HISTORY OF SOYMILK AND OTHER

NON-DAIRY MILKS (1226 TO 2013):

EXTENSIVELY ANNOTATED

BIBLIOGRAPHY AND SOURCEBOOK

Including Infant Formulas, Calf Milk Replacers,
Soy Creamers, Soy Shakes, Soy Smoothies,
Almond Milk, Coconut Milk, Peanut Milk, Rice Milk, Sesame Milk, etc.

Compiled

by

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DEDICATION AND ACKNOWLEDGMENTS

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This book, no doubt and alas, has its share of errors. These, of course, are solely the responsibility of William Shurtleff.

INTRODUCTION

Scope for Soymilk: This book focuses on the use of soymilk as a beverage. Soymilk has long been the most widely consumed non-dairy milk worldwide. Soymilk also appears as a step in the process for making tofu, yuba, soy yogurt, soy ice cream, soy cheese, fermented soymilk (incl. soy acidophilus milk), etc. Each of these soy products is or will be the subject of a separate book.

Amazaké, a thick fermented non-dairy rice beverage from Japan, usually served hot, topped with a dab of grated gingerroot, is also the subject of a separate book.

Use in East Asia: Only in China has soymilk (*doujiang*) long been used as a beverage. Traditionally it was been served hot, ladled from a caldron for breakfast, at the place where it was made either sweetened or as the base of a salted soup served with deep-fried crullers. It was not used to feed infants or as an infant formula.

Starting in the 1920s, a small number of companies in China started to make and sell bottled soymilk.

In Hong Kong, Vitasoy was launched in 1940 by K.S. Lo as a nutritious food for refugees fleeing during World War II. By 1968 it had captured 25% of the Hong Kong soft drink market, second only to Coca-Cola.

In Japan, bottled soymilk arrived in about 1957. The first soymilk boom started in about 1980; the many brands of soymilk were all sold in 180 ml aseptic cartons.

In the United States and Europe, soymilk started to become popular in the 1980s. The first two brands sold nationwide were Vitasoy and Edensoy, both aseptically packaged so they did not need refrigeration. The first superstar of soymilks, Silk, was launched by White Wave of Boulder, Colorado, in early 1996. It was sold in the dairy case in gable-top cartons that looked like typical milk cartons.

The first widely popular rice milk was Rice Dream, launched in June 1990 by Imagine Foods of Palo Alto, California.

Brief chronology of soymilk and other non-dairy products.

1226 – *Kitab al-tabik* [*A Baghdad Cookery Book*], by al-Baghdadi et al. is the earliest document seen that mentions a non-dairy milk – almond milk.

1365? – *Yiya Yiyi* [*Remnant Notions from I Ya*], by Han Yi is the earliest document seen that mentions soymilk, which it calls *doufujiang*.

1390 – "Almond milk" is first mentioned in English in *The Forme of Cury*. It came to be widely used in Europe during Lent – the first popular non-dairy milk in the Western world.

1640 ca. – Soymilk is probably in use in China by the beginning of the Qing dynasty (H.T. Huang 2006).

1704 – Soymilk is first mentioned in English by Domingo Fernandez Navarrete in his book *A Collection of Voyages and Travels*. Navarrete served as a Dominican missionary in China.

1790? – An undated painting of hawkers selling soymilk (*doujiang*) in China, by Yao Wenhan, is from the Qing dynasty.

1790 – Soymilk is mentioned by Juan de Loureiro in his book *The Flora of Cochin China*. Loureiro was a Portuguese Jesuit missionary who lived in what is now Vietnam. He notes that soymilk is part of the process for making tofu.

1866 – Soymilk is first discussed as a drink in its own right by the Frenchman Paul Champion, who traveled in China. In a French-language article he stated that the Chinese had taken their cups to tofu shops to get hot soymilk, which they drank for breakfast.

1896 June – Soymilk is first referred to in the United States by Henry Trimble in the *American Journal of Pharmacy*.

1897 July 7 – The term "soy-bean milk" (or any cognate / relative thereof) first appears in a USDA or U.S. government publication: C.F. Langworthy. 1897. "Soy beans as food for man." *USDA Farmers' Bulletin* No. 58. p. 20-23. July 7. The table, titled "Comparison of the composition of soy-bean milk and cows' milk," gives the nutritional composition of the two liquids. The same term next appeared in Dec. 1916 in a USDA Bulletin by Piper & Morse, and then on 7 Feb. 1917 in a USDA Weekly News Letter.

1897 Nov. 16 – Peanut cream and peanut butter are now being made in Kokomo, Indiana by Lane Bros. (*Kokomo Daily Tribune*, p. 4). This is the earliest document seen that contains the term "peanut cream."

1899 – Almeda Lambert of Battle Creek, Michigan, in her book *Guide for Nut Cookery*, describes how to make "peanut butter,… peanut cream, peanut milk, raw peanut milk and cream, almond milk, hickory milk, pine-nut milk, chufas milk and cocoanut milk" at home. This is the earliest document seen that contains the term "peanut milk" or the term "cocoanut milk."

1906 April – Kayatama, in Japan, reports that he has made "A condensed vegetable milk" from soy-beans.

1909 – The first soy-based infant formulas and soymilk made from full-fat soy flour are developed in the United States by John Ruhräh, a pediatrician. He reports his results in the *Archives of Pediatrics* (July 1909).

1910 – The world's first soy dairy, named Caséo-Sojaïne, is founded by Li Yu-ying, a Chinese citizen, biologist and engineer, at 46-48 Rue Denis Papin, Les Vallées, Colombes (near Asnières), a few miles northwest of Paris. In December 1910 he applies for the world's first soymilk patents (British Patents No. 30,275 and 30,351). The first patent is titled "Vegetable milk and its derivatives." He is issued both patents in Feb. 1912.

1913 June 13 – Li Yu-ying is issued the first U.S. soymilk patent (No. 1,064,841), titled "Method of manufacturing products from soja." He filed the application on 10 Oct. 1911.

1914 – Maria M. Gilbert, in her book *Meatless Cookery*, gives a recipe for "Rice milk." – the earliest know use of this term.

1917 – Soymilk (Soy Lac) is being produced commercially in the U.S. by J.A. Chard, Soy Products in New York City.

1921 Sept. 23 – Vita Rice Products plans to build a factory to make "rice milk products," including Vita Rice Milk, in San Francisco (*San Francisco Business*, p. 20).

1921 – Leon Rouest of France gives the first detailed discussion (in French) of calf-milk replacers based on soymilk.

1929 Nov. – T.A. Van Gundy, founder of La Sierra Industries in Arlington, California, launches La Sierra Soy Milk, and becomes the first Seventh-day Adventist worldwide to make soymilk commercially. The product was canned and the beany flavor removed by live steam processing.

1929 Dec. – Bottled soy bean milk is now widely made and sold in China. "One large factory in Peking now makes and distributes over a thousand bottles of [soy] milk daily; in Shanghai two factories each meet an even greater daily demand. The industry is bound to grow rapidly to greater dimensions" (Adolph and Wang 1929).

1931 – Madison Foods of Madison, Tennessee,

introduces Madison Soy Milk – the world's earliest known soymilk to be fortified with calcium and the second commercial soymilk product made by Seventh-day Adventists in the USA. Madison Foods is a company run by students and faculty within Madison College, a pioneering work/study school.

1936 Jan. – Dr. Harry W. Miller and his son, Willis, start making Vetose Soya Milk, sold in natural or chocolate flavors in sterilized half pint or quart bottles at their Vetose Nutritional Laboratories in Shanghai, China. Dr. Miller is a Seventh-day Adventist physician, a student of Dr. John Harvey Kellogg, and a medical missionary living in China. The world's first "soy dairy," this company also made soy ice cream and Acidophilus Vetose (a cultured soya milk) – both launched in Jan. 1936. But Japan was invading China. Within months after the soy-milk business began booming, a Japanese bomb blew up the soy dairy.

1936 April – The earliest known English-language document to contain the modern word "soymilk" is: Miller, Harry W.; Wen, C. Jean. 1936. "Experimental nutrition studies of soymilk in human nutrition." *Chinese Medical Journal* 50(4):450-59. April.

1936 June – Sobee, the world's earliest known branded soy-based infant formula, is launched by the American Soya Products Corp. of Evansville, Indiana.

1939 autumn – Dr. Harry W. Miller, forced by the war in China to return to the USA, starts making soymilk at Mt. Vernon, Ohio, in a large brick plant which he and coworkers built from the ground up. The first two products are canned liquid soymilk (made in a pressure cooker and fortified with vitamins and minerals) and malted soymilk (Soy-A-Malt). Pressure from the powerful U.S. dairy industry and the USDA convinced Miller not to call his product 'soymilk,' so he latinized the name to Soya Lac. This term was first used in late 1939 for Miller's first American soymilk.

1940 March - K.S. Lo, founder and managing director of the Hong Kong Soya Bean Products Co. Ltd. starts to make soymilk in Hong Kong. His product, originally named Vita Milk (*Wai-ta-nai* in Chinese) was fortified with calcium, cod-liver oil, and vitamins, and sold in milk bottles, primarily as a nutritious, affordable beverage for refugees. In June 1940 the product was renamed Sunspot, and in 1953 it was renamed Vitasoy.

1949 – Bob Rich first learned about soymilk in 1943 from employees of Henry Ford, who were making soymilk at the Carver Laboratory in Dearborn, Michigan, for use in the Ford Hospital. In April 1945 Rich Products Corp. launched Whip Topping – a non-dairy product. The first lawsuit against Whip Topping (1949) charges that this is an imitation dairy product – and thus illegal. Bob Rich and Rich Products (Buffalo, New York) mount an aggressive defense, contending that their product is not an imitation (which implies inferiority to the real product) but a replacement. By 1974 Rich Products (which now also made non-dairy Coffee Rich) had won 40 cases. That year the Kansas Supreme Court declared Coffee Rich "a new and distinct food" and the dairy lobby gave up. Were it not for Bob Rich and his lead attorney, Ellis Arnall (former attorney general and governor of Georgia, 1943-47), non-dairy products might still be illegal in the USA!

1950s – Soymilk enters the modern era as it begins to be marketed in bottles like soft drinks, largely due to work by K.S. Lo of Vitasoy in Hong Kong and Yeo Hiap Seng in Singapore.

1956 Dec. – The Plantmilk Society has its first annual general meeting in London. Mr. C.A. Ling is in the chair. This report in *The Vegan* is the earliest English-language document seen that uses the word "plantmilk" to refer to soymilk and other non-dairy milks – a nice short word.

1957 – Japan's first commercial soymilk, sold in bottles, named *Tônyu*, is introduced by the Ueda Tofu Shop in Hachioji, Tokyo. Dr. Harry Miller was the inspiration for and helped to establish the shop.

1960s – In Japan, soymilk slowly increases in popularity. New manufacturers are: Nihon Tanpaku Kogyo (1962). College Health Foods (later renamed San-iku Foods) in Chiba prefecture with its Soyalac (1969, also inspired and aided by Dr. Harry Miller). Luppy Tanpaku (House Shokuhin) in Saitama prefecture with its Luppy soymilk (1969).

1965 – ProSobee, the world's earliest known non-dairy infant formula based on soy protein isolates, is launched by Mead Johnson & Co. of Evansville, Indiana.

1966 - The enzyme lipoxygenase is discovered by scientists at Cornell University [Ithaca, New York] to be responsible for the "beany" flavor in soymilk. They develop a process which can be used to help eliminate this "beany" flavor.

1967 – Soymilk begins to be packaged aseptically in Tetra Pak cartons. This allows it to be sold without refrigeration for six months or more. The first such product was Beanvit, made by Yeo Hiap Seng Ltd. in Singapore and packaged in a disposable tetrahedron-shaped container.

1970s and 1980s – Soymilk becomes a popular beverage throughout Asia, spreading to Europe, Australia and the United States.

1979 – Hong Kong Soya Bean Products Co. Ltd. starts to export Vitasoy, packed in Tetra Brik cartons, to selected countries throughout the world. By the early 1980s exports were going to over 20 countries, both developed and developing. Exports to the USA began in 1980.

1980 Jan. - DE-VAU-GE Gesundkostwerk, a Seventh-day Adventist food company near Hamburg, Germany, launches GranoVita Soja Drink in 500 ml Tetra Brik cartons; this soymilk product is made by N.V. Vandemoortele (one of Europe's largest oilseed crushers, founded in 1934) in Izegem, Belgium.

1980 June – N.V. Alpro is founded by Vandemoortele to take over production of this soymilk. Inspired and headed by Philippe Vandemoortele, Alpro purchased the land on which it was located from Vandemoortele, and became an independent manufacturer. Alpro quickly became Europe's leading producer of soymilk, making private-label brands for scores of companies.

1983 July – Edensoy brand soymilk is launched by Eden Foods of Clinton, Michigan. Imported from Japan (where it is made by Marusan-Ai Co.), it is sold in plain and carob flavors in stand-up foil retort pouches.

1984 Feb. – The first comprehensive study of the soymilk market in the U.S. is published by Soyfoods Center of Lafayette, California. It estimates that total soymilk consumption in the U.S. in 1983 (not including soy-based infant formulas) was 2.68 million gallons (26% of this was imported), and total production of soy-based infant formulas was 32 million gallons.

1984 March – Vitasoy (USA) introduces the first soymilk whose flavor is described as "Original" – meaning dairylike or resembling (as much as possible) dairy milk.

1984 Aug. – Westsoy Natural brand soymilk is launched by Westbrae Natural Foods of Emeryville, California. Imported from Japan (where it is made by San-Iku Foods), it is sold in one flavor in stand-up foil retort pouches.

1984 Oct. – Westbrae Natural Malted's, a thick soymilk resembling a milk shake, are launched in many flavors by Westbrae Natural Foods, imported

from Japan.

1986 Nov. – Edensoy starts to be made in America by American Soy Products (ASP) at a large, modern plant in Saline, Michigan, and sold in Tetra Brik aseptic cartons. ASP is a joint venture of 4 Japanese companies and Eden Foods.

1986 – Raj Gupta (of ProSoya Foods International, Ottawa, Ontario, Canada) applies for two patents on the oxygen-free, cold-grind process and equipment that he has invented. The first U.S. patent is issued on 17 May 1988. This process soon becomes widely used to make good-tasting soymilk. ProSoya becomes a major manufacturer of systems used to make soymilk worldwide.

1988 Nov. – Pacific Foods of Oregon launches its first soymilk product, Naturally Northwest Soy Beverage [Plain], in a 1-quart Tetra Brik Aseptic carton. The company's new factory is in Tualatin, Oregon.

1990 April – WestSoy Lite, America's first "lite" soymilk, with a low fat content, is introduced in plain, vanilla, and cocoa flavors by Westbrae Natural Foods. Made by adding water to regular soymilk, the product is less expensive to make, but also contains less nutrients.

1990 June – Alpro opens a new soymilk plant at Wevelgem, Belgium. Costing about US$15 million and having a capacity of 45 million liters a year, it is reputed to be the largest in the world. Alpro now makes about 70% of the soymilk in Europe.

1990 June – Rice Dream, a non-dairy beverage, is launched in a Tetra Pak aseptic carton by Imagine Foods of Palo Alto, California. It is made by California Natural Products of Manteca, California, using an innovative patented process, in which the ground rice is digested by enzymes. Many prefer its flavor to that of soymilk.

1990 Sept. 24 – The company name is changed to Vitasoy International Holdings Ltd. from Hong Kong Soya Bean Products Co. Ltd.

1991 – There are at least 35 processors or marketers of soymilk in the U.S., increasing production to approximately 9.8 million gallons. Consumption is estimated to be growing at between 15 and 20% per year since 1984.

1993 – More than 200 scientific journal articles about soymilk have been published in English, and at least 80 English-language patents on soymilk have been issued between 1912 and 1993.

1994 Jan. – Soy-Um, a low-priced and attractively packaged soymilk, is launched by J&G Inc., a product developer and distributor in Chicago, Illinois. The product is made in Oregon by Pacific Foods. It soon becomes widely sold at Trader Joe's food stores.

1995 – A market study is published, estimating that $108 million of soymilk was sold in the U.S. in 1994. This equates to approximately 13.5 million gallons of soymilk. By 1995 sales are projected to have risen to over $130 million, or approximately 16.3 million gallons.

1996 Jan. – Silk – soymilk sold refrigerated in quart or half-gallon ESL (Extended Shelf Life) gable-top cartons – is introduced by White Wave, Inc. of Boulder, Colorado. It is the first U.S. soymilk to be sold refrigerated in the dairy case in a carton that looks like a typical milk carton, but that has a longer shelf life. It soon becomes the superstar of American soymilks.

1999 Aug. 18 – White Wave and Dean Foods Co. (Franklin Park, Illinois; a leading dairy milk company) announce a new alliance, in which Dean Foods acquires a minority stake (about 25%) in White Wave in exchange for money to market Silk soymilk. Silk is now in 6,000 supermarkets and chain stores – not counting natural foods chains like Whole Foods market. In 1999 sales of

refrigerated Silk increased 600 percent.

1999 Oct. 26 – The U.S. Food and Drug Administration (FDA) authorizes a health claim stating that consumption of 6.25 grams of soy protein per serving, as a part of a healthy diet, low in saturated fats and cholesterol, may reduce the risk of heart disease by lowering cholesterol levels. This claim soon appears on the front of many products that meet these requirements. It leads to the creation of many new soy products (including soymilks) and generates major public interest.

2002 May 8 – Dean Foods, Inc. (Dallas, Texas), one of America's largest dairy milk companies, acquires the remaining 64% of shares of White Wave, Inc. of Boulder, Colorado for $189 million. But the total value Dean Foods pays for White Wave is $295 million – largely to win the morale of the management and to give them an incentive to stay for at least 2 more years.

The many names of soymilk (for digital searching):

Alternative to milk
Artificial milk
Dairy analog or dairy analogues
Dairylike
Dairy like or dairy-like
Milk analog or milk analogue
Milk alternative
Milk replacer(s)
Milk substitute
Milklike beverage
Milklike flavor
Milklike product(s)
Milky drink
Milky emulsion
Milky filtrate
Milky fluid
Milky liquid
Milky liquor
Milky substance
Plantmilk
Plant milk or plant-milk
Protein beverage
Protein beverage base
Soja milk or soja-milk
Soya Lac
Soyabean beverage
Soya bean beverage or soya-bean beverage
Soyabean milk
Soya bean milk or soya-bean milk
Soya bean vegetable milk
Soyamilk
Soya milk or soya-milk
Soybase
Soy base or soy-base
Soybean beverage
Soy bean beverage or soy-bean beverage
Soybean beverage base
Soybean milk
Soybean "milk" or soybean 'milk'
Soy bean milk or soy-bean milk
Soy dairy
Soymilk
Soy milk or soy-milk
Soy "milk" or soy 'milk'
Substitute for milk
Synthetic milk
Vegetable milk
Vegetable protein beverage base

ABOUT THIS BOOK

This is the most comprehensive book ever published about the history of soymilk or of non-dairy products. It has been compiled, one record at a time over a period of 35 years, in an attempt to document the history of these ancient and interesting beverages. It is also the single most current and useful source of information on this subject.

This is one of more than 100 books compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyinfo Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features detailed information on:

- 96 different document types, both published and unpublished.
- 6557 published documents - extensively annotated bibliography. Every known publication on the subject in every language.
- 1148 original Soyinfo Center interviews and overviews never before published, except perhaps in our books
- 1043 unpublished archival documents.
- 1304 commercial non-dairy products.

Thus, it is a powerful tool for understanding the development of this subject from its earliest beginnings to the present.

Each bibliographic record in this book contains (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English language publications together with an English translation of the title, month and issue of publication, and the first author's first name (if given). For most books, we state if it is illustrated, whether or not it has an index, and the height in centimeters.

All of the graphics (labels, ads, leaflets, etc) displayed in this book are on file, organized by subject, chronologically, in the Soyinfo Center's Graphics Collection.

For commercial soy products (CSP), each record includes (if possible) the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as advertisements, articles, patents, etc.) are also given.

A complete subject/geographical index is also included.

ABBREVIATIONS USED IN THIS BOOK

A&M = Agricultural and Mechanical
Agric. = Agricultural or Agriculture
Agric. Exp. Station = Agricultural Experiment Station
ARS = Agricultural Research Service
ASA = American Soybean Association
Assoc. = Association, Associate
Asst. = Assistant
Aug. = August
Ave. = Avenue
Blvd. = Boulevard
bu = bushel(s)
ca. = about (circa)
cc = cubic centimeter(s)
Chap. = Chapter
cm = centimeter(s)
Co. = company
Corp. = Corporation
Dec. = December
Dep. or Dept. = Department
Depts. = Departments
Div. = Division
Dr. = Drive
E. = East
ed. = edition or editor
e.g. = for example
Exp. = Experiment
Feb. = February
fl oz = fluid ounce(s)
ft = foot or feet
gm = gram(s)
ha = hectare(s)
i.e. = in other words
Inc. = Incorporated
incl. = including
Illust. = Illustrated or Illustration(s)
Inst. = Institute
J. = Journal
J. of the American Oil Chemists' Soc. = Journal of the American Oil Chemists' Society
Jan. = January
kg = kilogram(s)
km = kilometer(s)
Lab. = Laboratory
Labs. = Laboratories
lb = pound(s)
Ltd. = Limited
mcg = microgram(s)
mg = milligram(s)
ml = milliliter(s)
mm = millimeter(s)
N. = North
No. = number or North
Nov. = November
Oct. = October
oz = ounce(s)
p. = page(s)
photo(s) = photograph(s)
P.O. Box = Post Office Box
Prof. = Professor
psi = pounds per square inch
R&D = Research and Development
Rd. = Road
Rev. = Revised
RPM = revolutions per minute
S. = South
SANA = Soyfoods Association of North America
Sept. = September
St. = Street
tonnes = metric tons
trans. = translator(s)
Univ. = University
USB = United Soybean Board
USDA = United States Department of Agriculture
Vol. = volume
V.P. = Vice President
vs. = versus
W. = West
°C = degrees Celsius (Centigrade)
°F = degrees Fahrenheit
> = greater than, more than
< = less than

HOW TO MAKE THE BEST USE OF THIS DIGITAL BOOK - SEARCH IT

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When asked: "What word or phrase would you like to search for?" type that word or phrase in the box. For example: Edensoy or White Wave. No need to use quotation marks. Then click "Search."
At "Results" click any line that interests you.

For those using a Mac without Acrobat Reader: Safari is often the default browser. Click "Edit" in the toolbar at top. In the dropdown click "Find," then click "Find..." again. A search bar will open across top of screen with a search box at right. In this box type a word or phrase you would like to search, such as Edensoy or White Wave. Click "Done" then scroll through the various matches in the book.

Chronological Order: The publications and products in this book are listed with the earliest first and the most recent last. Within each year, references are sorted alphabetically by author. If you are interested in only current information, start reading at the back, just before the indexes.

A Reference Book: Like an encyclopedia or any other reference book, this work is meant to be searched first - to find exactly the information you are looking for - and then to be read.

How to Use the Index: A subject and country index is located at the back of this book. It will help you to go directly to the specific information that interests you. Browse through it briefly to familiarize yourself with its contents and format.

Each record in the book has been assigned a sequential number, starting with 1 for the first/earliest reference. It is this number, not the page number, to which the indexes refer. A publication will typically be listed in each index in more than one place, and major documents may have 30-40 subject index entries. Thus a publication about the nutritional value of tofu and soymilk in India would be indexed under at least four headings in the subject and country index: Nutrition, Tofu, Soymilk, and Asia, South: India.

Note the extensive use of cross references to help you: e.g. "Bean curd. See Tofu."

Countries and States/Provinces: Every record contains a country keyword. Most USA and Canadian records also contain a state or province keyword, indexed at "U.S. States" or "Canadian Provinces and Territories" respectively. All countries are indexed under their region or continent. Thus for Egypt, look under Africa: Egypt, and not under Egypt. For Brazil, see the entry at Latin America, South America: Brazil. For India, see Asia, South: India. For Australia see Oceania: Australia.

Most Important Documents: Look in the Index under "Important Documents -."

Organizations: Many of the larger, more innovative, or pioneering soy-related companies appear in the subject index – companies like ADM / Archer Daniels Midland Co., AGP, Cargill, DuPont, Kikkoman, Monsanto, Tofutti, etc. Worldwide, we index many major soybean crushers, tofu makers, soymilk and soymilk equipment manufacturers, soyfoods companies with various products, Seventh-day Adventist food companies, soy protein makers (including pioneers), soy sauce manufacturers, soy ice cream, tempeh, soynut, soy flour companies, etc.

Other key organizations include Society for Acclimatization (from 1855 in France), American Soybean Association, National Oilseed/Soybean Processors Association, Research & Development Centers (Peoria, Cornell), Meals for Millions Foundation, and International Soybean Programs (INTSOY, AVRDC, IITA, International Inst. of Agriculture, and United Nations). Pioneer soy protein companies include Borden, Drackett, Glidden, Griffith Labs., Gunther, Laucks, Protein Technologies International, and Rich Products.

Soyfoods: Look under the most common name: Tofu, Miso, Soymilk, Soy Ice Cream, Soy Cheese, Soy Yogurt, Soy Flour, Green Vegetable Soybeans, or Whole Dry Soybeans. But note: Soy Proteins: Isolates, Soy Proteins: Textured Products, etc.

Industrial (Non-Food) Uses of Soybeans: Look under "Industrial Uses ..." for more than 17 subject headings.

Pioneers - Individuals: Laszlo Berczeller, Henry Ford, Friedrich Haberlandt, Artemy A. Horvath, Englebert Kaempfer, Mildred Lager, William J. Morse, etc. Soy-Related Movements: Soyfoods Movement, Vegetarianism, Health and Dietary Reform Movements (esp. 1830-1930s), Health Foods Movement (1920s-1960s), Animal Welfare/ Rights. These are indexed under the person's last name or movement name.

Nutrition: All subjects related to soybean nutrition (protein quality, minerals, antinutritional factors, etc.) are indexed under Nutrition, in one of more than 70 subcategories.

Soybean Production: All subjects related to growing, marketing, and trading soybeans are indexed under Soybean Production, e.g., Soybean Production: Nitrogen Fixation, or Soybean Production: Plant Protection, or Soybean Production: Variety Development.

Other Special Index Headings: Browsing through the subject index will show you many more interesting subject headings, such as Industry and Market Statistics, Information (incl. computers, databases, libraries), Standards, Bibliographies (works containing more than 50 references), and History (soy-related).

Commercial Soy Products (CSP): See "About This Book."

SoyaScan Notes: This is a term we have created exclusively for use with this database. A SoyaScan Notes Interview contains all the important material in short interviews conducted and transcribed by William Shurtleff. This material has not been published in any other source. Longer interviews are designated as such, and listed as unpublished manuscripts. A transcript of each can be ordered from Soyinfo Center Library. A SoyaScan Notes Summary is a summary by William Shurtleff of existing information on one subject.

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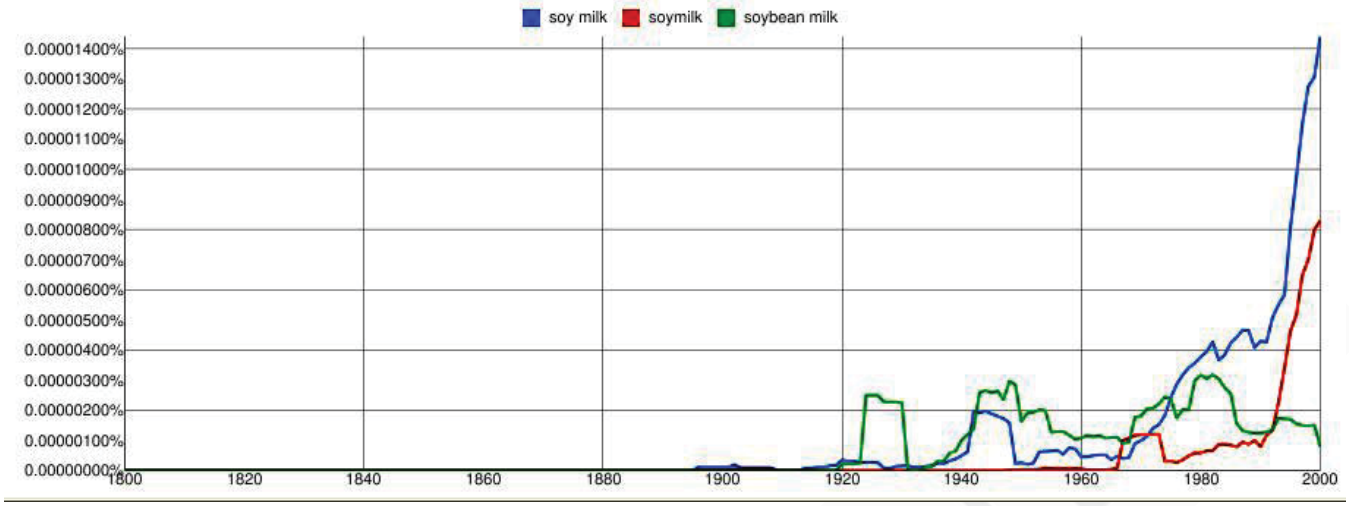
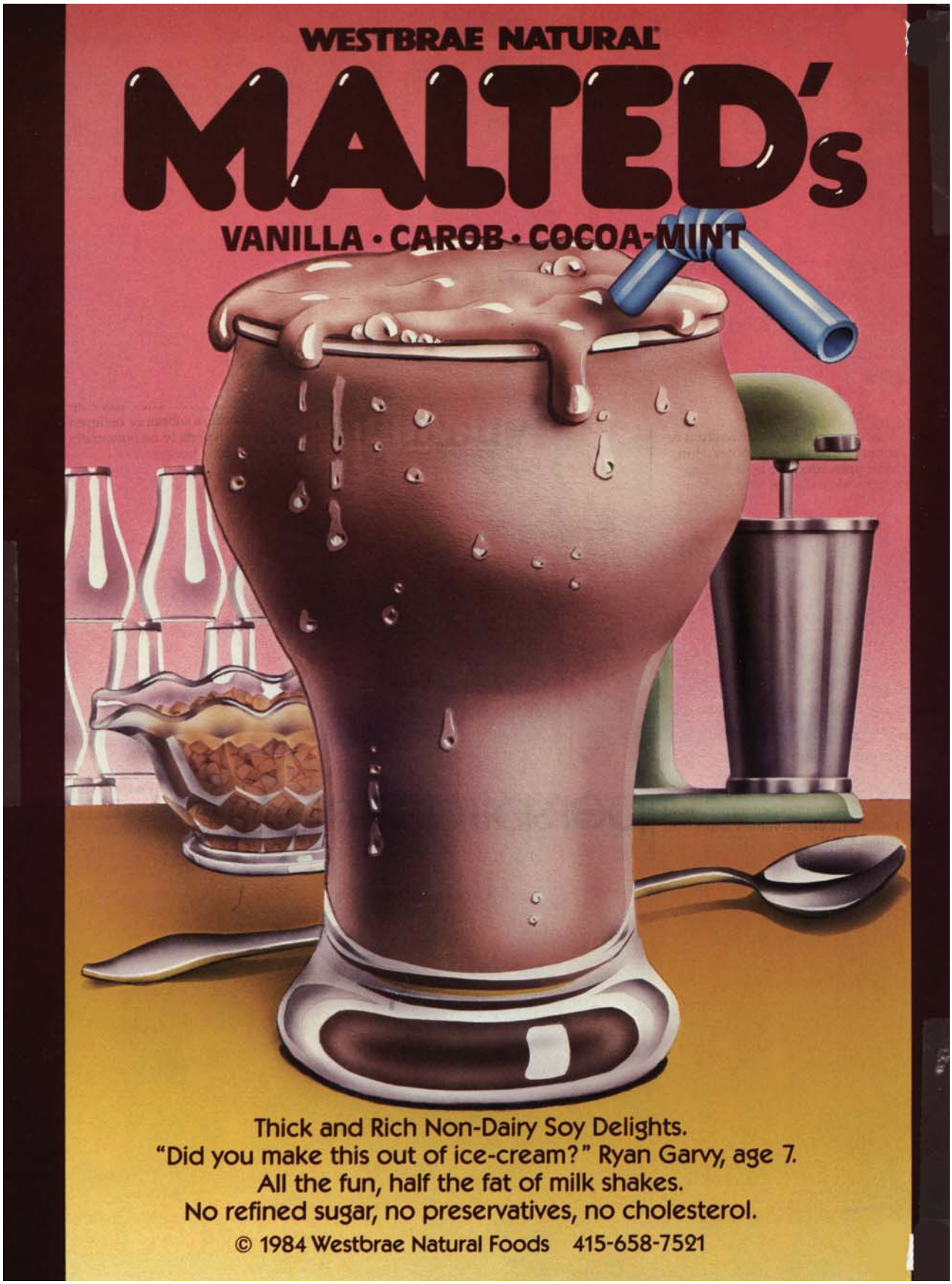


We've got an alternative

White Wave

Soy Dairy



HISTORY OF SOYMILK AND OTHER NON-DAIRY MILKS

1. al-Baghdadi, Shams al-din Muhammad b. al-Hasan. 1226. Kitab al-tabikh [A Baghdad cookery book]. Baghdad, Iraq. [Ara]

• ***Summary:*** An English translation (by A.J. Arberry) of this important medieval Arabic cookbook was first published in the periodical *Islamic Culture* (1939, vol. 13); this was the first translation of medieval Arab recipes into a European language since the Middle Ages. Nearly all the recipes had been extinct for centuries. It was published again in 1985 in *Petits Propos Culinaires* (No. 21), and a third time in: Rodinson, Maxime; Arberry, A.J.; Perry, Charles. 2001. *Medieval Arab Cookery: Essays and Translations.* Totnes, Devon, England: Prospect Books. 527 p. See p. 19-89.

Almonds ("sweet almonds)" are called for throughout this book; they are often peeled, finely chopped or ground, and soaked in water. In several recipes they are "milked" or made into milk: "Peel sweet almonds and grind, then mix with a little water: flavor [the recipe] to taste with the water and milk of the almond (p. 44). "Take a portion of sweet almonds, peel, grind fine, stir in water, and add to the saucepan, making a broth as desired of the milk of almonds. Before putting in the milked almond, one may also add cabobs... (p. 55; see also p. 56, 58-59). Almond oil is called for in one recipe (p. 81).

Note 1. In each recipe in which the almonds are ground, they are immediately mixed with some water; they are apparently never used as almond paste.

Sesame oil appears in 9 recipes, but olive oil is considered to be of better quality. Sesame seeds are used in 3 recipes (p. 77, 78, 86).

Some of the recipes also call for *murri,* a liquid seasoning made from fermented barley, for which Chinese soy sauce makes an excellent substitute. Interesting, sometimes exotic-sounding ingredients are used throughout the book: mastic, Medina dates, mint, pomegranate seeds, poppy flour, rose-water, saffron, sugar, and sumach juice.

Note 2. This is the earliest document seen (Jan. 2005) that mentions almonds. Note 3. This is the earliest document seen (Aug. 2013) that mentions almond milk, or any non-dairy milk other than soymilk.

Note 4: This is the earliest document seen (Jan. 2005) that mentions almond oil.

Note 5: This is the earliest document seen (Sept. 2007) that mentions olive oil (or olives). Address: Baghdad.

2. Han Yi. 1365? Yiya yiyi [Remnant notions from *I Ya*]. China. Undated. [Chi]

• ***Summary:*** Wade-Giles reference: *I Ya I I,* by Han I. H.T. Huang (2000, p. 322, 617) who cites this book gives its date as "the late Yüan." Note 1. The Yüan (Mongol) dynasty in China lasted AD 1260-1368. Note 2. This is the earliest document seen (Aug. 2013) worldwide that mentions soymilk. Dr. Huang states that this is also the earliest Chinese-language document seen (Aug. 2013) that mentions soymilk, which it calls *doufujiang.* As of Aug. 2013 *doujiang* is the modern Chinese word for soymilk, but that word does not appear in this document. While discussing the preparation of a thick puree (*fu,* the same character as in *doufu / tofu*) of poppy seed and mung bean powder, this book mentions in passing that the poppy seed extract should be cooked in a way similar to that for cooking *doujiang.*

Dr. Huang comments: The statement above implies that soymilk must have been known in China for quite a long time. It also implies that although soymilk had been readily available, it was not itself of much interest as a food or beverage. It probably did not become popular in China until the late Qing (Manchu) dynasty (1644-1912), when the sale of *doujiang* by hawkers became a sight common enough to prompt an artist named Yao Chih-Han [sic, Yao Wenhan] to record the scene in a drawing now owned by the National Palace Museum in Taipei, Taiwan. An excellent reproduction of this illustration appears in Huang's book (p. 323). During the Qing, the Chinese apparently discovered that prolonged, slow heating rendered soymilk more digestible by and acceptable to adults. Infants, however, have plenty of the enzyme lactase which enables them to hydrolyze lactose (milk sugar). Lactose is an alpha-galactoside. Therefore, by inference, infants should be able to hydrolyze the alpha-galactosides (raffinose and stachyose) found in soymilk. However, Chinese traditionally did not feed soymilk to their infants–probably because adults could not tolerate it. Surprisingly, this discovery is never mentioned in the literature; it seems to have been treated like a trade secret. However, western researchers (see footnote 2) later found, that during slow heating, the oligosaccharides are gradually hydrolyzed.

Huang (p. 322) then gives several possible reasons for soymilk's lack of popularity in early China: (1) It had an unpleasant beany taste, especially when made using the cold-extraction method. (2) The presence of protease inhibitors (lipoxygenase) and oligosaccharides (complex sugars that cause flatulence) make soymilk less than easily digestible. Cooking the soymilk inactivates the lipoxygenase. A major advantage of making tofu from the cooked soymilk is that most of the flatulence-causing oligosaccharides go off in the whey.

In one footnote on this page, Huang adds that the term next appears in the literature in the *Bencao Gangmu Shi Yi* (Supplemental Amplification of the *Bencao Gangmu*) (+1765, p. 365).

In a second footnote on this page, Huang notes that after prolonged heating, up to 90 minutes, significant amounts of stachyose and raffinose are removed from soymilk (Pires-Bianchi et al. 1983).

Note 3. The term "alpha-galactoside" appears (as of Nov. 2003) in only 3 records in the SoyaScan database (two in 1965 and one in 1988). However the term "alpha-galactosidase" (the enzyme absent in the human digestive tract) is found in 8 records from 1965 to 1998. In 1970 it was found that most of the oligosaccharides (complex sugars which cause flatulence in adults) in soymilk can be eliminated by adding a commercial preparation of alpha-galactosidase to the milk. This enzyme hydrolyzes (breaks down) the oligosaccharides into simple sugars, which the body can digest.

A full-page table (Huang, p. 372) shows the "Usage of soy condiments in food recipes from the Han to the Qing dynasties." Only seasonings based on jiang (fermented soybean paste) are used in this book; none are based on fermented black soybeans (*shi*). Jiang itself is used in 10 recipes, soy sauce made from jiang (*jiangyou*) is used in 1, and another type of soy sauce made from jiang (*jiangshui*) is used in 1 recipe.

Page 52 mentions *fu cha* (tossed gluten salad) and *chien fu* (pan-fried gluten slices). Address: China.

3. Kitab wasf al-at'ima al-Mu-tada [The description of familiar foods]. 1373. Cairo, Egypt. [1 ref. Ara]
• ***Summary:*** For an excellent, colorful translation of this book see: Rodinson, Maxime; Arberry, A.J.; Perry, Charles. 2001. *Medieval Arab Cookery: Essays and Translations.* Totnes, Devon, England: Prospect Books. 527 p. See p. 273-465. Almonds (in various forms) appear in many of the recipes in this medieval Arabic cookbook, as peeled sweet almonds (e.g., p. 305, 312, 315, 325), blanched sweet almonds (p. 328), sweet almonds pounded to a paste (p. 306-07, 309, 311-14, 337, 339), sweet almonds pounded and milked with water (i.e., almond milk, p. 319, 322, 336), and sweet almond oil (p. 308, 332). See also marzipan in the index. Milk is also made from safflower seeds ("pounded fine and milked with water," p. 316, 318-19, 336), and walnuts ("walnut meats, pounded fine and milked in water," p. 309). Sesame oil is used in many recipes and sesame seeds in a few (p. 317). Soy sauce is used as a substitute for murri (fermented barley) in quite a few recipes (p. 308, 310, 317, 328).

Note 1. This is the earliest document seen (Aug. 2013) concerning a non-dairy milk made from safflower seeds, or from walnuts.

Interesting, sometimes exotic-sounding ingredients are used throughout the book: apricot, chufa, camphor, Ceylon cinnamon, a race of ginger, jujubes, kishk (dried yogurt), mastic, mint, noodles, Persian yogurt (*laban farsi*, p. 314), pistachios (pounded, p. 316), pomegranate seeds, purslane stalks, quince, rose-water, rue, saffron, spikenard, sugar, tiger nut, verjuice, tahineh [tahini, sesame butter] (p. 312-13).

Note 2. This is the earliest document seen (May 2011) that mentions tahini (which it calls *tahineh*). Centuries later it also came to be known as "sesame butter."

Note 3. This is the earliest document seen (Jan. 2005) concerning a non-dairy nut or seed butter, *tahineh*, made by grinding sesame seeds until smooth.

Note 4. This is the earliest document seen (Dec. 2012) that mentions almonds pounded to a paste [almond paste]; centuries later it also came to be known as "almond butter." Address: Cairo, Egypt.

4. The forme of cury: a roll of ancient English cookery, compiled, about A.D. 1390, by the master-cooks of King Richard II... 1390. London, England. [Eng]
• ***Summary:*** Page 124: "Almandes. page 17 [and 18]. very variously written at this time, Almaunde, Almandy?, Almaundys, Almondes, all which occur in MS. Ed. and mean Almond or Almonds.

"Almahd my Ike. 9. Almonds blanch'd and drawn thickish with good broth or water, Nº 51. is called thyk mylke, 52. and is called after Almande mylke, first and second milk, 116. Almands unbleached, ground, and drawn with good broth, is called mylke, 62. Cow's milk was sometimes used instead of it, as MS. Ed. 1. 13.

"Creme of Almands how made, 85. Of it, Lei. Coll. VI. p. 17. We hear elsewhere of Almond-butter, v. Butter."

First published: London: Printed by J. Nichols, printer to the Society of Antiquaries, 1780 [i.e. 1785].

Note: Charles Perry (2013/08) says this is the earliest English-language book he has seen that mentions almond milk. Address: London, England.

5. Furnival, Frederick J. ed. 1430. The babees' book: Medieval manners for the young. London: *
• ***Summary:*** A recipe in this book states: "Take Almaunde Milke & yolkys of Eyroun."

In modern English, this reads: "Take almond milk and egg yolks." The first character of the word *yolkys* (pronounced YO-kus) is not actually a *y* but an ancient orthographic character called a "yogh," that looked liked somewhat like the number 3 and was sounded like a guttural *y. Eyroun* means "eggs" in a dialect of English.

Note: This book was the earliest cited by the *Oxford English Dictionary* under "almond milk." Address: England.

6. Harleian MS. 279 (ab. 1430) [about cookery in England]. 1430.
• ***Summary:*** This manuscript, which is presently (Aug. 2013) in the British Museum, was published in *Two Fifteenth-Century Cookery Books*, edited by Thomas Austin (1888). It is found on pages 1-64 of that book.

This MS. [Manuscript] is divided into three Parts, the

first, headed *Kalendare de Potages dyuers*,–containing 153 recipes: the second Part, *Kalendare de Leche Metys*, has 64 recipes, and the third Part, *Dyuerse bake metis*, 41 recipes.

Almond milk is mentioned many times throughout this book, however the words "Almond" and "milk" are spelled in many different ways. Here are some examples from the 1888 published book:

Page 19: "Bruet of Almaynne–Take Almaundys, & draw a gode mylke ther-of with Water; take Capoun [capon], Conyngys [conys = rabbits older than 1 year] or Pertriches [partridges]; smyte ye Capoun, or kede, or Chykonys, Conyngys: ye Pertriche shal ben hol: pan blaunche ye Fleyssh, an caste on ye mylke... take pouder Gyngere, Galyngale, Canel, & temper ye pouder wyth Vynegre, & caste ther-to; sesyn it with salt, & serue forth."

"Bruet of Almaynne in lente–Take fyne thikke Mylke of Almaundys; take datys, an mynce hem smal ther-on; take Sugre y-nowe, & straw ther-on, & a lytil flowre of Rys; sylt [mix] & serue forth whyte, & loke Pat it be rennyng." Address: England.

7. Su Ping. 1500. Doufu [Ode to tofu? (Document part)]. Quoted by Wai 1964, p. 91-92. [Chi; eng]

• ***Summary:*** In an English-language article about fermented tofu titled "Soybean cheese, Nganshou Wai (1964, p. 92) notes that Su Ping of the Ming Dynasty (1500) wrote:

"The best is King Wainan's skill, you see the beauty when you peel.

"Ground in mortar and milk flows.

"Boil in water and it turns to snow.

"Soak in the jar and white curds show.

"Cut apart with a knife yet the jade is sound.

"Who knows the delicacy of the curd? Only the Buddhist and Taoist."

Note 1. This is the earliest document seen (April 2012) clearly linking tofu and Buddhism.

Note 2. This is the earliest document seen (April 2013) that mentions soymilk curds–before they become tofu.

Note 3. Dr. H.T. Huang found in a bibliography the original Chinese name of Su Ping, who flourished in about 1435. He has no further information about this poem or its source.

8. Iseno, Teijo. 1525? Teikun ôrai [Teikun ôrai]. Japan. [Jap]*

• ***Summary:*** Ohta (1975, p. 226) states that this book was written during the Muromachi (Ashikaga) period [ca. 1336-1573] in Japan. It contains recipes for using fermented black soybeans (*shiokara nattô*).

K. Tsuchiya (Soymilk, 1982, p. 30) states that in this book, written during the Muromachi (Ashikaga) period in Japan, the word *tofu-kan* appears in the section titled *Shojin Ryori* (Buddhist Vegetarian Cookery). That word used to mean "tofu soup" but it actually refers to what Japanese today call soymilk (*tônyû*).

Toyo Shinpo. 1983. Jan. 1. "Tonyu no rekishi wa furui" [Soymilk has a long history]. Based on new book by Kanji Tsuchiya.

9. Boorde, Andrew. 1542. The fyrst boke of the introduction of knowledge made by Andrew Boorde, of physycke doctor. A compendyous regyment; or, A dyetary of helth... London: N.T. Truber & Co. Published for the Early English Text Society. 396 p. Illust. 22 cm.

• ***Summary:*** Boorde, attributes therapeutic value to almond milk: "Almon mylk doth comforte the brest, and it doth mollyfe the bely, and provoketh uryne." Note: This is the 4th earliest document seen (Aug. 2003) that mentions almond milk. It was first cited by Lorna J. Sass in her book *To the King's Taste* (1975). Address: Physycke Doctour.

10. Hakluyt, Richard. 1589-1600. The principall navigations, voiages, traffics and discoueries of the English nation. 3 vols. London. See vol. 1, p. 97. Reprinted in 1965. Cambridge, Published for the Hakluyt Society and the Peabody Museum of Salem at the University press. *

• ***Summary:*** Page 97 states: "It leaueth behind it a taste like the taste of almond milke." This statement appears in a section of the book about alcoholic beverages. The author writes that "cosmos" leaves behind it a taste like the taste of almond milk. Since "cosmos" is made by fermenting mare's milk, it is probably today's koumiss–which is a beverage of fermented mare's milk made originally by the nomadic people's of central Asia." According to *Webster's Dictionary* (1998) the word koumiss was first used in English in 1598! It is derived from the Russian *kumys*, which is of Turkik origin and akin to the Turkish word *kumiz*.

Note 1. Richard Hakluyt (lived ca. 1552-1615) was an English geographer and historian.

Note 2. This passage about "almond milke" does not appear in the 1589 edition of this book.

Note 3. This is the third earliest document seen (March 1999) that mentions almond milk. It was first cited by the *Oxford English Dictionary* under "almond milk."

11. Chen Maoren. comp. 1644. Shuwu yimingshu [Compilation of common things with unusual names]. China. Passage on soy reprinted in C.N. Li 1958 #158, p. 103. [Chi]

• ***Summary:*** Wade-Giles reference: *Shu Wu I Ming Shu*, by Ch'ên Mao-gun. The first passage states: "Soybean milk (*shuru*) is the same as tofu (*doufu*). If you cook the beans, you will get the milk."

The second and last passage states: "A Sanskrit (*fanwen*) quotation says that you use soybeans and azuki beans (*daxiaodou*) as a nut or fruit." (Translated by H.T. Huang, PhD, Nov. 2002). Dr. Huang adds: The first passage about soymilk and tofu is garbled and doesn't make much sense. The first passage is from the *Qing Yilu* [Anecdotes, simple

and exotic] (+965), but this source is not cited in this work of 1644, and Li (1958) was also unaware of it, because he never cited or mentioned the *Qing Yilu.*

Schlegel (1894, p. 136) (1) "The *Tao-fu* or Bean-curd was also called 'Leguminous milk,' and was prepared by boiling curds or milk from beans." (2) Dr. Huang comments: Schlegel was the first to cite this early reference to tofu, but he did not realize that this passage actually comes from a much earlier source, the *Qing Yilu,* which appeared almost 680 years earlier, at the end of the Tang dynasty!

This work consists of 30 bound volumes of 30 chapters. The wood blocks were carved during the reign period of Chong Zhen, the last Ming emperor, who hung himself on Cold Mountain as the Qing Manchus were conquering his dynasty and preparing to establish the Qing dynasty (1644-1911).

Note 1. This is the earliest document seen (Nov. 2002) which states that the soybean was mentioned in an early Sanskrit source.

Note 2. This is the earliest Chinese-language document seen (Aug. 2013) that uses the term *shuru* to refer to soymilk.

12. Fernández Navarrete, Domingo. 1665. [Journal]. In: Awnsham Churchill and John Churchill, comps. 1704. A Collection of Voyages and Travels. London: Published by the author. 4 vols. See vol. 1, p. 251-52. Chap. 13. [Spa; Eng]
• ***Summary:*** This passage in Fernández Navarrete's journal, written in 1665 in Spanish, first published in Spanish in 1676, but not published in English until 1704 by Churchill & Churchill, appears in Chapter 13 of the Journal, titled "His Journey to Che Kiang" (p. 251-52). The following is from the 1704 translation; the unnamed translator may have been Captain John Stevens:

"16. Before I proceed to the next chapter, because I forgot it in the first book, I will here briefly mention the most usual, common and cheap sort of food all *China* abounds in, and which all men in that empire eat, from the emperor to the meanest *Chinese,* the emperor and great men as a dainty, the common sort as necessary sustenance. It is call'd *teu fu* [tofu], that is, paste of kidney-beans [*Llamase Teu Fu, esto es, masa de frixoles* {*frijoles*}]. I did not see how they made it. They draw the milk out of the kidney-beans, and turning [curding] it, make great cakes of it like cheeses [*quesos*], as big as a large sieve, and five or six fingers thick. All the mass is as white as the very snow, to look to nothing can be finer. It is eaten raw, but generally boil'd and dressed with herbs, fish, and other things. Alone it is insipid, but very good so dressed and excellent fry'd in butter. They have it also dry'd and smok'd, and mix'd with caraway-seeds, which is best of all. It is incredible what vast quantities of it are consum'd in *China,* and very hard to conceive there should be such abundance of kidney-beans. That *Chinese* who has *teu fu,* herbs and rice, needs no other sustenance to work; and I think there is no body but has it, because they may have a pound (which is above twenty ounces) of it any where for a half-penny. It is a great help in case of want, and is good for carriage. It has one good quality, which is, that it causes the different airs and seasons, which in that vast region vary much, to make no alteration in the body, and therefore they that travel from one province to another make use of it. *Teu fu* is one of the most remarkable things in *China,* there are many will leave pullets for it. If I am not deceiv'd, the *Chineses* of *Manila* [Philippines] make it, but no *European* eats it, which is perhaps because they have not tasted it, no more than they do fritters fry'd in oil of *Ajonjoli* ([sesame seed] a very small seed they have in *Spain* and *India,* which we have not) which the *Chineses* make in that city and is an extraordinary dainty."

Note 1. Friar Domingo Fernández Navarrete was born in 1618 in Castrogeriz, Spain (he was Castilian), and he died in 1686 on the island of Santo Domingo, where he was Archbishop and Primate of the Spanish Indies. He wrote in Spanish, and served as a Dominican missionary in China (where he observed soyfoods) from 1658 to 1669.

Note 2. This is the earliest document seen in the Western world, or written by a European, that mentions soymilk, although it is described as a step in the process of making tofu rather than an a beverage. It is the third earliest that mentions soya or tofu.

Note 3. This is the earliest Spanish-language document (April 2013) seen that mentions tofu, which it calls *Teu Fu* or *masa de frixoles* {*frijoles*}. The author is not certain that Chinese in Manila made tofu. If they did, this would be the earliest document seen (April 2013) concerning soybean products (tofu) in the Philippines. This document would also contain the earliest date seen for soybean products in the Philippines (1665); soybeans as such had not yet been reported by that date. Yet if the Chinese were making tofu at this time in Manila, they must have had soybeans. Therefore, this would be the earliest document concerning soybeans in the Philippines. And these soybeans were probably being cultivated at this time in the Philippines.

Note 4. This is the earliest document seen concerning soybeans in connection with (but not yet in) Spain.

Note 5. This is the earliest document seen (Jan. 2002) concerning soybeans in Southeast Asia. This document contains the earliest date seen for soybeans in Southeast Asia (1665).

Note 6. This is the earliest document seen (April 2013) that mentions smoked tofu. It is interesting that a European mentions smoked tofu, which he apparently saw in China, before it is mentioned in any known Chinese document–in 1680.

Note 7. This is the earliest European-language document seen (Aug. 2007) that mentions sesame oil, which it calls "oil of Ajonjoli."

Note 8. This is the earliest European-language document seen (April 2013) that mentions dry / dried tofu ("They have

it also dry'd") in China. This probably refers to *doufu-gan* (which literally means "tofu dry" but which we call "pressed tofu").

Note 9. Navarrete's 1665 journal is the earliest Spanish-language document seen (Jan. 2000) concerning soy. When it was published in 1676 in Spanish, it was the earliest Spanish-language publication seen concerning soy.

Note 10. For a biography of Domingo Fernández Navarrete (1610-1698), see J.S. Cummins (1962). In the National Union Catalog, his surname is given as "Fernández Navarrete" (i.e. his name is indexed under "F," not under "N"). In May 1677, long after leaving China, he was nominated Archbishop of Santo Domingo (an early name for the Dominican Republic); he arrived there on 20 Sept. 1677. He learned about food uses of soybeans in about 1665 while he served as a Dominican missionary in China (1658-1669). The island on which he was archbishop, called Hispaniola in English or Española in Spanish, was visited by Christopher Columbus in 1492 and settled in 1493; it became the center of Spain's rule in the West Indies and the base for Spain's expansion to the American mainland. Its capital constitutes the oldest continuous European settlement in the Americas. The natives were soon exterminated by the Spanish and replaced by negro slaves. During the 1600s, the western third of the island (known today as Haiti) was occupied by French buccaneers and ceded to France by Spain in 1697, after Navarrete wrote about soya; it came to be known by the French as the colony of Saint Domingue, while the eastern two-thirds of the island where Navarrete lived (Santo Domingo, known today as the Dominican Republic) remained under control by Spain. Hymowitz and Newell (1981) noted that this was the earliest accurate European description seen for the use of soybeans as a food. Thus the first two European references to soyfoods were both about tofu.

For a good biography of Fernández Navarrete, see Cummins 1962.

13. Fernández Navarrete, Domingo. 1676. Tratados historicos, politicos, ethicos, y religiosos de la monarchia de China... [An account of the empire of China, historical, political, moral, and religious]. Madrid, Spain: En la Imprenta Real, por Juan Garcia Infancon. A costa de Florian Anisson, Mercador de Libros. [18] + 518 + [25] p. See p. 347-48. 30 cm. [Spa]

• ***Summary:*** This is the earliest published Spanish-language edition of Fernández Navarrete's journal, written in 1665. It was printed/published in 1676 in Madrid by Juan Garcia Infanon. Book VI (*Tratado sexto*), titled "The author's travels" [1646-1674] (*De los viages, y navigaciones que el autor deste libra ha hecho*) begins on p. 289. We are interested in Chapter XIII, titled "My journey to Che Kiang and stay there till the persecution," which begins on p. 344. We will give below an exact transcription of part of this 17th century Spanish document, but we will adapt the original letter forms to their contemporary equivalents. Near the end of this chapter, Part 16 (p. 347) begins: *"Antes de passar al capitulo siguiente, escribo aqui con breuedad* [*brevedad*], *por averseme* [*averme*] *olvidado in en Tratado primero, el manjar usadisimo, comunisimo, y muy barato de que abunda toda la China, y que comen quantos ay en aquel Imperio, desde el Emperador, hasta el China mas ordinario, el Emperador, y señores, por regalo, la gente ordinaria por sustento, y necesidad. Llamase Teu Fu, esto es, masa de frixoles* [*frijoles*]. *El modo come se haze* [*hace*] *no le vi, sacan la leche de los frixoles, y quaxada* [*cuajada*] *hazen* [*hacen*] *uno como quesos tan grandes como un arnero, y de gruesso cinco y seis dedos. Toda la masa tan blanca como la mesma nieue* [*nieve*]. *Tiene la vista quanto se puede desear."*

The following translation is from A. Churchill and J. Churchill, comps. 1704. *A Collection of Voyages and Travels* (London): "Before I proceed to the next chapter, because I forgot it in the first Book, I will here briefly mention the most usual, common and cheap sort of food all *China* abounds in, and which all men in that empire eat, from the emperor to the meanest *Chinese*, the emperor and great men as a dainty, the common sort as necessary sustenance. It is call'd *teu fu*, that is, paste of kidney-beans [*masa de frixoles*]. I did not see how they made it. They draw the milk out of the kidney-beans, and turning [curding] it, make great cakes of it like cheeses, as big as a large sieve, and five or six fingers thick. All the mass is as white as the very snow, to look to nothing can be finer."

Note 1. This is the earliest published Spanish-language document (April 2013) seen that mentions tofu, which it calls *Teu Fu;* the author refers to soybeans as simply *frijoles*.

Thanks to Javier Alvarez-Mon of Spain, a student and employee at the Graduate Theological Union Library in Berkeley, for help in transcribing and interpreting this passage in old Castilian (the language of Castile–an ancient kingdom in central and northern Spain–that became the modern official and literary language of Spain). Javier notes that today in Spain beans are no longer called *frijoles.* Rather, they are called *judías* (pronounced hu-DEE-as), a word apparently (for unknown reasons) related to the word "Jews."

Note 2 This is the earliest Spanish-language document seen (Aug. 2013) document seen that mentions soymilk, which it calls *la leche de los frixoles.*

For a good biography of Fernández Navarrete, see Cummins 1962. He was born in 1618 in Castrogeriz, Spain (he was Castilian), and he died in 1686 on the island of Santo Domingo, where he was Archbishop and Primate of the Spanish Indies.

14. Marvell, Andrew. 1678. An account of the growth of the growth of popery and arbitrary government in England. Amsterdam. 68 p. Reprinted in Westmead, England, by

Gregg International (156 p., 20 cm). *
• ***Summary:*** A letter from Andrew Marvell to Dr. Witty states: "The doctor doth stint [confine] them to cordials, almond-milk and broth."

Note: *Merriam-Webster's Collegiate Dictionary* (1998) defines popery (a noun, first used in about 1534) as "Roman Catholicism–often used disparagingly."

15. Fernández Navarrete, Domingo. 1704. An account of the empire of China, historical, political, moral, and religious. Vol. 1. In: Awnsham Churchill and John Churchill, comps. A Collection of Voyages and Travels. London: Published by the author. 4 vols. 424 p. See p. 251-52. Chap. 13. [Eng]
• ***Summary:*** The subtitle of the entire volume reads: "Some now printed from original manuscripts. Others translated out of foreign languages, and now first pub. in English. To which are added some few that have formerly appear'd in English, but do now for their excellence and scarcity deserve to be reprinted."

At the bottom of the title page of this chapter is written: "Written in Spanish by R.F.F. Dominick Fernandez Navarette [sic, Navarrete], Divinity Professor in the College and University of St. Thomas at Manila, Apostolick Missioner in China, Superior of those of his Mission, and Procurator General at the Court of Madrid for the Province of the Rosary in the Philippine Islands, of the Order of Preachers." Domingo Fernández Navarrete lived 1610-1698. Many curious observations are contained in this work, which is a translation of *Tratados historicos, politicos, ethicos, y religiosos de la monarchia de China* (1676). In this collection it appears as the first item in Volume I, which bears out the tendency for travel literature of this period to be of less significance for geography and history than for literature. The name of the translator is not mentioned, but Cummins (1962, p. cxvi) speculates that it may have been Captain John Stevens. The *Tratados* appears in all the Churchill editions.

The author's exact description of tofu in China, which first became available in English in 1704 in this book as compiled/edited by Churchill and Churchill is as follows:

"16. Before I proceed to the next chapter, because I forgot it in the first book, I will here briefly mention the most usual, common and cheap sort of food all *China* abounds in, and which all men in that empire eat, from the emperor to the meanest *Chinese*, the emperor and great men as a dainty, the common sort as necessary sustenance. It is call'd *teu fu*, that is, paste of kidney-beans [*Llamase Teu Fu, esto es, masa de frixoles* {*frijoles*}]. I did not see how they made it. They draw the milk out of the kidney-beans, and turning it, make great cakes of it like cheeses, as big as a large sieve, and five or six fingers thick. All the mass is as white as the very snow, to look to nothing can be finer. It is eaten raw, but generally boil'd and dressed with herbs, fish, and other things. Alone it is insipid, but very good so dressed and excellent fry'd in butter. They have it also dry'd and smok'd [dried and smoked], and mix'd with caraway-seeds, which is best of all. It is incredible what vast quantities of it are consum'd in *China*, and very hard to conceive there should be such abundance of kidney-beans. That *Chinese* who has *teu fu*, herbs and rice, needs no other sustenance to work; and I think there is no body but has it, because they may have a pound (which is above twenty ounces) of it any where for a half-penny. It is a great help in case of want, and is good for carriage. It has one good quality, which is, that it causes the different airs and seasons, which in that vast region vary much, to make no alteration in the body, and therefore they that travel from one province to another make use of it. *Teu fu* is one of the most remarkable things in *China*, there are many will leave pullets for it. If I am not deceiv'd, the *Chineses* of *Manila* [Philippines] make it, but no *European* eats it, which is perhaps because they have not tasted it, no more than they do fritters fry'd in oil of *Ajonjoli* ([sesame seed] a very small seed they have in *Spain* and *India*, which we have not) which the *Chineses* make in that city and is an extraordinary dainty."

Note 1. This is the earliest English-language document seen (Feb. 2006) that uses the term "kidney- beans" to refer to soybeans.

Note 2. This is the earliest English-language document seen (April 2013) that uses the word "teu fu" (or "teu-fu") to refer to Chinese-style tofu, or that uses the word "cakes" or "cheeses" ("make great cakes of it like cheeses") in connection with tofu. This is also the earliest English-language document that mentions tofu in connection with China. Benjamin Franklin in London read the English translation and in 1770 wrote his friend John Bartram in Philadelphia, Pennsylvania, about tofu and Chinese Garavances / Caravances.

Note 3. This is the earliest English-language document seen (April 2013) that mentions smoked tofu or that uses the word "smoked" (actually smok'd) in connection with tofu.

Note 4. This is the earliest English-language document seen (May 2011) that mentions sesame seeds, which it calls *Ajonjoli*.

Note 5. This is the earliest English-language document seen (April 2013) that mentions dry / dried tofu ("They have it also dry'd") in China. This probably refers to *doufu-gan* (which literally means "tofu dry" but which we call "pressed tofu").

Note 6. This is the earliest book chapter seen (Oct. 2001) that mentions soy.

For a good biography of Fernández Navarrete, see Cummins 1962. Address: Divinity Professor in the College and University of St. Thomas at Manila, Philippines.

16. Zhao Xuemin. 1765. Bencao Gangmu shiyi [Supplemental amplification of the *Bencao Gangmu*]. China. [Chi]

• ***Summary:*** Wade-Giles reference: *Pên Ts'ao Kang Mu Shih I*, by Chao Hsüeh-Min. H.T. Huang (2000, p. 322, 621) who cites this Qing dynasty book, says of its date: "Begun ca. +1760; first prefaced +1765, prolegomena added +1780, last date in text 1803. First published 1871." Huang says that this is the 3rd earliest Chinese-language document seen in which a term for soymilk (*doujuang*) appears (See p. 365 of the 1971 edition {Comm. Press, Hong Kong}). Address: China.

17. Yao Wenhan. 1790? [Painting of hawkers selling soymilk in China]. China. Undated. Reproduced in H.T. Huang 2000, p. 323. [Chi]

• ***Summary:*** Painted during 1736-1796. Qing dynasty. Original in the National Palace Museum (Taipei, Taiwan). Reproduced (with permission) on page 323 of H.T. Huang. 2000. Science and Civilisation in China. Vol. 6, Biology and Biological Technology. Part V: Fermentations and Food Science. Joseph Needham series. Cambridge, England: Cambridge University Press.

Letter (e-mail) from H.T. Huang, PhD. 2005. Aug. 25. "As far as I can see it is a team of hawkers. The one on the far left is preparing the soymilk. The one on the far right is dispensing soymilk from a pail into a bottle, and the one in the center is pouring it from a bottle into a cup. People are buying it in bottles to take home or in cups to drink on the spot."

Letter (e-mail) from H.T. Huang. 2006. Sept. 7. This illustration was painted by Yao Wenhan (Chinese characters given) (probably not Yao Zhihan as the inscription on the Needham Research Institute copy says), a painter at the court of Emperor Qianlong who reigned from AD 1736 to 1796. "Yao Wenhan was a well-known court painter. His dates are unknown... We are indebted to Dr. James Lin, a curator of the Fitzwilliam Museum, University of Cambridge, for this information. His friend has seen the original in the National Palace Museum [Taipei, Taiwan] and recognized the painting and painter instantly. He also thinks this may be a copy of a Song [W.-G. Sung dynasty, 960-1279] painting since many of the paintings in Qianlong's collection were copies of classical Song works. I'm not so sure, since soymilk is not mentioned in Song literature [although it is first mentioned in about 1365, late Yüan dynasty]. I do think it is painted in Song style. The attire of the hawkers in the painting is like those seen in Song paintings and not like those in Qing paintings. Thus, we can surmise that soymilk was in use in China by the beginning of the Qing dynasty (c. 1640). It was sold as a street food in the 18th century."

18. Glasse, Hannah (Mrs.). 1796. The art of cookery made plain and easy; which far exceeds any thing of the kind ever yet published. London: J. Fairburn. xl + 419 p. See p. 173-74. Index. 22 cm. Facsimile edition reprinted in 1971. [Eng]

• ***Summary:*** On the title page, after the table of contents, we read: "in which are included, One Hundred and Fifty new and useful Receipts [recipes], not inserted in any former edition."

In Chapter X, "Fish," the last receipt [recipe], "To dress White-bait," is almost identical to that in the 1784 edition– except it is in a different chapter and it lacks two commas. It states (p. 173-74): "Take your white-bait fresh caught and put them in a cloth with a handful of flour, and shake them about till they are separated and quite dry; have some hog's lard boiling quick, fry them two minutes, drain them and dish up with plain butter and soy."

Note 1. The last word, "soy," refers to soy sauce. It does not appear in the index, and we can find no other use of it in this book.

Note 2. "Price: five shillings, bound."

Note 3. Chapter XIV, "For Lent, or a fast dinner..." (p. 205-64) contains several recipes in which almonds

are pounded to a paste in a mortar then mixed with other ingredients and used in place of or with dairy milk or cream, including Almond soup (p. 209-10), Almond fraze (p. 218, sweet pancakes with pounded almonds, sweet cream, eggs, sugar, and grated white bread, pan-fried in butter), How to make a hedge-hog (p. 224; with 2 lb of almonds instead of meat), Almond pudding (two types, p. 243-44), and Ipswitch almond pudding (p. 251). In other chapters, almonds are also used to make Almond cheesecakes (p. 319), Almond custards (p. 320), Almond butter (p. 321), Almond cream (p. 324), and Almond rice (p. 339). In these Lenten recipes, eggs, butter, cream, and cheese are used quite often and liberally. Meat is never used, but eels, fish (flounder, herring, salmon, scate / thornback), and shellfish (crawfish, lobsters, mussels, oysters) are all used.

Note 4. This is the earliest English-language document seen (Aug. 2013) calling for the use of almond milk at Lent in Europe in place of or with dairy milk or cream.

Note 5. This is the earliest English-language document seen (Dec. 2012) that contains the term "Almond butter" (p. 321) or gives a recipe: "Take a quart of cream, put in some mace whole, and a quartered nutmeg, the yolks of eight eggs, well beaten, and three quarters of a pound of almonds well blanched, and beaten extremely small, with a little rose-water and sugar; and put all these together, set them on the fire, and stir them till they begin to boil; then take it off, and you will find it a little cracked; so lay a strainer in a cullender [colander] and pour it into it, and let it drain a day or two, till you see it is firm like butter; then run it through a cullender, and it will be like little comfits, and so serve it up."

Note 6. Other interesting ingredients and recipes: Walnut catchup (p. 156). Sago puddings (p. 244, 254). To boil sago [for the sick] (p. 268). To make catchup to keep twenty years (for captains of ships, using mainly strong stale beer, large mushrooms, pickled anchovies, shallots, mace, cloves, pepper, and ginger–no tomatoes or soy, p. 271). To make catchup (two ways, using mainly mushrooms, salt, red wine, and spices–no tomatoes or soy, p. 371-72).

Note 7. This is the earliest document seen (Jan. 2006) that contains a recipe for a type of "catchup" in which mushrooms are the main solid ingredient. Address: England.

19. Kinsei shokuhin zukushi ekotoba [Abundant food illustrations and captions of the early modern period]. 1805. Japan. [Jap]

• ***Summary:*** A large, superb illustration shows tofu being made in a commercial tofu shop. The basic steps are unchanged to this day. A lady with a baby on her back, grinds the next batch of soaked soybeans in a hand-turned stone mill. She turns the mill with her right hand while ladling in soaked soybeans using a shallow spoon with her left. She is wearing raised wooden shoes (*geta*) to keep her feet dry and clean. The smooth white puree runs down into a wooden barrel beneath the mill. Puree from the last batch of soybeans she ground has been cooked with water (in front of her) in a large iron caldron covered with a wooden lid. That cooked puree was ladled out into a pressing sack.

A man, probably the tofu maker (with his back to us) is sitting on a lever press (a sturdy board attached to a fulcrum on the wall) pressing a white sack so that the soymilk runs down into a curding barrel and okara remains in the sack.

After a coagulant (nigari or calcium sulfate or both) is added to the hot soymilk in the curding barrel, the milk is transformed into white curds and yellow whey. The whey is ladled off (see two ladles hanging on wall) and the curds are scooped into the cloth-lined perforated wooden forming box that rests atop a wooden tub next to the wall just to the left of the ladles. The curds in the forming box are pressed to make tofu.

A previous batch of tofu is now under cold water in a wooden sink near the left front of the illustration. A knife, used to cut blocks of tofu into smaller cakes, rests on that part of the sink which is covered. A potential customer (far left), with a fan in his left hand, stands on the street.

At the far right of the illustration, thinly sliced pieces of tofu are draining on a mat on a long table, in preparation for deep frying. At the top right, an elderly person from the tofu maker's extended family (probably a parent of the tofu-maker or his wife), kneeling on the tatami mats in the home–one step up from the tofu shop, appears to be deep-frying–probably to make deep-fried tofu pouches (aburagé).

An adjacent room (to the left) is a fish shop where fish are being cut into smaller pieces and deep-fried (perhaps to make cakes or patties of *Satsuma agé*).

On the illustration of the tofu shop are three groups of old, hard-to-read Japanese characters, handwritten in script format. (1) At the top right is written *Ne no hi no.* "Ne no hi" is a word somewhat like "Tuesday," the name of one of the days of the week in old Japan under the lunar calendar system–even though there was no idea of a "week" in Japan at this time. "Ne ho hi" occurred roughly 3 times each lunar month of 28 days, typically at 12-day intervals.

(2) Below the feet of the women with the baby on her back is written: *Tamatama ni Edo no hito* [*?*] *mo saburafu ya,* which may mean "Sometimes people from Edo visit here."

(3) Below the man sitting on the pole that is pressing the sack of okara is written *Inaka* [*?*] *hito wa kataki tofu o konomeruga okashiki,* which may mean "It's funny that country folks prefer firm tofu."

20. O'Shaughnessy, W.B. 1841. The Bengal dispensatory and pharmacopoeia: Chiefly compiled from the works of Roxburgh, Wallich, Ainslie, Wight and Arnot, Royle, Pereira, Lindley, Richard, and Fee; and including the results of numerous special experiments. Calcutta: Bishop's College Press. xxiii + 794 p. Index. 21 cm.

• ***Summary:*** Vol. I, "The Dispensatory," discusses: Gluten

and vegetable albumen (p. 72-73). Fixed oils, "obtained by expression chiefly from seeds, as the almond, castor, croton, arachis, sesamum, &c." Also: linseed, poppy, walnut, and hemp seed (p. 74-75). Linum–linseed mucilage and linseed oil (p. 212-13). *Arachis hypogæa* (Earth pistachio; p. 304). *Pueraria tuberosa* (p. 316). *Amygdalus communis*–Almonds, incl. common almond, oil of sweet almonds, almond milk, the bitter almond (p. 318-22). *Sesamum orientale*–Sesamum, gingilie oil (p. 479). *Cannabis sativa* or *C. Indica*–Hemp (p. 579-604). *Cyperus esculentus*–Esculent cyperus (p. 628). Algae–Sea-weeds (p. 667-71).

Note 1. This is the earliest English-language document seen (Aug. 2006) that mentions *Cyperus esculentus.*

Note 2. This is the earliest English-language document seen (June 2003) that contains the word "linseed." Address: M.D., Asst. Surgeon, Prof. of Chemistry and Materia Medica, Medical College, Calcutta.

21. Medhurst, Walter Henry. comp. 1842-1843. Chinese and English dictionary: Containing all the words in the Chinese Imperial Dictionary, arranged according to the radicals. 2 vols. Batavia: Printed at Parapattan.

• ***Summary:*** In volume I (1842): At radical 37 (p. 145-46), *ta,* meaning "big," the soybean, *tatou,* is not mentioned. But *tama,* meaning "hemp" is mentioned.

At radical 82: *Maou* (p. 432-33, hair of brute animals), *maoutow* [*maodou, edamame*] does not appear.

At radical 85 ("water"): *Tsëang* is defined (p. 482) as: "A thick fluid water of a certain consistence, water in rice has been steeped..." Note 1. This character (pinyin *jiang*) can also mean "milk." *Doujiang* ("bean + milk") means soymilk.

In volume II (1843): At radical 151 (p. 1072), *tow,* meaning "pulse" or "bean" we find: *Ta tow* is large beans [soybeans], and *seaou tow* is small beans [azuki]. But *tow fu* [tofu, doufu] does not appear. *Shé* (p. 1072, four strokes) means "Pickled pulse; any thing pickled in brine" [today's "fermented black soybeans"].

Note 2. This is the earliest English-language document seen (July 2009) that uses the term "pickled pulse" to refer to fermented black soybeans.

Wan (p. 1073, five strokes) means "A bean, read yuh, soy." *Tsae* (p. 1073, six strokes) means "Pickled pulse; soy." *K'he* (p. 1073, eight strokes) means "Bean stalks." *Han* (p. 1074, ten strokes) means "Beans in a cake."

At radical 164: *Tsëang* (p. 1197, eleven strokes) means "Pickle, brine; the brine in which meat is salted. *Shé tsëang* means "a soy made of pulse."

At radical 201: *Hwang* (p. 1457) means "Yellow." But *Hwang tow* meaning "soybean" or "yellow soybean" does not appear.

Also discusses: At radical 200: *Ma* (p. 1455) means "Hemp." Walter Henry Medhurst lived 1796-1857. Address: Missionary.

22. Wang Rizhen. 1850? Huya [Lakeside elegance]. China. Passages on soy reprinted in H.T. Huang 2000, p. 319-20, 324-25. Undated. [Chi]

• ***Summary:*** Wade-Giles reference: *Hu Ya,* by Wang Jih-Chên. H.T. Huang (2000, p. 319-20), in the section titled "Products associated with tou fu," notes that by the 19th century many products derived from soymilk had been developed. The most complete discussion of these appears in this book, published in about 1850: Tofu (*doufu*) is prepared by grinding soybeans finely [with water], cooking the milk in a caldron, then coagulating it with gypsum or nigari. Before coagulation, the soymilk is called *doufu jiang* ("tofu + thick liquid").

Note 1. This is the earliest Chinese-language document seen (Aug. 2013) that uses the term *doufu jiang* to refer to soymilk.

The curds are wrapped in a piece of cloth then placed in a wooden box, where excess water is drained off.

The soft product is called watery tofu [*shui-doufu, shuidofu,* which is made like soft Japanese tofu {*momen-goshi, with separation of curds and whey*} and *not* like Japanese kinugoshi, which is made without any separation of curds and whey].

The soft curds (before they are pressed into blocks of tofu) are called *doufu hua* ("tofu flowers") or *doufu nao* ("tofu brain").

Note 2. This is the earliest document seen (April 2013) that mentions soymilk curds, which it calls *doufu hua* or *doufu nao.*

Curds which have been placed in layers between sheets of cloth, then pressed, are known as *qian zhang* ("thousand leaves") or *baiye* ("hundred sheets / leaves").

Note 3. This is the earliest document seen (April 2013) that mentions pressed tofu sheets, or the names *qian zhang* or *baiye.*

When soymilk is heated, a film forms on the surface. When it is lifted off, it is called *doufu i* ("tofu robes") or *doufu pi* ("tofu skin") as noted in the *Bencao Gangmu* (The great pharmacopoeia) (+1596).

Note 4. This film is called yuba in English.

When small pieces of tofu are deep fried, giving a golden-brown outer surface surrounding a hollow interior, they are called deep-fried tofu (*you doufu,* literally "oil tofu").

Note 5. This is the earliest document seen (April 2013) that mentions deep-fried tofu or *you doufu.*

When firmly pressed tofu is cut into small pieces then simmered in soy sauce, the product is known as *doufugan.*

Note 6. Soyinfo Center believes that pressed tofu is now called *doufugan* and that pressed tofu simmered in soy sauce is now called *jiangyou doufugan.* When pressed tofu is marinated in soy sauce with "five spices" then baked, it is called five-spice pressed tofu (*wuxiang doufugan*).

The plain pressed tofu is known as *bai doufugan* ("white

tofu dry").

When dried tofu is smoked by burning shavings it becomes smoked tofu (*xun doufu*).

When pressed tofu is soaked in brine and fermented, the product is called *chou doufugan* ("stinky pressed tofu" / "foul-smelling pressed tofu").

Note 7. This is the earliest document seen (Oct. 2011) that clearly mentions a type of *chou doufu* ("stinky tofu") or that mentions *chou doufugan* ("stinky pressed tofu").

Talk with H.T. Huang. 2001. Feb. 20. Tofu was seasoned and flavored long before the first description of the products in this book in about 1850. The use of five-spice was already in common use in China during the Ming dynasty (1368-1644), if not earlier. Five-spice tofu, made by simmering pressed tofu (*doufugan*) in a sauce seasoned with five spice, has the advantage of a longer shelf life than regular tofu.

23. *Punch* (*London*). 1854. A vegetarian eating house. 27:53. Aug. 12.

• ***Summary:*** "The immense success of the late Vegetarian Banquet at Leeds has induced an enterprising enthusiast to start an Eating House conducted entirely without assistance of the Butcher" as well as the Fishmonger and the Poulterer "for not even eggs are tolerated: it being considered cruel to rend the tie which exists between them and hens, if not cocks also:..." Recourse is not even had to the Dairyman; to drink the cow's milk is to rob calves: and if the cow has no calf, to milk her is to weaken her, by creating an artificial drain upon her constitution. Milk quite sufficient for the composition of puddings and pies is obtained from various plants, and the requirements of the tea and breakfast-table are completely met by the milk of the cocoa nut."

"The beverages–for the establishment is teetotal as well as vegetarian–essentially consist of the unfermented juice of the pump [water].

"We have honored this Vegetarian Eating House with a visit, and on inquiring what there was ready, were informed by the waiter that there was 'some very nice grass just up.'" A humorous conversation with the waiter follows. He explains that they have no butter or cheese, because they are animal substances, and they use no animal substances.

Note: It is not clear whether this vegetarian restaurant was real or fictitious. In either case, this is the earliest document seen (Aug. 2005) concerning a vegetarian restaurant.

24. Kemeseye, Johannes de. ed. 1855. A roll of the household expenses of Richard de Swinfield, bishop of Hereford, during part of the years 1289 and 1290. Ed. by the Rev. John Webb... 2 vols. London: Printed for the Camden Society, o.s. 23 x 17 cm. Vol. 59.

• ***Summary:*** The Preface states: "The value of such materials is fully appreciated in this age of investigation. They are as subsidiary to private memoirs and biography as those in their turn are to more expanded history; and they lead us into the halls and dormitories of our ancestors. We see much of the man and his mode of life, if we can ascertain how his pecuniary resources were employed. Details of this kind, recorded by a faithful hand, disclose more graphically than any studied narrative the character of an individual and the manners of his time; and there can be no question as to the authenticity and fidelity of those which are before us."

Note: The printed text of this document cannot be read by an educated modern speaker of English. Thus, the Preface and footnotes are very helpful.

Page 53: Footnote (d): "An unusual quantity of milk, with cheese, almonds, figs, and raisins, and the absence of flesh, exhibit a change in their diet, and indicate the season [Lent] upon which they were entering."

Page 115: Almonds are mentioned twice in the 2nd footnote.

Note: Almond milk is also mentioned in this book. Address: England.

25. Burr, Fearing, Jr. 1865. The field and garden vegetables of America: Containing full descriptions of nearly eleven hundred species and varieties; with directions for propagation, culture, and use. Boston, Massachusetts: J.E. Tilton. xv + 667 p. See p. 499-500. Illust. Index. 20 cm. [25* ref]

• ***Summary:*** Pages 499-500 state: "Japan. *Hov. Mag.* [*The Magazine of Horticulture, Botany, and Rural Affairs.* By C.M. Hovey. Boston [Massachusetts]. Monthly. 1834 to the present time].

"Cajanus bicolor. The Japan Pea is a native of the East Indies, and also of Japan, as implied by the name. The plant makes a strong, erect growth, with numerous spreading branches; the leaves are large, light green and downy beneath; the flowers are small, yellow at the centre,–the upper petal purple; the seed-pods are small and downy, and are produced in profuse abundance,–growing in clusters over the entire plant; the seeds are small, roundish, or pea-form, and of a cream-yellow color when ripe." Note: This is the earliest English-language document seen (Sept. 2004) that uses the term "cream-yellow" to describe the color of soybean seeds.

"Propagation and Culture.–It is raised from seed, which, as the plant requires the entire season for development, should be sown as soon as the ground is warm and settled. Make the drills about 20 inches apart, and drop the seeds ten or twelve inches apart in the drills, covering half or three fourths of an inch deep. The plants will blossom the last of July or beginning of August, and the seeds will be suitable for use in their green state, from the 20th of August until destroyed by frost, the crop being seldom fully perfected in the Northern States.

Use.–The seeds are the only parts of the plants eaten, and these, while young, are tender and delicate. The ripe

seeds if soaked for an hour in moderately hot water, take the form and appearance of the Common White Bean, become quite soft and tender, and have a pleasant, nutty, and oily flavor. The whole plant with the seeds, is also used for feeding stock.

"A variety occurs with green seeds, which is not only considered superior to the Common Yellow-seeded just described, but is two weeks earlier."

Note 1. The plant referred to here is actually the soybean, which Mr. Teschemacher incorrectly identified as the pigeon pea *Cajanus bicolor* in Feb. 1853. Note 2. No reference to the Japan Pea appears in the 1863 edition of this book.

Also discusses: Chufa or earth almond (*Cyperus esculentus*, edible cyperus, nut rush, p. 32. When dried and pulverized, the tubers "are said to impart to water the color and richness of milk"). Note 3. This is the earliest English-language document seen (Sept. 2002) concerning a non-soy, non-dairy milk–made from chufa or earth almonds. Amaranthus (Chinese amaranthus, Chinese spinach, p. 279-80). Quinoa (*Chenopodium quinoa*, p. 292-93. Varieties: white-, black-, or red- seeded, from Mexico or Peru. Goosefoot). Pea-nut (Ground bean, earth nut, pindar nut, ground-nut, *Arachys hypogea*, p. 544-46. Varieties: African, Wilmington {North Carolina}, and Tennessee). Winged pea (*Lotus tetragonolobus*, Red birdsfoot trefoil, p. 547. Pods 3½ inches long, with four longitudinal leafy membranes, or wings; seeds globular, slightly compressed, yellowish-white. *Use*.–"The ripened seeds are sometimes used as a substitute for coffee; and the pods, while young and tender, form an agreeable dish, not unlike string beans"). Bene-plant (Oily grain, *Sesamum* sp., p. 548-49. This medicinal plant {which is "cooling and healing"} may be used for food or oil. Varieties: biformed-leaved, oval-leaved, trifid-leafed {having three parts}). Address: Hingham [Massachusetts].

26. Champion, Paul. 1866. Sur la fabrication du fromage de pois en Chine et au Japon [On the production of tofu in China and Japan]. *Bulletin de la Societe d'Acclimatation* 13:562-65. Oct. Meeting of June 1. [Fre]

• ***Summary:*** "The Chinese and the Japanese eat considerable quantities of a white material rather analogous in its appearance to the French product named *fromage à la pie* (quark), and which they make with a particular type of soybean (*Pois oléagineux*) which is also used for food and from which one can extract a rather expensive and very good quality oil. The production of this cheese [tofu] is simple, but it requires care and rather extensive practice to produce a white product."

The author then gives a detailed 3-page description of how tofu (*fromage de pois*, literally "pea cheese") is made–though he never mentions its name in either Chinese or Japanese.

Note. This is the earliest French-language document seen (April 2013) that uses the term *fromage de pois* to refer to tofu.

It is coagulated with magnesium chloride, and will keep for 1 day in summer and 1 week in winter. It is also often salted and it is mixed with various sauces which allow it to keep for several years. In the process of making tofu, the hot soymilk is poured into a second tub and allowed to cool before the coagulant is added. The foam is removed using a copper scoop. After several minutes, a skin / film (*une peau*) [yuba] forms on the surface of this liquid. It can be lifted off by passing a stick (*baguette*) underneath it and hung up to dry by inserting one end of the stick into one of many holes that have been deliberately created in the wall. This film, by the way, has a rather agreeable taste, and is eaten either fresh or dried; a second film is often formed and is lifted off in the same manner.

Note 1. This is the earliest French-language document seen (Oct. 2012) that mentions yuba, which it calls *une peau*.

After the tofu has been pressed, so that the volume has been reduced by half, it is removed from the forming box, or the tofu (cheese) is sometimes shipped out to a great distance. To transport them, it is sufficient to close the box with planks, nailed with the aid of bamboo pegs. Arriving at the destination, it is cut into small pieces by means of a large metal knife.

Tofu (pea cheese) is generally a grayish white and looks like a jelly. It does not keep for more than a day during the hot months, and to preserve it from rapid deterioration, it is generally mixed with salt or sauces of various types. It can then be kept for several years. A piece of tofu the size of a fist sells for 2 Cash (i.e., 1 centime).

He then (p. 564) describes shops in China selling hot soymilk for breakfast. "Generally, the shops where this cheese (*ce fromage* = tofu) is made are filled with Chinese, who bring cups to get some of the hot liquid (*le liquide chaud*), which is used to make the cheese and which has not yet been coagulated; they drink this beverage (*ce breuvage*), which has an insipid but not disagreeable taste, just like we enjoy coffee with tea. For many of the poor, the morning meal consists of a cup of this liquid, in which they dip various types of deep-fried crullers" (*des espèces de gâteaux frits à l'huile*).

"I will send with this note some samples of soybeans which, according to the analysis that I am in the process of making, contain more than 10% oil, and all the materials employed in this industry as well as some small preserved dried cheeses (*des petits fromages secs conservés*), of which I have spoken above. I have seen this production established on a large scale in many ports of China from the south to Peking, and also in various ports of Japan which I have visited. This cheese, when well prepared, has a very agreeable flavor. Deep-fried it makes a delicious dish. It is widely consumed among the Chinese and would be able to be employed, I believe, to advantage in Europe."

Note 2. This is the earliest document seen (Oct. 2011) worldwide–in any language or in any country–that discusses the use of soymilk as a beverage. We find this quite surprising! Why are there no earlier references to its use as a beverage in Chinese documents? This is also the earliest French-language document seen (Aug. 2013) that mentions soymilk, which it calls *le liquide chaud* and *ce breuvage*.

Note 3. This is the earliest document seen (April 2013) that describes how to make tofu on a commercial scale. Address: France.

27. Champion, Paul; Julien, Stanislas. eds. 1869. Industries anciennes et modernes de l'empire chinois, d'après des notices traduites du Chinois par M. Stanislas Julien et accompagnées de notices industrielles et scientifiques par M. Paul Champion [Ancient and modern industries of the Chinese empire. According to accounts translated from the Chinese by Stanislas Julien and accompanied by industrial and scientific accounts by Paul Champion]. Paris: Eugene Lacroix. xiii + 254 p. See p. 185-89. 25 cm. [Fre]
• ***Summary:*** Contains a chapter about tofu titled "Fabrication du fromage de pois en Chine et Japon," by Champion and Lhôte (p. 185-89), which is cited separately. Address: Champion: Prof. of Chemistry at the Polytechnic Assoc. Former delegate of the Society for Acclimatization in China and Japan.

28. Champion, Paul; Lhôte, M. trans. 1869. Fabrication du fromage de pois en Chine et au Japon Fabrication du fromage de pois en Chine et au Japon [Production of tofu in China and Japan]. In: P. Champion and S. Julien, eds. 1869. Industries Anciennes et Modernes de l'Empire Chinois... Paris: Eugene Lacroix. xiii + 254 p. See p. 185-89. [Fre]
• ***Summary:*** This chapter gives a detailed description of the production of tofu, but also mentions soymilk and yuba. "Tofu (*Le fromage de pois*, literally "pea cheese") which is regarded in China and Japan as a very important food, looks similar to *fromage à la pie* (a smooth cottage cheese or soft cream cheese; quark). It is made from a particular variety of soybeans (*pois oléagineux*, literally "oil peas"), which are also consumed directly and which can be used, in addition, to make an oil of very good quality and rather high price.

"The production of tofu is simple, but it demands much care. The soybeans are first soaked for about 24 hours, then they are drained in a wicker basket. Next they are ground in a mill, while mixing them with the soak water, which had been set aside. The mill used for this purpose is made of horizontal discs of hard stone. The upper stone is pierced with a conical hole. The apparatus is rotated by means of a connecting rod, connected by joints, that a worker rotates with one hand while the other hand is used to throw the soybeans into the hole of the upper stone with a spoon / scoop (*cuiller*). With each addition of the soybeans, a certain amount of water for grinding is added. The soybeans, ground by the action of the mill, are transformed into a liquid slurry (*bouillie liquide*), which collects between the millstones, falls into a circular channel, and accumulates in a tub. This slurry is poured onto a filter formed of a linen cloth attached to an overhead frame; when the filtration is very slow, the material is mixed. To facilitate this operation, the frame / chassis is suspended from the ceiling at the height of a man.

"The liquid filtrate (*Le liquide filtré*), mixed by hand, is collected in a wooden vat and poured into a cooking pot, where it is cooked slowly. This cooking pot is formed of a deep, wide pan of cast iron, surrounded by a type of wooden tub (frame?); the metallic surface presenting a limited area, permits the person cooking the liquid, without fear, to raise the temperature briskly; this can alter the material. This apparatus is almost always used by the Chinese for cooking organic materials. A second cooking pot is located next to the first one on the same stove, in the form of a parallelepiped (a six-sided polyhedron all of whose faces are parallelograms lying in pairs of parallel planes) and receives the direct action of the fire-box. The liquid which has flowed from the mill starts to be covered with foam at about 100ºC. It is kept boiling for about 10 minutes, then is decanted into the second cooking pot, where it is subjected to a lower cooking temperature, because of the disposition of the stove. The first cooking pot, once empty, is refilled immediately with a new quantity of liquid filtrate; the drained pulp (*la pulpe égouttée*) [okara] on the filter cloth is washed with water, and the liquid which runs out is used to wet the beans which undergo grinding. This wash water carries with it a significant quantity of usable material.

Note 1. This is the earliest French-language document seen (June 2013) that mentions okara, which it calls *la pulpe égouttée*.

"When the liquid (*la liquer*) has been heated for a few moments in the second pot, it is poured into a large tub and allowed to cool. One is careful to agitate it with the aid of one's hand, causing it to rotate. The foam which forms gathers in the middle of the surface and is removed with the aid of a copper scoop. After standing for several minutes, the liquid becomes covered with a thick film

pellicle (*pellicule épaisse*) [yuba], which is removed with a stick (*baguette*) without tearing it. The film is hung up to dry by affixing the stick in the wall. Sometimes a second film is formed; it is treated in the same manner. The material thus solidified at the surface of the liquid is employed in foods. It is eaten either fresh or dried and its flavor is not disagreeable.

Note 2. This is the earliest French-language document seen (Oct. 2012) that uses the term "pellicule épaisse" to refer to yuba.

"The liquid which remains in the vat is destined to produce the tofu (*fromage de pois*). One first adds to it a small quantity of water mixed with plaster (*plâtre*) [calcium sulfate], which has probably been baked in the cooking

stove. Finally one adds a few drops of a concentrated solution from a salt marsh. (According to our analysis, this is nothing but magnesium chloride.) The liquids are mixed slowly to form a homogeneous mass, which soon coagulates and becomes a solid. The plaster is certainly added to coagulate the casein of the soybeans (*pois*). As for the magnesium chloride, it is rather difficult to define the role that it plays; it is used in only a few cities in China.

"Once formed, the tofu curds are poured, while still hot, into a square forming box, 40 cm on a side and 5 cm deep. These boxes, stacked up double, are placed side by side on a long stone table, having gutter drains along the two sides. The boxes on the table are closed at their lower part by a fine-weave linen, through which the water trapped in the cheese (*fromage*) can flow out. When the tofu (*fromage de pois*) is sufficiently drained, it is compressed in the box where it is trapped, by putting on the top a plank laden with weights. When the volume is reduced by half, the box is removed and the cheese it contains is sometimes shipped out to a great distance. To transport them, it is sufficient to close the box with planks, nailed with the aid of bamboo pegs. After arriving at the destination, it is cut into small pieces by means of a metal knife.

"Tofu is generally a grayish white and looks like a jelly. It does not keep more than a day during the hot months, and to preserve it from rapid deterioration, it is generally mixed with salt or sauces of various types [especially soy sauce]. It can then be kept for several years.

"A piece of tofu the size of a fist sells for 2 Cash, i.e., one centime. Sellers of tofu also offer for consumption the hot uncoagulated liquid (*le liquide chaud non coagulé*) [soymilk], of which we have spoken previously. Poor Chinese nourish themselves on this substance, which has a dull flavor but is not disagreeable. The shops where this cheese is sold present a curious aspect at certain times of the day. Chinese workers come in great numbers to buy a portion of liquid cheese (*de fromage liquide*), which they carry away in small cups; others consume the coagulated cheese on the spot.

"For many people of the poorer class, the morning meal consists solely of a cup of soymilk (*une tasse de fromage de pois liquide*) in which they soak some cakes [crullers] that have been deep-fried in oil."

Note 3. This is the earliest French-language document seen (Aug. 2013) that uses the term *fromage de pois liquide* to refer to soymilk.

"The production of tofu ("pea cheese") is executed on a grand scale in most of the ports of China through which we have traveled, from the south to Peking, and in the few towns in Japan that we have been able to visit.

"Tofu is rather agreeable in flavor. It could render a great service to the feeding and nourishment of Europeans if they are able to cultivate the seeds... Tofu, deep-fried like french-fried potatoes, makes a very delicious dish.

"The seeds used to make tofu usually contain 17% of a clear oil, whose flavor is not disagreeable."

"We will add to the above information some analytical results that our colleague, Mr. Lhôte, and we, have obtained on the soybeans (*pois oléagineux*, literally "oil peas") and tofu (*le fromage*)." A table (p. 189) gives: (1) The percentage composition of soybeans (now called *Pois de Chine*, or Chinese Peas) on an as-is basis and on a moisture-free basis: Water 15.07/ -, ash 4.63/5.45, lipids (*matières grasses*) 12.98/15.28, and nitrogen 5.79/6.81.

(2) The percentage composition of tofu (called *Fromage de pois*, or pea cheese) on an as-is basis and on a moisture-free basis: Water 90.37/ -, ash 0.76/7.89, lipids 2.36/24.50, and nitrogen 0.78/8.09.

(3) The percentage composition of yuba (called *Matière coagulée pendant la préparation du fromage*, or "The material coagulated during the preparation of tofu") on an as-is basis and on a moisture-free basis: Water 9.36/ -, ash 4.01/4.42, and nitrogen 9.70/10.71.

From 120 gm of soybeans on obtains 184 gm of tofu.

One full page (frontispiece, facing the title page) contains a specimen of the Chinese text translated by Mr. Stanislas Julien. The characters are written with handsome calligraphy. Address: China & France.

29. Ritter, H. 1874. Tofu, Yuba, Ame [Tofu, yuba, ame]. *Mittheilungen der Deutschen Gesellschaft fuer Natur- und Voelkerkunde Ostasiens* (*Yokohama*) 1(5):3-5. July. [Ger]

• ***Summary:*** The discussion begins with tofu: Tofu (*Das Tofu*), one of the foods that is rather widely enjoyed by Japanese, is made from beans. It can be described most simply as 'bean cheese (*Bohnenkäse*)*;'* the literal translation of the two characters, 'beans rotten,' seems to give us the first glance of its earlier meaning as a cheese–which is a product of fermentation. However, this only appears to be so, since tofu is definitely fresh and unfermented. Perhaps the earlier name signifies that the tofu essentially consists of legumin (*Legumin;* a legume protein), not considered as a portion but as a fermentation product of the beans.

The preparation is very simple. White soybeans (older beans are preferred to newer) are soaked for about 12 hours in cold water or 8 hours in hot water, then ground with water between the stones of a handmill to form a slurry (*Brei*). The slurry is filtered through a silk or very fine-meshed sieve. The larger particles remaining in the sieve are reground in the mill. The amount of water used during grinding is such that from one measure [volume] of beans about 10 measures of slurry are obtained. This slurry is then poured into a kettle, which contains an amount of boiling water equal to about one-third the volume of the slurry; it is simmered over a low / weak fire. It is best, when the kettle is only half full, because the foam will suddenly starts to rise; this rise can be moderated by the addition of some oil. As soon as the contents of the kettle comes to a boil, it is removed from

the fire and the slurry is filtered through a cotton sack [over a vat], then pressed with a lever. The pressed residue in the sack (*Der Pressrueckstand* [okara]) is often cooked again with half the amount of water. Note 1. This is the earliest German-language document seen (June 2013) that mentions okara, which it calls *Der Pressrueckstand.*

"The filtered liquid (*Die filtrirte Fluessigkeit* [soymilk]), which now consists of a solution of legumin, is carefully freed of its foam, and then the precipitation of legumin is brought about using nigari (*shio no nigari, Salzbitter*) as the coagulant. Nigari is the mother-liquor which drips out of [a sack of] sea salt in humid / wet weather, consists mainly of calcium- and magnesium salts. The nigari is added in three steps. First, about ½% of the liquid id added and only on the surface, while stirring slightly, since too much stirring would be disadvantageous. Then a somewhat larger amount is added, and without disturbing the first precipitation, stirred lightly. Finally, after most of it [the curd] has settled, a little more nigari is added, as much for the formation of the final curds and to obtain the right consistency. If you add too little nigari, you won't get any cakes (*Kuchen*) [of tofu], but too much nigari will give you a hard cake; soft tofu is preferred.

The author concludes by noting: "One cannot deny that most of the dishes made from tofu are rather nice, even for the European palate."

Note 2. This is the earliest German-language document seen (April 2013) which contains a description of tofu by a German living in Japan or East Asia.

Note 3. This is the earliest German-language document seen (April 2013) that uses the word *Bohnenkäse* ("bean cheese") to refer to tofu.

Note 4. This is the earliest document seen written by a Westerner (Nov. 2003) that uses the word *Nigari.*

Note 5. This is the earliest German-language document seen (Aug. 2013), that mentions soymilk, which it calls *Die filterte Fluessigkeit.*

Yuba (*das uba*) and *ame* (*das Ame*) are then described briefly. "Yuba is a peculiar preparation made from the legumin of the soybean [Note: *Webster's Third New International Dictionary* (1963) defines legumin (a term derived from the French *légumine*) as "a globulin [a type of protein] found as a characteristic constituent of the seeds of leguminous plants."] This thin yellow or brownish leathery tough film or skin is formed and consists of legumin which has become insoluble through cooking in contact with the air. It is prepared in the manner described above from the legumin solution in the soybean with addition of wood ashes [which raise the pH], cooked in an open kettle. As is the case with all alkaline protein solutions, there forms on the surface an insoluble film, which is then lifted off with a skewer and dried. Yuba is prepared as a food in various ways, but is used mostly as an addition to other foods."

Note 6. This is the earliest German-language document seen (Oct. 2012) that mentions yuba, which it calls *uba.*

Ame (grain syrup or *Midzuame*) is a widely used delicacy and sweet, loved by Japanese children. It consists of glucose (starch sugar) and dextrin that results from the malting of millet (*Hirse*) or rice. The *ame* made from millet is the sweetest, while that made from rice, especially from glutinous rice (*mochi kome*), has the advantage of being whiter." The process of making *ame* is then described in detail.

Dr. Rein adds to these proceedings that tofu is used in place of protein in lacquered or japanned work, in order to produce a more plastic product.

Note 7. This is the earliest document seen that mentions rice syrup (*ame* or *midzuame*) in Japan.

Note 7. The name of this journal varies. This issue was titled *Mittheilungen der Deutschen Gesellschaft für Natur und Voelkerkunde Ostasien's* and also known as the *Transactions of the German Asiatic Society of Japan.* The place of publication is Yokohama. This article actually has no title. Address: PhD, Japan.

30. Imperial Japanese Commission to the International Exhibition at Philadelphia (1876). 1876. Official catalogue of the Japanese section: And descriptive notes on the industry and agriculture of Japan. Philadelphia, Pennsylvania: Published by the Japanese Commission. 130 p. 24 cm.
• ***Summary:*** The Preface (p. 3) begins: "Never until the year 1873, had Japan participated to any great extent in the various European International Exhibitions. Up to that time she had been merely represented by some of the provincial governments, acting independently of the central Government. However, the Government determined to be worthily represented at the Vienna International Exhibition of 1873,..." But Japan was well prepared for the Philadelphia Centennial Exhibition.

Under classes of "Agricultural products" (p. 32, 34): Class 621–Peas, beans, etc. (incl. Soya, adzuki). Class 650–Sea weeds (incl. Vegetable isinglass [agar, kanten]). Class 657–Flour and starch (incl. Kudzu {*Pueraria thunbergiana*}). Class 659–Wines and other kinds of drinks (incl. Sake, Soy {a kind of sauce}).

Page 71 discusses relief painting in lacquer: "The lacquer can even be carved, and, finally, the artisan can incrustate mother-of-pearl shell, ivory, thin metal, or anything he likes into the lacquer. By mixing a sort of paste made of [soy] bean powder, or the white of eggs, with the lacquer, he can thicken it to such an extent as to give it a kind of plasticity, admitting the possibility of making impressions which remain visible after hardening."

In the long chapter titled "Descriptive notes on the industry and agriculture of Japan (p. 37-117) is section on "Agricultural products. Classes 620-21–Cereals, vegetables, etc." (p. 104-06). Beans, generally referring to soy beans, are mentioned many times. "Manures of a mineral nature consist of marls, shells and ashes; those of vegetable origin

of inferior kinds of beans and peas or their residues, of [soy bean] oil-cakes, the residues of sake-brewing,..."

"The excellent kinds of beans and peas, which are made into a kind of cheese [tofu] and a peculiar mixed dish called 'misso' [miso] afford the necessary nitrogenous substances, and to a certain extent form the substitute for meat; the Soyu [shoyu; soy sauce] also belongs to this kind of food, and is frequently mixed with other dishes. With regard to animal food, it is limited almost exclusively to fish, poultry and eggs. But a change has already been effected to a certain extent in the larger towns, where butcheries have been established. An experiment of sheep farming was commenced one or two years ago" (p. 106).

Note: This is the earliest English-language document seen (April 2012) that uses the word "Soyu" (regardless of capitalization) to refer to shoyu or soy sauce.

Under "Class 657, 658–Flour, starch, etc. we read (p. 110-11): "It has been mentioned above that the various kinds of beans constitute a very important element of the national diet. Some of the preparations made of beans and peas are worthy of a short notice. In preparing the 'Tofu,' white beans are soaked in water, ground between two stones, strained through a sieve and afterwards boiled. The contents of the kettle are then filtered through cotton cloth and the residue pressed out. The liquid [soymilk], which may be considered as an alkaline solution of legumine, is precipitated by successive additions of the bitter lye [nigari] which runs off from sea-salt by deliquation, and which is mostly composed of magnesium salts. The precipitate is legumine with a small percentage of legumine-composits [-composites] and a large proportion of water. The 'yuba' is also made by boiling the above-mentioned legumine solution in an open kettle, with a slight addition of ash-lye. The insoluble skins which form upon the surface of the boiling liquid, are taken off and dried. Another kind of preserved food is the 'misso' [miso]. White beans are first boiled, pounded in a mortar to form a paste, then mixed with fermenting rice and salt, whereupon the whole mixture is placed in tubs and left in some cool place; at the end of a month it is ready for use. In mentioning the various preparations made of beans, the 'Soy' or, as the Japanese call it, 'Soyu' [shoyu] should not be omitted; but as it belongs rather to the produce of fermentation, the process will be described under the head of Class 660 [Alcohol and malt liquors].

One page 112 we read: "The soy, or 'soyu,' is made of a small bean, the 'Dolichos soja,' or 'Soya hispida,' to which are mixed wheat, salt and water. The beans are first boiled, and the wheat bruised and steamed; both are then mixed with a small addition of fermenting wheat, placed in flat wooden boxes and kept for several days at a fixed temperature in a special room. At the end of three days, the mass [koji] is all covered with fungi and partly with roots of germination. After having been mixed with a salt-lye, which has been prepared hot and allowed afterwards to cool down, and to depose certain impurities, the mashings are now removed to enormous coops [vats] in which they are kept for several years. Experience has shown that the best soy is produced by mixing equal quantities of mashings of three years and five years' standing. This mixture is transferred into bags of thick cotton-cloth, placed in large boxes, and then submitted to pressure–at first only to a slight pressure, which yields the best soy, and afterwards, however, to a gradually increasing pressure, the separation of the last portions being assisted by an addition of salt water.

"The soy forms a very important condiment for all kinds of dishes, and is consumed in large quantities. In 1874 the production amounted to 1,506,402 hectolitres."

An interesting term in the Index (p. 129) is "Bean-cheese," which refers to tofu (p. 110).

Also: Use of hemp (*asa*) for manufacture of cloth (p. 77, 113). The tea ceremony (p. 108). Sea weeds, incl. cultivated nori and Asakusa nori in Tokio bay, kanten or vegetable isinglass, and fu (that resembles carragheen [carrageenan] moss and is used in the sizing of the warp of silk goods) (p. 109). Kudzu (p. 110). Sake (p. 111). Address: Japan.

31. Paillieux, Auguste. 1880. Le soya, sa composition chimique, ses variétés, sa culture et ses usages [The soybean, its chemical composition, varieties, culture, and uses (Continued–Document part I)]. *Bulletin de la Societe d'Acclimatation* 27:414-49. Sept. 28 cm. [73 ref. Fre]

• ***Summary:*** Introduction (p. 414): At the moment, when according to all appearances, a precious plant is going to take the place in our culture to which it has the right, we consider it our duty to bring back to light the previous efforts of the Society for Acclimatization, to introduce and propagate this plant in France. We will publish, therefore, word for word excerpts of everything soya in the records, reports with articles, letters and notes published in the bulletins of our society during the past 25 years. Our study, it seems to us, cannot be proceeded by an introduction more interesting than this.

From 1855 until the present (1880), the Society has not ceased to receive and distribute soybean seeds, and to make known its cultivation and utilization. It has rewarded successful trials by recognition and publication, and described the production processes of the industries that use soybeans.

We might have tried to refer the reader to past bulletins of the Society, but not everyone has access to these old documents, and besides looking up these articles on soy takes time and care. These motives led to our decision.

The question of soy has been dormant for a long time. But it awakens today with cultural experiments, which have been carried out for seven years in Etampes, using seeds given by the Society, with tests of tofu making which have been conducted in Marseilles; it was finally highlighted with the introduction of the plant in Austria-Hungary, in Bavaria,

in Italy, etc. The question is ripe for a solution.

We do not know, whatever our own hopes may be, what the future holds for soy, but if its cultivation may render one day great service to the country, all the honor would belong to the Society, which, during a quarter century, has not ceased to facilitate and to encourage it.

Written on the 25th anniversary of Society's work with soy. We will divide this work into 6 chapters, starting with excerpts from past bulletins of the Society.

Chapter 1. Linnaeus gave our plant (*Le Soya*) the name *Dolichos Soja* (*Species plantarum,* 1621). Jacquin mentioned it later in his *Icones plantarum rariorum,* p. 143. Moench gave it the name Soja hispida. Moench gave it the name Soja hispidia (*Method plant. hort. bot. et agri Marburgensis,* 1794, p. 153).

Messrs. Bentham and Hooker have not admitted this genre; for them the plant is nothing but a veritable Glycine. This is also the opinion of almost all modern botanists. Miquel affirms that there are two species of *Soja* in Japan, *Prolusio florae Japonicae.* These are: (1) *Glycine hispida* (*Soja hispida,* Moench). (2) Glycine Soja, Sieb. et Zucc.

Note 1. In 1880 Paillieux called it Soja Hispidia.

Chapter 2. The soybean (*Le Soya*) in Japan. Begins with the full story of Englebert Kaempfer [see our chapter on Kaempfer], including translations into French of his writings on miso and shoyu.

There follows a list of Japanese soybean varieties of which they possess the names, 19 names, 22 species (see previous record, table, p. 435), with nomenclature taken from a Japanese work entitled Explications, with figures, of trees and plants newly determined, with the last 3 names taken from a work entitled Japan at the World's Fair of 1878, written in French by a Japanese. (Note that only in 1880 did Paillieux change the name of soybean to Le Soya). Then come descriptions of the characteristics of some of the various beans. "In short we can say that the various types of Mame can be used to make miso, shoyu, or to-fu." The Japanese do not make soybean oil (*huile de Soja*). They use sesame oil for cooking and rapeseed oil to burn in lamps... Soybean straw is given to animals. In Satsuma, in the far south of Japan, horses are given soybeans (*graines de Daizu*) at the end of their rations and it is claimed that this is good nourishment and not as expensive as naked barley. (Confusion about Mame and Daizu). Here is what is said about soybeans in the work entitled *Japan at the World's Fair of 1978:* The Mame serves numerous usages; it can be cooked, ground to a meal or flour, and used to make shoyu, miso, and tofu. The soybean, its pods, its leaves, and its stalks serve to nourish horses and sheep; tests show that this is the best nourishment available... Shoyu, after being filtered, is boiled, then cooled. The lees / dregs are then removed and it is stored in small kegs. The reside of first grade shoyu is used as follows. One takes 5 *to* of this residue and one ads one *to* of water. It is mixed, pressed, and boiled, Then one ads 2 *to* of salt, lets it rest and decants it. This second product is then added in larger or smaller quantities to various qualities of shoyu (p. 440). There follows a detailed practical recipe for making shoyu in France by an unnamed correspondent. He recommends substituting peas for soybeans in France. He uses the word *Daizu* for soybean (1½ page description). Here is the recipe for the sauce I have learned in Japan. He made it in France, using 2 parts by volume of naked barley and 3 parts of soybeans (*Daizu*).

Page 441: In Japan, there is no village, no matter how small, that does not have a shoyu maker. It is also made in private homes. The correspondent says: During my stay in Japan, the price of shoyu varied, according to the quality, from 8 to 12 sen, 40 to 60 centimes per *masu,* that is to say per 1.8 liters. To-fu (*Fromage de Daizu*). Note that they now call soybean Daizu. This is a detailed description of how tofu is made in Japan.

Page 442: Key points. Cold extraction of the slurry. The residue is used as fodder for livestock–from beef to rabbits. Soymilk (which he calls "the albuminous liquid" {*Le liquide albumineux*}) is put on the fire. Coagulate it with nigari (*eau de mere*) which contains magnesium chloride. Put the tofu in a basin of running water. To-fu is usually eaten fresh (he says *To-fu* for Japanese tofu and *Teou-fou* for Chinese). It is very frequently cooked with shoyu and dried fish, sometimes fried, more often grilled. Sometimes during the winter it is frozen, then dried to give it a spongelike consistency. In this state it lasts a long time and is cooked / prepared in various ways. In its fresh state, this vegetal cheese (*fromage végétal*) has a very delicate consistency, but it has a certain taste of raw beans that is not pleasant / agreeable.

Note 2. This is the earliest French-language document seen (April 2013) that mentions dried frozen tofu.

Chapter 3. Le Soya in Cochin China (p. 442). France has long been involved in Indochina as a Colonial power. There follows a report from the Committee on Agriculture and Industry in Cochin China. Siebold et Zuccarini. There is a long excerpt (Corroy 1878) from an article about "The feeding of horses and mules imported into Cochin China" from *Bulletin du Comite Agricole et Industriel de la Cochinchine* 1:449-58. For the year 1877. Series 2. See p. 456-58. It is about using black soybeans (*Glycine Soja*) as feed.

Glycine soja is cultivated in India up to the Himalayas and down to Ceylon, in Philippines, Java, etc. The seeds, boiled or lightly roasted are agreeable to the taste and to the stomach. Soy sauce is used to stimulate the appetite. The people also make a white pâté resembling coagulated milk, called Teu hu or Tau hu by the Chinese, which is for them a food more widely used than any other and which, though bland by itself, when served with seasonings and condiments, is a pleasant and healthy dish.

Chapter 4. Le Soya in China (p. 446). The generic name of the soybean is Yeou-Teou. Yellow soybeans are huang-tou.

He-tou is black soybeans. Certain varieties are selected for each of the various food uses; not just any varieties are used. Soybeans are used to make fermented spirits and artificial wines called Teou-che.

Soy oil (p. 448). This oil is very widely used. It is of the first grade among the 15 or 20 oils possessed by the Chinese. Europeans find that it has a disagreeable aftertaste of raw beans. Except for this, it is of excellent quality. It was written in the introduction that M. Fremy analyzed the seeds / grains of Soya and that they contained 18% oil. Three samples analyzed by the German chemist Senff contained an average of 18.71% lipids. The analysis of Mr. Pellet of 3 samples of yellow Soya from China, Hungary, and Etampes, that we furnished him, gave about the same result.

Tofu (*Le fromage de Soya*, p. 449): Only the Tartars, scattered throughout the Empire, have continued to use milk. The Chinese do not use it. For them the soya takes its place. From the soybean they extract and filter a milk, a true milk (*lait*) usable like the milk of the cow, goat, or ewe (female sheep).

We are reporting in the chapter entitled Soya in France what type of tests we have done personally and those which have been done by the Society of Horticulture of Marseille. We have but to mention here the immense consumption of soymilk (*lait de Soya*) in China, as such or in form of cheese [tofu]. The Introduction contains reports on tofu by Baron Montgaudry and M. Champion, so there is no need for us to say any more about tofu here. Continued. Address: France.

32. Roman, E. 1881. Correspondance: Sur le Soja [Correspondence: On the soybean]. *Nature* (*La*) (*Paris*) 10(425):115. July 25. Letter. [Fre]

• ***Summary:*** "The soybean (Le Soja or Soya), of which you have spoken in previous issues of *La Nature*, is a very interesting plant and destined to play a major role in our agriculture, but it is not new, and its introduction [to Europe?] should not be attributed to Italy [but rather to France]. The [Natural History] Museum was already in possession of its seeds in 1779, but at that time it was nothing but a curiosity. It has been cultivated there up to 1880 inclusive.

"It is now grown not only in Italy but also in Austria-Hungary, where its cultivation seems to have undergone a major development, and in France at various points, especially at Etampes and at Montpellier. Likewise, I had some planted at Orange [capital of Vaucluse in southeast France] this year.

"This plant is probably destined to play as important a role in the future as the potato. Its qualities, which have already been confirmed in France by many experimenters, leave no room for doubt. *La Revue Horticole* has already published several articles on soya; and Mr. Paillieux has written a brochure on this subject (published by la *Maison rustique*).

"Although it seems incredible, soya a hardy plant in France, especially from the latitude of Paris southward, grows in any soil, even the driest, and can provide us with the following: 1. An excellent forage, that is good for fattening cattle. 2. Seeds similar in shape to small haricot beans, but containing 37% protein, 20% fat, and only 3% starch.

"None of our French legumes has an equal chemical composition. The nutritional composition of soya is much better than that of haricots and lentils. It comes close, in that respect, to that of cheeses and could possibly replace the famous dry pepper sausage (*saucisson aux pois*).

"Cooked with rain water and certain precaution, those beans can make a nice dish similar to haricots.

"From it, the Chinese make milk (*du lait*), various cheeses (*divers fromages*), oil, a condiment (*Indian Soy* [sauce]), etc., etc.

"In France, people have envisioned roasting the seeds to make imitation coffee.

"I immediately tried it to check the idea and, although I am very choosy when it comes to coffee, I recognized that the flavor and properties of this decoction of soya were quite similar to those of an average quality coffee. It goes without saying that a cup of soy coffee, well prepared, is immensely preferable to what we are served under the name of mocha in 75% of publish establishments.

"Mixed with milk, the decoction of soya is, in my opinion, better than the coffee with the best aroma. For some time now, we have been drinking this soy coffee with milk every morning. The awareness of these properties of soya would be very useful to the poorer classes, for it actually costs 1.20 French francs per kg at Vilmorin, and this price will certainly drop by more than half when soya comes to be extensively cultivated.

"You can see from the above that soya is one of the most valuable plants and that its cultivation merits encouragement in France. It is doubtful that, to start with, we will develop all of the applications mentioned above. But we could–and this is the advice given by those who introduced it–cultivate it first for use as forage. Animals are not sensitive to routine; they accept with pleasure anything savory that one offers them, and have already adopted the soybean. Once the plant is extensively cultivated and well known, we will gradually come to take advantage of all of its qualities."

Note: This is the earliest French-language document seen (Aug. 2013) that uses the word *lait* to refer to soymilk. Address: Ingenieur en chef à Périgueux.

33. Napier, Mrs. Alexander. ed. 1882. The noble boke off cookry ffor a prynce houssolde or eny other estately housshold: reprinted verbatim from a rare ms. in the Holkham collection. London: Elliot Stock. xiii + 136 p. For almond milk see p. 27, 29, 25, 42-43, 47, 75-76, 86-87, 109. 23 cm.

• ***Summary:*** Contains a brief glossary of "obsolete words" at the end. Discusses almond milk and gives recipes for preparing it. This recipe was found in a rare manuscript (written ca. 1467) in the Holkham collection in England.

Page 27: "To mak comyne [cummin]: To mak comyne set almond mylk on the fyer then tak amydon and stepe it and drawe it and put ther to pouder of comyne and boile it and stirr it well put ther to sugur or hony and colour it with saffron and salt it and let it be rynyinge, and ye will have it standing tak raw yolks of eggs well betene and put it in the pot at the setting downe then leshe it in dyshes and cast on a drige mad with hard yolks of eggs sugur mynced ginger clowes maces and serue it."

Page 29: "Charlet forced:... then tak the mylk of almondes or cow creme and sett it on the fyere put ther to sugur and colour it depe with saffrone then leshe out the crud and couche it in dishes and pour out the ceripe [syrup] and cast on sugur and canelle [a kind of spice] and serve it."

Page 35: "To mak bland sorre: To mak bland sorre tak the mylk of almondes blanched mad with capon brothe then tak the braun of a capon and bet it in a mortair and mele the fishe and the mylk to gedur [together] in the mortair with the pestelle and thik it with flour of rise and boile it put ther to sugur or hony and mak it stondinge then lesk it in dyshes and diaper it with turnsole and serue it."

Pages 42-43: "Creme of Almonds: To mak creme of almonds tak blanched almondes and grind them up and temper them up akurd thik mylk with faire water drawe it into the pot and sett it on the fyere and stirre it welle when it begynnethe to rise and ye have to myche put ther to a dishefulle of venygar. if ther be alitille putt ther in the lesse hille the pot and let it stand awhile then tak a clene cloth and hold it abrod betweene iiij men strait cast the creme there in and rube it undirnethe the clothe with a ladille toward and froward with the egge of the ladille to draw out the watter then gadur it to gedur unto the myddle of the clothe then bind the corners to gedur and hong it upon a pyne and let the water run out then put it in a bolle and temper it up withe wyne and bruse it with a saucer as soft as ye wille and serue it."

Also: "To make hagges of Almayne" (p. 43-44). "To make hattes in lent" (p. 47-48). "Soupes in dose" ("grinde blanched almondes," p. 75-76).

"To mak hoot milk of almondes" (hot milk, p. 76. "To mak hot mylk of almonds tak blanched almonds and grind them and draw them with faire water and sugur or Hony clarified then salt it and boile it and serue it furthe hoot and toisted [toasted] bred ther in"). "Cold mylk of almondes" (p. 76. "To mak cold mylk of almondes put fair water in a pot with sugur or hony clarified so that it be douce [sweet] then salt it and set it on the fyere and when it is at boilling scom it and let it boile awhile then tak it from the fyere and let it kele then blanche youre almondes and grind them and temper them with the same water in to a good thik mylk and put it to wyne that it may haue a good flavour ther of and serue it then cut bred and toist it and baist it and toist it again that it be hard and serue them in one disshe and the mylk in an other disshe").

"To mak furmente with porpas in" (p. 86-87). "Cawdell ferry" (p. 109). Address: England.

34. *Wanganui Chronicle* (*Manawatu-Wanganui, New Zealand*). 1883. Local and general: A new bean. Oct. 30. p. 2.

• ***Summary:*** "Mr. James Laird has introduced into this district [Wanagui / Whanagui, on the southwest coast of the North Island of New Zealand] a very prolific and nutritious bean called the Soja. This cereal, which is an important addition for vegetable garden and farm purposes, was (so far as Europe is concerned) originally developed in Hungary [through the work of Friedrich Haberlandt in Vienna, Austria-Hungary], whence it extended to general consumption in many parts of Italy and France, in which countries it is supposed that the Soja will probably play as important a part in the future as the potato. The seeds take the form of small kidney beans, but their nutritive properties are far greater than the beans and lentils usually employed for food. Besides the ordinary soup and other dinner table purposes, the beans are in France roasted like coffee, and the Soja, mixed with milk, becomes a fragrant and appetising decoction [soymilk?].

Although the Soja has scarcely ever been heard of in New Zealand, it has for centuries fed the millions of Eastern Asia, and has become the favorite food of Southern Europe [sic]. In this colony [New Zealand] the plant grows like a shrub, and reaches a height of three feet, the pods never dropping their beans on the ground. No other known leguminous plant bears beans of such tasteful, healthy and nutritious qualities, or contributes such a proportion of straw adapted for fattening food for cattle.

"Analysis discovers in the Soja bean 34½ per cent. of albuminous matter and 18½ per cent. of fat. Horse beans show only 25 per cent. of the one and 1½ per cent. of the other, and maize only 10½ and 4½ per cent. respectively.

"As an alternative crop, Soja beans will prove a blessing and a restorative to the soil anywhere. We apprehend that when the merits of this bean become known in the Wanganui district, Mr. James Laird will have many demands for seed."

Note 1. Edited portions of two articles, previously published in other New Zealand newspapers in 1882 (Jan. 21 and April 18) can be found in the text above, together with some new and important material.

Note 2. This is the earliest document seen (March 2010) concerning the cultivation of soybeans in New Zealand or in Oceania. This document contains the earliest date seen for the cultivation of soybeans in New Zealand (Oct. 1883), and the earliest clear date seen for the cultivation of soybeans in Oceania (Oct. 1883). The source of these soybeans was Mr.

James Laird.

But who was Mr. Laird? How did he learn about soybeans? And where and from whom did he did he get his soybeans?

35. *Cosmos: Revue des Sciences et de leurs Applications.* 1885. Noms lait de soja [Names of soymilk]. Page 408. [Fre] • ***Summary:*** In this article the first section, titled *Lait factice,* states that this is a fake / pseudo milk that can be used like cow's milk (*un lait factice utilisable comme celui de la vache,...*).

The beans, by far the richest in legumin among the many plants in the leguminous (legume) family, hold in reality a solid milk. Based on that fact, they take the beans and soak them in water, then crush them, then pass them through a sieve after having diluted them in water to make a fake or pseudo milk that can be used like the milks of the cow, the goat or the sheep. They mostly use it in that stage, or they prepare, through coagulation of this vegetable casein, a cheese similar to our quark, that they call in China Teou-fou and in Japan To-fu, and that they consume in great quantity, be it fresh or dried, raw or cooked.

This cheese, when it is well done, is rather pleasant to the taste and it makes for a very delicate dish when it is fried in grease as it is done with potatoes. Similarly, by grinding the beans with an equal amount of wheat, barley or rye, and letting them ferment for a certain period of time, after having diluted them with water, they prepare a condiment sauce [soy sauce].

This condiment sauce is very much appreciated with roasted meats or fish; added to beef or beef bouillon, it gives them.... (the rest of the phrase is missing).

Besides this culinary use, soja is also used in these countries as a forage plant.

Note 1. This is the earliest French-language document seen (Aug. 2013) that contains the term *lait factice,* used to refer to soymilk.

Note 2. Hervé Berbille (of France), who discovered this article, writes: If *factice* and *artificiel* are both translated in English as "artificial", in French, "factice" and "artificiel" are not exact synonyms. *Factice* rather evokes a "fake" cow's milk, whereas "artificiel" evokes "not natural" (as opposed to cow's milk arbitrarily chosen as a reference). However, in practice, these two names refer both to soymilk.

This article is also important because soymilk is described as a fully fledged food, not only as a precursor of tofu.

Finally, the following article contains the key elements of the *Cosmos* article: Hervier, P. 1910. "Le pois oléagineux de la Chine: Soja hispida." *Jardin* (*Le*). 24:233-36. Aug. 5. See p. 235, left column, 70% of the way down.

36. Gordon Cumming, C.F. (Constance Frederica). 1886. Wanderings in China. 2 vols. New edition. Edinburgh and London: William Blackwood and Sons. Illust. Index. 21 cm. • ***Summary:*** The author is a Protestant Christian; she praises Christian mission work in China and sees all Chinese (except Christian converts) as heathens and idolaters. She traveled in Hong-Kong and China in late 1878 and 1879. Each entry is dated, like a journal.

Volume I: In describing a Chinese feast on the island of Nantai, she notes that beef is prohibited by Confucianism on utilitarian grounds; however sea-weed and "almonds with bean curd" are among the many delicacies served. All manner of delicate little dishes "were scattered about the table for the guests to play with between courses, and each was provided with a tiny silver plate for mustard, soy [sauce], or any other condiment" (p. 220-23). A footnote on delicacies of old states that in the late 1500s at Launceston, England, porpoise was served with furmenty [frumenty; a dish of wheat boiled in milk and usually sweetened and spiced], almond-milk, sugar, and saffron (p. 222).

She describes a vegetarian meal at Kushan Monastery, noting that butter is considered as unfit for food, and milk is fit only when curdled and sweetened (p. 260).

Volume II: In a delicious vegetarian dinner at the Tien-Dong Buddhist Monastery, "pea-nuts" were served on the first tray. "Of course the whole was entirely vegetable [vegetarian], though some portions of corn-husk and other things tasted so very much like meat and preserved fish that we found it difficult to persuade ourselves that such was not the case" (p. 39). From vendors with portable street ovens in Peking: "Bean pudding in a crust of mashed potatoes, fried in oil, seemed to be in great demand..." (p. 281).

"But the favorite food here [Peking] is a cake made of bean curd. Common small beans are ground between two granite millstones like a hand quern. As the upper stone is turned, water is poured on, and a creamy white fluid oozes out, which flows into a tub, and is boiled with salt. The froth is skimmed off, and the curd is tied up in a cloth, put under pressure, and so formed into square cakes [tofu], which really taste rather like our own curds. They are generally, however, fried in oil, or else eaten with soy, which is a sauce obtained from the same bean when fermented." (p. 282).

"Every now and again among the curious vehicles dragged noisily along the street, came a gigantic wheelbarrow, laden with wicker oil jars. It seems that the manufacture of oil from the yellow and white pulse bean is one of the great industries of Northern China, and thousands of junks are annually employed in transporting the oil and bean-cake to the Southern Provinces. The beans are first crushed in oilmills, whose revolving stone wheels are turned by bullocks. Some mills are so large as to employ about sixty bullocks. The beans are then steamed, and when very hot are (by a somewhat elaborate process) subjected to great pressure whereby the oil is expressed. It is filtered through a cloth, and is then generally poured into large jar-shaped baskets, each made to contain a hundred pounds of oil. They

are lined with tough paper, which is glued to the wicker-work by a strong varnish, and is quite oil-proof. The narrow mouth of the jar is then covered with the same varnish paper, and no further packing is required even for a sea voyage. The oil, which is clear and pale, is used both for lamps and for cooking purposes.

"The bean-cake which remains after the oil has been expressed, is used as manure for the land, but is never given to cattle, who, however, are largely fed on the bean itself. As the aforesaid very popular pulse curd and soy sauce are both prepared from the same bean, it must be allowed that it holds an important place among the vegetable products of the land" (p. 283).

Miss Constance Frederica Gordon Cumming, a woman, lived 1837-1924. A portrait photo of the author appears as the frontispiece of each volume. Address: Author and world traveler.

37. Lecerf, Ch. 1888. Sur la valeur alimentaire du Soya hispida [On the nutritional value of the soybean]. *Bulletin de la Societe de Medecine Pratique de Paris* p. 442-49. Meeting of April 26. Presided over by M. Laburthe. [Fre]

• ***Summary:*** Because of the difficulty many people have in tolerating gluten bread, we are anxious to find another food free from sugar and amylaceous materials for diabetics. I thought it would be interesting to do some trials on the use of the seeds of a bean used often in China, Japan, and Malaysia.

I had the occasion to study this bean under the direction of my master, Mr. Muntz, when I was at his laboratory at the Agronomic Institute (*l'Institut agronomique*). I wish to speak of soybeans (*Soya*).

In 1855, Mr. de Montigny, struck by the considerable nutritional value of soybeans, imported some to France, and submitted them to the Society of Acclimatization (*la Société d'acclimatation*), hoping that our farmers would make the best of this legume that is the foundation of the food of the poor classes of China and Japan. In these countries, the soybean equals the potato in our countryside, in consumption. We shall see, in a bit, that the bean of this legume (sub-order *papillonacée* [sic, papilionaceæ]) is richer by far in nutritious elements than the tuber of Parmentier [the potato].

Since this attempt [by Mr. Montigny in 1855], many agronomical trials have been conducted, at different places in our territory [France and its colonies], and they have proven that the acclimatization of this plant, in France, is possible. They have also permitted us to hope that the climate of our regions is analogous to that of the Chinese and Japanese provinces where the soybean (*le Soya*) is cultivated on a large scale. Unfortunately, these trials had the goal of feeding animals rather than the introduction of this bean into the human diet.

However, eight years ago, Count Attems, who was busy with the cultivation of soybeans in Austria, wrote: "We fool ourselves when we think that soybeans are only an advantageous pasturage, or when we believe that they constitute a delicate dish only for the table of the rich. Soybeans have also been discovered for the large class of less idle consumers, for the country folk and the workers; and although it is a plant of ancient Asia, future generations will make a great case for them and without a doubt will call them "Haberlandt's bean" (*Haricot de Haberlandt*) in recognition."

Professor Haberlandt, who tested the cultivation of soybeans following the Exposition of 1873, published his results in 1878 and became the popularizer of their cultivation and use in Austria. Here is this author's [Haberlandt's] opinion on the nutritive value of this bean:

"I think that soybeans are a food too concentrated to be prepared alone and that, consequently, it is better to mix them with other foods, especially those containing starch... They can furnish armies with provisions of little volume, and enter with good right, as the best equivalent, in pea sausages."

In France, although many notes relative to the cultivation and use of soybeans have been addressed to the Society of Acclimatization, I believe that the first, if not the only monograph that was made of it, is that of Mr. Paillieux. This work was published in 1881; I have borrowed from him numerous times. As for me, it was in 1883 at the Agronomical Institute that I came to know soybeans, following the analyses and experience of Mr. Muntz, and of my dear friend, the late Levallois, from whom the Academy of Sciences received last April 3rd a posthumous communication on the composition of the beans that he harvested at the agronomic station in Nice, of which he was the director.

The name *Dolichos soya* was given by Linnaeus to this Chinese bean that Moench later named *Soya hispida.*

In Japan, they call it *Daïzu Mame,* that is, food seed *par excellence.* In China, it is known under the name *Yéou-téou;* its cultivation there is less important than in Japan, although it enters largely into the food of the working class and is used, as in Japan, for the commercial / industrial preparation of a variety foods.

The soybean is also cultivated and consumed in India, the Himalayas, Ceylon, Tonkin, Cochin China, and the Dutch possessions in Malaysia. In these different lands, it is eaten in its natural state (*en nature*), and used to make many food products, on the one hand the daily food of the poor, on the other condiments sought after by the rich.

Because of the high content of fatty materials in soybeans (17-18%), its flour emulsifies with water, giving with oil a certain quantity of *légumine* [a protein found in soybeans]. The mixture, passed through a cloth, yields, as a filtered liquid, a true milk (*vrai lait*), used like that of cows, goats, or sheep. This is the milk (*le lait*) of the Chinese.

This milk is used to prepare a cheese (named *Téou-fou*

in China, *Tou-fou* in Japan), that resembles a white cheese known, in France, under the name of *fromage à la pie* (quark). The lightly heated milk is coagulated when it is warm with the help of a few spoonfuls of liquid nigari / pure sea water (*d'eaux mères de sel marin*). The curds (*caillé*) thus obtained are allowed to drain, then submitted to the action of flowing water. Note 1. The drained curds are first pressed to make tofu, then cut into cakes, which a placed into a container of cold, circulating water.

According to Mr. Champion, in China a piece of tofu (*fromage de pois*) as big as a fist sells for a cent (*un centime*). For many people of the working class, it constitutes the morning meal, either in a liquid state [as soymilk], or coagulated and fresh [as curds], or in a dried state [probably as pressed or firm tofu, or possibly as yuba] and fried in oil extracted from soybeans.

According to the analyses of Mr. Fremy, the soybean contains 18% of this oil, which is in the first rank among the 15-20 types of oils that the Chinese possess. It is of excellent quality and for Europeans, has the sole drawback of retaining the aftertaste of the raw bean.

In Canton [China], soybeans figure in the composition of a solid ferment, *Kiu-tsée*, that the Chinese use to make an artificial wine and their brandy (*eau-de-vie*).

Note 2. This is the earliest document seen (Oct. 2012) that contains the term *Kiu-tsée* (written with an acute accent), which it uses to refer to a solid Cantonese wine ferment.

Continued.

38. Petit, Léon. 1888. L'huile de soya. Son emploi en médecine comme purgatif à petite dose [Soy oil. Its use in medicine in small doses as a purgative]. *Bulletin de la Societe de Medecine Pratique de Paris.* p. 449-52. Meeting of April 26. Presided over by M. Laburthe. [Fre]

• ***Summary:*** Kaempfer first introduced soybean seeds into Europe from Japan, where they are used to make *miso* and *shoyu* (a black and limpid liquid). These two are indispensable condiments in the Japanese diet. They also make a vegetable cheese, tofu, which is usually eaten fresh, and of which the people are very fond.

In Cochin China, soya occupies a major place in the culinary art. The Chinese do not consume milk; instead, they crush the soybean and obtain from it a liquid, rich in casein and oils, which they use like we use the milk from cows' goats, or sheep. From it, they also make white cheeses, red cheeses [fermented tofu], and a sauce, *Tsiang-Yéou* (*jiangyou* or soy sauce), which are greatly appreciated. For my part, I have had the occasion to taste this condiment several times and I admit that I do not share, in this regard, the enthusiasm of the Chinese. Much more, *soya* enters in the preparation of a ferment used for making spirits and wines.

Nothing could be easier than obtaining soybeans; in France, they germinate as easily as haricots. They contain 30-35% protein and make excellent forage.

The soybean has been tested as a forage plant, either alone or mixed with hay, oats, barley, sugar beets, etc. Mr. Paillieux, a distinguished agriculturalist, even conducted various trials in using the soybean for human food.

He cooked the seeds, like one cooks haricot beans, after they had been soaked in distilled water. He also roasted soybean seeds to make a sort of coffee. He successfully reproduced the various Japanese and Chinese food preparations. He even tried to make a flour by grinding the beans, but this flour degenerated [rancidified] because of the large quantity of oil and fat that it contains.

It is possible that if this oil were extracted, the soybean oilcake (*le tourteau de Soya*) could be ground / reduced into flour which would contain more than 40% nitrogenous materials [protein] and would have no bad [after]taste. But unfortunately, this flour would have a rather high net cost, because of the manipulations that its production would necessitate, unless a use for soybean oil, which is the object of an enormous traffic in China, is found. This very limpid oil, which has a beautiful yellow color like olive oil, leaves a little acrid taste in the mouth which is not disagreeable. It possesses very obvious drastic qualities. I had a liter at my disposition, and I observed that with a minimum dose of 10 gm, you obtain a very energetic purging [like diarrhea], without any type of abdominal pain / colic (*colique*). I hope, before long, to receive a certain quantity of soybean oil that I shall place at the disposition of those of our colleagues who would like to test it as a purgative.

Note: The writer is the only person ever to ascribe a "purging" or "purgative" property to soy oil.

There follows a question and answer session. Mr. Terrier asks: Can Mr. Lecerf provide us with some information about the use of this oil in China and Japan? Mr. Petit responds: I believe that the Chinese and Japanese use this oil only for therapeutic purposes. Soy sauce (*La liqueur de Soya*) is widely employed in England as a condiment. Mr. Lecerf adds: I know nothing about how the Chinese and Japanese use soy oil as a medical substance; but, as I said, this oil is of the highest rank among the oils consumed throughout China. I would say to Mr. Petit that the *India Soy,* which the English consume, is a product which contains only a small proportion of soybeans; it is made with considerable quantities of barley and rice [sic], and it comes from China. However *Shoyu,* which I present to you, is originally from Edo [Tokyo, Japan]. Like that from Batavia [Jakarta] (Ket-Jap [ketjap, kecap]), it is made with from equal parts wheat and soybeans (*Soya*).

Mr. Gillet de Grandmont asks: Very precise and extensive information on the cultivation of soybeans can be found in the *Annals* [*Bulletin*] *of the Society for Acclimatization.* This bean, which I have tried to use for food, does not soften easily upon cooking; it always retains a very disagreeable, acrid taste. I could hardly stand it, except consumed in the form of a salad after cooking.

Mr. Lecerf replies: In the fresh state [as green vegetable soybeans], soybeans are not hard and their taste is even agreeable. In the dry state, it is easy to render them less tough, by adding a small quantity of sodium bicarbonate [baking soda] to their cooking water, and by taking care to soak them in water 24 hours in advance. Address: M.D., 2 Rue Casmir-Delavigne, Paris.

39. Egasse, M. 1888. Le soja et ses applications économiques et thérapeutiques: Matière médicale et therapeutique [Soja and its economic and therapeutic applications: Medical and therapeutic subject-matter]. *Bulletin General de Therapeutique Medicale, Chirurgicale, Obstetricale et Pharmaceutique* 115:433-48. Nov. 30. [28 ref. Fre]
• ***Summary:*** This is a review of the literature, especially the use of soy in diabetic diets. The author was one of the first Westerners to suggest the therapeutic use of soybeans in diabetic diets. Illustrations show: (1) A soy bean plant (from Vilmorin 1883, p. 434). (2) Two views of a soy bean and a cross section of soy bean seed (both from Blondel, p. 435).

Discusses (with 11 tables) the work with soybeans of Haberlandt in Austria-Hungary, Steuff [Steuf] in Germany, Schroeder (a chemist) in Napagedl [in Mähren / Moravia, a region in today's central Czech Republic], Capan [sic, Caplan] in Vienna, Pellet in France, P. Muntz, A. Levallois, Stingl and Morawski, E. Kaempfer, Eug. Simon, Champion, L'hôte and Champion, Mr. Lecerf, Mr. Dujardin-Beaumetz and Mr. Bourdin at Reims (soy bread), and Mr. Lailleux in Algeria.

Blondel (1888) reports the absence of starch in all parts of the soybean seed (p. 435).

"Soybeans are used above all to prepare foods: in Japan, miso and shoyu (*le sooju*), in China an imitation of milk (*une imitation du lait* [soymilk]) and a cheese (*un fromage* [tofu]) greatly appreciated by the common people" (p. 441).

"Throughout China, soybeans (*les graines du soja*) are also used to prepare a milklike / lacteal emulsion (*une émulsion leiteuse*) which replaces milk and which is obtained by crushing the seeds, soaking them in water, and simply passing the liquid through a fine sieve. The [soy] milk, this liquor (*liqueur*), only looks like [dairy] milk, but since [dairy] milk is extremely rare, this liquor supplements the milk [i.e., soymilk supplements dairy milk] from the alimentary point of view" (p. 443). Note: This is the earliest French-language document seen (Aug. 2013) that uses the term *une imitation du lait* or *une émulsion leiteuse* to refer to soymilk.

"The applications of soybean seeds for the feeding of diabetics is not numerous. Yet we know, via an oral communication from Mr. Lailleux, former intern at the hospital in Algiers, that a certain number of diabetic Arabs under treatment at the hospital of Dey, in Algiers, have seen, under the influence of a dietary regimen based on soybean pap, that not only did the content of sugar in their urine diminish by a considerable proportion, but also the condition of their sores was improved, a condition which like all of its type had resisted other treatments employed. If this fact can be verified again, either with soy pap or soy bread, the therapy would have found in soybeans an aid of great utility in the ordinary treatment of diabetes mellitus, which is so difficult for most patients to stand, especially because they must abstain from starches for which they generally show such a strong appetite" (p. 447). Address: France.

40. Austin, Thomas. ed. 1888. Two fifteenth-century cookery-books. Harleian MS. 279 (ab. 1430) & Harl. MS. 4016 (ab. 1450) with extracts from Ashmole MS. 1439, Laud MS. 553 & Douce MS. 55. London: Early English Text Society, Original Series (EETS, OS), No. 91. xix + 151 p. See p. 16, 20, 28, 34, 38, 74, 85, 91-92. 23 cm. New edition 1964 by British Library. Two fifteenth-century cookery-books. Harleian MS.279 (ab. 1430) & Harl. MS.4016 (ab. 1450) with extracts from Ashmole MS.1439, Laud MS.553 & Douce MS.55, edited by Thomas Austin. [4 ref]
• ***Summary:*** On the tile page below the title we read: "Published for The Early English Text Society by the Oxford University Press." Contents: Forewords. Collation with Ashmole MS., and errata. Harleian MS. 279 (about 1430 A.D.). Harleian MS. 4016 (ab. 1450 A.D.). Ashmole MS. 1439 (Sauces). Laud MS. 553 (Bodleian Library). Recipes from Douce MS. 55 (ab. 1450 A.D.) Glossary and Index.

Almond milk is mentioned many times throughout this book, however the words "Almond" and "milk" are spelled in many different ways. The word "almonds" is also spelled "almand" (p. 34, 112 {2 times}, 113 {2 times}, 114 {3 times}),

"almande" (p. 114),

"almaund" (p. 119, 124),

"almaunde" (p. 1, 11 {3 times, all almaunde mylke}, 14 {2 times}, 16 {2 times, 1 almaunde mylke}, 17 {2 times, 1 almaunde mylke}, 14 {2 times, all almaunde mylke}, 19 {2 times, all almaunde mylke}, 21 {2 times, all almaunde mylke}, 22 {almaunde mylke}, 23 {almaunde mylke}, 24 {2 times, all almaunde mylke}, 28 {almaunde mylke}, 29 {2 times, all almaunde mylke}, 30 {3 times, all almaunde mylke}, 31 {2 times, all almaunde mylke}, 33 {almaunde mylke}, 34 {almaunde mylke}, 35 {almaunde mylke}, 38 {2 times, all almaunde mylke}, 43, 46 {almaunde mylke}, 47, 49, 55 {2 times}, 59, 119 {3 times, incl. almaunde mylke}),

"almaundis" (p. 56, 119),

"almayn" (p. 123),

"almayne" (p. 2, 3, 111, 114 {"peys de almayne" = pease and almond milk}, 120, 123, 132, 140 {2 times}),

"almaynne" (p. 2, 19 {2 times}, 44, 120 {2 times}, 123 {2 times}, 132),

"almaundys" (p. 1, 6, 7 {3 times}, 9 13 {2 times}, 15, 16 {3 times}, 18 {3 times}, 19 {4 times}, 20 {2 times}, 21, 22, 23, 24, 25 {2 times}, 26 {2 times}, 27 {2 times}, 28 {3

times}, 29, 30 {2 times}, 31 {2 times}, 32, 33 {2 times}, 34 {2 times}, 36 {3 times}, 37, 38 {3 times}, 41 {2 times}, 42 {2 times}, 43, 46, 48 {3 times}, 49 {2 times}, 55, 58, 60, 62, 119, 124, 126, 127, 148),

"allemaundys" (p. 10),

"almondes" (p. 66 {5 times}, 68, 71 {2 times}, 74, 80, 84 {4 times}, 85 {3 times}, 87, 88, 71 {2 times}, 90 {2 times}, 94 {2 times}, 95 96 {5 times}, 97 100, 105 119 {3 times}, 120 {2 times}, 121, 130, 132),

"almond mylke" (p. 71, 90, 98). "bruet of almaynne" (p. 2, 19 {2 times}, 120. 123),

"creme of almaundys" (p. 7, 60),

"creme of almaundes" (p. 119),

"crem of almonde mylk" (p. 119),

"fride creme of almaundys" (p. 7), "froyde almoundys" (p. 7, 119),

"froydelet dalmandes" (p. 91),

"froyte de almondes" (p. 91, Lent; froyte = froid in French = cold), fried creme de almondes (p. 66, 91),

"milk of almondes" (p. 120),

"mylke of almaunde" (p. 17),

"mylke of almaundys" (p. 6, 13, 15, p. 19 {2 times}, 23, 26, 28, p. 31 {2 times}, 32, p. 33 {2 times}, p. 34 {2 times}, 38, p. 41 {2 times}, 46, 124, 148).

The Foreword begins: "The Ancient Cookeries edited in this volume have been copied from Harleian MSS. 279 and 4016, in the British Museum... This MS. [Manuscript] is divided into three Parts, the first, headed *Kalendare de Potages dyuers*,–containing 153 recipes: the second Part, *Kalendare de Leche Metys*, has 64 recipes, and the third Part, *Dyuerse bake metis*, 41 recipes. This MS., besides the Cookery, contains the Bills of Fare of several Banquets which are noticed more fully below. The date of this MS. is about 1430 or 1440, and has been given a little too early on pages 1 and 5. This has been collated with Ashmole MS. 1439, in the Bodleian, noted as A. in the text. For the second MS. it was originally intended to publish Douce MS. 55, in the Bodleian Library, but this was found imperfect, and was replaced by Harleian MS. 4016. They are similar books, and contain the same recipes in nearly the same words, the latter having a few that are not in the former, and *vice versa*. The Harleian Cookery has 182 Recipes, while the Douce Cookery has 184. The two have been collated, and are of about the same date, ca. 1450. Two Banquets are prefixed to this MS., which are also more fully noticed below. Several of the recipes of the Douce MS. are appended at page 115.

"Some recipes for sauces, taken from Ashmole MS. 1439, are given at page 108. This MS. is about the same date as Harleian MS. 279, and has the same Feasts added, though some of the leaves are missing. These recipes are followed by others taken from two odd leaves in Laud MS. 553, in the Bodleian Library; see page 112. The first English Cookery Book seems to be that of Neckam, in the twelfth century, but the *Forme of Cury* is the oldest practical work" [ca. 1390].

Address: England.

41. Dujardin-Beaumetz, Georges Octave. 1889. L'hygiène alimentaire: Aliments, alimentation, régime alimentaire dans les maladies. Deuxième édition revue, corrigée et augmentée [Food hygiene: Foods, feeding, special diets for illnesses. 2nd ed., revised, corrected, and expanded]. Paris: Octave Doin. viii + 239 p. Series: Conférences de Thérapeutique de l'Hopital Cochin, 1885-1886. Illust. [1 soy ref. Fre]

• ***Summary:*** Dr. Dujardin-Beaumetz, a world-famous physician, lived 1833-1895. He wrote the preface to the first edition on 15 Oct. 1886, and to the second edition in July 1888. This book contains papers presented by the author at 15 conferences. Soya is discussed extensively at the 5th (p. 71-90) and 11th (p. 175-80). Page 72 notes: The principal vegetable proteins (*albuminoïdes végétaux*) have been well studied by Ritthausen (see his book *Die Eiweisskoerper,* 1872, Bonn). They consist of vegetable albumin, vegetable casein, legumin, vegetable gelatin, gluten, and conglutin [*Ils se composent d'albumine végétale, de caséine végétale, de légumine, de gélatine végétale, de glutine et de conglutine.*] As for gluten, its composition is more complex, and Ritthausen affirms that it contains at least four albuminous substances, gluten-casein which is insoluble in alcohol, and three substances which are soluble in alcohol; gluten-fibrine, gliadin [a term first used in about 1828], and mucedin (*mucédine;* a nitrogenous substance, one of the constituents of gluten. Word first used in English in 1879). Note: This is the earliest French-language document seen (Nov. 2003) that contains the word *caséine* or that uses the terms *caséine végétale* or *albumine vegetale* to refer to "vegetable protein."

Page 88 notes: Dr. Bovet has shown that legumin, which is rich in protein and low in starch, can serve as a base for cakes and pâtés to be used in diabetic diets. But certainly the most interesting fact is that which was communicated by Lecerf to the Society for Practical Medicine (Société de médecine pratique; June 1888) concerning soy flour (*farine de soya*).

"Soya (*Le soya*) is a legume very similar to our haricot, which originated in China and Japan, and which is cultivated presently in Austria. From soya one can extract a fatty substance, which the Chinese use as milk and from which they even make a cheese [tofu]. As for the flour, it contains a considerable quantity of protein, more than even beef (36.63% vs. 22.74%), as one can see from the following table... But what is most interesting is its low content of starches and sugars. Lecerf proposed that this flour be used to make a bread for diabetics. Such a bread would contain 45% water, 20.1% protein, 9.35% oil, 2.794% starches and sugars, and 0.863% phosphoric acid. Thus, this bread, which has an agreeable flavor, can be substituted for gluten bread, which contains at least 16-17% starches and sugars.

The chapter on diabetic diets contains a long discussion of bread (p. 181): Bread is an indispensable food. The

introduction of gluten bread in the feeding of diabetics, which we owe to Bouchardat, is one of the most important points in the dietary treatment of this disease. But there are various types of gluten bread, each with a different content of starches and sugars; dry gluten bread, sold in slices, contains the least. This brand, made by Cormier, is widely praised by Bouchardat. Page 185 shows a table stating that fresh gluten bread contains 27.07% sugars and Lancry gluten bread contains 31.15%. Boussingault wrote an article titled *"Analyse comparative du biscuit de gluten et de quelques aliments"* [Comparative analysis of gluten biscuits and of some other foods]. (1876, *Annales de Chimie 5:114-26*).

Concerning soya bread (*pain de soja;* p. 187-88): Soya bread constitutes a major step forward in the feeding of diabetics. As noted above, Lecerf has given its composition; it contains less than 3% starches and sugars compared with at least 16% in gluten breads. It is also rich in protein. Therefore there is real interest in replacing gluten bread and potato bread by soya bread in diabetic diets. Address: Membre de l'Académie de médecine et du Conseil d'hygiène et de salubrité de la Seine médecin de l'hôpital Cochin.

42. Yeo, I. Burney. 1889. Food in health and disease. London, Paris, New York and Melbourne: Cassell & Company, Ltd. x + 583 p. See p. 432-33, 440. Illust. Index. 19 cm. Series: Clinical Manuals for Practitioners and Students of Medicine. Reissued in 1890 in Philadelphia by Lea Brothers & Co.

• ***Summary:*** In Part II, "Food in disease," Chapter 3 is titled "Food in diabetes." "Soya" is mentioned on pages 432-33. "Dujardin-Beaumetz also objects both to gluten bread and to almond cakes; the former he maintains is often found to contain a considerable percentage of starch."

"Quite recently Dujardin-Beaumetz has advocated (Footnote: 'L'Hygiène Alimentaire.' Second edition) the use of 'soya' bread for diabetics, of which he gives the following as the composition:–Soya Bread: Water 45.000. Proteids 20.168. Fats. 9.350. Starch and sugar 2.795. Phosphoric acid 0.863.

Note 3. This is the earliest English-language document seen (Dec. 2011) that contains the term "proteids" (or "proteid") in connection with soybeans.

"This bread, he states, keeps well, and has an agreeable taste, and contains much less sugar-forming material than gluten bread, the best kind of which, he asserts, contains at least 16 per cent. of starch and saccharine substances.

"Lecerf (Footnote: *Journal de Médicine Pratique,* 10 June 1888, p. 923) was one of the first to call attention to the value of the meal of the *Soya hispida* in dietetics. It has a leguminous fruit like the haricot, and is a native of China and Japan, but is now cultivated in Austria. The Chinese extract from soya a fatty substance which they use as milk [soymilk], and even make cheese [tofu] with it. The meal is very rich in nitrogenous substances, more so than animal flesh, and the amount of starchy and saccharine substance is very small."

The section on "Diabetic dietaries" contains "5.–Dujardin-Beaumetz's" (p. 440) which begins: "He adopts with little modification the dietary of Bouchardat. He strongly recommends... *the use of soya bread."*

The author (who lived 1835-1914) mentions gluten on pages 7, 10, 74, 76, 78-83, 184, 186, 193, 194, 428-33, 437, 439-40, 541, and 556.

He seems favor a non-vegetarian diet Chapter 4 (p. 73+), which is titled "Vegetable foods," begins: "We derive from the vegetable kingdom a great variety of foods, many of them of a highly nutritious character, and therefore of great importance to the human race... but as a rule, in vegetable foods the non-nitrogenous constituents are greatly in excess of the nitrogenous ones, and occur chiefly as carbo-hydrates; and, save in the case of certain fruits and seeds, they contain but little fat."

"There is legumin or vegetable casein, abundant in the seeds of the leguminosae, and resembling in all essential particulars the casein of milk" (p. 74). Chapter 12 (p. 341-54), which is titled "The relative advantages of animal and vegetable foods–Vegetarianism (Beneke's diet for carcinoma)," contains a fair and balanced review of the literature on vegetarian and non-vegetarian diets. He states (p. 344-45): "There are few persons in the present day who advocate the practice of limiting the human dietary to substances of exclusively *vegetable* origin. The majority of the so-called 'vegetarians' of modern times adopt no such exclusive diet, but take, together with the more highly nutritive forms of vegetable food, such typical animal foods as eggs, milk, cream, butter, and cheese. They object only to animal flesh. But those who take for their food the egg and the milk prepared by animals from the vegetable substances they feed on, and reject only animal flesh, have no claim to call themselves 'vegetarians.' They feed, as has just been said, on the most typical and concentrated of animal foods. They have a *sentimental* objection to killing animals for food, and they found upon it a scheme of diet which we believe to be utterly impracticable on an extensive scale, and irreconcilable with the existing state of civilised man, not so much on strictly physiological grounds as on general economical considerations. There can be no objection to individuals adopting any kind of diet which they may find answer their needs and minister to their comfort; it is only when they attempt to enforce what they practise on others that they must expect to encounter a rational opposition."

"But there exists also abundance of evidence that a purely vegetable diet is not the most appropriate for the production of either physical or intellectual effort.

"Jules Béclard has recorded in his well-known text-book on Physiology that 'the workmen employed at the forges of Tarn were for a long period fed with vegetable substances. It was then found that all the workmen lost, on an average,

fifteen days' work a year on account of exhaustion or illness. In 1883, Mons. Talabot, deputy of La Haute Vienne, took charge of the forges. Meat was then made an important part of the diet. The health of the men afterwards improved so greatly that they did not lose more, on an average, than three days' labour a year. Animal food produced a gain on each man of twelve days' work a year.'

"It has also been stated that the Italian labourers from Lombardy, with their largely vegetable dietary, performed much less work when engaged in piercing the St. Gothard Tunnel than their Swiss co-labourers with a more richly animalised scale of diet."

The author also mentions the words "vegetarian," "vegetarianism," or "vegetable diet / dietary, / foods / kingdom / origin / substances" on pages vii, x, 32, and 406-408. Address: M.D., F.R.C.P., Prof. of Clinical Therapeutics, King's College, London, and Physician to King's College Hospital [London, England].

43. *Good Health* (*Battle Creek, Michigan*). 1890. Vegetable milk. 25(5):153. May.
• ***Summary:*** An English periodical notes: There are several trees which produce milk, the best known being the *Palo de Vaco* or "cow-tree," of the Cordilleras of the coast of Caracas [Venezuela] in South America. "Humboldt says of this tree, 'Among the many curious phenomena that I beheld during my journey, there was hardly any that struck my imagination so forcibly as did the "cow-tree..." pierce the trunk and a sweet and nourishing milk flows. At sunrise this vegetable source is most abundant; then the blacks and native people hurry from all parts, provided with jugs to catch the milk, which turns thick and yellow on the surface.' M. Boussingault has analysed this vegetable milk, and declared before the Academy of France that it most certainly approaches in its composition to the milk of a cow..."

Note: This is the earliest English-language document seen (April 2010) that contains the term "Vegetable milk." However it does not refer to (or even mention) soymilk.

44. *Lancet.* 1890. Analytical Records: Bread and biscuits made from the soya bean (G. Van Abbott and Son, 6, Duke Street Mansions, Grosvenor Square, W. [London]). 136(3494):342-43. Aug. 16.
• ***Summary:*** "The use of 'soya' bread has recently been advocated for diabetics by no less eminent an authority than Dujardin-Beaumetz. Lecerf, according to Professor Yeo was one of the first to call attention to the value of the meal of *Soya hispida* in dietetics. It has a leguminous fruit like the haricot, and is a native of China and Japan, but is now cultivated in Austria. The Chinese extract from soya a fatty substance which they use as milk [soymilk], and even make cheese [tofu] with it. The meal is very rich in nitrogenous substance, more so than animal flesh, and the amount of starchy and saccharine substance is very small. Our examination of the bread before us confirms this. We find it to contain as much as 25.02 per cent. nitrogenous matter, and as little as 2.72 per cent. starch, and 4 per cent. of mineral matter. In texture it is just like ordinary wholemeal bread, and it possesses quite an agreeable taste. Messrs. Abbott have evidently made a very valuable addition to their list of foods which are intended for the use of the diabetic. The biscuits are not less satisfactory." Address: England.

45. Purdy, Charles W. 1890. Diabetes: its causes, symptoms, and treatment. Philadelphia and London: F.A. Davis. viii + 184 p. See p. 87. Index. Physicians' and students' ready reference series, No. 8. [2 soy ref]
• ***Summary:*** In Section VI, "Treatment of diabetes mellitus," the soya bean is mentioned (p. 87): *Soja*, or Japanese bean, owing to its high nutritive properties and its low percentage of starch, is likely to enter largely into the diabetic diet of the future. It has recently been much cultivated in some parts of Europe, especially in Hungary. Its composition is as follows: Nitrogen, 36.6 per cent.; fatty matter, 17 per cent.; starchy matter, 6.4 per cent.

"A sauce is made from *soja* which bears the name of *miso* and *soju* [shoyu]. A kind of cheese [tofu] is made from it, and very much prized in Japan as a table-luxury. (Footnote: See Egasse 1888, p. 433-38).

"In Europe the soja has already been utilized for food of men and animals, and recently the attempt has been made to make bread of it. This is very difficult because of the large proportion of oil which it contains. This oil is very purgative [sic], and hence it becomes necessary to rid the meal of it in order to render it fit for domestic usages. Lecerf in Paris and Bourdin in Rheims have succeeded in rendering the bread made from this meal very well supported by the stomach.

"This bean, which, as the analysis shows, is more nutritive than meat, serves for nourishment to a great country like Japan, under the forms of sauce, of cheese, of farina, and even of *real* artificial milk" (Footnote: Therapeutic Gazette, March 15, 1890, p. 150).

Note: This is the earliest English-language document seen (Aug. 2013) that uses the term "artificial milk" or "real artificial milk" to refer to soymilk.

Gluten is also mentioned several times (p. 84-85): "First in importance ranks the question of bread in the construction of any diabetic diet-list. The withdrawal of this article from the list is usually the most serious deprivation the patient has to encounter. In consequence of this fact, an almost endless number of breads have been placed upon the market, which are *claimed* to be free, or nearly free, from starch, and are hence named diabetic breads. Now, I do not hesitate to say that most breads which have been put upon the market with such claims are 'a snare and a delusion,' and have unquestionably shortened the lives of hundreds of diabetic patients. Most samples of so-called 'diabetic flour,' from which the starch is claimed to have been eliminated,

'or nearly so,' contain from 30 to 70 per cent. of that article... But Dr. Chas. Harrington, of Boston, has rendered us under perpetual obligations to him for fearlessly exposing the most of these deceptions, by publishing a careful analysis of most of them in detail. It may first be noted that his analysis of home-made bread gives the proportion of contained starch as 44.99 per cent. The Graham wafer, made of Graham flour, contains 58.45 per cent. of starch. The gluten flour, of Farwell & Rhines, of Watertown, N.Y., contains 67.17 per cent. of starch... The gluten flour of the New York Health Food Company contains 66.18 per cent. of starch. Bread made of this flour would contain 35 per cent. of starch... The Boston Health Food Company's diabetic flour, No. 1, sold as absolutely non-starchy, contains 62.94 per cent. of starch. Bread made of this flour would contain 30 per cent. of starch." Address: M.D., Queen's Univ. [Kingston, Ontario, Canada].

46. Coupin, Henri. 1892. La soya [The soybean]. *Nature* (*La*) (*Paris*) 20:203-04. Aug. 27. [Fre]

• ***Summary:*** An overview of the soybean (*La Soya*). It is not possible to encourage too much the acclimatization of exotic plants in France. One cannot doubt the worthiness such an interest when a plant, such as the soybean, has found, in its country of origin, such numerous applications.

This plant is used in China and Japan for human food and for animal feed, for making bread, cheese [tofu], for extracting an oil [soy oil], etc. Why would we not do the research necessary to raise such a precious plant in France? Many trials have already been conducted and have succeeded rather well; we will return to that later, but first we must see how the soybean behaves in Japan and China.

The soybean (*Glycine Soya*) belongs to the legume family. A botanical description is given.

In Japan, the soybean is one of the most widely used plants. It is known under the name of either *mame* or *daizu,* and it is widely used to make a sort of paste, named *miso* (*le Miso*). The process for making miso is described. [Note: However koji is not mentioned so it will not work]. It ferments for 1-2 months, and then is ready for food use. It is part of the breakfast of many Japanese.

The second product made from soybeans is a condiment, a liquid named *Shoyu.* It is a sort of dark brown syrup which serves as a sauce to season dishes, especially fish. The manufacture of shoyu is a very important industry in Japan. In the city of Nagasaki alone there are as many as ten factories, and each makes more than 1.2 million kilograms per year of shoyu. A description of how shoyu is made is given using equal quantities of boiled soybeans and roasted wheat, plus salt. 1.8 liters sells for 40-50 centimes.

The third product made from soybeans is a cheese called tofu (*le To-fu* or *fromage de Daizu*). The process for making tofu is described. It can be eaten fresh, but unfortunately it retains the taste of raw beans, which is not very agreeable.

In China the soybean is known as *Yeou-teou,* but ice it is not ordinarily cultivated on a large scale, as it is in Japan. According to Eugene Simon: Each person makes his or her own cheese [tofu]. Very also, often, each one makes his oil, if not at home, then at least at one of his parents' homes or in the neighborhood; it is distributed by the head of the family.

There is a variety of black soybean which constitutes the principle food of animals; horses and mules eat the seed in nature. People use mainly the white soybean (*la Soya blanche*)*:* from it they extract an oil [soy oil], which is the object of an enormous trade and which occupies the top rank among the oils used in China. As in Japan, the Chinese also make tofu. According to Paillieux and Bois, in the entire Chinese empire, only the Tartars use daily milk; the [Han] Chinese do not consume it at all. They use soymilk instead. The soybean is solid milk. Not all legumes contain legumine, as the soybean does. Describes how to make soymilk from soybeans.

Trials for the acclimatization of soybeans in Europe are rather numerous. In 1875, the first ones were conducted by F. Haberlandt and Blaskovics in Austria-Hungary. In France, Buffon received soybean seeds and cultivated them at the Museum [of Natural History]. One of the problems with the soybean is that its seed mature very late. However some varieties mature their seeds earlier than others.

An illustration [non-original] shows a soybean plant. At the bottom of the column on page 1, we read: See No. 425, of 25 July 1881, p. 115 [an article by E. Roman]. Address: Ingenieur en chef à Périgueux.

47. *Avenir de Diego-Suarez* (*Madagascar*). 1893. [Foods made from the soybean]. March 2. [11 ref. Fre]*

• ***Summary:*** Note 1. As of Oct. 2012 we have been unable, after great effort, to obtain a copy of this article; we do not even know the title. However a detailed summary (which we have; which see) appears in *Le Temps* (Paris) of 8 April 1893.

Note 2. Diégo-Suarez (renamed Antsiranana or Antsirane in 1975) is a harbor and town at the northern tip of Madagascar. In 1893 Madagascar was part of the French colonial empire. The place was named for Diego Soares, a Portuguese navigator (brother of the better-known Bartholomew Dias) who visited the bay in 1543.

The estimated population in 1990 was 54,400. A French naval base (maintained since 1901) was handed over to Madagascar in 1975.

48. *Temps* (*Le*) (*Paris*). 1893. On lisait dans *l'Avenir de Diego Suarez* du 2 mars cet avis: [One reads in *l'Avenir de Diego Suarez* of March 2 this notice:]. April 8. p. 2, cols. 2-3. No. 11641. [1 ref. Fre]

• ***Summary:*** The governor hurriedly lets the residents know that he has just received from Mr. de Mahy a box of soya bean seeds (*une boîte de graines du haricot* soya), with which is made a cheese [tofu] that keeps for a very long

time. It improves with age and that is a precious resource for settlers who live far from the urban centers.

This notice appears to have surprised a few of our colleagues. It did not contain, however, the revelation of an unknown food.

Cheese made from soya is called tofu (*to-fu*). Here is the recipe for tofu, which seems to us of interest to reproduce given the efforts being made to acclimatize this legume in Europe. You begin by softening the seeds of this bean in water, then you crush them in a mortar so as to make a milky paste. When this paste is pressed in a piece of linen it separates into two parts: one [okara] stays inside the linen and is used for animal feed. The other, a liquid which passes through the linen, is rich in emulsified fatty matter and in albuminoidal matter (albuminoids). This liquid is heated; coagulation is facilitated by adding nigari (eau mere / mother water, which flows out of sea salt piles). This curd separates and gives the cheese. It is eaten either raw, or cooked with fish, or most often pulverized. During the winter [after being frozen], it is dried. In this state, it keeps for a very long time.

Soya cheese (*Le fromage de soya*) is a very important food in China. Only the Tartars / Mongols have continued to use [cow's] milk. The Chinese do not consume any such milk. In its place they use soya. Its seed is a sort of solid milk. No other legume contains as much legumin (a substance chemically analogous to casein) as the soybean. None other is as rich in fatty acids. All you need to do is to crush the soya seed, dilute it with water, and filter through a sieve to obtain a product with milklike properties that can be used just as you would milk. Soya cheese looks just like quark cheese (*fromage à la pie*).

The soybean (*La soya*) which is cultivated in Japan, in China, in the Indies [Dutch East Indies, today's Indonesia], in Cochin-China [today's South Vietnam], in Tonkin [today's North Vietnam], etc. is used for more than just making tofu. It is used in these countries in a great variety of ways to make human foods and seasonings. Transformed by cooking in water into a gruel / pap (*bouillie*) which is mixed with salt and polished rice, one obtains miso, which is served at lunch [as the seasoning in miso soup] by many Japanese.

Mixed with barley and submitted to fermentation, after adding additional water and being pressed, one obtains a syrupy liquid, called shoyu, a unique sauce used to season almost all Japanese foods (*mets*), and which is employed in such large quantities that the factories of the city of Nagasaki make more than 1,200,000 kilograms of it each year. Finally, an oil is extracted from the soybean which is the object of an important trade and which serves for both human consumption and in industry.

49. *Natuur* (*De*). 1893. Soja [Soya]. 42(20):233-34. May 13. [1 ref. Dut]

• ***Summary:*** This Dutch-language periodical appears inside a German-language periodical titled *Die Natur* (Halle). The author of this article (whose initials "CKN" appear at the end) discusses: The soybean plant, named *Glycine Soya* or *Dolichos Soja* or (in Dutch) *de Sojaboon,* which is widely used for food in Japan (where it is called *Mame* or *Daizu*) and China. Food products made from the soybean in Japan: Miso, shoyu (soy sauce), To-fu [tofu] or *Kaas van Daizu;* a brief description is given of how each is made. Soybeans in China, where it is called "Yeou-teou," and where they make a cheese (*Soja kaas*), oil (*eigen olie*), and milk (*melk*) which resembles cow's milk.

Note. This is the earliest Dutch-language document seen (April 2013) that uses the term *To-fu* or the term *Kaas van Daizu* or the term *Soja kaas* to refer to tofu.

Black soybeans (*zwarte Soja*) are widely used. Proteins in the soybean, including legumine. In Europe, by 1881, the soybean was known in Italy, Austria, Hungary, and France (especially at Etampes and Montpelier); from the seeds, people learned to obtain oil, milk, cheese, an excellent cattle feed, and a vegetable for humans–similar to the French bean but much better (*en een groente voor den mensch, gelijkende op onze spersiebonen, maar veel beter*). Soybeans are used by doctors to treat people suffering from diabetes.

In France, the seeds are roasted like coffee beans; the result is a good-tasting coffee substitute (*dure koffie,... een even goed smakend surrogaat verkrijen*).

A large illustration (engraving) shows a soybean plant bearing many pods. In the lower left corner is one large pod. In the lower right is written "Al Clement," which appears to be the artist's name.

Note 1. This is the earliest Dutch-language document seen (Nov. 2012) that mentions soy coffee.

Note 2. This is the earliest Dutch-language document seen (June 2009) that mentions green vegetable soybeans, which it calls *"een groente voor den mensch,..."*

Note 3. This is the earliest Dutch-language document seen (Aug. 2013) that mentions soymilk, which it calls *melk.*

Note 4. This is the earliest Dutch-language document seen (Oct. 2003) that mentions oil from the soybean, which it calls *olie.*

50. *St. Louis Post-Dispatch* (*Missouri*). 1893. Use of the soya bean. Nov. 12. p. 20.

• ***Summary:*** "The use of the Soya bean in the dietary of diabetics has recently attracted much attention. Heretofore the bean has been used only for culinary purposes, the Japanese using a liquid called sooju [shoyu] or soja [soy sauce], a condiment which they prepare by fermenting the seeds of the Soya bean. The Japanese name of the plant is Daidsu [Daizu]. Linnaeus, the great botanist, called it *Dolichos Soja."*

The Japanese call the beans Mame, and make 'miso' or sooju from them. The preparations are used principally in cooking meat. In China an emulsion [soymilk] is made from the oil of the beans [sic, from the whole beans]. It forms a

white liquid and is drunk in the districts in which milk is too dear for the poor to buy it. The Chinese also make a kind of cheese [tofu] from the beans. Soy sauce is exported to and used in many European countries. The Dutch call it 'Zoya.' In the East Indies it is known as 'Ket Jay' [sic, 'Ket Jap'] (probably the source of 'catchup' or 'ketchup'). This liquid is obtained by fermentation of cakes of roasted barley and boiled soya bean. After [the first] fermentation salt is added. The whole is kept for two or three years and then the sauce is squeezed out of the mass.

"Bread and biscuit, made from the flour of the beans, have been highly recommended for diabetics on account of the low proportion of starch and the high proportion of fat and proteid. They are said to be pleasant to the taste. Dr. W. Hale White, writing from Guy's Hospital, London, where he has used the bread and biscuit for some time, says: 'They are to patients suffering from diabetes not only a good substitute for gluten bread, but they form a pleasant change from it, and many patients much prefer the taste of them to gluten bread.'"

51. Schlegel, Gustave; Cordier, Henri. 1894. The Chinese bean-curd and soy and the soya-bread of Mr. Lecerf. I. Tofu. *T'oung Pao* (*General Newspaper*) 5:135-46. March. [11 ref. Eng]

• ***Summary:*** "Of late these Chinese preparations have again attracted the notice of Europeans. The *Temps* in France published last November [sic, April 8, 1893] a note upon the subject after an article in the *Avenir de Diego-Suarez* of 2 March 1893, and Dr. Vorderman, of the civil medical service in Java and Madura... We will add to these notices what is written about the subject by the Chinese themselves.

"I. Tao-fu or Bean Curd. According to 'Collected Omissions of *Sieh-choh*' nothing had been ever heard of the confection of bean-curd before or after the period of the three dynasties of antiquity (B.C. 2205-250), and it was only mentioned for the first time in the work of *Liu-ngan* [*Liu An*] king of Hoai-nan [Huai Nan] of the Han (second century before our era) Cf. Mayers, Chinese Readers Manual, No. 412, Cap. 24."

"The *Tao-fu* or Bean-curd was also called 'Leguminous milk', and was prepared by boiling curds or milk from beans.

"It is further related that when *Shi-tsih* [pinyin: Shi Ji] was governor of *Ts'ing-yang* [pinyin: Qing Yang] (Latitude 30º45', Longitude 115º26') he, in order to purify himself and to rouse the population, did not permit himself the use of meat, but bought every day in the market several pieces of bean curd, so that the townpeople called these curds 'The little slaughtered sheep.'

"The bean of which this curd is prepared is known in science by the name of *Soja hispida*, and has been imported in the form of a meat-sauce from Japan to Europe under its japanese name of *Sho-yu*, the corrupted japanese pronunciation of the chinese *tsiang yu* or 'relish-oil' which this sauce bears in some parts of China, and which has been further corrupted by the Dutch into *Soja*, by which name (also written *soya* and *soy*) it became known all over Europe. We will return to this by and by.

"According to Dr. Vorderman (loc. cit. p. 354) the soy-beans are distinguished in light-colored (cream-color, straw-yellow, light ochre-yellow and amber-yellow), brown and black. The first two sorts are roundish, the last either roundish or oblong, as they come from the one or the other variety of the plant. Accordingly, the plant with roundish seeds is called *Soja hispida, tumida* and that with oblong seeds *Soja hispida, platycarpa,* amounting, with the differences in color, to four varieties: 1. Soja hispida, tumida Beta pallida; 2. Soja hispida, tumida Beta atrospuma [atrosperma]; 3. Soja hispida, tumida Beta castanea; 4. Soja hispida, platycarpa Beta melanosperma.

"No. 2 and 4 are black and serve especially for the fabrication of Soy or Ketchup, whilst No. 1 (pale-yellow) and No. 3 (brown) are used for other culinary purposes.

"Since the Vienna [Austria] exhibition of 1873, when several samples of Chinese, Japanese and Indian soybeans were exhibited, their great nutritive proprieties and richness of azote [nitrogen] and fat have been shown by chemical analysis, and the culture of this plant has been largely introduced into Europe, especially in Hungary."

Note 1. This is the earliest English-language document seen (July 2003) that contains the word "soybeans"–spelled as one word.

König in his work *Die menschlichen Nahrungs und Genussmittel,* 2nd Ed., Vol. II, p. 372, gives an analysis of the composition of 4 types of soybeans. "Dr. Vorderman says that he has not been able to detect amylum [starch] in the Soybeans of Java, China and Annam in applying the reaction of jodium [iodine] upon the section of the bean. The texture of the cotyledons consists principally of oblong, radiating parenchyme-cells, about five times longer than broad.

Note 2. This is the earliest English-language document seen (Oct. 2004) that uses the word "cotyledons" in connection with soybeans.

"II. *Tao-kan* or Preserved Bean Curd. The Chinese make of the Soy-beans two preparations, one called in Java *Tao-hu* and the other *Tao-toa.* They both consist of leguminous cheese, obtained from the light-brown beans, principally those obtained from Annam. But at present many Chinese in Batavia prefer the so much cheaper *kadele putih* grown in the *Preanger* and the *Ommelanden* (circumjacent territory of Batavia).

"These lightcolored beans are macerated during five hours in rainwater, when they swell up to about twice or thrice their original size. After having been cleansed from accidental dirt or admixtures, they are ground in a stone handmill, very much resembling that in which Europeans ground colors. One Chinese turns the mill, whilst the other throws the macerated beans, still in their husk, with a little

water into the mill, so that the stuff runs as a white, thin mass, by a small gutter, into a tub prepared for its reception. This mass is then heated upon the fire in a large iron open cauldron, until it reaches the boiling-point. The froth is skimmed, and the fluid strained, after boiling, through a cotton cloth, in which a white, doughy residu [sic, residue = okara] remains, having a peculiar oily smell, and which serves as food for ducks and fowl.

"The filtrated fluid, which has a milkwhite color, is mixed, whilst it is being cooled, with a certain proportion of common Madura-salt or with a little calcined gypsum.

Note 3. This is the earliest English-language document seen (Aug. 2013) that refers to soymilk, which it calls the "milk from beans" and "The filtrated fluid, which has a milkwhite color..."

"This gypsum is imported from China in the form of large lumps of radiated gypsum. As it is specially used for preparing the leguminous cheese of the soybeans, it is called by traders in Batavia by the Malay-Chinese hybrid word *Batu-tao* i.e. 'bean-stone.'\ "The salt (or, as in China, the chloride of magnesium) and gypsum change the juice, by precipitation of the legumine [legumin], into a white, gelatineous [gelatinous] mass, which, when sufficiently cooled, obtains a certain consistency, allowing it to be cut into flat square pieces. This can, however, not be done for after two hours after the precipitation. These squares are then laid upon plantain-leaves protected by a white cotton cloth against dust, and hawked about in the streets.

"They have an unpleasant raw bean-flavor, but when mixed with other victuals, this taste is lost. It is used as well in the preparation of Chinese victuals, as in that of the so-called Indian rice-dish.

"In order to preserve the *tao-fu* for continuous use, it is made to *tao-koa* (or dried beans) by the following method.

"The *tao-fu,* cut into flat squares, is plunged into a decoctum of *Curcuma longa,* which colours it intense yellow. These yellow cakes are then wrapped up in white square pieces of cotton, laid between boards and exposed to a certain pressure. Generally they are at the same time stamped with Chinese characters.

"By this pressure a good deal of water is lost, but the cakes can be preserved much longer.

"Dr. Vorderman says that both *tao-fu* and *tao-koa* can be successfully used in the nourishment of feeble children, who refuse to take eggs. *Tao-koa* is also imported from China, but these cakes are much larger than those prepared in Java, and are always stamped with Chinese characters."

Note 4. This is the earliest document seen (Aug. 2002) that mentions Liu An of Huai Nan in connection with tofu.

Note 5. This is the earliest English-language document seen (April 2013) that uses the word "Tao-fu" (or "Tao fu"), or the word "Tao-hu" (or "Tao hu"), or the word "Tao-kan" (or Tao kan") to refer to Chinese-style tofu.

Note 6. This is the earliest English-language document seen (Sept. 2004) that uses the term "pale-yellow" or the term "straw-yellow" to describe the color of soybean seeds.

Note 7. An article in this same issue, titled "The Chinese in Boston" [Massachusetts], notes that presently "1,000 Chinese live in Boston, of which 700 work in the 180 laundries, and about 300 are merchants and traffickers, all dwelling on Harrison Ave. Here one also finds 63 gambling dens (or houses of ill repute) and several others where opium is smoked–visited in part by the most vile class of Americans."

Note 8. We wonder if there wasn't at least one tofu shop in Boston at this time. Address: 1. Professeur de Chinois à l'Universite de Leide [Leiden]; 2. Professeur à l'Ecole spéciale des Langues orientales vivantes et à l'Ecole libre des Sciences politiques à Paris.

52. Martin, Ernest. 1895. Le Tao-fu (soya), son origine, ses propriétés, son acclimatation [Tofu (soya): Its origin, properties, and acclimatization]. *Revue Scientifique* (*Revue Rose*) 3(5):144-46. Feb. 2. Series 4. [Fre]

• ***Summary:*** A French-language review of the literature on tofu, including a brief discussion of soy sauce and soybeans. The Soya hispida (Family: Papilionacées; Glycine Phaseolus) is an oilseed (*graine oléagineuse*) that originated in China. According to the research of Prof. Schlegel at the University of Leiden, it was first mentioned in the work of Liu-An, king of Huai-nan, of the Han dynasty, in the 2nd century before the Christian era. From this period, the seed was boiled and a milk-like liquid [soymilk] was extracted which had the reputation of possessing beneficial properties.

When the soybean (*le soya*) was imported to Europe, it was in the form of a sauce made in Japan and sold by the Dutch who were the first [sic] European navigators to arrive in Japan. Note: Portuguese navigators arrived in and traded with Japan before the Dutch.

Its name was *sho-yu,* which is nothing but the corruption of the Chinese characters *tsiang-yu,* which signifies savory oil [sic]. From sho-yu, the Dutch made the word "soya" or "soy" the name by which the bean is known in Europe.

Discusses: The shape and color of soybeans. The Exposition of Vienna [Austria] in 1873. König's discovery that soybeans contain 31-33% protein. The research of Vorderman and Pellet. Tao-Kan, Tao-Hu (tofu in Java), and Tao-Koa. Tofu exported from Annam. How Chinese in Batavia make soymilk and tofu (curded with gypsum); use of the pasty residue (*résidu pâteux*) [okara] for feeding to penned poultry, such as chickens and ducks. Further processing of tofu to extend its shelf life.

Note: This is the earliest French-language document seen (June 2013) that uses the term *résidu pâteux* to refer to okara. Preparation of soy sauce. Many uses of tofu in Chinese therapy. Shi-tsih as the founder of the vegetarian diet. Writings of Montigny, the French consul general. Soy bread in diabetic diets. Mr. Desvilles. Soybean trials and

acclimatization in France. Composition of soybeans grown in France.

"From the viewpoint of practical utility, we conclude that the acclimatization of species of the vegetable and animal kingdoms, which was formerly the goal of multiple costly tests, has now lost much of its importance. The ease of communications and the rapidity with which exotic shipments can be made often provide the same results.

"However we must continue to be attentive to failures of acclimatization, for they have much to teach us. One of the most interesting problems of science is that of mutations. The work of the mutationists (*tératologistes*), and especially of Dareste, on the production of artificial anomalies, has led to new proof that the variability of animal organization is much greater than one would be tempted to believe–and this variability extends also to plants... Such research can help elucidate the problem of the origin of races, which has heretofore remained in the deepest obscurity despite the work of savants such as Is. Geoffroy Saint-Hillaire, Darwin, and Quatrefages.

"Thus there is nothing surprising in the transformations manifested in living things which, transplanted from afar, find themselves placed in telluric [terrestrial] and climatological conditions completely different from those of their original habitat. Examples of this transformation multiple with each new day;" they include the opium poppy, rhubarb, some legumes, numerous varieties of bamboo. "What is the reason for these laws of transformation and degeneration that extend over each of the large kingdoms of nature? The problem is posed but has not been seriously addressed.

"As for the soybean (*graine de soya*), we have shown that it undergoes this transformation in a very sensitive manner: in it, the protein molecule progressively gives way to the starch (*amylacée*) molecule. At the heart of the plant organism, a special synthesis is accomplished: its chemical composition is modified in proportions such that it becomes inappropriate for the goal targeted by its cultivation in Europe."

53. Kellogg, John Harvey. 1895. Milk as a food unsuited for the diet of adults: Editorial. *Modern Medicine and Bacteriological Review* (*Battle Creek, Michigan*) 4(5):121-22. May.

• ***Summary:*** "The popular idea that milk is one of the most wholesome and nutritious articles of food for use at all periods of life, is by many facts shown to be an error. Cow's milk is admirably adapted for digestion in the stomach of a calf."

"Kumyzoon is a scientific preparation of milk in which the lactose is replaced by lactic acid... Kumyzoon is manufactured by the Sanitarium Health Food Co., Battle Creek, Michigan, and 28 College Place, Chicago, Illinois. This company is manufacturing kumyzoon according to the formula furnished by the writer, and has it made under the writer's care at the Battle Creek Sanitarium."

Note: This is the earliest document seen (July 2013) that discusses problems with cow's milk as a food for adult humans. Address: M.D., Battle Creek, Michigan.

54. Inouye, M. 1895. The preparation and chemical composition of tofu. *Bulletin of the College of Agriculture, Tokyo Imperial University* 2(4):209-15. Aug. [6 ref. Eng]

• ***Summary:*** One of the best early articles on tofu in Japan. Inouye tried to make a product resembling Swiss cheese with tofu, with moderate success.

"The efforts to prepare an easily digestible food from soya beans led to the preparation of *miso* and *natto*, two kinds of vegetable cheese, which were investigated some time ago in the laboratory of this college. (Footnote: On the preparation of *miso*, by O. Kellner, this Bulletin, Vol. 1, No. 6. On *natto*, by Yabe; Bulletin Vol. 2, No. 2).

"But the most interesting preparation is *tofu*, which consists principally of the protein-matter of the soya bean and which, according to the investigation of Prof. Osawa in Tôkyô, is as easily digestible as beef. This preparation is freshly made every day and sold in the form of tablets [cakes] about 10 c.m. broad, 2 c.m. thick, and 25 c.m. long [4 by 10 by 0.8 inches thick], is of snow-white appearance and of the consistency and taste of freshly precipitated casein of milk, but as there is no trace of bacterial action connected with its preparation, the name vegetable cheese is certainly not justified." A table (p. 211) shows the composition of tofu a determined by *Kellner.*

"*Tofu* is also sold in another form called *kori-dofu* [dried-frozen tofu]. It is prepared by exposing the fresh *tofu* tablets to the action of frost, under which they shrink considerably, lose water, and become more compact. While fresh *tofu* contains, on an average, 89.02% of water, *kori-dofu* contains only 15.32% in the air dry condition. The analysis of *kori-dofu* gave me the following results: Water 15.32%. Albuminoids 41.42%. Fat and lecithin 23.65%. Non-nitrogenous extract 15.05%. Cellulose 1.48%. Ash 3.08%."

Note 1. This is the earliest English-language document seen (April 2013) that uses the term *kori-dofu* to refer to dried-frozen tofu.

The author then describes the tofu manufacturing process, noting that it "is manufactured only on a small scale, by people who sell it in their own shops." "The beans are first soaked for about twelve hours in water and then crushed between two mill-stones until a uniform pulpy mass is obtained. This is then boiled with about three times its quantity of water for about one hour, whereupon it is filtered through cloth. This liquid is white and opaque, exactly like cow's milk; while the smell and taste remind one of fresh malt." "I also analyzed the fresh milky liquid with the following results" for "Soya bean milk" and

cow's milk, respectively (p. 212): Water 92.53% / 86.06%. Albuminoids 3.02% / 4.00%. Fat 2.13% / 3.05% Fibre 0.03% /–. Ash 0.41% / 0.70%. Non-nitrogenous extract, including carbohydrates 1.88% /–. Milk sugar–/ 5.00%.

"The fat contained in this liquid as well as in the *tofu*-tablets was found to consist partly of lecithin. *Tofu* dried at 100º yielded 26.65% fat and 4.83 gr. of this fat yielded, after igniting with carbonate of soda and nitrate of potash in the usual way, 0.280 grm. of magnesium pyrophosphate, which, when multiplied by the lecithin-factor, 7.2703, corresponds to 2.035 grm. lecithin, amounting to 11.2% of dried *tofu,* leaving for the genuine fat 15.4% (Footnote: A portion of this lecithin was probably present in the soya bean as lecithalbumin; comp. Leo Liebermann, J.B. f. Thierchemie, 1893, p. 32, and E. Schulze, *Chemiker Zeitung*, 1894, No. 43); more of the latter, therefore, is left in the refuse than of the former."

Note 2. This is the earliest English-language document seen (March 2001) that contains the word "lecithin" or "lecithalbumin" in connection with soy–in this case tofu.

"In the manufacture of *tofu*-tablets from the freshly prepared milky liquid, about 2% of concentrated brine [natural nigari] as it is obtained as mother liquor from the preparation of sea salt, is added with constant stirring, whereupon a flocculent precipitate is soon formed which is separated by means of a cloth filter, slowly pressed, and then cut into tabular shape. I have tried to arrive at a satisfactory explanation of the nature of *tofu,* and have found that the salt-brine does not act by its chloride of sodium, but by the calcium and magnesium salts which are in it; for we can at once obtain precipitate from the milky liquid if we add a little calcium nitrate or magnesium sulphate, while we can not obtain any separation or precipitation by adding even considerable quantities of sodium chloride or sodium sulphate."

"I have analysed a sample of the salt brine used for *tofu* making and found it to contain, besides chloride of sodium, 27.9% of chloride of magnesium and 7.0% of chloride of calcium."

Footnote 4 (p. 213): "In order to see whether a product similar to Swiss Cheese could be obtained from the crude soya casein or *tofu,* I infected 50 grm. of fresh *tofu* with a small dose of pulverised Swiss cheese, and added ten per cent of common salt to the mixture, pressed it in cloth, and allowed it to stand in a moist beaker glass for several months. The product resembled, only to a limited extent, the cheese from milk, but further experiments with the addition of small quantities of milk sugar are intended."

Note 3. This is the earliest English-language document seen (Aug. 2013) that contains the term "soya bean milk."

Note 4. This is the earliest English-language document seen (Aug. 2013) that contains the word "milky" in connection with soymilk, or that uses the term "milky liquid" to refer to soymilk. It is the second earliest English-language document seen (Aug. 2013) that mentions soymilk, and the earliest that mentions it in connection with Japan. However there is no suggestion that Japanese consume soymilk as a beverage.

Note 5. This is the earliest English-language document seen (March 2009) that uses the term "vegetable cheese" to refer to miso. Address: Nôgaku-shi [Prof. of Agriculture], Japan.

55. Kellogg, John Harvey. 1895. Re: Work with digestion, nuts, and peanut butter. Letter to Ellen G. White, "Norfolk Villa," Granville, N.S.W., Australia, Oct. 10. 6 p. Typed, with signature.

• ***Summary:*** The letter, addressed to "Dear Sister White," states: "I have just finished the MS. for a new edition of Digestion and Dyspepsia. It is really a new book, well illustrated, and I hope will prove helpful to the work. Mrs. Kellogg has also finished the MS. for a small book on Cookery, in which careful attention has been given to the many suggestions which you and others have made with reference to a work for Australia.

"I entirely agree with you in the suggestion that cream and milk should not be too freely used. I think they are even worse than the limited use of butter as a seasoning, as there are so many people who have dilated stomachs and cannot digest them. We make very little use of cream or milk in our family, and use no butter whatever for seasoning, but use nuts instead. I have recently succeeded in making some very excellent preparations from nuts which take the place of butter entirely and are sweeter, more palatable, and more digestible. I find this plan is working very successfully both with the patients and with the helpers at the Dormitory."

Note 1. The preceding paragraph states that Dr. Kellogg was developing various nut butters, but he does not say from what kinds of nuts. However, about 3 months later, on 4 Nov. 1895, he applied for a U.S. patent (No. 567,901) for a "nut-butter" made from peanuts or almonds. This is the earliest document seen (Jan. 2005) concerning the work of John Harvey Kellogg or Seventh-day Adventists with nut butters, and probably with peanut butter.

Note 2. The letter also discusses the Medical Missionary College and its Seventh-day Adventist students: "I cannot describe to you what an encouragement it is to me to see these 40 young men and women devoting their lives to the grand work which the Lord has placed in our hands. I have done my best to inspire them with confidence and courage and to lay before them the importance of thorough consecration to the work." Dr. Kellogg is anxiously awaiting Ellen White's revised manuscript for Christian Temperance.

Note 3. The original letter is in the Ellen G. White Papers, Incoming papers, Ellen G. White Estate, Inc., General Conference of Seventh-day Adventists, 12501 Old Columbia Pike, Silver Spring, Maryland 20904-6600. Address: M.D., Superintendent, Battle Creek Sanitarium,

Battle Creek, Michigan.

56. Prinsen Geerligs, H.C. 1895. Eenige Chineesche voedingsmiddelen uit Sojaboonen bereid [Some Chinese foods made from soybeans]. *Pharmaceutisch Weekblad voor Nederland* 32(33):1-2. Dec. 14. Summarized in Teysmannia (1897) 7:413-15. [5 ref. Dut; eng]

• ***Summary:*** Contents: Introduction. Tofu or bean cheese (*Tao-hoe of boonenkaas*). Chinese soja or Fao-ijoe (boonenolie; soybean oil). Japanese soya (soy sauce; In Japanese: Shoijoe; in Chinese: Sex-sze-ijve). Taucho or bean paste (*Fao toio of boonenbrei*).

In the section on tofu, soymilk is mentioned twice.

Note 1. This is the earliest Dutch-language document seen (April 2013) that uses the term *boonenkaas* (unhyphenated) to refer to tofu.

Note 2. This is the earliest Dutch-language document seen (Aug. 2013) that uses the term *melkachtige, vettige vloeistof* ("milky, fatty liquid") or *gefiltreerde melkachtige vleistof* ("filtered milky liquid") to refer to soymilk.

Note 3. This is the earliest document seen (March 2009) that mentions Indonesian-style miso, which it calls "Fao toio." This would later be spelled tao-tjo, taotjo, tauco, or taucho.

At the end of the section on tofu, the author continues: Another widely used bean preparation is soy sauce (de Soja), of which two kinds exist: the Japanese and the Chinese Soja. The first-mentioned has already been repeatedly described, for example by König (1889, p. 241), further by J.J. Hoffman in his "Contributions to the Knowledge of the Language, Geography, and Ethnology of the Netherlands Indies" (*Bijdragen tot de Taal-, Land- en Volkenkunde van Nederl. Indië;* Vol. V, p. 192), and recently by G. Schlegel in T'oeng pao [T'oung Pao 1894] (Part 5, No. 2) and O. Kellner in *Chemiker Zeitung* (1895, p. 120). While I could not find anything in the literature about the preparation of Chinese soy sauce (*Soja*), I have copied the following from the manufacturers themselves.

Chinese Soja or Fao-ijoe (bean oil). For this, only black varieties of the *Soja hipida* [*sic, hispida*] *humida Beta atrosperma* or *Soja hipida platycarpa Beta melanosperma* have been used. Their seeds are cooked and the water poured off, after which the beans are left in the sun for half a day to dry. Now they are cooled on big trays of woven bamboo out of the sun, then covered with leaves of a *Hibiscus* variety. On the beans there will always appear a type of mold, the *Aspergillus Oryzae* to be precise, which, at least on Java, appears every time again on moist soybeans exposed to the open air, but strangely enough does not appear on other foods. The beans are allowed to stand until the mold sporulates, which can be seen by the green color of the mold threads (hyphae), then they are dried again for some days and then put in a strong salt solution that has been cooled. This mixture is put in the sun for 8 days and afterwards it is boiled. The salt solution is then poured off from the beans and saved. The beans are boiled again and the water is added to the first salt solution. This process is repeated as many times as it takes to extract the residue completely.

The decoction is strained through a fine sieve, boiled again, and the sugar from the areng palm, star anise (not the leaves), and some other herbs (which are available from Chinese druggists as "soya herbs") are added. Finally, this dark brown, pleasantly aromatic liquid is boiled down until salt crystals start to appear on the surface, indicating that the liquid is completely saturated with salt. After cooling, the soy sauce (*soja*) is ready to use. It yields a spice which is used together with all different kinds of foods as a pleasant condiment, and in the Chinese, Javanese, and even the European kitchen on Java it is an irreplaceable ingredient.

Soy sauce is sold in several quality grades, of which the best is a thick sauce with a special aroma. The lesser kinds are thinner and are made by diluting the thick soy sauce with salt water, while in the very low-grade kinds, instead of the pleasantly sweet-tasting palm sugar, the bitter, sour-smelling unassimilated molasses from sugar factories is used.

Note 4. This is the earliest document seen (May 2010) that describes the preparation of a sweet Indonesian-style soy sauce quite similar to *ketjap manis* (which seems to have been first created about 1960), yet the writer does not mention its name.

The Chinese soy sauce appears as a black colored, thick, clear liquid in which sometimes a viscous sediment can be found. When diluted with water it turns turbid or cloudy, but after adding salt this cloudiness disappears. Here is an analysis of one of the most common varieties: Specific gravity 1.254, saccharose and glucose 15.60%, nitrogen containing substances (*stikstofhoudende stof*) soluble in alcohol 4.87%, nitrogen containing substances not soluble in alcohol 2.62%, nitrogen-free substances soluble in alcohol 0.25%, nitrogen-free substances (*stikstofrije stof*) not soluble in alcohol 0.75%, salt 17.11%, other ash components 1.65%, water 57.12%. Total 100%.

The substances insoluble in nitrogen consist (except for peptone) mainly of legumin, which is soluble in strong salt solutions (compare Beilstein, *Handbuch Organische Chemie*, III, p. 1275) and will precipitate when diluted. This protein product (*eiwitstof*) has, by repeated precipitation with alcohol and renewed dilution in water and salt, been cleaned and could be recognized as a legumin. The elementary analyses gave these figures: Carbon 51.6, hydrogen 7.1, nitrogen 15.9.

Furthermore, the dilution in water was precipitated by ammonium sulfate, magnesium sulfate and sodium sulfate and not by a large quantity of sodium chloride.

The nitrogen containing substances soluble in alcohol were leucine, tyrosine and aspartic acid, all breakdown products of legumin, plus a little ammonia. Nitrogen-free extraction substances are almost not present and consist of a little pectin and the black coloring agent from the skin of the

soybeans, which gives the black color to the soya.

Just like Kellner (*Chemiker Zeitung* 1895, p. 121) remarks, the composition of the soya is very similar to the one of meat extract, by which the big importance of this condiment in countries, where mainly vegetable type food is consumed, can be readily explained. Very peculiar moreover is the way in which during the preparation of the soya the heavily digestible protein substances, which are locked into the thick skinned cells of the soya, have been converted into an easily digestible, very delicious food.

One lets the boiled beans mold by means of the *Aspergillus oryzae*, which above all has the quality of changing amylodextrine and starchy substances into sugars followed by carbonic acid and water breakdown. We can say that a microscopic investigation of a molded soybean shows that the mold threads (hyphae) penetrate the cell walls of the complete soybean and partly dissolve them so the contents will be more readily available. When the mold has used up all that food, as shown by its fructification, the beans are put into a strong solution of salt water so that the legumin will dissolve, producing a thick fluid liquid. At the same time, the broken down substances of the legumin will dissolve pepton [peptone], leucine, tyrosine and ammonia, next to the aromatic substance that will start to form in this stage. The continued manipulations, addition of sugar, herbs, etc., are of course of minor importance, but principally the clever way in which the mold is being used to dissolve the cell walls is highly interesting. This, like so many Chinese preparations, is completely empiric and no Chinese would have the slightest notion of what all this molding is about.

This article describes the first attempt to identify the tempeh mold. In the section on Indonesian miso (taucho), the author notes: In a similar way, in Java, other molds are used to make leguminous seeds into more digestible foods. Thus the presscake, which remains after making peanut oil and would be indigestible without further preparation, is subjected to the action of molds. In central and eastern Java *Chlamydomucor Oryzae* [now known as *Amylomyces rouxii*] is used, whereas in western Java an orange mold of the family Oospore (Neurospora) is used. In the former case, the food is called 'bongkrek,' and in the latter 'ontjom.' If soybeans are molded with *Chlamydomucor* the spice is called 'tempets' [sic, tempeh]. In the preparation, the seeds are boiled, spread, mixed with a little molded cake from a former batch, and left alone for a while until the mass is bound into a solid white cake.

All the aforementioned molds have the ability to break starch and pectin substances down into sugars, by which means the cell walls are opened and the seeds made more easy to digest.

In the case of the starch-containing peanut presscakes, the breakdown of starch into sugars, followed by the use of the resulting sugars, proceeds so rapidly that the cakes become warm and within 1 day about 5% of their weight will disappear.

Kagok Tegal 28.9.95.

Note 5. This is the earliest document seen written only in Dutch that mentions Indonesian miso, which it calls *Fao toio* or *boonenbrei*, and *tao tsioe.*

Note 6. This is the earliest document seen stating that Hibiscus leaves are used in Indonesia to make soyfoods–in this case soy sauce.

Note 7. This is the earliest document seen (April 2012) that mentions "bongkrek"–but the explanation is incorrect.

Note 7. This is the earliest document seen (Sept. 2011) that mentions "ontjom." Address: Java, Indonesia.

57. *Times* (*London*). 1896. Agriculture: Crops and live stock. Jan. 13. p. 8, col. 3. [1 ref]

• ***Summary:*** "A vegetable preparation possessing many of the dietetic properties of meat is produced in Japan under the name of 'tofu.' It consists principally of the protein matter of the soya bean, and is said to be as easily digestible as beef. It is freshly made every day, and is sold in thin tablets of snow-white colour, and of the consistency and taste of freshly-precipitated casein of milk. The name 'vegetable cheese,' proposed to be applied to it, is not justifiable, as there is no trace of bacterial action associated with its preparation. Another form, known as 'kori-dofu,' is prepared by exposing the fresh tofu tablets to the action of frost, with the result that they shrink considerably, lose water, and become more compact. Fresh tofu contains, on the average, 89 per cent of water, whilst kori-dofu contains only 15.3 per cent, in air-dry condition. Tofu is manufactured by the people who sell it in their shops. The beans are first soaked for 12 hours in water, and then crushed between two millstones to a uniform pulpy mass. This is boiled for an hour with three times its quantity of water, and is then filtered through cloth. The liquid passes through white and opaque, exactly like cow's milk, whilst the smell and taste is suggestive of fresh malt. Upon standing, very fine particles separate on the surface, and these under the microscope are easily recognizable as small globules of fat. After two or three days there is a strong development of lactic acid, under the influence of which the casein separates exactly as in the souring of milk. Mr. Inouye, of the College of Agriculture at the Imperial University, Tokio, states that in preparing tofu tablets from the fresh milky liquid about 2 per cent of concentrated brine is added with constant stirring; a flocculent precipitate soon forms and is separated by means of a cloth filter, slowly pressed, and cut into tabular shape. In this way about one-fourth of the total quantity of the proteid in soya beans is obtained in the tofu. The brine employed is made from sea water, and it is to the potassium and magnesium salts contained in this that the precipitation of the tofu appears to be due. Wherever rice forms the principal food of man, as in China and Japan, the addition of some other food rich in nitrogenous matters, or proteids, is necessary to make up for the deficiency of

proteids in rice. The people of the sea coast supply this want by the use of marine animals, whilst inland the seeds of various leguminous plants, and notably the soya bean, are employed, as beef and other meats have only recently come into use. Tofu, therefore, may be regarded as a kind of vegetable beef prepared artificially from a plant product, and, when consumed in conjunction with rice, filling the *róle* of a nitrogenous or proteid food in the presence of a larger quantity of a carbonaceous one."

Note: This is the earliest article seen (Dec. 2005) in the *Times* (London) that contains the term "soya bean."

58. Prinsen Geerligs, H.C. 1896. Einige chinesische Sojabohnenpraeparate [Some Chinese soybean preparations]. *Chemiker-Zeitung* 20(9):67-69. Jan. 29. (Exp. Station Record 8:72). [3 ref. Ger]

• ***Summary:*** This is a German translation of the author's 1895 Dutch article, but with two mistakes concerning tempeh corrected. He changed the name of the mold from *Chlamydomucor Oryzae* to *Rhizopus Oryzae* and he changed the name of the product from "tempets" to "tempeh." He added in conclusion that "it was finely sliced and enjoyed, mold and all." But he continued, apparently mistakenly, to refer to tempeh as a Chinese soyfood.

He also improved his description of Chinese-style soybean paste, which he now calls *Tao-tjiung* (*Bohnenbrei*) [*doujiang*], and says has much similarity with the miso of the Japanese (p. 68 R.7).

Note 1. These two articles by Prinsen Geerligs ushered in the era of scientific research on tempeh by European microbiologists and food scientists.

Note 2. This is the earliest document seen (Sept. 2011) that contains the word "tempeh"–spelled with an "h" on the end.

Note 3. It is also the earliest German-language document seen (Sept. 2011) that mentions tempeh, which it calls "tempeh."

Note 4. This is the earliest German-language document seen (Aug. 2013) that uses the term *milchweisse Flüssigkeit* ("milk-white liquid") to refer to soymilk. Address: Java, Indonesia.

59. Kellogg, John H. 1896. Nut butter and nut meal. *Good Health* (*Battle Creek, Michigan*) 31(2):56-57. Feb. [1 ref]

• ***Summary:*** This article by Dr. Kellogg was reprinted from *Modern Medicine.* The most valuable products developed from nuts are nut butter, nut meal, and bromose. Gives ten "special advantages of nut butter over ordinary butter, tallow, lard, cottonseed oil, cocoanut butter, olive oil, suet, cream, and other materials used for shortening foods..." "1. Nut butter is a purely vegetable product, and hence free from the elements of disease which are often found to an extent dangerous to life in animal fats." "Bromose is a combination of nuts with digested starch. It is the vegetable analogue of malted milk and constitutes a perfect food."

"Nut butter, nut meal, and bromose are manufactured and sold at reasonable rates by the Sanitas Food Company, Battle Creek, Michigan." Almonds are mentioned; peanuts are not.

Note 1. This is the earliest document seen (May 2004) that mentions Sanitas Food Company.

Note 2. This is the earliest English-language document seen (Jan. 2005) that contains the term "Nut butter" used without referring to a specific type of nut.

Note 3. This is the earliest English-language document seen (Aug. 2013), that mentions Bromose, a dry non-dairy product resembling malted milk, made from nuts.

Note 4. This is the earliest document seen (Feb. 2005), that mentions a dairy alternative made by Seventh-day Adventists. Address: M.D., editor.

60. **Product Name:** Bromose (Dry Milklike Product Made from Malted Nuts–No Soy).
Manufacturer's Name: Sanitas Nut Food Co. from 1899. Renamed Kellogg Food Company in mid-1906, then Battle Creek Food Co. in the spring of 1921.
Manufacturer's Address: Battle Creek, Michigan.
Date of Introduction: 1896. February.
Ingredients: Mainly peanuts.
New Product–Documentation: Kellogg, John H. 1896. "Nut butter and nut meal." *Good Health* (Battle Creek, Michigan) 31(2):56-57. Feb. "Bromose is a combination of nuts with digested starch. It is the vegetable analogue of malted milk and constitutes a perfect food."

Sanitas Food Co. 1896. "New nut products" (Ad). *Chicago Vegetarian* 1(3):8. Nov. Four products are advertised: 2. Bromose. "Makes fat and blood. This is a product made by malting nuts, and is especially adapted to persons who cannot digest starch."

Ellen Goodell Smith. 1896. *The Fat of the Land and How to Live on it.* Page 195 contains a full-page ad for products made and sold by the Sanitas Food Company (Battle Creek, Michigan) titled "Pure Products of Nuts." These include Bromose.

Schwarz, Richard W. 1970. *John Harvey Kellogg, M.D.* Nashville, Tennessee: Southern Publishing Assoc. "During the decade following the appearance of peanut butter, Dr. Kellogg developed several other food products with a nut base. In 1896 he patented a product labeled 'Bromose,' which he claimed to be a vegetable equivalent of malted milk" (p. 120-21).

61. Trimble, Henry. 1896. Recent literature on the soja bean. *American J. of Pharmacy* 68:309-13. June. [12 ref]

• ***Summary:*** One of the best early reviews of the literature, especially the Japanese and European literature, published in the United States. This paper introduced several new soyfoods (such as *natto* and *kori-dofu*) to the United States

Contents: Introduction. Nutritional composition of the soja bean based on analyses of 5 samples from China, Hungary, France, and Japan. Diastatic enzyme / ferment "present in the soja beans to a greater extent than in many other leguminous seeds (see Güssmann 1890). Composition of etiolated soja shoots [sprouts]. The oil [of the soja bean]. Starch content. Sugar content. Use of soybeans as food in Japan. Miso. Natto. Tofu. Kori-dofu. Introduction of the soja bean to the United States in about 1888. Ability to obtain nitrogen from the air.

Note. This is the earliest English-language document seen (Jan. 2013) that uses the term "etiolated soja shoots" to refer to soy sprouts.

"The immediate excuse for the appearance of this paper is the fact that a number of contributions have recently appeared on the soja bean, notably from the College of Agriculture, Imperial University of Japan."

"The oil may be extracted by pressure or by means of solvents [in the laboratory]; it is said to possess some laxative properties, is of a yellowish brown color, and has a slightly aromatic odor; it is intermediate between the drying and non-drying oils." The following constants, based on Stingl and Morawski (*Chemiker Zeitung,* 1886, p. 140) are given: "Specific gravity at 15ºC: 0.924. Point of solidification: 8-15ºC. Fusing point of the fatty acids: 27-29ºC. Point of solidification of fatty acids: 23-25ºC. Temperature rise: 59ºC. Iodine number: 121.3. Iodine number of the fatty acids: 122. Saponification number: 192.5. Note: Trimble actually got these constants from *J. of the Society of Chemical Industry,* 31 May 1893, p. 453-54, which summarised an Italian-language article by De Negris and Fabris (1891), whose values confirmed those obtained by Stingl and Morawski.

Trimble (p. 311-12) gives a good, detailed description of natto based entirely on Yabe (1894). Parts of his summary perceptive: "Yabe found in this substance four kinds of microbes present, and he believes the chemical decomposition of the proteids to be due to one or more of these microbes... A chemical investigation by the author just mentioned [Yabe] revealed tyrosine, peptone, guanine, leucin and xanthine. The total proteids amounted to considerably more in the *natto,* when allowance is made for moisture, than existed in the original bean, and the artificial product is also considered to be much more digestible."

Concerning tofu and soymilk: "A still more interesting preparation of the soja bean than either of the preceding [miso and natto] is *tofu.* This has been described and investigated by M. Inouye (*Bulletin Imp. College of Agriculture,* Vol. 2, No. 4 [1895]). The beans are first soaked for about twelve hours in water, and then crushed between two millstones until a uniform pulpy mass is obtained. This is then boiled with about three times its weight of water, and filtered through cloth. The liquid filtrate is white and opaque, very closely resembling cow's milk, while the odor and taste remind one of fresh malt. On standing, the liquid becomes sour from the formation of lactic acid, and a coagulation of the casein takes place. The freshly boiled and filtered liquid is coagulated either by the addition of a portion of the sour liquid which has been set aside from a previous lot, or it is treated with about 2 per cent of a concentrated brine, such as is obtained as mother liquor from the preparation of sea salt."

"Somewhere about the year 1888 the soja bean was introduced into the United States. It has been tried in a number of State Experiment Stations, and is gradually working into favor in the Southern States. In Kansas the plant has been found to withstand considerable drought... The plant is valuable for forage or soiling. The beans have been produced in South Carolina to the amount of 10 to 15 bushels per acre. On account of their richness in oil they have been used as a substitute for cotton-seed meal in feeding cattle, with very satisfactory results.

"The plant is believed to have, in common with most leguminosæ, the power of obtaining some of its nitrogen from the air, and hence, of acting as a soil renovator."

Note 1. This is the earliest document seen (Aug. 2013), published in the USA, that contains the word *tofu,* or *kori-dofu* [dried-frozen tofu], or that discusses soymilk.

Note 2. This is the earliest English-language document seen (March 2003), published in the USA, that uses the word "crushed" or one of its cognates (crushing, crushers, etc.) in connection with soybeans.

Note 3. This is the earliest U.S. document seen (Sept. 2002) that mentions the use of a solvent for extracting the oil from soybeans.

Note 4. This is the earliest English-language document seen (March 2008) that contains the term "iodine number" (regardless of hyphenation or capitalization).

Note 5. This is the earliest English-language document seen (March 2008) that contains the word "drying" in connection with soy oil and its iodine number, or that states that soy oil is intermediate between the drying and non-drying oils. Address: USA.

62. Newberry's. 1896. Just received: A large assortment of Health Foods from the Battle Creek Sanitarium (Ad). *Los Angeles Times.* July 21. p. 7.
• ***Summary:*** "Granose Flakes–25¢ package. Whole wheat biscuits–15¢ package. Granola–15¢ package. Aranola–15¢ package. Caromel coffee–15¢ package. And many others including Bromose." Address: 216 and 218 South Spring Street [Los Angeles, California].

63. Kellogg, John Harvey. 1896. Cow's milk a cause of disease: Editorial. *Modern Medicine and Bacteriological Review* (*Battle Creek, Michigan*) 5(9):220-23. Sept.
• ***Summary:*** Contents: Introduction. Milk a natural food for infants, but not for adults. Milk the cause of biliousness. Milk the cause of nervous headache, or migraine. Vegetable

substitutes for milk.

"Cow's milk differs very materially from mother's milk, containing less sugar, more fat, and four times as much casein [protein] as mother's milk. The casein in cow's milk also differs from that in mother's milk in that it forms large, firm, tough curds, whereas those formed in mother's milk are small, soft, and friable, crumbling easily into small particles under the action of the stomach.

"It will thus be seen that that popular notion that since milk is the natural food of infants, cow's milk must be the most wholesome and easily digested of all foods for adults, is without proper foundation. When pure cow's milk is fed to infants, the child not infrequently vomits fragments of decomposing curds, which, having remained many hours in the stomach, are still hard, tough, and leathery. Every nurse is also familiar with the fact that the bowel discharges of children fed upon cow's milk often contain large quantities of tough, undigested curds."

"The writer has become thoroughly convinced that there are few persons who do not suffer sooner or later from the long-continued use of cow's milk."

"Vegetable substitutes for milk.–Some years ago Sir B.W. Richardson, the eminent London physician, prophesied that the time would come when milk, as well as all other forms of animal food, would be derived directly from the vegetable kingdom... The milk of the cocoanut furnishes a satisfactory substitute for cow's milk to the teeming millions of many tropical countries..." Most nuts, when crushed and mixed with water, give a solution "closely resembling milk... By the addition of a proper amount of sugar, preferably levulose or maltose, a very perfect substitute for milk may be produced. Such a preparation may be made from almonds..."

"In the experiments which we have made with nut milk we find it has a delicate, delightful flavor, with a suggestion of its nutty origin, but resembles cow's milk very closely indeed... Added to cow's milk in proper proportion, lac vegetal, or nut cream, prevents the formation of hard curds in the stomach, as when the cow's milk is used alone. This renders it an exceedingly valuable food for infants–vastly superior to any infant's food which has been devised."

"Nuts are unquestionably the vegetable analogue of meat and other animal foods, not only containing all the food elements to be found in animal products, but in finer and more digestible form, more delicately flavored, and wholly free from deleterious elements which abound in meat..."

Note 1. This is the earliest English-language document seen (Feb. 2012) that uses the word "vegetal" to refer to a plant-based or pure vegetarian diet. *Merriam-Webster's Collegiate Dictionary* (1998) defines vegetal (derived from the Middle Latin *vegetare*, meaning to grow), a word first used in English in the 15th century, to mean: "1: vegetable. 2. Vegetative..."

Note 2. This is earliest English-language document seen (Aug. 2013) that contains the term "nut milk" (or "nut milks" or "nut-milk") or the term "nut cream" (or "nut creams" or "nut-cream") or the term "lac vegetal" (or "lac-vegetal"). Address: M.D., Battle Creek, Michigan.

64. Sanitas Food Co. 1896. New nut products (Ad). *Chicago Vegetarian* 1(3):8. Nov.

• ***Summary:*** Four products are advertised: 1. Nuttose. Has "the consistency of cheese, having somewhat the appearance and flavor of cold roast mutton." Prepare like meats. 2. Bromose. "Makes fat and blood. This is a product made by malting nuts, and is especially adapted to persons who cannot digest starch." 3. Nut Butter. "A substitute for ordinary butter, presenting fat in the form of a perfect emulsion; combined with water, forms a delicious cream. Used for shortening of all kinds. A pure product of nuts; can be eaten by those who cannot eat ordinary butter." [Note: This may well be peanut butter.] 4. Nut Cream. "A delicate, delicious nut preparation, which, properly diluted, furnishes a delicately-flavored cream or milk. It resembles milk in appearance." Note: It is probably made from peanuts and/or almonds.

"Send 25 cents in stamps for samples. Circulars free on application."

Note. This is the earliest English-language document seen (Aug. 2013) that contains the term "Nut Cream." Address: 65 Washington St., Battle Creek, Michigan.

65. Newberry's. 1896. Just arrived: Another shipment of Health Foods in today from Battle Creek (Ad). *Los Angeles Times.* Dec. 3. p. 7.

• ***Summary:*** "Bromose, Nuttose, Almond Meal, Granose, Caramel Cereal, Granose Flakes and Avanola." Address: 216 and 218 South Spring Street [Los Angeles, California].

66. **Product Name:** [Dr. Lahmann's Vegetable Milk].
Manufacturer's Name: Lahmann, Dr. Heinrich.
Manufacturer's Address: Dresden, Germany.
Date of Introduction: 1896.
How Stored: Shelf stable.
New Product–Documentation: Ad in Ellen Goodell Smith. 1896. *The Fat of the Land and How to Live on It.* Page 196 contains an ad titled "Pure. Vegetable. Nutritive." by The Hygienic Supply Co. (F. Witte), 203-205 Park Ave., Baltimore, Maryland. They are "Importers of German health goods and books" including Dr. Lahmann's Vegetable Milk (for infants), Dr. Lahmann's Vegetable Extract, and Dr. Lahmann's Nutritive Cocoa.

Lahmann, H. 1901. *Natural Hygiene*. London: Swan Sonnenschein. Dr. Lahmann's Vegetable Milk is discussed in detail (p. 149-60). It is made by Hewel & Veithen in Cologne.

M. Fuerstenberg. 1917. Die Soja (The Soybean). p. 32. The most popular vegetable milk is Dr. Lahmann's Vegetable Milk (*Lahmannsche Vegetabile Milch*), an emulsion made

from almonds and nuts.

Note 1. According to *Vegetarisches Kochbuch mit Gesundheit Regeln,* by Carlotto Schultz (1886), Dr. H. Lahmann of Stuttgart is an authority on the feeding of infants and problems related to indigestion. Note 2. Strittmatter (1915, p. 56) says that H. Lahmann M.D. lives in Munich, Germany.

Note 3. Janet Barkas in *The Vegetable Passion* (1975, p. 100) states that Dr. Heinrich Lahmann was an early, influential vegetarian in Germany. "Lahmann traced many illnesses to an over-reliance on meat and unnatural medications." He was one of the first German physicians to use natural healing methods. He was the author of at least 3 major books, his sanitorium generated much enthusiasm, and, at the turn of the century, he founded a vegetarian society in Dresden.

67. Hoy, Albert Harris. 1896. Eating and drinking: The alkalinity of the blood, the test of food and drink in health and disease. Chicago, Illinois: A.C. McClurg and Co. 304 p. Index. 20 cm.

• ***Summary:*** Saliva contains ptyalin, which converts / digests the starch in food into maltose, a sugar. Saliva is a weakly alkaline fluid; acids inhibit its action. After mastication, food is swallowed and enters the stomach–which is normally free of acid for 30-45 minutes during the process of eating (p. 44-47).

Results of experiments published by Dr. J. von Feder show that the increasing alkalinity of the blood is nature's way of overcoming harmful bacteria. After the blood is infected, its alkalinity suddenly increases (p. 82).

Chapter 6 (p. 222-95) is titled "Food, its effects on the alkalinity of the blood." In discussing the subject of vegetarianism, the questions is always raised: "Is animal food, in some form, absolutely essential for all races of men? The answer must be equivocally, no." Vegetarians are divided into two classes, from hygienic [health] and from ethical considerations. Vegetarians of the first class partake of butter, milks, eggs, and cheese–food which can be procured without taking life. Ethical vegetarians eschew the use of animal fat, substituting in its place vegetable fat, as olive oil, cocoa butter, etc. (p. 234-35). The daily ethical vegetarian diet of a healthy woman from Oct. 27 to Nov. 23 is given; it includes Graham bread, nut butter, nuts, cocoanut butter, bananas, grapes, and gluten pancakes (p. 238-43). "That the proper alkalinity of her blood was maintained was shown by the amphoteric condition [capable of reacting chemically either as an acid or as a base] of her morning urine." Vegetarians have always claimed that meat-eating causes both intemperance [over-consumption of alcohol] and excess thirst (p. 244).

The longer meat has stood after an animal dies, the more acid is generated by uric acid. Cooked meat is "less stimulating than rare. Trainers of fighting dogs recognize this and put their brutes on a raw meat diet before contests" (p. 251).

"An artificial milk, made from sweet almonds, is highly recommended in many cases of febrile diseases or in cases of feeble digestion and assimilation, and often given better results than natural milk." Directions for making it at home are given (p. 262-63).

Soups made by pureeing peas, beans and lentils only are "rich in a substance known as legumin, which is simply a vegetable caseine. This is as nourishing as the caseine of milk..." (p. 271).

Gluten "satisfies, by itself, all that nature demands for prolonged and complete nutrition." "The writer recommends it very highly as a non-acid-making, non-fermenting food, and feels justified in asking physicians to give it a thorough trial" (p. 275, 277).

Note: This is the earliest document seen (Aug. 2004) that discusses, systematically and at length, alkalinity, alkaline vs. acid reaction, or the alkalinity of the blood in relation to human health. Note that the author is an M.D. Address: M.D., 103 State Street, Chicago, Illinois.

68. Kellogg, Ella Ervilla Eaton. 1896. Every-day dishes and every-day work. Battle Creek, Michigan: Modern Medicine Publishing Co. 184 p. Index. 24 cm.

• ***Summary:*** The wife of the famous Dr. John Harvey Kellogg discusses her system of meatless cookery–though the term "vegetarian" is not used. She lived 1852-1920. Contents: Eight pages of ads (for books, foods, and medical instruments/devices). Title page. Cereals (incl. Graham grits, Graham apple mush). Preface. Introduction. Cereals (incl. Graham grits, Graham meal). Macaroni. Fermented or yeast bread (incl. whole-wheat bread, Graham or wheat-meal bread). Unfermented or aerated bread (incl. Graham puffs, Granola gems). Fruit (cooking, canning). The leguminous seeds (incl. peas, beans, lima beans, lentils, cooked peanuts). Vegetables. Soups (incl. without milk, with milk and cream; Bran stock). Eggs (incl. cream). Desserts. Pastry. Cake. Toasts. The Battle Creek Sanitarium Health Food Company's products (discusses and contains recipes using Granola, Granose, Crystal Wheat, gluten {13 recipes}, nut butter and nut meal, Nuttose, zwieback, and caramel cereal, p. 139-52). Hints about every-day work. Every-day bills of fare.

The eight ads on unnumbered pages in the front of the book are for: (1) "Caramel-Cereal. A most delicious substitute for the Coffee Bean, and contains none of its harmful properties... Caramel-Cereal has been used for over twenty years at the Battle Creek Sanitarium, and the demand has increased daily... Try it, and you will always use it... Manufactured by Battle Creek Sanitarium Health Food Co." (2) Battle Creek (Mich.) Sanitarium Health Foods. "Eat Granola, Granose. Drink Caramel-Cereal." (3) Charcoal Tablets: Antiseptic... Absorbent. Sanitas Food Company, Battle Creek. (4) Almond Meal, from Sanitas Food Co. (5)

Lac Vegetal or Nut Cream: Prepared from the choicest nuts. A perfect substitute for cow's milk. Sanitas Food Co. (6) Bromose: Makes fat and blood. "Consists of cereals and nuts in which the starch is completely digested... Unequalled as a tissue builder... Gain in flesh." Sanitas Food Co. (7) The natural abdominal supporter. Modern Medicine Co., Battle Creek. (8) *The Stomach: Its Disorders and How to Cure Them,* by J.H. Kellogg, M.D. Modern Medicine Publishing Co.

A table (p. 7) shows the "nutritive value of some common food substances," including sweet almonds, peanuts, five legumes, milk, and six types of meat and poultry, and eggs. Values/columns are given for: Water, albuminous elements, starch, grape sugar, free fat, salts, cellulose, proportion of carbonaceous to nitrogenous material, total nutritive value.

The chapters on cereals and breads include Graham Grits, Wheat-Meal or Graham Mush, whole-wheat breads, Graham breads, Graham Puffs, etc.–but most breads are made with white flour and milk–and fermented. The chapter on leguminous seeds contains two recipes for blanched and boiled peanuts (p. 76); soy beans are not mentioned. Milk, cream, eggs, and sugar are used in moderation throughout the book. There is an entire chapter titled "Eggs." Desserts are generally sweetened with sugar. Up to 1 cup of sugar is used in some recipes (p. 117), but fruits are often used instead; milk or cream are also widely used in desserts. The chapter on "Pastries" (mostly pies) begins by discussing the dietetic evils of pastries; recipes calls for less fat than typical recipes.

The section on "Nut Butter and Nut Meal" (p. 147-49) notes that these two foods "have been prepared as substitutes for butter and cream," which cause many persons to "suffer from biliousness, nervous and sick-headache, and various forms of indigestion." Ten recipes are given. For example (p. 149): "Nut Butter Sandwiches.–Spread slices of thinly cut graham bread with nut butter, and then with chopped dates or figs..." Note 1. Although "peanut butter" is not mentioned, this is almost certainly a peanut butter sandwich. Yet this book contains no recipe for making peanut butter at home.

The section titled "Nuttose" (p. 149-50) states: "This is a pure product of nuts. It is intended as a substitute for meat, which it completely replaces dietetically, having nearly twice the nutritive value, while it furnishes the same elements and in a form much more digestible, and wholly free from the objectionable features of meat. Nuttose may be prepared and served in the same manner as the various forms of flesh food. It so perfectly resembles meat in appearance and flavor, as well as nutritive properties, that many persons find it difficult to distinguish the difference. 7 recipes are given.

The 1¼ page discussion of Zwieback (p. 151) states: "Any one who has ever made a visit to Carlsbad [Karlsbad or Karlovy Vary in today's Czech Republic] will remember the delicious zwieback which occupies so conspicuous a place in the bill of fare... At Carlsbad, zwieback is made by exposing the sour 'schwartz brodt' to moderate heat for several hours until the starch becomes to dextrin and dextrose. For years the Sanitarium Health Food Company has manufactured for the use of the numerous patrons of the Medical and Surgical Sanitarium, Battle Creek, Mich., a superior quality of zwieback, which is not only more palatable but much more wholesome than the original article of Carlsbad manufacture... With milk or cream it is a real delicacy, as toothsome as it is nourishing and easy of digestion. Zwieback is supplied in three grades as follows:–No. 1. Made of graham flour (Sanitarium brand), containing fifteen per cent. of gluten... For recipes, see pages 145 to 138."

Note 2. This is the earliest document seen (July 2004) that contains the word "zwieback" (pronounced SWEE-bak in English). The word is also spelled like this in German, but with a capital "Z" and pronounced TSVEE-bak. The earliest occurrence of the word seen by *Merriam-Webster's Collegiate Dictionary* is 14 March 1894, *New York Weekly Tribune* (p. 5, col. 4). "These Zweiback will keep for a long time if put in a dry place." Note spelling and capitalization!

The eight ads on unnumbered pages in the back of the book are for: (1) Health Foods–Granola, a health food, an invalid food. From Battle Creek Sanitarium Health Food Co. Established 1876. "One pound more than equals three pounds of best beef." (2) Health Foods–Granose, Granola, Caramel-Cereal, Battle Creek Sanitarium Breakfast Food, Germless Oats, Germless Wheat Grits, Germless Corn Grits, Crystal Wheat, gluten preparations, diabetic foods. Send for a catalogue and price list to Battle Creek Sanitarium Health Food Co. (3) "Almond Butter–A substitute for ordinary butter. Presenting fat in the form of a perfect emulsion. Combined with water it forms a delicious cream. Used for shortening of all kinds. A pure product of nuts; can be eaten by those who cannot eat ordinary butter. Send five cents for sample. From: Sanitas Food Co., Battle Creek. (4) "Nuttose–Pure product of nuts. Perfect substitute for all flesh foods. Makes fat and blood. In their natural state nuts are difficult to digest, and cannot be eaten by many persons... Nuttose has the consistency of cheese, and much the consistency of cold roast mutton, and may be eaten cold, stewed, cooked with vegetables or other foods, made into gravies and other preparations in the same manner as meat..." "Send ten cents for a sample can... Ready to eat at once. Keeps indefinitely." From: Sanitas Food Co., Battle Creek.

(5) *Science in the Kitchen,* by Mrs. E.E. Kellogg. Published by Modern Medicine Publishing Co., 65 Washington St., Battle Creek, Michigan. (6) Universal Mercurial Dynamometer, developed by Dr. Kellogg for testing the strength of individual groups of muscles in the human body. From: Sanitary and Electrical Supply Co., Battle Creek. (7) *Home Hand-Book,* by Dr. J.H. Kellogg. Published by Modern Medicine Publishing Co. Over 1,700 pages and 500+ engravings. Describes the best means of

preserving and regaining health. (8) Perfection vaporizer, from Modern Medicine Co. Address: A.M., author of "Science in the Kitchen," etc., Battle Creek, Michigan.

69. Smith, Ellen Goodell. 1896. The fat of the land and how to live on it. Special chapters on nuts and vegetable oils, and how to use them in cooking; milk; bakeries; feeding infants and various other subjects relating to the problem. Amherst, Massachusetts: Press of Carpenter & Morehouse. 251 + [12] p. Portrait. Illust. Index. 20 cm. At top of title page: "A practical cook and text book for general use."
• ***Summary:*** A remarkable and wholistic vegetarian (actually vegan) cookbook by a medical doctor (M.D.). A photo (frontispiece), facing the title page, shows a portrait of Dr. Ellen Smith. Dedication: "To the millions of thinkers who think in new directions, and to other millions who do not stop to think whether they should 'live to eat' or eat to live' this book is dedicated." Facing the table of contents are three quotations from Buddhist and Christian scriptures on the importance of not killing.

The Preface begins: "This book *is* because of the agitation and discussion upon the various phases of the food question. The title indicates its character to be vegetarian; this word however is a misnomer, but as none better has yet been coined, we will simply state that we are vegetarians because we think nature designed us to subsist on the 'fat of the land,' and not on the flesh and blood of beasts, or of any living, sentient creature."

"To be a health and dietetic reformer in the early days of this movement meant much sacrifice and often personal abuse" (p. 10).

"With no desire to set aside the work of the scientists, we accord 'honor to whom honor is due,' and may success attend their gigantic efforts, that seem to be heroically directed toward healing, protecting, and preparing the animal world and their products for human consumption" (p. 11).

This chapter, after listing many of America's major problems, concludes: "From a vegetarian standpoint, these unhealthful conditions of mind and body are largely propagated, nourished and developed and developed from the never ending supply of slaughtered flesh and its stimulating–not nourishing–accompaniments. The moral and physical health of millions is thus undermined, and from such material is created generation after generation of imperfect human beings;..." (p. 11).

Chapter 5, titled "Milk, cream, butter, etc." begins: "Milk, cream, butter, salt and sugar are admissible in hygienic and vegetarian dietary, but in most of the recipes here given are not included... [but] in all cases salt can be added if desired, or milk substituted for water."

Chapter 6, titled "Vegetable oils," notes: "Those at present extensively used for culinary purposes are obtained from the olive, cocoanut and cotton seed." It is almost impossible to obtain olive oil unadulterated. "The *American Analyst* tells us that 'Two-thirds of the olive oil sold in the markets of the world is born in the cotton fields of the southern states" (p. 57). "At Manheim, Germany, cocoanuts have for many years been made into butter for general culinary use... [It] keeps indefinitely and even when exposed to the air *will not become rancid* like animal fat. This butter is also manufactured in England... It is now manufactured in America by the Pure Food Co., Chicago, Illinois" (p. 58). Chapter 6 concludes prophetically: "One need not be a vegetarian or even a hygienist to use these vegetable oils, for these are thousands of families using them, who also use animal food, finding economy in health and purse by so doing." Note 1. This is the earliest document seen (March 2005) that contains the term "Pure Food," probably in connection with the growing "pure food movement" in the USA

Chapter 10, titled "Nuts, their culture and use in cooking," (p. 141-56) discusses almonds (now largely grown in California), walnuts, pecans, Brazil nuts, and peanuts. Peanut oil is largely exported to foreign countries and doubtless returns, with olive oil, under the name of "Pure Olive Oil." "It is said that America uses 4,000,000 bushels of peanuts yearly at a cost to the consumers of $10,000,000. Very rarely do we find these nuts on the table as an article of food, but they are consumed between meals by everybody, from the shoeless and hatless street waif to the gray-haired millionaire." "Unbelievers tell us that a vegetable diet lacks proteids or tissue building elements, and hence that vegetarians are not properly nourished. Science has demonstrated that proteids are abundant in the grains," nuts, and other foods (p. 148-49). The section titled "Nuts as food" (p. 149-53) begins: "Nuts are not only superior to flesh as an article of diet, but may be used in many forms of cookery, either whole, chopped, grated, crushed or ground into a paste or meal." "The pine nut, sold under the name of pegnolia [pignolia], is an excellent nut for cooking." Two sub-sections are titled "Nut substitute for milk" (using cocoanuts, pecans, peanuts, Brazil nuts, etc.) and "Nut butter" (one of the latest novelties). There are recipes for sandwiches with "almond nut butter," and "Peanut sandwiches" spread with a "form of nut butter which flavors so strongly of peanuts that it will make an excellent substitute for dairy butter to spread the bread and hold the crushed nuts in place." Note 2. This book contains no recipe for making peanut butter at home.

Chapter 11, "Salads," contains a long section titled "Japan Soja" (p. 164) which clearly refers to Japanese soy sauce: "A jar of the extract of Japan soja was received too late for careful testing or experiment. But coming from a German vegetarian laboratory [Dr. Lahmann's] and said to be free from injurious substances, it may prove to be a useful addition to the table. Following is a description of the Soy-bean from which it is made.

'Japan Soja, a substitute for flesh meat extracts such as Bovinine, etc. etc. The soy-bean or pea is a small erect

herb, ("Glycine soja," or "soja hispida") of the bean family, "Papilionacees" of India and China, cultivated for its seeds; composed of 38% proteids, 17 to 20% fat, 5% cellulose [fiber] and 4% ashes. The hygienist loses nothing by declining flesh meat extracts of any sort, but substantially gains by adopting Japan Soja, a safe and far more palatable flavoring for various dishes. It may not only be so employed in the preparation of dishes, prior to serving, but subsequently and similarly to Worcestershire sauce, etc.'

The odor and flavor of this preparation is very delicate and may readily supply a need in the dietary of those who are making a change from an animal to a vegetable diet."

The next (and last) paragraph of Chapter 11 (p. 165) notes that commercial samples of "Bromose and nut butter... manufactured in vegetarian laboratories and guaranteed free from animal fat" were "received at 'the eleventh hour,' too late for critical experiment... Crushed nuts, nut butter and nut meal of home make were used in all preceding recipes containing nuts."

Chapter 12, titled "Condiments and seasonings" (p. 167-71) argues against the use of salt, spices (including pepper, mustard, ginger, etc.), and commercial condiments. "Salt destroys natural flavor and gives its own flavor to all food... Salt also induces unnatural thirst,..." Instead, why not grow and use "sweet herbs" and "aromatic seeds." "Why may not sweet marjoram, sweet basil, rosemary and lavender, lemon verbena, rose and geranium leaves lend their exquisite flavors to our food? Thyme, parsley, sage and mints of various kinds..." Note 3. This general attitude may explain why Japanese soy sauce, a commercial condiment, was not considered a condiment and included in this chapter.

A "Directory" (p. 246) lists 13 sources of "pure food products" including: "Health foods: Dr. J.H. Kellogg, Battle Creek, Michigan. Nut preparations: Sanitas Food Co., Battle Creek, Michigan... Vegetable milk, etc.: Hygienic Supply Co., 203-05 Park avenue, Baltimore, Maryland... Readshaw's Forest Mills Graham Flour (Original) and cereals, Dansville, New York."

A full-page ad (p. 255) describes products made and sold by the Sanitas Food Company (Battle Creek, Michigan) titled "Pure Products of Nuts." These include Bromose, Nuttose, Nut-Butter [probably peanut butter], and Nut-Meal.

A full-page ad (p. 258) is titled "Pure. Vegetable. Nutritive," by The Hygienic Supply Co. (F. Witte), 203-205 Park Ave., Baltimore, Maryland. They are "Importers of German health goods and books" including Dr. Lahmann's Japan Soja, which "Is a pure vegetable extract, which is far superior to Meat Extract. It can be used for making soups, or may be added to other foods in order to make them more appetizing. Price per jar, $1.00." (Note 4. According to *Vegetarisches Kochbuch mit Gesundheit Regeln,* by Carlotto Schultz {1886}, Dr. H. Lahmann of Stuttgart is an authority on the feeding of infants and problems related to indigestion.) Other products imported from Germany by this company include Dr. Lahmann's Vegetable Milk (for infants), Dr. Lahmann's Vegetable Extract, and Dr. Lahmann's Nutritive Cocoa.

Note 5. This is the second earliest English-language document seen (Aug. 2013) that contains the term "Vegetable Milk." This non-soy product is an emulsion made from almonds and nuts.

Page 259 contains an ad for *Health-Culture: A Journal of Practical Hygiene* by The Health-Culture Co., 341 Fifth Ave., New York.

Page 260 contains an ad for *Food, Home and Garden,* a periodical edited by Rev. Henry S. Clubb of the Vegetarian Society of America, 310 Chestnut St., Philadelphia, Pennsylvania.

Note 6. Notice that this book contains no chapter on main dishes or entrees; unleavened Graham bread (made with "entire wheat flour") was considered the best main dish. Very few the many recipes call for the use of dairy products, eggs, animal fats, or honey, and in each case they are optional.

Chapter 13, "Pudding, pastries and cakes," convincingly questions the need for this entire category of foods, but those who *must* have such sweets are encouraged (p. 176-77) to use water instead of milk, vegetable fats instead of animal fats and dairy products, reduce the number of eggs and the amount of sugar used by one-half or more, and gradually eliminate spices and salt.

Chapter 14, "Milk and the cow" makes a strong case for not using these animal products.

A woman cited several times (p. 68, 177) as an authority on foods is Mrs. Emma P. Ewing. Address: M.D., Pansy Park, Dwight, Massachusetts.

70. Kellogg, John Harvey. 1896? Cow's milk a cause of disease (Brochure). Battle Creek, Michigan. 18 p. Undated. 15 cm.

• ***Summary:*** Contents: Introduction. General suspicion of cow's milk. Milk a natural food for infants, but not for adults. Why milk disagrees with adults. Milk the cause of biliousness. Milk the cause of nervous headache, or migraine. A vegetable substitute for milk (Lac Vegetal, or Nut Cream, sterilized in half pound tin cans). Nuts and fruits remain man's natural diet. The advantages of Nut Cream (10 advantages). Directions for use.

Infants who cannot digest cow's milk should "add one part of Nut Cream to six parts of thin gruel made of the Sanitarium Infant Food, or Sanitarium Gluten Meal. Every one who has seen Nut Cream and tasted it, is astonished that so close an imitation of milk could be produced from nuts. It constitutes one of the most useful and interesting products of the many experiments which have been conducted by the Sanitas Food Co. Taken together with Nuttose, nut cheese, and nut butter, Nut Cream completes the list of substitutes for most common animal food substances; namely, meat and

milk and their products."

Note: This brochure was probably published shortly after an article by the same title appeared in *Modern Medicine and Bacteriological Review* (Battle Creek, Michigan) (Sept. 1896, p. 220-23)–because it is longer and more detailed. Address: M.D., Battle Creek, Michigan.

71. Newberry's. 1897. Health, 'Lead in quality and quantity.' We are headquarters for Battle Creek Sanitarium Health Foods. The following is a partial list (Ad). *Los Angeles Times.* March 7. p. 27.

• ***Summary:*** "Granose Flakes–20¢ a package. Arenola–15¢ a package. Granola–15¢ a package. Bromose–50¢ a package. Nuttose–25¢ a can. Zwieback–15¢ a package. Glutin [Gluten] Biscuits–40¢ a package. Glutin Wafers–25¢ a package. Caramel Cereal, a substitute for coffee–15¢ a pound. Whole Wheat Wafers–15¢ a package.

"Just in a large shipment of shredded whole wheat biscuits, from Worcester, Massachusetts, 15¢ a package." Address: 216 and 218 South Spring Street [Los Angeles, California].

72. Kellogg, John H. 1897. Vegetable substitute for milk. *Good Health* (*Battle Creek, Michigan*) 32(4):245. April.

• ***Summary:*** The cocoanut furnishes a satisfactory substitute for cow's milk to millions of people in tropical countries. For the past 20 years, Dr. Kellogg has been searching for a suitable substitute for milk to meet the dietetic requirements of invalids. About 18 months ago he "succeeded in producing a very palatable substitute for milk, which was termed 'Lac Vegetal.'... It can not be offered with confidence as a thoroughly satisfactory substitute for animal milk. Lac vegetal, or nut cream, is made from the choicest nuts, and is thoroughly sterilized. Its composition is such that it constitutes a perfect and symmetrical food." It is made from almonds.

"Lac vegetal, when diluted, has precisely the appearance of cow's milk; and if allowed to stand, a cream will rise upon it.

"In experiments made with nut milk it has been found to have a delicate, delightful flavor, with a suggestion of its nutty origin, but resembles cow's milk very closely indeed. It agrees with the most delicate stomach, and can be taken with perfect impunity by persons who cannot take cow's milk or cream even in the smallest quantities without suffering more or less severely in consequence. Added to cow's milk in proper proportion, lac vegetal, or nut cream, prevents the formation of hard curds in the stomach, as when the cow's milk is used alone. This renders it an exceedingly valuable food for infants,–vastly superior to any infant's food which has been devised." Address: M.D., Battle Creek, Michigan.

73. Langworthy, C.F. 1897. Soy beans as food for man. *Farmers' Bulletin* (*USDA*) No. 58. p. 20-23. July 7. Revised (very slightly) in 1899. [1 ref]

• ***Summary:*** Describes and gives the nutritional composition of various Japanese soyfoods, including natto, miso (white, red, or Swiss), tofu, frozen tofu, yuba, shoyu. Many of his descriptions of soyfoods are based on Trimble (1896).

"Tofu, or bean cheese, is prepared as follows: The beans are soaked in water for about twelve hours, and crushed between millstones until of a uniform consistency. The ground material is then boiled with about three times its bulk of water for about an hour, and filtered through cloth. The filtrate is white and opaque, having somewhat the appearance of milk. It has, however, the taste and smell of malt. This milky liquid, to some extent, resembles cow's milk in composition, as is shown by the following table:" The table, titled "Comparison of the composition of soy-bean milk and cows' milk," shows that the two liquids (soy / cow) have the following composition: Water 92.53% / 86.08%, albuminoids 3.02% / 4.00%, fat 2.13% / 3.05%, etc.

"The protein in soy-bean milk is precipitated by adding the mother liquor obtained in the manufacture of salt from sea water, which contains considerable magnesium chloride. The precipitate is filtered off and formed into cakes with the hands. It is eaten in the fresh state or frozen. In the latter case it loses part of its water."

"Though these soy-bean products are prepared chiefly in Japan and other eastern countries, their manufacture has been attempted to some extent in Switzerland and elsewhere..."

"Bean sausages in considerable variety are prepared in Germany, and formed part of the ration of the German soldier in the Franco-Prussian war. So far as can be learned, these are always made from ordinary varieties of beans and not from soy beans...

"Under the name of coffee beans, soy beans are eaten to some extent in Switzerland as a vegetable, and dried and roasted are also used as a coffee substitute. Their use for this latter purpose is not unknown in America. The attempt has recently been made by certain dealers to place the soy bean on the market as a new substitute for coffee and to sell it under other names at an exorbitant price.

"Bulletin No. 98 of the North Carolina Experiment Station recommends soy beans as a palatable vegetable when prepared as follows: Soak the beans until the skins come off and stir in water until the skins rise to the surface and then remove them. Boil the beans with bacon until soft, season with pepper, salt, and butter, and serve hot. If the beans are green the preliminary soaking may be omitted. No other references to the use of soy beans for human food in the United States have been found."

Note 1. This is the earliest English-language document seen (Aug. 2013) that contains the term "soy-bean milk." It is also the earliest U.S. government document or USDA document seen (Aug. 2013) that uses the term "soy-bean milk" (or any other term containing the word "milk") to refer to soymilk.

Note 2. This is the earliest document seen (Jan. 2005) concerning the work of the USDA with nutrition (or home economics) and soybeans. Address: Office of Experiment Stations, USDA, Washington, DC.

74. *Kokomo Daily Tribune* (*Indiana*). 1897. The latest in butter: Kokomo has a new industry making butter from peanuts. The dairy cow faces a new enemy in the butter markets of the world–a good substitute. Nov. 16. p. 4, col. 3.
• ***Summary:*** "Butter made out of peanuts is a new thing in dairying. Kokomo has a factory that makes butter from peanuts–the real, prime, good old yellow cow butter, to all appearances."

"The manufacturers of this new commodity are Lane Bros., the well known manufacturers of Lane Bros. Cereal Coffee. Their factory on McCann St. has enlarged its borders and is now making peanut butter. Peanut cream is also being made to put in the Cereal Coffee. This is no joke. Lane Bros. are actually making cream and butter at their factory and are making it from peanuts–just common, ordinary 'goobers' grown in Georgia. Of course, only the best quality of nuts are used in the erection of the new fangled butter and the highest grade of 'goobers' only enter into the article.

"The nut being ground as fine as the finest flour and the oil in it makes a sightly, palatable and wholesome article of diet. It is said to be an admirable substitute for real butter and some like it better. It can be colored to suit the eye and resembles the genuine stuff. "Peanut cream is made from peanut butter–the butter being thinned to the required consistency. Both articles are in good and growing demand for table use and if the consumption continues to increase at the present rate the old barn yard cow will have a formidable competitor in the butter markets of the world.

"The little peanut may in time relegate the old brindle cow to the rear just as the horse is being displaced by the electric car and the horseless carriage."

Note 1. This is the 2nd earliest English-language document seen (May 2005) that contains the term "peanut butter."

Note 2. This is the 2nd earliest document seen (May 2005) worldwide that describes commercial production of peanut butter or peanut cream. This and later documents indicate that Lane Brothers began commercial production of peanut butter in late 1897, definitely by Nov. 16.

Note 3. This is the earliest English-language document seen (Aug. 2013) that contains the term "Peanut cream" which is used to refer to thick peanut milk.

Talk with Bonnie Van Kley, Curator of Archives, Howard County Historical Society, Kokomo, Indiana. 2004. Jan. 13. Bonnie found this important article by consulting a librarian (in the Kokomo Public Library, local history services room), who had an old, obscure index that contained a card citing this article.

75. Kellogg, John Harvey. 1897. Nuts for diabetics: Editorial. *Modern Medicine and Bacteriological Review* (*Battle Creek, Michigan*) 6(11):274-77. Nov.
• ***Summary:*** "In view of the high nutrient value of nuts, it is astonishing that they have heretofore been so little employed as a source of food by civilized nations." The ancient Arcadians in Italy used chestnuts. The Indians of California used pine-nuts. The cocoanut furnishes food for vast multitudes of people in the Pacific islands and tropical countries. The hickory-nut, the walnut, and the butternut are also valuable foods. In "their natural condition [raw] they are somewhat difficult of digestion, and so have been altogether excluded from diet lists... Even peanuts, which are perhaps the most refractory to digestion of all nuts, may be so prepared as to be acceptable to the most delicate and sensitive stomach.

The especial characteristics of nuts, from a dietetic standpoint, are the almost entire absence of starch and allied substances, and an abundance of proteids and fats... This fact is well shown by the accompanying table." It gives values for the walnut, hazelnut, sweet almonds, peanuts, and cocoanut." Most contain a much larger proportion of proteids than beefsteak.

"Some extensive experiments have recently been made in Germany for the purpose of determining the food value of the peanut. The material used is what is known as the 'oil-cake,' a residue of the oil industry. Some thousands of tons are annually imported to Germany for the purpose of making salad oil, a large portion of which is sold in this country as olive-oil." More than 25 factories in Germany are engaged in this process.

"Within the last few years the writer has made many experiments with nut products of various sorts in diabetes and other disorders, and has found the following preparations extremely valuable:-

"1. Nuttose.–This is a thoroughly cooked and sterilized product of nuts, chiefly peanuts. Nuttose is made into the form of a cheesey mass which readily dissolves in the digestive fluids, the nuts having been first completely disintegrated and then thoroughly cooked" [steamed or blanched].

"2. Nut meals of various sorts.–These are chiefly almond meal and nut meal, the latter consisting of an admixture of nuts." They can be added to cakes, soups, etc. or used for shortening pie crusts.

"3. A sterilized nut butter.–This preparation consists of a combination of nuts which have been first thoroughly blanched, then completely disintegrated by conversion into a paste, and finally cooked at a temperature which secures complete sterilization. This product is an excellent substitute for butter and shortening of all kinds. When mixed with water it makes a very delicious nut cream or milk, and is very readily assimilable.

"Fürbringer's examination of the fecal matters of

persons fed upon nuts shows that roasted peanuts in their ordinary form are practically indigestible, coarse particles being found in about the same condition as when swallowed. When reduced to a paste, roasted peanuts are much more digestible, but, for perfect digestibility, the nut needs to be subjected to long cooking at a lower temperature than that employed for roasting.

"Luedtke has shown that the proteids of the peanut are much more easily digestible than those of beans, peas, lentils, etc..." Address: M.D., Battle Creek, Michigan.

76. Trimble, Henry. 1897. The soy bean. *American J. of Pharmacy* 69:584-93. Nov. [11 ref]
• ***Summary:*** Much of this material is derived from Williams and Langworthy (1897). Illustrations (p. 585, from Williams, p. 5) show: (a) flowering branch of a soy bean plant (reduced 2/3), (b) one of the flowers (enlarged), (c) pods of a soy bean plant (reduced 2/3).

One table (p. 588) shows the chemical composition of various kinds of forage made from the soy bean (fresh or air-dry substance, or water-free substance): Fodder (early bloom to early seed), soy-bean hay, straw, straw (hulls and vines after threshing), soy-bean seed, soy-bean meal (18.9% / 21.0% fat), soy-bean ensilage, corn and soy-bean ensilage, millet and soy bean ensilage.

Another table (p. 591) shows the composition of the following "Soy-bean food products": Fresh tofu, frozen tofu, natto, yuba, white miso, red miso, Swiss miso, and two types of shoyu. For each is given the percentage of water, protein, fat, nitrogen-free extract, fiber, and ash [minerals].

Note: This is the earliest English-language document seen (Sept. 2011) that contains the term "soy-bean food" or "soy-bean food products." It is also the earliest document seen (Sept. 2011) concerning the etymology of the word "soyfoods." Address: USA.

77. Angell, Stephen H. 1897. Soya as food and fodder. *Consular Reports* [*USA*] 55(207):551-52. Dec. [2 ref. Eng]
• ***Summary:*** A remarkable article about all aspects of soybeans and soyfoods. It begins: "The following is a translation from an article by M. Henri Fortune, the well-known French agriculturist. 'There exists a plant extensively cultivated throughout China, Japan, Cochin China, and Tonquin, of which the culture on clay and flinty clay lands would be an excellent experiment for agriculturists and persons interested in the progress of agriculture. This plant acclimatizes perfectly in Belgium.

"'It is employed in the above countries as a food and for divers other purposes. Transformed by cooking into a pulp, which is mixed with salt and rice, we obtain the 'miso,' which constitutes the regulation breakfast of the Japanese. I have eaten this preparation in Yedo [Edo, Tokyo] in 1892, and I found it excellent in taste and very nourishing.

"'Mixed with barley, fermented with water and pressed, this product yields a sirup known as the "soya," which is, so to speak, the unique sauce for all and every Japanese dish, and is employed in such large quantities that the works in the town of Nagasaki have a yearly production of 2,000 tons. The soya also yields a very superior quality of oil, which advantageously replaces olive oil.'"

"'The bread made from the flour of the soya is as good as cake without sugar, and is very appetizing, and is not to be compared with gluten bread, which constipates.'" Fortune believes that 'soya bread is twice as nourishing as wheaten bread, five times as poor in starch, and ten times as rich in fatty materials, and, once its qualities are fully known, the soya may be pronounced the bread of the future.' He recommends the use of soya in bread and biscuits for diabetic diets.

"'In China, the soya replaces milk, which the Chinese do not drink at all. To make this milk, the grain must be crushed, put in a sieve, water slowly poured over it, and a product obtained having all the qualities of milk.

"'The cheese made from soya is delicious. The grain is softened in water and pounded in a mortar. The pulp compressed in a cloth gives two parts; that which is hard is used to feed poultry, etc., and the other, which passes through the cloth, is albumen, and is put on the fire, the curds separated with the aid of rennet, and, when coagulated, a little salt is added.'"

Of green vegetable soybeans he writes: "'We have a project in hand to call together the principal Paris restaurant keepers this winter, to allow them to partake of this new vegetable, which will advertise it throughout the world under the patronage of such substantial connoisseurs.

"'In a few years hence, one will buy soya at the grocers, as to-day one buys beans. It is an excellent substitute for hay, and keeps horses in good condition, and cows, when fed on it, will yield at least 20 per cent more milk daily than when fed on ordinary hay.

"'The soya produces per hectare (2.471 acres) from 2,500 to 3,000 kilograms (5,512 to 6,614 pounds) of seed, especially if phosphate fertilizers are sufficiently employed.'"

Note: This is the earliest document seen (Feb. 2001) concerning soybeans in Belgium, or the cultivation of soybeans in Belgium. This document contains the earliest date seen for soybeans in Belgium, or the cultivation of soybeans in Belgium (Dec. 1897). The source of these soybeans is unknown. Address: Commercial Agent, Roubaix, France July 13, 1897.

78. Sanitas Nut Food Co., Ltd. 1897. Eat Bromose, Maltol, Malted Nuts (Ad). *Gospel of Health* (*Battle Creek, Michigan; Seventh-day Adventist*) 1(11):2. Dec.
• ***Summary:*** A ½-page ad. "Are you thin? Would you like to get fat? 'Laugh and grow fat' is an old adage which may have in it a grain of truth, but thousands of scrawny

individuals will testify that something more than laughter is necessary to produce plump, rosy cheeks and a rotund figure. Fat- and blood-making foods are necessary. We have three new foods, all produced from nuts, which make fat faster than any other food remedies known. Send for brochure 'How to Get Fat,' for circulars; and if you wish a sample of foods, enclose ten cents." Address: Battle Creek. Michigan.

79. Kellogg, Ella Ervilla (Eaton) (Mrs.). 1897. Every-day dishes and every-day work. Battle Creek, Michigan: Modern Medicine Publishing Co. 184 p. Index. 22 cm. [2 ref]
• ***Summary:*** The text of this book is identical to that of the 1896 edition, and on the same pages. However the order and location of the ads are different.

The eight ads on unnumbered pages in the front of the book are for: (1) *Science in the Kitchen,* by Mrs. E.E. Kellogg. Published by Modern Medicine Publishing Co., 65 Washington St., Battle Creek, Michigan. (2) Universal Mercurial Dynamometer, developed by Dr. Kellogg for testing the strength of individual groups of muscles in the human body. From: Sanitary and Electrical Supply Co., Battle Creek. (3) *Home Hand-Book,* by Dr. J.H. Kellogg. Published by Modern Medicine Publishing Co. Over 1,700 pages and 500+ engravings. Describes the best means of preserving and regaining health. (4) Perfection vaporizer, from Modern Medicine Co. (5) Health Foods–Granola–a health food, an invalid food. From Battle Creek Sanitarium Health Food Co. (6) Health Foods–Granose, Granola, Caramel-Cereal, Battle Creek Sanitarium Breakfast Food, Germless Oats, Germless Wheat Grits, Germless Corn Grits, Crystal Wheat, gluten preparations, diabetic foods. Send for a catalogue and price list to Battle Creek Sanitarium Health Food Co. (7) "Almond Butter–A substitute for ordinary butter. Presenting fat in the form of a perfect emulsion. Combined with water it forms a delicious cream. Used for shortening of all kinds. A pure product of nuts; can be eaten by those who cannot eat ordinary butter. Send five cents for sample. From: Sanitas Food Co., Battle Creek. (8) "Nuttose–Pure product of nuts. Perfect substitute for all flesh foods. Makes fat and blood. In their natural state nuts are difficult to digest, and cannot be eaten by many persons... Nuttose has the consistency of cheese, and much the consistency of cold roast mutton, and may be eaten cold, stewed, cooked with vegetables or other foods, made into gravies and other preparations in the same manner as meat..." "Send ten cents for a sample can... Ready to eat at once. Keeps indefinitely." From: Sanitas Food Co., Battle Creek.

The last 8 unnumbered pages of the book contain more ads. Foods from Sanitas Food Co. in Battle Creek include: Almond Meal, Lac Vegetal or Nut Cream ("Prepared from the choicest nuts. A perfect substitute for cow's milk. Added to cow's milk, it increases its digestibility. Especially valuable for invalids and infants"), and Bromose ("Consists of nuts and cereals, in which the starch is perfectly digested... It is the most easily digested and most fattening of all foods.").

Other terms *not* seen in this book: Bran, roughage, dietary fiber, or fiber (but cellulose is mentioned in a table on p. 7).

A slightly enlarged edition (186 p.) of this book was published in 1898, and another in 1900 (copyright 1896). Address: Battle Creek, Michigan.

80. Newberry's. 1898. 'Lead in quality and quantity.' Battle Creek Health Foods are the best pure foods in the world (Ad). *Los Angeles Times.* Feb. 2. p. 7.
• ***Summary:*** "Granose Flakes–1-lb package 20¢. Granose Biscuits–1-lb package 20¢. Avanola–2 packages 15¢. Wheat Gluten–15¢ a package. Wheat Granola–2 packages 25¢. Zwieback–2 packages 25¢. Ralston Breakfast Food–2 packages 25¢. Selected Bran–4-lb package 10¢. Malted Nuts–1-lb package 65¢. Maltol–1-lb package 55¢. Bromose–1-lb package 50¢. Gluten Farina–3 packages 25¢. Caramel Cereal a fragrant and palatable drink, as a substitute for coffee–2 packages 25¢.

"The Hotel Green of Pasadena and San Gabriel Pulmonary Sanatarium are supplying their patrons with the famous Glen Rock Water." Note: An early record of selling bottled water. Address: 216 and 218 South Spring Street [Los Angeles, California]. Phone: Main 26.

81. Sanitas Nut Food Co., Ltd. 1898. Twentieth century foods (Ad). *Gospel of Health* (*Battle Creek, Michigan; Seventh-day Adventist*) 2(5):106. May.
• ***Summary:*** A ½-page ad. The company makes the following foods: Ambrosia. Bromose. Nuttose. Nut Butter. Malted Nuts. Maltol. Address: A 25, Battle Creek. Michigan.

82. *Good Health* (*Battle Creek, Michigan*). 1898. The medical opinion of the Battle Creek Sanitarium Health Food Company's products. 33(6):391. June.
• ***Summary:*** The London *Lancet* is one of the leading medical publications of the world. It is recognized as an eminent authority in all parts of the civilized globe. A recent issue contains the following reference to the foods manufactured by the Battle Creek Sanitarium Health Food Company and the Sanitas Nut Food Company: -

"'There are some novel and interesting dietetic preparations in the list of this company. They consist chiefly of food prepared from cereals and from nuts.

"'Granose Flakes,' for example consists of light brown flakes resembling potato chips, which on analysis present the composition of wheaten flour of superior quality–that is, flour in which all the essential food constituents are retained. The nitrogen amounted to 2.14 per cent., which is equivalent to a total of 13.37 per cent. albuminoids. The moisture amounted to 12.02 per cent., and the mineral matter to 2.09 per cent. The microscope showed the presence of starch

granules highly distorted by cooking, probably by steam. The preparation is undoubtedly nutritious, not merely on account of its composition, but also because the constituents are prepared for the digestive process.

"'Nuttose' is an oily compound prepared from nuts. The fat is in a finely divided state, amounting to an emulsified condition, while the carbohydrates and nitrogenous matter are previously treated so as to render them easy of digestion.'"

Bromose and Caramel Cereal (an alternative to coffee) are also discussed.

83. Dujardin-Beaumetz, Prof. 1898. The soya bean: A vegetarian treasure. *Vegetarian* (*The*) (*London*). July 23. p. 468.

• ***Summary:*** From *Health News:* The Soja, or Soya bean, is the Japanese bean (*Glycine soja*), cultivated in certain countries of Europe, and more particularly in Hungary, since 1875. This bean, which contains extremely little starch, and has been employed in the dietetic treatment of diabetes by Lecerf, contains a very large amount of albuminoid matter (flesh formers); and, on referring to the different analyses published by Steuff [Steuf], Capan, Pellet, and Muntz, we find the following percentage of alimentary principles contained in the bean:–Albuminoid matter, 36.67 per cent.; fatty matter, 17.60 per cent. If this analysis is compared with that of meat, the Japanese bean has a decided advantage over beef.

"From an alimentary point of view, the soya bean serves several uses. A sauce is made from it, which bears the name of *stiso* [*miso?*] and *soju* [shoyu], but the most curious and interesting point in the application of soja to dietetics, is a kind of cheese made from it–it is the *pea or bean cheese* [tofu], very much prized in Japan.

"In Europe, the soya bean has been utilized as the food of men and animals, and in the last few years the attempt has been made to make bread of it, which is a matter of considerable difficulty, by reason of the large proportion of oil which this bean contains. This oil, as Leon Petit has shown, is very purgative, and might replace castor oil in medical practice. Hence it becomes a necessary to rid the meal of this oil, in order to render it fit for domestic use. Lecerf, in Paris, and Bourdin, in Rheims, have succeeded in rendering the bread made from this meal very well borne by the stomach.

"Here, then we have a bean which is more nutritive than meat, and which serves for nourishment to a great country like Japan, under the different forms of sauce, of cheese, of farina, and even of an artificial milk. The advantage which the Vegetarian dietary may derive from such a food is evident." Address: Physician to the Cochin Hospital, Paris.

84. Kellogg, John Harvey. 1898. Re: Medical missionary work, use of the tongue in diagnosis, and work with nuts. Letter to Ellen G. White, "Sunnyside," Cooranbong, N.S.W., Australia, July 29. 5 p. Typed, with signature.

• ***Summary:*** The letter, written on ornate Battle Creek Sanitarium letterhead (illustrations show two views of the "San") and addressed to "Dear Sister White," begins with a discussion of Dr. Kellogg's views of the importance of medical missionary work by the General Conference and its president Eld. [Elder] Irwin who is "a thorough-going health reformer. At the college View Conference last year he showed me his tongue. It was thickly coated, about the worst looking tongue I ever saw. He complained of constant pressure and headache, and was laboring under great difficulties. I called his attention to the fact that he was using milk and cream. I advised that he discontinue them and take a diet of fruits, grains, and nuts as a source of fat and albumen, and take once in a while a meal of fruit only. He adopted this plan with most excellent results.

"We have continued our experiments with nuts until now we are able to dispense with butter, milk, and cream altogether. In our Health Food department, we no longer use any animal fat of any kind but shorten our crackers, rolls, etc. with nuts and with such excellent success every one pronounces them more palatable and excellent in every way. I feel more thankful than I can say that we are at last delivered from the Beast entirely in diet at any rate."

Note 1. The preceding paragraph suggests that Dr. Kellogg was developing peanut butter, peanut milk, and peanut cream. If so, this is the earliest 2nd document seen (Aug. 2013) that refers to peanut milk.

Note 2. The letterhead states that the medical staff at the Sanitarium and hospital includes: J.H. Kellogg, M.D.; Kate Lindsay, M.D.; Lou C. Cleveland, M.D.; David Paulson, M.D.; Ruth O. Bryant, M.D.; D.H. Kress, M.D.; G.H. Heald, M.D.; Lauretta Kress, M.D. Abbie M. Winegar, M.D.; Howard F. Rand, M.D.; C.E. Stewart, M.D.

Note 3. The original letter is in the Ellen G. White Papers, Incoming papers, Ellen G. White Estate, Inc., General Conference of Seventh-day Adventists, 12501 Old Columbia Pike, Silver Spring, Maryland 20904-6600. Address: M.D., Superintendent, Battle Creek Sanitarium, Battle Creek, Michigan. Phone: Nos. 135, 45, 188.

85. *Kokomo Dispatch* (*Indiana*). 1898. Bucking the cow: Butter from peanuts and how it is manufactured. A Kokomo product growing in demand–locks horns with the farm cow in many markets. Nov. 12. p. 2, col. 3.

• ***Summary:*** "Out on Courtland avenue, near the Palmer school-house, stands a curious little factory. It is a modest frame edifice of one story, architecturally speaking, but it has another story but little known even in the immediate neighborhood of its location. This factory is engaged in the manufacture of butter from peanuts, a rather queer procedure one might say, but nevertheless a real, genuine occupation, started up in opposition to the saffron Jersey "sookey"

[sookie, used as a call to cows] of the farm barn. The little peanut butter factory stands just across the street from a large dairy barn, which location gives evidence that the 'goober' is bearding the lion in its den [boldly confronting, opposing, and defying a powerful opponent].

"The butter made from peanuts is hairless. Like Samson shorn of his locks, the peanut butter does not attain the prodigious strength that the product of the cow is capable of, especially of the kind that frequents cheap boarding houses and depot restaurants of neighboring towns.

"The proprietor of this new industry is George B. Lane (formerly Lane Brothers), and he is doing a thriving business. The process of manufacture is simple, but interesting. Nearly a year ago Mr. Lane began in a small way to convert peanuts into butter, using Georgia and Virginia nuts, but he soon discovered that the American grown 'goobers' did not fit the bill. He now uses the Spanish nuts grown at the Philippines, Cuba, and Porto Rico.

"At the present cost of the tropical bean the butter is made and sold at fifteen cents per pound, and if these islands become American possessions the butter will be less expensive.

"Mr. Lane makes no secret of his process, and anybody who has the machinery and understands the business can make the butter. The hulled peanuts are carefully hand-picked to remove all the imperfect grains, after which the nuts are put into a baker's rotary oven and roasted to a rich brown color. After roasting the nuts are again gone over by hand to rid them of scorched and faulty ones. They are then put into a hopper and ground to the finest of flower. The product comes from the mill looking very much like putty, the natural oil of the nut giving it that consistency. This completes that manufacture, nothing being added, not even salt. It goes into the mill a peanut and comes out butter. It never goes rancid, keeps in any climate and does not stale with age.

"The butter is put up [packed] in one, two, five, ten, twenty-five and 100-pound cans and sealed. It is used for every purpose cow butter is used and is said to be an excellent substitute for the output of the cow. Rich 'Jersey' cream is also made by reducing the butter with pure water. Sky-blue milk, if wanted, will appear through the liberal application of water in the reducing process.

"The peanut butter is in great demand at health resorts and sanitariums throughout the country. It also finds favor with camping parties. Mr. Lane recently filled large orders for the annual camp meeting of the Indiana Baptists at Logansport and Rushville, and had the Spanish war lasted a little longer the butter probably would have been in use in feeding the United States soldiers–a ration the boys would have appreciated, as no butter of any kind was issued to them. The new butter is very pleasant to the taste, and physicians say it is more healthful than that produced by the cow.

"Mr. Lane also manufactures Lane Bros.' cereal, graham crackers and other health foods, having quite a large trade in Indiana and adjoining states."

Note: Mr. Lane roasts his peanuts, whereas his mentor, Dr. Kellogg, at Battle Creek, Michigan, did not.

86. Trabut, Louis. 1898. Le soja [The soybean]. *Algerie, Service Botanique, Informations Agricoles. Bulletin* No. 16. 7 p. [7 ref. Fre]

• ***Summary:*** The author, who demonstrates a good knowledge of American and European publications on the soybean, has cultivated soybean varieties at Alger (Algiers) and Rouïba since 1896. The soybean resists dryness well. "Soya (*le Soja*) has remained a curiosity and is not well known among agriculturists. This is explained by the large diversity of soybean races having very different needs, and also by their very varied aptitudes and uses. This is not astonishing, for soya is cultivated in the country of its origin in both temperate and tropical zones, and is used for the feeding of animals, which eat it in the form of grain, hay, and green forage. It plays a major role in the human diet, providing abundant nutrition in the form of sauce, vegetable milk (*lait végétal*) or cheese [tofu], oil, flour, and bread. Soya completes rice, which is lacking in nitrogen. It is very widely used, furnishing, at a low price, a food which replaces meat or fish." Note 1. This is the earliest French-language document seen (Aug. 2013) that uses the term *lait végétal* to refer to soymilk.

"We have made the mistake of presenting soya as a rival to the haricot bean: the comparison turned out to be advantageous for the latter legume (haricot) and soya was rejected.

"In Algeria we think that, for the moment, soya must be looked at primarily as a forage plant. Very remarkable for its richness in nitrogenous materials and fat, it can be very useful in the feeding of animals, for fattening and for the production of dairy milk. Its role in the human diet is less evident, however the indigenous people might find a precious resource in this legume. The soya would perfectly complement 'bechna' [probably a local grain] and barley, which are used to make a flat cake which, is too low in nitrogenous materials."

"At this station the maximum yield has been obtained from a large yellow soybean obtained directly from China. On an area of 10 ares (1,000 square meters or 0.1 hectare) the yield has been 30 tonnes/ha of green forage giving about 70 quintals (7,000 kg) of dry forage." Note 2. This is the earliest document seen (Jan. 2001) that uses the word "quintals" (or quintal") in connection with soybeans. Note: 1 quintal = 100 kg.

"The yield of the seed had been high enough that cultivation of soybeans can be considered profitable. The early varieties have given the following yields in kg/hectare at the Rouïba Station in 1896/1897: Chocolate dwarf 1370

(not watered)/1735 (watered). Compact green 2980/1735. Yellow early 2500/1785. The spring of 1896 was very rainy, while the spring of 1897 was very dry and it was necessary to water the crop.

On page 7 is a brief description of miso, shoyu, and tofu (made by coagulation of soymilk).

Concerning nodulation: Until this year, the numerous varieties of soya which I have cultivated at the station did not show any trace of nodulation on the roots; it is therefore evident that in our soils the special microbe which determines these nodules or tumors is not present. In Jan. 1897 I contacted Prof. Kirchner (at the School of Agriculture at Hohenheim), who is especially interested in the rhizobium of soya, and I asked him to send me several nodules in order to allow me to introduce to the soya crops here the microbe which assimilates atmospheric nitrogen.

All the pots that were inoculated produced soybeans whose roots were covered with nodules the size of peas. It was not formerly possible to appreciate the influence of the nodules on the development of the plant. Field trials concerning this point will be made during 1898.

An illustration (non-original, p. 2) shows a soybean plant (from an original in Carrière 1880). Address: Algeria.

87. White, Ellen G. 1899. Re: Work with health foods, including peanuts. Attitude toward nuts (1868-1876). Letter to John Harvey Kellogg, M.D., Superintendent, Battle Creek Sanitarium, Battle Creek, Michigan, April 17. 1 p. Typed, without signature.

• ***Summary:*** "As yet we have received only two hundred fifty pounds from the Echo office. Special direction was given in regard to the manufacturing of health foods, but lately we have not had money to invest in peanuts for our own family. We eat no meat or butter, and use very little milk in cooking. There is no fresh fruit in this season. We have a good yield of tomatoes, but our family think much of the nuts prepared in a variety of ways. For many months my food has been uncooked tomatoes and bread."

Note 1. This is the earliest use of the word "peanuts" see in the collected papers of Ellen G. White, co-founder of the Seventh-day Adventist church. The full text of all her letters and diary entries has been computerized and this fact is the result of a search conducted by the Ellen G. White Estate. This letter is cited as follows: Lt 73, 1899. The original letter is in the Ellen G. White Papers, Ellen G. White Estate, Inc., General Conference of Seventh-day Adventists, 12501 Old Columbia Pike, Silver Spring, Maryland 20904-6600.

Note 2. Ellen White's attitude toward nuts seems to have changed over the years. She first uses the word "nuts" in a letter to James Edson White [her eldest child/son; Willie was her youngest son] dated 27 Feb. 1868. "I have frequently asked myself what you could have done with so much money. Edson, I am answered in a dream, you are not a health reformer in principle. You do not live up to the light God has given and while you neglect one ray of light that the Lord has graciously permitted to shine upon your pathway, you will be in darkness. When you boarded yourself, did you not spend money for nuts, candies, and hurtful things and eat these between meals and at any time? I concluded that your frequent headaches were caused by the indulgence of your appetite. You gratified the taste to the injury of the stomach..." (Letter 5)

Again in July 1874, in an undated letter to Brother and Sister Abbey, she states: "You have fostered a perverted appetite by indulgence. You have allowed her to eat between meals, to fill her pockets with nuts and crackers, and to have the third meal, eating sometimes late at night. How can you expect her to have a healthy relish for coarse and healthful food? I understand her father has bought Lillie white baker's bread to tempt her delicate appetite, and at night she has eaten this baker's bread and butter in the cellar with Nellie Matthews. Is this in accordance with the principles of a health institute?" (Letter 65).

Again on 12 June 1876, in a manuscript, Ellen White states: "We were pained to hear the mothers' fretful chiding, as they sought to hold in check the outbursts of temper exhibited by the children. But these mothers did not control themselves; how then could they expect their children, with their perverted habits, to have tranquil tempers. Both parents and children ate at irregular intervals all through the day, after eating heartily three times a day. The boy on the cars who sold cakes, candies, nuts, and fruit was freely patronized by the indulgent parents." Address: "Sunnyside," Cooranbong, New South Wales, Australia.

88. Sanitas Nut Food Co., Ltd. 1899. The Dujardin-Beaumetz antiseptic dietary (Ad). *Modern Medicine* (*Battle Creek, Michigan*) 8(6):Ad at rear of issue. June.

• ***Summary:*** A full-page ad on page 8 of the "Advertisements" section at rear of issue. "It is universally recognized by European physicians as essential to the successful treatment of Disorders of the Stomach and Liver. This dietary excludes flesh, fish, and shell-fish of all kinds. The chief difficulty in enforcing the non-flesh regimen is the lack of a suitable variety of foods rich in proteids in the ordinary bill of fare.

"The Sanitas Nut Food Co. has discovered how to make all sorts of delicious meat dishes from nuts, by newly discovered processes, which have proved so successful that thousands of invalids are already daily regaling themselves with the most delicate and tasty meat 'stews,' 'roasts,' 'potted meats,' meat 'soups,' 'broths,' and other savory and blood-enriching viands, without the slightest fear of 'hepatic congestion,' 'uric acid diathesis,' or any thing of the sort.

"'Vegetable Meat–in the form of 'Protose,' 'Nuttose,' 'Bromose,' 'Nutta,' And their congeners, is as much more toothsome than 'bloody beefsteaks,' as Bartlett pears are superior to crabapples. Address for circulars and further

information,-

"Sanitas Nut Food Co., Ltd., Battle Creek, Michigan." Address: Battle Creek, Michigan.

89. Blasdale, Walter C. 1899. A description of some Chinese vegetable food materials and their nutritive and economic value. *USDA Office of Experiment Stations, Bulletin* No. 68. 112 p. See p. 32-36. [19 ref]

• ***Summary:*** "According to Prinsen-Geerligs [*Chemiker-Zeitung*, 20 (1896) 67-69], 'tao hu,' or bean cheese, is prepared from the seeds of the white variety of soy bean. These are allowed to soak for three hours in water, are then reduced to a thick paste, and the mass cooked. The cooked mass is strained through a coarse cloth. The filtrate consists of a milky-white liquid containing protein and fat. As soon as this becomes cool some material is added (for instance, crude salt containing magnesium chlorid [chloride]), which precipitates the proteid material, the fat being inclosed in the coagulated mass. The coagulated material is pressed and kneaded into small cakes. The cakes may be dipped for a few moments into a saline solution of curcuma. Variations in the process give rise to a number of varieties of bean cheese. This is essentially the method used by the Chinese of San Francisco in the preparation of the bean cheese used by them. It is sold either in the form of a freshly precipitated curd or in the form of small square cakes obtained by compressing the former material. It is usually cooked in peanut oil before being eaten and, in the author's opinion, is a palatable food. A partial analysis of one of the cakes gave 81.35 per cent, fat 5.19 per cent, and ash 0.80 per cent.

"The filtrate from the cooked soy beans resembles milk, and, on heating, a skin [yuba], not unlike that formed on milk, rises to the surface of it."

A large number of varieties of the soy bean are in cultivation in China and Japan, but only two were found in the Chinese markets in San Francisco, a yellow and a black variety. Aside from a difference in color, the two forms apparently do not differ materially from each other. The yellow variety is known as 'wong tau,' and is designated by the characters 'yellow' + 'bean' (2 Cc = 2 Chinese characters are given) while the black is known as 'hak tau,' and is designated by the characters 'black' + 'bean' (2 Cc).

"Both varieties obtained from the Chinese market in San Francisco grew readily in Berkeley, attaining a height of about 3 feet, and in spite of a very dry season produced an abundant crop of seeds... The composition of the seeds of the two varieties is shown in Table 10 (p. 33), the average composition of American-grown soy beans being quoted also for purposes of comparison." This table gives values for water, protein, albuminoids, amids [sic] (by difference), fat, starch, cane sugar, reducing sugars, crude fiber, ash, and undetermined.

On a dry-weight basis, the original black soy beans contained, on average, 0.35% more protein (39.62% vs. 39.27%) and 0.72% less fat (18.77% vs. 19.49%) than the yellow soy beans. The soy beans grown in Berkeley (average of 8 analyses) contained 38.1% protein and 19.00% fat. On a dry-weight basis, the black soybeans were found to contain 15.8% more starch than the yellow soybeans (7.41% vs. 6.40%).

Photos show: (1) The upper portion of a plant of the black soy bean (p. 33).

(2) "Mature plant of yellow soy bean" (showing only the pods and stems, no leaves, p. 35). Address: Instructor in Chemistry, Univ. of California.

90. *Natal Agricultural Journal.* 1899. Pea-nut butter. 2(14):437. Sept. 29. [1 ref]

• ***Summary:*** "A new factory has just been put into operation in Kokomo, Indiana, for the manufacture of butter from peanuts, says *St. Louis Globe Democrat.* For a year or more Lan Brothers, of that city, have been working on a process of making butter from the peanut to compete with the product from the farm cow, and have succeeded in producing the desired article. At the present price of the nuts the butter can be sold at 15 cents per pound. The process of manufacture is no secret. The nuts, after the hulls are removed, are carefully handpicked, and faulty kernels removed. They are then roasted in a large rotary oven. Again they are gone over by hand, for the removal of scorched grains. The nuts are then put through a mill and ground as fine as the finest flour, the natural oils in the grains giving it the appearance and consistency of putty as it leaves the mill, except that it is more of an orange colour. By the addition of filtered water, to reduce it to a more pliable state, the butter is complete, no other ingredient, not even salt, being used. It never grows rancid and keeps in any climate. It is put up in 1 lb., 2 lb., 5 lb., 10 lb., 25 lb., and 100 lb. tin cans and sealed. The new butter is already in great demand at sanatoriums and health resorts. It is used for all purposes ordinary butter is used, including in shortening and frying. Physicians pronounce it more healthful than cow butter, and it is much less expensive. By the addition of water a delicious cream is made, and, if desired, in the same way be reduced to the consistency of milk. The new butter factory is located but a few rods from a large dairy barn, and is run in opposition to it."

91. *Union Conference Record* (*Australia*). 1899. The health food factory. 2(10):8. Dec. 1.

• ***Summary:*** "After a long but most determined and persevering effort the Sanitarium Health Food Factory is well fitted up, and able to turn out many of our health foods rapidly. This has required much longer time than was expected by anyone, but the work has been well done..." "They are now manufacturing granose biscuits, granose flakes, bromose, nuttose, antiseptic tablets [charcoal tablets], granola, caramel cereal, nut butter, wheatmeal biscuits,

gluten biscuits, gluten meal, and still other foods are in the experimental stage. White and brown bread, for the school and the immediate neighbourhood, are also made at the factory. We are thankful to see this enterprise at last on its feet, and we believe it will be appreciated in proportion to the effort it has cost."

Note 1. This is the earliest document seen (Feb. 2010) concerning the Sanitarium Health Food Factory (or Company) in Australia, or stating explicitly that foods with names such as "granose biscuits, granose flakes," etc. are being made in Australia. Formerly foods with these names were made only in Battle Creek, Michigan, then some were imported to Australia.

Note 2. Ellen G. White, co-founder of the Seventh-day Adventist Church, apparently never used the word "gluten" in her own writings. However the above passage appears in her biography, *Biography of Ellen G. White,* 6 vols., by White, Arthur L. 1981-86. He cites it to show what products are being made by the Sanitarium Health Food Factory in Australia. Ellen White was almost certainly aware of all these products (including gluten) since she was in Australia during the 1890s; she arrived in Dec. 1891 and stayed until about 1900.

Note 3. As of May 1997, this Seventh-day Adventist church paper is still published under the title *Record.*

92. **Product Name:** Malted Nuts (Non-dairy Product Made from Malted Cereals and Nuts and Resembling Malted Milk).
Manufacturer's Name: Sanitas Nut Food Co. from 1899. Renamed Kellogg Food Company in mid-1906, then Battle Creek Food Co. in the spring of 1921.
Manufacturer's Address: Battle Creek, Michigan.
Date of Introduction: 1899.
Nutrition: Water 2.6%, protein 23.7%, fat 27.6%, carbohydrate (malt sugar and dextrin) 43.9%, and ash 2.2%. Calories per ounce: 140.
New Product–Documentation: Mrs. Anna L. Colcord. 1899. "A friend in the kitchen: Or, what to cook and how to cook it. Containing about 400 choice recipes carefully tested." The next to last page of the book (unnumbered) lists foods available from the St. Helena Sanitarium Health Food Company [California], including "Malted Nuts."

Sanitas Nut Food Co., Ltd. 1900. *Good Health* (Battle Creek, Michigan). 35(7):July. Ad section in back of issue. Unpaginated. "20th century foods" (Ad). Products include "Malted Nuts."

John Harvey Kellogg. 1921. The New Dietetics–What to Eat and How... Battle Creek, Michigan: Battle Creek Modern Medicine Publishing Co. p. 359. "Nearly thirty years (1892-93) the writer, in seeking to supply the needs of invalids unable to eat cow's milk, conceived the idea of combining malt-digested cereals with nuts to prepare a substitute. The result reached after many experimental efforts was the product known as 'Malted Nuts,' which much resembles malted milk in appearance, while having a delicate and very agreeable nutty flavor. This product has been produced in considerable quantities and has come to be somewhat widely used." 'Malted Nuts' is an excellent source of food iron and it increases the milk secretion in nursing mothers.

In: Richard W. Schwarz. 1970. John Harvey Kellogg, M.D. Nashville, Tennessee: Southern Publishing Assoc. 256 p. See p. 121. "In 1896 he [Dr. Kellogg] patented a product labeled 'Bromose,' which he claimed to be a vegetable equivalent of malted milk... At about the same time, John Harvey originated a similar product which he named Malted Nuts. Derived principally from peanuts and almonds, one could mix Malted Nuts with water to form a vegetable milk which Kellogg maintained looked 'exactly like milk, and tastes so nearly like it that it is a very satisfactory substitute.' He designed the latter product primarily for infants who could not tolerate cow's milk..."

93. Colcord, Anna L. (Mrs.). 1899. A friend in the kitchen: Or, what to cook and how to cook it. Containing about 400 choice recipes carefully tested. Oakland, California, San Francisco, New York, Kansas City: Pacific Press Publishing Company. 126 + v p. Illust. 19 cm.
• ***Summary:*** A Seventh-day Adventist vegetarian cookbook. The subtitle continues: Plain directions for healthful cookery; How to can fruit; A week's menu; Proper food combinations; Rules for dyspeptics; Food for infants; Simple dishes for the sick; Wholesome drinks; Useful tables on nutritive values of foods, time required to digest foods, weights and measures for the kitchen, etc.

Pages 105-09 discuss "Specially Prepared Health Foods" which may be obtained from the St. Helena Sanitarium Health Food Company (St. Helena, California), of the Battle Creek Sanitarium Health Food Company (Battle Creek, Michigan). They include Granola (thoroughly cooked and partially digested; may be eaten with milk, cream, or fruit juice), Granose (light, crisp flakes; serve like Granola), Nut Butter (a substitute for butter and cream), Protose ("This is also a nut product and is intended as a substitute for meat..."), and Caramel Cereal (a "harmless and nutritious substitute for tea and coffee, both of which are now generally recognized by the best physicians as harmful beverages, and the cause of many nervous disorders. It is made wholly from grain products...").

Page 120 gives a week's menu and page 121 discusses the Sabbath and Sabbath dinners ("The Sabbath is the day of rest In order that it may be devoted by all to religious exercises, holy meditation, and spiritual delight, it should be as free as possible from the ordinary duties and cares of life... With proper planning, very little, if any, cooking need ever be done on the Sabbath...").

A full-page ad on the next to last page of the book (unnumbered) lists foods available from the St. Helena

Sanitarium Health Food Company (which has a San Francisco branch at 1422 Market St.): Granose ("The Queen of cereal foods"), Granola, Granose biscuit, Caramel cereal, Whole wheat sticks, Graham sticks, Pure gluten biscuit, Whole wheat zwieback, Whole wheat wafers, Nut butter, Nucose, Nutlet, Bromose, Malted nuts, Protose, Maltol, Ambrosia, Almond butter, Manno, Fruit coco. "Unfermented breads aid digestion: Most of our crackers and sticks are unfermented."

Note: This is the earliest document seen that mentions Protose (which was Dr. John H. Kellogg's first meat alternative product), or that mentions "Malted Nuts" (a nondairy product made principally from peanuts and almonds; when mixed with water it resembled malted milk).

94. Lambert, Almeda. 1899. Guide for nut cookery: Together with a brief history of nuts and their food values. Battle Creek, Michigan: J. Lambert & Co. 452 p. Illust. Index. 22 cm.

• ***Summary:*** Published in 1899, this book was copyrighted in 1898 by Mrs. Almeda Lambert (of Battle Creek, Michigan), who was almost certainly a Seventh-day Adventist. She quotes from Genesis 1:29 and on pages 60-65 she quotes extensively from the writings of Ellen G. White, the founder of the Seventh-day Adventist religion; she likewise advocates a vegetarian diet–indeed a pure vegetarian diet, free from milk and dairy products.

In the Introduction (p. 6) she states: "In the last few years there has been a great awakening in regard to healthful living and great strides have been made in the methods of emulsifying nuts into a paste or butter,–a convenient form for cooking purposes and much easier to digest. But the majority of those who have adopted nut butter, use it instead of the dairy product only to spread on bread. It is the object of the author to place before the public a book treating upon the use of nuts as shortening, seasoning, etc., to be used in every way in which milk, cream, butter, or lard can be used, and fully to take their place."

Chapter 1, "Nuts and Their History" (p. 7-58) includes many species of nuts arranged alphabetically including almonds, beechnut, chufa (earth almond), cocoanut, groundnut (*Apios tuberosa,* common in low, wet grounds), hickory-nut, litchi (leechee nut), peanut, pecans, sapucia-nut, souari-nut, pine-nut, walnut, and water chestnut.

The section on the peanut (*Arachis hypogæa,* p. 37-42) states that it is also "known in different localities as the earthnut, ground-pea, goober, pindar, jar-nut, and Manila nut. Strictly speaking it is not a nut at all, and should be more properly called the ground-pea." About 3½ pages of extracts are given from *Farmers' Bulletin* No. 25 titled "Peanuts: Culture and Uses," by Robert B. Handy (1895). Mrs. Lambert then comments: "Thus we see that over thirty years ago, peanuts were not only used as titbits [sic, tidbits] between meals, but also for culinary purposes. But since the invention of machinery for family use, for grinding the nuts into a butter, their use has spread over a greater territory. This is partly due to the fact that the expense is thus lessened, and not only this, but because the nut as it comes from the mill is in a much healthier condition to eat, being easier of digestion than the oil or the raw residue that remains after the oil is taken out. The nut butter can be easily mixed with water, forming an emulsion, and by thinning it sufficiently, it makes an excellent substitute for cream and milk. It can also be made into various nut foods."

A table compiled by Prof. König (p. 41) shows that peanut meal has the largest number of nutritive units per pound of twelve principal foods listed, and the cost of 1,000 nutritive units in the form of peanut meal is the lowest. For this reason the German army now uses peanuts, peanut flour and peanut meal extensively in its diet (p. 6).

In the chapter titled "Nuts: Their properties and food values" she states (p. 68-69): "The purest and most easily digested of all meats is the meat of nuts. In nutritive value they far exceed all flesh meats." "Nuts are more digestible if they are first emulsified, as very few can masticate them fine enough to be acted upon by the digestive juices. The question of emulsifying nuts has been practically settled in the last few years by the invention of machinery for that purpose, both for family and factory use. It is sincerely hoped and believed that the time is not far distant when nuts will fully take the place of animal flesh, fats, and products."

The chapter titled "Nut butter" (p. 70-75) describes how to make the following at home: "Peanut butter, raw peanut butter, almond butter, Brazil-nut butter, peanut cream, peanut milk, raw peanut milk and cream, almond milk, hickory milk, pine-nut milk, chufas milk, and cocoanut milk."

Note 1. This is the earliest document seen (Aug. 2013) that mentions coconut milk, which it calls "cocoanut milk."

Concerning homemade "Peanut butter" (p. 70-71): The introduction states: "The Spanish peanut makes the best peanut butter. The first essential thing is to have a nut-grinding mill" [such as the one made by Joseph Lambert & Co.]. The recipe itself states: "The first step is to roast the peanuts to a nice brown, being careful not to over-brown or scorch them, as too much cooking spoils the flavor. They can be roasted in an ordinary oven, but can be better done in a peanut roaster made especially for this purpose. As soon as they are roasted and cool, the skins or bran should be removed by rubbing them in the hands, or what is better, a coarse bag; or take a square piece of cloth and fold the edges together, forming a bag of it. The chaff can then be removed by the use of an ordinary fan, or by pouring from one dish to another where the wind is blowing. The process of removing the skins is called blanching. Next look them over carefully, remove all defective nuts and foreign substances, and they are ready for grinding. If a fine, oily butter is desired, adjust the mill quite closely, and place in the oven to warm. Feed the mill slowly, turn rapidly, and always use freshly roasted

nuts; after they have stood a day or two they will not grind well nor make oily butter. If the butter is kept in a cool place in a covered dish, and no moisture allowed to come in contact with it, it will keep several weeks; and if put in sealed jars or cans, will keep indefinitely."

Note 3. This is the earliest document seen (Dec. 2007) that contains a recipe for homemade peanut butter.

When making peanut cream and milk, roast the peanuts less than when making peanut butter. "They should have a light straw color."

Note 4. This is the earliest document seen (Oct. 2004) that mentions Joseph Lambert in connection with peanut butter. Unfortunately it provides little information on the history of peanut butter or the history of his work with it.

Note 4. This is the earliest document seen (Sept. 2000) that mentions almond butter (resembling the modern product) or gives a recipe: "Almond butter is more difficult to make than peanut butter because the skins can not be so easily moved. Roasting does not loosen the skins of the almond as it does of the peanut. They have to be soaked in boiling water from two to five minutes; then the skins become loose and can be pinched off by pressing on the nut with the thumb and finger; the skin will crack and the kernel pop out. But by this process the nuts have soaked up some water and become tough. They must then be dried in the oven until quite crisp, but the oven must not be hot, or they will brown. Then run them through a loosely adjusted mill or a sausage grinder, and place on a cloth stretched over the stove until perfectly dry; then grind them in the nut-butter mill, quite tightly adjusted. This makes excellent butter if the almonds are first-class, and sweet."

Note 5. This is the earliest U.S. document seen (Sept. 2000) that mentions "Almond milk" which is prepared as follows: "Dissolve 1 tablespoonful of almond butter in 1 pint of warm water, adding a little at a time.

Note 6. This is the earliest English-language document seen (Aug. 2013) that contains the term "peanut milk." Continued. Address: Battle Creek, Michigan.

95. Lambert, Almeda. 1899. Guide for nut cookery: Together with a brief history of nuts and their food values (Continued–Document part II). Battle Creek, Michigan: J. Lambert & Co. 452 p. Illust. 22 cm.

• ***Summary:*** Continued from p. 76. Other chapters include–Nut meal (p. 76-78): To make peanut meal, heat the nuts sufficiently to remove the skins, but do not brown them. Blanch (remove skins), then boil in water until very tender. Drain until perfectly dry, then grind in a mill that is loosely adjusted. If desired, rub through a flour sieve. A very rich meal can also be made by grinding raw peanuts. Meals can also be made from almonds, pine-nuts, etc.

Sausages (p. 79-81): For peanut sausages mix 1 tablespoon peanut butter, 2 tablespoons water, 3 tablespoons gluten or dry bread-crumbs, a little salt, sage, and parsley. Form into small cakes and bake on an oiled tin. Serve topped with Peanut Gravy No. 1.

Nut oil (p. 82-83): Boil ground cocoanuts or peanuts with water in a kettle for 1 hour. Set in a cool place and the oil will rise to the top. Nutmeatose, Nutora, etc. (p. 84-90): These foods are best cooked under high-pressure steam to make them quite solid. For Nutora of peanuts: Mix 2 cups raw nut butter or nut meal with 1 cup water and salt to taste. Beat with an egg beater for 5 minutes or more, then put into cans and cook (in a steam cooker) for 3 or 4 hours. For "Nut cheese," see p. 90.

Note 7. This is the earliest document seen (Aug. 2002) in the Western world concerning a meatless sausage.

Nutmeato (p. 91-127): This chapter contains many nut-based recipes for meat alternatives. The main ingredient is usually nut butter, but "nutmeatose" gluten, zwieola or toasted bread crumbs, and legumes are also used, along with corn starch and a little salt. The mixture is usually sealed in a can and steamed for 3-5 hours. Recipes include: Mock Nutmeato roast, Nutmeato steak, Nutgrano No. 1-10 (No. 1 and No. 8 use 1 cup raw peanut butter), Nutmeatose No. 1-7 (p. 97-98; No. 1 uses 2 cups peanut butter), Frutose, Frutosia, Butter for table (butter whipped with an equal quantity of water), Roast goose (with full-page photo, based on zwieola {see p. 399} and eggs), Turkey legs, Chicken legs, Roast turkey (with photo, based on zwieola, gluten, pecan meal, almond meal, peanut butter), Nut lobster, Baked trout (with photo), Mock fish stuffed and baked, Sauce for baked fish (with photo), Mock turkey, Mock fish-balls, Vegetable nut roast, Mock salmon, Mock chicken croquettes, Mock fried oysters, Mock oyster patties, Mock chip beef. Includes many photos of the finished dishes.

Unleavened breads (p. 156-67): These are "made light without the use of yeast, baking-powder, or soda. Since they are the most healthful of all breads, it would be of benefit to mankind if they were in more general use." For best results "run the dough through the nut-butter mill twice or more, instead of kneading by hand as directed in the recipes." Recipes include: Graham gems, Raw peanut-butter gems, No. 1 gluten (made from best grade white flour which is rich in wheat gluten–such as Pillsbury's Best). Yeast breads (p. 168-82) incl. Graham bread.

Legumes (p. 246-52) incl. Nut meatose beans, Vegetable turkey, boiled peanuts. Gravies for vegetables and toasts (p. 311-17) incl. Mock milk gravy (from peanut butter), raw peanut milk gravy. Pies (p. 320-32) incl. Peanut meal pie crust, Chufa cream pie crust.

Puddings (p. 333-43): "Puddings made with dairy milk and sugar combined are apt to ferment in weak stomachs. They are much better prepared without dairy milk." Incl. Custard No. 1 (from raw peanut milk). Sauces for puddings (p. 344-49) incl. Almond cream sauce. Cakes (p. 354-75): "Cakes and pies are filled with animal fats, irritating spices, and are raised with baking-powder or soda, are certainly very

unwholesome; to use them in our bill of fare could work nothing but injury to all who partake.

"Animals are becoming so diseased that it is no longer safe to use their flesh as food, and even if they were not diseased, free fats are hard of digestion." (p. 354).

"Spices and condiments, which usually enter into cake making, are equally injurious. The effect that they have upon the stomach can be illustrated by putting them upon a raw surface or in the eye; inflammation immediately takes place. They irritate the nerves, cause irritability and peevishness, and create a craving for something more highly spiced, which often leads to grosser forms of intemperance."

Drinks (p. 381-83) incl. Peanut and cereal coffee (with wheat bran, corn-meal, and malt), Peanut coffee No. 1-2 (roast peanuts until dark brown), Chufa coffee. Food for the sick (p. 400-01) incl. Almond milk, Graham gruel, Plain gluten gruel, Nut gruel (with almonds and peanuts), Egg nog (made from cocoanut cream, eggs, and sugar).

Note: This is the earliest document seen (Dec. 2012) that mentions or contains a recipe for a nondairy egg nog.

Creams, ices, etc. (p. 411-14) incl. Ice-cream No. 1-3 (made from almond or peanut cream, sugar, and eggs), Ice-cream made of peanut milk, Almond ice cream, Sherbets (from frozen fruit juices). To blanch nuts (p. 415-16); blanch peanuts dry and almonds by pouring boiling water over them. To salt nuts (p. 417-18). Confectionery (p. 419-24) incl. Peanut candy (with 1 lb each sugar and peanuts). Menus (p. 425-33) incl. Thanksgiving dinner: This "has been a great puzzler to the vegetarian housewife... I propose that we do have a turkey for Thanksgiving, not the corpse of a bird whose life was sacrificed to satisfy our perverted appetites, but something which... is only one made of nuts and grains... "With painstaking we shall have a better dinner than our sisters who have their platters ladened with the remains of a barn-yard fowl, and with cakes and pies filled with animal fats and spices. Besides this, we shall have a clearer mind, as well as a clear conscience; while those who eat meat are taking poisons into the system which benumb the brain, cloud the conscience, and render man unfit to meet the vesper hour and hold communion with his God."

Thanksgiving dinner menu (8-course meal), Christmas dinner. Composition of foods (p. 434-39) incl. Dietetic tables by Atwater and Woods of USDA. See p. 439 for composition of nuts.

On the last page is a full-page ad for nut grinders, blanchers, and peanut roasters made by Joseph Lambert & Co., Battle Creek, Michigan.

Note 8. This is the earliest U.S. document seen (March 1999) that mentions almond milk.

Note 9. This is the earliest document seen (Oct. 2001) that mentions a non-dairy non-soy ice cream; it is based on almonds or peanuts.

Note 10. This is the earliest document seen (June 2007) that gives a recipe for a meatless turkey and the 2nd earliest that mentions meatless turkey. However soy is not mentioned.

Note 11. This is the earliest document seen (Dec. 2003) that mentions or gives a recipe for a meat alternative resembling beef: Mock Nutmeato roast, and Nutmeato steak. These were made with nuts rather than soy. Address: Battle Creek, Michigan.

96. Langworthy, C.F. 1899. Appendix: Soy beans as food for man. *Farmers' Bulletin* (*USDA*) No. 58 (Revised ed.). p. 20-23. [1 ref]

• ***Summary:*** This part of Bulletin 58 is identical to the original July 1897 edition. Address: Ph.D., Office of Experiment Stations, USDA, Washington, DC.

97. *Los Angeles Times.* 1900. Care of the body: Valuable suggestions for acquiring and preserving health. Jan. 7. p. IM27.

• ***Summary:*** The section titled "A vegetarian restaurant" states: "Los Angeles has now a first-class vegetarian restaurant and it appears to be well patronized. The restaurant, which also keeps health foods for sale, is connected with a well-known hygienic institution [Battle Creek Sanitarium] in Michigan, which manufactures these foods on a large scale, and has branch sanitariums all over the world. For those who are not acquainted with the wide range of dishes at the command of the modern vegetarian in the United States, the following dinner bill of fare of the restaurant above referred to, on a recent Sunday, will be of interest:

"Bayo beans and tapioca soup, celery, cabbage salad, onions, nut and vegetable roast, egg macaroni, boiled potatoes with gluten sauce, lima beans and nut stew, carrots, vegetable stew, ambrosia, bromose tablets, shaved nuttose, sliced nucose, protose.

"Boiled eggs, plain omelet, scrambled, poached, poached on toast, and poached on granose.

"Rice with raisins, granose, granola, gluten mush with milk, nut cream or dairy cream.

"Steamed figs, pear sauce, baked apples with cream, sliced bananas with cream, stewed prunes, apple sauce, apples, oranges, and bananas. Apple charlotte, cream rice pudding.

"Cereal coffee, hot malted nuts, cold milk, hot milk, unfermented wine, glass one-half cream and one-half milk, lemonade, hot or cold orangeade, distilled water.

"Whole-wheat bread, graham bread, zweiback [zwieback], graham sticks, whole-wheat sticks, mixed wafers, oatmeal wafers, graham wafers, granose biscuit, gluten wafers, and whole-wheat wafers."

Note: This is the earliest document seen (March 2007) worldwide that mentions a health foods restaurant.

98. Clark, Annie M.L. 1900. The Alcotts in Harvard

[Massachusetts]. *New England Magazine* 22(2):173-80. April. New Series.
• ***Summary:*** The detailed story of Amos Bronson Alcott and his family at Fruitlands. Early in June, 1843, a small colony of 16 men and women gathered near the quiet town of Harvard, Massachusetts. Amos Bronson Alcott was born on 29 Nov. 1799 in Wolcott, Connecticut. He married Abba May on 23 May 1830 in Connecticut. While a teacher at the famous Temple, Mr. Alcott developed the idea that "the simplest food was alone conducive to lofty thinking and living." Traveling to England, he found there congenial spirits, and in October 1842 he came home, accompanied by three of these new friends, Charles Lane, his son William Lane, and Henry C. Wright. Together they went by wagon to a place they called Fruitlands near Harvard–a field of about 100 acres on a hillside. They immediately began the work of forming "a family in harmony with the primitive instincts of man." Mrs. Alcott and Anna Page were the only women. "No animal food was to be eaten, nor were butter, cheese, eggs or milk allowed–nothing that in the taking would cause pain or seem like robbing any animal; besides, animal food... would corrupt the body and through that the soul. Tea, coffee, molasses and rice were forbidden for two reasons"–they were foreign luxuries and the product of slave labor. "Water alone was for drink, fruit in plenty, and some vegetables were allowed"–but only vegetables that grow in the air, not those that grow downward like potatoes. Salt was also forbidden. The impractical but idealistic group returned to Concord at the end of the summer, 1844, after about 15 months of their experiment.

Five photos show: (1) Old house at Fruitlands. (2) The Brick Ends. (3) Orchard at Fruitlands. (4) The road to Prospect Hill. (5) The Nashua Valley from Prospect Hill–Fruitlands at Right.

99. *Vegetarian Messenger* (*Manchester, England*). 1900. Price list of the Vegetarian Society's food stores, 19, Oxford St., Manchester, S.E. April. Unnumbered page at rear of issue.
• ***Summary:*** The five categories of food sold are: (1) Foods [cereal grain, whole, crushed, meal, and flakes] (First item is whole wheat meal, freshly ground from best English red wheat). (2) Beans, peas, lentils (incl. soya beans and lists the price as "4*d.* a lb" plus carriage; also 4 types of haricot beans {2.5 to 4*d.*} and 4 types of lentils {2.5 to 3*d.* a lb.}).

(3) Prepared foods (incl. Dr. Nicholl's Food of Health, Dr. Allinson's Food of Health, Fromm's Extract, Fromm's Soup, Nuttosia, Nut Butter {almond, hazel}, Nuttose, Protose, Sterilized Nut Butter, Granose Flakes, Granose biscuits, Avenola, Crystal Wheat, Nutta, Bromose, Falona). (4) Biscuits (incl. Graham crackers, Wholewheat wafers, Wheat and nut rolls, Zwieback–white or Graham). (5) Plasmon (powder, chocolate, or biscuits).

Note: This is the earliest English-language document seen (June 2009) published in England that contains the word "Granose" (a flaked cereal food).

100. Stewart, Charles E. 1900. Chronic constipation, a symptom resulting from a disordered state of the sympathetic nervous system. Its causes and cure. *J. of the American Medical Association* 34:1306-10. May 26.
• ***Summary:*** "Nuts, in order to be of service, should go through a special process of preparation. At the present time such specially prepared nut foods as protose, nuttolene, malted nuts, granuts, bromose, and a number of others can be found on the market. A careful analysis of these nut foods has been made in our laboratory, and they have been found to be sterile and wholesome, and to contain nitrogenous and fatty material to meet the demands of the human economy. A diet consisting of granose, browned rice, protose, steamed figs, prune marmalade, and ripe fresh fruits..., almond butter, and cream [almond cream], is so palatable, nourishing, and easy of digestion that the most fastidious epicure could find no fault with it" (p. 1309). Address: M.D., Battle Creek, Michigan.

101. Langworthy, C.F. 1900. Vegetable cheese. *Sanitary Home* (*Fargo, North Dakota*) 2(3):55-57. May.
• ***Summary:*** "It is commonly believed that the Japanese, Chinese, and other oriental peoples live almost exclusively on rice, eating little or no meat... In the course of centuries the Japanese and Chinese have evolved the art of preparing substances resembling dairy products from vegetable sources. It is well known that beans, peas, and other legumes contain large amounts of protein... The soy bean, which is perhaps the principal legume grown in Japan and China, is less suited for food in its natural state."

"Though the soy bean is not relished when cooked in the ordinary way, the Chinese and Japanese prepare very satisfactory foods from it in ways which are unknown to western cooks. Bean cheese or bean curd, called by the Japanese tofu and by the Chinese tao hu, is one of the most important of these products and is prepared as follows: The soy beans are soaked in water for about 12 hours and crushed between mill stones until of a uniform consistency. The ground material is then boiled with about three times its bulk of water for an hour or more and filtered through cloth. The filtrate is white in appearance and has somewhat the appearance of milk. It has the taste and smell of malt. Analysis shows that it resembles cow's milk in composition. When heated a film forms on the surface which in appearance suggests cream. This is dried and eaten under the name of yuba. As soon as the soy bean milk becomes cool, some material is added; for instance, crude sea salt, containing magnesium chlorid [chloride], which precipitates the proteid material, the fat being inclosed in the coagulated mass. The coagulated material is pressed and kneaded into small cakes or cheeses. These are sometimes dipped in saline

solutions of curcuma to color them. The bean cheese cakes are sometimes eaten fresh or may be cooked in different ways. Often when practicable they are frozen. This removes a considerable part of the water present. As shown by analysis, the fresh bean cheese contains about 5 per cent of protein and 3 of fat. Ordinary cheese made of milk contains about 28 per cent protein and 36 per cent fat.

"Miso resembles tofu to some extent. It is prepared from cooked soy beans, which are rubbed to a thick paste and fermented with rice wine ferment. Shoyu is a thick sauce prepared from a mixture of cooked pulverized soy beans, roasted and pulverized wheat, wheat flour, salt, and water. The mass is fermented with rice wine ferment in casks for from one to five years being frequently stirred. The resulting product is a moderately thick, brown liquid, in odor and taste, not unlike a good quality of meat extract, though perhaps a trifle more pungent. Throughout the East it is eaten in large quantities with rice and other foods and is an important source of protein. Under the name of soy sauce, it has been known to Europeans in India for many years, and is not unknown in the United States. Most of the soy bean products are fermented; that is, they are prepared with the aid of micro-organisms. The micro-organisms break down the cell walls and similar materials and thus the cell contents are rendered more accessible to the digestive juices at the same time peculiar and pleasant flavors are developed. The manufacture of these products is of very ancient origin and affords an interesting, practical illustration of the use of bacteria for economic purposes.

"The Chinese residents of San Francisco and other cities consume large quantities of these soy bean products and it is stated on good authority that soy bean cheese is manufactured in this country, though doubtless it is seldom, if ever, eaten by any except the Chinese."

Note 1. This periodical was later named *North Dakota Farmer.*

Note 2. This is the earliest English-language document seen (April 2013) that uses the term "bean cheese cakes" to refer to tofu.

Note 3. This is the earliest document seen (June 2011) concerning soybeans in connection with (but not yet in) North Dakota.

Note 4. This is the earliest English-language document seen (Aug. 2013) that contains the term "soy bean milk."

Note 5. Dr. E.F. Ladd was a nationally-known pioneer in food safety and sanitation in the United States. He published this periodical, *Sanitary Home,* in Fargo and distributed it free of charge like an extension publication before the extension service was created; North Dakota State Univ. paid the printing and mailing expenses. Interested in home safety, he rewrote technical publications in a language homemakers could understand. He did much work with North Dakota food purity and chemical purity laws. Address: PhD, Office of Experiment Stations, Dep. of Agriculture, Washington [DC, USA].

102. *Poverty Bay Herald* (*Gisborne, New Zealand*). 1900. Sanitarium health foods (Ad). July 6. p. 3.
• ***Summary:*** "Supply on hand: Caramel Cereal [a coffee substitute]. Granola (packets and bags). Granose Biscuits. Nut Butter. Nuttose. Bromose. Gluten. Charcoal Tablets.

Note 1. No company name [Sanitarium Health Food Company] or address is given.

Note 2. This is the earliest document seen (Nov. 2009) concerning "Sanitarium health foods" in New Zealand.

103. Sanitas Nut Food Co., Ltd. 1900. 20th century foods (Ad). *Good Health* (*Battle Creek, Michigan*) 35(7):July. Ad section in back of issue. Unpaginated.
• ***Summary:*** "We manufacture the most unique, delicate, and toothsome line of foods on the market. While these foods are so prepared as to be perfectly adapted to the stomach of the feeblest invalid, or the youngest child, they are at the same time of the greatest value in forming the healthy tissue of the vigorous man or woman. They are prepared with the greatest care from the choicest edible nuts. Perfect substitutes for meat, butter, and milk. Possessing none of their objections." Products include: "Malt Honey, Bromose, Protose, Nut Butter, Malted Nuts, Maltöl. Ask your grocer for samples, and if you fail to get them, write us, giving his name, and you will hear of something to your advantage."

Note: According to Stoltz (1992) Sanitas Nut Food Co. was legally founded in 1899. Address: Battle Creek, Michigan.

104. Abel, Mary Hinman. 1900. Beans, peas, and other legumes as food. *Farmers' Bulletin* (*USDA*) No. 121. 32 p. See p. 9-11. Illust. Revised Nov. 1904. Corrected March 1906. [1 ref]
• ***Summary:*** A section titled "Soy Bean (*Glycine hispida*)" (p. 9-11) briefly describes the soybean plant and the rich nutritional composition of its seeds. The first paragraph is quoted from USDA Farmers' Bulletin 58.

Starting with paragraph 2: "This leguminous plant, probably native in China, is the most important legume of China and Japan... In the Orient this bean and the various food products made from it are so largely consumed that it is perhaps the most important food plant next to rice. The soy bean is eaten to a small extent boiled like other beans, but in China and Japan it is elaborated into a variety of products, all of which have a high percentage of protein, and when eaten in connection with the staple food, rice, which is so deficient in that constituent [protein], helps to make a well-balanced dietary. Some one of these products is eaten at perhaps every meal and by rich and poor alike, especially in the interior of these countries, where sea food is not obtainable.

"One of the most important of these preparations is shoyu, and it is the only one that has been introduced to any

extent into other countries, where it is known as soy sauce...

"There are also several varieties of bean cheese or similar products made from this legume which are very important foods. These are natto, miso, and tofu. Natto is made from soy beans that have been boiled for several hours until very soft, small portions of the still hot mass being then wrapped securely in bundles of straw and placed in a heated, tightly closed cellar for twenty-four hours. Bacteria, probably from the air or the straw, work in the mass, producing an agreeable change in its taste.

"For tofu, the soy bean, after soaking and crushing, is boiled in considerable water and filtered through cloth. To the resulting milky fluid 2 per cent of concentrated sea brine is added, which, probably by virtue of the calcium and magnesium salts present, precipitates the plant casein, which is then pressed into little snow-white tablets. It is made fresh every day. Tofu is sometimes cooked in peanut oil before it is eaten. In natto and miso the action of minute organisms plays an important part. In tofu there is no such action. The composition of a number of these products is as follows:"

A table (p. 11) shows the nutritional composition of food products made from soy beans, including fresh tofu, natto, white miso, red miso, Swiss miso, and shoyu (2 samples).

An illustration (non-original line drawing, p. 10) shows a soy bean plant with a cluster of 7 pods to its upper left (slightly changed from an original in Carrière 1880, p. 154).

This bulletin also discusses (with an illustration of each): The bean–Broad or Windsor bean (*Vicia faba*). Kidney bean (*Phaseolus vulgaris*). Lima bean (*Phaseolus lunatus*). Scarlet runner (*Phaseolus multiflorus*). Frijole (*Phaseolus spp.*). Cowpea (*Vigna catjang*). Lablab bean (*Dolichos lablab*) and other common varieties. Locust bean (*Ceratonia siliqua*).

The pea–Field pea (*Pisum arvense*). Garden pea (*Pisum sativum*). Chick-pea or gram (*Cicer arietinum*).

The lentil (*Lens esculenta*). The peanut (*Arachis hypogæa*).

Note 1. This is the earliest English-language document seen (Aug. 2013) that uses the term "milky fluid" to refer to soymilk.

Note 2. Mary Hinman Able was not an employee of the USDA or of the federal government. She was a pioneer in the fields of nutrition, nutrition education, home economics, and popularizing science for the general public. Between 1904 and 1913 she wrote several farmers bulletins for the USDA. From 1909 to 1915 she was editor of the *Journal of Home Economics*.

105. *Kneipp Water Cure Monthly* (*The*) (*New York City*). 1900. Nut foods. 1(8):141-42. Aug.
• ***Summary:*** "By those who desire to leave off animal foods, such as eggs, milk and flesh meats, there has been a long-felt want for some food which will supply an abundance of nitrogenous matter in easily digestible form." Gives eight advantages of nut foods. "8. They are more digestible than raw nuts.

"The first of these foods put on the market was nut butter, and it has had such a remarkable success that it is now manufactured all over the country, in a small way, by families and by small manufacturers. It is proving a boon to many people, but on account of the temperature at which it is produced, a change takes place in the oil, rendering the fat more or less indigestible to certain individuals; so in a certain proportion of cases it is found to disagree. Notwithstanding this, it is probably used, on account of its cheapness, to a greater extent than any of the other nut foods.

"Nut Marmalate and nutlet are foods put up in sealed cans, and have a growing popularity. These foods are excellent sliced, or can be made up into stews."

"There is another series of foods, in which nuts are combined with predigested starch in the form of malt sugar. These foods, bromose, malted nuts, etc., are very delicate and toothsome,..."

106. Kellogg, Ella Ervilla (Eaton) (Mrs.). 1900. Every-day dishes and every-day work. Battle Creek, Michigan: Modern Medicine Publishing Co. 206 p. Index. 21 cm. [1 ref]
• ***Summary:*** The wife of the famous Dr. John Harvey Kellogg discusses her system of meatless cookery. She lived 1852-1920. This book was copyrighted 1896.

Contents: Preface. Cereals. Macaroni. Fermented or yeast bread. Unfermented or aerated bread. Fruit. The leguminous seeds (soy is not mentioned). Vegetables. Soups (without milk, with milk), Eggs. Desserts. Pastry ("Dietetic evils of pastry–General suggestions for making pies"). Cake. Toasts (incl. Zwieback). The Battle Creek Sanitarium Food Company's Products (recipes using them; including Granola, Granose, Crystal Wheat, Gluten, Zwieback, Caramel-Cereal).

Sanitas Nut Food Company's Products (recipes using them; including Nut Butter, Nuttolene, Nut Meal {"Many persons suffer from biliousness, nervousness, sick-headache, and various forms of indigestion, from the use of butter, milk, and cream, without being aware that these substances are harmful to them. Persons suffering from dilatation of the stomach, a condition which is exceedingly common, must avoid milk and butter in all forms. Nut butter, nut meal, and nuttolene have been prepared as substitutes for butter and cream. In nut butter, the fat is in a state of perfect emulsion, so that it mixes well with water. Thus it does not interfere with digestion}," Protose, Granose, Almond Meal). Hints about every-day work (Economizing time, system in work, daily program of kitchen work, economizing money, economy of material, uses of stale bread, left-overs, waste of fuel, general suggestions for economical housework, order of clearing the table, washing the dishes, dish-cloth and towels, cleaning silver, care of table linen, disposal of garbage).

Peanut butter is called for as an ingredient in recipes on pages 166 and 170 ("An icing for the peanut cake may be

made in the same way by using the peanut butter").

Almond butter is called for as an ingredient in recipes on pages 140 (one well-rounded tablespoonful in an icing for Almond pound cake), 155 (twice), 156 (twice), 166 (twice), 170, and 172 (twice).

The term "nut butter" appears on 32 pages; see p. 201 in Index.

The word "Vegetarian" appears in this book only once, in the titled of a recipe, "Vegetarian Boiled Dinner" (p. 164).

Bran (including wheat bran) is mentioned on pages 98 and 99 (3 times each in the section on soups), 100, 144, 169, and 197.

Near the end of this book are full-page ads for: Bromose (p. 207), Malted Nuts ("presented in the form of a fine granular powder," p. 208), Protose–vegetable meat ("This truly wonderful food product is, without question, the most remarkable discovery in dietetics which has been made within the last half century... Protose is a Perfect Substitute for flesh food... Send 10 cents for a sample can," p. 209), Battle Creek Sanitarium Health Foods (Granose, Granola, Caramel-Cereal, Battle Creek Sanitarium Breakfast Food, Germless Oats, Germless Corn Grits, Crystal Wheat {sterilized, ready cooked}, Gluten Preparations, Diabetic Foods, A large variety of crackers and biscuit and other wholesome preparations. Superior canned goods. Warranted pure. Send for catalog and price list, p. 210).

Antiseptic charcoal tablets–antiseptic, absorbent. "Charcoal Tablets are not a panacea, but they have proved to be the moat valuable remedy we possess for morbid conditions arising from fermentation or decomposition of food in the stomach and intestines. They consist of a special form of vegetable charcoal, much superior to willow, freshly prepared, to which is added sulphur, one of our most valuable intestinal antiseptics, and diastase, a starch-digesting ferment. This will at once be recognized as a happy combination for combating the action of microbes in the alimentary canal," (p. 211). *The Stomach: Its Disorders and How to Cure Them,* by J.H. Kellogg, M.D. (p. 212). *The Home Hand-Book,* by J.H. Kellogg (p. 213). *Science in the Kitchen,* by Mrs. E.E. Kellogg, A.M. (p. 214). Address: A.M., Battle Creek, Michigan; Author of *Science in the Kitchen,* etc.

107. *Los Angeles Times.* 1901. Queer spirits of vegetarian sect: They live in round rooms and on cocoanut milk–Vagaries of Placentia's unique and unhappy colony. June 2. p. C3.

108. Sanitas Nut Food Co., Ltd. 1901. Cow's milk kills babies: Malted nuts cures babies (Ad). *Good Health* (*Battle Creek, Michigan*) 36(7):Unpaginated. July.
• ***Summary:*** "By the thousand every year. The manure germ is always present in milk, and is now known to be the cause of *Cholera Infantum,* and other gastro-intestinal disturbances which are the bane of infant life, especially during the warm months. Cow's milk forms tough and indigestible curds. Cow's milk develops ptomaines which cause rickets. Cow's milk causes coated tongue and biliousness [peevish and ill-natured in disposition]. Cow's milk constipates.

"Cow's milk may be improved by mixing with malted cereals (malted milk or cream), and in various other ways, but it is cow's milk still, and often causes rank poison to the babe, and is not much less unwholesome for adults, often gastric catarrh, biliousness, periodical headache, and obstinate constipation.

"Malted nuts cures babies and adults of the mischiefs which milk creates, and is the one perfect substitute for mother's milk, a delicious and wholesome substitute for cow's milk." An oval photo on this full-page ad shows a baby. Address: Battle Creek, Michigan.

109. *Good Health* (*British*) (*England; Seventh-day Adventist*). 1901. A Christmas dinner. 1(2):25-26. Dec.
• ***Summary:*** Gives a menu with recipes. The main dish is: "Protose roast.–Use one-half pound of protose as it comes from the tin. Press into the sides of this one large onion which has been sliced thin, and sprinkled with salt. Place in a baking dish, and surround with a nut cream made by dissolving one-fourth cup of peanut butter in one and one-half pints of water, and salt to taste. As it bakes in a hot oven, baste often with the dressing until the protose and onion become a rich brown. The time usually required for baking is from one and one-half to two hours."

110. Bie, H.C.H. de. 1901. De landbouw der inlandsche bevolking op Java [The agriculture of the indigenous people in Java]. *Mededeelingen uit 's Lands Plantentuin* (*Buitenzorg*) No. 45. 143 p. See p. 97, 99, 138-43. [Dut]
• ***Summary:*** The soybean is discussed in the chapter titled "Cultivation of crops other than paddy rice: Cultivation of secondary crops (*Palawidja*)." Soya bean is one of the secondary foods served with rice, but it is mostly used to make soy sauce and tempeh (*tempe*). One variety of soybean, which originally came from Japan, is widely grown as a second crop on the wet rice fields (*sawahs*), and it is easy to cultivate at altitudes of 1,200 to 1,500 feet above sea level. It is called *katjang kedele* in Central and East Java, but *katjang djepoen* in Sunda or West Java (*de Soendalanden;* [the area around Bandung only]). A description of the plant and the method of cultivation in Java is then given. It is planted much more on wet rice fields than on dry (non-irrigated) fields (*tegalans*) near the rice fields used for vegetables and secondary crops. Usually the soybean seeds are planted right after the paddy stumps have been cut away, but sometimes they are planted just before or during the paddy harvest, and pressed into the earth under the feet of the paddy cutters. They are rarely weeded, excepted when the crop is suffocated by tall weeds. At harvest, the plants are pulled

completely out of the ground and bound into bunches. At night they are stored under a specially-constructed roofed shelter in the field, and during the day they are sun-dried on bamboo structures or on the ground. This takes at most 3-4 days, if the plants are really ripe and the weather is good, after which the bunches are put on bamboo mats in heaps and threshed. To protect the seeds from damage, one preferably uses piece of banana tree branches which still have fibrous veins. The fibrous plant stems and branches are removed together with the soybean pods and burned on the sawah fields. Poor people first sort out the pieces good enough for fuel and take these home. Immature green leaves are fed to animals. Sometimes soybeans are planted on the dikes of the paddy fields at the same time as or a few days later than the paddy rice. The fresh seeds from this harvest are then planted in the sawah fields after the paddy is harvested. Soybeans planted in this way are called *katjang apitan.*

There are two varieties of soya: one has an ivory yellow seed coat and the other is black. The latter is used almost exclusively to make soy sauce; the former to make pastry and condiments for rice or as a vegetable (*sayur; sajoer*). Soya is cooked with salt in the green pod and eaten as a snack.

The indigenous people do not occupy themselves with the production of soya (soy sauce) or *ketjap* or other products made from soybeans such as *taoetjo* [*tao tjo, tauco, taucho* = Indonesian style miso], *taoehoe* [*tao hoe, tahu* = tofu], *taoekwa* [*tao koan, taokoan or takoa* = fermented tofu], and *taoetji* [*tao dji, tausi* = fermented black soybeans]. The work is too involved and takes too long before the product is ready to be sold. Most people are too inexperienced and there is not enough of a market for the product.

The only food that most people make out of soybeans is tempeh (*témpé*), which plays the same role in Central and East Java as does ontjom in Sunda or West Java, and is prepared similarly. The tempeh-making process is described. It takes place indoors, out of the light. Tempeh is sometimes cut into smaller pieces. It is usually eaten pan-fried after being soaked in a solution of tamarind and salt. It is also cooked with vegetables.

Most soybean seeds are sold to the Chinese, who export them or process them to make soy sauce and other products. To make soy sauce, the seeds are roasted to aid in removing the hulls. Some people pound the seeds instead. They are cleaned, boiled in water, drained, spread on flat bamboo trays (*tampah* or *njiroe*) and dried daily for a week in the wind. They are washed again then soaked for 30-40 days in salt water which has been boiled then cooled. This mash is mixed thoroughly and strained through a cloth. To the black liquid is added a boiled and cooled mixture of cane sugar and water, then the mixture is boiled until its volume is reduced by 20%. If the solid residue removed by filtering still tastes salty, it is put into water, kneaded and strained again. A sugar solution is added and all is boiled down as before to make second-grade ketjap.

To make *taoetjo* (*tauco, taucho* or Indonesian-style miso), the soybeans are soaked in fresh water, the hulls are removed, the seeds boiled and spread on bamboo trays to cool. Rice or glutinous rice flour is roasted until golden brown, then mixed with the seeds and set aside for 2-3 days to ferment between hibiscus (*waroe*) leaves on flat trays. When the mass has molded, it is sun dried for a few days until very hard. Note: This is the soybean koji used making taucho.

Remove the leaves and put this mass of soybean koji into salt water. On the third or fourth day, add some yeast (*gist*) and some cane sugar syrup. Continue the soaking and fermentation in salt water for 2-3 weeks. Place it [in crocks] daily outside in the dew, taking care that no rain gets on it.

To stimulate the fermentation, take steamed rice or glutinous rice that is only half cooked. Add *ragi* starter and allow it to ferment for 2-3 days until a sweet, alcoholic flavor develops. This kind of fermented rice is called *peujeum* in West Java, or *tapé* in Central or East Java. Now add this fermented rice to the soybeans in salt water to enhance both the fermentation and the product.

After 3-4 weeks the soybeans should be very soft like porridge; then the taucho is ready to be used. It is eaten raw with cooked or raw vegetables, or mixed with meat or rice dishes; other condiments are also made from it.

Another product that the Chinese make out of soybeans is tofu (*tahoe* or *tauwhoe*). Soaked soybeans are ground and the puree is mixed with fresh water. Then a milky liquid (*melkachtige vloeistof*) is filtered off and coagulated. The Chinese use a coagulant called *tjiogo* (gypsum or calcium sulfate), which is specially imported from China and is not always available, even to the Chinese apothecary. It is first burned, then cooled before being added to the milky liquid. The white mass which is precipitated is called tofu. A similar product can be made from mung beans. Address: Batavia (Jakarta), Java.

111. Lahmann, Heinrich. 1901. [Natural hygiene: or, Healthy blood, the essential condition of good health and how to attain it. A treatise for physicians and their patients on the predisposition to and prevention of disease. Translated by H. Buettner]. London: Swan Sonnenschein & Co. vi + 218 p. Illust. No index. 22 cm. Printed in Holland. [10* ref. Ger]
• ***Summary:*** This is a translation of the 8th edition of *Die diätetische Blutenmischung* (*Dysaemie*) *als Grundursache der Krankheiten,...* first published in German in 1892. Hygiene ought to be taught in plain language so that children can understand it. The author has four children (see photo facing title page), ages 6 years to 8 months, who have been raised on his system. “The most important factor... as regards the maintenance of health is food” (p. 11). The fundamental cause of disease is not external agents such as micro-organisms but is always an internal and constitutional

predisposition; the external causes are secondary causes (p. 12). Dietetic dysæmia is an abnormal composition of the blood and the principal origin of all predisposition to disease. The blood is formed from what we eat and drink (p. 15). The key to a good diet is its inorganic or mineral substances. The "total amount of food salts contained in the ordinary food of European nations is not only altogether too small, but the relative proportion of the food salts to each other also varies widely from that of the normal food-mixture" (p. 27). An unbalanced vegetarian diet can also lead to dysæmia (p. 28). Dietetic dysæmia arises from three main causes: Wrong selection (or preparation) of food, the abuse of common salt (NaCl), and excessive consumption of water. Uric-acid diathesis is a comprehensive name for gout (p. 59, 61). Carnivores and men consuming vegetable food form only small quantities of uric acid, whereas men living on flesh food form very large quantities. "Consequently man cannot be classed as a carnivore and cannot eat flesh unpunished" (p. 64). As "man is subject to sweating, it is evident that he was not intended to live on flesh, but on vegetables or rather on fruits, for he was never meant to live on cereals, as we have seen above" (p. 65). People should eat so as to maintain an alkaline condition of the blood (p. 121). They should avoid stimulants (*Genussmittel*) such as tea, coffee, alcohol, tobacco, etc.–which cause dysæmia.

In 1883 Dr. Lahmann hit upon the idea of adding the milk of nuts and almonds, instead of plain water, to cow's milk. Then he added food-salts extracted from leafy vegetables (p. 149). His invention, named "vegetable milk," was made by Hewel & Veithen in Cologne, and concentrate into a thick jelly. The product forms finer curds in the stomach of infants.

"The question of food reform has only lately been practically taken in hand, and this we owe to the *vegetarians.* They were the first to earnestly consider the food question, and they were right in the beginning with that most important question: Ought man to belong to the carnivorous class, to the herbivorous (frugivorous), or to the omnivorous? One through instinct, another by philosophy, a third from moral reasons, arrived at the conclusion that flesh-eating was not proper for man, and all united in opposing it. But after all there was comparatively little gained by this; for almost all of them held fast to the albumen theory... This is the reason why the vegetarian regime has failed in so many cases... We can certainly live without meat, and indeed it is more natural for us to do so; but there is a correct and an incorrect way of using even vegetarian food." The best diet is based on green vegetables and juicy fruits, with cereals, pulses and nuts as secondary foods (p. 195-96). The author lived 1860-1905. Address: M.D., Sanatorium, near Dresden, Germany.

112. *Vegetarian Messenger* (*Manchester, England*). 1902. Price list. Jan. p. 12.
• ***Summary:*** Lists prices for foods; beans, peas, lentils; prepared foods; biscuits; Plasmon; tea and coffee substitutes; nuts; jams; bottled fruit; oils; butter and lard substitutes [margarines and shortenings]; soaps; and cookery appliances, etc.

All are available for purchase from the Vegetarian Society's Food Stores at 19 Oxford St., Manchester, England.

The foods in the category "Prepared foods" are of special interest, since most are meat alternatives and would soon be called "health foods." Those known to be made (or imported) by the International Health Association Ltd. (renamed Granose Foods Ltd. in 1926). are followed by an asterisk: Dr. Nichol's Food of Health, Dr. Allinson's Food (packed it tins), Fromm's Extract (jar), Maggi's Soups (packet), Granose Flakes* (packet), Granose Biscuits* (packet), Avenola (packet), Bromose* (tin), Falona (tin), Meatose*, Nutmeatse* (tin), Vejola (tin), Nutvejo (tin), Malted Nut Caramels (tin), Nut Butter* (tin), Carnos, Golden Grain Meal (packet).

Cookery appliances include several Nut Mills, and "The Pitman Spoon."

Note: There are apparently no foods made by Pitman sold at this vegetarian store.

113. Kneipp Health Store. 1902. Mother's milk (Ad). *Naturopath and Herald of Health* (*The*) (*New York City*) 3(3):Unnumbered page at front. March.
• ***Summary:*** "... is undoubtedly the best food for infants. When this, however, is not procurable the best substitute for it only should be used... Dr. Lahmann's Vegetable Milk (*Pflanzen-Milch*). Dr. Lahmann's Health Cocoa (*Närsalz-Cacao*). Dr. Lahmann's Hafer Cacao (made with oats). Dr. Lahmann's (sweetened) Chocolate. Dr. Lahmann's Nutritive Extract (*Närsalz-Extract*). Dr. Lahmann's Närsalz Hafer Biscuits." Address: 111 E. 59th St., New York City.

114. R.S.T. 1902. The solving of the meat problem: What has been accomplished at the Battle Creek Sanitarium during the past thirty-seven years. *Chicago Daily Tribune.* June 5. p. 7.
• ***Summary:*** "Just now, when the price of meat is so high as to make it an expensive luxury even to the well-to-do classes, it strikes me that it is a good time generally for people to learn the fact that meats are not the best foods obtainable to contribute to either health or strength."

"I was surprised to learn that the patients treated at this great institution were not only not given drugs for the cure of their ailments but were fed on a 'meatless' or vegetarian diet. At first I said these people are 'cranks,'... Gradually I sampled the 'vegetarian' dishes, and found them so temptingly prepared and served, that I soon learned to prefer them to the flesh foods. I was surprised at the great and pleasing variety of substitutes for meats in the line of cereal and nut preparations."

Dr. Kellogg, whom the writer has known intimately for about 6 years, "has been a vegetarian for 35 years or

more [i.e., since at least 1867]. He is the hardest and most persistent worker that I know of." He works at least 14 hours a day. "He is a human dynamo of wonderful energy. Recently, when he was engaged almost night and day planning and working for the rebuilding of the Sanitarium [destroyed by fire on 18 Feb. 1902], I asked him how he could endure so much work. He answered in his uniformly courteous and cheerful way: 'O, that is simple; I live right.'"

He has developed scientifically prepared foods from cereals and nuts for his thousands of patients. In "this line he is certainly the most prolific as well as the most successful inventor in the world."

These food products were primarily "for use in the Battle Creek Sanitarium, but as the thousands of patients who have been cured or benefited, learned the better way of living, they demanded that these foods be supplied to them at their homes, and as a result the Battle Creek Sanitarium Food Company and the Sanitas Nut Food Company came into existence, the former about 3 years ago [i.e., about 1899], and the latter about 7 years ago [i.e., about 1895].

"Dr. Kellogg is not the only living example of the superiority of a vegetarian over a meat diet. There are, I should judge, no less than 2,000 people in Battle Creek who do not eat meat, and who claim as a consequence that they enjoy better health on account of their method of living, and they certainly look healthier than the average persons who are meat eaters."

The Sanitarium "corps, numbering about 800, are all vegetarians, and the amount of work that they do, always with cheerfulness, amply demonstrates the fact that the 'Battle Creek Idea' is correct."

It is important to know that neither "the Battle Creek Sanitarium nor the Battle Creek Sanitarium Health Food Company is conducted for the purpose of making money." They are "wholly philanthropic in nature."

There follows a long column giving menus on specific days, starting with breakfast, 4 June 1902. Items preceded by an asterisk (*) are made by one of the two food companies. These include: Almond Cream, Bromose, Caramel Cereal, Cocoanut Crisps, Crystal Wheat, Gluten Biscuit No. 1, Gluten Wafers, Graham Crackers, Granola, Granut, Granose Biscuits, Granose Flakes, Malted Honey, Malted Nuts, Nuttolene. Protose, and Zwieback. Categories: Dextrinized grains. Unfermented breads. Eggs and milk are served, but no meat, fish, or poultry–except at the "sinners" table. Two photos show the Sanitarium, old and new.

115. Bilson (T.J.) & Co. 1902. T.J. Bilson & Co. (Ad). *Good Health* (*London*) 1(4):125. Sept.
• ***Summary:*** A ¼-page ad. "Supplies of the best dried fruits and nuts of all kinds.

"Also a full stock of the foods of the International Health Association [IHA], such as Bromose, Protose, Granose, Toasted Wheat Flakes, etc.

"Special offer made with respect to Welch's Grape Juice, a most delicious food-drink, and real tonic.

"Send stamp for full price list, in which you are sure to be interested."

Note 1. This small ad (3 inches high by 2.5 inches wide) is the earliest document seen (July 2009) (one of two ads on the same page) that mentions the "International Health Association," a Seventh-day Adventist organization, which was renamed Granose Foods in 1926. The IHA was an early (perhaps the earliest) manufacturer of health foods in England and the UK.

Note 2. This is the earliest document seen (July 2009) giving the name of a retail store that carries products manufactured by the International Health Association. Note that this retail store is located in London.

This same ad appeared in the Dec. 1902 (p, 228) and Jan. 1903 (p. 260) issues of this magazine. Address: 86 Gray's Inn Road, London, W.C. [England].

116. Meyer, Frank Nicholas. 1902. Letters of Frank N. Meyer. 4 vols. Compiled by Bureau of Plant Industry, USDA. 2444 [i.e. 2577] leaves. Unpublished typescript.
• ***Summary:*** Only two copies of these rare, magnificent unpublished documents exist. One is Rolls 28-30, Vols. 105-109, Project Studies, Division of Plant Exploration and Introduction, Record Group 54: Records of the Bureau of Plant Industry, The National Archives. The second is at the University of California at Davis. Most are carbon copies of typewritten letters. Includes some illustrations (pencil sketches) by Meyer.

The first letter in this collection, dated 7th Oct. 1902, is from Meyer in Santa Ana, California, to Mr. Adrian J. Pieters (a fellow Dutchman) at USDA in Washington, DC. Meyer arrived in California on 18 Sept. 1902 and started immediately to work for USDA at the plant introduction garden in Santa Ana; he stayed 7 months. In April 1904 Meyer is in Guadalajara, Mexico. In March 1905, Meyer receives an offer from David Fairchild and Pieters to work for USDA as an agricultural explorer in northern China. In August 1905, he is in Nagasaki, Japan. In Sept., he is in Shanghai, China. In Oct. 1905, he writes a long letter to Fairchild. Meyer made four very fruitful expeditions to Asia, eastern Europe, and the Middle East. His first expedition was to China, Manchuria, and Siberia, 1905-08. His second was to Europe, Russia, Caucasus, Transcaucasia, Turkestan, and Siberia, 1909-12. His third was Russia, Siberia, Manchuria, China, and Japan, 1912-15. And his fourth and final expedition was to Japan and China, 1916-18.

On 23 Dec. 1917, war engulfed Frank Meyer at Ichang (I-ch'ang or Yichang) on the Yangtze River. He was trapped there until 2 May 1918 when he managed to break through lines of soldiers. The last letter in this collection, dated 18 May 1918, is from Meyer to Fairchild written from Hankow, China. He died about 1-2 June 1918, having drowned in the

Yangtze River below Anking, and above Wuhu, China.

Meyer did not report any soybeans in Russia or Turkestan.

Note 1. This is the earliest document seen (July 1998) concerning Frank N. Meyer.

Note 2. Ichang, which opened as a treaty port in 1876, was a city of 40,000 people by 1920. It is situated at the head of steam navigation on the Yangtze, at the throat of the main outlet from Szechuan, and at the point where the mountains of Szechuan and western Hupeh meet the central plain of Hupeh.

Note 3. Soyfoods Center owns all pages that mention soy, plus: (1) The full U.C. Davis cataloging record for the archival collection, which is in Special Collections SB108 A7M49 1902 v1-4. (2) A letter from Melissa Tyler of U.C. Davis, dated 22 Sept. 2003, discussing the collection and its lack of front matter. (3) Appendix A: Bureau of Plant Industry, by Knowles Ryerson about a dispute he had with Secretary of Agriculture Henry Wallace involving Nicholas Roerich, Dr. H.G. MacMillan, and James F. Stephens over a plant exploration expedition to Manchuria and the Gobi Desert. In 1934 Ryerson was appointed Chief of the USDA's Bureau of Plant Industry; this dispute led to his removal that same year; he was replaced by Frederick D. Richey. Address: USDA Bureau of Plant Industry.

117. *Good Health* (*London*). 1902. The International Health Association of Legge Street, Birmingham,... 1(5):156. Oct.
• ***Summary:*** "... have added two new foods to their list of products during the last few months; namely Toasted Wheat Flakes, and, very recently, Malted Nuts. These foods are not eminently wholesome and nourishing but also very palatable. Toasted Wheat Flakes bids fair to out-rival the famous Granose Flakes, from which it differs in affording more resistance to the teeth, and in its rich, sweet taste. The Association richly deserves the increased patronage which it is enjoying."

Note: Toasted Wheat Flakes was on the market by Oct. 1901, and widely publicized by 1902. Granose Flakes was on the market by 1898. Both products were first launched in the USA by Seventh-day Adventists in Battle Creek, Michigan.

118. Miles, Eustace Hamilton. 1902. Avenues to health. London: Swan Sonnenschein & Co, Ltd.; New York, NY: E.P. Dutton and Co. 438 p. Illust. Index.
• ***Summary:*** In Chapter 15, "Diet and feeding," Miles gives a full-page list of protein foods that he believes are nourishing and free from harmful elements. "I certainly find them pleasant to the taste." These include:

"Foods of the International Health Food Association (70-74 Legge Street, Birmingham; Battle Creek, Michigan, U.S.A.). Besides Protose, Nuttose, and Malted Nuts or Bromose (over 20 per cent. of vegetable Proteid), Granose is a excellent Grain product."

"Pitman's Vigar Oil (for Salads, etc.)."

"These and other food products can be ordered through the Pitman Stores, Corporation Street, Birmingham."

Note 1. The "International Health Food Association" was probably correctly named the "International Health Association"; in 1926 it became Granose Foods. It may have been the earliest known company in England that used the term "Health Food" or "Health Food Co." in its company name.

Note 2. On the last (unnumbered) page of the book is a long list of "Works [mostly books] by Eustice Miles, M.A." A summary of the prizes he won in racquets, tennis, and squash, etc. appears at the top of the list. He was a fine, well known athlete. Eustace Miles lived 1868-1948, and was at his peak of athletic performance in about 1897-1902. Address: Author, England.

119. Rorer, Sarah Tyson. 1902. Mrs. Rorer's new cook book: A manual of housekeeping. Philadelphia, Pennsylvania: Arnold and Company. 730 p. Illust. Index. 21 cm.
• ***Summary:*** The soy bean is mentioned in two special sections: Botanical classification of our common vegetables (p. 281): "Leguminosae: Pulse family. Soy bean, peanut, kidney bean, string bean, lima bean, black bean, pea, chick pea, lentil, St. John's bread."

Soy bean (*Glycine hispida*, Maxim.) (p. 334-35): "Soy beans are grown principally in China where they form an important article of food; in fact, they are the richest of all in food constituents. It is also grown to a considerable extent in India [sic], where it is mixed with rice. This bean ranks high in fat and albuminoids and is their only muscle-making food. It has more than meat value. By the Chinese it is made into cheese [tofu], pastes [jiang], and sauces [Soy]. Soy sauce is used by them on all meat and fish dishes. For the English and Americans it forms the foundation for such sauces as club-house and Worcestershire."

Note 1. This is the earliest document seen (Feb. 2012) stating clearly that soy sauce is used as an ingredient in making Worcestershire sauce.

"Soy is an agreeable seasoning to creamed meat dishes and a very pleasant addition to French salad dressing. It can be purchased in jugs at any Chinese shop, or at the American wholesale druggists by measure." A table (based on Church) gives the composition of the soy bean: Albuminoids, etc. 35.3%. Fat 18.9. Starch and dextrin 12.5. Sugar 12.0. Cellulose 4.2. Water 12.5. Mineral matter 4.6.

"Soy" [sauce] is used as an ingredient in 12 recipes: Japanese fish sauce (p. 228). Japanese eggs (p. 253). Sautéd [sic Sautéed] celery ("When ready to serve sprinkle over two tablespoonfuls of soy or mushroom catsup, and send at once to the table," p. 389-90). Ginger chutney (p. 435). Japanese dressing (p. 442). Celery salad ("This is greatly improved by adding a few drops of Worcestershire sauce, soy or mushroom catsup," p. 451). Bobotee salad (p. 457).

Philadelphia cream salad (p. 459-60). Shad roe salad ("one tablespoonful of Worcestershire sauce or soy," p. 469). Salad seasoning ("Agreeable seasonings to be kept on hand for salad making: Garlic, mushroom catsup, tomato catsup, Worcestershire sauce, soy, tobasco oil [sic, Tabasco], tarragon vinegar, mint sauce, capers and celery seed," p. 472). "A group of Hawaiian recipes"–To cook beef ("bake until brown. Then pour over it a half pint of sweet cream, to which you have added a tablespoonful of soy. Cook slowly for one hour, basting frequently with the cream," p. 691-92). Cream lettuce sauce to serve with fish ("a half saltspoonful of pepper and a teaspoonful of soy," p. 695).

Worcestershire sauce is used as an ingredient in at least 25 recipes. The first four are: Ox tail soup (p. 62). Cream of cheese soup (p. 74). Mock turtle soup (p. 80). Baked carp (p. 104).

Peanut butter is used as an ingredient in 5 recipes: Cream of peanut soup (p. 75). Lentil pie (p. 337-38). Peanut wafers (p. 535). Nut and fruit crackers (with almond butter or peanut butter, p. 537-38). Marguerites (p. 556).

The earliest recipe seen for homemade peanut butter states (p. 535): "Peanut Butter: Roast the nuts, shell and blow off the brown skins. When making it in large quantities, it will pay to have a bellows for this purpose, or put the peanuts on a coarse towel, cover them with another towel, rub them gently, then blow off the skins. If you use salt dust them lightly with it and grind at once. Pack the butter into glass jars or tumblers, cover them and keep in a cool place. This may be used plain or diluted with water."

Two recipes use almond butter as an ingredient: Almond wafers (p. 525). Nut and fruit crackers (p. 537-38). A recipe for homemade almond butter is given (p. 525).

The word "vegetarian" is mentioned in connection with 7 sections of recipes: Meats (p. 135-36). Vegetables (p. 277-78). Salsify (p. 317-18). Tomatoes and okra with curry (p. 417-18). Nuts (p. 522-23). Nut croquettes (p. 538). Sample menus–Vegetarian (p. 666). The author speaks very favorably of a balanced vegetarian diet. Scientists in general agree, she says, that animal proteids are easier to digest than vegetable proteids. "I must contend, however, that a well selected vegetable diet will give health, bodily vigor and mental strength to those who live rationally." In other countries and cultures, vegetarians are quite equal in strength to those of the same economic class who live largely on meat or on a mixed diet of proper proportions–and are most likely freer from disease. The out-door laborer would probably do better on a vegetarian diet whereas the sluggish digestive apparatus of an indoor is probably better suited to beef (p. 135-36).

"The American people, as a class, in their rushing and bustling life, prefer to take their nitrogen from animal products, which are more easily digested and assimilated than vegetables." "The Japanese, who do in their country the work performed by horses here, are practically vegetarians." The "vegetarian requires but two meals per day," yet they are more nourishing than three meals of meat. They take less time to eat, cost less, and offer more variety. "The amount of cellulose or waste in vegetable foods keeps up the peristaltic motion of the intestines and lower bowels; hence, vegetable eaters are rarely troubled with constipation and torpid livers." America has "grown into a meat-eating nation" in large part because the scullery maids who preside over the kitchen are largely uneducated, do not understand nutrition, and have never learned the subtleties of preparing vegetables (p. 277-78).

"To the vegetarian, they [nuts] are indispensable; they furnish his meat, milk and butter. They are palatable, nutritious, and, if well prepared, easy of digestion. Being of vegetable origin, they are free from the danger of disease germs. Their food value is generally overlooked by Americans as they are generally served as dessert"–on top of a heavy meal. "From the general awakening in regard to healthful diet, societies have sprung up all over the world, recommending the use of vegetable foods, especially fruits and nuts. We have well established, both in New York and London, large vegetarian societies, many with separate branches of 'fruit and nut eaters.' Personally I have tried the experiment, and find it most satisfactory" (p. 522).

The Preface notes that this "new book on Domestic Science... represents on paper The School at its highest period of development..." "A great change in the methods of living has taken place in America during the last few years." Not long ago, schools of cookery taught "fancy cookery"–"to succeed with these elaborate, dyspeptic-producing concoctions as the highest ambition. All this has now changed: the teacher or cook book (an ever present teacher) that does not teach health, body building, and economy in time and money, is short lived. There are still a few women who do elaborate cooking to please the palate and appetite,... They are still at the palate stage of existence. Strive to reach a higher plane of thought–eat to live. Why should any woman be asked to stand for hours over a hot fire mixing compounds to make people ill? Is this cookery? Is the headache that follows a food debauchery more pleasant or pardonable or less injurious than that which follows drink? Results of intemperance are identical. Simple living and high thinking have the approval of learned men and women,..."

Sarah Tyson Heston Rorer (1849-1937) "is one of the great ladies of American culinary history. She was a nationally recognized cookery expert, founded and ran a cooking school in Philadelphia for 18 years, authored over 75 books and pamphlets, edited her own magazine *Table Talk*,... and was domestic editor of the *Ladies Home Journal* for 14 years." With over 1,500 recipes, tips and advice, and more than 125 recipes, this "is one of America's great cookbooks. The *Ladies Home Journal* reprinted it in 1970. It offers an excellent view of American cookery at the turn of the 19th to 20th centuries" (MSU introduction).

Note 2. This is the earliest document seen (Jan. 2001) which states that "body building" is widely considered part of a healthy way of life. Address: Philadelphia.

120. *Good Health* (*London*). 1903. Malted Nuts, the new food which the International Health Association is putting on the market,... 1(9):285. Feb.
• ***Summary:*** "... affords the best hot, nourishing drink that we know of. A cup of hot malted nuts may be prepared in a moment, and is in such form that it is ready for immediate assimilation into the system. It is not only far superior to tea, coffee, or cocoa, but contains a great deal more nourishment than bovril or any other meat extract, as well as being free from the harmful extractives contained in these animal foods."

121. International Health Association. 1903. Health foods (Ad). *Good Health* (*London*) 1(10):319. March.
• ***Summary:*** A full-page 2-column ad with a large bold title. The introduction, spanning both columns, states: "The foods included in the following list are called 'Health Foods' because they are entirely free from all that is injurious, and contain just the elements required to build up the human system, both in health and disease. They are made from the purest materials, combined in the proper chemical proportions, and so perfectly cooked as to be easily digested by all."

Under the fairly large words "Price list" (also spanning both columns), the name of each of 14 foods appears underlined in large bold letters, followed by a detailed description and the price in regular size type. The foods are:

Granose Flakes (crisp flakes in packets containing about 13 ounces, 7½*d.*) Granose Biscuits ("The same as Granose Flakes but pressed into biscuit form." Sold in boxes). Toasted Wheat Flakes ("Sweetened with Malt Honey (Nature's Health Sweet)," Makes a "delicious breakfast dish." Serve warm or cold)."

Avenola (A combination of grains. "Makes porridge in one minute." Also tasty puddings. Packed in an air-tight canister). Nut Rolls (Made from "whole meal and finely ground nut meats, shortened with sweet nut oil. Very suitable for those who have to put their dinners in their pockets"). Gluten Meal (Made from wheat gluten for "diabetics and people who cannot digest starch").

Nut Butter ("Made from cooked nuts only. Can be used for shortening, flavouring soups, or for table purposes. When diluted with hot water it forms a delicate cream. In 1 lb tin"). Caramel Cereal ("A healthful and fragrant substitute for tea and coffee, prepared from cereals... One pound makes nearly 100 cups. Packed in air-tight canister. 8*d.*). Protose ("Vegetable Meat... It provides the same elements of nutrition that are found in the best meat, without any impurities. Liked by almost everyone from the first... In ½ lb. tin" 8*d.*). Bromose ("A combination of malted cereals and pre-digested nuts"). Fruit Bromose ("The same food as Bromose, combined with figs"). Wheatmeal biscuits. Oatmeal biscuits. Fruit wafers ("Made from the best flour and dried fruits, shortened with nut fats").

Across the bottom: "A package of assorted samples of the above foods will be sent, post paid, one receipt of One Shilling. Can also be obtained from your *Good Health* agent. Recipes furnished."

Note: This is the earliest ad seen (June 2009) for the various foods made or sold by the International Health Association of Birmingham. A few of these foods may be made in Battle Creek, Michigan, and imported into the UK. Address: Birmingham [England].

122. International Health Association. 1903. Radical temperance. Health foods (Ad). *Good Health* (*London*) 1(11):348. April.
• ***Summary:*** A 1-column half-page ad. The health foods advertised are: Caramel cereal (A "health beverage" for use in place of nerve stimulants like tea and coffee). Malted nuts (Use in place of stimulating Beef Tea and Meat Extracts). Protose (Use in place of animalising flesh foods). Address: Birmingham [England].

123. *Yakugaku Zasshi* (*J. of the Pharmaceutical Society of Japan*). 1903. Zappo: Tônyû oyobi jinzônyû [Miscellaneous news: Soymilk and other man-made or artificial milks]. No. 256. p. 616, 635. June. [Jap]
• ***Summary:*** Note: This is the earliest Japanese-language document seen (July 2012) that mentions soymilk in the title, or that uses the term *tônyû* (literally "bean milk") to refer to soymilk.

It is also the earliest document seen (Aug. 2013) in any language that mentions *tônyû* or *tonyu*. As of Aug. 2013 *tônyû* is the modern Japanese word for soymilk.

124. *Vegetarian Messenger* (*Manchester, England*). 1903. The Vegetarian Society's food depot. Sept. p. 211-12.
• ***Summary:*** "A new price list of specialties supplied at the V.S. Food Stores has been prepared, and can be had on application, from 19 Oxford Road, Manchester. It contains a list of Health and Food-Reform publications as well, and the prices quoted will be found to compare favourably with those charged at other depots.

"It may be convenient to group the specialities [sic] under different heads so that readers may the more readily understand their nature.

"Substitutes for fleshmeat fittingly comes first. Under this head we have Protose, Meatose, Nuttolene, Almond Nut Meat, Vejola, Savoury, and Banana Nut Meats. These range from 5d. to ¼ per tin, and it is claimed for them that they look like meat, taste like meat, are less expensive than meat, and can be served in all the many ways that meat can be; and I can affirm that they are much more healthful.

"Amongst nut butters (which even these warmer months are having a very ready sale) are. Pea-Nut, Almond, Almond Cream, and Coconut Butters, and there are in addition, two varieties of 'Nut' Butters, each having a distinctive flavour of its own."

"The grain preparations include wholewheat meal, whole wheatmeal bread, and cracked wheat (all of which are fresh daily), whole red and pearled wheat."

"Among biscuits may be mentioned the V.S. health biscuit (a most relishable and healthful wholemeal biscuit) at 4½d. per lb."

"With the introduction of Plasmon Powder, Milk Proteid Foods became a household word–and necessity. Besides this brand the Depôt stocks others of a similar character, viz.: Casumen, Lacumen, and Milcose, the latter being a preparation produced specially for the Vegetarian Society's Stores."

125. *Good Health* (*Battle Creek, Michigan*). 1904. Chart of food elements. 39(1):Insert after p. 48. Jan.
• ***Summary:*** This table lists 64 foods, both processed and unprocessed, with a standard serving size for each (both volume and weight), and the amount of proteid, fat, and carbohydrate per serving, plus the number of "food units" [apparently similar to calories] per ounce. Processed foods include: Granola, Granose, Graham crackers, Whole wheat wafers, Graham bread, Whole wheat bread, Gluten mush, Wheatose, Malted nuts, Bromose, Nuttolene, Protose, Stewed Nuttolene (½ water), and Kumyss. For example, Protose: 0.5 pint (4.2 oz) contains 21.3 [units not given] protein, 10.2 fat, 2.8 carbohydrates, and 60 food units per oz. Butter has the highest number of food units per oz (217.6), followed by shelled almonds (189.6). Lettuce is lowest (5.2).

126. International Health Association, Ltd. 1904. Our health foods reach to the ends of the earth: Have they reached you? (Ad). *Good Health* (*Britain*) (*Seventh-day Adventist*) 2(8):255. Jan.
• ***Summary:*** A full-page ad. This company sells (and perhaps makes) the following foods. A description and price of each is given. Granose flakes. Toasted wheat flakes. Avenola. Nut rolls. Whole wheatmeal biscuits. Oatmeal biscuits. Fruit wafers. Peanut butter. Pure almond butter. Caramel Cereal [a coffee substitute]. Protose. Nuttolene. Bromose. Malted nuts–in fine powder form.

"Send us One Shilling for a package of samples and cookery book, or ask your Good Health agent for these foods."

Note: Most or all of these products were first developed by Dr. John Harvey Kellogg at Battle Creek, Michigan, and sold by Sanitas Nut Food Co. Address: Birmingham [England].

127. Just, Adolf. 1904. Return to nature! The true natural method of healing and living and the true salvation of the soul. 2nd English edition. Paradise regained. Authorized translation from the 4th German edition by Benedict Lust. New York, NY: Published by the translator's Naturopathic Publishing Co. xv + 303 p. Illust. No index. 22 cm. Reprinted in 1970 by Health Research, Mokelumne Hills, California. [Eng]
• ***Summary:*** Contents: Dedication. Translator's preface to the English edition. Preface to the first edition. Preface to the fourth edition. The voices of nature. The Jungborn, its purposes. The natural bath. Rubbing and stroking of the body. Light and air. Light-and-air huts and cottages (injurious gaslight). Our clothing. Earth power. The fear of catching cold. Earth bandages and earth compresses. How shall we bury our dead? (not in coffins). Nutrition according to nature. Jesus and nutrition according to nature. Meat and alcohol. Fire. When ought we to eat? The natural food, care, and education of children. Cases and cures. Sea and mineral baths. When ought we to submit to a natural cure? My relation to the old method of natural healing. Everyone his own doctor. Agriculture, fruit culture, veterinary science and vivisection. Mental and physical work, fruit culture, and sport. The family, the home, and the country. Ideals and poetry. Conclusion: The soul's life. Supplement: The arrangements, aims, and purposes of the Jungborn. The contents and the significance of the following volumes (Vols. I and II) of my work.

Adolf Just, born in 1859, believed that everyone should return to nature, should be his own doctor, and should make use of the four great therapeutic means that nature offers–diet, mud, light and air baths, and the cold rub-down. Men must listen to the voice of nature to learn what is right. Primitive people are seen as "children of nature" whereas civilized mankind has gone astray–despite their higher intelligence and science, which is "the cunning serpent in paradise." For health, one must turn toward nature and away from science.

The section titled "Natural food" (p. 132-56) advocates a vegetarian diet, with native raw fruits and nuts as the main foods. Drink mainly water, but sparingly; unnatural thirst is caused by meat, salt, and spices. Meat-eating should be avoided. "Salted and smoked meats are the most injurious. Pork and various kinds of sausages are the worst of all... Instead of potatoes and leguminous seeds, we ought to choose green vegetables and salads." Avoid sugar, tobacco, alcohol, and other stimulants, especially coffee. "Instead of real coffee, cereal coffee (malt coffee) could be used." Also avoid salt and spices. Raw, uncooked milk or curds (although most stable cows are sick), plus bread and butter, can be helpful in making the transition. "This new departure in a meatless diet, in which fruit occupies the chief place, might be called the *new vegetarianism.*" The old vegetarian diet used bread, green vegetables, leguminous seeds, and some fruit as the main foods. It is "well known that the orang-

outang whose intestines and organs of digestion are so like man's... lives entirely on raw fruit and nevertheless possesses such enormous strength that he is the giant of the tropic forest" (p. 145). During sickness one should fast.

Sports (such as gymnastics, bicycling, etc.) are contrary to Nature; do productive physical work instead (p. 261-63).

Note: The first German edition of this book was published in 1896, the third edition in 1898, and the fourth edition in 1900. Address: Author: Jungborn, Stapelburg (between Isenburg and Hartzburg) in the Harz [Germany]; Translator: Naturopathic Physician, American "Jungborn," Butler, New Jersey, USA.

128. Abel, Mary Hinman. 1904. Beans, peas, and other legumes as food. *Farmers' Bulletin* (*USDA*) No. 121. 39 p. See p. 11-13, 18-20. Revised. Illust. [1 ref]*

• ***Summary:*** A revised edition, 3 pages longer than the 1900 original. The information about soy is unchanged, however it is on different pages (see above). The section titled "Nutritive value of the legumes" (p. 18-20) includes a table titled "Composition of fresh and dried legumes compared with that of other foods." Under "Dried legumes," the composition of "Soy beans" (dry, containing 10.8% water) is given.

129. Fulton, Edwin Giles. 1904. Vegetarian cook book: Substitutes for flesh foods. Oakland, California: Pacific Press Publishing Company. 266 p. Index. 19 cm.

• ***Summary:*** The introduction, titled "Why I was impressed to write a cook book," states: "The number of physicians and dentists increases each year at an alarming rate, but the aches and ills of the suffering people do not lessen. Thousands of people find themselves in a deplorable condition, with stomachs almost worn out, having depended largely upon predigested foods and a long list of so-called 'dyspepsia cures.'

"The amount of patent medicines, 'sure cures,' consumed by the people in the United States is enormous, and is increasing every year...

"Disease among cattle, poultry, and fish has increased so alarmingly in the last few years that we should no longer depend on the animal kingdom for food." "In our efforts to teach how to live without the use of flesh foods, we find we have only begun to discover the inexhaustible resources of the great vegetable kingdom in the boundless wealth of varied hygienic foods."

The chapter on "Entrees" (p. 67-114) contains only vegetarian recipes with names like Mock white fish, Fillets of vegetarian salmon, Mock turkey with dressing, Roast duck (vegetarian style), Vegetarian roast, Vegetarian hamburger steak (p. 113-14), or vegetarian sausage. Several commercial products are called for in many recipes: Protose, Nuttolene, and Nut Food–all made by the Sanitas Nut Food Co. of Battle Creek, Michigan.

The chapter on "Cereals" contains a recipe for Gluten-Granola mush (p. 184). The chapter titled "Toasts" states (p. 187): "Zwieback should be used as the foundation of all toasts, although ordinary toasted bread can be used." Adjust the fire so as not to burn or singe the bread.

The chapter titled "Nut butter" (p. 239-45) states that "Nut butter can be easily made in the home... Peanuts and almonds are the nuts most suitable for making nut butter... The best variety peanuts for making nut butter is the Spanish shelled." Three home-scale processes are given. The first is:

"Process no. 1: Put a layer of peanuts about one-half inch deep in a dripping-pan and place on perforated shelf in a moderate oven. Allow them to bake slowly for about one hour. Cook them until they are a light brown or straw color. Shake the pan or stir the peanuts every few minutes. When the kernels begin to crack and pop they brown very quickly, and should be watched closely.

"A splendid way to cook them is to fill a tight-covered dish about two-thirds full, place in the oven, and shake occasionally. When cooked this way, they are not liable to burn, and they retain their flavor better. When they have cooked sufficiently, spread out at once. When they have become quite cool, blanch as follows: This can be done by rubbing them in the hands, or what is better, a coarse bag, or take a piece of cloth and fold the ends together, forming a bag. Another good device is a screen made of coarse wire. Rub them until the skins are loose. The chaff can be removed by using a fan or by pouring them from one dish to another where the wind is blowing. Look them over carefully, removing defective nuts and foreign substances.

"The next step is to grind them. The most practical family mill we know of for grinding nuts, etc., is the Quaker City Mill (see cut [illustration] and description of same in this book).

"Always grind freshly cooked nuts, as they do not make good butter when left a day or two after being cooked." Note: No salt is used in this recipe. And, it is clearly based on the recipe in Lambert (1899, p. 70-71, which see). Moreover, the term "peanut butter" does not appear in this book.

These recipes are followed by recipes for: Salted nut butter ("Prepare nuts as described in process No. 1. Sprinkle salt on the kernels when grinding. It is much more preferable to grind the salt in with the nuts than to mix it in the butter"). Almond butter ("more difficult to make than peanut butter, on account of the difficulty in removing the skins"). Brazil nut butter. Peanut meal. Nut butter for the table. Peanut cream ("Emulsify with water until it is the consistency of milk").

Concerning "Nut butter for the table" (p. 245): "Put one-half the amount of butter required for the meal [p. 244] into a bowl and dilute with an equal quantity of water, adding a little of the water at a time, beating it thoroughly with a fork until it [sic, the mixture] is smooth and light. Enough water should be used to make it the proper consistency to spread

nicely. An egg beater or a wire potato masher is an excellent utensil for mixing. A little salt can be added if desired. Nut butter when mixed with water does not keep but a few hours."

Page 249 lists 25 U.S. and 2 overseas "Vegetarian Restaurants and Cafes" worldwide, each with a street address. USA: Vegetarian Restaurant, Los Angeles, California. Vegetarian Restaurant, Oakland, California. Vegetarian Cafe, San Francisco, California. Vegetarian Cafe, Colorado Springs, Colorado. Vegetarian Cafe, Denver, Colorado. Hygienic Dining Rooms, Washington, DC. Hygeia Dining Rooms, Chicago, Illinois. Vegetarian Restaurant, Des Moines, Iowa. The Hygeia, Battle Creek, Michigan. Vegetarian Restaurant, Detroit, Michigan. North Michigan Tract Society, Petoskey, Michigan. Pure Food Cafe, Kansas City, Missouri. Vegetarian Restaurant, Lincoln, Nebraska. Vegetarian Restaurant, Jamestown, New York. Health Restaurant, New York City, New York. The Laurel, New York City, New York. Hygienic Cafe, Philadelphia, Pennsylvania. Vegetarian Restaurant (Corner Church & Vine St.), Nashville, Tennessee. The Pure Food Cafe, Salt Lake City, Utah. Good Health Restaurant, Seattle, Washington. Vegetarian Restaurant, Spokane, Washington. Restaurant, Fairmont, West Virginia. Hygienic Cafe, Madison, Wisconsin. Hygienic Cafe, Milwaukee, Wisconsin. Hygienic Restaurant, Sheridan, Wyoming.

Foreign: Vegetarian Restaurant, Sydney, NSW, Australia. Vegetarian Restaurant, Copenhagen, Denmark.

Pages 250-52 contain a "Directory of Sanitariums," 56 in all, worldwide. They are located in the USA (35), Australia (2; Wahroonga and Cooranbong, NSW), Canada (4; Vancouver and Victoria, British Columbia; Knowlton, Quebec; and St. Johns, Newfoundland), Denmark (2; Skodsborg and Frederikshavn), England (2; Caterham, Surrey, and Leicester), Germany (Friedensau, Bez. Magdeburg), India (Calcutta), Ireland (Belfast), Japan (Kobe), Mexico (Guadalajara), New Zealand (Christchurch), Norway (Christiania), Samoa (Apia, [Western Samoa]), South Africa (Cape Colony), Sweden (Orebro), and Switzerland (Basle).

Page 252 gives a "Directory of Sanitarium Food factories: Battle Creek Sanitarium Food Company, Battle Creek, Michigan Sanitarium Food Company, Sanitarium, California. Portland Sanitarium Food Company, West Ave., Mt. Tabor, Oregon. Colorado Sanitarium Food Company, Boulder, Colorado. Union College Bakery, College View, Nebraska. Sanitarium Food Company, 228 Clarence St., Sydney, NSW, Australia.

Commercial food products made by these food companies and used in the recipes include: Gluten, Granose Flakes, Nuttolene, and Protose.

In the back are ads (on unnumbered pages) for: (1) Quaker City Peanut Butter Mill, made by A.W. Straub Co. at 3 locations: 3737-41 Filbert St., Philadelphia, Pennsylvania; Canal and Randolph Streets, Chicago, Illinois; Vegetarian Cafe, 775 Market St., San Francisco, California. (2) Sanitarium Food Company, Sanitarium [St. Helena?], California. Branch stores: San Francisco, Oakland, San Jose, and Fresno, California; and Salt Lake City, and Provo, Utah. They make bottled grape juice and apple cider. (3) Sanitas Nut Food Co., Ltd., Battle Creek, Michigan (makers of Protose and Nuttolene. "Nut foods were developed by the Sanitas Nut Food Co., Ltd., Battle Creek, Mich. Their manufacture is protected by patents... Sanitas Protose and Nuttolene are the only successful and scientific meat substitutes on the market. Sanitas Foods are sold by reliable dealers in all parts of the country... The Sanitarium Food Co., St. Helena and San Francisco, Cal., carry a full line of our products.")

Note: This is the earliest English-language document seen (Nov. 2003) that contains the term "meat substitutes" (or "meat substitute").

A slightly revised edition was published later in 1904, containing 268 pages. A second edition was published in 1910.

130. Kellogg, Ella Ervilla Eaton. comp. 1904. Healthful cookery: A collection of choice recipes for preparing foods, with special reference to health. Battle Creek, Michigan: Modern Medicine Publishing Co. 299 p. Index. 19 cm.
• ***Summary:*** Contents: Methods in hygienic cookery: Healthful cookery. Measuring and combining ingredients. Breads. Unfermented, or aerated bread. Sandwiches. Toasts. Vegetable substitutes for flesh foods. Eggs. Porridges and breakfast dishes. Vegetables. Gravies and relishes. Salads. Soup. Soups with nut soup stock. Gruels and liquid foods. Desserts. The invalid's meals. Seasonable bills of fare. Note: Soy is not mentioned.

"Peanut butter" is called for in various recipes: Nut cheese (p. 163), Nut cream (p. 164), Nut salad dressing (p. 171), and Vegetable soup (p. 181-82).

"Almond butter" is called for in: Fruit pin wheels (p. 49), Almond cream (p. 164), Nut cream (p. 164), Peach salad (p. 169), Sweet salad dressing (p. 172), Sour salad dressing (p. 172-73), Cream of almond soup (p. 179), Almond puree (p. 197), Hot nut milk (p. 197), Granola pie crust (p. 210), Almond pound cake (p. 231, incl. almond butter in the icing), Almond filling (for desserts, p. 233), Chocolate mold no. 1 (p. 239), Cocoanut almond cream sauce (p. 245), Almond whipped cream (p. 246).

"Nut butter" is called for in: Granuto cakes (p. 44), Nut butter puffs (p. 45), Nut gluten rolls (p. 47), and other recipes on pages 55, 57, 58, 71, 78, 82, 86, 87, 88, 104-06, 126, 136, 157, 159-62, 169, 173, 177-79, 233, 245, 301. For "Nut butters" see Sandwiches (p. 53; "The butter, whether dairy or some one of the various nut butters, should be creamed and spread smoothly on the bread...").

"Nut cream is called for in: Granuto cakes (p. 44; "Serve

at once with dairy or Nut Cream, dairy or Nut Butter,..."), Nut gluten rolls (p. 47), Pease gravy toast (p. 65), Nut Lisbon steak, no. 2 (p. 75), and other recipes on pages 86, 99, 104-05, 121-23, 129, 132, 136-37, 141, 146, 151, 153, 155, 159-60, 164, 176, 192, 205, 217, 245, 253, and 283.

Gluten is mentioned throughout the book, as are gluten bread, gluten flour, 40% gluten flour, ½ cup gluten (p. 84), 20% gluten (p. 99, in Protose and gluten patties), gluten meal, and gluten gruel.

This is a vegetarian cookbook. In the chapter on flesh-food substitutes (p. 67+), "vegetarian" is mentioned in several recipe names: Vegetarian roast (p. 106). Vegetarian roast No. 2 (p. 107). Also: Vegetarian boiled dinner (p. 134). Major branded ingredients in this chapter are: Protose ("vegetable meat"), Nuttolene, Granola, and Nut Butter. On page 84 is a recipe for "Vegetable turkey."

On the last 2 pages of the book is an ad: "This volume contains some six hundred recipes." "For the preparation of Sanitarium foods. These foods are manufactured by the Battle Creek Sanitarium Co., Ltd., and the Sanitas Nut Food Co., Ltd., the two original health food manufacturers of Battle Creek. Our products are of world-wide reputation, some of them having been in use more than a quarter of a century [i.e., since about 1879]. The company makes more than 49 food products. "Many good grocers carry only a few of them; some, a large line; more, none at all... Thousands upon thousands of grocers have never heard of our products."

"To all express offices in the following States we prepay the express on orders of $5.00 or more." On orders of $15.00 or more they also offer a 10% discount. The names of 23 states near Michigan are listed. Then the name, weight, packaging type, and price of every product is given.

The author is the wife of the famous Dr. John Harvey Kellogg. She lived 1852-1920. A slightly enlarged edition (313 p.) was published in 1908. Address: A.M., Battle Creek, Michigan.

131. Kellogg, Ella Ervilla Eaton. 1904. Science in the kitchen: A scientific treatise on food substances and their dietetic properties, together with a practical explanation of the principles of healthful cookery; a thousand choice, palatable, and wholesome recipes. Revised and enlarged edition. Battle Creek, Michigan: Modern Medicine Publishing Co. 508 p. [39] leaves of plates. Illust. Index. 24 cm.

• ***Summary:*** In this new edition, the wife of the famous Dr. John Harvey Kellogg discusses the principles and methods of the dietary system employed at the Battle Creek Sanitarium. Although this is a vegetarian cookbook (which includes the use of eggs and milk), that fact is not discussed anywhere in the book.

The "Preface to the fourth edition" (p. 4) begins "Cookery is a progressive science. Within the past few years several new and very valuable food products have been developed in the food laboratories of the Battle Creek Sanitarium and put upon the market, making necessary the evolution of many new recipes for their preparation for the table."

The long chapter on "Meats" (p. 389-417) in the 1892 ed. has been replaced by an even longer chapter on "Nuts and nut foods" (p. 389-425). After that we find all new chapters: "Food for the sick" (p. 426-52), "The daily menu (p. 453-63), and "Appendix" (p. 464+) with many pages of nutritional analyses, copied from the "Battle Creek Sanitarium Diet List," showing the "Food value of the large variety of foodstuffs when prepared for the table."

In the new "Introduction," the section on dairy products has been rewritten to deemphasize their use.

The long chapter on "Legumes" again notes that the Chinese "manufacture cheese [clearly tofu] from peas and beans" (p. 217-18).

The chapter on "Milk, cream, and butter" states (p. 369): "Various nuts, as almonds, filberts, and cocoanuts furnish products which make excellent substitutes for milk, and which can be utilized in cooking in early all recipes where milk is needed. These milk substitutes approach very closely the same composition as cow's milk, thus affording equal nourishment, while they have the advantage of being perfectly clean and free from germs. Recipes for their preparation are given elsewhere."

The chapter on "Nuts and nut foods" begins with a description of the major nuts. The long section on "The peanut or groundnut" notes: "In this country they are more commonly roasted, but in this form are almost indigestible, for the peanut is really not a nut at all, but a legume, and requires thorough cooking... to render it digestible. Peanuts are, however, a very wholesome and nutritious food when properly cooked" (p. 393). Recipes include: To blanch almonds. To blanch peanuts. Cocoanut cream. Nut pulp (from well blanched and baked peanuts). Peanut butter (Blanch, then cook in a double boiler for 8-10 hours before grinding). The section titled "Nut preparations" states: "Within the last few years, various processes have been discovered whereby nuts of different kinds are converted into most valuable and palatable foods. Chief among these nut products may be named protose, or vegetable meat, almond and peanut butters, nuttolene, nuttose, nut meals, and nut soup stock" (p. 398). Then come subsections on: "Protose and nuttolene recipes" (p. 399-411, incl. 2 recipes for Vegetarian roast, Vegetarian chili sauce, Protose steak, Nut steak in gravy, Mock hamburger steak, Nuttolene cutlets, Nut fillets, Protose patties, and Rice and lentil croquettes). "Nut products with vegetables" (p. 411-16). Nut cream and butter (p. 416+, incl. Nut butter, Nut milk). Sandwiches (p. 214+, incl. with almond nutter or nut butter).

The Appendix showing nutritional value of foods (p. 464-84) includes all the new nut products. At the very

end is a half-page table titled: "The following table shows clearly the inferior value of flesh foods." The nutritional composition of 23 such foods (red meat, poultry, fish, and shellfish) is given. The book contains 31 excellent illustrations and 39 unnumbered pages of glossy black and white photos, each page printed on only one side.

Note 1. This is the earliest document seen (Jan. 2007) that mentions a kind of meatless burger or patty, which it calls "Mock hamburger steak" and "Protose patties."

Also discusses: "The superiority of bread made from the entire wheat or unbolted meal" also called "whole-wheat bread" (p. 112, 143). Many gluten recipes throughout. Diabetic biscuit (p. 452, made of Graham or entire-wheat flour). The following words do *not* appear in the Index: Animal, beef, bulk, fiber, fish, flesh, roughage.

Note 2. The 1904 date appears only on page 4 in the section titled "Preface to the fourth edition." No mention of a 4th ed. appears on the title page. The copyright page gives only the 1892 date. Address: Battle Creek, Michigan.

132. Thurston, Herbert. 1904. Lent and Holy Week: Chapters on Catholic observance and ritual. London: Longmans, Green. See p. 46. *

133. Lust (Benedict). 1905. Mother's milk (Ad). *Naturopath and Herald of Health* (*The*) (*New York City*) 6(3):Unnumbered page at front. March.

• ***Summary:*** "... is undoubtedly the best food for infants. When this, however, is not procurable the best substitute for it only should be used... Dr. Lahmann's Vegetable Milk (*Pflanzen-Milch*). Dr. Lahmann's Nutritive Salt Health Cocoa (*Närsalz-Cacao*). Dr. Lahmann's (sweetened) Chocolate. Dr. Lahmann's Nutritive Extract (*Närsalz-Extract*). Dr. Lahmann's Oatmeal and Närsalz Biscuits. Dr. Lahmann's Japan Soya Sause [sic, Sauce] $1.00.

"Descriptive pamphlet on receipt of 2 Cents stamp. For sale by all naturopathic sanitaria and N.D's."

Note: This is the earliest document seen (Aug. 2007) in this periodical that mentions soy. Address: Sole importer and agent for the U.S., 124 E. 59th St., New York City.

134. Li, Yu-ying. 1905. Le lait végétal fabriqué en Chine [The vegetable milk made in China]. In: 2nd Congrès International de Laiterie: Compte-Rendu des Séances (2nd International Dairy Congress: Proceedings): Paris: Comité Français–Fédération International de Laiterie. 548 p. See p. 387-89. Held 16-19 Oct. 1905 at Paris, France. [Fre]

• ***Summary:*** The president of this international milk congress introduces Li Yu-ying as attaché at the Chinese Legation, and official delegate to the congress. Li begins by expressing his happiness at being able to speak to the congress and getting to know the many scholars and very competent people from many countries.

"In China, not much animal milk is consumed. It is replaced by another product: *vegetable milk* (*le lait végétal*). This latter product could not be used here and, therefore, is of little interest to you. I will speak to you about it only as a curiosity, first to explain the special method employed in my country for the production of vegetable milk and vegetable cheese, and finally to increase interest in these products because of their hygiene and economy.

"Everyone knows that animal milk is an excellent substance with numerous advantages. One may ask, therefore, why so little of it is consumed by the people of China. The reason is because it is relatively expensive and because cows cannot be raised in all parts of China. Dairying is practiced only in the north and the west of China. In the other provinces dairying is difficult because of the climate and the nature of the soil; so vegetable milk is consumed there.

"The latter is made with the seeds of *Soja hispida* or 'oil peas of China.' This is an annual legume which has been imported to England, Spain, Belgium, and France. Presently it is widely cultivated in America as forage.

"Mr. Lechartier, director of the agronomic station at Rennes, has experimented with this plant in France; he obtained yields of up to 25,000 to 30,000 kg of green forage per hectare. This plant is therefore already known here."

"As forage, the soja hispida is as rich in protein as clover (*trèfle*), horse beans or dried kidney beans (*les féveroles*), etc.; but it is richer in fats than the other legumes. The seeds are richer in nitrogenous materials [protein] than other plants of the same family. Analyses show that they contain 30% protein, oil, and little starch.

"The seeds of this plant can also be used to make a cheese (tofou [tofu]) which is a major source nourishment for the peoples of China and Japan. It is consumed, in effect, every day and at every meal, as a main dish.

"The production of these two products [milk and cheese] is very simple. First the seeds are cooked, then they are pressed strongly to obtain a sort of puree, which is coagulated by a mineral salt that plays the role of rennet. The fresh cheese, which is made daily, must be sold and consumed the same day. It can be used in recipes like vegetables or meats. However it can also be preserved, either hot, or by putting it in a salt solution: in this way one obtains various cheeses which are used as desserts, as following:

"(1). Salted and smoked cheese (*Le fromage salé et fumé*), which in both flavor and form bears some resemblance to gruyere cheese. It can be stored for a rather long time; (2) Salted cheese (*Le fromage salé*), white in color, whose taste somewhat resembles that of goat cheese; (3) Fermented cheese (*Le fromage fermenté*). Its color is white, yellow, or gray, and it flavor is very strong, like that of Roquefort.

"The processes which give rise to Chinese milk and cheese also give residues [okara] which are not lost. They are employed either as fertilizer, or as feed for farm animals.

Thus nothing is wasted from soybeans. Moreover, the factories where this plant is processed are very numerous, and the products made by them are the most moderately priced. A square or cake of vegetable cheese (*carré de fromage végétal*) (11 by 10 by 2½ cm), consumed daily by one person, costs about one centime, or about one-fiftieth the price of an animal cheese of average price.

"It is of interest, finally, to compare the products of the animal dairy with those of the vegetable dairy, not only in terms of their similarity in appearance, but also in terms of their chemical composition. It is well known that animal milk contains a large proportion of casein; the same is true of vegetable milk, which contains legumine that has the same chemical formula as casein.

"Furthermore, during processing, the peas (*le pois*, i.e. soybeans) undergo a complete chemical and mechanical transformation which concentrates the nutritive parts and eliminates the others; it is this which explains the richness of the vegetable milk and cheese in nutritive principles.

"After all these considerations, you can realize the interest present in this industry in China.

"It can also be interesting in places where raising livestock is impossible. It is evident that this would be more difficult than in the countries which produce animal milk in large quantities. I am well aware that animal milk has a real superiority over vegetable milk, but doesn't it also have its disadvantages: Fraud, on the one hand, and its contagious diseases on the other? Moreover, milk merchants have various categories of milk at different prices; it is clear that the most expensive is the best, and vice versa. But the consumer knows full well that some milk is not of good quality, yet he is obliged to take it in order to earn money. Thus it is the fate of the poor to be condemned to drink milk of inferior quality, and often fraudulent. However, vegetable milk does not support fraud and cannot transmit contagious diseases. It is the same for everyone; the poor consume the same product as the rich.

"Let the culture of soybeans expand therefore in Europe. One might try to make vegetable milk which will be destined, not for those who have the means to buy good milk, but rather for those who can only afford low-price milk; thus, fraud becomes useless, and this will a benefit for public hygiene and for the purse of poor people."

Note 1. This is the earliest document seen (May 2011) concerning Li Yu-ying. It is also the earliest publication seen by him on the subject of soya.

Note 2. These proceedings contain a list of attendees and of excursions. Address: Attaché at the Chinese Legation, and official delegate.

135. Fernie, William Thomas. 1905. Meals medicinal: With "herbal simples," (of edible parts). Curative foods from the cook; in place of drugs from the chemist. Bristol, England: John Wright & Co.; London: Simkin, Marshall, Hamilton, Kent & Co., Ltd. xxii + 781 p. See p. 84. Illust. Index. 22 cm.

• ***Summary:*** In this collection of unusual facts about the healing power of foods, the various foods are listed alphabetically. The section titled "Bean" states (p. 84): "The Soy Bean (*Glycina soja*) [sic, *Glycine soja*] is of three varieties, black, green, and white. These Beans are boiled, then mixed with barley, or wheat, until, through fermentation, they become covered with fungi; then brine is added, and further fermentation goes on for a couple of years. The sauce thus concocted is afterward boiled afresh, and put, when cool, into bottles, or casks. From a nutritive point of view it is superior to any other sauce in our markets." Soy is made throughout Japan, and most Japanese partake of it with every meal. "In China, Soy Cheese [tofu] is extensively eaten, whilst various sauces, and pastes [jiang] are prepared from the Beans... An old fable said that Soy was made from certain beetles, and Londoners have improved this to 'black beetles.'" Note: This is also the earliest English-language document seen (April 2013) that clearly uses the term "Soy Cheese" (or "soy cheese") to refer to tofu.

The author then quotes a four-line poem by Edward Lear from his *Book of Nonsense* (1862) which begins: "There was an old person of Troy / Whose drink was warm brandy and soy,..."

Also discusses: Seaweeds (p. 495-96, 627-33; Incl. Irish moss or carrageen, dulse, laver, sloke, samphire, sea holly, bladderwrack, and *Laminaria digitata* or sea-tang, sea spinach, agar-agar or Japanese isinglass). The Pea-nut (Arachis hypogæa, p. 504-05; Incl. pea-nut candy and nut cream). Vegetarianism (p. 711-17). The book contains no recipes. Address: M.D [England].

136. Abel, Mary Hinman. 1906. Beans, peas, and other legumes as food. *Farmers' Bulletin* (*USDA*) No. 121. 38 p. March 25. See p. 11-13, 18-20. Corrected. [1 ref]

• ***Summary:*** A corrected edition, one page shorter than the 1904 revised edition. On the cover, below the title is written "(Corrected March 25, 1906)," yet at the bottom of the same page the publication date is given as 1904.

The section about soy (p. 11-13) is titled "Soy bean (*Glycine hispida*) and its preparations," but the information in that section appears to be the same as in the original 1900 edition, as is the illustration of the soy bean plant (p. 12) and the table on page 19.

137. Atwater, W.O.; Bryant, A.P. 1906. The chemical composition of American food materials. *USDA Office of Experiment Stations, Bulletin* No. 28 (Revised ed.). 87 p. Corrected April 14.

• ***Summary:*** Note: The first edition of this classic was published in 1896. The composition of wheat gluten is given in a table on page 57, and gluten bread and Graham bread on page 60.

Under nuts (p. 74-75) is given the composition of almonds (edible portion and as purchased), cocoanuts, cocoanut milk, peanuts, and peanut butter.

Note: Soy is not mentioned. Is there no section titled "Beans" or "Oilseeds" in the index and no mention of oilseeds or soybeans. Beans mentioned in the long table titled "Vegetable food" (p. 56-75) under "Vegetables, fresh" (p. 65-69) include: Butter beans, dried beans, beans (frijoles), lima beans (dried and fresh), mesquite beans, string beans (cooked and fresh). Beans mentioned in the long table titled "Vegetable food" (p. 56-75) under "Vegetables, Canned" (p. 69-70) include: Baked beans, string beans, little green beans, wax beans, haricot verts, haricot flageolets, haricot panaches, lima beans, and red kidney beans. Address: 1. PhD; 2. M.S.

138. Katayama, T. 1906. On the preparation of a vegetable cheese from the protein of the soy bean. *Bulletin of the College of Agriculture, Tokyo Imperial University* 7(1):117-19. April. German summary in Chemisches Central-Blatt 1906(2):540. [4 ref. Eng]

• ***Summary:*** Describes experiments to make a cheese similar to Swiss cheese. The soybean contains (according to Osborne and Campbell 1898) as its "chief proteid constituent glycinin, a globulin similar in properties to legumin, but of somewhat different composition, containing nearly twice as much sulphur..." and having the following composition: Carbon, 52.12; hydrogen, 6.93; nitrogen, 17.53; sulphur, 0.79; and oxygen, 22.63 per cent.

This protein can be extracted from [soaked, ground] soybeans by boiling. "The liquid thus obtained resembles cow's milk in appearance," and when treated with calcium and magnesium salts, yields a precipitate which is sold in Japan under the name of Tôfu. The author has attempted the preparation of a cheese from tofu. 450 gm of pressed tofu were mixed with 60 gm of common salt, 50 gm of finely-ground Swiss cheese, and the mixture was wrapped in a linen cloth saturated with brine, and left for five months in a room with an average temperature of 15º C. At the end of this time the mass was of a grey color, and quite compact; it was free from the numerous pores produced by evolution of gas in Swiss cheese. The cheese had an agreeable taste different from that of Swiss cheese, and when extracted with water, yielded a solution in which the presence of albumoses and peptones was detected. Further experiments with mixtures containing larger quantities of milk-sugar, but no casein, gave similar results. Address: Japan.

139. Katayama, T. 1906. A condensed vegetable milk. *Bulletin of the College of Agriculture, Tokyo Imperial University* 7(1):113-15. April. German summary in Chemisches Central-Blatt 1906(2):540. [1 ref. Eng]

• ***Summary:*** A liquid closely resembling cow's milk is obtained by soaking soy-beans in water, crushing them, and boiling with water. "The composition of this milk prepared in Japan for the purpose of obtaining Tôfu by the precipitation with calcium or magnesium salts, is in average as follows:" A table titled "Soy-bean milk" shows: Water 92.53%. Protein 3.02%. Fat 2.13%. Fibre 0.03%. Non-nitrogenous extract, including carbohydrates (galactan), 1.88%. Ash 0.41%.

"There can be no doubt that this vegetable milk is of a certain value as an easily digestible food, although in regard to the nourishment of children it cannot replace cow's milk or mother's milk, even if the necessary amount of milk sugar be added.

"The idea suggested itself to prepare from that vegetable milk, the soy milk, by addition of sugar and evaporation a durable preparation resembling condensed cow's milk."

"In 4 litres of soy-milk were dissolved 4 g. dipotassium phosphate [to prevent separation of protein] and 600 g. cane sugar and the solution concentrated *in vacuo* to a very thick liquid. This no doubt can replace the much more expensive condensed cow's milk for certain purposes of the cuisine as e.g. for sweetening coffee and tea, and for the preparation of chocolate.

"It has an agreeable taste like cow's milk, but a very feeble odor recalling crude beans and a slightly yellowish color. If this preparation should be manufactured on a large scale, it must be, of course, always sold under its proper name, and adulteration of condensed cow's milk with condensed soy milk, must be strictly prohibited." Chemical investigations "must determine whether such an adulteration can be easily discovered. My experiments in this direction answer this question in the affirmative."

Such adulteration could be detected by addition of sodium carbonate, when a yellow coloration would indicate the presence of the soy milk. Also, if a portion of the suspected milk were mixed with twice its bulk of water, treated with a few drops of dilute sulphuric acid, and one-tenth of the whole distilled off, the distillate would possess the characteristic odor of the raw beans, if soy-milk were present. Adulteration might also be detected by separating the casein from the suspected sample with rennet, and adding calcium nitrate to the filtrate; the formation of a precipitate would indicate the presence of the globulin of soy-milk, the so-called glycinin.

Note 1. This is the earliest English-language document seen (Aug. 2013) that contains the term "soy milk" or the term "soy-milk."

Note 2. This is the earliest English-language document seen (Aug. 2013) that uses the term "vegetable milk" to refer clearly to soy milk.

Note 3. This is the earliest English-language document seen (Dec. 2010) that uses the term "condensed vegetable milk" to refer to condensed soymilk. It is also the earliest document seen (Dec. 2010) that mentions or discusses condensed or concentrated soymilk. Address: Japan.

140. Loew, O. 1906. Ueber einige sonderbare japanische

Nahrungsmittel [On some special Japanese foods]. *Mitteilungen der Deutschen Gesellschaft fuer Natur- und Voelkerkunde Ostasiens* 11(1):109-11. [Ger]
• ***Summary:*** Prof. O. Loew includes a discussion of tofu, soymilk, yuba, and shoyu (*shôyû-sauce*). On the coasts of Japan there were fresh seafish, and in the inland regions some salted fish were used. People have learned how to prepare wheat gluten (*Jap: fu; German: Weizenkleber*) in various dried forms, which are very porous and easily digested. The protein of the soybean, under the name of tofu (*Tôfu*), comes in the form of soft white cakes and is prepared daily. It is sold from door to door by salespeople.

The cooking of the softened soybeans, before the precipitation of the tofu, has a very milklike consistency. Without doubt, it is similar in nutritional value to milk but it can be recommended only for adults, and not for sensitive infants. "When this soybean milk (*Soyabohnenmilch*) mixed with some gelatine [sic] is simmered down, and while in a concentrated condition the mixture is poured into flat, level containers, there results from the drying of the gelatinous mass thin skins, which are sold under the name of yuba."

Note 1. This is the earliest German-language document seen (Aug. 2013) that uses the term *Soyabohnenmilch* ("soybean milk") to refer to soymilk.

Note 2. The date on the title page is given as 1907-09. The place of publication has now changed to Tokyo. Address: Prof. of Agricultural Chemistry, Imperial University, Tokyo, Japan.

141. *Poverty Bay Herald* (*Gisborne, New Zealand*). 1907. Our mail bag: Japanese vegetable milk. March 16. p. 7.
• ***Summary:*** A condensed vegetable milk has been prepared by Professor Katayama of the Imperial Agricultural College, Tokio, but it is not yet a commercial article.

"It is prepared from soy beans, and the liquid is said to be very similar in appearance to cows milk, having a yellowish color and an agreeable taste which would be quite like the product but for a slight odor of beans."

142. *Bulletin of the Imperial Institute* (*London*). 1907. Utilisation of the soy bean. 5(1):86-87. [2 ref]
• ***Summary:*** "The plant yielding the "soy bean" (*Glycine soja*) has of late received much attention at the hands of agriculturists in tropical countries on account of its value as a green manure. The bean itself has long been employed in the East as a vegetable and food-stuff, and has been imported in large quantities into European countries, principally for use as a feeding-stuff for animals. It is also an important ingredient in Indian soy, which forms the basis of chutney. More recently the introduction of the extraction of cheaper methods for the extraction of fixed oils by the use of solvents has made it possible to utilise such materials as the soy bean, which contains only 10 per cent. of fixed oil, as a source of oil, and considerable quantities are now used in the United Kingdom in this way." Note: This is the earliest English-language document seen (March 2003) that uses the term "solvents" (or "solvent") in connection with the crushing of soybeans to give oil and meal.

Also discusses briefly the preparation of soymilk and tofu in Japan.

143. Marre, Francis. 1907. Le lait végétal en Chine [Vegetable milk in China]. *Nature* (*La*) (*Paris*) 35(1776 Supplement):13. June 8. [Fre]
• ***Summary:*** The use of milk as food in China is very limited. The immense empire, which is governed by the Son of Heaven, is not suited for raising livestock, except in its northern and western regions, which occupy only a small part of its total area. Moreover, the climate and nature of the soil do not permit the culture of forage crops. These purely geographical reasons are enough to explain why vegetable milk is consumed abundantly in the majority of Chinese provinces.

This milk, whose name seems strange and a bit paradoxical, is made from the seeds of *Soja hispida*, also called the oil pea of China (*haricot oléagineux de Chine*), an annual plant of the legume family. To obtain it, the seeds are first [ground with water], boiled and then pressed, making a sort of puree which, when dissolved in water, makes a very nourishing vegetable milk. When treated with a mineral salt, which acts much like rennet in milk, it coagulates and may be made into a kind of cheese (*to-fou*) [tofu] which plays an important part in nourishing the Chinese and Japanese people. It is one of their basic daily foods and can be made into a great variety of culinary preparations. It is generally consumed fresh, the day it is made. But it may be cooked, and preserved by salting or smoking. In commerce, three principal varieties of vegetable cheese (*fromage végétal*) [tofu] are found. One, which is fermented [fermented tofu], is white, yellow or gray, and has a piquant flavor like that of Roquefort. The second is white and salty, resembling goat cheese / goat's milk cheese. The third is smoked and quite like Gruyere (*gruyère*).

In the process of making vegetable milk and tofu, they recover with care the various by-products [okara, whey] and use them with ingenuity to nourish their animals and as fertilizer for their fields; in this way nothing is lost. Even the stems of the plant and the pods that envelop the seeds are used as forage. Thanks to the fact that every part of the plant can be used, and thanks also to the low cost of manpower in China, soy cheese (*fromage de soja*) can be sold for such a low price that enough to serve a man for a day (110 square cm of surface by 2.5 cm thick) costs less than a centime [one-fifth of a U.S. cent], or 50 to 60 times less than an equal quantity of animal cheese.

As for the food value of soymilk, it is approximately equal to that of cow's milk; it contains significant quantities of legumine, whose chemical composition is very close to

that of casein.

Mr. Li Yu-Ying, an attaché at the Chinese legation in Paris, made soymilk (*lait de soja*) the subject of an important presentation at the last dairy congress, and forecast the introduction of soya (*soja*) into French culture.

Note 1. This is the earliest French-language document seen (April 2013) that uses the term *to-fou* to refer to tofu.

\ Note 2. This is the earliest French-language document seen (Aug. 2013) that uses the term *lait de soja* to refer to soymilk. As of Oct. 2003 *lait de soja* is the modern French word for soymilk. Address: Chimiste-Expert près de la cour d'Appel de Paris et les Tribunaux de la Seine.

144. *Literary Digest.* 1907. Vegetable milk and cheese. Aug. 3. p. 65. Science and invention section. *
• ***Summary:*** This is an English-language translation of the following French-language article: Marre, Francis. 1907. *Le lait végétal en Chine* [Vegetable milk in China]. *Nature* (*La*) (Paris) 35(1776 Supplement):13. June 8.

145. Carles, P. 1907. Le lait végétal [Vegetable milk]. *Repertoire de Pharmacie* 19(11):487-88. Nov. 10. Series 3, 63rd year. [2 ref. Fre]
• ***Summary:*** Discusses the characteristics and value of vegetable milk made from soybeans. Note that this article was published in a pharmaceutical journal.

146. International Health Association, Ltd. (The). 1907. Monotony in diet tends to mal-nutrition (Ad). *Good Health* (*London*) 5(19):607. Dec.
• ***Summary:*** "A variety of sustaining breakfast foods eaten on alternate mornings is, for most people, better than the same kind morning after morning." Each of IHA's breakfast foods is perfectly cooked and ready to serve in two minutes.

They are: Granose Flakes and Granose Biscuits. Toasted Wheat Flakes. Avenola. Gluten Meal (I.H.A. brand).

"Can be obtained from all Health Food Stores, or direct from the makers. In districts throughout the United Kingdom where we have no agents we will send, carriage paid, a packet of each of the above five foods, also a tin of our delicious Malted Nuts, and a ½ lb. tin of Protose (Nut Meat), together with "One Hundred Hygienic Recipes," for 5/-.

Note: The first page of the December issue states: "Our seventh Christmas... Our edition this month is 80,000 copies. Six years ago it was 15,000." Address: Stanborough Park, Watford, Herts. [Hertfordshire, England].

147. Jaffa, M.E. 1907. Nuts and their uses as food. *Yearbook of the U.S. Department of Agriculture* p. 295-312. For the year 1906.
• ***Summary:*** The introduction (p. 296) notes: "The increased demand for nuts is due in the main to two causes, namely, a better appreciation of their appetizing qualities and the numerous ways in which they form a palatable addition to the diet of the average family, and, secondly, to their use by the vegetarians and persons of similar belief–a group small in proportion to the total population, but still fairly large numerically–who use nuts, and more particularly the peanut, as a substitute for meat and other nitrogenous and fatty foods.

"Many special nut foods, such as malted nuts, meat substitutes, etc., have been devised and extensively advertised by the manufacturers for general use in the diet and for the special needs of vegetarians and fruitarians. It is said that some of these American nut products contain soy beans, but apparently the peanut plays a very important part in their composition. In either case, since the peanut, like the soy bean, is a legume, these preparations might more properly be compared with the bean cheese and other soy-bean products so much used in China, Japan, and other eastern countries than with such nuts as the walnut, almond, or cocoanut."

In the section titled "Description of nuts," page 297 states: "The chufa, nut grass, or earth almond is a small tuberous root of a sedgelike plant and perhaps should be classed with the vegetables rather than with nuts. It is not common, though sometimes eaten."

In the section titled "Composition of nuts" a table (p. 299) gives the following analyses of peanut butter and round steak: *Peanut butter.*–Water 2.1%, protein 29.3%, fat 46.5%, carbohydrates 17.1%, ash 5%, fuel value 2,825 calories per pound. *Round steak.*–Water 65.5%, protein 19.8%, fat 13.6%, carbohydrates 0%, ash 1.1%, fuel value 950 calories per pound.

These figures show that peanut butter contains 1.5 times as much protein, more than 3 times as much fat, nearly 5 times as much ash, and 3 times as much fuel value as round steak. Analyses are also given for: Chufa (earth almond), cocoanut, ginkgo nut (seeds), lichi nut, pignolia, cocoanut candy, peanut candy, cocoanut milk, cocoanut–desiccated, cocoanut flour, peanut coffee made from the entire kernel.

Cocoanut milk contains: Water 92.7%, protein 0.4%, fat 1.5%, carbohydrates 4.6%, ash 0.8%, fuel value 3,125 calories per pound.

"Nut butters: Within the last few years so-called nut butters have been used in increasingly large amounts, and at least one variety, namely, peanut butter, is made and sold in ton lots." Nut butters are commonly marketed in jars. "The nut butters are recommended by vegetarians as a substitute for butter in culinary processes and for use at the table. With persons who are not vegetarians they are commonly used for making sandwiches and in other ways for their agreeable flavor and for the pleasing variety which they give to the diet. Nut butter may be easily made at home." "The nut butters just mentioned are entirely different from cocoanut butter and from cocoa butter, which are expressed and purified fats. These 'butters' are of considerable commercial importance and are used for culinary purposes, though

perhaps they are more commonly used in other ways."

A section titled "The pecuniary economy of nuts" (p. 309-10) states: "For the vegetarian or fruitarian, who looks to nuts as the chief source of protein in the diet, the peanut must be considered as much the most economical." A table shows the price in cents per pound of various foods, the cost of 1,000 calories of energy, and the number of pounds of protein that 10 cents will buy: Peanuts 7, 3.6., 0.31. Peanut butter 20, 7.1, 0.15. Peanut candy 25, 11.8, 0.04. Porterhouse steak 25, 22.5, 0.07. Whole milk 4, 12.0, 0.8. Cheddar cheese 16, 7.5, 0.17. Address: Asst. Prof. of Nutrition, Univ. of California [Berkeley].

148. *Otago Witness* (*New Zealand*). 1908. Science notes. Jan. 22. p. 84.

• ***Summary:*** In a recent number of a Japanese journal, a Mr. T. Katajama [Katayama] described a process for the manufacture of a vegetable milk, the properties of which would render it highly suitable for use in tropical countries. The, preparation is obtained from a well-known member of the leguminous family of plants–namely, the Soja bean–which is a very popular article of food among the Chinese. The beans are, first of all, softened by soaking, and are then pressed and boiled in water. The resultant liquid is exactly similar to cows' milk in appearance, but it is entirely different in its composition.

"This Soja bean-milk contains 92.5 per cent. water, 3.02 per cent. proteine, 2.13 per cent. fat, 0.03 per cent. fibre, 1.88 per cent. non-nitrogenous substances, and 0.41 per cent. ash. Katajama added some sugar and a little phosphate of potassium (in order to prevent the elimination of the albumen), and then boiled the mixture down till a substance like condensed milk as obtained; this 'condensed vegetable milk' is of a yellowish colour, and has a very pleasant taste, hardly to be distinguished from that of real cows' milk. However it still retains the aroma of the Soja bean. It is recommended as a cheap and good substitute for condensed cows' milk."

Note: Summaries of this article appeared several times in New Zealand newspaper articles until 1914.

149. *Advertiser* (*The*) (*Adelaide, South Australia*). 1908. Correspondence: A curious milk used in Japan is described in a Japanese periodical (Letter to the editor). June 9. p. 11.

• ***Summary:*** "It is made from the Soja bean. The liquid is exactly like cow's milk in appearance, and in taste can hardly be distinguished from it. To make it the beans are first soaked and then boiled in water. Some sugar and phosphate of potassium are added, and it is boiled down till it has the consistency of condensed milk."

150. Jaffa, M.E. 1908. Nuts and their uses as food. *Farmers' Bulletin* (*USDA*) No. 332. 28 p. Oct. 23. [9 footnotes]

• ***Summary:*** This article is based largely on the author's article by the same title published in 1907 in the *Yearbook of the U.S. Department of Agriculture* (p. 295-312. For the year 1906). In the Introduction (p. 8) we read: "Many special nut foods, such as malted nuts, meat substitutes, etc., have been devised and extensively advertised by the manufacturers for general use in the diet and for the special needs of vegetarians and fruitarians. It is said that some of these American nut products contain soy beans, but apparently the peanut plays a very important part in their composition. In either case, since the peanut, like the soy bean, is a legume, these preparations might more properly be compared with the bean cheese and other soy-bean products, so much used in China, Japan, and other eastern countries than with such nuts as the walnut, almond, or cocoanut."

The section titled "Description of nuts" states (p. 10): "The chufa, nut grass, or earth almond is a small tuberous root of a sedgelike plant and may, perhaps, be classed more properly with the vegetables than with the nuts. It is not common, though eaten to some extent." The Chinese olive (*Canarium* sp.) and closely related species of Canarium nuts (which are imported to some extent, but are by no means common) are also discussed.

The section titled "Nuts and nut products for diabetics" (p. 18) notes that "Nuts and nut products are often recommended as foods for diabetics and others from whose diet starch and sugar are excluded, or at least materially reduced."

The section titled "Nut butters and nut milk" (p. 18-20) states: "Within the last few years so-called nut butters have been used in increasingly large amounts, and at least one variety, namely, peanut butter, is made and sold in ton lots." "The nut butters are recommended by vegetarians as a substitute for butter in culinary processes and for use at the table. By persons who are not vegetarians they are commonly used for making sandwiches and in other ways for their agreeable flavor and for the pleasing variety which they give the diet." Peanut butter may be easily made at home; for best results use the roasted rather than the raw nuts. "The process of making nut butters has been frequently described in journals and cookery books." Describes how to make cocoanut milk and cream, which "are used to some extent by strict vegetarians who do not care to use cow's milk. A similar nut milk or emulsion of nut fat made from Java almonds (a species of Canarium) is used in Java, apparently with considerable success, as an infant food" (p. 20).

Note: Briggs and Calloway (1979, p. 16) state: "As far as we know, the first professor of human nutrition in the United States was Professor M. Jaffa, in 1908, at the University of California, Berkeley. In 1912 he became chairman of the Department of Nutrition at the Berkeley College of Agriculture. This may have been the first department of nutrition in America." Address: M.S., Prof. of Nutrition, Univ. of California [Berkeley].

151. Colcord, Anna L. (Mrs.). 1908. A friend in the kitchen: or What to cook and how to cook it. Containing 400 choice recipes carefully tested. 16th ed. Takoma Park Station, Washington, DC: Review and Herald Publishing Association. 112 p. Illust. Portrait. 20 cm.

• ***Summary:*** One chapter in this vegetarian cookbook, titled "Substitutes for meats," contains many Biblical quotations opposing meat eating. The recipes are based mostly on nuts, lentils and peas.

Another chapter, titled "Specially prepared health foods: Nuts, oils, etc.," gives recipes including: Peanut butter. Peanut cream. Peanut milk. Almond butter. Almond milk and cream. Cocoanut milk and cream. Home-made granola. Nutmeat. Protose steak. Protose cutlets. Nut gravy. Other chapters (p. 98-110) include "Simple dishes for the sick" (with recipes for Gluten gruel, Graham gruel, and Rice gruel), "Food for infants," "Remember the Sabbath Day to keep it holy," "Food combinations," "Time required to digest various foods" (Rice, apples, and granola take the least time, 1 hour; Roasted pork takes the longest, 5 hours and 15 minutes; animal foods generally take longer than foods of plant origin), "How to become a vegetarian," and "Vegetarianism in London."

A photo of the author, a Seventh-day Adventist, and her signature faces, the title page. Note: This is the second earliest U.S. document seen (March 1999) that mentions almond milk. Soy is not mentioned in this book. Address: USA.

152. Huang Shirong. 1908. Weituiju suibi [Random notes from the "plain flavor" studio]. China. Passage on soy reprinted in C.N. Li 1958 #349, p. 248-49. [Chi]

• ***Summary:*** Wade-Giles reference: *Wei T'ui Chü Sui Pi,* by Huang Shih-Jung. Qing dynasty. A revised edition of this book, edited by Huang's son, appeared in 1916 during the Republican period. This is a summary by Mr. Huang (in China) of a publication by Li Yu-ying–who was in France at the time.

The section titled "Soybeans efficacy and use" (*gongyong*) states: Mr. Li Yu-Ying recommends that China establish an association / society for soybeans and soybean technology for Chinese manufacturing. Li wrote two articles: One, to promote the establishment of a society for soybeans, and the second to promote manufacture of soybean products in China using modern technology. It is most important to invent new methods of production and manufacture, which would have a great effect on the industry. These two, which contained 5,000 words, were published in a Chinese newspaper [probably in China] the 2nd month on the 6th, 7th, 8th, 9th, 10th, 11th, and 12th days. Note 1. The name of the newspaper is not given. Mr. Huang summarizes the content as follows:

The nutrients of the soybean benefit health, economics, and commercial production; it is worthy of future development. Its wider propagation will improve the fertility of the soil because the roots contain nodules which fix nitrogen to enrich the soil. Soybeans are a rich source of dairy products (milk content) and oil, so they are very nutritious. They can be used to make good substitutes for meat. They are rich in phosphorus and potassium, so they are healthful and strengthen the brain. Since they are lacking in starch, they are good for diabetic diets. Because they are a rich source of dairy products (milk content) and oil, they would be a good material for industrial exploitation. And its very inexpensive; it sells for only about one-fifth as much as legumes from other countries. When you compare the milk / protein content with that of meat, milk, or eggs, or with other legumes and cereal grains, it is at least 2-10 times higher.

The soybean is rich in phosphorus, which is equal to the efficacy of Western medical phosphorus. Other products: Whole soybeans (*douren*). Soybean noodles (*doumian;* wheat pasta enriched with soy); it is a substitute for wheat gluten (*mianjin*). Soybean oil (*douyou*). Soybean cake–defatted (*doubing*). Okara or residue from making soymilk (*douzha;* [mostly fed to animals]).

Note 2. This is the earliest Chinese-language document seen (June 2013) that uses the term *douzha* to refer to okara.

Soymilk (*doujiang*). Spray-dried [or powdered] soymilk (*doujiangfen*). Canned soymilk (*guandoujiang*). Soured soymilk (*suandoujiang;* by lactic acid fermentation). Soybean extract (*doujing*). Tofu (*doufu*). Pressed tofu–sliced (*doufugan yupian*). Fermented tofu (*faxiao doufu*). Whey–from making tofu (*yujiang*). Soy sauce (*jiangyou*). Sweet wheat-flour jiang (*tiandoujiang*). Soy sprouts (*douyacai*). Soybean coffee (*douren jiafei*). (Translated by H.T. Huang, PhD, April 2003).

Note 3. This is the earliest document seen (Aug. 2013) worldwide that mentions powered soymilk.

153. Kato, Yogoro. 1908. Physico-chemical studies on tofu. *Memoirs of the College of Science and Engineering, Kyoto Imperial University* 1:325-31. (Chem. Abst. 3:2182). [2 ref. Eng]

• ***Summary:*** Tofu is a foodstuff made by grinding the soy bean with water, filtering to obtain a milky liquid, and coagulating the suspended matter by the addition of a bitter salt solution (bittern). This bitter salt solution is obtained as the residue in making common salt from sea-water by evaporation. The author concludes that the tofu solution contains a negative colloid and belongs to the class of solutions which might be called colloidal suspension. "It seems quite probable that the manufacture of tofu is based upon the coagulation of the colloid by electrolytes: consequently, several electrolytes containing cation [cations] of high valency, besides calcium and magnesium, may be employed for the coagulation."

Note: This is the earliest English-language document seen (Aug. 2010) that contains the term "physico-chemical"

or with the term "physico-chemical" in the title. Address: Chemical Lab., Higher Technological School of Tokyo.

154. Kellogg Food Co. 1908. Healthful living: An account of the Battle Creek Diet System. Battle Creek, Michigan. 72 p.
• ***Summary:*** The inside front cover, titled "A bit of history about the health food business in Battle Creek," states: "Thirty-five years ago Dr. J.H. Kellogg, the Superintendent of the Battle Creek Sanitarium, began the preparation of special food products, intended at that time for the use of the patients of the Sanitarium.

"The knowledge of their value grew. New foods were added from time to time as the idea developed. One of the first was a cereal coffee (1876). Later came the invention of Toasted Wheat Flakes (1895), and Toasted Corn Flakes (1901), then Toasted Rice Flakes and a long list of nut foods and other products.

"Dozens of food companies were organized in Battle Creek to manufacture toasted flakes, cereal coffees, and other foods. Millions were made and lost in exploiting the food ideas developed by Dr. Kellogg and the reputation acquired by Battle Creek as a headquarters for health foods and ideas.

"In order to protect the public against further imposition, a company has been organized and incorporated to manufacture and sell Dr. Kellogg's food products made after original and perfected formulæ, which will be known as The Kellogg Food Company, Battle Creek, Michigan."

The price list, near the back of this booklet, gives the prices for 126 foods–including various sizes. Among these are: Almond butter (1 lb can, $1.00), almond meal, Bran biscuit, Bromose, Diabetic gluten biscuits, Diabetic gluten meal, 40% gluten flour, Gluten meal, Granola, Meltose, Nut butter (1 lb can, $0.30), Nuttolene, Nuttose, olive oil, Peanut butter (large jar, $0.25; small jar, $0.10), Protose vegetable meat, Salted peanut butter (1 lb can, $0.25), Savora nut butter, Sterilized wheat bran, Taro gluten biscuit, Toasted corn flakes, Toasted rice flakes, Toasted rye flakes, Toasted wheat flakes, Vegetable gelatin, Wafer–whole wheat, Yogurt cheese, Zwieback.

On page 72 is a description of the company's "Peanut butter.–We were the originators of peanut butter, the use of which has become so widespread, and which is now manufactured by many concerns in different parts of the country. But we long ago abandoned the process of roasting the nuts, as we found this to produce harmful effects by setting free the oil and producing certain chemical changes in it. For years our peanut butter has been prepared by a wholly different process, by which the injurious effects referred to may be avoided. In this respect our Peanut Butter differs from all similar products. Prepared from choicest nuts. Put up in pound tins. Most excellent fat producer. Capital for use in sandwiches, for the preparation of salads and desserts. An excellent substitute for butter. Large glass jars, 25 cents; small glass jars, 10 cents.

"Salted Peanut Butter–Same as the preceding, but containing a certain proportion of salt. Pound tins, 25 cents.

"Nut butter–A combination of various nuts. An exceedingly palatable, toothsome vegetable fat which is readily accepted as a substitute for animal fats of all sorts. Pound, 30 cents."

Note 1. This is the earliest English-language document seen (Nov. 2003) that contains the term "vegetable meat" (or "vegetable meats"–with any combination of quotation marks).

Note 2. This is the earliest document seen (June 2002) showing interest by Seventh-day Adventists or Dr. John Harvey Kellogg in dietary fiber, or a high-fiber food product (Bran Biscuit, Sterilized Wheat Bran) sold by an Adventist food company. Dr. Kellogg was the founder and director of Battle Creek Foods. This is the earliest document seen (June 2002) that mentions bran in connection with Dr. John Harvey Kellogg. It is also the first commercial product seen with "Bran" in the product name. Address: Battle Creek, Michigan.

155. The babees' book: Medieval manners for the young. Done into modern English from Dr. Furnivall's texts, by Edith Rickert. 1908. London: Chatto and Windus. xxxv + 203 p. Illust. 16 cm.
• ***Summary:*** Contents: This book consists of an Introduction and 14 different books.

A recipe in this book states: "Take Almaunde Milke & yolkys of Eyroun."

In modern English, this reads: "Take almond milk and egg yolks." The first character of the word *yolkys* (pronounced YO-kus) is not actually a *y* but an ancient orthographic character called a "yogh," that looked liked somewhat like the number 3 and was sounded like a guttural *y. Eyroun* means "eggs" in a dialect of English.

This document was first cited by the Oxford English Dictionary under "almond milk." Note: "Nearly forty years ago, Dr. Furnivall (Frederick James Furnivall lived 1825-1910) collected for the Early English text society 'divers treatises touching the manners and meals of Englishmen in former days.' Some of these were published in 1868, under the title *The Babees' Book* (since listed as *Early English Meals and Manners*) and others ... in 1869, under the title *Queene Elizabethes Achademy.* The substance of Dr. Furnivall's collections in antiquated English are now presented in modern form." Address: England.

156. Friedenwald, Julius; Ruhräh, John. 1909. Diet in health and disease. 3rd ed. Thoroughly revised and enlarged. Philadelphia, Pennsylvania, and London: W.B. Saunders Co. 765 p. April. Illust. Index. 22 cm. [33* ref]
• ***Summary:*** The section titled "Legumes" (p. 108-10) discusses various kinds of beans and peas, the lentil and the peanut–but not the soy bean. However a large table (p. 109)

titled "Composition of fresh and dried legumes compared with that of other foods" (Based on Abel, Farmers' Bulletin No. 121 [1900, p. 17]) includes soy beans, cow peas, chick-peas, and peanuts.

The section on "Diseases in which diet is a primary factor" begins with a subsection on "diabetes mellitus" in which "various Substitutes for bread" are discussed. "Soya biscuits, or bread are made from the Soya bean, a Japanese product. Soya bread was suggested for diabetics by Dujardin-Beaumetz in 1890. Attfield gives the following composition of Soya flour: Protein 41.24%, fat 13.70%, carbohydrate 30.35%, phosphates 4.81%, other salts 0.52%, moisture 9.38%.

"Dujardin-Beaumetz gives the following as the composition of Soya bread: Water 45.000%, protein 20.168%, fats 9.350%, starch and sugar 2.794%, and phosphoric acid 0.863%." Aleuronat is a vegetable albumin flour made from wheat. "Peanut flour has also been used with success in making various dishes for the diabetic."

The section on "Vegetarian diet" (p. 44) states that there are various points of view about its healthfulness, but most have found that animal protein can be entirely replaced by vegetable protein without any appreciable change in the nitrogen balance. The amount of protein required seems to be related to the amount of muscular work performed.

During fasting (p. 44-45), according to Von Noorden, the amount of nitrogen excreted daily in the urine was as follows: For 5 days before fasting: 16.2 gm. During the first 5 days of the fast: 12.9 gm/day average. From the 21st to 25th day: 4.7 gm/day avg. From the 26th to 30th day: 5.3 gm. The experiment lasted 30 days and was conducted by Luciani on the professional faster Succi.

A table (p. 68) shows the "Comparative composition of various kinds of milk" of mammals. Only the milk of the mare contains less total protein (1.3%) than the milk of women (2.3%). Dog's milk contains the most protein (11.2%). "Milk ferments (p. 69): Milk contains various ferments [enzymes]... The principal ferments are proteolytic ferments, resembling trypsin, but less sensitive to acids; fat splitting ferments, lipase, amylase, amylase, peroxidase, and catalase. Chicory is the most common adulterant of ground coffee (p. 201).

In the section on "Vegetable foods," a subsection titled "Vegetarianism" (p. 113-14) begins: "It will not be out of place here to point out the disadvantages of an exclusive vegetable [vegan] diet." "Persons subsisting on a purely vegetable diet for any great length of time are apt to lose strength, as well as physical and mental vigor and endurance. Laborers are unable to perform the same amount of work they could on a diet containing animal food... A purely vegetable diet, if persisted in, is also said to lessen the powers of resisting disease" (2 references are given).

The section titled "Artificial food preparations" starts with a subsection on casein preparations, which include Nutrose, Eucasein, Sanos, and Plasmon. Artificial proteins prepared from vegetables include Roborat (made from rice, wheat, and maize), Legumin (from legumes), and Aleuronat.

In the section on "Recipes" under "Beverages" is a recipe for "Almond milk" (unsweetened). There are no soy recipes in this edition.

Julius Friedenwald lived 1866-1941. John Ruräh lived 1872-1925. Address: 1. M.D., Prof. of Gastro-Enterology; 2. Prof. of Diseases of Children. Both: College of Physicians and Surgeons, Baltimore, Maryland.

157. Nussbaum, -. 1909. Soja [Soya]. *Schweizerische Wochenschrift fuer Chemie und Pharmazie / Journal Suisse de Chemie et Pharmacie* (*Zurich*) 47(26):412. June 26. [Ger]*

158. Ruhräh, John. 1909. Soy beans in infant feeding; preliminary report. *J. of the American Medical Association* 53(2):140. July 10.
• ***Summary:*** This is a summary of the author's pioneering article that first appeared in *Archives of Pediatrics*, July 1909, p. 496-501. Address: M.D., Baltimore, Maryland.

159. Ruhräh, John. 1909. The soy bean in infant feeding; Preliminary report. *Archives of Pediatrics* 26:496-501. July.
• ***Summary:*** This pioneering paper was read before the Twenty-first Annual Meeting of the American Pediatric Society, Lenox, Massachusetts, May 28, 1909. "The soy bean (glycine hispida), sometimes incorrectly called the soja bean, is an annual leguminous plant which originally grew in a wild state from Cochin China to the south of Japan and Java."

There follows a brief but accurate history of the soy bean. "In 1875 Professor Haberlandt began a series of investigations with this plant in Austro-Hungary, and in his work published in 1878 he urges the importance of the soy bean as a food both for man and animals. After his death, which occurred in 1878, very little notice was taken of the soy bean in Hungary and the prophecy that he made for its future failed."

"As early as 1829 Thomas Nuttall wrote an article in the *New England Farmer* concerning the bean as a valuable crop for this country. The Perry expedition to Japan also brought back soy beans, but until the last fifteen or twenty years the plant was known only as a curiosity."

"The plant is grown in America, but is used chiefly for the purpose of a forage crop and comparatively little reference has been made to its use as food for man." The plants "bear a remarkable number of beans and the flowers are self-pollinated, making the yield independent of insects. The bean may be easily grown in Maryland. I am indebted to three friends for experimenting with this plant in their gardens and obtaining good crops..."

Note 1. This is the earliest document seen (May 2009)

that mentions soybean pollination–quite remarkable since it is by a pediatrician writing about a completely different subject. It is also the earliest document seen (May 2009) that uses the term "self-pollinated" (or self-pollinating, etc., with or without the hyphen) in connection with soybeans.

"At the present time there are seven varieties handled by seedsmen, and some twenty-two distinct varieties are known." The varieties Mammoth Yellow, Hollybrook, and Ito San have been used in infant feeding experiments. "The other varieties are the Guelph (green), the Samarow (green), the Ogemaw (brown), and the Buckshot (black). All of these latter may be grown in the north."

"I am indebted to Mr. Frank N. Meyer, agricultural explorer for the Department [U.S. Department of Agriculture], for information concerning the use of the beans in the East... The light-colored beans are eaten in soups and the pods are sometimes picked green, boiled, and served cold with a sprinkling of soy sauce. The green varieties are often pickled in brine and eaten moist or dried with meals as promoters of appetite; the same varieties are often slightly sprouted, scalded and served with meals in winter time as a green vegetable." Also discusses soybean oil, soy bean milk (which "has a composition nearly the same as that of cow's milk" as shown in a table), "natto, tofu, miso, yuba, shoyu,..." (p. 498).

"The soybeans are sometimes roasted and then used as a substitute for coffee" (p. 499)

"The fact that the soy beans contain little or no starch suggested to Dujardin-Beaumetz that they be used as a food for diabetics. The soy bean flour has been placed on the American market, but was withdrawn owing to the fact that according to the manufacturers it contained 8 per cent. carbohydrate. It contains much less carbohydrate, however, than any of the other diabetic foods."

"As regards the use of the beans in infant feeding it seemed to me that soy bean gruel or milk, either alone or with cow's milk, might be of value in feeding several classes of cases, viz., of marasmus and malnutrition, as a substitute for milk in diarrhea, and in intestinal and stomach disorders, and in diabetes mellitus."

Note 2. This is the earliest document seen (Aug. 2013) that suggests the use of a soybean preparation as a milk substitute for infants."

Note 3. This is the earliest document seen (Aug. 2003) concerning the actual feeding of soymilk to infants or children, or concerning a soy-based infant formula. The author was the world's first pediatrician to use soybeans in infant feeding, and did the first U.S. studies with soyfoods and human nutrition.

Note 4. This is the earliest English-language document seen (Aug. 2013) that uses the term "substitute for milk" to refer to soymilk.

Note 5. This is the earliest English-language document seen (Nov. 2002) that uses the word "malnutrition" in connection with soyfoods.

The writer had hoped to conduct experiments and make a more complete clinical report but several misfortunes attended his efforts to secure the beans. "My first crop was eaten by rats, my second moulded in the pods owing to some unusually damp weather, and insects ate about two-thirds of my last crop. Fortunately, the beans may now be obtained from Messrs. T.W. Wood & Son, Richmond, Virginia.

"So far the gruel has been prepared by soaking the beans over night, stirring to remove the envelope surrounding the bean. Three times the amount of water is added to the beans and they are boiled until a smooth gruel results. This is strained if necessary [to make real soymilk]. This has the odor and taste of malt, but with the addition of a little salt is well taken, especially after the first bottle or two. The gruel is retained unusually well and seems to be easily digested. The stools are not more frequent than with other foods. The stools are light brown in color like those from malted milk. This soy bean gruel has nearly the same food value as milk and for certain children may need further dilution. About the same size feedings should be used as if milk were being given. Five percent sugar may be added to increase the fuel value.

"I have not used the beans in a sufficiently large number of cases nor over sufficient periods of time to justify any further statements at this time, but I do feel that properly used they will be a most valuable addition to the dietary of the sick infant. Grinding them to a bean meal would simplify matters very much, and, if success attends their use, a soy bean meal could easily be prepared.

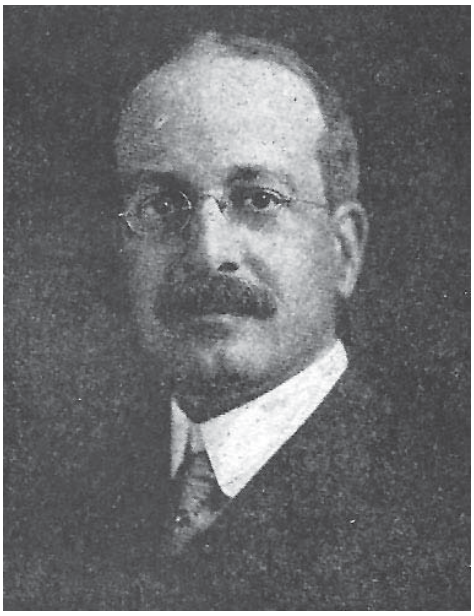
"I hope to be able to make a second report at the next meeting and have called your attention to the bean in hope that other members may try them and report at the same time."

Note 6. Pediatrician Herman F. Meyer (1960, p. x) published a long poem by Dr. John Ruhräh titled "A Simple Saga of Infant Feeding," which described the history and present status of infant feeding. Meyer described Ruhräh as a "philosopher, teacher, poet, pediatrist [pediatrician] and able historian."

Note 7. This is the earliest English-language document seen (Oct. 2001) that uses the term "soy bean flour."

The following photo (see next page) of Dr. John Ruhräh (1872-1935) was taken in about 1914. Born in Chillicothe, Ohio, he was a graduate of the College of Physicians and Surgeons (Baltimore, 1894), did post-graduate work at Johns Hopkins, the Pasteur Institute, Paris (1897), and in other European schools (1900-1901), and was quarantine physician of the port of Baltimore (1898-1900), where he became Professor of pediatrics in the University of Maryland Medical School and in the College of Physicians and Surgeons.

His autograph is shown below. Address: M.D., Baltimore, Maryland.



160. *Milling* (*Liverpool*). 1909. A new British industry. Soya beans. Their cultivation and manufacture. Their wonderful food value. Great possibilities. 33(9):290, 292. Aug. 28. Also printed in 1910 as *Soya Beans*, a 27-page booklet by Northern Publishing Co. in Liverpool., Liverpool. Extensively quoted by Sawer 1910 (p. 27) and 1911 (p. 212). [1 ref]

• ***Summary:*** "The firms which first entered the export trade in Soya beans in quantity were Messrs. Nathanson (Russia) and Messrs. Mitsui and Co. (Japan). Several English firms have also entered the trade, and among these must be mentioned Messrs. S. Macgregor and Co., and Messrs. Jardine, Mathieson [Matheson] and Co. We believe that Messrs. [John] Bibby, of Liverpool, were one of the first British importers of Soya beans, that firm having received a considerable quantity last year. It was not until last Spring, however, that consignments arrived in this country in large cargoes. Up the present time the imports in 1909 have been estimated at about 300,000 tons. This is a large total for the first year of general crushing, and shows that the trade is certainly to be largely increased, providing that Manchurian exporters can secure the beans, and of this there does not appear to be any doubt."

The yellow Sakura soybean variety shipped from Dalny appears to be the best quality and commands a price of about 2/6 per ton more than small yellow varieties such as the Harbin variety shipped from Vladivostok or the Hankow variety shipped from Shanghai. "The black Soya bean appears to be the richest in oil, while analysis proves it to contain a large percentage of albuminoids and phosphates.

"The analysis of the ordinary yellow Soya bean, made by Mr. Alfred Smetham, F.I.C., F.C.S., of Brunswick Street, Liverpool, shows an average of about the following constituents:–Water 12 per cent., oil 17 per cent., albuminoids (protein) 38 per cent., carbohydrates 22 per cent., fibre 5 per cent., ash 5 per cent., and sand 1 per cent...

"Mr. Smethan, in a pamphlet he has prepared for the *Annual Journal of the Royal Lancashire Agricultural Society* for 1909, gives a number of analyses of Soya beans, besides the products of oil and flour millers generally. Some of our readers will be interested to learn that the Chinese in Liverpool have regularly imported various kinds of Soya beans, which are sold in the Chinese shops for human food. We understand that the method of cooking them is very similar to the British plan of steeping and boiling dried peas. In China the beans, after having had the oil extracted from them, are used for feeding pigs and cattle, as well as for manuring the land. The beans have long been known in Japan, where they are made into a favourite condiment known by the name of Shoyu, the meal from the beans being mixed with meal from either wheat or barley."

The oil is of a superior kind and finds a ready sale at high prices for a great variety of purposes, including the manufacture of margarine and other edible goods, the manufacture of fine toilet soaps and paint oils. Note 1. This is the earliest document seen (Oct. 2007) concerning the use of soybean oil in margarine.

"We hear that the Japanese are extracting the caseine [casein] from Soya beans, using it as a substitute for milk. It is said that this vegetable milk is produced by extracting the juice. The preparation, according to the *Java Times*, is a very popular drink among the poorer classes of China and Japan. In making the milk the beans are first softened by being soaked and then boiled in water. The liquor is secured by straining and is similar to cow's milk in appearance, but has a different composition, which renders it highly suitable for use in tropical countries...

"The most interesting use to which the bean can be put, from a corn miller's point of view, is the production of flour for bread-making purposes. This has been done by a Hull firm who recommend that the Soya flour be mixed with wheat flour in the proportion of one of the former and four or five of the latter. We have obtained a sample of Soya flour and blended it with white flour. After baking a loaf it was seen that the top broke but the crumb was all that could be desired. The flavour of the loaf was superior to that of average brown bread. The Soya flour cannot be bleached; therefore, it would not be suitable for white bread making. We think that a proportion of Soya flour might be blended into the millers' brown meal with advantage, because of its great food value and its flavour. Further mention is made of Soya beans and flour in our editorial notes.

"Just as we go to press a gentleman called at this office and showed us a Soya bean pod which had been plucked

from plants raised in South-West Lancashire [England]. It was fully ripe and contained four beans... Soya beans, he informs us, have been grown before in this country as an experiment though without much success."

Note 2. This is the earliest document seen (Sept. 1999) that mentions Mitsui & Co. (a major Japanese trading company) in connection with soybeans.

Note 3. This is the earliest English-language document seen (Oct. 2001) that uses the term "soya flour" (one of two documents).

161. *New York Times.* 1909. The talk of the day [vegetable milk from the Soja bean]. Aug. 31. p. 6.
• ***Summary:*** "The Japanese have discovered a cheap substitute for the milch cow in the form of a tiny bean. The juice, which is extracted by a special process from the bean, is said to be an excellent vegetable milk, the properties of which render it highly suitable for use in tropical countries. The preparation, according to 'The Java Times,' is obtained from the Soja bean, a member of the leguminous family of plants, and a popular article of food among the poorer classes of Chinese and Japanese. In making the vegetable milk the beans are first of all softened by soaking and boiled in water. The resulting liquor is exactly similar to cow's milk in appearance, but is entirely different in composition."

162. *Manchester Guardian* (*England*). 1909. The Manchurian soya bean: New industries projected. Sept. 10. p. 10.
• ***Summary:*** "Considerable interest has been awakened in commercial quarters by the statements recently published as to the immense possibilities of the Manchurian Soya bean and there is a probability that at Liverpool, if not also on the banks of the Ship Canal, an important new industry will spring up."

Note: The Manchester Ship Canal, opened in May 1894, transformed Manchester from a landlocked city into a major sea port, known as the Port of Manchester.

"The value of the bean has already been recognised in various parts of the world, but it was only in the recent opening of the Manchurian Railway for other than military purposes that revealed the immense trade possibilities connected with it."

"The uses of the bean are manifold. It is said to be excellent in bread; it yields a rich oil, is a capital food for cattle and pigs; and in Japan even milk has been derived from it, and from that milk cheese of various sorts has been made. It forms such a rich food for pigs that it requires to be mixed with plainer fare before being offered to them. Its advantages in this direction were quickly grasped by the enterprising Danish pig-breeders; they bought heavily on the Hamburg market, and the subsequent decline in the imports of Canadian hog products into this country has been attributed, in part at any rate, to the advantages gained by the Danish breeders as a result of the extensive use of the bean.

"The first cargo of the beans to reach this country came in the Myrtledene to Bristol and was consigned to a well-known Liverpool firm of cattle food manufacturers. The bean is now used also for soap-making at Port Sunlight. The Myrtledene's cargo arrived in February last, and since then 200,000 tons have been imported.

"Although firms at Hull and Newcastle-on-Tyne are also moving, a serious attempt is to be made to centre the imports of the bean at Liverpool, with the intention not merely of increasing the shipping trade of the port, but also with a view to establishing a new local industry. The exportable surplus of this year's crop will, it is said, probably exceed a million tons, so that the magnitude and value of the trade is readily appreciated. Several of the most prominent commercial men of Liverpool are interested in the scheme, amongst them Sir Alfred Jones, who contemplates attempting its cultivation in West Africa. He is also interested in the question of its shipment from Vladivostok, and particularly in the erection of special mills at Liverpool to deal with the bean. Efforts are now being made to promote a company to take the matter up, and in a few weeks it will be seen whether these efforts have been successful.

"In the meantime the British Vice Consul at Vladivostok reports that the condition of the coming crop is very favourable,..."

163. Edie, E.S. 1909. Cultivation and uses of soya beans. *Liverpool University, Institute of Commercial Research in the Tropics, Bulletin* 1(1):1-7. Oct. 8. [1 ref]
• ***Summary:*** An excellent article. Contents: Introduction. Uses of the soya bean: Forage, hay, ensilage, soya oil, soya milk, a type of cheese made from soymilk [tofu], soya meal [flour]; use of soya bean oil for soap, illumination, paints and other industrial products, soya bean meal used as a fertilizer on Chinese sugar plantations, soya beans as a legume for enriching the soil with nitrogen, planting between rows of maize. Cultivation of soya beans. Varieties of soya beans.

"The Soya bean (*Glycine hispida*) is a native of South-eastern Asia, where it has been cultivated for centuries in China and Japan. It was introduced at a later period into India, and arrived in England towards the end of the eighteenth century. A considerable number of experiments were carried out with the plant were carried out in Austria about thirty years ago, but it is only quite recently that it has become an article of commercial importance in Europe."

After discussing uses as hay and silage: "It is in the bean itself, however, that the chief value of the Soya plant lies. As food for man and domestic animals it is used to a very large extent in the East. In some parts of China the bean forms one of the staple articles of food, and it is cooked much as beans and marrowfat peas are, and also in soups and other forms. The oil is used largely for making salads and sauces, and is also mixed with flour in the manufacture of cakes. Mr.

Turner tells me that the Chinese extract casein from the bean, and I have also seen this stated elsewhere.

"A liquid closely resembling cow's milk is prepared from Soya beans in Japan." The process is described. "This condensed product is of considerable value as a food, but it is unsuitable for the use of infants. This "Soya Milk" is also used in the preparation of a kind of cheese" [tofu]. Note: This is the earliest English-language document seen (Aug. 2013) that contains the term "Soya milk."

"Soya bean meal is now use in the manufacture of biscuits, and for mixing with flour for making brown bread in this country. In some parts of the Continent Soya meal is now being used in preference to rye meal for making bread."

"One of the most valuable products of the Soya plant is the oil. As mentioned before, it is used largely for eating purposes in the East, and Mr. Turner tells me that on the Continent a greater percentage of Soya oil than of Copra oil is allowed in the manufacture of margarine.

"Soya oil is largely used for soap making in the East, and I understand that it has recently been tried with very good results in this country also.

"As a considerable proportion of oil is left behind in the cake after expression of the oil, it may be more profitable to extract the oil by solvents such as naphtha and use it all for manufacturing purposes, as extraction by means of naphtha renders the oil unsuitable for edible purposes.

"In the East Soya bean oil is used as an illuminant and also in the manufacture of paints. The oil has a comparatively high iodine value, which is an index of the drying quality of an oil of that class." Note: This is the earliest English-language document seen (March 2008) which states that soy oil can be used in paints (or other coatings) in connection with its iodine number.

Cultivation: "Recently the question of raising this crop in various British colonies has been discussed. In most of the African colonies, including West Africa, the Soya bean would probably be successfully grown, and in rotation with, or along with maize and other crops, its cultivation would be a very profitable investment. I have seen samples of Soya beans at least three years old, which showed no signs of weevilling or deterioration in any way. Cargoes of the beans shipped from Vladivostock [Vladivostok] and Dalny to Hull and Liverpool are stated to have arrived in perfect condition."

Varieties: A table (p. 6) gives a nutritional analysis by S.H. Collins of "a sample of Chinese yellow Soya beans." Moisture: 10.23%. Oil 15.62%. Albuminoids 37.54%. Carbohydrates 27.27%. Woody fibre 5.02%. Ash 4.32%.

"I have analysed samples of five distinct varieties of Soya beans, some of which were obtained from the shop of a Chinaman who sells them to the Chinese in Liverpool for food. I do not, of course, know the age of the samples, nor their source..." After describing the shape and color (2 green, 2 brown, 1 black) of each, and noting that No. 4 came from Hong-Kong, he gives a nutritional analysis of each in tabular form, and the weight of 20 seeds of each in grams.

"In conclusion I have to thank Mr. A. Grenville Turner, Grain and Seed Broker, member of the Liverpool Corn Trade Association, for much valuable information regarding the Soya beans and for his kindness in obtaining samples for me. I am also largely indebted to an excellent article on Soya beans in the *Natal Agricultural Journal*, November, 1908.

"Since the above was written I have been enabled, through the kindness of Sir Alfred Jones, to analyse a sample of yellow Soya beans grown in West Africa from seed sent out by him early this summer." A table shows the analysis. Moisture: 10.52%. Oil 17.26%. Albuminoids 36.05%. Carbohydrates 26.16%. Woody fibre 5.39%. Ash 4.62%.

"The results show that in the first season at least the Soya bean underwent no deterioration in West Africa, and the plants also came rapidly to maturity."

Also published in 1909 as a 7-page booklet by C. Tinling & Co., Liverpool. Also published in 1911 Spanish by: Mexico. *Ministerio de Fomento, Colonización e Industria* under the title "Explotación de la soya," by E.S. Edic [sic, Edie]. The last line of the article seems to say that the author is at the central agricultural station (*Estación Agrícola Central*).–San Jacinto [probably in or near Mexico City], January 1911. Address: M.A., B.Sc, Liverpool Univ.

164. *Colonist* (*Nelson, New Zealand*). 1909. News of the day. Nov. 13. p. 2.

• ***Summary:*** "The Japanese have discovered a cheap and good substitute for the milch cow in the form of a tiny bean. The juice, which is extracted by a special process from the bean, is said to be an excellent vegetable milk, the properties of which render it highly suitable for use in tropical countries. The preparation, according to the "Java Times," is obtained from the soya bean, a member of the leguminous family of plants, and a very popular article of food among the poorer classes [sic] of Chinese and Japanese."

165. *London and China Telegraph* (*London*). 1909. The soya bean. 51(2,415):1086. Dec. 6. [1 ref]

• ***Summary:*** "An exhibition of Soya beans and by-products from North China, together with photographs of the Soya bean industry, was held recently at the boardroom of the Manchester Chamber of Commerce. Explanations and full particulars of the industry were given by Mr. Cavendish Evelyn Liardet, lately returned form China.

"At a recent meeting of the committee of the African Trade Section of the Incorporated Chamber of Commerce of Liverpool Mr. A. Grenville Turner delivered an interesting address on the cultivation and uses of the Soya Bean.

"In the course of his address Mr. Turner said that it was estimated that this year's crop of Soya beans is likely to exceed 1,000,000 tons. There were about 20 to 25 varieties of the beans, different in colours, size, and shape. The beans

contained about 18 per cent of oil, and it was stated that refined Soya oil fetches to-day a higher price even than refined cottonseed oil. The soya bean, which is an edible bean and can be used in the same manner as marrowfat peas, can be utilised for a number of purposes."

"In America an attempt has recently been made there by certain dealers to place the Soya beans on the market as a new substitute for coffee, and sell it under other names at fancy prices. A sample of coffee specially ground from the Soya bean, at the suggestion of Sir Alfred Jones, was submitted, and created much interest. Mr. Turner stated that according to a recent report issued by the Department of Agriculture of the U.S.A., as Soya beans contain no starch, they have been recommended for food for people suffering from diabetes. Soya bean cake is used as manure on the sugar plantations of Southern China, and on the rush beds, from which Chinese matting is made. Mr. Turner also stated that the Japanese extract casein from the bean from which they make a milk, which is condensed. Cheese is also made from this milk."

Also contains a long summary of information on the uses of soya bean oil and cake published recently: "Cultivation and utilisation of the soy bean." 1909. *Bulletin of the Imperial Institute* (London) 7(3):308-14.

166. Wildeman, É. de. 1909. Le soja [The soybean]. *Agronomie Tropicale; Organe Mensuel de la Societe d'Etudes d'Agriculture Tropicale* 1(12):195-200. Dec. 25; 2(1&2):5-8. Jan/Feb. 1910. [10 ref. Fre]

• ***Summary:*** An overview of the subject, including a brief history, based largely on a summary of about ten documents. It begins: "For some years now, attention has been drawn to the soybean (*Soja hispida* (Mönch) or *Glycine hispida* (Max.)), which comes from Manchuria; its products are now used in various ways in our daily lives."

"It is not a question of exhausting the question, but as the *Bulletin of the Imperial Institute* of London has already devoted several articles to this plant this year and that the first part of vol. I of the *Liverpool University, Institute of Commercial Research in the Tropics, Bulletin* [Edie, 8 Oct. 1909] is entirely devoted to it, it appeared useful to us to insist here on the soybean which would also have a certain importance for our colonies."

This legume originated in Southeast Asia, and has been cultivated for centuries in China and Japan. It is now abundant throughout Manchuria, where the seeds are widely appreciated for their nutritive value. It was later introduced into the Indies (*l'Inde*) and arrived in England at the end of the 18th century. About 30 years, it was the subject of numerous trials [by Haberlandt and co-workers] in Austria, but is only recently that it has become an article of commercial importance in Europe.

"The occupation of Northern Manchuria by Russian troops, during the Russo-Japanese War, gave rise to numerous demands for this bean, which stimulated the extension of [its] agriculture. After the departure of the troops, the local demand fell naturally, and it was necessary to find an outlet in foreign markets. From 1906 to 1908, a large part of the products of N. Manchuria were exported to Japan via Vladivostok, but in 1908 the economic crisis of Japan diverted a part of these products to Europe, which actually received large quantities of soybeans, especially in England. The first large shipment of soybeans contained 5,200 tonnes (metric tons) and arrived at Hull on 2 March 1909. The beans arrived at the destination in perfect condition despite the distance. They were classed in three categories: 1. Shipped from Dalny; 2. Shipped from Vladivostock; and 3. Shipped from Hankow. The value of those in category No. 1 is about £6 8*s.*/tonne [metric ton]; those in No. 2 and No. 3 is about £6 6*s.*/tonne, these prices being, naturally, subject to the fluctuations of the market. Most imported beans are monopolized by the manufacturers of oil who obtain 10-18% of the weight of the beans in oil. [The remaining] oilcake can be used in the feed of livestock."

There follows a long discussion of soybean cultivation and production, including soils, fertilizers, nitrogen fixation by root nodules, planting, intercropping, yields of forage and seed, use as silage, soil restoration, soybean varieties, tables showing the chemical composition of the plant and seeds showing their excellent nutritional value.

"Until recently, soybean cultivation has been confined to Asia and some states of the USA. Recently, the question of cultivating this plant in the various British colonies has been raised. In most of the colonies of West Africa, the soybean could probably be cultivated with success in rotation or mixed with maize or other crops, and give significant yields."

"In China, Japan, and Indo-China the seeds are used to prepare a sort of milky liquid (*liquide lactescent*) [soymilk] and a sort of cheese" [tofu]. A brief description of each process is given. The milk has considerable nutritional value "but is not suited for infants."

"The flour of soybeans (*La farine de fèves de soja*) is used to make biscuits, and, mixed with wheat flour, is used to make a brown bread; it is sometimes even preferred in this application to rye flour. Since it contains neither sugar nor starch, the soybean has been recommended as the basis of diabetic diets." Address: Prof., School of Horticulture, Vilvoorde, Belgium (Professeur au Cors colonial de l'École d'Horticulture de Vilvorde).

167. Imperial Hygienic Laboratories. 1909. Inshoku-butsu narabini shikô-hin bunseki-hyô [Analytical tables of food and luxury items]. *Eisei Shikenjo Hokoku* (*Bulletin of the Imperial Hygienic Sciences*) No. 10. p. 1-78. Miso, see p. 27-28. Shoyu, see p. 28-28. Soymilk, see p. 39-45. [Jap]

• ***Summary:*** Gives a detailed analysis of the nutritional

composition of these basic foods, including analyses of various well-known brands, which are clearly specified. The number of products analyzed are: Miso 30 products, shoyu 122, fermented black soybean Chiang (Shoyu shisho) 4, shoyu moromi 2, shoyu presscake (kasu) 1, Thick (noko) shoyu 11, shoyu second generation products and imitation products 16, soymilk (containing only soybeans) 6, other soymilk products 89. Address: Eisei Shikensho (National Institute of Hygienic Science), Tamagawayoga-machi, Setagaya-ku, Tokyo, Japan (in 1962).

168. Cornet, Paul. 1909. Le régime alimentataire des malades: Considérations pratiques sur les aliments et les boissons diététiques et sur l'hygiene de l'alimentation [The dietary regimen for the sick: Practical considerations on dietetic foods and drinks and on the hygiene of feeding]. Paris: G. Steinheil, Éditeur. 484 p. No index. 23 cm. [144* ref. Fre]

• ***Summary:*** In Part III, "Foods drawn from the vegetable kingdom," Chapter 20 titled "Starchy vegetables" discusses various fruits, grains, and legumes. The section on "Soya" (p. 269-70) gives the name of the soybean in Japan (*daizu*), Annam (*dau-nauh*), and China (*théou*), and notes that the seeds can be used to make shoyu, miso, and tofu–which are widely appreciated.

"Dietetic uses: Without having recourse to these exotic preparations, the nutritional value of soybeans is not used enough in our country. Soy bread is only used in anti-diabetic diets*, whereas one could prepare a pap and a drink (*boisson*, [soymilk]) no less precious, as well as extracts [soy sauce] which could be substituted for meat extracts." Footnote: *Soya is well suited for diabetics, for the seed contains only 3% starch plus 16% oil and 27% protein.

In Part V, "The regimens," Chapter 30 titled "General solid regimens" has two parts: The first, the "Vegetarian regimen" (p. 341-55) has the following contents: Indications for the vegetarian regimen. Application of the vegetarian cure: Absolute [vegan foods plus water], mitigated (lacto-ovo vegetarian), total vegetarian diet (*régime total*) throughout the seasons (incl. dry legumes such as soybeans, peanuts, etc.), culinary preparations. Vegetal calendar (*Calendrier végétal*)*:* soups, main dishes, and desserts for each month of the year. Address: Dr., Professeur at the municipal schools of the infirmaries of the Hospitals of Paris (aux Ecoles municipales d'Infirmières des Hôpitaux de Paris).

169. Edie, E.S. 1909. Cultivation and uses of soya beans. Liverpool: C. Tinling & Co. 7 p.

• ***Summary:*** See: Edie, E.S. 1909. "Cultivation and uses of soya beans." Liverpool University, Institute of Commercial Research in the Tropics, Bulletin 1(1):1-7. Oct. 8. Also published in Spanish in Mexico (1911). Address: M.A., B.Sc.

170. Kellogg, John Harvey. 1909. The Battle Creek Sanitarium diet list. Battle Creek, Michigan: Modern Medicine Publishing Co. Ltd. 71 p. 16 cm.

• ***Summary:*** A table on page 53 shows the "Number of food units or calories per ounce of various uncooked foodstuffs." Soja beans are said to contain the following: 38.4, fats 48.3, carbohydrates 33.5, total 120.2. Note: The units are not clear. The food with the highest total is almond meal (200.2). There are two types of Sanitas self-rising gluten flour. One with protein 20.0 and total 107.4, and another with protein 46.4, total 100.3.

One section titled "Disease-producing foods" (p. 58-59) discusses cane-sugar, fats (in excess), flesh foods, oysters and other shellfish, eggs, milk, condiments, tea, coffee, chocolate, cocoa, wine, beer, and all alcoholics [i.e. alcoholic beverages].

Note: This is the second earliest document seen (Nov. 2002) connected with Dr. John Harvey Kellogg that mentions soy beans [actually "Beans, Soja"]. Dr. Kellogg was born in 1852. Address: M.D., Superintendent, Battle Creek Sanitarium, Battle Creek, Michigan.

171. Rorer, Sarah Tyson (Heston). 1909. Mrs. Rorer's vegetable cookery and meat substitutes. Philadelphia, Pennsylvania: Arnold and Company. 328 p. + 8 p. of unnumbered ads at end. Index. 20 cm.

• ***Summary:*** An early, detailed and savoury vegetarian cookbook. The long chapter titled "In the place of meat" (p. 39-62) includes recipes for: Peanut butter and peanut meal (p. 41-42). Mock veal roast (with roasted peanuts), Mock meat hash, Mock tenderloin steak (with 1 quart nut meats {English walnuts, peanuts, pine nuts and almonds in equal quantities}), Mock turkey, Mock goose (with black walnuts), Mock duck, Mock fish, Planked mock fish, Mock ham (with English walnuts, black walnuts, pecans, and almonds), and nut cheese (p. 43-47). Also includes: Peanut sandwiches [actually Peanut butter sandwiches] (p. 194). Section titled "Nut milks and nut creams" with recipes for Cocoanut milk. Almond milk (p. 245). Section titled Menus (p. 249+). The author was born in 1849. Address: Philadelphia.

172. Hitier, H. 1910. Société Nationale d'Agriculture de France: Le soja [National Society of Agriculture of France: Soya]. *Journal d'Agriculture Pratique* 74(1):24-25. Jan. 6. [Fre]

• ***Summary:*** "Mr. Sagnier, on behalf of Mr. Liyuying [Li Yu-ying], delegate of the government of China in Europe, gave a very interesting presentation on the soybean (*le soja*), and its alimentary, therapeutic, agricultural, and industrial utilization. (This journal will soon publish an article on the soybean.)

After his presentation, Mr. Sagnier showed the members of the Society various products that can be extracted from soybeans: flour, bread for diabetics, cake, seasoning sauce, confections, raw milk, fresh cheeses, etc.

Mr. Schribaux recalled that the soybean, which is widely grown in East Asia, is also cultivated in Europe, but the varieties introduced up to this time have been very sensitive to the cold. In the USA the crop has expanded rapidly.

Mr. Lindet remarked that the soybean contains 16-17% oil, a rather low percentage. Mr. Ch. Girard has cultivated soya at Joinville as a forage plant, but the forage obtained is mediocre, in part because the plant is covered with hairs.

The prince of Arenberg noted that prior to 1908 not one kilogram of soybeans passed through the Suez Canal, yet in 1908 35 million kilograms passed through. This gives a good idea of the commercial development of this plant. Address: France.

173. *Advertiser* (*The*) (*Adelaide, South Australia*). 1910. Milk from the soya bean. Jan. 11. p. 7.
• ***Summary:*** "The Japanese make a milk, said to be very nourishing, from the soya bean. The process is as follows:- The beans are first of all softened by soaking, and are then pressed and boiled in water. The resultant liquid is exactly similar to cow's milk in appearance, but is entirely different in composition. The soya bean milk contains 2.5 per cent. of water, 3.02 per cent. albuminoid, 2.13 per cent. fat, 0.03 per cent. fibre, 1.18 per cent. non-nitrogenous substances, and 0.41 per cent. ash. Some sugar and a little phosphate of potassium are added in order to prevent the elimination of albumen, and then the moisture is boiled down till a substance like condensed milk is obtained. This condensed vegetable milk is of a yellowish color, and has a very pleasant taste hardly to be distinguished from real cow's milk."

174. *Bulletin de l'Association Amicale Franco-Chinoise.* 1910. Le soja [Soya]. 2(1):62-64. Jan. [Fre]
• ***Summary:*** This periodical was established to promote understanding and friendship among the people of France and China.

The name *Soja* or *Soya* comes from the name that the Japanese give to the sauce made from soybeans. In Chinese it is called *tsiang-yeou* (Cc = Chinese characters given [soy sauce]) and it is made from *houang-teou* (Cc [yellow soybeans]). This sauce, which is used in the well-known *Worcester sauce*, is widely used in China and Japan. Some Chinese residing in Paris [incl. Li Yu-ying] recently took the initiative to introduce into France this sauce, as well as several other products derived from these same 'yellow peas' (*pois jaunes*).

They have just built a factory near Paris in a town named Les Vallées (rue Denis-Papin), on the train line going to Saint-Germaine-en-Laye. There, perfected machines / equipment and the resources of western science allows them to obtain from the raw materials a much better yield than could be obtained using the rudimentary Chinese process. These things made it possible, at the same time, to develop many new soy products suited to European tastes.

A retail store named the Golden Jar in Paris (La Jarre d'Or, 4, rue du Renard) received the right to sell these products from *Caséo-Sojaïne.* And an exposition [of the soy products] was organized at the Grand Palace, at the time of the opening, last Nov. 20, of the Food Fair / Expo (*Salon de l'Alimentation*). There various products were offered.

A summary of the contents of an interesting brochure from that exposition is reprinted. Contents of the brochure: Introduction to the soybean. Products based on soymilk (*Le lait de soja, Le lait végétal*)*:* Liquid, powdered, or fermented soymilk, soy cheese (*Le fromage de soja, Le fromage végétal* [tofu]) (fresh, hard, and fermented). Soy sauce. Soy oil. Sweet soya preserves (*Confiture de Soja;* this soy cream {*crème de soja*} resembles chestnut cream {*crème de marron*}). Soybeans used as a vegetable (dehulled dry soybeans, and soy sprouts {*les germes de soja*}). Other soy products (including soy flour, bread for diabetics, whole-meal bread, and soybean cakes–used as feed for animals).

Note 1. It is unclear whether the Chinese-run factory, *Caséo-Sojaïne,* has started to make and sell commercial soy products, or whether they are just about to. They may have started on Nov. 20 of the previous year, however there is no description of soyfood products now being sold in Paris.

Note 2. This is the earliest document seen (April 2013) that contains the term *Caséo-Sojaïne,* which appears to be the name of a business, not of a product. This term would soon be used to also refer to "tofu." Li Yu-ying's name is not mentioned.

Note 3. This is the earliest document seen (Aug. 2013) that mentions soy cream (*crème de soja*).

Note 4. This is the earliest French-language document seen (Aug. 2013) that mentions powdered soymilk (*Le Lait de Soja, en poudre*).

Note 5. This is the earliest document seen (Sept. 2002) that mentions fermented soymilk (*Le Lait de Soja Fermenté*).

Note 6. This is the earliest French-language document seen (Jan. 2013) that mentions soy sprouts, which it calls *les germes de soja.*

175. **Product Name:** [Soy Cream {Resembles Chestnut Cream} (Fresh, or Powdered)].
Foreign Name: Crème de Soja.
Manufacturer's Name: Usine de la Caseo-Sojaine.
Manufacturer's Address: Valles, Colombes (near Asnieres, Seine), northwest of Paris, France.
Date of Introduction: 1910. January.
New Product–Documentation: *Bulletin de l'Association Amicale Franco-Chinoise.* 1910 "*Le soja* [Soya"]. 2:62-64. Jan. See p. 64. A company named *Caséo-Sojaïne* has published a brochure showing products that it makes, including sweet soya preserves (*Confiture de Soja;* this soy cream {*crème de soja*} resembles chestnut cream {*crème de marron*}).

Beltzer, Francis J.-G. 1911. *"Études sur la caséine végétale du 'soja' et ses applications* [Studies on the vegetable casein of soybeans and its applications"]. *Revue Scientifique* 49(23):716-20. June 10. See p. 720. Conclusion: "A Chinese factory has already been established on the outskirts of Paris (at Vallées near Colombes) to make food products based on soya (*produits alimentaires à base de Soja*)." This factory now produces various food products, including sweet soya preserves (*confiture de Soja*).

Scientific American Supplement. 1911. "Extended utilization of soya bean products: Milk, cheese, and a variety of other products from a vegetable seed." Aug. 19. p. 115. "A Chinese factory has been established [by Li Yu-ying] not far from Paris for the purpose of manufacturing alimentary products from Soya, and it has already put on the market... preserves,..."

Li, Yu-ying; Grandvoinnet, L. 1912. *"Le soja* [The soybean"]. *Agriculture Pratique des Pays Chauds* (Bulletin du Jardin Colonial) 12(109):302-08. April. See p. 304. Under "Soy preserves (*Confiture de soja"*) we read that this product resembles *"Creme de Marron"* (sweetened chestnut paste/ butter). A table (p. 304) compares the composition of the soy and the chestnut cremes.

Note 1. This is the earliest known commercial soy cream product.

Note 2. *Creme de marron* is made by pureeing cooked chestnuts and sugar to make a very sweet spread for bread.

176. Sagnier, Henry. 1910. Le soja et ses produits [The soybean and its products]. *Journal d'Agriculture Pratique* 74(1):307-10. March 10. [4 ref. Fre]

• ***Summary:*** The soybean was a curiosity in Europe until 2-3 years ago, when large amounts started to be imported. The prince A. d'Arenberg, president of the Suez Canal Society, told the National Society of Agriculture, that prior to 1908 no soybeans had passed through the Suez Canal, yet in that year 35,000 tons passed through it. It seems that the new commerce has been stimulated by the expansion of the crop in Manchuria and Korea, under Japanese influence. Most of the imports have gone to England and northern Europe. In England, the oil is used to make soaps and the cakes are fed to livestock.

Recently it was announced that the Chinese government, preoccupied with the expansion of exports, would have manifested the intention to prohibit these exports in view of preventing a shortage of soybeans in the interior of the country.

"The Chinese are now greatly expanding their efforts to make known in Europe the advantages to be gained from soya and from the products that can be extracted from its seeds. I recently had the occasion to present to the National Agricultural Society of France a study written by Mr. Liyuying [Li Yu-ying], delegate of the government of China for several missions. It was titled *Le soja, utilisation alimentaire, thérapeutique, agricoles et industrielle*. This study was accompanied by samples of yellow and black soybean seeds, and by the principal products which can be extracted from this plant: flour, bread for diabetics, cake (*gâteau*), seasoning sauce (*sauce condimentaire*), confections (*confitures*), raw milk (*lait cru*), cooked and sweetened milk (*lait cuit et sucré*), cake for livestock feed, (*tourteau pour l'alimentation du bétail*), fresh cheese (*fromage frais* [tofu]), and smoked cheese (*fromage fumé* [smoked tofu]).

"These products originated from processing imported soybeans. They have been prepared at a test factory (a photo, p. 309, shows the interior) set up just outside of Paris, at Vallées, near Asnières. Li Yu-ying's study gives complete details on these products" which are made from imported soybeans. This factory, named *Caséo-Sojaine*, "has been established by the agents of a civil society constituted in China under the name of *Société biologique de l'Extrême-Orient* (Far Eastern Biological Society). Made up of physicians, scholars (men of letters), and businesspeople, this society would seem to have as its principal goal/object to make known and have used in Europe the pharmaceutical and agricultural products of the Far East [East Asia]."

Note: This is the earliest document seen (May 2011) that mentions the Far Eastern Biological Society (*Société biologique de l'Extrême-Orient*)

The author concludes by discussing soymilk (*lait de soja ou lait végétal*), soybean cakes (*les tourteaux d'huilerie*), and a brief history of the soybean in France.

Illustrations (p. 308) show: Mature soy bean plant with pods. Close-up of soy bean pods and seeds. Soy milk and soy flour viewed under a microscope (p. 309).

177. Le Goff, Jean. 1910. Sur l'emploi de la graine du "Soja Hispida" de Chine dans l'alimentation des diabétiques [On the use of soybeans in diabetic diets]. *Gazette des Hopitaux* 83(34):476-78. March 22. Also published as a brochure. [5 ref. Fre]

• ***Summary:*** The writer is interested in using diet to treat or manage diabetes. As early as Feb. 1908, she suggested the use of almond cake in diabetic diets. The almond is not the only oilseed that is available. Nuts, poppy seeds, roasted peanuts, etc. also taste good. "I am here today to call attention to a legume, *Soja Hispida* (Moench), popularly known as the oil-pea of China (*pois oléagineux de Chine*), which serves as the basis of the diet for the inhabitants of that vast country.

"Like wheat, it is an annual plant. It has been cultivated in China since antiquity, and is likewise found in Cochin China, Cambodia, the Indies, and Japan.

"Its cultivation not been tried much in France. The trial by Lechartier (1903), with the goal of using soya as a forage plant, has not yet been repeated.

"Desiring to increase the number of foods permitted for diabetics and, above all, providing them with a fresh

vegetable capable of replacing [dry] peas and haricot beans, I had the idea of trying to cultivate soybeans in France. The trials I made in 1909 were very encouraging.

"The soybean (*Le soja*) planted last May in the department of Loir-et-Cher [in north-central France] gave a magnificent stand of plants 100 to 110 cm in height, which bore fruit in September, even though that month was very rainy.

"Just like grapes, soybeans need plenty of heat to mature. The soybean harvest will be greatest in areas which are dry and warm. In short, the best regions for growing grapes would also seem to be preferable for soybean cultivation.

"It seems to me this demonstrates that the soybean can be cultivated in our country, like peas and haricot beans. It is the one new resource for diabetics who are living in the countryside where it is often difficult to obtain starch-free foods.

"Introduction of the soybean as a vegetable garden crop may be easier, since the trade has usually sold seed from the previous year's crop–or even older. Seeds that were not fresh contributed to the poor quality of foods made from them, and contributed to the discredit into when they fell."

"If soybeans are crushed in a mortar and mixed with water, you get a vegetable milk, resembling almond milk. With this milk, as with animal milk, one can make a cheese [tofu], the cost of which is practically insignificant. In China it is consumed in large quantities."

A table, by Mr. Balland, shows the chemical composition of soybeans from Cambodia and Tonkin.

"It is not only because of its low starch content or its richness in protein that one can recommend the soybean to diabetics; it is also because of the oils that it contains. From that point of view its action approaches that of almond cake.

There follows a long discussion of the action and importance of oils in diabetic diets.

Note: This is the earliest article seen (July 2001) by Dr. Le Goff on soy and diabetic diets. Address: M.D., Lauréat de la Faculté de médecine de Paris [France].

178. Demolon, A. 1910. A propos du 'Soja hispida' [About the soybean, Soja hispida]. *Journal d'Agriculture Pratique* 74(1):375-76. March 24. [Fre]

• ***Summary:*** "The article by Mr. H. Sagnier which appeared recently in this journal on the subject of *Soja hispida* (No. 10, 10 March 1910) stimulates us to publish some reflections on this timely question in which we took an interest while Li Yu-ying was working at our laboratory at the Chesnoy School of Practical Agriculture" [in France].

Demolon presents the soybean as a rather uninteresting plant, though one that could be of purely scientific interest. He makes 12 points–which Li later tries to refute in the Jan. 12, 1911 issue of this journal: 1. The carbohydrates in soybeans are represented by cellulose. 2. When one submits soy flour to an appropriate water treatment, the oil in the flour forms an emulsion and one obtains a whitish liquid. The name "vegetable milk" (*lait végétal*) which is applied to this substance has always seemed scientifically very inexact. 3. It is well known that vegetable albumins have a coefficient of assimilation very inferior to albumins of animal origin. The physical properties of so-called soy casein (*la soi-disant caséine du soja*) are not at all the same as those of milk casein, which has considerable importance from an alimentary/nutritional viewpoint.

Note: This is the earliest French-language document seen (Oct. 2008) that uses the term "soy casein" (or "soya casein") to refer to soybean protein.

4. What should we think of a milk in which lactose is totally absent and cannot be replaced except by indigestible cellulose. 5. Where are the lecithins and the soluble ferments, in short all those things which give milk the character of a biological liquid? 6. This vegetable milk has to its disadvantage a very characteristic taste, which reveals its origin. 7. Those of us who raise livestock are reassured by that fact that vegetable milk cannot compete in terms of results. 8. From the industrial viewpoint, and above all from that of an oil mill, we must note that the oil content of soybeans (16-18%) is inferior to that of most oleaginous plants (rapeseed or colza 35-40%, linseed 20-25%, and peanuts 45-46%). 9. Concerning the preparation of bread for diabetics, it is not clear what advantages soy bread has over gluten bread. The oil content and the strong flavor of soya cannot help but make the product inferior. 10. As Mr. Schribaux has noted, an agronomic trial conducted last year at the Chesnoy School of Agriculture gave an insignificant harvest. And even if varieties suited to these regions could be found, they would have to be superior to our good traditional legumes. 11. Nevertheless, the imported cake can find an advantageous place in livestock feeding. 12. It is however true that the soybean plant represents one of the curiosities of vegetable physiology and in this regard its study will be of great interest.

Note: This is the earliest French-language document seen (Nov. 2003) that uses the term *caséine du soja* to refer to "soy protein." Address: Director of the agronomic station of Aisne, France.

179. Blin, Henri. 1910. Le soja ou fève de Mandchourie. Production et utilisations [The soybean or bean of Manchuria. Production and utilization]. *Nature* (*La*) (*Paris*) 38(1, Supplement):141-42. April 2. [Fre]

• ***Summary:*** Since 1908 people in France have been very preoccupied with the large imports of soybean seeds which are grown in Manchuria and shipped from Dalny and Vladivostok. Soya beans are known in commerce as *Haricot de Chine* and *Pois oléagineux du Japon.* In England, soybeans have been used as a source of oil which is healthful, very nutritious, and of great value–especially for

use by soap manufacturers. In Germany, this bean is used for the preparation of an artificial distillery yeast; it contains an important amount of fermentable materials and of an enzyme (*ferment*) similar to the diastase of malt which transforms fermentable starches and sugars. The investigations of Dr. Calmette of the Pasteur Institute at Lille, have made it possible to extract from soybeans diastatic enzymes (*des diastases*) which have unique effects. [Note: Dr. Calmette was one of the inventors of the "amylo process," which began operation in France in 1891. He also first named *Aspergillus rouxii*.]

Recently Li Yu-ying, a delegate of the government of China in Europe, made a very interesting presentation to the French Society of Agriculture, concerning the food, therapeutic, agricultural, and industrial uses of the soybean: Flour, bread for diabetics, cakes, a seasoning sauce, confections, raw milk, fresh cheeses, etc.

Also discusses: Soybean cakes, cultivation of soybeans in Europe and the USA, soy coffee made by roasting soybeans in the south of France (*le Midi*), and the use of soya in diabetic diets. The author concludes by stating that the soybean has great potential in France, and varieties well adapted to this climate should be cultivated.

180. Brenier, Henri. 1910. La question du soja [The soya question]. *Bulletin Economique de l'Indochine* (*Hanoi*) 13(83):105-28. March/April. Series 2. [22 ref. Fre]

• ***Summary:*** This is an in-depth look at the relevance of the soybean to France, both now and in the future. It is prompted by the rapid growth of soybean imports to Europe from Manchuria. The author has a good knowledge of the literature on soybeans and a familiarity with the crop in the field in French Indochina and China.

Contents: 1. Soybean cultivation: Species and varieties, major soybean producing countries (China, Japan, Korea, Indochina), other countries (Java and the Dutch East Indies, France, USA. The Imperial Institute of London is conducting trials in the Cape of Good Hope and Natal [South Africa], in British West Africa, and in Gambia), methods of cultivation and yield. 2. Commerce: Exports of soybeans and soybean cake (beancake, *tourteaux de soja*) from China and especially Manchuria (Newchwang, Dairen/Dalny, Antung, Ta tung kow, Suifenho [Suifenhe] / Sui-fen-ho), importing countries in 1908 in descending order of amount imported (Russian ports on the Pacific [Vladivostok, for re-export to Europe], Great Britain, France, Holland, Italy, Belgium, Germany), prices. 3. Soybean utilization: Chemical composition, use as a forage plant and for improving the soil, use in human foods (tofu, shoyu, Worcestershire sauce, tuong [Annamite soy sauce], miso, natto, soymilk), the soybean as an oilseed (yield of oil from various oilseeds), soybean cakes. Conclusions.

Page 109 discusses soybeans in Indochina, according to information received from M. Crevost, Curator of the Agricultural and Commercial Museum of Hanoi, and from the article by Bui-quang-Chiêu (Dec. 1905). The names of the soybean are different in the various parts of Indochina. In Cochin China (especially in the provinces of Chaudoc and Baria), in Annam (sporadically), and in Tonkin it is called *dau-nanh* or *dau-tuong* (*Tuong* is a sauce made with soybeans, described later under "Uses"). In Cambodia (*Cambodge*) it is called *sandek sieng*. The variety most widely cultivated in Indochina seems to be one with a yellowish-white color, more oblong than round, a little flattened (*soja platycarpa* of Harz [1880, 1885] (?)), different therefore from the fine (*belle*) varieties of Manchuria and Japan that are well rounded and pure yellow.

A table (p. 112) shows soy bean grain exports (in 1,000 metric tons) from different Manchurian ports for the years 1905-1908. The author notes that Indochina could be exporting soybeans to France. One factor that stimulated the large exports of soybeans from Manchuria in 1908 (besides an excellent harvest in 1907) was a program to suppress the cultivation of opium by expansion of soybean acreage (p. 113). The author uses the scientific name *Phaseolus radiatus* to refer to the *petit haricot vert* (probably mung bean). He observed soybeans planted in mixed culture in Szechuan.

Page 116 notes that the rise of soybeans in Manchuria is due in part to the power of the Japanese commercial house Mitsui Bussan Kaisha and the large English oil mills, which joined to develop an industry that had not previously existed. At the end of 1906, Mitsui, which had a dominant commercial role in Southern Manchuria, sent one or two trial shipments of soybeans to England. Mitsui was followed mainly by the British trading houses (Samuel & Samuel, Jardine, Matheson), then by the Germans (Otto Reimers, Arnhold Karberg), and the Russians. Continued suppression of opium growing led to further expansion of soybean cultivation.

A table (p. 117) gives the price of soybeans (per picul of 300 catties = 180 kg), soybean cake (per 10 cakes of 53 catties each or 318 kg for the 10), and soybean oil (per picul of 100 catties = 60 kg) in New chwang [Newchwang] taels and in French francs in the average year from 1882-1891, and in the year 1897. Prices were up in 1897.

Page 124 states: "A factory was recently founded near Paris (at Saint Germain en Laye), with Chinese capital, for the preparation of a series of products derived from soya: milk, *"caséo-sojaïne,"* cheese [tofu], sauce, and sweet soya preserves (*confiture* (*?*) *de soja*)*."* A footnote states: "I owe this curious piece of information to the amicability of the secretary of *Ecole française d'Extrême-Orient,* Mr. Ch. Maybon, who pointed it out in the January 1910 issue of the *Bulletin de l'Association amicale franco-chinoise.*

A table (p. 125) shows that the soybean gives the lowest yield of oil of all major oilseeds: copra (from coconut) yields 67-70% oil, sesame seeds 50-56%, poppy seed (*pavot*) 43-50%, castor oil plant 42-50%, rapeseed (colza) 42-45%,

linseed 43%, peanuts 35-47%, cottonseed 21-26%, soybeans from Manchuria 16-18%.

Note: This is the earliest document seen (March 2000) that describes *caséo-sojaïne* as a product. Yet this may well be a mistake since its source of information is given as *Bulletin de l'Association Amicale Franco-Chinoise* (Jan. 1910)–which uses the term to refer to a business name. Address: Inspecteur-Conseil des Services Agricoles et Commerciaux de l'Indochine.

181. Ruhräh, John. 1910. The soy bean as an article of diet for infants. *J. of the American Medical Association* 54(21):1664-65. May 21.

• ***Summary:*** The author advocates the use of the soy bean as an article of diet in infant feeding and for diabetics because it is free from starch and has a high protein content (about 25%). It is also good in diabetic diets when the patient tires of eating meats.

"In the feeding of infants and of some young children one difficulty is to supply sufficient in a form in which it can be digested and assimilated. Mothers' milk is often not available, and the protein of cows' milk may not be suited, or cannot be adapted to the infant's digestion or, owing to certain diseases, may be contraindicated; and it is in these difficult and abnormal cases that the soy bean would seem to have place."

The author had a "gruel flour" made from dehulled soy beans by a company [probably run by Mr. Macey F. Deming of the Cereo Company, Tappan, New York–see last paragraph of article] which makes a specialty of producing such gruel flours. An analysis of this flour shows that it contained 44.64% protein, 19.43% fat, and no starch. Each ounce of this "soy-bean gruel flour" yields about 13 gm of protein and 120 calories. He mixed 1 to 6 tablespoons of the finely-ground flour with 1 quart of water (or water-milk mixture) and a little salt, boiled it for 15 minutes, and fed it with good results to infants with diarrhea, digestive disturbances, or diabetes.

He gives recipes for the preparation of gruels, broths, and muffins using this flour, and discusses the indications for its use in difficult infant feeding cases. He suggests that barley, oat, or wheat flour be added to the recipes to help them thicken and prevent settling. "Later, when the food is to be increased, condensed milk or cows' milk may be added to the soy-bean gruel to advantage."

He concludes: "I am indebted to Mr. M.F. Deming for assistance in getting a satisfactory soy flour made."

Note: This is the earliest English-language document seen (Oct. 2001) that uses the term "soy flour." Address: M.D., 839 North Eutaw St., Baltimore, Maryland.

182. Langworthy, C.F. 1910. Apendice. La soya como alimento para el hombre [Appendix: The soy bean as human food]. *Boletin de la Sociedad Agricola Mexicana* 34(20):389-92. May 25. [1 ref. Spa]

• ***Summary:*** This is a Spanish-language translation of USDA Farmers' Bulletin No. 58 (1897, Revised 1899). The soybean is referred to throughout as "La haba soya." It describes and gives the nutritional composition of various Japanese soyfoods, including natto, miso (3 types; *miso blanco, colorado, Suiza* [*Swiss*]), tofu (*Tofu o queso de haba; Tofu fresco*), soymilk (*leche de la haba soya*), frozen tofu (*Tofu helado*), yuba, soy sauce (*salsa de la haba soya*).

Note 1. This is the earliest Spanish-language document seen (Oct. 2012) that mentions yuba, which it calls *yuba.*

Under the name of coffee beans (*habas de café*), soybeans (*las habas soya*) are sometimes consumed in Switzerland as legumes (*como legumbres*); when they are dry and toasted, they are used as a substitute for coffee (*sustituir al café*). No mention is made of soybeans or soyfoods in Mexico.

Note 2. This is the earliest Spanish-language document seen (April 2013) that uses the term *Tofu* or the term *queso de haba* or the term *Tofu fresco* to refer to tofu

Note 3. This is the earliest Spanish-language document seen (Jan. 2012) that mentions natto, which it calls *natto.*

Note 4. This is the earliest Spanish-language document seen (March 2009) that mentions miso, which it calls *miso.*

Note 5. This is the earliest Spanish-language document seen (Nov. 2012) that mentions soy coffee or soy as a substitute for coffee, which it calls *sustituir al café.*

Note 6. This is the earliest Spanish-language document seen (Aug. 2013) that uses the term *leche de la haba soya* to refer to soymilk.

Note 7. This is the earliest Spanish-language document seen (April 2013) that mentions frozen tofu, which it calls "Tofu helado."

Note 8. This is the earliest Spanish-language document seen (April 2012) that mentions soy sauce, which it calls "salsa de la haba soya." Address: PhD, Office of Experiment Stations, USDA, USA.

183. Burtt-Davy, Joseph. 1910. The soy-bean (Glycine hispida). *Transvaal Agricultural Journal* 8(32):620-26. July.

• ***Summary:*** Contents: Introduction. Description. Climatic requirements. Varieties. Planting and cultivation. Harvesting the seed. Returns of seed. Use of the seed for stock feed. Use of the seed for human food. Commerce in the seed. Soy-bean oil. As green forage. For ensilage. For hay. As a rotation crop for green manuring. Some co-operative experiment reports (from South Africa).

"We have grown soy-beans successfully at Skinners Court and on the Springbok Flats since 1903. We have also tested them successfully in other parts of the country, but as there was no market for the beans, and farmers had not learned to use them for their own stock, they were not taken up as a regular crop. Another reason for this was that some varieties gave a uniformly poor germination, while on some

soils, or under some conditions, none of the varieties did well.

"We have continued our experiments and have now established a strain of seed which gives very satisfactory results. But owing to the variations in soil and the apparent necessity for inoculation (natural or artificial) in some cases, I cannot recommend farmers to plant largely until they have given the crop a trial on a small scale...

"A variety brought by me from the United States in 1903, known as the 'Southern,' has given the best results of any tried by us, both at Skinners Court and on the Springbok Flats. The seed harvested in 1904 we distributed extensively in different parts of the Transvaal, and have had favourable reports of it, both from the high veld and the bush-veld. The original stock was obtained through [seedsmen] J.M. Thorburn & Co., New York.

"Writing from London, Messrs. Mitchell, Cotts & Co. state that only two varieties have been imported into England in any quantity, viz., the north Manchurian or 'Harbin' quality, exported from Vladivostok, and the south Manchurian or 'Sakura' quality, shipped from Dalny, both of which are described as very similar in appearance and composition; the 'Sakura' realizes about 2*s.* 6*d.* per ton more than the others. These are the classes which are most acceptable to the English market. Seed has been received through the courtesy of Messrs. Mitchell, Cotts & Co., and will be tried the coming season."

"Of the varieties grown in Europe we have tried Vilmorin's 'Extra-Early,' 'Extra-Early Black,' and 'Yellow Etampes' at Skinners Court, but they did not thrive at all, even though grown alongside the 'Southern' which did excellently" (p. 621).

A list of the names of soybeans grown in Japan, grouped according to seed color, is given. Among the six white seeded beans (*Shiro Mame*), Teppo Mame or 'Gun Bean' is "the sort principally used to make the famous Soy Sauce." Maru Mame or 'Bullet Bean' is recommended as very valuable for horse food. The names of three black seeded soybeans (*Kuro Mame*) and three speckled seeded soybeans (*Fuiri Mame*) are also given. "These have not yet been tested by the Department, but seed is on order for trial next season. In the meantime I recommend farmers to restrict themselves mainly to the 'Southern' variety." Note 1. In calculating yields, 1 muid = 3.33 bushels.

"In China and Japan the soy-bean is an article of human diet. In Japan it constitutes a large proportion of the food of the people, a variety of dishes being prepared from it as well as foodstuffs similar to butter, oil, and cheese. A condiment famous among the Chinese under the name of 'soy', is made from this bean. The beans are of a pleasant taste when boiled, either in a green state or when ripe; in the latter state they need considerable soaking before use...

"The Japanese are reported to extract the casein from soy-beans, using it as a substitute for milk. This vegetable drink is said to be a very popular drink among the poorer classes of China and Japan. The beans are first softened by being soaked and then boiled in water.

"Experiments are being made in Europe in the use of soy-bean flour as an admixture with wheat flour for bread. A biscuit is made and sold in Paris, containing soy-bean flour, which has no starch, and is recommended for persons suffering from diabetes.

"Biscuits seem to be the most likely form in which this flour can be used, and two or three large English firms are now making them... A coffee substitute is made in America and on the Continent of Europe, out of soy-beans."

Note 2. This is the earliest English-language document seen (Oct. 2001) that uses the term "soy-bean flour." Address: F.L.S., etc., Governnment botanist and agrostologist.

184. Lemarié, Charles. 1910. Les sojas du Japon [The soybeans of Japan]. *Bulletin Economique de l'Indochine* (*Hanoi*) 13(85):493-98. July/Aug. [4 ref. Fre]

• ***Summary:*** "As a contribution to the study of the question of soybeans, so clearly revealed by the Inspector-Consul Mr. Brenier in a recent edition of this Bulletin, he judged it useful to ask me for the notes hereafter collected as much over the course of my lectures as upon the occasion of my voyage to Japan in 1903.

"I borrow much from Rein (*The industries of Japan*) and from Messrs. Paillieux and Bois (*Le Potager d'un Curieux* or *The Kitchen-garden of a Curious One*) who summarized all that we know about soybeans (*soja*) in Europe up until recently" (p. 493).

Describes and gives the names of more than twenty cultivated varieties, using the classification system of Rein and the Japanese based on seed coat color.

"I have already said that it [the soybean] needs heat and frequent watering. These considerations explain, in part, the failures encountered up to now in the attempts to introduce this crop into Europe. I fear the same obstacles for Mr. Li-yu-Ying, of Chinese nationality, formerly a student at the school of practical agriculture at Chesnoy, near Montargis (Loiret).

Note: Loiret is a department of France just south of Paris. Montargis is a commune in the Loiret department; the ancient town is located about 110 km (68 mi) south of Paris.

According to a lecture he gave last year to his former classmates, Li set himself the task of taking up these trials on the outskirts of Paris: or was it on the manure fields / sewage farms (*champs d'épandage*) of Gennevilliers or Achères.

"But even if the cultivation of soybeans in France is not profitable, nevertheless the popularization of the diverse products that come from them is no less useful; Indochina, if the need be, could provide for new industrial ventures. With Mr. Albert Demolon, a scientifically educated agriculturist (*ingénieur-agronome*), then professor at Chesnoy, and today

director of the Agricultural Station of Aisne [northeast of Paris] and of the Laboratory of Bacteriology at Laon, Mr. Li-yu-Ying again took up his previous studies related to these various products. In particular, he compared soymilk, which he calls *Caséosojaïne*, with animal milk, and he believed [it] possible, employing the highly developed procedures of handling and fermentation used [in France] with cow's milk, to obtain forms of tofu (*Téou-fou*) acceptable for our Western palates. That is to say: first, before any fermentation, a liquid [form of tofu] lends itself to the same uses as milk, especially useful for artificial feeding of livestock; then, after coagulation: 1. a hard cheese, corresponding to cheese of the firm sort (*fromage à pàte ferme*), cooked egg, or cooked meat in richness of protein; 2. a soft cheese, corresponding to fresh cheese (*fromage frais*) and able to be consumed as a legume; 3. a fermented cheese, after sterilization then inoculation with microorganisms of certain special cheeses, corresponding to these diverse fermented animal cheeses" (p. 497-98).

Also discusses: Azuki (p. 497). Address: Directeur des Services agricoles et commerciaux du Tonkin.

185. Choles, H.J. 1910. Soy beans: Their cultivation and uses. A new Natal industry. *Natal Agricultural Journal* 15(3):281-307. Sept. [4 ref]

• ***Summary:*** Contents: Introduction. I. Botany and habitat: Introduction, varieties. II. Cultivation: Conditions of growth, methods of culture, soy bean mixtures. III. Harvesting: When to harvest, curing, frame for curing soy bean hay, harvesting for seed, yield of seed, yield of forage. IV. Chemistry of the soy bean: Introduction, digestibility, soy bean oil, soy bean bake. V. Value and uses of the soy bean: Introduction, the uses of the soy bean (uses of the oil {7 uses}, uses of the bean as a vegetable in Natal {like marrowfat peas or haricot beans}, in bread or biscuits in Paris [France] for diabetics, in France and Switzerland as a coffee substitute or adulterant, soy bean flour used for making bread and biscuits in England, soya meal for cattle feeding, oil-free residue made into cake for stock-breeding purposes, liquid closely resembling cow's milk made in Japan, vegetable cheese [tofu] made from the milk, a sauce called "Shoyu" made in Japan, soy-bean cake used as a fertilizer in Japan and China), as a soiling crop, as a silage crop, as a hay crop, as a pasture plant, as a soil renewer. VI. Value of the bean for feed: Introduction, soy beans for hogs, soy beans for dairy cows, other experiments with milch cows.

Illustrations (non-original line drawings) show: The soy bean plant with pods and roots (p. 280; from an original in Piper 1909). Flowering branch with close-ups on flower, leaves and pods (p. 285; from an original in Lamson-Scribner 1899). Frame for curing soy bean hay (p. 291; reproduced from Messrs. Lever Bros. pamphlet on Soy Bean Cultivation). Roots of soy bean plant with nodules (p. 301).

Note: This is the earliest document seen (May 2005) concerning Lever Brothers in connection with soybeans.

186. *Tropical Agriculturist, Supplement* (*Ceylon*). 1910. East Asiatic Co. and the soya bean industry. Soya cake factory erected at Copenhagen. 35(4):368. Oct. 15. Also titled Supplement to the Tropical Agriculturist and Magazine of the Ceylon Agricultural Society. [1 ref]

• ***Summary:*** A factory "has been erected there with capital provided by the East Asiatic Company at a cost of about 1,000,000 kr. (£55,500). It is estimated that as at present arranged 100 tons of soya beans can be pressed in 24 hours, and that, if necessary, the output could be increased. The factory appears to be well equipped and fitted with the latest improvements. The East Asiatic Company's own vessels are likely to largely contribute to the activity of the factory by bringing the beans from the East for pressing, though a quantity of soya beans has already been shipped from the United Kingdom [to Copenhagen]. It is anticipated that by establishing this, and in the course of time other oil cake factories, Denmark may be able to obtain a more effectual control over the price of butter than has been the case hitherto, and avoid the enormous fluctuations of price which of late have been so much in evidence."

"A French agency states that Mr. Li Yu Jin [sic, Li Yu-ying], who established the first soya bean industry in Paris, has returned from China after consulting Chinese capital of F. 1,500,000 for developing this enterprise in Europe. The soya will be worked at Paris, Brussels, London, and Berlin, and will be consumed in the form of milk, sauce, soup, vegetable, jam, cheese, flour, and bread.–*L. & C.* [*London and China*] *Express, Aug. 19."*

Note 1. It is not clear whether soybeans have arrived yet in Denmark for processing by this new oil mill. Note 2. This is the earliest English-language document seen (March 2000) with the term "Soya cake" in the title.

187. Main, F. 1910. Les produits du soja: Fourrage, engrais, huile, torteau alimentaire, usages médicaux, Etat actuel de la production et de la consommation. Avenir [The products of the soybean: Forage, manure, oil, edible cake, medical uses. Present state of production and consumption. Future]. *Journal d'Agriculture Tropicale* 10(112):297-301. Oct. [soy ref. Fre]

• ***Summary:*** Contents: Introduction. Oil. Cake. Forage. Green manure. Medical usages and various other uses. The future of soya.

Page 300: Chinese factory near Paris and the factory of the Biological Society of the Far East (*l'usine de la Société Biologique d'Extrême-Orient*), recently installed in France, with the goal of disseminating among sick Europeans, soymilk, soy bread, and soy cheese (*fromage de Soja,* [tofu]), supported by exact scientific facts. In 1890 Menudier used soy flour to treat diabetics. Address: Agricultural engineer (*Ingénieur agronome*).

188. Mene, Edouard. 1910. La Chine a l'Exposition de Bruxelles [China at the Brussels Exposition]. *Bulletin de l'Association Amicale Franco-Chinoise* 2(4):336-46. Oct. See p. 340-43, 346. [Fre]

• ***Summary:*** 1. The Chinese pavilion: In the beautiful and grandiose Universal Exposition of 1910, that a frightful fire partially destroyed, the Chinese section merits special mention. It is not an official exposition organized through the care of the Chinese administration. Rather, it is an exposition organized by five Chinese merchants The last one, Mr. Tsu represents both soya and the ideal kite (*soja et cerf-volant idéal*).

Note: The meaning of *cerf-volant idéal* is unclear. The Chinese have long been known for their beautiful and well-designed kites, some with long, flowing tails. However, if Mr. Tsu was exhibiting kites, he would have used the plural form of the noun. Is he saying that soy is like a high-flying kite?

These exhibitors have gathered a certain amount of indigenous and modern objects, commercial and artistic in a pavilion located in the section reserved to foreign countries (start of p. 339).

In the back of the room, to the right are displayed by Mr. Tsu, the different products extracted from one of most utilized plants in China: *Soja hispida*, Houang-teou, the soybean of the leguminous family.

One can observe plates filled with soybean seeds (*graines*), looking like little round (broad) beans (*fèves*), and some dehulled soya beans; jars filled with white soya cheese, looking like quark [tofu], cheese in round boxes, looking like Camembert [fermented tofu]; a jar with the skin of the soya cheese [yuba]; a vial with soya casein [soy protein].

A display case is filled with jars of different types of yellow, green, and black soybeans, of soya flour, of semolina, of a brownish soya coffee in bean and powder form, of bottles of soymilk, of soy oil, and of Soy [sauce], this condiment so utilized in Chinese cuisine. On a table are displayed soya pastries resembling in their shape, the Commercy madeleines [small sponge cakes shaped like sea shells], some noodles, macaroni and soya bread that is prescribed to diabetics as well as a gruel of soya flour. On the floor are placed several square soybean cakes (*tourteaux*), residue of the soya oil production, of a grey-yellow color, to be used as fertilizer. A brochure on soya-based food products, excerpted from the book *The Soybean* (*Le Soja*) by Mr. Li Yu-ying is being handed out through the care of the exhibitor, Mr. Tsu.

This brochure, titled: 'Soya based Food Products' (*Produits alimentaires à base de Soja*), Caseo-Sojaine, rue Denis-Papin, les Vallées (Seine), describes these products and their preparation: soya milk, liquid or in powder form, derived from the grinding of the beans, after immersion, in water, for several hours. The grain content consisting of legumin or vegetable casein, is placed under a grindstone: one derives an homogenous, nutritive and digestible milk product. Fermented and powdered milk is produced, soya casein, extracted from the soya milk, with uses in food and in industry; soya flour, obtained by the grinding of the dehulled beans, completely deprived of their seed coat to lessen the proportion of cellulose and increase its digestibility. It does not contain any starch; soya bread, well utilized to feed diabetics; by perfecting fermentation, one makes a rather light bread, one that reminds one of rye bread; pasta / noodles; cookies, pastries, white- and pink-tinted pasta prepared with soya flour, soy sauce (Soy) with a bouquet that reminds one of burned onion that is used to enhance fish and vegetables; soya jam (*confiture de Soja*), similar in appearance and taste to chestnut cream (à la crème de marrons), soya oil for food use; green vegetable soybeans (*légumes de Soja*), whose sprouts may be used as a salad. As for the soybean cakes (*tourteaux*), these are used for animal feed and fertilizer.

In China, the *Soja hispida* (the soybean), with hairy pods, with yellow, reddish, black, green, white, variegated beans, whose taste echoes the green bean, the lentil, the pea, and that has a high content of culinary oil, is grown, on a large scale, in Mongolia, in Manchuria, and in the provinces of Henan, Zhejiang, Jiangxi (*Ho-nan, Tchokiang, Chan-si et Chang-tong*). It is one of the most utilized plants from the culinary and industrial point of views.

Soy sauce, called Soy in English and in Chinese *Tsiang-yeou*, is a greatly-appreciated condiment that is prepared with yellow soybeans named *Houang-teou* and that one flavors with star anise, green anise, and grated orange rind. It is a blackish liquid, lightly syrup-like used to enhance the flavor of fish, meat, and vegetables. Another Chinese condiment [fermented black soybeans] is made with soybeans mixed with salt and ginger. In Canton, *Kiu-tsu* [*jiuzi*, Cantonese wine starter, a ferment] is made with soybeans, red rice, and leaves of *Glycosmis citrifolia*. As for soya cheese, it is made as follows (see footnote): Soak the soybeans in water for 24 hours to make them swell; drain off the water, grind while adding fresh water to form a slurry that is run through a filter. Stir it by hand, then pour it into a caldron, where it undergoes a slow cooking. Let it cool in a tub and remove and foam with a big spoon.

A thick film [yuba] is formed on the surface. It is lifted off with a round wooden stick shaped like a long chopstick (*baguette*) and it is allowed to dry on thin ropes. This skin is called skin of soya cheese [yuba]. To the remaining soymilk, add a little water mixed with calcium sulfate (*plâtre*) and several drops of nigari, which is magnesium chloride derived from the salt in salt beds.

Footnote at the end of page 342: See (1) *Bulletin of the Society for Acclimatation*, second series, volume 13, page 562, 1866, "On The production of tofu in China," by Paul Champion.

Stir in the liquid coagulant which will cause the casein in the soymilk to coagulate. Pour the warm mass into in a wooden frame or box lined internally with a fine cloth through which the liquid whey will seep. Atop the frame or box place a board loaded with weights to press the cheese which is of a grayish white color, looks like quark, and has a pea-pod taste (*à goût de pois*)*;* with the addition of salt, this cheese will keep; without this precaution, it spoils. It is used to feed the impoverished portion of the population: often, it is fried in soya oil. Soya cheese [tofu] is manufactured on a large scale near Peking and in most of the sea ports of Southern China. It is mostly the town of Ning-po that is the center of this production. Each year, thousands of junks (*jonques*) loaded exclusively with soya cheeses leave this town harbor to reach other Chinese harbors.

Besides cheese [tofu], the most important soya product is the oil that is extracted from its beans, mostly the yellow beans called *Houang-teou.* This yellow oil, which is siccative / drying, has a special smell and a pea-pod taste. At Kaifeng (K'ai-fong) in Henan (Ho-nan) province, at Tsi-nan in the Chan-tong, and at T'ai-yuan in the Chan-si, are located important soya oil manufacturing plants. But it is mostly Ningpo in the Tcho-kiang, that is the center for the production and the centralizing of soya oil. Much is also produced in Newchwang [Nieou-tchouang], and in Chefoo / Tantai (Tche-fou) in Shantung province. The soybean cakes (*tourteaux*), the by-products of soya oil processing, are a major export out of Newchwang and Chefoo; they are shipped to Swatow and Amoy to be used as fertilizer in sugar cane plantations.

These soybean cakes (*tourteaux*) are sought after as much as the beans themselves, and are to feed cattle, as are the pods, the stems and the foliage of the plant. The beans of *Hei-teou,* the black soya bean, mixed with cut up straw, are given as feed to horses and mules in Northern China and in Manchuria.

Note: This periodical was established to promote understanding and friendship among the people of France and China. Soja is mentioned on pages 341, 342, 343, and 346. Address: Dr.

189. *Times of India* (*The*) (*Bombay*). 1910. The soy bean. Nov. 1. p. 4.
• ***Summary:*** From Pioneer: "It will interest those who are now busily engaged in this country in the cultivation of soy beans, in the hope of intercepting some of the wealth that is freely flowing to Manchuria, where this class of cultivation has proved so important and so profitable, to know that, in addition to its many other claims to utility and popularity, a method has just been discovered of converting the soy bean into a kind of coffee, a kind of milk, and also a kind of cheese. Generally speaking imitation food stuffs are harmful, but the claim is made that these latest products of the now famous Manchurian bean are wholesome to a degree and are likely to find a ready sale amongst those classes of the community who cannot always afford a regular supply of pure coffee and milk and sustaining cheese. At all events there now seems to be a run on soy bean specialties."

"Experiments have shown that this bean can be cultivated in many places in India and required no very particular attention. Even when carelessly sown in an ordinary flower pot in a verandah in Calcutta it sprang up in a few days, strong and vigorous. The point to be borne in mind is this: The soy bean has been proved to be such an all-around useful commodity that the demand for it during the past year or so has become enormous in practically all parts of the world, and, as we have seen, new uses continue to be found for it. Secondly, the growth in this trade is such that it is evident that Manchuria will find it difficult to keep pace with it even if there were any desire on the part of those in a position to complete to allow her an undisputed monopoly of this profitable trade. And, finally, it must not be forgotten that the growing popularity of the soy bean is only acquired at the expense of other oil seeds which are chiefly grown in India, and it is not at all improbable that cultivators in this country will soon have to decide whether there are to be less oil seeds or more soy beans."

190. Kato, Yogoro. 1910. Yuba no seisei [On the chemistry of the formation of yuba]. *Tokyo Kagaku Kaishi* (*J. of the Tokyo Chemical Society*) 31(11):1139-55. Nov. [11 ref. Jap]
• ***Summary:*** Contents: The surface tension of soymilk (p. 1140). Relationship between the formation of yuba and the gas in contact with the surface of the soymilk (1142). Relationship between the formation of yuba and the evaporation at the liquid surface (1143). Relationship between the concentration of soymilk and the formation of yuba: Table shows concentration vs. time for yuba to form (1144). Changes in the concentration of soymilk during yuba formation (1146). Relationship between the sequence of yuba films and their respective composition (1146). Changes in the composition of the soymilk during yuba formation and relationship between concentration of the milk and the yuba (1148). Relationship between yuba formation and temperature (1149). Nature of the soymilk after removal of oil/fat (1150). Experiment on film formation using cow's milk (1151). Formation of films on a liquid consisting of dissolved starch (1153). Summary and conclusion (p. 1153).

Note: Throughout this article, the term for "soymilk" is written *tôeki,* or "bean liquid." Address: Rigakushi.

191. Li, Yu-ying. 1910. Vegetable milk and its derivatives. *British Patent* 30,275. 5 p. Date of application, 30 Dec. 1910. Accepted 29 Feb. 1912.
• ***Summary:*** Li gives his occupation as "Engineer." "This invention consists in the manufacture of a vegetable milk and its derivatives by means of soja grains (Chinese peas), the milk thus produced having the appearance, the colour

and the taste of ordinary milk, its chemical composition greatly resembling the same. It has moreover the same nutritive and alimentary properties." The grains are cleaned, decorticated, soaked and ground with water in a mill of the kind specified in British Patent Application 11,903 of 1911. The mechanized mill is composed of a fixed lower millstone above which the upper millstone is mounted on a vertical shaft.

"The clear milky liquid produced by grinding the grain previously mixed with water in combination with the supply of water in the millstone enters a channel then passes into a shoot (*t*) which conveys it to a tank (*u*) from which it is drawn off by a pump (*v*) which forces it under pressure into the filtering press (*x*). On leaving the filter, it falls, after passing through a sieve (*y*) into a vat (*z*). From this vat it is conveyed through a pipe (*a*) to the boiler or digester (*b*)." It is cooked with steam in a water-jacketed vessel, then pasteurized or sterilized. "It is then bottled and is ready for consumption. The soja milk may be utilised in the two following cases. 1st. As a substitute for ordinary milk. It may be consumed as sterilised at temperatures of 110º to 120ºC. 2nd. As a raw material for use in different manufactures (cheeses, casein, and the like). It must then be heated from 60º to about 120ºC.

"It may also be concentrated, dried, or fermented. "The milk obtained may be humanised or animalised," i.e., its composition may be brought to resemble that of human or animal milk. It is coagulated for making cheese by magnesium salts, organic salts, rennet, lactic ferments, or "sojaobacille," a ferment obtained by cultivation in a mixture of the above-described liquid and sodium chloride the fermented paste obtained by putting into salt water soy beans that have been cooked with water and allowed, alone or mixed with cereal flour, to stand in the air.

"For obtaining fermented cheese such as roquefort [Roquefort], parmezan [Parmesan], romatour [Rahmatour; Bavarian cream cheese], camambert [Camembert], and gruyere, suitable ferments are employed."

"For the fermented milk, the special ferment termed 'sojaobacille' is employed or other ferments used for obtaining fermented milks–kephir [kefir], yoghourt [yogurt], koumiss, and the like, and which are the saccharomyces cerevisæ, dispora caucasica, maya bulgare, and the like, and the said milk is modified by the addition of sugar levulose, and the like and particularly of lactose."

In making casein, the oil may be expressed from the beans before the preparation of the milk. The casein, obtained by coagulating the milk, may be used as food, paste, etc., or may be mixed with borax, oxide of zinc, magnesia, gelatin, etc., to obtain a hard industrial (non-food) substance termed "sojalithe" [resembling ivory, horn, or shell]. The filter press residues may be dried and ground to form a food for human beings, or may be used as food for cattle, or as manure. The liquid expressed in making cheese [soy whey] may also be used for feeding animals.

An illustration shows a longitudinal view of all the equipment used in the invention; each important part is marked with a letter.

Note 1. This is the earliest document seen (Sept. 2012) that mentions soy yogurt or fermented soy yogurt.

Note 2. This is the earliest document seen (Sept. 2012) that mentions kefir in connection with soymilk.

Note 3. This is the earliest document seen (June 2011) that mentions the word "sojalithe" (a hard plastic) or that discusses a specific non-food industrial use for soy protein; "sojalithe" is probably derived from "Galalith" (a registered trademark; see F.G.J. Beltzer, June 1911). Galalith, or Erinoid in the United Kingdom, a synthetic plastic material manufactured by the interaction of casein and formaldehyde, was introduced in 1900 at the Paris Universal Exhibition in France. In France, Galalith was distributed by the Compagnie Française de Galalithe located near Paris in Levallois-Perret. It was first used to make buttons, resulting in a revolution in the button industry. In 1913 some 30 million liters (8 million U.S. gallons) were used to make Galalith in Germany alone. Ever the entrepreneur, Li apparently saw "sojalithe" as a potential substitute for expensive ivory.

Note 4. This is the earliest English-language document seen (Oct. 2011) that uses the term "fermented cheese" to refer to a type of fermented tofu, or to a Western-style soy cheese (Roquefort, Parmesan, Camembert, or Gruyere types). It is interesting to note that all of these Western-style cheeses are traditional mold-ripened cheeses.

Note 5. This is the earliest document seen (Sept. 2012) that mentions a fermented Western-style soy cheese (see above).

Note 6. Levulose, now more commonly called fructose, is a sugar.

Note 7. This is the earliest English-language document seen (Aug. 2013) that contains the term "soja milk."

Note 8. This is the earliest document seen (Feb. 2011) that mentions the bottling of soymilk or the sale of soymilk in bottles. Address: Engineer, 46 rue Denis Papin, aux Valées [Vallées] (Seine), France.

192. Li, Yu-ying. 1910. Sauce consisting chiefly of soja grains. *British Patent* 30,351. 2 p. Date of application, 31 Dec. 1910. Accepted 29 Feb. 1912.

• ***Summary:*** Sauces. Cooked soy beans, to which flour may be added, are fermented with ferments such as "sojaobacille" (*vide* 30,275, 1910, *supra*), and the fermented mass is placed in saltwater. When matured, it is pounded to a paste or is diluted with saltwater and filtered. Alternatively, "soy milk," obtained as described in 30,275, 1910, is fermented with sojaobacille, sodium chloride being added, and filtered. Spices or sugar may be added, and the products may be concentrated or dried.

Note: This is the world's earliest patent seen for

soymilk.

193. *Revue Jaune* (*La*). 1910. La plante à Frégoli [The Frégoli plant]. 1:110-11. [Fre]

• ***Summary:*** We are talking about a Chinese plant, about Soya specifically. Just like the artist Frégoli, it takes on the most diverse and the most unexpected aspects.

If one should be a vegetarian, here is the menu that can be ordered in a chic restaurant at Pao-Ting-Fou or at Chang-Haï-Kouan:

Waiter, a soup dish please.

Would you care for a cream soup, an oxtail or for turtle soup?

Soya soup, please, garçon.

What would you like to drink, sir?

Soya milk please.

Would you care for a vegetable, sir.

Sure, a plate of soya if you please, waiter.

Do you care for English sauce, sir?

Not English sauce but soya sauce if you please, waiter.

Would you care for anything else, sir?

Cake, a good, solid soya cake if you please, waiter.

I see that you have a good appetite, sir. We still have custard. Would you care for some, sir?

For sure waiter. A custard made with this delicious soy flour.

Would you care for a few fried doughnuts, sir?

Yes, fried in soy oil, waiter. And served very warm if you please.

Would you enjoy a cheese platter, sir?

Soya cheese if you please, waiter.

Would you care for fresh, hard or smoked cheese, sir?

Well, today I shall have the fresh cheese.

Would you prefer French bread or sandwich bread, sir?

Soya bread, waiter. I never have any other bread.

Will you have dessert, sir?

Bring me your little soya fondants, those petite cakes that stay fresh for months and that just melt in your mouth. Ah!

Oh, I almost forgot the jam.

Yes, Soya jam if you please. Please bring that to me waiter and if you please, please refill my glass of soya milk.

Would you like some tea, sir?

Tea with soya cream if you please, waiter. Soya cream, soya cream, soya, soya...

Note 1. This is the earliest document seen (Aug. 2013) that mentions a soy custard.

Note 2. Why is the word *Frégoli* used to refer to the soybean? Hervé Berbille, who found and sent this document to us, says: "I found that Léopoldo Frégoli was at beginning of the 20th century a famous *transformiste*, a kind of artist whose performance consisted in changing appearance; likewise the soybean can be transformed into an infinite variety of foods." For more, see Wikipedia at Leopoldo Fregoli.

194. Caséo Sojaine booth at the Universal Exposition at Brussels in 1910 (Photograph). 1910.

• ***Summary:*** On a long table with the Caséo Sojaine in front of it is an elaborate, tall pile of soymilk bottles. A young Chinese man, wearing in a Western suit, is seated on a chair to the right, holding a book, with his legs high-crossed.

Across the top of the photo, in red letters, is written: A l'Exposition Universelle de Bruxelles 1918.

195. Fulton, Edwin Giles. 1910. Vegetarian cook-book: Substitutes for flesh foods. Mountain View, California, Kansas City, Missouri, and Portland, Oregon: Pacific Press Publishing Association. 419 p. Illust. Semi-index. 20 cm.
• ***Summary:*** This Seventh-day Adventist cookbook was first published in 1904 under the title *Substitutes for Flesh Foods.* In the long chapter on "Entrees" (p. 35-94), many recipes call for meat alternatives, such as Nuttolene, Protose, and "nut cero"–but with no recipe given for making the latter.

In the chapter on "Sandwiches," are two recipes (p. 301-02) which could be considered precursors of the veggie burger. The first, "Nut cero sandwiches," is a lettuce and sliced tomato sandwich, with nut cero serving in place of the burger.

On p. 260 are two recipes with "Granola" in the title. In Granola Porridge, the first ingredient is "Granola or fruit nuts, 1 cup." The meaning of "fruit nuts" is unclear. The second is Gluten-Granola Mush.

The sub-chapter titled "Nut butter" (p. 309-13) states: "Nut butter is easily made in the home... Peanuts and almonds are the nuts most suitable for making nut butter. The other varieties are difficult to blanch... The best variety of peanuts for making nut butter is the Spanish shelled... There are three ways of cooking them; namely baking or roasting, boiling, and steaming. The baking process is the easiest way, but care should be used not to scorch them..." Two processes / recipes for homemade peanut butter are given, followed by Almond butter, Peanut meal, Nut cream (alternative to dairy cream made by mixing 2 tablespoons peanut butter with 1 pint hot water and 1 teaspoon salt), Crystallized peanuts, Salted peanuts, and Blanched almonds.

The author was born in 1867; his portrait photo faces the title page, with the inscription "Yours for health," and his signature, A slightly revised edition with the same number of pages was published later in 1910.

196. Li, Yu-ying. 1910. Ta tou: Le soja [The soybean]. Paris: Société Biologique de l'Extrême Orient. 66 p. Illust. 28 cm. [Chi]
• ***Summary:*** This remarkable work, written entirely in Chinese, was the first of Li's major works on soybeans and soyfoods. Published in Paris, it was written in Chinese and meant to be read by young people in China interested in coming to Paris to study or in helping Li with research on Chinese soybean varieties. An expanded and revised version was published into French the next year (1911).

Contents: Soybeans: 1. Introduction. 2. Names and varieties (colors, sizes, and shapes) of soybeans. 3. Where soybeans are produced and their history. 4. The place of soybeans in the hierarchy of plants (taxonomy). 5. Nutritional composition of soybeans. 6. Characteristics of soybeans (physiological, morphological, etc.). 7. Food uses of soybeans (incl. tables comparing the price of tofu with various meats, and the various sicknesses associated with eating different types of meat). 8. Equipment used in making soyfood products (a photo shows the equipment in Li's modern soymilk and tofu plant near Paris; p. 37), and compares soymilk with cow's milk. A large soybean utilization diagram in Chinese (p. 44) shows all the products that can be made from soybeans using the wet process (from soymilk) or the dry process (from flour). Note: This is the earliest document seen (July 2002) that contains a diagram of this type.

9. Value of soybeans in agriculture (incl. fertilizer use). 10. Conclusion. Appendixes: (1) About the *Société biologique de l'Extréme Orient* (Far-East Biological Society). (2) Membership form for the Far-East Biological Society (Paris): Date, name, A.K.A., Address, Occupation or subject of study, Place of birth. Please enclose 2 yuan membership fee (p. A6). (3) Bibliography of publications on soybeans by the Society of the Far East (p. A7-8). (4) Special announcement concerning soybean research (p. A9).

Illustrations (line drawings) show: (1) Comparison of shapes and colors of 7 different colors of soybeans (p. 5). (2) Five views of soybean pods with beans, incl. outside of pod, inside of both halves when open, with beans in one half, the two cotyledons of a single soybean (p. 11). (3) Soybean plant with pods (p. 12). Photos show: (1) The cellular components and layers of soybeans and hyacinth beans (p. 22, 23). (2) The interior and equipment in Li's soymilk and tofu plant on the outskirts of Paris (p. 37). (3) Microscopic views of soymilk (*doujiang*) and a liquid resembling soymilk made from soy flour (p. 38).

Tables show: (1) Size range (length, width, and thickness; maximum, average, and minimum) of 7 colors of soybeans: yellow bean, green skin bean, green bean, dark bean {"black" or "crow" bean}, black bean, red bean, spotted bean (p. 4). (2) Composition of four parts of a soybean plant: Comparison, water, protein, oil, carbohydrates, ash (p. 18). (3) Comparison of oil and protein content of 5 colors of soybeans (red, black, green, white, yellow) from various countries and regions: China, Japan, Southeast Asia, Russia, Hungary, and France (p. 19). (4) Composition of soybeans, hyacinth beans, and wheat (p. 21). (6) Comparison of the price of tofu with that of various meats (p. 29). (7) Ash content of soybeans, hyacinth beans, duck, uncooked rice, cabbage, egg, beef, chicken, lamb, pork, carp, wheat flour (p. 31). (8) Carbohydrate content of uncooked rice, wheat flour, hyacinth bean, soybean (p. 32). (9) Weight of products containing 100 gm of protein: Soybeans, tofu (somewhat firm), hyacinth bean, uncooked rice, bread, cooked rice, vegetables (p. 32).

Publications listed in the Bibliography (p. A7-8): *Ta tou–The soybean* (this book; published 1909). *Bean curd–20 centuries of great craftsmanship around the world* (1908).

Soycrafting–China's manufacturing specialty (1908). *The Paris Bean Curd Company* (1908, illustrated). *An outline of the agricultural societies of France* (1908). Note: the above publications concern industrial matters.

A description of herbs (*Chinese medicinal plants etc.*) (1909). *TB* [*Tuberculosis*] *and its cure* (1909). Note: the above publications concern medicinal herb and health matters.

The benefits of soyfoods (1909). *Smoking and its relationship to health, economics and industry* (1909). Note: the above publications concern industrial and health matters.

Special announcement concerning soybean research (p. A9): "Gentlemen–Many of us in this society are researching the benefits of the soybean. It may be considered as China's greatest resource. We have already published a number of specialized reports. These have been made available to you. In view of the fact that there are so many varieties of soybean in China and that the regions of cultivation are so extensive, we must rely upon you, our colleagues, in all parts of the country to go into the field and collect data for us. Only then will we be able to complete our research into every variety of Chinese soybean. If we should receive your kind consent, we beg you to be so good as to send the soybean varieties to the Peking postal address of this Society (address is given). We are interested only in soybeans (see pages 1-6 of this book) and need one or two catties (0.5-1.0 kg) of each. Once our research into the benefits and properties of these beans is complete, we will submit a further report to this Society, in order to repay your goodwill. If you would please advise us of the cost of the beans and the postal charges, we will make the appropriate refunds. We will also send you a copy of this book as a modest token of our gratitude. Enclosed please find an explanatory document. Please take the trouble to complete this and send it together with the beans.

"The Paris/Far-East Biological Research Society"

On page A-10 is a form to be used when submitting the Chinese soybean varieties.

197. Wheldon, Rupert H. 1910. No animal food: And nutrition and diet with vegetable recipes. New York, NY; Passaic, New Jersey: Health Culture Co. 125 p. Plus 18 unnumbered pages of advertisements at end. Undated. No index. 19 cm.

• ***Summary:*** A comprehensive appeal to vegetarianism, advocating exclusion of all foods of animal origin [i.e., a vegan diet]. Contents: I. No animal food: 1. The urgency of the subject. 2. Physical considerations. 3. Ethical considerations. 4. The aesthetic point of view. 5. Economical considerations. 6. The exclusion of dairy produce. 7. Conclusion. II. Nutrition and diet: 1. Science of nutrition. 2. What to eat. 3. When to eat. 4. What to eat. Food table. Recipes (100 "strictly vegetarian" [vegan] recipes as they appear in the English edition).

The Preface states that "the following pages are in vindication of a dietary consisting wholly of the products of the vegetable kingdom, and which therefore excludes not only flesh, fish, and fowl, but milk and eggs and products manufactured therefrom." "This work is reprinted from the English edition with changes better adapting it to the American reader."

Pages 30-31: "As to the testimony of individuals it is interesting to note that some of the greatest philosophers, scientists, poets, moralists, and many men of note, in different walks of life, in past and modern times have, for various reasons, been vegetarians, among whom have been named the following:–Manu, Zoroaster, Pythagoras, Zeno, Buddha, Isaiah, Daniel, Empedocles, Socrates, Plato, Aristotle, Porphyry, John Wesley, Franklin, Goldsmith, Ray, Paley, Isaac Newton, Jean Paul Richter, Schopenhauer, Byron, Gleizes, Hartley, Rousseau, Iamblichus, Hypatia, Diogenes, Quintus Sextus, Ovid, Plutarch, Seneca, Apollonius, The Apostles (Matthew, James, James the Less, Peter), The Christian Fathers (Clement, Tertullian, Origen, Chrysostom, St. Francis d'Assisi), Cornaro, Leonardo da Vinci, Milton, Locke, Spinoza, Voltaire, Pope, Gassendi, Swedenborg, Thackeray, Linnaeus, Shelley, Lamartine, Michelet, William Lambe, Sir Isaac Pitman, Thoreau, Fitzgerald, Herbert Burrows, Garibaldi, Wagner, Edison, Tesla, Marconi, Tolstoy, George Frederick Watts, Maeterlinck, Vivekananda, General [Bramwell] Booth, Mrs. [Annie] Besant, Bernard Shaw, Rev. Prof. John E. B. Mayor, Hon. E. Lyttelton, Rev. R. J. Campbell, Lord Charles Beresford, Gen. Sir Ed. Bulwer, etc., etc., etc."

The chapter title "What to eat" states (p. 83): "The Mongol procures his supply of protein chiefly from the Soya bean from which he makes different preparations of bean cheese [tofu] and sauce." "Among the foods rich in protein are the legumes, the cereals, and nuts... Fat is chiefly found in nuts, olives, and certain pulses, particularly the pea-nut."

Several recipes (p. 116-17) call for: Nut-milk, Vegeton, Nutter or nut butter, Marmite, Carnos, Pitman's Vigar Gravy Essence. These can be ordered from stores in England (see p. 111). The last 16 pages contain advertisements for *Health-Culture* magazine (monthly), "health appliances" (such as Dr. Forest's massage rollers and colon syringes), and many books published by The Health Culture Co., Turner Building, 45 Escension St., Passaic, New Jersey.

198. Labbé, Henri. 1911. Le soja et ses usages [The soybean and its uses]. *Revue Scientifique* 49(1):171-76. Jan. 7. [6 ref. Fre]

• ***Summary:*** A summary of earlier publications (mostly in French) on soybeans and soyfoods. Discusses: Soy flour (*farine de soja*) for diabetics. Soy bread (*pain de soja*). Soy flour used to make various foods for diabetics as well as for vegetarians. Soymilk (*lait végétal à base de soja,* p. 174). Soy kefir and soy yogurt (Kephir, Yohourt). Soy sauce (*sauce de Soja, soyou, choyou*). Tofu (*Le fromage de Soja*

ou Tou-Fou), which was invented by the ancient Chinese philosopher Whai Nain Tzu. Fresh tofu and dry tofu [dried frozen tofu, containing 53.6% protein]. How shoyu is made.

Note: This is the earliest French-language document seen (April 2012) that uses the word *soyou* to refer to soy sauce.

The section on the nutritional value of soy and soy protein (p. 173) ends with this interesting thought: For a long time the Chinese and Japanese, who cared little about the future justification of their habits and customs, have adopted the consumption of soy on a large scale, without realizing that science would perhaps one day come to bestow / confer on them a certificate or testimonial of complete approbation.

The section on soymilk ends as follows: Soya milk, according to trustworthy Chinese persons, is not just a mere curiosity. It is used, in China, for breakfast, being mixed with cow's milk. It is also used for infant formula [literally "artificial breast feeding"] or therapeutically. For this latter purpose, it is the fermented foods, such as Kefir, Yogurt, etc. that appear to be of interest. (*"Le lait de Soja, au dire de Chinois dignes de foi ne serait pas une simple curiosité. On s'en sert, en Chine, pour le dèjeuner du matin, et en mélange avec le lait de vache. On l'utilise aussi pour l'allaitement artificiel, ou dans un but thérapeutique. Dans ce denier but, ce sont plutôt les laits de soja fermentés, genre Kephir, Yohourt, etc. qui paraissent intéressants"*).

The author notes (p. 175, footnote) that a Chinese proverb says: *Le To-Fou est la viande des os* ("Tofu is the meat of the bones"). Note: This makes no sense and appears (April 2013) to be a mistake. Tofu has long been known as "the meat without bones" (Horvath 1927, 1931, 1938, etc.) or "the meat without a bone" (Lager 1945, etc.).

The writer also notes that France is not taking any part in the development of an industry to produce soy oil (p. 176, footnote). Illustrations (p. 72) show: Soy bean plant, with roots and pods. Close-up of soy bean pod and seed. Address: Doctor of Sciences (*Docteur ès-sciences*), France.

199. Li, Yu-ying. 1911. A propos du Soja hispida [About Soja hispida, soybeans]. *Journal d'Agriculture Pratique* 75(1):48-50. Jan. 12. [4 ref. Fre]

• ***Summary:*** This is a the author's point-by-point reply to 12 points of a critical article in this journal on March 24 by M. Demolon, Li's former professor. Note: Li studied the soybean at Demolon's laboratory at the school of practical agriculture at Chesnoy. Li discusses: Carbohydrates and starch in soybeans, soy flour, the quality of vegetable proteins vs. animal proteins, the absence of lactose in soymilk, the lecithin in soybeans (*fèves de soja*), soymilk, soy bread for diabetics and their superiority to gluten breads.

"The soybean will grow in almost all climates, from Manchuria to the south of China. This year [1910], at the Exposition of Nanking, we found nearly 400 soybean varieties exhibited by different provinces. In Europe and America, successful trials have already been conducted. In France the Society for Acclimatization has already studied the soybean for many years. Mr. Paillieux has written a very well documented book on this subject which concludes in favor of the adoption of soybean cultivation in Europe. The fact that there was an isolated unsuccessful trial at the School of Agriculture at Chesnoy does not seem sufficient to demonstrate that soybean culture cannot succeed in France."

"Mr. Demolon represents the soybean to us as being of interest merely from the viewpoint of pure science." Li concludes by re-stating his belief (stated two years earlier in this journal, on 2 July 1908): "The question up to this point has nothing to do with industry and commerce; it is purely scientific, but pure science always precedes applications. And there is nothing to say that tofu or soy cheese (*le to-fou* {*fromage de soja*}) won't one day become a prized food for Europeans."

Note: This is the earliest document seen (Oct. 2004) that mentions the Exposition of Nanking, where 400 soybean varieties were exhibited by different provinces. Address: Paris.

200. Rousset, H. 1911. Chronique et correspondance: Chimie industrielle. Laits et beurres végétaux [Chronicle and correspondence: industrial chemistry. Vegetable milks and butters]. *Revue Generale des Sciences* (*Pures et Appliquees*) 22(1):182-83. Jan. 15. [2 ref. Fre]

• ***Summary:*** Vegetable butters are made from coconut oil. Soymilk is made from the soybean, a unique type of bean which is grown in China. Huge quantities have recently been exported. This paradoxical plant can be used in many different ways–as to make oil and soap, special breads for diabetics, forage and fodder for animals, and confections. The Japanese transform the soybean into a cheese [tofu], the Chinese make it into milk, and the English use it to make sauces [such as Worcestershire sauce].

According to Mr. Li Yu-Ying, who, as a former student at a French school of agronomy, is well qualified by his origins and knowledge to know the soybean, as well as the milk (*les émulsions*) prepared from seeds which have first been submitted to the beginning of germination. This milk is not different, at first glance, to animal milk. A table shows the composition of soymilk. A long discussion of soymilk and its uses follows.

201. *Lancet.* 1911. Notes from China (From our own correspondent): The soya bean. i(4560):202. Jan. 21. Summarized in *J. of the New Zealand Department of Agriculture*, 15 Feb. 1913, p. 149.

• ***Summary:*** "Within the past three years the outstanding merits of this pulse have come prominently to the front, and its export from Manchuria, where most of it is raised, has lately assumed very large dimensions. For the past 2000 years it has been used in North China for making bean

curd, a thick nutritious jelly eaten daily by all classes of the people. A widely used vegetable oil is also expressed from it, the refuse left over serving for cattle food and manure for sugar plantations."

"It is a cheap product, each bean when sown multiplying itself, on an average, 450 times. On account of the great nutritive value of the Soy Bean, it is well worth medical attention, more particularly for diabetic cases, because of its low proportion of starch. For making biscuits, soup powder, infant and other foods, it will be widely used in future when its dietetic value becomes better known." The composition is then given, and it is shown to be rich in albumin [protein, 40%], fats (20%), sugar 8-11%, and minerals 4-6%. "The most abundant salt is sodium phosphate. Advocates of the fleshless diet have to contend with large amounts of indigestible cellulose which occurs in vegetarianism. This cellulose is present in 4 to 11 per cent. of the soya bean, but is easily eliminated from the other products. Bean curd is entirely free from it" as is "a most excellent vegetable milk which resembles animal milk in that it coagulates." The author then gives some comparative nutritional figures, based on "the work of a French-trained Chinese chemist, Mr. Li Yu Ying."

202. *Matieres Grasses* (*Les*) (*Paris*). 1911. La fève de soja [The soybean]. 4(33):2094-95. Jan. 25. [Fre]
• ***Summary:*** A summary of recent world news related to soybeans. Two German researchers have applied for a patent on the manufacture of artificial rubber from soy oil. In China a sort of vegetable milk is made from soybeans according to a report by Li Yu-Ying made at the Dairy Congress held in Paris in 1908.

"In 1906 and 1907 the price of various oils grew rapidly. At the same time the consumption of vegetable oils grew rapidly. Therefore people in Europe began to ask if there was not a good way to use soy oil, which had been used for a long time in China and Japan for food and illumination. Then in 1908 imports of soybeans to Europe began. In 1909 at least 400,000 tons were imported to England... There is at least one factory in France which uses soy oil in the production of cakes (*tourteaux*).

"One can see that soybean commerce is very active; this 2-year infant would seem to have a bright future."

203. Shaw, Norman. 1911. The soya bean of Manchuria. *Shanghai, Statistical Department, Inspectorate General of Customs. China Imperial Maritime Customs. II. Special Series* No. 31. 32 p. Also published by P.S. King & Son, 2 Great Smith St., Westminster, London SW, England. [6 ref. Eng]
• ***Summary:*** Contents: Introductory. Varieties. The plant. Soil and climate. Cultivation. Soil infestation. Yield. Uses of the soya bean: In the Far East: Bean sauce or soy (called shoyu in Japan [whence the name "soya"] and *chiang-yu* in China), the Chinese paste *chiang* (incl. *ta chiang* {great, made with yellow soybeans} and *hsiao chiang* {small, made with soybeans and maize}), tofu (incl. firm tofu {*tou-fu kan-tzu*}, tofu curds {*tou-fu nao*, curded with calcium sulphate instead of brine}, curd skin or yuba {*tou-fu p'i*}, layers of tofu pressed in cloth [pressed tofu sheets] {*ch'ien-chang tou-fu*}, and "frozen curd" {*tung tou-fu*, tofu that is frozen then dried}), bean flour, bean refuse {okara}, bean oil for food or industrial uses. Beancake and its uses. Uses in the Western world (beancake in Europe, and bean oil in Europe). The bean oil and cake industry in Manchuria. Trade development (statistics on exports from Newchwang have been kept since 1864). Beginnings of the European trade. Bean oil and cake production in South Manchuria. Chief sources of supply. Map references. Supplementary note.

Appendixes: 1. Table showing values (in Haikwan taels) per picul of [soya] beans, beancake, and bean oil at Newchwang, 1864-1909. 2. Graph showing monthly values (in silver yen) at Dairen of beans, bean oil, and beancake, 1907-10. 3. Table showing estimated [soya] bean production of Manchuria in normal years, compiled by the South Manchuria Railway Co. in 1909. 4. Estimates of [soya] bean production of Manchuria for the last 5 years by province and territory, compiled by the South Manchuria Railway Company in 1909: Fengtien province 1,092,350 tons. Kirin province 626,500 tons. Heilungkiang province 280,250 tons. Grand total for all Manchuria: 1,999,100 tons. Estimated soya bean production in Manchuria has increased from 600,000 tons in 1906 to a peak of 1,500,000 tons in 1908, to 1,400,000 tons in 1910. Percentage contributed by various colors of soya bean in 1910: Yellow 80.1%, green 9.4%, white-eye 3.8%, black-eye 3.2%, and black 3.4%. 5. Table showing total export of [soya] beans and bean products from Manchuria, 1909. For export of soya beans: Dairen 51% of total, Suifenho [Suifenhe] 25%, Newchwang 23%. For export of bean cake: Newchwang 50%, Dairen 44%, Antung 2%. For export of oil: Newchwang 75%, Dairen 21%, Harbin 1%. The writer frequently refers to Sir Alexander Hosie's book on Manchuria (1901, 1904).

The introduction begins: "It is only in the last three years that soya beans have become important in intercontinental commerce, and their rapid emergence from obscurity has, indeed, been one of the most remarkable commercial events of recent times. The circumstance that 'the rise of a great export trade in beans is that fact that overshadows all others,... the soya bean thus taking at a bound a position equal to that of tea in the list of exports and, with the addition of beancake, even challenging the position of silk at the top of the list'"* (Footnote: * = "Statistical Secretary's Report on the Foreign Trade of China in 1909").

The "bean district *par excellence* is the upland country beyond Moukden [Mukden] where the hills... are overlaid with wind-deposited soil..."

"Cultivation: In Manchuria the beans are produced

almost entirely by hand methods. The plough, which is drawn by quaintly mixed teams of oxen, mules, and donkeys, has only one handle and a rough steel-tipped cutter. The seed is sown by hand, on top of the drills, in April, and is covered by hand. A heavy hoe is used for a good deal of the turning and breaking. When the plant appears the earth is heaped up round it, so that the roots may derive the maximum of nourishment from the soil."

"The harvest takes place in September, and the pods are usually harvested before they are quite ripe, as otherwise they are liable to burst on drying, a loss of seed being thus occasioned. The plants are pulled up by hand or cut with a straight-bladed sickle in Manchuria, and collected into small heaps in order to facilitate drying, and, when dry, the seed is separated by means of a cylindrical stone roller having longitudinal cuts on its surface, which is dragged over the plants by a mule as they lie on the threshing-floor. After this primitive threshing operation has been completed, the beans are winnowed in the usual Chinese method–that is, by throwing them against the wind. The only manure used is a compost of stable manure and earth, which is often taken from the miry pools formed in the roads–the despair of the carter but a boon to the farmer. In countries where chemical manures are used, it is only necessary to apply potash and phosphoric acid where they are lacking, for nitrogenous manure is unnecessary, owing to the property which the soya bean possesses, in common with other leguminous plants, of obtaining nitrogen from the air by means of colonies of bacteria."

Yield: In 1867 the Rev. A. Williamson, who travelled in the upper Sungari district at the time and who appears to have been a very close observer, estimated a maximum yield of 2,000 lb., or 15 piculs, to the acre.

The Chinese paste *chiang* is not the same as the Japanese paste miso. Chiang "is made by farmers and eaten with fish, meat, and vegetables, while the more expensive Chinese soy [sauce] is only made by wealthy families and restaurant keepers and is not consumed by the very poor. There are two kinds of *chiang: ta* (great) and *hsiao* (small)." Describes in detail how each is made. Great chiang is made from yellow soybeans, salt, and water. Small chiang contains a small amount of maize (p. 7).

Industrial uses of bean oil: (1) As an illuminant, where it has not been superseded by kerosene oil. One advantage is that "no lamp is needed to hold it, the wick being inserted into the basin or plate containing the oil." (2) As a lubricant, bean oil is used to a very considerable extent in north China and Manchuria "for greasing axles and parts of native machinery" (p. 8-9).

In China, bean oil "is used as a substitute for lard, in cooking. Although it is inferior to rapeseed and sesamum oils for this purpose, these oils cannot compete with it in point of price... In spite of its unpleasant characteristic odour and unpalatability, the poorer classes in China consume it in its crude state, but among the rich it is boiled and allowed to stand until it as become clarified" (p. 8). In Europe "Refined bean oil may be used as a salad dressing in place of other oils (but, owing to its unpleasant odour, is usually mixed with an oil of animal origin or with rapeseed oil), or in the manufacture of margarine, when a greater percentage of soya oil than of copra oil is allowed" (p. 10).

Traditional methods of pressing out the oil yield only about half of that present in the seed (9% of the weight of the beans); the rest is left in the cake, and this distracts very much from its fertilizing value. "By gasoline extraction the beans give up practically all their oil, which, as refined by this process, is a clear, pure liquid, hardly resembling the muddy, dark oil produced in the old way" (p. 14).

Photos on unnumbered pages show: (1) Seven varieties of soya beans: Large black, small black, large flat black, small flat black, two green, and two yellow. (2) Soybean root nodules. (3) A massive granite roller for crushing beans. (4) "Steaming vat with grating on which [soya] beans are placed in gunny bags during the steaming process." (5) Native bean press, showing cakes in receptacle and log wedges driven in to press out the oil. (6) Modern bean press [hand turned screw?] set up in bean mill. (7) Oil-motor and crusher. (8) Modern crushing machinery. (9) Piles of beans in sacks awaiting loading onto trains at Changchun. (10) Color fold-out map titled [soya] "Bean districts of Manchuria." A schematic diagram (in the form of a rhombus / diamond) shows the probable relationships of the different groups of soya beans based on their color. A beautiful map, approximately 17 by 22 inches, is attached between page 26 and page 27. "Wuchang" [not Wochan] is in the area labeled "Yellow Beans" in the map. Other labeled growing areas on the map include "Grasslands," "White eye," "Black beans" [soy], "Maize" and "Green beans." The major railways, rivers, roads, and towns / cities (with their Chinese characters) are shown. The major soybean markets (underlined) are Fenghwa / Maimaikai, Kungchuling, Changtufu, Tungkiangtze, Sinminfu, Tienchwangtai, Newchwang, Kaiyüan, Tiehling, Mafengkow, Moukden, Takushan, Antung, Harbin, and Shwangcheng.

Shaw finished writing this yellow book on 31 December 1910.

Note 1. This is the earliest document seen (July 2000) that mentions the South Manchuria Railway Company in connection with soybeans. This company was run by Japan. According to the *Encyclopedia Nipponica* (vol. 22, at "Minami"), the South Manchuria Railway Company (*Minami Manshu Tetsudo K.K.*) was established in 1905 based on the Portsmouth Treaty ending the Russo-Japanese War; Japan took over the rights to the railway from Russia. The company started to actually run the railway in 1907.

Note 2. This is the earliest English-language document seen (April 2013) that uses the term "frozen curd" to refer to dried-frozen tofu.

Note 3. This is one of the earliest English-language documents seen (Sept. 2006) that repeatedly uses the word "bean" (not preceded by the word "soya") to refer to the soya bean.

Note 4. This is the 2nd earliest English-language document seen (Oct. 2012) that uses the term "tou-fu p'i" (regardless of capitalization or hyphenation) to refer to yuba.

Note 5. This is the earliest English-language document seen (April 2012) that uses the term *chiang-yu* to refer to Chinese soy sauce. Address: 4th Asst., Custom House, Dairen.

204. Clerget, Pierre. 1911. La question du Soja [The question of the soy bean]. *Revue Generale des Sciences* (*Pures et Appliquees*) 22(3):100-01. Feb. 15. (Chem. Abst. 5:1637). [2 ref. Fre]

• ***Summary:*** Contains a brief description of the soybean and discusses its commercial importance, distribution, soil requirements, the value of the oil and its uses, and the composition and commercial value of the cake. During the past 2 years, the large amounts of soybeans exported from Manchuria to Europe have called attention to this plant. It is cultivated all over China, but especially in Manchuria (in the Liao Valley, where it is the second most important crop after sorghum), Japan, Korea, and Indo-China. In China it is often cultivated with maize; it demands a great of work, care, and good soil. The main exports come from the Manchurian ports of Newchwang and Dairen, and from Vladivostok. In 1908 some 859,200 tonnes of soybean and cake were exported from Manchurian ports, up from only 88,900 tonnes in 1905. Until 1908, Japan was the principal outlet for Manchurian soybeans (615,900 tonnes), but at the start of that year, exports to Europe began: 69,200 tonnes to Great Britain, 21,390 tonnes to France, 7,290 tonnes to Holland, etc.–for a total of 204,440 tonnes.

According to chemical analyses made at the Colonial garden of Nogent-sur-Marne, Manchurian soybean seeds contain 17.64% oil and 33.5% protein; yellow varieties contain more oil than black varieties. The soybean is used as a forage plant and for soil improvement, but its most important role in China and Japan is as a human food among people who consume little meat. According to Bloch (1908), it is most widely used in making a sauce [soy sauce] and a cheese [tofu]. It is also used to make numerous pastes and a sort of soymilk (*lait de soja*).

It also has industrial uses, thanks to its oil content of 16-18%. Indigenous mills can obtain only 8-10% oil, but modern hydraulic presses can obtain 12-14%. The oil and cake have made the soybean rise so rapidly on European markets. The oil, which has an agreeable smell and taste, is widely employed for culinary purposes in Manchuria. In England, as in France, it is used in making soap and margarine. It is more drying that cottonseed oil and can likewise be used in making paints. Soybean cakes (*Les torteaux de soja*) would give the same results as cottonseed cakes in terms of milk yield from dairy cows. As a fertilizer, they are used throughout Japan and on the sugarcane plantations of southern China.

The soybean could be introduced to Indo-China where, even if it has to compete against Manchurian soybeans, it could be service locally for soil improvement in the rice fields and as a food in the densely populated districts where there is hardly any room for animals, or where the animals have been decimated by disease. Address: Professeur à l'Ecole supérieure de Commerce (Graduate School of Commerce) de Lyon [France].

205. Demolon, A. 1911. Lait végétal? [Vegetable milk?]. *Journal d'Agriculture Pratique* 21:140-41. March 24. [Fre]

• ***Summary:*** The milk of the soybean contains constituents which correspond to those of cow's milk: casein, fats, sugars, and minerals. However, plant milk will never be the same as artificial mother's milk made by mixing one volume of cow's milk with one-half volume of lactose solution. Nonetheless soymilk is an economical and highly nutritious food. Since its introduction into the United States, production of soybeans has expanded significantly. Address: Directeur de la Station agronomique de l'Aisne.

206. *Poverty Bay Herald* (*Gisborne, New Zealand*). 1911. The soya bean. April 22. p. 2.

• ***Summary:*** "Will the soya bean 'boom' extend to Victoria? [Australia], asks the *Age* [an Australian periodical]. Present indications are that it will. In the meantime the bean is here [in New Zealand], if not the 'boom,' and the plant is thriving remarkably well. Last year the Department of Agriculture obtained four tons of the seed from Shanghai, and planted some on its experimental plot at Cheltenham, where the bean attained a height of five feet on sandy soil, one variety yielding 13 tons and another 12 tons to the acre."

Note: Cheltenham is located just southeast of North Shore City, in the Auckland region of New Zealand's North Island."

"On different soil at Ballarat [a city in central Victoria, Australia] an even more vigorous growth is shown. Mr. J.M.B. Connor, Superintendent of Agriculture, said recently that he considered the plant greatly benefited the soil by the nitrogen which the nodules extracted from the air. The uses of the soya bean are manifold. A Chinese in Victoria was handed a parcel of the beans to convert them into merchantable goods. He made them into bottled preparations known as soya milk, soya currants, soya cheese [tofu], straws for making soup and soya curd, which the Japanese use as a cure for sciatica.

Note. This is the earliest English-language document seen (April 2013) that uses the term "soya cheese" to refer to tofu. This is also the earliest English-language document seen (April 2013) that uses the term "soya curd" however it

is not clear to what it refers.

"In Manchuria it is primarily utilised for its oil extract and the manufacture of cake. The *London Times* reports that soya beans are now one of the principal imports of Hull, and are likely to seriously affect the importation of cotton seed. Their value is widely recognised by soap makers. The first commercial crop was sent to Europe [from Manchuria] in 1906, and the requirements from Manchuria for the coming season are estimated at 1,000,000 tons, worth £6,500,000. That Victorian farmers are alive to the possibilities of the soya bean is shown by the fact that Mr. Connor disposed of two tons and a half of the seed in small lots in one day."

Note: The meaning of "soya currants" and of "straws for making soup" is unclear.

207. Bontoux, Emile. 1911. Le Soja et ses dérivés [The soybean and its products]. *Matieres Grasses* (*Les*) (*Paris*) 4(36):2195-99. April 25; 4(37):2239-43. May 25; 4(39):2326-29. July 25; 4(40):2364-66. Aug. 25; 4(41):2405-07. Sept. 25. [48 ref. Fre]

• ***Summary:*** Contents. Introduction. The plant: origin and history, species and varieties, culture, and production: USA, Japan, Manchuria, France, England, China, Korea, Indochina (it is cultivated for the needs of the population in Cochin China {especially in the provinces of Chaudoc and Baria}, Annam, Tonkin, Cambodia), Formosa, Java, India, Africa. The soybean–a food plant: The plant, the seed, large table showing many analyses from many countries of the chemical composition of many soybean seed varieties.

Introduction to food products made from soybeans in East Asia. Shoyu [soy sauce] (and koji). Miso. Natto (from Japan). Le Tao-yu (a Chinese condiment also widely used in Japan. It is a thick, clear liquid [sometimes] made from black-seeded soybeans) Tao-tjiung (doujiang, from China). Tuong (from Annam). Tofu. Li Yu-ying. Table showing composition of powdered soymilk, fresh tofu, and soy flour.

The soybean–an oilseed plant. The soybean as an oilseed in the Far East. Table showing exports of soybean cake and oil from various Manchurian and Chinese ports in 1908 and 1909. The soybean as an oilseed in Europe and the United States. Table showing imports of soybeans to various British ports in 1909 and 1910 (the leading port by far is Hull, followed in 1909 by Liverpool, London, Bristol Channel, Scotland, and Other ports {Rochester, etc.}). Table showing exports of soy oil from Great Britain in 1910: To Germany, Austria, Australia, USA, Belgium, Denmark, Egypt, France, Holland, Italy, the Indies (*Indes*), Norway, Russia, Sweden, other, total (115,372 barrels, each weighing 175 kg). Discussion of soy oil and cake in most of the above countries.

Trade in soybean seeds: Mitsui Bussan, Manchuria, England, China, Japan. Soybean cake.

Soy oil: Physical and chemical properties. Applications and uses as food and in industry: Margarine, for illumination, soaps, as a drying oil, paints and varnishes, linoleum, artificial rubber. An extensive bibliography is at the end of the last article in the series.

Note: This is the earliest document seen (May 2010) concerning the cultivation of soybeans in Cambodia. This document contains the earliest date seen for the cultivation of soybeans in Cambodia (April 1911). Earlier documents imply that soybeans were being cultivated in Cambodia by 1900, and it is highly likely that they were being cultivated for at least a century before that time. Address: Ingénieur-chimiste E.C.I.L., France.

208. Beltzer, Francis J.-G. 1911. Études sur la caséine végétale du "soja" et ses applications [Studies on the vegetable casein of soybeans and its applications]. *Revue Scientifique* 49(23):716-20. June 10. [4 ref. Fre]

• ***Summary:*** The author did his research in Cochin China [today's Vietnam], then a French colony. This is a very original and important article.

Contents: Introduction. Vegetable milk [soymilk]. Vegetable cheese [tofu and fermented tofu]. Industrial vegetable casein (*La caséine végétale industrielle;* i.e. soy protein). Production of vegetable casein: Cleaning and washing the soybean seeds, extraction of the oil (which can be used in soap), extraction of the casein. Industrial [non-food] applications of vegetable casein: Paint, paper coating, Galalith, etc. Conclusion.

The preparation of vegetable milk and vegetable cheese are widely practiced today in Cochin China and in Annam [today's North Vietnam], as recently discussed by Mr. Henri Labbé in *Revue Scientifique* (11 Feb. 1911).

Soymilk (*lait végétal*). After describing the process for preparing soymilk, the author notes: This soymilk serves for the feeding of infants and for general nutrition (*Le lait sert à l'allaitement des enfants et à l'alimentation génerale*)*;* it can also be used for the production of a vegetable cheese (*fromage végétal*).

Tofu (*fromage végétale*)*:* When vegetable milk is treated with a mineral salt or an acid, playing a role analogous to that of rennet, it produces curds through coagulation, resembling those of ordinary casein. By draining and washing, one obtains a sort of white cheese (*fromage blanc*) which plays a major role in the nutrition of the peoples of the Far East. In Indochina the milk is coagulated by the addition of a very small quantity of a powder called Tchach-Kao or plaster [calcium sulfate], which comes from a selenite pulverised by the action of fire.

Tofu is generally eaten fresh, the same day it is made, but it can also be preserved by salting or smoking. In Annam, three main varieties of tofu are found: 1. Fermented tofu, gray or yellow in color, with a flavor resembling Roquefort cheese; 2. White or salted tofu resembling goat's cheese; 3. Baked or smoked tofu, resembling Gruyere cheese. At the market in Saigon, Chinese sell regular tofu to the natives for

one-tenth the price of Gruyere cheese.

Industrial vegetable casein: Defatted soybean meal from oil presses is ground between millstones with cold water to give a slurry that is filtered to obtain soymilk. The soymilk is heated to boiling, then calcium sulfate is added to precipitate the protein, which is collected (just like tofu curds) on filter cloths. The presscake is mixed with forage and molasses, then fed to livestock. The curds are then dissolved in diluted soda lye (sodium hydroxide), filtered, precipitated with acetic acid. The finely divided precipitate is filtered out, washed on the filter, left to evaporate in the open air, then dried to a yellowish powder at a low temperature. The casein thus obtained is white, and, from an industrial viewpoint, very pure. It is insoluble in water, but soluble in dilute caustic alkalies and in ammonia. It exhibits almost precisely the same properties as the casein obtained from ordinary milk. It is found on experiment to be susceptible of the same industrial applications as animal casein, and may come to largely supersede this because of lower cost. 100 gm of soybeans yields about 25 gm of this "vegetable protein," which has both food and industrial uses.

Note 1. This is the earliest document seen (Aug. 2013) concerning isolated soy protein. The author says that his "vegetable protein" has both food and industrial uses.

Note 2. This is the earliest French-language document seen (Aug. 2003) that uses the term *caséine végétale du "soja"* or *caséine végétale industrielle* to refer to isolated soy protein.

Industrial applications of vegetable casein: "Like animal casein, industrial vegetable casein, free of fat or buttermilk, can be used in a host of applications. It can be used in making paints, and for the preparation of moisture-resistant products. Note 3. This is the earliest document seen (Oct. 2001) that mentions the use of soy protein in paints.

"It may be used also for the sizing (coating used to fill the pores) of paper, which consumes such large quantities of ordinary casein. Being soluble in ammonia and caustic solutions it is capable of forming a smooth and solid size.

Note 4. This is the earliest document seen (Oct. 2001) concerning the use of soy protein as a sizing for paper.

"Other uses are in certain manufacturing processes in the preparation of silks and artificial textiles, as well as of rubber, leathers, plastic materials, films, photographic emulsions, etc.

Note 5. This is the earliest document seen (Sept. 2001) concerning the use of soy protein to make silks, artificial textiles, or other industrial (non-food) fibers.

Note 6. This is the 2nd earliest document seen (Dec. 2001) concerning the use of soy protein as a raw material for making plastics.

Large amounts of animal casein are at present employed in the manufacture of 'Galalith,' from which are made numerous objects which imitate articles made from ivory, tortoise-shell, bone, horn, etc. The Soya casein, when free from fats, is equally well adapted for these purposes.

"Formol acts upon this casein in the same way as on ordinary casein, rendering it insoluble. Hence it may be used for the water-proofing of fabrics, straw hats, etc., as well as for the preparation of sizes and dressings... A solution of vegetable casein and borax can be successfully utilized in the process of calico printing."

"It will be seen from the foregoing rèsumè, that the fabrication of vegetable casein for industrial purposes has immense possibilities, only exceeded in importance by the alimentary value of its food products for man and for beast.

Note 7. *Webster's Third New International Dictionary* (1963) defines Galalith (a registered trademark)–as "used for a hornlike plastic [also resembling ivory or bone] made from casein [milk protein] and formaldehyde and used especially in making small molded objects (as buttons, beads, or combs)." This is the earliest document seen (Nov. 2003) that mentions Galalith in connection with soy protein. Galalith, "a new horn-like product from cow's milk," was sold commercially by Nov. 1905 and the process was protected by patents "in all civilized countries" (*Monthly Consular and Trade Reports*, USA. 1905. No. 302. Nov. p. 243.)

Conclusion: "A Chinese factory has already been established on the outskirts of Paris (at Vallées near Colombes) to make food products based on soya (*produits alimentaires à base de Soja*). This factory now produces tofu (*Caséo-Sojaïne*) and the following food products: Soy flour, soy bread, soy sauce, sweet soya preserves (*confiture de Soja*), soymilk (*lait de soja*), fermented soymilk (*lait de Soja fermenté*), tofu (*fromage de Soja*), etc.

Note 8. We wonder: Was Beltzer influence more by Li Yu-ying, or was Li influenced more by Beltzer? Both did independent and original research, however by Dec. 1910, some 6-7 months before this article was published, Li had applied for two French patents and three British patents which describe how to make various soy products in detail–including many of those products described by Beltzer. Therefore, we believe that Li influenced Beltzer more than Beltzer influenced Li.

"The Indochinese prepare, in addition, a fermented liquor, a concentrated milk, an alimentary flour, and a casein which forms the essential food of the people... Many Europeans are preoccupied with extracting part of the nutritive principles that exist so abundantly in the seeds, for the feeding of armies at war and of colonial troops... Hopefully the question of food uses of soy will be taken up at the same time as the manufacture of industrial casein, and that this will permit the utilization of the immense resources that our Indochinese colonies offer as raw materials."

Note 9. Later in 1911 this article was summarized in *Scientific American* Supplement and printed as a special booklet.

Note 10. This is the earliest document seen (May 2000) that uses the term *la Caséo-Sojaïne* to refer to a food–

clearly to tofu. Li Yu-ying coined this term, apparently after considerable thought and research. However the author also uses the term *fromage végétale* to refer to tofu–perhaps more generically. Martine Liguori, a native French speaker who is interested in tofu, noted in an interview (May 2000): "This term for tofu doesn't sound foreign. Rather it sounds somewhat scientific, learned, and upper-class, as from the techno-elite. If you don't know what it means, that's because you are not well enough educated. In France, people will adopt something that is upper class, but they resist foreign things–even foreign words. This whole idea originated in France when Napoleon created the *Grandes Ecoles* (French graduate schools) to develop an intellectual elite to replace the royal elite."

Note 11. This is the earliest document seen (April 2001) that mentions dried tofu. Address: Ingénieur-chimiste.

209. Figart, D. Milton. 1911. Notes from Malaysia. *Daily Consular and Trade Reports* (*U.S. Bureau of Manufactures, Department of Commerce and Labor*) 14(135):1114-16. June 10. See p. 1116.

• ***Summary:*** "The valuable soya bean: The soya bean has lately come into some prominence by reason of its extensive uses in the manufacture of oil and soap, and also because it forms return cargoes for tramp steamers bringing coal to the East. Dr. Gilbert Brooke, port health officer of Singapore, describes some new uses for the article:

"'The object of this paper is to show that we have at hand an article of diet which is cheap, which can be grown over large areas of the globe, which is palatable, which is not attacked by any known insect or fungus, which forms valuable by-products, and–most important of all–which contains, more nearly than any other known animal or vegetable substance, all the essential and properly proportionate constituents of a perfect diet.

"'Rice is a very badly balanced food, consisting mainly of starch, having next to no nitrogen, and hardly any fat or salts. In this rice stands, in the scale of food values, almost at the bottom, whereas the soya bean stands at the top. But it is remarkable that nature and experience seem to have taught rice-eating races that one of the best accompaniments to rice is some form of leguminous food, such, for instance, as dhal, the small yellow pea so much used by natives of India. Following out this analogy it would seem to be most desirable to foster among Asiatic races that depend mainly upon rice as a staple the simultaneous consumption of the soya bean as supplying in abundance those essential food elements that can not in the least be derived from rice.'

"Among the economic products derived from the soya Dr. Brooke enumerates these:

"'(1) Bean curd. A most nutritious jelly can be made from the soya bean. This has been known and widely used by all classes in north China for the last 2,000 years.

"'(2) Bean milk. The beans are dried, very finely ground, and made into an emulsion with water. This forms a valuable milk, which resembles cow's milk in that it coagulates when heated and acidified. The possibility of this is due to the fact that the proteid is composed of casein, as in the case of animal milk.

"'(3) Bean cheese. A nutritious cheese [tofu] is frequently made in Japan from bean milk.

"'(4) Bean flour. The dried and pulverized bean is most valuable as a soup basis. It is also useful for making biscuits and infant foods. Soya biscuits, produced by a Scotch firm, are supplied on several P. & O. mail boats.

"'(5) Bean oil. There is a very high percentage of fat in the soya bean. This is of commercial value. It is edible, and also forms an excellent basis for candle and soap manufacture.

"'(6) Bean cake. The seed cake left after expression of the oil from the soya bean forms one of the most valuable and rich cattle foods known.

"'(7) Bean sauce. The soya bean ground up and steeped in vinegar or brine forms a basis for Worcestershire and other sauces.

"'(8) Bean coffee. A substitute for coffee may be made from the soya bean, by dry toasting and grinding it, then adding boiling cow's milk or hot soya milk.

"'(9) The straw surpasses in nitrogenous value that of wheat or even hay. It is quite possible that the leaves or root may have medicinal properties, but this has not yet been worked out.'" Address: Vice Consul General, Singapore.

210. **Product Name:** [Soya Milk].
Foreign Name: Lait de Soja.
Manufacturer's Name: Usine de la Caseo-Sojaine.
Manufacturer's Address: Valles, Colombes (near Asnieres, Seine), northwest of Paris, France.
Date of Introduction: 1911. June.
New Product–Documentation: Beltzer, Francis J.-G. 1911. *"Études sur la caséine végétale du "soja" et ses applications* [Studies on the vegetable casein of soybeans and its applications"]. *Revue Scientifique* 49(23):716-20. June 10. See p. 720. Conclusion: "A Chinese factory has already been established on the outskirts of Paris (at Vallées near Colombes) to make food products based on soya (*produits alimentaires à base de Soja*)." This factory now produces various food products, including soymilk (*lait de soja*).

Scientific American Supplement. 1911. "Extended utilization of soya bean products: Milk, cheese, and a variety of other products from a vegetable seed." Aug. 19. p. 115. "A Chinese factory has been established [by Li Yu-ying] not far from Paris for the purpose of manufacturing alimentary products from Soya, and it has already put on the market... Soya milk,..."

Li and Grandvoinnet. 1912. Le soja. p. 92-93. A photo shows the equipment used to make soymilk (*lait de soja*) and Li's factory (*l'Usine de la Caséo-Sojaine*) on the outskirts of

Paris.

Fuerstenberg, Maurice. 1917. *Die Soja, eine Kulturpflanze der Zukunft und ihre Verwertungsmoeglichkeiten* [The soybean, a cultivated plant of the future, and possibilities for its utilization]. Berlin: Paul Parey. 40 p. See p. 5-6. The first manufacture of soyfoods in Europe took place in France, at Valees near Asnieres, where they made flour, bread, cakes, cheese [tofu], and soymilk (*Mehl, Brot, Kuchen und Käse, vegetabilischer Milch*)– though only in small quantities and, above all, for diabetics.

211. Barrau, Fernand de. 1911. La situation agricole dans l'Aveyron: La fève soja; Lait et fromage de soja [The agricultural situation in the department of Aveyron. Soybeans, soymilk, tofu]. *Journal d'Agriculture Pratique* 75(2):21-22. July 6. [Fre]

• ***Summary:*** The Roquefort cheese industry in the region of Roquefort is experiencing hard times and the author fears that soy cheese (*le fromage de Soja* [*tofu*]) may offer additional competition. "Many provinces of China, especially Manchuria, and all the countries of East Asia, cultivate on a vast scale the bean called *Soja* or *Soya* from which one can extract at will an excellent bread, oil, milk, butter, or cheese. Already, quite near Asnières (Seine), there exists a factory named *Caséo-Sojaïne,* supplied by soybeans imported from these distant countries. In this factory attempts have been made to make a special bread for diabetics using the flour of this bean. (Soybean seeds are very low in starch, which is the enemy of diabetics, and very rich in oils and protein.) The factory also produces confections, raw milk, cooked and sweetened milk, oil, various cheeses, not to mention the various cakes used to feed livestock.

"In the region of Roquefort, certain people are starting to ask themselves if they won't soon have to fight against another products besides the cheese made in Corsica, or in the Pyrenees region, or in the plains of the Crau (near Avignon in Bouches-du-Rhone province). This product which they see as a competitor in the near future is soy cheese."

"With special reference to soy cheeses, it is stated in the *Revue Scientifique* of last June 11, that the Orientals obtain three varieties of it: (1) A fermented variety, gray or yellow in color, reminiscent of Roquefort; (2) A white, salted variety resembling goat's cheese; (3) A broiled or smoked variety (*cuite ou fumée*) resembling Gruyère."

Since the Orientals themselves make a cheese from soya milk that reminds us of Roquefort, doesn't this tell us that tomorrow the factory at Asnières, with the same milk, won't also imitate Roquefort cheese very well? And how do we know that one day an industrialist won't come right here to Roquefort to establish a factory, similar to that at Asnières, to convert to cheese the milk drawn from soybeans (*fèves de Soja*)*?* "Thus speak those who are always trembling for our old and glorious Roquefort cheese. They would like to limit clearly the territory and the rights of soja, and have Parliament decide that one can never make from it a cheese resembling ours, and above all that such a soy cheese can never be imported into the commune of Roquefort. But is that possible? No. What is possible is to let it be known, by the local tribunals (courts of law), what has already been pronounced 100 times, that Roquefort cheese is made from the milk of sheep, and that a cheese made from vegetable milk cannot be sold under the name of 'Roquefort cheese.'"

"After all this time, we don't really see that soya cheese could jeopardize our Roquefort. And if ever there are measures to take against soya, ordinary local tribunals will doubtless suffice, without national legislators getting involved."

Note: This article also appeared in the *Le Cultivateur du Sud-Centre... Aveyron / Aveyronnais.* 1911. "Chronique agricole: La situation agricole dans l'Avetron." July 16. p. 420-21. Address: France.

212. *Los Angeles Times.* 1911. Wonderful soya bean: Has great food possibilities and is grown in great quantities in China and Japan. July 16. p. II-11.

• ***Summary:*** From *The Pathfinder.* "The Western world is only just beginning to appreciate the possibilities of the soy, soja, or soya bean, which is produced in such vast quantities in China, Japan and other parts of the East and which is adapted to so many different purposes. Large quantities of these beans are now being brought to Europe and this country, as they form a good return cargo for vessels that carry manufactured goods to the oriental markets."

"Dr. Gilbert Brooke, British health officer at Singapore, has issued a paper emphasizing the merits of the soya bean. He recommends it as a very desirable food... and–most important of all–which contains more nearly than any other known animal or vegetable substance, all the essential and properly proportioned constituents of a perfect diet. Among the economic products derived from the soya Dr. Brooks enumerates these:" Bean curd, bean milk, bean cheese [probably tofu–not fermented], bean flour, bean oil, bean cake, bean sauce ("the well-known 'soy' sauce"), and bean coffee.

"The straw surpasses in nitrogenous value that of wheat or even hay. Like other leguminous plants it enriches the land on which it grows, instead of impoverishing it."

213. Beltzer, Francis J.-G. 1911. Le lait végétal, la caséine végétale et les produits industriels retirés des graines de "soja" [Vegetable milk, vegetable casein, and industrial products extracted from soybeans]. *Revue de Chimie Industrielle et le Moniteur Scientifique, Quesneville* 22(259):209-15. July; 22(260):241-51. Aug. (Chem. Abst. 5:3597). Also published in Paris by Librairie Bernard Tignol (1911). Bibliotheque des Actualites Industrielles, No. 144. [13 ref. Fre]

• ***Summary:*** Contents: Introduction: Chemical composition of the soybean and of soy oil. Fermented soyfoods and koji: Li Yu-ying and his soyfoods plant established near Paris (at Vallées, near Colombes), the products it makes (tofu or soy casein {*Caséo-Sojaïne*}, soy flour, bread, sauce, confections, milk, fermented milk, tofu, etc.), soyfoods made in French Indochina. Soymilk (*lait végétal*). Tofu (*fromage végétal* or *to-fou*)*:* fresh tofu, fermented tofu (*La variété fermentée*, which is gray or yellow and has a piquant taste resembling that of Roquefort cheese), white and salted tofu (which resembles a goat's cheese), smoked tofu (which resembles a gruyère cheese)...

Industrial production of vegetable casein from soybeans (cleaning the seeds, extraction of the oil), cost of a plant to make vegetable casein, industrial applications of vegetable casein: in paints, glues, paper coatings, plastics resembling Galalith, conclusion.

An illustration (schematic drawing; p. 248) shows two views (a cross-sectional side view and an overhead floor plan) of a factory for producing vegetable casein, with a capacity to process 10 tons of soybeans per day.

Note: This is the earliest document seen (Sept. 2001) concerning the use of soy protein in glues or adhesives. Address: Ingénieur-chimiste, Expert, Professeur de Chimie Industrielle, France.

214. *Scientific American Supplement.* 1911. Extended utilization of soya bean products: Milk, cheese, and a variety of other products from a vegetable seed. 72(1859):115. Aug. 19. Summary of Beltzer 1911, in Revue Scientifique. [Eng]
• ***Summary:*** "A Chinese factory has been established [by Li Yu-ying] not far from Paris for the purpose of manufacturing alimentary products from Soya, and it has already put on the market Soya flour, Soya bread, Soya sauce, Soya Milk, Soya cheese, preserves, fermented milk, etc."

"The well-known chemical engineer, F.J.G. Beltzer, who has made a careful study of the whole subject, publishes in the *Revue Scientifique* a report of whose most important features we present an abstract."

"For purely industrial applications it is necessary, as we have said, that the vegetable casein be entirely free from fatty matters.

"In the industrial treatment of Soya, therefore, the process is somewhat different. The 3 objects sought are: the pure oil, the casein entirely free from oil, and the residuary cake.

"The oil is extracted by pressing, and 2 grades are obtained. The first or purest is sold for edible purposes, while the second is useful for soap-making and other manufactures where oils and fats are employed...

"The pure casein is prepared from the pulp which remains after the extraction of the oil. The milky liquid obtained by triturating the pulp with cold water, is filtered and treated with powdered gypsum. About 1 kilo of gypsum per 1,000 liters of the liquid is used. The mixture is brought to a boil and the resulting coagulate is drained and washed in cloth filters. The casein thus obtained is dissolved in a quantity of very dilute soda solution, so weak that the reaction is either neutral or very slightly alkaline. The solution is filtered and then precipitated by acetic acid. The finely divided precipitate obtained is filtered out, washed on the filter and finally dried at a low temperature.

"The casein thus obtained is white, and, from an industrial point of view, very pure. It is insoluble in water, but soluble in dilute caustic alkalies and in ammonia. It exhibits almost precisely the same properties as the casein obtained from ordinary milk. It is found on experiment to be susceptible of the same industrial applications as animal casein, and may come to largely supersede this because of lower cost.

"Among the various uses to which it may be applied we may mention its employment in painting, and for the preparation of products having a resistance to moisture.

"It may be used also for the sizing of paper, which consumes such large quantities of ordinary casein. Being soluble in ammonia and caustic solutions it is capable of forming a smooth and solid size.

"Other uses are in certain manufacturing processes in the preparation of silks and artificial textiles, as well as of rubber, leathers, plastic materials, films, photographic emulsions, etc. Large amounts of animal casein are at present employed in the manufacture of 'Galalith,' from which are made numerous objects which imitate articles made from ivory, tortoise-shell, bone, horn, etc. The Soya casein, when free from fats, is equally well adapted for these purposes...

"It will be seen from the foregoing résumé, that the fabrication of vegetable casein for industrial purposes has immense possibilities, only exceeded in importance by the alimentary value of its food products for man and for beast.

"The residuary cake left after the extraction of both oil and casein still retains sufficient nutritive qualities to be useful as an addition to the feed of animals."

Note 1. This is the earliest English-language document seen (Oct. 2011) that uses the term "soya cheese" to refer to fermented tofu.

By 1905 Li presented a paper (in French) describing how he had tofu to make "Fermented cheese (*Le fromage fermenté*). Its color is white, yellow, or gray, and it flavor is very strong, like that of Roquefort." In Dec. 1910 he applied for British Patent 30,275, titled "Vegetable milk and its derivatives." It was accepted / issued on 29 Feb. 1912. It stated: "For obtaining fermented cheese such as roquefort [Roquefort], parmezan [Parmesan], romatour [Romadur, Rahmatour], camambert [Camembert], and gruyere, suitable ferments are employed."

Note 2. This is the earliest document seen (Aug. 2013) that uses the term "Soya casein" to refer to an isolated soy protein product; it is used for industrial purposes.

Note 3. This is the earliest English-language document seen (Dec. 2004) that uses the term "silks" (or "silk") to refer to spun soy protein fiber used like a textile fiber.

215. Li, Yu-ying. 1911. Procédés et dispositifs pour la transformation intégrale du soja [Processes and apparatus for the complete transformation of soybeans]. *French Patent* 433,986. Application filed 6 Sept. 1911. Granted 20 Jan. 1912. [Fre]

• ***Summary:*** The beans, freed from stones and decorticated, are passed into a pipe from which they are withdrawn, through a number of branch-pipes, to be converted into flour (by dry grinding and bolting) suitable for bread-making, etc. They are also converted into oil and press-cake, or into "milk" (by wet grinding and pressing) and press-cake [okara], or into sauce, or after roasting into "coffee" or "chocolate." The "milk" may be concentrated or reduced to powder, or converted into "cheese," or into sauce, or it may be used for the preparation of casein (*sojalithe,* for various industrial uses). The cake obtained on expressing the "milk" may also be used for the preparation of casein, and the cake obtained on expressing the oil from the bean serves for the preparation of "milk" or meal.

Soybeans can be used in seven different food industries: (1) Milling. (2) Dairy and cheese. (3) Baking, pastry, and pâtes. (4) Confectionery. (5) Chocolate. (6) Charcuterie–Pork butcher deli business. (7) Preserves and canned foods.

They can also be used for industrial (non-food) uses in: (1) The casein industry (*Caséinerie,* incl. sojalithe for various industrial uses). (2) The oil industry (*Huilerie,* incl. soap, paint, candles {*bougies*}, and artificial rubber).

Note: This is the earliest document seen (Dec. 2005) that mentions the use of soy oil to make candles (one of two documents). However no description or details are given as to how the candles are actually made. Were they made from hydrogenated soybean oil? Address: Resident in France (Seine).

216. H.L. 1911. Le Haricot soja ou Fève de Mandchourie: Cultures exitoques [The soybean or Manchurian bean: Exotic crops]. *A Travers le Monde* 17(36):288. Sept. 9. Bound in the back of *Le Tour du Monde.* [Fre]

• ***Summary:*** Contents: Introduction. Its utilization by the Japanese: Fertilizer, oil, and oil cakes. Its utilization by the Annamites [Vietnamese]: Milk and cheese. How will soybeans be used: The first exports to Europe. Some figures on the present trade in soybeans. The Germans are becoming masters of the European soybean market. Soya in France: It is utilized by foreigners.

Concerning the Germans: "Until the spring of 1909, the Japanese were the masters of the soybean market. Some German companies have in turn entered into competition in places of production, and there followed a rather significant rise [in production]. There resulted as a counter-measure some soybean cultural trials in terrains that seemed favorable to them in China. The result of these trials is not yet known.

"Be that as it may, the Germans hasten to assume first rank among the importers of soybeans in Europe.

"In effect, it follows from a report published by *The Chemical Trade Journal* (10 June 1911) that the port of Stettin recently received from Vladivostok a shipment of 4,823 tonnes (metric tons) of soybeans; the manufacturers of Stettin have established a society with capitalization of 1,875,000 francs for the utilization of this product.

"Its importation into Germany duty-free will favor its use for several reasons: first, soybean oil, a substitute for linseed oil, can be sold at a price that is one-third lower; secondly, it can be used in soap-making; thirdly, the cakes remaining after the extraction of oil can be used to feed livestock in the same way as cottonseed cakes. Finally, after the appropriate extraction of oil, the pulp, reduced to a flour and mixed with cereal flour, yields an edible bread or biscuit.

"The nascent industry in Germany of cottonseed oil, flour, and oil cakes, whose primary material is cottonseed imported from America, will have before long to struggle against the formidable competition of soybean products."

Concerning soya in France. "Soya (*soja*) is hardly known in France except by a few products that are found in certain food stores and that are bought sometimes, but without realizing their origin. (Footnote: Notably many flour products whose fortifying qualities are incontestable.)

"For, there would be every advantage to introduce this industry into our country where the mechanical and chemical resources would permit an improvement of yields. The example, moreover, is already given, not by French industries, but by the Chinese, who have established a factory at Vallées, Colombes, near Paris, where a Chinese workforce, exclusively employed, make all types of soy-based food products.

"Our industries would draw great profit from entering this path and not allowing themselves to be surpassed by German chemistry any longer."

217. *Chemiker-Zeitung Chemisches Repertorium.* 1911. Pflanzenmilch [Plant milk (Abstract)]. 35(114):479. Sept. 23. [1 ref. Ger]

• ***Summary:*** A German-language summary of the following French-language article: Demolon, D.A. 1911. Lait végétal? [Vegetable milk?]. *Journal d'Agriculture Pratique* 21:140-41. March 24.

Note: This is the earliest German-language document seen (Aug. 2013) that uses the word *Pflanzenmilch* ("plant milk") to refer to soymilk.

218. Abel, Mary Hinman. 1911. Beans, peas, and other legumes as food. *Farmers' Bulletin* (*USDA*) No. 121. 38 p. See p. 11-13, 17-20, 35-36. Revised Nov. 15, 1906. Reprint, Sept. 30, 1911. [1 ref]

• ***Summary:*** This is a reprint of the 1906 revised edition. The information about soy is unchanged. On pages 17-18 is a section titled "The peanut" (*Arachis hypogæa*). On pages 35-36 is a section titled "Peanuts and peanut preparations" which includes a subsection titled "Peanut butter.–The roasted peanut ground to an oily meal has somewhat the consistency of butter and is now marketed under the name of peanut butter. Salt is perhaps quite generally added during the process of manufacture. Water is also sometimes added–usually before serving. Peanut butter is used like other butter to spread on bread, for the making of sandwiches, and in the preparation of a number of made dishes. Many persons like its flavor when it is fresh and of good quality, and it seems fair to say that the use of this and other sorts of nut butter is growing. As regards composition, peanut butter, which is essentially the ground roasted peanut, contains more protein and less fat than ordinary butter. Little is known regarding the digestibility of peanut butter, but the fine grinding would naturally seem to be of an advantage. Judged by Jaffa's experiments with a ration containing peanuts, it would be well digested. (See p. 26)

"Peanut oil.- At present the American peanut crop is not large enough to more than supply the roaster and the confectioner, hence the expressing of oil from the peanut has never become established here, but in Europe large quantities of the African-raised nuts are used for this purpose. The shelled nuts contain from 30 to 50 per cent. of oil. The oil is said to be of fairly good flavor, but inferior to olive oil. In 1899 some 80,000 tons of the nuts were used in Marseille alone for oil making. The unhusked nuts are passed between a pair of rapidly revolving grooved rollers and the shells and red inner skins are then removed by a winnowing process with the use of air currents and oscillating sieves. The cleaned kernels are ground and enveloped in fibrous mats and pressed to extract the oil.

"According to Brannt, "the first cold pressure yields 16 to 18 per cent of very fine table oil. The residue is then broken up, moistened with water, and again cold pressed, yielding 7 to 8 per cent of more or less valuable oil, used for table purposes and burning. The residue from this is heated and then pressed, giving 7 to 8 per cent more oil, unfit for table use, but used for soap and lubricating." The grades of oil are sold as salad oil alone or mixed with olive oil.

"Peanut cake.- When the oil has been pressed from the ground nut, the mass remaining, called oil cake, is used for fattening. Some experiments have also been made as to its food value for human beings. Containing, as it does, 47 per cent of protein and 9 per cent of fat and starch, and costing about 5 cents a pound, this attracted the attention of German scientists. The oil cake broken up and cooked a long time in water and eaten as a soup or porridge in a hospital. Most of those who tried it ate it with apparent relish, not once only, but again and again. No effort have been made to ascertain to what extent it was digested, and the use of the cake does not seem to have passed the experimental stage."

219. Ruhräh, John. 1911. Further observations on the soy bean. *Archives of Pediatrics* 28(10):841-43. Oct.
• ***Summary:*** "Read before the Twenty-third Annual Meeting of the American Pediatric Society, Lake Mohonk, June 1, 1911."

"In 1909, at the meeting at Lenox, I called the attention of the [American Pediatric] Society to the soy bean and suggested its use in infant feeding... Since that time I have had considerable experience with the use of the bean and also the flour made from it, and believe that it is a food of very considerable value in certain well-defined conditions, and I also believe that the bean will eventually be used as an article of diet in this country."

Three tables show the nutritional composition of the soy bean (on an "as-is" and on a water-free basis) and "of the [whole] soy flour made by the Cereo Company, Tappan, New York." This flour contains 44.64% protein, 19.43% fat, 9.34% cane sugar [sucrose], and no starch or reducing sugar.

A patent flour is made by Bayer & Company of Germany and patented in the USA [see Lampé 1911; U.S. Patent 980,292. Jan. 3. 1 p. Application filed Aug. 4, 1910].

The soy bean has three basic uses: (1) In the form of dilute gruels, either with or without the addition of some starchy flour, as barley flour, in summer diarrheas and in certain forms of intestinal digestion; (2) In cases where cow's milk disagrees with the child and in which there is difficulty in finding any food containing sufficient nourishment to nourish the child; (3) In "diabetes this food is of great value and serves two purposes. First, it may be prepared in a number of different ways and relieves the tedium of the ordinary diabetic diet to a very great extent, and secondly, as Friedenwald and I have shown, the use of the bean tends to lessen glycosuria [abnormal amounts of sugar in the urine], especially when used in connection with strict diabetic diets.

Dr. Ruräh concludes: "I feel that the soy bean has a very definite future assured for it, and it is chiefly for this reason that I again call your attention to it as an article of diet for infants." Address: M.D., Baltimore, Maryland.

220. Loew, Oscar. 1911. Ueber Sojabohnenmilch [On soymilk]. *Chemiker-Zeitung* 35(131):1222. Nov. 2. (Chem. Abst. 6:519). [2 ref. Ger]
• ***Summary:*** Gives a brief description of the process for making soymilk and a nutritional analysis; it contained 4.87% protein.

Note: This is the earliest German-language document seen (Aug. 2013) that uses the term *Sojabohnenmilch* ("soybean milk") to refer to soymilk. Address: Munich, Germany.

221. *Washington Post.* 1911. Manifactured [sic, manufactured] milk: Tid bits. Nov. 26. p. MS2.

• ***Summary:*** "Cows are not numerous in Japan, but the Japanese are fond of milk, and to meet this demand in the face of a natural shortage they long ago put their wits to work and evolved a product that the average person cannot distinguish from the regular dairy article.

"The artificial milk is derived from the soja bean, The beans are first soaked, then boiled in water. Presently the liquid turns white; sugar and phosphate of potash in proper quantities are added, and the boiling continues until a substance the thickness of molasses is obtained [sic]. This fluid corresponds very accurately with ordinary condensed milk, and when water is added cannot be told from fresh. If the present rise in the price of British milk continues we can foresee a big run on soja beans. Now, Mr. Milkman, beware!"

Note: A very similar article appeared about two months later on 14 Jan. 1912 in the *Boston Daily Globe.*

222. Li, Yu-ying; Grandvoinnet, L. 1911. Le soja [The soybean]. *Agriculture Pratique des Pays Chauds* (*Bulletin du Jardin Colonial*) 11(105):459-74. Dec. [18 ref. Fre]
• ***Summary:*** Contents (continued): 2. The soybean in human nutrition. The soybean in general nutrition: From the viewpoints of physiology, economy, and gastronomy. The role of soybeans in special diets/regimens: Vegetarianism and vitalism, remineralization, anti-diabetic, others, lactose-free.

Foods made from soybeans (*Produits alimentaires à base de soja*)*:* 1. Soymilk and its derivatives: Soymilk (developed by the Chinese philosopher Whai Nain Tze {Liu An of Huai Nan} well before the Christian era, method of production, Chinese method, modern method used at Li's factory *l'Usine de la Caséo-Sojaïne* at Vallées (Seine)), cleaning the seeds, steps in soymilk preparation (grinding and filtration), the nature of soymilk (physical properties). A graphic illustration (p. 465) shows a comparison of nutritional elements between soybeans, tofu, and beef. A chart in outline form (p. 471) titled "Soy based food products" (*Produits alimentaires a base de soja*) shows the numerous and varied food products that can be derived from the soybean: I. Soymilk and its derivatives: Normal soymilk, concentrated soymilk, powdered soymilk, fermented soymilk (*lait fermenté*), soy cheese (*Caséo-Sojaïne; Fromage de soja* [*tofu*]), soy casein. II. Soy flour and its derivatives: Soy flour, soy bread for diabetics, whole-grain bread (*Pain complet*), cakes, biscuits (*Biscottes*). III. Soy oil and its by-products (cake). IV. The soybean used as a vegetable. V. Condiment products based on fermented soybeans. VI. Confectionery products: Soy confection, soy powder. VII. Soy coffee. Soy-based ferments: Kiu-tsee, lactic ferments based on soymilk. (*Ferments lactiques à base de lait de soja*).

Photos show: Inside view of Li's factory as the equipment is producing soymilk (p. 473). Microscopic view of soymilk, and of soy flour dissolved in water (p. 474). Also contains various tables, charts, and graphs from other sources.

Note: This is the earliest document seen (March 2000) written by Li Yu-ying which contains the term *Caséo-Sojaïne.* On p. 471 he states clearly that he uses it as a synonym for soy cheese (*Fromage de soja*) [tofu], which is made from soy milk–perhaps to avoid disputes over the word *fromage* with manufacturers of dairy cheese. On p. 472-73 he states that *Usine de la Caséo-Sojaïne* is the name of his modern factory at Vallées (Seine) which makes a variety of soy products. Address: 1. Counseiller de 1ere classe au Ministère de l'Agriculture de la Chine; 2. Ingénieur agricole (G.).

223. Nashville Sanitarium–Food Factory. 1911. High grade health foods (Ad). *Naturopath and Herald of Health* (*The*) (*New York City*) 16(12):Unnumbered page. Dec.
• ***Summary:*** "Made by expert bakers, from best selected materials, in a well-ventilated hygienic factory away out in the country, surrounded by farms and pure fresh air. Made by men who do things from principle.

"Contain no animal fat. Full line of nut foods, cereal foods... More than twenty-five kinds. Nutfoda is the great vegetable meat, pure, wholesome, delicious, a perfect meat substitute at 10, 15 and 25¢. for ½ lb., 1 lb and 2¼ lb. cans.

"Nutkysa–similar to cheese, 1 lb. can–$0.15.

"Nashville Malted Nuts, 1 lb. jar–$0.35...

"Baked Beans, Tomato or Plain, 1½ lb. can–$0.10. Note: It is possible, but unlikely, that these baked beans are soybeans.

"Cereal Coffee, Superb, 1 lb. pkg.–$0.10...

"Dixie Kernel (a Malted Breakfast Food) 1¼ lb. pkg.–$0.15.

"20 per cent Gluten Meal, Well Cooked, 1 lb. pkg.–$0.12."

"On sale at Naturopathic Supplies Store, 465 Lexington Ave., New York, N.Y." Address: Nashville, Tennessee.

224. Boname, P. 1911. Soja [Soybeans]. *Ile Maurice* (*Mauritius*), *Station Agronomique, Rapport Annuel* For the year 1910. p. 67-71. Also titled Bulletin No. 25. [1 ref. Fre]
• ***Summary:*** Summarizes the world soybean situation and soybean uses, then states: "We believe that this crop culture has been tried this year in various small plots on Maurice. We have distributed seed from various sources but we do not have precise information on the results obtained." The need for nitrogen fixing bacteria is discussed.

Note: Moutia (1975, p. 218) states that in this report "Boname called soybean a fashionable plant, referring to the huge quantities being imported into Europe and to the yields of 4 to 10 hectoliters of seed per acre being obtained in the United States. 'It is really a crop to try,' he wrote, 'being better than cowpeas in that flowering is uniform and pods come to maturity all at the same time.' The 1910 trials at Reduit had given better results than those obtained in the

past. When sown between December and March, soybean matured in 2½ to 3 months, yielding 7 to 8 hectoliters of well-formed seed per arpent of full stand, or 6,000 to 7,000 kg of green fodder. In addition to hares, the other pests were birds, snails, and the bean fly Agromyza.

"Soybean was planted on a small scale in Mauritius in 1910 and the not very encouraging results were thought to be perhaps due to the absence of the special bacteria–the particular Rhizobium strain–which the newly introduced legume required." Address: Directeur, Station Agronomique, Mauritius.

225. Hooper, David. 1911. Soy bean in India: Glycine hispida. *Agricultural Ledger* (*Calcutta*) No. 3. p. 17-33. (Vegetable Product Series No. 114). Also reprinted in Tropical Agriculturalist, 1912. 38:11-15, 99-103.
• ***Summary:*** Contents: Introduction. Experimental cultivation in India. Vernacular names of the soybean. Method of cultivation: Green manure, harvesting. Races and varieties. Races in India: Yellow [grown in Poona Experimental Farm, Burma, Darjeeling, Dehra Dun, Simla, Punjab], green [Poona], black [Poona, Kashmir to Darjeeling, Simla], brown [Kashmir, Kalimpong to Darjeeling], mottled [Shillong, Assam]. Composition of the seed: From Church, from König, from Dr. J.W. Leather (1903), tables showing analyses made in India of Indian-grown Soy beans from various provinces (Burma, Hill Tracts, United Provinces [black seeds], and Poona). Soy bean oil. Soy bean oil-cake. Composition of hay. Use as food: Soy-bean milk, bean cheese (topo, sic tofu, or "Soy-bean cheese"), shoyu ("Under the name of 'Soy sauce' and other fanciful names it has formed the basis of most of the important sauces of Europe for many years."), roasted soy beans as a coffee substitute, soy beans in diabetic diets. Trade (exports of Soy bean from Manchuria to England). Price.

"The plant was introduced into the United States of America in 1854 and was grown to a small extent in the Southern States, but from the year 1885 its cultivation as a forage crop has gained in importance in all the agricultural centres. Within the last two or three years a great deal of interest has been taken in the cultivation of Soy, and experiments are in progress in Government Farms in Cape Colony, Natal [South Africa], East Africa, Gambia, Mauritius and Australia.

Contains a good early history of the soybean in India: "It is difficult to ascertain the date of the introduction of Soy beans into India. There is no doubt that certain hill tribes, mostly of Mongolian origin, have cultivated the bean for a long time. At the Punjab Exhibition held at Lahore [later divided between India and Pakistan] in 1864 Soy beans identified by Dr. Cleghorn, were sent from the Hill States. This is the first record of the beans being exhibited in this country, and shows that the cultivation was on a insignificant scale.

"Experiments in India. In 1882 Messrs. Jardine, Matheson & Co. of Hong-Kong sent a sample of Soy beans for experimental cultivation in the Saidapet Experimental Farm, Madras. The plants raised from these seeds were healthy but the yield of the crop was small.

"In 1897 Surgeon-Colonel W.G. King, Sanitary Commissioner, Madras, strongly advocated the cultivation of Soy bean as a valuable food worthy of the attention of the people. In two experiments carried on at Saidapet during 1897-98, the yield of seed per acre was 468 to 495 lbs., respectively. Recent enquiries in Madras resulted in the opinion that the cultivation in the Presidency is still in an experimental stage.

"In 1882 some Japanese Soy beans were sent by the Government of India for trial to Saharanpur. In 1885 very good results were obtained, the black seeded variety giving a yield of 1,124 lbs. per acre, and the white seeded variety giving a yield of 561 lbs. per acre. In 1886 the acclimatised seed was widely distributed; in some cases the crop failed and in others it was fairly successful, but as a rule where seed was harvested it was said that the pulse was not popular in any form. The Botanical Gardens grew the crop for a few years longer but as there was no demand for the seeds the cultivation was abandoned. An interest in Soy bean, however, seems to have revived for the Agricultural Department has this year sent to the Reporter on Economic Products samples of the black variety of Soy beans from forty villages of the United Provinces.

"At the Experimental Farm at Nagpur, Central Provinces, the bean was grown experimentally from Japanese seed first planted in 1885. The yield at the end of the first year was at the rate of 180 lbs. per acre, but taking the average of five years the result was 88 lbs. per acre. In the Report for 1908-09 it is stated that Soy beans were grown on a small area under field conditions and the yield was fair, but there was little local demand for the seed. It was, however, ground and formed an excellent addition to the diet of the farm cattle. Last year only 43 lbs. were obtained on light soil on the Nagpur Farm, the crop being practically a complete failure; on heavier soil 380 lbs. of seed were raised.

"Soy beans have been grown at Poona for nine or ten years with varying results, and they have also been tried at Nadiad in Gujrat [Gujarat] and elsewhere in the Bombay Presidency. In the Experimental Farm Report for 1901 a large yield was chronicled, but next year the crops at Poona and Surat failed. In 1904 a yield of 300 lbs. per acre was obtained in light land. One year later nineteen plots were under trial but with unpromising results, for only five yielded seed enough to repay the cost of cultivation. The yield varied from 50 to 293 lbs. per acre, and it was found that only when the yield exceeded 200 lbs. was the crop profitable. In 1905-06 the Manjri Farm, Poona, grew nineteen plots with better results, probably due to better soil. The yield of some of the plots was on an average of 680 lbs. per acre–a highly

remunerative return. A year later it was reported by Mr. Fletcher, Deputy Director of Agriculture, that an experiment made on the edge of black cotton soil gave a yield of 1,166 lbs. per acre, while adjacent plots gave from 395 to 650 lbs. per acre.

"In the Agri.-Horticultural Gardens at Lahore Soy bean planted on a small area in 1894 yielded an estimated crop of 349 lbs. of seed per acre and 349 lbs. of fodder. Evidently it varies greatly in suitability to different soils and climates and does not seem to be adapted to the sea level plains of India.

"Gollan observed that the Japanese plant is erect, attaining a height of 12 to 15 inches, while the Himalayan form is a trailing plant. So far this vigorous growing plant does not appear in India to have been attacked by any insect or parasitic fungus.

"With regard to Burma, Mr. Burkill remarks: 'The Burmese grow it under the names of Pe-nga-pi and Pe-kyat-pyin, sowing it never in great quantities along with other beans on the mud banks as the falling rivers leave them bare in October, or more sparingly still away from the rivers. The Kachins and other hill tribes grow a little of it on their hill clearings, the Kachins call it Lasi. The Khasis, the Nagas and other tribes between the Brahmaputra and Upper Assam cultivate it similarly... In the Brahmaputra Valley it is grown as far as known only towards Barpeta in the Kamrup District.'

"Soy beans are called 'Bhut' in the Punjab, 'Bhat', 'Bhatwas' or 'Bhatmas' in the United Provinces and in the hills as far as Darjeeling, and 'Rymbai ktung' in Shillong and the Khasi Hills. Mr. B.C. Basu gives the Assamese name for *Glycine* as 'Patani jokra' and the corresponding Bengali name as 'Chhai.' In the Naga Hills it is called 'Tsudza' or 'Sudza.' It is grown by the Lepchas in Sikkim and is called by them 'Salyang' or 'Silliangdun.' 'Pe-nga-pi' is the usual name for Soy bean in Burma, but it has been received under the name of 'Lasi shapre tum' from Bhamo, and as 'Lasi N'Loi' and 'Lasi N'Hti' from Myitkyina. The Santali name appears to be 'Disom Horee.'"

"Dr. J.W. Leather in 1903 analysed the seeds of seven samples of Soy bean from Japanese seeds cultivated at Manjri, near Poona. The amount of oil in them varied from 14.92 to 23.05 per cent. being on the dry weight 15.97 to 24.41 per cent. with an average of 19.99. In 1902 Dr. Leather examined five samples grown on the Dumraon Farm. They yielded from 14.27 to 19.72 per cent of oil on the air-dried seeds.

"Fourteen samples of the seeds grown from Japanese seeds at the Manjri Experimental Farm were again analysed last year by a leading European firm. The percentage of moisture varied from 9.90 to 12.06, and the percentage of oil from 16.80 to 22.48...

"The following analyses of Indian-grown Soy beans were made in the laboratory of the Indian Museum in 1909 and 1910." Gives names and composition (oil [as is and on a dry basis], water, and ash) for 17 varieties from Burma, 21 from the Hill Tracts, 11 from the United Provinces [black seeds], and 15 varieties from Poona. "An attempt in 1903 to extract oil from these beans with the country *ghani* or indigenous oil-mill was a failure in Bombay."

Note: This is the earliest English-language document seen (April 2013) that uses the term "soy-bean cheese" to refer to tofu.

226. Marcuse, Julian; Woerner, Bernardine. 1911. Die fleischlose Kueche: Eine theoretische Einleitung und ein praktisches Kochbuch [Vegetarian cookery: A theoretical introduction and a practical cookbook]. Munich, Germany: Ernst Reinhardt. 2 + 552 p. Index. 21 cm. [Ger]

• ***Summary:*** Dr. Marcuse was born in 1862. The 3-part introduction by Dr. Marcuse discusses: The significance of a flesh-less [*fleischlosen*] diet for human nutrition. The practice of flesh-less cookery. Comparative summary of the main animal and vegetable food products. This is followed by recipes. In the back are some advertisements: (1) Nuxo foods made from nuts by Nuxo-Werke, Rothfritz & Co., Hamburg; (2) Protose, Vegetabilischer Aufschnitt (vegetable cutlet), Nuttolin, Granola, Granoseflocken and Bromose, from the Deutscher Verein für Gesundheitspflege, Friedensau Nr. 60 (Post Grabow, Bez. Magdeburg). This looks like a Seventh-day Adventist company with a health food factory in Germany.

There is a directory of Vegetarian eating houses, restaurants, and boarding houses (Pensionen) in Germany, and other nearby German-speaking countries (mostly Switzerland and Austria). Address: 1. Doctor of medicine.

227. Mexico. Ministerio de Fomento, Colonización e Industria. 1911. La soya: Traduccion de varias publicaciones extranjeras sobre la explotación de esta planta [Soya: Translations of various foreign publications on the development and cultivation of this plant]. Mexico: Secretaria de Fomento. 57 p. [3 ref. Spa]

• ***Summary:*** The *Ministerio de Fomento* is the Ministry of Public Works. The first three-fourths of this publication contains Spanish-language translations of the following three articles: (1) "The soybean: A valuable fodder plant" by H.J. Choles (p. 3-26). Contents: Introduction. Botany and history of the soybean (*de la Soya*). Varieties. Cultivation: Conditions of growth, methods of culture. Harvesting: When to harvest, curing, harvesting for seed, yield of forage, yield of seed. Chemical composition. Digestibility. Value and uses of the crop: For green forage, as a silage crop, as a hay crop, as a pasture plant, as manure, value of the soybean as human food.

(2) "Utilization of soybeans" by E.S. Edic [sic, Edie] from *Estación Agrícola Central–San Jacinto*. Jan. 1911 (p. 26-36). Contents: Introduction. Uses of the soyabean: As a forage plant, hay, ensilage, soy oil (*El aceite de soya*),

soymilk (*leche de soya*), a type of cheese (*una especie de queso*) [tofu], soy flour (*harina de soya*), use of soybean oil for margarine (*margarina*), for soap, illumination, paints and other industrial products, soy bean meal used as a fertilizer on Chinese sugar plantations, soybeans as a legume for enriching the soil with nitrogen. The cultivation of soybeans. Varieties of soybeans.

Note 1. This is the earliest Spanish-language document seen (April 2013) that uses the term *una especie de queso* to refer to tofu.

(3) "Importance of the Soybean: Products which can be obtained from the soybean. Its marvelous value as food." reprinted from *Milling* magazine, Aug. 1909 (p. 36-42).

The last one fourth of this publication (p. 42-57) discusses the following: The soybean (possibilities for importation to Mexico). The new world trade in soybeans. Soybean production in the British empire (Sir Alfred Jones, soya in Africa, trials in British Columbia). Consumers of soybeans (Countries that import the seeds, especially for their oil to make margarine, soap, and paints; Canadian research commission). As a food. Dark bread. Wheat gluten. The latest news about soya: Products that can be obtained (oil and meal), the soybean (vegetable casein), experiments making bread with soy flour, opportunity for the manufacture of biscuits or crackers (*galletas*). Summary.

Note 2. This is the earliest Spanish-language document seen (Sept. 2006) that mentions soy oil, which it calls *El aceite de soya.*

Note 3. This is the earliest Spanish-language document seen (Aug. 2013) that uses the term *leche de soya* to refer to soymilk. As of Oct. 2013 *leche de soya* is the modern Spanish term for soymilk. Address: Mexico.

228. Ward, Artemas. 1911. The grocer's encyclopedia–Encyclopedia of foods and beverages. New York, NY: Published by the author. 748 p. Illust. (color). 29 cm.
• ***Summary:*** Soy-related entries: Bean (p. 49-54): "The bean of European history is the Broad or Windsor variety,..." "The principal beans of United States cultivation are the Kidney and Lima, both of them believed to be native to South America.

"The Kidney Bean is the Haricot of the French and in Great Britain is sometimes called the French bean." The many varieties can be classified into "tough podded" and edible podded." "The 'tough podded' class produces the bulk of the dried beans of commerce, variously known as 'Kidney Beans,' 'Navy Beans,' 'Marrow Beans,' 'Black Beans,' 'Turtle Beans,' etc., in many colors, shapes and sizes." "'Flageolets' are cultivated with special regard to the consumption of the fresh seeds or beans." To the "edible podded" class of kidney beans belong Wax or Butter Beans, the Cranberry Bean or Red Speckled Bean, String Beans, Snap Beans, French Beans. "Pea Beans are the Cowpeas of the agriculturist." "Among numerous other 'special' varieties are the Soy Bean (which see), Asparagus Bean, Frijole, Lab-lab (or Egyptian Kidney), Red Bean, and Scarlet Runner." Asparagus Beans are known as *Tou Kok* by Chinese gardeners in California.

"Catsup, Catchup, Ketchup: a word derived from the name of an East Indian pickle, which was formerly applied specifically to the boiled spiced juice from salted mushrooms, but is now freely attached to various sauces (sold both bottled and in bulk) which consists of the pulp–bottled, strained and seasoned–of various fruits, as tomatoes, green walnuts, etc." Note 1. At "Catchup" and "Ketchup" we are told to see "Catsup."

Locksoy ([Lock Soy], p. 346): "Rice boiled into a paste and drawn into threads, imported from China. It is used to thicken soups."

Nuts (p. 412-13): A table shows the nutritional composition of all major American nuts, including almonds, chincapin [chinquapin] or water chestnut, chufa (earth almond), cocoanut, peanut, and peanut butter. "Many special nut foods, such as malted nuts, meat substitutes, etc., have been devised and extensively advertised by manufacturers for general dietetic use and for the special needs of vegetarians and fruitarians. It is said that some of these products contain soy beans, but apparently the peanut is very important in their composition.

Sauces (p. 552-53): In bottled sauces, vinegar is the most common liquid ingredient. "Commercial sauces of the Worcestershire kind, if of good quality, generally have Soy (which see) as their chief character ingredient. A typical formula of Worcestershire-style includes, in addition to Vinegar and Soy, a considerable percentage of lime juice, onions and tamarinds and small quantities of garlic, fish (as anchovies or pickled herrings), red chilies and spices. The product, after cooking, is strained through fine hair sieves. Leicester Sauce resembles Worcestershire in general characteristics but is less pungent."

Soy (p. 576): "A brown sauce, valuable to the commercial sauce market, made from the Soy Bean, a native of Southeastern Asia [sic] and widely grown in China and Japan. The beans are boiled, mixed with ground wheat or other grain, salt, etc., and allowed to ferment for a month or 6 months. The liquid is then strained off and clarified. Molasses is frequently added. In appearance it resembles Worcestershire Sauce, of which it is an important ingredient. It should not be too salt [salty] or too sweet, and although thick and syrupy, should be clear. When shaken in a bottle or glass it should, if it is genuine, leave a bright yellow film on the glass. Being a very desirable article, it is often counterfeited."

Soy bean (p. 577): "Commercial and government circles, both in Europe and this country are devoting increased attention to the cultivation of the Soy Bean as a food product, as it contains a large percentage of protein and a fair amount of fat, thus resembling meat in general nutritive

value. The cell-walls of the raw bean are very tough, but thorough cooking makes it readily digestible. Boiled with bacon and other fatty broths until soft and then seasoned, the result is a vegetable dish very pleasing to the average palate. If the beans are dry, a preliminary soaking to remove the skins is necessary.

"The Soy Bean is largely consumed in Japan, China and other parts of Asia as an adjunct to rice and other foods, taking the place of meat in the popular dietary. It is most popular in these countries in fermented form, the best known types being *Shoyu* or Soy Sauce; *Tofu,* a kind of cheese; *Miso,* Soy Bean 'Milk' [sic]; *Yuba,* the evaporated product of 'Miso" [sic], and *Matto* [sic, *Natto*], a product obtained by simple fermentation of the boiled beans. The various degrees and styles of fermentation serve the double purpose of rendering the beans more easily digestible and producing new flavors, just as by the fermentation of milk and cream we produce the different flavors of cheese.

Note 2. This is the earliest English-language document seen (Aug. 2013) that uses the term "Soy Bean 'Milk'" (regardless of capitalization) in to refer to soy bean milk.

"The plant is an annual, growing chiefly in bush form..." The different varieties are classified principally by the color of the beans: "Black, Yellow, White and Brown,... Types of all these four classes are grown to some extent in Germany, Austria, and Switzerland, and the first three also in this country, in North Carolina and other Southern States. Under favorable conditions a single plant may bear a hundred or more pods.

"Because of the fact that the beans contain little if any starch, they have been recommended as a desirable food for diabetics, and Soy Bean Bread and Soy Bean Meal are prepared for that purpose in Paris. The dried beans are also used in Switzerland and elsewhere as a coffee substitute." An illustration shows the top of a soy bean plant, with leaves, pods, and flowers.

Note 3. This book is full of fascinating information about the food system in the USA in 1911, with entries such as cold storage (first attempted in 1860, it has grown to extraordinary proportions), coloring matter (great improvements, no longer harmful), ice and refrigeration (ice manufacture dates from about 1870; today nearly 200 companies produce ice for general sale, mostly using the compressor and anhydrous ammonia). Dictionary of food names in five languages (English, French, German, Italian, and Swedish, p. 710-724) and a dictionary in English of "Culinary and bill-of-fare terms" (p. 741-45).

Note 4. The author, Artemas Ward, lived 1848-1925. His father was Henry Dana Ward (1797-1884), his grandfather was Thomas Walter Ward (1758-1835), and his great-grandfather was Artemas Ward (1727-1800), the first Commander-in-Chief of the colonial troops before the arrival of George Washington (a little-known Virginia planter) on 3 July 1775. Thereafter he served as second in command after Gen. Washington and was a Major General in the American Revolutionary War. Address: Formerly (from 1874) founder and editor of *The National Grocer,* 30 Union Square, New York.

229. *Boston Daily Globe.* 1912. Artificial milk: Japs make excellent imitation from soja beans. Jan. 14. p. 34.
• ***Summary:*** This article is very similar to one that appeared about two months earlier: *Washington Post.* 1911. "Manifactured [sic, manufactured] milk: Tid bits." Nov. 26. p. MS2.

230. Hooper, David. 1912. Soy bean in India: Glycine hispida. *Tropical Agriculturist* (*Ceylon*) 38(1):11-15. Jan. 15; 38(2):99-103. Feb. 15. [1 ref]
• ***Summary:*** This is a reprint of an article by the same author with the same title published in 1911 in *Agricultural Ledger* (Calcutta) No. 3. p. 17-33. Address: Australia.

231. Li, Yu-ying; Grandvoinnet, L. 1912. Le soja [The soybean]. *Agriculture Pratique des Pays Chauds* (*Bulletin du Jardin Colonial*) 12(106):28-38. Jan. [16 ref. Fre]
• ***Summary:*** Contents (continued): Soymilk (continued): Chemical properties, composition (comparison with 8 animal milks–in bar chart form showing protein, lipids, carbohydrates, and ash), action of ferments [enzymes] and diastases [diastatic enzymes] on soymilk (*Action des ferments et des diastases sur le lait de soja*) (1. The lactic ferments {kefir, yogurt, etc.} act in the same way on vegetable milk and on animal milks. 2. The ferments of certain European cheeses make analogous vegetable cheeses {*fromage végétal d'une façon analogue*}. 3. Rennet coagulates soymilk, but the optimum temperature is a little higher than for cow's milk. 4. The ferments that we have extracted from shoyu [Japanese soy sauce] coagulate animal milks in the same way as vegetable milk).

Uses of soymilk (p. 30): They are the same as those of the animal milks. We will note, mostly, its use in China as a substitute for mother's milk. (Footnote 1. One of our parents was nourished, from the first phase of life, with soymilk. He/she is now 37 years old and has always been in excellent health).

Residues of the [soy] dairy (*residus de laiterie;* okara).

Condensed soymilk (*lait de soja concentré*). Powdered soymilk (*lait de soja en poudre*). Fermented soymilk (Kefir, yogurt, etc. are increasingly used therapeutically. One can compensate for the lack of carbohydrates in vegetable milk by the addition of lactose {or levulose for diabetics}). Tofu–which Li calls *Caséo-Sojaïne* (*fromage de soja*)–meaning "tofu or soy cheese": Method of production, coagulants used, perfected modern production methods at Li's factory (In this factory, tofu can be made into either non-fermented or fermented cheeses. The non-fermented cheeses {*Fromages non fermentés*} are of two types: Fresh and hard/firm. The

fresh are white in color and the consistency of hard-boiled eggs. The hard/firm are of two types: In diced sheets {salted or unsalted}, and in salted, semi-dry pieces/morsels. The fermented cheeses {*Fromages fermentés*} may be of the Gruyere, Roquefort, or Camembert types), tofu yields, preservation and storage, composition of tofu (compared with 4 meats on a moisture-free basic, in bar chart form showing protein, lipids, carbohydrates, and ash), digestibility of tofu, culinary preparations based on tofu (tofu omelette with egg, smoked tofu with shoyu, tofu pâté, soy sausage–made like regular sausage except that meat and fat are replaced by fresh, hard tofu plus butter or cocoa butter). Soy casein (*Caséine de soja;* for food or industrial uses). Contains various tables and charts from other sources.

Residues of the [soy] dairy (*residus de laiterie;* okara, p. 30-31): After filtering the [soy] milk, a slightly firm, aqueous oilcake remains in the filter cloth that is still very rich in nutrients (*substances alimentaires*). According to Dr. Bloch, it does not contain any trace of starch (our tests agree with this conclusion). Consisting of torn cells emptied of the largest part of their content, it would have the following percentage composition (see Bloch 1907):

Protein 0.248, water 88.75, ash 0.36, fat .04, other 10.85.

"The oilcake (*torteau*) obtained at the factory of 'Soy-Casein' (*Caséo-Sojaine*) and analyzed at the municipal laboratory of Paris yielded:

Water 80.04, protein 33, fat 8.44, carbohydrates 22.63, mineral salts 4.24.

"This oilcake was very easily dried to 10% water. The milk can only be filtered after boiling, thus according to Prinsen [Geerligs]:

Proteins 29.38, oil 12.81, ash 4.66, carbohydrates that are convertible to sugar 26.80, fiber 11.10, cellulose 10.2.

"The oilcake can be diluted in water. The liquid thus obtained is used in grinding to make the second extraction of [soy] milk."

Soy casein (p. 38): The casein or legumine of soymilk can be prepared by precipitation, purifying it by several dissolutions and precipitations, and finally drying it. One obtains a yellowish powder resembling animal casein obtained by the same processes.

It is generally admitted that vegetable albumins have a coefficient of assimilation greatly inferior to those of animal albumins. But confirmation of this is far from being definitive. The experiments of Messrs. H. [Henri] Labbé and Marchoisne have showed, in effect, that vegetable albumin is as well assimilated as animal albumin.

Legumine is different from animal casein, but the differences are of the same order as those which exist between the various animal caseins. The differences existing between the caseins of the various animal milks have been noted by many chemists.

The casein extracted from soymilk can be used in the same applications as casein from cow's milk. These are of two types: food and industrial. For food uses, one can point out the manufacture of powders, of lacteal flours (*farines lactées,* perhaps wheat flour enriched with soy casein), of whole-grain bread, etc.

Note 1. This is the earliest document seen (April 2001), worldwide, that mentions a Western-style soy cheese (Gruyere, Roquefort, or Camembert types), or a tofu sausage. This is also the earliest French-language document seen that mentions soy cheese, which it calls *fromage de soja.*

Note 2.

Note: This is the earliest document seen (April 2013) concerning the use of tofu in a second generation product.

Note 3. This is the earliest document seen, worldwide, that mentions powdered soymilk or dried soymilk.

Note 4. This is the earliest document seen, worldwide, that mentions soy kefir. Address: 1. Counseiller de 1ere classe au Ministère de l'Agriculture de la Chine; 2. Ingénieur agricole (G.).

232. *A Travers le Monde.* 1912. Le lait de soja, sa fabrication et ses propriétés: Cultures exotiques [Soymilk, its production and its properties: Exotic crops]. 18(10):80. March 9. Bound in the back of *Le Tour du Monde.* [Fre]

• ***Summary:*** The periodical *Bulletin de l'Agriculture Pratique des Pays Chauds* contains interesting information about the milk of this vegetable. The process for making soymilk (*lait de soja* or *lait végétale de soja*) is described briefly, both the "very rudimentary" process used in China and the modern process [resembling that used by Li Yu-ying at his factory outside Paris–See the 9 Sept. 1911 issue of this periodical].

"Soymilk has properties resembling those of animal milk. It rises upon boiling... The boiling does not become regular until after the milk has been withdrawn from the first several times; it forms a solid film on the surface. The milk has an odor of malt." Address: Paris.

233. Li, Yu-ying; Grandvoinnet, L. 1912. Le soja [The soybean]. *Agriculture Pratique des Pays Chauds* (*Bulletin du Jardin Colonial*) 12(108):213-23. March. [7 ref. Fre]

• ***Summary:*** Contents (continued): Products and condiments based on fermented soybeans. 5. Condiments in paste form (*Condiments pâteux*)*:* Miso (preparation, different varieties including white miso, Yeddo miso, Sandai [Sendai] miso or red miso, composition of miso {a table based on studies by Kellner and König}), Tao-Tjiung (Tou-chiang, doujiang) or Chinese-style miso (preparation, properties, composition {a table based on analyses by Prinsen-Geerligs}). Sauces: Shoyu (Schoyou, soyou, schoyu, or Phek-sze-You in Chinese; preparation, raw materials used and their proportions, formation of molds and koji, fermentation, perfection of the fermentation process in an aseptic environment using soymilk or soy bouillon inoculated with pure cultures), properties of shoyu, chemical composition

of shoyu (tables show: (1) Composition based on analyses by Kellner, Stift, Belohoubeck, Tahara & Kitao. (2) Composition and forms of nitrogen according to Suzuki, Azo [sic, Aso], and Mitarai (3 tables)), aroma of shoyu (2 tables based on analyses by Tahara and Kitao; Belohoubeck found two types of microbes in shoyu; the Saccharomyces and the bacteria). *Chiang-yu* (*Tsiang-yeou;* Chinese soy sauce), Ketjap (soy sauce from Java).

Note: This is the earliest French-language document seen (April 2012) that uses the word *Schoyou* or the term *Phek-sze-You* to refer to soy sauce. Address: 1. Counseiller de 1ere classe au Ministère de l'Agriculture de la Chine; 2. Ingénieur agricole (G.).

234. *Pure Products* (*New York*). 1912. Products of the soy bean. 8(3):157-60. March.
• ***Summary:*** "Three very interesting food products are manufactured from the soy bean, one known as vegetable milk, another known as vegetable cheese or vegetable casein, and soy sauce." "Vegetable milk, like animal milk, may be may be homogenized; that is to say, it may be passed through an apparatus known as a 'homogenizer'..." Concentrated or "condensed vegetable milk has a characteristic odor, but this can be improved by adding a little coumarin or vanillin, which corrects the taste so as to make it more nearly resemble that of cow's milk."

Vegetable cheese is coagulated "by the addition of a white mineral powder known as tchach-kao, which consists largely of plaster of paris."

"Soy sauce, or fermented soy,... may well serve as the basis of sauces of the Worcestershire type." Address: USA.

235. *Chicago Defender* (*Big weekend ed.*). 1912. Milk mills. May 11. p. 5.
• ***Summary:*** From the London Globe: According to *L'Opinion,* an "artificial milk" is "already consumed extensively in China, and a mill is to be set up in France. The Chinese drop a few grains of powder [sic] into water, stir it, and it becomes milk. The powder is the soja bean crushed, and the French mill is to treat the bean so as to enable the milk powder to be sold in packets. It is said that an excellent cheese [tofu?] is obtained by the same process."

236. *Washington Post.* 1912. A new kind of cow. June 30. p. M1.
• ***Summary:*** From The Vegetarian: "Notwithstanding vegetarians are being scoffed at and dubbed 'cranks,' more and more are coming into the field, and the cause is advancing at a rapid rate.

"This is not so much due to the effort of vegetarians as it is the result of sociological conditions." The human population is increasing so "that the raising of cattle for culinary purposes [meat or dairy products] is each year becoming more of a problem. Each year science gives us some new food element to replace the barbarian piece of roast flesh.

"The latest announcement reveals that milk, butter and cheese can be made out of beans. This milk-producing bean is a special variety, however–the Soja bean, a native of China. A Chinese chemist [Li Yu-ying] has a factory in France working out the problem of milk from beans. He has succeeded in making from this Soja bean milk, a fine quality of butter [made of whole soybeans that have been cooked, pureed, and seasoned], and a highly delectable cheese [tofu]."

237. *Christian Science Monitor.* 1912. Famous soya bean of China. July 31. p. 19.
• ***Summary:*** "It is interesting to note in conjunction with the awakening of China that a Chinese article of food, or at any rate a vegetable product which grows most profusely in Manchuria, is attracting the serious attention of Europe and America. Authorities say that the soya bean contains more of the ingredients of a perfect food than any other one known product, and an important experiment is being tried in France, where a wide assortment of foods is being made from soya beans [by Li Yuying, near Paris]. They include milk, cheese [tofu], casein, oil, jellies, flour, bread, biscuits, cakes and sauces.

"Now an article in the *Journal of Chemical Industry* [29 June 1912, p. 572-74] shows that the use of soya bean oil for paint purposes is established as a practical fact. While it is said that soya oil is not yet proved a perfect substitute for linseed oil in exterior painting, in interior painting it is entirely satisfactory and for some sorts of finishings, like 'baking japans,' it is even better than linseed oil.

"Soya beans to the number of 280 varieties are listed already by the United States governmental investigators. The orientals have made a close study of the product, and apparently know beans. Soya beans have been grown in Virginia and used as a substitute for corn to feed stock, Planted with the corn they act as a fertilizer, and the animals that can get soya beans let the corn alone.

"In China and Japan there is hardly a meal in which some preparation of the soya bean is not used. There would seem to be, after all, some subtle affiliation between bean-fed New England culture and the wisdom of the Orient.

"A Georgia man who tried the soya bean declares that he planted in rich soil and got stalks 20 feet high which he could harvest. It is plain that Jack's, then, was a soya beanstalk." Note: Soybean plants typically grow to height of 2-3 feet, never 20 feet.

238. *Medical Review of Reviews.* 1912. Soy bean and condensed milk. 18(8):513. Aug.
• ***Summary:*** In this review of the literature, a combination of the soy bean or its flour with sweetened condensed milk is recommended as an infant food as a substitute for fresh milk

when the latter is not safe. The soy bean is also a valuable food for diabetics because it contains no starch. "Soy bean flour" contains 44.6% protein, 19.4% fat, and 9.3% sucrose.

"For many years condensed milk has been regarded as unsafe owing to its low proportion of fat and proteids. To offset this shortcoming in condensed milk, soy bean deserves the attention of the profession.

"Soy beans really are the seeds of Dolichos soja Linn."

239. Li, Yu-ying; Grandvoinnet, L. 1912. Le soja: Sa culture. Ses usages alimentaires, thérapeutiques, agricoles et industriels [The soybean: Its culture. Its food, therapeutic, agricultural, and industrial uses]. Paris: Augustin Challamel (Rue Jacob 17). 150 p. Illust. Index. 25 cm. Translated into French and expanded from the Chinese edition, published by la Societé Biologique d'Extréme-Orient (1910). [151 ref. Fre]

• ***Summary:*** One of the earliest, most important, influential, creative, interesting, and carefully researched books ever written about soybeans and soyfoods. Its bibliography on soy is larger than any published prior to that time. It was first published as a series of eight articles in *Agriculture Pratique des Pays Chauds* (*Bulletin du Jardin Colonial*) from September 1911 to April 1912. Before being published as a book, it was revised slightly by adding a table of contents at the back, dividing the material into 5 parts with 19 chapters, and adding several photos (p. 16-17), a world map showing the distribution of soybean cultivation (p. 21), and an interesting 2-page table (p. 66-67).

Contents: The soybean: Origin and history. Part I: Soybean culture. 1. Species and varieties of soybeans: Botanical characteristics, species, varieties (Chinese, Japanese, Indian, Indochinese, Hawaiian, USA, European). 2. Needs of the soybean: Climatic, geographical area of the soybean by region worldwide, agrological/soil needs, fertilizers, soil preparation, the place of the soybean in crop rotations. 3. Soybean seeds: Study of seeds (by weight, by germination rate, selection of seeds), time of planting, plant spacing, depth of seeding, rate of seeding per hectare, method of seeding (broadcasting, in rows, in mounds). 4. The soybean during its vegetative stage: Germination, transplanting, types of care (e.g., second dressings), irrigation, flowering and fruiting, enemies of the soybean (e.g., insects). 5. Harvest of soybeans: Time for harvest (forage or grain), methods of harvesting (forage or grain; mechanical mower), threshing (use of machine), yields of soybeans (forage and grain in various countries, ratio of seeds harvested to straw is about 1 to 2, yield of nutrients). 6. Fixation of atmospheric nitrogen by soybeans, and improvement of the soil. 7. The soybean in mixed cultures and alternate rows: With corn, cowpeas, rice, sweet sorghum, or millet.

Part II: Chemical composition of the soybean. 1. Composition of the plant: Minerals in the leaves and total plant. 2. Study of the seed: Composition, chemical composition, microscopic comparisons, table of analyses by 28 previous researchers, albumins, sugars, starch, dextrin or dextrine, diastase, lipids, ash/minerals.

Part III: The soybean as human food and animal feed. 1. The soybean as feed for animals: Green forage and hay. 2. The soybean in human feeding: From the viewpoints of physiology, economy, and gastronomy. The role of soya in special diets: Vegetarianism, remineralization, diabetic, and lactose intolerant.

Part IV: Food products based on soya. 1. Soymilk and its derivatives: Soymilk (Methods of manufacture, Chinese and modern at l'Usine de la Caséo-Sojaïne, nature and properties [physical and chemical] and composition of the milk, action of ferments and diastases (enzymes) on the milk, uses of the milk, the residue from the soy dairy [okara], condensed soymilk, powdered soymilk, fermented soymilk (kefir, yogurt, etc.)), tofu (called Caséo-Sojaïne, or fromage de soya; methods of production, coagulants, yield of tofu, storing tofu, composition and comparison with various meats, digestibility, culinary preparations made from tofu (smoked tofu, tofu pâté, tofu sausages)), Soy casein (food and industrial uses). 2. Soy flour and its derivatives: Soy flour, soy bread, wholemeal bread, other products based on soy flour (as biscuits and cakes for diabetic diets). 3. Soy oil and its by-products: Soy oil, physical and chemical properties, usage, residue of the oil mill: the cake, price, uses. 4. Use of the soybean as a legume: Whole soybeans (composition and digestibility), soy sprouts (*germes de soja*), green vegetable soybeans (*le soja frais*). 5. Fermented soy condiments: Solid condiments from Japan: Tokyo natto (*Le Tokio-Natto*) and Ping-Ming natto or tao-tche (*Le Ping-ming-Natto;* fermented black soybeans with salt, ginger, orange rind, etc. A similar product is made in China and called tao-tche). Paste condiments: Miso (four types and composition), tao-tjung (Chinese miso). Sauces: Shoyu (its production, varieties, properties, composition), chiang-yu (*tsiang-yeou*), ketjap [kechap, from Java], tuong (from Annam, with rice or corn), tao-yu (widely used in China and Japan, described by Prinsen Geerligs). 6. Confectionery products: Comparison with chestnuts, roasted soy flour to replace chocolate. 7. Soy coffee (with analysis by Kornauth). 8. Special fermented products: Kiu-tsee (a special commercial ferment from Canton described by Thiersant), fermented soymilks.

Part V: Industrial uses of soybeans. Oil based: soap, wax candles (*bougie*), and paint oils. Protein based: sojalithe or soy stone which corresponds to lactite, insulators for electrical apparatus, glue, etc. Conclusion. Addendum (*Complément*) to Part III, Chapter 1: Soybean straw and stems. Composition of various seeds, including soybeans. Soy flour. The cakes from oil mills. Soymilk and the cake from soy dairies (*tourteau de laiterie*, okara).

A very interesting table (p. 66-67, which does not appear in the original 8 articles) shows earlier nutritional analyses

of the composition of soybeans by Steuf (from Hungary, Mongolia and China), Schroeder, Caplan, Pellet (from China, Hungary, Etampes), Muntz, Nikitin (black soybeans from Russia, 2 samples), Lipski [Lipskii] (yellow, from Russia), Giljaranski (yellow from Russia, China and Japan; black from China and Japan; green), König (*Hispida platycarpa* black, Tumida yellow, brown and black), Prinsen (white from Java and China), Goessmann, Kellner, USDA, Chemiker Zeitung (white from Java and China, 29 Jan. 1896), Scuff (misomame; miso soybeans), Zulkovski (yellow from China, reddish brown from Mongolia), Institut Agr. de Vienne (Austria; yellow from Vienna, reddish brown from Tirol), Ecole Imp. et Roy d'Ag. Hong (yellow from Mongolia and China, reddish brown from China), Chez M. Olivier Lecq (from Moravia), Lechartier (Etampes and black), Joulie (yellow), Stingl and Morawski, Bloch (yellow, green, and black), Balland, Cavendish Evelyn Liardet (yellow, brown, green, black, and white), Jardin Colonial (Laos, Tonkin, China), Aufray (Tonkin, Yun-nan), Homes Laboratory (black from China, or white). Photos and illustrations are the same as those referenced in individual sections of the book, except for the following: A field of soybeans (p. 16). A soybean plant growing in Europe (p. 17). Color illustrations appear facing pages 12, 22, and 64. Address: Li is from Societe Biologique d'Extreme-Orient (Chine). Grandvoinnet is from Ingenieur Agricole (G.).

240. *Lancet.* 1912. Synthetic milk [Solac]. ii(4651):1905. Oct. 19.
• ***Summary:*** This is an editorial on Solac, England's first commercial soymilk. "Last week the papers announced the production of 'synthetic milk,' and in response to an invitation from the company connected with the exploitation of this new food product, our consulting chemist was able to inspect and taste a sample of the first consignment sent to this country... The substance looks very like milk and has a round sweet fatty flavor not unlike that of rich milk. It appears to be an ingeniously made uniform emulsion, and is said to contain a rather larger proportion of the nutritive constituents of ordinary milk, derived from the soya bean amongst other vegetable sources... It is stated that the product can be retailed at 3d. a quart. Soya milk is referred to in certain text books on foods, and is said to be made by boiling the beans until they are soft and then beaten to a pulp. The theory of an ingenious preparation is that a vegetable casein then passes into solution and forms an opalescent fluid which resembles milk by the fact of a skin forming on its surface when boiled, just as in the case of cow's milk, and the casein further can be precipitated from solution, it is stated, by rennet or acids. But, of course, casein is only one of the constituents of cow's milk, and 'synthetic milk' is said to contain them all."

Note: This is the earliest English-language document seen (Aug. 2013) that uses the term "synthetic milk" to refer to soymilk.

241. **Product Name:** Solac (Soymilk).
Manufacturer's Name: Solac Company (Synthetic Milk Syndicate).
Manufacturer's Address: 221, Tottenham Court-road, London W., England. Also: Liverpool, England.
Date of Introduction: 1912. October.
Ingredients: Water, soybeans, lactose, sesame oil, sodium carbonate, salt, sodium phosphate.
New Product–Documentation: Lancet. 1912. Oct. 19. p. 1095. "Last week the papers announced the production of 'synthetic milk,' and in response to an invitation from the company connected with the exploitation of this new food product, our consulting chemist was able to inspect and taste a sample of the first consignment sent to this country... The substance looks very like milk and has a round sweet fatty flavor not unlike that of rich milk."

Note: Solac was England's first commercial soymilk.

Lancet. 1915. Dec. 4. p. 1263-64. "A milk similar." Made by Goessel's patented method. "By introducing a lactic culture of a selective strain at a certain stage of its production, the necessary biological activity is given to this artificial milk... A residue of bean cake [okara] is left which possesses high nutritive properties, and this has already been used for making a bread... Such a milk at once disarms all suspicion as to contamination with dirt and disease organisms... It has already been used with success by the bakery and confectionery trades."

242. Kuijper, J. 1912. Soja [Soya]. *Departement van den Landbouw, Suriname, Bulletin* No. 29. p. 24-29. Nov. [Dut]
• ***Summary:*** In recent years, since 1908, soya has become a product of great importance on the world market. There are few products whose exports have risen so dramatically in just a few years. The reason for the great expansion of trade in soya can be found in the great demand by industry for oilseeds. For more than 30 years, experiments have been conducted on growing soybeans in Europe, but the results have not been very promising. Some people have suggested that soya might be able to be grown in Suriname. It is grown in many tropical countries, including Siam, British India, and Java. Requirements for cultivation and yields are discussed. Japan reports the highest yields, 2,500 kg/ha, compared with 1,000 to 1,400 kg/ha from the USA. Soybeans produce more protein and oil per unit area of land than any other farm crop. The seed is used mainly for human consumption but the plant also yields, fresh or dried, an excellent livestock feed, which is why so much research on it is now being conducted in Australia and America. It is important for Suriname that soya can be used as a green fodder, for example interplanted and fed with corn.

From soya one can make numerous products such as soymilk (*soyamelk*), soy cheese [tofu] (*soyakaas*, whose

food value is higher than that of meat), soy flour, soy bread (*soyabrood*), oil (*olie*), various sauces (soya sauce, Worcester sauce, etc.), and various substitutes for coffee and chocolate, etc. (*surrogaten voor koffie en chocolade enz.*).

In Suriname soya is cultivated on a small scale by the Javanese, for example in Lelydorp and in the settlements of Johan and Margaretha. Many experiments with Soya have already been conducted in the experimental garden (*Cultuurtuin*). Seeds imported from America did not give good results; the plants remained small, yielded few fruits, and died quickly thereafter. It is a common occurrence that plants from temperate or subtropical regions do not grow well in the warm tropics in the rainy season. Of the seeds cultivated in Suriname, two varieties give good results. Those cultivated by the Javanese give hardy plants and a lot of seed though exact yield figures are not available; the planted area is still quite small. But the yield is about 1,000 kg/ha. Apparently the necessary bacteria are present in the soil, for the roots show nodulation.

In the experimental garden two beds of soya were planted on May 24. The first seeds ripened after 3 months and within 4 months all was harvested. Thus the plants developed during the rainy season, and they probably got too much water. The results would probably be better if this season could be avoided. Soya is sold in Suriname for hfl 30 per bag, a considerably higher price than that paid in Europe. On the plantations Peperpot and Jaglust experiments with soya have also been conducted. The European seed that was used gave very limited results. The experiments will be conducted again using Suriname seeds.

With the market price at hfl 10 per bag, it seems very unlikely that the cultivation of soya in Suriname will ever be profitable, unless high yields can be obtained. As mentioned above, this seems unlikely. Small scale cultivation for sale in Suriname, however, seems advantageous at present, while in areas where cattle are raised the use of soya as a green feed to replace more expensive secondary feeds will likely give good results.

Note 1 This is the earliest document seen (May 2009) concerning soybeans in Suriname, or the cultivation of soybeans in Suriname.

Note 2. This is the earliest Dutch-language document seen (Nov. 2012) that uses the term *surrogaten voor koffie* to refer to soy coffee.

Note 3. This is the earliest Dutch-language document seen (Aug. 2013) that uses the term *soyamelk* to refer to soymilk.

Note 4. This is the earliest Dutch-language document seen (April 2013) that uses the term *soyakaas* to refer to tofu. Address: Surinam.

243. Tonnelier, Adolfo C. 1912. Soja hispida, Moench: Metodos industriales de elaboracion de sus diversos derivados [The soybean: Industrial methods of manufacturing its various derivatives]. *Revista Industrial y Agricola de Tucuman* (*Argentina*) 3(6):236-39. Nov. See also p. 396. With 5 photos of soybean plants and soybeans. [Spa]
• ***Summary:*** Contents: Introduction. Vegetable milk (*leche vegetal*, soymilk). Vegetable cheese (*queso vegetal*) [tofu]. Oil and casein (*aceite y caseina*, including preliminary operations of washing the seeds, extraction of the oil (*El aceite de Soja*), extraction of the vegetable casein {*caseina vegetal*} which has numerous industrial applications, as in the preparation of water-resistant paints, in the textile, paper, silk, and artificial textile industries, rubber, leather, plastic materials, films, photographic emulsions, etc.). Soy flour. Artificial rubber (*caucho artificial*). Shoyu or soy sauce (*choyou ó salsa de soja*).

"In the vicinity of Paris a factory for the production of soy-based food products has been founded. In England important manufacturers of soy flour, soybean cakes, and the extraction of the oil are in operation. Mr. Karajama [sic, Katayama (1906)], a Japanese chemist, uses soybean seeds to prepare a concentrated milk, a flour of the type that Nestlé makes, and biscuits (*biscochos;* not cookies), obtaining in this way a maximum of food and nutrition at very reduced volume.

"The experiments carried out since one year ago at this part of the Experiment Station, attached to the National School of Agriculture at Córdoba, have verified the easy acclimatization of this plant, the abundance and goodness of its products.

"It is to be hoped that its cultivation with be extensively propagated in the zones that are favorable for it. This leguminous oilseed is not only of interest to the farmer, agriculturist, and landowner, but also to the industrialist, and on no smaller scale.

"It is a new fountain / source of riches for the nation, that we must not neglect."

Note 1. This is the earliest Spanish-language document seen (Aug. 2003) that uses the term *caseina vegetal* to refer to isolated soy protein.

Note 2. This is the earliest Spanish-language document seen (Sept. 2006) that uses the term *El aceite de Soja* to refer to soy oil.

Note 3. This is the earliest Spanish-language document seen (April 2012) that uses the word *choyou* or the term *salsa de soja* to refer to soy sauce.

Note 4. This is the earliest Spanish-language document seen (April 2013) that uses the term *queso vegetal* to refer to tofu. Address: Chief of the Experiment Station, attached to the School of Agriculture, Argentina.

244. *Poverty Bay Herald* (*Gisborne, New Zealand*). 1912. "Cowless" milk: Made in Germany. Dec. 7. p. 5 (Supplement).
• ***Summary:*** "London. October 18. Synthetic milk–cowless milk–has arrived. The first consignment has reached London.

It looked like milk, it smelt like milk, and it tasted like milk–some milk. At the best things look black for the cow. The machine-made milk was bottled in Germany, in Frankfort–patriotic cows will doubtless regard this as adding insult to injury–and opened in an office in the Strand.

"Half a dozen eminent analysts and some Government officials were there ready to taste, in the performance of their duty, and a good many other people who were also ready, even willing, to taste out of mere curiosity."

"To all questions as to the ingredients of cowless milk the same surprising and guarded answer was returned:–Soya beans–and other things."

245. *Grey River Argus* (*West Coast, New Zealand*). 1912. Milk made by machinery: Dairies turned into factories. Germ free and cheaper than cow's milk. Dec. 9. p. 1.
• ***Summary:*** "The familiar sign 'Milk from our own dairies' may soon be supplanted in London by the announcement 'Milk from our own factories.'

"This startling development of man's struggle to improve on nature is the result of the discoveries of Dr. Saner and Dr. Gooseell [sic, Gössel; Goessel], two German scientists, who claim to be able to make by machinery milk that is superior to that supplied by the cow.

"A demonstration of this synthetic milk was given at Dane's Inn House, London, in October, in the presence of medical men and Press representatives. Apart from a sort of clinging taste after drinking it, the synthetic draught passed the palate test. It went a little better with coffee.

"The inventors of synthetic milk have been experimenting in Germany for three years, and they claim they have now produced a perfect substitute for the natural article. Analysts in Germany have reported favourably on the new product.

It is claimed that the new milk is:–Free from bacilli; More wholesome than natural milk; Made in various grades to suit, the infant or the adult; Easily standardised; And that it is much, cheaper than the natural article.

"The raw material is said to be purely vegetable, one of the main ingredients being the Soya bean, which is grown in Japan and Corea [Korea], and much used in those countries. As to the process of manufacture. Mr. Faulding stated that various vegetables were put into a machine and subjected to great heat. In plain English the machine does the work of the cow, the raw material, in the scientific sense, being exactly the same as that which supplies the natural article. It takes about seven hours to turn out the finished milk, and it is proposed to 'brew' twice a day.

"The plant is not costly, and taking an average of the various grades of strength the inventors intend to make, the price to the public will be 3*d* per quart. Cheese [tofu] can also be made from synthetic milk, which would be sold for about 3*d* a pound.

"The substitute will not make butter, but it is possible that it may be used in the manufacture of margarine.

"Synthetic milk also gives cream, but it takes longer to make it, as the fat is more evenly distributed than in the case of natural milk.

"Other claims made for synthetic milk are that it is not touched by hand throughout the process of manufacture and that it is not exposed to the atmosphere while being made, except for the brief period required for bottling.

"This, the inventors claim, makes it absolutely free from bacilli [bacteria], and thus, it is claimed, the substitute will greatly diminish consumption [tuberculosis] and other illnesses which are due to or aggravated by, tuberculosis milk.

"It is said that the new milk will keep good twice as long as cow's milk, but as it will be offered for sale in bottles of all sizes, this is not very material.

"If the invention is favourably received it is intended to build a factory in London."

246. *Poverty Bay Herald* (*Gisborne, New Zealand*). 1912. An artificial milk,... Dec. 13. p. 2, col. 2.
• ***Summary:*** "... manufactured from vegetables, which is said to contain all the elements of the best cow's milk, and can be used for the same purpose, was shown to a gathering of scientists in London. Mr. A.J. Faulding, who will be responsible for the introduction of artificial (or synthetic) milk to this country, told a press representative that it was more digestible than ordinary milk, and its cream was for more nourishing. The milk could be used for all cooking purposes, and a very good cheese [tofu] could be made from it, but it would not produce butter. As the milk was germ-free, it would keep longer than cow's milk. The discovery was the work of three Germans, who spent three years in perfecting it. The soya bean in the principal source of the ingredients." Address: Prof.

247. Beltzer, Francis J.-G. 1912. Industries du lactose et de la caséine végétale du soja [Industries producing lactose and soy vegetable casein]. Paris: Librairie Bernard Tignol. 144 p. Undated. (Bibliotheque des Actualites Industrielles, No. 144). [17 ref. Fre]
• ***Summary:*** Contents: Preface. Part 1: The lactose industry (p. 9-95; 4 chapters). Part II: Vegetable milk, vegetable casein, and products from soybean seeds. Introduction. 1. Vegetable milk (*Le lait végétal;* soymilk), microscopic examination of vegetable milk. 2. Vegetable cheese (*Le fromage végétal;* tofu). 3. Industrial uses of vegetable casein, proximate analysis of soybean seeds, quantity and dosage determination, the price of soybeans, price of recovery of vegetable casein, industrial production of vegetable casein, cleaning the soybeans, extraction of soy oil, extraction of soy casein. 4. Plan and installation of a factory for processing (10 tons/day of) whole soybeans [to make industrial vegetable casein], estimate and specifications for special

materials, general materials, the buildings, price of recovery of vegetable casein, industrial uses of vegetable casein. Illustrations (line drawings) show: (1) Microscopic view of soymilk globules. (2) Microscopic view of soya bean tegument (exterior). (3) Schematic drawings (cross section and overview) of a factory for making vegetable casein.

Matagrin (1939, p. v) states that with this book, Francis G. Beltzer, a practical chemist, became a major force in visualizing new industrial uses for the soybean in the West.

The Preface notes that in Indochina, vegetable milk and vegetable cheese made from the soybean form the base of the people's nutrition. Cow's milk is largely unknown, and the people raise and nourish their children largely with soymilk. Tofu serves equally for the current nourishment of the poor (p. 6).

The Introduction (p. 101-07) notes that soy protein is a globulin, called glycinin or vegetable casein (*caséine végétale*). Osborne & Clapp submitted this substance to acid hydrolysis and found its composition, which is very rich in glutamic acid (p. 102). Soy flour (*farine de Soja*) contains little starch but a large amount of nitrogenous materials, similar to gluten; it is widely used in making bread for diabetics. It can also be used as the basis of foods that are rich in protein and very nutritious, as for colonial or European troops (p. 103).

Soy sauce (*Soja fermenté*) is made in Japan from a mixture of soy and wheat (*koji*). The number of brewers (*brasseurs*) of soy sauce exceeds 12,000 in the entire Japanese Empire, furnishing more than 2,500,000 hectoliters of this condiment (p. 103).

A Chinese factory has been founded on the outskirts of Paris (at Vallées, near Colombes) for the production soy-based food products (*produits alimentaires à base de soja*). This factory currently makes *Caséo-sojaïne* [tofu] and the following food products: Soy flour (*Farine de soja*), soy bread (*Pain de soja*), soy sauce (*Sauce de soja*), soymilk (*Lait de soja*), fermented soymilk (*Lait de soja fermenté*), soy cheese [tofu] (*Fromage de soja*), soy confections (*Confitures de soja*), etc. The Journal, in its issue of 9 Jan. 1911, under the title *"Une usine chinoise fonctionee dans la banlieue parisienne* [A Chinese factory is operating on the outskirts of Paris]" gives some details (p. 106).

In our colonies in Indo-China, the indigenous people have long prepared soymilk, tofu, and several other foods. Soymilk is used like regular milk for feeding babies. Soy cheese, when cooked, is analogous to gruyere cheese; fresh soy cheese resembles our goat cheese. Many Europeans are now preoccupied with making the best of the abundant nutritive principles found in the soybean. One can eat green vegetable soybeans (*Les fruits verts*) like green peas (*pois verts*). In Annam and Japan a sauce is also made from soybeans; its use has spread from East Asia just like that of tofu (*fromage végétal*) (p. 107).

The introduction into Europe and France of soyfoods (*aliments retirés du Soja*), especially soymilk and tofu, will enable us to combat periods of scarcity of animal milk and periods when the prices of certain foods are high. Will the substitution of vegetable casein for milk casein enable us to likewise conserve milk for food use instead of delivering it to industry? (p. 107).

Chapter one, "Soymilk" (p. 108-13), discusses the work of the Japanese chemist T. Katayama (1906) with soymilk and notes that it can be homogenized and condensed. Illustrations show a microscopic view of the globules of soymilk and of okara. The absence of starch in soybeans is a very positive characteristic.

Chapter two, "Tofu" (p. 114-18), notes that in Cochin-China, calcium sulfate is called *Tchack-kao*, and there are three main varieties of tofu: (1) The fermented variety, which is gray or yellow in color, has a piquant taste and resembles Roquefort cheese. (2) The white salted variety resembles goat's cheese. (3) The baked (*cuite*) or smoked variety resembles gruyere cheese and keeps as well as the salted variety.

Chapter three, "Industrial uses of vegetable casein" (p. 119-32), observes that the oil in soybeans must first be removed by pressing or extraction. A table (p. 120) gives the chemical composition of soybeans from Laos and Cochin China, Tonkin, and China and Manchuria. They contain 17.64 to 18.28% oil. In Indochina a food which Beltzer calls *La caséine végétale en lames* ("vegetable casein in sheets" = yuba) has a rather high oil content–about 25-28%. There follows a section (p. 126-32) which contains details on industrial production of soy casein. Chapter four, "Design and installation of a factory for processing soybeans into industrial vegetable casein," describes each piece of equipment and its cost, itemizes the costs of general and special materials plus, buildings and working capital. Also includes a detailed schematic diagram (p. 136-37) with three production lines, and both top and side views. Finally, it lists expenses, income, and profit (p. 139). The last section, applications of industrial vegetable casein, includes paints, paper coatings, silk and artificial textiles, Galalith, and waterproofing of textiles and straw hats. The book contains no bibliography, few footnotes, and no mention of the work of Li Yu-ying–from whom the author appears to have borrowed much.

Note: Although this book is undated, all major sources (except a Seattle Public Library bibliography) give its date as 1912. Address: Ingenieur-Chemiste-Expert, Professeur de Chimie Industrielle.

248. Hashimoto, Yojizaemon. 1912. The dairy industry in Japan. MSc thesis, University of Wisconsin. [2] + 67 p. See p. 41-42 [3 ref. Eng]

• ***Summary:*** Chapter X, "The manufacture of tofu," states: "Three gallons of Soya beans soaked in pure, cold water about 10 hours so that the beans absorb water until [they]

become of soft texture. Then grind the beans with a stone mortar, adding water little by little until you have 10 gallons of water. Then boil with water from about 20 to 30 minutes. If it boils over, add a little rape oil in order to prevent foam. After 20 or 30 minutes, pour into a hemp cloth bag and press with the hydraulic press so that a milky substance [soymilk] is squeezed out of the bag which is collected. The deposit remaining in the bag is cooled and is known as Kirazu [okara]. This is very palatable and is eaten by the people and domestic animals.

Note 1. This is the earliest English-language document seen (Aug. 2013) that uses the term "milky substance" to refer to soymilk.

"To this boiling, milky substance is added, little by little, saturated magnesium sulphate (obtained from sea salt) until about 1/20 of a gallon is added. Then cover about ten minutes without disturbing. This curd is poured into a wooden mold, which has a hoop of cheese cloth, and pressed about 30 minutes with light weights.

"The Tofu is a little firmer in texture than junket, which can be handled easily without breaking. Tofu has a mild, pleasant flavor and smooth texture. It is prepared economically and conveniently throughout the Japanese empire and is a most digestible food. It is cut into blocks about four or five inches square, weighing about one pound, which are sold for about one half cent each to consumers. It is eaten fresh or may be frozen and kept for a year or more."

\ Two tables (p. 42) give the "Chemical composition of tofu" and "Digestibility" [of tofu]. Digestibility: Crude protein: 2.7. Carbohydrates: 7.1? Fat 1.2.

\ Chapter XII (p. 63), "Future development of dairying in Japan" begins: "Some of the reasons why dairying has developed slowly in Japan are as follows:

"1. After introduction of Buddhism the slaughter of animals was forbidden under a severe penalty.

"2. Comparatively, our country is more thickly populated than any other civilized country, so that the entire area of fertile soil is cultivated and there are few pastures and meadows.

"3. Because our country is surrounded by oceans, fish are an abundant source of protein supplies.

"4. Tofu made out of soy beans is an economical, digestible food high in protein and is widely made by farmers and tofu makers throughout Japan.

"5. The native cattle are poor milk producers.

"In studying the future growth of the dairy industry in Japan, we have to consider, from an economical standpoint, (1) Whether there is room enough for the further development of the dairy industry in the island empire? (2) What quantities of dairy products will be consumed by the whole nation? (3) To what countries we might export dairy products? (4) What influence the dairy Industry would have on general agriculture?"

Note 2. This thesis was submitted for the Degree of Master of Science in Agriculture.

Note 3. At this time, the word "kirazu" appears to have been more popular than "okara" or "unohana."

249. Ruhräh, John. 1912. Weitere Beobachtungen ueber die Sojabohne [Further observations on the soy bean (Abstract)]. *Jahrbuch fuer Kinderheilkunde und Physische Erziehung* 75:241. (Chem. Abst. 6:1789). [Ger]
• ***Summary:*** A German-language summary of the following English-language article: Ruhräh, John. 1911. "Further observations on the soy bean." *Archives of Pediatrics* 28(10):841-43. Oct.

250. Snyder, Sherwood P. 1912. A treatise on foods: And their effects upon health and the physical and moral life. Also a complete list of recipes and instructions for the hygienic preparation of the common food products with special lists of menus. 5th ed. Revised and enlarged. Dayton, Ohio: Health Publishing Co. 192 p. Portrait. Index. 20 cm.
• ***Summary:*** The title on the cover: "The practical hygienic preparation of foods." The author is a vegetarian. His book focuses on the keys to a long and healthy life. Contents: Preface. Prescription for a long life. Wise and healthful sayings suggest healthful thoughts–So these little messages may cause someone to think (13 quotations, including many by Shaftesbury and one by Snyder: "All sickness and sin originate in disobeying nature's laws"). Introduction. 1. The preservation of health a sacred duty. 2. The dining-room. 3. Cereals. 4. Bread and bread-stuffs. 5. Soups. 6, Meats. 7. Meat versus vegetarianism. 8. Meat imitations and meat substitutes. 9. Gravies and sauces. 10. Eggs. 11. Fats and oils. 12. Vegetables. 13. Beans, peas and lentils. 14. Rice and macaroni. 15. Salads. 16. Nuts, nut preparations, nut butters & nut cream. 17. Pies. 18. Desserts. 19. Scientific cake baking. 20. Menus. 21. Ice cream and ices. 22. Miscellaneous subjects. 23. Baby's food and care of children. 24. Foods for the sick. 25. Mastication. 26. The value of steam cooking. 27. Composition of foods. 28. Exercising. Address: Food specialist.

251. Tibbles, William. 1912. Foods: Their origin, composition and manufacture. London: Baillière, Tindall and Cox. viii + 950 p. See p. 372, 476, 529, 531-33, 535, 537-39, 776. Index. 23 cm. [5 soy ref]
• ***Summary:*** In the chapter on "The legumes or pulses," the section on "Beans" (p. 529) lists ten species of beans (including the soy bean) that "are used in dry condition in many parts of the world."

The section titled "The Soy Bean (*Dolichos soja*, or *Glycine hispida*) states (p. 531-33): "The soy bean is a native of Cochin-China, Java, and Japan, where it has been cultivated from the remotest antiquity. It is said to be the *shu* mentioned in the writings of Confucius, although the modern name is *ta-tou.* Its introduction into India is

comparatively modern. It was introduced into Southern Europe and America in 1880, where it is now cultivated chiefly as a forage plant. There are numerous varieties of the plant, but, excepting in colour, the seeds do not differ much from each other in size and appearance. Those sold in the Chinese markets of Australia and Western America are either yellow or black. The seed resembles a pea, but the botanical characteristics of the whole plant are those of the bean. The seeds are one of the most important beans of China, Japan, and some other Oriental countries, where they are eaten like other beans–viz., boiled or baked. But in China and Japan they are elaborated into a variety of products, all of which are valuable for their high proportion of protein, and, when eaten with rice–the staple food of the people–make a fairly well-balanced dietary. Some of these articles are eaten at every meal by rich and poor alike, particularly in the interior of China. Some of these preparations are as follows:

"Soy Sauce, or Shoyu, is prepared from a mixture of cooked beans, roasted wheaten flour, and salt, which are put into a cask and allowed to undergo a prolonged fermentation. The result is a thick brown liquid, of pungent and agreeable taste. It is used in Europe as a basis for various proprietary sauces.

"2. Bean Cheese, or Tao-hu [Tofu].–There are several preparations. According to Prinsen-Geerligs, bean cheeses are made from white beans, which are soaked in water for three hours, afterwards being reduced to a paste and cooked. The milky fluid is then strained through a coarse cloth to remove starch and fibre, and when cool is precipitated by the addition of crude salt–i.e., salt containing calcium and magnesium as well as sodium chloride. The precipitate, which is rich in protein and fat, is then kneaded and pressed into cakes, called fresh Tofu, or 'Taahuor tofu.' They are then dipped into an alkaline solution of curcuma. An analysis of fresh tofu gives the following composition: Water 81.35, protein 11.46, fat 5.19, carbohydrate 0.81, ash 0.79, per cent. There are several varieties of the cheese, known as 'Natto,' 'Miso,' and 'Tofu.' Natto is made from beans which have been boiled for several hours until they are soft. The hot mass is then pressed into small cakes, wrapped in bundles of straw, and kept in a warm, tightly-closed cellar for twenty-four hours, when the action of minute organisms from the air or straw work a change in the mass, and produce an agreeable flavour. Miso is made by boiling the beans until they are soft, when they are beaten to a pulp, mixed with concentrated sea-brine or crude salt, and boiled rice. The substance is then put into a barrel which has previously contained a fermented liquor, and allowed to ferment. It is ready for use in two months, and is eaten like butter. Soy Milk: When beans have been boiled until they are soft, and beaten to a pulp, a considerable portion of the vegetable casein passes into solution, and forms a milky-looking liquid. It further resembles milk by a thin pellicle or skin [yuba] forming on its surface when it is boiled, just as in the case of boiled cow's milk, and the casein can be precipitated from solution by rennet or acids. Such milk has many uses. Tofu is also prepared from soy milk by the addition of sea-brine, which precipitates the casein by virtue of the calcium and magnesium salts. The coagulum is then pressed into tablets, which are snow-white. Tofu made in this way is prepared fresh daily, and therefore but little bacterial action occurs. Moreover, dried cheeses are made in China and Japan by freezing such cakes, afterwards thawing them and drying them in the sun."

Section 4 (p. 535) titled "The legumin of soy beans" mentions glycinin, legumelin, proteose, and vegetable casein.

A table (p. 537) gives the chemical composition of the following: Soy beans (black, or yellow). Soy cheese (*tao-hu*)*:* Tofu (fresh, frozen, dry matter). Natto. Miso (white, red, or Swiss). Soy sauce (Tao-yu): Shoyu. Three sources for these figures are cited.

On page 537-38 is information about the fats, carbohydrates, and minerals of soy beans and other legumes.

In the section on "Sauces" (p. 776) we read: Many of these sauces, or relishes, consist of a basis of vinegar, with Indian soy, mushroom ketchup, walnut ketchup, cayenne pepper, allspice, garlic, and other condiments and aromatic spices, to give flavour, pungency, and aromatic properties. A notable example is *Worcestershire Sauce*, which is composed of the following ingredients: Soy–1 quart. Malt vinegar–7 pints. Lime-juice–3/4 pint. Tamarind–1 pound. Chillies–1¼ ounces. Cloves–1¼ ounces. Garlic–3 ounces. Shallots–6 ounces. Anchovies–3 ounces.

"These substances are prepared by peeling and bruising the garlic and shallots with the anchovies. They are then mixed with the vinegar, soy, and spices, boiled together for twenty minutes, allowed to get cold, and strained. There are many other examples; most of the ingredients have been described in the foregoing pages.

"An imitation [soy sauce]. called English soy, is made by heating together 10 parts treacle, 16 parts extract of malt, 4 parts mushroom ketchup, and 9 parts common salt; it is allowed to stand twenty-one days, and afterwards clarified." Recipes for Mushroom ketchup and Walnut ketchup are also given (p. 776).

The section on "Rice as a food" (p. 475-76) notes that rice is poor in protein and fat and rich in carbohydrates. "It is consumed enormously by the inhabitants of Eastern countries... It should not be overlooked, however, that the same people consume the soy bean and its preparations, especially soy cheese and sauce, which largely compensate for the deficiency of protein. The deficiency of rice in stimulating properties, infinitely less than those of oats and oatmeal, accounts to some extent for the indolence and apathy of many Orientals, and it is a significant fact that the advance of the Japanese as a nation [incl. winning two major wars] is contemporaneous with the larger consumption of flesh foods."

The section on "Common Wheat" (p. 372) states: "The Chinese grew wheat 2700 B.C., and considered it a special gift from Heaven. It was classed with rice, sorghum, and the soy-bean, which the Emperor Chin-nong [Shen-Nung] ordered to be sown annually with sacred rites."

Note: William Tibbles lived 1859-1928. Address: LL.D., M.D. (Hon. Causa) Chicago, L.R.C.P. Edin., M.R.C.S. Eng., L.S.A. Lond. Medical Officer of Health, Fellow of the Royal Institute of Public Health, etc.

252. Tonnelier, Adolfo C. 1912. La Soja hispida y sus aplicaciones [The soybean and its applications]. Buenos Aires, Argentina: J. Carbone. 16 p. [Spa]

• ***Summary:*** Various tables give the chemical composition of soybeans based on different previous analyses (incl. moisture, ash, oils, nitrogenous substances / proteins {*materias azoadas, materias proteicas*}, cellulose, and carbohydrates).

"The results obtained during these last two periods in this Experimental Station permit us to predict a bright future for these industries. The soybean is adequate to use as green manure, green fodder and hay; it produces a grain with which flour is made for the maintenance of people and animals; it also produces oil which leaves a residue cake that can be fed to livestock. Besides these products, soybeans can be a source for artificial milk (*leche artificial;* soymilk), cheese (*queso*) [tofu], and a certain sauce (*cierta salsa;* soy sauce), all of which, even if their use has not yet become part of our custom, are at least widespread in the Chinese Empire" (p. 1).

"The main center for the utilization of the soybean and for the production of flour, oil and cakes is found in Hull, England." Tables show the composition of soy flour and the soybean cake, based on analyses by Maret and Delattre (p. 8).

On page 10 is a discussion of vegetable milk or soy milk. Page 12 discusses *"queso de Soja, ó To Fou"* ("soy cheese, or tofu") and *"la famosa salsa de Soja, llamada Soyou ó Choyou"* ("the famous soy sauce, called Soyou or Choyou" [actually shoyu]). A table gives the chemical composition of fresh and dry tofu.

A full-page table (p. 13) compares the chemical composition of soybeans and soyfoods with similar foods from other sources in six categories: Seeds or grains, cakes (for feed), flour, green forage, milk (incl. soymilk), and cheese (incl. fresh and dry tofu; *Queso de To Fou, fresco; Queso de To Fou, seco*). The dry tofu cheese may be dry-frozen tofu.

"Experiments carried out at this Experimental Station in Cordoba during the last three years plainly confirm the favorable effects that legumes produce as green/unripe manure over other crops such as corn, flax, wheat, barley, rye and potatoes. In the period 1910-1911, as is well known, was not a very favorable one for forage production. A yield corresponding to 36,000 kg/ha of green forage was obtained [from soybeans] at this Experimental Station" (p. 15). "The experimental cultivation of the hispid/hairy soybean in the period of 1910-1911 was carried out on soil of mediocre composition, inferior to that of the average crops in the region. As I stated earlier, that year was extremely unfavorable for all vegetation. Half of the crop either failed to bloom or did not ripen. As a result, by January 19, 1911, the harvest of green forage was 36,800 kg/ha, leaving the other half for seed" (p. 16).

Photos show: (1) A field of soy bean plants (Soja hispida). (2) Close-up view of a man standing with a measuring stick in a field of soy bean plants. (3) Close-up view of leaves of a soy bean plant. (4). Close-up of soybean pods on stem. (5). Soybean pods placed next to a ruler.

Note 1. This is the earliest document seen (May 2009) concerning the cultivation of soybeans in Argentina (one of three documents).

Note 2. The last two lines of the article read: "Cordoba, July 1911. A.C. Tonnelier." Therefore this document contains the earliest clear date seen for soybeans in Argentina, or the cultivation of soybeans in Argentina (1908). The source of these soybeans is unknown.

Note 3. This is the earliest Spanish-language document seen (Aug. 2003) that uses the term *materias azoadas* or *materias proteicas* to refer to nitrogenous substances or protein in connection with soybeans.

Note 3. This is the earliest Spanish-language document seen (April 2013) that uses the term *queso de Soja* refer to tofu. Address: Jefe de la Estación Experimental, anexa á la Escuela Nacional de Agricultura y Ganaderia de Córdoba (Chief of the Experiment Station, attached to the School of Agriculture and Cattle Raising of Cordoba, Argentina).

253. *Year-Book of Pharmacy* (*London*). 1912. The vegetable proteins. p. 490-91.

• ***Summary:*** The section titled "Soya bean protein" states that it "holds an important position amongst proteins with dietetic possibilities, but it is not in universal favour owing to its uncertain effects upon the organism. It merits the attention of pharmacists who desire to possess an inexpensive vegetable protein." "Soya bean protein is enjoying an extended use in connection with the treatment of diabetes and malnutrition."

254. Gerlei, Ludwig. 1913. Die Kunstmilch [Artificial milk]. *Milchwirtschaftliches Zentralblatt* 42(2):49-52. Jan. 15. [Ger]

• ***Summary:*** In this discussion of artificial milks, such a milk made from soyabeans is mentioned briefly on page 51. It is said to already be made and sold commercially in Japan and India. The product contains 92.5% water, 3% protein, 2.16% fat, and 0.41% ash. It is quite similar to cow's milk in appearance.

Note: This is the earliest German-language document seen (Aug. 2013) that uses the term *Kunstmilch* ("artificial milk") to refer to soymilk. Address: Direktor, Budapester Central Milchhalle-Genossenschaft.

255. Neuville, A. de. 1913. Les nouveaux aliments artificiels [The new artificial foods]. *Revue* (*La*) (*Paris*) 100(3):384-89. Feb. 1. 24th year. 6th Series. For translations see Literary Digest (8 March 1913, p. 509-510) and American Review of Reviews, April 1913 (p. 500-01). [Fre]

• ***Summary:*** Contents: Introduction. 1. Soymilk (*Le lait de soya*). 2. Meat alternatives (*La viandine*) developed by Belgian chemist M. Effront. 3. Miracle wheat. Note: The soybean is mentioned only in the section on soymilk.

By modifying the albuminoid and protein substances found in soy (Soya hispida, or Chinese pea), and extracting their proteids, we may obtain a milk that is similar to the milks secreted by the mammary glands of mammals. Soy is rich in nitrogen and in fatty matter. Made into flour it serves to make a bread that is prescribed for diabetes. A synthetic milk has been extracted from the beans, by a process that is still kept secret; it has the same nutritive effect as natural milk. "The invention was introduced into Germany and France almost at the same time. The parts of the plant are broken up mechanically, then chemically triturated and reduced to a lactescent substance that is cheaper than the product of the cow and may replace it perfectly."

A farmer can get six times as much milk from the same piece of land by planting it to soy beans, than by growing grass and letting a milch cow eat the grass. "The economy realized is considerable. A cow requires nearly a acre of pasturage. She turns only 53 per cent. of it into effective nutriment and about 5 per cent. into milk... Two milkings a day give on an average 15 quarts, varying with the breed. Soy grown on a field of one-sixth an acre yields the same quantity of artificial milk. The expense is far less.

"This soy milk presents other advantages over natural milk. It is not exposed to contact with impurities, as so often happens in farm stables and dairies... Besides, cows are not exempt from bacillary infections... Artificial milk is not exposed to these dangers. It is made with apparatus kept so scrupulously clean that there can be no question of microbial infection."

Soy "is a very nourishing food, but of an oily taste that makes it disagreeable to Europeans. Made into milk the soy has none of these disagreeable qualities. It is digestible, pleasant to the palate, and leaves no taste in the mouth. Being a complete food like natural milk, it is suited to children and invalids and all who are following a diet." Address: Dr.

256. *Revue Mondiale* (*La*) (*formerly Revue des Revues*). 1913. Le lait de soya [Soymilk]. Feb. 1. p. 385-86. [Fre]*

257. *Atlanta Constitution* (*Georgia*). 1913. Milk from soy beans. Feb. 2. p. A1.

• ***Summary:*** "Just now synthetic milk is a common topic in the German press, and is lauded as the highly important discovery of Dr. Rigler, professor of hygienics at the University of Klausenburg, Austria.

"This milk is produced from grain by a machine of simple construction and said to be equal to the best quality of cow's milk. Milk can also be made from soy beans; it has a peculiar flavor, but a German factory has for several years successfully produced from the soy bean milk of a reputed agreeable flavor, which sells at a low price."

258. *Literary Digest.* 1913. Vegetable milk. 46:509-10. March 8.

• ***Summary:*** This article begins: "Milk is not a chemical compound, but an emulsion... and it has, in fact, been imitated with more or less success, vegetable products having been mostly used for the purpose.

"The best known of these, 'soy milk,' made from a Chinese bean, has long been known. Witness Edward Lear's limerick about the man 'who lived on warm brandy and soy.' Children used to think that 'soy' was one of Lear's nonsense words, like his 'runcible spoon'; but it is now almost as common a food in Germany as it is in China." There follows a lengthy translation of an article by Dr. A. de Neuville titled "Artificial Foods" that appeared in *La Revue* (Paris, Feb. 1). "The economy realized is considerable. A cow requires nearly an acre of pasturage. She turns only 53 per cent of it into effective nutriment and about 5 per cent into milk... Two milkings a day give on an average 15 quarts, varying with the breed. Soy grown on a field of one-sixth of an acre yields the same quantity of artificial milk. The expense is far less...

"This soy milk presents advantages over natural milk. It is not exposed to contact with impurities, as often happens in farm stables and dairies... Besides, cows are not exempt from bacillary affections, and it has been proved that the pathogenic germs of their milk exist in the lacteal glands themselves. Artificial milk is not exposed to these dangers. It is made with apparatus kept so scrupulously clean that there can be no question of microbial infection."

Note. This is the earliest English-language document seen (Aug. 2013) that contains the word "lacteal" or the term "lacteal glands" in connection with soy milk.

"In China and Japan, soy has been abundantly cultivated since the earliest times... Made into milk the soy has none of these disagreeable qualities. It is digestible, pleasant to the palate, and leaves no taste in the mouth. Being a complete food like natural milk, it is suited to children and invalids and to all who are following a diet."

259. *Annales Coloniales* (*Les*). 1913. Un novel emploi du soya [A new use of the soybean] 14(31):2. Col. 1. March 13. [Fre]

• ***Summary:*** There is now a factory making soymilk in

England. It is sold in London for 30 centimes per quart.

260. *Los Angeles Times.* 1913. Vegetable milk (Abstract). April 8. p. II3.
• ***Summary:*** A reprint of an English-language article of the same title published in *Literary Digest.* March 8. p. 509-10.

261. Goessel, Fritz. 1913. Procédé pour la fabrication d'un produit alimentaire, ressemblant au lait, de la fève de soja et d'autres substances végétales similaires [Process for making a food product, resembling milk, from soybeans and other similar vegetable substances]. *French Patent* 451,447. April 18. 3 p. Application filed 2 Dec. 1912. Under International Convention, 4 Dec. 1911. [Fre]
• ***Summary:*** In the manufacture of a nourishing beverage from the soybean (*fève de soja*), similar to milk, purified finely ground soy beans (or pistachio or sesame kernels) are cooked up as rapidly as possible with sodium hydrogen phosphate and water 100 liters. Address: Germany.

262. *American Review of Reviews.* 1913. Vegetable milk and vegetable meat (Abstract). 47(4):500-01. April. [1 ref]
• ***Summary:*** An English-language summary of the following French-language article: Neuville, A. de. 1913. "Les nouveaux aliments artificiels" [The new artificial foods]. *Revue* (*La*) (Paris) 100(3):384-89. Feb. 1. 24th year. 6th Series.

This summary begins: "In most families the two heaviest items in the cost of food are the expenditures for milk and milk-products and for meat. Moreover, milk and meat are the most difficult foods to procure, to preserve, and to transport in a pure and wholesome condition. And it is this difficulty, coupled with modern standards of hygiene and sanitation, that has helped to make their cost mount steadily higher year by year. All of us, must be warmly interested in the successful efforts of certain foreign chemists to produce synthetically both milk and meat from vegetable sources, since it claimed that the 'near-milk' and 'near-meat' are not only as nutritious as their prototypes, but far freer from dirt and disease-germs, as well as very much cheaper."

The new artificial milk is made from the seed of the soy bean or the Chinese pea.

"From other sources we learn the interesting fact, not mentioned in *La Revue*, that an excellent cheese [tofu] can be made from this milk, which widens its usefulness materially.

The Belgian chemist, M. Effront, has proposed using the refuse from breweries to make a palatable and nutritious [non-soy] substitute for meat.

Note: This is the second earliest English-language document seen (Nov. 2003) that contains the term "vegetable meat" (or "vegetable meats"–with any combination of quotation marks)–and the first to mention "vegetable meat" in connection with soy.

263. Winkler, Gustav. 1913. Die Sojabohne: Vortrag gehalten in der Monatsversammlung des Gartenbau- und Verschoenerungsvereins Fechenheim [Mainkur] am 17. April 1913 [The soybean: Lecture presented at the monthly meeting of the Gardening and Beautification Society of Fechenheim {Mainkur} on 17 April 1913]. Frankfurt am Main, Germany: Published by the author. 14 p. [Ger] Address: Mainkur bei Frankfurt am Main, Kreis Hanau, Waldstrasse 55.

264. *Literary Digest.* 1913. Artificial meat. 46(21): May 24. Whole No. 1205.
• ***Summary:*** Excerpt from an article titled "The New Artificial Foods" in *Minerva* (Rome, April 1913) which begins by discussing soy milk, then states that a Belgian chemist named Effront has found a way to use spent brewers' yeast (from brewing beer) to make "Viandine," which he considers to be a complete substitute for meat–but one which is much less expensive. Experiments on both a man and on rats show that it has the same physiological effect on the digestive organs as real meat, and promotes growth as well or better than lean beef.

265. Houyet, A. 1913. La fève de soya [The soybean]. *Bulletin de la Societe Belge d'Etudes Coloniales* 20(5):367-90. May. [Fre]
• ***Summary:*** "The notes which follow have as their object the study of a commercial plant of East Asia which produces soybeans; it is interesting from the local point of view as a food plant and more specifically from the world viewpoint as an industrial plant.

"It appears useful to us to precede them with a geographic survey of the place of production of the plant, as well as some data on the population living there. After having studied the plant itself and the conditions of its agriculture, we will examine its uses, its commerce, and the possibilities for its development."

This is largely a discussion of soybean production and trade in Manchuria. But pages 378-80 contain a brief discussion of the many ways of using soybeans including in soy sauce, margarine, soap, as meal for livestock feed, as flour for fortifying biscuits, as soymilk, and (in Germany) as artificial rubber. "A Chinese manufacturer [Li Yu-ying] has established a factory near Paris that makes food products from the soybean" (*produits alimentaires à base de fève de soya*).

Concerning margarine: "Refined [soybean] oil can be used for the manufacture of margarine and as a salad oil" (*L'huile raffinée peut étre employée à la fabrication de la margarine et comme huile de salade*). Note: This is the earliest French-language document seen that uses the term *margarine* to refer to margarine.

266. Goessel, Fritz. 1913. Process of manufacturing

an alimentary product resembling milk from soy beans or similar vegetable seeds. *British Patent* 27,860. 3 p. Application filed 3 Dec. 1912. Accepted 12 June 1913. Under International Convention, 4 Dec. 1911.

• ***Summary:*** "This invention related to an improved process for producing a new alimentary substance, the composition and properties of which are similar to cow's milk or other natural milk but which is of vegetable origin. It is prepared from soya or soy beans or other similar seeds, earth or pistachio nuts [peanuts], sesame or teel seeds..." It is well know that soy beans are "particularly rich in albumen very similar to the albuminous substances contained in cow's milk. Soy-beans not only contain caseine-like albumen but also egg-albumen-like compounds."

If the seeds referred to "are suitably treated with water for the extraction of their alimentary substances, a milky liquor will be produced, but its composition would be such that it would never have the properties of cow's milk." It "is well-known that the finer the albumen is curdled and coagulated in the stomach the easier it will be digested... But a fine coagulation of the albumen is only obtainable if it be brought by means of a sufficient quantity of fat into as finely divided a condition as possible. Moreover to render possible the lactic fermentation of the product within the intestines, it is necessary to add milk-sugar or similar carbo-hydrates to make up for the shortage of same in the starting materials. In order to enable the new product to be used with coffee, tea and the like containing tannic acid substances without the albumen becoming curdled or coagulated by the latter, and so that it behaves like cow's milk, it is necessary to add small quantities of carbonate or bicarbonate of sodium or the like."

Example: Mix about 10 kg of finely ground soy-beans with about 100 liters water and about 5 gm of sodium phosphate or potassium phosphate. Allow the mixture to stand for about 1 hour then slowly bring it to the boiling point and only just allow it to boil. Allow it to cool to about 50ºC, then filter and press. Dissolve in the "liquor run off" [soybean milk] about 2.4 kg milk-sugar [lactose], 6 gm sodium chloride, and about 60 gm sodium carbonate. Mix in about 2 kg sesame oil. "The milky liquor obtained in this way is brought to the volume of 100 liters by the addition of pure water."

Note 1. This is the earliest document seen (Aug. 2013) that concerns sesame milk, or a non-dairy milk made from sesame seeds.

Note 2. This is the earliest English-language document seen (Aug. 2013) that uses the term "milky liquor" to refer to soymilk. Address: Doctor, Stockheim, Hessen, Germany.

267. Li, Yu-ying. 1913. Method of manufacturing products from soja. *U.S. Patent* 1,064,841. June 17. 3 p. Application filed 10 Oct. 1911.

• ***Summary:*** Li describes himself as "a subject of the Emperor of China, residing at Vallées, in France." "The object of this invention is to provide a simple, efficient and economical method of producing a product from soja beans, and from which product it is possible to obtain by adding certain substances a product resembling human or animal milk, and also to obtain fresh or fermented cheese, milk in the form of powder and concentrated milk, fermented milk, sauces, preserves, etc. The manufacture of this milk comprises a series of operations viz., the cleaning and decorticating of the beans, which are effected in the ordinary manner, the grinding of the said grain previously mixed with a certain quantity of water, the passing of the crude product through a filtering press, from which the liquid, which is of a milky color, runs off to cool through a filter and passes thence into a boiler heated with a water bath, where it is pasteurized or sterilized, and from which it is removed, ready to be delivered for consumption as milk, or for use in the manufacture of the products mentioned above.

"The apparatus necessary for this manufacture is illustrated in the accompanying drawings by a longitudinal sectional elevation." Li's signature, written "Yu Ying Li," is just below the mechanical drawing. A detailed description of the ingenious equipment and process follows. The ground paste is mixed with water; a pump "forces it under pressure into the filtering press..." The slurry is cooked in a "boiler or digester" which is actually a steam-jacketed kettle; there "it is heated to a variable temperature for the purpose of pasteurization or sterilization."

Concerning the okara: "When the operation is finished, the grain [okara] is removed from the filter-press and now forms cakes which can be utilized for feeding human beings (they are in that case dried and reduced to powder). They may also be used for feeding cattle, and, even if these cakes are greatly exhausted, they form a very good nitrated manure, after undergoing certain treatment; drying and dressing."

"The soja milk contains more casein and less lactose and butter than human or animal milk, but by reducing its quantity of casein by adding certain matters a product is obtained resembling human and animal milk. With this milk fresh or fermented cheese can be made as desired.

"In making fresh cheese [tofu], the milk is curdled or coagulated by means of magnesia salts, organic acids and ferments, rennet or lactic ferments.

"The coagulated milk is molded and pressed, and cheese of different forms and consistency obtained according to the degree of coagulation or pressure. The cheeses may be eaten fresh or they may be dried. They are salted or not according to the nature of the manufacture...

"In producing fermented cheese: Roquefort, Permesan, Romatour, Camembert, Gruyère, etc., ferments suitable for the manufacture of those products are employed...

"The fermented milk is obtained by using ferments such as the ferments employed in producing fermented milks– kephir [kefir], yoghourt [yogurt], koumis [koumiss], etc.

These are the *Saccharomyces cerevisiae, Dispora caucasica, Maya bulgare,* etc., and the manufacture is effected by modifying the said milk through the addition of sugar (glucose, levulose, etc.), and more particularly lactose.

"The casein derived from *Soja* is manufactured either from the milk itself obtained as indicated or with the cakes remaining after the extraction of the oil or fatty matter of the soja beans...

"In order to prepare it the soja milk is coagulated. The coagulation having been effected, the product is dried, asepticized or not, ground or not, and may be employed as an alimentary or as an industrial product. This latter product may be employed for all purposes; paste, bedding paper, manufacture of the objects, etc. the same as animal casein. To the casein thus obtained chemical products such as borax, oxid of zinc [zinc oxide], magnesia, gelatin, etc., may be added in different proportions in order to obtain solid casein. It is also possible to produce sauce with soja milk the fermentation of which is effected by means of special ferments such as sojaobacille and the acetomyces. This sauce is more or less salted with chlorid of sodium [sodium chloride] and an addition may be made of spices; pepper, clove, nutmeg, piment*, etc. The sauce having been made may be concentrated or dried by heating. Soja preserves may also be obtained with soja milk slightly thickened with sugar. In this case, the soja grains are cooked before being ground and may be mixed with or added to dry fruits, chestnuts, almonds, hazelnuts, cocoa, etc."

Note 1. This is the world's 2nd earliest patent seen (June 2011) concerning a fermented cheese made from soja, and also the earliest U.S. soymilk patent.

Note 2. *Webster's Third New International Dictionary* (1963) defines piment as "wine flavored with spice and honey." It defines pimento as a synonym for allspice.
Address: Vallées, France.

268. *Chemist and Druggist* (*London*). 1913. English and Welsh news. 83(10):379-81. Sept. 6. Series No. 1754.
• ***Summary:*** Under the sub-heading "Liverpool Notes" is one sentence (p. 380): "A factory for the manufacture of synthetic milk from soya beans is shortly to be established in Liverpool."

269. Winkler, Gustav. 1913. Die Sojabohne: Vortrag gehalten in der Monatsversammlung des Gartenbau- und Verschoenerungsvereins Fechenheim-Mainkur am 17. April 1913. 2 Auflage [The soybean: Lecture presented at the monthly meeting of the Gardening and Beautification Society of Fechenheim-Mainkur on 17 April 1913. 2nd ed.]. Fechenheim bei Frankfurt am Main, Germany: Published by the author. 16 p. 22 cm. [Ger]*
Address: Mainkur bei Frankfurt am Main (Germany).

270. Kita, Gen-itsu. 1913. Japanische Sojaindustrie [Japanese shoyu industries]. *Wochenschrift fuer Brauerei* 30(42):549-52. Oct. 18; 30(43):559-61. Oct. 25. (Chem. Abst. 8:984). Summarized in Zentralblatt fuer Bakteriologie, Series II. 41:257 (1914). [8 ref. Ger]
• ***Summary:*** An excellent and very detailed description of how shoyu is made in Japan, with many photos. Contents: Introduction. Overview of the process. The raw materials. Preparing the koji: Pre-preparation, mixing the beans with the wheat, the koji room (*muro*), handling the mass of koji, characteristics of koji. Part II: The fermentation process. Pressing. Scientific investigations of soy sauce brewing. Summary.

The author calls soy sauce *Soja* and *Sojasauce*. The two basic types of shoyu are made with soybeans and wheat, or just with soybeans. But some special sauce is also made with fish meat, such as Lintenfish. The addition of sugar and other sweeteners, and of colorings such as molasses to low-grade shoyu is not rare.

Preparation of soy sauce: The fermentation usually takes 6 to 12 months or more. Some years ago the "quick method" was widely introduced but after several years it unfortunately fell into ruin. The shoyu process has never been developed with modern processes like the sake processes, because sake must be a certain way when finished but shoyu is acceptable in many ways. The aroma from the roasted wheat adds a special component to Japanese shoyu, not found in Chinese soy sauce. The roasted wheat is coarsely ground (using a roller miller or, earlier, a granite mill), and the meal produced thereby serves to enrobe the steamed soybeans, while the larger particles hold the beans, thus aiding aeration. So the wheat must not be ground too fine. The beans are steamed, usually at a pressure less than 2 times atmospheric pressure; higher pressure creates a bad aroma. If the beans are cooked in an open kettle, a bamboo mat is placed in the bottom to prevent the beans from browning. The liquor left after cooking is called *amé*. The beans and wheat koji are then mixed. The beans, after being removed from the kettle, are spread out on the koji floor in front of the koji room (*koji-muro*) to a depth of about 3 cm. They are stirred from time to time until cooled to about 30-35ºC. The spores (*keim*) of *Aspergillus oryzae,* when they are used, are then sprinkled on. The mixture is put into wooden koji trays (*kojibuta*) each about 60 by 30 by 10 cm deep (24 by 12 by 4 inches), and holding 18 liters of raw material. In some places (such as Shozushima) a wide straw mat (80 by 180 cm) is used in place of these koji trays. The koji room is typically 10 by 3.5 by 2.2 meters high. The walls are thick. A modern room is of tiles in order to prevent changes of temperature from the outside. For cleanliness, the walls should be made of cement, with a door at one end and a window at the other. The room contains many vents to remove moisture and carbon dioxide. Steam pipes are laid in the floor, or a fire-pot is used instead. As noted above, the koji mold spores are either mixed in, or they settle from the air in the koji room, or come from the

koji trays. The koji trays are stacked in a zigzag fashion to allow ventilation, which is necessary for shoyu koji but not for sake koji. Dampness and lack of oxygen favor the growth of Mucor molds and undesirable bacteria. After 20 hours, the koji is mixed well in the trays, and the upper trays are placed on the bottom–and vice versa. Stir again after 7-10 hours; the temperature is now 38-40ºC. After 10-15 hours conidia formation begins. The koji is usually ready in 3 days. Good koji has yellow-green conidia, very numerous on the inside. The surface is white and the mass dry. Contaminants: *Mucor, Rhizopus* and bacteria due to too much moisture, especially with heat. Black koji has a bad aroma from the disease *kurotoko,* which is caused mostly by excessive moisture. During fermentation about 20% of the original mass is lost; starches are changed to sugars, which are used up by the koji mold. The goal is to obtain koji which is rich in enzymes.

The brewing process: The ingredients are mixed in a vat to make the mash (moromi), which contains enzymes. The vats are made of sugi wood (*Cryptomeria japonica* Don.) with bamboo hoops. In the large shoyu factories they usually have a capacity of 4,000 to 4,500 liters (1,057–1189 gallons). The proportions of raw materials are as follows: Soybeans (2,700 liters = 1,875 kg), wheat (2,700 liters = 2,025 kg), salt (NaCl, 2,700 liters = 1,690 kg), and water (5,400 liters = 5,400 kg). The salt may be dissolved in hot or cold water, usually to 20º baume. Less salt gives better quality. The mash is mixed with a pole or with compressed air. The mash must usually ferment for a year before it can be pressed. A longer fermentation improves the color and aroma, but the flavor becomes weaker. Where a 2 or 3 year mash is used, it is mixed with 1-year mash to improve the quality. In order to shorten the fermentation time, the mash is sometimes warmed; this and other suggestions for improving the process will be discussed later. The mash contains microbes, especially yeasts and bacteria.

Pressing: The mash, after it finishes aging, is pressed in cotton bags that have been dipped in tannin from astringent persimmons (*kaki-shibu*). Each bag holds about 2 liters. More than 2 liters may causes the bag to tear in the *fune* (literally "boat"), which is about 230 by 73 by 91 cm and which holds about 800 such bags. Formerly a log was used in the form of a lever press, but now screws and hydraulic presses are widely used. The yield of shoyu is about 70-80% of the volume of the moromi. The remaining presscake still contains soluble constituents, which are extracted by mixing the presscake (*Der Presskuchen*) with water. The remaining cake is sold as fodder.

Treatment of the pressed liquid: This liquid is heated in an iron kettle in order to partially pasteurize it, separate the coagulable constituents, and darken the color. Better grades are heated at a lower temperature (never above 70-80ºC), and poorer grades at a higher temperature, mainly to concentrate and darken the color. For good grades, darkening of the color is seen as a disadvantage, as is the resulting change of aroma. Kita then gives a detailed analysis of both shoyu and the second-pressed liquid. Shoyu contains 30-32% solids, has a specific weight of 1.189 to 1.234, and contains 16.15 to 18.61% minerals.

Scientific investigations and various proposals for the shoyu brewery: Kita experimented with the use of defatted soybean meal. He notes that koji contains a powerful proteolytic enzyme. Cooking under pressure and defatting promote decomposition. Pressure cooking is more and more widely used. Defatting of the beans proved to be disadvantageous since it lowered the quality of the final shoyu, but he thinks the problem lay in the improper treatment of the beans during defatting. He proved this hypothesis with coarse beans defatted with benzine (*Benzin*) to make flawless shoyu. Sake koji has stronger diastatic and weaker proteolytic enzymes than shoyu koji. The proteolytic and diastatic power of mold enzymes are inversely related. There are different varieties of *A. oryzae* with different morphologies. Photos (p. 550-51) show equipment used in making shoyu in a factory: (1) Presses for pressing the sauce from the aged moromi. (2) Brick roaster for the wheat, with a belt-driven mechanical stirrer. (3) Wooden fermentation vat. (4) Many wooden moromi fermentation vats, held together by braided bamboo hoops, with a wooden plank across the top of each. (5) A man in a white coat, with a moromi stirrer in one hand, standing among many tall fermentation vats. Address: Technical Inst., Tokyo Imperial University.

271. M.L. 1913. Synthetic milk production from soya beans in Liverpool. *Chemical World* (*London*) 2(10):332-33. Oct.
• ***Summary:*** "A factory for the making of synthetic milk from soya beans and other ingredients is shortly to be established at Liverpool... The company projecting to establish a factory in Liverpool is the 'Synthetic Milk Syndicate, Ltd.' in London, and they will work according to Dr. Fritz Goessel's process (of Stockheim, Essen, Germany)." A detailed description of the process and exact formula are given. "The 'milk' can be manufactured at a cost which will admit of its being sold to dealers at 2d. per quart.

Note: The article immediately after this one is titled "Contaminated Milk: Condition of the London Supply." Tests showed extensive bacteriological contamination in cow's milk.

272. Contant, Philippe-Jules; Perrot, Jean-Baptiste-Félix. 1913. Nouvelle matière plastique, transparente, flexible, ininflammable, pouvant remplacer le celluloïd, servir d'apprêts, être filée et tissée [Transparent, flexible, non-inflammable plastic material [from soy beans] capable of replacing celluloid, suitable for finishing, spinning and weaving]. *French Patent* 461,007. Dec. 17. 2 p. Application filed 1 Aug. 1913. First addition 5 Jan. 1914. [Fre]
• ***Summary:*** This new product has as its principal constituent the milk obtained from soybeans (*pois de Chine ou graine de*

soja hispida). This milk, obtained by the current process, is used to make tofu (*teou-fou*).

The milk from the seeds of Soja hispida is treated with bases, e.g., ammonia, soda or pyridine in the proportion of 5-10 gm per liter; 10-15 gm of a mixture of acetic, lactic, phosphoric and nitric acids are added at a temperature of 35ºC. The material is then heated to boiling in a solution of aluminum sulfate and the reaction is allowed to proceed for 2-8 days. The plastic product obtained is gelatinized by solvents, such as pyridine, acetic acid and resorcinol and may be hardened by formaldehyde. Address: 1. Côte-d'Or, France; 2. Ain, France.

273. Goessel, Fritz. 1913. Verfahren zur Herstellung eines Ersatzes fuer Kuh- oder Muttermilch aus der Sojabohne oder aehnlichen Samen oder Samengemischen [Process for production of a substitute for cow's milk or mother's milk from the soybean or similar seeds or seed mixtures]. *German Patent* 268,536. Dec. 19. 2 p. Application filed 5 Dec. 1911. See also No. 289,929. [Ger]
Address: Frankfurt am Main, Germany.

274. Goessel, Fritz. 1913. Process of manufacturing alimentary products from soy-beans. *U.S. Patent* 1,082,118. Dec. 23. 2 p. Application filed 7 Nov. 1912.
• ***Summary:*** A milk-like food is made from soybeans by grinding the beans, mixing with water containing 5% of sodium hydrogen phosphate or potassium phosphate and boiling, straining and pressing and adding to the liquor, for each 10 parts beans used, 2 parts milk sugar, 2 parts coconut, pistachio nut or sesame oil and 0.1 part sodium chloride or sodium bicarbonate. Cf. C.A., 7,3375. Address: Stockheim, Hesse, Germany.

275. Friedenwald, Julius; Ruhräh, John. 1913. Diet in health and disease. 4th ed. Thoroughly revised and enlarged. Philadelphia, Pennsylvania: W.B. Saunders Co. 857 p. Illust. 24 cm. [4 soy ref]
• ***Summary:*** The section titled "The soy bean" (p. 124-26) states: "This bean (glycine hispida), sometimes called the soja bean, is an annual leguminous plant extensively used as a food in China and Japan. Until recently it has been regarded as a botanical curiosity in the Occident. It has recently been extensively used in America as a forage crop and to improve the soil if plowed under... There are a large number of different varieties, which vary in size, shape, color, and length of time they take to mature. Some are grown exclusively for the oil they contain, and it is used for culinary, illuminating, and lubricating purposes. The light-colored beans are eaten in soups, and the pods are sometimes picked green, boiled, and served cold with a sprinkling of soy sauce. The green varieties are often pickled in brine and eaten moist or dried with meals as appetizers; the same varieties are often sprouted, scalded, and served with meals in winter as a green vegetable. The bean forms the basis of the so-called soy sauces, used as a condiment all over the world. The Oriental races most frequently eat the bean, in more or less cheesy-like foods, which are prepared from it. The most common of these are natto, tofu, miso, yuba, and shoyu. Natto is a sort of bean cheese made by boiling the beans until they become soft and then placing the resulting mass in a warm cellar where it ferments. Tofu is made by soaking the beans in water, crushing between millstones, and boiling in about three times their bulk of water. The protein is precipitated and the resulting cheese eaten. The white milky liquid of the above has nearly the composition of cows' milk, and tastes something like malt. It may be used in infant feeding to advantage (see same).

"Americans may eat the beans in numerous ways described under the head of soy bean cookery in the recipes at the end of this book. The bean is of particular value in diabetic diets (see same). It may be used to increase the protein of the diet.

There are variations in the composition of the different varieties." A table shows the chemical composition of yellow soy beans grown in the USA, both as is and calculated on a water-free basis. "The Cereo Company of Tappan, New York, have made a soy bean flour which is useful." Its composition is given. "The percentage of protein in this flour is almost one-third greater than the percentage of protein in the whole beans. This is caused by removing the coarse fibrous hulls which contain little protein.

"Vegetable food of such composition certainly is remarkable when compared with round beef, medium"– whose composition is given.

Soy flour can be used as a gruel, in broths, and in making biscuits. A table (p. 126) shows the "Composition of fresh and dried legumes (incl. soy beans, cow peas, chick-peas, peanuts) with that of other foods" (Based on Abel, Farmers' Bulletin No. 121 [1900, p. 17]).

The section on "vegetarianism" (p. 130-31) is the same as that in the 1909 edition (p. 113-14).

In the chapter on "Infant feeding," the section on "Other food for infants" has a subsection on "The soy bean" (p. 297-98) which begins: "In certain conditions the soy bean... is of great value. In cases when milk is badly borne, in certain forms of intestinal disorders, in diarrhea, and especially in the convalescence after diarrhea, in certain cases of marasmus and in malnutrition, the soy bean flour, properly used, is of great value. Each ounce contains 13 grams protein and 120 calories." A table shows the composition when mixed with various amounts of water. Recipes for making gruels are given.

In the chapter on "Diet in disease," in the section titled "Diseases in which diet is a primary factor," is a subsection on "The soy bean" (p. 592) states: "The bean contains about 8 per cent. of sugar and no starch, and furnishes a large amount of available protein and fat." "A patient on a strict

diabetic diet, who is excreting a certain amount of sugar, will excrete less sugar when the soy bean is added to the diet. It seems to be of particular value in severe cases. In addition to this action, it is a very valuable food, both on account of its nutritious properties and owing to the fact that it may be prepared in a number of different ways, and so serves to vary the diet."

In the section on "Diabetic Foods" (p. 601-02) is based on Winton (1906) and contains the same information, including that about The Health Food Company of New York.

In the chapter on "Recipes" is a section on "Bread" (p. 740-41) which includes whole-wheat bread, zwieback, and bran muffins for constipation. The same chapter has a section on "Soy bean cookery" (p. 766-69) with the following recipes: Introduction, gruels, broths, muffins, nut-cakes, soy bean cakes, breakfast food (like oatmeal), pancakes, soy bean cheese ("In Seattle, Washington, and other places in the West we are informed that tofu is made by the Japanese and sold to the Oriental residents").

Goff (1911) offers the following: Grilled soy bean [dry roasted soynuts], [whole] soy beans with butter, soy beans au gras (fried with onions and fat), bread or cakes of soy beans.

On page 822 is a "Short list of books on food and diet." 33 books are cited; some are in German or French.

Note 1. Julius Friedenwald lived 1866-1941. John Ruräh lived 1872-1925.

Note 2. This is the earliest English-language document seen (Dec. 2012) that uses the term "Grilled soy bean" to refer to dry roasted soybeans / soynuts. Address: 1. Prof. of Gastro-Enterology; 2. Prof. of Diseases of Children. Both: College of Physicians and Surgeons, Baltimore, Maryland.

276. Sornay, Pierre de. 1913. Les plantes tropicales alimentaires et industrielles de la famille des légumineuses [Edible and industrial tropical plants of the legume family]. Paris: Augustin Challamel. xii + 489 p. Illust. Index. 26 cm. [77* ref. Fre]

• ***Summary:*** This book is dedicated to "Mr. P. Boname, my excellent master and friend." Boname, who wrote the Preface and is now director of the agronomic station on Maurice, was the soybean pioneer in Maurice.

The section on the soybean (*Le Soja*, p. 195-205, 272, 276, 469, 471, 473, 475) is largely summarized from earlier writers, including Aiton, Bonâme, Bloch, Church, Grandeau, Joulie, Kaempfer, König, Korentschewski and Zimmermann, Lechartier, Li and Grandvoinnet, Paillieux, Paillieux and Bois, Pellet, Trimble, and Watt. Most of the section is about soybean production, but there are also subsections on soymilk, tofu (*Fromage de soja*), and shoyu (p. 204-05), plus soy coffee, soy bread and biscuits for diabetics, and trade in soybeans and soybean products (p. 205).

Also discusses: Alfalfa or Lucerne (*Medicago sativa*, p. 309, 453-54, 471, 474). Bambarra groundnuts (*Voandzeia subterranea, pistache voandzou*, 72-75, 277-78, 469, 473, 476). Kudzu (*Pueraria Thunbergiana*, p. 429-30). Lupins (*Lupinus albus*, p. 264, 309, 453-54, 468). Peanuts (*Arachis hypogæa, arachide* p. 47-72, 270, 273, 453-54, 467, 471, 472, 474-76). Winged bean (*Psophocarpus tetragonolobus, pois carré*, p. 183-94, 273, 276, 468, 471, 473-76). Address: Asst. Director, Agronomic Station, Mauritius (Station agronomique de l'Ile Maurice).

277. Grimme, Clemens. 1914. Die Sojabohne und ihre Verarbeitung zu Nahrungs- und Genussmitteln [The soybean and its processing for food and stimulants]. *Konserven-Zeitung* 15(1):1-3, 10-11. Jan. 2. [1 ref. Ger]

• ***Summary:*** The author discusses the many food uses of soybeans and how they are made and used, drawing heavily on *Le Soja* by Li & Grandvoinnet (1912). He notes that there is a steadily rising interest in soyfoods in almost all branches of the German food industry [perhaps in anticipation of World War I].

Foods made from natural [unfermented] soybeans include: Soymilk (*Sojamilch*), tofu (*Sojakäse*), frozen tofu (*Kori-Tofu*), soy flour (*Sojamehl*), soy bread (*Sojabrot*), soya confections (*Sojakonfekt*), soy chocolate (*Sojaschokolade*), soy coffee (*Sojakaffee*), and green vegetable soybeans (*Soja als Gemüse*). Foods and seasonings made from fermented soybeans include: (1) Solid seasonings: Natto (Japan; Tokio Natto, Ping-Ming Natto). Tao-tche (China [fermented black soybeans]. The process for making this Chinese food is exactly the same as that used to make natto in Japan [sic, almost completely different]); (2) Seasonings in paste form: Miso (4 types), and Tao-tjiung (Doujiang, Chinese miso); (3) Liquid seasonings: Shoyu (Schoyou), Tsiang-Yeou (Chinese soy sauce), Ketjap (Javanese soy sauce), Tuong (Annamite soy sauce, made with rice or corn), Tao-Yu (soy sauce made with black soybeans in China and Japan).

Note 1. This is the earliest German-language document seen (April 2013) that uses the word *Sojakäse* to refer to tofu.

Note 2. This is the earliest German-language document seen (June 2009) that mentions green vegetable soybeans, which it calls *Soja als Gemüse.*

Note 3. This is the earliest German-language document seen (Aug. 2013) that uses the term *Sojamilch* to refer to soymilk. As of Jan. 2009 *Sojamilch* is the modern German word for soymilk.

Note 4. This is the earliest German-language document seen (Jan. 2009) that uses the word *Sojaschokolade* to refer to soy chocolate. The German word for "chocolate" is *Schokolade.*

Note 5. This is the earliest German-language document seen (Dec. 2011) that mentions fermented black soybeans, which it calls *Tao-tche.* Address: Dr.

278. Langworthy, C.F.; Hunt, Caroline L. 1914. Corn meal as

a food and ways of using it. *Farmers' Bulletin* (*USDA*) No. 565. 24 p. Jan. See p. 14-15, 21.
• ***Summary:*** The section titled "Corn-meal bread" (p. 14-15) notes that the chief proteid of wheat is gluten, but the protein of corn has none of the properties of gluten. Thus, the best results are obtained if gluten flour (containing 35% protein). On page 21 is a recipe for "Gluten and corn bread" calling for 3/4 cup gluten flour. is added when making corn-meal bread.

The recipe for "Parched corn-meal biscuits" calls for "2 cups peanut cream." Address: 1. PhD, ScD, Chief of Nutrition Investigations; 2. A.B., Expert in Nutrition. Both: Office of Experiment Stations.

279. *Queensland Agricultural Journal*. 1914. The soya bean. 1(1):7-9. Jan. [3 ref]
• ***Summary:*** "Much has been written in the Australian Press during late years of the Soya bean as a profitable crop for farmers, and experiments have been made with it at the State Nursery at Kamerunga, but nothing has resulted from the experiments beyond proving that the soils and climate of some parts of Queensland are well adapted for the cultivation of this crop."

This article summarizes three articles received by the Department of Agriculture and Stock: (1) A communication from "Messrs. Thompson and Co., Dalny, South Manchuria, giving interesting information concerning the commercial possibilities of the [soy] bean, and suggesting that the Department experiment with the seed at the State Farms and in Western districts like the Marona, where the rainfall is comparatively small and uncertain, offering at the same time to supply the necessary seed, and, if the experiments proved successful, the firm would consider the taking up of a large tract of land in Queensland and growing the bean in quantity, as there would be no difficulty in disposing of the product. The present price of the beans in Europe is £9 per ton."

(2) "Messrs. Thompson and Co. furthermore enclosed an extract from the report (for 1912) of the Trades Commissioner for the Government of the Union of South Africa on the subject, which we summarise as follows,..." (see Turner 1914). The Queensland Journal then reflects: Profitability: "But the question to our mind is, whether, under our labor conditions, it would pay as well as it does in cheap-labor countries. A 1,000-lb. crop, at the highest prices for the beans, would sell for £4 10*s.* in Europe, and, deducting labour for production, freights, commission, &c., there would appear to be little in it to attract the attention of farmers, who can make far more [profit] out of dairying, sugar-planting, potato, onion, and maize growing. As a catch-crop amongst coconut and rubber trees, the Soya bean would doubtless prove of great value.

"As far as the feeding value of the [soy] bean is concerned, it is said to be at least twice as valuable for food as maize, as it is very rich in protein, but it is best fed in conjunction with maize. As a green manure, it is undoubtedly valuable in restoring the soil, being a leguminous plant.

"The expenses per ton for bags, railage, and freight to Harbin to Vladivostock [Vladivostok] are set down at £1 13*s.;* add ocean freight to England, £1 10*s.*–£3 3*s.*

"The expense of transport from South Africa to England is set down in the report we quote from at £1 9*s.*

"But Queensland is further from England than South Africa; and while it might pay to grow and export Soya beans thence to Europe, we cannot see that the crop could be profitably produced in this country."

(3) "The following summary of the uses of the Soya bean and its products given by *Tropical Life* [published in England], April, 1913 [p. 71-72], is interesting:–For dynamite and high explosives, soap, linoleum, India-rubber substitute, margarine, paints and varnishes, in place of linseed oil, various edible foods, toilet powder, salad oil, vegetable cooking oil in place of lard, oil, &c., preserving sardines, lamp oil, lubricating, as food in place of peas, flour for soups, biscuits, brown bread, artificial milk and cheese [soymilk and tofu], substitute for coffee, for sauces; cake for feeding cattle, and for manure."

Note: In this same Jan. 1914 issue (p. 3) of this journal, an article titled "Queensland Agricultural Journal," states: "With this number of the Journal we commence a New Series of issue, dating practically from the 1st July 1913, on which date the Journal completed its sixteenth year of publication." It first appeared in July 1897, and today some 60,000 copies a year [5,000 copies a month] are mailed to subscribers worldwide. From now on the Journal will accept "advertisments having reference solely to productions of the land or to manufactured articles needed by rural occupiers, thus not interfering in any way with the general run of advertisements in the public Press." Address: Australia.

280. Bois, D. 1914. Extraits des procés-verbaux des séances de la société. Cinquième section. Botanique. Séance du 16 Février [Excerpts of verbal proceedings from meetings of the society. 5th Section. Botany. Meeting of 16 Feb. 1914]. *Bulletin de la Societe d'Acclimatation* 61:304-10. Feb. See p. 307-08. [Fre]
• ***Summary:*** Page 307 states: Mr. Bois then presents information on the germination of two species of legumes: *Phaseolus Mungo* and *Soja hispida* (mung beans and soybeans), and confirms that the food product that is now widely sold in Paris under the name *germes de Soja* ("soybean sprouts") is actually mung bean sprouts (see the book *Potager d'un curieux* [The inquisitive person's kitchen garden], by A. Paillieux). He reads a note he wrote with the goal of highlighting and putting an end to this confusion. This note will be published in the society's Bulletin.

"Our colleagues Messrs. Rivière and Le Fort, recalled on this occasion the numerous food preparations that can be made with soybeans. Mr. Le Fort noted an article from

a German journal (*Molkerei Zeitung*), reproduced in the 29 January 1914 issue of *Journal des Halles et Marches*, according to which a company named Soyama-Werke has been founded in Germany near the Bockenheim railway station. The goal of this organization is to conduct trials for the production of an artificial milk made from soybeans and other substances." Address: France.

281. *Times* (*London*). 1914. Artificial milk. Butter and cheese from soya beans. Romance of a new industry. March 17. p. 4, col. 1.
• ***Summary:*** "A discovery which should prove of great interest to housewives and mothers has recently been brought to perfection in a London chemical laboratory. This is a process of manufacturing synthetically a pure and wholesome milk of high nutritive value, possessing all of the virtues of the original article, none of its many dangers." A German chemist has developed the process.

"The fluid, as far as its appearance is concerned, is quite indistinguishable from rich cow's milk. It is delightfully smooth on the palate. On the other hand, the taste seems to some persons slightly different from that of ordinary milk. It is said that even this slight 'taste' can be removed at will. A dairyman was recently asked to express his opinion of the new milk, and two glasses, one containing his own milk and the other the artificial milk, were placed before him. He praised what he supposed was his cow's milk and expressed a very modified appreciation of the other. His surprise on hearing of his error was naturally great.

"Introduction of bacteria. The new milk has been built up from a basis of casein obtained from the soya bean. Casein, of course, is likewise the basal constituent of cow's milk. The beans are treated by a special process whereby all oil and waste matter are removed and only the pure casein left. To this basis are added in exact proportions fatty acids, sugars, and salts, and emulsification carried out... In order that the synthetic milk may approximate in all respects to the real milk, bacteria of the required strains, including the lactic acid (sour milk) bacilli rendered famous by Metchnikoff a few years ago, are introduced to the fluid and permitted to act upon it until it reaches exactly that state of what may be termed maturity at which fresh cow's milk is obtained. That it is indeed a real milk is proved by the fact that excellent cheeses and 'butter' can be made from it.

"The advantages of the new milk are obvious. It is, of course, free from all suspicion of being contaminated with milk-borne diseases like tuberculosis, scarlet fever, or diphtheria."

The first consignment of soya beans was sent to Europe as recently as 1906. "In this country soya oil has now a very ready and extensive market. It is used instead of the cotton seed variety on account of cheapness. Soap manufacturers are also coming to depend upon it. The chief use, however, would seem to be as cattle cakes for winter feeding. That the article which has fed so many milch cows during the past few years should itself be used in the making of artificial milk is undoubtedly something of a coincidence.

"Most of the soya beans entering this country pass through Hull, which, with its great oil and seed mills, is the natural centre for such a commodity."

282. *Chemist and Druggist* (*London*). 1914. Westminster wisdom: This week in parliament. 84(15):576. April 11. Series No. 1785.
• ***Summary:*** Under the sub-heading "'Soya-bean' milk" we read: "In the House of Commons on Monday, Mr. C. Bathurst asked the President of the Local Government Board a question about the legality of the sale as milk of the compound made from the soya-bean. Mr. H. Samuel replied that if an article which is not milk is sold under that name it would be open to local authorities to take proceedings under the Sale of Food and Drugs Act against the vendor."

283. Meyer, Frank N. 1914. Re: Artificial milk, butter, and cheese from the soy bean. In: Letters of Frank N. Meyer. 4 vols. Compiled by Bureau of Plant Introduction, USDA. 2444 p. See p. 1889-90. Letter of 29 April 1914 from Peking, China, to David Fairchild of USDA.
• ***Summary:*** "I am also enclosing a clipping re *artificial milk, butter* and *cheese* from the *soy bean!* Is the fact already known to our specialists?"

One week later, on 2 May 1914 (p. 1898) he adds: "No. 2038a, *Soya hispida*, is a rare local variety. I think I have only seen it once."

Location: University of California at Davis, Special Collections SB108 A7M49. Address: USDA Plant Explorer.

284. *Asie Francaise* (*L'*). 1914. Le soja: Une légumineuse alimentaire Chinoise [The soybean. A Chinese food legume]. 14(158):196-98. May. [Fre]
• ***Summary:*** Begins with a good introduction to the soybean (*haricot soja*), including its early history in France and statistics of current trade between Europe and Manchuria. A footnote (p. 196) states that the statistics are from the Chinese maritime customs. The shipments to Europe for first reported in 1908 by the official statistics. The Suez Canal Company (*La Sociéteé du canal de Suez*) made it known that for some years when not a single kg of soybeans passed through the canal, but 35,000 passed through it in 1908.

At the Nanking Exposition [Nanjing] of 1910 in China, some 400 varieties of soybeans were on display.

Continues with a long discussion of the work and writings of Li Yu-ying (p. 197-98). "It was soymilk that Li first introduced to French vegetarians (*végétariens français*). In 1908 he established a laboratory in Paris for the study of tofu (*la caséo-sojaïne*). Then he set up a factory at Vallées, on the outskirts of Paris, where he employed about 30 specialist Chinese workers. The machinery was constructed

in France based on designs by Li and his collaborators.

"The creation of this Chinese factory, smack in the middle of France, was not lacking in originality. But it seems that its output could be as wide and varied as its founders had dreamed. In a shop which sells exotic products, we were told that the Parisian clientele scorned (looked down on) the soy preserves / jams (*confitures*), cheeses, condiments, eggs, and other unique soy products, but they remained faithful to flour, rusks / zwieback (*biscottes*, twice baked bread without added sugar), and the housewives appreciate the soy sprouts that are found today in all the markets of Paris and its outskirts."

285. *Le Monde des Plantes* (*le Mans, France*). 1914. Nouvelles: Lait, creme, beurre et fromage de soja [News: Soy milk, cream, butter and cheese]. 16(88):19. May. Series 2 [2 ref. Fre]

• ***Summary:*** According to the *Molkerei Zeitung*, an institute name Soyama Wecke [sic Soyama Wercke, Soyama-Werke, Soyamawerke] has been founded near the railway station of Bockenheim (Germany). The goal of this institute is the manufacture of artificial milk (*lait artificiel*) from the seeds of the soybean (*de Soja; Soja hispida*) and other substances. The soybean furnishes almost all of the product.

According to the Assembly of Agriculturists (*l'Assemblée des Agriculteurs*), which meets in Frankfurt, a few years ago 50,000 liters of soymilk arrived daily on the market when the factory was pushed to its full capacity. A deputy of the German parliament (*Reichstag*) is at the head of this enterprise which has several million dollars of capital. The Soyama-Werke also makes soy cream, butter and cheese [tofu].

Source: *Journal de la Société national d'Horticulture de France*, Feb. 1914.

Note: In May 1914 Germany was involved in World War I.

286. *Washington Post.* 1914. Beans for milk. June 14. p. M13.

• ***Summary:*** From Worcester (Massachusetts) Post: "Massachusetts lands which fail to give up forests and other crops of sufficient value to suit the tillers should be devoted to raising soya beans. A few Chinamen should be imported to show how that crop is produced to the best advantage. The experts claim it does best in hot climates, but that does not rob the beans of a change in Massachusetts. There is a great need of the beans here." Every session politicians urge less cows in the commonwealth. Farmers have long said, and keep saying, "that they cannot keep cows at the prevailing prices allowed for them for the milk. They are undoubtedly right." Let them quit. "But the soya beans in the course of scientific treatment give up a casein from which the best of butter and cheese are made.

"The imported figures indicate that an acre of land devoted to the beans will make more milk, butter or cheese than any cow in Massachusetts in a year, and no acre supports a cow. The milk and other products of the bean carry no bacteria, so far as reported by science, and that means they will keep indefinitely. There is nothing for the farmers to do but to raise the beans."

The state can save a lot of money by abolishing milk inspectors. "The beans can be sent to central points in bags without regard to special sanitary cars, and there be made into milk, butter and cheese for the community at hand."

This simple change would solve about half of the state's problems. "The soya bean of the Chinese is the solution."

287. *Independent* (*The*). 1914. Milk and cheese from the soya bean. 78:487. June 15.

• ***Summary:*** "A large concern known as the 'Synthetic Milk Syndicate, Ltd.' is about to establish a factory in Liverpool, at which soya milk will be made according to the process of Dr. Fritz Goessel, of Essen, Germany." A detailed description of the process follows. "It is expected that this milk will be retailed in England at 4 cents a quart. It is claimed to have the same nutritive value as natural milk, and will be free of the characteristic oily flavor which makes other soya bean products unpalatable to most people who have not acquired the tastes of the Orient... Treated with a mineral salt or an acid, which acts the part of rennet, vegetable milk can be converted into cheese of several varieties. In Indo-China, where the soya milk industry has assumed large proportions, three principal kinds of cheese are made: a fermented variety with a taste suggesting Roquefort; a white salted variety, resembling goat's milk cheese; and a cooked or smoked variety, like Gruyère."

Note: This is also the earliest English-language document seen (April 2013) that uses the word "smoked" (not including "smok'd") in connection with tofu. Address: England.

288. Hill, W. Stanley. 1914. The soya bean: Experience at Moumahaki Experimental Farm. *New Zealand J. of Agriculture* 8:594-96. June 20.

• ***Summary:*** "The failure of several attempts made to grow this crop under field conditions at Moumahaki Experimental Farm led to consideration of the cause or causes of these failures. In previous seasons only one variety of bean–viz., the Early Yellow–was experimented with. During the season just passed six varieties have been fairly successfully grown under severe field conditions. They were sown on the 20th September, 1912." A table (p. 594) shows that the varieties were (with the weight of 100 seeds of each), in descending order of seed size: Giant Yellow Santa Margherita (28.56 gm), Early Yellow (24.60 gm), Green Samarow (15.34 gm), Arlington (10.58 gm), Brownie (9.14 gm), and Meyer (7.10 gm). For each is given the average height (inches), period of growth (days), colour of seed, and weight per 100 seeds.

"Until the season 1912-13 no nodular development existed on any Soya-bean plants harvested at Moumahaki. During that season these nodules were obtained by means of a commercial culture." Address: B. Agriculture, New Zealand.

289. *Mercury* (*The*) (*Hobart, Tasmania, Australia*). 1914. Rival to milk. Produce from soya beans. Romance of an industry. June 20. p. 14.
• ***Summary:*** This is a summary of: *Times* (London). 1914. "Artificial milk. Butter and cheese from soya beans. Romance of a new industry." March 17. p. 4. The summary begins: "The keen rivalry between margarine and butter is to have a parallel in the fluid product of the soya bean threatening to knock cow's milk out of the market."

290. Monahan, Louis J.; Pope, Charles J. 1914. Soy-milk product and process of making the same. *U.S. Patent* 1,104,376. July 21. 3 p. Application filed 28 July 1913.
• ***Summary:*** Soy beans are emulsified with the addition of sodium bicarbonate and coconut oil; the emulsion is separated from the solid portion, heated, and filtered; the filtrate is mixed with malt extract and evaporated to dryness under reduced pressure. An illustration (line drawing) shows the equipment and plant layout used in the production of soy milk. Address: Oshkosh, Wisconsin.

291. Loomis, Henry M. 1914. Food products from the soy bean. *American Food Journal* 9(8):472-74. Aug.
• ***Summary:*** Loomis collected information on soybean products while stationed on the Pacific Coast. "Probably the most interesting and important of these food products is soy sauce, or shoyu, as the Japanese call it. It is the only one which is used to any extent among Occidental nations, with whom it forms the principal ingredient of Worcestershire and similar table sauces. It is also used to some extent as an ingredient of bouillon cubes. König estimates that the consumption of this product in Japan amounts to two or three fluid ounces per day for each person, which would make a total consumption for that country alone of three to four hundred million gallons. No figures are available as to the amount of this sauce which is used in China, but all except the poorest class eat it habitually on rice and fish, which form their principal articles of diet."

Japanese soy sauce "is prepared on more scientific principles and it is considered much superior to Chinese soy. Each manufacturer of Japanese soy has special brands or trade marks under which his products are sold. Japanese soy is usually imported into this country in wooden tubs holding about three gallons each and sells at wholesale price of from 75 cents to $1.50 per tub" [i.e. 25 to 50 cents per gallon]. A brief description of the Japanese process for making soy sauce follows; it mentions Koji.

Brief descriptions are also given of the following foods and their method of preparation: (1) "Soy bean curd, or, in Japanese, Tofu, is as its name implies prepared by coagulating or precipitating the legumin or vegetable proteid, of the soy bean by mineral salts. (2) "The frozen bean curd, or 'Koritofu,'..."

Note 1. This is the earliest English-language document seen (April 2013) that uses the word "Koritofu" to refer to frozen tofu. (3) [Yuba]. "The liquor or bean milk is the milky fluid produced in the manufacture of bean curd after straining and before coagulating. Chinese bean curd [sic], or Toufu-pi, is prepared by drying the scum produced on boiling the bean milk. It is imported in the form of vitreous, brittle, yellowish sticks in appearance like dried casein. (4) Soy bean oil. (5) "Kinako is prepared by roasting and grinding soy beans. It has a very agreeable flavor and is much used in the preparation of confections, particularly as a sort of coating powder. (6) Miso, which is made from "Koji, the same ferment as is used in the making of soy. There are two principal kinds imported into this country, the white and red Miso. They differ principally in the rapidity of fermentation and in the amount of salt used."

"Winton and others have suggested the use of soy bean products as foods for diabetics and it appears that there are many of the foods mentioned above which would serve a useful purpose in this regard. There are a number of firms now putting out soy bean meal or flour on a commercial scale and notices have appeared recently that soy bean curd and milk are to be manufactured on a large scale in Europe.

A large table contains nutritional analyses of four types of soy [sauce] (incl. Kikkoman, Kikkoraku, typical Japanese shoyu and Chinese soy) plus each of the foods mentioned above, including tofu (8.6% protein) made in Seattle, Washington, and "Bean milk (strained bean liquor before coagulating; 2.09% protein).

Mr. J.T. Willard notes: "I remember twenty years ago [i.e., 1894] that Prof. Georgeson of the Kansas Agricultural College had half a dozen varieties [of soy beans]. He was a teacher of agriculture in Japan and I suppose he learned as much there as he taught, and he became very enthusiastic over the soy bean. I remember there was a great difference in the different varieties of the soy bean." A portrait photo shows Mr. H.M. Loomis.

Note 2. This is the earliest English-language document seen (April 2013) that uses the term "soy bean curd" to refer to tofu. Address: Bureau of Chemistry, USDA.

292. Melhuish, William James. 1914. Improvements in the manufacture of vegetable milk and its derivatives. *British Patent* 24,572. Dec. 29. Application filed 29 Oct. 1913. Complete specification left 23 Dec. 1913.
• ***Summary:*** In manufacturing artificial milk from soy beans by a process similar to that of 27,860, 1912, the oil is first extracted from the beans or meal, or is centrifugally separated from the albuminous extract, which is obtained

by treating the meal at about 90º with water containing potassium phosphate, etc., and then filtering. Sesame or other oil mixed with butyric and other cream acids is then thoroughly emulsified in the liquid, which may be done by b. *in vacuo* or by a mixing or homogenizing machine. Dextrin and various sugars such as malt extract, dry maltose, cane sugar, milk sugar, dextrose, honey, etc., sodium bicarbonate, etc., sodium chloride, citric acid, and lactic bacteria are added. When the required acidity is reached, part is set aside, and the rest may be pasteurized. The part set aside is mixed with pasteurized soy milk and added to the next batch. The sesame oil, etc., may be omitted, or may be gradually added to obtain a thick cream, which may be made into margarine. Sugar may be replaced by saccharine, and medicinal iron may be added. Humanized, sterilized, fermented, condensed, or dried milk may be prepared. For making cheese, the casein may be coagulated by lemon juice, etc., rennet, or the ferments present. The soy cake in the filter press may be used as cattle food. Address: Highwood House, Upper Parkstone, County of Dorset [England].

293. Friedman, Jacob. 1914. Improvements in or connected with the treatment of soya beans and the production of a new or improved food preparation therefrom. *British Patent* 121. Dec. 24. Application filed 2 Jan. 1914. Complete specification left 8 June 1914.
• ***Summary:*** Soy beans are treated to remove the unpleasant flavor by decorticating, grinding, and then heating to 120º-300ºC with dry heat, with continuous stirring, to drive off the moisture, which carries off the flavor. The product is employed in making bread, chocolate, and other confectionery, soup, etc. Soy bean flour for bread-making, for example, is heated at 155ºC for about 70 minutes. Address: Confectionery Expert, 12, Parsons Green Lane, Fulham, County of London [England].

294. **Product Name:** [Soyama Soymilk (Regular Fresh, for Diabetics, for Baking)].
Foreign Name: Soyama Fruchtmilchpulver.
Manufacturer's Name: Soyamawerke Englehardt und Co.
Manufacturer's Address: Frankfurt am Main, Germany.
Date of Introduction: 1914.
New Product–Documentation: J.C. Friedrich. 1914. *Centralblatt für Bäcker und Conditoren.* No. 30. p. 627. "Die Soja in der Bäckerei."

295. Chiappini, C. du P. 1914. The trade of the Union: Soya beans. In: W.H. Hosking, ed. 1914. South African Year-Book 1914. London: George Routledge and Sons, Ltd. New York: E.P. Dutton & Co. See p. 192-261, especially p. 247-56.
• ***Summary:*** "The Annual Report of the Trades Commissioner in London for the Union Government of South Africa for the year ending 31st December, 1912, and dated 16th April, 1913, was presented to both houses of Parliament by command of His Excellency the Governor-General."

Soya Beans: Trials in connection with these beans have been, and are being, made by farmers in the Union–principally in Natal. During the past nine years many useful experiments have been made by the Agricultural Department, mainly at the Cedara, Winkle Spruit, and Weenen Government Farms (Natal), and also at Skinner's Court, Pretoria. A great deal of knowledge has thus been gained and made known to farmers by means of bulletins, etc., issued by the Government. I am, however, informed that there has been a check in the progress of this industry, and that in some parts farmers have been disheartened by their first trials, and have dropped the matter... I submit the [following] details in the hope that they will stimulate farmers through the Union to continue their experiments and carry them to a successful issue, my object being to support Mr. Burtt Davy and other officers of the Agricultural Department who are doing such good work in this direction.

"I have been fortunate in securing the valuable assistance of Mr. A. Grenville Turner, Grain and Oilseed Broker, and Assistant Secretary to the Seed, Oil, and Cake Trade Association, C 20, Exchange Buildings, Liverpool, and of Mr. Harold Beckwith, of Peter's Buildings, II, Romford Street, Liverpool, who is a specialist on the production of vegetable oil and on oil milling plant generally...

"During the year 1909 experiments were conducted in the Argentine Republic, Mr. A. Grenville Turner reporting that a crop of beans may be secured there in about thirteen weeks, as against six months in Manchuria, and ten weeks to five months in South Africa, according to zone and climatic conditions. Worldwide interest is now evinced in the culture of the Soya bean, and experiments are being conducted in practically every British Colony. The late Sir Alfred Jones, K.C.M.G., entrusted Mr. Turner with a mission to introduce the cultivation of the bean throughout West Africa, the result of the experiments being successful. On his return from the coast, Mr. Turner was entrusted with a mission by Messrs. Lever Brothers, Limited, to encourage the cultivation of the Soya bean throughout the Union of South Africa. The scheme was enthusiastically taken up by the farmers. Large quantities of seed (with descriptive pamphlets) were distributed by Messrs. Lever Brothers, the result of the experiments proving that South Africa can raise a crop of Soya beans equal, if not superior, to those from Manchuria...

"At the Government Experimental Farms in South Africa, over 80 varieties have been tested, and as high as 2,000 lb. per acre was recorded, while in many instances the yield was well over 1,000 lb. per acre. In Manchuria the yield per acre is from 1,100 to 1,600 lb. per acre...

"The subject has received the hearty support of the Union Government Agricultural Department, the Agricultural Unions, and Messrs. Lever Brothers, Limited, by whose assistance, through Mr. Turner, seed for the planting of

three to five acre plots was distributed to over 300 farmers in all parts of the Union, together with printed report forms and descriptive bulletins. One factor was proved–viz., the capability of the plant to resist a long sustained drought, and to grow under conditions that would probably in many instances be too severe even for maize.

A list is given of 18 products which can be obtained from the Soya bean, including "Human consumption, as a vegetable, like marrowfat peas, and in preparation of soups. As a substitute for meat, specially manufactured. Manufacture of a substitute for chocolate. Preparation of macaroni. As flour for biscuits and brown bread. As artificial cream and milk. Manufacture of cheese. As a substitute for coffee. Preparation of plastic substances and artificial horn." Diabetic foods, soy sauce, meal for feeding cattle, stallions or dairy cows, seasonings, beverages, industrial products, and livestock feeds.

The oil can be used for the manufacture of "Dynamite and high explosives. Soaps. Linoleum. India-rubber substitute. Margarine. Paints and varnishes in place of linseed oil. Edible goods and toilet powder. Waterproof cloth, paper umbrellas, and lanterns. Salad oil. Lubricating oil, in China, for greasing axles and native machinery. Lamp oil instead of kerosene oil. It is used on English railways for burning. The Soya oil is also used for preserving sardines, and in place of lard, and cotton-seed oil for cooking.

"Chemical analyses of the beans made in Europe show considerable variation in the percentages of the different constituents... of oil from 15.62 to 23.20 per cent., the latter oil content being the highest recorded, the beans being grown by Mr. Turner, at Sierra Leone (West Africa).

"At the latter end of the year 1908 the Soya beans started to be exported from Manchuria to Great Britain and Europe; the price on the London market being £4 15*s.* per ton, which recently rose to £9 2*s.* 6*d.* per ton in England; the value on the spot at Hull being now given as £8 7*s.* 6*d.* per ton; the value of soya oil on the spot, crushed, is £24 10*s.*, and extracted, £23 15*s.* per ton, and of Soya oilcake, £6 15*s.* per ton."

Note: This is the earliest English-language document seen that uses the term "oilcake" or "Soya oilcake" to refer to ground, defatted soybeans. Address: Trades Commissioner, South Africa.

296. Fischer, A. 1914. Kuhmilch und vegetabile Milch und ihre Unterschiede in der Magenverdauung besonders mit Ruecksicht auf das Problem der Kuhmilch-Intoleranz: Eine vergleichend-experimentell-diaetetisch Studie [Cow's milk and vegetable milk and the different ways they are digested in the human stomach, especially with regard to the problem of cow's milk intolerance: A comparative experimental dietetic study]. *Archiv fuer Verdauungs-Krankheiten* 20(1):13-48. [Ger]

• ***Summary:*** Page 18 gives the compositions of a number of nuts and seeds from which plant/vegetable milks can be made–including peanuts, coconuts, hazelnuts, walnuts, sweet almonds (*Amygdalus communis*), Brazil nuts (*Paranuss; Bertholletia excelsa*), cashews or cashew nuts (*Indische Mandel, Accajouness; Anacardium occidentale*), and soybeans. Of these, the soybean contains the highest percentage of protein and the lowest percentage of fat. In this long article, the soybean is mentioned only on page 18. Fischer focused his attention on almond milk and Brazil-nut milk, showing that they were more easily digested than cow's milk. He found that vegetable milks formed smaller, finer, more flocculant, and more easily digestible curds in the stomach, that these stayed in the stomach for less time, and that the peristaltic motion of the stomach was less after their consumption.

Note: On the basis of Fischer's observations, subsequent writers (such as von Nordon and Salomon in 1920 in Germany, and Dr. John Harvey Kellogg and Frances Dittes in the 1920s and 1930s in America), recommended the therapeutic use of soymilk for many digestive problems, including gastric and duodenal ulcer, peritoneal irritation, and disturbances of the motility of the stomach. Address: Dirig. Arzt des Sanatoriums Untere Waid-St. Gallen, Schweiz, Germany.

297. Gillmore, Maria McIlvaine. comp. 1914. Meatless cookery: With special reference to diet for heart disease, blood pressure and autointoxication. New York, NY: E.P. Dutton & Company. viii + 352 p. Introduction by Louis Faugeres Bishop. Illust. Index. 21 cm.

• ***Summary:*** The author's Preface begins: "Since auto-intoxication is now held to be the cause of many of the most serious diseases of humanity, too much stress cannot be laid upon the immediate necessity of looking into the question of diet and removing those foods which are responsible for the cause of ill health.

"In the case of heart trouble and high blood pressure, with the accompanying deterioration of other organs, Dr. Bishop has found from prolonged observation that the offending substance most often appears in meat, eggs, fish and meat stock soups, but is not the same in all cases."

"In a double sense, the way to a man's heart is by the food he is given, and the more elaborate the food, the more quickly does his heart succumb to the strain put upon it. So it falls upon the women to meet this condition, and without delay."

The author thanks: (1) The patients of Dr. Bishop (see below), who have been kind enough to share the result of their successful experience. (2) Dr. C.W. Langworthy, expert in charge of Nutrition Investigation at the United States Department of Agriculture. (3) Miss Lenna Frances Cooper, Head Dietitian of the Battle Creek Sanitarium [Michigan], for recipes published in *The New Cookery.*

In the Introduction, Dr. Louis F. Bishop, M.D. (Prof.

of Heart and Circulatory Diseases, Fordham Univ. School of Medicine, New York) begins by describing how difficult it is to bridge the gap between those of technical education and those who have not been so trained. After years of research he has found that, "under certain circumstances, the cells of the body become sensitive to the protein element of certain kinds of foods, and from that time on, as long as this sensitiveness lasts, that kind of food acts as a poison to the cells of the body. The only way to limit the damage is to exclude the offending article of food from the diet." Even small amounts of this kind of food can be as harmful as large amounts. Moreover, food damage can be entirely independent of any discomfort. "Food poisoning has generally existed for five or ten years before the heart is sufficiently damaged to cause distress on exertion... My own experience is that heart disease and hardening of the arteries have usually existed about five years at the time the sufferer comes under observation."

"The things that do damage are usually found in the group including eggs, fish, meat and stock soups, but there is no definite way of determining which of these things is at fault. This has to be accomplished by the study of each individual person, by means of the absolute withdrawal of all those things until there is an improvement in the action of the heart and blood vessels. Now one article of food, and then another is added to the diet, and it is discovered by experiment which one the person can use without a return of the disorder.

"In the beginning, it may be only eggs, or fish, or meat, that is a source of irritation to the cells of the body. In persons very seriously ill with hardening of the arteries, all of these things are a source of irritation."

There is a long chapter titled "Meat substitutes" (p. 81-127). The following recipes are of interest: Cereal coffee (p. 1). Almond milk (p. 2). Rice milk (p. 3). Peanut butter sandwiches (p. 209). Two charts near the back of the book give the nutritional composition of peanut butter, and peanuts.

Note 1. is the earliest document seen (June 2002) which states that diet (and specifically a meatless or vegetarian diet) can reduce the risk of coronary heart disease in humans.

Note 2. This is the earliest English-language document seen (Aug. 2013) that contains the term "rice milk," which it uses to refer to a recipe.

Note 2. This is the earliest English-language document seen (June 2003) that contains the word "autointoxication" (or "auto-intoxication").

Note 3. This is not a Seventh-day Adventist cookbook and no commercial products made by SDA companies are called for in the recipes. Soy is not mentioned. Maria Gillmore was born in 1871. Address: Clinical Prof. of Heart and Circulatory Diseases, Fordham Univ., Bronx, New York.

298. Street, John Phillips. 1914. Diabetic foods. *Connecticut Agricultural Experiment Station, Annual Report* 37:1-95. For the year ending Oct. 31, 1913. See p. 20-21, 30-33, 38, 45, 47-48, 56, 75-77. Part I. Eighteenth Report on Food Products and Sixth Report on Drug Products, 1913.

• ***Summary:*** Page 11: "What is a 'diabetic' food? Formerly an almost complete absence, or at least a very marked reduction, of carbohydrates was considered an essential characteristic of a true 'diabetic' food. A table of 12 different classes of diabetic foods shows that, of the 542 commercial products, "Beads, biscuits, cakes, etc." 150, and "Flours and meals" 109 were the top two classes.

In Table I, titled "Analyses of diabetic foods" (p. 18-39), the many commercial products are grouped into classes, starting with "Flours and meals." For each product is given: Year of analysis, name of manufacturer and brand, no. of pieces, net weight of package, cost per package, cost per pound, nutritional composition (water, ash, protein {Nx6.25}, fiber, nitrogen-free extract, fat {ether extract}, starch, weight supplying same amount of carbohydrates as 10 gms. of wheat bread, calculated calories per 100 gms.).

The summary (p. 75-77) groups the main commercial products into six groups based on their carbohydrate content. The first group contains less than 5% carbohydrates and the 6th group contains 25 to 35% carbohydrates. "The soy bean flours contained from 23 to 26 per cent. carbohydrates" and "cost from 30 to 65 cents per pound." Brands include: "Health Food Co., New York, Protosoy Soy Flour, Jireh Diabetic Food Co. (NY), Soja Bean Flour, Health Food Protosoy Diabetic Wafers (21.2% carbohydrates) and Protosoy Soy Flour (24.5%), Cereo Soy Bean Gruel Flour (23.7%), Metcalf's Soja Bean Meal (25.0%), Jireh Soja Bean Meal (25.8%; sometimes also named Jireh Diatetic [sic, Dietetic] Soja Bean Flour). Platschek (Karlsbad) Sojabohnenmehl (49%)."

The Health Food Co., New York, made the following products: Flours and meals: Almond meal (analyzed 1906, 1913), C B X Cold Blast Flour, 25% protein (1911), Glutosac Gluten Flour (1906, 1909, 1911, 1913), Pronireu (Gluten Griddle Cake Flour; 1913), Protosac Gluten Flour (1906, 1913), Protosoy Soy Flour (1913), Pure Washed Gluten Flour (1906, 1913). Soft breads–Protosac Bread (1906). Hard breads and bakery products: Alpha Best Diabetic Wafer (1913), Diabetic Biscuit (1906 & 1913), Gluten Nuggets (1913), Glutona (1906), Glutosac Butter Wafers (1906), Glutosac Rusks (1906), Glutosac Wafers, Plain (1906), Glutosac Zwieback (1906), No. 1 Proto Puffs (1906 & 1913), No. 2 Proto Puffs (1911 & 1913), Protosac Rusks (1906), Protosoy Diabetic Wafers (1913), Salvia Sticks (1906). Breakfast Foods–Manana (1913). Miscellaneous products–Kaffeebrod (1913).

Peanut butter was made or sold by the following (p. 36-37): Atlantic Peanut Refinery, Philadelphia (1899), J.W. Beardsley's Sons, New York, Acme Red Brand (1913), Beach Nut Packaging Co., Canajoharie, NY (1913), A.C.

Blenner & Co. New Haven, Connecticut (Distributor; 1913), D.W. Brooke (Newark, NJ; 1913), Dillon & Douglass, New Haven, CT, Perfection (Distributor), H.J. Heinz Co., Pittsburgh, Pennsylvania (1913), The Kellogg Food Co., Battle Creek, Michigan (1913), Francis H. Leggett & Co., New York, Premier (1913), MacLaren Imperial Cheese Co., Detroit, Michigan, Eagle (1913), Nut Products Co., New Haven, CT, Penolia (1913), Penolia Food Co., New Haven, CT, Penolia (1899), S.S. Pierce Co., Boston, MA, Acharis Brand (1914).

Almond paste [Almond butter] was made by: Chapman, Chicago (1902-03), Henry Heide, New York (1902-03), Spencer, New York (1902-03).

Many gluten-based foods are also discussed and analyzed in a table including Kellogg's Protose (3.6% carbohydrates), Barker's Gluten Food "A" (4.1%), Kellogg's 80% Gluten Biscuits (4.4%), Bischof's Gluten Flour (5.0%), Barker's Gluten Food "B" (5.9%), Barker's Gluten Food "C" (7.7%), Kellogg's 80% Gluten (1912) (7.8%), Plasmon Cocoa 9.3% (Made by Plasmon Co., London, analyzed 1903), Metcalf's Vegetable Gluten (1913) (9.8%), Kellogg's Pure Gluten Biscuit (1906) (10.2%), Kellogg's Potato Gluten Biscuit (1906, 1909) (11.9%, including fiber), Ferguson Gluten Bread (33.6%), Gum Gluten Breakfast Food (34.2%).

Many peanut-based foods are also discussed and analyzed including Rademann's Erdnuss-Brot [Peanut Bread 19.7%, p. 26, 77]. Frank & Co. (Bockenheim) Erdnuss-Kakes [Peanut Cakes, p. 28, 56]. Rademann's Erdnuss-Biskuits [Peanut Biscuits, p. 34]. Peanut butter: Manufacturers (with date of analysis in parentheses) are: Atlantic Peanut Refinery, Philadelphia, Pennsylvania (1899). J.W. Beardsley's Sons, New York (Acme Red Brand, 1913). Beech-Nut Packing Co., Canajoharie, New York (1913). A.C. Blenner & Co., New Haven, [Connecticut] (Distributed by D.W. Brooke, Newark, New Jersey, 1913). Dillon & Douglass, New Haven (Perfection brand; Distributed by H.J. Heinz Co., Pittsburgh, Pennsylvania, 1913). The Kellogg Food Co., Battle Creek, Michigan (2 samples, 1913). Francis H. Leggett & Co., New York (Premier brand, 1913). MacLaren Imperial Cheese Co., Detroit, Michigan (Eagle brand, 1913). Nut Products Co., New Haven (Penolia, 1913). Penolia Food Co., New Haven (Penolia, 1899). S.S. Pierce Co., Boston, Massachusetts (Acharis brand, 1913). Note the two brands that were on the market by 1899.

A host of products contain "almond" in the name, including Kellogg's Almond Butter (8.2% carbohydrates), Callard's almond shortbreads (21%), and Fritz's Mandelbrot (23%), Almond-form wafers with chocolate (from Fromm & Co., Dresden), Charasse Gluten Exquis Biscuits aux Amandes.

Other nut preparations (p. 38): The Kellogg Food Co., Battle Creek–Nut Bromose (Meltose [a malt preparation] and nuts, 1913), Nut Butter (Sanitas, 1906), Nut Meal (1906), Nuttolene (6.3%, 1906). Nashville Sanitarium-Food Co., Nashville, Tennessee–Nut Butter, Nutcysa, and Nutfoda (13.0% 6.3%, and 6.8%; Analyzed in 1913).

A section titled "Nut, Nuts Pastes, etc." (p. 62-64) notes: "Samples of peanut butter showed considerable uniformity; the carbohydrates ranged from 12 to 20, with 3.2 to 6.5 per cent. starch. Most of the peanut butters we have examined would seem to be useful additions to the diabetic's diet." The manufacturer of Kellogg's Malted Nuts claims that it "supplies the place of cow's milk as a liquid food. Its composition is similar to that of milk." The author thinks this statement is misleading, but he notes that "Kellogg's Nut Butter closely resembles peanut butter in composition, and has its same advantages as a diabetic food... Kellogg's Nut Meal is a peanut meal containing only 12 per cent. carbohydrates. Kellogg's Nuttolene and Protose likewise contained only 6 and 4 per cent. carbohydrates, respectively."

Webster's Dictionary defines "aleurone" (a word first used in about 1869) as "protein matter in the form of minute granules or grains occurring in seeds in endosperm or in a special peripheral layer." Many German products have the same root: Gerike's Aleuronat (3.1% carbohydrates, p. 76). F. Guenther, from Frankfurt, makes Aleuronat-Kakes (p. 56). R. Hundhausen, from Hamm, makes Aleuronatzweiback (high or low gluten) and Aleuronat Biskuits and Kakes (biscuits and cakes, p. 57, 30), or pure (4.0% carbohydrates, p. 76). Kirche, from Duesseldorf, makes Aleuronat-Kakes (p. 32).

Other well-known products. Protein preparations: Plasmon Co., London, makes Plasmon. Troponwerke, Mülheim, makes Tropon (p. 24). Address: Chemist of the Station, New Haven, Connecticut.

299. Fruwirth, C. 1915. Die Sojabohne [Soybeans]. *Fuehlings Landwirtschaftliche Zeitung* 64(3/4):65-96. Feb. 1 and 15. [65 ref. Ger]

• ***Summary:*** Contents: Introduction (work in East Asia and Europe from 1905-10). History. Botanical aspects. Varieties. Breeding. Needs of the plant (incl. "heat units," *Wärmesumme*). Utilization (incl. in German *Tofu, Miso, Chiang, Schoyu* or *Sojatunke* (shoyu, p. 83), *Natto, vegetabilische Milch* (soymilk), soy sprouts). Measures and precautions in cultivating soybeans (incl. yields). The soybean as a crop in central Europe. Conclusion.

Note 1. On p. 83 the term "Sojas" is used to refer to soybeans

Note 2. This is the earliest German-language document seen (April 2012) that uses the term *Sojatunke* to refer to soy sauce.

In 1905 the Japanese made the first attempt to import soybeans from Manchuria to Europe, but it failed because they did not arrive in good condition. The repetition of the attempt in 1908, however, gave good results. Then imports of soybeans grew, followed by imports of soybean cake (*Sojabohnenkuchen*). Major importers today are England, France, Germany, Denmark, Italy, Belgium, Netherlands,

Sweden. The high import duty hinders imports to Austria-Hungary.

Toward the end of the 1800s in Russia, Owinsky took early-ripening soybean varieties from China and Japan and requested the expansion of soybean cultivation. In 1899 in Kiev, Owinsky wrote the name of the soybean as Soja hispida praecox (p. 67). Owinsky in Derajne [Derazhne?] grew Podolie soybeans (p. 77). Sempolowsky in Derebzin, Russian Poland, also grew soybeans. European Russia gets soybeans overland (probably from Manchuria). Russia was one of the first countries to take an interest in growing soybeans after 1908. Russia now grows large amounts of soybeans in Podolia. In Germany, Prof. Kallo in Wiesbaden was a pioneer who recommended soybeans as an inexpensive food for the people. North America first started to import lots of soybeans as a source of oil because of a bad cottonseed harvest.

"Since the start of my teaching activities, I have had an interest in the soybean plant and have carried on my own investigations." In 1900 the author received 7 soybean varieties from L.V. Jurdiewicz from Deraznia in Podolia; these had been imported by Owinsky. In 1901 at Hohenheim he began to study the time needed for soybeans to mature; He found it ranged from 141 to 163 days. He continued this research at Hohenheim from 1901 to 1903, getting soybean seed yields of up to 1,560 kg/ha. From 1910 to 1914 he continued at Waldhof-Amstetten, with 5 varieties. The maturity range there was 112-166 days and the yields were up to 1,500 kg/ha (about 23 bushels/acre), but the yields of many varieties were low, about 300 to 500 kg/ha (4.5 to 7.5 bu/acre). Yields of soybean straw, however, were up to 3,600 kg/ha. Fruwirth uses three terms to refer to soybeans: (1) Die Sojabohne; (2) Die Soja; and (3) Sojas, as "Zuechtung von Sojas" or "Sojas, meist gemahlte." There are now a proposal to establish a joint stock company for growing soybeans in central Europe (probably in Germany), using big money. But it may not succeed because soybean yields in Germany and Austria are low. Seedsmen who sell soybeans commercially in 1915 include: Haage and Schmidt (Erfurt, Germany), Vilmorin Andrieux (Paris, France), Dammann & Co. (St. Giovanni at Tedaccio, near Naples, Italy), and Wood and Son (Richmond, Virginia, USA). The main soybean varieties sold by each of these companies are described in detail (p. 73-74).

Utilization (p. 82): Since soybeans are rich in protein and fat, they can be used as a good meat substitute. In Europe the use of soybeans for food is still very small. "In Europe, the first foods from soybeans were made in France, at Vallées near Asnieres: Flour, bread, and cakes for diabetics, and cheese. In Germany not long ago the Soyama-Works at Frankfurt am Main likewise began the production of such foods. Similar foods were also made in Romania. Soybeans sprouted in the dark yield a bitter-tasting salad. Production of vegetable milk started in France at 'Caséo Sojaine' at Vallées (Seine); and is now being studied by the Synthetic Milk Syndicate in England. Using the process developed by Fritz Goessel, this Syndicate made 100 liters of soymilk from 10 kg of ground soybeans at a factory at Liverpool." "It is in no way certain that soybeans will ever be widely used in human foods."

A fairly large amount of soybeans are ground for use as fodder. The main use is for oil extraction. Yet Haberlandt considered that since the soybean contained only about 18% fat (range: 13-22%), its use as a source of oil would not be economical. The main use of soy oil is in soaps, for which it is highly prized. It is also used in making paints as a partial substitute for linseed oil. The best quality may be used as food. In England soy oil is used for margarine production.

Conclusion: The soybean originated in central Asia and is now widely cultivated in China, Japan, Manchuria, and India. Its seeds are rich in protein and, unlike most other legumes, also rich in fat. The plant is used in its homeland mostly as a source of human foods and seasonings, made by fermentation; the oil is used mostly for industrial non-food purposes. In recent years soybean production has expanded significantly in the southern part of the United States. There it is used mainly as green fodder, hay, silage, and soil building. The main expansion of soybean cultivation in Europe has been in Italy, southern France, Hungary, and southern Russia. Good early varieties give yields of 1,100 to 1,300 kg/ha. A large expansion of soybean production in central Europe is possible only in southern Austria and Hungary, and maybe in a few other places where it is warm. But late-maturing soybeans may be grown for forage and silage in the cooler parts of Germany and Austria. Address: Prof., Dr., Wien (Vienna).

300. Cooper, Lenna F. 1915. The cost of foods in non-meat dietaries. *J. of Home Economics* 7(3):137-41. March.
• ***Summary:*** "The fact that meat is one of the most expensive articles of diet is illustrated by a comparison of the costs of a mixed diet and of a non-meat diet. The cost of foods given here are from the non-meat dietary in use at the Battle Creek Sanitarium." The cost of foods in the guests' dining room for the year 1912 amounted to 67.8 cents per capita per day. A copy of one day's menu is shown in order to give an idea of the variety of food in the guests' dining hall. Breakfast foods include: Scotch bran borse. Gluten gruel. Boiled protose. Scrambled eggs. Whole wheat bread. Entire graham bread. Toasted rice biscuit. Toasted granose (wheat) biscuit. Bran biscuit. Nut butter. Palm butter. Malt honey. Malt sugar. Yogurt buttermilk. Sanitas cocoa. Hot malted nuts [peanut milk]. Minute brew [coffee substitute] with sugar and cream. Kaffir tea. Dinner (afternoon meal) entrées include: Nut fillets. Nuttolene with piquant sauce. Supper (evening meal) includes many of the same foods served for breakfast.

In 1914 the total number of guest days at the Sanitarium was 115,590. The cost of vegetarian food for this same period was $67,866. Address: Head Dietitian, Battle Creek

Sanitarium, Michigan.

301. Meyer, Frank N. 1915. Re: Mr. J.H. [Julean] Arnold. In: Letters of Frank N. Meyer. 4 vols. Compiled by Bureau of Plant Introduction, USDA. 2444 p. See p. 2033. Letter of 12 March 1915 from Tsingtau, China, to David Fairchild of USDA.
• ***Summary:*** "About this Mr. J.H. Arnold *not* being an American consul at Tsingtau. Well, at a dinner at the American legation here in May last year [May 1914], Mr. A. told me he was going to be a Consul there. It seems, however, that his appointment was cancelled and Mr. Willys R. Peck was given his post instead. Later on Mr. Arnold was appointed to the new post of Commercial Attache with our Legation here, where he is now. The whole trade of Tsingtau is upset now and many products exported before will have to find new channels now."

Location: University of California at Davis, Special Collections SB108 A7M49. Address: USDA Plant Explorer.

302. Leimdoerfer, J. 1915. Unsere Fettversorgung [Our supply of fats]. *Oesterreichische Chemiker-Zeitung* 18(8):63-67. April 15. [Ger]
• ***Summary:*** This is the text of a lecture presented on 20 March 1914 at a plenary session of the Society of Austrian Chemists; Prof. Leimdörfer discusses the need to cultivate oilseeds, especially castor oil seeds and soybeans (p. 65).

The soybean, which makes a good livestock feed, can also be used in the preparation of bread, non-dairy milk, an alternative to coffee, and a non-dairy cheese [tofu]. Address: Prof., Budapest [Austria-Hungary].

303. *Independent.* 1915. Soy milk. 32:113. April 19. *

304. Goessel, Fritz. 1915. Manufacture of artificial milk [from soya beans]. *U.S. Patent* 1,139,031. May 11. 4 p. Application filed 5 May 1914. 1 drawing.
• ***Summary:*** This patent is similar to Goessel's U.S. patent of 23 Dec. 1913 (No. 1,082,118), however the "present invention is directed to a process of manufacturing such an artificial milk in a cheap and effective manner." It is also called a "synthetic milk." Note that the patent features use of hot water and vacuum stripping of volatiles. Soy beans are the main raw material used. An illustration (line drawing; in vertical section) shows the apparatus used.

Soy beans are washed, decorticated, then ground into a fine flour. Ten kg of this "soy bean flour" is fed into a hopper and moved by a screw conveyor into a chute, where it is mixed with 100 liters of steam-heated water at a temperature of 90-95ºC, to form a thin paste, to which is added 5 gm of sodium phosphate. The thin paste passes through a rubbing and mixing device composed of a sieve provided with a rotating brush. It is then run into a steam-jacketed mixing vat having a paddle in the bottom. The temperature here should be about 95ºC and "ordinarily the extraction will complete in about an hour." The liquid in the mixer will contain about 3.7 albumin, 2.0% fats and fatty acids, 1.8% carbohydrate, and 0.5% salts. This liquid is run into a centrifugal separator, where the insoluble solids are removed. The liquid is then run into a tank, where it is cooled to about room temperature. Then liquid is then run into a separator, where some or all of the fat may be removed "thereby reducing the particular flavor of the soy bean." The milk is best formulated during emulsification by adding 2.4 kg of carbohydrates (cane or beet sugar, milk sugar, malt extract, etc.), 6 gm of "sodium chlorid" (table salt), 60 gm of carbonate of soda, plus a fat. "If a thick creamy liquid is desired, a thick or heavy oil is used, such as cocoanut oil." Sesame oil may be used to give a thinner product. The emulsification may be conducted either under pressure or (ideally) in a vacuum. "During emulsification, the temperature may be maintained at 35 to 40ºC. At this temperature under vacuum the liquid may be boiled with a production of some vapors." The emulsified liquid is then cooled quickly and stored in tanks. Enough pure water is added to bring the volume back to 100 liters.

"If desired pure cultures of suitable bacteria such as *B. lactis acidl.* or *B. massal*, may be added to the milky material." Address: Frankfurt-am-Main, Germany.

305. Schieber, W. 1915. Die Sojabohne und deren volkswirtschaftliche Bedeutung als Nahrungsmittel [The soybean and its economic significance as a food]. *Oesterreichische Chemiker-Zeitung* (*Vienna*) 18(10):85-86. May 15. Excerpts from a lecture to the Austrian Chemical Society, 24 April 1915. [1 ref. Ger]
• ***Summary:*** Includes a summary of information from Li Yu-ying (1912) about foods and food adjuncts made from the soybean: Soymilk, tofu (*Sojakäse*), soy flour (*Sojamehl*), soya bread (*Sojabrot*), soya confections (*Sojakonfekt*), soy chocolate (*Sojaschokolade*), soy coffee (*Sojaskaffee*).

Japanese foods from fermented soybeans: Natto (*Feste Würzen*), miso (*Pasten*), soy sauce (*Saucen*). Plus original nutritional analyses. Address: Austria.

306. Meyer, Frank N. 1915. Re: Condensed soybean milk, made in Japan and sold in China. In: Letters of Frank N. Meyer. 4 vols. Compiled by Bureau of Plant Introduction, USDA. 2444 p. See p. 2068-69. Letter of 21 May 1915 from Peking, China, to David Fairchild of USDA.
• ***Summary:*** "I am also enclosing a can of so-called condensed milk, as sold here in China under the name of 'The Eagle Brand.' I strongly suspect this stuff to have been made in Japan from Soybeans, with something added. It is of a brown color, quite lumpy, not very sweet and it dissolved but poorly. One also gets effects of flatulency from it, especially when taken on an empty stomach. Do you consider it worth while to have it analysed by the Bureau of Chemistry?"

In a letter of 15 Dec. 1915 (p. 2166, from Washington, DC) to Fairchild we read: "Morse soy beans are desired, especially from southern China. Prof. Tracy at Biloxi got a mutant among his soybeans which is of extremely great value to the Gulf Coast sections... The *Kudzu vine* is not as desirable as was first thought; it occupies the land too long and does not always make a dense stand."

Location: University of California at Davis, Special Collections SB108 A7M49. Address: USDA Plant Explorer.

307. Schieber, W. 1915. Die Sojabohne und deren volkswirtschaftliche Bedeutung als Nahrunsmittel [The soybean and its economic significance as a food]. *Seifensieder-Zeitung* 42(22):471-72. June 2. (Chem. Abst. 10:1558). [Ger]

• ***Summary:*** Descriptions and nutritional analyses are given of a number of different food products prepared from the unfermented and the fermented soy bean. Unfermented: soya milk, tofu (*Sojakäse*), soy flour ("because of its composition it can be recommended as a first class food for diabetics and vegetarians"), soya bread, soya confections (resembling marzipan), soya chocolate, soya coffee, soy grits, whole dry soybeans, and soy sprouts ([*Soja*] *Schoten, Bohnen, und Keime*). Fermented: Solid seasonings such as Japanese natto, pastes such as Japanese miso, sauces (in Japan each year 10,000 factories make 700 million liters of soy sauce), a new German fermented soyfood product is made by a secret process; its contains 45% protein, 6% nutritional salts, and about 2% lecithin.

Note. This is the earliest German-language document seen (Jan. 2013) that uses the term [Soja] Keime to refer to soy sprouts. Address: Dr.

308. Goessel, Fritz. 1915. Improvements in the manufacture of artificial milk [from soya beans]. *British Patent* 8,027. Application filed 30 March 1914. 7 p. Complete specification left 9 April 1914. Accepted 24 June 1915. 1 drawing. [1 ref]

• ***Summary:*** Pages 1-3 are titled "Provisional specification; pages 3-7 are "Complete specification."

"This invention relates to the manufacture of artificial or so called synthetic milk from vegetable seeds or beans such as described in my prior [British] Patent No. 27,860 of 1912 [Application filed 3 Dec. 1912]. The present invention is directed to the manufacture of such milk on a commercial scale and in a cheap and effective manner" (p. 1). A full-page illustration (line drawing) shows many pieces of equipment connected to allow a continuous flow of product.

Soy beans are washed, decorticated, ground to a flour which will pass a 100-mesh sieve, and rubbed to a thin paste with soft water at 90º-95ºC. The ratio of flour to water is 1:10, and 5 gm of sodium phosphate is added to each 100 liters of water. The mixture is centrifuged to remove insoluble matter, and the liquid is cooled and again centrifuged to remove fat. The extract is now analyzed, and according to the analysis sufficient fat or oil, sugar, and salts are added to make the composition similar to that of milk. These substances are added in an emulsifier and the mixture is emulsified in a partial vacuum at 35º-40ºC. The liquid leaving the emulsifier is cooled and made up to the proper volume.

"If desired pure cultures of suitable bacteria such as the organism known as *B. lactis acidi* or *B. Massol* may be added in the milk in the vessel" (p. 6). Address: Dr., Chemist, 60 Kurfuerstenstrasse, Frankfurt on the Main, Germany.

309. Melhuish, William James. 1915. A substitute for milk made from soya and arachide and the treatment of the residue. *British Patent* 9,626. Application filed 1 July 1915. 9 p. Complete specification left 7 Oct. 1915. Accepted 3 July 1916.

• ***Summary:*** About 200 pints of purified water are heated to 80ºC and made alkaline with 400 gm of potassium phosphate; a suitable quantity of malted dextrin syrup is then added and 40 lb of arachide nuts which have been shelled, boiled with sodium carbonate, partially dried, and ground to a coarse powder. The mixture is well stirred and the temperature maintained for half an hour. The liquid is then strained and one fourth oz of butyric acid stirred in gradually. Next about 18 lb of soya beans are stirred into 100 pints of hot water, a little sodium phosphate added to insure alkalinity, and the temperature maintained for three fourths of an hour. The mixture is then strained. The 2 extracts are drawn into a vacuum pan in the form of a spray. There are also added at the same time a further quantity of dextrin syrup, 250 grains of calcium phosphate, and 500 grains of sodium phosphate. The mixture is boiled for 30 minutes. The milk produced is drawn off, strained, and made up to 300 pints. It is treated with a culture of lactic bacteria to produce acidity, pasteurized at 60º-70ºC for 20 minutes, and cooled. About 0.1% citric acid is added to the completed product.

The inventor has gotten very good results with the Manchurian soya beans known as Sakura, and "from batches grown in South Africa under the names of Wilson, Haberlandt, and Hollybrook."

"The residue meals should be mixed together thoroughly and dried out to a ten *per cent.* moisture content. This should be done as soon as possible as the soya residue [okara] quickly ferments and becomes a sanitary menace. The combination makes an excellent cattle food, for the excess oil in the soya meal blends with the oil-free pea nut meal and gets over the extreme heating properties of the soya meal when used alone. The insoluble proteids in both meals, coupled with their carbo-hydrate residues tends to form an almost perfect food from the constituent point of view, and its sale enables the cost of the milk to be brought down to something near threepence per gallon."

Note 1. This is the earliest English-language document seen uses the word "Soya" as a noun (in the title or

elsewhere) to refer to soybeans.

Note 2. This is the earliest English-language document seen (June 2013) that uses the term "soya residue" to refer to okara. Address: Lecturer in Dietetics, Highwood House, Upper Parkstone, Borough of Poole, County of Dorset [England].

310. Robert, J.C. 1915. Preliminary report on the economic value of the soybean. Jackson, MS: Mississippi Agricultural College, Tucker Printing House. 15 p. July 1.
• ***Summary:*** Contents: Introduction (incl. brief soy bean history). Composition of soybeans. Feeding value. Relation to soil fertility (nitrogen fixation, vegetable matter or humus). Yield of soybeans (shelled seed and hay). Uses of soybeans (milk, paints, etc.). Soybeans a valuable crop for the Southern farmer.

"The refined oil is used as a substitute for olive oil. Soybean milk and soybean cheese [tofu] are extensively used as an article of diet in the Orient. The cheese is made as follows:... magnesium chloride being added to precipitate the solution, which is hung in fine mesh cloth–and cottage cheese is obtained.

"In 1912 there was established [by Li Yu-ying] at Les Vales [sic, Valles], France, a large factory for the production of a variety of soybean food. Among these varieties were milk, cheese, casein, oils, bread, biscuits, flour, jellies, cakes, and sauces" (p. 12-13).

Note: This is the earliest English-language document seen (Sept. 2011) that contains the term "soybean food."

"Varnishes made from soybean oil are extensively used, though when subjected to exposure they seem not to wear quite as well as those made from linseed oil. For internal painting purposes, however, these varnishes are equal in every respect to those made from linseed oil. Soybean oils are used extensively in the manufacture of linoleums and table cloths, and for the manufacture of printing ink, and of enamel paints" (p. 14).

"Soybeans a valuable crop for the Southern farmer: As an article of human food, soybeans may become an important factor with us. We have used soybean meal made from our crop of 1913 and 1914 and had for breakfast excellent cakes. These cakes were made from wheat flour and soybean meal, and wheat flour and corn meal. Various proportions were used, sour milk and soda being added. Cakes made from equal parts of wheat flour and soybean meal were very palatable.

"Soybeans seem to be one of the most promising crops before the Southern farmer. Every particle of the plant has economic value, and a great number of commercial products are produced from the seed. It seems that the machinery of our cotton seed oil mills is suited to the manufacture of soybean meal and oil. The soybean straw is a good stock food... Therefore, soybeans offer a golden opportunity to the grain and cotton farmers, the live stock producers and the soil builders" (p. 14).

Photos show: (1) Numerous sacks of soybeans and oil cake in the Orient awaiting shipment (front cover). (2) People cleaning and resacking soybeans for shipment (front cover). (3) Five different varieties of soybeans, Including Virginia (p. 2). (4) Soybean root tubercles, natural size (p. 7). (5) Several osier bins used for storing soybeans (p. 13). (6) Southern Manchurian railway cars, with sacks of soybeans (p. 13). (7) Seven varieties of soy pods and beans: Guelph, Ito San, Buckshot, Austin, Hollybrook, Haberlandt, Mammoth (p. 15).

Tables show: (1) Percentage composition of different soybean varieties (most have values for two years, 1913 and 1914): Wilson, Arlington, Jet, Brown, Tokyo, 19981-A, Mammoth, Small Yellow, Amherst, Ito San, Holly Brook [Hollybrook], Peking, Acme, Virginia, Black, Brachet [Barchet], Dwarf Green, Cloud. For each is given moisture, ash, fat, protein, nitrogen free extract, fiber. (2) Plant food elements in farm crops (N, P, and K, including soybeans as grain, hay, or straw). (3) Yield of soybeans (in lb shelled seed and lb of hay per acre): In 1911 in Mississippi: Hollybrook, Black Soybeans, Brown Soybeans, Small Yellow, Mammoth Yellow. The highest yields were from Small Yellow–2,600 lb seed and 5,500 lb hay. In 1912: Brown Soybean, Black Soybean, Hollybrook, Dwarf Green, Small Yellow, Mammoth Yellow, Haberlandt. Again the highest yields were from Small Yellow–2,680 lb seed and 5,200 lb hay. (4) Farm account with the soil in proposed three-year crop rotation (NPK balance incl. soybeans for hay, grain, or straw). (5) Proposed three-year rotation system for long-pine section of Mississippi (1915-1917).

Note 1. This is the earliest document seen (Jan. 2004) that mentions the soybean variety Virginia.

Note 2. This is the earliest published English-language document seen (Sept. 2006) that contains the term "Soybean oil."

Note 3. This is the earliest English-language document seen (Aug. 2013) that contains the term "Soybean milk."

Note 4. This is also the earliest English-language document seen (April 2013) that uses the term "soybean cheese" to refer to tofu. Address: Director of the Station, School of Agriculture, and Prof. of Agronomy, Agricultural College, Mississippi.

311. *Washington Post*. 1915. 'Soy' bean as war food: German dieticians experiment with it in many prison camps. Product used in Worcestershire sauce is declared by many to be highly nourishing. Aug. 1. p. M8.
• ***Summary:*** "Berlin, July 31.–Protracted experiments with the Japanese 'soy' or 'soja' bean, out of which, among other things, Worcestershire sauce is made, are being conducted with a view to determine whether this vegetable, which can be and is raised in Germany, cannot be used in the many prison camps."

"In the Far East the soja bean is in great demand, both for human and animal food products, and also for the oil it contains. Next to rice it forms one of the principal articles of the food supply in some Eastern countries, especially when combined with cereals and salt. It also plays an important part in sauces and spices. The milk from this bean approximates ordinary milk in nutritive value, and cheese can be made from it.

"When combined with 30 or 40 per cent white flour, the meal of the soja bean lends itself to a tasty and nourishing bread which has been found to be especially good for diabetics because of the high percentage of albumen and fat contained. The roasted soja beans also make a good substitute for coffee. The soja plant forms a good fodder for cattle."

312. *Los Angeles Times.* 1915. Alliance–Japanese beans for Germans: The soy and soja said to be valuable foods. Experiments are to be made to determine if they can be used in the prison camps–together they yield flour, meal, milk, cheese, coffee and fodder. Aug. 8. p. III25.
• ***Summary:*** This article, via A.P. [Associated Press] foreign correspondence, is very similar to one published a week earlier (Aug. 1) in the *Washington Post* titled "'Soy' bean as war food: German dieticians experiment with it in many prison camps." (p. M8).

The last sentence in the article, however, is new: "Exhaustive experiments with the soja bean have already been made at the agricultural station of the University of Wisconsin, all tending to bear out, it is said, the contention of German dieticians in favor of the bean."

313. Morse, W.J. 1915. Re: Report on visits to makers of soy products. Letter to Prof. C.V. Piper, Forage Crop Investigations, Bureau of Plant Industry, Washington, DC, Sept. 5. 2 p. Handwritten, with signature.
• ***Summary:*** "Dear Professor Piper:... At Clayville, New York, I looked up the soy bean factory recently started for the manufacture of flour and milk. I had a visit with the man in charge, a Mr. Spring/Sjurning (?) of Cussville (?), New York. The establishment is under the name of Spring (?) Corporation Co. and in addition to the soy products are to put out different kinds of breakfast food. The soy beans were to be purchased from (?) and Indiana growers, but Mr. Spring is going to get in touch with growers in eastern North Carolina... They have a patent process for making the milk called an emulsifier. The beans are crushed, put in the emulsifier with water, the mass churned about and the liquid drawn up. The bean mass is then dried and ground into flour. The milk is all to be sold to chocolate manufacturers while some biscuit concerns agree to take a certain amount of the flour.

"At Battle Creek, Michigan, the Kellogg concern are interested in trying out the soy bean both as a flour and as a substitute for coffee. Mr. Kellogg would like to have us send him about a bushel of the Mammoth Yellow for experiments. He will give us the results and furnish us some of the products made from the beans." He is at the Toasted Corn Flake Co. in Battle Creek.

Note: This is the earliest document seen (Jan. 2002) that mentions Mr. [W.K.] Kellogg or his Toasted Corn Flake Co. in connection with soybeans.

Location: National Archives, College Park, Maryland. Record group 54–Bureau of Plant Industry, Soils and Agricultural Engineering. Subgroup–Div. of Forage Crops and Diseases. Series–General Correspondence, 1905-29. Box 92–Morgan-Morse. Folder–Morse, W.J.–#1 F.C.I.

Sent to Soyfoods Center by Jacob Jones of Purdue Univ., Aug. 1998. Address: St. Paul, Minnesota: Scientific Asst., Forage-Crop Investigations, Bureau of Plant Industry, USDA, Washington, DC.

314. *Tropical Life* (*England*). 1915. Vegetable oil notes. 11(9):164-66. Sept.
• ***Summary:*** "The Special Supplement to the London *Chamber of Commerce Journal*, dealing with the 'Trade Products of the Empire,' is full of useful information and statistics, including the following:" Using the process known as hydrogenation liquid oils can now be converted "into solid fats, and used for the manufacture of butter substitute,..." This fact is of "great importance to the trade in vegetable oils and oil-seeds." Many oils can be used to make butter substitute including "coco-nut oil, cotton-seed oil, palm oil, palm-kernel oil, ground-nut oil, sesamum oil, mowrah-seed fat, &c." Ground-nut oil is largely used, especially on the Continent. Efforts are being made to establish the crushing of ground-nuts on a much larger scale, but this is being hindered by the War.

"We are sorry to see, however, from the experiments that have been made by now in growing soya-beans in practically every British colony, it seems doubtful whether this crop can be profitably grown for export in competition with the Manchurian beans, which are raised under ideal climatic conditions, and by the cheapest possible labour. We still hope that results may prove to be otherwise before long, as soya-bean meal [flour] can be used for making bread, a use to which it is put on the Continent.

"Against this, *Fairplay* (of London) told us, some time ago that 'owing to the world-wide interest now evinced in the culture of the soya bean, experiments are being conducted in practically every British Colony. In West Africa, the bean arrives at maturity in six, eight or ten weeks, as against six months in Manchuria, while experiments carried out in South Africa prove that the crop could be matured in from ten weeks to five months, according to the zone and climatic conditions. It is expected that Ceylon will make shipments in the near future.

"'It is estimated that Great Britain and the Continent can

take ten million tons of [soya] beans per annum in the event of their being used for food purposes for human consumption in the form of milk [soymilk], cheese [tofu], butter, &c., as well as for industrial and other purposes. The Manchurian crop is estimated at over 1½ million tons per annum, but the fact that the experiments as to the cultivation of the bean, both in West and South Africa, have proved that the plant is well adapted to the soil and climate, gives every reason to suppose that large supplies will ultimately be obtained from the Colonies. In this event it will be seen that the South African farmer would be in a position to compete with the Manchurian growers, the latter costing in railage and ocean freight from Harbin to England £2 3*s.* as against £1 9*s.* for railage and freight from South Africa.

"'The storage of soya-beans requires special care. The grain should be thoroughly dry when put into storage, or placed where good ventilation can be afforded, otherwise it is almost certain to heat. During shipment a large number of pipe ventilators are placed in the ship's hold to prevent heating of the cargo, as sweating would otherwise occur on a long voyage from the East. The beans are shipped in bags, vessels being well dunnaged'" [packed to prevent damage].

315. *British Medical Journal.* 1915. Medicinal and dietetic preparations: "Synthetic milk" [made from ground-nuts / peanuts]. ii:646. Oct. 30.
• ***Summary:*** A demonstration of making synthetic milk from ground-nuts or pea-nuts (*Arachis hypogoea*) was recently given at the Melco Laboratories (56 Great Peter Street, Westminster, England). Near the end of the process, a "culture is added in the form of a special growth of lactic bacteria which has been acclimatized to the new milk. The cost price of the milk, including labour, is said to work out at 3*d.* [pence] a gallon, as against 8*d.* a gallon for cow's milk on the farm. The meal [okara] left over after the extraction of the milk-white fluid can also be used as a foodstuff. "The fluid certainly has all the appearance of cow's milk, but the flavour of the nut, which to many tastes would not be agreeable, is somewhat pronounced." The synthetic milk contains 13% solids versus 11.5% for standard cow's milk.

Note: Melco may stand for Melhuish + Company.

316. Ruhräh, John. 1915. The soy bean and condensed milk in infant feeding. *American J. of Medical Sciences* 150(4):502-12. Oct. Whole No. 523. [5 ref]
• ***Summary:*** From his experience in using soy bean, condensed dairy milk (Eagle brand) and some cereal (for additional carbohydrate) in proper proportions, Ruhräh feels that this method of feeding infants can be used without any danger. Address: M.D., Baltimore, Maryland.

317. *Advance* (*The*) (*Elizabeth City, North Carolina*). 1915. A better day for soy beans. Nov. 30. p. 2.
• ***Summary:*** "Farmers in this section will be glad to know that the Division of Agronomy at Raleigh, of which C.B. Williams is the head, is very much interested in the future of the soy bean crop, which is being more extensively grown now every year in this country.

"It is not strange that the State Department of Agriculture should be interested in soy beans, for the soy bean crop in North Carolina is larger than in any other state in the union. This year the soy bean acreage in nearly every county in this section was increased and it is said that Hyde County alone this year has harvested no less than 200,000 bushels.

"With a million bushels of soy beans now on their hands, Eastern Carolina farmers are wondering what they are going to do with them.

"In central New York, according to Mr. Williams, a factory has been established for the manufacture of soy bean milk and soy bean flour. The Kellogg Toasted Corn Flake Company of [Battle Creek] Michigan have conducted experiments with soy beans, and have expressed a desire to get in touch with growers of the product. Mr. Williams has recently visited this section and has obtained the promise of the Elizabeth City Oil and Fertilizer Company and of the Eastern Cotton Oil Company of Hertford [15 miles southwest of Elizabeth City] to conduct experiments with view to utilizing the soy bean to keep their mills running after the close of the cotton season. Also inquires have been received from the owners of factories which handle the soy bean and are able to use its by-products for information about factory sites in this section."

Note: This is the earliest document seen (June 2003) that mentions the Elizabeth City Oil and Fertilizer Company (or Elizabeth City, North Carolina) in connection with soybeans.

318. *Lancet.* 1915. A milk similar. ii(4814):1263-64. Dec. 4.
• ***Summary:*** Includes a discussion of Solac brand "synthetic milk" (soymilk), England's first commercial soymilk. This product was first announced in the *Lancet* (19 Oct. 1912). A large amount is presently produced by the Solac Company, "221, Tottenham Court-road, London, W., and our consulting chemist, who has witnessed it, reports that everything is carried out with scientific cleanliness...

"By introducing a lactic culture of a selective strain at a certain stage of its production, the necessary biological activity is given to this artificial milk. We have examined a good many samples of this 'vegetable milk' and have found that the non-fatty solids range from 8.96 per cent. (consisting of proteins, dextrin, and sugars) to 9.5 per cent., while the fat ranges from 3.69 to 3.9 per cent. The proteins consist chiefly of globulin, known as glycinin, which is a very rapidly digestible 'vegetable casein'; the fats are of vegetable origin, showing the same melting point and ease of hydrolysis as ordinary milk-fat; while the sugars and dextrin present are both again known to be of ready assimilability. The above figures are identical with those given by pure rich cow's

milk.

"The working basis of 'solac' or vegetable milk is the soya bean, which is particularly rich in oil and protein, the latter of an easily digestible type. The beans are very rigorously cleansed prior to the beginning of the extraction and emulsifying process. A residue of bean cake [okara] is left which possesses high nutritive properties, and this has already been used for making a bread, where its nourishing properties appear to be enhanced. The cake contains 10 to 11 per cent. of oil and 20 to 24 per cent. of protein.

"This novel invention is of some importance, especially at the present juncture, when the methods of practising food economies are upper-most in all minds. If it is proved that this vegetable milk can in the majority of purposes effectively replace cow's milk, the 'similar' will naturally claim considerable attention for many reasons. To begin with, such a milk at once disarms all suspicion as to contamination with dirt and disease organisms... It has already been used with success by the bakery and confectionery trades." Address: London.

319. Monahan, Louis J.; Pope, Charles J. 1915. Process of making soy-milk. *U.S. Patent* 1,165,199. Dec. 21. 2 p. Application filed 10 April 1913.

• ***Summary:*** Dry soybeans are reduced to a powder, which is rendered into an emulsion by slowly adding either fresh water or lime water and sodium bicarbonate; "the reason for using these agents is to counteract the taste of the bean as much as possible as well as to partially arrest the oily odor therefrom..." The emulsion is cooked and the insoluble matter is removed by filtration. Small amounts of "sodium chlorid" (table salt) and cocoanut oil may be added. "For giving a highly desirable sweet taste to the finished product we add about 8% of pecan or almond nut kernels during the emulsion processing so that the sweet nut oils are thoroughly emulsified." Chocolate and sugar may also be added. Address: Oshkosh, Winnebago County, Wisconsin.

320. Laxa, Otakar. 1915. Syrarstvi: Popis vyroby a upravy syra jako potraviny [Cheese production: Production of cheese and its productivity]. Prague, Czechoslovakia. 539 p. See p. 488-90. Chap. III, Vegetal Cheeses. Illust. 21 cm. [Cze]*

• ***Summary:*** A similar title was published in 1924. Address: Czechoslovakia.

321. Martindale, William Harrison; Westcott, W. Wynn. 1915. The extra pharmacopoeia of Martindale and Westcott. 16th ed. 2 vols. London: H.K. Lewis & Co., Ltd. See vol. I, p. 563, 849. Index. 17 cm. [14 ref]

• ***Summary:*** In Vol. I, the section titled "Oleum papaveris" (p. 562-63) is about "Suggested use of other oils to replace cod liver oil in malnutrition, phthisis and other forms of wasting disease." "Several nutritive oils... which rank almost as high as Cod Liver Oil in Iodine values, suggest themselves as suitable for therapeutic use. These oils are used both medicinally and as foods..." A table shows each oil with its iodine value. Cod liver oil 126-66. Poppy seed oil 138.1. Maize oil 111. Sunflower seed oil 136.1. Soya bean oil 122. Of these, poppy seed oil seems to be suited for use as an alternative to cod liver oil. Arachis oil, sesame oil, and henbane oil are also discussed briefly.

In the chapter titled "Supplementary list of drugs" is a long section (p. 805) on "Soya Bean.–*Glycine Hispida* (*Leguminosae*). This bean is extensively cultivated in China and Japan for human consumption and laterally in America and Europe, chiefly as a forage crop, is eaten as a vegetable, in soups, sometimes picked green, boiled and served cold with a sprinkling of Soy Sauce, and sometimes as a salad. A favourite method of preparing in the East is to boil until soft and place the resulting mass in a warm cellar until it ferments,–the resulting 'cheese' being known as 'Natto.'

"Analysis of the bean calculated on water free basis, indicated 38.5% Protein and 20% fat. It is probably due to this large amount of easily assimilable Nitrogenous matter that the Chinese and other rice eating people require so little meat. It contains practically no Starch–the latter fact is said to be due to presence of a diastase in the bean capable of converting Starch formed, two-thirds into Sugar, one-third into Dextrin. Has been used as an addition to ordinary diabetic dietary,–the beans may easily replace the Gluten of bread,–causes reduction in percentage of sugar (*Lancet* 1910, p. 1844). Soy Flour is even more serviceable, containing almost 1/3 more Protein than the bean, this being due to the removal of the fibrous hulls, which contain but little Protein (*British Medical Journal Epitome* 1911, p. 80).

"The protein of the Bean is being extensively used in connection with the treatment of diabetes and malnutrition. Soya Bean Meal from which it is made must be carefully examined for the toxic *Java Bean*.–F.W. Crossley Holland (*Pharmaceutical Journal and Pharmacist* (London) 1912, p. 154). Soya Beans average 8 m.m. in length and 7 m.m. in breadth and 6 m.m. in thickness. They are roundly ovoid in shape and about 99% are pale yellow in colour–there being a few darker coloured, smaller and more elongated. Structure of the bean. Soya Bean Cake and Meal is enormously adulterated.–T.E. Wallis (*Chemist and Druggist* (London) 1913, p. 278; *Pharmaceutical Journal and Pharmacist 1913,* p. 120).

"E.S. Peck states *Glycine Hispida* has been used in clinical experiments for the splitting up of Urea into Ammonium Carbonate.

"* Sarton is a preparation of the bean for use as a diabetic food.

"Soya Oil has Iodine value 121 to 123. Cowie found 131 (Chemist and Druggist 1910, p. 66). For further characters see (*Pharmaceutical Journal and Pharmacist* (London) 1911, p. 407)." See also p. 563.

In Vol. II, the section titled "Lecithin" (p. 76) states that it is a "Mono-amino Phosphatide" and contains a table listing the percentage of lecithin contained in 17 substances, including: Brain 160. Spinal cord 11.0. Nerve tissue (dry) 17.0. Kidneys 8.5. Egg yolk 12.0. Lupin seeds 2.0. Yeast (dry) 2.0. The soybean is not mentioned. A test of purity of lecithin made from fresh egg yolk, and the determination of lecithin in preparations are described.

William Martindale lived 1840-1902. Volume I also discusses Gluten (p. 546–Synonym: Vegetable Albumin), Diabetic foods (p. 546-47, incl. starchless bread; soy is not mentioned), *Oleum sesami* Sesame Oil (p. 571; also called Benné oil, gingelli oil, teel oil), *Arachis Hypogæa* (p. 805; also called Pea Nut, Ground Nut, Goober Nut, Manilla grain [Manila grain], Chinese Almond).

Volume II also discusses "glutin" (p. 86-89), proprietary medicines (incl. Ovaltine, and Pinkham's (Mrs. Lydia E.) Vegetable Compound, p. 162-63). Address: 1. Ph.D., F.C.S.; 2. M.B.Lond., D.P.H.

322. Associated Press (AP). 1916. Nutrition–Find soja bean valuable food. Blockade against Germany shows its merits. Chinese have used it extensively for the last 2000 years and it possesses more universal usefulness than almost any other common article of diet. *Los Angeles Times.* Jan. 13. p. 13.
• ***Summary:*** London, Dec. 15.–Discussion of the food blockade against Germany has served to bring attention to the merits of the soja bean, to which is given up more than twenty-five per cent. of the cultivated area in Manchuria. Although the soja is well known and highly regarded in Germany and the Scandinavian countries and is now second on the list of China's exports, it has hitherto achieved small general reputation in the English-speaking countries, and even the latest dictionaries dismiss it with the brief description: An Asiatic leguminous herb, Glycine Soja, the seeds of which are used to prepare sauce called soy."

The "first important shipment to Europe was made in 1908 by a British firm. The Germans almost immediately began to experiment with it and five years later were using the major part of an importation estimated at over $200,000,000 a year.

"The secret of the soja bean is its universal usefulness. A British government report gives the following list of soja products: 'Vegetable food (like marrowfat peas); soups; meat substitutes; chocolate substitute; macaroni preparation; flour; artificial milk; cheese [tofu]; coffee substitute; artificial horn; biscuit and food for diabetic patients; sauce; meal for cattle; oils, oil cake for fodder; fertilizer; beancake.'

"The same report points out that the oil from the bean is used in the manufacture of the following articles: 'dynamite and high explosives, soaps, linoleum, rubber substitute, margarine, paints, varnishes, toilet powder waterproof cloth, paper umbrellas and lanterns, salad oil, lubricants, lamp oil, preservative for sardines, substitute for lard.'"

"There are three principal varieties of the bean–yellow or huangtou [huangdou], green or chingtou [qingdou], and black or wutou [wudou]. The yellow contains more nutritive ingredients than the others, and this is the variety almost exclusively used for export. The quantity of oil extracted from the beans runs as high as 10 per cent. of the total weight.

"Sweden uses large quantities of the bean cake as food for milch cows; Denmark has a large pressing factory at Copenhagen; France has a factory built in Paris by a Chinese firm [Li Yu-ying]; and South Africa has recently begun to grow the bean in competition with the Manchurian Farmers. Germany in 1912 rescinded her former import duty and installed reduction plants for the far-eastern vegetable products in all her oil mills, importing the beans directly from Vladivostok by the shipload."

323. Goessel, Fritz. 1916. Verfahren zur Herstellung eines Ersatzes fuer Kuh- oder Muttermilch aus der Sojabohne oder aehnlichen Samen oder Samengemischen [Process for production of a substitute for cow's milk or mother's milk from the soybean or similar seeds or seed mixtures]. *German Patent* 289,929. Jan. 25. 1 p. Application filed 21 May 1914. Addition to German Patent 268,536. [Ger]
• ***Summary:*** In the application of the principal process an advantage has been found in reducing, in many cases, the amount of fat in the aqueous extracts of the soy beans, in order to secure a better taste in the product. The decrease or removal of the fat is effected by centrifuging the extract with the known separating centrifugal apparatus. The product is then emulsified with a fat or fat mixture suitable for human nourishment. Address: PhD, Frankfurt am Main.

324. Puig y Nattino, Juan. 1916. El cultivo de la soya [The cultivation of soybeans]. *Revista del Ministerio de Industrias* (*Montevideo, Uruguay*) 4(19):78-91. Jan. [7 ref. Spa]
• ***Summary:*** Describes variety trials conducted in Uruguay using seeds supplied by the USDA. The varieties harvested in March 1915 included Peking, Arlington, Pinsu [Pingsu], Jaba, and Mammoth. A table (p. 79) shows that the yields of seed were very small, but that Mammoth gave by far the largest seed yield, 320 kg/ha. Discusses the many ways that soybeans (*las habas de soya*) are used as food in Japan, including soy sauce (*Shoryu* [*sic, shoyu*]), cooked whole soybeans, tofu or soybean cheese (*Tofú ó Queso de habas de Soya*), and soymilk. They used Mammoth variety soybeans, grown in Uruguay, to make soymilk. Seven tables (p. 84-90) give the nutritional composition of five different soybean varieties tested in Uruguay, planted in 1914 or 1915. An 8th table (p. 91) gives the nutritional composition of soymilk.

Note 1. This is the earliest document seen (May 2009) concerning soybeans in Uruguay, or the cultivation of soybeans in Uruguay.

Note 2. This journal is published in Uruguay by the

Ministerio de Industrias y Trabajo.

Note 3. This is the earliest Spanish-language document seen (April 2013) that uses the word *Tofú* or the term *Queso de habas de Soya* to refer to tofu. Address: Ing. Agrón., Director del Laboratorio Agronómico en la Inspección Nacional de Ganaderia y Agricultura.

325. Latham, F.P. 1916. Soy beans as a cereal: Soy beans a great crop for southern farmer. *Progressive Farmer* 31(8):254-55. Feb. 19. See also p. 286 (Feb. 26) and p. 342 (March 4).

• ***Summary:*** "The first mention of the soy bean in this country was in the early part of the 19th century; however, it attracted little attention prior to 1854, when 2 varieties were brought to this country from Japan by the Perry expedition. It followed that other varieties were found and introduced, among them that 'old standard,' the Mammoth Yellow, which came to our shores sometime previous to 1882. The success with Mammoth furnished an encouraging lead to our diligent research workers, resulting in the importation into this country by the Department of Agriculture of some 800 distinct varieties."

As a cereal, it is widely produced in Japan, China, Korea, and Manchuria. "By certain processing of the ground beans a milk is extracted which is not such a poor substitute for the real article; from this a cheese [tofu] is made that resembles in texture and nutrient value, our cottage cheese. Another product is a heavy, rich sauce [miso], similar to our peanut butter, which is consumed in large quantities. Soys occupy the place in the diet of these people that navy and lima beans do in our own, and are prepared in a like manner. They furnish the brown man his 'peanut.' By the simple process of soaking in salt water, then roasting they at once become a close competitor of the famous American delicacy."

"So far as I have been able to ascertain there is but one mill in the United States built for and operating exclusively on soy beans. The Pacific Oil mills, of Seattle, Washington, have build up a lucrative business in this line and only get foreign beans for crushing, its output of both oil and meal meeting a ready demand in the West. That such can be done profitably in the South is no longer a question. The fact has already been demonstrated by several cotton oil mills in eastern North Carolina... If these satisfactory results can be obtained in mills not constructed for the purpose of handling beans, it is entirely reasonable to suppose that specially constructed machinery will in time be installed that will further enhance the profits accruing from such operations."

A portrait photo shows F.P. Latham.

Note 1. This is the earliest document seen (Aug. 2011) that mentions Pacific Oil Mills of Seattle, Washington.

Note 2. This is the earliest of many articles seen (Aug. 2011) that likens tofu to cottage cheese, or roasted soybeans to peanuts. Address: Belhaven, North Carolina.

326. Sinclair, John F. 1916. Recent observations in the use of soy bean in infant feeding. *New York State J. of Medicine* 16(2):83-88. Feb. Summarized in J. of the Am. Medical Assoc. (1916) 66:841.

• ***Summary:*** "Dr. John Ruhrah of Baltimore [Maryland] to whom I am indebted for the above details [on the nutritional composition of the "Soy Bean" and "Soy Bean Flour"] was the first to draw the attention of the medical profession in this country to the use of the Soy Bean in infant feeding. In 1909, he presented his preliminary report before the Twenty-first Annual Meeting of the American Pediatric Society. Subsequently in 1910 and 1911, he published the results of further studies.

"My own experience with Soy Bean began two years ago. I first employed it because of its high protein and fat content as a weak gruel to replace barley water, tea, and other liquids, in gastrointestinal disturbances in an effort to check the weight losses which occur so frequently. In this, it has proved most efficient. I have the records of 74 cases in which I have used Soy Bean in the wards of The Babies' Hospital of Philadelphia during the past two summers. All of these babies were under three years of age and were ill with summer diarrhea: 32 were diagnosed gastro-enteritis; 28 enteritis; and 12 ileo-colitis.

"In 38 cases the condition of the patient on admission was noted in the records as varying from 'bad' to 'dying'; while in 36 cases it is recorded as from 'fair' to 'good.'"

Of the 74 cases, 44 improved, 11 were unimproved, and 19 died. Details on each case are given in a semi-table format. Address: M.D., Philadelphia, Pennsylvania.

327. Melhuish, William James. 1916. Manufacture of vegetable milk and its derivatives. *U.S. Patent* 1,175,467. March 14. 3 p. Application filed 1 June 1914.

• ***Summary:*** "Within the last few years experiments have been carried out with the idea of making soy milk more palatable... It is found that the 'nutty' flavor hitherto associated with soy bean milk is to a large extent due to the presence of a small quantity of soy bean oil which comes out in the casein extractive process... This objectionable flavor is got rid of by (1) either crushing the oil from the beans in making the meal and before using the meal for the casein extraction, or (2) crushing the whole bean into meal without rupturing the oil cells, and then, after the casein extraction is complete, separating the oil from it. For this purpose a cream separator or any well-known form of centrifugal separator or filter may be used, and the oil so separated can be utilized for other commercial purposes."

Further, the addition of "citric acid greatly improves the flavor of the milk and destroys the slight nutty, beany or mealy taste which may remain in the finished product." A culture of lactic acid bacteria must also be added to insure proper digestion of the milk.

The first claim states: "The process of making vegetable milk from soy beans crushed into a meal for the purpose of extracting the casein by stirring the said meal in hot water, filtering the solution from the residue, extracting the nauseous soy oil, adding... sesame oil and fatty acids to make an imitation cow's milk cream, emulsifying same so that the said fats will not rise by the law of gravity, adding dry crystallized powdered maltose with other sugars, and the necessary alkaline salts." In claim 4 the citric acid and lactic culture are added.

Note 1. This is the earliest English-language document seen (May 2005) that contains the word "beany" in connection with flavor problems in soybeans or soyfoods (in this case the milk).

Note 2. This is the earliest English-language document seen (Sept. 2002) that mentions an "imitation cow's milk cream" made from soymilk. Address: Lecturer in dietetics, Upper Parkstone, Dorset County, England.

328. Suzuki, Tozaburo. 1916. Process of making foods. *U.S. Patent* 1,175,839. March 14. 1 p. Application filed 2 Sept. 1913.

• ***Summary:*** In the process of making soymilk, after boiling, a centrifugal machine is used to removed the lees [okara, or pulp]. Then the milky liquid [soymilk] is condensed by evaporation into a dough-like mass, which is placed on flat trays, fully dried, then powdered or molded into any desired forms.

Note: The author, a citizen of Japan, was also an inventor and innovator in the manufacture of soy sauce. Address: No. 401, Jineishinden, Sunamura, Minami-Katsushika, Japan.

329. Carver, G.W. 1916. How to grow the peanut and 105 ways for preparing it for human consumption. *Tuskegee Institute Experiment Station, Bulletin* No. 31. 35 p. March.

• ***Summary:*** Contents: Varieties. Soil. Preparation. Fertilizers for peanuts. Planting. Cultivation...

Peanut butter is mentioned in several places: No. 3, Peanut Bisque. Add half cup of peanut butter (p. 10). No. 4, Peanut Soup... Add a cup of peanut butter (p. 10). No. 14, Peanut rolls number one, calls for 4 tablespoons peanut butter (p. 12). No. 41, Brown sauce, calls for 1 teaspoon of peanut butter (p. 20). No. 51, Peanut butter. Describes how to make it at home (p. 22). No. 59, Peanut butter sandwiches (p. 24). No. 67, Peanut cream (Professional way), calls for 1 teaspoon peanut butter (p. 25). No. 70, Peanut butter candy, calls for 2 tablespoons peanut butter (p. 26). No. 80, Peanut butter fudge, calls for 2 heaping teaspoons peanut butter (p. 28).

Note 1. Linda McMurry called this Carver's "three-fold" bulletin on the peanut. It was based on the results of earlier work.

Note 2. David Manber (1967, p. 125) states: "Carver published recipes for cooking peanuts for the home in 1913, but the original bulletin was in its sixth printing by 1916. It gave directions for growing, and 105 different ways of preparing the peanut for eating." Address: M.S. Agr., Director of the Station.

330. *Washington Post.* 1916. Uses of soya bean: Merits not sufficiently appreciated, food experts point out. April 3. p. 10.

• ***Summary:*** "The general value of the soya bean has not attracted the general attention it deserves, according to experts who are bringing it to the attention of the American people. The Japan Society Trade Bulletin points out that the secret of the soya bean is its universal usefulness. Almost more remarkable than the rise of the bean trade itself is the number of discoveries of the uses to which it can be put. The trades commissioner for the government of South Africa gave the following list of soya bean products: Vegetable (like marrowfat peas) soups, meat substitute, chocolate substitute, macaroni preparation, flour, artificial milk, coffee substitute, cheese [tofu], biscuits, [soy] sauce, meal for cattle, oil, oilcake, fertilizer, beancake.

"The oil extracted from the soya bean, he pointed out, was used in the manufacture of the following articles: Dynamite and high explosives, soaps, linoleum, rubber substitute, margarine, paints and varnishes, toilet powder, waterproof cloth, paper umbrellas and lanterns, salad oil, lubricating oil, lamp oil, preserving sardines, lard substitute."

331. *Prescriber* (*The*) (*Edinburgh, Scotland*). 1916. Synthetic milk. 10(115):79-81. April.

• ***Summary:*** "The development of synthetic milk on practical lines is due to the researches of Mr. W.J. Melhuish. His processes are protected by numerous patents worldwide. His earliest work was with the soya bean (*Soja hispida*). "Soya milk can be made profitably only in large quantities," but the process has been used successfully. The rights for the British Empire are owned by a company named Solac, Inc., 221 Tottenham Court Road, London, W. The rights in the rest of the world are still controlled by Mr. Melhuish of the Melco Laboratories, 56 Great Peter St., Westminster, S.W.

The process for making Solac from pale yellow soya beans is then described in detail. The soya oil, which is "nauseous to the taste," is carefully removed, and arachis oil or sesame oil are added and emulsified to make up the synthetic cream content. A certain strain of "lactic bacillus" is also added.

The author has tasted Solac and finds that it is very similar to good cow's milk. Mr. Melhuish has also developed and patented a process for making a synthetic milk from "ground-nuts or pea-nuts (*Arachis hypogæa*) in conjunction with soya beans." The new process is trade-marked "Melcom." These new milks have certain advantages over dairy milk. First, they are prepared in a way that ensures

freedom from the organisms of disease. Second, it can be made to a standard composition, and this can be changed to suit the user. Third, "its price is lower than that of cow's milk, and neither price nor quality will vary with the season of the year." The cost of production is said to be about 3 pence per gallon.

Note: *The Prescriber* is "A monthly journal dealing with therapeutics and treatment."

332. Beille, L. 1916. Le Soja [Soya]. *Gazette Hebdomadaire des Sciences Medicales de Bordeaux* 37(9):67-70. May 7; 37(10):73-76. May 21. [4 ref. Fre]

• ***Summary:*** "The question of the soybean (*haricot Soya or Soja*) reappears in our scientific and medical journals from time to time; the importance that this grain has acquired in the diet of the essentially vegetarian peoples of the Far East, and its richness in oil, albuminous materials, and minerals, have long called it to the attention of hygienists. Some authors have wanted to portray the soybean as an ideal food, a little jewel with a nutritive power comparable to that of eggs and meat; others have extolled the milk-like emulsion, obtained by grinding soybeans with water, as an advantageous substitute for cow's milk.

A factory, established on the outskirts of Paris, at Vallées (Seine), was able to supply French consumers with flour, cheeses [tofu], sauces, and many other soy-based preparations used in China and Japan.

"Leaving aside the inevitable exaggerations that accompany a product which is new to us, but which already has an established reputation elsewhere, it is necessary to recognize that the chemical composition of the soybean is of real interest. The Parisian clientele promptly abandoned the sauces, cheeses, and milk made from soya, but they appreciated the sprouts, which are still selling well as vegetables in the markets of Paris and its suburbs; soy-based flour and biscuits are very well adapted for use in diabetic diets."

The author then gives an overview of the soybeans from a medical viewpoint, including a brief history and review of worldwide production and nutritional studies. "In 1779 this plant was introduced to France and cultivated in Paris at the Jardin du Roi. Since that period, despite the laudable efforts of the National Society for Acclimatization, the cultivation of the soybean has not gone beyond botanical gardens and some experimental fields. Nor has it had any more success in England or Italy. However in North America it is cultivated in all the southern parts of the United States, but as a forage plant."

Through the merchant and importer Mr. A. Denis of Bordeaux, the author obtained two varieties of soybeans, one from Manchuria and one from Japan. He conducted a nutritional and microscopic analysis of these.

The author concludes that the soybean has great potential as both a food and an in industrial uses, where the precipitated protein for example, can be used in place of milk casein to make Galalith, artificial ivory, glue, and paper coating.

Part II of this article discusses more about the general nutritional value of soybeans. He then discusses soy flour (*farine de soja;* he has a sample produced by the factory at Valées), soy milk (*lait de soja*), tofu (*fromage de soja*), shoyu and various soy-based sauces (such as *Tao-Tjung* of China, or *Touong* of Indo China).

"In summary the soybean is of great interest from the industrial point of view. The place that it occupies in the oil mills of Europe is already important... Its oil, for food or industrial uses, and its by-product, soy casein, are likely to receive a host of diverse applications. On the other hand, the future of the soybean as a food substance in Europe would seem to be more modest: its disagreeable taste removes it from daily consumption and enables it to be used only as an ingredient in mixtures."

"If, in Europe, with a few reservations, we can include soya in the diet of healthy people, then there will be even stronger reasons to give it to sick people. At first glance soya, which is rich in fats and protein, with little or no carbohydrates, appears to be a food of choice for diabetics. And we must recognize that it has attained the greatest success among these sick people. But, here again, it would be appropriate to give soya in the form of rusks/zwieback (*biscottes*), or mixed with vegetables or fruits; if it is not tolerated by sick people in these forms, then we should not hesitate to stop using it." Note: In Europe, rusks are widely given to sick people, like chicken soup in the USA. Both are considered to be good medicinal foods that are easy to digest. Address: Professeur â la Faculté de médecine et de pharmacie de Bordeaux.

333. *Advertiser* (*The*) (*Adelaide, South Australia*). 1916. Milk substitute. July 3. p. 6.

• ***Summary:*** "The South Australian Trade Commissioner in London, writing on May 18, said:–'I have been shown a liquid manufactured from soya beans, which in appearance resembles milk, and which has, I understand, many of the chemical properties usually found in milk. The finished product inspected was the outcome of the investigations of a company that has a manufacturing plant installed in London, and that is hopeful of working up an industry. At present the product is undergoing an examination by one of the leading American houses in London, with a view of testing, from a commercial standpoint, the advisability of placing, it on the market. It is through their courtesy that I was permitted to see a sample, and I have also been promised full particulars regarding any further developments in this alleged discovery, and will watch the progress of the investigations with interest.'"

Note: This is the earliest English-language document seen (Aug. 2013) that uses the term "milk substitute" to refer

to soymilk.

334. Johnson, Nelson Trusler. 1916. Manufacture of bean milk at Changsha. *Commerce Reports* [*USA*] (*Daily Consular and Trade Reports, Bureau of Foreign and Domestic Commerce, Department of Commerce*) 19(183):468-69. Aug. 5.
• ***Summary:*** "A firm composed of Chinese from the Province of Chekiang has recently opened a small factory at Changsha for the manufacture of milk from beans. This milk has long been known to the Chinese under the name of *to fu chiang* [soy milk] or bean-curd sauce. This is not to be confused with the product known as *chiang yu*, a fermented sauce made from beans which is well known as the soy of the Japanese and as one of the constituents of the famous sauces of Europe [such as Worcestershire sauce].

"Bean milk is made from small yellow beans, the same variety from which the Chinese bean curd [tofu] and *chiang yu* or soy [sauce] are made. The process appears to be a very simple one. The beans are soaked and then crushed between two stones. The crushed mass is allowed to run off into a tub and is then strained through cheesecloth and diluted with water and boiled. After boiling, it is again strained and the white milk run off into bottles and sold to the factory's customers." Note 1. The milk is first filtered when cold, before it is heated or boiled.

"An analysis of the bean-curd milk [soy milk] shows that it has a specific gravity of 1.020 and a fat content of 3.125 [percent], contrasted with a specific gravity of 1.029 and a fat content of 3.9 [percent] for good average cow's milk in America.

"No complicated machinery: The factory is a very small one. The proprietors informed me that they did all their work at night, in order to have fresh milk for delivery the following morning. They begin their work at about 10 o'clock. The milk is ready and bottled by daylight, when it is sent out by coolie to the various customers." Note 2. See photo in Piper & Morse 1923, p. 231.

"The room where the milk is made shows that no complicated machinery is necessary in the manufacture of the milk. At one end of the room are found two of the small stone mills in which the beans were ground. Large numbers of bottles were arranged on a rack near the wall, clean and ready to receive the morning's supply of milk. At the opposite end of the room there were three wooden [sic, metal] vats built into a concrete foundation, which proved to be a furnace. The prepared product is poured into these vats and boiled, the furnace being supplied with fuel from a hole in the outside wall. On either side were two earthenware jars into which the boiled product is poured and through which it is allowed to run through stop cocks into the bottles.

"The manufacturers of this milk seem to be endeavoring to conduct their factory along hygienic lines. They invited inspection of their factory and expressed a desire to carry out the suggestions made by the inspecting physician. These suggestions related principally to the sterilization of the bottles before allowing the milk to run into them. The whole room was very clean.

"Possible opening for milk bottle manufacturers: The manufacture and sale of this milk appears to be a new enterprise in Changsha, although I am informed by the natives of Shanghai and its neighborhood that it is an old and well-known product in that part of the country. To the eye the product looks exactly like unskimmed cow's milk. It has an odor of raw beans and is said to be not unpleasant to the taste. I am informed that a member of the family of Li Hung Chang is now engaged in manufacturing the various products of beans in Paris, his factory turning out, among other things, this bean milk.

"The product is very cheap compared with cow's milk. The factory undertakes to supply one pint each morning for approximately 50 cents gold a month. If this industry proves a success, manufacturers of milk bottles and patent milk-bottle tops should find a market for their wares here at Changsha, if they could be brought in cheaply... The milk bottle manufacturer will, of course, have to compete with the enormous numbers of empty bottles discarded by families who use aerated waters and wines. These bottles are sold by the servants, and are purchased for use in just such factories."

Note 3. This is the earliest document seen (Dec. 2006) describing the selling of soymilk in bottles in China. Changsha is in southeastern China, far to the southwest of Shanghai. Note 4. Consul Johnson seems to be a careful and well informed observer and reporter. Address: Consulate, Changsha, China.

335. Friedman, Jacob. 1916. Soy-bean products and method of preparation. *U.S. Patent* 1,194,495. Aug. 15. 2 p. Application filed 17 Dec. 1914.
• ***Summary:*** See author's British Patent No. 121 of 1914 titled "Improvements in or connected with the treatment of soya beans and the production of a new or improved food preparation therefrom." Address: Chicago, Illinois.

336. *Washington Post.* 1916. Beans milked in China: Beverage made from seed is not unlike cow's product. Aug. 20. p. MT5.
• ***Summary:*** "Consular advices report that a firm composed of Chinese from the Province of Chekiang has recently opened a small factory at Changsha for the manufacture of milk from beans. This milk has long been known to the Chinese under the name of fa chiang [sic, to fu chiang] or bean-curd sauce" [sic, soymilk].

This article contains long excerpts from: Johnson, Nelson Trusler. 1916. "Manufacture of bean milk at Changsha." *Commerce Reports* (Daily Consular and Trade Reports, Bureau of Foreign and Domestic Commerce,

Department of Commerce) No. 183. p. 468-69. Aug. 5. Johnson is the U.S. Consul at Changsha, China.

337. Golby, P.J. 1916. Synthetic milk. *Pharmaceutical J. and Pharmacist* (*London*) 97(2,785):214. Aug. 26. [5 ref]
• ***Summary:*** "A 'synthetic' or 'vegetable milk' has recently been introduced to the London market–under the trade name of 'Solac.' For this the following advantages are claimed: That its source and the conditions under which it is prepared practically guarantee its freedom from contamination with dirt or disease organisms; that it is equal in nutritive value to cow's milk; and that its price is little more than half that now generally charged for the latter.

"I recently bought a bottle of this milk, and 'took it home.' In appearance it is scarcely distinguishable from a good cow's milk; the flavour is pleasant, at first similar to ordinary milk, but leaving a somewhat nutty, in no way disagreeable, after-taste."

"I have heard that it may prove of some value as a diet for infants and invalids, on account of the absence of any tendency to form indigestible clots of curd in the stomach; but this is not claimed in the circular accompanying the milk.

"The actual source of this so-called 'synthetic' milk is not stated, but it is assumed to be an emulsion prepared from the Soja bean (*Soja hispida*)."

338. *Boston Daily Globe.* 1916. Beans milked in China: Beverage made by the Orientals is not unlike cow's product. Aug. 27. p. 33.
• ***Summary:*** This article is quite similar to, but shorter than, the one which appeared in the *Washington Post* one week earlier (Aug. 20. p. MT5) under the same title.

339. Meyer, Frank N. 1916. Re: Loneliness, depression, and hardships. In: Letters of Frank N. Meyer. 4 vols. Compiled by Bureau of Plant Introduction, USDA. 2444 p. See p. 2195, 2197. Letter of 1 Sept. 1916 from Hotel Seward, Portland, Oregon, to P.H. Dorsett.
• ***Summary:*** "Last night I landed here in Portland [Oregon], having come direct from Mandan [Experiment Farm, North Dakota] where I spent a night and a day and where [at Mandan] I found that a remarkable progress has taken place since you and I were here in Sept. 1912."

"And you are just a little bit surprised about I feeling lonely! My, Mr. Dorsett, there are times that my lonesomeness may destroy me. I wish I could tell you face to face some problems we go through, but I can assure you that the specter of a lonely old age looms up larger and larger and the spectacular office of an active explorer does not hold it down any longer!"

In a follow-up letter to David Fairchild dated 19 Sept. 1916 (written from Seattle, Washington) Meyer writes: "I am thankful to you for your interest in my recent illness, but I feel quite all right now, except of course that I have a touch of what the Germans and Swiss call "Heimweh" [homesickness]. It seems that it created almost somewhat of a sensation in the Office when I wrote that I felt lonesome. Well, that's not crime! Even wanderers like I, we find it hard to break ties of friendship! And the prospect of having to live again for several years among a race of people with whom one never becomes familiar, after having enjoyed the pleasure of our own white man's civilization for several months, well, that makes one feel lonesome. If I knew I could find a congenial white assistant in China I would feel better..."

"My illness was caused by being tired and then becoming over-heated in striking an unexpected hot wave. I got feverish, lost appetite almost entirely, could not sleep any more and for a few days I was in that strange borderland where sanity has slipped away and where insanity is entering. It is a dangerous, delirious borderland, and I really was afraid I would become seriously ill. The visions I have had are too strange to describe them; just fancy yourself visiting this early a million of years ago when Pithecanthropus erectus lived in small families and Aeantropus and all the strange beasts were all around. Well, I went thru it and marvelled. When I began to get better the animals and fishes went away and landscapes and forests came in succession but not landscapes of today, all was way, way back. I cannot explain all these matters!"

Location: University of California at Davis, Special Collections SB108 A7M49. Address: USDA Plant Explorer.

340. Ritchie, D.F. 1916. Synthetic milk. *Pharmaceutical J. and Pharmacist* (*London*) 97(2,759):244. Sept. 2. [1 ref]
• ***Summary:*** The author is writing in response to the article by Mr. F. Golby in the Aug. 26 issue of this Journal. "I have not seen the preparation to which he refers [Solac], but some years ago I experimented a good deal in trying to make a milk from Soya beans. This is quite easily done by grinding up the raw beans with a small proportion of water at a time, then adding sufficient water to make a uniform emulsion. A quite palatable milk is the result, which will keep good for several days." The author did not heat or cook the milk he obtained, believing that some "ferment" in the beans might be destroyed. When his raw soymilk was consumed, he observed that "it causes very great flatulence and disturbance. If boiled or used in cooking this effect would be minimised to a certain extent." This should "be a subject for careful investigation before being administered in a raw state to infants or invalids." Address: Ph.C., Newport, I.W. [Isle of Wight].

341. *Atlanta Constitution* (*Georgia*). 1916. The future of the domestic cow has been jeopardized by certain Japanese savants. Sept. 10. p. A12.
• ***Summary:*** "Owing to the scarcity of cattle in that country and the consequent scarcity of milk, these investigators of

the secrets of nature have had recourse to the soja bean, and, after treating it with water, sugar, and phosphate of potash, they have been able to produce a compound that is scarcely distinguishable from fresh milk."

342. *Pharmaceutical J. and Pharmacist* (*London*). 1916. Synthetic milk. 97(2,762):297. Sept. 23. [1 ref]
• ***Summary:*** This is a long summary of an article that first appeared in the *Prescriber* (vol. x, No. 115, p. 80) and which was in response to two earlier articles in the *Pharmaceutical J. and Pharmacist* (Aug. 26 and Sept. 2). "The development of synthetic milk on practical lines is due, it appears, to the researches of Mr. W.J. Melhuish, who was devised several processes which are protected by numerous patents all over the world. His earliest work was on the soya bean. Soya milk can only be made profitably on the large scale."

A detailed description of the process for making Solac from pale yellow soybeans is given. After soybeans are ground to a coarse flour and stirred vigorously in an alkaline water, the milk is filtered from the undissolved residue [okara]. The "next process is the separation of the oil; this requires great care, as the oil is nauseous to the taste, and, however carefully it is removed, will still leave a flavour in the milk. Certain oils are then added, such as arachis and sesame oils, to make up the synthetic cream content." Some sugar (dextrin) and the remaining salts are then added. "Emulsification is then completed in a vacuum pan, which gets rid of the greater part of the flavour and whitens the milk. A special strain of lactic bacillus is added to give the necessary biological activity, and the product is pasteurised [cooked] and cooled. The result is a rich, milk-like liquid, which tastes very much like cow's milk, with a slight, though not unpleasant, nutty flavor. In composition it is somewhat richer than cow's milk, the total solids being about 13 per cent., as against 11.5 in an average specimen of cow's milk." It remains fresh 24 hours longer than dairy milk and has a more creamy and rich consistency. "As an addition to tea or coffee it is, if anything, better than ordinary milk. A milk on similar lines is made from peanuts as the source of albumin, casein, and fat; it is only necessary to add the sugar, the salts, and the lactic ferment. The name given to this peanut milk is 'Melco,' and the product is said to be about the last word in synthetic milk production."

343. Piper, C.V.; Morse, W.J. 1916. The soy bean, with special reference to its utilization for oil, cake, and other products: Soy-bean meal as human food (Document part). *USDA Bulletin* No. 439. 20 p. Dec. 22. See p. 11-13. [2 ref]
• ***Summary:*** "The meal remaining after the oil is extracted from Mammoth soy beans is bright yellow in color when fresh and has a sweet, nutty flavor. The use of the meal as flour for human food has become an important factor in several European countries during the last few years and to some extent in America as a food of low starch content."

"In England, manufacturers have placed on the market a so-called 'soya flour,' which is 25% soy-bean meal and 75% wheat flour. This soya flour is being used by bakers in making a soy bread which is very palatable and may be found on the market. A similar product has been manufactured in Amsterdam [Netherlands] for 25 years. 'Soya biscuits' are also manufactured from this flour and constitute an article of export from England. German millers have been experimenting to some extent with soy meal in making brown bread by mixing with rye flour... Soy-bean flour enters largely as a constituent in many of the so-called diabetic breads, biscuits, and crackers manufactured as food specialties.

"As a human food, soy-bean flour has been used principally in the U.S. as a special article of diet and is sold by a number of food companies manufacturing special foods. Extensive tests are being conducted by the USDA with soy-bean flour in the making of bread. The flour or meal can be successfully used as a constituent for muffins, bread, and biscuits in much the same way as corn meal. In these various food products about ¼ soy flour and 3/4 wheat flour have been found to be the proper proportions." Note: This is the earliest document seen (Sept. 2004) which clearly states that soy-bean flour has been used to make bread in the USA.

"Although soy-bean milk has been used in both the fresh and condensed form and in the manufacture of cheese [tofu] in Japan and China for centuries, it only recently has been considered of possible importance in the United States. Soy-bean milk, owing to its food value and for sanitary reasons, is said to be of the greatest importance for cooking purposes and can be used by bakers, confectioners, and chocolate manufacturers. In Asiatic countries the whole bean is utilized in the manufacture of the milk, but quite recently it has been discovered that soy-bean meal, after the oil is extracted, is fully as useful for milk purposes as the whole bean.

"If the milk from the soy bean is used in the manufacture of products as a substitute for milk, the labels of such products should indicate that the substitution has been made, otherwise it would constitute adulteration under the food and drugs act.

"In addition to its uses for flour and milk, the soy bean can be prepared as human food in numerous ways. The green bean, when from three-fourths to full grown, has been found to compare favorably with the butter or Lima bean... The soy bean has been utilized not only in the U.S. but in European countries as a substitute for the coffee bean. When roasted and prepared, it makes an excellent substitute for coffee." Address: 1. Agrostologist in Charge; 2. Scientific Asst. Forage-Crop Investigations, USDA, Washington, DC.

344. Combe, Ad. 1916. Comment se nourrir en temps de guerre? Troisième partie [Where can one find proper nutrition in time of war? Part III]. *Bibliothèque Universelle et Revue Suisse* 84:446-73. Dec. See p. 450-51. [Fre]

• ***Summary:*** Vegetable milk (*Le lait végetal*)–For a long time in infant medicine we have used Lahmann's vegetable milk (*Le lait végetal de Lahmann*) which is nothing more than concentrated almond milk, sterilized and preserved in tin cans. It was formerly widely used by German pediatricians to prepare an artificial milk. But its high price does not recommend it as a war food.

Soymilk (*Le lait de soya*)–We will not say as much about other artificial milks, widely used in Germany since the war, as about that prepared from soybeans (*fève de soya*). But there is no need to get excited about a German discovery; soymilk comes from Japan where it has been used for a long time to replace natural milk; it has been used only rarely in France. It is prepared as follows: Soybeans are cooked until the liquid becomes white [sic], then sugar is added along with phosphates and potash [potassium]. It is then condensed into a creamy liquid analogous to condensed milk; this is soy butter [sic]. By diluting it with water, one obtains an artificial milk which somewhat resembles regular milk in taste and appearance.

Apparently inspired by this [Japanese] method, soymilk has been prepared in Germany for some years in ever larger amounts–so much so that in 1913 Germany imported 125,448 metric tons (tonnes) of soybeans a year, from which they obtained that year 18,000 tonnes of soy oil and soymilk. This artificial milk, it must be said in passing, is the ideal milk for diabetics, for whom it is suited because of its high content of fats and protein and its low content of carbohydrates. A table show the content of protein, fat, carbohydrates and calories in whole soy flour, soymilk, and cow's milk.

Soymilk is used with great advantage is times of war. Because of its high fat [vegetable oil] content, it can replace butter in the diet, to which it adds calories, for it is easy to digest and inexpensive. Address: Prof. of children's clinical studies, Univ. of Lausanne (Professeur de clinique infantile à l'Université de Lausanne).

345. Williams, C.B. 1916. Soy-bean products and their uses. *North Carolina Agricultural Experiment Station, Circular* No. 34. p. 1-7. Dec.

• ***Summary:*** Contents: Introduction. First commercial crushing from domestic beans (started on 13 Dec. 1915 by the Elizabeth City Oil and Fertilizer Company of Elizabeth City, North Carolina). Soy-bean oil. Uses for the oil. Soy-bean meal. Composition and exchange value of the meal. Prices paid for beans by the oil mills. Soy-bean oil industry in England, Manchuria, and Japan. Importation of oil. Soy-bean meal as feed. Soy beans and products for human food.

The article begins: "In order that any people may maintain their soils in the highest state of productivity in an economical way it will be necessary that proper systems of crop rotation are used, and in these rotations it will be necessary to bring in leguminous crops at as frequent intervals as practicable. For North Carolina conditions one of the crops of this nature that may be used to good advantage in all parts of the State is the soy bean. If properly handled, this crop may be used as the means of adding to the productivity of the soils as well as to increase the net returns from the farm. Recently there has been a marked interest throughout this State and the South in the growing of soy beans." A "new outlet for the beans has developed from the crushing of the seed by a number of oil mills of the State..." The spread of the boll weevil should lead to increased interest in the soy bean.

"This crop was introduced into the State something like thirty-five years ago, yet very little was heard of it, outside of very limited areas, until quite recently, when a campaign was begun to induce the cotton oil mills of the State to use beans for crushing purposes in the same general way that cotton seed had been used for many years before. This campaign not only opened the eyes of the oil crushers to the possibilities of the soy bean in a commercial way, but of the farmers, also, to the great opportunities of this crop.

"During the spring of 1915 farmers, particularly in the Eastern part of the State, were casting about to find a crop or crops that might be substituted, satisfactorily, for cotton, as the price of this latter crop during the previous fall had been, in many cases, below the cost of production. Many farmers increased their acreage of soy beans, and as a result of this increase at least a million bushels or more of beans were produced last year." Something like 80,000 to 100,000 bushels of soy beans were used by the cotton oil mills of the State during the past fall, winter, and spring.

"The first commercial manufacture of soy-bean oil and meal from domestic soy beans in the United States was started on December 13, 1915, by the Elizabeth City Oil and Fertilizer Company of Elizabeth City, North Carolina.

"From the start this mill operated night and day solely on soy beans until it had crushed it supply of about 20,000 bushels. This mill was able to crush about twenty tons during each twenty-four hours...

"It is understood that before the mill had ground a single bean they had contracted their entire output of oil to one of the leading manufacturers of the country at fairly reasonable prices. It, too, had no difficulty in selling its entire output of soy-bean meal, most of it going to a fertilizer manufacturer. From a ton of the beans this mill was able to secure something like 32 to 35 gallons of oil and about 1,650 pounds of meal... Other oil mills in North Carolina that crushed more or less soy beans during the past season were those located at New Bern, Hertford, Winterville, Washington, Wilson, Farmville, Lattimore, and at a few other places."

"Uses for the oil: At the present time the oil is used in this country chiefly in the manufacture of soaps, varnishes, paints, enamels, linoleums, and water-proofing materials. It has entered, also, to some extent in the manufacture of edible

salad oil and butter substitutes" (p. 3). "Soy-bean meal: The meal secured from crushing the beans is the most valuable product and will have the widest usefulness. That secured from the crushing of yellow-colored beans is of a bright yellow color... Meal, too, that has been treated with ordinary solvents, employed for this purpose to remove the oil, is of a brighter color than are those meals from which the oil has been removed by heating and pressure. The oil, however, secured by a solvent process would be of a darker color... The soy-bean cake secured by expression methods, has a pleasant taste, not unlike malted milk, and when ground into meal may be used, at the present time, chiefly for feeding to livestock or for fertilizing purposes. The meal as a feed is highly concentrated and nutritious, and all kinds of stock seem to relish it when fed to them properly. It should not be fed in large quantities for any great length of time, because of its highly concentrated nature. As a fertilizer it acts satisfactorily. Much of the meal produced by the oil mills of the State during the past year seems to have been sold, without any difficulty, to manufacturers for the making of mixed fertilizers."

"... during 1913 and 1914 the British Oil Mills, located mainly at Hull, England, paid from $1.00 to $1.17 per bushel for Asiatic beans. During 1915 the price paid at the mills at Hull varied from $1.04 per bushel in January to $1.82 per bushel at the end of the year.

"In England, the oil from the soy bean is extracted largely by a secret process owned by an oil extracting company of Hull. By this process the seed are ground finely and are then treated directly by means of a solvent, which is thought to be benzine. Afterwards the oil is removed from the solvent by distilling off the latter, the solvent being used over and over again in the extractive process."

"By use of gasoline extraction the whole of the oil may be secured, the oil being of a clear, pure color, and hardly bearing any resemblance at all to the dark, muddy oil secured by the old hand-press method.

"The machinery used by the larger operators of England, Continental Europe, as well as of Japan, Korea, Manchuria, and China, is of Anglo-American manufacture, which is the kind ordinarily used in the expression of oil from cotton seed. In 1910 Stewart and Chard secured patents in England for a special machine which was particularly adapted for breaking up the beans. This machine has been very useful in solving some of the difficulties experienced in the soy-bean crushing industry in England.

"In England soy-bean oil for general purposes is not refined, as is cotton-seed oil in America, by the use of caustic soda, but by means of sulphuric acid and fuller's earth.

"Processes of refining soy-bean oil for edible purposes have been devised, but these, like those used for extracting the oil from the seed, have been kept secret; but they are thought in most cases to be by means of superheated steam."

"Importation of oil: In this connection it may be of interest to know that for the five years ending with 1916 there were imported into this country more than 174,000,000 pounds of soy-bean oil, which represented crushings amounting to more than 12,000,000 bushels. Of these, 47.6 per cent came through the port of New York; 36.1 per cent through Seattle [Washington]; 9.6 per cent through San Francisco [California]; 2.2 per cent through Philadelphia [Pennsylvania]; 1.6 per cent through Boston [Massachusetts]; 1.1 per cent through Chicago [Illinois]; and 1.3 per cent through all other ports of the United States. In 1916, 75 per cent of the importations came through the ports of Seattle and of San Francisco, the chief port of entry being Seattle, with 62.9 per cent of the total importation. During 1916 more than 98,000,000 pounds of soy-bean oil came in from other countries, 99.9 per cent of the total coming from Asia. Of the total amount imported from Asia, almost 72 per cent were shipped from Japanese ports. The total importations during 1916 wore valued at little more than $5,000,000."

"Soy beans, before crushing, and the meal secured by crushing, seem to have great possibilities in the way of different human foods. They are not only rich in food nutrients, but when properly prepared make very appetizing products...

"In this country some enterprising manufacturers are putting out prepared pork and beans, part of all of the beans being soy beans. A regular preparation of these which the writer has tried proved to be of as high grade as could be desired...

"Muffins made from soy-bean flour have been found to be very palatable [a recipe is included]...

"The chief value of the flour lies in its high content of protein (muscle-forming material) and mineral matter, one pound of it containing as much protein as two pounds of meat. Bread made from the soy-bean flour in Germany, where it is being largely used at the present time, secures about the same amount of food value as six dollars spent for meat. The flour seems to have especial value in the preparation of foods for delicate infants which have difficulty with digesting cows' milk, and for persons suffering with diabetic troubles." A diagram (p. 7) shows "Products secured from the crushing of a ton of soy beans by the oil mill, and the material made from these products." One ton yields 1,650 lb of meal, 32 gallons of oil, and 120 lb of trash and moisture. From the meal one can make food (human and animal), fertilizer, and celluloid. The human food can be macaroni, flour, sauce, milk, cheese, coffee, and lard. From the oil one can make food (cooking oils, butter [margarine?]), paints, enamels, blown oil (linoleum, India rubber substitutes, varnishes), and soap stock (soaps, glycerine). Note: This is the earliest English-language document seen (August 1996) that contains a diagram of this type. Address: Chief, Div. of Agronomy, North Carolina Agric. Exp. Station.

346. **Product Name:** Soy Lac (Soybean Milk Powder).
Manufacturer's Name: J.A. Chard, Soy Products.
Manufacturer's Address: 263 W. 12th St., New York City, New York.
Date of Introduction: 1916-1917.
New Product–Documentation: This is the earliest known commercial soymilk product made in the United States, and the earliest known powdered or dry soymilk made in the USA.

Piper and Morse. 1916. USDA Bulletin No. 439. p. 9. "The soy bean, with special reference to its utilization for oil, cake, and other products." "An industry which promises to be of importance in a further utilization of the soy bean is the manufacture of 'vegetable milk.' At the present time a factory in New York State is being equipped for this purpose. The development of this new enterprise will depend primarily upon the demand created among different industries not only for the milk, but for the flour or meal [okara] remaining after the milk is manufactured, which is valuable either as stock feed or for human consumption." Note: No specific mention is made of the company name, or address, or its owners.

Stoddard, William Leavitt. 1917. "Soy: The coming bean." *Good Housekeeping* 65:77, 126-28. Sept. The American housewife probably does not care "that there is a factory in New York is making a 'vegetable milk' of soy beans; the "flour or meal [okara] which remains after the milk is manufactured is valuable both as a stock for feed and for human consumption;..."

Kempski. 1923. *Die Sojabohne.* p. 20. In 1916 in the state of New York, a large establishment for the production of soybean milk was being created.

Horvath. 1927. *The Soybean as Human Food.* p. 47 (footnote). "In the United States some very good breakfast foods and an excellent finely powdered soybean milk powder "Soy Lac" is made by J.A. Chard, Soy Products, 263 W. 12th St., New York City, who has been experimenting for some time with soybeans." Page 62 states: A fine soybean milk powder, called *Soy Lac,* has recently been prepared in America by Chard.

New York City, City Directories. 1915 and 1918. No listing for this company.

Shurtleff & Aoyagi. 1979. Soymilk Industry and Market. p. 10, 23-24. This was probably America's first commercial soymilk produced by a Caucasian-run company.

347. Caspari, Charles, Jr. 1916. A treatise on pharmacy for students and pharmacists. 5th ed. Enlarged and revised. Philadelphia and New York: Lea & Febiger. 929 p. Illust. Index. 24 cm.
• ***Summary:*** Chapter 21 is an introduction to and history of the major pharmacopoeias of the Western world. The first was the London Pharmacopoeia, established in 1618, followed by that of Paris [France] in 1639, and of Edinburgh [Scotland] in 1699. The first truly national standard was that of France, issued in 1818. The first United States Pharmacopoeia was established in 1820. A new revision is published every ten years.

Chapter 12, titled "Classification of the natural products used in pharmacy" includes a discussion of "Fats" (p. 217-25), which begins: "The fats used in pharmacy are derived mainly from the vegetable kingdom..." These include expressed oil of almond, linseed oil, olive oil, sesame oil, and oil of theobroma (p. 220). Details are given on each (p. 223-25).

In chapter 26, titled "Emulsions" is a table titled "The official emulsions." The first of four recognized by the Pharmacopoeia (U.S.P.), is Emulsum Amygdalæ or Emulsion of Almond (p. 372-73) "Made by triturating sweet almond, acacia, and sugar with water." The "Special remarks" on this (p. 373) state: "Emulsion of almond is also known as *milk of almond,* and should always be made fresh when wanted."

Also discusses: Fluidextractum Cannabis, also known as Fluidextract of Hemp (p. 331; The Pharmacopoeia now recognizes both the American and Indian varieties of hemp under the official title Cannabis; the fluidextract can be made from either variety, but the name of the variety used should be indicated on the label. Not more than 0.03 mil. of fluidextract per kilogram of body weight shall be required to produce incoördination when given to dogs). Almond oil, expressed from sweet almonds (p. 752). Linseed oil (p. 756). Sesame oil (p. 757; also known as benne oil or teel oil).

Petroleum products (p. 763-65). Closely allied to the fats but chemically entirely distinct, these are mixtures of hydrocarbons. They are recognized in the Pharmacopoeia by the names Paraffin (also: Hard Paraffin), Petrolatum (also: Petroleum Jelly, Soft Paraffin, Vaseline, and Cosmoline), Liquid Petrolatum (also: Mineral Oil), and White Petrolatum (also: White Petroleum Jelly, White Vaseline). "Purified Petroleum Benzin," the commercial product usually designated simply as "benzin, is a mixture of hydrocarbons, chiefly pentane, C_5H_{12} and hexane, C_6H_{14}.

Note: This is the earliest document seen (July 2002) that mentions "hexane." Charles Caspari, Jr. lived 1850-1917. Address: Prof. of Pharmacy in the Dep. of Pharmacy, Univ. of Maryland, Baltimore (Maryland College of Pahrmacy 1841-1904).

348. Cooper, Lenna Frances. 1916. The new cookery. 3rd ed. Revised and enlarged. Battle Creek, Michigan: The Good Health Publishing Co. 412 p. 22 cm.
• ***Summary:*** This is a Seventh-day Adventist vegetarian cookbook. Contents: 1. Food values. 2. The art of preparing foods. 3. Beverages. 4. Cereals. 5. Fermented breads. 6. Unfermented breads. 7. Sandwiches. 8. Dairy products. 9. Cream soups. 10. Plain soups. 11. Meat substitutes and entrees. 12. Macaroni and Italian pastes. 13. Eggs. 14. Gravies and sauces. 15. Vegetables. 16. Salads and relishes.

17. Toasts. 18. Fruit desserts. 19. Custards and cold desserts. 20. Frozen desserts. 21. Pastry and pies. 22. Cakes. 23. Cake fillings and frostings. 24. Hot puddings. 25. Sauces for puddings. 26. Canning and preserving. 27. Special dishes for invalids. 28. Balanced menus."

In the Foreword, the author states: "We are indebted to Professor Ivan Pawlow [Pavlov], of Russia, for demonstrating the relation between appetite and digestion." "Many food reformers and faddists have attempted to prepare wholesome foods but have neglected the almost equally important requirement–palatability." "The author wishes to express her indebtedness to Dr. and Mrs. John Harvey Kellogg, of the Battle Creek Sanitarium, who first inspired her with a love for the study of foods and their scientific preparation and who have since been constant sources of help and encouragement. She would also acknowledge her indebtedness to Miss Clara B. Lambert, who for several years was associated with the author and has contributed to this volume both by helpful suggestions and by numerous recipes."

Soy is not mentioned in this Seventh-day Adventist vegetarian cookbook. The following commercial products are mentioned: Minute Brew (cereal coffee [coffee substitute], p. 32). Cereal coffee (p. 33). Kaffir Tea (p. 33). Sanitas Health Koko (p. 33). Yogurt buttermilk (p. 33-34). Sterilized bran (p. 44). Gluten mush (p. 47). Graham bread (p. 54). Bran bread (p. 62). Bran gems (p. 76). Protose (p. 129-35). Gluten flour (p. 136). Nuttolene (p. 138-41). Peanut butter (p. 144-145). Nut chops (p. 144, with peanut butter). Savora (p. 145). Granola (p. 147). Mock turkey (p. 152). Salted almonds (p. 300). Strawberry gelee (p. 306, with Vegetable Gelatin and egg whites). Yogurt ice cream (p. 307). Meltose dressing (p. 361). Hot Malted Nuts (p. 386. Pour 3/4 cup boiling water into ¼ cup dry Malted Nuts, stirring while so doing. Add salt if desired. It is ready to serve at once. Calories in the recipe: 34 from protein, 88 from fat, 61 from carbohydrate. Total 183. Note: Malted Nuts was a dry powder or meal. The resulting beverage was almost certainly a mixture of peanut milk and almond milk). Almond ice (p. 389, with "almond butter"). Gluten bread (p. 390). Gluten puffs (p. 391).

Note: This cookbook calls for abundant use of dairy products (milk, cream, butter), eggs, and sugar (up to 2 cups in some recipes). Address: Director of the Battle Creek Sanitarium School of Home Economics, Head Dietitian of the Battle Creek Sanitarium [Battle Creek, Michigan].

349. Fuerstenberg, Maurice. 1916. Die Einfuehrung der Soja, eine Umwaelzung der Volksernaehrung [The introduction of soya, a revolution in the food of the people]. Berlin: Paul Parey. 30 p. Foreword by Dr. Gottlieb Haberlandt, Director of the Plant Physiology Institute, Univ. of Berlin. [5 ref. Ger] Address: Germany.

350. Laxa, Otakar. 1916. Rostlinné mléko, levna nahrazka mleka kravskeho [Vegetable milk, an inexpensive substitute for cow's milk]. *Zpravy Laktologickeho Ustavu* (*Dairy Institute News*) (*Prague*) No. 5. 10 p. [26 ref. Cze; ger]
• ***Summary:*** According to Horvath (1927, p. 65) this article recommends the following procedure: "100 gms. of good yellow or green soybeans washed in cold water until the water is absolutely clear. After the cleaning soak for 24 hours in an amount of cold water just sufficient to cover them. After the beans become soft, mash in an almond-mill of the kitchen type. Pour the resulting milk mass in a bottle with a capacity of 2 liters to which are added 900 cc. of cold water, 10-15 gms. of cane sugar, 1 gm. of sodium chloride and one drop of essence of fresh hay, in order to cover the beany taste and smell with an aroma similar to cow's milk. Close the bottle and shake the contents from time to time. Filter the liquid through a clean linen bag after 4 hours so the residue is pressed out. In this way about 750 cc. of soybean milk are obtained.

Note: This is the earliest document seen (Jan. 2010) that contains a detailed description of how to make soymilk at home or in a typical European kitchen.

The chemical composition (without adding the values for cane sugar and sodium chloride) is: water, 94.85%; fat, 1.00%; protein, 1.78%; reducing sugar, 0.11%; galactanes and other soluble carbohydrates, 2.02%; ash 0.34%; dry substance, 5.15%. The addition of 10 gms. cane sugar and 1 gm. table salt to 1 liter raises the amount of dry substance to about 6% and also the ash content and the nutritive value. The food value of such soybean milk is estimated by Prof. Laxa to be equal to about one-half of the food value of whole cow's milk, or two-thirds the value of skimmed milk. The cost of one liter of this soybean milk in Prague in 1916 was estimated by Laxa to be two and a half cents (Mex.) if made at home." Notice that no mention is made of cooking the soymilk!

Horvath (1927, p. 60) continues: "According to Prof. Laxa, the fresh soybean milk shows a slight alkaline reaction. 'At 12 degrees of acidity of Soxhlet-Henkel it coagulates on boiling. The fresh soybean milk gives a strong peroxidase reaction of Storch [Starch]. It is also rich in katalase [catalase]. If hydrogen peroxide (a 10% solution) is added to soybean milk in proportion 5 cc. to 15 cc., 15cc. of oxygen are formed (liberated) in two hours. The reductase test, on the contrary, goes very slowly. No change can be observed if rennet is added to slightly warmed soybean milk. But if one increases the content of soluble calcium salts (adding f.e. calcium citrate), a finely flocculated precipitate is formed. The soybean milk curdles spontaneously at room temperature if the developed acidity reaches 14.8 degrees of Soxhlet-Henkel. In order to inhibit the putrefication [putrefaction] of soybean milk it is advisable to add a few drops of a culture of lactic acid bacteria. Soybean milk supplemented with lactose and inoculated with a culture of yoghourt [yogurt]

bacteria, coagulates at 40ºC in 4 hours and gives a curd-like acid mass.'

Yeu (1933, p. 14) states: "It was not until 1916 that a study of soymilk as a substitute for cow's milk was undertaken. O. Laxa gives the composition of milk obtained from soybeans cultivated near Prague. He made a soy yogurt. He concluded that soymilk was not important except in places totally lacking animal milks."

The author is a doctor. Hromadko (1926, p. 321) and Pume (1941 #069) cited this article correctly. Horvath (1927, p. 85) and L'Heureux (1933, p. 370) cited it as if it were a German journal article (from Berichte der Laktologischen Anstalt an der K.K. Boehm. Technischen Hochschule in Prag. 1916). Several subsequent French authors (Maillet et al. 1932, p. 490; Yeu 1933, p. 103) cited this as if it were a French journal article (from *Rapports de l'Institut de l'Ecole Polytechnique, tchèque*. No. 5. Prague). Nakazawa cited him as publishing in Extr. de la Rev. gener. du Lait, and Zbl. Bakt. II. 51, 423 (1920). or II. 86, 160 (1932). Or Biol. Abst. 7, 19020 (1933). Address: Prof., Dr., Czechoslovakia.

351. Sornay, Pierre de. 1916. Green manures and manuring in the tropics, including an account of the economic value of leguminosæ as sources of foodstuffs, vegetable oils, drugs, etc. Translated from the French by F.W. Flattely. London: John Bole, Sons and Danielson, Ltd. xvi + 466 p. Illust. 26 cm. [12 soy ref]

• ***Summary:*** This book is dedicated "To my esteemed Master and Friend M.P. Bonâme. A token of deep gratitude and sincere admiration." It "was awarded a gold medal by the *Société Nationale d'Agricole de France."* The translator is from the International Institute of Agriculture, Rome, and the Dep. of Zoology, University College of Wales, Aberystwth. In the introduction H. Pellet states (p. viii) "M. de Sornay, who for a number of years has been a member of the Agronomic Station of Mauritius, had already published, some time ago, in the *Bulletin* of the Station, a short treatise on the Leguminosæ." This volume is a major expansion of that work. The author was one of the first to study intercropping of sugar cane with legumes. Working in Mauritius, he found that legumes used in mixed cultivation with sugar prevented the growth of weeds and retained the soluble salts which would have been washed away by rain. A trailing variety of peanut was used. He also suggested soybean as an intercrop because "it does not interfere in any way with the small canes; the soybean may be used on a mixed cultivation and may even be sown in two rows in interspaces of canes" (p. 184). Also includes concise information about the cultivation and yield of soybeans.

Chapter 1, "General remarks" (p. 1-9) begins: "The family of the Leguminosæ, which numbers not less than 7,000 species distributed over every portion of the globe, contains, according to Van Tieghem, 430 genera." "The Leguminosae are generally divided into three great sub-families: Cæsalpineæ, Mimoseæ, and Papilionaceæ." The first two sub-families prefer tropical climates, whereas the Papilionaceæ "adapt themselves to every climate and are found distributed from the Equator [Ecuador] to the Poles." The Papilionaceæ are divided into eleven tribes; a table shows these and the subtribes or genera they contain. The genus Glycine is in the tribe Phaseoleæ, subtribe Glycina.

Chapter 2 is an "Account [history] of the theories on the absorption of nitrogen from the air by the leguminosæ." Chapter 3 (p. 9-46) is a "Description of the various leguminous plants of agricultural value." The 37 species discussed include the peanut (p. 47-70), Bambarra ground-nut or Voandzou (p. 70-72, native of Madagascar), *pois carré* [winged bean] (*Psophocarpus tetragonolobus*), and Soja, or Soy bean (p. 182-92).

The rambling treatment of the soy bean discusses bits and pieces of its history, botany, and yields in India, South Africa, and Mauritius. Nineteen tables show its composition. Concerning uses: "The seed of the soy bean is eaten as a vegetable by the majority of Chinese and Japanese, and they make numerous other uses of it." The chief ones are: Soy milk, soy cheese [tofu], and shoyu. "The roasted seeds of the soy bean are used in the United States and Switzerland as a substitute for coffee. Not containing any starch, these breads are used in the manufacture of breads and biscuits for people suffering from diabetes. They are found on the European market... The seeds are pressed in order to extract the oil, the oil resulting from the first expression being used in the manufacture of soap, whilst that from the second is used as machine oil. The cake is given to cattle mixed with other nutriments of lower nitrogen content. The trade in soy has increased considerably during the last five years." Trade statistics (exports of soy beans from Manchuria and imports to Europe) and prices on the London market (of soy beans, oil, and cake) are given.

Chapter 7, "Starch in the leguminosæ" (p. 246+) discusses the "Characters of the principal starches in the Leguminosæ." It contains an illustration (line drawing) of the starch in Soja hispida (Fig. 42, p. 251), and a description (p. 255) as follows: "Soja hispida.–Soy contains very little starch. The shape of the grains is fairly uniform, whilst their size is very variable. All the grains polarize clearly. The hilum is linear, occasionally stellate, but of rather rare occurrence. The striations are only visible at the edges and are very close together. Starch only very slightly homogeneous." Address: Chemist, Ex-Asst. Director of the Station Agronomique of Mauritius, Laureate of the Association des Chimistes de Sucrerie et de Distillerie de France et des Colonies, Laureate of the Société Nationale d'Agriculture de France.

352. Zhu Chen. 1916. Dongting Dongshan wuchankao [Survey of products of the Eastern Mountain of Dongting lake]. China. Passage on soy reprinted in C.N. Li 1958 #351,

p. 249-50. [Chi]
• ***Summary:*** Wade-Giles reference: *Tung T'ing Tung Shan Wu Ch'an K'ao,* by Chu Chên. Republican period. The section titled "Yellow soybeans" (*huangdou*) states: When fresh, they are called green vegetable soybeans (*maodou;* "hairy beans"); when dry, they are called yellow soybeans. Plant them in the 4th lunar month. The stem grows to a height of 2 feet. The leaves are round with pointed tips. The color is deep green, with little yellow flowers. The pods are a little more than an inch (*cun*) long, have green hairs, and contain 2-3 beans. When the beans are fresh, they are green; but when they grow old, they turn yellow. They are round like pearls. After removing the skin [seed coat] from the individual beans, you will find two parts [cotyledons]. They are like almond seeds. Most beans have that same structure. Green vegetable soybeans (*maodou*) are boiled in the summer and served on a plate as a vegetable.

There are two kinds of green vegetable soybeans. One kind is called *guanbangqing;* in the 5th month you can harvest them as green vegetable soybeans, or in the 7th month you can harvest them as yellow soybeans (mature). Another kind is called *shijiaxiang;* in the 7th month you can harvest them as green vegetable soybeans, or in the 9th month you can harvest them as yellow soybeans.

For some, you do not wait until they are mature; just harvest the [green] pods and boil them, then spread them in the sun until dry; they are called dry green soybeans (*xunqingdou*). They are also called *maodougan* ("green vegetable soybeans dried").

Green vegetable soybeans (*maodou*) are easily infested by worms. There is no way to prevent this, whereas [mature, dry] yellow soybeans can be stored for a long time. After you get rid of the pods, they do not become wormy.

There are many ways to eat yellow soybeans. You can boil them, roast them, use them to make jiang or tofu (*doufu*), or to obtain oil. These are methods handed down to us from antiquity. Their nature is warm. They benefit the large intestine. If you eat them raw, the flavor is not good; they have an unnatural flavor. If you have an ulcer, then their flavor is sweet. Western doctors say the efficacy of yellow soybeans is better than cow's milk. Therefore, in recent years, many Westerners [in this part of China] have begun to drink soymilk (*doufujiang*), so its price has risen. When you put yellow soybeans among the rice straw and pour water on them, after 6-7 days, the soybeans will sprout to a length of 2-3 inches to become soybean sprouts (*douyacai*). The villagers call them *ruyicai* ("as you wish vegetable") [probably because you can grow soy sprouts quickly, for use as a vegetable, whenever you wish, year-round]. The stalks can be dried and used as fuel. (Translated by H.T. Huang, PhD, April 2003).

353. Melhuish, William J. 1917. Process for the manufacture of artificial milk and the treatment of its residues. *U.S. Patent* 1,210,667. Jan. 2. 4 p. Application filed 22 Oct. 1915.
• ***Summary:*** This is a patent for making artificial milk from the arachis or ground nut, which is commonly known in America as the pea nut. It represents an improvement on his U.S. patent (No. 1,175,467, issued 14 March 1916), in which he describes "a method for making artificial milk deriving the casein from the soy bean. While good milk can be made under this patent long experience has shown difficulties which the present invention is designed to overcome. The soy is not marketed as one would wish: it contains impurities and the meal varies much. The enzym in the bean causes frequent anxiety and the nauseous oil has to be removed thus delaying the process and involving considerable expense in separators, their cleaning and upkeep. Furthermore the production of milk from the soy beans can only be worked profitably on a large scale; the expense and complexity of the machinery required make it utterly impossible to produce a daily output of from 5 to 50 gallons at a sufficiently low cost to compare favorably with cow's milk.

"In the manufacture of my new artificial milk I have to arrange synthetically for all the ingredients in the varied proportions of ordinary cow's milk." Address: Lecturer in dietetics, Highwood House, Parkstone, Dorset County, England.

354. *Chemisch Weekblad.* 1917. Algemeene vergadering de Nederlandsche Chemische Vereeniging te 's-Gravenhage op 28 December 1916 [General assembly of the Dutch Chemical Union at the Hague on 28 Dec. 1916]. 14(1):4-15. Jan. 6. [Dut]
• ***Summary:*** Includes the paper *"Ueber die Anwendung von Enzymwirkungen in der Ostasiatischen Hausindustrie* [On the application of enzymes in East Asian cottage industries"], by H.C. Prinsen Geerligs, followed by a long discussion.

355. *San Francisco Chronicle.* 1917. Gotham now has the soja bean. Jan. 12. p. 15.
• ***Summary:*** New York. January 11–When it comes to the matter of beans, Boston would do well to look to its laurels, because New York has welcomed into its capacious midst a rival to the famous New England Saturday night and Sunday morning food staple. And if you don't believe it go to 6 East Thirty-ninth street, make your way into the soja bean room of the School of Modern Cookery and gaze reverently on the soy, or soja bean, there on exhibition.

"The soy in its native haunts is said to have red hair, and somewhat of the temperament generally associated with that style of adornment.

"Forty-nine soybean specimens are on display, shorn of their hirsute appendages, the pods, leaves, and stems.

"In its original condition the bean, which is about the size and form of a green pea, is served in soup and is used in the preparation of meat sauces [such as Worcestershire sauce]. It can be found in the mysterious concoctions [soy

sauce] which the adventurous eater absorbs in chop suey establishments, it is said.

"The soja bean, according to its sponsors in the bean room, forms the principal article of diet of Chinese and Japanese soldiers, and it is also popular in Germany, where it forms an auxiliary to the cow and goat in furnishing substitutes for milk. Information as to how a soja bean was milked was refused, by the way.

"It was predicted that the soja bean as a great future in this country."

356. *Washington Post.* 1917. Putting it over on the cow: Japanese manufacture artificial milk from vegetables. Jan. 26. p. 6.
• ***Summary:*** From the Youth's Companion: "The milk problem is by way of being solved in Japan, where cows are scarce, by an extensive use of artificial milk derived from the soy bean. First, the Japanese soak the beans, then boil them [sic, after grinding] until the liquid turns white, when [after filtering] they add sugar and phosphate of potash. The boiling is resumed until a fluid results very similar in consistency and appearance to ordinary condensed milk. When water is added, soy milk is hardly to be distinguished from fresh cow's milk.

"In composition also the artificial milk is almost like genuine milk. Its proteins, fats and sugars are in very nearly the same proportion, although, of course, they are wholly vegetable in origin.

"Whether the substitute is equal to real cow's milk as a form of nourishment is not quite clear, for much of the value of milk as a food comes from the enzymes or vitamines it contains. The Japanese, however, declare that it serves all the purposes of cow's milk, and that it has the advantage of being less liable to infection when properly and carefully manufactures."

357. *Weekly News Letter* (*USDA*). 1917. Soy bean useful crop. May be utilized in greater number of ways than almost any other agricultural product. 4(27):3. Feb. 7. [1 ref]
• ***Summary:*** "The soy bean... may be utilized in a greater number and a greater variety of ways than almost any other agricultural product...

"In Japan the soybean forms one of the most important articles of food in use. It is one of the principal ingredients in the manufacture of shoyu (soy sauce), miso (bean cheese), tofu (bean curd), and natto (steamed beans). The beans are eaten also as a vegetable and in soups; sometimes they are picked green, boiled, and served cold with soy sauce, and sometimes as a salad. A 'vegetable milk' is also produced from the soy bean, forming the basis for the manufacture of the different kinds of vegetable cheese. This milk is used fresh, and a form of condensed milk is manufactured from it."

In several European countries and to some extent in America, soy-bean "flour enters largely as a constituent in many of the so-called diabetic breads, biscuits, and crackers manufactured as food specialties.

"Soy-bean milk... has been produced in small quantities in the United States, and recently a factory has been equipped to make this product." In Europe and America soybeans are roasted to make "an excellent substitute for coffee. In Asia the dried beans, especially the green-seeded varieties, are soaked in salt water and then roasted, this product being eaten after the manner of roasted peanuts."

Soy-bean meal (for use as a stock feed) and soy-bean oil are also discussed. "In addition to its availability as a food, soy-bean oil has found important uses in the markets of the world for making paints, varnishes, soaps, rubber substitutes, linoleum, waterproof goods, and lubricants. It is also used in the Orient for lighting and in the manufacture of printing ink."

Reprinted in *Jersey Bulletin and Dairy World* 36:323. Feb. 28; *Ohio Farmer* 139:377. March 10; and *Journal of Home Economics* 9:183-4. April. Address: Washington, DC.

358. *Jersey Bulletin and Dairy World.* 1917. Soy bean a useful crop: May be utilized in a greater number of ways than almost any other agricultural product. 36:323. Feb. 28. [1 ref]
• ***Summary:*** Reprinted from the *USDA Weekly News Letter* 4:3 (7 Feb. 1917). Also reprinted in *Ohio Farmer,* 139:377. March 10; and *Journal of Home Economics,* 9:183-4. April. Address: Washington, DC.

359. Carque, Otto. 1917. Infantile paralysis. *Herald of Health and Naturopath* (*New York City*) 22(1):[553]-60. Jan/Feb.
• ***Summary:*** "Infantile paralysis is a functional disease of the spinal cord, and according to medical authorities, like any other endemic or epidemic disease, it is caused by a specific germ. It is needless to say that I do not share this view."

"There is no doubt that infantile paralysis is caused by eating too many white flour products, artificial sweets [with white sugar] and the use of cow's milk, particularly pasteurized milk." Those having contracted infantile paralysis should eat "fresh fruits, fresh fruit and vegetable juices, with their abundant supply of organic salts,..."

360. *Ohio Farmer.* 1917. Soybeans for human food. 139(10):377. March 10.
• ***Summary:*** Reprinted from the *USDA Weekly News Letter* 4(27):3 (7 Feb. 1917). Address: Cleveland, Ohio.

361. Mairin, C. 1917. Le Soja hispida [Soja hispida]. *Annales Africaines* 24(6):71. March 15. New Series. [24 ref. Fre]
• ***Summary:*** Praises the many benefits of the soybean. From it one can make soy milk (which is equivalent to animal

milk), cream and butter and cheese (tofu). Combined with wheat flour, it can furnish, at a low price, a complete bread–and, I would add, one that is good for diabetics. This flour can be used to make all the different types of pastries and cakes. Finally, roasted like coffee, it makes an excellent alternative–with all the aroma of mocha.

362. Williams, C.G.; Park, J.B. 1917. Soybeans: Their culture and use. *Ohio Agricultural Experiment Station, Bulletin* No. 312. p. 577-600. March. [3 ref]
• ***Summary:*** This bulletin consists of two articles: "Soybean Culture" by Williams, and "Uses of Soybeans" by Park. The latter, which contains extensive information on soyfoods, is an extract of Park's paper titled "Soybeans as Human Food. Palatable Dishes Made from a Comparatively New Legume"; it was printed in Ohio Agricultural Experiment Station Monthly Bulletin 2(9, whole no. 21):299-303. Sept. 1917.

Contents: I. Soybean culture. Introduction: Production in Ohio, place. Climate and soil requirements: Climate, soil, fertilizers, inoculation. Seeding and cultivation: Seed bed, time of seeding, manner of seeding, depth seeding, rate of seeding, cultivation. Harvesting: For hay, for silage, for seed ("The best implements for cutting soybeans for seed are the mowing machine with side-delivery attachment, the self-rake reaper and the grain binder."), threshing. Varieties: For seed production, for hay. The effect of soybeans in crop rotations.

Tables show: (0) Acreage planted to five legumes in Ohio. Red and alsike clover: 880,676 acres (No. 1). Soybeans: 4,921 acres (No. 4). (1) Rate of seeding and yields of soybeans in Ohio from 1909 to 1916. Best rate–3 pecks/acre–gave 6-year average yield of 3,540 lb/acre of beans. (2) Description of 25 varieties: Amherst, Auburn, Cloud, Ebony, Elton (Chestnut)* (* = The Elton was first sent out by the U.S. Department of Agriculture under the name of Chestnut), Habaro, Hollybrook, Ito San, Ito San 17268, Manchuria, Medium Green, Mongol, Mikado, Ohio 7491, Ohio 7496, Ohio 9001, Ohio 9016, Ohio 9035, Ohio 9100, Ohio 9110, Sable, Shingto, Taha, Wing's No. 1, Yosho. The five highest yielders of grain are: Ohio 9016 (29.22 bu/acre, 5 year average), Ohio 7496, Elton, Ito San 17268, and Shingto.

(3) Yields of grain and straw of these 25 varieties. (4) Variety tests at the county experiment farms (yields of 8 varieties). (5) Soybean hay test (yields of 10 varieties, 1912-1916). (6) Wheat yields following crops of corn, soybeans (the highest), potatoes, or oats.

Part II. Uses of soybeans. Introduction. Use for animal food: Hay, grain, soiling crop. Special uses and products: Soybean meal, soybean oil. Use for human food: Soy sauce, soybean milk, use of the whole beans.

Concerning soymilk and tofu (p. 300): "If a small amount either of acid or of magnesium or calcium salts is added to the liquid [soybean milk], or if it is allowed to stand until sour, a curd is formed which settles out, leaving a clear, yellowish, watery liquid. The grayish white curd can be drained, pressed and eaten like cottage cheese. When salted and fried it is palatable, and can be used as a salad. This bean curd is the tofu which is so extensively eaten in the Orient. It is made fresh every day, and is as staple an article of diet of Oriental peoples as bread is of ours. As used by the Japanese these cakes contain 83 to 88 percent of water, 7 to 11 percent of protein and 4 to 5 percent of fat."

Concerning use of the whole beans: "When properly roasted and prepared, the ripe soybean makes a good substitute for coffee, equal to many of the cereal preparations on the market" (p. 302).

Photos show: (1) A soybean plant with its leaves removed to show pods (front cover). (2) A field of soybeans, with about half the leaves fallen, ready to be cut for seed (opposite p. 581). (3) Root system of a soybean plant with "numerous nodules in which nitrogen-fixing bacteria live" (p. 583).

Tables show: (7) Percentage composition and digestibility of soybean meal (pressed, or extracted) and other foodstuffs [oil meals and feed grains] for comparison. (8) Quantity and value of imports of soybeans, soybean cake, and soybean oil into the United States, 1910-1915.

Bar charts show (p. 600): (1) Pounds of digestible protein in 100 pounds of 14 food materials; soy beans are highest at 28.3 lb. (2) Pounds of digestible protein and digestible carbohydrate that one dollar will buy in the form of the same 14 food materials; in the form of soy beans, it will buy the most digestible protein (9.43 lbs at 3 cents/pound) and the 4th most digestible carbohydrate (after corn meal, rice, and wheat flour). Address: Wooster, Ohio.

363. Li, Yu-ying. 1917. Procédés et dispositifs pour la transformation intégrale du soya [Processes and technology for the transformation of whole soybeans]. *Chemisch Weekblad* 14(15):348-51. April 14. Included within a longer paper in this journal by de Waal, p. 344-56. [Fre; dut]
• ***Summary:*** This lecture, delivered in French on 11 Nov. 1911, includes a description of and an interesting, complex diagram showing the basic processes by which the many food and industrial uses of the soybean are created. "In the soybean industry, it is not only the whole seed / bean which constitutes the usable raw material, but also its derivatives such as soy flour, milk, etc., and even the by-products (cakes), which can, themselves, serve as the basis for a large number of products." A table (p. 349) shows these raw materials in five degrees: 1st. Whole soybeans. 2nd. Dehulled soybeans, cellulose/fiber, cakes, oil-rubber, milk, cakes. 3rd. Flour, cakes, oil, milk, cakes. 4th. Flour, milk, cakes, casein (*caséine*), flour. 5th. Casein, flour. "These five groups are composed of 19 products which can be considered as the raw materials which derive from a series of transformations leading up to the complete utilization of the bean.

"The course of operations to obtain the announced products comprises the following phases which are represented in figure 1.

"Dehulling of the beans. Grinding of the dehulled product, of oilcakes (*tourteau d'huilerie*), cakes for [soy] dairy production (*tourteaux de laiterie*), of casein.

"Pressing to obtain oil, or to obtain *sojalithe* (an industrial soy casein resembling ivory or horn).

"Drying of the casein, of the soymilk cake [okara] (*tourteaux de lait*), of the powder for preserves (*confiture*) [such as chestnut cream (*crème de marron*)].

"Cooking for the production of preserves, or for making sauce.

"Roasting / grilling for the manufacture of [soy] chocolate or [soy] coffee.

"Wet-grinding to obtain milk [from soybeans], or to obtain milk from okara (*lait provenant de tourteaux*).

"Fermentation for the manufacture of sauce [jiang or soy sauce], cooked soybeans, or milk.

"Concentration for the manufacture of milk, [okara] (*torteaux de lait*), or sauce.

"Desiccation / drying to obtain powdered [soy] milk, powdered [soy] milk cake [okara] (*poudre de lait de tourteaux*), powdered soy sauce.

A chart (fig. 2, p. 350) describes the progress and combination of different necessary operations to obtain these products.

"You can see that the soybean is first dehulled so that it can be cooked or ground either dry or with the addition of water. The dry-ground products, made into flour, are used for baking, pastry-making, and the fabrication of pasta (*pâtes alimentaires*).

"Dehulled soybeans treated by wet-grinding yield soymilk, which can itself be transformed into fermented milk, concentrated milk, powdered milk, or it can serve for the production of fresh or fermented cheeses, of [soy] sauce (by fermentation), as well as to obtain casein that can be dried or powdered; by pressing casein one obtains 'sojalithe.' The oilcakes [okara] resulting from the fabrication of milk are pressed and ground and can be used to make casein.

"Soybeans are pressed to obtain oil which can itself serve as a base to make candles, soaps, paint, artificial rubber, etc. Oilcakes remaining as by-products can be ground to make milk or pulverized to obtain flour.

"Cooked soybeans are also used to make condiments, fermented [soy] sauce, liquid sauce, solid [sauce], [sauce] concentrated into a paste or in dry powder. Cooked soybeans are also used to make pasty preserves (*confitures pâteuses*) or in powder.

"Cooked and grilled soybeans again serve to make [soy] coffee and chocolate." Address: Seine, France.

364. Waal, A.J.C. de. 1917. Over soja-producten [On soy products]. *Chemisch Weekblad* 14(15):344-56. April 14. (Chem. Abst. 11:2001). [22 ref. Dut]

• ***Summary:*** Describes the work done by men in different countries on various soybean preparations and includes a paper by Li Yu Ying (cited separately) titled "Procédés et Dispositifs pour la Transformation Intégrale du Soya," including food and industrial uses of soybeans. A complex, full-page French-language diagram (p. 350) shows the basic processes by which the many food and industrial products that can be derived from the soy bean, and summarizes patents related to many of these. By milling and baking: soya meal (*soja-meel*) and soy bread (*soja brood*). Soya milk (*soja-melk*) and Western-style cheeses. Coffee and chocolate substitutes: Soy coffee (*soja-koffie*) and soy chocolate (*soja-chocolade*). Pork-butcher products, incl. soy sausages (*soja-worst*) in which one can use soy cheese (*soja-kaas*). Soy protein (*soja-eiwit*). Worcestershire sauce (*Worcestershire-saus*). Li is a resident of Seine France. This paper was presented on 11 Nov. 1911, and published on 20 Jan. 1912.

Note 1. This is the earliest Dutch-language document seen (March 2001) that used the term *soja-koffie* to refer to soy coffee.

Note 2. This is the earliest Dutch-language document seen (Aug. 2013) that uses the term *soja-melk* to refer to soymilk. Address: s' Gravenhage (The Hague), Netherlands.

365. Melhuish, William James. 1917. Fremgangsmaate ved fremstilling av kunstig melk av soyabenner eller soyafroe [Artificial milk from soy beans]. *Norwegian Patent* 27,895. April 30. 5 p. Application filed 4 Dec. 1914. [Nor]

• ***Summary:*** The soybean oil is removed from the soybeans, then replaced with sesame oil, which is emulsified with the soymilk. Address: Prof. of Chemistry, London [England].

366. *J. of Home Economics.* 1917. The soy bean. 9:183-84. April.

• ***Summary:*** "The soy bean, already one of the most important crops of Asia, promises to take an important place in the agricultural industry of the United States. It is said that it may be utilized in a greater number and a greater variety of ways than almost any other agricultural product. Not only are the beans, and the oil expressed from them, available as food, but soy bean oil is used for making paints, varnishes, soaps, rubber substitutes, linoleum, waterproof goods, and lubricants, besides its use in the Orient for lighting and other purposes.

"In Japan the soy bean is one of the principal ingredients in the manufacture of shoyu (soy sauce), miso (bean cheese), tofu (bean curd), and natto (steamed beans). The beans are eaten also as a vegetable and in soups; sometimes they are picked green, boiled, and served cold with soy sauce, and sometimes as a salad. A 'vegetable milk' is also produced from the soy bean, not only forming the basis for the manufacture of the different kinds of vegetable cheese, but used fresh, while a form of condensed milk is also made

from it. All of these food stuffs are used daily in Japanese homes, and for the poorer classes are the principal source of protein.

"Soy bean oil resembles that of cotton seed in many ways. The meal remaining after the oil is extracted from the beans has become important during the last few years as a food of low starch content, and so adapted to the use of diabetic patients.

"Soy bean flour enters as a constituent into many of the so-called diabetic breads, biscuits, and crackers manufactured as food specialties. The flour or meal may be used successfully in the household as a constituent of muffins, bread, and biscuits in much the way in which corn meal is used.

"An artificial milk like that manufactured in the Orient has been produced in small quantities in the United States, and recently a factory has been equipped to make this product. Such milk may be used for cooking in the household, and by bakers, confectioners, and chocolate manufacturers. Such products must, of course, be properly labeled.

"The soy bean has also been utilized as a substitute for the coffee bean. When roasted and prepared, it makes an excellent substitute for coffee."

367. Prinsen Geerligs, H.C. 1917. Ueber die Anwendung von Enzymwirkungen in der Ostasiatischen Hausindustrie [On the application of enzymes in East Asian cottage industries]. *Zeitschrift fuer Angewandte Chemie, Wirtschaftlicher Teil* 30(3):256-57. May 8. [Ger]

• ***Summary:*** Paper read before the *Niederlaendische Chemische Vereinigung* (Dutch Chemical Union), General session in The Hague, December 28, 1916.

This paper is on the domestic application of enzyme actions in Eastern countries, and describes, among other things, the making of fermented and non-fermented soybean food products. "To make soymilk (*Milchersatz*), only white soybeans are used, softened in water for 3 hours until they have swollen to 3 times their original size. Then, while water is added continuously, they are milled between two hard stones and fall through a hole in the bottom stone into a pail. A very small amount of the thin soybean slurry is set aside; through the proliferation of lactic acid bacteria it quickly becomes so sour that after several hours that lactic acid content has risen to 1.5%. The above mass is cooked in a large pan. The now pasteurized liquid is filtered through a large sieve to remove the hulls and hard pieces. The filtered milk-white liquid has, in appearance and chemical composition, the greatest similarity with animal milk. A sample contains 6.9% solids, 3.13% protein, and 1.89% fat. It gives an alkaline reaction and contains a solution of legumin bound to potassium phosphate, while the fat is emulsified in the thick protein solution. Unfortunately this soymilk (*Bohnenmilch*) tastes very much like raw French-beans (*Schneidebohnen*), so that people who are accustomed to cow's milk do not enjoy it much. But infants should be very content with it.

"If cheese is to be made from this milk, a small amount of the slurry soured with lactic acid is added to it. Thereby, the legumin (protein) is dissolved from the potassium phosphate and coagulated, then settles out with the fat with which it is emulsified. When the milk, through several hours mixing with the coagulation liquid, has become fully firm, it is packed in cloths and pressed between boards, in order to remove any excess water. Then the cakes are cut into square pieces; if they are to be eaten raw, it must be done quickly, lest they continuing souring and spoil. In order to impart a pleasant color to the cakes, they may be placed for several moments in a Curcuma [turmeric] decoction. Mostly the cakes of cheese (*Kaesekuchen*) are dried in the sun or fried (*gebraten*). They then keep better and acquire a pleasant flavor."

"Of much greater significance is the preparation of the most popular and prevalent soybean preparation, soy sauce (*der Soja*), which in East Asia is an indispensable seasoning for a variety of dishes, and is produced and used in unbelievably large quantities. There are various types, some of which contain wheat flour. But here we will consider only the type that is made [in the Dutch East Indies] with soybeans plus some added ingredients to improve the flavor.

Note: This is the earliest German-language document seen (April 2012) that uses the term *der Soja* to refer to soy sauce.

For the preparation of soy sauce, brown or black soybeans are cooked for several hours. After pouring off the cooking water, the beans are placed in flat trays (*Hürden* [*tampah*]) of woven bamboo and dried for half a day in the sun, then cooled in the shade. When they are cooled, the beans are covered with leaves of *Hibiscus tiliaceus*, a species of mallow, and they are soon covered with a layer of Aspergillus mold, which is usually found on the tiny hairs or cilia on the underside of the hibiscus leaves and so is transferred to the beans. The mold filaments or hyphae penetrate between the tough and thick cell walls, dissolve these through hydrolysis, and thus make the cell contents accessible to the influence of the molds. The mold is allowed to work until it forms spores (*Fruchtstaende*). The beans then appear to be covered with a brownish green felt. The beans are then dried in the sun and placed in a strong, cold salt solution. The mixture is placed in the sun for several days and then cooked. The brine solution, which contains the soybean extract, is poured off and the beans are cooked several more times until they have lost their salty taste. The various cooking extracts are mixed, filtered through a fine sieve, then mixed with palm sugar, aniseed [*Pimpinella anisum*], and an herb extract, which one can buy at a druggist's shop, and finally cooked until salt crystals appear. The soy sauce (*Soja*), which is now ready to use, is

a dark brown, thick, very salty liquid, in which a viscous sediment forms. By diluting with water, it becomes turbid. But the solution again becomes clear with the addition of salt. This thorough investigation has shown that the mold hyphae branch out into the cell walls, hydrolyze and dissolve the pectin substances, and likewise break down the protein content of the cells to leucine, tyrosine, asparagine, and other decomposition products of legumes.

"But this action and result is of secondary importance. The main point is the dissolution of the cell walls, whereby the protein becomes free and can be dissolved in the concentrated salt solution. The composition of soy sauce, except for the salt content, is very similar to that of meat extract, so that it can completely replace meat in the largely vegetarian diets of the people of the East.

"In a similar way, various other foods are obtained, whereby a mold dissolves the cell wall and so fulfills the function otherwise accomplished by cooking. We mention here only the bean paste (*Bohnenbrei*) [*tao-tjo*], for the preparation of which, dehulled white soybeans are cooked and then mixed with rice flour and glutinous rice flour (*Kleereismehl*). The mixture is placed in a small basket that is lined with the same hibiscus leaves mentioned above, and the Aspergillus molds growing on the leaves are allowed to develop. This saccharifies the rice starch flour and dissolves the bean cell walls. Thereby, the mixture becomes sticky and glutinous, and tastes sweet. It is dried and placed in a pot with saltwater. There it remains until each bean is permeated with salt and a sample tastes salty. Palm sugar is added to taste and it is ready for use without further cooking. Microscopic analysis showed that the cell walls were completely dissolved and the contents lay free, so that the mold growth had greatly improved the digestibility of the beans.

"In Java, soybeans are also cooked and made into flat cakes on a flat bamboo lattice. A small piece of an old cake is added and the mass is covered with banana leaves. One soon observes a rise in temperature and the development of moisture. The mass is penetrated by hyphae of *Rhizopus Oryzae*, which again dissolves the cell walls and frees their contents. The cake [tempeh, though the term is not mentioned] with its covering of mold, is consumed without further processing, raw or fried (*gebraten*).

Also discusses the preparation of onchom from peanut press-cake. Address: PhD, Netherlands.

368. Dacy, George H. 1917. Cheap foods from soy beans. *Country Gentleman* 82(19):863. May 12.
• ***Summary:*** A soybean substitute is available for nearly every ordinary dish on the average menu. "Soys" can be substituted for navy beans in the baked pork-and-beans dish. "A mixture of one part navy beans to three parts of soy beans, supplemented by a juicy piece of pork, makes an article for the menu that surpasses Boston baked beans.

"A Michigan cannery profitably canned green soy beans during the past season... the soy may in time supplant the lima bean in the canning business."

"A New York factory is now engaged in making vegetable milk from the whole bean, converting the by-product meal [sic, okara] into livestock feeds."

"When bread, biscuits, muffins or griddle cakes are to be made it is customary to use one part of soy-bean flour to three parts of wheat flour. The Germans use bean flour in combination with rye flour in making brown bread."

The soy bean "is a crop possessed of the camel's ability to do without drink for long periods. On the other hand it is not afraid of wet feet." "W.J. Morse, soy bean expert in the Division of Forage Crop Investigations of the Department of Agriculture at Washington [DC], knows almost all there is knowable about the thousand-odd varieties that have been acclimated to American conditions, and he will gladly help you solve your problems." A photo shows a typical soybean plant with pods.

369. Van Meter, Anna R. 1917. How to cook soybeans. *Ohio Farmer* 139(20):701-02. May 19.
• ***Summary:*** "At this time of high food prices and of immanent food shortage, it is a matter of satisfaction to be able to call attention to so promising a food material as the soybean." Gives the composition of the soybean, and describes how to make and use soybean milk and "the curd or cheese-like substance which forms in the soybean milk on treating with an acid" [i.e. tofu].

The section titled "Some recipes" states: "Dry soybeans possess a strong, characteristic flavor which must be gotten rid of before they can be served palatably. In order to do this, it is best to soak them over night using a large amount of hot water. The beans should be suspended in the water in a colander or cheesecloth bag. In the morning, they should be well rinsed, and put to cook in water to which baking soda has been added (about one teaspoonful of soda to each cup of beans). This is poured off after 40 minutes boiling, and fresh, hot water added. Four to five hours of cooking will usually be found sufficient (best done in a fireless cooker), after which the beans may be seasoned in a variety of ways."

Gives recipes for soybeans cooked as described above with: Tomato sauce. Sour pickle sauce or gravy. Also recipes for: Baked soybeans. Green soybeans. Soybean meal [i.e. flour, "a useful substitute for wheat flour in bread, biscuits and muffins"]. Soybean meal soup.

"Green Soybeans.–These are excellent. Altho the pods are too tough to be eaten, the beans should be boiled in the pods, since they can then be shelled much more easily than when raw."

Note 1. This is the earliest English-language document seen (June 2009) that uses the term "Green Soybeans" to refer to green vegetable soybeans.

Note 2. This is the earliest English-language document

seen (June 2013) that recommends the use of baking soda when preparing dry soybeans for food. Address: Dep. of Home Economics, Ohio State Univ.

370. Hagerty, Michael J. trans. 1917. The beans: Imperial encyclopedia (*T'u shu shih ch'eng.* Published, 1728). Washington, DC: U.S. Department of Agriculture. 18 p. May. 28 cm.

• ***Summary:*** This section on beans (including soy beans) appears in the encyclopedia in Category IV–Science (*Po Wu Hui Pien*), Section 20–Vegetable Kingdom (*Ts'ao Mu Tien*), Subheading–Beans (*Tou Pu*), Book 35. Virtually all of the translation concerns a General Chronological Survey (*Hui K'ao*), No. 1. p. 1-24. For many of the longer detailed sections concerning soy beans, the translator refers the reader to his 1917 translation of: Wu Ch'i-chün, ed. 1848. *Chih wu ming shih t'u k'ao.*

"*The Shih Ching,* or Book of Odes, under the heading of 'Pin Feng Seventh Month', says: N. B.–Translated; see Chih (*Chih wu ming shih t'u k'ao*) translation–Pai ta tou, p. 31.

"In the *Hsiao ya* (Lesser Eulogium–Section of *Shih ching*), there is a poem entitled the *Pai chu,* or White colt, in which it says: "Let the brilliant White colt graze in my field. of Huo, or young bean plants." In the *Ta ch'üan* (Complete Commentaries on the Classics, by Chu Hsi), there is a. passage as follows: 'Hua Ku-yen says the name *Huo* denotes the leaf of the bean plant and is used in making Kêng, or broth.'

"In the *Ta ya* (Greater Eulogiums–Section of *Shih ching*) there is a poem entitled *Sheng min,* or Decade of Shêng-min, in which it says: N. B.–Translated; see Ch. translation, p. 3, 27.

"The *Erh Ya,* or Ancient Dictionary of Classical Terms, says: N. B.–Translated.; see Ch. translation, *Pai ta tou,* p. 2, 27.

"The *Sheng Shu,* or Canons of Yao and. Shun, says: N. B.–Translated.; see Ch. translation, *Pai ta tou,* p. 25.

The *Ch'un ch'iu,* or Spring and Autumn Annals, says: "The term Shu is a general one for the bean, and it grows in the spring and ripens in the autumn. They are classified according to their uses and form. The *Chih,* or Scarlet, and the *Hei,* or Black beans are suitable for the *yin,* or negative principle, while the *Sheng* or fresh beans are good for the *yang,* or positive principle. When the Shu becomes scarlet and black it changes gradually from the negative to the positive. In general it has the same character but it changes a little in order to have the positive appearance.

"According to the *Tso chu chih* the god of beans has the name of *Ling Chih,* and his family name is *Lao,* is seven feet tall, has large eyes, and he understands the change of the seasons."

The *Hsiao ching,* or Book of Filial Piety, by Pa Shen-ch'i, says: "Red soil is suitable for the Shu."

The Hsia hsiao chêng says: N. B.–Translated; see Ch. Pai ta tou translation, p. 17.

"*Huai nan-tzu* says: 'The mud from the river bottoms is good for the Shu.'

"The *Po ya,* or Ancient Dictionary, by Chang I, describing the Tonu (1 Cc), or bean, says: 'The *Ta tou* (2 Cc) [soybean] is identical with the Shu (1 Cc);, while the *Hsiao tou* (2 Cc) [azuki bean] is called the *Ta* (1 Cc). There are also the *P'i tou* (2 Cc), which is also known as the *Wan tou* (2 Cc), and *Liu tou.* The *Hu tou* (2 Cc) is also known as the *Chiang tou* (2 Cc) and *Shuang tou* (2 Cc). The bean pods are called *Chia* (1 Cc), the leaf is called *Huo* (1 Cc). The *Pa shu,* is identical with the *Pa tou* (2 Cc).'

"*The Chung shu shu* (See Bretschneider, *Botanicon Sinicum,* 1:79), a Treatise on the Art of Planting, by Kuo T'o-t'o, a work of the 7th or 8th century, describing the bean, says: 'Plant the bean, *Yu ma* (2 Cc), and *Ta ma* (2 Cc) (*Cannabis sativa*). If the beans are not planted at the proper time they will be injured by weeds, and even if they bear some pods, there will not be many beans. There is a maxim which says: *Ma yun ti tou yün hua,* "Cultivate the Ma, or hemp earth; cultivate the Tou, or bean blossom." This means that the *Ma,* or hemp, should be cultivated before it has even sprouted, while the *Tou,* or bean should not be cultivated until it has blossomed. The Ta tou, or Large bean [soybean], should not be planted on a Shên day.

"The *Erh ya i* (Appendix to the Erh Ya, by Lo Yüan, a writer of the 12th century), describing the Shu, says: 'The *Shu* is identical with the Tou and this class includes very many varieties. All mention of grains included these two names. In ancient times it was said that the hundred grains were made of varieties of *Liang* (1 Cc) (now *Setaria italica,* Kunth), which was a general name for grains like *Shu,* or glutinous variety of *Panicum miliaceum,* L., and *Chi* (1 Cc), also *Panicum miliaceum,* and *Tao* (1 Cc), or *Oryza sativa* [rice]. The term *Shu* is generally used to denote all *Tou* (1 Cc), or beans. These three classes each had twenty varieties, making a total of sixty, while the *Shu* (1 Cc), or Vegetables, and *Kuo* (1 Cc), or Fruits, each had twenty varieties, making a grand total of one hundred. But I (Lo Yuan) think that each kind of grain includes not under ten varieties, so that we do not need to include the vegetables and fruits in order to make up the total of one-hundred.' The *Kuang ya* (Ancient Dictionary), says: 'The *Ta tou* is identical with the *Shu.* The *Hsiao tou* [azuki] is the same as the Ta. The *Pi tou* is also known as the *Wan tou* and *Liu tou.* The *Hu tou* is also known as the *Chiang tou* and *Shuang tou.* The pods of the been plant are called *Chia,* while the leaves are known as *Huo.* The *Pa shu* is identical with the Pa tou.' The *Kuang chih* (See Bretschneider, *Botanicon Sinicum,* 1:164), or Ancient Records, by Kuo I-kung of the Liang dynasty (AD 502-556), says: 'In one year there are three crops of *Hsiao tou,* or Small beans [azuki] ripened. There is an inscription which reads, *Kan pai tou ts'u* 'sweet, coarse, white large bean.' The large bean may be eaten (?), and the *Tzu tou* (2 Cc) may also

be eaten. The *Chü tou* (2 Cc) has a sprout or stem similar to that of the *Hsiao tou* (2 Cc), has a purple blossom and may be utilized in making Mien, or noodles. These beans grow in Chu-ti and Chien-ning. The *Hu tou* class of beans includes both green and yellow varieties. This is a general summary of the different kinds of beans. The *Ta tou,* or Large bean [soybean], is planted during the second decade of the second month, this being the best season. If the planting is delayed up to the third or fourth month, much of the seed will be wasted. The *Hsiao tou,* or Small bean [azuki], should be planted in the fifth month, as this is the best season for this bean. The *shang fu* (2 Cc), or first part of the three decades of summer, is regarded as the second best period, while the *chung fu* (2 Cc), or middle summer period, is considered third best. These beans are harvested in the autumn in the eighth month, and for this reason, the rains of the eighth month are called the *Ta hua yü,* or Bean blossom rains.' The *Lu Shih Ch'un ch'iu* (Spring and Autumn Annals of the Lu Shih), says: 'When the Shu is planted at the proper time, it will have a long stalk and short root, and its pods usually grow in groups of from two to seven. This plant grows many branches with a number of joints. The leaves grow very profusely and the plant bears many beans. The Shu class of grains is considered inferior to the other Ku, or grains. This is why the *P'in fêng* poem of the *Shih ching* says that in the ninth month, for food, they gather the Shu (1 Cc), or Bean, and *Chü* (1 Cc), or seeds of the female nettle hemp plant (*Boehmeria nivea*), and *T'u* (1 Cc), or Sow thistle (*Sonchus oleraceus*), while for fuel they gather the wood of the *Ch'u* (1 Cc), (*Ailantus glandiculosia,* Desf.). The farmers are made to eat the Shu, or beans, and *Chu,* or Nettle hemp seeds, for food, although they are very coarse and poor, and the T'u ts'ai, or Sow thistle, which is very bitter, while for fuel, they are compelled to use the *Ch'u,* or fetid tree (*Ailantus*), which makes a very ill-smelling firewood. This is the reason why the farming people were considered coarse and were forced to be frugal and industrious, yet in spite of these hardships, as a class they were happy. Even Confucius said that to eat the Shu and drink water could be called proper conduct, and demonstrated filial piety better than the indulgence in ease and luxury and worship of material things.' The *Han shu* (History of the Han dynasty), says: 'At the present time, when there is a famine and the people are poverty stricken, half their diet consists of Shu, or Beans, and when food for the soldiers was scarce, the Shu was mixed with other grains and eaten by them. The Shu is put to very many uses, and is also placed in the sacrificial vessels used for worship. There are four preparations made from Tao mi, or rice and Shu, or Millet, which are called *Chou* (1 Cc), *Erh* (1 Cc), *Fen* (1Cc), and *Tzu* (*1 Cc*). When both are mixed together and boiled the substance is called *Erh;* when made into cakes, it is called *Tzu.* Because of their sticky glutinous nature, these grains are ground into flour. The Ta tou, or Large bean [soybean], is boiled and used as *Piao* (1 Cc), an outside coating or garnish for food. According to the commentary of the second Ch'êng, the term *Erh* is identical with *Ch'ou* and *Tzu* is identical with *Fên.* In the commentary of the former *Chêng,* these are separated into different classes and the Fên is described as being a *Tou hsieh* (2 Cc), or Bean flour. This is not the same. The bean was also used to make *Shih* or Bean relish' [fermented black soybeans]. The *Ch'u tzu* (See Bretschneider, *Botanicon Sinicum,* 1:203) (Elegies of Ch'u, by Ch'ü Yüan, 4th century BC), mentions a preparation called *Ta ku hsien suan hsin kan hsing.* Some one has said that the *Ta ku* (1 Cc) here mentioned refers to *Shih* (1 Cc). This description would seem to refer to liquid bean relish, a. mixture obtained by mixing salt, pepper, ginger, and honey with beans. These ingredients, when mixed together, make a substance which has an acrid-sweet taste and is used in preparing *Chou,* or Congee. It is said that Kung Kung (A legendary being. See Giles, CBD, p. 393) had a stupid son, who, on one occasion of the winter solstice, died of a plague. His ghost feared the *Chih hsiao tou,* or Small scarlet bean, and for this reason congee is made and eaten, at the winter solstice to ward off the evil spirits.' The *Yang shêng lun* (See Bretschneider, *Botanicon Sinicum,* 1:210), by Chi K'ang, says: 'The bean diet will cause the body to become heavy, and if it is eaten for three years, the body will become very heavy and movement difficult. If it is constantly eaten, it will cause the body to become very fat and the flesh very coarse and dry. In the tenth month of the first year of Duke Ting, the bean crop was killed by frost. Formerly the learned men regarded the Shu, or bean plant, as being very resistant to frost, and there was a saying that if the bean plant was killed, all plants would perish.' A table (p. 11) compares the nutritional composition of [soy] bean milk and cow's milk.

Note: This book was presented to the U.S. Department of Agriculture Library by Mr. W.T. Swingle. Address: Translator of Chinese, Office of Crop Physiology, Bureau of Plant Industry, USDA.

371. *New York Times Magazine.* 1917. Woman off to China as government agent to study soy bean. Dr. Kin will make report for United States on the most useful food of her native land. June 10. p. 9. (New York Times section 6).

• ***Summary:*** The *New York Times Magazine* is part of the Sunday *New York Times* and may be simply cited as such. Dr. Yamei Kin is "the only Chinese woman with a physician's diploma from an American college," the Woman's Medical College of New York. "She left New York a few days ago for the orient to gather data on that humble but nutritious food [the soy bean] for the Department of Agriculture at Washington." During World War I, new demands are being placed on America to feed its citizens and allies. "The appointment of Dr. Kin marks the first time the United States Government has given so much authority to a Chinese. That it is a woman in whom such extraordinary confidence is now reposed detracts nothing from the interest of the story."

China was the first country to invent paper, printing, gunpowder, porcelain, chess, playing cards, and silk. "And now Dr. Kin is going to see if her native land can teach the United States how to develop a taste for the soy bean in its numerous disguises...

"'The world is in need of tissue-building foods,' said Dr. Kin, 'and cannot very well afford to wait to grow animals in order to obtain the necessary percentage of protein. Waiting for an animal to become big enough to eat is a long proposition. First you feed grain to a cow, and, finally, you get a return in protein from milk and meat. A terribly high percentage of the energy is lost in transit from grain to cow to a human being."

"'The statement is frequently made that the Orientals live almost exclusively upon rice, eating little meat. It is not generally known, perhaps, that deficiency in protein is made up by the consumption of large quantities of products of the soy bean, which take the place in our dietary of meat and other costly nitrogenous foods. They are eaten in some form by rich and poor at almost every meal. Instead of taking the long and expensive method of feeding grain to an animal until the animal is ready to be killed and eaten, in China we take a short cut by eating the soy bean, which is protein, meat, and milk in itself. We do not eat the plain bean in China at all. It is never eaten there as a vegetable, but in the complex food products–natto, tofu, miso, yuba, shoyu, and similar dishes.

"'The chief reason why people can live so cheaply in China and yet produce for that nation a man power so tremendous that this country must pass an Exclusion act against them is that they eat beans instead of meat.'"

She then describes how to make tofu. "'Soup noodles are made out of bean curd. Entrées made of bean curd are served with cream mushroom sauce or a hot Spanish tomato sauce. A salad of bean sprouts, accompanied by cheese–the cheese [fermented tofu] a cross between Camembert and Roquefort, and made from the soy bean–is very nutritious and palatable. Americans do not know how to use the soy bean. It must be made attractive or they will not take to it. It must taste good. That can be done. We make from it a delightful chocolate pudding. A black soy bean sauce we use as a foundation for sweetmeats in China."

Note: None of the various Chinese food experts whom we have asked can understand what Dr. Kin means by the previous sentence. None has ever heard of a "black soy bean sauce" that is used as a foundation for confections or sweets in China. The two black soy bean sauces made in China, from either fermented black soybeans or jiang, are both salty. (WRS Jan. 2009). Nevertheless: This is the earliest English-language document seen (Oct. 2008) that uses the term "black soy bean sauce" to refer to a kind of sauce made from soybeans.

"The soy bean contains practically no starch, which means that it is a most desirable food for diabetics, and also, of course, for vegetarians. Buddhists kill no animals–they thrive by making a specialty of the soy bean, which, by the way, is already being used in the French Army. They find there that soy bean mixed with flour makes a good cracker, more nourishing than any other cracker.'"

"The Chinese do not know what worn-out soil is. Some places are so fertile and are cultivated with so much care and skill that three or four crops a year are regularly gathered... it is very common to see two crops in the same field at the same time... The Chinese have a passion for fertilizing the soil..."

"Dr. Kin is a graduate of the Woman's Medical College of New York, and her great interests have always been domestic sanitation, civic hygiene, the conservation of life, and questions of nutrition. She is the head of the Imperial Peiyang Woman's Medical School and Hospital, near Peking... the Imperial Infant Asylum in Tien-tsin, the Widows' Home, and the Girls' Refuge all come under her supervision as head of the woman's hospital work of Northern China. She will return to this country in October, bringing to our Government the detailed results of her study of the uses of the soy bean as a foodstuff needed by this country and by the world in the campaign of food raising and conservation." An illustration (line drawing) shows a portrait of Dr. Yamei Kin.

Note 2. This is the earliest published document seen (July 2000) that mentions Dr. Yamei Kin. Frank N. Meyer wrote letters about her in 1911 and 1916.

Note 3. This is the earliest document seen (Aug. 2013) that mentions a soy pudding (a "delightful chocolate pudding" made from bean curd).

372. Prinsen Geerligs, H.C. 1917. Domestic application of enzyme actions in Eastern countries (Abstract). *J. of the Society of Chemical Industry* (*London*) 36(12):662-63. June 30. [1 ref]

• ***Summary:*** A summary of a paper read before the *Niederlaendische Chemische Vereinigung* (Dec. 28, 1916) and published in the *Zeitschrift für Angewandte Chemie, Wirtschaftlicher Teil* 30(3):256-57 (1917, May 8).

"A milk-like product produced by grinding soya beans with water contains 6.9% of total solids, 3.13% of proteins, and 1.89% of fat; this product, unless boiled, rapidly undergoes lactic acid fermentation, and a cheese may be obtained by the addition of a quantity of the fermented liquid to a larger volume of the normal liquid. To prepare an extract [soy sauce] resembling meat extract, the cooked beans are subjected to the action of fungi which are found on the leaves of a species of mallow (*Hibiscus tiliaceus*), the mass is then extracted with salt solution, spices are added to the extract, and this is then concentrated to a thick syrup. A similar product is prepared from a mixture of soya beans and rice by the action of fungi. Another food [tempeh] is obtained by submitting soya bean cakes to the action of

fungi found on banana leaves, etc. The fungi found in rice meal and rice straw are utilised for converting rice meal into alcohol; rice meal may be saccharified by treatment with the fungi occurring on banana leaves and the liquid obtained is subsequently converted into rice wine. One of the most important results of enzyme action is the production of sugar in the palm; the stem of the latter is free from sugar but contains large quantities of starch; the conversion of the starch into sucrose proceeds in the tree, but laboratory experiments with the separated enzyme resulted in the formation of dextrose alone."

Note: This early English-language document describes tempeh, although the term is not actually mentioned.

373. *Literary Digest.* 1917. To study the soy-bean for Uncle Sam. 55(2):52-53, 55. July 14. Whole No. 1421.
• ***Summary:*** This is a lengthy summary of an interview with Dr. Yamei Kin, published in *The New York Times Magazine* on 10 June 1917. It includes several lengthy excerpts. "So interested has the United States become in this discovery [China's knowledge of the soy-bean] that Dr. Yamei Kin, a Chinese woman graduate of an American college, has been sent back home to gather for the Agricultural Department at Washington [DC] all the facts that are known in China about the soy-bean."

"'Instead of taking the long and expensive method of feeding grain to an animal until the animal is ready to be killed and eaten, in China we take a short cut by eating the soy-bean, which is protein, milk, and meat in itself,' says Dr. Kin.

"The plain bean, however, is never eaten, but it furnishes such products as natto, tofu, miso, yuba, shoya [sic, shoyu], and other dishes with queer-sounding names..."

A letter dated 26 March 1917 from Frank N. Meyer in China gives the address of Dr. Mrs. Yamei Kin as 500 W. 111th St., New York City.

374. *San Francisco Chronicle.* 1917. Milk of the soy bean. July 27. p. 16.
• ***Summary:*** From Philadelphia Public Ledger: "The milk from soy beans, which cannot be distinguished from cows' milk by taste or by chemical analysis, is wholly practical, asserts Dr. Arao Itano, of the Massachusetts Agricultural College at Amherst. Dr. Itano, who is a native of Japan, and studied at European universities before coming to the United States, says that the soy bean is identical with cow's milk in composition. In Manchuria soy bean milk is in general use. Dr. Itano has improved upon the Manchurian process so that the slight bean flavor has been wholly eliminated. Soy bean milk can be produced at low cost, and Dr. Itano believes that it can be made to yield butter and other products. Members of the New England Milk Producers' Association, which has announced the intention of boosting the price of milk 2 cents a quart this month, says that while soy beans are rich in protein, the beans needed to produce a given amount of milk would produce more if fed to high-bred dairy stock."

375. *Ladies' Home Journal.* 1917. The most nourishing of all beans. Plant soy beans: They will come in handy next winter. 34:29. July.
• ***Summary:*** "Now that we are taking stock of our food resources we find these beans a palatable, nutritious food... they make an emergency addition to our daily food and, most important of all, they can be used as a meat substitute. The fact that they contain no starch makes them valuable for invalids who cannot eat starchy foods."

Soy beans "may be boiled and served as a vegetable, roasted like peanuts and made into soy-bean coffee and soy-bean cheese. There is a soy-bean milk rich in protein, which makes an excellent substitute for condensed milk and is particularly valuable in cooking. There is also a soy-bean oil, which is valuable as a food product.

"The beans may be grown easily in practically all sections of the country where corn is grown, and they will give heavier yields than most other beans."

"The dried beans may be purchased now in some markets in various parts of the country, often under the name of togo beans, or Manchurian or Chinese or black beans, but, with the increased acreage which will be given to raising them this summer, will be more generally available."

"Soy beans have been canned in considerable quantities during the past season, baked with pork, and are on sale in this form in numerous markets. Canned green soy beans, which may be compared with lima beans, also are on the market in some sections of the country."

"There are several varieties of bean cheese made from the soy bean." The article then describes how natto and tofu are made and eaten. Gives a recipe for soy beans with bacon and molasses.

Note 1. This article, published about 3 months after the United States entered World War I, is based in part on *USDA Weekly News Letter* (11 April 1917, p. 7).

Note 2. This is the earliest English-language document seen (Nov. 2012) that uses the term "soy-bean coffee" to refer to soy coffee.

Note 4. This is the earliest article on soy seen (Aug. 2002) in *Ladies' Home Journal* magazine.

376. *New York Produce Review and American Creamery.* 1917. Navy bean has rival: Soybean has higher food value–Bean milk preparation. 44(14):565. Aug. 1. [1 ref]
• ***Summary:*** Discusses the advantages of soybeans over navy beans, based in part on *Ohio Agric. Exp. Station Bulletin* 312. "Soybeans are rapidly finding a place as human food, used as common white beans and in new preparations, but more nutritious and economical. Less risk and labor are involved in growing and harvesting soybeans as compared with navy beans.

"Boiled or baked alone, or in combination with pork, potatoes or rice, soybeans take the place of navybeans. Soaking over night in considerable water is necessary to remove the strong flavor of the beans. A little soda in the water during cooking makes them softer.

"Green soybeans cooked in the pod shell easily, and make a palatable dish when served with butter or milk. The pods are tough and seldom eaten.

"A little soybean flour added to cornmeal makes mush made from the mixture brown and quicker and increases its food value."

"Soy sauce, bean milk, bean curd and a ripened vegetable cheese called 'miso' are common foods made of soybeans in Japan and China."

Note: This is the earliest English-language document seen (Oct. 2001) that uses the term "soybean flour." Address: New York.

377. H.W.C. 1917. Hope farm notes: Cow peas vs. soy beans. *Rural New-Yorker* 76:1008. Aug. 25.
• ***Summary:*** The author is conducting a contest between "Black-eye cow peas and Wilson Early Soy bean... to see which is more valuable as a food or manurial plant... I think the Soy bean will finally come out ahead." It stands upright and is easier to harvest. "The Soy beans are not generally eaten as food, though they can be used in various ways. As stock food they are very useful."

"They even make an artificial milk out of the bean." After the war between Japan and Russia, the "crop has made it possible for Korea and Manchuria to get on the map as respected and prosperous provinces. Just as Alfalfa has made the strip of limestone land through Central New York rich and famous, I believe the heavy culture of Soy beans will bring back prosperity to any section where the soil has begun to fail and where Red clover and Alfalfa have not done well. I do believe that dairymen and poultrymen have in this Soy bean a plant which will come close to solving the problem of providing fat and protein foods."

"This Wilson's Early Soy is a small black bean. I have carried a handful in my pocket. Whenever I meet some friend moping around with what they call a grouch, I offer him a few beans. 'Here try my new remedy for that tired feeling. Nature's true remedy for the liver; swallow them whole. Don't stop to chew!'

"In many cases people have become so used to dosing that they will swallow three of these raw beans. They do look something like a black capsule. In some instances I have met these parties a few days later and they say: 'That was fine dope you gave me. Where do you get it? I want more!' I have no doubt that a black Soy bean with full faith will do more for health than a barrel of medicine taken because one has acquired the dope habit." Address: New York.

378. Goessel, Fritz. 1917. Werkwijze voor de bereiding van kunstmelk uit sojaboonen of dergelijke zaden of mengsels daarvan [Method for the preparation of artificial milk from soya beans or similar seeds or mixtures thereof]. *Dutch Patent* 2,122. Sept. 5. 3 p. Application filed 4 Dec. 1912. Opened to the public 15 July 1914. [Dut]
• ***Summary:*** This milk can be made from soybeans, sesame seeds, peanuts, nuts, etc. For example, finely ground soybeans are mixed with cold water and small quantities of alkali phosphate. The mixture is heated to boiling for a short time, cooled, and then pressed. The resulting liquid is then emulsified with edible fats and table salt (NaCl) or sodium sulfate (Na_2So_4).

Note: This is the earliest Dutch-language document seen (Aug. 2013) that uses the term *kunstmelk uit sojaboonen* or *melk uit sojaboonen* to refer to soymilk. Address: Stockheim in Oberhessen, Germany.

379. Park, J.B. 1917. Soybeans as human food: Palatable dishes made from a comparatively new legume. *Ohio Agricultural Experiment Station, Monthly Bulletin* 2(9):299-303. Sept. Extract from Ohio Agric. Exp. Station, Bulletin No. 312, "Soybeans: Their Culture and Use." [2 ref]
• ***Summary:*** For details, see Williams and Park. 1917. "Soybeans: Their Culture and Use." Address: Ohio.

380. Stoddard, William Leavitt. 1917. Soy: The coming bean. *Good Housekeeping* 65:77, 126-28. Sept. [4 ref]
• ***Summary:*** "*Good Housekeeping* asked the Department of Agriculture to tell its readers the truth about the soy bean. This article is the department's answer. In the [Good Housekeeping] Institute Kitchen new recipes and methods of using the soy bean were evolved and tested. These recipes will be found at the end of this article. A list of dealers in various sections of the country who carry a supply of soy beans will be mailed upon request accompanied by a stamped addressed envelope.

"'The soy bean, also called the soja bean, is a native of southeastern Asia, and has been extensively cultivated in Japan, China, and India since ancient times... The beans are there grown almost entirely for human food, being prepared for consumption in many different ways. Their flavor, however, does not commend them to Caucasian appetites and thus far they have found but small favor as human food in either Europe or America.' Thus declared a bulletin of the Department of Agriculture [Piper and Nielsen. 1909. Farmers' Bulletin 372] before the war. Less than three months after our entrance into the war–and the entrance of the United States as a nation for the first time into a food moderation and conservation campaign–this same authority stated that 'the soy bean has already reached a place of high economic importance in America and Europe as a foodstuff... During the past season the demand for seed by food manufacturers has resulted in greatly increased prices.' The soy is a coming bean if not *the* coming bean."

Sold in some American markets under the name Togo bean, the soy bean "now flourishes in an increasingly large acreage in Tennessee, North Carolina, Virginia, Maryland, Kentucky, and the southern parts of Illinois and Indiana. The earlier varieties even mature in Ontario [Canada] and our Northern states."

The American housewife probably does not care "that there is a factory in New York is making a 'vegetable milk' of soy beans; the "flour or meal [okara] which remains after the milk is manufactured is valuable both as a stock for feed and for human consumption; that soap manufacturers and paint manufacturers are using the oil of soy beans to replace more expensive oils; and that the substitute butter makers are using the fat of the soy bean in products which thousands of consumers are using all unwitting of its true nature.

"The thing that the American housewife wants to know today is where soy beans can be bought and what are the simplest uses of them... Probably the easiest and commonest method of cooking soy beans is to use them either for soup or to bake them."

Eight recipes are given; all but two call for "soy beans." Soy-bean bread (containing 20% of the flour in the form of "soy-bean meal" [a full-fat soy flour]), Soy beans and rice (with "1 tablespoonful Worcestershire sauce"), Soy-bean loaf with tomato sauce, Vegetable roast (baked), Savory baked soy beans, Soy-bean soup, Soy-bean muffins (with "1 cupful cold baked soy-bean pulp"), and Salted soy beans (deep fried).

Photos show: (1) Muffins made with soy-bean meal. (2) Soy-bean meal ground at the Good Housekeeping Institute; the hand-turned mill and two small piles of soy beans are shown. (3) A dish of soy beans and rice. (4) A soy bean plant. (5) A vegetable roast with soy beans as an ingredient.

Note 1. Theodore Hymowitz writes (12 Feb. 1990): "I have no idea if William Leavitt Stoddard was related to Illinois soybean pioneer William Hoyt Stoddard. William Hoyt had one brother named Charles Lumas Stoddard."

Note 2. This is the 2nd earliest document seen concerning soybeans in connection with (but not yet in) Togo.

Note 3. This is the earliest English-language document seen (Dec. 2012) that uses the term "Salted soy beans" to refer to soynuts. It is also the earliest document seen in any language describing the frying or deep-frying of whole soybeans to make soynuts. Previously soynuts had always been dry roasted.

Note 4. This is the earliest article on soy seen (Aug. 2002) in *Good Housekeeping* magazine.

Note 5. In the recipe for Soy-bean muffins the meaning of the ingredient "1 cupful cold baked soy-bean pulp" is not completely clear. This is the earliest document seen (June 2013) that uses the term "soy-bean pulp" (regardless of hyphenation). It probably refers to whole soybeans that have been baked then ground or mashed to a pulp and allowed to cool. However, the writer discusses okara earlier in this article, and this recipe may be calling for okara as an ingredient. If it is, this would be the earliest English-language document seen (June 2013) that calls for okara as an ingredient in a recipe.

381. Melhuish, William J. 1917. Substitute for milk, made from soya-beans and arachis (pea) nuts. *U.S. Patent* 1,243,855. Oct. 23. 4 p. Application filed 22 Oct. 1915.
• ***Summary:*** Arachis (pea) nuts are cleaned and coarsely ground, and the soluble nitrogenous and oily matter is extracted from them by treatment with a hot, slightly alkaline aqueous solution containing also salts usually found in milk. The residue is strained and pressed and a very small amount of butyric acid is added to it. Ground soya-beans are treated with a hot, very dilute alkali solution of a phosphate to extract nitrogenous and fatty constituents and the strained and pressed extract is mixed with the extract from the peanuts in a vacuum pan and with added fats as desired, warmed to about 40º, mixed with sugar syrup and boiled under a vacuum of 26-29 inches, and finally treated with milk ripening bacteria and citric acid and evaporated to the desired concentrate. Address: Lecturer in dietetics, Highwood House, Parkstone, Dorset, England.

382. *Times Trade Supplement* (*London*). 1917. Soy beans: Cultivation in the United States. Nov. 5. p. 170, col. 4.
• ***Summary:*** During the past few years the soy bean has become an important crop in the United States. The plant is grown mostly for forage, but in some states, such as eastern North Carolina, growing the beans has become a profitable industry. In 1910, soy beans were first processed in the USA for their oil by a mill on the Pacific Coast. These beans were imported from Manchuria, the oil was expressed using a hydraulic press, and the oil was sold to makers of soap and paint. The soy bean cake, ground and sold under a trade name, was soon recognized as a valuable feed by dairymen in the western states.

In late 1915 a shortage of cotton seed prompted several cotton mills in North Carolina to profitably produce soy bean oil and meal from home-grown soy beans. In several English mills, a solvent extraction process, using benzene, is employed. Another industry plans to make "vegetable milk" from soy beans. Note: This article was written by "a correspondent."

383. **Product Name:** [Soyama Fresh Soymilk, Dried Soymilk, and Fresh Soy Cream, Dried Soy Cream].
Foreign Name: Soyama Fruchtmilchpulver.
Manufacturer's Name: Soyamawerke Englehardt und Co.
Manufacturer's Address: Frankfurt am Main, Germany.
Date of Introduction: 1917.
How Stored: Shelf stable.
New Product–Documentation: Fuerstenberg. 1917.

Die Soja. p. 7, 32-33. The Soyamawerke in Frankfurt am Main makes, largely from soybeans, a fresh and dried milk (*Frisch- und Trockenmilch*) as well as fresh and dried cream (*Frisch- und Trockenrahm*). Their soymilk is named Soyama.

Soyama Werke Englehardt und Co. 1921. German Patent 378,180.

384. Combe, A.D. 1917. Les succédanés du beurre [Butter substitutes]. *Bulletin de la Societe Scientifique d'Hygiene Alimentaire et d'Alimentation Rationelle* 5(3):183-84. [Fre]
• ***Summary:*** Vegetable butters, made from cocoa butter or coconuts, are very useful as butter substitutes. There are many kinds of artificial milk; they are easily digested and low in cost. Vegetable milk is the concentrated milk of almonds, sterilized and sold in cans. It is used as a medicine for infants, but it's high price makes it unsuited as a wartime food.

Soya milk (*Le lait de soya*), a milk extracted from soya beans, comes from Japan where it has long replaced natural milk that is very rare in that country. It is easy to digest and inexpensive. In times of war, it can be used advantageously to replace butter. In 1913 Germany was already importing 125,448 tonnes of soybeans, from which it extracted 18,000 tonnes of oil and milk. A table shows the nutritional composition of soy flour, soymilk, and cow's milk.

385. Crevost, Charles; Lemarié, Charles. 1917. Catalogue des produits de l'Indochine. 5 vols [Catalog of the products of Indochina. 5 vols.]. Hanoi: Imprimerie d'Extrême-Orient. 29 cm. Formerly published in Bulletin Economique de l'Indochine, Vols. 25 and 26. [Fre]
• ***Summary:*** Volume 1 (published in 1917; 175 p.), titled *Produits Alimentaires et Plantes Fourragères* (*Nutritious Products and Forage Plants*), describes plants grown in Indochina and the nutritive value of each. Pages 106-09 describe "Soja–Glycine Soja," the soybean. Local names are given in Annam and Tonkin, Cambodia, China, and Japan. "The plant is widely cultivated in Indochina for its seeds, which are consumed in various forms. Soybean seeds in Indochina are typically yellowish white... It is well known that the Japanese use the soybean to prepare a sauce named *shoyu* (*teou yeou* in China), as well as a *fromage de pâte* or vegetable cheese named *to fu* [tofu], or *teou fou* in Chinese. The Annamites also prepare an analogous sauce named *tuong* and a *fromage de pâte* named *dau phu* and *dau phu-ao.* Cambodia and the Indochinese province of Châu-dôc produce significant quantities of soybeans, of which a part is sent down to Saigon to be consumed or exported. There are good varieties on the high plateaus of Tonkin, especially in the province of Lang-son, whence large amounts can be obtained for export.

"The dead leaves are ordinarily burned. However some indigenous people partially burn the stems of the soybean plants, stripped of their leaves, to obtain a very fine charcoal dust or ash, which they mix with the resinous balm of *Canarium commune,* to use in making joss sticks. These are slender incense sticks burned as offerings in the pagodas and at the altars of their ancestors in their family homes." [Note: A joss house is a Chinese temple or shrine.] A large, excellent, and very detailed illustration (p. 108) shows a soybean plant, with leaves, pods, seeds, and flowers. Nutritional analyses of soybeans from Laos, Tonkin, and Manchuria are given (from other sources).

Volume 3, titled *Matières Grasses Végétales* (*Fats and Vegetable Matter*), includes analyses of Indochinese plants and their fat and oil contents. The contents of Vol. 3. was first published in the *Bulletin Économique de l'Indochine* 1922-1924. Pages 75-78 discuss "Soja–Soja Max (Lin.) Piper," the soybean. "Mr. Li Yu-ying, a member of the Biological Society of the Far East, has greatly contributed, following several attempts made for more than a century by naturalists and those who acclimatize plants, to popularize in France this plant of many uses. He introduced cultivation of the plant in the area around Paris and, in Paris itself, in 1908 he established a laboratory for the study of the soybean, since completed by a soyfoods factory (*l'usine de la caséo-sojaïne*), where all the products derived from this plant are manufactured: Soymilk (regular, concentrated, powdered, or fermented), tofu (*fromage de soja*), soya patés (*pâtes de soja*), soya casein (*caséïne de soja*), soy flour and bread, etc." The rest of the article is concerned mostly with characteristics, uses, and trade of soybean oil.

Crevost was born in 1858. Note: The meaning of soya casein is not clear. Address: 1. Inspecteur des Services agricoles et commerciaux; Conservateur du Musée [Maurice Long] agricole et commercial de Hanoi; 2. Ingénieur-Agronome, Directeur des Services agricoles et commerciaux du Tonkin, Lauréat de la Société nationale d'acclimatation.

386. Fuerstenberg, Maurice. 1917. Die Soja, eine Kulturpflanze der Zukunft und ihre Verwertungsmoeglichkeiten [The soybean, a cultivated plant of the future, and possibilities for its utilization]. Berlin: Paul Parey. 40 p. Illust. No index. 21 cm. [59 ref. Ger]
• ***Summary:*** Dedicated to the Prof. Friedrich Haberlandt, who introduced the soybean to Central Europe. Contents: Foreword. Introduction: The soybean. Ways of using the soybean in its homeland (East Asia, especially Japan and China). Shoyu or soy-sauce. Miso (vegetable cheese). Natto. Tofu of the Japanese or Tao-hu of the Chinese (bean cheese). The soybean as an oilseed. Soybean meal (and flour). Soy as a coffee substitute or extender. Soybean milk. Soy meat substitutes. Soybeans as a chocolate substitute. Soy rubber substitute. The utilization of the soybean in agriculture: As cow fodder. Summary. Bibliography.

Photos show: (1) A field of soybeans (p. 6). (2) A soybean plant with the leaves removed to show the pods (p. 12). (3) Soy beans and pods from inoculated and

uninoculated plants (p. 13).

Contains numerous tables, most without captions and mostly from other sources–See pages 11, 16-17, 19, 25, 27, 30, 35-37. Contains one of the best early European bibliographies on the soybean.

The author wrote this book during World War I. In his first book, published one year earlier in 1916 and titled "The Introduction of Soya, a Revolution in the Food of the People," he discussed what he believed to be the great agricultural and nutritional value of the soybean. He uses two terms, *Die Soja* and *Die Sojabohnen* to refer to soybeans.

Chapter 1 (p. 5-7): In 1908 England started to import large quantities of soybeans; in 1909 these increased to 400,000 tonnes and in 1910 to 800,000 tons. Also in Germany, in the years just before World War I, imports of soybeans climbed in an unexpected way, reaching 43,500 tonnes in 1910, 90,600 tonnes in 1911 and 125,200 tonnes in 1912. Note: These units are given in dz. One dz (*doppelzentner*) = 100 kg.

The first manufacture of soyfoods in Europe took place in France, at Valees near Asnieres, where they made flour, bread, cakes, cheese [tofu], and soymilk (*Mehl, Brot, Kuchen und Käse, vegetabilischer Milch*)–though only in small quantities and, above all, for diabetics. In England, soy flour has been used for a long time in the preparation of cakes (p. 5-6).

However it was in Germany that the utilization of soybeans for food took place on a large scale; this began shortly before the war. The supply of foods to Germany was almost completely cut off during the war, so general attention soon turned to the new foods prepared from soybeans and people quickly became aware of their great nutritional value. Thus, in the middle of the war, a soybean industry was built in Germany. Unfortunately this youngest twig of the food industry was left crippled due to lack of raw materials. However one can predict that this industry has a bright future because of the great encouragement given to these products in so short a time. For example, in October 1914 the *Agumawerke* (Aguma Works) located in Harburg (near Hamburg) on the Elbe, first began mass production of a soy flour according to its own process. During the next few years it made many thousands of tonnes of this meal, until the production had to be stopped for lack of raw materials (p. 6).

Equally gigantic sales of soy products were made by the *Soyamawerke* (Soyama Works) in Frankfurt am Main; this company made only soy food products. In addition to a meal (flour), it also produced a meat substitute (*Fleischersatz*), and, largely from soybeans, fresh and dried milk (*Frisch- und Trockenmilch*) as well as a fresh and dried cream preparation (*ein Frisch- und Trockenrahm-Präparat*). Likewise, this firm had to cease production of most of its soy products because of difficulties in soybean procurement, and concentrate only on the production of meat substitutes (*Fleischersatz*). These articles likewise entered all classes of the population splendidly as is seen from the large demand for them. Within 3-4 weeks this firm had orders for more than 1½ million pound cans, of which unfortunately it was able to satisfy only a small part. In addition to these two well-known firms, there are in Germany still a number others that are occupied with the production of foods from the soybean.

In Austria [the Austro-Hungarian empire], there exists a unique firm, the food factory Santosa in Prague [in the Czech Republic as of Sept. 2002], which is still processing soybeans. They introduced soy coffee into commerce. I understand that in Austria a large-scale soy processing venture is now being planned.

Certainly the soy processing industry finds itself in a beginning state and, like all young industries, in need of improvement. Remember the sugar-beet industry was also once young but it made improvements and went on to great success, as will be expected of this new twig on the food industry. In any case, the beginning of utilization of the soybean as food for the people has been made, and in the foreseeable future the soybean may, as in China and Japan, become an indispensable part of our people's food.

It is different with the introduction of the soybean as a cultivated plant in Central Europe. Forty years ago Friedrich Haberlandt showed (and after him countless others have shown) that the soybean grows well in Central Europe. Although additional new tests verify this, there are still those who object to soybean culture. One objection is the long time required by the soybean to come to maturity; the answer is the development of new varieties. Another is the relatively low yield compared with other beans; the answer lies in the use of inoculation. The author then discusses nutrient yield per acre and per unit of money, showing both to be high for soybeans.

Pages 10-11: It is well know that legumes possess the ability to transform and fix free nitrogen from the air. In 1886 Prof. Hellriegel discovered that this capability is due to certain bacteria that live in the soil and move through the root hairs into the root, where they cause nodule formation. The nitrogen-fixing bacteria living in the nodules nourish the plant. The author then talks about inoculation using either soil from a previous planting or "Nitragin," a pure culture of root bacteria, which is well known and has recently been improved. Dr. Kuehn of Berlin-Grunewald showed that soil inoculated with Nitragin gave a 3- to 4-fold increase in yield, plus an increase in protein in the roots and leaves. He then discusses improved cultural practices. Winkler says that transplanting improves yields. Continued. Address: Frohnleiten, Steiermark [Austria].

387. Fuerstenberg, Maurice. 1917. Die Soja, eine Kulturpflanze der Zukunft und ihre Verwertungsmoeglichkeiten [The soybean, a cultivated plant of the future, and possibilities for its utilization. Part II

(Document part)]. Berlin: Paul Parey. 40 p. 28 cm. [59 ref. Ger]

• ***Summary:*** Continued on p. 14. Ways of using the soybean in its homeland (East Asia, especially Japan and China): Note: In this section, starting on p. 15, the author repeatedly uses the word *Sojaspeisen* meaning "soyfoods." The soybean probably originated in India. The Chinese and Japanese used it to fortify their rice-based, protein-poor diet. The practice came before the theory. The author says (incorrectly, p. 15) that all the basic soyfoods are fermented. He then gives a long description of koji and how it is made.

Shoyu or soy sauce (*Shoju oder Soja-Sauce*) (p. 15-17): In Japan, 540-720 million liters are manufactured each year so each Japanese uses 60-100 ml/year. The fermentation time is 8 months to 5 years. The best soy sauce is fermented for 3 to 5 years. He explains how, as soy sauce is fermented, the protein is broken down into amino acids such as leucine, tyrosine, and members of the "Xanthin" group.

Miso (vegetable cheese, p. 17-18): Miso is widely used in soups. More than half of the yearly Japanese soybean harvest is used for making miso. This is 30 million kg per year. Types of miso include *shiro miso* and Sendai miso. Winkler, in his small work titled "The Soybean of Manchuria," mentions two other types of miso: Aka or red miso and nuka miso. Kellner investigated five types of miso; a table shows their composition. Loew reports that this vegetable cheese (miso) is consumed either raw or in soups. Kellner, Nagasaka and Kurashima report that, based on their investigations, the amount of amino-nitrogen increases 3-fold and the quantity of carbohydrates is significantly diminished through lactic acid and alcoholic fermentation. The carbonic acid created thereby rises significantly during fermentation (Loew).

Natto (p. 18): Discusses the findings of Yabe.

Japanese tofu or Chinese Tao-hu (p. 18-20): This is the so-called "bean cheese" (*Bohnenkäse*). A table (p. 19, from König) shows the nutritional value of fresh tofu (84.8% moisture) and frozen tofu (17.0% moisture). E. Senft studied frozen tofu, a Japanese military preserved food (*Militärkonserve*) that is not canned; he found it had a beige color and a unique, slightly sour aroma which was at times reminiscent of dextrin. It has a uniform texture throughout, with many tiny pores. Winkler refers to five other types of soy cheese. Concerning the military preserved foods, they were highly regarded during the Russo-Japanese War and (according to Senft) played a key role in the war. (Footnote: The descriptions of the various preparations made from soya make E. Senft's treatises (1906 and 1907) valuable; in them he published his investigations of a number of Japanese vegetable foods and military preserved foods or conserves). The well-known food manufacturer Maggi in Kempttal, Switzerland, has tried for many years to introduce a commercial miso-like product, but was not successful.

The soybean as an oil plant (p. 20-26): Winkler, in his brochure, discusses the uses of soybeans in Manchuria. After 1908, soybeans were sold in Europe at incredibly low prices which resulted in the expansion of imports and production. Then tariffs were levied on soybeans. There were some major problems in the Austrian oil industry.

Soybean flour (*Sojabohnenmehl;* p. 26-28): In recent years, various processes have been patented. One manufacturer is Soyamewerke in Frankfurt am Main, which makes *Soyama Kraftmehl*. Yellow soybeans are mechanically cleaned, washed, dried, and dehulled according to the process of Dr. Fritz Goessel. Agumawerke in Harburg also makes soy flour.

The soybean as a coffee substitute and extender (p. 28-31): Coffee is known to be detrimental to good health and void of nutrients. Rye, for example, has been used since the 17th century as a coffee substitute. Barley also plays a major role, especially as malt. A table (p. 30) shows the nutritional composition of ten coffee substitutes, including chicory, figs, lupin, and carob. Soy coffee tastes remarkably similar to real coffee. In Istria (*Istrien*), in the Austrian alps, in Switzerland as well as in Alsace (*Elsass*), the soybean has been used since its introduction as a coffee substitute. Haberlandt reported in his work that a teacher from Capo d'Istria told him that the soybean was used as a coffee substitute in Istria, and a friend told him that there was no difference between the flavor of the two. The Thunschen is used to make good soy coffee. The soybeans are mechanically cleaned, put into a trommel, agitated with water at 65-70ºC, brushed and thereby freed of a large number of impurities which can leave a burned smell. The aroma of soy coffee can be improved by impregnation with an extract of largely decaffeinated coffee. It has roughly twice the nutrients of regular coffee and no harmful constituents.

Soybean milk (*Sojabohnen-Milch*, p. 32-33): The most popular vegetable milk is Dr. Lahmann's Vegetable Milk (*Lahmannsche Vegetabile Milch*), an emulsion made from almonds and nuts. In Japan, they make milk from soybeans; he describes the process, inaccurately, based on information from Winkler. This milk is also used to make cheese [tofu]. Also in Europe there have been successful attempts to make a soymilk adapted to European tastes, as in France by the Caseo-Sojaine at Vallées near Asnieres, and in England by the Synthetic Milk Syndicate. Using the process of Dr. Fritz Goessel, the latter company has a factory in Liverpool; it makes 100 liters of soymilk from: 10 kg ground soybeans plus 5 gm sodium phosphate, 2.4 kg lactose, 2 kg sesame oil, 6 gm common salt, and 60 gm sodium carbonate. Also the Soyamawerke in Frankfurt makes a soybean milk, named Soyama, as mentioned above (fresh and dried milk and cream). Recently Prof. Melhuish developed a new method using soybean, peanuts, and added coconut milk fat.

Soy meat substitutes (*Soja-Fleischersatz;* p. 33): Soyamawerke makes a product named *Soyama-Fleisch-Ersatz.*

Soybean as a chocolate substitute (p. 34): Haberlandt reports such a product.

Soya rubber substitute (p. 34): Goessel and Sauer have developed a rubber substitute made from soybean oil.

The utilization of soya in agriculture (p. 34-38): Use as fodder for cows. In 1880 Blascowicz [Blaskovics], Assistant at the Royal Hungarian Academy in Hungarian Altenburg, conducted fodder tests, whose results are given in various tables.

Conclusions (p. 38).

Note: This is the earliest document seen that uses the word *Ersatz* or the word *Fleischersatz.* They mean "artificial or inferior substitute" and "meat substitute" respectively. Though often associated with World War I, the word "ersatz" (which means simply "substitute" in German) was actually adopted into English as early as 1875, in reference to the German army's "Ersatz reserve," or second-string force, made up of men unqualified for the regular army and drawn upon only as needed to replace missing soldiers. Hence the meaning "inferior substitute." Address: Frohnleiten, Steiermark [Austria].

388. Holt, Emily. 1917. The complete housekeeper. Garden City, New York: Doubleday, Page & Company. 402 p. See p. 202.

• ***Summary:*** In Chapter 8, "War time foods and recipes," is a recipe (p. 202) for Parched corn-meal biscuits, which calls for "2 cups peanut cream." Make the nut cream by mixing peanut butter with cold water and heating. It should be the consistency of thick cream. While the nut cream is hot, stir in the corn meal."

On pages 147-59 is a section titled "Substitutes for meat," with recipes.

Note: This book is copyright 1903, but it must have been revised during World War I (1917), since it contains the above chapter on war time foods. Address: Author of Encyclopedia of Etiquette.

389. Lyman, Benjamin Smith. 1917. Vegetarian diet and dishes. Philadelphia, Pennsylvania: Ferris & Leach. 416 p. See p. 155-58. Index. Portrait. 21 cm. [3 ref]

• ***Summary:*** Discusses the physiological, economical, and ethical advantages of a vegetarian diet, with recipes and principles of preparation. The author, who wrote mostly about geology, lived 1835-1920.

A large table titled "Composition of foods" (p. 44-47) gives the percentage of protein, fat, carbohydrates, and ash (on a dry basis) for many foods, including natto, fresh tofu, soy bean–dried, Swiss miso, soy [shoyu] No. 1 and 2, and white miso (all figures from Abel 1900), plus peanuts–dried.

In the chapter titled "Foods of vegetable origin" (p. 141-267), the section on "Pulse" (p. 152-78) contains a subsection titled "Soy bean" (p. 155-58), which begins: "The soy bean of China and Japan is perhaps the most important food plant there, next to rice. The bean is eaten to a small extent boiled like other beans; but is generally elaborated into a variety of products remarkably rich in protein and fat and therefore going well with rice so deficient in those constituents." The following soy-related subjects are discussed, based largely on the writings of others: Soy sauce (Abel), natto (Abel), miso (R. Takahashi), tofu (Abel), *aburage*, *koritofu*, substitutes for milk and cheese, and nutritional comparison with eggs, milk and cheese (Abel, Atwater).

The section titled "Substitutes for milk and cheese" states: "The Chinese in Paris [probably Li Yu-ying] have been urging the culture of the soy bean. The seeds, when boiled, mashed, and pressed, yield both milk and cheese; if thinned with water, a very good substitute for animal milk; and if coagulated with mineral salt, a cheese that is usually eaten fresh, though it may be preserved by salting or smoking, after being cooked. Three varieties of the cheese are common in the oriental markets; a fermented kind [fermented tofu], white, yellow, or gray in color, with a piquant taste, like roquefort; a salty and white kind, like goats' milk cheese; and a third kind, smoky and resembling Gruyére. The soy cheese costs about a fiftieth as much as animal cheese; and in nutritive value, like the vegetable milk, compares very favorably with the ordinary products of the cow. ('Phila. Ledger,' Sept. 27, 1906)."

Note 1. No such article in the *Philadelphia Ledger* or the *Public Ledger* (Philadelphia, Pennsylvania), of this date, can be found.

Note 2. This is the earliest U.S. document seen (Dec. 2008) that mentions smoked tofu.

The section on peanuts (p. 158-62) includes roasted peanuts, peanut butter, peanut taffy, and "Terralac or peanut-milk (here first published)." Details on how to make peanut-milk at home are given, followed by many recipes for its use–each preceded by the word "Terralac." Thus: Terralac custards, Terralac punch. Terralac cream, salad dressing, sauce, cream sauce, creams, blanc-mange [blancmange], cream pie, Bavarian cheese, Terralac in soup, "Ice-Terralac, or peanut ice-cream," peanut soup, salted peanuts.

There are also sections on the cowpea (p. 163+), almonds (p. 263-65; incl. salted almonds, marchpane, macaroons, nougat or almond cake, almond milk, orgeat syrup, burnt almonds, replacing almonds), vegetable-gelatine (p. 384-87, incl. carrageen or carragheen [carrageenan], Irish moss, and kanten), sesame oil or gingelly oil (p. 388), peanut oil or groundnut oil (p. 388), almond oil (p. 389), and sago and sago recipes (p. 390-91, incl. three sago puddings).

Note: *Merriam-Webster's Collegiate Dictionary* (1998) defines orgeat (a word first used in 1754) as "a sweet almond-flavored nonalcoholic syrup used as a cocktail ingredient or food flavoring."

390. Nigay, Antoine. 1917. Le regime alimentaire des

diabétiques [The food regimen for diabetics]. Paris: Librairie O. Berthier, E. Bougault, Successeur. 91 p. Preface by M. Marcel Labbé. [Fre]

• ***Summary:*** At the top of the title page is a quotation from Voltaire: *Règime vaut mieux que médecine* (A good diet is worth more than medicine).

At the end of the section on "Cheeses" (*Fromages*) we read: Soy cheese (*le fromage de Soja*), a food much liked by the Japanese (who call it *Tofu*), the Chinese (*Téou-fou*), and the Annamites (*Dau-Phu*), is obtained by the coagulation of a concentrated soymilk (*d'un lait de Soja concentré*) (Footnote: Soybean milk is obtained by the maceration / grinding of soybean seeds in water; it has nothing in common with cow's milk, except in appearance), with the aid of magnesium chloride or of bittern [nigari]; it is not, strictly speaking, a cheese; rather, it is unique. It contains only 4.33% oils and fats, and 1.30% nitrogenous materials, which is to say that it is not very nutritive, however it does not contain any carbohydrates. It is therefore permissible [in diabetic diets].

Soy cheese must be consumed the same day it is prepared, or the next day; however, dehydrated, it can last for several months. In the Orient, it is consumed after having been cooked in a decoction of the rhizome of curcuma (turmeric, which is yellow). The factory at Vallées (Seine) [Li Yu-ying] furnishes this cheese, as well as other soy-based products. Address: Dr., Consulting physician at Vichy. Physician at the Thermal Hospital of Vichy. Director of the *Journal de Médicine de Paris.*

391. Whittle, Charles A. 1917? Why soy beans? Southern Fertilizer Association, Soil Improvement Committee, Circular No. 3. 4 p. Undated. But it was received by the USDA National Agricultural Library on 24 May 1918.

• ***Summary:*** *"If the boll weevil takes from 30 to 50 per cent of the cotton crop then something else must be grown to supplement cotton. Soy Beans can lay strong claims for a place. The demand for its oil and meal is rapidly increasing." Contents: For human food: Soya biscuits* (*containing soya flour*), *soy bean milk* (*used for centuries in Japan and China "Because of its food value and for sanitary reasons, it is of greatest importance to bakeries and confectioners"*). *For stock feed. For industrial uses: Soap and paint. Wide adaptation to soil and climate. The increasing demand. Varieties. Yields and returns. Fertilization. Address: Atlanta, Georgia.*

392. Bottari, Paolo. 1918. La soja ed il latte di soja [*The soybean and soymilk*]. *Cronaca Agricola* (*Torino*) *No. 1. Jan. 17; No. 3. Feb. 4.* [*Ita*]*

• ***Summary:*** *Discusses soymilk experiments as the Bonafous Institute in 1916 and 1917.*

Note: This is the earliest Italian-language document seen (*Aug. 2013*) *that mentions soymilk, which it calls Èlatte di soja.*

393. Howell, E.V. 1918. Soy beans and soy bean oil. *J. of the American Pharmaceutical Association* 7(2):159-63. Feb. [14 ref]

• ***Summary:*** "This bean is a native of southeastern Asia. It is at present the most important legume grown in China and Japan, where it is grown almost exclusively for human food. It has been cultivated from a remote period, each district having its own distinct variety, some two hundred kinds in all... The bean was introduced into England in 1790. Apparently the first mention of soy beans in American literature was in the *New England Farmer,* October 23, 1829, in an article by Thomas Nuttall." There follows a summary of this article and several other early U.S. documents that mention the soy bean.

"Importance: I think the soy bean is the most important plant introduced into the South within a hundred years. This opinion is based on the range of the plant, the value as a soil improver, and the numerous uses of the seed and oil, together with the fact that the present cottonseed oil mills can produce the oil with practically no change in machinery and thus double their mill season. The beans can be stored, as they are practically immune to insects. Especial emphasis is placed on this statement in the present demand for food on account of the war. In Japan the bean forms one of the most important articles of food, by nature a meat, to go with the starch of rice. The Chinese make from the beans a cheese resembling our own cheese, while the Japanese make the well-known sauce for rice or fish, soy or suey sauce. It is one of the principal ingredients in 'Tofu' (bean curd), natto (steamed beans), and white and brown miso, which is like our molasses brown bread."

"A factory for the production of this [soy] milk has recently been established in America. This can be used in cooking, by bakers, confectioners, and chocolate manufacturers. I have before me the following food articles in which soy bean meal is the principal ingredient: Egg substitute No. 1, egg substitute No. 2, colored cocoanuts, coffee substitute, cocoa substitute, roasted malted nuts, coloring curry powder, cutlet powder, soy and navy beans with pork, the equal of any pork and beans.

"The use of the soy meal for soups, for proportional use in muffins, cookies, fritters, croquettes, biscuit, and loaf bread is unlimited. Its use is checked only by our prejudice for certain customary flavors, just as northern people and Europeans do not use corn meal. In other words, North Carolina, if forced to by war conditions, could largely exist on the soy beans crushed in the State this year, including the imported and native beans crushed, the oil from which I estimate to yield this year 400,000 gallons. This oil can be used for frying, and for a salad oil in French dressing or in mayonnaise. I fried a partridge in the crude unrefined oil, and found it delicious.

"While the chief use, so far, of the oil has been for soaps and paints, the particular object of this paper has been to call attention to the use of soy oil in pharmaceutical preparations."

Tables show: (1) The specific gravity, saponification value, and iodine for three samples of Manchurian soy oil purchased in New York. (2) The chemical composition of soy bean meal (8.77% fat), compared with the meal of five other seeds (including cottonseed, linseed {old and new process}, decorticated peanut, and sunflower seed). (3) Four chemical constants of seven samples of domestic and imported soy oils (from L.P. Nemzek). (4) The food values (nutritional composition) of soy beans and six other foods, including lean beef, milk, and eggs.

Because of World War I: "During the past six or seven months there has been produced in this country in the neighborhood of one hundred thousand gallons of soy oil. The largest part of this quantity has been produced in North Carolina by the Elizabeth City Oil & Fertilizer Co., Winterville Cotton Oil Co., and the New Bern Cotton Oil & Fertilizer Mills. Samples from the different crushings have been examined in comparison with the imported oil."

"Medicinal use: In England a diabetic biscuit is manufactured. In this country an infant's food from the soy bean is on the market. The enzyme in the bean is also attracting attention and opening a field for investigation."

Note 1. This paper was presented at the Scientific Section, American Pharmaceutical Assoc., Indianapolis meeting, 1917.

Note 2. This is the earliest English-language document seen (Oct. 2008) that contains the word "crushings."

394. Kellogg, John Harvey. 1918. The soy bean. *Good Health* (*Battle Creek, Michigan*) 53(2):111. Feb.
• ***Summary:*** "A new food product has made its appearance in the United States, although up to the present time it has been little appreciated. This new food is a legume, the famous Japanese soy bean, which has for unknown centuries been a staple food in Japan and China."

"Another point in favor of the soy bean is the fact that the protein which it contains is a complete protein. That is, it is capable of fully supplying the place of lean meat, milk or eggs. It is for this reason that the Chinese and Japanese are able to prepare from the soy a very good substitute for milk. A very fine cheese is also made from the soy which is in many respects superior to ordinary cheese.

"The fat or oil of the soy is of excellent flavor and is more easily digestible than animal fats."

"The soy bean has been grown quite freely of late years in the South as a forage plant and for feeding cattle, but has been little used for human food. The chief obstacle in the way of its introduction as a food product has been the difficulty of preparing palatable dishes from it. Ordinary cooking even when prolonged left the beans so tough as to be hard to chew and unpalatable. A few months ago the interesting discovery was made that by cooking the bean under pressure it became remarkably tender and toothsome. A temperature of about 225 degrees F. is required and the cooking must be continued for four to six hours."

A recipe is then given for "pressure cooking" whole dry soybeans without a pressure cooker. "Soak the beans over night in sufficient water to cover them. Provide an empty stone jar with a tight fitting top, also prepare a strong brine by adding to a gallon of water five pounds of common salt. Put the soaked beans in the stone jar with a little salt, adding tomato sauce if desired. Screw in the top, taking care to make it tight. Immerse the jar in the brine and boil for five or six hours. The brine has a boiling temperature of about 225 degrees F. Higher temperatures may be obtained by adding chloride of calcium to the brine.

"Prepared in this way, the soy bean makes an exceedingly rich and savory dish with a meaty taste and very great staying and satisfying qualities."

Note 1. The USA entered World War I in April 1917. Starting in about 1916 there was great interest in finding alternatives to meat and dairy products, so that the latter foods could be shipped to American and allied soldiers.

Note 2. This is the earliest document seen (Oct. 2006) that uses the term "complete protein" (or "complete proteins") and also the earliest that uses this term in connection with soy.

Note 3. This is the earliest document seen (June 2013) that mentions the cooking of soybeans under pressure or in a pressure cooker. Note that the soybeans are apparently in a separate container inside the pressure cooker so that their skins do not clog the pressure-release valve. Address: M.D.

395. Winkler, Gustav. 1918. Die Sojabohne: Vortrag gehalten in der Monatsversammlung des Gartenbau- und Verschoenerungsvereins Fechenheim-Mainkur am 17. April 1913. 2 Auflage [The soybean: Lecture presented at the monthly meeting of Gardening and Beautification Society of Fechenheim-Mainkur on 17 April 1913. 2nd ed.]. Mainkur bei Frankfurt am Main, Germany: Published by the author. 16 p. 21 cm. [5 ref. Ger]
• ***Summary:*** On the cover is written (in German): The soybean: What is it? What can it do? Is its cultivation possible in Germany? Contents: The significance of the soybean industry for the German economy (based on Grossmann 1910. From Tag, 23 Dec. 1910). Significance of the soybean for healthy and sick people, and the forms in which it is used (based on Neumann 1913). The soybean and its lecithin content, etc. (based on *Naturarzt*, March 1918). Addendum: Is the cultivation of soybeans in Germany possible? ("After my eight years of observations and cultural trials, I can say with confidence that the soybean that the soybean is no more sensitive than our usual bean varieties"). Address: Mainkur bei Frankfurt am Main, Post Fechenheim

a, M., Mainkur train station, Circle Hanau.

396. Makino, Magotaro. 1918. Soy-bean food (tofu). *U.S. Patent* 1,258,427. March 5. 2 p. Application filed 5 Dec. 1916.
• ***Summary:*** Soy bean flour is mixed with water and a small quantity of an edible oil, the mixture is heated, filtered, and the proteins in the filtrate are precipitated/coagulated with Epsom salts and separated from the liquid.

Note: This is the earliest document seen (Sept. 2011) with the term "Soy-bean food" (or "soy bean food") in the title. Address: San Francisco, California.

397. Johnson, Nelson Trusler. 1918. Process used by Chinese in making bean curd. *Commerce Reports* [*USA*] (*Daily Consular and Trade Reports, Bureau of Foreign and Domestic Commerce, Department of Commerce*) 21(58):926-28. March 11.
• ***Summary:*** This report begins: "Probably the first article of diet that attracts the attention of the foreigner coming to China is the bean curd which is served to him at the Chinese restaurant or hotel, or in the Chinese family in many ways. Bean curd is only one of a number of products derived from soya beans. Among these are bean meal, a kind of spaghetti, bean cheese, bean sauce (known as shoyu to the Japanese, chiang yu to the Chinese, and soy in commerce), bean milk, and bean oil. All of these products are used by the Chinese as foods. The shoyu is used as a foundation for a certain well-known brand of sauce." Note: Probably Lea & Perrin's Worcestershire Sauce.

The next section, titled "Product called an ideal food," is largely a summary of a 1917 article by John E.S. Han titled *The Yale-in-China Student* (Changsha, China) 1(2):8-14. Nov. Contents: Introduction. Product called an ideal food. Uniform quantities of beans used. Specific gravity near that of milk. Method of coagulating emulsion. Suggested improvements in process.

On the last point, Mr. Johnson notes that the changes Mr. Han recommends "are largely the same as those proposed by Li Yu-ying." Address: Consul, Changsha [China].

398. Howe, H.E. 1918. A lesson from the Orient. *Scientific American* 118(11):230. March 16.
• ***Summary:*** "In the south are many acres where the boll weevil makes it impossible to continue the profitable production of cotton. The search for a substitute crop has introduced the soya bean from Manchuria where it is a very important staple and it bids fair to become most useful. The soya bean yields an oil upon hot pressing and just prior to the war, the Germans set up a naphtha solvent process in the Orient but the oil recovered was considered inferior to that from the native presses. The potentialities of soya bean oil have not been fully determined. It has become established in the industries and we are learning how to make better use of it as a food product. The oil cake or meal left after pressing is a valuable component of stock foods, being high in nitrogen compounds.

"Some of the varieties of the soya bean are suitable for human food and in combination with peanuts, a foundation for several materials high in fat and protein is obtained. The soya bean alone comprises a ration that is nearly complete, for it contains a large amount of protein, fat in the form of oil and the starch furnishes a carbohydrate. The bean also carries a vitamine which is necessary to sustain and promote bodily growth but the mineral content is deficient."

"In the Orient soya beans are used to make a kind of cheese and a milk substitute. A peculiar cake is also made from them as well as a sort of fermented beverage.

"Experiments are under way to improve greatly the food values in soya beans and increase the oil content...

"And so these cotton lands of the south which have so long contributed to our clothing may now greatly supplement our food supply." Address: Chemical engineer.

399. Itano, Arao. 1918. Soy beans (Glycine hispida) as human food. *Massachusetts Agricultural Experiment Station, Bulletin* No. 182. 10 p. March. [16 ref]
• ***Summary:*** Contents: Introduction. Chemical composition and digestibility. Human food prepared from soy beans (practical recipes for making Japanese foods at home; names in parentheses indicate the Japanese name). Soy bean milk (*Toniu*)*:* The ordinary method employed in Japan, toniu from soy bean meal (made by grinding soybeans in a wheat flour mill or fine coffee mill), author's method [from soy bean meal, plus inoculation with *Bacillus coli* and *B. lactis aerogenes*], synthetic toniu, condensed soy bean milk (condensed toniu). Evaporated soy bean milk (yuba). Soy bean curd (tofu): Fresh curd (tofu), frozen tofu (*kori tofu*), fried tofu (*abura-age*). Baked beans. Boiled beans. Roasted beans.

"Powdered beans–Roasted: 1. Roast as in the roasted beans [either in an oven or in an ordinary corn popper]. 2. Let them stand until cool to harden them. 3. Grind them in a coffee mill or any other suitable grinder. Note.–The powder can be used as a salad dressing or cooked with cookies like peanuts or other nuts, or employed as a substitute for coffee."

Powdered beans, raw (soy bean meal). Green beans. Soy bean pulp (*kara*). Fermented boiled beans (natto). Ripened vegetable cheese (miso; discusses koji). Soy bean sauce (shoyu). Vegetable butter, ice cream, oil (table use) and lard (cooking): "The manufacture of these articles from soy beans needs further investigation." How to make "Evaporated soy bean milk (Yuba)" at home (p. 5): "1. Boil the soy bean milk until a film is formed on the surface. 2. Collect the film and cut it into any shape desired. Note.–The film consists of coagulated albuminoids and fat. It may be used as an article of food, cooked in soup, etc."

Note 1. Even though it is very brief and inadequate,

this is the earliest document seen (Oct. 2012) that contains a description of how to make yuba at home.

How to make "Baked beans" at home: (p. 7). "1. Soak the beans, suspended in a cloth bag, in a large quantity of hot water over night. (Soaking for twenty-four hours in ice-cold water which is changed occasionally will give the same result.) 2. Change the water, when hot water is applied, in the morning and an hour or two before cooking. 3. Add 1 teaspoonful of soda [sodium bicarbonate] per quart of beans and boil until the beans become soft. 4. Bake like other beans. Note.–The characteristic strong flavor of the beans is removed by soaking before cooking; the addition of soda [sodium bicarbonate] makes the beans soft. Cooking with salt pork, potatoes, onions, molasses and other substances makes the beans more palatable to some tastes."

Concerning the "Roasted beans" (p. 7). "1. Roasting can be done either in an oven or in an ordinary corn popper. 2. Roast until the skin of the bean is burst by popping. Note.–The beans can be kept soft by immersing them in a syrup while they are hot. Thus very wholesome candy is prepared."

Concerning the "Powdered beans: Roasted" (p. 7). "1. Roast as in the roasted beans. 2. Let them stand until they cool to harden them. Grind them in a coffee mill or other suitable grinder. Note.–The powder can be used as a salad dressing or cooked [baked] with cookies like peanuts and other nuts, or employed as a substitute for coffee." Note 2. This is the earliest English-language document seen (Nov. 2012) that uses the term "Powdered beans: Roasted" to refer to roasted soy flour.

Concerning "Green beans: 1. Pick them when the beans are three-fourths to full grown. Boil them in salt water. 3. Discard the pods. 4. Serve the beans with butter or milk. Note–The pods are tough and they can be removed easily on boiling."

Concerning "Soy bean pulp (kara): 1. This is the residue after the milk is extracted in the process of preparation of soy bean milk. 2. Cooked like any other vegetable with proper seasoning. Note.–Makes a very rich dish; an addition of green onions, cabbage or parsnip may improve it."

Tables contain analyses of the chemical composition of each of the basic foods discussed.

Note 3. This is the earliest English-language document seen (March 2007) concerning soy ice cream, which it calls simply "ice cream." This is also the earliest document seen (March 2007) concerning the etymology of soy ice cream.

Note 4. This is the earliest English-language document seen (June 2013) that uses the term "soy bean pulp" to refer to okara.

Note 5. This is the earliest English-language document seen (June 2013) that describes how to use okara in a recipe.

Note 6. This is the earliest English-language document seen (Aug. 2013) that uses the word "toniu" to refer to soymilk; the Japanese word is *tônyû*. Address: Amherst, Massachusetts.

400. *British Medical Journal*. 1918. A vegetable milk. i(2889):430. April 13.

• ***Summary:*** "From a correspondent: In these days of agalactia [failure of the secretion of milk in mammals] any reasonable substitute for milk is certain of a welcome, so that particular interest attaches to the soy bean, an alimentary plant grown on a very large scale in China, and imported into this country [Britain] by hundreds of thousands of tons annually for the sake of the oil it contains, which is utilized in the manufacture of soap, margarine, etc.

"More interesting from the alimentary point of view is the fact that it can be made to yield a substitute for milk, which in respect of appearance and composition so nearly approximates the familiar article as to be wellnigh indistinguishable therefrom.

"The process is simple. Five ounces of the bean are soaked overnight in a quart of cold water; it is then coarsely ground, mixed with the water in which it has been soaking, and filtered through muslin [coarse cotton fabric]. The result is a milky fluid with a rather strong smell of haricot bean, which disappears after it has been raised to boiling point. Infants take it readily, and, mixed with tea or coffee, the taste is imperceptible. Fresh soy bean milk has a fairly acid reaction; it is quite homogeneous under the microscope, and its physical properties are those of cow's milk; rennet causes it to curdle, lactic acid germs cause it to undergo lactic acid fermentation. When boiled it 'rises' like ordinary milk and forms a pellicle [yuba] on the surface.

"Its composition is: Casein 3.13 per cent., fats 9.89, but it lacks carbohydrates, a shortcoming which can easily be remedied. As the fatty constituent is an oil, butter cannot be made from soy bean milk, but it can be made to provide cheese (120 grams of the bean yields 184 grams of cheese), and the cheese [fermented tofu] can be made to resemble any of the popular cheeses in the market; it is merely a question of employing the proper flavouring ferment. Soy-bean milk can be retailed at 3 centimes a litre. The residue, after making milk, is still very rich in alimentary principles, and can be worked up into very palatable 'almond' cakes and biscuits. Being practically free from starch, these cakes are especially suited for consumption by diabetics.

"Roasted, the bean provides a colourable imitation of coffee, just as do barley and oats, to what a satisfactory degree only those who make use of these substitutes will understand."

"A practical idea of its alimentary value may be formed by contrasting the cost of this as compared with other albumins: 100 grams of albumin, at before-the-war prices, would cost–from egg 1s. 8d. [1 shilling 8 pence], from meat 1s. 4d., from pork 8d, dried peas 3d., and from soy bean 2d. The bean contains four times as much mineral constituents as meat, and is twice as rich in phosphoric acid." A table compares the nutritional composition of soy beans (water

plus 5 nutrients) with lentils, haricot beans, peas, and broad beans.

401. *Bulletin Bi-Mensuel, Office de Gouvernement Général de l'Algérie.* 1918. La culture et l'utilisation du soja [The cultivation and utilization of the soybean]. 24(4):54. April 1-15. [3 ref. Fre]

• ***Summary:*** This article appears in the section on "Agriculture" (p. 51-55). We reproduce the following note published by "Algerian Information" (*Informations algériennes*) on a question that presents a reality and an interest of the first order for Algeria:

"We can hope to see taken up, from this year forth, the cultivation of soybeans (*graine de soja*) even more as a letter received from Palestro gives us full confidence; the movement was already begun two years ago."

Having found a letter on this subject in the July issue of the *Bulletin of the Society of Agriculture* from Mr. Aimé Zurcher, of Zaatra near Courbet, we wrote him and he responds to us:

"I have, in fact, cultivated soybeans for 7 years from the point of view of industry. For, as you know, this precious bean furnishes several food products: milk, cheese [tofu] that is equal to meat, confections, oils, coffee, etc. I ate all these foods that I ordered from Paris where a company [founded by Li Yu-ying] makes them. And it was with the goal of selling my products to this company that I cultivated soybeans. I had distributed many grains and beans.

"The war having cut off my relations with this company, a certain quantity of soybeans remained. At the end of 3 years, they no longer germinated. I abandoned cultivation.

"I occupied myself with yellow soybeans with round seeds. I have had very high yields, even in nonirrigated, plowed soil and in slightly humid soil with ordinary labor.

"The lively, robust plant adapts to almost all terrain and completes its entire development in 3-4 months; it attains a height of 1-1.4 meters. It requires the same care as the ordinary haricot bean and more especially the dwarf haricot (*haricot nain*). It is then in March, even at the end of March and April that it should be sown (2 seeds/hole; but too much humidity can damage it).

"Nothing is lost of this precious plant. After threshing, the leaves and stems are very esteemed by livestock."

"... We also remark that for a liter of milk, that has nothing in common in taste with cow's milk but which is just as nourishing, 100-200 g [of soybeans] is used [to make the milk]; little matter, it's an insignificant expense. In any case the remains [okara] that the mincer (*hâche-viande*) (business M.F.G. Co., Philadelphia [Pennsylvania]) leaves must be used to obtain the result. We believe that we should give the recipe furnished by an ingenious experiment:

"[To] the okara (*drèche,* which originally meant dregs) that produced the milk [sic, that is a by-product of producing soymilk] is added half its weight in sugar and enough water to dissolve this sugar; it is then cooked to have confections that you can flavor.

"These confections, instead of being consumed as is, can be mixed with an egg, 4-5 bitter peeled almonds, [or] 2 spoonfuls of flour and divided into small cakes, macaroons, that are cooked in the oven again on a lightly buttered pan. These cakes are delicious, a true luxury product rivaling the best *petits fours* (a small cake cut from pound or sponge cake and frosted) of pastry-makers."

Two more articles on soy are cited, both published in *Nature*, in 1907 and 1910.

Note: Spine title on bound volumes: "Bulletin de L'Office du Gouvernement General." Address: Govt. of Algeria.

402. Dorsey, Henry. 1918. Growing soybeans. *West Virginia Univ., College of Agriculture, Extension Dept., Circular* No. 204. p. 1-8. April. [1 ref]

• ***Summary:*** "Within the last five years soybeans have assumed, due to their many desirable qualities, an important place in West Virginia agriculture and their importance is quite likely to increase. Less than a decade ago the crop was practically unknown. A conservative estimate derived from county agents' annual reports indicates an acreage of more than 6,000 in 1917. This acreage is almost equal to that of clover alone according to the census figures of 1910."

Contains sections on the importance of the crop, harvesting, yields, suitable varieties, special uses, human food, and in crop rotations.

The section on human food uses states: "The scarcity of meats will doubtless lead to a wider use of soybeans in the human dietary. For centuries they have supplied a large proportion of the nitrogenous part of the food of the Chinese and Japanese. In the Orient the whole beans are not eaten directly but soy sauce, bean milk, bean curd, and vegetable cheese are made from them. Americans would doubtless object to many of these products. The whole beans have often been used like other beans–boiled, baked, or with pork. They need to be soaked several hours to remove the strong flavor. Soybean flour has great possibilities as a substitute for part of the constituents of various breads. When Americans learn to use the products of the seed, then there will be a ready market for the crop and it will take a regular place in our cropping scheme." Address: Asst. Prof. of Agronomy, West Virginia Univ., Morgantown.

403. Trabut, Louis. 1918. Le Soja: Soja Max (L.) Soja hispida *Savi* [The soybean]. *Algerie, Service Botanique, Informations Agricoles. Bulletin* No. 55. 16 p. April. [7 ref. Fre]

• ***Summary:*** One cannot say that the soybean has been introduced to the Western world only relatively recently; it has been cultivated at the Jardin des Plantes since 1779. There the soybean has always produced seeds, which have

been distributed to botanical gardens and amateurs interested in plants. It would be unjust to say that for 138 years no one has been involved in the utilization of soya in Europe. In fact, there have been a number of fervent popularizers and propagators of the plant. A history of this work is given, including the Vienna Exposition of 1873, the work of Prof. Haberlandt in Austria disseminating and testing soybeans and his remarkable book on the soybean published in 1878, the work of the Society for Acclimatization in France from 1855 (they made the vegetable cheese, tofu [To-fou]), and exports from Manchuria to Europe.

Since 1898, Manchuria, which can no longer cultivate the opium poppy, has greatly expanded its cultivation of soybeans and has looked for outlets in European markets. In 1909 Manchuria exported 410,000 tonnes of soya, a figure which rose to 650,000 tonnes in 1912.

A that time, according to Mr. Brenier, Director General of the Chamber of Commerce at Marseilles, the industry of Marseilles, confronted with a influx of new oilseeds, tried to obtain soya but ran into customs problems. It wasn't clear whether soya should be classified as a legume (because it is a bean) or as an oilseed (*graine oléagineuse*). While the matter was being debated, all the available beans had been purchased by Hull, England, and Hamburg, Germany (*Académie d'Agriculture de France,* 1917, p. 189).

"As the Director of the Chamber of Commerce of Marseilles informs us, in England, Germany, and the Netherlands, the industrial use of the soybean has been growing in importance for several years. In Germany there even existed an important manufacture of soymilk.

"A Chinese factory [run by Li Yu-ying] was installed a few years ago near Paris to enable the soybean to realize its full potential and to introduce various commercial food products made from this seed. In 1912 Messrs. Li Yu-ying and Grandvoinnet published a work on the soybean, recommending its cultivation in France.

"In 1917 Mr. Balland notified the Academy of Sciences of the utilization of soya in war bread, biscuits, etc. All these products, said the knowledgeable chemist, can contribute to a good diet because of their rich nutrient content.

"The Swiss, who consume many coffee substitutes, roast the soybean seeds to make a coffee.

In Algeria, starting in 1894, soybean agronomic trials were started at the botanical station of Rouïba. The results were communicated to the other French colonies in 1898 [by Louis Trabut] in Bulletin No. 16 of the Botanical Service." The results of these and subsequent trials in 1896 and 1897 in Algeria are summarized.

In 1896 a soybean with a green seed coat yielded 2,980 kg/ha of soybeans.

Pages 7-11 include discussions of the nutritional value of soybeans, their use in diabetic diets, the fact that soybeans are rarely consumed as such but are almost always processed into more sophisticated foods (including fermented foods). Following these trials, that were focused on a very important collection (80 soybeans in number) received [in France] from a missionary in China through the intermediary of Mr. H. de Vilmorin, the seeds were distributed and the results of their cultivation were generally good. There follows a letter from a person in Bou-Medfa [Bou Medfaa, Algeria]. Also discusses the availability, benefits, and method of producing soybean milk which the Chinese prefer to animal milks, and which is free of bacteria that can cause tuberculosis. In Algeria, soybean yields range from 12 to 30 quintals per hectare. Note: 1 quintal = 100 kg. The Arabs consume soybeans boiled in salted water. In England a Soya Flour is sold which contains 75% wheat flour and 25% soy flour. This flour is used commercially to make a soy bread. A Soja Biscuit is made in the Netherlands.

Pages 12-14 list 26 soybean varieties in order of their earliness. Synonyms and characteristics are also given: *Soja très hatif à grain noir* (Extra Early Black; Vilmorin or Ogema [Ogemaw] of Michigan. Matures in 80-90 days). *Brun précoce* (Early Brown from Indiana). Vireo (Tokyo). Chernie (Khabarovsk, Siberia; black seed). Auburn (American selection). Merko (Mekoechofka of Siberia; brown seed). Elton (Khabarovsk, Siberia; yellow seed). Chestnut (American selection 1907; brown seeds). *Jaune d'Etampes* (Yellow Etampes, or Ito San in America; One of the earliest varieties introduced to Europe and America). *Vert de Samarow* (Green Samarow, or Guelph in America; green seeds, matures in 120 days). Butterball (or *Jaune géant* {Yellow Giant} from Dammann, from Tokyo; yellow seeds. Matures in 110 days). *Soja noir de Podolie* (Black Podolia, or Buckshot in America; black seeds). Wilson Black (Manchuria). Meyer. Austin. Haberlandt. *Huang-Tou* (Yellow Bean, from Ningouta {Ninguta, see Ning'an}). Bhetmas (from India; seed chocolate and yellow). Medium Yellow. Shingto (From Tieling {T'ieh-ling or Tiehling, Liaoning prov.}, Manchuria). Swan (from Canton). *Soja tigré* (Striped, spotted, or speckled soybean from Peking; seeds are grilled and eaten like peanuts). Brooks (Manchuria and China). *Maculata gigantea* (Large spotted, sold under this name by Dammann; probably the same as the American variety Meyer). Mammoth (American selection). Riceland (From China).

The importance of inoculation with bacteria is emphasized. Soybeans can be cultivated with cowpeas for forage. An illustration (line drawing) on the cover shows the soy bean plant, with a close-up of the pods.

Note 2. This is the earliest document seen (Oct. 2004) that mentions the soybean variety Wilson Black. Address: Director of the Botanical Service for the Government of Algeria.

404. Kiesselbach, T.A. 1918. Soy beans. *Nebraska Agricultural Experiment Station, Bulletin* No. 166. 16 p. May 1.

• ***Summary:*** Contents: Uses. Food values. Composition. Adaptation and varieties. Relative yields of soy beans and cereal crops. Time, rate, and manner of planting. Cultivation. Harvesting and threshing. Soy beans as a forage crop. How to use soy beans for human food: Soy bean flour, method of using flour, recipes for using soy bean flour, dishes prepared from whole soy beans boiled.

"Altho soy beans are an excellent supplementary protein stock feed, with a feeding value about equal to that of oil meal, investigations indicate that the yield is not sufficiently large to justify growing them for this purpose in Nebraska where alfalfa can be grown successfully. An acre bearing three tons of alfalfa hay produces approximately two times as much digestible protein and five times as much energy value in the form of carbohydrates and fat as one acre of soybeans yielding 15 bushels. On the other hand, soy beans are the most productive of protein and energy value of any of the leguminous concentrates suitable for human consumption."

"The yield of soy beans in the southern states in proportion to the yield of cereal crops is so much greater than in Nebraska that a natural adjustment of production is not likely to make it profitable for Nebraska farmers to compete extensively in the growing of soy beans for commercial purposes."

"The Experiment Station ground and sold considerable soy flour during the winter 1917-1918, in an experimental way, to a rather large number of people. This flour was relished and held in high favor by nearly all who used it. It was without doubt one of the most satisfactory substitutes for wheat flour on the market. The keeping qualities of this flour have proved very satisfactory during the winter time. A sack full has been retained in good condition at ordinary living room temperature (70 degrees F.) during the five months from October until March."

Ideas for using soy bean flour in recipes include: Raised wheat bread with soy bean flour. Raised whole wheat bread with soy bean flour. Steamed Boston brown bread. Muffins. Biscuits with soy bean flour. Corn bread. Mush for frying. Corn griddle cakes. Soy bean soup. Soy bean milk.

Ideas for using whole soy beans boiled in recipes include: Soy bean loaf. Soy bean croquettes. Soy bean soup. Roasted soy beans (like peanuts).

Photos show: A man standing in a field of soy beans. Fifty seeds of five soy bean varieties (Early Yellow, S.P.I. No. 36576, Habaro, Haberlandt, and Cloud). Tables give experimental data and compositional analyses of soy beans. Address: A.M. Agronomy, Lincoln, Nebraska.

405. Gray, Olive. 1918. The new. Latest view in stores and homes. Novelties, ideas, and practical suggestions. *Los Angeles Times*. May 19. p. III-15, III-15.
• ***Summary:*** The section titled "Soy dairy products" states: "At a Japanese place, where groceries and produce popular with the orientals are always in stock, I was interested in observing the 'soy bean milk,' 'soy bean cottage cheese'– maybe it is pagoda cheese [probably tofu]. Soy bean flour [probably roasted] is also there, and recipes are issued which teach many ways of utilizing this so-nutritious food product."

406. *Weekly News Letter* (*USDA*). 1918. Soy beans, used like navy kind, make valuable food: Ancient China's product can be served in numerous desirable ways. 5(42):3. May 22.
• ***Summary:*** "While the soy bean has been grown in the United States primarily as a forage crop, its availability as a valuable food for human beings is being given increasing attention. Many schools of cookery and domestic science in this country, as well as home economics experts and home-demonstration agents of the United States Department of Agriculture, have shown that dried beans can be used successfully in the same manner as navy beans." After the beans are soaked, then boiled slowly, they "may be seasoned and used as the principal part of a meal, as they are or may be made into bean loaf, bean croquettes, or other dishes.

"When soy beans are three-fourths or more grown, the seed make a palatable and nutritious green vegetable."

Also discusses "soy-bean milk" ("a milky emulsion is obtained which is similar in appearance and properties to cow's milk"), "tofu or bean curd" (the addition of either magnesium chlorid [chloride] or calcium sulphate to soy-bean milk precipitates some of the proteid substances, forming a grayish-white curd).

"Soy or shoyu sauce is a dark-brown liquid prepared from a mixture of cooked and ground soy beans, roasted and pulverized wheat or barley, salt, and water, inoculated with a culture known as rice ferment and left in casks to ferment for six months to a year or longer. The liquid obtained is used in many countries, including the United States, as a sauce for meat or vegetables." '

Note: This is the earliest English-language document seen (Aug. 2013) (one of three documents) that uses the term "milky emulsion" to refer to soy-bean milk. Address: Washington, DC.

407. *Good Health* (*Battle Creek, Michigan*). 1918. Milk from beans. 53(5):285. May.
• ***Summary:*** "A recent patent application in England is based upon a process for the manufacture of artificial milk for human consumption It is claimed that a wholesome and inexpensive substitute can be made from peanuts, soy beans, sugar, water, and the mineral salts found in milk." Contains a summary of the process.

408. *Bean-Bag* (*The*) (*St. Louis, Missouri*). 1918. Make good bread from soy bean flour. 1(1):38. June.
• ***Summary:*** Alameda, California–The humble and hitherto despised soy bean has come into its own. This particular legume is better known as the horse bean [sic], and it has appeared in the face of the serious wheat situation as the

savior of the day. A demonstration of the use of the soy bean was made by Mrs. H. Ward, head of the food conservation movement, before the Lincoln school class of conservation.

"The demonstration proved that not only bread, that is as rich in protein as bread made from wheat, but milk much like the ordinary condensed milk, can be made by cooking soy bean flour and water together. The soy bean is native to southwestern [sic, East] Asia and is largely cultivated in Japan for food purposes. In the west it has been used only for cattle fodder, but has been recommended by the food administration as an excellent substitute for wheat."

409. *Bean-Bag* (*The*) (*St. Louis, Missouri*). 1918. The soy bean. 1(1):43. June.
• ***Summary:*** Contents: Wide use of soy beans [in North Carolina]. Soy bean has food value. Soy beans for hay. Concerning food value: "This remarkable legume has a composition very closely resembling fat meat. Chemical analysis shows in its composition one-third protein, or more than is found in beef, and one-fifth of its weight in fat. And so the soy bean serves the Chinaman for both beef and butter.

"Another point in favor of the soy bean is the fact that the protein which it contains is a complete protein. That is, it is capable of fully supplying the place of lean meat, milk or eggs. It is for this reason that Chinese and Japanese are able to prepare from the soy a very good substitute for milk. A very fine cheese is also made from the soy, which is in many respects superior to ordinary cheese.

"The fat or oil of the soy is of excellent flavor and is more easily digestible than animal fat.

"The soy is a vigorous grower and produces more bushels to the acre than does the ordinary bean. Pound for pound the soy bean supplies one-half more nutriment, so that a parcel of ground planted to the soy bean supplies one-half more nutriment than if planted with ordinary beans."

410. *Scientific American Supplement.* 1918. Soy beans make valuable food (Abstract). 86(2218):8. July 6.
• ***Summary:*** A near reprint of: *USDA Weekly News Letter.* 1918. "Soy beans, used like navy kind, make valuable food." May 22, p. 3.

411. Burdick, Alfred S.; Nielsen, Carl. Assignors to Abbott Laboratories, Chicago. 1918. Vegetable milk. *U.S. Patent* 1,273,145. July 23. 2 p. Application filed 13 July 1917.
• ***Summary:*** Soy beans are washed, soaked in water, and drained. The inventors prefer not to remove the skins so as "to obtain in the final product the maximum percentage of the so-called vitamins which... are principally contained in the skin coating of the grain or in the layer immediately under the husk." The wet beans are then mashed and extracted with 5-10 times their weight of cold water. Address: Chicago, Illinois.

412. Burdick, Alfred S.; Nielsen, Carl. Assignors to Abbott Laboratories, Chicago. 1918. Prepared food. *U.S. Patent* 1,273,144. July 23. 2 p. Application filed 13 July 1917.
• ***Summary:*** Soak soy beans in water, drain off the water, mash the beans, extract the mash with water, and mechanically remove the liquid extract from the insoluble residue. "The milky liquid, which may be termed vegetable milk... is now evaporated in vacuum at approximately 55º to 60ºC until a liquid of the consistence of thick condensed milk is obtained.

Malt cereal flour gruel, made from ground rice or other suitable cereal, to produce a syrupy liquid containing dextrins and sugar, then filter out the insoluble and inextractable substances to produce a malt liquid. Mix the thick soy-bean milk with the malt liquid (rice syrup), then add tissue salts in the desired proportions. If desired, evaporate the mixture to dryness in a vacuum, then add the tissue salts. Address: Abbott Labs, Chicago, Illinois.

413. Morse, W.J. 1918. The soy bean: Its culture and uses. *Farmers' Bulletin* (*USDA*) No. 973. 32 p. July. Superseded by Farmers' Bulletin 1520. [27 ref]
• ***Summary:*** Contents: Summary. Commercial importance. Climatic adaptations. Soil requirements. Preparation of the seed bed. Fertilizers. Inoculation. Time of planting. Depth of planting. Rate of seeding. Method of seeding. Cultivation. Varieties: Barchet, Biloxi, Black Eyebrow, Chiquita, Early Brown, Elton, Guelph ("also known as Medium Green, Early Green, Medium Early Green, and Large Medium"), Haberlandt, Hahto, Hollybrook, Ito San ("has been known under the names of Japan Pea, Yellow, Medium Yellow, Dwarf Yellow, Early Yellow, Early White, and Coffee Berry"), Lexington, Mammoth, Manchu, Medium Yellow ("has been grown under the names Early Yellow, Mongol, Banner, and Roosevelt"), Mikado, Peking ("In variety tests the Peking, Sable, and Royal varieties appear to be identical, and it is quite evident that the latter two are selections from the Peking."), Shanghai ("has been grown in North Carolina under the name of Tarheel Black"), Tokyo, Virginia, Wilson-Five [black seeded], Yokotenn [Yokoten].

Soy beans in rotations. Soy beans in mixtures: With cowpeas, corn, sorghums, or Sudan grass. Soy beans for seed: Yields of seed, feeding value, for human food, for oil and meal, viability of soy-bean seed, cost of production, soy-bean straw. Soy beans for hay: Time of cutting, curing soy-bean hay, feeding value of soy-bean hay, yields of soy-bean hay. Soy beans for soiling. Soy beans for pasture. Soy beans for ensilage. Soy beans for soil improvement. Enemies of the soy bean: Rabbits, root-knot caused by a nematode, cowpea wilt due to a Fusarium, caterpillars, and black blister beetles.

"Commercial importance: The soy bean, also called the soya bean, the soja bean, and in North Carolina the stock pea, is an annual leguminous plant, a native of southeastern Asia. It has been cultivated in China, India, and Japan for

more than 5,000 years and in extent of use and value is the most important legume now grown in these countries."

"The soy bean was introduced into the United States as early as 1804, but it is only during the last decade that it has become a crop of much importance. At the present time it is most largely grown for forage. In many sections, especially southward and in some parts of the corn belt, a very profitable industry has developed from that growing of seed. During the past few years the acreage has increased to a very considerable extent. The large yield of seed, the excellent quality of forage, the ease of growing and harvesting the crop, its freedom from insect enemies and plant diseases, and the possibilities of the seed for the production of oil and meal and as a food all tend to give this crop a high potential importance and assure its greater agricultural development in America" (p. 3).

Concerning the variety Hahto (p. 14): "This variety recently introduced from Japan is a large producer of seed and forage, and the seeds when from three-fourths to full grown make an excellent green vegetable, similar to the Lima or butter bean. Plants stout, erect, maturing in about 135 days; pubescence tawny; flowers purple; seeds olive yellow, with a black seed scar, much flattened, very large, about 75,000 to the bushel; oil, 14.8%; protein, 40.6%." Note 1. This is the earliest English-language document seen (May 2003) that uses the term "butter bean" to refer to the lima bean.

Uses for human food (p. 22-23): "Until 1916 the soy bean had been used but little in the United States for food and only as a special diet for persons [diabetics] requiring foods of a low starch content. Much interest has been shown during the last two years in the possibilities of the soy bean for food. The United States Department of Agriculture and many schools of cookery and domestic science have conducted successful experiments in utilizing the dried beans in the manner of the navy bean and the green beans when three-fourths grown to full grown as a green-vegetable bean. The variety and palatability of the forms in which the bean can be served make it a very desirable article of food, and undoubtedly it will grow in favor as it becomes better known. Soy-bean meal or flour may be used as a constituent of bread and muffins and in pastry."

Photos show: (1) A man standing in a field of soy beans (front cover). (2) A typical mature soy-bean plant (p. 4).

(3) Roots of a soy-bean plant with abundant development of nodules (p. 7).

(4) Cultivating soy beans. Cultivation should begin as soon as the seedling plants appear. Two horses pull a man on a harrow or weeder. (5) A field of the Biloxi variety of soy beans in Mississippi (p. 13). (6) A field of the Black Eyebrow variety of soy beans in South Dakota. (7) Plats of the Mammoth and Virginia varieties of soy beans at Arlington Farm, Virginia (p. 15). (8) A man standing in a field of the Peking variety of soy beans grown in 24-inch rows. (9) A field of soy beans and corn grown for ensilage (p. 17). (10) A field of soy bean and Sudan grass grown in mixture for hay (p. 22).

(11) Opened pods of Hahto variety soy beans on a plate, showing the large seeds (p. 23). (12) Soy-bean hay on frames (p. 25).

A diagram (p. 5) shows 67 different ways in which soy bean plants and seeds are utilized. The plants are used for green manure, forage (hay, ensilage, soiling), and pasture. The seeds are used to make oil, meal, and food products. The oil is used to make various non-food industrial products (glycerin, explosives, enamels, varnish, waterproof goods, linoleum, paints, soap stock {for hard or soft soaps}, celluloid, rubber substitute, printing inks, lighting oil {illuminants}, and lubricating oil), and four food products (butter substitute, lard substitutes, edible oils, and salad oils). Food products include dried beans and green beans. From dried beans are made soy sauce, boiled beans, baked beans, soups, coffee substitute, roasted beans, breakfast foods, and vegetable milk (from which is made soy cheese {fresh, dried, smoked, or fermented}, condensed milk, fresh milk, confections, and casein). The green beans are used as green vegetables, canned, or in salads.

An outline map of the United States (p. 6) shows the areas to which the soy bean is especially adapted, as to varieties and purpose. The eastern half of the country is divided horizontally into 3 zones: Southern, for later and larger varieties for seed production; Central, for medium and medium-late varieties for seed and the same varieties and later varieties for forage; Northern (the line runs through central Ohio, Indiana, and Illinois, and southern Iowa) for very early varieties for grain production and the medium and medium-late varieties for forage and ensilage.

Note 2. This is the earliest document seen (July 2013) that mentions the soybean varieties Hahto, Yokoten, or Wilson-Five.

Note 3. This is the earliest document seen (June 2009) that describes a vegetable-type soybean variety (Hahto), or says that a specific variety makes an excellent "green vegetable."

Note 4. This is the earliest English-language document seen (June 2009) that contains the term "green-vegetable bean." Address: Scientific Asst., Forage-Crop Investigations, USDA Bureau of Plant Industry, Washington, DC.

414. Evans, W.A. 1918. How to keep well. *Chicago Daily Tribune.* Aug. 28. p. 6.

• ***Summary:*** "Soy beans offer large possibilities as a food. They contain 17 per cent fat, 36 per cent proteid, and 14 per cent starch. Soy bean milk has been used for feeding children for a long time. Le Wall says that soy bean cheese and soy bean croquettes resembling meat croquettes are in use. According to the same author, soy bean is the basis of Worcestershire and other sauces. Among orientals soy

bean foods are: Tashir, a bean natto and miso, also soy bean cheeses. Ordinary soy milk and Yuba or soy cream are in use. Shoyer [sic, shoyu] is an oriental sauce in making which soy beans are used."

Note: This is the earliest document seen (July 2013) that refers to yuba as "soy cream." That is certainly a better term than "tofu skin." Address: Dr.

415. *J. of Agriculture and Horticulture* (*Quebec*). 1918. Soy beans as food. 22:48. Sept. 1.

• ***Summary:*** "The housewife of to-day who desires to patriotically conserve needed foods for overseas and at the same time provide adequately for her own household is naturally on the lookout for new articles to add to her dietary list. Such a one which has much to recommend it is soy beans...

"Most varieties require a longer season for maturity than our northern climate provides but there are one or two that appear to thrive in Quebec and a number of people are trying them this year. They are said to produce abundantly so it is probable that many housewives will be giving them a trial this season for the first time, and a few suggestions as to their treatment may be welcome.

"In Japan and China soy bean milk is prepared and used extensively. This milk is also sold in a condensed form and as curd [tofu]. Other preparations are vegetable butter and cheese, and the extracted oil is sold for table use and for cookery.

"The Food Preservation Demonstrations of the Canada Food Board form an interesting feature of the fall fairs this year."

Describes the preparation of: (1) Green soybeans. "If cooked when about three-fourths grown as green beans the water should be changed once during cooking". (2) Dry soybeans. Long soaking in a large quantity of water improves the flavor by assisting "in the removal of any disagreeable principle." To serve as baked beans, in a crock, add to 2 cups cooked beans, ¼ teaspoon mustard, salt, a few grains of cayenne pepper, ½ cup tomato catsup, or if desired a few drops of onion juice, or 2-3 tablespoons molasses, or a teaspoonful of Worcestershire sauce. (3) Soy flour. "The raw soy beans may be ground into meal and combined with flour for bread, biscuits, or muffins. In the bread 1/3 soy bean meal may be used, in the biscuits and muffins a larger proportion." The meal tastes best if slightly browned.

Note 1. This is the 2nd earliest document seen (Jan. 2010) concerning soybeans in Quebec province, Canada, or the cultivation of soybeans in Quebec province (one of two documents).

Note 2. This is the earliest English-language document seen (June 2013) that contains the term "raw soy beans" (or raw soy-beans). Address: Canada.

416. Melhuish, William James. 1918. Improvements in the manufacture of soya bean milk and the complete utilization of bye products. *British Patent* 118,535. Sept. 5. 5 p. Application filed 10 Dec. 1917.

• ***Summary:*** Soybeans are immersed in water at 60ºC, allowed to cool in the water for 24 hours, then drained and ground; 16 lb of the meal is mixed with 100 lb of water containing 140 grains of potassium phosphate, and the mixture is stirred and heated at 95ºC for 45 minutes. The mixture is then passed through a filter-press, the press-cake being afterwards transferred to a hydraulic press to obtain a feeding cake and separate the oil. The liquid from the filter-press is centrifuged, heated under reduced pressure, and stirred with the addition of suitable oils (sesame, earthnut, coconut, etc.), then cooled to 36ºC, and treated with a culture. Salts and acids (e.g., butyric acid) are added, and after the lapse of sufficient time for the culture to grow, the whole mixture is sterilized at 70ºC, cooled to 16ºC, and stored. The separator slime may be mixed with the foots obtained in clarifying the soy bean oil, and the mixture used as a soap base. Address: Lecturer in Dietetics, Highwood House, Upper Parkstone, Borough of Poole, County of Dorset [England].

417. Jordan, Sam. 1918. Soy beans from soup to nuts: A new crop with many uses both on farms and in factories. *Country Gentleman* 83(39):7, 34. Sept. 28.

• ***Summary:*** Begins by discussing: The possibilities of soy beans "as a substitute for meat." The rising demand for "soy oil" which started a few years ago when the flax crop was little better than a total failure. "Industrial uses" of soy oil in soap, paint, and varnish. "Several packing houses were experimenting with the oil as a possibility in oleomargarine manufacture." "Soys fix soils for cotton." "Varieties of soy beans have been matured as far north as Quebec" [Canada]. The "development of the soy in the cotton sections will no doubt be swifter from an industrial standpoint because of the already existing facilities for oil extraction."

Concerning food uses, the author believes that "the soy bean as human food is destined to play a leading part in the way of a substitute for meat. From studies made of soy beans as food, the use of flour seems to be one form in which their use will suit the American taste and palate best."

"I have heard that the soy-bean milkman comes around before breakfast each morning in the Orient and leaves soy-bean milk." A Chinese student recently verified this story and said that in his family's household "it was customary to drink a glass of the milk upon arising." The student added that fried bean curd was often served for breakfast, and with soy sauce for dinner. "This soy sauce is something more or less familiar to Americans, the acquaintance being contingent upon the frequency with which our Chinese restaurants are patronized. It is the dark-brown liquid usually on the tables in the vinegar bottles. It is also the base of our Worcestershire sauces.

"For supper a favorite dish is sprouted beans in salad form, mixed with small pieces of meat or egg. They usually have also some form of bean cheese or fermented boiled beans. Next to baked and boiled beans, the preparation of soy-bean milk is a thing which should be more widely known."

"The author gives a brief description of how this milk is made, noting that it can be used in "cream sauces, puddings, custards, and even ice cream when some high flavoring is added to kill the beany taste. Much of the strong taste can be eliminated by boiling the milk slowly and stirring to prevent scalding.

"The residue [okara] obtained by straining the milk makes an excellent base for muffins and even bread, when it is used in the proportion of one part to three or four parts of wheat flour."

"In regard to fresh bean curd or 'tofu,' as the Chinese call it, it is hardly probable that we shall use it generally at an early date. The process of making it will no doubt come through the activities of our increasing number of women home-demonstration agents and, also, it is being made commercially by several Chinese firms in this country. When it does become more widely known, however, it is destined to be used extensively. It has very little taste of its own, and takes the flavor of everything with which it is used, generally as a base. It is also highly nutritious.

"Soy sauce is likewise destined for greater use, but the process of its manufacture is too complicated for domestic preparation. It can be purchased at Chinese groceries in this country, and probably from the majority of Chinese restaurants.

"Another dish which tastes as good as it looks or sounds is soy-bean sprouts. The smaller beans, of some yellow or green variety, are usually used." They are excellent because of "their use in the winter, acting as a green vegetable, and the fact that the vegetable can be had whenever wanted."

"And here is one for vegetarians–a 'vegetarian roast.' This is made by using equal parts of soy beans and peanuts, with the peanuts roasted and the beans boiled until soft before both are mixed and treated as an ordinary meat loaf. Such a roast as this is now being prepared by several food-manufacturing firms in the South, where both peanuts and soy beans are plentiful. It is being placed on the market in one and two pound containers."

"The beans served as a green vegetable are treated after hulling in much the same manner as Lima beans or peas. To hull, however, they should be boiled in the pods for about five minutes, then dipped into cold water, after which they shell easily. They can also be canned in this way, treating them after hulling the same as Lima beans. It is often desirable to serve them with rice or potatoes."

"So here we have a small glimpse of what their [soy beans'] future really is. A crop with a great industrial importance, a crop with known forage and manurial possibilities, and a crop holding forth a beneficent promise as an essential food, soy beans will soon be giving corn and wheat a close race for the more prominent places on our agricultural map."

Photos show: (1) Soy beans after being soaked but before boiling. (2) Piles of hay, used for forage. (3) Side view of a soy-bean harvester (with a man on top, pulled by two horses) used in the South, showing the bags filled. (4) A rear view of the same separating and bagging soy-bean harvester.

Note 1. This is the earliest document seen (March 2012) that uses the term "from soup to nuts" in connection with soybeans.

Note 2. This is the earliest English-language document seen (Jan. 2013) that uses the term "soy-bean sprouts" to refer to these sprouts. Address: Columbia, Missouri.

418. *J. of Agriculture and Horticulture* (*Quebec, Canada*). 1918. Soy beans, used like navy kind, make valuable food: Ancient China's product can be serve in numerous ways. Oct. 1. p. 67.

• ***Summary:*** From Weekly News Letter, U.S. Dept. of Agriculture [22 May 1918, p. 3]: "When prepared like the ordinary field or navy beans, soy beans should be soaked for 10 or 12 hours or more, if necessary, and boiled slowly. The boiled soy beans,... may be seasoned and used as a principal part of a meal as they are or may be made into bean loaf, bean croquettes, or other dishes.

When soy beans are three-fourths or more grown, the seed make a palatable and nutritious green vegetable.

Also discusses "soy-bean milk" ("a milky emulsion is obtained which is similar in appearance and properties to cow's milk"), "tofu or bean curd" (the addition of either magnesium chlorid [chloride] or calcium sulphate to soy-bean milk precipitates some of the proteid substances, forming a grayish-white curd).

"Soy or shoyu sauce is a dark-brown liquid prepared from a mixture of cooked and ground soy beans, roasted and pulverized wheat or barley, salt, and water, inoculated with a culture known as rice ferment and left in casks to ferment for six months to a year or longer. The liquid obtained is used in many countries, including the United States, as a sauce for meat or vegetables."

419. MacDougal, Sarah. 1918. The soy bean's many aliases: An artistic and appetizing demonstration of the many-sidedness of a 2,000-year-old Chinese vegetable that is meat, fish, milk, butter, cheese and many more in one. *San Antonio Light* (*Texas*). Oct. 6. p. 44. [1 ref]

• ***Summary:*** "Soy beans: Once I tried to cook them. After that I never wanted to hear any more about them. But that was before I went the other day to see Dr. Yamei Kin, a Chinese woman who is giving her time and talents to the Government to help solve the food problem.

"I found her in a blue silk kimono and a big white apron hustling about the kitchen in the United States Department of Agriculture Laboratory on Washington St., New York. The place looked as if some one had just milked the cows and brought in the milk pails. On the floor near the stove were two twelve-quart pails filled with warm milk. The Chinese boy helper strained the stuff through an aluminum strainer and cheesecloth. They were going to make cheese.

"That same Chinese lad had just finished milking the soy bean before I came in. That may sound queer, but it's all very simple. If we knew as much as we ought to know about soy beans there wouldn't be any absolute necessity for cattle or grazing lands or winter fodder. Because soybeans are ready to supply meat and milk and butter and cheese and all the rest of it. Dr. Kin said so and there were rows of jars and bottles on shelves and tables in that kitchen to prove it."

"'I might talk to you until doomsday about the manifold uses of soy beans, but you wouldn't understand,' she told me candidly, and then invited me to have luncheon in her apartment [at No. 56 West Eleventh St., New York City], promising a practical and palatable demonstration."

Since her guest had said that Roquefort was her favorite kind of cheese, Dr. Kin said she would serve that–[fermented tofu] made from soy beans–at the luncheon.

"Dr. Kin was born of Christian parents at Ningpo, south of Shanghai. Her father was a native pastor. Both parents died when she was three years old, and the Chinese child was taken into the home of medical missionaries, Dr. and Mrs. D.B. McCarter. When they came to the United States on furlough, she came with them. When she was sixteen she entered the Woman's Medical College of New York Infirmary for Women and Children, was graduated three years later, took a post graduate course for two years, and went back to China to practice medicine. She was appointed head of the Imperial Peiyang Woman's Medical School and Hospital, and later she was made head of woman's hospital work in northern China. She was married in 1894 and retired to private life. Her husband died a few years later, and in order to support herself and her son, Dr. Kin embarked on a lecture tour.

"Food is only one of the subjects she is interested in. She is recognized as an authority on Chinese art and literature.

"The one thing uppermost in her mind to-day is the winning of the war. She believes that food is one of the greatest agencies to that end.

"'My boy [Alexander] is at the front doing his bit,' she told me simply, and added: 'I want to do mine, too.'"

An excellent portrait photo shows Dr. Yamei Kin.

420. Moses, Albert Barnes. 1918. Process of producing liquid food from soy-beans. *U.S. Patent* 1,281,411. Oct. 15. 1 p. Application filed 27 Dec. 1917.

• ***Summary:*** Soya beans are disintegrated and allowed to stand with water until the nutritious matters are dissolved; then the mass is heated, and is afterwards cooled and strained. The residue is subjected to mechanical pressure and the expressed liquid is added to the strained liquid. Address: Seattle, Washington.

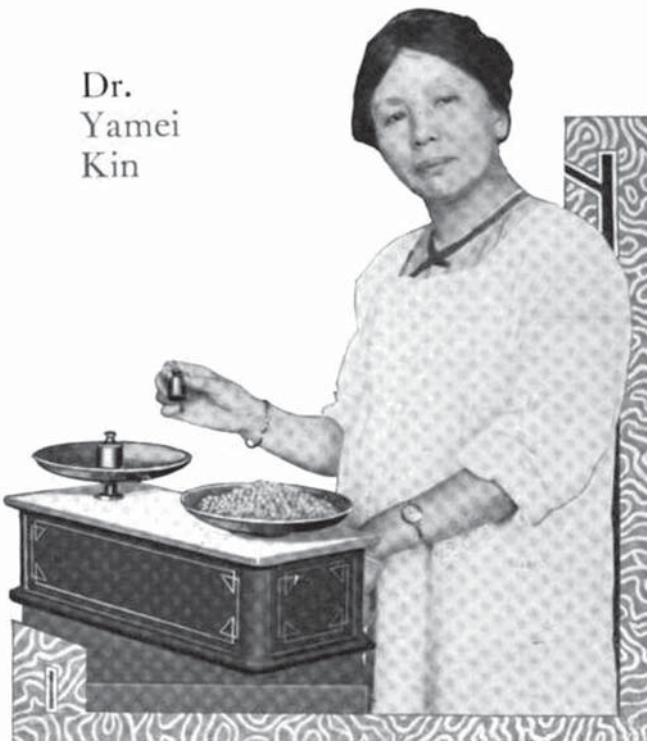
421. *Bean-Bag* (*The*) (*St. Louis, Missouri*). 1918. Products secured from a ton of soybeans (Diagram). 1(5):37. Oct.

• ***Summary:*** This diagram shows all the things that can be made from 2,000 pounds of soybeans: Meal 1,650 lb. Oil 32 gallons. Trash and moisture: 120 pounds.

From the meal: Food (animal or human), fertilizer, and cellulose. Human foods include macaroni, flour, soy sauce, milk [soymilk], cheese [tofu], coffee, lard [sic].

From the oil: Food (cooking oils, butter [substitute, lard substitute]), paints, enamels, blown oil (linoleum, varnishes, India rubber substitutes), soap stock (soaps, glycerine).

422. MacDougall, Sarah. 1918. Introducing to America an entirely new food–The soy bean: Dr. Yamei Kin. *Bean-Bag* (*The*) (*St. Louis, Missouri*) 1(5):17-19. Oct.



• ***Summary:*** From St. Louis Post-Dispatch Sunday Magazine: "Soy beans! Once I tried to cook them. After that I never wanted to hear any more about them. But that was before I was invited to a soy bean luncheon in a Greenwich Village apartment. Whenever anyone said 'soy beans,' I would recall that bowl of pebbles and then an unspeakably unpalatable mass of stuff that had to be thrown away. But now! As long as I live soy beans will seem like a symbol of pleasant sensations inside and out. I must tell you about that

luncheon.

"I went the other day to see Dr. Yamei Kin, a charming Chinese woman, who is giving her time and talents to the Government to help solve the food problem. Her specialty is Oriental food, especially soy beans, and she has been spending the summer showing how that food can be adapted to Occidental appetites. I found her in a blue silk kimono and a big white apron, hustling about the kitchen of the United States Department of Agriculture Laboratory in New York.

"The place looked as if somebody had just milked the cows and brought in the milk pails. On the floor near the stove were two 12-quart pails filled with warm milk. Dr. Kin was starting to make curds and whey. I watched her put a couple of spoonsful of fluid into each pail and saw the milk curdle in the good old way. Then the Chinese boy helper strained the stuff through an aluminum strainer and cheesecloth. They were going to make cheese.

"The Chinese lad had just finished milking the soy beans before I came in. That may sound queer to a mind that doesn't orientate toward those beans. But its all very simple. If we knew as much as we ought to know about soy beans there wouldn't need to be any cattle or grazing lands or winter fodder. Because soy beans are ready to supply meat and milk and butter and cheese and all the rest of it. Dr. Kin says so. And there are rows of jars and bottles on shelves and tables in that kitchen to prove it. Besides, there was a soy bean luncheon.

"The beans from which the milk had been extracted were soaked the night before. In the morning the Chinese lad put them through the mill, which is part of the kitchen equipment. It looks primitive, being made of two huge pieces of granite, imported from China. In its homeland this mill is worked by coolies, in New York by electricity. When the grist comes out of the mill it is strained. That was the stuff that filled those two pails. Dr. Kin told me that in China people eat the curds and cheese in their natural state. Here, however, she is making that cheese a base for a series of camouflage experiments.

"'We made ours into fish for dinner last night,' said a man from a nearby laboratory, who comes in every day to find out whatever happens to be new about soy beans.

"'How was it?' asked Dr. Kin.

"'Great,' said the man. 'My wife fried a couple of fish and then fried some soy bean cheese in the gravy, and, honest to goodness, I couldn't tell which was which. It has a way of absorbing the flavor of whatever it's cooked with,' he explained to me.

"'We had ours with chops,' remarked another laboratory expert who joined us. His name was Mr. Gleason. He declared that if he didn't know the difference he might have thought he was eating an extra chop. Everybody in the place was ready to root for soy beans.

"Dr. Kin explained that the reason the soy bean has been misunderstood in America was because people didn't take the trouble to investigate and analyze It, and to find out what are its food properties with reference to the nutrition we get from meat and vegetable.

"'Don't try to think about soy beans in a scientific way,' she advised me. 'This thing I am working with is in reality a vegetable cheese. It takes the place of meat. We've been using soy beans in China for over 2,000 years, and they are really very delicious and nutritious,' this in an offhand way, as if an experiment of 20 centuries or so ought to pave the way for the American appetite. She didn't want me to get my mind cluttered with such terms as carbohydrates and proteins.

"'I wouldn't waste a minute experimenting with food that was merely nutritious,' she told me. 'This whole movement about finding out the possibilities of food is part of the cultural development of the American people. The older a civilization becomes, the more people like to be surrounded by beautiful things. Chinese art, you know, is the most highly developed art in the world. All this bother about beans is not a question of science or of what is good for us, but it is a question of what is dainty, what is nice, what appeals to the taste. Making a study of eating is a part of the fine art of living.

"'American women, you must admit, are lacking in artistic sense. That is because the country is so young. When the process of refinement is farther advanced they will not regard household work, and especially cooking, as drudgery. It is really art. The older nations, being more cultured, make a deeper study of things. Chinese, for instance. But the Americans are very susceptible, very open-minded and frank and eager to acquire new ideas.

"'The trouble with vegetarians was that they expected us to eat such awful things. I'm not a vegetarian, but I must admit that I find great satisfaction in being able to sit down to most of my meals without facing the fact that I am eating slices of what was once a palpitating little animal, filled with the joy of life. I shouldn't be surprised if the soy bean will save the lives of many American animals.'

"On a long table was a row of glass jars filled with what looked like slices of white cheese [fermented tofu]. It was soy bean cheese. A jar was filled with a brownish paste [probably a type of Chinese jiang]. It was soy beans. There were bottles filled with the condiment we get with chop suey. That, too. was made from soy beans. Talk about dual personalities! The soy bean has so many aliases that if you couldn't like it in one form you would be pretty sure to like it in another.

"Dr. Kin has been trying any number of experiments with a view to boosting the bean to a bigger place commercially. In due time the results of all these experiments will be catalogued at Washington [DC]. Perhaps some day there will be a Bureau of Beans, from which may be obtained for the asking recipes on a thousand ways to prepare soy beans.

"Because she is working for the Government Dr. Kin doesn't disclose many details about the things she is doing. All that is worth while will be public information in due time, she says. Canning curds and cheese so they can be kept an indefinite length of time and then utilized in various forms is something she is trying to perfect.

"'I might talk to you until doomsday about the manifold uses of soy beans, but you wouldn't understand,' she told me candidly. Then she invited me to have luncheon in her apartment, promising me a practical and palatable demonstration that would make an impression in the way food ought to interest us. Of course, I was charmed with the idea. The only hitch was that I had to have luncheon without my hostess. Dr. Kin was going out of town early in the afternoon.

"While the Chinese lad was getting his instructions about piloting me to the apartment and serving luncheon, Dr. Kin turned to me and asked what kind of cheese I liked best.

"'Roquefort,' said I.

"'That's good,' said she, and then she told the boy something else in Chinese, told me she hoped I'd enjoy the luncheon and invited me to spend all afternoon at the flat if I cared to read any of her books or look at her pictures.

"Before we turned in at 56 West Eleventh street, I discovered that Wei, my amiable escort, was somewhat limited as to English vocabulary. He had been here only six months. When he entered the apartment he ushered me into a cool-looking parlor, indicated a comfortable big chair beside an open window, and disappeared with a smile that seemed to say: 'I'll rustle along the luncheon if you just sit there and fan yourself.'

"In a corner over near a window there was a big mahogany desk that looked like business. On it was the photograph of a Chinese-American youth, a strapping tall fellow who looked every bit a soldier. He is Dr. Kin's soldier son, Alexander, 21 years old, who left college to enlist as a private, and is now with Pershing's Eighty-second Division.

"A book and a magazine lay side by side on that desk. The book was Rabindranath Tagore's 'Nationalism.' The magazine was 'The Bean Bag.' I took up the magazine. Here are a few things I learned:

"Three million acres have been cultivated to soy beans in the South, principally in North Carolina; man could come nearer living well on soy beans alone than on any other food: it is the nearest substitute to meat there is; containing starch, sugar, fat, cellulose, albuminoids, mineral salts; a new harvester has been invented that threshes the beans on the vines, over 100 American manufacturers are using soy bean oil for soap, paint, varnish, enamel, salad oil; soy beans are listed in the food market of the District of Columbia; the soy. or soja, is the first and oldest of the 150 branches of the bean family; Manchuria claims the honor of its nativity; the Manchurian railroad recently opened a branch and an improvement station for distribution of the Ssupingkai special." Continued.

423. Winkler, Gustav. 1918. Die Sojabohne: Aus einem Vortrage... gehalten in der Hauptversammlung der Gartenbau-Gesellschaft Frankfurt a.M. am 17. April 1914. Zweite Auflage [The soybean: From a lecture... presented at the main meeting of the Gardening Society of Frankfurt am Main, on 17 April 1914. 2nd ed.]. Mainkur bei Frankfurt am Main, Germany: Published by the author. ii + 28 p. Illust. 22 cm. [4 ref. Ger]

• ***Summary:*** On the cover: "Die Sojabohne der Mandschurei [The soybean of Manchuria]. Much of this lecture (as stated on the title page) was based the following English-language article, translated into German by Werner Winkler (Gustav's son) in 1913: Shaw, Norman. 1911. "The soya bean of Manchuria." *Shanghai, Statistical Department, Inspectorate General of Customs. China Imperial Maritime Customs. II. Special Series* No. 31. 32 p.

Contents: A 2-page insert at the front. Photos show: (1) The author (with a large white beard and moustache) with a many-branched soybean plant, stripped of its leaves, mounted on a 2 x 3 foot wooden board, from his beanfield (*Winklers Bohnenfeld*) at Mainkur. This one plant grew from May 10 to Oct. 15, 6 months, producing 242 pods containing 503 completely mature soybeans. This line was acclimatized for 6 years and cultivated in the soil for 5 years. (2) The author standing and holding (with the roots facing upward) one soybean plant in each hand. In his right hand is an acclimatized soybean which produced 58 beans in 100 days. In his left hand is a plant grown from Chinese seeds of 1912-13 which produced 224 flowers and no seeds in 100 days. (3) A many-branched soybean plant, stripped of its leaves, from Winkler's beanfield, affixed to a board. Grown from Chinese seeds harvested in 1911/12. It grew from 15 May 1917 until Oct. 1, five months. 105 pods produced about 250 completely mature soybeans. From seeds that were not yet acclimatized grown on cultivated soil. (4) A similar looking plant from Winkler's beanfield. Grown from Chinese seeds harvested in 1911/12. It grew from 15 May 1918 until Oct. 15, five months. 160 pods produced about 350 soybeans. The seeds were not yet completely ripe because of bad, raw weather in 1918.

Foreword to the 2nd edition. Introduction. Diagram in the shape of a rhombus / diamond, showing how the various colored soybeans change from one color into another (adapted from Shaw 1911, p. 2). Description of the diagram: Discusses: (1) Ball, Carleton R. 1907. "Soy bean varieties." *USDA Bureau of Plant Industry, Bulletin* No. 98. 30 p. + 5 plates. May 27. (2) Hosie, Alexander. 1910. *Manchuria: Its People, Resources, and Recent History.* London: Methuen & Co. xii + 293 p. Hosie describes 3 types of soybeans: Yellow, with 3 subvarieites. Green, with 2 subvarieites. Black, with 3 subvarieites.

The rest of the contents is fairly similar to that of the

1st edition (1914), but the details within many sections are greatly expanded. On the rear cover is a photo of two soybean plants attached to a board, one month after planting the seed, Summer 1917; 15 May to 15 June. In the Supplement (p. 26-28), the author summarizes the results of his 8 years of soybean cultivation in Frankfurt; he concludes that it can be grown with good results in southern Germany. Frankfurt am Main is about midway between the northern and southern tips of Germany. Address: Mainkur bei Frankfurt am Main, Germany.

424. *Schweizerische Milchzeitung* (*Schaffhausen, Switzerland*). 1918. Soja-Milch [Soymilk]. 44(93):1. Nov. 22. Friday. [Ger]
• ***Summary:*** The soybean is imported in large quantities to Europe for industrial uses, for example in southern France, Algeria, and the USA. The plant originated in China. In the *British Medical Journal* of April 1918 [April 13, p. 430] we find a recipe for the preparation of soya milk. The recipe is summarized and the properties of soymilk are described. A milky liquid with a beany smell is obtained. The smell disappears upon boiling. Children like this milk, especially mixed with a little tea or coffee.

When fresh, this "soybean milk" has a slightly acid reaction, is microscopically homogeneous, and in its physical properties, resembles cow's milk. Lactic fermentation bacilli are active in it. It contains 3.13% casein and 9.89% fat. As the fat is rather oily, churning is impossible. When soymilk is heated, a skin [yuba] forms on its surface. A cheese [tofu] can also be made from soymilk. Soymilk and its derivatives are rich in phosphates, which would be good for nourishing infants and children. In normal times, soymilk should be very inexpensive. The residue from making soymilk [okara], which is still rich in nutrients, could be used in making cakes.

425. Castet, M. 1918. Utilisation du soja [Utilization of soybeans]. *Revue Horticole de l'Algerie* 22(10-12):160-61. Oct/Dec. Meeting of 20 Oct. 1918. [2 ref. Fre]
• ***Summary:*** The author (a woman, Mlle. Castet) is especially interested in the use of soymilk (*le lait de Soja*) for infant feeding. The soybean grows very well in Algeria and easily gives abundant harvests. In a small household, soya can furnish milk and very nourishing pastries at a low price. Properly prepared and cooked, it has an acceptable taste. Sweetened appropriately, infants also accept it well. One can mask its less agreeable flavor with two drops of essence of cut hay.

By reason of their extremely low price, one can pardon soymilk and tofu (*fromage de Soja*) if their flavor is not quite as good as their dairy counterparts.

According to the author, soymilk can entirely replace cow's milk. She believes that its use in place of cow's milk would reduce infant mortality.

Okara (*la drèche, drêche* = dregs or residue) can be used to make a sweet paste or cookies. Add half its weight of sugar plus just enough water to cover, then cook for at least one hour to give it an attractive brown color, with the taste and appearance of almond paste. It can be consumed as is or used to make stuffed dates. "One can even push the technique further. Mix with this jam one egg yolk, 2 egg whites (beaten until fluffy), and 3-4 gm of bitter almonds (crushed). Spoon onto a cookie sheet and bake for 4-6 minutes. Remove the cookies before they cool, lest they stick to the sheet."

Mlle. Castet also made a cheese (tofu) from soymilk, using magnesium chloride as a coagulant. Address: Secrétaire de la Société d'Horticulture d'Alger, Algeria.

426. Morse, W.J. 1918. The soy-bean industry in the United States (Continued–Document part II). *Yearbook of the U.S. Department of Agriculture* p. 101-11. For the year 1917. See p. 106-10. Contains many photographs by Frank N. Meyer.
• ***Summary:*** Continued from p. 106. "Soy beans for human food: In Asiatic countries, especially China and Japan, the soy bean and the various food products made from it are so largely consumed that it is second only to rice in importance as a food crop. The soy bean is eaten only to a very small extent like other beans, but in China and Japan it is elaborated into a great variety of products, all having a high percentage of protein and making a well-balanced diet when eaten in connection with the staple food, rice. Some of these products are said to be eaten at every meal and by rich and poor alike. Of these numerous preparations, only one, 'shoyu,' or 'soy sauce,' has been introduced to any extent in other countries. It is quite possible that some of these products would appeal to the American taste and with proper exploitation become established on the American market.

"Although the soy beans as an article of food has attracted attention from time to time in the United States, thus far it has been used but little except as a special food for invalids. The beans contain only a trace of starch and are highly recommended as a food for persons requiring a diet of low starch content. During the past year, however, much interest has been manifested in the possibilities of the soy bean as a staple food.

"Many schools of cookery and domestic science throughout the country have conducted experiments rather successfully, utilizing the dried beans in the manner of the navy bean. As a result, the dried beans can now be purchased in the markets in nearly all of the large cities. The variety and palatability of the forms in which the bean can be served make it a very desirable article of food, and it may be expected to grow in favor as it becomes better known (p. 107)."

"Dried beans:... During the season of 1916 about 100,000 bushels of American-grown soy beans were packed as baked beans by several canning companies in

the Central and Eastern States." Properly roasted, the dried beans "make a good coffee substitute. Those fond of cereal beverages pronounce it equal to many of the preparations on the market. In China, the beans are soaked in water and roasted, the product being eaten after the manner of roasted peanuts. This method of preparing the beans is improved by soaking the beans for about twelve hours in a 10 per cent salt solution, boiling slowly for about 30 minutes, and then roasting to a light-brown color. The yellow-seeded and green-seeded varieties are preferable, as they make a product of better appearance.

"Green beans: When soy beans are three-fourths or more grown, the seed makes a most palatable and nutritious green vegetable. As such it may be used much as is the green pea or the Lima bean. The pods are somewhat tough and not desirable to eat. The green beans are rather difficult to shell, but after cooking in the pods for about five minutes, they shell out very easily."

"Soy-bean milk:" If dried soy beans are soaked, crushed, and boiled "a milky emulsion is obtained which is very similar in appearance and properties to cow's milk. This liquid, separated out by means of a very fine sieve or through a cloth filter, is the soy-bean or 'vegetable' milk used so extensively in China." "Soy-bean milk has a rather strong characteristic taste and odor which may be masked by the addition of a small quantity of coumarin or vanillin. This 'vegetable milk' can be used in numerous preparations, such as breads and cakes, in creaming vegetables, in milk chocolate, and in custards. If allowed to remain in a warm place the milk becomes sour, like animal milk, and in that form may be employed just like sour milk or buttermilk...

"After separating the milk from the solid material, the residue [okara] is still very rich in nutritive substances. It can be dried and used for cattle feed or possibly made into a meal or flour for human consumption."

"Soy-bean cheese: "The addition of magnesium or calcium salts (about a 1 per cent solution) to soy-bean milk when hot precipitates some of the proteid substances, forming a grayish white curd which settles out, leaving a yellowish watery liquid. This curd, after being drained and pressed, represents the tofu, or bean curd, which is so extensively eaten and forms the basis of numerous fermented, smoked, and dried cheeses in China and Japan (Plates III and IV). Tofu is made fresh daily and is a staple article of diet of oriental peoples. In many cities of the United States having a large Asiatic population, fresh bean curd generally may be found in the Chinese markets. Although the fresh curd, or tofu, is tasteless, it is a highly nutritious food and no doubt could be elaborated by the American housewife into a variety of palatable dishes.

"Soy sauce: Soy or shoyu sauce is a dark brown liquid prepared from a mixture of cooked and ground soy beans, roasted and pulverized wheat (barley is sometimes used), salt and water. This mass is inoculated with a culture known as rice ferment (*Aspergillus oryzae*) and left in casks to ferment from six months to a year and sometimes longer (Plate V)... This product may well serve as the basis of sauces of the Worcestershire type... The manufacture of soy sauce is conducted on a large scale in China and Japan, and to some extent in India. The yearly production of Japan is said to amount to nearly 2,000,000 barrels. The brewing of this sauce has also become a well established industry in Hawaii. Although there are no factories in the United States, considerable quantities of the sauce are imported annually, and it can be obtained at Chinese stores in most of our cities."

"Soy-Bean sprouts: Several species of beans are sprouted and used as a green vegetable by the Chinese (Plate VI). Soy beans are used to a very considerable extent for this purpose, as these sprouts are larger and firmer than those of most other legumes. Bean sprouts can be used as a home winter vegetable, for the dried beans are sprouted easily in a short time under proper conditions of heat and moisture. It is quite possible that sprouted soy beans utilized in various vegetable dishes would appeal to the American taste."

Note 1. This is the earliest English-language document seen (Jan. 2013) that uses the term "sprouted soy beans" (or "sprouted soy bean") to refer to soy sprouts.

A table (p. 111) shows the "Quantity and value of soy beans, soy-bean cake, and soy-bean oil imported into the United States, 1910-1917, inclusive.

Photos on unnumbered pages show: (1) A typical soy bean plant. (2) A field of the Biloxi soy bean grown at Biloxi, Mississippi. (3) Pods and seeds of 7 common varieties of soy beans.

(4) "Large blocks of freshly made bean curd, 'tofu' [on a round wooden table], ready to be cut up into squares and sold to the housewife."*

(5) "Large bamboo tray of various kinds of soy-bean cheese of the drier type" [pressed tofu sheets].*

(6) "A dark room of even temperature where wooden trays, full of bean curd [tofu] are piled. This is another method of preparing soy-bean cheese" [fermented tofu].*

(7) "Large earthen jars full of squares of bean curd, which are covered with spiced brine and soy sauce. After several months' curing a bean cheese [fermented tofu] is formed, which can be kept for many years."*

(8) A "courtyard full of covered pots of fermented soy beans and brine from which soy sauce is made."*

(9) The basket on the left contains "sprouted soy beans, which are sold and used as a green vegetable" [in China]* * = Photographed by Frank N. Meyer, Agricultural Explorer, USDA.

Note 2. This is the earliest published document seen (Jan. 2001) that contains photos of soyfoods by Frank. N. Meyer. Most of the photos appear to have been taken in China.

Note 3. This is the earliest document seen (Jan. 2013) in

which William Morse describes "soy-bean sprouts" or "soy-bean cheese" (tofu).

Note 4. This is the earliest English-language document seen (Oct. 2011) that uses the term "soy-bean cheese" to refer to fermented tofu.

Note 5. This is the earliest English-language document seen (May 2005) that uses the term "masked" (or any other form of that verb) in connection with the undesirable taste or odor of soyfoods (soy-bean milk) or soy beans.

Note 6. This is the earliest document seen (June 2013) that gives statistics for the amount of whole soybeans used as food in the United States, or that gives a figure (about 100,000 bushels) for the amount of soybeans canned in the USA in 1916–the first time they are known to have been canned. Address: Scientific Asst. in Forage-Crop Investigations, Bureau of Plant Industry, USDA, Washington, DC.

427. Shih, Chi Yien. 1918. Beans and bean products. Shanghai, China: Soochow University Biology Dept. 13 p. 24 cm. [Eng]

• ***Summary:*** The author's name in pinyin is probably Shi Jiyan. At the head of each section, the name of each product or type of bean is written in Chinese characters. Contents: Introduction by N. Gist Gee of the Dept. of Biology, Soochow Univ., China.

Note 1. Soochow, also called Su-chou (formerly Wuhsien) is a city in southern Kiangsu (pinyin: Jiangsu) province, in eastern China, on the Grand Canal. Introduction and names of soy beans: Classical Chinese names, colloquial Chinese names, Latin names, and English name (Soja bean). Soy beans. The food products of soy beans. Bean curd (Cc). Tou fu koen. Po yeh. Yu tou fu [fried tofu]. Ju fu [fermented tofu]. Tsao ju fu [fried fermented tofu]. Ch'ing hsien ju fu. Tou chiang or bean sauce. Chiang yu. Bean ferment or tou huang. Bean Sprouts. Bean relish or tou shih [fermented black soybeans]. Bean oil.

Note 2. This is the earliest English-language document seen (April 2013) that contains the term *You tou fu* (regardless of hyphenation).

Beans (Four varieties of *Phaseolus mungo* var. *radiatus:* chidou = dark-red [azuki] bean, baichidou = white dark-red bean, lüchidou = green red bean, and lüdou = green [mung] bean): The food products from the green [mung] beans (lüdou): Bean sprouts, green bean congee or lu tou chou, green bean soup or lu tou tang, green bean pudding or lu tou kao and lu tou sha. The food products from the red [azuki] bean (quite similar to those made from the green [mung] bean): Congee, rice, pudding, tou sha.

Hyacinth beans (*Dolichos lablab;* five Chinese varieties / names: biandou, baibiandou, qingbiandou, zibiandou, longzhao biandou). Asparagus beans [cowpeas] (*Vigna catiang;* four Chinese varieties / names: jiangdou, panxiang jiangdou, manli jiangdou, baimi jiangdou). The food products from Pien Tou and Chiang Tou. Medicine. Flowers and seeds of the Pai Pien Tou, the broad bean, windsor bean, or horse bean (*Vicia faba*)*;* In China it has two names: (1) Ts'an Tou or silkworm bean, because it is harvested at the time the silkworm is making its cocoon; (2) Han Tou or cold bean, because it grows through the winter. The food products from Ts'an tou (broad bean): Bean shoot (tou miao), Ch'ing tou (as a vegetable), Ja tou (broad bean sprouts), Shien fan and fan bee (made from broad beans and mung beans), Tou sha. The section on the names of beans (p. 1) we will give the English name, Latin name, the classical Chinese names / colloquial Chinese names, and an English translation in parentheses, as follows: (1) Soja bean, *Glycine hispida:* heidou / heidou (black [soy] bean), huangdou / huangdou (yellow bean), yangyandou / yangyandou (sheep eye bean), maliaodou / maliaodou (horse material / feed bean),–/ guguo qingdou (bone wrap green bean),–/ jiajia sandou (pod pod three bean), xiangsidou (mutually think bean) / xiaqngzhidou (fragrant branch bean),–/ bayue baidou (8th month white bean). Soja bean: *Dolichos cultratus* quedou (magpie bean) / equedou (chirp magpie bean). Soja bean: *Phaseolus vulgaris* baidou (white bean) / shui bai dou (water white bean),–/ shidou (fennel bean) (Note 3. shiluo means "fennel"),–/ guashudou (melon ripe bean),–/ maquedou (sparrow bean),–/ niuta biandou (cow tread flat bean),–/ yadou (sprout bean),–/ shijia xiangdou (ten family fragrant bean),–/ xifeng qingdou (west wind green bean),–/ shizi hedou (persimmon pit bean),–/ denglongdou (lantern bean).

Note 4. The large title "Soy Beans" at the top of this table, the right column which says that the English name of each variety is "Soja bean," and the next 8 pages which are only about soy beans, strongly indicate that all the colloquial names in this table refer to different varieties of soy beans. Moreover, all these colloquial names appear again on page 3 in a table on planting and harvest times of different varieties of [soy] beans. The bottom half of the colloquial names are probably from different parts of China, since Dr. H.T. Huang (a soybean expert) has never heard many of these colloquial names before. The most puzzling question is: What are *Dolichos cultratus* and *Phaseolus vulgaris* doing at the bottom of the "Latin name" column? *Dolichos cultratus* is not listed on either of the two comprehensive taxonomy databases (GRIN and ILDIS, which include all past Latin / scientific names). *Phaseolus vulgaris* refers to the common bean, such as the kidney bean, pinto bean, navy bean, frijole, etc.

2. Soy beans. "They were introduced into France during the reign of Ch'ien Lung about 1740 A.D. by a French Consul; into England in 1790, into Australia in 1875, into Germany 1881, and 1888 into America. They were known here from ancient times and were mentioned in the oldest books Pên Ts'ao Kong Mu, which were written by the Emperor Shen-nung in the year 2838 B.C., and the later Chinese Classics."

Note 5. This is the earliest English-language document seen (Aug. 2002) that treats Shen Nung as a real, historical figure, or that says the first written record of the soybean appears in a book written by him. The information about that book is wildly inaccurate. The *Bencao gangmu* (The great pharmacopoeia), perhaps China's most famous materia medica, was written by Li Shizhen (+1596). The above information, which is all wrong, has been cited again and again, down to the present day (2002), in connection with the supposed origin of the soybean.

"Even during the ancient times they were considered by the people to be the most important of the cultivated leguminous plants." Note 6. This is the earliest document seen (Aug. 2002) which states, incorrectly, that the date of Emperor Shen-nung's book is 2838 B.C.

"The methods of cultivation are as follows: In general all of the soja beans are planted in rows along the banks of canals and the boundaries of the fields, which separate the fields of one family from those of another, except those which are called oil beans or Eighth month white bean and Water white bean. These last are planted in large fields. The oil beans are planted early in June." The method of cultivation, harvest, and threshing is then described in detail. A table gives the time of planting and harvest for 18 varieties of Chinese soybeans, grouped into 6 types by planting and harvest dates: (1) Plant in latter part of April, harvest in latter part of Sept.: *Heidou* (black [soy] bean), huangdou (yellow bean), *maliaodou* (horse material / feed bean), *guguo qingdou* (bone wrap green bean), *jiajia sandou* (pod pod three bean), *xiangzhidou* (fragrant branch bean). (2) Plant in early part of June, harvest in middle part of Sept.: *bayue baidou* (8th month white bean), *shuibaidou* (water white bean), *maquedou* (sparrow bean). (3) Plant in early part of July, harvest in early part of Oct.: *equedou* (chirp magpie bean). *niuta biandou* (cow tread flat bean), *shijia xiandou* (ten family fragrant bean), *xifeng qingdou* (west wind green bean), *shizi hedou* (persimmon pit bean), *denglongdou* (lantern bean). (4) Plant in early part of April, harvest in early part of July: *guashudou* (melon ripe bean). (5) Plant in early part of April, harvest in latter part of July: *shidou* (fennel bean). (6) Plant in early part of April, harvest in latter part of June: *yadou* (sprout bean).

The rest of the work concerns the food products of the beans, including a detailed description of how each is made.

Note 7. This document contains the earliest date seen for soybeans in Australia or Oceania (1875). It is not clear whether or not these soybeans were cultivated in Australia; they may well have been. The source of these soybeans is unknown, as is the author's source of information concerning that early introduction, 43 years before Shih wrote this booklet. He is the first to give such an early date for the introduction of soybeans to Australia. Yet the date does not seem unreasonably early since there were 17,000 Chinese in Australia by 1855 (see Australian Department of Immigration and Ethnic Affairs. 1985. "A Land of Immigrants"). Address: Biology Dep., Soochow Univ., China.

428. *Virginia Department of Agriculture and Immigration, Bulletin.* 1918. Soy bean useful crop. May be utilized in greater number of ways than almost any other agricultural product. No. 126. p. 174-76.

• ***Summary:*** "In addition to its availability as a food, soybean oil has found important uses in the markets of the world for making paints, varnishes, soaps, rubber substitutes, linoleum, waterproof goods, and lubricants. It is also used in the Orient for lighting and in the manufacture of printing ink. In Japan the soy bean forms one of the most important articles of food in use. It is one of the principle ingredients in the manufacture shoyu (soy sauce), miso (bean cheese), tofu (bean curd), and natto (steamed beans). The beans are eaten also as a vegetable and in soups; sometimes they are picked green, boiled, and served cold with soy sauce, and sometimes as a salad. A 'vegetable milk' is also produced from the soy bean, forming the basis for the manufacture of the different kinds of vegetable cheese. This milk is used fresh, and a form of condensed milk is manufactured from it. All of these foodstuffs are used daily in Japanese homes, and for the poorer classes are the principle source of protein."

"An artificial milk like that manufactured in the Orient has been produced in small quantities in the United States, and recently a factory has been equipped to make this product." Photos show: (1) Soy beans as a forage crop, arranged in stacks. (2) Lime spreader at work. Address: Virginia.

429. Eddington, Jane. 1919. The Tribune Cook Book: Soy beans as human food. *Chicago Daily Tribune.* Jan. 12. p. B4.

• ***Summary:*** Miss Eddington first got interested in the use of "soy bean flour" in the human diet about 5 years ago when she "first received samples of this flour for a medical manufactory." During these five years "soy bean flour has come into wide use in hospitals and homes. From being used in the United states to renew worn out soil and then for hog feed, the soy bean has come to be used largely as a food for those who have worn out kidneys, the diabetics."

"Soy bean cookery, especially the whole bean cookery, must be good, or the variety [of] vegetable meat contained in it is ruined, becoming as indigestible as white of egg cooked to a crisp." The key is to cook the whole bean at a low temperature for a long time. "Baked soy beans must be cooked at least eight hours."

"In Washington [DC], the government experts used 30 per cent soy bean flour with 70 per cent of wheat flour and called their product 'a high powered bread.'" She then gives four wartime recipes for "Soy bean muffins." Some call for "soy bean meal." Note: This "meal" is probably soy bean flour.

"Used as a meat substitute:... The tofu, a sort of cheese which is fried in deep fat and used as a meat substitute, was exploited by the United States department of agriculture last year, along with other of the soy bean products..." She then cites (incorrectly): Morse, W.J. 1918. "The soy-bean industry in the United States." *Yearbook of the U.S. Department of Agriculture* p. 101-11. For the year 1917. Then, from the section titled "Soy beans for human food," she includes the recipes for "Soy-bean milk" and "Soy-bean cheese," and the description of soy sauce. "Soy or shoyu sauce is a dark brown liquid prepared from a mixture of cooked and ground soy beans, roasted and pulverized wheat or barley, salt, and water..."

430. *Bulletin Mensuel des Renseignements Agricoles et des Maladies des Plantes* (*Rome*). 1919. "Lait de soya" ["Soymilk" (Abstract)]. 10(2):252-53. No. 251. Feb. [1 ref. Fre]
• ***Summary:*** A French-language summary of the following German-language article: *Schweizerische Milchzeitung* (Schaffhausen, Switzerland). 1918. "Soja-Milch [Soymilk"]. 44(93):1. Nov. 22. Friday.

431. Erslev, Knud. 1919. Process for the manufacture of artificial milk. *U.S. Patent* 1,297,668. March 18. 3 p. Application filed 3 Jan.
• ***Summary:*** This process involves four basic steps: (1) "Soya bean flour" is treated with a fat solvent so as to completely remove the fat content. The preferred solvent is benzin, benzene, or benzol, which may be distilled off and removed. The inventor has found that the unpleasant flavors in artificial milks "are largely produced by the presence of products dissolved in the fat, which products themselves, such as esters, aldehydes, and ketones, and not the fats, possess disagreeable odors." (2) The residue from the fat extraction is extracted with alcohol, and the alcohol distilled off for re-use. This dissolves and removes lecithin, sugars, and bitter principles. (3) The residue which has not been dissolved in either the fat solvent or alcohol is treated with a weak alkaline solution, whereby protein is dissolved. (4) The alcohol extract from step (2) is purified to remove bitter substances from it, then this purified alcohol extract is added to the protein solution from step (3), and a suitable amount of fatty material is added and emulsified in.

Note: This is the earliest English-language document seen (Oct. 2001) that uses the term "soya bean flour." Address: 268 Groesbeekscheweg, Nijmegen, Netherlands; Citizen of Denmark.

432. *Le Mutilé de l'Algerie.* 1919. "Ce qu'il faut savoir:" Utilisation du soja [Let it be known: Utilization of soya]. 4(82):7. March 30.
• ***Summary:*** A French-language extract from the following French-language document: Castet, M. 1918. Utilisation du soja [Utilization of soybeans]. *Revue Horticole de l'Algerie* 22(10-12):160-61. Oct/Dec. Meeting of 20 Oct. 1918.

433. Delaye, A. 1919. Contribution à l'étude sur "l'utilisation du soja" au point de vue de l'alimentation de l'homme [Contribution to the study of utilization of soybeans for human food and nutrition]. *Revue Horticole de l'Algerie* 23(2-3):197-202. Feb/March. [2 ref. Fre]
• ***Summary:*** "The communication made by Mlle. Castet, at the time of your session of 20 Oct. 1918, interested us so much that we have tried, in turn, to study how one can use the soybean in a simple and economic manner, while making it lose its somewhat disagreeable taste.

"M. Castet, our sympathetic Secretary General, has desired to put at our disposal a supply of soybean seeds that we can use for experimentation... The soymilk that we have obtained, mixed with coffee, tea, or chocolate, is not much different from animal milk. If you didn't know in advance, you wouldn't notice any difference. Lactescent soy flour, it seems to us, has a brilliant future... The lactescent soy flour, although relatively simple to make, will never become widely used by the general population, if I may say so, unless it can be mass produced. In order for housewives to make the flour by themselves, they would need some special equipment. Furthermore, housewives are too busy to take the time to make it. So, to be accessible to the general public, it is essential that soy flour be sold in all grocery stores. From there, packaged in either boxes or sacks, it will end up on the kitchen shelves. The package will effectively and advantageously display a cow, or a goat, or a conscientious dairy man." Tables show compositional comparisons between soybeans and various foods. Address: Societe d'Horticulture, 11, rue de Metz, Alger (Algiers), Algeria.

434. Holland, J.H. 1919. Food and fodder plants. *Kew Bulletin of Miscellaneous Information* Nos. 1&2. p. 1-84. April 16. See p. 11-12. [5 ref]
• ***Summary:*** Great Britain imported large quantities of soy oil before World War I to make up for the shortage of cottonseed oil needed to manufacture soaps: 875,526 hundredweight from Manchuria, 816,032 hundredweight from China, and 43,209 hundredweight from Manchuria. Note: A hundredweight is 112 pounds weight.

"Considerable interest has been taken in the cultivation in England, but results of experiments made at Cambridge, Midland Agricultural College, South Eastern Agric. College, Wye, &c., go to show that no variety so far has been found that can be relied on to produce seed here.

"In Japan and China they [soy beans] are largely known in the preparation of the sauce known commercially as 'Soy,' and they make there a preparation used as a substitute for milk, and from this a food product call 'Tofu,' which in turn forms the basis of the bean cheeses of Japan. The meal [flour] in this country is used in the manufacture of biscuits

and in making a bread for special use in diabetes; but the principal use here is for the extraction of the oil of which the beans contain about 18 per cent., suitable for soap-making and in general as a substitute for cotton seed oil, the residue being a valuable cattle feed.

Also discusses the adzuki bean (*Phaseolus angularis*, Wight). "This bean appears to have been coming into the market recently in quantity. Trade samples have been submitted to Kew for name as 'Dainagon Azuki Beans.'" They are important human food in Japan, Korea, China, and Manchuria, cultivated for the purpose.

435. Nashville Agricultural Normal Institute, Food Department. 1919. Re: Soy bean and peanut products. Letter to Mr. George Washington Carver, Tuskegee Normal and Agricultural Institute, Tuskegee, Alabama, April 29. 1 p. Typed, without signature on letterhead. [1 ref]

• ***Summary:*** "Yours of April 10 received. We have sent you two cans of our Soy bean product. We also can soy beans in three ways, plain, with tomato, and with nut meat.

"We do not know as anything we have would do to exhibit except our soy bean flour, and that you say you make yourself. We have never seen a sample of the milk though we have tried to make it many times. We would be much pleased to receive a little sample of you. Do you think you can make a success of producing milk from the soy bean? I hope the soy bean food reaches you O.K." Initials Dp or Sp.

Handwritten note on bottom of letter: "Is the wood stain you made from the soy bean of much use? Would be pleased to hear how you are succeeding with these experiments.

Note 1. Names printed at the top of this letterhead are E.A. Sutherland, M.D., N.H. Druillard, W.F. Rocke [farm manager of the Madison school], and M. Bessie De Graw.

Note 2. Letter from Sam Yoshimura. 1981. March 19. When Sam attended Madison College from 1937-1943 Nut Meat was made from peanuts, water, and seasonings.

Location: Library of Congress, Washington, DC. Microfilm of The George Washington Carver Papers in the Tuskegee Institute Archives, Roll 6 #0152. Address: Madison, Tennessee (near Nashville). Phone: Walnut 1789-W.

436. Lepine, R. 1919. Le soja et le lait de soja [The soybean and soymilk]. *Revue Scientifique* 57:373-74. June 28. [1 ref. Fre]

• ***Summary:*** Most of the information in this article is summarized from two earlier articles: (1) Dr. Louis Trabut, Director of the Botanical Service for the Government of Algeria, which appeared in the April 1918 in *Algerie, Service Botanique, Informations Agricoles. Bulletin* (No. 55, 16 p.). (2) Mlle. Castet. 1918. Utilisation du soja [Utilization of soybeans]. *Revue Horticole de l'Algerie* 22(10-12):160-61. Oct/Dec. Session of 20 Oct. 1918. "D'après Mlle Castet le lait de soja, pour toutes les préparations culinaires, ainsi que pour les entremets, peut remplacer entièrement le lait de vache. On a supposé que s'il était employé dans l'alimentation du premier âge il diminuerait la mortalité infantile"

There is also a brief reference to: Delaye, A. 1919. Contribution à l'étude sur "l'utilisation du soja" au point de vue de l'alimentation de l'homme [Contribution to the study of utilization of soybeans for human food and nutrition]. *Revue Horticole de l'Algerie* 23(2/3):197-202. Feb/March (1919).

In France, one pioneering soybean grower was Mr. Gustave Dollfus, near Mulhouse, but he was unable to continue. Most soybeans were cultivated for forage. To give good yields of forage they demand a warm climate and irrigation, which is only available in the south of France (*le midi de la France*) and, above all, in Algeria.

We are ignoring entirely the nature of the protein substances that it [soymilk] contains. A priori, it is doubtful that, for the development of infants and children, these proteins are as valuable as casein, which is of such great importance in nutrition. But it is likely that soymilk will render a great service in raising veal calves, which are reared with a pap of the [full-fat] flour; for it would add some fat and we now know, according to a recent article by Mr. Maignon in *l'Academie des Sciences*, that fats plays a role in the synthesis of albuminoids.

437. Acosta Henríquez, Juan. 1919. Habichuelas soyas [Soybeans]. *Revista de Agricultura de Puerto Rico* 3(1):18-29. June. [Spa]

• ***Summary:*** Contents: History. Varieties grown in Puerto Rico and their characteristics. Soils. Sowing. Harvest. Production and yield per acre. Seed storage. Uses. Silage. Green forage. Hay. Green manure. Uses of the seed (for humans and animals). Assimilation (by humans and animals) and digestibility. Soya as a domestic food (incl. soymilk and tofu). Soy flour (*harina de soya*). General considerations. Enemies of the soybean.

"The soybean (*La habichuela soya*) is a new crop in Puerto Rico. It was introduced from the United States and though, in some towns on the island it has been sold occasionally as a domestic food, it has not been cultivated for that purpose. The federal agricultural experiment station of Mayagüez [Mayaguez] is the only site where experiments have been conducted with this bean (*grano*). Its field of experimentation has been expanded to almost all the towns of Puerto Rico, where one would have been able to obtain very satisfactory results if it were not for the carelessness of the farmers on whose land the trials were conducted; for after seeing that their plants had grown a little, the farmers stopped tending them [assuming that the plants would grow by themselves]. On the grounds of the station at Mayagüez, we were able to carry out various experiments concerning the cultivation and utilization of this crop, and all gave favorable

results."

At the Mayagüez station, the author conducted soybean trials for 18 months, and he is sure that the soybean can be cultivated in and adapted to Puerto Rico. This is especially important today when yields of native beans are decreasingly rapidly. In 1918 at Mayagüez, the author planted the following soybean varieties: Mammoth Yellow, Ito San, Wilson's Five, Tokyo, Haberlandt, Manchu, Chiquita, Virginia, and Early Green. With these introductions an average production of 1.128 tons of dry hay per acre were obtained.

"The soybean has not been used to a great extent as a food in people's homes in Puerto Rico. Experiments have been conducted in this regard and the results have been satisfactory." The author believes that in Puerto Rico, the soybean has not been used as it should be for food. He does not believe that Puerto Ricans will use the soybean as it is used in Japan, with the exception of tofu (*queso de soya*). "This cheese could be made in Puerto Rico with very good results." He then describes how to make soymilk and tofu, and says that the tofu can be sold either fresh or refrigerated. "The pods [*las vainas;* he probably means green vegetable soybeans] can be used in salads before they harden. They should be washed and the fibers on the peel of the pod should be removed. The pods get lightly or briefly boiled, as is done with tender beans, and are served with oil and vinegar, resulting in a magnificent dish." Note: Habichuela means "French-bean or kidney bean." Tables contain data on production and composition of soybeans.

Note: This is probably the earliest Spanish-language document seen (June 2009) that mentions green vegetable soybeans, which it describes as shown above. Address: Subinspector de Agricultura, Puerto Rico.

438. Palen, L.S. 1919. The romance of the soya bean. *Asia and the Americas* 19(1):68-74. July. Illust.

• ***Summary:*** The author, who begins by acknowledging his indebtedness to Dr. Yamei Kin, Dr. John Harvey Kellogg, and Mr. W.J. Morse for much of the material in this article, gives an overview of the soya bean worldwide. The article contains excellent photos (many by Adachi): (1) Stacks of soya bean cake in open storage on Dairen wharves, South Manchuria. (2) Horses plowing soybean fields in North Manchuria. (3) Modern machinery [a huge steam-powered tractor] used in bean cultivation in remote parts of Manchuria where foreign interests are involved. A Western man and woman ride horses nearby. Caption: "To the Manchurian farmer, with his laborious methods of hand cutting and hand winnowing, the introduction of modern Western farming methods would spell many-fold prosperity." Note: This is the earliest document seen (Feb. 2003) that shows a photo of a tractor in connection with soybeans. (4) Stacks of soybeans piled high in sacks in Manchuria as far as the eye can see. (5) Soybeans stored in huge cylindrical, 20-foot-high osier bins, each covered with a conical top.

Soy oil is purified and flavored with an admixture of olive oil for use as a salad oil. It also forms the basis of some of our butter and lard substitutes. "What Mr. Li Yu-ying accomplished in Paris in the establishment of a Laboratory of Research and of a factory for the production of all the products derived from the soya has been the forerunner of activity on the part of certain independent Chinese companies in America and of government and private investigations."

"In general the use of whole soya beans has not been attended with much success because of the ever present flavor of the oil content and because, with the ordinary method of cooking, they remain hard and unpalatable; but it has been found that cooking at a temperature somewhat above the boiling point, say from 220 to 230 degrees, breaks up the cellulose structure and develops a richness of flavor that is not obtainable with the lower temperature."

"By far the most extensive use of the soya is in the products manufactured from it. And it is here that Dr. Yamei Kin, the talented Chinese physician, is making her chief studies under the direction of the Pure Foods Division of the Department of Agriculture, with the purpose of spreading a knowledge of the soya among Americans. For convenience of consideration the products studied may be divided into sauces, curds, cheeses and milk.

"Of the sauces the liquid form is already familiar, although unrecognized, perhaps, by a large percentage of Occidentals through the work of early English traders in bringing back the base of the now famous Lea and Perrins Worcestershire Sauce. This original Chinese *shi-yu* was highly spiced and became a well recognized adjunct to many an English meal. Following the example of Lea and Perrins, others have put out sauces with the same base without, however, attaining the same success, because the makers did not understand that there are many kinds of soya sauce. While they are all made by the same ferments and in the same general way, they differ very greatly in quality according to the locality and to the manufacturer, just as wine, though made from the identical kind of grape and by the same process of fermentation, may be a very different article from different hands. It takes several months to make this liquid form of sauce, while the best kind requires a year or more to attain the finest flavor and mellowness. The hot condiment added by Lea and Perrins is not favored by the Chinese, since according to their taste it detracts from a wide use of the soya sauce."

Tofu (spelled to-fu) is discussed in detail. "There are records to show that it has been used since at least nine hundred years B.C. *To-fu* making is a staple industry in every little community. Usually it is done at night so that the fresh curd will be ready for the morning demand in the market, or for peddling around the streets. It provides, for the fraction of a cent, the indispensable equivalent of meat and affords

very often the explanation of how the Chinese laborer does so much work on what is purely vegetable diet, popularly supposed not to contain much protein. *To-fu* is made in many different forms and the bean stalls occupy quite as large and prominent places in the city market as the fish and meat stalls...

"Cheeses are also made from the growth of cheese-making moulds on *tofu.* The Chinese resident in America regularly import a certain highly flavored red bean cheese for their own use...

"Perhaps the greatest contribution of the soya to the life of the Occident will be in its form of milk. Back in the golden era of peace there had been established in London a soya bean milk factory which was prepared to place its product regularly on the market, and there were said to be plans consummated for the erection of two others at Manchester and Liverpool; but of what the development has been we have no definite information. In Shanghai, Peking and Dalny Chinese companies are supplying hospitals and individuals with an 8 or 10 ounce bottle of concentrated milk per day at a cost of $1.00 Mex per month.

"In its competition with the cow the legume has in its favor the following facts: Soya milk can be produced with less contamination; it is tuberculosis-free; its caseins break down much more readily than the caseins of cows' milk and do not form curds in the stomach in the same degree...

"By those who advocate and urge a vegetarian diet, a very strong bill can be drawn in favor of this oriental substitute. In these days when war has thrown new light on many of our life problems, it will be easier to secure acceptance for their contention that the world must for both economic and physiological reasons adopt the biological diet. It has been calculated that, roughly speaking, it takes 100 pounds of foodstuffs to produce 3 pounds of beef and that a given acreage of land can support five times the population if the necessary protein can be derived directly from vegetable sources rather than going through the roundabout way of an animal form, imposing upon the body the burdens incident to taking in the toxines [toxins] resultant from the catabolism of the cells of the animal, and from possible putrefaction. In China the Buddhist priests and people who enter the various temperance societies all depend on varieties of *to-fu."*

439. Yamamoto, Yoshitaro. 1919. Process of deodorizing and decoloring bean-flour. *U.S. Patent* 1,314,298. Aug. 26. 1 p. Application filed 21 May 1919.

• ***Summary:*** "This invention relates to a process of preparing deodorized and decolorized bean flour from raw bean, or deoiled bean and consists in steeping in a weak solution of an organic acid bean coarsely broken and deprived of its bran, until it has swelled and lost all of its offensive smell, and color; then removing all the traces of the acid by carefully washing the material with water, and then drying and grinding it. The object of this invention is to obtain bean flour suitable for use as material for making sweetmeats, as a substitute of powdered milk, or for preparing bath powder."

Note: This is the earliest English-language document seen (Sept. 2010) that contains the word "deoiled" (spelled as one word) in connection with soybeans.

In detail: Steep the bean powder in a solution of 1-2 liters of vinegar mixed with 100 liters of water, heat the mixture to a temperature not exceeding 60ºC, remove the powder from said solution and wash it with water, then steep the powder in a solution of 140-200 gm of bicarbonate of soda mixed with 100 liters of water. Remove the powder again, wash it in water, then dry it at a low temperature. This process will not cause "condensation of the albumin, matters which give out the offensive smell and color of the bean, are decomposed and removed, such matters being changed into soluble substances. Thus the product obtained by my process is almost pure white in color, and retains it albuminous components unaltered, that is, in the condition they exist in raw bean. Thus the bean flour produced by my process can be used in place of wheat flour or rice flour in making sweetmeats, as a substitute of powdered milk for drinking purpose and as food stuff for other purposes. It can be also used as material for preparing bath powder, and also as body of soap." Address: No. 5 Zitchome, Taikaidori, Hyogo city, Kobe, Japan.

440. Bowers, William G. 1919. Some studies on the nutritive value of the soy bean in the human diet. *North Dakota Agricultural Experiment Station, Special Bulletin, Food Department* 5(13):278-328. Aug. Reprint of his 1919 PhD thesis, Ohio State Univ. 28 cm. [65 ref]

• ***Summary:*** Contents: Part I: Introductory. Extent of production. Human food preparation made from the soy bean. Varieties and chemical composition. Character of the carbohydrates of the soy bean and its bearing on nutrition. Character of the fats of the soy bean and its bearing on nutrition. Character of the protein and its bearing on nutrition. Vitamines of the soy bean. Minerals of the soy bean. The soy bean compared to some other legumes used as human food as to fuel value and organic nutrients. Digestibility of soy bean products.

Part II: Experimental part. The character of the materials used in the experiments. Digestibility of soy cake meal baked into bread. Digestibility of soy cake meal mush. A study of the nutritive value of the nitrogen free contents of the soy bean. Malt digestion. One per cent HCl [hydrochloric acid] extract (incl. pentosans, galactans, true cellulose). Milling of the soy bean: Composition of parts (incl. "the bran"), digestibility of the bran, the nitrogen-free extract, crude fiber, physical effects of a diet solely of a mush made from the bran, the calcium oxide and phosphorus pentoxide content of the soy bran and soy meal. Toxic and disagreeable or unpalatable substances of the soy bean: Some investigations

as to the possible poisons, location and elimination of the disagreeable and unpalatable substances (20 experiments, incl. soy and navy bean bran, benzine extracted soy and navy bean meal, alcohol extracted soy and navy meal, a steam distillation for the purpose of separating objectionable flavor). Discussion of results. Summary.

Introductory: Only within the last 35 years "has the soy bean been considered with much favor as a food for stock. Only within the last ten or fifteen years has it met with any favor at all as a food for man" (p. 279). "Soy milk and soy milk products are being made in the United States now" (p. 280). "Roasted beans. Soy beans may be roasted in an oven or ordinary corn popper. They are heated until the beans are burst like popcorn. The beans thus roasted may be softened by immersing in a syrup while they are hot. This is said to make a wholesome candy. The roasted beans may be powdered and used as a salad dressing or employed as a substitute for coffee" (p. 281). "The fresh green beans, those that have been dried without being allowed to ripen thoroly [sic, thoroughly], or those that have ripened on the vine after the vine has been pulled show slight amounts of starch" (p. 282).

"Experimental part (p. 287): "In our experimental work we propose to inquire into the digestibility of soy cake meal. We shall then determine the digestibility of the different carbohydrates as found in a representative variety of the soy bean. After passing some of the beans thru a milling process we shall study the composition and digestibility of the meal and bran and determine their relative amounts of calcium and phosphorus, and locate any possible poisons or objectionable substances that my be present in either of these. This will make it possible, then, to determine whether or not it would be profitable to carry on the milling process and eliminate certain products, or whether by the use of certain extractives we can get rid of the objectionable constituents."

Recalling the fact that "navy bean bran is so indigestible and is responsible for fermentation and discomforting gas in the digestive system, we were led to the effort to separate the bran and the meal of the soy bean and make determinations of each separately... we found the bran to constitute 8% of the whole bean." The germ was 1½% and the remainder was cotyledon. "The bran consisted of very large flakes. We had to grind it thru a burr mill three times before it would pass thru a twenty mesh sieve" (p. 301-02). The bran can be easily separated from the soy bean by milling. It is composed of about 37% crude fiber and 43% nitrogen free extract. "Digestibility experiments on the bran showed that the nitrogen free extract, including the hemicelluloses and waxes, is about 84% digestible, which is much less than that of the whole bean. (p. 323).

"In order to see what would be the physical effects of a day's diet on the bran alone, we made three meals of 30 grams each for one day. Next day we were a little uncomfortable on account of a slight amount of gas in the bowels. We were a little weak and very hungry but not sick. The next day the stool was voluminous but not so very soft. The diet had neither a laxative nor a constipating effect that could be noticed" (p. 304).

"In most of the Japanese foods made from the soy bean the disagreeable flavor is avoided by the nature of the preparation made. These, of the most part, involve some sort of fermentation which changes the flavor entirely. The Domestic Science Department of the Ohio State University [under the leadership of Dr. J.F. Lyman, with help on milling from Dr. Park of the Farm Crops Dept.], has carried on considerable experimentation making different preparations, combinations and extractions, as well as making use of different methods of cooking soy bean preparations, to avoid the disagreeable flavor."

The calcium oxide content of the bran was found to be 0.8% and the phosphorus pentoxide content 0.27%. No salicylic acid was found in the bran, and no hydrogen cyanide or cyanates in the samples tested. There was no trace of tannin in the bran and only a slight trace of alkaloids.

"As far as flavor is concerned there is no point gained in removing the bran from either the soy bean or the navy bean. The beany flavor and some of the disagreeable taste can be easily removed from the soy bean by steam distillation, but the disagreeable flavor in the oil cannot be removed in this way."

Nineteen tables (all but one without captions) show compositional percentages of soy beans, and a summary of results. An illustration (line drawing; p. 297) shows the apparatus for extracting meal with 95% alcohol. Three bar charts (p. 316-18) gives a summary of experimental results.

Note 1. Although this document was reprinted as a Special Bulletin by the Food Department of the North Dakota Agricultural Experiment Station, it has nothing to do with North Dakota per se, and makes no mention of soybeans being used or grown in North Dakota.

Note 2. This is the earliest English-language document seen (June 2013) that mentions soy bran, which it calls "soy bran." It is also the earliest document seen concerning the etymology of soy bran.

441. *Journal des Praticiens: Revue Generale de Clinique & de Therapeutique.* 1919. Le lait de soja [Soymilk]. 33(38):607-08. Sept. 20. [1 ref. Fre]

• ***Summary:*** This article in the "Food Hygiene" section notes that the soybean [*la soja*] is a legume whose seeds are very similar to those of haricot beans or beans, but the contain more protein and fat, and less carbohydrates. For this reason, they have been recommended in diabetic diets. Soy bread has had little success. Presently, soymilk is widely used (see articles in *Revue Horticole de l'Algerie* by Mlle. Castet, Oct/Dec. 1918, and by Delaye, March 1919).

In 1914, a ton of soybeans from Manchuria sold for 202 French francs in London [England]. Since 150-160 gm of

soybean are sufficient to make a liter of milk, the cost of the raw materials is only about 3 centimes. The labor could not be very expensive because the process is very simple. Thus, even with increasing freight rates, the actual cost of a liter of vegetable milk (*lait végétal*) is probably not more than about 20 centimes.

A brief description of the process soymilk making process is given. The flavor is very acceptable. Suitably sweetened, it is also well accepted by infants.

Mr. Delaye says that he has succeeded in removing the bad taste from soymilk, but he does not describe his process. According to Mlle. Castet, in all culinary preparations, as well as in side dishes or sweets, soymilk can entirely replace cow's milk. We suppose that its use in the feeding of young infants would diminish their mortality rate, but this supposition has not yet been supported by facts.

Mlle. Castet makes a cheese [tofu] with soymilk, using magnesium chloride as a coagulant. The taste is not bad, but rather tasteless. It should be sweetened. In the future, one can imagine an industry making various foods from soymilk curds.

In the preparation of soymilk, that which remains in the filter [okara] is not without value. Mlle. Castet adds sweetener plus a little water and cooks it for an hour or less until it has the appearance and taste of almond pâte. It can be consumed as is or used in making pastry, such as almond pâte.

442. Carver, G.W. 1919. Re: Milk from peanuts. Letter to Robert Russa Moton, Principal [Tuskegee Institute, Tuskegee, Alabama], Sept. 22. 1 p. Typed, without signature (carbon copy).
• ***Summary:*** "I am sure you will be pleased to know that I have today made a delicious, and wholesome milk from peanuts. It looks exactly like rich cows' milk and has a fine... flavor."

Note: Linda O. McMurry (1981, p. 170-71, 175) states that in this letter Carver announces a "discovery that ultimately shaped the course of his career... The creation of the Peanut Man began with the discovery of peanut milk." In 1918 Carver seemed well on his way to becoming the "Sweet Potato Man." Later, though he did not desert this work, the end of World War I soon brought an end to the interest in sweet potato flour. About a week after Carver wrote the letter to Moton mentioned above, "Walter M. Grubbs of the Peanut Products Corporation in Birmingham, Alabama, heard of the discovery and wrote Carver for details. Carver assured him that the milk tasted as good as cow's milk and had been successfully used as a substitute in baking and in making dairy products such as cheese. He also declared, 'I think I am conservative in my statement when I say that it is without a doubt, the most wonderful product that I have yet been able to work out, and I see within it, unlimited possibilities.' Grubbs came to Tuskegee to investigate and departed dazzled by both Carver and his many peanut products."

Location: Library of Congress, Washington, DC. Microfilm of The George Washington Carver Papers in the Tuskegee Institute Archives, Roll 6 #0321. Address: Director, Dep. of Research & Experiment Station [Tuskegee, Alabama].

443. Carver, G.W. 1919. Re: Milk from peanuts. Letter to Mr. Walter M. Grubbs, Peanut Product Corporation, Birmingham, Alabama, Oct. 1. 1 p. Typed, without signature (carbon copy).
• ***Summary:*** "It is true that our Research Laboratory has succeeded in producing a milk from Peanuts, eminently commercially practical. I am not ready however, to release it, as the discovery is less than a week old and it has a number of possibilities that I am perfecting; at present I have three grades. First, the Normal milk, Second, a very rich product which I choose to call Cream; Third, a Butter milk; they are all three wonderfully interesting products and every way that I have tried them out, they have proven a success.

"I have used the sweet milk for making both Corn-bread and Biscuits with perfect success; have used the sour milk with baking powder for biscuits with equally as much success. The Butter milk is delicious for drinking. I am making yeast bread with it today, hope to make ice cream very soon; The cream works very nicely in coffee, changes the color similar to the cream from cow's milk and those who tried it out with me, pronounce it excellent; in fact, I am trying it out upon a great many people here who are really fastidious. I do this in order to get whatever objections they may have to it, so as they may be corrected before it is released."

"I think I am conservative in my statement when I say that it is without a doubt, the most wonderful product that I have yet been able to work out, and I see within it, unlimited possibilities. It curds much like cow's milk and the curds make a delicious cheese [tofu]. I hope to have it perfected sufficiently to let it go out before a great while.

"P.S. [handwritten] I have just tried it out in rolls made with just the peanut milk instead of water. Yeast was used in the usual way. The rolls were simply delicious and taste like real milk rolls only more nutty in flavor. Experienced bread makers say the rolls are delicious."

Location: Library of Congress, Washington, DC. Microfilm of The George Washington Carver Papers in the Tuskegee Institute Archives, Roll 6 #0328. Address: Director, Dep. of Research & Experiment Station [Tuskegee, Alabama].

444. Le Goff, Jean. 1919. Le soja: Un aliment précieux pour diabétiques [The soybean: A valuable food for diabetics]. *Gazette des Hopitaux* 92:1120-21. Nov. 18-20. [3 ref. Fre]
• ***Summary:*** "In two preceding articles in this journal (22 May 1910 and 7 March 1911) I have called attention to the

use of soya in diabetic diets, I have demonstrated that it is to cultivate this plant in France, and I am hopeful that some day there will be interest in cultivating the soybean as a garden vegetable." In the United States the soybean is being introduced to many states under the direction of Mr. W.J. Morse, who has also written various bulletins dedicated to the study of the soybean, its cultivation and usage.

From the viewpoint of food, the soybean has been neglected up until the present. However I noticed in the *New York Herald* (May 1916) the name of this seed among the substances that the Germans have fed to our poor prisoners of war. And these soybeans came from France!

"Here, in effect, is what one reads in the *Journal de Genève* on Thursday, 10 August 1916, page 6, 1st edition. "Export of soybeans." Berne (Switzerland): "The *Nouvelle Gazette de Zurich*, in its issue no. 1238, has published the following note: 'We have said that Mr. G. Liechti, in Zurich, is the importer from France of 2,000 railway cars (*wagons*) of soybeans. At a later date, these soybeans were re-exported to Germany. He submitted to us the file of this case in which the press took such great interest.'" Note: These soybeans were probably not grown in France (or even Europe), but rather imported to France from East Asia.

"We would like to know what the role of our Minister of Blockade (*Ministère du Blocus*) has been in this affair, which I brought to their attention.

"Food uses of the soybean.–The soybean can be used in either the dry or fresh state. To date, it has been used only in the dry state in Europe: (1) As a flour, with which one can make biscuits, pastries, and bread. (2) As an edible oil. (3) As a vegetable milk with which one can make a cheese [tofu], that can be consumed fresh, dry, smoked, or fermented. (4) A coffee substitute, after roasting.

"In the fresh state, the soybean is rarely used because agriculture does not take enough interest in this plant, which not only fertilizes the soil by fixation of atmospheric nitrogen, but also furnishes forage and an edible seed of the first order. This is the vegetable of choice for those with diabetes mellitus." Soybeans harvested fresh in France are very easy to cook–quite unlike dry soybeans. A table shows the chemical composition of 3 samples of dry soybeans.

Two photos by Dr. Le Goff show: (1) A mature soybean plant with pods, harvested in the suburbs of Paris; it bears 38 pods containing 90 soybean seeds. (2) A portion of the roots of a soybean plant with nodules. Address: Dr.

445. Cromwell, Richard O. 1919. Fusarium blight of the soy bean and the relation of various factors to infection. *Nebraska Agricultural Experiment Station, Research Bulletin* No. 14. 43 p. Nov. Based on his PhD thesis, Univ. of Nebraska. [32 ref]

• ***Summary:*** The blight of soy beans is due to *Fusarium tracheiphilum.* The first report of this soy bean disease appeared in a publication by the author in 1917. "The disease is characterized by a chlorosis and shedding of the leaves or leaflets, followed by the death of the plants, and is herein called 'blight.' Soy bean blight has been observed in several localities within North Carolina on soils infested with cowpea wilt..." The physical structure of soils under natural conditions is not the limiting factor in the infection of the disease, but acidity under certain conditions has some influence. The nematode (*Heterodera radicicola*) also has some influence.

The section titled "Economic importance of the soy bean" (p. 6-7) states: "Its culture in England was begun in 1790. The plant was introduced into the United States from Japan in 1860. Since that time its cultivation as a soil-improving and a forage crop has been confined for the most part to the Southern States. North Carolina is probably foremost among these States in the production of soy beans. The yield in 1909 was only 13,313 bushels (29, p. 632), and in 1915 was estimated as approximately 1,000,000 bushels. Within the last three or four years, and especially since the war began, this crop has become increasingly important because of the large variety of products manufactured from the oil and meal and because of its introduction in the United States as a human food.

"The following is a list of the most important products obtained from soy beans or in which soy beans enter: Soy bean milk, vegetable cheese, meal or flour, macaroni preparation, soups, pork and beans, meat substitutes, toilet powder, fertilizer, and cattle feed from the meal, and high explosives, soaps, linoleum, rubber substitutes, margarine, Japanese sauce, paints, varnishes, water-proof cloth, salad oil, lubricants, and lard substitutes from the oil."

The section titled "Other soy bean diseases" (p. 7) mentions nine, including Heterodera, and "Chlorosis and crinkling (cause?)."

The section titled "History, occurrence and importance of the disease" (p. 8) states that in 1900 Orton conducted tests for disease caused by *Fusarium* on soy beans at Edisto Island and at Monetta, South Carolina (see Orton 1902, p. 16-19). Eight varieties of soy beans [planted on 29 May 1901 in Monetta] were tried on ten plats. "The varieties tested were Tokio, Buckshot, Yosho, Ito San, Manhattan, Guelph, and Amherst [Footnote: The names in use for these varieties in 1890 were respectively as follows: Best Green, Early Black, Yoshoka [sic, Yoshioka], Rokugatsu, Gosha, Black Round, Green Medium, and Bakaziro]. Orton reported that at Edisto Island the soy bean made a heavy growth, 3 or 4 feet high, and was free from the wilt disease. It may be said that a very considerable proportion of the several varieties of cowpeas grown in adjacent plots succumbed to wilt. The results of these tests accord with the observations of others who have had opportunity to observe these crops when they were grown on soil known to be infested with cowpeas wilt."

The section titled "Field experiments to determine the susceptibility of varieties" (p. 38-40) states that the following

soybean varieties were planted in May 1916 in Red Springs, North Carolina: Black Eyebrow, Brown, Haberlandt, Mammoth Yellow (which suffers greatly from *Fusarium* blight), Medium Yellow, Pekin, Tar Heel Black. and Virginia. Black Eyebrow seems to show some evidence of resistance.

A larger number of varieties were tested in this field in 1917, including the following not tested in 1916: Arlington, Auburn, Austin, Barchet, Chiquita, Early Dwarf Green, Guelph, Jet, Manchu, Peking (spelled differently this time), Tokio, and Wilson Black. Again, Black Eyebrow showed resistance. "The Brown variety, altho as badly infected by the nematode and *Fusarium* as any of the other varieties, deserves special mention because of its tolerance to these parasites." Address: Extension Plant Pathologist, Iowa State College. Formerly Asst. Plant Pathologist, North Carolina Agric. Exp. Station.

446. Gasca, Enrico. 1919. Il latte vegetale [Vegetable milk]. *Igiene e Vita* (*Rome*) No. 11. [Ita]*
• ***Summary:*** Note: This is the earliest Italian-language document seen (Aug. 2013) that uses the term *latte vegetale* to refer to soymilk.

447. **Product Name:** Milqo (Soy Milk).
Manufacturer's Name: Milqo Ltd. Later renamed Milquo Ltd., then Vi-Tone, then Milk-Ko.
Manufacturer's Address: Milqo Ltd., Hamilton, ONT, Canada.
Date of Introduction: 1919.
New Product–Documentation: W.L. Burlison and O.L. Whalin. 1932. *Journal of the American Society of Agronomy* Aug. p. 594-609. "The production and utilization of soybeans and soybean products in the United States." See p. 608. In a table under "Canadian Products" "Milqo (soy milk)" is listed.

H.W. Lohse. 1936. *Canadian Chemistry and Metallurgy.* July. p. 224-25. "The soya bean as a food product and industrial raw material." The author, who is from Milqo Ltd., Hamilton, Ontario, Canada, states in this paper presented at the Canadian Chemical Convention: "Soya bean milk has been manufactured here in Canada by Milqo Limited in Hamilton since 1919. This firm erected one of the first, if not the first, plants for the purpose of this manufacture on a large scale in the Western world."

American Soy Bean Association. 1938. "16th annual meeting." This leaflet lists the stores from which the soy products were purchased, incl. Milqo Limited, Vi-Tone Company, Hamilton, Ontario, Canada.

Soybean Digest. 1948. "Grits and flakes... from the world of soy: Milquo Ltd. is now Vi-Tone." Jan. p. 34. "Milquo Limited has changed its firm name to Vi-Tone Products Limited, 198 Gage Ave. S., Hamilton, Ontario. Ray H. Bissell is president."

Soybean Blue Book. 1954. p. 102. Milk-Ko Products in Hamilton is probably the same company that was previously named Milqo Ltd.

Note: This is the earliest known commercial soy product made in Canada, or in the province of Ontario.

448. Calvino, Mario. 1919. La soya [The soybean]. *Informe de la Estacion Experimental Agronomica* (*Santiago de las Vegas, Cuba*). p. 98-103. For the years 1917-1918. [1 ref. Spa]
• ***Summary:*** This report, which describes the first soybean experiments in Cuba, begins by discussing the composition of the seed, and its various uses in China, Japan, and Europe (including for manufacture of soaps and as a drying oil in paints, and as foods such as whole dry soybeans, soy coffee, roasted soybeans [soynuts] {"*Se comen también tostados...*"}). In China they are sprouted in darkness and the white sprouts, up to 3 cm long, make an excellent green vegetable."

Note. This is the earliest Spanish-language document seen (Jan. 2013) that mentions soy sprouts, which it calls *sus gérmenes blancos.* From soybeans the Chinese also make a special soy cheese (*un queso especial*), a type of milk (*una especie de leche*), and other drinks. The author then states: "We thought it would be useful to test varieties of soya suited for hot/tropical countries, and we were able to obtain two types of Japanese soybeans, those that gave satisfactory results without having been inoculated.

"Since these soybean types did not find suitable bacteria for the purpose of being inoculated naturally in our terrain, I asked the Mulford house (*casa de Mulford*) for a special bacterial strain for soy (Soya) and proceeded with the artificial inoculation of the seed. The result has been magnificent, as one can see in the accompanying photographs.

"Now we have inoculated land, with which we have been able to ensure the most success for our crop. The harvest [yield] during this first year in Cuba was 2,000 kg/ha of seed. We have also found that it is best to cultivate soya in rows 60 cm apart, with the seeds planted 10 cm apart in each row. This is very dense planting, but it is better to thin the plants than to transplant in others to get the desired plant density. Transplanting is often unsuccessful, and if a crop is not planted evenly the first time, it is difficult to make it even later by transplanting.

"I have had a chemical analysis done of the soybean seeds from our crop. The report prepared by the Department of Chemistry shows that they contain 10.4% water, 41.95% protein, 17.5% oil, 2.45% carbohydrates, 2.5% fiber, and 5.2% ash. The analyst was F. Dominguez." An analysis is also given of assimilable or digestive elements in the soybean from a book by R. Gouin titled *Alimentation rationelle des animaux domestique* [*Rational feeding of domestic animals*]. Three full-page photos show soybean plants: (1) Root nodules on a soybean plant grown in Cuba

without the use of inoculant (p. 99). (2) Two soybean plants grown at the agronomic station that contain many pods (p. 101). (3) Four soybean plants with roots; two were inoculated and bear nodules (p. 103).

Note 1. This is the earliest Spanish-language document seen that refers to soynuts. Note 2. This experiment station is under the Secretary of Agriculture, Commerce and Labor (*Secretaria de Agricultura, Comercio y Trabajo*). This 515-page report is published in Havana by Alvarez López y Cie. Address: Director, Estacion Experimental Agronomica, Doctor en Ciencias Agricolas de la Universidad de Pisa [Italy].

449. Koenig, Franz Joseph. 1919. Chemie der menschlichen Nahrungs- und Genussmittel. 4 Aufl. Nachtrag zu Band I. A. Zusammensetzung der tierischen Nahrungs- und Genussmittel [The chemistry of human foods and food adjuncts (stimulants / enjoyables) 4th ed. Supplement to Vol. I. A. Composition of animal foods and food adjuncts]. Berlin: Verlag von Julius Springer. 594 p. See p. 286-87, 346, 528. [6 ref. Ger]

• ***Summary:*** On pages 286-87 is a section on "Sunflowerseeds, soybean cake and soybean meal (*Sojakuchen und–mehl*) as fodder for milk cows," by Nils Hansson. A table shows the weight of the feed and the resulting milk, and the fat content of that milk. Soybeans (*Sojabohnen*) are also mentioned in two places on p. 346 as a raw material for soymilk–which is described in German as a "fluid resembling cow's milk" or a "soybean emulsion" (*Sojabohnenemulsion*) (Footnote: *Die Sojabohnenmilch, Sojamilch, Sojaglobulin*).

A table titled "Plant cheeses (*Pflanzenkaese*)" gives the composition of tofu, kori-tofu (frozen tofu), Hamananatto, three types of soybean cheese (*Sojabohnenkaese;* from the year 1912, one type prepared in a laboratory), Chinese tofu, and Daua-Daua (Dawa-Dawa) cheese made from the seeds of *Parkia africana.* The source of all data is given, and the lengthy footnotes accompanying each entry in this table take up more space than the table itself.

Note: This is the 2nd earliest German-language document seen (Dec. 2011) that mentions fermented black soybeans, which it calls *Hamananatto.* Address: Germany.

450. Mattei, G.E. 1919. La soja ed i suoi prodotti [The soybean and its products]. *Bollettino di Studi ed Informazioni del Regio Giardino Coloniale di Palermo* 5(1/2):1-34. [40 ref. Ita]

• ***Summary:*** This article contains one of the best histories seen to date of the soybean in Italy, from 1760 to 1813. Contents: Brief history of the soybean. History of its taxonomic classification. Botanical description of the wild and domestic soybean. Varieties. Introduction of the soybean to Europe (especially France and Italy). The question of the root nodule bacteria. Cultural requirements. Importance / value of the production. Utilization of the seeds. Soy flour (*farina di soja*). Soymilk (*latte di soja*). Soy cheese [tofu] (*formaggio di soja*). Soy oil (*olio di soja*). Soy cakes (*panelli di soja*). Other Japanese preparations: Miso, shoyu, koji. Opportunities for soybean cultivation in Italy. Results of cultural trials at the Colonial Garden (*Giardino Coloniale*) in Italy.

"Introduction of the soybean into Europe: The soybean (*La Soja*) was long confined to East Asia, and it is only towards the 17th century that it appears in the Indian Archipelago; in fact, if it had existed in the Pacific islands at the time of Cook's voyage, Forster surely would have reported it. Its introduction to the East Indies is even more recent. Roxburgh mentions its cultivation in the Botanical Gardens of Calcutta from seeds acquired from the Moluccas, in 1798. On the other hand, as Alphonse de Candolle observes, if its cultivation were ages-old, it would have spread long ago toward the West to Syria and Egypt, which did not occur.

"Its introduction to France is said to date back to 1739, when certain missionaries sent soybean seeds, from China, to the *Jardin des Plantes* in Paris: the uncertainty however arises as to whether, even before this time, it was cultivated in Europe, since, as Saccardo points out, it appears that essays (*saggi*) on the plant exist in the *Herbarium* of Bartolomeo Martini of Verona, Italy, written (*composto*) in 1701.

"In any event, concerning France, the soybean is reported as being grown extensively in about 1821 at Champ-Rond near Etampes; it seems, however, that subsequently its cultivation was nearly lost; in fact, Lachaume, in the *Revue Horticole* of 1857 [pages 568-70. Nov. 16], reports it as a new introduction, thanks to the French Consul in Shanghai, and he describes and illustrates it.

"As for Italy, Pinolini [1905] dates the soybean to 1848 [sic, 1840]. It is possible that its cultivation as an agricultural plant began to spread from that date, but the existence of the soybean in Italy antedates this date by at least a century. Saccardo says in fact: 'cultivated since the mid-18th century, and at times extensively, as in the Treviso region.'

"With the existence, as I have stated, of essays on the soybean in the *Herbarium* of Bartolomeo Martini of Verona, an herbarium written in 1701, one might suspect that from that time the soybean was being cultivated in the Verona region; but who could have brought the seeds? And if this were the case, why do we not find any reports of it in somewhat later authors? Or was the above-mentioned essay brought directly from the Orient. It should be noted that Kaempfer's voyage to Japan dates to 1690, and we have the first accurate reports on the soybean in 1712 with Kaempfer's own publication. Should we perhaps believe that some study, brought back by Kaempfer, was given to Martini? He might have obtained it from Zannichelli who, as

Targioni-Tozzetti relates, in the life of Micheli, carried on a correspondence with Martini himself? Assuredly Kaempfer had to regard a plant which is used for so many purposes in Japan as important and it is possible he brought back essays about it, and perhaps even seeds.

"In any event, the Jardin des Plantes in Paris, after 1739, must have distributed seeds to various botanical institutions, including Italian. In fact, from the old *Catalogs* (*Cataloghi*) of the first Italian botanical gardens and from the pertinent *Index seminum*, we see that in the second half of the 18th century, the soybean is being cultivated almost everywhere: in 1760 Allioni mentions its cultivation in the Botanical Gardens of Turin; in 1780 Abbot (*l'Abate*) Farsetti introduced it to his Santa Maria di Sala garden near Venice; in 1785 Scopoli mentions it in Pavia; in 1787 Guatteri records it in Parma; in 1790, with the Botanical Gardens barely established, Tineo was cultivating it in Palermo, as results [show] from the Catalogue published in precisely that year; in 1793 Zuccagni refers to it in Florence; in 1798 Durazzo had introduced it into his garden Dello Zerbino near Genoa; in 1801 Tilli mentions it in Pisa; in 1805 Graefer refers to it in Caserta; in 1807 Arduino introduced it to the Agricultural Gardens (*Orto Agrario*) of Padua; in 1811 Fabriani refers to it in Modena; in 1813 Tenora points it out in Naples, and the same may be said for other more recent reports. From this we see that, at the end of the 18th century, the soybean was already cultivated throughout Italy, not for agricultural but for scientific purposes, that is, in Botanical Gardens.

"Perhaps this information escaped those, like Pinolini, who did research on the soybean as an agricultural plant because, in all works dealing with plants cultivated at that time, the soybean is found under the name of *Dolichos soja*, the generic name *Soja*, of Moench or Savi, not yet having been adopted."

In 1918 a soybean cultural trial was conducted at the Colonial Garden, Palermo, on a plot of 350 square meters; smaller experiments had been conducted in previous years. A variety was chosen which had almost spherical seed and was greenish yellow in color. The seeds were planted on March 29, in furrows at a spacing of 30 x 40 cm.; they germinated regularly about 10 days later. The plants were hoed twice to reduce weeds and irrigated eight times from the end of May until the end of August. Flowering began in early July and the seed was harvested on Nov. 15. The entire vegetative period was, therefore, 7½ months. The plants reached an average height of 90 cm. Their growth was luxuriant and there was a normal development of nodules on the roots. From this plot of 350 square meters, 51 kg of clean seed was harvested; this corresponds to a yield of about 1,450 kg/ha, which is considered quite satisfactory and could be increased by manuring. The beans, when cooked in different ways, were found to have an agreeable taste.

Talk with Ted Hymowitz, soybean geneticist, Univ. of Illinois. 2003. Aug. 18. Caution! It is not clear whether the early dates for soybean in Italy in this article are based on herbarium specimens or living plants. With herbarium specimens, it is easy to make errors.

Note 1. This document contains the earliest solid dates and the second earliest overall dates seen for soybeans in Italy, or the cultivation of soybeans in Italy (1760). The source of these soybeans is unknown. Yet note that the earliest possible date that the soybean was cultivated in France was about 1740. Perhaps there was some connection between the earliest possible soybean cultivation in France and in Italy.

Note 2. This is the earliest Italian-language document seen (April 2013) that uses the term *formaggio di soja* to refer to tofu.

Note 3. This article was reprinted in the Nov. 1991 issue of *Il Giornale della Soia* (p. 11-16). Address: Royal Botanical Garden (R. [Regio] Orto Botanico), Palermo, Italy.

451. Smith, Joseph Russell. 1919. The world's food resources. New York, NY: Henry Holt and Company. 634 p. See pages 326-27, 360-65. [1 ref]

• ***Summary:*** Contains a brief overview of the soybean, soybean production, and soybeans as a food product, with several long excerpts from Dr. J.H. Kellogg, and the *USDA Year Book of Agriculture* (about food uses, including shoyu or soy sauce).

A photo shows "Soy bean curds and cheeses in a Japanese factory," in large earthenware containers (p. 362). Note: This photo of "curds and cheeses," taken by Frank N. Meyer, shows the production of fermented tofu, probably in a Chinese factory (See: {1} Morse 1918. "The Soy-bean Industry in the United States." Plate IV, fig. 2; {2} Piper & Morse. 1923. *The Soybean.* p. 242).

Concerning use of food resources, in the USA and Canada, the chief goal of agriculture is not to feed humans but to feed animals. This was true even in the food crisis of 1918 [at the end of World War I]. About 5,191 million bushels of grain are now grown in the USA; in descending order of importance (in million bushels) they are corn (2,863), oats (1,422), wheat (643), barley (195), rye (54), and buckwheat (14). Of this total of 5,191 million, the American people eat less than 550 million (14.1%). Adding the 340 million bu exported, the total amount used for human food was 900 million bu (17.3%). "The rest, 4,300 million, went to our four-footed brethren, who outnumber us and whose food requirements, because of their greater size, are several times our own.

"In addition to the grain, they get all of the 85,360,000 tons of hay grown on 54,618,500 acres. (More than ten per cent of the half billion acres under cultivation in the United States). They also roam over millions of acres eating all the grass. It is therefore plain that more than four-fifths [80%] of the produce of American agriculture, even in 1918 [a war

year], went to feed beasts." Address: Prof. of Geography, Columbia Univ., New York.

452. Le Goff, Jean. 1920. Un aliment précieux pour diabétiques: le soja [A valuable food for diabetics: Soya]. *Repertoire de Pharmacie* 32(1):1-4. Jan. 10. Series 3. 76th year. (Chem. Abst. 14:1169). [Fre]

• ***Summary:*** A call for the cultivation of the soy beans in France on the ground that they can be the source of valuable food products. Soybeans are said to be especially valuable as a food for diabetics, since they are is composed almost entirely of nitrogenous and fatty materials and contain practically no carbohydrates.

Food uses of soya: In the past, it has been objected to as a food because the dried beans are difficult to cook. The fresh beans, however, are said to be as easily cooked as peas and to have a flavor somewhat resembling that of chestnuts. The soybean can be used to make: (1) Flour, from which biscuits, pastries, and bread can be made. (2) Edible oil. (3) Vegetable milk (*lait végétal*), from which one can make a cheese [tofu] that can be eaten either fresh or dry, smoked or fermented. (4) A coffee substitute, after roasting.

A table compares the nutritional composition of soybeans grown in China, Hungary or France; there is no significant difference in their chemical compositions. Address: M.D., licencié ès sciences.

453. Parry, Charles A. 1920. Travel sketches, LXXXIII–Bean that made Manchuria famous: A factory at Shimizu–The bean of many qualities. *Japan Advertiser* (*Tokyo*). Jan. 25. p. 7. [Eng]

• ***Summary:*** Contents: Introduction. Sweet and nasty. "Not now." The tea port. History of a bean. Substitutes. Big business. Japanese place names. On 26 Nov. 1919 the author traveled by train from Tokyo to the port city of Shimizu, on Suruga Bay, in Shizuoka prefecture (about 90 miles southwest of Tokyo). "Shimizu is one of the 36 treaty ports, and it was opened along with now fewer than 26 others, in 1899. The name means 'clear water'... My chief object in coming to Shimizu is to visit the Suzuki Company's Bean Oil Factory, for which I have obtained permission by courtesy of the Japan Tourist Bureau. This consists of several large buildings, erected three years ago, including a central office and two mills which being built in a castellated Gothic style, make a picturesque adjunct to the scenery as they rise by the calm waters of Shimizu Bay. The mills deal at present with two only of the many products of the wonderful manchurian [sic] or soy bean, called in Japanese daizu (glycerine [sic, Glycine] hispida) the crushed bean and the oil." The two mills are capable of treating 300 tons of beans per day. The process is secret. "I am informed that factories for the extraction of this oil exist only in Japan and Manchuria; but the Suzuki Co. has a branch office in New York, and the business is rapidly extending."

"The oil is used for frying, for lubricating, for water-proofing clothes, for medicine, as a butter substitute, and in the manufacture of soap, candles, guncotton, and artificial rubber; though it can hardly yet be said to be on the market." For culinary purposes it is not as good as the ordinarily used goma (sesame) oil, being much lighter and requiring the use of a deep saucepan. Yet it costs only about 62% as much as sesame oil; the latter costs ¥1.60 per sho (1.58 quarts).

"At present its chief use is for making soap, for which it is taken at a less refined stage, of a dark brown color while the finished product is light yellow. The oil is at present little used in Japan because little known; its retail sale seems to be limited to the neighborhood of the factories. Of these there are three, the two others being at Yokohama and Kobe, both established only last year.

"One large shed is devoted to storing the crushed beans (*kasu*) after the oil has been extracted, large piles of which lie about... The chief use of this at present is for cattle-food; but it is now to be manufactured into flour, useful for mixing in various proportions with wheat flour."

"The daizu [soy] bean has long been known in Japanese cookery in the form of 'kiriako' [sic, kinako] ('yellow powder') to make which the entire bean is slightly roasted and pulverized; then used for mixing with flour to make light cakes, for giving savor to boiled rice, etc. The prices are not yet determined, the cost of manufacture not being known; but it will be cheaper than flour, as well as more nutritious, and will help to relieve the scarcity of rice.

"Substitutes: Other products of the bean are: tofu, the white bean-curd, used universally in Japan and, until recently, almost absurdly cheap; also used in the forms of age-dofu (fried in cottonseed oil), yake-dofu (baked) [yaki-dofu (grilled)], and the curious gori-dofu [kori-dofu], 'frozen tofu,' also called koya-dofu (from koya-san), tofu sprinkled with hot water, frozen, dried, and cut into small cakes; miso, the cheap condiment made of daizu beans fermented with yeast and barley; and soy, Japan's only sauce. A later addition to the list has been to-nyu, or tofu-milk [sic, "bean milk], a very passable substitute for cow's milk at half the price; and still more recently tofu-butter. The whole bean, parched and boiled, is an excellent coffee-substitute, yielding when parched just to the right degree, much of the aroma of that fascinating drink without any of its deleterious effects."

Note 1. This is the earliest English-language document seen (Aug. 2013) that uses the word "to-nyu" or the term "tofu-milk" to refer to soymilk; the Japanese word is *tônyû*.

Note 2. This is the earliest English-language document seen (April 2013) that uses the term "gori-dofu" or the term "koya-dofu" to refer to dried-frozen tofu.

"The present demand for been cake in Japan is met by the three factories of the Suzuki Co. that at Shimizu supplying central Japan, Yokohama Northern and Kobe Southern.

"There are several varieties of the bean known as white,

yellow green and black, the first two being the most used. The plant is as yet little grown in Korea and Japan.

"Big Business: The Shimizu factory, which is the largest of the three, employs about 300 workpeople on day and night shifts. This new bean-industry is, however, only the latest among many activities of the Suzuki Co. which ranks among the great industrial concerns of the world, the third largest in Japan, standing next to the Mitsui and the Mitsubishi, and employing a total of over 3,000 clerks and 100,000 workpeople. It deals also in rice, wheat flour, sugar, sake-brewing, coal, timber, metals, camphor, wool, cloth and manure besides numerous small lines. It has three dockyards, at Harima, Toba and another; a coal-mine in Kyushu; copper mines at Hibi (Okayamaken) Hiroshima (Yamaguchiken) and Dairi (Fukuoka ken) also mines of zinc and iron; while its steel works (*seikojo*) at Kobe are the largest in Japan."

"Shimizu is well situated for growth being midway between the ports of Yokohama and Yokkaichi and serving a prosperous hinterland. Its chief exports are tea and oranges and its imports coal and timber." Address: Japan.

454. *Good Health* (*Battle Creek, Michigan*). 1920. The soy bean. 55(2):71-73. Feb.
• ***Summary:*** Contents: Introduction. Soy-bean milk. Soy-bean cheese. Soy sauce. Soy-bean sprouts." Photos show: (1) A typical soy bean plant with leaves and pods. (2) A large basket full of "sprouted soy beans, which are sold and used as a green vegetable" [in China].* (3) "Large blocks of freshly made bean curd, 'Tofu' [on a round wooden table], ready to be cut up into squares and sold to the housewife."*

Note 1. This article consists mainly of long quotations from the following article: Morse, W.J. 1918. "The soy-bean industry in the United States." *Yearbook of the U.S. Department of Agriculture* p. 101-11. For the year 1917. * = Photographed by Frank N. Meyer, USDA Plant Explorer.

Note 2. The cover of this issue reads: "Edited by John Harvey Kellogg, MD, LLD. Devoted to race betterment and biologic living."

455. Lancaster Mechanical Products, Inc. 1920. Soya beans, coconuts, copra, cohune, cocobabassu, cebo, tapioca, tagua (Ad). *Bean-Bag* (*The*) (*St. Louis, Missouri*) 2(9):47. Feb.
• ***Summary:*** "If interested in growing, collecting, husking, de-podding, steamifying, cracking, decorticating, drying, curing, macerating and in adopting the most advanced methods, processes, plants and machinery in these important edible oil-producing, deodorizing, clarifying, refining pure Foods and kindred industries, consult or address. James H. Lancaster, President."

"Also builders of placer gold, platinum, and diamond washers, dredges, hoisters, pea hullers and splitters, soya-bean and rice hullers and super-sterilizers; also for utilizing the by-products of all species of oil nuts.

"'Soylac' cream and milk for bakers, ice cream and all edible uses.

"Soups: Soy-Rice; Soy-Pea; Soy-Coconut; Soy-Tomato; Soy-Tapioca; Soy-Potato (flour); Synthetic milk, canned or in bulk."

"Cables: Lanjames, New York. Established 1880; Incorporated 1918." Address: 37 Liberty St., New York [City], U.S.A. Phone: John 3531.

456. Moses, Albert Barnes. 1920. Process of making a substitute for milk. *U.S. Patent* 1,332,562. March 2. 2 p. Application filed 19 May 1919.
• ***Summary:*** Soya-beans are washed and the outer skin or coating is removed. The beans are dried then ground to a flour or meal, which is heated until it becomes very slightly brown in color. The flour is added to 8 times its weight of water which has been heated to 120ºF [49ºC]. It is kept at this temperature for about an hour, whereupon the temperature is gradually increased to 160ºF [71ºC], whereupon it is mixed for 30 minutes. The liquid is then filtered and heated to about 200ºF [93ºC] for a short time "for the purpose of precipitating such portion of the albumins as are subject to fractional precipitation thereby." During this last heating some filtercel or fuller's earth is added to remove any dark colors, or the dark colors may be removed by filtering the heated mixture through charcoal. "The solids contained in the mixture are calculated in the usual manner and vegetable fats and sugar are added in proportions to correspond to that of average cow's milk..." Flavor may then be added, and "the flavor added may be regulated either by the addition of *Lactis bacillus* or other cultures..." Address: Seattle, Washington.

457. Adolph, W.H.; Kiang, P.C. 1920. The nutritive value of soy bean products. *National Medical J. of China* (*Shanghai*) 6(1):40-49. March. [15 ref. Eng]
• ***Summary:*** "One of the problems of science has been the search for a perfect food. Though eggs and milk are presently considered to be "perfect foods," the authors believe that the soy bean should also be considered. "The recent world shortage of food, and the demand for foods which are high in nutritive value has turned the attention of dietitians to the possibilities of the soy bean." It is a distinctly well-balanced food.

"During the last few years, the soy bean has found application in the West in the infant dietary, frequently with an admixture of some cereal for additional carbohydrate (Ruhräh 1915), and in summer diarrhea (Sinclair 1916). It is one of the recognized diabetic foods. One of the most satisfactory forms of artificial milk is made from soy beans. The bread used by the French army in the recent war was made essentially from soy bean flour."

"Soy bean products in China: History–The use of the soy bean in China dates back to the beginning of China's agricultural age under the emperor Shen Nung. It

is mentioned in the *Ben Tsao Gang Mu* [*Bencao gangmu*] written by Shen Nung in the year 2838 B.C."

Note 1. This is the second earliest English-language seen (Aug. 2002) that treats Shen Nung as a real, historical figure, or that says the first written record of the soybean appears in a book written by him. The *Bencao Gangmu* (The great pharmacopoeia) was actually written by Li Shizhen in +1596.

"Tradition says that the manufacture of soy bean curd [tofu] originated in China in 164 B.C. during the reign of Han Wen Di, by a man named Liu An, the duke of Hwai Nan [Huai Nan]. The colloquial name for soy bean curd is *Do Fu*, and the classical name, *Li Chi*, probably meaning 'the morning prayer.' Its exact derivation, however, could not be traced. It is interesting to note that in China, at the present day the bean curd is made in the early hours of morning, and sold at daybreak."

"Liu An was a great friend of the Buddhist monks, and it is quite probable that he invented this bean curd in order to provide a change or a delicacy to break the monotony of the monastic ration. As a matter of fact, the bean curd is a real delicacy if carefully made and well cooked. Chinese who are connoisseurs on the subject assert that when so prepared it has the taste of pig's brain. The foreigners eating Chinese food often eat carefully prepared bean curd thinking it pork. With sugar it produces a dish like custard. Prepared with salt it resembles scrambled eggs."

"Application–The Chinese people make practically no use of dairy products, and the bulk of the people consume only very meager amounts of meat. Yet in spite of this they have lived for centuries on what appears to be a remarkably well-balanced diet by use of the soy bean."

"A number of interesting examples are found in China of the use of bean products as an agent for growth. One of us has observed in Anking that dealers in birds employ bean curd as the sole food for infant birds. The birds are robbed away from their nests immediately after they are hatched, and are then fed bean curd to tide over the infantile period till able to feed themselves. Possibly more interesting is the case of the true Buddhist monk who from birth is consecrated to the priesthood, and is carried through the period of childhood growth on a rather heavy diet of bean curd. The apparently normal growth of these monks would seem to be paralleled by the experiments of Osborne and Mendel (1917) on the promotion of growth in rats by both the water-soluble and fat-soluble vitamines contained in the soy bean. The country monastic diet is noted for its high content of soy bean products."

"The Chinese coolie... in spite of the scanty intake of meat and the constant exposure to overwhelming sources of infection, still does possess a wonderful resistance. The diet of the average coolie contains a surprisingly large amount of beans and bean products."

"A common saying in some parts of China terms *bean milk the poor man's milk*, and *bean curd the poor man's meat*... It is commonly stated that a meat diet is characteristic of the most aggressive peoples of the world. Has the protein of the soy bean replaced meat in the Orient?

"Bean milk is another bean product which is in composition not far different from cow's milk. In many places in China bean milk is a food drink. It is usually drunk sweetened with sugar. Western countries employ a number of patented methods for removing the 'beany taste' objectionable from the point of view of the Western consumer."

"It would be almost impossible to make a complete list of all the products manufactured from the soy bean in China. The best known and most important are the bean milk, bean curd, bean sauce (soy), and bean oil. In addition to this are the different forms of bean curd preparations, bean sprouts, and a large variety of sauces and condiments into which the soy bean enters as one of the constituents."

Details are then given on bean milk and bean curd. In making bean milk, the "bean residue [okara] which does not pass through the sieve is used as feed for hogs. On coagulation of this solution the soy bean curd (tofu), often called Chinese cheese, separates. As far as is known to the authors there are at present four agents employed in China to effect this coagulation. These are: (1) *lu*, the residue from the crystallization of salt, (2) gypsum; (3) *swan giang*, the soured bean milk whey remaining from the previous coagulation of bean curd; and (4) vinegar."

Table 1 gives the average chemical composition of the yellow soybean [*huangdou*] common throughout Shantung. Table 2 gives the chemical composition of two samples of soy bean curd purchased on the streets of Tsinan and made with *lu* [nigari] as a coagulating agent: The composition of the first sample is: protein 10.22%, fat 3.66%, water 80.90%, ash 1.09%, nitrogen-free extract 4.13%. This composition is compared with that of cottage cheese. Table 3 compares analyses of the ash of soy bean curd with that of soy bean. When it is made by coagulating soybean milk with bittern (from sea salt) the curd is rich in all the inorganic essentials (especially calcium, sodium, and chlorine) missing from the soy bean itself. The authors suggest that some of the racial characteristics of the Japanese people can be traced to their dependence largely on vegetable protein.

Table 4 gives analyses of 2 samples each of [soy] bean milk, cow's milk, bean milk whey, and bean residue [okara]. The chemical composition of the first sample of bean milk is: protein 4.22%, fat 1.87%, ash 0.40%.

Note 2. This is the second earliest document seen (Jan. 2002) that mentions Liu An of Huai Nan in connection with tofu.

Note 3. This is the earliest English-language document seen (April 2013) which states that *Li Chi* was an early or classical name of tofu.

\ Note 4. This is the earliest English-language document

seen (April 2013) that uses the term "poor man's meat" to refer to tofu. Address: Lab. of Chemistry, Shantung Christian Univ., Tsinan, China.

458. Valderrama, Santiago F. 1920. Notas sobre el cultivo de la soja: Ampliadas con las experiencias de los años 1914 al 1919 [Notes on the culture of soybeans: Enlarged with experiments of the years 1914 to 1919]. Cordoba, Spain: Printed by M. de Sola. 26 p. April. 16 cm. [Spa]
• ***Summary:*** This rare, valuable, and very interesting booklet was sent to Soyfoods Center on 15 June 1995 by Manuel Ruiz Luque, a collector of antiquarian books, from Montilla (Córdoba), Spain.

Contents: Introduction (description of the plant and brief history). Cultivation of soybeans. Manures and fertilizers. Preparation of the soil. Time of planting. Spacing of the plants. Quantity of seeds and depth of planting. Work. Yield. Photo of a soybean plant (yellow seeds) grown at Montilla (Cordoba) by Don Santiago F. Valderrama and harvested in 1916 (p. 15). Nutritional analysis of the seeds of this plant (conducted Aug. 1916 at Granada by Mariano Moreno). Soy products: Soymilk (*leche de Soja*), various types of tofu (*queso de Soja*). Soybeans and products cultivated in Montilla and exhibited in May 1918 at Cordoba: 16 types of seeds (7 yellow-seeded, 4 black, 3 green, 1 variegated, and 1 red), 6 green soybean plants (from yellow, green, or black seeds), 1 dry soybean plant, and 11 soy products. Summary.

The soy products exhibited in 1918 at Cordoba are: 1. Soy oil obtained from 5 kg of seeds. 2. Soy flour (full-fat). 3. Soy flour (defatted). 4. Soy bran (finely ground; *Moyuelo de Soya*). 5. Soy bread (made with full-fat soy flour). 6. Soy bread (made with defatted soy flour). 7. Soy extract (*Extracto de Soja;* "This product can be substituted with advantage for all food extracts"). 8. Legumine (*Legumina*) extracted from soya; "Similar to the casein of milk and with equal applications." 9. Soymilk. "Of great nutritional power. This product, fermented, yields an exquisite cheese." 10. Urease. "A chemical reagent of great application, extracted from soya." 11. Soybeans pods (*Cáscara de la Soja*).

On page 49 he continues. "In Spain, the first attempts at soybean cultivation were made by the Count of San Bernardo, who cultivated soybeans on his estates at Almillo (in Écija [a city in southwest Spain, 48 miles east-northeast of Seville]) at the beginning of this century. But the person who has given a truly admirable impetus to this cultivation is Col. Santiago F. Valderrama who, during the last decade, as well as obtaining marvelous plants, some of which we will show in a photo (page 70, fig. 1), also introduced his own varieties, of which we will speak later (p. 85). He estimates a really favorable yield, which cannot be obtained except in favorable regions having warm climates, where cotton, sugar cane, date palms, and bananas grow luxuriantly. In fact, he gets a yield of 2,500 kg/ha, which we can't wait to have here in Italy."

An illustration shows a soy bean plant (frontispiece, facing the title page).

Note 1. This is the earliest document seen (Feb. 2001) concerning the cultivation of soybeans in Spain.

Note 2. This is the earliest Spanish-language document seen that mentions soy bran, which it calls *Moyuelo de Soja.* Address: Montilla, Spain.

459. Cobb, C.W. 1920. Increasing interest in soy beans. *National Stockman and Farmer* 44(6):200. May 8.
• ***Summary:*** "Little did I think the article I wrote a short time ago for *The Stockman* would cause the flow of letters that I have been receiving, with all manner of inquiries. To answer them separately would take an expert typist, so I will try to answer here... All want to know where they can get Medium Green soy bean seed. They can get them from seed companies which advertise in Stockman, or possibly a few from their experiment station... Those living in Crawford county, Pennsylvania, I would advise to plant the Wilson or Ito San as next best, to those further south in this state I would plant Wilson and either Ohio 916 or Mammoth..."

The writer then describes in detail how he plants, cultivates, cuts or mows, and stores soy beans–for hay or threshed beans. "Put the soys in with commercial fertilizer and there won't be many weeds to contend with."

"If cut by machine too many are lost by tramping. If cut by binder more are threshed out than I care to lose. One man with sharp scythe will cut a lot of them in a day, then drive along rows and pitch them on, no need of raking. For hay roll the ground after planting..." "I have never had less than 25 bushels per acre and from that to better than 60 bushels."

"The soy is higher in protein than wheat middlings. There is a process by which they can be made into a substance resembling cow's milk that would be hard to tell the difference from cow's milk so far as taste is concerned." Address: Erie County, Pennsylvania.

460. *Liberty Bell.* 1920. Cow's milk from peanuts, work of colored genius. May. p. 2. *

461. *Popular Mechanics.* 1920. Close counterpart of milk made from peanuts. 33(5):691. May.
• ***Summary:*** "The common peanut is the source of a new substitute for milk, which so closely resembles its prototype that it turns sour and curdles, produces buttermilk when churned, and may be made into cheese. The flavor, in which the nut characteristic persists, is declared to be practically its only point of variance from cow's milk. The new lacteal product originated in the laboratory of a southern university... The cost of production is said to be less than the market price of dairy milk."

462. Schloss, Oscar M. 1920. Allergy in infants and children. *American J. of Diseases of Children* 19(6):433-54. June. [19

ref]
• ***Summary:*** The author observed 53 infants under 16 months of age who suffered from eczema. "Thirty-six of the patients reacted to cow's milk, and as this was the basis of their food, it was considered that the milk was, perhaps, responsible for the eczema. In artificially fed infants this is difficult to prove, as it is almost impossible to keep up their nutrition on foods free from milk protein. That the milk protein may be the cause of the eczema was demonstrated in six patients. These patients, all of whom had eczema, were given a mixture consisting of protein free milk (lactose and mineral salts), washed butter and soy bean protein. The amounts of fat, sugar and protein were approximately the same as they had been receiving. In all cases the eczema improved markedly in twenty-four hours and practically disappeared in three days. This mixture, however, caused diarrhea and vomiting in four of the patients and for this reason further observations were not made. The experience of Blackfan (1916) with infantile eczema is practically identical."

Note 1. This is the earliest document seen (May 2008) concerning work with soyfoods at Cornell University (Ithaca, New York).

Note 2. Rowe (1933) says of this article: "Schloss, in 1920, suggested the use of soy-bean flour in an improvised formula for the control of milk sensitization." Address: Dep. of Pediatrics, Cornell Univ. Medical College, Ithaca, New York.

463. *Scientific American Monthly.* 1920. Food economy. 1:560. June.
• ***Summary:*** Dr. C.O. Johns of the USDA Bureau of Chemistry has found that the quality of protein in soy beans and mung beans (unlike most common beans) is unusually high because of their high content of cystine. "If the press cake from the soy bean oil presses is used with peanut flour and white flour to make a loaf of bread it is claimed that such a loaf is a complete ration and will be found more easily assimilated than meat and equally nutritious and sustaining...

"Of late an increasing acreage has been devoted to raising soy beans, particularly in the South where the boll weevil makes the cultivation of diversified crops a necessity...

"The variety of materials made from the soy bean and its products in the Orient is remarkable. It forms the basis for an artificial milk. It is fermented into a drink. It affords an artificial cheese and the casein recovered from it has a variety of application. It will be seen, therefore, that nature has been particularly good to the Orient and naturally provided it with a particularly useful variety of bean."

464. *Matieres Grasses* (*Les*) (*Paris*). 1920. A propos des graines de Soja [Concerning soybean seeds]. 12(148):5614-15. Aug. 15. [16 ref. Fre]
• ***Summary:*** A two-page summary of information on soybeans from 16 sources, most of them in French. Soybeans are widely used in Manchuria and Japan. Soybean seeds from Cambodia and lower Laos are superior to those from Manchuria. A table gives the composition of three soybeans from Laos, Tonkin, and Manchuria. Soybeans in Indo-China and their use during World War I in England and France. Vegetable milk made by Li Yu-ying in France. A table gives the composition of three soybeans from Yun-Nan, Tonkin (Lang-Son), and Tonkin (Delta). Mr. Fr. de Roux recommends that soybean be more widely used in France and its colonies. Summarizes soybean research in Connecticut and New Jersey, and soybean production and yields in Ohio. More than 500 soybean varieties have been tested in the USA; the yellow varieties generally work best for human foods, oil and flour, while the brown and black are used for animal feeds. In 1917 cotton seed mills also used soybeans grown locally or in Manchuria. Milk made from soybeans is similar to animal milk and can be used to make cheeses. Soybean oil is used in the USA and England for making paints, but of greatest interest is its use in margarine and other food uses. In Japan, a society was founded with capitalization of 100,000 yen to extract soy protein for use as a substitute for celluloid. Conclusion: "In view of these many uses, it seems interesting to us to pursue in our colonies some cultural trials with this interesting legume. Could it perhaps be developed in certain temperate regions? É.D.W."

465. Carver, George W. 1920. Peanut milk. *American Food Journal* 15(8):25. Aug.
• ***Summary:*** Properly made, peanut milk is one of the most perfect and stable emulsions. "When it sours, the clabber or curd is about the same in quantity and physical appearance as that of cow's milk." "The curd can be converted into many fancy types of cheese, such as the pimento, nut sage, tutti fruiti, chocolate fillers, cream bonbons, etc., etc." The chemical composition of both peanuts and peanut milk are given. Note: This is the earliest English-language document seen (June 2002) with the term "peanut milk" in the title. Address: PhD, Dep. of Research and Experiment Station, Tuskegee Inst., Tuskegee, Alabama.

466. Kellogg, John Harvey. 1920. The almond. *Good Health* (*Battle Creek, Michigan*) 55(8):466-70. Aug.
• ***Summary:*** Contents: Introduction. Composition. Rich in food lime [calcium]. Rich in iron. An extraordinary food. Science prizes the high value of the almond [digestibility experiments]. Why nuts sometimes disagree [they are concentrated and should be used as a staple food which is well masticated, not as a dessert]. The origin of nut butters. Nut proteins equal to meat proteins [proteins are broken up into about 18 amino acids]. Meat eating involves enormous economic waste. The great food commission declared meat not necessary. Almonds are pure and safe which meat is not. A ready-to-eat food.

"The origin of nut butters: To overcome the objection that some people are unable to masticate nuts properly on account of defective teeth and to insure the proper assimilation even if not properly chewed, the writer about thirty years ago [i.e., in about 1890] conceived the idea of converting the nuts by crushing and grinding, into a paste–in other words, chewing the nuts by machinery. The peanut was first utilized in this way and rapidly won its way to public favor. Now, many scores of carloads of that nut are eaten under the name of peanut butter.

"Almonds were next used, and were found to make a delicious nut paste, or butter, which by the addition of water and a little salt, became a most delicious cream. In the form of almond cream or milk, nothing could be conceived in the way of nourishment which the body can more easily appropriate and more fully utilize" (p. 469-70).

"The Almond Grower's Association of California, with the co-operation of the U.S. Agriculture Department, in encouraging the growth of the almond is doing a work which will entitle it to an honored place in the economic history of this country; for the time is certainly coming, and it cannot be far in the future, when the animal industry will languish for lack of space for pasturage, and flesh foods for this as well as other reasons will fill a less conspicuous place in the dietary of the average man than at present" (p. 470).

"The great food commission... The Inter-Allied Scientific Food Commission which met during the war was without doubt the most authoritative body on the subject of food and nutrition that was ever brought together." The names of the members of the commission, each a distinguished specialist on human nutrition, are given. There were generally two members from each of the following countries: France, Italy, Great Britain, United States (Profs. Lusk and Chittenden), and Belgium. "The question of a minimum meat ration was discussed by the commission, but it was decided to be unnecessary to fix a minimum meat ration 'in view of the fact that no absolute physiological need exists for meat, since the proteins of meat can be replaced by other proteins, such as those contained in milk, cheese and eggs, as well as those of vegetable origin' (beans, nuts, and especially almonds).

"Quite in line with this official action was a recent editorial in the *Journal of the American Medical Association*, perhaps the highest medical authority in the world, which states that 'man's health and strength are not dependent on the assumed superior virtues of animal flesh as a dietary constituent.'

"Within the year 1918 there were slaughtered in the United States a hundred million beeves, sheep, pigs and goats, one whole beast for every man, woman and child in the United States. Of this vast multitude of animals, the Federal inspectors examined nearly two-thirds (60,000,000) and found one and a half per cent so badly diseased that the whole or part of the carcass was condemned. In other words, nearly a million (900,000) carcasses were found seriously diseased" (p. 471).

"Almond butter with the addition of a little water is converted into a delicious cream, which, with the addition of more water, becomes a delicately flavored milk closely resembling the milk of the cow in appearance, and with the addition of sugar the resemblance to milk, especially mother's milk, becomes still more complete. Such a preparation is in fact almost a perfect substitute for milk.

"The almond is thus not only capable of taking the place of meat in the dietary but may also serve as a substitute for milk." Address: M.D.

467. Rindl, M. 1920. Vegetable fats and oils. IV-V. Semi-drying oils. Soy bean. *South African J. of Industry* 3(6):518-31. June; 3(8):742-49. Aug. [29 ref]

• ***Summary:*** These are 2 installments of a series of articles on vegetable fats and oils, forming a Report to the Advisory Board of Industry and Science on Vegetable Oils, Fats, and Waxes. Soybeans are considered among the semi-drying oils. Contents of Part I: Introduction. Early [soybean] experiments in South Africa. Botanical characters. Varieties. Germination. Inoculation. Technique of inoculation. Soy beans as a rotation crop for maize. Comparison of soy beans and cowpeas. Storage of seed. The soy bean as human food. Vitamines. Soy-bean [food] preparations: Soy-bean milk, soy-bean curd [tofu], the soy bean as a vegetable (baked, boiled, roasted, green beans [green vegetable soybeans], soy-bean pulp (kara)). Soy-bean meal [soy flour and its uses]. Fermented soy-bean products: Fermented boiled beans (natto), ripened vegetable cheese (miso), the Chinese paste chiang, soy-bean sauce (shoyu).

Contents of Part II: Oil content of seed produced in South Africa. Quality of oil from South African beans. Extraction of oils. Nature and composition of soy-bean oil, and methods of treatment. Uses of the oil. Soy beans as forage. Enemies of the soy bean. Method of shipment from the East.

"The first systematic trials [with soy beans] were initiated about 1903 at Skinner's Court, on the Springbok Flats, and at the Natal Experiment Farms, Cedara, Weenen, and Winkle Spruit. These latter were continued until the season 1910-1911 when the field trials referred to above [by the Transvaal and Natal Departments of Agriculture] were carried out by the Department of Agriculture in conjunction with Messrs. Lever Bros. and a large number of farmers" (p. 519).

The best yields during the 1910-11 season at the three Natal Experiment Farms were: At Cedara: Haberlandt 2,000 lb/acre. Winkle Spruit: Mammoth Yellow 1,191 lb/acre. Weenen: Mammoth Yellow 1,400 lb/acre.

"Method of shipment from the East. The beans are shipped in bags, vessels are well dunnaged, and a large number of wooden pipe ventilators are placed in the ships'

holds to keep the cargo from getting heated. The beans, on a long voyage from Eastern Asia to Europe, being liable to sweat, are sometimes dried before shipment."

Tables show experimental yields and chemical compositions of soy beans from different countries and soy-related products. A diagram (outline-form) shows the various ways in which plants and seeds of soy beans are utilized.

Note: This is the earliest English-language document seen (April 2013) that uses the term "soy-bean curd" to refer to tofu. Address: Ing. D., Prof. of Chemistry, Grey University College, Bloemfontein [Orange Free State, South Africa].

468. Carver, George W. 1920. Peanut milk. *Good Health* (*Battle Creek, Michigan*) 55(10):589-91. Oct. [1 ref]
• ***Summary:*** This is a reprint of an article by the same author with the same title published in Aug. 1920 in *American Food Journal* 15(8):25. Address: Head, Dep. of Research and Experiment Station, Tuskegee Inst., Tuskegee, Alabama.

469. Thevenot, Gaston D. 1920. Process of manufacturing milk and cream substitutes. *U.S. Patent* 1,359,633. Nov. 23. 2 p. Application filed 24 Jan. 1919.
• ***Summary:*** To manufacture a liquid food, closely resembling cow's milk, soya beans are soaked in water, then boiled until they are thoroughly cooked and the coloring matter removed. The cooked beans are separated from the water and crushed to a fine pulp, which is mixed with sterilized and slightly alkaline water. "But if its desired to increase the albuminous content for a given quantity of pulp, a mixture of ground pulp and water may be digested with proteolytic enzym [enzyme], such as pepsin, or papain, in the presence of a sufficient amount of sodium chlorid [chloride; table salt], which acts as an activating medium on the enzyms." The liquid portion is removed and emulsified with fats, oils, and sugar.

Note: This is the earliest document seen (April 2003) that mentions the use of commercial or purified enzymes for processing soybeans. Address: Milwaukee, Wisconsin.

470. Adolph, W.H.; Wu, C.M. 1920. Additional notes on soy bean products. *National Medical J. of China* (*Shanghai*) 6(4):231-33. Dec. [2 ref. Eng]
• ***Summary:*** Tables give the following nutritional analyses of soy bean products purchased in the streets of Tsinan: Dry soy bean curd (salted or unsalted). Soy bean sprouts. Soy bean curd (86.4% water or 83.0% water; some is coagulated with gypsum (pinyin: *shígao*) and some with *lu* (nigari); in Shantung, soft tofu made with gypsum is called "southern tofu."). Ash of soy bean curd. Soy bean cake ("the press cake remaining after the expression of soy bean oil." Employed as a fertilizer and cattle feed, it contains 5.3 to 5.8% moisture, 39.1 to 39.8% protein, and 10.7 to 10.9% fat). Address: Lab. of Chemistry, Shantung Christian Univ.

471. **Product Name:** [Soyamamilk (Normal, or for Diabetics), Soyamamilk for Baking].
Foreign Name: Trink-Soyamamilch (normal, oder fuer Diabetiker), Soyamamilch fuer Backzwecke.
Manufacturer's Name: Soyama-Werke.
Manufacturer's Address: Frankfurt am Main, Germany.
Date of Introduction: 1920.
New Product–Documentation: Noorden and Salomon. 1920. *Handbuch der Ernährungslehre.* p. 311-12. The section titled "Vegetable Milk and Cream" (p. 311-14) notes that the authors have had extended experience with soybean milk and soy flour made by Frankfurter Soyama-Werken in various forms. For each product the composition of protein, fat, carbohydrates, ash, and calories is given. These 3 products contain 3.29–3.77% protein and 3.36–4.40% fat.

Horvath 1927. *The Soybean As Human Food.* p. 67-68. "In Germany the Soyama factory (in Frankfurt) manufactures soybean fresh milk (mostly from soybeans), soybean normal cream, and also condensed bean milk and cream. Soyama bean milk looks like cow's milk, contains the same constituents, even in larger amount and in a state of finer dispersion. Only the taste is different. According to Fuerstenberg [1917], Soyama milk can be qualified as a special, very valuable dietetic nutrient. The high lecithin content of this preparation adds to its value, too." Horvath then gives a nutritional analysis of each of the 3 types of soymilk and 3 types of soy cream, based on Noorden and Salomon (1920). Soyama production started during World War I. It was still being produced in the late 1920s.

472. **Product Name:** [Soyamacream (Normal, or for Diabetics), Soyamacream (Extra Rich in Fat for Diabetics)].
Foreign Name: Soyamarahm (normal, oder fuer Diabetiker), Soyamarahm (extra fettreich besonders fuer Diabetiker).
Manufacturer's Name: Soyama-Werke.
Manufacturer's Address: Frankfurt am Main, Germany.
Date of Introduction: 1920.
New Product–Documentation: Noorden and Salomon. 1920. *Handbuch der Ernährungslehre.* p. 311-12. The section titled "Vegetable Milk and Cream" (p. 311-14) notes that the authors have had extended experience with soybean milk and soy flour made by Frankfurter Soyama-Werken in various forms. For each product the composition of protein, fat, carbohydrates, ash, and calories is given. The first 2 soy cream products contain 2.93–2.95% protein and 11.50 fat. The third extra-rich cream contains 2.5% protein, 3-0.0% fat, and 1% carbohydrates.

Horvath 1927. *The Soybean As Human Food.* p. 67-68. Gives a nutritional analysis of each of the 3 types of soymilk and 3 types of soy cream, based on Noorden and Salomon (1920). Soyama production started during World War I. It was still being produced in the late 1920s.

473. Calvino, Mario. 1920. La soya [The soybean]. *Informe de la Estacion Experimental Agronomica* (*Santiago de las Vegas, Cuba*). Part 15. p. 179-92. For the years 1918-19 and 1919-20. [2 ref. Spa]

• ***Summary:*** Lists and describes briefly nine soybean varieties received from the office of new plant introduction of the U.S. Department of Agriculture ("A magnificent collection of varieties.") and four varieties already owned by the Station in Cuba. They were first planted in March 1919 (a second lot of four of these varieties were planted at this time–Wilson Five, Peking, Black Eyebrow, and Amarilla Nakasawa) and again in August 1919. The varieties and their yields (in kg/ha) in descending order of yield for the first planting are as follows: Pekin [Peking] (1435.9 + 790 / -). Early Brown (1153.9 / -). Biloxi (1153.9 / -). Virginia (923 / -). Unknown (976.6 / -). Black Eyebrow (1153.9 + 1140 / -). Wilson 5 [Wilson-Five] (920.5 + 1230 / 277.7). Arlington (820.5 / -). Soya S.P.I. 40125 (615.3 / -). Barket [Barchet] (513.0 / -).

The four varieties already owned by the station and their yields during these first two plantings were: (1) Amarilla Nakasawa / Nacasawa (from Mr. Nakasawa of Japan; 897.4 + 1100 / 1375). (2) Gigante (imported from the USA; 551 / -). (3) Negra. "This is not a variety name. Rather this seed came mixed with other seeds. We noted some of these plants in our fields and we propagated them." Note: This is said to have been the first Cuban soybean selection. (4) Hahto, from the USDA. "This is the most interesting soybean variety for Cuba for use as either green seeds (*grano verde;* green vegetable soybeans) or whole dry seeds (1000.0 / -).

For each variety the following information is given. Color of seed, date of start of germination in petri dishes (14 March 1919) and laboratory temperature, percentage germination, number of days to germination in lab, date of germination, date of harvest in fields (9 June 1919), yield, observations. There is a special section on the Hahto variety; sown on 10 June 1919, it yielded 1,000 g/ha. A table (p. 190) shows the nutritional composition of 12 the 13 varieties (all but Negra). Hahto had the highest protein content (39.12% protein, 11.90% water, and 17.36% fat), whereas S.P.I. 40125 had the highest oil content (28.91% protein, 10.60% water, 19.60% oil). A second such table (p. 191) shows assimilable nutrients of all 13 varieties.

The article concludes: "According to Dr. E. Babe, Chief of the Dept. of Chemistry at Santiago de las Vegas, in China and Japan the soybean is used to prepare very nutritious foods including a special bread for diabetics and a milk that is widely appreciated." Note: Dr. Babe, who never went to Asia, is said to have acquired this information from the literature on soybeans.

Photos show: (1) A field of variety trials in 1919. (2) 11 soybean varieties, with 10 samples of seeds from each variety. (3) A field of mature Biloxi soybeans. (4) An uprooted Biloxi soybean plant. (5) The Hahto soybean: Pods, green seeds, and dry seeds. (6) An uprooted Hahto soybean plant with many pods.

Note: This is the earliest Spanish-language document seen (June 2009) that uses the term *grano verde* to refer to green vegetable soybeans. Address: Delegate of the Secretary of Agriculture, Commerce, and Labor, and Acting Director, Cuba.

474. Caspari, Charles, Jr. 1920. A treatise on pharmacy for students and pharmacists. 6th ed., thoroughly revised by E.F. Kelly. Philadelphia and New York: Lea & Febiger. 954 p. Illust. Index. 24 cm.

• ***Summary:*** In Chapter 18, titled "Emulsions" is a table titled "The official emulsions." The first of four recognized by the Pharmacoepia (U.S.P.), is Emulsum Amygdalæ or Emulsion of Almond, "Made by triturating sweet almond, acacia, and sugar with water." The "Special remarks" on this (p. 281-82) state: "Emulsion of almond is also known as *milk of almond*, and should always be made fresh when wanted."

Also discusses: Fluidextractum Cannabis, also known as Fluidextract of Hemp (p. 375). Almond oil, expressed from sweet almonds (p. 770-71). Linseed oil (p. 774). Sesame oil (p. 775-76; also known as benne oil or teel oil).

Charles Caspari, Jr. lived 1850-1917. Address: 1. Late Prof. of Pharmacy; 2. Dean and Prof. of Pharmacy, Baltimore. Both: Dep. of Pharmacy, Univ. of Maryland.

475. Kellogg, John Harvey. 1920. The health question box, or a thousand and one health questions answered. 2nd ed. Battle Creek, Michigan: Modern Medicine Publishing Co. 907 p. Illust. Index. 21 cm. 1st ed. was 1917.

• ***Summary:*** "Foreword: For more than forty years, the writer of this volume has each week stood before an audience of invalids at the Battle Creek Sanitarium to open a popular question box. During a longer period the writer has supplied each month to the monthly journal *Good Health* several columns of answers to correspondents." More than a thousand of these have been selected, with their answers, for this volume.

The following questions concern the soy bean (p. 350-53, 886; also 125, 200, 347, 349): In what respect is the soy bean superior to the navy bean and other varieties? What is soy bean curd or cheese (to-fu), and how is it made? What is the food value of the soy bean? What is the composition of the soy bean, especially in relation to the amount of carbohydrate it contains?

Concerning peanuts (p. 348-49): Is the protein of the peanut equal to that of meat or eggs? Which is the more digestible, roasted or raw peanuts? Why is it necessary to cook peanuts to prepare them for digestion?

"In North China and various other countries where the peanut flourishes, it has long held a prominent place in the national dietary; but in this country its great value has been so little appreciated that it has been scarcely recognized as a

food, having been eaten as a dainty or luxury.

"Although, since the writer–some twenty-five years ago [i.e., ca. 1895]–introduced the crushed nuts, or peanut butter, into the bill of fare of the Battle-Creek Sanitarium, the use of peanuts in this form has rapidly extended and it has found its way to many thousands of tables."

One discovery has "placed the peanut upon a high pedestal among foodstuffs... It is the fact that the protein of the peanut belongs to a special class very rare among the products of the vegetable kingdom, known to the chemist as 'complete protein.' The complete protein is one which contains all the elements needed for making any of the many different kinds of tissue found in the human body. Very naturally these proteins are found in eggs, milk and meat, but they are not found in cereals or vegetables." The almond and soy bean also contain complete proteins.

Concerning the natural diet of man (p. 96-109, 124-25): What was the diet of prehistoric man? Ans: Fruits and nuts. What is the natural diet of man? Ans: Fruits, soft grains, nuts, tender shoots and juicy roots. Man is not carnivorous. What was the Brook Farm experiment? What is the simple life? What is biologic living? Ans: Living in accord with the "great biologic laws... which rule our physical being." What is Fletcherism? Ans: Thorough mastication. When eggs and meat are discarded what vegetable foods should take their place? Ans: No substitutes are needed. "Protose, Nuttolene and other vegetable meats are rich in protein. The newly introduced soy bean is more than a substitute for meat. It is rich in lime and vitamins which meat lacks. Its protein is 'complete.'" Have human beings a natural appetite for flesh? Do scientific authorities admit that animal flesh is a necessary part of the human dietary? Ans: "All modern physiologists admit that flesh food is not an essential part..." Is a meatless diet capable of maintaining the body in a state of vigorous health? Is there any authority for the elimination of flesh foods from the dietary? Does a flesh diet injure the kidneys? Is it not true that laborers universally require a large amount of meat.

Concerning roughage, bran, and constipation (p. 197-99). Diabetic foods (p. 199-201, incl. soy bean and soy bean curd). Dietary oils and butter (p. 338-41, incl. nut oils, peanut oil, olive oil, malted nuts). Concerning tree nuts (p. 341-47, 354-59): What is the food value of nuts? Ans: The "most highly concentrated of all natural foods." Tropical fats–Where do the natives of the tropics get their fat? Nuts for nursing mothers–Is there any food which will increase the flow of her milk? Ans: Nut milks, Malted Nuts. How did the Jordan almond get its name? Ans: This choicest of all almonds came originally from Malaga in southern Spain. Almond milk–Is it possible to prepare a substitute for milk from vegetables? Ans: Yes. "The writer has made large use of almond milk for thirty years [i.e., since about 1890]. It is more easily prepared from almond butter." "Almost equally good milk preparations may be made from the soy bean and the peanut." Are nuts good food? Yes, incl. peanut butter. Nuts make good "meat substitutes."

On the last page is a list of 18 health books by Dr. Kellogg, all published by the Modern Medicine Publishing Co. Address: M.D., Battle Creek, Michigan.

476. Noorden, Carl von; Salomon, Hugo. 1920. Handbuch der Ernaehrungslehre. Erster Band. Allgemeine Diaetetik [Handbook of nutritional education. Vol. I. General dietetics]. Berlin: Verlag von Julius Springer. xxxiii+ 1237 p. [100+* ref. Ger]

• ***Summary:*** The section titled "Vegetable Milk and Cream" (p. 311-14) notes that the authors have had extended experience with soybean milk and soy flour made by Frankfurter Soyama-Werken in various forms. For each product the percentage protein, fat, carbohydrates, ash, and calories per 100 gm is given, based on analyses of Dr. G. Popp in Frankfurt: Soyama Flour (*Soyamamehl;* 42% protein, 18% fat), Soyama Milk (*Trink-Soyamamilch* [normal], 3.77%, 3.36%), Soyama Milk for Diabetics [low in carbohydrates] (*Trink-Soyamamilch* [*fuer Diabetiker*], 3.77%, 3.40%), Soyama Milk for Baking (3.29%, 4.40%), Soyama Cream (Soyamarahm [normal], 2.93%, 11.50%), Soyama Cream for Diabetic (*Soyamarahm* [*fuer Diabetiker*], 2.95%, 11.50%), Soyama Cream [extra rich in fat, especially for diabetics] (*Soyamarahm,* 2.50%, 30.0%). The soybean is of special importance in diabetic diets because of its low carbohydrate content, which can be reduced even more by a special process.

When Soyama Cream is mixed with coffee, tea, or chocolate, once can scarcely tell whether or not one is using cow's milk. Pages 312-13 summarize the findings of Fischer on the ease with which plant- or vegetable milks are digested.

The section on variety breads (p. 427) notes that soybean flour is now warmly recommended in such recipes.

A section titled "Soybeans" (p. 542-43) notes that edible soy products are made by Aguma-Werken F. Thoerl in Harburg, Vaterland brand soy flour is made by E. Friedrichsen in Berlin, and an excellent soy flour is made by Soyama-Werken in Frankfurt am Main. In Japan and China countless preparations made from soybeans are on the market. Especially prized is the cheese named tofu (To-fu). Soy sauce is also known worldwide. Soy coffee (p. 694) is of much less economic importance than imitation coffees made from cereal grains or malt. Page 714 mentions tests using soybean flour to make cocoa or chocolate. Page 800 discusses soya seasonings such as shoyu fermented with koji, and miso.

Pages 887-903 discuss vegetarian cures for diseases, and ten specific diseases for which they are well suited. Some groups of German vegetarians are endeavoring to return to a more "natural way of life," and some of these eat a raw-food diet. Pages 898-99 give the protein content

and calories per 100 gm of soy flour and soymilk, plus a discussion of soymilk. Page 979 gives the composition of two brands of soymilk and one of soy cream. Also contains early information on using baking soda for cooking whole soybeans. Noorden lived 1858-1944. Address: 1. Geheimer Medizinalrat und Prof., Frankfurt-am-Main, Germany; 2. Prof., Vienna, Austria.

477. Ubbelohde, Leo. 1920. I. Oele und Fette aus Pflanzen. B. Schwachtrocknende Oele [I. Oils and fats from plants. B. Semi-drying oils]. In: Leo Ubbelohde & F. Goldschmidt, eds. 1920. Handbuch der Chemie und Technologie der Oele und Fette: Chemie, Analyse, Gewinnung und Verarbeitung der Oele, Wachse und Harze. II. Band [Handbook of the Chemistry and Technology of Oils and Fats: Chemistry, Analysis, Extraction, and Processing of Oils, Fats, Waxes, and Resins. Vol. 2]. Leipzig, Germany: Verlag von S. Hirzel. p. 137-322. See p. 282-93. Illust. Index. 25 cm. [Ger]
• ***Summary:*** No. 182, "Soybean oil (*Sojabohnenöl*)," has the following contents: Names: *Huile de Soja. Soja bean oil. Chinese bean oil. Olio di Soia.* Introduction: Botanical, varieties, culture, composition of the beans (2 tables), lecithin content, urease. Various preparations from soybeans: European (Sarton powder / Sartonpulver made by Bayer & Co.; Soyap made by Firma Zinnert), Asian (flour, bread, milk, cheese, canned / tinned foods, soya sauce {*Sojasauce*} and the so-called soya-quark {*Sojaquark*} [tofu, containing 72.1 to 73.0% water], natto), diabetic bread, soy sauce. Production of soybean oil. Properties of soybean oil. Use of soybean oil. Soybean cake (*Sojabohnenkuchen, Sojakuchen*). Commerce and trade.

Also discusses: Sesame oil (p. 196-206). Address: 1. Prof. Dr., Karlsruhe [Germany].

478. U.S. Tariff Commission. 1920. Summary of tariff information, 1920; prepared for the use of the Committee on Ways and Means, House of Representatives. Washington, DC: Government Printing Office. 1004 p. See p. 320-22, 779-80, 990. [7 ref]
• ***Summary:*** Contains a description of the soybean, its uses, production, and quantities imported, and the tariff regulations applicable to the various soy products.

Paragraph 200, page 321: "The provision in this paragraph for 'bean stick [dried yuba sticks] or bean cake, miso, and similar products,' covers a Japanese food product made from ground soja (soya) beans and water, known as frozen tofu or koya-dofu, and fried tofu or hoshi aburage, the frozen tofu or koya-dofu being in the shape of small, porous, yellow cakes about one-half inch thick, from 1½ to 2 inches square, and the fried tofu or hoshi aburage being in thin cakes one-quarter inch thick and 2½ to 5 inches in diameter, which have been fried in some kind of oil or grease. Even if not bean cake it is dutiable as a product similar to bean cake, bean stick, and miso. (G.A. 8045, T.D. 37079, of 1917, following Abstract 29577, T.D. 32780, of 1912.) *'Amasake,'* made from rice yeast (30 per cent) and boiled rice (70 per cent), used as a drink among the Japanese, was likewise classified as a 'similar product,' apparently as similar to miso. (Abstract 31147, of 1913).

Oil cake produced from the soya bean is free of duty as oil cake provided for in paragraph 560. (Abstract 23794, T.D. 30828, of 1910)."

Paragraph 201, p. 321-22: In the Act of 1909, sauces of all kinds were subject to a 40% ad valorem duty; this decreased to 25% in the Act of 1913. Thick sauces include dressings and condiments such as chutney. "Thin *Chinese soy* made by mixing cooked soy beans with wheat flour, salt, and water and exposing to the sun for about three months, used to flavor and color soups, fish, and meats, about 80 per cent being used in the kitchen and about 20 per cent on the table, is dutiable as a sauce hereunder and not as a nonenumerated manufactured article under paragraph 385. (9 Ct. Cust. Appls., -; T.D. 37976, of 1919.) *Japanese shoyu* is also classified as a sauce under this paragraph. (T.D. 37574, of 1916; Abstract 43496, of 1919.)"

Paragraph 606, p. 779-80. A duty is first levied on soya beans in the Act of 1913.

"Description and uses.–*Soya beans* used in oil mills, the important consumers, are chiefly imported. Soya-bean cake, or meal, a by-product of oil manufacture, is a valuable cattle feed and enters extensively into international trade. (See pars. 560 and 561.) In China and Japan the beans, cake, and oil are elaborated into a large number of food products, such as milk, cheese, flour, bean cake, and soya sauce... Except by resident Asiatics there is only a limited use of soya beans for food purposes.

"Production.–Soya-bean culture has recently developed rapidly... Imports of *soya beans,* too small to be listed separately prior to 1914, rose from about 2,000,000 pounds in 1914 to about 32,000,000 pounds in 1918; during the same period imports of soya bean *oil* rose from 16,000,000 to nearly 337,000,000 pounds.

"Soya beans cooked and salted, but not enough to so change them as to prevent their identification as soya beans, and packed in tins, jars, bottles, or similar packages, do not thereby lose their status as soya beans and are free of duty under this paragraph rather than dutiable under paragraph 199. (6 Ct. Cust. Appls., 415, of 1915.) *Soya beans* in stone jars and hermetically sealed tins, invoiced as *bean sauce,* were likewise classified, and not dutiable as prepared beans under paragraph 199, nor as sauce under paragraph 201. (G.A. 8217, T.D. 37860, of 1918.) *Beans* and *bean sauce* prepared or preserved in tins, jars, bottles, or similar packages, were also held free of duty under this paragraph, analysis of the samples showing them to be soya beans, either natural or prepared. (Abstract 41021, of 1917.)... A *black bean* known to the Japanese as *Kuromame,* was held not to be free of duty under this paragraph, the evidence

being insufficient to prove that the merchandise was soya beans. (Abstract 42852 of 1919)." Address: Washington, DC.

479. Domaschintzky, Julius. 1921. Improvements in and relating to synthetic milk. *British Patent* 157,351. 2 p. Application filed Jan. 10. Granted 10 April 1922. [Eng]
• ***Summary:*** The unbroken beans, peeled or unpeeled, are extracted with a solution of acids or salts having an acid reaction. Mild oxidizing agents may be added. The beans are then washed and treated with a solution of carbonates, or salts having an alkaline reaction, so that on crushing and extracting the beans in the usual manner with weakly alkaline water the proteins are dissolved, freed to a great extent from undesirable flavoring and coloring constituents. Address: 1 Marokkassergasse, Vienna, Austria.

480. Carver, George W. 1921. Re: Statement on uses for peanuts and sweet potatoes, and thoughts on the future of meat substitutes. *Tariff Information. Hearings before the Committee on Ways and Means, House of Representatives on Schedule G, Agricultural Products and Provisions.* Jan. 21. p. 1543-51.
• ***Summary:*** Carver has developed 107 products from sweet potatoes. He has just begun similar work on peanuts, and he expects to create even more products from them. He shows a high quality pomade or face cream made from peanuts, a fine ink made with peanut oil, peanut flakes than can be easily dissolved in hot water to make peanut milk, and some peanut relish.

Next he discusses meat substitutes: "And then here is a bottle of mock oysters. The peanut curds can be made into mock meat dishes so thoroughly that it is impossible to tell them from meat, and it is going to be very satisfactory in that direction. We are going to use less and less meat just as soon as science touches these various vegetable products, and teaches us how to use them. I remember years and years ago when the automobile first was being introduced how the people laughed and how they jeered and how they talked of the horses, about the impossibility of running them off the streets. I have been here two days, and I have not seen a single horse on your streets. They are automobiles. And now the same thing is true, or much the same thing is true about our vegetable products with reference to the meat business." Address: United Peanut Assoc. of America, Tuskegee, Alabama.

481. Adkins, Dorothy Margaret. 1921. The soya-bean problem. *Science Progress* (*London*) 15(59):445-51. Jan. [9 ref]
• ***Summary:*** This is a popular article. Contents: Introduction. Practical applications of the bean: Food uses include Tofu, or bean cheese (Japanese), Miso similar to chiang (Chinese), Shoyu (Japanese) and chiang-yu (Chinese), Natto (Japanese), whole dry soya-beans, soya-beans canned as a green vegetable (see description below), vegetable milk, soya-beans roasted, ground and used as a coffee substitute in Switzerland and the USA, soya flour, soya in diabetic diets and macaroni. Utilisation of soya-bean oil: In Italy, China, Manchuria. Utilisation of soya-bean cake and meal: As fertilizer in China and Japan, for feeding stock. Food value of the bean. The cultivation of the soya bean: China, Japan, United States, Australia (New South Wales), South Africa, West Indies, British East Africa, West Africa, Burmah [Burma], England.

"In Japan beans are germinated until the sprouts are about five inches long, and eaten with vinegar; beans, germinated and treated with brine, have also been noted in Spain." Note: It is not stated clearly that these beans in Japan or Spain are soya beans.

"Soya-beans may be cooked and used in the same way as haricot-beans, and may also be picked when young and treated like green peas, in which condition they may be canned."

"In South Africa success has been achieved in growing the plant; in 1910 the outlook was so hopeful that a project for constructing oil mills was suggested. Unfortunately the bean was not taken up by farmers, who preferred to cultivate maize, as it was an easier crop to produce. Thus no extensive culture of the bean was attempted, and the subject was dropped.

"In other parts of the Empire, for example the West Indies, British East Africa and West Africa, trials of soya-beans have proved successful, but in no district have promising early experiments been followed by tests on a larger scale."

"In certain parts of India, for example Burmah, soya-beans are grown on a large scale and are consumed by the natives."

Note: "Lower Burma is a historical region, referring to the part of Burma annexed by the British Empire after the Second Anglo-Burmese War, which took place in 1852... Lower Burma was centered at Rangoon, and composed of all of the coast of modern Burma, and also the lower basin of the Irrawaddy River, including Prome. The area was also known as British Burma" (Source: Wikipedia, Oct. 2010). Address: Royal Holloway College, London.

482. *Bulletin de la Societe d'Acclimatation.* 1921. Extraits des procès-verbaux des séances de la Societe: Botanique [Extracts from verbal proceedings of meetings of the Society: Botanical (Mr. Rouest)]. 68:138-39. Meeting of Feb. 7. [Fre]
• ***Summary:*** "Mr. L. Rouest, director of the experimental farms for new crops named Lacygrazailles à Carcassonne (Aude) [in south central France] requests that the Society obtain for him varieties of soya and of wheat native to Manchuria for their acclimatization and study in France.

Note 1. Hervé Berbille of France, an expert on the life

of Léon Rouest, says (e-mail of 14 Nov. 2011) "La ferme des Néocultures des Barthes," is located in Villardonnel (a village), closed to Carcassonne (the main city of the département de l'Aude); and "Lucie-Grazaille," which seems to be a neighborhood of Carcassonne (a kind of hillside to be precise). I guess L. Rouest worked at the farm of Néocultures and lived in Carcassonne, at Lucie-Grazailles. Note that "L'Aude" is the eponymous river of the department of l'Aude. According to *Le Génie rural.* Pyc-Édition, 1914, it seems that L. Rouest started to work at La ferme des Néocultures des Barthes, Villardonnel, in 1914. (exact month unknown to date).

"For some years, Mr. Rouest has cultivated American varieties of soya which have acclimatized themselves well in France's wine and corn region(s)... With these varieties, he has created numerous hybrids which are even better adapted than their ancestors.

"He has obtained very early varieties, which can be cultivated like the haricot bean. The goal is not to replace the haricot, but to furnish agriculture with a plant with both forage and industrial uses. The soymilk industry would be very useful in the feeding of veal calves and piglets, says Mr. Rouest. Using soybeans cultivated in France, one could also make casein and numerous food products with a high protein content." Note 2. This is the earliest document seen (Aug. 2013) concerning the use of soymilk as a calf milk replacer. It is only an idea or proposal, however.

"Mr. Rouest recalls that the Society for Acclimatization was the first to propagate soybeans in France.

"The president adds that soybean cake is remarkable for the feeding of carp. Very interesting experiments have been made in America and Hungary on use of soya as forage. Formerly, our colleagues Messrs. Paillieux and Bois have published very complete studies on this legume.

"Mr. Chevalier gives very curious details on the soybean plantations cultivated in the French Congo [*les plantations de Soja faites au Congo*]. They only succeeded on land where soil from the country of origin of the plants had been spread. In this soil there are bacteria which favor the development of the soybean." Note 2. This is the earliest document seen (Aug. 2009) concerning soybeans in the French Congo (Congo Republic), or the cultivation of soybeans in the French Congo. This document contains the earliest date seen for soybeans in the French Congo (Congo Republic), or the cultivation of soybeans in the French Congo (1921). The source of these soybeans is unknown. However, we have been unable to find the document by Mr. Chevalier to which Mr. Rouest is referring.

Mr. Charles Rivière presented a fruit of *Lodoicea Seychellarum.* Mr. Chevalier had traveled in Buitenzorg (Bogor), in Peradeniya (Ceylon), and in Malaysia.

483. Forrest, Wilbur. 1921. Ford breaks silence; Denies seeking loan. New policy aims to shift industry to country towns; Horse and cow will disappear, he says; Science to furnish milk and beef. *New York Tribune.* Feb. 9. p. 1, 4.
• ***Summary:*** In this exclusive interview, Ford broke the silence of nearly a year and talked freely of general affairs. Last year Ford sold 1,250,000 cars. There is unemployment worldwide and the company has been closed for a while to sell off excess stocks. The Ford Motor Co. wants to move a large part of its manufacturing away from cities, which "have come to be unnatural. They cause unnatural unrest in men's minds." Ford wants to make major use of the water power of small streams throughout the country for making car and tractor parts. Farmers can work at these rural industries when they are not farming.

Ford predicts that horses will be replaced by automobiles and tractors. The horse is a "twelve hundred-pound 'hay motor' of one horse power." The milk and meat from cows will be replaced by man-made products. Ford notes: "It is a simple matter to take the same cereals that the cows eat and make them into a milk which is superior to the natural article and much cleaner. The cow is the crudest machine in the world. Our laboratories have already demonstrated that cow's milk can be done away with and the concentration of the elements of milk can be manufactured into scientific food by machines far cleaner than cows and not subject to tuberculosis." [Note: This article was written 10 years before Ford discovered soybeans and soymilk!]

But what about the beef that the cow also provides? "Meat is not essential. A scientific food, such as I have described, will not only take the place of milk, but meat."

A nice photo shows Henry Ford, with an insightful character sketch.

484. Carver, G.W. 1921. Prof. G.W. Carver's lecture–Farmer's Conference. 19+ p. See p. 18. Feb. 16.
• ***Summary:*** "Here is a bottle of worcestershire sauce and it is made of Peanuts. The original worcestershire is made from the soy bean but I find this is just as nice as the soy bean and therefore will be attractive in that particular. Here is a bottle of Peanut coffee...

"Here is a bottle of tofue [tofu]. It is a Chinese preparation made from the soy bean and I find that the peanut makes it just as nice as the soy bean. The Peanut milks have just about the same quality of curds as cow's milk. Here is a bottle of Curds and all that is necessary is to freshen them up and you can make any of the various cheeses, or koumiss."

Note 1. The above lends support to the theory that Carver may have been influenced in his peanut research by his knowledge of existing processes for making products from soybeans. Note 2. This lecture was presented at the Voorhees Normal and Industrial School, Denmark, South Carolina. Address: [Tuskegee, Alabama].

485. Meekins, Lynn W. 1921. Favorable outlook for American trade in Manchuria. *Commerce Reports* [*USA*]

(*Daily Consular and Trade Reports, Bureau of Foreign and Domestic Commerce, Department of Commerce*) 24(41):983-93. Feb. 18. See p. 989-91.

• ***Summary:*** "The South Manchuria Railway Co., the largest purchaser of American products, proposes to spend more than $200,000,000 gold upon improvements and extensions of its enterprises within the next five years... In spite of Japan's special advantages in Manchuria there is an excellent opportunity for the marketing of many lines of American goods,..." Manchuria is made up of three provinces having an area of some 365,000 square miles.

"American trade with Dairen–Dairen versus Vladivostok: The share of the United States in the trade of Dairen is much larger than that shown by the Maritime Customs statistics, owing to the extensive shipments of goods to and from the United States credited to Japan as the country of immediate destination and origin. The direct trade between Dairen and the United States exceeded $38,000,000 in 1919, of which imports [to Dairen] comprised two thirds and exports one third."

"As between Dairen and Vladivostok, at present a greater risk is involved in using the Vladivostok route. Costs of handling cargo at that port are higher than at Dairen; there is no market at Vladivostok itself for produce shipped there, wharves and warehouses are inadequate, and shipping services are irregular. Until these conditions are improved Dairen will probably continue to handle most of the exports of Manchurian products, as well as the imports of American goods for sale in Manchuria.

"If Vladivostok were made a free port and provided with facilities which Dairen now enjoys, full advantage could be taken of it as a real open door to Manchuria. Vladivostok, rather that Dairen, offers the more promising outlook to American firms seeking non-Japanese business in Manchuria and eastern Siberia."

"It is estimated that 2,500,000 tons of soya beans are produced annually in the three Provinces of Manchuria. The wheat and millet crops generally approximate 1,000,000 tons each. The Japanese firm of Suzuki & Co. has sold 100,000 tons of Manchurian wheat to the United Kingdom and 50,000 tons to Italy during the last few months."

"The products of the soya bean include bean curd [tofu], flour, milk, cheese, soy sauce, oil, and cake. The Chinese are concerned chiefly with the food products mentioned and the Japanese use large quantities of the cake for stock feed and fertilizer. The United States is the principal purchaser of the oil, a substitute for cottonseed and linseed oil employed in the manufacture of soap and paint and also as a lubricant."

"How bean trade is conducted: In Tiehling and Sunkiatai (Fengtien) and Kwanchengtze (Kirin) there are about 300 Chinese wholesale bean companies whose capital averages from $100,000 to $200,000 Mukden currency. Four Chinese banks–the Bank of China, the Bank of Communications, the Government Bank of the Three Eastern Provinces, and the Hsing Yeh Bank of Mukden–negotiate loans upon the joint guarantee of two of these companies without security; other Chinese banks require in some cases that the beans be pledged. Such loans are for three months or six months, sometimes one year, and the rate of interest has been less that 10 per cent. The Japanese banks lending money to bean dealers are the Yokohama Specie Bank and the Bank of Chosen [Korea], the former issuing Newchwang notes and the latter gold notes. It is estimated that between 60 and 70 per cent of the loans made by the Japanese banks is to Chinese and between 30 and 40 per cent to Japanese companies.

"The bean business may be said to commence in September, when buyers visit the producing districts and pay from 10 to 20 per cent of the stipulated price in advance. To the towns mentioned above, from 1,000 to 2,000 cartloads of beans are brought daily from November to January. The average price during the past two years has been $2 Mukden currency per 27 catties (36 pounds), exclusive of the production tax and the cost of transportation to Dairen and Newchwang. Mukden currency–that is, small coin dollars–exchanges for Mexican dollars at an average value of $1.40 to $1. At the present rate they are equivalent to about 40 cents in United States currency.

"Owing to the lack of good roads in Manchuria the beans must be carried to the market centers during the winter months, when the fields and streams are frozen. By March the crop has been collected and stored and exports become most active.

"Through the system of mixed storage, the South Manchuria Railway Co. has effected a great improvement in the handling of beans. When brought to the railway stations the beans are examined and graded according to quality and size. A certificate issued to the depositor entitles him to draw from the mixed-storage depot at Dairen or Newchwang an equivalent amount of beans of the same quality and size. The bags used in packing are also examined, and when the grade of bags deposited and that of the bags delivered is different the loss or gain thereon is adjusted by paying to or collecting from the depositor the difference in value. The new system saves the railway the trouble of transporting and storing each consignor's cargo separately. It also saves the shipper from the risks attending delay in transportation and from searching for his goods after they have arrived at their destination.

"Production of oil: The 60 bean mills at Dairen produce daily nearly 400 tons of oil and 3,700 tons of cake. Newchwang and Harbin are next in importance as oil-mill centers. The most widely used method of production is the expression system, by which one picul (133.33 pounds) of beans yields about 12 pounds of oil and 122 pounds of cake (in two equal pieces of 61 pounds each). By the chemical extraction system one picul of beans yields an average of 17 pounds of oil and 116 pounds of meal. The specific gravity of the oil is from .922 to .930.

"Sapan-wood, hemp seed, sesamum, and bean oil are being used by the Manchuria Paint Factory in Dairen, organized in February, 1920, with a capital of 1,000,000 yen, to manufacture paints for the South Manchuria Railway Co. and for various markets. The daily output is about 7,000 pounds, or 250 tins containing 28 pounds each. The colors produced include white, 'iron rust' red, and brown.

"The Japanese initiated the export trade in soya beans from Manchuria and developed the business to its present proportions. These middlemen, conversant with oriental ways, studied occidental needs and learned enough about western business methods to deal successfully with American and European firms. their strong position is due to their control of railways, their banking connections, their oil mills, and, in general, their special organization in South Manchuria for handling the business. Eventually it may be possible by exporting beans and oil through Vladivostok for Chinese sellers and American buyers to deal directly with each other. Meanwhile the most effective methods to be employed involve the development of selling and buying organizations able to cope with the situation now existing."

"About two thirds of the population of Manchuria is in the Province of Fengtien, which composes, in general, South Manchuria." Address: Trade Commissioner, Peking.

486. *Agricultural News* (*Barbados*). 1921. The soya-bean problem. 20(492):73. March 5. [4 ref]
• ***Summary:*** Begins by summarizing articles from three other publications on the importance of having root nodule bacteria in the soil if the soybean plants are to bear root nodules and give a good yield of soybeans. Concludes by summarizing the many uses of the soybean, especially in Japan and China, including vegetable milk, oil, meal, and non-food industrial uses, as in the manufacture of linoleum, explosives, water-proof goods, rubber substitutes, and printing inks. "If vegetable milk is kept for several days, it turns sour, and can be used as butter milk. One firm in England is engaged in the production of a vegetable condensed milk, which is prepared from soya beans." Address: Barbados, West Indies.

487. Morse, W.J. 1921. La industria del "soy bean" en los Estados Unidos [The soybean industry in the United States]. *Revista de Agricultura, Comercio y Trabajo* (*Cuba*) 4(3):521-24. March. [1 ref. Spa]
• ***Summary:*** This is a translation of Morse 1918, from the USDA *Yearbook of Agriculture* (1917). Contents: Early history of the soy-bean industry. The soy bean in the United States. Cultural requirements. Varieties. Soya as forage. Soya for oil. Soy-bean meal (*Harina de "Soya"*). Soy beans for human food: Dried beans (*frijoles de soya secos*), green vegetable soybeans (*frijoles de soya verde*), soy-bean milk (*leche de frijol de soya*), soy-bean cheese (*queso de frijol de soya*), soy sauce (*salsa de soya*), soy-bean sprouts (*brotes de frijol de soya*). Possibilities of the soy-bean industry in the United States.

A table shows the quantity and value of soybeans (*Frijoles de soya*), soybean cakes (*Tortas de soya*), and soybean oil (*Aceite de soya*) imported by the United States from 1910 to 1917, inclusive.

Note 1. This is the earliest Spanish-language document seen (June 2009) that uses the term *frijoles de soya verde* to refer to green vegetable soybeans.

Note 2. This is the earliest Spanish-language document seen (April 2012) that uses the term *salsa de soya* to refer to soy sauce.

Note 3. This is the earliest Spanish-language document seen (Jan. 2013) that uses the term *brotes de frijol de soya* to refer to soy sprouts. Address: USDA, Washington, DC.

488. *Dairyman* (*The*) (*London*). 1921. Substitute for cow's milk: Canadians to manufacture vegetable milk. 43:345. April 2.
• ***Summary:*** "A score of prominent business men in Hamilton, [Ontario], Canada, have begun the erection of a large plant that will endeavour to manufacture a vegetable milk which they think can be sold in competition with cow's milk.

"Mr. James Frid, a well-known contractor, who is actively interested in the new plant, pointed out to the Toronto *Globe* recently that regardless of what scientists and chemists may say, the world has long been using vegetable milks in preference to animal milks. In China no animal or cow's milk is used at all. The natives there, Mr. Frid said, take the soya bean and make all their milk from it. The company he is associated with propose to do the same thing. It will import soya beans from China for the time being, but expects that the bean will be grown in Canada at no distant date, for the reason that it has great fertiliser virtues. If planted alternately with wheat, the latter crop shows an increased yield of from eight to ten bushels to the acre because of the fertilising qualities returned to the soil by the soya bean, thus rendering the keeping of live stock for fertilising purposes unnecessary. A normal yield of soya beans ranges from 20 to 25 bushels to the acre.

"Mr. Frid said that the company's product has been given the most rigorous tests, by chefs, bakers, makers of ice cream, confectioners, makers of malted milk and cocoa, with the result that in every instance the milk produced from the milk produced from the soya bean has been declared far superior to cow's milk in all properties, such as vitamines, fatty solids, casein, albumen, carbohydrates, sugar, and salts, with the same percentage of water as cow's milk.

"Laboratory demonstration: The chemist of the company recently visited the Ontario Agricultural College at Guelph and there met the chief chemist of that institution, who was inclined to doubt the claims of the Hamilton chemist that a substitute for cow's milk had been found. The Guelph chemist courteously stated that for twenty years, science and

chemistry had laboured to find a successful substitute for cow's milk, but of all the seventeen recognised formulas not one of them had come up to the standard of cow's milk, after being given every fair test.

"The Hamilton chemist insisted that he had a formula that was a success, whereat he was invited to the laboratory to give a demonstration. He went there and made milk from the soya bean and requested the Guelph chemist to put the milk to the hardest possible test. The latter did so, and finally admitted, Mr. Frid stated, that the substitute in question was superior to cow's milk.

"Machinery and other equipment are on order now, and the new company, to be known as the Soy Products, Ltd., will begin operations by next June. Officials say the tentative period is passed; they are satisfied that their product will be much superior to and can be sold cheaper than cow's milk.

"The above is not 'spoof': nor is it new. The process, so far as it is disclosed above, does not differ from that worked by Solae, Ltd., in this country. Unless it has much more push behind it than Solae: had, Mr. Frid's ideal of a cowless world will not be realised in our time."

Note: The fill title of this periodical in 1921 was *The Dairyman, and the Cowkeeper & Dairyman's Journal,* published by Grampian Press, London.

489. *St. Louis Globe-Democrat* (*Missouri*). 1921. Amazing food uses for the lowly peanut. April 3. p. 3. Sunday magazine section.

• ***Summary:*** The subtitle reads: "At a recent session of the Ways and Means Committee of the House of Representatives, Geo. W. Carver, a professor of the Tuskegee Institute, astounded both the members and spectators with visible proof that he can manufacture one hundred and forty-five different foods and useful articles, including milk and cream, from peanuts. This milk not only looks like cow's milk, but even tastes better and purer."

"'My very latest work in investigation is in reference to the production of peanut milk. Like Mr. Ford I believe that the cow is the crudest milk machine in the world and may easily be abolished for the synthetic cow, which gives clean, sweet and wholesome peanut milk.

"'In the milk, the cream rises exactly the same way as in cow's milk. In many ways peanut milk is even better than cow's milk, for no chemicals are used-nothing but pure water. The milk produced from the peanut is a vegetable milk, uncontaminated with harmful bacteria.

"'The peanut milk I have developed looks like cow's milk and is, if anything, more nourishing and more pleasant to the palate. It consists of a perfect emulsion of oils, fats, proteids, and carbohydrates. If you did not know one was cow's milk and the other peanut milk, the eye would never detect the difference. Peanut milk can be used for cooking just the same as cow's milk, while the rich cream may be used on fruit, in coffee, and for breakfast cereals.

"'of course, you want to know how many peanuts it will take to make a pint of milk. Here is a 3½ ounce glass. When filled with shelled peanuts it will make a pint of very, very rich milk, that is, milk that is many times richer than cow's milk, about what they call cream in most city dairies.

"'Here is a bottle of synthetic buttermilk made from peanuts. In this buttermilk, the whey rises exactly as it does in the cow's milk, and tastes very much like real fresh buttermilk. What's more, it is very nutritious, having a mild, pleasing acid taste.

"'Here is a bottle of full peanut cream. It can be used in coffee, chocolate, cereals, fruit, and in other ways, the same as cow's product.

"'Here is some peanut milk made especially for ice cream. Not long since I made a quart, gave it to a neighbor, and invited myself over to help eat it. It is not modest to say so, but I am honest when I say it was the finest I had ever tasted.

"'Here is an evaporated synthetic milk, much on the order of the regular commercial evaporated cow's milk, and acting when used in the same way. An interesting thing about this and the other peanut milks is that you can use nay acid with them, and they don't curdle as cow's milk does.

"'The cow is a portable milk manufacturer who grinds her food, moistens it, heats it to a proper temperature and then filters it, and the result is milk,' continued the chemist. 'A machine or the simple utensils used here, under the direction of a man, can do the same thing that the cow does. It is the same food or the elements of the same food as cow's milk and contains all the vitamines and nutritive quantities now that it has been proved that most excellent milk can be made from peanuts. The skill and ability of the human being can perfect a machine far more economical and infinitely more convenient for milk making than the cow. Man can do more than the cow. He can produce a synthetic milk at his own convenience and protect its quality and purity. He can make milk which lacks the animal taint and the danger of disease germs.

"'It takes the cow twenty-four hours to make milk. I can make from peanuts better, cleaner and more healthful milk in five minutes. The cow simply takes out of the food she eats what is soluble. Which is the cleaner process, that of grinding, moistening, heating and filtering in a machine or pan, or passing cereals, vegetables or the vegetable matter a cow eats through her stomach?'"

Dr. Carver then demonstrated how to make peanut coffee. For the best flavor, the peanuts must be roasted, allowed to cool, then roasted again; only then does it develop the coffee flavor. An illustrations shows Carver turning the crank on a hand mill whose hopper is filled with peanuts. Out of it come boxes and bottles of many common products, such as dyes, sauce, coffee, breakfast food, cheese, cream, milk, oil, face cream, and flavorings.

490. Muggia, Alberto; Gasca, Enrico. 1921. Il latte vegetale di soia nell'alimentazione e nella terapia delle malattie gastro-enteriche dei bambini [Soymilk for feeding and treating infants with gastro-enteric illnesses]. *Gazzetta degli Ospedali e delle Cliniche* 42(30):356-58. April 14. [10 ref. Ita; eng]

• ***Summary:*** Discusses soybean milk in feeding and in the treatment of gastro-enteritic illnesses in infants. "A suspension of soy-bean flour can be prepared which is stable, and which has a nutritive value closely approaching to that of cow milk. Comparative analyses are given. To prepare a liter of 'vegetable milk,' 150-160 gm of the beans are steeped in tepid water for 12-24 hours, which causes considerable swelling. They are then carefully crushed, l liter of water is added, little by little, and the whole then boiled 15 minutes, and filtered through sterilized gauze, forming a white emulsion. If the taste is not agreeable it can be improved by the addition of a small amount of real milk. The suspension coagulates under much the same conditions as real milk, and similar precautions in its handling must be observed. Figures are given showing marked improvement and gain in weight of infants in whose diet the suspension was substituted wholly or in part for true milk. This was especially noticeable in gastrointestinal disorders, or where human or cow milk was not well tolerated. 'What is most important from our point of view, is that the soy-bean milk, in the cases observed by us, shows itself to be more easily tolerated than the milk of animals, and sometimes more easily than human milk. The experiments will be continued on a larger scale and under more exact biochemical control, and we believe that we shall be able to show that in many affections of the digestive system of infants where there is evidence of intolerance toward animal milk, we shall be able to substitute the soy-bean milk wholly or partially, not only without inconvenience, but with improvement in the local condition of the digestive organs, and improved general conditions of the child.' The use of soy-bean flour in preparing food for diabetics, industrial uses of the oil, and of the 'vegetable casein' (*la caseina di soja*) are also suggested. References to the literature are given."

Note 1. This is the earliest Italian-language document seen (Aug. 2003) that uses the term *caseina di soja* to refer to isolated soy protein.

Note 2. This is the earliest Italian-language document seen (Aug. 2013) that uses the term *latte vegetale di soja* or the term *latte de soia* to refer to soymilk. As of Aug. 2013 *latte di soia* is the modern Italian term for soymilk. However, the term *latte di soia* appears only once in this article; the term *latte di soja* is used more than 10 times. Address: 1. Prof., Docente Clinica Pediatrica Università di Torino; 2. Dott., Direttore Generale del Dispensario per lattanti di Torino. Both: Torino, Italy.

491. Brook, Harry Ellington. 1921. Care of the body. *Los Angeles Times.* May 29. p. VIII18.

• ***Summary:*** The first section, titled "Milk substitutes," argues that cow's milk is not suited for human infants (who should use mother's milk) or adults (for many reasons, including tuberculosis germs). "Recognizing the limitations of milk as a food, many have endeavored to introduce some form of synthetic or artificial milk. In France, for many years, the soya bean has been used for this purpose, in feeding infants. It is not well adapted thereto, because, like the peanut, it contains starch, and infants cannot digest starch."

Dr. Elmer Lee of New York, recently developed a new synthetic milk made from oats and peanut meal. However these foods also have a high starch content. The best milk substitutes would be made from nuts, which contain no starch. The peanut is not a true nut. "The almond is the best nut to use for this purpose, blanched, ground into cream, but not heated, and mixed with distilled water." An infant deprived of its mother's milk will thrive much better on this nut milk, mixed with a little raw fruit juice, than on the milk of a cow, "while for adults it is greatly superior to milk."

The section titled "Removal" states: "The Carque Pure Food Company has moved from Magnolia avenue to 2618 West Seventh street, two blocks west of Westlake Park." Address: N.D. [Los Angeles, California].

492. Larue, Pierre. 1921. La fabrication du lait végetal au Canada [Production of vegetable milk {soymilk} in Canada]. *Vie Agricole et Rurale* (*La*) (*Paris*) 19(28):33. July. [Fre]

• ***Summary:*** "In certain countries, vegetable milk has long been used in preference to animal milk. In China, for example, the milk of cows and other animals is never consumed. The people use only soybeans for the preparation of their milk. And this is exactly what some people in Canada propose to do. For the time being, they will import their soybean seeds from China, but they hope that, in the future, soya will be cultivated in Canada. Grown in a rotation on alternate years with wheat, soya will increase wheat yields by 5-7 quintals/hectare. The normal yield of soya in 13-17 quintals/ha. Note: 1 quintal = 100 kg.

Soymilk (*Le lait de fèves de soja*) has been submitted to the most rigorous tests by chefs, bakers, pastry makers, makes of frozen desserts, etc., and they have unanimously recognized that this product (when containing an equal proportion of water) would be superior to cow's milk when considered from every point of view: vitamins, lipids, casein, albumin, carbohydrates, sugar and salts.

"The soymilk will be significantly less expensive than cow's milk."

493. Carver, Geo. W. 1921. Many products can be made from peanut and sweet potato. *American Food Journal* 16(8):20. Aug.

• ***Summary:*** Carver now has 150 tested recipes for the

peanut. "First let us examine the peanut as food for man. We find on our list peanut brittle, peanut fudge, peanut cream candy, peanut oil, which constitutes one of the choicest of cooking oils, peanut butter, peanut flour, peanut cake, peanut crackerjack, peanut caramels, peanut butter scotch, peanut kisses and peanut breakfast food.

"Under the head of general usefulness, we find peanut hulls, ground, a powder much prized for the scouring and finishing of tin plate, peanut skins for dyes, peanut wood stains, peanut axle grease, peanut oil soap, peanut quinine, peanut linoleum, peanut butter chili, peanut lard compounds, peanut margarin [margarine], and finally peanut germs, a by-product from various manufacturing processes which makes one of the most desirable pigeon feeds now on the market.

"Value of peanut milk. We next come to one of the most important peanut products–peanut milk... It is one of the most perfect and stable emulsions that I have seen when properly made." A table compares its composition with that of cow's milk. "When it sours the clabber or curd is about the same in quantity and physical appearance as that of cow's milk. The possibilities of this milk are practically unlimited, but it might be well to mention a few: Cooking purposes, sweet and sour milk, buttermilk, cream for coffee, cream for ice cream, evaporated milk, fancy fruit punch, Worcestershire sauce, peanut coffee, instant coffee, clear white oil, tofu–a highly flavored peanut sauce.

"And among the more astonishing products resulting from the peanut are mock oysters, made from the curds, and a very satisfactory substitute for real oysters; face pomade, ink, a fine blue black ink being derived from the vines, and finally a vinegar." Address: Dep. of Research and Experiment Station, Tuskegee Inst., Alabama.

494. Weed, A.R. 1921. Soy beans a standard Illinois crop: Many varieties studied at Illinois "soy bean day." *Orange Judd Farmer* 69(32):795. Sept. 15.

• ***Summary:*** Farmers learned that the soy bean has many uses. "The 'soy bean cranks' (we might mention in passing that they are rather proud of that name now) gathered at South Farm of the University of Illinois to look over the work that is being done with soy beans on the experimental plots." They learned that different varieties are best in different states, and "soy bean tourists" studied how soybeans are grown on 400 acres and used in the rotation on the Meharry farm.

"For lunch, everyone enjoyed them [soybeans] baked and parched. Likewise everyone was asked to help themselves to soy bean butter and soy bean cream."

Note: This is the earliest English-language document seen (Dec. 2012) that contains the term "soy bean butter." However, it is not clear whether this term refers to soynut butter (like peanut butter, made from roasted soybeans–probably so), or soy margarine, or soy bean butter (a product resembling soy margarine that is not hydrogenated).

A small photo shows two horses pulling a plow–probably in a field of or for soybeans. Address: Illinois.

495. *San Francisco Business* (*San Francisco Chamber of Commerce*). 1921. Factory to be built here for rice milk products. Sept. 23. p. 20.

• ***Summary:*** The factory will be built by the Vita Rice Products Co. "Too many everyday foods have been robbed of their vitamines in the process of manufacture. Care has been taken to avoid this fault in the preparation of Vita Rice Milk."

Note: This is the earliest English-language document seen (Aug. 2013) with the term "rice milk" in the title.

496. Berczeller, Laszlo. 1921. "Manna" food. Products of the soya bean. Bread, flour, and milk. *Times* (*London*). Sept. 28. p. 11-12.

• ***Summary:*** Contents: Preface. Introduction. Animal experiments. An ideal food. "Manna" milk. Children's food.

"We give below a statement which Dr. László Berczeller, a young Hungarian who was assistant to the late Professor Franz Tangl, has made to our Vienna Correspondent on the new foodstuffs which are being made from the soya bean. Dr. Berczeller is working in a laboratory specially placed at his disposal by the Austrian Minister of Public Health, and his studies are being watched with lively interest by the British Minister and the American High Commissioner in Vienna.

"It was in 1913, in Berlin [Germany], that I first turned my attention to the soya as a food. I was the guest of the Japanese Club and a Japanese professor showed me soya food and told me that a milk was made from the bean in Japan... Professor Riegler, also in Hungary, had invented a synthetic milk made from the gluten of wheat. I saw these products were not satisfactory as they only had qualities in the sense of the old theory of calories and protein value of foods."

Note: This is the earliest English-language document seen (Sept. 2011) that contains the term "soya food" or the term "soya as food."

"We have fed white rats on beans, peas, and lentils, and we have found that animals fed on beans live shortest and those on lentils longest." When animals are allowed to follow their instinct, and choose between "the several kinds of legumina... they eat most lentils, less peas, and least beans."

"It is well known that in the time of the Greeks men still used, of cereals, chiefly barley. Barley was followed by rye, especially in the Middle Ages, and both barley and rye were supplanted by wheat, as in England, as is the case today on the Continent."

"An ideal food–We now endeavored to apply this knowledge to the soya bean with a view to the food shortage problem. In the chemical sense, the soya is an ideal food.

It contains 40 percent albumen and 20 percent fat, and at the same time can be obtained very cheaply. In Japan and China the soya is worked up into a number of very valuable foodstuffs by small industrialists. These foodstuffs do not meet European taste. Probably the Mongolian race has accustomed itself to this food. The European foodstuffs industry has made repeated efforts to produce out of the soya a good and palatable food, but every attempt has failed, because the biological factor has been ignored. We could show that most of the processes used for this purpose and for which patents were also taken out, such as for extraction and roasting, only lead to one result; the rats fed with this food have a much shorter life than even those fed with the raw soya.

"We have been successful in creating three foods: bread, flour and milk, in which these principles were taken into account. These foods have been tested not only in the laboratory, but also on man; man, because one does not even yet know to what extent of certainty one may conclude from animal experiments to human beings."

"The new 'Manna' bread which has been produced by Mr. Robert Graham and myself–Mr. Graham's technical and scientific experience in bread making rendered it alone possible to work out this problem–is the solution of the old standard bread controversy. We do not use the bran, which is already disintegrated by the milling process. We use better proteids than those contained in the bran and we introduce a great quantity of fat into the bread. The bread is cheaper than any other at present on the market."

"Manna flour contains 40 per cent proteid and 20 percent fat. In the raw state it has a sweet and pleasant taste. It can be used for soups and cooking vegetables."

"'Manna' Milk–If we give animals the choice between the best milk powder and manna flour, their instinct leads them to eat largely of the later; and if we feed them on eggs or meat and manna flour in a similar colloidal state, they consume more manna flour and less eggs or meat. We deduce therefrom that human beings will find it pays them better to use manna flour. Manna milk is in its proteid, carbohydride, and fat contents, and in its colour, very similar to cow's milk. It has an almond-like taste. Used with tea, cocoa, or puddings, ice creams and pastry, one cannot detect any difference from fresh milk. It is now being manufactured and its cost in Vienna will be six times less than fresh milk. It is merely a question of scientific research and manna milk will be biologically perfect also."

"It is indisputable that the food of the white race is very costly, especially when one compares it with the food which the yellow race is accustomed to. We observe the evil consequences of this difference above all in the United States. It is therefore a matter of the highest political importance that the West should learn the lesson of cheaper living as taught them by the East in the adaptation of the soya bean as an article of food."

"For fighting the Russian famine the aforementioned foodstuffs commend themselves for widely different reasons." Address: Vienna, Austria.

497. *Times* (*London*). 1921. "Manna" for the hungry. Sept. 28. p. 11, col. 3.

• ***Summary:*** "A few months before the war attention was drawn in these columns to the wonderful food-producing properties of the soya bean. Since its first importation to Europe from the Far East, in 1906, these properties have been closely studied by western chemists, and during the last few years the researches of Dr. László Berczeller, a young Hungarian scientist working in Vienna, have been especially useful in extending the possibility of their further development... Dr. Berczeller is particularly interested in its adaptability as the basis of human food. In this respect its virtues are even more remarkable than as a fodder. Soy bean has been used to produce not only milk, butter and cheese, but flour and what is known as 'manna' bread. One part of the manna flour has the same nutritive value as two parts of meat and one third part of wheat flour. Manna milk, he says, is in its proteid, carbohydride, and fat contents and in its colour very similar to cows milk, over which... it has this advantage–that it is free from all suspicion of being contaminated by milk-borne diseases. It is now being manufactured in Vienna at on sixth of the cost of fresh milk. Dr. Berczeller's whole account, reads almost like a fairy tale but it is a fairy tale with a moral. Dr. Berczeller believes that... these manna foodstuffs are admirably adapted for fighting the horrors of the Russian famine. The cheapness and quickness with which they can be produced in Vienna, the facility of their transport, and the fact that, when they are produced in the form of rusks, they need no cooking, combine to give them a special value possessed by no other food that can be imported into the famine regions. If these plans of his are carried out, he looks forward to the time when the soya bean will be permanently cultivated in the Ukraine, to the great advantage of the future provisioning of the whole of Europe."

Note: Writing in the *The Illustrated London News* (8 Oct. 1921, p. 476), J.L. North, Curator of the Royal Botanic Society of London, and a pioneer in growing soybeans in England, notes that in this article of Sept. 28 about "Manna flour, Manna bread, and milk substances from the Soya bean... there is no reference to the fact that all these 'Manna' or Soya bean products were first made in England before the war. Samples of the flour and biscuits are to be seen in the cases of the London Institute of Hygiene, and Manna milk has been for years–and, no doubt, still is–sold here under the name of 'Solac' at a price considerably lower than that charged for milk by dairymen. "

498. Moderwell, Hiram K. 1921. Milk, flour, bread from a bean, new "manna" found in Vienna: Inventor claims it will

do for starving Europe what was done for the Children of Israel in Biblical times. *Toronto Daily Star* (*Canada*). Sept. 29. p. 13.

• ***Summary:*** London, Sept. 29. This is basically a rewritten version of the following article: *Times* (London). 1921. "'Manna' for the hungry." Sept. 28. p. 11, col. 3.

Reports from Vienna, Austria, describe experiments [by Laszlo Berczeller and colleagues] in which flour, bread and milk are made from the soya bean. "Soya milk costs only one-sixth as much as cow's milk and soya bread is 40 per cent. cheaper than wheat bread." The soya bean, which will be extensively cultivated in eastern and southeastern Europe, is "the only real solution to the problem of reconstruction" of Europe after World War I. Address: Special cable to The Toronto Star and the Chicago Daily News.

499. North, J.L. 1921. To solve the cost-of-living problem? A magic bean. *Illustrated London News* (*The*). Oct. 8. p. 476-77. [1 ref]

• ***Summary:*** "The leading article and letter in the *Times* of Sept. 28 from its Vienna correspondent about Manna flour, manna bread, and milk substances made from the Soya bean, are likely to do good if they help us to realise how much we are losing by our neglect of this, the most valuable–for the uses to which it can be put–of all legumes.

"In the letter giving the details of the researches of Dr. László Berczeller of Vienna, there is no reference to the fact that these 'Manna' or Soya bean products were first made in England before the war. Samples of the flour and biscuits are to be seen in the cases of the London Institute of Hygiene, and Manna milk has been for years–and, no doubt, still is–sold here under the name of 'Solac' at a price considerably lower than that charged for milk by dairymen. The appearance and rapid rise into importance of the Soya bean is one of the most remarkable commercial events of modern times."

"In 1790 the [soy] bean was brought to Europe when its cultivation was first attempted by Young [Arthur Young, lived 1741-1820 in England], the father of British Agriculture, though without success. In 1878 an Austrian professor, Haberlandt, tried it, but failed [Note 1. Haberlandt did not fail; he successfully cultivated soybeans in Austria as early as 1875, and many times thereafter.] When the bean came here in 1908 there was an immediate rush to grow it both in Europe and America. Experiments were started by our Board of Agriculture, the Royal Agricultural Society, and many semi-public bodies. The early experiments failed completely, for the reason that they were made with seed whose climatic origin was unknown, as well as the orthodox Chinese methods of growing it. Later, this was remedied..."

By 1918 Europeans were aware of 500 different soybean varieties that were growing experimentally at Arlington, Virginia.

"My interest in the Soya bean began in 1913 with a visit from an agent of a German cultivator at the office of the Royal Botanical Society at Regent's Park. He was, he said, trying to form a syndicate to grow what he called an acclimatised Soya bean, brought from China in 1910, and already in cultivation in Germany. He refused seeds for testing, but sent from Hamburg a plant which had been carefully cleared of the seed, though the *empty* pods, nearly sixty in number, were left. The syndicate never materialised, and I thought no more of the matter, until later on, whilst examining the dried plant, I noticed a tiny pod, scarcely half an inch long, which contained a seed no bigger than a pin's head. Going over the plant I found other pods which evidently had been thought too insignificant to be of use, and from these I obtained thirteen seeds. These were sown in 1914 and resulted in thirteen plants, which produced four hundred and forty seeds. From thirty-three plants in 1915 one thousand seeds resulted, and in 1916 no less than twelve thousand. Many experiments as to the value of different methods of growing them were made in several countries, and with no less than twenty-one different foreign varieties. One thing came clear throughout the tests, and that was that the original variety started with was by far the best. It says a good deal for German astuteness that they should have gone to Manchuria and, from hundreds of varieties, chosen the one best for them and for us."

The future of the Soya bean in England is uncertain. "Natural selection helps the plants that mature earliest produce most seed; those that mature late die out. It is noticeable that the plants experimented with in England fruit earlier now than they did at first, and this is a very hopeful sign. Another satisfactory fact is that there is no lessening in the number of pods produced, but rather a gain. This year there are plants with three times the number of pods shown in a photograph of the best German-grown specimen of 1912."

In China and Japan the Soya bean "enters into the composition of most dishes, and in one form or another, as Soy sauce, bean paste, bean cheese, bean curd, bean milk, bean wafers, bean cakes and confectionery, is used everywhere. For a hundred years Soy sauce has been imported–the principal ingredient in the well-known Worcester [Worcestershire] sauce."

Apart from its value as a food, it is used in the manufacture of glycerine, explosives, enamels, varnish, varnish, waterproofs, linoleum, paints, soaps, celluloid, printing inks, and as a lubricant."

Photos (all but #1 by Frank N. Meyer of the USDA) show: (1) A typical pod from a soya bean plant grown by Mr. J.L. North at Chiswick, England, in 1921. (2) Two large, thin "blocks of tofu (bean curd)" on a round, wooden table. "Soya bean cheese for human food... Ready to be cut up into squares for sale to the public. Tofu, or Soya bean curd, is made by adding magnesium or calcium salts (about a 1 per cent. solution) to hot Soya bean milk; the product is drained

and pressed. (3) "Varieties of soya bean cheese on a bamboo tray. Tofu, or Soya bean curd, forms the basis of many fermented, smoked, and dried cheeses in China and Japan." (4) "Soya bean cheese [fermented tofu] in preparation: A pile of wooden trays full of bean curd in a dark room of even temperature." (5) "Used by the Chinese as a green vegetable: A basketful of sprouted soya beans." (6) Soy bean plant with leaves, many pods and roots, grown at Chiswick.

Note 2. This is the earliest document seen (March 2002) written by Mr. J.L. North, the pioneer in cultivating soybeans in England.

Note 3. This is the earliest English-language document seen (April 2013) that uses the term "soya bean cheese" or the term "soya bean curd" to refer to tofu.

Note 4. This is the earliest English-language document seen (July 2007) that uses the term "magic bean" or that uses the word "magic" as an adjective to refer to the soybean.

Note 5. This is the earliest English-language document seen (Jan. 2013) that uses the term "sprouted soya beans" to refer to soy sprouts.

Note 6. Concerning Arthur Young. He was the author of many books on agriculture, which were very influential in their day. He was an important advocate for the progressive agricultural practices of his time, advocating such innovations as the seed drill, improved crop rotations, the use of marl as fertilizer, and the enclosure of open fields. In 1767 he undertook the management of a farm in Essex. He conducted various experiments and published the results in *A Course of Experimental Agriculture* (1770). In 1784 he began the publication of the *Annals of Agriculture*, a periodical which was continued for 45 volumes and had many contributors. Young traveled to France during 1787-89 and in 1792 published an important book about his travels and observations there. The soybean was first grown in Paris, France, perhaps as early as 1740, definitely by 1779. So he may have learned about soybean from fellow agriculturalists in Paris while on this trip. Address: Curator of the Royal Botanic Society of London.

500. Nakayasu, Kyoichi. 1921. Gyûnyû-chû no tônyû no kani kanshiki ni tsuite [On the simple detection of soymilk in cow's milk]. *Yakugaku Zasshi* (*J. of the Pharmaceutical Society of Japan*) No. 476. p. 880-87. Oct. 26. (Chem. Abst. 16:1469). [Jap]
• ***Summary:*** On adding 4-5 drops of 28% potassium hydroxide solution to 10 cc of milk, a yellow color develops if soybean protein is present; 5% of the protein can be detected. To render the test more definite, the albumins may be precipitated from the milk by acetic acid, filtered off, and treated in a dish with 2-3 drops of the alkali. A light yellow color indicates the presence of soybean protein; the protein from pure milk gives a yellow color only on heating.

501. Brook, Harry Ellington. 1921. Care of the body. *Los Angeles Times.* Oct. 30. p. VIII-18. Sunday magazine.
• ***Summary:*** The section titled "The soya bean" states: "English and Hungarian agricultural chemists have collaborated in the production of a soya bean for which great things are promised. We are told that it is to take the place of bread, butter, flour and milk. Nonsense.

"The soya bean is largely used by the Chinese. The white cheeses you can see at Chinese stores are made of soya bean curd [sic, they *are* soya bean curd, or tofu].

"In France, a liquid made from the soya bean has been used as a milk substitute. It is not good for that purpose because, like all beans, it is largely starch.

"The soya bean is a valuable food, but it is inferior to peanuts. They contain much fat, which beans lack."

Note 1. Tofu was apparently sold at Chinese stores in Los Angeles by 1921. Note 2. The writer doesn't realize that soya beans, unlike common beans, contain very little starch. Address: N.D. [Naturopathic Doctor].

502. Queen, W.M. 1921. Friend cow has new rival in rice: Marvelous rich milk can be made from kernel on commercial basis. Discovery promises to mark new chapter in history of dietetics: Opens up enlarged field of consumption. *Rice Journal* (*The*) (*Beaumont, Texas*) 10(24):19, 25. Oct.
• ***Summary:*** "In the rice plant the sun's heat performs the work directly and in a most perfect manner, requiring more time than the cow to complete the process of making its milk."

"It is known that rice at first grows like any ordinary grain, but later puts forth its milk veins, which have been called water roots, above the surface of the ground. These draw a milk from the elements in the water... A milk containing 7 per cent. fat has been produced. It is 100 per cent. rice. The writer has tasted this milk, 55 hours after its production, when it had become a buttermilk, and can vouch for the fact that it is refreshing, invigorating and stimulating.'" J.H. Stassen and Mr. S.

"In the near future a factory will be started in San Francisco or Oakland, which serving as a base for operations on the Pacific Coast, will be the nucleus of a world-wide industry of colossal magnitude."

"Too many everyday foods have been robbed of their vitamines in the process of manufacture. Care has been taken to avoid this fault in the preparation of Vita Rice Milk."

Note: For a long summary of this article, see *Literary Digest* (17 Dec. 1921, p. 23).

503. Yamamoto, Yoshitaro; Mizusawa, I. Tokyo Takushoku K.K. (The). 1921. [Imitation powdered milk]. *Japanese Patent* 40,711. Nov. 24. Addition to 34,949. [Jap]*
• ***Summary:*** Bitter principles could be removed by soaking beans in vinegar or dilute acetic acid.

504. *Bean-Bag* (*The*) (*Lansing, Michigan*). 1921. An

interesting feature of a fair held at Elizabeth City, North Carolina,... 4(6):45. Nov.
• ***Summary:*** "... early in October was an exhibit of the various products of the soy bean, whose production is rapidly increasing in North Carolina as well as in most other southern states. Twenty-five manufacturers supplied products," including "a substitute for butter, imitation milk, table syrup, flour, soap, linoleum, glycerine and paint–all made from soy beans."

505. *Trans-Pacific*. 1921. Making bread from Manchuria's beans. 5(5):43-44. Nov.
• ***Summary:*** "In a recent speech in London Mr. Winston Churchill insisted that 'it is a matter of the highest political importance that the West should learn the lesson of cheaper standards of living which is taught them by the peoples of the East in the adoption of the soya bean as an article of food.' He then went on to say that in a recent statement to the Times' Vienna correspondent by Dr. Berczeller, a young Hungarian, the latter professed to have succeeded in making both flour and milk from the soya bean, and that the bread made from soya bean flour is both palatable and easily digested and can be placed on the market at a price below that of any other kind."

Note: This is the earliest document seen that mention's Winston Churchill's speech about the soya bean. Address: Tokyo.

506. Blunck, Gustav. 1921. Pflanzenmilch [Plant milk]. *Chemiker-Zeitung* 45(144):1166. Dec. 1. [3 ref. Ger]
• ***Summary:*** The author notes that margarine was born in 1871, out of the necessities of the time, and the margarine industry grew rapidly during World War I until today in Germany margarine is more widely used than butter. The same problem has now arisen with respect to milk, and how to make a substitute from plants. The main drawbacks with existing soymilks are the strange flavor and the lack of vitamins. The author developed a soymilk using a fermentation with "aroma building" bacteria, and involving treatment with certain proteolytic enzymes. This improved the soymilk flavor, making it "completely similar" to that of cow's milk in flavor and digestibility, as well as in its ability to make kefir, yogurt, etc. And it stays fresh longer since it is free of a germ/sprout [*Keim*]. So in a short time we should have a plant milk to go with our plant butter, and an improvement in our nutritional situation, since the shortage of milk and its high price makes it almost a luxury item. Address: Chemiker, Eberswalde.

507. *Literary Digest.* 1921. "Milk" from rice. Dec. 17. p. 23. [1 ref]
• ***Summary:*** "Rice can be liquefied into the form of milk, we are told by W.M. Queen, writing in the *Rice Journal* (Beaumont, Texas [Oct. 1921, p. 19, 25])... 'It is known that rice at first grows like any ordinary grain, but later puts forth its milk veins, which have been called water roots, above the surface of the ground. These draw a milk from the elements in the water... A milk containing 7 per cent. fat has been produced. It is 100 per cent. rice. The writer has tasted this milk, 55 hours after its production, when it had become a buttermilk, and can vouch for the fact that it is refreshing, invigorating and stimulating.'" J.H. Stassen and Mr. S. Christensen are producing the new product from rice. After World War I, Stassen "went to Texas, where he brought the experiments with rice as a base for ice-cream he had started in Iowa, to a more perfect stage of development. His products were already being made experimentally in the form of an emulsion and also in a frozen state as a substitute for ice-cream and sherbet.

"'At this point Mr. Stassen brought his discovery to California,'" where he met Mr. Christensen (one of California's leading rice growers), "'whose researches covering a long period of years were so supplemented by Mr. Stassen's invention that between them they have opened a new field for the development of rice with possibilities hitherto undreamed. In the near future a factory will be started in San Francisco or Oakland, which serving as a base for operations on the Pacific Coast, will be the nucleus of a world-wide industry of colossal magnitude.'"

508. **Product Name:** Vita Rice Milk.
Manufacturer's Name: Vita Rice Products Co.
Manufacturer's Address: 407 Flatiron Building, San Francisco, California.
Date of Introduction: 1921. December.
Ingredients: Incl. rice.
New Product–Documentation: Ad (half page, black-and-white) in *The Rice Journal* (Beaumont, Texas). 1921. Dec. p. 12. "Vita Rice Milk: The new discovery which brings rice into its own." "The main reason for the superiority of Rice over all other forms of food is its ready digestibility; it being assimilated in one hour, while the other cereals, legumes, and most vegetables, require from three to five hours. Unfortunately for the Human Race, Rice, as sold in stores (in the World Market today) has been robbed of its vitals (Life-giving Food Value). Vita Rice Milk brings rice into its own, rich in all Vitals, retaining all life giving and life sustaining fats."

Note 1. This is the earliest rice milk seen worldwide. It is not clear whether or not the rice was fermented, like amazake.

Note 2. This is the earliest English-language document seen (Feb. 2005) that uses the term "rice milk" to refer to a commercial product.

509. Kellogg, John Harvey. 1921. The new dietetics: What to eat and how. A guide to scientific feeding in health and disease. Battle Creek, Michigan: The Modern Medicine

Publishing Co. 933 p. Illust. Index. 24 cm.

• ***Summary:*** This is the first edition of this important book; subsequent editions were published in 1923 and 1927. Contents: Foods: Food Principles. The digestive process: The liver, mastication, hunger. Metabolism: The energy of food–the calory [calorie]. The physiology of eating: The protein ration, fats, carbohydrates–starches and sugars, food salts, vitamins, cellulose, the acids of foods. Wholesome foods: Cereals (incl. wheat bran), vegetables, green vegetables, root vegetables, vegetable or garden fruits (incl. tomato, cucumber, eggplant, watermelon, muskmelon, squash, vegetable marrow, pumpkin, chayote), legumes (incl. the adsuki [azuki] bean, the Hahto bean, the soy bean, composition of the soy bean, soy bean milk, to fu [tofu], soy sauce, soy bean sprouts), fruits, nuts (incl. the ground nut, the peanut, peanut butter, flour from the peanut, peanut milk, malted nuts). Animal foods. Condiments. Tea and coffee (They are poisonous drugs, in 1921 the U.S. per capita consumption increased to 12 lb/year, chronic caffein [caffeine] poisoning, coffee raises blood pressure, tea, coffee and uric acid, coffee cripples the liver, other coffee poisons, some poisonous effects of tea and coffee, soda fountain drinks containing caffein, coffee substitutes {most consist of cereals plus molasses, roasted until part of the starch and sugar are caramelized; the roasting process makes them unwholesome}), tobacco. Ptomains–Poisoned foods. Water drinking. Medical dietetics: Introduction, scientific tests of the nutritive functions, regimens and dietaries, diet in disorders of the digestive organs, diet in disorders of nutrition, diet in joint diseases (rheumatism, arthritis, gout), diet in disease of the heart and blood vessels–Cardio-vascular-renal diseases, diet in disorders of the nervous system, diet in disorders of the urinary organs, diet in diseases of women, diet in management of fevers, diet in chronic infectious diseases, diet in diseases of the skin, diet in surgical cases, diet in diseases of the eye, ear, nose, and throat, infant feeding, the rice regimen. The world's foods: Making the bill of fare.

A table (p. 138) titled "Vegetable fats" lists "The principal sources of edible vegetable fats..." including: Cocoanut meats 36%, corn 5%, hemp seed 32%, palm nut 72%, peanut 52%, sesame seed 51%, soy bean 20%

A table (p. 166-67) lists the 7 main food salts [minerals] found in various foods, including soy beans, gluten (pure, 40%, or 20%), and peanuts.

Table XII (p. 170-71) lists foods rich in iron. Columns (a) shows the grains of iron in one ounce, and column (b) shows the number of ounces required to supply one day's ration of iron. Includes (in descending order of iron content): Savora (yeast extract), Gluten–pure, gluten–40%, egg yolk, dried lentils, wheat bran, soy beans, Protose, Brose (oatmeal, corn meal, bran), Nuttolene, Graham Flour, tenderloin meat, Graham bread, Zante currants.

Table XIV (p. 182) lists foods rich in lime [calcium] in descending order of lime content, with the same two columns as table XII. Includes: Cheese, yogurt cheese, mustard greens, linseed meal, turnip tops, soy beans.

Page 183 discusses "The acids and bases of foods–The reaction balance. As pointed out by Bunge many years ago, and as further shown by an extensive research conducted by Sherman of Columbia University, foodstuffs differ in relation to their acid and basic contents... The waste products of the body are predominantly acid, consequently it is desirable that the foodstuffs should be predominantly basic... The predominance of acids gives rise to a condition known as acidosis (p. 719), and care must be taken to protect the body from injuries which result from this condition... Meats of all sorts, especially the lean meats, tend to acidify the tissue fluids to a marked degree. Eggs tend in the same direction, though less strongly than do meats."

In the chapter titled "Diet in disorders of the digestive organs," pages 654-55 discuss soy flour, yeast extract (Savita, Marmite–which is a very useful source of iron and vitamins), Malted Nuts, 20% gluten meal, and the "Gluten-feeding method."

In the section on diabetes, page 703 gives a recipe for gluten bread. Gluten is also mentioned on p. 718. The section titled "Diet for acidosis" (p. 719) begins: "The blood and tissue fluids are slightly alkaline in reaction. This slight degree of alkalinity is essential to the maintenance of health. When, through disordered metabolism, the body becomes charged with an excess of acids, so that the alkalinity of the blood and tissues is diminished, the result is a condition known as acidosis. Among the symptoms due to acidosis may be mentioned nervousness, mental depression, mental confusion, drowsiness, convulsions, and coma. Air hunger with shortness of breath is one of the early symptoms of acidosis. This condition is most pronounced in advanced cases of diabetes and is encouraged by a meat diet, particularly by the use of an excess of fats. Fasting persons always show a condition of acidosis after fasting for a day or two. Professor Fischer believes that this preponderance of acids, or chronic acidosis, is the exciting cause of Bright's disease."

The section on diet and heart disease notes (p. 738-39): The "great frequency with which arteriosclerosis is encountered in modern times is the result of the increase in flesh eating which in recent years has been very marked in all civilized countries." It "has become the universal custom among practical physicians to exclude meats, meat extracts, and broths of all sorts from the diet of patients suffering from arteriosclerosis, as the most efficient means of checking the degeneration of the arteries..." Foods containing uric acid, plus coffee and tea, should be discarded. Bran, agar, paraffin oil, and an enema should be used freely. Address: M.D., LL.D., F.A.C.S., Superintendent of the Battle Creek Sanitarium, Battle Creek, Michigan.

510. Kellogg, John Harvey. 1921. Flour from the peanut. Peanut milk (Document part). In: J.H. Kellogg. 1921. The New Dietetics: What to Eat and How... Battle Creek, Michigan: The Modern Medicine Publishing Co. 950 p. See p. 359. 24 cm.

• ***Summary:*** These two sections appear in the chapter titled "Nuts." "Flour from the peanut: It has been found that by special treatment of the press-cake obtained after the extraction of the oil from the peanut an excellent flour, containing only five per cent oil, may be made. The flour contains a high percentage of an excellent protein."

"Peanut milk: The protein of the peanut is quite soluble in hot water, and the fat being in a finely divided state, it is easy to prepare from peanut butter a very palatable cream or milk by the simple addition of hot water." Address: Battle Creek, Michigan.

511. Kellogg, John Harvey. 1921. Malted Nuts (Document part). In: J.H. Kellogg. 1921. The New Dietetics: What to Eat and How... Battle Creek, Michigan: The Modern Medicine Publishing Co. 950 p. See p. 359-60. 24 cm.

• ***Summary:*** This section appears in the chapter titled "Nuts" (p. 359). "Nearly thirty years (1892-93) the writer, in seeking to supply the needs of invalids unable to eat cow's milk, conceived the idea of combining malt-digested cereals with nuts to prepare a substitute. The result reached after many experimental efforts was the product known as 'Malted Nuts,' which much resembles malted milk in appearance, while having a delicate and very agreeable nutty flavor. This product has been produced in considerable quantities and has come to be somewhat widely used. The following is the analysis as made by Atwater, as published by the U.S. Department of Agriculture:" Water 2.6%, protein 23.7%, fat 27.6%, carbohydrate (malt sugar and dextrin) 43.9%, and ash 2.2%. Calories per ounce: 140.

"It was soon discovered that 'Malted Nuts' had certain characteristic properties which rendered it of special value as a nutrient. One of these is its richness in food iron of which it contains double the amount found in ordinary beefsteak. Another... is its influence upon the milk secretion in nursing mothers. This discovery was first made by a mother who by its use was able to double her milk production and to nurse the child of a neighbor in addition to her own. Later, Dr. Hoobler, of Detroit, superintendent of a lying-in hospital, independently undertook an extended series of experiments, the interesting results of which, largely attained by the use of malted nuts, were reported in the *Journal of the American Medical Association* for August 17, 1917. The purpose of the research was to determine the influence of diet upon the milk production of nursing mothers... Studies were made of the effects of meat, eggs, cow's milk, a strictly vegetable dietary (fruits, grains and vegetables) and nuts.

"The influence of the diet was judged by the following points: 1. The amount of milk produced [by the nursing mother]. 2. The food value of the milk. 3. The effect upon the mother in loss or gain of weight.

"It was found that a diet consisting largely of nuts (fifty per cent), was far superior to any other dietary and in every particular. The amount of milk was larger than the average (14.8%), the food value was greater (30%), and the mother did better. It was noted that the mothers 'took the diet directly and in fact enjoyed it.'"

"'Malted Nuts' has been demonstrated practically the best substitute for milk which has thus far been found. It is relished by bottle-fed infants and 'agrees' when cow's milk is not tolerated."

Note: We are not told what kind of nuts were used to make Malted Nuts. But other sources (Schwarz 1970, p. 121) explain that this nondairy product was made principally from peanuts and almonds, and resembled malted milk. Address: Battle Creek, Michigan.

512. Kellogg, John Harvey. 1921. The soy bean. Composition of the soy bean (Document part). In: J.H. Kellogg. 1921. The New Dietetics: What to Eat and How... Battle Creek, Michigan: The Modern Medicine Publishing Co. 950 p. See p. 299-302. 24 cm.

• ***Summary:*** In the chapter on "Legumes," the section titled "The Soy Bean" (p. 315-21) has the following contents: Introduction and history (incl. a long extract from a publication by W.J. Morse (1918), and discussion of soy beans and diabetic diets). Composition of the soy bean (according to Bailey and Street 1915). Soy bean milk. To fu (tofu). Soy sauce. Soy bean sprouts. Composition of soy bean sprouts compared with mung bean sprouts.

The section begins: "The soy bean has been used in China since 2838 B.C. It was introduced into France in 1740, England 1790, and this country not until a century later. This bean requires a long season and does best in the Southern states on this account. It is quite hardy, however, and some varieties have been found which mature as far north as Canada.

"The soy is the best of all beans. It differs decidedly from other beans in its composition. It contains 40% protein, practically no starch, and nearly 20 per cent fat, giving it characteristics approaching those of the peanut more closely than those of ordinary beans.

"More than one thousand varieties have now been tested by the U.S. Department of Agriculture. Twenty varieties are at the present time being handled by growers and seedsmen in this country. The green and yellow varieties are best adapted for food. The black and brown are chiefly for forage.

"In China, the soy bean is very little used in the manner in which beans are used in this country. Instead, according to W.J. Morse [1918], of the U.S. Department of Agriculture, 'the beans are soaked in water and roasted, the product being eaten after the manner of roasted peanuts.'" Dr. Kellogg then quotes two passages from Morse; one about roasted

soybeans, and the other about soy beans which, when three-fourths or more grown, can be used as "a most palatable and nutritious green vegetable."

"This bean not only contains a large amount of protein, more than is found in the same weight of beef, but its protein is of a particularly fine quality. Heretofore, the casein of milk has enjoyed a unique reputation as a protein of finest quality, but now 'the protein of the soy bean appears to be as valuable as the casein of milk.' In view of the shortage of milk, which is likely to increase, it is gratifying to know that a protein has been discovered equally valuable as casein, and one which may be produced in unlimited quantities.

"For promotion of growth, it is not only necessary for the food to contain 'complete' protein in proper amount, but it must also contain a sufficiency of the two vitamins, designated as fat-soluble A and water-soluble B. Osborne and Mendel demonstrated that the soy bean contains an adequate supply of both fat-soluble and of 'water-soluble vitamins,' in which respect it is superior to all seeds heretofore examined, with the possible exception of flaxseed and millet.

"The soy bean is destined to become one of the great food staples, not only of this country but of the world. It is capable not only of supplying the essentials for growth and maintenance, but may also act as a complement to other imperfect foods, such as corn for example, in combination with which it has shown most excellent experimental results.

Composition of the soybean: A table shows the composition of the soy bean, compiled from various sources. "The above analysis clearly shows the soy bean to be a most remarkable food product. Its composition is in some respects more like that of a nut than that of other legumes. In this respect it very much resembles the peanut. Its protein content, nearly 40 per cent, is higher than that of any other foodstuff. Even lean meat affords but half as much. Its high percentage of fat gives it a very high food value and makes it a rich source of oil for various industrial purposes as well as for food.

"The soy fills the place of meat as well as milk in the dietary of many millions of sturdy Orientals. Since the composition of the soy has been understood, it has been much used as a food for diabetics. It is evident from the above [table] that it contains little which can be objectionable in diabetes. The small amount of dextrin and sugar may be easily removed, when necessary, by parboiling.

"Experiments by Holmes [1920], of the office of Home Economics, U.S. Department of Agriculture, have shown that the well cooked soy bean (cooked for two hours under steam pressure) is very easily digestible, and is an exceptionally wholesome article of food, superior to most other legumes.

"The soy bean may not become really popular until the pressure cooker comes into general use, which may be some time. In the meantime, while the patent pressure cooker is coming, any resourceful housewife may improvise a perfectly good and satisfactory pressure cooker from inexpensive materials close at hand. Get a stone jug or jar that can be hermetically sealed. The little stone jars in which apple butter is sometimes sold are well adapted to the purpose. After soaking the beans over night put [them] in the jug with a little salt and enough water to cover, seal up tight and secure the cover well, remembering that the pressure will be from within. Set the jug in a saturated solution of common salt, place over a smart fire and boil for one to two hours. The salt solution boils at a temperature of 220ºF. and so the beans are exposed to a higher temperature than in ordinary boiling... Cooking at the higher temperature not only softens the cellulose and so renders the foodstuffs tender, but greatly improves the flavor.

Note: This is the earliest document seen (Sept. 1996) that uses the term "pressure cooker" in connection with soy beans. Address: Battle Creek, Michigan.

513. Kellogg, John Harvey. 1921. Soy bean milk (Document part). In: J.H. Kellogg. 1921. The New Dietetics: What to Eat and How... Battle Creek, Michigan: The Modern Medicine Publishing Co. 950 p. See p. 302-03. 24 cm.

• ***Summary:*** "In Japan infants are sometimes nourished artificially on milk prepared from the soy bean by methods for a long time kept secret. Soy milk is now well known and quite extensively in use in France and England, and likely soon to be introduced into this country. The writer has prepared, experimentally, a quite palatable milk from the soy bean, and has for twenty-five years made use of milk prepared from the almond and other nuts.

"The beans may be prepared either by grinding to a fine flour or by soaking over night and crushing to a pulp between rollers. The dry meal is most convenient. Add to the dry meal sufficient water to a little more than saturate. Allow to soak for two hours. Add five times the quantity of boiling water. Boil for ten minutes, stirring. Filter through a fine cloth. The milky liquid thus obtained has properties very closely resembling cow's milk. It is rich in protein and fats. The fat is well emulsified and easily digestible, and the protein very closely resembles that of milk, being what is known to chemists as a complete protein which may replace the casein of milk as food. The soy milk is rather deficient in salts, both lime and iron. It contains vitamins but less than milk, and it contains no carbohydrates. To be used as milk it should be sweetened by the addition of 2 per cent of cane sugar or 4 per cent of milk sugar. To suit most palates a little salt should be added also. The flavor is different from that of cow's milk, but it is wholesome and not unpalatable and may to a considerable extent take the place of cow's milk by persons who are sensitized to milk or when milk is not available. A similar preparation may be made from peanuts.

"Soy bean milk, according to Adolf and Kiang, has the following percentage composition: Protein 4.22, fat 1.87, salts 0.40, water 93.51.

"The composition of the milk will vary, of course, with

the amount of water used in its preparation. It will be noted that soy milk contains no sugar and is very poor in salts, containing only half the amount of salts found in cow's milk. All these may be easily added, however, and so soy milk is a possible resource for lacteal food in case of scarcity of the bovine product; but it seems to the writer doubtful that soy milk will ever be able to compete with cow's milk as a nutrient for human beings, and especially the feeding of infants." Address: Battle Creek, Michigan.

514. Kellogg, John Harvey. 1921. Animal foods (Document part). In: J.H. Kellogg. 1921. The New Dietetics: What to Eat and How... Battle Creek, Michigan: The Modern Medicine Publishing Co. 950 p. See p. 363-435. 24 cm.
• ***Summary:*** Dr. Kellogg confines to this one chapter all of his discussion of meat, poultry, fish, eggs, and milk. Contents: Introduction: Special characteristics of animal foods. Meats: The iron of meats, the lime [calcium] content of animal foods, beef, mutton, goat, venison, pork, fowls, fish, "sea foods," oysters, meat extractives, the poisons of meat, viscera highly objectionable. "high" meats, putrefaction products in meat, the bacteria of meat, acidosis from a flesh diet, effect of flesh eating on animals, parasites of meat, flesh meat not essential, meat unnecessary, raw beef not antiscorbutic, special contraindications of flesh foods. Eggs: Introduction, egg yolk, egg white, the cooking of eggs, influence of hen's food on eggs, eggs and biliousness, the food iron of eggs, the lime content of eggs, egg substitutes, preserved eggs, bad eggs, candling of eggs, egg poisoning, when eggs should not be eaten. Milk: Introduction, table showing composition of cow's milk and milk products, why milk sours while meat putrefies, the special value of milk proteins, milk rich in vitamins, influence of food of cow upon milk, milk rich in salts, dried milk, cream, butter (rich in vitamins), butter color, cheese, skimmed milk, canned milk, buttermilk, whey, modified milk, the iron content of milk, the lime [calcium] content of milk and cheese, "yogurt cheese" (fermented using pure cultures of the *bacillus acidophilus*), whey, milk must be clean, sour milk, bitter milk, slimy and colored milk, bacteria on milk bottles, infections due to unclean milk, infected milk a cause of tuberculosis, injurious effects of sterilizing or pasteurizing milk, buddized milk (sterilized with peroxide of hydrogen), certified milk (and specifications established by the American Association of Medical Milk Commissions), a person may be sensitized to milk, medical uses of milk, how to eat milk (it must be chewed to mix it with saliva, not just swallowed; never eat it with meat), milk a cheap food, table showing composition of milk of various animals (human milk is the lowest in total protein {2.01%} and reindeer milk is the highest {10.90%}), table showing the composition of certain infant foods.

Photos show: (1) The appearance of eggs when candled (4 types). (2) The Battle Creek Sanitarium dairy barn (very clean, with cows standing in two long rows), (3) Beefsteak preserved in buttermilk for 15 years.

Note: Dr. Kellogg advocated a vegetarian diet. He opposed the consumption of meat, fowls (poultry), fish, or sea foods. Eggs are good food if they are fresh and properly cooked to make them digestible–at a low temperature (150-160ºF) until they are "soft boiled." Milk is an excellent food (good source of protein, calcium, and vitamins; and inexpensive) if it is fresh and clean (ideally certified), and comes from cows which have been fed upon fresh grass or other green food (which supplies vitamins). Unsanitary milk may contain disease-producing organisms such as those of typhoid fever, tuberculosis, and diphtheria. Butter is the most important of all animal fats because it is rich in vitamins. Fresh, unripened cheese (especially cottage cheese) and yogurt cheese are good foods. Fresh, clean milk is better than clean eggs. Address: Battle Creek, Michigan.

515. Rouest, Leon. 1921. Le soja et son lait végétal: Applications agricoles et industrielles [The soybean and its vegetable milk. Agricultural and industrial applications]. Carcassone (Aude), France: Lucie-Grazaille. 157 p. Illust. No index. 25 cm. [42 ref. Fre]
• ***Summary:*** Contents: Preface, by Louis Forest. Introduction–What is soya? 1. History of the dissemination of soya: In 1712 the naturalist Kaempfer introduced soya, introduction of soya to France and Europe, soya is cultivated in Austria in 1875 by Prof. Haberlandt, soya is the object of many trials in France from 1876 to 1881, the study and acclimatization of soya becomes widespread, the causes of setbacks in the cultivation of soya.

2. Cultivation of soya: Botanical characteristics of soya, the varieties of soya, Chinese varieties and soya in China, Japanese varieties and soya in Japan, American varieties and soya in America (varieties: Mammoth, Hollybrook, Ito San, Guelph, Haberlandt, Medium Yellow, Wilson, Peking, Tokio, Mandchu [Manchu], Black Eyebrow, Barchet), soya in Europe–France and Italy, seven varieties of soya tested in France, soya in the experimental farms for new crops (*les Fermes Expérimentales de Néoculture;* Many varieties from the USA were tested, including Manchu, Wilson Five, Haberlandt, Tokio, Virginia, Hato [Hahto], Early Medium Green), the cultural and geographical appearance of soya, its production worldwide, planting soybeans, heat units (*degré thermique*) and the germination of soya, the importance of spacing between plants, number of seeds per hectare, soya during its vegetative stage, the vegetation of soya compared with that of the haricot at high altitudes, rolling the seeds and types of crop maintenance, growth of the plant, acclimatization, the enemies of soya.

3. Composition of the soybean plant. 4. Soya forage: Green soya forage, soya hay, soya as a plant for soil improvement. 5. Harvesting soybean seeds: Maturity of the seed, harvesting soya, the food value and composition of

soya seeds. 6. Soya as an oil plant: Richness in oil, defatted soybean cake, imports and exports of soya cake from 1915 to 1919 (Imports to: Sweden, Canada, Korea, Japan, Formosa. Exports from: England, China, Korea), production of soya cake from 1915 to 1919 (Denmark, Great Britain and Ireland, Netherlands, Sweden, USA, Japan, Formosa, Korea, Java and Madura).

7. Soymilk: Its manufacture (in 1910-1913 Li Yu-ying installed a factory named "La Caséo-Sojaïne" at Vallées {Asnière-Seine} near Paris. Rouest visited this factory and saw them make soymilk, which was filtered using a filter-press resembling those used in sugar refineries), its properties and composition, composition compared to other types of milk, powdered soymilk, soymilk in the nursing and feeding of animals, soymilk related to tuberculosis in animals and in humans, soymilk would allow the milk and butter from animals to be reserved exclusively for human foods and could be used for raising many piglets, manufacture of non-dairy milk in Canada (a factory is now under construction). 8. Soya in Industry: Soymilk and soy casein, Sojalithe (like Galalithe).

9. Soya in human nutrition: Soy flour and its applications (incl. Li Yu-ying's usine de la Caséo-Sojaïne, and bread made of soya and wheat), soya compared to dry legumes (such as lentils, haricots, peas, beans), soya used as a legume (whole soybeans), the food value of soy sprouts, preserves and confections made from soya, soya chocolate and coffee, the amount of nutrients produced by soya and other crops from a unit of land, a meal of soya served in France (prepared and served some years ago by Li Yu-ying's soyfoods plant La Caséo-Sojaïne for the major print media, the medical press, the National Society for Acclimatization, etc.; it consisted of 2 soups {one with 'soya meat' and one with soymilk}, 2 entrees {an omelet with smoked soya ham, and fritters stuffed with soy meat}, soy [actually mung bean, *lüdou*] sprouts in a salad and sauteed, 3 desserts {soya cake, biscuits, and confection}, and soy coffee; a recipe for each is given; soya meat is smoked tofu).

10. Use of soya in East Asia: Tofu (*fromage végétal*), soy-based condiments (such as natto {Ping ming Natto and Tokio-Natto}, miso, Chinese miso or tao-tjiung [doujiang], and shoyu {Soyou or Schozou}), making soy sauce in Kwantung, China (from Groff).

11. The opinions of several authors concerning soya (from the French medical and hygienic press): Introduction–E. Maurel. Soya and soy bread in diabetic diets–Dr. Dujardin-Beaumetz, Dr. Bloch, Dr. J. Le Goff, L. Beille, M. Gautier. Soya used as a bean–M. Gautier. Soy sauce used in place of meat extracts. The state of cheese. The popularization of soya in Europe–A. Paillieux.

Conclusions: The influence of cultural technology on variation. Appendix: Advice to experimenters on the acclimatization of soya in France. Other methods of obtaining early-maturing soybeans.

The author concludes (p. 140): We must make every effort to acclimatize soya in France. We must develop the will and learn from past mistakes. Most soybean varieties now available in France are too late. We must get varieties from Manchuria, whose climate is similar to that of southeastern France, and from the northeastern USA. It is urgent that, in the near future, we start a Soybean Experiment Station to take responsibility for this work. The setbacks since 1830 can be overcome by present science and genetics. The first step is to introduce better varieties.

On the last page is a full-page advertisement for various seeds sold by Mr. Rouest, including 30 varieties of soybeans (*Soja hispida*)*;* the names of the individual varieties are not given.

Illustrations show: (1) A soy bean plant with many pods (title page). (2) Flowers and pods of the soy bean plant (p. 29). (3) Soy pods and beans (p. 30). (4) A soy bean plant drawn by a Chinese artist (p. 32, from Li Yu-ying). (5) Pods of the Hato [Hahto] variety of soy bean (p. 51). (6) Germinating soy bean seeds (p. 54, from Li Yu-ying). (7) Soy bean roots with nodules (from a photo by Dr. Le Goff; p. 73). (8) Soy bean pods, opened to show 3 beans in each (p. 82).

Tables show: (1) Production of soybeans by color in China in 1916 and 1917 (p. 35, in quintals, from the International Yearbook of Rome, Vol. 1, 1919): In 1917: Yellow 4,069,822. Other 953,012. Green 181,190. White 71,234. Black 40,066. Total: 5,315,324.

(2) Percentage composition of various oilseed cakes (p. 95, from Kellner). (3) Imports and exports of soybean cake, by country, from 1915 to 1919 (in quintals, p. 96). Imports are given for Sweden, Canada, Korea (from 1916), Japan, and Formosa [Taiwan]. Exports are given for England (6 quintals in 1915), China (including Manchuria, by far the biggest exporter, from 1916), and Korea (from 1916).

(4) Production of soybean cakes, by country, from 1915 to 1919 (p. 97, in quintals, based on statistics from the International Bureau of Agriculture, Rome, 1919). In descending order of production in 1915 (in quintals): Japan 5,439,337. Korea 3,209,238. Great Britain and Ireland: 1,513,059. Denmark 921,782. Java and Madura 503,025. Note that China is not listed. Netherlands 144,523. Formosa [Taiwan] 62,131. Sweden 1,733. USA 0, but 501,822 in 1916.

Note: When Alsace was occupied by the Germans during World War I, the Rouest family moved from Alsace to Paris. Mr. Rouest brought soybeans from Africa and adapted them to France. He paid for the publication of this book. Address: Directeur des Fermes Expérimentales de Néoculture, Carcassonne (Aude), France.

516. Rouest, Leon. 1921. Le soja et son lait végétal: Applications agricoles et industrielles [The soybean and its vegetable milk. Agricultural and industrial applications].

Carcassone (Aude), France: Lucie-Grazaille. 157 p. Illust. No index. 25 cm. [42 ref. Fre]

• ***Summary:*** This is a summary of interesting points throughout this book. The main early use of soy in Europe was more therapeutic than nutritional (p. 3); it was used mainly in diabetic diets.

Nothing remains of the early trials conducted 20 years ago in France and Austria. The reasons for the crop's failure were lack of understanding of the laws of acclimatization and genetics, and the fact that soya (*soja*) was introduced as a new food legume, when actually it can only be utilized as a forage plant and industrially (for oil, cakes, and casein). Later, when the plant has been adapted, when it is understood that soya is not being propagated to competed with other dry legumes, that it is not being cultivated to extract from the seeds a vegetable milk for people, but simply as a forage plant–and the most remarkable one that exists (p. 3).

The English are trying to acclimatize soya to their colonies, especially those in southern Africa. In 1908 some 200,000 tonnes (metric tons) of soybeans were exported from China [including Manchuria] to Europe, followed by 500,000 tonnes in 1909. One can extract from soybean seeds a vegetable milk (*lait végétal*) which has the same value as animal milk for use in raising young animals. Its seeds and forage are also fine for raising farm animals and for industrial products. The author thanks all those who have helped him to acclimatize the soybean to France and to create new varieties of soya in France (p. 4).

Introduction of the soybean to France and to Europe (p. 6-7): A good but brief review of the literature on this subject. In 1739 Buffon was made director of the Jardin des Plants in Paris. Shortly thereafter, Christian missionaries in China sent him specimens of seeds and plants. The soybean must have been among them. The soybean has very probably been cultivated at the Museum since 1779, certainly in 1779 and later from 1834 to 1880. In 1855 Baron de Montigny was charged by the Society for Acclimatization to distribute five varieties of soya sent from China by Mr. Montigny; these were from northern China. The plants first bore seeds in France in 1854; their acclimatization is assured. In 1857 Mr. Lachaume transmitted to the Society for Acclimatization details of the success he obtained at Vitry-sur-Seine with soy culture. The seeds were planted in 1856. In 1858 a report to the Society for Acclimatization indicated that the acclimatization of the soybean was complete. In 1859 Mr. de Vilmorin reported on cultural trials sent from China by Mr. Perny. The varieties matured too late. The same year Dr. Turrel harvested soybeans at Toulon. In 1862 the Society for Acclimatization received seeds from Mr. Guillemin; the yellow soybean was said to be used for making tofu. Following the events of 1870, the cultivation of the soybean in France was apparently discontinued. Note 1. The brief war of 1870 between France and Bismark's Germany ended in France's defeat and the ceding to Germany of Alsace-Lorraine.

In the long section on Prof. Haberlandt's work with soya, starting with his cultivation of it there in 1875, is a quotation from him: "I don't know, in this history of cultivation, any example of a plant which has, in so few years and to such a high degree, excited such general interest" (p. 8).

From 1876 to 1881, the soybean was the object of numerous trials in France by the Society of Horticulture at Etampes (Seine-et-Oise). During this same period, one Dr. H. failed with varieties sent from Japan but succeeded in cultivating a yellow soybean sent from China, and used the latter to make his own tofu (*fromage végétal*) for use at home. In 1880 Messrs. Vilmorin-Andrieux introduced in their catalog a species cultivated in Austria-Hungary (p. 17-18).

In 1878, Japan, China, and the Indies (*les Indes*) presented all the varieties of Soya at the Universal Exposition, and their seeds filled more than 20 boxes. In 1880 the National Society for Acclimatization was able to distribute soy in France and tests were conducted in 24 regions; they were largely successful, especially in central and southern France (p. 19-22).

Tests were then abandoned from this time until about 1888, when the soybean started to grow in the southern states of the USA. That same year Messrs. Lecerf and Dujardin-Beaumetz first had the idea of using soy bread in diabetic diets (p. 22).

Causes of setbacks in soybean culture (p. 24-27): First, the varieties used matured too late and were not acclimatized in a progressive manner. We must choose varieties from northern China and adapt them to the south of France (*le Midi*) [which is on the same latitude as Toronto, central Wisconsin, or southern Minnesota]. From these, we must develop hybrids, and gradually move them northward.

The soybean has been ostracized in France. Major commercial, financial, and social interests have viewed with terror the production of an inexpensive food and have retreated into the egotistical "Malthusian agriculture." This is the truth! (p. 26).

Soy cheese is even feared by the cheese industry in France. They ask if they should abandon their excellent cheeses in order to adopt a vegetal cheese (*fromage végétal*).

A long quotation from the *Chinese Imperial Encyclopedia of Agriculture* (p. 34) gives the various colors of soybeans, including black, white, grey, and even some speckled / mottled with blue. The black ones can be used for medicine. And they are used as an ingredient in the condiment called fermented black soybeans (*Chi* [*douchi*]), made of soybeans, ginger, and salt.

In 1910-1913 a factory named "La Caséo-Sojaïne" was installed near Paris. I (Rouest) visited this factory in which were installed all the modern conveniences (*tout le confort moderne*), and presented the best guarantees of hygiene. The

milk was filtered using a filter press similar to those used in sugar factories (p. 99).

Note 2. Rouest has borrowed a great deal of material from earlier publications by Li Yu-ying, usually without acknowledgment and often arriving at very different conclusions, especially on the question of using soya to make human foods (Li) vs. foods and milk for animals (Rouest).

Rouest strongly recommends the use of soymilk to feed young domesticated animals. For us, soy will not replace green beans, milk or cheese. During World War I, the Germans were actively involved with the study of soymilk. A translation of an article from the *Schweizerische Milchzeitung* (Nov. 1918) tells how to make soymilk and tofu (p. 102). By using soymilk, there is no fear of transmitting tuberculosis. Address: Directeur des Fermes Expérimentales de Néoculture, Carcassonne (Aude), France.

517. Rouest, Leon. 1921. L'étude et l'acclimatation du Soja deviennent générales [The study and acclimatization of soya becomes general (Document part)]. In: Leon Rouest. 1921. Le Soja et Son Lait Végétal [The Soybean and Its Vegetable Milk]. Carcassone (Aude), France: Lucie-Grazaille. 157 p. See p. 22-24. [Fre]

• ***Summary:*** From 1880 to 1896 frequent communications were published in agricultural bulletins from the United States.

The soybean was studied in Russia by Nikitin.

In 1905, Li Yu Ying, councillor 1st class at the Ministry of Agriculture in China, had the idea of soymilk in Europe. In 1906 he created a laboratory in Paris. This laboratory grew into the factory Caséo-Sojaïne, which made all the products derived from the soybean (*produits dérivés du Soja*).

In 1910-11 presentations of soy products (*produits de Soja*) at the expositions at Brussels, Turin, and Dresden.

Mr. Lechartier conducted cultural trials in Bretagne and in the Haute-Vienne, and gave the results of his chemical analyses of the plant.

Dr. J. Le Goff, in the *Gazette des Hôpitaux*, called new attention of hygienic doctors to the use of soya in diabetic diets.

In 1913 it seems to have been imported into Germany for the following note was published in several Frankfurt journals:

An institute has been founded under the name of Soyama-Werke for the purpose of making soymilk (*lait artificiel de graines de Soja*) and other soy products. Soya furnishes to Bockenheim the most important quantity, if not all of the artificial product. Some 5,000 liters per day will be sold on the market in Frankfurt, when the factory is in full swing. The head of this enterprise is a deputy of the Reichstag. The Society Soyama-Werke also makes cream, butter, and cheese. Samples of soymilk have already been used by various bakers in Bockenheim.

This note indicates that in 1913 soybeans had not yet been cultivated in Germany. Dairy farmers were said to fear competition from soymilk. Thus, no doubt, they tried the same thing in Germany that was tried in France, for during the same period a factory, "La Caséo-Sojaïne," installed at Vallées near Asnières (Seine), conducted rather original publicity in favor of soy products. The soybeans processed in the Chinese factory were imported from China and it was realized in advance that the soyfoods, made from a plant absolutely unknown to the public, would not have its favor.

In 1910 Vilmorin had in its catalog Early Podolie soybeans [from Russia]; they had black seeds. But Early Podolie is still too late for the south of France (*midi*).

Dr. Le Goff published new medical articles about soy and tried cultivating it in the area around Paris. He introduced a rather early black-seeded variety (Tokio) that matured in this region.

Messrs. Boulanger and Dausse cultivated this variety at Etrechy (Seine-et-Oise, near Paris) in order to prepare conserves to be packed in boxes for diabetic diets.

Finally in 1918 Mr. Rouest, Director of the Experimental Farm of Neoculture, receive some soybean samples from the United States, via Messrs. Brioux and Semichon. He cultivated them, isolated the mutations, created hybrids, and tested the new varieties that had already been cultivated by Mr. Carles of Carbonnière / Carbonniere in the Tarn. Address: Directeur des Fermes Expérimentales de Néoculture, Carcassonne (Aude), France.

518. Rouest, Leon. 1921. Le lait de Soja dans l'allaitment et alimentation des animaux [Soymilk in the nursing and feeding of animals (Document part)]. In: Leon Rouest. 1921. Le Soja et Son Lait Végétal [The Soybean and Its Vegetable Milk]. Carcassone (Aude), France: Lucie-Grazaille. 157 p. See p. 103-06. [Fre]

• ***Summary:*** Soymilk can be used as a milk replacer, replacing the natural milk of mother calves, lambs, and pigs.

The raising and fattening of young bovines: Calves, when they are young, whether they are destined for reproduction, fattening, or raising, must drink natural milk, at least for about their first 15 days. Today everyone agrees on the purgative effects of the first milk (colostrum), serving to clear out the digestive tract of products which have encumbered it (meconium, a dark greenish mass that accumulates in the bowel during fetal life and is discharged shortly after birth) during its intra-uterine life. It is no big sacrifice to let the calf drink the natural [mother's] milk during the first week, since this milk cannot be used in the human diet, and one would do well to prolong this regimen for another week in order to permit the calf to gain strength and resistance.

Any [solid] food, however well prepared, cannot replace animal or vegetable milk at a young age. The composition of these milks is hard to imitate; the fats and casein are in emulsion in a large volume of water; likewise, the minerals

are in solution.

How could we proceed after the animal has been weaned? The calf should first be given defatted milk, soured, lukewarm with a little bran; other livestock raisers dilute the defatted milk with dish-water and increase the richness of the liquid by the addition of flour and bran. Fairly often, under these conditions, the calf digests this poorly and will not benefit from it as much as desired. This is the reason for it. The defatted milk, left on its own, sours and acidifies, to the degree that its environment is warm and humid. Thus it yields, through decomposition of lactose or milk sugar, lactic acid, which the animals don't like any more than we would like vinegar. In addition, brans and flours contain ferments [enzymes] and harmful germs that, having arrived in the stomach, find an environment favorable to their development. Thus they multiply in number such that the by-products they generate poison the organism [animal]. The young animal often contracts diarrhea and suffers for a long time; sometimes it even dies.

In this situation, when one does not know about soymilk, there is only one remedy, and that would be to give defatted milk, which is sweet and boiled, enriched with starch or meat powder or even flours from seeds that are very rich in protein (beans, broad beans, peas, or lentils). Here I can point out that one can replace these flours, which contain no more than 24-28% protein, with soya flour which contains 45-47%. By virtue of its high protein content, soy flour can be fed at the rate of 150 to 300 gm per day per head as a supplementary feed for calves from 1 to 3 months.

Thus, the feeding of young animals with the plant-based (*végétal*) milk of Soya permits the utilization of defatted animal milk for other purposes: human nutrition, extraction of the lactose for industry, etc. Since the animal milk, when centrifuged, would be a by-product, why not dry it dry it for making bread and biscuits, destined for the human diet.

Raising of young breeding cattle, beef cattle, poultry, piglets, birds, etc. on soymilk. The farmers who raise breeding cattle nourish them with pure milk, for a rather long time and rather copiously as is necessary to obtain elite animals; for all the others, which is the great majority, they measure out the milk to their animals with extreme parsimony / thrift, in the fear that any extra expense would not pay off. We resign ourselves to seeing the calves stagnate during their first month, with the hope of repairing the consequences of this miserable diet later, at a lower cost.

The vegetal Soja milk (*Le lait végétal de Soja*) will, from now on, reduce proportionally the cost of the milk diet such that the breeder will be assured of finding it to his advantage not to reduce the amount of time that this milk is given to the calves.

The prolonged and exclusive use of vegetal milk will be the first step, and the most important one, on the way towards the general improvement of our bovine races and of all our animal races.

The author then gives almost two pages of additional details supporting his basic argument. He notes that male calves, which are not being raised to be breeders or veal, should be killed and sold for their meat at the age of about 5 weeks; feeding them any longer is not cost effective–unless he feeds them defatted milk to which is added meat powder (which always gives red meat [unsuitable for veal]) or potato starch. The same basic concept can also be used for raising young pigs, poultry, other birds, horses, and sheep. Animal milk will then be reserved entirely humans, for use as milk, butter, cheese, and other dairy products. These products, which will be less expensive, could be purchased by people with lower incomes, and that will be the progress that will be made possible by the soybean.

A feed can also be prepared from molasses mixed with soy casein (*caséine de Soja*). In Germany such a feed is prepared with molasses and defatted milk; the casein extracted [from the defatted milk] using an acid and pressure, is mixed with [defatted] peanut press-cake, rice bran, crushed corn / maize, and palmetto flour. Molasses is added to the mass this obtained. It seems that a milk production facility in the center of Berlin, 400-500 quintals of this feed are produced each day. Here is a use for soybeans and their casein that could render a great service to dairy farms, if defatted milk were not used.

Soymilk could also cause the disappearance of so-called milk flours with names such as Lactine, Lactifer, Farine lactée, and Farine lactique. These products are normally not of a lactic nature; they always result from the association of nitrogenous flours and tertiary flours.

One such "lactic flour," which sold for 125 francs per 100 kg (before the war), according to Dr. Delacroix, professor of plant pathology at the National Agronomic Institute, is nothing but very finely ground field peas.

When the farmer cultivates soybeans themselves, whether he transforms them into milk or flour, these dairylike products, put on the market by ingenious industrialists, will be widely used to the great profit of agriculture.

Note: This is the earliest document seen (Aug. 2013) that discusses calf milk replacers in detail.

The next section discusses how soymilk can prevent tuberculosis in both animals and humans. Address: Directeur des Fermes Expérimentales de Néoculture, Carcassonne (Aude), France.

519. Chevalier, Aug. 1922. Rouest (L.)–*Le soja et son lait végétal, applications agricoles et industrielles* [Review of Rouest's book *The Soybean and its Vegetable Milk*]. *Revue de Botanique Appliquee & d'Agriculture Coloniale* 2(5):34-37. Jan. 30. [1 ref. Fre]

• ***Summary:*** Mr. Rouest (of Luxey, Landes) is director of the experimental farms in the southeast of France. He has collected many documents concerning the soybean published in France, the USA, Austria, etc. His book constitutes a

very complete study of soya, especially of its culture and utilization.

Mr. Rouest has conducted soybean trials at the experimental form of Barthes, at Villardonnel (Aude), in the southeast of France, since 1918, starting with varieties from America obtained via Messrs. Brioux and Semichon. He has also tested the new varieties cultivated by Mr. Carles, of Carbonnières, in the Tarn.

Sojalithe, made from soymilk, can replace celluloid. The reviewer concludes: "There is no reason that this crop, whose cultivation has recently expanded so greatly in North America, could not also be increasingly widely cultivated in France and her colonies."

520. Adolph, William Henry. 1922. How China uses the soy bean as food. *J. of Home Economics* 14(2):63-69. Feb. [11 ref. Eng]

• ***Summary:*** This article is quite similar to a 1920 article by Adolph and Kiang titled "The nutritive value of soy bean products," published in *The National Medical Journal of China* (6:40-49). It combines a review of the literature with the author's personal experience in China and a summary of some studies conducted in the Shantung Christian University laboratory on soy bean products. "The soy bean is probably the most universal article in the Chinese dietary. When the Chinese finds it necessary to distinguish between the soy bean and other varieties of bean, he refers to the soy bean as the *yellow* bean (*hwang dou*), and this is the name most common throughout the orient... The use of the soybean in China dates back to the beginning of China's agricultural age under the Emperor Shen Nung. It is mentioned in the *Ben Tsao Gang Mu,* the ancient materia medica, written by Shen Nung himself in the year 2838 B.C."

"The soy bean as such is not very largely used as food in China, but it is the source of a number of products. It would be impossible to make a complete list of all these. The best known and the most important are the bean milk, bean curd, bean sauce (soy), bean sprouts, bean oil, and bean cake. The student of nutrition is particularly interested in the bean curd or 'bean cheese.'" There are four agents employed in China to make soy bean curd, often called Chinese cheese. "These are: (1) *lu,* the solid residue prepared by the evaporation of salt bittern; (2) gypsum; (3) *swan giang,* the soured bean milk whey remaining from the previous coagulation of bean curd; and (4) vinegar.

"In spite of the tremendous consumption of bean curd in China, the industry does not center in large factories, but myriads of small shops, as numerous as our own candy stores and fruit stands, make and supply the daily needs in bean curd for the millions throughout the Chinese republic. Every small town has at least one bean curd shop. Good bean curd must be manufactured fresh every day. The coagulated curd is white in color and resembles our cottage cheese. After coagulation it is pressed between cloths, cut up into squares or moulded into cakes about five inches in diameter and an inch thick, and sold to the Chinese housewife. A cake of the size indicated costs approximately $0.01 in U.S. currency. The cakes of bean curd may also be salted and dried, yielding a product which resembles our cream cheese.

"Tradition says that the manufacture of soy bean curd was originated in China in 164 B.C. during the reign of the Emperor Han Wen, by a man named Liu An, the duke of Hwai Nan. The common Chinese name for soy bean curd is *dou fu,* often romanized *tofu;* and the classical name is *li chi,* probably meaning 'the morning prayer.' It is interesting to note that in China at the present day the bean curd is made in the early hours of the morning, and sold at daybreak.

"Liu An was a great friend of the Buddhist monks, and it seems quite probable that he invented this bean curd in order to provide a change or delicacy to break the monotony of the monastic ration. As a matter of fact, bean curd is a real delicacy if carefully made and well cooked. Chinese who are connoisseurs on the subject assert that when so prepared it has the taste of pig's brain. Americans and Europeans eating Chinese food often eat carefully prepared bean curd thinking it is pork. With sugar it produces a dish like custard. Prepared with salt it resembles scrambled eggs.

"The Tsinan variety of bean curd is made exclusively with the use of *lu* as a coagulating agent. In the following table the analyses of bean curd are compared with that of common cottage cheese."

Table II gives an analysis of both fresh and dried soy bean curd, and compares them with cottage cheese. Table III gives an analysis of the ash of soy bean curd and soybeans.

Soy bean milk is discussed and Table IV gives its composition (4.22% protein, 1.87% fat), plus that of cow's milk (3.3% protein, 4.0% fat) and bean milk whey.

"Soy bean sprouts. Soy beans soaked in water and allowed to sprout are much relished as a vegetable by the Chinese. Very considerable quantities of soy bean are used in this way. The sprouts are usually cooked in oil, and produce a dish which appeals very strongly to the taste of Americans in China. It is strongly recommended for use as a vegetable on the American table." Table V shows that soy bean sprouts contain 5.7% protein and 0.8% fat.

"The soy bean cake is the press-cake which remains behind after the removal of the soy bean oil in the press mill. The orient has used soy bean cake for cattle feed and for fertilizer. It is of note that it contains a high percentage of nitrogen, but, economical though the Chinese have been, they do not seem to have attempted to convert it into a human food. Only recently has it been very seriously suggested that both in the occident and in the orient this rich nitrogenous material should be converted into some form of food for human consumption. During the north China famine of 1920-1921, the soy bean cake was actually used in the starvation diets to bolster up a failing food supply."

"Discussion: The Chinese people make practically no

use of dairy products, and the bulk of the people consume very meagre amounts of meat. Yet in spite of this they have lived for centuries on what appears to be a remarkable well-balanced diet by the use of the soy bean...

"A number of interesting examples are found in China of the use of bean curd as an agent for growth. One of the writer's Chinese colleagues, whose home is in Anking, has observed that dealers in birds employ bean curd as the sole food for infant birds. The birds are robbed away from their nests immediately after they are hatched, and are then fed bean curd to tide over the infantile period till able to feed themselves. Still more interesting is the case of the true Buddhist monk who from birth is consecrated to the priesthood, and is carried through the period of childhood growth on a rather heavy diet of bean curd... The country monastic diet is noted for its high content of soy bean products...

"The Chinese coolie... in spite of the scanty intake of meat and the constant exposure to overwhelming sources of infection, still does possess a wonderful resistance. The diet of the average coolie contains a surprisingly large amount of beans and bean products...

"A common saying in some parts of China terms 'bean milk the poor man's milk, the bean curd the poor man's meat.' This simply indicates the extent to which bean curd has been incorporated into the diet of the Chinese...

"Soy bean propagandists have been especially enthusiastic over the introduction of soy bean curd into America. Dr. Yamei Kin, a Chinese dietitian, has become particularly well-known as an exponent of bean curd on her visits to the United States."

Note 1. This is the earliest document seen (April 2013) that uses the terms "poor man's meat," or *li chi* or *dou fu* or "bean cheese" or "Chinese cheese" to refer to tofu. Use of the word "bean cheese" is confusing, since it could also refer to fermented tofu (also called "Chinese cheese" or "bean cake").

Note 2. This is the earliest document seen (Aug. 2003) that uses the term "poor man's milk" to refer to soymilk. Address: Assoc. Prof. of Chemistry, Shantung Christian Univ., China.

521. Sato, Y. 1922. Bean industry and its scientific study. *Light of Manchuria* No. 20. p. 1-33. April 1.
• ***Summary:*** Contents: Introduction. 1. Bean [soya bean] industry: Utilization of fat and bean oil, refining of bean oil (clarification of bean oil by precipitation, bleaching of bean oil {bleaching by clay, by carbon, by sun's rays, by heat, by chemicals}, refining by alkali, deodorizing), manufacture of derivatives (bean oil for paint manufacture, making of water proof from bean oil, substitute of India rubber from bean oil, substitute for hardened oil, lard and butter, manufacture of liquid fuel [petroleum] from bean oil). 2. Chemical industry using legumin: Industrial uses of bean cake, manufacture of plastic substance from legumin. 3. Beans as a food stuff: Introduction, bean milk (artificial milk; Melhuish 1915 British Patent, Goessel 1917 Dutch Patent, Japanese Patent no. 28,346), bean coffee and bean chocolate, food made from bean flour (bean powder or flour, roasted bean flour, and fat-free bean flour), hints on manufacture of food from nutritive point of view. Conclusion.

"What is now in the highest demand in Europe and the United States is not [soya] Beans themselves, but Bean Oil or various products made therefrom." "It may be said that the rapid development of the economic Manchuria has been accelerated by [soya] Beans. The future of the Manchurian industry may well be said to depend a good deal on Beans." Address: South Manchuria Railway Co., Agricultural Office.

522. Domaschintzky, Julius. 1922. Improvements in and relating to synthetic milk. *British Patent* 157,352. April 10. 2 p. Application filed 10 Jan. 1921. [Eng]
• ***Summary:*** About 0.07% of sodium nitrate (on the dry beans) is added to the alkaline washing liquid to decompose the amines present. Address: 1, Marokkassergasse, Vienna, Austria.

523. *Toronto Daily Star* (*Canada*). 1922. Milk from soya bean being made in Vienna [Austria]. April 19. p. 8.
• ***Summary:*** This is a summary for an article from Scientific American [sic]. "'Manna' milk from the soya bean is now being made in Vienna at one-sixth the cost of fresh cow's milk. In proteid, carbohydride [carbohydrate] and fat content, and in color, it closely resembles cow's milk, being, or course, free from milk-borne diseases. Butter and cheese [tofu] can also be made from the bean, and 'manna' flour, one part of which equals in nutritive value two parts of meat and one-third part of wheat flour. So, at least, Dr. Berczeller, a young Hungarian scientist tells us; he designates the soya bean as an ideal food containing 40 per cent albumen and 20 per cent fat."

Note 1. As of Aug. 2011, we have been unable, searching Google Books and the magazine itself, to find this article in *Scientific American.*

Note 2. This same article appeared in *The Labor Digest.* 1922. June p. 40 (Vol. 14, No. 3).

524. *Washington Post.* 1922. Bean that is a cow. April 28. p. 23.
• ***Summary:*** "The world's demand for soy beans is steadily increasing, and China's export of them bids fair soon to surpass in value that of its silk output. There are more than 1,000 varieties of soy beans, from which an experiment station at Kung-chu-ling, in southern Manchuria, has chosen one as the best of all. It is nearly spherical, yellow in color," and the size of a small pea. It yields 22% of its weight in oil when crushed. "The soy bean yields milk and butter (or products equivalent for table use), as well as a great variety

of other edibles, including a famous sauce [soy sauce]. Taken all in all, the soy bean is one our most versatile vegetables."

525. *Los Angeles Times.* 1922. "Manna" from soya bean. May 21. p. IV12.
• ***Summary:*** From Scientific American: "'Manna' milk from the soya bean is now being made in Vienna at one-sixth the cost of fresh milk. In proteid, carbohydride [carbohydrate] and fat content, and in color, it closely resembles cow's milk, being, or course, free from milk-borne diseases. Butter and cheese [tofu] can also be made from the bean, and 'manna' flour, one part of which equals in nutritive value two parts of meat and one-third part of wheat flour. So, at least, Dr. Berczeller, a young Hungarian scientist tells us; he designates the soya bean as an ideal food containing 40 per cent albumen and 20 per cent fat."

526. Remy, E. 1922. Ueber Sojabohnenmilch [On soymilk]. *Zeitschrift fuer Untersuchung der Nahrungs- und Genussmittel* 43(12):380-81. June 15. (Chem. Abst. 16:3714). [2 ref. Ger]
• ***Summary:*** Gives a chemical analysis of soymilk and compares it with cow's milk. A sample of soy bean milk, yellowish-white in color and having a sickly sweet taste and a faintly acid reaction, gave the following results on analysis: 88.93% water, 11.07% dry matter, 3.06% fat, 8.01% non-fatty solids, 2.96% protein, 0.57% starch, 2.48% glucose, 0.63% mineral matter, 6.44 cc of 1 normal acid alkalinity of ash, 4000 germs per cc. The gross energy content was 54 calories (cow's milk 70 calories). Content of food- units was 27 (cow's milk 34). The price of the soy bean milk at the time of the investigation was the same as that of cow's milk. It cannot therefore be considered to be an economical substitute for cow's milk. Address: Chemical Dep., Hygienic Inst., Univ. of Freiburg.

527. *San Francisco Chronicle.* 1922. The Chinese make out of the soy bean... Aug. 19. p. 9.
• ***Summary:*** "... a substance strongly resembling milk in color, taste and chemical composition."

528. Ehret, Arnold. 1922. The truth about stimulants and condiments. *Herald of Health and Naturopath* (*New York City*) 27(10):481-83. Oct.
• ***Summary:*** "Alcohol, coffee, cocoa, teas, tobacco, salt, pepper, etc., and sugar are all together poisons; so I was told when I was interested in dietetics after physical treatments had improved my conditions, but failed to heal me perfectly... I was a 'strict' vegetarian.

"Today my general attitude to these 'poisons' is this: In general they are, if used in a moderate way, far less harmful than over-eating,... They stimulate more or less at the expense of vitality and the efficiency of the nerves; but they don't produce nor do they leave any substantial waste in the body like meat, eggs, milk, fats and starchy foods." Address: Prof.

529. Kneipp Store. 1922. Health foods. Toilet articles (Ad). *Herald of Health and Naturopath* (*New York City*) 27(10):512-13. Oct.
• ***Summary:*** Under "Health foods: Breads and specialties. Diabetic foods and remedies (incl. Gluten bread). Laxative foods and remedies (incl. bran bread, crackers, wafers, and cookies). Cereal coffees (8 brands). Tea substitutes and health cocoas. Nut butters, honey and jellies (incl. Carqué's almond butter, Lust's peanut butter {roasted or unroasted}). Vegetable extracts, food additions and olive oil. Unfermented imported wines. Unsulphured, sundried fruits (incl. Black Mission Figs). Meat substitutes (Protose, Nuttose, Vegetable Meat or Roast, Vej-Meat or Vej-Roast, Watson's Nut Meat, Beans–Kidney, Soya, or Navy, Bromose–Nut or Fig, Mushrooms). Cereals (11 brands, incl. Carqué's Natural Whole Rice).

Note: The "Health Foods" half of this add appeared in the Sept. 1925 (p. 854) issue of this magazine. Address: 110 East 41st St., New York City.

530. Zlatarov, Asen; Trifonow, Iw. 1922. Die bulgarische Sojabohne [The Bulgarian soybean]. *Zeitschrift fuer Untersuchung der Nahrungs- und Genussmittel* 44(4):214-15. Oct. (Chem. Abst. 17:835). [1 ref. Ger]
• ***Summary:*** The mean analysis of 9 samples of black and yellow soy beans from different parts of Bulgaria is as follows: 10.91% water, 36.76% protein, 18.57% fat, 25.27% nitrogen-free extract, 3.94% crude fiber, and 4.75% ash. The fat content is high compared with other European soy beans. The papuda bean (*Phaseolus radiatus*) [azuki bean?], which is somewhat similar to the soy bean in appearance, and much cultivated in Macedonia, only contains half the quantity of protein and from 1/10 to 1/15 the quantity of fat. Two samples of artificial milk prepared from Bulgarian soy beans gave the following analyses: 90.53%/88.19% water, 5.3%/6.04% protein, 2.21%/2.94% fat, 1.18%/1.90% carbohydrates, and 0.78%/0.93% ash. Address: Chemical Institut, Univ. of Sofia.

531. Groud, Charles. 1922. Les laits végétaux [Vegetable milks]. *Vie Technique et Industrielle* (*Paris, C. Beranger*) 4:312+. [Fre]*
• ***Summary:*** Part of this article is about soymilk. Note: WorldCat says this is a periodical, published at Paris and Liège by C. Béranger from 1919 to 1930.

532. Arnbrecht, Jacob. comp. 1922. Hygienic cook book: A collection of choice recipes carefully tested. Revised and enlarged. Battle Creek, Michigan: Shaw Printing Company. 416 p. Index. 21 cm. [10 ref]
• ***Summary:*** This is a Seventh-day Adventist vegetarian

cookbook (which includes dairy products and eggs), containing much basic information about nutrition and hygiene. A full-page table titled "Typical foodstuffs representative of each food nutrient" (p. 14) lists soy beans as a food that contains protein, but less than is found in eggs, meat, milk, or cheese. It also notes that soy beans are "Starchless." A half-page table titled "Classification of proteins" (p. 18) states that the proteins legumin and glycenin [sic, glycinin] are found in soy beans. The chapter titled "Entrees" contains a recipe for "Soy bean loaf" which includes 1½ cups soy bean puree and ½ cup peanut butter. This is the only soy recipe in the book. This same chapter contains many recipes using "substitutes for flesh meats" (such as Protose, Nuttolene), and other innovative ingredients (gluten meal, ground nut meats, vegetable butter, nut butter) made by Seventh-day Adventist companies. Recipe names include: Vegetable meat. Vegetarian beefsteak. Mock veal pie.

Cellulose (p. 26): It "has no nutritive value, but because it is not digested in the human body it forms the larger part of the ballast or bulk of our food which is so necessary to a normal intestinal movement. It stimulates peristalsis by acting as a gentle mechanical irritant." Those who have a tendency to "sluggish intestinal movement" may want to add bran to their food or consume a diet consisting of "a greater proportion of foods which contain a large amount of 'roughage' or ballast, such as green vegetables, fruits, and whole grain products."

Note: This is the second earliest Seventh-day Adventist cookbook seen (Oct. 2004) that contains a recipe using soybeans or soy ingredients.

Also discusses: Lecithin (p. 28; soy is not mentioned). Food combinations (good, fair, and bad; p. 44). Acid and alkali forming foods (p. 48). Natural diet of man. Shall we eat meat? Dangers of disease in meat. Was flesh first used before or after the flood? (p. 50-55). Diet for constipation: Lists of laxative foods to be recommended and avoided (p. 147-49). Sago is used in puddings (p. 237). Many desserts contain a great deal of sugar, plus eggs and milk; others use "vegetable gelatine" (p. 262). Pies use butter, peanut butter, granola, etc. Whole wheat bread/flour is different from Graham bread/flour (p. 293). Recipes for gluten bread, and Gluten biscuit or sticks (p. 301), and Gluten mush (p. 319). Chapter 32, titled "Nut preparations" (p. 375-77) contains a recipe for peanut butter using two processes, one of which calls for a Quaker City Mill. Recipes for Almond milk (p. 382). Peanut candy (p. 394).

533. Beythien, Adolf. 1922. Volksernaehrung und Ersatzmittel [Popular nutrition and substitute foods]. Leipzig: Chr. Herm. Tauchnitz Verlag. xvi + 562 p. See p. 298-99. Index. 24 cm. [Ger]

• ***Summary:*** This book strongly reflects the influence of World War I, when many *ersatz* or "substitute" foods had to be made in Germany. In the section on meat alternatives (*Fleischersatzmittel*) is a listing of such alternatives by brand (such as "War meat") with the ingredients in each. Soybeans and yeast are mentioned separately (p. 133) as an important source of protein in such products.

The section on artificial milk (*Kunstmilch*) notes (p. 217) that although almond milk or "vegetable milk" (*Vegetabilen Milch*) is the best known, other good milk alternatives can be made by finely grinding other oil-containing seeds such as soybeans, peanuts, and hazelnuts with water and a little sugar or other sweeteners. Soymilk patents by Goessel and by Melhuish are described briefly.

A section titled "The soybean" (p. 298-99) notes that this versatile legume is widely used in East Asia, and has long been valued in Europe like lupins and chestnuts as a healing food in times of food shortages. During the War, the defatted meal was used in Germany in baked goods such as Agumamehl and Burtamehl, which also contained added rice starch, 7.22% fat, 40.28% protein, and 5% ash.

The section on dry soups (p. 334) mentions *Soja-Suppe* and *Sojama-Suppe.* Note: Suppe means "Soup." In the section titled "Legumes," a table (p. 337, based on König) gives the composition of eight legumes, including soybeans.

Also discusses: Quark and quark cheese (p. 224-25). Margarine (p. 275-77). Lupins (p. 299-300, 334). Bambarra groundnuts (*Voandzeia subterranea;* p. 340).

The author, a professor and doctor, was born in 1867. Address: Director of of the Office of Chemical Investigations (*Chemischen Untersuchungsamtes*), City of Dresden [Germany].

534. Cooper, Lenna Frances. 1922. The new cookery. 8th ed., revised. Battle Creek, Michigan: The Modern Medicine Publishing Co. 449 p. Index. 23 cm.

• ***Summary:*** Contents: 1. Food values. 2. The art of preparing foods. 3. Beverages. 4. Cereals. 5. Fermented breads. 6. Unfermented breads. 7. Sandwiches. 8. Dairy products. 9. Cream soups. 10. Plain soups. 11. Meat substitutes and entrees. 12. Macaroni and Italian pastes. 13. Eggs. 14. Gravies and sauces. 15. Vegetables. 16. Salads and relishes. 17. Toasts. 18. Fruit Desserts. 19. Custards and cold desserts. 20. Frozen desserts. 21. Pastry and pies. 22. Cakes. 23. Cake fillings and frostings. 24. Hot puddings. 25. Sauces for puddings. 26. Canning and preserving. 27. Special dishes for invalids. 28. Balanced menus."

Soy is not mentioned in this Seventh-day Adventist vegetarian cookbook; soy flour was mentioned in 9th edition (1924).

This book is dedicated to the author's mother. Page 13 states: "The author wishes to express her indebtedness to Dr. and Mrs. John Harvey Kellogg, of the Battle Creek Sanitarium, who have inspired her with a love for the study of foods and their scientific preparation and who have since been constant sources of help and encouragement."

With each recipe is given the calories in the recipe and per serving from protein, fat, carbohydrate, and total. Interesting items: Cereal coffee, Kaffir tea, and Health Koko (p. 33). Yogurt buttermilk and Orange yogurt (p. 34-36). Sterilized bran (p. 44). Graham mush with dates, Gluten mush, and Creamed gluten mush (with 1 cup 20% Gluten Meal, p. 47). Granola fruit mush (p. 49-50). Graham bread (p. 54-55). Peanut butter sandwiches (p. 84-85). Protose sandwiches (p. 85). Cream of almond soup (p. 104-05). Noodle soup with Savora (p. 126-27). Chapter 11, titled "Meat substitutes and entrees" contains many interesting recipes, including some commercial products made by SDA companies: Roast Protose with dressing (p. 129). Protose fillet (p. 130). Nut fillet (with Protose and Nuttolene, p. 131). Fillet of nut meat (with Protose and Cereal Coffee, p. 131). Nut meat loaf (with Protose and Nuttolene, p. 143). Vegetarian ham (with Nuttolene, Protose, and Savora, p. 143). Nut patties. Nut chops (with peanut butter, p. 144-45). Peanut roast (p. 145-46). Jellied peach (with 1 cup sugar, p. 284). Spanish cream (with 3 cups hot milk, 3 eggs, and ½ cup sugar, p. 285). Hot Malted nuts (with ¼ cup dry Malted Nuts, p. 386). Hot Malted Milk (with 4 tablespoons Malted Milk, p. 386). Almond cream (p. 388). Meltose ice cream (with 1 cup Meltose, p. 389). Almond ice (with 6 tablespoons almond butter, p. 389). Frozen malted nuts (with 1½ cups Malted Nuts, p. 390). Gluten bread (with 3.75 cups 40% Gluten Flour, p. 390-91). Gluten puffs (with 1 cup 40% Gluten Flour, plus soda and hydrochloric acid p. 391). Note: In 1923 Lenna F. Cooper was secretary of the American Home Economics Association (see *Journal of Home Economics*, Oct. 1923, p. 588). Address: Director of the Battle Creek Sanitarium School of Home Economics, Head Dietitian of the Battle Creek Sanitarium [Battle Creek, Michigan].

535. Martindale, William Harrison; Westcott, W. Wynn. 1922. The extra pharmacopoeia of Martindale and Westcott. 17th ed. (Reprint) 2 vols. London: H.K. Lewis & Co., Ltd. See vol. I, p. 568, 597, 824; vol. II, p. 369, 414-15. Index. 17 cm. [14 ref]

• ***Summary:*** The Preface to volume I notes that the last edition was issued in Jan. 1915, shortly after the European war began. The war was caused by "Germany's long conceived desire to ruin and destroy the British Empire–her best friend commercially..." During the war, brilliant German chemists and chemical factories quickly changed over "to the manufacture of explosives and poison gases"–such as mustard gas.

In the long chapter titled "Materia Medica, Official and Non-Official, alphabetically arranged" is a section on "Nutrimenta" (p. 562-79) that describes foods which can be used as medicines. In the subsection on "Milk preparations" (p. 567-75) we read (p. 568): "Synthetic milk. *Syn.* *Solac (T.M. 346623) [Trade Mark, British registered]. Soya beans are ground to a coarse flour and stirred vigorously in an alkaline solution to extract the soluble proteins. The oil, which is nauseous to the taste, is carefully removed. Finally Arachis and Sesame Oils, Dextrin and the remaining salts of milk are added; after emulsifying, *B. Acid Lactic* is added. The average fat content is 3.5%.

"*Melco* is also made using Pea Nuts as the source of Albumin. The methods are subjects of patents by W.J. Melhuish, (*The Practitioner* {London}, Vol. 10, No. 115, p. 80; *Pharmaceutical Journal and Pharmacist* {London}, Vol. ii, 1916, p. 297; *British Medical Journal*, Vol. ii, 1915, p. 646; Vol. 1/18/430).

"D.F. Ritchie writes that he experimented in the matter some years ago and found that a milk can be made by grinding up Soya Beans with a small quantity of water, and then adding enough water to make an emulsion, but Soya Beans as such cause considerable gastric disturbance (*Pharmaceutical Journal and Pharmacist* {London}, Vol. ii, 1916, p. 244; See also F. Golby, *Pharmaceutical Journal and Pharmacist*, Vol. ii, 1916, p. 214).

The section titled "Oleum papaveris" (p. 597-98) is identical to that in the 1915 edition.

In the chapter titled "Supplementary list of drugs" is a long section (p. 824) on "Soya Bean.–*Glycine Hispida* (*Leguminosae*)." It is identical to that in the 1915 edition.

The next two sections (p. 824) state: "Synthetic Milk *q.v.* has been made from the bean.

"Sarton (T.M. 322562) is a preparation of the bean for use as a diabetic food.

The next section, titled "Soya Oil" (p. 824) is almost identical to that in the 1915 edition.

In Vol. II, the section titled "Lecithin" (p. 87-88) is very similar to that in the 1915 edition; soy is not mentioned. In the chapter on "Analytical memoranda," the section on estimation of urea in the blood (p. 369) notes that "Urease contained in Soya Bean is used. It converts urea quantitatively into Ammonium Carbonate, but has no effect on other nitrogen constituents. (The hydrolysis is complete in 15 minutes.)... Caprylic Alcohol is used in conjunction with the Soy Bean flour. See for further details, pp. 414, 415."

The section titled "Urease method of estimating urea" (p. 414-15) begins: "Mix 25 Cc. of the urine with a pinch of powdered Soy Bean flour (2 to 3 Gm.)... It must be remembered that the urease [in the soy bean flour] attacks [hydrolyzes] only *urea*, 1 molecule of urea producing 1 molecule of Ammonium Carbonate." Details are given. can be used.

William Martindale lived 1840-1902. Volume I also discusses: Gluten (p. 576-77–Synonym: Vegetable Albumin). Diabetic foods (p. 576-77, incl. starchless bread; soy is not mentioned). *Oleum sesami* / Sesame Oil (p. 603-04; also called Benné oil, gingelli oil, teel oil). *Arachis Hypogæa.* (p. 780; also called Pea Nut, Ground Nut Goober Nut, Manilla grain [Manila grain], Chinese Almond).

Volume II also discusses: Proprietary medicines (p. 562-81, incl. Carter's Little Liver Pills, Ovaltine, and Pinkham's (Mrs. Lydia E.) Vegetable Compound, Woodward's Gripe Water). Address: 1. Ph.D., F.C.S.; 2. M.B.Lond., D.P.H.

536. Rouest, Leon. 1922. La culture du soja [Cultivation of soya]. In: Congrès de la Production Coloniale, Marseille. 1922. *Mémoires et Rapports sur les Matières Grasses* [Memoirs and Reports on Oils and Fats. Vol. 1]. Marseille [Marseilles], France: Institut Coloniale. 476 p. See vol. 1, p. 344-57, 449-51. 28 cm. [100+ ref. Fre]

• ***Summary:*** This paper is largely taken from the chapter on soybean cultivation in Rouest's 1921 book titled *Le soja et son lait végétal: Applications agricoles et industrielles* [The soybean and its vegetable milk. Agricultural and industrial applications]. However the bibliography for the soy chapter (p. 449-51) is largely new.

Contents of soy chapter: Soybean varieties tested in France: Yellow soybean, Soja d'Etampes, very early soybean (black), Wilson Five, extra early from Podolia, very early brown (selected by Mr. Carles de Carbonnière and tested at Barthes in 1920). The soybean on the Experimental Farms for New Crops in France. Sowing soybeans. Heat units required for soybean germination (2500º to 3000º). Importance of plant spacing. Quantity of seed per hectare. The soybean during its vegetative growth. Comparison of the vegetation of the soybean and the haricot at high altitudes. Rolling the seeds (*Roulage des semis*) and crop maintenance. Growth of the plant. The state of being acclimatized. Enemies of the soybean.

Most soybean varieties grown on the Experimental Farms for New Crops come from America. In 1920 the first ones arrived at maturity. These American varieties include: Wilson Five, Haberlandt, Tokio, Virginia, Hato [Hahto], and Early Medium Green. The writer has applied the principles of genetics, as articulated by Hugo de Vries, Blaringhem, Bateson, etc., in working with these soybeans. Discusses the work of l'abbé Vieules with soybeans in le Tarn, at l'Institut Génétique de Nages; he grew soybeans at an altitude of 800 meters (p. 349, 353, 355). Dr. Valette grew Manchurian soybeans and harvested them at the end of September.

Contains a long bibliography of many crops, by crop (p. 403-468); the bibliography on Soja is on pages 449-51. Address: Director of the Experimental Farms for New Crops, France (*Directeur des Fermes Expérimentales de Néoculture de France*).

537. Oshima, Kokichi; Church, Margaret B. 1923. Industrial mold enzymes. *Industrial and Engineering Chemistry* 15(1):67-70. Jan. [13 ref]

• ***Summary:*** "A new method for quantitative estimation of protease is described in this paper. Many strains of the *Aspergillus flavus-oryzae* group, which were separated from tane-koji used in shoyu manufacture and related industries, showed individually the production of amylase and protease of widely different strengths... Even on soy-bean flour, which contains no starch, strong amylase is produced."

The molds were cultivated on various media, including "soy-bean milk agar." "Experiments here show that extracellular and intracellular enzymes are the same, and after a certain period of growth all enzymes are excreted."

On page 68 is a reproduction of an interesting label, written in both Japanese and English, on an envelope containing "commercial mold ferment." The English-language portion reads: "Pure Cultured Aspergillus Soja. Registered Trade Mark." Illustrations show conidiophores of Aspergillus.

Photos show: (1) A worker in or near a koji room with koji trays inoculating the ingredients for making soy sauce with the mold ferment, *Aspergillus flavus.* (2) A series of modern, brick-walled koji rooms with wooden doors. Address: 1. Hokkaido Imperial Univ., Sapporo, Japan; 2. Bureau of Chemistry, USDA, Washington, DC.

538. Hamburger's Grocery Store. 1923. Go to Hamburger's Grocery Store for Health Foods (Ad). *Los Angeles Times.* Feb. 7. p. II20.

• ***Summary:*** "We carry the most complete line to our knowledge on the West Coast. Established 1881. 'Some ha' meat who canna' eat'–then it is they seek the most appetizing, most nutritious health foods. Hamburger's has searched this country and abroad to bring the best to you. One entire department is given over to health foods alone..." Two lines of health foods are advertised: Eugene Christian Vitamin Foods (Vegex brand), and Battle Creek Sanitarium Health Foods. For the latter: "- new goods arriving daily. Laxa–a combination of sterilized wheat, bran and Ceylon agar. Calax, Paramels, Paralax, Lactose, Dextrine, Acidophilus Lactose, Dialtetic [sic, Diabetic] Bran, Cooked Bran, Soy Biscuit, Black Fig, White Fig and Prune Marmalade, Gluten Meals, Malted Nuts, Yogurt Tablets. Among the many meat substitutes are Protose, Nuttose and Nuttolene."

"Free delivery, convenient charge account and special phone service." Groceries delivered free twice a day.

Note: A similar but larger ad appeared in 11 April 1923 issue, p. II22. Here we read "Diabetic Bran, Soy Biscuits." Address: Fourth Floor [Broadway at Eighth, Los Angeles]. Phone: Broadway 3940.

539. Thevenot, Gaston D. 1923. Process of making vegetable milk [from soy beans]. *U.S. Patent* 1,444,812. Feb. 13. 3 p. Application filed 21 Feb. 1922.

• ***Summary:*** "It is well known that vegetable milk may be obtained from a number of legumes, but among these the soy bean is to be preferred because of the fact that it contains the nourishing properties found in cow's milk to a larger degree than other legumes at present available. The use of this bean,

however, is attended with some objections, the principal one being the taste. Another objection is the color...” To prepare vegetable milk from soy beans, soak the beans in water at a temperature not exceeding 50ºC for about 4 hours, draw off the water, then soak in cold water for 10-12 hours. Grind or mash the beans with the spargings of boiling water such that the whole mass is raised to approximately 70ºC, but not substantially higher. “The effect of this treatment is to practically eliminate the disagreeable beany taste already referred to.” After a few minutes, run the mass “into a filter press or centrifuge. The resulting filtrate is a milky substance containing many desirable constituents of ordinary milk although lacking in some of the ingredients. For instance, it is deficient in salt and sugar.” It may be bottled for future use, or evaporated to any desired consistency, or formed into a powder. Or salt, sugar, and sodium bicarbonate may be added–the latter to neutralize any acid. Address: New York City, New York.

540. Piper, Charles V.; Morse, William J. 1923. The soybean. New York, NY: McGraw-Hill Book Company, Inc. xv + 329 p. Feb. Illust. Index. 24 cm. Reprinted unrevised in 1943 by Peter Smith Publishers, New York. [563 ref]

• ***Summary:*** This is the first comprehensive book about the soybean written in English, and the most important book on soybeans and soyfoods written in its time. Contains an excellent review of the world literature on soybeans and soyfoods with a bibliography on soy that is larger than any published prior to that time (563 references), a good description of the present status of the soybean worldwide based on the authors’ extensive contacts, and a great deal of original information. It quickly became a key source for people and organizations working with soybeans and soyfoods in all countries, and a major factor in the expansion of the soybean in the western world. Because of its scope and influence, Soyfoods Center considers the year of its publication to mark the end of the “Early Years” of the soybean worldwide. It remained in print until about 1986.

Contents: Preface. 1. Introduction: Name of the plant, origin, literature, use by the Chinese and Japanese, present importance, future prospects in the U.S., recognition of the possibilities. 2. The commercial status of the soybean: Manchuria and China, Japan, Europe, U.S., other countries, summary of imports and exports of soybeans and soybean oil. 3. Botanical history of the soybean: History prior to Linnaeus’ “Species Plantarum” 1753, Linnaeus’ misunderstandings of the soybean, Prain’s elucidation, other and the correct botanical name.

4. Agricultural history of the soybean: Vernacular names of the soybean, China, Korea, and Japan, India and neighboring regions, Cochin China, Malayan region, early introduction into the United States, later U.S. introductions, the early introduced varieties (grown in the USA by 1898–Ito San, Mammoth, Buckshot, Guelph or Medium Green, Butterball, Kingston, Samarow, Eda, Ogemaw or Ogema), soybean in Europe, varieties grown in Europe and identification, Hawaiian Islands, Australia, Africa, Argentina (p. 50), Canada (“Soybeans are grown in very small quantities in Canada and then usually as a forage crop”), Philippines, Egypt, Cuba (p. 52), British Guiana, Mauritius (p. 53), present culture distribution. 5. Culture of the soybean: Climatic adaptations, soil preferences, water requirement, preparation of seed bed, time of planting, methods and rate of seeding, seeding for pasturage, depth of seeding, inoculation, fertilizer reactions, cultivation, soybeans in mixtures (with cowpeas, sorghums, Sudan grass, Johnson grass, millet, corn, or sunflowers and corn).

6. Harvesting and storage of soybeans: harvesting soybeans for hay, silage, for the seed, seed yields, proportion of straw to seed, storing seed, separation of cracked from whole soybean seed, viability of soybean seed, pedigreed, inspected, registered, and certified seed. 7. Composition of the soybean: Proportions of stems, leaves and pods, composition of plant and seed, nutritive and mineral constituents, forms of nitrogen in soybean nodules, factors affecting oil content of seed. 8. Utilization of the soybean: Diversity of uses (a chart, p. 129, shows 59 products that can be made from soybean seeds, and 6 more that can be made from soybean plants), soybeans for green manure, pasturage, soiling, ensilage, hay, straw.

9. Varieties: Japanese, Manchurian, botanical classifications, vital characteristics, descriptions of important varieties, key for identification, breeding and improvement, genetic behavior, oil content.

10. Structure of soybean seeds. 11. Soybean oil: Methods of extraction [Manchurian, and solvent], American oil mills, methods of shipping and marketing, prices, utilization in soap manufacture, food, paint manufacture, miscellaneous. 12. Soybean cake or meal: Feeding value, composition, use for feeding for dairy cows, cattle, swine, sheep, poultry, digestibility, injurious effects, fertilizer.

13. Soybean products for human food: Food value of the soybean, digestibility of the soybean and its products, mature or dry soybeans, immature or green soybeans (a “nutritious green vegetable”), soybean flour, digestibility of soybean flour, soybean bran (p. 225-26), soybean sprouts, soybean coffee, soybean or vegetable milk [soymilk] (preparation, composition, residue from the manufacture of vegetable milk [okara], utilization of soybean milk, condensed vegetable milk, vegetable milk powder, fermented vegetable milk), vegetable casein, tofu or soybean curd (names and brief history, method of manufacture, coagulating agents, manufacturing yields, digestibility, utilization of bean curd and manufactured products, bean curd brains or *tofu nao*, dry bean curd or *tofu khan*, thousand folds {*chien chang tofu*}, fried bean curd {*tza tofu*}, Fragrant dry bean curd {*hsiang khan*}, frozen tofu {*kori tofu*}, Chinese preparation, various dishes), natto, hamananatto [hamanatto], yuba, miso, shoyu

[soy sauce], confections. 14. Table dishes of soybeans and soybean products: mature or dry beans, flour, tofu, sprouts (86 recipes). 15. Enemies of the soybean: bacterial, mosaic, fungous [fungus], and nematode diseases, insects, rodents. This last chapter is a comprehensive review of the literature on soybean diseases and insects published before 1922.

The Preface begins: "The soybean, also known as soya or soja bean, has assumed great importance in recent years and offers far-reaching possibilities of the future, particularly in the United States. It is, therefore, desirable to bring together in a single volume the accumulated information concerning this crop...

"The aim has been to present the information so as to make it useful from both agricultural and commercial standpoints, not omitting, however, much that is mainly of historical or botanical interest..."

The introduction begins: "There is a wide and growing belief that the soybean is destined to become one of the leading farm crops in the United States."

Note 1. C.V. Piper lived 1867-1926. Note 2. This is the earliest English-language document seen (July 2003) that uses the term "soybean bran" to refer to soy bran.

Note 3. This is the earliest document seen (July 2003) in which Piper or Morse describe natto, Hamananatto [Hamanatto], yuba, or miso.

Note 4. This book was published by March 1923 (See *Ohio Farmer,* 10 March 1923, p. 313). Address: 1. Agrostologist; 2. Agronomist. Both: United States Dep. of Agriculture, Washington, DC.

541. O'Brien, Harry R. 1923. Soy-bean magic: It is shown in feedlots as well as in factories. *Country Gentleman* 88(13):4, 18. March 31.

• ***Summary:*** Describes the results obtained by feeding a soy-and-mineral ration in a pasture to hogs, cows, poultry and horses. The idea was conceived in 1920 by three faculty men at Purdue University (W.A. Ostrander–extension farm crops specialist, S.D. Conner–chemist, and C.M. Vestal–dep. of animal husbandry). "Soy bean products are being used commercially to make salted peanuts and peanut brittle, meat substitutes, cheap coffee, synthetic milk, margarine, axle grease and other lubricants, chocolate, sardine packing oil, lard substitutes, soap, linoleum, artificial suet, foundry casting-cores, printer's ink, vegetable cheese, toilet powder, fertilizer, high explosives, rubber substitutes, waterproof cloth, and salad oil. The Chinaman makes an oil to use in lamps as a kerosene substitute.

"The use of soy-bean products commercially is just in its infancy in this country, hitherto the two most important uses being paint and soap. Most of the oil used has been imported from the Orient... Since 1912, when oil was first produced commercially in the United States from home-grown soy beans, the oil has been produced by the flaxseed crushing mills. But within the past year a number of mills for crushing soys alone have been projected. I visited Peru, Indiana, last summer, where one was being erected, and Monticello, Illinois, where a company was being organized to erect one.

"The past year there has been a big demand for soys from the paint companies who cannot get enough flaxseed."

Prof. W.E. Hanger, extension farm crops specialist at Ohio State University, says: "It is quite possible that before long, instead of feeding many beans, the farmer will sell his bean crop and buy back the soy-bean oil meal to feed... Last year there were somewhere between 40,000 and 50,000 acres of soy beans grown in Ohio, where in 1920 only about 7,000 acres were grown... and the acreage will doubtless be largely increased this year."

Photos show: (1) A man standing in a thriving "thirty-acre field of soy beans on the farm of Noah Fouts, Camden, Indiana. For two years previous this field has been in soy beans and corn and pastured with lambs. The present crop indicates there is nothing wrong with the system." (2) A man driving a tractor "harvesting and hulling soys in one operation on the Homer Johnson farm in Sheridan, Indiana." Note: This looks like a primitive combine, which is pulled alongside the tractor. Address: Indiana.

542. Piper, Charles V.; Morse, William J. 1923. Vegetable casein (Document part). In: Piper and Morse. 1923. The Soybean. New York: McGraw-Hill. xv + 329 p. See p. 233-34.

• ***Summary:*** "Vegetable casein can be prepared from soybean milk by precipitating the legumin from the milk, purifying by several washings and precipitations and finally by drying. The soybean casein obtained in this manner is a yellowish powder closely resembling animal casein prepared in the same manner. It is the general opinion that vegetable casein has a coefficient of digestibility much less than that of animal casein. According to the investigations of Labbé (1911 ["Le soja et ses usages"]), however, vegetable albumin is quite as readily assimilated as animal albumin. While vegetable casein has some differences from animal casein, about the same differences exist between the caseins of different animals.

"According to Beltzer (1911 [*see Scientific American Supplement,* 19 Aug. 1911, p. 115]), the manufacture of vegetable casein from the soybean has become an established industry in Cochin China. The extraction of the casein for industrial purposes is obtained from the meal, after the extraction of the oil from the bean."

"The casein obtained from the soybean can be employed in the same ways as animal milk. This vegetable casein is utilized for food and for industrial purposes. The various uses of soybean casein are: Medium for paints, dressing for textiles, size [sizing] for paper, Galalith, waterproofing for textiles, etc. As a food it is used as 'Soy-casein,' a flour like Nestle's, with which sauces, bread, jam, milk, fermented milk, cheese, and concentrated biscuits may be made."

Note 1. See also the separate section in this book titled "Soybean flour" (p. 222-25).

Note 2. This is the earliest English-language document seen (Oct. 2008) that uses the term "soybean casein" or "Soy-casein" to refer to isolated soy protein products.

543. Piper, Charles V.; Morse, William J. 1923. Photographs and illustrations (Document part). In: Piper and Morse. 1923. The Soybean. New York: McGraw-Hill. xv + 329 p.

• ***Summary:*** Photos show: (Fig. 1) Typical soybean plant (p. 1). (2) Plant of wild soybean (p. 2). (3) A fleet of junks engaged in carrying soybeans to Newchwang, Manchuria, from different points in the interior, taking away bean oil and bean cake to other places * (p. 6). (4) Soybeans in sacks brought to a bean center by horses in winter in Manchuria (p. 8). (5) Chinese bean cart loaded with beans in wicker containers in Manchuria (p. 8).

(6) Type of cart and method of hauling soybeans with a horse in Manchuria (p. 10). (7) Manchurian farmers hauling the bean crop to market in winter on sleds (p. 10). (8) Plants of a soybean variety from India (p. 38). (9) Plants of the wild soybean from Soochow, China, grown at the Arlington Experimental Farm, 1908 (p. 38). (Fig. 15) Soybeans grown on the edges of a rice field in southern China * (p. 58).

(16) A man in a field of the Peking variety of soybean grown in rows and cultivated (p. 61). (17) A broadcast field of soybeans showing how weeds have overrun the field (p. 61). (18) The ordinary grain drill furnishes a most convenient method of seeding in rows or broadcast (p. 63). (19) Soybeans and corn grown in alternate rows for pasturage; a man in a hat stands between the rows (p. 65). (20) The roots of a soybean plant, showing abundant development of nodules (p. 66).

(21) A man standing in a plat of soybeans without inoculation (in the foreground) and an adjacent plat which had been inoculated, in the background (p. 67). (22) A man seated on a cultivator pulled by two horses doing the last cultivation on a field of soybeans (p. 79). (23) Soybeans and sorghums grown in mixture for forage purposes (p. 80). (24) A field of soybean and Sudan grass grown in mixture for hay (p. 81). (25) A field of soybeans and corn grown in the same row for ensilage (p. 82).

(26) Soybean hay on frames. Under favorable weather conditions, hay can be successfully cured in this manner (p. 86). (27) A field of mature soybeans ready to cut for seed (p. 90). (28) Harvesting soybeans for seed with a bunching attachment on the mower (p. 90). (29) Self-rake reaper used in cutting soybeans for seed (p. 91). (30) Soybeans cut for seed with binder and soybeans placed in shocks for curing (p. 92).

(31) The ordinary gasoline threshing outfit which may be used in threshing soybeans (p. 92). (32) A special bean harvester used in gathering the soybean seed from the standing mature plants and also cleaning it (p. 94). (33) A special bean harvester by which the plants are cut, thrashed, and cleaned (p. 94). (34) A special soybean harvester used to gather soybean seeds from the standing mature plants, and which can be adjusted to level or ridged cultivation. On one side is written "The Little Giant Bean Harvester," manufactured by Hardy & Newsom, La Grange, North Carolina (p. 95). (35) Method of storing soybean seed awaiting shipment in Manchuria. The beans is sacks are stacked under Chinese mats (p. 98).

(37) Pasturing a corn and soybean mixture with sheep (p. 133). (38) Thrashing soybeans from the field and baling the straw (p. 141). (39) The larger plant is the Guelph or Medium Green which is very pubescent, while the smaller plant is a nearly smooth variety from Japan (p. 149). (40) Pods of soybeans showing the range in size and shape (natural size; p. 151).

(41) Seeds of the most important varieties of soybeans now grown in the United States showing the wide range in size and shape of seed. The name of each of the 20 varieties is given. A side view and a ventral view of each pair of seeds is given (p. 152). (42) Seeds of a black and white variety (Widower) from Korea. The white is due to the splitting of the outer later of the testa. A side view of six varieties is shown (p. 155). (43) A field of the Biloxi soybean, which requires a long season to mature (p. 163). (44) A man standing in a field of the Virginia variety of soybeans (p. 170). (45) Seeds of a natural soybean hybrid showing peculiar types of coloration (p. 175). (46) Pods of soybeans, hairy and smooth (p. 176). (47) A sterile soybean plant obtained from a natural hybrid (p. 176). (49) Seeds of an artificial soybean hybrid, showing peculiar types of coloration (p. 181). (56) An old style Chinese oil bean press, Manchuria (p. 195). (57) Coolies at Newchwang, Manchuria, carrying loads of soybeans from the junks to big stacks, where they are kept until the factory needs them for oil manufacture * (p. 196). (58) "Seeds and pods of the Hahto variety of soybeans, the seeds being especially valuable as a green vegetable" (p. 222). (59) Baskets of sprouted, small yellow soybeans and sprouted mung beans * (p. 226). (60) Men making soymilk, working with machinery with which the soybeans are ground and the milk strained. Note the 2 grinding stones and the cloth strainers suspended from the ceiling over the tub. The cabinet with rack for bottles is noted in the background (p. 228). (61) Motor stone mill for grinding soybeans in preparing tofu with brass water tank (A), funnel reservoir (B), stones (C), and brass guard (D) (p. 229). (62) Delivery coolies holding baskets full of bottles showing the way soybean milk is delivered by the factory in Changsha, China (p. 231). (76) A courtyard filled with large earthenware containers with cone-shaped wicker tops for ripening soy sauce mash [in Ichang (I-ch'ang or Yichang), Hupe / Hupeh / Hubei province, China]; a small, strong basket is placed into each, with its rim just above the surface of the mash. The soy sauce collects or accumulates

in each basket and is then dipped out, ready for consumption * (p. 251). (77) A man standing next to an iron cauldron in which soybeans are boiled for the manufacture of soy sauce (p. 252). (79) Fermenting room for yeast and soybeans in preparation of soy sauce (p. 253). (80) Rows of pots with cone-shaped wicker lids filled with soybean and wheat mixture for soy sauce * (p. 254). (81) A box press in which sacks of fermented soybeans are placed for pressing out the liquid forming soy sauce * (p. 254). (82) A man next to a kettle for boiling the soy sauce. After it is boiled, the sauce is ready to be placed in kegs at left side (p. 255). (83) Rows of soybean sauce in jars ready for shipment (p. 255). (84) Root of a soybean plant showing rootknot caused by the nematode (*Heterodera radicicola*) (p. 285).

Note: * means photo by Frank N. Meyer in China or Manchuria.

Illustrations (line drawings) show: (Fig. 48) Flower of the soybean enlarged. Front view. Side view. Parts of the corolla, standard, wing, one of the keel petals. Stamens. Pistil (p. 177). Figures 50-55, from Kondo (1913) are described at Kondo.

Maps show where the soybean is extensively and successfully grown in: (Fig. 10) The Orient (p. 51). (11) North and South America (p. 52). (12) Europe and Africa (p. 53). (13) A map of Manchuria shows the soybean districts and seed production of different localities (p. 56). (14) An outline map of the United States shows the areas with shading to which the soybean is especially adapted as to varieties and purposes (p. 57).

A diagram (Fig. 36, p. 129) shows the various ways in which the plants and seeds of soybeans are utilized. Level 2: The first two categories are seeds and plants.

Level 3: Under seeds: Food products, oil, and meal. Under plants: Hay, ensilage, soiling.

Level 4: Under food products: green beans and dry beans. Under oil: Glycerin, explosives, enamels, varnish, food products, waterproof goods, linoleum, paints, soap stock, celluloid, rubber substitute, printing inks, lighting [illumination], lubricating. Under meal: Human food, stock feed, fertilizer. Under forage: Hay, ensilage, soiling.

Level 5: Under green beans: Green vegetables, canned, salads. Under dried beans: Soy sauce, boiled beans [from whole dry soybeans], baked beans [whole], soups, coffee substitute, roasted beans, vegetable milk, breakfast foods. Under soap stock: Soft soaps, hard soaps. Under oil–food products: Butter substitute, lard substitutes, edible oils. salad oils. Under meal–human food: Breakfast foods, diabetic foods, flour, infant foods, macaroni, crackers, [soy] milk.

Level 6: Under dried beans–vegetable milk: Cheese, condensed milk, fresh milk, confections, casein. Under meal–human food–flour: Bread, cakes, muffins, biscuit.

Level 7: Under cheese: Fresh, dried, smoked, fermented.

544. Piper, Charles V.; Morse, William J. 1923. Soybean flour (Document part). In: Piper and Morse. 1923. The Soybean. New York: McGraw-Hill. xv + 329 p. See p. 222-25, 266-73.

• ***Summary:*** "Soybean flour, though not as yet a common commodity, has been used for many years in America and Europe in invalid dietetics. This flour which is made by grinding either the whole beans or the press cake remaining after the oil has been removed from the bean, is becoming an important article of food in America and European countries as it is of high food value and can be used as one of the ingredients of many palatable and nutritious dishes.

"Utilization and products.–"Extensive investigations have been conducted by the United States Department of Agriculture and Domestic Science Schools relative to the utilization of soybean flour. It has been found that this flour can be successfully used as a constituent for bread, muffins, biscuits, crackers, macaroni, and in pastry. In these various food products about one-fourth soy flour and three-fourths wheat flour have been found to be the proper proportion. In some of the pastry products, however, as much as one-half soy flour can be used. It will be found that in several dishes, as soybean mush, soy flour can be used entirely.

"In the United States soybean flour in on the market, being put up like ordinary cereal flours; also in special packages for invalids. In England, manufacturers have placed on the market a so-called 'soya flour' which is 25 per cent. soybean flour and 75 per cent. wheat flour. This soya flour is being used by bakers in making a soy bread which is very palatable and is extensively used by the English bakers. A similar flour is said to have been manufactured in Holland for 25 years. Soya biscuits and crackers are also manufactured from this flour and constitute articles of export from England.

"German millers have been experimenting to some extent with soy flour in making brown bread by mixing with rye flour... Soybean flour enters largely as a constituent in many of the so-called diabetic breads, biscuits, and crackers manufactured as food specialties. It also is utilized in the manufacture of breakfast foods and can be used in the preparation of vegetable milk and bean curd.

"Composition and value for invalids.–The soybean contains at the most but a slight trace of starch, and extensive experiments in American and Europe indicate that value of the bean and its products as the basis of foods for persons requiring a low starch diet."

A table (p. 224, from the USDA Bureau of Chemistry) compares the composition of two types of soybean flour (made from whole soybeans, or from soybean cake), wheat flour, corn meal, rye flour, Graham flour, and whole wheat flour. The two types of soybean flour contain by far the most protein (39.56% and 47.30% respectively), followed by Graham flour (12.60%) and whole wheat flour (12.00%). The two soybean flours also contain the least carbohydrates (26.63% and 33.85%).

Also summarizes research on: (1): The value of soybean flour for feeding infants and young children; (2) The nutritive value and digestibility of soybean flour.

Thirty-one recipes for soy flour are given on pages 266-73.

545. Piper, Charles V.; Morse, William J. 1923. Tables (Document part). In: Piper and Morse. 1923. The Soybean. New York: McGraw-Hill. xv + 329 p.

• ***Summary:*** Tables: (1) Acreage, production and yield of soybean seeds in the United States. Gives statistics for each for 1918, 1919, and 1920 for 14 states, other, and total. The states are listed in descending order of soybean acreage in 1921, as follows: North Carolina, Virginia, Alabama, Illinois, Ohio, Kentucky, Missouri, Tennessee, Wisconsin, Indiana, Georgia, Pennsylvania, S. Carolina, Mississippi.

(2) Estimates of soybean production of Manchuria for various years (in million tons): 1906 = 0.6. 1907 = 0.6 to 0.9. 1908 = 1.150. 1909 = 1.150. 1910 = 1.4. 1913 = 1.2 1921 = 4.52.

(3) Cost of production of soybeans per acre in Manchuria, 1910. (4) Monthly capacity of steam oil mills at Newchwang, Manchuria, 1917. (5) Export of soybeans, bean cake, and bean oil from the principal ports of South Manchuria, 1909 to 1913, inclusive. (6) Five-year averages of acreage, production, and yield per acre of soybeans in Japan. (7) Amount and value of soybeans imported by Japan. (8) Importations of soybean cake and bean oil into Japan. (9) Quantity and value of exports of soybeans and soybean oil from Japan to foreign countries, 1913 and 1914. (10) Quantity and value of exports of miso (bean cheese) and shoyu sauce, 1903 to 1907, inclusive. (11) Quantity and value of imports of soybeans, bean cake, and bean oil by European countries, 1912 to 1914, inclusive. (12) Comparative prices per ton of cottonseed and soybeans in European markets, 1911 to 1914, inclusive. (13) Quantity and value of soybeans, soybean cake, and soybean oil imported into the United States, 1910 to 1920, inclusive. (14) Quantity of imports of soybeans in the world's trade, 1920-1919 inclusive. (15) Quantity of imports of soybean oil in the world's trade, 1910-1919 inclusive. (16) Quantity of exports of soybean oil in the world's trade, 1910-1919 inclusive. (17) Quantity of exports of soybeans in the world's trade 1910-1919 inclusive. (18) Acre yields of seed and hay of soybeans at different dates of planting at Arlington Farm, Virginia. (19) Yields of soybeans variously spaced. (20) Acre yields of soybean hay and seed when planted at different rates. (21) Germination of soybeans at different depths of planting at Arlington Farm, Virginia. (22) Influence of nodules on the composition of seed. Michigan Experiment Station. (23) Effect of various nitrogenous fertilizers on the yield of soybeans. Massachusetts Experiment Station. (24) Effects of different phosphatic fertilizers with and without lime. Rhode Island Experiment Station. (25) The influence of different potash salts on yields of soybeans. Massachusetts Experiment Station. (26) Effects of different kinds of lime on the yield of soybeans. Massachusetts Experiment Station. (27) Effect of fertilizers on soybeans. Delaware Experiment Station. (28) Composition of hay of Mammoth soybean at different stages of development. Arlington Farm, Virginia. (29) Comparison of the loss in moisture in 10-lb. samples of green forage of ten varieties of soybeans when air dried. Arlington Farm, Virginia. (30) Tons of soybean hay to the acre at different experiment stations in the United States. (31) Bushels of soybean seed to the acre at different experiment stations in the United States. (32) Relative yields of straw to seed in different varieties of soybeans. Ohio Experiment Station. (33) Viability of soybean seed. (34) Proportions of stems, leaves, and pods. (35) Nutritive constituents contained in each part of the soybean plant. After Lechartier. (36) Composition of the different parts of the soybean plant at different stages of growth, at Arlington Farm, Virginia. (37) Total weights of mineral materials in 1,000 kilos of dry forage. After Lechartier. (38) Mineral Materials in 1,000 kilos of dry forage. After Joulie. (39) Percentages of nitrogen, phosphoric acid and potash contained in different parts of the soybean plant at different stages of growth, at Arlington Farm, Virginia. (40) Composition of soybean seed compared with that of other legumes. (41) Composition of common American varieties of soybeans. (42) Percentage composition of the different parts of soybean seed. After Lechartier. (43) Percentage composition and comparison of the amino acids of the protein of the soybean and of cow's milk. (44) Percentage composition of the nitrogen-free extracts of the soybean. (45) Starch content of commercial varieties of soybeans in the United States. (46) Maximum, minimum, and average of the more important constants of soybean oil from 48 varieties, compared with those of other well-known oils. (47) Comparison of the more important constants of soybean oil by different observers. (48) Constants for soybean oil. (49) Composition of the ash of the soybean seed. After Pellet. (50) Mineral content of the soybean seed compared with those of cowpea, navy bean, and peanut. (51) Oil content of soybeans gathered at various stages of maturity. (52) Oil content of soybeans as affected by partial defoliation. (53) Oil content of soybeans as affected by partial removal of very young seed pods. (54) Oil content of soybeans of large and small size seed from the same plant. (55) Oil content of soybeans planted at intervals of two weeks in 1911, at Arlington Farm, Virginia. (56) Varietal differences in the oil content of soybeans grown at Arlington Experiment Farm, Virginia, in 1907, 1908 and 1910. (57) Oil content of soybeans grown under different environmental conditions. (58) Oil and protein content of soybean varieties grown under different environmental conditions. (59) Fertilizing constituents of soybeans contained in crop and roots on one acre. Connecticut (Storrs) Experiment Station. (60) Yields of

hay of different legumes and content of fertilizing ingredients. Michigan Experiment Station. (61) Fertilizing constituents of soybeans cut at different stages of growth. Arlington Farm, Virginia. (62) Data and results of soiling experiments with milch cows. Iowa Experiment Station. (63) Soybean soiling experiment with milch cows, Pennsylvania Experiment Station. (64) Analyses of soybean, soybean and corn, and corn silages. (65) Digestibilities of soybean and other silages. (66) Digestible nutrients in 100 lb. of air-dry substance. (67) Digestible nutrients in 100 lb. of soybean straw and in other roughages. (68) Fertilizing constituents of soybean straw compared with those of wheat, oats, barley, and rye. (69) Number of seeds per bushel and weight in grams of 100 seeds of the most important varieties. (70) Results of planting a single variety of soybean at different dates. Vienna, Austria, 1877. (71) Results of planting different varieties of soybeans at different dates at Knoxville, Tennessee. (72) Life period of soybean varieties grown at the Arlington Experimental Farm, Virginia, for eight seasons. (73) Life periods of American varieties of soybeans grown at Sabour, India, 1911 (from Woodhouse and Taylor, 1913). (74) Life period of soybean varieties planted at intervals of two weeks in 1911 at the Arlington Experimental Farm, Virginia. (75) Behavior of flower color in natural hybrids. (76) Behavior of pubescence colors in natural hybrids. (77) Behavior of amount and colors of pubescence in an artificial hybrid. (78) Behavior of the color of pods in natural hybrids. (79) Behavior of seed colors in natural hybrids. (80) Soybean crosses in the study of seed color. (81) Behavior of cotyledons in natural hybrid selections. (82) Behavior of cotyledons in soybean crosses. (83) Variations in the cooking qualities of seed of different varieties of soybeans. (84) Consumption of vegetable oils by the soap industry in the United States. (85) Consumption of vegetable oils in the production of lard substitutes and oleomargarine in the United States. (86) Composition of soybean cake, meal, and other important oil feeds. (87) Two 17-week comparisons of soybean meal with other supplements for fattening pigs. (88) Growth and nitrogen elimination of chicks fed varying amounts of meat scrap or soybean meal or both, in addition to a corn ration. (Indiana Experiment Station). (89) Comparison of the digestibility of soybean meal and other oil meals. (90) Digestion coefficients of soybean meal obtained with sheep. Massachusetts Experiment Station. (91) Fertilizing constituents of soybeans, soybean meal, and cottonseed meal. (92) Analyses and calories of soybeans compared with those of other legumes and foods. (93) Composition of soybean flour in comparison with wheat flour, corn meal, rye flour, graham flour, and whole wheat flour. (94) Composition of the sprouts from the soybean and mung bean. (95) Composition of soybean milk compared with cow's milk. (96) Yields of bean curd obtained from different varieties of soybeans. (97) Compositions of tofu and tofu products. (98) Nitrogenous substances in natto. (99) Composition of hamananatto. After Sawa. (100) Composition of yuba. (101) Composition of red and white miso. (102) Composition of shoyu or soy sauce. (103) Composition of soybeans of the same variety dried, soaked, and roasted.

546. Piper, Charles V.; Morse, William J. 1923. Soybean or vegetable milk (Document part). In: Piper and Morse. 1923. The Soybean. New York: McGraw-Hill. xv + 329 p. See p. 228-33.

• ***Summary:*** Contents: Introduction. Preparation of soybean milk. Composition of soybean milk. Residue from manufacture of vegetable milk [okara]. Utilization of vegetable milk. Condensed vegetable milk, Vegetable milk powder. Fermented vegetable milk.

The section titled "Residue from manufacture of vegetable milk" states: "After separating the milk from the solid material, the residue is still very rich in nutritive substances. According to Bloch (1907) and Li Yu Ying (1911-12) this material contains no trace of starch. Bloch (1907) gives the following composition of this vegetable milk residue: Water, 88.75, nitrogen, 0.248; ash, 0.36, fat, 0.04; and other substances, 10.85 per cent.

Note: This is the earliest English-language document seen (June 2013) that uses the term "vegetable milk residue" to refer to okara.

"Utilization of Soybean Milk: Vegetable milk has rather a strong characteristic taste and odor, somewhat suggesting malt. These may be masked by the addition of a small quantity of coumarin or vanillin. Vegetable milk may be used the same way as cow's milk. In China this milk is drunk by the Chinese in the early morning with some sugar added. It is also eaten as a thin broth with salted pickles. Vegetable milk is extensively used throughout China for infant feeding. In many of the cities and towns of China, factories are engaged solely in the manufacture of vegetable milk. This milk which is bottled is delivered (Fig. 62) each morning to regular customers.

"Investigations in America and Europe with vegetable

milk indicate that it may be successfully used in place of cow's milk in numerous preparations. The milk has

been used with good results in bread, cakes, in creaming vegetables, in custards, in chocolate or cocoa, and in milk chocolate. In special therapeutic cases, vegetable milk has been used successfully in place of animal milk and is said to rank closely to mother's milk in infant feeding. If allowed to remain in a warm place, the milk becomes sour, like animal milk, and in that form may be employed just as is sour milk or buttermilk. Various ferments may be also used to bring about this condition.

"The milk made from the soybean also serves as a check on the very prevalent summer diarrhea common to children. Sinclair (1916) experimented on babies, who had various ailments, and found that soybean milk brought improvement in the great majority of cases, curing diarrhea and intestinal disturbances. It was also found that the milk was easily digested and easily excreted."

547. Friedrichs, Wilhelm. 1923. Verfahren zur Gewinnung eines milchaehnlichen Auszuges aus Sojabohnen und aehnlichen Samen oder Samengemischen [Process for obtaining an extract resembling milk from soya beans and similar seeds or seed mixtures]. *German Patent* 374,746. April 27. Application filed 27 Jan. 27 1920. [Ger]

• ***Summary:*** Soybeans or the like are fractionally lixiviated with water; they are first extracted in bulk, whereby the bitter principles present are removed, and are then ground and extracted a second time, yielding a liquid possessing properties similar to those of milk. The first extraction is preferably carried out with hot water in order to coagulate the coagulable proteins before the second extraction is attempted.

Note 1. It is not clear how the bitter principles are removed from the soy slurry. Note 2. The albumins and globulins (soy proteins) are coagulated by heat. Address: Frankfurt am Main [Germany].

548. *Popular Science Monthly.* 1923. Peanuts: How scientist's 145 varieties helped lowly "goober" to rise. May. p. 68.

• ***Summary:*** "At last the lowly peanut has graduated from the circus tent. It has become, almost overnight, one of America's most important and most wholesome food products. It serves more than 100 needs of man. This spectacular rise of the humble 'goober' is due chiefly to the patient experiments of one man–George W. Carver, professor of agricultural science and husbandry at Tuskegee Institute. Professor Carver knows more about peanuts than any other man in the United States... For example, Professor Carver found that one ordinary tumblerful of shelled peanuts will produce a pint of rich, creamy milk that you can drink in your coffee or pour over your morning cereal."

Concerning peanut milk, Carver explains: "It is rich, creamy, and palatable, and it contains 3 times as much carbohydrates, three times as much protein and 12 times as much fat as cow's milk, and only one tenth as much water. It was never intended to be substituted for cow's milk. It is a distinct product in the dietary."

"Peanut milk is a perfect emulsion of the oils, fats, proteins, carbohydrates and some of the ash of the peanuts. Many different kinds of milk can be made by controlling the proportions of carbohydrates and proteins and scientifically diluting the product. Its keeping qualities are about the same as those of cow's milk. It makes splendid bread, rich in flavor, and is excellent for creaming vegetables. Since it is a purely vegetable drink, it forms body building nourishment for invalids or children."

An illustration shows "Prof. George Washington Carver in his laboratory making peanut milk."

A sidebar notes that 25 years ago the peanut was a "no account" in American agriculture. Today annual production of peanuts in the USA is about 53 million bushels, or about ½ bushel per person.

549. Soyama-Werke Dr. Englehardt & Company. 1923. Verfahren zur Herstellung von Pflanzenmilch [Process for the manufacture of plant milk]. *German Patent* 378,180. July 5. 2 p. Application filed 8 March 1921. [Ger]

• ***Summary:*** Germinated beans are employed in the usual way for preparing the artificial milk. Use of the sprouting process (*des Keimungsprozesses*) for making a milklike liquid from certain soybeans give excellent results. The yield of the extract is higher, and the flavor of the product is very much improved. First, the sprouted seeds (*Die gekeimten Samen*) are washed... The final extract is rich is carbohydrates and soluble protein, and white in color; since the process takes place in a dark room no chlorophyll is formed. It has a taste similar to that of cow's milk.

Example of the process used: 1 kg of soybeans are soaked in water and after complete swelling, they are placed in a dark room at about 15ºC for about 24 hours. The sprouting takes place while the seeds are well rinsed at regular intervals. After 3-4 days powerful cotyledon sprouts (*kräftige Blattkeime*) will have developed. The germinated beans (*Die gekeimten Bohnen*) are scalded / parboiled (*abgebrüht*) then wet-milled (to 1 kg of starting material, 4 liters of water are added, resulting in a milklike suspension). The insoluble residue (*Die unlöslichen Rückstände*) [okara] is separated out through filtration. The resulting milklike liquid can be used just like any plantmilk (*Pflanzenmilch*).

The patent claim: Process for the manufacture of a plantmilk from soybeans and similar oilseeds (*ölhaltigen Samen*) using sprouted soybeans (*gekeimte Sojabohnen*).

Note. This is the earliest German-language document seen (Jan. 2013) that uses the term *gekeimte Sojabohnen* to refer to soy sprouts. Address: Frankfurt am Main–West [Germany].

550. Loreti di Imola, Mario. 1923. Esperienze sul lattante del

latte di Soja hispida [Experiments with feeding unweaned infants with soymilk]. Thesis, Univ. of Bologna (Università di Bologna), Faculty of Medicine and Surgery (Facoltà di Medicina e Chirurgia). 56 p. July. 30 cm. [10 ref. Ita]
• ***Summary:*** Soymilk, which is properly prepared, is shown to be an advantageous substitute for cow's milk in feeding infants with symptoms of exudative diathesis and spasmophilia.

Note: Hervé Berbille, who discovered this thesis and kindly sent a copy to Soyinfo Center says (Sept. 2010): "I am almost sure this is the first study in Europe about the use of soybeans for infant nutrition." Address: Faculty of Medicine and Surgery (Facoltà di Medicina et Chirurgia), Univ. of Bologna, Italy.

551. *Good Health* (*Battle Creek, Michigan*). 1923. Food value of the soy bean. 58(8):15-16. Aug. Advertising section.
• ***Summary:*** D.W. of Louisiana asks in a letter, "What is the food value of the soy bean?" Answer: "The soy bean is rich in fat, containing twenty times as much as the navy bean. It is also rich in protein, of which it contains fifty per cent more than the same weight of meat. The protein of the soy bean closely resembles that of milk, being a 'complete' protein and capable of replacing the protein of eggs, meat or milk. This has been demonstrated by animal feeding experiments.

"A milk closely resembling cow's milk may be prepared from the soy bean, and also cheese... In China and Japan the soy is used only in the form of *to-fu,* or curd... The half-grown beans of certain varieties are delicious."

552. Kloss (Jethro) Health Food Co. 1923. Health foods (Ad). *Naturopath* (*New York City*) 28(9):488. Sept.
• ***Summary:*** "We manufacture an unusual line of Health Foods. Have thirty-four years of experience along the Naturopathic line. Our years of experience in Institutional feeding of the sick, as well as out of Institutions, watching the results obtained from feeding Natural Products, has enabled us to present something to the public that is of infinite value."

"We manufacture a line of foods that most perfectly takes the place of meat, milk, eggs and butter. There are no animal products used in the manufacture of our foods. We have used no animal products in our home for over eight years [i.e., since 1915], no meat for over 30 years [since 1893 or before].

"We are just completing a book, which will be off the press in September, on Natural Products of the earth,..."

"Send for the price list of our health foods and complete description of our new book." Address: Brooke, Virginia.

553. Slosson, Edwin E. 1923. Catching up with China. *Scientific Monthly* 17:283-85. Sept.
• ***Summary:*** The soy bean "was first introduced to America in 1804, but it was a hundred years before we could be induced to take it seriously... But in the last ten years it has rapidly come to the front as one of our major crops and is likely in the next ten years to go ahead of oats in acreage in some of our states... The latest bulletin of the Department of Agriculture lists fifty different uses for soy products, and doubtless Yankee ingenuity can and will add more when we get our minds to working on it.

"Even the Japanese have not exhausted their ingenuity in this field, long as they have been at it. A Japanese scientist named Sato has invented a new plastic which he has called, according to American precedent, 'Satolite.' It is made by precipitating the protein with sulphite, hardening it with formaldehyde, and molding it under heat and pressure into combs, buttons and whatever we make from hard rubber or celluloid or the casein of milk.

"The soy bean is rich in protein and fat, and lacking in starch; in that more like animal than like vegetable food. You can make a milk out of it by simply soaking the dried beans till soft, then crushing fine in a meat grinder, boiling in three times the volume of water for half an hour and straining through cloth. If you do not like the flavor you can add vanillin or something else. This vegetable milk sometimes agrees with children when cow's milk does not. It can also be used for cakes and custards.

"The soy milk may be made into curds and cheeses of various sorts which form a large part of the diet of orientals, but for which we have not yet acquired a taste. Soy meal has come into common use in America, not only as a cattle food, but also for bread and pastry mixed with three parts wheat flour.

"Soy sauce has long been familiar but quite unknown to us. We did not recognize it under its aristocratic English name and its added flavors. But when the high cost of living drove us to the chop sueys, we became acquainted with the cruet of brown salty sauce called 'shoyu,' and we found, as the Chinese had found thousands of years before, that a sprinkling of it would make tasty a large lot of rice and serve as substitute for meat, both in taste and nutriment. Soy sauce is of several sorts. If you want it strong take the Korean. If you want it sweet take the Japanese. It is made by fermentation and the flavor depends upon the way it is brewed and the length of time it is left to ripen. To suit the palate of a Korean connoisseur the jars must be exposed to the sunshine by day and covered by night for a period of thirty years. We Americans, when we get to making it, will undoubtedly speed up the process.

"So far the oil is the most in demand of the soy products. The beans contain from 18 to 20 percent. of a fine palatable oil, which we have imported at the rate of a hundred thousand tons in a year, but which we are now growing for ourselves. It can take the place of cottonseed oil in vegetable substitutes for lard and butter, and of linseed oil in paints. Formerly the oil went mostly to Germany and England, but the war made a shift in the currents of Pacific trade, and we

learned to appreciate its value. But we have a lot to learn yet before we catch up with the orientals in the utilization of this multifarious bean."

554. *Estestvoznanie i Geografia* (*Natural Sciences and Geography*). 1923. [Soya milk]. 8(1-2):62-63. Sept/Oct. [Bul]*
• ***Summary:*** This editor's note discusses a soya milk production plant in Hamilton, Canada. Address: Bulgaria.

555. Goldlust, Wilhelm Niklas. 1923. Verfahren zur Herstellung von Teigwaren aus Sojabohnenmehl [Process for the production of farinaceous foods from soybean flour]. *Austrian Patent* 94,839. Nov. 10. 1 p. Application filed 15 July 1922. [Ger]
• ***Summary:*** Describes how to make pasta from soya flour or meal (*Sojamehl*) alone or in mixtures with other flours. In preparing the pasta, one can use either animal or vegetable milk; the latter can be made from soya, peanuts, or almonds. Address: Vienna [Austria].

556. Carqué, Otto. 1923. Rational diet: An advanced treatise on the food question. Los Angeles, California: Times-Mirror Press. xvi + 540 p. Illust. 24 cm. [104* ref]
• ***Summary:*** The preface of this book begins: "The aim of this book is to disseminate a better knowledge of diet and its relation to health and disease, in plain non-technical language, understandable to all who seek more scientific information on this vitally important subject." The author advocates a vegetarian diet, with dairy products and eggs consumed in small amounts–if at all; their pros and cons are discussed on pages 324-340.

In the chapter on "Flesh Foods," pages 353-54 state: "Writing to his friend Firmus, who had abandoned the Pythagorean doctrine in order to eat meat, the philosopher Porphyry, living in the third century, said: 'I cannot believe that your change of diet is due to reasons of health, for you yourself have constantly affirmed that a vegetable diet is much more suitable than any other, not only to give perfect health, but even a philosophic and balanced judgment, as a long experience had taught you.'

"And Seneca, who, after studying the problem of nutrition for many years, had adopted vegetarianism, wrote: 'Struck by such arguments, I also have given up the use of flesh of animals, and at the end of a year my new habits have become not only easy to me, but most agreeable; and it even seems to me that my intellectual aptitudes have become more and more developed.'

"Isaac Newton adhered strictly to a vegetarian regimen while performing the prodigious intellectual work which made his name immortal. Among the modern philosophers and artists who have followed or advocated a rational vegetarian regimen may be mentioned: Shelley, Byron, Thoreau, Tolstoi [Tolstoy], Richard Wagner, Tagore, Maeterlinck, Alexander Pope, and George Bernard Shaw."

Chapter V, "Cereals, Legumes, and Miscellaneous Food Products," contains a section titled "Beans," which is largely devoted to soy beans (*Dolichos soya*) (p. 316-318). It discusses green vegetable soybeans ("Soy beans, when about three-fourths grown, make a most palatable and nutritious green vegetable, like the green pea or the lima bean."), soy flour, soy bean milk, bean cheese (tofu), and soy sauce.

Note: This is the earliest document seen (Nov. 2010) in which Otto Carqué mentions or discusses soybeans or soyfoods.

Concerning the wastefulness of the animal as a converter of feed to food, page 361 contains a long quotation from an article in the prestigious journal *Science* titled "The cost of roast pig," by Prof. Henry P. Armsby (1917).

In extensive tables of food composition, the composition of soy beans is given on page 504. The author lived 1867-1935. Address: Los Angeles, California.

557. Wong, T. 1923. [Soy-bean industries]. *Chung-hua Hua Hsueh Kung Yeh Hui Hui Chih* (*J. of the China Society of Chemical Industry*) 1:83-92. (Chem. Abst. 17:2514). [Chi]*
• ***Summary:*** "Methods of preparation and analyses are given for 9 products manufactured from soy bean, including oil, been curd, bean milk, etc...

"Soy-bean cake contains 42.1% protein and 9.6% oil. This might be used for the manufacture of artificial marble and similar products."

558. Bottari, Fulvio. 1923. La soja nella storia, nell'agricoltura e nelle applicazioni alimentari ed industriali [The soybean in history, in agriculture, and in food and industrial applications]. Torino & Genova, Italy: S. Lattes & Co. 243 p. Preface by Prof. Oreste Mattriolo (R. Università di Torino). With 34 illust. 22 cm. [25 ref. Ita]
• ***Summary:*** Contents: Preface. Reason for the work; its scope and limits. Part I: The origin and history of the soybean. Reason for this history, the origin of the soybean and its early dissemination, soya (including production statistics) in Oriental countries (China, Manchuria, Japan, Formosa, Korea, French Indochina), how the soybean was introduced to Europe, the cultivation of soya in France, Soya in England, Austria, Germany, Denmark, Holland, Russia, Sweden, Alsace-Lorraine (now in northeast France), Spain, Italy, America, Conclusion.

Part II: Cultivation of soya. Part III: Soya in the feeding and nutrition of humans and animals. 1. The analysis and physiology of metabolism as an element in the study of nutrition. 2. Soybean forage in the feeding of animals. 3. Soybeans (*il grano di soja*) and soy products in the feeding of humans and animals: Commercial and nutritional value and digestibility of the soybean, how to prepare and cook whole soybeans, soy broth, thick soups, salads, and meat dishes, soy purée (*puré di soja*), soybean cakes (*torté di*

soja), soybean sprouts (*germi di soja*), roasted soybeans (*grano di soja come frutta secca*), soy coffee (*caffé di soja*), soy chocolate (*cioccolata di soja*), soy confections (*confetture di soja*), special soy sweets and chocolates for diabetics and tuberculosis patients, the soybean as a feed for animals.

Note: This is the earliest Italian-language document seen (Nov. 2012) that mentions soy chocolate, which it calls *caffé di soja.*

4. Flour, pasta, and bread in feeding. 5. Soymilk (*il latte di soja*) and its use in the feeding of animals and humans. 6. Tofu (*il formaggio di soja*). 7. Soy oil and oil-cakes (*panelli*). 8. Condiments and sauces: Natto, miso, soy sauce (*le salse,* called *Schogon* [sic] in Japan, *Tsinag-Yeou* [sic] or *Tao-yu* in China, *Ketjap* in Java, and *Tuong* in Annam). 9. Enzymes (I fermenti, incl. urease). 10. Conclusions.

Part IV: Industrial applications of soya.

Part V: General conclusions.

The first test of the lactation of calves with soymilk was conducted in the winter of 1916-17 by the Bonafous Institute in Turin. The results were splendid, and have encouraged eminent pediatricians such as Dr. Casalini, Prof. Dr. Alberto Muggia (teacher of clinical pediatrics at the University of Turin), and Dr. Enrico Gasca (vice director general of infants at Turin) to extend their experiments (p. 6).

In Italy vegetable oil production has decreased steadily from 1870 to 1920. Attempts were made to grow sesame, peanuts, and rapeseed, and to import oils from abroad. During World War I, unrefined soy oil was introduced to the market in large quantities, but its unappealing taste disgusted consumers and for a while nothing more was heard of it. Then in 1921 it began to be introduced again, but this time it was refined at Italy's national oil works. The good results obtained encouraged the Italian oil milling company, Sairo, and other oil works to make great progress in soy oil production. Several thousand quintals (i.e., several hundred metric tons) of the best soy oil, sold under the name "refined oil from seeds," were introduced in the first half of 1922 by the national oil works of Genoa.

Returning to the early history of soya in Italy, we find that in 1848 some missionaries brought soybean seeds and a little soil to Italy from Japan. They waited for the cultivation for several years, then nothing else was said. In 1880 the Italian Ministry of Agriculture recommended the cultivation of soybeans as a fodder crop for the future, as was being done in the USA, but their suggestion received no attention. In 1918, according to Mattei, a test of soybean culture was done at the Colonial Garden of Palermo on a parcel of 300 square meters.

Since 1912, after seeds had been brought by foreign delegates to the International Exhibition at Turin in 1911, repeated experiments with soybean cultivation have been conducted at the Bonafous Agricultural Institute in Turin, with the goal of developing two well adapted varieties, one for fodder and one for seed. Their green variety is for fodder and their yellow one for seed.

From 1920 the directorship of the cultural work was given to the head professor at the Institute, Venanzio Manvilli, also professor of the Germano Sommeiller Technical Institute, professor the faculty of agriculture, University of Turin. They worked with seeds already selected from the institute and with those obtained from Prof. Don Ricaldone, and from Tientsin, China, directly. Others who have done important work with soya in Italy are Paolo Bottari (with soymilk at the Bonafous Institute), Tamanini Guido, Mossello and Bellia, Prof. Cav. Giov. Batt. Allaria, Dr. Mose Miccinelli

A table (p. 31) shows soybean and cotton hectarage and production in Korea from 1909 to 1917. Soybean hectarage increased from 277,776 ha to a record 487,134 ha. Soybean production grew from 1,991,126 quintals (1 quintal = 100 kg or 0.1 metric tons) to a record 3,816,498 quintals.

Page 35: "Prof. Rouest of Luxey (Landes) in France wrote us on 30 Nov. 1921. 'I have finished only the period of acclimatization of the soybean. It remains for me to propagate it a little everywhere. The experiments of 1921 were extended in all the Departments, being viewed from an industrial and commercial point of view. I must now study which variety adapts among those I am cultivating. Soy flour will not be able to be made until we have many thousands of hectares under cultivation, and then we will be able to think of other applications as well... Actually the firm Hendebert de Lion sells its flour, originating in China, at 10 French francs per kg, a prohibitive price.'"

Page 206: At the pediatric congress held in Milan in Sept. 1922, the question of lactation (feeding children) with vegetable milk was discussed in a favorable way, proposed by Prof. Muggia and sustained by the illustrious Prof. Berghius, Director of the Pediatric Clinic of the University of Padua, and by Prof. Francioni of Bologna. We can also add that experiments on lactation are proceeding in Italy at the pediatric clinics of Turin, Bologna, Padua, Genoa, and Florence, and also at the Infant's Dispensary in Turin.

Photos show: (0) An infant fed soymilk in Turin in 1921, together with a table showing its weight gain from 18 July 1921 until 14 Jan. 1922 (p. 7). (1) Three different varieties of soybean plants (p. 70). (2) 2 soybean plants up close (p. 71). (3) The leaves of 3 different varieties of soybean plants (p. 72). (4) Close-up of the stem and pods of a soybean plant (p. 73). (5) Beans and pods of soybeans (p. 74).

(6) Different stages of germinating soybean seeds (p. 75). (7) Close-up of soybean roots (p. 76). (8-9) Field of soybeans at the "Istituto Bonafous" (p. 106, 108, 113). (10-11) Field of soybeans grown with corn (p. 122, 123). (12) Cellular transverse section through a soybean (facing p. 152). (13-14) Soy flour and wheat flour, each in a sack and loose (p. 177). (15) Pasta made from soy (p. 181). (16-21) Bread made from soy (p. 183-89). (22-23) Soy bran and wheat

bran, each in a sack and loose (p. 191). (24) Two bottles of soymilk (p. 194). (25) Two bottles of soy oil (p. 214).

A diagram (p. 227) compares the chemical composition of animal casein and vegetable casein.

Note 1. Quite a bit of the historical and non-Italian information in this book comes from Léon Rouest's 1921 book *Le soja et son lait végétal: Applications agricoles et industrielles.*

Note 2. This is the earliest Italian-language document seen (Jan. 2012) that mentions natto, of which it says: "il *Natto* in Giappone che corrisponde al *Tao-Teche* della Cina."

Note 3. This is the earliest Italian-language document seen (Jan. 2013) that mentions soy sprouts, which it calls *germi di soja.* Address: Dr. of Economic and Commercial Science, Turin [Torino], Italy.

559. Choux, P. 1923. Revue générale de botanique, tropical and subtropical (1910-1919 (suite)). [Review of botanical works, tropical and subtropical (1910-1919) (conclusion)]. *Revue Generale de Botanique* 35:141-43. [24 ref. Fre]
• ***Summary:*** This is a brief and very limited review of the literature with 24 references–several of which contain errors. It begins:

In France, in effect, the attention seems to have been attracted by the medical uses of the soybean and by soyfood products (*les produits alimentaires à base de Soja*)*:* soymilk, soy cheese (*fromage de soja*), soy casein, flour and bread, manufactured at the factory of *Caséo-Sojaïne* [the soy casein factory = tofu factory] installed at Vallés (Seine).

Everyone knows that in China the soybean plays a very important role in the diet of several million people and forms the basis of an entire series of food products that have been brought to our attention by Messrs. Li Yu Ying and Grandvoinnet.

560. Juckenack, A. 1923. Was haben wir bei unserer Ernaehrung im Haushalt zu beachten? Zweite, umgearbeitete Auflage [What must we be aware of concerning the foods in our homes? 2nd rev. ed.]. *Volksernaehrung* (*Die*) (*Berlin*) No. 6. xi + 75 p. [Ger]
• ***Summary:*** Some 129 numbered questions / subjects are considered, including: No. 38. What is artificial milk? (*Kunstmilch*). One type is the so-called vegetable milk (*vegetabilische Milch*), a beverage made with help from the soybean.

No. 89. Does the soybean deserve special attention? It is a legume that is unusually rich in nutrients, containing about 32-40% protein and 14-20% fat. Therefore it carbohydrate content is low (32.0-36.5%). Soybean oil is good for food use and has long been used to make margarine. Defatted soybean meal is sometimes used for livestock feed, and sometimes for protein-rich foods. Also, vegetable milk or plantmilk (*Pflanzenmilch*) is made with help from the soybean. So-called soybean milk (*Sojabohnenmilch*) can be used in place of cow's milk in the home in preparations such as soups, baked goods, egg-cakes, and puddings; it can also be added to coffee. It should obviously not be used for infant feeding, however it is noteworthy refreshing drink.

Also discusses: No. 81. What is artificial edible fat? (*Kunstspeisefett*). It is a lard substitute, which can be made from various vegetable oils, including peanut oil and sesame oil.

No. 129. What is vegetarianism? Is it scientifically grounded? Address: Berlin-Charlottenburg, Germany.

561. Kellogg, John Harvey. 1923. The soy bean (Document part). In: J.H. Kellogg. 1923. The New Dietetics: A Guide to Scientific Feeding in Health and Disease. Revised ed. Battle Creek, Michigan: The Modern Medicine Publishing Co. 1021 p. See p. 315-21. 24 cm.
• ***Summary:*** This section is quite similar to that in the 1921 first edition of this book, but on different pages. Changes appear on the following pages: 316 (addition of a paragraph stating that the soy bean is a highly valuable food for persons suffering from diabetes), 318 (deletion of the statement that the writer "has for twenty-five years made use of milk prepared from the almond and other nuts."), 320-21 (addition of a table, supplied by William Morse of the USDA, giving the composition of soy beans sprouts and mung bean sprouts). Address: Battle Creek, Michigan.

562. Kellogg, John Harvey. 1923. Vegetable substitutes for meat (Document part). In: J.H. Kellogg. 1923. The Natural Diet of Man. Battle Creek, Michigan: The Modern Medicine Publishing Co. 385 p. See p. 334-36.
• ***Summary:*** "By the combination of nuts and cereals, a product very closely resembling meat may be prepared. The process for doing this was discovered by the writer many years ago in a series of experiments undertaken for the purpose by the request of Professor Dabney, then assistant professor in the Department of Agriculture. Recognizing that the increase of population would ultimately lead to an increase in the price of foodstuffs and particularly of meats, and possibly a scarcity of meats, Professor Dabney requested the writer to solve the problem by a production of a vegetable substitute for meat. The result of the experiment undertaken was Protose, a nut-cereal preparation, which to a considerable degree resembles meat in appearance, taste and odor, having a slight fibre like potted meat.

"Earlier experiments made by the writer led to the production of peanut butter, which has since developed into a great industry and has increased enormously the size and value of the peanut crop of the South. From a food standpoint, a pound of peanut butter is more than equal to the same amount of pork or meat of any sort.

"In Malted Nuts, another product of our experiments, is provided a product [probably peanut milk] resembling Malted Milk, which has been extensively used as a substitute

for milk by those unable to tolerate cow's milk.

"No doubt the future will develop a large number of vegetable products which will so fully supply the place of various meat products and dishes that all of these unwholesome products may be dropped from the bill of fare without being missed. As a matter of fact, it is now recognized by the most eminent authorities in dietetics that the flavor of meats is about the only reason or apology which can be offered for their use." Address: Director, School of Hygiene and Public Health, Johns Hopkins Univ., Baltimore, Maryland.

563. Kempski, Karl E. 1923. Die Sojabohne: Geschichte, Kultur und Verwendung unter besonderer Beruecksichtigung der Verhaeltnisse in Niederlaendisch-Indien [The soybean: History, culture and use, with special attention to the situation in the Netherlands-Indies]. Berlin: Paul Parey. 88 p. Illust. Index. 22 cm. [101 ref. Ger]

• ***Summary:*** Contents: Introduction. Some remarks on the soybean's early history. Overproduction of soybeans in Manchuria after the Russo-Japanese War–English oil mills make their first trials. Soybean production in Manchuria. Soybean production in Korea. Soybean production in Japan. Soybean production in America–Soybean meal and soybean milk are introduced. Soybean production has also expanded in Africa, British India, and the Philippines. The introduction of soybean cultivation to Europe. The many uses of the soybean in Europe. Uses of soy oil. Old and new methods of obtaining soy oil. Soybean production and use of soybeans in the Netherlands-Indies. Appendix: Descriptions of how the most important soybean products are manufactured: In Java (tao-hoe [tofu]), tempeh, ketjap [soy sauce], tao-tjiong [or tao-jiung, a term, and perhaps a product, between *doujiang* and *tao-tjo*, Indonesian-style miso], in China and Japan (soy sauce, miso, tofu, frozen tofu, natto, soymilk) (p. 62-68). Supplements: I: Soybeans in Manchuria. II; Hansamuehle [Hansa Muehle] in Hamburg, Germany. III: *The Soybean* by Piper and Morse.

Note the extensive, early bibliography. Unfortunately, it contains many errors.

This book is largely a review of the literature, but with some original information, especially on Indonesia and Germany. In 1923 Java imported 150,000 to 200,000 tons of soybeans and had a population of 35 million. The area of soybeans planted in Java (including Madura) increased from 157,600 ha in 1918 to 164,700 ha in 1922 (p. 32). In 1921, 67.3% of Java's soybean acreage was in Central Java, 20.7% was in East Java, and only 5.7% was in West Java. (p. 35). Large quantities of soybeans are imported to the Netherlands-Indies from Manchuria: 35,105 metric tons (tonnes) in 1920, rising to 95,742 tonnes in 1922. From these and local soybeans are made tempeh [spelled like this!], tofu (*tahoe; Bohnenkäse*), soy sauce (*Ketjap, Sojasauce*), etc. In Java, mostly black soybeans are grown. To make tofu yellow, it is cooked in an extract of the *Curcuma* root / rhizome. Sometimes it is also sun-dried or fried/roasted (*gebraten*). Tempeh is inoculated with a piece of tempeh from a previous fermentation, and often fried in coconut oil. Detailed descriptions are given of the production of soy sauce (*ketjap;* which is made from black soybeans) and Indonesian miso (*taucho; tao-tjiong*). The author (p. 64) states that ketjap and tao-tjiung are both inoculated using *Hibiscus tiliaceus* (hibiscus) leaves, called *waroe* in Java. Today Germany, like America, produces fresh and dried soymilk, fresh and dried soya cream, meat analogs, and soy sauce (p. 25).

This book contains 17 interesting, old photos. Descriptions of those reproduced from other periodicals are omitted. (1) A soybean field on the farm Kikai Nojo near Sempo-Station, Korea, owned and run by Mr. Moegling (p. 12). (2) A combine used for harvesting regular beans in California in 1918 (p. 19). (3) Many hydraulic presses in a modern American oil factory (p. 29). (4) The equipment used in steaming the soybeans before they are crushed in an American "steam mill" type oil mill (p. 31). (5) The interior of a British oilmill (p. 33). (6) The electrical generators in a modern oilmill (p. 34). (7) Soybeans being harvested manually at Madioen [Madiun, in East Java], Java (p. 48). (8) Harvested soybeans being dried on racks in a field in Java, and carried away by one worker (p. 48). (9) Workers dividing up the harvest in Java (p. 50). (10) Threshing soybeans with bamboo flails in the courtyard of a small farmer in Java (p. 51). (11) Selling soybeans in a small market in Central Java (p. 51).

Tables show: (1) Imports of soybeans to Germany from 1910 (43,500 tonnes) to 1912 (more than 125,200 tonnes) (p. 24). (2) Soybean acreage in Java (including Madoera) from 1918 (157,600 ha) to 1922 (164,700 ha) (p. 32). (3) A breakdown of soybean area in Java in 1921 (of 226,186 bouws) into West Java (12,980 bouws), Central Java (152,154 bouws), and East Java (61,082 bouws) (p. 35). Note: 1 bouw = 1.754 acres (Johnstone 1975). (4) Imports of Manchurian soybeans to Java (including Madoera) and other parts of the Dutch East Indies (mainly Sumatra) from 1920 to 1922 (p. 36). (5) Yields (average or range) of soybeans in various countries: Germany, Italy, British Indies, Manchuria (incl. China and Korea), Japan, America (up to 2,700 kg/ha), Java (p. 52). (6) Comparison of the nutritional composition of soybeans, peas, and regular beans (Phaseolus varieties) (p. 53). (7) Comparison of the nutritional composition of soya cheese (*Sojakäse*, tofu), beef, and lean pork (p. 53). (8) The prices of white and of black soybeans in Java during January and December 1922 and the same two months of 1923 (in Gulden) (p. 56). (9) Comparison of yields, price, costs, and profit for peanuts (*Katjang tanah*) and soybeans in Java (p. 57-58). (10) Nutritional composition of canned frozen tofu (based on E. Senft) (p. 68). (11) Exports of soybeans from five Manchurian ports (Dairen, Antung, Newchwang, Suifenho [Suifenhe], and Sansing) in 1919, 1920, and 1921

(p. 70). (12) Exports and value of soybeans from all of China to four countries (Netherlands, Russia, Japan, Dutch East Indies) in 1919, 1920, and 1921 (p. 72). (13) Exports of soybean oil from five Manchurian ports (Dairen, Antung, Newchwang, Suifenho [Suifenhe], and Harbin) in 1919, 1920, and 1921 (p. 72). (14) Exports and value of soybean oil from all of China to five countries (England, Netherlands, Belgium, Japan, USA) in 1919, 1920, and 1921 (p. 72). (15) Exports of soybean meal from four Manchurian ports (Dairen, Antung, Newchwang, Suifenho [Suifenhe]) in 1919, 1920, and 1921 (p. 73). (16) Exports and value of soybean meal from all of China to three countries (Japan, Russia, USA) in 1919, 1920, and 1921 (p. 73). (17) Names of the five major railway lines in Manchuria (South Manchuria Railway, Chinese Eastern Railway, Peking Mukden Line, Kirin-Changchun Line, Saupingkai-Taonan Line) (p. 74). (18) Amounts (in tons) of soybeans, soybean cake, and soy oil (*Sojaöl*) shipped over the South Manchuria Railway, and the Chinese Eastern Railway in one year (p. 74). (19) Railway transport and production amounts of the mills (in tons) in Dairen and Newchwang of soybeans, soybean cake, and soy oil (*Sojaöl*) during the year 1921 (p. 74). Address: Agricultural Expert in Poerbasari te Pengalengan, Java.

564. Lewkowitsch, Julius. 1923. Butter substitutes–Margarine, "Oleomargarine" (Document part). In: J. Lewkowitsch. 1923. Chemical Technology and Analysis of Oils, Fats, and Waxes. Edited by George H. Warburton. 6th ed. Entirely rewritten and enlarged. Vol. III. New York, NY and London: Macmillan and Co., Ltd. viii + 508 p. See p. 31-54. [79 ref]

• ***Summary:*** An in-depth treatment of the subject. Margarine is called "Oleomargarine" in America, *Margarine* in French, *Margarine* or *Kunstbutter* in German, and *Burro di margarina* in Italian. Older English-language names suppressed by legislation are "butterine" and "Dutch butter." "Margarine consists either of a mixture of animal fats alone or of animal and vegetable oils and fats churned with cow's milk to a butter-like emulsion, and colored yellow (unless forbidden by law) with annatto, methylorange, etc. The cow's milk is sometimes replaced by an emulsion prepared from the kernels of almonds [almond milk] (see Li Yu Ying, Belgian patent 231,588) or from soya beans, so that it is possible to prepare a margarine from vegetable products exclusively" (p. 32). In the UK it is prepared exclusively from beef fat (called "oleomargarine" in the UK or "oleo oil" in the USA).

"Amongst the vegetable oils, cotton seed oil and cotton seed stearine, sesamé oil, arachis oil, and even soya bean oil take the most prominent place... Arachis oil (also olive oil) and sesamé oil are used to a greater extent in Europe than in the United States (p. 33).

"A general recipe for the manufacture of margarine containing oleomargarine as a preponderant basis is as follows:–Mix 65 parts of oleomargarine, 20 parts of vegetable oils, and 30 parts of milk. The yield is 100 parts of finished product, 15 parts of water being eliminated in the course of manufacture. The more milk used, the better will be the flavor of the margarine." "For still lower qualities maize oil is said to be used in the United States... as it is extremely difficult to remove or to mask the peculiar flavour of maize oil. Lard [pig fat] is not used so extensively in Europe as in the United States. In this country [England] oleomargarine is prepared exclusively from beef fat. Mutton fat, which imparts an unpleasant ("animal") flavour to the margarine, is, however, used in continental margarine factories. In Russia, sunflower oil is used in the manufacture of margarine... The use of soya bean oil has also been proposed" (Korentschewski and Zimmermann, *Chemiker Zeitung*, 1905, p. 777) for use in margarine (p. 37).

At the end of this section is one titled "Vegetable butters" (p. 55-58). These include "fats or mixtures of fats... which are exclusively of vegetable origin, and have at the ordinary temperature a consistence approaching that of butter or lard." They may be made from "cotton seed stearine," coconut oil, or palm kernel oil. They are sold, for example, in "countries where the inhabitants are forbidden by their religious tenets to consume beef fat or hog fat (India, Turkey). In commerce such vegetable butters are known as 'vegaline,' 'cottolene,' etc. The manufacturing processes for producing cotton seed stearine have been describe in the preceding chapter (Vol. II. Chap. XIV.)." Address: 71 Priory Rd., London, N.W., England.

565. Watson, Ernest. 1923. The principal articles of Chinese commerce (import and export) with a description of the origin, appearance, characteristics, and general properties of each commodity; an account of the methods of preparation or manufacture together with various tests, etc., by means of which the different products may be readily identified. Shanghai, China: Statistical Dept., Inspectorate General of Customs; sold by Kelly & Walsh [etc.]. xi + 630 p. Illust. 28 cm. The Maritime Customs. II. Special Series No. 38.

• ***Summary:*** Section II, titled "Oils, fats, and waxes" (p. 76-149) contains detailed definitions of the following: Bean oil (*Tou-yu* or *Oleum dolichos*) obtained from the soya bean of China, and the residual meal (*tou-ping-fên*) (p. 85-86). "In China bean oil is used as a food; for cooking purposes; for mixing with lacquer; in making varnish and printing ink; in soap making; and, to a slight extent, as an illuminant, although for this purpose it has been almost superseded by kerosene. It is also used in water proofing cloth and paper for making umbrellas and lanterns. In foreign countries, where the demand for the oil is practically unlimited, bean oil is used chiefly in the manufacture of soap and in preparing salad oils. On account of its drying properties bean oil is not very suitable for use as a lubricating oil.

"Bean oil appears in Chinese commerce packed in

wooden tubs, paper-lined baskets, or in earthenware jars, of no standard weight. It is exported in great quantities from many of the northern ports, particularly from Dairen and Newchwang, and, to a smaller extent, from Hankow and other Yangtze ports."

Section VI, titled "Miscellaneous products" contains a long subsection on "Beans, Soya" (Tou) (p. 320-21). "Soya beans, or 'soy beans'... are cultivated in enormous quantities in Central Manchuria... It is estimated that about 1,600,000 tons are produced annually in Manchuria alone... The beans are small,... the yield per acre being from 1,100 to 1,600 pounds [18.3 to 26.6 bushels]. Several varieties are grown in China and are commonly classified by the Chinese according to form, colour, size, use, and other characteristics. The best known of these varieties are (with Chinese characters for each term): -

(1) Yellow beans (*huang-tou*), subdivided into *pai-mei-tou* or 'white eye-brow bean,' so called from the whiteness of the prominent hilum; *chin-yüan-tou* or 'round golden bean'; and *hei-ch'i-tou.*

(2) Black beans (*wu-tou*), subdivided into (*ta-wu-tou*) or 'large black bean'; (*hsiao-wu-tou*) or 'small black bean'; and (*pien-wu-tou*) or 'flat black bean.'

(3) Green beans (*ch'ing-tou*), subdivided into two varieties, one of which has a green epidermis and green interior, the other a green epidermis and yellow interior.

Three subspecies [of soya beans], yielding very small beans, are known as: (*hsiao-pai-tou*) or 'small white bean'; (*hsiao-hung-tou*) or 'small red bean'; and (*hsiao-lü-tou*) or 'small green bean.'" Note 1. The writer may be mistaken in calling these last three subspecies of soya beans. They are probably white azuki beans, red azuki beans, and mung beans.

Soya beans "are valued chiefly as a source of bean oil, but are also extensively used as food, either whole or ground to flour in making beancurd, bean milk, bean sauce, or 'soy,' and salted relish (*ta-tou-shih*) [fermented black soybeans], which is used both as a food and as a medicine. The black beans, which are not much used as food because they are supposed to make the body too heavy, are used in medicine, to impart strength and vigour, as a carminative, and also as an antidote for vegetable poisons, such as aconite, croton oil, etc. The hulls of green [soy] beans are applied to smallpox ulcers and other sores; the bruised leaves of the plant are used in treating snakebite; the flowers are used in treating diseases of the eyes. Young bean sprouts (*tou-ya*) are used as a vegetable food." Details are given on the following products made from soya beans: "Beancurd (*tou-fu*), bean milk (*tou-fu-chiang*), bean sauce (see under 'soy'), and bean vermicelli (*Fen-ssu, Tou-fen-ssu, Hsi-t'iao-mien,* or *Kua-mien.*–A very famous vermicelli made in the Chefoo district, from beans most of which are originally imported from Manchuria).

Note 2. This is the earliest document seen (Nov. 2012) that contains the term *Tou-fen,* which probably refers to roasted whole soy flour.

Note 3. This is the earliest English-language document seen (Nov. 2011) that uses the term "salted relish" to refer to fermented black soybeans.

The section titled "Soy (*Chiang or Chiang-yu"*–with Chinese characters for each term) states: "Soy is a sauce made in China from the soya bean (*Soja hispida*). In preparing it, a quantity of beans are slowly boiled, an equal quantity of coarsely ground wheat or barley being added. The mixture, after being allowed to ferment for some time, is put into a jar with an equal amount of salt, a few aromatics, and three times as much boiling water as there were beans at first; the whole is then allowed to stand for several weeks exposed to the sun, after which the liquor, which constitutes the soy, is separated by pressing and straining the mass. The finished product is afterwards packed into jars or bottles ready for the market.

"Soy is thin, and, in colour, very dark brown or almost black; it becomes brighter and clearer on being kept, has an agreeable salty flavour, and produces a yellowish froth when even slightly shaken. It is much used by the Chinese as a sauce and condiment, as it creates an appetite and is supposed to counteract the injurious properties of contaminated food; it is also used in medicine as an application for burns, scalds, eczema, leprous sores, etc. Soy is often exported from China to foreign countries, where it is extensively used in the manufacture of many European sauces."

Also discusses: Groundnut oil (*Hua-shêng-yu*), also called peanut oil, earth-nut oil, and arachis oil (*Oleum arachis*) (p. 105-06). Hemp-seed oil (*Ma-yu or Ma-tzu-yu*) (p. 106).

Sesamum-seed oil (*Chih-ma-yu or Hsiang-yu; Oleum sesame*) also known as "gingelly oil," "teel oil," or "benne oil" (p. 133-35). Groundnuts (p. 421-22). Wheat gluten (*Mien-chin,* p. 574). A second edition was published in 1930. Address: Chief Appraiser, Chinese Maritime Customs.

566. White, Ellen G. 1923. Counsels on health, and instruction to medical missionary workers. Mountain View, California, Kansas City, Missouri [etc.]: Pacific Press Publishing Assoc. 696 p. 19 cm. *

567. Loew, Oscar. 1924. The soy bean, a superior crop. *Porto Rico Agricultural Experiment Station, Agricultural Extension Notes* No. 64. p. 1-2. Jan. 15.

• ***Summary:*** "The soy bean originated in Eastern Asia and has been introduced during the past 30 years into different countries of the world. It can be grown successfully even in a rather poor soil, in the absence of nitrogenous manure, provided the specific root-nodule bacteria are present. This plant is far superior to other leguminous crops, even those very rich in protein, as the lupin, which it equals in protein

and highly surpasses in fat content. In fact, the soy bean is richer in fat than all other leguminous crops and is, therefore, sometimes called the oil bean. The soy bean does not contain alkaloids and bitter tasting matters like the lupin..."

A table compares the nutritional composition of the pea, common bean, lupin, and soy bean. "From the analyses it would appear to be of great advantage for the people of Porto Rico to replace the common bean now serving as an essential part of the daily food, by the soy bean, it providing a higher percentage of protein and fat... Since the Soy bean needs prolonged boiling until it reaches a sufficient degree of softness, it is best soaked for a day in water to which some soda and common salt are added (about a teaspoonful of each to half a liter) followed by washing two to three times with fresh water and then boiling for an hour or so. The taste of this dish is very agreeable.

"In Japan the soy bean serves for several preparations, called 'tofu,' 'yuba' and 'miso,' which might be prepared in Porto Rico. Also, a dressing or condiment similar to the English Worcestershire sauce, is prepared from the seeds." The preparation of tofu is described. It is "generally fried like cakes and represents an excellent food."

"The milky liquid can also doubtless be used as a suitable nutrient, but it can never replace the mother's or cow's milk for children, since the lime content is exceedingly small and the protein differs widely from the casein of the milk.

"In our trials with soy beans at the Experiment Station, Mayaguez, the results at first were disappointing. This was found to be due to the fact that the soil was not inoculated with the proper bacteria for assimilating nitrogen for the roots. We now have inoculated soil, and before planting on ground new to this crop inoculating material should be secured from the Station for mixing with the seed at the time of planting. When the soil is once inoculated it will remain so for all succeeding crops."

Note: Who was Dr. Oscar Loew and how did he learn about soyfoods? From 1897 to 1906 he was a Professor of Agricultural Chemistry at the Imperial University of Tokyo, Japan, where he wrote articles about soy sauce, tofu, soymilk, and yuba. In 1911 he was in Munich, Germany, where he wrote an article about soymilk. When he speaks of "our trials with soy beans at the Experiment Station, Mayaguez," he seems to indicate that he was living at the Station in Porto Rico in about 1924. Address: Mayaguez, Porto Rico.

568. Slosson, Edwin E. 1924. Soy. *Scientific Monthly* 18:109, 111. Jan.

• ***Summary:*** "The recent rise in restaurant prices has sent economical Americans flocking to the chop sueys, where a savory and satisfying meal can still be obtained for a small sum. The Chinese, in their efforts to keep three hundred million people above the starvation point for three thousand years, have been forced to figure closely on food values... With us Americans meat has been the main part of the meal with vegetables on the side. With the Chinese this is reversed, and meat has in many cases been reduced to a condiment...

"The chief difficulty of a vegetarian diet is to get a sufficient amount and variety of proteins. Beans and peas are the richest in proteins, but they are not of the sort and proportion found in meats and needed for our muscle-making.

"But there is one exception and that is the soy-bean... The soy bean resembles animal foods in being rich in fat and protein and devoid of starch. What is more remarkable, the soy bean contains a dozen kinds of protein compounds that are the same as those found in milk. In fact a 'vegetable milk' can be made from soy beans and from this vegetable curds and cheese. These form a large part of the diet of Chinese and Japanese who abstain from animal food either because they are Buddhists or because they are poor. By milking the soy bean they can get ten times as much lacteal fluid per acre as if they pastured cows on the land. Italian physicians who used soy milk as infant food during the war report that it was better tolerated than cow's milk by some of the babies.

"The soy milk products have not yet come into use with us, but the American patron of the chop suey has acquired a taste for another product of the bean, the little glass cruet of brown sauce that seasons the rice. It looks and tastes like meat extract, such as we use in making beef tea, and is really much like it in composition and nutritive value. This shoyu or soy sauce is made by long fermentation and ripening of a mixture of beans and wheat in brine. The longer the process the better the product. Six months or a year may suffice for the masses, but to suit the taste of the Oriental connoisseur it must be sunned for five years or even thirty, the jars being patiently uncovered every day and covered every night or whenever it rains. Over two million barrels of soy sauce are made in Japan every year."

569. *Chinese Economic Monthly.* 1924. Manchurian beans. 1(9):12-19. June. [Eng]

• ***Summary:*** "The principal export of Manchuria, and indeed of the whole of China, is the soya bean, which in its raw and manufactured states amounts to over 75 per cent of the value of the total exports of the Three Eastern Provinces. It would be no exaggeration to say, therefore, that the entire industry in this territory is concentrated on [soya] beans, their production, manufacture and barter. It is mainly the bean that provides the buying power of Manchuria, and stimulates its economic progress. From a primitive agricultural region Manchuria has developed along industrial lines mainly as a result of its stupendous [soya] bean resources."

Manchuria is "almost the sole supplier of soya beans to world markets. All attempts to cultivate beans out of China

on any extensive scale have failed. 'Beans' is therefore always associated with Manchuria, and *vice versa*.

There are many soya bean varieties, but the yellow oliferous one (*huang-tou*) is the dominant variety; it is "subdivided into a number of kinds. The experimental field of the Manchurian Rural Economy Society cultivates no fewer than 200 varieties."

Chinese official statistics, which are usually low, estimate the area under soya beans in the whole of China [including Manchuria] at 12 million acres. Statistics from the Economic Bureau of the Chinese Eastern Railway, in the C.E.R. zone (Heilungkiang and a part of Kirin province), yellow soya beans are planted over an area of not less than 4.3 to 4.4 million acres, or 25% of the entire cultivated area, while in all 3 of the provinces of Manchuria the Bureau estimates that there are 8 million acres under cultivation. On average in Manchuria, 1 acre yields about ½ ton of soya beans. Thus, the total average production of soya beans in the whole of Manchuria may be estimated at more than 4 million tons, of which about 2.4 million tons (about 60%) are exported in raw and manufactured articles.

Owing to the density of the inner provinces of China, almost all the soya beans there are consumed locally. "Inner China looks not so much to the oil content of the bean as to the azotic stuffs [nitrogen] it contains. The export of soya beans and products from Inner China is very small and decreasing (5.5 million piculs in 1920 and 4.6 million piculs in 1922) while the exports from Manchuria continue to grow dramatically.

The world is now looking to the soya bean as one solution to its future food problems. Dr. Berczeller, a well-known Hungarian scientist, says: "It is a matter of the highest political importance that the West should learn the lesson of cheaper living as taught to them by the East in the adaptation of the soya bean as an article of food." After prolonged investigation, he claimed to have succeeded in creating from the yellow soya bean bread, milk, and flour, which were both inexpensive and palatable. Yet the taste of many soybean products (such as "bean flour" and "bean cheese") is unknown to Europeans.

"The extraction of oil from [soya] beans has as ancient an origin as the cultivation of the beans themselves. In the native Chinese mills it is still effected by means of the wedge press, the invention of which dates from the early days of the history of technics. The first steam bean-oil mill was opened toward the end of the last century at Yingkow [Yingkou]. At present such mills are counted in hundreds. Almost the entire bean oil export comes from steam mills. Several years ago the South Manchuria Railway Company erected a mill at Dairen for the extraction of oil with the aid of benzine. It is now under private management." Using the solvent method, 12% of the weight of the bean is extracted as oil, using the steam mill only 19%, and using the wedges presses less than 10%. Recently, due to perfected methods of refining, an oil named "Atzetko, made at Harbin by the Anglo-Chinese Company, has begun to be used in food by Europeans.

Before World War I, the price of soya beans was much lower than today. Today the main consumer of beancakes is Japan, were they are used as fertilizer on the rice fields. "However, there is one dark side of the picture" of soya beans in northern Manchuria. Manchurian bandits (*hunghutze*) are terrorizing and plundering the peasants.

Note 1. This is the earliest document seen (Nov. 2012) that uses the term "dark side" in connection with soya beans.

Tables show: (1) Soya bean cultivated area and production in the three provinces of Manchuria in 1923: Kirin province (center east): 1.6 million shan (1 shan = 1.8 acres) produced 1.5 million tons. Heilungkiang province (furthest north): 1.2 million shan produced 1.5 million tons. Fengtien province (later renamed Liaoning, furthest south): 1.2 million shan produced 1.5 million tons. Totals for Manchuria: 4 million shan (7,200,000 acres) and 3,700,000 tons.

Note 2. This is the earliest document seen (March 2001) that gives statistics on soybean production in East Asia. (2) Export of soya beans and soya bean products from China proper. Source: 1922 Chinese Maritime Customs report. For the 3 years 1920, 1921, and 1922, gives the weight in millions of piculs (1 picul = 133.33 lb) and value in Hk. Tls. [Haikwan Taels; a monetary unit] of each of the following: Yellow [soya] beans: Grain [beans / seed], beancakes, bean oil, total. Black [soya] beans. Green [soya] beans. White [soya] beans. Other kinds. Total exclusive of yellow beans. Gross total. In percentages relative to 1920. (3) Exports from Manchuria only: Exactly the same years and products as Table 2. Note 3. One Haikwan Tael in 1920 equaled 6 shillings 6½ pence or $1.24 in gold coin; in 1922 it equaled 3 shillings 9 pence or $0.83 in gold coin.

(4) Re-import of soya beans and products into China in 1922. Yellow beans–4.9 million piculs worth 17.6 million Hk. Tls. Beancakes–6.3 million piculs worth 16.6 million Hk. Tls. Oil [soya]–0.2 million piculs worth 1.7 million Hk. Tls. Other [soya] beans–2.1 million piculs worth 7.1 million Hk. Tls.

(5) Net export of yellow soya beans from China in millions of piculs each year from 1920 to 1922: To Japan, To Dutch Indies, To Turkey, Persia, Egypt, etc. To Europe. To other countries. Via Vladivostok. Total. Note 4. Soya beans exported via Vladivostok are mostly directed to Europe (about 3 million piculs), with about 2.5 million piculs to Japan.

Note 5. In Table 5, "Turkey, Persia, Egypt, etc." is treated as one unit or geographical area. In 1920 this area imported from China 0.4 million piculs of soybeans, followed by 0.7 million in 1921 and 0.3 million in 1922. Although we know the amount of soybeans imported to the area, we cannot say for sure to which specific countries the soybeans were imported in this area (Turkey and/or Persia).

Therefore, this may be the earliest document seen (Dec. 2007) concerning soybeans in Turkey. This document may contain the earliest date seen for soybeans in Turkey (1920-1922).

Note 6. This may be the earliest document seen (Dec. 2007) concerning soybeans in Persia (today's Iran). This document may contain the earliest date seen for soybeans in Persia (1920-1922).

Note 7. This is the earliest document seen (Dec. 2007) concerning soybeans in the Middle East / Near East (Persia, and/or Turkey–today's Iran). This document contains the earliest date seen for soybeans in the Middle East / Near East (Persia and Turkey) (1920-1922).

(6) Net export of [soya] beancakes from China in millions of piculs each year from 1920 to 1922: To Japan, To other countries, Via Vladivostok. Total. "Beancakes exported *via* Vladivostok are directed almost exclusively to Japan."

(7) Net export of [soya] bean oil from China in thousands of piculs each year from 1920 to 1922: To Japan, To Dutch Indies, To Turkey, Persia, Egypt, etc. To Europe. To United States of America. To other countries. Via Vladivostok. Total. A note states that Bean oil exported via Vladivostok is mostly directed to Europe and to countries of Asia Minor. All the other kinds of beans are distributed mostly in Japan, Korea, and along the coasts and islands of the Pacific Ocean.

(8) Chemical composition [as-is basis] of the three main soya bean varieties cultivated in North Manchuria: White Eyebrow (*pai mei*). Round Gold (*chin-yuan*). Dark Belly (*hei chi*). (9) Weight (in millions of poods) of soya beans and products carried on the Chinese Eastern Railway in 1920, 1921, 1922, and 1923. Also: Percentage of total carried. Weight of each exported to the South Manchurian Railway, and to the Ussuri Railway. Soya beans and their products are the principal cargo of the Chinese Eastern Railway; in 1923 they accounted for 49.0% of its total cargo, compared with only 24.6% in 1920.

570. Tang, Chi Yu. 1924. An economic study of Chinese agriculture. PhD thesis, Cornell University, Ithaca, New York. 514 p. June. See p. 420-23. [2+ ref]

• ***Summary:*** In Part V, Chief Agricultural Enterprises, chapter 24 is titled "Soy beans." It begins: "China leads the world in the production of soy beans. Statistics on acreage and production of soy beans in China proper are lacking. The soy beans acreage in Manchuria, however, was estimated at 7,200,000 acres, and production 3,700,000 tons" (see *Chinese Economic Bulletin* No. 156, p. 9 {16 Feb. 1924}). "During the period 1891-1904, exports of soy beans and soy bean products were almost entirely absorbed by Japanese markets. The Russo-Japanese war in 1904 and 1905 stimulated the production of soy beans in Manchuria, After the war, the surplus beans had to be disposed of in some markets, and for the first time trial shipments were made by Japanese firms to English mills in 1908... During the period 1909-1922, acreage and production of soy beans increased by leaps and bounds" [in the USA].

The chapter then lists five major reasons that soy beans have become so important in China: "1. Soy beans thrive in a variety of climatic conditions. They do well in dry seasons and at the same time do not reduce greatly in yield in a wet season. 2. Since they are a leguminous crop, soy beans are grown to maintain soil fertility... 3. Soy beans have a high food value in comparison with other foods. They are especially rich in protein... 4. Many by-products are made from soy beans, including bean oil cake, bean meal, bean flour, bean bran, bean sprouts, bean coffee, bean milk and bean curd. Because of the large range of by-products that have been made, the price of soy beans has become stabilized... 5. Further expansion of soy bean production possible when North Manchurian lands are brought under cultivation."

Table 45 (p. 422) shows China's exports of soy beans, bean cake, and bean oil for the years 1913, 1920, 1921, and 1922 in piculs (133.33 lb) and taels (a monetary unit). Each of the three increased during this period which included World War. I. In 1922 exports of bean cake were worth the most, followed by soy beans and bean oil. Soy bean exports grew from 7,419,511 piculs in 1913 to 12,462,350 piculs in 1922. [Soy] bean oil grew from 49,817 piculs in 1913 to 12,294,006 piculs in 1922.

Table 46 (p. 423) shows the weight and value of these three products exported to various countries. Beans are mostly exported to Russia, Japan, and the Dutch Indies (in that order). Bean cake is mostly exported to Japan (86% of the total) and Russia. Relatively little bean oil is exported: it goes mainly to the "Turkey, Persia, Egypt, etc." [grouped as one unit] (380,000 piculs), Russia (250,000 piculs), Great Britain (246,000 piculs), the Netherlands (201,000 piculs), and the United States (116,000 piculs).

Note: This is the earliest English-language document seen (June 2013) that uses the term "bean bran" to refer to soy bran. Address: Cornell Univ., Ithaca, New York.

571. May Co. (The). Formerly Hamburger's. 1924. Health first! (Ad). *Los Angeles Times.* Sept. 7. p. I25.

• ***Summary:*** "The May Co. headquarters for Battle Creek [Michigan] and other famous health foods! Yogurt Tablets, a Battle Creek product that makes very superior buttermilk. Vegex–a vitamin food in four different forms and sizes. Cubes, almonds, paste and fruit wafers. 10¢ to $11.50.

"Fruit and Nut Bromose–health chocolates and meltose sweets. Zo–Vitamin breakfast food (Battle Creek Food Co.) rich in food iron and other food salts.

"For a full list of Battle Creek and other health foods, also catalog of fine groceries, write for Bklet [Booklet] 67T." Address: Fourth Floor [Broadway at Eighth, Los Angeles].

572. Cullison, W.V. 1924. The soy bean and commerce. *Oil Miller* 20(3):17-18, 20-22. Nov. Reprinted from The Staley Journal.
• ***Summary:*** Contents: Introduction and history. Three methods of producing soybean oil: Old hydraulic method, extraction process using "light petroleum naptha" [naphtha], and by the Anderson Expeller mill (continuous process). Crude soy bean oil. Use of oil in hard soaps and paints. Soy bean meal: Soy bean flour as food. Food uses of soy beans in China and Japan: Soy bean or vegetable milk, tofu or soy bean curd, miso or soy bean paste, soy bean sauce (shoyu). Soy beans and the farmer: North Carolina led in acreage until 1923, when Illinois gained first place. Growing soy bean. history of the soybean, uses, methods of oil production, and uses for the oil and meal.

"The soy bean has been grown in the United States since 1804, under the names of Coffee bean, Japan pea, Soja, Soy, Soya and Stock pea. During the period of the Civil War the soy bean was used rather extensively in the southern States as a coffee substitute. For a considerable while seedmen sold certain varieties under the names Coffee Berry and Coffee Bean.

Note 1. This is the second earliest document seen (Nov. 2005) which states that soybeans were used as a coffee substitute during the Civil War in the United States.

The 2nd process for producing soy bean oil is the "Extraction Process wherein the ground seed is leached with light petroleum naptha, which dissolves the oil, leaving a meal containing less than 4 per cent oil. The naphtha extract is distilled, the naphtha recovered and used over again, and the soy bean oil obtained as a residue from this distillation."

"The demand and market for soy bean products, especially the oil, is here and now. Whether or not this demand will be filled by American grown beans, or by beans and oil imported from Manchuria depends upon the American farmer."

A map shows where soy beans are produced in the USA. A flow sheet shows the basic steps in making soy bean oil, meal, and other chief products. A photo shows a line of expellers, powered by overhead belts, as they "extract soy bean oil."

Note 2. This article says nothing about the A.E. Staley Manufacturing Company's work with soybeans. Address: Research Chemist, A.E. Staley Mfg. Co., Decatur, Illinois.

573. Loreti, Mario. 1924. Esperienze sulla alimentazione di lattanti affetti da manifestazioni di diatesi essudativa e spasmofilica con latte vegetale di soja hispida [Experiments with feeding unweaned infants, affected by symptoms of exudative diathesis and spasmophilia, with soymilk]. *Rivista di Clinica Pediatrica* 22(11):765-81. Nov. [20 ref. Ita; eng; fre; ger]
• ***Summary:*** Soymilk, which is properly prepared, is shown to be an advantageous substitute for cow's milk in feeding infants with symptoms of exudative diathesis and spasmophilia. Address: Asst., Institute of Clinical Pediatrics, Univ. of Bologna, Italy (Istituto di Clinica Pediatrica della R. Università di Bologna).

574. Slosson, Edwin E. 1924. Soy. *School Science & Mathematics* 24(8):855-56. Nov. Whole No. 208. [2 ref]
• ***Summary:*** This article is reprinted from *Scientific Monthly* (Jan. 1924, p. 109, 111).

575. Battle Creek Food Co. 1924-1933. Special tests. Battle Creek, Michigan. 115 p. Unpublished manuscript.
• ***Summary:*** This is a bound, lined laboratory notebook used for recording the results of experiments, which were then reported back to Dr. John Harvey Kellogg. Most of the experiments involved the vitamin content of plant foods. Pages 4-5 (dated 12 Dec. 1924) shows graphs of the weight of rats fed soy bean flour as the sole source of protein and vitamin B. H.S. Mitchell was the experimenter.

Page 7 (dated 9 Nov. 1928) is a test of soy bean flour which "had been subjected to a process for removing the bad flavor. Dr. Kellogg was "anxious to see whether the vitamins A and B have been removed." A test on rats showed that they grew equally well on regular soy bean flour and the processed soy bean flour.

Page 22 (dated 1929-30) describes an experiment which shows that soy milk and soy bean meal are equally good sources of vitamin B. Many tests were conducted on the vitamin content of Savita, Savita Bouillon Cubes, and Savita yeast, compared to Fleischmann's yeast. Address: Battle Creek, Michigan.

576. *Biblioteka Naroden Universitet* (*Library Popular University*). 1924. Soiata. Neinoto otglejdane i izpolzvane. Gotvene na zryalata i suha soia; soevo brashno; sos ot soia; kjufteta; mlieko i sirene ot soia; med ot soia [Soya. Its cultivation and use. The cooking of the ripened dry soy beans, soy flour, soy sauce, croquettes, milks, soya cheese and honey from soya]. No. 42. 16 p. Veliko Tirnovo: Novo Vreme [New Times Printer]. [Bul]*
Address: Bulgaria.

577. Wong, T. 1924. [Soy-bean industries]. *Chung-hua Hua Hsueh Kung Yeh Hui Hui Chih* (*J. of the China Society of Chemical Industry*) 2:139-44. [Chi]*
• ***Summary:*** "Methods of preparation and analyses are given for 9 products manufactured from soy bean, including oil, been curd, bean milk, etc...

"Soy-bean cake contains 42.1% protein and 9.6% oil. This might be used for the manufacture of artificial marble and similar products."

578. Cooper, Lenna Frances. 1924. The new cookery. 9th ed., revised. Battle Creek, Michigan: The Modern Medicine

Publishing Co. 475 p. See p. 76-77. Index. 23 cm.
• ***Summary:*** The Preface (p. 12) states: "The author wishes to express her indebtedness to Dr. John Harvey Kellogg, of the Battle Creek Sanitarium, and to his wife, the late Mrs. Kellogg, both of whom have inspired her with a love for the study of foods and their scientific preparation and have been constant sources of help and encouragement.

In the chapter on "Unfermented breads," the recipe for "Soy cakes and waffles" (p. 76) calls for "2 cups Soy flour."

The section titled "Unusual foods referred to in this book" (p. 462-64) states that the following are made by the Battle Creek Food Company, Battle Creek, Michigan: Protose (a meat substitute made from cereal and nuts), Nuttolene (a pure nut product with the consistency of brick cheese), Savita (a pure vegetable meat flavoring), Meltose (malt honey), Meltose Sugar, Sanitarium Cooked Bran (an appetizing food that supplies the necessary roughage, stimulates intestinal activity, and is rich in vitamins), Vita-Wheat (rich in gluten, lime, iron, and Vitamin B–the anti-neuritic vitamin), Branola (breakfast food that is 2/3 bran and 1/3 wheat), Zo (a body-building, ready cooked cereal breakfast food), gluten flour (contains 44% of wheat gluten), Malted Nuts ("A delicious nut cream–Contains the same nourishing food values as human milk and is even richer in its tissue building elements. It has an appetizing flavor and can be used with excellent results by those with whom cow's milk is found to disagree. It is excellent for those who wish to gain weight"), Minute Brew (a cereal coffee), Kaffir Tea, B. Acidophilus Culture (Bacillus Acidophilus is the strongest known lactic acid producing organism), Vegetable Gelatine or Agar (Made "from Ceylon moss, a seaweed that grows off the coast of Japan." It is "a form of cellulose resembling bran in chemical composition but somewhat like animal gelatine in physical appearance").

Note 1. This is the third earliest Seventh-day Adventist cookbook seen (Oct. 2004) that contains a recipe using soybeans or soy ingredients.

Note 2. The first edition of this book was copyrighted in 1914, the 11th edition in 1929. There is no mention of soya in Mrs. E.E. Kellogg's *Science in the Kitchen* (revised ed., 1892. Battle Creek, Michigan: Health Publishing Co.), nor in H.S. Andrews' *Science of Food and Cookery* (1921. Pacific Press Publishing Co.), nor in George Cornforth's *Good Food* (1920. Review and Herald Publishing Assoc.). Address: Dean of Home Economics, Battle Creek College; formerly, Head Dietitian of the Battle Creek Sanitarium; and later, Supervising Dietitian, United States Army (1918-1919).

579. Laxa, Otakar. 1924. Syrarstvi: Popis vyroby a upravy syra jako potraviny [Cheese production: Production of cheese and its productivity as a food. 2nd ed., revised and enlarged]. Prague: Ceskolovenske Podniky Tiskarske a Vydavatelske. 539 p. See p. 522-24. Series: Zemedelska Knihovna, edited by Prof. Dr. Alois Velich. [Cze]
• ***Summary:*** In the section titled "Vegetable Cheeses" (p. 522-24), the author discusses tofu, natto, kori-tofu [dried frozen tofu], and miso. Address: Prof., Dr., Czechoslovakia.

580. Minami Manshû Tetsudô K.K. Kôgyô-bu. Nômu-ka. [South Manchuria Railway Co., Industrial Div. Bureau of Agriculture]. 1924. Daizu no kakô [Soybean processing]. Dairen, Manchuria: SMRC. 777 p. 30 cm. (Sangyo Shiryo 21). [250 ref. Jap]
• ***Summary:*** Name of company with diacritics is: Minami Manshû Tetsudô K.K. Kôgyô-bu. Nômu-ka. This important, major work was written by Yoshitane Satô. Contents: Photos (on unnumbered pages at the front of the book) show 16 scenes of soybean transportation, storage, and processing in Manchuria, as follows: (1) Mule drivers whipping mules trying to pull carts loaded with large sacks of soybeans over muddy roads. (2) Cylindrical osier storage bins for soybeans. (3) Row upon row of sacks of soybeans piled high in storage near docks. (4) Soy sauce being made in a courtyard; each earthenware jar is covered with a woven conical lid. (5) The inside of a huge and modern soy sauce plant. (6) Wooden kegs and glass bottles of Yamasa shoyu. (7) Soy sprouts (*daizu moyashi*) growing in round woven baskets. (8-11) Soy oil being pressed using vertical screw presses [as an alternative to hydraulic presses]–four views. (12) Boilers used in a soybean mill. (13) A wooden barrel of soybean oil being sealed. (14) Soy oil packaged in many small containers, each surrounded by a wicker basket. (15) Round soybean cakes stacked high on railway flatcars. (16) The inside of a modern soy oil factory.

Note 1. This is the earliest Japanese-language document seen (Jan. 2013) that uses the term *daizu moyashi* to refer to soy sprouts.

Contents: 1. Current status of soybean production and consumption: A. Production: Overview (p. 2), Japan (p. 4), Korea (p. 12), Manchuria (p. 16), China (except 3 eastern provinces, but including Eastern Inner Mongolia, p. 31), USA (p. 34), British colonies (p. 37), European countries (p. 40). B. Consumption: Japan (p. 41), Korea (p. 52), Manchuria (p. 57), China (p. 59), Dutch East Indies (Indonesia, p. 60), USA (p. 61), European countries (p. 63).

2. Characteristics of soybeans: A. From a physical sciences viewpoint (p. 67): Structure (overview, cotyledons, hypocotyl, seed coat), contents of each system (p. 70), appearance (p. 73; color, gloss, shape, size, hilum (*fusuma*) color, young plumule leaf color, ratio of seed to seed coat). B. From chemical viewpoint (p. 82): General composition, structure of each component (p. 109; protein, oil, carbohydrate, ash/minerals, vitamins). C. Appearance and relationship between oil and protein content (p. 126): Oil and protein color related to color, glossiness, shape, size, hilum color, young plumule leaf color. D. Evaluating soybean quality (p. 140): Overview, key points (sizes, shapes, colors, glossiness, hilum color, young plumule leaf color, ratio of

seed coat to seed, dryness of seed, volume, weight, smell, mixing of different varieties, ratio of imperfect seeds, amount of other types of seeds), collection of materials for testing, testing and evaluating commercial soybeans.

3. Soybean usage and processing (p. 175). A. One view of main usage of soybeans. B. Nutritional value of soybeans as food (p. 183): Nutritional value of soy protein. C. Processed soyfoods (p. 208): Soy sprouts (p. 208), natto (*itohiki nattô,* p. 212, Hamanatto, p. 224), types of tofu (regular tofu [*nama-dôfu,* p. 226], *kori-dofu* or *koya-dofu,* p. 240, aburaage, p. 245, tofu curds [*tofu nô,* p. 247], hard tofu [*tofu-kan,* p. 247], fragrant hard tofu [*kô-kan,* p. 248], *senchô tofu,* p. 249, fermented tofu [*nyûfu or funyû,* p. 249]), *tofu-p'i* or yuba (p. 256), soymilk and artificial cow's milk, p. 259, soybean flour raw, or roasted (kinako, p. 263), shoyu (p. 266; overview of miso and shoyu, Japanese traditional regular shoyu, p. 267, Japanese traditional special shoyu and tamari, p. 269, Chinese soy sauce, p. 272, recent shoyu research and development, p. 274), miso (p. 280; Japanese traditional regular miso, Japanese traditional special and processed miso, p. 282, Chinese miso, recent miso research and development, p, 285). D. Soybeans as feed or fodder (p. 287; green soybeans as feed, p. 290): Fresh forage, dried forage or hay. E. Soybeans as manure or fertilizer (*hiryô,* p. 297; in the Kaijô area of Manchuria, have been roasted and steamed, and mixed with compost, and used for green manure (*ryokuhi*) or soybean cake (*daizu kasu*). This method has also been used in the northeastern provinces (*Tohoku Chiho*) of Japan in rice fields). F. Soybeans as oilseeds (p. 302). G. Use of soybean protein in industrial products (p. 304).

4. The soy oil extraction industry (p. 305): A. Methods of removing the oil (origins, traditional methods, hydraulic pressing, extraction method, p. 340). B. Advantages and disadvantages of each method (p. 348). C. The soy oil industry in Manchuria (p. 357): History of development, important places for soy oil on the Manchurian Railway, economic condition of the Manchurian oil industry (p. 420), oil extraction in Japan (history, p. 437, commercial factories, p. 442, development of these factories, p. 451).

5. Soybean meal or cake and its composition (p. 464). A. The varieties of soybean meal or cake and the composition of each. B. Evaluation of quality (p. 473). C. Soybean meal or cake as a fodder (p. 478): Feeding value and digestibility, incorrectness of the theory that there are bad effects from feeding soybean meal or cake (p. 479). D. Soybean meal or cake as a fertilizer (p. 490). E. Soybean meal or cake as food (p. 504): Use as a raw material for shoyu production (p. 506), use to make soy flour (p. 509). F. Soybean meal or cake as a source of protein in industrial products.

6. Soy oil and its processing (p. 526). A. Characteristics of soy oil: Composition, physical characteristics (p. 535), chemical characteristics, testing and evaluating soy oil (p. 564), the quality of commercial soy oil products (p. 577). B. Refining soy oil (p. 587). C. The use and processing of soy oil (p. 631): Overview, refined soy oil as a food, substitute for salad oil, or for deep-frying oil, as an illuminant, as a cutting oil, lard substitute, margarine, in paints, soap, hardened oil, for waterproofing, substitute for petroleum oil, glycerin, fatty acids, stearine.

7. Exports and imports of soybeans, soybean meal or cake, and soy oil (p. 708). A. Manchuria. B. Manchurian exports. C. China. D. Japan. E. Korea. Appendix: Bibliography of soybeans (Japanese-, German, and English-language works; p. 748). List of photos.

Note 2. This is the earliest Japanese-language document seen (Oct. 2011) that mentions fermented tofu, which it calls *nyûfu* or *funyû.*

Note 3. This is the earliest Japanese-language document seen (Feb. 2012) that uses the term *itohiki nattô* to refer to natto. Address: Dairen, Manchuria.

581. *Gazzetta degli Ospedali e delle Cliniche.* 1925. Il latte di soja in pediatria [Soymilk in pediatrics (Abstract)]. 46(5):110-12. Feb. 1. [1 ref. Ita]
• ***Summary:*** A 3-page Italian-language summary of the following Italian-language article: Loreti, Mario. 1924. "Esperienze sulla alimentazione di lattanti affetti da manifestazioni di diatesi essudativa e spasmofilica con latte vegetale di soja hispida" [Experiments with feeding unweaned infants, affected by symptoms of exudative diathesis and spasmophilia, with soymilk]. *Rivista di Clinica Pediatrica* 22(11):765-81. Nov.

582. Lovell, Philip M. 1925. Care of the body. *Los Angeles Times.* March 15. p. L24. Sunday magazine.
• ***Summary:*** When Commodore Perry visited Japan and created the "open door" in the mid-1800s, he found many interesting things. "For instance, dairy cows were unknown and milk from animals was something not used." When a mother died at childbirth, either a wet nurse was found or "ample substitutes for animal milk were found.

"The article below, reprinted from the *Vegetarian Magazine* [Chicago, Illinois], is especially interesting, not only because it presents a food infrequently used by the American public, but also because it presents a new outlook on the problem of feeding the delicate, keenly sensitized stomach of the tiny baby."

"'The American public, almost unawares, witnesses today the tedious process of the advent of a new food. Slowly and laboriously, as was the case with the tomato and potato, the soy bean is fighting its way into popular favor.

"'In sustaining 300,000,000 people for 3,000 years the Chinese have worked out a vegetable diet with the necessary constituents of a meat diet. The soy bean is the backbone. Lack of proteins handicaps a vegetarian diet. Beans and peas are richest in proteins, but not of the sort of proportion found in meats–and needed for muscle building.

"'But the soy bean, having no starch, contains 40 per

cent of protein and 20 per cent of oil, thus resembling animal foods; moreover, it contains a dozen kinds of proteins found in milk. Some babies thrive better on soy milk than on cow's milk."

"'Chinese make milk of soy beans, but our Americans are so occupied in making cream puffs, serum, and money that they have no time for making anything but animals to kill and eat."

"'Perhaps some day it [the USDA] will awaken to the fact that soy bean milk having nourished the Chinese centuries before the white man robbed the Indian of his heritage, can more profitably adopt the same product to save the nation. Sander Christensen has produced milk from rice and it was good milk, but has not yet successfully canned it. Americans want everything canned–religion, music, milk. If this inventive man would turn his attention to soy bean milk, we doubt not but we should soon be flowing in soy bean milk and gaining health thereby.'"

Note: This is the earliest English-language document seen (Feb. 2004) that uses the word "backbone" in connection with the soy bean. It says: "The soy bean is the backbone" of China's meatless diet. Address: N.D. [Naturopathic Doctor].

583. Millennial Food Co. 1925. "1000" brand whole treated rice (Ad). *Vegetarian Magazine and Fruitarian* 24(4):28. April.
• ***Summary:*** "The only Whole Rice upon the world's market in which the Malt Flavor is brought out, hence partly predigested... Shipped in 12-pound cartons."

Note: From the ad in this issue of the magazine on p. 29 we can see that this is a dry rice base for making rice milk. Address: 223 Minna St., San Francisco, California.

584. Millennial Food Co. 1925. Agents wanted (Ad). *Vegetarian Magazine and Fruitarian* 24(4):29. April.
• ***Summary:*** "All over America agents are wanted to establish Rice Milk Dairies. Rice milk has been taken up with keen interest and the demand is sharp, but we need live men to promote its further introduction. Chicago [Illinois] has a successful dairy, Palestine [in the Middle East], and the calls coming in to California from stations proves its popularity. For information address Millennial Food Co.,..." Address: 223 Minna St., San Francisco, California.

585. Millennial Food Co. 1925. Vegetable powder (Ad). *Vegetarian Magazine and Fruitarian* 24(4):30. April.
• ***Summary:*** "Rich in vegetable fats and containing all vitamines, natural and Balanced for Man. Used instead of milk and eggs in bread making, hot cakes and waffles, in soups and other cooking. Mix with eight times its weight of water.

"Shipped anywhere in the U.S., 4 pounds for $1.00 postpaid." Note: This is probably rice flour, which can be used to make rice milk. Address: 223 Minna St., San Francisco, California.

586. Thevenot, Gaston D. 1925. Process of making vegetable milk [from soy beans]. *U.S. Patent* 1,541,006. June 9. 4 p. Application filed 11 June 1923.
• ***Summary:*** This is a patent for soymilk made from soaked soybeans which are so finely ground that soymilk need not be filtered and the okara need not be discarded, but remains suspended or emulsified in the soymilk. It is based on a previous patent (No. 1,444,812) in which the okara was separated from the soymilk and discarded. Address: New York City, New York.

587. *Vegetarian Magazine and Fruitarian.* 1925. Rice milk all over the world. 24(7):23-24. July.
• ***Summary:*** "Palestine has already interested itself in our American rice milk, and now the French government has had representatives visiting the California rice milk plant with a view to making contracts for it. Also British representatives are interested and present outlook is that foreign countries will adopt rice milk..."

"Well, bakers are coming to see the value of both rice milk and Vegetable Powder now placed on the market by that wonder worker, Sander Christensen, who invented the rice milk, and has furnished the country with a superior brand of rice, called '1000.'"

"When we first learned of rice milk we knew it would revolutionize our present food conditions. Sander Christensen's name will stand out as a brilliant star among world progressives as having brought to it a value not before known in our history." Christiansen traces his origins to Denmark.

"Now the warm weather will begin and heat increase in July and August. Begin now to select a cooling diet and when the heated term arrives you can meet it with a cool smile."

Note 1. This is the second earliest English-language document seen (Aug. 2013) that uses the term "rice milk" to refer to a commercial product.

Note 2. This is the earliest English-language document seen (Feb. 2005) that contains the term "cooling diet" (or "cooling food"). Address: 223 Minna St., San Francisco, California.

588. Carqué, Otto. 1925. Natural foods: The safe way to health. Los Angeles, California: Carqué Pure Food Co., Inc. 359 p. Illust. Index. 20 cm.
• ***Summary:*** This book advocates a natural-food, vegetarian diet, but not necessarily a vegan diet.

Contents: Part I: Fundamental facts about food and health. 1. The old and new conceptions of the cause of disease. 2. Drug medication, vaccination, and serum therapy. 3. Nature's healing factors: Sunlight, fresh air, exercise, rest,

water, the importance of natural foods for life and health, why denatured foods (white flour, refined sugar, candies, etc) are injurious. 4. The constituents of food considered in the light of modern physiology and biology: Proteins, carbohydrates, fats and oils, cellulose, fruit acids are organic acids, organic salts, the alkaline or base-forming elements (iron, sodium, calcium, magnesium, potassium, manganese, and aluminum), the acid-forming elements (phosphorus, sulphur, silicon, chlorine, fluorine, iodine, bromine, arsenic), the vitamins.

5. Rational soil culture essential for the production of superior foods. 6. The conservation of vital force (stimulants, narcotics, elimination of waste, quality of foods, prolongation of life, alkaline and acid-forming foods). 7. Why the calorie theory is misleading. 8. Fruit, man's best friend (the fruit of the tree, sulphured and unsulphured fruits). 9. Nuts–Nature's most concentrated foods.

10. Vegetables–Nature's blood purifiers (Great hygienic value of green leaves, proper soil fertilization most essential to vegetable culture, loss of organic salts in cooking, classification of vegetables–5 classes). 11. Cereals and legumes (Cereals falsely called "The staff of life," whole grain products are the best, the great waste of food elements by modern milling processes, legumes–an important food). 12. Milk and dairy products (Milk not a perfect food for adults). 13. Meat–the least essential and most expensive of all foods (the vegetarian alternative).

Part II: Practical dietetics. 14. How to live well on less food. 15. The feeding of infants and children (lactation, almond milk, soy bean milk). 16. The rational preparation of foods. 17. Rational food combinations (importance of simplicity of eating, the mono-diet and its advantages). 18. Simple and well balanced menus for all seasons.

Appendix: Tables and statistics. A1. Analyses showing the amount of sodium, calcium and iron in foods. A2. Amount of food materials necessary to supply one ounce of protein. A3. Amount of calories contained in one pound and one ounce of 200 food products. A4. Average time required for gastric digestion of foods. A5. Annual consumption of sugar, soft drinks, salt, spices, coffee, tobacco, drugs, alcohol, etc., in the United States. A6. Regulations for the enforcement of the Food and Drug Act. Important information about chemical preservatives and artificial colors.

The Preface (and the book) begins: "Two powerful superstitions are impeding the welfare and progress of the human race. The one is the conviction that disease is an entity, a mysterious something that attacks us without warning from the outside, either in the form of germs or as inclemency of weather. The other–perhaps the more harmful of the two–is the belief that for each disease specific remedies must be found, such as drugs, serums, vaccines, glandular extracts, etc., and that, when we are afflicted, we have to submit to a specialist's treatment or even to the affected parts or organs."

The average individual tries "to shift the responsibility for his sins of omission or commission to some imaginary cause, rather than to hold himself accountable for the violation of nature's laws." There is "almost universal ignorance of the fact that disease is merely an effort on the part of nature or the universal life force to restore normal conditions in the organism. Our present system of commercialism has taken advantage of this situation by misleading people through clever advertising to persist in their errors in order to maintain the demand for drugs and serums, proprietary medicines,..."

Chapter 11, "Cereals and Legumes," briefly discusses many types of soyfoods–soy bean sprouts, milk, flour, tofu, soy sauce, and oil (p. 142). Page 196 discusses the use of soy bean milk and almond milk for feeding infants and children.

Chapter 16, titled "The Rational Preparation of Foods," contains a long and detailed section on soy beans (266-71), with subsections on boiled soy beans, soy bean milk, tofu, soy sauce, and soy bean sprouts. Home preparation of each is described. Miso, yuba, natto, and hamananatto are also mentioned (p. 268). Soy-related recipes include: Baked soy beans (p. 269). Soy bean loaf. Soy bean croquettes. Soy bean bread (p. 270).

The section titled "Home made cheese" begins: "Man can live well without milk and dairy products, if he makes judicious use of legumes and nuts in various forms, as has been explained in the preceeding chapters, but under the present system og agriculture and production of foodstuffs, many people have to make occasional use of milk products... As the commercial cheese are generally heavily salted, preference should be given to home made cheese... Cottage cheese made without salt is the most wholesome of the cheeses."

Chapter 9 (p. 119-24), about nuts, states: "The making of nut butters is not a difficult process. At present peanuts and almonds are chiefly used for this purpose... The blanching of peanuts and almonds is now done on a large scale by special machinery, and the blanched nuts can be procured in nearly all the larger cities." Break the blanched nuts into small pieces by running them through the Climax Grater or a food chopper. Put them into a moderately hot oven for a few minutes to make them dry and crisp, then run them through a tightly adjusted nut mill to create a "smooth, palatable nut butter." A large table (p. 122) compares the composition of various nuts and nut butters (almond butter, peanut butter) with meat, cheese, eggs, cow butter, and whole wheat bread. "The pecan contains the largest amount of fat, about 70%, closely followed by the hickory nut, brazil nut, filbert and pine nut, which all contain over 60% of fat. The pignolia imported from Spain ranks highest in the amount of protein, containing nearly 34%; the peanut comes next with 29.8%; the butter nut, almond. pistachio, all contain over 20% protein, excelling the best cuts of meat in that respect. The

almond does not contain any starch as is, therefore, the nut best suitable for infants, especially in the form of almond milk." Chufa contains 3.5% protein and 31.6% fat.

The section titled "Fruit and nut confections" (p. 212-15) discusses and has recipes for natural candies and confections.

The section titled "How the American people deplete their vitality by their favorite poisons: The tremendous waste of our material wealth" (p. 328-43) discusses (p. 338-43): The amount spent in 1924 on each of 15 "adulterated foods and drinks and of poisonous stimulants and narcotics" ($5,040 million) compared with the amount spent on foods and vegetables ($850 million, or 16.8% as much). Refined sugar. Coffee. Tobacco. Condiments, etc. Alcoholic beverages. Drugs. Regulations for the enforcement of the Food and Drug Act (due to untiring efforts of Dr. Harvey W. Wiley, former chief of the Bureau of Chemistry, USDA). Sodium benzoate and sulphur dioxide. Salt. Saltpeter. Boric acid and borax. Saccharine. Mineral and coal tar dyes. Laxity in enforcement of the Pure Food Law.

On pages 344-47 is information about the Carque Pure Food Company (incorporated 1912) and its founder and owner Otto Carque, including a brief biography of Otto, a list of leading Carque food products, and a full page photo of the company's new home at 729 Seward St., on 1 Oct. 1925 (2 story brick building).

The food products are arranged by groups: Fruits: Sun-dried and dehydrated, without bleaches or preservatives (Black mission figs, white Smyrna-type figs, prunes, dates, olives, raisins, apricots, peaches, pears). Nuts: Fresh, selected and unroasted (almonds, walnuts, Brazil nuts, pecans, pignolias, pistachios, peanuts). Confections: Of assorted fruits, nuts and honey, without sugar, salt, glucose or preservatives (delectables, fruit nuggets, Kandy-Andy). Stamina and laxative foods (Nut-Fruto, Prunola {prunes and olives}, fruit laxative). Nut butters: Ground from whole nuts, uncooked and unsalted (almond, nut cream, peanut). Cereals and products: Made from re-cleaned whole grain (wheat flour, yellow corn meal, brown rice, breakfast food, crackers). Miscellaneous (olive oil, strained honey, raw sugar, fig-cereal breakfast drink {instead of coffee}). Price list and descriptive circulars on request.

Note: This is the earliest English-language document (or book) seen (June 2004) with the term "Natural foods" in the title that also discusses soy. Address: Los Angeles, California.

589. Deming, Macey F. 1925. Soybeans for human food. *Proceedings of the American Soybean Association* 1:71-76. Sixth annual field meeting. Held 1-3 Sept. at Washington, DC.
Address: Tappan, New York.

590. Latham, F.P. 1925. The economic value of the soybean to southern agriculture. *Proceedings of the American Soybean Association* 1:63-65. Sixth annual field meeting. Held 1-3 Sept. at Washington, DC.
• ***Summary:*** "I remember very distinctly some fifteen years ago [in about 1910], one October afternoon, when a stranger came into my front yard, as I was in the midst of the unusual work that a farmer has to do to maintain his living. I asked the stranger what I might do for him. He said, 'Morse is my name and I am from Washington [DC]. I am making a soybean investigation and would be glad to go over the situation with you.'

"I took just about two minutes to find that I was right next to a man who had the information for which I had been thirsting for six or eight years, and it was my pleasure to be with him that whole afternoon, that night, and all the next day. And, gentlemen, that is the date of a period in my agricultural activities, a period that I look back to with great pleasure. I know it has been one of the most profitable and most pleasant periods, and I know that there has been no better time in all of my life than the time of my association with Mr. Morse.

"I come from a section of the country, that is a cotton country, that has been growing cotton for a century. I come from a section whose people have been losing in cotton, and during that time, the white plague [boll weevil] has worked on their sandy soils and erosion has made pock-marks all over the country of the south." "I believe this, as clearly as I believe I am before you now, that the boll weevil in the South is going to drive us to produce our own foodstuffs; and when the day comes that the South sits up to breakfast and a soybean cereal is served with rich, yellow, soybean cream; when the table is supplied with ham, eggs, bacon, all made from a soybean product and as a result of the humus the soybean puts into the soil; when our new meal and even our livestock comes from the soybean, then I believe that the greatest territory will lie between the Virginia line and the Rio Grande territory, and I believe that God is the only one who knows what our land will do under those conditions. I am particularly delighted to meet the faces that I have met here today, people who each have a mission with the going to be of inestimable value to the South, North, East and West, because there is no legume that will adapt itself into the whole United States as does the soybean. It will fit anywhere; you can start it in March or in August and it will make good in every kind of season and when everything else quits. It is one of the greatest plants ever introduced into our whole agriculture, and I want to say to you, gentlemen, that I have been wonderfully interested in what I have heard and learned here with you today." Address: Belhaven, North Carolina.

591. Meharry, Charles L. 1925. Second annual field meeting: Illinois–September 1, 1921. *Proceedings of the American Soybean Association* 1:42-46.

• ***Summary:*** "The Second Annual Field Meeting of the National Soybean Growers' Association was held on 1 Sept. at the University of Illinois and at the A.P. Meharry Farm near Tolono, Illinois, the University of Illinois Extension Service, the Champaign County Soybean Growers' Association cooperating in arranging and conducting the program. The Champaign County Soybean Association and the Champaign County Farm Bureau furnished transportation and lunch was served by the Crittenden Unit of the Champaign County Farm Bureau.

"More than 1,600 people representing 35 counties in Illinois, 9 counties in Indiana, 3 counties in Kentucky, one county each in Missouri, Ohio and Wisconsin and the United States Department of Agriculture assembled at the South Farm of the University of Illinois, where representatives of the Extension Department explained the various soybean experiments, and the use and place of soybeans in rotations for Corn Belt conditions. Field plot tests of varieties suitable for different uses, soil types and latitude were inspected and the characters and behavior of each variety discussed. A special feature of variety demonstration was a test of sixteen varieties secured from each of ten different states... Visitors were then shown the work of Dr. Woodworth and others who are developing new varieties through selection and breeding. Dr. Woodworth discussed quite fully the principles of breeding and their application to natural and artificial crossing."

"At 10:30 the visitors started in automobiles for the A.P. Meharry Farm near Tolono... After arrival at the farm, several hay varieties, Illinois 13-19 (Ilsoy), Virginia, Mongol (Mid-west [Midwest]) and others were inspected. Several large fields of the Manchu, A.K., and Mongol (Midwest) for seed production were viewed."

"At noon a cafeteria lunch was served in the grove. In addition to the regular lunch, the A.P. Meharry Farm served a number of soybean dishes, including baked soybeans, soybean coffee, soybean milk, and soy sauce. An exhibit of soybean products consisting of soybean oil, soybean oil meal and flour, various paints and varnishes, soaps and photographs of various operations in the soybean field was furnished by County Agent C.H. Oathout.

"After luncheon President Riegel called the meeting to order, and Professor J.C. Hackleman, Illinois Extension Specialist in Farm Crops, presided.

"Mr. Charles L. Meharry welcomed the visitors to the A.P. Meharry Farm and spoke briefly of the place and importance of soybeans on the Meharry Farms.

Mr. Henry J. Waters, former President of the Kansas State Agricultural College, addressed the growers on the economic distress of the times and the economic situation at the close of the World War.

Professor E.J. Kinney, of the Kentucky Experiment Station, told briefly of the soybean in Kentucky... For Kentucky conditions the Mammoth Yellow was recommended for forage and the Haberlandt for seed.

"Mr. Charles Caldwell, soybean grower of Kentucky, told briefly of ten years' experience with soybeans."

"Mr. Taylor Fouts, soybean grower of Indiana, stated that he had been growing soybeans for a great many years, and emphasized their value as a soil-building leguminous crop on poor soils, especially where clover fails. He suggested that while corn is King of the midwest crops, the soybean would be known as the Queen, when we realize the wonderful possibilities and many uses of the crop.

Note: This is the earliest English-language document seen (July 2007) that uses the word "Queen" to refer to the soybean.

"Mr. C.E. Carter, of the Missouri Experiment Station, reported on the soybean situation in Missouri... The Morse and Medium Yellow (Midwest) are regarded as the best seed varieties and Wilson and Virginia as the best forage sorts.

"Professor George M. Briggs, of the Wisconsin Experiment Station, praised the performance of soybeans in his state."

"Mr. W.J. Morse, of the United States Department of Agriculture, gave a general review of the soybean situation in the United States. He stated that the interest in soybeans has increased very rapidly during the past few years, not only in the Middle West, but also on the Pacific Coast, in New England and throughout the Northern and Southern States."

"Mr. O.L. Cunningham, Kentucky, reported that soybeans were so generally grown and favored in Fulton County that soybean demonstrations were not essential. Of the 20,000 acres of corn, at least 16,000 acres were said to be planted with soybeans. The Mammoth Yellow variety was grown with late corn and the Haberlandt with early corn for pasturage. In Fulton County the corn is cut off and the hogs allowed to pasture the soybeans.

"Mr. C.B. Newton, Ohio, reported on soybeans growing in Ohio."

"Mr. W.E. Riegel, manager of the A.P. Meharry Farm, in a brief talk, stated that there was a place for soybeans on every farm to produce whatever amount of feed could be fed upon the farm, and that farmers should produce their protein feed instead of buying tankage, cottonseed meal and other high-priced feeds. It was also thought that soybeans should be developed as a human food in the United States as already had been done in the Orient."

"Chairman Hackleman emphasized his belief that the farmer should think of the soybean crop as a feed, forage, and pasture crop, and as a legume to enrich the soil. He made the point very emphatically that farmers should not depend on growing the soybean crop for seed alone, and more converts are needed to soybeans for their value on the farm. When the farmers get this attitude towards the crop, the seed crop will take care of itself.

"A demonstration of threshing soybeans followed the program of speakers. Several loads of unhulled beans of

the 1920 crop were threshed to demonstrate that the proper adjustment of an ordinary grain separator is all that is necessary to successfully thresh beans. The growers were shown the necessary adjustments and attachments in the way of different sized pulleys which reduced the cylinder speed without reducing the speed of the remainder of the thresher.

"The growers and guests after a unanimous vote of thanks to the hosts of the A.P. Meharry Farms departed about sundown."

Four small photos (p. 41) show "The Second Annual Field Meeting of the Association at the A.P. Meharry Farm near Tolono, Illinois, September 1, 1921." (1) Men standing in a field with silos and barns in the background. (2) People and children standing around luncheon tables covered with white table cloths. (3) Many men seated on the ground under trees, wearing white dress shirts (some wearing straw hats) and listening to a speaker. (4) Men standing around talking under trees. Address: Acting secretary.

592. Thevenot, Gaston D. 1925. Method for the preparation of a vegetable milk. *U.S. Patent* 1,556,977. Oct. 13. 3 p. Application filed 8 Dec. 1923.
• ***Summary:*** When decuticled mashed soybean is digested with proteolytic enzymes, some of the flavor principles are removed. Address: New York City, NY.

593. Vi-Tone. 1925. Vi-Tone (A Canadian product) (Ad). *Toronto Daily Star* (*Canada*). Oct. 25. p. 10.
• ***Summary:*** A very small ad for Vi-Tone. "A delicious Malted Milk Chocolate-flavored drink. Serve it hot or cold. Rich in proteins and vitamines of the Soya Bean.

"Look for our special demonstration in the Parkdale and Riverdale Markets this week-end."

594. Firth, Violet Mary. 1925. The soya bean: An appeal to humanitarians. London: C.W. Daniel Co., Graham House, Tudor St., London E.C. 4, England. 55 p. Oct. Reviewed in Russian by N.I. Morosoff in Manchuria Monitor. 1930. No. 5. p. 104-05.
• ***Summary:*** Contents: Part I: An appeal to humanitarians. Introduction. 1. Practical application of idealism. 2. Economic considerations. 3. Milk is not a humane food. 4. The power of humane ideals in commerce. 5. The burden of the animal kingdom. 6. The freedom of the cattle.

Part II: The making of soya milk. 7. The cultivation of the soya bean. 8. Early experiments with soya milk. 9. Process of manufacture. 10. The soya meal [okara]. 11. The soya bean industry. 12. The soya bean in the kitchen. 13. Medical and dietetic aspects. 14. The soya bean in national emergencies.

The foreword begins: "The manufacture of a vegetable milk from the soya bean is a matter in which I was much interested during the war, and I think I may claim to be the first person, in this country at any rate, who succeeded in making a cheese [tofu?] from vegetable casein.

"Shortly after the war [World War I] the company that was making soya milk closed down, the milk was unobtainable, and I lost touch with the matter. During a recent visit to Letchworth, however, I found that the making of soya milk was again in full swing, and I was so impressed with the spirit of service and humane ideals in which the enterprise was being conducted that I suggested to the managing director of the company that if he would assist me with the necessary technical details, I would like to write a little book on the possibilities of the soya bean, and bring to the notice of humanitarians in general the work that has been going on so quietly in this little country town. All information was freely given to me...

"I must express to the Garden City Pure Food Co. my thanks for their assistance and my admiration for the spirit in which their work is being carried on." That company has neither commissioned, nor subsidized this book.

This book is "written in an endeavour to make those who are "earnest for animal welfare realise that the exploitation of our younger brothers can be prevented more effectually from the commercial aspect than by individual abstention from flesh-food..."

"Over a hundred thousand pounds has been spent in England alone in experiments in making milk from the soya bean... The original company closed down during the post-war trade depression, and the wonderful soya milk was unobtainable; the work on the soya bean has been taken up again by a body of people actuated by philanthropic and humanitarian motives, whose names are well known among workers for human and animal welfare.

"The dearly bought secrets of the soya bean must not again be lost to the world..."

Note: The author sometimes writes under the pseudonym of Dion Fortune. Address: Author [England].

595. **Product Name:** Vi-Tone. Renamed Soybean Malter Milk, and Chocolate Malter Milk by Sept. 1929 (Malt Chocolate Soymilk).
Manufacturer's Name: Vi-Tone Company (Renamed in Milk-Ko Products in 1954).
Manufacturer's Address: P.O. Box 356, Hamilton, Ontario, Canada.
Date of Introduction: 1925. October.
New Product–Documentation: Ad for Vi-Tone by Vi-Tone Company. 1925. *Toronto Daily Star* (Canada). Oct. 25. p. 10. "A delicious Malted Milk Chocolate-flavored drink. Serve it hot or cold. Rich in proteins and vitamines of the Soya Bean."

Ad for Vi-Tone by Vi-Tone Company. 1928. Proceedings of the American Soybean Assoc. p. 39. "Jack and Jill both love Vi-Ton" [sic, Vi-Tone]. The ad text mentions "Vi-Tone 3 times. "Vi-Tone is a scientific combination of the Soy Bean with malt extract and milk–rich in protein and

vitamin content–and deliciously flavored with chocolate." An illustration shows a can of "Vi-Tone," described as a "food tonic beverage."

F. Dimmock. 1929. Proceedings of the American Soybean Assoc. p. 47-50. See p. 47. "The Soybean in Canada." "As far as the speaker is aware, only one firm in Canada uses the soybean in a commercial way. The Vi-tone Co., of Hamilton, Ontario, uses annually about 5,000 bu in the manufacture of a patent food." The product name is not given. It may have been Soybean Malter Milk and/or Chocolate Malter Milk. Note also that Milqo / Milquo (Soy Milk) had been launched in Hamilton, Ontario, by 1919 (Source: H.W. Lohse. 1936. *Canadian Chemistry and Metallurgy.* July. p. 224-25).

C.A. MacConkey. 1935. Soybeans. Ottawa, Ontario, Canada: National Research Council. p. 65. "Firms Engaged in the Soybean Industry in Canada." The Vitone Co., Hamilton, Ontario."

Gray. 1936. All About the Soya Bean. p. 124. Note: Hamilton is directly south of Toronto, at the western tip of Lake Ontario. This may be the product referred to by Dimmock in 1929.

Leon Lothrope. 1932. *Nor'-West Farmer and Farm & Home* (Canada). Oct. p. 8. "Soya beans." A photo titled "Products that contain soya bean oil or meal" shows a can of "Vi-Tone" Malt Chocolate Flavor. The front panel reads: "Hot or cold. A tonic food beverage. An extraction of malt and milk–rich in protein and vitamins of the soya bean."

L.B. Breedlove. 1936. *Chicago J. of Commerce and La Salle Street Journal.* June 25. p. 14. "Soy bean–The magic plant. Article XI." "Vi-Tone Company, Hamilton, Ontario, Canada: Soy bean malted milk, chocolate malted milk."

International Inst. of Agriculture. 1936. *Le Soja dans le Monde* [The Soybean in the World]. See: Manufacturers of edible soy products. p. 206. Malted soymilk and chocolate malted soymilk. Address: P.O. Box 358, Hamilton, Ont.

American Soy Bean Association. 1938. "16th annual meeting." This leaflet lists the stores from which the soy products were purchased, incl. Milqo Limited, Vi-Tone Company, Hamilton, Ontario, Canada.

Soybean Digest. 1948. "Grits and flakes... from the world of soy: Milquo Ltd. is now Vi-Tone." Jan. p. 34. "Milquo Limited has changed its firm name to Vi-Tone Products Limited, 198 Gage Ave. S., Hamilton, Ontario. Ray H. Bissell is president."

Note that according to the *Soybean Blue Book* (1948, p. 80) by that year "Vi-tone Products Ltd." was making a "tonic food beverage with soybean base." No brand name is given. According to *Soybean Blue Book* (1954, p. 102) this company either apparently changed its name at this time to Mil-Ko Products Ltd. or merged with Milqo Ltd. in Hamilton. Its address changed to P.O. Box 366. It continued to make "Tonic food beverages with soybean base." When Mil-Ko appeared, Vi-tone disappeared.

596. Morse, W.J. 1926. Re: Material for the B.P.I. exhibit for the Sesquicentennial Exposition. Letter (memorandum) to Dr. R.A. Oakley, USDA, Washington, DC, March 22. 1 p. Typed, with signature on letterhead.

• ***Summary:*** "Dear Dr. Oakley: With reference to the attached memorandum of March 11 from Dr. W.A. Taylor regarding the B.P.I. [Bureau of Plant Industry] exhibit for the Sesquicentennial Exposition, will say that we have here at the office the materials shown on the accompanying sheet labeled, 'Soybean Material for Exhibition Purposes.'

"In a recent letter from the Henry Bower Chemical Co., Philadelphia, I have been advised by Mr. Sydney Thayer, Jr., Assistant Secretary of this company, that they have been offered exhibition space at the above exposition, and it is stated that they have no chemicals that they could exhibit for public interest, but they have considered taking some small space to demonstrate the results of their work with soybean. It may interest you to know that this company has been conducting experimental work with soybeans for about one year now, especially as to the milk and flour products which can be made from the soybean. Mr. Thayer states that it occurred to him perhaps the Department of Agriculture would be represented with some sort of an exhibit, and that in our exhibit of soybeans we might include the products which they are interested in. It is further stated that if we were planning this soybean exhibit, they would be very glad to cooperate with us and furnish us any material that they may have to make the soybean exhibit a successful one. Yours very truly,..."

Location: National Archives, College Park, Maryland. Record group 54–Bureau of Plant Industry, Soils and Agricultural Engineering. Subgroup–Div. of Forage Crops and Diseases. Series–General Correspondence, 1905-29. Box 92–Morgan-Morse.

Sent to Soyinfo Center by Matthew Roth of Rutgers Univ., March 2012. Address: Agronomist, Forage-Crop Investigations, Bureau of Plant Industry, USDA, Washington, DC.

597. McAuliffe, J.C. 1926. The soya bean as a new world food crop. *Manufacturers Record* 89:100-01. April 1.

• ***Summary:*** An brief overview. "Dr. Horvath, of the Rockefeller Foundation, at work in Pekin, declares that the soya bean is the most complete vegetable food in the world–that it has all the elements of bread and butter, milk, eggs and meat combined into one bean.

Moreover, a milk made from the soya bean is "said to serve all the purposes of cow's milk, simply by the addition of a little sodium chloride..." Investigators says that soya bean milk can be produced at one-tenth the cost of cow's milk. It "is both chemically and actually of the same constituent quality, possessing the vitamines and at the same time eliminating all dangers of contamination in the way of

tuberculosis, typhoid fever and other dangerous diseases."

A large photo shows a large field of O-Too-Tan variety soya beans in South Carolina. Two men, wearing hats, are standing in the field; one is holding uprooted soya bean plants. Address: Augusta, Georgia.

598. Tso, Ernest. 1926. The value of egg yolk in supplementing diets deficient in calcium. *American J. of Physiology* 77(1):192-98. June. [12 ref]

• ***Summary:*** This study is designed to test the statement made by the famous nutritionist McCollum in his *Newer Knowledge of Nutrition* (1922, p. 171, 343) that "all diets without milk or leafy vegetables are deficient in calcium and therefore not suitable for human or animal nutrition."

In the author's first feeding study using soybean milk, he prepared a fairly concentrated soybean milk (containing 4% protein and 1.6% fat), supplemented it with 5% cane sugar and 0.1% sodium chloride. When this mixture was supplemented by 4% of egg yolk, rats reproduced normally, reproduced young and these in turn grew up normally.

In China, cow's milk is little used and most households cannot afford to buy it. However the cost of eggs and soymilk are very low. Tso concludes: "Egg yolk should be considered as efficient a protective food as milk. Whereas milk in relatively large quantities is the most available source of calcium for human nutrition, egg yolk in small amounts furnishes a vitamin like substance which enables the body to mobilize and utilize economically the apparently limited supply of calcium in the diet. Egg yolk is therefore invaluable in supplementing Chinese diets of young children in which milk or milk products take little or no part." Address: Dep. of Medicine, Peking Union Medical College, Peking, China.

599. Horvath, A.A. 1926. A new method for the determination of fat in soybean milk. *China Medical Journal* 40(7):631-33. July. [2 ref]

• ***Summary:*** "Soybean milk is extensively used throughout China by adults and for infant feeding. It has also been a very great success in the feeding of children in the United States.

The method, which is described, consists in autoclaving the soybean milk in an equal volume of a 20 per cent NaCl [sodium chloride] solution, followed by determination of the fat by the Babcock method.

A table shows the percentage of fat in 8 samples of soybean milk; 1-4 were prepared in the laboratory and 5-8 were purchased from various shops in Peking.

The percentage of fat in samples 1-4 ranges from 1.75% to 1.42% when calculated by the new method and from 1.65% to 1.35% when calculated by the older extraction method.

The percentage of fat in samples 5-8 ranges from 1.04% to 0.52% when calculated by the new method and from 1.12% to 0.58% when calculated by the older extraction method. The specific gravity of samples 5-8 ranges from 1.105 to 1.018.

"The data also show that the market soybean milk is poor in fat owing to the custom of the Chinese of removing up to 30 pelliculas [pellicles; sheets of yuba] rich in fat, which are sold separately at a high price."

Note: Yuba is described as an early step in the process of making soymilk. Address: Dep. of Medicine, Peking Union Medical College, China.

600. Zlatarov, Asen. 1926. Die Soja und ihre Verwertung als Nahrungsmittel [The soybean and its use as food]. *Fortschritte der Landwirtschaft* 1(7):543-47. Sept. 1. [8 ref. Ger]

• ***Summary:*** On this document, the writer's name is written "Prof. Dr. Assen Zlataroff."

In Bulgaria as elsewhere in Europe, people have started to plant lots of soybeans. The soybean can serve as a source of healthy and rich nutrition, but also as a new source of income. There is much recent interest in Hungary and Germany.

Tables show: (1) Thirteen nutritional analyses of soybeans planted in Bulgaria between 1917 and 1922. (2) Nutritional analyses of black beans (non-soy), black peas, white beans, white lentils. Garbanzo beans (Chick-peas / chickpeas / *Kichererbsen*). And soybeans (*Soja*). The soybean is low in purines. (3) Soy oil constants (yellow variety, ether extract), including specific weight, saponification number, Reichert-Meissel number, iodine number, Hennersche number. (4) Nutritional composition of Papuda beans in 4 districts of Bulgaria in 1920 and 1921. (5) Weight of distilled water absorbed by 100 gm (800 beans) of soybeans after seven lengths of time ranging from 15 minutes to 12 hours. (6) Nutritional composition of soymilk (*Sojamilch*). (7) Comparative nutritional composition of various mammalian milks: Human milk, cow's milk, buffalo milk, sheep's milk, goat's milk. (8) Nutritional composition of tofu (*Tevu-fou, Sojakäse,* based on previous analyses by Champion and Lhote, Prinsen, and König {both fresh and dry}). He notes that tofu resembles quark. (9) Nutritional composition of soy casein (*Kaseo-Sojain*).

The value of the soybean as food: In China and Japan the soybean is used in large quantities as food. These foods include soymilk, soya cheese (*Sojakäse*), soya casein (*Sojakasein*), soybean meal, natto, miso, shoyu (*Schoyou*), Tao-you, Indonesian-style soy sauce (*Ketjap*), Vietnamese-style miso (*Tuong*), *Kiju-tze*, soya coffee (*Sojakaffee*), soya salad (*Sojasalat*), etc.

The soybean as a vegetable (green vegetable soybeans).

He then describes briefly how to make various soybean food products (based on Li Yu-ying and Grandvoinnet) including soya flour (*Sojamehl*), soy dumplings (*Sojaklösse*), soymilk (*Sojamilch*, discovered by the Chinese philosopher

Whai Nain-Tze), tofu (*Sojamehl*, made by coagulation of soymilk; he calls it *Sojamilchquark, Sojakäse, Tevu-fou* and notes that in China it is called "The meat without bones"). As far as taste is concerned, the writer has tasted tofu and he finds that this fresh cheese tastes very nice and the type of cheese made from it (by Li Yu-ying) such as Roquefort, Gruyere, Holländer, etc. are in no way inferior to the renowned real cheeses. Making tofu could be a new industry, which would be a good source of income for the nations where the soybean thrives and conducive to the nutrition of the people. Fresh tofu has many uses in cookery. With eggs it makes a fine omelet, likewise cheese dumplings and sausages. All these products have a fine taste and are very nutritious. In 1921 Dr. Assen Zlatafoff (a nutritionist) and J. Trifoneff wrote (in Bulgarian) a brochure on the soybean, its cultivation, composition, and food value. Address: Sophia Medizinisch-chemisches Institut, Bulgaria.

601. Eaton (T.) Co., Limited. 1926. Eaton's family drug sale (Ad). *Toronto Daily Star* (*Canada*). Sept. 11. p. 34.
• ***Summary:*** Near the center of this full-page ad, under "Patents" [meaning patented products] we read: "Vi-Tone–29¢, 49¢."

Note: By Jan. 1927 this product was described in another Eaton's ad as: "Vi-Tone, a milk chocolate-soya bean beverage, ½, 1, 5-lb tins. Sale price–29¢, 49¢, $2.39." It is not clear whether or not the product contained soya beans in Sept. 1926. Address: College St., Toronto. Phone: ADelaide 4941 or 5001.

602. Horvath, A.A. 1926. The soybean as human food. *Chinese Economic Monthly* 3(9):392-400. Sept. [Eng]
• ***Summary:*** Contents: Introduction. 1. General ingredients [composition] of the various Manchurian beans. 2. Composition of some Japanese soybeans and of the common American varieties. 3. Value of the soybean as food.

Introduction: "The soybean is a plant of very early cultivation in China. Its use dates back to the beginning of China's agricultural age under the Emperor Shen Nung. It is mentioned in the *Ben Tsao Gang Mu* [*Pen-ts'ao kang-mu*], the ancient materia medica, written by Shen Nung himself in the year 2838 B.C. The celebrated dictionary of Sui Sham describes the plant under the name of *tchouan.* In another ancient dictionary, the *Kouang-ia* [*Guangya*, 230 AD], dating from the time of the Han dynasty, the soybean is called *ta-teou* [*dadou*], or grand pea, and also *sou.* It seems very probable that the names soi, soy, soya, and soja are all derived from the ancient Chinese name *sou.*

Note 1. This brief history of the soybean in China (above) is largely borrowed from Piper and Morse. 1923. *The Soybean.* p. 36-37.

In numerous ancient books the philosopher Hamintze [Lord Liu An of Huai-nan], a prince of the Han dynasty, is given as the inventor of soybean curd. The soybean and the soybean curd (*tofu*) are mentioned in many of the ancient Chinese poems, as for example in the rhymes of the great poet Sou, of the 2nd century: 'The tender jade* gets perfumed by it in the kettle' and 'to boil the pea to milk and the seed to butter' (Li Yu-ying et Grandvoinnet)." (Footnote: *"The poet emphasizes the resemblance of the fresh *tofu* with jade.")

"In 1921 China produced 80 per cent of the world's soybean production, 70 per cent of the latter being harvested in Manchuria. The 1921 crop of soybean in Manchuria was approximately 4,500,000 tons. The total acreage of soybean in the three provinces was 8,000,000 acres, covering 25 per cent of the total cultivated area."

In the section titled "General ingredients of the various Manchurian beans," four long tables give the nutritional composition of some of the roughly 500 different varieties of Manchurian soybeans, including black soybeans. The Chinese names of the varieties are given. Most of the analyses were conducted by the South Manchuria Railway Co. Table 1 gives the names (all are Chinese names), composition (water, fats, and protein) of 26 Chinese soybean varieties. The averages are: Water 8.60%. Fatty substance 19.90%. Protein 42.84%.

Table II gives the composition of 15 soybeans grouped by color, including the Chinese name, place of production, water, protein, fat, carbohydrates, fibrous tissue, "ashy substance," and analyst (incl. Fengtien Experimental Farm, Mantetsu Experimental Farm, and Mantetsu Central Exp. Farm). "Generally speaking, yellow beans are richest in protein and fat, especially the latter, then comes green beans with black beans last.

In Table III the "Kung Chu Ling Experimental Station classified the different kinds of yellow soybeans produced in Manchuria by the colours of navel [hilum] and compared their chemical composition. No significant differences were found. Table IV shows the composition of mixed soybeans stored in Manchuria during 1919 and 1920. A Manchurian grading system is described based on five factors: Shape and size (15 points), weight of 1 *sho* (10 points), lustre (15 points), dryness (25 points), purity (cleanness) (30 points). Soybeans receiving a score of 90-100 points are graded as a Special Class, those with 80-90 points as First Class, and those with 70-80 points as Second Class (Nakao and Usami). This table shows the average composition to be: water 8.5%, fatty substance 18%, protein 40%, soluble non-nitrogenous substance and fibrous tissue 28%, ashy substance 5.5%. The higher grades contain more oil and protein.

In the section titled "Composition of some Japanese soybeans and of the common American varieties," table V (p. 397) gives the composition of four leading Hokkaido soybeans: Tsuru-no-Ko, Kanro, Yoshi-Oka, and Oh-Ya-Gi. The water content averages 16.47%, the protein content ranges from 39.34 to 36.86% (average 37.62%), and the fat content ranges from 19.08 to 17.86% (average 18.66%).

Table VI gives the composition of six leading American soybean varieties: Mammoth, Ito San, Haberlandt, Guelph, Midwest, and Kingston. The water content averages 7.74%, the protein content ranges from 36.59 to 32.99% (average 35.00%), and the fat content ranges from 22.72 to 18.96% (average 20.37). Note that the Hokkaido soybeans contain more than twice as much moisture, 7% more protein, and only 91.6% as much fat.

The section titled "The value of the soybean as food," states: "One of the certain evidences that the soybean is making god headway in the Occident is the fact that about 10 years ago [during World War I] the French army replaced a large portion of the meat powder in the army ration pottage by soybean products, and has used it in several forms as part of the regular ration. Germany and Austria also tried to compensate the poor protein diet of their army and population during the Great War by using soybean products."

"The soybean contains a double amount of the protein and of calories present in beefsteak. Therefore, in Peking, where the retail price for soybean in 1925 averaged 4 cents (Mex.) per one pound, half of a pound, costing 2 cents, may provide for an adult the necessary protein minimum, which otherwise would have to be purchased in the form of one pound of meat, costing at least 20 cents. According to Li Yu-ying, author of the well-known monograph (in French), 'Le Soya,' and now connected with the Kai Cheng Bean Products Company in Peking, the market prices for an equivalent of 100 calories in soybean were, in Paris in 1912, thirty times cheaper than for the same 100 calories in beef." In Germany, Ehrhorn (a well-known soybean food specialist, formerly of the Aguma factories in Harburg, Germany) calculates that 500,000 tons of soybean residue [meal and cake] are available every year. Soybean protein in Germany is now 25 times cheaper than beef protein. In China, where undernutrition is found on a large scale and famine is a common occurrence, soybean cake is used mainly as a fertiliser for rice fields and sugar plantations–rather than as a low cost source of protein. Numerous famine relief committees in China "have come to the conclusion that one key to the famine relief problem in China is to stop the waste of precious soybean cake for fertiliser." Note 2. This is the earliest English-language document seen (Nov. 2002) that uses the word "undernutrition."

Reprinted in 1927 as part of an 86-page monograph titled "The Soybean as Human Food" (Peking, China).

Note 3. This is the earliest document seen (May 2011) in which Dr. Horvath gives his title as "M.D.

Note 4. This is the earliest document seen (June 2013) that mentions the soybean variety Kanro. Address: M.D., Peking Union Medical College, China.

603. Salazar, Leopoldo G. 1926. The manufacture and chemical control of some soybean products under Los Baños conditions. *Philippine Agriculturist* 15(4):219-31. Sept. [12 ref]

• ***Summary:*** "The Chinese and Japanese manufacture a large variety of food products from the soybean, among which may be mentioned soy sauce or *toyo,* bean curd or *tokua,* soybean milk, flour, salad oils, and lard substitutes.

"Of these products, the sauce and curd are the most important. To the Americans the sauce is known as *soy sauce,* to the Japanese as *shoyu,* to the Chinese as *ch'au yau,* or drawing oil; to the Filipinos as *toyo.* The curd, cake, or cheese is known as *teou-fu* and *tao-hu* in China; *tofu* in Japan; and *tokua* in the Philippines. Soybean cheese is a misnomer as the product is obtained without any ripening process.

"The objects of this work were: (a) to determine the possibility of preparing toyo [soy sauce] and tokua [tofu] under Los Baños conditions; and (b) to determine the time at which the toyo contains the highest percentage of nitrogen. This work was performed in the laboratory of the Department of Agricultural Chemistry, University of the Philippines, Los Baños, Laguna, from April, 1924, to February, 1925."

A review of the literature shows that in the Philippines, only three prior investigations on this subject have been reported, those of Barrett (1911), Gibbs and Agcaoili (1912), and Gibbs, Agcaoili, and Shilling (1912). A photo shows the hand-turned stone mill and other tools used for making tokua, following the method used by the Chinese in Manila. The residue left after making tofu (okara) is called "sapal," and that left from soy sauce is called "tahuse."

"After 8 weeks of fermentation, the toyo was found to be ready for the first drawing. Analyses showed that the toyo prepared in the laboratory compared favorably in composition, odor, and flavor with the superior grade product of the market."

Note 1. This is the earliest document seen (April 2013) that uses the word "tokua" to refer to tofu.

Note 2. This is the earliest English-language document seen (June 2013) that uses the word "sapal" to refer to okara.

Note 3. This is the earliest English-language document seen (March 2007) that uses the word "tahuse" to refer to the residue left after making soy sauce. Address: College of Agriculture, No. 231, the Philippines.

604. Wastl, Helene. 1926. Das Sojamehl als Nahrungsmittel [Soy flour as a foodstuff]. *Wiener Medizinische Wochenschrift* 76(41):1209-10, 1213-14. Oct. 9. Reprinted in: L. Berczeller. 1928. Publications on Berczeller's Soy Flour. Vol. I. [4 ref. Ger]

• ***Summary:*** In 1870 a large migration of Chinese into Manchuria began, and from this time the soybean started to become the main crop of Manchuria, which is today the most important place for growing soybeans in the world.

The soybean became known in Europe largely through the efforts of Prof. Haberlandt following the Vienna World

Exposition of 1873. Large agronomic trials were undertaken, not only in Austria-Hungary but also in Russia. Trials were conducted successfully in most areas where corn/maize thrives. Nevertheless, the crop did not expand, since there were no suitable conditions for the utilization of soya or even market opportunities for the new crop. But with the development of improved extraction processes for obtaining vegetable oils, since 1908 the soybean has become widely used in Europe (and especially in England) as an oilseed, and imports have grown very rapidly. This growth was so sudden that in the trade report of Gehe & Co. for 1911 it was described as "something that has happened only once in the history of world trade. The imports of this heretofore neglected commodity rose to fabulous heights, and in a very short time it conquered the world market."

The author then discusses the nutritional composition of the soybean and briefly reviews the history of research on its nutritional value, including the work of Osborne and Mendel–which was confirmed by L. Berczeller. "The high biological value of soya protein is also shown by the fact that in East Asia, soya largely replaces animal protein in human diets. The use of the soybean for human nutrition depends (despite its outstanding chemical composition) on how it its technically processed. For centuries, ongoing experiments have been conducted on how best to make soybeans into tasty, nutritious foods." The soybean was used as a vegetable, made into milk, subjected to fermentation processes, used to make a type of cheese [tofu], and even a coffee substitute. Above all, people tried to mill it into a flour or to cook it like European legumes, and these recommendations were repeated uncritically in book after book until the advent of World War I, when they were examined on a large scale over a long time. In 1915 Lüthje [Luethje] wrote that the soybean could not be cooked and used like typical European legumes. People who tried to make soy flour during the war found that, because of the oil in the soybean, the flour quickly became rancid, causing consumers to complain about its bitter taste. So processors tried to make soy flour from defatted soybeans, but this caused a loss in nutritional value. However L. Berczeller, using a process of fractional distillation, succeeded in making whole soy flour which, despite its high fat content, did not become rancid. On a dry-weight basis this soy flour contains 45.50% crude protein and 2.38% fat. A table (p. 1213) shows that it is a less expensive source of calories than any other food. Using prices from June 1926 1,000 calories from whole soy flour cost only 0.19 shillings compared with 0.78 shillings for milk, 0.80 for butter, 1.07 for pork, 1.75 for an egg, and 2.64 for lean beef. The great practical significance of this lies in the use of soy flour in bread in place of all or part of the milk, eggs, and fat.

"Through the use of soya flour it is therefore possible, even for people with a low income, to secure a similar consumption of protein and fat, as is otherwise accessible to only a very small part of the population. Soya makes this possible in East Asia already today for hundreds of millions of people." Address: Physiologischen Institut der Wiener Universtaet (Vienna), Austria.

605. Hain Health Foods. 1926. Formal opening of Hain Health Foods. Oct. 18, 8 A.M. (Ad). *Los Angeles Times*. Oct. 18. p. K26.

• ***Summary:*** This is an ad for the opening of the 1st Hain retail health food store in Los Angeles. "Something new in health foods. From the grower direct to you enables us to sell high grade, fine quality products at lower prices. Our foods are 100% pure and in accordance with health standards. Our policy is quality first–service–courtesy."

Contains a long list of products sold at the store, with weights and prices, divided into the following categories: Flour (incl. 5 whole grain flours, Hain Health Meal, and Soy bean flour, 80¢ for 5 lbs). Breakfast cereals (6, incl. Hain Health Bran). Legumes (lentils, split peas, green peas, garbanza beans). Legume flours (6). Hain Health Mayonnaise (made with lemon juice and honey). Selected dried fruits (dates, figs, prunes). Hain pure mountain honey. Italian pure olive oil. Hain nut butters (almond butter, nut cream butter, peanut butter). Shelled nuts. Raisins–fancy.

Phone orders delivered. Mail order service. "Will gladly mail catalogue: Ask us for one."

Note: This is the earliest document seen (Jan. 2013) concerning Hain. Note that the company sold soy bean flour from day one. Address: 329 W. 3rd St. (near Hill St.), Los Angeles, California. Phone: MUtual 1703.

606. Horvath, A.A. 1926. The soybean as human food. *Chinese Economic Monthly* 3(11):513-18. Nov. [Eng]

• ***Summary:*** Contents: Soybean oil for food: Refined soybean oil, crude soybean oil. Refined soybean oil: As substitute for salad or frying oil, as substitute for hardened oil or lard (hydrogenation), in oleomargarine and vegetable butters.

Until quite recently, the line between edible oils and industrial oils has been quite clear. "Originally soybean oil was used as an edible oil by the Chinese, but its strange smell has repelled Japanese and Western palates (Sato)." "The advance of science in recent times has quickened the development of methods of refining, deodorizing, decolouring, and hydrogenating oils. As a result, the partition that used to divide food oils from industrial oils has collapsed. Whale oil and fish oil, as well as soybean oil, are now in use in Europe and America as a regular constituent of edible oils and fats."

"The aggregate production of the bean mills in Manchuria is in the region of 200,000 tons of bean oil and over 50 million pieces of bean cake. All the bean mills in Manchuria, excepting the Suzuki Bean Mill, Dairen, which is worked on the so-called extraction system, are worked by the expression system." The process of pressing, however, leaves

about 45% of the soybean oil remaining unused in the bean cakes, each of which weighs 61 lb. In Europe, and especially in England, the solvent method is used. In the 'Hanseatische Muhlwerke' [Muehlenwerke], Hamburg, Germany, pressing and extraction methods are combined. Extracted soybean oil generally for ½ to 1 cent per pound less than the expressed oil.

Soybeans contain the highly valuable fat-soluble vitamin. "In 1925 Hornemann showed that if the oil is taken from the beans by pressure, all the fat-soluble vitamin remains in the cake and the oil is free from it... But in case the extraction method is used, the soybean oil contains, according to Hornemann, all the fat-soluble vitamin... Moderate hydrogenation of soybean oil does not destroy the fat-soluble vitamin. Rancidity destroys it.

"Fresh soybean oil has a sweet smell, but, when the impurity is contained in a large quantity, it will emit a disagreeable odour. As time goes by, the change will grow more pronounced... In the case of the temperature being high, the same change occurs more quickly, and the colour of the oil becomes darker, the oil itself tasting also less palatable." Filtered oil is more resistant to undesirable influences. "At the present time the Harbin market includes only the filtered oil produced by the Anglo-Chinese Company. All the other oils are merely such as have settled."

Soybean oil as a substitute for salad or frying oil. "The improved methods of deodorizing and bleaching soybean oil have tended to remove a former prejudice against its use as a table oil. Several firms in Europe and America are packing soybean oil for sale to the retail trade, and it is claimed that a satisfactory market has been found (Piper and Morse)... The Nisshin Oil Mills Company, Ltd., at Yokohama and Dairen, purchased some modern oil refining machines from the U.S.A. in 1921 and a refined bean oil (salad oil) is being made which is claimed by the Japanese to be better in quality than the European or American make, by means of improved scientific methods and special skill... It is said that about 20 tons of the refined bean oil (superior salad oil) is manufactured every day at Dairen. In 1923 the refining of special soybean oil was also successfully begun in Harbin by the Anglo-Chinese Eastern Trading Company, Ltd., which had installed special equipment. The resulting product, known as 'Acetco,' is sold to the local preserve factory, is exported to Transbaikal [Transbaikalia or Zabaikal; a former Russian government located east of Lake Baikal–which is in southern Siberia], which is adjacent to Manchuria, and gradually appears to be conquering the local market as a substitute for the more expensive vegetable oils and animal fats. Acetco salad oil has been used at the Peking Union Medical College Hospital for a year and has been found in quality to be equal to Wesson oil, being at the same time much cheaper" (costing only 60% as much).

Frying oil is widely used in Japan to make "Tempura." "Fried *tofu* especially is made everywhere. Sesame-oil or refined rape-oil was formerly used in Japan for frying purposes but a few years ago the demand for bean-oil began to increase as a substitute for the above mentioned oil. (Footnote: In China refined soybean oil partly replaces the very expensive sesame oil in the diet)." "It is partly because the soybean oil manufactured in Japan cannot compete with that made in Manchuria for purpose of export and, consequently, the Japanese are obliged to extend the market at home."

Concerning lard substitutes: "The commercial lard substitutes consist chiefly of a mixture of lard or 'lard stearine' with 'beef stearine', cotton seed stearine and some vegetable oil... In the United States half of the total amount of all vegetable oils produced in that country is used as substitute for lard. Cotton-seed oil stands first in this respect... In hydrogenation, deodorization is practically complete. Therefore, the product made from cotton-seed oil has no intrinsic superiority over that made from soybean oil. The hydrogenation of soybean oil has tended to remove a former prejudice against its use for the kitchen. In 1918 the consumption of soybean lard substitutes in the United States amounted to over 56 million pounds."

"In oleomargarine and vegetable butters: The industry of butter substitutes owes its origin to experiments made by Mege-Mouries which were worked out to a manufacturing process in Paris in 1870. This industry duly spread to Italy, England, Holland, and other countries in Europe... Cow's milk is sometimes replaced by an emulsion prepared from the kernels of almonds or from soybeans, so that it is possible to prepare a margarine from vegetable products exclusively (Lewkowitsch)."

Note 1. This is one of the most important, original, and creative publications on soyfoods written in English before World War II. It is especially unique and valuable for the information it presents about soyfoods in Europe.

Note 2. This is the earliest document seen (March 2002) that refers to shortenings made with soy oil as "soybean lard substitutes."

Reprinted in 1927 as part of an 86-page monograph titled "The Soybean as Human Food" (Peking, China).

Note 3. In Jan. 1927 this journal merged with and became the *Chinese Economic Journal*. Address: M.D., Peking Union Medical College, China.

607. Kellogg, John Harvey. 1926. Nuts as a substitute for cow's milk. *Good Health* (*Battle Creek, Michigan*) 61(11):5-7. Nov.

• ***Summary:*** This paper, read at a meeting of the American Nut Growers' Association on 16 Sept. 1926 in Lancaster, Pennsylvania, begins by discussing nine serious drawbacks with cow's milk as a staple for adults. Dr. Kellogg first discovered that "milk disagrees very seriously with certain persons more than forty years ago." So he set out to develop a substitute for milk from nuts. He found that "the protein

of nuts so closely resembles that of milk that it was by some authors described as plant casein. Oily nuts, as Sherman has pointed out, are the vegetable analogues of meat. They consist almost wholly of fat and protein." Our relatives, the primates, are extremely fond of nuts, and they know how to chew them thoroughly. More than 30 years ago it was found that nut milk is better than cow's milk in promoting the secretion of milk in nursing mothers. Two or three years later, Dr. Kellogg began making Malted Nuts for this purpose, and it is now "regularly prescribed by many physicians for nursing mothers who need assistance of this sort."

"My first experiments in an effort to make nuts more digestible led me to produce peanut butter. This was for several years produced in small quantities by consumers with the aid of small hand mills especially devised for this purpose. It has now come to be a staple food manufactured by numerous companies and may be found in every grocery in the land."

But the peanut is a legume rather than a nut. "Continuing our experiments with other nuts, especially almonds, cashew nuts, pecans, and pine nuts, we finally succeeded in producing a series of nut creams which we found highly satisfactory as substitutes for cow's milk and cream."

608. Cascelli, Giovanni. 1926. Il latte di soja nella tecnica batteriologica in sostituzione del latte animale [Soymilk in bacteriological techniques as a substitute for animal milks]. *Clinica Medica Italiana* (*La*) 57(6):559-65. Nov/Dec. [7 ref. Ita]

• ***Summary:*** Soymilk can be substituted for animal milks with good results for the preparation of culture media. Bacteria grow well in it at 37ºC, and one can study their coagulation. The bacterium coli coagulates soymilk always and clearly at 37ºC and after 24 hours of inoculation. Address: Dr., R. Universita di Napoli. Istituto Pareggiato di Diagnostica Medica, Italy.

609. Hofer-Masard, H. 1926. Concentrated almond and milk syrup for use in foods or beverages. *British Patent* 282,088. (Chem. Abst. 22:1415). *

• ***Summary:*** Almond milk is an emulsion of the extract of ground, dehulled sweet almonds, which as been filtered many times, then mixed with sugar.

610. Mayerhofer, Ernst; Pirquet von Cesanatico, C. eds. 1926. Lexikon der Ernaehrungskunde [Dictionary of dietetics]. Vienna, Austria: J. Springer. viii + 1205 p. Illust. 25 cm. [Ger]*

• ***Summary:*** Included in the long list are: Akamiso, miso, shiromiso, tofukasu [okara], daizu [soybeans], fu [dried wheat gluten cakes], kingyo-fu, kiri-fu, kiri-mochi [frozen and dried rice cake], ame [malt extract], mirin, aburage [tofu fried in vegetable oil], natto–Bohnenkäse, Tofu–Sojatopfen, Tonyu–Sojamilch [soymilk], azuki [small red beans], kwansen-fu, kinako–Sojabohnenmehl, geröstet, amasake [amazake]–unvergorener Sake, umeboshi, koritofu [frozen and dried tofu], midzuame [soft ame = rice syrup], shoyu–Sojasauce, yuba–eine Bohnenspeise. Note that a number of these terms are Japanese.

Note 1. This is the earliest German-language document seen (Nov. 2005) that mentions amazake, which it calls "amasake."

Note 2. This is the earliest German-language document seen (April 2013) that uses the term *Sojatopfen* to refer to tofu.

Note 3. This is the earliest document seen (Aug. 2002) in any language that uses the term *tonyu* (or tônyû) to refer to soymilk.

Note 4. This is the earliest German-language document seen (Nov. 2102) that mentions kinako, which it defines as *Sojabohnenmehl, geröstet.*

611. Pirtle, Thomas Ross. 1926. History of the dairy industry. Chicago, Illinois: Mojonnier Bros. Co. xii + 645 p. Illust. Portraits. Maps. Index. 24 cm. [355* ref]

• ***Summary:*** The section on the "History of the dairy industry in China" states (p. 539-40): In southern China the people eat mostly rice, but mixed with soybean products. "In northern China wheat bread is largely used instead of rice together with large quantities of soybeans. In fact some authorities claim that the soybean is the most universal article in the Chinese diet, taking all the 300 or more varieties.

"The use of soybeans is as old as history in China. It is said to be a well-balanced food, rich in protein, fats, and carbohydrates, as well as vitamin A and B but lacks in minerals."

"A kind of bean curd or bean cheese is made from these beans. In the manufacture of soybean cheese the beans are ground with water, strained, and the residue [okara] used for hog feed. The liquid substance is like milk in appearance and on coagulation becomes the bean curd, or [when fermented], as it is sometimes called, Chinese cheese [fermented tofu]. There is an enormous consumption of bean cheese in China and in Japan. Still it is not made in factories. Every small town has a bean-curd shop. It must be made fresh each day and resembles cottage cheese. It is pressed into cakes about 5 inches in diameter and about an inch thick and sells at about one cent. American money. The cakes may also be salted and dried and they then resemble cream cheese. Tradition says that it was first made about 164 B.C. When the cheese is prepared with sugar it resembles custard and again when salted it resembles scrambled eggs.

"Soybean milk is in composition not so much unlike cow's milk, and in many places in China it is used as a drink, usually sweetened. Soybean sprouts are made ready for use by cooking them in oil and are relished even by Westerners.

The soybean cake is the residue after the expression of the oil or after the making of milk, and is used for animals only. It really has much food value and during the famine in North China in 1920-1921 [in which an estimated 500,000 people died of hunger and related diseases] much of this bean cake was used to save the starving people. From a nutritive standpoint it is supposed to substitute for meat and milk, as the Chinese consume large quantities of bean products and small quantities of meat and milk." Address: USA.

612. Rout, Ettie A. (Mrs. F.A. Hornibrook). 1926. Native diet with numerous practical recipes. London: William Heinemann (Medical Books) Ltd. ix + 140 p. Plus 9 unnumbered pages of plates. See p. 98-107. Preface by Sir. William Arbuthnot Lane. Illust. Index. 23 cm. [4 ref]
• ***Summary:*** On page 98 is a letter to the *London Observer* (17 Oct. 1926) titled "Soy flour in bread" about the work of Dr. L. Berczeller of the Vienna Physiological Institute.

Chapter 13, "The soya bean" (p. 99-107) begins: "This book would be incomplete without a reference to the Soya (or Soy) Bean–one of the most valuable legumes in the world." It discusses. Long use of the soya bean in China by the native races. Introduction into Europe at the end of the 18th century. Over 1,000 varieties have been tested by the USDA and some 20 selected for cultivation. How the Chinese soak, then roast soya beans to be eaten like peanuts [peanuts]. How to cook whole dry soybeans. USDA experiments with cooking whole dry soya beans. Two ways of pressure cooking. Sprouting soya beans. "Vegetable milk and vegetable cheese [tofu] are made from the soya bean." How to make milk from soybeans. "The properties of soya milk and curd are similar to those of the milk and curd obtained from cows,... Lactic ferments also act upon it in the same way, also the ferments of certain European cheeses." Vegetable milk. Tofu. Suggestions for introducing soya beans to Europeans and Americans.

Page 100 states: "Many authorities claim that the soy bean will soon become one of the great foods of the civilized world. It contains a large amount of protein of very fine quality–as valuable as the casein of milk. The soy bean, indeed, takes the place of meat and milk in the diet of many millions of people in different parts of the world."

Page 104-06: "Vegetable milk may be used in the same way as cow's milk. In China this milk is drunk by the Chinese in the early morning, with sugar added; it is also eaten as a thin broth with salted pickles. Throughout China, vegetable milk is extensively used for infant feeding [sic], and it is bottled and delivered each day to regular customers.

"Investigations in America and Europe indicate that vegetable milk can be successfully used to replace cow's milk in numerous preparations–e.g., in bread, cakes, creamed vegetables, custards, chocolate, and cocoa. It has been used to check the spread of summer diarrhoea and other intestinal disturbances among babies. It was found that the milk was easily digested and easily excreted.

"One form of soya bean curd is called *Tofu.* When a mineral salt or acid is added to soya bean milk, coagulation is produced, similar to the coagulation produced in animal milk by the same means. If the precipitated mass is allowed to drain, and is subsequently washed, a kind of white cheese or curd is produced. This cheese is called *Tofu* by the Japanese, *Teou fu* by the Chinese, and *Dan Phu* by the Annamites. It is said to have been originated by the Chinese philosopher Wha Nain Tze [Huai Nan Tzu; Liu An of Huai Nan] before the Christian Era, and introduced into Japan from China by the Buddhists. Ordinarily it has the consistency of cream cheese, but when subjected to pressure and allowed to dry it becomes much firmer, and can be rolled and cut into pieces. It is sometimes fried in oil, or used in omelettes, etc. Various kinds of fragrant dry curd (*Hsiang Khan*) are used sliced in soups and with vegetable dishes. Smoked curd, which keeps very well, is prepared by cooking the curd in soya sauce diluted with about 80 per cent. of water, and then smoking it in the same way as meat is smoked.*"

(Footnote: *"For fullest details of Soya Bean, see *The Soybean* by Piper and Morse (of United States Agricultural Department))." Address: [England].

613. Saito, Akio. 1926. [Chronology of soybeans in Japan, 1900 to 1926, last half of the Meiji period and all of the Taisho period] (Document part). In: Akio Saito. 1985. Daizu Geppo (Soybean Monthly News). Feb. p. 12-14. [Jap]
• ***Summary:*** 1901–Crushing of soybeans starts in Japan. Owada Seisakusho of Tsuruga, Fukui prefecture, Japan, starts making soy oil and soybean cakes using the press method (*assaku-ho*).

1901–Nakahara Kota is issued a patent on his process for making dried-frozen tofu indoors in a freezer (*jinko kôri-dofu*). This makes it possible to produce a good-quality product year round. This year there are 453 makers of dried-frozen tofu in Nagano. Nagano prefecture encouraged production of this product during the Russo-Japanese War as a side home industry.

1901–Soybean production in Japan reaches 525,000 tonnes, topping 500,000 tonnes for the first time.

1905–After Japan's victory in the Russo-Japanese War, it is said that maybe, because of the victorious mood, tofu makers start to blow a horn while selling tofu.

1905–At about this time, soybean cake (*daizu kasu*) passes fish cake to become the main fertilizer for crops in Japan.

1905–Shin Sawamura (lived 1865-1931) discovers the main natto bacteria and names it *Bacillus natto* Sawamura.

1906–Neda Tadamasa of Akita prefecture develops a new type of soybean. Named the Akita, it is a cross between Shirosaya and Itoi's Ani.

1907 March–Nisshin Mamekasu is founded (initial capitalization is 3,000,000 yen). The next year its soybean

crushing plant in Dairen, Manchuria, starts to operate. In 1918 the company merged with Matsushita Mamekasu to become Nisshin Seiyu K.K.

1908–At about this time the retail price of tofu in Tokyo is 1 *sen.* The average cake of tofu weighs over 100 monme (1 monme = 3.7656 gm or 0.1325 oz), so over 376 gm. In 1982 the average price of tofu is 100 yen per cake and the average cake weighs 300 gm.

1914–The Mogi Saheiji family in Noda starts to sell shoyu in 1-sho bottles (1 *sho* = 1.805 liters or 3.81 pints). Before this time a ceramic sake bottle (*tokkuri*) was used.

1914–Yamada Hikozaburo of Nagano prefecture succeeds in making dried-frozen tofu (*Koya-dofu*) for the first time in the *Shimi-dofu* area.

1915–From this year until 1919, the soybean oil industry in Japan is in a period of prosperity. In 1914 Japan produces 7,105 tonnes of soy oil and 92,325 tonnes of soybean cake. Just 5 years later, in 1919, these figures have risen about 13-fold to 30,658 tonnes of soy oil and 353,288 tonnes of soybean cake. Soybean cake becomes very widely used in Japanese agriculture.

1918–The mayor of Tokyo, Tajiri Inataro, recommends that people eat low-fat soybean cake cooked with rice (*mamekasu meshi*) to protect themselves from the rapidly increasing price of rice; he himself eats this dish every day. Hiroetsu? Takako (a woman educator, lived 1867-1949) cooked soybean cake and rice (*mamekasu gohan*). Dr. Saei Tadasuke (1876-1959, a nutritionist) introduces an inexpensive meal (it costs 3 *sen* 5 *rin* for 5 people) using tofu and fish bones for breakfast and dinner at the Inexpensive But Nutritional Cookery Seminar (*Eiyo Anka Ryori Koshukai*). This year 30-50% of Japanese don't have enough to eat. The demand for beef tendons and okara increases. The price of high-quality meat increases faster than the price of tofu.

1919–Artificially cultured pure-culture natto starts to be used. Hanzawa Jun of Hokkaido University (1879-1972), using this method, invents a new "Sanitary Natto Container" (*Eisei Natto Yoki*) made of thin slabs of wood (*kyogi*). He also founds the "Natto Container Improvement Association" (*Natto Yoki Kairyo-kai*)

1919–Soybean production in Japan reaches 502,200 tonnes, and soybean imports rise to 168,000 tonnes. Production of soybean oil reaches 8,853,600 gallons or 33,573,000 liters, equal to that of rapeseed oil.

1919–A machine or kit for making tofu or soymilk easily at home (*kateiyo tonyu-ki*) is marketed.

1920–Soybean production in Japan reaches a record 559,000 tonnes.

1920–Tsugano Akisaburo of Tokyo invents a quick method for fermenting shoyu (*shoyu sokujo-ho*). By adding salt water to soybean koji to make moromi, he is able to make shoyu in less than 10 days.

1922 April–The oil production department of Suzuki Shokai [which went bankrupt in 1922] becomes independent and founds Hohnen Oil Co., Ltd. (*Hohnen Seiyu*).

1923 Sept.–The Great Kanto / Tokyo Earthquake (*Kanto Daishinsai*) strikes. 70% of the miso factories in the area are burned down, causing a shortage of miso. But miso makers in other parts of Japan use this opportunity to ship their miso to Tokyo, and the people of Tokyo come to realize the good taste of miso made elsewhere in Japan.

1924–Kodama Shizutoshi? (or Shintaro) invents another quick method for fermenting shoyu (*shoyu sokujo-ho*) using acid or alkali to hydrolyze soybeans or soybean cake to make shoyu.

Note: This is the earliest document seen (April 2001) that mentions shoyu made by acid hydrolysis. Address: Norin Suisansho, Tokei Johobu, Norin Tokeika Kacho Hosa.

614. Eaton (T.) Co., Limited. 1927. Commencing a three day special selling in the drug section (Ad). *Toronto Daily Star* (*Canada*). Jan. 8. p. 32.

• ***Summary:*** In the upper left corner of this large ad, under "Patents" [meaning patented products] we read: "Vi-Tone, a milk chocolate-soya bean beverage, ½, 1, 5-lb tins. Sale price–29¢, 49¢, $2.39." Address: College St., Toronto. Phone: TR. 3311.

615. Chiu, Yan-Tsz (Chao, En-tz'u). 1927. Studies of the physical and chemical properties of soy bean milk. PhD thesis, Cornell University, Ithaca, New York. iii + 38 p. Feb. In: Library of Congress. Catalog Div. A List of American Doctoral Dissertations Printed in 1912-1932. 1931. [23 ref. Eng]

• ***Summary:*** Contents: Acknowledgement. Introduction. Review of literature. Experimental. Physical properties: Specific gravity and total solids, freezing point and total solids, relation of electrical conductivity and resistance to solids and ash, viscosity and total solids, refractive index of serum and total solids, dialysis and its products, keeping qualities, pH values of soy bean milk.

Chemical properties: General composition as determined by analysis (fat, protein–soluble in water soluble in NaCl solution, carbohydrates, ash), effect of soaking, methods of determining fat, composition of the fat in the milk, character of the fat in the milk, kinds of proteins in milk, composition of the true solution or serum, action of ferments on milk. Biological: General types of organisms that develop in milk, vitamins (from the literature), enzymes (from the literature). Discussion. Summary.

In the acknowledgement, he first thanks Prof. G.W. Cavanaugh for his many valuable suggestions and criticisms. "I also wish to express my thanks to Professor E.M. Chamot, Dr. C.W. Mason and other members of the staff of Instruction of the Department of Chemistry for aid and suggestions they have given."

"Introduction: Soy bean milk, which owes its origin to

Wai Nan Tse, a Chinese philosopher who lived before the Christian era, is a very satisfactory form of artificial milk. In China it takes the place of cow's milk which is rather scarce and expensive. It is a common food drink, the majority of Chinese being more accustomed to its use than to animal milk. Although the Cantonese do not drink it, they consume some of its products... It is an important food in China as it is used for infant feeding... Sweetened with sugar, it becomes a palatable drink. It may be eaten as a broth."

The thesis contains 22 tables (not one has a title) showing the results of various tests, including tests with different soybean varieties, effect of soaking time on specific gravity and total solids for different varieties, etc.

It also contains 9 graphs (also untitled), usually showing the data from a table in tabular form. For example, Figure A is a graph of the total solids in soymilk (x axis) vs. the specific gravity of that soymilk (y axis) for two soybean varieties: Black Eyebrow and Manchu.

On page 26 are two photomicrographs, one showing cow's milk, the other showing soy bean milk, each at 400x magnification.

Note 1. The author was born in 1890. In Cantonese, his name is Chiu Yan-Tsz; in Mandarin it is Chao En-tz'u. In pinyin it is Zhao-Enci. The last two characters (his given names) mean grace or blessing + gift.

Note 2. The following interesting line (p. 1) is difficult to interpret: "It is an important food in China as it is used for infant feeding..." Questions: What is the source of this information? It is in the introductory paragraph to the thesis and no source is cited. This idea is never mentioned again in this thesis, nor is any of the author's other 5 scientific articles on soy bean milk in China. The last of these articles (Chiu 1938) states: "In North China soybean milk has been a common food for both adults and children, while in South China only its products (mostly bean curd [tofu]) are used." Is it ever used with infants as the sole source of nutrition? If yes, for how long? If no, with what other foods is it fed, in what proportions, starting at what age, and until what age? Is this use of soy bean milk for infants routinely and widely practiced in China, or only in times of famine? Under normal circumstances, at what age is the soy bean milk introduced in the diet and how long is it continued? Address: Cornell Univ., Ithaca, New York.

616. Horvath, A.A. 1927. The soybean as human food. *Chinese Economic Journal* 1(2):175-92. Feb. [25 footnotes. Eng]

• ***Summary:*** Contents: Soybean cake, soybean meal, and soybean flour for food: Soybean press cake, soybean extraction meal, soybean flour (Berczeller, *Soyama, Aguma, Ehrhorn*), *Sojawurze* (*Suppenwurze*, Maggi cubes), digestibility of soybean flour, value for infants, some medical aspects of the use of soybean flour, soybean flour in diabetes (incl. Sarton).

Concerning soybean extraction meal (p. 177-79): This meal is shipped in bags and traces of benzine are easily removed. The process used at the Suzuki extraction plant in Dairen (the only extraction plant in Manchuria) is described; the solvent is benzine. "A new extraction plant (at the Borodin-Takata Alcohol Factory) is now under construction at Imienpo, in North Manchuria. By the new process, beans are first pulverized, then operated upon with alcohol, for the extraction of the oil content... The owner claims that 'there is no foreign taste left which would make the oil or the bean cakes unsuitable for human food.'" Analyses conducted at the S.M.R. Co. Central Laboratory, Dairen, show that this "bean meal" contains: water 7.90%, protein 57.04%, oil 3.41%, carbohydrates 16.92%, coarse fibre 8.63%, and ash 6.69%.

"The solvent method of extraction, involving the use of benzine or gasoline, is used by many of the large oil mills in European countries, especially England." Mills in the USA do not yet use the solvent method; they use traditional hydraulic and expeller processes. "The new process used by the Hansa Mill at Hamburg (Germany) called the Bollmann process, is so economical that the profits of bean milling can be enormously increased. By this process the beans are first pressed and then extracted. The extracted meal is utilized for the manufacture of a highly valuable soybean flour for food (Footnote: But extracted soybean meal (flour) does not contain any fat soluble vitamin, as shown by Hornemann [1925]). The oil is submitted to refining, during which crude lecithin is extracted. It is purified and sold in a form of pure lecithin.

(Footnote: "The soybean contains 1.64 per cent lecithin (an organic phosphorus compound), the price of which in China is about $18.00 (Mex.) per pound. It shows that the value of the lecithin contained in soybeans is greater than the market price of the beans themselves. Extracted soybean meal is therefore deprived of lecithin, which is a highly valuable food constituent, especially for the nervous system. Ordinary beans (navy beans, etc.) contain only 0.81 per cent lecithin)" (p. 178).

Note 2. This is the earliest English-language document seen (March 2001) that contains the term "crude lecithin."

Page 182 states: "Soybean flour is also utilized in the manufacture of breakfast foods and can be used in the preparation of vegetable milk and bean curd."* (Footnote: *"In the United States some very good breakfast foods and an excellent finely powdered soybean milk powder "Soy Lac" is made by J.A. Chard, Soy Products, 263 W. 12th St., New York City, who has been experimenting for some time with soybeans.)" Note 3. This Soy Lac appears to be the first commercial soymilk made in America.

Berczeller (p. 183-84): "A few years ago the Hungarian food physiologist, Prof. L. Berczeller, elaborated a process for manufacturing a soybean flour containing a large percentage of fat. This does not become bitter if kept for

over a year, and has a very pleasant taste. The process is patented in nearly all the countries of the world. Its chemical composition is given in the above table and its food value in a previous chapter. This flour contains the expensive fat-soluble vitamin which is deficient in the food of the white race. It is of yellow colour, has a sweet, agreeable nutty taste, and does not produce obesity, notwithstanding the fact that it contains a high percentage of fat. According to Berczeller, the uses of this soybean flour "O" are as follows:

"1. As roasted flour, with an equal part of wheat flour for soups or vegetables;

"2. For pastry, 10-15 per cent soybean flour is mixed with wheat flour. In this case no eggs or only a few need be added. The soybean flour gives to the dough a beautiful yellow colour;

"3. As an addition to meat, 25-50 per cent of soybean flour can be mixed with chopped meat for meat balls, sausage stuffing, etc.

"4. All sorts of flour dishes can be baked with the addition of soybean flour. The taste of the dishes thus prepared becomes better and the nutritive value higher (besides the economy in butter, eggs and sugar);

"5. The addition of even 5 per cent soybean flour in making wheat bread causes a much longer keeping capacity of the bread in a fresh state, the fat preventing the bread from getting stale;

"6. The soybean flour can be used also on a large scale in the foodstuff industry, and in different ways; e.g., in the manufacture of paste products (as a substitute for eggs), cakes, biscuit products, milk-bread (10-16 per cent soybean flour instead of milk), sausages and pastry products (as a substitute for meat).

"Berczeller's soybean flours can be manufactured with little trouble in rice mills or pea mills, where they are decorticated. Eighty-five per cent of soybean flour can be recovered from soybeans. The residue forms a valuable food for animals. According to Berczeller, the cost of production of soybean flour in a European country is as follows:

"One ton of soybeans: 245 shillings. Ten per cent milling expenses: 25 shillings. Total: 270 shillings. Subtracting the value of the bran: 20 shillings. Cost of 850 kg of soybean flour: 250 shillings. Or one ton costs: 294 shillings.

"According to Berczeller, soybean flour is an ideal concentrated food for soldiers, sailors, tourists, etc., in the form of biscuits, etc., because it furnishes a substitute for animal foodstuffs which spoil easily. Berczeller points out that soybean flour is not a substitute for wheat flour but a natural vegetable complement to wheat flour, and one which can be substituted for expensive animal foodstuffs for lowering the living rates [cost of living] of humanity to a degree that could not be reached either by potatoes, maize, or by intensive farming. Austria and Hungary are planning to start a very intensive utilization of Berczeller's soybean flour. This flour, being cheap and easy to manufacture in native rice mills, may be of great importance to China."

Note 1. This is earliest document seen (May 2010) showing that Dr. A.A. Horvath was aware of the work of Prof. Berczeller, who patented a process for improving the flavor / palatability of soya flour.

Page 185 states, in a discussion of soybean flours: "In Bollmann's process the oil is completely removed from the soybean material and the flour is therefore deprived of both the lecithin and the fat soluble vitamin."

Sojawurze (p. 187-88): "The profit from Ehrhorn's process could be much increased if part of the soybean flour were used for the manufacture of products similar to beef extracts, called in German 'Suppenwurze.' They are able to give to soup the taste and flavour of beef bouillon. They are used extensively in Germany, e.g., the well-known 'Maggi' cubes, and were manufactured in large quantities in pre-War and War time from soybean flour at the Aguma factory under Ehrhorn's supervision."

Reprinted in 1927 as part of an 86-page monograph titled "The Soybean as Human Food" (Peking, China). Address: M.D., Peking Union Medical College, China.

617. Horvath, A.A. 1927. The soybean as human food. *Chinese Economic Journal* 1(3):298-309. March. [24 footnotes. Eng]

• ***Summary:*** Contents: Soybean milk for food: Introduction. Preparation of soybean milk. Properties (Yu-P'i is Chinese for yuba; Laxa). Market prices. Composition. Nutritive value. New methods in the manufacture of soybean milk (Prof. Laxa in Prague [Czechoslovakia], Li Yu-ying, Soyama). Some dietetical advantages and applications of the soybean milk. Condensed soybean milk and milk powder (Soy Lac soybean milk powder made in America by Chard). Soybean cake, soybean meal and soybean flour as material for soybean milk. Yu p'i and yu ba (yuba; also fu chu).

"In 1905, Li Yu-ying submitted a paper on the subject [of soybean milk] to the 2nd International Milk Congress in Paris, in which he emphasized that the introduction of soybean milk to Western countries 'will be highly beneficial to public health as well as to the budget of the poor.' Also by those who advocate and urge a vegetarian diet, a very strong case can be made for this Oriental substitute" (p. 298).

According to Prof. Laxa: "Soybean milk, supplemented with lactose and inoculated with a culture of yoghurt [yogurt] bacteria, coagulates at 40º C. in 4 hours and gives a curd-like acid mass" (p. 300).

"Market prices. In Peking soybean milk is sold in small bottles in portions of about 200-220 cc. labeled 'Bean milk, a Chinese product, the most nourishing food, made by...' For such a bottle, delivered daily, the big factories of Peking asked in 1925 $1.00 (Mex.) per month. One liter of such milk costs, therefore, about 15 cts. (Mex.)... A fine soybean milk powder, called *Soy Lac*, has recently been prepared in America by Chard" (p. 300-01). Note: This company (Chard)

was first referred to by Piper and Morse in 1916 in *USDA Bulletin* No. 439, "The soy bean, with special reference to its utilization for oil, cake, and other products." Soy Lac is mentioned again by Horvath on p. 307.

A table (p. 302) compares the composition of soymilk made in 3 locations (Tsinanfu, China; Peking, China; and Japan) with that of human, cow, and goat milk. Human milk has the lowest protein content (1.25%) and ash content (0.25%); soymilk has about the same protein content as cow's milk (3.3%) but an ash content (0.40%) which is higher than that of human milk but lower than that of cow's milk. Footnote: "To supplement the deficiency of the soybean milk in mineral constituents [such as calcium], it is recommended by von Noorden and Salomon to add to it the salt mixture of Pirquet, which consists of: sodium chloride, 0.3 gm.; potassium chloride, 1.1 gms.; calcium glycerophosphate, 1.7 gms.; magnesium lactate, 0.5 gm.; ferrum glycerophosphate, 0.1 gm. This mixture is called *Nemsalz.* If diluted in 1 liter of water it gives the same percentage of salts as in women's milk" (p. 302).

"In Germany the Soyama factory (in Frankfurt) manufactures soybean fresh milk (mostly from soybeans), soybean normal cream, and also condensed bean milk and cream. Soyama bean milk looks like cow's milk, contains the same constituents, even in larger amount and in a state of finer dispersion. Only its taste is different. According to Fuerstenberg, Soyama milk can be qualified as a special, very valuable dietetic nutrient. The high lecithin content of this preparation adds to its value too" (p. 306). A table (p. 306, based on the analyses of Dr. G. Popp of Frankfurt) shows the nutritional composition of 6 types of Soyama milk and cream preparations: Normal milk. Milk for diabetics. Milk for baking purposes. Normal cream. Cream for diabetics. Cream extra rich in fat (especially for diabetics). "According to von Noorden and Salomon, Soyama preparations may be kept as long as almond milk and Paranut milk. Soyama milk looks just like cow's milk. By keeping, cream separates and it must be shaken before using" (p. 306).

"In using Soyama milk and cream preparations, v. Noorden confirms the following statement of Fischer (for vegetable milk in general): '1. In the stomach soybean milk gives a much finer flocculent precipitate than does cow's milk, produced by acid or even rennet. 2. The ingestion of soybean milk results in a feebler (smaller) secretion of gastric juice; the period of secretion is also shorter. 3. The period of stay in the stomach of the finely flocculent precipitate of the soybean milk is shorter than that of the casein-fat coagulum of cow's milk. 4. The peristaltic motion of the stomach is less after the ingestion of soybean milk and more coordinated than in the case of cow's milk, as shown by X-ray investigation'" (p. 307).

"On the basis of these observations soybean milk is recommended by v. Noorden in cases of gastric and duodenal ulcer, states of peritoneal irritation, hypersecretory conditions of the stomach, disturbances of the motility of the stomach, uric acid diatheses, kidney disturbances, conditions with edema where a food poor in sodium chloride is required, Basedow's disease, cholecystitis, cirrhosis of the liver, diabetes, and in cases where a very nutritious diet is required" (p. 307).

"Soybean milk powder will undoubtedly have a successful future in the Orient as well as in European countries and the United States. Its great advantage in comparison with cow's milk powders is its cheapness. Soybean milk powder can be easily stored and transported... It is believed that at present some of the commercial milk powders contain an admixture of soybean milk powder" (p. 307-08).

"*Yu P'i* and *Yu Ba* are the Chinese and Japanese names of the pellicula formed on the surface of soybean milk when the latter is gently heated. Good *Yu Ba* has a bright yellow color when properly dried. The best *Yu Ba* is that obtained after the first heating. In repeating the heating of the remaining soybean milk, pellicules of gradually inferior quality and color are obtained. As much as 30 pellicules can be secured from the same portion of soybean milk. In China, a product called *Fu Chu* is manufactured in a way similar to *Yu Ba* (Footnote: See this journal, Vol. VIII, 1926, p. 179). Recently an improved method for the manufacture of *Yu Ba* was patented in Japan, consisting in the use of an electric fan adjusted over the surface of a kettle containing the soybean milk heated to a temperature of 90ºC.

"*Yu Ba* has a great nutritive value, as it contains a high percentage of protein and fat,..."

A table (p. 309) gives the nutritional composition of five types of yuba: Common yuba, Kyoto yuba, Shimada yuba, Peking yuba, and Fu chu.

Note: The values for Fu chu are based on those previously reported by Adolph. Fu chu contains much more water (53.68%) than any of the other four types of yuba; common yuba contains only 21.85% and Peking yuba only 9.15%. So it is either fresh or reconstituted.

"In Japan, Kyoto and Nikko are noted for *Yu Ba. Yu Ba* is in much demand in China and Japan and is used in numerous ways as an essential ingredient in many very palatable dishes. Its price is high and therefore yuba is used only by the rich."

Reprinted in 1927 as part of an 86-page monograph titled "The Soybean as Human Food" (Peking, China). Address: M.D., Peking Union Medical College, China.

618. Horvath, A.A. 1927. The soybean as human food. *Chinese Economic Journal* 1(4):415-25. April. [34 footnotes. Eng]

• ***Summary:*** Contents: Soybean curd (tofu) for food: Preparation and types ("The Chinese classical name for *tofu* is *li chi,* probably meaning 'the morning prayer'"), historical, present state (of tofu in China), chemical composition,

digestibility, utilization (incl. frozen tofu and fried tofu).

Fermented soybean products for food. Soy sauce: Kibiki and sobiki tamari, composition of various soy sauces. Natto. Miso. Conclusion. Bibliography.

Tofu–Historical (p. 416): "The manufacture of soybean curd (*tofu*) was started in China in 164 B.C., during the reign of the Emperor Han Wen, by a man named Liu An, the duke of Hwai Nan. Liu An was a great friend of the Buddhist monks, and it seems quite probable that he made this bean curd to provide a change or delicacy to break the monotony of the monastic ration (Adolph). *Tofu* was introduced into Japan from Korea for the first time during the Toyotomi government, and Buddhist priests and some other people used it for their daily food among others before it was generally used in Japan.

Tofu–Utilization (p. 418-19): "Both the composition and the digestibility of *tofu*, therefore, prove it to be a very nutritious food material. In the Orient *tofu* forms a very popular and almost indispensable dietary article for the Buddhist priests, as well as the strict adherents to Buddhism, who eat no animal food [i.e., are vegans]. A common saying in some parts of China terms 'bean milk the poor man's milk, and bean curd the poor man's meat.' *Tofu* is also called 'the meat without the bones.'

Note: This is the earliest English-language document seen (April 2013) that contains the phrase "the meat without the bones" (or a similar phrase containing the words "meat" and "bones"); it is used to refer to tofu, not to soybeans.

In Indo-China the daily consumption of *tofu* by an adult is about 3/4 of a pound. *Tofu* in its various forms is also used very extensively by all classes of Japanese. In the interior of the country where fish cannot be easily obtained, it is a most important source of protein.

"In the Orient *tofu* is eaten in a fresh condition simply with a little *shoyu*, though it is also frequently cooked in soup. Fried *tofu* is also a very popular article of food. Rape-seed oil, sesame oil or soybean oil are generally used in frying.

"*Tofu* may also be prepared for preservation and transportation. For this purpose fresh *tofu* is cut into smaller pieces and exposed to severe cold weather, to remove the water by freezing, and is then dried in an oven. As thus prepared it can be preserved for several years. When the *tofu* is frozen the water collects in fine needles of ice distributed throughout the mass. When the ice melts and the water runs out, it leaves the *tofu* porous and it may be easily dried. If it is not frozen, it is difficult to dry and the resulting material is dense and horn-like. The *tofu* also cooks very well if cooked in diluted soy sauce and smoked in the same manner as meat. The resulting product forms in the Orient the basis for the manufacture of various 'artificial meat' preparations.*" Footnote: * "In Germany, the Soyama factory prepared during the Great War [World War I] a meat supplement from soybeans. It was cheaper than beef, contained less carbohydrates and had a nutritive value of about 1500 Calories in 1 kilo."

"In Peking, at the Kai Cheng Bean Products Company, various preparations manufactured from tofu may be purchased, such as different kinds of soybean meat, soybean sausages, etc. The company has established a restaurant in Peking (at 86 Morrison Street, the name is written in Chinese characters) where one can get a Chinese dinner of numerous dishes prepared mostly from soybean products (chicken meat, pork, ham and beef, manufactured from *tofu*). Also discusses Dr. Yamei Kin.

A note at the end of this April issue states: "A reprint of Dr. Horvath's paper in booklet form may be obtained from the Bureau of Economic Information. Price $1, Peking Currency.–Ed." Thus, these six articles were reprinted in 1927 as part of an 86-page monograph titled "The Soybean as Human Food" (Peking, China). Address: M.D., Peking Union Medical College, China.

619. Horvath, A.A. 1927. The soybean as human food. Peking and Shanghai, China: Chinese Government Bureau of Economic Information. Booklet Series No. 3. 86 p. May. Reprinted from Chinese Economic Journal, Sept. and Nov. 1926, and Jan. to April 1927. No index. 21 cm. [38 ref]
• ***Summary:*** A very original and important book. Contents: Preface by Macey F. Deming, Tappan New York, from an address at a meeting of the National Soybean Growers', held at Washington, DC, Sept. 1925. Introduction. 1. General ingredients of the various Manchurian beans. 2. Composition of some Japanese soybeans and of the common American varieties. 3. Value of the soybean as food. 4. Soybean oil for food. 5. Refined soybean oil: As substitute for salad or frying oil, as substitute for hardened oil and lard (hydrogenation), in oleomargarine and vegetable butters. 6. Whole soybean as food: Immature or green soybeans, mature or dry soybeans, the digestibility of the boiled soybean seeds, boiled soybeans as a food of predominant importance in China, soybean coffee, soybean chocolate, soybean sprouts.

7. Soybean cake, soybean meal and soybean flour for food: Soybean press cake, soybean extraction meal, soybean flour (Berczeller, Soyama, Aguma, lecithin, Ehrhorn), Sojawurze (Suppenwurze, Maggi cubes), digestibility of soybean flour, value for infants (p. 53, based on the research of Dr. Ruhrah in the USA), some medical aspects of the use of soybean flour, soybean flour in diabetes. 8. Soybean milk for food: Introduction, preparation of soybean milk, properties (incl. inoculation with a culture of yoghurt [yogurt] bacteria to give a curd-like acid mass), market prices, composition, nutritive value, new methods in the manufacture of soybean milk (Prof. Laxa in Prague [Czechoslovakia], Li Yu-ying, Soyama), some dietetical advantages and applications of the soybean milk, condensed soybean milk and milk powder (Soy Lac soybean milk powder made in America by Chard), soybean cake, soybean

meal and soybean flour as material for soybean milk, yu p'i and yu ba (yuba; also fu chu).

9. Soybean curd (tofu) for food: Preparation and types (classical name is *li chi*), historical, present state (of tofu in China), chemical composition, digestibility, utilization. 10. Fermented soybean products for food. Soy sauce: Kibiki and sobiki tamari, composition of various soy sauces. Natto. Miso. Conclusion. Bibliography.

On page 9 we read: "An industry which promises to be of importance in a further utilization of the soy bean is the manufacture of 'vegetable milk.' At the present time a factory in New York State is being equipped for this purpose." Address: Peking Union Medical College, China.

620. Trabut, Louis. 1927. Le soja légume [The soya legume]. *Comptes Rendus des Seances de l'Academie d'Agriculture de France* 13(18):611-13. Meeting of 1 June 1927. [Fre]
• ***Summary:*** For 150 years the question of soybean utilization in the west has been discussed. However only in the United States is the cultivation of this legume practiced, and it is quite popular in certain states, such as Kansas, where the farmers use the soybean plant as forage, and reserve the seeds for feeding their hogs. In addition, American industries use large quantities of soya. The oil is even imported from Manchuria, where certain factories process 50 tonnes/day of soya. England, Germany, Holland, and Italy extract oil from soya and use the cake for feeding animals and even humans. At Trieste, the cake is converted into a flour which, at the 10-15% level, fortifies and improves bread.

In China, for 50 centuries, soya has been used for the production of milk and cheese. Recently in Italy, soymilk has been made and used experimentally for the feeding of young infants at clinics in Turin, Bologna (*Bologne*), Genoa (*Genes;* Ital. = *Genova*), Padua (*Padoue*), and Florence.

In France, soya has been recognized since 1855 as a new legume and a variety named *Soja d'Etampes* is now found in seed catalogs.

In Algeria, for some years, a pressure cooker has been imported from Spain under the name "marmite espagnole." Having observed that chickpeas, which ordinarily remain hard after several hours of cooking, become soft after 15 minutes of pressure cooking, the author tried cooking soybeans (which had been soaked in water for 24 hours) the same way. The result surpassed his hopes, for by this rapid and economical process of cooking, the soybean becomes superior to the Haricot in many ways, including its high nutritional value. The author urges that more attention be paid to the soybean in France. Address: Directeur du Service botanique du Gouvernement général de l'Algérie.

621. Turner, A. Grenville. 1927. The useful soya bean. Commercial possibilities. *Liverpool Trade Review* 26(12):245-47. Dec. 15. Compiled from a report prepared by Mr. A. Grenville Turner, of Messrs. Kelly & Company... Liverpool.
• ***Summary:*** Describes the increasing importance and production of soybeans in the United States, and their food and industrial uses. Address: Messrs. Kelly & Co., 10 Irwell Chambers West, Liverpool, England.

622. Turner, A. Grenville. 1927. A wonderful bean: Bounteous nature's gift from the East. Manifold uses of the soybean. *Milling* (*Liverpool*) 69(25):695-96, 698. Dec. 17.
• ***Summary:*** Contents: Introduction. How the bean and its oil can be used. The soybean as a seed crop. Methods of oil extraction. Includes uses for the bean and methods of extraction used in the United States. Photos show: (1) Three children playing in a field of soya beans in Natal, South Africa. (2) A modern crushing machine. (3) A massive horizontal-axis granite roller for crushing the beans. (4) A native [Manchurian] bean press, showing cakes in receptacle and logs driven in to press out the oil. Address: England.

623. **Product Name:** Soybean Milk Powder.
Manufacturer's Name: Henry Bowers Chemical Co.
Manufacturer's Address: Philadelphia, Pennsylvania.
Date of Introduction: 1927.
New Product–Documentation: Horvath. 1927. The Soybean as Human Food. p. 47. "The Henry Bowers Chemical Co., Phila, Pa [Philadelphia, Pennsylvania], are also working on the soybean flour and soybean milk powder, and have some very good products." It is not clear whether or not these were sold commercially.

624. Gandhi, Mohandas Karamchand. 1927. The story of my experiments with truth. Translated from the original in Gujarati by Mahadev Desai. Vol. 1. Ahmedabad, India: Navajivan Press. 602 p. Index. 24 cm. See also Vol. 2, 1929.
• ***Summary:*** This magnificent autobiography opens with a sepia photo of Gandhi (lived 1869-1948), dressed only in a dhoti (a long loincloth worn by Hindu men), sitting on the ground and looking contemplatively downward–a characteristically humble pose for such a great man.

Before Gandhi left India for London on 4 Sept. 1888, 1 month before his 19th birthday, as a shy young man to further his studies in law for 32 months, he took 3 vows before his mother to set her heart at ease and to prevent him from violating the rules of his caste: he would not touch wine, woman, or meat (including eggs). The first friend with whom he lived in London persistently pleaded with him to eat meat, but he refused. The next family with whom he lived knew nothing of vegetarian cookery so Gandhi was always hungry–though he never mentioned it.

Finally, after much searching, he found a vegetarian restaurant on Farringdon Street in London. "The sight of it filled me with the same joy that a child feels on getting a thing after its own heart. Before I entered I noticed books

for sale exhibited under a glass window near the door. I saw among them Salt's *Plea for Vegetarianism*. This I purchased for a shilling and went straight to the dining room. This was my first hearty meal since my arrival in England. God had come to my aid.

"I read Salt's book from cover to cover and was very much impressed by it. From the date of reading this book, I may claim to have become a vegetarian by choice. I blessed the day on which I had taken the vow before my mother. I had all along abstained from meat in the interests of truth and of the vow I had taken, but had wished at the same time that every Indian should be a meat-eater and had looked forward to being one myself freely and openly some day, and to enlisting others in the cause. The choice was now made in favour of vegetarianism, the spread of which henceforward became my mission.

"My faith in vegetarianism grew on me from day to day. Salt's book whetted my appetite for dietetic studies. I went in for all books available on vegetarianism and read them. One of these, Howard Williams' *The Ethics of Diet*, was a 'biographical history of the literature of humane dietetics from the earliest period to the present day.' It tried to make out that all philosophers and prophets from Pythagoras and Jesus down to those of the present age were vegetarians. Dr. Anna Kingsford's *The Perfect Way in Diet* was also an attractive book"–as the writings of Dr. Allinson [probably Thomas Richard Allinson]" (p. 118-21).

As Gandhi set out to try to play the English gentleman, his vegetarianism occasionally led to awkward social situations but he never broke his vows–except for a brief lapse into eating eggs, which he later regretted.

Chapter 17, titled "Experiments in Dietetics," describes Gandhi's growing awareness of the many facets and implications of a vegetarian diet and of the relationship between humans and animals. He met many kindred spirits in vegetarian restaurants, joined a vegetarian society in England and subscribed to its journal. Soon he found himself on the Society's Executive Committee. "Here I came in contact with those who were regarded as pillars of vegetarianism, and began my own experiments in dietetics" (p. 137-39).

"Full of the neophyte's zeal for vegetarianism, I decided to start a vegetarian club in my locality, Bayswater. I invited Sir Edwin Arnold, who lived there, to be Vice-President. Dr. Oldfield who was Editor of *The Vegetarian* became President. I myself became the Secretary. The club went on well for a while, but came to an end in the course of a few months. For I left the locality according to my custom of moving from place to place periodically. But this brief and modest experience gave me some little training in organising and conducting institutions." Gandhi's extreme shyness prevented him from expressing himself on any subject, including vegetarianism, throughout his stay in England.

"It is my firm conviction, that man need take no milk at all, beyond the mother's milk that he takes as a baby. His diet should consist of nothing but sunbaked fruits and nuts... Restraint of the sexual and other passions becomes easy for a man who lives on such food. My co-workers and I have seen by experience that there is much truth in the Indian proverb, that as a man eats, so shall he become." But while "engaged in a recruiting campaign in Kheda, an error in diet laid me low, and I was at death's door. I tried in vain to rebuild a shattered constitution without milk. I sought the help of doctors, *vaidyas*, and scientists whom I knew to recommend a substitute for milk. Some suggested *mung* water, some *mowhra* oil, some almond-milk. I wore out my body in experimenting on these, but nothing could help me leave the sickbed." Finally he started drinking goat's milk; the spirit of his vow was destroyed–but he recovered and admitted that his theory had failed him. Nevertheless, he declared his "firm conviction, that for the seeker who would live in fear of God, and who would see Him face to face, restraint in diet both as to quantity and quality is as essential as restraint in thought and speech." (Vol. II, p. 45-47).

Gandhi wrote most of the history of his struggle in South Africa while in Yeravda jail, and finished it after he was released (p. 155). "I was now anxious to observe brahmacharya in thought, word and deed, and I was equally anxious to devote the maximum of time to the Satyagraha struggle and fit myself for it by cultivating purity... Fasting and restriction in diet now played a more important part in my life. Passion in man is generally co-existent with a hankering after the pleasures of the palate. And so it was with me" (p. 157-58). Gandhi first went to jail in 1908. At one point he voluntarily gave up salt and pulses. His wife observed that "all restraint, whatever prompts it, is wholesome for man" (p. 171-74). In 1912 Gandhi, Mr. Herman Kallenbach, and 4-5 Musalmans [Muslims] lived at Tolstoy Farm, a community started by Gandhi in 1910 in Transvaal (22 miles from Johannesburg), South Africa; all were vegetarians. Gandhi decided to give up milk and cereals, and to live on a diet of uncooked fruit, nuts, and olive oil (p. 180-83).

Note: This is the earliest document seen (Oct. 2010) concerning Gandhi and vegetarianism. Address: India.

625. Horvath, A.A. 1927. The soybean for food and feed. The Manchurian Research Society. *
• ***Summary:*** 1926 articles on soyfoods published in Chinese Bureau of Economic Information.

626. Horvath, A.A. 1927. The soybean as stock feed and human food. *Vestnik Manchzhurii* (*Manchuria Monitor*) No. 8. p. 5-7. English edition. p. 13-23. Russian edition. [19 ref. Eng; Rus]
• ***Summary:*** A brief but good introduction to soybeans and soybean products including soybean meal, soybean flour, soybean oil, bean milk [soymilk], to-fu, frozen to-fu, soy

sauce, and mizo [sic, miso] or tsiang [jiang].

"When boiled with gypsum or chlorate of magnesia bean milk curdles, and is known as 'to-fu.' Its constitution varies dependent upon the method of preparation employed. Fresh soy curd contains on the average, 8% protein and 3% fat. 'To-fu' when smoked or fried, owing to loss of water, becomes somewhat allied to meat, thereby substantiating the Chinese proverb that–'to-fu is meat without bones.'"

"Frozen 'to-fu' prepared during the cold season contains up to 50% protein. Bean curd is almost totally assimilated, and may be used in the preparation of a considerable number of European dishes, the recipes for which have been published by the U.S. Department of Agriculture. The Chinese prepare an unlimited number of dishes based upon this comestible, including artificial meat. In order to obtain the specific taste of meat, smoking soybean sauce is used." Address: Manchuria.

627. Kellogg, John Harvey. 1927. The new dietetics: A guide to scientific feeding in health and disease. 3rd ed. Battle Creek, Michigan: The Modern Medicine Publishing Co. 1031 p. See p. 188-93, 322-28. Illust. Index. 24 cm.
• ***Summary:*** This is an encyclopedia of food, diet, and nutrition. Earlier editions were published in 1921 and 1923. The author, a physician and a vegetarian, lists his credentials on the title page: "Fellow of the Royal Society of Medicine of Great Britain, of the American Medical Association, Member of the American Economic Association, and of the National Geographical Society, Member of the Société d'Hygiene of France, Late Member of the Michigan State Board of Health, Editor of "Good Health," Superintendent of the Battle Creek Sanitarium, President of Battle Creek College.

Table XIV (p. 188) lists soy beans as a food rich in lime (calcium), containing 0.46%. Pages 189-93 discuss "Acids and bases of food–The acid alkaline balance." It begins: "As pointed out by Bunge many years ago, and as further shown by an extensive research conducted by Sherman, of Columbia University, foodstuffs differ in relation to their acid and basic contents. In certain foods, bases or alkalies predominate, while in others the mineral acids predominate.

"The waste products of the body are predominantly acid; consequently it is desirable that the foodstuffs should be predominantly basic. If acids predominate in the ration, and this condition continues for a considerable period of time, the effect will be to disturb the nice balance between acids and bases which is normally maintained in the body fluids and which is essential for life. A deficiency of alkalies constitutes acidosis.

"It is necessary that the alkalinity of the blood should be constantly maintained as the only means by which the acid wastes of the body which are constantly accumulating as the result of all sorts of vital work may be promptly removed." All flesh foods leave highly acid residues. Eggs are also acidic, though less strongly than meat. Cereals and bread are acidic, though much less so than meats. Milk is slightly alkaline. Most fruits, and all green and root vegetables are strongly basic and tend to alkalinize the tissue fluids... Generally it is better to select foods which afford a large basic margin so as to add to the alkali reserve of the body, which always tends toward diminution, especially in old age. A strongly basic diet is especially indicated in cases of arteriosclerosis and disease of the kidneys, in fevers, in pregnant women, in all forms of acidosis, and in old age...

"At the present time all physiologists are agreed that the highest degree of physical vigor and efficiency may be maintained on a diet which excludes flesh foods and physiologists the world over are unanimous in advising a curtailment rather than an increase in meat consumption."

Table XVI (p. 192-93) is titled "Excess of acid or alkali in one ounce and in 100 calorie portions of common foodstuffs." The Soy bean has an excess of base (alkali), 12.0 units per 100 calories or per 1 ounce.

In the chapter on Legumes, pages 322-28 give a detailed and accurate discussion of the soy bean and various soyfoods, including the history and nutritional composition of the soy bean, soy bean milk, to fu [tofu], soy sauce, and soy bean sprouts. On the first page, Dr. Kellogg states: "The soy is the best of all beans."

In the chapter titled "Infant Feeding," under "Vegetable Milk" (p. 956), Dr. Kellogg states: "The Chinese have for ages made from the soy bean a preparation which so closely resembles the dairy product that it may not inappropriately be called vegetable milk. A much better preparation is made from walnuts, almonds, and even peanuts... Milk prepared from walnuts and almonds is used in China, the Philippines and throughout the Orient, as a food for nurslings for whom a wet nurse can not be provided. This custom prevails extensively in those Asiatic countries in which cow's milk is but little used.

"A nut milk commonly known as 'Malted Nuts' has been made in this country for more than thirty years and has come into extensive use... These plant protein milks render great service especially in the treatment of infants and invalids who are sensitized to cow's milk. They are also valuable resources in the treatment of colitis in infants and in cases in which change of the flora is found difficult, so that the suppression of all animal proteins becomes necessary."

Also discusses quinoa, kaoliang, and the adsuki bean.

Note: This is the earliest English-language document seen (Feb. 2004) that uses the word "alkalinize" to refer to making a food more alkaline. Address: Battle Creek, Michigan.

628. Lovell, Philip M.; Press-Lovell, Leah. 1927. Diet for health by natural methods: Together with health menus and recipes. Complete instructions for the cure of the sick without the use of drugs. Los Angeles, California: The

Times-Mirror Press. xiii + 428 + [7] p. No index. 21 cm.
• ***Summary:*** Part I: Treatment and diet, by Dr. P.M. Lovell. Part II. The preparation of health foods, by Leah Press-Lovell (recipes, p. 129-428). Some of the recipes in this book first appeared in the "Care of the Body" section of the *Los Angeles Times,* which Dr. Lovell has edited for the past few years. "This is the pioneer health department of any newspaper in the country, undoubtedly the most widely read and unique, in so far as it advocates drugless, natural therapy" (p. 4). "This book is based on vegetarian principles. Meat recipes... are not included." Many reasons for this are given. Meat includes fish and fowl (p. 8-9).

Soy-related: "Soy sauce or shoyu is made from soy beans and can be bought at Japanese stores. It gives a tasty flavor to gravies and to cereals" (p. 134). Chop suey (3 types), each served with "Soy bean sauce" (p. 290-91). Soy gravy (with soy–also called soy sauce or shoyu, p. 305). Chapter 14, "Legumes" (p. 366-70) discusses chick peas (Garvanza), lentils, peanuts, and "Soy beans: Best known in China and India. Rich in oil. Contain almost no starch. Require slow cooking to bring out flavors. Hulls are difficult to digest. Therefore remove them by rubbing through a colander." "About the soy bean: The soy bean is very important in the Orient. When three-fourths grown it makes a nutritious green vegetable [yes] known as 'bean sprouts' [no]. Products of soy beans are soy bean flour, soy bean milk, soy bean cheese (tofu), soy sauce, soy bean oil, sprouts, etc. Soy bean products can be bought at Japanese and Chinese grocery stores." Contains 3 recipes: Soy roll or bread (replace 25% of the whole wheat flour with soy flour in any whole wheat bread recipe). Soy bean porridge (cook 1 cup soy bean flour with 3 cups water for 2 hours in a double boiler. Cool, slice, roll in corn flour and bake with butter or oil to make croquettes). Soy bean croquettes (with "1 cup soy bean porridge"). Soy bean milk (made from soy bean flour, p. 420; also almond milk and cocoanut milk).

Also discusses: Of the general advice given to patients, "the subject of diet occupies the leading position" (p. viii). Agar flakes (vegetable gelatine) are better than animal gelatine (p. 135). Almonds–How to prepare almond milk, cream, and meal (p. 152). Cocoanut–To prepare cocoanut milk. Peanuts–How to prepare raw peanut butter (p. 153). Garvaza [garbanzo] beans and meal (p. 308-09). Nut loaf (Vegetable turkey) (with peanuts, p. 315). Carqué's unfermented whole wheat bread (p. 351). Carqué's unleavened fruit bread (p. 351). Recipes using Graham flour (different from whole wheat flour, p. 356-59).

Ads on the last 7 (unnumbered) pages are for: (1) Lovell Health Offices. (2-3) Lovell's drugless health library (39 titles on diseases and health problems; pocket edition size). (4) Health of the Child, by Dr. Philip M. Lovell. (5) Carqués California Pure Natural Food Products: Fruits–sun-dried and dehydrated without bleaches, fumigants or preservatives (incl. black mission figs), nuts, confections, stamina and laxative foods, nut butters, cereals and products (incl. soy bean flour), miscellaneous. And Carqué Pure Food Co., Inc. (6) Cubbison's Cracker Co., 3419 Pasadena Ave., Los Angeles. And Cubbison's Whole Wheat Flaxseed Crackers. Cubbison's also sells Whole wheat crackers, and Whole wheat nut bread (See p. 32-33, 104). (7) The Cary Health Cooker (for steaming and baking; Elmer E. Cary Co., Los Angeles).

Note: This is the earliest published document seen (April 2004) that gives the address of Cubbison's Cracker Co. as 3419 Pasadena Ave. Address: 1. Dr., drugless practitioner, Health Offices, 238 Chamber of Commerce Bldg., 1151 So. Broadway, Los Angeles, California; 2. His wife. Phone: WEstmore 8275.

629. Nadkarni, Krishnarao Mangeshrao. ed. and pub. 1927. The Indian materia medica. 2d ed. Bombay, India: K.M. Nadkarni. 5 + xviii + 1142 + clxix + lxxxviii p. Index. 20 cm.
• ***Summary:*** The body of this book (1142 p.) appears to be titled *The Indian Materia Medica with Ayurvedic, Unami & Home Remedies.* Soybeans are mentioned in three different places, almost as if each was thought to be different plant.

Page 313-14. "305. Dolichos Soja–(English–Soya bean, German–Soja bohne, Bengali–Gari kulaj, Hindi–Bhatwan, Kumaon–Bhut) is a species cultivated in some part of India for its seeds which are eaten and which contain a high percentage of protein and fat."

Page 399: "396. Glycine Soja & G. Hispida are species (English–Soya bean, Hindi–Bhatwan, Bengali–Gari kulay, Kumaon–Bhut, Eastern Terai–Khajuwa) met with on the tropical Himalayas from Kumaon to Sikkim and Khassia and Naga Hills. A decoction of the root is said to possess astringent properties."

Page 803: "886. Soja Hispida or Glycine Soja (English–Soya bean; Soy-bean) has taken the place of meat in the diet of Chinese, Japanese and other Asiatics. Its notable characteristics are its large proportion of assimilable protein and fat, and its lack of starch and small content of sugar. Being so highly nutritious, it is not adapted for use as a side-dish, like ordinary vegetables, but, like meat, supplies a chief food. Among the preparations mentioned as common in China and Japan are 'tofu' resembling cottage cheese; 'Shoyu or Soya' which has been soaked to remove the skin and then boiled and seasoned; 'Miso' or soy-bean milk, prepared by soaking pulverized beans and straining; and 'Natto' obtained by fermenting the boiled beans. The lack of starch gives the beans favour as a diabetic food, and soy-bean meal and soy-bean bread have been prepared. The beans have been also tried as a coffee substitute–(Popular Science Siftings). For more particulars see also Dolichos Soja etc."

Also mentions *Sesamum indicum* (p. 788-90). Sanskrit.–Tila. English–Gingeli. French–Sesame. German–Sesom

[Sesam]. Hindi, Cashmeri, Punjabi & Bengali–Til. Mahrathi & Konkani–Teel. Telugu–Nuvvulu; Guvvulu. Tamil–Ellu. Canarese–Uru-Ellu. Malayali–Karuellu.

The author was born in 1864. A 3rd edition was published in 1955. First published in 1908 under the title "Indian Plants and Drugs." Address: India.

630. Zhang Xiangwen. 1927. Dungu bitan [Chaotic valley essays]. China. Passage on soy reprinted in C.N. Li 1958 #354, p. 251. [Chi]
• ***Summary:*** Wade-Giles reference: *Tun Ku Pi T'an*, by Chang Hsiang-Wên. Republican period. The section titled "Yellow soybeans" (*huangdou*) states: The yellow soybean is a nutritious substance. The milk (*doujiang*) is especially beneficial. Soak the beans in water. When they are swollen, use a quern / mill (*mo*) to grind them. Then filter off the dregs (*zha;* Japanese: okara). Boil the milk (*jiang*) to a certain thickness, then consume it. Its efficacy is like that of cow's milk. (Translated by H.T. Huang, PhD, April 2003).

Dr. Huang adds: The title of this work may involve a humorous "play on words" with the famous *Mengqi Bitan* [Dream pool essays] (1086). Or, Dungu could be a place-name in China.

631. *Miller* (*The*). 1928. The soya bean. 53(2555):832. Jan. 9.
• ***Summary:*** Based on a publication by Messrs. Kelly & Co., Ltd. of Liverpool concerning soybean production and uses. Address: England.

632. Tso, Ernest. 1928. The development of an infant fed eight months on a soybean milk diet. *Chinese J. of Physiology* 2(1):33-40. Jan. [9 ref. Eng; chi]
• ***Summary:*** "Soybean milk is a native food used in certain parts of the country (China) as a morning beverage but is little used as a part of the diet for children. Its nutritive properties as a food for young infants are practically unknown. The following report of a more or less successful attempt to feed an infant six weeks of age for eight months on a soybean milk diet is therefore of interest from both the economical and the physiological standpoints. Soybean milk is five to ten times cheaper than cow's milk."

Describes exactly how the soybean milk was made and the protocol of the experiment, including feeding history, physical development, Roentgen-ray (x-ray) examinations, other clinical data, and metabolism experiment. During the 8 months, the child received daily 600 to 800 cc soybean milk containing 50-70 gm cane sugar and 0.1% NaCl [table salt]. At various times this diet was supplemented with other foods, including one half to one yolk of an egg, cod liver oil (10-20 cc daily), and orange juice (5-10 cc daily).

"This experiment is perhaps the first demonstration that an infant can be successfully fed through the perilous period of the first few months of life on a diet which contains no mammalian milk." However the author found signs of rickets in an infant fed solely on soy bean milk.

Figures show: (1) Graph: The buffer value of soybean milk; it is midway between that of human milk and cow's milk. (2) Graph: Weight of baby fed soy from 1 to 44 weeks of age compared with Holt's average weight curve for several hundred breast fed babies. The soy weight is always lower than the milk weight. (3) Photo of baby Yao at age 9½ months. Address: Div. of Pediatrics, Dep. of Medicine, Peking Union Medical College, Peking [China].

633. Stop & Shop. 1928. Buy your Sunday dinner at this store (Ad). *Chicago Daily Tribune*. Feb. 24. p. 12.
• ***Summary:*** One section is titled "Stop & Shop now offers Battle Creek Sanitarium Health Foods to you–Every day in the year a complete line of standard Battle Creek foods... Battle Creek expert always in charge of this department." Featured: "Savita–a valuable substitute for meat extracts; rich in vitamin–excellent for diabetics. Has the fine flavor of mushrooms and rivals the finest meats. 50¢ jar. Protose–looks like meat, smells like meat, tastes like meat; has the composition of meat yet is purely vegetable. 35¢ jar." An illustration shows 11 products, including Psylla [from psyllium], Gluten Flour, Malted Nuts, Lacto Dextrine, Zo, Savita, Protose, and Laxa. Address: 16 N. Michigan and 12 W. Washington.

634. Vitale, Luigi. 1928. Il latte di soja [Soymilk]. *Rassegna Internazionale di Clinica e Terapia* (*Naples*) 9(3):180, 183-86, 189-92. March 31. [Ita]
• ***Summary:*** Includes a discussion of the value of soymilk in infant feeding.

Note: The *Journal of the American Medical Association* (23 June 1928, p. 2068) summarized this article as follows: "Vitale extols the soy bean from the agricultural standpoint, as it requires little cultivation, thrives on mediocre soil, stands a drought well, and enriches the soil with atmospheric nitrogen. As a food, it is perfectly harmless, and differs from other legumes in that it constitutes a complete food, containing proteins, carbohydrates and fats, also vitamin B. In China, and in other countries of Asia, soy bean milk has been used extensively since remote times in the feeding of children. If prepared under proper conditions of cleanliness soy bean milk is a wholesome food. It keeps better than animal milk, although it also has a rich microflora." Address: Frattamaggiore (Napoli/Naples), Italy.

635. Carque, Lillian R. 1928. Mrs. Carqué's recipe book. Los Angeles, California: Otto Carqué. 32 p. Illust. 15 cm.
• ***Summary:*** Inside front cover: "Dear Friends: This recipe book has been created to fill a deeply felt human need, namely to emphasize the importance of a fruitarian as well as vegetarian dietary, and to encourage the greater use of nature's most wholesome foods..." Signed, Lillian Carqué

(Mrs. Otto Carqué).

This book has no table of contents. However the recipes are divided into "divisions." Fruit & nuts (p. 1-12). Vegetable salads (p. 13-18). Cooked dishes (p. 18-23). Vegetable soups (p. 23-24). Fruit soups (p. 24-25). Fruit cocktails (p. 25). Desserts (p. 25-27). Sandwiches (p. 27-28). Unfired pies [raw] (p. 28-29). Sauces & dressings (p. 29-31). Breads (p. 31). Health confections (p. 32).

Soy related recipes include: Soya bean bread (with 1½ cups Carque's Soya Bean Flour 2 cups whole wheat flour, 1½ cups nut milk, 2 tablespoons Carque's Honey, etc., p. 31).

A photo at the top of many pages shows the dish prepared from the recipe on that page.

The recipes call for many Carque brand products by name–such as: Carque's Almond Butter, Carque's Black Mission Figs, Carque's California Dates, Carque's California Honey, Carque's California Olive Oil, Carque's Celery Salt, Carque's Cracked Wheat, Carque's Deglet Noor Dates, Carque's Dried Apricots, Carque's Fig Paste, Carque's French Dressing, Carque's Gem Peanut Butter, Carque's Granulated Agar, Carque's Lentil Flour, Carque's Natural Whole Rice [brown rice], Carque's Nut Cream Butter, Carque's Nut Fruto, Carque's Nuts, Carque's Onion Salt, Carque's Orange Blossom Honey, Carque's Peanut Butter Dressing, Carque's Peanut Meal, Carque's Pecan Meal, Carque's Pitted Dates, Carque Powdered C-Leaves, Carque's Prunola Dressing, Carque's Raw Hawaiian Sugar, Carque's Ripe Olives, Carque's Savory Nut Loaf, Carque's Seeded Muscat Raisins, Carque's Seedless Raisins, Carque's Shredded Cocoanut, Carque's Soya Bean Flour, Carque's Thompson Seedless Raisins, Carque's Unsulphured Dried Peaches, Carque's Unsulphured Dried Pears, Carque's Whole Wheat Macaroni.

Lillian R. Carqué was born in 1899. This book was published about 7 years before Otto Carqué's death on 9 Jan. 1935.

According to OCLC (Dec. 2010) Helen Evans Brown was a former owner of this book. It was donated to the Huntington Library by Philip S. Brown. Address: 1016 So. Hill St., Los Angeles, California.

636. Grey, Egerton Charles. 1928. The food of Japan. Geneva: League of Nations, Health Organisation. 161 p. May. Index. 24 cm. [82 ref. Eng; fre]

• ***Summary:*** Detailed information and analysis. Contents: Preface. 1. Quantity of food in Japan: Exports, imports, production and consumption of food in Japan in the year 1925. 2. Quality of food in Japan: Definition of quality. 3. Distribution of food in Japan: Natural and artificial distribution. 4. Chemical composition of Japanese foods as consumed: Methods of analysis. 5. Chemical composition of Japanese food as purchased. Appendices: I. Literature relating to the chemical and physical properties of the food of Japan, with list of authors. II. Food materials and the plants and animals serving as sources of food in Japan.

The Preface begins: "This work... was carried out in the Imperial Institute of Nutrition, Tokyo (director, Dr. Tadasu Saiki). It comprises statistical data relating to the food supply of Japan and analytical data derived from the writer's personal examination of the food materials."

Table 7 (p. 25) shows the amounts of major foods consumed in Japan. The percentage of the total food consumed is: Rice 50.83%, barley 10.15%, potatoes 8.63%, wheat 6.63%, soy bean 4.76%, other beans 3.71%, other cereals 3.24%, fish 1.72%, seaweed 1.23%.

On page 54, the author discusses the "Alkalinity of the ash [of foods]. This figure is of considerable importance as indicating the capacity of the food material to produce alkali in the body." On pages 61-111 the author lists the nutritional composition of all major Japanese foods, grouped by food type: 1. Cereals and cereal products. 2. Legumes, pulses, and legume products. 3. Roots, greens, and other vegetables. 4. Mushrooms and seaweeds. 5. Fruits, nuts, and seeds. 6. Vegetable oils. 7. Other vegetable products. 8. Dairy products. 9. Eggs. 10. Meat and animal fat. 11. Fish. 12. Condiments, beverages, etc. The name of each food is given in both English and French, usually with a brief explanation.

In a table (p. 65-69), in category "II. Legumes, pulses, and legume products," the section titled "Fresh legumes" includes (p. 64-65): Edamame (Soy bean in pod) = *Fève de soya en cosse*. The section titled "Dry legumes (pulses)" includes (p. 64-67): Azuki (Small red bean) = *Petit haricot rouge.* Dainagon (Small red bean) = *Petit haricot rouge* Ao daizu (Soy bean [with green seed coat]) = *Fève de soya.* Kuro daizu (Black soy bean) = *Fève de soya noire.* Shiro Daizu (White soy bean) = *Fève de soya blanche.* Rakkasei (Pea nut) = *Pistache de terre.*

The section titled "Bean products" includes (p. 66-69): Aburage (Fried-bean curd) = *Pâte de haricots frite*. Aka miso (Soy-bean paste) = *Pâte de fèves de soya.* Gammodoki (Fried-bean curd) = *Pâte de haricots frite avec mixture d'algues marines.* Kinako (Soy-bean powder) = *Poudre de fèves de soya.* Kori dofu = *Pâte de haricots séchée.* Namaage (Fried-bean curd) = *Pâte de haricots frite.* Natto (Fermented soy bean) = *Fève de soya fermentée.* Sarashian (Red-bean powder) = *Poudre de haricot rouge* [Sarashi-an from azuki beans]. Shiro miso (White soy-bean paste) = *Pâte blanche de fève de soya.* Tofu (Soy-bean curd) = *Pâte de fèves de soya.* Tofu kasu (Soy-bean residue) [okara] = *Déchets de fèves de soya.* To nyu (Soy-bean milk) = *Lait de fève de soya.* Yuba.

Note 1. This is the earliest English-language document seen (April 2013) that contains the word *gammodoki*, which refers to deep-fried tofu burgers, or that contains the word *namaage*, which refers to deep-fried tofu cutlets.

Also: Mushrooms and seaweeds includes (p. 73-75): Arame, Asakusanori [Asakusa nori], aonori, hijiki, kanten, kombu, mozuku, ogonori, tororo kombu, wakame. Fruits, nuts and seeds includes (p. 77): Asanomi (Hemp seed),

Goma (sesame, white and black). Vegetable oils includes (p. 79): Daizu yu (Soy bean oil) = *Huile de fève de soya.*

Condiments includes (p. 92-93): Hamana natto [fermented black soybeans]. Kiriboshi (Dried daikon). Misozuke [miso pickles]. Narazuke. Shoyu [soy sauce]. Takuan (Pickled radish). Umeboshi (pickled plum) = *Prune confite.* Beverages includes (p. 92-93): Amazake. Mirin (fermented rice). Sake (Rice wine).

For each food, the following values are given in both English and French: Water, protein (N x 6.25), fat, carbohydrate, ash, calories, alkali value, total nitrogen, water-soluble nitrogen, phosphoric acid (anhydrous), sodium chloride (salt), water-soluble ash, water-insoluble ash, alkalinity due to soda and potash, alkalinity due to lime and magnesia, calcium oxide, ferric oxide, factor for converting to dry food.

Note 2. In Japan, the typical person is well aware of which foods are alkaline (*arukari-sei*) and which are acidic (*san-sei*). The alkaline foods are generally considered more healthful and health-protecting. For the alkaline values given by Grey for many basic Japanese foods, see SoyaScan Notes. 1991. Sept. 20.

Note 3. This is the earliest English-language document seen (March 2009) that uses the term "soy-bean paste" to refer to miso.

Note 4. This is the earliest English-language document seen (June 2009) that uses the term "Edamame" to refer to [green] soy beans in their pods.

Note 5. This is the earliest English-language document seen (April 2013) that uses the term "kori dofu" to refer to dried-frozen tofu.

Note 6. This is the earliest English-language document seen (Dec. 2006) that uses the term "pickled plum" to refer to umeboshi salt plums.

Note 7. This is the earliest English-language document seen (Nov. 2011) that uses the term "Hamana natto" to refer to fermented black soybeans. Address: M.A., D.Sc., F.I.C., M.R.C.S., etc..

637. Wu, Hsien. 1928. Nutritive value of Chinese foods. *Chinese J. of Physiology, Report Series* No. 1. p. 153-86. July. Issue title: Metabolism. [7 ref. Eng; chi]
• ***Summary:*** The nutritive value of many Chinese foods (water, protein, fat, ash, crude fiber, carbohydrate, calories) is given (with the English name, scientific name, and name in Chinese characters), including the following: wheat gluten, sesame seed (p. 155), yellow soy bean, black soy bean (large or small), green soy bean, soy bean sprout (yellow or green), soy bean flour, soy bean curd, soy bean dregs [okara], bean curd (doufu-gan, boiled in salt and spices and partially dried), oil skin ([yuba], from boiled soy bean milk), bean curd skin ([yuba], dried, or rolled like bamboo), soft bean curd, soy bean milk (p. 156), smoked bean curd, sheet bean curd, fermented bean curd, pickled bean curd, soy bean (fresh) (Characters: hair + bean = mao tou), wild soy bean, red gram bean (red small bean, Phaseolus mungo [azuki bean], p. 157), cucumber pickled in soy bean paste (p. 175).

Condiments: Thick soy bean paste, thin soy bean paste, fermented soy bean, fermented bean (dried), thin soy bean sauce (white), thick soy bean sauce (white), thin soy bean sauce (black), thick soy bean sauce (black), soy bean sauce ("chemical"), sweet flour paste (p. 176).

Table 4 (p. 180) gives the calcium, phosphorus, and iron content of some Chinese foods in percentages of edible portion, including the following: Wheat gluten, job's tear, yellow soy bean, black soy bean, red gram bean [azuki], green soy bean (fresh), soy bean flour, soy bean milk, bean curd (Southern style and Northern style).

Table 5 (p. 182) lists foods as sources of vitamins A, B, C, or D, including the soy bean (an excellent source of vitamin B).

Note 2. This is the earliest English-language document seen (April 2013) that uses the term "doufu-gan" (or "doufu gan") to refer to Chinese-style firm tofu. Address: Dep. of Biochemistry, Peking Union Medical College, Peking, China.

638. Vi-Tone Company. 1928. George Young takes plenty of energy-producing food (Advertorial). *Toronto Daily Star* (*Canada*). Sept. 10. p. 2.
• ***Summary:*** George Young, a well-known swimmer, and Johnny Walker, a trainer of swimmers, both favor foods that are high in energy-producing powers, and "one of the most important of these is Vi-Tone, which many people use and most of us have seen in the stores.

"It is a food tonic beverage, with a delicious malt chocolate flavor and contains the rich proteins and vitamins of the soya bean.

"Taken hot or cold it produces energy almost instantly. In this way it is far better than mere stimulants. For Vi-Tone gives that staying power which can only be obtained from true nourishment." Address: [Hamilton, ONT, Canada].

639. *Good Health* (*Battle Creek, Michigan*). 1928. Soy bean milk. 63(9):41. Sept.
• ***Summary:*** "An article in an Italian medical journal extols the soy bean from the agricultural standpoint... In some Asiatic countries soy bean milk has from remote times been extensively used in the feeding of children. When properly prepared it keeps better than animal milk."

640. Tso, Ernest; Yee, Martin; Chen, Tung-Tou. 1928. The nitrogen, calcium and phosphorus metabolism in infants fed on soybean "milk." *Chinese J. of Physiology* 2(4):409-14. Oct. [10 ref. Eng; chi]
• ***Summary:*** "It has been demonstrated that infants even in their first months of life thrive on a diet free of mammalian milk (Tso 1928)." The basic constituent of this diet is in

artificial "milk" prepared from soybean (*Glycine hispida*)... What is the co-efficient of digestibility of the bean "milk" proteins? "What is the rate of storage of its protein nitrogen? To what extent do the calcium and phosphorous contents in the bean milk meet the requirement of a growing child? Metabolism experiments have, therefore, been conducted in an attempt to gather data on these points."

An infant fed for 4-5 day periods on a daily ration of "bean milk" (720 gm), sucrose (72 gm), and orange juice (4 gm), showed satisfactory nitrogen absorption and retention. The calcium and phosphorus absorption appeared to be inadequate. The calcium content of soybean "milk" is inadequate. The addition of cod-liver oil (10-15 gm) and a small amount of calcium salt markedly enhanced not only the calcium retention but also the phosphorus storage. The phosphorus content of soybean "milk" is apparently adequate but its utilization may be restricted by the limited calcium intake.

Note: This is the earliest English-language document seen (Aug. 2013) that contains the term 'soybean "milk."' Address: Div. of Pediatrics and Dep. of Biochemistry, Peking Union Medical College, Peiping.

641. Dorsett, P.H.; Morse, W.J. 1928. Agricultural explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon (Log–unpublished). Washington, DC: Foreign Plant Introduction and Forage Crop Investigations, Bureau of Plant Industry, USDA. 8,818 p. Unpublished typescript log. Illust. Partially indexed. 28 cm.

• ***Summary:*** Also called the "Log of the Dorsett Morse Expedition to East Asia" and (by the National Archives) "Dorsett-Morse Expedition to the Far East, 1929-31," this is one of the most important documents ever produced on soybeans and soyfoods. Covering the period from late 1928 until 1932, it consists of 17 volumes of typewritten unpublished manuscript plus handwritten notebooks.

The two explorers, who were gone on the expedition for a little more than two years, initially planned to be gone for about three years. They took 3,369 photos of which 95% appear in the report; the original prints are pasted on the pages, each with a number and a caption. The first negative number is #43196 (p. 238) and the last is #46514. The last numbered page of the report is #8818, but most of the index pages are not numbered and some special reports at the end of the main report each start with page 1.

The first quarter of the pages (to about page 2,500) are indexed, using 4 separate indexes. The only original and 2 microfilm copies were at the American Soybean Assoc. (St. Louis, Missouri), however as of Aug. 2011 they are on permanent loan to Rare and Special Collections at the National Agricultural Library (Beltsville, Maryland)–which also has 7 photograph albums that accompany the 7 log books. A list of the missing pages has been compiled. One photocopy of a microfilm copy is at the Soyinfo Center (Lafayette, California). One microfilm copy is at the National Archives in Washington, DC, in Records of the Bureau of Plant Industry, Soils, and Agricultural Engineering, Record Group 54. See: "National Archives Microfilm Publication No. M840. Expedition Reports of the Office of Foreign Seed and Plant Introduction of the Department of Agriculture, 1900–1938." Rolls 16-20, volumes 56-73. These microfilm rolls may also be available for viewing or duplication at one of the various regional branches of the National Archives (e.g. San Bruno, California).

A brief itinerary of the trip is as follows: 1929 Feb. 18–The party of 5 people leaves Washington, DC, for Los Angeles by train. It consists of Morse, his wife Edna, their daughter Margaret (age 7), Dorsett, and his daughter-in-law Ruth (Bobbie; the widow of Dorsett's son, she served as Dorsett's secretary and general helper).

March 1–They sail from San Francisco to Yokohama on the S.S. *President Grant* of the Dollar Steamship Lines. March 29–Arrive in Yokohama, proceed directly to Tokyo, establish headquarters with rooms at the Imperial Hotel, and hire an interpreter, Mr. Suyetake, who works with them for the next 2 years. May 21–The Morses go to Hokkaido, the Dorsetts to Kyoto, by sleeper train. Morse returns to Tokyo.

Aug. 17–The entire party arrives in Hokkaido and establishes headquarters in Sapporo to study soybeans. Oct. 8–Leave Hokkaido for the Northeast Provinces, then arrive in Tokyo on Oct. 15. Oct. 22–Arrive in Keijo (Seoul), Korea, then take many side trips. Note: 1929 Oct. 29–Great Depression begins in USA with stock market crash. Dec. 8–Return to Japan via Kyushu, then to Tokyo to study soyfoods. They buy and photograph many!

1930 April 1–Travel by steamer to Dairen, Manchuria, where they set up headquarters. Dorsett very sick from April 11 to June 11; taken to a Japanese hospital in Dairen, he almost dies of double pneumonia. Morse does the work of both men and does not inform USDA of Dorsett's critical condition. June 24–Morse takes a quick trip to northern Korea, via Mukden and Antung (Tan-Tung), to look for Zoysia grass.

July 1–Returns to Manchuria via Mukden. July 21. Dorsetts leave for Peking by train; Morses and Mr. Suyetake stay in Dairen. Aug. 21–Morse party travels to northern Korea, staying in Heijo (Pyongyang / P'yongyang); takes a 4-day side trip to Seoul. Sept. 28–Morse returns to Dairen, Manchuria.

Oct. 19–Morse party leaves Dairen, arriving in Peking the next day. Nov. 9–Morse party returns to Dairen. Nov. 30–Morse arrives in Harbin, north Manchuria, then passing through Mukden, returns to Dairen. Dec. 18–Morses leave Dairen for Japan, passing through Kobe on Dec. 21 and arrive in Tokyo on Dec. 23.

1931 Jan. 12–Travel to Kyoto, Himeiji, and Tatsuno Shoyu. Jan. 16–Visit Okazaki and Hatcho miso. Jan. 17–

Return to Tokyo. Feb. 17–Morse party leaves Tokyo by boat for the USA, arriving in San Francisco on March 4. March 15–Dorsett party leaves Peking for Tientsin, Shanghai, and Hankow. March 27. Dorsetts sail from Shanghai to San Francisco.

Note 1. The title of this report is puzzling since the expedition never went to Taiwan, Singapore, Java, Sumatra, or Ceylon. It was proposed several times that they visit these places, but the plans did not work out.

Note 2. This is the earliest log (unpublished) seen (Oct. 2001) that mentions soy. Address: Agricultural Explorers, USDA, Washington, DC.

642. Ducceschi, V. 1928. La soja e l'alimentazione nazionale [Soya and the Italian national diet]. Milano, Italy: Francesco Vallardi. x + 246 p. (Biblioteca Encyclopedia Vallardi). [117 ref. Ita]

• ***Summary:*** Contents: 1. Introduction. 2. Natural history of the soybean. 3. Chemical composition of soybean seeds. 4. Biological value of the nutrients contained in soybean seeds. 5. Foods furnished by the soybean and their digestibility: Whole soybeans, soy oil, whole soy flour, bread made with soy flour, pasta, soy milk and cheese (Il latte ed il formaggio di soja [tofu]), fermented products (sauces; natto, miso, koji, soy sauce {called *shoyou* or *soyou* in Japanese, *tsiang-yeou* in Chinese}). 6. Medical and therapeutic applications of the soybean. 7. The economic problem of soybeans. 8. Conclusion.

Note 1. This is the earliest Italian-language document seen (April 2012) that uses the words *shoyou*, *soyou*, or *tsiang-yeou* to refer to soy sauce.

Note 2. This book's large bibliography contains more errors than any other soy-related bibliography ever seen. Address: University of Padova, Italy.

643. Maliareffsky, G.I. 1928. [Bean milk and curd]. *Vestnik Manchzhurii* (*Manchuria Monitor*) No. 6. p. 21-23. English ed.; p. 83-91 Russian edition. Data supplied by Manchuria Railway S-ty. [3 ref. Eng; rus]

• ***Summary:*** Detailed descriptions, based on personal observations, of how soymilk, tofu, and yuba are made and used in Harbin and Fuchiatien. Nigari (*lu-shui*) is used as the tofu coagulant. Four methods can be used to preserve tofu: salting, drying, freezing, and steaming. Unpressed soymilk curds are called to-fu-na-erh and are sold in the streets of Fuchiatien for 1 copper per middle-sized cup. The grinding of soybeans to make tofu is done using a stone mill, driven by a donkey. The soymilk is separated from the fiber by filtration through a cloth and pressing before heating. "The ground mass remaining in the cloth after the filtration has been performed forms a very good nourishment for pigs, which are usually kept to make use of such refuses at every mill." Tou-fu-p'i (yuba) is removed repeatedly from the 2.5 foot diameter cauldron while the milk is heated for 90 minutes. A cauldron containing about 2 gallons of soymilk may be skimmed 30 times, the first skim being the best. The yuba is sold. After the milk is boiled, some of it is sold, but most is used to make tofu.

Note: This is the 2nd earliest Russian-language document seen (Oct. 2012) that mentions yuba, which it calls "Tou-fu-pi" and "yuba." Address: Harbin, Manchuria.

644. Richter, V.F.A. 1928. Das Berczeller'sche Sojamehl vom baeckereitechnischen Standpunkte. II. Milchbrot, Gebaeck, Zuckerbaeckereien und Backhilfsmittel [Berczeller's soy flour from a bakery technology standpoint. II. Milk-bread, pastry, confectionery, and bread improvers (self-raising flour)]. In: L. Berczeller. 1928 and 1930. Publications on Berczeller's Soy Flour. Vols. I and III. 4 p. Unpublished manuscript. [Ger; Eng]

• ***Summary:*** Contains many recipes. Address: Laboratorium fuer Ernaehrungsforschung, Vienna, Austria.

645. Diaz, Juan B. 1929. Re: Soybeans in Cuba. Potential for soymilk. Letter to Director of the Station, Santiago de las Vegas, Cuba, Jan. 17. 1 p. [Spa]*

• ***Summary:*** "With respect to this bean (*judea* = soybean), a short time ago I read in the *Havana Post* an article which said that these soybeans contain a large quantity of a substance from which it is possible to make a very good and rich milk. In Korea there are said to be many dairies (*lecherias*) that are devoted exclusively to selling soymilk (*leche de soya beans*) and this milk is very rich and nutritious.

This letter is located in file #565 in the archives, INIFAT, Santiago de las Vegas, Cuba. Another letter in the same file, dated 5 Feb. 1929, describes the use of soybeans for green manure (*abono verde*) in tobacco cultivation. Address: J.B. Diaz & Co. (tobacco store), Habana, Cuba.

646. Carver, G.W. 1929. Re: Preparing peanut milk and soy milk for Mahatma Gandhi. Letter to Mr. [Charles Freer] Andrews, Feb. 24. 1 p. Typed, without signature (carbon copy).

• ***Summary:*** "My Dr. Mr. Andrews: Our various, previous conversations, marvelous lectures, followed by our conference this morning, all convince me that a new day is dawning for India. I believe Mr. Gandy's [sic, Gandhi's] physical strength can be greatly improved by following out the ideas we discussed in the matter of foods."

They must have discussed the method for preparing soy milk, for Dr. Carver concludes: "A peanut emulsion can be made in the same way as that recommended for the soy bean, and is a little richer in food nutrients."

Note 1. Charles Freer Andrews was an Anglican minister who worked with Gandhi, first in South Africa and later in India. See also Carver's letter to R.B. Eleazer dated 29 Nov. 1930, in which Carver discusses Andrews' visit in Feb. 1929

and mentions the development of a menu containing soymilk to help Gandhi. Andrews also knew Tagore and Carver and it is apparently he who is referred to in this letter. B. Chaturvedi and Marjorie Sykes, in their book titled *Charles Freer Andrews: A Narrative* (p. 238) note that Andrews visited Tuskegee in Feb. 1929. During his stay of 10 peaceful days, he attempted to establish ties between Santiniketan in India and Tuskegee in America. *The Tuskegee Messenger* of 9 March 1929 reported: "Tuskegee has had a messenger from the East. His spirit was a spirit of simplicity, of repose, of reflection and peace... One of the boys said it was just like Jesus himself talking to us." For more on Andrews see *C.F. Andrews and India* by Hugh Tinker (Oxford Univ. Press, 1979).

Note 2. This is the earliest document seen (Oct. 2010) that mentions Mahatma Gandhi in connection with with soybeans or soyfoods. Thus George Washington Carver apparently introduced Gandhi to soyfoods. Gandhi first began to write about them, in order to introduce them to India, in Sept. 1935. Address: Dep. of Agricultural Research and Experiment Station [Tuskegee, Alabama].

647. Carver, George W. 1929. Re: Making non-dairy milk from plants. Letter to W.E. Tabb, a Methodist Missionary at Minga Station, Kabinda (M.E.C.M.), Belgian Congo, April 16. 1 p. Typed, without signature (carbon copy).
• ***Summary:*** On Feb. 16, W.E. Tabb wrote to Dr. Carver explaining that he had come to the Belgian Congo in Oct. 1928 as a missionary under the Board of the Methodist Episcopal Church, South. He had first met Carver at a church conference in Macon, Georgia, in 1924. In the Congo, he is now Assistant Head of the Department of Education and his wife is head of the Hospital and Medical Department. The indigenous people in his area have plenty of rice, millet, sugar cane, peanuts, sweet potatoes, etc. "The main question in which I am interested at this writing is the saving of the lives of babies. Infant mortality is extremely high. And an unusually large percentage of mothers die during child-birth... An orphan child has very little chance; it is often buried with the mother... And when we have these babies turned over to us on the mission, we can't afford good baby milk which we have to bring in from America and Europe... Now then, the question is: can we use the peanuts or potatoes or sugarcane, etc., to make a milk that will be an adequate substitute for cow's milk or mother's milk? I know that you have made many discoveries along these lines, and perhaps you can help us out to save the lives of many infants here."

Dr. Carver replies: "My dear Mr. Tabb: I thank you for your most interesting letter. Yes, I am intensely interested in all humanity... I am enclosing directions for the making of a milk from Soy Beans. This milk when properly made is quite rich and palatable, and can be used in many ways the same as cows' milk. I do not know of any exhaustive tests that have been made with this milk for the feeding of infants. I do know, however, from personal experience how valuable it is in the preparation of many foods, and even for drinking."

Under separate cover, Dr. Carver also sends a set of Tuskegee bulletins on the use of sweet potato, peanut, etc. "Please let me hear from you from time to time. I am greatly interested in helping in this very important problem." Address: Dep. Research and Experiment Station, Tuskegee, Alabama.

648. Stockert, Kurt; Gruensteidl, Edmund. 1929. Zur Frage der Schaedlichkeit vegetabiler Kindermilch [Toxicity of vegetable milks for infants]. *Zeitschrift fuer Untersuchung der Lebensmittel* 57(4):326-38. April. [4 ref. Ger]
• ***Summary:*** Vegetable milk is essentially an emulsion of almonds in milk serum (Milchserum). Gives details on preparation of this beverage, its composition, and analysis of its safety. Concludes that this vegetable milk is not harmful to infants through fermentative hydrolysis. Soy is not mentioned. Address: Aus dem Laboratorium der Handelsakademie in Wien III [Vienna, Austria].

649. *Madison Survey* (*Madison, Tennessee*). 1929. Soy-bean products replace dairy products. 11(20):78-79. May 15.
• ***Summary:*** "For many years we have been warned that the increase of disease among cattle would put an element of danger into dairy products. This set us to studying foods that contain the essential elements of dairy foods with [sic, without] this objectionable feature." Describes the post-graduate work with soybeans done by two of the school's teachers, Miss Frances Dittes (Peabody College, Nashville) and Prof. P.A. Webber (Michigan State Agricultural College, Lansing).

"It is intensely interesting to those who are looking for something to replace dairy products, to see the products of the soy-bean cheese is delicious and capable of many variations in the dietary. One of the latest articles sampled is a loaf of yeast bread in which soy-bean milk was used instead of water. The bread is fine of grain, sweet, light, and with a toothsome crust that will appeal to the taste of the most fastidious."

"The soy-bean with nuts will supply every thing we have been obtaining from milk and flesh foods. And the danger that lurks in the products of diseased animals is entirely eliminated by the use of soy-bean products.

"There is a future for soy-bean products. We expect to see hundreds of our people demonstrating the value of these foods. This is a real missionary work for which Madison is preparing."

650. *Madison Survey* (*Madison, Tennessee*). 1929. Soy-bean recipes. 11(20):79. May 15.
• ***Summary:*** The following recipes were developed by Miss Frances Dittes: Soy-bean milk ("This gives creamy, forty-two and one-half pounds of rather heavy consistency, and

resembling cow's milk in appearance").

Soy-bean cheese: "To four quarts of soy-bean milk at 100 deg. F., add ten drops of rennet, dissolved in one-half cup cold water and two ounces of starter. The starter may be whey from a previous making of cheese or some sour soy-bean milk. The rennet needs an acid media in which to do its work. Stir thoroughly and keep the mixture for sixteen to eighteen hours at a temperature of 100 degrees. One gallon of milk will make twenty-four ounces of fine curd, which separates from the whey. This curd should be drawn off, mashed and molded."

Soy-bean omelet (from whole sieved soybeans and eggs).

Soy-bean in tomato sauce: "To one can of soy-beans add 2 cups of tomato juice, 1 small grated onion, a pinch of salt, celery salt, and a piece of butter about the size of a walnut. Bake for one hour."

Cream of soy-bean soup: "Through a sieve rub one can of soy-beans. To this add 3 cups of rich, creamy milk, and a pinch of salt. Serve hot with a few bits of chopped leaves of celery or parsley."

Soy-bean salad.

651. Senior Minister of Cuba in London, Subsecretario de Agricultura, Comercio, Y Trabaja. 1929. Re: All the nutrition that we need is found in the soybean. Letter to Sr. Director de la Estacion Experimental Agronomica, Santiago de las Vegas, Cuba, June 11. 1 p. [Spa]*

• ***Summary:*** This letter, which begins with the heading *"Todo el alimento que nosotros necessitamos en la soya,"* discusses Dr. James L. North of England, fresh soymilk, dry soymilk, soybean meal for use in bread, soy cheese, soy coffee substitute, and soy oil.

This letter is located in file #363 in the archives, INIFAT, Santiago de las Vegas, Cuba. Address: London, England.

652. Dorsett, P.H.; Morse, W.J. 1929. Plans for further exploration (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. Agricultural Explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon. Washington, DC: Foreign Plant Introduction and Forage Crop Investigations, Bureau of Plant Industry, USDA. 8,818 p. Unpublished log.

• ***Summary:*** Pages 2273-75 (30 Aug. 1929) "In view of the number of soybeans we have already collected and the large number which we have been promised by Japanese Experiment Stations this fall, as well as the very rapid increase of the soybean industry in the United States, Morse does not feel that it will be advisable or possible for him to remain in the field away from his work at Washington [DC] for more than two years. Dorsett does not have any special work which needs his attention at Washington and can remain in the Orient for another year or two if that appears necessary or desirable by those in authority at Washington.

"We are considering the following two plans of operation for the remainder of the time Morse feels that he can spend in the foreign field.

"1. Complete the work in Hokkaido which will possible require a month or six weeks longer then return to Tokyo and as soon thereafter as practicable make a trip into Chosen (Korea), and do what we can there within a week or ten days. Return to Tokyo and complete operations there by not later than December 15th or January first, 1930. Then leave for Formosa (Taiwan) and spend the remainder of the winter there. In early spring, April or not later than May 15th, proceed to Dairen and our headquarters there for the remainder of the time Morse can remain in the Orient. From Dairen work southern Manchuria and as far north as Mukden [now Shenyang], even making a short trip up to Harbin and vicinity. Also go from Dairen into Chosen during the spring or summer season and in the fall or early winter of 1930 get over to Peking to clean up the work of soybean milk production and other soybean products, in time for Morse and Dorsett too, if it is deemed advisable, to leave for America so that they will reach there in time for Morse to take up his spring work with soybeans.

#2. Complete our work here within the next six weeks or two months if possible. At any rate return to Tokyo as soon this fall as the work here is completed. Then at the earliest possible opportunity get over to Chosen (Korea) and do what we can there this fall, Return to Tokyo and complete our work there with soybean products, making when practicable excursions of a week or so into other parts of Japan for the purpose of picking up information and seed and pictures where possible or persimmons, green manure and cover crops as well as other features of Japanese horticulture.

"In early spring move headquarters to Dairen and work South Manchuria and the central portion as far north as Mukden and Chen Chung [Changchun], the region which was not worked by the Dorsetts in 1925-26. Chosen (Korea) might also be given additional attention throughout the summer and fall as opportunity permits. Dairen is perhaps the best place in the Orient to data if all kinds on soybean storage, handling, and by-products. Complete this work then get over into Peking to work up soybean products, especially soybean milk production. In the early winter go to Taiwan and work that region until Morse feels its time for him to leave for the states. If it is deemed advisable, Dorsett can return then or he could remain and finish up the work in Taiwan (Formosa) in case that was not done before Morse left. He could get in touch with McClure at Canton, which is nearby Canton, and together they might handle the *Placanea cornea*, edible Chinese acorn, and Tonkin cane proposition. Dorsett could then go to Java and look after the soybean and green manure and cover crop work..." Address: Agricultural Explorers, USDA, Washington, DC.

653. Dimmock, F. 1929. The soybean in Canada.

Proceedings of the American Soybean Association 2:47-50. Tenth annual field meeting. Held 22-23 Aug. at Guelph, Ontario, Canada.

• ***Summary:*** "It is doubtful if the acreage of soybeans in Canada at present exceeds 1,000 acres," and that is limited almost entirely to southwestern Ontario. "As far as the speaker is aware, only one firm in Canada uses the soybean in a commercial way. The Vi-tone Co., of Hamilton, Ontario, uses annually about 5,000 bu in the manufacture of a patent food." [The product name is not given. It may have been Soybean Malter Milk and/or Chocolate Malter Milk.] "During 1922-27 Canada imported annually an average of 5,000,000 lb of soybean oil for use in the manufacture of soaps and paints. This oil represents the product of at least 20,000 acres of soybeans." Some farmers have switched to growing soybeans because of the ravages of the European Corn Borer.

"Soybean work at the Dominion Experimental Station, Harrow, Ontario." The soybean is a comparatively new crop in Canada. It has been grown experimentally at Guelph, Ontario, for upwards of 30 years. At Harrow tests have been carried on for 7 years and have just emerged from a preliminary test stage. Upwards of 25 varieties have been tested; 18 of which have been tested for 4 years or more. The average maturity for the earliest variety tested (Ste Annes No. 92) has been 107 days with an average yield of 21.5 bushels per acre of seed. The average maturity of the latest variety tested (A.K.) has been 126 days with an average yield of approximately 40 bu/acre of seed.

Note 1. This is the 2nd earliest document seen (Jan. 2010) that gives soybean production or area statistics for Canada.

Note 2. This is the earliest document seen (Oct. 2004) that mentions the soybean variety Ste Annes No. 92. Address: Prof. and Agrostologist, The Harrow Experiment Station, Harrow, Ontario, Canada.

654. Nouelle, Georges. 1929. Le soja: Les produits coloniales [The soybean: Colonial products]. *Annales Coloniales* (*Les*) 30(137):1. Sept. 17. [2 ref. Fre]

• ***Summary:*** This is basically a good review of the literature, with no new information. It discusses the history, cultivation, and utilization of soybeans as human food, animal feed and in industry, with some emphasis on utilization.

For a long time, it has been considered in Europe as an object for botanical studies.

The milestone dates in its history are:

1779–The first cultural trials at the Museum of Natural History [Paris].

1868–Experiments are undertaken by the Society of Horticulture of the Côte-d'Or.

1880–Soybean seeds are sold by the house of Vilmorin [a seed company].

1888 [sic]–Introduction of soybeans into the United States, where it is adopted for the feeding of animals.

1906–Use of soybean in English oil mills, to make up for the shortage of cottonseed oil.

1908–Creation at Paris by Mr. Li-Yu-Ying of a research laboratory, later expanded into a factory named the *Caséo-Sojaïne* [soy casein factory = tofu factory].

The soybean is adapted to various climates and can be cultivated as far north as the haricot bean. It resists the cold better than the latter and is very tolerant of drought.

It is said that it grows from the Equator to 60º latitude. It is cultivated in China and from Manchuria large amounts are exported to China, Japan, Formosa, Korea, Indo-China and Siam.

In the Americas, it is cultivated in the United States. In Europe. it is cultivated in France in the area around Etampes, in several provinces of Italy, and in Russia.

In Oceania, it is grown in Philippines, Java, and Borneo.

In Africa, trials have been conducted in Algeria and Tunisia, as well as in the British colonies of southern Africa.

In 1908 about 100,000 metric tons were exported from China to Europe, of which 69,200 went to Great Britain and 21,390 to France. In 1909 England purchased 400,000 metric tons for its oil mills.

The soybean can be used profitably in crop rotations to add nitrogen to the soil for subsequent crops.

It is also widely used as a feed for animals.

For human food, it can be used in various forms, especially in the form of mil and of flour.

Soymilk (*Le lait de soja*), known in China before the Christian era, is obtained as follows: a brief description is given, including the process used at *Caséo-Sojaïne.*

Soymilk bears some resemblance to animal milk and it has analogous properties. It can be coagulated to make soy cheese (*fromage de soja* [tofu]). This is done in China and Japan using the water from salt marshes [nigari], or calcium sulfate (*plâtre*) or sour soymilk (*lait aigri*). At *Caséo-Sojaïne* it is made using a mechanized process, which ensures complete hygiene and uses pure coagulant solutions which leave no taste of bitterness.

They have also been able to make cheeses that resemble European cheeses, fermented or not.

Soymilk, like animal milk, can be concentrated, dried and reduced to a powder. Or it can be fermented to make kefir or yogurt (*Kéfir ou Yoghourt*). The cost of making it renders its use very economical.

Soy flour is obtained in the same way as wheat flour, by grind the seed–preferably dehulled. It is a very rich food which contains 4 times as much protein and 20 times as much oil as typical wheat flour. From it one can make bread (notably a diabetic bread using the formula of Dr. Menudier, 1890). By mixing it with wheat flour one can make biscuits that are easy to digest and have a long shelf life, or cakes, pâtes, etc.

From the seeds one can extract an oil which the Chinese

presently use in their cuisine, and the English use to make margarine or soap. The cake remaining after oil extraction makes an excellent animal feed.

The soybean can also be consumed as a vegetable [green vegetable soybeans]. Its digestibility varies with the means of preparation. It is recommended to boil it (after soaking) in water to which had been added a pinch of sodium bicarbonate [baking soda]. Soy sprouts give salads a very agreeable taste. The Chinese make a bouillon base which can replace the bouillon from meat. And fresh soybeans can be prepared like peas. The Japanese and Chinese make soy sauce, using a complicated process, of which certain types are appreciated in England.

Finally, it can be used in confectionery in the form of a confection similar to *crème de marron*, or in the form of chocolate (with sugar and cocoa butter added). Grilled soybeans are served in certain European countries in place of coffee.

In addition to its alimentary uses, the soybean is used to make candles, paints, and *sojalithe* as an insulator for electrical devices.

The soybean is thus suited for numerous and diverse uses. It would be desirable to develop its culture in our colonies and even in France itself in places where it can be acclimatized. Address: Député de Saône-et-Loire, vice président de la Commission des Colonies, membre de la Commission des Mines.

655. Hill, Lewis Webb; Stuart, Harold C. 1929. A soy bean food preparation for feeding infants with milk idiosyncrasy. *J. of the American Medical Association* 93(13):985-87. Sept. 28. [11 ref]

• ***Summary:*** This article begins: "Human milk is universally granted to be the best food for infants during the first few months of life, and cow's milk in some form or with some modification is recognized as the best substitute when human milk is not available. It has been conceded, however, that for the exceptional infant cow's milk may be contraindicated..." One reason may be infant eczema. One alternative is to use soy bean flour to make a substitute.

"Soy bean flour has been subjected to careful study by a number of workers, and the result of these studies would suggest that it could be used as the sole source of protein in the infant's diet."

The writers solicited the cooperation of Mr. L.D. Johnson of Mead, Johnson and Company. "From the formula presented by us, Mr. Johnson prepared a food under the name 'Sobee,' which we have had an opportunity to use in the feeding of a number of infants during recent months."

Tables show: (1) Comparison of the inorganic [mineral] composition of cow's milk and soy bean meal. (2) Ingredients in the original mixture given to Mr. Johnson: Soy bean flour (ground press cake) 67.5%. Barley flour 9.50%. Olive oil 18.95%. Sodium chloride 1.35%. Calcium carbonate [for calcium] 2.70%. (3) Composition of the dried product (Sobee). (4) Percentage of mineral salts in the reconstituted product. (5) Composition of reliquefied dried food (Sobee). "The product is a light brown flour of moderately fine consistency."

"We have used in the last year a large amount of this food, and we have determined to our entire satisfaction that infants take it well, digest it and thrive on it."

"We have fed about forty babies on this food: one for more than eight months, several others for periods of two months or more. These babies have done well and while we would certainly not advance the opinion that this preparation is as good a food for infants in general as the usual formulas made from cow's milk, we have used it enough to know that it is a quite efficient and practical substitute for milk, when it is not desirable to use the latter.

"We have had some excellent results with eczema and will say at this time that this food may prove to be very valuable as a temporary diet for babies with severe eczema. These cases will, however, be reported later."

Note: This is the earliest document seen (July 2008) with the term "soy bean food" in the title. Address: Both: M.D., Dep. of Pediatrics, Harvard Univ. Medical School, Boston.

656. *Chinese Economic Journal.* 1929. Soya beans and bean oil industry in Manchuria. 5(3):791-805. Sept.

• ***Summary:*** "According to their order of importance, the agricultural products of Manchuria are as follows: soya beans, *kaoliang* millet, corn, wheat, barley, rice, buckwheat, hemp, tobacco, cotton, sugar beets and other minor crops."

The yellow bean (*Huang Tou*) is by far the most common, growing in abundance in North and South Manchuria. When the hilum and seed scar is colored white, it is called *Pai Mei* (meaning white eyebrow) *Huang Tou.* When the hilum is golden hued, it is called *Chin Huang tou.* The seed of this variety is almost globular. When the hilum is black, it is called *Hei Chi Tou* or black belly. All the three varieties produce oil and fat, the first two named being specially good for the preparation of bean-curd [tofu], one of the most palatable vegetable dishes of the Chinese.

"The green bean (*Ch'ing Tou*) has two varieties. When the seed is green and the cotyledon is yellow, it is called *Pi Ch'ing Tou.* It is said that this variety yields more legumine in the preparation of bean curd than the two varieties of the yellow bean, but of inferior quality. When the seed, the epidermis and the cotyledon are all green, it is called *Ch'ing Tou.* The hilum of this variety is generally tawny or black.

"The black bean (Hei Tou or Wu Tou) has three varieties: When the epidermis is black and the inside green, it is called *Ta Wu Tou.* It yields oil or fat, and when boiled with millet or rice it is used for food. When the epidermis is black and the inside yellow and of much smaller size, it is known as *Hsiao Wu Tou.* It yields oil, and is used for horse feed, and

the refuse for pig feed. When the epidermis is black and the inside yellow, the bean assuming a flattened and elliptical shape, it is called *Pien Wu Tou,* and is used for horse feed, and when pickled for human food."

"Yellow or green soya beans are used in the manufacture of bean curd, a product of universal consumption in China. The by-product, bean milk, which is highly nutritious, is drunk as milk by many Chinese in the morning. The bean-curd skin [yuba], or the scum of the bean milk, is used for culinary purposes, and is greatly relished on the table."

"The most important product of the beans is bean oil, which has contributed in no small measure to the prosperity of Manchuria. It has attracted foreign capital, and the annual export of oil is enormous. there are altogether more than 300 bean oil mills in South and North Manchuria, including steam mills and oil-fashion, small plants. In Dairen there are 60 bean oil mills, of which only two are Japanese owned, the rest being Chinese. While other manufacturing industries have passed into Japanese hands with the acquisition of the Leased Territory of Kwantung. Chinese still retain a firm hold on the bean oil industry. Harbin has about 50 oil mills, two of which belong to Russians, the rest being entirely operated by Chinese. Other centers like Mukden, Antung, Newchwang and cities along the Chinese Eastern Railway, the South Manchuria Railway and fourteen other railways have bean oil mills in varying numbers, which go to make the total number of 300 oil mills. Beans harvested in the C.E.R. and the S.M.R. regions and even in the remote hinterland where only mule carts can go, are finally transported to various destinations in freight cars. Each car contains 52,000 catties of beans, which can produce about 5 thousand catties of oil and 1,000 bean cakes, every cake weighing 46½ catties. The 50 oil mills in Harbin consume annually about 490,000 tons of beans, valued at $35,000,000."

"The steam oil-mill and the old-fashioned mill differ from each other in mechanical equipment and in the number of presses employed. The old-fashioned mill has only one or two presses, while the steam mill has over twenty press machines. The largest having as many as a hundred. The screw press much in use in the former mill consists of a primitive wedge, that is now being replaced by the metal screw. The screw is turned by hand by the man in charge of the machine. In modern steam mills a steam pump operates a hydraulic press that puts great pressure on the prepared beans underneath. As the hydraulic presses are of larger dimensions, the cakes produced are greater in diameter and thickness than those made from screw presses."

657. *J. of the American Medical Association.* 1929. Sobee. 93(13):989. Sept.

• ***Summary:*** Describes the product based on a new U.S. trademark 252,477. There is no U.S. patent. A mixture of soy bean flour, 67.5%, and barley flour, 9.5%, to which has been added olive oil, 19.0%, sodium chloride, 1.3%, and calcium carbonate, 2.7%. The approximate analysis of powdered Sobee is: fat 22.50, protein 33.20, carbohydrate (barley and soy bean starches) 32.61, ash 8.51, moisture 3.18. The nutritive value of 500 gm is approximately equivalent to 2,223 calories.

Action and uses: Sobee is used as a substitute in the diet of infants who are sensitive to the proteins of milk.

Dosage: The normal dilution is prepared by adding 1 ounce by weight (6 level tablespoonfuls) of Sobee to 7 ounces of water and bringing to boiling temperature. This dilution represents approximately fat 2.81, protein 4.15, carbohydrate 4.07, salts, 1.06. The nutritive value of 1 fluid ounce is approximately equivalent to 17 calories. Sobee is manufactured by Mead Johnson & Co., Evansville, Indiana.

658. **Product Name:** Sobee (Non-Dairy Infant Food) [Powdered, Based on Soy Flour].
Manufacturer's Name: Mead Johnson and Co.
Manufacturer's Address: Evansville, Indiana.
Date of Introduction: 1929. September.
New Product–Documentation: Hill, L.W.; Stuart, H.G. 1929. "A soy bean food preparation for feeding infants with milk idiosyncrasy." *J. of the American Medical Assoc.* 93(13):985-87. In same issue see "Sobee," p. 989. Sept. U.S. trademark 252,447.

Note: Mull-Soy can be thought of as a first precursor to the modern soy formula, because it was more sophisticated than simply soy flour and water, but lacked many of the nutrients, and the isolated soy protein, found in modern soy formulas. Mead Johnson and Co. was a pharmaceutical company.

Gray. 1936. All About the Soya Bean. p. 123. Says that Mead Johnson and Co., Evansville, Indiana, is the manufacturer. International Inst. of Agriculture. 1936. Manufacturers of soy products. p. 205. States that American Soya Products Corp. in Evansville, Indiana is the manufacturer of this infant food. L.B. Breedlove. 1936. *Chicago J. of Commerce and La Salle Street Journal.* June 25. p. 14. "Soy bean–The magic plant. Article XI." "American Soya Products Corporation, Evansville, Indiana: Sobee (Infant food)."

Sarett. 1976. World Soybean Research Conference. p. 840-49; Shurtleff & Aoyagi. 1979. Soymilk Industry and Market. p. 10, 25. "The world's first commercial soy-based infant formula. Made from a mixture of full-fat soy and barley flours homogenized with olive oil, it had a dark tan color and beany flavor, and contained many oligosaccharides that led to intestinal gas (flatus) and poor-smelling stools, but in 1929 it was a godsend to infants allergic to cow's milk."

659. Lovell, John H. 1929. Soy bean as a honey plant. *Gleanings in Bee Culture* 57(10):646-48. Oct.

• ***Summary:*** The soy bean "belongs to the same family as the

pea, bean, and clovers, plants which produce their seeds in a legume or pod."

"Up to the present time it has been cultivated chiefly as a hay or forage crop; but, with our population increasing twenty times faster than the food production, it must soon become important as a food for the human race.

"Soy beans, before they have fully ripened, may be shelled and used as a green vegetable like green peas. A few hills might well be planted in every garden. They may also be canned and used in winter, or they may be sprouted and the sprouts used like asparagus tips, to which, however, they are much inferior. The dried beans when cooked also make a palatable dish, and more than 100,000 bushels are packed annually by American canning factories. As the seeds are used as a substitute for coffee, soy bean is often called coffee berry."

"By boiling the crushed beans in water a vegetable milk may be obtained, which may be used in making cakes and custards... From the milk a curd or cheese [tofu] is prepared, which is on sale in the Chinese markets of America. This may be flavored with fruits and jams and made into puddings, and used for sandwiches and luncheon novelties.

"But of all the preparations made from the soy bean, none is more widely distributed or better known than soy sauce, a dark brown liquid which in odor and taste resembles a good meat extract. In Japan alone the annual production is more than 2,000,000 barrels. While it is largely consumed by the Chinese and Japanese it has been introduced into both Europe and America and may be purchased at all Chinese markets."

There is conflicting evidence as to whether or not soybean flowers are a source of sugar-rich nectar from which bees make honey. The soy bean plants "grown in my garden, had small inconspicuous flowers, with the corolla hardly visible. They were odorless and apparently nectarless and wholly unattractive to bees. Plants under glass from which all insects were excluded formed pods in great abundance which were well filled with large seeds. The soy bean is self-fertile and not dependent on bees for pollination.

"The flowers, the young leaves, and the stems are densely hairy as can be seen in the illustration [photo], but the older leaves are smoother. The specific name *hispida* was evidently selected because of the roughness of the stems. But this coating of hairs is not sufficient to defend the plants from insect attack."

"If it is honeydew which is stored by the bees from soy bean, then the erratic, scattering and infrequent reports of honey flows would be fully explained." Note: Honeydew is a sugar-rich sticky substance, secreted by aphids and some scale insects as they feed on plant sap.

"Therefore without more reliable evidence than is at present available, the writer does not think that soybean should be ranked as a honey plant."

A photo shows the upper part of a soy bean plant with stems, leaves, and blossoms. Address: Waldboro, Maine.

660. Tso, Ernest. 1929. A vegetable milk substitute for North China. *American J. of Physiology* 90(2):542. Oct.
• ***Summary:*** This "milk" prepared from soybeans contains 4.4% protein, 1.8% fat, 1.5% carbohydrate, 0.018% calcium, 0.057% phosphorus, and 0.41% total ash. "The 'milk' alone is comparable to cow's milk in vitamin A and richer in vitamin B, while vitamin C has to be added. Vitamin D is believed to be absent. Without extra additions, the 'milk' is inadequate in sodium, chlorine and calcium. Six infants, one from birth and the others a few weeks old, were successfully fed six to nine months on this diet. Their weight curves follow very closely the average weight curve of healthy nursing infants in the United States." Address: Peiping, China.

661. Tso, Ernest. 1929. A comparison of the nutritive properties of soybean "milk" and cow's milk. *Chinese J. of Physiology* 3(4):353-62. Oct. [3 ref. Eng; chi]
• ***Summary:*** Feeding experiments on albino rats show that soya-bean "milk" has a vitamin A content approximately equal to that of cow's milk and that it is richer in vitamin B. The deficiency of soya-bean "milk" in minerals can readily be supplied by the addition of suitable salts, while the protein is adequate if sufficient quantities are given. Address: Div. of Pediatrics, Dep. of Medicine, Peking Union Medical College, Peiping.

662. *Nature* (*La*) (*Paris*). 1929. Le lait végétal japonais [Japanese vegetable milk]. 57(Part 2):476. Nov. 15. [Fre]
• ***Summary:*** Describes how to make soymilk in three steps.
1. Soak the soybeans for 24 hours, in pure water, free of limestone / calcium, stirring often.

2. Grind the soybeans (made soft through soaking) coarsely using a wood mill, then put the ground material (*ce mortier*) back in the soaking liquid where it must be stirred often for the next 24 hours.

3. Finally, press this paste (*pâte*) hard with a filter-press; the extracted liquid resembles milk and smells like malt; the product, that by its physical properties to cow milk, contains 3.13 percent casein and 9.89 percent lipids (*matière grasse*) which, however cannot be whipped (*le battage*) into butter (Note 1: *barrate* is an old French term indicating a pot with a stick in it to stir the milk and make butter). It however can be made into cheese which, through special ferments, can be assigned the desired flavor. Further more, this soya milk (*lait de Soja*), being rich in phosphates, is particularly recommended for the feeding of children, according to a German Doctor.

Note 2. This is a poor description of how to make soymilk.

663. **Product Name:** La Sierra Soy Milk.

Manufacturer's Name: La Sierra Industries.
Manufacturer's Address: Arlington, California.
Date of Introduction: 1929. November.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: Ad in Health magazine. 1934. 1(3):30. June. "La Sierra Soybean Products: Perfect Protein, High Alkaline Ash, Low Starch." Thirteen products are listed, including "Soy Milk."

Ad in Dorothea Van Gundy. 1936. La Sierra Recipes. p. 46. L.B. Breedlove. 1936. *Chicago J. of Commerce and La Salle Street Journal.* June 25. p. 14. "Soy bean–The magic plant. Article XI." "La Sierra Industries, Ontario, California: Soy bean milk.

Two interviews with and two letters from Charlotte Van Gundy Holmes. 1981. The product was canned with beany flavor removed by processing with live steam.

664. O'Brien, Harry R. 1929. Soy beans for profit: Combines and a cash market cause acreage to mount. *Country Gentleman* 94(11):19, 120-21. Nov.
• ***Summary:*** "While soy beans have been known in this country for 125 years, it was about fifty years ago that they were first grown in North Carolina as a farm crop and about 25 years ago when they were first introduced into the Middle West. In 1917 it was estimated that perhaps 500,000 acres were being grown for all purposes. Since then the acreage has increased annually until in 1928 around 3,000,000 acres were being grown in twenty or more states. Rapid as this growth may seem, it has been handicapped by difficulties of harvesting and lack of a commercial market for the beans.

"But within the past two years the situation has been radically changed" because of the combine harvester and the new cash market provided by the Peoria Plan and A.E. Staley. "These things I learned when late in the past summer I drove my car for more than 1200 miles through the Midwest to get the details of what was stirring in soy beans... There are soy beans everywhere, I found."

A star performer in many roles, "Soy beans offer another cash crop for the farmer. They are about immune to chinch bugs and the corn borer. Planted in corn, they shade the ground and protect the corn from the chinch bugs.

"Then there is the use being made of soy beans in industry, as beans, as oil, as meal. The oil is expressed out of the beans by the same process used with cottonseed. A ton of beans yields roughly from 1600 to 1700 pounds of cake or meal and from 250 to 300 pounds of oil.

"The beans are usable for coffee substitutes, soups, baked beans, confections, meat substitutes, vegetable casein, vegetable milk and cheeses. There are now several factories in this country making soy sauce. I know of one plant making chocolate out of soy beans.

"The oil is suitable for use in soap stocks, enamels, varnishes, paints, rubber substitutes, linoleum, waterproof goods, celluloid, explosives, glycerin, salad oil, lard substitutes and edible oils.

"Soy-bean meal, in addition to use as livestock feeds, is used for flour, diabetic foods that are supplanting gluten flour, infant foods, macaroni, breakfast foods, fertilizers and adhesive glue. Much of the glue used in furniture veneering is coming from soybean meal.

"Such are some of the qualities of this many-sided farm legume." The author then gives five reasons why soy beans have made such rapid growth in the past ten years: 1. Farmers have tried them and liked them, and the news has spread. 2. The influence of the agricultural colleges, experiment stations, extension services, and county agents. Experiments have been conducted on varieties, and methods of growing and feeding. 3. There have been "certain focal points where a few farmer pioneer enthusiasts grew them for seed and from these points the acreage has spread in concentric circles. There are a dozen of these points."

4. Improved harvesting methods; "and this is a story that is tied up with that of another focal point, Christian County, Illinois, where Claire E. Hay was county agent from 1918 to 1928. Hay knew beans from boyhood. When he came to Christian County chinch bugs had been bad for several years. So Hay began boosting soy beans as a means of outwitting the bug.

"Now in Christian County among the biggest growers of soy beans are the Garwood brothers, Frank and Harry. They had heard of combine harvesters being used out West for harvesting and threshing wheat in one operation in the field. They had a hunch that maybe this same machine would work with soybeans. Some Indiana farmers had rigged up a homemade affair that had already been used.

"But the manufacturers were skeptical. Two firms turned them down, refused to sell a combine for such a purpose. But a third did sell, and in 1924 what was possibly the first combine ever used in Illinois for any purpose, surely for beans, came to the Garwood farms and a public demonstration was held.

"To most people's surprise, the combine worked. So in one day the Garwood brothers had revolutionized soy-bean harvesting. Other growers were quick to seize on the idea, as were wheat and oat farmers too."

5. The newest development is the creation of a commercial market for soy beans. "Lack of a market was holding back farmers from growing the soys. So a committee of three count agents, headed by Hay, called on A.E. Staley, a feed manufacturer of Decatur, and asked him to use soy beans in his feeds. Staley built an oil mill, began buying beans and a commercial market was opened up.

"Oil mills were built later at Peoria and Bloomington. These mills have bought the beans and thus Illinois has taken the lead in growing them.

"The next step in the story came when along in 1927 Hackleman at the University of Illinois figured out that the marketing of soy beans would be much more stabilized if

farmers could grow them on contract for the mills. He and Doctor Burlison, chief in agronomy, suggested this plan to H.A. Atwood, a feed manufacturer in Peoria. The idea simmered on and several conferences were held.

"In the spring of 1928 Illinois farmers were faced with a wholesale killing out of their winter wheat. A conference was called at Urbana in April to consider what to recommend as an emergency crop, to which farmers, county advisors and feed manufacturers were invited. The advisors said that soy beans was [sic] the logical crop but there was no use to urge them because of a lack of a market.

"Mr. Atwood announced that his firm stood ready to contract at a guaranteed price for a million bushels of beans or the crop from 50,000 acres. A firm at Bloomington was associated with him in the offer.

"Back of the offer was the Grange-League-Federation, representing New York dairy farmers, which farm organization buys its feeds from Mr. Atwood's firm. The G.L.F. representative said in effect that if the Illinois farmers would grow the beans, the farmers of New York would buy the feed made out of them.

"The outcome was that a minimum price of $1.35 per bushel was set, based on farm cost-account records from four states in comparison with the price the G.L.F. had been paying for other protein feeds. County advisors circulated blank contracts through Farm Bureau membership lists, and 1344 farmers signed up to deliver beans from 48,444 acres, which, when marketed, totaled about 1,200,000 bushels of beans [24.77 bu/acre yield]. After paying freight and handling charges, the crop netted farmers around $1.20 a bushel."

A large photo shows two farmers, each with a team of four horses pulling a piece of farm machinery, on the farm of Finis Fouts, Deer Creek, Indiana. The first is cutting soy beans with a binder. The second, 10-15 feet behind, is drilling wheat for the next crop. Address: Central Ohio.

665. Adolph, Wm. H.; Wang, Yu-Mei. 1929. The manufacture and distribution of soy bean milk in Shantung. *Lingnan Science Journal* 8:563-71. Dec. 1 plate at end. [2 ref]

• ***Summary:*** "Bean milk as well as bean curd has been made and used in China for several thousand years. The soybean and particularly its products are more universally used in the Orient than even rice, and it is the soy bean which is China's special contribution to food economics."

"In recent years, attempts have been made to exploit bean milk on an extensive commercial basis. A factory for its manufacture was established in France near Paris, and operating today in most of the larger cities of China are bean milk factories which prepare and serve their bottled product to the community in much the same manner as a modern dairy in the Occident handles cows' milk. Because of its freedom from starch and sugar, it can be used as a diabetic food, and the very latest proposal is a *bean milk powder,* which makes possible the preparation of bean milk at home."

This report is a summary of a study of bean milk as manufactured in Tsinan [or Chinan], capital of Shantung province. Yellow soybeans are soaked in a little water, usually over night. "To the soy beans are usually added a small amount of peanuts and some apricot kernels. The latter are for the purpose of giving the product a pleasant taste." In general, one unit weight of dry beans is required to make 10 units by weight of finished soymilk. The softened beans are then ground to a thick pulp in a stone mill. The pulp is them mixed with a little water and strained through muslin filters. Usually this straining process is repeated until the liquid is of the right consistency. It is then boiled, cooled, bottled, sealed, and delivered (see photos). "Tsinan is famous for the large number of clear bubbling springs throughout the city, and the fame of each bean milk supply house rests upon the excellence of the spring water which is used in making the milk."

Bean milk costs only about half as much as cow's milk in China, i.e. about $0.05 Mex. per catty, but it is 20% more expensive per 100 calories. Bean milk also sours more quickly than cow's milk. "One solution will be the use of one of the recently invented soy bean milk powders."

"The growth of the bean milk industry in China is significant. Up to ten years ago, bean milk was a by-product from the bean curd industry; it could be purchased only from the bean curd factories, and no attention was given to producing a product which was palatable and pleasing to the taste. At the present day it occupies the position of an independent industry, and is advertised by attractive handbills setting forth intelligent interest in foods and their nutritive qualities. The fact also remains that...the taste of cows' milk is well-nigh intolerable to the average Chinese. One large factory in Peking now makes and distributes over a thousand bottles of milk daily; in Shanghai two factories each meet an even greater daily demand. The industry is bound to grow rapidly to greater dimensions.

"The Yen-Shou Bean Milk Company, which is the largest bean milk factory in Tsinan, reported, in 1926, a daily output of 250 bottles; each bottle has a capacity of approximately one-half catty [about 500 ml]. The customer pays $1.00 Mex. per month for one of these bottles delivered to the door each day. This factory started operations in 1923 with a capital of $300 Mex., and was able at the start to invite an expert from a large Peking factory to help introduce the details of the modern bean milk process.

The monthly financial statement showed: Income–sales of 250 bottles daily = $250. Expenses–Wages (6 men) $36. Rent $30. Raw materials, beans, etc. $30. Miscellaneous $30. Total expenses $136. Profit: $114.

Photos show (see next page): (1) A man delivering sealed bottles of bean milk to regular customers. The bottles are all slung over his right shoulder. (2) "Soybeans

being ground in a stone mill to a thick, creamy pulp." (3) A hanging 4-sided sieve over a metal barrel. "The thick, pulpy mass is then diluted with water and filtered. The filtered product is bean milk." Address: Dep. of Chemistry, Chee-loo Univ., Tsinan, China.

666. Chiu, Yan-Tsz. 1929. Suggested improvements in the manufacture of soy bean milk. *Lingnan Science Journal* 8:573-76. Dec. [5 ref. Eng]
• ***Summary:*** "Soy bean milk which has been used in this country for more than two thousand years, is a very satisfactory form of artificial milk made from soy beans. It takes the place of cow's milk which is rather scarce and expensive. It is a common food drink and people in our country are more accustomed to its use than to the use of animal milk.

"Although bean milk has been used in our country since the Christian era, apparently little attempt has ever been made to improve its manufacture." The author then reviews several methods developed in Europe and America. "In order to improve the quality of bean milk the unpleasant odor of the milk, which resembles raw beans, and the color of the beans have to be removed." The next step is to add desirable flavor and missing minerals. Address: Prof. of Chemistry, Lingnan Univ. [Canton, China].

667. Kellogg, John Harvey. 1929. Chinese babies thrive on milk from beans. *Good Health* (*Battle Creek, Michigan*) 64(12):36-37. Dec.
• ***Summary:*** Orphans in China are often "saved from starvation by feeding them milk prepared from almonds, walnuts and other nuts. In North China, the peanut is much used for this purpose," according to a Chinese trained nurse, as is the soy bean. "This bean in its composition resembles a nut more than an ordinary bean. It is richer in protein than any other plant food."

"Dr Tso, a Chinese physician, at the recent International Physiological Conference, held in this country, gave a report of a careful study of the effects of a soy-milk diet in the feeding of infants."

668. Nayler, John. 1929. The wonderful soya bean. *Vegetarian Messenger and Health Review* (*Manchester, England*). Dec. p. 301-02. [1 ref]
• ***Summary:*** The author begins with a brief discussion of growing world soybean trade, and a discussion of soybean production in the USA, based on articles in *Country Gentleman.* "The soya would not grow in the United Kingdom. To your readers the soya bean is of special interest on account of its high protein ratio, and its lack of starch, and the many uses to which portions of it may be put. It is particularly rich in protein and oil...

"The commercial chemist has discovered that the bean is useful in the preparation of coffee substitutes, chocolates, soups, baked beans, confection, meat substitutes, vegetarian sauces, vegetable casein, vegetable milk and vegetable cheese."

"The meal prepared from the bean has also a long list of uses. We have mentioned its use to the farmer and his stock. As a diabetic preparation it is supplanting gluten flour, as it has practically a no-starch content. It is used for infant foods, macaroni, breakfast foods, and in certain matters used by specialised trades."

"It appears to me that it is to the soya bean and the use which clever manufacturers may eventually make of it that the vegetarian may hopefully look forward to the day when really acceptable tasty substitutes will be on the market at a moderate price to take the place of present day dairy supplies, namely, milk, butter and cheese–possibly eggs also. The essentials to be sought for are palatability, a low competitive price, and practical value to the human economy. I am not aware as to how far these points have been realised, so far, but there does not seem any insuperable difficulty in achieving them all." Address: J.P.

669. *Vegetarian Messenger and Health Review* (*Manchester, England*). 1929. The soya bean. Dec. p. 284. [1 ref]
• ***Summary:*** "Our esteemed contributor, Mr. John Naylor, in a communication appearing on a later page, has done us excellent service in drawing our attention to the potentialities of the soya bean. The vegetarian who bases his practice on the principle of humaneness is aware of his inconsistency when taking milk and milk products. To replace cow's milk by a satisfactory milk made from the soya bean would be to replace a food that is provided at the cost of suffering with one free from that taint. The vegetarian strengthens his claim to be a humanitarian whenever he uses a vegetable substitute for an animal product and many have made the first forward

step by using only artificial leather. The soya bean makes it possible to advance still further by giving us not only milk, butter, cheese and meal, but many by-products which will satisfactorily replace by-products of meat. Statisticians have stated that before the close of the present century land will not be available to grow cattle for the meat and milk required, and Dr. Kellogg, of Battle Creek [Michigan], is of opinion that the soya bean will then become one of the great food staples of the world.

"The Vegetarian Society allows members the use of milk, butter and cheese, and for the majority of vegetarians, during the present transitional period, the use of these animal products is both necessary and convenient. Milk and milk products have been aptly called 'protective' foods and it has been demonstrated that they have often made up what was lacking in the dietary of a vegetarian doing hard physical or mental work. The soya bean, however, promises the greatest of possibilities, for by its use the time is brought appreciably nearer when vegetarians will obtain all their food from the vegetable kingdom." Address: The Vegetarian Society, 39 Wilmslow Rd., Rusholme, Manchester, England.

670. Brillmayer, Franz A.; Drahorad, Fritz. 1929. Die Sojabohne, ihre Bedeutung, Kultur und Verwendung [The soybean, its significance, culture, and utilization]. Vienna, Austria: Published by the authors. 62 p. Illust. 21 cm. [Ger]
• ***Summary:*** Contents: Foreword. 1. History of the soybean in its homeland and its introduction to Europe and America. 2. Current area where soybeans are grown worldwide and world production. 3. Soybean botany. 4. Use of the soybean: As a food (in East Asia, in Europe and America [in the form of flour, for making soymilk, as a coffee substitute, a meat substitute, and for making chocolate]), as an oilseed, as a source of fodder. 5. Soybean cultivation: Climate and the northern limit of growth, soil, crop rotation, seedbed [*Saatbeet*], manuring or fertilizing the soil, the seeds, care of the plants, diseases and enemies, harvest, cultivation for hay, green manure or silage, soybean varieties, agronomic trials with 22 varieties, summary of results, root bacteria and inoculation. 6. Significance of the soybean: For agriculture, as a food for the people, economic effects of the use of soybeans in agriculture and as food.

According to Brillmayer (1947, p. 14), the first edition of this work was self-published as a "brochure" in 1928, but it is not mentioned in this 1929 edition.

Note 1. This book was translated into Dutch in 1936 by J. J. Helmus, soya specialist.

Note 2. This book describes the last intensive research on soybean variety improvement in Austria until 1970. Address: 1. Seed breeder in Platt, Austria; 2. Commissioner, Federal Institute for Agronomy and Seed Testing, Vienna.

671. Ferrée, Christian Johan; Tussaud, J.T. 1929. The soya bean and the new soya flour. London: William Heinemann (Medical Books) Ltd. xi + 79 p. Illust. No index. 22 cm. Revised translation from the Dutch by C.J. Ferree and J.T. Tussaud of Die Sojaboon en Duurzaam Sojameel. [29 ref]
• ***Summary:*** Contents: Foreword, by Sir Wm. Arbuthnot Lane, President of The New Health Society. Preface, by C.J. Ferrée (London). 1. Introduction. Literature. Name of the plant. Origin. Botanical particulars. Assimilative power of the soya plant. Inoculation. Soil requirements. Production and cost. 2. General ingredients of the various Manchurian beans. Composition. The value of soya protein. Vitamin in the soya bean. Digestibility of the soya bean and its products. 3. Use in China and Japan: Bean sauce, soy, or shoyu, Chinese chiang (paste), tou-fu or beancurd, beans consumed as a table vegetable, bean refuse and bean cake are used as a fertiliser and for fattening hogs, bean oil is used as an illuminant (where it has not been superseded by kerosene), as a substitute for lard in cooking, and as a lubricant for greasing axles and parts of native machinery, miso and natto. First imports into Europe. Exports during the last five years from China and Japan. Imports during the last five years into Europe and America. The increasing rate of its cultivation. Manchuria–Production. Estimate of the world's production of the soya bean. London the principal market. Future importance.

4. America. Australia. South Africa. Other British possessions and protectorates. Java (Dutch East Indies). Europe. 5. Unsuccessful experiments with soya flour. Ordinary soya flour. Extracted soya flour. Dr. L. Berczeller's discovery. The new soya flour. Comparison with other cereal flour and other foods. Comparison in price with other cereal flour and other foods. Comparison in price of soya protein compared with other cereal foods. Comparative analysis of cereals. 6. Soya milk. Vegetable casein. Lecithin. 7. Increase in food value. Savings. Industrial application in foodstuffs. The importance of Dr. L. Berczeller's soya flour for the food industry. Soya flour and the food laws. Uses of soya flour in: Bread, pastry, cake, biscuits, confectionery, sausages, infant foods and food for invalids, cocoa, chocolate, soup cubes, pudding flour. Uses in the kitchen. Soya flour recipes (for flour made using the Berczeller process), soya flour for diabetics, recipes for diabetics.

The Preface states: "In the following pages the writer has endeavoured to give an account of the numerous uses to which the soya bean has so far been put, and to visualise its future service to humanity through the means of a totally new and practical process by which this legume... may in future be used as an important article of food for general consumption throughout every quarter of the globe.

"In compiling the details relative to the soya bean flour, with which this brief summary principally deals, he trusts that he has succeeded in giving sufficient data to enable the reader to fully realise its value as a staple food from the economic point of view, as well as from the more domestic standpoint, so that the important fact may be fully realised

that a new foodstuff of a very valuable nature... has now been brought within the reach of all nations to serve them in a most practical manner as an economic article of food."

The book includes statistics on the imports and exports from 1923 to 1927 of "soya beans, soya oil, and soya cake in various countries including China, Japan, England, France, Germany, Holland, Norway, Denmark, Sweden, and USA.

The "new soya flour" is that developed by Dr. Berczeller. This book repeatedly praises that flour. "A few years ago Dr. Laszlo Berczeller, a Hungarian physiologist in Vienna, succeeded scientifically in finding a method which enables us to prepare from the soya bean a digestible and pleasantly flavoured flour without detracting from its nutritive value, and this method entirely succeeds in preserving all the good qualities contained in the bean itself. Physiological experts and analysts withhold no praise, as the following extracts will show: -" There follow words of praise from: (1) Dr. Alfred Schwicker, M.P., Royal Hungarian State Institute, Central Depot for Experimental Chemistry. (2) Dr. Stefan Weisser, King's Counsellor, Royal Veterinary Physiological Experimental Station, Budapest. (3) Prof. A. Durig., The Physiological Institute, University of Vienna.

Marakujew (1928) estimates the production of soya beans in "Manchuria at 6 million tons at the utmost, the production of the whole of China at 16 million tons, and he is led to this figure by the conclusions of the Economic Bureau of the South Manchuria Railway, which estimates that the Manchurian crop in 1927 amounted to 37.1 million kobu (5.88 million English tons), of which 2.6 million tons originated from South Manchuria, 3.3 million tons from North Manchuria" (p. 32). A table (p. 33) gives estimated world production of soya beans from 1923 to 1929 (6.6 million tons, forecast). The leading producers in 1929 (in million tons) are: China 5.250. Japan 0.580. USA 0.250. Java and Dutch East Indies 0.120. Other Asiatic countries 0.400. A soya milk factory was recently established in Denmark (p. 54). Although this book contains a bibliography of 29 references, most are very incomplete.

Photos show: (1) A soybean plant with roots, pods, and leaves. (4) Nodules growing on soybean roots. (5) One pod and seed each from inoculated and uninoculated soybean plants. (7) An immense field of soya beans in Manchuria. (8) Soya beans awaiting shipment, in house-shaped stacks under tarps, at Dairen. (13) Seeds of the most important varieties of soya beans now grown in the United States. (10) Two horses and a farmer cultivating a field of soybeans. (11) Harvesting soya beans. (12) Well selected, clean soybean seeds.

A map (frontispiece) shows where soybeans are cultivated worldwide. An illustration (facing p. 2) shows "Shen-Nung. Emperor [of China] in 2838 Before Christ, called 'The Heavenly Farmer.' Reproduced from a print in a Vienna museum."

One bar chart compares the nutritional composition of soya flour with that of cereals and animal products, and other foodstuffs (p. 13), another compares the calories (p. 46), and a third compares the cost of 1,000 calories (p. 48). Marakujew (probably spelled Marakiev or Marakuyev), in "The Export of Manchurian Soya Beans and its Finance" (1928, in Russian, probably an article rather than a book) "estimates the production of Manchuria at 6 million tons at the utmost, the production of the whole of China at 16 million tons, and he is led to this conclusion by the Economic Bureau of the South Manchuria Railway, which estimates that the Manchurian crop in 1927 amounted to 37.1 million kobu (5.88 million English tons), of which 2.6 million tons originated from South Manchuria, 3.3 million tons from North Manchuria. According to the calculations of this bureau, the home consumption of North Manchuria is something like 40 of the production, viz., 1.3 million tons; the remaining 2 million tons are for export. The exports of South Manchuria were estimated at 1 million tons" (p. 32). Address: London.

672. Ferrée, Christian Johan. 1929. De sojaboon en duurzaam sojameel [The soybean and long-lasting soy flour]. Amsterdam, Netherlands: Drukkerij en Uitgeverij. J.H. DeBussy. 96 p. Illust. 24 cm. Translated into English as The Soya Bean and the New Soya Flour (1929). [Dut]*

• ***Summary:*** Johann Christian Ferée was born in 1895.

673. Sprecher von Bernegg, Andreas. 1929. Tropische und subtropische Weltwirtschaftspflanzen; ihre Geschichte, Kultur und volkswirtschaftliche Bedeutung. II. Teil: Oelpflanzen [Tropical and subtropical plants in international commerce; their history, cultivation, and economic significance. Vol. II. Oilseeds]. Stuttgart: Verlag von Ferdinand Enke. See vol. 2, p. 128-70. Illust. Index. 25 cm. [48 ref. Ger]

• ***Summary:*** The soybean (p. 128-70). Contents: Introduction. Name, place of origin and history. Description of the plant: Systematic, morphology, varieties, selection. General conditions for growth: Climate, soil. Cultivation of the plant: Planting, care. Harvest and storage. Composition and products. Utilization: As a fodder plant, as a coffee substitute, industrial non-food uses, as a food (as a green vegetable, soy sprouts, soy chocolate, soymilk, casein, tofu and soybean quark {*tofu oder Sojabohnenquark*}, natto {*Buddhistenkäse*}, hamananatto, yuba, miso, shoyu or soy sauce {*Sojasauce*}). Production and trade.

Concerning green vegetable soybeans, the author states: "Three-quarter ripe soybean seeds yield a good, green vegetable (*Dreiviertelreife Sojabohnen geben ein gutes, gruenes Gemuese*)."

Note. This is the earliest German-language document seen (April 2013) that uses the term *Sojabohnenquark* to refer to tofu. Address: PhD, Titularprofessor an der Eidgenoessischen Technischen Hochschule, Zurich, Switzerland.

674. Vi-Tone Company. 1929. Jack and Jill both love Vi-Ton [sic, Vi-Tone] (Ad). *Proceedings of the American Soybean Association* 2:37.
• ***Summary:*** This half page black-and-white ad is for Vi-Tone, a food tonic beverage based on soy milk and dairy milk in malt chocolate flavor. "No matter whether the boy or girl is two or twenty-two, Vi-Tone will make instant friends.

"You know, as soon as you taste Vi-Tone, that it is different–better and more appetizing than ordinary beverages.

"Vi-Tone is a scientific combination of the Soy Bean with malt extract and milk–rich in protein and vitamin content–and deliciously flavored with chocolate."

An illustration shows a small can of Vi-Tone, which appears to be a powder. Near the top of the label: "Malt Chocolate Flavor." It can be served hot or cold. "A tonic food beverage."

Note: This is the earliest document seen (July 2001) that advertises or markets soymilk. Address: Hamilton [Ontario, Canada].

675. Dittes, Frances L. 1930. Vegetable milk. *Madison Survey* (*Madison, Tennessee*) 12(2):5-6. Jan. 8.
• ***Summary:*** "Milk, for many years known as 'the perfect food,' has now become a point of question, not because in composition it is deficient, but because milk, being easily contaminated, becomes one of the great carriers of disease... Disease is increasing among the animals as well as among humans. Milk obtained from diseased creatures is not always healthful. Since milk is such a good carrier of disease, the public may well be concerned as to the condition of milk offered for its consumption... a number of [soy milk] products are now on the market, such as infant foods, canned milk, condensed milk, powdered milk, flour, and breakfast foods."

"The general method for making vegetable milk followed by the Orientals is to wash and soak the bean. Freshly ground soybean meal may also be used. The length of time of leaving the beans in water is not fixed but depends upon the temperature. When the beans are well softened, they are crushed in a stone mill and the meal washed thoroughly. After crushing, two or three times the volume in water is added to the dense, milky liquid, and the whole is allowed to stand for a while. Finally the mixture is placed in a covered kettle over a slow fire until the mass has simmered well. A filter bag separates the refuse from the white, thick liquid which resembles cow's milk, and which is called 'vegetable milk.'"

"The composition of soybean milk varies somewhat, depending on the process of manufacture. In general, however, it is similar in composition to animal milk.

"The protein of the soybean milk seems to contain all the essential amino acids to make it a complete protein. It is poor in fat soluble and anti-scorbutic vitamins (the juice of soybean sprouts may be used to supplement this deficiency), in sodium chloride and perhaps calcium. Because of its low carbohydrate content, the milk does not possess the sweetness of cow's milk.

"In competition with the bovine milk, soybean milk has in its favor the following facts and dietetic advantages: It may be produced with less contamination, it is free from tuberculosis, it may be produced more cheaply, and its casein breaks down much more readily than the casein of cow's milk.

"Soybean milk is recommended by Y. Noorden in cases of gastric and duodenal ulcer, states of peritoneal irritation, hyper-secretory conditions of the stomach, disturbances of the motility of the stomach, in conditions with edema where food poor in sodium chloride is required, cholecystitis, cirrhosis of the liver, diabetes, and in cases where a very nutritious diet is desired." Address: Madison, Tennessee.

676. Dorsett, P.H.; Morse, W.J. 1930. Tofu in Tokyo, Japan (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. Agricultural Explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon. Washington, DC: Foreign Plant Introduction and Forage Crop Investigations, Bureau of Plant Industry, USDA. 8,818 p. Unpublished log.
• ***Summary:*** Page 3469 (8 Jan. 1930). Tokyo, Japan. "Worked at the office until about 10 or 10:30 then took our camera and went out to get pictures and information about Tofu, soybean curd.

"We visited a place not more than half a dozen blocks from the Sankaido Building and got a nice lot of information about making tofu. Also secured a few pretty good pictures.

An elderly Japanese lady fried (or seared as we would say) the cakes about 3 by 9 by ½ to ¼ of an inch in thickness, over a charcoal fire [to make grilled tofu or *yakidofu*] on the street or side walk in front of their house.

"Detailed information about the making of this tofu will be found in the special report on soybeans and soybean products, which will be a special report added at the end of our exploration work.

"We saw for the first time fried Tofu which had had chopped carrots added to it [ganmodoki]. We had not prior to this known of vegetables of any kind being added to or mixed with the bean curd or Tofu before frying.

Pages 3470 to 3471. Photos show: (1) "Soja max. Tofu, bean curd. Tokyo, Japan. A nearby view of an elderly Japanese lady frying Tofu on the street. Children and Mr. W.J. Morse are looking on." (2) An elderly Japanese lady frying or searing Tofu. To the right, children are watching the operation, and so are Mr. Morse and Suyetake, in the background. (3) "A fairly nearby view of an old Japanese lady fanning a charcoal fire over which she is frying or searing tofu." (4) "Cakes of soybean curd piled upon bamboo

strip supporters [arranged on bamboo mats] and weighted to express the surplus moisture before frying. A metal two prong piece [skewer] is run through each to handle them with" (negatives #44714 to #44717).

Pages 3472 to 3473. Tofu in Tokyo. Photos show: (1) "A fairly nearby of an old Japanese lady turning the cakes of Tofu she is frying [sic, grilling] over a charcoal fire." Note 1. The rectangular charcoal brazier appears to be about 14 inches long, 8 inches wide, and 8 inches deep. This is the same old Japanese lady described on pages 3470-3471. (2-3) "An old Japanese lady fanning a charcoal fire and frying [grilling] Tofu on the street, not far from the Sankaido Building.

(4) A nearby view of five large cakes of skewered tofu being grilled on a brazier over a charcoal fire. (negs. #44718 to #44721).

Page 3476. "Oblong piece of fresh soybean curd which had been toasted over a charcoal fire... This is used in soups and also cooked with vegetable mixtures. Purchased from a bean curd factory, Tokyo, Jan. 8. The piece is 7½ inches long and 2½ inches wide" (neg. #44736).

Page 3477. "*Phaseolus angularis.* Adsuki bean. Packages of adsuki bean flour purchased in a store, Tokyo, December 24, 1929. This is a sweet flour used in making sweet bean soup. Package 3 1/8 inches long; 1½ inches wide. D. & M. #3100 (neg. #44737).

Page 3478. Soybean. This soybean product is sold in tubs from Tokyo small stores, and is known as 'Gomoku Mame.' It consists of a mixture of five cooked products, namely: soybeans, lotus root, fish sausage, seaweed and burdock roots." Purchased at a small grocery stand in Tokyo, Jan. 6. "It is eaten just as it is. Product is on bamboo leaf which measures 8 inches long and 5 inches wide" (neg. #44738).

Page 3481 (8 Jan. 1930). "Fried soybean curd cakes. The round cake (D. & M. #3096) is known as 'Ganmodoki,' and is fresh bean curd mixed with chopped carrots. The cakes are fried in mustard [rapeseed] oil until brown and sell for three sen each. Each cake is 4½ inches in diameter and 3/8 inch thick. The oblong cake (D. & M. #3097) is known as 'Aburage.' It is a fresh bean curd mixed with chopped carrots and fried in mustard oil until brown. The cake is 8½ inches long, 3 inches wide, and 3/8 of an inch thick. Sell for three sen. These forms of fried bean curd are eaten when dipped in soy sauce and also in soups" (neg. #44741).

Note 2. This is the earliest English-language document seen (April 2013) that contains the term "Fried soybean curd" or the term "Fried soybean curd cakes."

Page 3532 (11 Jan. 1930). "A soybean preparation used as a health drink, 'Almen: The Health Food Drink.'" Sold in a can whose front and back are shown. "Manufactured from soybeans by the Nippon Almen Shokuryo Co., Ltd., near Kobe, Japan. This form of flour is also used in making confections. Packages of 3 1/8 inches high and 2 1/8 inches wide" (neg. #44758). Note 3. Soy flour is apparently used to make the canned health drink.

Page 3533. "Dried and frozen bean curd. The fresh bean curd is cut into small blocks, frozen and then dried. Used commonly in soups. Packages 2 5/8 inches high and 2 1/8 inches across" (neg. #44759).

Note 4. This is the earliest English-language document seen (April 2013) that uses the term "Dried and frozen bean curd" to refer to dried-frozen tofu.

Page 3534. Photo of a package of cooked and sugared adsuki beans, 7½ inches long and 3¼ inches wide (neg. #44760).

Page 3535. "Candied soybeans and other products. Sticks of candy in which are imbedded black soybeans (green germ), yellow soybeans, peanuts, peas and sorghum seed. Box 8½ inches long and 6 7/8 inches wide" (neg. #44761).

Page 3537 (13 Jan. 1930). "Got down to the office pretty early and got the pictures made yesterday jacketed and the legends written.

"About 10 a.m. went to the American Consulate with 8 packages to go forward today in the diplomatic pouch to the office. Six of these 100 to 106, contain seed, 107 contains pamphlets and other publications.

"About noon we went down the street and made a few pictures at a soybean curd factory. A little later we developed those, they were only fair, but are about as good as we can get in view of the conditions.

"In the afternoon we packed and sewed up two parcels of soybean products to go forward to Washington [DC] at the first opportunity. We are having really wonderful weather, not very cold and sunshiny and bright."

Page 3538. "Soybean candy. Small cylindrical pieces of candy in which are imbedded medium small roasted soybeans. This picture is natural size" (neg. #44762).

Page 3539. Adsuki bean flour. Box containing 24 small papers of sweetened adsuki bean flour which is used in making sweet soup" (neg. #44763).

Page 3540. "Bean curd factory (soy). "View showing furnace and boiler where ground soybeans are being boiled for making soybean milk. To the left of the furnace is a tub, into which the milk is strained and made into curd. Tokyo" (neg. #44764).

Page 3541. "Bean curd factory. View showing a stack of oblong blocks of fresh bean curd which are to be slightly roasted over a charcoal fire [to make grilled tofu / *yakidofu*] (neg. #44765).

Page 3542. Bean curd factory. View showing stone mill for grinding soaked soybeans into a mash for making soybean milk and bean curd. Above the hopper is a small round tank of water from which flows into the hopper of beans, a small stream of water while the beans are being ground" (neg. #44766).

Page 3543. Soybean curd factory. View showing the

furnace and boiler where the ground bean mash [*gô*] is boiled in making soybean milk. To the left of the furnace is the wooden tub into which the milk is strained, and where the magnesium sulphate solution is added to form the bean curd. To the extreme left is the partitioned rectangular box into which the bean curd is dipped and pressed into blocks" (neg. #44767).

Page 3544. "View inside soybean curd factory showing in background stone mill for grinding the beans; on the right the oblong charcoal fire box for roasting blocks of the fresh bean curd; and in the foreground and on the left stacks of blocks of bean curd ready to be roasted. The tub in the center is where the blocks of bean curd are placed" (neg. #44768).

Page 3545. "Inside the bean curd factory showing a stack of oblong blocks of fresh bean curd with long handled forks [skewers with several prongs] in one end. These blocks are ready to slightly roast over a charcoal fire" (neg. #44769). Address: Agricultural Explorers, USDA, Washington, DC.

677. Morse, W.J. 1930. Soybean utilization. *Farmers' Bulletin* (*USDA*) No. 1617. 27 p. Jan. Revised 1932.
• ***Summary:*** Contents: Introduction. Soybeans for human food: Dried beans ("The Easycook and Hahto varieties, however, cook fully as soft as other beans." Also used as a substitute for coffee or for salted peanuts), green or vegetable beans ("The Hahto and Easycook varieties have been found especially valuable for use as green beans"), soybean flour, soybean oil, soy sauce, soybean sprouts, soybean vegetable milk ("used so extensively in China." Also mentions the residue [okara]), soybean curd. Soybeans for livestock: For swine, dairy cattle, beef cattle, sheep, poultry. Soybeans for oil: Methods of processing beans for oil, utilization of soybean oil. Soybean meal: Soybean meal for human food, soybean meal for stock feed, for swine, for dairy cattle, for beef cattle, for poultry. Soybean meal as a fertilizer. Miscellaneous uses of soybean meal. Soybeans for hay: Soybean hay for dairy cattle, for beef cattle, for horses and mules, for sheep, for swine, for poultry. Soybeans for pasturage: Swine, sheep, or poultry on soybean pasturage. Soybeans for silage. Soybeans for soilage [green crops for feeding confined animals; a term first used in 1928]. Soybeans for soil improvement. Soybean straw: Feeding value, and fertilizing value of soybean straw.

"Soybean milk in the form of a powder is a commercial product in some European countries, and in parts of the United States it has been used in special feeding cases" (p. 5). "In many cities in the United States having a large oriental population fresh bean curd may be found in the Chinese and Japanese markets" (p. 6).

Photos show: (1) Six men steaming soybeans while making miso in Japan. (2) Muffins made from wheat flour and soybean flour. (3) Making soy sauce in a Chinese courtyard. (4) Grinding soybeans with a stone mill to make soybean milk in China. (5) "Blocks of freshly made bean curd, 'tofu,' as sold in the markets of the Orient." (6) Loading soybean oil in tanks at a soybean oil mill, Harbin, Manchuria. (7) Soybean cakes awaiting shipment at a Manchurian port. (8) Hogs in a field of soybeans. (9) "Pasturing soybeans and corn with sheep is a common practice in the Corn Belt states." (10) Corn and soybean plants growing together for use as silage; a boy is standing by the plants. (11) "A fine growth of soybeans to be used for soiling." Address: Senior Agronomist, Office of Forage Crops and Diseases, Bureau of Plant Industry, Washington, DC.

678. Ribadeau-Dumas, L.; Mathieu, R.; Willemin, L. 1930. De l'utilisation des protéines végétales dans l'alimentation du nourrisson [On the utilization of vegetable proteins in infant feeding]. *Nourrisson* (*Le*) 18:65-81. March; 18:209-24. July. [40 ref. Fre]
• ***Summary:*** Part 1 (p. 65-81) of this two-part article focuses on the use of the soybean as the source of vegetable proteins in infant feeding. Part 2 focuses on sunflowerseed meal. The conclusions of the study are on p. 222 and the excellent bibliography is on p. 222-24.

This article is basically a good review of the literature rather than an original scientific investigation.

679. Nouelle, Georges. 1930. Les emplois du soja [Uses of soybeans]. *Revue Agricole* (*Guadeloupe*) 3(4):118-20. April. Reprinted from Les Annales Coloniales, No. 137, Sept. 1929. [Fre]
• ***Summary:*** Describes the various food uses of the soybean, including soymilk, concentrated, powdered, or fermented soymilk, soy flour, soy oil, soybeans consumed as a vegetable (fresh soybeans are prepared like peas), soy sprouts, soy sauces, soy confections, soy chocolate, and soy coffee.

The soybeans also has uses other than for food, in making candles, colors, and in the form of Sojalithe as an electrical insulator.

680. Shen, Chennen. 1930. The importance of soybean. *China Critic* (*The*) = *Chung-kuo Ping-lun Chuo Pao* (*Shanghai*) 3(18):416-19. May 1. [Eng]
• ***Summary:*** Contents: Introduction. Domestic consumption of soybeans. Foreign consumption of soybeans. Future prospects.

Soybean, called yellow bean in China, is "cultivated in all parts of the country, but most abundantly in Manchuria. While in 1913 the export of soybean amounted only to about ten percent of the total export and ranked next to silk and tea in importance, it has in sixteen years increased five times in value, risen to twenty percent of the total export and taken the premier place in our export trade! No other commodity has ever experienced such an overwhelming prosperity in

such a short time in the history of China."

"Everybody knows that we Chinese live on rice and wheat. But not everybody realizes that we live just as much on soybeans. The soybean is consumed in large quantities by the northerners as well as by the southerners. Its numerous forms of preparations are common articles of food found in every household. Recent scientific investigations have shown that the soybean satisfies a particular requirement in the Chinese dietary."

The human body is like a machine. It needs carbohydrates and fats for fuel and motive power, and protein for repairing worn-out parts. A table compares the nutritional composition of soybean, rice and wheat. "It is evident that soybean is entirely different from either wheat or rice. Whereas wheat and rice supply carbohydrates in the form of starch, soybean is mainly the source of protein. It is interesting to note that the poorer class of people in China consumes very little meat but seems to have sufficient amount of protein. Remembering that every Chinese takes a large amount of soybeans in various forms of preparation, we can readily understand how the protein requirement is satisfied. As soybean contains more than twice as much protein as does any meat and is much cheaper, we can satisfy our protein requirement at one-tenth of the cost of meat."

Exact data regarding soybean production in China are lacking. "The Manchurian crop is more accurately estimated at 5,200,000 tons [probably metric tons] in 1928. The production of soybean in all other provinces has been estimated at 2,000,000 tons by Horvath and 10,000,000 tons by Marakujew [in Russian]. The total exports of soybeans, soybean oil and soybean cake is about 3,500,000 tons, leaving 3,750,000 to 11,750,000 tons for domestic consumption. The consumption per capita is thus 20 to 65 lbs. per year. These two figures at least represent the two extremes. Marakujew's figure is probably nearer to the actual. These 65 lbs. of soybean are used: -"

1. As soybean oil. 2. As soybean milk, "a very popular drink in China," "which is to the Chinese as cow's milk is to the Westerners." The process for making this milk is described briefly and a table compares its nutritional composition with human milk and cow's milk. The composition of the three are "very similar. One of the products of "soybean milk is the pellicula (Cc = Chinese characters given) (doufu-pi [yuba]) which is a thin sheet coagulated on the surface of the milk when it is heated. It is especially rich in protein and fat and used as a table delicacy."

"4. As soybean curd (Cc: doufu), one of "the most universal preparations" of the soybean. "It is relished by the poor as well as the rich. When a coagulating agent like gypsum is added to the bean milk, a thick mass separates out." "It is very similar to meat in chemical composition." A table compares the composition (only protein, fat, and carbohydrate on an "as is" basis) of soybean curd, beefsteak, pork chops, and eggs. "Although the protein content of 'tofu' is only half of that of meats, we see the economy of it even if we have to use a double quantity of it. The solid bean curd (Cc: doufu gan) is more like meat as it contains less water than 'tofu' and is also extensively used in China.

Note 1. This is the earliest English-language document seen (April 2013) that uses the term "solid bean curd" to refer to Chinese-style pressed tofu.

"4. As soy sauce, another popular soybean preparation..." "Other fermentation products like the fermented soybeans (Cc: douchi) and the fermented 'tofu' (Cc: furu) serve similar purposes." Note 2. This is the earliest English-language document seen (Nov. 2011) that uses the term "fermented soybeans" to refer to these Chinese-style "fermented black soybeans."

"5. As a vegetable. Cooked [green vegetable] beans are also used by the Chinese but not very extensively. Experience has taught us that the cooked whole beans are not so digestible as 'tofu' or other preparations. However, soybean sprouts, obtained by germination in water, are highly digestible and contains the antiscorbutic vitamin C, which is lacking in the original seed."

"The chief demand for soybean in foreign countries is for the oil and the bean cake." The oil is used for either edible or technical [industrial] purposes and the cake is used as a fertilizer or as cattle feed. "The soybean owes its popularity to its resemblance to cottonseed oil which is widely used in making soap, lard [substitutes] and oleomargarine. The first shipment to Europe was attempted by Japanese in 1908. It was warmly received..."

"Due to its peculiar smell, the raw soybean oil is rarely used in western countries for cooking. But now it is possible to refine this oil and render it entirely palatable to the western taste. It has been put on the market as salad and cooking oils. By the process of hydrogenation, the liquid oil can be transformed into a solid fat, which is an excellent substitute for animal lard" [or butter].

"Thus we see that in a period of twenty years, soybean has extended its usefulness from the Chinese dietary into industries of world-wide importance and is now one of the most valuable agricultural products not only of China but of the whole world."

"In Germany and Denmark artificial milk is regularly manufactured from soybean and sold on a commercial scale. Soybean milk powder is also being manufactured.

"The soybean curd has also a good future, as it can be used to make meat substitutes. Artificial meat has been prepared by a German soybean factory.

"The biggest possibility in the popularization of soybean as a food is the soybean flour. From the bio-chemical point of view, white bread made from the wheat flour is deficient in protein and vitamins. Therefore a substance like soybean should be a valuable addition to the wheat flour. In fact, half a dozen kinds of soybean flour are already on the market in

Europe and America."

"The phenomenal rise of the soybean as a universal article is not a matter of accident: It is the result of years of intensive scientific research. We should be thankful that we Chinese are not only the biggest consumer but also the biggest producer of this valuable article. But in the face of keen competition at the present time, we should look out lest this leguminous seed should fall into the same pit as did our silkworm and the tea plant. Up to the present we have been benefited by the researches of foreign countries and also the laboratories of the South Manchuria Railway and the Chinese Eastern Railway, whose immediate interests are not purely Chinese. Are we going to lead the world in soybean production? The future is by no means bright. Already the Chinese soybean oil mills are suffering due to their out-of-date equipment and inefficient process. America is rapidly increasing the acreage for soybean planting. When the American soybean crop is big enough to supply herself and other countries, China will have a difficult battle to fight. China should take an active part in studying and widening the usefulness of soybean as a food and as an industrial raw material."

681. Tamblyn. 1930. Bargains for the entire week (Ad). *Toronto Daily Star* (*Canada*). May 30. p. 10.
• ***Summary:*** In the upper right corner of this full-page ad is a small display ad: "Vi-Tone–is equal in nourishment to many times its bulk in ordinary food. A soya bean product. 49¢ and $1.99."

An illustration shows a person's hand holding a spoon, used to measure some Vi-Tone from a canister into a steaming cup.

Note: Tamblyn is a chain of drug stores which dates back to the early 1900s in Toronto. Address: Toronto.

682. Morse, W.J. 1930. Utilizacion de la soya [Utilization of soya]. *Cuba* (*Santiago de las Vegas*). *Estacion Experimental Agronomica, Circular* No. 69. 40 p. May. Translation by Emma L. Sena of USDA Farmers' Bulletin 1617. [Spa]
• ***Summary:*** In the introduction, Ing. Francisco B. Cruz, Director of the Agronomic Experimental Station, E.C., praises an imported soy oil named "Aceite comestible de Soya." A full-page ad for this product (just before p. 36), apparently with the brand name Excelsior, is also shown.

Contents: Introduction. Soybeans for human food: Dried beans (*Los frijoles secos.* Also used as a substitute for coffee or like roasted peanuts), green or vegetable beans (*Los frijoles verdes*), soybean flour (*harina de soya*), soybean oil (*aceite de soya*), soy sauce (*salsa de soya*), soybean sprouts (*vastagos de soya*), soybean vegetable milk (*leche vegetal de soya* (including the solid material or residue {*la materia sólida, el residuo*} [okara] which is separated from the liquid soymilk), soybean curd [tofu] (*cuajada de soya*).

Note 1. This is the earliest Spanish-language document seen (Jan. 2013) that uses the term *vastagos de soya* to refer to soy sprouts.

Note 2 This is the earliest Spanish-language document seen (June 2013) that mentions okara, which it calls *la materia sólida, el residuo.*

Note 3. This is the earliest Spanish-language document seen (April 2013) that uses the term *cuajada de soya* refer to tofu.

Soybeans for livestock (*la soya para el ganado*)*:* For swine, dairy cattle, beef cattle, sheep, poultry. Soybeans for oil: Methods of processing beans for oil, utilization of soybean oil. Soybean meal: Soybean meal for human food, soybean meal for stock feed, for swine, for dairy cattle, for beef cattle, for poultry. Soybean meal as a fertilizer. Miscellaneous uses of soybean meal. Soybeans for hay: Soybean hay for dairy cattle, for beef cattle, for horses and mules, for sheep, for swine, for poultry. Soybeans for pasturage: Swine, sheep, or poultry on soybean pasturage. Soybeans for silage. Soybeans for soilage [green crops for feeding confined animals; a term first used in 1928]. Soybeans for soil improvement. Soybean straw: Feeding value, and fertilizing value of soybean straw.

Address: USDA, Washington, DC.

683. *Fortune.* 1930. Soy beans: Which may be glue, milk, cheese, sauce, varnish, axle grease, fertilizer, soap, soup, buttons, artificial leather, enamel. 1(5):102, 104. June.
• ***Summary:*** Discusses the history of the soybean in various countries. Its uses in the United States are outlined. A plastic named Satolite is used to make combs and buttons. In "Paris there is a cheese factory that makes Rocquefort [Roquefort] from soy bean curd." Soy bean "milk has more proteins than cow milk and little danger of contamination. Its flour contains four and one-half times more fat, four times more proteins, half as much water, and nearly half as many carbohydrates as the flour of wheat. These chemical ingredients make it a food, more interesting, perhaps, than palatable. Though the milk is supposed to be good for one (it arrests cases of retrogression, causes normal growth), it has generally to be drunk sweetened with sugar. Soy bean sauces are better spiced. (For the Chinese taste Lean & Perrins Worcestershire is too hot. The Chinese themselves make their sauces by exposing the crushed bean to sunlight and actually melting it. Certain Korean sauces are thus matured thirty years before they are considered palatable.) But if the bean's chemical make-up only indirectly contributes to its success as human food, it is nevertheless the basis of the bean's industrial importance. Because of its nitrogen, the bean is valuable as fertilizer and also as poultry and stock feed. And the bean's hereinbefore mentioned oil has proved of value to many a manufacturer of paints, enamels, lacquers, and even explosives."

The Anglo-Chinese Company at Harbin and the Suzuki Mill at Dairen, both of which use chemical solvent

extraction, have succeeded in extracting virtually all of the oil from the soybean; Manchuria's traditional crude stone presses were able to extract only about half the soybean's oil content.

"Perhaps the greatest economic and industrial triumph of the soy bean occurred, oddly enough, in Denmark. Until some thirty years ago this pleasant country was more than self-supporting in the production of cereals, especially wheat. But U.S. mass production and low prices made for perilous and in some cases disastrous competition, even in Denmark's home markets. The Danes bethought themselves of raising live stock, imported the soy bean (using the oil for its usual purposes), and used it as feed for their live stock and poultry. Today 70 per cent of Denmark's export trade consists of live stock and animal products: milk, butter, cheese, bacon, ham, eggs, and the like. And for their country's regained economic health Danes give thanks to the soy bean...

"In the United States the paramount importance of soy bean is still its agricultural use. But it is significant that 75 per cent of the soy bean oil consumed in United States is being used by paint and varnish industries and in manufacture of linoleum, oil cloth, artificial leather. Lesser quantities are utilized in printer's ink, liquid soaps. Few soy beans are imported into this country."

Note: This is the earliest English-language document (Feb. 2007) seen that contains the term "mass production."

684. Vi-Tone Company. 1930. Ask the man who trained the champion marathon swimmer about Vi-Tone (Ad). *Toronto Daily Star* (*Canada*). Aug. 30. p. 10.
• ***Summary:*** "Johnny Walker knows his job. He's been training athletes for a great many years. He knows the importance of proper diet for healthy vigorous physical condition.

"That is why Johnny Walker specified Vi-Tone for the winner of the 1930 Marathon Swim, and Marvin Nelson agrees with him when he says 'Vi-Tone is the best tonic food beverage I have ever used.'"

Lists other outstanding swimmers who are Vi-Tone boosters.

"Vi-Tone is a scientific combination of health-giving food elements of the Soya Bean, plus Malt Extract and Milk–ingredients which are easily assimilated and provide extra nourishment in concentrated form. Vi-Tone has an appetizing flavor all its own.

"Obtainable at all good grocers and druggists throughout Canada–Ask for Vi-Tone by name.

"Vi-Tone for health." Address: [Hamilton, ONT, Canada].

685. *New York Times.* 1930. Large demand for soybean is quickly created here: An old Oriental product is turned to many uses in the Western markets. Sept. 21. Section 9. p. 13.
• ***Summary:*** Food uses of soybeans are increasing, as in recent years attention has turned from the stalk to the seed. Soybeans are being used by "persons [such as diabetics] requiring a low starch diet. Either green or dried, boiled or baked, the beans may be eaten as a vegetable or made into soup, and special varieties have been developed that are easy to cook." In the Orient they are made into an emulsion similar to milk and into various kinds of vegetable cheeses. "In the West this milk has been produced in the form of a powder, usable in making bread and cake, milk chocolate and custards, and in creaming vegetables. A curd obtained from it has been canned and put on the market."

686. Dorsett, P.H.; Morse, W.J. 1930. Soybean milk in Heijo (Pyongyang), Chosen [Korea] (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. Agricultural Explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon. Washington, DC: Foreign Plant Introduction and Forage Crop Investigations, Bureau of Plant Industry, USDA. 8,818 p. Unpublished log.
• ***Summary:*** Pages 5905-06 (22 Sept. 1930, Heijo, Chosen). W.J. Morse's notes. "After lunch we went to the Prefecture Seed and Nursery Farm. On the way we found mature seed of the wild soybean and collected a fair sized sample.

"At the station we met the director, Mr. Shiramura, and asked concerning the harvesting of soybeans. He thought we would have a better chance of seeing the harvest of beans around Junsen, which is an extensive soybean section and is in a mountainous region. When the soybeans are grown alone, the plants are allowed to become fully mature before harvesting.

"After returning from the Seed and Nursery Farm we visited a soybean curd factory. In addition to selling bean curd this factory sells about five gallons of soybean milk daily during the summer months. This factory runs two stone grinders and uses 4-5 bushels of dry beans daily. Various forms of fried bean curd are also sold by this factory. The same process of making bean curd and milk is used on the Main Island. In the milk, however, less water is used, thus giving a higher quality of milk. The milk is used only by the Japanese and sells for 4 sen per bottle (5 bottles to the quart)." Address: Agricultural Explorers, USDA, Washington, DC.

687. Kellogg, John Harvey. 1930. Soybeans as human food. Paper presented to the American Soybeans Grower's Association, Sept. 11. 20 p.
• ***Summary:*** Dr. Kellogg shows that he has an excellent knowledge of the world literature on soybeans and soyfoods, much of which he summarizes in this speech. "Many years ago (1899), the United States Department of Agriculture, called upon me to undertake the preparation of a vegetable meat. The Assistant Secretary, Dr. Charles Dabney, wrote me, suggesting that the navy bean might be used for the

purpose. I found, however, as I expected, that this legume was not suited to the purpose. At that time the soybean was not grown to any extent in this country, I was wholly unacquainted with it, and so naturally sought to find in nuts, especially the peanut, a solution of the problem, and succeeded in producing a vegetable meat, Protose, of which several thousand tons have since been made and consumed. But the introduction of the soybean renders quite unnecessary any other substitute for flesh meats." The author discusses his belief that primitive man subsisted wholly upon plant products (i.e. ate a vegan diet "according to Prof. Elliot of Oxford University, Prof. Ami of Montreal, and other distinguished paleontologists"), and the nutritional value of soybeans and their basic-ash quality. "All meats yield a highly acid ash. The excess of acid in these foods produces a lowering of the alkalinity of the blood and tissue fluids when they are freely used, a condition which is known as acidosis." He also discusses soya sauce (which is now being manufactured in the USA), miso (which like soy sauce has a flavor resembling that of the osmazomes found in meat and meat sauces), roasted soy nuts (resembling roasted peanuts), pressure cooking whole soybeans, adding soy meal (flour) to breads, soy milk (which, in certain parts of China and Japan, "is made in quantities and distributed in bottles like milk in this country"), soy cheese [tofu], and the many health benefits of soy milk described in the medical literature, the many health problems caused by consuming flesh foods.

"Von Noorden, the world famous German physician, has demonstrated that the soy bean is of very great service in changing the intestinal flora." Note 1. This is the earliest document seen (June 2003) concerning soy and changing the intestinal flora. It is also the earliest document seen (June 2003) that uses the phrase "changing the intestinal flora" in connection with soy.

"In spite of the frantic efforts of vested interests to promote the uneconomic live-stock industry, it will no doubt gradually disappear as a true science of agriculture is developed and the country becomes more densely populated. The conversion of vegetable into animal protein by feeding to steers and pigs, is one of the most wasteful of all human activities. Armsby has shown that 100 pounds of digestible vegetable protein are required to produce 3 pounds of meat protein..."

Discusses Stefansson's absurd so-called meat-eating experiment, which was really a publicity stunt. Stefansson took no more than 20% of his calories in the form of lean or muscle meat. The rest of his diet was fat. "Excessive meat consumption is one of the begetting sins of the people of this country. Our per capita meat consumption is 5 ounces per day, just 5 times that of Italy (1.0 oz.) and ten times that of North China (0.5 oz.), while the average native of South China eats no meat at all, and is one of the hardiest and most industrious of workers."

"Thanks to the efforts of our efficient Plant Introduction Bureau, the soybean is beginning to get a start toward recognition and appreciation in this country; but it is evident that a plant possessed of such superlative values and such astonishing versatility and adaptability should receive far more serious attention than has heretofore been given it by the agriculturalists of this country... There can be no doubt that it is destined to play a large part in the feeding of America's millions..."

Note 2. This is the earliest English-language document seen (Dec. 2012) that uses the term "soy nuts" or the term "roasted soy nuts" to refer to soynuts. Address: Battle Creek, Michigan.

688. Morse, W.J. 1930. La utilizacion de la soja en diversas industrias [The utilization of soya in various industries]. *Hacienda* (*La*) (*Buffalo, New York*) 25:298-301. July; 25:347-49. Aug; 25:394-96. Sept. [1 ref. Spa]

• ***Summary:*** This is a translation of USDA Farmers' Bulletin 1617, but with excellent new illustrations. Contents: Introduction. Soybeans in the human diet: Whole dry soybeans, green vegetable soybeans, soy flour, soy oil, soy sauce, soy milk, tofu (*cuajada de soja*). Soybeans in the feeding of domestic animals. Soy oil: Extraction, use. Soybean cake: as a human food, as a livestock feed, as a fertilizer. The value of soybean forage. Soybean in silage. Soya as green forage. Soybeans for the improvement of soils. Soybean straw.

This article contains many interesting photos: 1. A man with a hand turned stone mill in China grinding soybeans to make soymilk. 2. Soybean cakes stacked and partly covered with tarpaulins at a port in Manchuria. 3. Earthenware vats used for making soy sauce in a courtyard in China. 4. Steamed soybeans being cooled to make miso in Japan. 5. Soybeans intercropped with corn. 6. Manchurians outside a soy oil factory in Dairen. The equipment was installed by the French Oil Mill Machinery Co. 7. Carrying round soybean cakes in a cart at the same factory. 8. A soybean mill at Yokohama, Japan. 9. An Anderson Expeller for the extraction of soy oil. 10. A tractor pulling rotary disks for cultivating soybeans in the USA. 11. Harvesting soybeans with a tractor in the USA. 12. A tractor pulling a harvester-thresher combine in the USA. Address: USDA, Washington, DC.

689. Morse, W.J. 1930. Utilizacion de la soya [Utilization of soybeans]. *Revista de Agricultura, Comercio y Trabajo* (*Cuba*) 11:43-60. Sept. [Spa]

• ***Summary:*** This is a translation of *USDA Farmers' Bulletin* No. 1607 titled "Soybean Utilization" (Morse, Jan. 1930). With an introduction by Ingeniero Francisco B. Cruz, Director de la Estacion Experimental Agronomica, de Santiago de las Vegas, Cuba. Translation by Emma Lopez Seña. Contents: Introduction. Soybeans for human food: Dried beans (*los frijoles secos*), green or vegetable beans (*los frijoles verdes*), soybean flour (*la harina de soya*), soybean

oil (*aceite de soya*), soy sauce (*salsa de soya*), soybean sprouts (*vástagos de soya*), soybean vegetable milk (*leche vegetal de soya*), soybean curd [tofu] (*cuajada de la soya*).

Note 1. This is the earliest Spanish-language document seen (April 2013) that uses the term *cuajada de la soya* to refer to tofu.

Soybeans for livestock: For swine, dairy cattle, beef cattle, sheep, poultry. Soybeans for oil: Methods of processing beans for oil, utilization of soybean oil. Soybean meal: Soybean meal for human food, soybean meal for stock feed. Soybeans for hay. Soybeans for pasturage. Soybeans for silage. Soybeans for soilage. Soybeans for soil improvement. Soybean straw.

Note 2. This is the earliest Spanish-language document seen (June 2009) that uses the term *frijoles verde* to refer to green vegetable soybeans. Address: USDA, Washington, DC, USA.

690. *Proceedings of the American Soybean Association.* 1930. Program of joint meetings: American Soybean Association and Annual Illinois Soybean Day. Agronomy South Farm, University of Illinois, Urbana-Champaign. Sept. 10, 11, 12, 1930. 3:3-6. Eleventh annual field meeting. Held 10-12 Sept. 1930 in Illinois.

• ***Summary:*** The Wednesday morning program began at 9:00 with music by a male quartet, followed at 9:20 by a welcome from Dean H.W. Mumford. Then came 13 speeches about soybean production and feeding; their titles and authors are listed. At 12:00 there was a "special soybean lunch" served at the University South Farm and prepared by ladies of the First M.E. Church, Urbana. It consisted of "Soybean fed pork, soybean fed beef, soybean bread, soybean muffins, baked soybeans, a soybean health drink, soybean ice cream, and soybean ice."

On Wednesday afternoon, starting at 5:00 p.m. there was an inspection of soybean production machinery at the Farm Mechanics Building, and the special tour of the Urbana Laboratories.

On Thursday evening at 8:00 p.m. Dr. John Harvey Kellogg, of the Battle Creek Sanitarium [Michigan], presented a paper titled "Soybeans as human food," which was printed in the Battle Creek Hospital Journal, *Good Health.*

On pages 5-6 is the text of the "Address of Welcome," by Dean H.W. Mumford, Univ. of Illinois.

Note: This is the earliest English-language document seen (March 2007) that contains the term "soybean ice cream." Address: Illinois.

691. Dittes, Frances L. 1930. Soybean food preparation for infants. *Madison Survey* (*Madison, Tennessee*). 12(38):151-52. Oct. 1.

• ***Summary:*** A table compares the nutritional composition of soybean milk, cows' milk, and mother's milk. Soybean milk contains the most protein (4.94%) and mother's milk the least (1.5%). Soybean milk is lowest in carbohydrate (0.92%) while mother's milk is highest (7.00%). "In composition the soybean resembles a nut more than an ordinary bean." Soybean milk contains "the six essential amino acids necessary for complete nutrition and normal growth."

Soybean milk works well for treating eczema in infants. "Soy milk is produced at a cost of one-fifth that of cow's milk, besides being free of disease bacteria, such as tuberculosis, typhoid fever, etc. This food product may be found so practical, economical, and adequate, that it will save the lives of many infants..."

Note: This is the earliest English-language document seen (Sept. 2011) with the term "soybean food" (or "soybean foods") in the title. Address: Madison, Tennessee.

692. Carver, G.W. 1930. Re: Preparation of milk from the soy bean. Letter to Miss Elsie M. Irland, The Natal Branch of the Order of the Golden Age, P.O. Box 323, Pietermaritzburg [South Africa], Oct. 10. 1 p. Typed, without signature (carbon copy).

• ***Summary:*** "I am very much interested in your letter which has just reached me.

"I regret to state that our station has done practically nothing with the soy bean in the matter of making butter and cheese. If you write to the United States Department of Agriculture, Bureau of Publications, Washington, D.C., they may be able to furnish you with literature along that line.

"I have made some very acceptable milk from the soy bean, and if you point out your troubles in its manufacture I shall perhaps be able to help you. You probably know more about the difficulties and just what is needed in the way of milk than I.

"Regretting that I cannot be of service to you in the manufacture of butter and cheese from soy beans, I am, Yours very truly, G.W. Carver." Address: Director, Agricultural Research and Experiment Station [Tuskegee, Alabama].

693. Dorsett, P.H.; Morse, W.J. 1930. Soybean sprouts, soybean milk, bean mash [okara], and bean curd [tofu] in China (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. Agricultural Explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon. Washington, DC: Foreign Plant Introduction and Forage Crop Investigations, Bureau of Plant Industry, USDA. 8,818 p. Unpublished log.

• ***Summary:*** Page 6252 (23 Oct. 1930, Peiping, China). P.H. Dorsett's notes. "Today we went to the market and saw a number of bean curd [tofu] dealers, also those handling soybean sprouts."

Pages 6264 to 6268, and 6275 (24 Oct. 1930). P.H. Dorsett's notes. "Tomorrow we plan to visit one of the many places around Peiping engaged in bean sprouting and the

making of other bean products."

Page 6265. Photo shows soybean sprouts in a market in Peiping (neg. #46113).

Page 6266. Photo taken in same market. "At the extreme left, back, soybean sprouts and string beans, in front soybeans, cauliflower and radishes. At the back left are dry bean curd [doufu-gan, pressed tofu] and Chinese cabbage" (neg. #46114).

Page 6266. "Chinese curd man shaving from thin sheets narrow strings of soybean curd" (neg. #46115).

Page 6267. "Peiping, China. Very near life sized picture. Fresh bean curd pressed into thin sheets and fried in soy sauce for five hours. These sheets are sliced into fine strings. Chinese name 'Chien chang'" (neg. #46116).

Page 6268. "Peiping, China. Small stand along the street selling various forms of soybean curd that have been fried in soy sauce" (neg. #6268).

Page 6268 (bottom). Peiping. "Most of the baskets contain a greater or less amount of sprouted soybeans; they show in three baskets."

Page 6275. A photo shows: "Soja max. Fried soybean curd. Peiping [Beijing], China. Between 3/4 and life sized picture. Small squares of fresh bean curd are fried in deep fat (sesame oil). Sometimes several of these fried squares are strung on pieces of grass. D. & M. #7256 (neg. #46125).

Page 6276. "Almost life sized picture. Round and oblong pieces of fresh bean curd fried in soybean sauce for 5 hours. The cakes are dark reddish brown. Chinese name 'Toufu kan' [doufu-gan] meaning 'dry bean curd'" (neg. #46126).

Page 6277. "Peiping, China. Life sized picture. Small squares of bean curd that have been boiled in soy sauce for 5 hours. Cakes are dark reddish brown" (neg. #46127).

Page 6280 (25 Oct. 1930). Peiping, China. "In the forenoon we went to the bean sprouting place of Mr. Chang Tzu Hsien, in the southwestern part of the city. His sprouting house or room is just back of the large public well where water is pumped by coolies and sold to big wheel-barrow men for a few coppers per load. Mr. Hsien sprouts mung beans, yellow and green soybeans; about six days are required to sprout the beans. He uses large earthen bowls are wide shallow jars, about two feet at the bottom, three feet on top and 16 to 20 inches deep, in which to sprout the beans.

"About 1 peck of dry beans are required to make one of the above vessels full of sprouts. Green soybeans are grown and sold with shorter sprouts than either the yellow soy or mung beans. We were told that the best beans for sprouting come from the Kalgan region [Zhangjiakou, a city in Heibei province of North China, adjacent to Beijing to the southeast], but that on account of the price he cannot afford to use these and so he gets his stock from the southeast of Peiping [Beijing].

"The beans are first soaked overnight in hot water and then put into vessels and sprinkled two or three times a day with cold water.

"Mung bean sprouts sell for two cents Mex. per cattie. Yellow soybean sprouts for three and one-half cents per cattie. Green soybean sprouts sell for four cents per cattie.

We next went to the Chi Shun Hung Co., 8 Lien Hua Ssu Street, Peiping, soybean curd and milk manufactory where we spent some little time getting information and pictures.

"Mr. Hao produces both dry and fried curd and milk. He sells soybean milk in about 10 ounce bottles at 1.00 Mex. per bottle, one bottle each day, delivered to his customers. He makes square and round cakes of soybean curd. They are from one-half to three-quarters of an inch thick and about three inches in diameter. These are called dry curd because most of the water is pressed out. They also fry these cakes in soybean oil.

"Mr. Hao also told us that the soybeans from the Kalgan region make the best curd, but that on account of their expense he cannot afford to use them, and buys his from local growers in the vicinity of Peiping.

"In the afternoon we finished up the nearby pictures of soybean products and then took the negatives made in the field and at the hotel to the Hartung Photo Shop to be developed and printed."

Page 6282. Peiping, China. "Wheel cart with baskets used by the peddler of sprouts of mung beans and soybeans" (neg. #46132). "Side view of wheel cart and baskets used by the peddlers of sprouts of soybeans and mung beans" (neg. #46133).

Page 6283. "Small grass baskets or forms for shaping fresh bean curd into small round cakes and then from which excess water is pressed out" (neg. #46134). "Small grass basket forms used in shaping small round cakes of soybean curd for pressing out moisture and the cakes are then fried in soy sauce" (neg. #46135).

Page 6284. "Basket of square and round cakes of fresh soybean curd from which excess water has been pressed. These cakes are now fried in soy sauce for five hours" (neg. #46136). "Tub of bean mash [okara] left after straining out the soybean milk which is used in the manufacture of bean curd" (neg. #46137).

Note: This is the earliest English-language document seen (July 2011) that uses the term "bean mash" to refer to okara.

Page 6288 (27 Oct. 1930). P.H. Dorsett's notes in Peiping. "Early this morning we visited the mung bean sprouting of Mr. Chang, at 66 Pei Yang Shih Kou, Peiping. This gentleman uses tubs in which to sprout his mung beans. The tubs are 12-14 inches across, 24 inches long, and 18-20 inches in height, with about eight small holes in the bottom for draining off surplus water..." The process is described and photos given.

Page 6289. "In the afternoon we called on the establishment of Mr. Chiang who makes what is locally known as 'Southern bean curd.' He uses yellow soybeans.

The milk is boiled three times. This curd seems quite different from that ordinarily seen."

Page 6337 (2 Nov. 1930. Peiping, China). P.H. Dorsett's notes. "Tomorrow we plan on visiting Dr. Ernest Tso, of the P.U.M.C. [Peiping Union Medical College] to get such information as we can relative to the making and utilization of soybean milk. We also plan on visiting a soy sauce, soybean jam [jiang] and pickling establishment for the purpose, if possible, of securing still and motion pictures."

Page 6338 (3 Nov. 1930). "In the forenoon we went to the Peking Union Medical College and met Dr. Ernest Tso. The Doctor is especially interested in the food and feeding of young infants, and is experimenting with the use of both cow and soybean milk.

"He showed us pictures of babies fed in part or wholly on cow's milk, as well as those fed on soybean milk and also showed us charts of the results of his work, as well as some of the babies being fed in the hospital.

"Mr. Morse made an arrangement to call on him again Wednesday morning to talk with him about soybean milk and other products and also to learn more about his work."

Page 6607 (5 Nov. 1930. Peking, China). "Inspected soybean milk laboratory and manufacture of soybean milk." Note: No details are given.

Page 6792 (14 Dec. 1930). Peiping en route to Kalgan, China. P.H. Dorsett's notes. "Owing to the fact that when the Morses were in Peiping in November, and Morse, Suyetake, Liu and I, while looking up soybean products, learned that the best soy and mung beans for use in sprouting and making bean vermicelli come from the Kalgan region, we thought it worth while to go there for a collection of soybeans, mung beans and other legumes." Address: Agricultural Explorers, USDA, Washington, DC.

694. *Christian Science Monitor.* 1930. From the world's great capitals–Moscow. Oct. 25. p. 20.
• ***Summary:*** The first section, titled "Soy-bean diet recommended," notes: In Moscow, where "meat, butter, and milk substitutes are in great demand," the soy bean is fondly called "our young revolutionary Chinese ally." The newspapers urge: "Plant soy beans and you plant meat, milk, and egg omelettes." Throughout the year, much effort has been made to introduce "soy bean dishes" to restaurants and homes. In Moscow, a "soy institute" has recently been organized, as well as a "special exhibition of soy foods at which 130 varieties of soy dishes, including cutlets, pastry, salads, candy, beef, were shown. A dinner, prepared entirely of soy beans, was served to representatives of trade unions, factories, Red Army and the Soviet press. The food was unanimously declared excellent. Special courses to train cooks in the preparation of soy foods have been opened throughout the country," and two books of soy recipes have been prepared for publication.

Note: This is the earliest English-language document seen (Sept. 2011) that contains the term "soy foods."

695. Hepburn, Joseph S.; Sohn, Keum Sung. 1930. Do fu: An Oriental food. *American J. of Pharmacy* 102(10):570. Oct.
• ***Summary:*** "The Oriental food, known as *do fu* in Chinese and *doo pu* in Korean, is a soy bean preparation." The beans are soaked in cold water, then ground with the water. "The resulting mass is filtered through a coarse linen bag. The white, milky filtrate is heated in a vessel, with occasional stirring, until it begins to foam. Then a saturated solution of sodium chloride is added until coagulation is complete..."

A sample of *do fu*, purchased in the 'Chinatown' of Philadelphia [Pennsylvania], was found to have the following percentage composition: Total solids: 13.37%. Moisture: 86.63%. Ether extract: 4.65%. Crude fiber: None. Crude protein: 4.22%. Ash: 0.59%. Nitrogen-free extractives: 3.91%.

Note: This is the earliest English-language document seen (Aug. 2013) that uses the term "milky filtrate" to refer to soymilk. Address: John Clifford English Laboratories of Physics and Chemistry; Hahnemann Medical College and Hospital of Philadelphia.

696. Pehkoff, Suzanne. 1930. Salvation seen in soy beans. *Los Angeles Times.* Nov. 15. p. A4.
• ***Summary:*** A summary of: *Christian Science Monitor.* 1930. "From the world's great capitals–Moscow." Oct. 25. p. 20.

697. *Afro-American* (*Baltimore, Maryland*). 1930. 'Kegee savant makes up menu for Gandhi: Dr. Geo. W. Carver asked to help perfect diet for great leader. Gives lectures. New products shown at Morgan and Hopkins. Nov. 22.
• ***Summary:*** Dr. Carver is collaborating in formulating a menu for Mahatma Gandhi, who weighs only 94 pounds. The great leader of India is struggling to help India free itself from British dominion. A friend and representative of Gandhi's [Dr. C.F. Andrews] had come all the way to Tuskegee to consult with Dr. Carver about the menu which, it is hoped, would add strength and perhaps years of life in which Gandhi could engage in the cause of his country's freedom. "Dr. Carver made the announcement during the course of a lecture at Morgan College, where he talked on his 202 products obtained from the peanut. In the evening he lectured on the same subject to a group at Levering Hall of the Johns Hopkins University."

Carter then said in his unassuming manner: "'Possibly you would like to know something of the work I am trying to do, the motive power, the spirit that prompts it, how I began, and where I got the idea. I am going to tell you how my discoveries are made,' he continued. 'I simply tune in with the creative powers–the Great Creator. There are certain things, however, I must do to tune in.'

"While not indifferent to the potential commercial

importance of his discoveries, Dr. Carver's primary interest is the pursuit of useful truth. He seeks to find the purpose suggested in Genesis, which he quoted: 'Behold, I have given you every herb-bearing seed which is upon the face of all the earth. To you it shall be meat.'

"'The Creator asks me what I want to know,' said Dr. Carver, 'and I tell him I want to know about the peanut. With my knowledge of chemistry and physics I set to work to take the peanut apart.'"

Note 1. Other reports of Carter's work at this time show that one of the key elements in the diet he developed for Gandhi was a nourishing milk made from soy beans.
Note 2. Carver was never able to do anything with his original peanut milk formula, developed in 1919, because he discovered that an Englishman already had a patent that might be in conflict. He didn't think it was worth fighting the matter out in court, so he let it go.

698. Carver, G.W. 1930. Re: Preparing soy milk for Mahatma Gandhi. Letter to Mr. R.B. Eleazer, 409 Palmer Building, Atlanta, Georgia, Nov. 29. 1 p. Typed, without signature (carbon copy).
• ***Summary:*** For at least ten years George Washington Carver has been working to develop milk-like beverages from plants. "I have made up many menus and offered suggestions to missionaries, etc. I am now cooperating with the Johns Hopkins University, that is with one of the professors who is very much interested along this line, and is doing some very excellent work with reference to making up food for babies that will take the place of milk, which they do not have in many sections of Africa and some of the other mission fields.

"I have just answered a communication from Miss Elsie M. Irmand [sic, Irland] of the Natal Branch of the Order of the Golden Age, to a milk, made from soy beans, which is very rich and profitable and can be used largely instead of cows milk.

"I have sent out quite a number of these recipes. One hospital has written me that it is working out nicely with them...

"When Dr. Andrews* was here, we made out a menu for Mr. Gandhi, which included the milk from soy beans."

* Note: Charles Freer Andrews was an Anglican minister who worked with Gandhi, first in South Africa and later in India. See letter from Carver to Andrews dated 24 Feb. 1929.
Address: Director, Agricultural Research and Experiment Station [Tuskegee, Alabama].

699. Goessel, Fritz. 1930. Procédé de traitement des graines du soja et autres graines semblables, en vue de les rendre propres à l'alimentation [Process for treating soybeans and other similar grains to make them suitable for food use]. *French Patent* 708,394. 26 Dec. 3 p. Granted 28 April 1931. [Fre]
Address: Germany.

700. *Constitution* (*Atlanta, Georgia*). 1930. Carver's work aid to Gandhi. Dec. 13.
• ***Summary:*** "Tuskegee, Alabama, Dec. 12.–That the discoveries of Dr. George [Washington] Carver, noted agricultural chemist of Tuskegee Institute, may become a factor in India's fight for freedom was revealed here recently when it was learned that Dr. Carver, at the request of a close friend of Mahatma Gandhi, has formulated a menu for the great Indian leader, designed especially to build up his emaciated body.

"The request, it is understood, came to Dr. Carver through Dr. C.F. Andrews, a recent visitor to Tuskegee, who for years has been Gandhi's intimate friend, adviser and associate. The menu prepared, it is said, makes large use of a nourishing milk derived from soy beans. Dr. Carver, it is understood, is co-operating also with a member of the Johns Hopkins faculty in the development of a vegetable baby food that can be used in Africa and other countries where milk is not available."

701. *Observer* (*Moultrie, Georgia*). 1930. Bean milk. Dec.15.
• ***Summary:*** "Dr. George Carver, noted agricultural chemist of Tuskegee Institute, has been called on to prescribe for Mahatma Gandhi, leader and reformer of India. Gandhi is thin and does not respond to food such as is obtainable in his country. Professor Carver has found in Alabama what he thinks will build up the emaciated body of the noted reformer.

"The request, it is understood, came to Dr. Carver through Dr. C.F. Andrews, a recent visitor to Tuskegee, who for years had been Gandhi's intimate friend, advisor, and associate. The menu prepared, it is said, makes large use of a nourishing milk derived from soy beans. Dr. Carver, it is understood, is cooperating with a member of the Johns Hopkins faculty in the development of a vegetable baby food that can be used in Africa and other countries where milk is not available.

"To date Dr. Carver's contributions to science include 202 products derived from peanuts, 118 from sweet potatoes, a large number from other common plants, and 300 colors and tints from Alabama red clay. Among the latter is a blue stronger than any on the market, said to be identical with the long lost blue used to decorate the tombs of the ancient Egyptian kings. He is now on the trail of another lost color, the famous Egyptian purple."

702. Tso, Ernest; Chu, Fu-T'ang. 1930. The nitrogen metabolism in infants on graded intake of soybean "milk" proteins. *Proceedings of the Society for Experimental Biology and Medicine* 28(3):218. Dec. [3 ref]
• ***Summary:*** This is a brief preliminary report of experiments. Address: Div. of Pediatrics, Dep. of Medicine,

Peiping Union Medical College.

703. **Product Name:** Soy Ice Cream (Honey Sweetened) [Strawberry, Chocolate, Vanilla], and Soy Coffee with Soy Cream.
Manufacturer's Name: Scientific Food & Benevolent Association.
Manufacturer's Address: Takoma Park Station, Washington, DC.
Date of Introduction: 1930.
New Product–Documentation: Miami Daily News. 1934. April. "He [Jethro Kloss] exhibited 21 articles made from soy beans" including "ice cream." He invited the public in Miami, Florida, to taste them.

Jethro Kloss. 1935. *Back to Eden.* Page 105 contains a recipe for non-dairy soy ice cream.

Letter from Jethro Kloss, president of this association, to his daughter, Promise. 1936. May 11. The letterhead states that this is "Manufacturers, Jobbers, and Distributors" with "A marvelous line of foods made from the soy bean..." Note: It is not clear when this company was founded, or if it existed in 1930, when Kloss first started making and selling soy ice cream commercially.

Letter from Eden Kloss, son of Jethro Kloss. 1985. Nov. 15. He recalls that in about 1930 he helped his father make soy ice cream (honey sweetened in strawberry, chocolate, and vanilla flavors) and soy coffee with soy cream. They sold it to the public as part of a quick lunch out of a small trailer on Pennsylvania Avenue near the White House.

Note: This is the world's earliest known non-dairy soy ice cream. This is the earliest known commercial soy product made in Washington, DC–in the early years of the Great Depression. It is also the earliest known commercial soy product introduced by a Seventh-day Adventist that contained chocolate.

704. Bragg, Paul Chappius. 1930. Professor Bragg's live food cook book and menus. Hollywood, California: National Diet and Health Association of America; and, Live Food Products. 170 p. No index. 24 cm.
• ***Summary:*** About raw food and vegetarianism. Contents: 1. Why I write this book. 2. Our daily food, is it nourishment or poison? 3. There are no meat recipes in this book. 4. Poisonous white sugar. 5. Dairy products not human food. 6. Coffee and tea are drugs. 7. Don't use condiments. 8. Salt–The enemy of life and health. 9. Pure food. 10. Don't use aluminum cooking ware. 11. Gas, indigestion and stomach trouble. 12. Acknowledgment of recipes and suggestions fork other health food writers. 13. Salads. 14. Fruit salads. 15. Salad dressings. 16. Directions for making nut butter and nut milk. 17. Relishes. 18. Soups (incl. Carque's nut milk soups, made with his nut milk). 19. Cooked vegetables. 20. Meat substitutes and main dishes. 21. Desserts. 22. Breads and bread foods. 23. Sauces and gravies. 24. Drinks. 25. Health confections. 26. Health sandwiches... 30. Baby's diet from birth to 18 months. 31. Diet schedule for the growing child.

Chapter 1 (p. 11) states: "The drug doctor has been a failure. After hundreds of years of his reign there is still universal sickness and suffering which, instead of abating, is unmistakably on the increase."

Chapter 12 (p. 26) acknowledges: "A few of the recipes in this book were taken from the works of some of the most prominent men in the field of Natural Living. I have considered, in giving a cook book to my people, that they should have, not only my own favorite recipes, but also the best of other men who have experimented along this line. I have therefore included recipes from the books of: Dr. John T. and Mrs. Vera Richter, the leaders of the Raw Food movement in the West. Dr. Philip M. Lovell, distinguished editor of the most widely read Health column in the world, the Care of The Body section of the *Los Angeles Times.* Dr. Henry Lindlahr, the great pioneer Nature Doctor. And Otto Carque, chemist, research worker and crusader in the fight for natural foods."

Chapter 16, "Directions for making nut butter and nut milk," begins with a long passage from *Natural Foods: The Safe Way to Health,* by Otto Carqué (1925). It contains recipes for: Cocoanut milk. Nut milk (made by mixing 1 level tablespoon nut butter with 1 cup warm water, plus a little honey or sweet fruit juice if desired). Almond milk for infants. Nut cream (made from unroasted nut butter, warm water, and honey). Combination nut butter (peanuts, pignolias, cocoanuts). Apple and almond butter. Nut meal.

Chapter 20, titled "Meat substitutes and main dishes" (p. 111-18), contains largely cooked dishes, and makes widespread use of the "Battle Creek Sanitarium product, Protose, being available at most fancy grocers." Vegex and Savita are also widely used in recipes. Soy sauce is used to season Vegetable chop suey (p. 114). It "may be purchased at a Chinese store or any fancy grocers."

The National Diet and Health Association of America is located at 1109 North Hudson, Hollywood, California.

Note: This is the earliest document seen (March 2007) by or about Paul C. Bragg that mentions soy. No juicer is mentioned in this book. A portrait photo (just after the title page, p. 5) shows handsome "Prof. Paul C. Bragg." Address: Professor, California [Los Angeles].

705. Capus, Guillaume. 1930. Les produits coloniaux d'origine végétale [Colonial products of vegetable origin]. Paris: Larose. 499 p. See p. 80-83. 26 cm. [Fre]
• ***Summary:*** The soybean (*soja*) is mentioned on 11 pages in this book: p. 1, 74, 78 80-83, 420, 484. 488, 496.

Contents: Introduction. Uses of the soybean (industrial uses and food uses): oil, cake, soymilk, tofu, fermented tofu, sauce, coffee substitute, green vegetable soybeans, whole dry soybeans, soy flour used to make bread for diabetics. The leaves and stems make an excellent green forage. Finally,

in the USA, the soybean is cultivated as a forage plant, for use as silage, and also as green manure to enrich the soil for other plants.

Capus Guillaume lived 1857-1931. Address: Doctor of Science, former Director General of Agriculture in Indochina.

706. Watson, Ernest. 1930. The principal articles of Chinese commerce (import and export) with a description of the origin, appearance, characteristics, and general properties of each commodity; an account of the methods of preparation or manufacture; together with various tests, etc., by means of which the different products may be readily identified. 2nd ed. Shanghai, China: Statistical Dept., Inspectorate General of Customs; sold by Kelly & Walsh [etc.]. ix + 630 p. Illust. Index. 28 cm. The Maritime Customs. II. Special Series No. 38.

• ***Summary:*** The first edition was published in 1923. There are sections on "bean oil" (*tou-yu*), the residual meal from the extraction process (*tou-ping fên*), and cakes (*tou-ping;* p. 85-86), soya beans (p. 320-21) including yellow, black, and green varieties, beancurd [tofu], bean milk (tou-fu-chiang), bean sauce (see soy sauce), and bean vermicelli. The latter product, named *fên-ssu, tou-fên-ssu, hsi-t'iao-mien,* or *kua-mien,* is a "famous vermicelli made in the Chefoo district from [soy] beans, most of which are originally imported from Manchuria. It is exported in great quantities from Chefoo to Hongkong, South China, and the Straits Settlements, and forms a favourite and very nutritious food."

Soy or chiang-yu (p. 538) is the name for a "sauce made in China from the soya bean (*Soja hispida*). In preparing it, a quantity of beans are slowly boiled, an equal quantity of coarsely ground wheat or barley being added. The mixture, after being allowed to ferment for some time, is put into a jar with an equal amount of salt, a few aromatics, and three times as much boiling water as there were beans at first; the whole is then allowed to stand for several weeks exposed to the sun, after which the liquor, which constitutes the soy, is separated by pressing and straining the mass. The finished product is afterward packed into jars or bottles ready for market."

"Soy is thin and, in colour, very dark brown or almost black; it becomes brighter and clearer on being kept, has an agreeable salty flavour, and produces a yellowish froth when even slightly shaken. It is much used by the Chinese as a sauce and condiment, as it creates an appetite and is supposed to counteract the injurious properties of contaminated food; it is also used in medicine as an application for burns, scalds, eczema, leprous sores, etc. Soy is often exported from China to foreign countries, where it is extensively used in the manufacture of many European sauces."

"Wheat gluten (*mien-chin*) is prepared in China by washing starch and is used as a nutritious food. The Chinese also prepare "dextrin" (*mai-ch'ao*) from wheat, using it chiefly as a medicine, and considering it to be very nutritious, antifebrile, and quieting..." Address: Tariff Expert, Chinese Maritime Customs.

707. Found, N. 1931. A cheap substitute for milk. *China Medical Journal* 45:144-46. Feb.

• ***Summary:*** This review of five articles on soybean milk was originally contributed to the *Mansen no Ikai*, June 15, 1930.

"Only in 1900 was it scientifically studied and found to have a high protein content, reaching 44% in the soy bean flour.

"In Japan it was found that nitrogen from this source was easily absorbed, especially if taken in a mixed dietary.

"John Ruhrah of Baltimore first recommended and used it as a supplementary infant food in 1909.

"Dr. Ernest Tso (Peiping Union Medical College) used soy bean milk as the main diet of an infant six weeks old for eight months and showed that this allowed the occurrence of rickets, which, however, could be cured by adding calcium and cod liver oil to the diet.

"In Peiping in 1928 he made metabolic studies on two such infants and confirmed chemically the lack of calcium, sodium and chlorine as well as vitamines other than A and B. He also showed that the phosphorus content was adequate. The nitrogen absorption is up to 90% of the intake and nitrogen retention is from 17% to 26% of the intake. His conclusion was that soy bean milk proteins are easily digested by a young infant and are capable of producing continuous growth. For best results calcium must be added and cod liver oil fed for vitamines.

"Following this, formulae were made out to correct the deficiencies.

"Dr. VanBuskirk has shown that the mortality rate per 1000 Korean children during the first five years of life are, 180, 127, 102, 59 and 39, which is especially high for the second and third years as compared with most other countries.

"Recently at the Evangelistic Center, Seoul, a practical experiment has been made in feeding large numbers of children with this milk and it is found that the cost per feeding is only about three sen as compared with 10 sen for canned cream.

"The method of preparation used is as follows:

"Soak the beans over night in 8 times their weight of water.

"In the morning remove the shells [hulls] and grind in a mill.

"Boil for five minutes.

"Filter through a sieve.

"For 1000 grams of the filtrate:

"Add 20 grams of starch, previously made into a paste with a little of the filtrate and add 60 grams of sugar.

"Add 1.5 grams of calcium lactate.

"Add 1 gram of salt.

"This gives a mixture with 4.4% protein, 1.8% fat and 1.5% carbohydrate, the pH is 6.8.

"Codliver oil [Cod liver oil] must also be given.

"Drs. Hill and Stuart in Boston have also worked out a formula for a dried powder which gives good results in cases where cows milk is not tolerated. They report the main protein in soy bean as *glycinin* and give a detailed chemical analysis." Address: Severance Union Medical College, Seoul, Korea.

708. Kellogg, John Harvey. 1931. Soybeans as human food. II. *Good Health* (*Battle Creek, Michigan*) 66(2):20-22. Jan.
• ***Summary:*** Contents: Introduction. How to cook the soybean (in a stone jug in salt water under pressure). The extraordinary supporting qualities of the soybean (nutritional value, gives stamina). The soybean combats acidosis (basic-ash quality). A wonderful vegetable milk from the soybean (relieves food allergy caused by dairy milk). The great value of soy milk as a remedy. The easy digestibility of soy milk ("The author finds that plant milk is digested more easily than cow's milk"). The soybean, the vegetable analogue of meat ("The soybean differs from other legumes and cereals in the fact that it contains practically no starch. Its food values are protein and fat, as is the case with meat").

Note: This is the earliest English-language document seen (Aug. 2013) that contains the word "plant milk" (or "plant milks").

A large photo (p. 21) shows soybean sauce being made commercially in Japan. Address: M.D., Battle Creek, Michigan.

709. Ziegelmayer, Wilhelm. 1931. Ueber die Wirkung von Pflanzenmilch (Sojamilch) auf die Gerinnung frischer Kuhmilch [On the effect of plant milk (soymilk) on the curding of fresh cow's milk]. *Zeitschrift fuer Fleisch- und Milchhygiene* 41(1):212-17. Feb. 15. [12 ref. Ger]*
• ***Summary:*** Soymilk inhibits the ability of rennet to produce curds in cow's milk. Address: Potsdam, Germany (now in E. Germany).

710. Tihon, L. 1931. A propos d'une variété nouvelle de soja O-too-ton [Concerning a new variety of soybean, O-too-ton]. *Bulletin Agricole du Congo Belge* 22(1):120-23. March. [Fre]
• ***Summary:*** "The management of the plantations has sent us, in the chemical laboratory [at Leopoldville, Belgian Congo], a rather important sample of seeds of the soybean variety O-too-ton [Otootan], recently introduced from Atlanta, Georgia, USA, to the botanical garden at Eala. At the time of a former shipment of two other varieties, we have pointed out in the report of our studies (10 October 1928) the interest in this legume and given some generalities concerning its cultivation and possibilities for various uses." Tables compare O-too-ton with the former two varieties (Jaune [yellow] and Violette) in terms of size, weight, chemical composition, and mineral content. A detailed analysis of the oil of the yellow soybean is given.

The author then discusses the physiological value of the soybean and its by-products. It contains about twice as much protein as locally-consumed beans and much more oil. It can therefore help in improving the diet of the indigenous people, which is deficient in protein (*albuminoides*). It is also a rich source of vitamin E and other key nutrients. As noted in the author's previous report, the people of East Asia use the soybean to make a milk, a curded milk (probably tofu), and various fermented foods such as miso and soy sauce. Various studies have shown the milk to be very nutritious and digestible.

"The information given above has been, in large part, extracted from the *Bulletin de la Société d'Hygiène alimentaire et d'Alimentation rationalle de l'homme* (Vol. 18, no. 1, 1930)."

Note: This is the earliest document seen (Aug. 2003) stating that vitamin E is found in soybeans. Address: Director, Laboratoire de Chimie, Leopoldville [Congo Belge].

711. McCoy, Frank. 1931. Health and diet advice: The Oriental vegetable meat. *Los Angeles Times.* April 7. p. A6.
• ***Summary:*** For centuries Chinese and Japanese have been living on a diet that contains very little meat. They have been able to do this by using the soy bean to supply a large amount of the protein in their diets. "This bean is superior to all other dried beans inasmuch as it contains little or no starch and a very large amount of balanced protein." A table shows the high food value of soy bean flour by comparing its composition with that of spring wheat and lean beef. Soy beans almost always contain less than 2% starch, "the mature beans having no starch. This is one of the reasons why soy bean flour is often preferred over other flours in the diet of those suffering with diabetes." It is not possible to make bread of "entire soy bean flour" because it tends to agglutinate instead of forming a paste.

"The Chinese make a kind of cheese [tofu] of the soy curd which closely resembles our cheese in appearance and food value, but has an entirely different flavor. The Japanese prepare a vegetable milk by grinding the soaked beans and boiling thirty minutes in three times their bulk of water and then straining. This milk compares favorably with cow's milk and is often used for feeding infants."

Soy beans tend not to cause flatulence "because they do not contain much of the hemicelluloses which are abundant in other beans. The carbohydrates of the soy bean seem to be much more digestible."

Also from soy beans the Japanese manufacture a sauce known as shoyu. "This is made by mixing cooked and ground soy beans with salted water and inoculating the

mixture with a rice ferment. The sauce tastes a good deal like a salty meat extract."

There follows a recipe for making soy bean muffins using soy bean flour, baking powder, salt, egg, and milk. No wheat flour is used. Address: Dr., author of "The Fast Way to Health".

712. Hill, Lewis Webb. 1931. Infantile eczema with especial reference to the use of a milk-free diet. *J. of the American Medical Association* 96(16):1277-80. April 18. [11 ref]
• ***Summary:*** "Blackfan, in 1916, was the first to report an extensive series of cases in which skin tests were done, and he found that more than three fourths gave a positive skin test to one or more proteins... In 1916, Blackfan and, in 1920, Schloss fed a number of babies on a milk free food made from soy bean flour, lactose and washed butter. In all cases the eczema disappeared rapidly, but infants were made ill by the food... [Note: We can find no document showing that in 1916 Blackfan fed babies a milk free food made from soy bean flour].

"It seemed to [H.C.] Stuart and me (see Hill and Stuart, 1929) that it would be worth while to try to develop an easily available and digestible milk free food for use in cases of milk idiosyncrasy and eczema, and with the help of Dr. James L. Gamble we worked out a formula. We then got the assistance of Mr. L.D. Johnson of Mead Johnson & Co., who had prepared for us a large amount of the preparation and christened it 'Sobee.' The product is a light brown flour of the following composition: soy bean flour, 67.5%; barley flour, 9.5%; olive oil, 19.0%; sodium chloride, 1.3%; calcium carbonate, 2.7%...

"The first points to determine with regard to such a food are the following: 1. Is it tolerated by the digestive tract? 2. Will it maintain nutrition? We used the food for more than a year before allowing it to be put on the market and satisfied ourselves as to both of these points. There are a few babies, particularly those more than a year old, who will not take Sobee; most babies take it readily. There are also a very few who vomit it...

"The results are variable. If there is a fairly severe sensitization to milk protein, as evidenced by positive skin tests, the results with Sobee are uniformly good, and I have had some truly remarkable and most satisfactory cases in which it has been possible to cure entirely very severe and long standing eczema. I have also sometimes had the same sort of results with Sobee in cases with negative skin tests, and not infrequently when I have discontinued Sobee and have attempted to return to milk the eczema has come back and it has been necessary to return to Sobee, with prompt disappearance of the eczema." Address: 319 Longwood Ave., Boston; Dep. of Pediatrics, Harvard Univ. Medical School and Eczema Clinic, Children's Hospital, Massachusetts.

713. Chiu, Yan-Tsz. 1931. A simple method for the determination of oil in soybeans or soybean milk. *Lingnan Science Journal* 10(1):130-31. April. [Eng]
• ***Summary:*** This method yields results comparable with the usual Soxhlet ether extraction method (within 1%), but requires less time and simpler apparatus. Address: Dep. of Chemistry, Lingnan Univ., Canton, China.

714. Horvath, A.A. 1931. The soy bean as human food. *Industrial and Engineering Chemistry, News Edition* 9(9):136. May 10.
• ***Summary:*** Contents: Historical background. Properties and uses. Growing interest in soy bean preparations in different countries. Soya foundation proposed.

This article begins: "The soy bean is a plant of early cultivation in China. Its use dates back to the beginning of China's agricultural age under the Emperor Shen Nung. It is mentioned in the *Ben Tsao Gang Mu*, the ancient 'Materia Medica' written in the year 2838 B.C. This bean is remarkable for its richness in oil (average 20 per cent), protein (average 40 per cent), and ash (average 5.5 per cent), and the almost complete absence of starch.

"Since time immemorial the soy bean has been the most universal article in the Chinese dietary. It is also extensively used for food in Korea, Japan, Indo-China, the Philippine Islands, the Dutch Indies, Siam, and India. The Chinese make practically no use of dairy products, and the bulk of the people consume a very meagre amount of meat. Yet, in spite of this, they have lived for centuries on what appears to be a remarkably well-balanced diet by the use of the soy bean."

"Soy bean milk has been extensively used throughout the Orient since its discovery by the Chinese philosopher Whai Nain Tze long before the Christian era. This milk does not coagulate on boiling, but acids and rennet produce a curd-like precipitate. According to Fisher, soy bean milk gives a much finer flocculent precipitate in the stomach than cow's milk. Its period of stay in the stomach is shorter. Its ingestion results in a feebler secretion of gastric juice; the period of secretion is also shorter. The peristaltic motion of the stomach is less after the ingestion of soy bean milk and more coordinated than in the case of cow's milk.

"If soy bean milk is boiled with a solution containing magnesium chloride or calcium sulfate its proteins are precipitated. The cheese-like product obtained by pressing this precipitate is generally known as bean curd and is called in China 'tofu.' If fresh, it contains approximately 8 per cent of protein and 3 per cent of fat, and is digested, according to Oshima, to an extent of over 95 per cent. Fried tofu resembles beef in its content of protein and fat, and is called in China "the meat without the bones."

"In the Orient tofu forms a very popular and almost indispensable dietary article." Also discusses: Miso, chiang, Worcestershire sauce ("liquid soy sauce... when spiced, is sold under the label 'Worcestershire sauce.'"), W.J. Morse of the USDA, soy bean foods in Europe, Prof. Berczeller,

and work at the Physiological Institute of the University of Vienna under Prof. Durig and Dr. Wastl.

"In Russia, the soy bean is fondly called 'our young revolutionary Chinese ally.' 'Plant soy beans and you plant meat, milk, egg omelets,' is the newspaper cry. Efforts have been made all year to introduce soy bean dishes to restaurants and homes. A Soy Institute was recently organized in Moscow, as well as a special exhibition of soy foods at which 130 varieties of soy dishes, including cutlets, pastry, salads, candy, and beef, were shown. A dinner, prepared entirely of soy beans, was served to representatives of trade unions, factories, Red Army, and the Soviet press. The food was unanimously declared excellent...

"Soya foundation proposed: There are reasons to expect that the United States will become the leader in introducing the soy bean in the daily diet of the white race. An important step should be the establishment of a soya foundation in order to promote the creation of a national soya food research institute." Address: Health Section, Bureau of Mines, Pittsburg, Pennsylvania.

715. Chang, Ke-Chung; Tso, Ernest. 1931. A soluble soybean milk powder and its adaptation to infant feeding. *Chinese J. of Physiology* 5(2):199-203. May. [1 ref. Eng; chi]
• ***Summary:*** A vegetable "milk" was obtained from the common yellow soybean, *Soja max*. A child born on 27 Aug. 1930 at the Peking Union Medical College Hospital weighed only 2.84 kg (6.25 lb) at birth. He was nursed for one week and then fed alternately cow's milk formula, fresh soybean milk, and three powdered soybean milk formulas (each sweetened and fortified with calcium lactate for 84 days). The child's rate of growth on the powdered soybean milk "surpassed that on either fresh soybean milk or cow's milk feedings. As shown in fig. 2 [a graph] it is even better than the average rate of growth of nursing infants." The apparatus and process for spray-drying the soluble soybean milk is described. Address: 1. Dep. of Chemistry, Nan Kai Univ., Tientsin; 2. Dep. of Medicine, Peiping Union Medical College, Peiping.

716. Rosenberger, E.T. 1931. The soy bean milk as a food. *Missionary Review of the World* 54(5):371-72. May.
• ***Summary:*** Results obtained in feeding milk to infants at the Social Evangelistic Center, Seoul, Korea. A recipe for preparing the milk is included. Address: Child Welfare Dep., Social Evangelistic Center, Seoul, Korea. Phone: GTUL 841-9811.

717. Tso, Ernest; Chu, Fu-T'ang. 1931. Nitrogen metabolism in infants on graded intake of soybean "milk" proteins. *Chinese J. of Physiology* 5(3):287-94. Aug. [3 ref. Eng; chi]
• ***Summary:*** In young infants fed on soya-bean "milk" furnishing 120-150 gm-calorie per kg body weight, adequate nitrogen retention is obtained when 18% of the calories is provided in the form of protein. On cow's milk feeding, in which 10-14% of the calories is furnished in the form of protein, 38-42% of the nitrogen intake was retained, while on soya-bean "milk" in which 8-18% of the calories was provided as protein, 14-30% of the nitrogen ingested was retained. At different levels of intake with soya-bean "milk," the ratio of nitrogen absorbed to nitrogen ingested is approximately constant at 80%, the corresponding figure in the case of cow's milk being 95%. Address: Peking Union Medical College, Peking.

718. Eldred, Myrtle Meyer. 1931. Your baby and mine. *Los Angeles Times.* Sept. 30. p. A6.
• ***Summary:*** If a baby has a personal sensitivity to cow's milk, the mother should try different kinds of milk–such as goat's milk. "Soybean milk, obtainable in commercial form from your druggist, is a preparation designed for babies who develop eczema from cow's milk. This is a nourishing form of protein, and may have no bad effect on baby."

Note: The first non-dairy infant formula sold commercially in the USA was Sobee, introduced in Sept. 1929, by Mead Johnson of Evansville, Indiana. Sold in powdered form, it was based on soy flour.

719. Eldred, Myrtle Meyer. 1931. Your baby and mine: Health and habit problems. *Toronto Daily Star* (*Canada*). Sept. 30. p. 25.
• ***Summary:*** A small percentage of babies are sensitive to cow's milk. "Soybean milk, obtainable in commercial form from your druggist, is a preparation designed for babies who develop eczema from cows' milk. This is a nourishing form of protein, and may have no bad effect on baby."

720. Chiu, Yan-Tsz (Chao, En-tz'u). 1931. Studies of the physical and chemical properties of soy bean milk. *Lingnan University Science Bulletin* (*Canton*) No. 4. 38 p. Sept. [24 ref. Eng]
• ***Summary:*** This article is based on his 1927 PhD thesis, Cornell Univ., New York; it has the same title and is the same length. Address: Prof. Analytical Chemistry, Lingnan Univ., Canton [China].

721. *Madison Survey* (*Madison, Tennessee*). 1931. A valuable but neglected food. 13(41):163. Oct. 21.
• ***Summary:*** "About half of the people of the world obtain their protein from the soybean. The soybean protein is complete and superior in some respects to the protein in milk and flesh foods. The protein of a pound of soybeans is equal in nutritional value to two pounds of beef and costs much less. It contains none of the objectional [sic, objectionable] features found in the protein of meat. The broken-down, worn-out dead matter–the result of metabolism–of flesh foods is injurious to the liver, kidneys, and blood vessels."

"The Madison School family is enjoying the milk made

from soybeans. Already the medical profession is realizing the value of this milk for infant feeding. The milk and cheese of the soybean is a wholesome, delicious food."

"It has been discovered that the average per cent of tuberculous milk in the great cities of England is 7.36. There are over a million tuberculous milk cows in England and Wales. And there are only four hundred dairies in all England and Wales that produce an A-grade milk."

722. Horvath, A.A. 1931. The soybean. *Co-operative Manager and Farmer* 21(2):38-40. Oct. Address delivered at the laboratory of the Harshaw Chemical Co., Cleveland, Ohio. 21 May 1931. [2 ref]

• ***Summary:*** "The following address was delivered by Dr. A.A. Horvath at the laboratory of The Harshaw Chemical Company, 1945 East 97th St., Cleveland, Ohio, May 24th, 1931.

"Twelve years ago [i.e., in about 1919] I had the good fortune to go to China and my first impression was that Occidentals have a number of things to teach the Chinese, but I have found that we have more to learn from them than we have to teach them. If we consider what nation was able to preserve its national character and its independence for a long period of time we must come to the conclusion that really the Chinese nation is the only nation which exists after 5,000 years. So we have to learn from the Chinese how to live and how to live in a reasonable way. China has suffered not once but many times from severe economic depressions but has recovered from them and I think we must pay more attention to the way the Chinese live and what they are using as food."

"During the Civil War in this country, soybeans were roasted and used by the Southerners. They were called 'coffee beans'... Soybean flour is used in ice cream. It is said that manufacturers are using it for the same reasons,– better taste, more smooth and better keeping qualities. (See article in Journal of Confectioners and the Ice Cream World of August, 1930)." Prof. Abel of Johns Hopkins found soy sauce stimulated digestion of carbohydrates.

"The soybean is peculiar for its richness in phosphorus and also richness in a certain substance, lecithin. This lecithin is an organic compound of phosphorus and belongs to a group of lipoids. Soybean contains around 1.6 per cent lecithin. This substance is one of the constituents of egg yolk and is the one which gives it its high value. It is a necessary constituent for the building up of the nervous system of human beings. Dr. Levine, of the Rockefeller Institute in New York, found that in soybean there is cephalin, a constituent of the human brain, and so we have two particular substances, which are used as material for the building of our nervous system."

The Chinese soak soybeans overnight and then grind them between millstones, to get a cream. This cream is filtered through cheesecloth, then diluted with water and boiled. "They get a milk such as almond milk which is made from sweet almonds. Soybean milk contains oil and protein necessary to emulsification.

"This soybean milk has been used in China since time immemorial and in the streets of Peking one can see men carrying bottles labeled similar to our milk here. This soybean milk, if kept at room temperature for hours, will turn acid and coagulate. Curds are formed exactly as curds are formed in ordinary milk. But the Chinese cheese [tofu] is made not by turning the milk acid but by curding it in a special way. They use the mother liquid from sea water after table salt manufacture [nigari] or a little plaster of paris" [calcium sulfate].

723. **Product Name:** Madison Soy Milk (Homogenized Fluid. Renamed Kreme O'Soy Milk by April 1937 and Kreme-O-Soy by 1947) [Plain, or Chocolate].
Manufacturer's Name: Madison Foods.
Manufacturer's Address: Nashville Agricultural Normal Institute, Madison, Tennessee.
Date of Introduction: 1931. October.
Ingredients: Fall, 1948: Soybeans, soy oil, dextrose, calcium phosphate, sodium chloride.
Wt/Vol., Packaging, Price: 15 oz, 19 oz, or 20 oz can.
How Stored: Shelf stable.
Nutrition: Protein 3.5%, fat 3.9%, carbohydrates 4.9%, ash 0.7%, calcium 0.34%, iron 4.4 mg/k.
New Product–Documentation: *Madison Survey* (Madison, Tennessee). 1931. "A valuable but neglected food." Oct. 21. p. 163. "The Madison School family is enjoying the milk made from soybeans."

Hansen, J.E. 1932. "A variety of foods from the soybean." *Madison Survey* (Madison, Tennessee). Jan. 27. p. 15. "Were our readers visiting the Madison Food Factory, they would be surprised to learn of the many ways in which the soybean is used. Bread, crackers, milk, and cheese are made from this important bean."

Madison Health Foods. 1934? *Vegetable milk and cheese. How they are served. Manual No. 2.* Madison, Tennessee. 21 p. Undated. Several recipes call for "soy milk" or "soybean milk." On the last page are listed "Products for sale by Madison Health Foods Inc. (Madison, Tennessee)": These include "Soy milk, 14 or 30 oz... Write for information and prices."

Madison Survey (Madison, Tennessee). 1937. "Experimental work with foods." 19(9):35-36. March 3. "Soy milk, fresh every day, is used in quantities by the institution. Soy milk in cans is one the market, its sale increasing continually as people become acquainted with the value of this product."

Note: We cannot be certain that Madison Foods had canned soy milk on the commercial market before March 1937. The earlier products may have been fresh soy milk, made by Madison Foods in quantity, and served in the

school's dining room and hospital.

724. Siddall, A.C.; Chiu, Y.T. 1931. A feeding experiment with soybean milk. *Lingnan Science Journal* 10(4):387-91. Oct. 1 plate at end. [7 ref]

• ***Summary:*** "For various reasons soybean milk has not found general favor in this [Kwangtung] province, and with the view of emphasizing the great value of this food and perhaps aiding in making it popular the following infant feeding experiment was undertaken at Canton Hospital starting April 1930 and closing June 1931. This period of almost 14 months is perhaps the longest feeding experiment of soybean milk yet presented."

Starting at the age of 6 weeks, a Chinese infant was fed on soybean milk for 13 months and 3 weeks. A graph shows that his growth was normal; at the age of 15 months, he weighed 10 kg and measured 75 cm in length. The soybean milk was supplemented with rice porridge, vegetables, eggs, and cod liver oil. The somewhat disagreeable taste of the soybean milk and its laxative factor were partially overcome by the addition of agar-agar, malt sugar, or rice water. Refined soybean oil added to the whole soybean milk in quantities of 10 cc daily caused no digestive disturbance.

Photos show (see next page): (1) Baby Sz Ling, age 6 months. (2) Baby Sz Ling, age 13 months. Address: Canton Hospital and Dep. of Chemistry, Lingnan Univ., Canton, China.

725. Webber, P.A. 1931. Facts concerning the soybean. *Madison Survey* (*Madison, Tennessee*). 13(45):177-78. Nov. 18; 13(46):181-82. Nov. 25.

• ***Summary:*** "The soy bean is the only seed, as far as we know, which contains both the water soluble and the fat soluble vitamins."

"In 1917 during the World War, a special committee appointed by the Department of Agriculture, while searching for a cheaper source of protein for human consumption, discovered the soy bean. Shortly afterwards, soy bean in the form of flour was manufactured and this has been on the market now for some time. The entire soy bean ground into flour contains double the amount of protein and calories present in beefsteak."

"The soy bean is also very rich in lecithin. It has been clearly shown the soybean oil contains fat soluble vitamins A, D, and E."

A soybean milk can be prepared "in the same way as almond milk... Many tests have been made in the pediatrics departments of various universities in the United States showing that soybean milk can be used as the only source of protein in the nutrition of young infants." Also gives details on tofu. "In the Orient, 'tofu' forms a very popular and almost indispensable dietary article. This 'tofu' can be used in many different dishes, taking the place of meat or eggs. It is delightful as a constituent of roasts, omelets, etc."

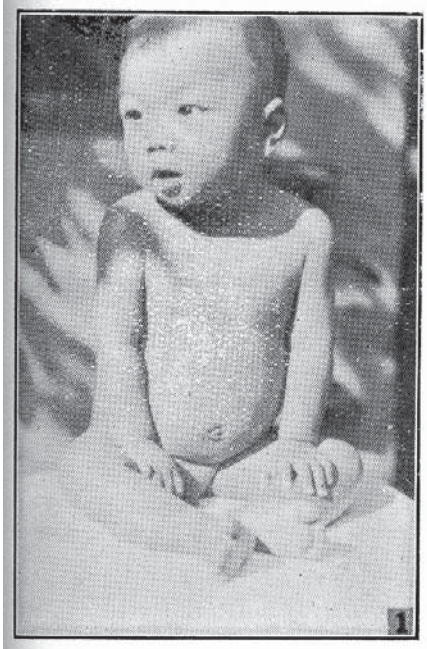
"In Russia the soybean is taking prominence in the dietary of the people there. 'Plant soybeans and you plant meat, milk, egg omelets,' is the newspaper cry. A Soy Institute was recently organized in Moscow as well as a special exhibition of soy foods at which one hundred thirty varieties of soy dishes, including cutlets, pastry, salads, candy, and beef were shown. There is every reason to believe that the United States will become the leaders in introducing the soybean in the daily diet of the white race."

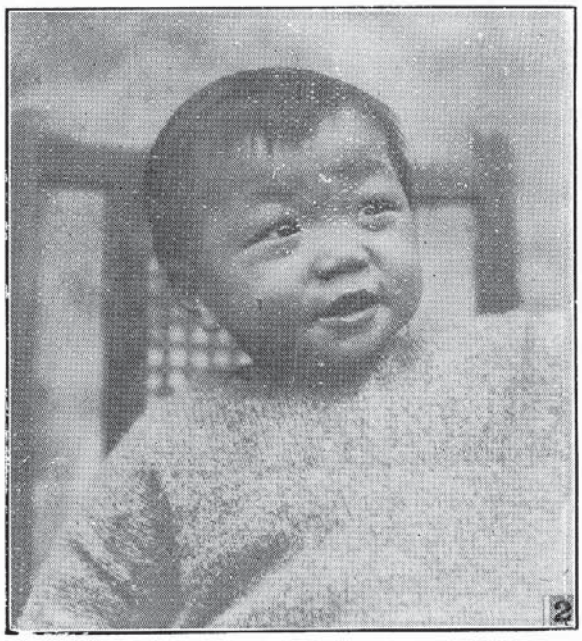
"The following are a few of the ways in which it is being prepared and used in the United States at the present time: Soybean flour is being used by large bakeries as a constituent of bread, rolls, pastry for pies, cakes, etc. Baby foods are coming on the market containing certain percentages of soybean milk. Chocolate malted milk containing a good per cent of soybean products is now manufactured and sold by several companies. For some time, manufacturers of diabetic foods have been placing on the market productions made largely from the soybean. The soy sauce, otherwise known as Oriental 'Shoyu' has been popularized by the Chinese chop suey restaurants, and is now being used in many dishes made in the home. The bean curd is being canned and manufactured in various other ways and sold on the market. Powdered soybean milk has become a commercial product."

"For several years the Health Food Department of the Nashville Agricultural Normal Institute has been experimenting with this most interesting legume, and is now offering two basic products which may be used in many nutritious and appetizing dishes: the soy cheese and soybean flour. These two products have been used in scores of recipes tested out at the Madison Rural Sanitarium, the Nashville Vegetarian Cafeteria, and other health food places. Just recently several different recipes for the use of soybean flour bread, rolls, and cakes have been perfected. These with other recipes, will be sent free to those who inquire for them."

"A move to substitute vegetable proteins for animal proteins is a move in the right direction, and there is no plant so promising as the soybean. A soybean research foundation has been suggested. Large space at the coming World's Fair in Chicago [Illinois] will do much to bring this important but neglected food to the attention of the American people."

Note: This article was reprinted as a little 8-page booklet (15 x 9 cm, undated) by T.A. Van Gundy of La Sierra Industries. This shows that Van Gundy was aware of the pioneering work of Madison Foods at an early date. On the last page of Van Gundy's booklet is the following paragraph which does not appear in P.A. Webber's original article: "For some time the founders of La Sierra Industries, Arlington, California, have been experimenting with this most interesting legume and are now prepared to offer a number of products which may be used in many nutritious and appetizing dishes: canned soys, soy soup, soy flour, soy cheese, soyco (a coffee substitute), smoein (vegetable smoked meat), soy breakfast food and soy-loaf." What a





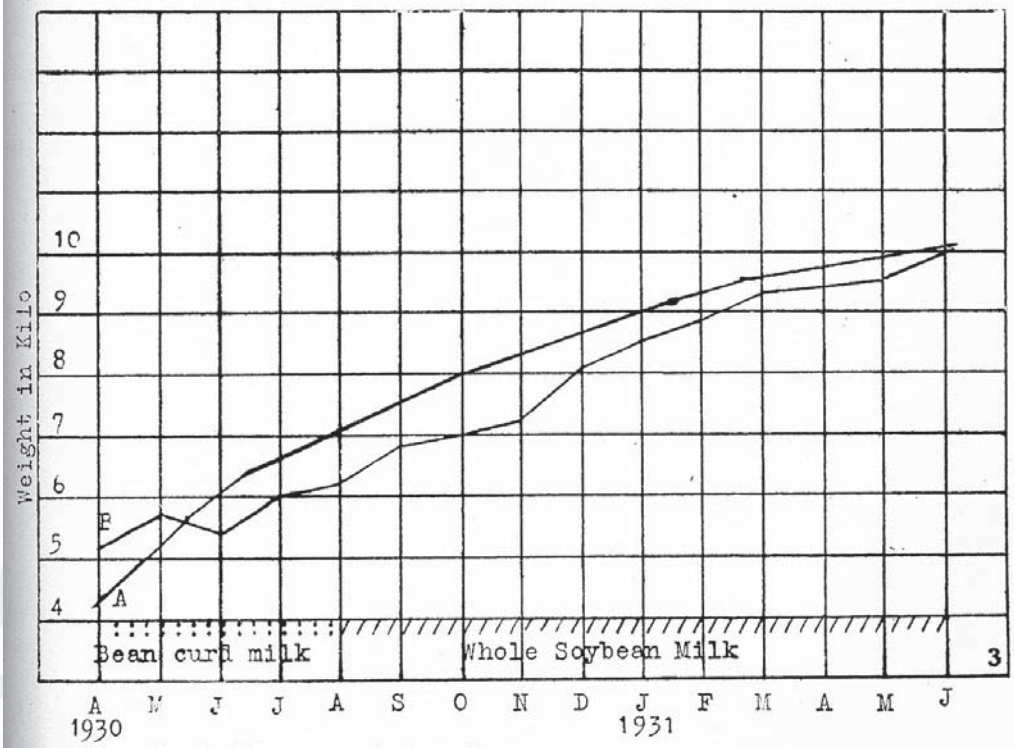


Fig. 1. Baby Sz Ling, age six months.

Fig. 2. Baby Sz Ling, age thirteen months.

Fig. 3. Growth of Chinese infant fed on soybean milk is shown by line B. Average rate of growth of American infants (Holdt) is show by line A.

shame that this little booklet is not dated! At least we know it was printed after November 1931. Address: PhD, Madison, Tennessee.

726. *Food Manufacture* (*London*). 1931. Trade notes: Edible soya flour. Soyolk in health drinks and foods. 6(11):334-35. Nov.
• ***Summary:*** "The pure edible soya flour (Soyolk) with a 20 per cent. fat content, prepared from the soya bean by the Berczeller process, is meeting with a ready response from many of the leading food manufacturers in U.S.A. After importing Soyolk from the British company for just over a year, the American concessionaires operating this process, we are informed, have commenced milling activities in a large plant at Nutley, New Jersey, and are supplying numerous bakers, confectioners, and food manufacturers with their product, known under the trade name of Soyex." Discusses the many types of American foods in which Soyex is used.

"A new field which Soyolk is said to be invading is that of the ready-to-take health food drink... A breakfast food in which soya bean flakes or puffed beans appear is one of the latest applications of this valuable food material, and salted soya beans promise to compete with salted almonds, the new invader being not only considerably cheaper in cost, but also easier to digest.

"English manufacturers will not be slow to follow the lead given by those in the American food industry..."

Note: This is the earliest English-language document seen (Dec. 2012) that uses the term "salted soya beans" to refer to soynuts. Address: UK.

727. Genin, G. 1931. La caséine végétale: Propriétés et emplois. I. [Vegetable casein: Properties and uses. I.]. *Industrie Chimique* (*L'*) 18(214):784-85. Nov. Abstracted in Le Genie Civil 100(14):352. April 2, 1932. [1 ref. Fre]
• ***Summary:*** In this article are described the preparation of the vegetable milk from soybeans from which the casein is derived, the preparation of casein in industry, and its industrial uses. To make vegetable casein the oil is first removed from soybeans. Carbon tetrachloride can be used. The protein is then extracted from the defatted cake and precipitated, using acetic acid or soda. (The Chinese and Annamites prepare vegetable casein in sheets, which are very delicate and yellow in color.) The coagulated liquid is separated from the liquid supernatant, washed and dried. The resulting product (which may be treated with formol) can be used to make galalithe/galalith (a hornlike or plastic, often transparent substance), adhesives, porcelain, oil-based paints, paper coatings or sizings (to make paper more resistant to and impenetrable by water), soap, insecticides, and cellulose-type products. Address: Ingenieur Chimiste E.P.C.I.

728. Wan, Shing. 1931. A comparison of the dietary properties of "soybean milk" and cow's milk. *Chinese J. of Physiology* 5(4):353-62. Nov. [12 ref. Eng; chi]
• ***Summary:*** "It is evident... that before soybean milk can be recommended as a general substitute for cow's milk, further work is necessary.

"We have therefore conducted some further experiments to compare soybean milk with cow's milk and repeated some of Tso's experiments.

"The nutritive value of soybean milk has been compared with that of cow's milk (Klim). The fresh soybean milk is poorer in vitamin A but richer in vitamin B than cow's milk..." Address: Dep. of Biochemistry, Peiping Union Medical College, Peiping.

729. Savault, Alf. 1931. [Soybean milk]. *French Patent* 721,422. Dec. 22. [Fre]*

730. Lane, Dorothy Engelhard. 1931. The nutrition of twins on a vegetable diet during pregnancy, the nursing period and infancy. *American J. of Diseases of Children* 42:1384-1400. Dec. [35 ref]
• ***Summary:*** The writer contends that while cow's milk has many advantages, it also has disadvantages" which are then summarized.

She arranged an experiment with an expectant mother who gave birth to healthy twins. The twins were nursed with mother's milk, supplemented at first by lactic acid cow's milk. A little orange juice and cod liver oil were given at each feeding. Gradually a vegetable milk was substituted for that from the cow and became the only milk used. This artificial milk was prepared by grinding unblanched almonds to make three level tablespoonfuls, and unroasted peanuts to make half a tablespoon. To these were added one half tablespoonful of wheat flour, one-fourth tablespoonful of shorts, one tablespoonful of soy flour, and one half tablespoonful of corn starch. Vegetable water was prepared from celery, chard carrots, string beans and lettuce according to season. One tablespoon of dextri-maltose and a little salt were added. The milk was rubbed through a fine purée sieve, so that it could be fed from an ordinary nursing bottle. A twenty-four hour supply could be prepared in half an hour.

At the age of two years and eleven months, they have made sturdy physical and mental progress. Their great endurance and strength call for special comment. Note: This vegan diet proved satisfactory in all respects for the nutrition of the mother during pregnancy and for her twins. Address: B.S., Berkeley, California.

731. Mader, A. 1931. Die Behandlung der Saeuglingspyurie mit Soja und ihre Wechselbehandlung [The treatment of infant pyuria with soya and its alternative treatment]. *Klinische Wochenschrift* 10(51):2346-50. Dec. (Chem. Abst. 26:2767). [8 ref. Ger]
Address: Universitaets-Kinderlkink Frankfurt a. M.

732. **Product Name:** Soyex Malt-Cocoa Drink, and Soyex.
Manufacturer's Name: Soyex Co.
Manufacturer's Address: Nutley, New Jersey.
Date of Introduction: 1931. December.
New Product–Documentation: W.L. Burlison and O.L. Whalin. 1932. *Journal of the American Society of Agronomy* Aug. p. 594-609. "The production and utilization of soybeans and soybean products in the United States." See p. 608. "Soyex-Malt-Cocoa drink" and "Soyex" are listed as two Canadian soybean food products.

W.L. Burlison. 1936. *Industrial and Engineering Chemistry* 28(7):772-77. July. "The Soybean: A Plant Immigrant Makes Good." See Table II, p. 775. States that these products were on the market during the latter part of 1931. Note: This is the earliest commercial malted soymilk product seen.

733. Bobroff, P.S. 1931. [Properties of soymilk]. *Profilaktichna Meditsina* (*Kharkov, USSR*). [Rus]*

734. Horowitz-Wlassowa, L.M.; Oberhard, I.A.; Gutermann, B.J. 1931. Ueber die Zubereitung der Sojamilch [On the preparation of soymilk]. *Schriften des Zentralen Biochemischen Forschungsinstituts der Nahrungs- und Genussmittelindustrie* (*Moscow*) 1(5):157-69. Summarized in Chemisches Zentralblatt 2:1985 (1932). [7 ref. Rus; ger]
• ***Summary:*** Soybean meal is soaked for 8 hours. Steam is passed through to deodorize it. Address: USSR.

735. Oberhard, I.A. 1931. Desodorierung von Sojabohnen [Deodorization of soybeans]. *Schriften des Zentralen Biochemischen Forschungsinstituts der Nahrungs- und Genussmittelindustrie* (*Moscow*) 1(5):175-81. [Rus; ger]
• ***Summary:*** For roasted products the shelled, soaked, and ground beans are dried at 150ºC; for products not requiring a stable emulsion, at 110-120ºC. For soybean milk the beans are steamed or treated with 0.5% formaldehyde, and dried at 60-65ºC. Hydrogen peroxide is unsuitable. Address: USSR.

736. Sadikov, W.S.; Franzusowa, M.A.; Chaletzkaja, E.G. 1931. Verfahren zur Herstellung von Sojabohnenmilch [Process for the production of soymilk]. *Schriften des Zentralen Biochemischen Forschungsinstituts der Nahrungs- und Genussmittelindustrie* (*Moscow*) 1(5):182-92. Abstracted in Chemisches Zentralblatt 1932. II. p. 1985-1986. [22 ref. Rus; ger]
• ***Summary:*** Undesirable tastes are removed by shaking with fat, which is then skimmed off and the milk emulsified with fresh fat.

Note: This is the earliest document seen (Feb. 2010) that discusses commercial soymilk production. Address: USSR.

737. Winokurov, S.I.; Palladina, L.I. 1931. Biochimiji sojevogo moloka [Biochemistry of soya milk]. In: Rep. 2., Caucasian Physiology Congress, Borjom. See p. 57-58. English Abstract in Nutrition Abstracts and Reviews (1932) 2:30. [Rus]*
Address: USSR.

738. Bruening, Hermann. 1931. Ueber die Verwendung von Soja, inbesondere von Sojamehl in der Kinderpraxis [On the use of the soybean, especially of soybean flour in pediatrics]. *Archiv fuer Kinderheilkunde* (*Stuttgart*) 93:81-91. [20 ref. Ger]
• ***Summary:*** Supports the use of soybean milk in infant dietaries. Edelsoja is mentioned on p. 86. Address: Universitaetskinderklinik, Rostok, Germany.

739. Bryene, Dame Alice de. 1931. The household book of Dame Alice de Bryene, of Acton Hall, Suffolk, Sept. 1412–Sept. 1413. Translated by Miss M.K. Dale and edited by Vincent B. Redstone. Ipswich, England: W.E. Harrison. For Suffolk Institute of Archaeology and Natural History. viii + 145 p. See Appendix III, p. 120, 137. 22 cm. *
• ***Summary:*** Mentions almond milk. Dame Alice de Bryene lived from 1360 to 1434 or 1435. Address: England.

740. Ochse, J.J. 1931. Vegetables of the Dutch East Indies. Buitenzorg (Bogor), Java: Archipel Drukkerij. xxxvi + 1005 p. See p. 366, 389-93, 398, 407-08, 732, 943-71. An entirely revised and greatly enlarged second edition of his Tropische Groenten (1925). Translated by Mr. C.A. Backer. Illust. 25 cm. Index. [10 ref. Eng]
• ***Summary:*** This translation (by Mr. C.A. Backer, the reputed ex-Botanist for the flora of Java) of Ochse's classic "may be taken as an entirely revised and much enlarged second edition of *'Tropische Groenten'* (Tropical Vegetables), which booklet was published in July 1925." The author, a Dutchman who confined his research to Java and Madoera, described the tempeh-making process in detail, saying that the mold used was *Aspergillus oryzae* and that it was obtained from a former batch of tempeh.

Page 366 discusses ontjom (témpé boongkil in Javanese), tetèmpè, and dagè, all made from peanuts. Page 372 notes that the pigeon pea (*Cajanus cajan*) can be used to make témpé bosok.

Pages 389-93 discuss the soya bean, which has various names in local languages. Malay: Katjang djepoon or Kedele. Javanese: Dekeman or Dekenan, Dele, Demekan, Gadele, Kedele, Kedoongsool, or Dangsool. Sundanese: Kadele, Katjang booloo, Katjang djepoon, Katjang kadele. Madura: Kadhele, Kadhellee, or Kedeleh. A description of the plant is given.

Illustrations show: (1) A young soybean plant with leaves and pods (half size). (2) A bamboo scaffolding or curing frame, in tripod form with 3 horizontal supports, used for drying bunches of soybeans.

Soybeans come in two main forms: Light yellowish-brown seeds, and black seeds. The latter are used to make *ketjap* (Indonesian soy sauce). "Of the ripe seeds *pélas* (Jav.) is made, by mixing them with grated young coco-nut [coconut], salt, and other ingredients. The mixture is wrapped in a banana leaf and steamed.

"The seeds can also be roasted and afterwards pounded. The *boobook, boobook delé* or *boobookan* (Jav.) is eaten in the shape of powder, usually with the addition of lombok and other ingredients."

Note 1. This is the earliest English-language document seen (Nov. 2012) that mentions Indonesian roasted soy flour, which it calls *boobook, boobook delé* or *boobookan.* As of Nov. 2012 this roasted soy flour is usually called *bubuk kedele* or *bubuk kedelai.*

"The seeds are mixed with a porridge of rice-meal and water and afterwards fried in coco-nut oil. This dish is called *rempeyek* (Jav.). It consists of brown slices in which the black *kedele*-seeds are scattered. *Rempeyek* is eaten either as a delicacy or with the rice table. "Témpé [tempeh, p. 391] is a much used product. In East- and Central-Java it takes the same place as the ontjom in West-Java. It is prepared in much the same way as *ontjom,* and the reaction is brought about by the same fungus, *Rhizopus Oryzae,* Went et Prinsen Geerligs, which is transmitted by *ragi.* The seeds are cooked and, after they have cooled, put in a basket. By stirring, rubbing and even by treading, coupled with repeated washing with fresh water, one tries to remove the testa [seed coat / hull] from the seeds. When this has been done, the seeds are put on hurdles (*sasak*) covered with banana- or waroo-leaves. Now the so-called *beeang,* i.e. rests of the fungus used for a former batch, is sprinkled over them and the mass is turned over on other sasaks. The *témpé*-cakes treated in this way are kept indoors and after two or three days the fungus has spread sufficiently for giving a light grey colour to the cakes, which then are soft and dry and ready for use. They are sold on the markets either cut into small pieces or divided at pleasure, according to the amount of money the buyer wishes to spend. *Témpé* is used, fried, in the *sayor* or prepared with all sorts of ingredients.

"Other products for the native market are *tahoo* [tofu] and *takoäh* [pressed tofu; Chinese: doufugan]. Both are eaten either boiled or cut into small slices, fried and added to *gado-gado* or, lombok rawit being added, as a side dish.

"For the preparation of *tahoo* or *takoäh* the seeds are soaked, ground fine, boiled and pressed through a cloth. The juice which is pressed out is mixed with salt, vinegar, coco-nut milk or with unburned gypsum (so-called *batoo tao*), imported from China. By this treatment a white gelatinous mass is formed, which, after cooling, can be cut into pieces."

"Wet *tahoo* does not keep well for a long time. For this reason it is soon made into *takoäh.* For this purpose the *tahoo* is cut into pieces, folded in pieces of cloth, pressed in order to remove part of the water and next boiled in a decoction of koonir [turmeric]. The product obtained in this way has an intense yellow color and is a much relished delicacy, especially with lombok rawit [fiery dwarf chilies]."

Taotjo [Indonesian-style miso] is a porridge made of soybeans and rice meal. The soybeans are soaked, dehulled (the testa removed), cooked, and left to cool. Then they are mixed with the meal of rice (regular or glutinous), which has been previously roasted. "The porridge obtained in this way is poured on winnows (*tampah* [winnowing trays]) covered with waroo-leaves, sprinkled with *ragi* or *beeang,* probably of *Aspergillus Wentii,* Wehmer, and covered with leaves. The filled tampahs are piled on each other and left alone till the cakes are very mouldy. Then they are dried in the sun, soaked in brine and mixed with sirup of *arèn* [sugar palm] and with *tapè* [*tapai;* a sweet fermented cake] of rice or glutinous rice. Next the porridge is placed out of doors. After the seeds have become soft by this treatment, which takes three or four weeks, the *taotjo* is ready for use.

"*Taotjo* must be boiled, otherwise the smell is to strong. It is eaten with cooked or raw vegetables. It is used for dressing some dishes of meat or fish, whilst it is also a material of which diverse side dishes are made."

Note 2. This is the earliest English-language document seen (March 2009) that uses the word "taotjo" to refer to Indonesian-style miso.

"According to De Bie (1901), *tao djee* [*tao dji; doushi, douchi*] is *taotjo* alternating with layers of cooked whole *kadelè*-seeds. This stuff is put into a pot or basin with some salt and boiled arèn-sugar. The mass is left to itself during a few days till the *taotjo* has become pervaded by the salt and the sugar and has assumed a uniformly brown colour. Note 3. *Tao djee* [*doushi*] is fermented black soybeans, which are not the same as *Taotjo* [Indonesian-style miso]. De Bie (1901) seems to have made a mistake.

"Of the black *kadelè*-seeds *soya* [soy sauce] is made, exclusively by the Chinese and the natives. First the seeds are cooked in a strong solution of salt. After diverse manipulations the cooked seeds are mixed with arèn-sugar and so-called soya-condiments and the mixture is concentrated till the salt begins to crystallize. By diluting this product with more or less water one obtains the diverse qualities of *kètjap* or *soya* found in commerce."

The "Pemimpin Pengoesaha tanah" of 15 Jan. 1915 lists various ingredients that can be used with black soybeans in making ketjap. "Young seedlings, obtained, like *taogè* [*taugé,* bean sprouts], by fermenting, are called *ketjambah kedele;* they are cooked and eaten as *petjel* (Jav.) with the rice (*ganteng,* Jav.)"

"Finally young leaves of *Kadele* can be eaten, raw or steamed, as *lalab.*

Page 398 describes *dagè* and *témpé bengook* made from these seeds of the velvet bean (*Mucuna pruriens*). Roasted tempeh are also discussed.

Pages 407-08 states that the seeds of the *Katjang oji*

(rice bean) can be used for the preparation of tempeh.

Pages 414-15 state that, when they have no soybeans, the Chinese use mung beans (*Katjang eedjo*) to make tofu and takoah, but they are most widely used to make mung bean sprouts (*taogè*).

Page 634 mentions témpé bosok (overripe tempeh) made with the foul-smelling bruised leaves of the plant *Paederia foetida*. Page 732 also mentions overripe tempeh.

Note 4. This is the earliest English-language document seen (Dec. 1998) which contains detailed information about tempeh, or which refers to tempeh as "témpé."

Note 5. This is the earliest English-language document seen (April 2013) that uses the word "tahoo" or the word "takoäh" to refer to tofu. Address: Buitenzorg (Bogor), Java, Indonesia.

741. Terroine, Emile. 1931. De l'emplois des laits artificiels dans l'élevage du bétail [On the use of artificial milks for raising animals]. *Bulletin de la Societe d'Hygiene Alimentaire* 19(1/2):1-23. [5 ref. Fre]

• ***Summary:*** Includes a section on the feeding of soy milk to animals, with tables showing results. Address: Institut de Physiologie generale de la Faculte des Sciences de Strasbourg.

742. Yang, Ximeng; Tao, Menghe. 1931. A study of the standard of living of working families in Shanghai. Peiping: Institute of Social Research. 86 + lvi p. See p. xxxii. 23 cm. Series: Social Research Publications, Monograph No. III. Facsimile edition reprinted in 1982 by Garland Publ. Co. (New York). [40 ref]

• ***Summary:*** Note 1. On the title page, the authors' names are given as Simon Yang and L.K. Tao.

Contents: Part I: General results. Part II: Statistical tables.

In Part I, section IX is titled "The standard of living food" (p. 47-55). The 2nd most important type of food, after "(a) Cereals and products" is "(b) Legumes and products," which states (p. 48): "Of beans, the young soy bean (Chinese characters: mao dou) formed the principal kind, but among the bean products, bean sprouts, bean curds of various makes and mung bean starch were consumed in considerable quantities."

Page 49: "(g) Fat and oil: Bean oil [soy] formed the most important article in this class, of which the average consumption was 4.78 catties (2.8 kg) per family per month. Lard, the second in order, lagged far behind..."

"(h) Condiments: Salt and soy sauce were the principal articles of this class."

Page 50: Whereas rice accounts of 44.6% of total expenses, legumes and products account for only 7.6%. More rice and legume statistics appear on page 53.

In Part II, "Statistical tables," six long tables mention soy as follows: I. "Average quantity of and expenditure for the principal articles purchased per family per month, by income groups" (p. ii-iii): Yellow soy bean sprouts, 0.15 expenditures. Soy bean curd, 0.26. Sheet bean curd, 0.18 [pressed tofu sheets, pai-yeh or ch'ien-chang]. Bean curd, fried, 0.10. Bean curd, dried [doufu gan] 0.16. Soy bean oil, 1.19. Soy bean sauce 0.38.

II. "Average quantity of and expenditure for the principal articles purchased per family in each of the twelve months under investigation (p. viii-xxx): There are entries for: Yellow soy bean sprouts, 1.87 annual expenses. Soy bean curd, 3.14. Sheet bean curd, 2.15. Bean curd, fried, 1.19. Bean curd, dried [doufu gan] 1.95. Yellow soy bean, 0.38. Young soy beans with pods [mao dou, edamame], 0.81.

III. "Average quantity of and expenditure for the "other" articles of food purchased per family in a year" (p. xxxii, xxxvii). Bean curd, fermented, odorous, 0.05 annual expense [ch'ou toufu]. Soy bean milk, 0.17. Fried beans, with salt, 0.21. Fermented bean curd, fried, 0.05. Bean curd skin, 0.02. Bean curd, fermented, with fragrant malt, 0.05. Bean curd, frozen, <0.005 [tung-toufu, ping-toufu]. Bean curd skin, cooked in skein forms, <0.005. Dried bean curd, fried, 0.005. Bean curd, fermented, 0.6. Soft bean curd, 0.05. Soy bean dregs, 0.02 [okara?]. Sheet bean curd, in skein [netlike] forms, > 0.005. Soy bean paste, 0.01.

Note: This is the earliest English-language document seen (Oct. 2011) that uses the word "odorous" or the term "Bean curd, fermented, odorous" to refer to *ch'ou toufu*.

VI. "Average quantity and fuel value of food consumed per family in a year" (p. l-li). This table has 6 columns. (1) Classes and articles of food. (2) Quantity, total (grams). (3) Quantity of protein, grams. (4) Quantity of fat, grams. (5) Quantity of carbohydrates, grams. (6) Fuel value, calories. Note 2. For soy products we will give only the quantity / amount purchased each year per person in grams. Yellow soy bean sprouts, 34,229. Soy bean curd, 55,080. Sheet bean curd 8,34. Bean curd, fried, 6,163. Bean curd, dried, 13,218. Yellow soy bean, 2,407. Mung bean sprouts, 15,257. Note 3. The weight of mung bean sprouts purchased was less than half (44.5%) the weight of yellow soy bean sprouts purchased. Young soy beans with pods, 7,180. Bean curd, fermented, odorous, 364. Soy bean milk, 6,963.

At the end of the book is a very interesting bibliography of the best books on China's economic and social development, divided into these periods: China during the interregnum [Republic of China] (1912-1949). Modern Chinese economy: The late imperial period (late 19th and early 20th centuries), the agrarian economy, foreign trade and investment, 20th century economic development, labor and the economy. The wartime economy and postwar problems.

Note 4. This book would have been much more useful if the Chinese names of these foods (in both Chinese characters, and transliterated) had been given. We are unsure of the exact identity of: (1) Fried beans with salt. Are these

salted, oil-roasted soybeans? (2) Bean curd fermented with fragrant malt vs. bean curd, fermented, odorous. Address: China.

743. La Sierra Industries. 1931? La Sierra soy bean products (Leaflet). Arlington, California. LSI. 3 panels each side. Each panel: 22 x 9 cm. Undated. [2 ref]
• ***Summary:*** Gives a 6-7 line description of each of the following products prepared by the company in Arlington: Soy Beans (canned, plain or with tomato sauce), Soy-Co, Soy Flour, Mamenoka [roasted soy flour], Soy Milk, Soy Cheese, Soy Loaf, Soy Bologna, Soy Sandwich Spread, Smoein, Soy Bean Butter [soynut butter], Soy Bean Breakfast Food.

"Smoein is a smoked vegetable protein made from legumes which have been toasted and smoked in the old fashioned way, giving the flavor of smoked meats. It is an excellent seasoning for soups, gravies, entrees, eggs and any food in which a smoked flavor is desirable.

"Soy Bean Butter is similar to peanut butter, however it does not contain any nuts. It may be served plain or mixed with water to dilute. A delicious spread is made by mixing equal parts of honey and soy bean butter." Note 1. This product is almost surely soynut butter. If so, this is the earliest English-language document seen (Dec. 2012) that uses the term "soy bean butter" to refer to soynut butter.

Note 2. This is the earliest published document seen (Sept. 2000) related to T.A. Van Gundy or his company, La Sierra Foods. Note 3. This is the earliest English-language publication seen (April 2013) that uses the term "Soy Cheese" to refer to tofu. T.A. Van Gundy coined and later frequently used the term "soy cheese" to refer to tofu.

Note 4. This is the earliest English-language document seen (Nov. 2012) that uses the word "Mamenoka" to refer to roasted soybean flour. It is a variation on or misspelling of the Japanese term *mame no ko* meaning "flour of [soy] bean."

Note 5. This is the earliest English-language document seen (Nov. 2012) that uses the word "toasted" in connection with roasted soy flour. Address: Arlington, California.

744. Hansen, J.E. 1932. A variety of foods from the soybean. *Madison Survey* (*Madison, Tennessee*). 14(4):15. Jan. 27. [1 ref]
• ***Summary:*** "Were our readers visiting the Madison Food Factory, they would be surprised to learn of the many ways in which the soybean is used. Bread, crackers, milk, and cheese are made from this important bean. The flour is ground on the hammer mill in the factory... Roasts, bean loaf, and croquettes are made from it. Ice cream made from the soybean is delicious." Address: Madison College, Tennessee.

745. Ch'en, Shen-Chao; Adolph, William H. 1932. Bone building potency of soy bean diets. *Chinese J. of Physiology* 6(1):59-62. Jan. [6 ref. Eng; chi]
• ***Summary:*** "Read before the Fifth Annual Meeting of the Chinese Physiological Society... at Peiping, February 16-18, 1931.

"In connection with our interest in the use of soy bean milk in nutrition, experiments were projected for the purpose of evaluating the bone building properties of soy bean product and comparing them with cows' milk."

Cow's milk, soy bean milk, and soy bean curd (tofu) were added to a rachitic diet. Cow's milk was shown to be decidedly superior to soy bean milk in preventing rickets. Cow's milk itself does not rank high as an anti-rachitic food. Thus soy bean milk, when used in infant feeding, should be amply supplemented with both calcium and vitamin D. Soy bean milk seems to be slightly superior to soy bean curd in bone-building capacity. Address: Dep. of Chemistry, Yenching Univ., Peiping, China.

746. Chiu, Yan-Tsz. 1932. Analyses of Chinese foods. II. Determination of pentosans in soybeans and soybean milk. *Lingnan Science Journal* 11(1):1-3. Jan. [3 ref. Eng]
• ***Summary:*** "It is found that the amount of pentosans present in the milk varies with the filter used in making the milk and also the size of the bean particles ground in the mill..." The beans contained 4.41-5.24% pentosans, and the milk 0.051-0.149%. Address: Prof. of Chemistry, Lingnan Univ., Canton, China.

747. Genin, G. 1932. La caséine végétale: Propriétés et emplois. II. [Vegetable casein: Properties and uses. II.]. *Industrie Chemique* (*L'*) 19(216):6-8. Jan. Abstracted in Le Genie Civil 100(14):352. April 2, 1932. [1 ref. Fre]
• ***Summary:*** This article describes the preparation of the vegetable milk from soybeans from which the casein is derived, the preparation of casein in industry, and its industrial uses. Address: Ingenieur Chimiste E.P.C.I.

748. André, E.; Hou, Kia-wo (Hu, Chia-mo). 1932. Sur la présence d'une oxydase des lipides ou lipoxydase dans la graine de soja, *Glycine soja* Lieb. [On the presence of a lipid/lipoid oxydase or lipoxydase in the soy bean]. *Comptes Rendus des Seances de l'Academie des Sciences* (*Paris*) 194(7):645-47. Feb. 15. (Chem. Abst. 26:3004). [Fre]
• ***Summary:*** The authors coin the term "lipoxydase" [in French] based on comparing the composition of oil extracted from soy flour, tofu, and okara. Exposure to the air of the unboiled residue from the preparation of soya-bean "milk" causes an increase in density and acetate value and a decrease in iodine value of the ethyl ether extract as compared with the corresponding values for the boiled material. This is believed to indicate the presence of a lipid oxidase.

Note: This is the earliest document seen (July 2003) that mentions "lipoxydase" (or "lipoxidase"), an enzyme which

was first reported in soybeans. Address: France.

749. Wan, Shing. 1932. Comparison of soybeans and milk in contents of vitamins B-1 and B-2. *Chinese J. of Physiology* 6(1):35-40. Feb. 15. [8 ref. Eng; chi]
• ***Summary:*** Soybeans contain only 2/3 as much vitamin B-2 (anti-pellagric factor) but 3 times as much vitamin B-1 (anti-neuritic factor) as Klim (whole cow's milk powder). The tests were conducted on rats using yellow soybeans (dried and finely ground) and Klim. Many growth curves are plotted. Address: Dep. of Biochemistry, Peiping Union Medical College, Peiping.

750. Concepcion, Isabelo. 1932. The greater significance of soy bean in the Filipino dietary. *J. of the Philippine Islands Medical Association* 12(3):97-106. March. [9 ref]
• ***Summary:*** "Read in the Symposium on Nutrition... Manila Medical Society on January 25, 1932." The Philippine diet is considered deficient in animal protein, calcium, vitamins (especially thiamine, leading to beriberi), and fat. One of the foods which can help solve these nutritional problems "and which is available in large quantities in this country is the soy bean (*Glycine max*), or what is commonly known as Chinese *balatong.* Since time immemorial this article of food has been well known in this country but people have not sufficiently taken advantage of its good dietary qualities... Dr. Manuel L. Roxas, Director of the Bureau of Plant Industry, says 'soy beans are grown in large quantities in Batangas [on the southern tip of the main Philippine island of Luzon] and will grow almost anywhere in the Philippines. The green pods are harvested in October and November and the dried seeds may be had in bulk in December and January.' Statistics show that the production of soy beans in the Philippines increased from 2,481 tons in 1921 to 4,218 tons in 1930, and importations from 1924 to 1930 gave a recorded increase of 4,657 tons. These figures indicate that consumption of soy beans has grown faster than production. They also clearly indicate a growing appreciation of the soy bean in this country. I am convinced, however, that greater efforts toward its popularization among the laity should be exerted, so that we might make it one of our staple foodstuffs."

Tofu is shown to be a good source of minerals, especially calcium. A diagram from Piper and Morse (1923) shows the various ways in which the plants and seeds of soy beans are utilized. A detailed discussion of the value of soy flour and soy milk is given. "The introduction of soy-bean flour as a constituent of bread, muffins, macaroni, biscuits, crackers, etc. not only is desirable but also will diminish tremendously our importations of flour, which are increasing every year."

"Compared with cow's milk, soy-bean milk has in its favor the following points: (1) Soy bean milk can be produced with less contamination; (2) it is free from infection by tuberculosis; (3) its casein breaks down much more readily than the casein of cow's milk and does not form curds in the stomach in the same degree; (4) it is much cheaper than cow's milk. At the present market price the cost of a liter of soy-bean milk is only 0.03 pesos compared with 0.30 pesos for either fresh or artificial milk."

"With a well-laid-out campaign to promote the intelligent use of soy beans, it is probable that inside of ten years the food and population problem will be well out of the way for centuries to come." Address: Dep. of Physiology and Biochemistry, College of Medicine, Univ. of the Philippines.

751. Donath, W.F. 1932. De voedingswaarde der sojaboon en enkele daaruit bereide specifiek Indische voedingsmiddelen [The nutritive value of soybeans and some specifically East Indian foods prepared from them]. *Landbouw* (*Buitenzorg, Java*) 7(9):705-40. March. English-language summary, p. 759-61. Also in: Dutch East Indies Dept. of Agriculture..., ed. 1932. Kedelee. Buitenzorg, Java: Departement van Landbouw, Nijverheid en Handel. Afdeeling Landbouw. p. 139-74, 193-95. [48 ref. Dut; eng]
• ***Summary:*** Discusses the composition of the soybean. "In contrast with Manchuria, where it is a common article of diet, the soybean is rarely used as such in these parts; but by means of various operations, among which is the action of certain fungi, several products are prepared from it.

"These products, such as *tempe kedele, taotjo, tahoe, taokoan* and *ketjap* are important items in the native diet. Except for the last mentioned, the preparation of these products is such that the albumins are preserved practically intact, so that, especially in tempe, as we were able to point out, the biological albumin value is very high...

"*Soymeal,* which is prepared by removing the husks and then pounding what is left, has the drawback that it tastes somewhat bitter and, in consequence of the high percentage of fat, soon becomes rancid... Berczeller, however, seems to have succeeded in obtaining an improved soy meal...

"Finally, in discussing the importance for the native diet of these beans and the products prepared from them, the author arrives at the conclusion that it is especially the albumins that are important, the people being practically vegetarian and these foods being, in addition, rich in carbohydrates.

"Thus the author expresses his approval of the fact that of late years the *Department of Agriculture, Industry and Commerce* has advocated the growing of the soybean and the consumption of the products prepared therefrom."

Note 1. This is the earliest English-language document seen (the summary) (Sept. 2005) that contains the word "soymeal," which apparently refers to whole (full-fat) soybean flour.

Note 2. This is the earliest document seen (April 2001) that contains the word *taokoan.* Address: Hoofd van het Analyselaboratorium te Buitenzorg, Java.

752. Dugard, Jean. 1932. La valeur alimentaire et industrielle du soja [The food and industrial value of soya]. *Genie Civil* (*Le*) 100(17):419-20. April 23. [3 ref. Fre]
• ***Summary:*** Contents: Introduction. *USDA Farmers' Bulletin* No. 1617, by W.J. Morse. Botanical characteristics of the soybean. Composition and food value of the soybean. Products derived from soya eaten by humans: Tofu, soy oil, shoyu [soy sauce] (called "soy" in English), soy flour, soy sprouts, miso, natto. The use of soya as forage. Industrial uses of soy oil and cake. The soybean in western Europe: Hansamuehle in Hamburg, Germany; Englehardt & Cie. in Frankfurt, Germany (making powdered soymilk, soy caseine, soy lecithin, etc.); Soybean cake used for animal feed in England, Denmark, Holland, Sweden, and–above all–in Germany, where more than 2 million tons/year are consumed.

753. Squirrell, W.J.; Laughland, J. 1932. Soybeans in Ontario. *Ontario Department of Agriculture, Bulletin* No. 366. 16 p. April.
• ***Summary:*** Contents: Origin and importance. Description. Composition. Climatic adaptation. Rotation. Soil and soil preparation. Manures and fertilizers. Varieties. Seed selection. Inoculation. Harvesting. Threshing. Uses of the crop: Hay, as a soiling crop, ensilage, pasture, soil improvement, ripe seed, straw, soybean oil, meal, other products. What farmers think of soybeans (Extracts from reports by 21 men who have grown and fed the crop from the following places (mostly counties): Durham, Dundas, Brant, Elgin, Frontenac, Grenville, Halton, Hastings, Kent, Lambton, Middlesex, Oxford, Perth, Simcoe, Welland, Wellington).

"Soybeans were first tested in the experimental plots at the Ontario Agricultural College in 1893 and first distributed for co-operative tests from the College to farmers in 1901."

"More than one hundred varieties of soybean have been tested for fodder and grain production by the Field Husbandry Department of the Ontario Agricultural College. Some of these varieties matured sufficiently early to be successfully grown in Ontario. Many, however, are too late for the climatic conditions of the Province and do not even reach the best fodder conditions before the arrival of killing frost."

Two tables (p. 6-7) show the average results for 6 years in testing 21 varieties of soybeans for fodder and for grain by the Department of Field Husbandry at the Ontario Agricultural College. In each table the varieties are sorted by descending yield of green fodder or grain [seed]. The varieties are: O.A.C. No. 211, Habaro No. 20405 (Wash. [Washington, DC]), Ito San Soja, Black Eyebrow (Jeffrey), North's, Minnesota No. 167 (Minnesota Exp. Station), Manchu, Early Yellow (O.A.C. No. 111), Elton, Medium Green (O.A.C.), Mandarin, Chestnut, Tsurunoko, Oyaji, Shiro Kotsubu, Early Yellow, Black Ontario, Quebec No. 92, Black Manchurian (Jeffrey), Brown, Ogema. For fodder, the "O.A.C. No. 211, which stands first with an average yield of 10.16 tons of green fodder per acre for the 6-year period, is a plant selected strain, developed by the Ontario Agricultural College, from the Habaro variety and is the only variety of soybeans eligible for registration in Canada." The plants were cut on Sept. 7. For grain/seed production Black Ontario has the highest average yield over the 6 years at 28.47 bushels/acre, followed by North's (28.42), O.A.C. No. 211 (27.73), and Black Manchurian (Jeffrey; 27.12). The plants were cut for harvest between Sept. 23 and Oct. 9. The Black Ontario was received from a grower in the Manitoulin Island in 1924. It produces small, black grain and straw of medium length. "The O.A.C. No. 211 has proven to be the best general purpose soybean tested at the College."

Soybean oil "is used in the manufacture of soaps, paints, rubber substitutes, printers ink and other articles. It is also used as a salad oil and as a substitute for butter and lard."

"In China and Japan soybeans are used in many ways as human food. The green pods, dried seed cakes, soy sauce and soybean milk, all have their place. In America soybean flour is made into cakes, biscuits, muffins, and being low in starch it has a special place as a diabetic food."

The article contains 11 photos, including one of 2 horses pulling a rotary hoe, and fields of soybeans growing in Peel, Welland, Dundas, Kent, Middlesex, and Lincoln counties. Address: Dep. of Field Husbandry, Ontario Agricultural College, Guelph.

754. Cruz, Aurelio O.; West, Augustus P. 1932. Composition of Philippine soy beans and soy-bean oil. *Philippine J. of Science* 48(1):77-88. May. [32 ref]
• ***Summary:*** In 1930 the Philippines produced 4,218 tons of soybeans. In 1911 O.W. Barrett, Chief of the Division of Experiment Stations, Philippine Bureau of Agriculture, strongly encouraged the Philippine Agriculturist to "to take up soy bean culture in earnest." But 20 years "after this advice was given we find the Philippines are producing an annual yield of only a few thousand tons of soy beans although, as shown by experiments, this is a very suitable and appropriate crop for this country. With this idea in view," in 1931 staff members of the Philippine Bureau of Science wrote various newspaper articles to popularize soybeans and gave a display of food products made from soy beans at carnival in Manila.

A short survey of the nutritional factors of soy beans is given. The Philippine beans are rich in fats (20%), proteins (39.1%), and carbohydrates (24.96%). The oil had iodine value 128.4, saponification value 193.3, unsaponifiable matter 1.0%, unsaturated fatty acids (corrected) 81.5% (iodine value 151.3), saturated fatty acids (corrected) 12.65%. The composition of the fatty acids is given as: (α-)linolenic 2.1%, linoleic 53.0%, oleic 30.1%, palmitic

8.9%, stearic 3.8%, and arachidic 0.6%. Address: Bureau of Science, Manila.

755. Stegman, Henry M. 1932. Babies thriving on vegetable milk. *Good Health* (*Battle Creek, Michigan*) 67(5):38-39. May. [1 ref]
• ***Summary:*** "Nutritionists place milk first among foods. They urge that every child should have a quart a day and every adult a pint–some say a quart." There follows a detailed summary of: Lane, Dorothy Engelhard. 1931. "The nutrition of twins on a vegetable diet during pregnancy, the nursing period and infancy." *American Journal of Diseases of Children* (Dec. 1931, p. 1384-1400). "At the age of two years and eleven months, they have made sturdy physical and mental progress. Their great endurance and strength call for special comment."

756. Tsen, Edgar T.H.; Sung, Shih-Hung. 1932. Soybean culture media: A preliminary report. *Chinese Medical Journal* 46(6):603-06. June. [Eng]
• ***Summary:*** "At present meat and peptone form the principal basis of nearly all culture media employed for the cultivation of pathogenic bacteria... They naturally constitute a heavy item of expenditure. So we have found it necessary to find a cheap and yet suitable substitute." A substitute was made as follows: Soak 100 gm dry yellow soybeans in cold water overnight. Finely grind, add enough tap water to make 1,000 ml, boil the beans and soak water for 1 hour, and filter off the residue through cotton and gauze to give soybean milk. Add dilute HCl (hydrochloric acid), boil for 15 minutes and filter through paper. Adjust the reaction of the filtrate with NaOH (sodium hydroxide) to the proper pH required by the different bacteria, heat to about 60ºC for 10 minutes, and filter through paper. Dissolve 5 gm NaCl (sodium chloride; table salt) in the filtrate, which is then tubed, sterilized, and used as soybean broth. For the preparation of solid medium, add 15 gm of agar to each liter of the soybean broth. After the agar has been melted and its reaction adjusted in the usual manner, it is tubed, sterilized, and slanted.

The ordinary meat-peptone medium costs from 37 to 60 times as much as its soybean counterpart. "We have found in the soybean a cheap and satisfactory substitute for the expensive peptone and meat." Address: National Epidemic Prevention Bureau, Peiping.

757. Adolph, Wm. H.; Chen, Shen-Chao. 1932. The utilization of calcium in soy bean diets. *J. of Nutrition* 5(4):379-85. July. [10 ref]
• ***Summary:*** "A dairy industry in China is essentially non-existent and at present is economically impossible. Moreover, the cost of raw milk, or of imported milk, either in tins or in the form of dried powder, is far beyond the reach of the average purse. The dangers of calcium of calcium deficiency are somewhat mitigated by the fact that breast feeding is continued till the infant is three or four years old, but for the remainder of the growth period and for the entire period of adult maintenance the individual is dependent upon calcium derived from vegetable sources. A very considerable amount of this calcium is supplied by soy bean products. Soy bean curd (soy bean cheese) would seem to have filled, in part, the place which milk has occupied in the Occident. Recent years have seen an extended use of the closely related food product, soy bean milk, which has been successfully applied to infant feeding."

Using the method of metabolic balance in experiments with human subjects, the authors reported good utilization of the calcium in soybean curd. They also found cows' milk and soya bean to be equally effective sources of calcium for Chinese adults. The attainment of a calcium equilibrium was facilitated by increasing the protein intake. Address: Dep. of Chemistry, Yenching Univ., Peiping, China.

758. *Good Health* (*Battle Creek, Michigan*). 1932. Plant milks. 67(7):20. July.
• ***Summary:*** "A simple plant milk which has borne the test of use in China for several thousand years may be prepared from the soybean by the following simple process." The process is described in two paragraphs.

Another "excellent plant milk may be prepared by grinding blanched almonds in a mortar."

759. Winokurov, S.I.; Palladina, L.I. 1932. Biochemistry of soya milk (Abstract). *Nutrition Abstracts and Reviews* 2(1):30 (Abst. #85). July. Published in Russian in 1931. Title: *Biochimiji sojevogo moloka.* [Eng]
• ***Summary:*** "The protein of soya milk is digested as easily as that of cow's milk or human milk, and more easily than egg or muscle protein. Soya milk contains more tryptophane than cow's milk. It also contains the following enzymes: amylase, protease, peroxidase, catalase. Vitamin D is not present. The iron content is greater than that of cow's milk. The soya milk used was made from Manchurian beans." Address: Biochemistry Div., Inst. Research in Nutrition, Kharkov, USSR.

760. Adolph, William H.; Kao, Hsueh-chung. 1932. Hemoglobin-building properties of soy bean products. *Chinese J. of Physiology* 6(3):257-63. Aug. [5 ref. Eng; chi]
• ***Summary:*** "Our attention was recently directed to a statement that soy bean cheese (soy bean curd) has been regarded by the Chinese as a cure for anemia... Examination of the mineral constituents of the soy bean, and also of soy bean cheese and soy bean milk, has revealed the fact that these materials all contain decided amounts of both copper and iron."

Soya-bean products had a curative action on rats rendered anemic by an exclusive diet of cows' milk. Analyses of these products indicated an appreciable iron

and copper content. The rate of recovery appeared to be approximately proportional to the iron and copper content of the ingested food, but it could not be said that the soya-bean products owed their curative activity to the presence of these metals.

Note: *Webster's Dictionary* defines anemia (derived from New Latin, via the Greek *anaimia* = bloodlessness), a word first used in 1807, as "1a: a condition in which the blood is deficient in red blood cells, in hemoglobin, or in total volume; b: Ischemia. 2: lack of vitality." Address: Dep. of Chemistry, Yenching Univ., Peiping, China.

761. Burlison, W.L.; Whalin, O.L. 1932. The production and utilization of soybeans and soybean products in the United States. *J. of the American Society of Agronomy* 24(8):594-609. Aug.

• ***Summary:*** Contents: Introduction. Acreage. Yield per acre. Acreage harvested for beans. Acreage harvested for hay. Acreage harvested with livestock. Imports of certain soybean products. Production of important oils in the United States. Net imports of oils and fats into the United States. Import duties levied on soybeans and soybean products. Utilization of soybeans in United States. Soybean products. Summary.

"Soybean acreage harvested for beans has expanded rapidly in the United States since 1925, reaching an estimated production of approximately 18,000,000 bushels for 1931. More than half of the acreage grown each year has been cut for hay. The acreage harvested with livestock has not shown any increase since 1927.

"Imports of soybeans and soybean cake and meal have always been of minor importance. Soybean oil imports represented significant quantities at the close of the World War, however, but have since diminished to negligible amounts as import duties have become effective. The imports of such competing oils as cocoanut and linseed have been of greatest importance.

"Approximately one-fourth of the soybean oil being utilized in the United States is going into paints and varnishes, another one-fourth is finding its way to the soap kettle, nearly one-fifth is being used in edible products, and about one-eighth is being consumed in linoleum and water-proofing products. The number of commercial products being placed on the market that contain soybeans or soybean products is increasing rapidly. A most encouraging feature of soybean progress has been the research development in utilization of soybeans and soybean products within the last two years and the corresponding expansion in demand along commercial lines." Contains numerous statistical tables illustrating these facts. Tables show: (1) Production of soybeans harvested for beans, selected states and the United States, 1924-31, 1,000 bushels. (2) Total equivalent solid acreage of soybeans, selected states and the United States, 1922-30, 1,000 acres. (3) Yield in bushels per acre. (4) Acreage of soybeans harvested for beans, selected states and the United States, 1922-31, 1,000 acres. (5) Acreage of soybeans harvested for hay, selected states and the United States, 1922-30, 1,000 acres. (6) Acreage of soybeans harvested with livestock, selected states and the United States, 192230, 1,000 acres. (7) Imports into United States of soybean oil, soybean meal and cake, and soybeans, 1915-31. (8) Domestic production of soybean oil and other oils and fats from domestic materials, 1916-30, 1,000 pounds. (9) Net imports of animal and vegetable oils and fats, with special reference to soybean oil and five other kinds of vegetable oils, oil equivalent being used for imported materials, United States, 1916-30, 1,000 pounds. (10) Exports of soybean oil and other leading vegetable oils, United States, 1919-31, 1,000 pounds. (11) Duties levied on soybean oil, soybean cake and meal, and soybeans by the tariffs of 1909, 1913, 1921, 1922, and 1930. (12) How the 1929 and 1930 crops of soybeans were utilized in the United States. (13) Utilization of soybeans and soybean products in the United States, 1930 crop. (14) List of soybean products produced in the United States.

Table 13 (p. 607) "Utilization of soybeans and soybean products in the United States, 1930 crop." The 13,323,000 bushels of soybeans were used as follows: Crushed 4,800,000 bu, seed 4,623,000, feed 3,500,000, ground 400,000 (half used for feed and half for food). The 37,200,000 lb of soybean oil was used as follows: Edible: Oleomargarine 750,000 lb, lard substitutes [shortening] 500,000, other food products 4,750,000. Industrial uses: Paint and varnish 9,000,000 lb, soap kettle 8,500,000, linoleum and oil cloth 4,000,000, other 3,500,000. Increased stocks including oil equivalent 5,700,000. The 110,000 tons of soybean meal was used as follows: Commercial feeds 89,100 tons, other feed 20,000, edible soy flour 850, diabetic foods 50. The 100,000 tons of soybean meal was very small compared to its competing products: Cotton seed meal 2,350,000 tons, and linseed oil meal 1,750,000.

Table 14 (p. 608) "List of soybean products produced in the United States." The accompanying text states that this list "does not pretend to be complete. Attention is called to the large number of food products actually being placed on the market in the United States from soybeans at the present time. This list has grown rapidly during this last year." The extensive list includes commercial food, feed, and industrial products derived from soybeans. Some products have brand names and others only generic names.

"Food products–USA: Soybean flour. Soybean meal flour. Refined edible soybean oil. Soybean salad oil. Chocolate bars (30% soybean flour). Cocoa (up to 60% soybean flour). Sausages (up to 50% soybean flour). Bread (7½% soybean flour). Rolls (10% soybean flour). Macaroni (20% soybean flour). Soybean muffins. Soybean cookies. Soybean doughnuts. Vegetable shortening. Infant foods. Diabetic foods. Oleomargarine. Lard substitutes. Filled sweets. Soybean sprouts. Soybean cheese. Soybean milk.

Soybean buns. Soybean ice cream [perhaps that served in Sept. 1930 in Illinois at the American Soybean Association's annual meeting]. Soya cream biscuits. La Choy-soy sauce. Soyolk (flour). Soy biscuits. Soy flour. Vi-Zoy. Lektizoy. Zoy soup. Zoybeans (cooked beans). Bacon and Zoy beans. Zoy bouillon. Soy bean biscuit. Casein gluten flour. Non-fat mayonnaise. Fatless spread. Fluffo.

Canadian food products: Milqo (soy milk). Vi-Tone (chocolate). Soya flour. Soyex-Malt-Cocoa drink. Soyex. Macaroni

"Feed products: Cake or meal. Commercial feed. Dairy feed. Hog chow. Poultry chow. Dog chow. Chicken chowder. Steer fatena. Calf chow. Lay chow. Rabbit chow. 34% protein chow chow. 24% protein chow chow. Chick startena. Chicken fatena. Olelene. Grainola.

"Industrial uses: Paint. Varnish. Enamels. Oil cloth. Linoleum. Printers ink. Glycerine. Celluloid. Lauxtex plastic wall coat. Lauxein waterproof soybean glue. Lauxein emulsifier (all 3 made by I.F. Laucks, Inc., Seattle, Washington). Soap (liquid). Soap (potash). Core binders. Rubber substitutes."

Note 1. This is the earliest document seen that mentions the following commercial soy products: La Choy-soy sauce. Soyex-Malt-Cocoa drink. Zoybeans (cooked beans). Lauxtex plastic wall coat. Lauxein waterproof soybean glue. Lauxein emulsifier. All were on the market by late 1931.

Note 2. This is the earliest English-language document seen (Feb. 2008) that uses the term "vegetable shortening" to refer to shortening made without animal products. Address: Univ. of Illinois, Urbana.

762. Richardson, J.W. 1932. La soja y el conflicto Sinojaponés [Soya and the Sino-Japanese conflict]. *Hacienda* (*La*) (*Buffalo, New York*) 27(8):294-95. Aug. [Spa]
• ***Summary:*** It is said that this plant, which plays such an important role in nourishment and in modern industries, forms the axis around which revolves the struggle for dominance of Manchuria. Slight reference is made to the increasing soybean importance in the United States. Photos show: (1) Round soybean cakes piled on the docks at Dairen. (2) An interesting Chinese hand-turned stone mill, with a metal hopper on top, being used by a Chinese man to grind soaked soybeans for soymilk. The slurry falls into an earthenware pot.

763. Horvath, A.A. 1932. El frijol "Soya" como alimento nacional [The soybean as a national food]. *Revista de Agricultura, Comercio y Trabajo* (*Cuba*) 14(3):43-56. Sept. [Spa]
• ***Summary:*** This is a translation of Horvath 1927, "The Soybean as Human Food." Address: Peking Union Medical College, China.

764. Maillet, Marcel; Yeu, Lucie; Yeu, K. 1932. Le lait de soja dans l'alimentation des nourrissons [Soymilk in the feeding of infants]. *Bulletin de la Societe de Pediatrie de Paris* 30:488-98. Meeting of 18 Oct. 1932. [8 ref. Fre] Address: Paris.

765. *Los Angeles Times.* 1932. Health aid and diets on program: Food specialist to assist director of 'Times' Home Service at meeting. Oct. 19. p. A6.
• ***Summary:*** Marian Manners, director of the [Los Angeles] Times' Home Service Bureau, announces a program for today at 3 o'clock in the auditorium of the Southwest Building, 130 South Broadway, held especially for those who are interested in "foods from the standpoint of diet and health."

"Hazel Denis, dietitian for La Sierra Industries, manufacturers of the complete line of soy bean products, will prepare soy cream pie and Boston roast, showing two novel and delicious ways of introducing this health food into the diet."

Note: This is the earliest published and dated document seen (Oct. 2004) concerning La Sierra Industries, founded by T.A. Van Gundy.

766. Dittes, Frances L. 1932. Soy milk in infant feeding. *Madison Survey* (*Madison, Tennessee*) 14(37):146-47. Sept. 28; 14(38):150-51. Oct. 5. [2 ref]
• ***Summary:*** "It is a fact definitely proved on many occasions, that for the normal baby, good breast milk from a healthy mother supplies the type of food, both as to quantity and quality, best suited to develop the ideal infant."

Two facts about breast milk stand out prominently: "First, breast milk protein, by its lack of buffer and formation of flocculent soft curd, favors both rapid and efficient gastric and intestinal digestion; and secondly, the protein, or element of growth, of breast milk contains the kind and amount of amino-acids best suited to the infant's growth."

"As a substitute for breast milk, when artificial feeding is necessary, cow's milk has long been recognized as the best. There are, however, conditions under which cow's milk may be undesirable, particularly since animals are becoming more and more diseased. Science is showing that a milk made from the soy bean is a splendid substitute for mother's milk. (To be continued)."

Part 2 (Oct. 5, p. 150-51): Two tables compare the composition of cow's milk, soy milk, and mother's milk. Mother's milk has 1.5% protein, soy milk 3.3%, cow's milk 4.94%. "The salts in cow's milk are chiefly phosphates, which absorb or buffer hydrochloric acid." Mother's milk is the lowest in salts (minerals), with soy milk in the middle. "Since soy milk contains less salts than cow's milk, it requires less secretion of gastric hydrochloric. According to Fisher [sic, Fischer 1914], soy milk gives a much finer flocculent curd in the stomach than cow's milk and by its lack of buffer action forms both rapid and efficient gastric

and intestinal digestion. Its period of stay in the stomach is shorter. Its ingestion results in a shorter period of gastric secretion. The peristaltic motion of the stomach is less after the ingestion of soy milk than in the case of cow's milk. These qualities make the soy milk more desirable as a food for delicate infants than is cow's milk."

"The protein of the soy milk has been shown by authorities to contain five of the essential amino-acids necessary for complete nutrition for infants, cystine being the absent amino acid."

"Soy milk is produced at a cost of one-fifth that of cow's milk, besides being free from disease bacteria such as tuberculosis, typhoid fever, etc. This food product may be found so practical, economical, and adequate that it will save the lives of many infants, particularly in cases where the use of cow's milk is not advisable, and in sections where cow's milk is unsafe for use." Address: Madison College, Tennessee.

767. La Sierra Industries. 1932. Soy bean (Ad). *Los Angeles Times.* Nov. 6. p. J20.

• ***Summary:*** This small, square ad reads: "One of the most perfect foods on the market today. Perfect in protein and practically free from starch, with an Alkaline Reaction.

"Soy bean products are offered in twelve different varieties: Soy-Co Breakfast Beverage [soy coffee], Soy Milk, Cheese [tofu], Butter, Bologna, Loaf, Spread, and Others.

"On sale at health food stores. Manufactured by the La Sierra Industries. 'Packers of superior foods.'" Address: Arlington, California.

768. *Good Health* (*Battle Creek, Michigan*). 1932. The soybean an excellent source of food lime [calcium]. 67(12):20-21. Dec. [1 ref]

• ***Summary:*** A summary of an article titled "The utilization of calcium in soy bean diets" by Adolph and Chen, published in the *Journal of Nutrition* (July 1932, p. 379-85).

Good Health adds: "Soybeans are now turned into about fifty products in America; while in the Orient two hundred and fifty products are made of them."

769. Rittinger, Fred R.; Dembo, Leon H. 1932. Soy bean (vegetable) milk in infant feeding. Preliminary report. *American J. of Diseases of Children* 44(6):1221-38. Dec. [18 ref]

• ***Summary:*** Fifty infants fed on soy bean milk for more than a year grew well and remained healthy. This influential article begins with a review of the literature on feeding soy and other vegetable milks to infants. "In recent years great interest in the study and use of soy bean preparations has been manifested throughout the world. Prominent forces in this country are the Bureau of Home Economics and W.J. Morse of the United States Department of Agriculture. Von Noorden in Germany, Ducceschi in Italy and Berczeller in Vienna [Austria] are giving their support to the use of the soy bean as a source of food."

The authors then discuss: The nutritional composition of the soy bean, soy bean milk powder as an exclusive food for animals, preparation of soy bean milk flour (dried soy milk) and its composition, their clinical study. Numerous growth curves are given for infants fed breast milk, soybean milk, and cow's milk. The babies fed on soy bean milk alone (plus daily doses of 4 cc cod liver oil and adequate amounts of orange juice) had normal growth curves (i.e. parallel the Holt line). The general health and condition of these babies was good and their resistance to infection was on a par with milk-fed babies. The fat, protein, and vitamin contents of the soy milk are approximately equal to those of cow's milk. "The stool flora resembles that of the normal, breast-fed baby. The economic features (mass production and low cost) are especially significant in a consideration of soy bean milk as an infant food. It compares favorably with the milk of animals from the standpoint of nutritional availability and biologic value. An additional 100 babies are at present under observation on a diet of soy bean milk, either as a complement to breast milk or as an exclusive food." Address: Pediatric Service, St. Ann's Hospital, Cleveland, Ohio.

770. Stewart, C.L.; Burlison, W.L.; Norton, L.J.; Whalin, O.L. 1932. Supply and marketing of soybeans and soybean products. *Illinois Agricultural Experiment Station, Bulletin* No. 386. p. 425-544. Dec. [34 ref]

• ***Summary:*** Loaded with statistics, graphs, tables, maps, and photos, this is one of the best reports on soybeans in America published to date. Contents: Introduction. The supply of soybeans and soybean products: Domestic production of soybeans, production of soybeans in Illinois, soybean varieties in Illinois, costs and returns in producing soybeans, imports of soybeans and soybean products (soybeans, soybean oil meal and cake, soybean oil, net imports, exports including reexports, export-import balance), import duties levied on soybeans and soybean products, supply of soybean oil and competing oils and fats. Consumption of soybeans and soybean products: Disposition of the domestic crop, utilization as beans, utilization of soybean oil meal, utilization of soybean oil (in food and industrial products), methods of processing soybeans for consumption (expeller, hydraulic press, solvent extraction), competition from other oils, distribution of gathered soybeans by uses. Practices in marketing soybeans and soybean products: Sources of market information, time of movement, varieties marketed in different sections of Illinois, selling soybeans for seed, selling soybeans for industrial uses (the Peoria Plan of 1928-29, Grange League Federation Exchange of Ithaca, New York, the Soybean Marketing Association of Illinois formed in Oct. 1929 {p. 490-91}), selling soybean oil and oil meal (National Soybean Oil Manufacturers Association of Chicago). Elements of cost in marketing soybeans:

Marketing mill beans, processing beans, marketing seed beans, exporting beans. The inspection system and soybean grades. Special considerations applying to the valuation of soybeans and soybean products: Use-values of soybeans and soybean products in feeding, derivative products as factors in the market valuation of soybeans. Prices of soybeans and soybean products: Prices of seed beans, prices of soybean oil, prices of soybean oil meal, use as affected by prices. Meeting the price risks in marketing. International trade in soybeans and soybean products. Summary. Literature cited. Sources of data.

"In Manchuria in 1930 there were 13 districts in which over 40% of the crop land was devoted to soybeans, the highest proportion being 65%. The proportions for the three Manchurian provinces as units were as follows: Kirin (eastern) 33.2%; Hailungkiang [Heilungkiang] (northern) 30.7%; and Liaoning (southern) 22%." Some soybeans were grown in Inner Mongolia.

Illinois was the largest soybean producer in 1924, followed by North Carolina, Missouri, and Indiana. "Few soybeans were grown in Illinois previous to 1890, when J.C. Utter of Mt. Carmel, Wabash county, began production of this crop. Frank Hurrelbrink of Taylorville, Christian county, known because of his work with the Hurrelbrink variety of soybean, started his work in 1897. He has grown soybeans continuously since that time, experimenting with many varieties. C.A. Rowe and his father, of Jacksonville, Morgan county, grew soybeans about 1899. Somewhat earlier than this the late Ralph Allen of Delavan, Tazewell county, became interested in soybeans and furnished seed beans to Illinois farmers as well as to interested persons in other states, in Hawaii, and in Alaska. C.L. Meharry of Attica, Indiana, who owns a large tract of land near Tolono, Champaign county, Illinois, has been an active soybean grower since 1909. The year following the Meharry venture, John T. Smith, also near Tolono, began to grow soybeans on a very limited scale, and in 1921 undertook active production. During the last decade soybeans have become an increasingly popular crop on Illinois farms."

Of the 1915 U.S. soybean crop, 52% of the entire crop acreage was used for hay, 15% was grazed, 4% was plowed under, and only 29% was harvested for beans; 18.2% was used for seed, 0.9% for human food, and 9.9% as beans for feed.

In 1930 some 11,975,000 bushels of soybeans were gathered or harvested in the U.S. Of these soybeans, 40.1% were crushed, 33.6% were used as seed, 23.0% were used whole directly as feed, 1.7% were ground and used as feed, and 1.7% were ground and used as food.

From the soybeans crushed in 1930, some 37,200,000 lb of soybean oil were produced. Its four main uses were: (1) Paint and other industries: Paint and varnish 24.2% of the total oil, linoleum and oil cloth 10.8%, other uses 9.4. (2) Soap kettle 22.8%. (3) Edible uses: Oleomargarine 2.0%, lard substitutes 1.3%, other food products 12.8%. (4) Increased stocks including oil equivalent 16.7%.

In 1930 some 110,000 tons of soybean meal resulted from crushing. Of this, 76.5% was used in commercial feeds, 13.6% in other feeds, 0.8% as soybean flour for food, 0.045% as infant and diabetic foods, and 9.0% as other uses including glue.

Page 460 lists the types and brand names of many commercial soybean food, feed, and industrial products. Consumption of soybeans as foods has increased appreciably since 1930. U.S. food products include chocolate bars (30% soybean flour), cocoa (up to 60% soybean flour), sausages (up to 50% soybean flour), bread (7½% soybean flour), soybean cheese, soybean milk, soybean ice cream, Soya Cream Biscuits, La Choy Soy Sauce, Soyolk (flour), V-Zoy, Lektizoy, Zoy Soup, Zoybeans (cooked soybeans), Bacon and Zoy Beans, Zoy Bouillon, Soy Bean Biscuit, etc. Canadian food products are: Milqo (soy milk), Vi-tone (chocolate), Soya Flour, Soyex-Malt-Cocoa Drink, Soyex, Macaroni.

"In the foreign trade of the United States imports of soybean oil have appeared since 1910 and of soybeans since 1914. The United States exported domestic soybeans to Europe in quantity for the first time during the fall of 1931, more than 2 million bushels being shipped from the 1931 crop." Address: 1, 3-4. Dep. of Agricultural Economics; 2. Dep. of Agronomy. All: Univ. of Illinois.

771. Leplae, Edmond. 1932-1933. Traité d'agriculture générale et de cultures spéciales des pays tempérés, subtropicaux et tropicaux [Treatise on general agriculture and special crops for temperate, subtropical, and tropical countries. 3rd ed. 2 vols]. Louvain, Belgium: Librairie Universitaire. Vol. 2, 796 p. See p. 306-07. 25 cm. [Fre]
• ***Summary:*** The author classifies the soybean among the leguminous forage plants, among starchy (*féculentes*) plants, and among oilseeds. "Soybean seeds have a nutritive value for humans greater than that of all other seeds, except peanuts." The peoples of East Asia prepare soybeans and their flour in 100 different ways, many of which are now also known in Europe. The Chinese make from soybeans an artificial milk and a cheese [tofu]. Soy flour is easy to digest and can be mixed with wheat in making bread and pastries. The soybean is used in the production of so-called "English sauces" [such as Worcestershire], which are widely consumed in Europe and America. Finally, soybeans are imported into Europe at the rate of 600,000 tonnes/year and the oil is used to make soap and margarine. Address: Prof. à l'Univ. de Louvain, Directeur général de l'Agriculture au Ministère des Colonies.

772. Zlatarov, Asen; Karapetkov, Nikolai. 1932-1933. Biohimichni isledvaniya varhu soiata i mliakoto ot soia [A biochemical study of soybeans and soymilk]. *Godishnik*

na Sofiiskiya Universitet, Fiziko-Matematicheski Fakultet (*Yearbook of Sofia University, Faculty of Physics and Mathematics*) 29(2):341-75. In French. p. 369-70. (Sofia: Grafica). [137 ref. Bul]*
Address: Bulgaria.

773. André, E.; Hou, Kia-wo (Hu, Chia-mo). 1932. [On the presence of fat oxidase or lipoxidase in the soy bean]. *Kuo Li Peiping Yen Chiu Yuan Yuan Wu Hui Pao* (*Bulletin of the National Academy of Peiping*) 3(4):1-4. (Chem. Abst. 29:4094). [Chi]*
Address: France.

774. Pao, C.H. 1932. Tau lu pei yang chi [Soymilk culture media]. *Kuo-Li Pei-Ching Ta Hsueh i Hsueh Nien K'an* (*Peking Univ. Medical School, Annual*). p. 67. [Chi]*
Address: Peking, China.

775. Abadal, D. Jose; Soroa, Jose Maria. 1932. Cultivo y aplicaciones de la soja [Cultivation and applications of the soybean]. Madrid: Patronato Central para la Proteccion de Animales y Plantas. 44 p. Illust. [Spa]
• ***Summary:*** Contents: Introduction (preliminary notes). Part I: Cultivation and applications of soya. Chart of utilization of the soybean seed. Agronomic notes and details on soybean cultivation. Part II: Soya as a food. Nutritional value, soya as a vegetable (green vegetable soybeans; *Soja, como verdura*), soy sauce (*salsa de soja*), soymilk (*leche*), condensed soymilk (*leche concentrada / condensada*), powdered soymilk (*leche en polvo*), fermented soymilk (*leche fermentada*), soy cheese (*queso de soja*) [tofu], soy casein (*caseina de soja*), soy flour (*harina de soja*), soy bread (*pan de soja*), Soyolk (soy flour made by Dr. Berczeller), whole-grain soy bread (*pan integral*), soy flour tablets (*comprimidos*), pastries, biscuits, puddings, etc. (*pasteles, bizcichos, puddings*), soy oil (*aceite de soja*), fermented soy products (*productos de la soja fermentada: natto, miso, shoyu*), confectionery products (*productos de confiteria*), chocolate (*chocolate*), coffee (*café*), soy ferments/enzymes (*fermentos de soja*), products made by Caséo-Sojaïne (*Caseo-Sojaina de Paris*). Soy as a livestock food. Appendix.

"As early as 1918 a Spanish public official, Don Julio de Palencia, the Spanish Consul in Shanghai, sent the State Department (*Ministeria de Estado*) a magnificent report specifying the great attention that representatives of the principal countries of the world were giving to this crop [the soya bean], and the relevance that it would have in the agricultural economy of the future. What a pity that Spain has been the only civilized country to ignore the study of the soya bean and its exploitation on a large scale" [p. 5].

"Finally we must make public our thanks to the spokesmen of this foundation/board (*Patronato*) for the special work they have done in writing this booklet: Don José Maria de Soroa, secretary of the Special School for Agricultural Engineers (*Escuela Especial de Ingenieros Agrónomos*), and Dr. Don José Abadal, chief of the Bureau for the Inspection of Pharmaceutical Services of the Ministry of War (*Negociado de la Inspección de Servicios Farmaceuticos del Ministerio de la Guerra*)" [p. 6].

"In 1917 the Spanish Consul in Shanghai, Don Julio Palencia, sent to the State Department a study on cultivation of soya, proposing that tests be done to acclimatize this valuable crop to our country.

"In Motril and later at the southern agricultural station of Malaga, the agricultural engineer D. Arsenio Rueda has been cultivating soya for the past 10 years [i.e. since 1923] in plots of 5 ares [1 are = 100 square meters], obtaining 60 liters (each liter weighing 780 gm) in each one.

"The white as well as the black varieties give good results, though the white ones do best. The seeds have been distributed to farmers who have noticed that, even though at first the goats that were given them as food rejected them, after a few days of getting used to this grain preferred them to such an extent that one must avoid growing this plant near the herd's path lest the herd be attracted and devour it all.

"Although soya is a legume which draws many nutrients out of the soil (*esquilmante*), it has according to Mr. Rueda, sufficient interest since it allows usage of terrains where field beans cannot be used due to the invasion of the pest called *Orobanche speciosa*, commonly called 'Jopo.' This parasite does not attack soya...

"Besides the quoted trials, it has been more than 25 years since soy has been grown in Spain with success due to the interest and zeal that in their patriotic work, the agricultural engineer Mr. Eduardo Noriega undertook with his partner, Mr. Ortiz, on the farm of 'Jerez.'

"He was successful during many years using the yellow and black varieties, later on also cultivating it in the Spanish central region.

"We think it useful also to state in writing the following data about soy grown by Dr. D. Jose Abadal in Lerida during the years of 1925-1926.

"The experiment was done only out of curiosity, with the intention of seeing if it could be grown in said province. Japanese seeds of the hirsute soy variety, yellow seed, used as food for diabetes, were used. The planting was done in a garden with seeds that had been soaked for ten hours, with no more care or fertilizers than those used for all the existing plants of that garden. The terrain of course was one of easy irrigation and located in Lerida where it is very hot all during the summer.

"This brief essay demonstrates that soy can be grown in irrigated terrain in very hot places and with little care.

"Fifteen years ago, the agricultural Engineer D. Jesus Andreu, in the province of Pontevedra [in the northwest corner of Spain, just north of Portugal, bordering the Atlantic ocean], did some tests with good results on growing soy as a forage plant.

"We also have news, though not concrete, of other successful tests done in the provinces of Madrid and Toledo." Address: 1. T.C. Farmaceutico Militar; 2. Ingeniero Agronomo e Ingeniero Sanitario, Spain.

776. Arnold, Julean. comp. 1932. China through the American window. Shanghai, China: The American Chamber of Commerce. 85 p. Illust. Map. No index. 23 cm. [Eng; Chi]
• ***Summary:*** This book is written in both English and Chinese, with two vertical columns on each page. The English-language column is 6.7 cm wide and the Chinese-language column 4.0 cm wide. The book was compiled for the U.S. Dept. of Commerce.

In the chapter on "Statistical contrasts." Page 27: Soybeans production (long tons): USA–540,000. China–7,000,000.

Average size of cultivated farm in acres: USA–80. China–2.

Percentage of school age children in school: USA–81%. China–10% (p. 26).

In the chapter titled "Interesting facts regarding China." Page 31: "7. Dairying does not figure in the economic life of the Chinese people. The soy bean can apparently give them the ingredients of cow's milk."

"Page 33: "13. China is the world's largest producer of soy beans, kaoliang, millet, sweet potatoes, peanuts, sesame, rape and perilla seeds,... bamboo, tea, ramie fibre, vegetable tallow, tung oil,... chickens, ducks and pigs. It ranks second in the production of rice, wheat, silk, corn, tobacco, cigarettes,...

Julean Herbert Arnold lived 1875-1946. Address: Commercial Attaché in China.

777. Grote, E.G. 1932. Experimentelle Untersuchungen ueber die Verwendbarkeit des Sojamehls in der Kinder- und Saeuglingsernaehrung [Experimental investigations on the suitability of soy flour in the feeding of children and infants]. Thesis, for Doctor of Medicine, Wismar, Germany. [Ger]*
• ***Summary:*** Whole soy flour worked well as a milk substitute for nursing infants. Address: Wismar.

778. Heibonsha. 1932. Dai hyakka jiten [Japanese encyclopedia]. Tokyo: Heibonsha. 15 vols. [Jap]
• ***Summary:*** For roasted soybeans (irimamé), see Vol. 1, p. 1025. For green vegetable soybeans (Edamamé) see Vol. 2, p. 237. For soynuts and mamé-maki, see Vol. 4, p. 899. For tofu, see Vol. 9, p. 284-85. For soymilk, see Vol. 9, p. 1169. Address: Tokyo, Japan.

779. Kellogg, John Harvey. 1932. How to have good health through biologic living. Battle Creek, Michigan: Modern Medicine Publishing Co. vii + 498 p. See p. 88-89, 209-10. 21 cm.
• ***Summary:*** For Dr. Kellogg, biologic living includes a vegetarian diet (which includes dairy products and eggs). A section titled "The soy bean and the peanut, high quality proteins" (p. 88-89) states: "The soy bean and the peanut are notable exceptions to other legumes. Their proteins are of the same high quality as those of eggs and milk."

The next section, titled "Proteins of animal origin" (p. 89) starts by noting that animal proteins are "of the complete or balanced sort." It concludes: "Lean meat is protein more or les saturated with blood and with a small admixture of fat. Such fat may constitute as much as one-half or more of fat meats. Meat contains uric acid urea, and other waste products. Newburgh has shown that toxic products constitute about one-fourth of lean meat solids."

A section titled "Soy milk" (p. 209-10) notes: "Soy milk is in some respects superior to cow's milk and its use in this country should be encouraged. Three quarts of excellent milk may be made from a pound of soy beans and the food value of the residue [okara] will be greater than that of a pound of beefsteak. A pound of wheat and a pound of soy beans will supply energy sufficient for a laboring man, and at a cost of less then three cents a day. Soy milk protein is of the superior quality necessary to supplement that of cereals and is of the basic or alkaline-ash type, and so corrects the acid-ash effects of cereal proteins.

"Soy milk is of special value in helping to change the intestinal flora. A very superior quality of acidophilus milk may be prepared from it*." (Footnote: *"For information, address Battle Creek Diet Service, Battle Creek, Michigan.").

"To fu [tofu], a curd prepared from soy milk, in China and Japan serves as the basis for a great number of meat-like and most delicious dishes."

Note 1. This is the earliest document seen (Sept. 2012) that mentions an "acidophilus milk" made from soy milk or that discusses Dr. Kellogg's work with it (one of two documents).

Note 2. This is the earliest English-language document seen (June 2002) that uses the term "animal origin" in connection with vegetarianism. Address: Battle Creek, Michigan.

780. Orosa, Maria Y. 1932. Soybeans as a component of a balanced diet and how to prepare them. *Manila* (*Philippines*) *Bureau of Science*, *Popular Bulletin* No. 13. 53 p. [16 ref]
• ***Summary:*** Contents: Introduction. The cooking of soy beans (89 Filipino recipes, p. 7-35), incl. roasted soy beans, soy-bean soups etc.–most recipes use whole soybeans, but quite a few use tofu (*tokua*), soy sauce (*toyo*), soy-bean flour, or soy-bean milk, and a few use *tahuri* (brine fermented tofu) or soy-bean sprouts. Some common foods made from soy beans and methods of preparing them (p. 35-53): Soy-bean milk, condensed soy-bean milk, soy-bean milk powder, soy-bean casein, soy-bean curd (tofu; *tokua* or *toqua*). *Tahuri* or *tahuli* (fermented tofu). Frozen tofu. Bean curd brains or *tofu nao*. Dry bean curd or *topu khan* (tofu-kan, dipped in

burnt millet sauce and rubbed with fine salt). Fragrant dry bean curd. Thousand folds (thin layers of fresh tofu pressed in cheesecloth. "On standing, the thousand folds mold and develop a meatlike flavor. This is fried in sesame oil and served in place of meat"). Fried bean curd. Soy sauce (called by the Chinese "ch'au yau," or drawing oil; or "pak yau" or white oil; by the Japanese "shoyu"; and the Filipinos, "toyo"). Natto. Hamanatto (p. 49). Yuba. Miso. Soy-bean flour. Soy-bean oil (used in the manufacture of lard and butter substitutes; also in paints, printing inks, etc.). Soy-bean meal. Soy-bean coffee. Soy-bean sprouts.

Note 1. This is the earliest English-language document seen (Oct. 2008) that uses the term "soy-bean casein" (or "soy bean casein" or "soybean casein"), probably to refer to soybean protein.

"When and by whom the soy bean was first introduced into the Philippines, no one can ascertain. The Filipino people have long known some important soy-bean preparations, such as soy sauce, or 'toyo,' bean curd, or 'tokua,' fermented bean curd or 'tahuri,' not knowing that they were prepared from this bean. The seed is known in some parts of the Philippines, where it is grown, as 'utao.'"

"The main object of this pamphlet is to encourage the Filipino people to use more soy beans, and preparations made from them as food" (p. 3-4).

"Soy beans are grown in some parts of the Philippines. According to Doctor Roxas, Director of the Bureau of Plant Industry, 2,481 tons were grown in Batangas in 1921 and 4,218 tons, in 1930. However, the importation of soy beans in 1924 was 4,657 tons. Doctor Roxas says that soybeans can be grown in all parts of the Philippines" (p. 6). "Immature soy beans may be cooked in the same way as lima beans (*patani*)" (p. 7).

"The soy-bean curd was first produced by Whai Nain Tze, before the Christian Era and was introduced into Japan from China by the Buddhists. It was introduced into the Philippines by the Chinese and has become a very popular food in Manila and in places where there are Chinese who manufacture it for sale. 'Tokua' on account of its high fat, protein, and mineral content, is called by the Chinese as 'meat without bone,' or 'the poor man's meat.'" The Chinese use burnt gypsum (about 1.5% by weight) as a coagulant. In some cases, the curds are wrapped in individual pieces of fine cheesecloth about the size of a small handkerchief, then pressed lightly for a few minutes. They are "unwrapped, spread on shallow bamboo trays (*bilao*) and partially dried at room temperature. Then they are dipped in a weak solution of turmeric to coat the outside in light yellow coloring. Some manufacturers soak the small cakes of curd in brine solution for a short time, then dip them in a solution of burnt sugar or molasses and bake them slightly before putting them on the market." 100 gm of dry soybeans typically yield 350 gm of tofu (*tokua*) (p. 41).

The section titled "'Tahuri' or 'Tahuli'" begins with 2 paragraphs and ends with a table very similar to those from Gibbs and Agcaoili (1912): "'Tahuri' is manufactured in China and exported to the Philippines in large stone jars or in small tin cans. There are some 'tokua' manufacturers in Manila that manufacture 'tahuri' for local consumption. Those that are imported from China are preserved in strong brine solution and the cakes are broken during the shipment so the liquid becomes like a thick emulsion containing pieces of the cured curd." It then contains a new paragraph: "In Manila, the Chinese method of manufacture is to pack the large pieces of soy-bean curd, about 5 inches long, 4 inches wide, and 2.5 inches thick, with much crude salt, in empty gasoline cans. The curd is allowed to cure for a period of several months. During the curing period the bean curd changes from white to a brownish yellow color and develops a peculiar salty flavor to which the Chinese and many Filipinos are educated" (p. 42). Note 2. No information about a fermentation microorganism or process is given.

"The bean curd brains known to many Filipinos as 'tojo' is the unpressed soy-bean curd. The method of making 'tojo' is almost the same as the method used in making 'tokua', only that a smaller amount of the coagulating agent is used, and the very soft but solid mass formed is left undisturbed in the wooden container until used. The Chinese used to peddle this preparation in a wooden pail-shaped container, through different parts of Manila, but on account of the Philippine Health Service regulations, this product is now sold in the markets only. / "The 'tojo' is served with a few tablespoonfuls of medium thick brown-sugar syrup, which gives it flavor, the 'tojo' being almost tasteless. Sometimes it is eaten with sweet oil, sauce, and vinegar, or with finely cut meat and spices." (p. 43).

Note 3. This is the earliest English-language document seen (April 2013) that contains the term "tojo" which is used to refer to unpressed curds made from soy-bean milk.

"Dry bean curd: The fresh bean curd when dipped in burnt millet-sugar sauce and rubbed with fine salt will keep longer than the 'tokua' and is called 'topu khan.' This preparation is usually eaten is soups."

Fragrant dry bean curd or *hsiang khan* ("fragrant dry") has the consistency of smoked sausage. "It is made by subjecting the fresh bean curd to great pressure, which eliminates much of the water content. The pieces of semidry curd are soaked in a weak brine solution in which is dissolved burnt millet-sugar and to which is added powdered spices. The curd is then dried to hardness. This preparation keeps indefinitely and is used in soup making and in vegetable dishes" (p. 43).

Note 4. Cruz and West (1932, p. 78) state that as part of a campaign by the Bureau of Science to encourage the Filipino people to use more soy beans, Miss Orosa "has made excellent cakes, cookies, puddings, sauces, soups, custards, ice cream, and other tasty preparations from Philippine soy beans."

Note 5. The author pioneered the branch of the branch of the Home Extension Service in which home demonstrators helped women in solving their home problems. She started the organization as a food preservation unit under the Bureau of Science in 1923, starting with six home demonstrators that she herself trained. That group became the forerunner of the Home Extension Service in the Philippines. For details on her work see: In: A Half Century of Philippine Agriculture. Manila, Philippines: Liwayway Publishing. p. 236-37.

Note 6. This is the earliest English-language document seen (Nov. 2003) that contains the word "meatlike." Address: Chief, Div. of Food Preservation, Bureau of Science, Manila.

781. Rowe, Albert H. 1932. Food allergy: its manifestations, diagnosis and treatment with a general discussion of bronchial asthma. Philadelphia, Pennsylvania: Lea & Febiger. xi + 18-442. Illust. Index. 24 cm. [300+* ref]

• ***Summary:*** The Preface begins: "Food allergy as a common cause of human symptomatology is gaining increasing recognition, as emphasized in the literature of the last decade and in my experience as an internist as well as an allergist. Such allergy not only enters into the etiology of many conditions necessarily treated by the general practitioner, but also into the cause of many symptoms demanding relief by all specialists."

A marvelous (but unnumbered) two-part bibliography appears on page 413-430. Albert Holmes Rowe was born in 1889.

Soy or soy-bean is mentioned throughout this book: Page 69: In the chapter on "Treatment by elimination diets and general measures," Diet No. 6 states: "For patients with a wide variety of sensitizations the following "elimination diets" may be necessary:... 2. A choice of one of the following proteins: lamb, beef, chicken, soy bean, lima bean, dried peas."

Page 93: In the section "The milk-free diet in infants," Hill and Stuart point out:... "The only food substance providing in suitable concentration all of the amino-acids specifically needed by the infant for continued normal development are animal milks, certain of the animal meats and soy-bean flour."

Page 94: In the same chapter, in the section titled "The milk-free diet in infants," Hill and Stuart [1929] "report the successful use of a soy-bean formula which is produced in dry form under the name of Sobee by Mead, Johnson & Co. Schloss, in 1920, suggested the use of soy-bean flour in an improvised formula for the control of milk sensitization. Ruhräh originally suggested soy-bean flour as a gruel in infantile diarrhea in 1910 and since then it has been shown to contain adequate amino-acids for the nourishment of infants. The ingredients of the mixture of Hill and Stuart [1929] are as follows: Soy-bean flour (ground press cake) 67.50%, olive oil 18.95%, barley flour 9.50%, calcium carbonate 2.70%, sodium chloride [table salt] 1.35%. Total: 100.00%.

Page 95: In the same section: "I feel that this formula is a most satisfactory one. I have used lima-bean flour and split-pea preparations in one infant, aged eighteen months, who had eczema with good results, the child now being on milk after nine months of relief, and I can report the successful use of this soy-bean formula as a substitute for milk in several infants and young children. It is important to state that sensitization to barley or even to soy bean must be thought of and that skin reactions to them might well be tried before the use of this formula. A general sensitization to cereals may arise, and it must be remembered that sensitizations at times are acquired in utero. If sensitizations exist to barley or soy bean other formulas containing a different starch or bean flour or meat protein must be prepared."

Page 187: "Lactic acid milk, melons and grapes were added. In another month the mother reported that improvement persisted. Lima bean, soy bean and figs were added. In another month the mother reported that immediately after the last visit weakness began and an attack of cold sores around the mouth developed. Because of her family history of idiosyncrasy to milk and its recent addition, this was excluded from the diet."

Page 197: "In milk sensitization in infants Schloss recommended a formula containing soy-bean flour, washed butter, potato flour and sugar of milk, which controlled an eczema in a baby who gave positive reactions to milk, wheat, oats and barley. Relief occurred in five days, and the general addition of milk some weeks later was tolerated without a return of eczema. This formula is similar to that recently suggested by Hill and Stuart, which has been described in Chapter III on treatment under the milk-free diet." Schloss (1920) reported: "Thirty-four cases reacted to egg, though it had never been eaten; 11 gave definite symptoms when egg was included in the diet; 36 reacted to milk; 6 patients who reacted to milk were given a formula containing lactose, mineral salts, washed butter and soy-bean protein. The eczema disappeared in three days. The mixture, however, caused diarrhea and vomiting."

Page 217: "Skin tests to all types of food showed positive reactions to egg, chicken, parsnip, pea, potato, soy bean, spinach, tomato, clam, halibut and lobster. She was placed on an 'elimination diet' modified by her positive reactions."

Page 265 (Literature): "Cutaneous skin testing with all types of allergens showed the following reactions:

"Foods: Dusts:
"Whole wheat + Dust No. 13 +
"Spinach +
"Oyster + +
"Pollens:...
"Egg-whole +
"Cocoa +
"Tea +

"Soy bean +
"Dust No. 23 +..."

Page 269 (Literature): "In addition to the pollen therapy a diet which contains tapioca, sago, eggs, lamb, beef, chicken, pork, artichokes, asparagus, beets, carrots, peas, white potato, sweet potato, soy bean, string beans, squash, tomato, butter, salt, olive, tea and coffee has been prescribed, with marked relief to her indigestion. Nasal congestion which was present during the winter in previous years, and which persisted until the institution of this diet, has also been relieved."

Page 329-330: The section titled "Statistics on food sensitization," begins "A careful tabulation of the records of 500 patients who have been tested completely with food allergens with the scratch method and, in most instances, intradermally with from three to fifteen common food extracts, to which negative cutaneous reactions had occurred with the cutaneous test is presented in Table 23." The most widespread food allergens are: Wheat 211. Spinach 124. Egg 110. Milk 86. Cabbage 52. Tomatoes 51. Cauliflower 50. White potato 50. Black pepper 50. Onion 47. Rice 46... Soy bean 13. Address: M.S., M.D., Lecturer in Medicine in the University of California Medical School, San Francisco, California; Chief of the Clinic for Allergic Diseases of the Alameda County Health Center, Oakland, California,....

782. Winton, Andrew Lincoln; Winton, Kate Barber. 1932. The structure and composition of foods: Vol. I. Cereals, starch, oil seeds, nuts, oils, forage plants. New York, NY: John Wiley and Sons; London: Chapman & Hall, Ltd. xiv + 710 p. See p. 512-24. Illust. Index. 24 cm. [67 soy footnotes]
• ***Summary:*** Volume 1 of this 4-volume set contains 274 superb illustrations by the authors. The book is divided into three parts: I. Cereals. II. Oil seeds. III. Forage plants.

In the chapter on "Seeds of the pea family (Leguminosæ)" (p. 497+) the section titled "Soy bean" (p. 512-24) has the following contents: Scientific and common names. Introduction. Macroscopic structure. Microscopic structure: Spermoderm, hilum cushion, endosperm, embryo (palisade cells, oxalate crystals, starch, aleurone grains and fat), chief structural characters. Chemical composition: Changes in composition during growth, soy bean cake, meal, and flour, proteins, carbohydrates, phosphorus-organic compounds, saponins, enzymes, mineral constituents, minor mineral constituents.

The chapter begins: "A native of the Far East, the soy bean has been cultivated since the dawn of civilization in China and Japan, where the seeds furnish millions of human beings with food. From the seeds are prepared soy cheeses (tofu, natto, miso [sic, none of these three are "soy cheeses"]), soy milk, and soy sauce, the latter being used in chop suey. Because of the absence of starch in many varieties soy bean flour has come into use in the Occident as a diabetic food. Soy bean oil is of growing industrial importance."

An illustration by Winton (p. 512; Source: Winton 1906, p. 248) shows the outer portion of the soy bean seed in cross section, with each of the layers (X 160 magnification).

In the introductory section on "Forage legumes," soy beans are discussed under the following headings (p. 642-45): Comparative macroscopic structure, comparative microscopic structure (table), comparative chemical composition of green fodder (p. 644) and of hay (p. 645). The section titled "Soy bean" (as forage plant, p. 666-67) has the following composition: Introduction. Macroscopic structure. Microscopic structure: Stem, petiole, petiolule, leaf, stipule, flower, chief structural characters. Chemical composition (values from Pellet, Schwackhöfer, and Haskins for: Total ash, potassium oxide, sodium oxide, calcium oxide, magnesium oxide, ferric oxide, phosphoric acid, sulfur trioxide, silicon dioxide, and chlorine).

Note: This is the earliest English-language document seen (Jan. 2004) that uses the word "petiolule" in describing the soybean plant.

This book also discusses: Lecithin (p. 8, 14). Kudzu starch (*Pueraria hirsuta* Schneider, p. 37). Gluten (p. 57-59, 72-73, 199-200, 211-25). Coix (Job's tears, p. 100-04). Hemp seed (p. 413-21). Almond (p. 476-85). Peanut (p. 497-512, 642-43, 663-66). Linseed (p. 525-35). Sesame seed (p. 598-605). Alfalfa (p. 642-43, 646-59).

Note: Andrew L. Winton lived 1864-1946. Kate Grace Barber Winton was born in 1882. Address: 1. Sometime state and federal chemist; 2. Sometime state and federal microscopist.

783. *Commerce and Finance.* 1933. Jap and the bean-stalk. 22(6):147. Feb. 8.
• ***Summary:*** Discusses the soy bean in East Asia, soy bean oil, soy bean milk ("fed to thousands of Chinese and Japanese babies"), tofu, soy bean coffee, and soy bean flour. "It is not generally known that the soya bean was used during the American Civil War as a coffee substitute."

"Soya bean flour is a concentrated food... In soups it resembles beef extract; one of the most famous European brands of soup cubes has a soya bean base.

"For troops in the field the bean is almost indispensable. Soya bean oil is used in the manufacture of explosives. Bean soups, curd, flour, meal and coffee can be a field diet in themselves. Many a city besieged by bandits has survived on stores of bean cake originally intended as fertilizer." Note: This is the earliest English-language document seen (June 2008) which states that bandits survived on soybeans–in this case bean cake in a besieged city.

784. *Good Health* (*Battle Creek, Michigan*). 1933. The soybean cures rickets. 68(2):16. Feb.
• ***Summary:*** This editorial states: "Various observers report the successful use of soybean milk in the treatment of rickets. Bischoff, an eminent German authority, calls attention to the

fact that the soybean is rich in phosphorus, the lack of which is a frequent cause of rickets.

"Many physicians are recommending the giving of cod-liver oil to all infants as a precaution against the development of rickets. Soybean milk may be found in many, perhaps in most, cases, equally as protective as cod-liver oil and because of its agreeable flavor and high nutritive value, may be found preferable to fish-liver oil."

Note: As of 1999 nutritionists believe that rickets, a deficiency disease characterized by soft and deformed bones, is usually caused by failure to assimilate and use calcium and phosphorus normally due to inadequate sunlight or vitamin D.

785. Hansen, Louis A. 1933. The soy bean as human food. *Life and Health* 48(2):21-23, 27. Feb. Also in J. of the Jamaica Agric. Soc., March 1933, p. 147-50.
• ***Summary:*** This is a good introduction to the soybean, based largely on information provided by Dr. A.A. Horvath (until recently of the health section, U.S. Bureau of Mines) and William J. Morse (senior agronomist at the USDA Bureau of Plant Industry). Discusses: History of the soy bean in Asia (especially China), nutritional benefits, soy bean flour, soy bean milk, and soy sauce.

Photos show: (1) Two men standing in a field of tall soybeans. (2) A person grinding soybeans with a stone mill to make soy bean milk in China. (3) A "Chinese courtyard with pots of fermented soybeans and brine from which the well-known soy sauce is made." (4) Steamed soy beans about to be made into miso in Japan.

Note: In 1968 Hansen wrote a book titled *From So Small a Dream,* about Madison College (Madison, Tennessee), which pioneered soyfoods in the United States.

786. *Madison Survey* (*Madison, Tennessee*). 1933. Soybean on exhibition at World's Fair. 15(10):39-40. March 22.
• ***Summary:*** "According to Sherman R. Duffy, the soybean will be the only vegetable crop having an exhibit all to itself at the Century of Progress Exposition, and will occupy 6,000 square feet of space in the Agricultural Building."

The soybean is known to urban dwellers only as the "material from which chop suey sauce is made... In the soybean exhibit will be soybean flour, diabetic foods, infant foods, macaroni, breakfast foods, and a vegetable milk which is being used in a variety ways in the manufacture of foods and confections."

787. Hansen, Louis A. 1933. The soy bean as human food. *J. of the Jamaica Agricultural Society* 37(3):147-51. March.
• ***Summary:*** This is a reprint of an article first published in *Life and Health,* Feb., 1933 (p. 21-23, 27).

788. Kellogg, John Harvey. 1933. Nutrient value of the soybean. *Good Health* (*Battle Creek, Michigan*) 68(3):25. March. [1 ref]
• ***Summary:*** *Nutrition Abstracts* reported that two Russian investigators who studied soy milk "found that its protein is equally as digestible as the protein of cow's milk and that it contains more tryptophan and so is able to balance up a larger amount of incomplete cereal proteins. Soy milk was found to digest more easily than egg or muscle protein (lean meat). Its lack of vitamin D is easily made good by the use of spinach and other greenstuffs which are the natural sources of this vitamin."

789. Klein, J. 1933. Vegetable milk in infant feeding. *Archives of Pediatrics* 50(3):205-10. March. [7 ref]
• ***Summary:*** The use of a soybean flour diet in the treatment of seborrheic eczema in infants is described. Address: Chicago.

790. L'Heureux, L. 1933. Le soja [Soya]. *Congo: Revue Generale de la Colonie Belge* 1(2):214-36. Feb.; 1(3):365-83. March. (Bulletin de l'Office Colonial, Bruxelles). [14 ref. Fre; eng+]
• ***Summary:*** This early publication on soyfoods in Africa describes food uses and methods of preparing soymilk, in both condensed and powdered forms. Tunisia was a French protectorate from 1881 to 1956, when it became independent. France grew soybeans there, apparently at about the same time it started growing them in Algeria (p. 214).

At the exposition of Nanking in 1910 some 400 varieties of soybeans were assembled (p. 214).

In 1908 the firm of Mitsui was the first to try to transport, by sea, soybean seeds from Dairen to Liverpool. It was the beginning of a new industry in England (Liverpool and Hull), in Germany, Denmark (Copenhagen), and Holland (Rotterdam & Amsterdam).

A former Belgian missionary in Jehol (West Mongolia), Father De Preter (*Le T.R.P. Fl. De Preter, Supérieur de la Maison des Pères de Scheut à Yvoir*) has corresponded with the author about soybeans, tofu, and soybean cake in that city. Soybeans are not cultivated on the best soils, which are reserved for wheat. One of his colleagues at Jehol, Father Cyr. De Puydt has worked to improve the soybean crop (p. 219).

Father De Preter has often helped in making tofu (*fromage de soja*), using magnesium chloride as a coagulant. If one uses calcium sulfate, the tofu is softer and the taste seems better. Father de Puydt has improved the manufacture of tofu by using magnesium salts (probably Epsom salts) in place of magnesium chloride. The tofu is eaten after being boiled in water or fried in fat. It is best when fresh. In winter, it is allowed to freeze [frozen tofu in northeast China] so that it can be kept for a long time; it becomes spongelike. But fresh tofu has a special aftertaste to which the European palate finds it difficult to get accustomed. This taste does

not come from the coagulant but from the soybeans. When one eats more than two pieces of tofu in succession, one experiences indigestion. It does not produce gas like the beans. Notes that the factory of the Caséo-Sojaïne near Paris, of which Mr. Li Yu-ying is the director, makes tofu and various tofu products. Cooked with eggs, tofu makes an excellent omelet. Cooked with the juice of meat, it takes on entirely that flavor. It can be used to make patés or smoked. Use firm tofu and cook in a mixture of 4:1 water to soy sauce. Then smoke it like meat. This can, for example, replace ham or bacon in an omelet. Tofu paté has much the same consistency and taste as paté de foi gras. Thus, there are many ways that tofu can replace meat (p. 221-24).

Using caséine or légumine of soymilk, the French pioneered industrial soy protein isolates in 1911 (see Beltzer). They were used in various glues, and in coating paper (p. 224-25).

The margarine industry employs only the finest quality oils. Soy oil was not introduced to margarine manufacture in Europe until about 12 years ago [i.e., 1921], but it has rapidly taken an important place on account of its good properties and low cost. Describes how to make synthetic rubber from soy oil. One of the main uses of soy oil in Europe is in making soaps. Some is also used to make explosives. Mr. Tihon is the distinguished director of the Laboratory of Industry and Commerce at Leopoldville, Belgian Congo (p. 227-28).

Soybean cake (*Tourteau*)*:* Father de Preter in Jehol has assured me that soybean cake is used there to nourish and fatten beasts. For horses, this cake has a surprising effect. If a horse, returning from a trip lean and exhausted, is put on a regimen of soybean cake, it will return to normal in 15 days (p. 230).

Just like the oil, the cake is more and more in demand in Europe, and in certain countries the effect of soybeans on the economy is quite remarkable. Until about 30 years ago, Denmark was a super producer of wheat. But Dutch products were defeated by the lower prices of American goods. Aided by soybeans, the Danes were able to expand their livestock. Soybeans are now imported, the oil is extracted and used to make margarine, while the cake is used to feed livestock–some 18.5 million heads in 1926, not including poultry The result has been the development of an enormous trade in animal products, butter, cheese, ham, bacon, lard, eggs and even livestock–all accounting for about 70% of Danish exports. Holland is in a similar position (p. 230-31).

In 1912 the "Dairen Mill Owners Association" was founded, By June 1923 all but 7 of the mills in Dairen were members of the association. The oil in the Suzuki mill is extracted using benzine solvent, the most modern method. 32 of the mills, mostly owned by Japanese, use hydraulic presses, while those owned by the Chinese generally use hand-turned screw presses (p. 231-32).

A large table (p. 323) shows exports of soybean seeds, cake, and oil from the ports of Dairen, Newchwang, Vladivostok, and total, from 1908 to 1917. During this time, because of Manchurian mills, the amount of seed decreased, while the exports of cake and meal increased.

Condiments: Shoyu (*shoyou*) is the main one. Several processes for making soy sauce are described in detail. Lea & Perrins Worcestershire Sauce is nothing but a highly seasoned soy sauce (p. 234).

Continued (p. 365): Mr. L. L'Heureux is director of the chemical service of the Belgian Congo. Let's see what the soybean is doing in the Congo. M. Tihon of Leopoldville, said in an interesting report titled *A propos du soja hispida:* Encountered 30 years ago [i.e., about 1903] at Stanleyville by commander Lemaitre, it figured in the collection of the botanical garden of Eala and was the object of experiments at Sankuru in 1914-15 (p. 365).

In this report, Tihon analyzed 3 varieties of soybeans from the plantations of Eala. The soybean would be good for all our [Belgian] colonies; it could replace meat and be used in the rations of black workers (p. 366-67).

Soymilk: Describes how to prepare it and its properties. According to Prof. Laxa of Prague, fresh soymilk has an acid reaction. Mentions the work of Li Yu-ying. Notes that by adding lactose and a bacterial culture, Yogourth [yogurt] can be made from soymilk (p. 370).

In Peking, soymilk is sold in small bottles of 200-220 cc carrying the title *Lait de pois–Un produit chinois. La nurriture la plus nourrissante. Préparé par* ___. In 1925 one bottle of soymilk daily cost 1 dollar Mex per month. In 1919 in Shanghai, Peking and Dairen, Chinese companies furnished hospitals and private individuals 8-10 oz of concentrated soymilk in bottles (p. 371-72).

A table (p. 373) compares the composition of 3 types of soymilk with mother's milk, cow's milk, and goat's milk; all but the cow's milk (87.00%) contain 90.71% water. The soymilks are: (1) From Tsinan fu, China. (2) From Peking, China. 3. From Japan. The soymilk from Peking was low in fat, so yuba had probably first been removed from it (p. 372).

In China, soymilk is habitually drunk sweetened with sugar. Li Yu-ying reports that one of his parents was nourished from birth with soymilk and for 37 years he has always been in excellent health (p. 374).

A new method for making soymilk. In 1916 Prof. Laxa of Prague develop a method for making soymilk in homes in Europe. The cost of a liter of soymilk in Prague in 1916 was estimated by Laxa as being about 40 centimes if it was homemade. Before the war, there was in London a soymilk factory which intended to place its products regularly on the market. Plans were made to construct two other plants, one in Manchester and one in Liverpool. The synthetic milk syndicate launched a soymilk on the market that was adapted to European tastes. The syndicate's factory, established in Liverpool, used the method of F. Goessel to make 100 liters of soymilk using the following formula (which is given). A

Dutch patent (No. 2122 of Sept. 1917) and a Japanese patent (No. 28346) are also cited (p. 375-77).

A table shows the composition of 6 types of Soyama soymilk according to the analyses of Dr. G. Popp of Frankfurt. The protein ranges from 2.5% to 3.77%. Normal soy cream contained 11.5% fat, whereas that which was extra rich for diabetics contained 30% fat. It is very difficult to tell the difference between tea, coffee or chocolate to which one has added Soyama soy cream compared with regular dairy cream (p. 379).

In using the Soyama milk and cream, von Noorden confirms the following statement of Fischer, who studied vegetable milks in general: 1. In the stomach, soymilk gives a flocculent precipitate which is finer [smaller clumps] than that produced by cow's milk. 2. The digestion of soymilk requires only a weak secretion of gastric juice; the period of secretion is therefore short. 3. The time that soymilk protein resides in the stomach is shorter than that of cow's milk protein. 4. The peristaltic action of the stomach is less after ingestion of soymilk and better coordinated. Therefore, based on these observations, von Noorden recommended soymilk over cow's milk (p. 380).

Hatmaker made powdered soymilk. A table shows its composition, as analyzed by a laboratory in Paris (p. 380).

Yu P'i and Yu Ba are the Chinese and Japanese names of yuba, respectively. Recently a new method for making yuba has been patented in Japan. It consists in the use of an electric ventilator [or fan] placed above the surface of the cooking pot containing soymilk that is not heated above 90ºC. A table (based on analyses of the Tokyo Laboratory of Hygiene, of Embrey, and of Adolph) then gives the nutritional composition of 5 types of yuba, including Fu Chu (dried yuba sticks) which (surprisingly) contain 53.68% water.

Note: Maybe this Fu Chu was either fresh or reconstituted yuba. Address: Directeur du Service Chimique du Congo Belge.

791. *J. of the American Medical Association.* 1933. Soy bean milk in infant feeding (Abstract). 100(15):1205. April 15.
• ***Summary:*** This is a brief summary of a study by Rittinger and Dembo, who conducted a preliminary study of 50 infants for more than one year by feeding them soy bean (vegetable) milk. "The progress in weight and the state of nutrition shown demonstrated that the soy bean, with the addition of sugars and various mineral salts, can be made an adequate food for infants. The preparation used contained adequate amounts of the essential vitamins. The stool flora resembled that of the normal, breast fed baby. The economic features (mass production and low cost) are especially significant in a consideration of soy bean milk as an infant food. It compares favorably with the milk of animals from the standpoint of nutritional availability and biologic value. The authors have an additional 100 babies under observation on a diet of soy bean milk, either as a complement to breast milk or as an exclusive food. They will report their studies at a later date."

792. Adolph, William H.; Yang, En-Fu. 1933. The estimation of soybean milk used as an adulterant in cow's milk. *J. of the Chinese Chemical Society* 1(1):29-34. April. [3 ref. Eng]
• ***Summary:*** Soybean milk (vegetable milk) is used in the Orient as both a substitute for and an adulterant of cow's milk. "In nutritive value, it is inferior to cow's milk. Therefore the development of a simple method for its detection and estimation as an adulterant becomes a matter of importance."

In general appearance the two types of milk are similar, except for "a distinct *beany* taste in the case of the soybean milk."

Two methods are proposed: (1) Reaction with alkali. (2) Determination of iodine number. Address: Dep. of Chemistry, Yenching Univ., China.

793. Battle Creek Sanitarium. 1933. Menu. Breakfast, Tuesday, April 18 1933. Battle Creek, Michigan. 1 p.
• ***Summary:*** At the bottom of each typed menu is a space for the dietitian's name. "Good morning!" is printed near the top of the menu, which is in the form of a table with 8 columns. Col. 1 are the menu items divided into main types: Fruits, cereals, entrees, breads, beverages. Cols. 2-8 give, for each menu item, the weight, the calories from protein, fat, and carbohydrates, and the total calories. Cols. 7-8 give the reaction of the food (acid or basic).

Only vegetarian foods are offered. These include soy milk, soy acidophilus [cultured soy milk], cereal coffee, whole wheat toast melba, cooked whole wheat cereal, bran flakes cereal.

794. *Washington Post.* 1933. Milk from soy beans is new economy food. Inventor [Jethro Kloss] claims product is more nutritious than dairy article. May 21. p. 24. Sunday.
• ***Summary:*** Jethro Kloss makes soy bean milk at home for his family. His own daughter, Mrs. Harry C. Engelhard, was raised on nut milk before he perfected the soy bean milk. Her daughter, Joyce Joan Engelhard, was raised exclusively on the soy bean milk. In Mr. Kloss' method, the strong flavor is removed. The beans are soaked overnight, then ground, to give a product costing about 2 cents for 3 quarts. Mr. Kloss, who lives at 109 Varnum St. Northwest, says that buttermilk and cheese may also be made from soy bean milk.

Two small portrait photos show (see next page): (1) Mrs. Harry C. Engelhard (left), wearing a white hat and dress. Jethro Kloss' youngest daughter, she was born Naomi Kloss, but later changed her first name to Joan. (2) Jethro Kloss (right), wearing a dress suit with a white bow tie. An original of this photo (shown here) was sent to Soyfoods Center in 1985 by Doris Kloss Gardiner of Loma Linda, California.

Note 1. This is the earliest document seen (Oct. 2004)

concerning Jethro Kloss and his work with soyfoods.

Note 2. This is the earliest article on soy seen (Aug. 2002) in the *Washington Post.*

795. Goessel, Fritz. 1933. Process for converting soya beans and the like seeds into a condition suitable for nutrition. *U.S. Patent* 1,912,895. June 6. 2 p. Application filed 23 Dec. 1930.

• ***Summary:*** Describes heat-treatment of soya beans with a hot liquid (such oils or fats) at 100ºC for about 5 minutes to remove the "repulsive taste" and/or smell. The oil is then removed by centrifuging.

Note: This process of oil-roasting or deep-frying soybeans in oil and/or Crisco to reduce their beany flavor is sometimes called "Goesselizing" (See Nelson 1935). Address: Frankfurt-am-Main, Germany.

796. Asiaticus. 1933. Sojas de Mandchourie: Production–exportation [The soybeans of Manchuria: Production and exports]. *Revue Internationale des Produits Coloniaux* 8(90):230-33. June. [Fre]

• ***Summary:*** Soymilk is made in Germany and Czechoslovakia.

797. *Boletin de Agricultura y Trabajo* (*Nicaragua Ministerio de Agricultura y Trabajo*). 1933. Soya o soja (Soja Híspida Moench) [Soya or soja]. 5(48):19-20. June. 2nd Series. [Spa]

• ***Summary:*** Contents: Introduction and history of the soybean ("it is also called 'soya'"), with its extension in the United States. Climate. Soil. Fertilizer. Inoculation. Varieties widely cultivated in the USA (Biloxi, Peking, Virginia and Wilson Five for hay and ensilage. Ito-San, Manchu, Mandarin, and Tokio [Tokyo] for seed. Hahto for use as a food legume at the table {*legumbre de mesa*}). Uses of the plant: Green manure, forage, pasture (*pastaderos*), hay, green forage. Food products made from the seeds: Flour, oil, soy sauce, cooked whole soybeans, coffee substitutes, soups, soybean roasts or steaks (*soyas asadas*), porridge or mush, soymilk (*leche vegetal*), condensed soymilk, fresh soymilk, casein, confections, soy cheese (tofu; fresh, dry, smoked, or fermented; *queso fresco, seco, ahumado, fermentado*).

Food products: Dry soybeans (*semillas secas*) are used to make soy sauce (*salsa de soja*), cooked soybeans (*sojas cocidas*), coffee substitutes (*sustitutos del cafe*), soups (*sopas*), roasted soybeans (*soyas asadas*), porridge / pap (*gacha*), vegetable milk [soymilk] (*leche vegetal*), condensed milk (*leche condensada*), fresh milk (*leche fresca*), casein (*caseina*), confections or sweets (*dulces*), and soy cheese ([tofu] fresh, dried, smoked, or fermented {*fresco, seco, ahumado, fermentado*}), and green vegetable soybeans (*semillas verdes*) are cooked and canned or served in salads. Enemies of the soybean.

Note 1. This is the earliest document seen (Feb. 2009) concerning soybeans in connection with (but not yet in) Nicaragua.

Note 2. This is the earliest Spanish-language document seen (Oct. 2011) that mentions fermented tofu, which it calls *queso fermentado.*

Note 3. This is the earliest Spanish-language document seen (Oct. 2011) that mentions roasted soybeans / soynuts, which it calls *soyas asadas.*

Note 4. This is the earliest Spanish-language document seen (June 2009) that uses the term *semillas verdes* to refer to green vegetable soybeans.

798. Kellogg, J.H. 1933. Lime and longevity: From the editor's pen. *Good Health* (*Battle Creek, Michigan*) 68(6):16-17. June. [1 ref]

• ***Summary:*** Dr. H.C. Sherman of Columbia University, in rat feeding experiments, has shown that the addition of milk and lime or calcium to their diet increased longevity by 10%. "For those who cannot take cow's milk, and there are many such, soybean milk is a very satisfactory substitute. It is, indeed, more than a substitute, for in some respects it is superior to cow's milk.

"Best of all is the soy acidophilus milk, a culture of the *bacillus acidophilus,* the protective germ which Nature plants in the intestine of every young mammal to protect it against the invasion of harmful bacteria. Unfortunately, many

adults have lost this bodyguard which Mother Nature kindly provides. In such cases, a new implantation of the protective flora is necessary. This can best be done by the use of the soy acidophilus milk. One or two pints of this milk, used in connection with lactose, will quickly change the flora even in cases where the protective organism has wholly disappeared. The protective flora keeps the intestinal tract in an acid state, the normal condition which encourages the absorption of lime" [calcium].

799. USDA Bureau of Home Economics. 1933. Nutritive value of soybean and soybean products (Leaflet). Washington, DC. 2 p. June 10. [5 ref]
• ***Summary:*** Table 1 gives the nutritional composition and fuel value of soybeans and soybean products: Green shelled soybeans, soybean sprouts, dry whole seed soybeans or whole ground meal, soybean flour (sifted, from the whole bean, from the press cake), soybean curd or cheese (fresh), soybean milk, soy sauce. Includes recipes for: Whole wheat bread with soybean flour, and White bread made with soybean flour. Mentions that Soyex Co., Inc., was at 60 John St., New York City, on 5 May 1931; An analysis of their flour made from whole soya beans is given.

Note: This is the earliest English-language document seen (June 2009) that uses the term "Green shelled soybeans" to refer to shelled green vegetable soybeans. Address: Washington, DC.

800. Adler, Max. 1933. [Manufacture of soy milk and its derivatives]. *French Patent* 749,137. July 18. [Fre]*

801. Dittes, Frances L. 1933. The soy bean as human food. *J. of the Tennessee Academy of Sciences* 8(3):323-28. July. [12 ref]
• ***Summary:*** "Read before the Tennessee Academy of Science at the Nashville meeting, November 27, 1931." Food products from soybeans and their value as food. Concludes: "Thus, there are significant reasons for expecting that the soy bean will become one of our most stable and prominent sources of fat and protein. There are reasons to expect also that the United States will become the leader in introducing the soy bean in the daily diet of the white race."

Tables: (1) Composition of soy bean seed compared with that of other legumes. (2) Comparisons of soy milk with other milks. (3) Composition of soy bean milk compared with cow's milk compiled from various sources. Address: Nashville Agricultural and Normal Inst., Madison.

802. Stearns, Genevieve. 1933. Soy bean flour in infant feeding: A study of the relation of the comparative intakes of nitrogen, calcium, and phosphorus on the excretion and retention of these elements by infants. *American J. of Diseases of Children* 46(1):7-16. July. [15 ref]
• ***Summary:*** Infants maintained on diets of soya-bean foods containing calcium, phosphorus, and nitrogen in approximately the same proportions as in cow's milk retain adequate quantities of these elements. Increase in the relative intake of calcium results in insufficient retention of phosphorus and calcium and of other fixed bases. Address: Dep. of Pediatrics, College of Medicine, State Univ. of Iowa.

803. *Chinese Medical Journal.* 1933. Annotations: Soya-bean milk in infant feeding. 47(9):943-44. Sept. [1 ref]
• ***Summary:*** "Long popular in the Orient where it occupies a prominent place in the dietary, the soya bean is not usually regarded in this country as an important foodstuff, still less as a possible source of material for the feeding of infants. Nevertheless it has been tried for the latter purpose with favourable results in certain centres in England, while in America many workers are now speaking well of the so-called 'vegetable milk.'"

There follows a summary of an article by Rittinger and Dembo (*American Journal of Diseases of Children,* Dec. 192, p. 1221-38). Note. This is the earliest English-language document seen (Aug. 2013) that contains the term "soya-bean milk," which is used in both the title and the long summary.

804. Miller, Carey D. 1933. Japanese foods commonly used in Hawaii. *Hawaii Agricultural Experiment Station, Bulletin* No. 68. 43 p. Nov. See p. 1-10, 28-43. [18 ref]
• ***Summary:*** Contents (p. 1-10): Introduction. Soybean products. Edamame (green soybeans). Tofu (soybean curd). Kirazu (tofu residue) [okara]. Tonyu (soybean "milk"). Aburage (fried soybean curd). Miso (fermented rice and soybeans). Natto (fermented soybeans). Shoyu (soybean sauce). Koji (fermented rice). Pages 24-15: Kinoko (mushrooms). Fu (gluten cakes). Goma (sesame seeds).

Pages 28-43: Recipes with the nutritional composition of each: Miso soup with tofu. Miso soup with wakame. Miso soup with daikon. Miso soup with [cow's] milk. Tofu soup with lemon. Tofu shoyu soup. String bean shirae [shira-ae] (with tofu and miso). Carrot shirai. Konnyaku shirai. Eggplant with miso. Green onions with miso. Fish cakes with miso. Sesame seed sauce for vegetables (with shoyu). Nishime (with shoyu). Nigome (with aburage and shoyu). Kirazu with vegetables (with okara, aburage, shoyu). Noodles (somen or udon, with shoyu). Vinegar sauce for sushi. Inari-sushi (with aburage and shoyu). Maki-sushi.

Note: This is the earliest English-language document seen (June 2013) that calls for okara [which it calls *kirazu*] as an ingredient in a recipe.

Appendix: Composition of some Japanese foods used in Japan.

Concerning edamame: "The Japanese use several varieties of fresh green soybeans. In Honolulu whole plants are purchased from the vegetable market. The pods are removed from the plants, placed in boiling salted water,

and boiled for about 25 minutes. They are then drained and cooled, and the beans are kept in the pods until eaten. Often children eat them out of bags as they would candy. The fresh green soybeans appear to be an excellent food. They are good sources of calcium, phosphorus, and iron, yield a basic ash, and, as compared with other fresh vegetables and fruit, have a remarkably high protein content. Vitamin tests in progress at the nutrition laboratory of the Hawaii Agricultural Experiment Station show that the cooked beans are very good sources of vitamins A, B, and G. The more general use of green soybeans should be encouraged in the home, and their consumption may be increased by selling them in school cafeterias."

Concerning Kirazu (tofu residue) (p. 5): "Kirazu, or the residue of the soybeans left when tofu is made, has a crude fiber content of 3 to 4 percent, contains 4 to 5 percent of the protein of the beans, more than 1 percent of the fat, and 5 to 6 percent of the carbohydrate. Only a small part of kirazu is used for human food in Hawaii, by far the greater part being used as hog feed. Kirazu, however, is a utilizable, inexpensive food and might be more generally used than it is... Kirazu is used in combination with vegetables, or with fish, or dried shrimp, and seasonings."

Concerning Tonyu (soybean "milk"): The milky liquid obtained by grinding soybeans with water and heating and straining off the insoluble residue has the appearance of skim milk. Early reports from China and from Japan stated that soybean milk may be used as a substitute for cow's milk for children, but Wan (16, p. 360), in more recent scientific reports from China, indicated that, whereas soybean milk is richer in vitamin B than is cow's milk, soybean milk is lower in vitamin A and still lower in calcium content. The biological value of the protein of the soybean milk is not comparable with that of the protein of cow's milk. Chemical analyses of local soybean milk obtained from the tofu-manufacturing shops showed it to be low in fat and in carbohydrates. Chang and Tso (3, p. 199) demonstrated that, when properly supplemented with the necessary minerals, vitamins, fat, and carbohydrates, soybean milk can be used successfully for infant feeding where cow's milk is not available or where the infant is anaphylactic to the protein of cow's milk. In Hawaii there is no need to use soybean milk as a substitute for cow's milk and, considering its dietary qualities, it should not be so used without the needed supplements"

Concerning natto: Describes the process for making natto on a commercial scale in Honolulu. After cooking (without soaking) for about 8 hours in a large iron kettle, the "beans are thoroughly drained and placed on paper plates covered with wax paper. The plates are stacked one above another in large wooden boxes, covered with rice straw mats, and kept at a temperature of approximately 30ºC. for 35 to 36 hours, when the product is ready for use... The fermented product is covered with a gray, slimy substance that forms strings or threads when the beans are pulled apart, indicating good quality... Although no molds or yeasts are added to the cooked soybeans, O.N. Allen, of the botany department of the University of Hawaii, who examined several samples of fresh natto from Honolulu, found 2 molds, 4 bacteria, and an aspergillus present. The enzymes of some of these organisms probably caused the conversion of a small part of the protein to simpler substances."

Concerning Inari-sushi (p. 37): The "ingredients required for this dish are rice, water, salt, aburage, carrots, mushrooms, string beans, gobo, flaked bonito, water, sugar, shoyu, and vinegar sauce." A detailed recipe is given.

Photos show the following (each food accompanied by its Japanese name written in both Chinese characters and *katakana*)*:* Edamame, in the pods on the plant, and shelled in a dish. Tofu kasu [okara] on a plate. Tofu on a dish. Tonyu (soybean "milk") in a glass. Three triangles of aburage on a dish. Miso on a dish. Natto in a white rectangular commercial paper tray about 3½ by 6 by 1 inch deep. Koji on a plate.

Note 1. This is the earliest English-language document seen (June 2009) that uses the term "fresh green soybeans" to refer to green vegetable soybeans.

Note 2. This is the earliest document seen (July 2003) that mentions commercial natto production in Hawaii.

Note 3. This is the earliest English-language document seen (Jan. 2012) that uses the term "tofu residue" to refer to okara.

Note 4. This is the earliest English-language document seen (Jan. 2012) that uses the word "strings" or "threads" in connection with natto. Address: Specialist in Nutrition, Honolulu.

805. Pollak, J. 1933. Soy bean is a source of food and milk for diabetics. *Industrial and Engineering Chemistry, News Edition* 11(23):347. Dec. 10. Translated by W.L. Hill.
• ***Summary:*** "The process worked out by L. Berczeller in Vienna for purifying the soy bean, which is known to be especially rich in protein and fat, has made possible the production of a soy bean meal [whole soy flour] that still shows the total fat and lecithin content of the bean and yet does not become rancid. Later, E. Kupelweiser [sic, Kupelwieser] in Vienna utilized and perfected this process on a technical scale." By the addition of the necessary technical baking supplements to edible soy meal, a soybean bread has been produced in Austria. It contains only "one-fourth as much sugar-forming substance as normal bread. In taste and appearance this bread comes so near to ordinary whole-grain bread that it can scarcely be distinguished from it. Moreover, there is the practical advantage that this new bread, now being manufactured for diabetics on a factory scale, is markedly cheaper than most of the baked products hitherto used by diabetics.

"Another old problem of the production of soy milk

has also been worked out recently in Austria. By suitable preliminary treatment of soy beans, M. Adler has been able to produce a soy milk which is completely neutral to the taste and can scarcely be distinguished from cow's milk. Moreover, in chemical composition and physical properties it appears to be quite equal to animal milk. On account of its low cost this product could assume importance in the food-processing industries. The process is also probably suitable for the production of milk for diabetics." Address: Vienna, Austria.

806. Adler, Max. 1933. Manufacture of soy milk and its derivatives. *British Patent* 402,948. Dec. 14. Application filed 12 Jan. 1933. *

• ***Summary:*** Objectionable flavors are removed from soybean products by partial preroasting, extraction with ethanol, and heating an aqueous suspension while passing a stream of superheated steam or air.

"The original harsh and bitter taste is changed to an almond-like sweetness by subjecting the beans in the first place to a light roasting, followed by peeling and removal of the germ. Bodies imparting an astringent taste are dissolved out with the aid of alcohol or other suitable organic liquid. Not less than 10 minutes' heating of the soy mass in aqueous suspension destroys the raw leguminosic taste. This operation is immediately followed by passage of a stream of superheated steam or other indifferent gas heated to the same temperature in order to drive off substances responsible for the characteristic odour of the raw beans. This last operation should not occupy more than 30 minutes at a temperature not exceeding 120ºC, so as to avoid decomposition of fats and albuminoids. The final product can be incorporated with other ingredients or diluents and thereby rendered approximately equivalent to cow's milk or human milk. Emphasis is laid upon the value of soy milk as a diet for diabetics." (Quoted from Food Manufacture).

807. Crane, Helen R. 1933. The story of the soya. *Scientific American* 149:270-72. Dec.

• ***Summary:*** The article begins: "During the Civil War the Union soldiers were fed a coffee which they did not like very well. It tasted 'so-so' but it failed to whip them on and keep them awake as did the coffee they had back home. No one bothered to tell them it was soybean coffee, and if they had been told what it was, the news probably would have meant nothing to them, for few people in this part of the world had ever heard of the soybean in that time." This "Civil War coffee" was "brought back by some of our traders to the East..."

"Time went on and then, in 1915 a shortage of cottonseed in the South coincided with a surplus of North Carolina's soybeans that were being cultivated for live-stock. The Department of Agriculture began to dream dreams of an American soy-oil. Had not the Orient been using this oil for thousands of years in making lacquers, varnishes, paints, soaps, printing-inks, candles, waterproofing, and all such?"

Americans discovered that soybean "oil could be extracted by grinding the beans and then placing them in some chemical solvent such as benzol, naphtha, or ether. The solvent was later evaporated, distilled, and used over again..." The Orientals have made comparatively "little use of soy meal for animal feed."

"It was not until as recently as 1917, when conditions brought on by the World War forced the Department of Agriculture to search for a cheap source of proteins for human consumption, that the soy bean was 'discovered' as a real food. More than 400 different recipes exist in Chinese cook-books, some of them dating back to about 3000 B.C., but we Americans did not find them. Our scientists went to work directly on the bean itself–although they may have accepted ideas from the Orient of using it as a flour, a curd, milk, oil, and meal."

"Our food experts, too, have taken with enthusiasm to this new 'almost perfect food... it fills a crying need in our dietary,' they say, and they add that, '... for some strange reason, our knowledge of foods has lagged far behind our other technical accomplishments and we have only just begun to realize the deficiencies of our present foods... the soya will be come a very important accessory.'"

"Soy-milk, which is prepared in a similar manner to almond-milk, is reported by several of our universities to be suitable for use as the only source of proteins in the diet of babies, as well as being adequate for promoting normal growth in children. It is further stated in these reports that invariably better results are obtained from its use in such cases than from cow's milk."

"As for the cheese, or curds, they do not appeal greatly to Occidental taste at first. They seem a trifle strong in flavor and are sponge-like in consistency, but it is prophesized [prophesied] that they will undoubtedly come to be looked upon as the delicacy they are considered to be in the Orient. These curds, prepared in an infinite number of ways, may appear in one form as the 'meat' course, in another as the salad, and in still another as the dessert."

"Flour is now an important product from the soy, and is being manufactured in various parts of the country by the ton. It is used for making breads, cakes, and pastries. To diabetic patients and others in need of a starch-free diet it comes as a blessing, as well as adding a very palatable and nutritious item to the pantry list of any housewife."

"'Ice Cream by the Mile' is the title of an article, to be published soon, which tells the story of the development of a new and better process for making that frozen delicacy."

Photos show: (1) A field of Oo-too-ton [Otootan] soybeans in Orangeburg County, South Carolina. (2) William Morse of the USDA holding a round soybean cake made by pressing the oil from the beans. (3) Laredo soybeans cocked up in the field for curing in White County, Arkansas. (4)

A soybean plant growing taller than a man, with corn, in South Carolina; they are used for soil building and "hogging down."

Note 1. This is the earliest document seen (Jan. 2000), published in the USA, that uses the term "the soya" as a noun.

Note: This is the earliest English-language document seen (Sept. 2006) contains the term "soy-oil." It is used as a noun.

808. Bogatskii, V.D.; Storozhuk, M.K.; Muromtsev, V.A. 1933. Technologie der Herstellung und Methoden der Desodorierung der Sojamilch [Technology for the production and methods for the deodorization of soymilk]. *Schriften des Zentralen Biochemischen Forschungsinstituts der Nahrungs- und Genussmittelindustrie* (*Moscow*) 2(9):410-30. (Chem. Abst. 27:5438). [3 ref. Rus; ger]
• ***Summary:*** Describes the commercial preparation and methods of deodorization of soy milk. "Detailed directions are given for preparation and grinding soy beans, emulsifying, boiling and deodorizing by blowing with hot air..." Address: USSR.

809. Kostuirke, D.S.; Maryash, T.K. 1933. Die Mikroflora der Soja und ihre Rolle in der Technologie der Sojaprodukte [Soybean microflora and their role in the technology of soy products]. *Schriften des Zentralen Biochemischen Forschungsinstituts der Nahrungs- und Genussmittelindustrie* (*Moscow*) 2(9):431-36. (Chem. Abst. 27:5438). Also in Zentralblatt fuer Bakteriologie Series 2. 90:279-, 1934. [1 ref. Rus; Ger]*
• ***Summary:*** Bacteriological examination of soya-bean revealed the presence of *B. perfringens, B. megatherium* and various strains of *E. coli* and *Bact. lactis-acidi Leichmann* (now called *Lactobacillus Leichmanii*). Mild fermentation usually sets in when the beans are soaked in water, the aerobic or the anaerobic organisms being active according to the conditions. The putrefactive spoilage of soya-bean milk is initiated by *Escherichia coli*, proteolyzed by *B. megatherium* and *B. mesentericus vulgatus.*

The authors prepared alcoholic and lactic acid fermentation products from soya-bean milk by using *Lactobacillus leichmanii* and a torula yeast isolated from kefir.

Pasteurization and Tindalization during the production of soymilk and soy lactic acid products (kefir, sour milk) is not suitable / applicable. Address: USSR.

810. *Unknown newspaper* (*Miami, Florida*). 1933. Scientist extracts milk from soy bean. Unknown.
• ***Summary:*** A facsimile copy of this article appears on page 341 of the revised 1981 edition of Back to Eden. A large photo shows "Dr. [sic, he was not an M.D.] Jethro Kloss" with glasses in what appears to be a tuxedo and white bow tie. The subtitle states: "Dr. Jethro Kloss of Washington, D.C., says product tests 3.15 per cent butter fat and can e obtained much more cheaply than from cow; soy bean products to be exhibited." The article continues: "Milk from contented soy beans. This may sound like a joke or prophetic, but it's a fact, according to Dr. Jethro Kloss of Washington, D.C., who has devoted 18 years to the study of the soy bean, and from it has derived so many products that an enumeration of them sounds like a dairy menu.

"'Milk so pure that it can hardly be detected by the taste alone can be taken from the soy bean,' Dr. Kloss said. 'From this milk more than 20 products already have been made, and have stood the test of careful analysis.

"'Soy bean milk tests 3.15 per cent butter fat against 4.50 butter fat for the best of cow's milk. It will sour just as the cow's milk, and after this it may be made into cheese, buttermilk or anything else for which cow's milk is used. And it may be produced for about 2 cents per quart.'

"Dr. Kloss said that he first became interested in the soy bean when he noted its fattening effect on cattle. He began an intensive study of the bean, and after many years of research, perfected processes by which the milk could be extracted. From this the by-products developed.

"' The milk can hardly be detected by taste alone. Most people expect it to be slightly bitter, but it isn't,' Dr. Kloss said. 'My own 4-year-old granddaughter has never tasted cow's milk, and she has been pronounced an almost perfect specimen of childhood.'

"Dr. Kloss will exhibit the products of the soy bean in Bayfront park tomorrow evening after the band concert."

Note: Kloss' 4-year-old granddaughter referred to here is Doris Kloss Gardiner, who was born on 28 Feb. 1933 in Miami, Florida. Thus the article must have been published after that date, probably sometime during 1933. Bayfront park (which still exists in 1990 and has a large amphitheater) is in northern Miami, Florida, on the waterfront on Biscayne Blvd.

811. Carqué, Otto. 1933. Vital facts about foods: A guide to health and longevity with 200 wholesome recipes and menus and 250 complete analyses of foods. Los Angeles, California: Published by the author. 208 p. Index. 24 cm. [20+* ref]
• ***Summary:*** This manual of food reform discusses the importance of a simple vegetarian diet of natural foods, sunlight and sunbaths, fresh air, pure water, exercise and rest. Also talks about acid and alkaline foods, the influence of mind on health, the failure of synthetic foods, why refined sugar is injurious, the dietetic value of sea plants, table salt is unnecessary and harmful, fruit is man's best food, sulphured and unsulphured fruits, nut butters, food preparation, and the treatment of disease.

"Dedicated to my dear wife, Lillian, who through her sincere and earnest spirit of cooperation has greatly assisted the author in his work of food reform."

The germ theory of disease has not been proven since potentially harmful germs are omnipresent yet often fail to harm healthy individuals (Pasteur was a chemist and laboratory worker, not a physician. Germ action is always secondary; "when germs invade a living organism it is a sign that the organism is enervated and its chemistry perverted." p. 114-15).

The section titled "'Meat substitutes' not essential" (p. 130) states: "Those persons who want to adopt a meatless diet should not look for artificially prepared meat substitutes as a source of protein. A food constituent required in such a limited amount as protein is easily supplied by the various products of the vegetable kingdom. Such combinations as 'roast vegetable turkey' or 'vegetarian steak' seem to be the result of the belief that meat is a necessary food and must be replaced in some form. Indeed, vegetarians, who live largely on foods in which the protoplasmic cells have been more or less disorganized by prolonged cooking, have very little advantage over mixed eaters.

"All other factors being equal, a judiciously selected meatless diet is far more conducive to health than the usual mixed diet, consisting, for the most part, of animal and starch-bearing foods deficient in alkaline elements. We should understand that the proteins of fruits and vegetables, supplemented by a small amount of the proteins of nuts, legumes (especially soy beans), or dairy products, are fully able to maintain health and efficiency. It is entirely feasible to live on an exclusive diet of fresh ripe fruits and green-leaf vegetables for many weeks and months, thereby purifying the blood and greatly improving the keenness of our senses. In fact, in many pathological conditions such a restricted diet is more helpful than an absolute fast.

"Among the legumes which contain a large amount of protein, the soy bean takes first place. Its protein content, nearly 40%, is higher than that of any other food. Moreover, this protein is of excellent quality, as valuable as the casein of milk; it contains all the essential amino acids. It contains a sufficiency of vitamins A and B, and in this respect it is superior to all seeds. It contains very little carbohydrate, only about 6%, and is practically free from starch. The soy bean fills the place of meat as well as milk in the dietary of many millions of sturdy Orientals; it is destined to become one of the great food staples, not only of this country, but of the world. A number of recipes for the preparation of the soy bean are given in Chapter XXI."

The section titled "Fruit and nut confections" (p. 133-35) begins: "Fruit and nut confections made without refined sugar and glucose should take the place of candies." These "sweet-meats"... "should be the only kind of confections allowed to growing children, which have a natural craving for sweets." Recipes include stuffed dates, date caramels, nut fruitose, carob confection, raisin-nut balls, and honey cocoanut balls. For Nut fruitose: Mix dates, figs, raisins, almonds and walnuts. "Run through a food chopper twice. Press the mixture into a flat pan in a layer about 1 inch thick, let stand overnight, and cut into convenient sizes." Note: Carque was a pioneer in the development of healthy, natural treats. The last recipe could be considered a forerunner of the less-healthful "nutrition bar" of the 1990s.

The next section, titled "Nuts and nut butters," states that "salting and roasting greatly impair the nutritive value of nuts and prevent their proper assimilation. The proteins become coagulated by roasting, and the fats split into glycerine and free fatty acids, while the vitamins are destroyed. Nut butters made from salted nuts should, therefore, have no place in our dietary." Rather, the peanuts or almonds should be blanched (scalded or parboiled in water or steam). "Since few people, on account of defective teeth, can masticate nuts well enough to be acted upon by the digestive juices, the mechanical emulsification of nuts by means of nut butter mills is quite dispensable."

The section titled "Melba toast" and "Melbettes" (p. 156) states: "These are delicious dextrinized whole wheat products made by the Cubbison Cracker Co., Los Angeles." Melbettes are also made from whole rye. "Calavo Melba Toast is another tasty whole wheat product; it contains the natural fruit fat of the California Avocado or Alligator Pear as shortening."

The section titled "Natural whole rice" (p. 156) notes: "Whole rice, also called brown rice, contains the bran, cuticle, and germ of the cereal. In milling nothing has been removed but the husk and dirt."

The section titled "The Soy Bean, a Remarkable Food" (p. 158-61) discusses boiled soy beans, soy bean milk, tofu ("it is called by the Chinese 'the meat without a bone...' Other preparations of the soy bean, which are but little known in this country, are *natto, hamananatto* [*hamanatto*], *Yuba* and *Miso*. The principal use of miso, which is a slightly [sic] fermented mixture of soy beans and rice or barley, is for making soups and for cooking vegetables"), soy sauce, soy bean sprouts, and various recipes.

Under "Boiled soy beans" we read: "The dry beans are best soaked in soft water over night or for at least 20 hours and then cooked with sufficient water in a waterless cooker or Pressure cooker until tender. This may require as much as 2 hours or more, according to the variety of beans used. The best results are obtained if the beans are allowed to simmer rather than boil quickly. Onions, tomatoes, celery, parsley and other seasoning vegetables increase the palatability of the soy bean. A fireless cooker may also be used in preparing soy beans for the table."

Under "Ready made soy bean products" (p. 161) we read: "As the preparation of the soy bean in the average household is often not convenient, the author has arranged to supply the following products at reasonable prices: Canned Soy Beans, Soy Bean Spread, Soy Bean Stew, Soy Bean Loaf, Soy Vegetable Onion Soup, Soy Bean Vegetable Bologna, Soy Bean Tasty Lunch, to which others

will be added in the course of time. These products have met with ready approval, as they fill a long felt want for tasty, nutritious and wholesome vegetable protein foods to substitute meat and dairy products."

The author's signature appears at the end of the Preface. Address: Los Angeles, California.

812. Hou, Kia-wo (Hu, Chia-mo). 1933. Contribution à l'étude de l'action des ferments de la graine de soja sur les lipides [Contribution to the study of the action of soybean enzymes on soybean lipids]. PhD thesis, Faculte des Sciences, Paris. 76 p. Printed as a book by Les Presses Modernes, Paris. No index. 28 cm. [92 ref. Fre]

• ***Summary:*** Contents: Introduction. 1. The soybean from botanical, agricultural, chemical, physiological, and biochemical viewpoints. 2. Soy-based food and industrial products. 3. Study of the transformations undergone by lipids in the production of soymilk and tofu. 4. The existence of oxidative ferments of lipids or "lipoxydases" in soybean seeds and in common beans. 5. Study of soybean lipoxydase. 6. Comparative study of normal soy oil and that oxidized by soy lipoxydase. 7. The action of soy lipoxydase on various other animal and vegetable oils (non-drying, semi-drying, drying, from marine animals, from terrestrial animals). 8. Gas-volumetric studies concerning the action of lipoxydase. Conclusion. Bibliography.

In the book, the author (who is from Kirin [later called Jilin], Manchuria) pays homage to Gabriel Bertrand (his "president of thesis") and his "maitres" Richard Fosse (a professor) and Emile Andre.

In the Introduction we read: "It was right after the first foreign threats that a group of young Chinese decided to come to Europe to study under the patronage of the Franco-Chinese Society for Education (Société Franco-Chinoise d'Education) in order to acquire the new knowledge which would better allow us to assure the defense of our country. Let us render a just homage to the founders of this society: Tsai Yuen-Pei, Li Yu-Ying, Painlevé and Herriot... At the time of my return to China 4 years ago (i.e. 1929) it was thanks to the recommendations of Doyen Maige and of professors Pelabon, Pariselle and Fosse that I was able to find a good welcome near to Presidents Li Yu-Ying and Li Shou-Hua, and to obtain a grant / scholarship from the Academie Nationale de Peiping which had just been created at this time... My thanks go also to the address of presidents Li Yu-Ying and Li Shou-Hua for the aid and encouragement which they have so well accorded me.

This study has as its point of departure a study of the transformations which are undergone by the lipids in soybeans in the production of soy milk and cheese [tofu]. That study, conducted under the direction of Emile Andre, was published (with Andre as the primary author) in 2 articles in 1932 in the *Comptes Rendus des Seances de l'Academie des Sciences* (*Paris*). Address: Paris.

813. Kellogg, John Harvey. 1933. The new method in diabetes. Fourth revised ed. Battle Creek, Michigan: Modern Medicine Publishing Co. 300 p. See p. 90-91, 177-80, 295. Illust. 21 cm.

• ***Summary:*** A section titled "Insulin–Its discovery and use" (p. 90-91) states: "Every diabetic suffers from intestinal toxemia and needs to have his intestinal flora changed... Gluten preparations and soy bean products should take the place of meat and eggs, and milk prepared from the soy bean may be advantageously used in place of ordinary milk. Soy milk is almost wholly free from carbohydrates... The soy bean encourages remarkably the growth of the protective acidophilus flora. Soy acidophilus milk is especially useful in cases in which the protective flora has been entirely lost. By its continued use, the flora may be restored and maintained.*" (Footnote: *"Information concerning soy acidophilus milk may be obtained by addressing the Battle Creek Food Company, Battle Creek, Michigan.")

In a chapter titled "Directions for Making Soy Acidophilus Milk at Home" (p. 177-80), Dr. Kellogg begins by noting that he discovered the "remarkably stimulating effect of soy bean milk on the growth of B. acidophilus, the germ which forms the protective flora in the human intestine..."

Page 295 gives a recipe for making soy bean milk at home. The first step is to grind the beans to a fine flour and sift.

Gluten-related recipes (all calling for gluten flour) include: Gluten bread (p. 273). Gluten bran bread (p. 273). Gluten bran puffs (p. 273). Gluten griddle cakes (p. 274). Gluten wafers (p. 274). "Southern" gluten biscuits (p. 274). Soy bean biscuits (with soy bean meal, gluten flour, and starch-free bran, p. 275). Oatmeal and gluten gems (p. 275). Sandwiches (all on gluten bread, p. 268-71). Gluten bran bread sandwich (on gluten bran bread, p. 270). Cream of gluten cereal (p. 272). Address: Battle Creek, Michigan.

814. Kroener, Waldemar. 1933. Proteine [Proteins]. In: Emil Abderhalden. 1933. Biochemisches Handlexikon. XIV. Band (7. Ergänzungsband) [Biochemical pocket dictionary. Vol. 14]. Berlin: Julius Springer. 339 p. See p. 38-39, 192. Index. 26 cm. [13 ref. Ger]

• ***Summary:*** Contents: Introduction. Plant proteins. Animal proteins. Decomposition products (*Abbaustufen*) of proteins. Glycinin (a globulin from the soybean) is discussed on p. 38-39. Page 192 states that (according to Ziegelmayer 1931) soymilk inhibits the ability of rennet to produce curds in cow's milk. Address: Zurich, Switzerland.

815. Morse, W.J. 1933. Soybeans now a major crop in United States; Few grown before 1898. *Yearbook of Agriculture* (*USDA*) p. 198-205. For the year 1933.

• ***Summary:*** Contents: Variety adaptation. Variety utilization

(incl. bean curd, bean milk, soy sauce, miso (bean paste), bean sprouts, green vegetable beans, bean flour, roasted beans, bean confections [made using roasted whole soy flour], beverages, oil and meal, special fermented bean products). Soybean oil and meal industry. Soybean meal. Soybean oil. Soybeans for human food. Soybeans as an export crop.

"Variety adaptation: The Virginia, Laredo, Manchu, and Biloxi have a greater range than most other varieties. The Virginia, Mansoy, and Harbinsoy varieties excel on the less productive types of soil, while on better soils the Mansoy and Harbinsoy give inferior results.

"Since the Department of Agriculture began to introduce soybean varieties more than 7,000 samples of beans have been collected from Japan, Chosen [Korea], Manchuria, China, Taiwan (Formosa), Java [in today's Indonesia], Sumatra, and India. There are more than 2,000 distinct types in this large collection, ranging from 75 to more than 200 days in reaching maturity. At present about 40 varieties are generally grown in the United States."

"In Japan, where the soybean is used extensively as a green vegetable, more than 60 varieties, ranging in maturity from 75 to 160 days and differing in flavor, are grown solely for this purpose. The soybean in used in the United States primarily as forage, being preserved either as hay or silage, or cut and fed green as soilage, and is also pastured extensively with hogs and sheep."

"Soybeans for human food: In Asiatic countries the soybean is grown primarily for the beans, which are used largely in the manufacture of numerous food products that supply the principal source of protein in the Asiatic diet as that in the diet of western people is furnished chiefly by meat and dairy products. "Oriental people use very few dairy and meat products, yet for many centuries they have lived on an apparently well-balanced diet of which the protein is derived largely from the soybean.

"The most commonly used soybean foods in the Orient are soy sauce, miso or bean paste, bean curd, bean milk, bean flour, roasted-bean confections, green-vegetable beans, bean sprouts, roasted bean flour, boiled beans (with rice, millet, or sorghum), coffee substitute, and health drinks made from roasted soybeans.

"In the United States the soybean and its products have attracted attention as an article of food at various times, but only within the last three or four years have there been any extensive investigations along this line by commercial interests. Soybean flour, made by grinding either the whole bean (preferably yellow-seed varieties) or the press cake after the oil has been removed from the beans, is finding increasing favor in the manufacture of various products, such as malted milk, macaroni, vermicelli, spaghetti, noodles, crackers, cookies, ice-cream cones, breakfast foods, health foods, diabetic foods, and infant foods. Within the last year several large baking companies have began using 15 to 20 per cent of soybean flour in making bread and cakes." Address: Bureau of Plant Industry, Washington, DC.

816. Yeu, Lucie. 1933. Le lait de soja dans l'alimentation du nourrisson [Soymilk in infant feeding]. Paris: Les Editions Véga. 105 p. Based on her 1933 PhD thesis in Medicine, Faculte de Paris. 28 cm. [34 ref. Fre]

• ***Summary:*** Describes feeding studies on 100 infants who took soymilk (*lait de soja*) for 1 to 20 months. States that soymilk was introduced to Africa by Catholic fathers in the Congo. Contents: Introduction. Soymilk in the diet in China. History. Soymilk: Preparation, physical characteristics, qualitative composition, quantitative composition (table, p. 21-22), conclusion. Method of administration. Clinical study: Age of infants, duration of trial, tolerance, stools after soymilk consumption, erythema of the buttocks, effect on growth. Non-dyspeptic and dyspeptic infants (tables). Conclusions. Bibliography.

The author was born on 1 Oct. 1896 in France at Auzelles (Puy-de-Dôme). "In France, until recently, only soy flour had been used in infant dietetics, following the work of Mr. Ribadeau-Dumas (1930). It is only recently that Mr. Maillet, in collaboration with us, has undertaken the use of liquid soymilk. We did this work at the Centre d'Hygiene Infantile Paul Parquet, under the direction of Mr. Marcel Maillet, who for several years has been studying the reduction of milk in the diets of dyspeptic infants and who wanted to work with us in using soymilk." Their first article on the subject was published in 1932. The first part of their work deals with the method of preparing soymilk, a study of its composition (qualitative and quantitative), and the method for administering it to infants. The second part gives their clinical results. The research attempted to answer two questions: (1) Could soymilk fed to healthy infants replace cow's milk; (2) Could dyspeptic infants tolerate soymilk, and grow properly.

Historically, Paillieux (1880) was the first person to make a detailed study of the soybean and its milk. It was also mentioned by Champion (1885) and Prinsen Geerligs (1896), then many others after 1900. O. Laxa in Czechoslovakia was the first to study soymilk as a substitute for cow's milk. It was only in 1928 that researchers began to foresee the use of soymilk in special diets. Pioneering work was done by L. Vitale in Italy (1928) and E. Tso in China (1928).

In preparing soymilk, Yeu dried the soybeans to facilitate dehulling. "Its peculiar savor is generally not much appreciated by the European palate," she observed. The density of her soymilk was 1.105, slightly heavier than water and slightly lighter than cow's milk (1.032) or mother's milk (1.032). Before feeding soymilk to infants, she added sugar, rice cream, calcium carbonate, and salt (sodium chloride).

Of the infants in the clinical studies, 80% were under 1 year of age; 22 were in a good nutritional state, 59 showed pronounced subnormal growth, 13 were sick and in a state

of serious undernutrition, and one was atrophied. Of these, 38 had no digestive problems and 68 had digestive problems (dyspepsia) and resisted the use of other milks and regimes. The diet was generally only soy (milk and pap), but in some cases rice water was included. The soymilk was generally well accepted. The resulting stools were unusual–less numerous, dark, and with a strong, persistent odor. There was some abnormal redness of the skin. Of the 83 infants who accepted and tolerated the milk well, 70% had a satisfactory growth rate. Of the 38 non-dyspeptics, 25 grew well, 8 had insufficient growth, 4 refused soymilk, and 1 did not tolerate it. Of the 62 dyspeptics, there were 30 fetid (heavy offensive smell) dyspeptics and 20 mucus dyspeptics. Of the former 30, 10 improved, 14 were unchanged, 4 refused soymilk and 2 did not tolerate it. Of the 20 mucus dyspeptics, 5 improved, 10 were unchanged, 1 refused, and 4 were intolerant.

Conclusions: Soymilk was generally well accepted and well tolerated. Soymilk, such as they used, cannot replace cow's milk for raising normal infants. For dyspeptic infants, some improved, many were unchanged, and a few had their problem aggravated.

817. Zlatarov, Asen; Karapetkov, N. 1933. Recherches biochimiques sur les grains et le lait de soya [Biochemical investigation on soybeans and soybean milk]. *Godishnik na Sofiiskiia Universitet, Fiziko-matematicheski Fakultet* (*Anuaire de l'Universite de Sofia. II. Faculte physico-matematique*) 29:341-76. (Chem. Abst. 28:7376). French-language summary p. 369-70. [137 ref. Bul; fre] Address: Bulgaria.

818. *News and Observer* (*Raleigh, North Carolina*). 1934. Food products from soy beans: Chemist from Washington makes interesting demonstration in Belhaven [North Carolina]. Jan. 21. Sunday morning.
• ***Summary:*** Belhaven, January 20, 1934. Dr. Jethro Kloss, expert food chemist from Washington, DC, gave a demonstration of food products that can be made from soy beans to a packed and enthusiastic crowd in Belhaven's City Hall Tuesday. He came to Belhaven at the invitation of F.P. Latham, Beufort County's master farmer.

"In 1932, Mr. Latham went to Washington, D.C. to a National Soy Bean Convention and witnessed Dr. Kloss making milk, cheese, buns, cakes, pies, vegetable roasts, butter, salad dressings and even a very healthyful medicinal liniment from soy beans. Mr. Latham's community is a great soy bean country and he immediately had a vision of Dr. Kloss visiting his community and showing it his experiments with soy beans. After 2 years, that vision at last has materialized and the people in Hyde County and Belhaven communities not only saw and tasted delicious foods made from the soy bean, but Dr. Kloss showed them how the products can be made in any home kitchen at a nominal cost."

"Dr. Kloss's little granddaughter came to Belhaven with him. She is 4 years old and 100% perfect. She never has drunk any other milk than soy bean milk.

"Dr. Kloss says there is no limit to the delicious foods that can be made from the soy bean. He is now working on a book of recipes made from soy bean products. He uses the Mammoth Yellow soy bean for most of his products. He became interested in the soy bean food products in searching for a food for diabetics."

819. Mader, A. 1934. Milk-free diet in pyuria and eczema of children. *Indian J. of Pediatrics* 1(2):99-103. Jan.
• ***Summary:*** Milk made from the soy bean is excellent as a replacement for animal milks in the diets of children with either these 2 conditions. Mentions a soy milk product named "Soyabasan" used for the dietetic treatment of eczema; this product "makes it possible to eliminate milk and its curative action is immediate" (p. 102). Address: Director, Univ. Children's Clinic, Frankfurt-am-Main, Germany.

820. Lovell, Philip M. 1934. Care of the body. *Los Angeles Times.* Feb. 4. p. G20-22. Sunday magazine.
• ***Summary:*** The section titled "Beverages" (p. 22) contains simple recipes for "ten health drinks" including "Soy bean milk." Mix 1 cupful soy bean flour with 2 quarts water. Boil for 5 minutes, taking care not to let it burn. Strain through a cloth. "This milk has proved to be the same as cow's milk in its food value and appearance and, adding a little honey, it tastes similar."

Also includes recipes for almond milk, cocoanut milk, rhubarb tonic drink, berry drinks, and celery, parsley, and tomato juice. Address: N.D. [Naturopathic Doctor].

821. Hepburn, Joseph Samuel; Sohn, K.S.; Devlin, L.P. 1934. Biochemical studies of soy bean milk and chicken protein. *J. of the Franklin Institute* 217(2):213-21. Feb. (Chem. Abst. 28:2042). [5 ref]
• ***Summary:*** "In Korea, soy beans are used extensively as a foodstuff. They serve as the basis of two foods, Doo Pu [known as Do Fu in Chinese] and soy bean milk... The Korean people passed immediately from a primitive condition to the status of an agricultural community without the intervention of a pastoral age. For this reason, soy bean milk was the only milk used by the Koreans as an accessory food until the introduction of cows in comparatively recent times. Even at the present time, soy bean milk is much used as a food and beverage especially during the summer months."

"Soy bean milk" gives results of feeding tests on albino rats, showing that soybean milk had about the same protein content as cow's milk, and that other nutrient compounds were present to a lesser extent. Values given for soybean milk and cow's milk (in parentheses) are: Protein 3.5% (3-4%); carbohydrate 0.61% (4.6-5.0%); fat 2.35% (3-6%);

calcium 0.034% (0.120%); phosphorus pentoxide 0.091% (0.23%). It curdled at a lower acidity than cow's milk, and in feeding, the ration containing soybean milk produced gain in weight less rapidly and with less efficiency than that containing cow's milk. Chicken protein is a less efficient protein than caseinogen in the diet of young rats. Address: John Clifford English Laboratories of Physics and Chemistry, Hahnemann Medical College and Hospital of Philadelphia.

822. *Good Health* (*Battle Creek, Michigan*). 1934. Have you lost your protective germs? 69(3):20-21. March.
• ***Summary:*** "Many adults are suffering seriously because they have lost their protective germs and so are defenseless against the germs of putrefaction and infection which are being constantly introduced in the air and in certain foods, such as fresh meat, fish, oysters, etc., which are fairly alive with harmful germs. In such cases, as in the case of the infant, a *new implantation of the protective germs is necessary.* The remedy employed for the infant is of course not available for the adults. A thoroughly efficient means of recovering lost acidophilus is available through the fortunate discovery of soy acidophilus milk, a highly active culture of the acidophilus, by the use of which it is possible to restore the friendly germs in any case in which it is possible to restore the friendly germs in any case in which they have been lost or have become so nearly extinct that they no longer serve as efficient means against invading bacteria."

"The new culture is prepared from milk made from the soybean, a product little known in this country, but which has been in use in China for many thousands of years, and in South China completely takes the place of cow's milk, which the average Chinaman has never tasted.

"When placed in soybean milk, the acidophilus germ grows with great vigor and develops rapidly, and in a few hours produces a highly palatable, slightly acid product closely resembling buttermilk both in appearance and taste. Its food value is greater than that of buttermilk and it has the advantage that the acid-forming germs, which contain many millions in every teaspoon, are able to live and thrive in the intestine, while the germs of ordinary buttermilk die almost immediately after being swallowed into the stomach."

823. Howell, G.C.L. 1934. The soy bean: A dietary revolution in China. *China Journal* 20(3):140-46. March.
• ***Summary:*** A Chinese proverb states that "Bean-milk is the poor man's milk, bean-curd is the poor man's meat." The Chinese "use practically no dairy products and the bulk of the nation eats little meat. The meat consumption of China is estimated at about 20 grams per head per day, as against 149 grams in the United States of America, 130 in Great Britain, 92 in France, 29 in Italy, and 25 in Japan." But the author contends that the Chinese have never learned to make sanitary products which keep well. "The flour, oil, and milk made in China quickly become rancid and unpalatable." Thus China is starving in the midst of plenty. No country in the world has had less benefit from the soy bean as treated by modern methods as that of its origin. In northern China, soy flour is used in a ratio of 2 or 3 to 8 with millet flour to make wo-tou steamed bread, and in a ratio of 1:5 with wheat flour to make man-tou steamed bread. A modern factory, such as the Aguma Works in Germany, could be established in China to make these products on a large scale at low cost. High quality soy-fortified macaroni, rice flour, soy oil and soya milk should also be produced. "Research has done its work. And China only awaits the pioneer, a commercial man, who will use the discoveries of science on a commercial scale. His coming is certain. The time of his coming rests on the knees of the gods."

824. Reid, Eric. 1934. A preliminary report on the preparation of an infant food, a soybean milk-egg powder. *Chinese J. of Physiology* 8(1):53-64. March. [18 ref. Eng; chi]
• ***Summary:*** "In the present investigation, the preparation of a soybean milk powder... will be reported. In addition, we shall present the results of our investigations on the digestibility of the powder, relative to that of cow's milk." The preparation of a perfectly miscible soybean-egg milk powder, with satisfactory keeping properties, is described. First prepare soybean milk, boiling it for 15 minutes in a steam pan, "thereby ridding it of most of the objectionable bean odour and taste." to each litre of this milk add 50 gm cane sugar, 30 gm egg yolk, 1 gm sodium chloride, and 2.5 gm calcium lactate. Filter again; the mixture is then "spraydried at a temperature of 50-55ºC..." The powder was found to be perfectly miscible with water in a 12% solution, yielding a permanent emulsion with only a slightly beany flavour." A table (p. 54) gives the nutritional composition of the soybean milk-egg powder and of its reconstituted milk (which contains 3.44% protein and 1.97% fat; the "egg yolk is rich in iron" and "the calcium content is about the same as that of human milk).

Compared with cow's milk, unsprayed soybean-egg milk forms a softer, less compact curd in the stomach. The buffer capacity of soybean-egg milk is lower than that of cow's milk. Address: Div. of Physiological Sciences, Henry Lester Inst. of Medical Research, Shanghai, China.

825. The wonder of the 20th century. Come and hear Dr. Kloss astonishing and interesting free lectures (Poster). 1934. Dr. Jethro Kloss, 500-44th St., N.W., Miami, Florida. 1 p.
• ***Summary:*** "Dr. Jethro Kloss of Washington, D.C. food chemist and scientist..." Dr. Kloss will show how to make soy bean milk and soy bean bread at the Miami School of Applied Arts, 406 N.E. 2 Avenue. These 2 exceptional food demonstrations have never yet been given to the public. "Dr. Kloss is one of the best informed chemists on the soybeans, which is fast coming to the front in food lines.

"Dr. Kloss makes more than 20 palatable edible table foods from the soybeans, they are very inexpensive and can be made in any home by a simple, practical method of which Dr. Kloss is the originator...

"Dr. Kloss' demonstration is truly amazing when one knows and considers that the soybean is a perfect food, and contains a high quality protein. Soybeans and their products perfectly take the place of meat, milk, and eggs. Soybean roast is better than the best beefsteak... Soybeans furnish the most economical supply of protein to be found, also contains all the other necessary elements of nutrition.

"Dr. Kloss' classes in the preparation of these foods will begin, Thursday afternoon, March 28 at 2:30 p.m." Address: Miami, Florida. Phone: Edgewater 1128-J.

826. *Miami Daily News.* 1934. Food products of soy bean urged for daily table use: Milk, cheese, roasts, bread and other preparations made from herb claimed to have high nutritive values. April 8. Sport section. p. 5. Sunday. Facsimile printed in Back to Eden by Jethro Kloss, 1982 ed.
• ***Summary:*** Two photos by Rinc above the article show: (1) A small insert portrait of Dr. Jethro Kloss. (2) His daughter, Mrs. Harry C. Engelhardt, standing next to her daughter, Joyce, age 5. The caption states that "Dr. Jethro Kloss is devoting his life to the dissemination of knowledge pertaining to soy bean milk." Both his daughter and granddaughter were raised on this milk."

"Dr. Kloss prides himself on having once been a 'farmer.' He is credited with having spent a fortune in philanthropic work, the greater part having gone toward introducing a bean which he feels is destined to eventually revolutionize the economic structure of this country and become of incalculable value in time of war.

"Approximately 6,000 persons recently heard Dr. Kloss in Bayfront park explain how he apparently performs miracles when he transmutes beans into 24 or more different foods which in addition to being delectable also retain various life-giving elements usually attributed to cow's milk...

"He exhibited 21 articles made from soy beans and invited the public to taste them. These were soy bean milk, bread, pie, cakes, buns, cookies, roast, buttermilk, coffee, cottage cheese, cream cheese, yellow cheese, soy bean sauce, pancakes, broth, butter, 'mashed potatoes,' mayonnaise, soy bean roast not like that from meat, ice cream, sprouted beans. None of these contained white flour nor cane sugar, making such foods especially valuable for diabetics. Soy bean foods are also recommended for arthritis.

"He advocates the teaching of edible food preparation from soy beans as part of school curriculum and drew a parallel tending to show how the government spends millions to spread hog and other stock-feeding knowledge while almost ignoring the phases which would create well-fed humans.

"Dr. Kloss pointed out that he was merely in this country revealing something which for centuries had been common knowledge throughout the Orient... He quoted Dr. S. [sic, A.] Horvath of the Rockefeller institute as one of the world's leading authorities who said: 'The Chinese nation exists today because of the use of the soy bean as a food.'"

A sidebar at the lower left of the article shows another portrait photo of Dr. Kloss and announces: "By the request of thousands who heard Dr. Kloss speak in Bayfront Park, he has consented to give further instructions in the preparation of the wonderful Soy Bean Products.

"He will give two food demonstrations in the Miami School of Applied Arts, 406 N.E. 2nd Ave., Monday afternoon at 2:30 and Monday evening at 8, April 9.

"Dr. Kloss makes more delicious table foods from soy bean than any one else known. The soy bean is a complete food, and is highly alkaline. Following is a partial list of the foods he makes:

"Soy bean milk, soy bean buttermilk, cottage cheese, ice cream, bread, buns, pies, cake, cookies, roast, coffee, pancakes, butter [probably soynut butter], mayonnaise, broth. These foods do not contain any cane sugar or other harmful ingredients. They are most economical, simple to prepare, and very healthful and inexpensive. The use of the articles would mean a great saving of money, and preserving of health. They must be seen and tasted to be appreciated."

Note 1. This is the earliest document seen (March 2000) that mentions soy mayonnaise.

Note 2. This is the earliest document seen (March 2007) that mentions a "cream cheese" or "yellow cheese" made from soy beans (one of two documents).

Note 3. This is the earliest document seen (March 2007) that mentions Jethro Kloss' work with soy bean ice cream.

Note 4. As of Nov. 1990 the *Miami Daily News* no longer exists. Its name was changed to the *Miami News,* it was owned by Cox, and it went out of business in about 1988. Back issues would probably be available at the Univ. of Miami.

Note 5. This is the second earliest document seen (March 2007) that uses the word "miracles" (or "miracle" or "miraculous") in connection with soy beans. Address: Florida.

827. Come and see: The wonders of the 20th century (Poster). 1934. Dr. Jethro Kloss, 500-44th St., N.W., Miami, Florida. 1 p.
• ***Summary:*** By special request Dr. [Jethro] Kloss is giving two more free lectures and food demonstrations at the Miami School of Applied Arts, 406 N.E. 2d Avenue, Monday, April 9, in the afternoon and evening. Following is a list of food Dr. Kloss prepares from the soybean. They do not contain any cane sugar, white flour, or other harmful ingredients: Soy bean milk, bread, buns, pies, cakes, roast, buttermilk, ice cream, jelly, sauce, cream cheese, cottage cheese,

yellow cheese, coffee, pancakes, broth, mashed potatoes, mayonnaise, butter.

"Learn to make this alkaline milk from soybeans, it taste's [sic] better than other milks, and has a better analysis than cow's milk, or goat's milk. Dr. Kloss will show a table of comparative analysis prepared for him by Dr. LeClerc, Senior Chemist of the Government. This milk can be made in any home, and costs less than 2 cents per quart... Dr. Kloss' ice cream made from the soybean milk is as delicious as any on the market, and very inexpensive and healthy. Learn to make these products in your own kitchens."

Note: This is the earliest document seen (March 2007) that mentions a "cream cheese" made from soybeans (one of two documents). This cream cheese was developed by Jethro Kloss. Address: 500 44th St., N.W., Miami, Florida. Phone: Edgewater 1128-J.

828. Morris, H.T. 1934. Story of soybeans. *Flour & Feed.* 34(11):9. April; 34(12):9. May.
• ***Summary:*** This two-part article begins with the [probably mythical] story of the A.E. Staley Company's role in pioneering the soybean industry in America. The soybean first came to America in 1804. Then, about a half century ago [i.e. about 1884], "a missionary, returning to his home in America, brought with him some peculiar looking beans. These, by chance, fell into the hands of an observant chap [A.E. Staley] who was a tiller of the soil. Upon being told that these beans were the main crop of the Orient and furnished sustenance to both man and beast, the observer planted the seed and from actual experience saw that it enriched the ground and that livestock relished the beans and hay. Little did he realize that half a century later his intimate knowledge of the soybean would perhaps be a factor in shaping the destiny of the industry.

"The farms of Illinois had been worked overtime. The ground had been 'corned to death.'" The observer "began to preach 'diversify with soybeans.' He was so sincere and intent that this gospel should be spread that through the Staley company [which he owned] a promotional department was created. This staff had one specific job–that of selling the farmers on the possibilities of soybeans. In conjunction with the Staley company, soybean trains were operated throughout the country–stopping at all stations and demonstrating soybeans and soybean products.

"From a comparatively few fields, the seed took root." "Ten years ago, the Staley company built its first crushing plant with sufficient capacity to more than take care of all beans offered for sale. Prospects of an adequate supply of raw material, an organization, an up-to-date crushing plant and oil refinery, all called for action, as there had to be an outlet for the finished product. The same method of introducing soybeans was applied to soybean products" such as soybean oil meal.

A portrait photo shows "A.E. Staley, Sr., Founder of A.E. Staley Mfg. Co., Decatur, Illinois."

Note: This is the earliest document seen (April 2001) that tells the story of A.E. Staley first obtaining soybeans from a missionary. The story gets embellished each time it is retold during the years ahead. See especially: Staley. 1947. *The Wonder Bean.*

Part two of this article discusses: Soybean oil meal. Poultry rations. Milling methods. The writings of Dr. A. Horvath. Soybean milk, tofu, and soy sauce in China. Address: Staley Sales Corp.

829. Morse, W.J. 1934. Utilizacion de las habas soya [Utilization of soybeans]. *Revista de Agricultura, Comercio y Trabajo* (*Cuba*) 14(52):77-90. April. [Spa]
• ***Summary:*** Contents: Introduction. Soybeans for human food: Dried beans, coffee substitute, toasted soybeans, fresh green or vegetable beans (*Habas frescas o legumbres*), soybean flour, soy sprouts (*retoños tiernos*), soy sauce, soybean vegetable milk, tofu (*cuajada o queso de habas soya*), soy oil. Soybeans for livestock: Soybeans for hay, for pasture, for ensilage, for fresh forage, for grain. Soybeans for oil. Soybean flour and cake. Soybeans for soil improvement. Address: USDA, Washington, DC, USA.

830. Torres Herrera, José M. 1934. El haba soya, su cultivo y beneficio [The soybean, its culture and benefits]. *Boletin Agricola* (*Medellin, Colombia*) 8(189):1180-92. April. [Spa]
• ***Summary:*** Contents: Introduction. Climatological conditions. Soils appropriate for this crop. Inoculation with bacteria. Preparation of the soil. Soya in crop rotations. Sowing the seeds. The work of cultivation. Calculation of the cost of production for 6,400 square meters (Data taken from the Palmira Agricultural Experiment Station, Bulletin No. 1; the cost is $0.45 per arroba = ca. 25 lb). Soybean varieties ("Agriculturists interested in planting this crop which has no equal, can obtain seeds free of charge from the Pamira [sic, Palmira] Agricultural Experiment Station or the Antioquia Agricultural Society [Sociedad Antioqueña de Agricultores, Colombia]"). Production of seeds. Yields of various varieties. Harvesting and threshing of the grain. The uses of soya (*la soya*).

Utilization of the plant and seeds of the soybean (*de las habas soyas*)*:* I. The plants as hay, pasture, green forage, ensilage, green manure. II. The seeds as: 1. Whole dry soybeans (*habas secas*, for making infant foods, flour, soup, butter, diabetic foods and breads, cooked whole soybeans, confections, health foods (*alimentos para sano*)*:* soymilk, soybean roasts or steaks, soy sprouts. Breakfast foods: Vegetable curd or cheese (*cuajada o queso vegetal*), soy sauce, malted milk, soy coffee cakes, flour, livestock feed). 2. Green vegetable soybeans (*habas verdes*). 3. Soy flour (*harina de habas*). 4. Soy oil (*aceite de habas*).

Soya as human food. The composition of various legumes. Soy flour. Soy oil. Soy milk (*leche de soya*)*:*

Nutritional comparison of soy milk and cow's milk, powdered soymilk, fermented soymilk, tofu (*queso soya*), soy casein (*Caseína*).

Whole dry soybeans: Roasted soybeans (*habas tostadas*), soy coffee (*café de soya*), soy chocolate (*chocolate de soya*). Green-seeded soybeans (*habas soyas verdes o legumbres*)*:* Soy sprouts, soy sauces. Edelsoya (soy flour made by Berczeller).

The value of soy forage. Soybeans in mixtures with other crops. Green manure. The concept of Dr. Uribe Echeverri, minister in Brazil.

Page 1180 states: "Climatological conditions. The soybean is suited to the temperate zones but it can become acclimatized to warmer climates and it has succeeded at the agricultural experiment stations of Valle de Cuaca and of Tolima and in various regions of the Intendencia del Chocó. It is probable that some varieties from England and from the north of Canada can acclimatize themselves in good conditions in our cold lands.

Note 1. This is the earliest document seen (May 2009) concerning soybeans in Colombia, or the cultivation of soybeans in Colombia. Note 2. No mention is made of soya in Nicaragua.

Note 3. This is the earliest Spanish-language document seen (Dec. 2012) that uses the term *habas tostados* to refer to soynuts.

Note 4 This is the earliest Spanish-language document seen (June 2009) that uses the term *habas verdes* to refer to green vegetable soybeans. Address: Agrónomo Nacional de la Intendencia del Chocó [Colombia].

831. Haas, Louis W.; Bohn, Ralph M. Assignor to J.R. Short Milling Company. 1934. Bleaching agent for flour and process of utilizing same in making bread. *U.S. Patent* 1,957,336. May 1. 3 p. Application filed 8 Feb. 1933.
• ***Summary:*** Soy-bean milk, processed at a low temperature, is used to bleach wheat flour for making bread. The soy-bean milk is "an aqueous dispersion of carotin-decolorizing matter derived solely from vegetable origin and containing active enzymes." A formula for the dough is given. Address: 1. Chicago, Illinois; 2. Evanston, Illinois.

832. Red & White Stores. 1934. The Red & White–Leader stores: Salmon week (Ad). *Toronto Daily Star* (*Canada*). May 31. p. 38.
• ***Summary:*** In the middle left of this full-page ad: "Vi-Tone 6 oz. tin–27¢. A soya bean food. Medical men recognize its value for health." Address: Toronto.

833. Adolph, William H.; Wang, Ying-Lai. 1934. The digestibility of the protein of soybean-milk. *Chinese J. of Physiology* 8(2):171-78. May. [5 ref. Eng; chi]
• ***Summary:*** "Soybean milk (vegetable milk) is being used to an increasing extant for infant feeding, where cow milk is either unobtainable or beyond the reach of the average food budget." The protein of fresh cow's milk is more readily digested *in vitro* by trypsin or trypsin + pepsin than is that of soybean milk; the latter, however, is more readily hydrolyzed by pepsin. Cow's milk and soybean milk have approximately the same optimum pH for proteolysis. The apparent digestibility by rats is approximately the same: Digestibility of soybean milk protein is 84.9%; cow milk protein is 86.6%. Address: Dep. of Chemistry, Yenching Univ., Peiping, China.

834. *Pediatrie.* 1934. Revue des thèses: Le lait de soja dans l'alimentation des nourrissons [Review of theses: Soymilk in the feeding of infants]. 23(5):122. May. [1 ref. Fre]
• ***Summary:*** A ¼-page review of the thesis by Dr. Lucie Yeu, Edition Véga, 175, boulevard Saint-Germain, Paris. Prix: 12 francs.

835. Pierce (S.S.) Co. 1934. Spring and summer mail order catalog. *The Epicure* (*Boston and Brookline, Massachusetts*) 48(1):1-72. May. Illust. Index. 28 cm.
• ***Summary:*** This company, which delivers fine specialty foods throughout New England, was established in 1831 and incorporated in 1894. Soy related items: Chinese foods–Ingredients for making Chop Suey: La Choy Soy Sauce (6½ oz bottle, $0.23, p. 40). Flour and meal–Dietetic flour: Cellu Soy Bean Flour (5 lb tins, $1.00, p. 43). Sauces–Worcestershire sauce: Lea & Perrins (large, $0.57; small, $0.29, p. 50). Note: Under "Sauces," no soy sauces are listed. But there is Harvey Sauce from Crosse & Blackwell, and H.P. Sauce.

Vegetables–Dried vegetables, Beans: Soy ($0.12/lb, p. 53).

Battle Creek Foods Department [Michigan] (full page, with photo and illustrations, p. 72)–Crackers: Soy Bean Biscuits ($0.60/package). Soy Gluten Bread ($0.35/tin). Flour: Soy Flour ($0.35/14 oz tin). Vegetables: Soy Beans, Baked ($0.18/11 oz tin).

Battle Creek Foods also offers: Psyllium seed. Bran-Gluten Flakes. Zo (a cereal rich in food iron and vitamin B). Kaffir tea (made from a shrub native to South Africa). Malted Nuts ("a vegetable substitute for milk, containing malt sugar"). Minute Brew (cereal beverage with coffee-like flavor). Bran biscuit. Gluten bread. Gluten biscuits. Rice biscuits. Nut butters: Almond butter and peanut butter. Savita (yeast extract, bouillon cubes, sal-Savita salt). Vegetable meats: Nuttolene, Nuttose, Protose, Saucettes. Vegetable gelatin (agar, flaked).

Note: Inserted in this catalog is an undated leaflet titled: "You are invited to attend a special demonstration of Battle Creek Special Purpose Foods, conducted by Miss Minnie Duffy, Oct. 12 to Oct. 17 at Park Grocery Co., 18-20 North Diamond, Mansfield, Ohio." Small photos show: (1) Battle Creek Sanitarium. (2) Miami Battle Creek Sanitarium

[Florida]. (3) Battle Creek Food Co. Address: Importers and Grocers, Boston and Brookline, Massachusetts.

836. La Sierra Industries. 1934. La Sierra soy bean products: Perfect protein, high alkaline ash, low starch (Ad). *Health* (*Mountain View, California*) 1(3):30. June.
• ***Summary:*** "Add variety and new flavors to your menu with the following foods–soy cheese [tofu], soy milk, soy butter [like a soynut butter, non-hydrogenated], sandwich spread, canned soy beans, soy breakfast food, soy flour (raw), Mamenoka, Smoein, Soy-Co (beverage), soy oil, soy noodles, soy loaf.

"Low in price. Ask your health food store or grocer, or write to La Sierra Industries."

Note 1. This is the earliest document seen (June 2001) that advertises or markets tofu.

Note 2. This is the earliest dated publication seen (Sept. 2000) concerning La Sierra Foods and soy.

Note 3. This is the earliest English-language document seen (Dec. 2012) that uses the term "soy butter" to refer to soynut butter. Address: Arlington, California.

837. Lin, F.C. 1934. A soybean digest medium for diagnostic work. *Chinese Medical Journal* 48(6):571-76. June. [4 ref. Eng]
• ***Summary:*** These media, soybean digest broths in plain and sugar free forms, are made by coagulating soybean milk with concentrated hydrochloric acid and pepsin scales. In the sugar free broth the milk is fermented with *B. coli*, with potassium dibasic phosphate added. They can replace the more expensive meat infusion in routine work, and may also be employed for the preservation of stock cultures. The various ingredients are inexpensive and readily available locally. The disadvantage is the same as with all digest media in that its nutritive contents tend to fluctuate with various batches prepared at different times. Address: Dep. of Bacteriology and Immunology, Peiping Union Medical College, Peiping.

838. Van Gundy, Dorothea. 1934. Soy beans: The new thing in foods. *Health* (*Mountain View, California*) 1(3):13, 30. June. [3 ref]
• ***Summary:*** Just below the subtitle is written: "Soy beans are going to revolutionize humanity"–Dr. A.A. Horvath. This article discusses: Nutritional value of soybeans, soybeans as a source of "complete protein" (which, when taken alone, will furnish all the essential elements for proper nutrition in sufficient quantities so there will be no impairment in growth or maintenance), soybeans for those who are seeking wholesome vegetable proteins to substitute for animal proteins, soy-bean flour (all cereals yield an acid ash, but soy flour is high in alkaline ash), whole soy beans (baked or pressure cooked), soy milk, and soy cheese or soy curd ("The Oriental people call it *tofu*, and make great use of it in their diets").

Soy beans "may be brought into the diet in almost any of the courses from soup to nuts, even entering the dessert course, for pumpkin pie made from soy milk with a crust made from soy flour is most delicious. Soy cookies are very nutritious as well as tasty.

"This unique food of the Orient is fast becoming Westernized, for all who study foods and nutrition are recognizing the value of the soy bean. Its high percentage of complete protein, its low starch content, its high alkaline ash, its valuable mineral and vitamin content, and its great versatility predestine this food to become an important and valuable addition to the American bill of fare." Address: Dietitian, California.

839. *Times of India* (*The*) (*Bombay*). 1934. Agricultural topics: Exploring. Aug. 11. p. 12.
• ***Summary:*** Dr. David Fairchild of the USDA was recently awarded the Marcellus Hartley Gold Medal for the year 1934 for excellence in the application of science for the public welfare.

The following is a quotation from the speech he gave upon receiving the medal: "It is with a thrill that I remember, each time I drink a glass of soybean milk, that in 1898, before we knew how to grow soybeans in this country [USA], I sent to Tokyo for soil with which to inoculate the root systems of our experimental plantings of them, little thinking that I should see the day when four million acres of soybeans would be grown in America."

840. Christian Science Monitor Bureau. 1934. Chicago finds that soy bean, made up into savory dishes, rivals noted Boston article. *Chicago News*. Aug. 18.
• ***Summary:*** For the text of this article, see the *Christian Science Monitor* of 18 Aug. 1934.

841. *Christian Science Monitor.* 1934. Chicago finds that soy bean, made up into savory dishes, rivals noted Boston article. 26(223):1. Aug. 18. Central edition.
• ***Summary:*** This article was written after Henry Ford's gala soybean banquet at the Chicago World's Fair. "Chicago. Aug. 18–Please pass the soy bean salad. Oh won't you have some soy bean soup?" "This soy bean cake is delicious, but after the soy bean croquettes, soy bean apple pie and soy bean coffee you know, one isn't really hungry.

"Remarks like these were heard here last night at a dinner in which the humble soy bean made its social debut. The hosts were the Ford exposition staff who have been exhibiting growing soy beans at the World's Fair all summer and who thought it about time to prove their claims about soy beans being excellent food for people.

"As the dinner advanced some 30 guests who had arrived in a state of anxious expectation, not at all sure they were going to be able to eat their way through the five

courses, relaxed and began to enjoy themselves. The soy bean appetizers, which included celery stalks stuffed with soy-bean cheese [tofu], set the pace for an excellent dinner in which every dish and drink was made wholly or in part of the little legume.

"No meat was served and it was not missed. The dish which took the place of the usual roast was soy bean croquettes. The hosts had obligingly furnished the guests with typewritten receipts of the foods they were eating so they were able to find out just how the croquettes were made... The man who was responsible for the menu, as well as for most of the recipes, was here to face the guests. He is Dr. A. E. Ruddimer [sic, Dr. E.A. Ruddiman], now chief chemist for the Ford Motor Company, but as one time desk-mate of Mr. Henry Ford's in a little country school in Michigan...

"Soy-bean meals are really only a side line for Dr. Ruddimer [Ruddiman]. He has been greatly interested in perfecting the salted soy bean and in developing synthetic milk from the legume, but the important part of his work, in Mr. Ford's scheme of things, he says, is the discovery of industrial uses for the bean.

"The Ford Company now makes 20 automobile parts and all of its car body enamel out of soy beans. Fortunately none of the parts or enamel got mixed up in the meal last night, which Dr. Ruddimen [sic, Ruddiman] had cooked in Dearborn with the aid of the Ford cafeteria staff to whom he gave much credit. It was brought here ready to serve in automobiles."

Note 1. This exact article was also published in the *Chicago News* on the same day. Note 2. No mention is made of Jan Willemse. Address: Special to the Christian Science Monitor Bureau, Boston, Massachusetts.

842. *St. Louis Globe-Democrat* (*Missouri*). 1934. Too much beans. Aug. 21.
• ***Summary:*** "It is to be feared that Henry Ford, in developing new uses for farm products, is doing a grave injustice to the City of Boston. The Ford Company makes 20 automobile parts and all of its car-body enamel out of soy beans, and now the Ford staff at the Chicago Exposition is trying to prove that soy beans are excellent food for people...

"As a demonstration of the versatility of the soy bean, the dinner was an unqualified success. But it is a terrible blow to the Boston baked bean...

"But is Boston the only place that has reason to be alarmed? Admitting that a bean which can take the place of meat, cheese, coffee and dessert might be a great asset if the nation's supply of grain and live stock were further reduced by drouth and crop limitation, what would happen if production of these commodities were normal and soy-bean dinners were served in every household? Brazil's coffee industry would collapse. The hog and cattle market would be demoralized. To prevent disaster to the farmers, the AAA [Agricultural Adjustment Administration (USDA)] would have to concentrate on limitation of soy-bean acreage. There would be no demand for cheese. And if the automobile manufacturer succeeded in developing synthetic milk from soy beans, as he is trying to do, the dairy industry would be in even greater peril.

"Mr. Ford should hesitate before he goes on with his efforts to find new uses for farm products."

Note: This is the earliest document seen (March 2006) that mentions USDA's Agricultural Adjustment Administration–the first major piece of New Deal agricultural legislation.

843. LeClerc, J.A. 1934. A list of references on soybean milk. Washington, DC: U.S. Bureau of Chemistry and Soils. Food Research Div. Aug. 28. 2 p. Aug. 28. Unpublished manuscript. [33 ref]
• ***Summary:*** The 33 references are listed no discernible order. Address: USDA.

844. Ford Motor Co. 1934. Menu of dinner served at Ford Exhibit, Century of Progress, August 17, 1934. Dearborn, Michigan. 1 p.
• ***Summary:*** "Tomato juice seasoned with soy bean sauce. Salted soy beans. Celery stuffed with soy bean cheese. Puree of soy bean. Soy bean cracker. Soy bean croquettes with tomato sauce. Buttered green soy beans. Pineapple ring with soy bean cheese [tofu] and soy bean dressing. Soy bean bread with soy bean relish. Soy bean buscuit [sic, biscuit] with soy bean butter. Apple pie (soy bean crust). Cocoa with soy bean milk. Soy bean coffee. Assorted soy bean cookies. Soy bean cakes. Assorted soy bean candy."

Note 1. No mention is made of soy ice cream being served at this meal in Aug. 1934. Yet shortly thereafter, and definitely by Aug. 1935 soy ice cream for dessert was served at similar meals in the pine-panelled dining room in the Ford Engineering Laboratory (Strother 1961).

Note 2. A 1936 recipe book published by the Edison Institute describes how to make "Soy bean butter: Mix hydrogenated soy oil with salt, coloring matter and diacetyl to color and taste." Thus this product is similar to today's soy margarine.

Note 3. This is the earliest menu seen on which soyfoods appear prominently. Address: Dearborn, Michigan.

845. Grulee, Clifford G.; Sanford, H.N.; Herron, P.H. 1934. Breast and artificial feeding. Influence on morbidity and mortality of twenty thousand infants. *J. of the American Medical Association* 103(10):735-39. Sept. 8.
• ***Summary:*** Soy is not mentioned. Address: 1. Prof. of Pediatrics, Rush Medical College; 2. Medical Director, Infant Welfare Society, Chicago; 3. Spokane, Washington.

846. *Oil and Soap.* 1934. The world's fair and the Oil and

Soap Chemists. 11(9):194-95. Sept.
• ***Summary:*** "In the scientific exhibits of the World's Fair of 1934 the soy bean, as a source of basic materials, is occupying a prominent place because of the bean's variety of economic appeals. Three exhibits in which soy beans are shown as an oil source susceptible of great development are those of the Ford Motor Company, the University of Illinois and the Sherwin-Williams Company. In the latter soy bean oil appears as a paint base with some limitations.

"Dealing with the soy bean as an agricultural product the University of Illinois exhibit in the Food and Agricultural Building shows the possibilities of this plant as a profitable crop. In the past year, 4,350,000 bushels were produced in the state...

"The University exhibit includes samples of jars of various grades of soy oil which may be used in hard and liquid soaps. There are also exhibits of varieties of soy beans and of soy bean flours and bakery goods made from them.

"Henry Ford has been a consistent advocate of soy beans as a farm crop as part of his program for the industrialized farm, in which the farmer will have a variety of ways of turning his crop into money. In the Ford exhibit at the Fair the Ford 'Industrialized Barn' is surrounded on two sides by plots in which soy beans are growing as demonstration of the vigor and productiveness of the plants.

"The barn is the original Ford homestead barn built in 1863 near what is now the city of Dearborn, Michigan. The building was taken up and transported to the Fair, partly for its sentimental interest and partly as a demonstration of how a farmer may transpose his old home barn into an industrial unit. A soy bean processing plant is built around the interior of the barn, the engine being outside.

"Units of the oil extractor are of simple design and made chiefly of standard piping and sheet metal that any mechanic could put together. The crushing rolls and a few accessories are the only parts that need be purchased.

"Oil extraction operation in this plant is by solvent. The beans are taken from storage in dry sheds, tempered to 12 per cent moisture content, then gravity fed to a series of five rolls between which they are progressively reduced to flakes of minimum thinness. The flaked beans are then passed by conveyor through a counter current of solvent, gasoline being used in the exhibit. The gasoline is distilled out of the solvent-oil solution and re-used. Flakes come through the process reduced to 2 per cent oil. The solvent is steamed out of the flakes, they are dried and ready for further conversion into food or industrial products. A paper concerning soy bean oil extraction is scheduled for the morning of Oct. 11 of the A.O.C.S. [American Oil Chemists' Society] meeting.

"A soy food exhibit in the Ford barn shows soy flours, cheese, milk, butter, sprouts, salad dressing and various bakery goods. Dinners have been served at the Ford exhibit at which a number of guests have sat down to meals of which the entire menu was contrived from soy beans in various disguises. Plastic uses of the soy bean also are shown. Light switch assemblies are molded in a demonstration operation. Gear shift knobs and other small parts are exhibited. The entire exhibit is a forceful educational effort in which Henry Ford's campaign to urge the raising of crops that will provide the farmer winter employment as manufacturer is centered on the soy bean."

A photo at the bottom of p. 195 bears the caption: "This crude barn, originally built 71 years ago on the farm of Henry Ford's father at Dearborn demonstrates to the World's Fair visitors what has been called 'Henry Ford's solution to the Farm Problem."

847. Castagnol, E.M. 1934. Étude sur la fabrication du lait de soja [Study on the production of soymilk]. *Bulletin Economique de l'Indochine* (*Hanoi*) 37:982-94. Sept/Oct. [Fre]
• ***Summary:*** Contents: Introduction. Composition of soymilk. Technique for the preparation of soymilk: soaking, grinding, dilution with water, filtration / dewatering using a centrifuge, centrifugation. Material balance / Description of the process (start with 200 gm dry soybeans. Soak in water for about 12 hours until soybeans swell to 439 gm. Grind while adding 500 gm water. Measure the frothy result: 867 gm. Dilute by adding 500 gm water, resulting in 1,367 gm of product. Centrifuge to filter off the fiber; the filtered liquid should weigh 966 gm. Centrifuge again to give a final weight of 954 gm).

Fermentability of soymilk (fermenting soy milk). Improvement of the yield of nitrogen through extraction of nitrogenous materials: Influence of the pH on the extraction, influence on the sodium ions, influence of the length of soaking. Conclusion: Making soymilk at home, making soymilk on a larger scale for sale.

Tables show: (1) Composition of soybean seeds. (2) Soaking #1 (length of soaking, weight of the seeds, quantity of water absorbed). (3) Soaking #2 (soaking water temperature, weight of seeds, weight of water absorbed). (4) Materials balance. (5) Composition of each step of the process. (6) Fermentation temperatures for 0-9 hours. (7) Fresh milk, whey, and curd. (8) Treatments and pH. (9) Treatments and yield. (10) Soak times and yield. Address: Ingenieur Agronome, Chef de la Division de Chemie de la Section Nord, Institut des Recherches Agronomiques de l'Indochine.

848. Juday, C.B. 1934. Development of combine reduces soybean losses. *Purdue Agriculturist* (*Indiana*) 29(1):1, 9. Oct.
• ***Summary:*** "During the past decade, there has been a remarkable increase in the acreage of soybeans in Indiana and the other Corn Belt States... A recently increasing interest in soybeans has been the result of the discovery of their practical use in the manufacture of oils, soybean flour,

numerous synthetic products, and various articles of food such as salad oils, sauces, and soybean milk."

"Probably no other phase has caused the soybean grower as much concern as that of successfully harvesting the crop." "The shattering property of the variety of soybeans grown and the method of harvesting used will determine the time of cutting... Common varieties which shatter quite badly are Midwest, Peking, and Ito San. Some of the varieties which shatter least Manchu, Mansoy, Kingwa, Dunfield and Illini. Varieties which are early maturing are Ito San and Early Brown.

"There are various methods of harvesting the crop. From one third to one half of the soybeans of the state are harvested by the combine which has many advantages. Another method is to cut the crop with the grain binder and shock the beans until they are cured suitable for threshing with a stationary thresher. This means is used extensively because the machinery is available to most farmers and the first cost is lower. Other methods are cutting with a mowing machine with a side delivery or buncher attachment, cutting with a self-rake reaper, and using special devices of varying utility.

"Combining is the most economical and satisfactory way of harvesting soybeans for seed. In fact this crop was responsible for the introduction of the combine into Indiana in 1925, and approximately three fourths of the 500 combines in the state in 1931 were purchased primarily for soybeans."

Discusses the many advantages to the use of the combine.

A photo caption states: "The general purpose tractor has sufficient power to pull a ten-foot combine under average conditions." One man is driving the tractor and another is standing on the combine. The ten foot wide combine has proved most popular in Indiana. On average, 1.8 acres of soybeans can be harvested per hour. "Soybeans should be cut less than three inches from the ground to get the low beans." Address: Class of 1935.

849. Reid, Eric. 1934. The nutritive properties of soybean-egg powder, a substitute for cow's milk in the infant dietary. *Far Eastern Association of Tropical Medicine, Transactions of the Congress* 9th Congress 1:367-71. Oct. Held 2-8 Oct. 1934 at Nanking, China. [11 ref]

• ***Summary:*** The authors believe that soybean-egg powder contains sufficient vitamin D and bone-building salts to prevent the development of rickets in the young growing dog. This powder consists of about 22% protein, 25% fat, 40% carbohydrate, and 0.4 to 0.5% calcium and phosphorus. Note: Since this powder was not fed to human infants, the title of the paper seems misleading. Address: Div. of Physiological Sciences, Henry Lester Inst. of Medical Research, Shanghai, China.

850. Torres Herrera, José M. 1934. El haba soya, su cultivo y beneficio [The soybean, its culture and benefits]. *Boletin de Agricultura y Trabajo* (*Nicaragua Ministerio de Agricultura y Trabajo*) 6(54):24-26. Aug.; 6(55):6-8. Sept.; 6(56-57):6-12. Oct/Nov. 3a Epoca. [Spa]

• ***Summary:*** The article begins with the following: "In previous editions of this bulletin we inserted various articles concerning the cultivation of soya; however, given the large importance of this legume, we decided to reprint this article by José M. Torres Herrera from the *Boletín Agrícola* of Medellín, Colombia" [April 1934. 8(189):1180-92]. The soybean variety Brazilian Yellow can be obtained in Sao Paulo for 10 cents gold at the most" (i.e., it is inexpensive).

Contents: Part I. Introduction. Climatological conditions for different varieties. Soils appropriate for this crop. Inoculation with bacteria. Preparation of the soil. Soya in crop rotations.

Part II. Sowing the seeds. The work of cultivation. Calculation of the cost of production for 6,400 square meters (Data taken from the Palmira Agricultural Experiment Station, Bulletin No. 1; the cost is $0.45 per arroba = ca. 25 lb). Soybean varieties ("Agriculturists interested in planting this crop which has no equal, can obtain seeds free of charge from the Pamira [sic, Palmira] Agricultural Experiment Station or the Antioquia Agricultural Society [Sociedad Antioqueña de Agricultores, Colombia]"). Production of seeds. Yields of various varieties.

Part III. Harvesting and threshing of the grain. The uses of soya (*la soya*). Utilization of the plant and seeds of the soybean (*de las habas soyas*)*:* The plants as hay, pasture, green forage, ensilage, green manure. The seeds as whole dry soybeans (*habas secas*, for making infant foods, flour, soup, butter, diabetic foods and breads, cooked whole soybeans, confections, health foods [alimentos para sano]: soymilk, soybean roasts or steaks, soy sprouts. Breakfast foods: Vegetable curd or cheese [cuajada o queso vegetal], soy sauce, malted milk, soy coffee cakes, flour, livestock feed), green vegetable soybeans (*habas verdes*), soy flour (*harina de habas*), soy oil (*aceite de habas*). Soya as human food. The composition of various legumes. Soy flour. Soy oil. Soy milk (*leche de soya*)*:* Nutritional comparison of soy milk and cow's milk, powdered soymilk, fermented soymilk, tofu (*queso soya*), soy casein (*Caseína*). Whole dry soybeans: Roasted soybeans (*habas tostadas*), soy coffee (*café de soya*), soy chocolate (*chocolate de soya*). Green-seeded soybeans (*habas soyas verdes o legumbres*)*:* Soy sprouts, soy sauces. Edelsoya (soy flour made by Berczeller). The value of soy forage. Soybeans in mixtures with other crops. Green manure. The concept of Dr. Uribe Echeverri, minister in Brazil.

Note: No mention is made of soya in Nicaragua. Address: Agrónomo Nacional de la Intendencia del Chocó [Colombia].

851. Kellogg, John Harvey. 1934. Method of making acidophilus milk [from soybean milk]. *U.S. Patent* 1,982,994. Dec. 4. 2 p. Application filed 14 June 1933. [1 ref]
• ***Summary:*** An "acidophilus milk" or "buttermilk" type product was prepared by inoculating sterilized soybean milk with *Bacillus acidophilus* and culturing the milk at about 100ºF. About 2% lactose may be added to the milk. The "culture count in soy acidophilus milk far exceeds the count in cow acidophilus milk. Old cultures are rejuvenated immediately. The organism is thicker and grouped in longer strings. Persons who are sensitized against cow's milk may employ soy acidophilus milk without experiencing allergic symptoms. In cases of acute colitis, especially in children, when cow's milk must be avoided, soy acidophilus milk is of special service. Likewise in cases of extreme toxemia, when all animal proteins are harmful to the patient, soy acidophilus milk may be used as a source of protein." Address: Battle Creek, Michigan.

852. Carqué, Otto. 1934. Vital facts about foods: A guide to health and longevity with 200 wholesome recipes and menus and 250 complete analyses of foods. 2nd ed. Los Angeles, California: Published by the author. 208 p. Index. 24 cm. [20+* ref]
• ***Summary:*** This so-called 2nd edition is identical to the first edition (1933) except that: (1) Two lines on the 2nd page of the Preface have been moved to the first page; both pages are unnumbered. (2) Two paragraphs, titled "Preface to the second edition" have been added to the end of the Preface and dated "November, 1934." The author's signature again appears at the end of the Preface.

Note: The first 5,000 copies were exhausted in about a year. Address: Los Angeles, California.

853. *Bulletin of the Defensive Diet League of America* (*Toledo, Ohio*). 1934. Soybean milk. No. 96-97. *

854. **Product Name:** Loma Linda Soy Milk (Canned).
Manufacturer's Name: Loma Linda Food Co.
Manufacturer's Address: Loma Linda, California.
Date of Introduction: 1934.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: Some Products of LLF. 1934. Handwritten manuscript. "Soy milk experiments by Harry Meger." House of Better Living. 1936. Sept. p. 4. "Soy Milk with a pleasing taste, and full of nutrition, SOY MILK is one of several Loma Linda soy products." Price list. 1938. Sold in plain and chocolate flavors.

Rosenberg's Original Health Food Store. 1940. Catalog of Health Foods... p. 52. "Loma Linda Foods: Soy Milk. $0.10, $0.15, $0.25." Loma Linda. 1945. Wholesale price list; Today's Food. 1966. Spring. States that Loma Linda first began making soy milk in about 1930.

Thomas' Wholesale Grocery... Register. 1955. July. p. 1474. Soy products. California, Arlington: Loma Linda Foods Co. (Soy milk).

Interview with Charlotte Holmes. 1981; Shurtleff & Aoyagi. 1984. Soymilk Industry and Market. p. 26.

855. Adachi, Isamu; Sakurai, Shigeru. 1934. Nihon shokumotsu-shi [History of Japanese foods]. Tokyo: Yuzankaku. 480 p. [Jap]
• ***Summary:*** This is the best book seen on the history of Japanese foods. The following soyfoods are discussed: Firm tofu, soymilk and okara (p. 290-91; discusses the *Teikun Orai* by Iseno Teijo, tofu-kan, tofu-jiru = soymilk, setsurun-sai = okara), yuba (p. 336), shoyu and tofu (p. 370-71), unohana (okara, p. 377), tofu and natto (p. 382-83).

856. Battle Creek Food Co. 1934. Healthful living. Battle Creek, Michigan. 64 p.
• ***Summary:*** The top one-third of the front cover contains a photo of the Battle Creek Sanitarium, with the tall twin towers. The bottom third is a table of contents.

The section titled "Nut butters" (p. 13) contains a description of the company's products with a photo of a jar of peanut butter; in the middle of the label is written "The Original." "Peanut butter–We were the originators of peanut butter, which we first made for the Battle Creek Sanitarium in 1892. We at first roasted the nuts, but found that roasting destroyed some of the fine qualities and rendered the product hard to digest. After much experimenting, we discovered a new process whereby a far more delicious and entirely wholesome product could be made without roasting. The roasted nut butter is difficult for some people to digest.

"Our peanut butter is prepared from choicest nuts. A most excellent fattening food. Capital for use in sandwiches and salads.

"Almond butter–Prepared by our own process from the finest quality of sweet almonds. Thoroughly cooked and emulsified, it dissolves readily in water, and until opened will keep indefinitely in any climate.

"Almond butter may be prepared for table use by mixing with an equal amount of water and adding salt. This makes delightful sandwiches. Mixed with equal parts of lemon juice and salt to taste, you have a sour salad dressing. Makes delicious nut cream and nut milk."

The price list (p. 64) gives the prices for 132 foods–including various sizes. Among these are Agar (flaked), Almond butter (8 oz jar, $1.35), Bran biscuit, Bran–cooked, Bromose–Nut, Dietetic bran (starchless), Gluten bread in tin, Gluten biscuit–40%, Gluten flour (5 lb sack), Granola, Meltose, Kaffir tea, Malted nuts, Meltose sugar (malt sugar), Nuttolene, Nuttose, olive oil, Peanut butter (8 oz jar, $0.40), Protose vegetable meat, Savita, Soy beans baked (11 oz tin, $0.18), Soy bean biscuit (package, $0.60), Soy flour (14 oz tin, $0.35; 5 lb tin, $1.25), Soy gluten bread ($0.35),

Vegetable gelatin, Whole wheat flour (100%, 5 lbs, $0.55), Whole wheat wafers, Yogurt tablets, Zwieback. Address: Battle Creek, Michigan.

857. Delegación de los Servicios Hidráulicos del Guadalquivir. 1934. Campos de experimentación agrícola. Ensayos con la "Soja." Laboratorio [Agricultural experimentation fields. Trials with soybeans. And the laboratory]. Sevilla, Spain. 89 p. [Spa]
• ***Summary:*** This Directorate of Waters, Delegation of the Guadalquivir (*Jefatura de Aguas de la Delegación del Guadalquivir*), has knowledge through lectures and references of trials conducted in different regions with the legume called 'soy,' whose products have numerous applications, both agricultural and industrial. I endeavored in late August 1932, while taking charge of the Delegation of Hydrological Services of the Guadalquivir, to see that this plant was tested at the Agricultural Experiment Fields that this organization had established in Córdoba and Granada. The tests began in 1933.

More than 20 years ago in Spain, soybean trials were conducted with good results by the Count of San Bernardo at his farm "El Alamillo," located in Ecija (Sevilla). In 1910 the soybean was cultivated by the agricultural engineer Mr. Noriega in Jerez (Cádiz) and even though the seeds were not in good condition, the plant showed its excellent resistance to drought. In 1917 the Spanish Consul in Shanghai, China, made three varieties of soya available for testing. Nowadays this plant is examined with care and curiosity, and later [p. 81-82] we shall say that what has been done by us at the experiment field of Córdoba.

In 1933 the varieties Lorca and Laredo were tested, and additional plantings of Laredo were done to test its use as fodder and to gather its beans. In 1934 the soybean trials were repeated, to test for both grain use and hay. Address: Seville, Spain.

858. Garot, Lucien. 1934. L'emploi des farines dans l'alimentation du nourrisson [The use of flour in feeding infants]. *Bruxelles-Medical* 14:458-70. [1 ref. Fre]
• ***Summary:*** Infant formulas, made from soy flour and sunflowerseed flour, if used in moderation, can be effective in treating infants who are intolerant to milk. Address: Agrege de Pediatrie a l'Universite de Liege, Belgium.

859. Karapetkov, Nikolai T. 1934. Biokhimichni izsledovaniia varkhu soevitie i mlieko ot soia: disertatsiia [Biochemical research on soybeans and soymilk]. Postgraduate thesis, Sofia University, Physico-Mathematical Faculty, Sofia, Hudojnik (Printer). 154 p. German summary, p. 132-48. [115 + 65 footnotes. Bul; ger]
• ***Summary:*** Contents: Summary. Composition of the soybean plant and seed. The soybean as a semi-permeable system. Experimental part. Soymilk. Emulsification conditions and stability of soymilk. Coagulation of the soymilk. Coagulation with salts. Colloid chemistry of the milk and coagulation with laboratory enzymes: Organic colloidal material (casein, albumin, globulin). Mineral colloidal materials (calcium phosphate, magnesium phosphate, calcium caseinate; Chimosin). Fractionating the soy proteins with formalin. The soya-coagulant (a graph shows the time it takes casein and glycinin to reach various levels of concentration). The long German-language summary is on pages 132-48. Address: Aus Kopriwstitza. Sofia, B-d Macedonia, 17–Bulgaria.

860. Karapetkow, Nikolaus. 1934. Biochemische Untersuchengen ueber die Sojabohne und Sojamilch [Biochemical investigations on the soybean and soymilk]. PhD thesis, Sophia. 154 p. Illust. [Bul]*
• ***Summary:*** Title and text also in Bulgarian. Address: Bulgaria.

861. Matveeff, G.N. 1934. [Varieties of soybeans in Georgia]. Tblisi, Georgia: Georgian Press. 146 p. Scientific Research Works, Series A, Issue No. 1. [51 ref. Geo]
• ***Summary:*** Table 1 (p. 8-9) shows the increase in the area planted to soybeans in Georgia from 1930 to 1933. Part 1 shows the area planted to soybeans only ("pure sowings"); this value increased from 626 ha in 1930 to 1,653 ha in 1933. Part II shows the mixed plantings converted to pure sowings; this value decreased from 49,544 ha in 1930 to 28,878 ha in 1933. Part III shows the total planted area (pure + mixed); this value decreased from 50,170 ha in 1930 to 30,531 ha in 1933. Part 4 shows soybean area as a percentage of total area; this figure decreased from 5.09% in 1930 to 3.05% in 1933. A note (p. 9) explains that this table is based on statistical data received from the Narcomzem (Agricultural Department) of Georgia.

Page 10 states that in 1932 a soymilk manufacturing plant was established in Tblisi. Page 11 states that soybeans exported from the port of Batumi (Georgia, on the Black Sea) to Germany and Denmark sold for ¼ to ½ to price of soybeans purchased from Manchuria.

Table 2 (p. 12) shows soybean production in Georgia in 1931 and 1932, and how these soybeans were utilized. Soybean production was 10,760 tons in 1931, and 3,611 tons in 1932. For the two years (respectively), 32.6% and 48.8% were exported (outside the USSR), 21.2% and 22.5% were exported to other countries inside the USSR, 27.9% and 2.6% were delivered to various organizations in Georgia for use in making edible oils and confections.

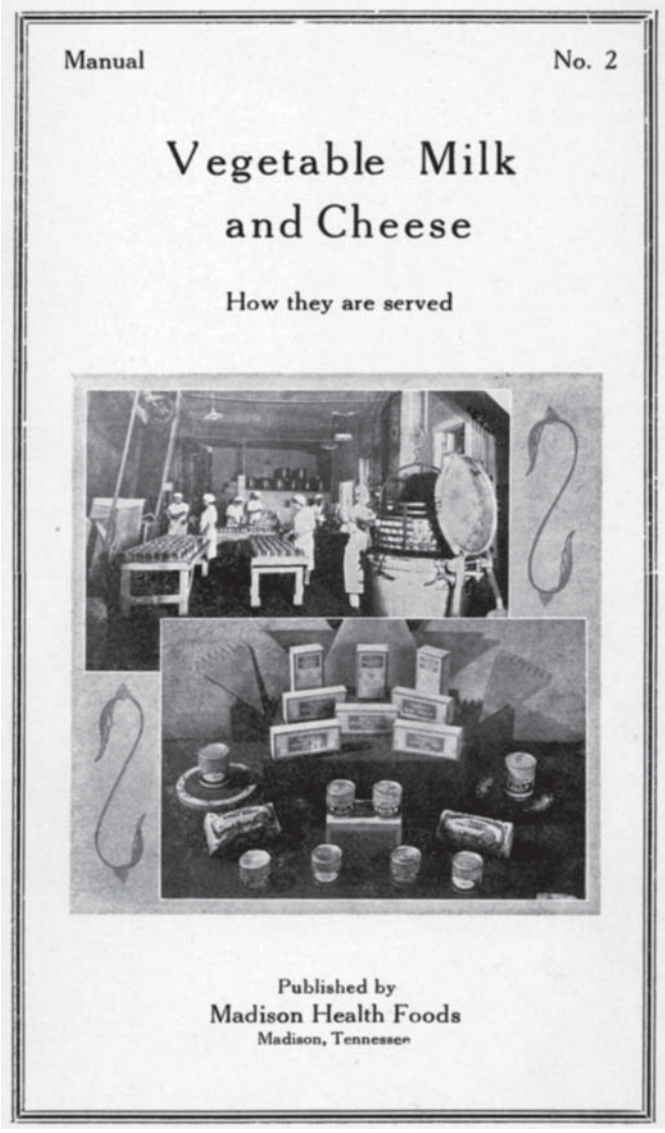
Page 10 states that G. Struev [G. Sturua] (1882) gave the names of some varieties he obtained from Japan. According to G. Japardize, S. Timofeev, and E. Wuchino, soybeans were introduced to Georgia during the 1870s.

Page 20 states: The first information about the soybean in Russia was from the year 1874 (See G. Tupikova).

Address: Georgia.

862. McGuire, Ray F. 1934. Soybean values. Cedar Rapids, Iowa: Soybean Production Advisory Board. 15 p. [24 ref]
• ***Summary:*** Contents: Values as farm crop. Commercial possibilities. Valuable human food. Modern method of producing oil and oil meal. Utilization of soybean oil. Utilization of soybean oil meal. Soybean flour. Imports, exports and the tariff. Marketing soybeans, oil and meal. Potential markets. Production last year (in the United States). Graphs show the domestic production of soybean oil, 1927-1932, and the increasing seed production in Iowa 1924-1933. A map shows the principal soybean producing counties in Iowa. Address: Iowa.

863. Madison Health Foods. 1934? Vegetable milk and cheese. How they are served. Manual No. 2. Madison, Tennessee. 21 p. Undated. 22 cm.



• ***Summary:*** Contents: Introduction. Composition of the soybean. Soybean–A food for infants. Salads: How to make a perfect salad (20 recipes, including 11 with soy cheese [tofu] and 7 with grated soy cheese): Tomato, pineapple, cheese salad (with grated soy cheese). Jellied soy salad (with grated soy cheese). Waldorf cheese salad (with grated soy cheese). Raisin and soy cheese salad (with grated soy cheese). Almond and soy salad (with grated soy cheese). Sliced fruit and cheese salad (with soy cheese). Soy peach salad (with grated soy cheese). Tomato and soy salad (with soy cheese). Baked apple with soy sauce (with grated soy cheese). Pineapple and cheese salad (with grated soy cheese). Apple, carrot and soy salad (with grated soy cheese). Soybean salad (with whole soybeans). Soybean sprout salad (with soybeans sprouted until the sprouts are about 2 inches long). Cold sliced curd (with thin-sliced soy cheese). Potato soy salad (with grated soy cheese). Stuffed egg with soy cheese. Vegetable soy salad (with grated soy cheese). Cheese, cantaloupe, and tomato salad (with grated soy cheese). Mock chicken salad (with grated soy cheese). Pea soy salad (with grated soy cheese).

Sandwiches (9 recipes, incl. 5 with soy cheese and 4 with grated soy cheese; one recipe uses Vegex). Cooked vegetable dishes with soy cheese (40 recipes, all use soy cheese except 2 which use soybean puree). Other soy dishes (3 recipes). Desserts (1 recipe for Soy cream custard, with soy milk). Diabetic foods (4 recipes, each using soy meal [flour]). Soups (5 recipes, using soybeans, grated soy cheese, and soy milk or soybean milk). Breakfast dishes (4 recipes, using canned soybeans, soy meal, or grated soy cheese).

Note 1. This is the earliest English-language document seen (April 2013) that uses the term “grated soy cheese” to refer to grated tofu.

On the last page (inside rear cover) are listed “Products for sale by Madison Health Foods Inc. (Madison, Tennessee): Soy cheese, 14 or 30 oz. Soy beans, 14 or 30 oz. Soy milk, 14 or 30 oz. Soy meal, 5 or 10 lb. Also many other health products. Write for information and prices.”

Two photos on the cover show: (1) Students at work inside the Madison food factory, with two long tables and a retort cooker. (2) Various food products made by the company.

Note 2. Although this booklet is undated, the two photos on the cover appear in the *Madison Survey* issue of 14 March 1934 (p. 31). Address: Madison, Tennessee.

864. Monnier, Emile. 1935. Les préparations à base de graines de soja dans l’alimentation des Annamites [Preparations based on soybeans in the diet of the Annamites (of Central Vietnam)]. *Bulletin Economique de l’Indochine* (*Hanoi*) 38:66-86. Jan/Feb. Also in Annales de Medecine et de Pharmacie Coloniales (1935) 33. p. 34-57. [11 ref. Fre]
• ***Summary:*** An excellent, very precise and detailed discussion of the subject. Contents: Introduction, botany of

the plant, nutritional composition, and utilization. Soymilk (used to make tofu–*le fromage de soja–dau-phu*). Tonkin soy sauce (*La sauce de soja = dau-tu'o'ng.* It is made by fermentation of a mixture of glutinous rice and roasted soybeans {*graines de soja grillées*}. It is made on a family level. It corresponds roughly to Japanese shoyu and Chinese soy sauce (*téou-yeou*). Describes exactly how it is made). Soy cream [yuba] (*La crème de soja = dau-phu-chuc;* [dried yuba sticks]). It comes in the form of sheets.

Note. This is the 2nd earliest French-language document seen (Dec. 2012) that mentions roasted soybeans, which it calls *graines de soja grillées.* Address: Chef du Laboratoire de Chimie de l'Institut Pasteur, Hanoi.

865. Reid, Eric. 1935. The nutritive properties of soybean-egg powder, a substitute for cow's milk in infant dietary. *Chinese J. of Physiology* 9(1):27-42. Feb. [14 ref. Eng; chi]
• ***Summary:*** Describes modifications in the method of preparing soybean-egg powder from that described in the Journal for March 15, 1934, and reports feeding experiments on rats. Soya-bean powder, prepared from soya-bean flour (125 gm), sucrose (40 gm), lactose (30 gm), dextrin (20 gm), liquid egg-yolk (50 gm), peanut oil (20 gm), calcium lactate (5 gm), and NaCl (2 gm), fed to young rats appears to be adequate for blood and bone formation and to produce no enlargement of thyroid or liver. In general, the growth-promoting power is greater than with whole milk powder, with or without iron citrate. The soybean flour used was Soylac, marketed by Nutro Products Co., Shanghai. Address: Div. of Physiological Sciences, Henry Lester Inst. of Medical Research, Shanghai.

866. Rittinger, Fred; Dembo, L.; Torrey, G.G. 1935. Soy bean (vegetable) milk in infant feeding. *J. of Pediatrics* 6(4):517-32. April. [16 ref]
• ***Summary:*** Gives the results of a 3½-year study on the growth and development of 205 infants. The gain in weight, general development, and resistance to infection were all satisfactory and paralleled that of breast-fed infants and those fed on carefully prepared dairy milk mixtures. The stool flora showed a high percentage of gram-positive organisms (acidophilus), resembling that of breast-fed babies.

The soy bean milk was found valuable in the treatment of infantile eczema when there was evidence of sensitization to animal protein. It was helpful in cases of constipation, owing to its bulkage and to the fact that *Lactobacillus acidophilus* thrives in soy bean milk. Address: Pediatric Services, St. Ann's Hospital and St. Luke's Hospital, Cleveland, Ohio.

867. Bowdidge, Elizabeth. 1935. The soya bean: Its history, cultivation (in England), and uses. London: Oxford University Press. xii + 83 p. Foreword by Sir John T. Davies (Director, Ford Motor Co., Ltd.). Illust. 20 cm.

• ***Summary:*** Contents: 1. Introduction. 2. The soya bean in the East: Europe, United States, Canada. 3. Description of the plant: Results of experiments in England, the 1934 experiment in Essex, yields from the four varieties, description of the four varieties, composition of English and other varieties. 4. Culture of the soya bean: Soil requirements, inoculation of the seed, preparation of soil, rates of seeding, sowing seed, cultivation, fertilizers, harvesting the crop, threshing, storage, yields in various countries, soya bean prices. 5. Soya bean hay: Feeding values, time of cutting, soya straw, soya in the mixed crop (in mixed cropping plans with sorghum, maize, etc.). 6. Soya beans for soil improvement. 7. By-products of the soya bean: Oil and its uses, notes on experiments in breeding for oil, methods of extraction, soya cake and meal, results of comparative feeding tests. 8. Food products of the soya bean.

This book describes the successful introduction and cultivation of soybeans in England. The Foreword notes (p. v): "In past years no sustained effort has been made to grow the plant on a large scale in England. The Royal Agricultural Society devoted several years to experiment at Woburn, but in 1914 they reported that the plant was quite unsuitable for growth in this country as it required more warmth than could be obtained here. The British Board of Agriculture reported in 1916 that 'the Japanese and Manchurian varieties hitherto tested cannot be relied upon to produce seed in this country."

In the Preface (p. ix) Ms. Bowdidge acknowledges: "That very able and unique work *The Soybean*, by Messrs. Piper and Morse, has been my principal source of information."

"Efforts to introduce the [soy] bean to English agriculture were begun in 1909 and given up in 1914, and except for the work of Mr. J.L. North nothing further has been done" (p. 9).

The section titled "Results of experiments in England" (p. 15-17) states: "One of the first attempts to acclimatize the soya bean in England began in 1914 at the Royal Botanic Gardens, Regents Park, when it was shown by Mr. North that certain varieties could be 'advanced' sufficiently to produce a mature crop towards the end of September. Many years devoted to careful selection of seed from the varieties in his collection had resulted in several early strains. In 1928, a hybrid was received from Canada which, on passing the experimental stage, was planted out on a number of small plots in various parts of the country. It proved to be a very reliable cropper and matured earlier than any of the sixty varieties previously under test. Planted in the first week in May it was harvested at the beginning of September, and reports of good results came from Middlesex, Essex, Berkshire, Oxfordshire, and Hampshire.

"The largest experimental test ever conducted in this country took place in 1933 at Boreham, Essex, when forty-seven different varieties of the soya bean originating from North America, Canada, Manchuria, and Japan were grown

under observation. The selection included four varieties which had been acclimatized by Mr. North. Mr. North was engaged to supervise operations, and 50 lb. of his special seeds was purchased. The results obtained were most interesting."

"There is no doubt at all that the four varieties acclimatized by Mr. North were a great success; two reached maturity on September 1st and two on September 6th. In many cases plants bearing between 300 and 400 seeds were harvested."

"It has been found by Mr. North in the course of more than twenty years' study of the subject, mainly with foreign beans grown in various parts of the country, that no variety of soya bean has any chance of success in England unless it matures in less than 100 days in America. Varieties requiring this length of time in America need nearly a month more in this country and, owing to our colder spring weather, no advantage is gained by earlier sowing. Mr. North's seeds require 124 to 127 days to reach maturity in England but, if grown in America, they would only require 85 to 90 days.

The section on "The 1934 Experiment in Essex" (p. 17-23) notes: "The result of the 1933 experiment was so encouraging that it was determined that a further attempt should be made in 1934 to ascertain whether it would be possible to grow the plant profitably as a field crop and, with this in view, a field of nearly 20 acres was specially prepared for the acclimatized seeds from the 1933 crop."

Joseph Bramah, an English engineer, invented the hydraulic press in 1796, leading to a "great advance in the oil-extraction industry." All "old methods in the western world immediately gave place to the new appliance." More recently the method of solvent extraction has been developed; it is now used throughout the world and removes nearly all the oil from the seeds (p. 69).

"There is plenty of evidence as to the efficiency of soya meal in live-stock feeding, yet it does not appear to be used in this country as widely as its feeding value merits. The prejudice formed when it was first introduced in England as dairy food seems still to exist. It was thought at that time that the use of the meal might affect the taste of milk and butter; but, although this was disproved later, England remains a small user" (p. 72).

Food products of the soya bean (p. 80-83): "It is unfortunate that the inherent conservatism of English people to anything new has been the cause of past failures to popularize soya bean food products for consumption in this country. The bean contains iron, magnesium, calcium, and other mineral salts; phosphorus in the form of lecithin makes it valuable in cases of nervous disorders...

"Soya 'sprouts,' which have been grown and used for centuries in the East, have recently been introduced as a green vegetable. The beans gathered before ripe and prepared in the same manner as green peas are a very satisfactory vegetable and the dried beans, if soaked for forty-eight hours, may be cooked like haricot or butter beans and make a most delicious and nutritious vegetable dish."

There is no doubt that soybean products are gradually becoming established in Western countries. We sometimes eat soybeans without knowing it. "The bean, when properly prepared by roasting, makes an excellent cereal beverage which looks, smells, and tastes like coffee; a sauce, appropriately seasoned with spices, is the so-called 'Worcester Sauce', and soya soups made from the bean taste like beef extract. During the late war, when Germany found herself on the verge of starvation, glutamic acid, produced from the soya bean, was used in German hospitals to form the basis of beef-tea, and it is said that the ground bean also was used at that time for the making of bread. Soya bread, made from properly prepared flour, is obtainable in England and is stated to be of high nutritive value" (p. 81).

Soya flour has long been used in foods for diabetic persons requiring a low starch diet. "The flour contains more protein and fat, and less carbohydrates than ordinary cereal flours, and a certain variety manufactured in England is stated by the proprietors to contain 42 per cent. protein and 20 per cent. fat, having good keeping qualities, 0.13 per cent lecithin phosphoric acid and the vitamins A, B, D, and E. There are many food products on the London market under the names that conceal their soya bean origin. Just before the late war [World War I] an enterprising English firm was making great strides with soya products. Vegetable butter, biscuits, cocoa, milk chocolates and other confectionery, cream, cakes, bread, &c., proved quite a success until a war-time embargo placed upon the importation of soya beans put a stop to the business; the organizers eventually went to America! (p. 82).

The author concludes (p. 83): "The soya bean is by far the most valuable of all known beans and our farmers ought to make a serious effort to grow it. It has already been shown that the acclimatized bean will grow in this country, and if crops can be raised profitably and on a commercial basis, a service will be rendered both to the farmer himself and to the country."

Excellent photos show (see p. xiii): (1) A typical example of the soya bean plant grown at Boreham, County of Essex, in 1933. (2) The soya bean plant in full maturity. (3) Bags of English acclimatized soya beans harvested on Fordson Estates, Boreham, Essex, in 1933. Left to right: Brown 'C,' yellow 'J,' black 'O,' and green 'Jap.' (4) A sturdy specimen of the 'Jap' soya bean plant grown at Boreham, Essex in 1934. (5) The 'J' variety. (6) The 'O' variety (for hay) at the seed stage. (7) Aerial view of the soya bean field as it appeared on 29 Aug. 1934. (8) Soya beans inoculated the previous day being fed into the horse-drawn drill prior to sowing. (9) A man seated on an ordinary horse-drawn grain-drill, planting soya beans in rows wide enough to enable cultivation later on. (10) Six men stooping in a field, planting small quantities of different varieties of soya

beans by hand in 30-inch rows. (11) A man walking beside a horse pulling a cylindrical roller, which helps to give the seeds a better growth and even stand. (12) Harvesting soya beans with a reaper and binder pulled by a tractor. (13) Threshing soya beans in 1934 with a mechanical 'Ruston' Thresher; many beans were split. (14) Loading sacks of soya beans onto an open-bed truck for conveyance to storage barns. (15) The first English rick of soya hay, grown in 1933. (16) Baled and trussed soya bean straw being ricked; a man is shouldering a bale atop the rick with a ladder propped against one side. (17) Heated cakes of crushed soya beans ready for hydraulic pressing at Erith Oil Mills, Ltd. (18) Soya bean cakes, after leaving the press, are passed through a paring machine where the edges are trimmed at Erith Oil Mills. Address: England.

868. Dittes, Frances Linda. 1935. Food for life: The art and science of preparing food. Madison, Tennessee: Associated Lecturers, Inc. xii + 332 p. Spring. Recipe index. 23 cm.
• ***Summary:*** This early Seventh-day Adventist vegetarian cookbook contains more soyfoods recipes that any published up to this time. The author, a soyfoods pioneer born in 1891, first attended Madison College in 1910 and joined the faculty in 1912. She did her graduate work in nutrition, specializing in soyfoods nutrition, at George Peabody College for Teachers (in Nashville, Tennessee), from which she received her MA degree in 1929. This book was printed by the "Rural School Press" (Madison College's school press) and published in the spring of 1935.

Contents: Part I: Food and nutrition. Milk. The acid-base balance. Fruit acids. Balancing the food. Measuring food values. Menu planning. The art and science of food preparation (preceded by this quotation: "Food will be the medicine of the future"–Harvey W. Wiley). Food combinations. Condiments. Suggestions for flavoring. Garnishings. Measurements. Part II: Recipes (listed by recipe type such as breads {some recipes call for Crisco shortening}, soups, salads, desserts, etc.). One chapter titled "Dishes to take the place of flesh foods" (p. 149-65) contains many interesting recipes such as: Preparation of gluten. Gluten pot pie. Gluten loaf. Glutose (with 5 cups ground cooked gluten, plus potatoes, eggs, and cream). Cold sliced Nut Meat or Vigorost (Nut Meat is sold in 2-lb cans, Vigorost in 14 oz cans). Peanut roast. Chow mein (with soy cheese or Nut Meat). Boiled peanuts. Soy-related recipes are given below. Another chapter is "Nutritive value of the soy bean. Soy bean dishes" (p. 166-86).

Appendixes: A. Classification of carbohydrates. B. Canning. C. Sample menus. D. 100 calorie portions of foods. E. Approximate servings and values of a few common foodstuffs. F. Protein, calcium, phosphorus, and iron in 100 calories of food material. G. Ash constituents of foods in percentage of edible portion.

The author uses the term "soy cheese" to refer to tofu. Soy-related recipes include: Soy bread (20% soy flour and 80% white wheat flour; p. 96). Soy gems (18-20 muffins using soy flour; p. 108). Tomato-soy sandwich (with grated soy cheese; p. 114). Soy noodle soup (with grated soy cheese browned in butter; p. 122). Jellied soy salad (with grated soy cheese; p. 138). Potato soy salad (with grated soy cheese; p. 138). Tomato and soy salad (with soy cheese). Waldorf soy cheese salad (with grated soy cheese; p. 139). Lentil-soy loaf (with soy bean puree; p. 157). Savory soy loaf (with soy cheese). Soy souffle (with grated soy cheese browned in butter; p. 159). To fu chi (deep-fried soy cheese stuffed with rice and seasoned with soy sauce). Soy gravy (with 3 parts soy flour and 2 parts white wheat flour).

The chapter titled "Nutritive Value of the Soy Bean" (p. 167-86) discusses the general nutritional composition, then gives details on protein, fats (including lecithin), minerals (including tofu made with magnesium chloride or calcium sulphate). Recipes are given for: Cooked soy beans. Soy milk (after soaking 1 lb of Mammoth variety soy beans overnight in water, "Wash several times in hot water to remove undesirable taste."). Soy milk no. 2. Soy acidophilus milk. Soy bean cheese [tofu, curded with calcium sulphate]. Soy bean cake [okara] loaf. Browned soy cheese. Green soy beans. Escalloped green soy beans. Dried soy beans. Baked soy beans. Soy beans southern style. Roasted soy beans. Soy beans in tomato sauce. Chop suey (with soy cheese). Sauce (with soy sauce). Soy bean omelet. Lentil soy bean loaf (with soy bean puree). Soy bean loaf. Soy bean pie (with soy bean pulp). Soy bean meat.

Note 1. This is the 2nd earliest English-language document seen (June 2013) that calls for okara as an ingredient in a recipe.

Note 2. This is the earliest English-language document seen (June 2013) that uses the term "Soy bean cake" to refer to okara.

* = made with soy bean flour. Soy bean muffins*. Soy muffins*. Soy biscuits*. Soy bread*. Soy nut bread*.

Escalloped onions with soy cheese. Baked rice with soy cheese. Escalloped potatoes with soy cheese. Spaghetti and soy cheese. Stuffed pepper with soy cheese. + = with soy cheese. Left-over croquettes+. Soy croquettes+. Soy cheese with rice. Stuffed baked potato with soy cheese. Soy fritters+. Soy cutlets+. Savory soy loaf+. Spanish chop suey+. Soy souffle (with grated soy cheese browned in butter). Cream of soy soup. Soy noodle soup+. Soy soup+. # = made with soy milk. Soy cream of tomato soup#. Soy cream of pea soup#. Soy cream custard#. Jellied soy salad+. Waldorf cheese salad+. Potato soy salad+. Stuffed egg with soy cheese. Soy bean salad. Soy bean sprout salad. Soy Vegex sandwich+. Tomato-soy sandwich+. Egg and soy sandwich+. Soy and cucumber sandwich+. Celery and soy sandwich+. Banana soy sandwich+. Scrambled egg and soy cheese sandwich. Diabetic crackers (with soy meal). Diabetic pie crust (with soy meal). Diabetic soy bean mush*.

Vegetables: Soy cheese sauce (with grated soy cheese and soy sauce, p. 195). Steamed cucumbers with soy cheese (grated, p. 201). Escalloped onion with soy cheese (p. 204). Spinach with soy cheese sauce (and Vegex, p. 207).

Desserts (p. 215-36), Cakes (p. 237-53), Pies (p. 255-60), Cookies (p. 261-68), and Ice creams and sherbets (p. 269-74). Some of these sweet recipes use agar-agar, gelatin, Malta (malt syrup), Health Koko, and Crisco. Some desserts call for 1-2 cups sugar per 4 servings and 1 pound of sugar is used in an icing for pound cake (p. 242). No soy is used in any sweet recipes. Note: It is surprising that Ms. Dittes and Madison had not discovered the use of tofu or soy milk in ice creams, other desserts, or dressings. Nor is peanut butter mentioned.

The chapter titled "Milk" (p. 17-21) states: "Since milk is an important food constituent, especially for children, those responsible for planning dietaries should see that each child has one quart of clean milk or its equivalent each day; adults, about one pint... *Grade A* is a raw milk from cows free from disease, having a bacteria count of not more than 100,000 per cubic centimeter at the time of delivery. *Grade B* must be pasteurized and the bacteria count must not exceed 1,000,000 per cubic centimeter. It must also come from cows free from disease." All other milk is Grade C.

The chapter titled "The acid base balance" (p. 23-24) states: "Most foods when burned in the body leave an ash in addition to the carbonic acid which is thrown off by the lungs. This ash may be either alkaline, neutral, or acid in reaction. The principal base-forming (alkaline) elements are calcium, potassium, magnesium, and sodium, while the chief acid-forming elements in foods are sulfur, phosphorus, and chlorine... A neutral or slightly alkaline condition will produce a feeling of buoyancy, health, vigor, and clear mental activity... In general, all fruits and vegetables (with a few exceptions) are potent in producing alkaline ash. Meat, eggs, breads, and cereals are acid-formers."

The chapter titled "Condiments" (p. 51-52) states: "Spices, such as mustard, ginger, pepper, horseradish, curry, and cloves, are among the most irritating of the seasonings used. It would be better if these exciting substances were not added to the food... Vinegar contains acetic acid which is burned in the body with difficulty. Citric acid as found in the lemon juice is more easily oxidized in the tissues. Lemon juice, therefore, makes a good substitute for vinegar, both as to ease of oxidation and flavor." Address: Director, Food and Nutrition, Nashville Agricultural Normal Inst., Madison Rural Sanitarium and Hospital, Madison, Tennessee.

869. Gay, H. 1935. La culture et les usages du soja [The cultivation and uses of the soybean]. *Revue de Botanique Appliquee & d'Agriculture Tropicale* 15(165):309-24. May; 15(166):447-53. June. [15 ref. Fre]
• ***Summary:*** Contents: Introduction. Geographical area and climatic requirements. The plant and its varieties: Taxonomy, anatomy, physiology. Soybean cultivation: Place in the crop rotation, preparation of the soil, manure and fertilizer, sowing (the seeds, time of sowing, details of sowing), vegetation and the points of [crop] maintenance / management, harvest (of seeds, of forage), grain storage, yields (of seeds in kg/ha {3,500 in Manchuria, 2,700 in China, 1,700 in France, 1,200 in Japan}, of forage in quintals/ha {in America they range from 163 to 168}), enemies. Note: 1 quintal = 100 kg.

Technology of soya: Soymilk (production, properties, uses), soy cheeses (*Fromages de soja*, called "tofu" in Asia), soy oil and cake, soy flour and products made from it (bread, rusks {*biscottes*}, cakes, and pancakes {*galettes*}). Soya as livestock feed: Soya forage, soya hay, soymilk for calves, soybeans seeds and cake.

Economic data: Hectares planted to soya in 1929-30: Northern China and Manchuria (11,800,000), USA (500,000), Japan and Korea (400,000), Russia (300,000), Sunda or Soenda Isles (100,000 ha);

Note: The *Iles de la Sonde* are the islands of the Malay Archipelago divided into two groups: (1) Greater Sunda Islands, comprising Java, Sumatra, Borneo, Celebes, and adjacent islands; (2) Lesser Sunda Islands, comprising the chain of islands east of Bali to and including Alor and Timor, but not Wetar.

Exports of soya from China in 1929-30 (in tons): To Japan 1,700,000, to Europe 1,500,000, to southern China 600,000, to the Netherlands Indies [Indonesia] 100,000, to other countries 100,000. Address: France.

870. *Hygeia.* 1935. Questions and Answers: Soy bean milk. 13:466. May. [2 ref]
• ***Summary:*** Dr. A.A. Horvath describes how to prepare soy bean milk, and bean curd (tofu).

871. *J. of the American Medical Association.* 1935. Soy bean milk in infant nutrition. 104(23):2098-99. June 8. [8 ref]
• ***Summary:*** This editorial review of the literature describes the work of various people who have made experiments on the use of soybean milk for infants. The pioneer in his field in America was John Ruhräh, who was able to produce improvements in infants with summer diarrheas and certain forms of intestinal disturbances. "Despite this pioneer work, soy bean milk has not until recent years received serious consideration in this country as a definite food for babies."

The editorial finishes by stating: "There appears to be considerable evidence, therefore, to warrant the conclusion that the soy bean is destined to assume a role of importance in infant nutrition."

872. Kennedy, L.W. 1935. The soybean... A new American. *Purdue Agriculturist* (*Indiana*) 29(9):83, 86. June.
• ***Summary:*** "This article was written with the aid of material taken from an undergraduate thesis submitted by E.A. Johnson, '34 [class of 1934]. Products of the soybean are

rapidly becoming more important to agriculture and various manufacturing industries of the nation." Soybean oil meal is an important livestock feed for cattle, hogs, sheep, and poultry. It is also "used extensively in the making of glue, water paints, fertilizer, celluloid substitutes, [plastic] gear shift knobs, etc. Breakfast food, diabetic food, infant food, macaroni, crackers, bean curd, soy sauce, vegetable casein, and meat substitute are popular in the list of foods made from soybean oil meal. The meal possesses a nut-like flavor and lends itself well to be used as human food."

Crude soy bean oil is dark brown in color and has a "beany" odor. It is largely refined to make special oils for use as paints, varnishes, glycerine, enamel, the waterproofing of cloth, fabrics, papers, and sandpapers, the making of oilcloth, shade cloth, rubber substitutes, printers ink, lubricants, hard and soft soaps, insecticides, foundry core oil, and lighting fuels. The food products, salads, edible oils, and lard and butter substitutes are also prepared by a commercial process from soybean oil. In 1930 about 6,000,000 pounds of soybean oil, or one-sixth of the domestic crop, were used in the preparation of edible products.

Note: This is the earliest document seen (Sept. 2001) concerning the use of soybean oil in insecticides or other crop-protecting chemicals (pesticides).

"A new auto body finish from soybean oil is the result of experiments made by the Ford Motor Company of Detroit, Michigan."

Also discusses "the vegetable soybean" which can serve as a supplement to the garden pea or lima bean. "In China vegetable soybeans have long been used as a delicacy on the table. They may be used green, or canned, or made into salads."

"Dried soybeans serve as a good substitute for coffee and peanuts when properly roasted and prepared. The dried beans are also used in preparing soy sauce, boiled beans, baked beans, breakfast food, soaps, and vegetable milk. From the vegetable milk, meat substitutes, infant food, confections, cheese, and fresh, dried, condensed [milk], and fermented bean curd is prepared. Soybean milk has not received serious consideration in this country, but it has been successfully used as a food for growing infants in China." Address: Class of 1936.

873. Lager, Mildred. 1935. Food facts. Los Angeles, California: House of Better Living. 228 + 10 p. No index. 23 cm. [34 ref]

• ***Summary:*** Contents: 1. Purpose of food. 2. Classes of food. 3. Natural foods are best. 4. Acid-alkaline balance. 5. Minerals. 6. Vitamins. 7. Proteins. 8. Carbohydrates. 9. Fats. 10. Fruits. 11. Vegetables. 12. Beverages. 13. Better cooking. 14. Food combinations. 15. The mental side of health. 16. What is the "House of Better Living."

Pages 67-68 contain a very positive section on soy beans and foods made from them, including whole soybeans, "curd cheese, resembling cottage cheese [tofu], and soy bean milk... Other soy food products are soy butter [no description is given; this is probably soynut butter from T.A. Van Gundy's La Sierra Foods, but it could be margarine made from soy oil], soy loaf (combined with gluten), soy sandwich spread, soy bologna, soy oil, soy sauce, soy ready-to-serve breakfast foods, coffee substitute, as well as soy flour. Soy flour is yellow and fluffy, and can be used in all baking... Soy macaroni, noodles, spaghetti, bread, and pancake flour are also on the market. Soy beans are also sugar coated for candy and toasted as peanuts. They are a wonderful food for animals and have been used in that way in this country for years. Today the governments of Europe and America are devoting a great deal of attention to the soy bean as human food and the next few years will see an increased consumption, as well as many new soy products."

Page 75 contains a nutritional analysis of soy beans.

In the chapter on Acid-alkaline balance (p. 22-25), foods with the most acid ash are egg yolk and oysters, followed by eggs, most fish and meats. Foods with the most alkaline ash are lima beans, string beans, dried beans, spinach, raisins, figs, dates, and dried milk, followed by soy beans, soy bean tea, and most vegetables. The author believes that one should keep an alkaline balance in the body. Sleep is a great alkalinizer.

The subsection titled "Lima beans: states: "Dr. Sansum of Santa Barbara was instrumental in having lima bean flour made, and Bill Baker of Ojai, California pioneered this field, developing the original lima bean bread and lima bean pancake flour."

This is not a vegetarian book. Meat and dairy products are discussed at length, and their consumption is not discouraged. However this is the earliest book seen that uses the term "natural foods" prominently–in this case as a chapter title.

Also discusses (see index for page numbers): Acidophilus milk, alfalfa (alfalfa tea has alkaline ash, p. 35), almonds, almond oil, aluminum, avocado, bran, carob beans, chufas, cottonseed, cottonseed oil, garbanzas, kephir, lentils, lima beans, linseed, margarine / oleomargarine, olive oil, olives, palm oil, palm kernel oil, peanuts, peanut oil, rape seed oil, sago, sesame oil.

Note 1. This is the earliest document seen (Sept. 2009) concerning Mildred Lager and soy.

Note 2. This is the 2nd earliest document seen (July 2005) that mentions a food or drink product ("alfalfa tea") made from alfalfa. This is also the earliest English-language document seen (July 2005) that contains the term "alfalfa tea." It was used for its alkaline ash. Address: House of Better Living, 1207 West 6th St., Los Angeles, California. Phone: Mutual 2085.

874. Lovell, Philip M. 1935. Care of the body. *Los Angeles Times.* Aug. 4. p. G30-31. Sunday magazine.

• ***Summary:*** "Weight building foods" include all whole-grain bread stuffs (incl. gems, muffins, biscuits, etc.), soy beans, soy bean milk, cold-pressed olive oil and peanut oil, almonds, etc. Address: N.D. [Naturopathic Doctor].

875. Morse, W.J. 1935. Soybeans: Ancient and modern uses. *Proceedings of the American Soybean Association* p. 34-35, 37. 15th annual meeting. Held 21-22 Aug. 1935 at Evansville and 23 Aug. at Lafayette, Indiana. [1 ref]
• ***Summary:*** The soybean "was sown yearly with great ceremony by the Emperors of China and poets in the ages before the Christian Era extolled the virtues of the soybean in its services to humanity.

"The soybean was included in the 2nd class of drugs and was regarded as having many medicinal virtues. We learn from a materia medica written about 452 A.D. that the soybean was not poisonous but was a specific remedy for proper functioning of the heart, liver, kidneys, stomach and bowels. It was also used as a remedy for constipation, as a stimulant for the lungs, eradication of poison from the system, improving the complexion by cleaning the skin of various impurities, and stimulating the growth and appearance of the hair. We also find that the fresh or green bean was used as a remedy for the following: Dropsical affections, gastric fever, paralysis, bladder trouble, improper circulation of the blood, catarrh or improper flowing of the fluids of the vital organs, heart, liver, kidneys, stomach and bowels, chills and poisoning from eating aconite. Further, it is learned that when the bean was cooked in a powder or meal-like form, the taste was sweet and good and was a remedy for gastritis, fevers, tumorous swellings, paralysis, inability to digest grain foods, and abdominal dropsy. The yellow soybean was used to increase lung power, make the body plump, and beautify the complexion. The beans were also cooked until they were of an oily consistency, mixed with hog's fat and taken in the form of pills in order to fatten and increase the strength of the body, and as a remedy for hoarseness. The soybean was said to have a cooling effect on the human system. If the beans were boiled into a liquid form and eaten, they eradicated all poison from the system and cured gastric fever, paralysis, pains, and bladder troubles. Bean or soy sauce was considered an antidote for poison caused by eating fish, fresh meat, vegetables, mushrooms, etc. It was also said to cure poison from bites of worms, insects, and bee stings. The yellow, green, and white varieties were regarded as valuable foods for the use of mankind. The black beans were used for food and it was also customary when taking a long journey to feed the horse black beans in order to make it strong. In addition to the use of the beans, many references are made on value of bean sauce, bean milk, bean curd, and bean sprouts for various diseases and other bodily ailments. The stems and leaves of the young bean plants were boiled and eaten by the farming people. No mention is found of the use of bean oil so it is concluded the crushing of beans for oil occurred at a much later date.

"In reviewing the old records, it is most interesting to find that many of the ways in which the ancient Chinese used the soybean as a remedy for human ills are now being found applicable to the same ailments by scientific research in America and Europe." Address: Bureau of Plant Industry, USDA, Washington, DC.

876. *Detroit News.* 1935. 'Milk' obtained from soy beans. Sept. 3. p. 20, col. 8.
• ***Summary:*** Mrs. William Bradshaw of Columbus, Ohio, has concocted a liquid resembling milk from soy beans for use in the two Presbyterian hospitals directed by her husband in the city of Lin Chow, 300 miles north of Canton. She developed the process (which is described) while doing research in dietetics. This liquid looks like milk and compares favorably with it in food values. "Although the patients look on it as medicine, they like the drink."

877. Powers, Grover F. 1935. Infant feeding: Historical background and modern practice. *J. of the American Medical Association* 105(10):753-61. Sept. 7. [22 ref]
• ***Summary:*** Contents: Introduction. Historical summary: Early history, chemical studies, pathologic studies, metabolism studies, clinical studies, vitamin studies and the concept of food deficiencies. The formulation of the infant's diet in modern practice: Energy, protein, carbohydrates, vitamins, water, salts. Rules for devising formulas. Infant mortality (breast fed babies have the lowest mortality rate). Psychological era. Conclusion. Address: Dep. of Pediatrics, Yale Univ. School of Medicine, New Haven, Connecticut.

878. Kellogg, John Harvey. 1935. Re: Growing soy beans. Making condensed soy bean milk and soy acidophilus milk. Letter to Mr. William J. Morse, Bureau of Plant Industry, USDA, Washington, DC, Sept. 16. 1 p. Typed, without signature (carbon copy).
• ***Summary:*** "Thank you for your letter of September 5. I am expecting to have 75 or 80 bushels of soy bean seed of the 78-day variety. I shall be glad to know if there will be any demand for this seed and at what price.

"You may be interested to know that our company is making a condensed soy bean milk which may be used either as it comes from the can or with the addition of one or two equal volumes of water according to the degree of richness desired. If you care to have me do so, I will be glad to have sent you a sample for your criticism and also a sample of our soy acidophilus which we are using extensively and with great profit."

Source: Bentley Historical Library, University of Michigan, Ann Arbor. J.H. Kellogg Collection, Box 2, Correspondence.

879. Gandhi, M.K. 1935. Soya beans. *Harijan* 3(33):263-64.

Sept. 28. [1 ref]
• ***Summary:*** "As soya beans are claimed to possess high nutritive value, I reproduce the following from pamphlet No. 7 published by the Bombay Presidency Baby and Health Week Association to enable the food reformer to make experiments."

Much of the pamphlet is published. It discusses: The introduction of the soybean to Europe by Kaempfer in 1712 and by Haberlandt from 1873. Soybean botany, regions of adaptation, and nutritional composition and value. Utilization of soybeans in diabetic diets and for the production of soya bean coffee, soya bean milk, and soya bean flour. For details see Bombay Presidency... 1935.

Note: The author is Mohandas Karamchand "Mahatma" Gandhi. This is the earliest publication seen in which Gandhi discussed soya beans or attempted to introduce soya beans to India. Address: Maganwadi, India.

880. Bombay Presidency Baby and Health Week Association. 1935. Pamphlet No. 7. Bombay, India. *
• ***Summary:*** Discusses the introduction of the soybean to Europe by Kaempfer in 1712 and by Haberlandt from 1873. Soybean botany, regions of adaptation, and nutritional composition and value. Utilization of soybeans in diabetic diets, as whole dry soya beans, and for the production of soya bean coffee, soya bean milk, soya bean flour, and tofu.

"The soya bean is one of the most important articles of diet. It contains far more protein than any grain or pulse seed known so far. It has as much as 40 per cent. protein, i.e. twice as much as pulses and beans, three times as much as wheat, and five times as much as rice. Its proteins are of high biological value, as they contain all the important amino-acids... In fact, the protein of soya bean is similar to that found in cow's milk and animal foods... It is a boon to vegetarians, as its protein resembles animal protein. Soya bean oil contains a large amount of Lecithin and Vitamin A & D, and in this respect it resembles butter. Lecithin of soya bean is identical with that of yolk of eggs.

"Soya bean is one of the few seeds containing three Vitamins A, B & D, which are indispensable in a staple food consumed by mankind."

Note: Mohandas K. (Mahatma) Gandhi reproduced this pamphlet in the 28 September 1935 issue of his popular periodical *Harijan.* Address: Bombay, India.

881. Dokras, M.R. 1935. Soya beans. *Allahabad Farmer* 9(5):226-30. Sept. [Eng]
• ***Summary:*** The author began to cultivate the soya-bean in 1931 in Berar. His unmanured field yielded 350 lb/acre while his manured field yielded 800 lb/acre. Address: Chandur, Berar.

882. La Sierra Industries. 1935. Soy bean products, "La Sierra Brand": Complete protein, low starch, high alkaline ash (Ad). *Health* (*Mountain View, California*) 2(9):31. Sept.
• ***Summary:*** Ad for canned soybeans (plain with tomato sauce), soy loaf, soy spread, soy bologna, soy breakfast food, soy milk, soy cheese [tofu], soy butter [like a soynut butter, non-hydrogenated], Soy-Co (beverage), Smoein (flavor), soy flour (raw), soy flour (processed).

Note: Neither Mamenoka, noodles, nor oil are mentioned. Address: Box 203, Arlington, California.

883. Marlatt, Abby L. 1935. Soybean dishes: New & old. *Wisconsin Agricultural College, Extension Service, Special Circular* 7 p. Sept. Revised Feb. 1937. [1 ref]
• ***Summary:*** Contents: Introduction. Supplies satisfactory proteins. Soybean flour useful. Soybeans good sources of vitamins. Dry soybeans: Black soybean soup, Cream soybean soup, Dry green soybeans, Yellow soybean souffle, Baked soybeans, Soybean loaf. Green soybeans [green vegetable soybeans]: Green soybean salad, Soybean perfection salad, Canned green soybeans. Soybean meal: Muffins (dry mixture), Yeast bread–soya flour, Yeast bread (2 loaves). Soybeans in place of wheat and wheat products: Soybean and buckwheat muffins, Soybean and corn meal muffins, Corn meal, rice and soybean muffins, Soybean and barley muffins, Spoon bread, Soya flour sponge cake, Muffins for diabetics (wheat free), Salmon loaf (wheat free with soybean flour), salmon croquettes, pie crust.

"Within the last two years the green soybean has been grown in Wisconsin and found to be most palatable and especially attractive in its clear emerald green color. The bean grows in long pods from which it is shelled after the whole pod is kept five minutes in boiling water. Then the bean comes out easily when the pod is pressed. These beans cook in from 10 to 15 minutes in boiling water and require only salt and butter or salt and cream–being served as you serve the small lima beans or the French haricot bean." Address: Wisconsin.

884. R.A.L. 1935. Les produits dérivés du soja [Products derived from soybeans]. *Bulletin des Matieres Grasses* (*Paris*) 19(9):232-40. Sept. (Institut Colonial de Marseille). Summarized in Bulletin Economique de l'Indochine (Hanoi) 38:830. [4 ref. Fre]
• ***Summary:*** This is a excerpt from an article said to be published in the *Revue des Produits Chimiques.* However, after a long search, we cannot find the original. So here is the contents of this excerpt:

Uses of soya. Soymilk. Soy caseine (*La Caséine de soja*), defatted soybean oil cakes (*les torteaux deshuilés*), vegetable caseine (*caséine végétale*) as made in Vietnam. Industrial, food and feed applications of the soybean and the products derived from it (*... des produits dérives*)*:* Shoyu or soy sauce, green vegetable soybeans, soy flour (free of starch, which is good for in diabetic diets), use as an incomparable forage plant, soymilk for humans

or young animals (it is free of tuberculosis bacteria), powdered soymilk, a type of cheese called tofu (which can be fermented, dried, salted, or smoked), soy oil (for food or industrial uses–such as paints, varnish, lubricants, printing inks, candles, and oilcloth), hydrogenated soy oil, soybean cakes (which make excellent animal feed). Address: Ingénieur chimiste ICMp, Licencié ès Sciences, France.

885. Desai, Mahadev. 1935. Dietetic experiments. *Harijan* 3(36):281, 283. Oct. 19. [1 ref]

• ***Summary:*** "The reader must have seen the difficulty of procuring clean, wholesome, unadulterated ghee... It was partly with a view to getting rid of this eternal problem of getting good ghee that Gandhiji has been casting about for a substitute of milk and ghee. The high protein and fat content of soya beans and their procurability on the premises, combined with the successful experiment of Sjt. Narhar Bhave, encouraged Gandhiji to start the experiment in Maganwadi last week. Oil and ghee and part of the wheat ration was cut out of the dietary of those who joined the experiment and substituted by a soya bean ration equal in dietetic value. It is difficult yet to say anything about the results of the experiments, but one might safely say that it is no longer the bugbear that it once used to be because of the unpleasant taste of soya bean milk. We soak the beans for a few hours and steam-cook them and serve them whole... Let the reader also know that we have grown soya beans on our own ground plenty enough for our experiments."

Also summarizes an article on soybeans from the *Far Eastern Survey* of Sept. 11. discussing the current rapid growth of soybeans in the USA, used for industrial products (paints, soaps, linoleum, etc.). "An impressive number of foods–flour and flour products, candy, milks, oils, meat, and margarine–in which it is used suggests a steady increase in its dietary use because of its high protein, fat, and vitamin contents."

Note: The introduction to the 1973 edition of *Harijan: The Journal of Applied Gandhiism, 1933-1955* states: "*Harijan* made more news than it reported. Its inception in 1933, the impact of its suspension in 1940, the drama of its complete suppression in 1942, and its resumption of publication in 1946 were events of historical moment."

"*Harijan* was not a party organ, yet it became the most influential journal involved in the movement for Indian independence... The journal provided the medium of moral instruction through which congressmen learned what Gandhi expected of them."

"The word *harijan* literally means God's people. It was the name coined by Gandhi to designate the so-called untouchables of India. The journal *Harijan* reflects the many social and individual concerns which were a part of Gandhi's complex and continuing analysis of the human predicament. *Harijan* is indeed a highly political journal, and that is so because Gandhi directly related the concerns expressed throughout its pages to the political fact that the India which gave rise to the founding of *Harijan* was a subject nation. Freedom as Gandhi perceived and publicly pursued it, begins with the individual."

"Mahadev Desai, whose initials, M.D., appear after so many columns in *Harijan*, has been described as more than a mere Boswell and not only a faithful chronicler of Gandhi's life and work. He was a peerless interpreter of Gandhi, gifted with a keen sense of humor and a penetrating intellect. Following his death (on August 15, 1942) Pyarelal took his place at Gandhi's side to continue the distinguished tradition which 'M.D.' had established." Address: India.

886. Gandhi, M.K. 1935. Soya beans. *Harijan* 3(36):287. Oct. 19.

• ***Summary:*** "It has been found that soya beans can be cooked whole and eaten like any other beans. Shri Narhar Bhave of Baroda, who has given his three gifted and gentle sons, Vinoba, Balkrishna and Shivaji to national service, is himself a careful observer, 61 years old. He is living almost wholly on milk and 6 ounces of soya beans and is keeping perfect health and strength. He is of the opinion that soya beans help him to avoid constipation which milk alone or milk taken in combination with cereals and vegetables could not do. Soya beans have in his opinion helped him also to avoid flatulence which other pulses or milk produced. He has come to this conclusion after an unbroken experience of over ten months. I may add that Shri Bhave used to suffer from gout and corpulence and had a trace of diabetes. He got rid of this triple disability by mere careful dieting. In imitation of Shri Bhave the inmates of Maganwadi including me have been trying soya beans for the last few days... Put these beans in boiling water and cook for fifteen minutes on a quick fire. No salt or soda to be added while cooking. Salt may be added after. At Maganwadi we steam them for two hours.

"Let those who are interested in food reform from the poor man's point of view, try the experiment. It should be remembered that soya beans are a most nutritious diet. It stands at the top of all known articles of diet because of its low percentage of carbohydrates and high percentage of salts, protein, and fat. Its energy value is 2,100 calories per lb. against 1,750 of wheat and 1,530 of gram. It contains 40 per cent of protein and 20.3 per cent of fat against 19 and 4.3 respectively of gram and 14.8 and 10.5 of eggs. Therefore no one should take soya beans in addition to the usual protein and fatty foods. The quantity, therefore, of wheat and ghee should be reduced and dal omitted altogether, soya beans being themselves a highly nutritious dal. We are just now trying the Manchurian variety. The Baroda beans we have not tried. Maganwadi has its own crop of soya beans. I hope to report the quality of Indian varieties from a layman's point of view as they come under my observation. Those who have Indian varieties are requested to send me samples with

prices." Address: Maganwadi, India.

887. Associated Press (AP). 1935. Drink soya bean milk. *Detroit News.* Nov. 3. Section 1. p. 2, col. 6.
• ***Summary:*** "Singapore. Nov. 2. Asiatic families in Malaya, too poor to buy natural or tinned milk, have invented a palatable beverage made by grinding soya beans to a fine powder and mixing it with sugar and eggs."

888. *Agriculture et Elevage au Congo Belge.* 1935. Le lait de soja [Soymilk]. 9(11):170-71. Nov. [1 ref. Fre]
• ***Summary:*** Gives the conclusions obtained in a study of soybean milk by Dr. Lucie Yeu, who set out to find if it were suitable in infant feeding. She conducted her research at the Centre d'Hygiène infantile Paul-Marquet [in Neuilly, near Paris], under the direction of Mr. Marcel Maillet.

Dr. Yeu concluded the following: Soymilk has been used for a long time as a food in the manufacture of tofu or "vegetable cheeses" (*fromages végétaux*). It has been studied in France since 1880, but its application in infant dietetics has only begun very recently. This "vegetable milk" (*lait végétal*) approaches animal milks on the whole in its physical properties and its qualitative composition. For example, in comparison with cow's milk, it has a lower content of fats, sugars, and calcium. It contains no chlorine or sodium. So when administering it to infants, some corrections must be made in its composition. Soymilk was generally well accepted and well tolerated by the 100 infants that she studied. To assure satisfactory growth as often as possible, it is sufficient to add normal nutrients or dyspeptics, but after a relatively short time, the infant has more difficulty accepting it and the weight graph becomes irregular. And in an important number of cases, the soymilk causes erythema of the buttocks to such an extent that its use must be discontinued. Erythema is abnormal redness of the skin due to capillary congestion. Soymilk, in the way it has been used by Dr. Yeu, cannot replace cow's milk in raising normal infants. In the case of dyspeptic infants, digestive problems are often improved but not in any consistent way. Soymilk works best with infants who are intolerant to cow's milk or have rank / fetid dyspepsia (with an offensive smell).

889. *Priroda i Nauka* (*Nature and Science, Bulgaria*). 1935. Izlojbata na soia [Soya exposition. Editor's note]. 6(3):46. Nov. [Bul]*
• ***Summary:*** Editor's note states: "The pioneer in popularizing soya in Bulgaria is Dr. A. Zlatarov, who has been trying for many years to publicize the importance of soya. Now he is able to see the fruits of his work."

Rosen L. Paskalev (1986) adds that this soya exposition, organized in Oct. 1935, was supported by the Bulgarian Agricultural Bank, which was very interested in supporting soybean production and utilization. It had been proved in 1933 that soybean culture would be very profitable for export but its use as food was not widespread in Bulgaria. For this reason foods such as soy flour, biscuits, bread, cheese, and soymilk, and some industrial products, were displayed at the exposition. A soyfoods kitchen was organized at the expo and soyfoods were served at a special vegetarian restaurant throughout the exposition. Soy oil was even demonstrated as a fuel for a diesel engine. Address: Bulgaria.

890. Reid, Eric. 1935. The calcium, phosphorus, and nitrogen retention of rats on soybean-egg powder and whole milk powder diets. *Chinese J. of Physiology* 9(4):307-14. Nov. [8 ref. Eng; chi]
• ***Summary:*** This soybean-egg powder helps to prevent rickets. It promotes calcium and phosphorus retention equal that of whole milk powder; nitrogen retention and digestibility are greater than that of whole milk powder. Address: Henry Lester Inst. of Medical Research, Shanghai.

891. Kellogg, John Harvey. 1935. Re: Growing and canning shell soy beans. Making condensed soy milk and soy acidophilus milk. Letter to Mr. William J. Morse, Bureau of Plant Industry, USDA, Washington, DC, Dec. 9. 3 p. Typed, without signature (carbon copy).
• ***Summary:*** "We have been doing some experimenting this year with growing and canning shell soy beans. I am having a couple of cans sent you so you can see what our product is like. We think it is very fine. The few thousand cans we put up went off like hot cakes.

"We are thinking of doing rather extensive planting this year. We shall not have any seed to sell but may need to buy some more seed.

"Here are some points on which I should like information: 1. Do you know of anyone in this country who is putting up shell soy beans? 2. Are shell soy beans canned in Japan and China, and if so can they be purchased there and brought to this country?..."

"I should also be glad to know if you have other varieties of shell beans of good quality with a growing period of about the same length.

"I am also having sent to you samples of our condensed soy milk. Diluted with two or three times its volume of water, it is, I think you will agree, a very palatable product. We supply this to people who are interested in soy acidophilus milk and willing to take the trouble to make it at home. We supply them with the culture. They simply put the condensed milk into a clean fruit jar, add hot water, let it cool to body temperature and then add the culture and wrap it up in a blanket and set it on the kitchen table and the next day the buttermilk is ready.

"Soy milk produces a much more vigorous growth of the bacillus acidophilus than does cow's milk. The organism is more than twice as large and it grows twice as fast and does not require the long training, 25 to 30 transfers, required when cow's milk is used for the culture medium. In other

words, the bacillus acidophilus seems to like vegetable products for a culture medium better than animal.

"I shall be glad to know how you like the milk. If you would like to try making it at home, I will have some more cans and cultures sent to you. The process is so simple any housewife can do it. Slight contamination occurs, of course, but by using a large inoculum this does not matter for the first culture; but a fresh pure culture has to be used every time. If an attempt is made to make a culture from a home made culture it will be likely to fail because of the contamination likely to occur.

"Thanking you in advance for any information you may be able to give me, I remain, dear Sir, Very sincerely yours,

"P.S. Soy acidophilus milk has become so popular at my institution here that dairy milk rarely appears on the table. Everybody likes the soy milk better, and of course when people have been properly informed they want the soy acidophilus milk to change their flora and to get rid of intestinal putrefaction and to encourage bowel action. The effect of the soy acidophilus milk in this particular is very remarkable. In cases of very chronic constipation I have observed complete recovery with two or three normal bowel actions daily.

"The Canadian quintuplets are taking soy acidophilus milk at every feeding and have been doing so since last September when they had an attack of bowel trouble which disappeared as soon as they began taking the soy acidophilus milk which I sent them and have supplied to them ever since.

"I am accumulating evidence to the effect that the soy bean encourages the growth of the protective organisms in the human intestine to a very pronounced degree and by producing acids not only prevents putrefaction but encourages bowel action.

"I think every effort possible ought to be made to spread information among the people respecting the value of the soy bean, which I am sure is some time destined to become one of the most important staple foods in this country as well as in China and Japan.

"Here is another question: One of the difficulties in the way of the soy shell bean business is the expense of picking from the vines and shelling the pods. Do you know of any machinery that is used for either of these purposes?"

Note 1. This is the earliest English-language document seen (June 2009) that uses the term "shell soy beans" to refer to shelled green vegetable soybeans.

Note 2. This is the earliest document seen (June 2009) that mentions machinery or equipment for picking / harvesting or shelling green soybeans in the pods. However it only asks a question about this machinery.

Source: Bentley Historical Library, University of Michigan, Ann Arbor. J.H. Kellogg Collection, Box 2, Correspondence.

892. *Harijan.* 1935. More about soya beans. 3(46):366-68. Dec. 28. [1 ref]

• ***Summary:*** Mahadev Desai introduces the article by stating, "A friend who is now in America has brought together the following article information about soya beans collected by him from books and various institutions." Much of the information apparently came from the Bureau of Home Economics, Washington, DC. Under the subtitle "Soybean and soybean products for table use," it discusses the nutritional composition of soybeans, green soybeans and their varieties (including Hahto and Easy Cook [Easycook], with 3 recipes including ones for salted soya beans [soy nuts], and whole dry soya beans used in soup), soybean sprouts, soybean flour, soya bean sauce, soya bean milk, and soya bean cheese (to fu). Details of how each food is prepared are also given. Continued in Harijan on 4 Jan. 1936. Address: India.

893. Akker, W. van den. 1935. Kedeleemelk voor Kindervoeding [Soy milk for infant feeding]. *Bull. Hyg. Org. DVG* 21:1. [Dut]*

• ***Summary:*** This is the earliest Dutch-language document seen (Aug. 2013) that uses the term *kedeleemelk* to refer to soymilk.

894. Novotel'nov, N.V. 1935. [Use of soybeans in confectionery. III. Soybean enzymes and their activity]. *Trudy Nauchno-Issledovatel'skogo Instituta Pishchevoi Promyshlennosti* (*Proceedings of the Institute for Scientific Research in the Food Industry, Leningrad*) 2(2):34-40. (Chem. Abst. 30:5674). [Rus]*

• ***Summary:*** Soybean milk must be pasteurized at 80ºC for 15 minutes to inactivate its oxidase, protease and urease enzymes. Tests did not reveal the presence of any lipase. At the usual acidity, soymilk may be kept for several days, but not longer because of bacterial spoilage.

895. Voskresenskii, V.M.; Dobruinina, T.K. 1935. [Uses of soybeans in confectionery. I. Soybean milk. II. Soy cream]. *Trudy Nauchno-Issledovatel'skogo Instituta Pishchevoi Promyshlennosti* (*Proceedings of the Institute for Scientific Research in the Food Industry, Leningrad*) 2(2):23-34. (Chem. Abst. 30:5673-74). [Rus]*

• ***Summary:*** To make soybean milk, soak soybeans for 2 hours then emulsify them thoroughly. Longer soaking gives an emulsion which is less stable but which has a higher fat content. Either whole or dehulled soybeans may be used; after soaking, grind them thoroughly and homogenize them in water for at least 1 hour, then add water and emulsify for at least 30 minutes. Pasteurize at 80ºC for 15 minutes.

For soybean cream (p. 31-34) reduce the water content of the emulsion or add cream to the soymilk. The fat content may increase by over 80%, e.g. 2.4% in the milk and 4.5% in the cream. The odorous principle in the soybeans is soluble in water and Et_2O, volatilized by steam, and reduces

Fehling's solution. The nitrogen content of soybean cream is uncertain, and is probably affected by the composition of the soybeans. Address: Leningrad, USSR.

896. Burkill, I.H. 1935. A dictionary of the economic products of the Malay Peninsula. 2 vols. Published for the Malay Government by Crown Agents, London. 2,400 p. See p. 1080-86.

• ***Summary:*** These two densely-written volumes might be described as updates to the works of Sir George Watt. In the Malay peninsula, the soy bean is generally known as *Kachang bulu rimau* or *Kachang jepun* [the Japan bean]. In Java it is called *Kachang kedele, Dele, Gadele, Dekeman,* or *Dekenan;* in Sundanese, *Kachang bulu, Kachang jepun,* or *Kedele;* in Sumatra, *Kachang rimau* or *Kachang ramang;* and in Siam, *Tua luang* or *Tua praluang* [accents are included by Burkill].

"The word 'soy' came from a Japanese name for this plant, through the Dutch, who made it [the word 'soy'] known to Europeans. The first account was a result of the residence of their embassy surgeon, Kaempfer, in Japan, in 1691 and 1692; the second of the long service of their merchant, his contemporary, Rumpf, in Amboina."

The soy bean "is frequently cultivated in Siam, and seems to be a familiar plant in Kelantan [a state of Malaysia bounded on the north by Thailand]. Repeated experiments have been made with it elsewhere in Malaya; the Chinese, indeed, continually make them, usually without success, their failure being conspicuous when any available seed is used, instead of seed of races known to stand more or less tropical conditions. In 1918 advantage was taken of experiments in the Philippine Islands, to try, in Singapore, races which succeeded there and grew well. Races from the warmer parts of the United States were on trial in Selangor [Malaysia] in 1922. In 1924 a Chinese race was successfully grown by settlers in villages in the southern parts of Pahang [a state of Malaysia, bounded on the north by Kelantan and Trengganu].

"The soy bean has long been cultivated in Java, and in recent times this cultivation has become almost universal except at the western end of the island, where the climate is most uniformly humid. Probably it came to Java from India, for the name by which it is most known is Tamil and the seed is flattened as are North Indian races, while the Manchurian races have round seeds."

Note: Roxburgh (1832), in discussing the earliest known date for cultivation of soybeans in India states: "Reared in the Honourable Company's Botanic garden [across the Hooghly / Hugli River from Calcutta] from seeds received from the Moluccas [in today's Indonesia] in 1798.

"In Java a soy crop immediately follows rice, and this was the rotation apparently which Spring found the Chinese to use in Pahang."

The seed of the soy bean is rich source of nutrients. It "replaces meat very largely among the Chinese; and as rations for Japanese troops has played a large part." Because the ripe seed contains little or no starch, it is widely used in diabetic diets. "A kind of artificial milk can be made from the seed, and is in common use in Japan and China... This milk has only three-quarters of the full nutritive value of cow's milk." Soy-bean coffee, made from roasted soy beans, "is sold regularly in Japan, and into the coffee can be put soy-bean milk. The Chinese germinate the beans and eat the seedlings.

Legumin, or vegetable casein is best made commercially from defatted soy beans. The casein is precipitated from the milky fluid [soy-bean milk] by calcium sulphate. "The liquor is strained through muslin, and the precipitate treated with soda lye, which dissolves the casein; filtering gets rid of the impurities and acetic acid precipitates the casein from the filtrate in a more or less pure state. This casein is fit for use in all the industrial processes for which casein from cow's milk is used."

Soy beans can also be fermented to make témpé or "flavourings used in small quantities to make uninteresting dishes appetizing... Témpé is a food product made in Java from soy beans. It occupies a very important place in the diets of those who live in central and east Java." Detailed descriptions are given of two methods of preparation. (1) Initially, the seeds are parboiled then left soaking in water for 2-3 days. The "mush" [sic, cooked beans] is spread upon frames in flat cakes and inoculated with the fungus *Aspergillus oryzae* by the addition of some of the previous preparation. The cakes are wrapped in banana leaves; (2) This method requires greater care and time. "Meanwhile, a preparation of the fungus has been made in a somewhat elaborate manner, as follows: a portion of an older preparation is wrapped in a rather young teak leaf freely punctured with holes; this preparation is allowed to dry for two days, during which the fungus spreads to the teak leaf. Next, the soy-kernel mush [sic, the cooked soybeans] being ready, the teak leaf is emptied of its contents and sprinkled over the mush in order to convey the fungus. The mush is now put up in packets in banana leaves, heaped together, and covered up for twenty-four hours, after which it is exposed again to the air and cooled; the packets are then ready for sale." Note: This is the second English-language work to contain information about tempeh.

"The Chinese, throughout their own country and those domiciled in Malaysia, make a yet greater variety of preparations. Chief among these is teou-fu [tofu, usually precipitated with imported calcium sulphate]. "The 'teo-fu' does not keep well in a moist state, but can be treated for preservation. First, the cakes are colored yellow by a solution of turmeric or Gardenia flowers, then they are wrapped in cotton cloth and submitted to pressure. Thus made drier, they keep better. The use of this preparation is spreading."

The Chinese also make tao-cho and soy kechap (each fermented with an *Aspergillus* mould). K. Heyne describes

how kechap is made in Java using black soy beans, hibiscus leaves, and *Aspergillus oryzae* mold. Finally the sauce is boiled with Arenga sugar, star anise, and other flavourings until the solution is so thick that the salt begins to crystallize.

Large amounts of soy-bean oil ("kachang oil" [perhaps soy sauce]) are imported to Malaya. "In the East [East Asia] it is used chiefly as food, but has other uses such as lubricating, varnish-making, making printer's inks, waterproof goods (Chinese umbrellas and lamps) and also for illumination. A process was patented 20 years ago for making artificial rubber, starting with soy oil. Note: Burkill was a British authority on the flora of southern and southeastern Asia.

"Criminal use: The hairs on the pods seem to be capable of causing a certain amount of irritation within the digestive tract. Gimlette (Malay Poisons, ed. of 1929 p. 169) records a case of administration of them with food in a criminal attempt to poison. He calls them a substitute for bamboo hairs in such circumstances.

"Joss-sticks: Ash of the stem, mixed with resin of *Canarium*, is said to make joss-sticks in Indo-China (Crevost and Lemarié, Cat. Prod. Indochine, 1917 p. 106)."

897. Crespí, Luis. 1935. La soja y su cultivo [The soybean and its cultivation]. Spain. 32 p. Series: Catechisms for Farmers and Cattlemen/Stock-Farmers (*Catechismos del Agricultor y del Ganadero*). 17 cm. [Spa]

• ***Summary:*** Contents: I: Cultivation of the soybean (*la soja;* p. 3-18): 1. Description of the plant. 2. Origin of the soybean. 3. Varieties of soybeans (*Variedades de sojas*): Early maturing, semi-late, late. 4. Needs of the soybean: In water, in soil, in fertilizer. Fixation of nitrogen from the air in soybeans. 6. Place in the rotation. 7. Preparatory work. 8. Planting: Carrying out the sowing, the necessary seeds, depth of planting. 9. The seeds sprout. 10. Cultural care. 11. Maturity. 12. Diseases (*enfermedades*). 13. Harvest: As a forage plant, as a producer of seeds. 14. Yield.

II: Applications of the soybean (p. 19-28). 1. Composition of the plant: Composition of soybean forage, composition of the seeds, composition of the straw (*la paja*). 2. The soybean in the feeding of animals: As a forage plant, as a plant that produces seeds, soybean cakes (*tortas de soja*), soybean straw. 3. The soybean as a human food. 4. Industrial products from the soybean (from the oil: paints and varnishes, soap). 5. The soybean as a fertilizer.

III: Geographic distribution: 1. Worldwide cultivation of the soybean. 2. The soybean in Spain.

The soybean as a human food (p. 27): The seed is rich in protein. Whole soybeans (*Semillas de soja*) can be used like French beans and peas, mature and dry, and toasted like peanuts. The first two leaves of very small soybean plants (*Plantitas de soja*) can be used in salads or cooked. Soy flour can be used in bread, pastries, biscuits, or diabetic diets. Condiments, widely used in China and Japan, include natto, miso, tou-chiang, and shoyu. One can make soymilk (*leche de soya*), and use it to make soy cheeses (*quesos de soja*). The seeds of certain varieties can be roasted to make substitutes for cocoa or coffee.

Soybean cultivation worldwide (p. 29-30): In France, starting in 1880, the house of Vilmorin, started selling the variety Etampes. Also in 1880, the soybean was cultivated in Portugal in the Botanical Garden at Coimbra (in west central Portugal).

"The soybean in Spain (p. 30): Thirty five years ago [i.e. in 1900] my father tried cultivating soybeans in Pontevedra. [Note: Pontevedra is a province and city in the northeast corner of Spain, just north of Portugal, on the coast of the Atlantic Ocean. The city is near the mouth of the Ria de Pontevedra, at about 42.4º north latitude]. For two consecutive years, and using seeds of the variety Etampes from the House of Vilmorin seedsmen, he obtained identical results: excellent vegetation, but a small yield of seeds because the plants failed to fully mature.

"More than thirty years ago [i.e. before 1905], the count of San Bernardo tried growing the soybean, with excellent results, on his estate "El Alamillo," at Ecija (near Seville).

"In 1910 the soybean was cultivated by Mr. Noriega in Jerez (near Cádiz {Cadiz}), and the results obtained seem to indicate that the harvest was of medium size due to the poor condition of the seeds; but the plant responded brilliantly, showing healthy growth and resistance to the drought.

"In 1917 the ambassador of Spain stationed in Shanghai forwarded to the Commercial Information Center of the Spanish Secretary of State three varieties of soybean seeds: small black, yellow, and green. These seeds were very probably used in cultural trials, even though we do not know the results that were obtained. In the same year Mr. Juan Abril reported in the periodical *Revista Ibérica* [*Iberian Review*] of his successful soybean trials conducted in Tortosa (in Tarragona province [in northeastern Spain]).

"Finally, during the years 1914 and 1915, Mr. Santiago F. Valderrama, the brigadier general from Artillería [Artelleria], conducted soybean cultural trials in Montilla (in Córdoba / Cordova province).

"To his cultivation and enthusiastic encouragement of the cultivation of this plant in Spain, we owe the photograph on the cover of this little instruction book. It shows the top of a mature soybean plant grown by him in Montilla. Two more generations of soybean plants were cultivated in the same locality."

Illustrations (line drawings) show: (1) Leaves of the soybean and the common bean (*judía = Phaseolus vulgaris*) (p. 4). (2) Flowers of the soybean and the common bean. (3) A soybean stem, with 3 leaves and 2 pods; an opened soybean pod showing 3 seeds (p. 5). (4) An uprooted soybean plant, showing nodules on the roots, and abundant pods (p. 12). (5) Comparison of two soybean plants, with and without nodules. The one with nodules is larger and has

many more and larger pods (p. 13).

Note: This is the earliest document seen (Feb. 2001) concerning soybeans in Portugal, or the cultivation of soybeans in Portugal. This document contains the earliest date seen for soybeans in Portugal, or the cultivation of soybeans in Portugal (1880 at the botanical garden in Coimbra). The source of these soybeans is unknown. Address: Catedratico de Agricultura de Instituto-Escuela, Spain.

898. Kloss, Jethro. 1935. Back to Eden. Takoma Park, DC: Published by the author. 189 p. Mimeographed. 28 cm. Staple-bound (not saddle stitched).

• ***Summary:*** This treasury of herbal lore and vegan cookbook (it uses no dairy products or eggs, replacing them with soy products) is one of the most creative and original sources of early soyfoods recipes, and one of the two earliest Seventh-day Adventist cookbook to contain many soyfood recipes (see also Frances L. Dittes' *Food for Life* published in the spring of 1935). The predecessor to the popular published edition of Back to Eden, it has a dark imitation leather cover and contains many Biblical passages. This book has no title page, copyright page, publication date, or table of contents. The first page (verso) states: "Send orders for 'Back to Eden' to the author, Jethro Kloss, Takoma Park, Washington, D.C., U.S.A., when you cannot secure it from dealers in your locality. Special Notice: This book is now being revised. Some things may be eliminated, and many new things added. I have a regular experimenting outfit, and I am experimenting all of the time. No doubt there will be many new recipes made from soy beans in the Revised book... This Revised edition will be printed in Regular Book Form. Just as this book is being closed up, another most excellent article has been perfected, a Soybean, Whole Wheat Noodle. Send all orders for this product to The Royal Cookie Co., Takoma Park, Washington, D.C... This book is now being copyrighted. All rights reserved."

Underneath the copyright notice, Doris Gardiner has written "Copyright Jethro Kloss 1935." She does not recall where she got that information. No publisher is listed. Note: Takoma Park is now in Maryland, 6 miles north of Washington, DC.

This book is largely about herbs and natural healing. It contains many Biblical quotes.

Soy-related recipes include: Unleavened bread (with soy bean meal, p. 94). Gems (with soy bean flour). Soy bean bread (5:1 whole wheat flour to boiled soy bean meal, p. 97). Soy bean buns or cinnamon rolls (with soybean meal and soybean milk, p. 98). Soy bean cheese (fermented, with raw peanut butter, soy bean milk, and tomato puree, p. 104). Nut cheese No. 1 and 2 (made with raw peanut butter, water, and salt, p. 105. Can be made from different nuts; tastes like cream cheese made from whole milk). Ice cream (made with soy bean milk, dextro sugar, corn starch, and crushed fruits to taste, p. 105). Malted nut cream. Nut milk (with raw peanut butter and Soothe-a-lac {made with cocoa fat}). Soy bean milk (p. 106). Buttermilk (made from soy bean milk, p. 106). Malted nuts (with raw peanut meal), non-dairy butters (with ground peanuts and cocoa fat, p. 107). Nut sauce (made from Vegetarian meat). Peanut butter No. 4. Nayonnaise (with peanut butter and vegetable oil, p. 108). Canned soy beans (using soybeans sprouted about half an inch, p. 111). Soy beans and rice (using sprouted soy beans, p. 112).

How to sprout soy beans, lentils, and grains (p. 112). "Cover 1 pint of soy beans with water and let stand over night. Pour off water. Keep them moist. Rewash daily and keep moist for approximately three days until well sprouted. Allow to stand until sprouts are about ½ inch long. Lentils do not take as long as soy beans.

"Sprouting of any bean or pea turns the protein into peptogen to a very great extent and the starch into dextrose or maltose and the sprouts are very high in vitamines,..."

Original meat #1 and #2 (using gluten and peanuts, p. 112). Granola #3 (with only whole wheat flour and soy bean flour, p. 116). Soybean coffee (p. 118). Note that Kloss has no recipes using whole dry soybeans in an unprocessed or unsprouted form.

"Loma Linda Food Company, Loma Linda, California, Manufacturer of Health Foods," has an ad on p. 189. They list their products, but no soy products are mentioned. Nature's Original Food Co. in Muirkirk, Maryland, is listed on pages 196 and 198. They make or sell strictly vegetarian pure health foods, incl. "Fine grade soy bean flour."

One interesting section is titled "Aluminum utensils for cooking purposes" (p. 80-84); Kloss strongly advises against their use, presenting much convincing but anecdotal evidence describing health problems that both he and other people have had after using aluminum cooking utensils. For example, Kloss bought a tea kettle which was constantly standing on the stove with some water in it. He would drink 2-3 cups of this water each morning, then some more about an hour before dinner. He developed terrible bowel trouble. He tried all kinds of remedies but nothing worked. The conditions grew steadily worse until finally he said to his wife, "Unless something helps me, I will surely die." One day he described his condition to a man, and the man said that the symptoms were similar to those that aluminum poison would cause. He began to research the subject by reading various books and found that "every one who had any practical experience in it condemned aluminum cooking utensils." Yet Kloss does not say that when he stopped using aluminum utensils his health problems disappeared. Kloss then includes a 3-page statement by Dr. Chas. T. Betts of Toledo, Ohio, on the dangers of using aluminum cooking utensils. Dr. Betts became very ill soon after his family began using aluminum cooking utensils. He too investigated the subject in depth and regained his health within 8 weeks after he stopped using aluminum cooking utensils. He has

enjoyed good health for the past 17 years. While studying the subject in Washington, DC. he found that the U.S. government had made a thorough investigation of the matter from 1920 to 1925. The Federal Trade Commission Docket 540 contained more than 4,000 pages of closely typewritten testimony from 158 witnesses during the 5 years, after which an official report was made by Edward M. Averill. "Many of the witnesses above mentioned were professors, deans, biologists, and toxicologists from many colleges, some of which are the highest schools of learning in America." Averill's report noted. "The evidence in this record does not prove that they are harmless... It does prove that there are substantial grounds upon which to predicate an honest opinion that they are harmful."

Doris Gardiner notes (Oct. 1990) that "in the revised 1939 edition of Back to Eden, Jethro Kloss eliminated many Biblical texts. He didn't want to turn off anyone that was not religious. He wanted to help everyone." Kloss moved to Brooke, Virginia, in 1920. From there, in the early 1930s (by Sept. 1932), he and his family moved to Takoma Park. Address: Takoma Park, DC.

899. Kung, Lan-Chen; Fang, Wen-Yuen. 1935. A preliminary report on the nitrogen metabolism of preschool children. *Chinese J. of Physiology* 9(4):375-81. [6 ref. Eng; chi]
• ***Summary:*** In China, there is no good substitute for breast milk after feeding. Both parts of this two-part experiment compared "the efficiency of the protein from cow's milk and soybean milk when used in a controlled diet of preschool children..." using the nitrogen balance method.

Experiment 1 was conducted on two healthy boys, age 4-5 years, for 16 days. One boy drank 3-4 cups of modified soybean milk a day; the formula for the milk is given.

Experiment 2 was conducted on two healthy girls, age 3-4 years. "They were given a controlled mixed diet for 33 days divided into 3 periods, supplemented with soybean milk for the first and third periods and cow's milk for the second period."

No marked difference could be observed in the protein utilization in either experiment. The same result was reported by Tso, Yee, and Chen in 1928 for infants.

Note: This study is summarized in *Experiment Station Record* 76:273 (1937). Address: Dep. of Home Economics, Yenching Univ., Peiping [China].

900. Battle Creek Food Co. 1935? Appetizing health food recipes and menus. Battle Creek, Michigan. 25 p. Undated. Illust. 15 x 17 cm.
• ***Summary:*** On the cover of this booklet is a 3-panel illustration of a family seated at the table enjoying a meal; the daughter is in the left panel, the wife and husband (with suit and necktie) in the center, and the young son (also in suit and tie) in the right panel. The booklet promotes and shows how to use the vegetarian food products made by Battle Creek Food Co.

Contents: The story of Battle Creek Health Foods (and its free diet service). Where these recipes are triple tested (the company's modern test kitchen). Dinner menus and recipes (p. 4-7). Luncheon and tea menus and recipes (p. 8-11). Breakfast menus and recipes (p. 12-15). Reducing menus and recipes (p. 16-17). Wholesome diabetic foods (p. 18). Brawn-building menus and recipes (p. 19). A brief description of Battle Creek Health Foods (p. 20-21). Health candies (p. 22).

On almost every page of recipes is an illustration of one of the company's products in its container/package, and in a prepared dish, followed by a description of each product on p. 20-21. The only two soy-related products are "Soy Biscuits–Best bread for diabetics. Contains less than 2% starch but is rich in protein and strength-building elements. (Also furnished in the form of a meal)."

Other products are: Agar (made from Japanese seaweed). Almond butter. Bran biscuits. Cooked bran (from wheat). Bran gluten flakes (crispy toasted breakfast cereal). Branola (hot cereal). Fig and nut bromose (with malt honey). Brose (hot cereal with dates, figs or raisins, and cream). Sanitarium canned fruits and vegetables. Chocolate nut bar. Cooked whole wheat. Fig bran. Fig bran flakes. Food ferrin (supplies dietary iron from green vegetables). Fruit crackers. Gluten bread (Low in starch, shipped in air-tight cans, ready to eat. A healthful reducing food). Gluten biscuit (40%, containing less than half the starch of ordinary bread; fine for diabetic patients). Gluten flour. Graham crackers. Health chocolates. Health koko. Kaffir tea (caffeine free). Lacto dextrin. Laxa (a biscuit with bran and agar). Malted nuts (increases the flow of milk in nursing mothers). Marmalades. Meltose (a malt sugar made from grains). Minute brew (A caffeine-free cereal beverage). No-fat (for use in place of butter). Nuttolene ("A nut meat product having the consistency of cream cheese. Makes healthful croquettes, cutlets, and stews"). Oatmeal wafers. Paralax with agar. Paramels. Peanut butter (made from steamed rather than roasted peanuts to make it easier to digest). Preserved figs. Protose ("The vegetable meat–makes savory sandwiches, salads, meat pies, and roasts. Rich in iron, lime and protein for body-building"). Psylla. Ripe olives. Savita ("A vegetable [yeast] extract with a rich, meaty flavor, excellent for soups and gravies, Rich in vitamins, and wonderful for blood-building"). Sal-Savita (A vegetable seasoning with a meat-like flavor). Savita-yeast (new yeast with a rich meaty flavor). Starchless bran. Toasted rice flakes. Tomato soup. Vegetable gelatin. Vegetable soup. Vitamet (A savory vegetable meat that is rich in Vitamin B and food iron). Vita wheat (creamy hot cereal). Whole wheat cream sticks. Whole wheat flour. Whole wheat wafers. ZO ("The vitamin breakfast food, ready to eat with cream and sugar. Made from whole wheat and barley and enriched with Savita... Supplies the daily vitamins and minerals"). Zwieback.

On page 23 is an ad for a 64-page booklet titled *Healthful Living: Fundamental Facts About Foods and Feeding.* Address: Battle Creek, Michigan.

901. Kingsley, Ellen J. 1935? Soybean and soybean products for table use. Washington, DC: Bureau of Home Economics, USDA. 17 p. Undated. Mimeographed unpublished manuscript. *
• ***Summary:*** How to use: Green soybeans, dried soybeans, soybean sprouts, soybean flour, soybean milk, soybean curd [tofu], and soybean mash [okara]. Includes recipes.

Note: A stamp shows that this undated publication was received by USDA's National Agricultural Library on 1 Nov. 1935.

902. Kellogg, John Harvey. 1936. Improvements in or relating to preparation of natural or artificial milk containing *Bacillus acidophilus. British Patent* 441,574. Jan. 22. Application filed 16 Nov. 1934. *

903. Aykroyd, W.R.; Krishnan, B.G. 1936. An investigation of cheap "well-balanced" diets. *Indian J. of Medical Research* 23(3):731-39. Jan. [5 ref]
• ***Summary:*** In recent years, as a result of the economic crisis [Great Depression], considerable attention has been given to this subject. "A number of diets, costing from Rs. 4 to Rs. 5 per adult man per month, and conforming in a general way with diets in habitual use in India, have been tested by rat growth experiments, and subjected to chemical analysis."

They found soya milk better than whole dry soya beans. Address: Nutrition Research Labs., IRFA, Coonoor, S. India.

904. Bordas, Jean. 1936. Le rôle du soja dans l'alimentation humaine [The role of soya in the human diet]. *Annales d'Hygiene et de Medecine Coloniales.* Jan. p. 1-7. [Fre]*

905. *Naturopath and Herald of Health* (*New York City*). 1936. Mail bag: Mahatma Gandhi turns raw fooder and reads book published by an American Naturopath, "The unfired food diet simplified."(Letter to the editor). 41(1):30. Jan.
• ***Summary:*** This is an undated letter written to Dr. James H. Faulkner, Cincinnati, Ohio. "Dear Friend: I thank you for your letter and the booklet. A friend had shown it to me some time ago. I cannot be satisfied that starchy vegetables and grains can be taken raw without injuring oneself.

"We have not yet been able to find a proper substitute for milk, much as I would like to do so. The Soya Bean is supposed to have such properties. A friend is making cautious experiments but he still combines milk with it. Sincerely yours, M.K. Gandhi.

When this book was published in 1923, Dr. Faulkner had an order or two from India; one copy went to a medical library in Delhi. One of these copies, no doubt, was showed to Gandhi by his friend.

906. **Product Name:** Vetose Soya Milk [Natural, or Chocolate].
Manufacturer's Name: Vetose Nutritional Laboratories.
Manufacturer's Address: Pting Liang Road, Shanghai, China.
Date of Introduction: 1936. January.
Wt/Vol., Packaging, Price: Half pint or quart glass bottles.
New Product–Documentation: Miller, Harry W.; Wen, C. Jean. 1936. "Experimental nutrition studies of soymilk in human nutrition." *Chinese Medical Journal* 50(4):450-59. April. "Such milk can be and is being manufactured as a dried milk powder under the name of Vetose Soya Milk Powder with claims of nutritive value the equivalent of other prepared powdered milk food for infants."

Miller, Harry W. 1944. "The Story of Milk from the Soya Bean." Mount Vernon, Ohio: International Nutrition Laboratory. 37 p. "Milk routes were established in all parts of Shanghai, and the production doubled each succeeding month. Three types of liquid milk were produced: natural soya milk, chocolate soya milk and acidophilus milk, packaged in pint and quart bottles. The price to the consumer was less than that of cow's milk in Shanghai, which thus made available a milk rich in food value for all members of families whose circumstances did not permit them to buy the more expensive animal milk. It was here demonstrated that soya milk in every way filled the average family requirement for a milk, and that in countries where the economic conditions make impracticable dairies, where stock feed is scarce and costly, the people may still have an equally suitable milk." On 13 Aug. 1937 a Japanese bomb destroyed Dr. Miller's commercial soy milk plant.

Raymond S. Moore. 1961. *China Doctor.* p. 182. Dr. Miller established a soybean milk plant on Pting Liang Road in Shanghai, not far from his Shanghai clinic. "There the doctor worked with his production manager, Harry, Jr., who later was to become a consultant for the United Nations Food and Agricultural Organization. From the outset, however, the customers in areas without refrigeration were plagued by spoilage. After studying the American techniques for keeping milk drinks, Harry Miller and his helpers installed in-bottle sterilization equipment, and began deliveries anew. The milk kept indefinitely until uncapped. Malt and chocolate flavors were provided for the sophisticated taste... The price of the milk competed easily with that of cow and goat milk. In the late thirties, Japan was invading China. Within months after the soy-milk business began booming, a Japanese bomb blew up the Shanghai plant."

Interviews with Harry W. Miller Jr. 1981-87. Sold and delivered door to door in half pint and quart bottles, this was the earliest known commercial branded soymilk in East Asia. It was sold in wide-mouth glass milk bottles with Crown caps. The only labeling information was printed on the caps. The plant, which was connected with the Seventh-day

Adventist Shanghai Sanitarium, was destroyed on 13 August 1937 during the Japanese invasion.

Note 1. This is the earliest known commercial soy product made by a Seventh-day Adventist food company outside the United States.

Note 2. This is the earliest document seen (March 2001) concerning the work of Dr. Harry W. Miller with soyfoods.

907. Kellogg, John Harvey. 1936. Re: Growing soybeans in Michigan and making condensed soy milk. Letter to Mr. William J. Morse, Bureau of Plant Industry, USDA, Washington, DC, Feb. 13. 2 p. Typed, without signature (carbon copy).

• ***Summary:*** Dr. Kellogg thanks Morse for his letter or Feb. 7. "The 78-day bean which you sent me a number of years ago reaches the shell bean state in 60 days and matures in 78 to 80 days." "I am interested in what you say about variety 81,031 which scored one hundred. We will be glad to obtain a supply of this variety and as much as is available."

"I shall be glad to have your criticism of the condensed soy milk sent you.

"Thanking you for the valuable information and for your gracious assistance, I am, Sincerely yours."

Note 2. This is the earliest letter seen (Aug. 1999) of various letters exchanged between Dr. Kellogg and William Morse. Note that Morse apparently wrote Kellogg first on 7 Feb. 1936. Letter from Jennifer Jacobs at Bentley Historical Library. 1999. Sept. 8. She is unable to find a letter from Morse to Kellogg dated 7 Feb. 1936 in the Kellogg Papers at Bentley. Address: Miami, Florida.

908. *Revue Agricole de l'Afrique du Nord.* 1936. La culture de soja [Soybean cultivation]. 34(865):131-32. Feb. 28. (Institut Agricole d'Algerie, Alger). [1 ref. Fre]

• ***Summary:*** Although it has been recommended [in Algeria] on several occasions, especially by Dr. Trabut, soybean cultivation has been given only limited trials here, and then mainly for production of forage. Certain varieties of soya yield a very nutritious forage whose composition approaches that of lucerne. But in East Asia large amounts of soybean seeds are used as a source of oil, flour, a milk substitute, etc. In Algeria the soybean has not yet been used as food, except in feeding pigs. The various types of soybeans and their cultivation is discussed. Soybean cultivation is now expanding in Europe; last year soya was grown on 25,000 hectares in Romania. Soybeans have been grown successfully in Normandy, France. The results of these trials have been published by Guerpel in the *Journal d'Agriculture Pratique* (5 Oct. 1935); the importance of proper inoculation when planting for the first time is emphasized.

Because of the low price paid at European ports for soybeans grown in Manchuria, it seems that the cultivation of soya, intended for sale to oil mills, will not be remunerative in Algeria. But there would be interest in this country, especially in the irrigated areas, in growing soybeans for forage or for the seeds which could be fed to livestock. Address: Algeria.

909. *Good Health* (*Battle Creek, Michigan*). 1936. The world famine. 71(2):48-49. Feb.

• ***Summary:*** "For the four hundred millions of China and several other hundreds of millions in the Far East, that most marvelous of food plants, the soy bean, supplies an abundance of protein and fat of the finest quality, far superior to the proteins and fats of flesh meats, and wholly free from the loathsome parasites, trichinæ, tapeworms, etc., and the filthy colon germs which swarm in fresh meats of all sorts.

"From an economic standpoint, the soy bean offers not only a more than complete substitute for meats, but salvation from the great economic evils to which flesh eating inevitably leads, evils so mischievous that they threaten destruction to the race by making the world uninhabitable." "The soybean contains 40 per cent protein of higher quality than that of the choicest meats. Its easily soluble protein resembles that of milk, and is more easily and quickly digestible. The proteins of the soy bean are of the basic or alkali-ash sort, while those of eggs and meat are acid-ash and so tend to cause acidosis, an evil to which the physiologic chemists have for many years been calling attention. This makes the soy bean a curative food instead of a cause of disease.

"In the market one can buy protein in the form of soy beans at one cent a pound, whereas protein in the form of meat costs from $1.00 to $2.00 a pound"

The "soy bean also improves instead of impoverishing the soil. Its roots gather nitrogen from the air and so enrich the soil.

"The soy bean, which in the Orient fills in the diet the place of flesh, fish, fowl, eggs, milk, butter, and cheese, and suffices for infants as well as for adults, is beginning to receive some attention in this country. An excellent flour is now being made which, added to ordinary wheat flour, greatly improves the loaf in nutritive values, and at the same time improves its flavor and keeping properties.

"Condensed soy milk in tin cans is also now being made and various other most wholesome products, the use of which enables one, if he chooses to do so, to exclude all animal products from his dietary and not only without loss but with an actual gain."

910. *Good Health* (*Battle Creek, Michigan*). 1936. Increasing use of the soy bean. 71(2):50-51. Feb.

• ***Summary:*** "Henry Ford has aided in the development of the soy bean industry, having urged the planting as a new opportunity for farmers.

"Manchukuo still produces the world's largest crop of soy beans. The culture of this bean is spreading as people come to know its value for food and many other purposes.

Various attempts have been made to grow them in England, Germany, and other parts of Europe with poor success. But the *London Times* records the harvesting of twenty acres of soy beans on the Fordson estate, near Chelmsford [England]. Here Henry Ford has a farm of about two or three thousand acres. His direct interest is due to the fact that he uses this product in his automobile industry.

"Four years ago Dr. Kellogg discovered that milk made from the soy bean made a remarkable culture medium for protective bacteria or so-called 'friendly germs.' In soy milk more than twice the number of these germs can be made to grow than in cow's milk. Remarkable results have been obtained in cases of intestinal disorders through the use of this milk. The Canadian quintuplets are protected against bowel trouble by the constant use of soy acidophilus milk."

911. Kanga, D.D. 1936. The soya bean: An ideal foodstuff for India. *Vegetarian News* (*London*). Feb. p. 46-49. [3 ref]
• ***Summary:*** Discusses the many food and industrial uses of the soya bean. "Millions of people in India live on a purely vegetarian diet." "Hardly one person in a thousand even amongst our educated people has heard about this important foodstuff, much less seen or handled it."

"From several experiments made in private families, and public institutions like the Sir Ratan Tata Industrial Home and the Bengali Girls' School, and from the fact that soya bean preparations were made at the Soya Bean restaurant in the H.O.H. Fête held in Bombay and sold to the visitors, it seems that a number of table preparations can be easily made from the soya beans and soya bean products suitable to the varied tastes of our countrymen, such as coffee, cocoa, chocolates, biscuits, cakes, pastry, sandwiches, custard, pudding, soup, bread, milk, cheese, sauce, salad, macaroni, margarine, all sorts of sweets, *puri, ganthia, sev, bhajis, papads, vada, chevdo,* etc."

"If Mother India wishes to have a race of strong, healthy and virile sons and daughters she must see that soya bean is grown most extensively in the different parts of our country* and that it becomes a household word in every home and is included in the dietary of every family." (Footnote: *"It is gratifying to note that experiments carried out in Sindh, Poona, etc., show that the soya bean can be successfully grown in our country. It is also gratifying to note that the Saurastra Seva Samiti Ranpur, Kathiawad, is doing some good solid work in popularising and distributing soya beans among the cultivators of its own province. It is equally gratifying to note that the Baroda State has also begun the cultivation of the soya bean in its territories.–*Footnote in the 'Indian Humanitarian'"*).

Note 1. This article was reprinted from the Silver Jubilee Number of the *Indian Humanitarian* (Bombay). Note 2. *The Vegetarian News* was published by the London Vegetarian Society from 1921 to 1958. Address: Gujarat College, Ahmedabad, India.

912. Shoptaw, LaVan. 1936. Soybean flour as a substitute for cow's milk in feeding dairy calves. *J. of Dairy Science* 19(2):95-99. Feb. [5 ref]
• ***Summary:*** "One of the sources of continual worry for the dairy farmer and one which has to do with the very life of the industry is the problem of the economical rearing of calves. A vast amount of work has been done to produce calf meals which might displace milk in the diet of the calf. Recent work done in the Orient upon the value of soybean 'milk' in infant feeding has raised the question of the adaptability of this material as a feed for young dairy calves."

"Because of the success that was had in feeding infants on soybean milk, an experiment was planned to determine the effectiveness and economy of using soybean milk as a substitute for cow's milk in rearing dairy calves.

"Experimental: Four pairs of calves [averaging 25 days of age] were used in the experiment, the pairs being matched closely as to weight, height, and age. One calf of each pair was used as a check and was fed in a manner approximating common herd practice. The second calf in each pair was fed the same way except that cow's milk was replaced by soybean milk in the calf's ration." "The soybean milk was prepared by stirring one part of soybean flour into nine parts of warm water [without filtering]. The mixture was fed at body temperature." The feeding trial continued for 70 days. Grain and hay were allowed *ad libitum* to both groups.

"The general health of the calves fed soybean milk was not especially good. A great amount of diarrhea occurred in this group so that gruels of barley were often used to alleviate this condition. The hair coats of these calves were rather more rough than those of the check group."

"The average daily gain for the soybean calves was 0.9 pounds while that for the check calves was 1.24 pounds... Also there was some difficulty in getting the calves to relish soybean milk." Graphs show: (1) The average weight gain in pounds per week for the two groups. (2) The average gain in height (at withers) per week.

Note 1. This is the earliest document seen (Aug. 2013) describing the actual use of soybean milk as a calf-milk replacer.

Note 2. This is the earliest English-language document seen (Aug. 2013) concerning the use of soy in a calf-milk replacer.

Note 3. *Ad libitum* is Latin for "at one's pleasure." Here it means that animals could eat the available feeds whenever they wished to. This is the earliest document seen (Oct. 2008) that contains the term *ad libitum* in connection with soy. Address: Panhandle Agric. Exp. Station, Goodwell, Oklahoma.

913. Morse, W.J. 1936. Re: Chusei and Bansei soybean varieties, and making soy milk. Letter to Dr. John Harvey Kellogg, Miami Springs (Miami), Florida, March 7. 1 p.

Typed, with signature.
• ***Summary:*** "I have your letter of February 13 with regard to the variety of soybean which you have been increasing at Battle Creek [Michigan] for the past three or four years. The sample of beans was recently received from Battle Creek and in checking it over with our samples I find that it is identical with the type we are now calling Chusei. I may say that the seed is now being distributed under this varietal name.

"Concerning variety 81031, which I wrote you had given such good results in making a high quality milk, we have given the varietal name Bansei to this number. I think that we shall be able to furnish you with 4 or 6 pounds of seed and I feel that it should mature in ample time at Battle Creek. I take it that you wish this seed to be sent in your name at your Battle Creek address. Very truly yours, W.J. Morse, Senior Agronomist."

Note 1. This is the earliest document seen (June 2013) that mentions the soybean varieties Bansei or Chusei. Address: Senior Agronomist, Div. of Forage Crops and Diseases, Bureau of Plant Industry, USDA, Washington, DC.

914. Kellogg, John Harvey. 1936. Re: Bansei soybean and making soy milk. Letter to Mr. William J. Morse, Bureau of Plant Industry, USDA, Washington, DC, March 9. 2 p. Typed, without signature (carbon copy).
• ***Summary:*** Dr. Kellogg thanks Morse for his letter or March 7. "I am very glad to know about the Bansei bean. I shall be greatly pleased if you will send me as many pounds as you can of this seed and tell me if it is possible for me to get a larger quantity for planting this year.

"We are using very considerable quantities of soy beans for milk and at the rate it is increasing will soon be requiring about a ton a week.

"I am anxious to get started with your new bean as raw materials as soon as possible. I should also like to know whether the bean you call Chusei can be obtained in quantity for seed. I am hoping to plant two hundred acres of this bean this year to be used chiefly as a shell bean for canning. Can this be obtained in quantity either in this country or in Japan? Can the Bansei bean be obtained in Japan? I should also like to know if you can give me information about a bean which I am purchasing through a local agency here under the name of Tokyo. It comes from Norfolk here and I am informed that it is imported direct from Japan."

"I consider the soy bean one of the most remarkable of the world's food products and expect to make increasingly large use of it. I have been experimenting with it for many years, but have made rather slow progress because of the multiplicity of other matters requiring my attention. I think from now on I shall make much more rapid progress.

"Could you tell me if anyone has succeeded in making a satisfactory dry evaporated soy milk which will keep?

"Hoping I am not troubling you too much, I am

"Sincerely yours," Address: Miami, Florida.

915. Morse, W.J. 1936. Re: Evaporated soy milk, soybean varieties, and green vegetable soybeans. Letter to Dr. John Harvey Kellogg, The Miami-Battle Creek, Miami Springs (Miami), Florida, March 26. 2 p. Typed, with signature.
• ***Summary:*** "I have your letter of March 9 and with reference to the Bansei soybean, I will say that we will try to spare you as many pounds as possible." There are no longer large sources of either the Chusei or Bansei soybean in this country at present... we obtained the seed from The Yamato Seed Co., Tokyo, Japan. The Bansei was obtained from them under the name *Bansei O Sayada Mame* [probably *Bansei O Saya Eda Mame*] and the Chusei under the name *Chusei O Saya Eda Mame."*

Note: In Japanese, *Bansei* and *Chusei* mean "late grower or late development" and "medium grower or medium development" respectively. *O Saya* means "large pod." *Eda Mamé*–pronounced ay-dah-MAH-may–means "green vegetable soybean."

"The sample of seed which you enclosed is the Tokyo variety and has been grown in this country for many years. During the past two or three years it has increased to a considerable extent especially in North Carolina, Tennessee, and Mississippi. It is not imported from Japan. All of the seed which is in this country was grown in the states mentioned above. It may interest you to know that in North China and southern Manchuria this light, greenish yellow bean is used in the manufacture of bean milk and bean curd. I am quite sure that you will have no difficulty in obtaining almost any quantity of Tokyo through North Carolina growers and seed dealers... In North Carolina and Virginia you can obtain the Tokyo through the following: T.W. Wood & Sons, Richmond, Virginia, Geo. Tait & Sons, Norfolk, Virginia, The Buxton White Seed Co., Elizabeth City, North Carolina, and F.P. Latham, Belhaven, North Carolina."

"Mr. J.H. Strawser of the Washington Sanitarium, Takoma Park, Maryland, sent me one of the nicest samples of evaporated soy milk that I have ever seen... I understand that Dr. Miller, who is associated with the Missionary College and now stationed in China, has one or two factories producing this soy milk powder. While Mr. Strawser was experimenting with the milk I understood that the soy milk was evaporated through the regular process used in evaporating cow's milk."

Note: This is the earliest document seen (Aug. 2013) concerning the work of Dr. Harry Miller with soyfoods or soy milk.

"The Seaboard Airline Railway, at its experimental farm near Hamilton, North Carolina, has been testing some of our green vegetable soybean varieties. Last year they froze some of the beans and have been sending samples to various places. From all reports it is evident that the frozen bean is a most excellent food product."

Note: This is the earliest document seen (March 2001)

concerning the work of a small Seventh-day Adventist food company (the Washington Sanitarium, Takoma Park, Maryland) with soyfoods. Address: Senior Agronomist, Div. of Forage Crops and Diseases, Bureau of Plant Industry, USDA, Washington, DC.

916. Kellogg, John Harvey. 1936. Re: Soy Acidophilus Milk and the Dionne quintuplets. Letter to Mr. William J. Morse, Bureau of Plant Industry, USDA, Washington, DC, March 30. 2 p. Typed, without signature (carbon copy).
• ***Summary:*** "We are having great success with our soy acidophilus milk. It cured the [Dionne] quintuplets of serious trouble and keeps them in good health. They have been using it regularly in their daily food for more than a year and a half. Dr. Dafoe writes me that he cannot get along without it. When he stops the use of it the bowels get bad and he has to resume its use at once. I shall be glad to have a liberal sample of this milk sent to you if you would like to try it."

"Sincerely yours,

"P.S. Dr. Miller of China is one of my old students. He sent me a sample of his soy milk powder. It was very fine in appearance, but had a rancid flavor...

"I shall be very glad indeed if you will let me have as much seed as you can of rapid growing vegetable varieties of soy beans. I am planting 150 acres this year, but will be glad to plant 50 more if I can get sufficient seed for the purpose." Address: Miami, Florida.

917. Khankhoje, Pandurang. 1936. El frijol soya, Glycine hispida, Max [The soybean]. *Campesino* (*El*) (*Mexico*) 1(7):14-15. March. Revista Mensual. [Spa]
• ***Summary:*** "In Mexico, various experiments for the introduction of the soybean were made starting in 1911. There were repeated sporadically, always with poor results, until the years from 1928 to 1932 and 1933 when in Chapingo and Jalapa, the acclimatization of five varieties was achieved. In the following years, seeds from these 5 varieties were grown and matured in the experimental fields of the Biotechnical Institute (*Instituto Biotécnico*). The varieties Virginia and Laredo also did well there; it was hoped they would soon produced seeds suited for each of our climates."

Also discusses the importance, utilization (as oil, cheese [tofu], shoyu, and flour), and cultivation of the soybean. A photo shows two Laredo variety soybean plants and one Virginia variety soybean plant.

Note: This is the earliest document seen (Feb. 2009) concerning the cultivation of soybeans in Mexico or Central America (one of two documents). This document contains the second earliest date seen for soybeans in Mexico (1911), and the earliest date seen for the cultivation of soybeans in Mexico (1911) or Central America. The source of these soybeans is unknown. Note, however, that soybeans may well have been cultivated in Mexico as early as 1874 (see Carriere 1880). Address: Ingeniero, Jefe de la Oficina de Genetica, Ecologia y Botanica, Dirrecion de Agricultura, San Jacinto, D.F [Mexico City, Mexico].

918. Lager, Mildred. 1936. The House of Better Living Catalog. Los Angeles, California: Published by the author. March. 14 p. March. 28 cm. Second expanded edition, March 1938.
• ***Summary:*** On the front cover is a large illustration of the exterior of the House of Better Living, and a 4-stanza poem about the House by Mildred Lager. Below the poem we read: "Catalog. The most unusual store in Southern California. Owned and operated by Mildred Lager, food economist, author, and radio lecturer."

The first section, titled "The origin of the House of Better Living!" (p. 1) begins: "Is it fate? Often the handicaps and obstacles that we have to overcome lead us into our life work, help us to find ourselves. A few years ago a young school teacher was forced to give up her chosen profession because of arthritis deformans. It was a severe obstacle to overcome, but it was that experience that led Mildred Lager into the study of foods and their relation to health, and led to the founding of the House of Better Living. No one *has* gained recognition as rapidly as Miss Lager. In a little over two years she has won her place among the 'leaders,' has received both national and international recognition, and has established the House of Better Living as an institution in Southern California... Her perfect radio voice reaches thousands who cannot attend her classes.

"Miss Lager is teaching the ounce of prevention, the health insurance that pays dividends in years of health and happiness. Her slogan is that Pure Air, Pure Water, Pure Food and Constructive Thought plus exercise and sunshine build health.

"The House of Better Living is more than a Health Food Store. It is a bureau of food information and a place and means where Miss Lager can conduct her classes free of charge–and *that* is her goal. Two years ago it seemed an impossibility–very few thought it would ever succeed. They did not know the sincerity and the spirit behind it... It is but two and a half years old. We cannot predict its future nor that of its charming founder–we can only wait and see, knowing that achievement and not time is the measure of success.–By one who has watched the growth from the start."

At the top of page 2 in large letters: "The House of Better Living offers you: 1. The best of natural foods at reasonable prices. 2. Free delivery of all $3.00 orders in Los Angeles. 3. Free cooking classes every Wednesday afternoon at 1:30. 4. Food classes Monday and Thursday afternoon at 1:30 (except during June, July and August). 5. Miss Lager's Radio talks every Monday, Tuesday, Wednesday and Thursday morning at 7:45 over KFAC."

Product categories and products mentioned include: Coffee substitutes (Soyco, Hollywood Cup, Breakfast

Cup, Ficgo, Sipp). Broths (Vegebroth, Vegemineral Broth Concentrate, Hauser's Meatless Bouillon). Nut butters–Freshly ground (Soy Bean Butter, Almond butter, Cashew butter, peanut butter–dextrinized). Whole grain flour, meal, etc. (Soy Bean Flour, Bill Baker's Prepared Lima Bean Pancake or Waffle Flour, Bill Baker's Prepared Soy Bean Pancake or Waffle Flour {2 lb for $0.30}, whole wheat flour, wheat germ, bran, buckwheat flour, dextrinized flour, gluten flour, breakfast cereals–to cook {Cubbison's cracked wheat}). Ready to serve cereals (Soy bean breakfast food, wheat germ). Macaroni, noodles, etc. (Soy bean macaroni, garbanza shells). Legumes (soy bean {imported}, garbanza peas, natural brown rice, sesame seeds). Melba toast, crackers, cookies, etc. (Bill Baker's Soy Toast {$0.30/lb}, Cubbison's Melba Toast, Cubbison's Melbetts, Soy bean gluten cracker, Cubbison's whole wheat crackers, Cubbison's Whole Wheat Dunkeretts, Cubbison's wheat soda cracker, Cubbison's honey wheat cookies, Cubbison's Melba cookies, Soy bean wafers, soy bean macaroons, Bill Baker's 100% Soy Bean Fruit Cookies {$0.18/dozen}, Bill Baker's 100% Lima Bean Fruit Cookies {$0.18/dozen}, Olson's soy bean bread, sliced {$0.12}, Bill Baker's soy bean bread–unsliced {$0.16}, Bill Baker's Lima Bean Bread, unsliced {$0.16}). Natural aids (Agar, flaxseed, psyllium, Burbank kelp, kelp, Green kelp, Santay sea greens). Oils (Soy bean oil, sesame oil, Lindsay Cold Pressed California Oil). Meat substitutes (11 products, 5 with "Soy" in the name, such as Soyatose). Soy bean products (25 products! Makers incl. La Sierra, Loma Linda, etc.).

The 27 different soy products are: La Sierra Soy Beans, plain or with tomato sauce; Loma Linda Soy Beans, plain or with Proteena; Soy Beans, imported; Soy Beans, roasted; Soy Bean Loaf (meat substitute); Soy Bean Bologna; Soy Bean Spread; Soy Bean Butter (like peanut butter); Loma Linda Soy Mince Sandwich Spread; Soy Bean Sauce; Soy Bean Milk; Soy Bean Oil; Soy Bean Noodles, Macaroni, and Spaghetti; Soyco (Soy Coffee); Soy Bean Breakfast Food; Soy Bean Sprouts; Soy Bean Flour; Bill Baker's Prepared Soy Bean Pancake or Waffle Flour; Bill Baker's Soy Bean Bread; Olson Soy Bread (sliced); Bill Baker's Soy Toast; Bill Baker's Soy Bean Fruit Cookies; Soy Bean Macaroons; Soy Bean Wafers; Soy Bean Gluten Crackers.

Photos show: (1) A portrait of Mildred Lager smiling (p. 1). (2) Mildred conducting a free cooking class in her kitchen at The House of Better Living. Many men and women, all wearing hats, are seated around the perimeter of the kitchen (p. 6-7). (3) Packages of various "Bill Baker's Soy & Lima Bean Products" including Lime Bean Wafers, Pancake Waffle & Biscuit Lima-Bean "Neat Flour," Lima Bean Toast, Pancake Waffle & Biscuit Soya-Bean "Neat Flour," Lima Bean Bread, and Soy Bean Bread" (p. 10).

A small ad (3½ by 2¼ inches, p. 6) by the Cubbison Cracker Co. (3417-19 Pasadena Ave., Los Angeles, California) states: "Dextrinized and whole wheat products: Melba Toast, Melbetts, Cracked Wheat, Whole Wheat Crackers and Cookies." Note: This is the earliest document seen (June 2004) concerning the work of Sophie Cubbison with soyfoods.

A ¼-page ad (p. 12) titled "Hain 100% pure foods," describes Vege-Jell Puddings, Mal-Ba-Nuts (a powdered beverage), Potassium broth, and Col-Lax (whose ingredients are: Powdered psyllium, Powdered agar, and lactose). Address: 1207 West Sixth St., Los Angeles, California.

919. *Consumers' Guide*. 1936. Salute to the "wonder bean." 3(8):3-7, 22. April 20.

• ***Summary:*** A general introduction to the soybean and its uses, including "green soybeans" (used as a green vegetable), soy milk, soy oil, lecithin, and [whole dry] soybeans.

"Almonds, eggs, lean meat, milk, all have complete proteins. So do soybeans which sometimes, as in the case of many eastern [East Asian] people, are the only source of efficient protein within pocketbook reach."

"Soybean flour,... is both a rich and a cheap source of such minerals as calcium and iron." Calcium in the diet is necessary for strong bones and teeth. Soybeans are a probable source of vitamin A, and a good source of vitamins B and G (the "anti-pellagra" vitamin). Soybean sprouts have vitamin C (the "scurvy fighting" vitamin). Unlike most beans, soybeans contain little starch. "For this reason they are recognized as a good food for people needing a low starch diet."

Note: This is the earliest document seen (Aug. 2011) that uses the term "wonder bean" to refer to the soy bean. Address: U.S. Agricultural Adjustment Administration, Washington, DC.

920. J.G.C. 1936. The soya bean: Remarkable progress in cultivation. *Manchester Guardian* (*England*). April 27. p. 6.

• ***Summary:*** The soya bean is a major crop in Asia; about 25% of the area of Manchuria is used for growing it. The Japanese, like the Chinese, eat "soya bean foods" in their daily diet.

The soya "bean did not appear as a commodity in the Western world until 1907."

In 1910 in the United States, 2,000 acres of soybeans were grown; by 1920 the acreage had grown to 950,000 and today it is about 5,000,000. In 1931 the U.S. began to export soybeans to Europe.

In Soviet Russia, similar advances in the cultivation and utilization of soya beans have occurred recently.

Mr. Henry Ford has cultivated soya beans at Detroit, Michigan. During the past few years he had begun their full-scale cultivation in England, on the Fordson Estates near Chelmsford.

A list of the many industrial and food uses of soya beans is given.

An interesting account of the Fordson experiments

appears in the book *The Soya Bean*, by Elizabeth Bowdidge.

Mr. J.L. North, former curator of the Royal Botanical Society of London, during 20 years of breeding experiments in Regent's Park and elsewhere, has developed four soya bean varieties capable of maturing in England's climate. The Fordson Estates obtained these seeds and Mr. North's advice. In 1933 they did experimental plantings of about 50 soybean varieties collected from various parts of the world. In 1934 they planted about 20 acres of the most promising varieties.

Westerners obtain most of their fat and oil from meat, milk, eggs and bread. But these foods are relatively expensive, and many [especially in 1936 in the midst of the Great Depression] cannot afford them. The people of north China, who consume very little dairy products or meat, obtain an inexpensive, balanced diet from soya beans. Moreover, Chinese make a soya milk from soya beans. Although it is unpalatable to Western tastes, more refined processes can produce a palatable soya milk with good nutritional value.

Conclusion: "The soya bean provides a remarkably efficient method of providing supplies of food and raw materials."

921. Guy, Ruth A. 1936. The diets of nursing mothers and young women in Peiping. *Chinese Medical Journal* 50:440. April. *

• ***Summary:*** Dr. Guy has found little evidence that Peiping women have ever used soybean milk to feed their children. She notes that though the drink was available through street vendors, it was generally drunk by "old people in place of tea." Home preparation was difficult and laborious, and therefore avoided. Address: 1. M.D., First Health Station, Peiping Municipality, China.

922. Miller, Harry W.; Wen, C. Jean. 1936. Experimental nutrition studies of soymilk in human nutrition. *Chinese Medical Journal* 50(4):450-59. April. [15 ref]

• ***Summary:*** "Because of their small carbohydrate content soybean products have long been used as a diabetic food. Also hundreds of years ago, it was used in the form of soymilk, cheese, curd, various soy sauces, ferment products, bean sprouts, as salted roasted beans and as a coffee substitute. More recently it is used in ice-cream, ice-cream cones, in candies and confectionery, puddings, salad dressings, food drinks, breakfast-foods, etc., besides in the industries in making paints, linoleums, automobile parts, lacquers, celluloid substitute, glue, and vegetable casein. It is a valuable stock food, and in the human dietary the various soybean products not only give flavor and relish, but also supply a most valuable type of protein."

"The people in China use practically no dairy products and comparatively little meat, and yet have a well-balanced diet, which is obtained through the protective foods supplied them through the soybean. We have in China the common saying, '*Do-giang* [pinyin *doujiang* = soy milk] is the poor man's milk, *do-fuh* [*doufu* = tofu] is the poor man's meat.'"

"We have never observed soybean protein possessing an allergy in any single case. Recently a patient admitted to the sanitarium informed us that he could use neither wheat, eggs, nor milk. We placed him, therefore, on soybean protein as found in Vetose milk and soydophilus milk, and he got along remarkably well. We have never noted an instance where soybean has set up any reaction in the nature of skin eruptions, stomach or intestinal upsets" (p. 451-52).

"Much experimentation has been carried forward along the line of making palatable food products out of the soybean, of getting rid of the raw, beany, rather bitterish flavor in the uncooked or partially cooked bean. This objectionable beany taste has been shown by Schmalfuss and Treu [1927] to be a methyl-n-nonyl-ketone, which seems to be located in the outer layer of cotyledons.

"Since a process is now available for the removal of these ketone bodies immediately the possibilities loom before us of the use of soybean as an important element in the human dietary... we may have a true milk substitute.

"We have approached the formulae of cow's milk by the addition of a sufficient amount of carbohydrate in the form of a malt sugar and a little additional oil, together with vitamin C in the form of tomato juice, and by exposing this liquid to irradiation with ultra violet light to add vitamin D. Such milk can be and is being manufactured as a dried milk powder under the name of Vetose Soya Milk Powder with claims of nutritive value the equivalent of other prepared powdered milk food for infants."

"Our experimental work on infant feeding has been carried on over a period of more than two years, mostly in the Shanghai Sanitarium Clinic" (p. 454).

"In the Shanghai Sanitarium and Clinic, aside from the use of modified soya milk in the pediatrics department, the nurses and the helps have taken regularly the soya milk, with most satisfactory results. Our observations over this period of time lead us to believe that modified soya milk has every advantage over cow's milk; it is palatable and a liking for it is readily acquired. It is a complete food of very high nutritive value; it is readily digested, and free from all poisonous and deleterious substances. The standard formula used was protein 3.5%, fat 5%, carbohydrate 5.64%. The caloric value is a little higher than that of cow's milk, and will run 170 calories to the full glass" (p. 457).

Soya milk "can be used in cooking and baking; it makes delicious ice cream. At the same time it affords the advantages of being 100 per cent pure. Also the dread of so many diseases now known to be directly transferred from cows' milk, such as hoof and mouth diseases, undulant fever, typhoid fever, streptococcal infection, infection, dysentery, etc., is removed from users of soya milk.

"The new milk powder, which has now been used for upwards of a year, seems to be equal in quality with

the freshly made soya milk. It is a little better tasting. Its advantage is that it can be transported to any place without deterioration, and can be freshly made up as required, and does not require refrigeration" (p. 457).

"We use a soydophilus made by inoculating sterilized soya milk with the acidophilus organisms." Soydophilus "creates an intestinal flora that overcomes intestinal autointoxication."

Note 1. This is the earliest English-language document seen (Aug. 2013) that contains the word "soymilk" spelled as one word, or that has the word "soymilk" in the title. However, the word "soymilk" does not appear in the text. Instead, the term "soya milk" is used at least 22 times and the term "soy milk" is used once. The term "modified soya milk" is used many times but the meaning of "modified" is never explained.

Note 2. This is the earliest document seen (Aug. 2013) that contains the word "Vetose" in connection with the work of Dr. Harry Miller with soyfoods. Address: M.D. (both), Shanghai Sanitarium and Pediatric Dep., Shanghai, China.

923. Platt, B.S. 1936. An approach to the problems of infant nutrition in China. *Chinese Medical Journal* 50(4):410-24. April.
• ***Summary:*** "Whilst from our information it is found that soya bean milk is very rarely used [for feeding infants in China], much attention has been given to its preparation in various countries in recent years. It was introduced into paediatrics by Rühran in 1909 as a substitute for animal milk in allergic conditions and is still recommended for this purpose. Chinese and American workers have reported satisfactory results in clinical work. In the Dutch Indies good results are claimed using a mixture one part soya bean flour with seven parts of wheat flour. There are preparations marketed in various countries, including one in China at the present time, in the form of a powder from which by adding water the milk can be reconstituted. A freshly prepared milk can be bought in the local market; and attempts have been made to furnish a daily supply in bottles as is customary with cows' milk. Scepticism was found on a recent visit to exist in the minds of various workers in Malaya and Java as to the value of soya bean milk as a routine infant feed... The Chinese mother is found often to be aware of the property of soya bean milk of causing diarrhoea [diarrhea]; whether this is the result of the introduction of bacteria with the milk or to some cathartic action of the soya bean oil still remains to be studied." Address: Dep. of Medicine, Div. of Clinical Research, Henry Lester Inst. of Medical Research, Shanghai, China.

924. Siegmeister, Walter. 1936. Are vegetarians suffering from lecithin and vitamin deficiency? *Naturopath and Herald of Health* (*New York City*) 41(4):101, 120-21. April.
• ***Summary:*** Vitamin D and lecithin, essential for good health and sound teeth, are both present in the soy bean. "After over 15 years experimentation on various vegetarian, fruitarian, fruit-and-nut, raw food diets–living for several years at a time on each in turn, the writer was still in great uncertainty as to the nature of the best diet for physical and mental health. At this time, he first came across the soybean. At first he was somewhat prejudiced against this bean, as he was against all other legumes, believing that it formed uric acid in the system as peanuts and other legumes have a tendency of doing. But after eating some soybean bread, cheese, and soybean milk powder, he observed that there was something present in these foods which his body craved."

Note: Talk with Gordon Kennedy of Ojai, California. 2002. Oct. 18. Walter Siegmeister also wrote under pen name of Raymond Bernard, especially in his works about eugenics. He was also interested in longevity. Address: PhD.

925. Carver, G.W. 1936. Re: Soybean milk, peanut milk, and coconut milk. Letter to Mrs. J.F. (Alice D.) Musselman, R.R. 2, Lebanon, Pennsylvania, May 8. 1 p. Typed, without signature (carbon copy).
• ***Summary:*** On May 4, Mrs. Musselman wrote Dr. Carver asking if he knew of a small, hand-powered machine that could be used to press the oil from peanuts. "I have read of a process of using peanuts to make milk for feeding babies in Africa, where cow's milk cannot be obtained. We could follow this same formula in Sierra Leone, West Africa, where my work is, if we knew how to express the oil from the peanuts by a simple process." Friends, Mr. and Mrs. Hursh of Westerville, Ohio, "told me of your great work and your beautiful spirit."

Carver replies "I know of no small mill sufficient to express the oil from peanuts. I wish also to say that peanut milk is not made direct from the oil. It is made from the whole peanut.

"You can make a rather satisfactory compound in much the same way that you make soybean milk, that is, you crush the soybean thoroughly, put into a vessel, and cover with water. Heat to almost the boiling point, stirring constantly. Strain and cool, and it is ready for use. You can do peanut the same way, and make a very satisfactory product. Much the same process is used in the coconut, which makes a very satisfactory milk." Address: Director, Research and Experiment Station [Tuskegee, Alabama].

926. Kloss, Jethro. 1936. Re: Trip from Houston, Texas, to San Francisco. Letter to his daughter Promise Kloss, May 11. 1 p. Handwritten, with signature on letterhead. Facsimile printed in Back to Eden, 1981 ed. center insert section.
• ***Summary:*** This letter is of interest both for its contents–it shows a loving and caring father–and for its letterhead, which states in large letters: "Scientific Food & Benevolent Association." Below that, next to a photo of Kloss is typewritten: Jethro Kloss, President. Herbalist, Public

Lecturer, Food Scientist and Demonstrator. Manufacturers, Jobbers, and Distributors. Home address: Takoma Park Station, Washington, D.C. A typed description of the Association continues at the bottom of the page: "Distributors of non-poisonous herbs for medicinal and culinary purposes. A very practical course in nursing, including hydrotherapy. Scientific feeding for every purpose. Unexcelled substitutes for meat, eggs, cow's milk and butter–cooking, canning, baking and health foods. How to live better on less money. A marvelous line of foods made from the soy bean, and their cultivation. Send for description of new book 'Back to Eden' (revised edition) revealing astounding truths on prevention of disease and revolutionary food and health methods not published before." Address: 913 Yale St., Houston, Texas.

927. *Agricultor Venezolano* (*El*) (*Ministerio de Agricultura y Cria, Caracas*). 1936. El cultivo de la "soya" [The cultivation the soybean]. 1(1):24. May. [1 ref. Spa]
• ***Summary:*** A short paragraph at the top of the article states: We have translated the monthly bulletin of the Royal Bank of Canada [actually The Royal Bank of Canada Monthly Letter, April 1936] which discusses the extraordinary importance acquired recently by the soybean, an agricultural product whose cultivation is being tested in Venezuela. The intensification of this crop in our country can come to signify a new and important source of national wealth.

The article begins: "To many people, the soybean has an oriental flavour; they know it as the basic ingredient in some of the most famous English meat sauces [Worcestershire, etc.] and have heard that it is an important Manchurian export. Against this background it is something of a surprise to learn from the *Wall Street Journal* of February 17, 1936, that in the previous year it had become, from the viewpoint of cash return to the farmers, the fourth most important cereal crop in the United States. The crop of 1934 was about 50 per cent larger than that of 1933 and the crop of 1935 was doubled that of 1934."

The many uses of the soybean are discussed, including soybean flour (with and without the original oil content of the seed), soybean milk, butter, cheese [tofu], and coffee. Among industrial uses, in 1934, 10 million lb of soybean oil were used by the paint industry in the USA. "In varnish and lacquers soybean oil is the principal base. The Ford car is finished with a soybean lacquer and the Ford Company is erecting a $5,000,000 plant in Detroit [Michigan] to make soybean products. In soaps, glues, linoleums and rubber substitutes, the ingredients of the soybean have come to be of predominant importance."

928. The Royal Bank of Canada Monthly Letter, April 1936. 1936. In: National Research Council of Canada. 1936. Proceedings of the Second Conference on Soybeans. Ottawa, Canada. 18 p. See Appendix C, p. C1-C2. Held on 4 May 1936 in the National Research Building, Ottawa, Ontario, Canada. [1 ref]
• ***Summary:*** An overview of the rapid growth of soybeans in the United States, and their potential as a crop in Canada. "To many people, the soybean has an oriental flavour; they know it as the basic ingredient in some of the most famous English meat sauces [Worcestershire, etc.] and have heard that it is an important Manchurian export. Against this background it is something of a surprise to learn from the *Wall Street Journal* of February 17, 1936, that in the previous year it had become, from the viewpoint of cash return to the farmers, the fourth most important cereal crop in the United States. The crop of 1934 was about 50 per cent larger than that of 1933 and the crop of 1935 was doubled that of 1934."

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929. *Chicago J. of Commerce and La Salle Street Journal.* 1936. Soy bean field study is urged: Illinois manufacturers advised to investigate possibilities for use. June 2. p. 12.
• ***Summary:*** "Illinois supplies considerably more than one-half of the entire yield of soy beans in the United States."

"Some of the best known industrial uses for soy beans are soy bean milk, soy chocolate, soy sauce and other foods, including confectionery. It is used for feeding live stock by packing companies and baking companies substitute a portion of soy bean flour for wheat flour in bread. There is an increasing demand for soy bean oil in edible products, in paint, varnish, linoleum, soap and in foundries for core binding purposes. It is also utilized in glue.

"'Horn buttons, insulation material, tool handles are being made in increasing quantities from the residue of soy beans after the oil has been extracted.'"

"Fifth in State's Crops: 'The soy bean crop is now fifth among the various farm crops of the state, both in harvested acreage and in gross farm value.'"

930. LeClerc, J.A. comp. 1936. Partial list of references on soybean milk. Washington, DC: Food Research Div., Bureau of Chemistry and Soils, USDA. 4 p. June 16. Unpublished manuscript. [50 ref]
• ***Summary:*** The 50 references are listed in chronological order, from Trimble (1896) to Castagnol (1934). Address: Food Research Div., Bureau of Chemistry & Soils, USDA, Washington, DC.

931. Breedlove, L.B. 1936. Soy bean–The magic plant: Source of manifold foods for man, woman, and child. Article VIII. *Chicago J. of Commerce and La Salle Street Journal.* June 18. p. 12.

• ***Summary:*** Contents: Introduction (experiments on the diet of prisoners; the scientific knowledge of foods in relation to life and work). Removing bitter taste. Composition of soy flours. The count in amino acids.

One table shows the average composition of five types soy bean flours made from: (1) whole soybeans, (2) high fat content cake, (3) medium fat content cake, (4) low fat content cake, (5) solvent extracted cake. Flour made from whole soybeans contains 20.45% fat and 36.63% protein. Flour made from solvent extracted cake contains 1.58% fat and 68.74% protein. A second table gives the "Composition of the principal protein of various grains," as follows: Barley (hordein). Oats (glutelin, gliaden). Rice (globulin, glutelin). Rye (gliaden, glutelin). Wheat (glutin, gliadin, glutenin, leucosin). Soybean (glycinin). Navy bean (phaseolin).

A large diagram titled "Uses of the soy bean," shows 91 different uses. For example: The plants can be used for green manure, forage, pasture, or soiling. The beans can be used to make meal, oil, dried beans, and green beans. The oil can be used to make 13 different non-food industrial products plus food products and lecithin. These food products include butter substitute, lard substitute, edible oils, and salad oils. Lecithin is used in leather tanning, candy manufacture, medicines, and as an emulsifier. The dried beans can be made into 9 foods and beverages plus stock feed. The "vegetable milk" can be made into bean curd (which can be used fresh, dried, smoked, or fermented), "condensed soy milk, canned soy milk, fresh soy milk, soy milk powder, and soy casein." The casein can be made into "paper sizing, paints, textile dressing, waterproofing for textiles, drugs, or synthetic wool." Green beans can be used as a green vegetable, canned, or in salads.

"History indicates that the Chinese because of the soy bean were first among racial groups to have a well-balanced diet, and being better nourished, they were for centuries able consistently to drive off the barbarians.

"Western nations took little interest in diet other than that which grew up in the customs born out of trial and error methods. For more than one hundred years after experiments on prisoners began, the whole matter was looked upon as one of economy for the state and it was not until Carl von Voit laid down seventy years ago, his famous dictum, i.e., a man doing little work should have daily 118 grams of proteins, 500 grams of carbohydrates and 56 grams of fat, that any interest in a diet providing sufficient nutrition became manifest."

Note 1. This is the earliest English-language document seen (Aug. 2003) with the term "soy casein" to refer to isolated soy protein products.

Note 2. This is the earliest English-language document seen (Dec. 2004) that uses the term "synthetic wool" to refer to spun soy protein fiber used like a textile fiber (such as wool). Address: Staff member, Chicago Journal of Commerce.

932. Breedlove, L.B. 1936. Soy bean–The magic plant: Source of manifold foods for man, woman, and child. Article X. *Chicago J. of Commerce and La Salle Street Journal.* June 23. p. 11.

• ***Summary:*** Introduction and composition of "soy milk" (also called vegetable milk and soya milk). Producing soy bean milk (method of Max Adler). Food for diabetics. Curd base for many dishes (To Fu). American soya sauce superior.

"Soy bean milk is now produced, on a factory basis, in this country by five companies, of which three offer the soy milk in powdered form."

"The addition of magnesium or calcium salts or lactic acid to soy milk when hot, precipitates out a good part of the protein, forming a grayish white curd, leaving a yellow water liquid [whey]. This curd, after being drained and pressed, is the product known as 'To Fu,' which is an extensive article of diet among oriental, and also forms the basis for numerous fermented, smoked and dried cheeses in China and Japan. In all of the large cities of this country having a large oriental population such curd, made fresh each day, may be found in the food stores which cater to such populations.

Such cheeses or curds have not yet appealed to the occidental taste. They seem too strong in flavor and are of a sponge-like consistency... With the newer methods of conditioning the beans, it seems quite likely that the curds–not unlike cottage cheese–may be more palatable to the western taste.

"On the oriental table these curds, prepared in an infinite number of ways–it is said that most any self-respecting oriental chef knows at least 500 recipes–may appear in one form for an appetizer, in another form as the 'meat' course, in another as the salad, and in still another as the dessert."

"American soya sauce superior: Soya sauce, used extensively by oriental peoples in cooking, as a relish or condiment to increase the flavor of all dishes and as an aid to food assimilation, is made by crushing and grinding a mixture of cooked [soy] beans and pulverized barley, inoculating with a culture known as rice ferment and leaving in vats for six to eighteen months to ferment. The juice is then drained and filtered, salt and spices added.

"The recipe for this dark-brown liquid, used on chop suey and other typical dishes, has been a closely guarded secret handed down for generations in a limited number of Chinese families. However, within the last few years, the chemists of one American firm [Oriental Show-You Company, Columbia City, Indiana] discovered a more satisfactory recipe and the output of this factory, making the sauce from domestic beans, has so captured the market in

this country among the oriental reared citizens that imports of the sauce have been greatly reduced."

"Until very recently, when methods were found to remove the bitter taste, very little soy bean oil was used in this country for edible purposes. When properly treated, however, soy bean oil may serve in any one of the three important uses–either in lard substitutes, in margarin [margarine], or in cooking oils." Address: Staff member, Chicago Journal of Commerce.

933. **Product Name:** Sobee (Infant Food).
Manufacturer's Name: American Soya Products Corp.
Manufacturer's Address: Evansville, Indiana.
Date of Introduction: 1936. June.
New Product–Documentation: International Inst. of Agriculture. 1936. Manufacturers of soy products. p. 205. States that American Soya Products Corp. in Evansville, Indiana is the manufacturer of this infant food.

L.B. Breedlove. 1936. *Chicago J. of Commerce and La Salle Street Journal.* June 25. p. 14. "Soy bean–The magic plant. Article XI." "American Soya Products Corporation, Evansville, Indiana: Sobee (Infant food)."

Note: This is the earliest known branded soy-based infant formula worldwide.

934. *Times of India* (*The*) (*Bombay*). 1936. Cultivation of soya bean: Nutritional value to India. July 16. p. 8.
• ***Summary:*** This excellent article about the soya bean, containing many photos, recently received from the USA, discusses the remarkable number of uses to which this farm crop is being put in America. It is only natural to ask whether its cultivation is being promoted in India. Soyabean milk is mentioned.

935. Live Food Cafeteria. 1936. Health Ice Cream (Ad). *California Health News* (*Hollywood, California*) 4(14):6. July 17.
• ***Summary:*** "From soy bean milk, fresh fruit, honey. A refreshing food. We make it. Delicious salads from garden to you. Send for free literature and health hints."

Note: This ice cream was served in the Richter's raw-food cafeteria; we have no evidence that it was a commercial product, sold elsewhere. Address: 325 West Third St., Los Angeles, California.

936. **Product Name:** Soy Milk (Canned). Condensed and Canned by 1940. Brand-named Soygal by April 1942.
Manufacturer's Name: Battle Creek Food Co.
Manufacturer's Address: Battle Creek, Michigan.
Date of Introduction: 1936. July.
Wt/Vol., Packaging, Price: 10 oz can.
New Product–Documentation: L.B. Breedlove. 1936. *Chicago J. of Commerce and La Salle Street Journal.* June 25. p. 14. "Soy bean–The magic plant. Article XI." "Battle Creek Food Factory, Battle Creek, Michigan: Milk (canned)."

Price List. 1940. 10 oz. can.

Good Health (Battle Creek, Michigan). 1942. April. p. 52-53. "Cow's milk a common cause of allergy." Soybean milk, now available under the commercial name of Soygal, is "wholly free from the unpleasant taste of the soybean."

937. Burlison, W.L. 1936. The soybean. A plant immigrant makes good. *Industrial and Engineering Chemistry* 28(7):772-77. July. [23 ref]
• ***Summary:*** Contents: Introduction and brief history. Description of the bean. Soybean culture. Industrial uses. Imports. Composition of soybean seed. Composition of soybean oil. Composition of soybean-oil meal. Methods of processing soybeans for consumption: Expeller method, hydraulic-press method, solvent extraction process. Disposition of the domestic crop. Products derived from soybeans. Industrial use of soybean oil. Soybean oil in the paint industry. Soybean oil as a core binder. Other uses for soybean oil: Lecithin, sulphonated oil. Plastic industry. Soybean glue. Further investigation needed.

This article begins: "The soybean is one of the oldest crops grown. It was described in a Chinese book on Materia Medica, *Ben Tsao Gang Mu*, written by Emperor Shen-Nung about 4800 years ago... Soybeans were introduced into the United States in 1804, yet a hundred years there were very few grown outside the southern states."

The section titled "Products derived from soybeans" (p. 775) contains an extensive list of commercial food, feed, and industrial products derived from soybeans and compiled from letters received by the University of Illinois during the latter part of 1931. "This list is increasing from month to month." Some products have brand names and others only generic names. The following products were on the market in the USA and Canada at that time.

"Food products: Soybean flour. Soybean-meal flour. Refined edible soybean oil. Soybean salad oil. Chocolate bars (30% soybean flour). Cocoa (up to 60% soybean flour). Sausages (up to 50% soybean flour). Bread (7½% soybean flour). Rolls (10% soybean flour). Macaroni (20% soybean flour). Soybean muffins. Soybean cookies. Soybean doughnuts. Vegetable shortening. Infant foods. Diabetic foods. Oleomargarine. Lard substitutes. Filled sweets. Soybean sprouts. Soybean cheese. Soya cream biscuits. La Choy soy sauce. Zoybeans (cooked beans). Bacon and Zoybeans. Zoy bouillon. Casein gluten flour. Non-fat mayonnaise. Fatless spread. Soyex-malt-cocoa drink. Soybean milk. Soybean ice cream.

"Feed products: Cake or meal. Commercial feed. Dairy feed. Hog chow. Poultry chow. Dog chow. Calf chow. Rabbit chow. 34% protein chow chow. Chick Startena.

"Industrial products: Paint. Varnish. Enamels. Oilcloth. Linoleum. Printers' ink. Glycerol. Celluloid. Lauxtex plastic

wall coat. Lauxtein waterproof soybean glue. Lauxein emulsifier. Soap. Core binders. Rubber substitutes. Plastics."

Photos show: (1) "A beautiful field of Illini soybeans, a variety extensively used for industrial purposes." (2) "A soybean plant loaded with pods and ready for harvest.

Tables show: (1) "Utilization of soybeans and soybean products in 1930" For example: Soybeans ground for food: 200,000 bu (bushels). Soybean oil used in various edible products: Oleomargarine: 750,000 lb. Lard substitutes: 500,000 lb. Other food products: 4,750,000 lb. Soybean oil used in industrial products: Paint and varnish: 9,000,000 lb. Linoleum and oilcloth: 4,000,000 lb. Soap kettle: 8,500,000 lb. Soybean meal used in: Commercial feed: 84,100 tons. Other 15,000 tons. Soy flour for food: 850 tons. Infant and diabetic foods: 50 tons. Other uses, including glue: 10,000 tons.

Table 2: "Adaptability of soybean oil to various products." Drying products: Paint, varnish, linoleum and oilcloth, waterproof goods. Soap products: Hard soaps (toilet, household, laundry), soft soaps (shampoos, automobile soaps). Edible products: Lard compounds, cooking oils, salad oils, fountain drinks, candy, mayonnaise, margarine. Miscellaneous: Foundry core oil, printers' ink.

Note: A revised and considerably expanded version of this article, with the same title and author but a somewhat different format, was published two months later as *Illinois Agric. Exp. Station, Circular,* No. 461. 15 p. Sept. Address: Univ. of Illinois, Urbana, Illinois.

938. **Product Name:** Soyol (A Vegetable Milk Substitute).
Manufacturer's Name: Dr. Julius F. Muller.
Manufacturer's Address: New Brunswick, New Jersey.
Date of Introduction: 1936. July.
New Product–Documentation: L.B. Breedlove. 1936. *Chicago J. of Commerce and La Salle Street Journal.* June 25. p. 14. "Soy bean–The magic plant. Article XI." "Muller, Dr. Julius F., New Brunswick, New Jersey: Soyol (a vegetable milk substitute)."

Photo of commercial soy products in William Morse's office. 1936. Soyol: Milk substitute (can).

939. Lohse, H.W. 1936. The soya bean as a food product and industrial raw material. *Canadian Chemistry and Metallurgy* 20(7):224-25. July. (Chem. Abst. 30:6505).
• ***Summary:*** Contents: Introduction (incl. nutritive value of soybeans). Proteins and fats. Vitamins of soya bean. Soya bean as a food product. Soya bean milk. Soya bean flour. Soya bean oil (obtained by solvent extraction process, hydraulic press process, or expeller process; food and industrial uses). Uses for extracted meal (food and industrial; including lecithin).

According to statistics from the Dominion Bureau of Statistics, consumption of soya bean oil in Canadian manufacturing industries was as follows: Miscellaneous food industries 499,451 lb, slaughtering and packing 169,916 lb, bakeries 112,693 lb, and biscuits & confectionery 20,200 lb. Total: 802,260 lb worth $48,062.

Concerning soya bean milk, the author states in this paper presented at the Canadian Chemical Convention: "Soya bean milk has been manufactured here in Canada by Milqo Limited in Hamilton since 1919. This firm erected one of the first, if not the first, plants for the purpose of this manufacture on a large scale in the Western world." Milqo Ltd. (which may be related to Vi-tone or Vitone in Hamilton) is probably the same company in Hamilton that was named Milk-Ko Products in 1954 (Soybean Blue Book p. 102). Address: Milqo Ltd., Hamilton, ONT, Canada.

940. Monnier, Emile. 1936. La graine de soja: Les préparations à base de graines de soja dans l'alimentation des Annamites [The soybean seed: Preparations based on soybeans in the diet of the Annamites (of Central Vietnam)]. Marseille, France: Imprimerie Ant. Ged. 106 p. 24 cm. [91 ref. Fre]
• ***Summary:*** The title pages states that this is the published version of the author's PhD thesis at the Mixed Faculty of General and Colonial Medicine, and of Pharmacy at Marseille. The thesis was presented and defended before the Faculty of Medicine of Marseille on 10 July 1936 to obtain the degree of Doctor of Pharmacy. The author was born on 19 Nov. 1905, at Sarzeau (Morbihan); he is a *Licencié ès Sciences, Pharmacien-Capitaine des Troupes Coloniales.*

Contents: 1. Introduction. 2. The soybean: Historical summary and overview. Soybean botany, the production of soya; its cultivation in Indochina, soybean commerce and trade, chemical composition of the soybean seed (analysis of soybeans from Tonkin), the chemical constituents of the soybean seed, soy oil, food use of soya in Europe, industrial uses of soya, soya in therapeutics and dietetics. 3. Soy-based food preparations from Indochina: Soymilk, the fermentation and preservation of soymilk, tofu (*dâu-phù*), soy sauce, yuba (La crème de soja, *dâu-phù-chuc*). 4. Conclusion.

941. **Product Name:** Health Breads, Cookies, Date Bars, Soy Bean Sprouts, Soy Oil, Soy Milk, Soy Cheese, Soy Flour.
Manufacturer's Name: Soybean Health Products Company.
Manufacturer's Address: Oakland, California.
Date of Introduction: 1936. July.
New Product–Documentation: L.B. Breedlove. 1936. *Chicago J. of Commerce and La Salle Street Journal.* June 25. p. 14. "Soy bean–The magic plant. Article XI." "Soybean Health Products Company, Oakland, California: Health breads, cookies, date bars, etc.; soy bean sprouts, soy oil, soy milk, soy cheese, soy flour."

942. Siegmeister, Walter. 1936. Soy beans. *Nature's Path to*

Health (*Melbourne, Australia*). Aug. 15. p. 25-26.
• ***Summary:*** "Soy Beans contain a Complete Protein which can replace the proteins of meat, eggs, and milk.

"The verdict of modern biochemistry is that the alkalinity of the blood is the basis of physical and mental health, while a rise in acidity means lowered vitality and increased susceptibility to disease. Therefore it is of the highest importance to keep the blood alkaline. To do so, we must avoid acid-forming foods, consume those with an alkaline ration, and above all, thoroughly oxygenate the lungs with pure oxygen. Unless carbon dioxide is removed as quickly as it forms, there will be a rise in the carbonic acid content of the blood which means increased acidity.

"Chief among the acid-forming foods are meats, fowl, fish, eggs and grains. Flesh foods putrefy readily and hence are causes of constipation and intoxication... The soy bean is highly alkaline (as are potatoes and bananas)... It is one of the few vegetable proteins with a full biological value equal to that of meat, eggs, or milk. Soy bean powder [flour] dissolved in water makes a milk which has been found by experiments to be able to replace cow's milk in the feeding of infants."

"Butter is acid-forming; so are most vegetable oils. Soy bean oil is the only oil found to be alkaline in reaction and to contain vitamin D..."

Note: This is the earliest document seen (June 2002) concerning a vegetarian diet and mental health. Address: PhD.

943. Brewster, Clara M. 1936. The Soya bean: A four-star food. *Horizon* (*Tempo Books, New York City*) 1(3):9, 26-27. Aug.
• ***Summary:*** "Like the Fountain of Youth, the Perfect Food is a myth. There is, however, a well-nigh ideal substitute. It is 5,000 years old, yet fully appreciated only so recently that it can well be called the food of tomorrow. This food is the Soya bean–a four-star tiny seed, with one star for its exceptionally fine and healthful chemical composition, one star for its cheapness, one star for its taste, and the final star for its adaptability, which makes it a blessing to every health-minded housewife!

"In the Orient, the Soya bean takes the place of meat, eggs, milk, cheese, butter and wheat. Over its supply wars have been fought. On a diet of it entire races have been nourished and thrived. To approximately half the population of the world, it is food and drink day in and day out.

"And it is no wonder. An analysis of the chemical composition of the Soya bean shows that it is composed of 40% protein, 20% fat, and the rest is balanced carbohydrates and minerals. Also, research has shown that the Soya bean contains all the vitamins, both the fat-soluble and the water-soluble."

"The Soya bean is a complete vegetable protein containing all of the amino acids in assimilable form; one pound of Soya beans equals the protein value of two pounds of beef, which is much more expensive. Also, quite the opposite of meat, which is highly acid forming, the Soya bean is alkaline, possessing more than twenty times the alkalinity of cow's milk."

From Soya beans we can make Soya bean milk, oil, "a perfect substitute for lard and other kinds of indigestible shortening," a substitute for fresh butter (when the lard substitute is colored with a bit of carrot juice and seasoned with a little Nu-Vege-Sal), a delicious flour (good for use in pancakes, soups, etc.), toasted soya bean (which resemble peanuts in flavor and texture), coffee substitutes and chocolate substitutes (from toasted soya beans–alkaline in reaction and minus all harmful stimulants), toasted soya flour (which has a nut-like flavor), sprouted soya beans, green vegetable beans (picked when the plant is three quarters ripe; they are easy to shell after boiling in the pods for five minutes), tofu (one of the most popular foods made by the Chinese from soya beans, it is a cheese resembling our cottage cheese but pressed into cakes), the curds used to make soya cheese (use in salads or other recipes calling for cottage cheese).

"There are 250 varieties of soya beans. Recipes are given for: Soya beans a la Hauser (boiled [whole dry] soya beans, seasoned with Nu-Vege-Sal and made into a casserole). Raw soya bean salad (with sprouted soya beans). Soya milk. Clabbered soya milk ("The pulp [okara] strained out of the milk may be used in a multitude of ways..."). Mock oyster patties (with 1 cup soya pulp). Soya muffins (with 2 cups toasted Soya Flour). Soya waffles (with soya flour). Soya fiddle sticks (with soya flour, raw sugar, dates, and nuts). Soya flour fruit cake. Soya sand tarts (with soya flour).

Note 1. Nu-Vege-Sal ("Nutrofied salt") is made by Modern Health Products (Milwaukee, Wisconsin), which has a full-page ad in each issue and also makes Swiss Kriss (natural herbal laxative), Sym (formerly called "Slim"), Vitana (ripe banana food), Santay Swiss Teas, Santay Meatless Bouillon, Sea Greens ("sea vegetables" in tablet form), Sipp (drink instead of coffee), and Aydee Vitamin Tablets.

Note 2. This stylish, spiral bound, quarterly magazine, edited by Bengamin Gayelord Hauser, began publication in early 1936. It is published by Tempo Books (580 Fifth Ave., New York City), the publisher of Hauser's many books with titles like *Eat and Grow Beautiful, Food Science and Health, Harmonized Food Selection, New Health Cookery, Types and Temperaments, Dictionary of Foods, Child Feeding* (written for mothers), *Health Day* (*Gesundheitstag*), *Here's How To Be Healthy* (sensational "health cocktails"). Focusing on "Health, beauty, vitality," it emphasizes that all are related to a good diet. Hauser (whose full-page, dapper photo appears near the front of issue no. 1) "has been called into consultation by the world's most beautiful women, stars of

the stage, screen and opera; and for the past two summers he has been Dietetic Director of Elizabeth Arden's exclusive 'Siesta' in Maine." Hauser appears to advocate a vegetarian diet (though he does not say so); he makes no mention of meat, fish or poultry in the text or recipes in the first four issues.

944. Grulee, Clifford G.; Sanford, Heyworth N. 1936. The influence of breast and artificial feeding on infantile eczema. *J. of Pediatrics* 9(2):223-25. Aug. [1 ref]
• ***Summary:*** Soy is not mentioned. Address: Both: M.D., Dep. of Pediatrics, Rush Medical College, and the Infant Welfare Soc. of Chicago.

945. Kellogg, John Harvey. 1936. Regimen and technic for changing the intestinal flora. *Good Health* (*Battle Creek, Michigan*) 71(8):230-33. Aug.
• ***Summary:*** The author offers a four-step plan which "has been found efficient in the treatment of hundreds of cases requiring change of the intestinal flora." These include: "1. Liberal carbohydrate feeding (Lactose, Dextrin, Lacto-Dextrin). 2. Discarding of flesh meats (Combe) of all sorts. 3. Increasing the activity and efficiency of the colon so as to secure complete clearance of the intestinal tract at least once in twenty-four hours. 4. Liberal feeding of a potent culture of *L. acidophilus.*

In place of "animal proteins," one should use "milk and vegetable proteins." Note that "milk proteins are less putrescible than are flesh proteins, and besides are protected against putrefaction by the presence of lactose." "The peanut and the soy bean supply a high percentage of protein of most excellent quality... The soy bean provides a basic protein of high quality, and is rich in food minerals and vitamins and has the added advantage that it stimulates the development of the protective flora. This gives to the soy bean special value in efforts to change the flora by special feeding. All soy bean products are to be recommended, especially a milk prepared from this legume which closely resembles ordinary milk in appearance and composition."

Avoid all medical laxatives, which seriously interfere "with the effort to develop or implant a protective flora... Only purely physiologic means may be employed, such as liberal increase of bulkage (Kaba, psyllium seed, agar) and the enema."

946. Associated Press (AP). 1936. A vegetable wonder. *Advertiser* (*Montgomery, Alabama*). Sept. 8.
• ***Summary:*** "The soy bean is an immigrant from China... In Detroit, Mr. Ford is building a $5,000,000 plant to make soy bean products. He finishes all his cars with soy bean lacquer [paint].

"The soy bean is also being canned for human consumption. So versatile is this remarkable vegetable that there is soy bean milk, butter, cheese, coffee, breakfast foods, and macaroni on the market. It is remarkable because of a complete absence of starch and a high protein content. In soy bean flour the protein runs from 37 to 40 per cent, and has a high nutrition value."

Note: A cartoon on the same page tells the life story of George Washington Carver. "George worked his way through college. He extracted an oil from peanuts which has been used in treating infantile paralysis. Now, Dr. George Washington Carver, whose parents were slaves, is a great scientist–one of the few Americans to become a member of the Royal Society of Arts, London."

947. *Times of India* (*The*) (*Bombay*). 1936. Use of soya milk suggested. Sept. 8. p. 15.
• ***Summary:*** Dr. K.D. Dadachanji, who practices medicine in Bombay, has strongly urged the "adoption of vegetable soya milk as a substitute for cow's or buffalo milk." He says that it can be made for less than a pice per seer if prepared at home–and for still less if made in a modern factory.

He says that soya milk is widely used by the people of China, Korea, and Japan to good advantage. If the Municipal Corporation of Bombay were to start a soya milk factory in that city, he says, the problem of pure milk supply could be solved.

Note: This is the earliest of 117 articles or ads seen (Sept. 2010) in *The Times of India* that contains the term "soya milk," or that mentions soya milk (regardless of how it is spelled) in connection with India.

948. Meade, Mary. 1936. Soy beans are new dish on American table. *Chicago Daily Tribune.* Sept. 9. p. 26.
• ***Summary:*** It has taken agricultural America a long time to discover the soy bean. For centuries it has been a valuable human food in the Asiatic diet, "but only within the last few years has it come to the American table. And in what variety!" We have fresh and dried soy beans. We are using soy bean flour to make breads, drinking a soy bean milk, and cooking many of our foods in soy bean oil. "There is a soy bean 'coffee' on the market, a soy bean butter, which resembles peanut butter, soy sauce, and a roasted soy bean which is eaten like peanuts and which is gaining in popularity every day."

Soy beans are a valuable food, rich in "good quality protein and having a superior caloric content." Their low starch content makes them valuable for diabetics. Describes how to cook fresh soy beans and dried soy beans.

"Among the most edible varieties of soy beans are Easycook, Mammoth Yellow, Manchu, Dunfield, and Haberlandt. All are light in color." Gives a recipe for Soy bean nut bread; the nuts are chopped tree nuts.

949. Desai, Mahadev. 1936. Soya bean for the poor. *Harijan* 4(33):259. Sept. 26.
• ***Summary:*** "Sir Courtney Terrell, Chief Justice of the

Patna High Court, had a long interview during his visit to Japan with Prof. Saiki, Director of the Japanese Bureau of Nutrition, who showed him the various processes of making simple food products from soya bean for the poor people of India. Sir Courtney, it is interesting to note, writes with special reference to Bihar. The first is the preparation of *satu* [which resembles roasted soy flour] and the second is the preparation of milk. About the *satu* preparation he writes:

"'About two seers [i.e. 4 pounds] of bean preferably of the large white hard Manchurian variety, were heaped upon an iron or earthenware dish and this dish was placed over a fire, the dry beans being continuously stirred with a wooden spoon. When they assumed a golden brown colour they were allowed to cool and then ground in a small stone hand mill of the kind commonly seen in Indian prisons for preparing *atta.* The beans were reduced to a fine soft powder and the entire bean was ground without any waste. The flour so produced is already cooked and it may be used in any of the ways now known in India in connection with *satu.'*

"The process of preparing milk that Sir Courtney describes is rather elaborate. Far simpler is the recipe by Benjamin Hansen, the well-known Viennese Food Scientist." Address: India.

950. Burlison, W.L. 1936. The soybean. A plant immigrant makes good. *Illinois Agricultural Experiment Station, Circular* No. 461. 15 p. Sept. First printed in Industrial and Engineering Chemistry. 1936. 28(7):772-77. July. [24 ref]
• ***Summary:*** A shorter version of this article, with the same title and author but a somewhat different format, was published two months earlier in *Industrial and Engineering Chemistry* 28(7):772-77. July.

Contents: Introduction and brief history. Description of the soybean. Soybean culture. Industrial uses. Disposition of the domestic crop. Products derived from soybeans: Food, feed, and industrial products. Imports. Chemical composition: Soybeans, soybean oil, soybean oil meal. Methods of processing soybeans: Expeller, hydraulic-press, solvent extraction. Industrial use of soybean oil. Use of soybean oil in the paint industry. Soybean oil as a core binder. Other uses for soybean oil: Lecithin, sulphonated oil. Plastic industry uses soybean oil meal. Glue from soybean oil meal. Soybean oil meal for fertilizers. Further investigation needed.

The section titled "Products derived from soybeans" (p. 6-7) gives is an extensive list of commercial food, feed, and industrial products derived from soybeans. This list is almost identical to that published two months earlier. Address: Chief in Crop Production.

951. Fors, Alberto J. 1936. El frijol soya, materia prima para la produccion de aceite [The soybean, raw material for the production of oil]. *Revista de Agricultura* (*Cuba*) 19(8-9):64-66. Aug/Sept. [Spa]

• ***Summary:*** Briefly describes the importance of the soybean as a raw material for the production of oil. At the end of the article are listed the products obtained from the soybean. These include 24 food products (incl. refined soy flour, refined soy oil, chocolate and cocoa with soya, sausages with soy flour, soy bread, soy macaroni, gluten flour and soy casein, soy lard (*mantecado de soya* = shortening), foods for children and diabetics, oleomargarine, soy sprouts (*retoños de soya*), soy cheese (*queso de soya* = tofu), biscuits made with soy cream, La-Choy soy sauce, soya bouillon, low-fat soy mayonnaise, soymilk), 6 concentrated feeds for domestic animals, and 14 industrial soy products (incl. paints, enamels, linoleum, glycerine, varnish, artificial adhesive rubber, candles, lubricants).

The article begins: "The soybean (*el frijol soya*) is a bush which grows to a height of, at most, 3½ feet, but its industrial possibilities and its agricultural worth are gigantic. One cannot explain why the cultivation of this plant in Cuba is still at the test stage. During the past year of 1935, the United States harvested not less than 24 million quintales [1 quintal = 100 pounds] of this bean. The soybean also does well in our climate and in the majority of our soils, with the advantage over the black bean that two crops per year can be harvested.

"We are importing for our consumption about 6 million kg of oil extracted from this bean which, with some industrial products derived from the same, represent an annual expenditure which approximates, on average, one million pesos. The soybean is not a future possibility: it is money in the hand of those who plant it. Cuba has oil extraction plants which can process all the soybeans we can harvest. Why don't you plant soya? Not only do we import large quantities of soy oil, for we are large consumers of oils and fats, but we also bring in concentrated feeds for milk cows, chickens, and various other substances derived from the soybean." The article ends with these words written in large letters: Plant soybeans! Address: Propagaganda de la Inspeccion Provinical de Agricultura de la Habana. A Cargo de Ingeniero A.J. Fors.

952. *Good Health* (*Battle Creek, Michigan*). 1936. Soy milk versus cow's milk. 71(9):275. Sept.
• ***Summary:*** This editorial argues that soy milk is healthier and less subject to food-borne diseases than cow's milk. "The use of soy acidophilus milk is also recommended because it encourages the growth of *acidophilus,* the protective germ which stands guard in the intestine to prevent invasion by the disease-producing organisms."

953. *Good Health* (*Battle Creek, Michigan*). 1936. Heating milk prevents injury to persons sensitized to it. 71(9):280. Sept.
• ***Summary:*** "A better plan is to substitute milk prepared from the soy bean or cow's milk when the latter is found to

disagree. Soy milk looks like cow's milk, has essentially the same nutritive value when dextrin or milk sugar is added, and when properly prepared, has an agreeable flavor which infants do not dislike.

"Infants also profit greatly by the use of cultured soy milk, known as Soy Acidophilus Milk."

"Soy milk may now be obtained in condensed form, put up in tins resembling various brands of condensed cow's milk. It is hoped that a good quality of powdered soy milk may be available in dried form."

954. Lager, Mildred. 1936. New items. *House of Better Living* (*Newsletter, Los Angeles*) 3(10):3. Sept.
• ***Summary:*** "Dry Soy Milk, ready to mix with water. Soy Cocolette–soy milk cocoa not sweetened. Soy steel cut coffee. Soy milk prepared ice cream powder. Soy milk and soy milk chocolate bars. Soy milk and soy milk chocolate diabetic candy. Soy Gluten Noodles and wafers. Red Soy Beans–cook in 25 minutes when soaked over night... Soy bean oil."

On page 4 are recipes for Soy bean loaf (with 1 can Loma Linda Soy Beans) and Soy bean thousand island dressing (with Loma Linda soy mince spread). Address: 1207 West Sixth St., Los Angeles, California.

955. Loma Linda Foods. 1936. Soy milk (Ad). *House of Better Living* (*Newsletter, Los Angeles*) 3(10):4. Sept.
• ***Summary:*** "... with a pleasing taste, and full of nutrition, Soy Milk is one of several Loma Linda Soy Products." A logo, with "Loma Linda Foods" written on a black oval background, shows the company's name. Address: [California].

956. Slawson, H.H. 1936. Agriculture's Jack of all trades: Introducing the versatile soybean with which you may either build automobiles or run them and in which many people see possibilities for farm relief without benefit of subsidy. *Nation's Business* 24(9):24-26, 94. Sept.
• ***Summary:*** Contents: Introduction. A program for soybeans (Regional Soybean Laboratory, Urbana, Illinois). Wood glue from soybeans (I.F. Laucks). Helps bread stay fresh. A twenty-year development.

Five years ago at the Univ. of Illinois soybean researchers searched the USA and Canada for commercial soy products; they collected about 100. "Today that list numbers more than 300 and the ball seems just beginning to roll."

On 1 July 1936 a systematic research program on soybeans was started at the University of Illinois at Urbana. Funded by the federal government, with 12 midwestern state agricultural colleges cooperating, an industrial research laboratory as been established in Urbana. Dr. O.E. May of USDA's Bureau of Chemistry has been placed in charge, with the "help of Dr. W.J. Morse, government scientist, who has made the study of soybeans his life work." The program will have three objectives: "1. Improvement of present industrial uses and development of new industrial uses for soybeans." 2. Research on the effects of different processes on the quality and quantity of soybean processes. "3. Facilities for testing different varieties as to adaptability for industrial use."

In 1930 a research chemist in a private laboratory developed a new method for improving the head of foam on beer–using soy flakes. "Today soybean beer flakes are being made on a commercial scale in Chicago and from there they are pouring into many of the country's biggest breweries."

In the Pacific Northwest, five new fir plywood factories (making a total of 23) have been constructed this year–because glue made from soybeans is less expensive than and superior to (incl. more water resistant) traditional plywood glues. Together with several pine plywood factories in California and British Columbia, they are using tons of the new soybean glue each day.

The initial impulse for this new industry came from automobile manufactures who complained that the plywood they were buying was not sufficiently water resistant. So the Pacific Coast Plywood Manufacturers Association sponsored a contest to find a new glue. A newcomer, I.F. Laucks, Inc., of Seattle [Washington], won with some soupy stuff that did not look like glue at all. And "today this soybean glue–its formula a trade secret–is the standard glue of the plywood industry. Mr. Laucks discusses the reasons for the success of this new glue: (1) Most important is its low cost. (2) Since soybeans are an annual crop, "production can be increased as the demand grows. This is not true of casein or blood, which are by-products of other industries more or less fixed in their production." (3) It is more uniform. (4) It is more "foolproof" than other water-resistant bases.

At Iowa State College, Dr. O.R. Sweeney is producing gasoline from soybean oil; he cracks it by heating to 350ºC using animal charcoal as a catalyst. He then distils one of the fractions. The first person to make petroleum from soybean oil was the Japanese scientist Satow, who made a calcium soap from the oil then subjected it to destructive distillation to get light, middle, and heavy grades of petroleum. Forty gallons of soybean oil yielded about 25 gallons of soybean petroleum, 33 pounds of glycerine (for use in explosives), and 480 cubic feet of combustible gas.

The U.S. paint industry was one of the first to make large use of soybeans–especially in Illinois. Soybean flour helps bread to stay fresh longer. Soybean lecithin is used by confectioners. Tanners use soybeans to increase the grease-absorbing properties of chrome leather. Textile manufacturers use it to make their fabrics soft, supple, and lustrous. It is also used by rubber makers, linoleum makers, soap makers, and sausage and wiener makers. Doctors prescribe soybean 'milk' (which is practically free of starch) for some babies and many diabetics. Even the family dog

now consumes soybeans, which are less expensive than meat and make his [or her] coat sleek and shiny.

"Not half the story of this amazing development has been told here. U.S. soybean production jumped from around 5 million bushels in 1925, to 18.6 million in 1934 and 39.6 million in 1935. Illinois is the leading sate.

"Almost two decades ago, when the first president of the American Farm Bureau Federation, James R. Howard, was beginning that organization's constructive efforts to aid agriculture by other means than politics, he made a remark which is just beginning to be appreciated at its full significance.

"'The surest relief for agriculture,' Mr. Howard said, 'will come from the production of new agricultural output that will go to industry rather than to the human stomach.'

"The response to that, so far as soybeans are involved, is seen in a recent government statement that at present more than 120 industrial concerns are making soybean products. They include about 35 soybean mills in ten states and a number of cottonseed mills which crush soybeans for oil and meal; 15 soybean flour mills; 20 soybean food products factories and more than 50 plants where various industrial commodities are fabricated from the magic soybean.

"It looks as if industry is beginning to know its beans."

Photos show: (1) A tractor in a field of piles of soybean hay pushing a device designed to speed the job of getting the hay to the baler. (2) A warehouse in Manchukuo filled with piles of round soybean cakes. Two men are carrying 3-4 each on one shoulder up a wooden ramp. (3) A workman standing by a vat filled with a thick white liquid. "The first step in making auto parts is to feed the [soy] bean fibers into the rills that mix them." (4) Black auto parts grown on the farm, with a pile of some soybean powder that has not yet gone to the press. (5) "Powdered soybean fibers fed into this press come out in the form of distributor terminal plates for automobiles."

957. Kellogg, John Harvey. 1936. Re: Soy beans, soy milk, and okara. Letter to Dr. A.A. Horvath at University of Delaware, Newark, Delaware, Oct. 5. 2 p. Typed, without signature (carbon copy).

• ***Summary:*** "I have your letter of Sept. 24th. We have harvested and canned our shell beans and have about 250 bushels of seed of the 78-day variety of beans... It is an excellent green bean variety.

"I have been using the Tokyo bean for milk and find it very satisfactory. Do you know any other varieties of beans equal to it or better? I need a few tons more beans for milk before the new crop arrives, which I understand will be in about two months. I do not find the Manchu or the Dunfield as good for milk as the Tokyo. I find the Tokyo is out of the market. Can you give me any helpful information respecting other varieties that are still available?

"As regards to the effects of soy beans on laying hens, I have not the precise information I ought to have, but I can tell you this: I fed the hens with the residue left after making soy milk. They did not like it very well even when it was mixed with other foods. I used it as a substitute for meat meal and was very much disappointed with the results. The number of eggs began to fall off almost immediately, the chickens lost weight and though I soon discontinued the use of the soy bean they did not seem to recover, but continued to deteriorate. I left them in charge of an experienced poultryman who has hens of the same variety... They began to moult very early and 25 to 30 per cent of them died. It appeared as though feeding with soy residue produced a permanently damaging effect.

"This experience was certainly very disappointing because I thought the soy bean would certainly prove a complete substitute for meat. I even tried to encourage the chickens by feeding them Savita mixed with the residue. This seemed to help a little, but not very much. If you can give me any light on this problem I will be greatly obliged.

"Very truly yours,"

958. Smith, Wesley. 1936. The march of finance: Trading in soy bean futures spotlights latest arrival in farm commodity king row. *Los Angeles Times.* Oct. 6. p. A18.

• ***Summary:*** Yesterday, trading in soy bean futures started on the Chicago Board of Trade. The soy bean has risen dramatically from a minor product on American farms to the "fourth most important cereal crop" in terms of cash returns to farmers last year. It is a "story of the romance of American agriculture and industry."

In 1909 the value of the soy bean crop in the USA was only $17,000. In 1919 the value was $1,085,000–a 64-fold increase in only 10 years. In 1935, the value had risen to $35,000,000. An estimated 600,000 American farmers grown soy beans; the harvested acreage in 1935 was 5,211,000 acres compared with less than 500,000 acres in 1917. In 1935 some 39,637,000 bushels were produced, compared to 5,131,000 in 1925.

Many new industrial uses of soy beans have been developed; it is used to make high-grade paints, soaps, as a binder for foundry cores, celluloid, candles, printing ink, glycerin, linoleum, rubber substitutes, lecithin, and many other products.

A range of foods are now being made and marketed in America: Soy bean flour (with or without the original oil content of the seed), soy bean milk, butter, cheese, coffee, biscuits, bread foods and macaroni. The beans themselves are canned.

"The soy bean cake, which is the residue when the oil has been extracted from the bean, is one of the most satisfactory types of fertilizer."

959. *Time.* 1936. "Little honorable plant." Oct. 12. p. 76, 78, 80. [1 ref]

• ***Summary:*** "Last year 'the little honorable plant' put $35,000,000 into the pockets of U.S. farmers, outranking in value rye and barley. Soybean trading had grown so active that the [Chicago] Board of Trade could no longer overlook it as a potential source of commissions. First futures transaction in soybeans in the Pit this week was 5,000 bu. sold by Archer-Daniels-Midland Co. to Bartlett-Frazier Co. at $1.20 per bu...

"A Yankee shipmaster brought the first soybeans to the U.S. in 1804... Yet no more than 500,000 acres were planted to soybean in the U.S. in any one year until 1917."

"In the U.S. some 600,000 farmers grow soybeans in 27 states." Illinois produced more than half the total U.S. crop last year.

"Food. Soybeans are ideal for diabetics because they contain little sugar, no starch. They do, however, contain more than three times the protein of wheat or eggs, more than twice that of lean meat. Soybean vitamins are A, B-l, B-2, D, E. For vegetarians and diabetics, the bean is converted into cheese, soup, butter, salad oil, macaroni, breakfast food milk (from grinding the beans in water). To bakers soybeans mean a new bread which is expected to break sales records. Last year vegetable shortenings and other lard substitutes required no less than 52,450,000 lb. of soybean oil, compared to a 1934 consumption of 2,735,000 lb."

"Factory. Each ton of soybeans yields 30 gallons of oil and 1,600 lb of meal. Industry takes the oil and the meal, uses one or both to make glue, paints, combs, candles, radios, buttons, axlegrease, paper size, explosives, linoleum, oilcloth, printer's ink, billiard balls, rubber substitutes, cigaret holders, Christmas tree ornaments. Last year U.S. manufacturers consumed 91,166,000 lb. of soybean oil, of which 2,550,000 lb. went into soaps, 4,800,00 lb. into linoleum and oilcloth, 13,000,000 lb. into paints and varnishes."

"Ford & Future... The number 1 U.S. soybean man is Henry Ford. His reason: 'If we want the farmer to be our customer, we must find a way to be his customer.' Henry Ford began investigating the beans in 1930, spent more than $1,000,000 in the next few years growing them, finding out how they could be used. Few months ago the River Rouge works got a $5,000,000 addition in the shape of a soybean processing plant. Into Ford cars at present go the product of some 60,000 acres of soybeans. The oil goes into glycerine for shock-absorbers, enamel for body finishes [paints], binder for foundry cores. The meal, turned into plastics, rolls off the assembly line as horn buttons, gearshift knobs, window-trims, distributor cases.

"Said Mr. Ford few months ago: 'You will see the time when a good many automobile parts will be grown.'"

A portrait photo shows Henry Ford with the caption, "Motormaker Ford. A bean's best friend."

Note: This is the earliest document seen that mentions the "assembly line" in connection with Henry Ford. Mass production was pioneered on the Ford moving assembly line in April 1913 at the Highland Park plant–and with it began the rise of the consumer economy.

960. Kellogg, John Harvey. 1936. Re: Bifidus acidophilus and Soy Acidophilus. Letter to Mr. John M. Lonsdale, 46 Westwood Ave., Altrincham, Cheshire, England, Oct. 31. 2 p. Typed, without signature (carbon copy).

• ***Summary:*** "Yours of October 17 has reached me here at my winter headquarters [in Florida].

"I first obtained the organism bifidus acidophilus from Dr. Tissier, of the Pasteur Institute, in 1912, and have been making use of it ever since. A report from the laboratory that made the culture for me, a short time ago showed that between 1912 and 1935, we had received from the laboratory over 28,000 gallons of the culture.

"Dr. Tissier informed me that he could not make the organism grow in milk." Dr. Kellogg eventually succeeded in making it grow "in the whey of milk with the addition of peptone, and later a type of acidophilus was developed by making 25 or 30 transfers which grew quite well in milk.

"The trouble is, it seems to me, that the long process of adapting the organism to a cow's milk medium, denatures it so that it doesn't do so well... when attempts are made to reimplant it.

"The new type, Soy Acidophilus, is easily developed by planting the organism in soy milk under exacting laboratory conditions. It starts off a vigorous growth at once.

"The clinical results obtained by the use of the soy acidophilus type appear to be much better than those obtained from the dairy milk cultures, and the count is very much higher.

"It is easy to obtain cultures with a count of four or five billions per cc., which certainly is not often obtained with cow's milk." Address: [Miami, Florida].

961. Hermano, A.J. 1936. Soybeans a national food for Filipinos. *Agricultural Life* (*Exponent of Philippine Agriculture and Allied Industries*) 3(9-10):21-23. Sept/Oct.

• ***Summary:*** Rice is the chief staple food of the Filipinos. But the local diet would be improved by the addition of soybeans and their products. In April 1934 the Nutrition Research Laboratory, Bureau of Science, began to manufacture soybean milk. The method is described, the milk was used with good results in experiments with school children in Paco. Presently 8 liters/day of soybean milk are prepared for the Tondo and San Nicolas Community Health Social Centers.

The article concludes: "Various soybean products, like 'tokua' [tofu], 'toyo' or sauce, 'tahore' 'toho' 'tohu' and other products made by the Chinese are prepared in rather simple ways and could be easily made by the Filipinos."

Note: This is the earliest English-language document

seen (Oct. 2011) that contains the word "tahore" which probably refers to fermented tofu. Address: Chief, Nutrition Research Lab., Bureau of Science [Manila, Philippines].

962. Shoptaw, LaVan Neill. 1936. Gastric digestion of soybean flour when used as a substitute for cows' milk in feeding dairy calves. *Iowa State College J. of Science* 11(1):105-06. Oct. Based on his PhD thesis No. 356, submitted Dec. 1935. [1 ref]
• ***Summary:*** This is an abstract of his PhD thesis, No. 356, submitted Dec. 1935. "One of the most serious problems with which the dairy farmer is concerned is the economical rearing of calves. A vast amount of work has been done to produce calf feeds which may displace milk in the calf ration, many stations have been outstanding in their interest in calf meals and gruels. The problem has usually been attacked either (1) by attempting the use of milk products such as dried and semi-dried skimmilk and buttermilk, or (2) by using cereals, packinghouse by-products, sugar, starch etc., in the making of meals or gruels.

"The use of soybean products in the rations of mature animals, and even for human consumption, has been quite extensive."

Three trials were conducted. The soybean milk, used in all 3 trials, was a mixture of 1 part soybean flour and 9 parts warm water. Address: Dep. of Dairy Husbandry, Iowa State College.

963. **Product Name:** Vitasoy Soybean Milk Powder, Soya Vegetable Soup Powder, Soya Fruit Cereal, and Soya Meal. Packers and Distributors of Giant Soybean Nuts, Quick-Cooking Manchurian Soybeans, and Soya Butter.
Manufacturer's Name: Soya Health Products.
Manufacturer's Address: North Main St., Spring Valley, New York. Phone: 248 J.
Date of Introduction: 1936. October.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Letter (1 page) from W. Siegmeister of Soya Health Products to Fearn Soya Foods in Chicago. 1936. Oct. 23. Concerning request for information on Soya Cereal. "Soya Health Products: Manufacturers of and specializing in Vitasoy Soybean Milk Powder, Soya Vegetable Soup Powder, Soya Fruit Cereal, and Soya Meal. Packers and Distributors of Giant Soybean Nuts, Quick-Cooking Manchurian Soybeans, Soya Butter." Fearn Soya Foods was 355 West Ontario St., Chicago. Sold Soya Cereal.

Note 1. This is the earliest English-language document seen (April 2012) that uses the term "Soybean Nuts" or the term "Giant Soybean Nuts" to refer to soynuts.

Note 2. This is the earliest English-language document seen (Dec. 2012) that contains the term "soya butter." It probably refers to soynut butter, but we cannot be sure.

964. *Nature's Path to Health* (*Melbourne, Australia*). 1936. Remarkable dietary properties of the soybean. Nov. 15. p. 8.
• ***Summary:*** Gives a brief history of the soybean and an overview of its nutritional benefits. "For 5,000 years the Soy Bean has replaced meat, eggs, and milk in the diet of millions of vegetarian Chinese. It has also been used for food in Japan, Indo-China, Siam and India. The Chinese make practically no use of dairy products, and use very little meat, yet they have lived for centuries in a state of prolific vigor on what appears to be a remarkably well-balanced diet by the use of the Soy Bean." Mentions soy bean flour and soy bean curd.

"Dresden, Germany–Dr. Ragnar Berg, famed city hospital food scientist, who wrote the Dictionary of Foods, recently conducted fundamental researches on protein requirements and found that Soy Beans are a splendid source of protein."

"Due to its content of lecithin and phosphorus, the Soy Bean is a nerve and brain food which is especially valuable in cases of neurasthenia for increasing nerve and brain energy."

965. Hill, Edwin C. 1936. Hill praises Henry Ford's soy beans. *Detroit Times.* Dec. 21.
• ***Summary:*** "Henry Ford is a great exploiter of the soy bean. Out near Dearborn he has 65,000 acres cultivated to a particular variety, called the 'Illini.' The fruit of these 65,000 acres goes into the millions of automobiles which are run off the assembly lines at River Rouge. The rich, lustrous paints of the sleek bodies have their basis in bean oil. The knobs of the gear shifts, the horn buttons and the scores of other parts of the body which are made of plastics, trace their origins back to the soy bean farm near Dearborn."

"The truth is that one must cultivate a taste for soy beans just as one does for olives and certain kinds of cheese. To the westerner, soy bean milk has a horrible taste, yet Manchurian babies cry for it, not at it, and thrive very well on it."

966. Fontoynont, Dr. 1936. Autour d'un beau voyage scientifique: suite et fin [About a fine scientific voyage: continued and end]. *Depeche de Madagascar* (*La*) 3(333):4. Dec. 25. [Fre]
• ***Summary:*** In Java an outstanding laboratory has been established for hygienic, chemical and bacteriological research and education. The director is Dr. Mortens. Remarkable research on beri-beri is being conducted there. The focus is on public health and hygiene. The Institute of Social Hygiene of Batavia was established by the Rockefeller Foundation. Its director is Dr. Hydvick. Educators go from village to village with motion pictures / films and a projector. The names of six films are given. No. 6 is: How to make milk from the soybean (black and white) (*6. La fabrication du lait fait avec le soja* {*haricot blanc et noir*}). The soybeans are cleaned by washing in a little water. Then they are soaked over night in water. The next day they

are ground to a powder. In a container 3 parts clean water are mixed with 1 part of soybean powder; the mixture is then cooked. From this one obtains a which liquid that resembles milk, which it can replace.

Milk is a rare substance in Java, and it is very difficult for the indigenous people to obtain it.

Also discusses the Pasteur Institute, which was transferred from Batavia [today's Jakarta] to Bandung a number of years ago. The population density of Java is high; about 40 million people live on the island. Thus, vaccinating them is a huge job.

967. *Hoard's Dairyman.* 1936. March of dairying. 81(24):644-45. Dec. 25.
• ***Summary:*** A chronology of major events connected with cow's milk from 1609 to 1937.

"1609–"First cows in U.S. landed in Virginia.

"1810–Earliest scientific feeding–Thaer, Germany, publishes table of hay equivalents with meadow hay as standard.

"1811–Dolly Madison serves ice cream at the White House." An illustration shows a portrait of Dolly Madison. Note: This is the earliest entry for ice cream in this article. However the 1978 book titled "The History of Ice Cream", by the International Association of Ice Cream Manufacturers (IAICM, Washington DC) states that Dolley Madison, wife of U.S. President James Madison, served ice cream at her husband's Inaugural Ball in 1813.

"1817–First Jersey imported into the United States."

"1851–First wholesale manufacture of ice cream, Baltimore" [Maryland]. Address: Wisconsin.

968. *Hoard's Dairyman.* 1936. Baby's milk from beans–Editorial comments. 81(24):636. Dec. 25.
• ***Summary:*** This editorial is critical of the article by H.H. Slawson about soybean milk that appears on pages 631 and 649 of this issue. "We consider the statements made as being extravagant... The soybean has very little vitamin A, no vitamin C, no vitamin D, and is low in calcium."

969. Slawson, H.H. 1936. Baby's milk from beans: Glowing news story of the soybean that staggers imagination. *Hoard's Dairyman* 81(24):631, 649. Dec. 25.
• ***Summary:*** "To the average Chinese in that cowless country, the taste of cow's milk is said to be 'well nigh intolerable.' The big news for the dairyman, however, lies in the fact that soybean milk is now being produced in this country on a commercial basis. And there is further news in the fact that soybean flour is being promoted as a substitute for milk in the making of bread, pastries, and other foods, which recipes have heretofore called for milk. And there is yet further news in the third fact that soybean casein, made from soybean milk, is being employed as a substitute for casein obtained from cow's milk and used by the paint, paper, textile, and adhesives industries."

"One Tsinan [soy] milk factory had a daily output of 250 bottles and patrons could get one bottle delivered daily for $1 (Mex.) per month." No soybean milk brand names are given.

The Chinese make a cheese, called tofu, by coagulating the soybean milk. "To this product the rich poetic fancy of the Oriental has given the classic name 'Li chi,' or 'the morning prayer,' which suggests the early morning hours devoted to its manufacture... The importance of this cheese in the Chinese diet can be inferred from the oft-repeated saying that soybean cheese is 'the poor man's meat,' just as the soybean milk is 'the poor man's milk.'"

Soybean casein is now competing with cow's milk casein. "How far the invasion has proceeded can be inferred from statistics furnished by a Detroit [Michigan] automobile manufacturer [Henry Ford]. In 1936 he used the entire output of over 61,500 acres of soybeans for use in his cars, including paints and such plastic parts as gears, distributor termina plates, and other accessories. For the plastic frame of the rear window alone 144,000 bushels of soybeans were required. All of the plastic parts might possibly have been made from milk."

970. *Agricultor Venezolano* (*El*) (*Ministerio de Agricultura y Cria, Caracas*). 1936. La soya: Alimento, abono, y material de gran valor industrial [Soya: Food, fertilizer, and material of great industrial value]. 1(8):15-16. Dec. [Spa]
• ***Summary:*** Soya is a species of plant closely related to the french bean (*caráota*) in its needs during cultivation and its basic nature. A large number of varieties have excellent flavor and nutritional value, and can be used in many different applications. Because the soybean is a legume, its seeds are rich in protein and very nutritious.

Other types of soybeans exist which produce large amounts of foliage for use as forage for cattle or as green manure.

In the latter case, the plants are plowed under so that they enrich the soil at the same time they improve its physical condition by increasing its porosity and its ability to retain humidity / water during droughts.

Edible varieties have a reputation among many for their good flavor. From their seeds you can make soy flour or soymilk. From the soymilk you can make a cheese [tofu], or various drinks and dishes. Breads and cakes are also widely enjoyed, and have excellent nutritional value. Some varieties are very rich in oil, and from them we can extract oil for either food use or industrial uses. The residue left after extracting the oil can serve as a concentrated feed for pigs, dairy cows, and other animals.

The Ministry of Agriculture and Husbandry has, for a long time, distributed different varieties of soybean seeds, whose adaptability to Venezuela has been verified with certainty. Anyone who wishes to obtain soybean seeds of these varieties should contact the Ministry; they will be sent

at once. Likewise, anyone with questions related to soya, such as varieties, methods of planting and cultivation, uses as forage, green manure or human food can contact the Ministry of Agriculture for reliable answers.

Photos show: (1) Two soybean pods, one unopened and the other open with 3 seeds showing. (2) Two large fields of soybean plants growing, apparently in Venezuela.

Note 1. This article states that soybeans have long been distributed in Venezuela by the Ministry of Agriculture and Husbandry, which strongly implies that the soybean has been cultivated in Venezuela. If it has, this would be the earliest document seen (May 2009) concerning the cultivation of soybeans in Venezuela.

Note 2. This periodical began publication in May 1936; 28 cm. From 1937 to 1961 this same ministry published another agricultural periodical titled *Memorias y Cuentas*.

971. Glassmann, B.; Gologorskaja, S. 1936. Verdauungsversuche an Milch und Sojanaehrpraeparaten [Digestibility experiments on milk and soyfoods (soy sour cream, soy "quarg," and tofu)]. *Zeitschrift fuer Untersuchung der Nahrungs- und Genussmittel* 72(5-6):450-52. Nov/Dec. (Chem. Abst. 31[16]:5886). [2 ref. Ger]

• ***Summary:*** Artificial digestion experiments were made with soy sour cream (*Sojasauerrahm* or *Sojamilchrahm*), soy quarg (*Sojaquarg*), tofu (*Sojaeiweiss* = soy protein (*Tophu*)), sour cream from cow's milk, and 'quarq' from cow's milk. (1) To make soy sour cream, sterile soymilk is cultured with lactic acid bacteria for 18 hours at 35ºC, and the resulting product is homogenized by whipping or beating (*durch Schlagen*). (2) To make soy quarg, soymilk is brought to a boil, allowed to cool to 42ºC, inoculated with *Streptococcus acidi lactici*, then allowed to stand at 40ºC for 8 hours. The resulting quarg is pressed. (3) To make tofu, soybean flour or meal (*Sojamehl*) in a vat or tub is slowly stirred with water for 30-45 minutes. The mass is then poured into a sieve to separate the milk from the residue. The milk, in a kettle with an automatic stirring device, is heated to 95ºC, then curded with calcium chloride. The protein curds are pressed.

The digestibility of the soy sour cream was 2-3 times greater than that of the sour cream from cow's milk, but the digestibilities of the other products were about the same. Without the addition of some material to better the flavor, the soy preparations would be difficult to use.

The nomenclature *Sojasauerrahm* is erroneous. The product must be designated as *Sojasauermilch, "Sojaprostokwascha."*

Note 1. Sojaquarg is a unique and interesting product which resembles tofu, except that the coagulation is done by a microorganism with which warm soymilk is inoculated. This is the earliest German document seen (April 2013) is which the word *quarg* is used to refer to tofu.

Note 2. This is the earliest German-language document seen that uses the word "Sojanaehrpraeparaten" in the title to mean "Soyfoods."

Note 3. This is the earliest document seen in any language that contains the term "soy sour cream" or any product resembling sour cream made from soy. Address: Laboratorium des Troustes "Koopchartsch" in Odessa.

972. Original Health Food Store. 1936. Soybean products (Ad). *Naturopath and Herald of Health* (*New York City*) 41(12):381. Dec.

• ***Summary:*** Down the left side of this 4.75 by 5½ inch ad is a list of soybean products by brand a price is also given for each: "BakerLust" brand: Soybean milk powder, plain or banana flavored, 14 oz, 1½ lb, or 5 lb. Soya bean vegetable soup powder, trial size, 14 oz, 1½ lb bag. Soy muffins, ½ dozen. Soy bean bread, 14 oz or 26 oz loaf. Soy beans–raw, per lb.

"Vita-Soy" brand: Soybean milk powder, 1 lb, 2 lb, 5 lb. Soya bean vegetable soup powder, ½ lb or 1 lb. Soya confection powder, ½ lb or 1 lb. Soya date sugar, 1 lb.

Madison brand: Soy fruit stix, 6½ oz. Soy date stix, 6½ oz. Soy koff, 12 oz.

Morey brand: Soy cocoa, 4 oz, 8 oz, or 16 oz cans.

Pfaffman brand: Soymac macaroni, 7 oz package. Soy noodles, 7 oz package.

Winroy brand: Soy nuts–roasted, 1½ oz, 8 oz, or 16 oz.

Coyle-Lawson brand: Soy malt–chocolated or plain, ½ lb.

Down the right hand side, under the title "Products of the marvelous soybean," is a brief description of each type of product. The first item, and that with by far the longest description, is "soybean milk powder."

Note 1. This is the earliest English-language document seen (Nov. 2009) that contains the word "BakerLust." It appears to be used as a brand name only for soy products.

Note 2. Benedict Lust apparently owned this store (See ad in the Feb. 1937 issue, p. 64). His brother, Louis Lust, owned a bakery (established in 1903) at Corner 105th St. and Park Ave., New York City. He baked wholegrain breads and related baked goods. Louis used (and may have coined) the brand name "BakerLust" to refer to products he made or sold.

Note 3. This ad also appears (with the same content but in a different form) in the Jan. 1937 edition of this magazine (p. 27), and of *Nature's Path* (New York City) (p. 38). It appeared in the same form in the July 1937 (p. 224) issue. Address: 343 Lexington Ave., New York City.

973. **Product Name:** Manchu Soybean Milk.
Manufacturer's Name: Eastern Health Food Stores Assoc.
Manufacturer's Address: Washington, DC.
Date of Introduction: 1936.
New Product–Documentation: Gray. 1936. All About the Soya Bean. p. 122. This is the 2nd earliest known commercial soyfood product made in Washington, DC.

974. **Product Name:** Vi-Zoy (Chocolate Flavored Powder for Drinks), Lektizoy (Infant Food), and Soybean Spray-Dried Flour (Soy Bean Vegetable Milk Powder).
Manufacturer's Name: Harshaw Essential Foods Corp. (or Inc.).
Manufacturer's Address: 1945 East 97th St., Cleveland, Ohio.
Date of Introduction: 1936.
New Product–Documentation: L.B. Breedlove. 1936. *Chicago J. of Commerce and La Salle Street Journal.* June 25. p. 14. "Soy bean–The magic plant. Article XI." "Harshaw Essential Foods, Inc., Cleveland: Lektizoy (infant food), soy bean vegetable milk powder, Vi-Zoy (chocolate flavored powder for drinks)." Gray. 1936. All About the Soya Bean. p. 122. International Inst. of Agriculture. 1936. *Le Soja dans le Monde* [The Soybean in the World]. See: Manufacturers of edible soy products. p. 206. The company makes Lektizoy (an infant food), powdered soymilk, and Vi-Zoy (a chocolate flavored soymilk).

975. LeClerc, J.A. 1936. Information on soybean milk. Washington, DC: U.S. Bureau of Agricultural Chemistry and Engineering. 5 p. Unpublished manuscript. Reprinted 194? * Address: USDA.

976. **Product Name:** Mull-Soy (Non-Dairy Soy-Based Weaning Food for Young Children). Spelled Mullsoy from about 1955 on.
Manufacturer's Name: Muller Laboratories.
Manufacturer's Address: 2935 Frederick Ave., Baltimore, Maryland.
Date of Introduction: 1936.
Ingredients: Incl. soy flour, water.
New Product–Documentation: Ad (1/6 page) in *Proceedings of the American Soybean Assoc.* 1937. p. 79. "Mull-Soy. Vegetable milk substitute." "The Muller Laboratories, 2935 Frederick Ave., Baltimore, Maryland." Ad also in 1938 (p. 69) and 1939. p. 14. "Mull-Soy." 1939 address is 3156 Frederick Ave.

Note 1. This ad also appeared in the 1939 Proceedings, p. 14. A ½ page ad appeared in the 1940 Proceedings, p. 18.

Note 2. Mull-Soy can be thought of as the second (after Sobee) precursor to the modern soy formula, because it was more sophisticated than simply soy flour and water, but lacked many of the nutrients, and the isolated soy protein, found in modern soy formulas.

Ad (¼ page, black-and-white) in *Soybean Digest.* 1941. Sept. p. 28. "Mull-Soy Soy Bean Milk-Substitute."

Fomon. 1967. p. 230. The product is made with soy flour and has a PER of 1.83.

Shurtleff & Aoyagi. 1984. Soymilk Industry and Market. p. 26. "In 1934, while director of allergy research for the Borden Co., Dr. Julius F. Muller developed a soymilk for his own child, who was highly allergic to dairy milk. Muller formed his own company, Muller Laboratories in Baltimore, introduced Mull-Soy commercially in early 1936, and promoted it by his own efforts. It was a liquid suspended soymilk, made by homogenizing together soy flour, water, and added nutrients. In early 1942 Muller's company was purchased by The Borden Company, which continued to promote the product well. A powdered version became available in the late 1940s."

Note 3. This is the earliest known commercial soy product made in Maryland.

977. **Product Name:** U.D. Vita-Full (Chocolate Flavored Soy Powder for Use as a Beverage).
Manufacturer's Name: United Drug Co.
Manufacturer's Address: Boston, Massachusetts.
Date of Introduction: 1936.
New Product–Documentation: L.B. Breedlove. 1936. *Chicago J. of Commerce and La Salle Street Journal.* June 25. p. 14. "Soy bean–The magic plant. Article XI." "United Drug Company, Boston: U. D. Vita-Full (chocolate flavored powder for drinks)."

International Inst. of Agriculture. 1936. *Le Soja dans le Monde* [The Soybean in the World]. See: Manufacturers of edible soy products. p. 206.

978. Carqué, Otto. 1936. Vital facts about foods: A guide to health and longevity. 3rd ed. Los Angeles, California: Published by the author. 208 p. *
• ***Summary:*** Note: Since this "3rd ed." has the same number of pages as the 2nd ed. (Dec. 1934) the contents are probably the same. Address: Los Angeles.

979. Fearn, Charles E. 1936. The soya bean and its value in our national dietary. Chicago, Illinois: Fearn Soya Foods. 10 p.
• ***Summary:*** "Modern methods of treating the Soya Bean to remove the unpleasant taste without injuring any of its food values, have now placed at the disposal of the public a really palatable and highly nutritious product with a higher protein value than any other known food, and this protein is biologically fully as efficient or 'complete' as that of meat muscle itself.

"To illustrate how recent is the development of this new food in the United States, it was not until 1930 that a really palatable and edible soya bean flour was first introduced by Dr. Charles E. Fearn. Prior to that there were certain beany tasting products made, which rapidly turned rancid, and were, generally speaking, quite unfit for food purposes."

Discusses: Soya protein. Soya fats. Soya carbo-hydrates. Soya vitamins. Minerals.

The Fearn Soya Foods Co. now sells the following "soya foods:" Soya cereal (with whole wheat and soya). Cereal for diabetics (composed entirely of soya, contains no starch

and less than 1½ per cent of reducing sugars). Pure soya bean flour (Contains all the natural fats; nutritional analysis given). Proteinized cocoa (liquid). Soya milk powder: Ideal in cases where milk disagrees. Soya-date breakfast food. Dr. Fearn's general food (concentrated): For children and adults. Address: Chicago, Illinois.

980. Gray, George Douglas. 1936. All about the soya bean: In agriculture, industry and commerce. London: John Bale, Sons & Danielsson Ltd. ix + 144 p. Introduction by James L. North. Late curator, Royal Botanic Gardens, Regent's Park, London. Index. 28 cm. [19 ref]

• ***Summary:*** A comprehensive, early work on the soybean. Gray was a Scotch physician. Contents: 1. Introducing the soya bean. 2. The soya bean plant and its cultivation. 3. The soya bean as food: Dietetics, immature green beans, mature dried beans, soya bean coffee, soya bean chocolate, soya bean sprouts, soya bean milk, soya bean flour (incl. Berczeller flour, Soyvita bread made by Messrs. Wm. Beattie, Ltd., Glasgow), bean curd [tofu], soy (also called soya bean sauce, Chinese bean sauce, or shoyu), miso, fermented bean curd (p. 66-67). 4. Soya bean oil. 5. Soya bean trade. 6. The soya bean in agriculture.

Addenda: Soya bean products in the USA. Dieting and recipes. Statistics. India. Bibliography.

In the chapter on "Soya bean oil" we read (p. 75): "In England, the bean oil trade is carried on by the following firms:–The British Oil and Cake Mills Ltd., the ordinary shares of which are held by Lever Bros., Ltd., so that they are a branch of Unilever, Ltd.

"The Hull Oil Manufacturing Co., Ltd., Hull, now merged in the foregoing concern.

"The Premier Oil Extracting Mills, Ltd., Hull.

"Messrs. Wray Sanderson & Co., Hull.

"The Medina Refinery Ltd., Deptford, London.

"Messrs. J. Bibby & Sons Ltd., Liverpool.

"The Erith Oil Works Ltd., Erith" [Kent].

The first addendum, titled "Soybean products exhibited by the American Soybean Association" (at Washington, DC, p. 120-24) lists the following companies and each of the soy products that they manufacture: American Lecithin Corp. (Atlanta, Georgia), Archer-Daniels-Midland Co. (Milwaukee, Wisconsin), Armstrong Paint and Varnish Works (Chicago, Illinois), Battle Creek [Food] Factory (Battle Creek, Michigan), The Blanton Co. (St. Louis, Missouri), Cereo Co. (Tappan, New York), The Davies-Young Soap Co. (Dayton, Ohio), Detroit Graphite Co. (Detroit, Michigan), Eastern Health Food Stores Association (Washington, DC), Funk Brothers Seed Company (Bloomington, Illinois), Harshaw Essential Foods, Inc. (Cleveland, Ohio), Keystone Macaroni Mfg. Co. (Lebanon, Pennsylvania), Kloss, Jethro (Takoma Park, Maryland: Fresh [soybean] milk. Pumpkin pie [soybean milk and soybean flour]. Soybean cheese. Soybean bread [20% soybean flour]. Soybean buns. Soybean sprouts. Soybean cake), Laucks, I.F., Inc. (Bloomington, Illinois–home office, Seattle, Washington), Madison Food Company (Madison, Tennessee; Vigorost, Cheese [Tofu], Soybeans canned with Tomato, Soybeans canned plain, Dixie Fruit Crackers), Mead Johnson and Co. (Evansville, Indiana; Makes Sobee [Infant Formula]), Oriental Show-You Co. (Columbia City, Indiana), Paintcraft Co. (Galesburg, Illinois), Prince Macaroni Mfg. Co. (Boston, Massachusetts), Purina Mills (St. Louis, Missouri; makes Cresol disinfectant, Purina turkey and growing fattening chow, Purina lay chow, Purina egg chowder, Purina breeder egg chowder, Purina fitting chow, Purina rabbit chow, Purina chick Growena chow, Purina 34% cow chow, Purina chowder, Purina bulky cow chow, Purina 24% cow chow, Purina pig and hog chow, Protena all mash starting and growing food), Shellabarger Grain Products Company (Decatur, Illinois), Soyex Company, Inc. (Nutley, New Jersey), Staley Sales Corporation (Decatur, Illinois), The Stamford Rubber Supply Company (Stamford, Connecticut), Dr. Roy Monier, President, Board of Managers, State Hospitals (Jefferson City, Missouri), United Drug Company (Boston, Massachusetts), Vi-tone Company (Hamilton, Canada), Woolsey Paint and Color Co., C.A. (Jersey City, New Jersey), Bureau of Chemistry and Soils, Department of Agriculture (Washington, D.C.). Page 120 adds: "The exhibit also contained some 200 soybean products, mostly foods, brought from the Orient by Mr. W.J. Morse, Senior Agronomist, Department of Agriculture, Washington, DC, U.S.A." Note 1. Morse and P.H. Dorsett were in East Asia from 1929 to 1931, when they collected many samples of soybeans and soyfoods.

In the second addendum, recipes, the author notes that soy flour is widely used in diabetic diets. Two leading firms who make soy flour in England and who also incorporate it in various products are: Soya Foods, Ltd., Rickmansworth, Herts, and Dietetic Foods Ltd. 124 Victoria St., London, S.W. 1. "The former specialize in Soyolk which is flour prepared on the principles laid down by Professor Berczeller; it is a mealy powder, fatty to the touch. The latter firm are the sole distributors in Great Britain of the well-known 'Heudebert' Dietetic Food products, a French concern which makes different kinds of diabetic breads." The following recipes are then given; * = Calls for Soyolk soy flour: Soybeans, southern style. Soybean salad. Roasted soybeans [like dry-roasted peanuts]. Soybean croquettes. Soybean soufflé. Stuffing for baked fish*. White sponge pudding*. Shortbread*. Madeira cake*. Soya soup à la Reine (uses Heudebert soya flour). Soya chocolate (with soya flour). Soya vegetable soup (with soya flour). Soya bean sprout salad.

Note 2. This is the earliest English-language document seen (Jan. 2013) that uses the term "soya bean sprouts" to refer to these sprouts. Address: M.D. (Scotch physician) England. Late medical officer to H.B.M. Legation, Peking,

China. Lieut.-Colonel, Retired.

981. Heiser, Victor. 1936. An American doctor's Odyssey: Adventures in forty-five countries. New York, NY: W.W. Norton & Co., Inc. viii + 544 p. Illust. (portrait). Index. 25 cm.

• ***Summary:*** In the Philippines, Dr. Heiser found that poor nutrition was the major cause of the high infant mortality. "The use of milk on a large scale was practically unknown in the Philippines, as well as in many other tropical countries." Whatever milk the poorer classes consumed came almost entirely from the caraballa, or female water buffalo (the male is the carabao)–a dirty animal whose habits tend to contaminate its milk.

Ultimately Dr. Heiser discovered several "substitute's for fresh cow's milk." It was discovered at the Peiping Hospital that a substitute for milk could be made from the soya bean. "With the addition of cod-liver oil and calcium, it closely resembled natural milk." Children fed on this milk from the time they were 3 weeks old, were found "to be healthy and normal in every way." Children "who had never had any other food loved this soya bean milk," but "to an adult it was one of the worst-tasting decoctions that could be imagined."

"A Filapina graduate student in chemistry from Columbia University then made her contribution. She found that extract of banana added to the soya bean mixture made it taste like fresh milk. The Filapina housewife can now make this milk in her own kitchen, using a little handpress for the bean and adding other ingredients according to the prescribed directions.

"The soya bean has proved of inestimable value to the East and promises to enlarge the dietary. I once attended a delicious full course lunch in the Bureau of Science Laboratory in Manila where everything from soup to cake was made from this bean."

Note: Heiser, a physician, was born in 1873. Address: M.D.

982. Institut International d'Agriculture (International Institute of Agriculture). 1936. Le soja dans le monde [The soybean in various countries of the world]. Rome, Italy: Imprimerie de la Chambre des Deputes, Charles Colombo. viii + 282 p. Bibliography, p. 276-82. No index. 25 cm. [90 ref. Fre]

• ***Summary:*** A superb early work, containing extensive original information, looking at developments with soybeans and soyfoods country by country, worldwide. Contents. Preface (p. 1). A. Culture of soy (*soja;* p. 4): 1. Botanical description, selection, classification of the varieties. 2. Culture properly said. 3. Enemies and illnesses.

4. Culture in the various countries: 4a. The Americas (p. 38): Antigua, Argentina, Bermuda, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, USA (gives details on all varieties grown, and describes production, history, varieties, and cultural practices in North Carolina, Illinois, Indiana, Iowa, Maryland, Massachusetts, Mississippi, Missouri, New York, Ohio, West Virginia, Wisconsin, Conclusion), Guadeloupe, Guatemala, British Guiana, Dutch Guiana, British Honduras [Belize], Jamaica, Barbados, Martinique, Mexico, Montserrat, Peru, Puerto Rico, El Salvador, Trinidad and Tobago, Uruguay.

4b. Europe (p. 101): Germany, the Danubian countries, Austria, Spain, France, Great Britain, Hungary, Italy, Netherlands, Poland, Romania, Switzerland, Czechoslovakia, Turkey, USSR.

4c. Asia (p. 128): Ceylon, China and Manchuria, Cyprus, Federated States of Malaysia, British India (incl. Punjab, Bihar and Orissa, Burma, Berar, Madras Presidency, Bombay Presidency, Bengal (incl. Nepal, Bhutan, Sikkim, and the district of Darjeeling), Assam, North-West Frontier Province, United Provinces), Netherlands Indies, Indochina (incl. Tonkin, Annam, Laos, Cambodia, and Cochinchine), Japan, Palestine, Siam.

4d. Africa (p. 146): French West Africa, Algeria, Belgian Congo, Cyrenaica, Egypt, Eritrea, Madagascar, Morocco, Mauritius (Ile Maurice), Reunion (Réunion), Rhodesia, Anglo-Egyptian Sudan, Tripolitania, Tunisia, Union of South Africa.

4e. Oceania (p. 153): Australia, Fiji Islands, Hawaii, New Caledonia, New Zealand, Philippines.

B. Utilization of soya (p. 158): 1. The soybean in human nutrition and in industry: Whole soybeans, chart of the uses of whole soybeans, use of soya in the green state (green vegetable soybeans), soy sauce (*dau-tuong* of the Annamites, or *toyo*, named shoyu by the Japanese, or *chau-yau* or *chiang yoo* by the Chinese), condiments and sauces based on soya in the Netherlands Indies (*tempe, ontjom, tempemori* and *tempe kedele* [various types of tempeh and onchom, p. 168-70]), *tao tjo* [Indonesian-style miso], *tao dji* [fermented black soybeans], *ketjap, ketiap benteng* [Indonesian-style soy sauce], soymilk (*le lait de soja*), yuba (*crème de lait de soja*), tofu (*le fromage de soja*) and fermented tofu (*des fromages fermentés*, made by Li Yu-ying near Paris), soymilk casein (*caséine du lait de soja*, for industrial use, including vegetable albumin, or galalithe [galalith]" [isolated soy protein], and artificial wool), soy lecithin (*lécithine de soja*), soy flour (*la farine de soja*, incl. soy bread, soy pastries, and soy cocoa).

Note 1. This is the earliest document seen (Sept. 2010) that uses the term *benteng ketiap benteng* to refer to an Indonesian-style soy sauce.

2. Soy oil (p. 194): Food uses, industrial uses (including soaps, products resembling petroleum, paints, varnishes, linoleum, and artificial rubber), extraction, directory of U.S. manufacturers of materials and equipment for soybean processing, directory of U.S. and Canadian manufacturers of food products based on soya (*produits alimentaires à*

base de soja, p. 205-06), directory of U.S. manufacturers of industrial soy products (p. 206-07).

3. Soybean in the feeding of domestic animals (p. 207): Forage, hay, silage, pasture, soybean seeds, the minerals in soybeans, soya as a feed for dairy cows, cattle, buffaloes, sheep, hogs, horses and mules, poultry.

4. Use of soya as fertilizer (p. 257). C. The trade of soya and of its by-products (p. 363): Production of soybeans in the principal countries, economic importance of soybean culture in the USA, soybean trade/commerce including tables of the major importers and exporters, and amounts traded annually in 1931-1934, price of soybeans, cost of production.

List by region and country of people and organizations that responded to a questionnaire sent by IIA (p. 273-76). Bibliography of main publications consulted, listed by region and country of publication.

Reunion (*Ile de la Réunion*)*:* "The soybean (Le Soja) is only cultivated as an experimental crop, on a few square meters at the agronomic station" (p. 148).

Fiji (*Iles Fidji*)*:* Soybean cultivation is not yet practiced in this colony; however soybean seeds are currently being imported in order to conduct a trial.

New Caledonia: In 1928 soybean cultivation was introduced to New Caledonia.

Note 2. This is the earliest document seen (Dec. 2007) concerning soybeans in Bhutan, Costa Rica, Dominican Republic, El Salvador, Guatemala, Israel, Jamaica, Madagascar, Morocco, New Caledonia, Palestine, Peru, or Réunion, or the cultivation of soybeans in Bhutan, Costa Rica, Dominican Republic, El Salvador, Guatemala, Israel, Jamaica, Madagascar, Mexico, the Middle East. Morocco, New Caledonia, Palestine, Peru, or Réunion. It is also the earliest document seen (Dec. 2007) concerning soybeans in connection with (but not yet in) Cyprus; it is stated that soybeans are not grown on the island of Cyprus. Soybean culture is not practiced in the Italian colonies of Eritrea (Erythrée, now part of Ethiopia) or Cyrenaica (Cyrénaïque, now part of Libya).

Note 3. This document contains the earliest date seen for soybeans in Bhutan, New Caledonia, or Réunion, or the cultivation of soybeans in New Caledonia (1928), or Bhutan or Réunion (1936) (One of two documents).

Note 4. This is the earliest French-language document seen (Sept. 2011) that mentions tempeh, which it calls "tempe" (p. 168). It notes that, in general, the indigenous people of the Netherlands Indies use soybeans mainly to make *tempe,* a product which, throughout central and eastern Java, takes the place reserved for *ontjom* in western Java. Tempeh is found in two forms: either in large flat cakes which are cut at the time of sale into small square morsels, or wrapped in folded banana leaves. A detailed description of the preparation of each of these two types of tempeh is given as well as another type of tempe, called *tempemori,* which is made with soybeans and coconut presscake.

Soybean culture is not known to be practiced in the following countries or colonies: Antigua, Barbados, British Honduras (renamed Belize in about 1975), Trinidad and Tobago. Address: Rome, Italy.

983. Kale, F.S. 1936. Soya bean: Its value in dietetics, cultivation and uses. With 300 recipes. Baroda State, India: F. Doctor & Co. xxxi + 375 p. Illust. Index. 22 cm. 2nd ed. 1937.

• ***Summary:*** Contents: Preface. 1. Deficiencies in the Indian diet and soya bean as a means to rectify them. 2. History of the origin and growth of soya bean. 3. The use of soya bean. 4. World trade in soya bean. 5. Botany of the soya bean plant. 6. Classification of soya bean. 7. Cultivation of soya bean. 8. Diseases and pests of soya bean. 9. Cultivation of soya bean in India. 10. The constituents of soya bean. 11. Soya bean milk. 12. Soya bean flour. 13. Industrial uses of soya bean. 14. Enriching soil by addition of nitrogen and use of soya bean as fodder. 15. Food requirement of the human body. 16. European and American soya bean recipes. 17. Diabetic dishes, Mahatma Gandhi's experiments at Magan Wadi and opinion of scientists on soya bean. 18. Chinese and Japanese soya bean dishes. 19. Indian soya bean dishes: Hindustani dishes, Moglai dishes, Gujarati dishes, Maharashtrian dishes, Bengali dishes, Goa dishes, Tanjore dishes. Appendix.

For a more detailed table of contents and summary of the work, see the 2nd edition (1937).

Photos on unnumbered pages show: (1) H.H. the Maharaja Gaekwar of Baroda, the first Indian ruler to inaugurate the soya bean planting ceremony in his state–24 Nov. 1933. (2) H.H. The Maharaja of Baroda, seated in a chair, lecturing on the dietetic and industrial importance of soya bean. (3) The mature soya bean pods of Mammoth Yellow variety grown in Baroda territory. (4) Map of Baroda state showing areas of soya bean cultivation. (5) Map of Baroda state showing local distribution of soya bean. (6) A field of soya bean in rows grown by Patel Hargovan Bavabhai of Achisara Baroda District (with two white bullocks) who has been awarded the first prize for his good cultivation.

(7) Bavabhai B. Patel, a farmer age 65 who is interested in cultivation of soya bean; dressed in white, he is standing in a field of soya beans behind two large white bullocks. (8) The author's own child, three months old, fed on soya bean milk.

(9) Mahatma Gandhi who uses soya bean at Maganwadhi; he is seated in a chair reading.

Note 1. This is the earliest English-language document seen (Sept. 2006) that uses the term "soya bean" in a new way–as a singular noun, like the words "corn" or "wheat," not preceded by "the." Examples: "2. History of the origin and growth of soya bean. 3. The use of soya bean. 4. World trade in soya bean... 6. Classification of soya bean. 7. Cultivation of soya bean. 8. Diseases and pests of soya

bean." This usage originated in developing countries.

Note 2. This book was written as the princely state of Baroda was studying the possibility of growing the soya bean plant for food, feed, and fodder. It looked promising, but little headway was actually made in either production or utilization. Address: Food Survey Officer, Baroda State, India.

984. Mumford, H.W. 1936. A year's research at Illinois. *Illinois Agricultural Experiment Station, Annual Report* 48:1-331. For the year ended June 30, 1935.

• ***Summary:*** Soybeans are discussed in the following sections and pages: Soils and crop investigations: Soybean hay and seed yields sensitive to soil fertility (p. 27-29; Two bar charts show the dramatic effects of soil treatments on yields. Seed yields are highest when the soil is treated with R = residues, L = limestone, and P = rock phosphate. Soybeans are more acid-tolerant than most of the widely grown legumes. Nitrogen is usually deficient in acid soils). Soybean acreage sets new record in crop adjustments (p. 40-41; In 1934, for the first time in history a single legume occupied more than a million acres of farm land in Illinois; soybeans occupied only 1,000 acres in 1914 in Illinois. The 10 varieties with the highest seed yields (in bushels per acre) at Urbana in 1934 were: Type 117, 38.1. Manchuria 13-177, 36.4. Mansoy, 36.3. Scioto, 34.9. A.K. 125, 33.9. 04002-B, 33.4. Illini, 33.2. Macoupin, 32.7. A.K. 146, 32.0. Manchu, 31.5). Work for better soybean varieties is continued (p. 41-43). Susceptibility to nodulation inherited characteristic (p. 43-44; "The Peking soybean variety shows scanty nodulation, whereas Illini is abundantly nodulated"). Quality of inoculant outweighs its ease of application [in affecting yields] (p. 44; Those "recommended for use with water were superior to those designed to be used dry"). Experiments keeping pace with interest in new crops (p. 69-72; "Investigations on the use of soybean oil for paint purposes have been continued with satisfactory results").

Livestock investigations: Home-grown proteins being brought into wider use (p. 78-79; "Discovery that soybean oil meal and animal tankage can be used successfully in fattening cattle has made considerable in the protein buying habits of Illinois farmers. Formerly all standard protein concentrates used for balancing beef-cattle rations were produced mainly outside the corn belt"). Tankage proves satisfactory supplement for steers (p. 81-83; Ordinary steam-rendered tankage is less palatable and less digestible that dry-rendered tankage, or meat scrap. Rendering is the process that converts waste animal tissue into stable, value-added materials, including fats such as lard and tallow). Lespedeza hay equals alfalfa for feeding steers (p. 83-86; In this test, soybean hay was slightly inferior to alfalfa- or lespedeza hay). Soybeans found richer in certain vitamins than corn (p. 90-91; vitamins A, B, and G were tested). Supplemented [corn] silage equal to soybean hay for sheep (p. 118-20). Soybean meals are compared further for chick feeding (p. 128-30).

Entomology investigations: Prompt control halts insect threat to soybean crop (p. 159-60; Cutworms and armyworms caused heavy damage, but were controlled by poisoned bait).

Agricultural economics investigations: Accounting studies show ways to reduce farm costs (p. 200-02; net profit per acre in 1932, 1933, and 1934 is given for soybeans {harvested with a combine}, soybeans {threshed}, and soybean hay. Farmers lost money on all three in 1932 and 1933, but made a profit on all 3 in 1934). Demand is one of the factors affecting [soy] bean prices (p. 218-19; "Production of soybeans in Illinois and also in the United States in 1934 was the highest on record, owing largely to the AAA {Agricultural Adjustment Act of 1933, which paid farmers to reduce crop acreage} programs and to the severity of chinch bug damage").

Home economics investigations: Best varieties of soybeans for food being located (p. 298-300; There "is a rapidly expanding list of manufactured food products made of or containing soybeans,–that is, soybean flour, oil, and milk." About 35 "varieties of soybeans which are known as vegetable types have been used and compared with the so-called commercial types." "The beans while immature all had a vivid green color which makes them a very promising fresh vegetable." Some varieties, such as Illini, are very acceptable as a garden vegetable in both the green and mature states. Freedom from shattering in the field is probably directly connected with difficulty of shelling the beans in the green state). Address: Dean and Director of the Station, Urbana, Illinois.

985. Rouest, Leon; Guerpel, Henry de. 1936. Le soja français et ses applications agricoles et industrielles [The French soybean: Its agricultural and industrial applications]. Chateauroux, France: G. Langlois. xxiii + 99 p. 28 cm. [42 ref. Fre]

• ***Summary:*** Contents: Preface, by L Brétignière (Prof. at Grignon, Member of the Academy of Agriculture). Preface to the first edition, by Louis Forest (1921). Introduction to this new edition: Soviet Russia and the soybean (*le Soja;* includes the story of Rouest's stay in the Northern Caucasus, Russia, from 1930 to 1933), Germany and Poland take up the soya question, the canons [guns] of Germany versus the Manchurian soybean, a secret contract to provide the weapons of war, organization of a Polish bank in Manchuria, Germany cultivates soybeans in Romania and Bulgaria in preparation for the war, France and the cultivation of soybeans.

1. What is soja? 2. History of the propagation of soja: Introduction of the soybean into France and Europe, the soybean is cultivated in central Europe, in Austria, in 1875, in France the soybean is the object of numerous trials from

1876 to 1881, its cultivation worldwide, the study and acclimatization of soya become generalized.

3. Botanical characters of the soybean: And the varieties of soybeans. 4. Chinese varieties: The soybean in China, the production of soya in China in 1916 and 1917, production of soya in the Far East during the year 1928, exportation of soya from the Far East to Europe.

5. Japanese varieties: The soybean in Japan, varieties of soya from Indochina and from other Asian countries. 6. The soybean in America: American varieties, cultivation of soybeans in Ohio, selection of soya using pure lines in Connecticut.

7. The soybean in Europe: Italy, Russia, France, French climatic zones for the cultivation of Soja hispida, the Atlantic zone, the continental zone, the Mediterranean zone and climate, can the soybean be cultivated in all the French climates including those in the north, northeast, and northwest, speedy production of soybeans in view of agricultural production and of the creation of early varieties for the regions in north and northeast France.

8. Instruction for growing soja in France. 9. Soja in Manchuria. 10. Soja seeds. 11. Selection of soja. 12. Varieties of soja. 13. Different ways of planting soya seeds. 14. Soy yield. 15. Nitrogen fixation in soya seeds. 16. Tilling and preparing the earth. 17. Soja fodder. 18. Soja, striking and improving. 19. Harvesting soja grain. 20. Soja oil. 21. Soja oil-cake for animal feeding. 22. Vegetable milk, soja milk and industrial casein.

23. Soja in human food: Soy flour and its applications, soy bread with wheat, nutritional composition of soja compared to dry legumes, soy viewed as a dry legume to replace meat, comparative production of nutritive elements among the various legumes used for human food, comparative value in calories of the usual foods and of soja, preparation of soy soups and meals in compressed tubes, what varieties of soy can serve the special needs of human nutrition, Sojenta, potatoes stuffed with soy, force meat balls (*boulettes*) of rice and soy, bread of rice and soy, pudding of soy and rice, soy sprouts and their food value, fresh soy sprouts in a salad, soy sprouts with vegetables, soy preserves and confections, soy chocolate, soy coffee, soybeans conserved in containers, soy with smoked fish, soup with soy vegetable meat, soymilk soup, omelet with smoked soy vegetable ham, green soy sprouts, soy cake, soy force-meat fritters.

24. The utilization of soja in the Far East: Vegetable cheese (tofu), soy-based condiments, Japanese natto (2 types), Japanese miso, Chinese miso, soy sauce (*soyou* or *schoziou*), making soy sauce in Kwantung, China, making soy sauce in Japan, koji or molded rice.

25. The culture of soja in North Africa (Rouest has varieties that would grow and yield well in the French colonies of Tunisia, Algeria, and Morocco). 26. Opinions of some authors on soja. Conclusions. Bibliography on soja.

A small photo on the "Dedication" page shows Léon Rouest (born in Paris on 11 Nov. 1872).

Concerning soy in Russia (USSR) (p. 52-53): In Russia, the soybean has been known for quite a long time, specially in the Ukraine and Bessarabia, but it was never grown over a large area, and was given a back seat (low priority) in agriculture until after the revolution of 1917. It was not until 1926-27 that cultural trials were conducted on farms in the state of Northern Caucasus (*d'Etat du Caucase du Nord*). In the regions of Rostov-on-Don (*Rostow-sur-Don; Rostov-na-Donu*), Eisk (near Krasnodar), Stavropol, Prim-Koumsk, Yessentuki / Essentuki in the Kuban and Kuban River area of the North Caucasus region of southern Russia, the yields were 11 to 16 quintals.

In 1927 there were 600 ha planted to soybeans, increasing to 17,000 in 1928, in the *kolkhoz* (collective) farms or the *sovkhoz* (state owned) farms.

In 1929-1930 and until 1932-1933 there were very laudable / praiseworthy efforts to propagate soybeans in favorable regions, especially in the North Caucasus, but the soils of this region, although they are very rich and well suited to soybeans are also very rich in bad weeds and the results obtained up to the present do not seem favorable. As I said earlier, the soybean is a technical plant of the intensive cultivation type. It is very well suited to the soil and climate of Russia, but it is less well suited to the indolent character of people who are accustomed to cultivating only small parcels and who are suddenly, through collectivization, thrown into cultivating immense fields. In spite of the remarkable efforts at mechanization, the peasants who submit to collectivization and who do not yet understand it very well, the cultivation of soybeans does not assume the importance hoped for (p. 52).

Note: This is Rouest's first book about soy since 1930. Address: France.

986. Rouest, Leon; Guerpel, Henry de. 1936. Le soja français et ses applications agricoles et industrielles: La Russie Sovietique et el Soja [The French soybean: Its agricultural and industrial applications: Soviet Russia and the soybean (Document part)]. Chateauroux, France: G. Langlois. xxiii + 99 p. See p. xv-xvii. 28 cm. [Fre]

• ***Summary:*** The propagation of new edible plants for man requires a true apostleship. I could say, along with Mr. Paillieux, who was the first in France to draw farmers' attention to Soy, and now fifty years later: "Our point of departure was not fortunate." Since 1921, date of the first publication of my study, *Le soja et son lait végétal* ("The soybean and its vegetable milk"), after having exerted every possible effort in France to propagate Soy, I expatriated myself in 1930 to study and propagate Soy in Soviet Russia where I found excellent agrologic and climactic conditions. Back in France, towards the end of my life and my agronomic carrier, will this new study shake my fellow citizens' inertia? Will they wait, once more, to be tributaries

to foreigners while they themselves are in a position, if not to take the lead, at least to step at a level worthy of our needs and our agriculture?

More than ten years have passed and already, in 1930, *la Librairie Agricole de la Maison Rustique* [my publisher] informed me in Russia, where I had gone to cultivate Soy varieties that I had already acclimated in France, that the first edition of my book had completely sold out and that it would be useful and necessary to produce a new edition and complete it with new documents.

If I did not answer sooner to this invitation, it is because I wanted to finish studying several problems related to Soy: the problem of selecting varieties suited to different agricultural regions, the cultivation of pure lines, and above all the possibility of cultivating Soy on large areas and thus mechanizing the harvest.

I bring thus, with this new edition, the experience acquired in Russia where Soy has been cultivated since 1930, on rather large areas, although these areas have not reached the numbers proposed in the Five Year Plan, which called for several million hectares.

For the time being, Soy is remaining stationary in Russia because once it was noticed, a bit late according to my point of view, that Soy could not be cultivated in the same manner as wheat which is the typical extensive cultivation plant, that is a poorly tended type of cultivation. They noticed this after a considerable number of years of experiments that are more of the social realm rather than of the agronomic realm.

It was finally understood that Soy is and remains the intensive type of industrial crop and that one could, even against a formidable apparatus, cultivate it in a collective social regime.

Furthermore, this disfavor that reigns in Russia towards Soy farming also accounts for to its poor utilization.

Following the mandatory collectivization of the soil in 1932 and 1933, the peasants having refused to work collectively, a famine followed that was not total, truth be told, but that was particularly felt in the regions most favorable to Soy cultivation, in the richest black farmland of Ukraine and the Northern Caucasus.

Deprived of bread and other food items, people jumped on Soy which had never before entered into their diets. The main cause of this was the lack of knowledge on processes and means of Soy utilization as are practiced in the East Asia.

This Soy availability indeed saved the life of thousands of individuals but these same individuals retained a dislike of it, and it will be difficult to make that dislike go away. The ignorance of the need for preliminary preparation of the soy bean was its sole reason.

At the beginning of the introduction of Soy in Russia, the Soviet leaders had many hopes that did not materialize. The hope first of creating a real / veritable monopoly of the export of Soy, encouraged by the Germans, who were expecting to have on their side, fats and food by-products necessary to their policy of expansion and, on the Russian side, the immense expanses of land that they own, enabled them to contemplate an economic power that they alone in Europe would be able to possess. But, unfortunately for them, they had not understood that Soy cultivation is only suited for countries whose large population is obliged to live of fairly small plots of land and devotes to this nourishing plant all the care that people of Mongolian origin are capable of.

Soy cultivation is an intensive cultivation wonderfully suited to a society based on the family and not a society based on the collective spirit which, through its shear size, tends to practice an extensive type of cultivation where little care is exerted.

Soy cultivation can only be undertaken by hard-working individuals. It is neither suited to the temperament or the psychology of the Russian people.

The psychological error generated, among the Russians, an agronomic error. Russia, as it stands to-day under the communist regime, will never export soy because the social framework that it adopted is not compatible with the care and work that it requires.

By merely looking at and observing the cultivation of Soy as it is done on vast expanses of land among their neighbors of Mongolia, Manchuria and China, it is possible to perceive the error that was going to be committed in introducing this crop, but it is common in Soviet Russia, not to take into account what is viewed as the survival of old customs and work that must disappear under the drive of modern mechanization and social concepts professed in that country.

As in many other things, the Bolshevik pride has rejected as unnecessary and mostly hampering the observations mentioned earlier. Among the hopes that did not realize and that probably never will be, is the hope to create, for the needs of the collectivization, Soy varieties that are sufficiently early and a tall plant that would yet remain highly productive; this is physiologically impossible and mostly having the first row of bean pods at a height such that these could be harvested with the machines that are actually used for the wheat harvesting.

Thus what is required is creating the plant for the machine and not creating the machine for the plant. That is a reversal of all the theories that form the background of modern, scientific agriculture. But that's is the way it is!

I did not linger in attempting to solve such problems because I confess not being capable of solving such problems.

Thus the soy cultivation is, just as it is for beets and all cultivated plants (*plantes sarclees*), a crop of the intensive type. Those who have neither the will or the physical strength should not attempt this crop. One should not believe however that large fields do not suit Soy. I saw in 1933, at

Kropotkine (in Northern Caucasus), in a German concession, five hundred hectares on a single plot of land, without a single weed, in a state of perfect cleanliness. The yield reach from 15 to 18 quintals (1 quintal = 100 kg) [per hectare] even though the soil was poor and no fertilizer was used. These yields, that are not extraordinary if these are compared to the small Manchurian or Chinese plots which generally reach from 20 to 30 quintals may be considered good and normal due to the poor soil.

A few days after my visit to this German agricultural project, I learned that this concession had been liquidated and that its personnel had returned to Germany. At the same time, Russian newspapers were beginning a violent campaign against the Hitler's Germany, and were publishing the documents that are inserted later in this book.

At that time I decided to leave Russia and take with me all the French Soy varieties introduced in the 1930s. My duty as a French agronomist was dictating my return to my Motherland in the hope of bringing back with me the same arms of national and economic defense. Address: France.

987. Shoptaw, LaVan N. 1936. Gastric digestion of soybean flour when used as a substitute for cows' milk in feeding dairy calves. PhD thesis, Iowa State University. In: Doctoral Dissertations Accepted by American Universities, 1936. * Address: Iowa State Univ., Ames, Iowa.

988. Van Gundy, Dorothea. 1936. La Sierra recipes. Campus and Maitland, Ontario, California: Published by the author. 47 p. 19 cm.

• ***Summary:*** Most (but not all) of the recipes in this book call for soy-based ingredients. Contents: Dedication. "This book is lovingly dedicated to the memory of my father." Foreword: "Due to the increase of disease in the animal kingdom, the diet should be as free as possible from these elements, including meat, eggs, and milk." Approximate composition for La Sierra Products: Soy butter [soynut butter] (27.6% protein, 47.1% fats). Soy breakfast food. Soy flour. Cooked soy beans. Soy loaf. Milk. Bean sprouts. Soy cheese [tofu]. Soy spread. Soy bologna. Dry soy beans.

1. The soy bean as a human food: Nutritional value, varieties of soy beans, flour, soy milk, soy milk from flour, soy milk from raw beans, soy cream (made by homogenizing / blending equal parts of soy milk and soy oil or other vegetable oil), soy cheese, soy bean sprouts, soy sauce.

2. Soups: Incl. Soyament bouillon. Many use Soyament (Soy Sauce), soy milk, or soy cream. 3. Entrees. Recipes incl. Soy croquettes (with Soy Bean Pulp and Smoein). Walnut Loaf (with Smoein and soy milk). Soy protose (with soy butter and Mamenoko flour). Gluten patties (with Smoein). Soy cheese with tomato sauce. Soy cheese croquettes. Soy cheese and Soyament sauce. Baked macaroni with La Sierra Vegetable Bologna. Soy loaf. Soy loaf a la king. Baked soy noodles. Chow mein (with La Sierra Soy Cheese). Lentil patties (with Smoein).

4. Sauces and gravies: Many use soy milk, Smoein, or soy sauce. 5. Vegetables. Incl. Creamed vegetables (with soy milk). 6. Salads and salad dressings. Soy recipes include: Carrot and soy cheese. Tomato and soy cheese. Pineapple and soy cheese. Stuffed celery (with soy cheese). Soy loaf salad. Cabbage and banana salad (with soy mayonnaise). Head lettuce (with soy butter dressing). Salad dressing (uses soy milk in place of eggs). Soy mayonnaise [Note: This is the earliest recipe seen for a soy mayonnaise]. Tomato mayonnaise (tomato juice beaten into soy mayonnaise). Thousand island dressing (with soy mayonnaise). Parsley and olive dressing (with soy mayonnaise; uses ¼ cup chopped olives, not olive oil). Soy cream dressing. Soy butter dressing [with soynut butter]. Cream golden dressing (with soy cream). French dressing (with soy oil or any vegetable oil).

7. Desserts. * = with soy milk. + = with soy cream. Cream rice pudding*. Rice pudding+. Blanc mange*+ [Blancmange]. Orange cream pudding+. Lemon fluff+. Fruit fluff+. Cream tapioca*+. Frozen pudding*+. Vanilla Ice Cream*+. Almond cream [Almond ice cream] (incl. 1 cup chopped almonds)*+. Strawberry sherbet+. Raspberry sherbet+. Butterscotch chiffon pie+. Lemon pie+. Banana cream pie*+. Pumpkin pie without eggs*. Soy pastry with soy flour. Soy cookies+.

8. Bread: Soy bread (with 4 cups entire wheat flour and 1 cup soy flour). Entire wheat bread (with 2 cups soy milk). Entire wheat sticks (with 3 parts wheat flour and 1 part soy flour). Corn meal crisps (with 4 parts corn meal, 3 parts wheat flour, and 1 part soy flour). Short cake (with 2 parts soy milk, 5 parts wheat flour, 1 part soy flour). Waffles (with 12 parts wheat flour, 2 parts soy flour, and 7 parts soy milk).

9. Sandwiches: Soy bean filling. Vegetable bologna. Soy delight filling (with soy[nut] butter). Soy cheese and raisin sandwiches. Soy butter (soynut butter thinned with tomato juice). Soy butter and honey. Soy cheese and olive [chopped green olives]. Soy spread [Made by La Sierra]. Sandwich salad (with many soy possibilities).

10. Beverages: "A very fine coffee substitute is made [by La Sierra] from the Soy Bean, and tastes remarkably like Coffee. It is particularly fine from an alkaline standpoint, and is particularly excellent to be used in connection with high alkaline diets." Soy-co (Beverage) Add 1 rounding teaspoon to 1 cup of water. "Percolate or boil until desired strength. Serve plain or with Soy Cream." Also delicious iced. Soy-co (Made with soy milk). Soy milk shake. Soy banana drink. Mamenoko drink (uses 3 tablespoons Mamenoko, which is processed soy flour). Soyament cocktail ("A very refreshing beverage may be made by using 1 to 2 tablespoons Soyament sauce to 1 cup of water").

11. Healthful confections: Beanut brittle (2 cups each Soy Beanuts and brown sugar). Victoria fudge (with "3/4 c Soy Milk").

Use of soy beans in the diet: Outline for 3 meals. Suggestion for 3 days' menus, using soy products.

La Sierra Industries manufactures the following 14 foods from soy beans: Canned soy beans, plain or with tomato sauce. Soy loaf. Soy vegetable bologna. Soy milk. Soy breakfast food. Soy butter [like peanut butter]. Soy-co (beverage) [coffee substitute]. Smoein (smoked meat flavor). Soy spread. Soy flour, raw and processed. Soy beanuts (parched soy beans).

Soyament brand bean sauce. This soya bean sauce is "prepared from soya beans by splitting up the bean protein by a special process which thoroughly decomposes it into Amino Acids. A number of Amino Acids, each possessing a sweet taste, is the most remarkable feature of the Soyament Sauce and makes it different from many of the so-called soy sauces... On sale at all grocery stores or write to Soya Bean Products Co., 3522 East Third St., Los Angeles."

In the section on "Soy milk" (p. 8) is a long quotation from Dr. [Walter] Siegmeister: "So well has the Soy bean served as a source of vegetable milk, that the records tend to show that it has proven superior to cow's milk in certain important respects. The most marked of these is the almost complete absence of rickets in China, which is quite probable in view of the fact that not only is the Soy bean rich in Vitamin D, but also in Calcium and Phosphorous, the chief requirements for healthy bone development."

Note: This is the earliest document seen (Dec. 2003) that mentions a soy-based shake. It is also the earliest English-language document seen (Dec. 2003) that uses the term "Milk Shake" to refer to a non-dairy soy milk shake or that contains the term "Soy Milk Shake" (p. 41). The recipe with that title states: "Soy Milk may be mixed with any of the fruit juices and beaten with a small amount of chipped ice. It fluffs up and is very palatable. Soy Milk and orange juice combine splendidly." Address: Dietitian, Box 203, Ontario, California.

989. Fearn, Charles E. 1936? Your children's future health and happiness (Leaflet). Chicago, Illinois: Fearn Soya Foods Co. 4 panels each side. Each panel: 22 x 9 cm. Undated.
• ***Summary:*** "In conclusion let me say that I know of no better way of giving Soya Foods to children than in the form of the Fearn's Soya Food products such as: Soya Cereal (to be cooked), Pure Soya Milk Powder, Fearn's General Food, Soya-Date Breakfast Food (ready-to-eat) and Dr. Fearn's Proteinized Cocoa as a drink or when making cakes, etc."

The distributor of these products is Malcolm McBride, Los Angeles, California. Phone: PArkway 3232. Address: Fearn Soya Foods Co., Chicago, Illinois.

990. Jones Grain Mill. 1936? Natural foods: Catalog, recipes, information. Los Angeles, California. 74 p. Undated. 22 cm.
• ***Summary:*** On the cover is a white mill behind a mill wheel (unrealistic) on a mill pond. Contents: Foreword. Health recipes: Cereals (incl. Soy bean or Mamenoke {Mamenoka, Mamenoko} breakfast cereal), breakfast cakes (incl. soy hot cakes with soy milk and Mamenoka flour, soy waffles, soy bean griddle cakes), desserts, breads (incl. soy bean flour gems, whole wheat bread), candies. Vital information: Vitamins and minerals essential to life.

Price list (prices are given for each item listed on pages 46-72): Alberty products, Alvita products, Battle Creek Sanitarium Health Foods [Michigan] (p. 47-48), beverages–coffee substitutes (Loma Linda Breakfast Cup, Soyco {soy bean coffee}, Javex {soy bean}, Carque's Soy Bean Coffee), books (by Dr. Benjamin Gayelord Hauser, Paul C. Bragg, Mrs. Alberty, Martin W. Pretorius, Otto Carque, Clark Irvine, Dr. Harry Finkel), Dr. Paul Bragg products, Jones Grain Mill Bakery (operated by Alberty Specialty Bakers), Burbank products, Carque's products, crackers and toast (Cubbison's bulk or packaged), honey, jams & jellies, juices (fruit & vegetable), KAL products, kelp products (products of the sea, incl. sea lettuce, dulse, Parkelp), Kovac products, Loma Linda Foods (Soy products: Soy beans–plain, tomato, or tomato and Proteena, Soy milk–8½ oz, No. 1, or No. 2, Soy Mince sandwich spread), macaroni & noodles (incl. soy bean macaroni, soy bean noodles), meat substitutes (incl. Simoein [Smoein], Soy loaf, Alfa Soy Spread, Soy Mince) McCollum products, maple syrup and candies, Martin Pretorius products, nuts and butters, Nature Ade products, Nutro Links (Santay, Swiss, Hauser), oils, olives, Radiance products, salts (vegetable, vegetized, and vegetablized), salad dressing and mayonnaise (made with lemon and vegetable oil), health sugars and sugar substitutes, seeds, soya bean products, teas.

The price list of "Soya bean products" (p. 72) reads as follows: "Breakfast Cereal with Carob Flour ([and soya beans] tastes like Grape Nuts), pkg., 25¢. Breakfast Cereal (prepared [with soya beans]), pkg., 25¢. Soya bean flakes, pkg., 30¢. Soya bean grits, pkg., 25¢. Soya bean bread, lb. loaf, 14¢. Soya bean melba toast, lb., 30¢. Soya bean wafers, lb., 40¢. Soya bean cookies (sweetened with dextrose), doz., 15¢. Soya bean coffee cakes (sweetened with honey), each, 5¢. Soya beans cooked: Soya beans (plain cooked), No. 2 can, 13¢. Imported soya beans from Manchuria, lb., 10¢. Pre-cooked soya beans (easily prepared in 30 minutes), lb., 15¢. Soya beans with tomatoes (ready to serve), No. 2 can, 15¢. Cooked soya beans with Proteena, No. 2 can, 15¢. Other soya bean products: Non-fattening [sic] soya bean oil (for all cooking purposes), pint, 40¢. Soya bean coffee, lb., 25¢. Soya bean flour, lb., 10¢; 3 lbs., 25¢. Dextrinized soya bean flour, lb., 15¢. Soya bean milk flour, lb., 60¢. Soya bean candy (with pure chocolate and Dextrose), lb., 50¢. Soya bean sandwich spread, 25¢. Soy sauce, 20¢. Soya bean loaf, No. 2 can, 25¢. Soya bean milk, No. 2 can, 15¢. Soya bean cheese (made from soya bean milk), lb., 30¢. Soya bean mince, 8-oz. can, 25¢. Soya bean spaghetti, lb., 25¢. Soya bean macaroni, lb., 25¢. Soya bean noodles, lb., 25¢. Soy beverage (Cocoalette), 10¢.

Ads include: Hollywood Cup (p. 20). Otto Carque Co. (Glendale, California, p. 30). Loma Linda Foods (p. 33, sells soy wafers, three styles of soy beans, liquid soy milk, soy mince). Vita-Pekan (p. 46, formula includes soya bean as a major ingredient). Alberty dried brewers yeast (p. 50). Kovac Laboratories (p. 67). Cubbison (p. 73, incl. Soya Toast, Soya Cookies, Soya Gluten Crackers).

Note: This catalog was probably published in 1933, since the company's location in Beverly Hills is not mentioned; it opened in 1934. Moreover, the book titled *Vital Facts about Foods*, by Otto Carque was first published in 1933. Address: 322 So. Hill St. and 504 So. Broadway. Both: Los Angeles, California.

991. Dafoe, Allan Roy. 1937. Re: The Dionne quintuplets, dried soy bean milk, and soy acidophilus milk. Letter to Dr. John H. Kellogg, Miami-Battle Creek, Miami Springs, Florida, Jan. 4. 1 p. Typed, with signature on letterhead. • ***Summary:*** Dr. Dafoe is the attending physician for the Dionne quintuplets. He thanks Dr. Kellogg for the shipment of fruit which arrived today. "Since writing you last you have also favored us with the dried soy bean milk and the gallon shipment of acidophilus, both of which, you may be sure, are appreciated."

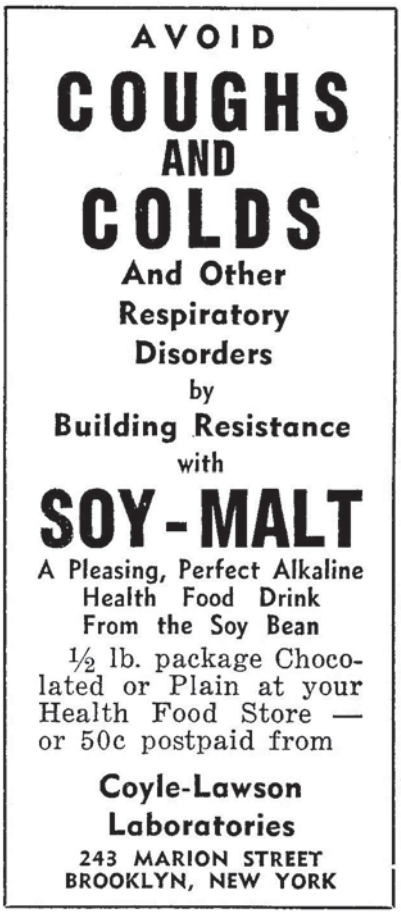
Note: On the letterhead is a photo of the five babies with their names printed under each: Yvonne, Cecile, Marie, Annette, and Emilie [spelled Emelie by Feb. 23].

On Jan. 27 Dr. Dafoe writes Dr. Kellogg requesting that he double the amount of acidophilus sent each week. On the letter is written by hand: "1 case been shipped weekly for 6 months." Next to it is a stamp: "Approved–Jan. 29 1937. Credit Dept."

On Jan. 29 Dr. Kellogg writes that he is sending a number of special foods especially designed for infants, made by his Battle Creek Food Company in Michigan. One of these is made from the soy bean. "It may interest you to know that the specimen of soy acidophilus milk which I sent you is particularly rich in vitamins B and G, containing 50 units per 10 grams of vitamin B and 90 units of vitamin G." He then raises the idea of using a picture or pictures of the quintuplets in connection with the sale of these infant foods if is agreeable to the trustees of the Guardianship to do so.

In another letter of 29 Jan. 1937 to Hon. David Croll, Minister of Public Affairs, Parliament Buildings, Toronto, Ontario, Canada, he proposes the same idea, but now with a royalty payment: "We have an application from two other milk companies who desire to manufacture and distribute our soy acidophilus milk. We will be greatly pleased if you can see your way clear to quote us terms for a royalty arrangement." Address: The Dionne Quintuplet Guardianship, Callander, Ontario, Canada.

992. **Product Name:** Soy-Malt [Plain, or Chocolated].
Manufacturer's Name: Coyle-Lawson Laboratories. Renamed Soy-Malt Corp. by Jan. 1940.
Manufacturer's Address: 243 Marion St., Brooklyn, New York.
Date of Introduction: 1937. January.
Wt/Vol., Packaging, Price: ½ lb, 1 lb, or 5 lb tins.



New Product–Documentation: Ad (2 by 4.75 inches) in *Nature's Path* (New York City). 1937. Jan. p. 29. "Avoid coughs and cold and other respiratory disorders by building resistance with Soy-Malt." "A pleasing, perfect alkaline health food drink from the soy bean. ½ lb. package Chocolated or Plain at your Health Food Store–or 50¢ postpaid from Coyle-Lawson Laboratories, 243 Marion Street, Brooklyn, New York." Note: A similar, but somewhat different, version of this ad appears in the November (p. 421) issue of this magazine.

Ad (2¼ by 2 inches) in *Nature's Path* (New York City). 1940. Jan. p. 33. "Make Nature your partner: Soy-Malt." "Gives you in pleasantly palatable form the *vitamins, minerals, and enzymes* of the soybean which Nature provides so generously for your benefit–plus the starch-digestive ability of diastatic *malt.* Rich in *proteins, iron, copper and lecithin.* Unsweetened. Plain or chocolated... Sample at your health food store or on request from us. Or we'll mail half-pound tin for 50¢ postpaid; both flavors $1." Address:

234-A Marion St., Brooklyn, New York. Note: It is not clear whether this dry product is made from dry soy milk or soy flour.

USDA Bureau of Plant Industry. Div. of Forage Crops and Diseases. 1942. Firms manufacturing or handling soybean food products. p. 3. Soy-Malt Co. company is listed as making or handling the product listed above.

993. *Good Health* (*Battle Creek, Michigan*). 1937. Cow's milk harmful to both infants and adults. 72(1):22. Jan.
• ***Summary:*** "Allergic reaction, or sensitization, to cow's milk is most common in infants and young children but no age is exempt from it." And it is becoming more and more widespread, according to an article by Dr. Charles G. Kerley in the *New York State Journal of Medicine.* The allergy in children may take one of three forms: Shack, gastrointestinal symptoms, or skin reactions (eczema, urticaria, giant hives, etc.).

"The best plan for securing quick relief in these cases is to feed Malted Nuts or a vegetable milk prepared from the soy bean. Milk prepared from almonds or pecans may also be used successfully." Address: USDA, Washington, DC.

994. Lager, Mildred. 1937. If you cannot use milk. *House of Better Living* (*Newsletter, Los Angeles*) 4(14):1. Jan.
• ***Summary:*** "Milk can be made from soy beans and it is a common food in Asia. You can buy it or make it. When bought, it comes in cans, usually unsweetened, sweetened with dextrose, or with chocolate flavor. It also comes in powdered form and then one only needs to add water. It can be made from soy flour. Use 1 cup flour to 4 cups water. Mix and cook in double boiler 20 minutes. Strain.

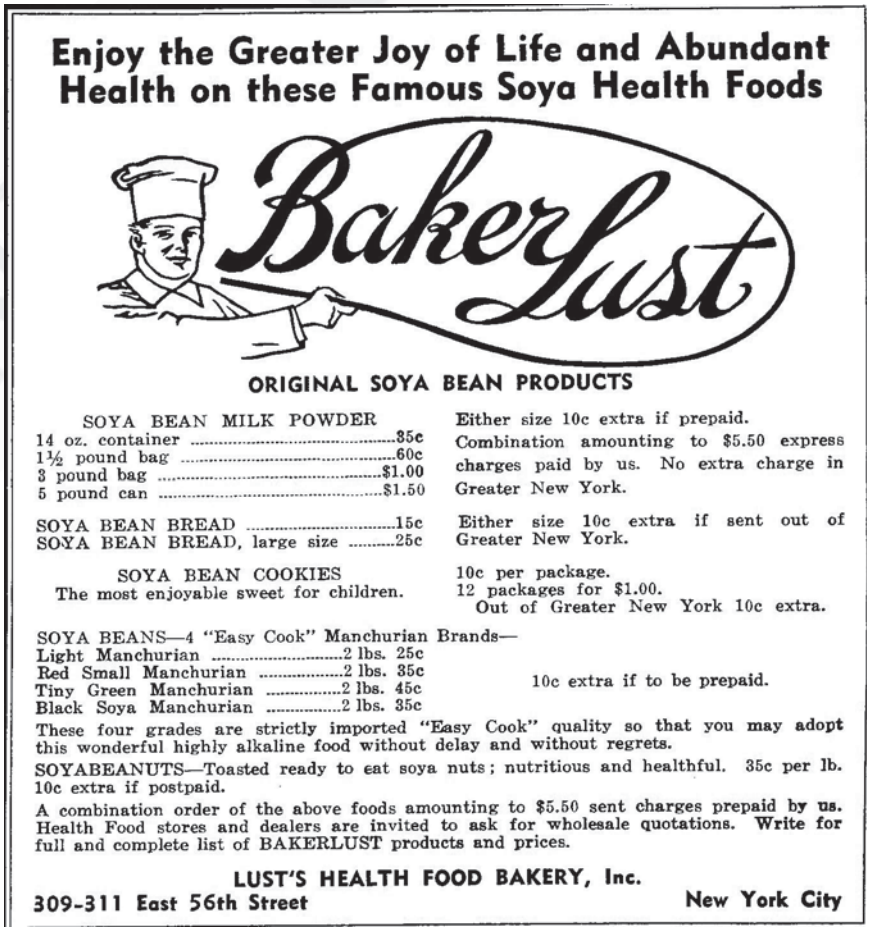
"Almond milk is made from raw almond butter. Use 1 tablespoon to 1 cup water."

995. Lust's Health Food Bakery, Inc. 1937. Enjoy the greater joy of life and abundant health on these famous soya health foods: BakerLust–Original soya bean products (Ad). *Nature's Path* (*New York City*). Jan. p. 19.
• ***Summary:*** A 1/3 page ad. (1) Soya bean milk powder: 14 oz. container–35¢. 1½ pound bag–60¢. 3 pound bag–$1.00. 5 pound can–$1.50. (2) Soya bean bread–15¢. Soya bean bread, large size–25¢. (3) Soya bean cookies: The most enjoyable sweet for children–10¢ per package. 12 packages for $1.00.

(4) Soya flour. 1 lb.–20¢. 5 lbs.–90¢.

(5) Soya beans–4 "Easy Cook" Manchurian brands–Light Manchurian, 2 lbs.–25¢. Small red Manchurian, 2 lbs.–35¢. Tiny green Manchurian, 2 lbs.–45¢. Black soya Manchurian, 2 lbs.–35¢. "These four grades are strictly imported 'Easy Cook' quality so that you may adopt this wonderful highly alkaline food without delay and without regrets."

(6) SoyaBeanuts–"Toasted ready to eat soya nuts; nutritious and healthful. 35¢ per lb.



Note 1. This is the earliest English-language document seen (Dec. 2012) that uses the word "SoyaBeanuts" or the term to "soya nuts" to refer to soynuts.

"A combination order of the above foods amounting to $5.50 sent charges prepaid by us. Health food stores and dealers are invited to ask for wholesale quotations. Write for the full and complete list of BakerLust products and prices."

Note 2. It seems possible, even likely, that Louis Lust (who owned this bakery), purchased soya beans, then milled and baked them himself to create the above line of six different soy products.

Note 3. The large logo near the top of the ad shows the outline of a baker, from the chest up, wearing a baker's hat, and holding out his right hand, in which is a sort of light wand that has taken the shape of the word "BakerLust." Address: 309-311 East 56th St., New York City.

996. Ingham, A.G. 1937. Soybean milk vs. milk. *Hoard's Dairyman* 82(3):78. Feb. 10.
• ***Summary:*** There is no possibility of making a complete substitute for cow's milk out of the soybean.

997. Marlatt, Abby L. 1937. Soybean dishes: New and old. *Wisconsin Agricultural College, Extension Service, Special Circular* 9 p. Feb. Revised ed.
• ***Summary:*** This revision of the 1935 edition contains 2 more numbered pages, plus a recipe for soybean milk. Contents: Introduction. Soybean milk (recipe from U.S. Bureau of Home Economics). Supplies satisfactory proteins. Soybean flour useful. Enriches bread. Muscle building value. Blood building food. Soybeans good sources of vitamins. Homemade soybean meal [roasted soy flour]. Use of the dry soybeans (6 recipes, incl. black soybeans). Green soybeans. Quick breads using soya flour or meal. Soyflour in place of wheat and wheat products: Wheat allergy diet (8 recipes). Soya flour in fish dishes. Desserts. Uses for soybeans and successful combinations with other foods.

"Within the last two years the green soybean has been grown in Wisconsin and found to be most palatable and especially attractive in its clear emerald green color. The bean grows in long pods from which it is shelled after the whole pod is kept five minutes in boiling water. Then the beans come out easily when the pod is pressed. These beans cook in from 10 to 15 minutes in boiling water and require only salt and butter or salt and cream–being served as you serve the small lima beans or the French haricot bean." Four recipes are then given: Green soybean salad, Soybean perfection salad, Canned green soybeans, and Puree of green soybean soup. Address: Madison, Wisconsin.

998. *Nature's Path* (*New York City*). 1937. Directory of health aids (Ad). Feb. p. 80.
• ***Summary:*** A full page ad. (1) Soya products: Soya Bean Milk Powder (Plain or banana flavored). Soya Bean Soup Powder (Soy-Veg). From: Lust's Health Food Bakery, Inc., 309-211 E. 56th St., New York City.

(2) Buy soybean milk powder in bulk. At new reduced prices. "Vitasoy" 25 lbs. @ 20¢ per lb–$5.00 100 lbs. @ 18¢ per lb–$18.00. From: Soya Health Products. North Main St., Spring Valley, New York.

"Natural treatments. Let Nature make you well. She can if you allow her to! Dr. Jesse Mercer Gehman. P.O. Box 1725. Paterson, New Jersey."

999. **Product Name:** Soybana.
Manufacturer's Name: New Century Foods, Inc.
Manufacturer's Address: Burbank, California.
Date of Introduction: 1937. February.
New Product–Documentation: Ad in California Health News. 1937. 5(4):5. Feb. 19. "Announcing !Soybana! A delicious new food made of powdered bananas, powdered soy bean milk, and powdered honey."

Note: This is the earliest known commercial soy product that contains powdered (or spray-dried) soy bean milk.

1000. *Revista de Agricultura* (*Cuba*). 1937. La pequena planta honorable [Little honorable plant]. 20(2):67-69. Feb. [1 ref. Spa]
• ***Summary:*** This is a translation by Prof. Miquel A. Valdiva of the *Time* magazine article of 12 Oct. 1936. Discusses the value of the soybean crop to the United States, the increasing acreage planted in soybeans, their uses as food, and in the factory, and the utilization of the beans in the Ford Motor Co. plant. Address: Chicago, Illinois, USA.

1001. Siegmeister, Walter. 1937. Dietary value of soybean milk in infant feeding. *Naturopath and Herald of Health* (*New York City*) 42(2):36, 55, 59. Feb.
• ***Summary:*** This article is largely composed of carefully cited quotations from many authoritative articles about the value of soybean milk in infant feeding when mother's milk is not available–starting with Ruhrah (1915, p. 502). "Since soy bean milk is deficient in milk sugar [lactose], as compared with human milk, [Dr. J.H.] Kellogg advises sweetening it with honey." Address: Dr.

1002. *Madison Survey* (*Madison, Tennessee*). 1937. Experimental work with foods. 19(9):35-36. March 3.
• ***Summary:*** "Soy milk, fresh every day, is used in quantities by the institution. Soy milk in cans is on the market, its sale increasing continually as people become acquainted with the value of this product.

"Not only is Madison publishing the virtues of soy milk, but scientists in various places are advocating its use instead of dairy milk. Professor Madder of the University of Frankfurt, Germany, showed recently that infants fed on soybean milk are able to resist infection to a remarkable degree. This is attributed to the alkalinity of the soy milk,

which increases the resistance of cell tissues.

"An experiment conducted in Cleveland, Ohio, in the feeding of over 200 infants on soy milk and gruel [with okara, probably], shows that the cellulose of soybean gruel relieves constipation. When soybean milk is used, the intestinal flora show a predominance of gram-positive organisms, thus resembling the stools of normal breast-fed babies."

1003. *Madison Survey* (*Madison, Tennessee*). 1937. Home economics and nutrition courses. 19(9):33-34. March 3.
• ***Summary:*** In recent years, the college has provided liberally for science courses and "other departments for the education of workers in the Southland. But the Home Economics Department has been operating in temporary quarters, and with meager equipment, waiting for the hour to strike, for the opportune time to arrive for advancement." Now the time has come. Madison College is eminently fitted to operate a strong department in Diet and Nutrition. Its medical department, known as Madison Rural Sanitarium and Hospital, makes a specialty in its treatment of diet in disease. In its Food Manufacturing Department it is experimenting with foods and is placing on the market a variety of health products. Its experimental work with the soy bean has brought it into prominence in that field.

"Students in Diet and Nutrition have the privilege of practical demonstration and daily work in the Sanitarium diet kitchens and in the preparation and service of foods in the College Cafeteria. They are at work with foods in the Food Manufacturing Department, in the Cannery and Soy Milk departments, and it is from the college diet classes that the City Cafeteria draws its cooks and dietitians. Dr. Frances Dittes, who heads the college Department of Home Economics, has been Sanitarium dietitian for years. She is author of the cook book, to which you have been introduced, entitled "Food for Life.' Something of her equipment for her work both as teacher and writer is voiced in the review, of "Food for Life," written by Dr. H. A, Webb, head of the Department of Chemistry, Peabody College, for the Magazine Section of Nashville *Banner,* issue of July 26, 1936. He says: "'This book makes a real contribution to the literature of cookery and nutrition from at least two standpoints: First, it is written by a Southern author who knows the Southern taste in sickness and in health; second, it is the vegetarian school, whose life work consists in administering foods as a true medicine to those who seek for health.'

"By education, by close association with the Sanitarium staff of physicians in their care of patients, and by collaboration with Dr. Philip Chen of the College Department of Chemistry who is also chemist for the Food Manufacturing Department, Miss Dittes has a wide background for training dietitians and for leadership in the Department of Home Economics. Students otherwise qualified and who are interested in food work are unhesitatingly directed into this section of the college.

"It is in recognition of the wide field of usefulness open to those who are well trained in food preparation and food service, that Madison College is now preparing to equip new headquarters for this department of instruction, and solicits your cooperation."

1004. Chieh, Sung; Chu, Fu-tang. 1937. The vitamin C content of food articles available for young infants. *Chinese Medical Journal* 51:315-24. March. [9 ref. Eng]
• ***Summary:*** The vitamin C content of soybean milk is negligible. It was obtained from the Child Health Institute, Peiping, prepared by Tso's method. Address: Div. of Pediatrics, Dep. of Medicine, Peiping Union Medical College, Peiping.

1005. *Food Industries.* 1937. Keeping right on soy beans. 9(3):119. March.
• ***Summary:*** What is the best way to utilize soybeans in the United States?–a very important question addressed by this interesting editorial. "There is considerable danger that over enthusiastic friends of the soy bean may attempt to develop the new industry into directions that are unwise and may retard its development. Properly exploited, the soy bean should add to our national welfare; but improperly exploited the soy bean may go into disfavor. It has not yet won its way to the point where Americans will recognize its possible misuse, despite the propaganda of the Farm Chemurgic Council at Dearborn, Michigan.

"Oriental foods such as soy bean milk and cheese are not very palatable, we are advised, and are more expensive than cows' milk and cheese. Until there is a shortage of cows' milk it is unwise to create fears of new competition and the consequent antagonism of the dairy crowd.

"Another possible weak spot lies in the marketing of inferior tasting soy bean products, yet putting them over by a sales talk on nutritive values. Any food that earns a permanent place on the American dinner table does so because it tastes good–not because it ought to be eaten.

"Again: emphasizing the value of soy beans as a food for diabetics lays stress on one of its lesser values. To most of us, diabetic foods seem like foods that have been deprived of all pleasure and zest in eating. Butter, green vegetables and poultry are good foods for diabetics, but a big sales drive on that angle alone will not build volume business.

"And finally, it is a mistake to give the public the notion that soya flour and soy bean products are luxury foods by demanding prices that are out of reach of the masses. Soy beans are almost as cheap as corn and are usually cheaper than wheat. Soya products belong in the grocery store–not exclusively in the so-called health store."

1006. Shoptaw, LaVan; Espe, D.L.; Cannon, C.Y. 1937.

Gastric digestion of soybean flour. *J. of Dairy Science* 20(3):117-28. March. [9 ref]
• ***Summary:*** "A soybean gruel made by mixing one part of soybean flour with nine parts of water was compared with whole and skim milk for calf feeding..." Address: Dairy Husbandry Section, Iowa Agric. Exp. Station.

1007. Chubbuck, Dorothy. 1937. The many wonders of the soy bean. *Herald* (*Edison Inst., Dearborn, Michigan*) 4(7):1, 3. April 30.
• ***Summary:*** Describes the work of the Ford Motor Co. with soy beans. "Let us now see how the soy bean was first introduced to the Ford Motor Company and Greenfield Village. In the chemical plant in the Village, a group of young men were experimenting with several different vegetables–carrots, beets, cabbage, etc.–to discover which of the vegetables was the most complete food. Among these vegetables was the soy bean, which proved to be the most promising. About 1928 Dr. Ruddiman started experimenting with the soy bean; however, it was not until about 1930 that the young men in the chemical plant began work on it.

"The number of acres planted with soy beans has increased greatly. In 1917 about 50,000 acres were planted in the United States; in 1935 over a million and a half acres were sowed. Evidently people are beginning to realize the value of the soy bean." Michigan ranks seventh in amount of soy beans grown...

"Soy beans even play a part in the production of Ford cars. Every car that comes off the assembly line at the Rouge Plant will require several pounds of soy bean plastics for horn buttons, electrical apparatus, window frames, and many other parts. The use of the soy bean in the factory draws closer together the link between agriculture and manufacturing... Soy bean plastics are used not only in the factory but also in the hospital for table tops and coverings for either curved or flat apparatus. Soy bean plastics give a modern as well as a serviceable appearance to the hospital."

Photos show: (1) The author interviewing "Dr. E.A. Ruddiman, director of the food laboratory, concerning the many uses of the soy bean. On the table are biscuits, waffles, cake, cheese, soy butter, sandwich spread, soy sprouts, milk, and canned beans–all made from or containing soy bean products." (2) The author and Dr. Ruddiman in a laboratory standing by distillation tubes; he is showing her how to estimate the ingredients the ingredients of the soy bean using these tubes. (3) The author looking into a microscope in order to examine "some of the meal from which the protein has been extracted."

Note 1. This journal is "Published by Students of the Edison Institute." This article contains the earliest date seen (1928) for the Ford Motor Company's involvement with soybeans.

Note 2. This is the 2nd earliest English-language document seen (Jan. 2013) that contains the modern term "soy sprouts."

1008. Dittes, Frances L. 1937. Soybeans and human nutrition. *Health* (*Mountain View, California*) 4(4):18-19, 26. April. [3 ref]
• ***Summary:*** Discusses history of the soybean, food uses, nutritional value, recent scientific studies. Address: PhD, Dietitian, Madison College, Madison, Tennessee.

1009. Lager, Mildred. 1937. Something new–delicious. *House of Better Living* (*Newsletter, Los Angeles*) 4(17):4. April.
• ***Summary:*** "No chocolate is added to real soy chocolate. The dark color is from the browning of the bean. We have soy cocolette as well as the soy candies. We also have new banana soy milk powder."

1010. Fearn, Charles E. 1937. Re: Mr. Paul Richard of Oak Park, Illinois. Letter to Dr. A.W. Stokes, 4755 Fullerton Ave., Chicago, Illinois, May 3. 1 p. Typed, without signature (carbon copy).
• ***Summary:*** "Dear Dr. Stokes, I had a call from an old friend of mine, Mr Paul Richard of Oak Park today and he tells me you are interested in the possible use of Soya in infant feeding, and especially so in cases that are Allergic to milk protein. It so happens that I have had quite a considerable experience of these, and the results have invariably been satisfactory. Some years ago in London (England) I treated a large number of these allergy cases with Soya as a substitute for milk, but I found it was essential to prepare it from a blend of beans, as these vary very considerably in the Amino-Acid values of the protein; since doing this there have been no difficulties whatever, and all cases progressed very favorably."

Dr. Fearn recommends use of "the cereal I make here, as to my mind it is probably the best way possible to use Soya in the ordinary cases, and particularly in Pre and Post natal ones.

"With this I am sending you samples of the Soya Milk which I suggest you try in these allergic cases, leaving out milk entirely of course."

It "is not possible to make this Soya Milk entirely soluble without robbing it of its most important constituents, so the milk when fed to the baby should be shaken occasionally to prevent any settling.

"Directions. Use five heaping teaspoonfuls to a pint of water and boil gently for 15 minutes, adding sugar and salt as desired." Actually, Dr. Fearn usually starts with 3-4 heaping teaspoonfuls, then increases the amount "as the infant becomes used to it, but it depends somewhat on the age and the number of feedings. It occasionally takes a few days for the child to get used to this diet, but in most cases there is not the least trouble even at the start."

"This particular product is not yet on the market." Dr. Fearn is no longer practicing medicine. "Believe me my Dear Dr Stokes, Very Sincerely Yours... M.D. Eng. [England] late Royal Army Medical Corps."

Note: Dr. Fearn had known Paul Richard well since the mid-1930s. Address: M.D. [Fearn Soya Foods Co., 355 West Ontario St., Chicago, Illinois].

1011. Miller, Harry Willis. 1937. Process of making vegetable milk. *U.S. Patent* 2,078,962. May 4. 2 p. Application filed 3 Dec. 1935.

• ***Summary:*** This patent is "especially for the production of vegetable milk from the soya bean, the various steps of the process being physical and at no time chemical."

It has "been found of decided advantage to grind the soaked beans in a burr mill and during the grinding operation to constantly add a small stream of water to the beans. The beans should be ground to the finest possible state.

"During the grinding operation the water added is such as to result in the formation of about twenty gallons of pulp [okara] for twenty-five pounds of beans."

The saturated mass is added to boiling water in a "kettle and stirred or agitated while being heated to the boiling point, such boiling being continued until the pulp has lost its viscosity stickiness so that when separated the pulp comes out quite dry..."

"After the fluid has been heated to the boiling point it is then strained through a very fine straining cloth to separate cellular residue from the milk allowing only the food particles in solution to pass through. This straining operation is preferably facilitated by use of a centrifuge making 2,500 revolutions per minute."

To the hot milk are then added a cereal sugar (7 lb), a vegetable fat (7 lb) and salt (3 oz). The mixture is then reheated to the boiling point and during this heating and cooking the fluid is agitated very carefully until the entire taste of the milk is "changed from a beany flavor to what might be termed a 'nutty' flavor." After proper cooling, the milk is run through a colloid mill or homogenizer.

This improved process extracts from the soya bean approximately 85% of its protein and 70% of its fat, together with vitamins A, B, E, and G and the larger portion of the mineral ash. Address: Shanghai, China.

1012. Alwines, C.W.D. 1937. The soya bean (Letter to the editor). *Tropical Agriculturist* (*Ceylon*) 88:304-05. May.

• ***Summary:*** "When in charge of the Balance Diet Experiment at St. Patrick's Boarding House last year, I was anxious to get a quantity of these beans, to see how much they would cost in a daily diet and whether they could go to make palatable dishes. Enquiries from [sic, to] the Department of Agriculture elicited the information that these beans were not grown in Ceylon. The Market Commissioner gave the address of a Colombo firm that sold the beans. A trial order was placed. The cost however militated against the regular use of these beans." A small quantity of yellow soybeans was roasted and ground. "To all intents and purposes the powder passed off as coffee. That was the easiest way of preparing the bean as food." The beans were passed three times through a flour mill to obtain a fine, golden flour, almost like gram flour. "The flour was used to make bread, buns, tarts and a cake. These were very tasty." One part of soya was mixed with two parts of [wheat flour] dough to make bread and buns... The nutty flavour as eliminated by a liberal addition of butter, sugar and essence of vanilla. The number of eggs uses was less" since soya flour contains 20% at. Rotti, Vadai, and other indigenous dishes were also tried.

"Undaunted by the fact that Soya Bean was not grown in Ceylon, an attempt was made to grow it at Paranthan and at St. Patrick's Boarding House gardens. The variety tried belonged to the black group (with flat black seed)." They grew well and the flour tasted good in the dishes described above. "An attempt to make Soya Bean milk and curds is contemplated." Address: St. Patrick's College, Jaffna, Ceylon.

1013. Lust's Health Food Bakery, Inc. 1937. Enjoy the greater joy of life and abundant health on these famous soya health foods: BakerLust–Original soya bean products (Ad). *Naturopath and Herald of Health* (*New York City*) 42(5):157. May.

• ***Summary:*** This 1/3 page ad is identical to that which first appeared in the Jan. 1937 issue of *Nature's Path* (New York City)–except that the large logo near the top of the ad has a horizontal bold black rectangle (1½ by 3½ inches) as background. On it, in white, is the outline of a baker, from the chest up, wearing a bakers hat, and holding out his right hand, in which is a sort of light wand that has taken the shape

of the word "BakerLust." Address: 309-311 East 56th St., New York City.

1014. *Popular Mechanics.* 1937. The bean that made good. 67:660-62, 120A, 122A. May.
• ***Summary:*** Photos show: (1) William Morse in his office at USDA in front of shelves of soybean food products. (2) Native 2-wheeled carts drawn by horses or mules (and widely used to carry soybeans) in front of storage silos in Manchuria. (3) "Soybeans from Japan used as green vegetables"–their pods. (4) A soybean storage yard Manchuria, with many horse-drawn wooden carts and tall cylindrical storage containers. (5) William Morse inspecting candied soybean products. (6) Two men in a hay-strewn field. (7) Boiled soybeans being crushed in a wood mortar in Japan. (8) Earthenware jars for making soy sauce in China; each is topped with a conical woven bamboo lid. (9) Two men, possibly including Morse, examining the root systems of soybean plants.

A chart (p. 120A) is titled "Soybean Utilization."

This digital photo, with caption and date, was sent to Soyfoods Center by Joyce Garrison (William Morse's granddaughter) of West Hartford, Connecticut (July 2004).

1015. *Revista de Agricultura* (*Cuba*). 1937. El frijol que se ha hecho famoso [The bean that has become famous]. 20(4-5):30-36. April/May. [Spa]
• ***Summary:*** Describes the soybean, its history in the United States, the advantages of planting it, its uses as oil and vegetable milk, its use in industry, and prospects for the future. Contains eight photos: (1) William Morse of the USDA standing in front of many floor-to-ceiling shelves filled with food products made from soybeans. (2) Green vegetable soybeans in their opened pods. (3) Horse-drawn carts with sacks of soybeans and silos filled with soybeans in Manchuria. (4) William Morse pouring whole soybeans into his left hand from a can held in his right hand. On a nearby wooden box, apparently containing the same type of soybeans, is written in Japanese (from right to left) *"Hakka mamé,"* which means "peppermint soybeans." (5) Two farmers in a field of shocked soybeans. (6) A Korean girl pounding soybeans in a tall wooden mortar. (7) A Chinese courtyard filled with vats of fermenting soy sauce, each covered with a conical braided bamboo lid. (8) Two farmers wearing straw hats inspecting soybeans in a field.

1016. *California Health News* (*Hollywood, California*). 1937. Article about Gandhi drinks soybean milk from Harijan. June 18. *

1017. Carver, G.W. 1937. Re: Peanut milk. Letter to Mrs. L.C. Barnes, 459 Marlborough Road, Yonkers, New York, June 21. 1 p. Typed, without signature (carbon copy).
• ***Summary:*** "Dear Madam: Peanut milk is not on the market and is not being manufactured. I suggest that you get in touch with the Nashville Agricultural Normal Institute, Madison College, Madison, Tennessee. They manufacture many kinds of health foods from soybeans including soybean milk, which is similar in many respects to peanut milk. They make an excellent product."

John Ferrell, who located this document, adds (Dec. 1992). "Carver seemed to like Madison College. I've noted maybe six letters much like this one to people who enquired about soybeans." Address: Director, Research and Experiment Station [Tuskegee, Alabama].

1018. Carver, G.W. 1937. Re: Soybean milk. Letter to Joseph Horsham, M.D., 623½ Kanawha St., Charleston, West Virginia, June 26. 1 p. Typed, without signature (carbon copy).
• ***Summary:*** Dr. Horsham wrote Carver on June 22: "I was also much interested in the preparation [soybean milk] that you made for Mr. Mahatma Gandhi. I have a patient who is suffering from an obstruction of the pyloric end of the stomach..."

Dr. Carver replied: "I suggest that you try out the following beverages. First, soybean milk. Grind the soybeans and cover them with cold water; heat slowly, stirring constantly. When it reaches the boiling point, remove from the fire and strain through double cheese cloth. This milky liquid can be sweetened, lemon juice or any other fruit juice added, making a very palatable drink. Peanut milk can be made the same way from either parched or raw peanuts." Address: Director, Research and Experiment Station [Tuskegee, Alabama].

1019. Carver, G.W. 1937. Re: Soybean milk, peanut milk, and Madison College. Letter to Mr. N.A. Alexander, Harrison, New York, June 27. 1 p. Typed, without signature (carbon copy).
• ***Summary:*** "Dear Sir: Our station has never issued any publications on the soybean or peanut milk. I just received yesterday a can of chocolate milk and one that is of the same composition as cow's milk. Both are made by the Madison College, Madison, Tennessee. They are supreme authority on the use of the soybean, and it would be well for you to get their literature, as I do not know of an institution that is doing more remarkable things with the soybean along food lines as they are." Address: Director, Research and Experiment Station [Tuskegee, Alabama].

1020. Megee, C.R. 1937. Soybean production in Michigan. *Michigan Agricultural Experiment Station, Circular Bulletin* No. 161. 14 p. June.
• ***Summary:*** Contents: History, adaptation, and uses. A high protein emergency or annual hay crop. Digestible nutrients and feeding value per acre of soybeans and other Michigan crops. Soybean oil meal. A supplementary

protein feed. Soybeans for silage. A cash crop. Soybeans as a soil improving crop. Cultural practices: Varieties, time of planting, rate and methods of planting, inoculation. cultivation, harvesting for hay, harvesting for seed, threshing, storage of soybean seed. Industrial and commercial uses of soybeans: Soybean oil, soybean oil meal, dried beans, for human food.

"As early as 1902 and for 20 years afterwards, E.E. Evans of West Branch, Michigan, took an active part in introducing, breeding, and distributing varieties of soybeans. The Ogemaw is an introduction of Mr. Evans and is the result of a cross between his No. 6 Early Black and Dwarf Brown. Since 1918 the Michigan Agricultural Experiment Station has conducted numerous variety tests for both hay and seed production at East Lansing and at various points over the state" (p. 3).

Table 4, titled "Soybean variety adaptation" (p. 10) lists the following: Manchu, Ito San, Mandarin (Canada), OAC 211 (Ontario), Dunfield, Illini (Illinois), Mandell (Indiana), Sciota (Ohio), Cayuga (New York), Ogemaw (Early Michigan), Wisconsin Early Black, Virginia, Wilson, and Mammoth Yellow. For each variety is given the name, maturity, seed color, and adaptation. "The Manchu is the leading general-purpose variety for hay, seed, and commercial uses in Michigan."

Under "Industrial and commercial uses of soybeans," a table shows 10 industrial and food uses of soybean oil, 15 industrial and food uses of soybean oil meal (incl. diabetic foods, flour, crackers, soy milk, bean curd [tofu], soy sauce), and 12 industrial and food uses of dried beans (incl. roasted beans, coffee substitutes, soups, baked beans, boiled beans). "When soybeans are to be used as a green vegetable, the Easycook and Hahto are preferred because of their milder flavor." Address: Section of Farm Crops, East Lansing.

1021. *Naturopath and Herald of Health* (*New York City*). 1937. Recipe for soya bean milk. 42(6):183. June.
• ***Summary:*** This recipe by Clara M. Brewster is from *Horizon* (Aug. 1936, p. 9, 26-27).

1022. Radcliffe, Jack B. 1937. Soybean: The perfect protein. *Nature's Path* (*New York City*). June. p. 210.
• ***Summary:*** "Packed into the tiny soya bean is a wealth of nutrition; minerals, tiny vitamins, easily assimilated carbohydrates, and the greatest hoard of proteins that any food in the vegetable kingdom contains." Just imagine. "A vegetable product equal to most, and superior to some animal products in proteins, the body building element in food, without which there would be no life."

Unlike meat and fish, the soybean is one of those rare foods that alkalinize the body. Milk and butter made from soybeans are better than their dairy counterparts. Its oil is equal to the best grade of olive oil. It is the world's leading source of lecithin, and the source of protein-rich soy flour, soy sauce, roasted soybeans, vegetables, cheese, etc. Dr. Kellogg is making increasing use of "soy acidophilus" [a type of liquid fermented soy milk].

1023. Carqué, Lillian R. 1937. Sensible feeding of children. *Nature's Path* (*New York City*). July. p. 244, 264-65.
• ***Summary:*** "Pure roasted and unsalted Almond Butter, diluted with warm water to the consistency of milk," to which a little honey has been added, may occasionally take the place of animal milk. "Almond milk should be made fresh every day."

"In China and Japan, soy bean milk is frequently used in feeding infants and children in place of animal milk."

Note: This last sentence may possibly be true about China but it is not true of Japan. Address: [Los Angeles, California].

1024. Lanzing, J.C.; van Veen, A.G. 1937. Sojamelk [Soymilk]. *Mededeelingen van den Dienst der Volksgezondheid in Nederlandsch-Indie* 26(1&2):60-74. [9 ref. Dut]
• ***Summary:*** This is the earliest Dutch-language document seen (Aug. 2013) that uses the term *sojamelk* to refer to soymilk. As of Oct. 2003 *sojamelk* is the modern Dutch word for soymilk. Address: Both: Dr., Geneeskundig Laboratorium, Batavia.

1025. Voellmig, Gertrude. 1937. Modern science discovers the soy bean as very nearly perfect food: New leaflet on soy bean now ready. *Detroit News.* Aug. 29. Home and Society section. p. 14, col. 4.
• ***Summary:*** "The Detroit News Household Department receives so many requests from readers for information about soy beans" that they have compiled a table and leaflet (with 21 recipes). It has been grown in China since 2800 B.C. [sic]. Readers want to know why it is recommended so highly by doctors for special diets. Now grown in the United States, it is used in industry and to make the steering gear of cars. "But did you know that this bean comes nearer to being a complete food for humans than any other known product?" The beans are often served green in the pods. First the pods are dipped in boiling water for 1-2 minutes, then the beans can easily be pressed out of the pods. The mature beans can be made into milk, and the milk into cheese [tofu]. Soy bean butter is similar to peanut butter. Many U.S. margarines are made from soy bean oil. "Salted Soyas," toasted and salted, make a fine tid-bit [tidbit] after dinner. "The most commonly known soy bean product is the flour." If 5-10% of the wheat flour is replaced by soy flour in the recipe for any bread or baked good, the result will be more tender and last longer.

Three photos, titled "This product has many uses as a food," show: (1) Jars of: Soy bean–Salted Soya. Soy beans–Mature, pressure cooked. Soy beans with carrots. Soy bean–Green. (2) Jars of: Soy bean cheese. Soy bean milk. Soy bean

cheese with pimento. Soy bean butter, Soy bean sprouts. (3) A loaf of Soy bean bread–25% bean flour. A jar of Soy bean flour–Not processed.

Of the 5,000 varieties, only about 10 are grown in the USA to any great extent. "Mammoth Yellow is one of the few preferred for food stuffs because it does not have a strong flavor."

Gives many reasons that soy beans are very important in the diet, 6 reasons why the "soy bean is an excellent food stuff," a listing of industrial uses, plus two recipes. Address: Asst. Household Editor, The Detroit News.

1026. *Food Field Reporter.* 1937. Russians make soybean milk, use it for chocolate candy. 5(18):35. Sept. 6. [Eng]
• ***Summary:*** "Leningrad, Russia–How to make soybean milk and soybean cream and the uses of soybeans in confectionery have been investigated by V.M. Voskresenski and T.K. Dobruinina of this city. The scientists say that soybean milk is made by soaking the beans for 2 hours and thoroughly emulsifying. In commercial production, they state, the material may be hulled or whole beans, thoroughly ground and homogenized in water at least one hour and then thinned with water and emulsified at least 30 minutes. The milk may be pasteurized at 80ºC for 15 minutes.

"In making soybean cream there are 2 methods. The water content of the original emulsion may be reduced, or the soybean milk may be creamed. Pressed soybean milk has been used to make chocolate candies of good quality, it is reported. Also soybean-milk residues have been mixed with jam or jelly to make pie fillings."

1027. League of Nations Health Organization–Bandoeng Conference. 1937. Report of the Intergovernmental Conference of Far-Eastern Countries on Rural Hygiene. *International Conference of Far Eastern Countries on Rural Hygiene* (*Preparatory Papers*) Vol. 3, page 74-76. Held 3-13 Aug. 1937 at Bandoeng, Java. Published 8 Sept. 1937. Official No. C.H. 1235.
• ***Summary:*** In Chapter 4, titled "Nutrition," section I discusses "Composition of food and methods of its preparation." The soya bean and its uses in French Indo-China (today's Vietnam) are discussed on pages 75-76. "Apart from rice an maize, one of the most important food crops in that Far East is the soya bean (*Glycine hispida*). This bean is rich in proteins and fatty matter, but has a very low carbohydrate content. Eaten in its natural state as a vegetable, or better still, in the form of a variety of appetising preparations in which the casein is partly disintegrated, the soya bean makes good the deficiency of fatty and nitrogenous matter in the native diet, which consists almost entirely of the rice carbohydrates.

"Its chief derivatives are nuoc-dâu, or soya milk; dâu-phu, a fresh soya cheese obtained by precipitating the casein of soya milk; dâu-tuong, or soya sauce, which is often used instead of nuoc-mam, especially in Tongking; and dâu-phu-chuc, or soya cream [yuba].

"Soya milk is a yellowish-white liquid with a slight smell of burnt bread and a peculiar flavor greatly appreciated by the Annamites. It is prepared by peeling the beans, pounding them in water, straining, and boiling up the resulting liquid.

"Soya cheese [tofu] appears in trade in the form of faintly yellowish-white rectangular cakes, weighing about 150 grammes each. Ten kg. of soya beans will produce 100 liters of milk, which in turn yield 300 cakes, or 45 kg., of cheese. This very cheap product, of which several thousand kilogrammes are sold every day in the Hanoi market alone, is eaten either raw with salad, or stewed with vegetables, or fried in oil.

"Soya sauce, or dâu-tuong, is a preparation obtained by fermenting a mixture of glutinous rice [*Oryzae sativa glutinosa*, called 'nêp' by the Annamites] and roasted soya beans. It is a condiment both salty and sweet, which frequently replaces nuoc-mam, a relatively dear food, especially in regions distant from the sea.

"Dâu-tuong is commonly found in commerce in the form of a heterogeneous mixture, consisting of a liquid (nuoc-tuong) in which floats a somewhat coarse paste called tuong-cai, made of incompletely powdered soya beans.

"Dâu-phu-chuc is prepared by drying the skin that forms on the surface of soya milk after prolonged heating. It is sold in shiny, pale yellow, crinkly sheets, and smells like cow's milk. It is a food rich in proteins and fatty matter, and is consumed by the Annamites in small pieces, either in soup, or in pork, beef, or chicken stew."

Note: This is the earliest English-language document seen (Dec. 2012) that uses the term "roasted soya beans" to refer to soynuts. Address: Geneva, Switzerland.

1028. League of Nations Health Organization. 1937. Report of the Intergovernmental Conference of Far-Eastern Countries on Rural Hygiene. *International Conference of Far Eastern Countries on Rural Hygiene* 3:65, 74-77. Held 3-13 Aug. 1937 at Bandoeng, Java. Published 8 Sept. 1937. Official No. A.19.1937.III.
• ***Summary:*** Chapter 4, titled "Nutrition" has a section on "Recommendations About Diet" (p. 74-77). It encourages the inclusion of some animal protein in the diet, praises "under-milled rice" over highly-milled rice for its greater content of vitamin B-1, protein, and mineral salts, and praises the nutritional value of fish, eggs, milk, pulses, and soya bean. "Soya bean contains a high percentage of protein and fat, and preparations of soya bean are an important dietary ingredient in Eastern countries. While soya bean is a valuable food, it does not make good all the deficiencies of diets based on rice. Soya bean "milk" has little in common with mammalian milk beyond a white colour. Suitably supplemented–e.g., by egg yolk, malted sugar, and mineral salts–soya bean

"milk" may be useful in infant feeding." Address: Geneva, Switzerland.

1029. Morse, W.J. 1937. Soybean variety studies of the United States Department of Agriculture. *Proceedings of the American Soybean Association* p. 16-18. 17th annual meeting. Held 14-16 Sept. at Urbana, Illinois.
• ***Summary:*** "One of the outstanding results of soybean improvement work in the United States has been, the realization of the importance of varietal adaptation... Varietal adaptation is obviously the reason why practically every locality in the soybean regions of the Orient has its own local varieties... Of the large number of introductions obtained from Asia, the same variety rarely has been secured a second time unless introduced from the same locality... Before numerous introductions were made by the Department, beginning in 1898, there were not more than eight varieties of soybeans grown in this country, and the culture of these varieties was confined to limited areas in a few states... Seed samples were obtained through consuls, missionaries, seedsmen, government agencies, and foreign explorers until by 1909 we had 175 varieties; by 1913, 427 varieties; by 1919, 629 varieties, by 1925, 1133 varieties, and at the present time more than 2,500 distinct types. Since 1989 the Department of Agriculture has made more than 10,000 introductions of soybeans from China, Manchuria, Japan, Chosen [Korea], Java, Sumatra, Siberia, and India. This large collection, ranging in time of maturity from 75 to 200 or more days, has show wide differences in adaptation to soil and climatic conditions..."

After preliminary testing at Arlington Farm, Virginia, the introductions are sent to various experiment stations for cooperative studies...

"The soybean has been used chiefly as a forage crop in the United States and for many years breeding work tended largely toward the development of varieties for hay, silage, and pasture. With the rapid development during the past few years of the soybean for oil, food and industrial purposes, acreage for bean production has increased greatly. The improvement and development of varieties adapted to a wide range of conditions and uses undoubtedly has been one of the most important factors in increased acreage and seed production."

"Extensive cooperative investigations with more than 3,000 introductions and selections of soybeans have been carried on during the last three or four years with experiment stations and special cooperators in 44 states and the insular possessions, Hawaii and Puerto Rico. Many of these selections gave outstanding results when compared with standard varieties in different sections and are being increased for more extensive field tests. Several of the varieties in different sections were found especially suitable for use as green shelled beans, dry edible beans, or beans of high oil and protein content, as commercial beans.

"In 1936, more than 5,000 individual soybean plant selections from introductions and natural hybrids were under test at Arlington Farm. Although improvement work at Arlington has been largely plant selection, some hybridization work has been started, especially with the wild soybean and the most promising cultivated types. Oil and protein studies have been conducted along with the breeding work, analyses being made of introductions grown in the same and under different environmental conditions. An extensive series of varieties, introductions and selections at Arlington Farm ranged from 12 to 26 per cent oil and from 28 to 50 per cent protein... In view of the interest in soybean oil for paint purposes, studies were conducted to show the range in iodine number. The results of these investigations showed a range from 118 to 143 for domestic varieties and 155 for the wild soybean.

"The increasing use of soybeans for food has resulted in a demand for varieties especially suited for various food purposes. Extensive cooperative cooking experiments with the Bureau of Home Economics of the Department of Agriculture and with several state experiment stations have shown considerable variation in flavor and cooking quality in both the green and dry beans of edible varieties from the Orient. The most promising of these have been named and distributed to special cooperators by several state experiment stations. Some of these varieties are especially valuable as green shelled beans, flour, dry edible beans, roasted salted beans [soynuts], bean curd, bean milk, and bean sprouts." Address: Bureau of Plant Industry, USDA, Washington, DC.

1030. Muller Laboratories (The). 1937. Mull-Soy. Vegetable milk substitute (Ad). *Proceedings of the American Soybean Association* p. 76.
• ***Summary:*** A 1/8-page horizontal, rectangular ad with no graphics.

Note: This is the earliest ad seen (July 2013) that mentions "Mull-Soy." Address: 2935 Frederick Ave., Baltimore, Maryland.

1031. *Times of India* (*The*) (*Bombay*). 1937. Rs. 2,00,000 [200,000] for free milk for municipal school children: Bombay Corporation's decision. Oct. 8. p. 14.
• ***Summary:*** Starting next year, under-nourished, needy children, who attend municipal primary schools in Bombay, will be given a free supply of milk every day at the expense of the Bombay Municipality–as announced at a meeting of the Municipal Corporation held last Thursday.

Various amendments were offered and debated. Mr. Hirjibehedin noted that many foreign countries had similar programs. "In that connection, he suggested that the Schools Committee might try soya bean milk, which, in his opinion, was more nutritious than cow's milk or buffalo's milk."

1032. *Chicago J. of Commerce and La Salle Street Journal.*

1937. Ice cream, milk from soy beans: Tennessee scientists start new industry. Oct. 13. p. 9, col. 8.
• ***Summary:*** In a small group of buildings located a few miles from Nashville, a small group of chemical and agricultural scientists are doing "big things with the soy bean..."

It all started some 25 years ago when some agricultural chemists at the small, self-supporting the Nashville Agricultural Normal Institute started experimenting with the soy bean, then used mainly as forage.

Today, in a small group of buildings housing the 3-month old industry, E.M. Bisalski, his staff of assistants, and Dr. Philip Chen (a research chemist from China) are making "milk, meat, coffee, and automobile accessories from the vegetable."

Chen says there was soy bean milk in China 3,000 years ago, yet it has taken the scientists about 25 years to "neutralize the bean flavor and approximate that of the cow." Experiments in the institute laboratory showed that many generations of rats living exclusively on soy bean milk grew strong and produced prolific offspring. The scientists believe that the "bean milk can be produced more cheaply than dairy milk and that it can be produced under conditions of chemical sterility, almost germ free."

Having developed good milk, the group next "sought to compete with cattle as food producers in the form of beef.

"A product called soy-burger has been produced. It tastes like hamburger.

"The scientists have made ice cream and buttermilk and even chocolate flavored milk. They also have a cheese [probably tofu] which is said to be the closest thing to pure protein known to chemistry. It tastes like Swiss cheese but costs only a fraction as much."

Note: This is the earliest document seen (Jan. 2007) concerning a meatless burger made from soy. This is also the earliest English-language document seen (Jan. 2007) that contains the term "soy-burger."

1033. *Agricultor Venezolano* (*El*) (*Ministerio de Agricultura y Cria, Caracas*). 1937. Consultorio agricola [Agricultural information bureau]. 2(18):62-63. Oct. [Spa]
• ***Summary:*** One of the sections, by Bartolomé Valero, dated July 1937, is about soymilk (*Leche vegetal de soya*) and tofu (*Queso de habas de soya, ou cuajada de soya*). Describes briefly how each is made.

1034. Kellogg, John Harvey. 1937. Special health values of the soybean. Paper presented before the Section of Food and Nutrition at the American Public Health Assoc., 68th meeting. Oct. 5. 7 p. typescript. Reprinted in 1937 by Soya Foods Ltd., Rickmansworth, England. 6 p. [9 ref]
• ***Summary:*** This paper begins: "The rapid development of the production and use of the soybean (*Soja hispida*) in this country within the last quarter of a century, and the multitudinous uses to which it is being put, fully justify the name 'wonder bean', which it has been called by American writers, and the appellation, 'little honorable plant', by which it is known in China.

In South China, the soybean so completely replaces other sources of protein that there is no dairy industry, and meat, fish and even eggs, are very little used. The soybean is the chief source of protein for the common people and is referred to as 'the poor man's meat.'

"Studies of this most remarkable of food products, especially in the United States and Germany, have shown it to possess not only extraordinary nutrient properties, but also some highly important prophylactic and therapeutic values, knowledge of which ought to be popularized as rapidly and widely as possible.

"Although botanically classed with legumes, the soybean rather closely resembles the nut in its very low content of starch and high percentage of protein. It easily takes precedence over all other natural foodstuffs in the great percentage of protein which it contains, and protein of such superior quality that in animal feeding experiments it has proved itself to be capable of replacing proteins of all other sorts, even milk proteins. The soybean protein content is 40%, nearly twice that of average meat and four times that of eggs, three to four times that of wheat and other cereals, five to six times that of bread, twice that of lima and navy beans, walnuts, filberts and most other nuts. The protein of the soybean (glycinin) is of high quality, like that of milk, containing certain amino acids of which the proteins of nearly all other legumes and all cereals are deficient."

Contains a long discussion of soy acidophilus milk, changing the protective flora, and the experience of Dr. Dafoe with the Dionne quintuplets in Canada.

"Forty years ago, I was requested by Dr. Dabney, then Assistant Secretary of the United States Department of Agriculture, to prepare from plant sources a substitute for meat, and found in a combination of the gluten of wheat with peanuts a product having not only the essential nutrient values of meat, but a fairly close approximation in flavor and appearance. The soybean solves the problem so completely and so satisfactorily that with the proper development of its culture and use, there need be no fear of protein shortage and no need of a substitute. There is, indeed, evidence that Americans might profit greatly as the Chinese have by giving the soybean a large place in the national bill of fare.

"A few years ago (1923), Dr. Arthur Hunter, Chief Actuary of the New York Life Insurance Company, in an international study of blood pressures, found the systolic pressure of the average Chinaman to be ten points lower than that of the average American and gave conclusive evidence that the cause is to be found in the difference in the dietary habits of the Chinese and Americans. In concluding an address before the American Life Underwriter's Association, Dr. Hunter said, 'Taking the population of the United States

as a whole, I believe that a better adjusted diet, with less animal food, would result in a lower blood pressure and in greater longevity with an equal ability to carry on their occupations.'

"In view of the facts cited in this paper, is it not reasonable to believe that the general use of the soybean in this country would tend to lessen the mortality rate from intestinal infections and many other acute and chronic disorders, and to increase individual life expectation?" Address: M.D., LL.D., F.A.C.S., Medical Director of the Battle Creek Sanitarium, Battle Creek, Michigan, and of the Miami-Battle Creek, Miami Springs, Florida.

1035. *Nature's Path to Health* (*Melbourne, Australia*). 1937. Soy bean–The perfect protein. Sept/Oct. p. 34.
• ***Summary:*** "Packed into the tiny soya bean is a wealth of nutrition; minerals, tiny vitamins, easily assimilated carbohydrates, and the greatest hoard of proteins that any food in the vegetable kingdom contains. Think of it! A vegetable product equal to most, and superior to some animal products in proteins, the body building element in food, without which there would be no life. And this same Soya Bean, so rich in all the food essentials, produces an alkaline reaction in the body. It sounds almost unbelievable!

"The chief argument against a heavy meat diet is the acid reaction in the human system. So it is with all highly protein foods commonly used as meat substitutes–fish, eggs, etc.; but here is the most nearly perfect substitute for meat known to man, and it is one of the extremely rare foods which alkalinize the body."

"Milk and butter made from soya beans are richer and more satisfactory than dairy products. Its oil equals the best grade of olive oil."

"Lecithin, in which the soya bean is rich, is a nerve, brain, and sex building food. Calcium builds bone, teeth, finger nails and accessories.

"From the seed comes meal and oil. Out of the meal can be made a flour for use of infants, macaroni, breakfast foods, bread, cakes... From the dried beans come soya sauce, soups, roasted beans, vegetable, milk, liquid and powder, cheese, soy cultures that taste like buttermilk, beverages, confections and so-called candy.

"Another valuable property of the soy bean is its high alkalinity, which amounts to twenty-four times that of cow's milk. Concerning this point, Dr. Kellogg says: 'We are certainly eating too much meat and not enough alkaline products.' A meat diet is heavily charged with acids which lower the alkalinity of the blood and tissue fluids and tend to cause acidosis, thus inducing chronic fatigue, lowered resistance to disease, and setting up degenerative processes in the liver, kidneys, blood vessels and other parts of the body. More people die in this country from these causes than from any other." Address: Australia.

1036. Salgues, René. 1937. Étude agronomique et chimique de quelques Sojas cultivées en France [Agronomic and chemical studies on some varieties of soybeans grown in France]. *Revue de Botanique Appliquee & d'Agriculture Tropicale* 17(194):724-37. Oct. [1 ref. Fre]
• ***Summary:*** The author has conducted soybean trials with various varieties since 1921 in the region of Brignoles, France. Some of the best studies on soya in France have been written by Mlle. Marie-Thérese François, Professor at the Faculty at Nancy, France. They appeared during 1935-36 in the *Actes et Compte-rendus de l'Association Colonies Sciences.* A table gives statistics for the world's principal countries importing and exporting soybeans and soy oil, during 1925-29, 1932, 1933, and 1934.

Details are given on soybean trials conducted in the region of Brignoles. Eleven varieties were grown, obtained from various locations. For each variety is given: Variety names or numbers. Germination percentage. Density. Weight of 100 seeds. Plant habit. Flowering (usually none). The date obtained, varietal names, and seed weights, when given, are shown in parentheses. The locations are: 1. Botanical Garden of Eala, Belgian Congo (3 numbered varieties; 100 seeds weigh 28.6, 27.9, and 31.4 gm). 2. Botanic Gardens, Peradeniya, Ceylon (23.5 gm). 3. State Botanical Garden, Buitenzorg, Java (2 numbered varieties; 29.1 and 15.5 gm). 4. Botanic Gardens, Singapore, Straits Settlements [incl. Malaya] (22.3 gm). 5. Botanic Gardens, Sibpur, Calcutta, British India (22.3 gm). 6. Agricultural Service, Beirut, Lebanon (Service de l'Agriculture, Beyrouth; Etat du Grand Liban) (1924; 35.6 gm). 7. Botanical Garden, Tabor, Czechoslovakia (1924; 18.4 gm). 8. Technische Hoogeschool Culturtuin voor Technische Gewassen, Delft, Netherlands (4 varieties–alba 34.3 gm, nigra 26.5 gm, ochroleuca 23.8 gm, Sangora 21.2 gm). 9. Bureau of Plant Industry, USDA, Washington, DC, USA (2 varieties–alba 27.8 gm, nigra 24.3 gm). 10. College of Agriculture, Univ. of Wisconsin, Madison, Wisconsin, USA (3 varieties–Mandarin 54 23.6 gm, Manchu Ped. 3 19.6 gm, Ito San 57 27.3 gm). 11. Dr. Trabut, then Pr. Maire, Direction du Service Botanique, Algers, Algeria (4 or 5 varieties–Haberlandt 1929 19.8 gm, Black No. 6 (black eye) 23.7 gm, Précoce 1 1922 23.9 gm, Mamouth [Mammoth] 26.7 gm.).

An analysis of the chemical composition of the seeds of most of these varieties is given on p. 722, and a detailed analysis of the oil of six varieties is given on p. 733.

Details on large scale cultivation of 11 other varieties of soybeans at Vaucluse are also given (p. 734-36). The variety names (in French) are: *Jaune de Pologne, Soja brun, Soja saumon, Mandarin, Hato tacheté noir, Vert monstre, Hato noir, Tokyo noir, Sun Yat Sen, Mandchou* [*Manchu*], *206 vert.* For each is given: Color of the seeds, color of the pods, density, yield in 100 liters per hectare, yield in kg/ha (ranged from a high of 2,870 for *Hato tacheté noir* to a low of 1,530 for *Soja brun*). weight of 1000 seeds in grams, number of

seeds per kg, seeding rate (kg/ha), number of times the seeds were harvested.

A final section on soymilk gives the composition of soymilk made by the author from 5 varieties of soybeans.

Note: This is the earliest document seen (Dec. 2007) concerning soybeans in Lebanon, and (probably) the cultivation of soybeans in Lebanon. This document contains the earliest date seen for soybeans in Lebanon, or the cultivation of soybeans in Lebanon (1924, probably). The source of these soybeans is unknown. Large green soybean seeds were sent from Beirut to France in 1924. Address: Fondation Salgues de Brignoles (France) pour le developpement des sciences biologiques.

1037. Siegmeister, Walter. 1937. Developing a business on the soybean. *Bean-Bag* (*The*) (*Lansing, Michigan*) 20(5):9, 15, 19. Oct.

• ***Summary:*** "About two years ago I first became interested in the soybean and began to study the various foods that could be made from this bean. I then commenced to send out to some friends some 'Soybean Powder,' processed from steamed soybeans, and having a delicious milky taste when eaten raw. So great was the demand for this, that we got our own containers and labels and started to pack it, and in a short time orders came from all over the country for our products both from stores and individuals.

"Since then we added a number of other products to our line, including a soup powder, a soybean-banana powder that makes a tasty drink, a soy butter, a soy coffee; a soy cereal; etc. The name of our firm is Soya Health Products, which is a mail order company situated at Spring Valley, New York. We also publish a magazine devoted to the soybean called 'Regeneration,' and we will gladly send a sample copy to anyone who writes us."

On page 15 (lower right) we read: "And from the Soya Health Products, Spring Valley, New York, we received samples of a lot of soybean products that really are superb. There is a soy bean milk, a soy breakfast food, roasted soybeans, and soy flour. Write this firm and see for yourself."

Then on page 19 (lower right) is the expected small advertisement: "Soybean milk powder. A protein substitute for meat, eggs and dairy products. 40¢ per lb.–$1.00 for 3 lbs. Free sample on request. Write for free sample copy of 'Regeneration.' The soybean magazine contains valuable information on the soybean and diet. $1 per year. Ask for price list on New Soybean Health Foods. Soya Health Products, Spring Valley, New York." Address: Dr., Soya Health Products, Spring Valley, New York.

1038. Radcliffe Soya Products. 1937. Soya foods sweep America (Ad). *Health News* (*Hollywood, California*). Nov. 5.

• ***Summary:*** In a large white circle: "Radcliffe's 38 assorted soya alkaline foods. Also diabetic foods." In bold white letters on a black background: "Radcliffe's Malted Soya Milk. Also: 100% Soya Beverage–Just like breakfast coffee. Natural Soya Butter–Soya Milk. Write for catalogue."

Note: This is the earliest English-language document seen (Sept. 2011) with the term "Soya foods" in the title. Address: 146 Fillmore St., San Francisco, California.

1039. *Madison Survey* (*Madison, Tennessee*). 1937. Manufacture of foods. 19(42):167. Nov. 10.

• ***Summary:*** "Madison is giving a message of healthful living to the public, and in this program the food factory plays an important part. Among the products it is placing on the market are crackers of various composition; foods to use in place of meat, such as, Vigorost, Soy Cheese, Soybeans canned with Tomato; a beverage to take the place of coffee called Soy-Koff. Kreme O'Soy Milk, plain and chocolate, is also on the market in cans."

1040. **Product Name:** Kreme O'Soy Milk (called Kreme-O-Soy in 1947) [Plain, or Chocolate].
Manufacturer's Name: Madison Foods.
Manufacturer's Address: Madison College, Madison, Tennessee.
Date of Introduction: 1937. November.
Ingredients: Fall, 1948: Soybeans, soy oil, dextrose, calcium phosphate, sodium chloride.

Wt/Vol., Packaging, Price: 15 oz, 19 oz, or 20 oz can.
How Stored: Shelf stable.
Nutrition: Protein 3.5%, fat 3.9%, carbohydrates 4.9%, ash 0.7%, calcium 0.34%, iron 4.4 mg/k.
New Product–Documentation: Madison Survey. 1937. Nov. 10. p. 167. "Kreme O'Soy Milk, plain and chocolate, is also on the market in cans."

Madison Health Messenger. 1938. "The only homogenized soymilk on the market to date."

Madison Health Messenger. 1948. Fall. p. 3. "A unique food developed." A black-and-white photo shows a can of Kreme O'Soy." A table compares the composition of Kreme O'Soy, human milk, and cow's milk. A list of ingredients is given on p. 4. Madison Health Messenger. 1949? V. 49-2. p. 5.

Shurtleff & Aoyagi. 1984. Soymilk Industry and Market. p. 25-26. "By May 1929 fresh soymilk and tofu were being served occasionally in the dining hall and sanitarium, and soymilk was used in place of water in some yeasted breads. Soymilk was first sold commercially in 1931 and canned in 1932. It became popular nationwide." Soybean Blue Book. 1947. p. 69. Sold in Chicago by Dietetic Supply House. Soybean Blue Book. 1950. p. 88. No brand name given. Soybean Blue Book. 1956. p. 100. "Kreme-O-Soy."

Note: This is earliest commercial soymilk product seen worldwide to be fortified with calcium. It is also the second earliest commercial soy product seen introduced by a Seventh-day Adventist company that contained chocolate.

1041. **Product Name:** Radcliffe's Soya Milk [Malted, or Plain].
Manufacturer's Name: Radcliffe Soya Products.
Manufacturer's Address: 146 Fillmore St., San Francisco, California.
Date of Introduction: 1937. November.
New Product–Documentation: Ad in *Health News* (Hollywood, California). 1937. Nov. 5. "Soya Foods Sweep America. Radcliffe's 38 Assorted Soya Alkaline Foods. Also Diabetic Foods." "Malted Soya Milk... Soya Milk."

Ad in House of Better Living Catalog. 1938. March. p. 21. Similar to ad above.

1042. Gutierrez, Marciano. 1937. Soybean milk, the poor man's milk: A close approximation to natural milk can be easily prepared from soybeans. *Agricultural and Industrial Monthly* (*Manila*) 5(3):3, 17, 37. Dec. [Eng]
• ***Summary:*** Contents: Introduction. Food value. How to prepare soybean "milk." Extensively used in China and Japan. Composition.

"That milk can be made from beans seems incredible. It sounds like one of Ripley's 'believe-it-or-nots.' But it is true. From the soybean an artificial 'milk' which is a close approximation of natural milk can be easily prepared and at very little cost.

"It seems that in the Philippines very little is known about the soybean, aptly called by some the 'wonder bean,' when for centuries it has played an important part in the diet of the teeming millions of China."

Dr. Roxas, chief of the technical staff of the National Development Company, states that the soybean can be grown in all parts of the Philippines." As an added incentive, one should consider that annual importation of soybeans to the Philippines far exceeds domestic production.

Photos show: (1) Trays of soybeans, ground soaked beans, bean residue [okara]. (2) All implements used in the preparation of soybean "milk" at the U.P. School of Hygiene and Public Health in Manila, plus a bottle filled with soybean "milk" to the left of the hand-turned stone mill. Address: Ph.C., M.D., School of Hygiene and Public Health, Univ. of the Philippines.

1043. *Nature's Path to Health* (*Melbourne, Australia*). 1937. Nutrition: Bernard Shaw, Gandhi, Henry Ford advocate soy beans and vegetarianism. Nov/Dec. p. 13-14.
• ***Summary:*** "In a recent visit to this country, Bernard Shaw was observed drinking a glass of milk. When questioned why he used milk, since he opposed exploitation of cows, Shaw replied that it was not cow's milk he used, but Soybean Milk. Bernard Shaw has been a vegetarian for a long time and has lately become interested in the Soybean.

"Gandhi becomes a champion of soybean–Abandoning his famous goat-milk, Gandhi, who is also a vegetarian, has become an advocate of soybean milk. Gandhi is a great believer in the soya bean. He thinks that soya milk will eventually replace the dairy product." A long article about the soya bean published in a recent issue of *Harijan* is quoted.

"Ford predicts vegetarian world. Dearborn, Michigan–Henry Ford, billionaire, automobile maker, has visioned a future world without ham sandwiches, juicy steaks, and chicken dinners, but with a worthy substitute produced by science from grains and vegetables... Ford is now 73 and is in excellent health."

"In a recent interview with newspaper men, Ford predicted: 'The farm animal will go, but the farm will become larger. The horse is dying out through the increased use of machines. The cow is losing its economic importance through the great advances in chemistry. The farmer of the future will grow vegetable foods instead of livestock.'

"According to Dr. Kellogg, a vegetarian diet is not new to Mr. Ford. For many years he has been practically a vegetarian. He owes to a vegetarian diet the health and vigor necessary to conduct successfully the gigantic industries his remarkable genius has created.

"Henry Ford, looking into the future, sees that the use of meat will have to be abandoned for economic reasons." Address: Australia.

1044. Bordas, Jean. 1937. Le soja et son rôle alimentaire [The soybean and its role as a food]. Paris: Hermann & Cie. 36 p. 24 cm. Series: Actualités Scientifiques et Industrielles, No. 557. [24 ref. Fre]
• ***Summary:*** Contents: Introduction. 1. Botanical characteristics and principal varieties. 2. Chemical composition of soya. 3. Alimentary physiology and the nutritional uses of soya: Seeds (energy value, protein, vitamins, use as a milk substitute), forage. 4. Different uses of soya: Agricultural, industrial (oil, casein, sterol), as human food (sprouts, tofu, fermented tofu, shoyu, miso, tuong of Annam, roasted soy coffee, soy bread for diabetics, the future of soya). 5. The economics of soya: Production, imports, exports. Conclusions. Address: Director, Station d'Agronomie et de Pathologie vegetale d'Avignon, France.

1045. Fearn, Charles E. 1937. Soy-O cereal: Compared with ordinary cereals (Leaflet). Chicago, Illinois: Fearn Soya Foods Co. 2 panels each side. Each panel: 18 x 8.8 cm.
• ***Summary:*** The company also sells: Soy-O pancake flour. Soya milk powder. Whole wheat and soya flour. Address: M.D., Fearn Soya Foods Co., 355 West Ontario St., Chicago, Illinois.

1046. Fishbein, Morris. 1937. Your diet and your health. New York and London: McGraw-Hill Book Company, Inc. x + 298 p. See p. 51, 204. Index. 21 cm. Whittlesey House Health Series. See also 1967 ed.
• ***Summary:*** Chapter 7, "Protein," contains two tables (p. 51): (1) "Food rich in proteins: Beans (dried), cheese, crab, eels, eggs, fish, fish roe, gluten products, lentils (dried), lobster, meats, nuts, peanut butter, peas (dried), poultry shrimp, soy-bean products, wheat cereals. (2) "Food poor in proteins: Beans (string), cabbage family vegetables, carrots, eggplant..."

Chapter 19, "Milk and milk products," contains a paragraph on soy-bean milk which states (p. 204): "Soy-bean milk is a product prepared from the soy bean. It seems to be a satisfactory food in the diet of invalids. It can be furnished at a reasonable price and is gaining importance in nutrition in this country. The soy bean, dried, provides [contains] 7½ per cent water, 33 per cent protein, 21 per cent fat, and 29.6 per cent carbohydrate. It provides 1,993 calories to the pound. This has also been used in the case of children who are sensitive to cow's milk."

Chapter 26, "Conclusion" states (p. 253-54): "Perhaps the most significant of all information offered in this volume is that concerning the protective foods: These are the substances like milk, fruits, vegetables, eggs, cod-liver oil, liver, lamb's kidneys and similar substances which are essential in providing the diet with necessary vitamins and mineral salts."

Appendix B (p. 263) lists "Protein for building muscles and all tissues: Good protein foods: milk (all forms), cheese, eggs, meat (lean, all kinds), poultry (all kinds), fish, shellfish."

Note: Only animal proteins are included. Legumes (beans, peas, etc.) and nuts are not mentioned. Milk is listed first, implying its believed superiority.

Appendix C: "Approximate food value table. Showing percentage composition" (p. 264, 269-70). In this table the same categories appear as on page 263, however nuts are added here. Legumes are, again, not mentioned.

Chapter 5, "Debunking diets" includes a section on vegetarianism as a cult diet (p. 27-30). He notes that many religions advocate some avoidance of meat. "Such avoidance of meat, of course, is entirely without scientific foundation." Address: Editor, J. of the American Medical Assoc., Chicago, Illinois.

1047. Kale, F.S. 1937. Soya bean: Its value in dietetics, cultivation and uses. With 300 recipes. 2nd ed. Baroda State, India: Baroda State Press. xxx + 375 p. Illust. (35 leaves of plates, described in a separate record). Index. 22 cm. 2nd ed. 1937. [66 ref]
• ***Summary:*** Contents: 1. Deficiencies in the Indian diet and soya bean as a means to rectify them. 2. History of the origin and growth of soya bean: Derivation of the word soya bean, origin of soya bean, literature, primitive man and soya bean, name of the plant, home of soya bean and its expansion, varieties of soya bean, the culture of soya bean is very remote (It "has been the chief article of diet in China for over 7,000 years."), reference of soya bean in old Chinese records, how and when soya bean became known to Europeans, soya bean in England (from 1890; J.L. North and Henry Ford), soya bean in France (from 1739), soya bean in Italy, soya bean in other countries of Europe, soya bean in United States of America, India and soya bean.

3. The use of soya bean: Importance of soya bean, dietetic importance, industrial importance, agricultural importance (Russia, Mussolini in Italy), medical importance, soya bean is alkalising in its effect ("Soya bean milk as well as its flour is used in foods for invalids and infants, like Nestle's food"), longevity and soya bean.

4. World trade in soya bean: Imports to Europe, production of soya bean in Manchuria (58% in North Manchuria), exports from Manchuria, oil and cake industry in Manchuria, soya bean production in Japan, in America, in Africa, in Australia, in Europe, in Java, in India, in other British possessions, estimate of world production of the soya bean, the desirability of the expansion of soya bean cultivation, imports and exports of soybeans, soya bean oil, and soya cake–1913-1927: Denmark, Holland, United States, Great Britain, Japan, France, Russia, China, Germany, Norway, Korea. Source: International Institute of Agriculture, Bureau of Statistics, 1921, p. 420-21. A table (p. 38) shows statistics for world production of soybeans "as estimated by the leading firm of London soya bean dealers"

for various years from 1923 to 1929. This includes individual statistics each year for China [incl. Manchuria], Japan, and USA. The world totals in tons are: 3,095,000 (for 1923-25). 3,397,000 (for 1926). 4,325,000 (for 1927). 6,000,000 (for 1928), and 6,570,000 (for 1929; incl. China 5,250,000; Japan 550,000; USA 250,000; Java & Dutch East Indies 120,000; Other Asiatic countries & Africa 400,000).

5. Botany of the soya bean plant. 6. Classification of soya bean. 7. Cultivation of soya bean. 8. Diseases and pests of soya bean. 9. Cultivation of soya bean in India. 10. The constituents of soya bean. 11. Soya bean milk. 12. Soya bean flour. 13. Industrial uses of soya bean. 14. Enriching soil by addition of nitrogen and use of soya bean as fodder. 15. Food requirement of the human body. 16. European and American soya bean recipes. 17. Diabetic dishes, Mahatma Gandhi's experiments at Magan Wadi and opinion of scientists on soya bean. 18. Chinese and Japanese soya bean dishes: Toffu [tofu] or soya bean curd: Digestibility, utilization, toffu khan, toffu nao [doufu nao], tze toffu (fried bean curd), chien chang toffu (thousand folds), hsiang khan, kori toffu (frozen toffu), preservation of toffu. Natto. Tokio natto and Kyoto natto etc. Hamanan natto [Hamanatto]. Yuba. Misso [miso]. Soya sauce. Soya bean confectionery. Roasted beans (Chinese).

19. Indian soya bean dishes: Hindustani dishes, Moglai dishes, Gujarati dishes, Maharashtrian dishes, Bengali dishes, Goa dishes, Tanjore dishes. Appendixes. 1. Acreage of soya bean in Manchuria during the last 5 years. 2. Total figures of export during last 5 years. 3. Bibliography. 4. Some opinions about the first edition of this book.

The preface begins (p. iii): "This little book is written in response to innumerable inquiries I have had from time to time after the inauguration of the plantation ceremony of Soya Beans at the State Agricultural Experimental Station by H.H. the Maharaja Gaekwar of Baroda in November 1933.

"A few months after this a food exhibition was held in Baroda where many Soya Bean dishes–Indian, European and Chinese–were exhibited. The leading papers and journals all over the country spoke in very glowing terms about the Soya Bean dishes that were exhibited... Later on at the request of Messrs. Mitsui Bussan Kaisha Ltd., a leading Japanese Firm in Bombay, a Soya Bean Exhibition and Restaurant were run in the Japanese village at the H.O.H. fete. So keen was the interest and enthusiasm evinced by the cosmopolitan public of Bombay that seats in the restaurant had to be reserved in advance. The presence of H.E. the Governor and Lady Brabourne and many Indian princes was an additional evidence of the ever growing popularity of the tasty Soya Bean dishes served there.

"At the closing of the H.O.H. fete many prominent people of Bombay requested me to continue the restaurant at a convenient place in the city, and asked me to open soya-bean milk centres for the children of the poor who could not afford to buy cow's milk. Many were ready to finance any scheme that I would propose, but unfortunately my time was not my own as I had to attend to my duties in the State and could not take advantage of their generous offer.

"The Departments of Agriculture of the various provinces of India as well as many Indian States asked me to supply them with literature regarding the cultivation and the uses of this most useful bean. The Department of Commerce and Industry of the Government of Bombay inquired if I could furnish them with information about the machinery for the extraction of Soya-bean milk. Letters of inquiries from private individuals kept pouring in daily from all parts of India. All this has induced me to undertake the preparation and the publication of this book...

"From the number of experiments carried on in the Baroda territories and outside it, I feel sure that the Indian soil is most suitable for the cultivation of soya bean...

"The leading thought of the day in India is, 'Village uplift,' and 'Rural reconstruction.'

"Baroda, 7th January 1936, F.S.K. (p. iv)

"Preface to the Second Edition: I feel grateful to the public for having given such a hearty reception to the first edition of my book. It is running into a second edition within a year...

"Now, Soya Bean Bakeries and Restaurants have been started in the city of Bombay and in many other towns in India, and Soya Bean products are exhibited in almost all the exhibitions...

"I feel highly thankful to His Highness the Maharaja of Baroda who gave me an opportunity last year of visiting Russia, where I have seen that seven to ten per cent. of Soya Bean flour was being added to the wheat flour in order to enhance the nutritive value of the bread. The Soya Research Institute at Moscow is making researches into the nutritive, industrial and economical values of Soya Bean. I have seen there the actual working of the Soya-bean milk extracting plant. They make casein out of Soya-bean milk. Soya-bean cream is sold in the market.

"I visited the dietetic clinics in England, France, Germany, Austria and other European countries, where doctors prescribe Soya Bean bread for diabetic patients. In Russia, rickets and consumption are treated by Soyolk extracted out of Soya Bean...

"France is growing Soya Bean on côlt de jura [sic, Côte d'Azur, on the Mediterranean?]. In England, through the efforts of Mr. J.L. North, Soya Bean is realised as a field crop for the last two years.

"Paris, 3rd April 1937. F.S.K. (p. ix)." Address: Food Survey Officer, Baroda State, India.

1048. Kale, F.S. 1937. Soya bean: Its value in dietetics, cultivation and uses. With 300 recipes. 2nd ed. Photos and illustrations (Continued–Document part II). Baroda State, India: Baroda State Press. xxx + 375 p. Illust. (35 leaves of plates). 22 cm. 2nd ed. 1937. [66 ref]

• ***Summary:*** Photos (mostly original) show: (1) "H.H. the Maharaja Gaekwar of Baroda the first Indian Ruler to inaugurate the soya bean plantation ceremony in his State 24th November 1933" (frontispiece, facing the title page). (2) "Dedicated to my noble master, His Highness the Maharajah Sir Sayajirao Gaekwar, G.C.S.I., G.C.I.E., Farzande-Khas-e- Daulate-Englishia (p. 1). (3) Soya bean ready for shipment at port Dairen, South Manchuria (p. 28). (4) View of Dairen harbour with bags of soya bean ready for shipment (p. 30). (5) Transport of soya beans [on sleds] on the frozen Liao-ho River near New-chwang [Newchwang, later Yingkou], North Manchuria (p. 31). (6) The Maharaja of Baroda seated in a chair, lecturing on the dietetic and industrial importance of soya bean (p. 37). (7) The Indian method of interculturing; two bullocks in a field (p. 80). (8) Bavabhai B. Patel, 65-year-old farmer interested in the cultivation of soya bean, in a field of soya beans with two bullocks (p. 82). (9) A field of soya beans grown [in 1934 or 1935] by Hargovan Bavabhai Patel, of Achisara, Taluka Sinor, Baroda District; he has been awarded the first prize for his good cultivation (p. 84). (10) A soya bean plant having more than 500 pods, fodder type variety grown at the Agricultural Experiment Station, Baroda (p. 86). (11) Poona fodder type green variety grown at the Agricultural Experiment Station, Baroda (p. 89). (12) Bags of soya bean seeds grown as Baroda State crop of 1935 (p. 91). (13) The luxuriant growth of the fodder type variety at the Baroda Agricultural Experiment Station (p. 103). (14) "The biggest soya bean milk factory at Moscow (Russia)." Four small photos show the plant at work, "Milking the earth" (p. 138). (15) "The author's own child 3 months' old fed on soya bean milk" (p. 144). (16) "Soya bean oil pressing mill worked by hydraulic power" (p. 158). (17) The Palace Bakery–"The first soya bean Bakery in India" (p. 196). (18) "Mahatma Gandhi who uses soya bean at Maganwadi" (p. 251). (19) Many people seated at tables in the "Soya Bean Preparation Restaurant" at the H.O.H. Fete, Bombay (p. 278). (20) Many Indian men standing at the "Soya Bean Restaurant at the Rural Life Exhibition, Baroda, on the occasion of H.H.'s Diamond Jubilee, 7 Jan. 1936 (p. 332).

Illustrations show: (1) "Shen-Nung. The Chinese emperor 2838 B.C. called 'the heavenly farmer.' He used to plant Soya bean every year with great ceremony" (p. 17). (2) A plant with branches showing the various ways in which the soya bean plants and seeds are used (p. 23). (3) Cartoon (from the American Medical Assoc. cartoon series) of a skeleton raising a glass of milk in one hand; he is standing behind a table on which is a bowl labeled "impure milk." The caption: "'I drink to the death of the whole table'–the dangers of contaminated milk" (p. 132). Address: Paris, France; Formerly: Food Survey Officer, Baroda State, India.

1049. Morse, W.J.; Cartter, J.L. 1937. Improvement in soybeans. *Yearbook of Agriculture* (*USDA*) p. 1154-89. For the year 1937. [67 ref]

• ***Summary:*** Contents: History of the soybean. World distribution and production. Utilization of the soybean (with chart). Improvement of soybean varieties. Methods in breeding: Natural and artificial crossing, mutations. Inheritance studies and cytology: Plant characters (flower, stem, pubescence, and foliage; height of plant and maturity; pod-bearing habit and pod characters; sterility, growth habit), seed characters (color of seed coat, hilum, and cotyledon; other seed characters), yield of seed. Disease resistance. Identification of genes and chromosomes. Selected references on genetics of the soybean. Appendix: 1. Workers identified with soybean improvement: United, States, foreign countries. 2. List of soybean genes (table). 3. Linkage of soybean characters (table). 4. Soybean varieties: Origin and varietal characteristics (table listing 101 named soybean varieties; for each is given the place and date of introduction or origin, days to mature, flower color, pubescence color, and seed characters {coat color, germ color, hilum color, seeds per pod, seeds per pound}, uses {dry-edible beans, forage, green-vegetable beans, grain}).

The section titled "History of the Soybean" states: "The early history of the soybean is lost in obscurity. Ancient Chinese literature, however, reveals, that it was extensively cultivated and highly valued as a food for centuries before written records were kept. It was one of the grains planted by Hou Tsi, a god of agriculture. The first record of the plant is contained in a materia medica describing the plants of China, written by Emperor Sheng Nung [sic, Shen Nung] in 2838 B.C. The crop is repeatedly mentioned in later records and it was considered the most important cultivated legume and one of the five sacred grains essential to the existence of Chinese civilization. Seed of the plant was sown yearly with great ceremony by the Emperors of China, and poets extolled its virtues. The records of methods of culture, varieties for different purposes, and numerous uses indicate that the soybean was perhaps one of the oldest crops grown by man."

Note 1. This is the earliest English-language document seen (June 2003) which states that: (1) The soybean was one of the "five sacred grains." (2) "The early history of the soybean is lost in obscurity." (3) The soybean was planted at an early date by "Hou Tsi, a god of agriculture." (4) The "soybean was perhaps one of the oldest crops grown by man." It is also the earliest document seen (June 209) in which William Morse mentions the mythical Chinese emperor "Sheng Nung" in connection with soybeans.

More broadly, this entire story linking Shen Nung with the earliest written record of the soybean, is completely incorrect. Yet because the story was written by Morse (highly regarded as America's leading authority on the soybean) in a USDA publication, it has unfortunately been repeated, and this source cited, again and again down to the present day (see Hymowitz 1970; Hymowitz and Shurtleff 2005).

Note 2. This is the earliest document seen (June 2003) in

which the emperor's name is spelled "Sheng Nung."

Note 3. This is the earliest document seen (July 2007) in which William Morse tries to write an early history of the soybean in China. Unfortunately, he does not cite his sources.

The section titled "Improvement of soybean varieties" states: "In the United States, more than 50 percent of the acreage devoted to soybeans is used for forage and pasture; breeding work, therefore, has tended largely toward the development of varieties for hay, silage, and pasture. The development of such varieties as Virginia, Laredo, Otootan, Wisconsin Black, Manchu, Wilson-Five, Kingwa, Peking, and Ebony by selection from introductions has been the principal factor in the increased use and acreage.

"Beginning with 1929, the use of soybean seed by oil mills has led to a demand for yellow-seeded varieties of high oil content. Agronomists and plant breeders have attempted to meet this demand by making large numbers of selections from foreign introductions and locally grown varieties and by analyzing these for oil content. This has brought about the development of several superior oil varieties and has resulted in a large increase in production of beans for milling purposes. The most popular of these varieties are Illini, Dunfield, Mukden, Mandell, Scioto, Mansoy, Manchu, Mamredo, Delsta, and Mandarin. Results of analyses with more than 1,000 selections and varieties have shown a range of from 12 to 26 percent in oil content. From studies of the oil content of varieties grown in a given locality, it seems possible, from the breeding standpoint, to produce varieties high or low in oil, at least within the known ranges of variation exhibited by common varieties." (p. 1161-62).

Soybean varieties that have excellent flavor and become soft in less than 2 hours of cooking include Easycook, Bansei, Rokusun, Jogun, Chusei, and Sousei. These are "now in the hands of growers and seedsmen. Experiments by commercial firms have shown that these varieties are superior to commercial varieties for the manufacture of food products, such as bean flour, roasted beans, bean milk, and bean curd [tofu].

"In Japan, certain varieties of soybeans were found that were used solely as green shelled beans. Ranging in maturity from 75 to 170 days, many of these introductions, and selections from them, have been found especially promising for the various sections of the United States. The vegetable soybean offers an excellent food of high nutritional value, especially in the fall when other green beans are lacking and in sections where the Mexican bean beetle prohibits the growing of garden beans. As a result of selection, cooking tests, and adaptation studies, eight green vegetable varieties–Hahto, Kura, Kanro, Hokkaido, Higan, Chusei, Sousei, and Jogun–have been introduced in various sections of the country" (p. 1163).

Photos show: (1) "The late Charles Vancouver Piper, agronomist, United States Department of Agriculture, 1902-26. Pioneer in the introduction and development of soybean varieties for United States conditions." (2) "Storage yard of a Chinese grain merchant near Kungchuling, Manchuria. More than 80 osier bins, each holding four cartloads of soybeans, were in this yard." (3) A Manchurian farmer and how he harvests, threshes and cleans soybeans by methods learned from his ancestors; comparison with modern U.S. machine harvesting. (4) "Millions of soybean oil cakes are stored in warehouses in Manchuria awaiting shipment to Japan, Chosen, China, and the East Indies, where they are used for fertilizing purposes and for cattle feed." A person looks up at the towering stacks. (5) Coolies loading large sacks of soybeans on a freighter for shipment to the oil mills of Europe. One man has hoisted a huge sack onto his back. (6) Five Manchurian farmers who have been awarded certificates and prizes for producing high-quality soybeans. (7) Twenty seeds of a natural soybean hybrid showing peculiar types of coloration. (8) Illustration (line drawing) of a soybean flower and its parts enlarged. Front view, side view, parts of the corolla (standard, wing, one of the keel petals), stamens, pistil. (9) A. Stems and pods of fasciated soybean plants; B. Determinate pod-bearing type; C. Indeterminate pod-bearing type. 10. Chromosome chart showing four groups of linked genes in soybeans.

A table (p. 1157) shows: "Increase in production of soybeans over an 11-year period, 1924-25 to 1935-36, inclusive, in the principal producing countries of the world" (Manchuria, Chosen [Korea], Japan, United States, Netherland India).

Soybean seed size (p. 1177): "The range in size of soybean seed varies according to the variety, each variety having its own typical seed size. Varieties and introductions tested at the Arlington Experiment Farm ranged in average weight of 100 seeds from about 4 grams for the smallest to about 40 grams for the largest." Address: 1. Senior Agronomist; 2. Assoc. Agronomist. Both: Div. of Forage Crops and Diseases, Bureau of Plant Industry [USDA, Washington, DC].

1050. Woertge, Karl Heinz. 1937. Entwicklung und weltwirtschaftliche Bedeutung der Sojabohnenerzeugung und -verarbeitung [Development and international economic significance of soybean production and processing]. Thesis, Friedrich Alexander University, Erlangen, Coburg, Germany. 119 p. 28 cm. [112 ref. Ger]

• ***Summary:*** Contents: Foreword. Part I: History and culture of the soybean. 1. History, natural requirements and technology of soybean production; chemical composition of the soybean. 2. Occurrence of the soybean and methods of production in various countries: Asia (Manchuria and China, Japan, Korea, Formosa, Dutch East Indies, other Asian countries incl. British India, Cochin China, Ceylon), America, Europe (Southeast Europe, Austria, USSR, France, Italy, England, Poland, Switzerland, Czechoslovakia,

Germany), Africa and Australia.

Part II. Scale and global economic significance of soybean production in the main producing areas. 1. General overview of world soybean production: Production for seeds, for fodders. 2. Scale of soybean production in the main producing areas: Asia (Manchuria, Japan, Korea, Formosa, Dutch East Indies [Java and Madura/Madoera]), America, Europe (Southeast Europe, USSR).

Part III. Development and global economic significance of soybean processing. 1. Soybean processing possibilities: A. Processing soybeans to make foods: Asia (general, methods used in China and Japan to make vegetable-type soybeans and salads, koji, soymilk, shoyu [soy sauce], miso, natto, tofu, methods used in the Dutch East Indies), Europe (general overview, preparation of soybean meal, soymilk, coffee- and chocolate substitutes). B. The soybean as an oilseed: General, methods of obtaining the oil (in Asia, Europe, USA), use of soy oil (as human food, other). C. Obtaining lecithin from the soybean. D. Use of soybean press-cake for livestock feed. E. Use of the soybean meal for fertilizer. 2. World trade in soybeans, soy oil and soybean cake/meal (*Sojakuchen/Sojaschrot*)*:* World trade in soybeans (Manchuria, Asia, Europe, USA), world trade in soy oil, world trade in soybean meal.

Closing remarks: The state of the world soybean market with special consideration for the current German conditions. Appendixes and tables. Address: Nuerenberg, Germany.

1051. Fearn, Charles E. 1937? Soy-o Cereal: Compared with ordinary cereals (Leaflet). Chicago, Illinois: Fearn Soya Foods. 2 panels each side. Each panel: 18 x 9 cm. Undated.
• ***Summary:*** On the front panel is an illustration of a package of Soy-o Cereal. “The main objections to ordinary cereals are, the excess of Starch, the absence of high grade Protein, and the limited amounts of Minerals and Vitamins.”

On the 2nd panel: “All cereal grains are “Acid Foods” but the soya is definitely alkaline, and in Soy-o Cereal the excess acid of the Whole Wheat is neutralized, forming a bland, easily digested and very nourishing food...” On the 3rd panel: “A message to mothers.” On the back panel: Fearn Soya Foods Co. also makes: Soy-o Pancake Flour, Soya Milk Powder, and Whole Wheat and Soya Flour. Address: M.D., Fearn Soya Foods, 355 West Ontario St., Chicago, Illinois.

1052. Landy, Pierre. 1938. Le commerce et l’industrie du soja [The commerce and the industry of soya]. *Annales de Geographie* (*Paris*) 47(265):9-24. Jan. 15. [13 ref. Fre]
• ***Summary:*** This is basically a summary or review of the literature; the main sources used are cited on page 9.

Contents: Introduction. I. Soybean production: The plant, the crop (used for forage or seed; in Manchuria, in Japan), distribution of the crop geographically (Manchuria, China, Korea, USA, etc.). II. Soybean industries: The ancient industries of the Far East (oil, meal, soymilk, shoyu), the great modern soy industries (in Asia, in Europe, in the USA). III. Soy commerce (local transport, exportation, trade routes and markets).

Figures: (1) A soybean plantation in Manchuria. (2) A field of soybeans in Manchuria. (3) Distribution of the cultivated area in 1934. (4) Production of soybeans in 1934. (5) Transport of soybeans over the Manchurian plain. (6) Collecting soybeans in sacks at a railroad station. (7) A group of soybean silos. (8) Soybean depots at the port of Dairen. (9) Soybean imports to Europe in 1935.

1053. *American Cookery* (*Formerly The Boston Cooking School Magazine*). 1938. Recipe for soy bean milk (Letter to the editor). 42(7): Feb. *
Address: 221 Columbus Ave., Boston, Massachusetts.

1054. Lager, Mildred. 1938. The House of Better Living Catalog: Finer natural foods. Los Angeles, California: Published by the author. 36 p. March. 23 x 10 cm.
• ***Summary:*** The single most important document showing the creative development of commercial soyfoods in California in the late 1930s. This catalog contains a large section on Diabetic Foods, consisting mostly of soyfoods, and an even larger section titled “Soy Bean Products.”

The Foreword (p. 1) begins: “The House of Better living is as unusual as its name. Its aim is to teach better living, and has made possible Mildred Lager’s free educational program by radio and class work. Become a member of our ever-growing family. Secure one of our creed cards–Realize life can be a game and not a battle, and if you give to the world the best you have, the best will come back to you.

“The House of Better Living has grown in four years from what was called a brain storm to an institution. It is outstanding, unique, and built on the ideals of sincerity and service. It is teaching the ounce of prevention–the health insurance that pays dividends in years of health and happiness. It carries for you, Finer Natural Foods, selected by Mildred Lager.”

A full page of delivery and order information (p. 2) shows that Mildred was shipping foods (such as California nuts and fruits, fresh and dried) all over the United States.

This catalog contains a total of 42 soyfood products, including 26 such products not found in the 1936 catalog. Soy (and other interesting) products are listed as follows (prices and weights are given for each): Beverages–Coffee substitutes: Radcliff’s soy bean, Soy-Co. Other beverages: Dr. Fearn’s Proteinized Cocoa, Radcliff’s Malted Soya Milk, Radcliff’s Soya Bean Cocolette, Soy-Malt (plain or chocolate). Sugars and syrups: Radcliff’s Golden Soya Honey Spread (4-oz. glass). Natural sweets–Candies: Carque’s health candies, bar, 5¢, Halvah bars, Sesame brittle, Soya candy sticks, 1¢ each, Soy milk “chocolate” bars, in Bavarian, cocoanut, mint, cherry, pineapple, and creme de mint flavors, Soy milk “chocolates,” ½-lb. box or 1-lb. box,

Soy chocolate, 1¢ square, ½-lb, 1 lb, 60¢, or bulk.

Desserts: Agar–Parfait mix, Agar–Hain Vege-Jell, Agar–Sanitarium vegetable gelatin. Diabetic foods: Gluten flour, Soy bean flour, 10¢ lb, Soy Bean Pancake and Waffle Flour (Bill Baker's Prepared; 2-lb. pkg. 30¢), Dr. Fearn's Soya Cereal, Dietetic Soyrina Cereal, Dr. Fearn's Soya-Date Breakfast Food, Battle Creek Dietetic Bran, Battle Creek toasted gluten bran flakes, Soy breakfast food, Cubbison's soy-gluten crackers, Soy-gluten wafers, Loma Linda soy bean wafers, Bill Baker's 100% soy-fruit slices, Bill Baker's soy bean bread, Olson's soy bread, Soy bean macaroni, spaghetti and noodles, Soy beans–imported, Soy beans–cracked, Soy beans–red, Soy beverages (without sweetening), Bill Baker's soy melba toast, Cubbison's soy melba toast.

Nut butters: Almond butter, Almond meal, Cashew butter, Peanut butter (dextrinized or raw), Pecan butter, Soy bean butter (lb or 8-oz. can). Whole grain flours, meals, etc.: Lima bean flour, Soy bean flour (1 lb, 3 lbs, or 10 lb), Soy bean pancake and waffle flour (Bill Baker's prepared), Soy bean pancake and waffle flour (Mrs. Hauser's), Whole wheat flour, wheat germ. Breakfast cereals (to be cooked): Mildred Lager's quick cooking cracked soybeans, Dr. Fearn's soya cereal, Dietetic Soyrina Cereal. Breakfast cereals (ready to eat): Battle Creek Zo, Dr. Fearn's soya-date breakfast food, Soya breakfast food, Bill Baker's 10% soya cereal. Melba toast, crackers, cookies: Cubbison's soy toast, Bill Baker's soy toast, Cubbison's Soy-Gluten crackers, Soy-gluten crackers, Loma Linda soy bean wafers, Cookies: Cubbison's soy cookies, Bill Baker's 100% soy fruit slices. Bread: Olson's soy bean bread (sliced loaf), Bill Baker's soy bean bread (unsliced loaf 16¢). Macaroni noodles: Soy bean macaroni, spaghetti and noodles. Legumes: Soy beans–imported, Soy beans–cracked, Soy beans–red. Meat substitutes: Nuteena (7 oz. can 15¢), Nut Meat, Nuttose (Battle Creek), Proteena, Protose, Soy bean butter (30¢ lb.), Soy mince sandwich spread, Soy bean spread, Soy bean ravioli (12¢ and 20¢ can).

Soy bean products (40 products; those mentioned above may be omitted here): Loma Linda soy beans (plain or tomato flavored, No. 1 can), Loma Linda soy beans with Proteena (No. 1 can), Dry soy beans (quick cooking red), Soy bean spread, Soya bean honey spread, Loma Linda soy mince sandwich spread, Soy bean sauce (5 oz for 18¢ or 2 oz bottle for 10¢), Soy bean oil (45¢ pint bottle), Soyco (Soy coffee), Soya bean milk powder, Milk of soya bean (6 oz or 12 oz can), Soy-Malt, Proteinized cocoa, Radcliff's 100% soya bean beverage (1 lb package), Cubbison's soy bean cookies, Cubbison soy-gluten crackers, La Sierra Soy breakfast cereal, Diamel Soyarina cereal, Diamel breakfast cereal. Salad dressings: Imitation Worcestershire sauce (Carque's, 5 oz bottle for 25¢). Powdered dry vegetables: Dulse, Dulse leaf, Irish moss, Kelp, Kelp–fancy, Sea lettuce (leaf or powdered), Soy-banana powder. Laxative foods: Agar, Psyllium, Swiss Kriss, Sym, Tam (laxative jam). Natural aids: Savita yeast tablets, Sesame seeds, Theradophilus (4 oz bottle 75¢, 8 oz bottle $1.25). Electric appliances: Electric juicers are not yet on the market. Index (p. 36).

There are ads for the following: Battle Creek Sanitarium Foods (p. 5; ask for literature). Ficgo coffee substitute (display ad, p. 6). Racliffe's Soya Products (p. 9, 21). Mildred Lager's quick cooking family (incl. cracked soy beans), Bill Baker's soy and lima bean products (photo display, p. 16). Therapy, Ltd.–Foods for Better Living (Theradophilus, soy bean milk, p. 19, 29).

A photo (p. 1) shows Mildred Lager.

Note. This is the earliest English-language document seen (Aug. 2013) that contains the term "soya bean beverage," which probably refers to powdered soya milk. Address: 1207 West Sixth St., Los Angeles, California.

1055. **Product Name:** Radcliffe's Soya Milk Bon Bons, and Bars (Sweetened with Honey and Dextrose).
Manufacturer's Name: Radcliffe Soya Products.
Manufacturer's Address: 146 Fillmore St., San Francisco, California.
Date of Introduction: 1938. March.
New Product–Documentation: Ad in House of Better Living Catalog. 1938. March. p. 9. "Sugarless and non-fattening." This company also made diabetic products, sweetened with Saccharin.

San Francisco City Directories. 1938-44. The term "Radcliffe's Soya Products" never appears. But 1938 shows: Radcliffe, John B. Confectioner. 146 Fillmore and 504 Gough. Home 1165 Fell St. In 1940 John is listed as a confectionery manufacturer 504 Gough and Health Foods 146 Fillmore. In 1942 his wife is given as Louise. Now he is doing only health foods at 146 Fillmore. 1944 is the same.

Rosenberg's Original Health Food Store. 1940. Catalog of Health Foods... p. 52. Radcliffe's Famous Soya Products: Soya Bob Bons, light and dark. 1 lb for $0.75."

Note 1. This is the earliest nutritious "Bar" seen (May 2000) in which soy is a featured ingredient.

Note 2. This is the earliest known commercial soy product in which soy milk is used as an ingredient.

1056. **Product Name:** Malted Soya Milk [Banana, Soya Mocha, Nut, or Choklateen].
Manufacturer's Name: Unknown. Perhaps Hain or Radcliffe's.
Manufacturer's Address: Los Angeles, California.
Date of Introduction: 1938. March.
Wt/Vol., Packaging, Price: 8 oz or 16 oz can.
New Product–Documentation: House of Better Living Catalog. 1938. March. p. 22. 8 oz. can for $0.40 or 16 oz. can for $0.70. Talk with Ben Kahan of Kahan & Lessin. 1988. Sept. 24. He thinks that Hain Pure Foods in Los Angeles may

have made this. The company was first sold during World War II. They were one of the pioneer companies, founded by Harold Hain. They used to have retail stores as well as manufacturing, but they gave up the stores to concentrate on manufacturing. A very interesting company.

1057. **Product Name:** Soy Milk "Chocolate" Bars [Bavarian, Cocoanut, Mint, Cherry, Pineapple, or Creme de Mint].
Manufacturer's Name: Unknown. Probably Svea Candy Co.
Manufacturer's Address: Los Angeles, California.
Date of Introduction: 1938. March.
New Product–Documentation: House of Better Living Catalog. 1938. March. p. 10. 5 cents each. Talk with Ben Kahan of Kahan & Lessin. 1988. Sept. 24. He thinks Svea Candy Co. made this. Dr. Hollie's Products near Los Angeles made a similar candy.

1058. **Product Name:** Soy Milk "Chocolates" (Natural Candies).
Manufacturer's Name: Unknown. Probably Svea Candy Co.
Manufacturer's Address: Los Angeles, California.
Date of Introduction: 1938. March.
New Product–Documentation: House of Better Living Catalog. 1938. March. p. 10. 8 oz. box for $0.50. 1 lb box for $1.00. Talk with Ben Kahan of Kahan & Lessin. 1988. Sept. 24. He thinks Svea Candy Co. in Los Angeles made this. Dr. Hollie's Products near Los Angeles made a similar candy.

1059. *Christian Science Monitor.* 1938. China is finding soya bean important food supply source. April 4. p. 9.
• ***Summary:*** "The humble soya bean, grown in China for generations, has become known as the 'cow of China' due to relief needs requiring the uncovering of new sources of cheap but nourishing food supplies."

This according to Julean Arnold, Commercial Attaché of the United States Department of Commerce, speaking today in Boston before a group of professors called together by Harold T. Smith, New England manager of the U.S. Bureau of Foreign and Domestic Commerce.

After 30 years of service in China, Mr. Arnold "has earned a reputation as one of the world's outstanding authorities on the Orient."

Arnold spoke of issues confronting the Chinese today, including the need to feed the millions of war refugees. "Through chemistry, he said, the soya bean has become the chief substitute for beef and milk at costs approximating 20 per cent of milk and beef."

From the soya bean one can extract a synthetic milk that sells for one-twentieth the cost of real milk [i.e., for 1 cent a quart], including delivery, "yet this bean liquid has all the nourishing qualities of milk. By substituting the soya bean for milk and beef, he added, Chinese refugees at Shanghai are being fed at the rate of $1 a month."

Regardless of the war and massive disruptions, trade between China and the U.S. continues. Chinese imports from the USA in 1937 totaled $103.6 million and exports from China to the USA $49.7 million, or about 40% greater than in 1936.

A large photo shows a group of nine men, looking very distinguished, sitting in two rows. Among them are Julean Arnold, Prof. Norbert Wiener of MIT, etc.

Note 1. This is the earliest English-language document seen (Dec. 2011) that contains the term "cow of China" used to refer to the soya bean.

Note 2. This is the earliest English-language document seen (Aug. 2013) that uses the term "bean liquid" to refer to soymilk.

1060. *Lancet.* 1938. Soya-bean milk at Shanghai. April 9. p. 349.
• ***Summary:*** An estimated 350,000 destitute Chinese are living in camps and elsewhere in Shanghai. But it is the children who suffer most from shortages of food and nutrition. A report received from the International Red Cross at Shanghai through the Lord Mayor's Fund for China states that all refugees suffer to some degree from beri-beri, and attempts are being made to prevent this by supplying them with soya-bean milk and cakes, which contain vitamin B-1. This milk is made at one of the local hospitals as follows: The beans are soaked then ground to a slurry in a mill powered by a small motor, which has the capacity to give 15,000 lb. of milk in 12 hours. Unfortunately, at present, only 6,000 to 7,000 lb per day is made, due to the limit of the cooking facilities. The hot soya-bean milk is delivered twice a day to the camps, where sugar and calcium lactate are added; each child is given one pound a day. There are said to be about 15,000 children under age 6 in the International Settlement and French Concession, for whom bean milk is a necessity, but there is only enough for about 7,000.

The "bean residue" [okara] after milk production is mixed with its own weight of whole-wheat flour and baked into cakes at cost price by a Shanghai company. About 3,200 children, ages 6 to 12, receive two of these cakes each day. The total cost of this project is about $11,000.

Note: Why are there Chinese refugees in Shanghai? Because the Japanese military has invaded northern China and is moving southward.

1061. *American Cookery* (*Formerly The Boston Cooking School Magazine*). 1938. Queries and answers: Soy bean curd. 42(9):564-66. April.
• ***Summary:*** "Query No. 5886. 'In your February I noticed a recipe for soy bean milk that referred to one for soy bean curd. Will you now please supply me with that recipe?'"

Ans: "The following recipe is quoted from the Bureau

of Home Economics. To make soy bean curd with vinegar, heat four quarts of soy bean milk, add two cups of vinegar and stir until will mixed. Let stand a few minutes. Put in a cheesecloth bag and dip the bag of curd in cool water several times to wash away the excess acid. Drain for about an hour and press out the remaining liquid. Season with salt and pack rightly into a dampened mould. Cover and store in a cold place until firm enough to cut.

"To make soy bean curd by fermentation, keep the milk in a warm place overnight, or until it forms a curd. Stir to break the curd. Add an equal amount of water heated almost to boiling and let stand ten minutes. Pour into a cheesecloth bag and drain for several hours. Press out the remaining liquid. Season with salt and pack into a dampened mould. Cover and store in a cold place." Address: 221 Columbus Ave., Boston, Massachusetts.

1062. Goessel, Fritz. Assignor to General Soya Corp. (New York, NY). 1938. Treating soya beans. *U.S. Patent* 2,117,315. May 17. 3 p. Application filed 11 Oct. 1935. Address: Frankfurt-am-Main, Germany.

1063. *Evening Telegram* (*Superior, Wisconsin*). 1938. Superior girl success as manager of 'health store.' May 27. p. 4, col. 6.

• ***Summary:*** Mildred Lager, who left Superior after doctors gave her only a few years to live, is now manager of a health food store in Los Angeles, California, "supplying special nutritive aids to patients under doctor's care."

A graduate of Superior State Teachers' College, Miss Lager was active in college affairs and a member of Tau Alpha Chi sorority. She "became a saleslady in a shoe store in Superior soon after her graduation, then became a co-partner in the store when ill health forced her to quit.

"As a result of intensive study of foods and their value to health, she became a demonstrator for Dr. Frank McCoy, noted health specialist whose health talks appear daily in *The Evening Telegram* [this newspaper in Wisconsin] in the column, 'How to keep well.'

"Traveling throughout the United States appearing before large audiences of both men and women showing how health advocates prepare food, Miss Lager returned here six years ago [i.e., about 1932] to conduct a cooking school and institute at Concordia Lutheran Church. Large crowds attended.

"Four years ago, Miss Lager left the McCoy institute to go into business for herself, opening a health food store [named The House of Better Living, on 25 Oct. 1933] in Los Angeles, the largest of its kind in the United States.

"The store handles special canned foods for diabetics, imported flour and fruits, fruit juices and other products not in stock at the regular grocery store. Patients on special diets are sent to the store on advice of their physicians. A mother in Texas sends regularly for special almond milk, necessary for her child's health because it has an allergy to cow's milk.

"Two years ago Miss Lager went to Honolulu [Hawaii] to spend several months studying the pineapple industry and how the fruit affects health when used in the diet. She herself is strict in her own food desires.

"In connection with the store, Miss Lager conducts a cooking school once a week supplemented by talks by prominent foot specialists, chiropractors, dieticians and doctors. A writer of note herself on nutrition, one of her articles was printed recently by a magazine in England.

"She conducts a 15-minute radio program [in Los Angeles] five times a week which is rated by critics as having one of the largest followings for a program of its kind on the west coast."

A portrait photo shows pretty Miss Mildred Lager.

Note: Frank McCoy's "health institute" was in Los Angeles, where he lived from roughly 1924 to 1931; he wrote a book on health and had a column in the *Los Angeles Times.*

1064. Horvath, A.A. 1938. The nutritional value of soybeans. *American J. of Digestive Diseases* 5(3):177-83. May. Earlier edition in Deutsche Medizinische Wochenschrift. 19:733. 1937. Amaral 1958. [114 ref]

• ***Summary:*** Contents: Introduction. Composition and properties. Nutritive value. Conclusions. This article contains a good review of the literature, with 114 references. Individual foods discussed include: Fresh soybean curd, smoked soybean curd, frozen soybean curd, soybean milk, soybean milk powder ("mostly nothing but a finely ground soya flour..."), soybean flour, soy acidophilus milk, immature green soybeans, boiled mature soybeans, soya bread.

"In the Orient soybean curd (tofu) has been in daily use since times immemorial, and is called 'the meat without the bones,' as it serves as a food rich in protein."

"The low basal metabolism of the orientals was to a certain extent attributed to their being vegetarians, and the basal metabolism was accepted as a measure of efficiency of a nation until recent studies showed the basal metabolism of the Maya Indians to be about 5 per cent above that of the white race" (Shattuck & Benedict 1931, p. 518).

"It has been shown that while alkalinization of a human being by the administration of sodium salts (bicarbonate or citrate) is followed by a retention of water amounting to one Kilo [kg] and greater perspiration during exercise, the alkalinization by the corresponding potassium salts results in a one Kilo loss of water by the body and a marked reduction in perspiration during exercise (H. Dennig, 1937). The deficiency of the soybean ash in sodium and the large excess of potassium places the soybean in the latter class of alkalizing agents."

"Besides bread and bakery products (such as coffee cake and doughnuts) the other main outlets for soya flour are for the manufacture of crackers (only solvent extracted soya

flour gives a product that will keep indefinitely), pancake flour, cocoa-malt mixes, baby foods, chocolate puddings, ice cream powders, macaroni products, and sausages*. (Footnote: * Mostly meal flours are used today for sausages. Since sausages containing a substantial amount of soya flour can be sold at a reduced price, this may provide the packing industry of our country with a means of expanding the consumption of meat").

Note: This is the earliest English-language document seen (June 2009) that uses the term "immature green soybeans" to refer to green vegetable soybeans. Address: Chemist, Agric. Exp. Station, Newark, Delaware.

1065. Lager, Mildred. 1938. New items. *House of Better Living* (*Newsletter, Los Angeles*) 7(29):3. May.
• ***Summary:*** Includes: Bulk soy candies. Cocoanut milk. Improved electric juicer. Small cans of soy bean ravioli.

1066. *Madison Health Messenger* (*Madison, Tennessee*). 1938. Soy bean milk, coffee, meat, and cereal. 1(1):1, 4, 6. Spring.
• ***Summary:*** "More versatile than any other food is the soy bean. Previously used as stock feed, it has gradually won its way into many wholesome foods that are distinctly different, yet palatable and reasonable.

"Madison Foods, in conjunction with Madison College, has spent years in experimental research developing soy bean foods. Dr. Philip S. Chen, Professor of Chemistry at Madison College, a native of China who received his doctorate degree in chemistry at Michigan State College, together with Dr. Frances L. Dittes, Professor of Nutrition at Madison College, whose doctorate degree is also in the field of Chemistry and Nutrition, have successfully exploited the ancient bean, discovering its versatility as is evidenced by the possibilities of its use as milk, coffee substitute, meat substitute, breakfast cereal, flour, etc."

Kreme O'Soy Milk is the only homogenized soy bean milk on the market to date; it is made of soy beans, added soy bean oil, dextrose, and organic calcium. Zoy-Koff is an alkaline coffee substitute made from soy beans and grains. Kreme O'Soy Crisps is Madison's new ready-to-eat alkaline breakfast cereal. It is made of whole soy bean flour, whole wheat, and malt.

Foods made by Madison Foods that contain soy as an ingredient, described in this first issue are: Soy-Koff (with photo of front of package in front of Mr. Hubert Henken, assistant production manager of Madison Foods, from Albia, Iowa, and a "strict vegetarian"). Thin Things (a new soy wafer). Date-Stix (a natural sweet, with Kreme O' Soy Flour). Fruit Stix (a soy flour biscuit). Breakfast Crisps / Kreme O'Soy Crisps (with photo of front of package). Soyburger Loaf. Soy Beans (in 5 oz, 14 oz and 30 oz cans, with tomato sauce or plain). Soy Cheese [Tofu]. Vigorost ("Madison's finest protein food representing the 'steak' of its variety." A photo shows Vigorost sliced and ready to serve on a platter). Kreme O'Soy Flour. Kreme O'Soy Milk.

Note: This is the earliest document seen (Jan. 2013) that contains the word "Soyburger" (spelled as one word, regardless of capitalization) or the term "Soyburger Loaf."

1067. Melick, Weldon. 1938. Self-supporting college. *Reader's Digest.* May. p. 105-08.
• ***Summary:*** About Madison College in Tennessee. "In 1904 the Nashville Agricultural Normal Institute at Madison, Tennessee, consisted of 11 students and some dilapidated farm buildings on 400 acres of worn land purchased with the last cent of its founders–Dr. E.A. Sutherland and four other teachers. In addition, however, it had one invaluable asset: Dr. Sutherland's idea that a college education should be made available to any boy or girl willing to work for it."

Today "Madison's curriculum includes 27 campus industries, run by the students to support the college and themselves... 15 years of research in food chemistry have resulted in new food products too useful to confine to campus menus.

"Hence, Madison Foods–an industry that is largely responsible for making the soy bean appetizing to Americans. The school's food chemists, experimenting with 200 varieties of soy beans, eliminated objectionable taste and produced savory breakfast foods, bread, coffee substitute, condensed milk, and meat substitutes which look and taste like beef but are even more nutritious and digestible. Vigorost, made from soy loaf after the milk is extracted [i.e. okara], is featured by a cafeteria chain in New York City. More than $60,000 worth of Madison's packaged and canned foods was sold in 27 states last year, and the Institute runs its own health-food cafeterias in Nashville and Louisville.

"Madison Foods have developed soy milk until it is now not only cheaper than cow's milk but, on the authority of the American Medical Association, better for babies. Observers have come from Africa, India, and other countries where milch cows are scarce, to study the methods of Madison's soy bean 'dairy.'...

"With twice as many applicants as can be provided for, Madison as a rule accepts only those who could not otherwise arrange for a college education."

Note 1. As a result of this article, the school received nearly 5,000 inquiries concerning the school plus a flood of student applications. The next year was the highest in the history of the College with a total of 450 college students enrolled.

Note 2. This is the earliest article on soy seen (Aug. 2002) in *Reader's Digest* magazine.

1068. *Good Health* (*Battle Creek, Michigan*). 1938. A special milk for bottle-fed babies. 73(6):179-80. June.
• ***Summary:*** This special milk is prepared from the soybean, which the Chinese call "the honorable bean" and which has

"for thousands of years been found a perfect substitute for breast milk [sic] in the feeding of babies deprived of their natural food supply. Soybean milk looks like cow's milk, and tastes much like it, and is more easily digestible and richer in lime and iron, though in other respects much like dairy milk. The great virtue of soy milk is that it encourages the growth of the wonderful protective germ acidophilus with which every nursling is inoculated by contact with its mother's breast."

"Many foods discourage the growth of the acidophilus, especially greasy and fried foods, hamburger steak and sausage, as do also alcohol, tobacco and laxative drugs. Bread and milk, breakfast foods, bananas and fresh fruits and vegetables of all sorts encourage the growth of friendly germs, which differ from ordinary buttermilk germs chiefly in the fact that they are able to grow in the colon, whereas the buttermilk germs die at the level of the stomach because they cannot survive without oxygen, while acidophilus can obtain its oxygen from sugar of milk, dextrin and some other carbohydrates.

"One to three glassfuls of soy acidophilus milk taken daily will keep the colon free from offensive gases and foul odors, clear the skin and the tongue, sweeten the breath and promote better appetite and a sense of fitness to a remarkable and almost unbelievable degree. Every bottle-fed baby should receive a teaspoonful of soy acidophilus milk at each feeding as an almost certain protection against the bowel troubles of bottle-fed infants."

1069. Sanford's Cafeteria. 1938. "World's most unique cafeteria!" ... Say previewers and you'll agree! (Ad). *Los Angeles Times.* July 26. p. 4.

• ***Summary:*** This big ad announces the grand opening of a healthy cafeteria on Tuesday, July 26. "Fully air-conditioned. We acknowledge with gratitude the co-operation of the firms listed below: Acidofilac–Radiance Products Co. Bragg Meal & California Mint Tea–Live Food Products Co. (Paul Bragg). Cocoanut Milk Powder & Cocolette–Radcliffe Products. Cottage cheese & buttermilk–Knudsen Creamery Co. Healthful Candies–Hassey Candy Co. KAL–The calcium phosphorus food–Makers of KAL. Mal-Ba-Nuts & vegetable juices–Hain Pure Food Co. Nuteena, Syl-Dex & Savorex–Loma Linda Food Co. Papaya & guava juice–Milo Frank. Soy milk powder–Viana (Malcolm McBride). Soy waffle flour & soy macaroni–Mrs. Hauser's Food Products Co. Swiss Kriss, Vitana, Staf & Juicex [electric juicer]–Modern Health Products Co. (Gayelord Hauser). Soyolate, The soy chocolate–Theo. Hollie Co. Theradophilus & Theradiet–Therapy, Ltd. Unsulphured figs & jumbo prunes–F.E. Hadley & Sons. Virgin olive, peanut & soy bean oils–Solar Food Products Co.

Keep fit by eating right. Modern cooking insures digestibility ("Either whole wheat and soy bean flours, vegetable shortening in baked goods–no cheap artificial substitutes Whatever!"). "Outstanding features to help you keep fit:" Cafeteria, Dietetic food store, bakery (using "whole wheat and soy bean flours"), health bar ("An exclusive feature of Sanfords. Fresh fruit and vegetable juices squeezed right before your eyes and concocted into tantalizing non-alcoholic cocktails that will send you along with a new spring in your step and sparkle in your eye"). "All employees required to pass a physical examination. Open every day of the year, 7 a.m. to 8 p.m." "Cooking that's kind to your stomach."

Photos show: (1) The inside of the cafeteria with white tablecloths. (2) Thirteen waitresses in uniform. (3) Bar stools around the health bar. (4) The dietetic food store.

Note: This is the earliest document seen (June 2006) that mentions the Juicex, an early electric juicer. Address: 720 South Hill St. [Los Angeles, California].

1070. Guy, Ruth A.; Yeh, K.S. 1938. Soybean "milk" as a food for young infants. *Chinese Medical Journal* 54(1):1-30. July. [16 ref]

• ***Summary:*** "Conclusions: 1. Soybean 'milk' reinforced with calcium lactate, sodium chloride, starch and sugar and well boiled was taken readily by young infants, even by those a few days old. When properly diluted and given in suitable slowly increasing amounts, remarkably few, and only mild and transient, gastrointestinal disturbances have been noted.

"2. Vitamins C, A and D were provided in addition. 3. Vitamin C was provided by cabbage (*Brassica pekinsis* or *Brassica chinensis*) soup... 4. Vitamins A and D were supplied in this study by cod liver oil, 12 cc daily."

"5. Soybean 'milk', supplemented as specified, has contributed to good growth and development. All the infants had a little human milk, but some who had very little, as evidenced by their need for more than 100 calories of artificial food per kilogram, developed well. None was suspected of anemia.

"6. All the infants, as compared with those in this clinic who were fed entirely by maternal milk, have shown less muscular vigor, although they have all sat up and stood alone at the usual ages, and appeared to their mothers to be quite normal."

"9. The present method of making soybean 'milk' is impracticable. Improvements are needed and are being made." Address: M.D. (both), Dep. of Public Health, Peiping Union Medical College, and the First Health Station of the Municipality of Peiping.

1071. **Product Name:** Mary McBride's Soya Powder. Formerly named Soya Milk Powder.
Manufacturer's Name: McBride Products Company.
Manufacturer's Address: 811 Fairview Ave., South Pasadena, California. Phone: PY. 1-1314.
Date of Introduction: 1938. July.
Ingredients: Soya beans.

Wt/Vol., Packaging, Price: 12 oz or 5 lb boxes. Wholesales for $0.39 or $2.25 respectively.
How Stored: Shelf stable.
New Product–Documentation: Leaflet/catalog/price list. 1938. 12 by 17 inches. Blue and red on beige. "McBride's Soya Foods." A photo shows the box. The front panel shows a glass of milk next to a bowl of steaming breakfast cereal. "Modern Nutrition. Fully Prepared. Delicious and nourishing. The best in soya foods. Contains no salt." The poster states: "Rich in calcium and phosphorus. Made by an exclusive method with especially selected soya beans exceptionally high in amino-acids, calcium, phosphate, etc. This is a bone, muscle, brain and nerve building food with only traces of starch, and is alkaline.

"Soya powder can be used daily the same as cow's milk for drinking, cooking, baking and table use. When added to cow's milk it is delightful on cereals, fruits, etc. It is ideal in making custard pies and puddings. Delicious recipes are enclosed in each package. Infant foods are greatly improved in nutritive value by the addition of a level teaspoonful of the powder to the bottle three or four times a day. This aids in the building of sound, healthy teeth, bone structure and strong muscular tissue, reduces the tendency to flabbiness, so common in infants fed on cow's milk, and fortifies the baby against the ravages of rickets."

1072. **Product Name:** Mary McBride's Soya-Malt (Plain, Chocolate, Banana, or Almond).
Manufacturer's Name: McBride Products Company.
Manufacturer's Address: 811 Fairview Ave., South Pasadena, California. Phone: PY. 1-1314.
Date of Introduction: 1938. July.
Ingredients: Soya beans.
Wt/Vol., Packaging, Price: 12.5 oz jar or 5 lb boxes. Wholesales for $0.85 or $4.25 respectively.
How Stored: Shelf stable.
New Product–Documentation: Leaflet/catalog/price list. 1938. 12 by 17 inches. Blue and red on beige. "McBride's Soya Foods." A photo shows the jar. "Modern Nutrition. Contains no salt." The poster states: "A delicious soya malted food drink in four flavors. A highly nourishing and easily digested liquid food, of particular value as a building and restorative food for young and growing children, expectant and nursing mothers, convalescents, invalids, and elderly people, and for use in all cases where a rich, nourishing and easily digested liquid food is needed. A glass of Soya-Malt supplies quick energy between meals. Children really enjoy this delicious drink.

"A hot Soya-Malt before retiring is soothing to the nerves and an aid to restful sleep."

Note: This is the earliest commercial non-dairy soy product seen (Jan. 2005) that is flavored by almonds.

1073. **Product Name:** McBride's Morena: A General Food. Formerly called McBride's General Food.
Manufacturer's Name: McBride Products Company.
Manufacturer's Address: 811 Fairview Ave., South Pasadena, California. Phone: PY. 1-1314.
Date of Introduction: 1938. July.
Wt/Vol., Packaging, Price: 1 lb jar and 5 lb package. Wholesales for $1.22 and $4.60 respectively.
How Stored: Shelf stable.
New Product–Documentation: Leaflet/catalog/price list. 1938. 12 by 17 inches. Blue and red on beige. "McBride's Soya Foods." A photo shows the jar. The poster states: "Ideal for infants, children and adults. A wholesome nourishing liquid food especially prepared for infants, children, invalids, convalescents, elderly people and in cases of gastro-intestinal disturbances, when solid foods are discontinued.

"General Food is rich in practically all essential food elements, contains 'superior' protein, vitamins A, B, G, E and minerals. It is extremely valuable in all below par cases, or an adjunct to the ordinary diet, and can be taken either with meals, between meals or both. It is a rich, palatable and satisfying drink for young and growing children and adults, and in pre-natal and post-natal cases. A glass at bedtime is soothing to the nerves, and an aid to restful sleep. It is starch free and contains absolutely no cereal grains."

1074. **Product Name:** McBride's Soycocoa.
Manufacturer's Name: McBride Products Company.
Manufacturer's Address: 811 Fairview Ave., South Pasadena, California. Phone: PY. 1-1314.
Date of Introduction: 1938. July.
Ingredients: Incl. soya flour, cocoa, milk solids, diastatic malt, and calcium phosphate.
Wt/Vol., Packaging, Price: 12.5 oz jar and 5 lb package. Wholesales for $0.75 and $3.25 respectively.
How Stored: Shelf stable.
New Product–Documentation: Leaflet/catalog/price list. 1938. 12 by 17 inches. Blue and red on beige. "McBride's Soya Foods." A photo shows the jar. The entire front panel is visible. Note: The "Soya product" referred to may be soy lecithin. The poster states: "Soycocoa is prepared in the same manner as ordinary cocoa, however, it is unlike ordinary cocoa in that it contains an abundance of life giving protein, vitamins and minerals essential to health. Taken regularly, it is inclined to have a mildly laxative action that is characteristic to soya foods. It makes a very palatable drink and a highly nourishing one, especially for children."

1075. Ferri, Nicandro A. 1938. Soybeans: The wonder food! A brief treatise on modern nutrition. Boston, Massachusetts: Bruce Humphries Inc. 62 p. March. 17 cm.
• ***Summary:*** The Modern Health Foundation (Chicago, Illinois) copyrighted this book in 1938. Contents: Foreword by Charles E. Fearn, M.D. ("World renowned authority on the Soybean). Introduction. Historical. Human dietary habits.

The soybean industry. The economics of nutrition. The proteins in nutrition. The proteins of the soybean. The role of mineral salts. The mineral content of the soybean. The fatty oil in the soybean. The vitamin and the soybean. The soybean in disease. Child feeding. Making dairy products with soybeans. Baking with the soyflour. The use of the soybean itself. Special soybean recipes.

On page 36 the author makes an astonishing claim: "One other feature of the soybean oil is the fact that it does not tend to increase body weight. Seldom, if ever, one sees in the Orient obese people. This is due to the high percentage of lecithin-phosphoric acid, 1.64%, present in the soybean which greatly enhances the oxidation of fatty acids of soy oil. Thus in spite of the high fat content present in the soybean, the tissues and organs readily oxidize this fat instead of storing it as excess weight. And so soybean products are considered as non-fattening foods.

"However, in order to receive the full benefit of the fatty oil contained in the soybean, one should eat the soybean itself, or a full fat soyflour."

On pages 44-45 the author uses the terms "soyflour" and "soy meal (the latter differing from the former in that it contains all of the valuable fatty oil)." He also discusses "soymilk" and its use in "making dairy products with soybeans." Address: M.D., USA.

1076. Lyman, J.F. 1938. The soybean as food for man. *Proceedings of the American Soybean Association* p. 25-30. 18th annual meeting. Held 12-14 Sept. at Wooster and Columbus, Ohio.

• ***Summary:*** "The Chinese and other Eastern peoples have solved the problem of food seasoning without the use of meat. They have found that a meaty flavor can be obtained from the soybean through a fermentation process. Soy sauce is to the Chinese what gravy is to the American. Even more important is soy sauce in China because the use of food flavors and condiments in that country is much more restricted than with us. The Chinese have simple tastes. Soy sauce, salt and pepper are the only food flavors commonly used by them.

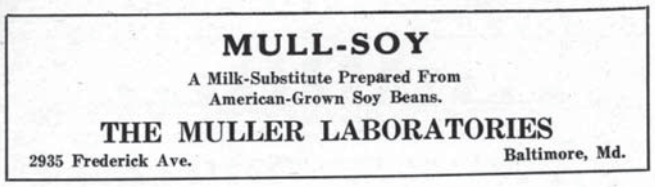
"While the chemist has made but little study of food flavors and the physiologist has done but little also, enough is known of the problem so that soy sauce can be made by chemical methods as well as by the ancient fermentation process. The chief meaty-like taste of soy sauce is known to be the salt of an amino acid, mono-sodium-glutamate. This salt is now manufactured for use as a condiment. The process involves the disintegration of the soybean of other protein, preferably wheat gluten, with hydrochloric acid. A mixture of about 20 amino acids is obtained among which mono-sodium-glutamate makes up about one-fifth in the case of soybean protein and two-fifths in the case of wheat gluten.

"The mono-sodium-glutamate can be crystallized from the mixture by adjusting the acidity to pH 3.2, or the mixture can be neutralized to a desired acidity and used without refining just as soy sauce is used" (p. 25).

"In Japan mono-sodium-glutamate of good purity is sold at a wholesale price of about two dollars a pound under the name Ajinomoto" (p. 26).

A diagram (p. 28) shows "Some possible food products from the soybean," including sprouts, soybean milk, soybean curd, soybean cheese, soy sauce, meat sauce, meal, flour (for use in breakfast cereal, bread, sausage, meat loaves, or ice cream), refined oil (for use in lard substitutes), crude oil (for us in margarine or dressing), and lecithin (an anti oxidant or emulsifier). Address: Dep. of Agricultural Chemistry, Ohio State Univ.

1077. Muller Laboratories (The). 1938. Mull-Soy. A milk substitute prepared from American-grown soybeans (Ad). *Proceedings of the American Soybean Association* p. 69.



• ***Summary:*** A 1/6-page horizontal, rectangular ad with no graphics.

Note: This is the 2nd earliest ad seen (July 2013) that mentions "Mull-Soy." Address: 2935 Frederick Ave., Baltimore, Maryland.

1078. Wightman, Henry B. 1938. Soybean sensitivity with a case report. *J. of Allergy* 9(6):601-03. Sept. [7 ref]

• ***Summary:*** Begins with a discussion of the many food- and industrial uses for the soybean worldwide. The author reports a case of soybean sensitivity in a 33-year-old man who had been suffering from nonseasonal asthma for 2½ years. Asthma was induced when the air was contaminated by soybean pollutants in areas of industrial use of its products. Sensitivity occurred on inhalation (of soybean dust) and on digestion (of Sobee soy milk); It was detected by direct skin test and by passive transfer. "Because of its widespread and increasing utilization, sensitivity to soybean should be constantly suspected." Address: M.D., Dep. of Allergy, the Roosevelt Hospital, New Rochelle, New York.

1079. George, S.E. 1938. New industries: The versatile soya bean. *Nature's Path to Health* (*Melbourne, Australia*). Oct. 1. p. 17, 38.

• ***Summary:*** Discusses utilization of soya beans throughout the world to make soya bean oil and meal, industrial products (glycerine, paints, soaps, linoleum, rubber substitute, printing inks, explosives, etc.), bean-milk, bean-curds or tofu, salted bean-curd (resembles Roquefort cheese), coffee substitutes (sold today in America and Europe), soya bean

flour, and beef-like extracts for use in soups ("one of the most famous European brands of soup-cubes has a soya-bean base"). "Sacks of [soya] beans make excellent substitutes for sandbags [in wartime], as was proved in the recent Manchurian struggle. Buddhists in China use bean-curd [probably yuba], shaped in molds, to make many products that resemble animal products: fish with sauces, a whole chicken swimming in a golden chicken soup. A number of other products made from soya beans are listed. Discusses the work of the Ford Motor Co. with growing and using soybeans in England and the USA.

A cartoon shows a figure of "The Versatile Soya Bean" smiling and dancing with hands on hips.

Note 1. This is the earliest document seen (April 2003) that mentions a meat alternative which is described as an alternative to fish or seafood. Address: Australia.

1080. Woodruff, Sybil. 1938. Soybean products as competitors of dairy products. *National Butter and Cheese Journal* 29(20):30-31. Oct. 25. Summarized by W.V.P. in J. of Dairy Science (1939) 22:A16.

• ***Summary:*** Discusses food uses of soybeans and the nutritive value of soybeans. Predicts that food use of soybean oil and soybean protein will probably increase. Relatively little soybean oil is used in salad oils, margarines, and shortenings which are sold at retail to consumers because of "problems of flavor which may arise. These three soybean oil products are sold rather to wholesale manufacturers of other food products with an expectation of a rapid turnover. It is a fact admitted frankly by soybean oil chemists that refined oil may undergo a 'reversion' of flavor on standing even after hydrogenation, which restricts its salability as food. The cause and means of preventing this unpleasant flavor, described by some as 'fishy' are not yet understood but are the subject of considerable research in the industry at present."

Soybean oil suddenly jumped to prominence as an edible oil in about 1935-36. Margarines and shortenings made from soybean oil both compete with the dairy industry.

A table shows factory consumption of soybean oil for food and industrial uses from 1932 to 1936. Use in lard compounds and vegetable shortenings jumped from 4,889,000 lb in 1932 to 113,897,000 lb in 1936. Use in margarine jumped from 3,000 lb in 1932 to 14,262,000 lb in 1936. Use in other edible products increased from 180,000 lb in 1932 to 21,598 lb in 1936. Thus total food uses skyrocketed from 5,072,000 lb in 1932 to 149,757,000 lb in 1936–a 30-fold increase in only 5 years. Total industrial uses of soybean oil increased steadily from 19,039,000 lb in 1932 to 25,847,000 lb in 1936. In 1935 food uses first exceeded industrial uses.

Soy flour is being used extensively in the sausage industry. "The grits are being added to bread and other bakery goods. Home use of soybean flour is at present almost non-existent" except where small amounts are used as a substitute for wheat flour in cases of allergies, or as a low-carbohydrate in special [diabetic] diets. "At present it is not available on the retail market except in food specialty shops at fancy prices.

"Soybean oil and flour are at present the only manufactured food products of any importance." Address: Dep. of Home Economics, Univ. of Illinois.

1081. *Health and Life* (*London*). 1938. Health services. Oct. p. 330.

• ***Summary:*** This ½-page listing of companies and products includes "Vi-Tone: The lecithin nerve-food beverage with Soya Milk basis."

Note: In 1929 Vi-Tone Company in Hamilton, Ontario, Canada, made Soybean Malter Milk, and Chocolate Malter Milk. It is not clear if the Canadian company is related to this product in England.

1082. Schroeder, Franz. 1938. Die Sojabohne, ihre wirtschaftliche Bedeutung und ihre Verwertung fuer die menschliche Ernaehrung [The soybean, its economic significance and its use as human food]. *Ernaehrung* (*Die*) 3(9):245-57. Sept.; 3(10):281-93. Oct. [61 ref. Ger]

• ***Summary:*** Adaptations of soybeans to Western food habits are discussed in detail. Page 89 mentions efforts to commercialize and popularize the use of soy flour (*Sojamehl*), for example the little Edelsoja Cookbook from the New Edelsoja Co. in Berlin (*das kleine Edelsoja-Kochbuch der Neuen Edelsoja-Gesellschaft in Berlin*) and the Edelsoja Cookbook from the Edel Soja Workshop in Lübeck (*das Edelsoja-Kochbuch des Edel-Soja-Praktikums in Lübeck*). Address: Oberregierungsrat und Mitglied des Reichsgesundheitsamts i. R., Wilhelmshoeher Strasse 3, Berlin-Friedenau, Germany.

1083. Whiteman, Elizabeth Fuller; Keyt, Ellen Kingsley. 1938. Soybeans for the table. *USDA Leaflet* No. 166. 6 p. Oct.

• ***Summary:*** Contents: Introduction. Food value of soybeans and their products. Soybeans as a green vegetable. Dry soybeans (Recipes: Soybean casserole {with "2 cups cooked soybeans, chopped"}, Chile con carne with soybeans. Soybean souffle {with "3 cups soybean pulp" [sieved or ground cooked soybeans]}. Salted soybeans {"they are good fried in deep fat and salted to serve like salted nuts"}).

Soybean sprouts. Soybean milk and "mash" [okara] (Recipes: Soybean milk sour. Soybean macaroons (with cooked soybean mash)). Soybean curd (Recipes: Vegetable chowder with soybean curd. Chop suey with soybean curd and bean sprouts). Soybean flour (Recipes: Soybean flour muffins. Soybean nut bread. Soybean piecrust).

Concerning "Dry soybeans" (p. 2-3): "Dry soybeans are cooked and served in a variety of dishes in practically the

same way as other dry beans, except that some varieties of the soybeans require longer cooking. They should always be soaked overnight first.

"Of the varieties tested, Easycook, Chusei, Rokusun, Jogun, Hokkaido, and Kanro require the least cooking, but Mammoth Yellow, Dixie, Hahto, and many other varieties may be used successfully, especially with the pressure cooker. After soaking overnight, drain, add fresh water, and simmer. The first varieties named will cook tender in about 2 hours, or sometimes less.

"With a pressure cooker at 15 pounds pressure, the cooking time is only a matter of 15 to 30 minutes, depending on the variety.

"For baking, the dry soybeans should be partly cooked first in an open kettle or the pressure cooker, then combined with the seasonings and baked in a slow oven for 3 to 4 hours, or until the beans are tender and savory. Any standard recipe for baked beans may be followed.

"Sometimes the cooked soybeans are pressed through a coarse sieve or ground in a food grinder and the pulp used in making soup, croquettes, loaf, or souffle. The cold soybean pulp also makes a nutritious and flavorful filling for sandwiches when mixed with chopped onion and enough salad dressing or milk to make it easy to spread. Or the pulp may be used like pumpkin or squash with milk, eggs, and spices as a filling for pie.

"The following recipes are typical of the many ways of using cooked dry soybeans. The beans themselves contain so much fat that they need only enough added for flavor."

Concerning "Soybean sprouts" (p. 4): "Soybeans, like mung beans, can be sprouted in a flower pot, a sink strainer, or any container that has holes in it for drainage and can be covered. Be sure the container is large enough, for the beans swell to at least six times their original bulk as they sprout. Soak overnight, and next morning put the beans in the container, cover, and leave them in a warm place. Flood with lukewarm water at least four or five times each day during the sprouting period. In 4 to 6 days the sprouts will be 2 to 3 inches long. Then they should be kept in a cool place, just as any fresh vegetable.

"Bean sprouts are a good addition to raw salads or to omelet, souffle, meat stew, or fricassee. The sprouts are very tender and to hold their crispness should not be added to hot mixtures until a few minutes before serving. They are also often used with soybean curd and vegetables in chop suey (p. 6)."

Concerning "Soybean 'milk' and mash" (p. 4-5): "Soybean 'milk,' though not the equal of cow's milk in food value, may be used like it as a beverage or in cooking. It is of value in diets for persons allergic to cow's milk, but in infant feeding must be properly supplemented.

"Of the varieties of soybeans tested, the best to use for making milk are Bansei, Hokkaido, Haberlandt, Mammoth Yellow, Dixie, and Rokusun. The milk may be made by either of two methods.

"Method 1.–Wash the dry soybeans and soak overnight. Remove the skins and grind the beans very fine. Put the ground beans in a cheesecloth bag, in a bowl of lukewarm water, using 3 quarts of water to each pound of dry beans. Work thoroughly with the hands for 5 to 10 minutes. Wring the bag of pulp until dry. Boil the milk on a low fire for 30 minutes, stirring frequently to prevent scorching. Add sugar and salt to taste. Keep in a cold place.

"Method 2.–After washing the dry soybeans, let them dry thoroughly. Crack them; then grind them fine. To each pound of beans add 3 quarts of water, and soak for 2 hours. Boil for 20 minutes, stirring constantly; then strain through cheesecloth. Add sugar and salt to taste. Keep in a cold place.

"The creamy white soybean milk can be used in practically any recipe calling for milk. For instance it may serve as one of the chief ingredients in a creamed vegetable soup, or with eggs in custard, or in cocoa or other hot beverages.

"The ground bean pulp or mash has very little flavor, but may be used for its nutritive value in combination with foods of more pronounced flavors. It spoils quickly, however, and should be heated to prevent it from souring.

"To cook soybean pulp or mash [soybean mash], put the desired amount of mash into the top part of a double boiler. Add one-half teaspoon of salt to each pint of mash. If the mash is too dry, moisten it with soybean milk. Stir occasionally and cook for about an hour or until the raw soybean flavor is gone. Keep in a covered jar in a cold place. The cooked mash makes an inexpensive ingredient in the macaroon type of cooky [cookie]." There follows recipes for "Soybean milk soup" and "Soybean macaroons."

Note: This is the earliest English-language document seen (June 2013) that uses the term "soybean mash" to refer to whole soybeans than have been cooked, then mashed or ground to a paste. Address: 1. Junior home economics specialist; 2. Junior scientific aide.

1084. *Post-Dispatch* (*St. Louis, Missouri*). 1938. Pictures. Nov. 6. *

• ***Summary:*** Photos show: (1) Aerial view of "Madison College, Tennessee. Its campus covers 700 acres." (2) "At one wing of the Madison College hospital, a student nurse wheels a patient past a pre-medical student, delivering a tray."

1085. *Eagle* (*Dothan, Alabama*). 1938. Soy bean milk is fine. Nov. 16.

• ***Summary:*** "Tuskegee Institute's versatile Dr. Carver has produced milk and many other things from peanuts–an amazing variety of food and other products... The chemist is a resourceful scientist and research uncovers no end of wonders.

"The soy bean, too, is proving to be the prolific mother

of many palatable and nourishing products.

"Two or three years ago, says Editor William Allen White's Emporia Gazette, he was a luncheon guest of Secretary of Agriculture Henry Wallace. 'We lunched in his private office. A cafeteria in the building supplied the order which the writer hereof ordered. A big bowl of milk and crackers appeared at Wallace's place.' The greedy eyes of the editor of The Gazette fell on it and Wallace said, 'That is our favorite luncheon dish. Would you like a glass of milk?' At a nod of acquiescence the Secretary told the waiter to bring some milk like his. It appeared. It was good. When we had disposed of our milk, the Secretary grinned and asked us, 'Did you like it?' We said 'Yes.' He said, 'I thought you would. I drink it every day. It isn't milk at all. It's a milk substitute made of soy beans and is much richer for my purposes in nourishing qualities than milk itself. And someway I like it better.' 'Ditto here.' To that the writer of The Gazette article adds the following:

"This story is told to illustrate another story. A state food inspector was in the office the other day, examining The Gazette's advertising columns. He spotted the advertisement he was looking for. It was a line in a grocer's advertisement advertising this soy milk as a cheap brand of milk but without calling attention to the fact that it was not cow's milk. In other words it was false advertising. Cases and crates of this good soy bean milk are sold in this town as cheap canned milk

"Of course this advertising is false advertising and the dealers are subject to arrest, as are the canners who pack it. How much better it would be if they would frankly advertise their product as soy bean milk. Those who consume this fake milk because it is cheap are fooled but they are not swindled. They are getting a good pure product. They know now that it is better milk than the real milk. They will buy it advertised for what it is.

"Why not be honest? It really pays. Quite apart from the morality involved, honesty–commercially–is the best policy. Soy milk branded as soy milk will have its place in the commercial world. But branded as a cow-milk product it will have tribulation. Try that soy milk sometime and as the old-fashioned advertisements used to read, 'You will use no other.'

"Yet as a matter of fact probably in many cases the real milk is just as good as the imitation.

"Yes, it really pays to be honest, but it does not pay to come into competition with the great American dairy block.

"Southern farmers are greatly interested in the production of oleomargarine, 'the poor man's butter.' Oils which enter into its composition are produced abundantly in the South, but the dairy interests of the northern and western states are powerful enough to keep a law on the statute books which forbids the sale of margarine butter to which coloring matter has been added.

"And if soy bean milk, or any other vegetable milk begins to be produced in quantity in this country, it will have the dairy interests on its neck in short order–via the Congress of the United States, which seems to jump obediently when the dairy lobby in Washington [DC] says jump."

Note: Perhaps Wallace got the idea for soy bean milk from his friend, G.W. Carver, whom Wallace had known since he (Wallace) was a baby. Carver had "made some very acceptable milk from the soy bean" by Oct. 1930.

1086. Chiu, Yan-Tsz. 1938. Analyses of Chinese foods. *Chinese Medical Journal* 54(5):435-41. Nov. [9 ref. Eng]
• ***Summary:*** "Soybean milk: My first problem is to study the manufacture and properties of soybean milk to be used as a substitute for cow's milk, which is too expensive for poorer children. In North China soybean milk has been a common food for both adults and children, while in South China only its products (mostly bean curd) are used. Ten years ago the manager of a local department store introduced bean milk as a beverage to take the place of soda water. But many people do not like it because of its unpleasant taste. It is found that the unpleasant odor of bean milk can be eliminated by washing the beans thoroughly and then soaking them in a large volume of water."

Table 1 gives a nutritional analysis of 4 types of soybean milk (including a condensed soybean milk with cocoa), human milk, goat's milk, and various types of cow's milk (condensed, evaporated, fresh, and powdered).

"Condensed soybean milk can be used to make a very cheap ice cream. Dean Koo and the writer have made for the first time several quarts of soybean milk ice cream which contains 60 per cent condensed soybean milk, 30 per cent cream (having 40 per cent butter fat) and 10 per cent cow's milk, with 5 per cent fat. The condensed soybean milk contains about 52 per cent water. 0.3 per cent gelatin is added. Flavored with lemon or vanilla or chocolate it has a good taste."

Note: This is the earliest English-language document seen (March 2007) that uses the term "soybean milk ice cream" to refer to soy ice cream. Address: Prof. of Chemistry, Lingnan Univ., Canton, China.

1087. Hastings, Milo. 1938. A college that feeds itself. *Physical Culture.* Nov.
• ***Summary:*** About Madison College near Nashville, Tennessee. About 500 people now live on the campus, of which 300-350 are students. About 90% of the vegetables (including soybeans) consumed by all these people are grown by student labor. The college has its own mills for whole-grain products and its own bakery, "which also serves whole-wheat and soy-bean bread to over one hundred retail stores in the nearby city of Nashville."

"The address Madison College, Tennessee, has become familiar to patrons of health food stores as the place of origin of a distinctive line of products made from soy-beans."

The reason for that grew out of an interesting combination of circumstances. First, the college was founded upon the idea that the "students should by their own labor produce as nearly as possible all their own food supply for a completely nourishing diet. Second: Madison College and Sanitarium are strictly vegetarian, and, as at the Battle Creek Sanitarium, the vegetarianism has been worked out as part of the school dietary as well as the sanitarium dietary. To students and patients alike the importance of proper food for the body is emphasized.

"Third: one phase of the work at Madison College has to do with the training of medical missionaries. That has not only brought to the teaching staff people who have had experience in the Orient, but has also brought students from those countries. (At present there are six Japanese and ten Chinese students.)

"Out of these circumstances came the development of a new line of foods which we may call the Americanization of the second most important food material in the Eastern world and the greatest of all vegetarian sources of protein–the soy-bean."

To Madison College, with its interest in perfecting a vegetarian diet, came Perry A. Webber, as professor of chemistry. He had taken his doctor's degree at Michigan State College after a fourteen years' residence in Japan. It was a happy combination of circumstances, and the American chemist, with his Japanese experience, set to work to Americanize the soy-bean as a source of human food.

"It also happened that one of Dr. Webber's Chinese friends, Philip S. Chen, was a fellow student of chemistry at Michigan State College, having come to America to study science. When he had completed his chemical work for a doctor's degree at Michigan, he entered Madison College as a special student to take up practice teaching in the Department of Chemistry under Dr. Webber. The two men, each with a knowledge of soy-beans as used in the Orient, now worked together as chemists in the American college.

"After two years of this cooperation Dr. Webber was called back to Japan to become the head of a school there. Dr. Chen then became the professor of Chemistry at Madison College and continued to work on soy-bean products."

Though Dr. Chen says soy-bean milk has been used in China for 3,000 years, the type made at Madison "is new because it is different and superior to the older forms of the Oriental product." It has been made "more acceptable to American tastes and to the more exacting demands of present-day nutritional science. This also applies to the substitutes for meat and the cheese products made from soy-beans, and to the use of soy-bean flour as an ingredient in bakery and cereal products. Today all this is of special interest to vegetarians and to those who follow the latest forms of health foods. These advances in food science will later become of far greater significance."

Dr. Frances L. Dittes, head of the Department of Nutrition, specializes in soybeans, "both in nutritional research and menu applications. Thus, the new food products developed from soy-beans, along of course with other vegetarian dishes, were worked out and tried out in the students' dining hall and also in the Madison Sanitarium. Patients cured at the sanitarium naturally wished to continue the use of the food products after returning home. This gave the nucleus of a health food manufacturing business.

"This, in turn, provided another campus industry for the work-your-way college, giving occupation for the students in which they could take an especial interest and pride, since the business grew out of the research work of the college and was closely tied in with both their agricultural and their health work."

Note: This article is reprinted near the back of the 1989 edition of *Madison–God's Beautiful Farm.*

1088. *Post-Dispatch* (*St. Louis, Missouri*). 1938. A college supported by its own industry: Madison College, Tennessee–the country's most unusual educational institution. Dec. 7. Rotogravure section. p. 10-11. *

• ***Summary:*** This 2-page center spread is about Madison College in Tennessee, to which it brought much favorable publicity. Photos by Jack Schutz show: (1) Five women students with many Madison Foods packages. (2) Soy milk being made in the food plant. "Soy milk may be substituted for cow's milk by those who require a strictly vegetarian diet" [i.e., a vegan diet].

1089. Bulatao, Emilio. 1938. Statistical note on the effect of supplementary feeding of powdered milk, soya bean milk, cod liver oil, and tomato juice on height-weight of children. *Natural and Applied Science Bulletin* (*Univ. of the Philippines*) 6(4):357-76. Dec. [2 ref]
• ***Summary:*** Conclusions: "4. Whichever and whenever one of two groups was given milk as a dietary supplement, that group put on weight at a significantly faster rate than did the other group taking only the basic diet."

"6. Although the soya bean group showed greater rate of weight increment than did the control, the difference is small and not significant." Address: Dep. of Physiology and Biochemistry, College of Medicine, Univ. of the Philippines.

1090. Concepcion, Isabelo; Paulino, Peregrino. 1938. The influence of certain dietary supplements on the growth of Filipino children. *Natural and Applied Science Bulletin* (*Univ. of the Philippines*) 6(4):337-56. Dec. [14 ref]
• ***Summary:*** Various dietary studies have shown that the Filipino diet has a deficiency of milk and dairy products, is low in calcium, animal protein, and fat, and is deficient in vitamins, especially A, B-1, and C. The high cost of milk and dairy products in the Philippines prevents their widespread use among infants and children.

Four supplements were tested in the diets of 67 children. The authors found that the addition of liquid milk (reconstituted from whole milk powder) to a basic diet produced an acceleration in both weight and height, and an apparent increase in the red blood cell count. "The addition of soya bean milk and a mineral mixture to the same diet, although it caused an increase both in height and weight more than the control group, is not significant however, specially with regards to height. There was also a marked increase in the hemoglobin content of the blood."

They conclude: "Of the four supplements that we have studied milk was the most effective and from the standpoint of nutritive value, the most economical." Efforts should be made to reduce the price of milk. Address: Dep. of Physiology and Biochemistry, College of Medicine, Univ. of the Philippines.

1091. *Madison Health Messenger* (*Madison, Tennessee*). 1938. Price list. 1(3):6. Fall-winter.
• ***Summary:*** This is the earliest known list of foods made by Madison Foods. The name of each food that contains soy as an ingredient is preceded by an asterisk (*). The foods are divided into categories and the flavor, size and price of each size are given.

The categories are: Breakfast cereals. Beverages. Crackers. Canned protein foods. Flour.

The foods containing soy as an ingredient are: Kreme O'Soy Crisps. Soy-Koff. Kreme O'Soy Milk (plain and chocolate). Thin-Things. Fruit Stix. Date Stix. Soyburger Loaf. Vigorost (3 sizes of cans). Soy Cheese seasoned (3 sizes of cans). Soy Beans with Tomato (3 sizes of cans). Kreme O'Soys [whole soybeans]. Kreme O'Soy Flour.

PRICE LIST

BREAKFAST CEREALS		
Minute Wheat	12 oz.	15c
*Kreme O'Soy Crisps	9 oz.	13c
BEVERAGES		
*Soy-Koff (No Caffein)	12 oz.	20c
*Kreme O'Soy Milk plain, liquid	15 oz.	15c
*Kreme O'Soy Milk plain, liquid	29 oz.	25c
*Kreme O'Soy Milk chocolate, liquid	15 oz.	15c
*Kreme O'Soy Milk chocolate, liquid	29 oz.	25c
CRACKERS		
*Thin-Things	5 oz.	12½
Whole Wheat Wafers	5 oz.	12½
Bran Wafers	6½ oz.	12½
*Fruit Stix	6½ oz.	15c
*Date Stix	6½ oz.	15c
CANNED PROTEIN FOODS (used in the place of meat)		
*Soyburger Loaf	14 oz.	20c
*Soyburger Loaf	30 oz.	40c
Nut-Meat	5 oz.	10c
Nut-Meat	14 oz.	25c
Nut-Meat	30 oz.	50c
*Vigorost	5 oz.	12c
*Vigorost	14 oz.	30c
*Vigorost	30 oz.	60c
*Soy Cheese seasoned	5 oz.	10c
*Soy Cheese seasoned	14 oz.	25c
*Soy Cheese seasoned	30 oz.	50c
*Soy Beans with Tomato	5 oz.	7c
*Soy Beans with Tomato	14 oz.	15c
*Soy Beans with Tomato	30 oz.	30c
*Kreme O'Soys	14 oz.	15c
FLOUR		
*Kreme O'Soy Flour	2 lbs.	35c
*Kreme O'Soy Flour	5 lbs.	85c

*(Soy Bean Foods.)

1092. **Product Name:** Soymilk.
Manufacturer's Name: Canton Mission School.
Manufacturer's Address: Canton, China.
Date of Introduction: 1938.

1093. **Product Name:** Soymilk, Tofu-Pimiento Spread, Okara Spread, and Gluten Cutlets.
Manufacturer's Name: Miller's Soy Foods.
Manufacturer's Address: Utica, New York. Washington, DC.
Date of Introduction: 1938.
Wt/Vol., Packaging, Price: Soymik: Bottled. Gluten products: Canned.
New Product–Documentation: Herbert P. Ford. 1958. *The Life Story of Dr. Harry W. Miller.* p. 131. "In 1939 Dr. Miller returned to the United States having been so thoroughly convinced of soy milk being destined to have world-wide acceptance... His son, Harry Willis Miller, Jr. had returned preceding his father and had started a small soy milk plant in

Utica, New York, where he made and bottled soy milk and also made and canned some of the protein foods out of wheat gluten for which they had developed recipes. This plant was later moved to Mt. Vernon, Ohio, after they started the soybean plant at Mt. Vernon."

Interview with Willis Miller. 1981. After he returned to the USA from Shanghai, Willis started this company, named Miller's Soy Foods, in Utica, New York, in 1938. Later that year he moved it to Washington, D.C. and was successfully making and marketing canned soymilk, tofu used in a tofu-pimiento spread, okara spreads, and gluten cutlets. When Dr. Miller returned to the U.S. he suggested that he and his son go into business together. Willis liked the idea.

1094. Zaporozcev, N.S. 1938. Sojove mleko [Soy milk]. *Lekarska Revue* (*Medical Revue*). [Cze]*
Address: Czechoslovakia.

1095. Abreu Velho, H. de L.; Gossweiler, John. 1938. A soja [The soybean]. Luanda, Angola: Imprensa Nacional. 48 p. (Conselho de defesa da producao e do comercio). [8 ref. Por]
• ***Summary:*** Cover title: Soja; o que os agricultores devem saber sobre a sua cultura (Soya: What farmers must know about its culture). In the section titled "Possibilities for soybean culture in Angola," it is noted: "Although on a relatively small scale, some soybean trials have been conducted in Angola. At the Experimental Station of Algodao, in Catete, some soybean trials were conducted in 1929 and 1930 with a yellow variety, with the intent of studying the crop for use in rotation with cotton and with maize (corn). The sowing went well and the germination was rapid and uniform, but none of the plants grew to a height of more than 30 cm (1 foot)."

At the experiment station of *Policultura Planáltica at Bié,* from 1928 to 1931, the soybean was one of the crops tested for use as a green manure. A summary of the results was given by the station's director in the *Boletim da Direcçao dos Serviços de Agricultura e Comércio,* volume 4, numbers 12-15, 1931. A long extract from that Bulletin concerning the soybean is given, focusing on the year 1930.

Soybean trials have also been conducted at the Station for the Reproduction and Improvement of Seeds and Plants (*Estaçao de Reproduçao e Melhoramento de Sementes e Plantas*) at Planalto de Malanje, since the beginning of 1935.

This publication also contains a long section on food uses of the soybean, including soy flour (*farinha de soja*), soy milk (*leite de soja*), tofu (*queijo de soja; queijo duro*), soy sauce (*Shoju, Soyu, Shoyu, tao yu*), and soy oil (*óleo de soja*). In Austria and America, and also in the Orient, soybean seeds are roasted, ground, and used as a substitute for coffee (*substituto de café*).

Note 1. This document contains the earliest date seen for soybeans in Angola, or the cultivation of soybeans in Angola (1928). One source of these soybeans was France.

Note 2. This is the earliest Portuguese-language document seen (Nov. 2012) that refers to soy coffee, which it calls *substituto de café* (a substitute for coffee).

Note 3. This is the earliest Portuguese-language document seen (Aug. 2013) that mentions soymilk, which it calls *leite de soja.* As of Aug. 2013 *leite de soja* is the modern Portuguese term for soymilk.

Note 4. This is the earliest Portuguese-language document seen (April 2013) that uses the word *queijo de soja* or the word *queijo duro* refer to tofu.

Note 5. This is the earliest Portuguese-language document seen (Sept. 2006) that mentions soy oil, which it calls *óleo de soja.*

Note 6. This is the earliest Portuguese-language document seen (April 2012) that uses the word *Shoju* or the word *Soyu* or the word *Shoyu* or the term *tao yu* to refer to soy sauce. Address: Angola.

1096. Anderson, Hans Steele. 1938. Science of food and cookery. 7th ed. Mountain View, California, Portland, Oregon, Cristobal, Canal Zone, and Omaha, Nebraska: Pacific Press Publishing Assoc. 297 p. Illust. 23 cm. [7 ref]
• ***Summary:*** Soybeans are discussed, with recipes, on pages 157-60. A recipe for making soy bean milk is given on p. 282; the remaining pulp is called "soy bean cake."

A 5th edition (same publisher, number of pages, and size) was published in 1929, and a 6th edition in 1932.

1097. Balzli, Hans. 1938. Kleine Soja-Fibel. Geschichte, Anbau und Verwertung einer einzigartigen Nutzpflanze [A little soybean primer. History, culture, and utilization of a unique useful plant]. Zurich and Leipzig: Albert Mueller Verlag. 88 p. Index. 16 cm. [26 ref. Ger]
• ***Summary:*** Contents: Foreword. Economic questions. Botanical. Historical. Chemical composition of the soybean seed. Utilization in East Asia: Koji, miso, shoyu, soymilk, yuba, tofu (*Sojakäse*, like Quark), soy oil and press-cake. Utilization in Europe and America: As fertilizer and feed, as food (soy flour, roasted soybeans, soy coffee, green vegetable soybeans (*den jungen Sojakern... wie junge gruene Erbse*), soy sprouts), and industrial products (incl. "soybean steel," an invention of Henry Ford). Medicinal significance. Cultivation and yield. Epilogue. Bibliography. Author-subject index.

In the chapter on History (p. 24), the author notes: "The poet Johann Heinrich Voss (lived 1751-1826) once said: 'Young Calcuttans... with your sharp soy sauce from Jakarta (*Junge Kalkuten... mit scharfer batavischer Soja*).' Then he adds to that the observation: 'Soy sauce (*Soja*) is a powerful sauce, which is prepared from soybeans (*Sojafasele*), Dolichos Soja, which originate in the East Indies and are subject to fermentation, together with brine and spice.'"

Balzli continues on page 25: "The *Deutsche Woerterbuch der Naturgeschichte* (German Dictionary of

Natural History) contained in the *Allgemeinen Polyglotten-Lexikon der Naturgeschichte* (General Multilingual Encyclopedia of Natural History) by Philipp Andreas Nemnich (1793) contains the entry: 'Sojablume. Dolichos soja.' (Soya flower. Dolichos soja)."

"In the world-famous work *Geist der Kochkunst* (Spirit of the Culinary Art), the art historian C.F. von Rumohr (lived 1785-1843) also mentions soya in the second edition (1832, p. 155) and conjectures that the Garum sauce of the Romans was an imitation of the East Indian sauce (Sulze) made from soybeans (Soja)."

Page 29 reports that "During the war of 1870 (*des siebziger Krieges*, in which Bismarck of Germany defeated Napoleon III of France) the German head artillery man, O. Wehrman, saw in the botanical garden of Montigny-les-Metz a plant that was unknown to him. It was the soybean. He took 4-5 seeds with him and planted them in early 1872 on his property / estate near Meissen (in Sachsen/Saxony, near Dresden in today's Germany). He harvested 80 to 100 seeds, with which he continued his investigations successfully for some years" [Note: Haberlandt (1878, p. 5) tells this same story].

On page 57 the author uses the term "Sojaspeisen" to refer to soyfoods. Address: Switzerland.

1098. Fiene, F.; Blumenthal, Saul. 1938. Handbook of food manufacture: A handbook of practical food information... New York, NY: Chemical Publishing Co. vi + 603 p. See p. 89. Index. 24 cm.

• ***Summary:*** This book contains many commercial scale formulas / recipes. Chapter 2, "Description of raw materials," includes brief descriptions of "corn oil (maize oil), cottonseed oil, arachis oil (also called peanut, ground nut, and earth nut oil), sesame oil (gingli oil, teel oil), soy bean oil, and rape oil" (p. 70-71).

Chapter 3, "Milk and milk products," includes subsections titled "Infants' milk, synthetic" (a recipe for a dry mix in which "Soya bean powder, 125 g." is the main ingredient), "Soya bean vegetable milk" and "Soya bean curd" (p. 89). Concerning the milk: "Soya bean meal after the oil is extracted or whole soya bean meal may be utilized quite as well as the whole bean. The milk can be used successfully in numerous preparations, such as breads and cakes, in creaming vegetables, in milk chocolate, and in custards. After separating the liquid from the solid material, the residue is still very rich in nutritive substances and can be dried and used for cattle feed or made into flour for human food."

Note: This is the earliest English-language document seen (Aug. 2013) that uses the term "Soya bean vegetable milk" to refer to soymilk.

Concerning the curd: "This curd, after being drained or pressed, represents bean curd of [sic, or] tofu, which is extensively eaten and forms the basis of numerous fermented, smoked, and dried cheeses in China and Japan... In many cities of the United States having a large oriental population fresh bean curd may be found in Chinese and Japanese markets."

Chapter 5, on canned foods, notes in the section titled "Dried beans" (p. 126) that "Soya" beans sold in cans.

Chapter 17, on "Bread" contains two formulas (p. 378-79) for "Soya bean flour bread," the first containing 260 lb. wheat flour, 65 lb. "Soya flour," etc., and the second containing 25 lb. "Whole soya flour," 25 lb "Whole wheat flour," etc. The straight dough method is used.

Chapter 23, titled "Health foods" begins (p. 445): "Natural and vitamin-laden health-building foods and drinks are essential for healthy muscles, nerves, glands, and for the growth and maintenance of a healthy, vigorous, and sound mind." The best diets are those containing plenty of fresh foods and juices. "Nuts and soya beans are good substitutes for meats, fish, eggs, and sea foods." A section in this chapter on the "Soy bean" begins (p. 447): "The soy bean is justly entitled to be called the king of the legumes. Not only because it is lowest in starch but also because, firstly, it is the most complete and best protein for both growing children and adults and, secondly, because of its unusually high mineral content being quite high in alkaline potassium, calcium, and magnesium... it is an alkaline food."

Formulas for health foods include (p. 454-55): "Health dry cereals" (six formulas, two if which contain "Soy bean middlings" [medium size soy grits, probably made by cracking whole soybeans]). Coffee substitutes and health drinks (three formulas, the 3rd containing only 75 oz. roasted whole wheat and 25 oz. roasted soy bean middlings). The next health-food subsection, titled "Flour, meals, etc." states (p. 455): "Soy bean flour, with or without a high percentage of fat, is used to make bread, biscuits, noodles, mayonnaise, candy, etc."

Chapter 24, "Acid-forming and alkali-forming foods," states: "When foods yielding an acid ash predominate in the diet, a condition of acidosis may result unless the resulting constituents are neutralized with alkaline ash foods."

Next come two lists: (1) "Acid-forming foods, starting with those foods having the least amount of acid-forming ash." The foods with the *most* acid-forming ash are: 1. White bread. 2. Cheese. 3. Meat, chicken. 4. Fish, haddock. 5. Meat, venison. 6. Meat, beef, lean. 7. Meat, veal.

(2) "Alkali-forming foods, starting with those foods having the least amount of alkali-forming ash." The foods with the *most* alkali-forming ash are: 1. Soy bean. 2. Olives. 3. Beans, lima, dried. 4. Linseed oil meal. 5. Spinach. 6. Raisins. 7. Beans, dried. 8. Almonds. Address: 1. PhD, Food Research Chemist; 2. B.S., Consulting Food Chemist and Director of Shirley Labs., New York City.

1099. Glotova, E.V.; Chebotareva, S.V. 1938. [The influence of lactic acid microorganisms on the formation of toxin by

B. botulinus in acid soybean milk preparations]. *Voprosy Pitaniia* (*Problems of Nutrition*) 7(3):132-39. (Chem. Abst. 34:7325). [8 ref. Rus; ger]
Address: 1. Abteilung fuer anaerobe Infektionen (Vorst).

1100. Hauser's (Mrs.) Food Products Co. 1938. Mrs. Hauser's recipe book: Soya formulas for better nutrition. Los Angeles, California. 32 p. 24 cm.
• ***Summary:*** The cover of this booklet is light blue on beige. Contents: The purpose of this book. The nutritional marvel–*Soy or Soya Beans "Soya max."* Soya Bean high lights. Analysis of Soya Bean Flour. Soy Bean facts. Soya briefs. Hot and cold food stuffs. Eat relaxing alkaline foods. Breathe correctly. Five day efficiency diet. The water we drink. Practical "low carbohydrate" diets. Soups. Drinks. Salad dressing. Bread–biscuits–muffins. Meat substitutes. Recipes to be used when preparing Mrs. Hauser's paste goods. Cakes. Cookies. A good breakfast for health. Desserts. Sandwiches. Miscellaneous (incl. Baked delight {with ground Soya Nuts}, Tofu or Soya Bean Cheese {made from soya milk curded with lemon juice or citric acid}). About vitamins: Vitamin A, B, C, D, E, G. Soya beans are a good source of vitamin G. Foods and their minerals. Soya beans are rich in copper, iron, phosphorus, and calcium. Food which are alkaline: Incl. soya beans.

The types of soyfoods called for in these recipes include: Mrs. Hauser's "Soy" Sauce. "Soy" Brand Elbow Macaroni (p. 18-19). "Soy" Brand Hot Cake and Waffle Flour. "Soy" Brand Macaroni. "Soy" Brand Noodles. "Soy" Brand Spaghetti. Soya bean flour (also called "Soya flour"–by far the most common ingredient called for). Soya bean mush (p. 25). Soya beans (canned or cooked). Soya milk. Soya nuts (p. 15-16). Soya oil.

The booklet ends with these words (p. 32): "A liberal use of the Soya Bean and Soya Bean Products in the average diet is a very distinct aid in the digestion of meats, poultry, fish, and, in fact, all animal foods. (Recipes of this nature will be given in future publications.)"

Note 1. Many of the recipes call for "Mrs. Hauser's Sea Salt." Note 2. Mrs. Hauser is apparently not related to Gayelord Hauser, who is also in the health foods business in Los Angeles. Address: 4617 Melrose Ave., Los Angeles, California.

1101. Miege, M.E. 1938. Les cultures complémentaires au Maroc [Complementary crops in Morocco]. French Morocco: Service de l'Agriculture et de la Colonisation. 339 p. Preface by J. Lefevre. Illust. Index. 22 cm. [10 ref. Fre]
• ***Summary:*** Miège considered the extension of any crop as subordinate to the utilization of varieties that withstood drought and were high yielding. Within irrigated zones, the soybean furnished yields of 14,000 to 16,000 kg/ha of excellent green forage. But the seed yield was very small, usually not exceeding 1,000 kg/ha when unirrigated. That would not make the crop financially viable.

On the other hand, the bean can be used to make a great variety of preparations: transformed into flour, into milk, into cheese [tofu], or consumed green, dried, or grilled [roasted], it enters into the daily feeding of several millions of human beings, for whom it represents a very rich food, as it contains, on average, 38 to 40% proteins, 16 to 22% lipids, and 14 to 15% carbohydrates.

In Morocco, this legume has so far, only been used on a small scale as forage or green manure; however, they are beginning to use the beans, boiled or ground into flour, to raise calves and baby pigs, as well as to make oil (in Casablanca).

Note: "Complementary" in this sense means alternative, secondary or additional to the main or primary crops. It could also mean a source of protein and/or oil to make up for a shortage of traditional protein and/or oil sources.

Also discusses: Peanuts (p. 20-25; 5 refs). Sesame (p. 52-55; 1 ref). Address: Director, Center for Agronomic Research, French Morocco (Directeur du Centre de Recherches Agronomiques du Maroc).

1102. Montagné, Prosper. 1938. Larousse gastronomique [Larousse gastronomique]. Paris: Librairie Larousse. 1087 p. See p. 989-90. [Fre]
• ***Summary:*** The following are defined under *"Soja ou Soya":* Introduction. Tofu (*fromage de soja*), soymilk, (*lait de soja*), soy sauce (*sauce ou extrait de soja*), soy meat (*viande de soja; viande végétale*). The soy meat, which resembles smoked ham, is said to be very complicated to make, requiring industrial equipment. An illustration (p. 990) shows a soybean plant, including enlarged insets of the flowers and pods.

Note: This is the earliest French-language document seen (Nov. 2003) that uses the term *viande de soja* or *viande végétale* to refer to meat alternatives. Address: France.

1103. Nuxo Nussnahrungs. 1938. Zur Bereitung koestlicher Rohkostspeisen [For the preparation of delicious raw-food dishes and meals (Ad)]. In: Bircher-Benner, Maximilian Oskar; Bircher, Max Edwin. 1938. Fruechtespeisen und Rohgemuese. 26. Auflage [Fruit dishes & raw vegetables. 26th ed.]. Zurich, Switzerland, Leipzig, Germany, Vienna, Austria: Wendepunkt Verlag. 59 p. Ad faces title page. [Ger]
• ***Summary:*** Nut mayonnaises made from Nuxo = Nutmeats. Breakfast foods with Nuxocreme. Almond milk and fruit milk made from Nuxo Almond- and Nut products. Dextrinized Nuxo = flakes from cereal grains, chestnuts, and the like. Our logo is the sign of natural purity (*Naturreinheit*) and wholeness (*Vollwertigkeit*). Established in 1905. Address: Nuxo-Werke, Rothfritz & Co., Hamburg 1, Germany.

1104. Platt, B.S.; Gin, S.Y. 1938. Chinese methods of infant

feeding and nursing. *Archives of Disease in Childhood* 13:343-54. [14 ref]
• ***Summary:*** Page 345 mentions a number of foods that are believed by Chinese to promote lactation in nursing mothers. At the end of this paragraph it is stated: "Another preparation that is sometimes used is the 'milk' prepared from the soya bean with powdered walnut added."

Page 347 shows a graph of the foods fed to 390 infants after introduction of solid foods while nursing continued. Rice was by far the most widely fed, followed by Chinese red dates (Chinese jujubes). Soy bean milk was one of the least frequently fed foods. The weaning diet was studied in 305 Chinese infants. Only one case was seen where soya bean milk was fed. Guy (1936), a woman pediatrician in Peking, found that "soya bean 'milk' is never used in infant feeding; a hot weak solution sold in the streets of Peiping is taken by old people as a beverage. At a recent conference of nutrition experts in the Far East, it was recorded (Bandoeng Conference, 1937) that soya bean milk had little in common with mammalian milk beyond a white colour. A soft bean curd may, however, be used with advantage (Platt, 1936) in a mixture for weaning purposes." Address: Dep. of Medicine, Henry Lester Inst. of Medical Research, Shanghai, China.

1105. Silva Cortes, Cesar. comp. 1938. El poroto soya [The soybean]. Santiago, Chile: Ediciones Ercilla. 87 p. Illust. Index. 19 cm (Colleccion Manuales Ercilla). [Spa]
• ***Summary:*** Contents: Introduction: General outline off its importance and use, composition of various legumes, general characteristics of the meal (*harina*), oil, lecithin, cake and other derivatives of the soybean (*poroto soya*). Part I: Cultivation of the soybean. 1. Botanical characteristics of the plant: Leaf, flowers, pods, seeds, roots and nodules. 2. Varieties and desired characteristics: Various varieties, those most suited to Chile, characteristics of other varieties. 3. Cultivation of soybeans: Climate, the soil and its preparation, fertilizers, inoculation of the seeds, planting, cultivation, harvest, diseases, enemies, and their cures.

Part II: Utilization of the soybean. 1. Generalities: Applications of the plant and its seeds. Summary of the uses. 2. Soy oil and its derivatives: Extraction of the oil, edible oil, industrial uses of the oil, soya phosphatides and lecithin (*Fosfáticos y lecitina de soya*), soybean cake, commercial enzymes. 3. Soybeans in human nutrition: Green vegetable soybeans (*porotos verdes*) and whole dry soybeans, soy sprouts (*vástagos de soya*), soy flour (*harina de soya*), nutritive and caloric value, types of flour, bread with soy flour, doughs (*pastas*) and biscuits, sausages with soy flour, soymilk (*leche vegetal de soya*), soybean curd (*cuajada de soya* [tofu]). 4. Soya for livestock: Soybean straw, soybean pasture (*pasto*), soya for silage, soybean hay, soybean hay for animals to be slaughtered, soy meal (*harina de soya*) for various animals.

A table (p. 19-20) lists soybean varieties suited for different uses: For hay: Barchet, Chiquita, Goshen Prolific, Laredo, Old Dominion, Otootan, Virginia. For green forage: Dixie, Easycook, Hahto, Hollybrook, Mammoth Brown, Mammoth Yellow, Southern Prolific, Tarheel Black, Tokio. For silage: Biloxi, Mammoth Brown, Mammoth Yellow, Tarheel Black, Tokio. For beans (oil, cakes, flour, etc.): Biloxi, Chiquita, Dixie, Hollybrook, Mammoth Yellow, Southern Prolific, Tokio, Ito San, Dunfield, Illini, Manchu.

Varieties most suited to Chile (p. 20): About 27 varieties have been tested at various locations in Chile. Those which gave the best results were Ito San, Dunfield, Illini, and Manchu. Ito San gave good results from Aconcagua to Bío-Bío. It performed especially well at Maule, Ñuble, and Bío-Bío. Dunfield and Illini gave very good results in Curicó and Talca. Manchu, which matures a little later than Ito San and Dunfield, is very appropriate for the Central Zone.

Note 1. This is the earliest document seen (July 1998; one of two documents) that uses the word *"poroto"* or *"porotos"* in connection with soybeans.

Note 2. This is the earliest Spanish-language document seen (June 2009) that uses the term *porotos verdes* to refer to green vegetable soybeans.

Note 3. This is the earliest Spanish-language document seen that uses the word *"lecitina"* to refer to lecithin, or the term *Fosfáticos y lecitina de soya* to refer to phosphatides and soy lecithin.

1106. Simonds, William Adams. 1938. Henry Ford and Greenfield Village. New York, NY: Frederick A. Stokes Co. xiv + 268 p. Illust. No index. 20 cm.
• ***Summary:*** In chapter 9, titled "Industry and Agriculture," Henry Ford's work with soybeans is discussed on pages 230-35. Ford developed plastics using soybeans. "The cost of one pound of soybean molding material has as yet proved higher than that of a pound of steel, but the polishing and finishing of the steel makes the cost of its finished part somewhat greater than that of the finished plastic. When a molded plastic part replaces one of steel, weight is decreased with consequent reduction in gasoline consumption.

"Two years before experiments with the soybean in its relation to industry were commenced, the bean was the subject of another definite line of research in the food and diet laboratory maintained by the Company in the rear of the Engineering Laboratory directed by Mr. Ford's old seatmate, Dr. Edsel Ruddiman... Many will doubtless recall the howl of laughter that went up when Mr. Ford informed a reporter one day of his belief that synthetic milk could be produced. Nevertheless, milk has been produced from the soybean in the Ford laboratories and elsewhere. It is even better than cows' milk for certain infants' cases, where skin afflictions make use of the latter undesirable...

"When Dr. Victor Heiser, author of 'An American Doctor's Odyssey,' visited Greenfield Village he told me of the wide use of soybean milk among the Filipinos, and how

the addition of a little oil of banana had made it much more palatable...

"With this milk soybean cheese, similar to cottage cheese except in flavor, may be made. While somewhat insipid in taste, the cheese proves very useful when mixed in salads, sandwich spreads, croquettes with a food having a strong flavor. The whole bean has many food uses, among them soups, baked beans, salads, and canning. As the flavor of the soya is slightly stronger than that of the ordinary bean, onions and tomatoes are often used to cover it. The process of canning the green soybean was first demonstrated under Dr. Ruddiman's direction. Production of soybeans in 1935 totaled 590 cans; and in 1936 it reached 1,000."

Defatted soybean flour "finds a ready market among visitors at the Village. It is used in many common baked goods such as bread, rolls, muffins, biscuits, cakes, cookies, and so on... Another product that has proved popular with visitors is the salted soya, put up in small packages like nuts. In preparing these, the bean is soaked in water for a time, then roasted in hot soya oil. The salt is added to taste." Lecithin can be used to make a "chocolate sauce and coating for soybean candies, with which the Ford men have done much experimenting.

"As a practical demonstration of the possibilities of the soybean in a variety of foods, a dinner was served one August evening in 1934 at the Ford exhibit in the Chicago Century of Progress Fair. Every dish on the menu was comprised, in part at least, of the legume. Following was the list [of 15 dishes served].

"Tomato juice seasoned with soybean sauce. Salted soybeans. Celery stuffed with soybean cheese. Purée of soybean. Soybean crackers. Soybean croquettes with tomato sauce. Buttered green soybeans. Pineapple ring with soybean cheese [tofu] and soybean dressing. Soybean bread with soybean butter. Apple pie (soybean crust). Cocoa with soybean milk. Soybean coffee. Assorted soybean cookies. Soybean cakes. Assorted soybean candy."

Note 1. This is the earliest English-language document seen (Dec. 2012) that uses the term "soybean butter." It is not clear whether this was a soynut butter (made from roasted soybeans and resembling peanut butter) or whether it was made with hydrogenated soybean oil and resembled dairy butter.

Note 2. The listing and spelling of the items in this menu differs slightly from the original menu of 17 Aug. 1934.

Note 3. No mention is made of soy ice cream being served at this meal in Aug. 1934. Yet shortly thereafter, and definitely by Aug. 1935 soy ice cream for dessert was served at similar meals in the pine-paneled dining room in the Ford Engineering Laboratory (Strother 1961).

Chapter 10, titled "Little Factories," discusses Ford's rural industries, including the mills at Saline, Tecumseh, Milan, and Ypsilanti. At Tecumseh, in the heart of soybean country, the Hayden Mills, after its restoration, "was used for cleaning and sacking soybeans for seed, preparing them for distribution to neighboring farmers in the spring." At "the village of Saline where the Chicago pike crosses the Saline River a few miles north of the soybean farms..." the old Shuyler mill and its dam were restored. "The fall of 1936 also found workmen busy at the town of Milan east of the soybean area..."

An excellent panoramic view of and guide to Greenfield Village are shown inside the front cover and on the facing page. #11 is a "soybean extraction plant." Address: Dearborn, Michigan.

1107. White, Ellen G. 1938. Counsels on diet and foods: A compilation from the writing of Ellen G. White by the Board of E.G. White Trustees. Takoma Park, DC: Review and Herald Publishing Assoc. 511 p. Index. 17 cm.
• ***Summary:*** The Foreword states: "Early in 1926 there was issued by the Loma Linda college press, a paper-bound volume entitled 'Testimony studies on diet and foods.' This was compiled by Dr. H.M. Walton from the writings of Mrs. E.G. White for use in the College of Medical Evangelists... The continued call for the book... justifies the issuance of this new and enlarged edition."

Quotations from previous writings by a founder of the Seventh-day Adventist faith are arranged by the following subjects: Reasons for reform. Diet and spirituality: The relation of diet to morals. Health reform and the third angel's message. The proper dietary: The original diet, the simple diet, the adequate diet, diet in various countries. Physiology of digestion. Improper eating a cause of disease. Overeating. Control of appetite. Regularity in eating: Number of meals, eating between meals. Fasting. Extremes in diet. Diet during pregnancy. Diet in childhood. Healthful cookery. Health foods and hygienic restaurants. Sanitarium dietary. Diet a rational remedy. Fruits, cereals, and vegetables: Fruits, grains, bread, vegetables. Desserts: Sugar, milk and sugar, pie, cake, pastry, puddings. Condiments, etc.: Spices and condiments, soda and baking powder, salt, pickles and vinegar. Fats: Butter, lard and grease, milk and cream, olives and olive oil. Proteins: Nuts and nut foods, eggs, cheese. Flesh meats (proteins continued): Progressive dietetic reform in Seventh-day Adventist institutions. Beverages: Water drinking, tea and coffee, cereal substitutes for tea and coffee, cider, fruit juice. Teaching health principles: Instruction to be given on health topics, how to present the principles of health reform, cooking schools. Appendix: Personal experience of Ellen G. White as a health reformer, a statement by James White relating to the teaching of health reform. General subject index.

Concerning the consumption of milk, dairy products, and eggs, Ellen G. White stated (year of quotation, number in book): "Fruits, grains, and vegetables, prepared in a simple way, free from spice and grease of all kinds, make, with milk or cream, the most healthful diet. They impart nourishment

to the body, and give a power of endurance and a vigor of intellect that are not produced by a stimulating diet" (1890, #601).

"Some, in abstaining from milk, eggs, and butter, have failed to supply the system with proper nourishment, and as a consequence have become weak and unable to work. Thus health reform is brought into disrepute... The time will come when we may have to discard some of the articles of diet we now use, such as milk and cream and eggs; but it is not necessary to bring upon ourselves perplexity by premature and extreme restrictions. Wait until the circumstances demand it, and the Lord prepares the way for it" (1909, #602).

"Milk, eggs, and butter should not be classed with flesh meat. In some cases the use of eggs is beneficial. The time has not come to say that the use of milk and eggs should be wholly discarded. These are poor families whose diet consists largely of bread and milk...

"Let the diet reform be progressive. Let the people be taught how to prepare food without the use of milk or butter. Tell them that the time will soon come when there will be no safety in using eggs, milk, cream, or butter, because of wickedness among men" (1902, #603).

"If milk is to be used, it should be thoroughly sterilized; with this precaution, there is less danger of contracting disease from it" (1905, #607).

"We place no butter on our table. Our vegetables are generally cooked with milk or cream and made very palatable... We think a moderate amount of milk from a healthy cow is not objectionable" (1870, #611).

Concerning the idea that the strictest diet is not the best, especially for the poor, see White's letter of 1901, #612. She feels that all people should stop consuming flesh meats, tea and coffee, but that the subject of giving up milk, eggs, cream, and butter needs to be handled carefully, especially by poor families. "No extremes in health reform are to be advocated. The question of using milk and butter and eggs will work out its own problem."

"The health food business is in need of means and of the active cooperation of our people, that it may accomplish the work it ought to do. Its purpose is to supply the people with food which will take the place of flesh meat, and also milk and butter, which, on account of the diseases of cattle, are becoming more and more objectionable" (1900, #583).

"Large quantities of milk and sugar eaten together are injurious. They impart impurities to the system. Animals from which milk is obtained are not always healthy. They may be diseased... Could we know that animals were in perfect health, I would recommend that people eat flesh meats sooner than large quantities of milk and sugar" (1870, #533). Large amounts of milk and sugar "clog the system, irritate the digestive organs, and affect the brain" (1870, #534). "Especially harmful are the custards and puddings in which milk, eggs, and sugar are the chief ingredients" (1905, #536).

Concerning cheese (made by fermentation): "Cheese is still more objectionable [than butter]; it is wholly unfit for food" (1905, #633).

Other entries: Why use secondhand food? "The diet of the animals is vegetables and grains. Must the vegetables be animalized, must they be incorporated into the system of animals, before we get them? Must we obtain our vegetable diet by eating the flesh of dead creatures?" (1896, #703). Note: A revised edition was published in 1946.

1108. Edison Institute. 1938? Recipes for soy bean foods. Dearborn, Michigan: Edison Institute. 19 p. Undated.
• ***Summary:*** This undated booklet begins with 1½ pages of nutritional information about soy beans and recipes containing them. "Fresh green soy beans contain about 10% of protein compared with 7% in green lima beans or green peas. The varieties Willomi and Rokusun "are preferred because they do not have such a strong taste." Many of the 58 recipes are based on soy flour, e.g. soy-bran bread, steamed soy bean bread, cinnamon buns, muffins, waffles, lady fingers, apple sauce cake, soy bean "paste," doughnuts, etc. A number of others use "cooked soy beans" (soy loaf, chile con carne [chili], baked beans), "boiled soy beans" (salad) or "cooked and ground soy beans" (soup).

Note. This is the earliest English-language document seen (June 2013) that uses the term "ground soy beans" or the term "cooked and ground soy beans" to refer to whole soybeans that have been cooked and ground.

More unique recipes include: Soy loaf (with "soy cheese" [tofu], p. 9). Cheese croquettes (with soy bean cheese and soy milk, p. 9). Green soy beans (p. 10). Scalloped green soy beans. Omelette (with tofu, p. 10). Salad (with tofu, p. 11). Salad soy bean sprouts (p. 11). Sandwich spread (with "soy nut butter," p. 12). Honey soy bean icebox cookies (with soy bean butter or Crisco [shortening], p. 14). Brittle cookies (with soy bean flour and roasted soy beans, p. 14). Coconut balls (with roasted soy beans, p. 15). Soy bean custard (with soy bean milk, p. 18). Candy-milk chocolate clusters (with freshly roasted soy beans, p. 18). Candy-roast soy brittle (with fresh roasted soy beans, p. 18).

The last page (p. 19) gives basic recipes for: Cooked soy beans. Green soy beans. Soy bean milk. Soy bean cheese [tofu], coagulated with dilute acetic acid or vinegar; salt to taste. Roasted soy beans. Soy bean nut butter. Soy bean butter.

"Roasted soy beans: Soak beans in water 3 or 5 hours. Drain off water and roast beans for 9 to 11 minutes in deep, purified soy oil or Wesson oil heated to about 325ºF. Drain and sprinkle with powdered salt."

"Soy bean nut butter: Grind about 2½ cups of roasted soy beans and mix with about 2 tbsp. of purified soy oil or salad oil.

Soy bean butter: Mix hydrogenated soy oil with salt,

coloring matter and diacetyl to color and taste.

Note 1. Robert Boyer stated in an interview in the 1980s that this booklet was published in the mid-1930s, and the recipes were developed mostly by Dr. Edsel Ruddiman. However mention of the varieties Willomi and Rokusun makes it more likely that this booklet was published after mid-1938.

Note 2. This is the earliest English-language document seen (Nov. 2012) that uses the term "soy nut butter" or the term "soy bean nut butter" to refer to soynut butter. Address: Dearborn, Michigan.

1109. Photographs of Madison College in Madison, Tennessee. 1938? Undated.

• ***Summary:*** These black-and-white prints were sent to Soyfoods Center in 1983 by Ed Bisalski. Most are pasted onto heavy brown cardstock paper in a 3-ring scrapbook, which has a neat, handwritten description of each photo in black ink.

The photos are: (a) A display of Madison Foods featuring Soy-Koff ("coffee flavor without coffee effects, alkaline," 20 cents for 25 cups), Kreme O'Soy Milk ("a pure tasty vegetable milk," plain or chocolate, homogenized, 15 cents or 25 cents) and Kreme'O-Soy Crisps (ready-to-eat, malted soy crumbles, 13 cents or 2 for 25 cents).

(b) "Madison Foods college industry. Bread molding. specializing in the manufacture of soy bean foods–bread, crackers, cereals, flour, cheese, milk, coffee substitute, canned soy beans, meat substitutes. Sold in 48 states–Health Food Stores, Department stores, Specialty Grocers, etc."

(c) Madison Foods plant.

(d) The 400-acre farm provides for the stock [animals], for the college kitchen, sanitarium kitchen, and campus store. A female student in the "Soy bean patch."

1110. Stegman, Henry M. 1939. The soybean a blessing to mankind. *Good Health* (*Battle Creek, Michigan*) 74(1):11. Jan. [1 ref]

• ***Summary:*** "A promising field in this country is the employment of soybean milk for medicinal purposes. In the stomach this gives a very fine, flocculent precipitate instead of the large, tough curds of cow's milk. The period of stay in the stomach is thus made much shorter, and the peristaltic motion of the stomach is less and more coordinated. It also curdles at a lower acidity...

"The deficiency of the soybean ash in sodium and the large excess of potassium makes the food an important alkalinizing agent... The standard which gives milk an alkalinity of 0.5, places that of the soybean at 12...

"The soy acidophilus milk which the Dionne quintuplets take today is given them to prevent the recurrence of the severe bowel trouble infection which they suffered when four months old. They were relieved by this after other measures had failed."

1111. *New York Times.* 1939. Chemists patent new sleep potion. Feb. 19. p. 39.

• ***Summary:*** The section titled "Flavor of soya products" states that U.S. Patent No. 2,147,097 has been granted to Artemy A. Horvath of Newark, Delaware. The patent is assigned to Soya Corporation of America.

Soya beans have long been seen as potential source of food products (such as flour or milk) in the USA. However the objectionable soya flavor and odor impeded the use of

these products. This invention is intended to overcome this problem by treating soya with carbon dioxide under pressure and at low temperatures. When the soya is heated both the carbon dioxide and the volatile flavors and odors also evaporate, leaving a good tasting soya product.

1112. Pynaert, L. 1939. Le Soja au Congo Belge [The soybean in the Belgian Congo]. *Revue Internationale des Produits Coloniaux et du Materiel Colonial* 14(158):61-65. Feb. Summary in Revue de Botanique Appliquee (1939) 19:233. [3 ref. Fre]

• ***Summary:*** Contents: Preface. Soybean yields obtained in the Belgian Congo. The utilization of soya in Europe: Dry seeds (whole dry soybeans), soy sauce, soymilk, yuba, tofu, soymilk casein, soy lecithin, soy flour and chocolate, soy oil. Net cost. In short, Pynaert describes all the basic types of soyfoods and encourages their introduction to the Congo.

Yields: "In 1915 the agronomist Mestdagh made it known that at the end of an experiment well conducted at Lusambo in the district of Sankuru [Belgian Congo], he had harvested 1,472 kg/ha of a light yellow variety of soybean, and 1,786 kg/ha of a black variety.

"The agronomist J.B.H. Lejeune, who worked in the Congo for nearly 20 years, recently furnished information of great interest on the subject of the soybean cultivation which he had undertaken in the colony as well as in Rwanda-Urundi.

"In 1922 he cultivated a yellow soybean which he had obtained from Vilmorin-Andrieux & Co. in Paris under the name of Mammoth Yellow. He obtained yields ranging from 500 to 1,500 kg/ha.

"In 1926 the same agronomist introduced the black soybean O-Too-Ton [Otootan] cultivated in Georgia. This variety adapted itself remarkably well to the conditions of the Eala milieu and gave soybean yields of 1,000 to 2,000 kg/ha.

"In 1927 trials were recorded at four stations in Rwanda-Burundi, a country of higher altitude with conditions that are very different from those forested central Africa.

"At Lusunyu, which enjoys a temperate climate, the yields of a variety of O-Too-Ton varied from 90-540 kg/ha during a 4 month cycle. At Bugarama, in a much warmer climate, the average yield of seeds was 556 kg/ha. At Kisozi the variety O-Too-Ton gave yields of 100 to 400 kg/ha. A variety named Biloxi furnished a yield of more than 500 kg/ha. At Rubona, still in Rwanda-Urundi, the following seed yields were obtained from 1931 to 1935. Biloxi: 300 to 652 kg/ha. O-Too-Ton: 150 to 1,300 kg/ha. Eala Yellow (Jaune d'Eala): 214 to 261 kg/ha." Also discusses yields at: Kisozi from seeds introduced by Mr. Lejeune; at the Agronomic Station at Yangambi, near Stanleyville, from 1937; at Nioka in Upper Ituri (*Haut-Ituri;* Ituri is a district in the oriental province of the Belgian Congo) where yields are 450-500 kg/ha in poor soil but 700-800 kg/ha in good soil, and even up to 1,000 kg/ha; it is concluded that indigenous crops will probably not give yields of greater than 400-500 kg/ha.

This document contains the earliest date seen for soybeans in Ruanda-Urundi, or the cultivation of soybeans in Ruanda-Urundi (1927) (one of two documents). Address: Directeur du Jardin Colonial de Laeken (Belgium).

1113. Heiser, Victor George. 1939. You're the doctor. New York, NY: W.W. Norton & Co., Inc.; London: J. Cape. 300 p. April. Index. 21 cm.

• ***Summary:*** The legumes (peas, beans, lentils), once so highly praised for their proteins, have fallen rather into disrepute as a staple article of diet, because it has been shown that they are lacking some of the most important amino acids–the building blocks of nutrition. But there is one noteworthy exception. "The easily digested 'little honorable plant,' the soy bean, known in the Orient as 'the meat without the bones,' is the richest in proteins of any food except dried egg white and is possessed of more of the properties of animal proteins than any other vegetable."

Note: This is the earliest English-language document seen (June 2012) that refers to the soy bean as "the meat without the bones"; in all previous documents, that phrase was used to refer to tofu.

In the tropics, milk is difficult to obtain. In Peking, China, a soy bean decoction was developed as an alternative. "To me, it was one of the vilest mixtures I've ever tried." Nevertheless, babies reared on this "nauseating beverage loved it;" they clamored for it and consumed it greedily. When given fine fresh cow's milk, they promptly spat it out.

"The addition of banana oil [or bananas] does wonders for the taste of soy bean milk... With the addition of calcium and certain vitamins it becomes an almost ideal food."

Henry Ford has always wanted to produce a "tin cow." He and his researchers have done a great deal "to popularize the soy bean; he practically lives on it himself. He drinks it and eats bread made from it, and with what is left over he produces buttons and insulators for his automobiles." Recently, at age 77, "to prove he was free of arthritis via soy beans, he showed me how he could jump over a table."

After lamenting the ways of "food faddists" (such as Mussolini [in Italy] and Hitler [in Germany]) he says that, in all his travels, he has never met a person who eats a strictly vegetarian diet. He states (incorrectly) that those who consume milk and eggs are not "true vegetarians."

Victor George Heiser, born in 1873, has long worked with the Rockefeller Foundation. Address: M.D.

1114. Primmer, George H. 1939. United States soybean industry. *Economic Geography* 15(2):205-11. April.

• ***Summary:*** Contents: Introduction. Recent phenomenal acreage increase. Soil relationships. Effect of slope. Climatic influences. Relation to pests and diseases. Use of soybeans for food and feed (coffee substitute, "cooked as a green

vegetable," "soy sprouts of about two inches receive praise as a winter vegetable," "Duluth confectionary counters display 'Salted Soys' alongside other exotic nuts," "Recipes for preparing soybean 'milk' circulate widely").

Note. This is the 3rd earliest English-language document seen (Jan. 2013) that contains the modern term "soy sprouts."

Industrial uses of soybean oil and residue: the regional industrial products in Urbana, Illinois

Figures show: (1) Bar chart of the world principal soybean producing countries in 1924-25, and in 1935-36. In 1936, Manchuria was by far the leader, followed by the USA, Chosen [Korea], Japan (whose production has decreased since 1925), and Netherland India [today's Indonesia].

(2) A map of the eastern half of the United States, with carefully located 50,000-acre dots showing areas of heaviest soybean production. Between 1934 and 1939, the area increased 5-fold in Mississippi and 21-fold in Minnesota. The area in Oklahoma decreased.

(3) A graph shows that the number of combines used to harvest soybeans in Illinois skyrocketed from 0 in 1924, to about 20 in 1925, to about 75 in 1926, to about 300 in 1927; by 1935 the number had increased to an estimated 3,000. (4) A photo shows a combine harvesting soybeans.

(5) A photo of a "Superior field of Indiana soybeans probably cultivated for the last time as plants shade most of the field's surface. Two-row corn cultivators or "beet cultivators may till four such soybean rows simultaneously.

(6) A graph shows soybean oil imports into the United states; these imports increased dramatically during World War I, peaking in 1918 [at 335.98 million lb].

(7) A map shows the location of soybean oil mills in the United States. There are large numbers in Illinois, Indiana, Ohio, Iowa, and North Carolina.

(8) A bar chart shows "Utilization of soybean oil processed in the United States" in 1934, 1935, and 1936. In 1934 the 30 million lb was used mostly by the drying oil industry. In 1935 the 140 million lb was used mostly for [lard] compounds and vegetable shortenings. In 1936 the 280 million lb was still used mostly for compounds and vegetable shortenings, but a significant amount was used for oleo, other edible, the drying oil industry, and soap.

(9) A photo shows a mill for removal of oil from Corn Belt soybeans; the processing plant serves an area tributary to Champaign, Illinois, and ships the oil to Chicago factory area.

"Soybeans provided some of the none-too-kindly remembered 'coffee' rations to Union Civil War soldiers. Sausage makers, at times, put up to 50 per cent soybean flour in part of their product."

Note: This is the earliest English-language document seen (Dec. 2012) that uses the term "Salted Soys" to refer to soynuts.

1115. *Detroit News.* 1939. Milk from soy beans. May 14. p. 1, cols. 6-1. Editorial.

• ***Summary:*** Milk and butter from soy beans are being made experimentally in Muskegon, Michigan. Neither product is for sale yet. Senator John Vanderwerp of Muskegon has introduced a bill in the Michigan Legislature. But the dairy industry appears to be alarmed and in same districts the Grange is opposing the measure on grounds that new competition could damage dairy interests. Their "argument is not convincing. Soy beans have proved a valuable asset to farming. This crop has the big advantage of yielding the ground more fertile after yielding tons of stuff that can be made into milk or butter or automobile steering wheels."

1116. Mihaeloff, S. 1939. L'utilité économique d'introduire et d'encourager la culture du soja en Égypte [The economic benefit of introducing and encouraging the culture of soybeans in Egypt]. *Egypte Contemporaine* (*L'*) 30(185):493-501. May. [2 ref. Fre]

• ***Summary:*** The soybean is one of the most ancient and important crops cultivated in East Asia. It is of interest both as a food and industrial crop. From it is made the famous liquid shoyu. Its flour is useful in making bread for diabetics, a vegetable milk can be made from the seeds, and its casein has many industrial applications. In France, Mr. J. Bordas, Director of the Agronomic Research Station at Avignon, has shown that it can play an important role in solving the current agronomic and economic difficulties in France. Various tables give the nutritional composition of soybean seeds from Egypt and France. The author then discusses soybean cultivation and production worldwide, including Algeria. Based on this information, the author believes that soybeans have a good chance of success in Egypt, and should be tested in lower (north) Egypt, with tests gradually moving toward upper (south) Egypt.

In addition to the role it can play as a human food, the soybean can also be used as a feed for animals (in the form of forage, defatted cake, or milk), and as a source of vegetable oil. The oil can be used as a solvent for rubber, in the production of dynamite or margarine, as a lubricant for automobile motors, and in making soaps. The soy protein (casein) can be used as a binder for lime in agriculture, to make industrial plastics, and as a substitute for gelatine in the manufacture of paper.

In short the soybean could play a very useful role in Egyptian national economy. Address: Doctor of Sciences (*Docteur ès-sciences*).

1117. El Molino Mills. 1939. Free! Be sure to ask at your health food store for leaflet–Diet–Soya flour as an admixture–reprint from "American Miller" (Ad). *Health News* (*Hollywood, California*) 7(12):7. June 23.

• ***Summary:*** "Do not miss this instructive article–it has information on Soya flour you cannot afford to miss! Soya

flour is used by all leading bakers in Soya bread–nutritious, healthful, non-acid, non-fattening. One fifth to one fourth El Molino Soya Flour can be used in baking bread, cake and cookies, also soya milk, soya cheese, and soya candy. Get your soya recipes at your health food store." Address: 5604 Valley Blvd., Los Angeles, California.

1118. Black, M.A. 1939. Soya beans. *New Zealand J. of Science and Technology* 21(1A):46a-60a. June. [23 ref]
• ***Summary:*** Contents: Introduction. Description. Chemical composition. Utilization: Human food, stock food, industrial uses (paint, soap, glue, plastics). Production: General, agriculture, effect of temperature on yield, vernalization, acclimatization, soils and manures, inoculation, seeding, cultivation, harvesting, storage, conclusion. Appendices: A. Soya-bean oil. B. Soya-bean varieties tested in New Zealand. C. Prices. D. Average analysis of soya beans grown in new Zealand.

"Summary: Under existing conditions the growing of soya beans in New Zealand cannot be recommended because–(1) The climate is generally unsuitable. (2) The potential market for human food is negligible. (3) There is no internal commercial market, and no possible export market in competition with the main soya-bean growing countries. (4) For stock feed other cheaper and more certain supplies of forage and concentrates are available."

"Widespread interest has been aroused from time to time in New Zealand by reports of the amazing variety of products derived from soya beans... As long ago as 1915 the Department of Agriculture conducted successful experiments on the growing of soya beans, but the crop has not found favour with New Zealand farmers... In Western countries the chief food use of soya-oil is in the manufacture of margarine... In New Zealand some 27,000 gallons of decoloured and deodorized oil are used annually by bakers for shortening, and for greasing baking tins. For the latter purpose it is of value because it does not change colour under baking temperatures... Curiously enough, there is a soya-milk factory in Denmark, a great dairying country. Note 1. This is the earliest English-language document seen (Aug. 2013) that contains the term "soya-milk."

Industrial uses: "The chief industrial uses of soya-bean oil are in paint, varnish, soaps, linoleum and oilcloth, and printing ink. In paints the essential disadvantage of soya-oil is that it is a poor-drying oil, especially in comparison with linseed, perilla, and tung oils. This drawback can to a large extent be overcome by the use of cobalt driers, which, however, considerably increase the cost of the paint. Promising blends are being obtained with blends of perilla and soya oil..."

Tables 5 and 7 shows the average and range in the number of days to maturity, and the yields (1935-1938) for 14 soybean varieties tested in three seasons, two at Palmerston North, three at Ruakura, in New Zealand. In table 7, they are listed in ascending order of days to maturity: Manitoba Brown (128 days), Wisconsin Black (128), Cayuga (133), St. Annes (141), Mandarin, Manchu, O.A.C. 211, Black Eyebrow, Early Yellow, A.K. (Harrow), Henry Ford (a selection of A.K. grown at Ford's estate in England), Black Ontario, Laredo, Virginia (186 days). For each variety is given the days to maturity (average and range), yield in bushels per acre (average and range), and number of trials.

Appendix B lists the following 34 soya-bean varieties tested in New Zealand: A.K., Auburn, Biloxi, Bilton, Black Beauty, Black Eyebrow, Black Ontario, Cayuga, Chernie, Dixie, Early Brown, Early Yellow, Harbinsoy, Herman, Hollybrook, Illini, Ito San Laredo, Mammoth Yellow, Manchu, Mandarin, Manitoba Brown, Mikado, Morse, O.A.C. 211, Ogemaw, Otoxi, Sable, St. Annes, Tashing, Tokio, Virginia, White Non-shatter, Wisconsin Black. Of these, 13 selections were sent by Mr. N.P. Neal of Wisconsin, as being likely to suit New Zealand conditions. Also four English acclimatized varieties, known as Jap, C, J, and O, have been grown.

Note 2. This is the earliest English-language document seen (Sept. 2006) that contains the term "soya-oil." Address: Agronomy Div., Plant Research Bureau, Dep. of Scientific and Industrial Research, New Zealand.

1119. Lovell, Philip M. 1939. Care of the body. *Los Angeles Times.* Aug. 20. p. H21-23. Sunday magazine.
• ***Summary:*** The section titled "Summer drinks" (p. 22) is identical to that titled "Beverages" in his column of 4 Feb. 1934. Address: N.D. [Naturopathic Doctor].

1120. Borth, Christy L. 1939. Pioneers of plenty: The story of chemurgy. Indianapolis, Indiana and New York: Bobbs-Merrill. 303 p. Portraits. 22 cm.
• ***Summary:*** Soy is discussed at length (usually in connection with Henry Ford Sr. and Edsel A. Ruddiman) on p. 22, 40, 42, 202-06, 208-11. Henry Ford is also discussed on p. 21-22, 30, 69, 76-77, 118, 144, 246.

"A few years ago, Henry Ford was ridiculed when he said the time would come when most of an automobile would be grown on the farm. Since then, Ford chemists have perfected processes whereby soy beans are converted into plastic substitutes for automobile parts formerly made of metal. Ford Chemist Russell Hudson McCarroll estimated that the use of plastics for interior window moldings alone would increase that company's use of farm-grown metal-substitutes twenty-five million pounds annually." (p. 21-22).

"Dearborn was selected as the [first chemurgic] conference site because it was the home of Henry Ford, an industrialist who had demonstrated his understanding of the meaning of the farm problem, and because there were, in near-by Edison Institute, working exhibits of the processing equipment which Ford researchers had developed to convert soy beans into some thirty industrial products." (p. 40).

At the chemurgic conference Russell Hudson McCarroll, a Ford chemist, described how soy beans are converted into raw materials for industrial use. "From the bean oil Ford chemists make a lacquer which is claimed to be superior to the pyroxylin paints usually used in coating metals. From the residue of meal after extraction of oil, Ford chemists make plastic parts for automobiles, these farm-derived parts being substitutes either for metals formerly mined or for rubber formerly imported." (p. 42).

Chapter 10, titled "Ford links farm and factory" (p. 200-12) is about Henry Ford, chemurgy, and soy beans. "Do you recall the gibes that greeted his [Henry Ford's] prediction that man would one day find a substitute for the cow, as revolutionary as the automobile which displaced the horse? It was very funny when the cartoonists and columnists leaped upon it gleefully–but it may not be so fantastic as it once seemed.

"Let's investigate it.

"Come now to the foot of Elm Street, in Dearborn, to a rejuvenated farmhouse whose homelike exterior masks a modern laboratory."

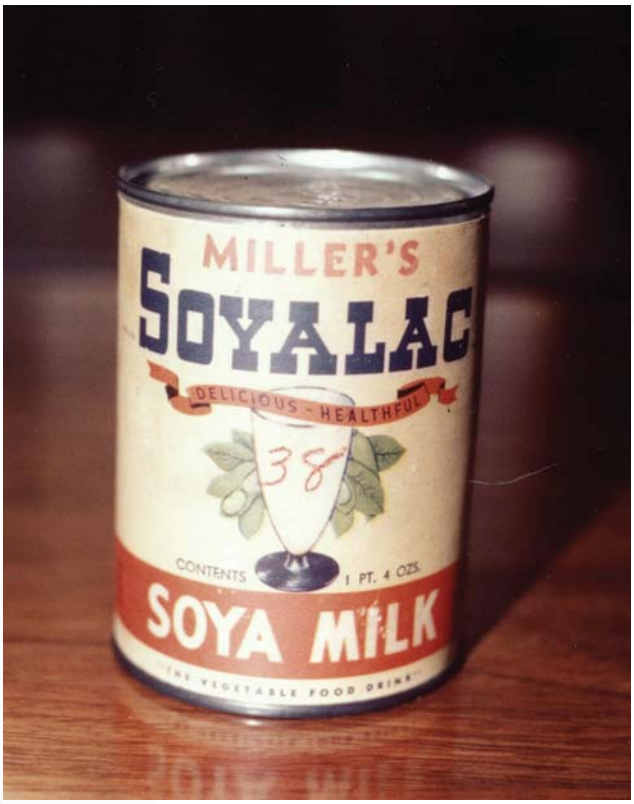
"Follow the truant chemurgists inside and meet Ford's boyhood companion, Dr. Edsel a. Ruddiman, the food-chemist whose services were enlisted by his old deskmate. In the back room, once a farm kitchen, is an electric refrigerator, filled with food made from soy beans. Milk, butter and cheese–the latter, fresh, dried, smoked and fermented–are there, soy-bean products all. In the pantry are breakfast foods, macaroni, salad oils, crackers, diabetic foods, infant foods, flour, bouillon cubes, soups, confections, coffee substitutes, sauces, gravies and beef substitutes–all produced from the soy" (p. 202-03).

A wonder bean indeed!" "During the World War [I], when Germany faced famine, German chemists extracted from the soy the glutamic acid which became the basis of the 'beef-tea' that kept patients alive in hospitals." The soy bean "gets into Heinz and Lea & Perrins' sauces and into oleomargarine" (p. 203).

A full-page photo (between pages 206 and 207) shows Irénée du Pont and Henry Ford talking and enjoying a meal together at a table.

1121. Fershan, Del. 1939. Health: Menus for September. *Nature's Path* (*New York City*). Sept. p. 334.
• ***Summary:*** Gives a menu for breakfast, lunch and dinner, each day of the week. Includes soy bean loaf, coffee substitute or soy milk, steamed soy beans.

1122. **Product Name:** Miller's Soya Lac (Canned Liquid Soymilk Fortified with Vitamins and Minerals). Renamed SoyaLac by 1941.
Manufacturer's Name: International Nutrition Laboratory.
Manufacturer's Address: 13246 Wooster Rd., Mt. Vernon, Ohio.
Date of Introduction: 1939. September.
Wt/Vol., Packaging, Price: Canned liquid.
How Stored: Shelf stable; refrigerate after opening.



New Product–Documentation: International Nutrition Laboratory. 1940? "Miller's Soy Bean Foods." Undated 12-page leaflet. 1. Miller's Soya Lac: A liquid milk packed in 13 oz. and 30 oz cans. It is available in both natural and chocolate flavors.

Ad in *Soybean Digest.* 1941. Sept. p. 17. "New items for the table: Soy products by Miller." "SOYALAC: Spray-dried Infant Food–the perfect formula for the new-born infant–especially fine for malnutrition and allergic conditions."

USDA War Food Administration, Food Distribution Administration. Grain Products Branch. 1943. Dec. "Soya products distribution." p. 5. International Nutrition Laboratory / Miller's Soya Foods makes SoyaLac, Chocolate SoyaLac. "Distribution scattered throughout the United States by Health Stores."

Ad in *Soybean Digest.* 1944. Sept. p. 61. "Meet the Vegetable Cow." International Nutrition Laboratory now makes (1) Miller's Soyalac (powdered milk), plain, malted, or chocolate; and (2) Miller's Soyalac (soya milk), liquid, natural, or chocolate.

Ad in *Soybean Digest.* 1949. Sept. p. 89. Photos shows cans of Miller's Soyalac Soya Milk (All Purpose and Malt Flavor) and Infant Food.

Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). Gives the company's name

and address. Zip: 43050. Phone: 614-397-7077. Contact: Glen Blix & Charles D. Howes.

Shurtleff. 1981. Sept. Dr. Harry W. Miller: History of his work with soyfoods. Unpublished manuscript. "Dr. Miller's new plant at Mt. Vernon was completed in the fall of 1939 and the first products, canned liquid soymilk (made in a pressure cooker and fortified with vitamins and minerals) and malted soymilk (Soy-A-Malt) were available late that year. Pressure from the powerful U.S. dairy industry and the USDA convinced Miller not to call his product 'soymilk,' so he latinized the name to Soya Lac. This term was first used in late 1939 for Miller's first American soymilk; the spelling had been changed to the present one-word Soyalac by Sept. 1941. Powdered Soya Lac was first produced in 1940."

Shurtleff. 1981. Soyfoods. Winter. p. 31. "This liquid soymilk was generally considered to be better tasting and less prone to clog nipples than the various soy flour based products, although at least one series of tests showed it to have a significantly lower protein quality as measured by PER (Gyorgy 1962)."

Talk with Lillian Miller, wife of Clarence Miller, Dr. Miller's eldest son. 1994. March 28. The first soymilk Dr. Miller made in Ohio was a canned liquid soymilk for adults. He had to do additional detailed scientific experiments and get permission from the American Medical Association before he could start to make and sell an infant formula.

1123. **Product Name:** Soy Milk Compound (Renamed Soy Compound in 1981).
Manufacturer's Name: Roberts (F.G.) Health Food Products.
Manufacturer's Address: 40 Chapel St., St. Kilda (a beach-side suburb of Melbourne), Victoria, Australia.
Date of Introduction: 1939. September.
Ingredients: Incl. soybeans, lactose.
Wt/Vol., Packaging, Price: Tin-plated steel can.
New Product–Documentation: Ad in *Nature's Path to Health* (*Melbourne, Australia*). 1939. Sept. p. 27 and Oct. p. 13. "Soy Milk Compound. Contains natural lecithin and amino acids. This milk compound is a hormone building food and therefore can be used by children and adults with most beneficial results. Soy-Milk Compound is highly recommended for infant feeding. For those who cannot use cow's milk Soy-Milk Compound proves eminently satisfactory. Use Soy-Milk Compound daily either with hot or cold milk. Drink Soy-Milk Compound and strengthen the brain by Lecithin contained in this Defensive Food. Obtainable at all F.G. Roberts' Health Food Stores. Addresses, Page 47." Same ad in the following 1940 issues: Feb. p. 38, March p. 30, April p. 16.

Information brochure sent by Paul Smith of Soy Products of Australia. 1995. March 10. "Soy Products of Australia Pty. Ltd. evolved from F.G. Roberts' interest in using soy as an alternative to milk in treating allergy problems, particularly in children. The soy component of Soy Compound [soy flour] was imported between the 1930s and 1950s. Since 1954 Roberts' soy flours and grits have been manufactured in Australia from Australian grow soybeans... Soy Compound was formulated in the early 1930s as a result of F.G. Roberts' combined interest in the work of Dr. Harry Willis Miller with soy milk and children in China, during the 1920s and 1930s, and in treating cow's milk allergy problems–eczema, colic, mucus and related infection problems–particularly in children... Lactose is used in Soy Compound because it is a valuable, naturally occurring, complex carbohydrate present in the milks of all suckling mammals from human beings to whales and dolphins."

Note from Paul Smith of Soy Products of Australia (Pte.) Ltd. 1995. March 14. Paul thinks Soy Milk Compound was first introduced in about 1933-34.

1124. Bertrand, Georges. 1939. Le lait de Soja [Soymilk]. *Revue Internationale des Produits Coloniaux et du Material Colonial* 14(164-166):263-64. Aug/Oct. [Fre]

1125. Bower, Frank W. 1939. Lecithin in soy bean milk. *Naturopath and Herald of Health* (*New York City*) 44(12):378, 384.
• ***Summary:*** Lecithin is a good source of phosphorus.

1126. Yang, E.F.; Dju, M.Y. 1939. The total and available iron in vegetable foods. *Chinese J. of Physiology* 14(4):479-87. Dec. [13 ref. Eng; chi]
• ***Summary:*** Fifty-six kinds of local foodstuffs are analyzed for their total and available iron contents. The name in English and in Chinese characters is given for each. Soybeans: Moisture 15.7%, total iron 8.5 mg/100 gm, ionizable iron 7.5 mg/100 gm. Percent of total iron ionizable: 88%.

Soybean curd [tofu]: Moisture 85.5%, total iron 6.9 mg/100 gm, ionizable iron 4.5 mg/100 gm. Percent of total iron ionizable: 65%.

Soybean curd cake [doufu-gan; firm tofu]: Moisture 65.5%, total iron 4.3 mg/100 gm, ionizable iron 2.85 mg/100 gm. Percent of total iron ionizable: 66%.

Soybean curd, fried [yu-doufu; fried tofu]: Moisture 55.5%, total iron 6.3 mg/100 gm, ionizable iron 4.6 mg/100 gm. Percent of total iron ionizable: 73%.

Soybean curd sheet [pai-yeh; pressed tofu sheets]: Moisture 45.2%, total iron 6.8 mg/100 gm, ionizable iron 3.6 mg/100 gm. Percent of total iron ionizable: 53%.

Soybean milk clot [yuba]: Moisture 4.9%, total iron 6.3 mg/100 gm, ionizable iron 2.5 mg/100 gm. Percent of total iron ionizable: 40%.

Soybean, sprouted [soybean sprouts]: Moisture 83.3%, total iron 8.3 mg/100 gm, ionizable iron 3.7 mg/100 gm. Percent of total iron ionizable: 45%.

Also discusses (p. 483): Cowpea pod, green. Flat bean, pod. Horse bean, dried. Horse bean, sprouted. Mung bean sprout. Mung bean starch sheet. Mung bean starch strip. Peanut. Address: Div. of Physiological Sciences, Henry Lester Inst. of Medical Research, Shanghai.

1127. Hsu, T.Y. 1939. Physical measurements of Chinese children. *National Medical J. of China* (*Shanghai*) 25:451. [Eng]*

1128. Ni, T.G. 1939. Infant feeding in the Shanghai refugee camps. *J. of Clinical Medicine* (*Shanghai, China*) 4:178-82. [6 ref. Eng]
• ***Summary:*** Good results were obtained (on 3 infants) using a soybean milk powder containing egg yolk and other supplements, as developed by the late Dr. Eric Reid. Address: Div. of Physiological Sciences, Henry Lester Inst. of Medical Research, Shanghai.

1129. Univ. of Illinois, Dept. of Home Economics and Education. 1939. Ways of using soybeans as food. *HEE* No. 224. 12 p. Mimeographed. Revised in 1943 by E.C. Faulkner. 17 p.
Address: Urbana, Illinois.

1130. A handbook of Philippine agriculture. 1939. Manila, Philippines: College of Agriculture, University of the Philippines. vii + 803 p. No index. 18 cm.
• ***Summary:*** On the title page: "Issued in commemoration of the thirtieth Anniversary." The University of the Philippines was founded in 1908. The Foreword (by L.B. Uichanco, Dean, College of Agriculture) states that its College of Agriculture opened on 14 June 1909, at which time "scientific Philippine agriculture was virtually nonexistent." The idea for the book originated with the former dean of the College of Agriculture, Dr. B.M. Gonzalez, before he was appointed president of the University of the Philippines. Soybeans and soyfoods are discussed extensively.

"Coffee adulterants" (p. 104), commonly mixed with ground coffee, include roasted ground corn, soybean, peanut, mungo, cashew, and sometimes ipil-ipil (*Leucaena glauca*).

In Chapter 1, "Field crops" is a long section titled "Peanut, soybean, cowpea" (p. 132-43). Contents of "Culture of soybean" (p. 134-41): Varieties. Preparation of the land. Planting. Cultivation. Harvesting and threshing. Yield. Green and yellow seeds of Ami soybean. Soybean sprouts. How to prepare–Soybean coffee, soybean cake [dessert, with baking powder], soybean milk, "tao-si" (salted soybean [fermented black soybeans]; Method furnished by Superintendent of the Davao Penal Colony), "toyo" or soy sauce.

Note: This is the earliest document, and the earliest English-language document seen (Jan. 2012) that mentions fermented black soybeans from the Philippines, or that uses the term "tao-si" to refer to this type of salted, fermented soybean food.

The section titled "Method of preparing 'tao-si'" (p. 139-40) gives a full-page description of making tao-si on a small commercial scale–as follows: Wash dry soybean seeds and soak in clean water overnight. In the morning, remove the water. Transfer the soaked soybean seeds into a pot containing fresh clean water; boil until beans are soft. Remove boiled beans from the pot and place in shallow baskets to drain the excess water; allow them to cool. Dry beans in the shade for about one-half hour or one hour in the sun. For every 2½ petroleum cans of boiled soybeans, add 1-2 kg of wheat flour. Stir the mixture until beans are thoroughly coated with flour, then dust over about ½ kg of yellow fungus known as *Aspergillus oryzae;* thoroughly stir again. Cover open mouth of basket with a piece of abaca cloth or clean Manila paper and place in a dark room to allow the fungus to incubate. After 2-3 days the mixture will be thoroughly covered with a thick growth of yellow fungus and is now ready for salting. Transfer mixture into an earthen jar (*tapayan*), and to every 2½ petroleum cans of it, add 16 kg of native salt dissolved in two petroleum cans of water. Sun the jar for five days to facilitate curing, then move jar into a shed for further fermentation. "The 'tao-si' is ready for use after two months, but the longer it is left to cure, the better the quality becomes."

The two main kinds of insecticides in 1939 (p. 223-31) were stomach poisons (which kill when eaten; incl. lead arsenate, calcium arsenate, Paris green) and contact poisons (incl. concentrated tobacco decoction, as in Black Leaf "40").

"Diseases of beans and other legumes (p. 319+) include downy mildew of soybean and rust of soybean.

A table (p. 448) gives the content of five vitamins found in various feeds incl. soybean seeds, soybean leaves, soybean meal, peanut meal, and peanut seeds.

"Leguminous silage" includes that from cowpea, soybean, and mungo [mung bean] (*Phaseolus aureus*). Tables give: (1) The "Average digestible nutrients in feeds" incl. soybean (p. 459, 462).

(2) The "Nutritive value of foods" incl. seaweeds (ara-rosip, *Gracilaria crassa,* p. 534), mungo sprouts (p. 536), green soybeans (p. 537), seguidilla or kalamismis (*Psophocarpus tetragonolobus,* fresh and sun-dried seeds, p. 538), soy products (p. 538-39) incl. soy sauce (toyo, Superior {Senkee and Co.}, Commercial), soy milk–boiled, soy residue (sapal), soy residue after second drawing of toyo, soy curd (toqua [tofu]).

(3) "Foods as sources of minerals" (calcium, phosphorus, iron; p. 580-81), incl. miso or soybean mush, soybeans–baked flour, soybeans–baked sprouts, soy curd or toqua, soy sauce or toyo (four brands: Solo, Great Eastern, Violin, Rooster), tahuri or soybean curd preserved in strong brine solution (solid portion).

(4) "Foods as sources of vitamins" (p. 593-94) incl.

bean–asparagus or cigarillas (*Psophocarpus tetragonolobus*), bean–mungo (in pods or sprouts), bean–soy (dry, green, or leaves), peanut butter, seaweed, sesame (p. 601). Address: Manila, Philippines.

1131. Hou, Hsiang-ch'uan; Mar, P.G.; Ni, T.G.; Read, B.E. 1939. Nutritional studies in Shanghai. Chinese Medical Association. Special Report Series No. 12. 92 p. Published in 1941 by the Henry Lester Institute of Medical Research, Shanghai, China. No index. [10+ ref]

• ***Summary:*** A report upon the nutritional status of certain Shanghai groups 1937-39, dietary surveys and a study of the value of various food supplements. Two chapters, both written by H.C. Hou, discuss soymilk at length: II. "Nutritional supplements for refugee children" (p. 15-26), and IV. "Height weight measurements of refugee children given soybean milk" (p. 37-45).

Soybean milk with the addition of sugar and calcium was given to refugee children as a supplementary food. Altogether 1,028 children from 20 refugee camps had their weight and height measured monthly, up to a maximum of 8 months. Those children who received soybean milk generally had greater weight increases than those who did not receive it. Children over 1 year old who received soybean milk also showed a somewhat greater increase in height, although not so marked as the monthly increase in body weight. Address: Div. of Physiological Sciences, Henry Lester Inst. of Medical Research, Shanghai, China.

1132. Kloss, Jethro. 1939. Back to Eden: A book on herbal remedies for disease, and other natural methods of healing. 1st ed. [Washington, DC]: Published by the author. vii + 667 + [25] p. Illust. Portrait. Index. 21 cm.

• ***Summary:*** This treasury of herbal lore and vegan cookbook (it uses no dairy products or eggs, replacing them with soy products) is one of the most creative and original sources of early soyfoods recipes. Contents: Foreword. 1. Personal experiences. 2. Soil. 3. History of medicine. 4. Fresh air and exercise. 5. Fasting. 6. Effects of devitaminized, adulterated foods on the body. 7. Fruit diet. 8. Meat-eating. 9. Foods. 10. Diet. 11. Aluminum utensils. 12. Cooking under steam pressure. 13. Disease of animals. 14. History of water cure. 15. Water. 16. Water-effects and treatment. 17. Water-its effect in sickness. 18. Baths. 19. Compresses and fomentations. 20. Massage. 21. High enemas. 22. Nursing. 23. Fruits. 24. The eliminating diet. 25. Minerals found in the body. 26. Herbs. 27. Medical trees. 28. Tonics. 29. Herbs (Their description and use in treating disease). 30. Definitions of medicinal properties of herbs. 31. Herbs indicated for specific diseases. 32. Directions for use of non-poisonous herbs. 33. Treatment of disease. 34. Food preparations of various kinds. 35. Oranges. 36. Potatoes; gathering and preserving of herbs.

The Foreword states: "This book contains tried, safe, and inexpensive remedies for the prevention of disease and sickness, remedies which are the result of my own practical experience of nearly forty years." "No matter how many germs get into the body, if the blood stream is clean and the blood corpuscles are in a healthy condition, you will be safe. Everyone comes in contact with many kinds of germ, but these organisms will not harm you or cause you sickness and death unless they have a place in which to propagate themselves." Sickness and illness are "caused by violating the laws of nature and health. "If then they would resort to simple means and follow the basic laws of health that they have been neglecting–proper diet, use of pure water, fresh air, sunshine, rest, and nature's remedies, herbs, etc., nature would restore the body to its original health." "God has provided a remedy for every disease that might afflict us." "The fundamental principle of true healing consists of a return to natural habits of living."

Virtually all of the information on soybeans and soyfoods is in chapter 34, "Food Preparations of Various Kinds" (p. 582-633). First come two sections of text: "The nutritional value of the soybean" (p. 582-84; "Taken from an address delivered by Dr. J.A. LeClerc, before the annual meeting of the American Soybean Association. Sept. 15, 1936"). "Uses of the soybean for industrial purposes" (p. 585).

Then comes an introduction soy-related recipes (p. 585-87): "The knowledge of the value of the soybean here in America is one of the greatest things that was ever launched in the food line in the history of the nation, and at this time of great poverty [the Great Depression], want, and disease, it is the most important thing that could be given the people." "Soybean milk can be made from soybeans at home for less than two cents a quart." Soybean milk "is not only a good food, but a real medicine." It is easily digested and highly alkaline. "I have experimented with soybeans for fifteen years [since about 1924] and have produced a fine, acceptable soybean milk as well as many other soybean products." "I use soybeans in more than fifty dishes."

Then come recipes (p. 587+): Soybean cheese (fermented soybean milk, peanut butter, and tomato puree, p. 587). Soybean cream cheese (from fermented soybean milk, p. 588). Nut cheese no. 1 (fermented soybean milk, peanut butter, and soybean butter {see p. 613}, p. 588). Nut cheese no. 2 (raw peanut butter, ground oatmeal flour, water and salt [no soy], p. 589). Nut milk (made with raw peanut butter and cow's milk [no soy], p. 590). Canned soybeans (p. 592). Soybeans and rice (with sprouted soybeans). Baked beans with tomato sauce (incl. soybeans, p. 593; "Soybeans are, no doubt, the best of all beans, but the flavor is not as pleasant. This can be overcome by using various seasonings, such as tomato sauce, a little onion, and celery). Vegetable protein (wheat gluten seasoned with soy sauce, p. 597). Nut loaf (seasoned with soy sauce). Kloss' granola (with soybean milk and soybean mash [okara], p. 599). Baked rice (natural

brown rice baked in soybean milk, p. 600). Soybean coffee plus 2 recipes for Cereal coffee based on rye or wheat bran [real coffee with caffeine is not included]. Soybean broth (with soybean milk and oatmeal, p. 604-05). Oatmeal broth (with soybean milk). Soybean buttermilk (fermented, p. 605-06; "Buttermilk is an excellent article of diet for everyday use, but is especially beneficial in malnutrition, tuberculosis, toxic conditions, and intestinal infections. Soybean buttermilk has the advantage of producing an alkaline effect and is more nourishing than ordinary buttermilk. It is rich in minerals and very palatable. More nourishing than yogurt buttermilk used under various names."). Soybean cheese (fermented soybean milk, raw peanut butter, and tomato puree). Soybean cottage cheese (fermented soybean milk, p. 608). Soybeans and rice (with sprouted soybeans, p. 608-09). To sprout soybeans, lentils, or grains (p. 609). Soy patties (with soybean pulp [probably ground soybeans, not okara] and soy sauce). Gluten patties (seasoned with soy sauce, p. 610). Soybean loaf. Soybean cottage cheese loaf. Soybean milk. Soybean milk no. 2 (made from "soy meal, p. 611). How to curd [soybean] milk (p. 612). Soybean jelly (soybean milk jelled with agar-agar flakes and sweetened with malt sugar). Soybean butter (made with 1 cup water, 2 tablespoons soybean flour, and 2 cups soybean oil, p. 613). Soybean cream (blend rich soybean milk and soybean oil). Soybean ice cream (made with 2 quarts rich soybean milk, 2 lbs. malt sugar, ½ pint soybean butter or soybean mayonnaise, and 1 tbsp. agar-agar). The yolk of an egg (made with soybean flour, p. 614). Pancakes (with cornmeal and soybean mash [okara]). Tomato soup (with soybean flour, soybean flour, soymilk, and/or soy sauce, Savita, or Vegex, p. 618). Cream of tomato soup (with soybean milk, p. 620). Cream of celery soup. Cream of lentil soup. Vegetable oyster soup (with rich soy milk, p. 622). Eggplant soup (with soybean milk). Cream of spinach soup. Potato soup. Soybean gravy. French toast (made with soybean bread soaked in soybean milk, p. 624). Soy oil mayonnaise (with soy oil and finely ground soy flour, p. 628). Vanilla sauce (with soybean cream, p. 632). Vegetable gelatin (with agar-agar and soybean cream dressing, p. 632). Orange jelly (with soybean cream). Strawberry jelly (with soybean cream). Rice pudding (cooked in soy cream, p. 633). Cream tapioca (with soy cream and soybean milk). Soybean bread no. 1 (with whole wheat flour, soybean mash or soybean flour, p. 648). Soybean bread no. 2. Soybean buns or cinnamon rolls (with soybean meal, p. 650). Cornmeal gems (with soybean milk, p. 651). Oatmeal or soybean gems (with soybean meal). Soybean gems (with soybean mash [okara] out of which soybean milk has been washed, p. 652). Pones (with soybean milk). Beaten biscuit (with soybean milk). Unleavened pie crust (with soybean flour or mash, p. 655). Raised pie crust (p. 656). Soybean pumpkin pie (p. 656). Fig marmalade pie (with soybean milk, p. 657). Mashed potatoes (with rich soybean milk, p. 666).

This book does not call for the use of dairy milk or eggs. Concerning cow's milk, Kloss states (p. 75): "Cow's milk is not suited for human consumption. Half the invalids in the world suffer from dyspepsia, and milk should not be taken. Milk causes constipation, biliousness, coated tongue, headache, and these are the symptoms of intestinal auto-intoxication. Soybean milk and nut milks are excellent substitutes, and have practically the same analysis, and the danger of disease is removed." A recipe on page 614 uses a mixture of soybean flour and soya bean oil as a substitute for the yolk of an egg.

This book contains the same detailed information on the possible dangers of aluminum cooking utensils found in the 1935 edition.

Ads on unnumbered pages in the rear include: (1) Dominion Herbal College, Vancouver, BC, Canada. (2) "Horta" Pure Vegetable Extract. "Of strong aromatic meat flavor, though made from leguminous materials only." F. Behrend, Inc., New York, NY. Established 1886. (3) Old-fashioned Quaker mill. No. 4 Quaker City Mill. Ad: Enterprise No. 69, Hand Mill. A.W. Straub Co., Philadelphia, Pennsylvania. (4) Nature's Original Food Co., Falmouth, Virginia. "Nuts, grains, fruits and vegetables are Nature's original foods for men. Animal flesh has been substituted. If you want health, don't use it. "Try our [canned vegetarian] meats–see the difference." Meatose. Vegetose. To-Meta.

Note 1. This latter company was almost certainly founded and is owned by Jethro Kloss.

According to Doris Gardiner (Oct. 1990), the original book (of which she and her aunt each have copies) has a green hard cover. The first printing was probably done by a Mr. Brunck, who worked for the College Print Shop in Takoma Park, Maryland. She thinks Jethro self-published the book. He paid for the printing and sold the books himself. Jethro and his wife moved to Coalmont, Tennessee. There they lived with the Hiatt family, and Mr. Hyatt, owner of Longview Press (renamed The Message Press by 1964) became the book's first legitimate publisher. His wife died in 1944. Jethro died in 1946 at age 83. The page numbers from the 1939 edition are unchanged in later editions.

Note 2. This is the earliest English-language document seen (March 2007) that uses the term "Soybean cream cheese" to refer to soy cream cheese.

Note 3. This is the earliest English-language document seen (June 2013) that uses the term "soybean mash" to refer to okara. Address: Washington, DC.

1133. **Product Name:** [Vegelact (Dry Soy-Based Infant Formula)].
Foreign Name: Végélact: Lait Sec Végétal au Soja.
Manufacturer's Name: Laboratoires Boutroux (Les).
Manufacturer's Address: 30, Rue du Landy, Clichy (Seine), France.
Date of Introduction: 1939. January.

New Product–Documentation: *Bulletins de la Société de pédiatrie de Paris*, 1939, Volume 37, page 395 [published by: Société de pédiatrie de Paris, Masson].

Letter (e-mail) from Hervé Berbille of Paris, France. 2011. Oct. 25. The main problem with the soy milk as a food for infants was the absence of vitamins B-12 and D, which was probably found empirically.

"It seems that Végélact was the first commercial soy infant formula to appear in France, probably before Sojarine Natura. I found a document on Google Books attesting to its use in 1939 (enjoy this nice picture by the way, from 1954). This 1939 document (see citation above) says: "A la suite de troubles digestifs, il est mis au Végélact. A 5 mois, c'est, paraît-il, un très bel enfant."

"The first manufacturer was Les Laboratoires Boutroux, located in Clichy (or Paris, later or before?). This formula was similar to Sobee, but in my opinion, less well adapted than Sobee because with no added fats (olive oil) therefore insufficient in caloric intake for infants.

Note: The color ad for Végélact which Hervé found on the Web was dated (on the Web) as 1954, but no source was given.

1134. Matagrin, Am. 1939. Le soja et les industries du soja: Produits alimentaires, huile de soja, lécithine végétale, caséine végétale [Soya and soya industries: Food products, soy oil, vegetable lecithin, and vegetable casein]. Paris: Gauthier-Villars. x + 390 p. Illust. 18 cm. [300 ref. Fre]
• ***Summary:*** Contents: Introduction. 1. The agricultural, industrial, and commercial history of soya: Asiatic origins and propagation in Europe, soya in America (its cultivation and industries), soya in Europe, Asia, Africa, and Oceania (1936) (1. Admission of soya in the agriculture and industry of European nations (p. 35): Soya in France, soy industry and commerce in central and northern Europe {England, Germany, Holland, Denmark, Sweden, Poland, Austria and Hungary, Switzerland}, penetration of soya into southern Europe {Iberian peninsula, Italy, Balkan countries of Dalmatia, Istria, Yugoslavia, Greece (p. 47), Bulgaria, Romania, Ukraine}, the grandeur and decadence of soya in Russia. 2. Soya in modern Asia (p. 51): China and Manchuria, Japan, Korea, Formosa, French Indochina {Tonkin, Cambodia, Cochin China}, the British and Dutch Indies {Siam, Assam, Bengal, Burma, Ceylon, India, Straits Settlements [later Singapore] / Malacca}, western Asia {Turkestan, Persia (p. 57)}. 3. Soya in Africa and Australia (p. 57-58): South Africa, Rhodesia, Nigeria, Gold Coast [later Ghana], Cote d'Ivoire, Dahomey, Togo, Algeria, Tunisia, Morocco, Egypt, Australia {Queensland, New South Wales, Victoria}, Tasmania, New Zealand, not yet in British New Guinea [later Papua New Guinea], Philippines, Java).

2. The botany and agronomy of soya: The plant, its names, its botanical characteristics, its varieties (original and created by selection), the cultivation of soya.

3. The general chemistry of soya: Chemical composition of the plant, structure and chemical composition of the beans.

4. Using soya in soyfoods and soyfood products: Whole soybeans (whole green, dry, sprouted, roasted and salted {*soja á l'état vert, fève de soja sèche, fève grillée, fève salée de soja, fèves de soja salées*, p. 166-67}, soynut butter {*un mélange rappelant les beurres végétaux*}, soy coffee, soy confections {*confiture de soja*}, soy chocolate, soy sprouts {*fèves de soja germées, germes de fèves de soja*}), soymilk and tofu (*le lait et le fromage de soja;* soymilk cream, concentrated soymilk, soymilk powder / powdered soymilk, fermented soymilk {*lait fermenté, yoghurt, kéfir, koumys*, p. 189}, fermented tofu {*fromages de soja*}), okara (*pulpe résiduaire de la préparation du lait de soja*), fermented soy products (solid, paste, and liquid condiments; natto, miso, and shoyu [soy sauce]; kiu-tsee and lactic ferments), soy flour and bread.

5. The soy oil industry and products derived from it: Extraction and refining of soy oil, properties and use of soy oil.

6. The vegetable lecithin industry: Extraction of vegetable lecithin, properties and use of vegetable lecithin.

7. The vegetable casein industries and plastic materials based on soya: Soybean cakes and flours from which the oil has been removed, use of such cakes and flours, in the crude state, as a raw material for plastics, manufacture and use of vegetable protein, soybean cellulose for artificial silk, soya furfural and furfuraldehyde (phenolic resins). Conclusion: How to launch soya industries in France. Important terms. A bibliography appears at the end of each chapter.

Note 1. This is the earliest French-language document seen that uses the terms *Fève grillée, fève salée de soja,* or *fèves de soja salées,* "roasted soy beans" to refer to soynuts.

Note 2. This is the earliest French-language document seen (April 2005) that mentions soynut butter, which it calls *un mélange rappelant les beurres végétaux.*

Summary: Matagrin wrote two previous books: *Manuel du Savonnier* (Paris, no date given) and *L'Industrie des Produits chimiques et ses Travailleurs* (Paris, 1925).

Francis G. Beltzer, a practical chemist, became a major force in visualizing new industrial uses for the soybean in the West. By contrast, Li and Grandvoinnet (1912) paid little attention to soy oil in their book, devoting only 3 pages out of 150 to the subject, and only ½ page to industrial uses, while largely ignoring lecithin. These two books had a great influence on soy in France and they nicely complement each other (p. vi).

The Soybean, by Piper & Morse (1923), was published in both New York and London. Horvath was a Russo-American chemist. Italians who made important contributions to the soybean were professors Bottari, Mattei, Panatelli, and Tito Poggi (p. vii).

Leon Rouest, French the agronomist, wrote an important book titled *Le soja français et ses applications agricoles et industrielles* (Chateauroux 1936). Since 1920 he has devoted himself to the culture of soybeans and to the selection of acclimatized varieties. He was director of the Laboratory of Soja in the north Caucasus from 1930 to 1935, and in 1921 he had already published a book, *Le soja et son lait végétal.* His new (1936) book benefitted from the collaboration of Henry de Guerpel, an agricultural engineer and mayor of Percy-en-Auge, who was also an indefatigable prophet of soybeans in France, until his untimely death in Jan. 1937.

Anyone in the world can order (from the U.S. Government Printing Office in Washington, DC) the many U.S. publications about soybeans from the USDA or state agricultural experiment stations. These substantial works are based on careful research and enriched with numerous tables and photos–a fine example of the key role that governments can play in introducing and popularizing soya. Recently J.A. LeClerc (of USDA's Bureau of Chemistry and Soils) said the soybean has become a naturalized American (p. viii).

More than a century ago lord Byron wrote *Beppo,* the first Western poem on soy. It was an account of a carnival at Venice, Italy, in 1818. He advised the tourists to bring "Ketchup, Soy [sauce], Chili-vinegar."

Maurice Druel was one of the young engineers who worked with competence to launch a soy industry in France (p. x).

For an early chronology of soybeans and soyfoods in France (1856+, see pages 8-12). 1857-58: Lechaume planted soybeans at Vitry-sur-Seine and got encouraging results. A report by the National Society for Acclimatization declared: "The acclimatization of the soybean is complete."

1859–Setback for the first tests by Vilmorin with Chinese beans that were too late, but success by Dr. Turrel in le Var.

1862-69–Success of Mme. Delisse, in Gironde.

Then the Franco-Prussian war arrested these tests, so the center of interest moved to central Europe. The world exposition of Vienna in 1873 and Haberlandt. In his book one finds the first analyses of the seed by Steuf, of the cake by Woelker / Voelker, the results of texts by Berndt on oil extraction (p. 9).

Podolie is in the Ukraine.

Of Haberlandt's 148 trials in 1877, only 12 failed for lack of warmth. Much new agronomic information was accumulated.

Back in France: 1874-80–Society of Horticulture d'Etampes (Seine-et-Oise) grew a yellow Chinese variety which succeeded. This "soja d'Etampes" was studied intensively from the chemical and agronomic points of view by Lechartier and various authors. A doctor from the region prepared, for his personal use, a vegetable cheese (tofu). But the grain did not find buyers so its cultivation did not spread. There now remain only 2 or 3 innovators to cultivate soybeans and on 5-10 acres maximum. But Chinese soybeans mature in the region of Paris, as in 1879 at Marseille.

1880–While the tests of Boursier in l'Oise have succeeded. and while Olivier-Lecq, ardent propagator of soybeans, distributed 100 kg to farmers in the north, the national Society of Acclimatization organized cultural trials all over France. Results were obtained in each of the regions, some with record yields. The general objection of the farmers was the difficulty found in using the soybean as a legume (it was too hard) or to find buyers.

As Paillieux said so well: "Our point of departure has not been happy one; the soybean has been presented simply as a new legume" (p. 10).

The German successes in soybean cultivation were studied by Wein in 1881 (p. 10).

In the 1880s there was a big growth of interest in vegetarian diets in Europe. Compare this with the USA (p. 11).

Li Yu-ying: After his 1905 speech, in 1908, he created a laboratory for studies, which soon founded the factory La Caseo-Sojaine at Vallees, near Colombes (Seine), administered by a French-Chinese company. This establishment made soyfoods using imported soybeans, especially tofu (p. 12).

Dr. Bloch of France recommended thin sheets of pressed tofu as a reserve ration for troops.

Lever Bros. soap works used lots of soy oil in Britain (p. 12).

The British did some cultural trials in India, Burma, Siam (Thailand), and South Africa.

Japan, in effect, annexed Korea in 1895.

It was only after 1905 that soybean tests took place, first in Guyana, where the soybean matured easily.

Soybeans were grown for forage more in the South of USA than in the north. Continued. Address: France.

1135. Matagrin, Am. 1939. Le soja et les industries du soja: Produits alimentaires, huile de soja, lécithine végétale, caséine végétale [Soya and soya industries: Food products, soy oil, vegetable lecithin, and vegetable casein (Continued–Document part II]. Paris: Gauthier-Villars. x + 390 p. 18 cm. [300 ref. Fre]

• ***Summary:*** Continued. The agricultural experiment stations and the scientific labs have played an important role in the U.S., also the farm equipment manufacturers.

The experiment stations in many states have helped the farmers to clarify cultural questions which greatly influence yields, preparation of the soil, type and proportion of fertilizer use, dates and methods of planting, how many seeds per acre, choice of varieties according to the climate and soil, role of the soybean in mixed cultures and in crop rotation, etc.

In this book, Matagrin always says "fèves de soja."

1936 listing of soyfoods firms (p. 27): Fearn Soya Foods Co., Chicago, Illinois. Soybean Health Prods Co. Oakland, California (tofu). Soyex Co. Nutley, New Jersey. La Sierra Industries, Ontario, California (soymilk). American Lecithin Co., Atlanta, Georgia. Ten soy flour companies (p. 29).

American Lecithin Co. in 1936 was in Atlanta, Georgia. From when to when was it in Illinois?

Soy in France (p. 36): Prof. Beille of Bordeaux published a good work on soy but it is no longer available. Also the books of Prof. Jumelle of Marseille on colonial crops and vegetable oils. Prof. R. Lepine of Lyon in 1919 in *Revue Scientifique*, wrote about soy culture in Algeria and the preparation of soymilk.

Mr. Rouest perfected again the selections of yellow or green varieties that he had undertaken from 1907, with success. Using American seeds, others who experimented were Messrs. Brioux at Rouen, Carle of Carbonniere in le Tarn, and Semichon at Carcassonne; he likewise cultivated it at l'Aude from 1918. A list of 42 of Rouest's varieties (chosen from 2,000 others) were given in Rouest's book *Le Soja Francaise* showing that he was more qualified than anyone to write a book of this tile. He pursued his cultures and selections in France from 1921-30, in the Caucasus from 1930 to 1935, and thus fulfilled the efforts started by the Society for Acclimatization and its successors. He worked with another apostle, Henry de Guerpel, and agronomist and mayor of Percy-en-Auge (Calvados), who developed and perfected during 5 years the culture of the best varieties of soybeans in the regions surrounding his country house at Plainville, near Mézidon. He did not only collaborate on the book with Rouest, but also published interesting articles in several reviews in France and the colonies. Also Mr. Denaiffe of Carignan (Ardennes), author of the esteemed book *Les Haricots*, did important culture work and provided information.

Today production of soybeans in France is no more than several thousand hectoliters of beans = several 100,000 liters. For forage, the crop / culture has developed only in North Africa. It was encouraged by Rouest and de Guerpel.

Caseo Sojaine's products were excellent but expensive.

The products of Heudebert (probably diabetic products made with soyflour?), were well known in England as in France (p. 39).

Since 1913 the oil mills of Marseille, France, have started to use soy oil (mainly for hydrogenation) and those of the north (mainly for manufacture of soft soaps).

Recently the foundation (at Chateauroux) of a Society of Friends, Producers and Technicians of Soja has been announced by M. Druel.

In England the fine botanist J.L. North tested with success 13 Manchurian soybean seeds in 1913 and in the third harvest expanded these to 12,000 seeds, which he sent in 1917 to a farm at Uxbridge in Middlesex and to the Ogilvie Farm in Essex. There was a remarkable harvest in 1921, followed by good development of the enterprise. It advanced thanks to Piper and Morse's 1923 book *The Soybean* which to told of American successes. North succeeded in 1928 in getting 20-80 pods per stalk. In 1921 North's work drew the attention of the Ford establishment in Boreham which was not able to obtain good yields with American soybeans but succeeded with North's. Today England cultivates soybeans on about 15 hectares and yields are 1,400 to 2,500 liters per ha.

In England. Lever Bros. are big users of soy oil in soap. The main oil mills using soybeans are J. Bibby and Sons in Liverpool, three others in Hull, one in Erith and one refinery on the outskirts of London. Huge amounts of soy oil and meal are imported by a subsidiary of Lever Bros.

Germany: The recent agreement between Germany and Japan foreseeing an exchange of arms, explosives, etc. in exchange for soybeans which can furnish explosives (for nitroglycerine, naturally) is a barter / swap (of cannons for soybeans) analogous to that with Manchuria in 1934. What is certain is that the agents of I.G. Farbenindustrie A.G. under the patronage of the Economic Federation of Central Europe has been enforcing for 3 years soybeans culture in the Balkans which trade voluntarily with Germany.

Spain was rich in other oil sources (mainly olive oil). so not pay much attention to soy.

Italy: In 1918 a trial by Prof. Borzi, on a parcel of 2.5 acres at the Colonial Garden in Palerme / Palermo gave a yield of 20 liters/ha. In 1918-20 at the Institute Bonafous in Turin, a scientific research center, did research on yellow soybeans. Then trials were done in Liguria, Lombardia and Capo d'Istria, and Palerme about 1920s–a total of a dozen localities. Retaking in 1922 these tests of 1884 in Piedmont, Prof. Tito Poggi seeded 8 parcels in Monferrat, then helped to popularize soybeans in Italy. By the mid-1920s soy flour was widely used in baking. In March 1926 a "Bread for ammunition = pagnotto di munizione" containing 10% soy flour was heartily welcomed by the garrison in Rome. Already an official tasting by Mussolini (of the bread by him?) has been commented upon by the Italian press. The success of the campaign to promote use of wheat limited, after that, the outlets for soy in human foods, but the oil remained widely used by industry and the cake for production of milk.

Bulgaria and Rumania were influenced by the example of the Ukraine = Podolie?

The grandeur and decadence of soja in Russia: The book by L. Rouest, who was director of the Soy Laboratory in the North Caucasus from 1930 to 1935, brings together, but in a somewhat dispersed way, a very instructive documentation on soya in Russia. He described the grandeur and decadence. Soya was cultivated, it seems, since the victory of the Tcherkesses? (p. 48) and the incursions in east Turkestan, about 1860, then introduced into the Ukraine and Bessarabia, either from the Caucasus or from Hungary in the following years. Finally better known when the construction of the Transsiberian railroad connected (*conduisit*) Russia and Manchuria (1896-1900) But the soybean could not fail to interest the higher government officials. Before the universal success of the soybean after World War I, it was seen not only as an interior resource but also as an export crop. However in 1931, of the 5,970,000 ha in Russia used to grow oilseeds, less than 1,100 were used to grow soybeans versus 5.2 million used for sunflowers, 300,000 for castor oil, 140,000 for sesame, 30,000 for peanuts, and 350,000 for others such as rapeseed. But the industry began to demand soybeans. A large furniture factory in Oklanskaia made glues of vegetable proteins. The oil was studied for use in soaps and paints. The famine which menaced the working population because the moujiks [muzhiks, mujiks], resisted the exploitation of the lands into collectives, was able to be prevented or delayed by the progress in the culture of soybeans. Also the 5-year plan foresaw the extension of this crop onto 3-5 million ha with harvests of at least 1,500 kg per ha. To guide the farmers and perfect management techniques, specialists were recruited and concessions were granted to Germany in diverse regions. For how would the USSR itself have harvested the 1935 crop of about one million quintals = 100,000 MT. The number is enormous by comparison with the rest of Europe. (Did the Soviets see themselves as pioneers of a revolutionary new crop?)

Here, according to the agronomist Rouest, are the causes of the Russian setback. 1. Negligence and ignorance of the Russian peasant. 2. Disadvantages of the communist regime, 3. The general ideological method, always little reconcilable with the needs of the changes and hazards of agriculture (e.g., research to find varieties permitting the use of large harvesters). 4. Poorly chosen cultural methods. 5. Use of most of the harvest for food. The best literature concerns the moujik [muzhik, mujik] peasants, and one long study of 1911, of which we have a copy, written by a Russian doctor,... Sowed in the black earth of the Caucasus and the Ukraine, these soybeans, said Rouest, evidently saved the lives of thousands of people... We have been told that the Russians are disgusted at the compulsory use of soybeans, result of unskilled cooks...? Address: France.

1136. Matagrin, Am. 1939. Le soja et les industries du soja: Produits alimentaires, huile de soja, lécithine végétale, caséine végétale [Soya and soya industries: Food products, soy oil, vegetable lecithin, and vegetable casein (Continued–Document part III]. Paris: Gauthier-Villars. x + 390 p. 18 cm. [300 ref. Fre]

• ***Summary:*** Continued. Japan: The great oil mills of Kobe. In Japan, for cooking, sesame oil is preferred and for illumination rapeseed oil.

French Indochina: From 1931. It is estimated Tonkin cultivated about 12,000 ha of soybeans and harvested an average of 7,500 metric tons per year. The low yield of only 625 kg/ha, compared with a world average of 1,000, is explained by the fact that soybeans are generally cultivated with corn in a 1:1 mixture. Some soybeans are exported to Hong Kong. Since 1933 Paul Braemer, chief of agricultural services in Hong Kong, is exerting himself to propagate more this nutritious plant. Up till now the strong flavor of the soy protein deters colonials from using soy for food and soymilk. Made experimentally at the Maurice Museum, these have not attained but a relative success in the European colony. However the natives use many products. The village of Cu-da / Cuda 10 km from Hadong [in today's Vietnam] specializes in a type of soy sauce which cannot be made except from April to July, and which must be kept in sealed containers.

English and Dutch Indies: Today Prof. D. Kanga of Gujerat College of Ahmedabad, recommends warmly this economical and fortifying food. Soy is now used increasingly in industrial dining rooms and universities (he lists names). It is likely that India will acclimatize varieties rich in oil, develop extraction mills in its centers of industry, and deliver a large tonnage to the English soap makers.

Soybeans, propagated by the Russians, have long been grown on the plains of Turkestan [today's Afghanistan] and tests have been done in Persia [today's Iran] and the Soviet and Chinese republics of Central Asia northeast of there.

Soy in Africa: The French tried growing soybeans successfully in Dahomey and Togo. In North Africa trials have been taken more seriously since 1918 in Algeria, then in Tunisia and Morocco. In Tunisia, the tests which began in the late 19th century, are now growing. In Morocco lots of other beans are grown.

Australia is finally cultivating soybeans since the start of the century in the southeast, and today on all the east coast (Queensland, New South Wales and Victoria).

Soybean etymology: Low Countries = Sojaboon. Russia = Soia. Italy = Soia or (better) soja.

At the start of this century, when the German industry launched "Nitragine," a liquid culture of nitrogen fixing bacteria, there was much interest. The American practice, founded on the research of Norman Shaw (1910) and on the experience at the agricultural experiment stations at Michigan (1905), Wisconsin (1907, 1922). etc. consists of inoculating new soil with soil from former soybean fields.

Matagrin has a lengthy and excellent review of soybean agronomy. Also one of the best bibliographies; the most extensive of any European book to date on all aspects of soybeans and soyfoods.

The USA and the USSR were the first two countries to mechanize soybean planting and harvesting.

On the diseases and enemies of the soybean (p. 108): Earliest citation is 1919 from J. of Agricultural Research, and from the Nebraska Agricultural Experiment Station. Third is Wolf and Lehman 1920.

Most of the early studies on soybean diseases and enemies are analyzed in Morse (1927) "Soy Beans: Culture and Varieties." In the same publication is found a summary of U.S. work on insect enemies of soybeans established by H.R. Walton, Bureau of Etymology, Washington, DC.

The early research on the chemical composition of the soybean plant was to determine its value as forage. The key work in France was done by Lechartier and Joulie. The latter also studied the composition of the soybeans from Etampes, as did Giljaranski. and H.L. North.

The structure of the soybean cells was studied in France by Colin and Blondel (1888).

Matagrin has a strong historical dimension running through every chapter.

The median oil content from Asian soybeans is not more than 17%, while that of American soybeans attains 19%.

In about 1920, West and Levene developed the chemical formula and structure for animal lecithin.

The importance of soybeans as a protein source was not pointed out by researchers for 69 years, i.e., until the 1880s, and was not considered from an economic point of view until the World War I put into relief the problems of feeding populations and armies. Then interest and patents multiplied. For example, in 1910 the processes of S. Satow of Sendai, Japan for the precipitation of soymilk by a ferment or by sulfuric acid.

Most legumes contain only 1.6 to 2.9% oil, with the exception of peanuts which contain 45%. Soy contains 20%.

Concerning soy lecithin, From 1870 to 1910 W. Koch (1902), Fraenkel, (p. 152) not only verified the initial conclusions of Thudichum about this agent of nutritional assimilation. Koch showed in 1902 that this phosphatide was important.

At the start of the 20th century, soy pap was prescribed with success for diabetics in the hospitals of Algeria, as in Japan and Austria.

Page 158: Number of calories costing 15 centimes in 1938. Li Yu-ying had a similar chart but he omitted potatoes.

Potatoes: 80 grams give 224 calories
Soybeans: 40 grams give 188 calories
Rice: 50 grams give 180 calories
Bread: 45 grams give 145
Followed by 16 other foods.

Etymology: Matagrin (p. 160-61) says "fève de soja" and "soja à l'etat vert" (for green vegetable soybeans).

Miss Ellen Kingsley (p. 161) of the U.S. Bureau of Home Economics published many recipes using whole dry soybeans.

Durand (no citation) discussed cooking whole soybeans in water with sodium bicarbonate. This well-known process for all legumes leaves an unpleasant taste. So he recommended pressure cooking. Then he gives recipes for whole dry soybeans.

At whole dry soybeans, there is considerable discussion of their use in vegetarian diets. Was Matagrin a vegetarian?

Etymology: Matagrin (p. 166) says "la farine des fèves grilles" for roasted soy flour.

At the Iowa College of Agriculture, Nelson made a soynut butter as follows: Deep-fry soybeans in oil at 100-110ºC for about 5 minutes. Grind the soybeans finely. Then grill at 160ºF for about 20 minutes. Finally mixing these with some of the deep-frying oil.

Soy coffee is cafe without caffeine. Matagrin uses lots of information from Li Yu-ying; likewise information from Li appeared in countless later articles. Li was one of the two original sources; Paillieux was the second.

Is soymilk presently consumed more widely that animal milks in China? Not in Japan.

Carles (note spelling) was not a Frenchman who did work on soymilk.

Soymilk (p. 172): According to an article by Prof. R. Lepine of Lyon (1919), concerning a communication of Mlle. Castet of the Society of Horticulture of Alger (Algiers).

Rouest was director *du Laboratoire du Soja* in Russia's North Caucasus.

Castagnol (soymilk) in Bulletin of Indochina, uses a centrifuge.

Soymilk patents from France. G.D. Thevenot (1920-25), A. Serault (1931), M. Adler (1933).

Arao Itano (1918). Made soymilk from soy flour with

Bacillus inoculum. So it was fermented soymilk developed by a Japanese.

Etymology: *Fèves de soja entieres* = whole soybeans.

Li Yu-ying used cold extraction of soymilk, Chinese style.

Matagrin has an excellent review of all the various ways of making soymilk.

Muggia and Gasca (1921) made soymilk with a bland flavor in Italy.

1933 process for making soymilk in Russia by Bogatskij, Storozhuk and Morumtzev.

In raising animals, soymilk renders a great service. It is very wildly used now in USA and in Asia. but its use is limited by that fact that it is more economical to feed the animals the bean itself or the cake.

Adding lecithin to soymilk gives it a light flavor of butter.

Etymology: Matagrin unfortunately calls yuba *Crème de lait de soja* (Phu-chuc of Indochina) [dried yuba sticks]. According to an analysis by a pharmacist, Monnier, of the Pasteur Institute of Hanoi, it contains 64.62% oils, 8.98% Nitrogen. It is often prepared with fish bladders or minced meat.

Just. Hatmaker (p. 190) made powdered soymilk, as did three other processes, including a spray process of Bevenot and Neveu. This process was also widely used in English soap factories. Matagrin gives 3 analyses of powdered soymilk, the earliest from Li Yu-ying.

Pages 192-93: Discusses soy yogurt (*Yoghourt au lait de soja*), soy kefir (*Kéfir au lait de soja*), and soy koumis / koumiss (*koumys*).

Matagrin gives detailed descriptions of many methods of making tofu and 9 pages of information (p. 194-202)

Bloch said the best coagulant is magnesium chloride. Beltzer preferred acids to calcium salts.

Ellen J. Kingsley (1935) of the USDA gives a method for making tofu.

Drs. Labbé (Labbe) and Marchoisne have shown that vegetable albumines, despite current opinion, are very assimilable.

Matagrin gives a number of nice tofu recipes including French-style tofu in Petits-fours (fancy biscuits; p. 201) and Tofu meringue. Address: France.

1137. Tabanera, Juan Antonio. 1939. Estudio de un nuevo elemento alimenticio: la “soja” o “soya” [Study of a new food element: The “soja” or “soya”]. Cordoba, Argentina: Impr. de E. Spinelli. 49 p. 23 x 16 cm. [18 ref. Spa]

• ***Summary:*** Reprinted from *La Semana Médica*, no 49, 50, and 51 (1938). The soybean: Introduction and brief history (incl. Emperor Shen Nung and the *Ben Tsao Gang Mu*), uses in the human diet of the whole soybeans (*el poroto de “soya”*), soy oil, flour, grits, and soymilk. The soybean in Argentina. Soybeans and their flour: composition and energetic value (calories). Soy flour (*harina de soya*). The carbohydrates in soy flour (Von Noorden, Soyama). Other components of soy flour (protein, lecithin, vitamins, acid vs. base reaction). Various types of soy flour. Advantages of using the soybean and its derivatives (protein, lecithin, vitamins). The inclusion of soy flour in the diet / food (*alimentación*) of the healthy person.

Study of a new food element: The “soja” or “soya.” Soya and gastroenterology: The stomach (incl. gastric and duodenal ulcers).

Concerning the soybean in Argentina (p. 7): In the year 1908 studies of acclimatization and experimental cultivation were initiated in Cordoba province, Argentina. Later, some bulletins were published by the country’s Ministry of Agriculture. The zone of cultivation was extended and today the soybean has an outstanding place in the Gobernacion of Misiones and provinces such as Santa Fe and Buenos Aires. Today the crop is being developed, and the ease of harvesting the seed, so that it is as easy as wheat. Among the countries of the Americas, the United States is the leader in soybean production and commercialization. More than 70 firms are dedicated exclusively to the commercial development of the soybean. Brazil and Chile are also developing the crop.

A full-page table (p. 11) shows the nutritional composition of many basic foodstuffs and sources of protein; the superiority of soy flour is emphasized. Address: Dr. of Gastroenterology (Médico Gastroenterólogo).

1138. **Product Name:** Kevo (Soy chocolate).
Manufacturer’s Name: Kevo Co.
Manufacturer’s Address: Azusa, Calif. Later: 847 Arcade Annex., Los Angeles, California.
Date of Introduction: 1940. January.
Ingredients: Jan. 1940: Whole soy bean, germ of whole wheat, fruit, dextrose, powdered milk (with fat removed), barley malt, Special deep sea kelp, mint, spinach, carrots, celery, rhubarb, W.H.Y. blended flavoring. phosphorus, iron, copper, iodine.
How Stored: Shelf stable.
New Product–Documentation: Display ad (2¼ by 3 inches) in *Nature’s Path* (USA). 1940. Jan. p. 26. “Drink Kevo. ‘Puts pep in your step.’ Made in a jiffy! Delicious energy food-drink.” “Are you always tired? Do you feel ‘draggy’? If you need more pep and energy, start drinking Kevo... the new double energy food-drink–has a delicious *chocolate-like* flavor yet contains no chocolate. Kevo is made in a jiffy [by mixing] with either milk or water. It’s delicious hot or cold. Children and adults all like Kevo.” Ingredients are listed. “On sale at your Health Food store, or send dime for postage and packing on Large Free Sample.” Small illustrations show a cup of hot Kevo and a tall glass of cold Kevo with a straw. A similar ad also appeared in the Nov. 1940 issue (p. 431). It contains: Whole soy bean, germ of whole wheat, fruit dextrose, powdered skimmed milk, barley

malt, deep sea kelp, rhubarb, mint leaves, celery, carrots, and W.H.Y. flavoring. Also in the July 1941 issue (p. 373).

USDA Bureau of Plant Industry. Div. of Forage Crops and Diseases. 1942. Firms manufacturing or handling soybean food products. p. 1. This company is listed as making or handling soy "chocolate and other beverages."

Ad in *Let's Live.* 1945. Sept. p. 19. "Have you tasted the new formula? Kevo has amazing flavor–Gives more pep." Ingredients: Whole soy bean, germ of whole wheat, dextrose, soy bean milk, deep sea kelp, mint leaves, rhubarb plant, spinach, carrot, celery, W.H.Y. Blended flavoring, Special calcium, phosphorus, iron, copper, iodine.

1139. Lager, Mildred. 1940. Healthful philosophy. *House of Better Living* (*Newsletter, Los Angeles*) 11(49):2. Jan.
• ***Summary:*** New items include "Canned Soy Cheese. Soyburger. Full line of Madison Foods."

"We carry liquefiers at four different prices: $29.95, $19.95, $14.95 and "13.95." Contains a recipe for Carrot soy milk. Ingredients: 1 cup carrot juice, add 1 tbsp. soy flour or milk powder, 1 tsp honey or plain Joyana.

"Liquefied foods have become popular with the new electric mixers. They are fine and a boon to the person with poor assimilation and digestion..." A number of combinations are given, all starting with fruit juice. "Soy flour or soy milk powder may be added to juice or broth for soy milk drinks." A portrait photo shows Mildred Lager.

Note 1. A section titled "Soyburgers" on p. 4 explains that the Soyburger and Canned Soy Cheese mentioned above are both made by Madison Foods of Tennessee. Separately, soy chocolate is mentioned.

Note 2. A small ad on p. 3 is for waffles: Soy wheat-wheat germ. Soy corn (contains no wheat). Address: 1207 West Sixth St., Los Angeles, California. Phone: MUtual 2085.

1140. Macheboeuf, Michel; Reiss, Charlotte. 1940. Documentation sur les graines de soja et leur utilisation pour l'alimentation de l'homme et des animaux, suivie de quelques considerations sur l'importance industrielle du soja [Documentation on soybeans and their utilization as a food for humans and animals, according to some considerations of the industrial importance of soya]. Paris: Ministère de l'Education Nationale, Centre National de la Recherche Scientifique, Section de la Recherche Appliquée. 48 p. Unpublished typescript. Jan. 30 cm. [200+ ref. Fre]
• ***Summary:*** Contents: Introduction. Chemical composition of soybean seeds: Proteins, nutritional value of the proteins, lipids, phosphatides, sugars, sterols, enzymes, minerals, vitamins. Soy flour. Soybean cake. The role of soya as a food. Some physiological effects of soya. Feed for cattle. Feed for pigs. Feed for sheep. Feed for birds. Experiments on animal feeding. General considerations on the feeding value of soya for animals. The soybean as human food. Various culinary preparations based on soya: Soy sauce, fermented soy beverages, soy sprouts, tofu, soymilk, soy bread or soy and wheat bread, soy oils and hydrogenated soy oil products, soy coffee, summary. Brief survey of industrial utilization of soybeans: Oil for preserving fish, cake for fertilizer, oil for foundry use, lubricants, plastics incl. sojalithe, other uses of soy proteins, glue, paint emulsions, artificial textiles, paints and varnishes, interior enamel, soaps, petroleum substitutes, explosives. Note: The extensive bibliography is full of errors. Address: 13, Quai d'Orsay, Paris (7eme), France. Phone: Invalides: 45-95 & 45-96.

1141. **Product Name:** Soya Choc-Malt (Later Renamed Soya-Choc).
Manufacturer's Name: Roberts (F.G.) Health Food Products.
Manufacturer's Address: 40 Chapel St., St. Kilda (a beach-side suburb of Melbourne), Victoria, Australia.
Date of Introduction: 1940. January.
Ingredients: Incl. water, soybeans.
Wt/Vol., Packaging, Price: Tin-plated steel can.
New Product–Documentation: Ad in *Nature's Path to Health* (*Melbourne, Australia*). 1940. Jan. p. 46. "Fresh from the Factory Soya Choc-Malt comes to you charged with Phosphorus, Calcium, Magnesium, Potassium, Iron. No better Food Drink has yet been made. Give it to your children and use it in the sick room and on your breakfast table regularly. Made from carefully selected ingredients this new Food Drink may be used by all persons of every age and position in life. Purchase your supplies at the Roberts Health Food Shops. Branches in every state." This same ad was published during 1940 in the following issues: Feb. p. 32, May p. 40, June p. 40.

1142. **Product Name:** Joyana (Vitamin-Fortified Soymilk-Based Powder) [Plain, or Chocolate].
Manufacturer's Name: Tam Products, Inc. Later renamed American Dietaids.
Manufacturer's Address: 260 West St., New York City. Then Yonkers, New York.
Date of Introduction: 1940. January.
Wt/Vol., Packaging, Price: 10 oz can sells for $0.49, 5 oz can for $0.29.
How Stored: Shelf stable.
New Product–Documentation: Display ad (4½ by 3 inches) in *Nature's Path* (USA). 1940. Jan. p. 34. "Suffering from high blood pressure, arthritis, sinus, anemia?" "In all these conditions it is important to get enough proteins, all 5 vitamins, and iron, calcium, and other minerals. Joyana is just what you need. Abundant in vitamins and minerals. Made with soy bean, which is richer in protein than any food except white of egg." Drink Joyana in milk 3 times a day. "At all health food stores."

Talk with Jack Schwartz. 1988. Sept. 25. One product

he recalls that was soy-based is Joyana. It was made by Tam Products. Tam was a laxative. The company was founded by George Spitzer, located in Manhattan, then Yonkers, New York. Spitzer later became wealthy with the invention of the aerosol can. Jack thinks the product was introduced in about 1939. Frank Murray. 1984. Only One Slingshot. p. 32. "Joyana, plain and chocolate flavored soy milk product." p. 53. "a vitamin-fortified chocolate and vanilla powder to be added to milk."

1143. McRostie, G.P.; Laughland, J. 1940. Soybeans in Ontario. *Ontario Department of Agriculture, Bulletin* No. 407. 12 p. Feb.

• ***Summary:*** Contents: Introduction. The plant. Uses: Hay, seed, straw, soybean meal, soiling crop, ensilage, soil improvement, soybean oil, other products. Feeding value. Climatic adaptation. Place in rotation. Culture: Soil, preparation of seed bed, manure and fertilizers, seed selection, inoculation, dates of seeding, methods and rates of seeding, depth of seeding, seasonal care, harvesting for hay or seed, threshing, storing. Varieties. Description of varieties: Manitoba Brown (Brown, Ogemaw), Kabott (From Mr. R.R. Kabalkin in Manchuria), Mandarin, Cayuga, Minsoy, Hudson Heights (Hudson; a selection by T.B. Macaulay of Hudson Heights, Quebec), O.A.C. No. 211 (selected from the Habaro variety), Goldsoy, Quebec No. 92, Manchu, Illini. Soybeans in mixtures (with grains and grasses). Enemies of the soybean.

Concerning other food products (p. 3): "Soybean flour, which is made into bread, cakes and muffins, due to its very low percentage of starch, is of especial value as a diabetic food. Soybean milk, curd [tofu] and breakfast foods are products of this bean. Lecithin, a complex fatty material containing phosphorus and nitrogen, is also obtained from the soybean and is used in candy making. Green soybeans (probably green vegetable soybeans), dried beans and bean sprouts are used in many ways for the table."

Concerning varieties (p. 9): "Both Manitoba Brown and Brown are varieties which have been selected from Ogemaw which was introduced by E.E. Evans, West Branch, Michigan, 1902, as a supposed cross between Early Black and Dwarf Brown varieties. The Manitoba Brown is an early selection made at the University of Manitoba. All three are similar in appearance and may be described as follows: seed colour brown, medium to large in size, hilum chocolate; plant short, erect, bushy; flower purple. They are very early varieties suitable for seed and may be successfully grown in northern districts."

Concerning enemies (p. 12): "In Japan, according to reports, there are many destructive diseases which attack the soybean. In the United States, no pest has assumed any great economic importance, but there have been some losses due to rabbits, woodchucks, root rot, cowpea wilt and caterpillars. Forty-three years of experiments at the Ontario Agricultural College have shown little loss due to fungus and bacterial diseases, but some parts of Ontario have reported that groundhogs show a preference for this crop. This comparative freedom from plant enemies is a favourable factor in promotion of soybean culture in Ontario."

Note: This is the earliest document seen (Sept. 2004) that mentions the soybean variety Kabott. Address: 1. PhD, Prof. and Head of Dep.; 2. B.S.A., Extension specialist. Both: Dep. of Field Husbandry, Ontario Agricultural College, Guelph, Ontario, Canada.

1144. *South China Morning Post* (*Hong Kong*). 1940. Soya bean milk factory opened: War on malnutrition and T.B. March 10. [Eng]

• ***Summary:*** The article begins: "'What is wanted in the colony today is a source of supply of nutritious food which is cheap enough to be within the reach of the masses; and if we can meet a part of this urgent need, one of our main objectives will have been achieved,' said Mr. K.S. Lo, Managing Director of the newly-established Hong Kong Soya-bean Products Company, Limited, at the inaugural ceremony of the company's factory at Causeway Bay [on George Street, in Hong Kong] yesterday afternoon. Turning on a switch which set the factory in operation, the Hon. Mr. M.K. Lo officially declared the factory in open in the presence of a large gathering.

"Among those present were the Hon. Dr. P.S. Selwyn-Clarke, Director of Medical Services, and Mrs. Selwyn-Clarke, Dr. F.I. Tseung, Dr. J.E. Dovey, Dr. T.C. Li, the Hon. Mr. and Mrs. W.N. Tam. The guests were conducted over the works by Mr. K.S. Lo and Mr. Y.C. Kwan.

"Welcoming the guests, Mr. K.S. Lo said: 'To most of us, the soya bean needs no introduction. We come in contact with it every day in one form or another. It is the first thing that greets us on our breakfast table in the form of soy sauce, and to many Chinese it is also the last dish served on the dinner table in the form of a hot delicious soup. Its food value, long recognized by our fore-fathers, has been verified by chemists in modern laboratories. What is new here this afternoon is not Soya Bean, but the birth of our pet baby "Vita." And although "Vita" comes from the age-old soya bean family, she is as modern as our lass of 1940.

"'Vita is nursed and brought up in a hygienic home, scrupulously attended by its expert doctor, Mr. H.L. Hoover and a string of white-uniformed nurses. It is dressed up in modern romper with a hood as white as that of Snow White's. To make doubly sure that it will turn out to be a strong and healthy thing, we are feeding it with calcium, cod-liver oil and all the vitamins.

"'As "Vita" grows up, it will be followed by Vita butter, Vita cream, Vita biscuits, and Vita ice-cream.'" Some of the equipment from the United States for the factory has not yet arrived.

"'The present Director of Medical Services has set

a new mile-stone in social progress in the Colony by his determined campaign against malnutrition and tuberculosis. The better-off community are well supplied with the best milk obtainable. It remains for us to look after the needs of the less fortunate, among whom are thousands of school children and wage-earners.'" Mr. M.K. Lo then gave a speech about the importance of good nutrition, and of an adequate intake of the "'protective foods' containing vitamins and mineral salts... Their absence has especially deleterious effects upon children and nursing and pregnant mothers.'"

Dr. Selwyn-Clarke, as Director of Medical Services, is making an energetic attack on tuberculosis and malnutrition, especially among the poor in the Colony. "'It seems to me that any concern which could produce, under approved hygienic conditions, soya bean milk in such quantity as to be available to the poorer section of the community, and at such low prices as to be within their means, would be rendering a public service to the Colony. I understand that the Hong Kong Soya Bean Products Company seeks to fill this role. It has imported the latest machinery and will produce soya bean milk cheaply and under hygienic conditions. I wish the promoters and the Company all prosperity and success.'"

Note 1. According to Vitasoy's 50th anniversary history (1990, p. 102), the English-language name of the company's first product was "Vita Milk." The name was changed on 11 June 1940 to "Sunspot."

Note 2. This is the earliest document seen (Aug. 2013) concerning Vitasoy (named Hong Kong Soya Bean Products Co. Ltd. before 24 Sept. 1990).

1145. De Weese, C.W. 1940. The "vegetable cow." *National Food Distributors' Journal* 14(4):5-6. March. Reprinted in Madison Health Messenger (Madison, Tennessee) 2(3):1-3 (1940).

• ***Summary:*** "Suppose there were suddenly to occur a complete disappearance of all meats, milk, eggs, cheese, potatoes, wheat, and grains. Suppose further, that we were deprived of every other food known, with the exception of one vegetable. What single vegetable would you choose to live on if such an even should happen?"

The author would choose the Soy Bean. The people in the land where it originated call it the "Vegetable Cow." He discusses industrial uses of soybeans (plastics, paint, etc.), soy bean flour, "roasted soy bean nuts," and the many important nutrients found in soy beans.

Note: This is the earliest English-language document seen (Dec. 2012) that uses the term "soy bean nuts" or "roasted soy bean nuts" to refer to soynuts.

"Alkaline preparations are used daily by millions; perhaps they are necessary as we certainly are a nation of excess acid human beings. Most of the foods we eat form acid in the digestive process. Therefore, the alkalinity of the Soy Bean is good news and particularly so because when properly cooked they are delicious to eat in many different ways. Apparently they provide a diet that is adequate and well balanced."

"In Washington, DC, a milk route has been established for Soy Bean milk. Soyburgers have made their appearance. Pancake flour, cereals, cheese, substitute for egg whites, flour for baking, ground meal, coffee, baked and boiled beans, and many other foods can now be had or are in the process of going on the market."

1146. **Product Name:** [Vita Milk (Soymilk Fortified with Calcium, Cod-Liver Oil, and Vitamins. Renamed Sunspot in June 1940. Renamed Vitasoy in 1953)].
Foreign Name: Wai-ta-nai.
Manufacturer's Name: Hong Kong Soya Bean Products Co. Ltd.
Manufacturer's Address: Great George St., Causeway Bay, Hong Kong.
Date of Introduction: 1940. March.
Ingredients: Water, soybeans, water, sugar, calcium, cod-liver oil, vitamins. By 1967: Soya, oil, calcium, vitamins.
Wt/Vol., Packaging, Price: Wide-mouth half-pint glass bottles, sealed with a cap and hood. HK$0.06.
How Stored: Refrigerated.
New Product–Documentation: South China Morning Post (Hong Kong). 1940. March 10. "Soya bean milk factory opened: War on malnutrition and T.B." Mr. K.S. Lo is Managing Director of the newly-established Hong Kong Soya Bean Products Company, Ltd. [HKSBPCL], which has a factory at Causeway Bay, Hong Kong. The name of the company's soya bean milk is "Vita." It is enriched with calcium, cod-liver oil, and vitamins. Note: This is the earliest known commercial soy product (with a brand name) made in Hong Kong.

K.S. Lo. 1947. *Soybean Digest*. April. p. 8, 10. "... I am the founder of Hong Kong Soybean Products Co. Ltd., which engages in the production of fresh soybean milk for local distribution. It was established in 1940 and just before the outbreak of the Pacific war [Dec. 1941], our 'Sunspot Soya Milk' had daily sales of 13,000 to 15,000 one-half pint bottles of milk."

K.S. Lo. 1982. History of Vitasoy. p. 1, 5; Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 99-100, 130-53.

Talk with K.S. Lo. 1989. Oct. 6. The product's original name was Vitamilk, until one of the company's competitors wrote the Urban Council to complain that the term "milk" should not be used in the name of a product which was not of dairy origin. After a long debate and fight with them, they allowed HKSBPCL to retain the Chinese name Wai-ta-nai, but not the English name Vitamilk. So in 1940 Mr. Lo decided to change the product's English name from Vitamilk to Sunspot, because the company was bottling Greenspot. Sunspot was a temporary name, that was changed to Vitasoy

in 1953.

Letter from K.S. Lo. 1989. Nov. 3. Gives details on the Chinese name (registered in 1940), changes in the English name, and the use of the trademark Sunspot from 1940 to 1953. Mr. Lo never liked the term Sunspot.

Choi. 1990. *Hou sheng yü ch'uang yeh: Wei t'a nai 50 nien* (*1940 chih 1990*) [*Enriching life and creating business: Fifty years of Vitasoy* (*1940-1990*)]. See pages 18, 19, and 102 for changes in the early name of this product.

1147. DeWeese, C.W. 1940. The "vegetable cow." *Madison Health Messenger* (*Madison, Tennessee*) 2(3B):1-3. Undated.
• ***Summary:*** Reprint of an article with the same author and title published in March 1940 in the *National Food Distributors' Journal* 14(4):5-6. Note: The author's name was spelled "De Weese" in the original article.

1148. Lager, Mildred. 1940. Summer foods for health. *Madison Health Messenger* (*Madison, Tennessee*) 2(3B):1-4. Undated.
• ***Summary:*** A large photo shows Miss Lager, next to a KFAC microphone. For 6½ years she has been broadcasting over the radio four times a week on station KFAC is Los Angeles. "She is the founder of the House of Better Living, and a tireless worker for better living. Her weekly free classes draw hundreds of people for instruction in healthful cookery and healthful living."

She writes that now is a good time "to cut down on rich foods and the acid-forming foods, using instead the alkaline-forming foods and the bulk foods for the natural eliminative effects... With a liberal intake of the alkaline-forming foods, one may be assured of the natural alkalizers which neutralize body acids and in this way assist in the protection of health... Acid wastes produce fatigue; alkaline-forming foods neutralize the acid wastes to restore the normal body tone and stamina.

"The summer diet must necessarily contain adequate complete proteins, for protein foods are necessary for cell repair and growth... A lack of protein may cause retarded growth, lack of vigor, and poor appetite... The vegetable proteins are nuts, soy beans, legumes, and in general they are found in all vegetables. The proteins of nuts and soy beans are classed as complete proteins and are therefore especially desirable. The animal proteins are acid-forming, whereas the vegetable proteins are alkaline-forming. Animal proteins are also more putrefactive than vegetable proteins. The soy bean and nuts can be used in a great many tasty ways."

Among the many recipes for summer the following include soyfoods: Cocktails–Soy milk and carrot ("Soy milk is a fine, alkaline, soft food. Excellent for those with sore conditions of the digestive tube)." Protein salads–Soy bean salad. Soy cheese [tofu] tomato salad. Mock shrimp salad (with Zoyburger). Entrees–Soy cheese cutlets. Zoyburger and mushroom sauce. Mock turkey legs (with Vigorost as the main ingredient). Broiled Vigorost with ripe olive sauce. Platter of cold cuts (Vigorost and Zoyburger). Hot Zoyburger sandwich. Stake-Lets (canned) for picnic dinner. Alkaline breakfast food–Wheatasoy. Alkaline beverage–Zoy-Koff (coffee substitute). Soy bean milk (Kreme O'Soy). Complete protein foods: Zoyburger, Vigorost, Stake-Lets, Not-Meat (made with unroasted peanut meal and seasoning), Soy Cheese, and Soy Beans. A brief description, nutritional analysis, and price is given for each product. "None of the Madison Foods contain animal products." A portrait photo shows Mildred Lager next to a KFAC radio microphone. The caption states that for 6½ years Miss Lager been broadcasting over the radio in Los Angeles. "She is the founder of the House for Better Living, and a tireless worker for better living. Her weekly free classes draw hundreds of people for instruction in healthful cookery and healthful living. Miss Lager is the author of *Food Facts.*"

Note 1. This is the earliest document seen (June 2007) that mentions or gives a recipe for a soy-based meatless turkey. Vigorost, a meatless / vegetarian roast introduced by Madison Foods in 1932, used wheat gluten and tofu as its two main ingredients.

Note 2. This is the earliest English-language document seen (Jan. 2007) that contains the word "Zoyburger," an early, popular vegetarian burger in the United States.

Although this issue is not dated, it contains the reprint a current article published in March 1940.

1149. *Madison Health Messenger* (*Madison, Tennessee*). 1940. Price list [of products made by Madison Foods] (Ad). 2(3B):5. Undated.
• ***Summary:*** Breakfast cereal: Wheatasoy (9 oz).

Beverages: Zoy-Koff (No caffein [caffeine]; 12 oz.). Kreme O'Soy Milk (plain, liquid, 15 oz and 29 oz; chocolate, liquid, 29 oz). Crackers: Thin-Things ** (5 oz). Whole wheat wafers ** (5 oz). Bran wafers ** (6½ oz).

Canned protein foods (used in place of meat): Zoyburger (14 oz, 30 oz). Stake-Lets (14 oz, 30 oz). Not-Meat (5 oz, 14 oz, 30 oz). Vigorost (5 oz, 14 oz, 30 oz). Soy cheese [tofu] seasoned (5 oz, 14 oz, 30 oz). Soy Beans with Tomato (5 oz, 14 oz, 30 oz). Kreme O'Soys, plain (14 oz).

Flour: Kreme O'Soy Flour (2 lbs, 5 lbs).

Note: Asterisks in the printed list indicate that all products except Whole wheat wafers, bran wafers, and Not-Meat are "Soy Bean Foods." ** = Wheat germ added.

Although this issue is not dated, it contains the reprint of a current article published in March 1940.

1150. *Nature's Path to Health* (*Melbourne, Australia*). 1940. Soya beans. April. p. 40.
• ***Summary:*** "An ancient food with many modern uses–use as a substitute for meat, cheese, milk... made up in the form of crackers, butter, sausage, cereals, salad, loaf, coffee, cheese, etc. Soya bean products are a fine source of

protein and also have lecithin which is a brain and nerve constituent."

1151. P.J.K. 1940. La agricultura es una industria: Cultivo e industria de productos oleaginosos [Agriculture is an industry: The cultivation and processing of oleaginous products]. *Agricultor Venezolano* (*El*) (*Ministerio de Agricultura y Cria, Caracas*) 4(47-48):28-36. March/April. [Spa]
• ***Summary:*** Pages 28-31 are an introduction to oilseed processing to produce oil and meal. Peanuts, soybeans, and sunflower seeds are mentioned on p. 30. Then comes a long section on peanuts (p. 31-34), followed by a 3-page section (p. 34-36) on soybeans titled *"Plantas oleaginosas: El haba de soya y la alimentacion"* (Oilseed plants: The soybean and food).

Discusses: The major new role played by soybeans during the war in Germany. 400 million people in the Orient use soybeans daily as food. During the last 20 years soybeans have come to be widely used in Europe and the USA, but only to make certain products, such as oil and meal. The soybean is a rich source of nutrients. 10,000 Chinese infants developed robustly and normally on soymilk. The most important product of the soybean is soy flour, which has remarkable nutritional value and can easily be added to bread, cakes, etc. Lecithin is another important product and acidophilus soymilk is a new product. Address: Dr.

1152. Puget, R. 1940. La question du lait et le soja [The question of milk and the soybean]. *Les Cahiers de la santé publique. Hygiène. Hygiène publique. Hygiène et médecine sociale* 13(4):69. April. [Fre]
• ***Summary:*** Hervé Berbille, who found this article, writes: "In my opinion, this it is a very important article for two fundamental reasons:

"(1) It seems that the tariffs were increased in France in order to nip soymilk rise in the bud: 'There was, indeed, more than ten years ago, a French company, now defunct, named "Les Établissements Iris" which had begun to manufacture, at Montrouge, a plant milk plant whose nutritional value and easy digestibility threatened for a moment a disastrous competition with cow's milk.'

"'A brutal rise of the customs duties on the entrance into France of the 'pea of China,' or soya aborted'" [the development of this soymilk].

"(2) Probably shortly after the ceasing of activity of the Caseo-Sojaïne, there was a second attempt to market soy milk in France by a company ('Les Établissements Iris'), located in Montrouge (a town near Paris) which I had never heard of before (I did not find any additional information about it)."

Note: Hervé thinks that *Les Établissements Iris* probably produced soymilk during the period of roughly 1920 to 1930. Address: France.

1153. *Detroit News.* 1940. Negro exposition inspired by exploits of Dr. Carver. May 17. p. 13, cols. 3-4.
• ***Summary:*** "The inspiration of Dr. George Washington Carver... has been left with the members of his race who are celebrating at the 75 years of Negro Progress Exposition here." Dr. Austin W. Curtis, who has worked with Dr. Carver for the last 5 years, told the audience the story of Dr. Carver's life and "revealed the vistas that are open to the efforts of the American Negro." From the Spanish peanut Dr. Carver developed more than 300 uses including a "substitute butter, milk, cereals and flour, many oils, printer's ink, linoleum compounds, and rare and beautiful dyes. Under his touch the sweet potato yielded coffee, paste, 70 dyes for cotton and silk and a rubber substitute."

"Dr. Carver never took out a patent and in answer to the honors heaped upon him by the world always answers: 'It is just the work of the Lord. It is just the Lord's doing's, not mine.'"

A photo shows Dr. Austin Curtis explaining Dr. Carver's work to two boys, Walter King (age 11) and Donald Wilson (age 11). Address: Michigan.

1154. *Eat For Health* (*Rosenberg's, San Francisco*). 1940. The versatile soy bean: Food of a thousand uses. Spring. p. 6-9.
• ***Summary:*** "Man's search for the perfect food, like his search for the Fountain of Youth, has never been entirely successful. As usual, it took the Orientals to discover the qualities of the almost-perfect one–the soy bean." This bean, which is rich in high-quality protein, can be used to make soy flour for use in preparing "richer soups and in the baking of excellent breads; meat substitutes in the nut form are very appetizing; the oil is good in salad dressings, and the sprouted seed is a tasty vegetable.

"The Chinese were the one to introduce sprouted soy beans as a vegetable; practically everyone who has eaten chow mein knows the succulent shoots contained therein." Soy sauce is, of course, "the standard flavoring for chow mein, imparting a salty tang. The legume is very good cooked liked lima beans [as a green vegetable], too, and is even more alkaline than the latter.

Soy milk "is richer than cow's milk in calcium, phosphorus and iron.

"In spite of the large percentage of its fat, the soy bean does not induce obesity. Instead of being stored in the body, as are other oils and fats, soy bean oil is immediately useable by the bodily metabolistic process." Moreover, "the soy bean has practically no starch, so those keeping a careful eye on their weight can derive the full benefits of its other qualities without worrying about gaining.

"This lack of starch is a distinct advantage to the diabetic too," and many diabetic foods can be prepared from soy beans.

"Solidified [hydrogenated] soy oil is an excellent shortening for cakes and pastry;... Soy bean oil is also "capable of use as butter."

When soy beans are cooked, then put through a good grinder or coarse sieve, they become "soy bean pulp," which offers many possibilities to the venturesome cook.

"Green soy beans are a very good salad vegetable after steaming and chilling." And "the soy bean is a delightful snack when eaten as the peanut is. Toasted, it has much the same flavor and is just as energizing."

"Editor's note: We carry a large variety of soya bean foods–practically everything from soya oil and flour to those delightful toasted 'soya nuts' that make a hit wherever served. Come in soon–we'll be glad to show you.

Contain three "Delicious soy recipes": Soy mock turkey (with "½ cup soy cracks" [cracked soya nuts] and "½ cup browned soya flour"). Soy bean soup (with "1 cup soy bean pulp" [ground, cooked whole soybeans]). Soy-wheat biscuits (with "½ cup soy bean flour"). Soy bean salad (with "2 cups cooked soya beans").

A small photo shows "water-sprouting of soy beans"–four stages in the process of transforming whole dry soy beans into sprouts. Address: Rosenberg's Original Health Food Store, 1120 Market St., San Francisco, California. Phone: MArket 3033.

1155. **Product Name:** Diabetic Soya Bars [Maple, Mocca, or Dark].
Manufacturer's Name: Radcliffe Soya Products.
Manufacturer's Address: 146 Fillmore St., San Francisco, California.
Date of Introduction: 1940. June.
New Product–Documentation: Rosenberg's Original Health Food Store. 1940. Catalog of Health Foods... p. 52. "Radcliffe's Famous Soya Products." The bars are 20 cents each, or 1 lb for $1.00.

1156. **Product Name:** Soya Candy Bars.
Manufacturer's Name: Radcliffe Soya Products.
Manufacturer's Address: 146 Fillmore St., San Francisco, California.
Date of Introduction: 1940. June.
New Product–Documentation: Rosenberg's Original Health Food Store. 1940. Catalog of Health Foods... p. 52. "Radcliffe's Famous Soya Products." The bars are 5 cents each.

1157. **Product Name:** Soya Milk Powder [Regular, or Cello].
Manufacturer's Name: Radcliffe Soya Products.
Manufacturer's Address: 146 Fillmore St., San Francisco, California.
Date of Introduction: 1940. June.
New Product–Documentation: Rosenberg's Original Health Food Store. 1940. Catalog of Health Foods... p. 52. "Radcliffe's Famous Soya Products." For the regular: "1 lb. can $0.45." For the Cello, "10 oz. $0.25."

1158. **Product Name:** Cocoanut Milk Powder [Regular, or Cello]. Malvitose Beverage.
Manufacturer's Name: Radcliffe Soya Products.
Manufacturer's Address: 146 Fillmore St., San Francisco, California.
Date of Introduction: 1940. June.
New Product–Documentation: Rosenberg's Original Health Food Store. 1940. Catalog of Health Foods... p. 52. "Radcliffe's Famous Soya Products." Cocoanut Milk Powder: "10 oz. $0.40. 16 oz. $0.70." Malvitose Beverage: "18 oz. $0.55. 20 oz. $1.10." Note: It is not clear whether or not these products contain soya.

1159. **Product Name:** Soya Malt [Nut, Mocca, Banana, Plain, Chocolateen].
Manufacturer's Name: Radcliffe Soya Products.
Manufacturer's Address: 146 Fillmore St., San Francisco, California.
Date of Introduction: 1940. June.
New Product–Documentation: Rosenberg's Original Health Food Store. 1940. Catalog of Health Foods... p. 52. "Radcliffe's Famous Soya Products." "8 oz. $0.40. 16 oz. $0.70. 5 lb. $2.90."

1160. Rosenberg's Original Health Food Store and Whole Wheat Bakery. 1940. Catalog of health foods and manual of valuable health information. San Francisco, California. 76 p. Undated. Illust. 17 cm. Index
• ***Summary:*** Cover title: "Health from foods." Also on title page: "Eat to get well. Eat to keep well." "Where good health originates." "No branch stores." Contents: About your health, by Morris Rosenberg, president. Shop by mail. Parcel post scale. Eat to get well–Eat to keep well (rules and guidelines, p. 4). Vitamin chart (for each: Functions, results of deficiency, most reliable sources, p. 5-8). Biological chemistry of foods–Minerals (p. 9-10). List of products available, by product type, with weight and price. Incl. Soy bean bread, Soy toast, Soy bean wafers, Soy cookies (p. 12). Natural brown rice. Sun-dried, unsulphured California fruits. Salted nut meats (almonds, peanuts, cashews, pecans, p. 16), Nut butters (unroasted and unsalted: Almond butter, Nut cream butter {Carque}, Peanut butter, Cocoanut butter, Smucker's apple butter, Peanut oil (2 brands). Parkelp (minerals of the sea). Salt substitutes.

List of products available, by manufacturer or source, with weight and price. Incl. Battle Creek Health Products [Michigan] (p. 18-19): Beverages (SoyKee, Kaffir Tea), Gluten biscuit, Vegetable meats (Protose), Savita yeast, Psyllium seed. Cellu Dietetic Products: Canned vegetables (Soy bean oil, Soy bean spread, Soy flakes, Soy grits). Dia-

Mel (dietetic food products): Gluten crackers, Soy-Rina cereal (to be cooked). Alberty Food Products: Cero-Fig coffee substitute. Modern Diet Products [Gayelord Hauser], incl. Juicex (electric juicing machine), and Fletcherizer (juicers). Radiance Health Products (Los Angeles, p. 30-31). Tam Products (Joyana, the remarkable soybean health drink, plain or chocolate flavor). McCollum Laboratory Products (Soy-A Granules–Soy breakfast food). Penna Soya Products (soy foods): Tenderized whole soybeans, Toasted soy flakes, Toasted soy nut butter (8 or 16 oz), Soy malt–chocolate flavor, Creamee Soy Best (soy milk powder). Mrs. Hauser's Soya Products: Hot cake and waffle mix, Pancake and muffin mix, Soya cereal. Hain's Products (Hain Pure Food Co.): Nature's Best Foods: Assorted candy bars, Fruit juices (6 types), Vegetable juices (7), Hollywood Foods (Meat substitutes: Protone-Soytone-Nutone, SoyBean with Tomato Sauce, SoyBeans T.S. & Protone, Soya sandwich spread), Nut butters (raw–Almond, cashew, pecan). Nut butters (roasted–Almond, cashew), Olive oil (California virgin). Hain's vitamins. Alvita Products. Live Food Products (Paul C. Bragg). Books by Paul C. Bragg (*Paul C. Bragg's Personal Health Food Cook Book. Building Health and Youthfulness Nature's Way. Awaken Health and Happiness. The Art of Feminine Loveliness. Health Cocktails, The New Way to Health, Beauty and Youthfulness. The Chart of Scientific Diet.* Note: The first 4 books cost $1.00 each. The last two cost $0.25 and $0.10, respectively). Loma Linda Foods (Tasty, wholesome, nutritious): Cereals (5), Soy products (Soy beans–plain, Soy beans with tomato, Soy beans with Proteena, Soy milk, Soy mince sandwich spread, Soy milk, Soy mince sandwich spread, Soy weet wafers, Fruities, Fruit wafers, date sandwiches), Vegetarian meats (Proteena {plain, smoked flavor, or mushrooms}), Nuteena, Gluten steaks), Other choice foods (Garbanzos, Savory lentils, Wheat kernels, Savorex). Radcliffe's Famous Soya Products: Diabetic soya bars (flavors–maple, mocca, dark), Soya bon bons (light or dark), Soya candy bars, Soy milk powder, Soy milk powder–Cello, Cocoanut milk powder (8 or 16 oz), Soya malt (8 or 16 oz, 5 lb; Flavors–Nut, mocca, banana, plain chocolateen), Soya beverage–coffee, Malvitose beverage (8 or 20 oz), Soya paste [pasta?] (7 or 14 oz), Soya ravioli, spaghetti, macaroni (7 or 15 oz, 2 lb), Unsweetened soya bean chocolate. Cubbison's whole wheat products. Bill Baker's flour: Lima and pancake flour, Soya and wheat flour, Lima bean cookies, Soy bean cookies. Figco instead of coffee. Carque's natural foods. Carque natural brands. Books by Carque. Therapy, Ltd. (Pasadena): Theradophilus (a pure condensed acidophilus culture in soy bean milk). Health publications (22).

Health recipes (p. 68-71): Soya cup cookies. Soya loaf with rice. Soya cup custard. Soy bean goulash. Soy bean bread. Soy flour applesauce cake. Soy bean vegetable soup. Soy macaroni, noodles, or spaghetti. Baked soy bean croquettes.

Key to calories. The four types of foods: Regulatory, body-building, energizing, heating. Index.

On the rear cover is an ad for the Juicex ("makes fresh, pure, undiluted vegetable juices"–$49.50. A photo shows this modern-looking electric juicer. Fruits and vegetables as pushed–using a wooden pusher–into a small hopper on top. The juice runs out of a spigot into a glass) and Fletcherizer [electric blender] ("The new 1940 model has all the latest improvements in construction and appearance. It liquidizes, whips, mixes, and chops..." $14.95). Across bottom of ad: "See these products demonstrated at our store."

Note: This 1940 date, plus other internal evidence, gives us a good estimate for the date of this undated catalog. Address: 1120 Market St., San Francisco, California. Phone: MArket 3033.

1161. *Chicago Daily Tribune.* 1940. Soy bean feast served 35 at cost of $10.87. July 4. p. 23.

• ***Summary:*** "A full seven-course dinner–everything from 'soy' to 'bean'–was served 35 members of the Chicago chapter of the Society of Grain Elevator Superintendents. And yesterday the diners, while admitting that even a good thing can be carried too far, said they had no regrets.

The idea of a soy bean feast originated with Dean Clark, national secretary of the organization." Recipes were obtained from a California firm.

Here's the menu: "Soy-carrot juice appetizer. Hors d'oeuvre (celery stuffed with soy bean paste [soynut butter]). Soy-mince soup and soy wafers. Soy-vegelona 'meat' course (tasted like bologna). Pineapple salad made with soy bean sandwich spread. Soy bean (100 per cent) bread. Soy butter. Side dish of (you guessed it) baked soy beans with soy sauce. Ice cream made with soy milk and soy fruities wafer. Coffee with soy milk. Roasted soy beans (for variety's sake)."

The superintendents were then given "a tour of the Glidden company's new elevator at 5165 West Moffat street–a soy bean extraction plant." The retail cost of the entire banquet was just $10.87.

1162. Simmons, Roscoe Conkling. 1940. The week. *Chicago Defender.* July 13. p. 15. National ed.

• ***Summary:*** Dr. George Washington Carver may have missed a report on the stylish seven-course soy-bean dinner given recently in Chicago by the Society of Grain Elevator Superintendents. "Beans have enjoyed Dr. Carver's important attention, but goobers have increased their fame under his spell." The full soy bean menu is given: "Soy-carrot juice appetizer. Hors d'oeuvres (Celery stuffed with soybean paste [soynut butter]). Soy-mine soup and soy wafers. Soy-vegelona 'meat course' (bologna like). Pineapple salad made with soybean sandwich spread. Soy bean (100%) bread. Soy butter. Side dish of baked soy beans with soy sauce. Ice cream made with soy milk and soy fruities wafers. Coffee with soy milk. Roasted soy beans."

"The cost of the banquet came to $10.87. This writer asked one of the superintendents about the after-effects of the feast. 'Easy on the pocket, pleasant to the appetite, agreeable to health,' he replied."

1163. Fan, Ch'uan; Woo, Theresa T.; Chu, Fu-t'ang. 1940. Metabolic studies on the roasted soybean as an infant food. *Chinese Medical Journal* 58:53-67. July. [10 ref]
• ***Summary:*** Metabolic studies were made on two infants fed on various soybean mixtures. Wet ground soymilk seems to be better utilized than roasted soybean meal. The calcium of autoclaved soya-milk was as well retained as that in cow's milk, but the retention of its phosphorus was lower. Address: Div. of Pediatrics, Dep. of Medicine, Peiping Union Medical College, Peiping, China.

1164. Hayward, J.W. 1940. Soybean oil meal: Its current consumption. *Proceedings of the American Soybean Association* p. 21-23. 20th annual meeting. Held 18-20 Aug. at Dearborn, Michigan.
• ***Summary:*** The soybean arrived in America in 1804. During the past ten years the production of soybean oil meal as such has increased in the United States from about 39,000 tons to approximately 1,250,000 tons. Practically all of this production has been used as a feed for livestock and poultry.

For the past several years production of soy flour has held between 11,000 and 15,000 tons. "Before leaving this subject on food, I do wish to give credit to the increasing popularity of edible green soybeans, many specialty soybean products and special health foods, such as soy milk, etc."

Properly processed soybean oil meal is a better feed than raw uncooked soybeans. "In most cases, I think you will find that protein can be purchased cheaper in soybean oil meal than it can be supplied by feeding soybeans at market prices even though they were raised on your own farm." Several calculations are given to prove this point.

Note: This is the earliest English-language document seen (June 2009) that uses the term "edible green soybeans" to refer to green vegetable soybeans. Address: Chairman, Soybean Nutritional Research Council.

1165. Hayward, J.W.; Hayward, Mrs. J.W. 1940. Little soybean who are you? *Proceedings of the American Soybean Association* p. 6. 20th annual meeting. Held 18-20 Aug. at Dearborn, Michigan.
• ***Summary:*** This poem, written and submitted by Dr. and Mrs. J.W. Hayward reads: "Little Soybean who are you / From far off China where you grew? / I am wheels to steer your cars, / I make cups to hold cigars. / I make doggies nice and fat / And glue and feathers on your hat. / I am very good to eat, / I am cheese and milk and meat. / I am soap to wash your dishes, / I am oil to fry your fishes, / I am paint to trim your houses, / I am buttons on your blouses. / You can eat me from the pod, / I put pep back in the sod. / If by chance you're diabetic / The things I do are just prophetic. / I'm most everything you've seen / And still I'm just a little bean." Address: 1. PhD.

1166. Lloyd, J.W. 1940. The rise of edible soybeans. *Proceedings of the American Soybean Association* p. 59-62. 20th annual meeting. Held 18-20 Aug. at Dearborn, Michigan. [1 ref]
• ***Summary:*** "Although the field-type soybean was introduced into the United States from the Orient a number of years ago, the vegetable-type was unknown in America until after the exploration trip in China and Japan by Dr. [sic] W.J. Morse, which extended from February, 1929, to February, 1931. The seed samples of many varieties were sent back to Washington by Dr. Morse and were planted at the Arlington Experiment Station [Virginia] in 1930 and 1931. Seed developed from these plantings was distributed for trial to various State Experiment Stations in the spring of 1934. The Illinois station had its first contact with the vegetable-type soybeans that season, and started a series of field and palatability tests including many varieties... Other midwestern experiment stations that have been giving attention to the vegetable-type soybeans are Indiana, Ohio, and Iowa."

The results of the Illinois tests were first published in March 1939 in Illinois Bulletin No. 453. "In this bulletin and in press notices concerning it, the announcement was made that small packets of vegetable-type soybeans for trial planting would be furnished upon request, as long as the available seed supply lasted. The response was a perfect deluge of requests for seed... Special interest was manifested in the vegetable-type soybean as a food suitable for diabetics, and many stated that they wished to grow the crop for that purpose. By the end of May [1939] seed had been sent to 2,096 persons–all who had made requests up to that time. Requests were received from 46 of the 48 states, from Hawaii and the District of Columbia, from 5 provinces of Canada and from 6 other foreign countries.

"At the end of the 1939 season, reports were received from 810 persons to whom seed had been furnished that spring. Almost 80 percent of those persons reported success in the production of the crop, in spite of drouth, grasshoppers, rabbits, and other hazards. Approximately 70 percent of those who succeeded in growing the crop were enthusiastic about its table quality as a green vegetable... While tests by correspondents were limited mostly to the use of the soybeans as a fresh vegetable, a number reported successful canning of the product for winter use, while others allowed the beans to mature and reported them as highly satisfactory when used like navy beans." One company "is reported to have canned eight carloads of the finished product last year. Experimental work in canning and freezing of green soybeans is in progress on a comprehensive scale at two eastern experiment stations this season."

The Bansei variety is said to be especially well suited to the making of soybean milk. Yellow-colored varieties are said to make a superior grade of soybean flour. "The chief objection to the soybean as a home-garden or market-garden vegetable is the difficulty of shelling the beans by hand... Perhaps progress would be made in popularizing this product if the Oriental method of serving were adopted. This involves cooking the beans in the pods and letting each guest do his own shelling. Some Americans have tried this method and are well pleased with it. It involves more leisurely eating and would be especially appropriate at a banquet table."

"Previous to the spring of 1940, seed of vegetable-type soybeans was practically unobtainable by the general public. It was not offered under variety names by a single seedman so far as I am able to learn. Last spring, however, at least six seedsmen announced several varieties in their catalogs or price lists, and seeds were sold to a large number of planters."

Note: This is the earliest English-language document seen (April 2013) that uses the term "field-type soybean." Address: Univ. of Illinois, Urbana.

1167. Miller, Harry W. 1940. The role of the soybean in human nutrition. *Proceedings of the American Soybean Association* p. 64-71. 20th annual meeting. Held 18-20 Aug. at Dearborn, Michigan.

• ***Summary:*** "The interest in the soybean in America has largely centered around its industrial uses and animal feeding. Comparatively little interest has been manifest in its utilization in human nutrition. Whereas, in the Orient, where I have had opportunity to observe the various uses made of the soybean, at least 90 per cent of the local consumption is in human nutrition. The remainder is exported out of the country... I must admit that I feel that the soybean has suffered a setback by tremendously exaggerated statements made in its behalf that are misleading, and by the fact that the specimens of foods offered have so often been insipid, and poorly processed...

"There is one food that is utilized everywhere in China, and that is the soybean, for they have learned that they must have it in their diet to give them strength, and in order to promote growth. They have not understood its alkalinizing action, nor its biological value as a food, nor its mineral contents, nor its many other scientific and physiological values. However, they do know that when they are tired and need fatigue relief the soybean is the food. They realize that they soon tire on a rice, wheat or corn diet, and cannot maintain their daily round of duties unless they get a portion of soybean... The Chinese people also produce a record to the world on their great endurance during strenuous labor, as is seen in Coolie and agricultural workers...

"Paying the market prices for soya milk and also for other infant foods, in Shanghai, we made a comparative cost of food for a baby for its first five months, making an average of the cost per month. To provide the requisite amount of nutrition, if these babies were fed on fresh cow's milk bought on the Shanghai market the cost was $20.00 per month, Shanghai currency. If fed on canned milk, $16.50. If fed on the cheaper class of Shanghai dairy milk, $14.75. If fed on a milk that came from Holland, called Oster Milk, $12.00. If fed on S.M.A. or Lactogen, American prepared baby foods, the cost was $26.00 a month. Whereas these same babies could be cared for equally well on soy bean milk, at a cost of $5.00 a month." Address: M.D., International Nutrition Lab. [Mt. Vernon, Ohio].

1168. *Proceedings of the American Soybean Association.* 1940. Twentieth anniversary program. American Soybean Association. In session at Dearborn Inn, Dearborn, Michigan. August 18, 19, 20, 1940. p. 2-3. 20th annual meeting. Held 18-20 Aug. at Dearborn, Michigan.

• ***Summary:*** This meeting was held in Dearborn, Michigan, at the invitation of the Ford Motor Co., which had its headquarters in Dearborn. The company played an active role in the 3-day meeting. The first scheduled activity, after registration on Sunday, was general sight-seeing with suggested visits to Greenfield Village and Edison Museum. On Monday morning, Aug. 19, tours to those two places were scheduled from 9-12 a.m. Luncheon, at noon, was in the Alexandria Ballroom of the Dearborn Inn. Dr. E.A. Ruddiman (Engineering Laboratory, Ford Motor Co.) was in charge of the luncheon program, which included a welcome address by John L. Carey, Mayor of Dearborn. Carey praised Henry Ford's work with soy beans and referred to him as "Dearborn's first citizen." After lunch Robert A. Boyer (Engineering Laboratory, Ford Motor Co.) gave a talk on "Chemurgy and the soybean." After lunch was a tour of the Ford Rotunda and the Rouge Plant. Monday evening the dinner banquet was in the Alexandria Ballroom. Wheeler McMiller, President of the National Farm Chemurgic Council, was toastmaster. The first talk was by W.J. Cameron of the Ford Motor Co.

On Tuesday, Aug. 20, Dr. E.A. Ruddiman (Research Laboratories, Ford Motor Co.) presented an afternoon paper titled "Possibilities of soybean milk."

1169. Ruddiman, E.A. 1940. Possibilities of soybean milk. *Proceedings of the American Soybean Association* p. 62-63. 20th annual meeting. Held 18-20 Aug. at Dearborn, Michigan.

• ***Summary:*** "Infants who are not accustomed to cow's milk will take the soy milk as readily as the cow's... Soybean milk, either in the liquid or powdered form, works into baked goods to good advantage. It has about the same effect as cow's milk. Baked custard and custard pies have been made which could hardly be distinguished from that made with regular milk... The cost of ingredients which go into a gallon of soy milk is less than the cost of milk at present, but the

labor runs it up to several times that of cow's milk. Proper machinery may reduce the cost so that in case of necessity it may be a competitor of cow's milk. From a therapeutic standpoint it seems to me that soy milk is a very important product." Address: Research Laboratories, Ford Motor Co.

1170. Schmitt, R.P. 1940. The versatile soy bean: Food of a thousand uses. *Nature's Path to Health* (*Melbourne, Australia*). Aug. p. 5-6.
• ***Summary:*** "Before 1935, the soy bean was an insignificant factor in the health food store. Since then, however, its increase in popularity has been phenomenal, with the result that it is now one of the major sellers in the field. One reason for this growth is the soy bean's versatility: from it are produced flour, milk and cheese, bread, crackers, cereals, meat substitutes, candies and canned soybeans to be served as a vegetable. Almost no other item of food can claim such diversification of products. And the ways of preparing it are infinite..." It is also a good source of protein, vitamins, and minerals, and its low starch content makes it valuable in diabetic diets. It is easy to digest, "is not gas-forming, and does not encourage the growth of putrefactive bacteria in the intestinal tract, as do other high protein foods. On the contrary, it builds up acidophilus bacteria, which combat putrefaction in the digestive system.

"Then, too, it is alkaline in action: it has 20 times the alkalinity of cow's milk, and five times that of citrus fruits... Yet it one of the most economical foods." Address: Penna Soya Products [Williamsport, Pennsylvania], USA.

1171. Balzli, Jean. 1940. La culture du soja "magique" et sa contribution au redressement de la France [The cultivation of the "magical" soybean and its contribution to the recovery of France]. *L'Eclaireur de Nice et du Sud-Est.* Sept. 17. Later published Revue Internationale du Soja, March 1941, p. 41-45. [1 ref. Fre]
• ***Summary:*** Includes a discussion of uses for human foods, including defatted soy flour, soy coffee, soy chocolate, Worcestershire sauce, soymilk, tofu, and soy sprouts. Other uses include lecithin and industrial uses of soy oil and soy proteins.

1172. Bataille, René. 1940. Le soja et sa contribution à notre redressement économique [The soybean and its contribution to our economic recovery]. *Eclaireur de Nice et du Sud-Est* No. 268. Sept. 24. Partial summary in Revue Internationale de Soja 5(23-24):19, titled "Why there is no soymilk in France." [Fre]*
• ***Summary:*** The author received an excellent sample of soymilk but was told that it could not be produced without a struggle against powerful syndicates. "... I have talked in my office with entrepreneurs who had produced quite a remarkable soymilk (lait de soja) at a location that I will not mention, and managed to have it adopted by hospitals which lacked fresh cow's milk during the winter. This soymilk would have met the needs of elderly people, sick people, and children. These entrepreneurs had planned to expand their business but a short time after that, they returned to tell me that they had given up for fear of having to compete with some powerful lobbies and pressure groups." Address: Nice, France.

1173. Winter, Louis. 1940. Breuvage, engrais, tissu, peinture, farine... Voici l'incroyable "Soja!" [Beverage, fertilizer, textile, paint, flour... Here is the incredible Soya!]. *L'Ouest-Eclair.* Sept. 26. p. 1, 2. [Fre]
• ***Summary:*** In this period of restrictions, who would not think gladly of Soya? Thousands and thousands of infants have been raised on soymilk [infant formula]. Both soy flour and soymilk are useful in cooking, in making pastry, and cheeses, and confections. It can also be used to make bread (for diabetics) and pasta.

And that's not all. Soya oil is edible after it is refined. And an infusion of soya can be used to make a nutritive coffee.

The seed can be consumed green (as a vegetable), germinated (to make sprouts) or roasted. It can also be used to feed animals. To be continued. Address: Ingénieur Horticole, Directeur du Jardin de Plantes, Parcs et Promenades de la Ville de Rennes [in northwest France].

1174. Lindlahr, Victor H. 1940. You are what you eat. New York, NY: Natural Nutrition Society. 128 p. Sept. No index. 27 cm.
• ***Summary:*** Victor H. Lindlahr is the son of Dr. Henry Lindlahr, founder and head of the Lindlahr Sanitarium in Chicago, Illinois. Dr. Henry Lindlahr, "who first uttered the phrase, 'You are what you eat.'... and was one of a handful of pioneers who alone thought or knew much about diet in its relation to the prevention and cure of illness."

This book contains a wealth of interesting information on the history of nutrition. During 25 year "tenure of the Lindlahr Sanitarium, we used diet with excellent results in the treatment of more than 50,000 patients." In 1929 Victor shifted from sanitarium work to radio broadcasting. A major goal is to eat a balanced vegetarian diet. On page 43 are the "Ten Commandments of eating."

Contents of Part II: Vitamin tables. Vegetables and fruits highest in vitamins. Caloric value of vegetables and fruits. Mineral tables. Vegetables and fruits highest in minerals. Food classes. Pot liquors and fruit juices. Dry yellow soybeans are listed among the best sources of vitamins B-1, and E, and the single best source of vitamin G. They are a rich source of the minerals calcium, and an excellent source of protein. Green soybeans are an excellent source of vitamins A, B-1, and G, a good source of the minerals calcium, phosphorus, iron, and a good source of protein (p. 44-50).

In Part III, the section on vegetables contains a subsection on beans (p. 81-87), which includes "Soybeans, green-shell. Health factors: "Practically a 'life' staple in Oriental countries where meat is scarce. Protein in the diet supplied by soybeans; contain all essential amino-acid constituents of animal *proteins*, and, in some instances, have twice the quantity. Soybeans used to replace all various products of the cow: meat, milk, butter, and cheese.

"Soybean milk similar in appearance and properties to animal milk. By certain processes, some of protein may be precipitated from it, forming a gray-white curd. This protein comparable to casein (the protein of animal milk); has been commercialized in form of powder which may be used in special feeding cases.

"Soybean oil more similar to butter in Vitamin A content than any other vegetable fat. Soybean flour or meal mixed with its proper constituents not only can be made into various types of bread and confections, but is today used in invalid and infant dietetics.

"Soybeans not so well known to Americans as they justly should be. Green-shell soybeans not readily available, although their cultivation is being encouraged.

"Excellent source of Vitamin A, especially the varieties that are deepest green in color. Also excellent source of Vitamins B-1 and G. Can be relied upon as a good source of essential minerals, calcium, phosphorus and iron.

"Alkaline-ash. Should not be used on soft diets unless puréed, as high in roughage. Comparatively high in calorie content, but only 6 to 12 per cent of their carbohydrate is available to the body. Starch makes up a very small part of total carbohydrate; hence soybeans may be used occasionally by reducers. Soybean meal is used in preparing breadstuffs sufficiently reduced in starch content to be used by diabetics." Also discusses: Selection and care. Preparation. Basic method of cooking. Similar information is given under "Soybeans, dried," which are better known in the USA than green-shell soybeans.

Chapter 2, titled "Different foods do different things," contains one of the many interesting stories about the history of nutrition. "Hippocrates believed and taught that all foods served the *same purpose*, all contained a basic nourishment which he called the 'universal aliment.' Some foods, he taught, had more of the universal aliment than others, but insofar as a choice of foods was concerned, the only necessity was to eat enough foods containing the universal aliment, and all would be well.

"For almost 2300 years, physicians and laymen believed implicitly in this idea... Hippocrates' theory was accepted blindly, even by top-ranking scientists, until little more than a century ago. The few chemists who began to question it then were afraid to oppose authority and state their misgivings. Even when undeniable proof was finally presented that there was more than one kind of nourishment in foods, the great majority of physicians and scientists were unwilling to depart from the idea of Hippocrates. Those who believed that different foods have different purposes were called fools, fanatics, faddists and worse!"

As recently as 30 years ago [1910] the universal aliment idea "was so 'respectable' that 'rebels' like my father, who challenged it, felt the full weight of scientific scorn.

"The first wedge was driven in Hippocrates' theory a little over 150 years ago. In the late 1700's, a brilliant French scientists named Antoine-Laurent Lavoisier proved that the food you eat is gently burned (oxidized) in your body with the help of oxygen contained in the air you breathe into your lungs. He proved that *certain parts* of foods provide the body heat. Lavoisier, and a colleague by the name of Pierre-Simon Laplace, even developed a method by which the heat-producing value of foods could be measured.

"Later, an American by the name of Ben Thomson devised a unit of measurement for the heat which food produces in the body. This unit was called a *calorie*–the very same calorie that overweight people have been reckoning with ever since."

"Once the important role played by food in creating body heat was understood, scientific circles began to talk of a food's value only in terms of its calorie content, its heat-producing potentialities. The calorie became a tyrant; it was to rule most physicians and dietitians until the War of 1914.

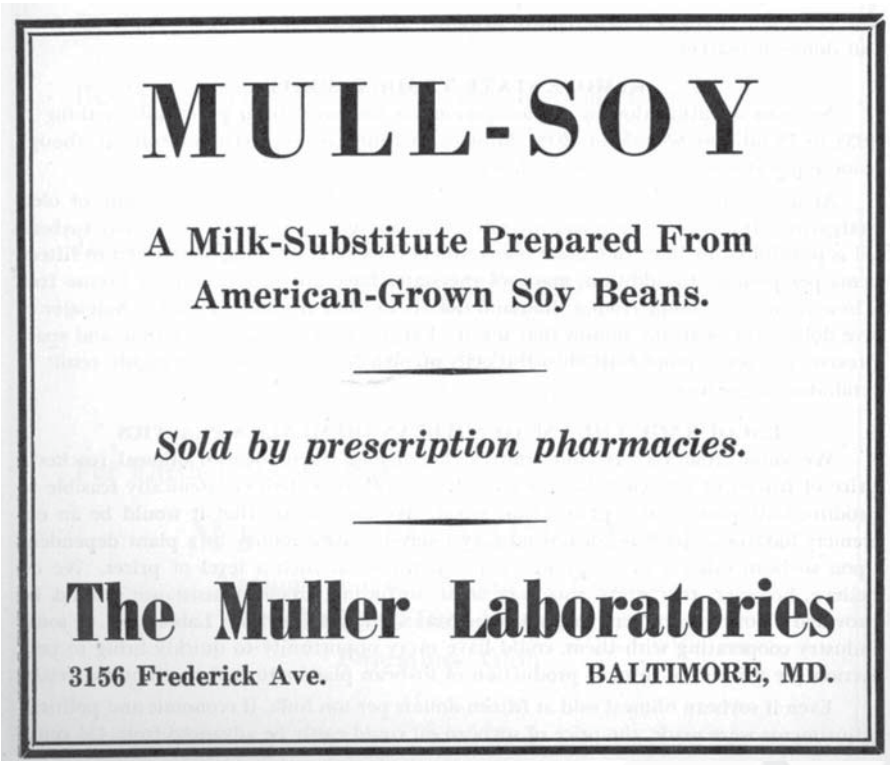
"Lard and butter, with approximately 250 calories per ounce, became premium foods. Carrots, spinach, onions and other vegetables which have a low calorie content, sank to uncharted depths in scientific esteem. Sugar (approximately 120 calories per ounce) was a 'wonderful' food; ready-to-eat cereals (120 calories per ounce) became the 'finest nourishment' anyone could partake of!"

On the inside rear cover is a description of many "Food & Health Guides" by the Lindlahrs. The rear cover shows that in March 1941 this book was the No. 3 best seller nationwide in the category "General non-fiction."

A portrait photo on the inside front cover shows Victor Lindlahr. For the past 10 years he has been a lecturer on health and nutrition, with a radio program broadcast by stations nationwide. He is also the author of: *The Guide to Balanced Health. Natural Way to Health. Eat and Reduce. Seven Day Reducing Diet. The Lindlahr Vitamin Cookbook. How to Win and Keep Health with Foods.* Address: Editor, Journal of Living, 1819 Broadway, New York City. President, National Nutrition Society, Inc., New York.

1175. Muller Laboratories (The). 1940. Mull-Soy. A milk substitute prepared from American-grown soybeans (Ad). *Proceedings of the American Soybean Association* p. 18.
• ***Summary:*** A ½-page ad (see next page) with no graphics. "Sold by prescription pharmacies." Address: 3156 Frederick Ave., Baltimore, Maryland.

1176. Fan, Ch'uan; Ch'en, Wu-min. 1940. Variations in the



composition of soybean "milk." *Chinese Medical Journal* 58(4):479-82. Oct. [7 ref]

• ***Summary:*** In China soybean milk is usually prepared as a liquid, but it has also been prepared in the powder or meal form. It has been used in the Chinese diet for centuries. The diet kitchen in the authors' hospital has been making soybean "milk" for some time for the use of public patients in the adult wards. After the soybeans are ground with water, either immediately or after standing, the emulsion is strained through a cloth then boiled for 15 minutes. Even when soybean milk is made using the same procedure under strict supervision, the composition (specific gravity, fat, and nitrogen content) "may vary independently and significantly within a wide range." This made it difficult to study the effect of other variables on the composition. The other variables were: (1) The temperature at which the soybeans were soaked (room temperature or refrigerated); (2) Whether the soybeans were soaked in plain water or salt water (0.5% solution of sodium chloride); (3) The interval between grinding and straining (immediate or 3 hours); (4) The use of different straining techniques; (5) The effect of repeated grinding of the residue [okara] so that less solid matter would be strained off. Soymilk with the highest nitrogen (protein) content resulted when the soybeans were soak overnight in plain water under refrigeration, salt water was added after grinding, and straining took place 3 hours after grinding. But the effect of uncontrollable factors made the results inconclusive. Address: Div. of Pediatrics, Dep. of Medicine, Peiping Union Medical College, Peiping, China.

1177. McBride, Gordon W. 1940. What's happening with soybeans? *Food Industries* 12(10):55-57. Oct.

• ***Summary:*** "Greatly increased production, with accompanying increase in soybean oil output and wider utilization of other soybean products, is influencing all food industries." Discusses, with many statistics, the utilization of soybeans in the USA, including the amount used for oil (crude and refined; nonfood and food), meal, industrial proteins, and foods. An interesting table on page 56 states that the following foods are made from soybean meal: bean powder, bean curd, soy sauce, soy milk, breakfast food, invalid foods, soy flour, infant foods, ice cream, baked goods, macaroni, and sausage. Whole soybeans are used to make sprouts, cooked beans, soy sauce, confections, breakfast foods, meat substitutes, and coffee substitutes. Either whole soybeans or soy flour are used to make "fresh vegetable milk," which can be further processed to make condensed milk, dried milk, confections, cheese, or casein.

"In addition to the increasing quantities of soybeans that are brought to the market as a fresh green vegetable, larger quantities of the green beans are being canned each year. One unofficial estimate placed the 1939 pack at 15,000 cases (24 one-pound cans each)."

A photo shows the soybean products plant of Archer-Daniels-Midland Co. recently erected at Decatur, Illinois. Address: Chemical Engineer, Washington, DC.

1178. *Ohio Farmer.* 1940. Now its soybean milk! This and other foods produced by new Ohio plant. 186(11):10. Nov. 30. Whole No. 4606.

• ***Summary:*** About the work of Dr. Harry W. Miller (of Ohio and China) with soymilk. Today, because of the Japanese invasion of Shanghai, there now stands in Mt. Vernon, Ohio, a plant producing soybean milk, powder, and a number of products from the edible soybean. The head of this company, International Nutrition Laboratory, is Dr. H.W. Miller, who was born in Miami County, Ohio, and educated as a surgeon. For many years he was head surgeon in an American mission hospital in China. During this time he saw the need for milk and other dairy products in China; they were unavailable to most people due to the high cost and short supply. So he and his associates started a plant in Shanghai for the production of soybean milk. In 1937, at the time of the Japanese invasion, they had 15 delivery boys going out each day on bicycles to deliver the soybean milk to thousands of

customers.

When Japanese bombs destroyed the plant in 1937, Dr. Miller decided to relocate near Mt. Vernon, in Knox County, Ohio. He and his sons built the plant, and also designed and built much of the equipment in it. According to Dr. Miller, soybean milk "is more quickly assimilated by the body than animal milk, it gives a quick recovery from exhaustion and fatigue, and is especially desirable as a food for infants and invalids. The liquid and powdered soybean milk produced in this plant is sold to doctors and hospitals all over the United States..." The steps in the process are described. They also make Mien Jing, based on wheat gluten, to which are added fresh vegetables and soya sauce to make a nutritious food with a meat-like flavor.

"During the past summer this plant also packed a quantity of edible soybeans. These were canned, both as green beans, and dried beans with tomato sauce added. Another product is a soybean flour..."

Some of the edible soybeans used in this plant were grown on the farm run by Dr. Miller near Mt. Vernon and by farmers in the neighborhood. However it has been necessary to import a large portion of the soybeans from other states.

Dr. Miller's organization is presently establishing another plant for the production of soybean milk in the Philippines. Moreover, 2,000 pounds of powdered soybean milk were recently shipped to China from Mt. Vernon.

Photos show: (1) Dr. Harry Miller, seated at a desk in a coat and tie, examining samples of edible varieties of soybeans. (2) The plant of the International Nutrition Laboratory near Mt. Vernon, Ohio. (3) A worker inspecting a can of edible soybeans, which are packed in cans and labeled, ready to ship to all parts of the USA.

1179. **Product Name:** Soya Malt, Soya Cocoa Malt, Soya Cocoanut, Soya Banana.
Manufacturer's Name: Penna Soya Products.
Manufacturer's Address: Williamsport, Pennsylvania.
Date of Introduction: 1940. November.
Wt/Vol., Packaging, Price: 8 oz can.
New Product–Documentation: House of Better Living. 1940. Nov. p. 4. 8 oz. can for $0.43, $0.23, $0.23, and $0.30 respectively; Rosenberg's Original Health Food Store. 1940. Catalog of Health Foods... p. 38. "Soy Foods (Penna Soya Products): Soy Malt, Chocolate Flavor. 16 oz. $0.35."

USDA Bureau of Plant Industry. Div. of Forage Crops and Diseases. 1942. Firms manufacturing or handling soybean food products. p. 3. This company is listed as making or handling 18 soy products, including "malted products, and soy milk."

1180. **Product Name:** Creamee Soy Best (Soy Milk Powder) [Plain, or Sweetened].
Manufacturer's Name: Penna Soya Products.
Manufacturer's Address: Williamsport, Pennsylvania.
Date of Introduction: 1940. November.
New Product–Documentation: House of Better Living. 1940. Nov. p. 4. Soya Milk Powder, plain or unsweetened. 1 lb can for $0.25; Rosenberg's Original Health Food Store. 1940. Catalog of Health Foods... p. 38. "Soy Foods (Penna Soya Products): Creamee Soy Best (soy milk powder). 1 lb. $0.40."

1181. Read, Bernard E.; Wagner, W. 1940. Shanghai vegetables. *China Journal* (*The*) 33(5):206-20. Nov.; 33(6):259-71. Dec.
• ***Summary:*** In the "Science" department, the Introduction begins: "Recent advances in the science of nutrition show the great need for more so called Protective Foods in the diet. This term refers to those things which are rich in essential vitamins and minerals."

In section 2, "The Legumes" (p. 210+), the first two entries are: (1) The soybean. Latin names. Chinese name: (Cc = Chinese characters given), Ta Dou. "The yellow, black and green varieties are common in China and marketed from Manchuria, Tsingtao and Shanghai. The young soybean in the pod is a common article of diet in Shanghai, Chinese name, Cc. Shanghai: *Mau Deu;* Peking, *Mao tou.* Followed by: season, price, nutritive value, and a recipe.

(2) Soybean sprouts. Chinese name, Cc. Shanghai: *Waung Deu Nga;* Peking, *Huang Tou Ya.* Followed by: season, price, how to make, nutritive value, and serving suggestions.

"There are very many other soybean preparations of high nutritional value well worth adding to the diet. Soybean sauce (soy) with added spices is the basis of such things as Worcester [Worcestershire] sauce. Beancurd is really a king of junket containing good digestible protein, it can be added to soups or stews. Made fresh daily... A dry cake is made [pressed tofu], also spiced, pickled, fried and fermented. The latter is just like a kind of strong cheese." Soybean milk is made by "grinding the [soy] bean with water, one part of bean to about 9 of water.

Photos (on unnumbered pages, against a black background, with a small cm ruler show): (1) Four young soybean pods with beans inside. Four soybean sprouts 8-10 cm long.

Also discusses many other edible Chinese legumes. Address: 1. Henry Lester Inst. of Medical Research; 2. Public Health Dep., Shanghai Municipal Council.

1182. *Soybean Digest.* 1940. Soybeans' traveling emissary... 1(1):5. Nov.
• ***Summary:*** A photo shows a large, three panel traveling exhibit that will be shown, by request, during November in the first floor foyer of the United States Department of Agriculture Building in Washington, DC. The exhibit was prepared for the American Soybean Association by the agricultural department of the Pennsylvania Railroad

with cooperation from the NSPA and the National Farm Chemurgic Council. The three panels are titled Farm, Industry, and Home, respectively. The display, debuted at the ASA meetings in Dearborn, Michigan on Aug. 18, 19, and 20, then went to several state fairs, and is now on the first floor foyer of the USDA building in Washington, DC. The industrial panel shows various paints, varnishes, and auto accessories. In the center of the third panel (Home) "is a Pennsylvania Railroad Dining Car finished inside and out with soybean oil and varnish, illustrating how this farm crop enters into the daily life of the traveling public"

"Flour for various uses, cooking and salad oils, nut butter, soy spread, wafers, nuts, macaroni, spaghetti, bread and cookies, together with soy milk, chocolate drink, coffee substitute, candy coated soy puffs are a few of the uses in which soybeans are prepared for human consumption."

1183. Battle Creek Food Company. 1940. Authorized dealer price list. Battle Creek, Michigan. 1 p. *
• ***Summary:*** Dr. John Harvey Kellogg was particularly interested in the nutritional use of the soybean in dietetic diets. In his 1940 price list, the following soy products are listed: Soy Beans, Cooked (10 oz cans). Soy Beans, Green (1 lb, 3 oz can). Soy Gluten Wafers (3½ oz). Soy Flour (1 lb or 4 lb). Soy Gluten Bread (in tin). Soy Kee (16 oz). Soy Milk, Condensed (10 oz tin). Soy Spread (8 oz). Address: Battle Creek, Michigan.

1184. **Product Name:** Miller's Soyalac Soya Milk [Spray-Dried, All-Purpose Flavor; Liquid, All-Purpose, or Chocolate].
Manufacturer's Name: International Nutrition Laboratory.
Manufacturer's Address: Mt. Vernon, Ohio.
Date of Introduction: 1940.
Ingredients: Water, sugar, soya oil, salt, vitamin D, calcium, soya beans.
Wt/Vol., Packaging, Price: 1 pint 4 oz can.
How Stored: Shelf stable.
Nutrition: 3.4% protein, 3% fats, 5.2% carbohydrates. 20 calories per liquid ounce.
New Product–Documentation: Label, 4.5 by 11 inches. Contents: 1 pt. 4 oz. "The Vegetable Food Drink." 3.4% protein.

USDA War Food Administration, Food Distribution Administration. Grain Products Branch. 1943. Dec. "Soya products distribution." p. 5. International Nutrition Laboratory / Miller's Soya Foods makes SoyaLac, Chocolate SoyaLac, and Soy-A-Malt. "Distribution scattered throughout the United States by Health Stores."

Ad in *Soybean Digest.* 1945. Sept. p. 40. Shows 3 large bottles of "Soyalac: A spray-dried infant food." A photo of an infant appears on the front of each bottle.

Soybean Blue Book. 1947. p. 72; 1948. p. 84. "Soyalac. Soybean milk, powdered and liquid." Also listed in 1960, 1965.

1185. **Product Name:** Miller's Soy-A-Malt [Spray Dried: Natural Malt, or Chocolate flavors].
Manufacturer's Name: International Nutrition Laboratory.
Manufacturer's Address: Mt. Vernon, Ohio.
Date of Introduction: 1940.
Wt/Vol., Packaging, Price: 1 lb can.
How Stored: Shelf stable.
New Product–Documentation: International Nutrition Laboratory. 1940? "Miller's Soy Bean Foods." Undated 12-page leaflet. 2. Miller's Soy-A-Malt: A spray-dried powder available in both natural and chocolate flavors, packed in 1-pound cans, which make 1 gallon of "vegetable milk."

Ad in *Soybean Digest.* 1941. Sept. p. 17. "New items for the table: Soy products by Miller." "Soy-A-Malt: A delicious wholesome soy-malted milk–a pure vegetable beverage containing all and more of the food qualities of milk."

Ad in Leaflet titled "Optimal Nutrition in Infant Feeding." Undated. "Soy-A-Malt is put out under registered trade mark No. 390909 U.S. Patent Offices."

USDA War Food Administration, Food Distribution Administration. Grain Products Branch. 1943. Dec. "Soya products distribution." p. 5. International Nutrition Laboratory / Miller's Soya Foods makes SoyaLac, Chocolate SoyaLac, and Soy-A-Malt. "Distribution scattered throughout the United States by Health Stores."

1186. **Product Name:** SoyaLac (Powdered Soymilk Infant Formula). Renamed Miller's Soyalac by Sept. 1944.
Manufacturer's Name: International Nutrition Laboratory.
Manufacturer's Address: 13246 Wooster Rd., Mt. Vernon, Ohio.
Date of Introduction: 1940.
Wt/Vol., Packaging, Price: Powdered.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Ad in *Soybean Digest.* 1941. Sept. p. 17. "New items for the table: Soy products by Miller." "SOYALAC: Spray-dried Infant Food–the perfect formula for the new-born infant–especially fine for malnutrition and allergic conditions."

Ad in *Soybean Digest.* 1944. Sept. p. 61. "Meet the Vegetable Cow." International Nutrition Laboratory now makes (1) Miller's Soyalac (powdered milk), plain, malted, or chocolate; and (2) Miller's Soyalac (soya milk), liquid, natural, or chocolate.

Shurtleff. 1981. Sept. Dr. Harry W. Miller: History of his work with soyfoods. Unpublished manuscript. Powdered Soya Lac was first produced in 1940.

Talk with Lillian Miller, wife of Clarence Miller, Dr. Miller's eldest son. 1994. March 28. She thinks Dr. Miller's first soymilk infant formula was sold in powdered form. After introducing a liquid for adults, Dr. Miller built equipment that would spray dry the liquid.

1187. **Product Name:** Miller's Soya Lac. Renamed Soyalac by 1952.
Manufacturer's Name: International Nutrition Products, Inc.
Manufacturer's Address: 41 Nagathan St., Manila, Philippines. Phone: 6-62-71.
Date of Introduction: 1940.
New Product–Documentation: Ad in *Manila Tribune*. 1941. Aug.

Ad in *A Half Century of Philippine Agriculture.* Manila, Philippines: Liwayway Publishing. p. 433. "Soyalac. The wonder vegetable milk. Processed by International Nutrition Products, Inc., 41 Nagathan St., Manila. Tel. 6-62-71. Note: This is the earliest reference seen for the company's name, address, and phone number. They could have been different in 1941. Note also that the product is now named Soyalac.

Shurtleff & Aoyagi. Soymilk Industry & Market. p. 106-07. Made at the first soymilk plant in the Philippines, set up by Dr. Harry Miller and Mr. Paul Sycip.

Note: This is the earliest known commercial soy product made in the Philippines.

1188. Carqué, Otto. 1940. Vital facts about foods: A guide to health and longevity with 200 wholesome recipes and menus and 250 complete analyses of foods. 4th ed. Glendale, California: Natural Brands, Inc. 239 p. 23 cm. Revisions and supplements by Mrs. Lillian R. Carqué. [20+* ref]
• ***Summary:*** This manual of food reform discusses the importance of a simple vegetarian diet, fresh air, pure water, exercise, and rest. Also discusses acid and alkaline foods, the treatment of disease, and food preparation. The author lived 1867-1935.

The nutritional value of soy beans is discussed briefly on pages 113, 145, 153, 162, and 174. The section titled "The Soy Bean, a Remarkable Food" (p. 176-78) describes and discusses boiled soy beans, soy bean milk, tofu, soy sauce, and soy bean sprouts; recipes for Baked soy beans, Soy bean loaf, and Soy bean bread are given. The content of this section is slightly different from that of the 1933 edition.

A table (p. 221) gives the average chemical composition of various legumes, including soy beans.

Note: This enlarged 4th edition contains 239 pages, compared with 208 pages in the first 3 editions. The type for the entire book appears to have been reset. Address: Los Angeles.

1189. Mackay, Helen M.M. 1940. Soya bean flour with dried milk: A cheap and efficient substitute for breast milk. *Archives of Disease in Childhood* 15:1-26. Summarized in Soybean Digest, May 1941, p. 8. [45 ref]
• ***Summary:*** Research was conducted on 225 babies in London, but only 150 were available for the final statistical comparison. Of these 150, 48 were fed yolac (a mixture of dried milk and Soyolk whole soya flour), and 102 were controls, 49 of these latter getting iron-containing dried milk with cod-liver oil, and 53 the same dried milk and iron with vitamin D and no supplement of vitamin A. Over 75% of the children were under 3 months of age when first seen. All children participated for at least 5 weeks, and the average time was 9 months.

Note: This is the 3rd earliest document seen (Aug. 2013) that contains the word "soymilk," spelled as one word (see pages 2 and 8). Address: M.D., F.R.C.P., Member of the Staff of the Medical Research Council, and Physician to the Queen's Hospital for Children, London.

1190. Mariposa. 1940. Hollywood glamour cook book. Miami, Florida: Glamour Publications. Distributed by M. Barrows & Co. xviii + 427 p. Portrait. No index. 21 x 16 cm. [3 ref]
• ***Summary:*** The author presents herself as a glamour girl, who lives in Miami, Florida. She is "Your 'Mystic Pot, with herbs and spice. I charm your meals and make them nice." "Foreword: You must have wondered how the Movie Stars keep so glamorous, vivacious, young-looking and slender, they seem more like gods and goddesses than real people. No wonder they are fairly worshipped by the Movie Fans! This book will disclose to you the beauty secrets of the Movie Stars..." The key is a healthy diet and herbs.

Recommended foods: Whole wheat and soy bean spaghetti, La Choy Soy Sauce and La Choy Molasses Sauce, Soy bean crackers, goat's milk (not cow's milk), all seafoods, fish, poultry, rabbit, venison, lamb, frogs' legs. Foods to avoid: White bread, white flour, white sugar, white rice, spaghetti etc, made of white flour, beef, veal, pork, lard, suet, grease, sulphur dried fruits, table salt ("free running," iodized, but "bag salt" is OK), most soda fountain drinks, "pop" or any drink put up with carbonated water, gassed, dyed, or faked foods. Soy-related: "Legumes" include soy beans (p. xi). Soy honey bread (with soy bean flour and soy milk, p. 7). Soy honey rolls (p. 8). Soy corn sticks (with soy bean flour, p. 22). Soy vegetable flour sticks (p. 23). Soy waffles (p. 24). Soy [pie] crust (p. 35-36). Soy short cake (p. 52). To make soy bean milk and corn milk (from soy bean flour, p. 78-79). Soy milk and carrot juice (p. 79). Soy bean coffee (p. 83). Coffee substitutes (incl. soy, p. 85). Canapes d'amour (with soy bean bread, p. 102). To cook Soy Sea Shells or Soy Macaroni (p. 122). Soy kidney pie (p. 132). Soy macaroni or spaghetti (with soy or Savita Sauce, p. 200). Soy beans–highlights (p. 213-14). Soy baked beans (p. 214). Proteins (incl. soy, p. 386-87).

Also discusses: Garbanza pie crust (p. 36, 212). Electric vegetable juicer (p. 68). Importance of alkaline diet (p. 68-69, 238-39, 388-91). A table (p. 101), titled "Raw nut butters," lists 12 types: "Peanut, butternut, lychees, almond, pecans, pignolia nut, pistachio nut, paradise nut, cocoanut, hazelnut, beechnuts, cashew, walnut, chestnut, Brazil nut,

and sesame tahini. Note: These butters are sold at the fancy grocer's or Health Food Stores." Note: This is the earliest English-language document seen (May 2011) that mentions "tahini" or "sesame tahini"–a smooth paste of sesame seeds. According to *Webster's Dictionary,* the word "tahini" comes from the Turkish *tâhin* and was first used in English in about 1899.

Carrot peanut butter canape (p. 101). Mock liverwurst. Vegetarian dinner party (p. 287).

Glamour guide (p. 360-61). Planetary foods and menus (by astrological sign, p. 277-341). Tables showing the best food sources of various vitamins and minerals (p. 365-417).

In the chapter titled "Snacks and Beverages" is a recipe (p. 76-77) for a Date and goat's milk shake, which is "better than any soda treat" and which calls for use of an "electric blender." The recipe for "Orange honey nanny shake" (p. 77) states: "For a more frothy drink, whip with electric blender..." See recipe for soymilk made from soy flour. Recommends buying foods and herbs in health food stores.

In the section titled "Recognition and gratitude" (p. 392) near the end of the book, she thanks "Henry Lindlahr, M.D.," "Otto Carqué, Mausert, M.D.," and many other lesser-known people.

Talk with Akasha Richmond. 2004. June 5. Akasha has been able to find out very little about the author of this book, who she thinks self-published it. Although she lives in Florida, she talks about "glamour girls" and Hollywood. Address: 1265 S.W. 11th St., Miami, Florida.

1191. Matagrin, Am. 1940. La culture du soja: Avec des notions sur l'histoire, l'intérêt économique, la composition, les emplois agricoles, alimentaires et industriels de la fève asiatique [Cultivation of soya: With notes on the history, economic interest, composition, and agricultural, food, and industrial uses of the Asiatic bean]. Chindrieux (Savoie dept.), France: Published by the author. 125 p. 22 cm. [17 ref. Fre]

• ***Summary:*** Contents: Introduction: The soybean and its seed, historical summary of the culture and use of soybeans, economic questions–the soybean worldwide and in France. I. The climatic and agrological preferences of the soybean and its needs for fertilizers (organic, chemical, or microbiological). II. Methods and cultural styles for soybeans: the seed, the plant, and its evolution. III. The soybean harvest: Methods, yields, storage, how to select the seeds. Conclusion: Agricultural, food, medicinal, and industrial uses of soybeans: 1. Agricultural uses: Fertilizer and livestock feed. 2. Food uses (p. 108-18): As a vegetable, sprouts, flour, milk (incl. tofu, condensed milk, and fermented milk), fermented products, roasted (as a coffee substitute), oil (incl. margarine and vegetable butter), lecithin, and edible casein (purified soy protein). 3. Medicinal uses (p. 118). 4. Industrial uses: the oil, soaps, industrial proteins.

Note: Matagrin has written previous books: The industry of chemical products and its workers (1925), In the country of the sun (1927, a novel with Felix Vial), The soap-maker's manual (1938), and The soybean and its industries (1939). Address: Anc. Professeur et Bibliothecaire Scientifique, Conseil en Chimie appliquee, Savoie, France.

1192. Piedallu, André. 1940. Produisons du soja [Let's produce soybeans]. *Gouvernement General de l'Algerie. Direction de la Production Agricole. Documents et Renseignements Agricoles. Bulletin* No. 19. 4 p. [Fre]

• ***Summary:*** Describes the basics of cultivation: Soil, culture, fertilization, sowing for forage or seeds, time of planting, harvest, threshing, yield (forage and seeds), composition of the seeds compared with wheat and beef. Products made from soybeans: Flour for diabetics, oil, lecithin, paints and varnishes, soymilk, tofu, artificial wool, soybean cake for feeds, soy sprouts, roasted soy coffee that is popular in Switzerland and Italy, soy oil mixed with hydrogenated fish oils is used in Germany to make margarines. Address: Pharmacien Lieutenant-Colonel, Docteur es-Sciences, Ingenieur Chimiste.

1193. Sampaio, Sebastiao C. 1940. Soja [Soybeans]. Sao Paulo, Brazil: Tipografia Brasil, Rothschild Loureiro & Cia, Ltda. 43 p. Secretaria da Agricultura, Industria e Comercio do Estado de Sao Paulo. [20 ref. Por]

• ***Summary:*** Contents: Introduction: Soya. Botanical description. Varieties. Composition of the plant. Culture/cultivation. Enemies and pests. Improvement of the seeds: Improving the oil (*óleo dos graos de soja*), improving the cake and flour, other improvements. Commerce and trade.

This general book draws heavily on U.S. publications, including Piper and Morse, 1923. The section titled "other improvements" (p. 38-39) briefly mentions many food uses of soybeans, including vegetable-type soybeans (Easycook and Hahto), green vegetable soybeans (*Quando verdes... elas constituem ótimo legume verde = when green... they constitute an excellent green vegetable*), sprouted seeds (*sementes germinadas*), soy flour, soymilk (*leite de soja*), soy casein, soy cheese (*queijos e requeijoes*) [tofu], shoyu, and miso. The Japanese colony in Sao Paulo makes shoyu in commercial quantities.

Note 1. This is the earliest Portuguese-language document seen (June 2009) that mentions green vegetable soybeans, which it describes as shown above.

Note 2. This is the earliest Portuguese-language document seen (Sept. 2006) that uses the term *óleo dos graos de soja* to refer to soybean oil.

Note 3. This is the earliest Portuguese-language document seen (Jan. 2013) that mentions sprouted soybeans, which it calls *sementes germinadas.*

Note 4. This is the earliest Portuguese-language document seen (April 2013) that uses the term *queijos e*

requeijoes to refer to tofu. Address: 3a Seccao Tecnica do Departamento do Fomento da Producao Vegetal, Sao Paulo, Brazil.

1194. White, Julius Gilbert. 1940. Abundant health: A digest of the "Learn-how-to-be-well" lectures. Madison College, Tennessee: Published by the author. ix + 317 p. Illust. 28 cm. [soy ref]

• ***Summary:*** Advocates vegetarian diet. Note that Madison College is a Seventh-day Adventist college and sanitarium. One section, titled "The Soy Bean–The Wonder Food," introduces the many benefits of soybeans, discusses their low cost, and describes (in fairly specific terms, but without recipes), how to use soybeans in baking, as cooked or canned beans, in commercial "meat substitutes," as soybean milk (good for those with allergies to cow's milk), as cheese (tofu), as greens (soybean sprouts), or in commercial "coffee substitutes." Note: The author lived 1878-1955. Address: Madison, Tennessee.

1195. Chéron, E.P. 1940? Le Soja: Culture et récoltes. Ses applications alimentaires, industrielles et thérapeutiques. Son avenir. Recettes gastronomiques et culinaires. 5e édition. Provendes au Soja [The soybean: Cultivation and harvest. Its food, industrial and therapeutic applications. Its future. Gastronomic and culinary recipes. Uses as fodder]. Sanguilles, Indre département, France: Comptoir Agricole de Centre. 48 p. Undated. Illust. (many photos). No index. 21 cm. [10 ref. Fre]

• ***Summary:*** Contents: Introduction. 1. Study of the botany and composition of the plant: its cultivation and vegetation.

2. Study of the seed; food and industrial applications. Soymilk, condensed and powdered soymilk, fermented soymilk (kefir, yogurt), okara (*résidus de laiterie de Soja*), Ajimoto [sic, Ajinomoto], soy cheeses / tofu (*fromages de soja*), applications of soy legumine in industry: vegetable wool and rayon, soy oil, sterol, soy flour, soy germ flour (farine de germe de Soja), soy coffee (Soféрur / Sofepur, Grillsoy), feed for animals, soymilk for animals, soybeans as feed for adult animals, conclusion. Appendix to the first edition: the soybean, a complete food, a medicinal food, a food for infants. Recipes for soy cuisine. Soy industries: making soy oil, lecithin, plastic materials, soybean cake: refining, neutralization, deodorization, decoloration, properties of soy oil, use of soy oil in France. The by-products of soy oil: lecithin, its properties, food uses, industrial uses. Soy casein, substitute textiles and plastic materials based on soy. Use of soy for raising young animals.

Note 1. A previous edition may have been titled: *Le Soja: Son histoire, sa culture, ses applications industrielles et alimentaires.*

Note 2. On page 1 the author's enlarged title is given as *Président du Syndicat National des Producteurs, des Amis et des Techniciens du Soja por la propagation du Soja en France et en Afrique du Nord.* Address: Président du Syndicat National des Producteurs de Soja en France et aux Colonies, France.

1196. International Nutrition Laboratory. 1940? Miller's soy bean foods (Brochure). Mt. Vernon, Ohio: International Nutrition Laboratory. 12 panels. Each panel: 19 x 10 cm. Undated.

• ***Summary:*** A description (probably written by Dr. Harry W. Miller) of each of the following foods is given: 1. Miller's Soya Lac: A liquid milk packed in 13 oz. and 30 oz cans. It is available in both natural and chocolate flavors. 2. Miller's Soy-A-Malt: A spray-dried powder available in both natural and chocolate flavors, packed in 1-pound cans, which make 1 gallon of "vegetable milk." 3. Miller's Soya Curd: "This delicate protein food is made by coagulating Miller's Soya Lac with lactic acid and then blending this soft curd with tomato puree, pimento and Soya Sauce. It is a pleasing protein addition to salads, or for spreading crackers and sandwiches."

4. Miller's Mien Jing: Wheat "gluten, or cereal protein, is the basic food element in Miller's Mien Jing. Mien Jing is the Oriental name meaning processed gluten. A high protein wheat flour is washed free of starch, and small slices of the remaining gluten are processed with fresh vegetables and soya sauce, making a highly nutritious food, quite meat-like in taste. This gluten food was first introduced into this country by us, and our Mien Jing, or gluten cutlets, has the genuine flavors that have popularized this food in the Orient... It requires only a little cooking to make Mien Jing into many savory dishes, such as stews, croquettes, entrees, and also Oriental dishes such as Chow Mien and Chop Suey."

5. Miller's Soya Sauce: "Produced in South China where the finest soya sauce is made, insuring a pure and highly concentrated product. It should be used in flavoring all protein dishes where a meat-like flavor is desired." 6. Miller's Soya Loaf: "Made from especially selected high protein edible soya beans, low in fat and carbohydrates. This food will be found to be a very pleasing entree that can be served as it comes from the can, or made into appetizing roasts, pot-pies, sandwiches, and other meat substitute dishes."

7. Miller's Soya Spread: This canned product can facilitate the making of tasty and nutritious sandwiches. 8. Miller's Whole Soya Bean Flour: This flour "is not made from oil extracted 'bean cake,' but fresh selected edible soya beans are ground to produce this rich golden flour. Wheat flour is classed among the acid foods while soya bean flour is strongly alkaline... One part of Soya Flour will neutralize the acidity of four parts of wheat flour." 9. Miller's Green Soya Beans: These delicious canned green beans "are an abundant source of Vitamins A, B, and G, and a splendid source of calcium, phosphorus and iron... rich in protein, they can be

served just as they come from the can. They make a splendid addition to a vegetable salad. They combine well with many of the vegetables in cooking. Surprise your family and friends by serving this new food.

10. Miller's Giant Soya Beans: These soy beans are high in protein (43.18%) and low in fat (18.7%). "Miller's soy beans are processed so that the nutlike flavor is brought out and they are rendered entirely digestible. The eating of the soy bean creates an alkaline reserve so necessary for the healthful functioning of the body." 11. Miller's Soya Beans with Tomato Sauce: Edible soy beans are canned with tomato puree and malt. "This is truly a treat for the picnic lunch."

This brochure contains 8 recipes using Miller's products. Three panels discuss the "Dietetic advantages of the soy bean;" across the bottom is written in large letters "Alkalinize with Miller's Soy Bean Foods." These panels note of the soya bean: "So highly does it stand in the list of foods from the vegetable kingdom that the International Nutrition Laboratory is devoting 95% of its effort to the output of foods made from the soya bean." Edible Soy Beans are a remarkable food, a complete protein with adequate calcium for optimum metabolism, a ready alkalinizer, rich in Lecithin and Cephalin–the nerve foods, and "The only vegetable protein that is biologically able to substitute for animal protein... It is indeed unfortunate that so little interest has been aroused here in America in the culture of the so-called vegetable or edible type of soy beans... The International Nutrition Laboratory uses only these edible beans for canning and food manufacture.

"This institution now located at Mount Vernon, Ohio, first began its work in Shanghai, China, where extensive nutrition experiments were carried out in the feeding of infants, children and adults on soya milk. It operated a Soya Bean Dairy, providing daily milk distribution of plain and chocolate soya milk to thousands of persons. But as this plant was practically demolished during the recent war in the Orient, it was organized again in 1939 in Mount Vernon, Ohio as the International Nutrition Laboratory, and is producing from the edible soya bean all the valuable foods described in this folder."

Another panel describes the "Advantages of vegetable milk." Large letters across the bottom state: "Alkalinize with Miller's soy bean foods."

Note 1. This is the earliest document seen (April 2002) with the term "soy bean foods" in the title.

Note 2. This is the earliest document seen (Aug. 2013) that uses the term "Soy Lac" to refer to a soymilk. Address: Mt. Vernon, Ohio.

1197. **Product Name:** Soyagen (Soymilk for General Use) [Powdered, or Spray Dried].
Manufacturer's Name: International Nutrition Laboratory.
Manufacturer's Address: 13246 Wooster Rd., Mt. Vernon, Ohio.
Date of Introduction: 1941. January.
New Product–Documentation: Raymond S. Moore. 1961. *China Doctor.* p. 185. After developing Soyalac, Dr. Miller developed a different product for adults, which he called Soyagen.

Talk with Raymond C. Kraft. 1989. Oct. 24. He worked for Dr. Miller from Jan. to Sept. 1941. When he started, he thinks he recalls that the company was making Soyagen in both liquid and powdered forms. Note: The year that this product was introduced and the manufacturer's name at that time are not certain.

1198. Holman, Ross L. 1941. Soybeans and college degrees. *Forward magazine* 60(5):5. Feb. 1.
• ***Summary:*** About Madison College, located near Nashville, Tennessee, and their work with soybeans and soyfoods. Reprinted in the *Madison Survey* of March 1983, p. 8.

Madison College has developed a large number of soybean food products and is selling them all over the United States "in such a volume as to net that institution a large amount of the revenue it needs to operate.

"In fact, Madison College is getting almost its entire support from its own 800-acre farm... Nearly all of its 400 students earn their tuition, board, clothes, and all personal expenses by growing these crops and preparing them for use.

"The most interesting of these processing plants is the soybean factory where these beans are manufactured into thirty different food products which, in addition to what are consumed at the college, bring the institution a revenue of $60,000 a year. Among these foods are meat, bread, cheese, breakfast foods, pork and bean products, sweet milk, buttermilk, and coffee... They say that such foods are more nourishing than the meat or vegetable products for which they are substituted.

"Take soybean milk, for instance. You can't tell it from any cow's milk you ever saw, except when you taste it. You may not like the taste, but many consumers prefer it to that drawn from a cow...

"The bread made from soys is baked in loaves of the same size and shape as bread from regular bakeries. This bread is sold in nearly all the grocery stores of Nashville and in other cities. All these soy foods are sold to grocery chains and are consumed from coast to coast...

"Madison College was started 37 years ago by Dr. E.A. Sutherland, who is still its president... The students have not only been working their way through college but have actually built, with their own hands, the 120 buildings in which the institution and its industries are operating. They not only process the soy foods and serve them to the patients of the sanitarium, but they also constructed the factory and sanitarium buildings in which these foods are made and consumed."

Note: Forward magazine is published weekly by the Board of Christian Education of the Presbyterian church,

USA.

1199. *Farmer's Digest* (*Ambler, Pennsylvania*). 1941. Soybean milk! 4(10):28-29. Feb.
• ***Summary:*** About the work of Dr. Harry W. Miller (of Ohio and China) with soymilk. This article is condensed from *The Ohio Farmer* (30 Nov. 1940, Cleveland, Ohio).

1200. Roux, Charles. 1941. Le soja [The soybean]. *Revue Internationale du Soja* 1(1):4-20. Feb. [Fre]
• ***Summary:*** An introduction and overview. Contents: Introduction: Varieties, composition. Soybean cultivation. Feed, food, and industrial uses of soybeans.

The author has recently discovered a way of making petroleum from soybeans (p. 18). Address: Directeur General de l'Association Technique Africaine.

1201. Balzli, Jean. 1941. La culture du soja "magique" et sa contribution au redressement de la France [The cultivation of the "magical" soybean and its contribution to the recovery of France]. *Revue Internationale du Soja* 1(2):41-45. March. Originally published in the "Free Zone" on 17 Sept. 1940 by *L'Eclaireur de Nice et du Sud-Est.* [1 ref. Fre]
• ***Summary:*** Includes a discussion of uses for human foods, including defatted soy flour, soy coffee, soy chocolate, Worcestershire sauce, soymilk, tofu, and soy sprouts. Other uses include lecithin and industrial uses of soy oil and soy proteins.

1202. Pynaert, A. 1941. A propos du Soja en Belgique [Concerning the soybean in the Belgium]. *Revue Internationale du Soja* 1(2):55-60. March. [5 ref. Fre]
• ***Summary:*** After a brief early history of soya in Belgium, the author describes green vegetable soybeans, whole dry soybeans, soy sprouts, soymilk and its residue (okara), and tofu. Address: Directeur du Jardin Colonial de Laeken [Brussels, Belgium].

1203. Roux, Charles. 1941. Le soya [The soybean]. *Revue Internationale des Produits Coloniaux et du Material Colonial* 16(181):8-25. March. [Fre]
• ***Summary:*** Contents: Introduction. Chemical composition. Cultivation. Food and industrial uses of soybeans: Incl. soymilk, tofu, soya casein, soy flour, soy bread, soy oil, soybean cake, green vegetable soybeans, fermented soy condiments (natto, miso, shoyu), roasted soy coffee, industrial uses, petroleum substitute.

Appendix A: Composition of various parts of the soybean plant: (1) Green–stems, leaves, pods. (2). Dry–stems, leaves, pods. (Averages based on analyses by M. Lechartier). (3) Composition of soybean seeds: Whole seeds, cotyledons, embryos, seed coats (based on analyses by the Municipal Laboratory of Paris and the Laboratory of the Biological Society of the Far East {*la Société Biologique d'Extrême-Orient*}).

Appendix B. Composition of the seeds of various soybean varieties by various analysts: Steuf, Pellet, By Steuf: From Hungary, Yellow from Mongolia, From China, Chinese reddish brown. By Pellet: From China, from Hungary, from Etampes. By Giljaransky [Giliaranskii, Giljarinsky, Giljaranskii, Giljaranski, Gilyaranskii, Gilyaranskii]: Yellow from Russia, Yellow from China, Yellow from Japan, Black from China, Black from Japan, Green from Japan. By Lechartier: From Etampes, Etampes dry, Black, Black dry. By Jardin Colonial: Soja from Laos, Soja from Tonkin, Soja from China. By Schroeder: Reddish brown dry, Yellowish brown dry, Tumida pallida yellow. By König: Tumida castanea brown, Tumida astrospermal [sic, atrosperma] black.

Appendix C. (1) Composition of soybeans (maximum and minimum) compared with four other legumes. (2) Composition of soybeans and beef compared. (3) Composition of soy flour and wheat flour compared. Address: Director General of the Association Technique Africaine.

1204. Morgan, Helen. 1941. Jack in the beanstalk. *Scribner's Commentator* 9:82-84. April.
• ***Summary:*** The subtitle reads: "Salad dressing, milk for the baby, varnish, fertilizer, steering wheels for Fords–and profits- all come from the soybean, agriculture's miracle crop."

"Few plants have been subjected to such a thorough dissection in such a short space of time. Recently it's been found that the same protein of soybean, which, when mixed with water, chemicals, and coloring, makes the steering wheels and horn buttons for Henry Ford's cars, can also be whipped into a lofty meringue. Commercial bakers may use it instead of expensive egg-white."

Note 2. This is the 2nd earliest document seen (Aug. 2002) that uses the term "miracle crop" in connection with soybeans.

1205. *Calcutta Municipal Gazette.* 1941. ABC of soya bean. 34(2):49. May 31. *
• ***Summary:*** This article is reprinted in Dr. K.M. Nadkarni's book *Indian Materia Medica* (Vol. 1, p. 1145-48). The title of each paragraph starts with a different letter of the alphabet. The many benefits of soya beans are discussed. Soybean milk, flour, oil, and lecithin are mentioned.

1206. Concepcion, Isabelo. 1941. Significance of soy bean in the dietary of Filipinos. *Acta Medica Philippina* 2(4):479-95. April/June. Read before the Sixth Pacific Science Congress, San Francisco, California, July 24 to Aug. 12, 1939. [28 ref]
• ***Summary:*** Contents: Introduction. Composition and nutritive value. Supplementary value of soy bean (to a rice-based diet). Forms of soy bean used in Philippines: Soy

bean curd or "tokua," fermented bean curd or "tahuri," soy bean curd brain or "tojo" (served with a little thick brown sugar syrup), soybean with shaved ice or "mongo con hielo," soy bean flour, soy bean milk. Deficiencies of Filipino diet. Effects of improper food. The need for a campaign to popularize soy bean products. Conclusions.

"Soy bean is grown in many parts of the Philippines where it is known as 'utao' and also as Chinese 'Balatong.' It is grown in large quantities in Batangas Province. The green pods are harvested in October and November and the dried seeds may be had in bulk in December and January. Just when soy bean was first cultivated in the Philippines is not known. For years casual plantings have been made but it is only in comparatively recent years that the cultivation has been seriously considered as an agricultural industry. Statistics indicate that consumption of soy bean in the Philippines has grown faster than production. They also show a growing appreciation of soy bean in the Philippines."

Soy bean with shaved ice "is a very popular soy bean mixture introduced by the Japanese but now sold in nearly all refreshment parlors all over the Philippines. The preparation consists of a mixture of boiled red mongo and soy bean mixed with cream, brown sugar and ice shavings. This form of soy bean mixture is more nourishing than any other preparation just described on account of its cream and sugar content."

The consumption of soy bean products in the Philippines "does not amount to very much. The reason for this apparent neglect is the general lack of sufficient information. It is desirable that the government should initiate the necessary campaign to inform the people regarding the valuable nutritive properties of soy bean. Although the Bureau of Science since 1931 has been carrying a demonstration campaign to teach the public the different methods of cooking soy bean with the aim of popularizing its use among the masses, its efforts so far have not yielded the expected results. Another reason is the lack of a central body in the Philippines that can coordinate all the nutrition work to be carried out in that country. Furthermore, there is lacking a definite long range policy for the betterment of nutrition...

"The popularization among the masses of soy bean and soy bean products like soy bean curd, soy bean flour, and soy bean milk should be undertaken along with a more intensive campaign about its nutritive value carried on in the different schools all over the Philippines."

Note 1. In section titled "Fermented bean curd or 'Tahuri'" (4 paragraphs and 1 table), the text is a combination of that first presented by Gibbs and Agcaoili (1912) and Orosa (1932). Although the word "fermented" is used here to describe *tahuri* for the first time, no information about a fermentation microorganism or process is given.

Note 2. This is one of the earliest English-language documents seen (Sept. 2006) that uses the term "Soy bean" in a new way–as a singular noun, like corn or wheat, not preceded by "the." Examples: "Soy bean is grown in many parts of the Philippines..." "... campaign to teach the public the different methods of cooking soy bean with the aim of popularizing its use among the masses,..." Address: Dep. of Physiology and Biochemistry, College of Medicine, Univ. of the Philippines.

1207. Morse, W.J. 1941. Shanghaied... a super food. *Soybean Digest.* July. p. 4-5, 10. [10 ref]

• ***Summary:*** The super food is green vegetable soybeans from edible soybeans. "Attempts to secure seed of these food varieties from oriental countries through correspondence met with little success, due to the fact that the edible types were classified under another name than the soybean. During agricultural exploration work in the Orient from 1929 to 1931, many varieties of soybeans were found in Japan and Chosen [Korea] which were used solely as green vegetables or dry edible beans." These varieties have been under test for the past 8-9 years at various agricultural experiment stations throughout the United States.

A table shows 42 "edible varieties of soybeans classified according to maturity." Very early (100 days or less): Agate, Sioux. Early (101-110 days): Bansei, Chusei, Etum, Giant Green, Goku, Kanro, Kanum, Sac, Tastee, Waseda, Yellow Marvel. Medium Early (111-120 days): Fuji, Hakote, Hiro, Hokkaido, Jogun, Kura, Osaya, Sato, Shiro, Sousei, Suru, Toku, Willomi, Wolverine. Medium (121-130 days): Chame, Emperor, Funk Delicious, Illington, Imperial. Medium late (131-140 days): Aoda, Easycook, Hahto, Higan, Rokusun. Late (141 or more days): Green, and Black, Jackson, Jefferson, Nanda, Seminole.

"Most of these edible types have been found to be much superior to the commercial varieties in flavor, texture, and ease of cooking. Moreover, tests have indicated that the flour made from edible types has a better flavor than that made from commercial varieties. Some of the edible types have also been judged to be superior to commercial types in the manufacture of bean milk, roasted beans and other food products...

"One of the most promising uses of edible varieties of soybeans is as a green shelled bean and for this purpose the pods should be picked when the beans have reached the full size but are still green and succulent. The green beans resemble young, tender Lima beans and have a rich, distinctive and delicious flavor... The usual oriental way of cooking green soybeans is to boil the pods in water flavored with soy sauce or salt and serve them to be eaten from the pod."

In America, "Several commercial concerns have canned large packs of green soybeans, which have become quite popular."

Photos show: 1. Soybeans sprouts pushing up out of spherical earthenware pots at a market in East Asia. 2. A woman selling "soybean curd" ("the 'boneless meat' of

millions of Oriental people") in a Korean market. 3. "In place of candy between meals, Japanese children often carry about a small bag of cooked [green] vegetable soybeans, break open the pods and lick the salty beans out with their tongues." 4. Roasted soybeans, which are used extensively in candies in Japan. 5. Portrait of William Morse. 6. Green vegetable soybeans (in the pods on plants, or shelled) being sold in a Korean farmers market. 7. "This Japanese farm girl has just pulled an armful of green vegetable soybean plants to prepare for market." 8. A Korean peddler with a large pack of green vegetable soybeans on his back.

Note: This is the earliest document seen (Aug. 2013) that mentions the soybean varieties Etum, Green and Black, Jackson, Jefferson, Kanum, Sac, Seminole, Tastee, Wolverine, or Yellow Marvel. Address: USDA Bureau of Plant Industry, Washington, DC.

1208. Ukil, A.C. 1941. Soya bean as a component of balanced diet. *Science and Culture* (*Calcutta*) 7(1):49-53. July; 7(2):111-16. Aug. [3 ref]

• ***Summary:*** This article is largely a summary of: Orosa, Maria Y. 1932. "Soybeans as a component of a balanced diet and how to prepare them." *Manila* (*Philippines*) *Bureau of Science, Popular Bulletin* No. 13. 53 p.

It begins: "In view of the interest recently created in the value of the soya bean to make up for the deficiency of protein in the diet of starch-consuming agricultural populations of countries lacking a sufficient supply of high quality proteins like milk, fish, meat and eggs in their diet and in view of its extensive use in China, Japan, the Philippines, U.S.A. and more recently the German army, the following..."

"Although isolated attempts [have been made and] are being made in India to cultivate the bean, no systematic efforts have yet been made to encourage its use on a sufficiently large scale for commercial purposes and to supplement the food resources of the country... Soya bean is not only much more nourishing but has many more uses than *dal."*

Foods discussed (in July) include: Soya-bean flour, soya-bean milk (regular or condensed), coffee made from roasted soya beans, soya bean sprouts (a table shows they are much more nutritious than mung bean sprouts), soya bean oil, soya bean casein, soya bean curd [tofu].

August issue: "Some common foods and their methods of preparation:" Soya sauce (using koji, based on Groff 1919). Soya-bean flour. The cooking of soya beans (immature [green vegetable soybeans] and mature). Some food recipes with soya beans: Of the 22 recipes given, 17 call for boiled whole soya-beans, 2 for roasted soya-beans [dry roasted, soy nuts], one for soya-bean flour (Angel cake), and 3 for soya-bean milk (two puddings and a custard). Address: Member, Sanitary Board, Bengal [India].

1209. *Science News Letter.* 1941. Soybean protein to replace milk casein. 40:89. Aug. 9.

• ***Summary:*** "Soybean protein is scheduled to replace milk casein as paper sizing, as an adhesive in making plywood, as an ingredient in water paint, and in many other industrial uses, chemists of the U.S. Department of Agriculture state. Freeing milk casein from industrial demands will aid national defense as well as the aid-to-Britain program, for casein is the raw material from which cheese is made, and more cheese is one of the prime needs of the food-export program...

"It is estimated that 10,000 tons of soybean protein will be required annually, on the basis of present needs, to make up for casein shortage."

Note. This is the earliest English-language document seen (Aug. 2013) that contains the term "replace milk" or the term "replace milk casein."

1210. *Manila Tribune* (*Philippines*). 1941. Soya-Lac Supplement (Ad). Aug. 16. *

• ***Summary:*** This full-page supplement, including a 5-column ad for Miller's Soya Lac, is devoted to the story of soya milk and the soya bean. The lead article states: "By unbiased laboratory analysis, soya milk has been found to be virtually identical to cow's milk in nutritional elements, and higher, in fact, in protein content." Paul Sycip, a soya milk chemist and a graduate of the University of the Philippines, recently returned from a tour of U.S. soya milk factories. He stayed most of the time with Dr. Harry W. Miller, owner of the patent on soya milk processing.

Another article quotes Rafael Alunan, Philippines Secretary of the Interior, as saying that "The National Land Settlement Administration is already committed to the growing of the soybean on a large scale in the Koronadal Valley and to making soybeans one of the major producing crops."

1211. *Times* (*Morning ed.*) (*Chattanooga, Tennessee*). 1941. The lowly soybean rises. Aug. 29.

• ***Summary:*** "Most people don't know what soybean are. They associate them, rather loosely and vaguely, with cover crops on farm hillsides. Something cows eat, maybe. But the lowly soybean may hold the future of the world health in its little husk.

"Henry Ford has been experimenting with soybeans down on his Ways (Georgia) plantation for many years. He has grown a lot of soybeans and has turned them into plastic things. Mr Ford, it is said, drinks soybean milk. It is healthful.

"Over at the Madison (Tennessee) sanitarium they grow a lot of soybeans, too. The doctors at Madison have found out how to make the soybean look like beefsteak. It not only resembles steak, but it tastes like steak. The soybean is a fine source of protein. So is steak, but the soybean is said to

have steak beaten for the most proteins. The Germans have been using the soybean in their blitzkrieg tactics. The Nazi soldiers have been partly on a soybean diet since the war began."

1212. Liebenthal, Frank; Adolph, William H. 1941. The determination of soybean milk used as an adulteration in cow's milk. *Chinese Medical Journal* 60:174-77. Aug. [4 ref]
• ***Summary:*** Because soybean milk has properties resembling cow's milk, it can be used as an adulterant. Therefore a simple method is needed for measuring if adulteration has occurred, and how much. The basis for this method is the fact that glycinin, the principal protein of the soybean, is a globulin, which under certain conditions is more readily coagulated by sodium chloride than is the casein in cow's milk. The weight of soybean nitrogen in the mixture is directly proportional to the weight of nitrogen found in the coagulum. This rapid method is found to be accurate to ± 2 percent when calculating the percentage of soybean milk used as a coagulant. Address: Dep. of Chemistry, Yenching Univ., Peiping.

1213. LeClerc, J.A. 1941. Re: Cablegram from Dr. C.J. Ferree inquiring about soy milk. Letter to Dr. Charles E. Fearn, Fearn Soy Products Co., 355 West Ontario St., Chicago, Illinois, Sept. 26. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "Dear Dr. Fearn: I am enclosing a copy of a cablegram which was received from Dr. C.J. Ferree inquiring about soy milk... I am also asking the R.E.A. to send you a copy of their recent bulletin on whole wheat flour.

"I want to say right here that I enjoyed meeting you again, and I hope that it may be my pleasure to greet you here in Washington [DC]. Very truly yours... Enclosure." Address: Senior Chemist, Agricultural Chemical Research Div., Bureau of Agricultural Chemistry and Engineering, USDA.

1214. International Nutrition Laboratory. 1941. New items for the table: Soy products by Miller (Ad). *Soybean Digest.* Sept. p. 17.
• ***Summary:*** The three new soy products are: "Soy-A-Malt–A delicious wholesome soy-malted milk–a pure vegetable beverage containing all and more of the food qualities of milk."

"Canned Green Soybeans–Delicious creamed, buttered, or in soups and salads.

"Soyalac–Spray-dried Infant Food–the perfect formula for the newborn infant–especially fine for malnutrition and allergic conditions.

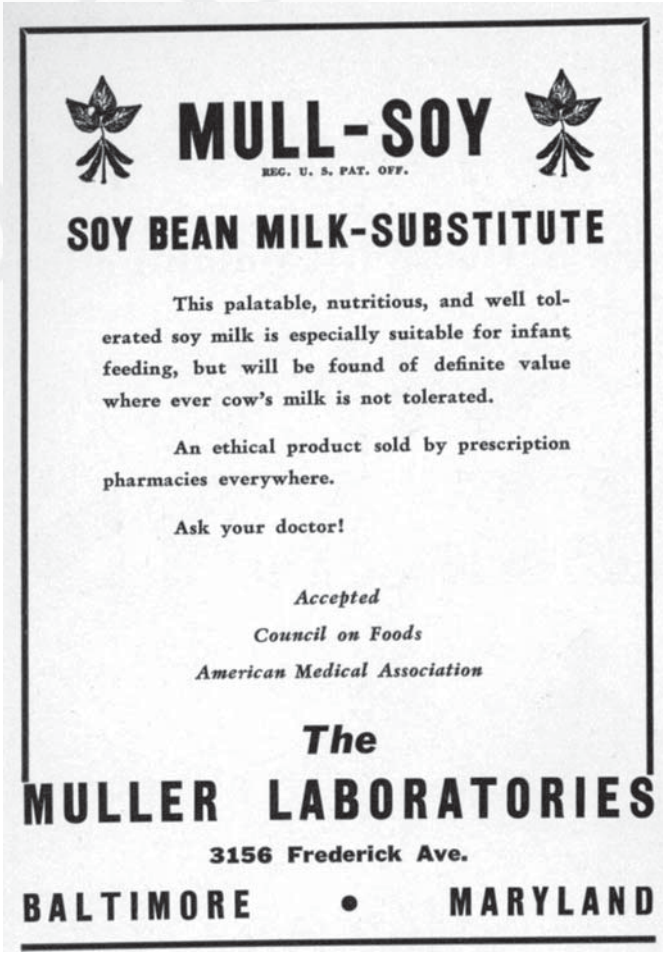
"Available in Health Food Stores everywhere or for further particulars regarding these Miller Soya Foods write International Nutrition Laboratory, Mount Vernon, Ohio."

Note: The meaning of the term "Canned Green Soybeans" is unclear. They were probably canned mature soybeans with green seed coats rather than canned green vegetable soybeans. Address: Mt. Vernon, Ohio.

1215. **Product Name:** Miller's Soyalac Infant Food [Spray-Dried Powder, or Liquid].
Manufacturer's Name: International Nutrition Laboratory.
Manufacturer's Address: Mt. Vernon, Ohio.
Date of Introduction: 1941. September.
Wt/Vol., Packaging, Price: 1 lb can.
New Product–Documentation: Ad in Leaflet titled "Optimal Nutrition in Infant Feeding." Undated. The spray-dried product is packaged in 1-lb cans, "sealed in nitrogen gas to insure shelf wear, 24 cans to the case. It is sold from coast to coast, mainly through health food stores and druggists."

Ad in *Soybean Digest.* 1949. Sep. p. 89. "Soyalac: A Spray Dried Infant Food." A photo shows a can of the Infant Food

1216. Muller Laboratories. 1941. Mull-Soy: Soy bean milk-substitute (Ad). *Soybean Digest.* Sept. p. 28.



• ***Summary:*** This ¼-page, black-and-white ad states: "This palatable, nutritious, and well-tolerated soy milk is especially

suitable for infant feeding, but will be found of definite value where ever cow's milk is not tolerated. An ethical product sold by prescription pharmacies everywhere. Ask your doctor! Accepted: Council on Foods, American Medical Association." Address: 3156 Frederick Ave., Baltimore, Maryland.

1217. Re: Experimental work with plastics, soybean protein fiber, vegetable milk, etc. 1941. Dearborn, Michigan. 2 p. Dec. 4. Unpublished typescript. Courtesy of Henry Ford Museum & Greenfield Village Archives (Dearborn, Michigan). Acc. 285, Henry Ford Office (Correspondence), Box 2453.

• ***Summary:*** "Plastics: Plastics for use in structural applications has occupied much of our attention in the laboratory during the last few years." Formulas for these plastics are generally based on the use of cellulose fibers held together and waterproofed with phenolic resin. Mass product methods have been developed; forming the slurry with a "vacuum mold has shown the most promise. A complete automobile body was made by this method this summer.

"Soybean protein fiber: Our work with the soybean led us a few years ago into the development of a synthetic fiber from the soybean protein. This development has now reached the point where the fiber is suitable for many commercial uses such as the manufacture of felt for mens [sic, men's] hats and for the blending with wool and mohair [goat's hair] for the manufacture of automobile upholstery." The steps for making this fiber are described briefly. "The resulting fibers have will like characteristics and at the present time have about 80% the strength of upholstery grade wool. This procedure has been used on other vegetable proteins such as peanuts and wheat. The peanut protein has given very promising results to date."

"Vegetable milk: Recently a project to develop a vegetable milk to replace cows milk was undertaken. Tests conducted with the Henry Ford Hospital show that rats can live and reproduce for five generations on nothing but a soybean milk. The problem today is to produce a milk that will taste equally as good as cows milk."

"Miscellaneous protein uses: Our work with the soybean protein in the fiber job has led us into other possible uses for the vegetable protein such as a base for water paint, a paper sizing material to substitute for milk casein and as a material for making transparent films. Because of the defense program milk casein is becoming very scarce and expensive and it is imperative that some substitute be found. To date the soybean protein is showing increasing promise of being an excellent substitute. Likewise if the protein is spread in a film under certain conditions a transparent film similar to cellophane can be produced. We are at present experimenting with a small laboratory machine for preparing transparent films from soybean and other vegetable proteins."

Also discusses: Recovery of iron from low grade ores, new sources of magnesium, possible industrial uses of wheat, preservation of fruits and flowers, artificial parts for the human body [prosthesis].

Ford R. Bryan (Jan. 1993) is quite certain that R.H. McCarroll was the author of this document; he "was instructed to keep Carver apprised of Ford research programs. McCarroll was 'Chief Chemist' of the Ford Motor Co., and spokesman for Ford research in general." Address: Dearborn, Michigan.

1218. Savon S., Julio. 1941. La soya: Un vegetal marvilloso [The soybean: A marvelous vegetable]. *Agricultor Venezolano* (*El*) (*Ministerio de Agricultura y Cria, Caracas*) 6(67-68):5-9. Nov/Dec. [Spa]

• ***Summary:*** What is the soybean? It is a legume which was cultivated for more than 5,000 years in the Celestial Empire, which has the important characteristic of being a food of major value as a source of protein, and which can provide a large quantity of derivative foods, forage, and industrial products.

In the Soviet Union there is a Soy Institute (*el Instituto de la Soya*), which is continually experimenting with new soybean varieties.

A table gives the chemical composition of whole soy flour–which contains 38% protein and 22.5% vegetable oil. The soybean is also a source of many other nutrients, including vitamins and minerals. It is also a source of milk, called soymilk (*leche de soya*), which can be made at home from soybeans. There is no danger of tuberculosis in soymilk as there is in cow's milk. Discusses various published experiments feeding soymilk to infants, and gives the chemical composition of Soybee and Sobee, two soy-based infant formulas. There follows one paragraph on each of the following foods: Soy cheese or tofu (*el queso de soya or teo-fu*). Soy sauce or shoyu (*la salsa de soya o shoyu*). Soybean puree (*el puré de soya;* made from dehulled, ground soybeans, boiled for a long time). Soy cottage cheese and butter. Soy oil and lecithin. Soy coffee and chocolate. Soy bread (bread enriched with 10-20% soy flour; good in diabetic diets). Soymilk: A table compares the chemical composition of mother's milk, cow's milk, and soymilk. Address: Dr.

1219. Smith, Robert A. 1941. Re: Experimental work with soy bean milk, etc. Moore [sic, Moir] House Lab., Dearborn, Michigan. 2 p. Courtesy of Henry Ford Museum & Greenfield Village Archives (Dearborn, Michigan). Acc. 285, Henry Ford Office (Correspondence), Box 2453.

• ***Summary:*** "Soy bean milk: A method was developed for the preparation of soy milk that differs from other soy milks on the market. The milk is prepared from purified soy protein, hydrogenated soy oil and corn sugar. It is more like cows milk in appearance, taste and chemical composition than other soy milk products which are made from the whole

bean. It has been tested in the nutrition laboratory of the Ford Hospital in rat feeding tests and when supplemented with the proper vitamins, has produced normal growth when fed exclusively to rats for four generations.

"pH instrument: To aid in the production of soy bean milk and for general laboratory work, a glass electrode pH instrument was designed and constructed. The circuit, which uses for the most part standard radio parts has proven to be accurate, rugged, dependable and easily used."

Also discusses research on water sterilization, fertilizers (synthetic manure vs. composted grass cuttings, and using waste materials), soil analysis, furnace, weeds (fibrous weeds were tested for their fiber strength and retting qualities for use in cellulose plastic). Note: To "ret" is to soak (as flax) to loosen the fiber from the woody tissue. Address: Dearborn, Michigan.

1220. *Soybean Digest.* 1941. German Army Soya Cook Book: Translated by competent authority. Dec. p. 2-6.
• ***Summary:*** This is a summary of the translation of an important book titled *Speisenzusammenstellung unter Mitverwendung von Edelsoja mit Kochanweisungen* (*Formulation of menus using Edelsoja, with recipes*), by Oberkommando der Wehrmacht (German Army High Command), Berlin, 1938.

Contents: Introduction: Problems and possibilities of using full [whole] soya flour, "working" vital elements, carbohydrates lacking, high protein essential, calorie count, excellent for health, economical use of Edelsoja in cooking, the use of Edelsoja in army kitchens (uses of soy flour {a means of making meat go further, a means of economizing on fats, egg substitute, milk substitute for use in cooking, spread for bread, panada}, methods of saving essential foods {savings of meat in minced-meat dishes, savings in fat}), not to be fried.

Resume of recipes as shown in translation: Soups (soups from army canned soups, sweet soups), roasts, roast sliced meat, minced meat dishes, fish dishes, egg dishes, potato and other vegetable dishes, alimentary pastes (macaroni, noodles, etc.), one-dish meals, sauces and gravies, salads and fruit dishes, desserts. Note: No actual recipes are included in this article.

The article begins with a translator's note: "Scientists have devised a method of milling and extracting [removing] the bitter substance from soybeans without removing any of the oil. This produces a yellow flour containing 40 percent protein, 20 percent fat, 27 percent carbohydrates, 5 percent ash, and 8 percent water. This is called full soya flour ('Vollsojamehl') or pure soya ('Edelsoja'). Its composition and use differ widely from cereal flours."

The text states: "A reduction in the use of animal products in the German diet is desirable for economic reasons, as these products must be manufactured from plant materials in a roundabout way by the bodies of the animals themselves. In the process the animals use up the major part of the plant material consumed–about 80 percent–in preserving their own lives."

Full-fat soya flour (*Vollsojamehl*) is also called *Edelsoja.* "This flour is made from the soybean, the cultivation of which in the Reich, and particularly in Austria, is becoming yearly more important... Edelsoja is made from shelled [dehulled] soybeans without the use of chemicals." It has very little taste of its own. The flour itself should not be fried, since it its high lecithin content causes it to burn easily. "In making up the menus, the dishes are to be chosen so that at least 30 gram of Edelsoja (28 gm = 1 ounce) shall be used per person per week."

The recipes: "This extensive complete collection of recipes for use in German Army kitchens contains 270 separate varied recipes, more than 100 of which include small amounts of soya flour and a few contain larger percentages." In general among the recipes 5 grams (roughly one teaspoonful) of Edelsoja are to be mixed into the portion for each person served. A list of the names of all recipes containing soya flour is given.

1221. Blanchard, Marcel. 1941. Le soja en France: Ses possibilités culturales. Ses débouchés industriels. Son intérêt économique [The soybean in France: Its cultural possibilities. Its industrial outlets. Its economic interest]. Paris. Societe d'Editions Geographique, Maritimes et Coloniales, 17 rue Jacob, 6eme. ii + 200 p. Illust. 22 cm. [158 ref. Fre]
• ***Summary:*** Contents: Introduction. Part 1: Cultivation of soya. 1. The soybean. 2. Soybean cultivation worldwide. 3. The varieties of soybeans. 4. The requirements of the soybean crop. 5. Sowing soybeans. 6. The soybean during its vegetative stage. 7. Harvesting soybeans. 8. Mixed cropping and intercropping of soybeans. 9. The enemies and diseases of the soybean.

10. History of soybean cultivation in France (introduction in 1739 at Jardin des Plantes under direction of Buffon, 1850–National Society for Acclimatization, around 1880 MM Vilmorin-Andrieux, M. Pailleux, M.P. Olivier-Lecq, Messrs. Lechartier, Denaiffe, Dr. Le Goff, Boulanger & Dausse, Brioux, Semichon, Carle de Carbonnières, Rouest, de Guerpel).

11. The vegetative cycle of the soybean in France. 12. The soybean at the various French agricultural research centers (*les Centres de Recherches agronomiques français*) including Centre de Versailles, Station de Dijon, de Colmar, de Clermont-Ferrand, d'Antibes. 13. The possibilities of soya in France in terms of its cultivation.

Part 2: The nutritional value of the soybean. 1. The nutritional value of the soybean.

Part 3: Utilization of soya. 1. Soybeans in the farm economy. 3. The soybean in human nutrition and in industry.

Part 4: The soybean from an economic viewpoint. 1.

Commerce and trade in soybeans and soybean products up to Sept. 1939. 2. The present economic possibilities of the soybean in France. Conclusion. Bibliography. 16 illustrations. 8 maps.

The introduction begins: "In a letter written on 15 Jan. 1935, on board the *Chenonceaux* which was sailing toward Shanghai, Li Lu-Ying [sic, Li Yu-ying], president of the National Academy of Peiping (l'Académie Nationale de Péping) offered to furnish us with the translation of important documents in the Chinese, Japanese, and Russian languages concerning all aspects of soya. Let him find here the expression of our gratitude, because he introduced us to a plant, in which there is more interest abroad than in the country of its origin."

The publisher was formerly named Maison Challamel, founded in 1839.

Illustrations show: (1) The branch of a soybean plant, with the flowers and young pods, enlarged 3x. (2) The flower of a soybean plant as it is about to open, enlarged 5x. (3) A soybean branch with mature pods and leaves, enlarged 2x. (4) Two views of a soybean seed with parts labeled. C = chalza (*chalze*). H = hilum (*hile*). M = micropyle (*micropyle*). R = radicle (*radicule*). A-H = hypocotyl axis (germ) (*axe hypocotylé*). G = raphe, bud, leaf-bud (*gemmule*). Enlarged 3x. Note: The raphe is a small grove extending to the chalza, where the integuments were attached to the ovule proper.

(5) Microscopic view of a transverse section of the seedcoat: C.P. = palisade layer of cells (*cellules en palisade*). C.S. = hourglass cells (*cellules en sablier*). P.E. = spongy parenchyma (*parenchyme externe*). C.A. = aleurone layer (*cellules à aleurone*). P.I. = remains of parenchyma cells of endosperm or internal parenchyma (*parenchyme interne*). Enlarged 247x. (6) Cells of the epidermis facing the microscope. Enlarged 460x. (7) Microscopic view of a transverse section of a cotyledon, two views, showing starch grains (*grain d'amidon*), oil droplets (*oléolaste*), and aleurone grains (*grain d'aleurone;* high in protein). (7a) Six large maps of soy in Asia and in Oceania, in North America and in South America, in Europe and in Africa in 1939 (p. 12-36). (8) Nodules containing nitrogen-fixing bacteria on the roots of a soybean plant (p. 66). (9) Planting soybeans; a man walks behind a planter pulled by two horses (p. 84). (10) Cultivating soybeans; a man sits on a cultivator pulled by two horses (p. 89). (11) A field of long, straight, weed-free rows of soybeans in the United States. (12) Drying of soybean hay in shocks. (13) Harvesting soybeans; a man sits on a harvester pulled by two horses. (14) Threshing soybeans using a machine (p. 99). (15) Intercropping of soya and maize. (16) The soybean variety Lisbonne growing at the Central Station for Seed Trials (*Station Central d'Essais d Semences*) (p. 122). (17) Map of France with isotherm lines of July and a line showing the northern limit of maize cultivation (p. 134).

Tables: 1. Asiatic varieties: Chinese and Manchurian varieties, varieties from the British Indies, from the Dutch Indies, Japanese varieties. 2. American varieties: Canadian varieties, U.S. varieties (for each is given: Days to maturity, flower color, seed color, color of the oil, oil content, protein content, weight of 1,000 seeds in grams, seed yield (in kg/ha), yield of hay containing 15% moisture (in kg/ha)). 3. European varieties: German, Austrian, English, Italian, Polish, Czech, Soviet Russian. Mineral needs of the soybean. Yield of two soybean varieties, with and without inoculation. Yield of three soybean varieties with and without inoculation. Germination percentages of 8 French soybean varieties at the Station Centrale d-Essais de Semences in 1938-39 (ranges from 91% to 100%). Variation in the composition of soybean hay at 4 stages of maturity. Weight of seeds vs. straw for 10 U.S. soybean varieties (the straw weighs 1.5 to 2.7 times as much as the seeds). Average yield of soybeans in four countries in 1933 (in kg/ha): Manchuria 1,200. Japan 1,000. Korea 650. China 950. Length of the vegetative cycle at four stations with 10 varieties in France (ranges from 98 to 157 days). Length of the vegetative cycle at four more stations with 16 varieties in France (ranges from 95 to 172 days). 18 varieties that completely matured their seeds at 2 stations in 1921 and in 1922. Oil and protein content of 7 French soybean varieties at Station de Clermont-Ferrand. The seed yield of 10 soybean varieties at the same station. The seed yield of 6 soybean varieties at Station d'Antibes. Six tables (p. 138-42) on the nutritional value of soybeans. Six tables (p. 148-61) on the utilization of soybeans in the farm economy and for feeding animals 2 tables (p. 162-42) on the soybean in the human diet and in industry. 5 tables (p. 175-42) in trade in soybeans and its by-products. 7 tables (p. 181-86) on the present economic possibilities of the soybean in France.

Chinese and Manchurian varieties soybean varieties (p. 48): Chu Yen Tou Erh, Kung-Chu-ling pai Mei, Pai Hoa Tso Tse, Su Li Huang, Ta Li Huang, Tieh Chia, Tou Tse.

Soybean varieties from the British Indies (*des Indes britanniques*) (p. 48): Behrum, Hto-nao, Hto-nang, Mirjanhat, Pekyat-pyin, Pe-Ngypi [pè-ngapi], and Santonauk. Note: According Thompstone & Sawyer (1914), some of the above names are the names of the yellow soybean in different parts of Burma.

Soybean varieties from the Dutch Indies (*des Indes néerlandaises*) (p. 48): Djepoen, Idjo, Ireng, Krawe, Mentik, Poetik, No. 16 sélectionné, No. 17 sélectionné, No. 27 sélectionné, No. 28 sélectionné, No. 29 sélectionné.

One variety from Indochina (p. 48) is Langson.

Soybean varieties from Japan (p. 50): Akasaya, Banseihikarikuro [Bansei hikari kuro], Chinseihikarikuro [Chinsei hikari kuro], Gindaizu [Gin daizu], Ishikarishiro [Ishi kari shiro], Kanro, Kurosaya, Mitsuishidaizu [Mitsuishi daizu], Naktchadaka, Oyachi no. 2, Rankoshi no. 1, Shimoshirazu no. 1 [Shimo shirazu no. 1], Shirokotsubu,

Shirotsurunoko, Tsurunoko, Wasehodaka / Waschodaka, Yoshiokatairin [Yoshio katairin].

Soybean varieties from Canada (p. 50): A.K. (Harrow), Brun du Manitoba, Soja jaune de Montréal / Montreal, Soja jaune de Québec / Quebec 92, Manchu (Hudson), Mandarin (Ottawa), O.A.C. No. 211. Address: Directeur interimaire, Station d'Essais de Semences (Ministere de l'Agriculture), France; In 1946 Chef de Travaux at this station.

1222. Diehl, Harold S. 1941. Healthful living. New rev. ed. New York and London: Whittlesey House, a div. of McGraw-Hill Book Co. x + 449 p. Foreword by Morris Fishbein, M.D. Illust. Index. 21 cm. Series: Whittlesey House; Morris Fishbein, editor. [150+* ref]

• ***Summary:*** This is a basic, interesting mainstream book on health, written in a language that any intelligent person can understand. For many years the author was associated with the care of student health at the Univ. of Minnesota. "As dean of the Medical School of the University of Minnesota and as a teacher of preventive medicine, he has devoted many years to presenting the problems of hygiene and health." "Our nation is about to engage in a vast campaign [World War II] of preparedness... Only those who are physically fit can consider themselves prepared" (p. vii-viii, by Morris Fishbein, M.D.).

The tuberculosis death rate as dropped steadily and rapidly since 1900. The death rate from pneumonia, measles, and whooping cough are also dropping. A few years ago heart disease became the leading cause of death for Americans of all ages. The cancer death rate is also rising.

In the two chapters on food, milk is considered "the perfect food." Eggs and meat are "expensive but necessary."

In chapter 7, titled "Dietary dangers," is a section titled "Dietary fads and fallacies," which begins: "The food faddist, with his missionary spirit and his pet prescription for health, is always with us." The subsection on "Vegetarianism" states: "The disciples of this fad usually follow it either because they consider animal foods deleterious to health or because they object to the destruction of animals to supply food for man. This latter reason is purely sentimental; but the former merits consideration.

"Professor E.V. McCollum, leading authority on nutrition, has written that 'a vegetarian diet, supplemented by fairly liberal amounts of milk is the most satisfactory type of diet that man can take.' But this is not true vegetarianism [sic]. In fact milk, butter, eggs, cheese, and other dairy and animal products are rarely left out of the diets of vegetarians. Hence, most 'vegetarians' are not really vegetarians but only abstainers from meat."

Note: The author fails to understand that a vegetarian diet has been defined for 100 years as one that avoids consumption of meat, poultry, and fish.

Also in this subsection on dietary fads are the use of enemas, a raw foods diet, alkaline foods, food combining, and dieting.

Chapter 21, "Choosing a health adviser," has the following contents: Introduction, scientific medicine, cost of medical care, choosing a physician, what to expect from a physician, healing cults (osteopathy, chiropractic, faith healing), why cults flourish, medical quacks, self-medication. Address: Prof. of Preventive Medicine and Public Health, and Dean of the Medical Sciences, Univ. of Minnesota.

1223. Fallon, F. (Baron). 1941. Le soja [The soybean]. *Belgique. Ministere des Colonies. Direction Generale de l'Agriculture et de l'Elevage. Propagande et Vulgarisation Agricoles* No. 21. 39 p. Bruxelles: Impr. Industrielle et Financiere. [17 ref. Fre]

• ***Summary:*** Contents: Botanical description: Introduction, the plant's needs, varieties. Soybean cultivation in Europe: Introduction (for some countries preferred early, medium, and late varieties are listed), France, Great Britain, Hungary, Poland (selection has been done at the Wilna experiment station using varieties imported from Hungary and Czechoslovakia), Romania (About 30,000 ha are devoted to soybeans, primarily in Bessarabia [Besarabia], Dobrouja [Dobrudja, Dobrogea], Bukovina [Bucovina], Walachia or Wallachia or Valachia [now called Muntenia, a fertile belt across southern Romania], and Moldavia. Most of these varieties came from Austria), Switzerland, USSR (the main soybean regions are all warm ones–the Caucasus, Ukraine, and Transcaucasia). Soybean cultivation in America. Soybean cultivation in Africa (especially in South Africa, mainly for forage in the Natal and Transvaal). Soybean cultivation in Asia: China and Manchuria, Malaysia, British Indies, Dutch Indies, Indochina, Japan. Soybean cultivation in Oceania (mainly Philippines).

Cultivation: Crop rotation, inoculation, planting and propagation, maintenance and manuring the land, harvest, seed storage, yield, selection of varieties. Soybean utilization: As human food (dry soybeans, soy sauce, soy flour, soymilk, tofu, soy oil), industrial uses (soy oil, refining and use, soymilk casein). Soya as a fertilizer: Green manure, or soybean cakes. Soya as a feed for domestic animals: Green forage, hay, silage, pasture, seeds, cakes. Soybean cultivation in the Belgian Congo. Soybean trade.

In the Congo various soybean trials have been undertaken since 1936 at the stations of the National Institute for Agronomic Study of the Belgian Congo (l'Institut National pour l'Etude agronomique du Congo Belge). Numerous varieties from the USA and Manchuria have been tested. Address: Directeur au Ministere des Colonies, Professeur a l'Institut Agronomique de Gembloux [Belgium].

1224. Hon, H.C.; Mar, P.G.; Read, Bernard E. 1941. ZZZ *Report of the Henry Lester Institute of Medical Research* (*Shanghai, China*) No. 12. *

• ***Summary:*** Stephen Greenberg, of NLM, replies to Ask a

Librarian request for a full citation: "I'm sorry, but I do not see that title in the NLM collection, or anywhere else for that matter."

1225. Silva, Benedito Bruno da. 1941. A soja: Sua importancia na alimentacao. Seu emprego no pao [The soybean: Its importance in food and nutrition. Its use in bread]. Sao Paulo, Brazil: Revista dos Tribunais. 188 p. No index. 24 cm. Secretaria da Agricultura, Industria e Comercio do Estado de Sao Paulo. [19 ref. Por]

• ***Summary:*** Contents: Introduction. Part I. Introduction–general considerations on the problem of food and nutrition. General concepts and principles relating to food and nutrition. Criteria employed in appreciating the nutritional value of foods. Classification of foods. Metabolism of proteins, fats, and carbohydrates. Daily requirements of basic nutrients.

Part II. The importance of bread in human nutrition. The problem of wheat in Brazil. Nutritional analysis of wheat. Nutritional value and types of bread. Substitutes for wheat flour–Bread made of mixed flours.

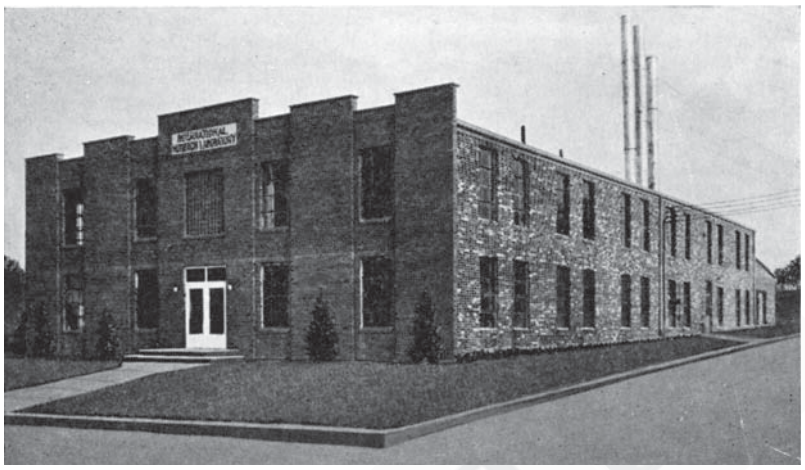
Part III: The importance of soya in human nutrition–breads based on wheat, soy and bran. Protein deficiency in regular or mixed breads in Brazil. The role of soya in nutrition: Nomenclature and history, world centers of soybean production, imports and exports, ways of using soybeans: Green or dry plants, green seeds (*graos verdes;* green vegetable soybeans–Store cooked or refrigerated; use as a green vegetable or in salads), dry seeds (*graos secos*), soymilk (*leite vegetal*), whole soy flour (*farinhas de graos secos*), flour from soybean cake (defatted) (*farina de torta de soja*), soy oil (*óleo de soja*), soy lecithin (*Lecitina de soja*, p. 118). Varieties of soybeans. Microscopic structure of the soybean seed. Chemical composition of the soybean seed. Nutritional value of soya. The introduction of soy flour into bread–soy bread. Mixed breads based on wheat, soy, and bran. Digestibility of bread based on wheat and soy. Conclusions. Bibliography.

Note 1. This is the earliest Portuguese-language document seen (June 2009) that mentions green vegetable soybeans, which it calls *graos verdes.*

Note 2. This is the earliest Portuguese-language document seen (March 2001) that uses the word "Lecitina" to refer to lecithin or the term "Lecitina de soja" to refer to soy lecithin.

Note 2. This is the earliest Portuguese-language document seen (Aug. 2013) that uses the term *leite vegetal* to refer to soymilk. Address: School of Veterinary Medicine (Escola de Medicina Veterinaria de) Sao Paulo, Brazil.

1226. Miller, Harry W. 1942. Answering America's protein problem! *Soybean Digest*. Jan. p. 6.



• ***Summary:*** "Editor's Note: Dr. Miller, whom we here introduce to the readers of The Soybean Digest, is a leader of the soybean food industry. President of the International Nutrition Laboratory, Mt. Vernon, Ohio, manufacturers of Miller's Soya Foods, he has had a most interesting career.

"Graduating in medicine in Chicago in 1902, he went to China the next year as a medical missionary under the Seventh-day Adventist board. He spent 8 years in the interior of China, and then was transferred to the superintendency of the Washington Sanitarium and Hospital, Tacoma Park, D.C., where he remained from 1913 to 1925.

"Returning to China in 1925, he established several medical centers in that country and in Japan, Korea, the Philippines and the Malay Peninsula.

"Becoming interested in dietary problems, because his specialty, goiter surgery, was directly concerned with a dietary deficiency condition, and because of the high Oriental mortality rate due to malnutrition, he began studying the food products which might ease the situation.

"This led him to the soybean, because, he observed, malnutrition was not nearly so acute in those sections in which the soybean was an article of diet.

"In 1936 Dr. Miller established a food plant in Shanghai from which he manufactured milk from the soybean. As he puts it: 'This work was nicely underway when the Japanese invasion of Shanghai resulted in the complete destruction of the plant, and after a year of waiting I again returned to America and established in Mt. Vernon the International Nutrition Laboratory where we have specialized on the processing of the soybean, not only studying varieties best suited for human food, but methods of preparing the bean and also developing processing equipment, that will give us a more satisfactory product."

"Dr. Miller has an interesting statement regarding the use of Soya Milk in infant feeding: 'In this country nearly a score of babies that we are in touch with have either been started on Soya Milk or have been transferred to it very shortly after birth, and the number of users of Soya Milk for infants are increasing very rapidly. Our results of feeding

large numbers of babies and children are to be found in the National Medical Journal of China.'"

"Soybean foods for human consumption have to date been scarcely available in America, and the question arises: Why bother to supplement a dietary which is already so abundant?

"Still, it would seem strange it the raw material which has been a mainstay in the Oriental diet for so many centuries could not be utilized in the American diet. It can be!

"That part of the American diet most often lacking is protein. Most animal proteins are cumbered with toxins, and most vegetable proteins are inadequate for nutrition.

"Soybeans the Answer: The soybean provides the answer to the protein problem. With a protein content of more than 40 per cent, it is the best source of protein which we have. Its protein is biologically equal to that of meats and animal foods, and it has the advantage of being free from toxins.

"The effectiveness of the soybean is strikingly demonstrated in China. Where vegetable protein is abundantly supplied in the diet as in Manchuria, and in North China, we have a stalwart race of people. However, in South China where the major products are oil and sugar we see dwarfed bodies and it is a rare exception to find in the warm climate among oil and carbohydrate feeders a single well-developed individual." A photo shows "The International Nutrition Laboratories, Mt. Vernon, Ohio, home of 'Miller's Soya Foods.'" The building is large, and appears to be constructed from bricks. Address: M.D., International Nutrition Lab., Mt. Vernon, Ohio.

1227. Prehn's Health Food Store. 1942. Build morale for defense: Eat soybean products (Ad). *Soybean Digest.* Jan. Inside front cover.

• ***Summary:*** A 1/8 page ad. "We have all kinds of soy foods from macaroni to chocolate clusters. Special 2 lbs. Soy Milk Powder 55¢. Write for price list." Address: 700½ S. Goodwin, Urbana, Illinois. Phone: 6-1691.

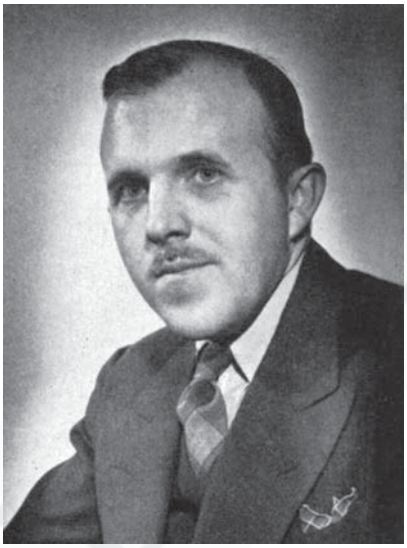
1228. *Soybean Digest.* 1942. Dr. Julius F. Muller, sells to Borden. Jan. p. 10-11.

• ***Summary:*** "The Muller Laboratories, Baltimore, Maryland, producers of Mull-Soy, soybean milk, have been purchased by The Borden Company, manufacturers and distributors of dairy products.

"The laboratories will be operated under the direction of the Prescription Products Department of the Borden Company and will continue under the management of Dr. Julius F. Muller.

"Mull-Soy, which is sold in drug stores on the recommendation of physicians, is in liquid form in tins of 15½ fluid ounces. It is prepared from soybean flour, soybean oil, dextrose, sucrose, calcium and sodium salts. It has been in production since 1936 [as an infant formula].

"Dr. Muller obtained his B.S. degree at Rutgers University [New Jersey] in 1922, his M.S. at the same institution in 1928, and his Ph.D. also at Rutgers, in 1930, following a Walker-Gordon Fellowship."



A portrait photo shows Dr. Muller.

Note: This is the earliest document seen (Dec. 2012) concerning The Borden Company's work with soy.

1229. **Product Name:** Mull-Soy Liquid (Soy-Based Non-Dairy Infant Formula).
Manufacturer's Name: Borden Company.
Manufacturer's Address: Headquarters: 350 Madison Ave., New York, New York. Product made temporarily in Baltimore, Maryland. Then by May 1943 at the National Milk Sugar Div. of The Borden Co., Bainbridge, NY.
Date of Introduction: 1942. February.
Ingredients: Water, soybean flour, soybean oil, dextrose, sucrose, calcium phosphate, calcium carbonate, salt, soybean lecithin.
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: *Soybean Digest.* 1942. Jan. p. 10-11. "Dr. Julius F. Muller sells to Borden." J.F. Muller. 1943. *Soybean Digest.* May. p. 5, 16. "The use of soy milk in allergy diets."

Schroeder and Cahill. 1946. Journal of Nutrition. Oct. p. 417. "Mull-soy, provided by the Borden Company, is an emulsified concentrate of water, soybean flour, soybean oil, dextrose, sucrose, calcium phosphate, calcium carbonate, salt, and soybean lecithin; homogenized and sterilized. Its soybean proteins are practically the nutritional equivalent of egg proteins (Cahill, Schroeder and Smith, 1944)."

H.F. Meyer. 1952. *Essentials of infant feeding for physicians.* p. 106, 197. Mull-Soy, a liquid, retails for $0.38 per 15½ oz can.

H.F. Meyer. 1960. Infant foods and feeding practices. A photo (p. 82) shows this canned product. A photo of a baby's face appears on the front panel. See also p. 88 and 90. Page 121 gives a detailed analysis of the product. The liquid, after being reconstituted, contains: Fat 4.0%, protein 3.1%, carbohydrates 4.5%. Calories per ounce: 20. Added vitamins and minerals: minerals 1.0, calcium 0.13, phosphorus 0.11. Curd tension (grams): zero. Affected by terminal sterilization: No. How formulated or reconstituted: dilute with equal volume of water and formulate as with evaporated milk–adding a carbohydrate modifier if desired. Chemical definition and essential clinical uses: "Hypo-allergenic soy food for infants and children who are milk sensitive. Palatable and well-tolerated." Meyer gives the manufacturer as The Borden Company, Pharmaceutical Division, 350 Madison Ave., New York 17, N.Y.

Harkins & Sarett. 1967. Journal of Nutrition. 91(2):213-18; Bates et al. 1968. Annals of Allergy. 26(11):577-83; Shurtleff & Aoyagi. 1984. Soymilk Industry and Market. p. 26. "In early 1942 Muller's company was purchased by The Borden Company, which continued to promote the product well. A powdered version became available in the late 1940s." Taylor. 1944. The Soy Cook Book. p. 200. Gives address as 350 Madison Ave.

1230. **Product Name:** Mull-Soy Powder (Soy-Based Non-Dairy Infant Formula).
Manufacturer's Name: Borden Company.
Manufacturer's Address: 350 Madison Ave., New York, New York.
Date of Introduction: 1942. February.
Ingredients: Incl. soy flour, water.
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable.
New Product–Documentation: H.F. Meyer. 1960. Infant foods and feeding practices. A photo (p. 82) shows this canned product. A photo of a baby's face appears on the front panel. See also p. 88 and 90. Page 121 gives a detailed analysis of the product. The liquid, after being reconstituted, contains: Fat 4.0%, protein 3.1%, carbohydrates 4.5%. Calories per ounce: 20. Tablespoons per ounce: 3 3/8. Added vitamins and minerals: minerals 1.0, calcium 0.13, phosphorus 0.11. Curd tension (grams): zero. Affected by terminal sterilization: No. How formulated or reconstituted: 1 level tablespoon to 2 oz. water. Chemical definition and essential clinical uses: "Hypo-allergenic soy food for infants and children who are milk sensitive. Palatable and well-tolerated." Meyer gives the manufacturer as The Borden Company, Pharmaceutical Division, 350 Madison Ave., New York 17, N.Y.

Harkins & Sarett. 1967. Journal of Nutrition. 91(2):213-18; Bates et al. 1968. Annals of Allergy. 26(11):577-83; Shurtleff & Aoyagi. 1984. Soymilk Industry and Market. p. 26. "In early 1942 Muller's company was purchased by The Borden Company, which continued to promote the product well. A powdered version became available in the late 1940s." Taylor. 1944. The Soy Cook Book. p. 200. Gives address as 350 Madison Ave.

1231. Davidson, Marion T. 1942. Milk–A human poison. *Southern Medical Journal.* Feb. *
• ***Summary:*** Dr. Davidson uses this strong expression because he has found cow's milk to be to blame in more cases of perennial allergy than any other food. In tabulating the cause of allergy in 100 patients, he found that house dust was apparently involved in 51% of the cases, milk 40%, eggs 27%, and wheat grains 8%. In a group of children ranging in age up to 4 years, the percentages were: milk 55%, eggs 40%, and wheat grains 40%. Address: M.D.

1232. Gullickson, T.W.; Fountaine, F.C.; Fitch, J.B. 1942. Various oils and fats as substitutes for butterfat in the ration of young calves. *J. of Dairy Science* 25(2):117-28. Feb. [11 ref]
• ***Summary:*** "Soybean oil" is mentioned repeatedly throughout this study. When either corn oil, cottonseed oil, or soybean oil were substituted for the fat of whole milk, the result was poor growth. Address: Div. of Dairy Husbandry, Univ. of Minnesota.

1233. Rouest, Antoine. 1942. Le soja français [Soya in France]. Argenton, France: Langlois. 48 p. Preface by J. Bordas. Illust. No index. 24 cm. [9 ref. Fre]
• ***Summary:*** Contents: Dedication Introduction. Part I. 1. What is the soybean? Composition properties of the soybean. 2. Cultivation of the soybean in France: Climatic zones in France for the cultivation of soybeans, A–Atlantic Zone, B–Continental Zone, C–Mediterranean Zone and climate, influence of latitude on the soybean, soils best suited for soybeans. fertilizer / manure, bacteria, soybean varieties, crop rotation, intercropping.

Part II. 3. Technical advice (*Conseils techniques*) for the cultivation of soybeans in France: Labor and preparation of the soil, seeds, soybean vegetation, germination, ways of cultivations (*façons culturales*), irrigation of soybeans, flowering and fruiting, diseases and enemies of the soybean, harvesting soybeans, harvest soybeans as forage, threshing and storage, yield.

Part III. 4. Use of soybeans on the farm: As green manure, green forage, hay, silage–which uses the stems and leaves of the plant. 5. Soybean seed and cake in the feeding of animals: Soybean cake in the feeding of dairy cows, conclusions, soybean cake in the fattening of animals, soybean cake in the feeding of pigs, conclusions, the value of soybean cake, soymilk, how to make soybean milk (on the farm).

6. Use of the soybean as a human food: Soybean coffee, dry roasted soybeans, Sojenta (made from cooked potatoes

and whole soybeans), soybean pâté (a meat alternative), soybean sprouts, salad of soybean sprouts, soybean sprout casserole with vegetables, sweet soya preserves (*Confiture de soja*), soy flour and its use by Germany during World War II, Comparative production of nutritive elements by the various legumes (haricot beans and peas), calorie content of various foods (table), soy flour (again), soy sauce. 7. Industrial uses of soybeans. Conclusion.

The Dedication reads: In homage to my father, the man who acclimatized the soybean to France. Léon Rouest. Born in Paris on 11 Nov. 1872. Died at Chartres on 27 Feb. 1938. A small portrait photo shows Léon Rouest. Address: Son of Léon Rouest, France.

1234. *Soybean Digest.* 1942. Manila paper praised milk from soybean. Feb. p. 7.
• ***Summary:*** On 16 Aug. 1941 the *Manila Tribune,* in the Philippines capital, published a "Soya-Lac Supplement" The full page, including a five-column advertisement for Miller's Soya Lac, is devoted to the story of soya milk and the soya bean. A nice photo shows Dr. Harry W. Miller.

1235. Quail, Betty. 1942. Vary your menus with Chinese foods: While their cooking techniques are different from ours, we can adapt some of their vegetables to our advantage. *Los Angeles Times.* March 29. p. F5.
• ***Summary:*** The Chinese, our old friends and new allies [in World War II] have long used soybeans as a staple in their diet. But in America, until recently, they were grown solely as a forage crop. "Fresh green soybeans rank higher in food value than any of our common table beans..." Dried soybeans contain about 12 times as much fat as other beans. Today soybean flour and bread are widely available in American food stores.

"The Chinese, however, were not content with just beans. They set to work with the skill of alchemists and accomplished some surprising results. They sprouted the dried beans..." to yield bean sprouts, now starting to be sold in American markets. Then they made a milk out of crushed soybeans and turned it into bean curd. Cut it into squares and try adding it to an omelet, to hard-cooked eggs, or meat loaf. It may also be seasoned and be used as a stuffing for tomatoes, celery, or green pepper rings for salad. Soybean milk can be substituted for cow's milk. And of course there is "soy sauce, or mandarin sauce." Unfortunately most Americans limit its use to those "half-caste dishes, chop suey and chow mein. As a matter for fact, this dark brown seasoning should have a place of honor on every American pantry shelf..." Like all good seasonings, it brings out the best in other foods, remaining in the background, "completing a dish while claiming no recognition for itself." A photo shows bean curd.

1236. Jester, W.B. 1942. What you can do with a pound of peanuts. *Peanut J. and Nut World* 21(6):13-14. April 7.
• ***Summary:*** Contents: Introduction. Food value of peanuts. Vitamin content. Many uses for peanuts. Peanut butter (Approximately 35% of all peanuts go into peanut butter). Peanut flour. Peanut oil. Peanut hulls. Peanuts go to sea (Six million pounds of raw, shelled peanuts have been exported to England for emergency rations).

Miss Dora Armstrong, a missionary in the Belgian Congo, developed a milk from peanuts as a substitute for cow's milk. She reported that the lives of many babies were saved with peanut milk. She raised, on peanut milk, two premature babies, each weighing approximately three pounds at birth. Address: Executive Secretary, National Peanut Council.

1237. Dies, Edward J. 1942. Soybeans: Gold from the soil. New York, NY: The Macmillan Co. 122 p. April. Index. 21 cm. Revised ed. March 1943. 122 p. Includes index, Illust., 22 cm. [205 ref]
• ***Summary:*** A landmark popular book and a good description of the pioneering period of soybean production and processing in the United States. Contents: 1. A certain man of science (William Morse and Dr. C.V. Piper). 2. Vignette from antiquity (how the soybean vine saved a caravan in China besieged by bandits). 3. Birth of an industry (U.S. soybean crushing). 4. The big drive starts (A.E. Staley, Glidden, Central Soya, Buckeye Cotton Oil Co., Drackett Co., ADM, Allied Mills, Ralston Purina, Spencer Kellogg and Sons, Swift & Co., Shellabarger Grain Products Co. Standard Soybean Mills, Iowa Milling Co.). 5. Breeding new types (Burlison, Hackleman). 6. Scientists commend product (oil and meal). 7. Lakes of oil. 8. In the field of industry (U.S. Regional Soybean Industrial Products Laboratory, and Henry Ford). 9. Listening post for soy (NRRL at Peoria). 10. Whims and price turmoil. 11. Milk for the tots of China (Dr. Harry Miller). 12. Soys in the home garden ("the vegetable soybean for table use," "garden varieties of soybeans," "green soybeans," "green vegetable soys," "vegetable type soybeans," "edible varieties"). 12. Americanizing soy foods (mainly about soy flour and improving its taste for use during World War II). 14. Little bean, what now? Appendix: Chronology of the soybean (27 entries). Bibliography. Dies was born in 1891.

Illustrations and diagrams show: (1) Principal centers of U.S. soybean production (p. 19, map). "Almost 90 per cent of all soybeans are harvested in Illinois, Iowa, Indiana, and Ohio. If three other states are included as shown on the map–Missouri, Michigan, and Virginia–the total is 97 per cent. (2) Principal centers of U.S. soybean processing (p. 20, map). Discs of different size show the various centers. Since Illinois produces 52% of the harvested soybeans, central Illinois is the center of soybean processing [crushing] in the USA. "Total processing capacity in late 1942 exceeded 100 million bushels for the regularly established soybean

processing plants." (3) Diagram of uses of the soybean (p. 68).

Chapter 2, "Vignette from antiquity" begins: "Even when the Pyramids were being built, three hundred years before the Tower of Babel, and twelve centuries before Solomon fashioned his temple, the soybean was hoary with age. The earliest writings on the subject go back to the period of the Pyramids.

"But of the science of soybean growing you will find no recorded beginnings in the musty tones [sic, tomes] of oriental history. No book reveals the name of the inquisitive oriental who in the misty long ago began sowing the seeds, harvesting the beans, pounding them into a mash for cooking and eating, and probably boring his friends no end with tales of their merit. There is no record depicting this unsung hero's foresight in saving the seed of the magic plant against next year's hunger. Likely as not he was a crude dreamer who fumbled his hunches and accomplished little in a lifetime of wrestling with the problem of proper cultivation.

"Oriental literature of a later date contains much about the plant but of its origin as a food product again there are only legends.

"A choice vignette from antiquity on the initial use of soybeans runs something in this fashion. Long, long ago, far back in the dim past, a caravan pulled out of an eastern China town. It consisted of a number of merchants and their servants... The caravan was bound for a distant inland settlement intent upon disposing of its valuable wares." After trading in the north, the caravan headed home, "now laden with gold, silver, and choice furs received in payment for the merchandise. Suddenly at dusk on a day when the caravan was still far from home it was surrounded by bandits who had learned of the rich prize at hand. Merchants and servants took quick refuge in a rocky defile easy of defense. Here they were besieged day on day until their scanty provisions ran low and starvation seemed inevitable. At length a servant whispered to his master and pointed to a vinelike plant bearing some sort of legume. No one could recall having seen such a plant before but all were touched with the pinch of hunger. So with grave doubts the men pounded the beans into a thick flour, mixed it with water, and made coarse cakes. Upon these cakes the caravan survived, and with renewed strength fought off the foe until help arrived. And, so the legend goes, from that day forth the miracle bean became the staff of life in China." Note 1. This story of the caravan besieged by bandits in China is a longer and embellished version of the tale first dreamed up and told by H.W. Galley in *Soybean Digest* (Dec. 1940).

"True or false, the story has lived through the ages.

"For the first written record of the soybean one must turn to 'Materia Medica,' written by Emperor Shen-nung in 2838 B.C. It describes many plants of China including that of the soybean, but even the name is clouded with antiquity. In the early Chinese history the name 'Shi-yu' [sic] and the 'Ta-tou' were applied to the soybean. These names probably antedate the first authoritative records of the plant."

Dies then discusses Engelbert Kaempfer, Linnaeus, and Moench.

"Then in 1804 a Yankee Clipper ship in full sail glided down the coast of China searching for ports for a return cargo. Not sure of the length of the return journey, the captain ordered several bags of soybeans tossed into the hold as a reserve food supply. And thus did the first soybeans enter America. Little was done about the soybeans then. Note 2. This is the earliest document seen (June 2003) that further embellishes the myth of the "clipper ship" with phrases like "glided down the coast of China" or "ordered several bags of soybeans tossed into the hold"–all supposedly in connection with the introduction of the soybean to the United States. This is also the earliest document seen (Aug. 2000) that compares the age of the soybean with that of the pyramids (in Egypt; the oldest and largest was built for Khufu at Giza in the 26th century B.C.), the Tower of Babel (in Babylon [today's Iraq]), or Solomon's Temple (in today's Israel), arguing that the soybean was much older than all of them.

"James Mease of Pennsylvania first mentioned in American literature shortly after this importation that the soybean was adaptable to Pennsylvania and should be cultivated" (p. 9).

In Chapter 3 (p. 14) Dies notes: "The first soybeans processed in this country were imported from Manchuria in 1911 and sold to Herman Meyer who had a small crushing plant in Seattle, later called the Pacific Oil Mills. From the raw material he produced the two chief products–soybean oil meal for livestock feed and soybean oil, selling the latter locally for industrial use. The meal was advertised and sold as 'Proteina,' a high-protein feed. The venture did not last for any considerable period; a few years later Meyer passed away." Note 3. This is the earliest document seen (May 2010) that mentions Herman Meyer.

"Soybeans grown in this country were first processed by the Elizabeth City Oil and Fertilizer Company at Elizabeth City, North Carolina. W.T. Culpepper, now postmaster at Elizabeth City, was manager of the new mill, started in 1912. The first domestic soybeans were crushed for commercial purposes there in the late fall of 1915. It was a small operation." Note 4. This is the earliest document seen (May 2010) that mentions W.T. Culpepper.

"At that time, most of the soybeans were grown in North Carolina, and the Winterville Cotton Oil Company at Winterville, North Carolina, purchased expellers for processing purposes, and these operated on soybeans for a limited period. Still another mill, operated by Havens Oil Company at Washington, North Carolina, crushed thirty thousand bushels of beans as an experiment in 1916." Note 5. This is the earliest document seen (May 2010) that mentions the Winterville Cotton Oil Company.

"'My uncle, Jonathan Havens,' says J. Havens Moss,

'was the first to plant soybeans in this section, devoting considerable acreage to the mammoth yellow [Mammoth Yellow] type which grew and matured splendidly from the very start. Its value to the land was obvious'" (p. 14-15).

Note 6. On the first page of the copy owned by Soyfoods Center is a signed inscription, in dark blue ink, which reads: "With kind regards to Russell East, who has done much on behalf of the soybean–Edward Jerome Dies."

Note 7. Only minor changes were made on about 13 pages of the revised edition published in March 1943. None of the statistics in the many tables were been updated, and the bibliography was not changed. Address: USA.

1238. Feingold, Benjamin F. 1942. Calsoy: A soybean substitute for milk. *J. of Pediatrics* 20(4):484-85. April.
• ***Summary:*** This article gives a recipe but does not describe a commercial product. The ingredients are 160 gm soybean flour, 4 gm clear gelatin, 840 ml (3.5 cups) water, 1 gm calcium gluconate, and 1 teaspoon salt. The nutritional composition of 960 ml Calsoy/cow's milk: Carbohydrates 19/48 gm, protein 64/29 gm, fat 32/38 gm, calories 620/650, calcium 1.30/1.38 gm, phosphorus 896/835 mg. Address: 3875 Wilshire Blvd., Los Angeles, California. From the Allergy Service of Dr. George Pines, Children's Hospital, Los Angeles.

1239. *Good Health* (*Battle Creek, Michigan*). 1942. Cow's milk a common cause of allergy. 77(4):52-53. April.
• ***Summary:*** In a group of children ranging in age up to 4 years, the causes of allergy were: milk 55%, eggs 40%, and wheat grains 40%.

"An effective remedy for milk allergy is to exchange cow's mild for an excellent milk prepared from the soybean which is now available under the commercial name of Soygal. This plant milk is the result of many years' research conducted in the food laboratories of The Battle Creek Food Company,..."

"Soygal, when examined by a government expert some months ago, was pronounced the first wholly satisfactory preparation of soy milk that he had ever examined, being wholly free from the unpleasant taste of the soybean."

1240. Guillaume, A. 1942. L'utilisation du Soja dans l'alimentation et dans l'industrie [The utilization of soybeans in food and industry]. *Revue de Botanique Appliquee & d'Agriculture Tropicale* 22(247-248):191-97. March/April. [7 ref. Fre]
• ***Summary:*** Contents: Introduction. Food uses: Whole soybeans, soy sprouts, soy coffee, soy milk, tofu, shoyu, miso, natto, soy flour. Industrial uses: Soy oil, Henry Ford and hexane solvent extraction, lecithin, soybean cake, animal feeds, plastics, green forage. Address: Professor, Univ. of Strasbourg.

1241. **Product Name:** Dr. Hollie's Soya Malt [Plain, or Chocolate].
Manufacturer's Name: Dr. Hollie's Products.
Manufacturer's Address: Los Angeles, California.
Date of Introduction: 1942. May.
Wt/Vol., Packaging, Price: 1 lb can.
New Product–Documentation: Natural Brands. 1942. Spring Wholesale Catalog. p. 1. 12 x 1 lb cans for $3.75 or 12 x 8 oz cans for $2.25. Talk with Ben Kahan of Kahan & Lessin. 1988. Sept. 24. This company was located in suburban Los Angeles. They also made slabs of soy chocolate, a combination of soy and carob.

1242. **Product Name:** Dr. Hollie's Soyalate (Soy Chocolate).
Manufacturer's Name: Dr. Hollie's Products.
Manufacturer's Address: Los Angeles, California.
Date of Introduction: 1942. May.
New Product–Documentation: Natural Brands. 1942. Spring Wholesale Catalog. 10 lb slab for $3.30. "A delicious health product, tastes like fine chocolate, sold in bulk." Talk with Ben Kahan of Kahan & Lessin. 1988. Sept. 24. The product was pronounced "So-ya-LAYT."

1243. Hill, Lewis Webb. 1942. The production of nonetiological skin hypersensitivity to foods by natural means in atopic persons. *J. of Allergy* 13(4):366-70. May. [2 ref]
• ***Summary:*** For the last 10 years the author has fed a milk-free food made of soybeans [soybean milk] to many eczematous infants who had positive scratch or intracutaneous tests to milk protein. In some of these patients, their dermatitis was removed by removing dairy milk from their diet. In others, removal of milk does no good and drinking milk does no harm. The author then selected 13 infants whose eczema was either greatly improved or cured when dairy milk was removed from their diet. The soybean food was substituted for dairy milk and all infants were "tested intracutaneously with soybean protein the day the soybean food was started. All were negative. They were then re-tested at one- or two-week intervals. Seven developed positive tests–1 at the second week, 2 at the third, and 4 at the fourth week. There was no aggravation or return of dermatitis coincident with the development of the positive skin tests or at any time while the soybean food was being taken, in most cases over a period of months. Some of these patients were again fed milk after a few weeks, and the dermatitis immediately recurred. The soybean food was again resumed, and the dermatitis disappeared... These observations do not seem reasonable and are not easy to explain... Whatever the explanation may be, the genesis of entirely nonetiological skin sensitivity to foods in atopic persons is demonstrated."

Webster's Dictionary defines atopy (derived from the

Greek *atopia* = uncommonness, and first used in 1923) as "a probably hereditary allergy characterized by symptoms (as asthma, hay fever, or hives) produced upon exposure to the exciting allergen without inoculation." Address: M.D., Eczema Clinic, Children's Hospital, Boston, Massachusetts, and Dep. of Pediatrics, Harvard Medical School.

1244. *Science and Culture* (*Calcutta*). 1942. Soya bean in infant feeding. 7(11):563-66. May. [19 ref]
• ***Summary:*** Contents: Metabolism of infants. Indian conditions (pediatric advances, shortage of cow's milk, promise of soya bean milk). Clinical experience with soya bean milk (brief review of the literature). Methods of making soya bean milk: Raw bean flour, wet grinding, roasted bean flour, steam processed flour (Berczeller process for Soyolk), soya bean flour with dried milk (Helen Mckay and Yolac), ground soya bean milk (made with groundnuts and soya beans). Composition of soya bean milk. Conclusion. Address: From the Section of Physiological Hygiene, All-India Inst. of Hygiene and Public Health, Calcutta.

1245. Rouest, Antoine. 1942. Le Soja dans l'alimentation humaine [The soybean in human nutrition]. *Revue Horticole: Journal d'Horticulture Pratique* (*Paris*) 114(2089):112-14. June 1. (New Series, Vol. 28, No. 5). [Fre]
• ***Summary:*** Discusses the reasons that soya has a poor image as a food. Discusses individually: Soymilk, soy oil, lecithin, soybean cake, whole soy flour, soya coffee, and soy sauce (which forms the base of Worcestershire sauce from England). Address: In 1946: Professeur d'Agriculture, Conservatoire National des Arts et Metiers, France.

1246. Carver, G.W. 1942. Re: Soy bean milk and peanut milk. Letter to Mrs. Ruth Sheldon Knowles, Petroleum Specialist, U.S. Department of Interior, Washington, DC, June 6. 1 p. Typed, without signature (carbon copy). [1 ref]
• ***Summary:*** In a letter dated June 3, Mrs. Knowles said she had read that "peanut milk was being used in the Belgian Congo with great success." Dr. Edward A. Perk, Pediatrician in Chief at Johns-Hopkins Hospital wrote her, in reply to letter of inquiry, saying that he knew of no one there who was working to develop a peanut milk. "He said he thought the chances with soy bean would be much better and that soy bean milk had been used in China as a food for infants and is the basis for nonmilk formula for babies, like Sobee."

Mr. Carver replied: "My work with peanut milk, soy bean milk, and other vegetable emulsions have been tried out by me, and the two that interested me most are soy bean milk and peanut milk. Where ever peanuts can be raised, I recommend the use of peanut milk, and where soy beans can be successfully raised soy bean milk, as soy bean milk has reached a much higher commercial stage than peanut milk, of course, as it is much older in development.

"Madison College, Madison, Tennessee, can give you much information with reference to the soy bean milk, as they have quite a number of commercial products made from soy beans.

"There is much yet to be learned about peanut milk and its uses. Missionaries from Africa, besides individuals working in foreign fields have used peanut milk most successfully in their work, according to the letters that I have received from them." Address: [Tuskegee, Alabama].

1247. **Product Name:** Sandwich Spreads.
Manufacturer's Name: Soy-Malt Co.
Manufacturer's Address: 234-A Marion St., Brooklyn, New York.
Date of Introduction: 1942. July.
New Product–Documentation: USDA Bureau of Plant Industry. Div. of Forage Crops and Diseases. 1942. Firms manufacturing or handling soybean food products. p. 3. Soy-Malt Co. company is listed as making or handling the product listed above.

1248. **Product Name:** Malted Milk (Soymilk).
Manufacturer's Name: Tastee Soy Foods.
Manufacturer's Address: 354 E. Girard Ave., Philadelphia, Pennsylvania.
Date of Introduction: 1942. July.
New Product–Documentation: *Soybean Digest.* 1941. Feb. p. 12. This company sells "edible soybeans." USDA Bureau of Plant Industry. Div. of Forage Crops and Diseases. 1942. Firms manufacturing or handling soybean food products. p. 3. This company is listed as making or handling 15 soy products, including "malted products." It is not clear whether this company is a manufacturer or a handler.

Soybean Blue Book. 1947. p. 72.

1249. USDA Bureau of Plant Industry. Div. of Forage Crops and Diseases. 1942. Firms manufacturing or handling soybean food products. 3 p. July. Mimeographed unpublished manuscript.
• ***Summary:*** The companies are listed alphabetically by state, and within state by city. Numbered codes after each company, keyed to a list of 35 soyfood types in the back, explain which foods are made by each company. Unfortunately, it is not clear from this list which companies are manufacturers and which are "handlers" (retailers or distributors).

California: Arlington (Loma Linda Foods), Berkeley (Golden Gate Food Products Co.), Glendale (Hygenic [Hygienic?] Food Co.), Los Angeles (El Molino Mills, Mrs. Hauser's Soya Foods Co. {4617 Melrose Ave.}, Kevo Co., Klein Soup Co.), San Francisco (Radcliffe Soya Products {146 Fillmore St.}), Santa Cruz (Daglish Health Food Service). Delaware: Milton (Draper Canning Co.). Illinois: Bloomington (Funk Bros. Seed Co.), Chicago (Allied Mills, Armour & Co., Dewey Food Products Inc., Dietetic Supply

House, Durkee Famous Foods, Fearn Soya Foods Co. {355 W. Ontario St.}, Glidden Co., Great China Foods Co., Griffith Laboratories {1415 W. 37th St.; handles soy flour and grits}, John F. Jelke Co., Soybean Products Co. {210 N. Carpenter St.}, Swift & Co.), Decatur (Spencer Kellogg and Sons, A.E. Staley Manufacturing Co.), Elgin (B.S. Pearsall Butter Co.), Urbana (Prehn's Health Food Store). Indiana: Columbia City (Oriental Show-You Co.), Decatur (Central Soya Co.), Indianapolis (Standard Margarine Co.). Iowa: Des Moines (Soy Products Co.). Maryland: Baltimore (J.H. Filbert, Inc., The Wm. Schluderberg–T.J. Kurdle Co.), Takoma Park (Hillcrest Health Products Co.). Massachusetts: Boston (Prince Macaroni Co.), Newton Centre (W.L. Cummings & Co.). Michigan: Battle Creek (Battle Creek Food Co.), Detroit (Shedd Products Co.). Minnesota: Minneapolis (Archer-Daniels-Midland Co.). Missouri: Kansas City (Harrow-Taylor Butter Co.), St. Louis (Blanton Co.). New Jersey: Vineland (George A. Mitchell). New York: Brooklyn (Agash Refining Corp., Cosmo Packing Co., Soy-Malt Co. {234-A Marion St.}), Elmhurst, Long Island (American Lecithin Co.), Glandale, Long Island (Beskor, Inc. Note: As of May 1997 there is no place named "Glandale"–or "Glendale"–on Long Island), New York City (Barrett & Eastwood, Borden Company, Enco Chemical Corporation, Franklin Mills Co., National Biscuit Co., Soya Corporation of America {Rockefeller Plaza}, Stein, Hall & Co.), Rochester (Vegetable Products Co.). North Carolina: Asheville (Judd's Health Foods), Lexington (Vitro Nu Foods Corp.). Ohio: Cincinnati (The Churngold Corp., Miami Butterine Co.), Circleville (Winoor Canning Co.), Cleveland (Barton Nut & Candy Co., Pfaffman Egg & Noodle Co.), Columbus (Capital City Products Co.), Greenville (O'Brien Milling Co.), Mount Vernon (International Nutrition Laboratory [Dr. Harry Miller]), Worthington (Special Foods, Inc.). Pennsylvania: Paoli (Great Valley Mills), Philadelphia (J.S. Ivins' Son, Inc., C.F. Simonin & Sons, Tastee Soy Foods), Williamsport (Penna Soya Products Co.). Tennessee: Madison College (Madison Foods). Wisconsin: Hortonville (Fox Valley Canning Co.), Oostburg (Oostburg Canning Co.), Owen (Owen Canning Co.).

The soy food types are: "1. Albumin or protein. 2. Beans–baked. 3. Beans–canned green. 4. Beans–roasted. 5. Breakfast foods. 6. Butter–soy. 7. Candies. 8. Chips or meats. 9. Chocolate. 10. Chocolate and other beverages. 11. Coffee substitute. 12. Crackers, wafers, cookies, puddings, etc. 13. Curd or cheese. 14. Diabetic foods. 15. Flakes. 16. Flavorings. 17. Flour. 18. Flour–prepared. 19. Grits. 20. Health foods. 21. Ice cream powder. 22. Infant foods. 23. Lecithin. 24. Macaroni products. 25. Malted products. 26. Meat-like products. 27. Milk. 28. Molasses–bean. 29. Oil. 30. Puffs. 31. Sauce. 32. Shortening. 33. Soups. 34. Soybeans. 35. Spreads–sandwich. 36. Toast."

Note: This is the earliest document seen (Nov. 2002) that mentions Griffith Laboratories. Address: Washington, DC.

1250. *Soybean Digest.* 1942. Soybeans and people... Aug. p. 9.
• ***Summary:*** The Iowa Experiment Station is working on better ways to shell "green soys." "No need for bossy: If you wish to make your own butter, milk, and cheese, here are some recipes to help you, from the Edison Institute, Dearborn, Michigan." Contains 3 short recipes: Soy bean milk. Soy bean cheese (tofu, coagulated with dilute acetic acid or vinegar). Soy bean butter (like peanut butter). A photo shows a woman cooking green soybeans in a glass pot on an electric stove. The beans should be precooked before freezing.

1251. **Product Name:** Miller's Soya Milk [Liquid, or Powdered].
Manufacturer's Name: International Nutrition Laboratory.
Manufacturer's Address: Mt. Vernon, Ohio.
Date of Introduction: 1942. September.
New Product–Documentation: Ad in *Soybean Digest.* 1942. Sept. p. 16. "Miller's Soya Products." Soybean Blue Book. 1947. p. 72. Also listed in 1960, 1965.

1252. International Nutrition Laboratory. 1942. Miller's Soya Products (Ad). *Soybean Digest.* Sept. p. 16.
• ***Summary:*** This quarter-page black-and-white ad states: "The International Nutrition Laboratory are pioneers in soya bean processing of the choice edible varieties and of soya protein utilization in the human dietary. Our distinctive achievements are: 1. Flavor improvement. 2. Ready digestibility. 3. High protein yield. 4. Lower cost of man's protein dietary requirements.

"Send for catalogue of Miller's tasty soya foods including soya milk, liquid and powdered, delicious green soya beans, soya meat substitutes, such as Miller's savory vegetable cutlets, soya loaf, sandwich spread and soya cheese. Processed and packed by the International Nutrition Laboratory." Address: Mt. Vernon, Ohio.

1253. *Madison Health Messenger* (*Madison, Tennessee*). 1942. Soy bean exhibit at National Health Foods Convention. 4(4):3. Undated.
• ***Summary:*** "'The World of Tomorrow in Soybeans' was the theme of the Madison Foods exhibit at the National Health Foods Convention in New York City. A picture of this very beautiful exhibit is shown at the bottom of this page.

"Many new varieties of soybeans were shown to health food dealers from all over the United States, who saw for the first time at the National Health Foods Convention a comprehensive exhibit of various soybean products. There were small black soybeans, brown soybeans, green soybeans, yellow soybeans, of various sizes, shapes, and varieties. There were breakfast foods ready-to-eat and cooked. Other items in the exhibit consisted of soy flour, various kinds of

soy oil, soy hydrogenated shortening, soy lecithin, stock feed, poultry feed, dog and cat foods; canned soybeans plain, canned soybeans in tomato sauce, meat substitutes, soy cheese, soy milk, soy albumin, soy bread, soy muffins, soy toast, soy coffee substitute, soy macaroni, soy noodles, soy sauce, linoleum, and plastics.

The exhibit was finished in an automobile lacquer with a photographic smear of soybeans covering the entire front of the exhibit around the display of sample bottles of various soybean products on the right wing of the exhibit, and the Madison Foods products on the left wing of the exhibit, the soybean smear was finished in a sepia tone to approximate the natural color of the soybean, and the lettering on the top of the exhibit was cut-out wood, raised letters, finished in automobile lacquer. It was one ot the most outstanding exhibits ever shown at a National Health Foods Convention from the standpoint of its educational value as well as its artistic layout and beautiful finish. Visitors to the exhibit were profuse in their commendatory comments of the exhibit, and E.M. Bisalski, Manager of Madison Foods, and Ulma Doyle Register, Chemist, were busy receiving visitors to the exhibit, who came from all parts of the forty-eight states to attend the National Health Foods Association Convention, Hotel McAlpin, New York City, August 26-29.

"Next year the convention will be held in Los Angeles, California, at approximately the same time."

1254. Vergnaud, Henri. 1942. Ressources apportées par le haricot d'Asie à l'alimentation humaine [Resources supplied by the Asiatic bean (soybean) to the human diet]. *Chimie et Industrie* (*Paris*) 48(3):126-33. Sept. (Chem. Abst. 37:6049). [9 ref. Fre]
• ***Summary:*** Repeats, with minor modifications, the history of the arrival of the soybean in various countries, given in Letzgus and Vergnaud 1941. Address: Ingénieur E.C.A.T. Secrétaire général de l'Institut Agricole et Industriel du Soja (Paris).

1255. Carver, George Washington. 1942. Re: Miniature food wafers made from soybean flour. Letter to Frank Campsall at Ford Motor Co., Dearborn, Michigan, Oct. 21. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "Under separate cover I am sending you a few miniature wafers made from the soy bean flour from the Engineering Laboratory [at the Ford Motor Co. in Dearborn, Michigan]. These miniature wafers are simply the soy bean flour combined with ordinary cream cheese in proportion of about one-third cheese to two-thirds soy flour. You can see what a very high protein ration that would make.

"Think also how nice it would be to use the Bulgarian soy milk made into cheese, instead of cow's milk.

"The reason that this is rather skimpy is the fact that I haven't but very little of the soy flour, and therefore, have to use it very sparingly.

"Please see that Mr. Ford, yourself (naturally), and others who may be interested get a taste. Be sure that the Engineering Laboratory gets a sample. I should like to know just how they like it. Any modification as to quantity of flour or cheese can be used."

Courtesy of Henry Ford Museum & Greenfield Village Archives (Dearborn, Michigan). Acc. 285, Henry Ford Office (Correspondence), Box 2453. Address: The George Washington Carver Foundation, Tuskegee Inst., Alabama.

1256. Cartwright, William. 1942. The miracle of soybean milk: Equalling cow's or goat's milk in general nutriment, Soy Milk bids fair to become a popular favorite in baby diet, where it is now undergoing extensive experimentation. *American J. of Health.* Oct. p. 16.
• ***Summary:*** In Ohio, 30 babies in average homes are living exclusively on soy bean milk–and they are thriving. A recipe for home-made soymilk is given. A photo shows a healthy baby, little Joan Martony, "incubator baby who responded promptly to a dietary of soy bean milk." She is 6 months old and weighs 23 lbs.

1257. Sonnedecker, Glenn. 1942. Soybean boom: Armed forces and Lend-Lease buy soy products in great quantities. *Science News Letter* 42:362-63. Dec. 5.
• ***Summary:*** From soybeans we can make rubber substitutes, cloth, high-protein foods, plastics, and vegetable oils. Over 600 million pounds of soya flour and grits have been purchased by the Agricultural Marketing Administration for shipment to our allies and for school lunches. "Overseas, soy is used in meat products, baked goods, soups, ice cream and milk substitutes."

"In Army rations: The U.S. government is also adopting soybean products as part of the rations for the armed forces. So far, Army purchases have been confined to flour. The Marines are also using it in this form. Wider usage has been hampered, asserted Colonel Rohland A. Isker of the Quartermaster Corps Subsistence Research Laboratory, because manufacturers threw soy products on the market that had not been scientifically prepared. This situation is being remedied."

Breakfast foods containing up to 20% soya flour and flakes "are being shipped by lend-lease to Russia and other allied countries." The British are also buying large quantities of soybean flour sausages and grits.

Note: This is the earliest document seen (Oct. 2001) concerning the use of soy in school lunches or a school lunch program.

1258. Lust's Health Food Bakery. 1942. BakerLust–Sends you a hearty Christmas greeting, and a popular priced Christmas special offer (Ad). *Nature's Path* (*New York City*). Dec.
• ***Summary:*** This ad (two-thirds page) lists various foods and

their prices. Soyfoods include: ½ lb. Soynuts (Crisp-coated) $0.20. 2 pkgs. Soya cookies (a real alkaline sweet). $0.24. One 14 oz. box Soya milk powder $0.35. Address: 309-311 E. 56th St., New York, NY.

1259. Reid, Marion. 1942. Soya beans help solve food problem. *Health Culture.* Dec. p. 28-30, 55.
• ***Summary:*** Describes Mahatma Gandhi's work to improve living conditions in India, a country with a population of 350 million, all but 6 million of whom live in 700,000 villages. "Gandhi himself is a vegetarian and he is introducing a sane vegetarian diet into the villages. His medium of instruction is his little weekly paper called Harijan (i.e., 'Child of God'). The people have acquired the pernicious habit of buying polished rice, white sugar, white flour and commercial oil, instead of growing these things themselves and using them in their natural condition as they used to do...

"Gandhi is a great believer in the soya bean. He thinks that soya milk will eventually replace the dairy product. In a recent number of Harijan he published the following extract from pamphlet No. 7 issued by the 'Bombay Presidency Baby and Health Week Association.'" The extract is reprinted in full. For details see Bombay Presidency... 1935.

Note: *Health Culture* magazine was published from 1894 to 1964 in New York City. In 1910 Elmer Lee, M.D., was the editor.

1260. Stanley, Louise. 1942. Studies of Bureau of Home Economics (on soybeans). *Soybean Digest.* Dec. p. 4, 10.
• ***Summary:*** "During the last war an effort to promote the wider use of soybeans was unsuccessful because the vegetable varieties were not generally grown and processed products from the other varieties were on the market to a limited extent. Soys were grown then largely as a forage crop and used in animal feeding.

"The earlier work of the Bureau on soybeans was undertaken in cooperation with the Bureau of Plant Industry. We tested the vegetable varieties–those most satisfactory as a green vegetable–those that were easily cooked as dried beans and did not have the beany flavor characteristic of many varieties.

"The green vegetable soys are too little known and used. They have good flavor and food value, being good sources of efficient protein, calcium, vitamins A, C, thiamine, riboflavin and probably a fair source of other members of the B complex.

"Satisfactory methods of preparing and using soybean milk, the curd, and the mash were worked out and the varieties most satisfactory for this use determined. Home methods were worked out for sprouting the dried beans." A photo shows Dr. Louise Stanley. Address: Chief, Bureau of Homes Economics, Washington, DC.

1261. **Product Name:** ViM-ilk (Soymilk).
Manufacturer's Name: Butler Food Co.
Manufacturer's Address: P.O. Box 4, Cedar Lake, Michigan.
Date of Introduction: 1942.
Wt/Vol., Packaging, Price: 8 oz or 16 oz can.
New Product–Documentation: Manufacturer's catalog. 1942. 8 oz. can for $0.06 or 16 oz. can for $0.10. "Resembles cow's milk. May be used in same manner, and is preferred by many to an animal milk. ViM-ilk, as it comes from the can, is of the consistency of cream, therefore should be diluted about half with sold water for drinking. ViM-ilk is purely vegetable, therefore it is pure and wholesome. This product should be kept in a cool place, if possible, in a refrigerator, as the lecithin, which is in abundance in the soybean, may cause ViM-ilk to solidify if stored in normal temperature. After ViM-ilk has become solid or sour, a fine cheese can be made from it, the same as cottage cheese is made from cow's milk."

1262. Dau, M. 1942. Quelques modifications apportées à la technique de préparation du lait de Soja [A few modifications employed in the technique for the preparation of soymilk]. *Revue médicale française d'Extrême-Orient* 20(1):219. [Fre]
• ***Summary:*** The leguminous taste of raw soymilk makes its consumption sometimes difficult, in particular for the persons not accustomed to this vegetable milk.

To mask this unique and peculiar (*suis generis*) odor of the soymilk (*du lait de soja*), we first thought about roasting the soybeans to a certain degree. But the roasting the beans creates a total destruction of the vitamins and a partial destruction of the fundamental active principle of the milk: its proteins and lipids. Indeed, milk prepared with roasted beans has the pleasant smell of toasted bread and keeps much better (at least a whole month in the ice box). But its consistency is thinner than the one of raw soymilk. In order to keep intact its vitamins and its active principles, and to hide the legume taste, we supplemented the soya milk with the principal food item of the country: rice. We begin by toasting the rice, until its grains acquire the dark yellow color of the heel of a loaf of bread. Toasting too much would cause the starch in the rice to be completely carbonized. We then prepare a decoction of roasted rice grains with 200 grams of rice per 100 grams of water (the decoction lasts for 15 minutes). We are finally called to prepare a real coffee with soya milk adding to the milk 100 grams of the toasted rice soaking liquid and 100 grams of simple syrup. And indeed, the color and the smell do recall closely the look and the taste of coffee prepared with cow's milk. We should note that the decocted rice is stringy and slightly viscous, as it still retains a large part of the starch that will transform into body holding gel at the time of decoction and will make the milk thicker while enriching it with carbohydrates.

To further improve its pleasant flavor and enhance the milk consistency, we add 10 grams of caramelized sugar for

each liter of milk. To increase its lipid content and make it more unctuous, we supplemented it with 5 grams of peanut oil per liter. This oil has an added benefit when preparing soymilk: it eases the filtering by causing the abundant foam of the bean emulsion to settle. Address: Pharmacist from Indochina [Pharmacien Indochinois].

1263. Anderson, Hans Steele. 1942. Food therapy: Diet and the healing art. Fort Meade, Florida: The Anderson Publishing Company. 152 p. 23 cm.
• ***Summary:*** The author was born in 1877.

1264. Butler Food Co. 1942. Order blank. P.O. Box 4, Cedar Lake, Michigan. 1 p. Catalog. Undated (but date is written on by hand).
• ***Summary:*** The following soy products are listed: Cereals: Soy-fruit & nut cereal (ready to eat). Vegetarian Meats: ViM-eat soy-nut loaf, ViM-eat soy-nut cheese. Beverages: Soy-kawfee. Flour: Entire soybean (very fine) bulk, entire soybean wheat mix 30-70 bulk, soy beans with tomato sauce, ViM-ilk, and Soy-Nuts.

Note: This is the earliest document seen (March 2001) concerning Butler Food Co., Cedar Lake, Michigan. Address: Cedar Lake, Michigan. Phone: 128-F-21.

1265. Butler Food Products of Cedar Lake Academy. 1942. [Product descriptions and recipes]. P.O. Box 4, Cedar Lake, Michigan. 4 p. Catalog. Undated (but date is written on by hand).
• ***Summary:*** The company's products are listed, a brief description is given of each, and with many a recipe is also given, as follows: Cereals: Soy-fruit & nut cereal (ready to eat.). Soy-Wheat Cereal. Vim-eat Soy-Nut-Loaf. Soy-Nut-Cheese. Vim-Ex (a savory extract of dry yeast and vegetables). Soy Kawfee. Flour. Soybeans with tomato sauce. ViM-ilk. Soy Nuts. Address: Cedar Lake, Michigan. Phone: 128-F-21.

1266. Giraud-Gilliet, J. 1942. Le soja, aliment d'avenir: manière de le cultiver; 2 à 300 façons de le consommer [Soya, food of the future: How to cultivate it; 200-300 ways to consume it]. Saigon: Imprimerie de C. Ardin. 285 p. Index. [Fre]
• ***Summary:*** Contents: Dedication. Introduction. Part I: Summary study of soya (the soybean): Its cultivation. 1. The nature of soya: Its area of expansion. 2. Cultivation of soya: Soil, manure & fertilizer, seeds. 3. Interest in soya: Its richness in nutritive elements and comparison with other foods. Various possibilities for utilization: therapeutic uses for hygiene and diseases (vegetarian diet, diabetes, beriberi, diseases of the nervous system, anemia, slimming, milk diet), agricultural uses for fixation of nitrogen in the soil and as a fertilizer, use in the feeding of animals (green forage, dry forage, soybean cake, flour, seeds, germinated seeds, straw and pods, soymilk, milk), industrial utilization (soybean oil and its derivatives, glycerine, soy casein), use as human food (whole dry soybeans, soy sprouts, soybeans mashed or ground after they are cooked, soybeans cracked or crushed before they are cooked, fermented soybeans, soymilk, soymilk derivatives / foods made from soymilk {tofu / *dâu-phu,* yuba / *tao hu ky,* dry yuba rolls / *phu chuc,* beverages}, edible oil), utilization for social work (drops of milk, bowls of soya, inexpensive restaurants, battle against malnutrition and degeneration, for school gardens, pagodas, waste lands).

Part II: The main soyfood products and how to prepare them at home. 1. Soymilk, soymilk curds (*tau hu hoa*), small white cheeses (*petits fromages blancs* {*dâu-hu miêng*}), folded sheets of yellow yuba (*feuille jaune plissée de crème de soja* {*dâu-hu ky vang*}), white sheets of yuba (*feuille blanche unie* {*dâu-hu ky trang*}), dried or smoked yuba (*plaquettes séchées ou fumées* {*dâu-hu ky ngot*}), fermented tofu–like cream cheese (*fromages fermentées: cancoillotte comtoise au soja*). 2. Soy flour: Roasted soy flour, soy bread, sojenta (soy polenta), pasta (soy vermicelli and vermicelli of mung beans {*dâu xanh*} or *song than*). 3. Soy condiments. Solid condiments: natto and douchi (*taotché*), condiments that are pastes: miso and doujiang (*tao tjiung*) and koji [sic, not a paste but used to make miso, doujiang, shoyu, and jiang-you], liquid condiments: shoyu, jiang-you (*tsiang yeou*), (*tao yu*), ketjap (Indonesian soy sauce), Vietnamese soy sauce (*tuong*).

Part III: Recipes. 1. Introduction: Essential recommendations, the cookery of the poor, comparative cuisine, general recipes. 2. Soups and paps. 3. Hors d'oeuvres and salads. 4. Vegetables. 5. Meat, fish and egg dishes. 6. Breakfasts, sweets, and desserts.

Conclusion. Appendix. Errata. Address: Administrateur des S.C. de l'Indochine; Vietnam.

1267. Glotzhober, Clem. 1942. Annual report (August–December). Dearborn, Michigan: Food Laboratory (Ford Motor Co.). 14 p.
• ***Summary:*** Research was conducted on a coffee substitute made from roasted soybeans mixed with other plants, patties made from pre-cooked soybeans, and the effects of hydrochloric acid and sodium hydroxide on the pH of solutions of "soy protein."

The last section, titled "Hard soy cheese," describes the author's attempt "to make a similar cheese from soy milk. Several batches of soy milk were curdled by several methods including acetic acid plus heat, and lactic acid plus pepsin, and then the curds were pressed." The cheese was then cured for 3 months or more.

Note: This is the earliest English-language document seen (Feb. 2007) that uses the term "Hard soy cheese" to refer to a Western-style soy cheese. Address: Food Lab.

1268. Lager, Mildred. 1942. Soy bean recipes: 150 ways to

use soy beans as meat, milk, cheese, & bread. Los Angeles, California: House of Better Living. 43 p. Index. 21 cm.
• ***Summary:*** Contents: History of the soy bean. Food value. Analysis. Comparison with other legumes. Ash analysis. Soy beans in low starch diet. Alkaline in ash. Recipes: Green beans. Dry beans. Meat substitutes. Soy milk. Soy cheese. Soy butter [soynut butter]. Salads. Salad dressings. Soy spreads. Soy cereal. Soy macaroni, spaghetti and noodles. Soy bread and muffins. Waffles and pancakes. Cakes and cookies. Candies. Beverages. Toasted soy beans. Bean sprouts.

"Alkaline in ash: Soy beans have one great advantage over many proteins especially the meat proteins, in that they are alkaline in their chemical reaction or ash. This applies to the soy bean itself and to the other 100% soy bean products. The alkalinity will naturally be less in products where soy beans are mixed with acid ash foods."

A small portrait photo (p. 1) shows Ms. Lager and notes: "I want to acknowledge the aid received from Madison College, Tennessee; Loma Linda Food Company, El Molino Mills, Penna Soya Products Company, and from the many friends who gave me suggestions and recipes." Address: 3477 West 6th St., Los Angeles, California.

1269. Lager, Mildred. 1942. Soy bean recipes: 150 ways to use soy beans as meat, milk, cheese, & bread. 2nd ed. Los Angeles, California: House of Better Living. 43 p. Index. 20 cm. Reprinted in 1943. *
• ***Summary:*** Contents: History of the soy bean. Food value. Analysis. Comparison with other legumes. Ash analysis. Soy beans in low starch diet. Alkaline ash. Recipes: Green beans. Dry beans. Meat substitutes. Soy milk. Soy cheese. Soy butter [soynut butter]. Salads. Salad dressings. Soy spreads. Soy cereal. Soy macaroni, spaghetti and noodles. Soy bread and muffins. Waffles and pancakes. Cakes and cookies. Candies. Beverages. Toasted soy beans. Bean sprouts.

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1270. Löbbe, Henrique. 1942. Cultura da soja no Brasil. 6a ed. [Culture of soybeans in Brazil. 6th ed.]. Rio de Janeiro, Brazil: Serviço de Informaçao Agrícola, Ministerio da Agricultura. 35 p. 23 cm. 4th edition, 1939, 33 p.; 7th ed., 1945, 74 p. [Por]
• ***Summary:*** Contents: History (in East Asia, Europe, and the USA). Markets. Soybean trials in Brazil (from March 1921 at Campo de Sementes de Sao Simao). Letter dated 28 Sept. 1926 from W.J. Morse of the USDA to Dr. Henrique Lobbe (after Lobbe's visit with Morse to Arlington Farm [Virginia], Morse sent Lobbe one ounce each of 51 varieties of named American soybeans, plus 17 varieties of cowpeas). Table showing the 48 varieties of soybeans tested at Sao Simao in 1927, with the dates of planting, germination, flowering, maturation, and harvest, days to maturity, resistance to pests (*vagens*), height of the plant, and yield (in grams). Botanical description. Nomenclature (in Brazil the soybean is called "soja," "feijao China," "ervilha oleaginosa do Japao," "feijao Japones," and "fava da Mandchúria"). Varieties (divided into 5 groups from very early [80-90 days] to late [130-150 days]). Green manure. Climate and soil. Chart showing products of the soybean (from Piper & Morse, *The Soybean* 1923). Preparation of the soil. Inoculation with bacteria. Sowing. Chemical fertilizer. Things to be careful of during cultivation. Diseases and pests. Harvest and yield. Cost of cultivation. Use as forage. Chemical composition of the seeds. Oil. Cake. Use as a food for humans: Hahto and Easycook, soy sauce, soymilk and tofu (*leite e queijo de soja*), use in diabetic diets, soy flour. Address: Brazil.

1271. Mouriquand, Georges. 1942. Vitamins et carences alimentaires [Vitamins and food deficiencies]. Paris, France: Albin Michel. 462 p. Illust. Index. 20 cm. Series: Sciences for Today (*Sciences d'Ajourd'hui.* [Fre]
• ***Summary:*** This book was published during World War II. Because the Germans looted France of food and other valuables, the French were suffering from malnutrition. Efforts were made on many fronts to grow soybeans in France; long experience had shown that certain varieties grew and yielded well in the southern and eastern parts of the country. Moreover, soybeans were not subject to requisition by Germany, which did requisition meat dairy products, wheat, potatoes, wines, etc. It had long been well known that the soybean contained exceptional nutritional value, especially as a source of high-quality, low-cost protein. Yet Prof. Mouriquand regrets that habitual ways of eating and thinking are making the French slow to adopt soyfoods into their diet, where they could do immense service to the population. Even though he is a distinguished professor of medicine, Prof. Mourisand he does not hesitate to give his all and to cultivate soybeans (either he or someone in his family) as an experimental home crop–as shown in photographs.

The section on Flours for infants and young children (from 6 months to 6 years; p. 325-28) notes that France's Minister of Health and the Family demanded that the Commission on Food, under the Consultative Committee of Hygiene for France set aside flour, to be sold a low prices, for infants and young children. A table shows that these flours include both soy flour (*Farine de soja*) and defatted soybean cake. The introduction of soy into the diet raises the content of protein and oil in the diet. Our trials show–contrary to what some may believe–that soy does not give any "bad taste" to the flour and that that the infants accept and digest perfectly any of the flours shown in the table if

they are presented in the form of a pap with milk. Our study also shows that toasting the flours renders them even more savory and more digestible.

The section on Soy and nutritional balance (p. 407-10) states that there are now major deficiencies of protein and fat in the French diet. Yet men such as Bordas and Matagrin have written extensively about the soybean. Now is the time we must heed their words. The soybean contains about 40% protein and 18-20% vegetable oil; this oil is one of the main oils used by the Germans. One kg of soybeans has about the sane nutritional value as 6 liters of milk or 500 gm of meat. And soy contains vitamins A, B, and D. The people of southern France should be growing their own soybeans. The soybean can also be made into chocolate, or roasted soy flour can be added to cocoa powder to enrich it with protein, calories and vitamins–and to lower its price. Soybeans can also be use to make soymilk, tofu (fromage de soja), etc. Various authors have recommended a mixture such as the following for infants and young children: Soy flour 5-8 gm. Rice cream 10 gm. Malt 2 gm. Sugar 5 gm. Water 80 gm; it is well accepted and well digested.

Facing page 368 is a photo of soybean plants in a field at Saint-Rambert l'Ile-Barbe in the department of Rhone near Lyon. Photo by Ed. Mouriquand, Sept. 1941.

Facing page 369 is a photo of a single mature, dry soybean plant, planted in May, pods reached maturity on 15-30 Sept. 1941. Photo by Ed. Mouriquand, Sept. 1941. Address: Professeur à la faculté de Médecine de Lyon. Membre correspondant de l'Académie de Médecine, France.

1272. Rotondi, Pietro. 1942. Vegetarian cookery. Los Angeles, California: Willing Publishing Co. 151 p. Recipe index. 23 cm. 2nd edition 1948 (150 p.).

• ***Summary:*** This book, dedicated "To Humanity," is basically a vegan cookbook–except for the use of a little honey. It uses no dairy products or eggs, and views a raw food diet as the ideal–although many recipes call for cooking. Following the dedication is this quote: "The human body is the temple of God and as real as God himself, because He dwells in it..."

Under "Substitutions" (p. 21) the author notes that "Soy milk may be substituted for cow's milk..." Under "For the infant" we read: "Advice to the mother–Almond milk is the most perfect and ideal food for the infant both in nutritional value and digestibility." Soy sauce (p. 70-71, etc.), Savita, and Vegex are widely called for a seasonings. The soy-related recipes in this book seem extremely original and innovative; they include: Baked lima beans (with soy bean milk, p. 58). French-fried onions (with soy bean milk, p. 61). Peas cooked with potatoes and soy bean milk (p. 67). Whole wheat or barley chowder (with soy bean milk, p. 68). Ripe olive croquettes (with soy milk, p. 71). Vegetable hamburgers (with soy bean milk, p. 72). Carrot loaf I (with soy milk, p. 73). Tofu (fried in flour breading, p. 74). Tofu loaf (baked, p. 74). Tofu omelet (p. 74). Tofu and garbanza [garbanzo] beans (p. 75). Gluten steak (with 1 cup soy sauce, p. 75). Chop suey (with [mung] bean sprouts and soy sauce, p. 78). Savory lima patties (with soy bean bread, p. 85). Soy bean loaf (with cooked and ground soybeans, p. 85). Soy gravy (with soy milk and soy sauce, p. 87-88). Wholewheat bread and rolls (p. 89-92; many call for the use of soy milk). Tofu cake I (like a baked cheesecake with shredded coconut, lemon, and agar, but no crust, p. 99). Tofu cake II (like a cheesecake with a wholewheat or graham cracker crust, p. 99). Note: This is the earliest document seen (Oct. 2003) that mentions a tofu cheesecake, and the earliest recipe seen (Oct. 2003) for a tofu cheesecake.

"All Bran" muffins (with bran and soy milk, p. 112). Soy wheat germ muffins (with soy pastry flour, p. 113). Corn meal muffins (with soy milk, p. 113-14). Soy bean chocolate frosting (with "2 squares soy bean chocolate," p. 116). Soy bean chocolate date pudding (with 5 oz "soy bean chocolate" and 1 tablespoon soy bean milk, p. 120). Rice pudding deluxe (with 1 quart soy milk, p. 121). Soy bean chocolate ice cream (with 1/3 pound soy bean chocolate and a pint coconut milk, p. 127). Fruit ice cream, Maple sugar candy, Maple fudge (each with soy milk, p. 129). Soy bean chocolate fudge (with 1 cup "grated soy bean chocolate" and 3 tablespoons soy milk). Peanut butter fudge (with soy milk, p. 130). Soy bean chocolate caramels (with 3 squares soy bean chocolate and ½ cup "soy milk," p. 131).

On pages 141-43 are two charts: (1) Alkaline, acid and neutral foods (soy beans [dried or fresh], soy bean bread, and soy bean milk are listed as having an alkaline ash, whereas flesh foods, eggs, cheese, and most nuts are listed as having an alkaline ash). (2) Vegetable protein vs. animal protein. Divides various foods that are high in protein content into vegetable and animal, then ranks them in descending order of protein content. Included in the vegetable protein are: 1. (highest) Soy bean flour 39.5%, 4. soy beans 34.0%. The highest ranked animal product is dried beef 39.2%. The average protein content of 26 vegetable foods is 25.89%, compared with 21.79% for 26 animal foods.

The author, a chiropractor, died in about 1986 in a fire at about age 92. A videotape of him has been produced by the Rotondi foundation in Los Angeles.

Note: This is the earliest English-language document seen (Jan. 2007) that contains the term "Vegetable hamburgers" (or "Vegetable hamburger"). Address: Los Angeles, California.

1273. International Nutrition Laboratory. 1942? Soyalac: Optimal nutrition in infant feeding. Mt. Vernon, Ohio. 12 p. Each page 22 x 10 cm. Undated.

• ***Summary:*** Contents: Mothers milk simulated in Soyalac. Solves feeding problems ("While Soyalac is an ideal food for non-problem infants, it becomes tremendously important in cases of milk allergy"). Composition of Soyalac (two

forms: Soyalac dry powder {22.31% protein}, and reliquified Soyalac {2.79% protein}). Preparation of baby's feedings (always add the powder to water, not water to powder). 24 hour feeding formulas. Canned liquid Soyalac. Soyalac hypoallergenic. Laxative correction. Supplementary feeding (starting 3rd month). Soyalac benefits mothers. Quick, nourishing for children and adults. Medical supervision. The home of Soyalac (photo of large brick building at Mt. Vernon, Ohio). You can get Soyalac ("mainly through health food stores"). Miller's high protein soya foods: 1. Soyalac All Purpose spray dried soya milk. 2. Soyalac Malt Flavor. 3. Soyalac Liquid. Soyalac Chocolate. Soyalac Infant Food–Powder (1 lb cans). Soyalac Infant Food–Liquid (20 oz cans). Miller's Cutlets. Cutletburger. Giant Green Soya Beans. Soya Beans in Tomato Sauce. Soyaspread ("Delicious sandwich filler"). Vegetable Chili Con Carne (with soya beans and wheat gluten). Vegetable Chop Suey (with soya beans and wheat gluten). Address: Mt. Vernon, Ohio.

1274. Holt, Jane. 1943. News of food: Soy beans, the source of oil, flour, milk and cereals, winning 'terrific' popularity. *New York Times.* Jan. 27. p. 16.6.
• ***Summary:*** "The wallflower became the belle of the ball. That, figuratively, is the American history of the soy bean." Several decades ago the soybean was considered fit only for fodder, but now it is found, in one form or another, "on the best of dinner tables."

Soy flour is creamy yellow in color and lighter in texture than wheat flour. It may be used for baking muffins, soft cookies, or bread. In one Manhattan department store, soy flour is sold in 1-pound tins for $0.30 each. Dried soybeans (or "dried soys") are sold in New York City shops for about $0.10 per pound.

Although the canning of soy beans has been ruled out for the duration of the war, some tins are still available. "Giant green beans, those not fully ripe, are sold in six-ounce containers for 18 cents, and a one-pound four-ounce tin of the mature soys costs a quarter [$0.25]. The fresh green variety does not seem to be available at the moment.

Soybean milk is sold in a Manhattan store–$0.20 for a 14 oz tin. The curd is also sold in tins–$0.30 for 13 ounces.

Soybeans are also converted to breakfast cereals. One that recently arrived on the market, made solely from soy beans, "looks and tastes very much like chopped nuts. It is ready to serve with milk or cream, or to use in place of nuts as garnish for cakes and cookies. An eight-ounce package, which holds more cereal than you may suspect, costs a quarter [$0.25]... Various soy cereals have been compounded and set forth as coffee substitutes."

1275. *Soybean Digest.* 1943. Soys on hotel menu: Hotel Wellington, 55th Street and 7th Avenue. Jan. p. 8.
• ***Summary:*** A luncheon menu from this downtown New York City hotel restaurant dated Tuesday, October 13, 1942, is reproduced, with the soy-based items boldfaced. They include: VV-Feature of the Day; Baked soy bean loaf with mushroom sauce. Wellington rolls with ground soya beans. Ice cream with soya fudge sauce. Millers Soya Milk. Soya wheat rolls. Chocolate soya milk shake. Golden brown waterground corn and soy scrapple. Whole wheat soy bread. Soy bean milk.

Director Christine McKeever says that "on many days our leading sales item has been a soybean product."

Note 1. This is the earliest article seen in *Soybean Digest* with the word "Soys" in the title. "Soys" was used in the title of articles in *Soybean Digest* at least 19 times between Jan. 1943 and Nov. 1952. Note 2. This is the earliest English-language document seen (Dec. 2003) that contains the term "soya milk shake."

1276. Carver, George. W.; Curtis, Austin W., Jr. 1943. The peanut. *Tuskegee Institute Experiment Station, Bulletin* No. 44. 14 p. Feb.
• ***Summary:*** Note: Page 1 states: "This bulletin was in the process of being prepared before Dr. George W. Carver's death on January 5, 1943."

Contents: Introduction. Fertilizing. Selecting seed. Planting. Protecting the seed, Cultivating. Harvesting. Marketing. Grading. Cleaning. Shelling. Roasting in the shell. Salted peanuts. Blanching. Peanut butter. Peanut butter mills. Food value. In candy. Peanut oil. Oil extracting (hydraulic press vs. expeller press). Refining of oil. Analysis and physical constants of peanut oil. Iodine number–89 to 96. Saponification value–186.6–188.4. Titer test 30., 5-32.0º. Smoke point 450-470º Fahrenheit. Diesel fuel. Peanut meal. Peanut flour (incl. nutritional analysis). Peanut hulls. Uses for peanut oil. Additional uses [of the peanut], including peanut "milk," peanut cheese–made "by keeping the 'milk' in a warm place until the curd is formed, which would require overnight, or by the addition of vinegar to the 'milk.' After the curd has been formed it is placed in cheese cloth and allowed to drain. After the liquid has been removed the curd is seasoned with salt and stored in a cool place or cooked immediately.

"The residue [okara] resulting from the preparation of the 'milk' or curd can be used in the making of meat substitutes, and in flavoring paste.

"Peanut sprouts are also a very wholesome adjunct to the diet." Address: 1. Director of the Station (1896-1943), Tuskegee Institute, Alabama; 2. Director.

1277. Stidger, William L. 1943. Henry Ford on plastics. *Rotarian* (*The*). Feb. p. 15-18, 58. [1 ref]
• ***Summary:*** In a metal-short world, soybeans are being used in a surprising number of new ways. Henry Ford has a suit made of spun soybean fibers, drinks soybean milk, and has an experimental plastic car, many parts of which are made from soybeans (only the tubular frame is made of steel; the

car weighs only 2/3 as much as a steel car). A chronology of major plastic products–from celluloid in 1875 to vinylidene chloride in 1941–is given.

1278. U.S. Office of Price Administration. 1943. Official table of point values for processed foods: No. 1–Effective March 1, 1943. *New York Times.* March 1. p. 13.
• ***Summary:*** This large table is a reprint of "Now that point rationing is here." Down the left column are the names of various foods that are rationed. Across the top are the point values for different weights of each food. At the bottom, a section titled: "The following items are not included," includes "By-products of fruits or vegetables such as soya bean oil, soya bean milk,..."

1279. Shippey, Lee. 1943. Lee side o' L.A. *Los Angeles Times.* March 31. p. A4.
• ***Summary:*** Frank W. Bower writes that you can buy a dime's worth of soybean flour at a food store, add water, and make 8 quarts of soybean milk. "It doesn't taste so good, but it has all the health-giving qualities of milk," he says.

1280. Dies, Edward J. 1943. Soybeans: Gold from the soil. Rev. ed. New York, NY: The Macmillan Co. 122 p. March. Index. 21 cm. First published in April 1942. [205 ref]
• ***Summary:*** This revised edition is very similar to the first edition published in April 1942. Minor changes have been made on the following pages: 20, 28, 70-73, 84-85, 90-94, 121-22. None of the statistics in the many tables have been updated, and the bibliography is unchanged. Address: USA.

1281. Yoder, Robert M.; Thiem, George. 1943. Soya can do! *Rotarian* (*The*) 62:26-27, 54-55. March. [2 ref]
• ***Summary:*** Scientists are transforming soybeans into glue, clothing, doorknobs, paint oils, and a thousand other needed items. A sausage (containing 22% soybean meal and 66% meat), "undoubtedly doomed to be called 'soysage,'" is helping to feed a hungry world (p. 27).

"The Germans, it is known, have fortified practically all their Army rations with soybean flour. As far back as 1939, they added the protein-rich powder to the ten basic foods of the German Army–barley, noodles, wheat flour, conserves, peas, potatoes, rice, lentils, cabbage, and turnips" (p. 54).

"A year or so ago, Henry Ford, wearing a suit made of soybean 'wool,' treated a visitor to a glass of soybean milk and took him for a ride in a soybean Ford, in which soybean plastics had replaced everything replaceable. Mr. Ford predicted that this bean will in time replace both the cow and the hog on Midwestern farms, and the corn belt will inevitably become known as the soybean belt" (p. 54).

"A clipper ship brought the first soybeans to the United States in 1804... Soybeans growing in a garden plot were a curiosity in the Oriental exhibit at the Chicago [Illinois] World's Fair [Columbian Exposition] in 1893" (p. 54).

"Two years ago, at Kutsing, a refugee center deep in the interior of China, an American-educated Chinese girl opened a soybean dairy. China Child Welfare, Inc., of New York, sponsored her project" (p. 54).

Three somewhat racist cartoons from the *Chicago Tribune* shown how the soybean, in the form of a Chinese man, has become Americanized. A photo shows a man driving a tractor, whose wheels straddle two rows of soybeans; he appears to be cultivating.

Note 1. This is the earliest document seen (May 2013) that contains the word "soysage." This same year, the word was picked up and used by three other widely-read periodicals: *The Atlanta Constitution*, *The New York Times*, and *Time* magazine.

Note 2. This is the earliest English-language document seen (Oct. 2003) that contains the term "soybean dairy" (or "soy bean dairy" or "soy-bean dairy").

1282. Gounelle, H.; Marche, J. 1943. La farine de soja dans le traitement des amaigrissements et des oedèmes par sous-alimentation [Soy flour in the treatment of emaciation and oedema from under-nutrition]. *Paris Medical* 125:109-11. April 30. [1 ref. Fre]
• ***Summary:*** Contents: Introduction and history. Composition of the soybean: Proteins, lipids, glucides [carbohydrates], minerals, and vitamins. Soy flour in the treatment of emaciation. Soy flour in the treatment of edema and undernutrition. Interpretation.

"In France, although Armand Gautier recommends use of soya as a food, soy bread, 'prescribed' by Lecerf and Dujardin-Beaumetz, and made by Mr. Labbé, remained a food for diabetics. Despite the work of Germans and Americans, who as early as the turn of the century assigned a prominent role to the use of soya milk in the treatment of infantile diarrhea, we had to wait for the remarkable studies of Mr. Ribadeau-Dumas and his students (Mathieu, and Willemin) before the use of soymilk became widely used among French pediatricians...

"The good research of Mr. Terroine and of Miss Valla have shown the exceptional quality of this albumin [protein]."

Note: This article was published by Corbeil in Crete in 1943 as a 4-page monograph. Address: Centre de recherches de l'hôpital Foch [Suresnes, a separate city near Paris].

1283. Gay, H. 1943. La culture du soya en Tunisie [Soybean cultivation in Tunisia]. *Revue Internationale du Soja* 3(17):31-41. March/April. Also in: Bulletin de la Direction des Affaires Economiques, 2nd trimester, 1936. [Fre]
• ***Summary:*** Contents: The environment. Climatic factors affecting soybean trials during 1932-34 near Tunis. Varieties tested during these years: white seeded and colored, early and late, those suited for grain vs. forage. Design and implementation of the trials. Results of the trials: Influence

of the date of planting, of spacing, of the soil type, of the fertilizer used, of the bacteria used for inoculation, combined action of the fertilizer and bacteria, of irrigation, crop management, harvest and yield (of seed and forage; the highest seed yields came from Mansoy, Virginia, Illini, and Mandarin; the highest forage yields came from Virginia, Laredo, and Tarheel Black), the influence of soybean culture on the following wheat crop. Enquiry and investigation of farmers who grew soybeans in other parts of the country (1932-34). Notice and advice concerning soybean varieties and cultivation addressed to farmers in 1934.

Trials of the utilization of soybean products: Soymilk, tofu (*le fromage de soya*), soy coffee, whole dry soybeans and soy nuts (*Soya Légume, soya salés et grillés*), soybean forage. Conclusions. The results are inconclusive. Special thanks goes to Mr. Serge Livoff, Mr. Chabrolin, and Mr. Parisot. The latter is *directeur du Domaine des Fermes Françaises de l'Oued Tessa*. Address: Conseiller a la Direction des Affaires Economiques de Tunis.

1284. Muller, Julius F. 1943. The use of soy milk in allergy diets. *Soybean Digest*. May. p. 5, 16.
• ***Summary:*** Dr. Muller developed Mull-Soy in 1936 for his own child, who was highly allergic to cow's milk. "The detailed development of the formula and manufacturing process required more than 2 years of study and experimentation. When the finished product finally emerged from the laboratory stage, it had to go through extensive clinical investigation in leading hospitals in various parts of the country, to prove its worth." He then promoted it by his personal efforts. Most people are surprised to learn that an estimated 2% of all babies are allergic to cow's milk. Proteins are the usual factor causing allergy.

"Mull-Soy is now being manufactured by a large scale continuous batch system in a wing of the fine modern factory of the National Milk Sugar Division of The Borden Company in Bainbridge, New York, in the heart of a rich farming region. The process consists of mixing the various ingredients (soybean flour, soybean oil, sugars, and salts) in water in great steam jacketed vats. From these it flows into a homogenizer where under a pressure of 2500 pounds the particles are disintegrated and the oil finely dispersed, the mixture emerging as a creamy white emulsion. The Mull-Soy is then filled into sanitary-type tin cans, sealed, and sterilized under steam pressure...

"Since almost the entire output is used for allergic cases, the promotion is done entirely on an ethical basis through the medical profession. Mull-Soy bears the seal of acceptance of the American Medical Association, and frequent references in medical text books and journals show the physicians' interest in this soybean product... Inventory stocks are maintained in warehouses in several key cities in various parts of the country from where it is distributed to the larger drug wholesalers. These in turn distribute to the local retail drug stores who are the source of supply for the ultimate consumer." Address: Director of Allergy Research, The Borden Co.

1285. Swingle, Walter T. 1943. Trees and plants we owe to China. *Asia and the Americas* 43:295-99. May.
• ***Summary:*** See Swingle 1942, "Our Agricultural Debt to Asia." Address: Div. of Plant Exploration and Introduction, USDA.

1286. Otto, Harold L. 1943. Re: Dr. Charles Fearn and soya flour. Letter to Dr. Charles E. Fearn, 355 West Ontario St., Chicago, Illinois, June 10. 1 p. Typed, with signature on letterhead.
• ***Summary:*** Dr. Otto begins by thanking Dr. Fearn for his gift of Glen Livet (apparently a type of rum). "Soya Products Co. submitted 3 soups–a total of 9 million pounds–for which we hope to have the acceptance of a portion so that our actual business is begun. Bert Adair had a long talk with Harry Surface [in St. Joseph] a few days ago. Harry has checked the building in St. Joseph and has all his equipment lined up with the exception of the dryer." Dr. Otto asks if he can visit Dr. Fearn in Chicago and then if Dr. Fearn can accompany him to St. Joseph. There they can talk "before the real action begins."

"I have submitted on preliminary sample your pan cake [pancake] flour and cereal. We will see what happens. I would like also to discuss in great detail the line-up for production of soya milk. I can dump it off by the carload if we can line up its production.

"I had a conference with Drs. Wilder and Sherwood of the FDC and they can't [sic, can] see no edge for high fat flour. From all indications it looks clearly to me that we ought to have a production division for low fat... Harry I think will have no difficulty in picking up an expeller or two. Dr. Payne told me that Glidden [The Glidden Co.] will come out in the fall with something new in the way of a high fat product by a new processing technique which is to create a revolution in the industry... We will be seeing you soon. As ever, Harold Otto." Address: M.D., Soya products Company, 667 Madison Ave., New York, N.Y.

1287. Holt, Rackham. 1943. George Washington Carver: An American biography. New York, NY: Doubleday Doran & Co. 342 p. 2nd ed. 1963, 360 p. [18* ref]
• ***Summary:*** This is considered by some to be the best biography of Carver. The author is a woman. There are ten entries on soy in the index of the 1963 second edition.

Dr. Carver was born a slave in Missouri, around 1864. After working his way through school by washing clothes, Carver applied for registration at the University of Iowa and received a letter of acceptance. However, when he arrived, and officials learned that he was a Negro, he was rejected. Later he attended Simpson College at Indianola, Iowa, and

then Iowa State College, where he was appointed to the faculty after graduation. In 1896 Carver accepted Booker T. Washington's invitation to come to Tuskegee Institute in Alabama, where he stayed until he died. The Iowa State College of Agriculture and Mechanic Arts was already an eminent institution in 1891. "It was the seed bed from which sprouted 3 men who were to rule the agricultural destinies of the United States for 28 years.

"James G. Wilson, director of the Agricultural Station, was soon to become Secretary of Agriculture in the cabinets of McKinley, Theodore Roosevelt, and Taft; Henry Cantwell Wallace was Assistant Professor of Agriculture, later to become Secretary of Agriculture in the cabinets of Harding and Coolidge until he died in 1924. His son, Henry Agard Wallace, was to fill the same post during the first 2 administrations of Franklin D. Roosevelt." The school term had already started when George Washington Carver arrived in May.

Before the turn of the century, Carver was preaching that the South should balance its agriculture by growing peanuts and sweet potatoes. He later developed more than 300 uses for the peanut.

Shortly after arriving at Tuskegee in Oct. 1896, Prof. Carver started experimentation on various relatively new members of the legume family, which he felt could enrich the soil and serve as valuable additions to the diets of livestock. "In 1896 there was no crimson clover anywhere in the county, nor for many counties roundabout. He planted this and the cowpea and hairy vetch. In '97 [1897] he secured a pint of velvet-bean seed which yielded fully three pecks. He experimented with the peanut, which was no more considered a farm crop than was parsley; the children liked to eat peanuts, so a few families had a few vines.

"Developing agriculture means keeping an eye out for new things. The soja pea, now known as the soybean (*Glycine soya*), the little honorable plant and the main dependence of China for its food supply, was said to have been brought back by Commodore Matthew C. Perry, but nothing had been done about it in this country. This, too, Professor Carver planted" (p. 168). He would make every effort to educate away from the one-crop system. A photo (p. 169) shows young Carver at Tuskegee.

In 1901 Carver noted the occurrence of a fungus, which he designated as *Cercospora canescens* E. & M., on soybean and several other unrelated hosts. This appears to be the earliest reported occurrence of a Cercospora on soybean in America." It was not recorded in the U.S. again until 1924. In 1903 Professor Carver's exhibit in the capitol drew crowds to see his dried foods and soja peas and demonstrated the value of sweet potatoes and cowpeas.

With the notable exception of Professor Carver, few people in the U.S. had heard of the soybean until 1907 when the Department of Agriculture instituted experimentation on imported plants and tried adapting it to American soils and climatic conditions. Professor Carver had already successfully tried his own hand at experimentation. He was lecturing on the soybean and the derivatives he had found–flour, meal, coffee, breakfast food, oil, milk–long before it had been picked up by Midwestern growers. He could not emphasize the soybean for industrial purposes, however, because of Southern unfamiliarity. He concentrated his efforts, therefore, on the peanut.

Concerning peanuts, page 237 notes that "Professor Carver had started publishing recipes for cooking peanuts for the table before 1913, but these were constantly being augmented, and the bulletin was in its sixth edition by 1916, carrying directions for growing and 105 ways of preparing it for human consumption." During this time he was teaching senior girls at Tuskegee Institute how to cook with peanuts. The girls served a 5-course luncheon to Booker T. Washington and nine guests–"soup, mock chicken, creamed as a vegetable, salad, bread, candy, cookies, ice cream, coffee–all from peanuts."

Pages 239-40 describes a conversation, in "God's Little Workshop," between Prof. Carver and God in which Carver asks God about the meaning of the universe, of human life, and of the peanut. Responding only to his third question, God replied that "my mind was too small to know *all* about the peanut, but He said He would give me a handful of peanuts. And God said, 'Behold I have given you every herb bearing seed, which is upon the face of the earth... to you it shall be for meat..." Then God instructs Carver what to do with peanuts in order to unravel their mysteries and uses. Page 242 describes Carver's preparation of peanut milk. "Cream would rise upon it which could be turned into butter without souring. The cream could be removed to produce buttermilk, and from either an inexpensive, palatable, and long-lasting cheese could be manufactured; where a hundred pounds of cows' milk made ten pounds of cheese, the same amount of peanut milk made thirty-five pounds. This milk proved to be truly a lifesaver in the Belgian Congo. Cows could not be kept there because of leopards and flies, so if a mother died her baby was buried with her; there was nothing to nourish it. Missionaries fed the infants peanut milk, and they flourished."

On 22 Jan. 1921 Carver spoke at the hearings of the General Tariff Revision before the Committee of Ways and Means of the House of Representatives. Given 10 minutes to speak, he was found to be so interesting and persuasive that his time was extended to 105 minutes. He showed the Committee a bottle of peanut milk on which the cream had risen, a bottle of rich peanut milk for ice cream, plus samples of buttermilk and evaporated milk. He explained that Secretary of Agriculture Wilson had been his instructor at Iowa State College for 6 years.

William Jay Hale, a chemist, coined the term "chemurgy," which first appeared in print in 1934 in his book *The Farm Chemurgic*. "Chemi," the root from which

"chemistry" was derived, originally meant the black earth of Egypt; "ergon" was the Greek word for work. Hence "chemurgy" could be defined as "chemistry at work," an implied the application of this work to the soil.

In his book *Pioneers of Plenty,* author Christy Borth called Carver the first and greatest chemurgist. Carver later became close friends with Henry Ford.

1288. House of Better Living. 1943. Beat the meat shortage: *150 Ways to Use Soybeans as Meat, Milk, Cheese and Bread,* by Mildred Lager (Ad). *Nature's Path* (*New York City*). June. p. 237.
• ***Summary:*** This book sells for $0.55 by mail. Address: 3477 West 6th St., Los Angeles, California.

1289. **Product Name:** Soya-Choc. Introduced in Jan. 1940 as Soya Choc-Malt.
Manufacturer's Name: Roberts (F.G.) Health Food Products.
Manufacturer's Address: 40 Chapel St., St. Kilda (a beach-side suburb of Melbourne), Victoria, Australia.
Date of Introduction: 1943. June.
Ingredients: Incl. water, soybeans.
Wt/Vol., Packaging, Price: Tin-plated steel can.
New Product–Documentation: Ad in *Nature's Path to Health* (*Melbourne, Australia*). 1943. May/June, p. 15. "Your best moment. When the drink is Soy-Bev or Soya-Choc. These are the nicest drinks. Freshly made from the choicest soya beans in our modern factory, St. Kilda, Melbourne. In Hygienic ½ lb. and 1 lb. Tins at all Health Centres Throughout Australia." An illustration shows a man and woman seated in chairs by their fireplace each enjoying a cup of Soy-Bev or Soya-Choc. Below this is a steaming cup of the hot beverage. This ad also appeared in the Feb/March 1946 issue (p. 25), the Aug/Sept. 1946 issue (p. 23), and the April/May 1949 issue (p. 8) of this magazine.

Note from Paul Smith of Soy Products of Australia (Pte.) Ltd. 1995. March 14. Soya-Choc = Soy Compound with added cocoa. Soya-Choc = Soya Choc-Malt of 1940. Paul thinks Soya-Choc was first introduced in about 1933 or 1934.

1290. Faulkner, Evelyn Chambers. 1943. Ways of using soybeans as food. Department of Home Economics, University of Illinois. 17 p. Mimeographed unpublished manuscript. July 17. HEE-224. 28 cm.
• ***Summary:*** Contents: Ways of using soybeans as food. How to use green soybeans. Ways of using dry soybeans (with 17 recipes). Ways of using soybean flour with wheat flour (16 recipes). Soybean recipes for special diets (8 recipes). Ways of using soybean milk (11 recipes, including homemade soybean milk, homemade soybean curd, and sauted soybean curd). Miscellaneous soybean products. Revised 1943 by Evelyn Chambers Faulkner, Instructor in Home Economics. Address: Univ. of Illinois.

1291. *New Yorker.* 1943. Meat without bones. 19(24):14-15. July 31.
• ***Summary:*** A humorous article. "Governor Dewey's announcement that only the soy bean stands between New Yorkers and starvation made the soy as timely as Badoglio" [Pietro Badoglio, and Italian soldier and politician. As Prime Minister of Italy, replacing fascist dictator Mussolini, he signed an Armistice with the Allies].

"We immediately sent out our man with instructions to get the soy story and spare no expense doing it, and he has submitted the following facts. In the first place, it is true that a diet of soy beans and water will sustain life indefinitely; Governor Dewey could live on soy beans and water until he becomes president." This year the acreage will probably double or triple as "the result of the soy's publicized ability to take the place of meat and other protein foods that are now hard to get. In this country the soy is considered chiefly an article of civilian diet, but it is also included in military rations as an ingredient of such things as soups, gravies, and pie crusts."

"In China as well as Japan, soy bean curds are called 'meat without bones.'"

Soy bean oil can be used for pretty much any purpose, including a butter substitute and artificial rubber (which won't stretch but works fine as a doormat). The beans may be served as a "green vegetable. Put in a warm, steamy place, they shoot out sprouts, which make a nice salad. Soy-bean flour makes good muffins. Mixed with ten parts water, it turns into a palatable milky drink. From this milk several kinds of cheese and something like buttermilk may be produced. The dried bean can be used as a breakfast cereal, or, roasted and ground, as a coffee substitute.

"Soy meal with the oil removed has dozens of uses in industry... Soy-bean glue is now the preferred adhesive for pine and fir plywood, from which the Mosquito bomber is made. Soy beans can also, of course, be put in beanbags."

Note 1. This is the earliest document seen (June 2012) with the phrase "Meat without bones" (or a similar phrase) in the title; it is used to refer to tofu.

Note 2. This is the earliest document seen (Aug. 2013) that uses the term "milky drink" to refer to soymilk.

Note 3. Notice the interesting use of the terms "the soy's publicized ability..." and "the soy is considered..."

1292. Paddleford, Clementine. 1943. Meet the soy! Try the new tasty products of this versatile, nutritious bean. *Los Angeles Times.* Sept. 5. p. G18.
• ***Summary:*** "This mighty little bean, the soy, is on its way to changing the food habits of the nation. The grocery store of the future will be crammed with soy foods. Soy items are moving out of the food-fad class, out of the health stores into regular grocery channels to play an important role in

everyday dining."

The soybean "is a near-perfect food" which for 5,000 years has been the "staff of life" in the Orient."

"Dry soys can be made to sprout into a new 'miracle' food containing large quantities of nutritious proteins plus Vitamin C." Anyone can grow soy sprouts at home in a kitchen flower pot. They will be ready to harvest in 4 days. It's a Victory so rich in Vitamin C and protein that nutritionists at Cornell University say the sprouts can substitute for meat, fresh vegetables, and even citrus juice.

A sprout garden requires neither sunshine nor soil; sprouts need water and prefer darkness. When the "soy sprout" is 2 inches long, much of the bean itself still remains. Both the sprout and the bean are cooked and eaten together. Cook for 10-20 minutes, just long enough to remove the raw taste. They are nice sautéed or when steamed and served with a sour sauce or with chow mein.

Note: Clementine Paddleford was a very important and influential food writer, who wrote syndicated articles. She was the food editor of the *New York Herald Tribune* and *This Week* magazine. Born and raised in Kansas, she lived most of her professional life in New York City.

This article also appeared on Sept. 5 in the Atlanta Constitution (p. 18).

1293. *New York Times.* 1943. Vegetable 'steak' declared at hand: And many Americans will get soybean milk shakes, says Dr. Burkholder at Yale. Meat shortage stressed. It will force us to rely on plants with high protein content, he says in radio talk. Sept. 6. p. 12.

• ***Summary:*** New Haven, Connecticut: The remarks of Paul R. Burkholder, Associate Professor of Plant Physiology at Yale University, were broadcast on radio station WTIC. Edible strains of soybeans can be grown in home gardens and served like baby lima beans. He also recommended bean sprouts, which the Chinese have eaten for centuries; they have a fine flavor and high nutritive value. Other "substitutes for meat" include "potent yeasts harvested from brewery vats."

1294. Voellmig, Gertrude. 1943. Soy bean luncheon served to Detroiters: Soy milk introduced to public. *Detroit Free Press.* Sept. 25.

• ***Summary:*** "A world premier of soy bean milk was part of a complete soy bean luncheon served by the Ford Motor Co. to a selected group of Detroit newspaper women, Friday noon, Sept. 24.

"While they had looked forward eagerly to the first all soy bean meal that has ever been served, they were amazed at the variety of fascinating dishes produced from this miracle bean... Henry Ford II, enjoying with the rest of his guests the foods prepared in special kitchens at the Administration Building, commented favorably about the soy bean butter...

"Planned especially to introduce practical soy bean dishes to the world's housewives, the luncheon menu was as follows:

Celery stuffed with soy pimento cheese. Canapes of soya crackers with soy butter. Soy bean soup. Soya melba toast. Soy cutlets. Soy sprouts creole. Buttered green soya beans. Baked soy beans. Parsley potatoes. Soy bean coffee. Soy bean milk. Soy sprout salad. Soy bean bread, butter and crackers. Soya ice cream. Soy custard. Soya cookies." The ice cream, described as "rich" and "delicious," was one of the highlights of this "World Neighbor Luncheon."

Note. This is the 4th earliest English-language document seen (Jan. 2013) that contains the modern term "soy sprouts."

"Robert Smith, soy bean chemist of the Carver Experimental Laboratory at Dearborn, Michigan, explained that the luncheon was held to demonstrate how the soy bean can help to rehabilitate the war-devastated countries where dairy herds and food sources have been destroyed."

Note 1. Ford served a similar (but not identical) all-soy luncheon to reporters nine years earlier, in Aug. 1934, at the Chicago World's Fair. Soy bean milk was also served at the 1934 luncheon, but not soy ice cream.

Note 2. This is the earliest English-language document seen (March 2007) that uses the term "Soya ice cream" to refer to soy ice cream.

1295. *Time.* 1943. Down with meat. Sept. 27. p. 70, 72.

• ***Summary:*** "The U.S. Department of Agriculture warned the U.S. people to prepare for big changes in their diet in 1945. Example: they will get a lot less meat, a lot more beans.

"Harvard doctors, after a two-month feeding test, announced that an active adult can get along perfectly well with no more than an ounce of meat a day."

Food scientists are working to develop supplementary and substitute foods. "For almost two years a notably thorough analysis of possible meat substitutes has been conducted by Yale Botanist Paul Rufus Burkholder. He and others have found a number which on almost every food count (protein, vitamins, calcium, carbohydrates) are as good as or better than beefsteak; even whole wheat compares well with meat."

The researchers state that soybeans rival meat in protein, cost only about one-fourth as much, and that from soybeans one may secure a great variety of foods–from milk shakes to steaks. Soybean sprouts can be grown at home "indoors in a pot or jar, they can be raised the year round from dried field soybeans, sprout in five days or less, can be cooked as quickly as a pork chop, have several times as much vitamin B complex as the bean itself, rival tomatoes in vitamin C. A crisp, tasty dish, they have been a staple of the Chinese diet for centuries."

Other good sources of protein are cottonseed, peanuts, vegetable steaks [meatless] (Already on the market are

"Soysage, Stakelets, Proteena, Victory Chops"), yeast, and germs [bacteria].

1296. Hauser, Gayelord. 1943. Delicious and nutritious food for the duration. *Diet Digest* (*Beverly Hills, California*) No. 17. p. 40-41, 62.
• ***Summary:*** Recipes include: Delicious baked soya beans. Soya bean loaf. Soya butter (toast whole soya beans then grind very fine. Add soya oil and a pinch of salt until the consistency of peanut butter). Soya and peanut butter patties. Soya sprouts. Soya bean milk. Soya wheat germ waffles (with soya flour). Wheat germ soya muffins (with soya flour).

The article ends: "Note: For the duration it will be wise for you to go to your health food store and secure several pounds of wholewheat germ, wholewheat pastry flour, and soya flour (preferably toasted)." Plus several supplements sold by Hauser's Modern Products in Milwaukee, Wisconsin.

Note 1. This is the earliest English-language document seen (April 2012) that clearly uses the term "soya butter" to refer to soynut butter.

Note 2. This is the earliest English-language document seen (Jan. 2013) that uses the term "soya sprouts" (or "soya sprout") to refer to these sprouts. Address: 9889 Santa Monica Blvd., Beverly Hills, California.

1297. International Nutrition Laboratory. 1943. Miller's soya foods (Ad). *Soybean Digest.* Sept. p. 35.
• ***Summary:*** "Miller's International Nutrition Laboratory are among the largest growers of the Edible Soya bean, as also processors of high protein yielding foods from the Soya Bean. They possess both Eye and Flavor Appeal. Miller's Laboratory is a demonstration that Soya Beans are a delicious food for humans.

"Miller's Soya Foods Include:

"1. Canned liquid Soya Milk.

"2. Spray dried Soya Milk Powder (natural, malted and chocolate flavors).

"3. Superb canned Giant Green Soya Beans.

"4. Delicious meat substitutes and extenders in appearance, and taste, like bologna, veal cutlets, etc.

"Price and detailed information supplied to interested individuals, address,..."

Note: This is the earliest English-language document seen (March 2003), published in the USA by a manufacturer of soybean foods, with the term "soya foods" in the title. Address: Box 326, Mt. Vernon, Ohio.

1298. Miller, Harry W. 1943. Soybeans and the Orient. *Soybean Digest.* Sept. p. 18, 44.
• ***Summary:*** "It was my privilege during 23 years of residence in the Orient to travel very extensively through the provinces of China, and to acquaint myself with all eastern Asia relative to soybean production. I found that while the central and northern provinces of China including Manchuria are the principal soybean producing areas of the Orient, that soybeans are widely used by all the groups of Orientals, save the Filipinos, and the Malays, and are universally used by the Chinese, and that wherever they emigrate in any part of the world, the one universal food of the Chinese is soybeans, and not rice, as so often claimed.

"There are millions of the Chinese who do not live in the rice producing territories. The Chinese and many of the Oriental people have come to understand by common experience rather than scientific deduction that soy protein is an essential to livelihood and cannot with safety he dispensed with from their diet. Wherever in Chinese occupied territories soil and climatic conditions are at all favorable to the production of soybeans, they will be found as one of the stable crops. However the yield in the tropical portions of China is rather small. They have depended on importing beans from Manchuria and northern China. The same is true of the South Sea Islands.

"Foundation: Much that we have learned concerning handling soybeans and preparing them into food materials we must credit to the knowledge gained through studies made and travels in the Orient, chiefly in China, Korea, and Japan. Like their handling of many other things, they have developed the soybean culture and processing up to a certain point and there they stand. We have built upon their foundation, and have carried research in the agricultural field, as also processing methods several steps farther, and have made soya food products not only better but far more digestible, and therefore nutritionally more available, and found out that the bean can be made tasty as well.

"You may ask how are the Oriental people using the soybean. There are many ways. If you were to visit the Chinese markets during the late summer and early autumn months you would be able to purchase shelled green soybeans. You would also be able to purchase the unshelled beans, that is in the pods just like you buy peas in the pod. Some people prefer to purchase them in the pods, cook them in the pods in salt water, and then squeeze out the beans and eat them from the pod. There have been no canning facilities available to the Chinese for any of their products in years past, and so the use of the green soybean is only seasonable. You might expect that since the Chinese have stone mills everywhere to grind their wheat and their corn into flour and meal that they would be grinding their soybeans into a flour. But soy flour is largely an Occidental product. It would be very difficult for you to pick up in any of the markets of China a pound of soy flour.

"Curd: The Chinese have learned through long experience that the greatest value nutritionally from the soybean is obtained through a water extraction of its protein. This milky liquid after it is strained is coagulated into a cheese [tofu]. Ninety percent and possibly even higher of the nutrition the Oriental obtains from the soybean is taken in the form of this cheese. Of course they have many ways of

dealing with this soft gelatinous curd, which has a very high water content. They press it into cakes, about the thickness of a large slice of bread. This then is placed in a brine solution or other flavored liquid, and later sliced up like we at times dice cheese. Again it is pressed into thin sheets that are about a sixteenth of an inch in thickness. These are also diced up and eaten like a relish or a salad.

"Another common product is a thin semi-transparent sheet of protein [yuba] made by a slow heating vat filled with this soya milk. A heavy scum will come to the surface, which they lift off at intervals and suspend to dry. These sheets are later on used as food wrappers. They can use these sheets which are pure protein, like we can use cellophane sheets, but instead of wrapping parcels with them they stuff them with certain vegetables, imitating the body and legs of a fowl, or the form of a fish, or they can represent almost anything in the way of an animal, and by submitting them to a little baking, give the same nice brownish hue by the use of a little oil, so you could hardly tell whether you were eating actual turkey or an artificial one.

"When you go to the market where the soybean producer delivers his finished products, you will see a great variety of foods made from soybeans. As I say, you can buy the bean curd in squares, or you can buy the patties, or you can buy the thin sheets of soya cheese, or you can buy these large semi-transparent sheets of soya protein. These in turn can be incorporated into many tasty and highly nutritious dishes, by the skill and ingenuity of the cook, and has also the likeness of meat in flavor and appearance. Naturally nutritionally we know of the high value of these proteins for a proper substitute for meat, fish, fowl, eggs, and the protein of animal milk.

"Of course the Chinese have as one of their big industries the making of oil from the soybean, and that is true of the Koreans and the Japanese. They heat the bean, grind it, and put it into wooden presses and extract the oil by driving wedges into their oil presses, bringing a tremendous pressure to bear upon the roasted beans. This oil is all used for edible purposes.

"The residue of the bean cake contains about 6 percent of oil, and has been exported in recent years to great extent. But the Chinese have in certain localities ground it up and used the bean cake meal for food, although much has been used in China and exported for fertilizer.

"The soybean is also extensively sprouted, and these sprouts are used in their vegetable food mixtures and eaten as bean sprouts.

"I shall not attempt at all to discuss the varieties of soybeans found in the Orient. I have seen almost every color, every shape and size, running from a small shot sized bean to the large jumbo sizes, such as we have in our edible list. All the beans that I have seen that come from India have been of a very small size. When we buy beans in China we go to the market and ask for soya beans. If we are not satisfied with what they have we go to another shop, and see if we can find a bean of superior size and quality. We never purchase soybeans in China by name of any variety.

"As is well known, China and most parts of the Orient grow from two to three crops per annum on the same ground. In some areas when they harvest a rice crop they plant a soybean crop on the same soil. In other areas when they harvest a wheat crop they put in a crop of soybeans. We believe in many of our central states, and certainly this would be true of the southern portions of our central states, that it would be quite practical to harvest a crop of peas, and disk the land, and plant and harvest a crop of soybeans" (Continued).

1299. *Poston Chronicle* (*Poston Internment Center, Arizona*). 1943. Poston may get soybean milk. 16(8):3. Oct. 22.
• ***Summary:*** "Poston will soon have ersatz milk made from soybeans to alleviate the lack caused by the nation-wide milk shortage, if all goes well with the equipment which the Steward's department has obtained from Phoenix.

"At present it is planned to experiment with the milk substitute in Unit III only, in conjunction with the tofu industry which will supply the soybeans. If the milk agrees with Poston palates, arrangements will be made to have the milk made available to the other units.

"Soy bean milk has a higher protein content than cow's milk and is said to be richer in minerals."

1300. Kollmorgen, Walter M. 1943. The soybean goes to college. *Tennessee Planner* 4(1):15-20. Sept/Oct.
• ***Summary:*** The author was invited to lunch at Madison by E.M. Bisalksi, who is in charge of the food research and production program. The menu, typical of the meatless meals served on the campus, included: Meatless meat balls (Yum), fresh soymilk, Zoy-Koff (coffee substitute), margarine (75% soybean oil), and bread (made in part from soybean flour). "It should be noted that in the above menu animal foods and animal products are completely absent, with the exception of a small portion of cream used in the Zoy-Koff... Cans of Madison Foods substitutes for milk and meat carry the words "Contains no animal products." These food were not developed to stretch meat ration points during the war; some of them are nearly 20 years old.

Large photos on a 2-page spread show the following Madison products: Wheatasoy, Kreme O'Soy (sliced bread), Kreme O'Soy (canned soymilk), bottled soymilk, Yum, Zoyburger, Soy Cheese, Kreme O'Soy Butter Muffins, Stake-Lets, Not-Meat, Vigorost, and Zoy-Koff.

"Dr. Floyd Bralliar, Vice President of Madison College, has for years conducted experiments with soybean varieties. In this work he is closely associated with experts in the United States Department of Agriculture. Dr. Bralliar believes that Tennessee farmers can profitably devote more acreage to the soybean. He holds that canneries will do well

to can more fresh soybeans...” Address: Research Director, Tennessee State Planning Commission.

1301. Morse, W.J.; Stuart, W.M., Jr. 1943. Vegetable varieties of soybeans. Washington, DC: Div. of Forage Crops and Diseases, Bureau of Plant Industry, USDA. 6 p. Nov. [12 ref]

• ***Summary:*** Contents: Introduction. Nutritive value of the soybean. Classification of varieties as to use and maturity (very early is 100 days or less; very late is 161 days or more. The two types by use are “green vegetable” and “dry edible”). Soil and climatic adaptations. Preparation of the seedbed. Fertilizers and lime. Inoculation. Time of seeding. Method, rate, and depth of seeding. Cultivation. Harvesting and shelling green vegetable beans. Harvesting and threshing mature beans. Utilization: Shelled green soybeans, mature soybeans. Enemies of soybeans. Seed supplies of vegetable varieties. Publications.

“About 10 years ago agricultural explorers in the Orient collected more than 100 varieties of soybeans that were used solely as green vegetable or dry edible beans. The term ‘vegetable varieties’ has been applied to such edible types to distinguish them from varieties grown for other purposes. These varieties, differing in size, shape, and color of seed and ranging in maturity from 85 to 165 days, have been under test for the past 8 or 9 years at various experiment stations throughout the United States and its insular possessions.

“In extensive tests of the cooking quality and composition of the green and dry soy beans made by the Federal Bureau of Home Economics and by the Departments of Home Economics of various agricultural colleges and experiment stations, the vegetable varieties have proved to be much superior to the field varieties in flavor, texture, and ease of cooking. Some varieties have also been judged superior for the manufacture of bean milk, flour, and other food products.”

“Classification of varieties as to use and maturity.” “The recommended uses and classification as to the length of growing season of the following vegetable varieties are based on observations made at Arlington Farm: [Arlington, Virginia]: A table shows:

Very early (100 days or less): Green vegetable: Agate, Giant Green, Hidatsa, Sac, Sioux. Dry edible: Giant Green, Sac.

Early (101-110 days): Green vegetable: Bansei, Chusei, Etum, Goku, Kanro, Kanum, Waseda. Dry edible: Bansei, Chusei, Etum, Goku, Kanro, Kanum, Waseda.

Medium Early (111-120 days): Green vegetable: Emperor, Fuji, Hakote, Hiro, Hokkaido, Jogun, Kura, Osaya, Sato, Shiro, Sousei, Suru, Tastee, Toku, Willomi, Wolverine. Dry edible: Emperor, Fuji, Hokkaido, Jogun, Osaya, Sousei, Suru, Toku, Willomi, Wolverine.

Medium (121-130 days): Green vegetable: Funk Delicious, Hahto, Illington, Imperial. Dry edible: Funk Delicious, Illington, Imperial.

Medium late (131-140 days): Green vegetable: Aoda, Chame, Higan, Rokusun. Dry edible: Easycook, Higan, Rokusun.

Late (141 to 160 days): Green vegetable: Edsoy, Green and Black, Jackson, Jefferson, Nanda. Dry edible: Edsoy, Jefferson, Nanda.

Very late (161 days or more): Green vegetable: Cherokee, Seminole. Dry edible: Seminole.

“In general, the method of planting vegetable soybeans is practically the same as that of field varieties except that they are always planted in rows far enough apart to permit cultivation. Three feet has been found a satisfactory distance between rows, although the very early varieties may be planted in 2-foot rows.”

Note: To see refinement in Morse’s thinking, compare this with a similar article written about two years earlier: Morse, W.J. 1941. “Shanghaied... a super food.” *Soybean Digest.* July. p. 4-5, 10. Address: 1. Senior Agronomist; 2. Asst. Agronomist. Both: Div. of Forage Crops and Diseases, USDA, Washington, DC.

1302. *Gila News-Courier* (*Gila River Internment Center, Phoenix, Arizona*). 1943. Keadle gets facts on tofu delivery. 3(44):4. Dec. 2.

• ***Summary:*** “Project Steward H.E. Keadle returned Tuesday night from a trip to Poston [Arizona] where he went to get necessary data on tofu consumption and distribution.

“Poston has a smooth mess operation, according to Keadle. They are making soy bean milk as well as tofu, and Rivers will soon be making them too, he said.”

1303. *Science News Letter.* 1943. Soybean curd makes good cottage cheese substitute. 44:360. Dec. 4.

• ***Summary:*** “Now that cottage cheese production has been curtailed, soybean curd can be used as a good substitute.” This curd, made from soybean milk, can be “added like cheese to omelets, Welsh rabbit and creamed hard-boiled eggs, or served with other vegetables in hot dishes. Its mild, somewhat cheese-like flavor and soft texture” makes it a good as a stuffing for celery, pepper rings, or tomatoes, a garnish on salads, or mixed with salad dressing. It can also be rolled into balls and served on crisp lettuce.

There follows a description of how to make soybean milk and soybean curd on a home kitchen scale.

1304. Brewster, Clara M. 1943. The soya bean–A four star food. *Diet Digest* (*Beverly Hills, California*) No. 18. p. 32-34. [1 ref]

• ***Summary:*** This is a reprint of an article with the same author and title first published in Aug. 1936 another Hauser magazine: *Horizon* (Tempo Books, New York City) 1(3):9, 26-27.

1305. Drown, Marion Julia. 1943. Soybeans and soybean products as food. *USDA Miscellaneous Publication* No. 534. 14 p. Dec. [1 ref]

• ***Summary:*** Contents: Introduction. Nutritive value of soybeans: Why soybean protein is important, minerals and vitamins of soybeans, the fat of soybeans–soybean oil. Recent increase in soybean production [in the USA]. Soybean products: Soya flour, soya grits, flakes and meats, soya with sausage and in soup. Soybeans as a green or dried vegetable: Varieties, growing and harvesting, preparation and cooking. Soybean "milk." Soybean curd. Soybean sprouts. (Note: A description is given of how to make the three previous foods at home.) Other edible soybean products (Soy sauce, Worcestershire sauce, soya crackers and breakfast foods, a coffee substitute, and salted soys [soynuts]).

"In 1942 nearly 210 million bushels of soybeans were produced on about 11 million acres [yield = 19.1 bushels/acre]. If the 4.6 million acres on which soybean plants were grown for forage and other purposes are added to this figure, only five other crops–corn wheat, hay, oats, and cotton–occupied more land in the United States in that year. These figures contrast strikingly with those of 1924, when less than 5 million bushels of soybeans were harvested from 448,000 acres" [yield = 11.16 bushels/acre]. Figure 1 shows soybean production in the USA (in million bushels) from 1924 to 1942. The rapid increase in production began in 1934. In 1942 production doubled as a result of wartime needs.

"Soybean meats are split or coarsely ground soybeans, dehulled and debittered. They are chiefly used in place of roasted peanuts in confectionery and baked goods, but they can also be cooked and eaten like navy beans.

Vegetable soybeans make an excellent Victory Garden crop. "The most suitable varieties for green shelled or dried beans have straw-yellow or olive-yellow seeds that cook easily and have a mild flavor." A table (p. 8) shows: "Some of the desirable garden varieties for green and dried beans, classified as to their length of growing season" (from Morse & Stuart, Nov. 1943). State experiment stations can usually supply information about the "seeds of vegetable varieties of soybeans... Many State experiment stations furnish pure cultures of soybean bacteria at cost, and commercial seed firms also sell them" (p. 9).

"When soybeans follow corn on fertile land, they should produce a good crop without direct application of fertilizers. The use of fertilizers, however, is recommended on sandy soils or soils of low fertility, the best results being obtained with stable manure or superphosphate and muriate of potash. Wood ashes may be used if the potash is not available."

Note: This is the earliest English-language document seen (May 2005) that uses the word "debittered" (or "debitter," "debitters," or "debittering") in connection with flavor problems in soybeans. Most early documents that used the term were written in German. Address: Associate editor, Bureau of Plant Industry, Soils, and Agricultural Engineering.

1306. Morse, W.J. 1943. Introducing the soybean. In: U.S. Food Distribution Administration, War Food Administration, ed. 1943. Soybeans and Soya Products. Program for Meeting of Interdepartmental Nutrition Coordinating Committee. 25 p. See p. 1-2. Dec. 7. [1 ref]

• ***Summary:*** The soybean has many uses. Fermented, it yields different sauces; "pressed, it gives oil for cooking; sprouted, it gives a fresh vegetable rich in vitamins; picked when green, it makes an excellent green vegetable; ground dry, it makes flour; soaked, ground, and with water added, it provides milk; and the curdled milk furnishes the famous bean curd–the boneless meat of the Orient–used in the form of various cheeses and as a meat substitute."

Note. This is the earliest English-language document seen (April 2013) that uses the term "boneless meat of the Orient" refer to tofu.

"Strange to say, the first published use of the soybean in the United States, other than for forage purposes, was as a coffee substitute by the Indiana Experiment Station in 1892 [sic, 1894]. It was revealed that an Indiana farmer and his neighbors had been using the roasted beans for coffee for about 8 years. During the past two years, as many of you know, the soybean has been sold as 'Coffee Berry", and 'Coffee Plant', and used extensively to blend with coffee."

"The soybean was first used for food in America, beginning about 1910, as a flour prepared chiefly for infant foods and for persons requiring a food of low starch content" [diabetics].

"In 1925 the American Soybean Association held its annual meeting in Washington [DC] and in the exhibit of products, the only articles of food shown were canned baked soybeans, diabetic and infant foods, soy sauce, and health soy flour. At the present time more than 50 different foods made wholly or in part from soybeans by about 200 manufacturers are on the market."

"Vegetable soybeans led the list of new vegetables planted in the rural gardens in 1942 in South Carolina. Approximately 2000 home demonstration club women in 44 of the 46 counties in South Carolina planted them in the vegetable garden for the first time. In the winter and spring of 1943, 10,000 one-pound packages of dry vegetable soybeans were sold throughout South Carolina." Address: Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, USDA, Washington, DC.

1307. USDA War Food Administration, Food Distribution Administration. Grain Products Branch. comp. 1943. Soya products distribution. Washington 25, DC. 5 p. Dec.

• ***Summary:*** Gives a partial list of companies that retail products containing soya, the names of the products

distributed, and their areas of distribution. Address: Washington, DC.

1308. A.B. 1943. Biljno mleko [Plant milk]. *Srpsko Selo* (*Serbian Country*) 3(76):7. [Ser]*
Address: Yugoslavia.

1309. Huebscher, Adolf. 1943. Die Soja: Ihre Kultur, Verwendung, Zukunft! [Soya: Its culture, use, and future!]. Grenchen, Switzerland: A. Niederhaeuser. Published by the author. 52 p. Undated. Illust. with 18 line drawings. [Ger]
• ***Summary:*** Contents: Foreword. Soya–The dispenser of work and bread. Botanical description of the soybean. Cultivation and manuring of the fields. Seeds and sowing. Nutritional composition and food value. Harvest, storage and use as silage. Enemies of the soybean. Economic significance of the soybean. Preparation of the soybean for use as food. Soya minestra (an Italian dish, also consumed in Switzerland). Soya beefsteak. Soya cutlets. Tomatoes stuffed with soya. Soy sauces–Japanese shoya [sic, shoyu] and Shimosa. Vegetable cheese [tofu]. Miso-cheese. Natto cheese. Soy coffee. Soy flour (Soja-Mehle, made by Morga S.A. or Ennat-Kappel, Switzerland). Soya cakes. Soya salad. Green vegetable soybeans (*Soja-Gruengemuese*). Soya Muesli. Soya Kasha (*Soja-Kascha*, the newest food for soldiers, athletes, and heavy laborers. It consists of a mixture of soy flakes, rolled oats, corn flakes, sugar, salt, and powdered milk). Soymilk (The first soymilk in Europe was made in Paris in 1882). Soy yogurt (*Soja-Yoghurt*). Soy cream for the tropics (*Soja-Crème-Tropenmilch*). Address: Dr. and veterinarian, villa Bel-Air, Corseaux (Vaud), Switzerland.

1310. Mathews, R.H. comp. 1943. A Chinese-English dictionary. Revised. American ed. Cambridge, Massachusetts: Harvard Univ. Press. Published for the Harvard-Yenching Institute. xxiv + 1226 p. Index. 26 cm. [3 ref]
• ***Summary:*** This excellent dictionary, which romanizes Chinese words using the Wade-Giles system and arranged them in alphabetical order by sound, is a condensed version of the multi-volume dictionary by Giles, and a revised version of Matthews' 1931 dictionary. Soy-related characters include:

Chiang (No. 661, p. 90)–Soy [sauce], pickled vegetables, pickled bean curd (*chiang toufu*) [fermented tofu].

Fu (No. 1930, p. 285)–Tofu.

Ju (No. 3144, p. 473)–Milk. The breasts; a teat, a nipple. To suckle. *Fuju* ("rotten milk")–A milky preparation from beans. [Note: Probably fermented tofu].

Shih (No. 5805, p. 813)–Cantonese soy [sauce], salted beans [fermented black soybeans] eaten with rice, gruel, etc.

Note: This is the earliest English-language document seen (April 2012) that contains the term "Cantonese Soy," which apparently refers to soy sauce made in Canton, China.

Tou (No. 6478, p. 939-40)–See No. 6481.

Tou (No. 6481, p. 940)–Beans, oil expressed from beans, young bean plants, bean stalks, bean flour, bean curd, dried cakes of bean curd usually flavored with soy, underlings = bean curd officials, soft hearted, bean sprouts [mung]–used as a vegetable, bean pods, soy [sauce], bean-cake, four kinds of soya beans (ta-tou, hei-tofu, huang-tou), (*Glycine hispida*).

Note: At Mao (No. 4357, p. 614, meaning "hair") there is no entry for *Mao tou* = "green vegetable soybeans."
Address: China Inland Mission, Shanghai.

1311. Rebelo Hespanha, Jaime. 1943. A soja: Cultura e utilizacao dos seus produtos [The soybean: Cultivation and use of its products]. Lisboa, Portugal: Livraria Rodrigues. 42 p. No index. [Por]
• ***Summary:*** Contents: Part I: Soybean culture. 1. Introduction: History and origin, botanical description, advantages of its cultivation for farmers. 2. Soybean culture: Climate, terrain, types of culture, seed and sowing, varieties and sub-varieties, seed characteristics, time of planting, manuring and fertilizing, precautions during cultivation, harvest. 3. Yields.

Part II: The products of soya and its utilization. 1. As human food: As a green vegetable (*como legume*), flour (*farinha*), milk (*leite*), cheese (*queijo-caseina* [tofu]), oil (*oleo*), the hulls (*bagaço*). 2. Feed for cattle. 3. Industrial products.

In Spanish the soybean is called "Soja, Soya, Haba, or Guisante de Japan."

In the section on soybean culture, pages 10-11 state: "For 20 years [i.e. since 1923], the soybean has been cultivated in Ribatejo, with the only goal of providing feed for cattle. The soybean is now being cultivated technically in Alentejo, in Baixo-Minho, and in parts of Estremadura. [Note 1. Ribatejo, Alentejo, Estremadura, Baixa, and Minho are all provinces of Portugal, according to the U.S. Board of Geographic Names for Portugal, 1961.] The land in these areas is well suited for growing soybeans. The most admirable initiative for the cultivation of soybeans in Portugal was undertaken by the Malange [Malanje] Agricultural Station (in Angola), which obtained a yellow variety that had been given an excellent classification in Germany.

"Soybean cultivation in Angola could be extensively spread, even among European farmers. The growing period does not exceed 145 days, and the yield averages 700 kg of seeds [per hectare], bringing a price of $25 (0.25 angolares) per kilogram. It would be good if the example given by the Malange Agricultural Station would spread to the [area around the] cities."

Note 2 This is the second earliest document seen

concerning soybeans in Portugal, or the cultivation of soybeans in Portugal. This document contains the second earliest date seen for soybeans in Portugal, or the cultivation of soybeans in Portugal (1923 in Ribatejo). The source of these soybeans is unknown. The author was born in 1891.

Note 3. This is the earliest Portuguese-language document seen (April 2013) that uses the term *queijo caseina* to refer to tofu. Address: Major do S.A.M., Portugal.

1312. Ricino, soja y sesamo: Siembra, cultivo, cosecha e industrializacion de estas tres plantas oleaginosas. 2nd ed. [Castor-oil plant, soybeans and sesame: Sowing, cultivation, harvesting, and industrialization of these three oleaginous plants. 2nd ed.]. 1943. Buenos Aires, Argentina: Editorial Atlantida, S.A. 148 p. See p. 41-150. Illust. 17 cm. (Biblioteca de "La Chacra" Dirigida por Waldemar Martínez Pintos). [Spa]

• ***Summary:*** Contents: Introduction. Products obtained from the soybean (chart). As a human food. The seeds (*los porotos;* the soybean is called *poroto soja*). Green vegetable soybeans (*porotos verdes*). Soy flour. Soy oil. Soy sauce. Soy sprouts (*vastagos*). Soy milk (*leche vegetal*). Tofu (*queso*). Curd (*cuajada*). For livestock or cattle destined for slaughter. For sheep and poultry. Preparation of the seeds for obtaining oil. Utilization of the oil. Defatted soybean flour (*harina de torta*). Soybean cake for animals. Soybean cake for fertilizer. Other uses of the cake. The soybean for hay. For pasture. For silage. Address: Buenos Aires, Argentina.

1313. Swardt, S.J. de; Saunders, A.R.; Bergh, W.F.; Roux, L.L.; Bronkhorst, J.J.; van Wyk, D.J.R.; Hoek, T.; Groene woud, P.W.G. 1943. Soya beans in South Africa. *South Africa, Department of Agriculture and Forestry, Bulletin* (*Capetown*) No. 240. 58 p. [15 ref]

• ***Summary:*** Contents: Introduction. The production of soya beans, by A.R. Saunders. The economic aspect, by S.J. de Swart. Use as livestock feed, by W.F. Bergh and L.L. Roux. Nutritional value and domestic use, by D.J.R. van Wyk and Miss T. Hoek (Mrs. P.J. Serfontein) (Composition, mineral content of selected foods, comparative analyses of selected foodstuffs, soya bean bread. Soya beans on the menu: 41 recipes). The industrial preparation and uses of soya bean products, by P.W.G. Groene woud (Edible soya-bean flour, oil, plastics). Address: South Africa.

1314. Ford News Bureau. 1943? [Ford soy milk: Background–not for release]. Administration Building, Dearborn, Michigan. 3 p. Typed. Double-spaced. Undated. Courtesy of Henry Ford Museum & Greenfield Village Archives (Dearborn, Michigan).

• ***Summary:*** This undated, untitled background document, probably written between 1943 and 1945, describes the production of soymilk based on isolated soy protein. "The undernourished of a war-devastated world will receive abundant protein as a result of a mass production process for making soybean milk now being perfected in the laboratories of the Ford Motor Company. Note: This is the earliest English-language document seen (Nov. 2002) that uses the word "undernourished."

"Since soy milk is laboratory and not animal produced, it is possible to scientifically control bacteria and procure–quickly and cheaply–sufficient quantities of protein-giving liquid at a cost equal to, or less than milk.

"The implications of mass production of life-sustaining milk are of terrific import. Herds in occupied countries have been slaughtered. During the four to five years that must pass before cow's milk can be available to malnutrition-threatened millions, synthetic milk may supplement the world's diminishing supply of proteins. Ford soy milk may enable the people of regions like the tropics, where the breeding of cattle is difficult and unsatisfactory, to receive the necessary benefits of dairy products...

"Nine bushels of soybeans will produce one ton of milk, 232 gallons or 928 quarts of milk.

"Soy milk has been used for hundreds of years by the Chinese and of recent years has been manufactured in considerable quantities to supply the dietary needs of children allergic to cow's milk. However, soy milk made by the Chinese method is often inferior to cow's milk in both composition and flavor and those produced by many of the newer formulae, while comparing with cow's milk in composition, are expensive and to many tests have an objectionable flavor. The Ford chemists, under Mr. Ford's personal direction, have developed a soy milk having similar appearance and composition to cow's milk and which can be produced by mass production methods at a cost equal to, or less than, cow's milk.

"The process of manufacture of soy milk from the bean may be considered in three steps: first, the separation of the oil from the bean and its subsequent hydrogenation and de-flavoring; second, the extraction of the protein from the oil-free meal and its purification; third, the mineralization and the mixing of the protein and the addition of the ingredients necessary to complete the product.

"The oil is removed from the soybean at Saline, Michigan–an attractive, white frame, reconditioned mill–located like 17 other Ford village industries near power-producing streams and small country towns which furnish the labor.

"As soybeans arrive from neighboring farms, the beans are cleaned, cracked, and conveyed from the Saline mill to another spotless building. From then on, gigantic telescope-shaped equipment separates oil from the meal in one continuous cycle of solvent extraction. The soybeans are pressed into yellowish bits similar to corn flakes. These flakes are carried countercurrent through a 32-foot tube where Hexane, a petroleum solvent, separates the oil and meal. After flakes are freed from solvent and dried in the

middle and lower tube, the solvent is fed into a long tube, or percolator, near the upper end. Flowing through a filter and into a still, the oil is freed from the solvent. The solvent from both sources is now collected and recovered in the decanter from which it is taken and used again. The extracted soybean oil flows into a container at one end of the unit; flakes emerge in the finished form, ready for the next step.

"The dry, protein-containing meal is taken to the George Washington Carver Laboratory, a neat sunlight-filled brick building near the little Michigan town of Dearborn. There, inside towering glass tubes, protein is extracted from the yellowish meal. Piped into a settling tank, most of the once pithy, flaky meal separates from the yellow-greenish solution of water and protein. Any meal remaining in the mixture is removed by whirling centrifuges, their 6,000 revolutions per minute revolving like a cream separator. The combined water and protein goes to a de-airating [de-aerating] tank where any excess air is removed.

"Looming over the shiny tanks and maze of giant tubes, controller-recorder dials chart a graphic red ink progress of precipitation of the proteins into bits of whipped-creamy white. Swirling water in huge tanks complete the purification of the protein. At present, the George Washington Carver Laboratory produces enough protein in 24 hours for 300 gallons of milk.

"Since Ford soy milk is approximately the same composition as cow's milk–3.5 per cent protein, 4.8 per cent carbohydrates, 3.5 per cent fats, and 0.7 per cent minerals–the final operation is simple mixing and addition of minerals, the proper amount of potassium phosphate, calcium chloride and citric acid. The glucose, maltose and dextrin found in corn syrup provide sufficient carbohydrates without making the milk too sweet to be palatable. Refined, hydrogenated soybean oil forced through viscolizers at high pressure supplies fat with such reduced globules that they stay in suspension like those of homogenized milk. Vitamins are added to make the soy milk equal to the best grades of cow's milk in this respect. The result is a tasty, more digestive beverage, Ford soy milk.

"Daily, more and more soybean milk is being produced to meet the demands of experiments taking place at the Henry Ford Hospital in Detroit–dietary experiments conducted among children and infants to determine how completely vegetable protein may replace animal protein so vital to life. Synthetic dairies pouring forth soybean milk in mass production quantities may be on of the most important contributions of America to a war vitiated world." Address: Dearborn, Michigan.

1315. **Product Name:** Soymalade (Soy Malt Drink & Spread. Powdered Base for Beverages or Sandwich Spreads).
Manufacturer's Name: Hodson's Pantry Products. Imperial Brands Co.
Manufacturer's Address: 537 S. Dearborn St., Chicago, Illinois.
Date of Introduction: 1944. January.
New Product–Documentation: Ad in *Nature's Path* (New York City). 1944. Jan. p. 16. "Try this new modern product from Hodson's Pantry." "Soymalade: Soy malt drink & spread–65¢."

Taylor. 1944. The Soy Cook Book. p. 199.

1316. Chapman, Paul W. 1944. Cowless milk. *Atlantic Journal.* April. p. 3-. *
• ***Summary:*** The author believes that Americans will not accept (as Henry Ford suggested) a vegetable drink as a substitute for a glass of cold cow's milk, nor a plate of sprouting soybeans in place of a thick, juicy steak. Address: Dean, College of Agriculture, Univ. of Georgia.

1317. *Southern Dairy Products Journal.* 1944. Can the soybean say moo? April. p. 2. *
• ***Summary:*** This editorial wondered if Henry Ford had estimated all his costs when he announced that soybean milk could be produced for 3 cents a quart.

1318. *Los Angeles Times.* 1944. Baby, only 8 weeks old, already toddles about. June 18. p. D3.
• ***Summary:*** Clarence Dwight Zillig of El Monte, only 8 weeks old today, is already walking. He now weighs 11 pounds–typical for an 8-week-old youngster, but his diet is not typical. He drinks soymilk–27 ounces a day. His mother started feeding it to him when his original formula didn't seem to agree with him. A photo shows the athletic baby and his mother.

1319. Barthélemy, M. 1944. Contribution a l'étude du soya en France [Contribution to the study of soya in France]. Clermont-Ferrand, France: Jean de Bussac. 91 p. June 20. Based on his thesis, Strasbourg Univ., Faculty of Pharmacy. [34 ref. Fre]
• ***Summary:*** This is a published thesis, presented to the Faculty of Pharmacy at Strasbourg. Contents: Introduction. Part I: The cultivation of soybeans. 1. History of cultivation (its origin and importance). 2. Botanical characteristics. 3. Soybean cultivation in detail. 4. Conclusions. Part II: Chemical composition of soybean seeds. Proteins, lipids, oil and lecithin, carbohydrates (*glucides*), minerals, diastases, vitamins, sterols–soyasterol.

Part III: Utilization of soya as a food and in industry. 1. As food (nutritional value, whole soybeans, soy sprouts, roasted soybeans, soy coffee, condiments liquid and solid, soymilk, Li Yu Ying, products derived from soymilk {kefir, yogurt, tofu}, shoyu, miso, natto, soy flour, soy confections, recipes and formulas). 2. In industry: Oil, lecithin, cake. 3. Other uses of the plant.

Part IV: Laboratory work. 1. In human nutrition. 2. Animal feeds for the farm. 3. In industry. General

conclusions. Address: Univ. of Strasbourg, France.

1320. Beau, Maurice. 1944. La caséine du soya (Glycinine) est-elle de la caséine? [Soybean casein: Does it contain casein?]. *Lait* (*Le*) 24(234-236):97-108. April/June. [14 ref. Fre]
• ***Summary:*** Contents: Soya milk and soya cheese (tofu). Soy caseine: Composition and properties (nutritional composition, amino acid composition), types and methods of preparation, various ways of utilization. Conclusions. Address: Ingénieur agronome.

1321. Jones, D.B. 1944. Nutritive value of soybean and peanut proteins. *Federation Proceedings* (*FASEB*) 3(2):116-20. June. [66 ref]
• ***Summary:*** Good review of soyfoods and human nutrition. Address: Bureau of Human Nutrition and Home Economics, Agricultural Research Administration, USDA, Washington, DC.

1322. Stoesser, A.V. 1944. Chemical evaluation of soybean milk and oil in allergic infants and children. Lecture presented at annual meeting of American College of Allergists. June. *

1323. *Business Week.* 1944. Soya Butter. July 22. p. 85-86.
• ***Summary:*** "'Soya Butter' is a new food spread formulated by Butler Food Products, Cedar Lake, Michigan, which is said to resemble dairy butter in 'taste and appearance... but which will not turn rancid.'... The process by which it is made consists of churning hardened soybean oil in soya milk and adding certain unspecified ingredients. The product is shipped in pint-sized cardboard containers or in 38-lb. fiberboard tubs."

1324. Anderson, George K. 1944. Make way for soy in your diet. *Hygeia* 22:525-26, 528, 530. July.
• ***Summary:*** Subtitle: "The little bean with the big reputation is here to stay–so you should know its many good nutritional qualities."

The article begins: "It is only recently that the soybean has been introduced in this country as a food of any widespread use; yet already this little fellow has been variously hailed as a 'wonder food,' a 'miracle food' and a 'magic plant.' It would be difficult for any food to live up to a description such as this,..."

In the Orient, soybeans are known as the "poor man's meat." "Others have called them the 'cow of China,' because the fluid milk or curd made from these beans has served as the only source of milk ever known to most Chinese babies aside from their mother's milk."

In 1943 the soybean was America's "fourth largest pay crop, with a total of 290 million bushels."

"More recently the cultivation of edible varieties or 'vegetable types' is gaining in popularity... They can be eaten either as a fresh vegetable, in the form of dried baked beans, or as any of the prepared products such as soy flour... Perhaps the easiest way to become acquainted with the soybean is to raise it right in your own garden... The shelled beans serve as a fresh green vegetable for table use and taste much like fresh lima beans."

Also discusses [whole dry] soybeans, soy sprouts, soy milk and curd, soy oil, margarine made from soy oil, soy flour, industrial uses of soybeans, and the nutritional value of the soybean and soyfoods. Soybeans now sell for approximately 12 cents per pound in most sections of the country and the flour is priced at 12 cents per pound. Soy flour is used in military rations and in Lend-Lease food supplies.

Concerning [whole dry] soybeans (p. 530): "The American palate is not sufficiently familiar with the full, unmodified taste of soybeans to have developed a real appreciation of them as yet. This taste differs from that of our more commonly used dried beans in that it has a heavier, stronger quality. The processing methods which are now used to make the soy flour and grits serve to mellow this taste so that it is much more bland. It is often said to have a 'nutty' character which is delightful in preparations made of the proper proportions of soya and other foods."

1325. **Product Name:** Butler's Soya Butter (Non-Dairy Margarine made with Soybean Oil and Soy Milk).
Manufacturer's Name: Butler Food Products.
Manufacturer's Address: P.O. Box 4, Cedar Lake, Michigan.
Date of Introduction: 1944. August.
New Product–Documentation: *Business Week.* 1944. July 22. p. 85-86. "Soya Butter." *Soybean Digest.* 1944. Aug. p. 16. "What is Status of Soya Butter?" Ad in *Soybean Digest.* Sept. 1944. p. 11. "New foods from the wonder bean: Butler's Soya Butter."

Short in *Soybean Digest.* 1945. Feb. p. 22. "The *Detroit News* puns in headlines: 'Uses his bean to make butter: Spread it soya can forget about points,' which doubtless refers to the soya butter of Butler Food Products." Note: "Soya" is a pun on "so you." During World War II dairy butter was rationed and one needed points to buy it. *Soybean Digest.* 1945. May. p. 14. "Ohio Ruling on Soya Butter."

Note: This was the first all-soy margarine and the first non-dairy (vegan) margarine made in the USA. It appears to be related somehow to Shedd's Willow Run Margarine. There were conflicting state and federal regulations to whether the product was margarine or not. Finally in December 1945, at which time the company was manufacturing 100,000 units of soya butter a month, a federal judge in Detroit ruled that the product was oleomargarine as defined by the internal revenue code, and therefore subject to back taxes of 10 cents a pound on

every pound made to date. The three-year battle and the ruling assessing an estimated $150,000 in back taxes drove the company out of business in 1946. In about 1950, while typing out an appeal to the government to reconsider his case, Butler suffered a fatal heart attack. Shortly after his death, the margarine law was changed and the tax (on other companies) removed.

1326. **Product Name:** Delsoy (All-Vegetable Soymilk-Based Non-Dairy Whip Topping).
Manufacturer's Name: Russell-Taylor Inc. Renamed Delsoy Products, Inc. by July 1945.
Manufacturer's Address: Livonia Dairy, 2001 S. Telegraph Rd. at Harvard, Dearborn, Michigan.
Date of Introduction: 1944. August.
Ingredients: Incl. soymilk, vegetable oil, sugar.
Wt/Vol., Packaging, Price: ½ pint wax paper carton in the shape of a truncated cone.
How Stored: Refrigerated.
New Product–Documentation: This is the world's earliest known commercial non-dairy whip topping. Letter from Herb Kusche to Bob Rich, both of Rich Products Corp. in Buffalo, New York. 1945. March 22. "Glad to hear you are progressing favorably with your topping with the exception of the Washington delay. It sounds as if you might be on the market very soon. Let's hope so anyway. The government restricted Taylor [Herbert Marshall Taylor] for selling 'topping' for about a month due to the fact that he was overselling his quota. Now I understand he has come out with a complete soy product containing no butterfat. I am going to get a carton of it and send it to you."

Detroit News. 1945. April 16. "Who's who and why." [About Herbert Marshall Taylor and Delsoy]. A photo shows Taylor. In Nov. 1942 the War Food Administration issued an order prohibiting the sale of whipping cream in America. After dairy interests forced Taylor to leave Chicago, he picked up a partner, Eric R. Swanson, who is still with him, and in Dec. 1943 started a business in Detroit. Though dairy people continued to oppose him, his "business soared. In 1944 it jumped from 1,400 to 20,000 gallons a month. He sold at wholesale, then added half pints for the home trade. Now he claims 1,500 independent distributors here [in Detroit]. But along came a War Food Administration order placing a 19 per cent limit on all fats–animal or vegetable–used in his product [which combined a milk base with vegetable fat]. WFA also cut his milk quota. So he started using soy milk as a base, producing an all-vegetable product.

An ad (below this article in Rex Diamond's binder; original source and date unknown) is titled "What is Delsoy? It's the dessert topping that's winning the enthusiastic approval of housewives by the hundreds of thousands. Delsoy is the original topping made of natural vegetable products." The ad shows illustrations of two non-dairy whip toppings: (1) In the foreground, "Delsoy Super Whip: Instant Dessert Topping" which is sold in a pressurized can. The ad states: "Introduced in August 1944, the first product of its kind, Delsoy dessert topping has gained tremendous popularity. Continuing to grow by leaps and bounds..." (2) In the background, "Delsoy: A delicious whip," a refrigerated perishable product which is sold in a half-pint paper container shaped like a truncated cone.

Letter from H. Marshall Taylor to Mr. Holton W. Diamond, c/o Russell-Taylor, Inc., 2001 S. Telegraph Rd., Dearborn, Michigan. 1945. July 6. "Dear Diamond: At the suggestion of Mr. [Bob] Smith, and with my consent, we take pleasure in handing you... ten shares of the common stock of Delsoy Products, Inc. We feel that since you have taken such a great interest in our operations, and that you would like to continue working with us, that we can possibly cement our relations by inviting you to join the small family." At the top of the letter is "Devonshire Topping, Inc." Just above Marshall's signature is typed "Delsoy Products, Inc."

Soybean Digest. 1945. Aug. p. 24. "Delsoy topping: An all-vegetable cream." Note 1. This early non-dairy whipped topping was NOT made with enzyme-modified soy protein.

Note 2. This is the earliest known commercial soy product made by Delsoy Products, Inc.

A W-2 form shows that during 1945 Holton W. Diamond (who lived at 1648 May Ave., Dearborn, Michigan) was employed by "Russell-Taylor Inc., 1951 E. Ferry Ave., Detroit 11, Michigan." [Note the spelling of the company's name; Diamond was working on their whip topping]. His wages totaled $552.13 in 1945. A 1946 form shows he was paid wages $68.25 by Russell-Taylor in the first quarter of 1946.

Shurtleff & Aoyagi. 1979. Feb. Tofutti & Other Soy Ice Creams. p. 22-23. Shurtleff & Aoyagi. 1985. History of Rich Products' work with soy proteins. "In 1944 or 1945 Bob Smith (a former Ford researcher) and Herbert Marshall Taylor introduced Delsoy, a soymilk-based non-dairy whip topping. Launched in the Detroit area, it was sold mostly to the restaurant trade. In the spring of 1945 it was introduced through retail stores in New York. Delsoy was America's earliest known commercial non-dairy whip topping. But it never became a very successful product. In part because it was not a frozen food, its distribution was limited to the Detroit area."

Robert A. Smith. 1979. "The Ford Experimental Laboratory and the 'Square House.'" Interview conducted by Donald V. Baut of Dearborn Historical Museum, May 31. Pages 44-48. This is one of the best sources seen on the origin and history of this product and of Presto Whip, its counterpart in a pressurized can. Starting in the spring of 1943, Smith worked in his spare time, designed the equipment (based on the design of the equipment in the Carver Laboratory but on a larger scale), and built a plant in the old Livonia Dairy on Telegraph Road at Harvard in Dearborn; its initial capacity was about 1,000 gallons

per day (one shift). The equipment in Ford's Carver Lab was designed to produce 150 gallons of soymilk per day in a small non-stop stream. The funds needed to equip and establish the plant in Dearborn came from profits made by selling Devonshire Topping in Detroit. They began production [of Delsoy] in the Livonia Dairy "in the latter part of 1943" (p. 45). [Note 3. This introduction date of late 1943, recalled by Smith in 1979, does not fit with the date given in several earlier documents. 1. Olmsted (April 1945) says that H.M. Taylor started making a filled dairy milk in Detroit in Dec. 1943. He did not start using soy milk until WFA cut his milk quota, apparently in 1944. 2. An undated Delsoy ad from about 1945 states that the Delsoy was "introduced in August 1944, the first product of its kind"]. For the first year or so the company's name in Dearborn was the Russell Taylor Co. Harvey Whitehouse, a Detroit dairyman who was qualified to operate both refrigeration and steam equipment, was hired to operate the plant. Smith left the Ford Motor Co. in Aug. 1945 to work full time with Delsoy Products.

Talk with Herb Kusche, executive vice president of Rich Products Corp. 1993. July 14. He thinks that Delsoy was on the market only several months before Whip Topping, made by Rich Products Corp.

1327. Taylor, Demetria M. comp. 1944. The soy cook book. New York, NY: Greenberg. 215 p. Index. 21 cm. [2 ref]
• ***Summary:*** Emphasis on recipes using soy flour, sprouts, and dried soybeans. Contains one of the most complete early listings of commercial soyfoods products, with product name, and manufacturer name and address.

Contents: 1. Soy–The wonder bean. 2. Growing soybeans in Victory Gardens. 3. How to sprout soybeans. 4. How to cook soybeans: Green soybeans preservation, canning, dehydration, quick freezing, dried soybeans, soybean pulp or "mash" (cooked, crushed or finely chopped soybeans), soybean milk and soybean curd or "cheese," recipes for dried soybeans, recipes for canned soybeans, recipes for soybean pulp, roasted soybeans or soynuts (p. 45), soynut butter (p. 47), recipes for soybean milk and mash [okara]; "It makes a good base for macaroon-type cookies" (p. 50), recipes for soybean curd or "cheese" (tofu). 5. How to use soy flour. 6. Using soy grits and flakes. 7. Stretching meat with soybeans. 8. Using other soy products. List of [commercial] soybean products (p. 199-202). Key to recipe sources.

Chapter 2, "Growing soybeans in Victory Gardens," states (p. 4): "In general, all varieties may be classified under two main types: the field type and the edible or vegetable type. The latter type is the one which is of interest to the Victory Gardener, although a few field varieties, such as Illini or Manchu, are satisfactory for eating purposes." Varietal trials (p. 5-8) with four type-A vegetable varieties (suited for cooler, northern climates) show: In mountainous Colorado, all four varieties matured seed at altitudes of 5,000 to 7,000 feet. In Idaho, all four varieties matured seed at altitudes of 1,700 to 3,745 feet. In Montana, Giant Green soybeans matured seed at altitudes of 3,000 to 4,900 feet. In Wyoming, Giant Green was the only variety to mature seed in Campbell county (4,600 feet) and in Park county (4,600 feet). But all four varieties matured seed in Johnson county at an altitude of 3,750 feet. Giant Green also did well in Utah and New Mexico at altitudes of 7,000 to 8,000 feet. In California, 11 counties reported success with vegetable-type soybeans. In Tucson, Arizona, 8 varieties were grown under irrigation at an altitude of 2,400 feet, all with satisfactory yields. Some varieties also did well in Canada. In St. George, Ontario, Giant Green, Bansei, Fuji, and Willomi all matured seed before killing frost. Bansei was the best producer. In Barrington Passage, Nova Scotia, Fuji was the only variety that produced pods before frost. At Bogot, Manitoba, only Giant Green matured seed before frost, but Fuji reached edible condition. At Swift Current, Saskatchewan, the season was evidently too cool for soybeans. Page 142 states: "Soy grits and soy flakes are made from soybeans in much the same way that soy flour is made. However, they contain almost no fat, and are ground more coarsely. Grits are like corn meal in texture, while flakes resemble rolled oats. Grits and flakes both contain less than 45 per cent protein."

Note 1. This is the earliest English-language document seen (Dec. 2012) that contains the word "soynuts." On pages 45-49 the book gives recipes for: Cream of soynut soup (using 1 cup Co-Op soynuts), Soynut rice loaf. Soynut honey buns. Soynut brownies. Soynut butter. Economical soynut brownies. Soybean brittle (using 1 cup chopped roasted soybeans).

Note 2. This is the earliest English-language document seen (Dec. 2012) that contains the term "soynut butter," used to refer to a product resembling peanut butter that is made from roasted soybeans. The recipe for "Soynut butter" (p. 47) states: "Grind 2½ cups of roasted Vee-Bee soybeans and mix with 2 tablespoons of salad oil. Use in place of butter or as a sandwich spread." On p. 197 is a recipe for Mull-Soy "ice cream."

1328. Cahill, William M.; Schroeder, L.J.; Smith, A.H. 1944. Digestibility and biological value of soybean protein in whole soybeans, soybean flour, and soybean milk. *J. of Nutrition* 28(3):209-18. Sept. [13 ref]
• ***Summary:*** The authors studied the digestibility and biological value (BV) of the soybean protein in cooked whole soybeans (with 10 human subjects, the digestibility averaged 90.5 and the BV 94.5), cooked soybean flour (with 6 subjects, the digestibility averaged 94.0 and the BV 91.7), and "soymilk" (with 9 subjects, the digestibility averaged 89.6 and the BV 95.3). The biological value of egg protein, taken as the standard, is 100. The soybean milk [actually a soy-based infant formula] was Mull-Soy, a brand made by The Borden Co. They concluded that the soybean proteins

in Mull-soy are practically the nutritional equivalent of egg proteins. The soy flour they used was Staley's Soy Flour #2. Address: Wayne University College of Medicine, Detroit, Michigan.

1329. International Nutrition Laboratory. 1944. Meet the vegetable cow (Ad). *Soybean Digest.* Sept. p. 61.
• ***Summary:*** A creative illustration (see next page) shows the head of a cow made entirely from soya. The main part of the face is made from whole dry soybeans. The ears are made of soybean leaves. The horns, forelock, parts surrounding the eyes, nostrils, and mouth are made of soybeans in their pods.

The company now makes 8 commercial soy products: 1. Miller's Giant Green Shelled Soya Beans. 2. Miller's Soyalac (powdered milk), plain, malted, or chocolate. 3. Miller's Soyalac (soya milk), liquid, natural, or chocolate. 4. Miller's Vegetarian Cutlets in uniform slices or diced [made from wheat gluten]. 5. Miller's Soya Loaf. 6. Miller's Soya Spread. 7. Miller's Edible Soya Flour. 8. Miller's Edible Soya Beans.

A photo shows a 14 oz glass jar of Miller's Soya Spread, with some of it being spread, using a knife, on two slices of bread. It is a butter substitute and sandwich filling. Standing next to the jar is a small cartoon figure of man dressed like a chef or baker. The caption reads: "The Soybean Man says: 'There's nothing like it!'"

Note: This is the earliest document seen (June 2009) concerning the marketing of green vegetable soybeans. Address: Mt. Vernon, Ohio.

1330. Associated Press (AP). 1944. Try crushing soybeans for your milk supply. *Wall Street Journal*. Oct. 2. p. 1.
• ***Summary:*** *Domestic Commerce,* a publication of the U.S. Department of Commerce, suggests that if you run out of milk, why not try making soybean milk. It states that "Chinese children are raised on soybean milk and that small amounts of the liquid are being produced in the United States."

According to Dorothy P. Bales of the Bureau of Foreign and Domestic Commerce and author of the article, one method is to soak dried soybeans for several hours, crush them, boil 3 parts water with 1 part bean mash for half an hour, then strain. The resulting liquid "resembles animal milk both in appearance and properties."

1331. Loma Linda Food Company. 1944. Re: Loma Linda Soy Milk. Letter to Mrs. Marie G. Thompson of Milwaukee, Wisconsin, Oct. 17. 2 p. Typed, without signature on letterhead.
• ***Summary:*** This letter is written on the company letterhead which contains an illustration (line drawing) of the new Arlington headquarters, and gives the address and phone number. Across the bottom is written: "Tasty. Wholesome. Nutritious." The author writes: "We are surely interested to know that you have had such good success in raising your baby entirely on Soy Milk and we trust that this good progress will continue. It encourages us to know that there are those who believe in the vegetarian regime and... are willing to demonstrate that babies can be raised on Soy Bean Milk. We are sending you with this letter a copy of our folder featuring Loma Linda Soy Milk. The Kreme O'Soy put up by Madison [Foods] is also a good product. They do not add Carotene [which Loma Linda does, to provide essential vitamin A].

"One of the largest children's hospitals in Los Angeles where they have many allergy cases is using our Soy Milk very extensively and has done so for a number of years." Address: Arlington, California. Phone: Riverside 9217.

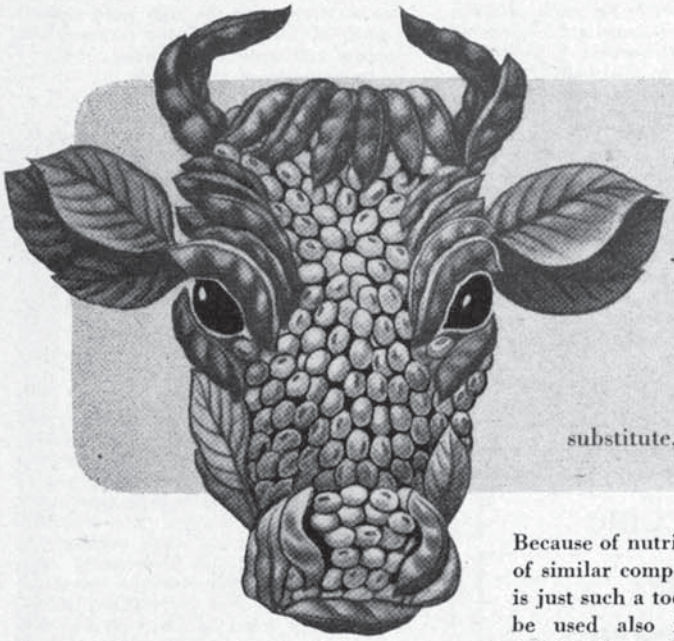
1332. Stoesser, Albert V. 1944. Clinical evaluation of soy bean food in eczema of the child. *Annals of Allergy* 2(5):404-12. Sept/Oct. [1 ref. Eng; spa]
• ***Summary:*** Thirty-seven children were offered a soy bean formula. "Eight could not take it and soy bean sensitivity was only suspected in 3 of these patients. Twenty-nine cases ranging in age from 2 months to 2 years ingested the food very well, but 14 developed a diarrhea which was controlled. Four normal non-allergic controls receiving the soy bean formula did not have diarrhea.

"All of the children progressed remarkably well, with 18 revealing good, and 11 fairly good, results in a relatively short period of time. The improvement continued long enough to make this observation quite significant." Address: Minneapolis, Minnesota.

1333. Moulinier, André. 1944. Essai d'utilisation de la graine de soja dans la fabrication des milieux de culture [Attempt to use soybean seeds in making culture media]. Lyon and Villeurbanne, France: Printed by Association Typographique. 59 p. 25 cm. [19 ref. Fre]
• ***Summary:*** The title pages states that this is the published version of the author's PhD thesis at the University of Lyon, Faculty of Medicine and Pharmacy–No. 357. The work was done at the university's Laboratory of Hygiene. The thesis was presented and defended before the Faculty of Medicine and Pharmacy (section of pharmacy) on 13 Dec. 1944 to obtain the degree of Doctor of Pharmacy. The author was born on 23 April 1920, at Firminy (Loire).

Contents: Preface. Part I. 1. Principal vegetable media used in bacteriology. 2. Overview of the soybean: Botanical origin, geographical origin and distribution, cultivation, chemical composition.

Part I: Experiments. 3. Attempts to use the soybean in bacteriology: Soy bouillon, solid media, bouillon of soy peptone, attempt to use all of the albumins, soymilk–its preparation and utilization, tofu (*petit lait de soja* = little soymilk). Interpretation of results. Conclusions. Address: Pharmacy intern at the Hospital of Lyon (France), certified in



Meet the VEGETABLE COW

The Soybean produces a milk substitute, *Soyalac*,* and a butter substitute, *Soya Spread*.

Because of nutritional needs we should use butter or a tasty spread of similar composition on our bread. MILLER'S SOYA SPREAD is just such a toothsome spread for plain or toasted bread. It may be used also in various combinations for salads, sandwiches, entrees, omelets, croquettes, etc.

Miller's SOYA SPREAD comes in 14-ounce glass jars, and a trial purchase will convince you how little you miss butter when *Miller's* SOYA SPREAD is put on a cracker or slice of toast. Besides a high oil content, *Miller's* SOYA SPREAD, like *Miller's* popular VEGETARIAN CUTLETS, has a high protein value.

* Miller's milk substitute in powdered or liquid form.

THE SOYBEAN MAN SAYS:
"There's Nothing Like It!"

All Miller's products are distinctive and FIRST in quality. Here they are:

1. Miller's Giant Green Shelled Soya Beans.
2. Miller's Soyalac (powdered milk), plain, malted, or chocolate.
3. Miller's Soyalac (soya milk), liquid, natural, or chocolate.
4. Miller's Vegetarian Cutlets in uniform slices or diced.
5. Miller's Soya Loaf.
6. Miller's Soya Spread.
7. Miller's Edible Soya Flour.
8. Miller's Edible Soya Beans.

If your dealer does not stock *Miller's* foods—

Address

INTERNATIONAL NUTRITION LABORATORY » Mt. VERNON, OHIO

microbiology and hygiene, ex-monitor of practical hygiene works.

1334. **Product Name:** Mel-K-Soy (Soy Flour).
Manufacturer's Name: Central Soya Co.
Manufacturer's Address: 300 Old First Bank Building, Fort Wayne 2, Indiana.
Date of Introduction: 1944.
New Product–Documentation: Taylor. 1944. Soy Cook Book. p. 202. "Sold wholesale to bakers." Letter from E.B. Oberg. 1985. May 4. Central Soya tried to get the confectionery trade to use its Mel-K-Soy soy flour in place of non-fat milk powder. The soy flour had a higher protein content and probably lower cost.

1335. Kingsley, Ellen J. 1944. Soybean and soybean products for table use. Washington, DC: Bureau of Home Economics, USDA. 17 p. Mimeographed unpublished typescript.
• ***Summary:*** Contents: Introduction. Green soybeans [green vegetable; "Of the garden varieties tested, the Hahto, Easy Cook [Easycook], and Rokusun are most desirable]. Dried soybeans. Soybeans sprouts. Soybean flour. Soybean milk. Soybean curd. Soybean mash ("The ground bean pulp or mash which remains after the milk has been extracted...).

For each type of soybean or soybean product an introduction followed by several recipes is given. For example: Dried soybeans:

"Dried soybeans may be used in much the same way as navy beans and other dried beans, except that some varieties of soybeans require longer soaking and longer cooking, The Easy Cook and Rokusun require least cooking but Mammoth Yellow, Dixie, and Hahto, are other varieties which may be used successfully as cooked dried beans. All of them need to be soaked overnight and simmered in fresh water for 2 hours or less, according to the dryness of the beans and the variety.

"A pressure cooker may be used to advantage in cooking dried soybeans. Soak the beans before cooking. Easy Cook and Rokusun varieties will cook in 15 minutes in a pressure cooker at 15 pounds pressure. Dixie, Hahto, and Mammoth Yellow require 25 to 30 minutes at 15 pounds pressure.

"Although soybeans are very rich in fat, in cooking, a little meat fat or butter may be added for flavor. To bake them, use cooked dried beans, season, and cook in a slow oven for 3 or 4 hours.

"A number of appetizing dishes may be made of soybean pulp, which is obtained by mashing, grinding, or pressing the soaked dried soybeans through a coarse sieve." Ten recipes for dried soybeans are given. Address: Under Scientific Aid, Foods and Nutrition Div., USDA, Washington, DC.

1336. **Product Name:** Soy-B Prep Soy M Powder (for Making Soymilk).
Manufacturer's Name: Natural Health Products.
Manufacturer's Address: 143 W. 41st St., New York 18, New York.
Date of Introduction: 1944.
New Product–Documentation: Taylor. 1944. The Soy Cook Book. p. 201.

1337. Soya Foods Ltd. 1944. Soya flour: Make your dishes more nutritious (Leaflet). Elstree, England. 2 panels each side. Each panel: 20 x 12 cm. Undated.
• ***Summary:*** Contents: Introduction. How you should use it. Recipes for household use [of soy flour]. Child and infant feeding.

At the bottom of panel 3 we read: "A section on soya flour, including further recipes, can be found in 'Food Without Fuss' [1944], by Josephine Terry, the well-known *Daily Mirror* cookery expert (Publishers, Faber & Faber, price 4/6)." Address: Boreham Holt, Elstree, England. Phone: 2421.

1338. Anderson, Hans Steele. 1944. The new food therapy: Diet and the healing art. Maitland, Florida: Printed by The Academy Press. 165 p. See p. 37-38, 64-66, 85-86, 89, 118-19. 23 cm.
• ***Summary:*** This is a rewritten and enlarged edition of the author's *Food Therapy: Diet and the Healing Art*, published in 1942. The author, apparently a Seventh-day Adventist, was born in 1877.

Pages 37-38 contain a discussion of soya bean products (including Soya Lac, which is alkaline in reaction, and is made by the International [Nutrition] Laboratory, Mt. Vernon, Ohio). There are home-scale recipes for: Soybean milk no. I (made from soybean flour). Soybean milk No. II (made from powdered soybean milk–Soya-Lac). Soy butter substitute No. I (made by blending soybean flour, soybean oil, and a few drops of dandelion butter color with a Dover beater). Soya bean butter substitute No. II (made by blending Soya-Lac powdered soybean milk with soybean oil; refrigerate). Soybean cheese, made by curding hot soybean milk with a little citric acid. "Season with rich soybean milk and salt as you would flavor ordinary cottage cheese and serve."

Pages 64-66 give nutritional information on soybeans and soy-products, and compare soybean milk with cow's milk. "As a source of wholesome food constituents, the soybean probably has no peer... Soya bean milk contains more food mineral and vitamins than cow's milk; is alkaline in reaction; has a greater proportion of calcium; and forms into smaller curds in the stomach. Soya milk, moreover, is far cheaper than cow's milk and may be prepared fresh as required, and can be seasoned to suit anyone's taste."

Other soy-related recipes include: Soybean-wheat muffins (p. 85-86). Use of soy bean flour in wholewheat bread (p. 89; it can be substituted for up to 25% of the wheat flour).

In the chapter titled "Diet and the healing art," under "Lecithin," pages 118-19 note that "there is a new food factor called lecithin which promises to become a factor of importance on account of its being essential for reconstruction and for the maintenance of vital organs, including the brain, nerve forces, heart and liver. Oil that is contained in the soybean is comparatively rich in lecithin and vitamin A and in this respect it is said to resemble butter. Cow's milk proves rather deficient in lecithin whereas soya milk is fairly rich in this essential constituent. Nutritional anemia which has been brought about through an exclusive use of cow's milk may be quickly eradicated by a liberal use of soybean milk."

1339. Bordas, Jean. 1944. Le Soja: Agronomie du soja, utilisations agricoles et alimentaires, usages industriels, économie du soja, état actuel de la question en France. Dieuxème ed. [The soybean: Agronomy, agricultural and food uses, industrial uses, economics, and present status in France. 2nd ed.]. Montpellier, France: Dubois et Poulain. 32 p. The 1st edition (36 p.) was published in 1937. [39 ref. Fre]
• ***Summary:*** Contents: 1. Introduction (he notes that World War II is "the war we have just lost"). 2. Soybean agronomy: Botanical characteristics, varieties (in Japan, China, Manchuria, USA), acclimatization trials in Europe, soybean cultivation (incl. inoculation), 3. Food and agricultural uses of soya: Chemistry of the soybean, alimentary physiology, as a feed for animals (soybean cake, forage, soybean seed and flour, soymilk mixed with 25% animal milk), other agricultural uses, as a human food (soy sprouts, tofu, fermented tofu, smoked tofu, how to make tofu), condiments–sauces (soy sauce, miso, tuong of the Annamites, soy coffee, provisions / rations), human therapy (incl. infant foods).

4. Industrial uses: Soybean oil, casein, plastic materials (Sojalithe), vegetable lecithin, cellulose, sterol.

5. Soy in the economy: Production, imports and exports.

6. The present state of the soybean question in France–Conclusion.

A full-page table (p. 7) shows varieties developed and acclimatized to various countries. France: Rouest 29. Rouest 250. Rouest 104. Rouest 14. Rouest 71. Rouest 60. Rouest 178. Rouest 16. Rouest 36. Rouest 85. Rouest 6. Rouest 67. Rouest 40. Rouest 500 M. Rouest 13. Vilnensis.

Russia: Schribaux (Rouest). Lawes et Gilbert (Rouest). Miège (Rouest). Staroukrainskaya. Halton 502/2. Kouben 0.354. Kouben 0.375. Kharbinskaya 190.

Germany: Früheste Mittelhôhe gelbe. Mittel Frühe. Mitteleurope. Diekmanns frühgelbe. Diekmanns hel'gelbe. Diekmanns grungelbe. Platter silo. 236 Pappelsdorf. 238 Pappelsdorf.

England: Green Jap. Brown C. Yellow J.

United States: Cayuga. Manchu. Illini. Tokio noir [Tokyo Black]. Mandell. Black Eyebrow. Wisconsin. Chestnut. Mandarin. Lisbonne.

On page 8 is an interesting map of France which shows: (1) Twelve centers of agronomic research. (2) A shaded zone which is the area of optimal production of soybean seeds. It is in the southeast of France and along the eastern side of France all the way to the northern border. This zone includes (from southwest to northeast) the following centers: Toulouse, Montpellier, Avignon, Antibes, Clermont, Dijon, and Colmar (in Alsace).

Pages 5-6: The first trials made by the agronomic stations in France date from 1901. Mr. Lechartier, director of the station at Rennes, concluded at the end of his observations, that the production of soybean seeds would be more advantageous in a climate that was drier and warmer than that of Brittany (Bretagne).

These were the same conclusions that Mr. Brioux, director of the agronomic station at Rouen, arrived at some years later.

Starting in 1924 the agronomic station at Avignon, the central station for plant improvement at Versailles, in 1935 the stations at Colmar, Clermont-Ferrand and Dijon, and in 1940 the School of Merle (Bouches-du-Rhône), established soybean [germplasm] collections which originated in many different places, in order to test the earliest and most productive varieties that were adapted to each region.

Rouest and Rondet in the south of France, Dr. Balzli in Alsace and de Guerpel in Normandy were the main agronomists and selectionists who were passionately interested in the cultivation of Soya in France.

Note: Rouen is the historic capital city of Normandy, in northern France on the River Seine. Address: Ingénieur Agronome, Directeur de la Station Régionale de Recherches Agronomiques d'Avignon, France.

1340. Hauser, Bengamin Gayelord. 1944. Diet does it. New York, NY: Coward-McCann, Inc. 248 p. Index. 20 cm. Rev. ed. 1951 (117 p., 28 cm), and 1952.
• ***Summary:*** In the preface, the author states that for 20 years he has been a pioneer in the field of scientific eating. The author does not advocate a vegetarian diet, but he does recommend use of soya beans, and consumption of plenty of vitamins and whole (unrefined) grains. For example, at the start of chapter 3 titled "Normal Nutritional Regime" is a section on "Proteins Come First." It says: "Protein foods are of two kinds, spoken of as first class and second class proteins. The first class proteins keep the body in excellent repair. Such proteins are found in egg yolk, cheese, milk, yogurt, and glandular meats such as liver, kidney, brain, and sweetbreads. The muscle meats which we eat as roasts, chops, and steaks are also first class proteins but are less valuable to the body than glandular meats. A few vegetable foods contain first class protein: soya beans, nuts, wheat, especially wheat germ..." An active man should eat 75 gm of protein daily to maintain buoyant health. Half of the amount

should be supplied from animal protein. "Recent studies have revealed that about 60% of the people in America obtain too little protein to build full health. With the higher costs of eggs, fish, and meat, protein deficiencies of a more severe nature may be expected. For that reason you should acquaint yourself with 'the honorable soya bean' or the 'meat without bones' as it is called in the Orient. Prepared correctly as directed in the 'New Health Cookery,' Chapter 20 [sic, 21, of this book], soya beans can be delicious and fortunately contain first class protein."

Cooked soya beans are a good source of vitamin B-1 (p. 32). "Buy only whole wheat or soya bean macaroni, spaghetti, and noodles which are sold at stores specializing on health-building foods. Use brown rice rather than the white variety. Eat soya beans, baked, in "meat" loaves and patties" (p. 34).

Soy-related recipes include: Cream of soya soup (with cooked soya beans, p. 217). Soya nut croquettes (with baked soya beans mashed, p. 224). Soya bean loaf (p. 224). Soya and peanut butter patties (with cooked soya beans, p. 224). Delicious soya muffins (with soya flour, p. 228). Soya cream waffles (with soya flour, p. 229). Soya nut waffles (p. 229). Delicious soya cake (with soya flour, p. 229). Soya cookies (with soya flour, p. 230). Whole soya flour pie crust (p. 232; with "½ cup whole wheat flour and 1½ cups soya flour" etc.). Soya bean sprouts (homemade, p. 234; "They are also often used with soya bean curd and vegetables in chop suey."). Soya bean milk (homemade, p. 235). Address: Beverly Hills, California.

1341. La soya: Excellente alimento para el hombre como para el ganado y valiosa materia prima de numerosos usos industriales: Indicaciones para su cultivo y aprovechamiento [The soybean: Excellent food for people and for livestock and valuable raw material with numerous industrial uses. Remarks on its cultivation and utilization]. 1944. New York, NY: Reader's Digest. 32 p. [Spa]*
Address: New York City, New York.

1342. Matagrin, Am. 1944. Le soja: Culture et utilisations [Soya: Cultivation and utilization]. Paris: Gauthier-Villars. 72 p. Illust. No index. 28 cm. [Fre]
• ***Summary:*** Contents: Introduction: Why does soybean culture remain little known in France? 1. What is the soybean (*le Soya*)*?* Why should it be cultivated?: The plant and its varieties, the soybean (*la fève de soya*) and its general characteristics, alimentary interest in soya, agricultural interest in soya, industrial [non-food] interest in soya.

2. Soybean cultivation: The question of climate, choice of the variety to cultivate, choice and preparation of the land/soil, fertilizers for soya, soya in crop rotations, seeds, sowing, and seedlings, mixed cultures or intercropping, soybean vegetation and crop management, maturation, harvest, yield, and storage.

3. Use of the soya plant and its seeds: Soya in agriculture and livestock feeding, soya in human foods, recipes, industrial uses of soya, people and organizations connected with soya, contracts for growing soybeans in 1944. Table of contents.

The section on soya in human foods, based on the author's 5-6 years of personal experience, discusses, with recipes: green vegetable soybeans (*soya en légume vert*), whole dry soybeans (*soya en légume sec*), soy sprouts (*germes de soya*), fermented soy condiments (shoyu, miso, natto), soy flour (bread containing soy flour was made at Paris and even at Vichy in 1939), soymilk and tofu (*lait de soya et fromage végétal*), roasted soybeans and a coffee substitute (*soya grillé, substitut de café*), soy oil (*huile de soya*). Address: France; In 1946: Technical Consultant to Bureau Francais du Soja.

1343. Miller, Harry W. 1944. The story of milk from the soya bean. Mount Vernon, Ohio: International Nutrition Laboratory. 37 p. See p. 1-6.
• ***Summary:*** This rare and very interesting booklet was sent to Soyfoods Center by Charles D. Howes of Mt. Vernon, Ohio, in Feb. 1979.

Contents: Full page photo of the "International Nutrition Laboratory established for processing soya bean foods, located at Mt. Vernon, Ohio. Foreword, by J.A. LeClerc, PhD, Formerly Senior Chemist of the USDA (Retired). March 5, 1944. The story of vegetable milk (Soyalac), by Harry W. Miller, M.D. Early trend, observations in China, back in America, the milk question, encouraged to produce a vegetable milk, further studies in China, the role of the International Nutrition Laboratory in America. Other products of the International Nutrition Laboratory.

"Foreword: The preparation of a palatable and appetite-appealing soya milk is proving a great boon to people allergic to cow's milk. It has been estimated that 20 to 25 per cent of our population are allergic to ordinary milk and many thousands of babies suffer from infantile eczema and other violent symptoms, whose condition clears up when transferred to soya milk feeding.

"Soya milk as prepared has approximately the same composition as cow's milk, except when soya milk is especially prepared for infants its formula simulates mother's milk. Soya milk contains more Vitamin B than cow's milk, and an equal quantity of Vitamin B-2. The valuable proteins found in soya milk contain all the Amino-acids known to be essential for growth. Preparations made from the soya bean are relatively rich in iron and copper, so that soya milk compares very favorably with animal milk as to its nutritional and biologic values.

"Soya milk has this further advantage that it does not endanger the user to disease producing germs.

"In view of the fact that there is not enough animal milk available in this country for the optimum nutrition of our

population, also that it takes three years of care and feeding before a cow gives milk, that only a small percentage of the food consumed by the cow is returned in the form of milk, and further that the use of only ten million bushels or one twenty-fifth of our annual soy bean crop for conversion into soy bean milk, would supply a pint of milk every day to 8,000,000 people, at a cost less than that for cow's milk, and that soya milk is palatable, and especially acceptable by children, it would seem the sensible thing to encourage the preparation and consumption of soya milk on a large scale.

"The 'Story of Vegetable Milk' is most interesting to read. The successful preparation of an appetite-appealing soya milk, after years of experimentation by Dr. Harry W. Miller, now bids fair to become one of the most practical of modern food discoveries. Its use will not only be the means of saving thousands of children from unnecessary suffering and sickness but soya milk should prove a good substitute for cow's milk for those who are allergic to animal milk.

"It is my sincere wish that all who are fortunate enough to obtain a copy of Dr. Miller's "Story of Vegetable Milk," will study its contents and then pass it on to others, in order that in due time, millions of our people will have recognized the full nutritive value of this most excellent food product."–Signed, Joseph A. LeClerc, PhD.

"Early trend: Being the oldest of a family of five children, it fell to my lot to help Mother about the kitchen. She was well known for her sumptuous meals, and we always had many visitors at our house. Later as a part of the curriculum of the college which I attended was a course in cookery, and this stimulated my interest in knowing how good things were made as well as their food values. Then when I became a student of medicine we were introduced into a study of food preparation which in those days (1898) was rather unusual in the program of a medical school. This course only seemed to further whet up my interest in the study of foods and their preparation.

"Having to earn the resources for pursuing my medical education. I secured the position of guiding visiting groups through a food factory. As I explained the processes of manufacture, many questions were directed to me on all phases of nutrition as it relates to health and disease, and I took great interest as a guide to inform myself in every way available. I hungrily devoured literature on the subject and was fortunate in being under the tutorage [sic, tutelage] of the father of nutrition work in America, namely the late Dr. John Harvey Kellogg, to whom more credit belongs for furthering the selection, processing and sanitary packaging of breakfast foods than any other man. He was forty years ahead of the times in advocating the value of proper diet in relation to the cure of the sick, and so I have been able to grow up with the advance of nutrition work from its beginning and see the birth of the science of dietetics.

"Observations in China: In the autumn of 1903 my wife and I sailed as medical missionaries for interior China. After a stormy voyage, in which seasickness had deprived us of rations that were included in the price of our ticket, as well as several pounds of flesh, we arrived at the port of Kobe, Japan, where our colleagues, Dr. and Mrs. Lockwood, who preceded us one year, had a small sanitarium and had prepared a sumptuous meal for us. Half starved, we ate with great relish. One dish that was new to us especially attracted attention. It was a protein loaf made from the soy bean curd which was marketed under the name 'To Fu.'

"Arriving at the port of Shanghai, China, we went inland and took up our abode in the central part of the province of Honan, where we not only wore the Chinese costumes, including the queue, but our diet was from foods bought from the local markets, and consisted of only those edibles indigenous to China. Here again we were introduced to the soy bean, whose home is China, and which has been the great source of protein of the Chinese people for millenniums.

"The bean was grown abundantly in Honan, and in fact in all parts of North and Central China. Wherever the Chinese emigrate, they utilize this bean in many marvelous and tasty ways, mostly, however, in the form of cheese made by coagulating the milk with calcium sulphate. This curd is eaten in its soft state, or else pressed into little square cakes. The curd may be formed in sheets by pressing cloths. They also gather sheets of almost pure albumen [yuba] from a scum arising to the top of the soy milk on heating same. Accustomed to people chiefly drinking cow's milk, rather than making products from it, I questioned the Chinese why they did not use the soy milk. They said some of the aged with weak digestions do, but that the cheese was more popular, as they could combine it with other cooked foods. Still more did I wonder why, for the much undernourished infants of the Orient, they did not give them soy milk, containing as it does such important food entities as salts, vitamins, protein and oil in richer amounts than the bean curd and without the undesirable gypsum.

"Being engaged in language study and other mission responsibilities for several years I could do but little more than ponder over what I felt were great possibilities in soy milk for the people of China as well as other lands, were it scientifically studied.

"Another observation I made was that the people of North and Central China who were vegetable-protein eaters, getting especially soy bean rations, were a large and muscular people in comparison with those of the South, where rice was the food, and who used more meat in their diet. These results were later confirmed by experiments to show that the protein of the soy bean is one of the greatest body building foods known.

"Back in America: After eight years' service in China, I was compelled to return to America on account of illness contracted in interior China. When sufficiently recuperated, I was called to the position of medical superintendent and

surgeon of the Washington Sanitarium and Hospital at the nation's capital. This again brought me in touch with important nutrition studies carried on at the government bureaus in Washington and also the work at Johns Hopkins University. We also had our own laboratory where we prepared several soy products and introduced many original dishes into our hospital dietary. The Washington Sanitarium was an institution whose dietary was of the lacto-vegetarian type" (Continued). Address: M.D., Mt. Vernon, Ohio.

1344. Miller, Harry W. 1944. The story of milk from the soya bean (Continued–Document part II). Mount Vernon, Ohio: International Nutrition Laboratory. 37 p. See p. 6-11.
• ***Summary:*** Continued. "In order to get our protein supply, we went heavy on cow's milk and dairy products. In 1917 we received notice from the dairy which supplied us milk, that the government had requisitioned their entire milk supply to the Walter Reed Military Hospital, and we would have to look to other sources. We secured a large farm nearby and expended several thousand dollars buying the best registered cows we could secure. Our heavy investment necessitated that I should give some study to the dairy business. And, although I grew up on the farm and as a boy it fell to me to do the milking, which was usually accomplished in the barnyard or in the cow stable, my boyhood anxiety while milking was how best to save the milk from dirt contamination, in which we had many narrow escapes, and when none to successful we had to add an extra thickness to the strainer cloth. We knew nothing then of infected milk through disease of animals, or of milk as a carrier of infections and spreader of epidemics, of cow allergy, or that the milk contained toxins that came from certain feeds and pastures. My father being a school teacher, taught us, however, to try to keep flies out of the butter, and lids on the milk crocks while the cream was rising. From the day I began to milk cows I lost interest in drinking milk.

"The acquisition of this dairy by the Washington Sanitarium not only convinced me of the need of a substitute for animal milk, but my investigations into all phases of the care of a herd and its product, milk, served as a preparation for building up just such a product with nutritious properties equal to those of animal milk.

"The Milk Question: Among the several dairy publications studied, I was especially impressed with Dr. M.J. Rosenau's book on "The Milk Question," especially since he was recognized as America's foremost hygienist, being surgeon-general of the U.S. Public Health Service. Dr. Rosenau aimed in his book to inform the public of dangers in animal milk and the need of improved methods for caring for same. To start with, he calls attention to the following: The milk-giving animal may be suffering from serious disease or there may be contamination while milking, both from filth on the animal or from exhalations from diseased cows, from milkmen's unclean hands, dirty milk pails or strainer cloths, unclean holding receptacles, the fly menace, putrefactive changes in milk while standing in the sun or being hauled to the market, contamination from often repeated handling of milk, failure of pasteurization to make infected milk good and safe, and also the contamination of the infant nursing bottle. In his amazing statement of the high infant mortality through contamination of milk, he also enumerated numerous epidemics transmitted by milk infection, typhoid, scarlet fever, and other disease scourges. However. Dr. Rosenau's book was written too early to list undulant fever now known to be wholly contracted from infected animals.

"The results of these investigations led me to check our herd of carefully selected cows for tuberculosis, with the result that five of the finest milk cows reacted as tuberculosis infected animals, and the results were confirmed by specimens of infected glands taken from each animal. During these years of investigation and practical experience I became convinced of the following facts:

"1. That the cow's milk is a perfect food for the calf during its early period of development. The grown calf turns to other food later and the mammary secretion of the cow is for a short period. The calf has four stomachs and possesses enormous powers to digest the heavy curd of cow's milk. It should be kept in mind that each animal gives a milk most suitable for the nourishment of its own kind. A calf's growing conditions are different from the human, so that cow's milk is not suited by nature as a perfect food for man.

"2. Out of a mixture of milk from several cows you are almost certain to get strains of pathogenic germs, which are not always certain of destruction by Pasteurization temperatures. Only when Pasteurization temperatures are held at 154 degrees Fahr. for 30 minutes can its germicidal action be depended on.

"3. Tests made on 500 well people showed that 27 per cent gave evidence of allergy to cow's milk, of whom about one-fourth were severe reactors.

"4. Certain foods in the animal diet affect the character of the cow's milk.

"5. Cow's milk has six times the amount of calcium of human milk, but such salts are not so available to the human infant as the calcium of woman's milk.

"6. The casein or protein of cow's milk forms a tough curd in the infant's stomach, and since the infant's digestive organs are poorly developed, the casein is only partially available.

"7. Cow's milk is frequently constipating to both infants and adults and has a tendency to gas formation.

"8. Both vitamins and minerals are a variable item in cow's milk, depending on her diet. The cow borrows all she contributes in food values from vegetation. If what she eats does not have vitamins, her milk cannot contain same.

"9. Animal milk certainly has proven of value in the feeding of infants and children, still, because of certain lacks and dangers to be found in cow's milk, an effort to find a

safer and more suitable substitute is justifiable.

"10. Deriving nourishment from cow's milk is an extravagant waste of food materials, since the cow returns but 12 per cent of her feed in milk and only 8 per cent of what she eats is stored as muscle tissue for beef.

"After all, the only perfect food for humans is woman's milk, and that only during the lactation period, as every animal gives a perfect milk to start off the nourishment of its kind. The reason goat's milk is better for infants, is that its offspring's growing needs more nearly parallel those of the human infant, whereas the milk of the large animals whose offspring make a very rapid growth are not so suitable for the human species without considerable modification. Thus extensive modification of cow's milk is required to make it suitable for infants, so that baby food manufacturers discard some of the fat, others modify the salts, still others soften the curd, and some replace the entire sugars; and to be sure of vitamins, they always have to be supplemented.

"So, we ask why not build up just the milk we want to start with, and this we have now accomplished. Nevertheless, cow's milk will still continue to occupy an important place in the American dietary, but let us not conclude it is indispensable, by any means. However, we are convinced that every process the cow uses to make milk could be duplicated in the laboratory as regards the transformation of food materials to become a part of our growth and energy needs. We have sugars even superior to animal lactose, vegetable oils with a less tendency to rancidity. Minerals, as also vitamins, are today added to food with greater certainty than depending on their existence in animal milk, and thus far there is no protein superior to that found in the soy bean, as it contains all the indispensable amidoacids [sic, amino acids] that constitute complete protein nutrition" Continued. Address: Mt. Vernon, Ohio.

1345. Miller, Harry W. 1944. The story of milk from the soya bean (Continued–Document part III). Mount Vernon, Ohio: International Nutrition Laboratory. 37 p. See p. 12-18.
• ***Summary:*** Continued. "Encouraged to Produce a Vegetable Milk: Having arrived at these conclusions which were based on extensive feeding experiments, we set about to get milk from a vegetable cow. However, my colleagues shook their heads saying, 'You might make something that looks like milk, but will it have those living properties that fit the requirements of a growing life in the form of a human individual?' But I have only to remind them that in the early days we thought of vitamins as living principles that evaded analysis, causing reactions but perishing with attempts at investigation, subsequent years have erased this argument and we can now analyze vitamins as well as manufacture them, as they have a chemical formula.

"I could easily have become discouraged in trying to bring out a substitute for animal milk because of the well established dairy business in America where sixteen per cent of United States industry flourishes, except that all the while I had in mind the people of the Orient in behalf of whom I had dedicated my life for service as a young man. Millions die annually for the lack of a suitable balanced food beverage to take the place that animal milk occupies in the American dietary, and as many more suffer lifelong weakness and ills because of faulty nutrition, especially in the early years of life. I was also well aware that in America we have many who cannot take animal milk, either dislike it, are fearful of it, or are allergic to it, who are ill nourished for lack of a milk substitute. And even yet cow's milk is not available to all the inhabitants of the Americas.

"As I pondered over what a suitable milk food would mean to the Oriental races, where there was such a lack of that kind of food, I felt that humanity was throttled at its start. I was also aware of the dangers to health and life that lurk in the lacteal secretions of animals and the way milk is handled in dairy yielding countries. Consider also the economic food waste, in view of the enormous amount fed to animals and the little protein return. Think of what this well-processed vegetable protein would mean were it fed to the starving millions of this world. I determined to work out the problem of a vegetable milk. It occurred to me that if wool could be made direct from vegetable protein instead of feeding protein to the sheep, we could make milk without the digestive laboratory of the cow.

"I first investigated to see what had been accomplished, and discovered that two groups of child specialists, one in Baltimore, the other in Cleveland, had fed infants a gruel made from soy bean meal, and the reported results were very satisfactory. In America, all experimental feeding work was done with mixtures made from milling the soy bean into flour, although the fiber of the meal was a drawback. Yet because of the high nutritive value of soya protein and its alkalinizing properties, it possessed remarkable values as reported in infant feeding by these authorities.

"We made the acquaintance of two men prominent in soy bean work of the U.S. Department of Agriculture, Dr. W.J. Morse, Chief of the Soy Bean Division of the Department of Agriculture, and Dr. J.A. LeC1erc. Chief Senior Chemist of the Bureau. These men filled me with inspiration, enthusiasm and information. Throughout the succeeding years, we have had several interviews, and both of these men have made frequent visits to our Nutrition Laboratory at Mt. Vernon, Ohio.

"My preliminary studies made me aware that I would be confronted with many problems in producing from the soy bean an easily digested, tasty, wholesome milk that would meet a popular demand.

"My thirteen years spent at the nation's capital as surgeon and Medical Superintendent of the Washington Sanitarium and Hospital gave me a preliminary foundation in research methods for the years to follow in China. These years, from 1913 to 1925 were synchronous with the time

of the beginning of modern dietetics. McCullom at Johns Hopkins University in Baltimore was neighbor to us, and he was actively pursuing the study of vitamins and their dietetic value. I was intimately acquainted with this pioneer worker and in fact at the Government Bureaus in Washington there was a great arousement on the importance of dietetics and cooking advances, to which work I had ready access, as well as utilizing the marvelous Surgeon General's and the Congressional Library facilities, seeking the latest publications on food, processing and nutritional work.

"It was during this year I published my first book entitled, *The Way to Health*, which has enjoyed a wide circulation.

"During all these studies, my thoughts were focused on the Soy Bean, the world's great protein yielder, and how to best utilize it, and incorporate it into the American dietary as a substitute for meat, fish, milk, eggs and cheese. Early and late we were running experiments at the little food plant we erected in connection with the Washington Sanitarium and Hospital We realized that the large things in soy bean utilization in America, as also in the Orient, remained to be worked out in the future, and that our work was the first real effort to be recorded relative to a soy bean milk suitable for infant feeding and as a complete beverage milk.

"Further Studies in China: Finally in 1925 the opportunity came for me to return to China. My employing organization, the Seventh-day Adventist Church, sent me to establish a sanitarium at Shanghai. During the early years after my return to China, my time was fully occupied with medical and surgical work and the building of the Shanghai Sanitarium and Clinic, and assisting in the establishment of numerous other medical units in different parts of the Orient. However, simultaneous with this work, my son and I began to carry forward the assembly of a soy bean plant at the Shanghai Sanitarium. My work necessitated my return to America for a brief period about every two or three years and this gave me the chance to discuss my problems with chemists as well as investigate suitable processing machinery.

"In my contacts, while traveling in China. Korea and Japan, I discovered that a milky looking solution, a water extraction of soya protein, oil and its contained vitamins and minerals, had been tried out in infant feeding in some hospitals, in some instances with satisfactory results, but for the most part with quite disappointing results.

"The method used in its manufacture in most cases was to soak the beans, grind them in a stone mill with a stream of running water and this milky solution was filtered through a cotton cloth and then boiled, sugar added, and various flavors tried out to cover the beany taste, but flavor control was not possible by the strongest essences. As I examined this milk, it was apparent that something must be done to overcome the beany taste, and I concluded the reason the people were using bean curd rather than drinking the milk from which the curd was made, was that it tasted better after it was coagulated than before. Further, it needed to be farther processed to make it more digestible, and until we could add sugar and additional oil to it, we could not have a balanced milk as is found in human milk.

"Being familiar with the process of constituting cow's milk from skim milk powder, and sweet butter, through melting the butter, mixing it with the dissolved milk powder, and then homogenizing it, I concluded that we could do the same with this water-extracted solution from the hydrated soy bean.

"Since I knew that soy milk was a colloid liquid just the same as animal milk, and would hold a suspension of emulsified oil, I lost no time in getting a colloid mill that would do this same work, and could now constitute a liquid of any formula of protein, fat and sugar, so the resulting solution would be a colloid liquid as animal milk. Yet, I was far from having a milk that gave satisfactory results as to digestibility and could be borne by infants without too great looseness of the stools; and while you could sweeten it up so babies would take it, the older group would take a sip and turn it aside because of its bitter taste. To get rid of that beanish taste seemed far off, but to process it so that it could be more digestible, I thought was surely possible. Much work had been done at Ames, Iowa, in experimental animal feeding. Not only did these experiments show that thorough cooking under pressure of soy beans raised the availability of soy protein to 95 per cent absorption, but that weight and growth records in feeding of pigs and fowls were far superior to those of animals fed ordinary cooked beans, and thorough processing caused a disappearance of digestive disturbances" (Continued). Address: Mt. Vernon, Ohio.

1346. Miller, Harry W. 1944. The story of milk from the soya bean (Continued–Document part IV). Mount Vernon, Ohio: International Nutrition Laboratory. 37 p. See p. 18-23.
• ***Summary:*** Continued. "This coincided with work that I had done in which I discovered the fact that the more you process vegetable protein, the more digestible and available the protein becomes, while the contrary holds for animal proteins, which are less digestible when overcooked. Having proven that soy beans were improved in both taste and availability through thorough processing, we conducted extensive cooking tests to determine optimum temperatures and length of cooking required to give us the best flavor and to render the several soya products, including soya milk, most readily digestible and assimilable. In the feeding of infants, whereas simply boiling milk causes great looseness of the bowels, as soon as we processed at the correct temperature and determined the exact period of time in most cases even the premature and weakest infant could take the soya milk without this laxative effect. Occasionally an infant would still have too loose movements and the soya milk would have to be modified by adding the acidophilus

organisms or a little boiled cow's milk. With the solving of many nutritional problems regarding soya rations, we began feeding it to the infants and children at the Shanghai Clinic, keeping careful records in each case. We had no difficulty in getting children to accept soya milk, even though it was not so tasty in those days as the soy milk we have now.

"I knew there were yet many factors that must be solved to accomplish in this vegetable milk all that is claimed for animal milk. For instance, we must correct the beany taste, then the milk must be capable of being made to formula, containing definite quantities of fat, sugar, protein, minerals and vitamins. It must remain a colloid liquid and be capable of spray-drying into a powder that completely reliquefies, also made as inexpensive as animal milk.

"All these I believed must and could be accomplished, just as we had already made the milk more digestible than animal milk. The first problem was that of flavor control. I had endeavored to educate my American friends to learn to like the natural bean taste, just as people have learned to like yeast, as later the soya taste will be as pleasant to them as to the Oriental people who do not care for the taste to be changed. But the result was that they would pick up a glass that looks like animal milk, smell of it and sip it and say, 'It does not taste like cow's milk.' To this I replied, 'No, it does not taste like cow's milk, nor goat's milk, nor horse's milk, nor human milk," but I assured them that an infant would as readily change from its mother's milk to soya milk flavor as to cow's milk flavor. When I insisted on their drinking a glass of it instead of smelling of it or sipping at it before they passed judgment on its taste, the results were much better. Still I concluded that it takes much more than mere proof that a thing is scientifically correct to put a food across. The food must have a taste appeal and I believed that this could be accomplished with soya milk. It is a fact that food we relish is the food that gets the most bountiful supply of our digestive secretions, for good flavors and odors are a stimulant to the organs of digestion.

"Returning to America, I addressed myself again to this problem of removing the beanish taste. I had previously filed application to the U.S. Patent Office for a patent for constituting a vegetable soy milk of any given formula. Through our research we had now found that which was responsible for the beanish taste and also what to do to debitter it. We were able to make a milk from the soy been that could not be detected as from the bean. I therefore appeared at Washington with my samples of debittered soy milk powder and canned liquid soy milk and accompanied by my attorney we went before the commissioner of patents. Never before was I put through such a grilling. One man had spent several months looking through all available literature to see if my claims were entirely original and others checked over to see that they were true, and then my finished products were examined by expert tasters. The commissioner assured me that there were already patents on making a vegetable milk out of the soy bean and that as far as he knew none had ever netted their originator very large returns. This was my opportunity, and I remarked, 'Yes, but you have no patent that gives a method for debittering the soy bean nor of constituting a milk from it of any given formula, and not one of those products is palatable.' He and his taster admitted having tasted many soy products, and this was the first time there had ever come to them a truly debittered soy milk.

"My lawyer assured me my case was won and in a short time I received word that the patent had been awarded me No. 2078962. This patent covered several processes original with us, as debittering, and thus making a usable milk; the special methods of cooking so as to make soy products readily digestible; the method of preserving the protein from spoiling whereby it could be bottled as liquid milk, tinned as condensed milk, or dried as powdered milk; also the method of incorporating through homogenization the food principle to any given formula, reinforced by both vitamins and minerals. It but remained for us to find suitable machinery and equipment for practically carrying out extensive production by means of the above patented processes, and since much of this was not available, we had to have some specially built. For many years we had made soya milk only for our Shanghai Sanitarium and Clinic, using a few small machines and cookers sufficient for our needs. Through this small unit we were able to carry on extensive feeding of infants and children as well as the sick patients, also expectant and nursing mothers. Remarkable results were obtained in feeding post-operative cases, as they could start nourishment with soya milk much earlier than with other foods without the usual gas complaints. Ulcer of the stomach people did exceptionally well, also sprue patients, those suffering from colitis, the several types of dysentery, and those with constipation. For diabetics and arthritis eases the results were most satisfactory. In meeting up with allergy, soy milk proved to be the one food we could always turn to in our dilemma of finding something to agree with those suffering from skin rashes, vomiting. diarrhea, nervous attacks, dyspepsia. etc.

"In order to meet a growing demand for soya milk, we shipped to China the essential machinery for the first soy bean milk factory. It was the first soy bean creamery ever established and equipped with laboratory and machinery to make canned milk, condensed milk and spray dried powered milk and vacuum packed bottled milk, with regular deliveries. Milk routes were established in all parts of Shanghai, and the production doubled each succeeding month. Three types of liquid milk were produced: natural soya milk, chocolate soya milk and acidophilus milk, packaged in pint and quart bottles. The price to the consumer was less than that of cow's milk in Shanghai, which thus made available a milk rich in food value for all members of families whose circumstances did not permit them to buy the more expensive animal milk. It was here demonstrated that

soya milk in every way filled the average family requirement for a milk, and that in countries where the economic conditions make impracticable dairies, where stock feed is scarce and costly, the people may still have an equally suitable milk. We were able to bottle soya milk so that it would keep indefinitely without the need of refrigeration, and could be kept for a week or a month if necessary without spoiling. Thus we had a bottled milk and also a powdered milk that did not require refrigerators, and the expense of delivery was eliminated. Also, people were assured of a pure bacteria-free milk, one that would not give rise to intestinal disturbances in hot weather.

"Soyadophilus, a delicious sour milk made by growing the lactic acid organism in sterilized soya milk, had a remarkably large sale. In fact, cheese and numerous other preparations were made from our soya milk, while the powder afforded a convenient form in which to ship soya milk to western and northwestern China, where transportation rates were high. One pound of powder will make eight pounds, or four quarts of liquid soya milk" (Continued). Address: Mt. Vernon, Ohio.

1347. Miller, Harry W. 1944. The story of milk from the soya bean (Continued–Document part IV). Mount Vernon, Ohio: International Nutrition Laboratory. 37 p. See p. 23-30.
• ***Summary:*** Continued. "Unfortunately, the war that broke out in Shanghai on August 13, 1937, put an end to this illustrious beginning of making a soya milk with the vegetable cow. The sales returns were just beginning to equal the cost of operation. As a consequence of the war, the fire and bombing destroyed more than a hundred thousand dollars, national currency, worth of property and equipment. However much valuable experience had been gained during this time through the feeding of infants and children and the dieting of special disease conditions. The results of this experience were published in the *China Medical Journal*, 1937. These results showed that soy bean milk was second only to mothers milk in the feeding of infants and children and has no equal in dieting cases of stomach acidity and other intestinal complaints. The high biologic value of its protein, the ease of its digestion and ready absorption, when combined with dextrose and maltose, yielded a food of tremendous value to the people of the Orient where the soy bean is indigenous. This brief experiment in conducting a soy bean dairy left a contribution far exceeding the losses sustained by fire and the bombs. For two years we had to turn largely aside from food manufacture. We were busy establishing and organizing a sanitarium at Hankow, China, known as the Wuhan Sanitarium and Hospital. This large institution was extensively used for the care of sick refugees and disabled and wounded soldiers up till October 25, 1938, when the Japanese army forces entered the Wuhan area. Three months later I, with a group of four other Americans, being among the first to evacuate from Central China, were granted transportation on a Japanese transport to Shanghai.

"The Role of the International Nutrition Laboratory in America: Back in America, my first thoughts were how most advantageously to follow up our food research work and lay hold upon the wealth of nutritional advance and the knowledge of food processing in the U.S.A. in perfecting processes developed in China. The need of the peoples of the Orient was uppermost in our mind and protein direct from vegetation seemed their only way out for adequate nutrition, the soy bean naturally being that source. We, therefore, secured land and erected a suitable building on a farm at the suburbs of Mt. Vernon, Ohio, as this was in the soy bean growing belt.

"No sooner did we start the foundation of the building than we began also to fabricate the equipment for carrying forward the processes already worked out for the manufacture of soya milk and subsidiary food products from the soy bean according to our more recent research. The farm gave me opportunity to grow several types of the edible soy beans. The edible soy beans differ widely from the field type beans grown so extensively in the United States. The field varieties are raised for hay or for ripened beans to be used by the oil refiners, the residual bean cake is sold for stock feed. A small part of the bean crop is used for flour. The edible beans are those varieties that are better flavored, easier to cook, make better flour and are such as can be shelled in the immature state for green pack tinned beans. There is as much difference in foods made from the edible beans and those made from the field soy beans as in the taste and quality of sweet corn and that of field corn. There are two belts in America for producing soy beans. Some varieties of soy beans mature in from 90 to 120 days and are suitable for planting in the northern belt which includes the states of Ohio, Indiana, Illinois, Michigan, Wisconsin and Iowa, and the beans requiring over 120 days to mature are grown in the southern belt including the states of North and South Carolina, Georgia, Arkansas, Texas and Missouri.

"Out of fourteen varieties of the edible beans planted on our farm, four outstanding varieties were selected, namely, Bansei, Aoda, Funk's Delicious and Hokkaido. These four mentioned in the order of their value were found best for green pack canning, also made the best quality flour and milk, and were found best for processing for other foods. From our southern soy bean station located in North Carolina, there were three varieties, namely, Rokusun, Tokyo and Woods Yellow, named in the order of their value for food processing, A very unique feature of our farm experiment work was the shelling of green soy beans, with the use of a Viner obtained from the Scott Viner Company of Columbus [Ohio]. Some 40,000 cases of these delicious beans were put up this season (1943). A single unit of these Viners is capable of shelling five tons of green beans in one day.

"Because of the limited production in America of these fine vegetable types of soy beans, we readily saw that we

would have to run, as an important adjunct of the laboratory, a seed department, and an extensive agricultural program in raising this type of beans, and our methods in these lines have been perfected to overcome shattering, uneven ripening and other heretofore drawbacks to the raising of these splendid beans. We now have under cultivation annually several hundred acres of these large delicious edible soyas for green bean canning and for milk processing.

"Our factory, a newly built brick structure, lined with enameled tile, was completed in the autumn of 1939 and contains laboratory space, test kitchen space where soy milk and soy products are under continual tests for their combining properties in tasty recipes. This modern food factory has three large boilers for supplying steam pressure for processing, and contains specially constructed stainless steel cookers, vacuum pans, spray dryer, iron cow (homogenizer), grinder, centrifuges, sterilizers and other processing machinery. This is our first model plant where we have arranged the machinery in series so that the hydrated beans start at one end of the factory and come out a dehydrated complete milk powder at the other end, all ready for tinning in sanitary cans, and shipping.

"Nothing is perhaps more spectacular than to watch this milky bean juice being converted into a palatable, readily digestible milk, containing all the food essentials, with minerals and vitamins added and flowing from the iron cow in quantities as much as is often secured from the aggregate milkings of several hundreds of cows. It is truly a wonder, a colloid milk, bacteria free, being made in a sanitary laboratory.

"The splendid tasting and readily soluble powdered milk as it is now produced at the International Nutrition Laboratory came about only as a result of much effort and time in making many improvements and alterations of equipment from week to week. Dr. Weisner, of Ohio State University, did much valuable research work on the bacteriology of soy milk, and we are indebted to Dr. W.J. Morse for supplying seeds and much valuable information, and to Dr. LeClerc, senior chemist of the Government Department of Agriculture, for check-ups that assisted us in the standardization of our products.

"We were fortunate in being able to develop this milk in the Orient with a background of the Chinese experience with soy bean foods for ages and also have the benefit of scientific and technical expert help in the United States through the frequent visits I made to this country, and I feel profoundly grateful for the services of many of the leading nutrition experts as also the laboratory and engineer help to be found in Government Bureaus at Washington and at the Ohio State University. For vitamin assays, I am indebted to Dr. Howard J. Cannon, Director of the Laboratory of Vitamin Technology at Chicago. In the Orient we also had able laboratory help, and the feeding work was under our own supervision in Shanghai Sanitarium Clinic, a 200-bed hospital conducting a very large maternity and children's department.

"Soy beans can be grown in almost any country of the world and are capable of many methods of preparation. In Oriental countries we need to improve the preparation of soy bean foods to make them more digestible. In the Occident we have readily at hand the processing vats to thoroughly cook the beans, but to go over big, they must be made readily available and also palatable. The International Nutrition Laboratory, as its name indicates has been established to thoroughly process the bean and at the same time make it palatable so that its use can be universal. In warm climates or frigid areas nothing is more easy of digestion than the colloid liquid, soya milk.

"On several occasions we have gone out to lecture and give demonstration to clubs and to the annual meetings of the American Soy Bean Association. We have observed the textiles, fabrics and plastics made from soy bean protein with great admiration. At one meeting, wool was shown made from the soy bean and at another a cap, necktie, and many other articles we use" (Continued). Address: Mt. Vernon, Ohio.

1348. Miller, Harry W. 1944. The story of milk from the soya bean (Continued–Document part VI). Mount Vernon, Ohio: International Nutrition Laboratory. 37 p. See p. 30-34.
• ***Summary:*** Continued. "After all, protein is an important component of our clothing and many articles we commonly use. The soy bean is nature's greatest protein yielder. From 35 to 52 per cent, or almost one-half the weight of the dried soy bean, is protein. Next in value is the oil. By way of comparison with navy beans, peas, lentils and lima beans, the soy bean has 300 per cent more protein and ten times as much oil content.

"In making up our dietary requirements, we pay eight times as much for our protein as we do for carbohydrates and three times as much for protein as we do for oil. This may impress the reader with the great economic wealth in the soy bean. Nitrogen or protein is of first importance to the growth and maintenance of the human race, as well as the entire animal kingdom. While mankind has often depended on the flesh and products of animals, such as milk and eggs, for this protein supply, the animals had to basically depend on vegetables for their nitrogen. It is only vegetation. that can utilize the nitrogen of the air and inorganic sources of nitrogen and place it in accessible form for animal life. For instance, we exhale every atom of nitrogen of the air that we inhale. None is utilized or stored in our tissues. Therefore, whether we drink animal milk, eat animal flesh, or take only vegetation, we get our edible protein solely from plant life, and there is no superiority in the animal stored protein, to that eaten by the animal and which is primarily available to the human from vegetation. So, as the sheep makes wool from the protein it eats, so the cow makes casein from the protein she eats. Unless the animal gets protein, there would

be no wool or casein. But it is not necessary to use the animal digestive laboratories to make either wool or milk, for we can take the products the animal eats to make wool or milk by means of laboratory technique, and that under sanitary conditions.

"The chief and outstanding product of the International Nutrition Laboratory is soy milk, put out under the names of Soyalac and Soy-A-Malt, names having originated in the early days of our experimental work while pioneering in this field. Soy-A-Malt is put out under the registered trade mark No. 390909 U.S. Patent Offices and Soyalac registered trade mark is 389131 U.S. Patent Office.

"However, the Laboratory is concerned in making a large variety of foods from the soy bean and already has a score of such products on the market utilizing the entire bean, which is all valuable in human nutrition. Since milk has a wide variety of uses, we are making a beverage liquid Soyalac put up in tin cans, of 13 ozs. and 30 ozs. respectively. A chocolate flavored Soyalac is also put up in 13 oz. tins. A modified infant food powder, called Soyalac, is put up in one pound glass containers, which meets all the requirements of the growing infant from birth onward to the end of the nursing period, after which it is used to supplement the child's diet. This infant food has as its chief constituent vegetable oils homogenized, a combination of sugars including dextrose, maltose and dextrin, and supplemented by vitamin A and D with calcium, phosphorus and iron added. Hundreds of babies in America and other countries with allergy, weak digestion and intestinal disturbances, are now being most satisfactorily nourished by Soyalac, a complete infant food including all known requirements for infant nutrition.

"Miller's Soy-A-Malt is now a country-wide known beverage milk sold in either natural malt flavor or chocolate flavor and packed in one-pound, four-pound and twenty-pound containers, possessing all values of the soy bean nutritionally but without the bean flavor. Many who want a milk more nearly the animal milk flavor call for All Purpose Soyalac. This is packed in containers same as Soy-A-Malt, and can he used for cooking purposes as well as beverage the same as animal milk. Until we brought out these vegetable milks which are rapidly taking their place in the market beside cow's milk, soya milk was chiefly demanded for certain specific diseases such as correcting acid states, intestinal upsets, and for diabetics. The composition of all soya milk powders will be found on the labels as well as directions for using them.

"Frozen soya milk desserts and soya ice cream are now quite popular. Recipes are given for the home refrigerator.

"This little pamphlet concerns itself with the history of soya milk development rather than trying to cover the field of the International Nutrition Laboratory, for this soy food processing institution is the largest plant in the world devoting its entire efforts to human nutrition from the soy bean and for making meat substitutes. Foods that look like and taste like meat are made with high protein values. Our canned soya beans are among the most delightful and tasty vegetables. The soy bean is nature's highest protein yielder and the International Nutrition Laboratory engages in the manufacture of these fine protein foods from the edible varieties only.

"No claims are made that soya milk has yet been developed by us to its final possibilities, but at least these twenty-five years of painstaking study and experimentation has resulted in a food second to none as an essential to strong body building and health. So much progress has been made in changing the extracted milk liquid of the soy bean used for millenniums by the people of China for making cheese [tofu] into a complete food of inviting appearance and delicious taste, with food values the equivalent of either human or animal milk that we feel rewarded for the effort and expense. Our soy milk can be made into a sour milk resembling buttermilk, it can be made into a cheese, and this cheese can be treated so as to have the appearance and flavor of meat. We have not tried to enter into the comparative values of soya milk and cow's milk. There is much to be said regarding the value of soya milk and the story of Soya Milk would not be complete without a summary of the many virtues and nutritional values of soy food products. The soy bean, often called these days the 'wonder bean,' is just as wonderful as a food supplier as in the oil industry, or when used for plastics.

"The protein of the soy bean possesses all of the indispensable amidoacids [sic] and therefore is a complete dietary substitute for milk, eggs and meat, and stands as the only vegetable protein that is biologically equal to meat proteins. By our extraction process we are able to obtain 85 per cent of this edible protein in a soluble form that means that it is very readily digested. Truly, it is a wonder bean, for it does wonders in the nourishment of the well as also the sick. It is good for growth and excellent for body maintenance" (Continued). Address: Mt. Vernon, Ohio.

1349. Miller, Harry W. 1944. The story of milk from the soya bean (Continued–Document part VII). Mount Vernon, Ohio: International Nutrition Laboratory. 37 p. See p. 34-37.
• ***Summary:*** Continued. "Let us notice the high points in favor of soya milk as manufactured by the Miller process at the International Nutrition Laboratory:

"1. The edible soy bean, which is the protein base of soy milk, is the richest source and unquestionably the highest type of protein known.

"2. Soyalac made by our modern equipment takes from the soy bean about 85 per cent of its protein content, 50 per cent of the oil and the major portion of the mineral and vitamin content, all of which is extracted in true colloid liquid form.

"3. Soya protein contains all the indispensable amido-

acids that are of known value in human nutrition, and is biologically comparable to animal protein.

"4. Soyalac, as made by the International Nutrition Laboratory, supplies every purpose of animal milk for the new born, the growing child, for the adult, the pregnant or nursing mother, and in the dieting of special diseases.

"5. Soya milk, being first thoroughly debittered, is capable of affording all varieties of flavors by their addition, and its sweetness will depend on the amount of dilution added.

"6. It is hypoallergic and serves as a substitute protein diet to those of allergic tendencies.

"7. It has a definite standard formula which can always be maintained, for it is laboratory checked.

"8. It is free from pathogenic germs and other types of harmful bacteria.

"9. It is a definitely alkalinizing food of great value in treating arthritis or dieting acid or ulcer states, and serves as an ideal nonresidue diet of high nutrition value in intestinal disorders, particularly amoebic dysentery, sprue and colitis.

"10. Mixed with lactic acid bacillus or acidophilus cultures it makes a delicious sour milk drink and one of known therapeutic value in intestinal disturbances.

"11. Eight pounds of soy beans fed to a cow will produce a gallon of cow's milk, whereas the same eight pounds of beans by our process yields eight gallons of soya milk equivalent in value to cow's milk. In other words there is a great economic saving, not to consider perhaps other advantages in a vegetable milk.

"12. It is the only vegetable protein that is biologically equal to and may be substituted for animal milk, cheese, eggs, fish and meat in the human diet with safety, and mixes well with fruits and vegetables.

"13. All Miller's milks are richer in calcium than cow's milk and are vitamin D fortified.

"This little pamphlet on the Story of Soya Milk is issued by the International Nutrition Laboratory, Mt. Vernon, Ohio.

"Other Products of the International Nutrition Laboratory: The Vegetarian Cutlet is another of Miller's distinctive high protein foods. These are marketed as choice, uniform sliced cutlets for frying or broiling; or diced for use in roasts, chop suey, patties, croquettes, hash, or as meat extenders. Sold in small family size, or in large containers for hotels, restaurants and institutions.

"Miller's Canned Green Shelled Soya Beans are a treat. They contain the nutritious values of meat, fowl, eggs and milk. They are grown as choice edible beans, and canned just before ripening.

"Miller's Soya Spread not only takes the place of butter as a spread, being rich in fat as well as protein, and very pliable; but is also combined in many table recipes. It comes packed in 14-oz glass sealed jars.

"Miller's Soya Milk is packed in various formulas and different sized containers.

"Soya Malt, as a spray dried powder, either with a malt or chocolate flavor.

"Soyalac all purpose milk, for either a beverage or in cooking and baking.

"Soyalac Infant Food, a soluble milk powder, hypo-allergic, fortified as a complete vegetable milk.

"Soyalac Liquid Milk, in either natural or chocolate flavor.

"For descriptive material regarding other Miller Foods, such as Soya Loaf, Vegetable Cheese, Soya Flour, write to the manufacturers at Mt. Vernon, Ohio." Address: Mt. Vernon, Ohio.

1350. Saillenfest, Jean. 1944. Le Soya: Sa culture et ses utilisations [The soybean: Its culture and uses]. Paris: Editions de Montsouris, 1 rue Gazan, Paris XIV. 96 p. 19 cm. Series: Collection Rustica. Preface by Pierre Chouard. [10 ref. Fre]

• ***Summary:*** Contents: Preface. Foreword. 1. The soybean worldwide and in France. 2. The plant: Botanical description, varieties, vegetative cycle, climate, area of cultivation. 3. Soybean culture: In fields (fertilizer and soil amendments, symbiotic bacteria, sowing, soya forage), in the garden. 4. Diseases and enemies of the soybean. 5. Soybean utilization: Table of uses, main industrial uses, uses on the farm, the soybean in the family cuisine (green vegetable soybeans [*graines de soya vertes*], soy sprouts [*germes de soya*], soaking soybeans, cooked ground soybeans [*pâté de soya*], soya desserts (dry roasted soynuts [*Soya grillé*], soy cakes and confections with roasted soy flour), soy coffee, how to make soy flour at home, soymilk, tofu [*fromage de soya*]). 6. Regulation of soybean varieties: Table of varieties: The role of G.I.O.M. (*Groupement interprofessionnel des oléagineux métropolitains*), growing contracts, classification and catalog of varieties, prices of seeds, how to obtain seeds. Address: France.

1351. Union Nacional de Cooperativas del Campo. 1944. Instrucciones sobre el cultivo de la soja y sus aplicaciones. 2nd ed. [Instructions on the cultivation of the soybean and its applications. 2nd ed.]. Madrid. 16 p. [Spa]

• ***Summary:*** Pages 12-14 list industrial uses of soybeans, give a nutritional analysis of white and black soybeans (Soja blanca, Soja negra) done by the Central Agricultural Station (*Estación Agronómica Central*) using samples from Granada, and briefly describe several soyfoods, including soy flour, soymilk, and tofu (*queso de soja*). Thus section concludes: "Outdoing the known anecdote of Permantier, who offered Louis XVI a succulent feast in which all the dishes were made of potatoes, today one could make a menu that was more varied, rich and select in which the delicacies as well as the serving utensils would all be derived from soya." Address: Madric, Spain.

1352. White, Julius Gilbert. 1944. Abundant health: Expounding the Learn-how-to-be-well system of daily living. 4th ed. Madison College, Tennessee: Published by the author. xix + 437 p. Illust. 24 cm. [21+ ref]

• ***Summary:*** The maintenance of physical and mental health can be achieved through a vegetarian diet and wholesome living. Interesting sections include: Meat not necessary (p. 150-52; 13 quotes from authorities). Denmark's food experiment under Dr. Hindhede during World War I (p. 152-53). Sixteen reasons for vegetarianism (p. 153-). The animal kingdom a reservoir for disease (p. 165-). Note that Madison College is a Seventh-day Adventist college and sanitarium.

Soya is discussed on the following pages: Soybeans and soybean products as a replacement for meat (p. 151-52). One section titled "The Soybean: The Wonder Food" (p. 345-59) discusses many aspects of soybeans and how to use soybeans: In baking. In general cooking. As beans. As beans ready-cooked. As meat. As milk (gives 3 recipes for making soybean milk and ways for using "the pulp left after making milk"). As cream. As cheese ("A very satisfactory soybean cheese is now available in the health food stores. It has a texture something like cottage cheese..."). As butter. As oil. As home-made soy butter (made from 4 tablespoons each soy flour and water, 1 cup of oil, a little salt and butter color if desired). As home-made soy mayonnaise (based on the above home-made soy butter). As soy acidophilus milk (also often called soy buttermilk). As greens (soy sprouts). As soy sauce. As coffee. As substitute for egg white.

On page 389 begins a long treatise on the safety of aluminum in connection with cooking and foods, a subject which is causing much debate. Address: Madison, Tennessee.

1353. Williams-Heller, Annie; McCarthy, Josephine. 1944. Soybeans from soup to nuts. New York, NY: The Vanguard Press. 119 p. Foreword by Walter H. Eddy, Ph.D., Professor Emeritus of Physiological Chemistry, Columbia University. Index. 20 cm.

• ***Summary:*** Dedication: "To the soybean pioneers, American and Chinese."

Contents: Introduction. Part 1. The soybean: Vegetable of tradition and high nutritional value, "fresh green soybeans," dried soybeans, sprouted soybeans, soybean oil, soybean flour, soy grits and soy flakes, soybean milk and curd, soy sauce, soy nuts. Part 2. How to prepare soybeans: General directions; fresh green soybeans, dried soybeans, and sprouted soybeans; soybean milk, curd, pulp or mash; soy grits and flakes.

Part 3. Recipes: Appetizers, soups, meat stretchers, meat substitutes, croquettes and fritters, side dishes, salads, salad dressings, sauces, sandwich spreads, breads and quick breads, desserts, soybean-milk drinks, soybean nuts. Part 4. "One soybean dish a day" (Menu suggestions).

The section titled "Soybean-milk drinks" (p. 107-08) contains 5 interesting recipes: Banana soybean-milk shake (with 4 cups soybean milk, 1 ripe banana, 1 tablespoon honey, and 1 teaspoon lemon juice or vanilla or almond flavoring, to taste; it used no ice cream). Eggnog (with 4 cups soybean milk, 3 eggs, 3 tablespoons honey, nutmeg and cinnamon to taste, and flavoring to taste). Hot cocoa with soybean milk. Spiced soybean milk (with 4 cups soybean milk, 2 tablespoons honey, ½ teaspoon cinnamon, and a pinch of nutmeg, or mace [somewhat like chai]). Vanilla soybean-milk shake (with 4 cups soymilk, 2 tablespoons honey, vanilla flavoring to taste).

About the authors: "Annie Williams-Heller, a former Austrian and now an American citizen, has had international experience as a consultant and author in the field of nutrition and food. She holds diplomas from several European schools and has undertaken graduate academic studies in this country. She is an active member of both the New York Dietetic Association and the Soroptimist Club of New York and an associate member of the International Federation of Business and Professional Women.

"Broadcasts and many publications in leading newspapers and magazines here and abroad are indicative of Mrs. Williams-Heller's desire to create a bridge between scientific knowledge and its practical application for the public and housewife.

"In this connection she became interested in the soybean. She studied this miracle food from the soil to the kitchen at a time when its qualities were known only to pioneers in the field.

"Josephine McCarthy, a graduate of San Francisco State Teachers' College, has had twenty years experience as an executive in various of the country' largest restaurant and bakery chains. In hotel work she has supervised the training of food workers from chefs on down.

"For the past five years she has been broadcasting on food preparations and news of the home. At present, as Home Economist for the American Institute of Food Products, she is known as 'Ella Mason' to millions of devoted fans, and is heard daily with Doctor Walter H. Eddy on the 'Food and Home Forum' over Radio Station WOR, emanating from New York City" (inside rear dust jacket).

Note: This is the earliest document seen (Dec. 2003) that contains a recipe (in standard format with the amount of each ingredient) for a non-dairy soybean-milk shake, or for soy eggnog. It is also the earliest English-language document seen (Dec. 2003) that contains the term "soybean-milk shake." Address: 1. Nutritionist and Food Consultant; 2. Home Economics Director, American Inst. of Food Products ("Ella Mason" on the Dr. Eddy Food and Home Forum). Both: USA.

1354. Ecuador Ministerio de Economia, Subsecretaria de Agricultura. 1944? El Ecuador produce Soya, el alimento ideal, nutritivo y barato. Cultive y consuma soya [Ecuador produces soya, the ideal food, nutritious and inexpensive.

Grow and eat soya (Poster)]. Quito, Ecuador. 1 p. 2 x 3 feet. Undated. [Spa]
• ***Summary:*** A remarkable poster. Request seeds for your planting from the Undersecretary of Agriculture, Quito, Ecuador. But soya from the national distributor. "It yields well in sheltered places." With soya, you can make tortillas, empanadas, tostado, bread, soup, soymilk (*leche vegetal*), tofu (*quesos*), fideos, etc.

An illustration shows an Ecuadorian man, woman and child, in traditional dress, on a hill overlooking their fields, with a basket of whole soybeans beside them, and snow-caped mountains in the background. Address: Ecuador.

1355. Ecuador Ministerio de Economia, Subsecretaria de Agricultura. 1944? Soya: El fréjol maravilloso que mejorará la dieta de la América de post-guerra [Soya: The marvelous bean that will improve the post-war diet of the Americas (Poster)]. Quito, Ecuador. 1 p. 2 x 3 feet. Undated. [Spa]
• ***Summary:*** A striking poster. Soya has nutritive value in the form of proteins, oils, carbohydrates, and vitamins. A substitute for milk, eggs, meat, fruits, and pulse / vegetables (*legumbres*).

An illustration in a square, with a caption, in each of the four corners of this poster shows: (1) 1 lb. of soya flour and 3 liters of water = 3 liters of soymilk (*leche vegetal*). (2) Student outside of a schoolhouse. Toasted soybeans taste like peanuts. (3) Competent authorities consider soya the most complete food. 1 kg of soya = 88 eggs or 12 liters of milk. (4) Woman facing a stove. To cook soya with ease, put it in cold water. Address: Ecuador.

1356. Ecuador Ministerio de Economia, Subsecretaria de Agricultura. 1944? Algunos aspectos importantes del frejol "soya": Alimentacion, vestidos, hogar, industrias, haciendas, perfumeria, medicina [Some important aspects of soya: Food, clothing, the home (paint), industry, the farm, perfumes, medicine (Poster)]. Quito, Ecuador. 1 p. 2 x 3 feet. Undated. [Spa]
• ***Summary:*** A large and detailed poster, showing the versatility of soya. Soya: A low cost food with good nutritional value. Seven illustrations, each in a vertical rectangle, has a one-word caption then details in smaller letters. The caption words are: Food. Garments. Home. Farm. Industry. Perfume. Medicine. Under food (for example): Substitutes of butter, lard, meat, coffee, egg albumin, flour, edible oil, cereals, food for babies and children, tostadas, bread, cocoa, sweets, eggs from chickens, soymilk / vegetal milk (*leche vejetal*), green beans and dry beans, sauces, etc. Address: Ecuador.

1357. Ecuador Ministerio de Economia, Subsecretaria de Agricultura. 1944? El alimento ideal para los niños: "Soya." Nutre mas y cuesta menos [The ideal food for children: Soya nourishes more and costs less (Poster)]. Quito, Ecuador. 1 p. 2 x 3 feet. Undated. [Spa]
• ***Summary:*** A charming poster. Soya: Its nutritive value in proteins, oils, carbohydrates, and vitamins can substitute for milk, eggs, meat, fruits, and pulses / vegetables (*legumbres*).

An illustration shows a wide-eyed woman next to a bowl of fruit, cup of beverage, and a plate holding a cooked chicken and a whole egg. Address: Ecuador.

1358. Ecuador Ministerio de Economia, Subsecretaria de Agricultura. 1944? Soya: El alimento del pueblo [Soya: The food of the people (Poster)]. Quito, Ecuador. 1 p. 2 x 3 feet. Undated. [Spa]
• ***Summary:*** A remarkable poster. If you cannot buy milk, eggs, meat, fruits, etc., get soya, which contains the nutritive principles of those foods. Raise robust children with Soya. With it you can make empanadas, fideos, galletas, soups, tortillas, frozen desserts, soymilk (*leche vegetal*), cream (*crema*), etc.

An illustration shows a very strong Ecuadorian working man, with his right hand raised over his head, standing next to his wife and child, in modern urban dress. Address: Ecuador.

1359. Gotham, Lucille J. 1944? Allergy to certain foods. *Madison Health Messenger* (*Madison, Tennessee*) 6(1):1-2. Undated.
• ***Summary:*** A reader writes to ask: "I am on a diet eliminating wheat, milk, and eggs. What products and foods can I substitute for them while I am experimenting?" The author answers: "Milk is the hardest problem. Through the years nut milks and soy milks have been developed, and they may be used in cooking in place of cow's milk, with satisfying results for almost everyone. They are also very nutritious. The soy milks are liquid or dry... If you make your own nut or soy milk you had better ask your physician about the advisability of adding some dicalcium phosphate with viosterol and some vitamin A. These additions will not change the flavor noticeably, and they will safeguard your health.

"You will like soy cheese in place of real cheese. Health food stores have these special foods." The following recipes are then given: Nut milk (almonds make the best milk). Soy milk (made from soy flour). Plantation cocktail (with soy milk). Creamy soup (with soy milk and Savita [a product made from brewer's yeast]). Soybean apple crisp (with soy flour). Soy cookies (with soy flour). Creamy rice pudding (with soybean milk). Soy piecrust (with soy flour). Corn soy mush (with soy flour). Mayonnaise (with soy flour). Address: Dietitian.

1360. Loma Linda Food Company, Inc. 1944? The Loma Linda line: 35 selected recipes. Arlington, Riverside, California. 16 p. Undated. 16 cm.
• ***Summary:*** This little undated booklet, bound with 2

staples, is printed with brown ink on tan paper. Front cover: "They're tasty. Wholesome, Nutritious." On the inside from cover is a quotation by Ellen G. White: "Those who understand the laws of health and who are governed by principle, will shun the extremes, both of indulgence and of restriction. Their diet is chosen not for the mere gratification of appetite, but for the upbuilding of the body. They seek to preserve every power in the best condition for the highest service to God and man" (Source: *Ministry of Healing,* p. 319).

Contents: Soy beans (canned; introduction + 4 recipes). Soy Mince sandwich spread (Specially ground soy bean with nuts, olives, tomatoes, and choice vegetable flavoring; 9 recipes). Garbanzos (canned, 4 recipes). Proteena (Plain or with smoke flavor) (A nut- and cereal combination with a meat-like texture, "yet contains no animal product"; 8 recipes). Nuteena (Makes tasty cutlets; 7 recipes). Savory lentils ("One of the latest additions to the Loma Linda line." Grown in Chile. Cooked, seasoned to impart a meat-like flavor, and canned. 2 recipes). Syl-Dex breakfast wheat (with dates and powdered psyllium, dextrinized). Oven-cooked wheat (dextrinized, 1 recipe). Fruit cereal. Breakfast cup (Made with soy beans, plus grains and figs. Alkaline beverage served like coffee). Fruities (bite-sized raisin-filled wafers). Fruit wafers. Date sandwich. Soy-Weet Wafers (with soy flour). Ruskets (Whole wheat with malt, sugar, and salt; dextrinized). Soy milk (canned). Savorex (yeast extract). Savory Bits (Wafers made from wheat and soy flours plus Savorex). Address: Arlington, Riverside, California.

1361. **Product Name:** Milnot (Filled Dairy Milk Containing Soy Oil).
Manufacturer's Name: Milnot Co.
Manufacturer's Address: 120 W. St. John, Litchfield, Illinois. Phone: 217-324-2146.
Date of Introduction: 1944?
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: American Soybean Assoc. 1974? "Soybeans: From America's fertile soils the world's versatile protein resource." A photo shows a can of Milnot. Product line seen at Adventist Book Center in Pleasant Hills, California. 1990. July 9. The company is now located in Litchfield, Illinois (Phone 217-324-2146).

Talk with Tenny Hutchcraft at Milnot Co. 1990. July 11. She assistant to the president, Mike Osborne at the company's headquarters (100 South 4th, St. Louis, Missouri 63102). The company was started by the Howser (spell?) family. Milnot was originally called Milnut. It was introduced during the 1940s and widely used during World War II. The product has always been made in Litchfield. Recently they started another plant in Seneca, Missouri. The company was recently sold and a company history was written on that occasion. The company also makes a vegetarian chili, and tamales.

1362. *J. of the American Medical Association.* 1945. Biological value of soy protein. 127(5):279-80. Feb. 3. [1 ref]
• ***Summary:*** A summary with comments of Cahill, Schroeder & Smith. 1944. Compares the digestibility and biological value of three sources of soybean protein with that of egg protein. The results are: soybeans (90.5 / 94.5%), soy flour (94 / 91.7%), and soybean milk (89.6 / 89.6%).

Note: This is the earliest English-language document seen (Oct. 2003) with the term "soy protein" in the title.

1363. Diamond, Holton W. 1945. Laboratory notebook. Dearborn, Michigan: George Washington Carver Laboratory. Unpublished manuscript. 23 cm. Courtesy of Henry Ford Museum & Greenfield Village Archives (Dearborn, Michigan). Microform negative, Acc. 89.432.
• ***Summary:*** During January and February 1945, Diamond was doing research on a "soy cheese" made by culturing soymilk curds at the Ford Motor Company's Carver Laboratory. On Jan. 8 he wrote the words "Soy cheese" at the top of his notebook page. Note: This is the earliest English-language document seen (March 2007) that uses the term "Soy cheese" to refer to a Western-style soy cheese.

During March and April he worked on whipped toppings. On 24 March 1945 Diamond noted in his notebook that the previous day he had made two batches of "Exptl. topping" (experimental whipped topping). Concerning the first batch, he wrote: "Flavor excellent; definite improvement [perhaps compared with a sample Florence Diamond says was brought to the lab by Herbert Marshall Taylor]. Did not whip." The ingredients were: 125 gm hydrogenated soy oil ("accident–intended to be 62.5 gm), 62.5 gm liquid soy oil, 125 gm skim soy milk, 250 gm water, 4 gm Span 20 emulsifier. 1 gm NaCl (table salt), 12 drops butter color, 2 gm B.V. meat flavor, 2 gm butter flavor, SM."

During April, Diamond's toppings vary from "thin" to "thick," with some "dark" and others "soapy." None of the 4 experimental toppings he made on 10 April 1945 whipped, but two of the three batches he made the next day did whip but were very thin. On April 13 the first batch finally whipped although it was somewhat thin. It contained 170 gm soy milk, 170 gm water, and 170 gm fat (composed of 92% hydrogenated soy oil, 5% glycerin, 2% glyceryl monostearate, and 1% Soyemuls); increasing the glycerin was the key to success. On April 19, the first topping whipped satisfactorily–in 4½ minutes; the basic ingredients were the same but the pH was adjusted after preparation (probably by adding citric acid) to 6.60 or 6.68. By April 30 the first sample was "usable."

In May and June Diamond concentrated his research on soymilk, then started to work on ice cream in early June 1945. On June 28 (p. 80) he gave the formula for his soy ice cream then noted: "This batch was exceptionally good. The

flavor was mild, not at all 'beany,' and the texture smooth. The fat used was hydrogenated soy oil. The mix was frozen in a hand freezer and packed in freezing compartment of refrigerator in tray. Some crystallization, or 'iciness' was observed after a couple of weeks."

This Carver Laboratory film only covers the first half of 1945. Numerous other log books in this accession in the Ford Archives cover work elsewhere during the 1950s.

Note: This is the earliest document seen (Sept. 2001) concerning Holton W. ("Rex") Diamond and soy. Address: Dearborn, Michigan.

1364. McCay, Jeanette B.; Loosli, J.K.; Adolph, W.H.; Brewer, Lucille; Munn, M.T.; Neidert, Marion; et al. 1945. Soybeans: An old food in a new world. *Cornell University, Extension Bulletin* No. 668. 65 p. Feb. Illust. Index. 28 cm. Produced by the Soybean Committee of the New York State Emergency Food Commission. [38 ref]

• ***Summary:*** Contents: A potential food resource: Introduced into the United States, new American industries. Composition and food value of soybeans: Proteins, fats, carbohydrates, minerals, vitamins, the enzymes of the soybean. How to use soybeans and soy products (contains many recipes): Fresh green soybeans (how to cook, how to can, how to freeze), dry soybeans (how to cook, how to can, how to freeze, 3 recipes, salted soybeans [oil-roasted soynuts], how to prepare bean pulp {by running drained cooked soybeans through a meat chopper}, 4 recipes), sprouted soybeans (vitamin C forms during sprouting, exposure to light does not affect vitamin C, riboflavin and niacin are also increased, how to sprout soybeans at home {9-step process}, store sprouts in refrigerator, how to freeze sprouted soybeans, how to cook sprouted soybeans, illustration of apparatus [equipment] for sprouting soybeans in quantity, 6 sprouted soybean recipes), grits, flakes and flour (protein equivalents {one pound of low fat soy flour is equal in protein value to two pounds of cheese, 2 pounds of navy beans, 2½ pounds of beefsteak or chicken, 3 dozen eggs, 5 pounds of bread, or 12 pints of milk}, a little soy flour with wheat flour improves protein quality, amount of protein, iron, and calcium also increased, 23 soy-grits and flour recipes {divided into 3 main dishes, 3 quick breads, 17 desserts}), a stronger staff of life–bread (rats fed bread containing only 5% soy flour grow much better than those eating white bread, does soy bread taste good?, little change required in baking with soy flour, 6 yeast bread recipes), soybeans in large-quantity cooking (6 recipes), other soybean products (soybean curd, soybean milk, soy sauce). Production, varieties, and culture of soybeans. Soybeans in animal feeding: For cattle, for sheep, horses, swine, and poultry, soybean hay a substitute for alfalfa, for dogs and fur-bearing animals. References. Index.

Contains nine bar charts in the form of illustrations / pictorial drawings / symbolic graphics (which may be by Kenneth Washburn).

How to sprout soybeans at home (p. 26-27):

"1. Select a stock of clean, bright, new-crop soybeans of one of the field varieties. The yellow seeds have less conspicuous skins than do the black beans, although the black beans may be preferred. The garden varieties are not satisfactory because the sprouts break off easily, but the exact variety is unimportant so long as the seed is good.

"2. Handpick the seed thoroughly, and discard everything except clean, whole beans.

"3. Wash the beans and place them in a suitable container for sprouting, such as a one- or a two-quart glass fruit jar. The bean sprouts increase to about six times their original volume.

"4. Cover the seeds with at least four times their volume of lukewarm water and let them stand for a few hours, or at most overnight, until they are swollen.

"5. Pour off this water, and wash or rinse the swollen beans thoroughly, then pour off the last wash water.

"6. Cover the top of the jar with a piece of cheesecloth or other thin cloth, and tie it on securely. Quarter-inch mesh screening also makes a good cover.

"7. Invert the jar and place it in a cupboard or dark place, in a slightly tilted position, so that the excess water can drain away.

"8. At least three times a day, or better every four hours, place the jar under the water tap or pour on plenty of cool water, thus thoroughly and carefully washing the swelling and sprouting seeds, so that bacteria or molds which may have developed are carried away. The better the washing, the better the sprouts. After washing, place the jar back in its slanting position.

"Chlorinated lime water to kill fungus growth is not needed if the seed is well selected. If such a solution is used (1 tablespoon of chlorinated lime in 1 gallon of water), it should not remain on the seeds longer than for ½ hour; the soybeans are injured by a longer exposure.

"9. In from three to four days at room temperature, the sprouts will be from 1 to 2 inches long and ready for use. Then pour the sprouts into clean cold water and shuck off the skins if this is desired. With the yellow-seeded varieties, however, the skins are not conspicuous and need not be removed. If a flower pot or similar receptacle is used for sprouting with a piece of cloth over the bottom hole for drainage, be sure that the surface of the beans is also covered with a piece of moist cloth to prevent drying; otherwise the sprouts will be tough and will not be uniform.

"It is not wise to attempt sprout production in the summer, because good sprouts will not be produced in warm weather unless the place where they are sprouted can be kept at about 70ºF. The sprouting of old, badly cracked, discolored or shriveled soybeans should not be attempted, for this only causes trouble. Soybeans packaged for cooking and baking are not likely to sprout too well. When in doubt, one

should make a preliminary trial. If, after the first day, or after soaking, the beans become soft or soggy, they are probably unfit for sprouting.

"The commercial production of soybean sprouts in large quantities proceeds along the same lines as outlined, except that larger sprouting devices or tanks are used and the process is more carefully controlled. An apparatus with an automatic watering device developed at Cornell University to sprout a large quantity of beans is shown in figure 6.

"Store sprouts in refrigerator: Sprouts not used immediately must be stored in a covered container in the refrigerator, as is any fresh, crisp vegetable, for as long as a week. They must be kept moist; otherwise they will wilt or discolor. If kept longer, they must be blanched for 2 minutes, then canned as a green beans, dried, or frozen."

Tables show: 1. Proximate and mineral composition of soybeans and soy flours. Essential amino acids in servings of certain protein-rich foods (lean meat, eggs, cooked soybeans). 3. Calcium, iron, and B vitamins (thiamine, riboflavin, niacin) supplied by common serving portions of certain foods. 4. Vitamin composition of 7 soy products. 5. Food values of sprouted soybeans and of some common vegetables per 100-gram edible portions. 6. Thiamine, riboflavin, and niacin content of soybeans during sprouting, storage, and dehydration. 7. Soybean milk, cow's milk, and human milk (typical nutritional analyses). 8. Composition of some [seven] soybean products used for food in the Far East. 9. Varieties of soybeans most suitable in New York State for animal feed and human food (For green vegetables: "Garden varieties such as Green Giant, Hokkaido, Jogun, Bansei, Fuji, Tortoise Egg, and Willomi").

Concerning "Fresh Green Soybeans: When gathered from the garden while the pods are still greenish and the seeds are still soft but fully developed, the soybean is a new green vegetable that some persons say is more attractive and delicious than the fresh lima bean. Many Victory gardeners have grown them for the first time, and they may be purchased commercially canned as are green peas."

Note: This is the earliest English-language document seen (Aug. 2003) that contains the term "protein quality." Address: New York.

1365. Nicholls, Lucius. 1945. Tropical nutrition and dietetics. 2nd ed. London: Baillière, Tindall and Cox. xii + 370 p. Feb. Illust. Index. 22 cm. [30+* ref]

• ***Summary:*** This 2nd edition, which contains more than twice as many pages as the 1st, is extremely clear and well written, especially for beginners. Both books were written when the knowledge of nutrition was undergoing rapid development. It contains new information on major vitamins (nicotinic acid, vitamin K), several minor vitamins, several minerals including "trace" elements, much recent knowledge on the constituents of foodstuffs, foodstuffs more or less peculiar to the warm climates, diets suitable for hospitals, prisons and other institutions and for labourers at large, public health activities related to nutrition, food poisoning, insect pests of grain foods. The great progress in parasitology and nutrition has led to the lowering of death rates, especially infantile mortality; this "is producing such an increase in the numbers of the populations of the tropics that one may wonder what will be the nature of the end of it, for an end there must be." There is "growing acceptance that all persons have a right to diets adequate for good growth and health, as in another sphere, it has long been accepted that all children have a right to primary education" (p. v-vi).

Fats and lipoids (p. 4-8): "The fats and lipoids may be defined as substances which are soluble in ether, chloroform or benzene, but insoluble in water, and can be used as food by living organisms." Edible oils include olive, coconut, and sesame (gingelly) oil. "The fats are compounds of glycerol, which is trihydric, and fatty acids, which are monobasic, hence on hydrolysis the fats split up into three molecules of fatty acids and one of glycerol." An example is given. The naturally occurring fats are made up of many triglycerides plus various acids. There are two categories of fatty acids: Saturated and unsaturated. In saturated fatty acids (which contain carbon, hydrogen, and oxygen), the number of hydrogen atoms is twice the number of carbon atoms. The names and formulas of 8 saturated fatty acids are given. In unsaturated fatty acids, the number of hydrogen atoms is less than double the number of carbon atoms. These include oleic acid, linoleic acid, linolenic acid (first found in linseed oil), and arachidonic acid. "The unsaturated fatty acids can take up iodine (or other halogen) by addition to form saturated compounds. The amount of iodine taken up by a fat is more or less characteristic of that fat, and is known as the *iodine number,* and this number roughly indicates the amount of unsaturated fatty acid in the composition of the fat. Table III (p. 6) gives the iodine numbers of 13 vegetable oils and 5 animal fats. The highest iodine numbers are found in linseed oil (175-205), soya bean oil (137-41), and maize [corn] oil (113-25). The lowest iodine numbers are found in coconut oil (9), butter (26-28), palm oil (20-56) Chinese "tallow" (30), margarine (50), shea butter (56), and lard (60-70).

"Soft fats or oils, which are rich in unsaturated fatty acids, can be hardened to a desired consistency by hydrogenation, by which they are saturated with hydrogen by the aid of a catalyst, such as powdered nickel. The process has been widely used for the production of *margarine* and lard substitutes from vegetable and whale oils." "Human needs for fat. Fats are deposited in the subcutaneous tissue as a protection against cola and injury, and in the abdomen as a padding and support for the viscera. Their light, compact and soluble nature enables the storage of them to take place without the addition of water, and this can occur with no other substance. The fats are composed of the same three elements as the carbohydrates, but they are superior to them as a supply of energy because they have less oxygen

in proportion to the carbon and hydrogen, and hence on complete combustion produce more energy [more than twice as much per gram]. Any normal deposit of fat is a reserve store for the production of heat and work."

Lipoids fall into three groups: Sterols, phospholipides (incl. lecithin), and glycolipides.

Chapter 4, titled "Vitamins: History, animal experiments, etc.," contains an excellent history of the subject. "The history may be considered to have started with the slow realization that the disease scurvy was due to a dietary error." Doubtless in ancient times it had been common in besieged towns, but it was not mentioned in the literature until Europeans began to take long ocean voyages. In 1498 Vasco da Gama lost 100 of his 160 men to scurvy. In 1535 Jacques Cartier first used a fresh vegetable preparation (a decoction of spruce tree needles, on the recommendation of Red Indians in Newfoundland) to effectively treat scurvy. "Two names stand out in connection with the dietetic treatment of scurvy in the 18th century." An Austrian army doctor, Dr. J.G.G. Kramer, (Physician to the Imperial Armies of Hungary, 1720-1730) wrote at this time: "3 or 4 ounces of orange or lime juice will cure this dreadful disease without other help." In 1747 James Lind, a British naval surgeon, performed a famous experiment on 12 men who were severely ill with scurvy. He divided them into 6 groups and tried six therapeutic measures of which the only successful one was two oranges and a lemon daily. In 1757 his famous *Treatise on Scurvy* as published. In 1795 the British Admiralty finally adopted Lind's recommendation– after 100,000 lives had been lost to scurvy. Similar histories of beriberi and rickets are given.

There is a small section on "Roughage" (p. 162). In Chapter 11, "Analyses of foodstuffs," the information on the same 14 pulses, including Soya bean (p. 184), is slightly more detailed. Under nuts and seeds (p. 192-93) are: Coconut milk. Gingelly seeds. Mustard seeds, Brassica juncea. Rape seed, Brassica napus. See also: Adlay (Job's tears), Coix lachryma (p. 182, 214). A good section on "Pulses, dhals, and beans" (p. 215-17), includes the soya bean. "The beans and peas fall under the general term pulses. Split peas are called *dhals* in Southern India, and dried peas, especially the smaller kinds, are called *grams.*" "Unfortunately the pulses are not very digestible and do not find a prominent place in the diets of the well-to-do." The commonest of the dhals is the lentil, sometimes called *Massur dhal.* There are two methods of making dhal: dry and wet. The best dhals are prepared by the dry method. The dhals are more digestible than the grams. Beans are "pulses with seeds more or less kidney shaped... The dried beans are the least digestible of the pulses."

The section on "Nuts and oil seeds" (p. 227) has much about coconuts, coconut oil and coconut milk. The section on "Fluorosis" (p. 306-09) notes: "When the amount of fluorine in the water exceeds one part per million some degree of mottling of the teeth usually occurs among the children drinking it.

The section on "Saponins in foodstuffs" (p. 309-10) lists the many foodstuffs in which they are found, including the soya bean.

Lucius Nicholls was born in 1884. Address: M.D., B.C., B.A. (Cantab.), Colombo, Ceylon.

1366. Olmsted, Fred L. 1945. Who's who and why [Herbert Marshall Taylor and Delsoy]. *Detroit News.* April 16. p. 4.
• ***Summary:*** Herbert Marshall Taylor is a native of Canada. When "hail, frost, and influenza" put an end to his farming in Alberta, he returned to Toronto, where he had received a university degree 6 years earlier. "He acquired American rights to a gadget which British housewives had bought in quantity to make cream from butter and milk through homogenization. He sold 30,000 in the United States, but it wasn't a big-time success.

"By 1937 Taylor had perfected a product using a milk base and vegetable fat. And he had motorized the gadget. He started selling the product to bakers in New York. It saved them $1 a gallon on whipping cream. The idea spread to other cities."

In Nov. 1942 the War Food Administration issued an order prohibiting the sale of whipping cream in America. After dairy interests forced Taylor to leave Chicago, he picked up a partner, Eric R. Swanson, who is still with him, and in Dec. 1943 started a business in Detroit. [Note: Swanson lived most of his life in Dearborn.] Though dairy people continued to oppose him, his "business soared. In 1944 it jumped from 1,400 to 20,000 gallons a month. He sold at wholesale, then added half pints for the home trade. Now he claims 1,500 independent distributors here [in Detroit]. But along came a War Food Administration order placing a 19 per cent limit on all fats–animal or vegetable– used in his product [which combined a milk base with vegetable fat]. WFA also cut his milk quota. So he started using soy milk as a base, producing an all-vegetable product.

"Taylor drew the fire of OPA [Office of Price Administration], too. He says it is demanding damages for overcharges which would put him out of business. But Taylor isn't through. He grossed $267,000 last year. He added a plant in Dearborn to his start in Detroit. He's planning to market soy milk, butter, cheese [tofu?], and frozen dessert [soy ice cream]. There is an indication that Henry Ford is interested."

Note 1. This is the earliest English-language document seen (March 2007) that uses the term "frozen dessert" to refer to soy ice cream.

Note 2. Herbert Marshall Taylor learned how to make soymilk and soy-based whipped topping from Bob Smith and Rex Diamond at Henry Ford's George Washington Carver Laboratory in Dearborn.

"'The dairy lobby in Washington [DC] is powerful,'

says Taylor. 'But I've been fighting the dairy interests for 12 years. They'll never stop me.'" A photo shows Mr. Taylor.

An ad below this article (not in *The Detroit News*, but in Rex Diamond's scrapbook; original source and date unknown) is titled "What is Delsoy? It's the dessert topping that's winning the enthusiastic approval of housewives by the hundreds of thousands. Delsoy is the original topping made of natural vegetable products." The ad shows illustrations of two non-dairy whip toppings: (1) In the foreground, "Delsoy Super Whip: Instant Dessert Topping" which is sold in a pressurized can. The ad states: "Introduced in August 1944, the first product of its kind, Delsoy dessert topping has gained tremendous popularity. Continuing to grow by leaps and bounds..." (2) In the background, "Delsoy: A delicious whip," a refrigerated perishable product which is sold in a half-pint paper container shaped like a truncated cone.

1367. Gattoni, Luis A. 1945. Frijol soya [Soybeans]. *Honduras Agricola* No. 8. p. 5-7. June. English-language summary in Soybean Digest, March 1946, p. 29. [Spa]
• ***Summary:*** The diet of the people of the tropical countries of America is composed almost exclusively of rice, bananas, corn, and beans. The author believes that the ideal daily diet consists of daily consumption of 1 pound of meat and a half liter of milk. However since the people cannot afford such a diet, especially with the rapid population growth, Mr. Gattoni believes that these countries are faced with a postwar nutrition crisis.

As a partial solution, he recommends that they produce soybeans on a large scale, both to be consumed as whole soybeans, and to be made into oil and flour. He proposes that the schools, radio, movies, conferences, etc. be used as mediums for educating the people about soybean production. He points out that soybeans can be cultivated satisfactorily in areas where corn, beans, and peanuts are grown. In Honduras, the best soil and climate for the crop exists in the tropical zone of the coast. Some interesting experiments with adapted varieties are being conducted at the Pan American agricultural school of El Zamorano.

In the area of La Lima in the department of Cortés (a "county" in northwest Honduras), according to a report of the Office of the Institute of Inter-American Affairs, 9 soybean varieties have been tested (see USDA Farmer's Bulletin 1520 of 1939). "In the Experimental Grains department of the Institute of Inter-American Affairs at Toncontín, Comayagua (35 miles northwest of Tegucigalpa), and Danlí (45 miles east of Tegucigalpa), the following edible yellow varieties were sown, besides some forage types: Mammoth Yellow, Bansei, Funk Delicious." Yields were good when the soybeans were inoculated.

In Santa Ana, Wallace Farm, Costa Rica, 11 varieties (Fuji, Hahto, Hakute, Gogun [Jogun], Kanro, Kura, Sato) were tested. Seed yields ranged from a high of 3,186 lb/acre (53.1 bu/acre) for Hahto No. 20, down to 868 lb/acre for Hakute.

On May 15 the following varieties were planted at Toncontin: Ogden, Arksoy, Ralsoy, Volstate, Cherokee, Delsoy, Tastee, Hahto, Rokusun, Aoda, and Woods Yellow.

The author then discusses soybean cultivation, soils, bacteria that fertilize the plants, planting, harvest, and yield. He concludes: "Note: The National Commission on Food and Agriculture encourages all people interested in soybean cultivation to apply to them, indicating the quantity of seed that they wish to cultivate so that, for one-time trials to find the best-yielding and most useful varieties in Honduras, we can tell how much we need for planting in September, which is the most appropriate time for its cultivation."

Photos (black and white) show: (1) An experimental plot of inoculated soybeans cultivated at the Central Project of Toncontin [near Tegucigalpa]. The development and yield have been satisfactory. (2) The same soybean varieties planted in the same soil but without inoculation; the results are noticeably inferior.

Note 1. This is the earliest document seen (Jan. 2011) concerning soybeans in Honduras, or the cultivation of soybeans in Honduras. This document contains the earliest date seen for soybeans in Honduras, or the cultivation of soybeans in Honduras (May 1945). The source of these soybeans is unknown. It seems likely (but not certain) that the soybeans described in this paper were planted in Sept. 1944.

Note 2. This is the earliest document seen (June 2013) that mentions the soybean variety Delsoy. Note: It seems like there must be an earlier record announcing this variety in the USA. Address: Ingeniero Agronomo del Instituto de Asuntos Inter-Americanos (Inst. of Inter-American Affairs), Honduras.

1368. De, Sasanka S.; Subrahmanyan, V. 1945. Processing of soya-bean for the production of milk. *Current Science* (*Bangalore, India*) 14(8):204-05. Aug. [8 ref]
• ***Summary:*** "During recent years, milk shortage in India has assumed alarming proportions." In India, the per capita consumption is estimated to be only 7 oz. per day compared to 35 oz. in the U.S.A. "The minimum requirement of milk for a growing child is 32 ozs. and 16 ozs. for an adult." Since it will be at least several years before these levels of production can be reached in India, our attention has been "directed to the possible utilisation of soya-bean to make up the deficit in our milk supply."

By working to improve the process, the writers have been able to prepare a "milk" that has an agreeable taste and good nutritional value. The vitamin C content of soymilk is 21.6 mg/100 gm. Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore, India.

1369. Miller, Carey D. 1945. Thiamin content of Japanese soybean products. *J. of the American Dietetic Association*

21(7):430-32. Aug. [10 ref]

• ***Summary:*** The approximate amount of thiamin retained in various soybean products is as follows: Raw soybeans, 100%. Soybeans pressure cooked for 60 minutes at 121ºC, 26% (i.e., 74% of the thiamin is lost). Soybean "milk" (*tonyu*), 74%. Soybean curd residue (*kirazu*), 19%. Soybean curd (*tofu*), 18%. Tofu contains 54 mcg. thiamin per 100 gm. About 7% of the thiamin in tofu appears to be destroyed by the cooking process, about 20% remains in the residue (*kirazu*), and the remainder of the thiamin (almost 60%) is lost in the discarded liquid which drains off when the protein in precipitated and pressed.

The author acknowledges the help of the Yokoyama Tofu Factory. *Kirazu* may be used as a human food in combination with vegetables, etc. "However, in Hawaii most of the *kirazu* is fed to pigs. To make tofu, hot soybean milk "was mixed with a liquid containing magnesium and calcium sulfates, a by-product obtained in the manufacture of salt from sea water, which precipitated the tofu as a flocculent curd."

Note: This is the earliest English-language document seen (June 2013) that uses the term "Soybean curd residue" to refer to okara.

Aburage (a fried soybean curd) loses additional thiamin as a result of the cooking process. "Miso, made from cooked soybeans and fermented rice, which is allowed to age in huge wooden vats for 2 months or longer, is a relatively good source of thiamin," containing about 130 mcg. per 100 gm. But since relatively small amounts are used, even by people who favor this food, its contribution to the daily thiamin need is not great. Address: Nutrition Dep., Hawaii Agric. Exp. Station, Univ. of Hawaii, Honolulu.

1370. *Soybean Digest.* 1945. Delsoy topping: An all-vegetable cream. Aug. p. 24.

• ***Summary:*** "Delsoy is the new brand name for Devonshire Topping, all-vegetable whipping product. And the name of the manufacturing firm has been changed from Devonshire Topping, Inc., to Delsoy Products, Inc., Herbert Marshall Taylor, the manufacturer, has announced. Headquarters are in the Graybar Building, New York City.

"Delsoy Topping has had an interesting history, having encountered the usual pitfalls of a new food product that is bedeviled with bureaucratic interference and the opposition of powerful economic interests.

"Topping is the name bakers have for the fluffy white dressing they use on the top of pies. Whipped cream is the traditional topping.

"Taylor began over a decade ago by manufacturing and selling a machine with which bakers could whip up their own cream from mixtures of powdered milk and butter, an operation saving them a dollar a gallon.

"When, as he says, the Chicago creameries put him out of business, he moved to Detroit and began to manufacture the topping to sell through retail stores. The product was made from a milk base and a vegetable oil until WFA [War Food Administration] cut the firm's milk allotment. Then Taylor switched to a soy milk base and the topping became an all-vegetable product. According to the *New York Herald Tribune* it whips to two and one-half times its original volume and looks, tastes and acts like whipped cream.

"Taylor claims 1,500 independent dealers for Delsoy Topping in Detroit. He has added a plant in Dearborn to the one in Detroit, and announces that he plans to manufacture

and sell soy milk, soy chocolate milk, soy butter, soy cream cheese and ice cream. This spring the topping was introduced through retail stores in New York City."

A large photo shows Herbert Marshall Taylor using a spatula to scoop his whipped Delsoy Topping from a metal bowl onto the top of a pie. Nearby is an eggbeater and a truncated conical carton, in which Delsoy is sold.

Note 1. Rich Products Corp.'s Whip Topping was introduced shortly after Delsoy, and sold in the same shaped container. Note 2. No mention is made in this article of Delsoy sold in a pressurized can.

Note 3. This is the earliest English-language document seen (March 2007) that uses the term "soy cream cheese."

Note 4. This is the earliest English-language document seen (March 2007) that uses the term "soy ice cream," but in the form "soy cream cheese and ice cream."

1371. *Vegetarian Messenger and Health Review* (*Manchester, England*). 1945. Soya bean protein. Aug. p. 145. [1 ref]

• ***Summary:*** This summary of an article from the *Journal of the American Medical Association* (3 Feb. 1945) compares the digestibility and biological value of three sources of soybean protein with that of egg protein. The results are: soybeans (90.5 / 94.5%), soy flour (94 / 91.7%), and soybean milk (89.6 / 89.6%).

"Apart from these tests which give results in mathematical terms, the centuries of experience in parts of China, where soya bean protein has been the principal, and in some cases, the only protein available in adequate amounts, amply confirms the value of this legume as a body-building food."

1372. A.P.I. [Associated Press of India]. 1945. Milk from Soya bean: Bangalore experiments. *Times of India* (*The*) (*Bombay*). Sept. 13. p. 9.

• ***Summary:*** Dr. V. Subramaniam, Professor in Charge of the Bio-Chemistry Department of the Indian Institute of Science (Bangalore), explained at a press conference on Tuesday afternoon that milk extracted from the soya bean could greatly contribute to a solution to the problem of milk shortages in India. At the conference, pressmen were treated to refreshments in which soya-milk (or products made from it) was an essential ingredient.

"Dr. Subramaniam said that soya-milk could be produced easily at home by the housewife or in a factory." The cost of making the milk should be about 2 pice per pound–far below the cost of dairy milk.

He said that his department has also made milk from other vegetable sources, such as cashew nuts and ground-nuts.

He said there was a proposal to make a comparative study of the effect of soya-milk, cow's milk and a mixture of the two on three groups of 100 children each.

He said the soya-bean was unique nutritionally in that it contained no starch, but had some other carbohydrate, with proteins, fats, and minerals in the right proportion.

Note: This is the earliest document seen (Sept. 2010) that mentions the "Indian Institute of Science" (Bangalore, founded in 1909) in connection with soya-milk.

1373. Arnold, Julean. 1945. Soy–China's Cinderella. *Soybean Digest.* Sept. p. 36-37, 69.

• ***Summary:*** In the summer of 1937 masses of Chinese refugees poured into Shanghai in frantic efforts to escape Japanese armed forces. The immediate problems were food and shelter. One relief agency, China Child Welfare, Inc., with which the author worked, helped to establish 220 refugee camps to accommodate 250,000 people. Since tofu is too concentrated for infants, the group turned to soybean milk. "Fortunately the Peking Union Medical College of the Rockefeller had several decades earlier carried on extensive research with the soybean under the direction of a Russian scientist Dr. A. A. Horvath. He became a great enthusiast on the nutritive properties of the soybean. He found that by adding a certain amount of calcium lactate, sodium chloride [table salt] and sugar to the soybean milk, it would be possible to produce a substitute for cow's milk, and at a fraction of the cost of cow's milk. Chinese trained under him carried on research experiments.

"Thus when we were interested in preparing a scientific, sanitary, and standardized soybean milk we looked for assistance to Doctors Ho and Tso who were trained at the P.U.M.C. but later came to Shanghai to join the Lester Institute where they continued their work on soybean nutritive products. So we impressed them into service. We also secured much aid from Dr. W.S. Fu, who supervised a Chinese children's hospital in Shanghai. He gave us accommodations for setting up a small plant for the manufacture of soybean milk in one of the court-yards of his hospital." A description of the equipment and process used is given. After boiling the soymilk for 20 minutes, calcium lactate, sodium chloride, and sugar were added. The soybean milk was served hot to the children in the camps. The plant was managed by Miss Nellie Lee, a Chinese who graduated from Mt. Holyoke College and had studied dietetics and social science.

After taking the milk from the soybean, there is a residue [okara] very rich in protein. We found by adding 40 percent coarsely ground wheat flour which is also plentiful in China, plus the other ingredients above mentioned, we could make a biscuit which when baked in an oven proved to be very palatable. It represented probably the greatest food value for the cost obtainable. A Chinese department store baked them for us. We distributed millions of them to the refugee camps.

"In order that our committee might take the fullest possible advantage of the very able assistance we received

from Chinese scientists, doctors and others we organized the China Nutritional Aid Council with Chinese and American members for the express purpose of popularizing a properly prepared soybean milk and other soybean nutritional products." This council, backed by China Child Welfare, Inc. of New York, launched a campaign to share with people in other parts of China "the advantages of our experiences in providing soybean milk for from 25,000 to 37,000 children daily in the refugee camps in addition to several millions of soybean biscuits furnished the refugees."

"Another American medical missionary, Dr. H.W. Miller, went much further in his experiences with soybean milk products. He became so enthusiastic about their possibilities that he set up a modern plant in Shanghai for their manufacture, with facilities for producing qualities acceptable to those whose palates rebelled against the ordinary types of soybean milk."

After the Japanese bombing of Pearl Harbor, the China Nutritional Aid Council and its soymilk plant moved to Chung-king [or Ch'ung-ch'ing, a city in southern Szechuan province; the Kuomintang made it the political capital of China from Oct. 1938 until the end of World War II]. Nellie Lee has worked for 5 years "spreading the gospel of soybean milk for the great masses in that country."

"When John D. Rockefeller Jr. came to Peking about 25 years ago to dedicate the Peking Union Medical College of the Rockefeller Foundation, he told me that he found it harder to spend money than to make it." A large photo (p. 36) shows a Chinese mother feeding her children "soy milk and soy cakes at a food shop where highly nutritious foods are made and sold at cost prices."

Note 1. This is the earliest document seen (July 2012, one of two) that uses the word "Cinderella" in connection with the soybean. The author, however, does not elaborate on this idea. This is the earliest document seen (July 2012) with "Cinderella" in the title.

Note 2. In the winter of 1937 K.S. Lo of Hong Kong, age 27, happened to be in Shanghai on other business. There he attended a talk by Julean Arnold titled "Soya Bean: The Cow of China." This talk inspired Lo to establish the Hong Kong Soya Bean Products Co., Ltd. in March 1940. This company later made the world-famous Vitasoy soymilk. If the date and title of this talk are correct, this would be the earliest date seen (Aug. 2002) for the use of the term "Cow of China." Address: Berkeley, California.

1374. Diamond, Holton W. 1945. Excerpts from "Cumulative Work Report," George Washington Carver Laboratory–June 1943 to September, 1945. Dearborn, Michigan. 5 p. Unpublished manuscript.

• ***Summary:*** At some unknown date (after Sept. 1945 and probably before Aug. 1947) "Rex" Diamond wrote a summary of the work he had done at Henry Ford's George Washington Carver Laboratory in Dearborn: 1. Chlorophyll and its derivatives: Edible and inedible chlorophyll compounds. 2. Soybean oil. Two types of investigations were made: (A) Deodorizing and deflavoring. "Experiments were made to determine the optimum conditions for removing the unpleasant odor and flavor from the oil produced at the Rouge Plant. There were found to be: Temperature of the oil, 140ºC; temperature of the steam, 70-80ºC; pressure, less than 4 inches of mercury; time, 40-60 minutes. (B) Extraction of oil from wet soybean flakes following alkaline extraction of protein." Only 50% of the oil was recovered in this process compared with 97% in the extraction of the whole dry flakes with hexane. However the flavor of the oil was better.

3. Gelatinous form of soybean protein. "During experiments which were directed toward obtaining a 'soy cream' which would not curd in coffee, a 'protein' with phenomenal gelatinous properties was prepared... It was thought such a 'vegetable gelatin' might find use in the food and pharmaceutical industries... Note 1. This is the earliest document seen (Aug. 2013) concerning a non-dairy coffee creamer; in this case it was made with soy protein.

"4. Wheat Milk. Several attempts were made to make milk by process similar to that used in making soy milk, but were largely unsuccessful... 5. Peanut Milk. A few experiments were conducted with peanut protein. One batch of milk was made, of unpleasant color and flavor, due to the inclusion of the red 'skins' and the staleness of the nuts themselves.

"6. Soybean 'dairy' products. (A) Soy Milk. Since the manufacture and development of soy milk is one of the major projects of the Carver Laboratory, much of my work has had to do with this product. Investigations were largely in six general fields. (B) Soy Cream. (1) Non-curding cream for coffee. Quite a large number of experiments have been made to prepare a 'soy cream' which will not 'curd' when used in coffee. These experiments are still proceeding. As yet, no palatable non-curding cream has been prepared. (2) Soy whipping cream. Various types of vegetable fats, emulsifiers, and proportions of these with 'skim soy milk' were tried in seeking a cream that would 'whip'. 'Sweetex' fat, manufactured by Procter and Gamble, homogenized at pressures under 500 pounds per square inch with soy skim milk makes an acceptable 'topping' which 'whips' and resembles whipped cream in appearance. The flavor of this product is generally considered to be an improvement over the flavor of regular soy milk, probably due to the dilution of the soy protein with fat and air. [Note 2. No mention is made of mono- or diglycerides. See Florence Diamond interview of Dec. 1992.]

"(C) Soy 'cream cheese' spreads. Different methods of chemically 'souring' straight 16% soy cream were tried, using citric acid and calcium chloride as precipitating reagents, and different combinations of the drained and pressed precipitate with pimentos, pickles, and other flavoring materials were made. A number of different

varieties of 'cheese spread' of this sort were made. The texture and flavor of these spreads are comparable with the flavor and texture of the common spreads made from cow's milk.

"(D) Soy 'Cheddar' cheese. A number of attempts were made to prepare an acceptable 'hard' or 'Cheddar' cheese from soy milk by chemical souring and mechanical pressing. In all cases, however, the pressed cake was brittle, with a tendency to crumble, quite different in texture from ordinary Cheddar cheese. The flavor in each case was considerably inferior to ordinary American cheese.

Note: This is the earliest English-language document seen (Feb. 2007) that uses the term "Soy 'Cheddar' cheese" to refer to a Western-style soy cheese.

"(E) Soy ice cream. (1) Refrigerator tray type. It was found that by substituting soy topping for whipping cream and 16% soy cream for coffee cream specified in ordinary cow's-milk recipes for refrigerator ice cream, an acceptable product could be obtained."

See also Diamond's "Laboratory Notebook," starting Feb. 1945. Address: Dearborn, Michigan.

1375. International Nutrition Laboratory. 1945. Soyalac (Ad). *Soybean Digest.* Sept. p. 40. [1 ref]
• ***Summary:*** This full-page ad (see next page) is mainly for bottled "Soyalac: A spray dried infant food." It notes that this company also makes "* Miller's Soya-Malt. A malted soya milk mostly used as a beverage milk. * Miller's Chocolate Soya-Malt. Also a tasty beverage milk. * Miller's All-Purpose Soyalac. A natural soya milk for both beverage and cooking purposes. Packed in 1-lb., 4-lb., and 20-lb. containers." Three photos show 1-lb glass jars of "Soyalac: A spray dried infant food." On each jar is a photo of a seated baby. Address: Mt. Vernon, Ohio.

1376. *Let's Live.* 1945. Have you tasted the new formula? Kevo has amazing flavor–Gives more pep (Ad). Sept. p. 19.
• ***Summary:*** This 2¼ by 3½ inch ad states: "This hearty food beverage offers you something delightfully different–a smooth, chocolate-like flavor but contains no chocolate. Kevo powder makes a delicious drink hot or cold. Try it with your meals every day for a week. Carry Kevo Tabulets (Enurgets) in your pocket or purse and eat like candy for more pep.

"You will keep coming back for more because Kevo tastes So Good and makes you fell so good.

"Kevo is made from the following natural foods that give True Minerals and Vitamins: Whole soy bean, germ of whole wheat, dextrose, soy bean milk, deep sea kelp, mint leaves, rhubarb plant, spinach, carrot, celery, W.H.Y. Blended flavoring, Special calcium, phosphorus, iron, copper, iodine.

"Ask your Pure Food dealer for Kevo. If he is temporarily out, send his name, address and 10¢ to the factory. We shall mail you a generous trial size of Kevo and Enurgets, post paid. Kevo-L-2, Azusa, California." Address: Azusa, California.

1377. *Madison Health Messenger* (*Madison, Tennessee*). 1945. Madison Foods–Madison College, Tennessee. 7(1):4. Undated.
• ***Summary:*** A full-page photo shows the following canned products, with a brief description of each and the price: Stake-Lets (a combination of gluten and soy beans). Not-Meat (a meatless loaf for cutlets, roasts, patties, croquettes, salads, etc.). Yum (a mild Bologna flavor. Contains soy beans, wheat gluten, and seasonings). Zoyburger (excellent for sandwich spreads or served like a steak with onions). Vigoroast (a vegetable steak). Wheatasoy (an alkaline breakfast food, ready to eat. Contains rich grain malt, whole wheat, and soy-bean flour). Zoy-Koff (Prepare like coffee. No trace of caffeine. No nerve stimulants. Two grinds–regular and fine). Kreme O'Soy (a soy milk for those allergic to cow's milk and for special diets. A liquid not concentrated). Soy Cheese (soy curd (tofu) seasoned for croquettes, salads, sandwich spreads, etc.).

A separate photo across the top of page 1 of this issue shows a ground-level view of the "Madison College Campus, Home of Madison Foods."

1378. Myco Biological Laboratories. 1945. A wonderful food drink–Almon-O (Ad). *Let's Live.* Sept. p. 17.
• ***Summary:*** This 4½ by 2 inch ad states: "The all-year, all-round nourishing product, rich in almonds. Once you drink Almon-O you will always like it. Ask for it at your health food store." Address: 2075 North Fair Oaks Ave., Pasadena 3, California.

1379. *Madison Survey* (*Madison, Tennessee*). 1945. Food-manufacturing industry. 27(19):76. Oct. 17.
• ***Summary:*** "Again Madison Foods has made a carload shipment of nearly 65,000 pounds to the Pacific Coast, to distributors in Los Angeles [California] and Seattle [Washington]. This car contained Zoy Koff, the cereal drink, 350 cases of Kreme O'Soy Milk, and 1,350 cases of the protein foods-Vigorost, Yum, Zoyburger, Not Meat, Stakelets, and Soy Cheese."

"It is now an established fact that we are not dependant on flesh foods for the protein content of the daily rations." After discussing an article about soybeans in *Reader's Digest* titled "How we can help feed Europe's hungry" (Sept. 1945, p. 50-52), the *Madison Survey* concludes: "Madison is fortunate at such a time as this to be able to manufacture and market products that are helping in the solution of the greatest food problem the world has known."

1380. *Times of India* (*The*) (*Bombay*). 1945. The fact that milk prepared out of soya bean can be used in exactly the same way as cow's milk for ice cream or curds [tofu]... Oct.

SOYALAC

★ A time-tested and medically approved nonallergic infant food.

Miller's Spray-Dried Soyalac is a soluble soya milk modified and reinforced with proper proportions of essential oils, carbohydrates, minerals, and all required vitamins except vitamin C.

While Soyalac is the distinctive and only soluble spray-dried, completely modified vegetable milk offered to replace either mother's or cow's milk, and intended for babies and children of early years, other types of spray-dried soya milk are available for general family use. All these contain the equivalent of cow's milk in food value and calcium.

★ **Miller's Soya-Malt.** A malted soya milk mostly used as a beverage milk.

★ **Miller's Chocolate Soya-Malt.** Also a tasty beverage milk.

★ **Miller's All-Purpose Soyalac.** A natural soya milk for both beverage and cooking purposes.

Packed in 1-lb., 4-lb., and 20-lb. containers. Priced on a level with cow's milk. If your druggist or health food store does not have Miller's Soyalac Infant Food, packed in 1-lb. glass jars, or other brands of Miller's Soya Milk, write to Box 388.

℞ NOTE TO PHYSICIANS: A manual on Soya Milk Infant Feeding is obtainable from the address below.

Distinctive Values in Infant Feeding

1. Ready preparation.
2. Easy digestion.
3. High protein availability.
4. A complete infant food requiring only the addition to the diet of vitamin C in form of orange or tomato juice.
5. Nonallergic; thus it can be substituted for cow's milk for children with eczema, regurgitation, dyspepsia, etc.
6. Nonconstipating.
7. Costs no more for baby's diet than prepared baby foods from animal milks.
8. Soya protein most readily assimilated. Since protein is the growing portion of the baby's diet, it is important that the child has the maximum intake it can utilize.

INTERNATIONAL NUTRITION LABORATORY · MT. VERNON, OHIO

30. p. 5.
• ***Summary:*** "... is suggested in a note prepared by Prof. V. Subramanian [Subramaniam, Subrahmanyan] and Dr. S.S. De, of the Indian Institute of Science, Bangalore." The say that 1 lb. of soya bean will yield 6 lb. of milk having about the same nutritional composition as cow's milk.

Note: See *Times of India,* 13 Sept. 1945.

1381. Claudel, Paul. 1945. La plante qui donne du lait [The plant that gives milk]. *Figaro* (*Le*). Dec. 16. Reprinted in *Revue International du Soja,* March 1946, p. 35-36. [Fre]
• ***Summary:*** Claudel was the French ambassador to Japan before World War II. Address: France.

1382. Holman, Ross L. 1945. A chemurgic fantasy. *Yale Review* 35(2):282-91. Dec. Condensed as "New riches from farm synthetics" in Science Digest. 1945. 17:53-55. March.
• ***Summary:*** The farm chemurgic movement, started in 1934 to find industrial markets for surplus farm crops, has begun to grow. W.J. Hale is the founder of the present chemurgic movement. "There is no farm crop that the test tube has turned into more industrial products than soy beans. It is surprising to see what the soy bean can become in the hands of a chemical juggler. To offset war scarcities it can be processed into many things, from gunstocks for guns to a good substitute for butter; from vitamin K for our blood to a handkerchief for our tears.

"America's industrial pioneer number one with soy beans is Henry Ford. With a staff of chemists, a laboratory, and several thousand acres of soys he is turning these beans not only into a large variety of things to eat but into something to wear and ride, to keep the rain off and to doctor our liver troubles. We may recall how extravagant Ford sounded to us in the Twenties when he said that some day we would be able to dispense with the farm cow and drink synthetic milk [See *New York Tribune,* 9 Feb. 1921]. This fantastic prophecy made rich material for newspaper reporters and cartoonists. There were comic caricatures of a robot cow pouring out synthetic milk to be churned into a synthetic butter. Today reporters and cartoonists know that the joke has backfired. Ford's chemists have been getting milk from soy beans for years. The milk has been shown to have important food values. The list of Ford's soy foods includes meats, cheese, breakfast foods, macaroni, bread, crackers, sweet milk, buttermilk, and coffee."

Reichhold Chemical Corporation and one or two other companies are producing soy-bean rubber at the rate of 25,000 tons a year.

The author also discusses how Henry Ford uses soy beans to make synthetic wool. "Ford himself frequently wears a soy-bean suit, and experiments seem to prove that it can be manufactured at less cost than any other textile fiber. Two Japanese scientists processed a wool from soys before the war and insisted that wool for a whole suit of clothes could be manufactured for less than a dollar."

"The climax of Ford's pre-war chemurgic achievements was the manufacture of a car with a all-plastic body. The body, made largely of soys, was 1,000 pounds lighter than a similar car with a steel body... Just about the time it was ready to go into production Pearl Harbor stalled the manufacture of cars for the duration.

"Madison College near Nashville, Tennessee, is an educational institution that has turned farm chemurgy into a bonanza... The chief crop handled here is the soy bean, which is manufactured into 30 foods ranging from meat to coffee." The students, working their way through college, make the foods and student nurses and boys taking pre-medical courses play a major role at the school's sanitarium, where "patients are nursed back to health on soy foods."

At Taftville, Connecticut, the National Dairy Products Corporation is now manufacturing 10 million pounds a year of Aralac, a wool-like fiber made from the casein in skim milk.

"America's pioneer chemurgist, who performed scientific miracles before chemurgy ever got its name, was the late Dr. George W. Carver, of Tuskegee Institute in Alabama. Dr. Carver's record of processing over 300 industrial products from the peanut and 120 from the sweet potato is too well known to need discussion here."

Note: This is the earliest document seen (April 2002) that mentions vitamin K in connection with soy.

1383. Mayo, J.K. 1945. Soya beans in Nigeria. *Tropical Agriculture* (*Trinidad*) 22(12):226-29. Dec. [10 ref]
• ***Summary:*** "The first recorded trial of soya beans was made in 1910 at Ibadan. The crop was a failure.

"In 1928, in response to requests to the United States and Southern Rhodesia for fodder legumes likely to succeed in Nigeria, the Department of Agriculture received several varieties of soya beans. These were grown for some years at Kano, Zaria, Yandev and Ibadan. Yields up to 500 lb. per acre were recorded at Zaria in small scale trials and nodules developed without inoculation. As a fodder plant it was found inferior to other plants, as an export crop it had no prospect at that time in competition with Manchuria, and as a food for human beings it was not seriously considered. Trials were discontinued in 1933. The best of these varieties seemed to be Otootan (black seed) which gave 500 lb. per acre at Zaria and 430 lb. at Yandev in 1930 and 1932. Five varieties from Russia were discarded after two years' trial.

"The Missions, especially the Church of the Brethren Mission at Garkidda on the plateau and the Leper Settlement in Itu in the Eastern Provinces have, from time to time, introduced and tried a number of varieties. They grow the crop solely as a food for human beings

"In 1937, tropical varieties were introduced and tried by the Botanist at Ibadan and Zaria. These varieties came from Trinidad, British Guiana, Malaya, India, the Philippines,

Ceylon, the Dutch East Indies, the United States and South Africa... From 1940 onward the more promising varieties were grown at most of our farms with very variable success... variable yields were recorded sometimes as high as 800-1,200 lb. seed per acre, the best yielders being Malaya and Benares... In the Cameroons soya beans have been tried at Bamenda (4,500 ft.) and Esosong (3,300 ft.) which lies on a slope of Mount Kupe...

"The peasants have not begun to grow soya beans in Nigeria, except here and there under the direct encouragement and example of Europeans, *e.g.* at Yandev and Ilorin, in the Anchau 'corridor' in Zaria Province, and near Bamenda...

"Dr. Ogle carried out a controlled experiment on school children in Lagos in 1942 using soya bean milk and flour. She concluded that 'it is dangerous as well as difficult to interfere with native diets' and recommended that further tests with steamed flour and soya bean milk be carried out and beans distributed to teachers and health workers for trial in their homes... The army tried soya beans as part of the rations of West African troops in 1944, but further trials by the Medical Department are needed." Address: Senior Botanist, Dep. of Agriculture, Nigeria.

1384. Diehl, Harold S. 1945. Textbook of healthful living. 3rd ed. New York and London: McGraw-Hill Book Co. 707 p. Illust. Index. 20 cm. [150+* ref]
• ***Summary:*** In Chapter 7, titled "Dietary Dangers," in the section on "Dietary Fads and Fallacies," page 147 states: "*Vegetarianism.* The disciples of this fad usually follow it either because they consider animal foods deleterious to health or because they object to the destruction of animals to supply food for man. This latter reason is purely sentimental; but the former merits consideration."

"Professor E. V. McCollum, leading authority on nutrition, has written that "a vegetarian diet, supplemented with fairly liberal amounts of milk, is the most satisfactory type of diet that a man can take." [Prof. McCollum continues: "Palatable and attractive as they [meats] may be, I feel confident they are not very satisfactory as human foods when adhered to over appreciable periods."] "But this is not true vegetarianism. In fact, milk, butter, eggs, cheese, and other dairy and animal products are rarely left out of the diets of vegetarians. Hence, most 'vegetarians' are not really vegetarians but only abstainers from meat."

In the section titled "Milk–A Potentially Dangerous Food," the author begins by stating: "Of all foods in the dietary of man milk is the most perfect. Unfortunately, however, it is an ideal food not only for man but for many of his microscopic enemies as well... Disease-producing germs may get into milk either from a diseased animal or from human beings who have contact with milk.

"The diseases of animal origin which one may get through milk are tuberculosis, undulant (malta) fever, foot and mouth disease, and intestinal ailments resulting in diarrheal conditions, especially in children... The diseases of human origin most commonly spread by milk are typhoid fever, septic sore throat, scarlet fever, and diphtheria. In the twenty years from 1908 to 1927, 429 milk-borne outbreaks of typhoid fever with a total of approximately 15,000 cases were reported in the United States."

Fortunately the disease-producing germs found in milk are easily killed by a heating process called "pasteurization." "At the present time approximately 90 per cent of the milk used in American cities of 10,000 population and over is pasteurized, but all too many smaller communities are still exposed to the hazard of raw milk."

Note: This is the earliest document seen (July 1999) with the term "Preventive Medicine" in the author's title in the USA–at the University of Minnesota. Address: Prof. of Preventive Medicine and Public Health, and Dean of the Medical Sciences, Univ. of Minnesota.

1385. Lager, Mildred. 1945. The useful soybean: A plus factor in modern living. New York and London: McGraw-Hill Book Company, Inc. xii + 295 p. Illust. General index. Index of recipes. 22 cm.
• ***Summary:*** One of the most important and innovative books on soyfoods ever written. Contents: Preface. 1. Agriculture's Cinderella: America discovers the soybean, our wonder beans, soy as a food in the United States, soy in rehabilitation food programs, soybeans as an emergency crop, soybean terminology. 2. World-wide use of soybeans: A real antique, monarch of Manchuria, soybeans in mechanized warfare–Germany, soybeans in other countries (USSR, Italy, Spain, Belgium, Holland, Norway, Denmark, Sweden, Great Britain, Canada), soybeans in Lend-Lease and United States Agricultural Marketing Administration, Food for Greece, soybeans and the Mexican Indian, soybeans in Hawaii (Mr. C.G. Lennox). 3. Soybeans and industry: The versatile soy, uses of soybean in industry, soybean paint (from soy oil, incl. Duco finishing), soybean protein (used in making plywood, plastics, water paints, paper sizing, leather finishes, and insecticide sprays), Henry Ford and soybeans, soybean glue (I.F. Laucks and the firms he has licensed turn out some 30,000 tons of soybean glue annually), rubber substitute (Norepol), paper industry (Glidden), plastics, soy-cotton helmets, firefighting compounds, lecithin, fertilizers. 4. Nutritional nuggets: Food value of soybeans and soy products (vegetable or edible types of soybeans, protein, fat & carbohydrate, minerals, vitamins, lecithin, alkaline ash, economy, exaggerated claims), principal uses of soybeans and soy products (meat substitutes, meat enrichers, fortifying foods with soy flour). 5. From soup to nuts: Green beans, dry beans, frozen beans, roasted soybeans, sprouted soybeans, the cow of China–soy milk, the meat without a bone–tofu or soy cheese, the little giant among protein foods–soy flour, soy grits, puffed grits, soy oil, miscellaneous soy products

(soy butter [soynut butter, p. 99-100], sandwich spreads, malts, coffee substitutes, soy sauce, soy albumen–a new product, greatly improved during the past two years, is now used to "replace egg albumen in candy manufacture" [as in marshmallows]).

Note 1. This is the earliest English-language document seen (March 2001) that refers to tofu as 'the meat without a bone.' In 1938 Horvath called tofu 'the meat without the bones.' Note 2. This is the second earliest document seen (Aug. 2002) in which the soybean is called the "cow of China."

Note 3. This is the earliest English-language document seen (Aug. 2003) that uses the term "soy albumen" (or "soy albumens") to refer to isolated soy protein as a product.

6. The blazed trail: Introduction (history and pioneers), our tardy acceptance, food pioneers (health-food stores, Dr. W.D. Sansum of Santa Barbara and soy bread, allergy studies, vegetarians, Seventh-day Adventist food companies, meatlike products, Madison College of Tennessee, Loma Linda Food Co., the International Nutrition Laboratory and Dr. H.W. Miller, special dietary concerns and diabetic diets), establishing soybeans in the kitchen (The Edison Institute and Henry Ford, the USDA and the U.S. Bureau of Home Economics, the Agricultural Marketing Administration, U.S. railroads, the Soy Products Division of the Glidden Co., the Soy Flour Association). 7. The challenge of nutrition: The dangers of hidden hungers, nutrition and health, corrective nutrition, starch-restricted diets, meatless diets, allergy diets, bland diets, building diets, reducing diets, acidophilus culture, lecithin. 8. Our wonder crop: Jack and the beanstalk, early history, new varieties, aids to the industry (Regional Soybean Industrial Products Laboratory, American railroads, American Soybean Association, Fouts Brothers of Indiana, *Soybean Digest* and George Strayer in Hudson, Iowa, Soy Flour Association with Edward Kahl as first president, Soya Kitchen in Chicago (Illinois) opened in Jan. 1943, National Soybean Processors Assoc., National Farm Chemurgic Council), educational program, restrictive regulations. 9. Soybeans and the farmer: Varieties, sources of information, seeding and inoculating, harvesting, grading, soybean diseases, crop rotation, damaged beans. 10. Tomorrow: Acreage and production, soybeans on the farm, soybeans in nutrition, postwar industrial uses, future improvements. 11. A few suggestions for better living: Kitchen diplomacy, personal opinions, soybeans for everyone. Recipes: Green soybeans, dry soybeans, sprouted soybeans, roasted or toasted soybeans, meat-substitute dishes, soy-enriched meat dishes, soy noodles, macaroni, spaghetti, sauces and gravies, soups, salads, dressings, soy spreads, soy milk, tofu or soy cheese, soy butter, soy cereals, soy desserts, soy candies, soy beverages, soy-flour recipes, bread and muffins, pancakes and waffles, soy gluten recipes, baking-powder biscuits, pastry, cookies and doughnuts, cakes.

Contains recipes for "Soy milk molasses shake (p. 238). Soy puddings. Soy ice cream (p. 250; "Soy milk may may be used in place of milk in ice-cream recipes... adding whipped cream"). Soy fruit ice cream. Soy chocolate dessert (Eggless) (p. 250-51). Soy shake "(p. 254, made in a "liquefier or mixer").

The story of Allied aid to Greece [p. 24-26] is one of the great mercy stories of World War II. Starting in March 1942, as many Greeks were starving, the first mercy ship sailed to Greece with food and medicine. Up to Nov. 1943, the United States through Lend-Lease sent 82 million pounds of food to Greece. A number of these foods (including soup powders, stew mixes, and spaghetti) were based on soy flour and grits, and specifically developed to suit Greek tastes.

Concerning Henry Ford (p. 35-38), his "first experiments were made in a laboratory in connection with the Edison Institute in 1930. In these experiments, several tons of wheat were used, also several thousand bushels of carrots; sunflower seeds, which have a high oil content; cabbages; onions; and cornstalks. It was not until December, 1931, after a long series of experiments with the soybean, that Mr. Ford and his chemists felt that they were at last approaching a solution to the problem of finding a basic farm material from which the ordinary farmer could develop a commercially profitable product."

Note 4. This is the earliest English-language document seen (March 2007) that uses the term "Soy ice cream" (p. 250).

Note 5. This is the earliest document seen (July 2007, one of two) that uses the word "Cinderella" in connection with the soybean. The author, however, does not elaborate on this idea.

Note 6. This is the earliest English-language document seen (June 2011) that uses the term "soy-flour." Address: Southern California.

1386. Lager, Mildred. 1945. Madison College (Document part). In: Mildred Lager. 1945. The Useful Soybean: A Plus Factor in Modern Living. New York and London: McGraw-Hill Book Company, Inc. xii + 295 p. See p. 106-07.
• ***Summary:*** "There are several large and small Seventh-day Adventist food concerns in this country that manufacture a complete supply of soy products, most of which are cooked and ready to use.

"As pioneers, all these Adventist concerns have done considerable research on soybeans, and most of them employ chemists who have had firsthand experience with the beans in China. These men know the food value of the bean, what it has meant nutritionally elsewhere, and they strive to perfect formulas for well-balanced and complete vegetable protein foods to take the place of meat. Most of these concerns also manufacture soy milk, fortified to equal dairy milk in food value. Their meatlike products at first were for the use of their own people, their hospitals and institutions; but demands for vegetable protein have brought them into

health-food stores and food specialty shops. Sales on these products have been steadily increasing with a rapid rise in the last 3 years, climaxed by meat and cheese rationing..."

"Perhaps the best known of the pioneer institutions is Madison College, Tennessee. It is doing an outstanding job in maintaining a self-supporting college and a sanitarium and in developing a complete line of soy products that are being sold on an international scale. Madison's curriculum includes 27 campus industries run by the students to support the college and themselves. A 900-acre college farm is operated entirely by student labor and is also self-supporting. The student canning factory was started when the college was in its infancy, almost forty years ago; and several years of research in food chemistry have resulted in many new products built around the soybean. Madison College is largely responsible for making soybeans appetizing. They have developed a soy milk that has received world recognition; observers have come from Africa, India, and other countries where milch cows are scarce, to study the methods of Madison's soybean dairy. They also make soy cheese [tofu] and several meat substitutes, as well as a soybean beverage. These foods are now well distributed over the United States and some foreign countries, including South Africa."

Note. This is the earliest English-language document seen (Aug. 2013) that uses the term "soybean beverage" to refer to soy milk. Address: Southern California.

1387. Lager, Mildred. 1945. Loma Linda Foods (Document part). In: Mildred Lager. 1945. The Useful Soybean: A Plus Factor in Modern Living. New York and London: McGraw-Hill Book Company, Inc. xii + 295 p. See p. 107-08.
• ***Summary:*** "The Loma Linda Food Company of California was originally established to supply nutritious vegetarian foods to institutions and hospitals, but it soon outgrew that field. Its sales in the last 3 years has grown by leaps and bounds. The first 6 months of 1943 almost double 1942; and today the company has national distribution of a complete group of soy products including canned beans, soy milk, cheese, several meat substitutes, a soy coffeelike beverage, and soy-fortified cereals." Address: Southern California.

1388. Longrée, Karla. 1945. Soybeans and peanuts: With 51 original recipes worked out by students in experimental classes at Hampton Institute. Hampton, Virginia: Hampton Institute Press. 47 p. Summarized in Soybean Digest, Feb. 1946, p. 22. [19 ref]
• ***Summary:*** Dr. Longree, who joined the staff of Hampton Institute in 1941, is a native of Germany and has been in the USA since 1933. She became an American citizen in 1939. She earned PhD degrees at both the University of Berlin and Cornell University. The many soy-based recipes include those made with whole soybeans, "soyflour, soygrits, soymilk, and sprouted soybeans." Address: Prof. of Foods & Nutrition, Hampton Inst., Hampton, Virginia; PhD Univ. of Berlin and Cornell Univ.

1389. Löbbe, Henrique. 1945. Cultura da soja no Brasil. 7th ed. [Culture of soybeans in Brazil. 7th ed.]. Rio de Janeiro, Brazil: Directoria de estatistica da produccao, Ministerio da Agricultura. 74 p. 2nd ed. was 1935. [Por]
Address: Eng. Agronomo, Brazil.

1390. Colombia. Servicio Cooperativo Interamericano de Salud Publica. Seccion de Nutricion. 1945? Un alimento maravilloso: la soya [A marvelous food: The soybean]. Bogota, Colombia: Aire Libre. 8 p. Undated. [Spa]
• ***Summary:*** Contents: Have you heard talk about soya? A little history. Soy preparations: Soymilk, how to prepare soymilk and okara (*el afrecho de soya; afrecho* means "bran"), soy cheese [tofu], whole soy flour. Some soy recipes: Arepa with corn and soya. Maizena with soymilk. Arequipe with soymilk. Soy sprouts (*tallos alimenticios de soya*). Bread with corn and soya. Bread with wheat and soya. Soya galletas. Soya ponqué. Soya bollos. Soy soup.

Note: This is the earliest Spanish-language document seen (June 2013) that uss the term *el afrecho de soya* to refer to okara. Address: Colombia.

1391. De, S.S.; Subrahmanyan, V. 1946. Processing of soya bean for the preparation of milk and other food products. *Indian Farming* 7(1):17-19. Jan.
• ***Summary:*** Contents: Introduction. Industrial and other uses of soya bean (soy milk, butter, and bean curd [tofu], Russia). Soya bean in India (unsuccessful attempts to use like dhal). The soya milk (The Chinese method, the improved method). The flavour and taste of soya milk. Nutritive value of soya milk. Possibilities of soya bean in India (to supplement the supply of cow and buffalo milk, which may be decreasing on a per capita basis). Uses of soya milk (sour curd, sweeter curd [tofu]). Production of soya bean [in India]. Other soya products.

"In Russia there is very intense propaganda for the use of soya bean. Soya bean dishes have been introduced in restaurants and homes. A Soya Research Institute has been organized in Moscow and in a special exhibition of soya food, 130 varieties of soya dishes including cutlets, pastry, salads, candy, and beef were shown. A dinner prepared entirely of soya bean was served to representatives of trade unions, factories, the Red Army and the Soviet press. The food was unanimously declared to be excellent."

"Over a considerable part of India, the chief dairy product used by a large section of the population is only the sour curd or the butter milk. Owing to the high cost of cow's milk, the corresponding curd and buttermilk are now becoming increasingly difficult to obtain. Even at the present high price of the bean (roughly 4 as. per lb.), the soya milk cost only about one-fifth of that of cows milk, so the curd

obtained from it would come within easy reach of a large section of the population."

"An important step would be the establishment of a soya foundation in order to promote the creation of a National Organization for Soya Research an example of which already exists in the U.S.S.R." Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1392. Indian Research Fund Association, Nutrition Advisory Committee, Sub-committee on the Soya Bean. 1946. Report on soya bean. *Indian Research Fund Association, Special Report* No. 13. 35 p. Jan. (Cawnpore, India: The Job Press). [83 ref]
• ***Summary:*** This study was compiled by the following four organizations: 1. The Biochemical Laboratory, Univ. of Dacca, under Dr. K.P. Basu; 2. The Seth G.S. Medical College, Bombay, under Dr. V.N. Patwardhan; 3. The University Chemical Laboratories, Lahore, under Dr. Bashir Ahmad; 4. The Nutrition Research Laboratories, Coonoor, under Dr. W.R. Aykroyd.

Contents: Introduction and review of the literature. The composition of soya bean. Soya bean in the feeding of infants and children. The investigation of the biological value of the proteins of soya bean and other pulses (incl. rat experiments). The effect of soya bean in supplementing rice diets. Discussion. Summary and conclusion (13 points).

The final opinion: "Taking the results obtained so far into consideration, the Sub-committee is of the opinion that as a supplement to typical Indian diets based on cereals, but supplied adequate in quantity, soya bean has no special advantage over common Indian pulses."

"The sub-committee is not in a position therefore to advocate *immediately* the encouragement of the production of soya bean on a wide scale in India as a substitute for Indian pulses." Address: Indian Research Fund Assoc.

1393. International Nutrition Laboratory. 1946. Dealers order blank. P.O. Box 388, Mount Vernon, Ohio. 1 p. Catalog. Jan.
• ***Summary:*** Lists 14 Soyalac products (all-purpose in 4 sizes, malt flavor in 4 sizes, chocolate in 3 sizes, infant food, natural liquid, and chocolate liquid), Giant Green Soya Beans in 3 sizes, Giant Select Soya Beans, Soya Beans with Tomato Sauce in 2 sizes, Soya Spread, Chili Con Carne (Vegetarian; with wheat gluten, no soy), Chop Suey (Mein Jing, Vegetarian, with soy sprouts), Cutletburger (Vegetarian; with wheat gluten, no soy), and Cutlets (Vegetarian, 4 sizes, no soy). Address: Mount Vernon, Ohio.

1394. Smith, A.K.; Beckel, A.C. 1946. Soybean or vegetable milk. A résumé and bibliography. *Chemical and Engineering News* 24(1):54-56. Jan. Also published as USDA Bureau of Agricultural and Chemical Engineering, AIC-113 (Feb. 1946) and in Soybean Digest (May 1946). [124 ref]
• ***Summary:*** A very useful document with 124 bibliographic references. Address: Oil and Protein Div., NRRL, Peoria, Illinois.

1395. Balzli, Jean. 1946. Laits végétaux et autres substituts du lait animal [Vegetable milks and other substitutes for animal milk]. *Revue Internationale du Soja* 5(23-24):8-12. Jan/Feb. [Fre]
• ***Summary:*** Contains long sections on soymilk and almond milk. In 1932 Léon Rouest tasted a good-tasting soymilk in Moscow. One specialist who has studied the problem of improving the flavor of soymilk is Dr. Louis Gutschy, professor of agronomy at the University and Polytechnic School of Zagreb, Yugoslavia. He has succeeded in making a "a seductive and savory soymilk." Address: France.

1396. De, Sasanka S.; Subrahmanyan, V. 1946. Processing soyabean to increase its nutritive value. *Science and Culture* (*Calcutta*) 11(3):437-39. Feb. [20 ref]
• ***Summary:*** This is a brief review of the literature on soybean nutrition. Treatment of dehulled ("decuticled") soaked soybeans with warm dilute sodium bicarbonate solution removed to a large extent the bitter principles. The vitamin C content of soy sprouts is 33.8 mg/100 gm. Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore, India.

1397. *Honduras Agricola.* 1946. La soya: Excellente alimento para el hombre como para el ganado y valiosa materia prima de numerosos usos industriales [The soybean: Excellent food for people and for livestock and valuable raw material with numerous industrial uses]. No. 14 & 15. p. 7-9. Jan/Feb.; No. 16. p. 10-11. March; No. 17. p. 16-17. April; No. 18. p. 18-19. May; No. 19 & 20. p. 17-18. June/July; No. 21. p. 10-13. Aug. [Spa]
• ***Summary:*** Contents continued: No. 14 & 15: Varieties. Fertilizer and manure to prepare the soil. Inoculation with bacteria. Time of sowing. Methods of sowing. Plant density. Depth of sowing.

No. 16: Tillage (*Labores*). Rotations. Mixed cultures: Soya and maize, soya and Sudan grass pasture, Soya and sorghum (*zahina*). Harmful animals (especially insects). Diseases. II: The harvest. Introduction. Cutting and preparation of soya for dry forage or hay. Time of harvest and reaping

No. 17: Method of harvest. Curing the pasture or hay. Baling the hay. Exhaustion of the soil. Harvest and preparation of the grain. Time of gathering. Methods of reaping. Curing and manipulation. Threshing.

No. 18: Special machines. Exhaustion of the soil. Storage of the seeds. II. Uses of soybeans. Introduction: The plant. The flour made from the seed. Green vegetable soybeans and sprouts (*Las soyas verdes y grillos*). Dry soybeans (*Las soyas secas*) and products made from them. The oil and its uses. The soybean as a human food:

Introduction, dry soybeans, green vegetable soybeans (*Soyas frescas*). Soy sprouts.

No. 19 & 20: Introduction. Flour. Oil. Soy sauce. Soymilk. Soy curds or tofu (*Cuajada o requesón de soya*). Soybeans as food for animals. Soy oil. Extraction of soy oil.

Issue No 21: Uses of the oil. Soybean meal (*pulpa, o bagazo de soya;* which remains after extraction of the oil). Use of soy meal [or flour] in human foods. The meal as a feed for livestock, for poultry, and as a fertilizer. Soy hay: For fattening cattle, for dairy cows, for mules and horses, for other animals. Soya pastaderos. Fresh soy forage. Soya for ensilage. Soy straw. Soya as a green manure.

On page 10 of this last part is a full-page cartoon of a woman with fruits and a cooked chicken. "Soya is the ideal food for children; it nourishes more and costs less. It is a good source of proteins, oils, carbohydrates, and vitamins. It can serve as a substitute for milk, eggs, meat, fruits, and pulses or vegetables (*legumbres*)." Page 11 states that people interested in planting soybeans can contact Prof. Raul Zaldivar, Director of the Rural School at Toncontin for Training Elementary Teachers (*Director de la Escuela Normal Rural de Toncontin*), Tegucigalpa, Honduras. Address: Honduras.

1398. **Product Name:** [Natural Sojarine (Soy-Based Infant Formula)].
Foreign Name: Sojarine Natura.
Manufacturer's Name: Natura.
Manufacturer's Address: 8, Quai de Passy, Paris 16, France.
Date of Introduction: 1946. February.
New Product–Documentation: Ad (1/8 page) in *Revue Internationale du Soja.* 1946. March. On unnumbered page before title page. "Sojarine Natura. A base de soja. Suraliment parfait. Convient aux nourisons, enfants, viellards, atteints de troubles gastro-intestinaux ou de diarrhees-rebelles [Made from Soy. The Perfect Food Supplement. Suited for Nursing Babies, Infants, Old People, and those Suffering From Gastro-Intestinal Troubles or Diarrhea]." Ad still running in 1949.

This ad also appeared in *Revue Internationale des Produits Coloniaux et du Material Colonial Revue Internationale du Soja.* 1946. July/Aug.

Note: It is hard to tell if Sojarine Natura was *truly* an infant formula, with all the necessary vitamins and minerals to sustain life and growth in place of mother's milk. It was developed during or right after World War II, so ingredients were scarce and times were very hard in France. But it was the first such product that we have seen made in France.

1399. *Revue Internationale du Soja.* 1946. Pourquoi il n'y a pas de lait de soja en France [Why there is no soymilk in France]. 5(23-24):19. Jan/Feb. [3 ref. Fre]
• ***Summary:*** The celebrated soyist (*sojaïst* [*sojaist*]) Li Yu-ying, after having spoken about soymilk in 1905 at the Congrès de la Laiterie, founded a laboratory for studies in Paris in 1908. Then he created at Vallées, near Colombes (Seine), a factory named *La Caséo-Sojaine* which produced a beautiful line of soyfoods (*aliments sojaïques*). This company went bankrupt fairly quickly, because certain "sharks" in our trade worked to suffocate it.

"Later other idealists have taken up the work of the Chinese scholar and scientist. Too bad for them. The same big businessmen attacked again and spread death and destruction. On this subject, see the article by Mr. René Bataille in the *Eclaireur de Nice et du Sud-Est* (No. 268, 24 Sept. 1940).

Will trusts [a powerful combination of firms designed to reduce competition] still today be able to prevent the manufacture of soymilk products? The shortage of animal milk will continue and soymilk could really help us. Of course, soy flour mixed with water is not soymilk. We need a real soymilk, made in the proper way, checked, graded, and standardized. It is not to be confused with the soymilk used as a calf milk replacer.

"Likewise, we will need soy cheeses (*fromages de soja*), made in factories. The late Dr. Alexis Carrel said during this war that the French youth would not have become [nutritionally] deficient if the Third Republic [1870-1940, proclaimed after Napoleon III was captured by the Prussians] had not strangled all attempts at soybean production and developing soyfood industries." Address: Paris, France.

1400. Claudel, Paul. 1946. Le soya coopératif [The soya cooperative]. *Figaro* (*Le*). March 20. [1 ref. Fre]*
Address: France.

1401. Claudel, Paul. 1946. La plante qui donne du lait [The plant that gives milk]. *Revue Internationale du Soja* 5(25):35-36. March. Reprinted from *Figaro,* 16 Dec. 1945. [1 ref. Fre]
• ***Summary:*** Claudel was the French ambassador to Japan before World War II. Address: France.

1402. Contreras C., Moisés. 1946. La soya; su cultivo y su importancia [The soybean; its cultivation and importance]. Ciudad Trujillo, Dominican Republic: Secretaria de Estado de Agricultura, Pecuaria, y Colonizacion. 12 p. March. [Spa]
• ***Summary:*** Contains many recipes. Address: Agron., Republica Dominiciana.

1403. Doherty, Lawrence E. 1946. Imitation or improvement? Dairy 'replacement' products widening market, seeking to equal margarine's success. *Food Business.* March. p. 22-23, 56.
• ***Summary:*** "In the family of vegetable-fat dairy replacements, the Big Brother Who Made Good is oleomargarine. The other family members–including

whipped topping, coffee whiteners, and mellorene [mellorine]–are working to be equally successful... Today vegetable whipping preparations, both powdered and aerosol, reportedly outsell dairy whipping cream." Two companies long associated with the dairy industry now make powdered coffee whiteners or creamers: Carnation makes Coffee-mate (launched in 1961, and now the market leader), and Borden's makes Cremora (launched in the autumn of 1963). Photos show a jar of each product. "The non-dairy coffee whitener market" is now experiencing fast growth. These products have two advantages over cream: they are less expensive and they keep longer. It was during World War II "that 'ersatz' dairy products got their big boost, due to some shortages of dairy products on the home front, and the need to develop non-spoiling dairylike foods for military men on the move.

"Since that time whipped topping and coffee whiteners have made important strides, especially in the institutional field where lower cost and increased shelf life are telling advantages. On almost all coffee vending machines, the 'cream' button releases what is actually a vegetable-base cream replacement, either powdered or liquid."

"Robert E. Rich, whose Rich Products Corp. sells frozen liquid Coffee-Rich, predicts that within five years vegetable fat coffee whiteners will be outselling dairy cream for coffee. Rich Products, of Buffalo, New York, is a pioneer in the non-dairy field. In 1945 Bob Rich, who then (as now) operated a large dairy company, learned of work done by the George Washington Carver Laboratories [of the Ford Motor Co., Dearborn, Michigan] on making milk and cream from soy beans, and used this work plus other research to produce a soy cream that would whip. Rich's Whip Topping produces more volume when whipped, remains firmer longer, combines with any acid fruit or juice, and costs less. This was followed in 1961 by Coffee-Rich, and this is where the company ran into a barrage of legal battles...

"Rich's Coffee-Rich is probably the largest seller of liquid non-dairy coffee whiteners. Carnation's Coffee-Mate is said to be the leader among the powdered cream... In the whipped topping field, Rich is said to be the largest seller of liquid topping. General Foods' Dream Whip, introduced in 1957 in powdered form, is the leader among the dry packaged whips. Lever Bros.' Lucky Whip mix, introduced in 1961, is considered in second place. Lucky Whip is also sold in aerosol containers, as is Whip Topping."

"H.W. Diamond, research vice-president of Rich Products, who holds the 'Diamond process' patents for vegetable fat whippable emulsions, foresees a fine future for non-dairy products. 'Generally speaking, vegetable fat replacements for dairy products can be created, manufactured, distributed, and sold at a lower cost in man hours of effort than can comparable dairy products. The vegetable fat products represent a more efficient utilization of the food producing capacity of the soil and the labors of man,' he said."

One ad for Rich's Coffee Rich shows it being poured into a cup of coffee. "New non dairy coffee compliment. Shipped frozen. Keeps 3 weeks after thawing in your refrigerator." It is sold in a Pure Pak carton. A second ad states "Rich's Coffee Rich wins again!" A Wisconsin cow, so labelled, is being carried away in a cage. The sign across the top which read "Legally Dangerous" has been changed to "Legally Meek," since Coffee Rich won a big legal victory in the dairy state of Wisconsin. Coffee Rich can be sold there and it need not be labeled "imitation cream." Rich has now won this legal battle in 7 states.

Note 1. This is the earliest document seen (Jan. 1999) that uses the term "coffee whiteners" (or "coffee whitener"). It is also the earliest document seen (Jan. 1999) that uses any term to refer to this new product category, and the earliest document seen (March 2001) concerning the etymology of such products.

Note 2. This is the earliest English-language document seen (March 2007) that uses the term "mellorene" to refer to a frozen dessert made with vegetable oils instead of butterfat.

Note 3. This is the earliest English-language document seen (Aug. 2013) that uses the word "dairylike" to refer to products resembling dairy products. Address: Assoc. editor.

1404. Jamyn, Stephan. 1946. Farine ou lait végétal de soja; Lait animal et artériosclèrose [Soy flour or milk; animal milk and arteriosclerosis]. *Revue Internationale du Soja* 5(25):38-39. March. English-language summary in Soybean Digest, Aug. 1946, p. 25. [6 ref. Fre]

• ***Summary:*** Researchers have recently concluded that the addition of soya to the "human diet tends to reduce arteriosclerotic lesions, while the casein of milk intensifies them. In an experiment on rabbits, hardening of the arteries was artificially produced by cholesterol.

"Since soya, due to the unsaponafiability of its oil in phytosterols, has been recognized as a protector against the sclerotic factor while animal casein increases its power, here is a new and powerful argument for the admission of the soybean into the western diet and culture, in the opinion of the author.

"Since experiments seem to prove that it is only animal casein which would be apt to cause arteriosclerosis, this is a new objection to the misuse of milk in the diet of aging adults. It is known that an excess of lactic acid menaces the heart. The author suggests that soya offers to older people the opportunity of nourishing themselves well and of even safely drinking milk, since it is exempt from harmful residues." Address: France.

1405. Emory, Mayo L. 1946. Soybean milk-substitute as used on Okinawa. *U.S. Naval Medical Bulletin* 46:616-18. April.

• ***Summary:*** Near the end of World War II, after the campaign for Okinawa, "the nutrition of the native children

presented a serious problem. Both malnutrition and undernutrition were universal and starvation was common." "Breast-fed children suffered most," followed by orphans under the age of 6.

"Soybean was one of the foods available. It was found that a substance closely resembling milk (table 1) was produced as a intermediate step in the preparation of a native soybean dish *tofu*.

"On 18 July 1945 the formula was made up experimentally in a native kitchen and tried out in General Hospital G6-59 on the pediatric ward. The following day the formula was used in the orphanage of 142 children of Dispensary G10-20. The food was readily accepted by the children... One cupful, approximately 200 cc, was given to each child before the noon meal. Those who wished more were given more." It was found that dehydrated egg powder could be added easily to the soybean formula to make a more valuable food. After only a month, on Aug. 19, the experiments were concluded.

The method of preparation was simple; the formula is given (for 1 lb dry soybeans, 1 lb of dehydrated egg powder and 3/4 lb sugar could be added). "Four natives (one cook and three helpers) could prepare enough milk-substitute to feed a thousand children." The "bean residue" [okara], a by-product of the process, was generally eaten "in soups by both adults and children, but it was not suitable for infants." Address: Surgeon U.S.P.H.S [U.S. Public Health Service].

1406. *Indian Farming.* 1946. Soya bean. 7(5):223-24. May.
• ***Summary:*** "Within recent months, much has been said and written, some of it in this journal, of the merits of the soya bean as an article of food. We have now before us the *Report on Soya Bean* submitted by the special sub-committee of the Indian Research Fund Association's Nutrition Advisory Committee. It is an authoritative statement which does nothing to strengthen the opinion that in the soya bean lies the solution to many of India's dietetic problems. The Woodhead Famine Inquiry Commission agreed with the finding of the Nutrition Advisory Committee."

The soya bean has never been cultivated to any large extent in India "although 30 years ago [in 1916, during World War I] some 20,000 acres were being grown in north Bengal, Nepal, Bhutan and Sikkim.

"The Nutrition Advisory Committee in 1937 stated that 'The nutritive value of soya bean has been studied by experiments on animals and also by controlled experiments on school children. The general conclusion is that soya bean, considered as a supplement to typical Indian diets, is not of outstanding value; it does not appear to have any advantage over various common pulses which have long formed part of the diet of the Indian people. While it would be advisable that the results obtained at the Coonoor Laboratories should be confirmed elsewhere, existing data suggest that at present the encouragement of the production and consumption of soya bean need not be made a prominent part of nutritional and agricultural policy in India.'

The soundness of that opinion was questioned both within and without the Committee, so that at the seventh meeting of the Committee in 1941, it as decided that 'further work was necessary to elucidate the problem.' Accordingly a sub-committee was appointed to suggest lines on which further experiments on soya bean might be carried out by different laboratories, and it is the record of the work done by experts in the laboratories in Dacca, Bombay, Lahore and Coonoor that is to be found in the present report." We must understand clearly that only the nutritive value of the soy bean in Indian diets is under examination.

A summary of seven key points is given. It should be clear that in India, the use of food for industrial purposes is out of the question. The soya bean "is a poor milk substitute but a valuable addition to a deficient milk supply. In the latter respect it somewhat resembles the position of *vanaspati* with regard to *ghee*–both soya bean and *vanaspati* must be used to augment a deficient supply of a superior article while neither can be a substitute for it." Address: India.

1407. Smith, A.K.; Beckel, A.C. 1946. Soy or vegetable milk. A resume and bibliography. *Soybean Digest.* May. p. 18-23. First published in Chemical and Engineering News, 24:54-56. [123 ref]
• ***Summary:*** The 123 references comprise the most extensive bibliography on this subject up to this time. A photo shows A.K. Smith. Address: Oil and Protein Div., NRRL, Peoria, Illinois.

1408. De, Sasanka S.; Desikachar, H.S.R.; Subrahmanyan, V. 1946. A practical approach to the milk problem in India (Vegetable milk–Their nutritive value and ultimate practical possibilities). *Science and Culture* (*Calcutta*) 11(12):692-95. June.
• ***Summary:*** Contents: Introduction (Need for milk in India). India's needs are beyond her capacity for production. Bad distribution of available supply. Imported milk products will be quite insufficient. Animal milk–a luxury product. Soya milk is used by hundreds of millions. Comparative composition of cow and soya-milk. Vitamin content per liter of soya-milk and cow's milk. Importance of processing; some recent work on soya-milk. Soya-bean should not be used as DHAL. More comprehensive scientific research is needed. Improvements in the preparation of soya-milk. Other vegetable milks. Cow's milk can be excelled by improved vegetable products. Immediate need for supplementing our present supply. Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore, India.

1409. Illick, Edith Windels. 1946. A study of soybean milk: Its preparation and its use in some Chinese and American recipes. MS thesis in Home Economics, Cornell University.

47 + xiv p. June. [38 ref]
• ***Summary:*** Contents: Introduction. Review of the literature. Experimental procedure: Preliminary experiments (variety of soybeans, milk supplementation), preparation of soybean milk (equipment used, standard recipe, variables in experimental procedure, scorecards and judging), use of soybean milk in cookery (in Chinese dishes, in American dishes). Results and discussion: Preparation of soybean milk (amount of soaking water to be used, length of soaking time required, time for grinding, amount of water to be used for straining, time for straining, length of cooking time), revised recipe for preparing soybean milk, use of soybean milk in cookery (in Chinese dishes, in American dishes [chocolate ice cream, junket, Spanish cream, baked custard, cream of tomato soup]).

Using chocolate ice cream recipe II, "no conspicuous differences were observed in the chocolate ice creams made with either cow's milk or soybean milk." The recipe is as follows: ½ cup soybean milk (or dairy milk). ¼ cup sugar. ¼ tablespoon flour. 1/8 teaspoon salt. ½ ounce (½ square) chocolate, cut fine. ½ egg yolk, slightly beaten. 1 teaspoon vanilla. 1 cup light [dairy] cream. Note that this is not a non-dairy product.

Tables: (1) Recipes for making soybean milk. (2) Summary of methods of preparing soybean milk. (3) Composition of soybean milk. (4) Composition of cow's milk. (5) Composition of human milk. (6) Approximate percentage of amino acids in some animal and vegetable proteins calculated at 16% nitrogen. (7) The digestibility of the protein of soybean milk compared with cow's milk. (8) Effect of variations in procedure in making soybean milk on the yield of raw and cooked milk. (9) Effect of variations in procedure in making soybean milk on the appearance and palatability of the milk. (10) Results of substituting soybean milk for water in some Chinese products. (11) Results of substituting soybean milk for cow's milk in some American products.

The Introduction states: "'So old and yet so new,' is one adage that could rightfully be applied to soybean milk, or vegetable milk as it is sometimes called. Soybean milk is said to have been developed by the Chinese philosopher Whai Nain Tze long before the Christian era, and is known to the Chinese under the name of Fu Chiang or bean curd sauce. It is used in fresh, evaporated, condensed and powdered forms, according to Piper and Morse (1923).

"Despite its early discovery, soybean milk has not been used extensively. Only in the last two or three decades has man some to realise the potentialities of this product. Although it does not compare equally with cow's milk or other animal milks, it is sufficiently rich in the known food nutrients to make it worthy of consideration for more extensive study and use.

"To make soybean milk more comparable with animal milk, it is possible to supplement it in various ways with such nutrients as calcium, sodium, chlorine and sugar. This supplementation does not give it equality, but does produce a product of high food value.

"Even before World War II, malnutrition was manifested on every hand in China. only those individuals who were able to supplement the foundation diet of rice with large enough quantities of vegetables, meat fish, eggs and fruit, consumed an adequate diet. These cases were comparatively rare in proportion to the total population. To alleviate this serious situation, further study was imperative. Siddall and Chiu (l93l) believed that part of the answer could be found in the use of soybean milk, since soybeans are a native product of China, even though they are little used as a regular part of the diet.

"Because soybean milk is approximately five to ten times cheaper than cow's milk, the latter of which is virtually unobtainable to the average Chinese family, the possibility of its increased use appears more significant. To date, the average Chinese has not incorporated this milk in his daily cooking.

"During the last decade, soybean milk has received recognition in America also. Physicians, realizing its food value, have begun to use it in the diets of persons allergic to animal milk. It is usually referred to commercially as Mull-Soy, a product developed by Dr. Julius F. Muller (1943).

"What is the value and usefulness of soybean milk? In this study, an attempt will be made to produce the most palatable soybean milk and to incorporate it in some Chinese recipes calling for water and in some American recipes requiring milk. The substitution of this nutriently rich vegetable milk for water in the Chinese recipes appears to be a plausible method of improving the food value of the average diet." Address: Cornell Univ., Ithaca, New York.

1410. Marquis, Arnold. 1946. The Pacific story. Radio broadcast. National Broadcasting Company (NBC). Hollywood, California. June 2. 30 minutes. 23 p. transcript.
• ***Summary:*** This radio broadcast is a fascinating story–told by many voices–of how the Japanese scientifically developed soybean production, utilization, and export in their puppet state of Manchukuo, and, how the USA intends to capture the soybean export markets lost by the Japanese when they lost World War II.

The Chinese speak of the soybean this way: "It is the poor man's meat. It is the cow of China. It is meat without bones. The Japanese speak of it this way: If we could have held Manchuria, it would have guaranteed that Japan could never be starved out. American nutritionists speak of it this way: It is high in protein. It is rich in vitamins–in A, B-1, C, G, and E–and also in the bloodclotting vitamin K. Weight for weight it contains several times as much B-1 as beefsteak. And as for minerals: One-half cup of soy flour contains as much calcium as a whole cup of milk... [and] as much phosphorus as two cups of milk. And weight for weight,

it contains as much iron as liver, twice as much iron as molasses, and three times as much iron as whole wheat flour. The soybean is a wonder food. One pound of soy beans is almost a complete one-day ration for an adult."

The USA is now developing two famine-relief foods based on soybeans. The first contains 50% soybean, plus split peas, wheat flour, and a little peanut-meal, onion, salt, and fish-oil. Four million pounds of this mixture and twelve million pounds of another soy-based mixture are being sent "to the famine areas of China." In other words, soybean are being sent from the USA to the land of their origin, "where they have been a mainstay for five thousand years."

Discusses: The growing of soybeans in Manchuria. The Japanese takeover and extension of their control via the South Manchuria Railroad, whose terminus is Dairen. The importance of Manchurian soybeans to Japan. The Japanese Central Laboratory at Dairen and its research on soybeans. The two Japanese agricultural experiment stations in Manchukuo. Development of the benzine [benzene] solvent extraction process for soybean oil, "until there were 200 large bean plants in southern Manchuria." Soybeans as a livestock feed in Manchuria. Use of soybeans as food in China: "Tofu is bean-curd... This is fermented tofu. It is very good. Tofu is eaten in several forms. Fresh, fermented, dried or frozen. Just about any way it is prepared, its food value is preserved... We also use the oil of the soy bean. And with the soy bean we make soy sauce." Many Asiatic peoples also use soybeans to "make bean milk and bean flour." "They roast them for confections [kinako]. They eat them green [green vegetable soybeans]. They sprout them [soybean sprouts] and they even make drinks of them.

Note 1. This is the earliest English-language document seen (Oct. 2011) that contains the term "fermented tofu.

Industrial uses of soybeans in America. How Dairen became Japan's great center of the soy bean industry in Manchuria, and the Mixed Storage System. "About 55% of the soybeans grown in Manchuria are used for human food."

"You see, its all tied together. The growing of the bean, the processing, the transportation, and the export. Since 1937, the economy of Manchuria has been developed for the benefit of Japan." The Japanese and the Bank of Manchukuo (which is an instrument of the powerful Mitsui and Mitsubishi financial combines) are "buying up all the soybean business" and trying to eliminate the major European companies that were exporting soybeans before the Japanese moved in, such as Dreyfus Co. (France), and Wassard Co. (Denmark). Although the Japanese claim that Manchukuo is an independent nation, other nations realize it is a puppet state. The Chinese Eastern Railway, which was built by the Russians and has its terminus at Vladivostok, is in competition with the Japanese-controlled South Manchuria Railroad for the soy bean business of Manchuria. The latter uses rebates (kickbacks) to try to eliminate competition.

In 1937, after 6 years of dominating Manchuria, Japan invaded China proper–using Manchuria to supply their troops. "By 1941, Manchuria was yielding some four million tons of soybeans. The Japanese controlled every pound of it. And by 1941 they had fostered the growing of soybeans in Korea, and also in Japan itself. Also, by this time, the Japanese had seized a good part of the soybean country of China proper. But by Pearl Harbor [7 Dec. 1941], the United States was also growing soybeans: Over 3 million tons in 1941. By 1945 it was nearly 6 million tons."

Now that the war is over, the Japanese have lost the entire soybean industry in Manchuria–including the laboratories, bean oil mills, Dairen, the South Manchuria Railroad, and the Bank of Manchukuo which controlled it. China, which now controls Manchuria, "will consume much of the soybeans which, before the war, were exported to European countries, and to Japan." The United States has begun to supply this soybean export demand, and in fact "is already shipping soybean products back to the Far East–to the famine stricken areas of China."

America Doctor: "So far most of our soybeans have gone for feeding livestock. But now we known what they can mean to man. Narrator: Now, in this great crisis, we are learning what the Chinese have known for thousands of years. Chinese: It is the poor man's meat. It is the cow of China. It is meat without bones... Announcer: This is the story of the wonder food and the part it has played in our time."

Next comes a 5-minute segment in which W.J. Morse of the USDA Bureau of Plant Industry (Beltsville, Maryland) talks about the significance of the soybean and its development, and the new Pacific Program. Then the conclusion: "For a reprint of this program, send ten cents in stamps or coin to University of California Press, Berkeley, California. The Pacific Story is written and directed by Arnold Marquis. The original musical score was composed and conducted by Thomas Peluse. Your narrator–Gayne Whitman... This program came to you from Hollywood. This is N.B.C.–The National Broadcasting System." Note 2. A cover letter accompanies this manuscript. It is from Arnold Marquis, Writer-Producer, The Pacific Story, to Mr. John Baker, Department of Radio, USDA, Washington, DC. The letterhead reads: National Broadcasting Company, Inc., A service of Radio Corporation of America, Sunset and Vine, Hollywood 28, California. [Phone]: 6161. Dated May 13, 1946. Address: USDA.

1411. *Vegetarian Messenger and Health Review* (*Manchester, England*). 1946. Cookery demonstration. June. p. 115.

• ***Summary:*** On May 6 a public cookery demonstration was given at Croyden by Mrs. Fay K. Henderson of London. She prepared four nutritious savouries without meat and three sweets without eggs or milk. Of the latter 3 dishes, one was

a Semolina Mold in which soya flour was whisked to a milk in a pint of warm water, and another was Date Cake which contained 2 oz of soya flour.

1412. Basu, U.P. 1946. Soya bean. *Science and Culture* (*Calcutta*) 12(1):43-44. July.
• ***Summary:*** "Considerable discussion has taken place on the subject of soya bean and its potentialities as a food crop in India." But a recent report states that the soya bean has no special advantage over common Indian pulses as a supplement to typical Indian diets.

1413. Krishnaswamy, N.; De, S.S.; Subrahmanyan, V. 1946. Digestibility of soya milk (Letter to the editor). *Science and Culture* (*Calcutta*) 12(1):51-52. July. [4 ref]
• ***Summary:*** "Soya-bean milk is a highly digestible product. Experience in different parts of the World has shown that it is more easily digested than cow's milk. In America and other countries, persons who are allergic to cow's milk or otherwise experience difficulty in digesting it, experience no such discomfort when using soya-milk. In Canada, where there is no milk shortage, the sweet soya curd is flavoured for feeding children as it produces no digestive disorders.

"Our recent experience with feeding soya milk in child welfare centres has shown that even very young children can drink fair quantities of the milk without any discomfort. Even babies have been fed on soya milk without any ill effect."

"Soya milk forms a soft curd which disperses readily on either side of the iso-electric point. Cow's milk curd remains as such over a wider range."

"Further work bearing on the digestion of soya milk in the animal system is in progress. It is hoped that this study will throw fresh light on the digestibility of other vegetable milks as well." Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1414. McWethy, John A. 1946. Soybean success: War boom continues as many plants expand, bring out new products. Examples: Meat flavor, wool-like fibre, bottle cap adhesive, soymilk cheese. St. Louis meeting draws 400. *Wall Street Journal.* Aug. 31. p. 1.
• ***Summary:*** This article is about the 3-day meeting of the American Soybean Association in St. Louis, Missouri. The soybean industry thrived during the depression, more than doubled in size during World War II, and is now continuing to grow. The A.E. Staley Manufacturing Co., America's largest soybean processor, has just started construction of a new $1 million plant that will turn soybeans into monosodium glutamate (MSG), making one million pounds a year. MSG has been previously made on a small scale in the USA from wheat, but Staley's plant will be the first to make it on a large scale from soybeans.

The Drackett Co. in Cincinnati is putting the finishing touches on a commercial plant that will make a wool-like fibre from soybeans. Robert A. Boyer, the firm's research director, said the new fibre will be used mostly for blending with rayon. He thinks it may sell for less than wool.

ADM, one of America's four largest soybean processors, earlier this year completed a plant to make a "whipping agent" from the versatile soybean; it can replace egg albumin, which is much more expensive.

Dr. Harry W. Miller, president of the International Nutrition Laboratory (Mt. Vernon, Ohio), "started making soybean products in Shanghai, China, in 1935. Bombed out in 1937 by the Nips [Nipponese = Japanese], he came to this country and began making similar products here in 1939. Now his firm does a $500,000 a year business and could do a lot more if sugar and other ingredients used with soybeans were available." His most popular items are [soy] milk, cutlets, and canned green soybeans. He says the milk tastes "rather like malted milk and is especially good for infants and others allergic to animal milk. His company has also developed a cheese made from soymilk, a prepared mix for ice cream from the soymilk, and "albumen sheets" [yuba], which are very popular in China.

These sheets aren't much thicker than a piece of paper and are used in China to make the layers of a loaf filled with mushrooms. The Chinese also use soybeans [yuba] to make products that taste like both fish and chicken. In American kitchens, an excellent substitute for butter can be made "by combining soya oil, soya milk," carotene oil for color, and salt.

One big American breakfast cereal maker is said to be planning to introduce a "soya flake cereal soon, similar in appearance to cornflakes. Another may soon market a puffed soyabean cereal, a third may introduce a cooked cereal made from soybeans, oats and wheat."

General Mills is building a factory for producing a synthetic resin from soybeans–a product developed at the Northern Regional Research Laboratory in Peoria, Illinois. Dr. G.E. Hilbert, NRRL's director, says this new resin shows "considerable promise as a protective coating and as a heat-sealing and moisture-proofing agent.

During the past few years, soybean processors have been switching to the solvent extraction systems, from the expeller system, for obtaining oil from soybeans. Most newer plants use hexane solvent. The advantage of the solvent system is that it removes all but about half of one percent of the oil, compared with 3½% to 5% left in the meal when expellers are used. The meal currently sells for 3 cents/lb compared with 11.75 cents/lb for the oil.

NRRL has recently developed a process that uses alcohol instead of hexane. This yields superior "soyflour." Before the war, production of soyflour was 25 million lb/year; this year it is expected to top 400 million lb. Roth Products Corp. of Chicago has already used 6 million pounds of soyflour this year in its dehydrated soups, baked goods,

pancake flour mixes, and sausage filler.

The soybean industry (especially the NRRL) is also working to make soybean oil more stable. It "has a tendency to develop a grassy or painty flavor on standing." A process obtained from Germany "goes a long way toward preventing the development of these objectionable flavors."

The Lincoln soybean variety, developed at the U.S. [Regional] Soybean Laboratory at Urbana, Illinois, and first made available to farmers during the war, is playing a major role in increasing yields. Today farmers in the corn belt are getting 25-30 bushels/acre with Lincoln, compared with only 15-16 bushels/acre in the early 1920s with varieties then available. Moreover, today's soybeans contain 20-21% oil compared with only 15-17% about 20-25 years ago.

1415. *Soybean Digest.* 1946. The culture of soya in France. Aug. p. 6, 16.

• ***Summary:*** "Information concerning the status of the soybean in France used in the accompanying article was kindly supplied to us by Am. Matagrin, formerly scientific librarian at Lyons and technical advisor to the National Soya Center. Mr. Matagrin is author of *La Culture du Soja* and other books." A portrait (illustration, line drawing) shows Matagrin, bearded and with monocle.

"Soy sprouts were furnished to the Parisian markets in 1875. In 1900 French physicians were prescribing soy bread for diabetics. Prior to the first world war a Chinese scientist [Li Yu-ying] was running a small factory near Paris which manufactured such soy foods as oil, flour, milk and cheese... During the first world war Am. Matagrin was collecting all the information he could find on soybeans in the English, French, German, Italian and Spanish languages. In 1936-38 he was growing a large number of varieties from different countries in Choutagne...

"But in spite of all the effort by enthusiasts there was little general interest in soybeans until France was defeated by Germany in 1940 and began to go hungry. Then an excessive interest in the crop developed. But most attempts to grow soys were ill advised and failed... Newspapers carried extravagant accounts of the returns that might be obtained from soya. People quickly bought out editions of books on soybeans by Matagrin and the author Rouest. (The puppet Vichy government prohibited reprinting of Matagrin's book, since it looked on him as a 'resistant.')

"The National Soya Center (C.N.S.) was founded by Jo Philippart, a big oil miller. The large mills of Chartres and soybean cooperatives at various places encouraged farmers to grow the crop. Many organizations distributed seeds. There was a surprising increase in garden plantings, or 'little cultures' as the French call them. Garden and horticultural societies distributed over 125,000 packets of soybean seed in 1943, while Matagrin personally gave away more than 200 kilograms of selected seed in small lots.

"A monthly magazine, *Revue Internationale du Soja*, began publication in 1941. It is still being issued. Thus the soybean became almost fashionable under German occupation. But growers were disappointed as in most cases returns were small... But one-fourth of the French people became acquainted with the soybean during the war–a great advance... In 1945 the total crop amounted to perhaps 5,700 tons.

"[Matagrin] asserts the French soybean will always cost too much to produce for technical uses, and will be grown preferably for fine food products. France is adapted to intensive rather than extensive production."

1416. Miller, Harry W. 1946. Feeding the world with soya. *Soybean Digest.* Sept. p. 56, 58, 61.

• ***Summary:*** Soybean production has extended so rapidly during the past decade "into many corners of the world, that encouraging a worldwide dependence on it nutritionally may not seem presumptuous."

For years the world has been facing acute nutritional shortages, with millions of people either starving or half-starving. Even in peace time millions showed signs of being undernourished or died of malnutrition "because of the lack of satisfying portions of protein. There is no more weakening and disease inviting situation than that observed among people robbed of essential protein. It is the first requisite of nutrition." Protein is essential for growth, tissue repair, fortification of the body against bacterial invasion, and the maintenance of all organs of the body in harmonious balance and action.

"Loss of protein in the diet cannot be supplanted by either oils or starches, no matter in what abundance they

may be found." "Well prepared soya foods" are an excellent source of protein in the diet. Soybean protein excels that of corn and wheat in both quantity and quality, and it is less expensive.

"Present prices of vegetable protein average about 40 cents a pound, oil 15 cents a pound, and starches or carbohydrates 5 cents a pound." These "figures give a nutritional value of $285 per acre for soybeans, while an acre of wheat will yield $132.75 and an acre of corn $201.25. Yet the yield of corn is almost double that of wheat or soybeans, so the premium crop for the farmer today is corn.

"Vegetable protein vs. animal protein: Vegetable protein (as from soybeans) is much less expensive than animal protein–such as meat, milk, or eggs. The reason for this becomes clear when we realize that animals live on feed consisting vegetable proteins." For example: "Taken on average, a cow will eat 800 pounds of food units in order to yield 100 pounds of nutritional units in the form of milk solids. To produce meat it requires between 1,100 and 1,200 pounds of feed to yield 100 pounds of tissue storage in the animal made available as food.

"I am going into these facts and figures somewhat to call attention to the economic losses in time of food scarcity in feeding the nutritious legumes and grains to livestock to get small nutritional returns."

"It is possible that these facts that I have given were in the mind of the Secretary of Agriculture when he issued a few months ago a request to the American people to send their wheat and corn to the starving people of other lands rather than feed them to pigs and cows and sheep of this country.

"Processed soya foods: In the third of the world's population not accustomed to soya foods there is a psychological prejudice to overcome. I am glad to say today it is solved.

"Many companies, recognizing the unpopularity of the word 'soya' worked on the plan of incorporating it into other foods, particularly soy flour used in various products in order to enrich and extend them. Defatted and whole soy flour has been incorporated with wheat flour by bakers and housewives into bread, biscuits, cookies, crackers and other bakery products such as cakes and pie crust. In 10 to 20 percent proportions, it has yielded improvement in quality and added to its nutritive value.

"One of the latest breakfast foods, which bids fair to become one of the most popular, is made by a 50-50 combination of soy flakes and corn grits run through a shredder and toasted. Its crisp and nutty flavor recommends it as an appetizer as well as a decided improved nutrient. This cereal has nearly 20 percent protein.

"Soy flour has become very successful in the manufacture of noodles. It has been used as an extender for bologna, hamburgers, sausage and incorporated in a very large number of recipes for meat loaves. In all these instances a little soya adds better flavor and higher nutritive yield. For all of these products the ordinary field variety of the soybean can be readily used.

"It also can be announced today that the newer methods of manufacture and the better understanding of the utilization of the soybean enable us to adopt many of the field varieties into the edible group. In fact, most of the types of soybeans that have the white hilum can be readily utilized for edible purposes. It is commonly believed that further experimentation will enable soybean food producers to take the ordinary varieties of soybeans and make tasty foods very similar to those now processed from the edible group.

"Other foods: We have a still much larger list of foods that today are made directly from the soybean. In these the soybean must stand on its own merits and it has proved acceptable to 90 percent of people sampling it. The large edible soys are now becoming available the world over. The canned mature beans, when properly processed and flavored by a suitable vegetable bullion or with tomato sauce, are very acceptable. It must be remembered that soybeans contain three times the quantity of protein and nine times the amount of oil found in either peas, lima beans, lentils or the ordinary navy bean." Continued. Address: M.D.

1417. Miller, Harry W. 1946. Feeding the world with soya (Continued–Document part II). *Soybean Digest.* Sept. p. 56, 58, 61.

• ***Summary:*** Continued. "The green edible soybean offers an additional line for canneries and freezing plants packing peas, lima beans, corn and other vegetables. It also offers another tasty item to the cook to adorn the dinner plate.

"Green soybeans can be canned with exactly the same equipment that all canneries have and can be shelled with the same sheller that is used for peas. The canning season is not in conflict with that of any other product unless it be sweet corn. The varieties can be planted so that they will not seriously interfere with this product. There is nothing we can put into the cans exported to other countries and for the areas of large population of our own country that will give people greater returns nutritionally than the immature green soybean. It has a nutty flavor and does not in any way harbor the beany taste that lingers in the minds of some people who think of soy foods.

"Canned sprouts: Canneries could develop a very fine winter industry by canning soybean sprouts. Or the frozen food people could very well add a package of frozen soy sprouts to their lines. These could very nicely come into our markets as a fresh vegetable along with Brussels sprouts, lettuce and other raw foods, to be incorporated into salads and cooked dishes. The sprouting of the soybean again removes the characteristic taste and gives a nice vitamin-yielding food, along with its rich content of minerals. Any good field variety may be used for sprouting.

"There is much to be learned from the Orient regarding

usages of soybeans in the diet, in the many forms in which they prepare them. They first make a water extraction of the protein, curdle it and make cheese [tofu]. With this bean they can make foods simulating milk, fish, fowl and meat in appearance and taste.

"Already, in this land hundreds of infants have been started from birth using modified soy milk. A very large group of others who are allergic to animal milk are substituting soy milk for the dairy milk. It is being made into varieties of delicious cheeses, and has possibilities in the cheese industry the equivalent of cow's milk curd. The lactic acid soy milk is the most pleasing beverage. The acidity of the milk covers wholly any semblance of the characteristic beany flavor.

"Albumen sheets: We now have albumen powder made from the soy extraction flakes utilized like egg powder by the big candy industry in ever increasing amounts. The soy albumen sheets [yuba], because of their labor and painstaking requirements, have not been made in this country as they are in China. However, we are finding ways of providing for their manufacture.

"A halt has been made on the production in Michigan of a competitive margarine called soy butter. Still, there is available to every housewife a method of making a butter with far less work than churning cow butter. Such a butter is made from soy oil and soy milk which is colored with carotene oil and salted to taste.

"Dry mature soybeans can be readily transported to any part of the world without requiring refrigerator space. They are a form of concentrated nutrition the world can easily be taught to use. Seventeen dollars worth of soybeans at 5 cents per pound will supply enough protein for a family of five for an entire year.

"In a paper such as this it would seem to be in place to give a few concrete suggestions on what might be done to help solve the world food shortage.

"1. Encourage more soybean production in America. This could be done if soybeans were given their proper economic value.

"2. Forward seed to various countries in the world, encouraging its production through helpful instructions in growing, processing and using. There are very limited areas where soybeans have proven entirely unsuccessful when given a fair trial.

"3. We should devote more time on experimental work in cooking and preparing the food and overcoming any objectionable features that seem to prevent its widespread use. The feeble efforts that have thus far been put forth have really done wonders in furthering the adoption of the soybean in the diet.

"In closing, allow me to say that with the present world yield of soybeans, if used exclusively to relieve human starvation, relief could come to all the destitute areas of the world." Address: M.D.

1418. Chick, Harriette; Slack, E.B. 1946. Malted foods for babies: Trials with young rats. *Lancet* ii(6426):601-03. Oct. 26. [7 ref]
• ***Summary:*** "A malted food for infants to provide a supplement or substitute for milk, when this is very scarce, was [developed] by Dr. G. Caprino in the laboratories of Peroni's brewery in Rome and was called by him 'Maltavena.'" Two types of Maltavena preparations were supplied to the European Regional Office of UNRRA. One contained (on a solids basis) about 80% malt extract, 10% wheat flour (80% extraction of the grain), and 10% skimmed-milk powder. The other contained 10% soya flour in place of the milk powder. "Both the wheat flour and the soya flour had also been subjected to digestion with the enzymes of malt extract for a short time." These and closely related products were tested on growing rats as sources of proteins and B vitamins. It was found that a formula containing 70% malt extract, 10% wheat flour, 10% soya flour, and 10% skimmed-milk powder was the best, being equal in growth promoting value to a mixture of proteins in milk when fed in a diet of equal protein content.

Note: The Lister Institute of Preventive Medicine was established in 1891 to support biomedical research. As of 1994 it was located at Brockley Hill, Stanmore, Middlesex, England. Address: Lister Inst. of Preventive Medicine, London, England.

1419. Gilardi, C.A. 1946. La soya, son importance agricole e industrial [The soybean, its agricultural and industrial importance]. *Lima* (*Peru*) *Agricultural Experiment Station "La Molina"* (*Ministerio de Agricultura*) No. 6. 9 p. Oct. (Ps-8/1742). [Spa]*
Address: Peru.

1420. Schroeder, L.J.; Cahill, W.M.; Smith, A.H. 1946. The utilization of calcium in soybean products and other calcium sources. *J. of Nutrition* 32(4):413-22. Oct. [14 ref]
• ***Summary:*** In adult human subjects, the average percentage utilization of the calcium in evaporated cow's milk (Whitehouse brand) was found to be 29.1%, in calcium (the pure chemical compound) 23.7%, in soybean "milk" [actually soy-based infant formula] (Mull-soy, provided by the Borden Co.) 22.6%, and in whole cooked soybeans 10.4%. Address: Dep. of Physiological Chemistry, Wayne University College of Medicine, Detroit, Michigan.

1421. Childs, Margaret M.; Additon, E.G.; Ehlers, M.S. 1946. Soybeans and soy products in quantity cookery. *Michigan Agricultural Experiment Station, Circular Bulletin* No. 204. 56 p. Nov. Summarized in Soybean Digest, Dec. 1946. p. 22-23.
• ***Summary:*** Contents: The versatile soybean. Food value of the soybean and its products. Experimental work: Use

of soybean as a vegetable (green soybeans [fresh], dry soybeans), use of soy flour, use of soy grits, use of soy sprouts (method and directions for sprouting soybeans at home or commercially, suggested containers for sprouting soybeans, directions for sprouting), use of soy butter (in making cakes), soybean vegetable milk. Availability of soybean products (reprint from USDA sources, as published in the *National Restaurant Newsletter* for 9 Sept. 1943–by state). Literature cited. Appendix: Recipes for soybean and soy products (36 pages, p. 20-56).

Concerning "soy butter" (p. 13-15), this is probably soy margarine. In this study, soy butter was used only in making cakes, not as a spread for bread. It was used in place of shortening in a standard Gold Cake. Address: Michigan State College, Agric. Exp. Station, Section of Home Economics, East Lansing, Michigan.

1422. Stahel, Gerold. 1946. Foods from fermented soybeans as prepared in the Netherlands Indies. I. Taohoo, a cheese-like substance, and some other products. *J. of the New York Botanical Garden* 47(563):261-67. Nov.

• ***Summary:*** Contents: Introduction. Sprouts and milk from soybeans. Cheese-like products. How taohoo is made. Condiments made with Aspergillus.

In East Asia–as in Surinam–people have developed "means for overcoming the rather bitter taste of soybeans and their failure to cook soft. They have learned to ferment the soybeans with quick-growing fungi, thus making several palatable and wholesome foods.

"Most important of these foods are *taohoo* and *tempe;* also *taokoan,* a cheese made from *taohoo; taotjo,* a fermented paste-like condiment, and *ketjap,* which is soy sauce. Soybean milk is also made, but without a fungus, and sprouted soybeans are widely used by orientals."

"In the Netherlands East Indies [later Indonesia] sprouted soybeans are called *tokolán* or *taogé.* They are one of the ingredients of every 'rijst-tafel' (rice table, or combination of dishes) and therefore are never lacking in the 'passar' (market). Even in our Paramaribo market *tokolán* is displayed every day."

In China, soy milk is used in the same manner as cow's milk. It is also consumed in the United States, though on a very limited scale. In the Netherlands East Indies, soy milk "is only slightly known as food, but it is produced in large quantities for the manufacturing of soy cheese, called *taohoo* or *tahoo."*

The curd [tofu] "is either eaten fresh or baked in oil or lard. In China it is sometimes processed further into a kind of real cheese by impregnating the curd with turmeric and reducing the water content by heavier pressing. This cheese, called *taokoan* [Chinese: doufugan], has a yellow color and can be shipped abroad."

"After tempe [made with *Rhizopus Oryzae*], taohoo is the most common form of soybean product eaten in the Netherlands East Indies. In China, it is the most important soy product. Taohoo is manufactured here in Surinam only on a very limited scale, by a single Chinese store-keeper close to the Paramaribo market-halls along the Surinam river. Twice daily, between 2 and 4 o'clock in the morning and again in the afternoon, he manufactures 11½ kilograms of taohoo, to be sold after 6 o'clock the next morning." A detailed eyewitness description of the tofu-making process is then given.

Describes briefly how to make taotjo (a kind of paste) and ketjap (soy sauce) with *Aspergillus oryzae,* another fungus. Taotjo is not made in Surinam, but ketjap is. "To make taotjo, boiled soybeans are mixed with roasted meal of wheat or glutinous rice. The mass is wrapped in hibiscus leaves, which commonly harbor the *Aspergillus* fungus." After 2-3 days the moldy mass is immersed in brine, where it is kept for several weeks. "Palm sugar is added at intervals. Taotjo must be made in the dry season, because every day it has to be brought outside into the sun and air for hours." This dish is eaten in East Asia with the 'rijst-tafel.'"

To make ketjap, soybean are boiled, cooled, then wrapped in hibiscus leaves–but without mixing in roasted meal. After fermenting for 2-3 days, the mass is immersed in brine, as with taotjo. Each day, for one to several months, it is exposed to the sun. A little palm sugar is added at intervals. Then the fluid is filtered off and the solid residue is cooked several times with fresh water to extract all the soluble material. "The fluid is then concentrated by slow boiling. Spices and other piquant materials are added, according to the *specialité de la maison.* These may include galangal, ginger, cloves, Jew's ear fungus, and dried and ground fish and chicken meat."

Photos show: (1) Chinese kitchen [shop] equipped with implements for tahoo manufacture, with hand-turned millstones, soybean mash flowing into cheesecloth bag hanging in wooden barrel, press, earthenware pot filled with brine for the "coagulation of the curd." (2) Four pieces of fresh taohoo, four-fifths natural size. (2) Four pieces of freshly baked taohoo, four-fifths natural size.

Note: This is the earliest English-language document seen (April 2013) that uses the word "taohoo" or "taokoan" to refer to tofu. Address: Agric. Exp. Station, Paramaribo, Surinam.

1423. A.P.I. [Associated Press of India]. 1946. Food research centre to be opened in Bangalore. *Times of India* (*The*) (*Bombay*). Dec. 27. p. 8.

• ***Summary:*** The Government of India is said to be planning a food research unit to be attached to the bio-chemical laboratories of the Indian Institute of Science, Bangalore. The new unit will focus on solving practical food problems.

"The Central Food Department has studied the potential possibilities of soya bean milk and related products as supplements to the present limited supply of milk and milk

products and has decided...” to conduct more feeding trials at additional centres similar to the Indian Institute of Science.

Moreover the Government have decided to provide more funds for research on the manufacture of large scale well processed and balanced soya milk.

1424. Norton, C.L.; Eaton, H.D. 1946. Dry calf starters for dairy calves. *New York* (*Cornell*) *Agricultural Experiment Station, Bulletin* No. 835. 32 p. Dec. [7 ref]*
• ***Summary:*** Satisfactory results with calf starters containing 16-18% of a processed soybean oil meal were reported. They fed 350 lb. of whole milk per calf. Soy is mentioned on pages 21, 23, and 24. Address: Ithaca, New York.

1425. *Soybean Digest.* 1946. Soy products in quantity cookery: For hotels, restaurants. Dec. p. 22-23.
• ***Summary:*** This is a summary of *Michigan Agricultural Experiment Station, Circular Bulletin* No. 204 titled “Soybeans and Soy Products in Quantity Cookery,” by Margaret M. Childs, E.G. Additon, and M.S. Ehlers. (Nov. 1946, 56 p.). Contains a recipe for Meat Loaf (with 2 lb soy grits and 2½ lb each ground beef and ground pork). A photo (courtesy of A.E. Staley Mfg. Co.) shows the meat loaf.

1426. *Soybean Digest.* 1946. Grits and flakes... from the world of soy: Clifton’s Cafeterias, Los Angeles... Dec. p. 30.
• ***Summary:*** “... plans to offer its patrons a drink which is 95 percent whole milk, 5 percent soya milk, with vitamin C enrichment, to be called ‘Mil C.’ Clifton’s objects, however, to labeling the product ‘imitation milk’ as required by California’s law.”

1427. **Product Name:** [Maltavena].
Foreign Name: Maltavena.
Manufacturer’s Name: Peroni’s Brewery.
Manufacturer’s Address: Rome, Italy.
Date of Introduction: 1946.
Ingredients: Water, malted oats, malted soybeans.
New Product–Documentation: Chick and Slack. 1946. Lancet. 251:601-03. Oct. 26. “Malted foods for babies: Trials with young rats.” “A malted food for infants to provide a supplement or substitute for milk, when this is very scarce, was [developed] by Dr. G. Caprino in the laboratories of Peroni’s brewery in Rome and was called by him ‘Maltavena.’” Two types of Maltavena preparations were supplied to the European Regional Office of UNRRA. One contained (on a solids basis) about 80% malt extract, 10% wheat flour (80% extraction of the grain), and 10% skimmed-milk powder. The other contained 10% soya flour in place of the milk powder. “Both the wheat flour and the soya flour had also been subjected to digestion with the enzymes of malt extract for a short time.”

L. Nicholls. 1950. Food Manufacture. March. p. 96-97. “Considerable work has been done in war-devastated Italy and Germany to find a milk substitute for infants and children. One such substitute, called *Maltavena*, was produced early in 1945 by Dr. Caprina, chemist to the Peroni brewery, Rome. It consisted of an emulsion prepared from a cereal [probably barley] which had been malted in the usual manner of brewers; later malted soya bean was included as well as the cereal.”

Note: This is the earliest known commercial soy product made in Italy.

1428. Desikachar, H.S.R.; De, S.S.; Subrahmanyan, V. 1946. Studies on the nutritive value of soya milk. I. Nutritive value of the protein. *Annals of Biochemistry and Experimental Medicine* (*Calcutta*) 6(2):49-56. [12 ref]
• ***Summary:*** Biological value of soymilk proteins is about 90% that of cow’s milk proteins. Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1429. Desikachar, H.S.R.; De, S.S.; Subrahmanyan, V. 1946. Studies on the nutritive value of soya milk. II. Comparison of the vitamin B complex content of soya milk and cow’s milk. *Annals of Biochemistry and Experimental Medicine* (*Calcutta*) 6(2):57-60. [4 ref]
Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1430. Desikachar, H.S.R.; De, S.S.; Subrahmanyan, V. 1946. Studies on the nutritive value of soya-bean milk. III. Supplementing value of soya milk to a poor Indian diet. *Annals of Biochemistry and Experimental Medicine* (*Calcutta*) 6(2):61-64. [8 ref]
• ***Summary:*** The authors studied the supplementary value of soya-bean milk (without addition of extra calcium) to a poor South Indian diet consisting mainly of rice. Soya-bean milk or cow’s milk was fed to the rats at a level of 10 ml per day along with the basal diet. The average weekly increase in weight of the rats was followed over a period of 7 weeks. The results showed that on a basal rice diet, the average weekly increase in weight was 2.8 gm. When 10 ml of soya-bean milk was added to the basal diet, the average weekly increase in weight climbed to 5.4 gm, and when 10 ml of cow’s milk was added instead of soy milk, the average weekly increase climbed to 8.2 gm. Thus, a small amount of soya-bean milk given as a supplement practically doubled the growth rate. Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1431. El Salvador Ministerio de Agricultura. 1946. La soya [Soya]. San Salvador. 89 p. [Spa]
• ***Summary:*** The two Latin American countries in which soybean cultivation has acquired importance are Argentina and Brazil. In Argentina, cultivation began in 1908. In 1940 Argentina produced 15 tonnes of soybeans on 300 hectares, increasing in 1941 to 204 tonnes on 5,000 hectares. Rio

Grande do Sul in Brazil exported 6,420 kg of soybeans in 1937, rising to 40,000 kg in 1939. Address: El Salvador.

1432. Esat-Kadaster, Isfendiyar; Kansu, Sedat. 1946. Cigit ile Pamuktohumukuspesinin yemkarakterleri [The nutritive value of soybeans]. *Ankara Yuksek Ziraat Enstitusu Dergisi* (*Turkey*) 6:61-112. (Chem. Abst. 1947, 41:1049). Summarized in Revue Internationale du Soja 9(51):41 (1949). [38 ref. Tur]
• ***Summary:*** At the Agricultural Institute of Ankara, in the course of a series of investigations which also pertain to the nutritional value of gourds and squash, beetroots, cottonseeds, peanut milk etc., soya was also studied. It was fed to flocks of poultry, mixed with dried clover. An analysis of the dry beans shows that they contained: protein 36.71%, fats 14.9%, cellulose 4.32%, non-nitrogen extract 25.07%; the starch equivalent approached 100%. Because of the high digestibility of their protein (34.94%), soybeans were declared superior, for raising livestock, to the other legumes produced in Turkey.

Note: This seems to imply that soybeans were being grown in Turkey at the time, but we cannot be sure. Address: 1. Prof. Dr. Ziraîkimya Professor; 2. Doc. Dr., Ziraîkimya Doçenti. Both: Turkey.

1433. Hauser, Gayelord. 1946. The Gayelord Hauser cook book: Good food, good health, good looks. New York, NY: Coward-McCann, Inc. viii + 312 p. Illust. 21 cm.
• ***Summary:*** This is a health food (but not a vegetarian) cookbook; it uses meats, poultry, and fish. Soy-related recipes include: Soya tomato soup (with soya flour, p. 48). Soya soup (with soya flour and soy sauce, p. 49). Soya cheese sticks (with soya grits, p. 111). Roasted soybeans (p. 115; p. 114 notes that the soybean is a first-class protein food). Cranberry soya pudding (p. with soya flour, p. 154). Caramel soya custard (with soya milk, p. 163). Rice pudding (with soya milk, p. 164). Soya ice cream (with soya milk and agar-agar, p. 167).

In the chapter on baked goods, p. 179 shows that soya flour is rich in protein, vitamin B-1, riboflavin, and niacin. And pages 180-81 give a detailed discussion of the benefits of soya flour and how to use it. Page 182 discusses gluten flour. Recipes include: Whole-wheat soya bread (p. 183). Soya nut waffles (p. 186). Soya muffins (p. 188). Steamed soya bread (p. 189). Four nutritious sandwich spreads with ½ cup soya flour (p. 191). Delicious soya cake (p. 193-94). Quick service cake (p. 195-96). Soya-flour pie crust (p. 197). Soya cookies (p. 204). Soya sand tarts (p. 206).

Fletcherizer (p. 221, a type of electric blender). Fletcherized drinks: Cream of soya milk (with soya flour, p. 222), vege-nut milk (with soya flour), almond-, pecan-, walnut-, filbert-, or cashew milk. Cream of soybean soup (p. 224).

In the chapter titled "Yogurt, brewer's yeast, and other special foods" is a long section on soybeans and gluten (p. 237-42) including basic information on soybean oil, soya flour and grits, soy flakes, soy meats (split or coarsely ground soybeans), soybeans as a vegetable [fresh-green soybeans], soybean milk, and soybean curd or tofu. Instructions are given for making soybean sprouts at home. Recipes include: Boiled soybean sprouts. Fried soybean sprouts. Green soybeans. Baked soybeans. Soybean milk. Soybean parsley croquettes. Soybean nut croquettes. Vanilla soya ice cream. Homemade gluten dough. Gluten steaks or chops. Address: Beverly Hills, California.

1434. Krishnaswamy, N.; De, S.S.; Subrahmanyan, V. 1946. Studies on the nutritive value of soya milk. IV. Digestibility of soya milk–"in vitro" experiments. *Annals of Biochemistry and Experimental Medicine* (*Calcutta*) 6(2):65-68. [5 ref] Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1435. *Soya Francais* (*Le*)*: Bulletin Mensuel du Bureau Francais du Soya.* 1946?. L'aliment le plus économique du monde: Comment manger le soya [The most economical food in the world: How to eat soya]. Special number. 34 p. Undated. [Fre]
• ***Summary:*** Includes a remarkable assortment of ads and descriptions of commercial soyfoods, plus many recipes. Address: Bureau Français du Soya, 15 rue Cauchois, Paris 18eme; Societe Francaise des Produits du Soja, 6 rue Cave–Levallois-Peret. France. Phone: Pereire 23-80.

1436. Chin, Kuo-Chun. 1947. Nature du lait végétal de Soja et précautions à prendre dans son emploi [The nature of soymilk and precautions to take when using it]. *Comptes Rendus des Seances de l'Academie des Sciences* (*Paris*) 224(4):288-90. Jan. 27. [2 ref. Fre]
• ***Summary:*** Soymilk was prepared by the Chinese philosopher Whai-Nan-Tze well before the Christian era. Its production was described by Champion (1885), Li Yu-Ying (1905), Miller (1941), Mildred Lager (1946), and others. Starting in 1888 many authors (Balland, Cazalis, Dujardin-Beaumetz, Graux, Labbé, Lecerf, Maurel) and other partisans of vegetarianism, right up until the present (1930-46, Dr. Dresses, Donela, and Yen 1933) have recommended the use of soy flour or milk in infant feeding (*dans l'alimentation des nourrissons*).

Tables show: (1) A nutritional analysis of soymilk conducted by the Municipal Laboratory of Paris (*le Laboratoire Municipal de Paris*). (2) A nutritional analysis of cow's milk. (3) A nutritional analysis of soymilk conducted by Prinsen (1896). (4) Two nutritional analyses of soymilk conducted by Li Yu-Ying in the factory *caseo-sojaine.*

Conclusion: It appears that the chemical composition of soymilk varies considerably.

1437. Stoesser, Albert V. 1947. Influence of soybean products on the iodine number of the plasma lipids and the course of eczema. *J. of Allergy* 18(1):29-31. Jan. [10 ref]
• ***Summary:*** "The present study deals with changes in iodine numbers of the total fatty acids of the plasma lipids in milk-sensitive infants who were fed daily 900 to 1,200 gm of a soybean food [Mull-soy], which contained 4 per cent soybean oil with an iodine absorption value ranging from 119 to 135. Seventeen patients from 3 to 14 months of age were chosen, and divided into two groups. Eleven were acutely ill with erythema and papules, oozing and crusting confined chiefly to the cheeks, but spreading to the forehead and scalp or ears and neck. Six had less of the exudative characteristics, there being redness, thickening, induration, and scaliness of the skin, with marked itching and a tendency to spread to the trunk and extremities.

"The infants with the more severe skin changes had iodine numbers averaging 71, which is much below normal. However, after three or more weeks of ingestion of the soybean milk, the values rose until an average of 118 was reached which is within the normal range. This situation was associated with a favorable response to external therapy.

"The other group of children with moderate but widespread skin manifestations had little change in the iodine numbers... The results reveal that there is some correlation between the level of the unsaturated fatty acids of the plasma lipids and the type and course of infantile eczema." Address: Minneapolis, Minnesota.

1438. *Soybean Blue Book.* 1947-1966. Serial/periodical. Hudson, Iowa: American Soybean Assoc. Annual. Titled Soybean Blue Book from 1947-1966; Soybean Digest Blue Book from 1967-1979; Soya Bluebook from 1980 to present.
• ***Summary:*** A directory and information book for the soybean production and processing industries–but with much greater emphasis on processing and utilization. One of the most valuable sources of worldwide information on soybeans. During the period from 1947 to the 1960s, the Blue Book was usually published in March or April of each year.

In the 1966 Blue Book (p. 28-29) are two full-page tables titled "World Soybean Production." The first gives acreage in 1,000 acres, yield in bushels per acre, and production in 1,000 bushels. The second gives hectarage, yield in kilograms per hectare, and production in 1,000 metric tons. Figures are given for: 1950-54 (average), 1955-59 (average), 1963, 1964, and 1965. Statistics are given for the following countries: North America: Canada, United States. South America: Argentina, Brazil, Colombia, Paraguay. Europe: Italy, Rumania, Yugoslavia, Other Europe (excluding USSR). USSR (in Europe and Asia). Africa: Nigeria, Rhodesia, Tanzania. Asia: Turkey, China (Mainland), Cambodia, China (Taiwan), Indonesia, Japan, Korea (South), Thailand. Estimated world total. Address: Hudson, Iowa.

1439. *Soybean Blue Book.* 1947. Manufacturers and handlers of soy foods. p. 69-73.
• ***Summary:*** Arranged alphabetically by product category: Beverages; Breakfast Foods; Soy Butter (probably like margarine; the only source is Daglish Health Foods in Santa Cruz, California); Canned Green Soybeans (Note: These are probably canned mature green vegetable type soybeans. In the 1948 Bluebook this section is titled "Canners of Green Vegetable Soybeans." List compiled from 1947 edition of *Canners' Directory,* published by the National Canners Association); Coffee Substitutes; Cookies, Crackers, Toasts and Wafers; Soybeans for Cooking and Sprouting; Soy Flour, Flakes and Grits; Soy Flour Mixes; Soy Food Consultant (Donald S. Payne); Health Food Stores, Supply Houses; Lecithin; Macaroni, Spaghetti, Noodles; Meat Substitutes; Soy Milk; Sprouts; Roasted Soybeans or Nuts; Sausage Binders; Salad and Cooking Oils, Shortening; Soy Sauce; Toppings [Whip]; Whipping Agents.

1440. *Soybean Blue Book.* 1947. Uses of soybeans. p. 97.
• ***Summary:*** This is a full-page diagram with four columns. In the left column are: Forage, green manure, and pasture. Meal. Oil. Green bean. Dried bean.

In the second column, for example: After green bean, listed vertically, are: Canned, frosted, green vegetable, salad. After dried bean, listed vertically, are: Baked, boiled, breakfast foods, feeds, flour, roasted, soy sauce, sprouts, vegetable milk.

In the third column: After feeds, listed vertically, are: Cattle, hogs, poultry, sheep. After roasted are: Candied, coffee substitute, salted.

In the fourth column after flour (with a dotted line crossing the second and third columns), listed vertically, are: Baked products, breakfast foods, candies, chocolate, diabetic foods, health drink, ice-cream cones, ice-cream powder, infant foods, macaroni products, meat products (filler). Note: There are too many uses on the diagram to describe them all here.

1441. Lo, K.S. 1947. Soy milk in China. *Soybean Digest.* April. p. 8, 10.
• ***Summary:*** "To the editor: It may be of interest for you to know that I am the founder of Hong Kong Soybean Products Co. Ltd., which engages in the production of fresh soybean milk for local distribution. It was established in 1940 and just before the outbreak of the Pacific war [Dec. 1941], our 'Sunspot Soya Milk' had daily sales of 13,000 to 15,000 one-half pint bottles of milk. The company was forced to close down during the occupation but started again last summer [1946].

"The main object of our company has been the turning out of highly nutritious soybean foods at the lowest cost

for the benefit of the majority of the working class who otherwise are barred from obtaining cow's milk and milk products due to their high cost. A half-pint bottle of fresh cow's milk costs 50 cents, whereas our soybean milk is sold for only 20 cents per half-pint.

"We find the school children and the working class are our best customers, although we also care for the needs of the hospitals. We are still supplying a very substantial quantity of our milk to Queen Mary Hospital, which is the largest government in Hong Kong... We were experimenting in the making of the condensed soybean milk when the war intervened. We propose to continue with this experiment as soon as circumstances permit and the required equipment can be brought over from the United States.

"If there are firms who are interested in setting up plants in China for the manufacture of soy milk powder, and condensed and evaporated soybean milk in tins, we are most willing to cooperate.

"There are immense opportunities for such an industry as soybean food products in China which is the home of the soybean and where the major part of the population is too poor to have access to cow's milk and its products. A double opportunity awaits those who wish to render a real service to mankind and make a business for themselves."

Note 1. This is the earliest publication seen on the Hong Kong Soya Bean Products Co., Ltd. and Vitasoy. The author has apparently established a new company in anticipation of doing business in China.

Note: This is the earliest document seen (Aug. 2013) that contains industry or market statistics for soymilk by individual companies. Address: China International Commercial Co., Ltd., Hong Kong.

1442. *Revue Horticole: Journal d'Horticulture Pratique* (*Paris*). 1947. Le grand congrès du soya à Paris [The great soya congress in Paris]. 119(2140):277-78. April. [Fre]
• ***Summary:*** On Monday, March 16, 1947, at 2:30 p.m., at the City University, the first Grand Soya Congress ever held in Europe took place. It was organized by the French Bureau of Soya (*Bureau Français du Soya*), the Laboratory of Soya Experiments (*Laboratoire d'Essais du Soya*), and the France-China Association (*l'Association France-Chin*). Mr. Marius Moutet, the Minister of French Colonies and Territories (*Ministre de la France d'Outre-Mer*) presided. The two presidents were Prof. Blaringhem, president of the Academy of Sciences, and his excellency the Chinese Ambassador to France.

It was indeed a brilliant assembly of numerous scientific and agronomic personalities, including Mr. Lévèque, delegate from the Belgian Soy Group (*Groupement Belge du Soya*).

Includes a brief summary of the presentations by the following people: René Brochon, president of the French Bureau of Soya (*Bureau Français du Soya*). Mr. Schad, director of the Agronomic Research of Clermont-Ferrand (*la Station de Recherches Agronomiques de Clermont-Ferrand*). Mr. Simonet, Director of Scientific Research for Vilmorin (*Etablissements Vilmorin*), who discussed the varieties he had developed at the Center for Agronomic Research of Antibes (in southeastern France). Mr. Salaberry, an agronomic engineer. Mr. Blanchard, head of works at the Station for Seed Trials at the Ministry of Agriculture. Mr. Chouard, Prof. of Agriculture at National Conservatory of the Arts and Crafts. Messrs Brochon and Matagrin discussed the nutritional value of soy.

Mr. Chin Kuo Chun, director of the Laboratory of Soya Experiments (*Laboratoire d'Essais du Soya*), discussed the results of his work on manufacturing soymilk, tofu, and soy sauce in France, using traditional Chinese processes. Prof. Gounelle, Director of the Foch Hospital gave a brilliant discussion on the use of soy flour to combat nutritional edema and diabetes. Mr. Boutroux showed brilliantly that soymilk can successfully replace cow's milk in the feeding of defective babies.

Mr. Siao Yu, former Chinese Minister of Agriculture, recounted how Mr. Li Yu Ying, presently vice-chancellor (*recteur*) of the University of Peking, established in 1908, near Paris, a soyfoods factory; it made soymilk, tofu, cakes, etc. He saluted with emotion the members of this first Soy Congress to be held in Europe.

Mr. Villars, director of a cooperative for the production of soybean seeds. Mr. Matagrin, technical consultant to the French Bureau of Soya. Mr. Vançon, president of the Family Association of the Gardens of the north of France (*du Nord de la France*).

The Congress was closed by three excellent speeches by conference leaders Blaringhem, Bineau, and the Chinese Ambassador.

A reception in honor of China, cradle of the soybean, was then held and a buffet was served consisting of soy pastry and cakes, soy chocolates, and soymilk.

1443. *Revue Internationale du Soja.* 1947. Congrès du Soja [Soy Congress (Europe's first, held in Paris, March 16, at the City University)]. 7(37-38):30-31. March/April. [Fre]
• ***Summary:*** Li Yu-ying (President of the National Peiping Research Academy) was there, along with a luminous throng of the greatest soy devotees in France, including: M. Brochon (President du Bureau Français du Soja), M. Simonet (director of scientific research at Etablissements Vilmorin), M. Blanchard (chef de travaux à la Station d'Essais de Semences of the Ministry of Agriculture), and M. Chouard.

Mr. Chin Kuo Chun (director of the laboratoire d'Essais du Soja) discussed the results of his work on the production in France of soymilk, tofu, and soy sauce using the traditional Chinese processes, and of projects to organize family gatherings to taste these products. Prof. Gounelle (director of the Foch Hospital) showed how soy flour can

be extremely beneficial in curing edema and malnutrition, and is perfectly suited for diabetics. Mr. Boutroux showed brilliantly that soymilk (*lait de soja*) is beneficial in replacing cow's milk in the diets of undernourished babies, and spoke of the industries presently producing soy products (*produits au soja*) in France. Note: This is the earliest English-language document seen (Nov. 2002) that uses the word "undernourished."

Mr. Siao YU, former Minister of Agriculture in China, recalled how Li YU Ying created in 1908 near Paris a factory for food products from soya: milk, cheese (tofu), cakes, etc. He saluted with emotion the First Soy Congress to be held in Europe. Address: Paris, France.

1444. Tsien, Tai. 1947. Allocution [Concluding remarks]. *Revue Internationale du Soja* 7(37-38):34-35. March/April. [Fre]

• ***Summary:*** It is an honor and a great pleasure for me to say a few words at the end of your soya congress, which has been honored by the presence of the French Foreign Minister (M. le Ministre de la France d'Outre-Mer), Mr. Marius Moutet; and by my compatriot, Prof. Li Yu Ying, president of the Academia Sinica.

I would like to thank the *Bureau Français du Soja*, the *Laboratoire d'Essais du Soja*, as well as the *Association France-Chine* for having organized this interesting congress. At this congress we have learned about soymilk, pressed tofu, fermented tofu, soy sprouts, and the use of soy flour in French pastries and cakes. Address: Prof.

1445. Kerle, W.D. 1947. Soybeans. *Agricultural Gazette of New South Wales* 58(5):227-31. May 1; 58(6):295-98. June 1. Summarized in Soybean Digest, Nov. 1947, p. 34.

• ***Summary:*** Contents: Introduction. World distribution. Experience in New South Wales. Soil and climatic requirements. Soil preparation. Time and methods of sowing. Fertilisers. Inoculation of seed. Varieties. After cultivation. Rotation. Harvesting. Storage. Yields. Insect pests and diseases. Uses of soybeans (soybean oil for food and industrial purposes, soybean meal for livestock feed, soybean plastics and wool, soybean flour, green vegetable soybeans, soybean milk, sprouts, mature soybeans). Economic aspect of soybean growing.

Experience with soybeans in New South Wales extends over the past 30 years [i.e., since about 1917]. Hundreds of varieties have been imported from East Asia, the USA, and other countries, and field experiments have been conducted in all districts of the State. Numerous trials have been conducted at Hawkesbury Agricultural and Experiment Farms with varieties, cultural practices, fertilisers, seed inoculation, etc. Several soybean varieties are now recommended and the Northern Tablelands have been shown to be the district best suited to seed production, yet the yields there (averaging 7 bushels/acre over a ten year period) have not been sufficient to recommend soybeans as a commercial crop. Yields of over 20 bushels/acre, however, have been obtained in variety trials. The best variety is Potchefstroom 169, originally from South Africa. Other good varieties available in NSW include Easy Cook [Easycook], Haberlandt, Otootan, Lincoln, Dunfield, and Richland.

Before World War II, soybeans were imported from China and the Netherlands East Indies for about 6 shillings per bushel. During the war the price for soybeans (whose production was very small) was as high as 42 shillings per bushel, and contracts were let at 25 shillings by the Commonwealth Government in 1942-43. Of all the states of Australia and New Zealand, Queensland now seems to show the best promise of success in growing soybeans.

In 1924 in the USA only about 6% of soybean production was crushed for oil, but in 1940 this figure rose to 83%.

Photos show: (1) Farmer standing in a field of high soybeans on the North Coast. (2) A field of soybeans in the early stages of growth. (3) Soybean roots showing well-developed nodules. (4) Mature plant of Potchefstroom 169. (5) A man examining Easy Cook [Easycook] soybeans growing in a field. (6) Soybeans "cocked" after harvesting with reaper and binder. (7) Soybeans being grown as a green manure crop between tung oil trees. Address: Special Agronomist, New South Wales.

1446. Brillmayer, Franz A. 1947. Geschichte der Einfuehrung der Soja in Frankreich [History of the introduction of the soybean to France (Document part)]. In: F.A. Brillmayer. 1947. Die Kultur der Soja in Oesterreich. Vienna: Scholle-Verlag. 97 p. See p. 20-23. [Ger]

• ***Summary:*** The first soybeans in France were grown at the *Jardin des Plantes* in Paris in 1779, and served mainly scientific interest. In 1857-58 the National Society for Acclimatization did culture trials in Vitry sur Seine and got good results. The seeds were planted May 10-12, they set flowers July 25, were harvested at the end of October, and yielded an average of 183 seeds per plant.

In 1859 the House of Vilmorin-Andrieux had a bad harvest with late varieties from China.

After the 1873 Vienna Exposition, the work of Prof. Haberlandt and his writings had their effects in France.

From 1874 to 1880 the Society of Horticulture of Etampes (Etampes, Seine et Oise) had great success with a yellow soybean variety from China; its properties and chemical composition were thoroughly studied by Lechartier. A doctor from the surrounding area made plant cheese (*Pflanzenkäse*) from soybeans. Yet is spite of all this, the harvest found no buyers.

In 1880 the Vilmorin catalog offered the Haberlandt variety, which had been acclimatized in Austria. The Society for Acclimatization now organized cultural trials all over France and the results were excellent. The soybean was

described in many publications and its value set forth. Yet, in spite of all this, its value was forgotten and disappeared. Note: The author implies a long period of no interest; but the interest only diminished.

Then the soybean was introduced as a new vegetable, praised above all for its high nutritional value, without investigating how (practically) it could be introduced into the diet. However if the soybean (*die Sojafrucht*) is cooked like other beans, it remains hard and does not taste so good. Today we know that there is a bitter principle in a thin layer just under the seed coat and that this adversely affects the soybean's flavor. Moreover, there was no need for a new foodstuff, for the French colonies provided everything by way of food and shelter. The brief burst of enthusiasm petered out, and again soybeans came to be forgotten. Thereafter it was medical doctors and scientists who concerned themselves with the soybean–not the farmers.

In 1919 Prof. R. Lepine published the results of interesting research in Algeria, and investigations of soymilk. In the environs of Paris, Dr. Le Goff attempted, with the Japanese soybean variety Tokyo Black, to grow large areas for use in canned foods for diabetics.

These attempts and efforts persuaded Mr. Rouest to continue his selection research with soybeans, which he had begun in 1907, but it was not until 1925 that he was satisfied with the results. At that time he described 42 varieties (out of a total of 2,000). Rouest attempted to interest the French government and other existing places, but he had no success. In 1929 the Soviet government proposed that Rouest continue his soybean research in the USE and at the end of 1930 he left France with his family to settle down in Rostow [Rostov] on the Don [in southwestern Russia, just 46 km / 21 miles northeast of the Sea of Azov]. Here he began with an area of 1 hectare, where he observed the 200 soybean varieties he brought with him. His successes were very satisfying. Then, because of practical considerations, his work was moved [about 250 kilometers (150 mi) southward] to Krasnodar [a city in Southern Russia on the Kuban River in the North Caucasus, located around 80 kilometers (50 mi) north-east of the Black Sea port of Novorossiysk].

In France, Rouest had attempted to find an early soybean variety that gave a good yield; therefore the majority of his varieties were short, and since the yield is directly correlated with the length of the growing season, his yields were somewhat low. The Soviets wanted an early variety which grew with a minimum of hand labor, could be harvested by machines, and gave a high yield. Rouest was not able to achieve this goal, so in 1936 he returned to France, where he died in 1938. His son, who returned to France from military service in the French colonies several years ago, would like to continue his father's work where his father stopped.

So far as I know, Rouest's varieties are the only ones available in France which have been significantly improved by breeding. The following varieties, developed by Rouest, have been grown and observed in my breeding nursery (*Zuchtgarten*)*:* Grignon No. 37, No. 34, No. 39, No. 1, No. 10, No. 5, No. 82, No. 45. Rouest No. 9, No. 346, No. 250.

There was little interest in the soybean in France before World War II, but during the German occupation [which started in June 1940] 17 new associations that were active with soybeans appeared in France, largely because of the lack of food. Many were simply interested in buying soybeans abroad and selling them in France.

At an earlier time, the following worked with soybean breeding: Abbé Souillet in Anjou [a province in north western France centered on the city of Angers in the lower Loire Valley], Charles Eckenfels, and Mr. Jean Bordas, director of the Agricultural Experiment Station in Avignon [in southeastern France on the Rhône River].

Through propaganda and as an author, Dr. Jean Balzli made a name for himself in the field of soybeans. Likewise Amadee Matarin as a manufacturing technologist and chemist.

In Tunisia, H. Gay did soybean breeding worked as advisory director for the trade delegation to Tunis.

The authorized ventures for soybean seed production and cultivation and expansion in the soybean industry are:

(1) National Soya Center (*Centre National du Soja*), Bordeaux.

(2) Agricultural and Industrial Society for Soya (*Société Agricole et Industrielle du Soja*), Paris.

(3) Cooperative of Soybean Producers at Lot and Garonne (*Cooperativ des producteurs du Soja de Lot et Garonne*), Agen.

(4) Cooperative of Soybean Producers in the Valley of the Rhone (*Cooperativ des producteurs du Soja de la valée du Rhone*), Valence.

(5) Cooperative of Soybean Production and Sales of Selected Seeds (*Cooperativ des production et vente de semences selektionées*), of Massif Central Clermont-Ferrand.

(6) Toulouse Interregional Soya Cooperative (*Cooperativ toulousaine interrégional du Soja*), Toulouse.

(7) Reynaud Geilinger establishment (*Etablissements Reynaud Geilinger*), Marseille [Marseilles].

(8) Mr. Hébert, Great Mill at Chartres (*M. Hébert, Grands Moulins de Chartres*), Eure et Loire.

(9) Cooperative Society of Soybean Planters in Provence (*Sociéte cooperativ provencale des planteurs de Soja*), Marseille.

Authorized establishments working on food uses of soya are:

(10) *Laboratoires Dulfrance,* Bayonne.

(11) *Société francaise des produits de Soja,* Levallois-Perret.

(12) *Société "Les aliments de régime,"* Levallois-Perret.

(13) *Soociété "Soja" 57 rue Pierre Charron,* Paris.

Climatically, France is a diverse country, so soybean research must be done in each region. It is now certain that

with seriousness and enthusiasm, soybean cultivation in France will advance.

As a postscript, the House of Vilmorin near Paris, still has, after many long years, an acre of land where all 800 soybean varieties obtainable worldwide are grown, observed botanically, and classified. They have also developed soybeans with seeds as big as small cherries. Address: Braunsdorf–Vienna, Austria.

1447. *Family Circle.* 1947. Whip Topping: The frozen pure soy cream for whipping (Ad). May.
• ***Summary:*** A small (1.75 by 2.5 inch) black and white ad. "Delicious and nutritious for desserts, salads, etc. At all fine food stores and grocers." There are two seals: "Guaranteed by Good Housekeeping," and recommended by "Parents Magazine." Illustrations show: (1) A small gable-top carton of the Whip Topping. (2) A parfait topped with a cherry and plenty of Whip Topping.

1448. *Soybean Digest.* 1947. Henry Ford was a soybean pioneer. May. p. 37.
• ***Summary:*** "Henry Ford, who died at his home in Dearborn, Michigan, April 7, left a name that will be closely associated with the soybean for years to come.

"The Ford Motor Co. had discontinued all its soybean operations at the time of the great industrialist's death. But Ford did some of the pioneering work in developing new uses for the crop; and gave soybeans publicity that vastly increased the interest of the public in them...

"Ford's policy was to produce raw materials as close to the point of processing as possible. With this in mind, he gave a great deal of effort to increasing soybean acreage near the Ford plants in southern Michigan. Then in 1937-39 the Ford Motor Co. built three solvent extraction plants at Saline, Milan and at the Rouge plant in Dearborn.

"Before the war Ford was using soybean products in many ways in the manufacture of automobiles. For a number of years the car body enamel contained 35% soybean oil. In 1937, 300,000 gallons of soybean oil was used for this purpose. The firm used thousands of gallons for shock absorber fluid. The foundry used both soybean oil and meal, the latter as core binder.

"But by far the most spectacular in the public mind was Ford's work with plastics. The actual usage was small compared with the tremendous publicity resulting. But some auto parts were made for several years from soybean molding compound. These included coil cases, accelerated pedals, horn buttons and distributor heads.

"Work on soy fibers was done at the Ford plant. This was under Robert Boyer, who has continued the project with The Drackett Co. Ford also experimented with soy food products, manufacturing soy milk and canning edible soybeans.

"It was the efforts of the Ford publicity machine, probably more than anything else, that caused the soybean to become associated chiefly with paint and plastics in the public mind, although other uses have always been far more important.

"Most soybean usage was discontinued by the Ford firm during the war and all its soybean processing plants have been sold.

"Ford offered considerable inspiration to the farm chemurgic movement. He was one of the founders of the National Farm Chemurgic Council." A small portrait photo shows Henry Ford at about age 60.

1449. A.P.I. [Associated Press of India]. 1947. Finding food value of vanaspati: Delhi research scheme. *Times of India* (*The*) (*Bombay*). June 12. p. 6.
• ***Summary:*** The Central Food Department has sanctioned two research projects on vanaspati. One is to determine its nutritive value and the other to determine its [not legible].

Research on the first project will be carried out at the Indian Institute of Science, Bangalore, and the University College of Science at Calcutta. Research on the second project will be conducted at Bombay, Delhi and either Mysore or Madras.

Another research project sanctioned "is in connection with a pilot plant for the manufacture of soya bean milk."

1450. Allen, Mark. 1947. Soybeans: The miracle food. *Diet Digest* (*Beverly Hills, California*) No. 27. p. 21-22, 38. [1 ref]
• ***Summary:*** "Reprinted by special permission of Syndicate Publications, Inc."

1451. Chin, Kuo-Chun. 1947. Contributions à l'étude du soja [Contributions to the study of the soybean]. *Revue Internationale du Soja* 7(39-40):51-54. May/June. [Fre]
• ***Summary:*** Contents: I. First attempts at production of soy sauce. II. The nature of soya, and vegetable meat (tofu). III. The nature of soymilk (*lait végétal de Soja*) and precautions to take in its use. IV. The nature of soybean cake and its judicious use. Address: Directeur du Laboratoire d'Essais du Soja, France.

1452. De, Sasanka S.; Desikachar, H.S.R.; Karnani, B.T.; Subrahmanyan, V. 1947. Investigations on soya bean milk and related products. *Science and Culture* (*Calcutta*) 12(12):587-91. June.
• ***Summary:*** Contents: Introduction. Animal experiments. Human feeding experiments: In welfare centers, in children's hospitals, feeding primary school children. General observations. The flavour of pure soya milk. Supply of soya bean–the bottleneck in extended production. The cost of soya milk. Equipment for large-scale production of soya milk. Various uses of soya milk and related products (sour {lactic fermented} curd, or buttermilk). Some outstanding

problems: Further improvement in the flavour of the milk (adding barley malt helps), enhancement of the nutritive value (supplement with a small amount of cereal protein, plus calcium, other minerals, and fat-soluble vitamins), improvement of manufacturing methods, organised production of the right varieties of beans.

The paper begins: "Our studies on the above subject were started, about two years ago, with the background of the earlier work done under the auspices of the Soya-bean Sub-Committee of the Indian Research Fund Association. That committee conducted its researches, mostly, on the nutritive value of the whole bean. The committee concluded that the bean, used in that form, is not superior to the average Indian pulses. We also came to the same conclusion regarding the whole bean as we found that the biological value of the protein in the *dhal* was only about 55."

"There is remarkable improvement when the bean is suitably processed and converted into the milk. It is in this form that the bean is largely utilised in China, Japan and other countries. After extensive trials, we found the following to be important steps for improving the taste, flavour and nutritive value. (1) steeping and incipient germination; (2) extraction of the kernel with dilute sodium bicarbonate to remove the colouring matter and bitter principle; (3) pasting to very fine condition; (4) adjustment of reaction and vigorous boiling; (5) incorporation of calcium in some suitable form; and (6) addition of salt and a small percentage of cane-sugar or invert sugar."

Supply and bottleneck: "There is already a good deal of public interest in the production of soya milk and related products. Many cities and commercial organisations have already expressed a desire to start large-scale feeding trials. The chief 'bottleneck' at the present time is the availability of the bean at a reasonable price. Every province in India can grow soya bean, but at the present time, there is very little production. Some area is now being brought under the crop and it is hoped that, at least during the present season, sufficient quantity of beans will be grown so as to facilitate trials at a larger number of centres. The co-operation of the Government Agricultural Departments is badly needed."

This far-sighted paper ends with these observations: "Organised production of the right varieties of beans.– Among the oil-bearing seeds that we have so far tried, soya-bean yields, by itself, the milk of the highest nutritive value. The pulse is unique in many respects. In composition and properties it comes half way between a typical legume and an oil-seed. It has considerable potential possibilities not only as a food but also in the plastic and other industries. The Government should therefore take keener interest in the cultivation of soya-ban [sic, soya-bean] in all the provinces of the country; There is already some experience in growing the bean, but more information is required regarding the right variety for each area, the season for sowing, manurial and other requirements and so forth. There is immediate need for at least some hundreds of tons for carrying out extended trials in different parts of the country and to popularise the use of the milk and the related products. It is earnestly hoped, therefore, that both the Central Agricultural Departments and the Provincial Departments will take more active interest in the subject and set up the necessary organisations for ensuring a steady supply of the bean in different parts of the country."

An editorial on this article (p. 559-60 of this issue) notes: The authors express the view that, when soya bean is processed according to their method, a remarkable improvement takes place in the quality of the soya milk. They claim that (1) it has a higher digestibility than cow's milk, (2) when prepared from beans after 3 days' germination, it has a higher biological value than cow's milk, and (3) when supplemented with calcium and some vitamins, it is in no way inferior to cow's milk. Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1453. *Science and Culture* (*Calcutta*). 1947. The case for soya bean. 12(12):559-61. June.
• ***Summary:*** This editorial argues for more widespread cultivation and use of the soya bean. Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1454. *Soybean Digest.* 1947. Paris soybean meeting. July. p. 30.
• ***Summary:*** According to Am. [Amédée / Amadee] Matagrin, the first Congress of Soya was held on 16 March 1947 at the Maison Internationale of the City University of Paris. The meeting, an indication of the French interest in soya, was organized by the French Bureau of Soya and its president, Mr. Rene Brochon, with the cooperation of the Experimental Laboratory of Soya and the France-China Association.

"The honorary presidency of the Congress was divided between M. Marius Moutet, French foreign Minister, and Li-Yu-Ying, president of the French-Chinese Society of Education and warden of the University Pekin [Peking], who as long ago as 1912 published with the agronomist Grandvoinnet a work on soya in French, and set up a little factory making soy milk, flour and oil in the suburbs of Paris.

"But the real presidency of the Congress was conferred on Prof. Louis Blaringhen, of the Sorbonne, president of the Academy of Sciences. Speakers were French research men and members of Universities, and the former French minister of agriculture. A paper from A.A. Horvath of the United States was read. There were addresses by President Blaringhen and the ambassador from China.

"The agricultural attache of the U.S. and a delegate from the Belgian Association of Soya assisted with the Congress."

1455. Tiling, W. 1947. Soja-Milch as vollwertiger Ersatz fuer

Kuhmilch [Soymilk as a high-quality substitute for cow's milk]. *Medizinische Klinik* 42(15):632-33. Aug. 1. Reprinted in Deutsche Arbeitsgemeinschaft Soja 1947, p. 12-13. [Ger]
• ***Summary:*** During World War II and in the post-war period, Dr. Wolfgang Tiling of Hamburg, Germany, fed soymilk to under-nourished children in Germany. Like others before him, he concluded that "soy milk is a complete substitute for cow's milk." Address: Univ.-Kinderklinik, Hamburg, Germany. Born in Tsingtau, China.

1456. Seiler, Hans G. 1947. Soja in der japanischen Kueche [Soya in Japanese cookery]. In: Dr. Wolfgang von Schuh, ed. 1947. Bericht Ueber die Erste Deutsche Soja-Tagung in Weissenburg, Bayern, 28-31 Aug. 1947. Heilsbronn bei Ansbach, Mittelfranken: Arbeitskreis fuer Landwirtschaft, Deutsche Arbeitsgemeinschaft Soja. 24 p. See p. 10-11. [Ger] Address: Studienrat and Dr., Erlangen.

1457. *Huntington Herald Press* (*Huntington, Indiana*). 1947. Chinese educator begins duty Monday at Huntington College. Sept. 14. p. 1, 4.
• ***Summary:*** "Dr. Y.T. Chiu, Chinese educator in the areas of science and religion, will commence his duties as a member of the Huntington college faculty Monday. The visiting professor will preside in the chemistry and practical foreign missions department..."

"Dr. Chiu came to the United States in August 1908 to attend the University of California [at Berkeley], where he received his Bachelor of Science degree in 1913. He continued his studies in the graduate field at Columbia university and received his Master of Arts degree in 1915, and then returned to China. Chiu came back to the United States in September of 1925 to enter the Cornell university graduate school [Ithaca, New York], where he received his Doctor of Philosophy degree in 1927 before returning to China."

"He is the author of a number of books including a textbook on chemistry, on English, on Quantitative analysis, a study of physical and chemical properties of soybean milk, and an analysis of Chinese tea... In addition to these he has written treatises on nutrition and health, the human body, and theological discussions relative to science and religion. Dr. Chiu presented a thesis on the soybean milk for his Ph.D. degree, which is essential to the people of China who suffer from a scarcity of milk." A portrait photo shows Dr. Y.T. Chiu.

1458. Sahasrabudhe, M.R.; Desikachar, H.S.R.; Lakshminarayana Rao, M.V. 1947. Biological value of "soya-bean milk" proteins by regeneration of liver protein in the rat. *Current Science* (*Bangalore, India*) 16(10):313-14. Oct. [8 ref]
• ***Summary:*** Soymilk has better quality protein than whole dry soybeans; 81.5% that of casein. Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore, India.

1459. Rodrigo, P.A. 1947. Soybean culture in the Philippines. *Philippine J. of Agriculture* 13(1):1-22 + 5 plates. Third quarter. Summarized in Soybean Digest, May 1948, p. 41. [14 ref. Eng]
• ***Summary:*** Contents: Introduction. Description and history. Climatic and soil requirements. Varieties. Propagation. Preparation of the soil. Fertilizers and lime. Inoculation. Planting. Care of the crop. Harvesting and production: For day, for seed. Cost of production. Uses of soybeans. Diseases. "In the big cities in the Islands, many of the soybean products like soy sauce or toyo, tokua, tajuri [fermented tofu], tojo [soymilk curds], miso, etc. are becoming more popularly used by the Filipinos, and will be more so as their nutritive values become more fully realized. Already, in some sections of the country where soybean is being grown, the seed is used either as a green or as a dry vegetable. The dried bean is roasted and is eaten offhand or is used in adulterating coffee, and the bean in the dough stage is boiled and eaten like peanut" (p. 2).

Note 1. This is the earliest English-language document seen (Oct. 2011) that uses the word *tajuri* to refer to fermented tofu.

Table 1 shows annual imports (in kg) of soybeans and soybean products into the Philippines from 1929 to 1940, including dried beans, soy sauces, soybean meal, tausi (fermented black soybeans, salted), paste (miso), and total. By far the leading import (by weight) from 1929 to 1937 was dried soybeans. In 1929 some 4,574,497 kg were imported. This figure rose gradually (with ups and downs) to a peak of 5,660,575 kg in 1937, then fell sharply to only 237,666 kg in 1940. Soybean sauces were the No. 2 import, starting with 606,231 kg in 1929, rising to a peak of 1,441,563 kg in 1932, then remaining above 1,000,000 for most years thereafter. Imports of soybean meal started in 1935 with 660,699 kg; they reached a peak 1,023,303 in 1936 (the next year), then remained near 1,000,000 thereafter. Tausi was first imported in 1940, the amount being 151,571 kg.

Table 2 shows the value of these items (in pesos). In 1940 the imports of greatest value were soy sauces (120,346 pesos), soybean meal (50,682), and tausi (20,280).

"In the Philippines, while the plant has been under cultivation since the Spanish regime [1571-1898], it has not gained much headway due mainly to the lack of a variety suitable for commercial planting, and perhaps due to want of interest among farmers" (p. 4-5). The Philippine Bureau of Plant Industry has, to date, introduced more than 200 soybean varieties to the Philippines from the USA, China, Japan, Hawaii, Java, and India, but it presently recommends only a few varieties for commercial planting. These include Ami, which has long been cultivated there and is well adapted to the varied soil and climatic conditions.

Based on the results of a number of years' trials in

different regions of the Islands, the following varieties have been found to be productive: Yellow Biloxi Hybrid (introduced from Hawaii in 1936), Mis 28 E.B. Str. 3910 (introduced from India in 1937), Mis 33 Dixi (introduced from India in 1937), Head Green (introduced from the USA in 1935), and American Black. All of these varieties are good for May and June planting, and all but Yellow Biloxi Hybrid are good for September to December planting (dry season).

"In the Philippines, the green but fully developed pods are harvested, and the seed is cooked and eaten in practically the same way as lima bean or patani... In Lipa, Batangas, soybean in the dough stage is boiled in the pod and sold and eaten offhand" like peanuts. The more common soy products made in the Philippines are soy sauce or *toyo*, tokua [tofu], tausi [fermented black soybeans], and miso. "Soybean milk is being manufactured by the Bureau of Plant Industry in a limited scale and a big modern firm has started putting soybean milk and other products in the local markets" (p. 15-16).

Note 2. This is the earliest English-language document seen (Nov. 2011) that uses the word *tausi* to refer to fermented black soybeans. Address: Chief, Horticulture Research Section, Bureau of Plant Industry.

1460. Genin, G. 1947. Supplément technique: Le lait de soja ou lait végétal [Soymilk or vegetable milk]. *Lait* (*Le*) 27:633-38. Nov/Dec. [19 ref. Fre]
• ***Summary:*** Describes how to make soymilk based on previous reports in the literature.

Note: *École Pratique du Commerce et de l'Industrie* ceased to exist in 1959. Address: Ingenieur E.P.C.I [École Pratique du Commerce et de l'Industrie].

1461. Miclot, A. 1947. Le lait de soja: Son emploi dans les maternités indigènes. Ses résultats [Soy milk: Its use in indigenous maternity wards. Its results]. *Medecine Tropicale* (*Marseille*) 7(5):465-469. Nov/Dec. [3 ref. Fre]
Address: Medecin Capitaine du Corps de Sante Colonial, France.

1462. **Product Name:** Delsoy Super Whip: Instant Dessert Topping (All-Vegetable Soymilk-Based Non-Dairy Whip Topping Sold in a Pressurized Can).
Manufacturer's Name: Delsoy Products, Inc.
Manufacturer's Address: Livonia Dairy, 2001 S. Telegraph Rd. at Harvard, Dearborn, Michigan.
Date of Introduction: 1947.
Ingredients: Incl. soymilk, vegetable oil, sugar.
Wt/Vol., Packaging, Price: Pressurized metal can.
New Product–Documentation: Detroit News. 1945. April 16. "Who's who and why." [About Herbert Marshall Taylor and Delsoy]. A photo shows Taylor. An ad (below this article in Rex Diamond's binder; original source and date unknown) is titled "What is Delsoy? It's the dessert topping that's winning the enthusiastic approval of housewives by the hundreds of thousands. Delsoy is the original topping made of natural vegetable products." The ad shows illustrations of two non-dairy whip toppings: (1) In the foreground, "Delsoy Super Whip: Instant Dessert Topping" which is sold in a pressurized can. The ad states: "Introduced in August 1944, the first product of its kind, Delsoy dessert topping has gained tremendous popularity. Continuing to grow by leaps and bounds..."

Interview with Robert A. Smith by Donald V. Baut. 1979. June 21. "Delsoy Products." p. 44-72. This is the single best source seen on the origin and history of this product. However Bob Smith calls the product Presto Whip (which is also sold in a pressurized can) and gives the date of introduction as 1946 or 1947, which is 2-3 years after Delsoy Super Whip was introduced.

Talk with Robert Rich, Sr., founder and chairman of the board of Rich Products Corp. 1993. July 13. He strongly disagrees with Bob Smith's statement that Delsoy was the first non-dairy whip topping to be sold in a pressurized can. Mr. Rich believes that Rich Products' non-dairy Whip Topping was the first such product to be sold commercially in a pressurized can. It was on the market in Oct. 1948. Bob never heard of Delsoy Super Whip; he thinks Delsoy's product in a pressurized can was named Presto Whip.

1463. **Product Name:** Lo Hi Milk.
Manufacturer's Name: Lo Hi Food School.
Manufacturer's Address: 618 Adams Ave., Muskegon, Michigan.
Date of Introduction: 1947.
New Product–Documentation: Soybean Blue Book. 1947. p. 72.

1464. **Product Name:** Soy Milk.
Manufacturer's Name: Natural Foods Institute.
Manufacturer's Address: 624 Prospect Ave., Cleveland, Ohio.
Date of Introduction: 1947.
New Product–Documentation: Soybean Blue Book. 1947. p. 84. Not clear whether this company is a manufacturer or a handler.

1465. Bragg, Paul C. 1947. Paul Bragg's health cookbook [1st ed.]. New York, NY: Alfred A. Knopf. xii + 402 + xxx p. Index. 21 cm.
• ***Summary:*** Contents: Section I: Flavor. 1. Flavor, the soul of food. Section II: Recipes. 2. Salads (7 types). 3. Salad dressings. 4. Soups. 5. Vegetables. 6. Meats. 7. Fish. 8. Poultry and game. 9. Vegetarian entrees and cheese dishes. 10. Eggs and egg dishes. 11. Cereals. 12. Bread, rolls, and muffins. 13. Pancakes and waffles. 14. Pies and fillings. 15. Cakes and frostings, 16. Cookies. 17. Desserts (fruit desserts, other desserts). 18. Sauces. 19. One world cookery ("Health"

foods in many lands, Mexican, Creole, From France, the Near East, the Far East, etc.). 20. Candies. 21. Drink health the new way ("cocktails" made without alcohol, from fresh fruit and vegetable juices). 22. Canapés. 23. Sandwiches and fillings. 24. Canning.

Section III: Special-purpose recipes. 25. Reducing. 26. Gaining. 27. Food allergies. 28. Invalid food or bland diets. Appendixes. Herb chart. How to grow a savory herb garden. The window-box herb garden. Organic gardening: Good nutrition starts in the ground. How to make a compost pile.

Soy-related recipes: Substitutes. Soybean milk for cow's milk. Beans and especially soybeans for meat. Whole-grain flours for white flour (p. 5). Sprouted soybean salad (p. 45). Soybean soup (with "1 cup {dry} soybeans," p. 72). Black soybean soup (p. 72-73). Sour-cream bean soup (p. 73).

In the chapter on "Vegetables" there is a section titled "Soybeans" (p. 92-95) with this contents: Introduction ("The soybean is one of the richest of all foods in protein and in minerals, and it also makes a very delightful addition to good meals... but only in recent years have Americans and Europeans become awakened to its possibilities as a meat substitute and also its great value as a food staple"). How to make soybean sprouts. Soybean sprouts en casserole. Sprouted soybean omelet. Soybean sprouts with onions and mushrooms. Soybean recipes ("for preparing the magic soybean"). Green soybeans (in pods). Dried soybeans. Canning recipes. Soybeans used as meat substitutes. Soy milk. Soybean cheese [tofu].

Chapter 9: Vegetarian entrees and dishes. Lentil loaf with milk or soy milk. Soybean loaf (with dry soybeans and soy milk). Soybean macaroni loaf. Vegetable and soybean stew. Soy vegetable roast (with 1½ cups cooked soybeans). Vegetable hash (with soy sauce). Boston baked soybeans. Stuffed peppers with soybeans. Vegetarian sausages (with cooked soybeans). Vegetarian chop suey (with soy sauce and gluten steaks). Soybean cheese (homemade tofu made from soy milk allowed to curdle in a warm place; cut and serve with soy sauce).

Whole-wheat soy bread (with soy flour, p. 195). Soybean waffles (with soy flour, p. 212). Whole-wheat soy pie crust (with soy flour, p. 213). Canned [green vegetable] soybeans (p. 324, 336). Soybean waffles (wheatless, with soy flour, p. 369). For those with food allergies: Soy milk and Soybean cheese (see p. 95).

In this book, Bragg uses the word "aminos." "The link between protein and body tissues is the amino acids. When the aminos enter the blood stream, they are carried to every part of the body, where they set to work repairing, rebuilding, and maintaining body tissue, building up rich red blood, and 'conditioning' the various organs" (p. 6).

Note 1. Throughout his life, Paul Bragg seems to have had an ambivalent feeling about eating and recommending red meat and poultry. In his later years, fish became his favorite flesh food.

Note 2. This book contains no autobiographical information about Paul Bragg. Address: P.O. Box 428, Burbank, California.

1466. Kent-Jones, Douglas William; Amos, Arthur J. 1947. Modern cereal chemistry. 4th ed. Liverpool, England: The Northern Publishing Co., Ltd. vii + 651 p. See p. 89, 109-113, 118, 150, 302, 349, 376, 568-69. 20 cm. [3 soy ref] • ***Summary:*** The first edition of this book was published in 1924 in Liverpool. Chapter 4, titled "Rye, oats, maize, rice, soya and potato," contains details on the soya bean from various sources (p. 109-13) including: Production in major countries (1934-39), chemical composition, amino acids, constants of soya oil, fatty acids of soya oil, carbohydrates of soya bean, mineral content of selected foods, composition of various milks, and uses of soya flour.

Page 150 discusses soya lecithin, gluten, baking, and flour strength. Page 302 discusses the benefits of soya flour in making less expensive forms of cakes and various confections.

Chapter 14, "Cereal and balanced rations for livestock" (p. 349-) contains a short section on soya bean cake (p. 376). "At one time a mixture of soya bean and cottonseed cakes were sold as 'Soycot Cake' and attained considerable popularity."

Tables on p. 568-69 show the contribution of soya bean cake and soya bean meal (extracted) to mixed feeds. Address: Analytical and consulting chemists, England.

1467. Radwansky, Andor (pseudonym of Dr. A. Medriczky). 1947. Der "Gelbe Gottessegen," die Sojabohne im Haushalt und Kleingarten [The "golden blessing," the soybean in home and garden]. Murnau (near Munich): Verlag Sebastian Lux. 31 p. Series: Die kleine Reihe, 4. 17 cm. [21 ref. Ger] • ***Summary:*** Contents: Foreword. 1. Soybeans and nutrition. 2. What does the soybean look like? 3. The soybean–commercial products (Edelsoja whole soya flour, soy flakes, soy oil, soy margarine, soy lecithin, soymilk and tofu [these were once made by a German firm in Frankfurt], soy sauce, Worcestershire sauce, soy chocolate and cocoa). 4. Soybeans in the household (incl. the above commercial products plus soy coffee, soy sprouts). 5. Growing soybeans on farms and in home gardens. Hope for the founding the "Society of Soybean Producers and Friends of Soya" (*Gesellschaft der Soja-Anbauer und Sojafreunde*). 6. The different methods of soybean production. Growing soybeans in a small garden.

On page 15 the author uses the term "Sojaspeisen" to refer to soyfoods. On page 17 he uses the term "Gruenbonen" to refer to green vegetable soybeans. Address: Herwegstr. 5, Stuttgart, Germany.

1468. **Product Name:** Presto Whip (All-Vegetable Soymilk-Based Non-Dairy Whip Topping in a Pressurized Can with Valve–Refrigerated).

Manufacturer's Name: Delsoy Products, Inc.
Manufacturer's Address: Livonia Dairy, 2001 S. Telegraph Rd. at Harvard, Dearborn, Michigan.
Date of Introduction: 1947?
Ingredients: Incl. soymilk, vegetable oil, sugar.
Wt/Vol., Packaging, Price: 10 oz pressurized can with valve.
How Stored: Refrigerated.
New Product–Documentation: Interview with Robert A. Smith by Donald V. Baut. 1979. June 21. "Delsoy Products." p. 44-72. This is the single best source seen on the origin and history of this product. Originally Delsoy Topping was sold in paper containers purchased from the Sutherland Paper Co. in Kalamazoo, Michigan. Delsoy bought the containers by the carload, 300,000 at a time. When Sutherland went out of business, Delsoy switched to buying containers from the Crown Cork and Seal Co. in Philadelphia. During World War II Crown Cork and Seal had developed a pressurized can to use for insecticide sprays by the military. Delsoy was the first to realize that the can's unique valve (produced by the Super Whip Co. in Chicago and used with nitrous oxide gas) made it suitable for whipping cream. So the company modified its formula for Delsoy Topping, put it in this pressurized can, and in 1946 or 1947 named it Presto Whip. Delsoy Products was the first company to ever put a topping in a pressure can and sell it. It immediately became a huge success, was widely advertised, and was soon sold by every chain store in the area. Soon Delsoy Products was working 3 shifts, making 25,000 cans a day–sold mostly in the Detroit area. Soon they were selling the products over a range of 350 miles in lower Michigan, Ohio, and parts of Indiana, Pennsylvania, and New York. By 1963 they had 23 distributors.

Letter from Robert A. Smith (of Delsoy Distributors, 1847 South Telegraph Rd., Dearborn 8, Michigan) to Mr. Holton W. Diamond (in Whiting, Indiana). Smith expresses interest in obtaining Rex Diamond's services and patents. Printed in the lower left corner of the letter is a picture of a pressurized can of Delsoy Presto Whip. In the lower right corner is a picture of a container of Delsoy Topping in the shape of a truncated cone.

Talk with Robert Rich, Sr., founder and chairman of the board of Rich Products Corp. 1993. July 13. He strongly disagrees with Bob Smith's statement that Delsoy was the first non-dairy whip topping to be sold in a pressurized can. Mr. Rich believes that Rich Products' non-dairy Whip Topping was the first such product to be sold commercially in a pressurized can. It was on the market in Oct. 1948. Delsoy Products had problems with the name of its product "Presto Whip." Delsoy Products and the Presto Whip Co. in California both had a lawsuit against each other since they were both using the same name. The California company probably won, since they used the name for many years afterwards.

Note 1. The relationship between this product and Delsoy Super Whip, both soy-based whip toppings sold in a pressurized can and made by Delsoy Products, is not clear. Note 2. This early non-dairy whipped topping was NOT made with enzyme-modified soy protein.

1469. Liang Shih-chiu [Shiqiu]. ed. 1947? Zui xin shi yong Han Ying ci dian A new practical Chinese-English dictionary. [Taipei, Taiwan]: The Far East Book Co. Ltd. 1355 p. See p. 1037-38. 22 cm. [Eng; Chi]
• ***Summary:*** Gives the Chinese characters and their pronunciation for the following soy-related terms: Soybean cake; bean curd; a semi-transparent film formed on the surface of soybean milk; a store where bean curd is made for sale; spiced and dried bean curd; soybean cheese; legume; (said of girls) in teens; the pods of beans or peas; soybean milk; fermented beans in paste form; residue of soybeans in making bean curd; fermented and seasoned soybeans; pisolite [bean + stone]; legumin; bean sprouts as a vegetable; soybean oil. Address: Editor in Chief.

1470. **Product Name:** [Lactavena].
Foreign Name: Lactavena.
Manufacturer's Name: Unknown.
Manufacturer's Address: Rome, Italy.
Date of Introduction: 1947?
Ingredients: Water, malted oats, malted soybeans.
New Product–Documentation: L. Nicholls. 1950. Food Manufacture. March. p. 96-97. "Considerable work has been done in war-devastated Italy and Germany to find a milk substitute for infants and children. One such substitute, called *Maltavena*, was produced early in 1945 by Dr. Caprina, chemist to the Perani brewery, Rome. It consisted of an emulsion prepared from a cereal [probably oats] which had been malted in the usual manner of brewers; later malted soya bean was included as well as the cereal. The idea was taken up by a British Medical Unit working in Germany, and a modified product was used with considerable success in feeding infants and children. This product has been developed on a small commercial scale under the name *Lactavena."*

1471. Cort, Mabel Gilson. 1948 Personal report of Mabel Gilson Cort for the year 1947. Chiang Mai, Thailand. 2 p. Unpublished typescript. Undated.
• ***Summary:*** She has spent the entire year of 1947 at home in Chiengmai [Chiang Mai], Thailand, doing mainly dietetic work, but also some evangelical work. She has developed special diets for patients with particular diseases. "Because of the high cost of living and the scarcity and high price of such foods as milk and eggs and the number of orphan babies we have in the hospital and the number of patients requiring milk diet, we have used quantities of soy bean product to increase our milk protein and supplies. Every day we make great quantities of white soy bean milk which is

used to feed the babies, make cream soup, egg nogs, custards and even ice cream occasionally. We make tasteless soy bean flour, which I learned to make at home. We also use the ground browned soy bean flour [kinako] to feed babies, to make a beverage we call soy bean coffee, which is drunk as a beverage, using coconut milk and sugar. It is used in many hospital diets and the nurses drink it. We enrich it with sugar, starch and calcium, thus making it nearly equivalent to milk in value. We make soy bean flour, rice bran and rice flour muffins for beriberi and soy bean flour and rice bran muffins for diabetes. We also send out the browned soy bean flour to mothers in the country to make soy bean milk for their babies as the browned flour will keep indefinitely and country mothers have not the facilities for keeping the white milk which sours very easily. We buy bean curd from a Chinese merchant. We use this in curries, soups, etc. We have also increased the value of the protein in our diets and the use of the bean products are increasing every where. We think this is good public health work. All this requires a great deal of reading and compiling from books from China, Malay, the Philippines and America."

Note: Mrs. Mabel Gilson Court worked was a Presbyterian missionary in Siam (later called Thailand) from 1903. Her husband was a physician and fellow missionary. They were married in 1910. In 1915 Dr. Cort took charge of McCormick Hospital in Chiang Mai, and Mrs. Cort took charge of dietetics at McCormick Hospital.

1472. *Soybean Digest.* 1948. Grits and flakes... from the world of soy: Milquo Ltd. is now Vi-Tone. Jan. p. 34.
• ***Summary:*** "Milquo Limited has changed its firm name to Vi-Tone Products Limited, 198 Gage Ave. S., Hamilton, Ontario. Ray H. Bissell is president."

1473. *Huntington Herald Press* (*Huntington, Indiana*). 1948. Dr. Chiu to speak at Union Church. Feb. 28.
• ***Summary:*** "Dr. Y.T. Chiu, visiting professor of chemistry and foreign missions at Huntington college, will speak at Union church, Union township, at 10:30 a.m. Dr. Chiu will discuss conditions in China, their effect upon the mission work and what missions are doing to alleviate suffering... He served as professor on the staff of Lingnan University in Canton, China, from 1915 to 1942, and was principal of the Pui Ching middle school, the largest high school in southern China, from 1942 to 1946. For his Ph.D. degree Dr. Chiu presented a thesis on soybean milk which was essential to the people of China who suffer from a scarcity of milk."

1474. *American Magazine.* 1948. Interesting people (William Morse): Ice cream grows on bushes. Feb. p. 101.
• ***Summary:*** Shows a nice full-page photo (by Vincent Finnigan) of William Morse eating soy ice cream. "Ice cream, as indicated here by Dr. Morse, can be made from powdered soybean milk. To launch the soybean in America Dr. Morse spent 2 years in the Orient collecting 5,000 soybean samples." When he returned, he used his wife, daughter, friends and himself as guinea pigs to test the beans. They made entire meals out of soybeans, including soybean wine. The idea gradually caught on. Dr. Morse is a graduate of Cornell University, soft-spoken, shy and at 63 years old, still busy at the Department of Agriculture's experimental farm in Beltsville, Maryland. He feels the surface has hardly been scratched.

The photo was also run in *Soybean Digest*, April 1948, p. 41.

This digital photo was sent to Soyfoods Center by Joyce Garrison (William Morse's granddaughter) of West Hartford, Connecticut (July 2004).

1475. **Product Name:** Sunspot Soya Milk [Chocolate].
Manufacturer's Name: Hong Kong Soya Bean Products Co. Ltd.
Manufacturer's Address: Great George St., Causeway Bay, Hong Kong.
Date of Introduction: 1948. February.
Wt/Vol., Packaging, Price: Bottle.
New Product–Documentation: H.W. Miller. 1948. *Soybean Digest.* June. p. 22-23. "Survey of soy foods in East Asia." "From Manila I went to Hongkong where 8 years ago a small company known as the Hongkong Milk Factory made a beginning in homogenizing a constituted soy milk. On this last trip to Hongkong, K.S. Lo, the manager, took me through their plant. He informed me that they are now serving to each of the school children a half-pint bottle of the soy milk, both in the natural and the chocolate flavors, at their noon lunch.

"The Hongkong Milk Factory is in reality a soybean dairy. As you view the equipment including the bottle filling machine and the refrigerating unit, you would not know you were not in an American dairy."

1476. *St. Louis Globe-Democrat* (*Missouri*). 1948. $213,000 peanut crop had origin as slave food. March 1.
• ***Summary:*** Peanuts came to America in slave ships, but they originated in Peru. The conquistadores found the Incas munching on them between meals. The Spaniards took these peanuts in their treasure galleons back to Spain, where they flourished. Then they took them from Europe to Africa, where they became involved with the slave trade. "The slavers fed them to the natives because they were cheap and easy to grow. The natives called them 'goobers.' When the slavers crammed the natives into holds and began the long journey to America they used the peanuts as slave food. Upon landing, the slaves built crude cabins, and planted peanuts near their cabin doors. Gradually peanuts spread through the south and changed from a slave to a money crop. They continued as a southern specialty until the civil war."

"In the 1890s a doctor at Battle Creek, Michigan, named

Kellogg thought peanuts possessed excellent dietary qualities for invalids. This was the fabulous era when corn was being flaked, and oats and other grains exploded into breakfast cereals. Kellogg crushed the nuts into a creamy mass and called it peanut butter. He said it was more easily digested by sick people this way."

The late Dr. George Washington Carver played a major role in the development of peanuts in America. "He perfected dozens of extracts from peanuts, including peanut coffee and peanut milk and cream. At one point in his career he experimented with peanut oil as a massage for after-treatment of infantile paralysis."

Peanuts are now a price-supported crop. Georgia is the largest peanut-producing state. Peanut yields are now decreasing because peanut farmers have used backward methods and not replenished the soil. Some authorities believe the soybean has come to the front because of these backward methods.

1477. Roberts, F.G. 1948. The return of the edible soya bean. *Nature's Path to Health* (*Melbourne, Australia*). Feb/March. p. 22.
• ***Summary:*** "The Soya Bean is a complete vegetable protein containing all the Amino acids in assimilable form; one pound of Soya Beans equals the protein value of two pounds of beef, which is much more expensive." Soybeans are an alkaline food with a wonderful chemical content.

"We are doing our best to encourage the growing of Soya Beans in Australia, we have promised the farmer a fair margin and we hope to distribute many tons of Grade 1 Soya Beans through our many branches, and other grades will be used for making Soya Flour, Soya Bean oil, Soy nut roast, Soy milk compound, Soya Bean and Soya Beans in Tomatoes."

Note: This is the first article about soy to appear in this periodical (published by F.G. Roberts and wife) since Aug. 1940, a gap of more than seven years. Hence use of the word "Return" in the title. Address: Reg. Dietitian, Australia.

1478. Desikachar, H.S.R.; De, S.S.; Subrahmanyan, V. 1948. Protein value of soya-bean milk: Human feeding experiments. *Indian J. of Medical Research* 36(2):145-48. April. [1 ref]
• ***Summary:*** When cow's milk curd protein, fed along with a poor South Indian rice diet, is replaced by an equivalent amount of soya bean protein, the mixed proteins of the diet in both cases are utilized to about the same extent. By following the nitrogen balance method on two adult subjects, they reported that the average digestibility coefficient and the biological value of soya-bean milk protein compared to egg protein are 96.6 and 94.0 respectively.

The calcium of soya-ban milk curd (tofu) fed to 6 adult subjects along with a basal low calcium ration was utilized about 90% as much as the calcium of cow's milk curd. Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1479. Desikachar, H.S.R.; De, S.S.; Subrahmanyan, V. 1948. Utilization of soya-milk protein for the formation of blood proteins. *Indian J. of Medical Research* 36(2):139-44. April. An inquiry into the nutritive value of soya-bean milk under the Indian Research Fund Assoc. [15 ref]
• ***Summary:*** The protein of soymilk was found to be about 90% as efficient as casein for haemopoiesis in the rat. Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1480. Gehrke, Charles W.; Weiser, Harry H. 1948. A comparative study of the biochemical activity of *Streptococcus lactis, S. citrovorus*, and *S. paracitrovorus* when grown in cow's milk and soybean milk. *J. of Dairy Science* 31(4):213-22. April. [17 ref]
• ***Summary:*** These three microorganisms are widely used to culture butter. "Soybean or vegetable milk is used extensively throughout Japan and China for infant feeding as well as for adults." The introduction of soybean milk to the American people has occurred only recently. Soybean milk has been manufactured in the form of a powder. It has been used with good results... especially in those countries that find it cheaper to use a vegetable milk... The development by butter organisms of diacetyl [which is partially responsible for the aroma of butter] and related compounds in vegetable milk and products made from it may be desirable from a commercial standpoint."

The butter cultures were obtained from the Department of Dairy Industry, Iowa State College, Ames. The soybean milk was obtained from Harry Miller, Director of the International Nutrition Laboratory, Mt. Vernon, Ohio. Cow's milk and soybean milk were inoculated and incubated, then measurements of the following were taken at regular intervals up to 216 hours: pH, titratable acidity, volatile acidity, and Mg Ni salt. The production of acetylmethylcarbinol (AMC) and diacetyl in soybean milk by butter culture organisms was not evident until after an incubation period of 48 hours; however, upon incubation of cultured soybean milk for 168 to 216 hours, larger amounts of the flavor and aroma compounds were produced in soybean milk than in cow's milk. "The values obtained for the titratable acidity in cow's milk and cow's milk to which 0.15 per cent citric acid had been added were nearly twice as great as those secured for the soybean milk. Address: Dep. of Bacteriology, The Ohio State Univ., Columbus, Ohio.

1481. *Times of India* (*The*) (*Bombay*). 1948. New treatment for plague: Research in India. June 17. p. 5.
• ***Summary:*** Field trials were conducted in Bengal and Bihar to test the effectiveness of sulphaguanadine, a new drug for combating plague.

Research on nutrition is being carried out at a number of centres across India under the auspices of the Indian Research Fund Association. "Experiments to determine the nutritive value of soya-bean milk and soya-bean curd [tofu] have been conducted at the Indian Institute of Science, Bangalore." Feeding trials now being conducted in Bangalore suggest that soya-bean milk and its products can provide an inexpensive and nutritious substitute for cow's milk.

1482. Miller, H.W. 1948. Survey of soy foods in East Asia. *Soybean Digest.* June. p. 22-23.
• ***Summary:*** The primary objective of Miller's company "was to develop a milk built up to formula for babies, children, and adults that could be utilized by Oriental populations where animal milk is not available, and which for economic reasons can never be a dependable source of food supplies for the masses.

"Before the war the Laboratory had branches both in Manila, Philippine Islands, and Shanghai, China. The war saw the plant in Shanghai completely demolished and the equipment destroyed. In Manila, the building was left, but all the equipment was removed. Therefore we have been busy since the end of hostilities in restoring these plants.

"In 1946 and 1947 and during this last January and February the writer made trips and spent time in connection with these institutions. I am glad to report that on my last visit to the Philippine Islands I was able to see the plant there start its operations. The machinery and equipment are practically restored.

"At the present time there are no soybeans under cultivation in the Philippine Islands... though certain parts are very well adapted to the growth of the southern type of soybeans.

"The Manila plant is interested in marketing bottled 'Soyalac' (soy milk) both in natural and chocolate flavors, and also in entering the production of soy ice cream–we are permitted to call it that in the Philippines.

"From Manila I went to Hongkong where 8 years ago a small company known as the Hongkong Milk Factory made a beginning in homogenizing a constituted soy milk. On this last trip to Hongkong, K.S. Lo, the manager, took me through their plant. He informed me that they are now serving to each of the school children a half-pint bottle of the soy milk, both in the natural and the chocolate flavors, at their noon lunch.

"The Hongkong Milk Factory is in reality a soybean dairy. As you view the equipment including the bottle filling machine and the refrigerating unit, you would not know you were not in an American dairy. Mr. Lo informed me that if they had refrigeration they could be putting this soy milk out in many of the other cities of China on a very large scale.

"The firm obtains it beans from China, mostly from the province of Chang Tung, though some come from Manchuria. The beans are not of a very fine quality."

At Shanghai there were two soybean enterprises that particularly attracted my attention. The one for which we helped secure the machinery and equipment is being run under the name of the International Nutrition Products Co., Ltd. It is to be run very much like the Manila plant in the manufacture of liquid soy milk. The company will develop along with it a soy margarine and soy spread in the form of a mayonnaise dressing.

"The other enterprise is being undertaken by the government. The Chinese Army Quartermaster Department has purchased a property where ice cream, dried eggs and butter, and also candy were made. This large property has a splendid group of buildings with refrigeration." Here the Chinese Army intends to run a "soybean factory and a vegetable dehydration plant.

"The Chinese Army has secured the help of my son, Harry Willis Miller, Jr. He is there at the present time erecting this plant. It is perhaps the largest soy protein processing plant we know of at present. The firm has bought equipment for large-scale production of a spray-dried soy milk powder. This is to be included in other rations of a dehydrated character for use of the Chinese Army."

In Japan, the author found the people to be "greatly undernourished, especially in regard to protein. Soybeans are scarcely to be had... Bean curd plants are all closed down... I know of nothing that the Japanese nation needs worse than soybeans... I found the Japanese people, even to the advisor to the Emperor, whom I met, pleading with us to establish a plant similar to that which we have in China and the Philippines. However we have no financial interest in those plants. They are carried on wholly by local capital. Our part is simply the 'know-how' in setting them up and transmitting the processes to them."

Note: This is the second earliest document seen that uses the term "soy foods" in the title. Address: International Nutrition Lab., Mt. Vernon, Ohio.

1483. *Times of India* (*The*) (*Bombay*). 1948. Research in India: Research on nutrition. July 17. p. 5.
• ***Summary:*** "Experiments to determine the nutritive value of soya-bean milk and soya-bean curd have been conducted at the Indian Institute of Science, Bangalore." Feeding trials now being conducted in Bangalore, indicate that soya-bean milk and its products can provide an inexpensive, nutritious substitute for cow's milk.

This nutritional research is being conducted under the auspices of the Indian Research Fund Association.

1484. *Soybean Digest.* 1948. German soy milk. July. p. 25.
• ***Summary:*** "A soy milk that is on a par with cow's milk has been perfected at Hamburg, Germany, by W. Tiling, chief physician there. Dr. Tiling reported in a recent article.

"Scarcity of food especially for children during the

period following the war made research for suitable foods highly necessary, he reports. He recalled the part soybeans have played in the nourishment of Chinese children for 5,000 years, and investigated them as a source of milk for the undernourished German children.

"A soybean emulsion was produced which with a little water added looks just like cow's milk. It can be used for cooking purposes, and keeps as well as cow's milk, says Dr. Tiling. 'We have found this milk to agree with children, and that the children who have used it have made very satisfactory and normal progress,' he states."

1485. De, Sasanka S. 1948. Soybeans in India. *Soybean Digest.* Sept. p. 45-47.
• ***Summary:*** Contains a good photo of De, the author. Address: Indian Inst. of Science, Bangalore, India, and Massachusetts Inst. of Technology.

1486. Karnani, B.T.; De, S.S.; Subrahmanyan, V.; Cartner, D. 1948. Relative utilization of calcium from soya milk (fortified with di-calcium phosphate) and cow's milk by growing children. *Indian J. of Medical Research* 36(4):355-60. Oct. [7 ref]
• ***Summary:*** Since soymilk contains much less calcium than cow's milk, the authors raised the calcium content of milk to the level of 80 mg calcium/100 ml by the addition of di-calcium phosphate after adjustment of the pH of the milk. Calcium-fortified soya milk and cow's milk were fed to "six growing children (age 7 to 9 years) who received the milks as a supplement to a basal diet composed mainly of cereals and which provided only a small amount of calcium (224 mg.) per day. When fed the basal diet alone, the children showed a negative calcium balance, the excretion exceeding the intake by 20 mg to 135 mg per day. On supplementing the diet with fortified soya or cow's milk, the children received 362 mg per day of calcium in the case of the former and 365 mg per day from the latter. As the result of this, the calcium balance was changed from an average of -54 mg per day in the case of the basal diet to +29.0 mg in the case of soya milk and +28.9 mg in the case of cow's milk. In spite of the initial negative balance, the extent of utilization of the supplementary calcium was only 23.1 per cent in the case of soya milk and 22.8 per cent in the case of cow's milk. The response of the two milks was practically the same." Address: 1-2. Dep. of Biochemistry, Indian Inst. of Science, Bangalore; 4. Lady Curzon Hospital, Bangalore.

1487. Karnani, B.T.; De, S.S.; Subrahmanyan, V. 1948. Fortification of soya-bean milk with calcium and study of its availability to young growing rats. *Indian J. of Medical Research* 36(4):349-54. Oct. [15 ref]
• ***Summary:*** "Although soya milk is fairly adequate in other respects, it is nevertheless deficient in calcium (about 20 mg calcium in 100 cc) as compared with cow's milk (about 120 mg calcium in 100 cc). Apart from its general importance, calcium is of special significance in the dietary of vegetarians and particularly as a supplement to the poor South Indian rice diet which is highly deficient in that element."

"It was found that more than minute amounts of calcium in any form could not be added to soya milk without the risk of clotting on subsequent heating unless the reaction was suitably adjusted. There was also marked difference in regard to the extent to which each calcium salt could be incorporated... Whenever possible, the calcium salt was prepared in the form of a solution and added in small instalments till the limit of stability was reached. Before incorporating any further quantity, the reaction was adjusted by addition of bicarbonate and fresh calcium then added. The maximum concentration aimed at was 120 mg. of calcium in 100 c.c. but it could not be attained in any of the cases."

Table I shows the fortification of soya milk with calcium using different calcium salts: calcium gluconate (8% solution), calcium lactate (10% solution), calcium glycero-phosphate, marble (di-calcium phosphate or limestone), and calcium carbonate ($CaCO_3$). In the case of marble, a maximum of 417 mg of calcium salt could be incorporated into 100 cc of soya milk with the pH adjusted to 6.7. The calcium content of the soya milk after fortification was 48 mg/100 cc. In the case of calcium carbonate, the corresponding figures were 167 mg, pH 6.8, and 46.2 mg/100 cc. In the authors' semi-large-scale preparations they used marble or calcium carbonate. They prepared about 400,000 lb of soymilk and used it for school feeding and other experiments.

The authors concluded: "The calcium content of soya milk can be raised by incorporation of different calcium salts after suitable adjustment of reaction. Di-calcium phosphate can be added so as to raise the level of calcium to about 80 mg. per 100 c.c. of milk. The fortified product has a pleasant taste and flavour. Other calcium salts, such as gluconate, lactate and glycero-phosphate, can also be incorporated, but the phosphate generally gives a better product. Calcium carbonate has the advantage that it can be easily incorporated–though at a lower level–without any special precautions in regard to previous adjustment of reaction.

"It was found that rats retained 82 per cent of the calcium and 87 per cent of the phosphorus ingested from fortified soya milk. The growth rates of rat on a calcium-free synthetic diet supplemented with cow's milk and soya milk respectively, on the same volume basis, were practically of the same order."

Note: This is the earliest study seen on the fortification of soya milk with calcium. Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1488. Rangnekar, Y.B.; De, S.S.; Subrahmanyan, V. 1948. Soya-bean ascorbicase. *Indian J. of Medical Research* 36(4):361-70. Oct. [17 ref]

• ***Summary:*** "No attempt seems to have been made to isolate and study the enzyme from germinating seeds, although its presence in germinating soya bean has been reported (Ito, 1938; Shen *et al.*, 1945). During the course of studies on vitamin C in soya bean and soya milk (Rangnekar *et al.*, 1948), it has been observed that the bean possesses a powerful ascorbicase activity which is dormant in the dry seed but develops quickly on germination. The important bearing which this aspect has on the final vitamin C values of the soya milk prepared from the bean after extended germination has also been discussed from the viewpoint of the scalding of bean prior to milk preparation. The present studies relate to the isolation, properties and chemical nature of soya-bean ascorbicase...

"In germinating soya beans the ascorbicase activity is developed practically to a maximum after 48 hours. After that period, it remains more or less stationary in the cotyledons but decreases in the sprouts." Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1489. Fairchild, David. 1948. Early experiences with the soybean. *Soybean Digest.* Nov. p. 14-15. [2 ref]

• ***Summary:*** "It was not until 1897 that I first saw soybeans growing... I found my friend Merton B. Waite had been trying to grow soybeans on his farm outside Washington [DC, in Maryland; see Fairchild, Oct. 1948], but with little success. They had been sent in by some American consul or missionary, I believe. At about the same time Dr. George T. Moore [who by 1903 was Physiologist in Charge of the Lab. of Plant Physiology, Bureau of Plant Industry, USDA, working on soybean root bacteria] in working on the root nodules of leguminous plants had discovered that the nodules contained bacteria. Waite and I talked over the matter of the failure of his soybeans and wondered if they might require special bacteria, so I wrote out to Japan and imported several pounds of soil from a soybean field.

"We made a little experiment, planting alternate rows of soybeans with and without the addition of this Tokyo soil. The effect of the imported soil was immediately apparent as the plants grown in it made a far better growth and had their roots covered with bacterial nodules, whereas the control were practically without any.

"Photographs had yet to come into any general use as records of agricultural experiments, but Waite had taken up photography as a hobby and made excellent photographs with his stand camera. So at harvest time he pulled up an equal number of soybean plants from the soil-treated rows and from the controls, and the only photographic record in existence of this little experiment (the first of its kind, I suppose, in the world) is this negative taken by Waite in the autumn of 1897.

"Although these experiments did not at the time lead to more extensive trials, they indicate the awakening of our interest in soybeans.

"In that fall of 1897 it was my privilege to organize the office of plant introduction in the Department of Agriculture. We began introducing a great number of different kinds of plants, among them, as I see from our inventories printed at the time, occasional small collections of soybeans from China and Japan. They were obtained mostly through correspondence with missionaries and consuls stationed there.

"At that time the Department had no testing ground near Washington where we could grow miscellaneous vegetables, including these soybean collections. It was not until several years had passed that facilities were provided on the so-called 'Potomac Flats' [in Washington, DC] and James H. Beattie, an enthusiastic young horticulturist, took over the planting of our introduced seeds.

"The soybeans did well and Beattie soon had on his hands a quantity of seeds. But we didn't know just what to do with these strange beans. When cooked in the way other beans were prepared they had a strange flavor that nobody seemed to like...

"It was not, I think, until the office of forage crop investigations was organized and C.V. Piper took charge that the soybean as a forage crop attracted attention and Beattie's experiments came to be looked upon as important. We planted larger patches of soybeans on a tract of land near Bethesda, MD...

"And then we ran into the difficulty of harvesting the soybeans. P.H. Dorsett of the office, one of the most ingenious and most indefatigable workers I have ever known, and his friend Rankin, who was running the little experimental farm, put their heads together and adapted a bean picker then in use–in California I think–and discovered that it was perfectly possible to harvest soybeans mechanically...

"I went out exploring again and my travels with Mr. Lathrop this time took me into the soybean fields of Japan. The tremendous importance of the crop as I saw it there made a great impression on me. Also the almost universal use of soy sauce, which Americans were just beginning to appreciate, fixed my interest...

"Dr. Yamei Kin, an extraordinary Chinese woman whose acquaintance I had made on the boat returning from Japan, made a visit to Washington and captivated us all by her enthusiasm over soybeans. She introduced us to 'tofu,' a delicate cheese which has not even yet attracted the attention it deserves from the American public.

"In 1903 A.J. Pieters came to me one day and told me of an amazing young Hollander who had been a gardener of the great geneticist, Hugo de Vries. He was then on his way back from a trip on foot to Mexico, and I wired him to come to Washington. For 13 years, as agricultural explorer of our office, Frank N. Meyer tramped from village to village over much of China. He gathered soybeans whenever he saw them, for he felt it was important to secure all the local

varieties he could for our plant breeders before they should have disappeared as the result of the spread of standard varieties he thought was bound to come.

"The importance of getting as many as possible of these local varieties and these, or selections from them, form, I believe, the basis of the very extensive soybean breeding that has been done by the various plant breeders of America."

Note: According to Vivian Wiser of the USDA and to the Washington D.C. Historical Society (13 Feb. 1991; phone 301-785-2068, Mrs. Offut), in 1897 Merton Waite lived in downtown Washington, D.C. in a built-up area. There is no record of his owning a farm outside Washington D.C., but he may have owned the farm as a sort of summer home or he may possibly have worked with the group at the USDA farm at Somerset, Montgomery County, Maryland. He was a plant pathologist and physiologist, in charge of diseases of orchard fruit trees, especially pears and peaches. There is a collection of David Fairchild's materials at Coconut Grove. His personal residence, The Kampong near Coconut Grove, is still (as of 1998) well preserved and open to the public. Address: "The Kampong," Coconut Grove, Florida.

1490. *Madison Health Messenger* (*Madison, Tennessee*). 1948. King Cotton welcomes King Soybean: American soybean convention highlights. Fall. p. 1-2, 5-6.

• ***Summary:*** The American Soybean Association held its 28th annual convention on 13-15 Sept. 1948 in Memphis, Tennessee (on the banks of the Mississippi River in southwestern Tennessee) at the historic and famous Peabody Hotel. Nearly 1,000 people attended, representing 28 states and 9 foreign countries. Madison College is in Tennessee, so representatives attended.

Memphis became the largest spot cotton market in the world, the largest cotton seed products market in the USA, and (at one time) the largest mixed feed center. In 1884 the Memphis Merchants Exchange was organized.

"Early in the twentieth century, experiments were made in this market in the use of blackstrap molasses, then a worthless by-product, mixing it with alfalfa hay and grain. It proved to be an excellent animal feed and was placed on the market as commercial mixed feed. Memphis can probably claim the honor of originating the mixed feed business that was the forerunner of the scientifically prepared stock feeds that now comprises one of our nation's largest industries." The feed industry created an enormous demand for protein which was largely derived from cottonseed meal. That source, however, proved inadequate, and so 'Necessity being the mother of invention' the soybean was introduced into American agriculture and began to be produced in considerable quantities about 1920.

"Having about the same protein content as cottonseed meal it has practically doubled the supply of protein available for mixed animals feeds. Geographically Memphis is the center of the production of high protein vegetable meals. The crops of cottonseed and peanuts of the Mississippi Valley in the South, blend here with The soybean crops of the North Mississippi Valley states. Memphis, therefore, is the natural location for the world's only protein futures market. The price of cottonseed meal and soybean meal established by this open market is recognized throughout this country, as well as abroad, as the basis price for trading in both commodities.

"Barge lines on the Mississippi River now handle a vast tonnage of merchandise and bring millions of bushels of grain and soybeans to Memphis for distribution throughout the South and for export via barge to the Port of New Orleans. So important is the Port of Memphis that millions of dollars are being spent to improve and enlarge its facilities for handling an ever increasing tonnage while 'Old Man River He Just Keeps Rolling Along.'

"Convention highlights: The Soybean Conventioners were welcomed royally by Mayor Pleasants, President Williams of the Memphis Commercial Exchange, and the friendly staff of Peabody Hotel. Ladies of the Memphis Commercial Exchange entertained the ladies attending the convention and it seemed from the gardenia corsages given to all the ladies (100 attending) by the Memphis Commercial Exchange, the luncheons, parties, tours. and the annual banquet, planned for the guests, that King Cotton himself and all Memphis bent their efforts to make Kong Soybean their honored guest. The conventioners were profoundly impressed with the beautiful city of Memphis and its never-to-be-forgotten genuine warm hospitality. With every exhibit space in the large hall taken with interesting displays of soybean products, machinery, supplies, and technical services offered, it was obvious that the industry was well organized and integrated to meet the heavy demand put upon its young shoulders.

"Efficient President Walley and aggressive Secretary Strayer of the American Soybean Association gave every evidence of providing the unusual leadership required for the development of a national organization to serve the soybean industry in the United States.

"President Walley reported fresh from his summer stay in Europe where he studied conditions relating to the interest and needs of the people with respect to the potential possibilities of supplying soybeans to aid in the recovery program. He said in part, 'From The best available information, France could use oilseeds equivalent to at least 10 or 15 million bushels of soybeans per year at the present time... soybeans have become more popular and more appreciated by the French.' In Italy it is about the same story. 'I was particularly impressed with the fine work being done by CRALOG (Christian Relief Organizations Authorized to Operate in Germany), cooperating with German food manufacturers in preparing soybean products in the most palatable form.' Large quantities of soy flour are being flown to Berlin over the blockade. Belgium processors

were pleased with the quality of America soybean varieties. 'In England I found many friends of soybeans and much progress has been made in the use of soy products in food.' 'One of the principal paint companies of England is very enthusiastic about the use of soybean oil in paint and is doing everything it can to encourage the growing of soybeans in South Africa in order to augment its needed supplies.'

"'... let us take the cost of protein for human consumption in Germany. At the time I was there 40 grams of protein purchased at the store in the form of full fat soy flakes cost only one-third to one-sixth as much as 40 grams of protein secured through any animal product and that cost was figured on the basis of soybeans being worth between $8 and $10 a bushel in Germany.' Here is a large fertile opportunity market that can mean much to the American soybean grower.

"'Gentlemen, in my opinion, this "cold war" is hotter than you think. Today national security is our most important business."

"'As producers of a potent weapon in that war [soybeans] let us carry on, keeping this in mind: a continued and assured production of soybeans in the United States can have much to do with the preservation of individual liberty here and abroad–a treasure more important than any immediate consideration of price or profit.'

"Two films, *Progress in Products,* the margarine film produced jointly by the American Soybean Association and the National Cotton Council, and the Allis-Chalmers film, *The Soybean Story,* were shown and, as you might surmise, Madison Foods comprised a part of the section of the story on the screen showing foods produced from soybeans.

Soybean milk experiment: Dr. Sasanka S. De of the Indian Institute of Science, Bangalore, India, and now a research fellow in the Department of Food Technology, Massachusetts Institute of Technology (MIT), reported on his experimental work with soybean milk. He found "that it was possible to prepare a fortified soya milk that would have a high supplementary value in the Indian diet comparable to that of cow's milk and without increasing the cost greatly... In the human experiments, nearly 6,500 infants, children and youth were used as subjects in Welfare Centers, Orphanages, and Schools."

"Visit to the world's largest cotton plantation: The last day of the conference was set aside for a field day in the rich Arkansas delta at the Arkansas Agricultural Experiment Station, Clarkedale, Arkansas, and at Wilson, Arkansas, to see the world's largest cotton plantation. In this rich northeastern section of Arkansas the flooding mighty 'Old Man River' deposited layer upon layer of black loam silt until it reached the incredible thickness of 1,200 feet (the average topsoil depth around the world is seven inches).

"At the Clarkedale experiment station the staff prepared test plots for this field day showing all the named commercial varieties of soybeans in the U.S. Flame weeding was also demonstrated..."

Over 500 guests attended the Soybean Banquet in the Ball Room of the Peabody Hotel. Madison Stakelets and Zoy-Koff were served. "Dr. Morse, father of the soybean, Chief Agronomist of the Department of Agriculture said, 'I always enjoy Madison Soybean Foods, especially Zoy-Koff for it takes the place of coffee which I do not use.' Dr. De of India, previously mentioned, said 'I liked your Stake-Lets very much and ate them with intense interest. Both the flavor and texture are so much like meat.'"

1491. *Madison Health Messenger* (*Madison, Tennessee*). 1948. Soybeans–A wonder food: Madison College works with the soybean. Fall. p. 1, 3-4.

• ***Summary:*** The soybean originated in China. However this "food of the ancients now seems destined to turn its antiquity into one of the most valuable foods in the modern world.

"The first actual mention in the literature of this wonder bean is recorded in Emperor Chen Nung's Materia Medica, written under date 3838 B.C. In the Legendary period of China the story of bandits attacking a merchant caravan has been handed down through generations in which it is said that the miracle wonder food, soybeans, were the lifesavers of some merchants, who, being surrounded and besieged by bandits until their own provisions were exhausted, noticed a vinelike plant bearing a legume which they had never seen before from which they made flour and baked cakes. Energized therewith, they fought off the enemy until help came. So the legend goes, soybeans became the staff-of-life in the great nation of China which still ranks first in population in all the world."

Soybean "oil is used extensively in Margarine in which it is used up to 80% in certain brands (Sure Good, sold by A. & P., and Nu-Maid, sold by Kroger)." Many brands of margarine contain 20-80% soybean oil.

Discusses the work of Henry Ford with soybeans and soyfoods. "His research staff made soybean milk and cheese, soybean-nuts, canned green soybeans, soybean sprouts, and a hundred other things."

"With the knowledge of widespread disease in the animals used for food by man, the founders of Madison College adopted a vegetarian diet supplemented with dairy products and eggs. For over 44 years this has been strictly adhered to in the food preparation for the students, faculty, workers, and patients at its 165 bed sanitarium and hospital... For over 30 years [since 1918 or before] Madison has been growing soybeans. They have occupied a place of prominence in its menus for many years." Then Madison began to manufacture soybean food for the public. More and large equipment was added. "In 1941 a new plant was started and today Madison Foods are produced in a fine daylight plant of modern design and construction..."

A list of Madison's foods is given, together with the weight of the can or bag in which each is sold: Kreme O'Soy,

Zoy-Koff, Stake-Lets, Yum, Zoyburger, Vigorost, Not-Meat, Soy Cheese [Tofu].

1492. *Madison Health Messenger* (*Madison, Tennessee*). 1948. A unique food developed [Kreme O'Soy]. Fall. p. 3.
• ***Summary:*** "Realizing the need of a milk substitute for infants and adults who could not tolerate cow's milk, Madison turned to the soybean and made an emulsion so near in appearance that even the choosy cat drinks its and licks its chops. Manufactured exclusively by Madison Foods and sold under the registered trade name of Kreme O'Soy, this creamy homogenized emulsion of soluble soybean protein fortified with dextrose, calcium phosphate, and soybean oil, is compounded to take the place of human and animal milk in human nutrition.

"In thousands of cases Kreme O'Soy has been used to replace human and cow's milk in feeding infants, children, youth, and adults, and the infants develop normally, children make the usual gains, and adults maintain normal weight and health. It contains less calcium than cow's milk because the human organism requires less calcium than the calf for which the cow's milk is obviously intended. However it contains almost twice as much iron as cow's milk and forty times as much copper.

A black-and-white photo shows a can of Kreme O'Soy. The text reads: "A tasty milk-like drink. Homogenized. Shake well." Two large photos show healthy babies raised on Kreme O'Soy. A table compares the composition of Kreme O'Soy, human milk, and cow's milk. A list of ingredients is given on p. 4: Soybeans, soy oil, dextrose, calcium phosphate, and sodium chloride.

1493. De, H.N.; Dutta, P.K. 1948. Investigation on soyabean-milk powder. *Science and Culture* (*Calcutta*) 14(6):248-49. Dec. [2 ref]
• ***Summary:*** Describes how a "soyabean milk powder" was prepared. It has a "pleasant odour and taste." The average composition was: Protein 41.70%, fat 33.35%, carbohydrate 18.42%, and ash 4.37%.

"The biological value and the digestibility of the soyabean milk powder protein as deduced by the balance sheet method on rats were found to be 69.7 and 89.2 respectively."

Note: This is the earliest English-language document seen (Aug. 2013) that contains the term "soyabean milk." Address: Nutrition Research Unit, Biochemical Lab., Dacca Univ., Dacca, India.

1494. Genin, G. 1948. Le lait de soja ou lait végétal [Soymilk or vegetable milk]. *Revue Internationale du Soja* 8(47):7-9. [Fre]*
Address: Ingenieur Chimiste E.P.C.I.

1495. Karnani, B.T. 1948. Investigations on vegetable milks. PhD thesis, Bombay University. *
• ***Summary:*** The author studied the utilization of calcium from soya-bean milk by young human subjects, 7-8 years of age, who received the milk as a supplement to the basal diet. It was found that when 363.5 mg of calcium from either cow's milk or soya-bean milk was added to the basal diet per day, the average daily calcium balance was changed from -54.5 mg to +24.0 mg in the case of soya-bean milk and to +28.9 mg in the case of cow's milk. The availability of calcium from the 2 milks was practically the same, as the average utilization of supplementary calcium from soya-bean milk for affecting positive calcium balance was 23.1% and that from cow's milk was 23.8%. Address: Bombay, India.

1496. **Product Name:** Loma Linda Soyagen. Soy Beverage Powder for Adults [Liquid, or Powdered; All-Purpose/Plain, Malt, or Carob].
Manufacturer's Name: Loma Linda Food Co.
Manufacturer's Address: 11503 Pierce Place, Arlington, California. Phone: 714-687-7800 (3/88).
Date of Introduction: 1948.
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable.
New Product–Documentation: Today's Food. 1964. Autumn. p. 5; All purpose or malt available. Today's Food. 1966. Carob flavor now available; Wholesale price list. 1968. Soyagen Liquid sold in 17 oz. and 30 oz. cans for $0.36 and $0.42 retail respectively. Powder sold in 1 lb or 4 lb cans for $1.05 or $3.61 retail respectively. Label for a can, 8 by 10 inches, color. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. "Vitamin & Mineral Fortified." Ad (full page, color) in Bestways. 1988. March. p. 11. "Soyagen. Good-tasting and so good for you too." Available in 3 flavors–All purpose; no-sucrose (with no cane or beet sugar), and carob. Photos show cans.

Burnett (1951, p. 998) notes that a 1948 label for liquid canned Soyagen, made by Loma Linda Food Co., gave the following composition: Water 88.6%, protein 3.03%, fat 3.48%, carbohydrates 4.53%, ash 0.36%. Vitamins (all in units per liquid quart): vitamin A 2000 USP, thiamine 500 mcg (micrograms), riboflavin 1000 mcg, vitamin D 500 USP. More sophisticated versions of the same product with the same name appeared in 1963 (All Purpose), 1965 (Carob flavor), and 1977 (Plain).

1497. Maillard, J. 1948. Le lait de soja [Soybean milk]. *Lait* (*Le*) 28(279-80):585-88. [30 ref. Fre]

1498. **Product Name:** Soy Milk (Dried, or Liquid).
Manufacturer's Name: Natural Foods Institute.
Manufacturer's Address: Olmstead Falls, Ohio.
Date of Introduction: 1948.
New Product–Documentation: Soybean Blue Book. 1948. p. 102. Not clear whether this company is a manufacturer or

a handler.

1499. **Product Name:** Soylac (Powdered Spray-dried Mixture of Soyolk and Cereal Flour).
Manufacturer's Name: Soya Foods Ltd.
Manufacturer's Address: 40 St. Mary Axe, London, E.C.3., England. Phone: AVEnue 4971.
Date of Introduction: 1948.
How Stored: Shelf stable.
Nutrition: Protein 26%, fat 11%, total sugars 26%.
New Product–Documentation: Ad in Confectionery News (England). 1948. Began March 5th and ran at two-week intervals to Oct. 1, then at different intervals until 4 March 1949. "The ideal ingredient for all Ice-Cream mixes. Complete recipes available from the manufacturers."

Staines. 1950. Ice-Cream Making and Selling. p. 21. "There is also a proprietary powder on the market based on soy flour. Known as 'Soylac,' it is specially prepared, pasteurized and spray dried and is treated to increase solubility." Soybean Blue Book. 1953. p. 103. Soy Flour Mixes. Soya Foods Ltd, 40 St. Mary Axe., London, E.C. 3, England. Plant at Cardiff, South Wales. Affiliate of Spillers Ltd. States that Soylac is a spray-dried mixture of Soyolk and cereal flour.

Indian Council of Medical Research, Special Report Series No. 31. 1955. p. 3. Based on a personal communication (in which the product name is given as Soyalac) from S.S. Bhatnagar and F.G. Donnan. "Early in the twenties, Donnan and Bhatnagar processed soya-bean to yield a product which was subsequently marketed in the United Kingdom under the name 'Soylac.' This type of product is still being produced, though on a relatively small scale, in the U.K."

Letter from Mrs. I.B. MacKay. 1983. May 24. "Soylac was a milk-like powder for use in cakes and confectionery. It was last produced in 1952."

Note: This is the earliest known soy protein product used in making ice creams.

1500. Desikachar, H.S.R.; De, S.S.; Subrahmanyan, V. 1948. In vitro digestibility of soya bean milk and the tryptic inhibitor in soyabean. *Annals of Biochemistry and Experimental Medicine* (*Calcutta*) 8(3/4):93-96. [6 ref]
• ***Summary:*** "The poor in vitro digestion of soya milk is due to the presence of the tryptic inhibitor in it... Under in vivo conditions, however, the soya milk protein is nearly as digestible as cow's milk." Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1501. Engelbeen, M. 1948. Le soja au Congo Belge [Soya in the Belgian Congo]. Brussels, Belgium: Ministere des Colonies. 94 p. 25 cm. [200 ref. Fre]
• ***Summary:*** Contents: Preface. 1. The soybean: Habitat and acclimatization: Genus and species, sub-species and varieties, habitat and acclimatization. 2. The principal factors in soybean production: Climate, nature of the soils, symbiotic bacteria, selection and hybridization, cultural methods, enemies and diseases. 3. Seed storage and multiplication. 4. Nutritional value of soya: Generalities, soymilk, tofu, okara (*tourteau de soja;* the pulp remaining after filtering off soymilk), soy oil, soy flour. 5. Industry and commerce. 6. Perspectives on soya in the Belgian Congo. Summary. Bibliography consulted.

The section titled "Introduction and Acclimatization to the Belgian Congo (p. 30) states: "Known in Africa for 30 years, the cultivation of soya has not yet passed the experimental stage. Numerous introductory trials were conducted with multiple varieties which originated in East Asia and the United States.

"Soya was mentioned for the first time in the Belgian Congo by Commandant Lemaire [Charles François Alexandre Lemairé], who first encountered them at Stanleyville [later renamed Kisangani] in 1908. It was introduced, shortly afterwards, to the Eala botanical garden (near Coquilhatville). The first agronomic trials took place in 1915; the agronomist Mestdagh, at Lusambo (Sankuru [Kasai]) harvested 1,472 kg of yellow soybeans and 1,786 kg of black soybeans."

Note 1. I.N.E.A.C. stands for Institut National pour l'Étude Agronomique du Congo Belge.

Note 2. This document contains the second earliest date seen for soybeans in Zaire (1908). The source of these soybeans is unknown. These soybeans were probably being cultivated in 1908, but we cannot be sure. Address: Ingenieur agronome colonial Lv., Chef du Bureau d'Etudes de l'I.N.E.A.C.

1502. Jacobson, Norman L. 1948. Modified soybean-oil-filled milks and their effects when fed to dairy calves. PhD thesis, Iowa State University. In: Doctoral Dissertations Accepted by American Universities, 1948. *
• ***Summary:*** Most soy-based milks used as calf-milk replacers were made from the protein portion of the soybean. This type substituted soy oil for butterfat in cow's milk. Address: Iowa State Univ., Ames, Iowa.

1503. Rangnekar, Y.B.; De, S.S.; Subrahmanyan, V. 1948. Studies on vitamin C in soyabean and soyamilk. *Annals of Biochemistry and Experimental Medicine* (*Calcutta*) 8(3/4):99-104. [4 ref]
• ***Summary:*** 72 hours germination of the beans (preferably the white variety) yields a fair quality milk containing nearly optimum amount of vitamin C–22.6 mg per litre–which is appreciably higher than the average value given by cows' milk.

Note 1. This is the earliest English-language document seen (Aug. 2013) that contains the word "soyamilk." It appears in both the title and the text. Address: Dep. of

Biochemistry, Indian Inst. of Science, Bangalore.

1504. Rangnekar, Y.B.; De, S.S.; Subrahmanyan, V. 1948. Stability of vitamin C in soyamilk as compared to cows milk. *Annals of Biochemistry and Experimental Medicine* (*Calcutta*) 3(2/4):105-08. [6 ref]
• ***Summary:*** It has been known for quite some time that copper (Cu) and sunlight are instrumental in causing a severe destruction of vitamin C in cowsmilk. The high stability of vitamin C in soyamilk against both types of destructive agencies has pointed out the presence of vitamin C protecting factor or factors in soyamilk which are absent in cowsmilk. Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1505. Rotondi, Pietro. 1948. Vegetarian cookery. 2nd ed. Hollywood, California: Published by the author. 150 p. Recipe index. 21 cm. 1st edition was 1942.
• ***Summary:*** This book is identical to the original 1942 edition except that: (1) It is now published in paperback by the author; (2) A color photo of the smiling author, standing at the door of his office by a sign "Dr. P. Rotondi, Chiropractor, Nature Cure," appears on the front cover; (3) The author's business card, which includes the address of his chiropractic office, appears at the bottom of the copyright page; (4) The last page of the index, p. 151, was accidentally not printed. Address: 1916 Vista Del Mar Ave., Hollywood, California. Phone: 463-2972.

1506. Watkins, James M.; Severen, Mario Lewy van. 1948? Producción y usos del frijol soya en El Salvador [Production and uses of the soybean in El Salvador]. San Salvador, El Salvador: Ministerio de Agricultura e Industria, Centro Nacional de Agronomia. 12 p. Undated. 25 cm. [Spa]
• ***Summary:*** This work consists of a contribution of the National Center of Agronomy (*Centro Nacional de Agronomia*) of El Salvador that was established and works with the collaboration of the government of El Salvador and the Office of Foreign Agricultural Relations of the United States. The present cooperative investigations were carried out using funds provided by the Interdepartmental Committee of the United States for Cultural and Scientific Relations together with financial support provided by the government of El Salvador. Address: Santa Tecla, El Salvador.

1507. Desikachar, H.S.R.; Subrahmanyan, V. 1949. Infant feeding experiments with soya-bean milk. *Indian J. of Medical Research* 37(1):77-83. Jan. [10 ref]
• ***Summary:*** The authors, conducting feeding experiments in 30 children ages 1-3 years, found that soya-bean milk protein was 86% as much utilizable as cow's milk protein. Address: Dep. of Biochemistry, Indian Inst. of Science, Bangalore.

1508. Raymond, Jack. 1949. "Ersatz" milk and meat with taste of genuine foods made in Germany. *New York Times.* Feb. 13. p. 1, 20. Sunday.
• ***Summary:*** Working to overcome food shortages in Germany, "a group of Allied and German scientists has produced and is ready to distribute two food substitutes that are said to taste and have the same nutritious qualities as milk and meat...

"'This is potentially the greatest innovation in human feeding since people began to cook,' declared Gwynn Garnett, an official at the United States Military Government Food and Agriculture Branch... 'These synthetic foods can be a boon not only to the people of Germany but to hungry areas throughout the world. They are cheap and could be useful in the United States too.'

"The new foods consist of combinations of protein extracts from such diverse sources as soy beans, peanuts, wood, yeast, wheat, corn, and coal."

Henry C. Sherman, Prof. Emeritus at Columbia University and an outstanding authority on ersatz foods, notes that these are not new and gives extensive comments. Address: Frankfort, Germany–Special to the New York Times.

1509. Smith, Allan K. 1949. Oriental use of soybeans as food: Notes on Oriental farming practices. II. China. *Soybean Digest.* March. p. 26-28, 30, 32, 34.
• ***Summary:*** Contents: Soy sauce in China. Sweet flour paste–Tien Mien Chang [Chiang]. Soy or vegetable milk (incl. Willis Miller, yuba). Soybean curd or tofu (incl. use in Buddhist restaurants to look like meat, poultry, or fish dishes).

Soybean cheese [fermented tofu]. Fen-t'iao from mung beans (vermicelli). Fermented soybeans [fermented black soybeans] (made from small black soybeans). Vinegar fermentation process.

Concerning soy milk: "The Chinese National government has taken an active interest in soy milk for use by its army, Willis Miller, with offices and business connections in the Henningsen Produce Co. in the Dollar Building at 51 Canton Road, Shanghai, has just completed building a soy milk plant for the Chinese government. The process is patterned after that of the International Nutritional Laboratories [Dr. Harry W. Miller] at Mt. Vernon, Ohio, for making a powdered or spray-dried milk. Mr. Miller is also supervising the installation of a vegetable canning plant for the same purpose." Address: Northern Regional Research Lab., Peoria, Illinois.

1510. Culbertson, Raymond E.; Smith, Allan K. 1949. Oriental uses of soybeans as food: With attention to fermented products. Notes on Oriental farming practices. V. Korea. *Soybean Digest.* June. p. 15-18, 20, 22.
• ***Summary:*** Contents: Introduction. Breeding work.

Topography. Land use. Soybean varieties. Climatic relations. Soils of Korea. Cultural practices. Marketing. Soybeans as foodstuff. Soya sauce. Green pods on the bush. Bean sprouts. Parched beans. Curd (soybean curd [tofu]) and milk. Kochuchang. Other uses.

"Prior to World War II, North Korea planted (1940-44 averages) slightly more than 905,000 acres of soybeans annually which yielded some 7,700,000 bushels. During the same 5-year period South Korea was planting 626,000 acres which yielded a little over 5 million bushels. The latest available figures (1947) for South Korea show a production of 4,480,000 bushels from 662,000 acres."

Concerning food uses of soybeans in Korea: "Soya sauce:... is found on the tables of all Koreans, where it is used quite generally on rice, sukiaki [sukiyaki], fish, chicken, and other meats and for the flavor it adds to the soup. It is a very popular appetizer. Most families make soya sauce and are allocated 2.7 kilograms of salt per person annually for this purpose. Yearly consumption is about 6 liters per person. In addition to homemade soya sauce, a supply is also available from many small factories making it. There are more than 10 plants in Seoul, the capital city. Making soya sauce in the home starts about January or February. It is the custom at this time to take a batch of beans and boil them in water until soft, following which they are mashed and formed into a ball, placed in a rice-straw bag and hung up in a heated room to ferment for a 3-month period. Following fermentation, the ball is cut open, broken into pieces and allowed to dry in the sun. When dry, water and salt are added, inoculant (yeast) introduced and the mixture allowed to stand in an earthen crock 2 to 3 months. The liquid is then poured off, boiled about 2 hours and filtered, following which it is considered to be sauce. The sediment remaining in the crock is known as paste. This is used primarily for making soup. In both home and commercial production of soya sauce parched and browned wheat or barley is frequently used in conjunction with the soybeans.

"Green pods on the bush: It is common practice to market early beans on the bush. The plants are pulled, dirt shaken from the roots and the leaves removed. The braches are tied with a string (usually hemp) and the plants are taken to market where they are sold by the bunch. The housewife prepares them for eating by picking off the pods and boiling, and the plant stem is used for fuel.

"Bean sprouts: Bean sprouts are much in demand especially during the winter months. They are used in combination with meat, Chinese cabbage, spinach, turnips, soups and various other cooked dishes. Sprouts are nourishing and supply much-needed vitamins to the Korean's usual polished rice diet. In some instances the beans are left on the sprouts, in others they are removed. The beans are sprouted in central places and usually peddled in two-wheeled, man-drawn carts. Sprouting requires about a week. They are sold on a weight basis.

"Parched beans: For parching, soybeans are simply placed in a pan over a fire and heated slowly until the skin breaks and part of the beans are slightly blackened. They are eaten like peanuts or mixed with other foods. Most varieties are quite palatable and well liked for parching. Note: The Korean name for parched soybeans is *kong*.

"Curd and milk: Soybean milk is consumed in Korea but not so extensively as in China. The milk is made in a manner similar to the Chinese method which was described in an earlier report.

"A large percentage of the soybeans' growth in Korea are consumed as soybean curd. In addition to the huge quantities made at home, curd is also made in literally hundreds of small factories. In Seoul alone there are more than a hundred. Small units, which on the average employ five men, can work up about 10 bushels of soybeans daily.

"Kochuchang: Practically every Korean family makes kochuchang. Boiled [soy] beans are mashed and hung up in sacks to cure well for 2 or 3 months. This material is then broken up, dried in the sun, and ground to a fine powder, usually in an old type hand-operated stone mill. Red peppers are ground fine, the lot is mixed and salt and water added, then it is allowed to stand in crocks 2 to 3 months. To prepare kochuchang for the table, it is taken from the crock and boiled with the addition of ground meat and sugar, if the latter is available."

Note: This is the earliest (and only) English-language document seen (March 2009) that uses the word "kochuchang" to refer to Korean-style red pepper and soybean paste (miso).

Photos show: (1) A man standing in a field of sorghum interplanted with soybeans in Korea. (2) A Korean woman examining different varieties of soybeans in woven baskets in the market place in Seoul, Korea (Aug. 1948). (3) A boy carrying a wooden bucket on each end of a wooden shoulder pole. The buckets are used for transporting night soil to the land in Korea. (4) Soybean curd (cut into cakes) and vegetables in the market place at Seoul, Korea (Aug. 1948).

An outline map of South Korea and its provinces shows the principal varieties of soybeans grown, the section where each variety is grown, acreage and production. A chung or chungbo is 2.45 acres, and a suk is 5 bushels. The yields appear very low but this may be due to the custom of interplanting soybeans with other crops.

Tables show: (1) The 15 chief varieties of soybeans grown in Korea. For each is given: The name of each variety (romanized, with a translation of each word). Days to maturity. Flower color. Stem length. Color of seed coat and hilum. Weight of 1,000 seeds. Yield per acre. Rank in test. Year approved (1921-1939). For example: Chang Tan Paik. "Chang Tan" is the name of a town in Korea; Paik means "white."

(2) Analytical data for improved varieties of soybeans on the basis of the size of the bean. The 3 sizes are large,

medium, and small. Examples of locations are: Southeast Korea. Northeast Korea. Central Korea. Southeast Korea. Address: Northern Regional Research Lab., Peoria, Illinois.

1511. Smith, Allan K. 1949. Oriental methods of using soybeans as food: With special attention to fermented products. Notes on Oriental farming practices. *USDA Bureau of Agricultural and Industrial Chemistry.* AIC-234. June. 40 p.
• ***Summary:*** Page 1 states: "The text of this bulletin, with slight revisions, is as it appeared serially in *The Soybean Digest,* issues of February through June, 1949, although many additional photos appear herein. It is processed with the publisher's permission." Note: An enlarged 65 page edition was issued in July 1961.

Photos show: (1) Nine people in a field cultivating soybean with hoes near Nanking, China. All of these workers but one are women. July 1948. (2) "The three-man shovel, Korean version of the turning plow. The motive power is supplied by the mean holding the ropes." (3) A man and donkey threshing wheat with a stone roller. (4) A water buffalo and man pumping water from the rice fields. All parts of the pump and elevator are made of wood. Near Nanking, China, July 1948. (5) Windmill used for pumping water. The sails or vanes are mats woven from grass. (6) Children with baskets of soybean sprouts and inflated Chinese national currency in the market place at Canton, China. Aug. 1948. (7) Soybean milk for sale on the streets of Canton, China. Aug. 1948. It is in bottles, carried using a shoulder pole. (8) A wedge press for oilseed operations at Canton, China. Preformed disks of the flaked or ground meal are inserted in the slot and turned clockwise in the hollow log; pressure is applied with wooden wedges. July 1948. (9) Equipment for steaming soybeans preparatory to making soy sauce. Steam is passed upward through the wooden tanks from a boiler beneath. Peiping, China. 1948. (10) Soy sauce preparation. Steamed soybeans are placed in woven baskets or trays for 3 to 7 days to permit the growth of the mold *Aspergillus oryzae.* Nanking, China. July 1948. (11) Many earthenware jars for soy sauce production in a courtyard surrounded by houses. "Following the growth of a thick mold on the soybeans, they are mixed with parched and cracked wheat and placed with salt solution in earthenware jars for fermentation, which lasts 3 months to 2 years. Soy paste [chiang] is fermented in a similar manner but it contains less water and the fermentation period is about 3 months. Shanghai, China. Aug. 1948." (12) "Soybean curd and vegetables displayed for sale in market place, Seoul, Korea. Aug. 1948." (13) Squares of soybean curd covered with white mold on round, woven bamboo trays. "This is the first step in making soybean cheese. Canton, China, Aug. 1948." (14) Two rows of large hydraulic presses in the mill of the China Vegetable Oil Company, Shanghai. June 1948. (15) Men loading round, hydraulic-pressed soybean cakes onto a truck, on the Bund. Shanghai, July 1948. (16) Men and an ox preparing a seed bed at a Japanese agricultural experiment station near Tokyo. 1948. (17) "A miso plant in Tokyo. The large tubs [vats] in foreground are used for the fermentation of miso. A part of this plant was destroyed by bombs during the war. Aug. 1948." (18) Three men standing by presses destroyed during bombing raids over Tokyo. These presses formerly were used for filtering monosodium glutamate. July 1948. (19) Many stacked wooden tubs of ajinomoto (monosodium glutamate) ready for shipment at a plant located between Tokyo and Yokohama, Japan. Aug. 1948. This plant had a maximum production of 7.5 million pounds of ajinomoto in 1937. (20) Agricultural Experiment Station near Seoul, Korea. This station was built by the Japanese during their occupation of Korea. Later it was taken over and administered by the newly formed Korean Government. Aug. 1948. (21) A Korean boy standing in a field of sorghum interplanted with soybeans; this is a common practice in Korea. 1948. (22) A boy using a shoulder pole to carry two wooden buckets of night soil to the land. Korea. 1948. (23) A wooden shopper looking over the different varieties of soybeans in the market place at Seoul, Korea. Aug. 1948. (24) Outline map of Korea showing where principal varieties of soybeans are grown, the section in which each variety is found, the acreage, and production. Address: Head of Meal Products Investigations, Oilseed Crops Lab., Northern Utilization Research and Development Div., Peoeia, Illinois.

1512. Chang, Irene C.L.; Murray, H.C. 1949. Biological value of the protein and the mineral, vitamin, and amino acid contents of soy milk and curd. *Cereal Chemistry* 26(4):297-305. July. [35 ref]
• ***Summary:*** Fresh tofu coagulated with calcium chloride contained the equivalent of about 172 mg of calcium per 100 gm, whereas that coagulated with magnesium chloride contained the equivalent of about 60 mg of calcium per 100 gm. Address: State College of Washington, Pullman, Washington.

1513. Gandhi, Mohandas Karamchand. 1949. Diet and diet reform. Ahmedabad, India: Navajivan Publishing House. xii + 176 p. July. See p. 32, 40-41, 51-54, 136-48. 22 cm.
• ***Summary:*** The purpose of this anthology is "To bring together Gandhiji's writings [articles, essays, and correspondence] on the subject in... *Young India* and *Harijan* [1935]. Gandhiji's writings are included in Part I of this book and those of others in Part II." See also "The Moral Basis of Vegetarianism" (p. 8-12). Gandhi lived 1869-1948. Address: Bombay, India.

1514. International Nutrition Laboratory, Inc. 1949. Milk-equivalent nutrition for the whole family: The only spray-dried soya milk (Ad). *Soybean Digest.* Sept. p. 89.
• ***Summary:*** A 2/3-page vertical ad. A large photo near the

top shows cans of Miller's Soyalac Soya Milk (Spray Dried) in All Purpose and Malt Flavors and a can of Soyalac Infant Food.

The text reads: "Scoring again, the Soybean brings everyone, everywhere a delicious, palatable drink equaling cow's milk in nourishing qualities. This spray-dried all-vegetable milk is Different from liquid soy milks and is the only one which has been granted a U.S. Patent. It is an excellent, non-allergic protein beverage for the entire family. Available in two distinct flavors to suit most tastes–All-Purpose and Malt Flavor."

Note: This is the earliest English-language document seen (Aug. 2013) that contains the term "protein beverage," which probably refers to soy milk.

"Miller's Soyalac is thoroughly processed by being atomized into a sterilized chamber resulting in a quickly soluble powdered milk. Best of all it is easily digested because it forms a soft, fine curd in the stomach which speeds up absorption, giving fast fatigue-relief.

"Infant Food–Choice of doctors who know! Non-allergic and quickly assimilated by the most sensitive baby's stomach, Soyalac Infant Food assures the baby of healthy growth and balanced development. It is vacuum-packed and fortified with essential elements and vitamins. Babies love it–and thrive on it!

"Other Soya Bean Products we pack include: Green Soya Beans, Giant Select Soya Beans, Soya Beans in Tomato Sauce, Sandwich Spread and Vegetable Cheese."

A small illustration (line drawing) shows the outside of the plant in Mt. Vernon, Ohio. Address: Mt. Vernon, Ohio, Manila [Philippines], Shanghai [China].

1515. *Madison Health Messenger* (*Madison, Tennessee*). 1949. The story of Madison Foods. Vol. 49-3. p. 1-6. Undated.

• ***Summary:*** "Over 45 years ago [actually in 1904] a group of educators founded an institution in Madison, Tennessee, where special study was given to healthful living. They began by operating a school on a farm. Later a sanitarium was built. And, finally, a food production department was opened, now known as Madison Foods... People who came to the sanitarium were helped by the treatments and the plain wholesome food. However, because when they returned to their homes, they were unable to obtain some of the foods which proved helpful, many sent their orders to us for these foods. The popularity of the foods increased and now they are available in many stores throughout the 48 States."

"In 1941 a building program was started to completely rebuild the Madison Foods plant on the original site. Modern offices, adequate storage and shipping facilities, a five story production section, complete revamping of processing equipment, and a re-arrangement of the plant were realized step by step, and now the Madison Food plant, built of concrete, blocks, and steel, with tile and plastered interior, and a building of modern design for greater efficiency, stands as a monument to the devotion of its founders and the perseverance of those who carried the torch onward.

"A character builder: As part of the vocational training program at Madison College, Madison Foods is primarily concerned with building strong physical bodies and strong minds."

Photos show: (1) East side view of the new Madison Foods plant. (2) A can (with label) of Stake-Lets (the original gluten-soy product, a complete protein food, sold in 14, 20, and 30 oz sizes). (3) A young man standing next to a large autoclave used for cooking canned foods. (4) Four young ladies hand picking peanuts to insure quality. (5) Front view of the new Madison Foods plant ranging from 2 to 5 stories in height. (6) A can of Yum (14 oz, made with grains, legumes, and vegetables). (7) A young man operating an homogenizer that is homogenizing Kreme O'Soy. (8) A student operating a machine that is labeling cans.

Page 5 contains a description of the various products, with their ingredients, made by Madison Foods: Zoy-Koff–an alkaline beverage used in place of coffee. Contains no coffee–no nerve stimulants. Two grinds–regular and fine. Prepare like coffee. Ingredients: Soybeans, bran, brown

sugar. 1 lb bag.

Kreme O'Soy–a rich-bodied, homogenized soy beverage. May be used in place of milk. Ingredients: Soybeans, soy oil, dextrose, calcium phosphate, sodium chloride. 20 oz cans.

Zoyburger–excellent for sandwich spread, serve like steak with onions. Ingredients: Soybeans, gluten, raw peanut meal, vegetable seasonings. 14 & 20 oz cans.

Stake-Lets–a combination of gluten and soybeans sliced in meatlike sauce. Ingredients: Gluten, soybeans, soy sauce, seasonings. 14, 20 & 30 oz cans.

Not-Meat–a smooth-textured loaf for vegetable roasts, salads, sandwiches, etc. Ingredients: Whole peanut meal, soybeans, and seasonings. 14 & 20 oz cans.

Vigorost–a fibrous-textured vegetable steak used like meat. Also for sandwiches, salads, etc. Ingredients: Gluten, soy cheese, whole peanut meal, seasonings. 14 & 20 oz cans.

Yum–a mild bologna-like-flavored, meatless loaf, used hot or cold. Ingredients: Soybeans, gluten, soy cheese, whole peanut meal, seasonings.

Cheze-O-Soy–a curd made from soybean milk, to be used in salads, sandwiches, spaghetti, etc. Ingredients: Coagulated soybean proteins, seasonings. 14 & 20 oz cans.

Bite-Size Stake-Lets–gluten and soy bits in rich sauce simulating stewed bits of beef in rich gravy. A choice food. 20 oz cans.

"A statement of ingredients, use and recipes is on each package and can of Madison Foods."

1516. Adolph, William H. 1949. Important aspects of nutrition research in China. *Science and Technology in China* (*Nanking*) 2(5):80-83. Oct. [53 ref]

• ***Summary:*** One section titled "Vegetarian diets" discusses the nutritional value of soybeans and soybean milk. Table 1 shows the percentage of total calorie intake provided by four food groups: Cereals and legumes 88%, vegetables 5%, fats 4%, meat and eggs 3%. Table 2 shows the average per capita daily nutrient intake: Calories 2,500, protein 80 gm, fat 30 gm (11% of calories from fats), carbohydrates 480 gm, calcium 400 mg, phosphorus 1,200 mg, iron 20 mg. Address: Peking Union Medical College, Peking, China.

1517. Chatfield, Charlotte. 1949. Food composition tables for international use. *FAO Nutritional Studies* No. 3. 56 p. Oct. [158* ref]

• ***Summary:*** A table on page 11 shows "Food composition in terms of retail weight ("as purchased") for soybeans and various soybean products: Whole seeds, dry; Flour, full fat (seed coat removed); Flour, low fat–grits, flakes (partially defatted); Curd, tofu (yield 3.5); Fermented beans–Japanese natto; Fermented beans–Chinese tsiang [chiang]; Soybean milk (yield 7.5); Paste, miso (made with small amounts of rice or other starchy materials) (yield 2.5); Shoyu sauce (yield 3.5). The following are given for each product: Calories per 100 gm, percentage of protein and fat, and yield from 1 kg of soybeans.

Similar but expanded information is given on p. 25, including carbohydrate, fiber, ash, and refuse. Address: Nutrition Div., FAO, Rome, Italy.

1518. *Vegetarian News Digest* (*Los Angeles*). 1949. Health in the news: The soy bean–wonder food of many uses. 1(9):21. Sept/Oct.

• ***Summary:*** "Allan K. Smith of the Northern Regional Research Laboratory, Peoria, Illinois, recently returned to the United States from the Orient where he learned of countless uses for soy beans. In China, Japan and Korea he found soy beans being fermented, ground, and processed in various ways. In its motherland, Smith discovered, the soybean is a source of flour and cake, oil, bean sprouts, vegetable milk,

various sauces and pastes, curd, cheese, and several other foods." Describes how soy milk is made in China. One restaurant that Smith visited prepared more than 25 different dishes from soybeans.

1519. Dawn, W.J. 1949. Soy milk in Africa. *Soybean Digest.* Nov. p. 66.
• ***Summary:*** The author of this letter, who runs a home for rescued children of leprous parents, wants to learn how to make milk from soybeans or soy flour to replace expensive Klim. "We can grow the soybeans here and we can also buy them." Address: Heart of Africa Mission, Belgian Congo.

1520. Gouri Devi, S.; Ganguly, J.; De, S.S. 1949. Studies on the nutritive value of germinated soya-bean and soya-milk. *Annals of Biochemistry and Experimental Medicine* (*Calcutta*) 9(5-6):213-216. Oct/Dec. [9 ref]
• ***Summary:*** "The effect of germination on the nutritive value of soyabean was studied by rat growth method and it was found that while raw soyabean powder [flour] gives a biological value of 0.95, after 48 hours germination the biological value of the soyabean powder becomes 1.33.

"The effect of germination on the nutritive value of soyabean milk was studied and it was found that on 48 hours germination the biological value becomes 1.41 where as cow's milk (from Imperial Dairy Research Institute) give 1.44.

"The effect of supplementing milk prepared from germinated soyabean with 20% cow's milk was studied and it was observed that supplementing increases the biological value." Address: Food Technology Section, Indian Inst. of Science, Bangalore.

1521. **Product Name:** Malted Milk (Soymilk), and Meat Substitutes.
Manufacturer's Name: Brilliant Foods (Formerly named Tastee Soy Foods).
Manufacturer's Address: 354 E. Girard Ave., Philadelphia, Pennsylvania.
Date of Introduction: 1949.
New Product–Documentation: Soybean Blue Book. 1949. p. 102. Not clear whether this company is a manufacturer or a handler.

1522. **Product Name:** Soy Powder for Vegetable Milk. Renamed Vi-Vi-Ta by 1958.
Manufacturer's Name: Vegetable Products Co.
Manufacturer's Address: 24 Windsor St., P.O. Box 145, Rochester, New York.
Date of Introduction: 1949.
New Product–Documentation: Soybean Blue Book. 1949. p. 102. Also listed in 1960, 1965.

1523. Balzac, S.S.; Vasyutin, V.F.; Feigin, Ya. G. eds. 1949. Economic geography of the USSR. American edition, edited by Chauncy D. Harris, translated from the Russian by Robert M. Hankin and Olda Adler Titelbaum. New York, NY: Macmillan Co. xlv + 620 p. See p. 341, 391, 404-05. Preface by John A. Morrison. 22 cm. [30+* ref. Eng]
• ***Summary:*** The section on the soybean is in Chapter VI, "Distribution of Agriculture in the USSR," under Section 6. "Distribution of Industrial Crops." "The soybean is a new crop. It has highly diverse uses in the food industry. Edible and industrial oils, flour, milk products, and other products are made from its seeds. Unripened soybeans are suitable for canning. The young plants serve as fodder for livestock. Before the Revolution sowings were insignificant. In 1937, 173,000 hectares were sown in the USSR. The soybean requires much heat–an annual total of daily temperatures not less than 2,500º. The chief regions of its distribution are the Far East (about half of all sowings), the southern part of the Ukrainian SSR, and Krasnodar Kray."

1524. Chang, Irene C. 1949. Nutritive value of soymilk and soybean curd. PhD thesis, Washington State University. 25 p. In: Doctoral Dissertations Accepted by American Universities, 1949. *
Address: Washington State Univ.

1525. *Indian Research Fund Association.* 1949. Report on soya milk, their preparation, properties and nutritive value. *

1526. Castanie, H. 1950. Le lait végétal [Vegetable milk]. *Revue Internationale des Produits Coloniaux* 25(245):39-40. Feb. [Fre]
Address: Ingénieur E.C.P.

1527. **Product Name:** Dr. Fearn's Pure Soy Bean Milk Powder (for Making Soy Bean Milk).
Manufacturer's Name: Fearn Soya Foods.
Manufacturer's Address: 355 W. Ontario St., Chicago, Illinois. Phone: DELaware 7889.
Date of Introduction: 1950. March.
New Product–Documentation: Invoice dated 20 March 1950. "Dr. Fearn's Pure Soy Bean Milk Powder."

Invoice dated 5 Dec. 1951. The product name is the same but the company name has changed to Fearn Foods Co. at the same address. The telephone number is DELaware 7889.

Soybean Blue Book. 1952. p. 105. Dr. Fearn's Pure Soybean Milk Powder (for Making Soymilk). Also listed in 1960, 1965, 1970, 1977.

1528. Nicholls, Lucius. 1950. Production of milk substitutes. *Food Manufacture* (*London*) 25:95-97. March.
• ***Summary:*** Throughout most of the tropics, little or no milk is available for the poorer classes. The soya bean is good for making milk substitutes because of its high biological value.

"The bulk of milk substitutes might well be prepared from rice and soya bean." Addition of vitamins may be desirable. The Chinese have long made "soya bean emulsions. Being rich in proteins, these make good supplements in diets consisting to a large extent of rice or other cereals; yet the nutritive value of soya bean preparations is far from being equal to cow's milk because they lack several vitamins and are deficient in calcium.

"A 'soya milk' factory has been operating in Hong Kong for several years, the emulsion of the beans being prepared under sanitary conditions and issued in hermetically sealed milk bottles...

"Several soya bean preparations have been placed on the American and European markets. One of these is *Soyalac*, a spray-dried emulsion, which is claimed to be an almost complete infant food lacking only vitamin C.

"Considerable work has been done in war-devastated Italy and Germany to find a milk substitute for infants and children. One such substitute, called *Maltavena*, was produced early in 1945 by Dr. Caprina, chemist to the Perani brewery, Rome. It consisted of an emulsion prepared from a cereal [probably oats] which had been malted in the usual manner of brewers; later malted soya bean was included as well as the cereal. The idea was taken up by a British Medical Unit working in Germany, and a modified product was used with considerable success in feeding infants and children. This product has been developed on a small commercial scale under the name *Lactavena."* Address: England.

1529. Wassersug, Joseph D. 1950. The case against vegetarianism. *American Mercury* 70:407-13. April.
• ***Summary:*** The author, who tries to refute the reputed health benefits of a vegetarian diet, believes there is no scientific proof that consumption of animal foods is harmful to human beings. "It is from the medical standpoint that vegetarians have least justification for their position... Most plants do not have all the amino acids the human body needs. Unless the vegetarian diet is exceedingly well thought out, nutritional deficiencies are likely to occur... The contention that cancer is related to the diet of the individual is without scientific proof."

According to a recent report from the Milk and Food Section of the U.S. Public Health Service, milk-borne diseases have led to 804 deaths and 40,177 illnesses in the last 20 years in America. "These include typhoid fever (7,449 cases, 541 deaths), streptococcal infections such as scarlet fever and septic sore throat (182 deaths), gastroenteritis, undulant fever, dysentery, diphtheria, and other illnesses." Moreover milk and eggs are rich in cholesterol. "In recent years, scientists have found more and more reason to believe that cholesterol is a causative factor in hardening of the arteries." Address: Instructor in medicine, Tufts Medical School [Boston, Massachusetts].

1530. Van Duyne, Frances O. 1950. Recipes for using soybeans: Fresh green soybeans and dry soybeans. With directions for growing in the home garden. *Illinois College of Agriculture, Extension Circular* No. 662. 16 p. June.
• ***Summary:*** Contents: Why use soybeans: An excellent food, easy to grow in home garden. Green soybeans: Shelling and cooking, recipes, freezing, canning, drying. Dry soybeans: Using the cooked beans, using soybean pulp ("This pulp is made simply by passing cooked dry beans through a meat grinder."), roasting soybeans, making and using soybean milk, making and using soybean curd, soy sprouts. Contains 25 recipes.

Note: This is the earliest English-language document seen (June 2004) that uses the term "Fresh green soybeans" in the title. Address: Assoc. Prof. of Foods, Univ. of Illinois.

1531. *Soybean Digest.* 1950. Soy foods from a unique college [Madison]: This little Tennessee college has long been noted for its soy foods. Nov. p. 14-15.
• ***Summary:*** This is the second in a series of articles by the Soya Food Research Council. Photos show: (1) "Attractive packaging of soy foods which have been pioneered by Madison College." These include: Kreme O'Soy (sliced bread), Stake-Lets, Kreme O'Soy (canned soymilk), Cheeze-O-Soy, Zoy-Koff, Yum, Not-Meat, Zoyburger, Vigorost, Kreme O'Soy Muffins. (2) Dr. E.A. Sutherland, standing, writing in a notebook. (3) A young man operating an homogenizer that is homogenizing Kreme O'Soy.

"Down in Tennessee nearly a half century ago Dr. E.A. Sutherland was obsessed with an irrepressible idea. He believed that any boy or girl willing to work for a college education should not be denied the right. He set out to achieve that end and succeeded against overwhelming odds.

"Madison College, at that time styled Nashville Agricultural Normal Institute, had only these assets: 11 students, some tumbled down buildings, and 400 acres of tired, soil-depleted land. Those acres had been bought by Dr. Sutherland and a small group of teachers with their last dollars.

"Today Madison College at Madison, Tennessee, has 4O0 students from 40 odd states and many foreign lands. Without endowment, as such for operating expenses, it has poured almost a million dollars from its own earnings into buildings, lands and farm equipment. Down south it is referred to as 'the college with a soul.'

"Soy Spotlighted: Of course Madison College lacks some of the gay social activities and other distractions that drain time and energy of students in many big-name institutions of learning. But students at Madison enjoy life. They are a determined lot, dead set on acquiring an education. The curriculum includes a variety of campus industries, in which students cooperate to support the college and themselves. Soy has a spot-lighted place in the over-all

program.

"Under the Madison plan as set up by Dr. Sutherland every student must work for at least half, and preferably all of his academic expenses. Two-thirds of the students enter the college with only the required fee of $50. They complete a 4-year college course for a B.S. degree and may graduate with the original deposit intact. In all that time the efficient hard-working student need receive no outside help. Moreover, he will leave the college well equipped to do more than a single job.

"Before launching his experiments at Madison, busy Dr. Sutherland had been president of two colleges. At the outset his chief problem was to provide an income for the new school. This he did by farming and establishing a sanitarium. This permitted the training of health workers as well as the care of ill students. To do the job right, he discovered, he should be fully qualified as a medical scientist. He had set a rugged course for his students–they work 5 hours and study 5 hours a day the year round–and he was even less considerate of his own schedule. On top of all other duties he studied medicine for 4 years at Vanderbilt University Medical School and the University of Tennessee Medical School and finally, at the age of 50, received his M.D. It is inspiring today to go through the Madison Rural Sanitarium and Hospital with its large staff of physicians, its patient capacity of 165 and its complete modern medical equipment. Much of the work of the institution is done by students who earn while they learn. The best hospitals snap up the graduate nurses. Many of its students have matriculated in medical schools, colleges and universities and have been awarded Baccalaureate, Masters, and Doctorate degrees.

"Of the foresighted Dr. Sutherland it has been said: 'In any field, in any land, he would have been a great success.'

"By Student Effort: His enthusiasm and determination were infectious. That helps explain how the many college and sanitarium buildings, cottages and dormitories on the 900-acre grounds have been built with students supplying much of the brawn and brain; how the biology class grows many of its excellent specimens; how physics students have built much of their own equipment; and why there are more student applicants than can be admitted.

"Madison is justly proud of its school farm, which is as important economically as its Sanitarium, with its sprawling acres of gardens, fruit trees, vineyards, its greenhouses of flowers for hospital rooms, and its fine dairy.

"Madison is also noted for its 27 years of practical research in special foods development. This research has distinguished the institution as a unique center and pioneer of soy food development primarily intended for human use.

"Long ago it became evident that the new foods being fashioned at Madison–where good health and strong bodies always have been a chief aim–were too useful to be confined to campus menus. Accordingly, Madison Foods was founded, and has grown steadily over the years.

"It came about in this way. Dr. Sutherland and his associates believed in a simple life. They were convinced that plain wholesome foods–such as whole wheat bread and whole grain cereals, fresh fruits and vegetables, nuts, dates, honey and soy protein–helped patients to early recovery and contributed to permanent good health. Many of these patients, after returning to their homes, ordered these foods in ever-increasing volume. Demand grew until it became necessary to put them into retail stores and now they may be purchased in all 48 states.

"Convinced long ago of the high nutritive value of soy protein, Madison food chemists experimented with more than 200 varieties of soybeans. They solved the taste factors, and went on with the creation of savory breakfast foods, bread, coffee substitutes, soy milk, various meat substitutes, and other products.

"Through measured scientific research they developed soy milk until now it is not only as economical as special formula cow's milk but, according to the American Medical Association Journal, better for some babies. From Africa, India, and other countries where dairy cows and cattle are scarce, observers have come to study the methods of Madison's soy milk 'dairy' and its 'vegetarian slaughter house.'

"Today many authorities believe that a properly prepared dry soy milk powder would help to solve the child feeding problems in protein-starved nations of the Orient and in Latin-American countries, and research to that end is in progress.

"More Frontiers: Food scientists at Madison, dipping deeper and deeper into the protein mysteries of the soybean, are convinced that new frontiers will be pierced, and that the astonishing progress already made is but a prelude to a much greater future.

"Meantime, 85-year-old Dr. Sutherland, the man who made a dream come true, has lightened his daily load, but still carries on many duties. He is president of the Layman Foundation, member of the board of directors of Madison College and of a half dozen other rural schools in the South which he was instrumental in developing.

"In Dixieland they say 'the college with a soul' is but the lengthened shadow of a great man, a man with the courage to fight for an ideal."

1532. *Indian Farming.* 1950. Research on soya bean in the Punjab. 11(11-12):547-48. Nov/Dec.

• ***Summary:*** Discusses soybean breeding, agronomy, chemical composition, and utilization in the diet (as flour, soybean milk, and tofu). "Soybean milk has a peculiar flavour and taste but the curd prepared from it is palatable."

"A scheme for research on soyabean has been in operation at Lyallpur, in the undivided Punjab, from 1944 to 14 August 1947; after the partition [of the Punjab between India and Pakistan], it was transferred to Ludhiana, and it

finally terminated on 31 March 1950." About 90 soybean varieties collected from India and abroad were tested during the years 1947-50. The erect and compact varieties ripened earlier than the erect and loose; the viny creeping types were late maturing. The yellow-seeded varieties had a higher protein content than the black, chocolate, or green-seeded ones. Natural shattering was absent in Behrum varieties. Varietal trials showed that Punjab-1 was much superior to the other varieties and yielded as much as 2,791 lb/acre. Average field germination of 50% was increased to 80% by soaking the seed in water for 12 hours before planting. Address: India.

1533. Gómez, F.; Ramos, R.; Bienvenu, B.; Cravioto, F. 1950. The recuperation of undernourished children using proteins of vegetable and animal origin (Abstract). In: Report of the 6th International Congress of Pediatrics, Zurich. Summaries of communications. See p. 26. *
• ***Summary:*** Gomez and his co-workers at the Mexico City Children's Hospital obtained satisfactory results with two groups of undernourished schoolchildren kept under observation for 6 months, by using two diets, each containing 50 gm of protein. In one diet, 22 gm of protein were provided by milk and eggs, while in the other, 20 gm of protein were provided by soybeans. Examinations included the measurement of weight, height, haemoglobin content, and serum protein, plus observation of the effect of the diet on ocular lesions due to avitaminosis. Address: Mexico.

1534. **Product Name:** ViVi-Ta Hi-Fat Soy Flour, Soy Flakes, Soy Powder for Vegetable Milk (Renamed Vi-Vi-Ta by 1958).
Manufacturer's Name: Vegetable Products Co.
Manufacturer's Address: 510 S. Clinton St., Syracuse, New York.
Date of Introduction: 1950.
New Product–Documentation: Soybean Blue Book. 1950. p. 86.

1535. Coorengel, G.B. 1950. Katjang kedelai [The soybean]. Jakarta: Balai Pustaka. 34 p. 20 cm. [Ind]
Address: Jakarta, Indoensia.

1536. Masuno, Minoru. 1950. Daizu to sono riyô [The soybean and its utilization]. Tokyo: Sangyo Hyoron-sha. 197 p. [Jap]
• ***Summary:*** A very nicely done predecessor to Watanabe et al.'s book *Daizu Shokuhin.* Address: Tokyo Daigaku Kyoju, Kôgaku Hakase, Japan.

1537. Morse, W.J. 1950. History of soybean production. In: K.S. Markley, ed. 1950. Soybeans and Soybean Products. Vol. I. New York: Interscience Publishers or John Wiley & Sons. xvi + 1145 p. See p. 3-59. [59 ref]
• ***Summary:*** Contents: 1. Origin. 2. Ancient history. 3. Modern history. 4. Description of soybean plant. 5. World distribution. 6. Climatic adaptations. 7. Soil preferences. 8. Soil erosion and practices. 9. Varieties and variety improvement. 10. Fertilizer and lime requirements. 11. Inoculation. 12. Cultural methods: Preparation of seedbed, methods of seeding, time of seeding, rate of seeding, depth of seeding, cultivation. 13. Rotations. 14. Mixture with other crops. 15. Hay production. 16. Seed production. 17. Soil improvement. 18. Diseases. 19. Insect enemies. 20. Other enemies (rabbits, pigeons, pheasants).

This chapter contains many original, interesting photos and a map. Figures (photos unless otherwise indicated) show: (1) Wild soybeans, cultivated soybeans, and *Glycine gracilis.* (2) Unloading soybeans from farm carts and storing the seed in osier bins in a Chinese merchant's storage yard–Manchuria. (3) Map of the principal soybean seed producing areas and countries of the world. (4) A soybean grain market in Korea. (5) "Fertilizer used for soybeans by Manchurian farmers is compost placed in piles in the field and scattered between rows of previous year's crop just before planting soybeans." (6) Roots of soybean plant (2 photos) showing abundant development of nodules. (7) Ordinary grain drill (pulled by a tractor) may be used in sowing soybeans in rows or close drills. (8) Soybeans sown by hand on ridges in rows about 21 inches apart in Manchuria. Two horses pull a wooden plow. (9) Korean woman planting soybeans along ridged rows. (10) Soybeans planted along edges of rice paddies in Japan, China, and Korea are used for home consumption. (11) Cultivating soybeans in rows, using a tractor-pulled rotary hoe, weeder, or harrow, in the Corn Belt. (12) Hand-cultivation of soybeans in Manchuria. (13) A field of plants: "The Korean farmer grows many other crops with soybeans: millet, mung beans, buckwheat, sesame, susu, or castor beans." (14) A field of soybeans and Kaoliang in China planted in alternate hills. (15) The combine has been one of the most important factors in the economic production of soybeans in the United States. (16) Harvesting soybeans by hand methods in Manchuria. (17) Threshing soybeans in Manchuria using a stone roller pulled over the plants by horse or donkey. (18) Primitive wind method of separating soybean seed from threshed plant material in Manchuria. (19) Korean farmers threshing soybeans with bamboo flails on the home threshing ground. (20) Japanese farmers turning under soybeans in a rice paddy for soil improvement. Address: 6809 Fifth St. N.W., Washington, DC; formerly Principal Agronomist, Div. of Forage Crops and Diseases, Bureau of Plant Industry, Soils, and Agricultural Engineering, USDA, Beltsville, Maryland.

1538. Morse, W.J. 1950. History of soybean production: 9. Varieties and variety improvement (Document part). In: K.S. Markley, ed. 1950. Soybeans and Soybean Products. Vol. I. New York: Interscience Publishers or John Wiley & Sons.

xvi + 1145 p. See p. 17-23.

• ***Summary:*** "Varieties of soybeans are very numerous [especially in East Asia], no doubt because of the fact that the soybean seems to be peculiarly sensitive to changes of soil and climatic conditions." Differences in behavior of the same pure-line variety in different locations are often so striking that it is difficult to believe that the variety is the same.

In China, soybean varieties are quite numerous and "are classified according to color, size, shape, time of planting, method of planting and use. The local names of varieties differ in different localities so that it is very difficult to obtain a variety which is widely known." There has not been much organized research on soybean varietal improvement in China. "The University of Nanking has done more work of this kind than any other organization."

Although many soybean varieties are grown in Manchuria, only three types are distinguished: yellow, green and black. This has apparently been found adequate for commercial purposes. In detail, these three groups are:

(1) Hwang Tou–yellow beans. (a) Pei Mei (white eyebrow, pale hilum). (b) Chin Huang (golden yellow or golden round). (c) Hei Chi (black belly), dark hilum. These three varieties are highly prized for the quality of their oil, but Pei Mei and Chin Huang are also valued for the soybean curd [tofu] made from them.

(2) Ching Tou–green beans. (a) Green with yellow germ or cotyledon. (b) Green with green germ or cotyledon. The green bean with the yellow germ yields more soybean curd but of an inferior quality compared to that of the yellow varieties. The green bean with the green germ is preferred for making sprouts.

Hei Tou or Wo Tou–black beans. (a) Ta Un Tou (large, black), green germ. (b) Hsia Un Tou (small, black), yellow germ. (c) Puen Un Tou (flat, black), yellow germ. The Ta Un Tou is used for oil, the Hsia Un Tou for oil and Horse feeds, and the Puen Un Tou for salted fermented soybeans [fermented black soybeans].

"Most of the varieties grown by Manchurian farmers consist of a mixture of varieties of which more than 90% are yellow-seeded types." The distribution throughout Manchuria of the various types is discussed. Native Korean soybean are classified into eight different groups.

Since 1898 the USDA had brought into the United States more than 10,000 introductions from China, Manchuria, Korea, Japan, India, Netherland Indies [Indonesia], South Africa, and several European countries.

Table 1 (two pages) shows the "Characteristics of soybean varieties most generally grown in the United States," arranged into seven groups from very early to very late maturity. For each variety in every group is given: Seed color (black, brown, green, olive or greenish yellow, straw yellow), hilum color (black, brown, dark brown, light brown, pale), seeds per lb., oil %, protein %, iodine value (range: 119 to 140), pubescence color (gray, or tawny), flower color (purple, white, or purple & white), shattering (little, medium, or much), and use (commercial {grain or oil and meal}, forage, or vegetable). The groups are: (1) Very early: Agate, Capital, Cayuga, Flambeau, Goldsoy, Habaro, Kabott, Mandarin, Mandarin 507, Mandarin (Ottawa), Minsoy, Ontario [developed in USA], Pridesoy, Sac.

(2) Early: Adams, Bansei, Earlyana, Hawkeye, Illini, Kanro, Lincoln, Manchu, Manchu 3, Manchu 606, Manchukota, Mendota, Montoe, Richland, Seneca.

(3) Medium Early: Chief, Dunfield, Hokkaido, Hongkong, Jogun, Mandell, Mingo, Mukden, Scioto, Viking.

(4) Medium: Aoda, Boone, Funk Delicious, Gibson, Kingwa, Macoupin, Mount Caramel, Patoka, S100, Virginia, Wabash, Wilson.

(5) Medium late: Arksoy, Arksoy 2913, Haberlandt, Laredo, Ogden, Ralsoy.

(6) Late: CNS, Mamloxi, Mammoth Yellow, Palmetto, Roanoke, Tanner, Tokyo, Volstate, Woods Yellow.

(7) Very late: Acadian, Avoyelles, Gatan, Otootan, Pelican, Seminole, Yelnando.

"Varieties now grown in the United States may be divided into three general groups, namely commercial (grain), vegetable, and forage. Varieties for commercial seed production are preferably yellow-seeded and are used largely for processing for oil, meal, and soybean flour, but these varieties may also be used for forage purposes if heavier rates of seeding are used. The varieties used principally for forage and green manure are the black- and brown-seeded varieties, which for the most part are low in oil but yield a finer and heavier forage than the commercial and vegetable varieties.

"The term 'vegetable varieties' has been applied to varieties introduced from oriental countries where they are used solely as green vegetable or dry, edible soybeans. In extensive tests of the quality of the green and dry beans made by the Bureau of Human Nutrition and Home Economics, Department of Agriculture, and by departments of home economics of various agricultural colleges, the vegetable varieties have proved much superior to the field or commercial varieties in flavor, texture, and ease of cooking. Many of these vegetable types have been found through experiments to be superior to commercial types for soybean milk, soybean flour, soybean curd, salted roasted soybeans, and other food products. (See Chapter XXV). The varieties used for processing and forage purposes usually do not cook easily and have a raw 'beany' flavor. Nearly all vegetable varieties cook easily and have a sweet or bland nutty flavor. The most suitable vegetable varieties are those with straw-yellow, greenish-yellow, or green seed, although a few black, brown, and bicolored varieties do have superior qualities as green shelled beans. Vegetable varieties, ranging in maturity from 75 to 175 days, have been developed for all soybean-producing areas in the United States.

"Several commercial companies have canned large packs of the green shelled beans of the vegetable varieties. Quick-frozen green shelled beans alone and in succotash have been placed on the market by several companies, the frozen product being highly satisfactory in color, texture, and flavor. For canning or quick freezing in the green stage, the yellow- and green-seeded varieties make a more attractive product than the black-, brown-, or bicolor-seeded varieties. Vegetable varieties have also become quite popular with the home gardeners and many seedsmen in various sections handle two or more varieties" (p. 22).

Listed from very early to very late, vegetable varieties include: Agate, Sac, Bansei, Kanro, Mendota, Hokkaido, Jogun, Aoda, Funk Delicious, and Seminole. Address: 6809 Fifth St. N.W., Washington, DC; formerly Principal Agronomist, Div. of Forage Crops and Diseases, Bureau of Plant Industry, Soils, and Agricultural Engineering, USDA, Beltsville, Maryland.

1539. Subrahmanyan, K.; Sathe, Vanamala; De, S.S. 1950. The hematopoietic property of the iron in soyabean and soyamilk and its utilization in normal rats. *Annals of Biochemistry and Experimental Medicine* (*Calcutta*) 10(1/2):13-18. [11 ref]
• ***Summary:*** The iron in soybean flour and soyamilk is well utilized by rats. Address: Food Technology Section, Indian Inst. of Science, Bangalore.

1540. Worth, Miklos. 1950. Soyabeans: The fabulous food that supplies meat, milk, cheese, proteins, amino acids, vitamins, minerals. New York, NY: Ideal Health Books. 62 p. A MacRichard publication.
• ***Summary:*** This book consists of many short chapters. Contents: The bean that is not a bean. A therapeutic substance. Chemical requirements of life. Natural foods supply basic needs. Disease–A disturbance of mineral salt balance. Essentials in man's diet. The big five. A balanced mineral supply. Soybean oil valuable to health. Carbohydrates in soybeans. A storehouse of vitamins. How vitamins are to be used. Soyabeans in Rheumatism. Nervous exhaustion. Rickets. Gastro-intestinal disorders. A perfect food for invalids. Constipation. Obesity–An easy way to reduce. Loss of weight. Dandruff and loss of hair. Eczema and other skin disorders. Sciatica. Hardening of the arteries. Excellent food for diabetics. An excellent blood builder. Soyabeans influenced civilization. The poor man's meat. Introduction to America. Revolutionizing modern economy. Soyabeans could enrich the diet. How to make soya milk. Soyabean sprouts. Soyabean curds. Soyabean coffee. Soyabean oil. How to cook soyabeans. Soyabean flour in baked products. Its use in green salads. Soyabean sauce. Health through soyabeans.

Chapter 1 begins: "Soyabean, the wonder-plant of the Far East that has given sustenance to the peoples of the Orient since time immemorial, is not only a nourishing food, but plays a host of roles in natural health because of its medicinal and therapeutic properties... There is no other single plant known to man which yields such bounty of goodness. All the essential ingredients for health and long life are gathered and packaged in this singular food."

Note 1. This is the earliest English-language document seen (April 2013) that uses the term "soyabean curds" to refer to tofu.

Note 2. This is the earliest English-language document seen (Jan. 2013) that uses the term "soyabean sprouts" to refer to soy sprouts.

Note 3. This is the earliest English-language document seen (Nov. 2012) that uses the term "soyabean coffee" to refer to soy coffee.

Note 4. This is the earliest English-language document seen (April 2012) that uses the term "soyabean sauce" to refer to soy sauce.

Note 5. This is the earliest English-language document seen (Oct. 2001) that uses the term "soyabean flour."

1541. **Product Name:** Loma Linda Soyalac Infant Powder (Soy-Based Infant Formula).
Manufacturer's Name: Loma Linda Foods.
Manufacturer's Address: 11503 Pierce Place, Arlington, California.
Date of Introduction: 1951. January.
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable.
New Product–Documentation: H.F. Meyer. 1960. Infant foods and feeding practices. A photo (p. 82) shows this canned product. A photo of a baby's face appears on the front panel. See also p. 88 and 90. Page 121 gives a detailed analysis of the product. The powder, after being reconstituted, contains: Fat 3.2%, protein 2.85%, carbohydrates 5.4%. Calories per ounce: 18. Tablespoons per oz.: 4. Added vitamins and minerals: ferrous sulphate, calcium carbonate, dibasic calcium phosphate. Affected by terminal sterilization: No. How formulated or reconstituted: 1 vol. milk to 7 vols. water. Chemical definition and essential clinical uses: "Contains soya bean solids, dextrose, maltose, dextrins, sucrose, soya oil. A spray-dried soya food to serve the nutritional needs of the bottle-fed infant. Completely soluble and formulated to simulate human milk. Used for infants allergic to dairy milk." Meyer gives the manufacturer as International Nutrition Laboratories, but with two addresses: 11503 Pierce Place, Arlington, California, and Box 388, Mt. Vernon, Ohio.

1542. **Product Name:** Loma Linda Soyalac Infant Concentrate (Liquid Soy-Based Infant Formula).
Manufacturer's Name: Loma Linda Foods.
Manufacturer's Address: 11503 Pierce Place, Arlington, California.

Date of Introduction: 1951. January.
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: H.F. Meyer. 1960. Infant foods and feeding practices. A photo (p. 82) shows this canned product. A photo of a baby's face appears on the front panel. See also p. 88 and 90. Page 121 gives a detailed analysis of the product. The liquid concentrate, after being reconstituted, contains: Fat 4.0%, protein 2.05%, carbohydrates 6.0%. Calories per ounce: 20. Added vitamins and minerals per quart: vitamin B-12–2 micrograms, vitamin A–3,0000, vitamin D 400, salt, calcium gluconate, calcium hydroxide, ferrous sulphate. Affected by terminal sterilization: No. How formulated or reconstituted: 1 can milk to 1 can water. Chemical definition and essential clinical uses: "Similar to Soyalac Infant Powder but in liquid form." Meyer gives the manufacturer as International Nutrition Laboratories, but with two addresses: 11503 Pierce Place, Arlington, California, and Box 388, Mt. Vernon, Ohio.

1543. Cravioto, Rene O.; Massieu, G.H.; Guzman, J.G.; Cravioto, O.Y.; Gomez Pagola, J.; Calvo de la Torre, J. 1951. Posibilidad de utilizar en la alimentación mezclas de leche y productos de soja [Possibilities of using mixtures of dairy milk and soy products in the diet]. *Ciencia* 11(1/2):37-40. Feb. 15. [11 ref. Spa; eng]
• ***Summary:*** "Replacement of 50% of milk by soyabean flour or milk of soya [soymilk] does not affect deeply its nutritive value." Address: Instituto Nacional de Nutriologia, Secretaria de Salubridad y Asistencia, Mexico, D.F.

1544. Nicholls, Lucius. 1951. Tropical nutrition and dietetics. 3rd ed. London: Baillière, Tindall and Cox. ix + 476 p. Feb. Illust. 24 cm. [40+* ref]
• ***Summary:*** Table XI (p. 22), "Chemical and biological evaluation of proteins for growing rats," contains 6 columns: Foodstuff, digestibility, Biological Value, Net Utilisation [NPU], Protein efficiency ratio, chemical score, and limiting amino-acid. "There is agreement in all methods of the high value of milk, eggs, and other foods of animal origin, and among those of vegetable origin, the proteins of soya bean flour hold a high place." Values for soya bean curd [tofu] are also included. The next section is on supplementing proteins.

The long section titled "Pulses (legumes)" (p. 219-35) has this contents: Introduction. Dhals (Dals; peas which have been shelled, split and polished). Peanut. Bambara earth pea (*Voandzeia subterranea*). Soya bean: Importance in Asia, used in may forms: Nearly-ripe seeds [edamamé or green vegetable soybeans], dry seeds, soya bean emulsion ('Milk'–contains a detailed description of how soya milk [Vitasoy] is made in Hong Kong, including exact amounts of all ingredients for 800 oz and the nutritional composition (%)), soya bean curd (may be smoked or dried), fermented curds [fermented tofu], fermented beans (témpé), soya bean sauce, sprouted soya beans, soya bean flours, mixtures of soya beans and cereals, milk substitutes (for infant feeding in China). The genus Phaseolus may be divided into two types: Those of Asian origin and those of New World origin (Americas). Cow pea (*Vigna sinensis, V. unguiculata, V. sesquipedalis*). Egyptian kidney bean (Dolichos lablab). Horse gram. Chick pea. Cluster bean (*Cyamopsis psoralioides*). Four-angled bean or Goa bean (*Psophocarpus tetragonolobus*). Locust bean (*Ceratonia siliqua*). African locust bean (*Parkia biglobosa, P. filicoidea*). Sword bean (*Canavalia gladiata*). Jack bean (*Canavalia ensiformis*). Velvet bean (*Mucuna* spp.). Honey locust (*Prosopis juliflora*). Garden pea (*Pisum sativum*). Broad bean (*Vicia faba*–not a tropical plant). Yam bean (*Pachyrrhizus erosus*). West Indian locust (*Hymenæa courbaril*). Madras thorn (*Pithecellobium dulce*).

Phaseolus–Asian: *Phaseolus aureus:* green gram [mung bean]. *Phaseolus mungo:* black gram. *Phaseolus calcaratus:* rice bean. *Phaseolus actinifolius:* moth bean. *Phaseolus angularis:* adzuki bean. New World: *Phaseolus lunatus:* lima bean. *Phaseolus vulgaris:* kidney bean. *Phaseolus multiflorus:* scarlet runner. The subsection titled "Substitutes for milk" (p. 231-35) discusses soya milk. Goitrogenicity of [raw] soya beans (p. 376). Saponins in foodstuffs (incl. soya bean; p. 385). Table 62 (p. 404-05) gives the botanical name and composition of pulses, incl. soya bean, soya bean curd, soya bean milk, carob bean, Goa bean, tepary bean. Table 66 (p. 410-11) does the same for fresh legumes, incl. broad bean, French beans, pea, pea nuts, and sprouted soya. Table 67 does the same for nuts, oil seeds, and miscellaneous seeds, incl. almonds, coconut, coconut "water," coconut "milk," linseed, pumpkin seed, sesame (gingelly), sunflower seed, and sunflower seed (kernel).

Note 1. This is the earliest English-language document seen (Oct. 2011) that uses the term "fermented curds" to refer to fermented tofu.

Note 2. The title C.M.G. (Companion of St. Michael and St. George) is an honor conferred upon those for distinguished service in the British colonies or commonwealth.

Also discusses: Marmite (autolysed yeast, p. 158, 302). Fluorine in teeth and fluorosis (p. 170, 38). The many species of millet and sorghum (p. 216-18). Coconut, coconut milk, palm oil, red palm oil benniseed of Nigeria, gingelly oil, sesame, sim-sim, til (p. 254-60). Yeast (dried; Torula utilis, Brewers' yeast, Bakers' yeast, Marmite) (p. 302-03).

Lucius Nicholls was born in 1884. Address: C.M.G., M.D., B.C., B.A. (Cantab.). Late Director of Bacteriological and Pasteur Institutes, and Director of Div. of Nutrition, Ceylon; Lecturer in Nutrition, Ceylon Univ.; Late Lecturer on Tropical Medicine, Ceylon Medical College; Nutrition Adviser to Commissioner General, South East Asia. Presently at Cookham Dean [just west of London, England].

1545. Rajagopalan, R.; De, S.S. 1951. Agricultural and economic aspects of "soya milk" production. *Indian Farming* 12(1/2):4-7. Jan/Feb. [5 ref]
• ***Summary:*** Contents: Introduction. Good substitute. Growing soyabeans. Yield of milk from cow. Immense possibilities.

Tables: (1) Composition of the residue [okara] obtained from the processing of soyabean milk. On a dry basis it contains 57% proteins, 6% fat, and 12% fibre. (2) Yield of proteins per acre from grass, groundnut, beans, wheat, milk, and meat (ox). (3) Approximate annual yield of milk per cow in provinces and States of India (ranges from 65 lb per year in Central Provinces to 1,315 lb in Sind).

Concludes: "The foregoing observations would serve to indicate the immense possibilities of producing large quantities of soyabean milk and thus meeting the requirements of the growing and under-nourished population. Although soyabean milk may not be considered as nutritive as cow milk in all respects, the vegetable milk, besides being cheap, has certain special advantages."

"In view of the fact that the *per capita* consumption of milk and milk products in India is extremely poor, both on account of inadequate supplies and high cost, soyabean milk could make up this deficiency to a very considerable extent and be within the easy reach of even the poorer class." Address: Food Technology Lab., Indian Inst. of Science, Bangalore.

1546. Porterfield, W.M., Jr. 1951. The principal Chinese vegetable foods and food plants of Chinatown markets. *Economic Botany* 5(1):3-37. Jan/March. See p. 5-9. [68 ref]
• ***Summary:*** The soybean "is referred to by Chinese as 'the poor man's meat and the poor man's milk.'" In New York City, soybeans are sold in Chinese shops in three main forms: seeds [whole dry soybeans], bean sprouts, and bean curd. Soy sauce and soybean oil are also available. Soy sauce "is a heavy dark fluid which is used as a condiment to supply saltiness that brings out flavor,..."

When soybean milk is heated, a skin [yuba] such as forms on milk rises to the surface. Other [Western] uses of soybeans include soybean flour, meal, lecithin, shortenings, and margarine.

Nitrogen fixation takes place in the nodules of the soybean plant, which makes it useful as a green manure. Crude soybean oil goes into the manufacture of soap (both soft and hard). Soybean meal can be used to make plastic and "protein fibers" which are called "soybean wool. "During the war about 1,000 pounds of soybean wool were produced each day, and all of it went into the winter uniforms of the armed forces."

Some 36 different varnishes with 100% of their oil content as soybean oil have been developed and given exposure tests. A rubber substitute named "norepol" has been developed and can replace rubber in "insulation, shoe heels, fruit-jar rings, gaskets, and tubing." Soybean protein has been used as a stabilizer in fire-fighting foam. Other industrial uses, which are too numerous to mention, include enamels, printing ink, linoleum, foundry cores, glycerin, notepaper, and billiard balls. In the United States, soybean crops and products create an annual income of $45 million.

Tables show: (1) Nutritional composition (on an "as-is" basis) of: "Bean cheese (Tou-fou; 13.5% protein). Soybean milk (3.13% protein). Bean oil (Tao-yu; 7.49% protein). Soy sauce (Tao-jung; 12.67%). (2) Nutritional composition of soybeans.

Half-page photos (each with a black background) show: (1) Bean sprouts ready for cooking. (2) A square of firm "Tou-fu, bean curd, a cheese made from soybeans." Address: 3334 Prospect Ave., N.W., Washington &, DC.

1547. Rich, Robert E. 1951. Rich's testimony. I. Buffalo, New York. 7 p. March. Unpublished manuscript.
• ***Summary:*** Frank S. Mitchell, a former early key employee of Rich Products Corp., sued Rich Products Corp. and Robert E. Rich. On 7 Feb. 1951 a summons was served on the defendants. This draft was presumably prepared in anticipation of a hearing which was scheduled from 19 March 1951. The testimony contains a detailed early history of Rich Products Corp. and its relationship with Frank Mitchell seen from Robert Rich's point of view.

"When in Detroit, serving as Milk Administrator for the War Food Administration, I became interested in a filled cream called Devonshire Topping. This product had a milk base and any product combining milk and vegetable fat is not allowed to be sold in New York State.

"However, the purchasing agent of the Ford Hospital [in Dearborn, Michigan] came to my office one day on another matter, and during our conversation he told me that the Ford Motor Company was making soybean milk and soybean cream at their laboratory, the George Washington Carver Laboratory, and that this soy milk and cream was being used exclusively in the Ford Hospital. He advised me further that one of the employees at the George Washington Carver Laboratory had been attempting to interest the Devonshire Topping people in placing a whole soy cream on the market instead of the milk base soy cream that they were making at that time. He mentioned that the Ford Company was going to sell the rights to the continuous flow soybean milk extraction to the Devonshire Topping people for $1.00 a year. He mentioned further, he was sure the Ford Company would make the same offer to any other company deciding to manufacture a soybean milk or cream.

"Several weeks later, Mr. Sam Lustig, Manager of Dealer Dairy Products, Detroit, came to see me and advised me that Devonshire Topping was making plans to put a whole soy cream on the market. He stated, that he had been granted the franchise for this product for New York and Pennsylvania and wondered if I would be interested in

distributing this product in the Buffalo area. I advised him I was interested and we arranged tentatively for the rights to distribute in Syracuse, Rochester, Buffalo and Erie.

"About a week later, Lustig called and advised me that it would not be possible for him to grant us the distribution in the area mentioned, as Mr. Taylor, the head of the company placing Devonshire Topping on the market, did not want to deal with dairies, but rather with jobbers, who were handling noncompetitive products that were held at dairy case temperature.

"Shortly after obtaining this information from Mr. Lustig, I requested our dairy sales manager to go to Toledo and purchase some of the whole soy cream that Devonshire Topping had just placed on the Toledo market. Mr. Hannon purchased eight or ten samples in Toledo and flew them back to Buffalo. I immediately took several of these samples downtown to Dr. Alexander Schwarcman, who is Research Director and Vice President of the Spencer Kellogg Company. I whipped up one of the samples to show Dr. Schwarcman the whipping ability of this product and told him I wished to breakdown the product and manufacture a similar product in Buffalo, in as much as, the Devonshire Topping people did not wish to do business with us. Dr. Schwarcman, after studying the ingredients, advised me that such a product could be placed on the market at a price much lower than dairy cream."

Mr. Chase, in charge of sales of edible fats for the Spencer Kellogg Co. advised Mr. Rich "that there were several chemists working for the Spencer Kellogg Company, who would be interested in earning some extra money working on the breakdown of this product after hours. At that time he mentioned the name of Frank Mitchell, a friend of his." The following Saturday Mitchell expressed interest in doing the work. Mr. Rich "gave him several samples of a new batch of the soy cream which I had purchased in Detroit the previous week, as Devonshire Topping had turned over part of their production to a whole soy cream topping, which they sold in addition to their topping with a milk base." Mitchell worked on developing the product, aided by information from the Buffalo Testing Laboratory. "However, it took slightly longer than we had anticipated and we [Rich Products Corp.] did not put a soy cream on the market until the last day of March [1945] instead of early March as we had hoped.

"During this time I was working with Mr. Howard Fanet, president of the R.G. Wright Company, on picking up used pieces of equipment that could be used in the manufacture of the soy cream itself. This equipment included two Cherry Burrill pasteurizers, a Manton Gaulin homogenizer, a surface cooler, a Cherry Burrill filler and the necessary amount of tin copper piping lines. This was the equipment we needed with the exception of the equipment necessary to make the soy milk which we were going to use as the base and which Mitchell was working on at that time. In the meantime, we were attempting to obtain the authorization from the Ford Motor Company for the use of their patent, which we had been given to believe would be granted us for $1.00 per year. We were not successful in our attempt, so I asked Mr. Faust if he would go to Detroit with Mr. Mitchell and look at the equipment being used at the George Washington Carver Laboratory for the manufacture of the soybean milk base. This he did and when he returned he advised me that the same work could be done by a batch system with the addition to our equipment of a 300 gallon extraction tank, two 300 gallon settling tanks and a clarifier. This equipment was purchased and once it was set-up, we obtained a 43% extraction, which was considerably higher than the extraction obtained by the Ford Company on the continuous flow system."

"On February 21, 1949, Mr. Mitchell incorporated as Mitchell Food, Incorporated and began the manufacture of a soybean cream similar to ours. He attempted without much success, to obtain our customers for his product. He was of considerable nuisance but not much competition." Continued. Address: Rich Products Corp., 1145 Niagara St., Buffalo 13, New York. Phone: GArfield 3211.

1548. Wallace, H.D.; Loosli, J.K.; Turk, K.L. 1951. Substitutes for fluid milk in feeding dairy calves. *J. of Dairy Science* 34(3):256-64. March. [16 ref]

• ***Summary:*** Table 2 (p. 257) shows that "high fat soya flour" was used at the level of 20% in formula No. 4.

"Mixtures containing 20 per cent of high-fat soya flour, or dried beet pulp, or as much as 60 per cent of dried whey resulted in slower growth rates and more digestive disturbances than the other mixtures studied." Address: Animal Nutrition Laboratory, Dep. of Animal Husbandry, Cornell University, Ithaca, New York.

1549. Sternberg, S. David; Greenblatt, I.J. 1951. Serum protein values in infants fed soya-bean milk. *Annals of Allergy* 9(2):190-94, 204. March/April. [8 ref]

• ***Summary:*** "In the course of caring for infants fed cow's milk formulas, the pediatrician may be faced with the necessity of removing milk from an infant's diet because of allergic reactions such as eczema, vomiting, diarrhea, abdominal cramps, and various manifestations in the respiratory tract.

Milk sensitivity may be classified into three types: (1) Species specific factor of cow lactalbumin. (2) Common factor to both cow and goat lactalbumin, (3) casein.

"In group (1) a change to goats milk is indicated. In group (2) Goat's milk may give little improvement. In group 3 goat's milk is valueless. Therefore Hill has stated that he often prefers to do away with milk entirely if milk sensitivity exists. As a substitute for animal milk various 'milks' from a vegetable source have been utilized."

We therefore decided to conduct the following study "to

determine the effects on serum proteins of infants fed 'milk' prepared from soya-beans for the first three months of life." Address: 1. M.D.; 2. PhD. Both: Dep. of Pediatrics and Dep. of Biochemistry, Beth-El Hospital, Brooklyn, New York City, NY.

1550. Viswanatha, T.; De, S.S. 1951. Relative availability of cystine and methionine in the raw, germinated and autoclaved soybeans and soybean milk. *Indian J. of Physiology and Allied Sciences* 5(2):51-58. [10 ref]
• ***Summary:*** Germination improved the nutritive value of soybeans. Address: Food Technology Lab., Indian Inst. of Science, Bangalore 3, India.

1551. *Soybean Digest.* 1951. Accept "Soyalac" as infant food. July. p. 22.
• ***Summary:*** "'Soyalac,' a vegetable milk produced by the International Nutritional Laboratory, Mt. Vernon, Ohio, has been accepted as an infant food by the Council on Foods of the American Medical Association, Dr. H.W. Miller, the president announces.

"Miller began development of 'Soyalac' in China over 15 years ago. It is prepared from the valuable protein and oil of the soybean. Its carbohydrates are a combination of sugars and it is reinforced with minerals to build it up into infant food to care for nutrition problems from birth to weaning time.

"'In order to meet the requirements of the American Medical Association, a vast amount of experimental work was necessary, not only to produce feeding results with 'Soyalac' by leading child specialists, but to obtain records of the feeding of large groups of babies over a long period of time,' said Dr. Miller. 'These results were obtained in America, Japan, the Philippine Islands and China. 'Soyalac' was granted acceptance on the basis of its splendid record as a hypoallergic food.'

"International Nutrition Laboratory was recently purchased by Loma Linda food Co., Arlington, Calif., and is now being conducted as the latter firm's eastern division. Products manufactured by the Mt. Vernon plant will be almost exclusively derived from the soybean.

"The firm has set up the International Research Foundation in charge of Dr. Miller. The plan is to continue research into and investigation of soy products."

1552. Ciancio, Pedro N. 1951. La problema alimentario de nuestro pais [The problem of food and nutrition in our country]. *Union* (*La*) (*Asuncion, Paraguay*). Aug. 18. *
• ***Summary:*** Discusses the nutritional value of soya and soyfoods, including soymilk.

1553. Adolph, Wm. H. 1951. Nutrition under the Chinese communist government. *Scientific Monthly* 73(2):128-30. Aug. [3 ref]
• ***Summary:*** "The first action of the new regime when it came into power in 1949 was to lower the standard of living, not only in respect to food, but also in respect to clothing and manner of life. This was not a gradual development; it was immediate, brought about in part by decree, but carried into effect by an overwhelming wave of patriotic feeling that made it unbecoming for anyone to be found eating food better than that available to laborers and farmers... The dietary of the Chinese people has been the subject of considerable study. It is essentially vegetarian, with approximately 90% of the calorie intake in the form of cereals; in south China the cereal is rice, in north China, wheat, millet, maize, and kaoliang. The amount of meat or animal food is in general very small, and only about 5% of the protein intake is animal protein... The amount of milk and milk products consumed is practically nil... The average intake has been estimated at 2,200-2,400 calories per capita per day." Address: Dep. of Biochemistry, Peking Union Medical College; Then School of Medicine, Yale Univ., Connecticut.

1554. Ciancio, Pedro N. 1951. La problema alimentario de nuestro pais [The problem of food and nutrition in our country]. *Union* (*La*) (*Asuncion, Paraguay*). Sept. 5 or 6. *
• ***Summary:*** Discusses the nutritional value of soya and soyfoods, including soymilk.

1555. *Times of India* (*The*) (*Bombay*). 1951. High nutritive value of soya beans: Interesting facts revealed by research. Oct. 30. p. 2.
• ***Summary:*** The U.S. Department of Agriculture requested from India seeds of improved soya bean varieties; herein lies a tribute to research work conducted by the Indian Council of Agricultural Research [ICAR].

Note: This is the earliest document seen (Sept. 2010) that mentions the Indian Council of Agricultural Research. A search on Google Books (Advanced) for "Indian Council of Agricultural Research" and (soya or soyabean or soyabeans) from 1928 to 1955 gets 25 hits / results; the earliest is dated 1939. The main focus of research was on the soyabean as a fodder crop, although soyabean flour was also studied.

Investigations sponsored by ICAR and conducted on soya-bean cultivation in the Punjab have been highly successful. The purpose of these investigations was to introduce soya bean varieties from outside the area, acclimatise them to local conditions, and select the most suitable varieties, considering both their agricultural and dietetic properties.

ICAR collected about 90 soya bean varieties from places as distant as Manchuria and the United Kingdom. All these beans could be divided into two types by growth habit: (1) Erect and compact types; (2) creeping types. The erect and compact varieties generally proved superior; they ripened earlier. Yellow seeds had, in general, a higher protein content

than black, chocolate, or green coloured seeds. Small seeded varieties tended to have hard seeds and to cook poorly.

Eventually, a yellow-seeded variety was selected from a variety that came from Nanking, China. It is high yielding, ripens early, and has good tasting seeds, which contain 43.2% protein and 19.5% oil. "Above all, this variety has proved to be the best for the production of soya bean milk, flour, biscuits, confections and other edible products." The best time of planting and rate of planting are discussed. The Punjab was found to be best suited for hilly tracts; it yielded more than 34 maunds (1 maund = about 82.28 pounds or 37.32 kg) per acre.

Wide variation in the nutritional composition was noticed in the 25 varieties of soya beans grown at Ludhiana–in the Indian state of Punjab.

The Punjab experiments have shown that up to 25% of soya bean flour can be mixed with wheat flour without any change in the appearance or flavour of the blended product–which is good for making confectionery. Milk made from the soya bean was found to have a peculiar flavor, but the curd [tofu] was found to be palatable.

Experiments conducted at the Indian Institute of Science, Bangalore, have shown that the nutritive value of soya beans can be conserved and even enhanced by proper processing and storage.

1556. Ruddiman, Edsel A. 1951. The reminiscences of Dr. Edsel Ruddiman. Dearborn, Michigan: Ford Motor Company Archives, Oral History Section. iv + 9 p. Oct. Unpublished manuscript. Courtesy of Henry Ford Museum & Greenfield Village Archives (Dearborn, Michigan).

• ***Summary:*** These reminiscences are based on a tape-recorded interview with Dr. Ruddiman conducted by Mr. Owen Bombard in March and April, 1951. A chronology of Dr. Ruddiman states: 1864 Dec. 27–Born in Dearborn, Michigan. 1886–Pharmaceutical Chemist, University of Michigan. 1887–Master, Pharmacy, Univ. of Michigan. 1887-1890–Chemist in charge of manufacturing laboratory, Milburn and Williamson. 1893–M.D., Vanderbilt Univ. 1897-1920–Chemist to Tennessee Board of Pharmacy. 1890-1920–Prof. of Pharmacy and Materia Medica, Vanderbilt Univ. 1919-1920–Dean, School of Pharmacy, Vanderbilt Univ. 1921-1926–Chief Chemist, John T. Milliken & Co. [St. Louis, Missouri]. 1926-1942–Research Chemist, Ford Motor Co. [Dearborn, Michigan].

He was born in what was then known as the Scotch Settlement in Dearborn, about 2 miles from Henry Ford's father's farm. He and Henry Ford attended the same primary school and from the first day of school they sat together in the same wooden seat, and often attended the same Episcopal church on Sundays. As a young man, Henry showed his mechanical genius. He often drove his cars himself in early automobile races. In 1926 Dr. Ruddiman accepted an invitation from Henry Ford to work for him. Dr. Ruddiman's laboratory was in what was then called the Engineering Laboratory, in Greenfield Village, not far from Mr. Ford's office. "In my work I followed a more or less independent line of research." "Most of the time I worked for him, it was along the dietary line. When he talked to me about food and diets, it was about making more healthy foods and improving the parts, protein and so on.

"Most of my work was with soybeans. It was just about the time they were beginning to grow them around there, and Mr. Ford wanted to know particularly if they were good as food. I did a lot of chemical analysis on them; separating them, of course, into their parts (protein, carbohydrates, etc.) and then fed those to the rats. I had quite a number of white rats to experiment on. I used them to test the food values.

"I used to enjoy that work; I was interested in it and I wanted to do what he wanted me to do, of course. I followed out his suggestions. He came in frequently and made suggestions, or to see what I was doing, and what the results were.

"I guess I was as responsible as anyone for the making of synthetic milk from soybeans. We just rubbed it up with water and saw that it had properties that made it look like milk, then we tested it to see the amount of protein, sugar, etc. it had in it. We then made up the soybean milk to agree with the ordinary cow's milk in those constituents that were deficient. I was very well satisfied with it. It tested out very well on the rats.

"We talked of putting it on the market commercially but decided not to, though I don't remember any particular reason why we did not.

"We also made up a powder from the beans, like a flour. That was used somewhat in place of wheat flour. Mr. Ford used some of this in his home occasionally, though he didn't make a practice of it. He had a great interest in this line of research.

"I also worked in making plastics from the soybean. We broke the beans into their parts, the proteins largely, and worked this into a stiff mass. We didn't use it much as a powder. I didn't do much in making the plastic for the car, but it was through my work in showing what could be done with the soybean that the car was made." Address: 22179 Long Boulevard, Dearborn, Michigan.

1557. Nickerson, Jane. 1951. News of food: Finalists in national baking contest vie for $138,000 worth of prizes. *New York Times.* Dec. 11. p. 56.

• ***Summary:*** The contest was held in the ballroom of the Waldorf-Astoria Hotel. For the third year in a row 100 finalists competed in the Pillsbury national baking contest.

Mrs. Gloria Eldridge Yuin of Freeport, Long Island [New York], baked a Chinese-style hot biscuit [probably *yu-tiao*] that she learned from her Chinese-born husband. She said it is "the poor man's breakfast in China when eaten with hot soy milk."

1558. **Product Name:** Canned Soy Milk.
Manufacturer's Name: Chicago Dietetic Supply House, Inc.
Manufacturer's Address: 1750 W. Van Buren Ave., Chicago, Illinois.
Date of Introduction: 1951.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: Soybean Blue Book. 1951. p. 94. Not clear whether they are a manufacturer or a handler.

1559. **Product Name:** Chocolait (Soy-based Chocolate Milk).
Manufacturer's Name: John Sexton & Co.
Manufacturer's Address: Sexton Square, Chicago, Illinois.
Date of Introduction: 1951.
New Product–Documentation: Soybean Blue Book. 1951. p. 90. "Other plants at Long Island City, Boston, Philadelphia, Pittsburgh, Detroit, Atlanta, Dallas, and San Francisco."

1560. Sluzewski, M. 1951. Soja melk [Soymilk]. *Algemeen Zuivel- en Melkhygienisch Weekblad* 44(21):377-78. [Dut]*

1561. Subramanian, N. 1951. Studies on vegetable milks. MSc thesis, Madras University. *

1562. Burnett, R.S. 1951. Soybean protein food products. In: K.S. Markley, ed. 1951. Soybeans and Soybean Products. Vol. II. New York: Interscience Publishers or John Wiley & Sons. xvi + 1145 p. See p. 949-1002. [125 ref]
• ***Summary:*** Contents: 1. Soybean flour, grits, and flakes: Introduction, early history, types of soybean flour–standard definitions, amount of soybean flour and related products produced, methods of manufacture, soybean flour in bread, soybean flour in other baked goods, soybean flour in the meat industry, soybean flakes in breakfast foods, soybean flakes and derived peptones as brewing adjuncts, miscellaneous uses of soybean flour. 2. Isolated and modified soybean proteins: Aerating agents for confections and related products, neutral spray-dried soybean protein [isolates], soybean protein in [whipped] toppings, soybean protein and flour in confections, soybean protein and flour in ice cream, soy sauce, monosodium glutamate from soybeans, soybean vegetable milk, tofu, miso, yuba, and other Oriental soybean foods (incl. natto and Hamanatto).

The soy flour industry in the U.S. has grown steadily in recent years. Deliveries of soy flour "from the years 1930 to 1940 averaged about 25 million pounds annually. The deliveries have increased considerably since 1940 partly as a result of an increase in domestic use and partly as a result of deliveries of soybean flour to various government agencies, largely for export. In 1941, Federal purchases amounted to about 10 million pounds of soybean flour. In 1943, the amount increased to 170 million pounds when large shipments were made to Great Britain and the U.S.S.R. under lend-lease. Purchases of soybean flour by the Federal government decreased for several years, but increased in 1946 to an estimated 200 million pounds under the UNRRA [United Nations Relief and Rehabilitation Administration] program. Total soybean flour deliveries for 1946 were approximately 380 million pounds. In the domestic market the bakery industry was the largest consumer. About 40% of the domestic sales of soybean flour were for bakery use. Since the Bureau of Animal Industry has legalized the use of soybean flour as a binder in meat products, about 20% of domestic sales are to the sausage industry. The balance is used in prepared dough mixes, macaroni, candy, and in institutional feeding.

"In 1947, domestic sales of soybean flour were over 60 million pounds. This amount, plus government purchases and exports, amounted to about 415 million pounds. Two-thirds or more of the present domestic consumption of soybean flour is by the bakery, meat processing, and pet foods industries."

Table 155 (p. 953) shows Bushels of soybeans used for U.S. soy flour production (1942-1947). In 1942-43, the amount of full-fat soy flour produced in the USA was roughly 40% of the amount of defatted. In 1944-45 it was about 49%, but thereafter the percentage dropped rapidly to only 5% in 1946-47.

Note: These statistics relate to Soya Corporation of America, Dr. Armand Burke, and Dr. A.A. Horvath.

Concerning soybean flakes and derived peptones as brewing adjuncts (p. 974-77): "Soybean flakes and grits have been employed by the brewing industry to improve the body and flavor of beer, to increase foam stability, and to stimulate yeast growth.

"Improvement in foam stability and flavor can also be attained by adding directly to the finished beer a hydrolyzed soybean protein which has been broken down to the peptone and proteose stage...

"The early history of the use of soybean products as whipping agents is of interest since this work stimulated the development of processes which eventually led to the production of the present soy albumens. In 1939, Watts and Ulrich pointed out that an active whipping substance could be prepared from solvent-extracted soybean flour in which the protein had not been heat denatured, by leaching it at the isoelectric point of the protein. This extract was found to whip more readily and to a much greater volume than suspensions of the original flour... The active principle in the whipping substance prepared by Watts and Ulrich was probably the nonprotein nitrogenous material present in the soybean flour which is soluble at the isoelectric point of the protein."

Tables show: (155) Soybeans used in the production of low-fat and full-fat flour and grits (1942-1947, 1,000

bushels). (156) Peroxide value of fat extracted from pastries stored at -17.8ºC. (0ºF.), containing different percentages of soybean flour for periods of 0-6 months. (157) Analysis of uncooked liverwurst emulsion and of processed (water-cooked) sausage containing added soybean flour and water. (158) Losses in cooking liverwurst containing added soybean flour and water. (159). Analysis of frankfurter emulsion and of smoked sausage made with 3.5% of various binders. (160) Losses in smoking frankfurters made with 3.5% of various binders and after consumer cooking. (161) Effect of the addition of soybean peptone on volume and life of foam on beer. (162) Composition and pH of soybean albumens. (163) Composition of ice creams containing soybean flour. (164) Comparison of soybean milk with cow milk. One sample of cow's milk is compared with 4 samples of soybean milk (probably Oriental) and 3 samples of modern U.S. soybean milk reconstituted (Soyalac for infants, all purpose Soyalac, Soyagen canned from Loma Linda Food Co., California).

Figures show: (199-201, p. 981) Comparison of whipping ability of egg albumen and soybean albumen in different proportions and combinations. (202) Flow sheet for the acid hydrolysis process used in making HVP soy sauce. Address: Protein By-Products Research, Research and Technical Div., Wilson & Co., Inc., Chicago, Illinois.

1563. Ciancio, Pedro N. 1951. La soja y el problema alimentario del Paraguay [The soybean and Paraguay's nutritional problem]. Asunción, Paraguay: Edit. "El Grafico." 505 p. No index. 25 cm. Contains a 17-page English-language summary. Ciencia de la Nutrition (Metabolismo). [50 ref. Spa; eng]

• ***Summary:*** On cover: *Ciencia de la nutrición* (*metabolismo*). Contents (from English-language summary, p. 477-94): 1. Report on the soybean, presented at the First Interamerican Congress of Medicine (*Primer Congreso Interamericano de Medicina*), sponsored by the National Academy of Rio de Janeiro [Brazil], September 7-16, 1948 (the soybean was the 6th subject on the program; the report by Dr. Pedro Ciancio, which emphasized the nutritional benefits of soya as a protective and basic food, was unanimously approved by the scientific assembly). 2. The "Paraguayan Soybean," a new variety (developed after 20 years of cultivation in Paraguayan soil). 3. The nutritional value of soy in the light of modern science. 4. Deficiencies in the dietetic regimen in Paraguay and how to correct them; particular importance of the soy bean to correct these deficiencies. 5. Peculiarities of the biochemical structure of the soybean and the medical applications deriving therefrom. 6. Soy cultivation ("Paraguayan soil is excellent for the cultivation of soy... The average output ranges from 1,500 to 2,000 kilos per hectare but in some regions of Caazapá (Rosario, Charará, Buena Vista, etc.)... I obtained the enormous output of 4,000 kilos per hectare, and this without any inoculation whatever!"). 7. The place of soy in the diet. 8. World production of soy. 9. Conclusion. More about soy milk (p. 493).

The author emphasizes the many nutritional benefits of using soy flour (he used the term "whole soy flour," p. 493), toasted soy meal, and soy milk in the Paraguayan diet. He believes that soya can be used to improve the diet without increasing its cost. In 1950 the author conducted experiments, in collaboration with the distinguished biochemist Prof. Dr. Ramón Codas of the Faculty of Chemistry and Pharmacy (Asunción), feeding soy milk to undernourished families living in the Department of Caazapá. When 1 liter/day of soymilk was added to the usual diet for 2 months, "most of the groups had increased their weights, and better coloring and greater activity could be noted in all the members of the groups under observation. He recommended using the resulting okara in soups or tortillas.

Chapter 8, "World production of soy," states (p. 490): "Cultivation of soy began in 1921, the year in which I introduced the plant to our country. Although its cultivation is only slowly increasing, at the present time there are already many villages where soy is cultivated, though on a small scale."

In 1950 a group of renowned scientists (Bergmann, Weizmann, and Willstater) at Weizmann's Institute of Science at Rehovoth, Israel, confirmed the importance of soy in banishing world hunger. They developed a soy powder and Bergmann wrote a report about it.

Note 1. This document contains the earliest date seen for soybeans in Paraguay, or the cultivation of soybeans in Paraguay (1921). In 1989 E.R. Alvarez-Britos wrote: "In 1921, Dr. Pedro N. Ciancio, considered the apostle of soybean cultivation in Paraguay, introduced the varieties Hollybrook, Manouth [Mammoth?], Pekin [Peking], and Shanghai, from Argentina, the USA, and Japan."

Note 2. Much of this book was written between 1940 and 1942. Address: Prof., Dr., Asunción, Paraguay.

1564. Dean, R.F.A. 1951. The nutritional adequacy of a vegetable substitute for milk. *British J. of Nutrition* 5(2):269-74. [11 ref]

• ***Summary:*** "The problem of supplying a substitute for milk can be resolved into the separate problems of finding substitutes for the various components: minerals, carbohydrate, fat, protein and vitamins." The writer intends to find a good diet from plant sources alone, and in this area most of the literature (which he reviews) is about soya beans or cereal-soya diets. However the soya bean is not universally available.

Soya preparations are widely used in the USA for feeding children who cannot tolerate cow's milk, but when Stoesser (1944) conducted a clinical trial using one of the most widely advertised of these, "his results were very poor."

Conclusion: "We know there are millions of undernourished children. We believe they could be better

nourished if we used our plant resources more perfectly. We must find means of translating our belief into fact." Address: Dep. of Experimental Medicine, Univ. of Cambridge and Medical Research Council.

1565. Law, James Thomas. 1951. Law's grocer's manual. 4th ed. Edited and revised by W.G. Copsey. London: William Clowes and Sons, Ltd. xv + 814 p. See p. 467, 510. Illust. 22 cm. With a foreword by W.R. Austen Hudson, M.P., F.G.I.
• ***Summary:*** Page 467, under the heading "Soy bean," discusses soy sauce, tofu, natto, miso, and soy milk. Page 510 gives more details on tofu and describes (quaintly and inaccurately) how to make this "fresh bean cheese." "The beans are soaked in water for 3 or 4 hours, cooked, and reduced to a paste. The milky fluid is strained through a coarse cloth to remove stalk and fibre [okara], and when cooled is precipitated by the addition of crude salt. The precipitate, which is rich in protein and fat, is then kneaded and pressed into cakes called fresh Tofu. They are then dipped into a solution of curcuma." Address: W.G. Copsey is Secretary of the Inst. of Certified Grocers; Hudson is President of the National Assoc. of Multiple Grocers.

1566. Nicolici, Dumitru. 1951. The original diet. New ed. 4th impression [printing]. Summer Hill, NSW, Australia: Printed by Religious Liberty Publishing Assoc. 151 p. Illust. 21 cm. [81* footnotes]
• ***Summary:*** Quoting extensively from Biblical scriptures and the writings of Ellen G. White, this Seventh-day Adventist book presents the principles of vegetarian nutrition, and gives details of the adverse effects on health and character from consumption of meat, dairy products, eggs, alcohol, spicy condiments, and stimulants of all kinds. Contains recipes for fruit, nut, grain, and vegetable dishes. The author was born in 1896.

Chapter 9, titled "Milk, Butter, Eggs & Cheese" is very critical of these products as foods, and suggests that they be dispensed with as soon as possible. "Thousands of infants die annually because of indigestion set up by the use of cow's milk." Cow's milk contains large numbers of germs, some of which produce diseases such as typhoid fever and tuberculosis. "Cheese must certainly be ruled off our tables as unfit for human food" since it contains large numbers of germs and microbes–"in every pound nearly twice as many as there are people upon the face of the earth."

Chapter 10, titled "The Soya Bean," provides an alternative to dairy products and meat. It begins: "The soybean has been referred to as the Wonder Food of the world... It is called the 'meat without bones.'" It is an "ideal source of protein." From soybeans can be made soya milk which is "entirely free from the disease germs that make milk a potential disease carrier." Soy-related recipes include: Mayonnaise without egg (p. 138). Soy-bean mayonnaise (with soy-bean milk, p. 138). Cooked dressing (with soy bean flour, p. 138). Soy-bean milk (p. 139). Baked soy-bean croquettes (with cooked, ground soybeans, p. 139).

1567. Pappas, B.B. 1951. A high protein food–the soybean. *Healthful Living* (*New York City*) 7:33-34.
• ***Summary:*** "The United States Department of Agriculture recognized its value and set up a separate Soy Bean Research Laboratory to find new dietary and industrial uses for this wonderful bean. It has now been proven that the protein of the soy bean can very well replace the protein of meat, eggs and dairy products, and many manufacturers have taken advantage of this knowledge to produce a fine group of soy bean foods. Today we have such foods as soy bean cookies, roasted soy beans (crunchy and delicious), soy bean milk powder, malt and soy drinks, soy flour, soy spaghetti, macaroni and noodles, soy bean bread, soya salad oil, soy sandwich spread, soy bean meat in cans, etc., etc. The number and variety of items now being made from the soy bean is extraordinary. The American people have come to a full realization of the value of this miraculous bean and are making it an integral part of their daily food.

"Soy bean cheese: The soy bean is used by the Chinese not only in place of milk but it is also made into cheese. Tofu, or soy bean cheese, is extensively used in China and has the advantage over cheese prepared from cow's milk in that it is not putrescent. This bean also serves as a substitute for eggs–containing as it does, protein and fat (including lecithin) equivalent to that supplied by the white and yolk of the egg. Kellogg says that Tofu omelette is more palatable and wholesome than an ordinary egg omelette.

"Most proteins are what is known as 'incomplete proteins' and therefore not capable of supporting life alone. The tests made by the United States Department of Agriculture show that soy bean protein appears to be as valuable as the casein in milk. Osborne and Mendel, two of the most famous investigators and research workers in nutrition in the world, show that the soy bean furnishes a 'complete protein' of high nutritive worth which may be used as a substitute for animal protein. This protein is highly digestible and has twice as much as meat, for example. The soy bean likewise has a high fat content but practically no starch.

"It resembles a nut more than a bean, and is superior to nuts as a protein because of its alkalinity. Most nuts are acid-forming.

"We have spoken of soy bean milk. This does not necessarily mean liquid milk, for a perfectly fine soy bean milk is made by mixing dry soy bean milk powder with water to get an excellent tasting beverage. This is superior to cow's milk because of its much greater capacity to counteract intestinal putrefaction. Soy bean milk is not only free from putrefactive bacteria but furthers the development of Bacillus Acidophilus which counteracts the putrefactive type of bacteria. It is certain that it will keep the intestinal tract of a

child in a purer state than cow's milk.

"Please don't get the impression from this that soy bean powder is strictly an infant food. Far from it. That is only one of its many uses.

"Three thousand years before the Christian era millions of Chinese were living–and thriving–on a vegetarian diet that was based on the soy bean as its principal food. This miraculous oriental bean was used in place of meat, fowl, eggs, butter, cheese, fish and milk. Often in their long experience the Chinese were saved from starvation and extinction by the soy bean.

"Protein substitute: In the Orient the soy bean still replaces both the cow and the chicken, being used as a substitute for such proteins as milk, butter, cheese and eggs. As a matter of fact, a milk made from the soy bean is used for infant feeding because of its easy digestibility and its lack of putrefactive agencies. As the famous Rout said: 'The properties of soy bean milk and curd are similar to those of milk obtained from cows, and the action of the rennet, etc., is the same. Lactic ferments also act upon it in the same way, also the ferments of certain European cheeses. Throughout China, vegetable milk is extensively used for infant feeding, and is, bottled and delivered each day to regular customers. Investigators in America and Europe indicate that vegetable (soy bean) milk can be successfully used to replace cow's milk.

"A vitamin food: The soy bean is also high in alkalinity. The lima bean was considered a high alkaline food, or bean, but Becker has proved that the soy bean stands higher than all vegetables in this respect. The soy bean is also rich in Vitamin D, which is one of its many striking characteristics. Outside of egg yolk and cod liver oil very few foods have any of this valuable vitamin."

1568. Ray, Georges. 1951. Technologie laitière. 2e éd. [Dairy technology. 2nd ed.]. Paris: Ed. Dunod. vii + 743 p. See p. 703-09. Illust. Index. 25 cm. [Fre]

• ***Summary:*** The chapter on "Milk substitutes" (p. 696+) contains a subchapter titled "Soymilk (*Lait de soya*)*"* (p. 703-09), which has the following contents: Introduction. General rules to follow in the preparation of soymilk. The North Vietnamese (*Tonkinoise*) method. Method of preparation used in dairies in the Far East: Castagnol process. Modern methods for the preparation of soymilk. Composition of soymilk. Properties of soymilk. Fermented soymilk (using *Bacillus acidophilus*, British patent No. 441,574, 22 Jan. 1936). Concentrating / condensing and drying soymilk (including yuba). Soymilk curds (*Caillebotte de soya*). The future of soymilk.

Contains two full-page ads by Alfa-Laval for dairy milk equipment.

Vegetable milks have certain advantages over animal milks. They are easily made in a state of microbial purity, free of tuberculosis bacteria. Their casein precipitates more rapidly than that of cow's milk and does not coagulate in the same manner in the stomach. And it can be sold at a lower price. Later: It contains no cholesterol, and makes better use of world food supplies. Disadvantages: It has a lower calcium content and many Westerners prefer the flavor of animal milks.

Here is a quick review of the processes for making soymilk, described at length in a monograph (written under the direction of G. Ray) by D. Kaltenbach and J. Legros [1936]. Precise information about the soya industry is assembled is a more recent work by A. Matagrin. Soymilk pioneer in France were [Li Yu-ying], L. Rouest, and H. de Guerpel (p. 703).

The Castagnol process was developed by Ray at the agronomic research Institute in Indochina (p. 704).

Starting in 1910, a Franco-Chinese society was founded for the study of the utilization of artificial milk from the soybean. The experiments were abandoned in 1912. In 1916 Prof. O. Laxa of Prague recommended for making soymilk on a small scale. Note: It is not important (p. 705).

In London, before World War I, a synthetic milk syndicate launched a type of [soy] milk adapted to European tastes. It applied the process of F. Goessel [of Germany]; 100 liters of soymilk were obtained from 10 kg of ground soybeans, 5 gm of sodium phosphate, 2.4 kg of lactose [milk sugar], 2 kg of sesame oil, 6 gm of salt, and 60 gm of sodium bicarbonate [also known as baking soda or bicarbonate of soda]. Melhuish, an Englishman, patented a process for enriching the [soy] milk with various oils that did not change its taste. Some years after World War I, Bertrand received a patent for the manufacture of deodorized soymilk. Among the American processes are those of Horvath and Kloss (p. 705).

In Germany, the Soyama factory in Frankfort makes a fresh soymilk very similar to cow's milk but with a different flavor. A table shows the nutritional composition of three different types of milk. After standing, the cream of Soyama soymilk separated. This soymilk has a more neutral and softer flavor than that of cow's milk. Bread made with this soymilk is excellent. In 1932 the French engineer Max Adler patented a process for soymilk without the characteristic flavor and odor (p. 706).

In China during World War II, soymilk was used extensively in refugee camps and saved many lives, especially those of children (p. 708).

The Annamites are fond of soymilk during the hot season. Each morning soymilk merchants can be seen circulating through the streets of the native villages of Hanoi. The product is consumed sweetened or unsweetened, cooked with rice, or added to various soups (p. 708).

Fermented soymilk: John H. Kellogg received a British patent for acidophilus soymilk. No. 41,574. 22 Jan. 1936. Yuba is the concentrated film of dried soymilk lipo-proteins (p. 708).

In France, Rene Jarre is specializing in the preparation of soyfoods (*produits alimentaires à base de soja*). Monahan and Pope (1915) added to powdered soymilk malt, cacao and chocolate–U.S. patent 1,165,199 of 21 Dec. 1915 (p. 709).

The future of soymilk: The main challenge now is to find a way to deodorize soymilk. Note: And to remove the flatulence factors (p. 709). Address: Honorary Prof. (Tunis, Rennes, Grignon), former Head of Technical Services, International Institute of Agriculture, Rome (Ex-Chef du Service Tecnique, a l'Institut d'Agriculture de Rome).

1569. Rombauer, Irma S.; Becker, Marion Rombauer. 1951. The joy of cooking. Indianapolis and New York: Bobbs-Merrill Co. 1011 p. Illust. by Ginnie Hofmann. Index. 22 cm.
• ***Summary:*** This is the earliest known Rombauer-Becker edition of this famous cookbook. Marion Rombauer Becker is the daughter of Irma von Starkloff Rombauer. A large percentage of the recipes contain meat, fish, or poultry. Soy-related recipes and descriptions include: Soybean cheese [tofu] (p. 192, made from soybean milk curded without a coagulant like cottage cheese. Season with salt, cinnamon or chives, and caraway). Suggestions for the use of soybeans (similar to the 1943 edition) with the following recipes for cooked soybeans: Soybean loaf. Soybean dinner in one dish. Soybean soufflé. Soybean salad. Then some ideas for "Peanuts as a meat substitute." Soybeans (p. 269; "Young vegetable type, not field varieties of beans, must be used. The pods should still be green"). Roasted soybeans. Cooked dry soybeans (p. 269). Sweet and sour milk substitutions and equivalents (p. 502-03; "If you use Soya Milk, page 817, substitute 1 cupful for 1 cupful of milk"). Soya bean milk (p. 817).

There is a nice, early chapter titled "The Electric Blender" (p. 895-98), which begins: "Throw away your tamis cloth and hair sieve, if you still have these relics of a by-gone age, and replace them with a piece of equipment that makes them obsolete, the electric blender." Includes 4 paragraphs about blenders. This chapter includes recipes for cocktails, cream soups, eggnog, beverages (incl. cold fruit sherbets and a "Blender health drink"), puréed vegetables, custard, and ice creams. For the sherbets: "A fairly creamy result comes from a fresh peach, a banana or canned pineapple juice. A velvety concoction is: 1 small banana, 1 cup milk. Add vanilla or rum, no sugar needed. You may add to this 1 tablespoonful chocolate sirup [syrup] or 4 tablespoonfuls vanilla ice cream. Also try stewed or canned apricots with milk, apricot, pineapple and lemon juice with cracked ice cubes, frozen strawberries with sour or sweet cream."

The chapter titled "Nutrition and calorie chart" states (p. 931): "Proteins are known to contain amino acids. These complex acids are still being studied by chemists, but it is known that some of them are essential to growth and life. All of these acids are not found in complete form in all protein foods. They are most fully represented in meat, fish, eggs, milk and cheese. They are present but less well represented in nuts, legumes and cereals. Since the vegetable groups are incomplete in themselves, it is wise to draw half to two thirds of the daily protein intake from the animal sources given above."

Note 1. In the *Betty Crocker Picture Cook Book* (1950, General Mills), no mention is made of the electric blender. A hand-turned rotary beater is used to make a milk shake.

Note 2. In *Joy*, there is no index entry for milk shake or organic (as "organic gardening"), or vegetarian. Address: 1. St. Louis, Missouri; 2. Cincinnati, Ohio.

1570. White, Julius Gilbert. 1951. Abundant health: Expounding the Learn-how-to-be-well system of daily living. 5th printing. Pine Mountain Valley, Georgia: Health and Character Education Institute. xix + 477 p. Illust. 24 cm. See p. 367-82. [25 ref]
• ***Summary:*** About vegetarianism, diet, and hygiene. Note that the author was formerly (for 11 years) head of the Lecture Bureau at Madison College, a Seventh-day Adventist college and sanitarium. A portrait photo (p. vi) shows Julius G. White.

One chapter titled "The soybean: The wonder food of the world" (p. 367-82) discusses (with some recipes) the nutritional value of soybeans, Soybean milk and the pulp left after making it, soy flour, whole soybeans, vegetable meat (meat substitutes), soybean cheese [tofu], home-made soy butter (made from 4 tablespoons each soy flour and water, 1 cup of oil, a little salt and butter color if desired), soy mayonnaise, soy acidophilus milk, soy sprouts, soy sauce, soy coffee, and soy protein substitute for egg-white.

1571. Morse, W.J.; Cartter, J.L. 1952. Soybeans for feed, food, and industrial products. *Farmers' Bulletin* (*USDA*) No. 2038. 41 p. Feb. Supersedes Farmers' Bulletin No. 1617 (Morse 1930, 1932).
• ***Summary:*** Contents: Importance of the soybean and its byproducts. Direct use of soybeans on the farm: Soybean hay (for dairy cattle, beef cattle, horses and mules, sheep, swine, poultry), soybeans for pasturage (hogging down soybeans, sheep, beef and dairy cattle, poultry on soybean pasturage), soybean for soilage, for silage, for soil improvement, for livestock feed (feed for swine, dairy cattle, beef cattle, horses, sheep, poultry, wild game {quail, pigeons}), soybean straw (feeding value, fertilizing value).

Soybeans processed for meal and oil: Processing methods, meal for livestock (for dairy cattle, beef cattle, poultry, swine, sheep, dogs {in dog-food industry}, rabbits, fur-bearing animals, quail and pheasants), meal as fertilizer, for industrial purposes, in food products, use of oil (in food products, industrial uses such as paints and varnishes). Soybeans and products for human consumption: Vegetable soybeans, dry soybeans ("Other uses of the dry soybean

{principally of oriental origin} are in the preparation of soybean milk, soybean curd, soybean sprouts, beverages, salted, roasted soybeans), soy flour, grits, and flakes, Oriental soybean foods, soy milk, soy curd, soy sauce, soy sprouts, soy beverages. Miscellaneous uses of the soybean: Honey production (the soybean as a honey plant, soy flour for honey bees), soy flour and grits in dog food, soy flakes in brewing beer, soy flour for insecticides.

Under "Soybean utilization," page 3 notes: (1) The roots and coarse stems are used as fuel in China, Manchuria, and Korea. (2) In many parts of China the plants, when 3 to 4 inches high, are used as greens. (3) In Manchuria and Korea, the leaves are cured and smoked as tobacco.

Under "Soy milk," page 38 states: "The ground soybean pulp or mash [okara] left after separating the liquid from the solid material is still of good nutritive quality, but it has very little flavor. It can be dried and made into flour for human food, combined with foods of more pronounced taste, or used for animal feed."

Under "Soy curd" [tofu], page 38 states: "Chinese and Japanese markets and restaurants in many cities in the United States sell fresh soy curd. Several firms in the United States can soy curd."

Under "Soy sprouts," page 40 states: "Soybeans and several other species of beans, especially the mung bean, are sprouted and used as a green vegetable in the Far East. Soy sprouts (fig. 18, D) can be produced successfully in the home, and a year-round fresh vegetable that may be used raw or cooked can be obtained by sprouting soybeans in a flower pot, a glass fruit jar, or a strainer.

"In producing sprouts, select a stock of clean, bright beans of the latest crop. Any of the field varieties may be used, but the yellow-seeded varieties have less conspicuous skins, though black-seeded varieties, such as the Cayuga, Peking, Wilson, and Otootan, seem to germinate more quickly and uniformly. Carefully hand-pick the seed, discarding everything except the clean, whole beans. Wash the beans thoroughly, cover with lukewarm water, and allow them to soak for a few hours (or at most overnight) until they are swollen. Place the beans in a container and cover them with dampened cheesecloth. Rustproof wire-mesh screening or cheesecloth can be used to cover the bottom of the container to allow for drainage. In using a glass fruit jar, cover the top with a piece of cheesecloth and tie it on securely. Invert the jar and place it in a dark spot at room temperature.

"Tilt it slightly so that excess water can drain away promptly. Pour plenty of water on the beans 3 to 4 times a day, thereby insuring thorough washing. The beans may be sprinkled each evening with chlorinated lime solution (1 teaspoon of calcium hypochlorite dissolved in 3 gallons of water) to keep down mold growth and spoilage. Chlorinated limewater is not needed to kill fungus growth if the seed is of good quality. In 3 to 4 days the sprouts will be 1 to 2 inches long and ready to use. Bean sprouts increase about six times their original volume. The commercial production of soy sprouts proceeds along the same, lines, except that larger sprouting tanks or trays are used and the process is more carefully controlled.

"Soybean sprouts can be used in many ways and are cooked and served with the bean attached. They are a fair source of thiamine, riboflavin, and ascorbic acid. The sprouts may be served raw in salads, cooked in various ways, and used in such dishes as omelets, stews, fricassees, and chop suey. They are very tender and lose their crispness if put into hot dishes more than a few minutes before serving.

"A few companies have successfully canned soy sprouts [in the USA]. The New York (Cornell) Agricultural Experiment Station found that sprouts lend themselves admirably to quick-freezing." Address: USDA.

1572. McCloud, J.L. 1952. Reminiscences: Bob Smith, Rex Diamond, and Delsoy Products (Document part). Dearborn, Michigan: Ford Motor Company Archives, Oral History Section. 423 p. See p. 162-64. Unpublished manuscript. 28 cm. Courtesy of Henry Ford Museum & Greenfield Village Archives. Acc. 65.

• ***Summary:*** Originally Bob Smith worked for Robert Boyer, then Mr. Ford had him operating a separate research laboratory. "Under Boyer they had worked up soybean milk and soybean cream which they found could whip quite well and from which the present product Delsoy is made. When Boyer was concentrating on soybean fiber, Smith was concentrating on milk and cream. Actually he was in a sense competing with Dr. Ruddiman, so you might say there were two food laboratories out there." Boyer's laboratory was focused on chemurgic applications. Dr. Ruddiman "was moved from the little rat house [where he kept is laboratory rats and did food experiments; it had previously been a private dining room] to the building that had been originally built for the Dearborn Water Works. This was empty and wasn't being used for anything else. I am quite sure, but I believe that Smith either went over to work in this laboratory under Ruddiman or about the time that Ruddiman retired...

A man by the name of Jack [sic, Holton W. "Rex"] Diamond claims that he developed this product which Smith sold and commercialized under the name Delsoy. I don't know very much about it, except that it was very confusing. There was a man from New York [probably Herbert Marshall Taylor] who came over here and told us a great long story about how Smith had stolen something from him, and he was going to sue Smith and the Ford Motor Company and so on. This man went out to see Frank Campsall, and I got assigned the job of interviewing him and trying to smooth his feathers."

At one time, Mr. Smith reported directly to Mr. Ford. "Mr. Ford went to see him regularly and was keenly interested in the work Bob Smith was doing. Later Bob

Smith left the Company and set up a business of his own, based on the Delsoy product, which was developed into quite a nice commercial affair.

"Jack [sic, "Rex"] Diamond left and I think he tried to set up competition to Bob Smith. Bob Smith had no prior technical training. I think he was another Trade School graduate. I would classify the Trade School not as a collegiate rank but as junior collegiate training that many of the boys acquired. Jack Diamond, however, was a trained chemist, and he may be right when he stated that he developed it" [soy-based whip topping]. Address: Chemist, in charge of the Chemical and Metallurgical Lab.

1573. Melo, Maria de Lourdes. 1952. Feijao soja, o alimento que se impoe [The soybean; the food that is becoming more popular]. *Boletim de Agricultura, Departmento de Producao Vegetal* (*Belo Horizonte*) 1(4):33-35. April. [Por]
• ***Summary:*** Belo Horizonte is in the state of Minas Gerais. Address: Dietista–Orientadora Nutricionista das Escolas de Ensino Tecnico, Brazil.

1574. Melo, Maria de Lourdes. 1952. Feijao soja, o alimento que se impoe [Soybeans for the nourishment of nursing mothers, and pre-school and school children]. *Boletim de Agricultura, Departmento de Producao Vegetal* (*Belo Horizonte*)*–Brazil* 1(4):33-35. April. [Por]
Address: Dietista, Orientadora Nutricionista das Escolas de Ensino Técnico.

1575. Varela, J. Daniel. 1952. El frijol soya en Cundinamarca [The soybean in Cundinamarca]. *Agricultura Tropical* (*Colombia*) 8(4):9-11. April. [Spa]
• ***Summary:*** Cundinamarca is a department in Colombia, of which Bogota is the capital. Soybeans grow well in this inland valley and soy products could find many uses. Photos show: (1) A field of soybeans in the municipality of "La Mesa" (Cundinamarca). (2) Calves, of the normanda breed, standing in a field. They are fed with soymilk at the hacienda "El Dindal," owned by Messrs. Carreño and Terán in Zipaquirá. Address: Ing. Agr. (Agricultural Engineer), Colombia.

1576. *Vegetarian News Digest* (*Los Angeles*). 1952. "44": The new improved food beverage. 2(8):48. Spring.
• ***Summary:*** The main ingredient appears to be dehydrated powdered whole soy beans. A 14-oz can retails for $1.39.

1577. Kastens, M.L.; Baldauski, F.A. 1952. Chemicals from milk. *Industrial and Engineering Chemistry* 44(6):1257-68. June. [23 ref]
• ***Summary:*** In the USA, about 70% of the production total milk solids is used for human food, 20% is condensed or dried for animal feed, and the remaining 10%, as skim milk, buttermilk, or whey is either discarded or returned to the farms for animal feed. The recent average production of 20 million lb of casein, 40 million lb of lactose, and 154 million lb of powdered whey is miniscule compared with the total supply.

Continuous casein-making machines, introduced in the 1920s and 1930s, with improvements in evaporators and drying equipment, "have made the milk by-product industry truly a chemical process industry..." Uses for milk proteins has ranged from textile fibers to paint, from glue to bacterial nutrients. In most applications it must compete economically with vegetable proteins. Under a recent reorganization, Sheffield's Chemurgic Division has become the Chemical Division. The process and equipment at the Norwich plant for making casein, caseinates, whey proteins, milk sugar, protein hydrolyzates, and casein hydrolyzates are described. The largest volume product is lactose, used in medicinal capsule formulations and a nutrient in penicillin fermentations. Casein is most widely used as a paper coating.

Note: This is the earliest document seen (Aug. 2013) concerning casein. Address: 1. Assoc. editor. 2. Chemical Div., Sheffield Farms Co., Inc., Norwich, New York.

1578. Melo, Maria de Lourdes. 1952. O que é a soja [What is the soybean?]. *Boletim de Agricultura, Departmento de Producao Vegetal* (*Belo Horizonte*) 1(6):63-71. June. [Por]
• ***Summary:*** Gives recipes for and/or using soymilk, okara (*u-no-hana* in Japanese), soya croquettes (*croquete de soja*), soya with rice, salted, roasted soynuts (*soja torrada em graos, salgadinhos*), tofu (*ricota de soja*), and soy flour in bread, biscuits, cakes, and bolos.

Note 1. This is the earliest Portuguese-language document seen (June 2013) that mentions okara, which it calls *massa* and *flor de sabugueiro.* The okara is used to make Farofa, a popular Brazilian dish made of manioc meal browned in a frying pan with grease or butter. Sometimes mixed with bits of meat, crisp fat, chopped eggs, etc. it is much used as a stuffing for roast turkey.

Note 2. This is the earliest Portuguese-language document seen (Dec. 2012) that mentions salted, dried roasted soybeans / soynuts which it calls *soja torrada em graos, salgadinhos.* Address: Dietista de Secretaria de Saude e Assistencia, Brazil.

1579. Glaser, Jerome; Johnstone, D.E. 1952. Soy bean milk as a substitute for mammalian milk in early infancy: With special reference to prevention of allergy to cow's milk. *Annals of Allergy* 10(4):433-39. July/Aug. [19 ref]
• ***Summary:*** The authors assume that the soybean is hypoallergenic and therefore an ideal food for the allergic child. Address: Dep. of Pediatrics of the Univ. of Rochester School of Medicine and Dentistry, the Genesee Hospital, and the Strong Memorial Hospital, Rochester, New York.

1580. Dabadghao, P.M.; Gandhi, R.T. 1952. Grassland

research. I. Some promising grasses and legumes at the Indian Agricultural Research Institute, New Delhi. *Indian J. of Agricultural Science* 22(III):279-91. Sept. See p. 289-90. [3 ref]
• ***Summary:*** In the section on "Kharif legumes" is a subsection titled "American soybeans–Glycine max," which states that "Soybeans are growing in importance both as a human and cattle food. The plants show very high content of protein. A very highly nutritive product of soybean known as Soya milk is prepared out of the seeds... The American varieties of soybeans at Delhi, are very early maturing and are ready for grain in about 2 months time and in about 45 days for fodder. Thus when sown in August, the crop can be harvested for grain in early October. Out of 24 varieties in the collection 5 have been found to possess better growth and are under study. These are Palmetto, Clemson, Monetta, Creole and Charlee. The grain is bolder than the local varieties and grain yield of about 10 md. [maunds] per acre can be had. If cut for fodder, about 150 md. of very highly nutritious fodder could be obtained.

"The earliness of these varieties is a character which can be used very profitably. For example, in the rainfed tracts where wheat is taken, the farmers generally keep the land fallow during the kharif season. These early maturing soybeans can very profitably be used as a catch crop in rotation with wheat."

The Kudzu vine (*Pueraria hirsuta* Scheid Syn. *P. thunbergiana*) is discussed on p. 290. "The plant was first introduced in India at Pusa in 1925 and has shown good promise as a fodder." Address: Indian Agricultural Research Inst., New Delhi.

1581. Dean, R.F.A. 1952. The treatment of kwashiorkor with milk and vegetable proteins. *British Medical Journal.* ii(4788):791-96. Oct. 11. [16 ref]
• ***Summary:*** Two soya preparations were used in feeding children and animals. One was a spray-dried soya milk made in England. The other was made in the laboratory from soya beans grown in the vicinity of Kampala, Uganda. They were soaked overnight in water, dehulled, ground, and packed into glass jars leaving 4-5 cm at the top. The jars were filled with water, covered loosely, immersed in water, and boiled for 3-4 hours. The soy products, were mixed with cooked banana, maize, and sucrose or glucose, were substituted for skim milk. A child on this diet was successfully treated for serious (but not the most severe) kwashiorkor. If soybeans can be used in the treatment of kwashiorkor, they can also presumably be used in its prevention.

Note: The next article (p. 796) gives a history of kwashiorkor. Address: Makerere College, Kampala, Uganda.

1582. Forstmann, Walther Georg Heinrich; Hillmann, Guenther; Radde, Erich M.H. 1952. Recovering valuable components from oil bearing seeds, and products therefrom. *U.S. Patent* 2,615,905. Oct. 28. 4 p. Application filed 30 Oct. 1950. Application also filed in Germany on 31 Oct. 1949. [8 ref]
Address: 1. Berlin-Templehof, Germany; 2. Tuebingen, Germany; 3. New York, NY.

1583. Miller, Harry W. 1952. Re: Infant feeding. Letter to Miss Dorothea VanGundy at 11784 Bonita Ave., Arlington, California, Dec. 14. 1 p. Typed, with signature. [1 ref]
• ***Summary:*** "Under separate cover I have mailed you a copy of the book 'Infant Feeding.' I am sure that you will be very interested in reading it through from cover to cover. It is written in very simple language and well within your vocabulary as a dietitian... It is a resume of the latest on infant feeding and familiarizes one with all of these various infants' foods. It also makes a very ready reference book in case any questions come up.

"I plan that you will have to do with a good deal of correspondence that comes in regarding infant feeding in the future... You will gradually get familiar with our Soyalac and its use... Of course, our scope of work goes way beyond infant feeding because we are working on the feeding of the masses of people, obtaining our nutrition from vegetable sources... Yours very sincerely, H.W. Miller, M.D., Research Director, International Nutrition Research Foundation."

Note 1. This letter is typed on the letterhead of the International Nutrition Laboratory, Inc. Above the Laboratory's name are printed: "Miller's Soya Foods. Soyalac–Sandwich Spread–Vegetable Cheese–Green Soya Beans–Cutletburger–Cutlets." Above that is hand-stamped: "International Nutrition Research Foundation, P.O. Box 388, Mt. Vernon, Ohio."

Note 2. In November 1952 Miss Dorothea Van Gundy began to work for Loma Linda Foods in Arlington, California, as a dietitian and food demonstrator. In August 1960 she was married (her first marriage) to Ed Jones, a health food salesman and distributor, who was 13 years older than she. Ed had previously been married to Mildred Lager. Address: M.D., International Nutrition Lab., Inc., P.O. Box 388, Mt. Vernon, Ohio. Phone: 1195.

1584. *Times* (*London*). 1952. U.N. work for children: Substitutes for milk. Dec. 16. p. 7, col. 2.
• ***Summary:*** From a correspondent in Rome, Italy. The United Nations International Children's Emergency Fund (Unicef) has just finished a meeting at the Food and Agriculture Organization [FAO] headquarters in Rome to consider methods by which to improve child nutrition. Mr. Pate, Unicef's executive director, emphasized at a press conference, "that children suffer severely where animal milk is not available. which is the case in most countries in southern Europe, the Near East, and Asia, where there is not enough milk to supply 1 per cent. of the real needs of the children. Malnutrition was, in fact, the primary problem

facing Unicef."

Since Unicef was created 6 years ago, Unicef has assisted more than 60 million children and expectant mothers throughout the world. Since taking over the work among children previously done by Unrra (United Nations Relief and Rehabilitation Administration) it has helped to feed 6 million children in Europe alone, 1.3 million of them in Italy.

One problem facing Unicef is how to increase supplies of local protein-rich foods that could serve as a substitute for milk where local livestock were insufficient. FAO "had been considering what assistance could be given to increase the production of pulses, including the soya bean, and progress had been made toward establishing a plant in an unspecified country in south-east Asia for the production of milk from soya bean flour."

Note: In 1957, Saridele, a dried nondairy milk based on soybeans, was introduced. Made in Yogyakarta, Indonesia, it was the result of a joint program by FAO and UNICEF.

1585. **Product Name:** Allerteen (Canned Dry Soy-Based Non-Dairy Infant Formula).
Manufacturer's Name: Charles Kilgore Co.
Manufacturer's Address: Yonkers 2, New York.
Date of Introduction: 1952.
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable.
New Product–Documentation: H.F. Meyer. 1952. *Essentials of infant feeding for physicians.* p. 105-05. This product (probably reconstituted) contains 4.2% fat, 3.2% protein, 5.3% carbohydrate, and 20.5 calories per ounce. It is "A palatable hypo-allergenic milk substitute made with soybeans and processed with moist heat to denature the protein."

1586. De, S.S. 1952. Report to FAO on trials conducted in Indonesia with a milk prepared from soya, groundnut, and malt. Rome, Italy: FAO. *
Address: Dr., FAO.

1587. Harmsen, L. 1952. Betreffende melk in Indonesia [On milk in Indonesia]. *Hemera Zoa* (*Bogor, Indonesia*) 59:514-16. [Dut]*
• ***Summary:*** Preceding Title: Nederlandsch-Indische bladen voor diergeneeskunde en dierenteelt.

1588. **Product Name:** Sobee Powder (Soy-Based Non-Dairy Infant Formula).
Manufacturer's Name: Mead Johnson Co.
Manufacturer's Address: 2404 W. Pennsylvania St., Evansville 21, Indiana.
Date of Introduction: 1952.
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable.
Nutrition: Protein 22%, fat 18%, carbohydrate 53%, crude fiber 1%, ash 4%, moisture 2%.
New Product–Documentation: H.F. Meyer. 1952. *Essentials of infant feeding for physicians.* p. 105-05. Sobee is now a dry product. Page 197 states that a 4 lb can retails for $3.69.

Ad in American Journal of Diseases of Children. 1956. 91(5):Inside front cover. May. "In the management of your food-sensitive patients, specify liquid Sobee, hypoallergenic soya formula (milk-free). A soybean protein food for sound nutrition."

H.F. Meyer. 1960. Infant foods and feeding practices. A photo (p. 82) shows this canned product. A photo of a baby's face appears on the front panel. See also p. 88 and 90. Page 121 gives a detailed analysis of the product. The liquid, after being reconstituted, contains: Fat 2.6%, protein 3.2%, carbohydrates 7.7%. Calories per ounce: 20. Tablespoons per ounce: 6. Added vitamins and minerals: none added. Curd tension (grams): zero. Affected by terminal sterilization: No. How formulated or reconstituted: 6 tablespoons to 7 oz. water. Chemical definition and essential clinical uses: "Hypoallergenic balanced soya formula designed for infants actually or probably sensitive to milk, and as a diagnostic measure to confirm or rule out milk sensitivity." Meyer gives the manufacturer's address as 2404 W. Pennsylvania St., Evansville, Indiana.

Orr and Adair. 1967. Tropical Products Institute Report G-31. "The production of protein foods and concentrates from oilseeds." p. 72. They call the product Soybee. Full fat soybean flour is cooked thoroughly, then incorporated with dextrimaltose carbohydrate modifier, sucrose, soya oil, coconut oil, chondrus extract [from Irish moss, a sea vegetable], minerals, and vitamins. An analysis of powdered Sobee (it is also sold as a liquid) is given. Harkins & Sarett. 1967. Journal of Nutrition. 91(2):213-18.

1589. Philips, G.L.C.; Venkitasubramanyan, T.A.; Rajagopalan, R.; De, S.S. 1952. Soya bean milk–Feeding experiments with army boys. *Army Medical Corps Journal* (*India*) 8:199-210. *
• ***Summary:*** The authors report that they are satisfied with the results obtained by supplementing the diet of young soldiers in India with soybean milk. Address: Food Technology Lab., Biochemistry Dep., Indian Inst. of Science, Bangalore 3, India.

1590. Allen, Ida Bailey. 1952. Solving the cost of high eating: A cookbook to live by. New York, NY: Farrar, Straus & Young, Inc. viii + 545 p. Index. 22 cm.
• ***Summary:*** Chapter 10, "Good bread is good food," discusses enriched white bread, and Cornell Bread (developed by Dr. Clive McCay of Cornell Univ., New York; it contains soy flour and no adulterating chemicals, p. 94), and gives recipes for: Soy yeast bread (with soy flour, p. 99-100). Soy muffins (p. 100). Also: Gravy thickened with soy

flour (p. 352).

Chapter 31, titled "Legumes, nuts and brewers' yeast" contains a section on "Soybeans" (p. 386-92) with the following contents: Introduction. Plain-cooked soybeans (boiled, or pressure cooked if possible). Soybean entrees (from home-cooked soybeans): Baked soybeans, Savory soybeans, Baked vegetables stuffed with soybeans, green peppers, tomatoes, turban squash. Soybean salads. Soy grits. Soybean curry (glamor dish). Soy products: Soy flour, Corn Soya cereal, soy macaroni, soy egg noodles (plain or containing carrots, tomato, or spinach), soy spaghetti, "canned meat alternatives based on soybeans," soy cookies, soybean milk powder, soybean curd or cheese, suggestions for using soybean curd or cheese. Soybean sprouts. Soy flour and how to use it. To use soy flour instead of wheat flour: In baking, as thickening, in meat and fish loaves, in spoon bread. Multi-Purpose Food: Pioneer in nutrition ("a spectacular and inexpensive pioneer food containing soy, developed at California Institute of Technology to be used in mass feeding in war stricken countries. It is also on sale in this country at health stores. It is 100 percent vegetable, violates no religious or dietary precept, comes in dry form, and keeps indefinitely"). The Introduction to soybeans (p. 386) begins: "This legume really deserves to be called a 'miracle' food. Soybeans are the only perfect vegetable alternate for meat." Also contains a section on peanuts and peanut butter (p. 392-96).

Note 1. This is the earliest English-language document seen (Jan. 2013) that contains the term "meat alternatives" (or "meat alternative"–with any combination of quotation marks).

Note 2. The author is well known for her 40+ books on food, cooking and the home that have sold 14 million copies, and her syndicated daily food column which is followed by 35 million readers. This book contains "1,300 taste-tested recipes–With glamour foods at budget prices for everyone." A photo on the inside rear dust jacket shows Ida Bailey Allen.

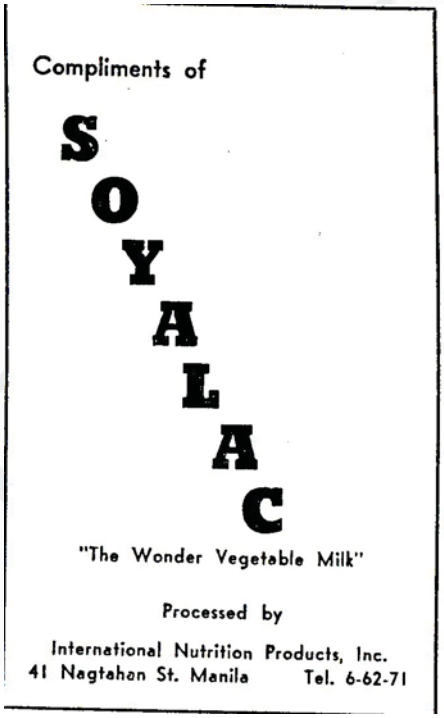
1591. Amaral, Afranio do. 1952. A Soja na alimentacao popular do Brasil [The soybean in popular Brazilian nutrition]. Rio de Janeiro, Brazil: Servico de Alimentacao da Providencia Social (SAPS). 35 p. No index. 18 cm. Colecao Ensaio e Debate Alimentar, no. 1. [Por]

• ***Summary:*** Mentions soymilk (*leite de soja*) and tofu (p. 31). Address: Brazil.

1592. Inagaki, Choten; Iechika, Keiko. 1952. Gyûnyû oyobi nyû-seihin no bitamin C kyôkqa ni kansuru kenkyû. I. Gyûnyû hikaku shita tônyû no bitamin C no antei-do [Studies on the vitamin C enrichment of milk and milk-products. I. Stability of vitamin C in soybean milk as compared to cow-milk]. *Nippon Eiyo Shokuryo Gakkaishi* (*J. of the Japanese Society of Nutrition and Food Science*) [*Nihon*] 4(5):183-86. [4 ref. Jap]

Address: Lab. of Nutrition Chemistry, Ochanomizu Univ., Bunkyo-ku, Otsuka, Tokyo.

1593. International Nutrition Products, Inc. 1952. Compliments of Soyalac. "The wonder vegetable milk" (Ad). In: 1952. A Half Century of Philippine Agriculture. Manila, Philippines: Liwayway Publishing. xxvii + 463 p. See p. 433.



• ***Summary:*** This is a quarter-page ad with no illustrations. Address: 41 Nagtahan St., Manila, Philippines. Phone: 6-62-71.

1594. Meyer, Herman Frederic. 1952. Essentials of infant feeding for physicians: A practical text for rapid reference. Springfield, Illinois: Charles C. Thomas. 252 p. Illust. 24 cm. [17 ref]

• ***Summary:*** Opposite the title page is a full-page photo showing many commercial milk products, both dairy and non-dairy, mostly canned. Soy-based Loma Linda Soyalac (made by International Nutrition Laboratory, Inc., Box 388, Mt. Vernon, Ohio; dry), Sobee (Mead Johnson Co.; dry), Mull-Soy (Borden; liquid), and Allerteen (Charles Kilgore Co.) are clearly visible. Pages 105-07 give details on each product and state that Allerteen (dry, made by Charles Kilgore Company of Yonkers 2, New York) is also soy based, while Almond-Lac (dry, made by Almond Lac Company of Chicago, Illinois) is based on almonds. Pages 124-26 describe Soyola and Protoban, both soy-based dietary supplements to infant feeding. Pages 196-97 give the prices

of various infant food mixtures, including Sobee and Mull-Soy. Pages 231-32 contain a directory of proprietary infant food manufacturers, their products, and their addresses. Address: Assoc. Prof., Dep. of Pediatrics, Northwestern Univ. Medical School, Chicago, Illinois.

1595. Patwardhan, Vinayak Narayan. 1952. Nutrition in India. Bombay, India: Indian Journal of Medical Sciences. 345 p. See p. 345. Illust. 23 cm. *
• ***Summary:*** Complete agreement has not been reached in India on the relative value of soybean milk and cow's milk.

1596. Petelot, Alfred. 1952. Les plantes médicinales du Cambodge, du Laos et du Vietnam [The medicinal plants of Cambodia, Laos, and Vietnam. Vol. 1]. *Archives des Recherches Agronomiques au Cambodge, au Laos et au Vietnam* No. 14. 408 p. See p. 276-81. [20 ref. Fre]
• ***Summary:*** The section on the soybean (*Soja hispida* Moench, p. 276-81) includes the vernacular names: Vietnamese: *Dau nanh. Dau tuong, Dau hon, Dau xa.* Cambodian: *Sandek sieng.* Laotian: *Mak toua kon, Ta ton.*

Discusses: Whole dry soybeans, green vegetable soybeans (*Elles peuvent... être consommées à l'état jeune à la façon des flageolets,...*), soymilk (*elles donnent une sorte de lait mousseux et crémeux,...*), nutritional composition, tofu (*le graines sont utilisées pour la préparation d'un fromage, le Teau-fou des Chinois, le dau-phu des Vietnamiens*), composition of fresh and moisture-free tofu, soy oil and its properties (In Europe, above all in England, this oil is used to make soap and margarine. Its drying properties enable it to be used to make paint), soybean cake (used as animal feed; it is rich in lysine), lecithin, vitamin B, the Agronomic Institute of Ankara, Turkey, has found soya to be superior as an animal feed to all other legumes cultivated in Turkey, defatted soybean meal, useful in diabetic diets, Haberlandt of Vienna suggests use as human food, fermented soy products and rice koji, natto, miso, shoyu, *Tsao Yu* of China, tuong dau of Vietnam, Japanese natto, MSG.

Note. This is the earliest French-language document seen (April 2013) that uses the term *Teau-fou* to refer to tofu.

Paul Alfred Pételot lived 1885 to 1940. Address: Chargé de Cours à la Faculté Mixte de Médecine et de Pharmacie de Saigon [Vietnam].

1597. De, Sasanka S. 1953. Report to the government of Indonesia on supplementary feeding of children with soya bean preparations. Rome, Italy: FAO. 20 p. Jan. ETAP (Expanded Technical Assistance Program) Report no. 78. *
• ***Summary:*** Based on a study of 1,000 subjects in Indonesia, Dr. De believes that soymilk made from soy flour could be a valuable, low-cost addition to the local diet. Also discusses the use of peanut presscake as a supplementary food for children. Address: Dr., FAO.

1598. Nandi, D.K.; Rajagopalan, R.; De, S.S. 1953. Studies on the vegetable milk. I. Processing and nutritive value. *Indian J. of Physiology and Allied Sciences* 7(1):1-5. Jan. [6 ref]
• ***Summary:*** A vegetable milk was compared using 56% soyabean, 24% groundnut, and 20% ragi malt. Vanslyke and Bosworth Salt mixture was added. The composition of the resultant milk was found to be similar to that of cow's milk. The overall nutritive value of this vegetable milk as determined by rat feeding was found to be 88% as good as that of cow's milk. Address: Dep. of Bio-chemistry, Indian Inst. of Science, Bangalore, India.

1599. Nandi, D.K.; Rajagopalan, R.; De, S.S. 1953. Studies on the vegetable milk. II. Availability of calcium and phosphorus. *Indian J. of Physiology and Allied Sciences* 7(1):6-9. Jan. [6 ref]
• ***Summary:*** The vegetable milk described in Part I of this study compares favourably with cow's milk for the availability of these 2 mineral elements. Address: Dep. of Bio-chemistry, Indian Inst. of Science, Bangalore, India.

1600. Dean, R.F.A. 1953. Plant proteins in child feeding. *Medical Research Council* (*London*), *Special Report Series* No. 279. viii + 163 p. (Her Majesty's Stationery Office, London). [307 ref]
• ***Summary:*** Contains extensive information on the use of soya in feeding infants and children, including: The direct improvement of proteins by heat. Removal of the trypsin inhibitor. The trypsin inhibitor in human nutrition. Milk substitutes based on the soya bean. Disadvantages of soya preparations. The preparation of soya for food. The supplementation of plant proteins–Isolated proteins–The effects of supplementing whole foods. Human experiments in protein supplementation. Recommendations for future work.

Dean investigated diets in post-war Germany. He found that as much as 50% of the total protein in diets of children of roughly 1-2 years of age were derived from soya. His conclusions are (a) that cereal and soya bean mixtures can probably be prepared which would take the place of most of the milk in children's diets and might even replace it entirely; (b) that for children from one to two years old, at least two of the mixtures (used in feeding German children) may be almost perfect substitutes for *all* the milk in the diet there were, however, a number of mixtures that had to be discarded. Dean's work in Germany was done in 1946 to 1949. Address: Medical Research Council, 38 Old Queen St., London S.W.1, England.

1601. Glaser, Jerome. 1953. Substitutes for cow's milk in infant feeding. *J. of Pediatrics* 42(6):734-38. June. *
Address: Brazil.

1602. Martinez, Margarita C.B. de. 1953. Derivados de la leche de soya [Products made from soymilk]. *Tierra* (*Mexico*) 8(6):482-83. June. [Spa]
• ***Summary:*** Gives a number of recipes for using soymilk, including tofu (queso de leche de soya, coagulated with vinegar or lemon juice), vanilla ice cream. Also contains recipes using whole soybeans and soy flour.

Note: This is the earliest Spanish-language document seen (March 2007) that mentions soy ice cream, which it calls *Helados de leche de soya.*

1603. Sasaki, R.; Tsugo, T. 1953. The manufacture of synthetic milk powder from whey and soy-bean. I. The preparation of synthetic milk from whey and soy-bean. *International Dairy Congress, Proceedings* 13(4):602-05. June. Proceedings of the 13th International Dairy Congress, held 22-26 June 1953 at The Hague, Netherlands. [2 ref. Eng; fre; ger]
• ***Summary:*** Although there are many ways of using whey, in Japan only a small percentage of it is used as raw material for the manufacture of lactose; most of it is mixed with skim milk [nonfat milk] for the feeding of calves, or is discarded.

The preferred process was: Soak soybeans in water overnight, then grind finely. Add whey to the ground soybeans. Heat the mixture. Remove the insoluble residue [okara] by press filtering. A powder can be prepared from the resulting liquid soy & whey milk.

When lactic acid whey was used the resulting product had a much better flavor than soy-bean milk itself. Address: Faculty of Agriculture, Univ. of Tokyo, Japan.

1604. Sasaki, R.; Tsugo, T. 1953. The manufacture of synthetic milk powder from whey and soy-bean. II. The manufacture and nutritive value of synthetic milk powder. *International Dairy Congress, Proceedings* 13(4):606-10. June. [5 ref. Eng; fre; ger]
• ***Summary:*** Using the process developed in the previous report, a manufacturing experiment was conducted semi-industrially at a milk powder factory. Various chemical properties of the product were determined and its nutritive value compared with that of regular whole milk powder. Address: Faculty of Agriculture, Univ. of Tokyo, Japan.

1605. *Times* (*London*). 1953. Substitutes for milk in children's diet: Use of plant proteins. Aug. 11. p. 8, col. 3.
• ***Summary:*** A summary of: Dean, R.F.A. 1953. "Plant proteins in child feeding." *Medical Research Council* (*London*), *Special Report Series* No. 279. viii + 163 p. Address: London, W.1.

1606. Melo, Maria de Lourdes. 1953. [Soy bean in nutrition of sucklings, infants, pre-school and school children]. *Revista Brasileira de Medicina* 10(8):586-91. Aug. [Por]* Address: Brazil.

1607. Johnstone, D.E.; Glaser, J. 1953. Use of soybean milk as an aid in prophylaxis of allergic disease in children. *J. of Allergy* 24(5):434-36. Sept. *

1608. L.W.H. 1953. Soybean as a milk substitute for potentially allergic infants. *J. of Allergy* 24(5):474. Sept. See Johnstone and Glaser 1953. [1 ref]
• ***Summary:*** "The two soybean foods which are most commonly used [for infants who are allergic to milk] (Mull Soy and Sobee) will nourish an infant as well as milk provided they are well tolerated. The trouble with these foods, however, has always been that there is something in soybean flour, at present unknown, which often causes loose bowel movements and sore buttocks, sometimes to the point of a severe diarrhea, and the younger the infant the more likely this is to take place."

"Allergy to milk is certainly not uncommon in infants and can be responsible for a variety of symptoms. At present it is being overemphasized, and while the milk-free infant foods have a definite and a valuable place in the treatment of some allergic infants, they are being used altogether too much in many situations which have nothing whatever to do with milk allergy." Address: Editor, this journal.

1609. *British Medical Journal.* 1953. Feeding children without milk. ii(4841):874. Oct. 17. [2 ref]
• ***Summary:*** "In many Oriental and tropical countries, however, cows' milk in any form is either scarce or absent. In order to bridge the gap between the end of breast-feeding and the development of digestive powers strong enough to cope with the normal local diet, vegetable substitutes for cows' milk are urgently needed. Countless lives are being lost because in many areas no suitable alternative is available."

"In 1944 Italian workers in Rome found that foods made from mixtures of malted cereals were useful for infant feeding at a time of acute food shortage." The quality of these foods could be increased by the inclusion of soya flour. Research work by Dr. Harriette Chick (*Lancet* 1946) and by Dr. R.F.A. Dean (in German orphanages and schools, 1953) has shown that mixtures of soya and cereals can be used as effective yet imperfect substitutes for cow's milk.

"The results seem hopeful, although it is clear that a perfect vegetable substitute for milk has still to be devised. For infants up to 1 year old about half of the milk in the diet could be replaced by some of the mixtures. For children from 1 to 2 years old at least two mixtures seemed nearly perfect substitutes for all the milk in the diet. For children aged between 2 and 11 years almost all the mixtures gave good results, but for optimum growth a small allowance of [cow's] milk was necessary."

Care must be taken to inactivate trypsin inhibitors and to minimize carbohydrates that cause flatulence.

1610. Glaser, Jerome; Johnstone, Douglas E. 1953. Prophylaxis of allergic disease in the newborn. *J. of the American Medical Association* 153(7):620-22. Oct. 17. [7 ref]
• ***Summary:*** Soy formula was used in the treatment of allergic diseases. The authors claim that babies fed soy instead of cow's milk have less subsequent allergy. The authors also withheld cow's milk feeding from 96 infants who had parents or siblings with allergic diseases and compared the later development of allergic manifestations in this group with a sibling-control group. Four times as many infants in the two control groups as in the experimental group displayed 'major' allergies. The cause of this significant data is not clear... Milk allergies constituted 50, 50 and 55% of the total allergies in the experimental and each control group respectively. Address: M.D., Dep. of Pediatrics, Univ. of Rochester School of Medicine and Dentistry, and the pediatric services of the Genesee, Strong Memorial, and Rochester Municipal hospitals, Rochester, New York.

1611. Lo, K.S. 1953. The story of soybean milk. *Far Eastern Economic Review.* Oct. 29. p. 568-69.
• ***Summary:*** In 1936 the author, a resident of Hong Kong, happened to be in Shanghai, where he read a newspaper article about a talk given by a Dr. Webb [actually by Julean Arnold; see letter from K.S. Lo, 3 Nov. 1989] on the nutritional value of the soybean. He was very impressed. A year later, the invasion of China by Japan brought a steady flow of refugees into Hong Kong, and with them problems of food supply and malnutrition. Lo recalled the article he had read about soybeans and began to think about the idea of making soybean milk to be sold to the working classes at the lowest possible price. He took his idea to Hong Kong's new director of Medical Services, Dr. P.S. Selwyn-Clarke, who was known for his progressive ideas, his untiring energy for work, and his concern for the poor. "He at once offered me his moral support were I to embark on this scheme. It was through his personal encouragement and moral support that eventually I was able to bring it to fruition. He was also later to become my strongest supporter and advocate of soybean milk. A modest factory was built at Causeway Bay and it was opened for business in March, 1949 [actually 7 March 1940]. The equipment used was simple and crude and the method adopted for the making of this milk was modeled after the dairy industry. On the day of its opening, I can still remember that the total business done was 9 bottles sold."

"After two years of hard struggle, we were beginning to make some headway in our sales. At this point the Pacific War intervened and brought our activities to a stop. The factory was occupied by the Japanese, and what little equipment we had in it was lost. After the war was over we tried to restart it, and once again Dr. Selwyn-Clarke came to our rescue."

"Much to our surprise, the post-war public took to soybean milk without being coaxed. All of a sudden it became very popular, especially among the working classes." A larger and more modern factory was built at Aberdeen, and completed in 1950. After this a product that did not require refrigeration was developed; sales increased ten-fold. "Today we are able to produce from 3000-5000 cases (24 bottles each) of soybean milk a day; distributed over the territories of Hongkong, Kowloon, New Territories and Macao with a fleet of 18 trucks."

The company has "succeeded in producing a nutritious and wholesome food and putting it within the reach of the masses." The price has been kept down to 20 cents (H.K.) per bottle. The soybean milk is also extremely high in vitamin B, and because of the large amount consumed by the public daily, this has a beneficial nutritional effect. The company is now also working actively with UNICEF [United Nations International Children's Emergency Fund] in promoting similar projects in Asia. "Already we know for certain that a factory similar to ours has been put up in Djakarta by the Indonesian Government in conjunction with UNICEF."

"We are, however, not resting on our laurels. Our technicians have been busy experimenting on condensed soybean milk, which we hope to put on the market sometime next year. Then we will move onto soybean milk powder, and other forms of soya food products."

Note 1. This is the earliest document seen (April 2004) that describes UNICEF's awareness of the attractions of Vitasoy as a high protein soy beverage for use in developing countries, and joint efforts by UNICEF and Vitasoy to promote similar products in Asia. Note 2. When Vitasoy was launched in March 1940, it was fortified with vitamins, calcium, and cod liver oil. Now, in 1953, it appears not to be fortified at all.

1612. Melo, Maria de Lourdes. 1953. Leite de soja na alimentacao do lactente [Soymilk for nursing infants]. *Boletim de Agricultura, Departmento de Producao Vegetal* (*Belo Horizonte*) 2(9/10):51-53. Sep/Oct. [Por]
Address: Dietista da Secretaria de Saude e Assistencia, Brazil.

1613. Tsugo, Tomokichi. 1953. Gyûnyû narabini hoee ni taisuru daizu nyû no kongo nôshuku shiken [Experiments on the condensing of whole milk and whey mixed with soybean milk]. *Nippon Chikusan Gakkaiho* (*Japanese J. of Zootechnical Science*) 24(2):73-78. Oct. English-language summary in Dairy Science Abstracts 16:237. [6 ref. Jap; eng]
• ***Summary:*** "When soybean milk was mixed with cow's milk and the mixture was condensed, the viscosity of the concentrate became higher due to the protein of the soybean milk." Address: Faculty of Agriculture, Univ. of Tokyo, Tokyo, Japan.

1614. *New York Times.* 1953. F.A.O. sees gains in 52 countries: Report for 1952-53 tells how experts gave help in varied projects. Nov. 2. p. 16.
• ***Summary:*** The United Nations Food and Agriculture Organization is at work on projects totaling $6,700,000 in 52 countries. In Indonesia, through the work of an FAO nutrition specialist, children are starting to get soybean milk to improve their diets; it is a substitute for dried dairy milk supplied by UNICEF. Trials in orphanages and schools over 3 months proved its acceptability. Now the Indonesian government has asked UNICEF to help in establishing a plant for large-scale production.

In Bombay, India, a revolution in dairy methods has produced cleaner milk for a population of 3 million. In the Thana district, where cows used to roam the streets, a colony of 13,000 buffaloes has been established. The milk is bottled and distributed in hygienic form.

1615. Delvaux, Edgar. 1953. Les protéines de coton et de soya dans l'alimentation humaine au Congo Belge et au Ruanda Urundi: Relation d'une enquête aux E.U. [The proteins of cottonseed and soya in human foods in the Belgian Congo and in Ruanda Urundi: Report of an investigation in the USA]. Louvain: U.S. Foreign Operations Administration. Operations Mission to Belgium and Luxembourg. 26 p. No. TA 32-101. Aug/Sept. 53. [68* ref. Fre]
• ***Summary:*** Contents: 1. Current state of food and nutrition of the indigenous people of the Belgian Congo and of Ruanda Urundi–Results of an investigation by FAO, OMS, and UNICEF. 2. Vegetable protein and animal protein in human nutrition. 3. Vegetable material rich in protein and available in the Belgian Congo–Cotton and soya. 4. Acceptability of a food. Conclusions.

Substituting vegetable protein for animal protein could help alleviate the shortage of animal protein that exists for certain categories of infants and adults, and that can lead to kwashiorkor. Cassava, the main food of these countries, is rich in carbohydrates but low in protein. The use of soy flour or cottonseed flour could add valuable protein to the diet. The soy flour could be used, as it has been elsewhere, to make soymilk for infants, tempeh, tofu, breads (add 35), or Multi-Purpose Food (Meals for Millions). Address: U.S. Foreign Operations Administration. Operations Mission to Belgium and Lexembourg.

1616. Niwa, Soichi; Katayama, Nobu. 1953. Tônyû no kakô ni kansuru kenkyû. II. Tônyû o genryô to shita nyûyô shokuhin no kakôhin [Studies on the preparation of bean milk. II. Manufacturing methods of milky foodstuffs by using bean milk]. *Eiyogaku Zasshi* (*Japanese J. of Nutrition*) 11(3):68-69. Dec. [1 ref. Jap; eng]
• ***Summary:*** As Japan has little available land for dairy farming, sufficient milk production cannot be expected. Bean milk, which is one of Japan's own soybean products, is rich in nutrients and is sold very cheaply as a by-product of the manufacture of Japanese tofu. For this reason, attempts have been made to use bean milk as a substitute for dairy products.

However, bean milk tastes of what is called "aokusai" (green and unripened). It is also impossible to sterilize it enough without coagulating it with the heat, so it can easily spoil, especially in the summer. Because of these weaknesses, it is hard to supply this bean milk to consumers, especially in summer. If these shortcomings could be eliminated, bean milk would become a very valuable high-protein nutritious food which could serve as a substitute for dairy products. Address: Aichi-ken Eisei Kenkyusho (Sanitary Inst. of Achi prefecture).

1617. **Product Name:** Willow Run Oleomargarine–Soy Bean Spread.
Manufacturer's Name: Shedd-Bartush Foods, Inc.
Manufacturer's Address: 14401 Dexter Blvd., Detroit, MI 48238.
Date of Introduction: 1953. December.
New Product–Documentation: Spot in *Soybean Digest.* 1953. Dec. p. 9. "Market new all-soy margarine." This product is made completely from the soybean (soybean oil and soy milk) except for added salt and vitamin A. A photo shows the carton.

Midwest Natural Foods Distributors, Inc. 1975. Catalog #7. Nov. Ann Arbor, Michigan. 108 p. See p. 19. "Willow Run Margarine, soybean spread, 1 lb.

Ad (full page, green, black, and white) in Natural Foods Merchandiser. 1989. Feb. "Shedd's Willow Run Soybean Margarine. Guaranteed all vegetable. No artificial flavors or preservatives. Pareve. Lactose free. Kosher and pareve. A natural part of a healthy lifestyle. Copyright 1989 by Lever Brothers Co. For more information contact Shedd's Baltimore: 301-644-4900."

1618. *Soybean Digest.* 1953. Market all new soy margarine [Willow Run]. Dec. p. 9.
• ***Summary:*** This product is made completely from the soybean (soybean oil and soy milk) except for added salt and vitamin A. Manufactured by Shedd-Bartush Foods, Inc. of Detroit, Michigan, it is "made for those who want a product free of cow's milk or other animal foods. The present Willow Run Margarine is the outgrowth of a product [Soya Butter, developed and sold by Butler Food Products of Cedar Lake, Michigan, and introduced in Aug. 1944] which at one time was made exclusively for sale in Michigan through health food stores. It was not shipped interstate because the then existing standard of identity for margarine made no provision for a margarine made with soybean milk in place of cow's milk.

"With the lifting of coloring restrictions from margarine, and the change in the standard of identity to allow the use of soy milk, Willow Run Soy Bean Spread Margarine came into being. It is shipped everywhere in the U.S. and the carton has been designed to comply with various state laws."

A photo shows a carton of "Willow Run Oleomargarine."

1619. Stoesser, A.V.; Nelson, L.S. 1953. The beneficial effects of soy-bean products in eczema of infancy and childhood. *Journal Lancet* (*The*) (*Minneapolis*) 73(12):487-95. Dec. *

1620. Wickes, Ian G. 1953. A history of infant feeding. V. Nineteenth century concluded and twentieth century. *Archives of Disease in Childhood* 28(142):495-502. Dec. [112* ref]
• ***Summary:*** In this long chapter, the development of non-dairy infant foods is not mentioned.

1621. **Product Name:** Vitasoy Soya Bean Drink (Sterilized in Narrow-Necked Soft Drink Bottles; Previously named Vita Milk, and Sunspot Soya Milk since 1940) [Plain].
Foreign Name: Wai-ta-nai.
Manufacturer's Name: Hong Kong Soya Bean Products Co. Ltd.
Manufacturer's Address: Aberdeen, Hong Kong.
Date of Introduction: 1953.
Ingredients: Plain/sweetened: Water, soybean solids, soy oil, cane sugar (5.5%), salt, vitamins A, B-1, B-2, and niacinamide.
Wt/Vol., Packaging, Price: 6.25 oz soft drink bottle, sealed with a metal crown cap and sterilized.
How Stored: Shelf stable.
Nutrition: Per 6.25 oz.: Protein 5.9 gm, plus vitamins for 3.2 cents (US) in 1968.
New Product–Documentation: K.S. Lo. 1947. *Soybean Digest.* April. p. 8, 10; K.S. Lo. 1953. Far Eastern Economic Review. Oct. 29. p. 568-69; K.S. Lo. 1964. *Soybean Digest.* May. p. 18, 20.

E. Orr. 1972. Tropical Products Inst. Monograph G73. The use of protein-rich foods for the relief of malnutrition. Aguilera and Lusas. 1981. *Journal of the American Oil Chemists' Society.* March. p. 519. "A good example of a commercial soy beverage is Vitasoy. Originally developed in Hong Kong as a milk substitute and made by the traditional Oriental process, it was almost a complete failure. After World War II, the company sought to enter the soft drink market and the product was reformulated so that its taste was refreshing and appealing to consumers. Although it was marketed as a soft drink, its advertising emphasized that Vitasoy was also nutritious ('... will make you grow taller, stronger, and prettier'). In 1968, Vitasoy had captured 24% of the retail soft drink market; by 1970, plant capacity had trebled and ca. 120 million bottles were being produced. Vitasoy contains 2.5-3.0% protein (from soybeans), 1.5% fat and 5.7% carbohydrates (on wet basis)." K.S. Lo. 1982. History of Vitasoy; Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 99-100, 130-53. Vitasoy was the first modern soymilk in East Asia made on a large scale. It was first sold like a soft drink in sterilized bottles in 1953, and in Tetra Pak (250 ml) from 1976. Soya Bluebook. 1986. p. 103. Their first listing! Boi. 1986. Sunday Times (Singapore). Sept. 7. "Soya Bean Milk Packs More Water than Flavor." Vitasoy sells for 35 cents per 250 ml. Comments: Contains artificial flavour, carries consumption deadline, milky taste but not of soya bean, thick, no bean flavour.

Letter from K.S. Lo. 1989. Nov. 3. Gives details on name changes in this product.

1622. Nandi, D.K.; Rajagopalan, R.; De, S.S. 1953. Availability of calcium and phosphorus from vegetable milk. *Indian J. of Physiology and Allied Sciences* 7:1. *
• ***Summary:*** Vegetable milk prepared from a blend of soybean (56 parts), groundnut, and ragi malt, and containing 0.11% calcium and 0.075% phosphorus, compares favorably with cow's milk for the availability of calcium and phosphorus.

1623. Reumpol-Haemer, F.H.; Soedarmo, Poorwo. 1953. Pembikinan susu kedelai [Soyamilk]. *Horticultura* 2(1):25-31. [Ind]*

1624. **Product Name:** Neolac (Soymilk Powder).
Manufacturer's Name: Soya & Protein Products Ltd.
Manufacturer's Address: 8/9 Great Pulterey Str., Piccadilly, London, W.1., England.
Date of Introduction: 1953.
New Product–Documentation: Soybean Blue Book. 1953. p. 103.

1625. **Product Name:** Soymilk.
Manufacturer's Name: Taiwan Sanitarium.
Manufacturer's Address: Taiwan.
Date of Introduction: 1953.

1626. Bush, Maxine Conwell; Fewer, Edward Patrick. 1953. Magic recipes for the Bush & Fewer Liqua-dizer: Consisting entirely of original recipes created by the authors. 3rd ed., revised and enlarged. Mehoopany, Pennsylvania: Published by the authors. 108 p. Portrait. Illust. 22 cm.
• ***Summary:*** A vegetarian cookbook that uses a sort of blender. The 1st ed. was copyrighted in 1950. Pages 53-56 give 24 recipes for Nut Milks, including almond milk, cashew milk, walnut milk, pecan milk, peanut-banana milk, almond-peach milk, etc. Pages 57-62 give 31 dairy-free recipes for Soy Milks, each containing 1-4 tablespoons of soybean powder [flour], including pineapple-strawberry-soy

milk, banana-strawberry milk shake, blackberry-soy milk, casaba-soy milk, fresh peach-soy milk, peach-pecan-soy milk, raisin-soy drink, plain soy milk, cocoanut-soy milk, vanilla-banana-soy milk, etc.

The section titled "Eggless Dressings," makes abundant use of soybean powder in mayonnaise-like recipes such as lemon-aise, orange-aise, apricot-peanut butter-aise, olive oil mayonnaise, thousand island soy, and soy tartar sauce. Address: 1. D.C., PhD, N.D., nationwide lecturer for more than 25 years on practical psychology, physiology, pathlogy and nutriton, chiropractic and naturopathic philosophies; 2. D.C., PhC, N.D., national lecturer on bio-chemistry and nutrition, formerly Prof. of Anatomy and Physiology, Dean and Clinical Director of the Standard Chiropractic School. Both: Mehoopany, Pennsylvania.

1627. Pritchard, Florence; Pritchard, Edgar W. 1953. A scientific meatless diet: Being the principles and practice of lacto-vegetarianism based on the latest scientific discoveries, with original recipes. 4th ed. Marryatville, South Australia: Published by the authors. 19 p. 22 cm.
• ***Summary:*** Discusses the advantages of a lacto-vegetarian diet, with recipes.

Concerning soya beans, page 7 contains a paragraph which states: "These beans deserve much more attention than they have hitherto received... In China and Japan they are a staple food, being made into innumerable dishes including soya bean milk and cheese [tofu]." There are also recipes for Boiled soya beans (p. 9), and Soya bean rissoles (p. 11). Address: 31 Yeronga Ave., North Kensington Park, Marryatville P.O., South Australia.

1628. Vest, M. 1953. Nahrungsmittelallergie, insbesondere Kuhmilchallergie bei Saeuglingen [Food allergies, especially allergies to cow's milk in infants]. *Annales Paediatrici* (*Basel*) 181:277-94. [91 ref. Ger; eng; fre]
• ***Summary:*** In Europe and North America, up until now, soymilk (*Sojamilch*, which was usually a water extract of soybeans or an emulsion of soy flour), has been used mainly for treating intestinal allergies (cow's milk allergies) and eczema. Here, the writer reports a very complicated case of an infant who went into anaphylactic shock after ingestion of cow's milk and again after soybean milk. This was apparently an example of allergy to soya protein in addition to cow's milk allergy. While generally the transition to soya feeding was carried out easily and successfully, it was necessary in the one case noted above, to feed the child wheat germ, oats, vegetables, fruit, and Ossopan as a source of calcium. The child made excellent progress until the disappearance of the allergy. Address: From the Kinderspital Basel [University Children's Clinic, Basel], Switzerland.

1629. **Product Name:** Beanvit (Soya Milk).
Manufacturer's Name: Yeo Hiap Seng Ltd. (Malaysian Subsidiary).
Manufacturer's Address: Malaysia.
Date of Introduction: 1953?
Wt/Vol., Packaging, Price: Sterilized bottles.
New Product–Documentation: E. Orr. 1972. Tropical Products Inst. G73. The use of protein-rich foods for the relief of malnutrition in developing countries: an analysis of experience. p. 15. "A soya milk, Beanvit, has been produced in Singapore and Malaysia since the early 1950s by Yeo Hiap Seng Ltd. of Singapore and its Malaysian subsidiary. The company's main business is in the soft drink, food processing (canned meat) business. More recently a form of Beanvit, with vitamin and mineral additives, called Vitabean has been on sale along with Beanvit. The trend of sales is said to be satisfactory and the company has plans to expand production."

1630. Almeda, Alberto Fontana. 1954. [Condensed milk of corrected composition]. *Spanish Patent* 217,451. Jan. 12. (Chem. Abst. 50:3673fg). [Spa]*
• ***Summary:*** Soybean and other oils are emulsified in skim milk by an agitation process which forms globules of similar size to those of cream in milk. Sugar is then added and the mixture is condensed before hermetic packaging. Cholesterol is thus eliminated.

1631. Chatfield, Charlotte. 1954. Food composition tables: Mineral and vitamins, for international use. *FAO Nutritional Studies* No. 11. 117 p. March. [539* ref]
• ***Summary:*** Table 1 gives "Food composition in terms of the retail weight, ("As purchased"). The section on "Pulses, nuts and seeds" (p. 13-14) includes values for: Groundnuts, peanuts. Soybeans (*Glycine max*) and soybean products– Whole seeds, dry. Flour, full fat (seed coat removed). Flour, low fat; grits, flakes (partially defatted). Curd, tofu. Fermented beans, Japanese natto. Fermented beans, Chinese tsiang [jiang]. Soybean milk. Paste, miso (made with small amounts of rice and other starchy materials). Shoyu sauce. Sprouts: See No. 86a.

Also: Broad beans. Common beans. Hyacinth, lablab, and twinflower beans. Jack beans and sword beans. Lima beans. Mung beans and urd beans. Voandzeia (without shell). Chickpeas. Cowpeas. Lentils. Peas. Pigeonpeas (*Cajanus* spp.).

Table 2 gives "Composition of the edible portion (E.P.) and refuse in the material as purchased (A.P.)." The section on "Pulses, nuts and seeds" (p. 31-33) gives values for the same foods listed in Table 2.

These tables contain corrections to the Food Composition Tables of Oct. 1949. On pages 52+ is an index to the scientific names of plants in the tables. Address: Nutrition Div., FAO, Rome, Italy.

1632. *O Mundo Agricola.* 1954. A soja–Vaca vegetal [The

soybean–Vegetable cow]. April. [Por]*

1633. Stein, J.F.; Knodt, C.B.; Ross, E.B. 1954. Use of special processed soybean flour and whey solubles in milk replacement formulas for dairy calves. *J. of Dairy Science* 37(4):373-79. April. [8 ref]
• ***Summary:*** "Soybean flour when fed with dried brewers' yeast and whey solubles can replace dried whey, distillers' dried corn solubles, blood meal, and up to a maximum of 43% of the nonfat dry milk solids in the milk replacement formulas fed to calves. Increases in soybean flour levels at the expense of nonfat dry milk solids of over a 43% substitution depressed appetite and retarded growth and resulted in poor physical appearance of the calves." Address: Dep. of Dairy Husbandry, Pennsylvania Agric. Exp. Station, State College, Pennsylvania.

1634. Blanchard, Marcel. 1954. L'intérêt du soja en élevage en Algérie [The importance of soybeans for raising livestock in Algeria]. *Revue Horticole de L'Algerie* 57(4):134-39. May. [5 ref. Fre]
• ***Summary:*** Discusses the use of the soybean for green forage, silage, hay, seed, and soymilk in raising livestock in Algeria. Soymilk is especially important for rearing calves. Address: Ingenieur Agronome, Chef de Travaux au Service de l'Experimentation Agricole en Algerie, Maison-Carrée.

1635. McBride Products Co. 1954. Mary McBride's Soya Malt (Ad). *Let's Live* 22(5):42. May.
• ***Summary:*** This ad (2¼ by 5 inches) has a prominent logo of a triangle piercing a ring. On the former is written "Mary McBride's." On the latter "Modern nutrition." The text reads: During the hot summer months, keep your vitality up. Drink Mary McBride's Soya Malt. It is a highly nutritious, easily digested food drink. Rich in the 'complete protein' of the soya bean and low in starch. A scientifically blended drink that tastes delicious, and a hot soya malt before retiring is soothing to the nerves and an aid to restful sleep." Packaged in 12½-ounce and 5-pound glass jars. Comes in four flavors: almond, banana, chocolate, and vanilla. Send for your free copy of 'Eating your way to better health.'" This ad also appears in the July 1954 issue (p. 19) of this magazine. Address: Box 19, South Pasadena, California.

1636. Stein, J.F.; Knodt, C.B. 1954. Further studies on the use of soybean flour and whey solubles in milk replacement formulas for young dairy calves. *J. of Dairy Science* 37(6):655-56. June. [21 ref]*
• ***Summary:*** This is not a full-length article. It appears in the section of this journal titled "Abstracts of Papers Presented at the Forty-Ninth Annual Meeting: Pennsylvania State University, State College, June 20-24, 1954." It is Abstract P. 26 on pages 655-56 of this journal.

The abstract begins: "Soybean flour and whey solubles when fed in a 7:1 ratio in dried processed form are more effective in replacing oat flour, dextrose, and dried brewers' yeast in the basic formula studied than the individual components per se." Address: The Pennsylvania Univ., State College, Pennsylvania.

1637. Balu, V. 1954. There need be no shortage of lactic foods in India now that scientists & research workers have succeeded in milking the ground-nut. *Times of India* (*The*) (*Bombay*). Aug. 1. p. 5.
• ***Summary:*** "Milk is a perfect and satisfying food." Dr. E.V. McCollum, the famous U.S. nutritionist of Johns Hopkins University, said in the early 1920s: "The people who have achieved, who have become large, strong, vigorous people, who have reduced their infant mortality, who have the best trades in the world, who have an appreciation of art, literature, and music, who are progressive in science and in every activity of the human intellect, are the people who have used liberal amounts of milk and it's products."

But there is an acute shortage of cow and buffalo milk in India, and it is unequally distributed.

Vegetable milk has been part of the diet in Far Eastern countries for thousands of years. The soya bean had attracted public attention in India by the early 1930s. "Even Mahatma Gandhi, the Father of the Nation, experimented with it for a brief period during the early days of the Gramodyog Sangh (Village Industries Association), since it is one of the most concentrated and nutritive of foods known to man."

As early as 1945, Dr. V. Subrahmanyan and co-workers in Bangalore found that the quality and digestibility of soya bean are greatly improved when it is soaked in water, drained, germinated [sprouted], made into a paste and then processed to make soya milk. They also found that if it is suitably fortified with calcium, soya milk is about 90% as good as cow's milk in its over-all nutritional value.

The smell and taste of the curd [tofu] and butter-milk prepared from soya milk resemble those of animal milk products.

Scientists at the Central Food Technological Research Institute [CFTRI], Mysore, after more than 3 years of intense research, have also developed a good, fortified vegetable milk from ground-nut. While the soya bean is new to India and not grown extensively, India is the world's largest producer of ground-nuts–3.5 million tons a year.

Since 1951 CFTRI in Mysore has been making vegetable milk from ground-nuts on a semi-large scale and distributing it to locally to the public through hotels and catering services. It has been well accepted.

In early 1954 CFTRI set up a vegetable [ground-nut] milk plant for a private firm in Mysore. During his election tour, Mr. Nehru visited the plant, tasted the curds and butter-milk prepared there, and expressed his appreciation of them.

1638. Tung, Golo. 1954. Two Indonesian soya bean experts

study production methods [at Hongkong soya bean factory]. *Hongkong Standard.* Aug. 23. [Eng]

• ***Summary:*** "Thousands of children and expectant mothers in Indonesia are awaiting the return of two of their countrymen who are here on a one-week research work at a soya bean milk factory as part of their survey tour of soya bean production methods in Europe and United States.

"The two persons are Messrs. Soeroengan Nasoetion and Suwardi Wirratmadja. They will not only transform their native resource of soya bean into nutrition-concentrated food but will provide their young generation and other needy persons free soya bean milk powders... UNICEF decided to set up a soya bean milk plant in Indonesia after seeing the local plant."

This research is funded by the FAO Expanded Technical Assistance Programme. A photo shows K.S. Lo, Managing Director of the Hongkong Soya Bean Products Company Ltd. with the two Indonesian men plus two other men. Address: Hong Kong.

1639. *Times of India* (*The*) (*Bombay*). 1954. Dr. Radhakrishnan meets hosts of old friends: London causerie. Oct. 17. p. 7.

• ***Summary:*** The United Nations Association recently held a reception which opened their autumn campaign to raise funds for the U.N. Children's Fund [UNICEF]. The press was invited to hear a host of distinguished speakers support the campaign, "and then to watch and photograph a group of children, some of them from Indian and Indonesian diplomatic families and others from film studios, cut the UNICEF birthday cake and then eat scones made of fish flour and drink fortified soya bean milk."

A photo shows two little children each drinking a glass of soya bean milk.

Note 1. This fortified soya bean milk was probably a forerunner of Saridele. In 1957, the United Nations (UNICEF and FAO) constructed a plant to manufacture spray dried Saridele soymilk (with sesame) in Yogyakarta, Indonesia. in 1957.

Note 2. Dr. Sarvepalli Radhakrishnan (5 September 1888–17 April 1975) was an Indian philosopher and statesman. He was the first Vice-President of India (1952-1962) and subsequently the second President of India (1962-1967). He was one of India's most influential scholars of comparative religion and philosophy. He was knighted (1931) and was Spalding Professor of Eastern Religions and Ethics at Oxford University (1936-1952).

1640. Autret, Marcel; Behar, Moisé. 1954. Síndrome policarencial infantil (kwashiorkor) and its prevention in Central America. *FAO Nutritional Studies* No. 13. 81 p. Oct. Also published as "Le Syndrome de Polycarence de l'Enfance en Amérique Centrale (Kwashiorkor)" in Bulletin de l'Organisation Mondiale de la Sante No. 11, p. 891-966. [108 ref. Eng]

• ***Summary:*** This was one of the surveys made by United Nations agencies in the late 1940s and early 1950s which showed the prevalence of protein-calorie malnutrition. Pages 61-63 discuss the soybean as a rich source of protein that may be prepared in a variety of ways. A brief review is given of work with soy in Uganda, Mexico City, India, El Salvador, and Guatemala.

"Acceptability tests with soybean milk were carried out successfully in 1951 in schools and community dining rooms in Mexico City, under the supervision of the Institute of Nutrition (according to a 1951 personal communication from J. Calvo de la Torre and J. Diaz Barriga). The milk was prepared from non-bitter varieties of soybeans developed by the Agricultural Research Department of the Ministry of Agriculture, with the assistance of the Rockefeller Foundation, and cultivated in Mexico under the direction of the Maize Commission, which plans to grow soybeans in rotation with maize" (p. 62)

"The Government of Indonesia, with the financial aid of UNICEF and the technical assistance of FAO, plans to construct a plant for the preparation of an infant food made from dried soybean milk. Other countries, such as Thailand and the Philippines, are now considering similar projects" (p. 62).

The fortification of tortillas with soybeans or soy flour looks very promising. "In an attempt to modernize tortilla making, the Industrial Research Department of the Bank of Mexico has set up a pilot plant to make powdered dried *nixtamal* from suitably treated maize. When this powder is reconstituted with water, it gives the *masa* or dough which can then be rolled out into cakes and baked at home. In addition to several economic and hygienic advantages, the new technique makes it possible to incorporate either whole or partly fat-free soy flour in the *nixtamal* powder. Experiments carried out on this product have been seen by one of the authors; the *tortilla* with 10% soy flour added was still excellent.

"In towns, where *tortillas* are the staple food, there will be no difficulty in introducing soybean once the preparation of *nixtamal* is concentrated in a few large industrial plants instead of scattered among thousands of mills. However, if the Government were to make soybean-maize mixture obligatory now, control would be difficult. In the rural areas the preparation of *tortillas* is a family operation, and it will be necessary to teach the women to add soybeans to the maize grains in the preparation of the *tortillas* by giving practical demonstrations. This will be a long-term and exacting task, but it must be undertaken because mature soybeans cannot be used in the same way as other beans, as they require prolonged cooking.

"The use of the classic fresh soybean curds [tofu] calls for long education of the public, as does that of certain special preparations such as *tempeh* (fungus-fermented

soybean cheese), the preparation and nutritive value of which have been studied by Van Veen" (p. 63).

"This Study is being published in French in the Bulletin of the World Health Organization for November/December 1954, and in Spanish in the Bulletin of the Pan-American Sanitary Bureau."

Note: This is the earliest document seen (Nov. 2002) concerning world protein shortages. Address: 1. D.Pharm., Senior Nutrition Officer, Nutrition Div., FAO, Rome, Italy; 2. M.D., Assoc. Member of INCAP.

1641. Worthington Foods, Inc. 1954. Wholesale price list and order blank. P.O. Box 190, Worthington, Ohio. 1 p. Nov. 15.
• ***Summary:*** New products include: Soyamel–soy milk. Entree (in tomato sauce or mushroom gravy). Veja-links.

Note: This is the earliest English-language document seen (Aug. 2003) that uses the term "links" or "Veja-links" to refer to meatless soy sausages. Address: Worthington, Ohio. Phone: 2-5359.

1642. **Product Name:** Sobee Liquid (Soy-Based Non-Dairy Infant Formula).
Manufacturer's Name: Mead Johnson and Co.
Manufacturer's Address: 2404 W. Pennsylvania St., Evansville 21, Indiana.
Date of Introduction: 1954.
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: H.F. Meyer. 1960. Infant foods and feeding practices. A photo (p. 82) shows this canned product. A photo of a baby's face appears on the front panel. See also p. 88 and 90. Page 121 gives a detailed analysis of the product. The liquid, after being reconstituted, contains: Fat 2.6%, protein 3.2%, carbohydrates 7.7%. Calories per ounce: 20. Added vitamins and minerals: none added. Curd tension (grams): zero. Affected by terminal sterilization: No. How formulated or reconstituted: 1 oz. per 1 oz. of water. Chemical definition and essential clinical uses: "Hypoallergenic balanced soya formula designed for infants actually or probably sensitive to milk, and as a diagnostic measure to confirm or rule out milk sensitivity." Meyer gives the manufacturer's address as 2404 W. Pennsylvania St., Evansville, Indiana.

Sarett. 1976. World Soybean Research Conference. p. 840-49; Shurtleff & Aoyagi. 1979. Soymilk Industry and Market. p. 25.

1643. **Product Name:** Soyamel (Powdered Soy Milk).
Manufacturer's Name: Worthington Foods, Inc.
Manufacturer's Address: 900 Proprietors Rd., Worthington, Ohio. Phone: 2-2539.
Date of Introduction: 1954.
Wt/Vol., Packaging, Price: 1 lb can.
New Product–Documentation: Wholesale price list. 1954. Nov. 15.

Ad (1/3 page) in *Let's Live.* 1955. Jan. p. 7. "New. Better tasting, all-purpose, all-vegetable soy milk." A photo shows a can of "Worthington Soyamel–All purpose." "Mix and use like milk." The text continues: It "is the perfect 'food beverage' for everyone who prefers or needs an all vegetable milk. You'll like its clean, white appearance and its clean fresh flavor. Better tasting. Keeps longer. Improved mixing. Not only does Soyamel taste better but it also remains completely in solution after mixing. There is no disagreeable raw bean flavor! No separation of solids from liquid to be stirred up from the bottom of the bottle!" A proximate analysis is given. "One ounce of Soyamel powder makes one 8 oz glass of soy milk containing 132 calories. Ask for Soyamel at your local health food store."

Chopletter (Worthington Foods, Ohio). 1960. "What you should know about Worthington Foods." April, p. 3. The Kosher certification on 11 Worthington products has been in effect since 1 July 1959. These products are both Kosher and Pareve (neutral). Foods bearing the Kosher label include Soyamel.

Soybean Digest Blue Book. 1972. p. 110. "Subsidiary of Miles Laboratories Inc. Processing and packing powdered soy milk called Soyamel." Leaflet (4 panels each side. Each panel: 21.6 x 10 cm. Blue and tan on white). 1972? "Worthington Soyamel: Facts & recipes."

Letter from Allan Buller. 1981. April 29; Shurtleff & Aoyagi. 1984. Soymilk Industry and Market. p. 28. This was not an infant formula. It was sold in liquid form in 1 lb cans.

1644. **Product Name:** Beanvit (Soyabean Milk. Later Renamed Yeo's Soyabean Drink).
Manufacturer's Name: Yeo Hiap Seng Ltd.
Manufacturer's Address: 23, 7 M.S. Bukit Timah Rd., Singapore.
Date of Introduction: 1954.
Wt/Vol., Packaging, Price: Sterilized bottles.
New Product–Documentation: U.S. Foreign Agricultural Service. FAS-M126. Feb. p. 22. "Southeast Asia as a market for U.S. soybeans and vegetable oils." In Singapore 2 companies are engaged in the production of pasteurized soybean milk, which is sold as a soft drink. They use about 100 tons of soybeans a month for this purpose. One product is marketed as "Beanvit" soybean milk. Page 37 states that the address of Yeo Hiap Seng is 23, 7 M.S. Bukit Timah Rd. The manager is Alan Yeo. The company uses about one ton of Mainland Chinese soybeans daily.

Soybean Digest. 1970. Nov. p. 3. "A Southeast Asia soy food firm." In 1952 Yeo Hiap Send Ltd. successfully launched its first soy milk in bottles. "This is marketed as a food beverage known as 'Beanvit' and retailed at the same price as other soft drinks." In 1968 Yeo Hiap Seng Ltd. successfully introduced a modern, one-way, tetrahedron-shaped container to pack its soy milk. The container is lined

with Kraft paper and polyethylene coated aluminum foil. The product is sterilized before filling, being heated to 142ºC for 4 seconds.

E. Orr. 1972. Tropical Products Inst. G73. The use of protein-rich foods for the relief of malnutrition in developing countries: an analysis of experience. p. 15. "A soya milk, Beanvit, has been produced in Singapore and Malaysia since the early 1950s by Yeo Hiap Seng Ltd. of Singapore and its Malaysian subsidiary. The company's main business is in the soft drink, food processing (canned meat) business. More recently a form of Beanvit, with vitamin and mineral additives, called Vitabean has been on sale along with Beanvit. The trend of sales is said to be satisfactory and the company has plans to expand production."

Soya Bluebook. 1981. p. 61. No brand name given; Soyfoods magazine. 1981. Winter. p. 29. A photo shows a Tetra-Pak carton (tetrahedronal in shape) labeled Beanvit (Soya Bean Milk), with Chinese characters above it.

Letter from Alan Yeo of Yeo Hiap Seng. 1982. April "1. Our Company first introduced commercial soybean milk in bottle in Singapore in the year 1954.

"2. The name of the product was 'Beanvit.' Subsequently we changed it to "Yeo's Soybean Drink.

"3. It started as a sterilized bottle product."

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 101. This rather sweet soymilk, introduced in Singapore in 1954 and sold like a soft drink in sterilized bottles, was marketed in Singapore and Malaysia, where it was the first product of its type. The address is now 950 Dunearn Rd., Singapore.

1645. Addor, Arnaldo Augusto. 1954. Consideracoes acerca da soja [Considerations relating to soybeans]. Rio de Janeiro, Brazil: Ministerio da Agricultura, Servico de Informacao Agricola. 69 p. (S.I.A. publication 797). [54 ref. Por]
• ***Summary:*** Discusses the cultivation, utilization, and nutritive value of the soybean in Brazil. Contents: Preface. Basic principles and overview. Cultivation. Varieties. Chemical composition. Oil. Vitamins. Nutritional value of the protein. Chemical characteristics of the protein. Preparation of soy flour and techniques for removing the natural bad flavor and aroma from the soybean and its flour. Use of the flour to obtain a mixed bread. Use of the soybean to obtain vegetable milk (*leite vegetal,* or soy milk). Extraction of the protein. Protein adhesives. Appendixes. Summary. Address: Quimico Agricola, Cuiabá, Mato-Grosso, Brazil.

1646. Bibliographie (sur) le lait de soya [Bibliography on soy milk]. 1954. France: Commission Internationale des Industries Agricoles. 6 p. [Fre]*
Address: France.

1647. Hartley, Dorothy. 1954. Food in England. London: Macdonald and Jane's. xii + 676 p. Illust. Portraits. Index. 25 cm. Reprinted in 2009 by Piatkus Books. *
• ***Summary:*** "In the old recipes of the 14th Century and earlier much cooking is done with milk of almonds."

1648. Katsumata, Senkichiro. ed. 1954. Kenkyusha's new Japanese-English dictionary. Entirely new ed. [3rd ed.]. Tokyo and Kyoto: Kenkyusha. xvi + 2136 p. 24 cm.
• ***Summary:*** Soy related words:

aburaage: see aburage.

aburage: fried beancurd.

age: a piece of fried bean-curd.

ama-miso: slightly salted bean paste.

atsuage: not listed.

Daitokuji natto: not listed.

daizu: a soya (= soy) bean. daizu kasu: a [soy] bean cake [a co-product of soy bean oil]. daizu abura: [soy] bean oil.

dengaku: bean curd baked and daubed with miso. dengaku-zashi ni sareru: to be transfixed; to be pierced through (as with a spear).

edamame: green soybeans.

ganmo: not listed.

ganmodoki: not listed. Hamananatto: not mentioned. Hamanatto: not mentioned.

inarizushi: fried bean-curd stuffed with boiled rice.

kogoridôfu = kôyadôfu.

Note 2. This is the earliest English-language document seen (April 2013) that contains the term *kogoridôfu* (written as one word, with diacritics) which it says is the same as kôyadôfu [dried-frozen tofu].

Note 3. This is also the earliest English-language document seen (April 2013) that uses the term *kôyadôfu* to refer to dried-frozen tofu.

koikuchi: not listed.

koikoku: a carp cooked in bean (= miso) soup.

kôji: malt (mugi); yeast; leaven (kôbo); kôji-ya: a maltster [a maker of kôji]. kôji ni suru: to malt something.

kôridôfu: a frozen bean curd.

kuromame: a black soy bean.

miso (chomiryô = seasoning): bean paste; miso. miso o suru: to mash the miso [as in a suribachi]. miso kakeru: to put miso on something (as food). (2) (tokui to ten) sore ga kare no miso da: that is what he takes pride in [that is what he is good at]. (3) (hikakuteki-ni) miso o kakeru (shuppai suru): to make a mess (=sad work) of something; to make a miserable (=poor) showing. miso o suru (hetsurau): to flatter [someone, as one's superiors]. [Modern is goma suru; kare, shatcho ni goma shitte-iru: he is flattering his boss. A grinding gesture goes with it. goma-suri: a person who flatters]. kuso miso ni iu: to speak meanly of a person; to speak of a person in the most disparaging terms. miso mo kuso mo isshoni suru: to mix up good and bad things. miso no miso kusaki wa, jô miso ni arazu: The secret of art lies in concealing art [Akiko never heard this saying]. soko ga miso

darô: perhaps that's the point he takes pride in [=the key point].

misokoshi: a *miso* strainer. [misokoshi de mizu o sukuu]: weave a rope of sand; attempt impossibilities [literally, to try to scoop up water with a miso strainer].

miso-mame: soy (= soya) beans.

misuzu-dofu: not listed.

momen: no meaning related to tofu is listed.

nama-age: fried bean curd.

Note 4. This is the earliest English-language document seen (April 2013) that contains the term *nama-age* which refers "fried bean curd."

nattô: fermented soybeans. nattô uri: a vendor of fermented soybeans. nattô-jiru: miso soup with ground fermented soybeans.

nigari, nigashio: bittern; brine.

nimame: boiled beans [typically boiled soybeans served as part of *osechi* at New Year's].

nori [no tsukudani]: laver boiled down in soy [sauce].

oboro: not listed.

okabe: = tofu.

okara: bean curd refuse.

shimidôfu = kôridôfu [frozen tofu].

Note 5. This is the earliest English-language document seen (April 2013) that contains the term *shimidôfu* (written as one word, with diacritics) which it says is the same as kôridôfu.

shitaji (7): soy [sauce].

shôyu: soy [sauce].

tamari: [a kind of] soy; soy sauce; sauce from refined soy.

tôfu: beans curds (=cheese); tôfu. [tôfu itcho; in characters]: a piece (=cake) of bean-curds. [tôfu-ya]: a bean-curds dealer (=seller). [yaki-dôfu]: roasted bean-curd. kare ni iken shita totte, tôfu ni kasugai da: advice to him is like water sliding off a duck's back = It's a mere waste of words (=It is like pouring water into a sieve) to advise him. [tofu-ya e ni ri, saka-ya e san ri to iu tokoro da]: there is no human habitation within five miles of the place. [It's out in the boondocks].

tônyû: bean soup; soya-bean juice [sic, soymilk].

u-no-hana: (1) flowers of the *Deutzia scabra.* (2) [tôfu no kara] bean-curd refuse.

tsukudani: preserved food boiled down in soy.

yuba: dried bean curds [sic, the film that forms atop soymilk when it is dried]. Address: General editor, Japan.

1649. Malnutrition in African Mothers, Infants and Young Children: Report of the Second Inter-African Conference on Nutrition. Held under the auspices of the Commission for Technical Co-operation in Africa South of the Sahara (C.C.T.A.). 1954. London: Her Majesty's Stationery Office. 398 p. Held 19-27 Nov. 1952 at Fajara, Gambia. Illust. Index. 25 cm.

• ***Summary:*** Contains 5 papers about food uses of soya in Africa, each cited separately. Address: Gambia and London.

1650. Platt, B.S. 1954. Some nutritional implications of the mother-infant relationship. In: Malnutrition in African Mothers, Infants and Young Children: Report of the Second Inter-African Conference on Nutrition. London: Her Majesty's Stationery Office. 398 p. See p. 285-89. Held 19-27 Nov. 1952 at Fajara, Gambia, under the auspices of the Commission for Technical Cooperation in Africa South of the Sahara (CCTA). [8 ref]

• ***Summary:*** "Most workers engaged in nutritional or paediatric studies in tropical countries have early in their careers an urge to produce a substitute for human or cow's milk. It would, in my view, be much more desirable to devote attention to two other problems: firstly, the study of how the mother should be fed so as to enable her to feed her infant adequately from her breasts, and secondly, the determination of the value of foods suitable for continuing the practice of mixed feeding." On the latter subject, the author favors the use of soya bean curd [tofu] rather than of the "milk" [soya milk] made from these beans. Address: Prof., Director of Medical Research Council's Human Nutrition Research Unit and of the Applied Nutrition Unit, and Head of the Dep. of Human Nutrition, London School of Hygiene and Tropical Medicine, London, W.C.1., England.

1651. Thorpe, Jocelyn Field; Whiteley, M.A. 1954. Soya bean. In: J.F. Thorpe and M.A. Whiteley. 1937-1956. Thorpe's Dictionary of Applied Chemistry. 12 vols. 4th ed. London, New York, Toronto: Longmans, Green & Co. See vol. XI, p. 46-48. 23 cm. [15 ref]

• ***Summary:*** The section titled "Soya Bean" has the following contents: Introduction. Composition of soya beans. Soya-bean products: Oil, cake and meal, flour, milk, soy sauce ("known in Japan as 'Shoyu' and in the west under such names as 'Worcester Sauce,'..."), miso, tofu, immature soya beans, roasted soya beans (eaten like peanuts), coffee substitute, chocolate substitute. Agricultural uses (green fodder, hay, silage, bean pods and straw). Sir Jocelyn Field Thorpe lived 1872-1940.

1652. Vollmer, Marion W. 1954. Food: Health and efficiency. Lessons in nutrition and healthful food preparation. Prepared for use in Home health education classes under the direction of the Medical Dept. of the General Conference of Seventh-day Adventists. Nashville, Tennessee: Southern Publishing Assoc. 111 p. 24 cm.

• ***Summary:*** This Seventh-day Adventist book on vegetarian nutrition (with recipes) mentions soy in several places. To help make breakfast a hearty meal, waffles may be "reinforced with soy" (p. 19). When cooking processed breakfast cereals, "they can be made more nutritious by adding wheat germ, rice bran, soy flour, etc." Soybeans are

given as the first example of a high-protein food that should be eaten daily (p. 26), and soybeans, soybean products, and gluten are listed as good sources of protein (p. 31). A table showing the protein content of common foods includes Soyalac (dry soy milk), meat substitutes (commercial gluten steaks, Proteena or dark meat substitutes, Nuteena or light-meat substitutes), and soybeans (p. 32).

The following recipes are given: Baked soybeans (p. 34). Gluten (how to prepare and serve at home, p. 35-36). Gluten, mushroom, and potato pot pie (p. 36). Holiday loaf (with Vegemeat Burger or other ground gluten, p. 37). Mushroom dressing with gluten slices (p. 37).

A second edition was published in 1964.

1653. *Soybean Digest.* 1955. Saving lives with soy. Jan. p. 18.
• ***Summary:*** A photo of Danny Kaye and S.S. De has this caption: "Film star Danny Kaye drank a glass of soybean milk on a recent trip to Bangkok [Thailand]. It was presented to him by Food and Agriculture organization's Dr. S.S. De, regional nutrition officer for Asia and the Far East. Danny, who was on tour as ambassador at large for UNICEF, was told how soybean milk is helping to improve the diets of many people who do not otherwise get enough protein."

1654. Ratner, Bret; Untracht, S.; Crawford, L.V.; Malone, H.J.; Retsina, Mary. 1955. Allergenicity of modified and processed foodstuffs. V. Soybean; Influence of heat on its allergenicity; Use of soybean preparations as milk substitutes. *American J. of Diseases of Children* 89(2):187-93. Feb. [7 ref]
• ***Summary:*** Soybean is innately a weak allergen. It only rarely causes allergic manifestations. Address: Depts. of Pediatrics and Immunology, New York Medical College and Flower and Fifth Ave. Hospitals, and the Pediatric Div. of Sea View Hospital, New York.

1655. *Soybean Digest.* 1955. Borden Dept. head. Feb. p. 28.
• ***Summary:*** "Dr. J.F. Muller has been named general manager of the prescription products department of the Borden Company's special products division. He succeeds Harry McNeilly who has resigned.

"Dr. Muller, a chemist and bacteriologist, has been with the prescription products department since 1941. He is the discoverer of MullSoy, a soy-base food for children and adults who are allergic to cow's milk. Before joining Borden's he was owner and director of Muller Laboratories which he founded in Baltimore" [Maryland].

A portrait photo shows Dr. Muller.

Note: This is the earliest English-language document seen (Aug. 2013) that uses the term "soy-base" (or "soy-based") as an adjective to refer to a product made primarily from soy rather than from the substance (in this case cow's milk) from which it is typically made.

1656. *New York Times.* 1955. Deaths: Mrs. Edwin C. Cort, Missionary in East. March 18. p. 27.
• ***Summary:*** Mrs. Mabel Gilson Court died on 15 March 1955 in Oakmont, Pennsylvania, at age 83–the widow of Dr. Edwin C. Court, who died in 1950. She had been a Presbyterian missionary in Siam (later called Thailand) from 1903 to 1949. Her husband was a physician and fellow missionary. Mrs. Cort was born in about 1872 in Zanesville, Ohio. She was married in 1910. In 1915 Dr. Cort took charge of McCormick Hospital in Chiengmai. Following a furlough of study at Johns Hopkins University, Mrs. Cort took charge of dietetics at McCormick Hospital. She developed a formula for "soybean milk that became standard in Thailand." In 1949, when they retired, Dr. and Mrs. Cort received high honors from Thailand.

1657. Wood, Alice L. 1955. The history of artificial feeding of infants. *J. of the American Dietetic Association* 31(5):474-82. May. [96 ref]
• ***Summary:*** "Artificial feeding has been defined as 'feeding an infant with other than breast-milk. Artificial feeding has perplexed every society." Milk from a wet-nurse was not artificial.

Discusses: Early records of wet nursing and artificial feeding. Science replaces superstition [in the late 19th century] ("Abraham Jacobi established the first pediatric clinic in America in 1860"). Evolution of the feeding bottle. Sanitary milk supply (success came in the late 19th century, as the germ theory came to be widely known and accepted. In 1857 Gail Borden started the first sanitary inspection of milk. In 1886 Jacobi recommended sterilizing milk). Deficiency diseases ("Rickets and scurvy have been the two outstanding hazards in the life of the young child throughout history,.."). Recent trends ("The modern era of feeding might be said to date from 1930." The baby food industry began in 1929).

In this long chapter, the development of non-dairy infant foods is not mentioned. However it is alluded to: "Allergy, too, can be dealt with more effectively" (of the 17 references cited, a few deal with soy formulas). Address: Graduate student, Teachers College, Columbia Univ., New York City.

1658. Autret, M.; van Veen, A.G. 1955. Possible sources of protein for child feeding in underdeveloped countries. *American J. of Clinical Nutrition* 3(3):234-43. May/June. [7 ref]
• ***Summary:*** Soybeans can help fill protein needs but must be processed in well-controlled processing plants. FAO has long been associated with the "saridele" "soy milk" project in Indonesia. After the "saridele" project had been extensively discussed in the National Nutrition Council of Indonesia, the Indonesian government asked UNICEF and FAO to assist in establishing a "saridele" plant for the manufacture of this

product for "mother and child welfare centers and hospitals." Why did the Government choose centralized manufacture rather than local manufacture in villages and households? "The reply is that whereas in many villages 'soy milk' is not unknown, 'saridele' from soybean and groundnut certainly is. Introducing a new, hardly known food or food mixture in a country like Indonesia is a difficult and slow process; demonstration through feeding schemes is one of the best ways. Processing on a village scale or locally for hospitals, etc. would certainly lead to numerous difficulties, such as unhygienic manufacture and distribution, lack of suitable containers, and adulteration of the product with water, etc.

"The total capital investment of the Government and UNICEF (who will supply the plant) is about 6 or 7 million Rupiahs (about &700,000); the plant will produce at least 300 tons of the dry product a year" (p. 235-36). Note: This is the earliest document seen (Sept. 2000) that mentions "saridele."

"Another well-known soybean product from Indonesia, *tempeh,* prepared by treating the cooked soybeans with a certain fungus, has drawn the attention of workers in Southern Rhodesia where soybeans are cultivated, but the local population is not much interested in consuming them. Tempeh has a high nutritive value and is highly digestible, but the manufacture is somewhat difficult to control when the product is manufactured under simple conditions. This and other considerations were the basis in Indonesia of the conclusion that soy milk would be preferred to tempeh in the manufacture of a soy product for infants, and children.

"FAO has been giving technical advice on the manufacture of tempeh in Southern Rhodesia, and it seems that the results of the large-scale experiments are very promising. It is to be hoped that these will be published, not only in connection with acceptability, but also concerning the technical problems, data on production costs, and so on." Address: 1. Pharm. D.; 2. PhD.

1659. Ratner, Bret; Crawford, Lloyd V. 1955. Soybean: Anaphylactogenic properties. *Annals of Allergy* 13(3):289-95. June. [11 ref]

• ***Summary:*** In 1934 Duke aroused interest in the "question of the allergenicity of soybean" when he reported one case of a person who was "exquisitely sensitive to soybean." His patient lived and worked near a soybean mill. Yet despite "Duke's warning that soybean might become a source of allergy, there has been practically no evidence in the literature in the intervening twenty years that soybean is an important factor in this disease." In 1942 Hill deduced that "soybean is a poor antigen." Many soy products are now on the market.

"Because of the use of soybean as a milk substitute in infant feeding, we undertook to investigate it from the standpoint of its allergenicity."

The materials used were raw dried soybean [whole dry], soybean flour (Special X Brand, made by Spencer Kellogg and Sons, Inc.) and soybean extract (SBE). Each is described in detail (p. 290).

"Summary and conclusions: Soybean was demonstrated to be a weak anaphylactogen when tested in the guinea pig. 2. The weak antigenicity is moderately enhanced when adjuvants are incorporated into the soybean antigen. 3. Sensitization was not materially increased by multiple sensitizing injections" or "through inhalation of soybean flour." "6. The reduced amount of methionine present in the soybean protein might in part account for the lowered antigenic activity of soybean."

Note: *Webster's Dictionary* defines anaphylaxis (a word first used in 1907) as "1: hypersensitivity (as to foreign proteins or drugs) resulting from sensitization following prior contact with the causative agent. 2: anaphylactic shock."

It defines an antigen (a word first used in 1908) as "a usually protein or carbohydrate substance (as a toxin or enzyme) capable of stimulating an immune response." Note: This is the earliest document seen (Jan. 2006) that uses the word "antigen" or "antigens" in connection with soybeans. Address: 1. M.D., F.A.C.A., 50 East 78th St., New York, NY.

1660. *Soybean Digest.* 1955. Soy plant in Indonesia. July. p. 20.

• ***Summary:*** "Establishment of a soybean milk plant in Djakarta [Jakarta], Indonesia, is under way, and may be the first of a number in that part of the world, reports the American Embassy, Djakarta. The project is one of the activities of the Food and Agriculture Organization of the United Nations (FAO)."

1661. Peoples Drug Stores, Inc. 1955. Fresh stocks, priced low (Ad). *Washington Post and Times Herald.* Aug. 5. p. 23.

• ***Summary:*** The section titled "Baby foods" includes: "Mull Soy Liquid, 15½ ounces–38¢. Soyalac Infant Food, pound–$1.18. Mull Soy Powder, pound–$1.14."

1662. McLaughlin, Kathleen. 1955. Soy milk plant to aid Indonesia: Factory in Jogjakarta may build up nutritional values for all Southeast Asia. *New York Times.* Sept. 18. p. 21.

• ***Summary:*** Harry Miller, Jr., an American technician for the United Nations Food and Agriculture Organization, is supervising construction of a plant to produce soybean milk–in both liquid and powdered form, in Jogjakarta, Indonesia. The plant is expected to be in production by Feb. 1956, and by mid-year the dehydrated form should be available for domestic shipment.

More than 20 years ago, Mr. Miller's father, an American medical missionary in China, developed a good-tasting soybean milk there. By hard work, persistence, and ingenuity, he developed the equipment that is now being instaled in the Jogjakarta plant.

"By 1936, Dr. Miller had returned to Shanghai with his family, erected and equipped a factory, and was turning out 3,000 quarts of bottled soybean milk a day, at 7 cents (U.S.) a quart. Cow's milk cost 30 cents.

"Then the war with Japan erupted. In 1937, Japanese forces completely destroyed his plant and in 1938 the Millers left China for their home in the United States." In 1947 they returned briefly to China, then in 1948 they left again before the Communist advance.

Dr. Miller's patents have long since been relinquished to the public domain, with the exception of an interest retained in one soybean milk plant in California. As an F.A.O. expert, Harry Miller Jr. hopes to make his father's soymilk processing system as widely available as possible, especially in places like Indonesia, where it can offer the greatest benefits.

The United Nations Children's Fund [UNICEF], which has provided $350,000 worth of the Miller type equipment for the Jogjakarta plant, has agreed that half of the annual output of 600 tons of soybean milk, powdered or liquid, from this plant, will be distributed free of charge to Indonesians for the first 3 years.

1663. Blue, Johnny A. 1955. Folklore remedy (Canada fleabane) for soybean diarrhea. *J. of Allergy* 26(5):425-28. Sept. [9 ref]
• ***Summary:*** Children allergic to cow's milk who use soybean milk may develop diarrhea from soybean milk. "Most of us have heard the complaints of mothers about the foul odor of soybean milk while boiling it in an attempt to prevent the diarrhea." Describes a cure for "soybean diarrhea" using Canada fleabane, also called "mule tail tea." The remedy was used on 25 infants and young children who had moderate to severe diarrhea from the consumption of soybean milk (Mull-soy) after the usual methods of treating it had failed. A pinch of the dried leaves were steeped in hot water then strained and added to the soybean formula. "There were no ill effects noted from the treatment." Address: Oklahoma City, OK.

1664. *J. of Agricultural and Food Chemistry.* 1955. Soy milk in Indonesia. 3(10):807. Oct.
• ***Summary:*** "A soybean milk plant is going up in Jogjakarta, Indonesia and should be in production by February. The product, already tested with mothers and children, is expected to get enthusiastic response. Not only is it palatable, but it is more easily assimilated by the underfed than is cow's milk. It is also higher in protein. The UN Children's Fund has furnished $350,000 worth of equipment for the 600 annual ton plant being built under direction of Harry Miller, FAO technician whose father, a medical missionary, developed the process."

Note: The soy milk is named Saridele.

1665. Melo, Maria de Lourdes. 1955. [Soy bean in diet therapy of nutrition diseases]. *Revista Brasileira de Medicina* 12(10):712-16. Oct. [Por]*
Address: Brazil.

1666. Lager, Mildred. 1955. Nutritional news and recipes: The power of gratitude. *Let's Live* 23(11):22-23, 53. Nov.
• ***Summary:*** "We all have so much to be grateful for, as there is an abundance of wonder and loveliness in the world if we will but look at it. Gratitude brings both healing and comfort. Start your day with gratitude..."

Discusses nuts as food, with recipes, including: Almond breakfast with "raw almond butter." Almond milk. Peanut butter mayonnaise. Vegetables in nut gravy (with "raw or toasted cashew butter"). Almond hamburgers [meatless] (seasoned with soy sauce). Address: Los Angeles, California.

1667. Thompson, M.D. 1955. Comparison of milk and soya beans in the treatment of kwashiorkor in Uganda. *British Medical Journal*. ii(4952):1366-69. Dec. 3. [5 ref]
• ***Summary:*** Soy-banana mixtures were used successfully for treating kwashiorkor. But the author warned: "Failures with soya are attributable at the practical difficulty of feeding the mixtures, which was so great, even in many cases in which treatment was eventually successful, that it would seem to make routine use of soya-bean feeds impracticable outside specialized centres." Address: M.D., M.R.C.P., Mulago Hospital, Kampala; Dep. of Medicine, Makerere College; Lab. of the Colonial Research Scheme.

1668. **Product Name:** [Wood-lit-nai soymilk].
Foreign Name: Wood-lit-nai.
Manufacturer's Name: A.S. Watson.
Manufacturer's Address: Hong Kong.
Date of Introduction: 1955.
New Product–Documentation: Letter from K.S. Lo. 1984. March 2. There have been many competitors in the Hong Kong soymilk market throughout the years. The first was A.S. Watson's "Wood-lit-nai" which was launched in about 1955. It was withdrawn a couple of years later.

1669. Henselwerk GmbH. 1955. Das Problem der milchfreien Saeuglingsernaehrung, insbesondere bei Milchschorf [The problem of raising infants on a milk-free diet, especially because of dermatitis caused by milk]. Magstadt bei Stuttgart, West Germany. [Ger]*
• ***Summary:*** This is the earliest document seen (May 2008) concerning a major European soyfoods company that was active in the 1990s. Address: Magstadt bei Stuttgart, West Germany.

1670. *Indian Council of Medical Research, Special Report Series.* 1955. Milk substitutes of vegetable origin. No. 31. 48 p. (New Delhi). [216 ref]

• ***Summary:*** Contents: Importance of milk in human dietary. Soya bean research in India. Vegetable milk from groundnut. Preparation of milk substitutes–soya bean milk. Groundnut milk and related products. Other milk substitutes. Summary and conclusions. References.

"During the Bengal Famine of 1943, Guha and Saha prepared a mixture of soya-bean, groundnut and malted barley from which a milk was prepared, which fortified with calcium and shark liver oil, was fed to a large number of infants and children who liked this feed and responded well to it. Experiments with rats showed that this milk gave better growth than ordinary bazaar milk but slightly less than genuine cow's milk."

"During the past 3 decades, several attempts were made in India to popularise the use of soya-bean as an article of human food... Experiments carried out at Coonoor by Aykroyd and Krishnan (1937), showed that the pulse did not have any advantage over the commoner pulses as already consumed in the country. Subsequently a more intensive programme was carried out in 4 Laboratories (Dacca [in today's Bangladesh], Bombay, Lahore and Coonoor) in accordance with a plan drawn up by the Soya-bean Sub-Committee of the Nutrition Advisory Committee. The report of that Sub-Committee (1946), generally confirmed the earlier Coonoor results and showed that, in spite of its higher protein content, soya-bean did not reveal any superiority over the commoner Indian pulses as a supplement to the typical Indian diets. The Sub-Committee stated, therefore, that it was 'not in a position to advocate *immediately* the encouragement of the production of soya-bean on a wide scale in India for use as a substitute for Indian pulses. The question should, however, be reconsidered if and when further evidence on the nutritive value of soya-bean becomes available.'

"When preparing the above report, the Sub-Committee had before them the results of the Dacca experiments which showed that while the bean itself, cooked as a pulse, had no supplementary value to the simplified rice diet, the milk prepared out of the bean had a definite supplementary value which was only slightly inferior to that of cow's milk. There was also a detailed report from the Indian Institute of Science, Bangalore, which indicated that the digestibility and the biological value of the fraction of soya-bean protein which was in stable emulsion as a result of processing were considerably higher than the corresponding values for the whole soya-bean protein. The latter report also outlined an improved method of preparing a stable and adequately fortified soya-milk which had already been used for trials in Bangalore.

"As the above observations were rather suggestive, a fresh programme of investigations was initiated at Bangalore under the auspices of (i) the then Indian Research Fund Association (now Indian Council of Medical Research), for assessing the nutritive value of processed soya-bean milk as compared with cow's milk at different levels in the case of both experimental animals and human subjects, (ii) the then Food Department, (now Ministry of Food & Agriculture) for pilot plant trials on the production of soya-milk and related products, and (iii) the then civil and Military Station, Bangalore, for mid-day school feeding of about 6,000 school children with rice and soya milk curd as compared with rice and skimmed milk curd. In these programmes the Indian Institute of Science conducted the preparatory studies and the animal experiments, while the Nutrition Research Laboratories collaborated in the field studies and made the necessary health observations. The trials which were conducted over a period of 3 years (1945-48) showed that, unlike the whole soya-bean, the milk or curd prepared out of it was acceptable, had a high digestibility and a definite supplementary value to the poor cereal diet as consumed in South India." Address: ICMR, New Delhi, India.

1671. Jelliffe, D.B. 1955. Infant nutrition in the subtropics and tropics. *World Health Organization Monograph Series* (*Geneva*) No. 29. 237 p. [313 ref]

• ***Summary:*** Contents: Introduction. 1. Evolution of infant feeding in the Western world. 2. Present infant-feeding practices in the subtropics and tropics. 3. Present status of nutritional disease among infants in the subtropics and tropics. 4. Methods of improving infant feeding in the subtropics and tropics. 5. Prevention of kwashiorkor. Acknowledgements. Annexes: 1. Summary of suggested methods of infant feeding in the subtropics and tropics. 2. Questionnaire for use in investigating methods of infant feeding. Illustrations. References. Index.

Soya-bean products are mentioned on pages 47 (tempeh and "tahu" [tofu]) and 49 (soya curd [tofu] and tempeh).

In the chapter titled "Prevention of kwashiorkor," pages 160-62 review and discuss the use of the soya bean to prevent protein deficiency in infant nutrition: (1) Soya-bean emulsion is "also known as soya 'milk.'" Work in the USA, Philippines, Hong Kong, Thailand, and Indonesia is discussed. (2) Soya-bean curd, "also known as soya 'cheese'" [tofu], is rich in calcium but is lacking in the vitamin-B complex. "Nevertheless, it can be an extremely valuable food, and, according to Platt (personal communication) is far superior to other soya products in infant feeding." (3) Fungus-digested soya beans or tempeh from Indonesia contains vitamin B-12 and is not expensive. It is very digestible and can be ground up and added to steamed rice for feeding older infants. (4) "Miscellaneous. Various other prepared soya products are of great nutritional value, but are probably unsuitable for infants." These include miso and soy sauce. "A simple method of preparation which requires further investigation is that of grinding the roasted beans into a flour, which can be added to gruels or soups. The roasted bean is certainly palatable but its digestibility for children is unknown, as is the effect of roasting on the trypsin inhibitor and on the amino-acid composition."

Address: WHO Visiting Prof. of Paediatrics, All-India Inst. of Hygiene and Public Health, Calcutta. Formerly, Senior Lecturer in Pediatrics, University College of the West Indies, Jamaica. Nutrition Consultant, World Health Organization.

1672. Lager, Mildred. 1955. How to use the soybean: A plus factor in modern nutrition. Burbank, California: Published by the author. Printed at La Sierra College Press, Arlington, California. 115 p. Index. 23 cm. Lay-flat comb bound.
• ***Summary:*** Contents: Preface. Nutritional nuggets–food value of soybeans. The versatile soybean. Soup to nuts–soybeans and soy products. Recipes: Green soybeans. Dry soybeans. Sprouted soybeans. Roasted or toasted soybeans. Meat-substitute dishes. Soy-enriched meat dishes. Soy noodles, macaroni, spaghetti. Sauces and gravies. Soups. Salads. Dressings. Soy spreads. Soy milk. Tofu or soy cheese. Soy butter (made from finely ground soybeans or soy flour, it may be raw or roasted, and resembles peanut butter; p. 73-74). Soy cereals. Soy desserts. Soy candies. Soy beverages. Soy-flour recipes. Breads and muffins. Pancakes and waffles. Soy gluten recipes. Baking-powder biscuits. Pastry. Cookies and doughnuts. Cakes. Contains 350 recipes.

A so-called "second edition" of this book was published in 1959, but it was identical to this first edition.

Ad in *Let's Live.* 1960. April. p. 39. Mildred Lager Publications [perhaps her home] is now located at 4118 Warner Blvd., Burbank, California. Mildred died in Aug. 1960. Address: Burbank, California.

1673. Rawson, Rulon W.; Rall, J.E. 1955. The endocrinology of neoplastic disease. *Recent Progress in Hormone Research* 11:257-90. See p. 273. Presented at a conference held 5-10 Sept. 1954 at Mont Tremblant, Quebec, Canada. [96* ref]
• ***Summary:*** Many "studies have demonstrated that certain tumors can be induced, inhibited, or even prevented in experimental animals by altering the hormonal environment. In other studies it has been demonstrated that the rate of growth of certain tumors can be significantly influenced, i.e., accelerated or inhibited, by altering the host's endocrinologic environment. Indeed these studies make it possible to foster hope for eventual control of these diseases by physiologic means."

Concerning tumors of the thyroid: "Recently we have had opportunity to examine the thyroid of a one-year old child whose thyroid had rapidly enlarged to the extent that a tracheostomy had to be done to prevent asphyxiation. A biopsy taken at the time of the tracheostomy was reported to be a Hürthle cell cancer of the thyroid. We suggested that the extreme and unusual hyperplasia seen in this goiter was benign and that it was due to a goitrogen. We asked if the child had been taking soybean milk, a source of protein relatively free of allergic reactions which in animals is goitrogenic. The child had been fed soybean milk since immediately after its birth, and the goiter disappeared on stopping this dietary item (see Fig. 6)."

Note: This is the earliest document seen (Oct. 2003) in which a soy product apparently caused goiter in a human subject. Address: Memorial Center for Cancer & Allied Diseases, New York, NY.

1674. Springer, Gertrude Anders. 1955. Natural food cookery: Nature's sweets, herbs and wholegrain flours. Milwaukee, Wisconsin: Lee Foundation for Nutritional Research. 71 p. No index. 23 cm.
• ***Summary:*** An early natural-foods cookbook. Contents: 1. Foreword. 2. Fundamental food concepts ("The way to build this vibrantly alive soil is by practicing the Science of Organiculture, or the organic method"). 3. Wholegrain flours. 4. Wholegrain meals and grits. 5. Other valuable foods. 6. Herb cookery. 7. Pies. 8. Cookies. 9. Cakes. 10. Cake frostings. 11. Doughnuts. 12. Confections. 13. Fruits. 14. Health beverages. 15. Salads. 16. Salad dressings. 17. Breads, rolls and muffins. 18. Meat, fish and eggs. 19. Vegetable dishes. 20. Soups and stews. 21. Pancakes and waffles. 22. Jams and preserves. 23. Quick desserts. 24. Article "Sesame seed–An important food." 25. Practical methods in preparing health-building foods. Note 1. Chapters 24 and 25 (on unnumbered pages) are written by Royal Lee, D.S.S. [dentist].

Soy-related recipes: Chapter 3, "Wholegrain flours," contains a photo of bags of five such flours, including "Soya flour." A paragraph (p. 5) explains: "Soya flour can be a full fat flour (all of the fat left in) which many consider nutritionally superior, or it can be a low fat flour (part of the fat removed) for low calorie diets." Note 2. This is the earliest English-language document seen (Nov. 2003) that uses the term "low calorie" or "low calorie diets" positively in connection with soybeans for human diets. Throughout most of human history, people wanted calories, which provide energy.

Unleavened Indian chapatis (with ½ cup soy flour, p. 52). Basic muffin recipe–Soya muffins variation ("Substitute ½ cup soya flour for ½ cup of the pastry [flour]. Gradually increase the soya and decrease the pastry until you are using half and half after several batches have been made." p. 54). Chinese chow mein (with up to ½ cup "Show You sauce," p. 62). Japanese sukiyaki (with about ½ cup "Show You sauce," p. 63). Egg white leavened waffles (with a bit of soya flour, p. 67). In Chapter 25, the section on "Vegetables" contains brief instructions for making soy bean milk, and using soaked, "liquefied beans direct from the blender" in making bread. The Chinese never eat soy bean products without first soaking the beans. "It is the secret of successful soy cookery." The chapter on sesame seeds notes: "Sesame seed ground into a butter like peanut butter is used in some countries–Turkey in particular–like our dairy butter is here, and is used in almost every food in some degree. It makes first-class salad dressing when mixed with vinegar and

prepared mustard. With honey and milk powder a very tasty cream candy can be made... In Roman times the emergency ration for soldiers was a candy made from sesame seed and honey. A very tasty and nutritious ice cream can be made from sesame butter, honey and milk powder. The sesame seed can be used for these purposes instead of the sesame butter if the seed is liquefied with the honey in a blender or Osterizer. Sesame butter is an ideal shortening for bread and cookies." Note 3. This is the earliest English-language document seen (May 2011) that contains the term "sesame butter"–a smooth paste of ground sesame seeds.

This book also discusses: Carob brownies, peanut butter, sunflower seeds, how to sprout mung beans, herbs, etc.

Note 4. This is the earliest English-language book seen (June 2003), published after World War II, with the term "natural food" in the title.

Note 5. This is not a vegetarian cookbook. Recipes (p. 55-58) call for steak, pork, ground beef, spare ribs, lamb chops, ham, chicken, tuna, and salmon.

1675. Williamson, Jessie. 1955. Useful plants of Nyasaland. Zomba, Nyasaland: Government Printer. 168 p. See p. 60-62. Edited by P.J. Greenway. Illust. by G. Jackson. 25 cm. [2 ref]
• ***Summary:*** *Glycine javanica* L. (called *Yembe* in ciCewa), is a perennial herb with slender climbing stems that are thinly pubescent. The leaves are frequently cooked as a side dish in Nyasaland [named Malawi after 1964]; they are not slimy and are much used.

The soybean (*Glycine max.*) is grown in considerable amounts in the southern province of Nyasaland. "The beans contain a saponin, which is poisonous and which is found in varying amounts in the different kinds." Among the many varieties suitable for eating are Herman, Easy Cook [Easycook], and some of the non-shattering Hernon varieties.

Methods of cooking soy soya beans: 1. Boiled as a side dish. 2. Boiled and mashed beans with skins removed as a side dish (called *cipere*). 3. The use of soya bean meal [soy flour] to improve the food value of porridge (*nsima*)*:* Introduction, use of roasted meal [roasted soy flour], use of unroasted meal [soy flour]. 4. Roasted soya [soynuts] as a substitute for groundnuts in side-dishes. 5. Soya bean milk and curd [tofu; a method is described for making soya bean milk from pounded soya beans that was in use at the Jeanes Training Centre in 1942; a method for making tofu from this milk is also described]. 6. Fresh [green] soya beans as an extra food [snack]. 7. Roast soya beans as an extra food.

Concerning the "Use of roasted meal: The beans should be roasted for some minutes and then ground or pounded. The resulting flour is palatable and also stores well. It may be used in amounts of up to 20 per cent. (10 per cent. is recommended) to mix with any other kind of flour. It makes a very palatable product with cassava flour, the latter is of such poor nutritive value on its own, as it consists almost entirely of starch, that the addition to it of protein-rich meal is important." Address: Member of Nutritional Survey and Nutritional Investigator, Nyasaland.

1676. Battle Creek Food Co. 1955? Pointers: On Battle Creek Sanitarium health foods. Battle Creek, Michigan. 16 p. Undated. Illust. No index. 16 cm.
• ***Summary:*** Contents: The story of Battle Creek Foods (The Battle Creek Food Company was established nearly 50 years ago). Agar–The laxative from the sea. Bran Biscuit–A crisp wafer. Dormi–Promotes sound, restful sleep (this is one of the newest Battle Creek Health Foods). Fig & Bran–The regulating breakfast food. Fig & Bran Cookies–Pure, tasty, wholesome. Food Ferrin–A pleasant way to get the iron you need. Battle Creek gluten products–for special diets (Toasted Bran Gluten Flakes, Gluten Bread, Gluten Meal, Sanitarium Gluten Flour, Pure Gluten Biscuit). Health Chocolates–Delicious health candy. Lacto-Dextrin–An internal cleansing food. Laxa–The laxative biscuit. Malted Nuts–A powdered nut milk (A "palatable vegetable substitute for cow's milk, it is a splendid food for babies and growing children"). Meltose–A syrup from grains ("It is a well-known fact that cane sugar does not agree with many persons." It may cause acid stomach. In appearance, Meltose "resembles strained honey"). Meltose sugar (a powdered form of Meltose; it is "much more easily assimilated than ordinary sugar, and is a better source of energy"). Minute Brew–A bracing cereal beverage ("resembles coffee but contains no caffeine"). Paralax with agar–An efficient regulator ("...a most effective remedy for constipation. No laxative drug of any kind has been added. A highly refined mineral oil using Agar as an emulsifying agent"). Paramels–The candy-like constipation remedy ("cubes of pure mineral oil... sweetened with Meltose sugar"). Protose–A vegetable meat that satisfies ("made entirely from nuts and grains"). Psylla (dark or white)–A seed that fights constipation [psyllium]. Sanitarium Cooked Bran–a bran cereal (serve with cream and sugar for constipation). Sanitarium Fig & Bran Flakes–A new flavor in breakfast flakes (Vitaminized, enriched with food iron and vitamin B; combines "Two of Nature's best laxative foods"). Savita–a rich, vitamin B flavoring extract ("concentrated yeast extract in paste form..." Rich in Vitamin B). Whole wheat flour–Stone ground. Cooked whole wheat–A ready-to-eat breakfast food. Zo–A Vitamin B breakfast food (crisp, crunchy). Sanitarium canned fruits and vegetables (in 20 oz cans). On the rear cover, with order form: Send for these valuable booklets free!: "Healthful Living." "Modern Health Recipes and Menus." Address: Battle Creek, Michigan.

1677. Fearn Soya Foods. 1955? Money saving recipes for using Dr. Fearn's Pure Soya Bean Powder (Leaflet). Melrose Park, Illinois. 3 panels each side. Each panel: 22 x 9 cm. Undated.
• ***Summary:*** On the front panel of this leaflet (black ink on yellow) is an illustration of woman holding up a glass

of (probably) soya milk. Below that is written: "Meatless. No starch. No salt. 42% complete protein. For vegetarians, athletes, restricted diets." When we open the leaflet, across the top is written: "How to use Dr. Fearn's Pure Soya Bean Powder." Below that are about 20 recipes and suggestions for use. On the back 3 panels are 15 more recipes.

One other front panel is titled "New recipes to try." It includes: Tiger's milk–homemade. Baby formula. Soy yogurt. Soy cheese–Tofu. The bottom half of this panel lists seven pamphlets from Fearn Soya Foods "available at your health food store (see Foods, Health in the Yellow Pages). Send us a self addressed stamped envelope if your store does not handle them." They are: "(1) The Fearn Chart–Lists all the vitamins and minerals of most common foods. (2) How to Get Slim and Stay Slim–Describes a satisfying 22 cent per day reducing diet. (3) About the Soya Bean–Describes its nutritive values and the hexane solvent menace. (4) You Cannot Live Without Protein–Tells function and importance of protein. Of special interest to vegetarians and body builders. (5) Recipe Folder: Soya Powders–Includes bread, soy milk, puddings, etc. for restricted diets. (6) Recipe Folder: Soya Granules–Lists many money saving recipes based on this high protein food. (7) Recipe Folder: Soybeans–Tells how to use our cooking and sprouting organic soybeans."

The third front panel is titled "Try these Dr. Fearn's Foods.

"Dr. Fearn's High Protein Food–47% protein. Makes pleasant tasting drinks with cold water. Vanilla or root bear flavors. 1 lb.

"Dr. Fearn's Wholewheat & Soya Pancake Mix contains the finest stone ground wholewheat with soya powder. It is quite digestible, higher in protein and lower in starch than the usual run of similar products. 1 lb.

"Dr. Fearn's Regular Pancake Mix is the same as above except that unbleached white flour is used. 1 lb.

"Dr. Fearn's Wheat Cereal & Soya is a cooked type cereal, made with the finely chopped Northern wheat and soya granules. It contains over 30% complete protein and less than 55% starch. A satisfying breakfast for the entire family and usually keeps hunger away until the noon meal. 1 lb.

"Dr. Fearn's Pure Soya Bean Powder for making soya milk. Contains 42% complete protein and no starch. Can be used for enriching various drinks, baked foods and meat dishes. 10 oz. and 2 lbs.

"Dr. Fearn's Soya Granules, contain 52% complete protein, no starch, 5% fat. Can be eaten as is, cooked, or added to meats, soups and other foods. 1 lb.

"Dr. Fearn's High Lecithin Soya Powder same as regular Soya Powder except 15% Lecithin has been added. 10 oz.

"Dr. Fearn's Low Fat Soya Powder. Same as regular Soya Powder except fat has been reduced to 5%. 10 oz.

"Dr. Fearn's Corn Bread & Muffin Mix with soya, makes light muffins and corn bread, very tasty and nutritious. Excellent for a surprising change. 1 lb.

"Dr. Fearn's Organic Soybeans. Organically grown without chemical fertilizers and poisonous insecticides. 1 lb.

"Dr. Fearn's Wheat Germ Powder. A fine toasted powder with most oil removed. Excellent added to drinks. Readily blends with most any other food."

Note 1. This leaflet was found inserted in *Mrs. Hauser's Recipe Book* (1938), purchased by Soyfoods Center from a used book store in Spokane, Washington. This booklet seems to show that Mrs. Hauser's Food Products Company (4617 Melrose Ave., Los Angeles, California) purchased Soya Bean Flour (and probably some other soy products) from Fearn Soya Foods.

Note 2. This is the earliest English-language document seen (Sept. 2012) that contains the term "Soy yogurt." Address: 1206 North 31st Ave., Melrose Park, Illinois.

1678. Fearn Soya Foods. 1955? Dr. Fearn's Soya Bean Granules: Money saving recipes (Leaflet). Melrose Park, Illinois. 3 panels each side. Each panel: 22 x 9 cm. Undated.
• ***Summary:*** On the front panel of this leaflet (black ink on white) is an illustration of woman holding up one finger. Below that is written: "Meatless. No starch. No salt. 52% complete protein. For vegetarians, athletes, restricted diets." When we open the leaflet, across the top is written: "Add high grade protein to your diet and save money, too." Below that is a long description of soya granules plus about 19 recipes. On the back 3 panels are 15 more recipes.

One other front panel contains 5 more recipes. The third front panel is titled "Other Dr. Fearn Foods.

"Dr. Fearn's Wholewheat & Soya Pancake Mix contains the finest stone ground wholewheat with soya powder. It is quite digestible, higher in protein and lower in starch than the usual run of similar products. 1 lb.

"Dr. Fearn's Regular Pancake Mix is the same as above except that unbleached white flour is used. 1 lb.

"Dr. Fearn's Wheat Cereal & Soya is a cooked type cereal, made with the finely chopped Northern wheat and soya granules. It contains over 30% complete protein and less than 55% starch. A satisfying breakfast for the entire family and usually keeps hunger away until the noon meal. 1 lb.

"Dr. Fearn's Pure Soya Bean Powder for making soya milk. Contains 42% complete protein and no starch. Can be used for enriching various drinks, baked foods and meat dishes. 10 oz. and 2 lbs.

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"Dr. Fearn's High Lecithin Soya Powder same as regular Soya Powder except 15% Lecithin has been added. 10 oz.

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1679. Nadkarni, Krishnarao Mangeshrao. 1955? Indian materia medica: With Ayurvedic, Unani-tibbi, Siddha, allopathic, homeopathic, naturopathic & home remedies. 3rd ed. revised & enlarged by A.K. Nadkarni. 2 vols. Bombay, India: Popular Book Depot. Vol. 1, xxii + 1319 p. 22 cm. Undated. Foreword by Colonel R.N. Chopra. [10+* ref]
• ***Summary:*** This book was first published in 1908 under the title "Indian Plants and Drugs." The author was born in 1864. Page 462 lists: "876. Dolichos soja. See Glycine soja. English: Soya bean. German: Soja bohne. Bengali: Gari kulaj. Hindi: Bhatwan. Kumaon: Bhut. Is a species cultivated in some parts of India for its seeds which are eaten and which contain high percentages of protein and fat."

Page 581 lists: "1135. Glycine soja, Sieb. & Zucc, G. Hispida Maxim. (N.O. Papilionaceae). English: Soya bean. Hindi: Bhat, Bhatwan. Bengali: Gari kulay. Punjabi & Kumaon: Bhut. Eastern Terai: Khajuwa. Habitat: Met with on the tropical Himalayas from Kumaon to Sikkim, and Kassia and Naga Hills. The nutritional composition (from Voorhees) is given.

Pages 1145-48 have a long section from the *Calcutta Municipal Gazette* (31 May 1941, p. 49) titled "Uses: ABC of Soya-bean." The title of each paragraph starts with a different letter of the alphabet. Soybean milk, flour, oil, and lecithin are mentioned.

1680. Alvarez, Walter C. 1956. Dr. Alvarez says: Black moles' removal should not be delayed. *Los Angeles Times.* Feb. 12. p. 12.
• ***Summary:*** The section titled "About treatment of children's allergies" summarizes a "splendid article" in *Modern Medicine* by Dr. Normal W. Clein of Seattle [Washington]. For an infant having problems with cow's milk formula, the first thing to do is to change to "goat's milk, soy bean milk, meat milk or some other proprietary milklike preparation."

Mixed cereals should not be given to allergic children; the safest single cereal is rice. The allergic child should be kept away from animals, birds, furs, kapok, and feathers in pillows.

Note: This is the earliest English-language document seen (Aug. 2013) that uses the word "milklike" in connection with soy bean milk. Address: M.D., Emeritus Consultant in Medicine, Mayo Clinic.

1681. Melo, Maria de Lourdes. 1956. [Nutritional value of soy bean and importance of its cultivation in North and Northeast Brazil]. *Revista Brasileira de Medicina* 13(2):105-09. Feb. [Por]*
Address: Brazil.

1682. Rodale, J.I. 1956. Don't drink milk (Editorial). *Prevention* (*Emmaus, Pennsylvania*). Feb. p. 11-22. [1 ref]
• ***Summary:*** The entire July 1955 issue of this magazine (*Prevention*) was devoted to the subject of milk. In it Mr. Rodale argued that the preponderance of the evidence weighed heavily against its use, and the use of all dairy products, as an aid to nutrition. Most "of the evidence was against pasteurized milk, but where can one secure a safe supply of raw milk?" And even in the case of raw milk, the breeding of cows for overproduction and artificial insemination should warn the health-conscious person against it.

Since July 1955 Mr. Rodale has done some additional study of the subject, which he reports here. Antibiotic drugs are increasingly used on cows.

"Remember that half the world, the eastern half, does not drink milk. I was talking to a Chinese professor the other day and he confirmed this fact to me and more. He stated that the average Chinese student who comes to this country, and hears about the supposed health-giving qualities of milk, begins to drink it, and as a result, he gets gas on the stomach and many other digestive ills." Address: Editor of Prevention, Emmaus, Pennsylvania.

1683. Cross, Leslie J. 1956. A Veganmilk Association. *Vegan* (*The*) (*England*) 9(8):2. Spring. [1 ref]
• ***Summary:*** "Provided sufficient support is forthcoming, an effort will be made as early in 1956 as possible to form an organization with the above suggested title, for the following purpose: To produce and make available to the general public in Great Britain a milk. the ingredients of which would be of plant origin; which would satisfy nutritional requirements; and which would be palatable, attractive, and simple to use for the purposes of which dairy milk s now used.

"The Association would probably function in three main stages: (1) It would conduct an enquiry into progress made in this and other countries in the manufacture of non-animal milks [Note: see Harry W. Miller, 1944. "The Story of Milk from the Soya Bean," 37 p.]. (2) Based upon information thus collected and collated, it would consider the problems connected with the successful manufacture and sale of such

a milk upon the general market in this country, including the question of scientific research and experiment. (3) Upon the successful manufacture on a small scale of an acceptable, the association would consider the question of large-scale manufacture and sale, including the organization required to promote such manufacture and sale; such, for example, as the formation of a Limited Company.

"While the work of the Association would be largely motivated by the ideals of vegetarianism and veganism, it would nevertheless function as a body with a precise practical job to do, and membership would be open to anyone prepared to support its work.

"The work would take a number of years and require considerable financial support. It would call for sustained and high endeavour, and though difficult, would be by no means impossible to achieve. Its successful outcome would be of immense value in many ways.

"Any persons interested in the proposal should send their name and address to Leslie J. Cross, Uxbridge, Middx. [Middlesex], who will, if support is sufficient act as convener of an inaugural meeting."

Note: This is the earliest document seen (Aug. 2013) that uses the word "Veganmilk" to refer to plantmilk. Address: Vice-President, The Vegan Society.

1684. Melo, Maria de Lourdes. 1956. [Soya in diet therapy for nutritional disorders: soya in diet therapy of other diseases]. *Revista Brasileira de Medicina* 13(3):198-201. March. [Por]*
Address: Brazil.

1685. Waterlow, J.; Vergara, A. 1956. Protein malnutrition in Brazil. *FAO Nutritional Studies* No. 14. 40 p. March. Also published as "La Malnutrition Protéique au Brésil" in *Bulletin de l'Organisation Mondiale de la Santé* (Bulletin W.H.O.) No. 15, p. 165-201. [58 ref]
• ***Summary:*** This was one of the surveys made by United Nations agencies in the late 1940s and early 1950s which showed the prevalence of protein calorie malnutrition. Discusses the difference between this condition (also called kwashiorkor) and marasmus. In the treatment of this condition, dried skimmed milk gives the best results since it also cures the dermatosis–but it is relatively expensive.

Contents: Prefatory note. 1. Medical aspects of the problem. 2. Natural history of *distrofia pluricarencial* in Brazil. 3. Prevention. 4. Proposals for further investigations. 5. Summary and conclusions.

Page 29 notes: "Soybean is a rich source of protein and may be prepared in a variety of ways. It has been shown that soybean preparations of various kinds are effective in treating kwashiorkor. The possibility of extending its use in Brazil and of making available preparation of soymilk, particularly for use in the Amazon region, is receiving attention."

Note: This is the 4th earliest English-language document seen (Aug. 2013) that contains the word "soymilk" (one of two documents). Address: 1. Dr., University College of the West Indies, Kingston, Jamaica, and WHO Consultant; 2. Dr., FAO Regional Officer for Latin America, Santiago, Chile.

1686. Howard, H.W.; Block, R.J.; Anderson, D.W.; Bauer, C.D. 1956. The effect of long time feeding of a soybean infant food diet to white rats. *Annals of Allergy* 14:166-71. March/April. [18 ref]
• ***Summary:*** Reproduction and lactation were adequately supported in several generations of rats fed an infant formula based on soy-flour. Address: Special Products Div., The Borden Co., New York, NY.

1687. Heron, John. 1956. Editorial: Vegetable milk. *Vegan* (*The*) (*England*) 9(8):1. Spring. [1 ref]
• ***Summary:*** "There can be few vegans, particularly vegan parents, who would not welcome the appearance of a nourishing and workable vegetable milk, ready-made and suitable for a wide variety of uses. Yet no such product is at present marketed in this country.

The use of a vegetable milk is not to be disparaged on the grounds that it is an aping of the animal milk habit. Like the compound solid vegan protein savoury, a compound liquid vegan protein food would be a valuable adjunct in broadening the scope and range of vegan catering. And it would undoubtedly have its place in providing quickly and conveniently for the needs of the growing vegan family.

"Such a product would also prove helpful and attractive to vegetarians and others wishing to make the change over to a vegan diet with the minimum of difficulty.

"Those with electric mixers can certainly make highly nutritious milks from nut creams, raw nuts, or soya flour, etc. But there is still room for a compound product of standardized vitamin, mineral and amino acid content. It is not that it is essential: but it would certainly be highly convenient.

"Is the time and are circumstances ripe for the marketing of such a product? Mr. Leslie J. Cross intends to find out. He has proposed an entirely independent body, the Veganmilk Association, in no way connected with any existing organisation, to determine the response of vegans, vegetarians, food reformers and those of orthodox dietary habits to the idea of getting a good non-animal milk on to the market. His announcement appears in this magazine. What is your response?" Address: Editor, The Vegan: Journal of the Vegan Society.

1688. **Product Name:** Nutribean (Soybean cocoa).
Manufacturer's Name: Manufacturer unknown.
Manufacturer's Address: Philippines.
Date of Introduction: 1956. July.

Wt/Vol., Packaging, Price: Can.
New Product–Documentation: Felix A. Pineda. 1956. Agricultural and Industrial Life (Manila) 18(July):8. "The economic value of soybeans and its manufacture for food products." The author is apparently a sugar agronomist, apparently in the Philippines. On page 8 he states: "The soybean cocoa is commercially sold in tin cans as Nutribean. One spoonful of nutribean dissolved in one cup of soyalac, or hot water and milk makes a nutritious and delicious drink in the morning and afternoon."

1689. Noller, C.H.; Huffman, C.F.; Ward, G.M.; Duncan, C.W. 1956. Dried whey and lactose as supplements to a vegetable milk replacer. *J. of Dairy Science* 39(7):992-97. July. [19 ref]
Address: Depts. of Dairy and Agricultural Chemistry, Michigan State Univ., East Lansing, Michigan.

1690. Pineda, Felix A. 1956. The economic value of soybeans and its manufacture for food products. *Agricultural and Industrial Life* (*Manila*) 18(June):8-9, 30; 18(July):8-9, 37.
• ***Summary:*** Contents: Introduction. Economic food value of soybeans. The manufactured food products from soybeans and their utilization. Methods of food preparation from soybeans: Soybean-rice, Soyalac or soybean milk, soybean cheese [fermented] or cheap meat, soybean cocoa or Nutribean, soybean coffee, toyo sauce or toyo [includes detailed instructions for making this Philippine-style soy sauce], salted beans or tau-si [fermented black soybeans], "soybean flour or soyaflour," soybean sprouts, dried and green beans ("The green soybeans with pods can be used for gulay, like the green mongo."). Conclusion and recommendation.

"Soybean milk" is suitable for the diabetic. Its food value approaches cow's milk.

Note: This is the earliest English-language document seen (Oct. 2001) that uses the word "soyaflour." Address: Sugar Agronomist, Philippines.

1691. Coates, M.E. 1956. Soya in animal nutrition. *Chemistry and Industry* (*London*) No. 32. p. 833-34. Aug. 18. [3 ref]
• ***Summary:*** Soy proteins supplemented with vitamin B-12 and methionine used as a major ingredient in synthetic milk.

"Soya is not widely used in animal foods in Great Britain because in normal times ample stocks of fish meal are available."

"In considering the substitution of animal proteins by soya, it must be remembered that the latter is deficient in certain essential growth factors that normally accompany proteins of animal origin... It is now generally accepted that the 'animal protein factor' (APF) is a complex and that although vitamin B-12 is an important member of it there are further components still to be identified." Address: Great Britain.

1692. Platt, B.S. 1956. The soya bean in human nutrition. *Chemistry and Industry* (*London*) No. 32. p. 834-37. Aug. 18. [25 ref]
• ***Summary:*** The author worked in China during the period in 1933-37, and there had "some experience of preparations made from the soya bean in infant feeding; also rarely a day passed in that period when I did not eat something of one or more of the Chinese soya bean food products–sauce, oil, bean curd or sprouts."

The author gives figures to refute the common misconception that "millions of Chinese have lived for centuries on a diet of rice and soya beans. For example (according to Buck 1938) in northeast China (Manchuria) where soya beans were used most, "very little rice was eaten, 25% of the calories in the diet came from wheat, and 5% from the soya bean... Only 2% of the calories in the Chinese farm diet were derived from vegetable oils which included oils from groundnuts, rape seed, sesame, and soya bean; the first three together occupy rather more than the acreage under soya bean crops. Learmonth (1956, p. 360) has stated that the soya bean has only been grown as an oil-bearing crop since the 19th century. There is, however, a Chinese work dated A.D. 1637 called 'The exploitation of the works of nature,' the second volume of which is devoted to oils and fats. From this work it may be deduced (according to information supplied by Dr. G.D. Lu) that the soya bean was grown for its oil as early as the third century A.D. According to Buck's data on most frequent yields, broad beans and field peas yield on average 18 bushels per acre compared with 14 bu/acre for soya beans. Peanuts or groundnuts give 64 bu/acre but it is not clear whether they are shelled or not.

"Anyone who, at a Buddhist feast, has eaten the delectable dishes made from the soya bean cannot but agree that, gastronomically, the merits of a wide range of soya bean products are outstanding. The 'vegetable' varieties of soya bean are, in fact, often simply immature ones. They are green and look like young lima beans but they have a richer and a distinctive and more delicious flavour... Soya bean curd (tou fu) is used in a variety of dishes. It is prepared from the mature beans, not usually in the home, but by the village 'specialist.'... With appropriate culinary treatment, it can be made to imitate a variety of meat dishes; traditionally it is given to young Chinese children."

The author also discusses soy sauce, tempeh, soy oil, and soya "milk".

"I recently had a visit from a professor of pediatrics at a hospital in Djakarta [Jakarta], Indonesia, who reported that about 50 infants put on a soya milk preparation, *all*, after two months, had some gastro-intestinal disturbances; none of them was thriving. In my view, it is still too early to replace human milk for infants and certainly not by a vegetable

substitute for animal milk...

"In my own experience soya bean curd is a suitable product for feeding young children and I suggest that its superiority over soya milk may be the separation in the 'whey' of substances that have been shown to be toxic for animals.

The contents of this paper were first presented as a contribution to the discussion on "Soya in the Field of Nutrition" by E.M. Learmonth, published in *Chemistry and Industry* on 12 May 1956. The author mentions an ad for "Sun Spot" soya milk.

The article begins with a poem written by "a medical nutritionist and his wife": "'Little Soybean who are you / From far off China where you grew?' / I am wheels to steer your cars, / I make cups that hold cigars. / I make doggies nice and fat / And glue the feathers on your hat. / I am very good to eat, / I am cheese and milk and meat. / I am soap to wash your dishes, / I am oil to fry your fishes, / I am paint to trim your houses, / I am buttons on your blouses. / You can eat me from the pod, / I put pep back in the sod. / If by chance you're diabetic / The things I do are just prophetic. / I'm most everything you've seen / And still I'm just a little bean.'"

Note: This poem, written by Dr. and Mrs. J.W. Hayward, was first published in the *Proceedings of the American Soybean Assoc.* 1940. Aug. p. 6. Address: C.M.G., Ph.D., M.B., Ch.B., Human Nutrition Research Unit, Medical Research Council Laboratories, Holly Hill, London, N.W. 3.

1693. Block, R.J.; Anderson, D.W.; Howard, H.W.; Bauer, C.D. 1956. Effect of supplementing soybean proteins with lysine and other amino acids. *American J. of Diseases of Children* 92:126-30. Aug. [3 ref]
• ***Summary:*** The addition of L-lysine to a soybean protein diet (Borden's spray-dried Mull-Soy infant food) did not improve the nutritive value of the soy proteins as measured by the growth of young rats. Address: PhD, Prescription Products Div., Borden Company.

1694. Borden Company (The), Prescription Products Division. 1956. Mull-Soy in milk-free diets: Tasty recipes. Hypoallergenic food for infants, children, adults allergic to milk. New York, NY: The Borden Co. 18 p. Sept. Illust. 15 cm.
• ***Summary:*** On the cover of this color booklet is a photo showing four prepared dishes and two drinks made using Mull-Soy. Contents: Photo of a can of Borden's Mull-Soy: Liquid Hypoallergenic Food (15½ fl. oz). Date and time of your next allergy and diet-check-up. What is allergy: Introduction, at what age level do food allergies develop?, how does food allergy develop?, do some foods cause allergy more than others? (yes, milk, chocolate, eggs, shellfish, etc.), must food offenders be removed completely from the diet? (yes), are alternatives readily available? (yes). What is Mull-Soy (a concentrated liquid soy food, to be diluted with an equal volume of water). How can Mull-Soy be used in milk-free diets? (just like milk. "If Mull-Soy is to be used as an infant formula, dip the can top, before opening, in boiling water for 15 minutes to sterilize it"). Mull-Soy recipes for good eating: Milk-free beverages. Milk-free hot breads. Milk-free soups and sauces. Milk-free desserts. Miscellaneous milk-free recipes. Foods you are not to eat (those checked by doctor; lists 42 foods in six categories). Address: Prescription Products Div., 350 Madison Ave., New York 17, New York.

1695. Noller, C.H.; Ward, G.M.; McGilliard, A.D.; Huffman, C.F.; Duncan, C.W. 1956. The effect of age of the calf on the availability of nutrients in vegetable milk-replacer rations. *J. of Dairy Science* 39(9):1288-98. Sept. [22 ref]
• ***Summary:*** This article begins: "There is a scarcity of data relevant to the digestion of vegetable milk replacers by the young calf, particularly with respect to the effect of age."

"The calves remained with their dams [mothers] for the first 48 hours after birth. They were then weighed, placed in individual pens, bedded with wood shavings, and usually fasted for the next 48 hours. Whole milk was fed on the fourth day of life and continued with decreasing amounts through the 21st day."

Table 2 (p. 993) gives the composition of the 3 milk replacers used. The main ingredient in each is "fine ground corn," followed by "soybean flour (52.4% [protein])." The percentage of soybean flour used in the 3 milk replacers is 33.0%, 32.5%, and 34.0%.

Conclusion: "The milk replacers were not satisfactorily utilized until the calf was approximately 25 days of age."

Note: This is the earliest English-language document seen (Aug. 2013) with the term "milk-replacers" (or "milk replacer" or "milk replacers") in the title. The term "milk replacers" is also used (as a noun) in the body of the text. Address: Depts. of Dairy and Agricultural Chemistry, Michigan State Univ., East Lansing, Michigan.

1696. *New York Times.* 1956. Food: Two foreign restaurants. Oct. 31. p. 38.
• ***Summary:*** It is a welcome sign that New Yorkers are becoming interested in Chinese dishes other than sweet and sour spareribs. Sun Luk, an exciting Chinese restaurant at 143 West Forty-ninth Street, offers an original and delicious dessert: "soy bean curd sweetened and flavored with almond."

Note: This well-known Chinese dessert, called "Almond bean curd" in some Chinese cookbooks, typically contains no soy; it is made with almond milk, gelled with agar, then refrigerated. It is cubed and served with a sweetened sauce flavored with almond extract (see Mei and Adams 1963, p. 121).

1697. Collins-Williams, C. 1956. Clinical studies with powdered Sobee, a new milk substitute. *Canadian Medical Association Journal* 75(11):934. Dec.
• ***Summary:*** Powdered Sobee was tested and found to be acceptable as a milk substitute in the feeding of allergic infants. The composition of the product is given. It was tested on 25 infants whose average age was 7½ months, and was well accepted by 23 of these infants. One infant took it only if it was mixed with cereal. One refused it. Weight gain and stools were normal. Address: M.D., Allergy Clinic. Hospital for Sick Children, Toronto, and Dep. of Pediatrics, Univ. of Toronto, Canada.

1698. *Vegan* (*The*) (*England*). 1956. The Plantmilk Society. 10(3):14-16. Winter. [1 ref]
• ***Summary:*** "Editor's Note: We have great pleasure in including in this issue the full text of the Report of the first Annual General Meeting of the Plantmilk Society, held at Friends House, Euston Road, London, N.W.1, on October 6th, 1956. The aims and endeavours of this new Society are held by the Vegan Society in high esteem; the manufacture and sale of a first-grade plantmilk in this country would greatly assist in a practical way an increased adoption of the vegan diet. We are glad also to announce that three members of the Vegan Society Committee–Mrs. M. Drake. Miss C. Harvey and Mr. J. Sanderson–have been appointed to the Committee of the Plantmilk Society. We take this opportunity to wish the new Society an early and fruitful harvest to its labours, and to assure it of our wholehearted support.

"Mr. C.A. Ling (Chairman) was in the chair. After his opening remarks he called upon the Secretary for his report on progress since the inauguration, on June 23rd this year.

"The Secretary stated that the Society was now well established and was served by a number of persons whose qualifications would prove of considerable value. In addition, the general support and interest which the Society was attracting was a source of considerable encouragement.

"As an example of the interest being shown, the Secretary stated that almost every post continued to bring inquiries or other matters to be dealt with. He had kept in fairly regular contact with the Society's Chairman, and with the Chairman and Secretary of the Research Committee, and some other members, both by correspondence and by personal visits.

"The Society welcomed and was grateful for publicity which it was receiving in the Press. The vegetarian magazines and an animal welfare magazine had published good notices of the inaugural meeting. A report which appeared in the *London Evening News* ("Now your milk may come from a plant") had resulted in a number of inquiries for information, following which the Society had gained several new members, some with valuable qualifications. Inquiries for information were also received from journals which cater for the dairy trade, and from one which caters for the food trade in general. Two national weekly publications. with large circulations, had also made inquiries. Reports had appeared in the foreign Press, following which inquiries had been received from business firms in Spain and Portugal concerning the possibility of manufacturing plantmilk in those countries. An organisation on the Gold Coast had ordered from the Society a supply of plantmilk–but they had had to be informed (regretfully!) that their order was a little premature.

"Further correspondence had taken place with the Californian company [Loma Linda Foods, Riverside, Calif.] which manufactured and sold plantmilk in America. This company had sent a gift of two tins of one of their general-purpose plantmilks. This particular kind was a double-strength plantmilk, being mixed with an equal amount of water before use. In appearance, it is not unlike dairy milk, and it has a pleasant taste. It is suitable for use in tea, coffee and other beverages and for general domestic uses. It conforms to American standards of nutrition and hygiene.

"The Secretary continued by saying that an application to the Board of Trade made on behalf of a British company, for a licence to import this plantmilk had been refused on the grounds of the government's balance of payments policy. An application was to be made for an import licence for the special type of soya bean which is the basis of the American plantmilk. Should this be granted, the company concerned would consider the possibility of erecting a pilot factory for the manufacture of plantmilk in this country upon an experimental scale. The company would have available to it both the formula and the details of the manufacturing process involved in the production of the American milk. Knowledge gained during many years of research and experience in America would thus be available as the starting point for the production of plantmilk in Britain. The plan, however, depended upon certain preliminary factors, such as the import licence, and for these reasons optimism must for the moment be restrained.

"With regard to the function of the Society now and in the future, the Secretary said that it had brought together several qualified persons, who would not otherwise have come together, who would give the Society the scientific and practical backing which was necessary for the success of its work. In a general sense, the Society had acted as a focus, and had injected life into an idea which had existed theoretically in a number of places for a number of years. With regard to the future, the Society would, of course, pursue by every means available to it the object for which it was formed. It would co-operate with manufacturers interested in the plantmilk project and give them every possible encouragement. It would also keep alive the underlying humanitarian motive which had been the main cause of its formation.

"The Secretary concluded by saying that the future might see the growth of a quite novel partnership–that of the

manufacturers on the one hand and the Society on the other, each working in their own way for a common end. Such a partnership would indeed be a partnership of principle and practice, and an effective instrument for the achievement of the Society's aim.

"The meeting appointed the following Officers and Committee to serve until the next Annual General Meeting:– Chairman: Mr. C.A. Ling; Secretary and Treasurer: Mr. L.I. Cross; Committee: Dr. B.P. Allinson, M.R.C.S., L.R.C.P., Mr. E.T. Banks, Mrs. J. van Brugen, Mr. D. Fairclough, Mr. W.S. James, M.Sc., Dr. D. Latto. M.B., Ch.B.. M.R.O.G., Mrs. Claire Lowenfeld, Mr. W. Ninniss, Mr. G.E. Norris. Dr. C.V. Pink, M.R.C.S., L.R.C.P., Mr. J. Sanderson, Dr. F. Wokes, Ph.D., B.Sc., F.P.S., etc., Mrs. M. Drake, Miss C. Harvey, Mr. W. Holttum. (The first twelve Committee members mentioned constitute the Research Committee, of which Dr. Wokes and Mr. Norris were re-elected as Chairman and Secretary.)

"It was also agreed that Dr. Franklin be approached with an invitation to serve upon the committee.

"A financial statement presented to the meeting showed that income up to October 6th was £227, with a balance at the Bank of £208. The majority of those who had originally expressed interest in the formation of the Society had now paid their subscriptions for the year ending September 1st, 1957. The amount of the balance at the Bank now made it possible for a number of matters to be considered by the Committee, notably the drafting and printing of literature, the need for which was becoming increasingly apparent.

"At the conclusion of the general meeting, a meeting of the Committee was held. Consideration was given in detail to the draft of a statement concerning the Plantmilk Society for issue to a food trade magazine which had requested such a statement for possible publication. The draft was finally approved. (In addition to the journal concerned, the statement has been supplied to two other trade journals whose Editors have applied to the Secretary for information.) A Literature sub-Committee was appointed by the Committee to consider the drafting of general literature. The sub-Committee consists of Mr. Fairclough, Mr. Ling, Dr. Wokes and the Secretary.

"At both the General meeting and the Committee meeting, several members expressed the view that the progress made during the few months since the Society's inauguration was encouraging. This view was endorsed by the Chairman, who also pointed out that the need for the Society would continue for some time even after a plantmilk industry had been established in this country. He asked members to continue to give the Society the sustained support which it would need in order to achieve the task it had set itself.

"The object of the Plantmilk Society is to promote the manufacture and sale of a satisfactory alternative to dairy or other animal milk used for human consumption, the ingredients of such alternative to be of exclusively plant origin. Any person willing to support the object of the Society is eligible for membership on payment of an annual subscription of not less than five shillings payable on September lst of each year. Subscription,... to be sent to the Secretary, Mr. Leslie J. Cross, Uxbridge, Middlesex."

Note 1. This is the earliest document seen (Aug. 2013) concerning Plantmilk News or The Plantmilk Society.

Note 2. This is the earliest English-language document seen (July 2013) that contains the word "plantmilk" (regardless of capitalization) or that uses that word to refer to soymilk.

Note 3. This is the earliest document seen (Aug. 2013) that mentions C.A. Ling [Arthur Ling] in connection with plantmilk. "Ling" is an old English surname.

1699. **Product Name:** Loma Linda Soy Milk (Powdered, and Liquid).
Manufacturer's Name: Loma Linda Food Co., Eastern Div.
Manufacturer's Address: P.O. Box 388 (Wooster Road), Mount Vernon, Ohio.
Date of Introduction: 1956.
New Product–Documentation: Soybean Blue Book. 1956. p. 99. No brand name is given, but the product includes Soyalac. This is right after Loma Linda bought Dr. Harry Miller's International Nutrition Laboratory. *Soybean Digest Blue Book.* 1970. p. 117. "Powdered and liquid soy milk in five flavors."

1700. **Product Name:** Instant Soyamel (Soy Milk. Based on Isolated Soy Protein) [Powdered, or Liquid, in Plain, or Malt Flavors].
Manufacturer's Name: Worthington Foods, Inc.
Manufacturer's Address: 900 Proprietors Rd., Worthington, Ohio.
Date of Introduction: 1956.
New Product–Documentation: Soybean Blue Book. 1958. p. 88. "Processing and packing powdered soy milk." No brand name given. Wholesale price list. 1957. April 1; Letter from Allan Buller. 1981. April 29. Shurtleff & Aoyagi. 1984. Soymilk Industry and Market. p. 28. This was the "world's first soymilk to be made from soy protein isolate; the isolate was manufactured by Gunther Products in Illinois. This was not an infant formula." Sold in 12 oz, 3 lb, or 15 lb sizes.

1701. Chen, Philip S.; Chen, Helen D. 1956. Soybeans for health, longevity, and economy. South Lancaster, Massachusetts: The Chemical Elements. xii + 241 p. Illust. Index. 21 cm. 2nd ed. Jan., 1962, 242 p. [24 ref]
• ***Summary:*** A comprehensive review of the subject. Contents: Preface, by the author (South Lancaster, Massachusetts, July 1956). Foreword, by Geo. M. Strayer, Vice-President and Secretary-Treasurer, American Soybean

Association. Introduction. Part I: Nutritive value of the soybean. 1. Protein (incl. Dr. Wolfgang Tiling of Hamburg, Germany; Dr. Harry Miller). 2. Fat (incl. phosphatides, sterols and hormones). 3. Carbohydrates and caloric value. 4. Minerals. 5. Vitamins. 6. Soybeans and world population. 7. Soybeans and disease (incl. Dr. Wolfgang Tiling of Germany).

Part II: Soy products. 8. Soybean oil: Composition and properties, processing and refining, reversion, uses, phosphatides, margarine, mellorine (vegetable frozen dessert). 9. Soybean oil meal: Heat treatment, Gelsoy, Multi-purpose Food. 10. Soy flour: Uses, soy bread vs. enriched white bread. 11. Soy milk. 12. Soy cheese (or soybean curd, "aptly described by the Chinese as 'the meat without bones'"–incl. pressed tofu sheets and yuba). 13. Soy sauce: Preparation of kojis, brine fermentation, production yields, microorganisms are available. 14. Soybean sprouts.

Part III: Soybean culture and preservation. 15. Soybean culture: Two types of soybeans (commercial field vs. edible or vegetable varieties), inoculation, fertilizer, cultivation, harvest. 16. Preservation of soybeans: Shelling, canning, freezing, dehydration, harvesting dry mature soybeans.

Part IV: Recipes. 17. Soybeans and soybean pulp: Green or fresh soybeans, dry soybeans, soybean pulp ("prepared by pressing cooked soybeans through a coarse sieve or by grinding them in a food grinder"), recipes (incl. Soyburger, Scalloped green soybeans, and Roasted soybeans–dry roasted or deep-fried (p. 151). Describes how to make wheat gluten at home and praises monosodium glutamate for its ability to improve the flavor of recipes–though its use is called for only in the recipe for Soyburger). 18. Soy flour: Breads, cakes, cookies, pies, soups, other recipes (A recipe for Wafers, p. 180, calls for "½ cup roasted soybeans, finely chopped").

19. Soy grits and soy flakes. 20. Soy milk. 21. Soy cheese. 22. Soybean sprouts.

Appendices: A. Soybean utilization (chart). B. Manufacturers and handlers of soy foods (Source: 1956 *Soybean Blue Book*). C. References.

Chapter 1, "Protein," begins: "The soybean is best known for its high protein content (p. 7). It then discusses the work of Dr. Harry Miller (p. 14-15).

Chapter 15, "Soybean Culture," describes how to grow soybeans in a garden. Pages 126-27 discuss the two types of soybeans: the commercial field type and the edible vegetable type. Five major differences between the two types are discussed (p. 126). The edible varieties are larger in size, do not yield as heavily (though they yield more heavily than snap beans or lima beans), are more prone to shatter as they near maturity in the field, are superior in flavor, texture, and ease of cooking, and some edible varieties are also superior in the manufacture of soybean flour, soybean milk, roasted beans and other products. Table 31 (p. 130) lists eleven varieties of edible soybeans: Very early–Giant Green. Early–Bansei, Fuji. Midseason–Hokkaido, Jogun, Willomi. Late: Illington, Imperial, Funk Delicious, Emperor, Higan. Commercial–Illini.

Chapter 16, "Preservation of Soybeans," describes how to preserve "green soybeans" by canning, freezing, and dehydration.

Photos show: (1) A sack of Lincoln soybeans (facing p. 1). (2) Soybean plants, showing pods and leaves (p. 3 and 4). (3) A beam balance with a small amount of soy flour balancing many animal products. "The protein value of soy flour: 1 lb. of soy flour contains protein values equal to 2 lbs. beef, or 34 eggs, or 6 quarts milk." Source: Health and Character Education Institute (p. 6). A similar photo (p. 24) states: "1 lb of soy flour contains food calories equal to 3½ lbs beef, or 3 quarts milk, or 29 eggs. (4) Two views of a child. Left, suffering from marasmus. Right, after six months on a soy milk diet. Courtesy Dr. Wolfgang Tiling (p. 62). (5) A machine at the Northern Utilization Research Branch of USDA treating soybean oil with alkali (p. 72). (6) The distribution of MPF [Multi-Purpose Food] to starving Indian children (p. 91; Courtesy Meals for Millions Foundation). (7) Quaker City No. F4 grinding mill (p. 102; Courtesy Straub Co., 4059 Ridge Ave., Philadelphia, Pennsylvania). (8) Early soy cheese (tofu) production in the United States (p. 108; perhaps at Madison Foods). (9) The Northern Utilization Research Branch, Agricultural Research Service, USDA–shows outside of the huge building (p. 113). (10). How to grow soy sprouts in a glass jar at home (p. 119). (11) Well nodulated soybean roots (p. 129; Courtesy The Nitragin Co.). (12) Baked soybeans in a crock (p. 144). (13) Soy flour used in numerous baked products (p. 159; Courtesy ADM). (14) Griddle cakes [pancakes] made with soy flour brown quickly (p. 173). (15) Soy peanut butter cookies (incl. peanut butter and soy flour; p. 185). (16) Soy grits in a glass jar (p. 198). (17) Freshly-cooked crisp soybean sprouts in a raw vegetable salad (p. 219).

Note 1. The first printing of this book (1956) was dedicated "To Li Yu Ying and William J. Morse, *The Soybean Champions of the Eastern and Western Hemispheres,"* but by the second printing (April 1957) the dedication had changed "To William J. Morse and Harry W. Miller, *The Soybean and Soy Milk Champions of Our Time."*

The publisher of this third printing was unable to sell all the books printed, so Chen apparently arranged for a company named "Outdoor Pictures" (Box 1326, Escondido, California) to sell them. On the title page, Outdoor Pictures pasted their name and address over that of "The Chemical Elements."

Note 2. According to the *National Union Catalog*, Philip Stanley Chen was born in 1903. The rear cover states that he was born in China and is now a naturalized U.S. citizen. He is a graduate of Emmanuel Missionary College [in Berrien Springs, Michigan] and Michigan State University. Before writing this, his first book on diet, health, or soybeans, he wrote several books on chemistry: (1) The

Chloro Derivatives of *m*-cresol. 1933. Easton, Pennsylvania: Mack Printing Co. 7 p. (Abstract of his PhD thesis, Michigan State College of Agriculture and Applied Science); (2) *The Chemical Elements, Rev. ed.* 1948. South Lancaster, Massachusetts: Chemical Elements (fold chart). (3) 500 Syntan Patent Abstracts, 1911-1950. 1950. South Lancaster, Massachusetts: Chemical Elements. 125 leaves. (4) Syntans and Newer Methods of Tanning. 1950. South Lancaster, Massachusetts: Chemical Elements. 128 p.

In 1962 Chen wrote *A New Look at God,* published by Chemical Elements (288 p.). Address: 1. Prof. of Chemistry, Atlantic Union College, South Lancaster, Massachusetts; 2. National Science Foundation Fellow, Cornell Univ.

1702. Chen, Philip S.; Chen, Helen D. 1956. Tables (Document part). In: P.S. Chen and H.D. Chen. 1956. Soybeans for Health, Longevity, and Economy. South Lancaster, Massachusetts: The Chemical Elements. 241 p. [24 ref]

• ***Summary:*** Tables show: (1) Soybean production in the United States, 1924-1958 (p. 2). (2) Essential amino acid content of some foods (calculated as percent of amino acid in sample). Foods include: Extracted soybean oil meal, whole milk, whole eggs, beef loin, patent wheat flour (p. 8). (3) Protein efficiency of a number of proteins (incl. whole milk 2.9, cottonseed flour 2.0, peanuts 1.9, soybean flour 1.8, casein 1.7, patent flour 1.00) (p. 11). (4) Biological value of food proteins for human adults (incl. whole eggs 78, milk 74, meat 72, soy flour 65, peanut flour 42, white flour 41) (p. 11). (5) Supplemental values of soy flour and milk for wheat flour (p. 12). (6) Nutritional quality of soy flour and milk solids in bread (p. 13). (7) Fat content of several common foods (p. 16). (7A) Chemical composition of vegetable oils (in per cent) (p. 18). (8) Carbohydrate content of soybeans (Street & Bailey) (p. 21). (9) Caloric values of various cereals and legumes (p. 22). (10) Mineral content of soybeans (p. 25). (11) Calcium, phosphorus and iron content of soybeans (p. 26). (12) Availability of iron in different foods (p. 27). (13) Availability of iron in several Hawaiian foods (p. 28). (14) Alkalinity of various foods (p. 29). (15) Vitamin content of soybeans and soybean oil meal (p. 32). (16) The vitamin B-1 content of some common foods (milligrams per 100 grams) (p. 34). (17) The vitamin B-complex content of soy flour as compared with wheat flour (per 100 grams of flour) (p. 35). (18) Choline content (dry weight basis) (p. 37). (19) Production of fats and oil in the United States in 1953 (p. 67). (20) Physical and chemical characteristics of soybean oil (p. 68). (21) Chemical composition of soybean oil (p. 69). (22) Protein concentrates used for feed in the United States, 1954-1955 preliminary (p. 83). (23) Correlation of volume of loaf and urease content of soy flour used in making bread (p. 86). (24) Analysis of nutritive elements (p. 92). (25) Soy flour standards (p. 94). (26) The growth-promoting values of the proteins of soybean flour, peanut flour, and cottonseed flour and their values as supplements to the proteins of patent wheat flour (p. 99). (27) Composition of soy milk and cow's milk (p. 103). (28) Some precipitating agents for soy milk (p. 107). (29) Composition of soybean curd (p. 109). (30) Composition of soy bean sprouts vs. mung bean sprouts (p. 122). (31) Eleven varieties of edible soybeans (p. 130). Address: 1. Prof. of Chemistry, Atlantic Union College, South Lancaster, Massachusetts; 2. National Science Foundation Fellow, Cornell Univ.

1703. Chen, Philip S.; Chen, Helen D. 1956. The work of Dr. Harry Miller with soy milk (Document part). In: P.S. Chen and H.D. Chen. 1956. Soybeans for Health, Longevity, and Economy. South Lancaster, Massachusetts: The Chemical Elements. 241 p. See p. 14-15. [24 ref]

• ***Summary:*** Chapter 1, "Protein," begins: "The soybean is best known for its high protein content (p. 7). It then discusses the work of Dr. Harry Miller (p. 14-15): "The one who has done more with soy milk than any one else is Dr. Harry W. Miller, Director of Research, International Nutrition Research Foundation. He began his work with soy milk shortly after 1925 when he was in China as a medical missionary and saw the need of making a preparation for the feeding of babies and children. Referring to his work with soy milk, he said,'I regarded that work as of far greater importance than the building up of the sanitarium because it had to do with the preservation of thousands of lives that otherwise would be lost if they did not have a proper substitute for mother's breast milk, because cow's milk is beyond the economic level of the Chinese people and almost all the Oriental races. We used this milk extensively and a long period of experimental work was carried on. Studies were made of the development of babies and children as to their weight gains, their height gains, their disposition, their skin texture, their hair development, their dentition and bone development. We finally published the article in the Chinese Medical Journal in 1937.'

"Dr. Miller was the first to put out a true soy milk, one that is homogenized and built to any formula. Finally he made it into a powdered milk by spray drying. Both 'Soyagen' and 'Soyalac,' which he perfected according to his patented process, are now widely used by infants and children who are allergic to cow's milk, as well as by grown-ups who prefer a vegetarian diet.

"Besides his factory in this country, Dr. Miller has established soy milk plants in Japan and Formosa [Taiwan], and has helped the United Nations build a plant in Indonesia. His formula is used by three large soy milk companies in Hong Kong, one of which puts out 75,000 bottles a day." Address: 1. Prof. of Chemistry, Atlantic Union College, South Lancaster, Massachusetts; 2. National Science Foundation Fellow, Cornell Univ.

1704. Chiu, Y.T. 1956. Meditations of a Christian Chinese.

New York, NY: Pageant Press. [5] + 101 p. No Index.
• ***Summary:*** The author says that he has previously written 24 books in Chinese. This, his first English-language book, includes a compilation of much of his best material in Chinese. Soy is mentioned in two chapters.

Chapter 7, titled "Child welfare in China," states (p. 22-26): "Very few mothers [in China] know how to feed their babies. If the infant were fed with mother's milk, it would be better for the child." Cow's milk is so expensive in South China that very few mothers can afford to buy it for their children. "The writer has analyzed several kinds of milk substitutes made locally and sold in the stores in Canton and found that they consist of starch and a little sugar (less than one-half of one per cent of this substituted milk is protein). In North China soya bean milk is used in feeding babies. This is much cheaper than cow's milk." A brief description is given of how this soya milk is made. "One pound of soya beans would make seven or eight pounds of bean milk. As soya bean milk is deficient in fat, sugar, and calcium, the latter should be added to the bean milk to increase its food value. Dr. Siddall [1931] used this milk to feed a baby in the Canton hospital and got pretty good results. If soya bean milk is prepared in a sanitary condition, it should be a good and cheap food for poorer babies."

Superstitions are widespread in South China. "Some people think that bean curd, a product made from soya bean, should not be given to infants lest they have an offensive odor on their breath."

Chapter 18, titled "Feeding a hungry world," states (p. 57-61) that the price of food in South China is now 5 to 10 times higher than before the war, while wages and salaries have not increased proportionally. "The increase in food prices is so great that the average family in China does not have enough to eat and many of them suffer malnutrition" and nutritional deficiency diseases. "As milk is so expensive in Hong Kong and China, children have to be contented with soya bean milk which has been used to feed babies in China for two thousand years." In times of famine, some parents have "had to sell their children in order to have money to buy food. Because of poverty, ninety percent of the parents in China cannot afford to send their children to school and these youngsters must either stay home to work or work as servants in the homes of the rich or in the factories."

"Poorer people in China and Hong Kong eat rice, soya beans, [mung] bean sprouts, bean curds and salt fish or green vegetables. The poorest people have only rice, sweet potatoes, which are cheaper than rice, and soy sauce made from soya beans."

Talk with Luke Fetters of Huntington College, Indiana. 2005. May 23. Luke is writing a biography of the author for this PhD thesis. Chiu wrote this book at about the same time he graduated from the seminary at Huntington College. "He was a Renaissance man. He was an educator, a scientist, a theologian." Luke's field is missiology, the study of missions. He believes that too much mission history has been written about the missionaries; not enough has been written about the heroes and hard-working people within the host culture. Address: Rev., Dr. (PhD.), Assoc. Prof. of Chemistry, Huntington College, Huntington, Indiana.

1705. Council of Scientific and Industrial Research. 1956. The wealth of India: A dictionary of Indian raw materials and industrial products. Raw materials. Vol. IV: F-G. New Delhi, India: CSIR. See p. 142-50 (Glycine), plus p. XIII-XXI (bibliography). [51 ref]
• ***Summary:*** "Attempts to popularise and extend soybean cultivation in India have not met with much success so far. Various reasons have been assigned to this. The market demand for the seeds is not steady and there are few indigenous industries based on soybean. Further, there are other pulse and oilseed crops adapted to varied climatic and soil conditions in India which satisfy the dietetic habits of the people. It is considered, therefore, suitable for introduction only in regions where pulses are not grown at present, e.g. regions at elevations about 5,000 ft. This view has been considered by some to be based on incomplete data."

Table 2, titled "Estimated acreage and production of soybean in some Indian states," gives statistics for 1948-1952. The leading state is Jammu and Kashmir (India's northernmost state). In 1948-49 (the latest year for which complete data is available) Jammu and Kashmir produced 502 tons of soybeans on 1,757 acres. Corresponding figures for other states, ranked in descending order of acreage, are Assam (208 tons/1,230 acres), Orissa (147/988), West Bengal (147/800), Madhya Pradesh (12/67), and Uttar Pradesh (1/33).

Note 1. This is the earliest document seen (Jan. 2009) that gives soybean production or area statistics for South Asia.

"Soybean is grown in India mainly for food and forage. It is generally raised as a *kharif* crop, sown at the outbreak of the monsoon in June or July and harvested in December-January... Soybean is raised either pure or in mixture with maize; in some parts of Assam it is grown along with *aus* paddy. Being a legume, soybean can be cultivated with advantage as a rotation crop with potato, as in Assam, or with sugarcane, as in Bihar. It is grown as a green manure or cover crop in tea estates...

"Uses: Soybean ranks high among the leguminous crops of the world. It is grown mainly as a food crop in China, Japan and other countries of east Asia. The seeds are consumed green, dry or sprouted, whole or split. Green seeds are used as vegetable; roasted and salted seeds are used in cakes and candies. The seeds are ground into flour and used for bakery products. They are also processed to give a milk-like product, curd or cheese. A variety of fermented products is prepared, including sauces which furnish the basic flavouring in Chinese and Japanese dishes. Soybean has been

used as a raw material in a variety of processing industries in U.S.A. The fatty oil extracted from the seeds is used for edible and industrial purposes...

"In India, soybean has not attained much importance as a food crop. The seeds are consumed locally after splitting as *dal*. They are also parched and used as *bhunja* or ground into a meal (*sattu*) and used in food preparations; a fermented product is prepared from soybean in Manipur. Soybean possesses a characteristic nutty or beany flavour which is not much favoured in India. Efforts have been made to select types devoid of the flavour and to popularise the use of soybean in non-cereal catering organizations for such preparations as porridge and biscuits. Considerable work has also been done to popularise the use of soybean 'milk'."

A detailed discussion is given of each of the following "soybean products: Soyflour, soysprouts (Sprouted soybean is used as a green vegetable [but not in India] and is reported to possess high nutritive value), soymilk, soybean oil, soybean lecithin, soybean meal." Table 5 (p. 148) gives the "composition of some soybean products," based on earlier publications: "Soyflour (defatted or full fat), soysprouts, soycurd."

Note 2. This is the 4th earliest English-language document seen (Aug. 2013) that contains the word "soymilk" (one of two documents).

Note 3. This is one of the earliest English-language documents seen (Sept. 2006) that uses the term "soy bean" in a new way–as a singular noun, like corn or wheat, not preceded by "the." Examples: "... there are few indigenous industries based on soybean." "Estimated acreage and production of soybean in some Indian states." "Soybean is grown in India mainly for food and forage." This usage originated in developing countries. Address: India.

1706. Noller, Carl H. 1956. Corn-soybean flour rations in the nutrition of the young calf. PhD thesis, Michigan State University. In: Index to American Doctoral Dissertations (1956-67), 1956. *
Address: Michigan State Univ.

1707. Shefferman, Maurice. 1956. Foods for longer living. New York, NY: Whittier Books, Inc. 181 p. No index. 22 cm.
• ***Summary:*** This is a book about diet and nutrition by one of the founders (in New York City) of Balanced Foods, the major health food distributor. Although it contains few original ideas, it helped to introduce soybeans as a healthy food, and meatless meals, during the late 1950s.

Contents: Preface. 1. Living a balanced life. 2. How well nourished are we? 3. Who gets our best food? 4. Your bloodstream is your lifeline. 5. Vim, vigor and vitamins. 6. A vitamin primer. 7. Minerals in your diet. 8. Cook, spare those nutrients. 9. Natural seasonings. 10. Fresh juices are staple foods. 11. The five basic foods. 12. Everybody needs more vitamin C. 13. Overweight–Our national health problem. 14. Don't live on your nerves! 15. Are you tired? 16. Relax and invite your health. 17. "Having a wonderful time!" 18. Your summer diet. 19. Design for winter living. 20. Recipes.

Shefferman wrote this book so it "would make sense to a lot of people who have a very hazy idea that right food has any direct relationship to their health." The "eating habits of the average American family, or individual, are not good." Many foods "have been depleted of much of their valuable nutrients; we eat too much," too many hot and highly spiced foods, and too much meat. The "vegetarians eat entirely too much starchy foods and are usually, as a result, on an unbalanced diet. As a nation we have retrogressed from the days when our forbears lived on natural, live, whole foods." "I believe that my viewpoint on 'natural' foods will find ready acceptance by intelligent people who are genuinely interested in helping themselves to maintain sound health all the days of their life" (Preface, p. 5).

Also discusses: The growing interest in the practice of organic gardening in the USA (p. 25). "Acid conditions of the soil are as unhealthy as acidity in the human system" (p. 26). "Under ideal conditions we can obtain all the vitamins and minerals we need through natural foods and correct eating." Yet today our soils are depleted of minerals and excessive processing further reduces the nutritional value of our foods (p. 35).

The human body is composed of about 66% oxygen, 18% carbon, 10% hydrogen, 2% nitrogen, and the remaining 4-5% is made up of minerals and trace elements. "Under ideal conditions, a perfect diet which includes the four main minerals–calcium, phosphorus, iron, and iodine– in abundance, will furnish all the other trace elements in sufficient amounts. The lesser minerals are sodium, potassium, magnesium, manganese, chlorine, and sulphur (p. 38, 52). Soy beans are a good source of thiamin (vitamin B-1, p. 42), riboflavin (B-2, p. 43), folic acid (p. 46), and choline (p. 46).

There "is always the possibility of getting too much of the proteins in the diet, especially proteins of meat, and that is one of the best reasons in the world why all persons should change over to meatless meals as often as possible. Now this is not an appeal for the reader to become a vegetarian, for it is the writer's form belief that meat and fish foods are vitally necessary to complete the diet. On the other hand, it is an appeal to meat eaters not to eat an excess of animal foods, for this may throw too much of a burden upon the system,... Among the better known protein foods are soy beans, dried beans, lentils, nuts, cheese, eggs, milk, mushrooms... All of these are less costly than animal foods and certain varieties of fish and other sea foods" (p. 61).

Brown rice is an excellent food. It was used in an 1897 experiment "which was to mark a high point in modern nutritional history." It proved that beri-beri could be cured by substituting whole rice for polished rice (p. 62-63). One of the best sources of lecithin in the soy bean. Its benefits

are discussed. Realize that "proteins of all kinds are being made from this alkaline-producing soy bean..." It cultivation has been promoted by the USDA, thereby making it a major crop. Soy beans are discussed at length. "The protein of soy beans is used in meat replacement dishes," Soy cheese [tofu] and "soy bean drinks" [soy milk] are good protein sources. For lunch, use "soy sandwich spreads" and "soy bean and wheat germ bread..." The main body of your meatless dinners can be made up of various combinations, including "soy bean loaf, "gluten steak," "green soy beans," "whole wheat or soy bean macaroni or spaghetti, or eggs "on soya toast." Use soya flour as a binder or serve baked soy beans with tomato sauce (p. 64-67).

Natural seasonings include "soy seasonings and natural herbs and spices." Use herb teas and herbs in cookery (p. 68-69). The five basic foods are blackstrap molasses, brewer's yeast, skim milk powder, wheat germ, and yogourt. They are "wonder foods" (p. 81). The Metropolitan Life Insurance Company's ideal weight chart shows, for example, that a man 6 feet tall should weigh 152-164 lb (small frame), 161-173 lb (medium frame), or 169-185 lb (large frame) (p. 97).

Shorter working days and modern labor-savings devices have transformed most Americans into a new "leisure" class (p. 108). Scientific experiments by Dr. Fisher at Yale University [New Haven, Connecticut] have shown that a meatless diet can provide sufficient protein for the body's needs. "Vegetable protein such as almonds and soybeans are excellent protein foods. Soybean products supply essential amino acids without creating the toxic end-products of the meat diet. The residue from the digestion of meats is acid and toxic forming. Vegetable proteins leave a neutral or alkaline ash. Vegetable entrees are wonderful meat replacements for the summer menu. A savory vegetable steak or roast is just as hearty, just as satisfying as meat and a good deal easier on the digestive system. The deliciously rich flavor of meat substitutes is particularly appealing when appetites need tempting during the summer months" (p. 125-26).

People with a definite allergy to cow's milk–as is quite common among children and adults–"can use soy bean milk or goat's milk." Soy bean milk is "an excellent substitute for milk products of animal origin. Crushed soy beans have been used as a source of milk by the Chinese for centuries. Soy milk is approximately the same chemical composition as dairy milk. It resembles cow's milk in consistency and appearance, and its calcium content is about equal to human milk. For infant feeding, in cases of special diets, digestive ailments and malnutrition, soy milk has proven highly beneficial. Soy bean milk is definitely alkaline and easily digested. The soy curd prepared from the milk is eaten as a soft, cottage-cheese -like food" (p. 128).

"Far too many individuals eat too much starch and not enough of the fresh fruit and vegetables." The "one man who should know better–the strict vegetarian–is often the worst offender" (p. 129). Recipes (p. 135-81) include: Soy casserole (meatless main dish, with cooked soy beans, p. 134). Cheese-bean casserole roast (p. 139). Baked soy beans (p. 151). Soy bean salad (with 2 cups "drained green canned soy beans," p. 158).

1708. U.S.I.S. (United States Information Service). 1957. Le soya et ses multiples usages [The soybean and its multiple uses] (Black and white motion picture). USA: All-Scope Pictures, Inc. 35 mm. 15 min and 50 seconds. *
• ***Summary:*** As of 10 Sept. 2010 this silent film was available on the Web at http://www.ina.fr/ economie-et-societe/ vie-economique/ video/VDD09016158/ le -soya-et-ses- multiples-usages. fr.html. It shows an American farmer growing soybeans and his wife cooking with them, making soy sprouts, soymilk, biscuits and cake with soy flour. It also shows various industrial uses of soybeans such as paint, soap, and plastics.

1709. *Medical Science.* 1957. Report of recent work on soybean preparations. 1(1):30. Jan. 10.
• ***Summary:*** A study by Dr. Sidney Kane of Philadelphia with 102 infants fed a liquid soybean formula (Sobee) showed that it was effective. "Of the 76 infants with eczema, 75 improved markedly. Symptoms other than dermatological, present in 62 of the infants were alleviated in 53" [85%]. Of these 62 infants, 21 had gastrointestinal disorders, 38 were irritable and given to colic and constant crying, 1 had asthma, and 2 had chronic nasal discharge. No other publication is cited. Address: Jnl. and Dr. Kane are from Philadelphia.

1710. Kane, Sidney. 1957. Nutritional management of allergic reactions to cow's milk. *American Practitioner and Digest of Treatment* 8(1):65-69. Jan. *

1711. *Plantmilk News* (*England*). 1957. Serial/periodical. England. No. 1 is Feb. 1957 *
• ***Summary:*** The Vegan, 1957 spring, p. 16. An article titled "Plantmilk News" (p. 15-16) ends by citing its source: "From 'Plantmilk News,' No. 1, February 1957. The Plantmilk Society is an organisation to promote the manufacture and sale for human consumption of a satisfactory non-animal alternative to dairy milk. General Secretary: 39 Willow Crescent, Uxbridge, Middlesex" [England]. Address: England.

1712. Miller, R.A. 1957. Medical memoranda: Treatment of ammoniacal dermatitis with folic acid and soya-bean. *British Medical Journal* i(5017):503. March 2.
• ***Summary:*** Five infants aged between 3 and 16 months, who had suffered from severe ammoniacal dermatitis, were fed folic acid. After an unsatisfactory response, folic acid was withheld and soya-bean milk was given. "The milk consisted of 1½ oz. (42 gm) of soya-bean flour added to

a pint (570 ml) of water. This was used to replace half the quantity of cow's milk normally taken daily, so that patients consumed 10 to 20 oz. (285 to 570 ml.) of soya-bean milk each day."

Within 5 days of starting treatment, all the infants had shown some improvement. "Within two weeks the appearance of the skin was normal in all cases. During the third and fourth weeks of treatment there was no deterioration, though very transitory erythema of the skin in the napkin area was sometimes noted."

In view of these promising results, further research would be useful. "Soya-bean flour can be obtained from Soya Foods, Ltd., London, E.C.3, and possibly from grocers." Its food value compares favourably with that of cow's milk, so that it is possible to rear infants from birth on this food. The cost of soya-bean milk is approximately twopence a pint.

Note: F.R.C.P.Ed stands for Fellow of the Royal College of Physicians Edinburgh. It was established in the 17th century. Address: M.D., Ph.D., F.R.C.P.Ed., Consultant Paediatrician, Royal Hospital for Sick Children, Edinburgh.

1713. Nakashima, Kyozo; Tamura, Tsuruo. 1957. Kôri-dôfu seizô kôtei ni kansuru kenkyû. IV. Tônyû no gyôseki ni tsuite [Studies on the production of dried-frozen tofu. IV. Coagulation of the soybean milk]. *Osaka Furitsu Kogyo Shoreikan Hokoku* (*Reports of the Industrial Research Institute, Osaka Prefecture*) 17:78-84. March. [3 ref. Jap; eng]

• ***Summary:*** The effect of temperature, time, and stirring speed on the coagulation of soymilk were studied, and the quantity of calcium chloride required to coagulate the milk was determined. Each of these variables is critical. If the temperature is too high when the coagulant is added, there is danger of having a "crust" due to the rapid coagulation. If too little coagulant is added, some of the soymilk will remain uncoagulated and the whey will be milky in appearance. When just the right amount of coagulant is added, the whey or supernatant will become transparent–but this correct amount may differ from one soybean variety to the next. The required amount of calcium chloride can be determined from the specific gravity of the soymilk. The rate at which the coagulant is added and the rate of stirring while it is added affect the final quality and yield of the tofu–as well as the size of the curds. Thus, for a given soybean variety, both the rate of adding and the speed of stirring should, ideally, be mechanized.

Note: Accompanying this article is a 12-page, double-spaced, typed English-language translation by Henry Sasame. Address: Osaka, Japan.

1714. *Vegan* (*The*) (*England*). 1957. Plantmilk News. 10(4):15-16. Spring. [1 ref]

• ***Summary:*** Plantmilk tests. In the Western hemisphere at least three, possibly more, companies produce plantmilk commercially, One in Spain bases its product upon almonds, the other two (in America) use soya as a base. One of the American companies has recently made a gift to the Society of a small supply of various types of its plantmilk. Some are for general purposes and some for infant feeding, and both types are available either as a powder or a liquid. The gift was made so that we could test their qualities. For domestic purposes they have been found to be satisfactory. An advantage which they possess over plantmilks produced in England some years ago is that they may be successfully heated and brought to the boil. They are excellent for use in making white coffee, and entirely satisfactory for use in tea. For successful use in tea, the powder variety needs thorough emulsification, and for this an electric mixer is desirable. We understand that the manufacturers are considering processing the powder variety to make it instantly soluble. The liquid varieties require no preparation, except for the double-strength variety, which merely needs mixing with an amount of water equal to the amount of milk in the sealed tin. These plantmilks have also been tested for other domestic uses, and have been found to be satisfactory for making rice puddings, custard and blancmange. On the question of nutritional qualities, one sample of liquid plantmilk has been assayed and found to contain the amount of vitamin B-12 which was claimed. Further tests will be necessary to establish uniformity of the vitamin B-12 content throughout a series of samples, also the stability of the vitamin under different storage conditions. The question of assimilation of the vitamin in the liquid plantmilk, from the intestinal tract, will, of course, have to be settled before the plantmilk can be accepted as being equivalent to animal milk in this respect.

"Production. A British company was refused a license to import American plantmilk on the grounds of dollar policy. Since then, the company has given consideration to the question of plantmilk production on an experimental scale in this country. The board of directors has now decided not to proceed with this proposal, and the position so far as the Society is concerned is now therefore an open one. It will be necessary for the committee to consider what action the Society should now take to further its object, and a meeting will be called in the near future. Meanwhile, the Society has been going into the question of the special type of soya bean used as a plantmilk base, and again we are indebted to the American company for valuable advice. It should be stated that this company has no pecuniary interests at stake, but its directors are in agreement with the principles that led to the formation of the Society. It may be possible to arrange for experiments to be made in this country in growing some of the suitable types of bean. The proprietor of a small site in France, north-east of Paris, states that during the war [World War II] he successfully grew one type of soya bean on the site.

"From 'Plantmilk News,' No. 1, February 1957.

The Plantmilk Society is an organisation to promote the manufacture and sale for human consumption of a satisfactory non-animal alternative to dairy milk. General Secretary: 39 Willow Crescent, Uxbridge, Middlesex" [England].

1715. Worthington Foods, Inc. 1957. Wholesale price list and order blank. P.O. Box 190, Worthington, Ohio. 1 p. April 1.
• ***Summary:*** New products include: Soyamel (soy milk; Instant or instant malt). Soy milk (powdered or regular). Fry-Sticks. Ground wheat gluten. MC (Sliced Miller's Cutlets). MC Ground (Miller's Cutletburger). VP (Vegetable Protein). Sweet dill pickles. Address: Worthington, Ohio. Phone: Tuxedo 5-5359.

1716. Chen, Philip S. 1957. The soybean–A food without peer. *Let's Live.* July. p. 3.
• ***Summary:*** Discusses the nutritional and economic benefits of the soybean. Contents: Introduction. Protein advantages. No cholesterol. Rich in iron. Economically cheaper. Varied assortment [of edible soy products]: Soy milk, soy milk powder, green soybeans, dry mature soybeans, soy sprouts, soy grits and flakes, and soy flour. Address: PhD, Prof. of Chemistry, Atlantic Union College, South Lancaster, Massachusetts.

1717. Dos Reis, A. 1957. [Soya milk in infant nutrition]. *Pediatria Pratica* 28(8):349-66. Aug. [Por]*

1718. *Today's Food* (*Loma Linda Foods, Arlington, California*). 1957. Now, milk without a cow. Summer. *
• ***Summary:*** About soy milk. Address: 11503 Pierce Place, Arlington, California.

1719. *Vegan* (*The*) (*England*). 1957. Plantmilk News. 10(6):15. Autumn. [1 ref]
• ***Summary:*** "An extract from "Plantmilk News," No. 2, September, 1957, published by the Plantmilk Society. "A small but possibly significant factor has occupied the attention of the Society's officers in recent months: a limited but definite medical need for plantmilk in this country. A few inquiries have been received for a supply of plantmilk for infants suffering from a disease which prevents them from being able to metabolise lactose. These infants are therefore unable to utilise either animal or human milk, and a satisfactory plantmilk might thus result in saving the lives of some babies, One baby was given some of the American plantmilk donated by the American company for this purpose. Other babies have received an experimental plantmilk made by another British company. Although in its present form this experimental plantmilk is not sufficiently attractive for general use, it may prove suitable for medical requirements. This is a development which if pursued could possibly lead to plantmilk being prescribed also in cases of allergy and near-allergy to animal milk found among certain infants, who may amount to some thousands in this country, and who are particularly liable to be found among the babies of vegetarian parents..."

"The Plantmilk Society: The second Annual General Meeting will be held at Friends House, Euston Road, London, N.W.1, at 2.30 p.m., on Saturday, October 12th, 1957, at which meeting members and others interested will be welcome. The Plantmilk Society is an organisation recently formed to promote the manufacture and sale for human consumption of a satisfactory non-animal alternative to dairy milk. General Secretary: Mr. Leslie I. Cross, Uxbridge, Middlesex [England].

1720. Walley, Ersel. 1957. Soybeans around the world. It would take 400 million bushels of soybeans to meet minimum needs of babies and growing children alone in the Orient. *Soybean Digest.* Sept. p. 30-32.
• ***Summary:*** The author made a world tour studying soybeans, including visits to Hawaii, Japan and other parts of Asia, and Italy. He studied production of soy milk in Taiwan, Hong Kong, and Bangkok (Thailand). In Taiwan he visited a soya milk plant which was established "by our good friend and American Soybean Association pioneer, Dr. H.W. Miller. In Hong Kong, the 'peek hole' and gap in the Bamboo Curtain, we found many small soya food producers and no doubt the largest and most successful soya milk plant to be found anywhere [Hong Kong Soya Bean Products Co. Ltd., makers of Vitasoy]." Hong Kong is the place where competition between soybeans from Red China and the USA is said to meet head-on. "May I voice my conclusion that Red China needs in its domestic economy more soybeans than it can possibly produce.

"A trip to southeastern and south Asia included good and sufficient visits to Thailand (Siam), Burma, India, and Pakistan. Of these countries, Pakistan is the only one that has soybean production of mention and here the total production is less than 1 million bushels per year."

A photo shows Walley. Address: Part president and chairman of Market Development Committee, American Soybean Assoc.

1721. Sinclair, H.M. 1957. Food and health. *British Medical Journal.* ii(5058):1424-26. Dec. 14. [2 ref]
• ***Summary:*** Dr. Sinclair believes that there are serious defects in cow's milk as a food for infants. It is definitely inferior to human milk. The main problem is that its fat is a poor source of essential fatty acids. Address: D.M., M.R.C.P., Vice-President, Magdalen College, Oxford [England].

1722. Orr, M.L.; Watt, B.K. 1957. Amino acid content of foods. *USDA Home Economics Research Report* No. 4. 82 p. Dec. [27 ref]
• ***Summary:*** Lists the amino acid content per gram of

total nitrogen in edible portion (average, maximum, and minimum, and number of samples) for soybeans and soy flour, soybean curd, and soybean milk. Address: Household Economics Research Div., Inst. of Home Economics, ARS, USDA, Washington, DC.

1723. Moraes, N.L.A.; et al. 1957. Lactario a base de leite de soja [A milk dispensary based on soymilk]. *Servico Especial de Saude Publica do Ministerio da Sude, Serie de Imformes Tecnicos* (*Rio de Janeiro*) No. 5. 51 p. [Por]*
Address: Brazil.

1724. Reis, A. 1957. O leite de soja na alimentacao do lactente [Soymilk in the diets of nursing infants]. *Servico Especial de Saude Publica do Ministerio da Saude, Serie de Imformes Tecnicos* (*Rio de Janeiro*) No. 5. 13 p. [Por]*
Address: Brazil.

1725. **Product Name:** Saridele (Spray-Dried Soymilk with Sesame).
Manufacturer's Name: Saridele Ltd. (Sarihusada Co. after 1964).
Manufacturer's Address: Yogyakarta, Java, Indonesia.
Date of Introduction: 1957.
Ingredients: Soybeans (made into soymilk), dehulled sesame seeds, cane sugar and/or corn malt, vitamin A, calcium carbonate, ascorbic acid, vitamin B-12, vanilla and/or chocolate.
Wt/Vol., Packaging, Price: 10 kg or 1 lb cans, or 250 gm polyethylene bags.
How Stored: Shelf stable.
Nutrition: Per 100 gm.: Protein 30 gm, fat 22 gm, carbohydrate 40 gm, ash 5 gm, moisture 3 gm, calcium 450 mg, iron 3.7 mg, vitamin A 2000 I.U., thiamine 0.7 mg, riboflavin 1 mg, ascorbic acid 15 mg, vitamin B-12 1 mcg. The PER is 2.48 versus 2.80 for cow's milk.
New Product–Documentation: Indian Council of Medical Research, Special Report Series No. 31. 1955. p. 3. "Recently, the F.A.O. and the UNICEF have jointly initiated a programme in Indonesia for the large-scale production of a properly fortified soya milk chiefly for use in feeding infants and growing children. This project is largely based on a process developed under the auspices of the Food Ministry and the Indian Council of Medical Research in India."

Saridele Ltd. 1958. Saridele leaflet. FAO Nutrition Meetings Report Series. 1959. No. 22. Report on the FAO-UNICEF Regional School Feeding Seminar for Asia and the Far East.

G.C. Mustakas et al. 1964. "Production and nutritional evaluation of extrusion-cooked full-fat soybean flour." *J. of the American Oil Chemists' Soc.* Sept. p. 613. "Proposed Clinical Testing. A 1,000-lb lot of the milled soy flour has been forwarded to the P.N. Sarihusada Co., Jogjakarta, Indonesia, where it will be formulated and packaged for acceptability testing in the areas now supplied by the plant with the dried water-extracted soya milk formulation. Clinical and acceptability

Belden, et al. 1964. The Protein Paradox. "The other approach is the Saridele project in Indonesia, which we include primarily because it is frequently mentioned when protein-rich food projects are discussed, being one of the older projects" (p. 53). "One of the longest developing projects has been that of Saridele, a soy-flour based product in Indonesia... After the Second World War, the Indonesian government became interested in the manufacture of soymilk on a more efficient basis, since soybeans were available in the country and cow's milk supplies were very limited. In 1952 FAO sent to Indonesia Dr. S.S. De, who had been working in India on a more palatable soymilk product that incorporated peanut and malt. Dr. De recommended testing a mixture of soymilk, peanut milk, and malt in Indonesia. To avoid the association with milk, the name Saridele (meaning 'essence of the bean') was selected for the mixture in Indonesia.

"After testing a mixture made from 60% soybeans, 20% peanuts, and 20% malt on 240 children, Dr. De suggested that FAO and UNICEF provide assistance for a Saridele plant in Indonesia, with UNICEF supplying the equipment. The FAO sent experts to Indonesia for further study of the problem and pilot plant experiments were undertaken in Holland and the United States to develop the spray-drying manufacturing process. A plant was finally built in Indonesia with UNICEF's assistance and it went on-stream in the middle of 1957. Since then there has been continual study of the process along with development of new formulations.

"The process produces a fairly expensive product of high nutritive value... Unfortunately, the retail price is too high for those needing it most" (p. 57). This comment presumably refers to the original process and ingredients. The new dry process and reduction of sesame may lead to a decrease in price. "Saridele has been developed in Indonesia using the traditional method of water extraction... It sells for about 50 cents a pound, a rather expensive product. The Indonesian plant, which has a capacity of about 1 ton per day, used sesame seed along with the soy initially. Only soy is used today because the sesame seed's contribution to the biological value of the product was not worth its additional cost. The process does not appear suited for broad application because of its high cost" (p. 70).

Orr and Adair. 1967. Tropical Products Institute Report G-31. "The production of protein foods and concentrates from oilseeds." p. 69. Manufacturer: P.N. Sarihusada, Jogjakarta, Indonesia. "Date of Start of Production: 1957. Form of Product: Soya 'milk,' spray dried. Sold unflavoured for use by infants and young children, and flavoured with vanilla and chocolate for use by adults. Intended to be used as a beverage, after reconstituting with water, as a replacement for conventional soft drinks. Can also be used

in powder form as a replacement for 'sagon,' a local foodstuff."

"Form of Packaging: (a) Originally packed in cans of 10 kg and 1 lb capacity but now part of the production is sold in 250 gm capacity polyethylene bags. (b) Shelf-life of product: 2½ years in cans and 3-4 months in bags. Channels of Distribution: 75 per cent retail trade; 25 per cent institutions. Assistance from Government/International Agencies: (a) The Government supplied the land and buildings for the factory and has undertaken to buy 300 tons of the product per year and distribute it free through institutions. (b) International agencies have been closely associated with the project from its inception. UNICEF donated some of the machinery and equipment and FAO provided technical experts to put the plant into operation and train staff. Promotion: There has been a considerable promotional effort over the years, particular emphasis being placed on offering samples at reduced prices to the public at exhibitions, etc. Promotion is estimated to cost about 3 per cent of total annual sales value. Trend in Consumption: Rising: arrangements have been made to expand production. Profitability: Satisfactory. Problems: Processing problems (see below): initially consumer prejudice, which the practice of giving low-priced samples has helped to rectify; and the high cost of cans which are made from imported tin plate and which were said at one time to account for 25 per cent of the retail price.

"The process used originally for making the product was basically the traditional Oriental one, although the product was spray dried and sold as a powder, not in liquid form. It is understood that the process has now been altered... to a 40 per cent increase in the utilisation of the bean and to the elimination of the 'beany' taste, it may be that the Oriental process is no longer used. It is also said that the new process reduces equipment requirements considerably... 'Saridele' was originally made from 4 parts soya bean and one part sesame seed, but the latter was found to be too expensive. 'Saridele' appears to have 2 distinct markets: as a food for infants and young children and as a soft drink for adults. The chocolate flavoured product is the more popular and it is believed that this is partly due to the high prestige value of chocolate in Indonesia where its high price limits its use by low income groups."

De 1971; E. Orr. 1972. Tropical Products Inst. G73. The use of protein-rich foods for the relief of malnutrition in developing countries: an analysis of experience. p. 13; Steinkraus 1976;

Shurtleff & Aoyagi. 1979. Tofu & Soymilk Production. p. 197-98, 228. "Production was discontinued in 1966 because of the irregularity of soybean supply and marketing and equipment problems." Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 108.

Note: This is the earliest known commercial soy product made in Indonesia. However tofu, tempeh, soy sauce, and other soyfoods had been made and sold by cottage industries in Indonesia for many centuries prior to this time.

1726. **Product Name:** [Soymilk].
Foreign Name: Tônyû.
Manufacturer's Name: Ueda Tofu Shop.
Manufacturer's Address: Hachioji, Tokyo, Japan.
Date of Introduction: 1957.
Wt/Vol., Packaging, Price: 180 ml bottles.
How Stored: Refrigerated.
New Product–Documentation: William Shurtleff. 1981. Soyfoods. p. 35. "Dr. Harry Miller: Taking soymilk around the world." "Starting in about 1955 Dr. Miller started to recommend that the Adventist-run Japan San-iku School serve soymilk instead of cow's milk to the students; however the staff hesitated because of its nutritional value and flavor. In 1957 two Japanese Adventists, Mr. Hidekazu Watanabe and Mr. Hanzo Ueda (who ran Ueda Tofu Shop at the time), started making Japan's first soymilk on a small scale in Hachioji, Tokyo, bottling it is 180-ml milk bottles, and selling it locally. Mr. Watanabe later described the great value to them of Dr. Miller's ongoing technical, nutritional, and spiritual guidance. After some time, directors of the San-iku School visited the small soymilk plant, liked the soymilk flavor, and understood its nutritional value. In 1959 they bought similar equipment, set up a small plant in the school, and started to produce soymilk, which was bottled in 180-ml bottles and served to the students at every meal. In 1969 the San-iku School set up an independent food production company called College Health Foods (which later became today's San-iku Foods) and through it, with the help of Loma Linda Foods in America, began to produce Soyalac soymilk infant formula."

Letter (in Japanese) from Hidekazu Watanabe. 1981. July 19. Discusses the early history of this product. "The Ueda Tofu Shop in Hachioji helped with the product development; I was there at the time. In those days our name was *San-iku Gakuin Shokuhin-bu*, not San-iku Foods. The purpose was to provide a place of labor for the students and opportunities to learn food processing. It was not a business. Dr. Perry Webber was the principal of our school at the time. I think that our company did not make commercial soymilk before 1957. The food company is said to have been founded in 1928 in connection with the school, but legally it did not become an independent company until December 1970."

Note 1. This is the earliest known commercial soymilk product made in Japan.

Note 2. This product was the predecessor of Soyalac made by San-iku Foods.

Letter from Mr. Ichiro Tabuchi of San-Iku Foods. 1990. July 4. In 1948 Mr. Tabuchi visited Dr. Harry W. Miller and studied at his soymilk plant in Mt. Vernon, Ohio. During this period, Dr. Miller visited Nihon San-iku Gakuin (located at Chiba prefecture, Sodegaura-cho) almost every year and earnestly advised the people there to make soymilk. In about

1957-58 they started to make soymilk at a tofu plant that was owned by Mr. Ueda. They bottled it in 180 ml dairy milk bottles, which they sold with their tofu. It was a small scale operation and it didn't last long.

Note 3. This is the earliest document seen (Aug. 2013) concerning major soymilk manufacturing companies in Japan.

1727. K.S. Lo., Chairman, The Hong Kong Soya Bean Products Co., Ltd. in Hong Kong with Mr. Don Kendall and Tony Rump of Pepsi-Cola (Photograph). 1957.

• ***Summary:***

K.S. Lo, founder and chairman of HKSBP, standing in the company's factory in Hong Kong with cases of Vitasoy soymilk piled next to a Pepsi vending machine.

1728. Miller, Harry W. 1957. Review of literature on the nutritional value of soy milk. WHO/FAO/UNICEF Nutr. Panel R.1/Add.4. 18 p. 21 cm. International Nutrition Research Foundation. [102 ref]

• ***Summary:*** "In China where the infant mortality ranges as high as 250 per 1000 live births and malnutrition so evident amidst surviving infants, there is a problem of finding suitable available food for the nourishment of infants and growing children. Dr. Harry W. Miller, Medical Director of the Shanghai Sanitarium and Clinic, and Consultant to a large group of Seventh-day Adventist hospitals in China and the Far East, determined to produce a completely formulated milk beverage from the soybean to meet this need.

"Beginning his research in 1928, a milk called Soyalac was manufactured and granted exclusive patent rights in 1937 by the United States Patent Office. The product had all the characteristics of animal milk, was a true colloid liquid, and could be make to any desired formula. This milk, in contrast to the gruel formulas made from soy flour, was a fiber-free liquid which would not plug the nipples. Its processing resulted in a milk that was both palatable and readily digestible. It could be manufactured either as a canned liquid or dehydrated in powder form. The powder could readily be reconstituted to a liquid. Both the sterilized bottled milk and the powder would not require refrigeration. In the original soybean dairy in Shanghai, China, soy milk was boiled in bottles, and distributed daily.

"In a paper by Miller and Wen published in the April

1936 *Chinese Medical Journal* appears the results of extensive feeding on premature, new-born and growing infants on Miller's formulated soy milk. This feeding was carried out in the Shanghai Clinic where a 20 bed ward of new-born babies, and a 24 bed ward for older children, where Miller's soy milk was their routine diet. This report covered a record of two years of supervised feeding."

"This early work on infant feeding with Miller's soy milk was the first and most far reaching use of soy milk feeding, as the entire city of Shanghai had a soy milk route, with many thousands of families using it, until the soy milk plant was destroyed by Japanese bombing in 1937."

1729. Nevins, Allan; Hill, Frank Ernest. 1957. Ford: Expansion and challenge 1915-1933. Vol. 2. New York, NY: Charles Scribner's Sons. 714 p. Illust. Index. 24 cm. [350+* footnotes]

• ***Summary:*** By 1923 Henry Ford's company stores and commissaries were very efficient, had low prices, and "did a tremendous business... The Highland Park store alone, crowded every day, had a staff reaching 100 persons. Some of the food stuffs came from Ford farms–wheat grown on Ford land, with such rarities to gladden the heart of food faddists as soya bean flour bread, unbleached flour bread, 100 per cent whole wheat flour, and canned green soya beans."

Ford was strongly opposed to smoking and drinking, especially by his workers. His interest in diet came later. "He believed firmly that only one or several 'harmonious' types of food should be eaten at each meal, that tea and coffee should be avoided, and that sound diet should comprise mostly vegetables and very little meat. (This was related to his prejudice against animal husbandry, an activity he thought unworthy of man... He pointed out on one occasion that the automobile would do away with the horse, while 'we could make milk commercially and get by without eating meat, and so cut out these wasteful animals.')

"In 1929 Ford began experiments at Dearborn to discover a farm crop that would have both food value and possibilities for industrial use. After an extended exploration, he chose the soybean [in Dec. 1931], the value of which, particularly for nutritive purposes, was later to be confirmed scientifically. In this activity he was seeking once again to relate farming to manufacturing. Michigan farmers were soon urged to plant [soy] beans with the assurance that the Ford Motor Company would do everything possible to provide a market." Address: Columbia Univ., New York.

1730. Zerfing, Sally D. 1957. Sally's recipes. Glendale, California: Published by the author. vi + 221 p. Illust. No index. 25 cm.

• ***Summary:*** A remarkable vegetarian cookbook with a Christian message and references to many Biblical passages. It would be vegan, except for the use of honey. The author is a devout Christian and is probably a Seventh-day Adventist since (1) Ellen G. White is quoted on several pages (p. 2, 214-17, etc.), (2) it contains so many soy recipes at a relatively early date, and (3) it mentions some brands of soy products (e.g. Madison Health Food Company's Cheze-O-Soy = tofu) made by Adventist companies. Page 14 has a short section on soy oil and page 14 a long section on soy beans, including soy milk. Soy-related recipes include: Soy beans (p. 44). Soy paste (with soy milk powder, p. 50). Soy-whole wheat noodles (with soy flour, p. 62). All purpose soy milk no. 1, no. 2, and no. 4 (made with El Molino Soya Milk Powder, p. 66-67). All purpose soy bean milk no. 3 (made from whole soy beans). Hot carob drink (with soy milk, p. 66). Almond milk. Cashew nut milk. Sesame milk (p. 67. "Liquefy together: 1 cup sesame seeds and 2 cups water. Then strain the milk through a fine cloth; squeeze to get out all the milk. Then liquefy with a little honey, salt, oil, or liquid lecithin").

Note: This is the earliest English-language document seen (Aug. 2013) that contains the term "sesame milk"–or a recipe for making it at home.

Scrambled tofu (with Chef Bonneaus Aminotone, p. 73). French toast (with soy milk, p. 73). No. 2 health burgers (with tofu, p. 79). Scrambled tofu sandwich (p. 80). Creamed tofu and nut spread. Soy cream and olive sandwich on Boston bread (with soy creamed cheese, p. 80). Cheze-O-Soy sandwich (p. 81). Sesame tahini cheese spread (with Sally's Soy Mayonnaise, p. 81). For other tahini recipes, see p. 82 and 111. For other sesame seed recipes: Sesame cream cheese (p. 82). Sesame salad dressing (p. 85). Sesame wheat germ candy (p. 148).

Soy creamed cheese (p. 82). Soy mayonnaise. Thousand island dressing (with soy mayonnaise, p. 83). Cucumbers with tofu cream dressing (p. 90). Homemade tofu cottage cheese (p. 91). Tofu cottage cheese (p. 91). Tofu vegetable jello-salad (p. 92). Tofu and rice croquettes (p. 100). Soy and rice patties (with ground soybeans, p. 101). Soy and eggplant patties (with ground soybeans, p. 101). Tartar sauce (with Sally's Soy Mayonnaise, p. 104). Baked macaroni and soy cheese (with tofu). Cheze-O-Soy and millet hash. Baked soy beans (p. 104). Soy and millet loaf (p. 105). Thanksgiving loaf–Wheat, tofu and nut combination (p. 107). Cheze-O-Soy patties (p. 108). Spanish-style scrambled tofu (p. 115).

Note: This is the earliest document seen (Feb. 2012) that contains the term "Scrambled tofu" or that contains a recipe for "Scrambled tofu." The book actually gives 3 recipes for scrambled tofu (pages 73, 80, and 115).

Ravioli (noodles made with soy flour and filling made with Cheze-O-Soy, p. 116). Bean sprout entree (with Cheze-O-Soy, p. 117). Scalloped corn (with tofu). Tofu Chick Pea Foo Young (p. 117). Wonder of the sea loaf (baked, with tofu, p. 118). Chew mein vegetarian style (with soy sprouts, p. 119). Tofu and Sally's homemade tofu (p. 118-19; curded with lemon juice and sea salt). Homemade soy cheese (made

with El Molino Soya Powder, p. 119). Tofu gravy (p. 120). Non-dairy ice creams (p. 149-53; most recipes call for 2 tablespoons El Molino soya milk powder). Banana split, Maple nut sundae, Fruit Sundae (each topped with "soy whipped cream," p. 151).

Note: We are unable to find a recipe or definition for "soy whipped cream" anywhere in this book.

Date shake (with "2 cups soy milk No. 3 or No. 1," p. 152). Carob soy malt (with "2 cups all purpose soy milk No. 3," p. 152). Ice cream pie (topped with soy whipped cream, p. 153). Carob-wheat germ banana shake (with soy milk, p. 153). Soy pie crust (with "¼ cup stirred soy flour," p. 154). Pineapple soy cheese pie (with "1¼ cups tofu and "¼ cup soy milk powder," p. 156). Baby's soybean formula (p. 196). Composition of ¼ cup soy powder (p. 196). Tofu for babies (p. 200).

Chapter 18, "Grandma's remedies" is about fasting, including "A week or fourteen day fast" (p. 204). A large portrait photo on the front cover shows Sally Zerfing. Address: 24629 N. Arch St., Newhall, California.

1731. Singh, Gursham; Singh, K.; Bedwa, H.C. 1958. Soyabean–Now going up into the Punjab Hills. *Indian Farming* 7(10):32-34. Jan. Series 2. Summarized in Soybean Digest, April 1959, p. 30.

• ***Summary:*** "Soybean, before long, is destined to play an important part in the dietary of the people of Punjab, especially the hill population. The Punjab Department of Agriculture has not only developed an improved soybean type suited to Punjab conditions, but has also determined the best method of growing and handling the crop... In India, its importance is yet to be fully recognized and its cultivation is very limited. As our people are mostly vegetarian and the nutritional standards extremely poor, it is very essential that their diet is supplemented with some protein-rich food. Soyabean fits into this picture very well."

The new variety, named Punjab Soyabean No. 1, is particularly suited to the agro-climatic conditions of the Kangra Valley. It is an edible variety, containing 43.9% protein and only 9.2% fat. The chief merit of this variety is that its seeds are free from the general drawbacks of bitter taste and pungent, beany smell. It does well when cultivated with maize. Note 1. Kangra is a town in Himachal Pradesh, northwest India, about 40 miles east-southeast of Pathankot. Pathankot is located in India about 10 miles east of the border with Pakistan.

Note 2. This is the earliest English-language document seen (Aug. 2010) that contains the term "agro-climatic" or the term "agro-climatic conditions."

"Soyabean flour: As the seeds of Punjab Soyabean No. 1 are free from the general drawbacks of bitter taste and pungent beany smell, soyabean flour can be extensively used for human consumption under local conditions. It can be mixed with wheat or maize flour up to 25 per cent, without any perceptibility, for making *chapaties*, leavened bread (*dabal roti*), sweetmeats, and bakery products like biscuits and cakes. The *chapaties* made from this combination are easy to cook and are very tasty. Soyabean green seed could be used as a vegetable like peas. It can be used for preparing artificial milk which compares favourably with cow's milk in chemical composition." It also makes a good cattle feed. Address: Dep. of Agriculture, Punjab [India].

1732. Dimond, Albert. 1958. Former ASA secretary in Japan mission [American Soybean Assoc. secretary Dr. P.A. Webber]. *Soybean Digest.* March. p. 7.

• ***Summary:*** Albert Dimond, past president of the American Soybean Association (ASA). wrote this account of Dr. P.A. Webber, a former ASA secretary, after visiting him and Mrs. Webber while in Japan recently. The Webbers live and work 10 miles north of Maebashi City, and a third the way up towering Mount Takagi.

"Dr. Webber, who did his graduate work at the University of Michigan, and his wife, also a graduate of the same school, are well on their way toward building and establishing the Mount Akagi Rest Home and Rural School. This is a non-profit Christian, medical and educational center, dedicated to furnishing self-help education and a rehabilitation center for handicapped children. The center is on a mountainside farm of 125 acres.

"Dr. Webber has spent much of his life alternating between Japan and the United States, and has been in Japan since 1948.

"During the early part of his career in Japan he became thoroughly acquainted with the valuable properties of soybeans. On one of his sojourns in the United States he served as secretary of the American Soybean Association, in 1931-32.

"Among his other activities in the United States were serving on the faculties of Berea College in Kentucky and Madison College in Tennessee. He headed the latter for a time. These are both well-known self-help educational institutions. Madison College manufactures and sells soybean foods.

"Dr. Weber also did much of the research and development work on soy milk done in this country [Japan].

During World War II the U.S. government drafted him for "liaison work in Japanese concentration [internment] camps in the western" USA. He "speaks of this interval in his life with sadness. There is no mistaking his love of the Japanese people.

"Asked what was the most pressing need of the Japanese people, Dr. Webber replied, 'Nutrition.' What food? "Soybeans.' Of course it is not as simple as that, but he pointed out that Japan now consumes ½ bushel of soybeans per capita per year. The people need 3 bushels and could use 5 bushels for each person every year. Other forms of protein are beyond their pocketbooks. It is either soybeans or no

protein.

"In Japan the government provides 6 years of school. The thirst for knowledge beyond that by these industrious and intense people is impossible to comprehend unless you have seen and talked with them.

"Dr. and Mrs. Webber in offering self-help educational advantages to this agricultural community are doing a wonderful service. It is an example of what can be done by a combination of science and devotion."

1733. *Vegan* (*The*) (*England*). 1958. Plantmilk for infant feeding. 10(8):17-18. Spring. [1 ref]
• ***Summary:*** "Plantmilks of different kinds have been used during the last few months for the treatment of a number of infants suffering from galactosæmia, which has been receiving some publicity in the medical and national Press.

In this disease there is lack of an enzyme needed for one stage of the metabolic pathway by which galactose is converted into glucose. If the baby's diet contains lactose (sugar of milk), which is a source of galactose, there is an accumulation in its tissues of a toxic substance. In severe cases this results in rapid wasting, with damage to the kidneys and especially to the liver, which can rapidly lead to death."

"In one instance, an American manufacturer of plantmilk kindly donated, through the Plantmilk Society, twelve pounds of plantmilk powder to meet an emergency. The Society has also been able to make available some further supplies as the result of a gift from one of its American sympathisers.

"The staff at one hospital considers that plantmilk has helped to save the life of a particular baby."

1734. Diamond, Holton W. 1958. Re: Update on his life and work. Letter to Dr. O.F. Boyd, Prof. of Chemistry, Emeritus, Wilmington College, Wilmington, Ohio, April 15. 2 p. Typed, without signature (carbon copy).
• ***Summary:*** Prof. Boyd apparently taught Rex Diamond chemistry at Wilmington College in Wilmington, Ohio. "Following my graduation in 1936, I roved among a number of jobs and activities, never quite satisfied. This orientation period included a term in the Methodist ministry, at Drew University Graduate School of Theology. You may recall my interest in YMCA and Gospel Team Work while I was a student at Wilmington College."

"During 1942, while working in Detroit [Michigan], I enrolled in night school at Wayne State University [in Detroit], taking courses, among others, in Advanced Organic and High Polymers. From the University I obtained a position in the Research Department of the Ford Motor Company, in the synthetic rubber development department, supervising a project group on butadiene synthesis. When the entire synthetic rubber research program at Ford was abandoned, I was given a choice of three other jobs in the Company's technical organizations, and chose to go to the George Washington Carver Laboratory in Dearborn, where I became acquainted with soy bean foods and the late Henry Ford, who maintained the laboratory as a sort of personal hobby, officially as a memorial to his good friend, Dr. Carver. Mr. Ford spent a great deal of time at the laboratory, usually dropping in two or three times a week to visit, and often spending the entire day with us. Working for him and sharing his ideas, as you can imagine, was a stimulating and interesting experience.

"I also became acquainted at the George Washington Carver Laboratory with a girl whom I interviewed for a job in the laboratory, Florence Barbier, a graduate of Stephens College, and with whom I have since become much better acquainted. Before we were married, *she* washed the dishes for *me.*

"I have been interested in soy foods, particularly 'soy cream', and the phenomenon involved in the 'whipping' or phase-reversal, of such emulsions, for the past fifteen years.

"Rich Products Corporation is America's oldest and largest manufacturer of frozen whippable emulsions, and the oldest specialty packer in the entire frozen food industry. We carry inventories in over one hundred public warehouses across the country, and number the world's largest users among our customers. We manufacture a variety of these emulsions, some for fountain use, some for household use, and others for bakery applications. Most people are a little surprised to learn of the large quantities of these materials used; as for example, a customer of ours in New England whips 700 to 1000 gallons of our emulsion per day, to cover the tops of 'soft' pies, chocolate, coconut cream, and the like. I have enjoyed very much being associated with such a new and growing technology, and being a part of a dynamic and thriving business. In January of this year I was elected to the Board of Directors of Rich Products Corporation, and appointed a vice-president.

"We have no children, and Flo and I are conveniently cliff dwellers at the address shown above, on the top floor of Buffalo's tallest apartment building." Address: 800 West Ferry St., Buffalo, New York.

1735. Black, H. 1958. Die Sojabohne–Ein Hauptnahrungsmittel der Zukunft [The soybean–A major food for the future]. *Ernaehrungs-Umschau* 5(2):33-34. March/April. [Ger]
Address: Bonn, West Germany.

1736. Pratt, Edward L. 1958. Food allergy and food intolerance in relation to the development of good eating habits. *Pediatrics* 21(4):642-48. April. [45 ref]
• ***Summary:*** "The intolerance of 15% of the infants [in one study; Glaser & Johnstone 1953] to soya bean milk is higher than intolerance of infants to cow's milk generally."
Address: Dep. of Pediatrics, Univ. of Texas Southwestern

Medical School, the Children's Medical Center, and Parkland Memorial Hospital, Dallas, Texas.

1737. Smith, Allan K. 1958. Use of United States soybeans in Japan. *USDA Agricultural Research Service.* ARS-71-12. iii + 36 p. April. April. Illust. 28 cm. Typewritten.
• ***Summary:*** An extremely well researched, interesting document based on a survey conducted in 1957 in Japan. Contents: Definitions of Japanese food products. Introduction. 1. Problems of Japanese food processors in using U.S. soybeans: Food production problems, foreign material, broken and dark-colored soybeans in exports. 2. Analysis of the problems. 3. Research proposals. 4. Miso: Processing, uses, production, composition. 5. Tofu and its modifications: Processing fresh tofu and frozen tofu, aburage. 6. Natto. 7. Hamanatto. 8. Kinako. 9. New products research: Soybean "milk," fermented cheese, soybean flour and isolated protein for foods, isolated soybean protein. Acknowledgments.

A graph on the front cover (and on p. 6) shows soybean production in the USA from 1938 to 1957 (in millions of acres harvested). Photos show: (1) Drying soybeans before threshing in Japan. (2) Manually operated threshing machine. (3) Power operated threshing machine. (4) Modern small-scale equipment for cleaning soybeans and grading for size. (5) Straw weaving equipment. Straw bags are used for soybeans, rice, and other farm products. (6) Cooling roasted soybeans and hand cleaning for making kinako. (7) Soybean varieties: Lincoln, White Hilum Iwate, and Acadian (six photos, showing each variety wet and dry). (8) Wooden vats used for fermenting miso; each stands a little taller than a man, and is bound with 4 bamboo hoops. (9) Miso in wooden tubs [kegs] ready for market. (10) Hand assembly of wooden tubs for shipping miso and shoyu. (11) Stone mill for wet grinding of soybeans to make tofu. (12) A modern tofu shop, with boiler, pressure cooker, filter, and precipitation vat. Photos 11 and 12 courtesy of Sugiyama Chemical Research Inst., Tokyo. (13) Deep fat frying of tofu for making aburage. (14) Wooden kegs used for fermenting hamanatto. Stone weights are used to compact the beans during fermentation.

Other figures: (1) Flow diagram of the miso manufacturing process (incl. koji). (2) Table showing total production of miso in Japan (about 1957) as reported by All Japan Miso Industrial Association. Factory made miso consists of: Rice miso 379,000 tonnes (metric tons), barley miso 146,000 tonnes, soybean miso 58,000 tonnes, total factory made 583,000 tonnes. Homemade miso of all types is 391,000 tonnes (67% of factory made). Total factory and home made: 974,000 tonnes. Ingredients used in this grand total: Soybeans 361,000 tonnes, rice 115,000 tonnes, barley 58,000 tonnes, salt 159,000 tonnes. (3) Table showing nutritional composition of rice miso, barley miso, and soybean miso. (4) Table showing composition of sweet miso, salty miso, and enriched miso. (5) Diagrammatic sketch of equipment used in making fresh tofu. (6) Flow diagram of a frozen tofu factory.

Note: The author was in Japan from Oct. 24 to Dec. 24, 1957. The principal localities visited were: Tokyo, Yokohama, Tochigi City, Nagano, Matsumoto, Suwa, Hamamatsu, Nagoya, Kyoto, Osaka, Fukuoka, Kumamoto, Nagasaki, and Sendai. His trip was sponsored by the Agricultural Research Service and the Foreign Agricultural Service of the USDA, and the American Soybean Association (Hudson, Iowa).

Note: This is the earliest document seen (July 2000) that mentions "barley miso"–a type of miso made with barley koji, soybeans, and salt. Address: Head of Meal Products Investigations, Oilseed Crops Lab., NRRL, Peoria, Illinois.

1738. Subrahmanyan, V.; Bhagavan, R.K.; Swaminathan, M. 1958. The place of processed foods in the treatment and prevention of protein malnutrition in children. *Indian J. of Pediatrics* 25(123):216-27. May. [57 ref]
• ***Summary:*** Contents: Introduction. Treatment of kwashiorkor: Vitamin therapy, the use of dried stomach preparations (e.g., hog's stomach), the use of protein hydrolysate, human serum, plasma and blood, treatment with skim milk powder and proprietary casein foods, treatment with plant protein diets, soybean-banana mixture (Dean 1952), Bengal gram and banana diet mixture, low-fat groundnut flour–Bengal gram–skim milk diet mixture, possible sources of processed protein rich foods for the prevention of protein malnutrition, better utilization of soya and groundnut products, soya and groundnut milks (7 studies are summarized briefly), low-fat oilseed flours, balanced malt food containing soya flour and groundnut flour, Multipurpose food based on low-fat soya flour and groundnut flour, predigested foods, fish flour. Conclusion.

"Introduction: It is now well recognized that protein malnutrition is widely prevalent among children in many tropical and subtropical countries (Trowell et al. 1954) (p. 216).

"The foods that have been most extensively used in the treatment of kwashiorkor, are skimmed milk powder and calcium caseinate" (p. 217).

"Treatment with plant protein diets: Of late it is being increasingly recognised that skim milk powder, though the cheapest protein food available so far for the treatment of protein malnutrition, cannot provide the basis for a large scale solution of the problem in underdeveloped countries, where skim milk powder is not available in sufficient quantities and has to be imported" (p. 218).

"Better utilization of soya and groundnut products:... Both these foods are by themselves highly concentrated and difficult to be cooked properly. Consequently children may experience difficulty in digesting cooked [whole] soyabean or roasted groundnut (Aykroyd and Krishnan 1937). Recent investigations carried out in India and other countries have

shown that both soyabean and groundnut could be suitably processed into milk which is highly nutritious and can be readily digested by young children (Dean 1953; Indian Council of Medical Research 1955). Low-fat flours obtained from soyabean and groundnut are also highly nutritious and can be incorporated in various ways in the diet of children (Autret and Van Veen 1955).

"Predigested foods" [fermented]: Mentions soy sauce, and tempeh in Southern Rhodesia.

"Conclusion: It is evident from the foregoing account that besides cereals and pulses which form important sources of protein in the diet of the low income groups in tropical countries, oilseeds and oilseed meals represent an abundant and a most important source of proteins which have not been fully utilised so far for supplementing human diet." Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

1739. Fonseca, Lourival. 1958. A soja: Sua cultura, industrializacao e emprego na alimentacao [The soybean: Its culture, industrialization, and use as food]. *Boletim de Agricultura* (*Belo Horizonte, Brazil*) 7(5/6):35-45. May/June. [Por]
Address: Eng. agronomo do Departamento de Producao Vegetal.

1740. *Vegan* (*The*) (*England*). 1958. Plantmilk News. 11(1):16-17. Summer. [1 ref]
• ***Summary:*** "Reprinted, by kind permission, from Bulletin No. 5 (May, 1958) of the Plantmilk Society.

"The first British infant plantmilk: By the time of the next Annual General Meeting of the Plantmilk Society on October 4th, a pioneer British plantmilk may be on the market."

1741. Almeda, Alberto Fontana. 1958. [Improved milk]. *Spanish Patent* 243,371. July 30. (Chem. Abst. 54:11327g). [Spa]*
• ***Summary:*** To make this "filled milk" product, a concentrated emulsion of mixtures of soybean oil and other oils is added to nonfat milk, and the fat mixture is fortified with vitamin A. No soymilk is used in the product.

1742. Bieringer, Otto R. 1958. [Soybean milk]. *German Patent* 1,037,245. Aug. 21. (Chem. Abst. 55:846c). [Ger]*
• ***Summary:*** Soybeans are soaked, ground to a slurry, and mixed with an aqueous solution of chlorophyllin. The soymilk is filtered off and the bitter substances are removed by filtration through a mixture of natural bleaching earth and yeast. The chlorophyllin absorbs bitter materials and deodorizes sulphur-containing compounds. The soybean milk can be used in foods.

1743. Fries, G.F.; Lassiter, C.A.; Huffman, C.F. 1958. Effect of enzyme supplementation of milk replacers on the growth of calves. *J. of Dairy Science* 41(8):1081-87. Aug. [21 ref]
• ***Summary:*** "Two experiments were carried out to determine the effect of supplementing milk replacers with enzymes." "In previous investigations, milk replacers consisting largely of vegetable products did not support satisfactory growth until calves were about 25 days of age." In the first experiment, a vegetable milk replacer was predigested with various enzymes. Table 2 (p. 1082) gives the composition of three different milk replacers. Soybean flour is a major ingredient in the first two, and is the leading ingredient in No. 2. Other major ingredients are "fine ground corn" and "dried skimmilk." The use of the enzyme papain in the 1st experiment, and of the enzyme pepsin in the 2nd experiment each produced deleterious effects. Address: Dep. of Dairy, Michigan State Univ., East Lansing.

1744. *Soybean Digest.* 1958. Nationwide cycle trip on soy diet: Will attend convention. Aug. p. 9.
• ***Summary:*** Carl Urban, age 40, plans to cycle across the USA in the summer heat on a 40-day diet costing only $10. His "only food on the bicycle ride from Los Angeles to New York will be Multi-Purpose Food (95% soy grits) filling for soy bread sandwiches. Margarine from soybean oil will provide the needed extra calories. In case he needs added low-cost energy he may drink some soybean milk." He plans to supplement his diet with vitamin C.

His wife and two children plan to pace him in the family car "and have family reunions each night in friendly motels and motor courts. Urban plans to do 100 miles a day." He left Los Angeles on July 26. He plans to attend the ASA convention (of which he is a member) at Des Moines, Iowa, on Aug. 19.

"Urban thinks many Americans, as well as restaurants and food service institutions, could provide better nutrition at lower cost by proper use of soy products."

1745. Miller, Harry W. 1958. Soybeans meeting nutritional needs in undeveloped countries. *Soybean Digest.* Sept. p. 68-73.
• ***Summary:*** "It was at the Dearborn, Michigan, meeting of the American Soybean Association held Aug. 18-20, 1940, that I presented a paper on 'Soybeans in Human Nutrition." In this paper I ventured the statement that while soybeans and the interest in them were chiefly valued for their oil content, I foresaw the day would come when soybeans in some form or other would become a regular item in the American diet for humans. The bean flakes and cake were discarded as fertilizer, except to a slight extent they were beginning to be used as stock feed, with a certain amount of credulity.

"At that time we were buying soybeans for a penny a pound, largely as a result of the fact that the value of their high biologic protein was not fully appreciated in animal

feeds. Today it is being strongly emphasized and well authenticated that the soybean is one of the world's greatest protein yielders, and protein, as its name indicates, is of prime importance in maintaining the life and nutrition of mankind."

In countries where meat and dairy products as suppliers or protein are unavailable, or form a very small amount of the dietary, there is noted a predominantly high incidence of infections, as also a low life expectancy averaging from 25-30 years. This is directly related to a low intake of high quality protein. In these countries the most noticeable and severely injured classes are those of the newly weaned infant, the growing child, and expectant and nursing mothers. During these ages and conditions the demand for the ratio of protein in the diet is double that of the average adult man and woman. The impact of protein deficiency is more than any other factor the cause of deterioration healthwise in nations where this lack exists."

In the United States: "One-half of the products of cultivated land is fed to animals..."

"E.J. DeCastro, in his book *The Geography of Hunger* comparing animal and vegetable sources of protein states, 'The conversion of vegetable calories into animal tissue has long been known to be inefficient. Only 15% of vegetable calories is recovered in producing milk, 7% in eggs, and only 4% in beef.'"

Three tables (p. 70) show "that the value of food obtained from an acre of soybeans is three times that of wheat and twice that of corn. The reason we do not appreciate these values in this country is that we overproduce corn and wheat for edible purposes, but scarcely use any soybeans for human consumption."

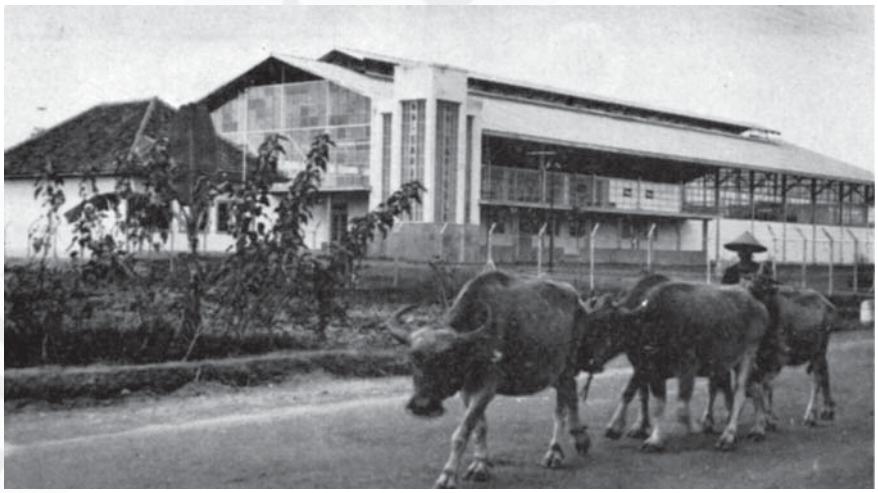
"Up to this time the only agricultural product that has given any promise of being a replacement for animal milk is found in the soybean."

"The Japanese are perhaps the best per capita nourished people of the Asiatic races. Imagine them as maintaining a population that is more than half that of the United States on tillable soil no more than that found in the state of California. Through intensive farming and heavy use of fertilizers to the soil they have raised the yield per acre of land to a production of 13,000 calories per day. And on their land they are able to supply the nutritional requirements for a person on 0.2 acre, as contrasted to 1.8 acres in America. One-half of the calories of farm products in the United States go to animal feed. But in Japan only 5% of their calories come from meat, milk and eggs. Their annual consumption of the soybean as their main protein supplier is 50 pounds per capita,..."

"Milk Plant in Shanghai: After 1945 it looked as though we had a little open time for the development. The Chinese government put in a million-dollar soybean plant in Shanghai. It was completed and ready for operation just prior to the takeover of Shanghai by the Communists in 1949 which ended this.

"But the soy milk business has been spreading to other parts of Asia, first to the Philippines then Hong Kong, and now it has been taken up by the United Nations who are pushing the use of soy milk in Indonesia. The Indonesian people have used Tempe [tempeh], which is a form of boiled soybeans that have been inoculated with the aspergillus [sic, Rhizopus]. In that way they have consumed a considerable amount of soybeans. But here the bean was not in a form Where babies or young children could make use of it."

"Now with the ability to install practical soy milk and soy cheese [tofu] plants in countries, especially the tropics, where soybeans do not grow well and the need of protein is so great, there is opened to the soybean industry a tremendous field of opportunity. This field should also receive a liberal apportionment of funds for research. Some research has been given to this subject, but it's infinitesimal with what is required."



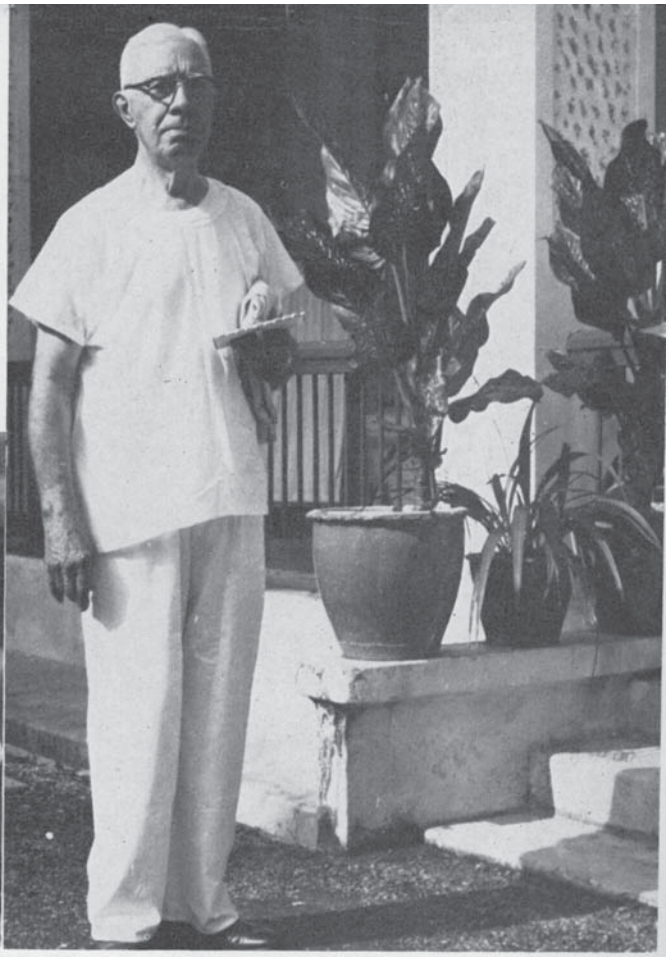
Photos show: (1) Portrait of Dr. Miller. (2) A "factory at Jogjakarta in central Java that produces a ton of soy milk [Saridele] every 7 hours. It is a cooperative venture between FAO, UNICEF, and the Indonesian government. Construction was supervised by H.W. (Bill) [Willis] Miller, son of the author." Water buffaloes are pulling a cart on a street in the foreground. Address: M.D., Director, International Nutrition Research Foundation, Arlington, California.

1746. *Soybean Digest.* 1958. Harry Willis Miller honorary life member [of American Soybean Association] 1958. Sept. p. 10-11.

• ***Summary:*** "Dr. Harry Willis Miller, director of the international Nutrition Research Foundation [INRF],

HARRY WILLIS MILLER HONORARY LIFE MEMBER 1958

Dr. and Mrs. Miller and Madam and Generalissimo Chiang Kai-shek.



Dr. H. W. Miller in Libya, 1957.

Arlington, California, was born 79 years ago in Ludlow Falls, Ohio. Although renowned as one of the world's leading thyroid surgeons, he also has spent many years in soybean research and has done much to perfect and promote soybean food products on the American market.

"As a medical missionary sent to pioneer the work of Seventh-Day Adventists in China from 1903 to 1911, he wondered how he could aid the millions of undernourished Chinese children–hundreds of infants dying daily from malnutrition.

"After years of investigation and practical experimentation with one of the most staple foods in China, he discovered a method of 'milking' soybeans and perfected a palatable formula suitable for both infants and adults.

"The response to the product was spectacular. To meet the immediate demand machinery was shipped to China, and under Dr. Miller's management the first modern vegetable milk plant in the world was put into operation. Until the outbreak of war in Shanghai in 1937, fresh soybean milk was delivered daily to hundreds of homes in Shanghai.

"For the service he rendered to the people of Free China in saving the lives of countless thousands of infants with the use of soybean milk and for his untiring efforts in establishing a dozen or so sanitariums-hospital clinics in the Orient, he has received National China's highest honor. In 1956 Dr. Miller was decorated with the Brilliant Blue Star by Generalissimo Chiang Kai-shek himself.

"Although Dr. Miller has certificates to practice medicine in nine of the 49 states and 11 foreign countries, and even at his age retains a steady hand for surgery cases, he continues to devote much time to the development and perfection of soybean foods.

"Despite his full life as a general medical practitioner, and many years spent superintending numerous Chinese sanitarium-hospitals, serving as president of the Seventh-Day Adventist mission in prewar China, managing and editing the Chinese Signs of the Times, authoring many medical books and articles and lecturing around the world, he has managed to continue his soybean research and experimentation whatever his location.

"From 1939 to 1950, while medical director of the Mount Vernon, Ohio, sanitarium and hospital, he opened a research laboratory where he developed a new improved soy milk, soy-olive sandwich spread, and numerous other

nutritious foods made from soybeans and grains, and initiated the International Nutrition Laboratory of America which later became the INRF which he has heavily endowed.

"In 1951 he sold his growing soybean food industry to the Loma Linda Food Co. and came to Arlington, California, where he now makes his home and spends as much time as possible in the new laboratory placed at his disposal by Loma Linda. Two years ago, the World Health Organization became interested in Dr. Miller's progress in developing a superior soy milk and modeled a million-dollar factory in Indonesia after the Loma Linda food factory which he had pioneered in Mount Vernon, Ohio. At the present time WHO is also providing $30,000 for an intensive 2-year infant nutrition research program at a leading U.S. hospital using his soy milk formula.

"Since his appointment as director of the INRF, has laboratory and experimental work have been frequently interrupted to answer please for help from his medical colleagues in foreign lands. From 1954-1956 he went to Penang [Malaysia] and Formosa to serve as medical director and surgeon for the hospitals there, took a similar post for 2 months in Trinidad in 1956, another in Libya in 1957, and he is now filling the post of medical director and surgeon at the Tokyo Sanitarium-Hospital in Japan during a 6-month leave of absence by an SDA medical-missionary.

"Despite his present busy daily routine at the sanitarium he is continuing his work with soybeans and has a nearby tofu shop deliver soy milk daily to the sanitarium in 5-gallon containers. Since his arrival he has introduced soy whipping cream for daily use at the sanitarium and routinely prescribes soy milk to allergic Chinese infants. He writes that he was surprised to find that the soy milk he helped perfect for the Loma Linda Food Co. is now obtainable by military personnel at the U.S. army post exchanges in Japan.

"While other men have rightly taken up golf, fishing, or other hobbies, Dr. Miller has devoted most of his spare time to research and development of vegetable foods. 'Soybeans have been my lifetime hobby,' he declares. Small wonder he is known from East to West as the man who gets 'milk from an iron cow.'

"Over the years Dr. Miller has been among the most active supporters of the American Soybean Association. He was chosen an honorary life member of the Association at the Des Moines convention. The award was made in his absence in Tokyo during the annual banquet."

Photos show: (1) Dr. and Mrs. Miller with Madam and Generalissimo Chiang Kai-shek. (2) Dr. Miller in Libya in 1957–standing outdoors and dressed in his plain white doctor's outfit. (3) "C.G. Simcox presents honorary life membership award to C.P. Miles, manager Loma Linda Food Co., Mt. Vernon, Ohio, in behalf of Dr. H.W. Miller. Award will be formally presented to Dr. Miller in Tokyo by Shizuko Hayashi, managing director of the Japanese American Soybean Institute."

1747. Peoples Drug Stores, Inc. 1958. Now 93 Peoples Drug Stores in metropolitan Washington (Ad). *Washington Post and Times Herald.* Oct. 12. p. A13.
• ***Summary:*** The section titled "Discount prices–Baby needs" includes: Mull Soy Powder, pound can–$0.84." "Mull Soy Liquid, 15½ ounces–4 for $1.16. These stores are also found in Bethesda, Maryland; Arlington, Virginia; and Rockville, Maryland.

1748. Neto, Luiz Guimaraes. 1958. Leite e queijo de soja [Soybean milk and cheese]. *Boletim de Agricultura* (*Belo Horizonte, Brazil*) 7(9/10):49-50. Sept/Oct. (Minas Gerais. Departamento de Producau Vegetal). [Por]
• ***Summary:*** Describes the utensils and techniques necessary to prepare these two foods. Address: Eng. Agronomo, Brazil.

1749. *Soybean Digest.* 1958. Dr. Miller receives honorary [life] membership [in American Soybean Association] (Photo caption). Nov. p. 23.
• ***Summary:*** This photo shows Dr. Harry W. Miller seated next to Mrs. Miller with 10-15 other people at a long table during a formal luncheon in Tokyo; there he received a gold medallion signifying his election as honorary life member of the American Soybean Association. "The luncheon was arranged by the Japanese American Soybean Institute and Shizuka Hayashi, managing director (standing), presented the award. Dr. Miller, who is on duty in a Tokyo hospital, was elected honorary life member at ASA's convention in Des Moines [Iowa] last August."

1750. Borges, José Marcondes; Viana, S. De L.; Leme, J., Jr. 1958. Estudo comparativo de dois processos para determinacao de acucares totais em leite de soja (nota previa) [Comparative study of two processes for determining total sugars of soybean milk (preliminary note)]. *Revista de Agricultura* (*Piracicaba, Brazil*) 33(4):199-204. Dec. [1 ref. Por]
Address: 1. Escola Superior de Agricultura, Universidade Rural de Minas Gerais–Vicosa; 2. Instituto Agronomico do E. de Minas Gerais, Belo Horizonte; 3. Piracicaba.

1751. **Product Name:** Vitamilk (Soymilk).
Manufacturer's Name: Green Spot (Thailand) Ltd.
Manufacturer's Address: 79 Mu 4 Patanakarn 3 Rd., Bangkok 10240, Thailand. Phone: 3775-088-91.
Date of Introduction: 1958.
Ingredients: Soymilk, 25-30% whole dried cow's milk, coconut fat.
Wt/Vol., Packaging, Price: 200 ml or 210 ml bottles.
How Stored: Shelf stable.
New Product–Documentation: Soya Bluebook. 1981. p. 61. 79 Mu 4 Klongton-Hua Mark Rd., Bangkok. Soy beverage; Brian Fitzpatrick. 1982. Soya Milk in Asia. p.

261. States that Green Spot Bangkok launched this soymilk in 1960; Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 105. Thailand's earliest commercial soymilk. "By 1973 the company was producing 33 million 200-ml bottles of Vitamilk a year, by 1978 about 120 million bottles."

Letter from Anders Lindner of STS. 1984. March 9. "Green Spot (Thailand) is partly owned by Mr. C.C. Cheung (Executive director–General manager, business card enclosed) and partly by 'Hong Kong Investors.' Cheung also bottles Green Spot orange soft drink but Green Spot California has nothing to do with the soymilk product 'Vitamilk' and does not have ownership in the Thailand operation." An enclosed photocopy of a page from a market study of unknown origin states that Vitamilk, a bottled beverage, is marketed as a soft drink product. "Producers tone their products with SMP to more closely approximate natural milk flavour. The best available estimate of current soymilk production in Thailand is 18.7 million 210 cc bottles per month, equivalent to 47,000 metric tons per year, with Vitamilk holding by far the largest market share, probably 85% of the total produced. We have been unable to verify these figures. Channels of distribution for soyabean milk are the same as for UHT milk. Vitamilk (210 cc) wholesales for 2.29 bhat/bottle and retails for 3,00 bhat." Business card lists Green Spot, F&N [probably Fraser & Neave], and Vitamilk as company brands.

Soya Bluebook. 1986. p. 104. Address: 79 Mu 4 Pattanakarn Extension Rd., Bangkok 10240. STS. 1985. Containers for Soymilk. Shows bottle. Red letters on white oval. Color photo sent by Anders Lindner of STS. 1987. Nov. 14. Tetra Brik carton. 250 ml. Red, blue, and yellow on white. Shows large yellow soybeans. 2007. 7th international soy symposium: Role of soy in health and disease prevention. Program and abstracts. Page 6: Green Spot Co. Ltd. (Thailand's pioneer and leading soymilk maker with over 45 years of experience. Produces a wide range of soymilk products under the Vitamilk, Vitamilk Champ, and V-soy trademarks).

Note: This is the earliest known commercial soy product made in Thailand.

1752. **Product Name:** Soy Milk.
Manufacturer's Name: Sterner's Special Foods, Inc.
Manufacturer's Address: Route 2, Birdsboro, Pennsylvania.
Date of Introduction: 1958.
New Product–Documentation: Soybean Blue Book. 1958. p. 88.

1753. Borges, José Marcondes. 1958. Contribuicao ao estudo do leite de soja [Contributions to the study of soymilk]. Vicosa: Universidade Rural do Estado de Minas Gerais. 202 p. Also published as a book. Sao Paulo. English-language summary in Soybean Digest, Dec. 1959, p. 28, and in Oleagineux, May 1962, p. 525. [66 ref. Por; eng]
• ***Summary:*** Soy milk, when well prepared and adequately supplemented, can be used as a good substitute for cow's milk whenever cow's milk cannot be used for medical or economic reasons. This book draws heavily on Brazilian and foreign literature on soy milk. "He notes a general opinion in the literature that soy milk is not pleasing to the taste of adults. But he reports he made some experiments and found that with the addition of some ingredients easily found on the Brazilian market, he could prepare a soy milk that is well accepted by normal adults. He describes the process used in detail." Address: Economic engineer, Sao Paulo, Brazil.

1754. Borges, Jose M. 1958. Leite de soja, importancia e adaptacao [Soymilk; its importance and adaptation]. In: Sao Paulo, Secretaria da Agricultura, Servico de Expansao da Soja. See p. 197-204. [Por]*

1755. Chen, Philip Stanley. 1958. Heart disease–Cause, prevention, and recovery. South Lancaster, Massachusetts: Chemical Elements. 189 p. Illust. 21 cm. Summarized in Soybean Digest, May 1958, p. 37. [10 soy ref]
• ***Summary:*** The author is a Seventh-day Adventist who advocates a vegetarian diet to prevent heart disease. In Part III, "Prevention of heart disease," are the following chapters: 11. Lecithin. 12. Sitosterol. 13. Heart disease and soybeans–Part 1. Soybean oil. 14. Heart disease and soybeans–Part 2. Soybean protein. 15. Heart disease and religion. 16. Future dietary habits and practices.

Philip S. Chen, Jr. assisted in preparing part 1 of this book. Address: Prof. of Chemistry and Chairman of Div. of Natural Sciences, Atlantic Union College, South Lancaster, Massachusetts.

1756. Circle, S.J.; Johnson, D.W. 1958. Edible isolated soybean protein. In: A.M. Altschul, ed. 1958. Processed Plant Protein Foodstuffs. New York: Academic Press. xv + 955 p. See p. 399-418. Chap. 15. [93 ref]
• ***Summary:*** Contents: Introduction. Isolated soy protein compared to soy flour. Availability and forms of edible soy protein isolate: Soy protein and soy proteinate, modified forms of soy protein isolate, partial isolates of soy protein and by-products. Properties of unmodified isolated soy protein: Methods of dispersing protein and proteinate, viscosity behavior–effect of high temperature, flavor. Nutritional value of edible isolated soybean protein: Nutritional value for human beings and animals (isolated soy protein, soybean oil meal, soybean milk, soybean curd, and Oriental products), amino acid composition, supplementation (mutual supplementation, isolated soy protein as a source of lysine). Food uses of edible isolated soy protein: Dairy-type products (including recipes for All-vegetable coffee "cream," All-vegetable whipped topping, All-vegetable "cream cheese," Non-milk chocolate frozen dessert [ice cream], All-

vegetable high-protein chocolate drink, All-vegetable high-protein non-starch chocolate pudding) meat-type products (including recipes for All-vegetable "meat loaf," and All-vegetable "frankfurters"), baked and cooked products based on dough, cereal-type products, macaroni-type products, oriental-type foods, specialty foods, confections and preserves, coatings, feed uses, modified soybean protein products, summary and conclusions. Address: The Glidden Co., Chicago, Illinois.

1757. Claudel, Paul. 1958. Qui ne souffre pas ... Réflexions sur le problème social [Who does not suffer? Reflections on the social problem. 5th ed.]. Paris: Gallimard. 151 p. See p. 135-41. 19 cm. [1 ref. Fre]

• ***Summary:*** One of the chapters in this book is titled *Le soya coopératif* [The soya cooperative] (p. 135+), which was in Rabat, Morocco.

A footnote states that this article was first published in the French magazine *Le Figaro*, issue of 20 March 1946.

The same article, but under the title "Le Soya" appears in the *Ouvres Complétes de Paul Claudel* [Complete works of Paul Claudel], in the section on *Proses Diverses* [Various writings in prose] on pages 447-451. At the end is written "[P. 24 janvier 1946]." Address: France.

1758. Ford, Herbert P. 1958. The life story of Dr. Harry W. Miller. Unpublished manuscript. 169 p. Unpublished manuscript. 28 cm.

• ***Summary:*** This manuscript is the slightly edited second draft of the transcript of a single 7-8 hour interview that Mr. Ford did with Dr. Miller in 1958 in Chicago. According to Mr. Ford, Dr. Miller later gave a copy of the manuscript to Raymond S. Moore PhD, a Seventh-day Adventist educator, with the understanding that Moore would use it as the basis for a book. The book, titled *China Doctor*, was published in 1961. Dr. Miller was not very happy with the way the book turned out.

Pages 122-35 give a much more detailed account and history of Dr. Miller's work with soy milk, tofu, yuba, other soyfoods, meatlike products, and wheat gluten than is found in the finished book, *China Doctor.*

Concerning wheat gluten: Dr. Miller's company in Mt. Vernon, Ohio, International Nutrition Laboratory, "had protein foods in which they used wheat gluten and made meat patties and various kinds of stews, sprouted the green soybeans and made a chili with them and wheat gluten." They also developed a vegetarian wiener [Veja Links] containing raw vital wheat gluten, soy flour, seasonings, and flavors. They stuffed these into wiener casings, submitted them to a smoke house and to cooking, then peeled off the casings/skins and canned the wieners. He developed these at the Mt. Vernon slaughterhouse.

"Soy milk manufacture in the U.S.A. (p. 131). In 1939 Dr. Miller returned to the United States having been so thoroughly convinced that soy milk was destined to have world-wide acceptance... His son, Harry Willis Miller, Jr. had returned preceding his father and had started a small soy milk plant in Utica, New York, where he made and bottled soy milk and also made and canned some of the protein foods out of wheat gluten for which they had developed recipes. This plant was later moved to Mt. Vernon, Ohio, after they started the soybean plant at Mt. Vernon. The plant was rather small at first as their capital was very limited. They had to build up the food plant out of his surgery earnings. As these products were mostly for export, the firm was called the International Nutrition Laboratory. It was called International because they didn't think of having any particular market for soy milk in the United States but anticipated making and packing soy powder which they could ship over to China, Japan, Korea, and other fields. Since the United States is a dairy country, they just thought they would have all kinds of difficulty getting it introduced over in America. They gave their attention largely in the early part of the work to making some products that went over quite well, which could be sold locally such as meat patties–vegaburgers. They would take the wheat flour, wash the starch from it, and make gluten patties. They actually built up a very fine product that was netting them earnings. The earnings of that, together with Dr. Miller's medical and surgery fees, to finally get together a spray dryer which they built with the aid of the know-how assistance of the Rogers Company, who sold these spray dryers... and through this home-made outfit they daily spray dried considerable powdered soy milk and placed it on the market. They made some ice cream mixes and they shipped out in barrels to the Philippines soy milk powder and also shipped consignments of the powder to Shanghai where they had formerly introduced a soy milk to the Shanghai Settlement. Thus they kept soy milk going up until the time of the world war in 1941 which cut them off from shipping to the Orient."

In the United States they found "an interest on the part of doctors in feeding babies that were covered with various kinds of rashes which they called atopic dermatitis. Many of these babies had asthma, diarrhea, projectal vomiting, nervous irritability and were unhappy babies, all because of the allergy to cow's milk formula." Doctors began to realize that babies with allergies and other sicknesses responded well to soybean milk; the market soon increased. Eggs and milk are the chief causes of allergy, but some vegetable proteins like wheat, corn, and some legumes also cause allergic reactions in some cases. Then doctors began to ask for evidence that the milk was safe. They suggested that it be submitted to the American Medical Association [AMA]. So at once Dr. Miller contacted Dr. Earl Baxter, Professor of Pediatrics at the Ohio State University Medical School, and he agreed to conduct some feeding experiments with soy milk. These studies showed that "babies could be nourished as well on soy milk." In Tokyo, Dr. Choei Ishibashi (later

president of the Japan Medical Society) also did meticulous feeding tests with infants, using the powdered soy milk Dr. Miller had sent after World War II. Over a period of many months, he compared the blood, measurement, and growth records of babies fed soy milk with those fed animal milk [cow's milk]. Then Dr. Miller took the results of the studies in Japan and at Ohio State and submitted them to the Council on Food and Nutrition of the American Medical Association. The Council has 15 members, the very best scientists on food and nutrition. "They examined the [soy] milk, examined the claims for it, looked over the research, and then gave the seal of approval which was placed on every can of soymilk thereafter."

"Now that they had this seal of approval, they went to medical conventions and canvassed the doctors; the sale of soy milk grew very rapidly." The plant began to get larger; it made great demands and there were many details to look after. These facts and his lack of capital to carry on this work adequately made Dr. Miller realize that he must do one of two things. He must either organize a corporation, issue stock, and enlarge the company greatly, or he must dispose of the plant and give his time and attention to research.

During this time, Dr. Miller received valuable help from the U.S. Department of Agriculture [USDA]. Dr. J.A. LeClerc (Senior Chemist, Agricultural Chemical Research Division) and Mr. L.H. Bailey, who investigated the use of "soybean milk in making breads" and made the results and analyses available to Dr. Miller. "Thus they got themselves very well established in this country as having a milk for people who did get along with cow's milk."

However the secretary of the AMA told Dr. Miller that he should not claim or advertise that his soy milk was a good alternative to cow's milk for all babies, but only "for those babies who do not do well on cow's milk." However he added: "If you can take care of babies that cow's milk does not take care of, there is no reason why you could not take care of the other babies that cow's milk does agree with too." This was his diplomatic way of counseling them not to make unfriendly comparisons with cow's in a dairy country–even if those claims are valid. By following his advice, Dr. Miller was able to work well with the dairy industry without any conflicts.

The Loma Linda Food Company in California showed an interest in acquiring Dr. Miller's company in Ohio. "They had been making some soy milk in the liquid form, but they were interested in getting an Eastern branch." So in 1950 they purchased the [soy] milk plant in Mt. Vernon and have been operating since that time. This took a great burden off Dr. Miller's shoulders and left him free to do medical and nutritional research work. "It was then decided to start the International Nutrition Research Foundation and Dr. Miller was asked to be the Director of this Foundation. He placed a larger part of the purchase price of the factory into this Foundation, which would be devoted to food research only. From the day this research institution was started it has attracted a great deal of attention from all parts of the world; among those interested parties has been the World Health Organization of the United Nations. They came to the conclusion that soy milk had great possibilities in countries of low economic conditions where they could not afford to buy imported [cow's] milk," and in protein-deficient countries. They came to Mt. Vernon to investigate both the soy milk plant and the experimental research. Dr. Miller educated them on the many benefits of using protein from soybeans instead of from animals. As a result, the United Nations constructed a large soy milk plant in Djojakarta [Jogjakarta / Yogyakarta] Indonesia. It was built with the advice of Dr. S.S. De (who has headquarters in Bangkok, Thailand) and the support of the Government of Indonesia, FAO, UNICEF, and WHO.

1759. Motoyama, Tekishu. 1958. Inshoku jiten [Encyclopedia of food and drink]. Tokyo: Heibonsha. 604 p. Illust. 27 cm. [Jap]

• ***Summary:*** Includes listings for the following soy-related terms: Aburage (deep-fried tofu pouches), aemono (Japanese-style salads), agedashi-dofu, daizu (soybeans), dengaku, fu (wheat gluten; but the term "seitan" is not listed in this book), ganmodoki (tofu burgers), gisei-dofu, goma-dofu (sesame tofu), goma-miso (sesame miso), inari-zushi, iri-dofu (scrambled tofu), kenchin-jiru, miso, namemiso, natto, oboro-dofu (soymilk curds), oden (stew), okara, shira-ae (tofu salad), shoyu, sukiyaki, tekka, teriyaki, tofu, tonyu (soymilk), tsuto-dofu, unohana (okara), yakimiso (broiled miso), yuba.

Separate entries, with detailed information, are given for some of the above words or terms.

1760. Richards, Janet; Richards, Charles. 1958. Basic Chinese and Japanese recipes. 3rd ed. rev. and expanded. San Francisco, California: City Lights Books. 75 p. Index of recipes. 17 cm.

• ***Summary:*** Contents: Introduction (General. For epicures, vegetarians, and dieters). Chinese recipes. Japanese recipes. General information: Buffet, party foods & hors d'oeuvres. To brew tea. Special imported ingredients. Where to get ingredients & equipment.

Introduction: "Most of the recipes in this book appear constantly on the menus of the Chinese and Japanese restaurants of San Francisco, New York, and a few other cities that have a population segment with Chinese or Japanese ancestry." Many recipes call for "soy sauce" and up to 1 teaspoon "MSG powder."

The section "For epicures, vegetarians, and dieters" states: "Of the special foods of the Orient, the most versatile is the soy bean. The number of widely differing foods made from soy beans is very large, including bean thread, noodles, soy sauce, soy milk with its derivatives such as dofu, the

fermented nam yu and fu yu of China and miso of Japan. Western food technology has also added to the list."

Soy-related recipes–Chinese: Lo han chai (with dofu and seaweed, p. 19-21). Dofu with oyster sauce ("1 block of Japanese tofu, or 2 cakes of Chinese tofu," p. 22). Steamed fish with dofu (p. 29-30). Chicken in soy (with 1 cup soy sauce, p. 31-32). Chinese sauce [commercial]: Foo yü (sharp thick sauce [fermented tofu]). Jeung yow (soy sauce).

Note: This is the earliest English-language document seen (Oct. 2011) that uses the terms "nam yu" or "fermented nam yu" or "Foo yü" to refer to fermented tofu.

Japanese recipes: Miso soup (with tofu. Miso is "fermented soy beans," p. 48). Konbu salad (with soy sauce, p. 49). Egg plant with miso (p. 50). Turnips in soy (soy sauce, p. 50). Misoyaki (p. 54-55). Joints of chicken teriyaki (with Teriyaki sauce, p. 56). Beef sukiyaki (with tofu, p. 59-60). Beef teriyaki (cook on a hibachi, p. 60). Teriyaki sauce (p. 61; Ingredients: ½ cup table syrup {light cane molasses}, 1 quart shoyu {high quality Japanese soy sauce}, 3/4 lb. sugar, 2 pieces dashi konbu {dried kelp} 6 inches long, ½ teaspoon MSG powder, 2 tablespoons sake). Quick teriyaki sauce (p. 61; Ingredients: 3/4 cup soy sauce, 3 tablespoons sake {or sherry}, ¼ cup sugar, 1 teaspoon grated ginger, ½ tsp. MSG powder). Buta dofu (with "soy bean curd," p. 63).

Special imported ingredients (p. 68-71): Japanese–Canned foods: Bean curd, prepared black soy beans. Packaged foods: Miso (the light variety, fermented soy bean paste). Bottled foods: Fuyü (Chinese bean cake; Order top quality such as Quong Hop brand). Shoyu (soy sauce; Order top quality such as Kikkoman, Higeta, or Marukin). Chinese–Bottled foods: Soy sauce. Black beans (Dow Shee; for black bean sauce).

1761. Tan, Boe Han. 1958. Technology of soymilk and some derivatives. PhD thesis, Agricultural University of Wageningen, Netherlands. 132 p. [10+ ref]*
• ***Summary:*** Includes soymilk, evaporated soymilk, soy curd, soy yogurt. Maps, tables, and statistics for 1955 are given. Address: Proefschrift–Wageningen.

1762. Toyosawa, Isao. 1958. Shokuhin oyobi shiryô no korin ni kansuru kenkyû. II. Tôfu oyobi seizo haieki no korin ni tsuite [Studies on the choline of foods and fodders. II. Choline content in commercially prepared soybean curd and its waste liquor]. *Eiyo to Shokuryo* (*J. of Japanese Society of Food and Nutrition*) 10(6):272-74. [13 ref. Jap; eng]
• ***Summary:*** Retention of total choline was: Okara 10%, soymilk 83%, tofu 45%, and whey (waste liquor) 30%.

1763. Borges, Jose M. 1958? Experimentos com leite de soja [Experiments with soymilk]. Vicosa, Diretoria Geral de Experimentcao e Pesquisa. 3 p. Unpublished manuscript. [Por]*

1764. Dowding, Lady. 1959. Challenges. *British Vegetarian.* Jan/Feb. p. 13-14.
• ***Summary:*** "Becoming a vegetarian is a step in the right direction from three angles, humanitarian, spiritual and physical, but it is not the end of the road. Already I can see the next challenge awaiting us, for to supply milk, butter and cheese nearly all the young bullocks must be slaughtered. There is a plant milk, I hope shortly coming on the market which should ease the next step for many of us."

A photo shows the lovely Lady Dowding, seated, holding a dog by her side. Address: Wife of Air Chief Marshal Lord Dowding.

1765. Rudd, Geoffrey L. 1959. Vegetarianism must be recognized: The British Vegetarian editorial. *British Vegetarian.* Jan/Feb. p. 1-6.
• ***Summary:*** Contents: Introduction. The point of crisis. Facts which are ignored. Points which indicate vegetarianism. Summary and suggestions.

"That the development of plant-milks should be actively encouraged, since these can be more closely adapted to human needs than animal milks, will have a longer shelf life, and be free from several health hazards inseparable from animal milk" (p. 5-6).

Note: This is the earliest English-language document seen (Aug. 2013) that contains the term "plant-milks" (or "plant-milk"–hyphenated). Address: Secretary of the Vegetarian Society.

1766. Johnson, Dale W.; Circle, Sidney J. 1959. Multipurpose quality protein offers "plus" factors. *Food Processing* (*Chicago*) 20(3):36-38, 53-55. March. Reprinted for Central Soya Co., Inc.
• ***Summary:*** Promine isolated soybean protein contains 92% protein, is free of undesirable flavor characteristics, and has no indigestible carbohydrates. Gives a list of almost 100 products in which Promine may be used, including bakery products, cereal products, confections, "dairy type products (Cheddar-type cheese, 'cream', all vegetable,' 'cream cheese,' 'cottage cheese,' flavored drinks, fortified 'milk,' frozen desserts, 'ice cream,' margarine, sour 'cream,' spreads, whipped toppings, 'whipped cream,' 'yogurt'), egg type products, edible coatings, macaroni type products, meat and meat type products, oriental type food products (incl. tofu and yuba), specialty foods, and animal feeds.

Note: This is the earliest English-language document seen (March 2007) that uses the term "Cheddar-type cheese" to refer to a Western-style soy cheese. Address: 1. Manager, Edible Protein Products; 2. Research Associate, Chemurgy Div., Central Soya Co., Inc.

1767. *Vegan* (*The*). 1959. Plantmilk News. 11(4):19. Spring.
• ***Summary:*** "No. 8, February, 1959, reprinted by kind permission of the Plantmilk Society.

"*Plantmilk News* takes pleasure in announcing that retail distribution of the first British plantmilk is planned to begin within a few weeks. Details of this product, which has been conceived and developed since the formation of the Plantmilk Society in June, 1956, are given below."

1768. *Vegan* (*The*). 1959. Soya-based plantmilk. 11(4):19-20. Spring.
• ***Summary:*** "The successful results obtained on a number of babies who have been receiving this plantmilk during the last year have encouraged the manufacturers to make arrangements for large-scale production.

"It is hoped that the product will be put on the market in a few weeks' time under the name 'Wanderlac,' although this is not yet finally decided. The cost will be 6*s.* 8*d.* [6 shillings, 8 pence] for a tin containing one pound of the powder.

"When re-constituted with water, this will make about six pints of a liquid food closely resembling cows' milk in appearance, flavour, and nutritive value.

"The content of nutrients will in general closely resemble that of cows' milk, but in certain respects will be superior to cows' milk and more closely resemble that of human milk.

"Wanderlac can be used as a drink or as an ingredient in puddings and other dishes, replacing cows' milk for infants, children and adults. It should be available from health food stores in a few weeks' time.

"Further details can be obtained from A. Wander Limited, 42 Upper Grosvenor St., Grosvenor Square, London, W.1., who are already supplying Wanderlac to babies urgently needing it: or from Dr. Frank Wokes, King's Langley, Herts.

"The Plantmilk Society has taken a keen interest in the development of Wanderlac from its first conception. In the early days, the Society was able to give some practical assistance to meet an emergency, in a case of a baby who was unable to tolerate cow's milk. Supplies of American plantmilk were made available by the Society to supplement Wanderlac, then without any name and in its first experimental form

"Considerable credit is due to Dr. Frank Wokes for his skilful, persistent, and painstaking work on this piece of original research and development. In his turn, Dr. Wokes has acknowledged the value of the moral support and interest which the Society has been more than glad to afford him in his work.

"To date Wanderlac has been available only in cases of special need, for the feeding of infants unable to tolerate animal milk. There is evidence that in one case at least its use resulted in the saving of a baby's life. Once the product becomes available more generally, the reactions of consumers will be awaited with interest. Wanderlac is primarily intended to meet the nutritional needs of those who for various reasons would prefer not to include animal milk in their diet.

"The Plantmilk Society will retain considerable interest in the future development of Wanderlac. It is pointed out, however, that in future all enquiries concerning this product should be directed as overleaf, and not to the Plantmilk Society.

"It merely remains to wish Wanderlac every success, and to express the pleasure which every member of the society must feel in the fact that this product, so much in line with the Society's object, is about to become generally available."

The next article, titled "Leaf protein research," explains that the Plantmilk Society has been involved in this work since October of this year, when it granted Dr. Franklin a commission to proceed with research.

1769. Borges, José Marcondes. 1959. Revisao de literatura relativa ao valor alimenticio e a digeribilidade da soja e do leite de soja e seus derivados [Review of the literature on the food value and digestibility of soybeans, soymilk, and products made from them]. *Revista Ceres* (*Vicosa*) 10(60):422-36. Jan/April. [36 ref. Por]
Address: Engenheiro Agronomo and MSc, Professor Adjunto de Tecnologia de Produtos de Origem Vegetal da Escola Superior de Agricultura da U.R.E.M.G.

1770. *British Vegetarian.* 1959. Soya-based plantmilk. March/April. p. 65.
• ***Summary:*** This half-page article, reprinted from *Plantmilk News* (Feb. 1959), states: "The successful results obtained on a number of babies who have been receiving this plantmilk during the last year have encouraged the manufacturers to make arrangements for large-scale production.

"It is hoped that the product will be put on the market in a few weeks time under the name 'Wanderlac,' although this name is not yet finally decided. The cost will be 6*s.* 8*d.* for a tin containing one pound of the powder.

"When reconstituted with water, this will make about six pints of a liquid food closely resembling cows' milk in appearance, flavour, and nutritive value.

"The content of nutrients will in general closely resemble that of cows' milk, but in certain respects will be superior to cows' milk and more closely resemble that of human milk.

"'Wanderlac' can be used as a drink or as an ingredient in puddings and other dishes, replacing cows' milk for infants, children and adults. It should be available from health food stores in a few weeks' time.

"Further details can be obtained from A. Wander Ltd., 42 Upper Grosvenor Street, Grosvenor Square, London, W.1, who are already supplying 'Wanderlac' to babies urgently needing it; or from Dr. Frank Wokes, King's Langley, Herts."

1771. Lassiter, C.A.; Fries, G.F.; Huffman, C.F.; Duncan, C.W. 1959. Effect of pepsin on the growth and health of

young dairy calves fed various milk-replacer rations. *J. of Dairy Science* 42(4):666-70. April. [9 ref]
• ***Summary:*** "Data presented in this study support an earlier observation that the feeding of a pepsin-supplemented plant protein milk replacer does not improve the performance of calves." Address: Depts. of Dairy and Agricultural Chemistry, Michigan State Univ., East Lansing.

1772. Miller, Harry W. 1959. Why Japan needs soy milk. *Soybean Digest.* April. p. 16-17.
• ***Summary:*** "It was an opportunity greatly appreciated to study the needs of the Japanese people nutritionally during my 7 months' responsibilities as surgeon and physician at the Tokyo Sanitarium and Hospital... The idea of a soybean beverage and milk from the soybean for soups and cooking was something altogether new... We set us a small pilot plant where we made soy milk, soy cream, soy ice cream, and soy spread... After seeing the ready acceptance by the nursing staff and patients of the Tokyo Sanitarium and Hospital of soy milk and soy cream made daily from a small fabricated plant of equipment procurable in Japan, we conceived the idea of such additions to be made to the tofu plants... We fitted up a small tofu plant out in a rural district with a homogenizer and a few utensils for milk handling. The milk is being bottled and capped there, and the local community is most appreciative. Since it sells at half the cost of fresh dairy milk it leaves a modest profit for the local shop."

1773. *Soybean Digest.* 1959. Soy milk study published in Netherlands [by Tan Boe Han]. April. p. 30.
• ***Summary:*** A review of the work titled *Technology of Soymilk and Some Derivatives* (140 p.). Tan published it for his doctoral thesis at the Agricultural Univ. of Wageningen, Netherlands.

1774. Holzel, A.; Schwarz, V.; Sutcliffe, K.W. 1959. Defective lactose absorption causing malnutrition in infancy. *Lancet* i(7083):1126-28. May 30. [3 ref]
• ***Summary:*** Weight charts and sugar absorption tests showed that two siblings were unable to metabolize / utilize the lactose in mother's milk. The two infants experienced a large number of stools, flatulence, and colic. Since lactose, a disaccharide (complex sugar), is not normally absorbed as such, but is hydrolyzed into its component hexoses [sugars] by the intestinal enzyme, lactase, it seems reasonable to assume that the problem is a failure to hydrolyze lactose. This may be due to a deficiency of lactase or to its inhibition. Neither parent had this problem. When we realize that lactose is the only carbohydrate present in any quantity in milk and normally accounts for about 40% of its total calories, it is not surprising that a failure to utilize this sugar results in a failure to gain weight.

Note: This is the earliest document seen (Oct. 1999) concerning "lactose intolerance"–although that term is not used and the milk is mother's breast milk. Soy is not mentioned. Address: 1. Child Health; 2. Chemical Pathology, Depts. of Child Health and Pathology; 3. Biochemist, Booth Hall Hospital for Sick Children. All: Univ. of Manchester.

1775. **Product Name:** Wanderlac. Renamed Velactin by 1961.
Manufacturer's Name: A. Wander Ltd.
Manufacturer's Address: 42 Upper Grosvenor St., Grosvenor Square, London, England.
Date of Introduction: 1959. May.
Ingredients: Incl. soybeans.
New Product–Documentation: *Plantmilk News.* 1958. May. No. 5. The "makers have decided to give it a trial on the market in powder form."

Plantmilk News. 1959. Feb. A number of babies have been receiving this plantmilk during the past year with good results. The manufacturers hope to launch the product as a powder in a few weeks under the name Wanderlac, although the name has not yet been finalized. A tin containing 1 pound of the powder will retail for about 6 shillings, 8 pence. When reconstituted with water, this will make about 6 pints of a "liquid food closely resembling cow's milk in appearance, flavour, and nutritive value." For details contact A. Wander Ltd., 42 Upper Grosvenor St., Grosvenor Square, London, W.1. (the company is already supplying Wanderlac to babies who need it urgently), or contact Dr. Frank Wokes, King's Langley, Herts.

The British Vegetarian. 1959. July/Aug. p. 139. One outcome of the work of Dr. Frank Wokes with vitamin B-12 was the development of a new soymilk product, fortified with vitamin B-12 and launched recently under the name Wanderlac by A. Wander Ltd., which also makes Ovaltine.

The British Vegetarian. 1959. July/Aug. p. 153. "Plantmilk is here!" This product, made by A. Wander Ltd., has been in existence for some months, but only limited quantities are available, solely for the treatment of sick children.

Note 1. When exactly was Wanderlac first sold commercially?

Note 2. Was the soymilk made from whole soybeans or from soy protein isolates?

Note 3. It is hard to say if Wanderlac was conceived to be purely an infant feed, but that is certainly how it was initially used before being launched commercially, and how it was referred to by third parties (i.e., The Plantmilk Society).

1776. **Product Name:** Dr. Fearn's Pure Soya Bean Powder: For Making Soya Milk.
Manufacturer's Name: Fearn Soya Foods.
Manufacturer's Address: 1206 N. 31st Ave., Melrose Park, Illinois.
Date of Introduction: 1959. May.

Wt/Vol., Packaging, Price: Bag.
How Stored: Shelf stable.
New Product–Documentation: Francis Kalnay. 1959. House Beautiful. May. p. 174-75. "Soybean has all the answers." Photo of the label. At the top of the bag is an illustration (line drawing) a lady holding up a glass of soymilk. The front panel text reads: "A pure vegetable product. Pleasant, nut-like flavor. Rich in high grade protein, vitamins, and minerals. Contains no starch. Definitely alkaline. Low sodium. Use as regular milk."

1777. Davis, R.N. 1959. The soyabean deserves to be grown. *Indian Farming* 9(3):35, 37, 38. June. Series 2.
• ***Summary:*** Contents: Introduction. Food value. Many uses (soyabean flour, milk, and sauce). Dependable crop. Yeotmal trials. Nine [maturity] groups. Soyabean vs. groundnut.

Trials with 28 varieties of soyabeans were conducted at Yeotmal, Vidarbha, in eastern Maharashtra state in central India, from 1953 to 1958, under the direction of Dr. Jackson Cartter of the University of Illinois. Of the 28 varieties, 23 were from the USA and 5 were from India. He also sent soyabean inoculum.

A table shows the results of the trials. Five columns show variety name, number of years raised, seed spacing in rows (in inches), percentage of germination, average yield per acre in maunds (1 maund = 37.3242 kg). The best yields by far came from Mamotan (24.19), followed by Acadian (19.31) Improved Pelican (16.32), and Biloxi (16.50).

1778. Edelsoja GmbH. 1959. Sojabohnen, Edelsoja-Puder [Soybeans, and Edelsoja powder (Ad)]. *Ernaehrungs-Umschau* 6(3):85. May/June. [Ger]
• ***Summary:*** This company sells soybeans for the production of soymilk, soya quark (*Sojaquark* = [tofu]), and soy sprouts. It also sells Edelsoja powder, ready for use in cooking. Direct delivery or via distributors. Telegram address: Edelsoja.

Note: This is the earliest German-language document seen (April 2013) that uses the word *Sojaquark* to refer to tofu (one of two documents). Address: Duesseldorf 1, Birkenstrasse 41, Postfach 8004, Germany. Phone: 66 34 61.

1779. Kring, W. 1959. Sojamilch und Sojaquark: Der Mixer erschliesst ostasiatische Sojagerichte [Soymilk and tofu: The electric blender opens new opportunities for East Asian soybean dishes]. *Ernaehrungs-Umschau* 6(3):86-87. May/June. [Ger]
• ***Summary:*** Contents: Introduction. Fresh soymilk for every household. Acidophilus-soymilk (Sojaquark). Tofu.

Tables show: (1) Nutritional composition of soymilk (*Sojamilch*). (2) Nutritional composition of tofu (*Sojaquark; Tofu*).

Note: This is the earliest German-language document seen (April 2013) that uses the word *Sojaquark* to refer to tofu (one of two documents).

Photos show: (1) Edelsoja-GmbH soybeans (*Sojabohnen*) No. 97/57. (2) From the soybean to soymilk. (3) An electric blender; an appliance which can be used to transform soaked soybeans into soymilk at home. The soymilk can then be made into chocolate pudding or vanilla sauce. (4) Soymilk with a little vinegar added as a curding agent. After pressing the resulting Quark does not taste sour at all. (5) After it is pressed in a linen sack, Sojaquark / Tofu is known as the meat without bones (*Fleisch ohne Knochen*). Address: PhD, Duesseldorf, West Germany.

1780. Barnes, George R., Jr. 1959. Acceptance of a soya food by infants. *American J. of Diseases of Children* 98(1):1-5. July. [5 ref]
Address: Dep. of Pediatrics, College of Medicine, State Univ. of Iowa.

1781. Fomon, Samuel J.; May, Charles D. 1959. The adequacy of soya bean protein in promoting nitrogen retention in infancy: Preliminary study. *American J. of Diseases of Children* 98(1):6-10. July. [5 ref]
Address: Dep. of Pediatrics, College of Medicine, State Univ. of Iowa, Iowa City.

1782. *British Vegetarian.* 1959. A vegetarian research centre. July/Aug. p. 138-40.
• ***Summary:*** A vegetarian research laboratory is being established in the Science Department of Stanborough School, Watford, Herts., England. Seventh-Day Adventists, who administer the Stanborough School, are making great efforts to raise funds to support the research. The laboratory will conduct nutritional investigations, focusing particularly on vegetarianism. Dr. Frank Wokes has been invited by the school board to organize the research. A life-long vegetarian, he is well known for his nutritional research during the last 18 years at the Ovaltine Research Laboratories. He has been a pioneer in showing the importance of vitamin B-12 in vegetarian diets and in improving the quality of vegetable protein. One outcome of this work was the development of a new soyamilk product, fortified with vitamin B-12 and launched recently under the name Wanderlac by A. Wander Ltd., which also makes Ovaltine. "This first British plantmilk has been used with success to replace milk in various allergic conditions, including the disease galactosaemia" [galactosemia].

Note. This is the earliest English-language document seen (Aug. 2013) that contains the term "replace milk" in connection with soyamilk.

Stanborough School provides a particularly suitable site for the research center, in part because it was the site, 27 years ago, of the first Experiments in Great Britain on the basal metabolism of vegetarians. The results were published in the *Journal of Biological Chemistry* (1932).

A photo shows the new laboratory at Stanborough Park.

Note: *Webster's Dictionary* defines galactosemia (a term first used in 1934) as "an inherited metabolic disorder in which galactose accumulates in the blood due to deficiency of an enzyme catalyzing its conversion to glucose."

1783. *British Vegetarian.* 1959. Plantmilk is here! July/Aug. p. 153.
• ***Summary:*** Vegetarians in Britain will be glad to know that "the first step towards overcoming dependence on dairy produce has been achieved with the of 'Wanderlac' to the market, to take the place of cow's milk." This product is made by A. Wander Ltd., manufacturers of the well-known Ovaltine. Though it was introduced some months ago, only very limited quantities have been available, solely for the treatment of sick children, "with such marked success in certain cases that the medical profession has become very interested indeed in its remedial uses."

The protein in Wanderlac is derived entirely from soyabeans, and its amino acid pattern is said to be similar to that of cow's milk. D.L.-Methionine, a limiting essential amino acid, and vitamin B-12 are added to increase the protein quality.

A table compares the nutritional composition of Wanderlac (reconstituted), cow's milk, and human milk. Wanderlac and cow's milk both contain 3.3% protein, vs. only 1.0% in human milk. Wanderlac contains 2.6% fat vs. 3.7% in cow's milk and 3.8% in human milk. Appreciation is expressed to the Plantmilk Society, to Dr. Frank Wokes, and to Messrs. A. Wander Ltd. "whose concerted efforts have resulted in this achievement, which brings vegetarians another step nearer to their final goal of a completely humane way of life."

Note. This is the earliest English-language document seen (Aug. 2013) that contains the term "Plantmilk Society."

1784. Dees, Susan C. 1959. Allergy to cow's milk. *Pediatric Clinics of North America* 6(3):881-900. Aug. [60* ref]
• ***Summary:*** Soy formula was used in the treatment of allergic diseases.

1785. Melo, Maria de Lourdes. 1959. O emprego da soja na alimentaçao da criança [The use of soya as a food for children]. *Boletim de Agricultura* (*Belo Horizonte, Brazil*) 8(7/8):41-46. July/Aug. [Por]
• ***Summary:*** Contents: Technique for preparing homemade soymilk enriched with calcium. Soymilk curds (*coalhada do leite de soja;* curded with lemon juice). Use of powdered egg shell to enrich soymilk with calcium. Okara *farofa–"Farofa 'Flôr de sabugueiro* (*U no hana, do japonês*)*."*

Soymilk mush or porridge (*angu*). Soya paçoca. Soy sweet with brown sugar (*Doce de soja com rapadura*). Soynut brittle (*Pé de moleque de soja;* like peanut brittle). Soy chocolate. Salted, roasted soynuts (*soja torrada em graos, salgadinhos*). Soya *acarajé* (*acará;* a cake of cooked beans fried in dende-palm oil). Address: Dietista do Departamento Estadual da Crianca–Sec. de Saude e Assistencia.

1786. Sapin, P. 1959. Le soja dans le monde [The soybean in various countries of the world]. *Bulletin Agricole du Congo Belge et du Ruanda-Urundi* 50(4):897-948. Aug. [39 ref. Fre; dut]
• ***Summary:*** This articles focus on soya at Yangambi in the Belgian Congo. Content: Introduction. 1. Historical and worldwide distribution. 2. Climatic adaptation: Comparison of the climates in Harbin (central Manchuria) and Yangambi (near the equator), photoperiodic and thermal characteristics of soybeans, comparative study of the behavior of soya at Yangambi and its main zones of cultivation, eco-climatic chart of soya, classification of soybeans (*des sojas*) into fundamental climatic types and directives for the realization of their introduction to Yangambi.

3. Selection: Classification of the soybean varieties, genetics, and selection. 4. The cultivation of soya. 6. Characteristics of the seed and its utilization: Composition of the seed, Oriental preparations based on soya (soy sprouts, soymilk, tofu, natto, Hamanatto, yuba, miso, soy sauce or shoyu), soy oil and by-products, soybean cake, use of soya in the West. 7. A glance at soybean production. 8. The situation in the Belgian Congo.

The author identified a number of soybean varieties adapted to different ecological zones in the tropics, which helped soybeans spread to tropical countries, especially in Africa. Address: Assistant à la Division des Plantes Vivrières de l'INÉAC, à Yangambi [Belgian Congo].

1787. Chhabra, Arun K. 1959. The scope of soybeans in India. *Soybean Digest.* Sept. p. 26-27.
• ***Summary:*** Mr. Chhabra, who helped the Soybean Council of America (SCA) at two fairs, in New Delhi (with Howard Roach, president of SCA) and Calcutta (with Fred Hafner of General Mills), will enter Iowa State University this fall. "A little less than 2 million people attended the fair at each place," from poor peasants to Prime Minister Nehru.

"At Calcutta alone we distributed 200,000 pamphlets, mainly among adults. At our booth we had hung up some signs, notably, 'Soybeans for Healthy and Strong Bodies,' and 'Soybean Story–A Possible Solution to India's Food Problem.' Scores of people would gather around the booth and ask for an explanation.

We had kept the soybean oil, soy flour, and toasted soy proteins side by side on a table and we would explain to the people the importance and use of each of them. Particularly we told them that 2 ounces of soy proteins when mixed with a pound of rice double the protein content of the food and cost only 1½¢ in India. Many people took coins from their pockets and asked for the vials. Needless to say they felt disappointed when we told them we did not sell them."

The many women visitors "were interested in soybean oil, soy flour, soy milk, and various other baby foods."

"In collaboration with the wheat people we prepared large quantities of doughnuts daily and distributed then freely among children, students, special invitees," etc.

The fair was just one of the SCA's activities in India. "In order to create a market in another country you have to have (a) a genuine demand by the general public, (b) cooperation of the local business and industry, dealing in the same kind of article, and (c) approval by the government."

"Most of the population is vegetarian and though the number of cattle is larger than anywhere in the world, religious proscriptions, both Buddhist and Brahmanist, help keep down the consumption of animal protein. Thus the diet in the North mainly consists of whole wheat bread and vegetables, while in the greater part of the country rice is eaten with vegetables and with small quantities of vegetable oils and fish. However, as there is comparatively more consumption of milk and its derivatives in the North, the people are healthier than their brethren living in the South." A small photo shows Arun K. Chhabra. Address: Nagal Township, India.

1788. Wokes, Frank. 1959. Vegetable diets and nutrition (Letter to the editor). *New Scientist* 6(150):595-96. Oct. 1. [1 ref]

• ***Summary:*** "Plantmilks based on soya are being used in America to treat milk allergies in infants. The first British plantmilk, Wanderlac, has just been put on the market, after two years' trial on infants suffering from such allergies, especially galactosaemia..." (p. 596, col. 1). Address: Vegetarian Nutritional Research Centre, Stanborough Park, Watford, Herts. [England].

1789. Fomon, Samuel J. 1959. Comparative study of human milk and a soya bean formula in promoting growth and nitrogen retention by infants. *Pediatrics* 24:577-84. Oct. [15 ref]

• ***Summary:*** Four infants (4-6.5 months of age) were fed a diet based on a full-fat soya extract, which was "made from full fat flour from the whole bean." Their mean protein intake was 1.7 g/kg body wt./day. All children gained as much weight as normal infants fed on human milk. Address: M.D., Dep. of Pediatrics, College of Medicine, State Univ. of Iowa, Iowa City.

1790. *FAO Nutrition Meetings Report Series.* 1959. Report of the FAO/UNICEF Regional School Feeding Seminar for Asia and the Far East. No. 22. 53 p. Held 10-19 Nov. 1958 at Tokyo, Japan. [5 soy ref]

• ***Summary:*** UNICEF stands for the United Nations International Children's Emergency Fund. Appendix 3 (p. 48-51) titled "Data on some nutritious food products that have been developed in Asia and the Far East," discusses Saridele, groundnut extract curd [tofu made from peanut milk], Indian Multipurpose Food (MPF, developed by CFTRI), miso, natto, and tempeh.

"'Saridele' is the name that has been given to a spray-dried soybean extract combined with an extract of sesame, or peanut, with or without the addition of malt. Vitamins and calcium are added to saridele in order to make its nutritive value similar to that of cow's milk or to enhance its nutritive value. Flavorings such as vanilla or chocolate are also used, which make the product highly acceptable.

"A plant having a capacity of about 800 kg./day has been erected in Indonesia with the financial assistance of UNICEF and the technical assistance of FAO. Saridele is manufactured from a mixture of soybeans and decorticated sesame in the proportion of 4:1. Malt extract from maize may be used to replace 50% of the cane sugar used. Soybean and sesame are soaked for about six hours and then disintegrated finely, together with 7 volumes of hot water. The slurry is stirred vigorously and then filtered. The filtered liquid is heated under pressure for 10 minutes at 120ºC., then flashcooled and formulated with Vitamin A, in oil solution, and malt, if desired. The formulated liquid is homogenized, concentrated in a vacuum evaporator to about 22% solids, then spray-dried. The powder finally is sifted and blended with finely ground cane sugar, and calcium carbonate, riboflavin, ascorbic acid and Vitamin B_{12} added; the mixture may be flavored with vanilla or chocolate." A table compares the nutritional composition of whole dried cow's milk and Saridele (based on a leaflet from Saridele Ltd., Indonesia). Address: FAO, Rome.

1791. Shurpalekar, S.R.; Lahiry, N.L.; Chandrasekhara, M.R.; Swaminathan, M.; Indiramma, K.; Subrahmanyan, V. 1959. Studies on milk substitutes of vegetable origin. I. The nutritive value of milk substitutes prepared from soyabean and groundnut. *Annals of Biochemistry and Experimental Medicine* (*Calcutta*) 19(11):269-74. Nov. [8 ref]

• ***Summary:*** Albino rats showed good growth with "soyabean milk" fortified with calcium and vitamins. The soybean milk was stabilized by the addition of disodium phosphate and sodium citrate, and fortified by the addition of calcium phosphate, vitamins A and D, and riboflavin. Table 1 shows the composition of the fortified soyabean milk, groundnut milk, 2:1 blend of soybean and groundnut milk, blend of vegetable and cows milks, and modified reconstituted cow's milk. Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

1792. Van Wyk, Judson J.; Arnold, M.B.; Wynn, J.; Pepper, F. 1959. The effects of a soybean product on thyroid function in humans. *Pediatrics* 24(5):752-60. Nov. [17 ref]

• ***Summary:*** A 10-month old infant reared from birth on Mull-Soy, a soy-based infant formula, developed a goiter and hypothyroidism, which was cured by the administration of 4

drops of Lugol's solution and the replacement of the soybean product by whole cow's milk.

Studies in normal adults showed that this soybean product did not interfere with the absorption of iodine, iodine uptake by the thyroid, oxidation of iodide to iodine, or the release of PBI-131 in most subjects. However two subjects who had a high plasma level of PBI-131 while receiving whole cow's milk, had a significant suppression in the PBI-131 while receiving this soybean product.

"These studies suggest that a goitrogenic agent was present in this particular soybean product, which interfered with thyroid hormone synthesis in susceptible individuals, and which raised the daily requirement for iodine."

Footnote: This work was supported in part by a grant from the Borden Company [makers of Mull-Soy]. Address: 1. M.D., Dep. of Pediatrics and Radiology, Univ. of North Carolina School of Medicine, Chapel Hill, NC; and Depts. of Medicine, Veterans Administration Hospital; and Duke Medical Center, Durham, NC.

1793. Takeda, Hiroshi. 1959. Nyûji tanpaku taisha ni kansuru kenkyû. I. Bonyû eiyôji narabini jinkô eiyôji no chisso taisha ni kansuru kenkyû [Studies on the protein metabolism in infants. I. A study on the nitrogen metabolism in infants brought up on mother's milk and in those on an artificial diet]. *Nippon Shonika Gakkai Zasshi* (*Acta Paediatrica Japonica*) 63(9-12):3105-12. Dec. 1. [43 ref. Jap; eng]
Address: Okayama Daigaku Igaku-bu, Shoni-ka, Kyo-shitsu (Dep. of Pediatrics, Okayama Univ. Medical School).

1794. Taira, Harue; Ebisawa, H.; Sugimura, K.; Sakurai, Y. 1959. Daizu kakôhin no amino-san ni kansuru kenkyû. I. [Studies on amino acid contents of processed soybean. I. Total amino acids of soybean products (Abstract)]. *Shokuryo Sogo Kenkyujo Kenkyu Hokoku* (*Report of the National Food Research Institute*) No. 14. p. 95. Dec. [1 ref. Jap]
• ***Summary:*** Amino acid content of the following are given: Two soybean varieties, tofu, deep-fried tofu pouches (abura-age), okara, dried frozen tofu, yuba, kinako, natto, and soymilk. Reprinted from *Eiyo to Shokuryo* 11(6):351 (1959).
Address: 1-2. Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1795. Taira, Harue; Ebisawa, Harue; Sugimura, Keiichiro; Sakurai, Yoshito. 1959. Daizu kakôhin no amino-san ni kansuru kenkyû. II. [Studies on amino acid contents of processed soybean. II. Transfer of amino acids during "tofu" processing (Abstract)]. *Shokuryo Sogo Kenkyujo Kenkyu Hokoku* (*Report of the National Food Research Institute*) No. 14. p. 96. Dec. [1 ref. Jap]
• ***Summary:*** A table shows the percentage of the basic amino acids that are transferred from dry soybeans to boiled soybeans, then to fresh soy puree (gô), okara #1, okara #2 wash, soymilk, tofu, soybean boiling water, and yuba.
Address: 1-2. Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1796. Takeda, Hiroshi. 1959. Nyûji tanpaku taisha ni kansuru kenkyû. II. Rin yûki eiyô shitcho nyûji no chisso taisha ni oyobosu rijin tôyo no eikyô [Studies on the protein metabolism in infants. II. Influences of lysine administration on the nitrogen metabolism in infants with malnutrition at weaning time]. *Nippon Shonika Gakkai Zasshi* (*Acta Paediatrica Japonica*) 63(9-12):3113-19. [30 ref. Jap; eng]
Address: Okayama Daigaku Igaku-bu, Shoni-ka, Kyo-shitsu (Dep. of Pediatrics, Okayama Univ. Medical School).

1797. Borges, José Marcondes. 1959. Revisao de literatura relativa aos sais minerais e as vitaminas da soja e do leite de soja [Review of the literature on mineral salts and vitamins in soybeans and soybean milk]. *Revista Ceres* (*Vicosa*) 11(61):36-47. [20 ref. Por]
Address: Engenheiro Agronomo and MSc, Professor Catedratico de Tecnologia de Produtos de Origem Vegetal de ESA da UREMG.

1798. **Product Name:** Soymilk.
Manufacturer's Name: Mountain View College.
Manufacturer's Address: Mindanao, Philippines.
Date of Introduction: 1959.
New Product–Documentation: Letter from Eric C. Fehlberg, Director, International Health Food Assoc. 1990. May 24. This organization no longer makes foods.

1799. Soedarmo, Poorwo. 1959. Vegetable protein as cow's milk substitute. In: Proceedings of the 15th General Assembly, Japan Medical Congress. See vol. 1, p. 492. *
• ***Summary:*** Orr and Adair (1967) state that the author presented an undated paper by this title at the "Symposium on Problems of Nutrition in Asian Countries." Includes a discussion of Saridele, a spray-dried soy milk made in Indonesia. "The equipments are highly technical, the receiving country is technically not well-developed, and this arouses problems in the selection and the ordering, the transportation, the installation and the exploitation of the equipment."

Tempeh is an Indonesian preparation. It may be eaten on its own, after roasting or frying, or used in soups. It is also used in a dry form. It is said that about 60 million of the 90 million inhabitants of Indonesia include tempeh in their daily menu.

1800. Figueiredo Paz, Ataliba de. 1959. Uma planta cuja cultura deve ser estimulada [A plant whose cultivation should be encouraged]. In: 1959. Soja no Rio Grande do Sul. Secretaria da Agricultura (Companha da Produtividade Agricola): Porto Alegre. See p. 63-76. Chap. 7. [Por]
• ***Summary:*** Thirty years ago Professor Ataliba de Figuerido

Paz conducted many soybean experiments at the Escola de Agronomia e Veterinaria da Universidade do Rio Grande do Sul, Brazil. A table shows imports of soybeans in 1919, 1920, and 1921 from China (the main supplier), Japan, the USA, and other countries. Discusses the main varieties grown in Brazil, medium- and late varieties, soybean pests, soya in human nutrition, how soymilk is made from soybeans, soya–an excellent forage. Address: Escola de Agronomia e Veterinaria da Universidade do Rio Grande do Sul, Brazil.

1801. Kon, S.K. 1959. Milk and milk products in human nutrition. *FAO Nutritional Studies* No. 17. 75 p. [14 ref]
• ***Summary:*** The author wisely points out: "It stands to reason that milk, which only for a limited time and with certain reservations is the ideal food for the young of any one species, is further restricted in value when used by another species, and the limitations of milks of domesticated animals in human nutrition must be frankly accepted and understood."

Fomon and Filer (1974, p. 359) add: "In this respect, it is worth noting that growth rates of the human infant and the calf are quite different, the human infant requiring about twice as long as the calf to double his birth weight (100 versus 50 days). Thus, the ratio of nutrient requirement for growth to that for maintenance will be greater for the calf than for the human infant. Furthermore, protein and minerals account for smaller percentages of weight gain in the human infant than in the calf. It is, therefore, not surprising that cow milk is richer in protein and minerals than is human milk."

Under soured and fermented milks, the author discusses: Sour milk (called *lait caillé* in France, *Dickmilch* in Germany, and *fiili* in Sweden), long milk (called *langmjölk* or *tättemjölk* in Sweden, *taette* in Norway, and *pitkäpiimä* in southwestern Finland), yoghurt, laban and dahi, cultured yoghurt, kefir (from the Caucasus), kumiss (prepared from mare's milk which contains more lactose than cow's milk; may contain up to 3% alcohol), kurunga, chal, and lassi (sour buttermilk remaining after the churning of butter from dahi in the manufacture of ghee), buttermilk (the acid by-product of the churning of butter into sour cream), cultured buttermilk, acidophilus milk (made with a pure culture of *Lactobacillus acidophilus* which has largely replaced *L. bulgaricus* for this purpose), and nutritive value.

Page 59 notes that in Europe, three different levels of milk consumption are found. It is highest in Scandinavia (excluding Denmark), Finland, and Switzerland, where it is in the order of 300 kg per person per year. In the rest of western Europe and in Denmark it ranges from 170 to 220 kg. In southern Europe, it is in the order of 100 kg, except in Portugal where it is only about 30 kg.

Note: Per capita consumption of margarine roughly follows the same pattern as that of milk.

All infants possess lactase, the enzyme needed to digest the sugar lactose–but most lose it after weaning.

Even if a woman is undernourished, the amounts and composition of the major nutrients in her milk change little, as shown in Nazi concentration camps, but the volume of her milk decreases, as do its content of riboflavin and thiamine.

There are two types of protein in milk, casein and the water soluble proteins [alpha and beta lactalbumins], which are obtained from whey and which dissolve in whey.

The bacterial vat or rumen is also called the "paunch." Here bacteria use simple nitrogenous compounds, such as ammonia or urea, to build up their own protein, which they then digest. So the value of the protein in an animal's food is not all that important. All the vitamins of the B group are also synthesized in the paunch. In young ruminants, the paunch activity does not develop until several weeks after birth. The mare [female horse] and ass [donkey and other members of the subgenus *Equus*] are the only nonruminant milk animals. Their milk is closest in composition to that of humans.

In the early days, animal proteins were thought to be superior to vegetable proteins. But progress in nutritional science has shown that some of the superiority was due to vitamins and minerals associated with the protein in animal products. Moreover, it is the amino acids, not the proteins, that count.

Milk has its best complementarity with cereals and potatoes.

Pasteurization of milk has several results: It kills bacteria, and it inactivates enzymes such as lipase, which cause bitter milk. It also destroys 10% of the thiamine, 10% of the vitamin B-12, and 20% of the vitamin C in milk.

UHT [ultra-high temperature] processing destroys 90% of the vitamin B-12 in milk.

Metchnikov's ideas gave fermented milks a good image, but it is probably not correct. "There is as yet very little evidence that the particular organisms of the fermented milks, even those specifically prepared for the purpose, can establish themselves and throve in the gut." So there are probably no healing effects of fermented milk products.

There are two types of butter: sweet butter is found in the USA, whereas that made from ripened soured milk is European. It has a prized flavor but short shelf life.

Some pastoral tribes in Africa [such as the semi-nomadic Maasai / Masai of Kenya and northern Tanzania] sometimes live exclusively on milk.

After World War II, governments and the United Nations' UNICEF took increasing responsibility for the nutritional welfare of children, especially those of the lower-income groups. Supplementary child feeding programs have taken two forms: school feeding programs and food distributed through maternal and child health centers. Address: National Inst. of Dairying, England.

1802. Rio Grande do Sol, Brazil, Secretaria da Agricultura,

Industria e Comercio. 1959. Soja no Rio Grande do Sul [Soya in Rio Grande do Sul]. Porto Alegre. 83 p. (Campanha da Produtividade Agricola). [Por]
• ***Summary:*** Contains 8 chapters by different Brazilian authors; each is cited separately. Address: Brazil.

1803. Servico Social da Industria (SESI). Secretaria da Agricultura. 1959. Receitas de soja [Soybean recipes]. In: 1959. Soja no Rio Grande do Sul. Secretaria da Agricultura (Companha da Produtividade Agricola): Porto Alegre. See p. 77-83. Chap. 8. Excerpted from A Soja. ed. Servico Social da Industria. Dept. Regional do R.G. do Sul. [Por]
• ***Summary:*** Contents: 1. How to extract soymilk from 250 gm of soybeans. Condensed soymilk. Soymilk made from whole soy flour. 2. Recipes based on soymilk: Yogurt, soy cheese [tofu], soymilk *batida* (milk shake), ambrosia, gelatin with fruits and soymilk, souffle with soymilk, soymilk pudding. 3. Recipes made with with soy residue (*com resíduos de soja):* Soya *docinhos* with condensed milk, croquettes, Adventist roast. 4. Dishes made with whole soy flour. Recipes excerpted from "A Soja" (Serviço Social da Industria, Departamento Regional do Rio Grande do Sul). Address: Porto Alegre, Brazil.

1804. Taira, Hirokadzu; Ebisawa, H.; Sugimura, K.; Sakurai, Y. 1959. Daizu kakô-hin no amino-san in kansuru kenkyû. II. Tôfu seizô kôtei ni okeru amino-san no suii [Studies on amino acid contents of processed soybeans. II. Transfer of amino acids during "tofu" processing]. *Eiyo to Shokuryo* (*J. of Japanese Society of Food and Nutrition*) 11(6):355-57. [1 ref. Jap; eng]
• ***Summary:*** The amino acid pattern of tofu was quite similar to that of the soybeans from which it was made, except that a significant amount of tyrosine ends up in the okara, as do smaller amounts of methionine and tryptophan. Address: National Food Research Inst., Tokyo.

1805. Thompson, Edna. 1959. The yoga cook book. New York, NY: Philosophical Library. 156 p. Index. 19 cm.
• ***Summary:*** The Yoga diet, as presented here, is not vegetarian. This book contains recipes for meat (liver, heart), fish, and shellfish. "Yogans" are said to eat at least some food each day which carries the life principle (fresh, raw food), to prefer whole foods in modest amounts, to avoid inert demineralized foods (such as white flour and white sugar), and alcohol. Yoga is not a religious movement; its followers practice self discipline in eating, without fasting. The rear dust jacket states: "This book banishes the idea that the modern Yogin as an ascetic with caveman dietary habits." The true Yogin regards his food as sacred and has heightened powers.

Soy-related recipes include: Soybean soup (p. 18). Shoyu sauce (soy sauce, p. 26). "Auxin" salad (freshly sprouted mung beans sprinkled with soy oil, etc., p. 48). Eggs foo yung (with bean sprouts, water chestnuts, green onion, celery, 4 beaten eggs, salt to taste. "Brown desired size patties of the mixture in soy oil." Serve with a brown sauce made with cornstarch, soy sauce, monosodium glutamate, sugar, and salt. p. 58-59). Vegetable sukiyaki (with Tofu {bean curd} and shoyu sauce, p. 65). Soyburgers (with mashed cooked soybeans, p. 66). Vegetable chop suey (with soy oil, bean sprouts, and soy sauce, p. 68). Korean soybean noodles (made with soybean flour, p. 72). Soy spoon bread (with soy flour and soy oil, p. 97-98). Making soy bean cheese (tofu, coagulated with vinegar, p. 104). Yoga puddings and desserts (white flour is replaced by soy flour and lard is replaced by soy oil, p. 114). Chinese sweet soy beans (p. 122). Manchurian soy bean milk drinks (p. 136).

Also discusses: Japan yokan cakes (with red beans [azuki], p. 116-17). Oat peanut butter wafers (p. 123). Red bean cake (Korea, with red kidney beans [azuki], p. 131-32).

Note: This is the earliest document seen (Jan. 2009) that describes the use of soy ingredients in Korean-style recipes outside Korea.

1806. Raheja, P.C. 1960. So many uses has the soybean. *Indian Farming* 9(10):18-19. Jan. Series 2.
• ***Summary:*** Contents: Introduction. Green manure. As fodder. Soybean oil and cake. As human food. Food include "the green pods," soybean flour, soy milk, and "soy curd" or tofu. "Soy curd is prepared out of soy milk by adding milk curd to it. You can also add acetic acid instead of milk curd." Address: Indian Agricultural Research Inst., New Delhi.

1807. Hydovitz, Jerrold D. 1960. Occurrence of goiter in an infant on a soy diet. *New England J. of Medicine* 262(7):351-53. Feb. [15 ref]
• ***Summary:*** A boy, age 4½ months, had an enlarged thyroid gland indicating possible goiter. His skim milk formula was "replaced by a popular soybean formula, which served as the sole nutrient except for vitamins A, C and D until the laboratory studies here reported were completed at 6 months of age." The soy formula was apparently made from soy flour, but the name of the manufacturer is not given. After substituting whole milk for the soy formula, the thyroid problem gradually disappeared. Address: Univ. of Pittsburg School of Medicine, Pennsylvania.

1808. McNaughton, Jean W. 1960. The soya-bean–Its properties and nutritive values. *Rural Missions* No. 112. p. 8. Winter. [1 ref]
• ***Summary:*** As human populations increase, animal populations decrease increasing the need for plant proteins. This article focuses on soya milk. "Details of the step by step processing of the soya-bean in its various uses may be obtained from FAO, 1325 C Street S.W., Washington 25, DC." Address: Regional Nutrition Officer, FAO, Washington, DC.

1809. American Soybean Association. 1960. Soybean Blue Book. Hudson, Iowa: American Soybean Assoc. 144 p Advertisers' index. 22 cm.

• ***Summary:*** Contents: American Soybean Association. Japanese American Soybean Institute. National Soybean Processors Association. Soybean Council of America. Midsouth Soybean and Grain Shippers Association. Ontario Soya-Bean Growers' Marketing Board. U.S. Department of Agriculture: Agronomic Research (ARS), Disease Research, Entomological Research, Utilization Research and Development (Northern Utilization Division [NRRL], Eastern, Southern, Western), Marketing Research.

Tables: (1) World soybean production. (2) Canadian soybean production. (3) Soybean production, utilization and value, 1936-1959 Canada. (4) Soybean crushings in Canada. (5) Soybean production–United States (with acreage and yield), 1924-1959. (6) U.S. Soybean production by states (1959). (7) U.S. soybean production, supply, and utilization (incl. exports, carryover), 1924-1959. (8) U.S. soybean production, acreage, and yield by state, 1924-1959. (9) U.S. soybeans: Inspected receipts. (10) U.S. soybeans–supply and distribution, 1952-1959 (1,000 bushels). (11) U.S. Soybean oil meal and cake production, supply and utilization, 1924-1959 (1,000 tons). (12) Soybean oil, meal and cake production and stocks by states, 1955-1958. (13) Oilseed cake a meals, supply and distribution, Oct. 1950-59. Incl. soybean, cottonseed, linseed, peanut, copra, total. (14) Production of protein concentrates (cake and meal), 1937-41 (avg.) to 1951-59. Incl. soybean, linseed, cottonseed, copra, gluten feed and meal, tankage and meat scraps, fish cake and meal, dried milk products (dried and concentrated skim milk, buttermilk, and whey used for animal feed), other milk products (fed on farms), total. Note: In 1953-54,395,000 tons of dried milk products were fed to animals. (15) U.S. soy flour production. (16) Production and exports of soy flour and grits (incl. full fat, low fat, and defatted products, exported commercially or to military). (17) Production of mellorine [frozen dessert where vegetable oil replaces butterfat], 1953-59, by month. (18) U.S. fats and oils production, 1937-41 (avg.) to 1959. Incl. Butter, lard, edible beef fats, total edible animal fats, corn oil, cottonseed, edible olive oil, peanut oil, soybean oil, total edible vegetable oils, inedible oils. (19) Soybean oil utilization, 1931-1959 (million lb). Incl. Foods: Margarine, shortening, other, total, Non-food products: Soap, paint & varnish, other drying oil products, miscellaneous, loss, total, total domestic disappearance. (20) Same as No. 19 but in percentages.

(21) Utilization of soybean products, 1955-56 to 1958-59. Incl. meal and oil: Livestock feed, industrial, fertilizer, export. (22) Prices of U.S. soybeans, by month and season average, 1923-1959. (23) Same as No. 22 but only for No. 1 yellow: Chicago, Illinois country shipping points, Minneapolis. (24) Same as No. 21 but soybeans for crushing, No. 2 yellow. (25) Value of U.S. soybean crop, 1925-59 (thousand dollars) in these states: Total USA, Illinois, Iowa, Indiana, Ohio, Missouri, Minnesota. (26) Soybean price support operations, 1932-33 to 1959-60. Started in 1941-42 and has continued to the present, with a peak of $2.56 per bushel in 1953-55. (27) Price spread, soybeans and end products, 1945-1958. Spread between price received by farmers and value of products. (28) Prices of U.S. soybean oil meal (44% protein), 1929-1959 by month. (29) Prices of U.S. crude soybean oil, by month, 1929-30 to 1959-60. (30) Imports, exports, soybeans, oil and meal.

(31) Soybeans: Inspections for export, 1957-59, with country of destination and port of departure. (32) U.S. trade in soybeans, fats and oils. (33) Oil and fat exports under P.L. 480. Total, cottonseed oil, soybean oil, Oct. 1954 to Sept. 1959. Incl. country of destination, the top four being Turkey, Pakistan, Israel, and Egypt. (34) Imports, exports cake and meal, 1929-1958, incl. cottonseed, soybean, linseed, peanut, copra. Exports incl. country of destination. (33) Soybeans: Crushings and yields of oil and meal. (35) Bar chart: Major markets for U.S. soybeans since 1953: West Germany, Netherlands, Other Europe, Japan, Canada, Other. (36) Composition of soybean seeds, by variety, incl. Maturity Group No., % protein, % oil, weight of 100 seeds in grams. (37) Amino acids of soy protein. (38) Composition of Lecithin. (39) Composition of soybean oil, by variety. Incl. linolenic acid, linoleic acid, oleic acid, saturated acids.

Official standards for soybeans, Revised effective Sept. 1, 1955. Soy flour standards, for full-fat, low-fat, and defatted. Densities of various soybean products. Map of the USA showing the best adapted soybean varieties for each major soybean producing state. Directories: Processors of soybeans, by state, with address and names of officers (p. 56-74). Canadian soybean processors (p. 74). Manufacturers of 50% protein soybean meal (by state, p. 76). Foreign soybean processors, by country (p. 78-81). Refiners of soybean oil, by state (p. 82-84). Manufacturers and handlers of soy foods (p. 86-93): Beverages, breakfast foods, canners of green vegetable soybeans, canners of mature soybeans, cookies, crackers, toasts and wafers, frozen desserts (companies that make vegetable oils used in frozen desserts), health food store & supply houses, lecithin, macaroni, spaghetti & noodles, margarine, meat substitutes, proteins (Griffith Labs, Gunther, Worthington Foods), pudding powders (Brockville, Ontario, Canada), Salad and cooking oils, shortening, sausage binders, seasonings, soups, soybean oil, soybeans for cooking and sprouting, soy butter (Town Food Co., Riverside, California, makes "Town: soy lecithin spread; Shedd-Bartush Foods, Detroit, Michigan, makes "Willow Run" soy spread), soy cheese [tofu], soy flour, grits and flakes, soy flour mixes, soy milk, soy sauce, sprouts, vitamins, whipping agents.

Manufacturers of industrial products employing soybeans (p. 94-95): Caulking compounds & floor tile,

coated papers & leather dressing, fire-fighting foam, glues, plywood & adhesives, insecticides, laminating, lecithin, oilcloth and coated fabrics, paints and varnishes (13 companies), paper sizings, wallpaper and wallboard coatings, resins, soaps, soybean fatty acids (8 companies), soybean oil. Services for the industry (p. 96-109): Analysts, appraisals, brokers, commission merchants & jobbers, consultants, engineering services, export elevators, exporters & importers, export warehousing and handling, farm management, field warehousing, futures market, market analysis, mill construction contractors, milling service, miscellaneous services, oil transports, transportation.

Equipment and supplies for the soybean industry (p. 110-32): Aspirators, bagging equipment, belting, chains, conveyors, elevators, defoliants, drying and aeration equipment (farm driers, grain driers, meal driers), dust control systems & dust collectors, elevator buckets, fans, farm equipment, fertilizers, fumigants, fungicides, germinators, grain and seed cleaning and separation equipment, grain grading equipment & moisture testers, grain handling equipment, granulators, grinding & mixing equipment, herbicides, insecticides & pesticides, inoculants, laboratory equipment, man-lifts, material level indicators, materials handling equipment, miscellaneous equipment, packaging materials, pelleting machines, power transmission equipment, pumps, respirators, seed protectants, sifters, soil testing, soybean storage (elevator & processing units, farm units), spraying and irrigating equipment, temperature systems, transportation equipment, truck lifts, unloaders, waterproofing, weighing and packaging equipment.

Soybean processing [crushing] and oil refining equipment and supplies (p. 134-42): Bleaching and filtering equipment, catalysts, complete plants [for crushing], continuous counter-current solvent extractors, continuous screw presses, degumming, deodorization, fractionation, hydraulic pressing equipment, hydrogenation, margarine, miscellaneous equipment, neutralization, shortening, solvent recovery, solvents, soybean seed [suppliers and private breeders], vegetable soybean seed. Advertisers' index. Incl. Allied Mills, V.D. Anderson, ADM, Arkansas Grain Corp., Big 4 Cooperative Processing Assn., Blaw-Knox Co., Buhler Mill Engineering Co., Cargill Inc., Central Soya Co., Crown Iron Works Co., Dannen Mills Inc., Delphos Grain and Soya Products Co., Albert Dickinson Co., Louis Dreyfus Corp., Esso Standard Oil, Farmers Cooperative Assn., Farmers' Cooperative Co., Felco Soybean Oil Meal Dealers, French Oil Mill Machinery Co., Funk Bros. Seed Co., Galesburg Soy Products Co., General Mills Inc., Jacob Hartz Seed Co., Inc., Honeymead Products Co., Huntley Mfg. Co., Illinois Soy Products Co., Iowa Milling Co., Iowa Soya Co., Jensen Mills, Kansas Soya Products Co, Inc., Spencer Kellogg & Sons, Inc., Lauhoff Soya Co., Albert Lea Engineering Co., North Iowa Cooperative Processing Assn., Penola Oil Co., Phillips Petroleum Co., Pillsbury Co., Port of New Orleans, Quincy Soybean Products Co., Rice Grain Corp., Seedburo Equipment Co. (measures oil content of soybeans in 10 minutes), Skelly Oil Co., A.E. Staley Mfg. Co., T.W. Wood & Sons (Seedsmen since 1879; Richmond, Virginia). Address: Hudson, Iowa.

1810. Wasserman, R.H.; Lengemann, F.W. 1960. Further observations on lactose stimulation of the gastrointestinal absorption of calcium and strontium in the rat. *J. of Nutrition* 70(3):377-84. March. [20 ref]
• ***Summary:*** Lactose is known to stimulate gastrointestinal absorption of calcium. The absence of lactose in soy-based infant formulae may theoretically impair growth or bone mineralization in infants fed such formulae. Address: Lab. of Radiation Biology, New York State Veterinary College, Cornell Univ., Ithaca, New York.

1811. Lee, Elinor. 1960. UNICEF develops protein sources: New foods for children. *Washington Post.* April 2. p. B5.
• ***Summary:*** The new foods include "milk [Saridele] made in Indonesia from soya powder."

1812. *Chopletter* (*Worthington Foods, Ohio*). 1960. What you should know about Worthington Foods. 13(2):3. April.
• ***Summary:*** Worthington makes both liquid and powdered Soyamel. Soy-based Kreem Chee has exactly the same fat (36.9%) and protein (9.0%) content as dairy cream cheese. The Kosher certification on 11 Worthington products has been in effect since 1 July 1959. These products are both Kosher and Pareve (neutral). Foods bearing the Kosher label are Choplets, Choplet Burger, Vegetarian Burger, Proast, Numete, Sandwich Spread, Soyamel, Veelets, Veja Links, VP, and Entree.

New and improved Vegetarian Patties are now available. A product named New Vegetable Burger is also available.

Note 1. This is the English-language document seen (Jan. 2007) that contains the term "Vegetarian Burger" (or "Vegetarian Burgers"), or the term "Vegetable Burger" (or "Vegetable Burgers").

Note 2. This is the earliest document seen (Jan. 2009) that uses the word "Kosher" or the word "Pareve" in connection with meat alternatives or with soy products. Address: Worthington, Ohio.

1813. Shurpalekar, S.R. 1960. Studies on the preparation and nutritive value of spray-dried vegetable milk powder. *Food Science* (*Mysore, India*) 9:176-77. May.
• ***Summary:*** Gives details on the preparation and nutritive value of spray-dried powder obtained from a blend of soyabean and groundnut milks.

1814. Shepard, Thomas H.; Pyne, G.E.; Kirschvink, J.F.; McLean, M. 1960. Soybean goiter: Report of three cases. *New England J. of Medicine* 262(22):1099-1103. June 2.

Abstracted in J. of the American Dietetic Assoc. 37(3):270. [21 ref]
• ***Summary:*** The article begins: Although goiters associated with soybean feeding have been produced experimentally in laboratory animals [5 references] we have been able to find only two similar reports in human beings (Rawson & Rall 1955; Van Wyk et al. 1959). Detailed case reports are given of three children who developed goiters after being on a diet including "soybean milk." In Case 1, a goiter developed in a female infant who was placed on a soybean formula (Mull-Soy, made by Borden Co., Pharmaceutical Div., New York City) at 3 months of age. At 11½ months, when cow's milk was substituted, the goiter subsided. In Case 2a goiter developed in a female infant after she had been placed on a soybean formula at birth. In Case 3, a mentally retarded girl was placed on a soybean formula at 3 months of age because of eczema.

The iodine-131 uptakes in all 3 children were high, and became normal when the soybean milk was discontinued. The goiters became much smaller or disappeared in 2 cases when the soybean milk was discontinued and in the other when iodine was added to the diet. Address: 1. Univ. of Washington School of Medicine & Children's Orthopedic Hospital.

1815. Shurpalekar, S.R.; Chandrasekhara, M.R.; Lahiry, N.L.; Swaminathan, M.; Indiramma, K.; Subrahmanyan, V. 1960. Studies on milk substitutes of vegetable origin. II. The effect of fortification with DL-methionine on the nutritive value of spray dried powder obtained from a blend of soyabean and groundnut milks. *Annals of Biochemistry and Experimental Medicine* (*Calcutta*) 20(6):145-56. June. [17 ref]
• ***Summary:*** Studies done with albino rats. Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

1816. A.P.; The Times of India New Service. 1960. Soya bean milk. *Times of India* (*The*) (*Bombay*). July 24. p. 5.
• ***Summary:*** Soy bean milk, called Saridele, is now made for children on Java, where there are so many people there is no room for cows. It is a soya bean extract flavoured with sesame and fortified with vitamins. It comes as a powder, but when mixed with water it looks like milk. It is designed as a nutritive, low-cost protein substitute for milk.

This plant, the first of its kind, was built with the joint assistance of the Food and Agricultural Organisation (FAO) and the U.N. Children's Emergency Fund (UNICEF). If the children of Java accept the new beverage, other plants will be built throughout the South-East Asia area.

1817. *Macrobiotic News* (*New York, NY*). 1960. Our activities in July. No. 4. July. p. 4.
• ***Summary:*** (1) Live with Mr. & Mrs. Ohsawa joyful and happy summer time at the New Horizon Camp, Southampton, L.I. [Long Island, New York City].

(2) Lecture on Macrobiotics by Mr. G. Ohsawa. Thurs, Fri, Sat, & Sun at 8:30 p.m. Fee: $2 for one. Macrobiotic meal cooked by Mrs. G. Ohsawa–Three meals a day.

Fee: special reduction has been done by Mr. G. Ohsawa. Lectures, meals:

$40.00 per week & other activities without sleeping accommodations.

$75.00 per week with sleeping accommodations.

$6 per day.

(3) Distribution of Macrobiotic Foods: (Unrefined Rice [Brown Rice], Yannoh [Ohsawa coffee], Kokko [Kokkoh; grain milk], Azuki, Goma [sesame seeds], Sea Salt, Miso, Tamari–Ohsawa Sauce, Mu-Tea, Sesame Oil, Tahin [Tahini] and Umeboshi, etc.): sold at Azuma Inc. & Ginza Inc.

(4) Presents to Mr. & Mrs. Ohsawa–Smith-Corona Portable Electric Typewriter–has been done by the attendants of the Welcome Party at Am. Buddhist Academy [American Buddhist Academy, founded in 1951, later renamed American Buddhist Study Center] on June 30.

Note 1. This is the earliest document seen (March 2012) that mentions "Tamari" in connection with macrobiotics.

Note 2. This is the earliest document seen (May 2011) that mentions "Kokko" (or "Kokkoh"), a milk alternative containing soy, developed and used by macrobiotics. Address: Ohsawa Foundation, 331 Riverside Dr., New York 25, NY.

1818. FAO/WHO/UNICEF Protein Advisory Group (PAG). 1960. Saridele plant–Indonesia. New York. R.2/Add.4. Aug. *

1819. *Food Science* (*Mysore, India*). 1960. Soyabean products. 9(8):289. Aug.
• ***Summary:*** In response to a letter from a person in Jubbalpore, the magazine gives a table showing the nutritional composition of soyabeans, then gives a brief description of each of 3 products than can be manufacture from soyabean: Soyabean flour, soyabean milk, and soyabean curd ("well known as 'Tofu' in Far Eastern countries").

1820. Kay, Jacob L.; Daeschner, C.W., Jr.; Desmond, M.M. 1960. Evaluation of infants fed soybean and evaporated milk formulae from birth to three months: A comparison of weight, length, hemoglobin, hematocrit, and plasma biochemical values. *American J. of Diseases of Children* 100:264-76. Aug. [38 ref]
• ***Summary:*** "This careful study leads one to the conclusion that there is little difference between the nutritive value of these two foods with respect to the parameters studied... Total plasma cholesterol increased significantly by the age of 3 months in infants fed ad libitum diets, but not in infants fed soybean milk." Supported in part by the Pharmaceutical Div. of the Borden Co., New York, makers of Mull-Soy, the

soybean milk used as a milk substitute in this study. Address: Dep. of Pediatrics, Baylor University College of Medicine, Houston, Texas.

1821. Farlow, David R. 1960. The Japanese American Soybean Institute. When Automatic Allocation goes into effect you will see the full impact of JASI's promotion work. *Soybean Digest.* Sept. p. 35-36.
• ***Summary:*** JASI is starting to get involved with soy milk in Japan. There are about 60,000 tofu makers in Japan and they can readily make both tofu and soy milk. Dr. Harry W. Miller "has long been a strong advocate of the utilization of soy milk to aid in the increased consumption of protein and fat by the Japanese people... K.S. Lo of the Hong Kong Soybean Co. showed me his plant last fall, and I saw huge amounts of soy milk being manufactured and bottled for the Hong Kong area alone. Pepsi Cola is bottled in the same plant and Mr. Lo informed me that soy milk was outselling Pepsi Cola by about two to one in the Hong Kong area. I drank a bottle and I have to admit that much to my surprise it was delicious."

The increase in exports of U.S. soybeans to Japan has been accomplished under a "controlled allocation system"–controlled by the Japanese government. "When the Automatic Allocation system goes into effect, and the consumer alone decides the amount of soybeans and soybean products that are consumed, you will see the full effect that the promotion work that we have done has had." A small portrait photo shows David Farlow. Address: Asst. to the Executive Vice President, American Soybean Assoc.

1822. Watanabe, Tokuji; Fukamachi, Chiharu; Nakayama, Osamu; Teramachi, Yayoi; Abe, Kazuyoshi; Suruga, Sachiko; Miyanaga, Setsuko. 1960. Tôfu seizô ni kansuru kenkyû. II. Tôfu seizô kôtei no hyôjunka ni taisuru kenkyû. 1. Futsû-dofu [Research on tofu production. II. Research on the standardization of the tofu making process. 1. Regular momen tofu]. *Shokuryo Kenkyujo Kenkyu Hokoku* (*Report of the Food Research Institute*) No. 14B. p. 6-15. Sept. [6 ref. Jap; eng+]
• ***Summary:*** Contents: Part I. Regular Momen Tofu. 1. Soybeans used for research. 2. Method of experiments. 2.1. Making soymilk. 2.2. Soymilk coagulation. 2.3. Measuring soymilk solids (2.3.1. Density of soymilk solids. 2.3.2. Density of protein in soymilk. 2.3.3. Volume of tofu. 2.3.4. Firmness of tofu. 2.3.5. Transparency of whey. 2.3.6. Tofu solids. 2.3.7. Density of protein in whey). 2.4. Expressing experimental results (2.4.1. Rate of extraction (%) of solids and of protein in soymilk. 2.4.2. Rate of solidification / coagulation. 2.4.3. Rate of tofu yield = Rate of extraction x rate of solidification / coagulation).

3. Results of experiments. 3.1 Cooking temperature of the slurry and the nature of the coagulated material (3.1.1. Effect of heating temperature on the tofu. 3.1.2. Effect of amount of water added during cooking. 3.1.3. Effect of temperature on conditions of extraction and solidification. 3.1.4. Cooking time). 3.2 Conditions of coagulation (3.2.1. Amount of coagulant. 3.2.2. Coagulation temperature. 3.2.3. Coagulation time. 3.2.4. Amount of stirring during coagulation. 3.2.5. Types of coagulants and effect on tofu. 3.2.6. Concentration of soymilk. 3.2.7. Varieties of soybeans used {Jackson, Dorman, Ogden, Lincoln, Harosoy, Hawkeye, Lee}). 3.3. Soaking the soybeans.

4. Standardization of the process for making regular tofu. 4.1. Amount of time soybeans should be soaked in water. 4.2. Method of obtaining soymilk. 4.3. Method of coagulating soymilk. 4.4. The standard manufacturing process.

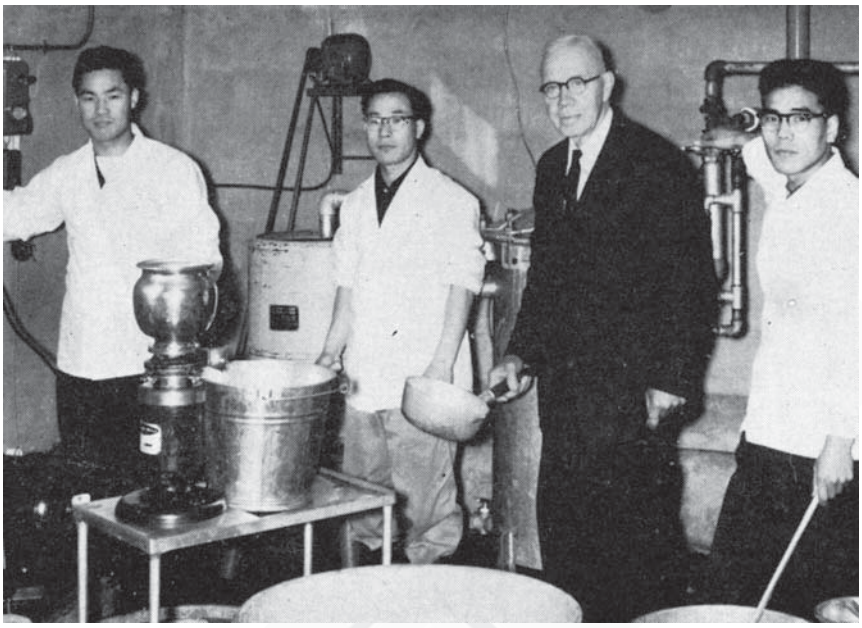
Parts II and III. Silken tofu and Bagged lactone silken tofu follow a parallel structure. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1823. Watanabe, Tokuji; Fukamachi, Chiharu; Nakayama, Osamu; Teramachi, Yayoi; Abe, Kazuyoshi; Suruga, Sachiko; Miyanaga, Setsuko. 1960. Tôfu seizô ni kansuru kenkyû. II. Tôfu seizô kôtei no hyôjunka ni taisuru kenkyû. 2. Kinugoshi-dofu [Research on tofu production. II. Research on the standardization of the tofu making process. 2. Silken tofu]. *Shokuryo Kenkyujo Kenkyu Hokoku* (*Report of the Food Research Institute*) No. 14B. p. 16-24. Sept. [Jap; eng+]
• ***Summary:*** The structure of this part (Silken tofu, 2.2) parallels that of part 2.1 (Regular momen tofu, pages 6-15). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1824. Watanabe, Tokuji; Fukamachi, Chiharu; Nakayama, Osamu; Teramachi, Yayoi; Abe, Kazuyoshi; Suruga, Sachiko; Miyanaga, Setsuko. 1960. Tôfu seizô ni kansuru kenkyû. II. Tôfu seizô kôtei no hyôjunka ni taisuru kenkyû. 3. Fukuroiri-dofu [Research on tofu production. II. Research on the standardization of the tofu making process. 3. Bagged lactone silken tofu {GDL}]. *Shokuryo Kenkyujo Kenkyu Hokoku* (*Report of the Food Research Institute*) No. 14B. p. 25-30. Sept. [Jap; eng+]
• ***Summary:*** The structure of this part (Bagged lactone silken tofu, 2.3) parallels that of part 2.1 (Regular momen tofu, pages 6-15). Bagged Lactone Silken Tofu is a packaging innovation. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1825. Miller, Harry W. 1960. The package soy milk shop. *Soybean Digest.* Oct. p. 14-15.
• ***Summary:*** Soy milk is now widely marketed in the United States in both powdered and evaporated forms.

"The demand for the product has been mostly from those allergic to animal milk and through prescription to those who cannot tolerate dairy products. Its manufacture, however, has been by large factory establishments. This



is the case with Loma Linda's Soyalac, Borden's Mull-Soy, and Mead Johnson's Sobee. The latest soy milk is being put out by the Indonesian soy milk plant located at Djorgakarta [Yogyakarta, Jogjakarta] which began soy milk powder production in 1957. These plants have contributed much to the knowledge of soy milk, and emphasized its value as a dietary article."

A package soy milk plant can be installed for less than $2,000. It can start as a tofu shop to which is added a steam boiler or steam generator of 5 to 10 horsepower capacity, either a hand-operated stone mill, or better a small mill run by an electric motor with steel or carborundum buhr, and a 50-gallon pressure cooker. The soymilk is formulated by adding sugar, oil, salt, calcium, and vitamins. "These are placed in about one-fifth the desired quantity of extracted milk and run through a small homogenizer especially made for the package plant. When it is homogenized it is added to the other four-fifths of the milk, and we have it as a constituted milk of a nice color and good flavor.

"In most places this soy milk is used hot and marketed at once as hot milk. However, where it is bottled (as is customary with animal milk) it is run over a cooler and bottled which adds a little expense. The package soy milk plant has a capacity for 150 pounds of cheese curd, and 200 gallons of milk per day of operation, using three trained workers, also at a very minimum of cost.

"Plant 30 Years Ago: The practicability of such package soy milk and cheese plants has been amply demonstrated. In fact, my first beginning with soy milk was made in a rather crude package plant at the Shanghai Sanitarium some 30 years ago. This grew into the large soy milk factory later in Shanghai. The next one, which was more streamlined, was put in a school at Taipei, Taiwan, supplying the school, the Taiwan Hospital and community with soy milk daily.

"One year ago the writer had the satisfaction of arranging a flow line of the above described equipment in a village in the northern suburbs of Tokyo, where soy milk is made in a soy cheese [tofu] factory so both bottled soy milk and tofu are supplied to the community and also to a state institution. There are an estimated 3,000 soy curd plants in Japan. At little additional cost each of these can be transformed into soy milk producing shops.

"A soy milk package unit has been assembled at Mountain View College, located in central Mindanao, Philippine Islands. Here the college farm raises a good type of edible soybean. There 700 students get soy milk for breakfast every morning and at noon have soy cheese. In these rice eating and corn producing areas the soybean thus prepared has made a great contribution to the health and welfare of the student body and faculty members.

"A similar package soy milk shop is now being installed at a school in Hong Kong, another at a college and hospital at Bandung, Indonesia, and another at a college in Japan.

"Thus a partial solution of the all-important protein in the nutrition of the Orientals, within their economic reach, is now a possibility. No greater benefit can be visualized than nutrition adequate for infants and the growing school child."

Photos show: (1) Three Japanese workers standing behind a table on which are glasses of soy milk. The caption reads: "Soy milk, ready for customers, is made fresh every day." (2) Dr. Harry Miller and three Japanese workers in a "soy milk package plant," or compact soy milk shop, with several pieces of equipment. Address: M.D., Director Emeritus International Nutrition Research Foundation.

1826. Cook, Charles D. 1960. Probable gastrointestinal reaction to soybean. *New England J. of Medicine* 263(21):1076-77. Nov. 24. [8 ref]

• ***Summary:*** Describes an infant who had a severe

gastrointestinal reaction to soy-based infant formulae, first to Sobee (made by Mead Johnson) at the age of 11 days, and shortly thereafter to Mull-Soy (made by the Borden Co.). The infant was initially put on soybean formula because of an undiagnosed macular rash. It was discontinued promptly, then tried again at age 10 weeks, and again followed by explosive vomiting and diarrhea, indicating sensitivity to soy. Address: Asst. Prof. of Pediatrics, Harvard Medical School, and Dep. of Medicine, Children's Hospital Medical Center, Boston, Massachusetts.

1827. Aljat, -. 1960. Food & utilization of food resources (Indonesia). In: Proceedings of the Fourth Pan Indian Ocean Science Congress. Section G. Human Ecology. See p. 65-68. Held 14-24 Nov. 1960 at Karachi, Pakistan.
• ***Summary:*** Gives detailed instructions for making the following soybean products: tempeh (tempe, soya-cake, moulded), tofu (tahu, soya curd, coagulated with gypsum / sakow powder), miso (taotjo), and sweet Indonesian soy sauce (Ketjap [perhaps ketjap manis], made with black soybeans). Also describes how to make onchom (ontjom) from peanuts, plus krupuk, and lempers. Table 1 compares the nutritional composition of powdered Saridele and cow's milk. Table 2 compares the amino acid composition of various mixtures containing soy.

Note: This is the earliest English-language document seen (April 2012) that uses the term "sweet Indonesia soy sauce" to refer to what is probably *kecap manis.* Address: Nutritional Inst. Labs., Djakarta, Indonesia.

1828. Ohsawa, G. 1960 Zen macrobiotics: The art of longevity and rejuvenation. New York, NY: Ohsawa Foundation. Printed in Japan. 218 p. Undated. Index. 17 cm.
• ***Summary:*** This is the earliest known printed edition of Zen Macrobiotics. The cover is gray. The author is George Ohsawa. The content is basically the same as the original mimeograph edition, however it has been edited and several of the parts have been rearranged and renamed to create a Forward [sic] (p. 3-5), a Preface (p. 6-8), and Chapters 1-3 (p. 15-43). At the end are two appendixes: One, which was titled "The Case of Mr. E," appeared at the end of the mimeograph edition. The second, which has been added is titled "The Pro-Forma Death Certificate of the American World Empire and its Gold Dynasty."

Concerning the date of publication: Although the date is not given in or on the book, the periodical *Macrobiotic News* announced it as being available in November 1960.

Distinguishing marks of this printing: Page 3: "Forward" is misspelled. Page 7: "... hundreds of ways of cookin [sic] and eating. They are all aim [sic] to create..." Page 62: "The yellow part is most yound [sic, yang],..."

These four errors were corrected in the next printing.

Both printings have 218 pages. However, pages 217 and 218 are different in the two books.

At least two printings were done in Japan. As of April 2011, Carl Ferré, President, George Ohsawa Macrobiotic Foundation (Chico, California) has one original of each.

Carl adds (e-mail of 30 April 2011): "Page 218 of the book you have (*Macrobiotics: The Art of Longevity and Rejuvenation,* by G. Ohsawa) appears to be exactly the same as the second Japan printing. It seems to confirm my hypothesis of a first printing in Japan in 1960, a second printing in Japan around 1962, and a third printing of the same edition in the U.S. after the 1962 Japan printing (and might even be the 1964 book referred to in Yin Yang). I believe the first reference in Macrobiotic News to a printed book is November 1960. Because editions of *Zen Macrobiotics* may have been printed at the same time as *Philosophy of Oriental Medicine,* we may need to look into that title as well in order to determine the full story." Address: Ohsawa Foundation: 331 Riverside Dr., New York City. Secretary Aihara, 44 W. 96th St., New York City, U.S.A.

1829. Prawiranegara, Dradjat; Rawi, Ihsan el. 1960. Food & utilization of natural food resources (Indonesia). In: Proceedings of the Fourth Pan Indian Ocean Science Congress. Section G. Human Ecology. See p. 55-63. Held 14-24 Nov. 1960 at Karachi, Pakistan.
• ***Summary:*** This is a relatively early publication by an Indonesian author on soyfoods, especially tempeh. The first author's name is incorrectly listed on the document as simply Dradjat. "Protein rich food. Soya beans: In order to increase the protein consumption of the people more soya bean should be made available, and soya products should be popularized and manufactured on large scale." After praising the nutritional properties of soybeans, the authors continue: "In order to render soya protein utilizable, both destruction of the cell walls and heat treatment are necessary. Crushing the beans such as in the manufacture of soya milk and 'tahu' or the action of fungi which partly digest and break the cell wall such as the case with 'tempeh' are means of improving the nutritional value of soya. All these foods are heat treated both during the manufacture and on preparation for the table, and the enzyme inhibitors are destroyed. Tempeh, tahu [tofu], tautjo [Indonesian-style miso], ontjom, soya milk, etc. [are excellent foods. A meal] which gives the maximum biological value contains soya proteins and rice protein in the ratio of about 2.3. Therefore an adult who receives little or no animal food should get 15 or 20 gm soya protein with his rice. A medium size family should get 75 to 100 gm of soya protein. Unfortunately, soya preparations such as tempeh and tahu are comparatively expensive. For example 100 gm of soya protein in the form of tempeh costs about 5 rupiahs. This is why it is necessary to find a simple way of using unprocessed soya beans. The preparations of 'fried soya' is one such way. Fried soya is simply prepared as follows. Soya is soaked overnight in water with a little salt added, ground

to a paste. The stuff is pleasant smelling, and tastes good. It can be used in many different ways, both in adults and in children's food. It costs little, compared to tempeh or tahu, and its nutritional value is high, specially when mixed with rice or corn. It is certain that the introduction of fried soya to the Indonesian family's daily diet will appreciably improve the nutritional status of the people. Three times as much soya protein can be consumed for the price paid for tempeh or tahu. Recent work on tempeh (which is soya bean product subjected to the action of certain fungus) have shown that the product is of a higher nutritional quality than heat-treated soya bean. Apparently the fungus growth on the soya favourably alters the biological value of its protein. More work is needed on the subject in order to find out the reason for such improvement. It was suggested that tempeh should be investigated as infant food. (P. Gyorgy's recent report to W.H.O. Protein Advisory Group).

Note: This is the earliest English-language document seen (March. 2009) uses the word "tautjo" to refer to Indonesian-style miso.

"'Saridele' is an imitation milk of vegetable origin. It is made from soya sesame combination. It is available as spray-dried powder. The composition is similar to cow milk powder. Animal trials have shown that the protein of the product is somewhat inferior to cow milk, but the biological value improves considerably when mixed with rice. Trials with infants showed that Saridele is well tolerated by older infants and it is a valuable addition to the diet after the age of 6 months. In case of emergency, when no cow milk is available, saridele may be used as food for infants over 4 months of age (will be published by Children Dep. Medical School, Univ. Indonesia)." A table lists gives the nutritional composition of soybeans, tempeh, tofu, fish flour, fresh cassava leaf, and dry cassava leaf. Address: 1. M.D., M.P.H., Director, National Nutrition Inst., Dep. of Health, Djakarta; 2. FAO Food Chemist.

1830. USDA ARS Northern Utilization Research and Development Division, Peoria, Illinois. 1960. Definitions of foreign foods of current interest (Brochure). Peoria, Illinois. 4 p. Dec. 13. 28 cm.

• ***Summary:*** The first section, titled "Japanese foods from soybeans" (p. 1-2) includes: Aburage, frozen tofu, Hamanatto (Hamananatto), kinako (A form of full-fat soy flour made by grinding roasted soybeans), koji (A culture prepared by growing *Aspergillus oryzae* on cooked rice, wheat or other cereal for a few days. Serves as a source of enzymes for making miso, soy sauce, saki [saké, sake] and other fermented foods), kori tofu, miso, monosodium glutamate (a seasoning compound first isolated from soy sauce), nama-age, natto, satsumage [satsuma age], soybean milk or tonyu, soy sauce or shoyu, tofu, yaki-dofu, yuba.

The second section, titled "Indonesian fermented foods" (p. 3-4) includes: Arak, ketjap (soy sauce made with black soybeans), ontjom, ragi, sajur asin, tapé ketan (fermented glutinous rice), tapé katella (fermented arrowroot), tempeh (or témpé or témpé kedelé), tuwak. Address: Peoria, Illinois.

1831. Arnould, Francis. 1960. La vie et l'oeuvre du Dr. Berczeller et le soja alimentaire [The life and works of Dr. Berczeller and soyfoods (Continued–Document part II)]. *Revue d'Histoire de la Medecine Hebraique* 13(4):153-68. Dec. [Fre]

• ***Summary:*** Continued from page 159. Soy flour has numerous practical advantages. Its adds stability and shelf life to breads. Containing very little water, it is lightweight and easy to transport. It is extremely versatile, for use in many foods and dishes. It also has special uses, in war provisions and relief foods for refugees. Because of its light weight and nutritional density, it was used as a foodstuff by German skydivers / parachutists.

III. The big questions and projects: Berczeller was interested in the problem of world protein shortages. Germany had long had a serious deficiency of protein and fat, which could be corrected by soy. Germany imported about 1 million tons of soybeans before the war, and these soybeans were largely treated by the Berczeller process–which was a triumph. Russia experienced grave famines in about 1926, as well as at other times. So Russia turned to the soybean and cultivated it on large expanses of land. Dr. Berczeller traveled to Russia in about 1927 to create a modern soya industry there. North Africa and black Africa suffer from undernutrition and protein malnutrition. Soybean cultivation and a soyfoods industry would offer a solution to the problems of the entire continent.

In 1936 the Maharaja of Baroda [Maharaja Sayajirao Gaekwad III] well understood India's protein problem and had a book published on soya by Indian physicians. But they ignored the decisive progress made by Berczeller, so they were not able to develop utilization of soya that was properly treated. Berczeller was thinking as early as 1932 that introducing the food use of soya to India would be the main human goal of his life.

Even before 1932 Dr. Berczeller saw–at an early date–the great question of world protein supply and undernutrition. He studied the problem of the balance of nutrition and food in Germany scientifically. In 1932, Dr. Berczeller met F. Arnould because he took interest in the general econometric studies done by F. Arnould; this became the basis of their relationship [thus F. Arnould seems to have been an economist]. Thus Dr. Berczeller was a pioneer or precursor of in the field of agricultural and food econometrics.

He was very interested in various international organizations. He foresaw the need for an organization or international laboratory for the study of nutrition and food. From 1932 he told us that he would like to donate his fortune–which was very large–to such an organization.

His ideas and goals were a perfect match with those of existing organizations, the International Institute of Agriculture (Rome) before 1939, and the Food and Agriculture Organization [FAO] after World War II. Particular circumstances–and perhaps even occult occurrences–impeded the development of his works under this normal framework. He was interested in new protein sources, such as yeasts, and in the synthesis of amino acids and even poly-peptides.

IV. The life of Dr. Berczeller. We knew only a part of Dr. Berczeller's life and work. We would like to gather documents, testimonies, opinions, even criticisms from the many people who knew him. Dr. Berczeller explained to us that the idea of studying soya came to him in 1912 after attending a soyfoods dinner at the Japanese embassy in Berlin. He had been indisposed with a headache. So the slight toxicity of seemed to him to be a question of great importance. Already specializing in food questions, he had been an expert in the Austro-Hungarian government in this field during World War I (1914-1918). In about 1918-1920 he worked in the laboratory of Dr. Wasserman studying the proteins in blood. In 1921-22 he invented his process for treating soya. He was aided by the laboratories of the Skoda Foundation in Czechoslovakia.

In about 1924 Winston Churchill wrote a favorable article about food uses of soya in the London *Times.* A soyfoods dinner was given by the British Empire League in London; Winston Churchill attended.

In 1926 Dr. Berczeller went to Russia to organize a soya industry. He was considered to be named "Honorary General of the Red Army." He returned in 1930. In Germany his patents were used or exploited by Hansa Muehle of Hamburg, a huge milling enterprise. His products based on soya flour were sold by the Edel Soja Society in Berlin.

In England his soy flour was produced by the company named Soyolk in Rickmansworth near London. But a lawsuit (*procès*) opposed Soyolk to Dr. Berczeller. He later lost this lawsuit in about 1930.

A factory for making soy flour was also started in the Netherlands.

As early as 1929 Dr. Berczeller presented to the French government a proposal to introduce soy flour into human feeding. When we went to Quai d'Orsay [headquarters of the French government] in the company of Dr. Berczeller in 1932, we reminded our audience of our earlier proposal.

To discuss the introduction of soy flour in the food of large organizations, and of armies / militaries in particular, he went to see many important persons–Joseph Stalin, B. Mussolini, Miss Dorothy Thompson, secretary to President Franklin D. Roosevelt, etc. From 1929 to 1939 Dr. Berczeller travelled extensively in Europe to study on location the food of various countries: Romania, Bulgaria, Yugoslavia, Italy, Portugal, etc. He often traveled to Great Britain, where he studied the countries of the British Empire.

Dr. Berczeller in France: In 1932, when Dr. Berczeller asked us to present his work on soy in France, the agricultural situation in France was not favorable to the use of this progressive item, agriculture being then in the mist of a crisis of overproduction, with too much wheat, too much meat, too much milk, etc.

Those in charge were told to keep his ideas on file and reopen them when the next war broke out. This actually happened. In Oct. 1939 we asked CNRS, the National Center for Scientific Research, to invite Dr. Berczeller to come to France. He arrived in Paris via Geneva with an introduction from the secretary general of the League of Nations. We worked at Toulouse in 1939-40 on a program of soybean cultivation in southern France. During that time he stayed in Paris, at CNRS, working on introduction of soya into the army's food. But in June 1940 the defeat of France by Germany interrupted our work. Dr. Berczeller retreated to Toulouse.

After the armistice, soy flour could have been able to render a great service to France for feeding children. Some of it could have been imported from the United States, but human and political considerations impeded the realization of this.

Dr. Berczeller departed for Marseilles. We lost track of him, but we re-established contact after the Liberation (spring 1945). We tried to import some soy flour from the USA to feed undernourished people returning from the German camps. But incredible blunders on the part of the State's relevant departments caused our efforts to run aground. Several 'Liberty Ships' loaded with soja beans arrived in France but the knowledge as to what to do with these products was not on hand. Finally, they were given to... hogs.

Dr. Berczeller encountered difficulties of all types in France after the Liberation. Ruined, unknown, poorly received, old and sick, he finally lost his equilibrium and was no longer able to conduct his complex affairs and delicate studies. He was hospitalized at the hospital Lariboisière, then sent to various psychiatric hospitals. In this unfortunate evolution, CNRS has taken a very heavy responsibility by its incomprehension and by the false information that it gave. One could write an entire book recounting these misadventures of Dr. Berczeller in the French scientific milieux.

In 1940 Dr. Berczeller, working with a Quaker group near Toulouse, studied the importation of a soy-based infant formula made in the USA. The Quakers later helped him greatly in trying to rectify injustices, but without success. In 1952 Prof. Veznar of Zurich, Switzerland, helped arrange for Dr. Berczeller to be placed in the *Maison de Santé Nationale de Saint-Maurice.* The chief medical officer of this establishment, Prof. H. Baruk, cared for him with the greatest devotion. But he was not able to stop the development of an old heart malady. Dr. Berczeller died at Saint-Maurice on 14

Nov. 1955.

1832. Garruti, R. dos S.; de Barros, L.V.S.Q. 1960. Influencia da variedade, no sabor e aroma do leite de soja [Influence of soybean variety on the flavor and aroma of soymilk]. *Bragantia* (*Sao Paulo*) 19(64):1071-79. Dec. [10 ref. Por]*

1833. **Product Name:** Soymilk.
Manufacturer's Name: Bandung College.
Manufacturer's Address: Bandung, West Java, Indonesia.
Date of Introduction: 1960.
New Product–Documentation: Letter from Eric C. Fehlberg, Director, International Health Food Assoc. 1990. May 24. This organization no longer makes foods.

1834. **Product Name:** Presto Whip (All-Vegetable Soymilk-Based Non-Dairy Whip Topping in a Pressurized Can with Valve–Frozen).
Manufacturer's Name: Delsoy Products, Inc.
Manufacturer's Address: Livonia Dairy, 2001 S. Telegraph Rd. at Harvard, Dearborn, Michigan.
Date of Introduction: 1960.
Ingredients: Incl. soymilk, vegetable oil, sugar.
Wt/Vol., Packaging, Price: 10 oz pressurized can with valve.
How Stored: Frozen.
New Product–Documentation: Talk with David and Harvey Whitehouse. 1992. Feb. 4. In about 1960 Harvey Whitehouse began freezing Presto Whip, so that they could store the product frozen and ship it nationwide–but the product was never advertised as frozen.

1835. **Product Name:** Delsoy Topping (All-Vegetable Soymilk-Based Non-Dairy Whip Topping–Frozen).
Manufacturer's Name: Delsoy Products, Inc.
Manufacturer's Address: Livonia Dairy, 2001 S. Telegraph Rd. at Harvard, Dearborn, Michigan.
Date of Introduction: 1960.
Ingredients: Incl. soymilk, vegetable oil, sugar.
How Stored: Frozen.
New Product–Documentation: Talk with David and Harvey Whitehouse. 1992. Feb. 4. In about 1960 Harvey Whitehouse began freezing Delsoy Topping, so that they could store the product frozen and ship it nationwide–but the product was never advertised as frozen.

1836. **Product Name:** Soymilk.
Manufacturer's Name: Hong Kong Hospital and South China College.
Manufacturer's Address: Hong Kong.
Date of Introduction: 1960.
New Product–Documentation: Letter from Eric C. Fehlberg, Director, International Health Food Assoc. 1990. May 24. This organization no longer exists.

1837. Rawi, Ihsan el; Oey, Kam-Nio. 1960. [Soya-rice baby food]. *Jakarta, Lembaga Makanan Rakjat, Departemen Kesehatan Repubublik Indonesia.* [Ind]*

1838. Chiang, T'ien-chiang. 1960. Ta tou ying yang yu chia kung [Soybeans and soyfoods?]. China. 183 p. [10+ ref. Chi] Address: China.

1839. Hu, Chang-tu [Hu, Changdu]. 1960. China: Its people, its society, its culture. New Haven, Connecticut: HRAF Press. [xv] + 611 p. Maps. Index. 22 cm. Series: Survey of world cultures. [550+* ref]
• ***Summary:*** Chapter 16, titled "Agriculture," includes a discussion of major changes in Communist agricultural policy, especially during the 1950s: Land redistribution (1949-1952). Forms of progressive collectivization: (1) The Agrarian Reform Law of 1950 essentially preserved the institution of private land ownership while confiscating the landlords' holdings. (2) Decisions of Dec. 1951 and Feb. 1953 give details and methods for promoting mutual-aid organizations and producers' cooperatives. 1954-56: The transformation of mutual-aid organizations into producers' cooperatives is completed. The move to mechanized collective farms: The first one started in 1951 in northeast China, and by 1955 their formation was accelerating. Foods and industrial crops: "Aside from soybeans, rapeseed and peanuts are the principal sources of edible oils in China" (p. 348). Yet neither the acreage nor the production of soybeans in China is known. The Second Five Year Plan, announced in 1956, aimed to increase soybean production 12.5 million tons.

Chapter 19, "Health." A minority of well-to-do people have adopted the use of milk in the past few decades. "Soybean milk is often drunk in place of cow's milk" (p. 408).

Chapter 23, "Life in the villages." In North China the need to conserve water is critical. In April or May, following the harvest of winter wheat, this land was planted to soybeans and/or corn (p. 495).

Chapter 25. "National attitudes." Chinese had long believed in the greatness of their nation and culture. Chinese had a sense of national unity based on Chinas long historical tradition and the relative homogeneity of Chinese culture. Both led to great cultural pride. "However, as China experienced repeated humiliation at the hands of western powers in the late 19th century, there arose serious doubts regarding the validity of these traditional attitudes." Major adjustments would have to be made if China were to meet the modern western challenge. Two basic schools of thought arose: (1) Combine the desirable elements of traditional Chinese culture and modern western culture, especially its science and technology. (2) Repudiate all Chinese traditions, particularly Confucian doctrines and practices, "as

incompatible with the growth of science and democracy." This latter "view called for the introduction of new ideas, new principles, and new methods–in short, a new culture." "For a people who had for centuries believed in their superiority, a sudden realization of their backwardness was a painful awakening."

In their contacts with westerners, starting in the 19th century, "Chinese became aware that Europeans and Americans consider themselves superior not only technologically and culturally, but also racially." They treated Chinese as members of an inferior race. For Chinese, such racial discrimination has always been untenable, and with it came a strong desire to expel westerners from China–an idea that the Communists have consistently exploited very effectively. Chinese must "Throw off the imperialist yoke." The United States is the No. 1 enemy (p. 502-06).

Note: HRAF (The Human Relations Area Files) is a nonprofit research corporation affiliated with Yale University [New Haven, Connecticut] and sponsored and supported by its seventeen member universities.

1840. Meyer, Herman Frederic. 1960. Infant foods and feeding practice. Springfield, Illinois: Charles C. Thomas. xxviii + 332 p. Foreword by Philip L. White. Index. 24 cm. [199* ref]

• ***Summary:*** Chapter 5 is titled "Bottle-fed (artificial) infant foods." A photo (p. 82) shows all known available U.S. and Canadian bottle-fed infant foods. These are divided into 3 basic types: 1. Milk-base dilution mixtures. 2. One-formula (ready-modified) mixtures. 3. Preparations with special functions. The soy milk products are all listed under type 3, in the category "Hypo-allergic preparations (liquid or dry). The following are mentioned: Mull-Soy Liquid and Mull-Soy Powder (The Borden Co., Pharmaceutical Div., 350 Madison Ave., New York 17, NY). Sobee (dry) and Sobee Liquid (Mead Johnson & Co., 2404 W. Pennsylvania St., Evansville, Indiana). Soyalac Infant Powder, Soyagen (dry), and Soyalac Infant Concentrate (liquid) (International Nutrition Laboratories, 11503 Pierce Place, Arlington, California; or Box 388, Mt. Vernon, Ohio).

Soyola (made by Wyeth), a soy-based "Therapeutic adjunct and dietary supplement," has been discontinued since 1952. Almond Lac (made by Almond Lac Co.), a hypoallergenic preparation, was discontinued during 1952-59. Address: Assoc. Prof., Dep. of Pediatrics, Northwestern Univ. Medical School, Chicago, Illinois.

1841. Ouei, Mimie. 1960. The art of Chinese cooking. New York, NY: Random House. x + 242 p. Illust. by Jeanyee Wong. Index. 21 cm.

• ***Summary:*** The author was the daughter of a diplomat and she learned how to cook from the family's chief cook (*Ta Shih Fu*) who always traveled with them–and from whom she learned the recipes in this book.

"There were no recorded recipes of the Chinese cuisine until the twentieth century, and even then only in Western countries. In China, cooking was done by feel and taste, and its secrets were passed on from one generation to another" (p. 4).

One chapter titled "Soy beans and bean curd" (p. 171-83) begins: "The story of the soy bean: This miracle bean is a legume..." Tells the legend of how, 2,000 years ago a party of explorers sailing up the Yangtze in a flat-bottomed boat, discovered accidentally how to sprout soybeans, when they found that some beans in a damp bag in the bottom of the boat had sprouted. "The soy bean is so nutritious it is known as the cow of China."

The next brief section, "How to sprout the soy bean," begins: "Mung beans are used to grow bean sprouts." No instructions are given for soy beans! And only "bean sprouts" are called for in the following recipes. Recipes are given for: Roasted soy bean nuts (Ts'an tou). Beef with bean sprouts (Tou ya niu jo). Bean sprouts and celery. Bean sprouts and pork. Soy bean milk (homemade; To fu chiang). Soy bean curd (homemade; Tou fu). Fried bean curd (Cha tou fu). Bean curd cheese (homemade; Fu ju). Stuffed bean curd (Tou fu chen jo, with "3 squares bean curd"). Bean curd with sea bass. Bean curd with flounder. Stewed bean curd. Braised pork with bean curd. Bean curd with braised pork. Bean curd with shrimps. Bean curd with scallions. Bean curd with mushrooms. Bean curd with eggs. Bean curd soup. Mushrooms and bean curd soup. Pork with red bean curd cheese (Nan ju jo, with "2 tablespoons red bean curd cheese in sauce {nan yu}").

Note 1. This is the earliest English-language document seen (April 2013) that contains the term *Cha tou fu,* a type of deep-fried tofu.

Also: Soy paste noodles (Cha chiang mien, with "6 tablespoons vegetable paste (Hoisin), p. 189).

The Glossary (p. 223-30) includes entries for: Beans, black [black beans] (*Hei tou*). Beans, black, fermented [fermented black beans] [fermented black soybeans] (*Tou shih*). Bean, yellow paste [yellow bean paste] (*Tou chiang*). Bean curd (*Tou fu*). Bean curd cheese (*Tou fu ju*). Bean curd cheese in sauce (*Nan ju*). Beans, red [red beans] (*Tou sha; Hung dow;* "For making sweet black bean fillings"). Bean sprouts (*Tou ya; Da dow ngah;* "Specially grown soy bean sprouts, gold in color"). Monosodium glutamate (*Wei ching; Mei ching;* "Brings out food flavors"). Soy jam (*Chu yu;* "A thick sweet and salty soy paste. Residue of soy sauce"). Soy bean skin (*Fu tsu; Foo jook;* "Creamy-colored dried bean curd skin").

Note 2. This is the earliest English-language document seen (Nov. 2011) that uses the term "fermented black beans" to refer to fermented black soybeans.

Note 3. This is the earliest English-language document seen (July 2011) that uses the term "Soy bean skin" to refer to yuba, or to Dried yuba sticks or rolls.

Soy sauce, light (*Chiang yu; pronounced jeung yow;* Used for cooking). Soy sauce, thick [thick soy sauce] (*Chiang yu; pronounced jeung yow;* "Imported and suited for table condiment or for special cooking"). Vegetable paste (*Hai hsien chiang; pronounced hoi sin*). Address: New York City, New York.

1842. Sonnenberg, Lydia. ed. 1960. Everyday nutrition for your family. Los Angeles, California: Seventh-day Adventist Dietetic Assoc. 147 p. Illust. 4 tables on nutritional intake. 22 cm. [43 ref]
• ***Summary:*** Discusses the principles of a vegetarian diet for all age groups. Chapter 3, "The Basic Food Groups," lists five: Fruits, vegetables, bread and cereals, protein foods (including legumes, cottage cheese, eggs, soy cheese [tofu], prepared meat alternates, nuts and nut butters), and the milk group. A "soy cheese sandwich" is listed as "something hearty" in a month's suggestions for pack-it lunches. The chapter titled "Proteins on Parade" discusses soy milk as a good source of protein, "complete proteins," and the supplementary action of proteins (p. 46-47). It has a section titled "Soybeans Important" which praises soy flour and soy cheese [tofu].

Chapter 8, titled "Fats are Concentrated," has a table (p. 53) listing protein-rich foods of animal origin (with mostly saturated fat) and plant origin (mostly unsaturated): Soybeans, soybean milk, and soybean cheese are mentioned; they have 50-70% of their calories from fat. A "Gluten" type entree is low in fat. Chapter 21 is titled "The Vegetarian Diet." Address: Director, Dietary Dep., Loma Linda Sanitarium and Hospital and Assoc. Prof., School of Dietetics, College of Medical Evangelists.

1843. **Product Name:** Delwhip Topping (All-Vegetable Soymilk-Based Non-Dairy Whip Topping–Frozen), and Delwhip Topping Base.
Manufacturer's Name: Delsoy Products, Inc.
Manufacturer's Address: Livonia Dairy, 2001 S. Telegraph Rd. at Harvard, Dearborn, Michigan.
Date of Introduction: 1960?
Ingredients: Incl. soymilk, vegetable oil, sugar.
How Stored: Frozen.
New Product–Documentation: Talk with David and Harvey Whitehouse. 1992. Feb. 4. Most of the sales of Delsoy Topping were to bakers and restaurants–not to consumers. At some point prior to 1961 the name of their frozen product, Delsoy Topping, was changed to Delwhip Topping, and a new product named Delwhip Topping Base was introduced; it was a concentrate to which one had to add water to reconstitute it. The name of Presto Whip remained unchanged.

1844. **Product Name:** Loma Linda Soyagen Infant Powder (Soy-Based Infant Formula).
Manufacturer's Name: Loma Linda Food Co.
Manufacturer's Address: 11503 Pierce Place, Arlington, California. Phone: 714-687-7800 (3/88).
Date of Introduction: 1960?
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable.
New Product–Documentation: H.F. Meyer. 1960. Infant foods and feeding practices. A photo (p. 82) shows this canned product. A photo of a baby's face appears on the front panel. See also p. 88 and 90. Page 121 gives a detailed analysis of the product. The powder, after being reconstituted, contains: Fat 3.2%, protein 2.85%, carbohydrates 5.4%. Calories per ounce: 18. Tablespoons per oz.: 4. Added vitamins and minerals: ferrous sulphate, calcium carbonate, dibasic calcium phosphate. Affected by terminal sterilization: No. How formulated or reconstituted: 1 vol. milk to 7 vols. water. Chemical definition and essential clinical uses: Same as Soyalac Infant Powder but sold in grocery and health food stores. Soyalac Infant Powder and Infant Concentrate only sold in drug stores. Meyer gives the manufacturer as International Nutrition Laboratories, but with two addresses: 11503 Pierce Place, Arlington, California, and Box 388, Mt. Vernon, Ohio.

1845. Mortimer, Edna Z. 1961. Anaphylaxis following ingestion of soybean. *J. of Pediatrics* 58(1):90-92. Jan. [10 ref]
• ***Summary:*** "There are few reported cases of severe reaction following ingestion of soybean, and even fewer reports of shock or anaphylaxis."

"A case is presented of true soybean anaphylaxis in an allergic infant with asthma and eczema. The skin test for soybean was markedly positive, correlating with the clinical findings and with the subsequent prompt improvements, especially of the eczema." The child was a Negro male, age 3 months, who had severe eczema–which appeared 2 months ago. He the initial visit, he was given an soybean formula (Sobee). We must recognize that the soybean is antigenic and a sensitizer; that sensitivity is to be found once its use becomes widespread.

Note: *Webster's Dictionary* defines anaphylaxis (a term first used in 1907) as "1: hypersensitivity (as to foreign proteins or drugs) resulting from sensitization following prior contact with the causative agent." Address: M.D., The Children's Memorial Hospital, 707 W. Fullerton Ave., Chicago 14, Illinois.

1846. Cross, Leslie J. 1961. The Plantmilk Society. *British Vegetarian.* Jan/Feb. p. 37-38.
• ***Summary:*** The Secretary's report for 8 Oct. 1960 states that this meeting marks the 4th anniversary of the Plantmilk Society. The first year [Oct. 1957–Oct. 1958] was spent establishing the organization, collecting information, "and in abortive attempts to arrange for the manufacture in this

country of an American plantmilk." As a result of the failure of these attempts, the Society decided three years ago to try to develop a plantmilk from green leaves. This project is now at least three-fourths of the way toward a successful product at the laboratory level. The research is carried out under the direction of Dr. H.B. Franklin in London. He is now Director of Research and a small pilot plant has been established at his premises. Comfrey leaves are now being tested.

This year the society has established a plantmilk company, which (it is hoped) will eventually make and sell the product. Address: General Secretary.

1847. Cesconetto, Ecilda. 1961. A soja na alimentaçao [Soybeans in the diet]. *Boletim do Campo* (*Rio de Janeiro*) 17(140):15-16. March. [Por]
• ***Summary:*** Discusses the soybean's protein, carbohydrates, minerals, and vitamins. How to consume soybeans: As whole beans, as meat, or soymilk. Describes how to make soymilk. Address: Brazil.

1848. Diser, Gleason M. comp. 1961. Glossary of soybean terms. *Soybean Blue Book.* p. 61-64.
• ***Summary:*** This is the earliest known glossary with this title in the *Soybean Blue Book.* However in the first *Blue Book* (1947, p. 17-19) there was a somewhat similar section titled "Terminology: Definitions and product descriptions for the soybean industry."

The following terms are defined in this glossary: Soybean(s), soybean processor, soybean processing (solvent extraction, mechanical pressing, hydraulic pressing), soybean oil, crude soybean oil, edible crude soybean oil, refined soybean oil, edible refined soybean oil, hydrogenated soybean oil, degummed soybean oil, winterized oil, technical grade refined soybean oil, soybean fatty acids, soybean soapstock, acidulated soybean soapstock, soybean lecithin, break material, sludge.

Soybean products: Ground soybeans, soybean hay meal, soybean flakes, 44% protein soybean oil meal, dehulled soybean flakes, 50% protein solvent extracted soybean oil meal, soybean proteins, soy flour, soy grits, soybean oil meal, defatted soy flour, low-fat soy flour, high-fat soy flour, full-fat soy flour, lecithinated soy flour, protein, isolated protein, toasting. Oriental soy foods: Soy sauce (shoyu), soy milk, miso, frozen tofu, aburaage, kinako, namaage, ganmodoki, tempeh, natto, yuba, moyashi (soybean sprouts). Address: Archer-Daniels-Midland Co., Minneapolis, Minnesota.

1849. Scrimshaw, N.S.; Bressani, R. 1961. Vegetable protein mixtures for human consumption. *Federation Proceedings* (*FASEB*) 20:80-88. Part III (March), Supplement 7. Proceedings of the Fifth International Congress on Nutrition. Held 1-7 Sept. 1960 at Washington, DC. [44 ref]
• ***Summary:*** Contents: Introduction. Basic principles involved. Present scope of efforts to develop vegetable protein mixtures. Vegetable ingredients for protein-rich foods (especially legume seeds and oil seeds). Soy-based protein-rich foods (incl. whole soybeans, soy flour, soybean milk, tempeh). Mixtures using chick pea, cow peas, beans, peanut flour or sesame. INCAP Vegetable Mixtures 8 and 9 (based on corn; neither contains soy). Summary. Address: Inst. of Nutrition of Central America and Panama (INCAP), Guatemala City, Guatemala.

1850. Shurpalekar, S.R.; Chandrasekhara, M.R.; Swaminathan, M.; Subrahmanyan, V. 1961. Chemical composition and nutritive value of soyabean and soyabean products. *Food Science* (*Mysore, India*) 10(3):52-64. March. Published in 1961 as a 32-page book by the Soybean Council of America in Hamburg, Germany. [178 ref]
• ***Summary:*** Contents: Introduction. Chemical composition and nutritive value. Soyabean oil. Carbohydrate in soyabean. Minerals in soyabean. Vitamins in soyabean. Factors affecting nutritive value: Trypsin and growth inhibitors, heat processing, other factors. Digestibility and biological value: Animal experiments, supplementation with sulphur amino acids, human feeding experiments. Supplementary value to other food proteins. Processed foods from soyabean: Soyabean milk, dried milk substitutes from soyabean, malt foods containing soyabean, soyabean flour, multipurpose food (fortified soyaflour), dehydrated soup mixture, balanced food, soyabean protein isolate. Fermented soyabean products: Soy sauce, tofu or soyabean curd, miso, natto, tempeh. Conclusion.

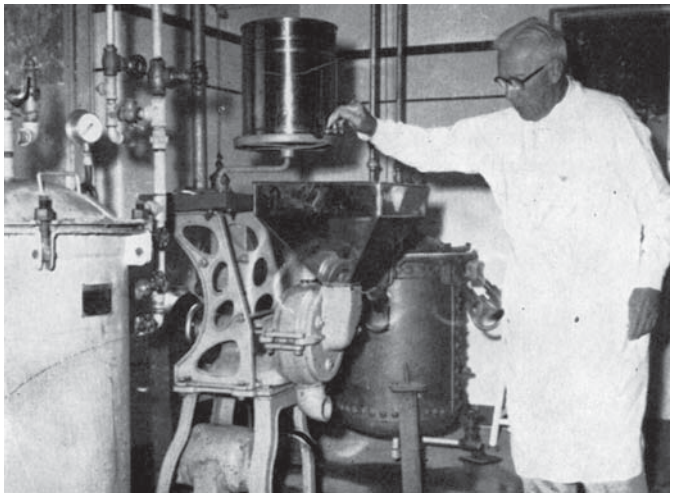
Note 1. This is the earliest document seen (Jan. 2001) from India that mentions tempeh.

Note 2. This is the earliest English-language document seen (Aug. 2003) that contains the term "soyabean protein" (or "soyabean proteins").

Note 3. This is the earliest English-language document seen (Aug. 2003) that contains the term "soyabean protein isolate" (or "soyabean protein isolates"). Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

1851. *British Vegetarian.* 1961. Soya milk for household use. March/April. p. 93.
• ***Summary:*** Granose Foods will soon be in a position to supply two varieties of spray-dried soya milk, Soyalac and Soyagen, made by one of their associated companies, Loma Linda Food Company in Arlington, California. Soyalac is specially prepared for infants, whereas Soyagen is for general use. A table compares the nutritional composition of the two products in both powdered and reconstituted forms. Reconstituted, Soyalac contains 2.85% protein and 3.39% fat vs. 2.80% and 2.80% for Soyagen. Sold in 16-oz. tins, Soyalac retails for 10 shillings 6 pence, and Granogen for 9 shillings 6 pence.

1852. Fact sheet: Harry Willis Miller, M.D., F.A.C.S. (News



release). 1961. n.p. 1 p. April. [1 ref]

• ***Summary:*** This one-page biographical sketch of Dr. Miller was released with the book *China Doctor,* by Raymond S. Moore, published this month by Harper & Brothers in New York. "Dr. Clarence Hall, *Reader's Digest,* says: 'Towering figure... Dr. Harry W. Miller... in the inspiring tradition of such all-time "greats" as Livingston, Judson and Paton [sic, Patton, General George]... restless creator of new traditions, a modern-day pioneer whose imaginative use of medicine has touched millions with the magic of new hope and health."

Concerning his work with soymilk and nutrition, this sketch states: "Proponent of preventive medicine, public health and nutrition as greatest challenge to America from world's needy (Consultant to United Nations). Out of this grew his research and development of fiber-free, potable soybean milk which is saving countless lives of infants and adults around the world (In Hong Kong more Miller soymilk sold than soda pop). Gives all royalties and fees back to research and building of hospitals (over $2,500,000). U.N. establishing overseas soymilk plants with Miller's counsel in areas where there are few cows (Indonesia, etc.). Recipient of gold medals for research."

Note: The soymilk made in Hong Kong that sold better than soda pop was not made by Harry Miller; he never made commercial soymilk in Hong Kong. Rather, it was Vitasoy, made by K.S. Lo of Hong Kong Soya Bean Products Co. Ltd.–with little or no influence from Dr. Miller.

1853. Moore, Raymond S. 1961. China Doctor: The life story of Harry Willis Miller. New York, NY: Harper & Brothers. xiv + 215 p. Illust. (8 pages of photos). Index. 21 cm. 2nd edition, 1969. Pacific Press, Mountain View, California.

• ***Summary:*** A key but sometimes inaccurate source of biographical information. Contains many excellent photos of Dr. Miller, including an especially good portrait on the inside rear cover.

Contents: Foreword by Hollington K. Tong. Preface. Map: The Far East. The opium cure. Hallway to service. The medical buff. Young surgeon at work. Slow boat to China. From mufti to mao tze and queue. The penniless VIP. Strange horizons. Pigtail honeymoon. Wife hunt. Picture section. Some close calls. A key decision. Operating on the Siamese elephant. Conquering new fields. Return to the Orient. No recipes in China. High finance. Facing the medical boards. A doctor's choice. Travel by presumption. To bow or not to bow. Kidnapping the generalissimo. "Mayor" Miller. An ounce of prevention. Shanghai again. China's greatest honor. Benghazi brink.

The rear cover of the book describes it as follows: "What happens when a man gives himself and his talents to the service of God? Here are a few of the things that Dr. Harry Willis Miller has done and is still doing! At 23 gave up a promising medical career and quarter-million dollar inheritance in America. Went to China as a medical missionary and lived among the poor and sick. Immediately began building the first of 15 hospitals throughout China. With inventive genius performed daring operations and made new discoveries in preventive medicine. Was responsible for many cures of the dread opium 'sickness,' including the cure of the famed 'Young Marshal' Chang. Became perhaps the most widely practiced surgeon in the world. Invented and developed soybean milk, which is responsible today for saving thousands of lives in undernourished areas of the world. Had many dramatic encounters with bandits, wars, famines. Was so well-known and respected that during World War II the Japanese invaders permitted Dr. Miller to give sanctuary to Chinese soldiers in the hospital compound. Returned to the U.S. for a time. Was consulting physician to 3 U.S. presidents and personal physician to national figures, senators, ambassadors, etc. Was awarded the coveted Blue Star of China by Generalissimo Chiang Kai-shek. At 81 is still healing and caring for the people of the Far East."

An ad for the book in *Soybean Digest* (Nov. 1935, p. 35) begins: "The incredible biography of the 'Schweitzer' of the Orient."

Pages 180-89 describe Dr. Miller's work with soy milk, Soyalac and Soyagen, and other soy foods. In the Shanghai Sanitarium kitchen he learned how to improve the flavor and digestibility of soy milk by running steam directly into the milk. From the Philippine Refining Co., which transformed bad-smelling copra into good-smelling coconut oil, he learned that steam distillation was the key to the transformation. From a Filipino company that refined stale and rancid butter into a product that tasted as fresh as new, he learned the secret of flash pasteurization–which effectively killed bacteria. Back in China, Dr. Miller, with his older son, Harry Willis Miller, Jr., worked to apply these new discoveries to soy milk. They worked! He expanded his experiments with infants and children, and in 1936 his results were published in the *Chinese Medical Journal.*

Photos (p. 81-89, unnumbered) show: (1) An excellent full-page portrait of Dr. Miller at age 81. (2) Harry and Maude Miller in China, wearing the Chinese dress they adopted after their arrival in 1903. Maude's tragic death two years later–caused by sprue, a vitamin deficiency disease–gave added personal meaning to Dr. Miller's nutritional research. (3) A group portrait showing a meeting of Adventist Missionaries at Shanghai, China, in 1907.

(4) Harry and Marie Iverson Miller at the time of their marriage in 1908. A trained nurse, she served with him through 42 years of missionary activity, and helped rear their 4 children. (5) Shanghai Sanitarium, opened 1 Jan. 1928, the first of 15 hospitals to be established in China under the leadership of Dr. Miller, who also founded numerous smaller clinics. (6) Members of the Shanghai Sanitarium staff in the mid-1930s, standing in front of a one-engine plane, as they see him off for a visit to outlying places.

(7) Dr. Miller and Marshall Chang Hsüeh-liang at Hankow airport in 1935, two years after Dr. Miller had cured the young Marshall's opium addiction. (8) Dr. Miller carried out more than 18,000 operations. Here he performs a thyroidectomy at one of his frequent visits to hospitals in Manila, Philippines. (9) Wuhan Sanitarium and Hospital at Wuchang, one of the medical units established through the generosity of the Young Marshal. Twenty thousand refugees moved into the Sanitarium compound when Hankow capitulated to the Japanese in 1938.

(10) The ruins of the Wuchang city dispensary, destroyed by Japanese bombs in 1938. (11) Dr. Miller examines a soybean plant grown on his farm at Mt. Vernon, Ohio. (12) Dr. Miller demonstrates his small-scale soymilk processing machine, which can be operated by one person. "The goal of Japan's Ministry of Health is to install one of these in each of the thirty thousand village tofu (soy cheese) factories in Japan."

(13) A baby and nurse with a large can of Soyalac in Japan. (14) A soymilk booth in Hong Kong, where more soymilk is sold than any kind of soft drink. The bottles in wooden cases are stacked four high. (15) A baby, little Mohammed Ali, a Bedouin child suffering from malnutrition bordering on starvation, at the Benghazi, Libya, hospital. In 1956 Dr. Miller nursed him back to health. He soon grew strong and healthy and began to take a lively interest in the world around him.

(16) "Generalissimo Chiang Kai-shek greets Mrs. Mary Greer Miller while Madame Chiang congratulates Dr. Miller following the ceremonies held March 26, 1956, in which Miller received the Blue Star of China, that country's highest award, similar to the Congressional Medal of Honor in the United States." Address: Vice President, College of Medical Evangelists, Loma Linda, California.

1854. Smith, Allan K.; Wolf, Walter J. 1961. Food uses and properties of soybean protein. I. Food uses. *Food Technology* 15(5):4-6, 8, 10. May. [34 ref]

• ***Summary:*** Contents: Summary. Introduction. Commercial soybean protein fractions. Soybean foods: Soybean varieties (garden varieties vs. field varieties, main differences between them, U.S. soybean breeding program). Trends in protein requirements (worldwide protein shortage). Soybeans and fractions used in food: Whole soybeans, defatted soybean meal, isolated proteins, protein concentrate (called "protein concentrate 70" in the summary), Gelsoy.

Whole soybeans may be baked or boiled, or used to make sprouts, fresh or dried tofu, vegetable milk (or "soybean milk"), yuba, and many fermented food products, including "miso or soy paste, natto, hamanatto, shoyu (soy sauce), tempeh, and some less important foods."

"Protein concentrate: Extraction of dehulled and defatted meal with dilute acid (pH 4.5) removes soluble sugars, nonprotein nitrogen, and other low-molecular weight components and a small amount of protein. The flavors are also mostly removed in the extract or in drying. The dried concentrate contains about 70% protein unless soybeans containing above-average protein are used.

"This product, having a manufacturing cost between that of soy flour and isolated protein, has been introduced recently into the food industry. This protein concentrate is a combination of the acid-precipitated protein plus the residue normally obtained in isolating the acid-precipitated protein... A protein concentrate can also be made by extraction of SOM [soybean oil meal] with about 70% ethanol at 50ºC or higher. This type of product is finding its place in the food industry."

Note: This is the earliest English-language document seen (Dec. 2005) that uses the term "protein concentrate 70" or the term "protein concentrate" to refer to a product containing 70% protein on a dry-weight basis. Address: NRRL, Peoria, Illinois.

1855. *Soybean Digest.* 1961. UNICEF grant steps up research on soy products. May. p. 29. [1 ref]

• ***Summary:*** "Research work on soybean food products is now being accelerated under a grant-in-aid from UNICEF [United Nations International Children's Emergency Fund] by the department of food science and technology at Cornell University...

"The work is being concentrated along two principal lines. The department is conducting pilot-plant experiments on the production of soybean milk with the hope of improving its yield and nutritive value. And the second line of work is the production of tempeh, also on a pilot-plant scale, in order to develop a suitable semi-commercial process."

1856. **Product Name:** Syn-klym ("Synthetic Milk" based on Soy Protein).
Manufacturer's Name: General Mills, Inc., Specialty

Products Div.
Manufacturer's Address: 9200 Wayzata Blvd., Minneapolis 26, Minnesota.
Date of Introduction: 1961. June.
New Product–Documentation: Ad (full page) in *Soybean Digest.* 1961. June. p. 23. "5 General Mills soy products help meet world protein needs." "Syn-klym: This 'synthetic milk' product, based on soy protein is available in both whole fat and non-fat forms. Syn-klym can be substituted in a wide variety of cooked food products for non-fat milk or whole milk; or used directly as a beverage."

1857. General Mills, Specialty Products Div. 1961. 5 General Mills soy products help meet world protein needs (Ad). *Soybean Digest.* June. p. 23.
• ***Summary:*** The five products are MPF (Multi-Purpose Food. "the vital backbone of a low-cost meal"), TSP-200 (micro-milled toasted soy protein), LSP-15 (a blend of TSP-200 and General Mills fluid natural lecithin), Genpro 200 (untoasted soy protein), and Syn-Klym (a "synthetic milk" product, based on soy protein, available in both whole fat and non-fat forms). Address: 9200 Wayzata Blvd., Minneapolis 26, Minnesota.

1858. Shurpalekar, S.R.; Chandrasekhara, M.R.; Lahiry, N.L.; Swaminathan, M.; Indiramma, K.; Subrahmanyan, V. 1961. Studies on milk substitutes of vegetable origin. III. The nutritive value of spray-dried soyabean milk fortified with DL-methionine and spray-dried powder from a 2:1 blend of soyabean milk and sesame milk. *Annals of Biochemistry and Experimental Medicine* (*Calcutta*) 21(6):143-50. June. [9 ref]
• ***Summary:*** Nutritive value of soybean and sesame milks. Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

1859. *Soybean Digest.* 1961. Aim is better, cheaper foods: Soybean Council of America–Italy. June. p. 35-36.
• ***Summary:*** The Soybean Council of America opened its quarters in Rome in Feb. 1958 with a staff of two. "While Italian imports of soybeans from the United States amounted to less than 1,000 metric tons in 1957, they reached the 100,000-metric-ton mark in 1960... Now two major Italian manufacturers have arrangements under way to produce soy milk in Italy... The Italian equivalent of Metrecal, called Melbamin which contains soy flour, is currently being produced and sold in Italy with success unforeseen even by its producers...

"The Italian office of the Soybean Council of America has printed and distributed three major publications: 'The Soybean Story'; 'Italy's Margarine Industry'; 'Italy's Mixed Feed Industry'. These are aimed at reaching the U.S. producer interests in developing a market for his products in Italy."

A photo shows boxes of Nabisco Triangolini (Triangle Thins; triangular crackers) in an Italian retail food store. The caption reads: "Italian stores offer foods containing soy flour."

1860. Watanabe, Tokuji. 1961. Intermediate report [on the progress of studies on "the manufacture of tofu from U.S. soybeans"]. Food Research Institute, Japan. 56 p. June. Typed, without signature (carbon copy). [2 ref]
• ***Summary:*** Stamped at the top right corner: "Japanese American Soybean Institute." Typed on the line below that: "R-578. July 4, 1961." Written in ink to the right of that: "Under Contract (1960–4)." A cover letter dated 3 Aug. 1961 from George Strayer to A.K. Smith explains that this is a copy of Mr. Hayashi's R-578, which is an intermediate report on the work being done on tofu by Mr. Tokuji Watanabe of the Food Research Institute, Japan. Contents: On gelation and coagulation of soy milk (incl. 11 graphs and photos). Defatted soybeans as a raw material for tofu (incl. 3 tables and 3 graphs). Studies on the manufacture of soy milk (No. 1) (incl. 15 tables). Spray-drying of soy milk (incl. 8 tables). Address: Japan.

1861. Nicholls, Lucius. 1961. Tropical nutrition and dietetics. 4th ed. Revised by H.M. Sinclair and D.B. Jelliffe. London: Baillière, Tindall and Cox. xii + 457 p. July. Illust. Index. 24 cm. [100+* ref]
• ***Summary:*** Preface to the fourth edition: Nutritional science has advanced at an accelerating rate since the last edition. The section on protein malnutrition in infants has had to be rewritten; it is "now the most immediately practical problem of tropical countries." "The advance of nutritional science emphasizes the urgent need to carry it into the field through public health measures and especially health education."

"Now problems of even greater magnitude are created by the growth of population. The world's population of 2,800 million [2.8 billion] is expanding at a rate that will double by the end of the century... The problem if an increasing population in a world where already two-thirds of the population is underfed is the greatest challenge facing mankind today" (Oxford, Jan. 1961).

Contents of Chapter II, "Proteins:" Introduction. Chemical nature of the proteins (hydrolysis of starches and proteins compared, classification of the amino-acids). Building the proteins. The proportion of amino-acids present in various proteins. Nutritive value of proteins: Complete proteins (including glicinin [sic, glycinin] of soya bean), partially incomplete, incomplete proteins (zein of maize and gelatin). Theoretical protein requirements for maintenance and growth (Biological value, Net utilization). Limiting amino-acids giving a relative chemical score. Supplementing. Theoretical protein requirement during pregnancy and lactation. The effect of cooking on proteins. Specific dynamic action of proteins. The amount of protein in diets (high, low, vegetarian, true vegetarianism [avoids all

foods of animal origin], lacto-vegetarians).

The contents of the section on "Pulses" (p. 227-43) is very similar to that in the 1951 edition:

A table from FAO (p. 260) shows that six oilseeds supply almost all of the world's vegetable oil: Soya bean 37.0%. Cottonseed 22.3%. Groundnut 20.2%. Rapeseed 9.8%. Sesame 2.7%. Sunflower 2.5%. The next section (p. 260-64) is "Palm nuts and oils."

Table 53 (p. 396-97) gives the botanical name and composition of cereals and bread. Table 54 (p. 398-99) gives the botanical name and composition of pulses, incl. soya bean, soya bean curd [tofu], soya bean milk, carob bean, Goa bean, tepary bean

Note: The title C.M.G. (Companion of St. Michael and St. George) is an honor conferred upon those for distinguished service in the British colonies or commonwealth. Address: C.M.G., B.A. (Cantab.), M.D., B.C. Late Director of Bacteriological and Pasteur Institutes, and Director of Div. of Nutrition, Ceylon; Lecturer in Nutrition, Ceylon Univ.; Late Lecturer on Tropical Medicine, Ceylon Medical College; Nutrition Adviser to Commissioner General, South East Asia.

1862. Ripp, John A. 1961. Soybean-induced goiter. *American J. of Diseases of Children* 102(1):106-09. July. [10 ref]
• ***Summary:*** "The goitrogenic effect of soybean diets in animals has been recognized for some 25 years" (McCarrison 1933). The fact that these effects can be modified by heat, etc., suggests that "a specific goitrogenic substance" is present in soybeans.

The author reports a case of human goiter caused apparently by Mull-Soy brand soybean milk. The white male infant had no history of thyroid disease in the family and his residence is not considered to be in a goiter area... He was first seen by Dr. Ripp at age 3½ months because of widespread, moderately severe eczema and constant spitting. The infant had been breast fed, then at age 1 month, placed on a modified cow's milk formula. His general condition was good, and he was placed on a limited diet plus Mull-Soy infant formula. There was an obvious enlargement of the thyroid gland, without clear decrease in the metabolic rate. Removal of the Mull-Soy from the diet after 15 months led to some decrease in the size of the gland but had no clear effect on the metabolic rate of the subject. Address: M.D., Pediatric Div., Community Hospital, Glen Cove, New York.

1863. Smith, Allan K. 1961. Oriental methods of using soybeans as food. With special attention to fermented products and notes on Oriental farming practices. *USDA Agricultural Research Service.* ARS-71-17. 65 p. July. Illust. 27 cm.
• ***Summary:*** Contents: Part I: China. Introduction. Farming conditions in China. Oilseed production. Soy sauce in China. Sweet flour paste–Tien mien chang [chiang]. Soybean or vegetable milk (incl. Willis Miller and the Henningsen Produce Co. in Shanghai). Yuba. Soybean curd or tofu. Soybean cheese [fermented tofu]: Chee-fan ("cheese" + "small cube"), tsüe-fan ("drunken cheese"), hon-fan ("red cheese"). Fen-T'iao from mung beans. Fermented soybeans [fermented black soybeans]. Vinegar fermentation process.

Note: This is the earliest document seen (Oct. 2011) that uses the term "tsüe-fan" ("drunken cheese") to refer to a type fermented tofu.

Part II. China–Chinese Institutions. Henry Lester Institute (in Shanghai; Dr. Bernard Read). Academia Sinica (headquarters in Nanking). China Vegetable Oil Corporation (CVOC, Shanghai). The China Oils and Fat Industries Ltd. (Shanghai). National Bureau of Industrial Research. Catholic University (Fu Jen, at Peiping). Yen Ching University (Peiping). Agriculture Experiment Station (Peiping).

Part III: Japan. Introduction. Production of miso in Japan. Soy sauce in Japan. Trends in soy sauce production. Part IV: With Raymond E. Culbertson. Korea. Introduction. Breeding work. Soybean varieties. Climatic relations. Soils of Korea. Topography. Land use. Cultural practices. Marketing. Soybeans as foodstuff. Soy sauce. Acknowledgment.

Page 19 states: "The China National Government has taken an active interest in soybean milk for use by its army. Mr. Willis Miller, with offices and business connections with the Henningsen Produce Company in the Dollar Building (7th Floor) at 51 Canton Road, Shanghai, had just completed, at the time of my visit, the building of a soybean milk plant for the Chinese Government. The process is patterned after that of the International Nutritional Laboratories at Mt. Vernon, Ohio, for making a powdered or spray-dried milk. Mr. Miller also was supervising the installation of a vegetable canning plant for the same purpose."

The text of this bulletin was previously published, serially, with slight revisions, in *Soybean Digest,* from Feb. to June 1949. Address: Northern Utilization Research and Development Div., Peoria, Illinois.

1864. Hayward, J.W.; Diser, G.M. 1961. Soy protein as soy flour and grits for improving dietary standards in many parts of the world. *Soybean Digest.* Aug. p. 14-18, 20, 22-23. [5 ref]
Address: Archer Daniels Midland (ADM).

1865. *Today's Food* (*Loma Linda Foods, Arlington, California*). 1961. [Commercial food products made by Loma Linda Foods]. 6(2):5-6, 8. Summer.
• ***Summary:*** Loma Linda food products include: Smokene. Savorex. Vegeburger. Nuteena.

Also mentioned as generic names are: Soy mayonnaise, and soy milk. Address: 11503 Pierce Place, Arlington, California.

1866. Clark, Linda A. 1961. Stay young longer: How to add years of enjoyment to your life. New York, NY: Devin-Adair Co. [xvi] + 364 p. Oct. Foreword by Adelle Davis. Preface by Beatrice Trum Hunter. 21 cm. [588* ref]

• ***Summary:*** This book is well researched and carefully documented. The author includes Clive M. McCay in her acknowledgments. Contents: Part I: How can you stay young? 2. How can correct nutrition help? 3. What makes you age? 4. How long will it take to slow down rapid aging? 5. What's wrong with us? 6. What's happened to our bread and cereal. 7. Is sugar harmful? 8. Are poisons making you old? 9. Is it safe to eat? 10. What else ages us? 11. How can you eat safely in a poisoned world? 12. What about vitamins? 13. What about minerals and enzymes? 14. What about fats and oils. 15. "Wonder" foods. 16. Are you a mirror of what you eat? 17. The great debate? 18. How can you eat for health and youth? a summary.

Part II: 19. How can exercise help? 20. Is there hope for sagging faces and figures? 21. How can you stay slim? 22. Are you proud of your skin, nails, and hair? 23. What about menopause, prostates, and male impotency? 24. How can you relieve stress?

Part III: 25. The art of loving. 26. The power of prayer. 27. The will to live.

Page 10: Most dog food is more nutritious than human food. A typical dog food contains soybean grits.

Page 12: The human body is replaced every year. Dr. Paul G. Aebersold of the Atomic Energy Commission, who has used radioactive tracers to study the body, states: "In a single year 98% of the old atoms will be replaced by new atoms which we take into our bodies from the air we breathe, the food we eat, and the water we drink."

Page 67: Home-sprouted soy beans are free from pesticide contaminants.

Page 139: Unsaturated fats are found in vegetable oils, including soybean oil.

Page 145-46. What raises our cholesterol level? One food that does is butter. When one-seventh of the ½ ounce of butter served at each meal was replaced by soy sterol (probably lecithin), the average cholesterol level of subjects dropped 11%.

Page 148: Tests by Dr. Lester Morrison (1958) found that "soy lecithin granules succeeded in lowering cholesterol and reversing atherosclerosis in thousands of his patients."

In the chapter on "Wonder foods" we read (p. 170): "Soy beans and products made from soy beans such as soy flakes, soy grits and soy flour, are rich in the only complete vegetable protein." In the same chapter, Dr. Clive M. McCay notes (p. 177) that many people "use soy milks. These soy milks are now very attractive to taste, They are also being sold in various modifications such as malted milk. With the growing interest in the consumption of unsaturated fatty acids which are rich in these soy milks, the future may see a real challenge to the dairy industry."

A long section titled "Meat-eating vs. vegetarianism" (p. 182-88) attempts to look at both sides of the issue from a nutritional viewpoint only. In "The case for the vegetarian" we read (p. 184): "A few nuts are complete protein. The soybean, a legume, is the only complete protein vegetable. In all other cases, some of the amino acids are missing. Because of the nature of the soybean, it is being recognized more and more, by vegetarians and others, for its high nutritional value. Other complete proteins include brewer's yeast, cottonseed, and cereal germs such as wheat germ."

Page 218-20: Beverages–Milk is also a problem since it may contain radioactive strontium 90, iodine 131, penicillin, wax, pesticides, etc. "Many nutritionists prefer raw certified milk." To offset the cost of raw milk, "powdered skim milk" can be used for cooking. Yogurt or kefir can be made from either kind of milk. "As a milk substitute, soy-bean milk (Lager 1955; Chen 1956), an oriental staple, has been suggested."

The section on healthy skin (p. 262) states: "Cold pressed soy oil, because it contains so many elements found to occur naturally in skin tissue, is excellent." Address: M.A.

1867. Spilsbury, Calvin A. 1961. Japan's oilseed and fats and oils industry. *USDA Foreign Agricultural Service.* FAS M-120. iv + 52 p. Oct. Illust. 28 cm. [9 ref]

• ***Summary:*** Contents: Introduction. Summary. The fats and oils industry: Total supply of fats and oils, edible fats and oils industries (oilseed crushing and refining industry, rice bran processing, margarine and shortening, oilseed food industries), industrial fats and oils (the soap industry, paint and protective coating industry). Domestic production of oilseeds and oil-bearing materials: Soybeans (farm income and management, research), rapeseed, other oilseeds, rice bran, marine oils, including whale, animal fats. Foreign trade: Soybeans, other oilseeds, marine oils, animal fats, oilcake and meal, trade controls. Demand and price: Price supports. Consumption. Marketing and market development: Marketing vegetable oils, marketing oilseeds (storage, inspection, soybeans, rapeseed), market development. Bibliography. No names of Asian crushers are given.

Japan's margarine and shortening production in 1960 was 88,600 metric tons, nearly 4½ times that of 1950... Margarine production in 1960 was 43,000 tons. Shortening production was only 41,600 tons in 1960. The margarine and shortening industry in Japan consists of 26 manufacturers, but a large percent of plant capacity is found in only a few plants: 4 plants have one-third of the industry capacity, which is around 400 metric tons per 8-hour day... 67% of the oils used to make margarine and shortening in Japan are animal and marine oils, with whale oil being the most widely used (26% of the total) followed by tallow and lard (21%), then fish oil (20.0%). Palm oils comprise 19.0% of the total and vegetable oils 14.0%.

Concerning oilseed food industries (p. 17-20), in 1960

some 532,218 tonnes (metric tons) of soybeans were used directly as foods or manufactured into foods in Japan. Substantial amounts of peanuts and sesame seeds were also so used. "The Japanese American Soybean Institute in Tokyo is actively promoting U.S. soybeans for food uses and has promoted soybeans as the meat of the field because of the excellence of their amino acids."

Note: This is the earliest document seen (Jan. 2005) containing the phrase "the meat of the field." Notice that it refers to soybeans and was apparently coined by an American organization in Japan.

"More soybeans are used directly for food than are grown in Japan, and the cake and meal from an additional 420,000 tons of soybeans are now used each year. The main soybean foods are: Miso, shoyu, tofu, aburaage (fried tofu), frozen tofu, natto, kinako, monosodium glutamate (extract of fermented soybeans and rice used as a seasoning compound; a low-grade shoyu is a by-product), tonyu (soybean milk, cooked water-extract of soybeans, not widely produced in Japan at the present time).

Miso: There are about 3,200 to 3,800 miso plants in Japan, and a large amount of home-made miso is also produced. "About 117,600 tons of soybeans and 52,300 tons of defatted soybean meal (expeller cake is thought to be the best) are required by this industry. Miso consumption is estimated at 28.9 grams per capita per day." Domestic Japanese soybeans, such as white hilum soybeans from Aomori are preferred to U.S. beans, which cook unevenly because of their hard seed coats.

Shoyu: There are about 5,000 producers; some have very large plants but many are small. Per capita consumption is about 3 gallons per year. This requires about 18,500 tonnes of soybeans and 155,000 tonnes of defatted soybean meal per year. A small amount of soybean oil (about 1,000 tonnes/year) is skimmed off the top of shoyu and used for a cutting oil. The cake that remains after pressing out the shoyu contains 4% salt, but it is an ideal hog feed as well as a fertilizer. Around 80,000 to 100,000 tonnes a year are produced. A taru (4½ gallons) of shoyu wholesales for about $3.60. A large volume of soy sauce is now being exported to the USA.

Tofu: There are around 50,000 small tofu plants in Japan. Their demand for soybeans is large and increasing. In 1960 production of tofu and aburaage required 254,800 tonnes of soybeans and 20,000 tonnes of defatted soybean meal. More soybeans and meal are used to make tofu than any other food in Japan, followed by shoyu, then miso. About three-fifths of the soybeans used are imported. In 1960 production of frozen tofu required 27,100 tonnes of soybeans.

In 1960 about 22,800 tonnes of soybeans were required to make natto, 6,200 tonnes to make kinako, 64,800 tones of defatted soybean meal were required to make monosodium glutamate, and 10,000 tonnes of soybeans plus 30,000 tonnes of defatted meal were required to make other soybean food products [such as whole soybeans, soybean milk, etc.]. Address: USDA Fats and Oils Div.

1868. Strother, Robert S. 1961. Henry Ford and his magic beanstalk. *Quest.* Autumn-Winter. p. 23-27. Condensed in *Reader's Digest.* Nov. 1961, p. 188-92.

• ***Summary:*** A colorful overview of Henry Ford's work with soybeans and soyfoods. "One day back in the 1930's, I was summoned, along with half a dozen other Detroit newsmen, to a special luncheon in Dearborn, Michigan. Our host was the first Henry Ford, then at one of the several pinnacles of his fabulous career. The luncheon, and the conversation that went with it in the pine-panelled dining room in the Ford Engineering Laboratory, consisted entirely of soybeans. The peppery old motor magnate, then a vigorous 71, held no convictions lightly, and soybeans were his current enthusiasm. From the moment he strode in and took his seat at the head of the long oval table we talked of nothing else...

"At the luncheon that day Ford saw to it that everyone gave the food a fair trial. His sharp blue eyes were on us as we politely worked our way through 16 soybean foods, starting with salted soybeans and ending with soybean ice cream and soybean cookies. There were buttered green soybeans, pineapple ring with soybean dressing, soybean butter, and apple pie with crust of soybean. For drinks the choice was soybean milk, cocoa made with soybean milk, or soybean coffee. The bread, made of soybean flour would keep fresh nine days, the magnate said, and he urged us to slip a slice in our pockets to prove the point.

"Though the Ford executives seemed to enjoy the luncheon, nothing we newsmen ate that day led us to foresee that soybeans were destined a few years later to become an ingredient in many popular food products, some of them delicious. We accepted as reasonable the possibility that the bean might become a leading cattle feed or industrial material, and we all felt Ford's chef had outdone himself in versatility for this occasion." Note: This document contains the earliest date seen for Henry Ford's work with soy ice cream (between July 1934 and July 1935, since Ford was born on 30 July 1863 and was age 71 at the time of this meal).

"After lunch, Mr. Ford led us through his vast, high-ceilinged laboratory. He walked steadily, putting his feet straight ahead as an Indian does. He wore old-fashioned shoes made for him by a cobbler he maintained in an antique shop in Greenfield Village. He was about average height, only slightly stooped, and as thin as Mahatma Gandhi. He could chin himself five times without drawing a deep breath, and as most of us knew, from previous visits, he liked to challenge reporters to a 50-yard race, especially if they were fat...

"The automobile king, who often fired predictions from the hip, had scored some wide misses in his role of

free-ranging prophet. But this one [concerning the future of soybeans] proved to be a spectacular hit... By 1959, soybeans had climbed to fifth place among all American crops...

"The Old Man's last connection with soybeans contains an ironic reverse twist. It came when he gave a barely perceptible nod that set bulldozers to work ploughing up a nourishing soybean crop. The time was April, 1941, and the place was Willow Run. Eleven months later the world's largest airplane factory stood on the soybean field and in it production rose to a war-time peak of one complete bomber an hour.

"The history books credit Ford with pioneering industrial mass production techniques. His role in promoting factory uses for farm products rates only a footnote. Yet it, too, brought changes felt everywhere today. And of all his great achievements this may well have pleased him most–his contribution to the proof that, indeed, there was industrial magic in a beanstalk."

1869. Tung, Ta-Cheng; Huang, P-C.; Li, H-C.; Chen, H-L. 1961. [Composition of foods used in Taiwan]. *J. of the Formosan Medical Association* 60(11):973-1005. Nov. 28. [27 ref. Chi; eng]

• ***Summary:*** Gives the nutritional composition (food calories, moisture, protein, fat, carbohydrate, fiber, ash, calcium, phosphorus, iron, vitamin A, thiamine, riboflavin, niacin, and ascorbic acid) of 384 foods commonly used in Taiwan. In the section on "Legumes, seeds, and nuts," the following soy products are included: Black bean (hei tou, black soybean; 37.1% protein, 15.2% fat), miso; soy bean (huang tou); soy bean curd (toufu); soy bean curd cake [pressed tofu] (toufu kan); soy bean curd cake, spiced (wu-hsiang toufu kan); soy bean curd cake, strip; soy bean curd, clot (toupi, yuba); soy bean curd, fermented (fermented tofu); soy bean curd, fried (yu toufu); soy bean curd, pickled (furu, hu-zu); soy bean, fermented (tou chi [fermented black soybeans]); soy bean milk (tou nai), soy bean extracted residue (okara). Address: 1-3. Dep. of Biochemistry, College of Medicine, National Taiwan Univ., Taipei, Taiwan, China; 4. Taiwan Provincial Hygienic Lab.

1870. Block, Richard J.; Mandl, R.H.; Howard, H.W.; Bauer, C.D.; Anderson, D.W. 1961. The curative action of iodine on soybean goiter and the changes in the distribution of iodoamino acids in the serum and in thyroid gland digests. *Archives of Biochemistry and Biophysics* 93(1):15-24. Nov. [29 ref]

• ***Summary:*** Rats were fed rations deficient in iodine (0.7-2.3 micrograms of iron per 100 grams of diet) based on raw soybeans, solvent-extracted soy flour, isolated soy proteins, or soybean infant formulas–with or without added iodine. "Significant enlargement of the thyroid gland occurred on the iodine-deficient rations in 1 or 2 weeks. The addition of 160 micrograms of iodine as KI [potassium iodide]/100 gm to the diet caused the hypertrophied gland to return to normal size in 2-3 weeks.

"Although the lack of iodine is the principal cause of soybean goiter, raw soybeans, which contain more iodine than either solvent-extracted soy flour or glycinin, produced greater thyroid hypertrophy. This observation suggests that raw soybeans have a goitrogenic activity (goitrogen?) which is removed or destroyed during processing." Address: 1-2. Boyce Thompson Inst. for Plant Research, Inc. Yonkers, New York; 3-5. Borden Special Products Co., New York, NY.

1871. *Soybean Digest.* 1961. A.K. Smith of Peoria Lab on trip to Asia. Nov. p. 7.

• ***Summary:*** Dr. A.K. Smith, head of meal products investigations, oilseed crops laboratory, Northern Regional Research Laboratory (Peoria, Illinois), left Oct. 15 on a 2½ month trip to India, Japan, and Indonesia. "Dr. Smith will survey research laboratories in the countries to determine those that are qualified to do food research and development on soybeans, soybean products, and related agricultural products under the P.L. 480 program." In Japan, he will visit trade associations to encourage the use of U.S. soybeans in Japanese foods.

Research is needed in six areas: Use of soy flour to supplement bread and cereal products. Manufacture of soybean protein. Use of tempeh. Production and nutritional value of soy milk. Production of low-salt miso for feeding babies. Comparison of U.S. soybean varieties in commercial production of tofu. A portrait photo shows Smith.

1872. *Soybean Digest.* 1961. 4-H club girl wins with Japanese meal. Nov. p. 18.

• ***Summary:*** Joan Ruths, a 17-year-old 4-H club girl from Waterville, Minnesota, won a blue ribbon at the Minnesota State Fair for her demonstration titled "Entree Tofu Steak." She prepared and served a complete Japanese meal. Among the many dishes on her menu made from soybeans were tofu, miso soup, aburaage [deep-fried tofu], and soy milk. Joan closed her presentation by saying: "Soybeans for our nation's economy, food for millions, and peace for the world."

1873. *Soybean Digest.* 1961. Build new soy milk factory at Hong Kong. Dec. p. 18. [14 ref]

• ***Summary:*** "A new soy milk factory is being built at Kowloon (Hong Kong) which is twice the size of the factory in Aberdeen, according to K.S. Lo, managing director of the Hong Kong Soya Bean Products Co., Ltd. Mr. Lo says he hopes to have the new plant in production by next March. Increase in sales of Vitasoy has been terrific, over 53% a year, with highest production 18,000 cases per day, according to Mr. Lo. 'When our Kowloon factory is in operation we hope to be able to meet all the demand on both sides of the harbor.'"

1874. **Product Name:** Velactin (Soy-Based Non-Dairy Infant Formula).
Manufacturer's Name: A. Wander Ltd. By 1967 made for Wander Pharmaceuticals by Promo Ltd. of Abergavenny, England.
Manufacturer's Address: England.
Date of Introduction: 1961.
Nutrition: Protein 21%, fat 18%, available carbohydrate 52%, ash 3%, moisture 5%.
New Product–Documentation: *The Vegan* magazine. 1961. Spring. "Wanderlac is soon to be changed to Velactin."

The British Vegetarian. 1963. March/April. p. 73. "New sources of protein in a hungry world." Velactin (A. Wander Ltd.) has already proved its worth in various clinical trials in America, Germany, and the UK.

The British Vegetarian. 1963. March/April. p. 89. "Stop press news." "The directors of A. Wander Ltd. have just generously offered to supply free of charge to the Vegetarian Nutritional Research Centre sufficient Velactin for a comprehensive study of the effect of using this vegetable milk as a sole dietary source of vitamin B-12 for vegans with B-12 deficiency."

Isabel James. 1964. *The British Vegetarian.* Jan/Feb. p. 39. "Domestic Science Bureau." "Velactin is now available from Health Food Stores, made by Messrs. A. Wander Ltd."

Orr and Adair. 1967. Tropical Products Institute Report G-31. "The production of protein foods and concentrates from oilseeds." p. 57, 71-72. Gives a description of the Promo Process, operated by Promo Ltd., Abergavenny, England, for producing a full-fat soya flour. "The Promo soya flour is made into a soya milk, marketed under the brand name of Velactin by the Wander company. The process used by Promo to make Velactin is a modification of that used to make full-fat soya flour in that dehulled soya beans are used and carbohydrates, groundnut oil, vitamins, minerals, and amino acids are added. Velactin is sold as a powder, to which water is added to make the beverage. A nutritional analysis is given (see above).

Leslie Cross. 1978. Alive. May. p. 6. "Free Plant Milk." Cross states (incorrectly) that Wander Pharmaceuticals made the first British plantmilk, Velactin.

1875. Sutedjo, -; Poey, S.H.; Rawi, I. el. 1961. Soya-milk trial on infants up to 6 months old. *Paediatrica Indonesiana* 1:57-87. Based on Proceedings, First All Asian Congress on Pediatrics (New Delhi). *
Address: 1-2. Pediatric Dep. Medical School, Univ. of Indonesia, Jakarta.

1876. **Product Name:** Fortified Instant Soyamel (Soymilk).
Manufacturer's Name: Worthington Foods, Inc.
Manufacturer's Address: 900 Proprietors Rd., Worthington, Ohio. Phone: Tuxedo 5-5359.
Date of Introduction: 1961.
Ingredients: 1985: Soy protein isolate, partially hydrogenated soybean oil, corn syrup solids, malt extract.
Wt/Vol., Packaging, Price: 2 lb can makes 2 gallons.
New Product–Documentation: Wholesale price list. 1961. May 1; Shurtleff & Aoyagi. 1984. Soymilk Industry and Market. p. 28. "The first fortified soymilk based on isolated soy protein, it was NOT thought of or marketed as an infant formula."

1877. DeMaeyer, E.M.; Vanderborght, H.L. 1961. Determination of the nutritive value of different protein foods in the feeding of African children. *National Academy of Sciences, National Research Council, Publication* No. 843. p. 143-55. Progress in Meeting Protein Needs of Infants and Preschool Children. [23 ref]
• ***Summary:*** "The incidence of protein malnutrition throughout the world has been widely publicized during the past 15 years. Attention of governments and international agencies has been focused on this important public health problem, and the prevention of malnutrition is being investigated at present in many parts of the world."

"The digestibility, BV and NPU of whole eggs, cow's milk, human milk, soy milk, fish flour, soybean flour, cottonseed flour, peanut flour and biscuits made of fish, peanut and millet flours have been investigated by the nitrogen balance technique" on 17 African children of the Bashi tribe which lives on the shores of Lake Kivu in the Kivu Province [formerly Costermansville] (Republic of the Congo–later Zaire). Address: 1. Head, Dep. of Nutrition, IRSAC, Lwiro, Bukavu, Republic of Congo [later Zaire].

1878. Desrosier, Norman W. 1961. Attack on starvation. Westport, Connecticut: AVI Publishing Co. 312 p. [211* ref]
• ***Summary:*** Soybeans are discussed in the section titled "Ingredients for Protein Enriched Plant Foods" (p. 254-57). Under "Soybean Food Mixtures," tempeh, Saridele, soy milks, and infant feeding are mentioned. Address: Prof. of Food Technology, Purdue Univ., Lafayette, Indiana.

1879. Dutra de Oliveira, J.E.; Oliveiro Netto, N. de; Duarte, Geraldo G.; Woiski, R.J. 1961. The use of soy products in the treatment of protein malnutrition. *National Academy of Sciences, National Research Council, Publication* No. 843. p. 1-11. Progress in Meeting Protein Needs of Infants and Preschool Children.
Address: Faculdade de Medicina, Ribeirao Preto (Sao Paulo), Brazil.

1880. Fomon, S.J. 1961. Factors influencing retention of nitrogen by normal full-term infants. *National Academy of Sciences, National Research Council, Publication* No. 843. p. 343-53. Progress in Meeting Protein Needs of Infants and Preschool Children. [12 ref]*

1881. Hunter, Beatrice Trum. 1961. The natural foods cookbook. New York, NY: Simon and Schuster, and Pyramid Books. xvi + 296 p. Index. 22 cm. Pyramid Books pocketbook ed. published in 1967.

• ***Summary:*** This very early and important natural foods cookbook contains more than 2,000 recipes. The Introduction is written by Dr. Clive M. McCay, Professor of Nutrition, Cornell University, New York, and Dr. Jeanette B. McCay, nutritionist. The pages numbers are those in the original 1961 hardcover edition. The author calls tofu "soy cheese" and uses it in many recipes, including mashed in a recipe for "soy cheese sherbet" (p. 204). This book is not vegetarian (some recipes call for beef, chicken, fish, etc.), but was quite influential in the early days of the U.S. natural foods movement.

Soy-related recipes include: Soy spreads (p. 14-15): Soy flour spread. Soybean spread (in blender). Soy cheese [tofu] spread. Soy butter (made from soy flour, regular or roasted, and oil). Smoothies (p. 26-29). Soybean-cheese salad (p. 35). Soybean-vegetable salad. Soybean molded salad. Soy butter dressing (with soy butter, p. 41). Soy cheese dressing. Eggless mayonnaise (with soy flour). Soybean soup (p. 49). Cream of soy soup (with soybeans in blender). Soy-vegetable soup (with soy milk in blender, p. 54). Soy noodles (with soy flour, p. 59). Green soybeans in pods (p. 70). Steamed green soybeans. Soy grits stuffing (for fowl, p. 127). Homemade soy cheese (also known as soybean curd or *tofu;* from soy milk or soy flour, p. 137).

Soybeans (p. 142-44): Basic soybean filler. Broiled soyburgers. Soybean ring (in blender). Baked soybean croquettes. Soybean casserole. Baked soybeans. Soybean-lentil loaf. Stewed soybeans. Soybean soufflé. Soybean squares. Roasted soybeans (dry-roasted). Leftover soybeans. Soy-oatmeal porridge (with soy grits, p. 162). Soy-cornmeal porridge. Soy sprouts (p. 163). Soy breads (p. 179-80): Kneaded soy-wholewheat bread. No-knead soy-wholewheat bread. Soy spoon bread. Unraised soy biscuits (p. 184). Soy-gluten popovers (p. 189). All-soy pancakes (p. 192). Soy waffles (p. 195). Soy cheese sherbet (with tofu, honey, vanilla, and nutmeg, p. 204). Soy cookies (p. 238). Flourless soy cookies. Soy-wholewheat cookies. Soy-cheese piecrust (with soy flour). Spiced soybean pie (with boiled, pureed soybeans, p. 250).

The section titled "Smoothies" (p. 26-29) contains the following recipes (those followed by an asterisk {*} contain dairy products and no soy unless stated in recipe name; the directions for all recipes in this section is "Blend all ingredients"): Homemade soybean milk (from whole soybeans, or from soy flour). Spiced soy milk. Soy-fig shake (with soy milk). Milk-soy smoothie (with soy flour)*. Almond milk. Peanut milk. Cashew milk. Milk-wholewheat shake*. Orange-coconut milk*. Coconut milk. Milk fruit shrub*. Strawberry smoothie.* Apricot shake*. Anise milk*. Milk smoothie*. Fruit milk shake*. Banana smoothie*. Lemon egg nog*. Honey egg nog*. Carob milk*. Carob smoothie. The recipes followed by an asterisk contain 2-4 cups cow's milk and no soy. Note 1. This is the earliest document seen (July 2013) that mentions "smoothie" or "smoothies" in connection with soy. All of the 22 recipes in the category titled "Smoothies" contain some kind of milk (either cow's milk or milk made from a seed–soy milk, almond milk, peanut milk, cashew milk, coconut milk, anise milk). About half of the smoothies contain fruits or fruit juices (orange juice, fresh berries, strawberries). None of the smoothies contain ice cream, frozen yogurt, or any other frozen dessert or frozen food. Therefore a smoothie seems to be like a milk shake but without the ice cream.

The recipe for "Milk-Soy Smoothie" (p. 27) reads: 4 cups milk. ½ cup soy flour. 4 tablespoons molasses. 2 eggs, raw. ½ teaspoon pure vanilla extract. 3 tablespoons nutritional yeast. Blend all ingredients. Serves 4-6.

The section titled "Nut butters (p. 29-30) gives a recipe for homemade peanut butter with "Variations: Homemade nut butter may be made from raw almonds, filberts, pignolias, walnuts (English and black), cashews, Brazil nuts, etc. Most of these nuts have enough oil so that no extra oil need be added." On p. 30 is a recipe for "Homemade peanut-sunflower seed butter."

By the time of the 19th printing, in Jan. 1974, this book had sold over one million copies.

Note 2. This is the earliest document or book seen (Dec. 2001) after 1960 with the term "natural foods" in the title.

Note 3. An advertisement for this book appeared in the July 1965 issue of *Natural Food and Farming* (p. 40). Address: White Mountains, New Hampshire [by July 1965: Hillsboro, NH 03244].

1882. LaLanne, Jack. 1961. Foods for glamour. New York, NY: Prentice Hall, Inc. xii + 243 p. Index. 22 cm.

• ***Summary:*** Soy related items: Broiled potatoes brushed with soya oil (p. 106-07). Jack's brother Norman is treating his ulcer "with consideration and soy milk. Soy beans, of course, are one of the most versatile vegetables we have. From them we make auto steering wheels, paint and pharmaceuticals. As a food they're easy to take and easy to digest. They're doing wonders for my brother" (p. 122). Jacks bastes his Thanksgiving turkey with soya oil or safflower oil–instead of grease, and brushes his brussels sprouts with a "trickle of soy oil" (p. 132-33).

Jack is now living in Hollywood, has his own daily half-hour TV show (broadcast into most major cities of North America), and lectures across America. More than 25 years ago he opened his first conditioning studios in Oakland, California. He and Elaine Doyle were recently married. Jack believes that diet and exercise are the keys to glamour and vibrant good health. But Hollywood has taught him that real glamour comes from within, and radiates outward. When he asked his good friend Paul Bragg "Who is the

most glorious woman you've ever known?' Bragg answered without hesitation, "Gloria Swanson"–"a beautiful mind in a beautiful body." LaLanne agreed. Gloria "eats only those foods that nourish health and beauty and shuns those that don't... She reads and meditates..." Other glamorous people? President Franklin Delano Roosevelt, actress Debbie Reynolds, actress Barbara Stanwyck, and statesman Winston Churchill–despite his large girth and evil-looking cigar (p. 20-24).

LaLanne retells the story of how he went from a sickly child to a healthy young man, inspired by Paul Bragg (p. 82-91). He considers fruit to be Nature's "beauty food" a natural alkalizer which can balance the acid influence of meat and eggs (p. 113). Address: Hollywood, California.

1883. Maner, Jerome Herman. 1961. Studies of factors affecting the utilization of isolated soybean protein by young pigs and rats. PhD thesis, Cornell University. 120 p. Page 2537 in volume 22/08 of Dissertation Abstracts International. *

Address: Cornell Univ.

1884. Montagné, Prosper. 1961. Larousse gastronomique: The encyclopedia of food, wine & cookery. New York, NY: Crown Publishers, Inc. 1101 p. See p. 925. Illust. Index. 26 cm. [Eng]

• ***Summary:*** The following are defined under "Soya Bean. *Soja"* (p. 925): Introduction. The soya bean is "the richest and cheapest source of vegetable protein." 1. Soya bean curd. *Fromage de soja.* Gives a completely inaccurate and useless description of how to make tofu at home. 2. Soya meat. *Viande de soja.* This "vegetarian meat," which resembles cooked ham, is said to be too complicated to make at home, but requires industrial equipment. 3. Soya milk. *Lait de soja.* 4. Soya sauce or extract. *Sauce, Extrait de soja.*

Note: This English-language edition is a translation from the original 1938 French-language edition by Nina Froud, Patience Gray, Maud Murdoch, and Barbara Macrae Taylor. Address: France.

1885. *National Academy of Sciences, National Research Council, Publication.* 1961. Progress in meeting protein needs of infants and preschool children: Proceedings of an international conference held in Washington, D.C., August 21-24, 1960 under the auspices of The Committee on Protein Malnutrition, Food and Nutrition Board, and The Nutrition Study Section, National Institutes of Health. No. 843. 570 p. Reviewed by Soybean Digest, Nov. 1961, p. 23.

• ***Summary:*** The National Academy of Sciences was established in 1863, the National Research Council in 1916, and the Food and Nutrition Board in 1940.

In Aug. 1960, 33 researchers from 18 foreign countries joined with 42 researchers from the USA in a 4-day conference to review the results of a worldwide research program for the development of protein products suitable for infants and children from indigenous resources such as soybeans, cottonseed, peanuts, and similar products in countries where protein deficiency is most prevalent. This research program has been conducted by the Committee on Protein Malnutrition with funds provided by the Rockefeller Foundation in cooperation with UNICEF, FAO, and WHO. The researchers also met to survey the areas of greatest need for further research, and to evaluate the status of knowledge in protein nutrition.

The 45 research reports in this volume constitute a comprehensive summary of the status of protein nutrition around the world and the technological problems involved in the development of economical protein foods. The papers are divided into the following groups: Central and South America (7 papers). Africa and the Middle East (10). India and the Far East (10). Relevant research in the United States (6). Experimental protein malnutrition in animals (4). Basic principles of protein and amino acid evaluation and potential protein resources (10). Protein problems around the world (3). Summary of the conference. Nomenclature guide to plant products cited.

Autret (p. 537) stated "the No. 1 problem for F.A.O. and for national agricultural departments is the production of protein foods of good quality." Address: Washington, DC.

1886. Patwardhan, Vinayak Narayan. 1961. Nutrition in India. 2nd ed. Bombay, India: Indian Journal of Medical Sciences. 515 p. Illust. 23 cm. *

• ***Summary:*** Complete agreement has not been reached in India on the relative value of soybean milk and cow's milk. The author was born in 1905.

1887. Patwardhan, Vinayak Narayan. 1961. Nutrition in India. 2nd ed. Bombay, India: Indian Journal of Medical Sciences. 515 p. See p. 56, 57, 114. Illust. 23 cm. *

• ***Summary:*** Page 56: "They found that the biological value of soya bean milk approached 90 per cent of that of casein and about 80 per cent of that of milk proteins."

Complete agreement has not been reached in India on the relative value of soya bean milk and cow's milk. Soya bean milk is also mentioned on pages 57 and 114.

1888. Rodale, J.I. ed. 1961. How to grow vegetables and fruits by the organic method. Emmaus, Pennsylvania: Rodale Books, Inc. 926 p. See p. 507-09. Illust. Index. 23 cm. Reprinted in 1974.

• ***Summary:*** In the large Section 2, "Organic vegetable culture: A complete listing," is a subsection titled "Soybean" (p. 507-09) with the following contents: Introduction, brief history [inaccurate], and nutritional value. Range and soil. Seed. Planting. Enemies. Harvest. Focuses on how to grow "vegetable soybeans" using the organic method.

"Two types of soybeans are now cultivated in this

country, out of the hundred or more varieties of the Orient. Field soybeans are used to make hay, for seed, for green manure and in combination with sorghum, for silage. The seed is a rich source of oil which has industrial as well as culinary uses. Vegetable soybeans are used green like peas or lima beans; dried, like navy beans, or are sprouted like Mung beans. Soybean protein is more complete than the protein found in any other vegetable. Soy flour is a valuable protein additive to baked products and is used for diabetics because it is low in carbohydrates. Soy milk and cheese are useful for babies and children suffering from cow's milk allergies. Soy meal, like cottonseed meal, is a rich source of nitrogen when used as a fertilizer."

"Tests at Iowa State have shown that the best way to plant soybeans is to plant several varieties, maturing in different periods, at the same time. Judging by gustatory as well as horticultural standards, Iowa State recommends Sac, maturing in 9 weeks, Kanro, maturing in 10 weeks and Jogun, maturing in 12 weeks. These may be expected to supply green beans for the table during the late summer."

Photos show: (1) Wilbert Walker, a Pennsylvania organic gardener, with a sprawling vegetable soybean plant in his garden. (2) A close-up of soybean pods on a soybean plant. Address: Editor-in-Chief, Rodale Books Inc., Emmaus, Pennsylvania.

1889. Rodale, J.I. ed. 1961. The complete book of food and nutrition. Emmaus, Pennsylvania: Rodale Books. 1054 p. Index. 23 cm.

• ***Summary:*** J.I. Rodale recommends the consumption of natural meat and eggs. He discourages humans from consuming or using milk, chemicalized meats, added salt, sugar, chocolate, aluminium utensils, and heated or hydrogenated fats. Throughout this book, he uses scientific sources and cites them carefully.

Chapters 30-40 (p. 116-56) are a critique of cow's milk. Man has made the cow into a milk machine, with ever larger udders, which can produce 75 times as much milk per year as in Biblical times. For adults, milk may cause lactose intolerance, allergies and excessive tallness, and may contain undesirable antibiotics.

Chapter 40, titled "Nutritive substitutes for milk" (p. 154-55), mentions "soybean milk and Tahini milk which is a milk made from ground sesame seeds. Tahini milk appears to us to be an excellent substitute for milk in the diet because of its extremely high content of calcium" (p. 155).

Dr. Stefansson (p. 69-72) lived for one year in good health on meat alone. The discovery of cereal culture 2,000 years ago was the beginning of civilization and human degeneration. The human digestive tract has not had time to adjust to this change. It took humans 2 million years to adapt to the diet of the primitive human hunter (consisting mainly of proteins and animal fats) from the largely vegetarian diet of the anthropoids. "It is extremely difficult to plan a vegetarian diet in which the essential amino acids will all be represented in their proper proportion."

Chapter 127, "How to sprout beans" (p. 472-74), discusses mainly how to sprout soybeans, and their nutritional value. A table compares the vitamin and mineral content of soybean sprouts and mung bean sprouts; the former are much more nutritious.

Chapter 153, "Soybeans–The wonder food" (p. 536-41) has the following contents: Introduction. How nutritious are soybeans? ("Soybeans are one of the few non-animal proteins which are complete–that is, contain all of the essential amino acids in good proportion.") Sprouting beans for vitamin C. Soybeans are economical (says the best book on soybeans is *Soybeans for Health, Longevity and Economy,* by Philip S. Chen, Ph.D.). Soybean milk for infants. "Soybeans are richer in potassium than any other food except brewer's yeast which, of course, is eaten in much smaller quantities. They contain more pantothenic acid than any other food except egg yolk, brewer's yeast, liver, rice bran, and wheat bran. The iron in soybeans is 96 per cent 'available'–that is, digestible and used by the body." Chapter 154, "Soya milk and soya curds" (p. 541-42), by Dr. W. Kring, of Dusseldorf discusses: Use of soybeans in East Asia. Fresh soya milk for every household. Acidophilus soya milk–Soya curds. Making soya cheese or tofu [at home].

Note 1. This is the earliest English-language document seen (April 2013) that uses the term "soya curds" in connection with tofu.

Note 2. This is the earliest English-language document seen (Sept. 2012) that contains the term "Acidophilus soya milk" (or "Acidophilus soymilk") regardless of capitalization, hyphenation, or spaces.

Chapter 178, "Eggs, meat and soybeans" (p. 675-77) gives a nutritional comparison of these three high-protein foods. One section titled "Meat substitutes" begins: "Soybeans should be a part of your diet as a substitute for meat." It continues: "Even though you include plenty of meat in your diet, make use of soybean protein, too. If your family does not know soybeans, get some and begin to introduce them to a wonder food."

Chapter 169, "Are chemical fertilizers harming our food" (p. 618-24) is part of a statement made by J.I. Rodale on December 15, 1950, to a Congressional Committee formed to investigate chemical fertilizers. He argues that the organic method is "far superior to the present general practice with respect to fertilizer usage, not only from the human health standpoint but from the point of view of preventing soil erosion and giving higher yields at a lower cost." Also discusses: History of the organic method. What is the organic method? What is a chemical fertilizer? The health aspect (experiments showing a much higher survival rate in mice fed organically grown food). More vitamins in "organic" food. Physicians praise the organic method. Rejection by our government (and request that agricultural

experiment stations test and compare the two methods).

Chapter 173 titled "Investigating Primitive Diet" (p. 642-54) contains a detailed summary of the work of Weston A. Price. D.D.S., as described in his book *Nutrition and Physical Degeneration.* This book is available from the Lee Foundation for Nutritional Research, 2023 W. Wisconsin Ave., Milwaukee, Wisconsin.

Chapter 182, titled "When you use fats and oils" (p. 682-83) discusses margarine, which is made from vegetable fats which have been hydrogenated. Soybean oil is one of the oils use to make margarine. "As you know, we do not recommend using margarine, mostly because of the many chemical substances used in it, of which the synthetic vitamin A is only one. Artificial coloring, preservatives and so forth are also used. But, in addition, hydrogenating the oils to make them solid destroys most of the essential fatty acids which are the chief reason for eating vegetable oil. So margarine is no better than butter as a spread, in spite of the fact that it is made from substances that do not contain cholesterol." "Soybean oil is another popular vegetable oil." Rodale especially recommends "our old friend, sunflower seed oil"–which is rich in vitamin E and linoleic acid.

Chapter 183 titled "Heated fats can cause cancer" (p. 686-90) summarizes several scientific studies and notes that "Hydrogenated fats are everywhere" in our food supply. "Finally, don't buy hydrogenated shortenings (the solid kind)..."

Chapter 198 titled "Who pays for nutrition research?" (p. 741+) begins: "'Dr. Stare's Nutrition Department (at Harvard University, Massachusetts) received from Food Industries and Foundations representative of their interests between and including the fiscal year 1950 to 1956 gifts totaling approximately $378,000, half of which was from the Sugar Research Foundation, supported by the sugar interests, and the Nutrition Foundation, supported largely by commercial food processors. A large portion of the other half was from the chemical and drug interests.

"This challenging statement sets the tone for a series of open letters from the Boston Nutrition Society, Incorporated, to Dr. Nathan M. Pusey, President of Harvard University. We think readers will find in these letters the answer to their puzzled query Ä 'Why?' Why must we eat doctored up, chemicalized, refined, cheapened food and above all, why must some of our top food scientists, men like Dr. Stare of Harvard, call everyone a faddist and a crackpot who points out that the modern American food is not everything it should be?

"The open letters hit at the very heart of the problem. Much university research on nutrition is being financed by the very folks who profit from selling this worthless food."

Chapter 199, "A British nutritionist takes stock," summarizes an article titled "Food and Health," by Dr. H.M. Sinclair (*British Medical Journal*, 14 Dec. 1957) about the dangers of feeding too much cow's milk to infants and children. Another article on the same subject by Dr. Milton J.E. Senn, was published in *McCall's* (Jan. 1958). Chapter 272 is "Kelp for trace minerals" (p. 1005-09) and Chapter 273 is "The value of seaweed nutrition" (p. 1010-12).

Chapter 39, "Miscellany on milk" (p. 146-54), documents many problems with cow's milk. Its contents: Introduction, detergents in milk, antibiotics in milk, some infants can't take milk at all, is milk the universal antidote?, an all-milk diet is hazardous, ulcer patients beware!, cavities caused by milk, DDT contamination, misuse of calcium, radioactive substances in milk, milk as a cause of goiter, a famous nutritionist speaks (Dr. Norman Jolliffe), milk's value questioned (by McCance and Widdowson), allergies to milk sugar, dermatologist criticizes both bread and milk, and old (1926) court decision on raw milk. Chapter 41: "Yogurt" (p. 156+). "Yogurt is probably the most popular of all so-called health foods". In the 19th century, Metchnikoff was the first to investigate it scientifically. Chapter 96: "Sesame seed–An ancient and nutritious food" (p. 342-44; Tahini milk makes a good milk substitute). Address: Emmaus, Pennsylvania.

1890. Tiling, Wolfgang; Ehring, A.M.; Stewart, C.P. 1961. The use of soya-based foods in infant feeding. *Nutritio et Dieta* (*European Review of Nutrition and Dietetics*) 3(2):89-104. [2 ref. Eng; ger; fre]

• ***Summary:*** A note on the first page states: "Dr. Wolfgang Tiling died suddenly at the time when he was about to prepare a preliminary report of his observations on the use of soy-based foods in infant feeding." Though his results are incomplete, his colleagues feel they are sufficient to justify publication.

The section titled "Development of a soy-based infant-food" states that this material, which had been supplied by Dr. Ebermann to Dr. Tiling, and was one of the soya foods used by Dean, had been modified until the "formulation ultimately adopted and used in the later trials at the *Kinderkrankenhaus Rothenburgsort* gave excellent results in rat feeding tests, both short and long-term. This material is termed *Wanderlac* in Dr. Tiling's case records, but it will be referred to as *Velactin* in this paper since it is shortly to be marketed in the United Kingdom under this name by A. Wander Ltd. who kindly provided the considerable quantities used in these trials."

Clinical trials were conducted on over 40 children, most suffering from various allergies, with good results.

Note: This is the earliest document seen (April 2010) that mentions Velactin–though it is not yet on the market. Address: 2. Kinderkrankenhaus Rothenburgsort, Hamburg; (3) Dep. of Clinical Chemistry, Royal Infirmary, Univ. of Edinburgh, Scotland.

1891. Watanabe, Tokuji. 1961? Studies on tofu production from U.S. soybeans (2). Food Research Institute, Japan. 11 p.

Undated. Typed, without signature. [2 ref. Eng]
• ***Summary:*** Contents: 1. Experiments in the laboratory: Weight per 1,000 seeds, color of seed coats and color of hilum of U.S. and Japanese soybeans, speed of water absorption in U.S. and Japanese soybeans, protein and fat contents of U.S. and Japanese soybeans, water-solubility of protein in U.S. and Japanese soybeans, natures of soy milk obtained from U.S. and Japanese soybeans. 2. Production test of tofu: Production method of tofu, comparison between the tofu made from U.S. soybeans and that from the Japanese, choice of U.S. soybean variety suitable for tofu production. 3. Improvement of production methods.

Tables show: (1) Properties of U.S. and Japanese soybeans (Japanese: Nagano, Hokkaido, Miyagi, Aomori, Kumamoto. U.S.: Harosoy, Hawkeye, Adams, Chippewa, Clark, Lincoln, Blackhawk, Acme, Ottawa Mandarin, Norchief, Comet, Lee, Jackson, Dorman, Dortchsoy, Ogden, Wabash, Monroe, S-100, Capital, Flambeau, Shelby, Ford, Hardome, Renville, Lindarin, Perry, Grant; For each variety is given: Weight per 1,000 seeds, color of seed coat, color of hilum, remarks). (2) Nitrogen content and nitrogen outflow of U.S. and Japanese soybeans. (3-1) Influence of the quantity of water added on the nitrogen solubility of soybeans. (3-2) Influences of the length and temperature of heating on the nitrogen solubility of soybeans. (4) Comparison between U.S. and Japanese soybeans in tofu production (for each variety is given: Percentage of protein and fat in the soybeans. Protein in laboratory soy milk {%}. Protein in factory soy milk {%}. Weight of tofu {kg from 1.8 kg of soybeans}. Yield rate of tofu {% of solids in soybeans appearing in tofu, dry basis}. Yield rate of protein {% of protein in soybeans appearing in tofu}. Protein in tofu {%}. Height of tofu {cm}. Moisture of tofu {%}. Hardness of tofu {using penetrometer; large value = soft tofu}. Properties of tofu–Coagulation, texture, color {3 = excellent, 2 = good, 1 = fair}). (5) relationship of water-soluble protein + fat in soybeans to weight, protein, and fat contents of tofu. (6) Volume and composition of okara. (7-1) Properties of tofu at various doses of coagulant and various tempos [speeds] of coagulation.

Note: A Japanese version of all tables is given on unnumbered pages at the end. Address: Food Research Inst., Japan.

1892. Chen, Philip S.; Chen, Helen D. 1962. Soybeans for health, longevity, and economy. 2nd ed. South Lancaster, Massachusetts: The Chemical Elements. xii + 242 p. Jan. Illust. Index. 21 cm. 1st ed. 1956. [24 ref]
• ***Summary:*** This book is identical to the original 1956 edition, third printing (the dedication is to William J. Morse and Harry W. Miller), except that: (1) Table 1, titled "Soybean production in the United States" (p. 2) gives statistics to 1960, instead of 1958. (2) Appendix B (p. 224-36) has been updated based on the 1961 *Soybean Blue Book.* (3) The dust jacket has been updated. On the rear dust jacket is a portrait photo of Dr. Philip Chen and a biographical sketch. (4) The paper is slightly thicker.

Note: In 1962 Chen wrote *A New Look at God,* published by Chemical Elements (288 p.). Address: 1. Prof. of Chemistry, Atlantic Union College, South Lancaster, Massachusetts; 2. National Science Foundation Fellow, Cornell Univ.

1893. Collins-Williams, C. 1962. Cow's milk allergy in infants and children. *International Archives of Allergy and Applied Immunology* 20(1):38-59. [54* ref]
• ***Summary:*** "Allergy to a food denotes an antigen-antibody reaction where the food serves as antigen and causes the production of antibody in the person who ingests the food."

"There are a great many non-immunological reactions to foods which should be classified as intolerances [intolerance] rather than allergy since there is no antigen-antibody reaction.

Table 1 shows (listed alphabetically) the many signs and symptoms attributed to cow's milk allergy.

"Milk substitutes: One approach to the treatment of patients sensitive to cow's milk is the use of cow's milk substitutes, the most popular of which is one or other of the various soy bean preparations available on the market." Table 8 lists the various milk substitutes which have been tried in the past, most of them on a very restricted basis. Address: M.D., Director, Allergy Clinic. Hospital for Sick Children, Toronto, and Dep. of Pediatrics, Univ. of Toronto, Canada.

1894. **Product Name:** Beanectar or Beannectar (Soybean Milk).
Manufacturer's Name: Malayan Food Products Ltd.
Manufacturer's Address: 153 McNair Rd, 12, Singapore.
Date of Introduction: 1962. February.
New Product–Documentation: U.S. Foreign Agricultural Service. FAS-M126. Feb. p. 22. "Southeast Asia as a market for U.S. soybeans and vegetable oils." In Singapore 2 companies are engaged in the production of pasteurized soybean milk, which is sold as a soft drink. They use about 100 tons of soybeans a month for this purpose. One product is marketed as "Beanectar" soybean milk. On p. 37 the company name is given, and the product name is spelled Beannectar. The managing director is Tan Chong Ming. "The company uses about 3 tons of Mainland Chinese soybeans daily when operating."

1895. Spilsbury, Calvin C. 1962. Southeast Asia as a market for U.S. soybeans and vegetable oils. *USDA Foreign Agricultural Service.* FAS-M-126. 41 p. Feb. Summarized in Soybean Digest, March 1962, p. 26.
• ***Summary:*** Gives an excellent, detailed discussion, with many statistics, of the soybean markets in Hong Kong,

Singapore, Malaysia, Indonesia, British Borneo (Sarawak, Brunei, and North Borneo [Sabah]), and Burma.

"The 350,000 Chinese of British Borneo are large consumers of soybean food products and fats and oils, but this market is small. Domestic production of soybeans in North Borneo is more than sufficient to supply domestic demand for that country, and some exports are made each year. Imports of soybeans into Sarawak and Brunei, though small, have been growing each year. In 1960 Sarawak's imports were 608 long tons, compared with 526 tons in 1959 and 403 tons in 1958. Thailand, Mainland China, Vietnam, and Cambodia are the main suppliers, as U.S. soybeans have been scarce in this market."

Burma: "The domestic production of soybeans in Burma has been small, but output is large enough to provide demands of the Burmese people in the Shan State, population approximately 500,000, who use soybeans for food." The peanut is the main oilseed crushed in Burma. The majority of peanut crushing mills are located in Rangoon, Insein, Mandalay, and Myingyan.

Table 6 (p. 29) shows imports (in piculs; 1 picul = 133 lb) of soybeans to Sarawak, by country of origin, annually 1958-1960. The main source countries are Thailand, Mainland China, and Indochina. Imports increased from 6,853 piculs in 1958 to 10,343 piculs in 1960.

Appendix: Hong Kong: Importers of U.S. soybeans, manufacturers of wet and dried bean curd for export to U.S., soybean sauce manufacturers. Singapore: Importers of U.S. soybeans, importers agents providing services to soybean importers, manufacturers of soybean curd, largest soybean sauce manufacturers, soybean milk companies. Federation of Malaya: Importers of soybeans, soybean sauce factories (Penang, Province Wellesley, Kedah, Perak, Selangor, Malacca, Negri Sembilan). Sarawak: Soybean importers and dealers (all of Kuching). Burma: Fats and oils importers (Rangoon), vegetable oil mills (Rangoon).

Note 1. Sarawak became part of Malaysia in 1963. Note 2. This is the earliest document seen (May 2010) concerning soybeans in Brunei. This document contains the earliest date seen for soybeans in Brunei (Feb. 1962). Address: Fats and Oils Div.

1896. **Product Name:** Infa-Soy (Soymilk Infant Formula).
Manufacturer's Name: Madison Foods.
Manufacturer's Address: Madison College, Madison, Tennessee.
Date of Introduction: 1962. March.
New Product–Documentation: Letter from Sam Yoshimura. 1981. Feb. 20. "At the beginning of 1962, production of Infa-Soy, using Dr. Harry Miller's formula, was started under the direction of his son, Willis Miller." The key to the formula was the addition of a little cooked rice (or the water therefrom; a small amount of rice was cooked in excess water for 10-15 minutes), which was effective in preventing loose stools in infants. Soybean Blue Book. 1965. p. 115. The company is now called Nutrition International Corp. and Infa-Soy is described as a "hypoallergenic baby formula."

1897. Lahiri, Nripendra L.; Sastry, L.V.L.; Shurpalekar, S.R.; Chandrasekhara, M.R.; Swaminathan, M.; Subrahmanyan, V.I. Assignors to Council of Scientific and Industrial Research. 1962. Vegetable milk powder. *Indian Patent* 70,049. April 7. Application filed 15 Dec. 1959. (Chem. Abst. 57:14256a). *
• ***Summary:*** Two parts by weight of dehulled soybeans and 1 part by weight of peanuts are used as the main raw materials. Both are ground and sodium bicarbonate and water are added. The resulting milklike emulsion is adjusted to pH 8.0–8.2, stirred, then centrifuged to remove the crude fiber and starch. Sugar and buffer salts are added to the clarified emulsion, the pH is adjusted to 6.8–7.0, the milk is steamed to destroy tryptic inhibitor, then homogenized, spray dried, and fortified with vitamins A, B, C, and D, calcium, phosphorus, iron, and DL-methionine.

1898. *British Vegetarian.* 1962. Dr. Harry Willis Miller. March/April. p. 96.
• ***Summary:*** Discusses the excellent work of Dr. Harry W. Miller with plantmilks and infant nutrition. Dr. Miller, Emeritus Director of the International Nutrition Research Foundation in Arlington, California, has just been elected an honorary member of the Vegetarian Nutritional Research Council.

"Dr. Miller has recently been visiting different parts of the Far East setting up equipment for the production of liquid plantmilks in under-developed areas..." A large photo shows Dr. Miller.

1899. General Mills, Specialty Products Div. 1962. From soy products, General Mills formulates new protein-rich foods (Ad). *Soybean Digest.* May. p. 28. [11 ref]
• ***Summary:*** A full-page ad. "We are manufacturing and marketing SMP (Soy Milk Powder) which, when mixed with water, makes a delicious beverage for school lunches and for supplementing diets of children unable to get cow's milk; also, through an agreement with Meals for Millions Foundation, MPF (Multi-Purpose Food) which provides, in concentrated form, the essential nutrients usually lacking from high carbohydrate diets. Using soybeans as the key, we have developed TSP (Toasted Soy Protein)–an unusually low cost, high quality protein completely pre-cooked and ready to use. Other protein foods from soybeans are in the developmental stage. When perfected, these too will contribute to improved world nutrition."

The "Specialty products" logo resembles an infinity sign. A large photo shows a little girl, with a mud wall behind her, looking up at her mother, who is feeding her

with a spoon from a bowl. Address: 9200 Wyzata Blvd., Minneapolis 26, Minnesota.

1900. Marcello, Dominic. 1962. Italy: New soy pasta on market. *Soybean Digest.* May. p. 59.
• ***Summary:*** The Soybean Council of America is cooperating with soy-related industries in Italy. "As a result of this cooperation, the first macaroni supplemented with soy protein, manufactured by the Dieba Co., is now on sale everywhere in Italy. The name of the new product is 'Soiamin'–the first of a series of pasta products containing soy derivatives. Soiamin will be the trademark of all such products to follow.

"Our mutual problems include the production of two new types of pasta containing 5% and 10% soy protein to be called Soiamin 15 and Soiamin 20 respectively; a doughnut mix, bread and cookies, all containing soy flour; soy beverages; a salad and cooking oil bearing the name of 'soia'; plus a number of other dietetic products such as baby foods and food for people unable to digest gluten.

"Following the Dieba lead, two other major manufacturers are now working on the production of pasta with soy protein." Address: Soybean Council Director for Area 1.

1901. Shade, Lucille. 1962. How soybeans can help you. *Organic Gardening and Farming* 9(5):22-24. May.
• ***Summary:*** The subtitle reads: "A remarkable plant that yields a highly nutritious food, helps build soil, and does a dozen other jobs–the soybean belongs in your garden." A photo caption states: "The vegetable soybean draws heavily upon lime in the soil, but will return nitrogen if the residue of the vine is left in the field and turned under. Soybeans give the most complete vegetable protein."

"Soybeans can be eaten green in much the same way you'd eat lima beans... They can be roasted and eaten like peanuts, or used to make soy milk for babies allergic to other kinds of milk.

"For the home garden, be sure you get an edible or vegetable variety, not a farm legume or forage type. Edible strains differ as much in palatability from field varieties as does sweet corn from field corn... Two of the better edible varieties are Bansei and Pando. These mature fully in about 96 days... Green vegetable soys may be prepared the same way as other garden beans. They make a good addition to soups, chili con carne, salads, etc. Mixed with corn, they make a delicious succotash.

"Soybeans should be inoculated like any other legume. Not only will they do better but the inoculant will help the plant to utilize nitrogen from the air rather than from the soil. Soybeans can obtain as much as two-thirds of their nitrogen from the air.

"A package of inoculant can be purchased at almost any garden center very cheaply. Twenty-five cents will buy enough to inoculate 5 or 6 pounds of beans. To use, simply dump the seeds in a pan, cover with water and then drain immediately. Sprinkle the inoculant powder over the seeds, mix well, and plant.

"Soybeans have long been used as a green manure crop to improve both the condition of the soil and to add a goodly amount of nitrogen as well. For best results, inoculate the soybean seeds, plant at the rate of about 3 pounds for each 1000 square feet of ground and turn under when the plants reach the blossom stage. They will then be as large as they'll ever be and still be tender enough to decay rapidly in the soil. Most of the nitrogen has been gathered by this time also.

"Soybean meal is one of the finest organic fertilizers you can buy."

Note: This is the earliest article on soy seen (Aug. 2002) in *Organic Gardening and Farming* magazine.

1902. USDA Northern Regional Research Laboratory. ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, Illinois. iii + 242 p. Held 13-15 Sept. 1961 at Northern Regional Research Laboratory, Peoria, Illinois. No index. 26 cm.
• ***Summary:*** The earliest conference on this subject in the USA. A very important document, with many excellent articles by experts in their fields worldwide.

Contents: Introductory remarks. Session I: Nutritional deficiency problems in developing areas of the world. II: World marketing of soybeans and soybean products. III: Research and development on soybean foods. IV: Nutritional and biological studies. V: Processing and feeding value of fluid and dry soy milks. VI: Problems involved in increasing world-wide use of soybean products as foods–panel discussion. VII: Committee on quality and processing guide for edible soy flour and grits. VIII: Summary of conference. List of attendance. Address: NRRL, Peoria, Illinois.

1903. Herb-Mueller, Lene. 1962. Die Soja und Ernaehrungsfragen in Entwicklungslaendern [The soybean and nutrition problems in developing countries]. *Ernaehrungs-Umschau* 9(5):143-46. July. [Ger]
• ***Summary:*** Nutritive value of soybean products. Address: Bonn.

1904. *Soybean Digest.* 1962. Soybean Council of America, Inc.: Hold mass demonstration of soy foods in Pakistan. July. p. 20.
• ***Summary:*** R.S. Patel, Soybean Council of America director for Pakistan, "recently carried out a very successful mass demonstration on soy foods at Malir village, with over 500 children and 250 adults attending." He gave a lecture on soybeans and their uses. Mr. Sadiq, a government official, also gave a lecture.

They distributed snacks made from 10% soy flour

and 90% wheat flour, fried in soybean and cottonseed oil shortening. A soy beverage was also given to the children. "The program lasted about 2 hours and the enthusiasm was so great that a stream of people was still coming when it ended." A photo shows Mr. Patel with the soy foods and attendees.

1905. *Guardian* (*Manchester*). 1962. Milk made from vegetables may be on sale soon. Aug. 27. p. 2, col. 3.
• ***Summary:*** "Milk made from outer cabbage leaves, pea pods, and other greenstuffs may soon be on sale as a result of experiments by scientists working in the Vegetarian Nutritional Research Centre, Garston, Watford." Dr. Frank Wokes, director of the research center, believes that there will never be enough cow's milk to supply all the world's children or to meet all the protein deficiencies. Before the end of this year, the Centre hopes to open a pilot plant for the process; large scale production would start later.

Related experiments have been made since before World War I, and "a plantmilk, made from cereals and pulses, has been on sale for some years."

1906. *Times* (*London*). 1962. Milk made from plants: Research scientists' experiments. Aug. 27. p. 5, col. 2.
• ***Summary:*** "Milk made from outer cabbage leaves, pea pods and other greenstuffs may soon be on sale after experiments by scientists working in the Vegetarian Nutritional Research Centre at Garston, Herts. They hope to open a pilot plant for the process before the end of this year... Basically, the raw materials used are the same as the cow eats.

"The scientists have got rid of a greenish colour in the man-made milk and now they hope to get rid of its slight vegetable flavour. Then the product would go on the market as a powder or a liquid, and it is expected to compete in price with cows' milk."

"Dr. Frank Wokes, director of the research centre, said yesterday: 'There can never be enough cow's milk for all the world's children or to solve all the protein deficiencies. But there is always plenty of greenstuffs such as we are using... The vitally important vitamin B12 must be added.

"'A woman member of the research centre, now in her 80s, has offered to will her fortune for the production of plantmilk provided we are able to put on the market within a year of her death a plantmilk which is certified as satisfactory from a nutritional viewpoint. Another proviso is that its domestic value must be certified by Lady Dowding, wife of Air Chief Marshal Lord Dowding. Lady Dowding has been interested in the project for some years."

1907. Dowding, Muriel (Lady). 1962. Why I am interested in plantmilk. *British Vegetarian.* July/Aug. p. 188-89.
• ***Summary:*** This famous woman and vegetarian (head of the Beauty Without Cruelty campaign) is speaking at the [Vegetarian Nutritional Research] Centre located at the Stanborough School, Watford, Herts., England. The school is run by Seventh-day Adventists. She speaks of the cruelty involved when cows are made to give milk and dairy products, and looks forward to the alternate milk that this centre will provide, at the beginning of a new age–the Age of Aquarius.

1908. Miyasaka, Shiro. 1962. Analise comparativa do leite de vaca e de soja [Comparative analysis of cow's milk and soymilk]. *O Agronomico* (*Campinas, SP, Brazil*) 14(7-8):5. July/Aug. [2 ref. Por]
Address: Secao de Leguminosas, Instituto Agronomico, Campinas, Sao Paulo, Brazil.

1909. *Today's Food* (*Loma Linda Foods, Arlington, California*). 1962. [Commercial food products made by Loma Linda Foods]. 7(2):4-6. Summer.
• ***Summary:*** Loma Linda food products include: Loma Linda Boston Style Baked Soy Beans.

An article by nutritionist D. Van Gundy Jones (p. 4) notes that "Soy milk makes an excellent mayonnaise."
Address: 11503 Pierce Place, Arlington, California.

1910. Nagafuge, Emilio. 1962. Los productos alimenticios derivados de la soya [Food products derived from the soybean]. *Tierra* (*Mexico*) 17(9):678. Sept. [Spa]
• ***Summary:*** Contents: Preface. Soymilk. Soy cheese [tofu]. Soy flour. Soy oil. Soy lard and butter (*Manteca y mantequilla de soya*). Soy sprouts (*Los brotes de soya*). Soy sauce. Miso.

Note 1. This is the earliest Spanish-language document seen that uses the term *mantequilla de soya* to refer to margarine.

Note 2. This is the earliest Spanish-language document seen (Jan. 2013) that uses the term *Los brotes de soya* to refer to soy sprouts. Address: Mexico.

1911. Joshi, A.B.; Singh, H.B.; Mital, S.P. 1962. Why be indifferent to soybean? *Indian Farming* 12(7):15-18. Oct. Series 2.
• ***Summary:*** Contents: Introduction. Indian farmer's indifference. Soybean for food (as pulse or flour). Soybean dal. Soybean flour. Soybean milk. Soybean cake [for livestock feed]. Fodder and green manure. Industrial uses of soybean (Lecithin, derivatives).

Soybean acreage in India is almost negligible. "According to *ad hoc* estimates, only about 43,000 acres are planted to soybean in India, mainly in the hills of Uttar Pradesh, with an annual production of about 5,900 tons." Known there as *bhat, bharat,* or *botang,* it is commonly used as *muri* (roasted beans; just as roasted and salted gram and peas are eaten elsewhere in the country), or the beans are ground to make *sattu* for mixing with barley or wheat

sattu. Occasionally *chapatees* [chapatis] are also made from a mixture of soybean flour with maize flour. However, due to its high oil content, soybean flour can keep well only for short periods, especially so in warmer locations."

In China and Japan, soybeans are made into soya milk and tofu (which corresponds to *panir*), "a popular milk product prepared at home and cooked into vegetable curries in India."

Note: This is the earliest document seen (April 2013) that contains the word "panir" (or "paneer") used in connection with tofu or soy. Panir is a soft, fresh dairy cheese, widely consumed in India. It is more expensive than tofu. Address: Indian Agricultural Research Inst., New Delhi, India.

1912. Gladwyn & Co. 1962. Classified ad: On user's license–Plants for fruit juice powder, soya bean milk powder, instant tea. *Times of India* (*The*) (*Bombay*). Dec. 21. p. 14.
• ***Summary:*** By M/s. Chemap AG, Switzerland. Address: 251, D. Naoroji Rd., Bombay-1.

1913. Olson, Harvey Stuart. 1962. Olson's Orient guide [1st ed.]. Philadelphia, Pennsylvania and New York: J.B. Lippincott Co. 1008 p. Illust. (by Cy Ferring). Maps. Index. 20 cm. 1st ed., 1962 [1963].
• ***Summary:*** In Chapter 5, "On dining out in the Orient," we read (p. 229): In Japan, much loved and widely consumed items include "bean sprouts and pastes [miso] and sauces made from soy beans." The Japanese, like many "foreign visitors are fond of sukiyaki made of thin beef strips simmered in a tasty soy sauce garnished with fresh vegetables, served with a raw egg, and accompanied by rice. They enjoy tempura, too,..." The dip is made of finely grated radish [daikon] "and spicy soy sauce."

The section on "Chinese cuisine" states (p. 236): "Cantonese which is the blandest, most subtle, and least greasy of the varieties of Chinese cooking..." Features "bean curd and minced pork."

The section titled "Japanese specialties" (p. 245+) starts with Sukiyaki (One "bowl contains small pieces of lotus root, scallions, bamboo shoots, bean curds, mushrooms, and other greens," p. 246). Also (p. 249) "Batayaki is the first cousin to sukiyaki," but with the difference that "batayaki is prepared with a sauce less pungent than that used for sukiyaki." This sauce has "a soybean base, but mixed liberally with butter" [*bata*].

The entry for "Soy sauce" (p. 252) taken from the Random House *American College Dictionary* "defines soy sauce as 'a salty fermented sauce much used on fish and other dishes in the Orient, prepared from soy beans.' I cannot emphasize too strongly how important a part this sauce plays in the Japanese cuisine. It is not only used in connection with fish but as a sauce for sukiyaki. It is also used generously in preparing chicken and steak and is utilized as a garnish as well as an ingredient.

"As a matter of fact I can think of no place where this tasty bit is not likely to appear. I. for one, like soy sauce." However. if you wish, you can ask your waiter to omit it.

The section on Thailand (p. 278-79) notes: "*Haw Mok,* a flaming hot Thai specialty, is made by pounding dry chili peppers, shrimp paste, lemon grass, onions, garlic and salt, and blending them with steamed coconut milk and soy sauce decorated with egg and slices of raw fish. It is served in a large banana leaf."

The section on night clubs in Osaka, Japan says of Yen Kyo (p. 312). "Another quality Chinese restaurant... Taste the spring rolls, the chicken in papers, and the vegetable bean curd dishes."

In Chapter 12, "Japan," the section on Tokyo states (p. 692): "One can eat squid, lotus roots, roasted sparrows (head, claws and all), raw lobster, embryonic eggs on a stick, cuttlefish painted with soy sauce, blowfish, mud eel, mock turtle, fermented bean curd, bamboo shoots, and quail's eggs,..."

Note: The 1st, 2nd, and 3rd editions all contain 1008 p.

1914. Steinkraus, K.H.; Hand, D.B.; Hackler, L.R.; Van Buren, J.P. 1962. Research on soybean products of improved nutritional value. *Farm Research* (*New York Agricultural Experiment Station*) 28(4):4-5. Dec.
• ***Summary:*** Discusses soymilk and tempeh. As a result of studies at Geneva, the yield of soybean solids for soymilk production has increased from 65 to 90 percent." Photos show: (1) Two men pouring soymilk from a large metal vat into a cooker, in the Cornell "pilot plant process for producing soymilk. (2) Small packets of tempeh wrapped in banana leaves on a round woven bamboo tray in Indonesia. Address: Dep. of Food Science and Technology, Geneva, New York.

1915. Sutedjo, -; Poey, Seng Hin. 1962. Continuation of soya milk trials on premature infants. *Paediatrica Indonesiana* 2(4):129-39. Oct/Dec. [4 ref. Eng]
• ***Summary:*** "In the *Journal of the Indonesian Medical Association* of January 1961 the results of Indonesian made soya milk (Saridele of Jogjakarta) trials on infants and prematures have been published by the writers. Their conclusions are as follows: (a) Cow's milk remains superior to soya milk (saridele). (b) Soya milk, as a source of 'complete protein' in Indonesia–since cow's milk and other animal proteins are still difficult to get and highly expensive–can be used as a 'remedy' and preventive to protein deficiency in adults and children over six months of age. (c) Under pressing circumstances, it can probably be used also as a substitute for cow's and breast milk on infants over four months old. (d) On infants less than six months–to be more exact less than four months–soya milk is unfit for use as a substitute for cow's milk and breast milk." Address: Pediatric

Dep., Medical School, Univ. of Indonesia, Jakarta.

1916. Teply, L.J.; György, Paul. 1962. Vegetable proteins in infant feeding. *J. of Pediatrics* 61(6):925-33. Dec. [38 ref]
• ***Summary:*** "Vegetable proteins in infant feeding may be considered in three main aspects: (1) As substitutes for milk to provide the protein in the diet of infants. (2) As 'transitional' foods to supplement breast milk during the period of weaning. (3) In a mixed diet after weaning." Address: Chief, Applied Nutrition, UNICEF, United Nations, New York.

1917. Vieira, Clibas. 1962. A soja e sua cultura [The soybean and its culture]. *Boletim de Agricultura* (*Belo Horizonte, Brazil*) 11(7-12):16-33. July/Dec. [19 ref. Por]
• ***Summary:*** A large chart (p. 18-19) lists the various ways of using the soybean plant and its seeds, including many foods and non-food industrial uses. From the cake or meal (*torta*) one can make adhesive materials, fertilizers, animal feeds, glue (*cola*), and plastics. Also food products: Flour, sauce (*môlho*), milk, etc. And industrial protein (*proteína industrial*).

From soy oil one can make various food products including margarine (*margarina*), salad oil (*óleo para salada*), cooking oil (*óleo para cozinha*). The green seeds can be used to make conserves or canned foods (*conservas*), salad (*salada*), or cooked dishes (*cozida*). The dry seeds can be cooked, sprouted, or used to make flour, milk, or animal feeds.

Note 1. This is the earliest Portuguese-language document seen (Aug. 2003) that uses the term *proteína industrial* to refer to isolated soy protein for industrial uses.

Note 2. This is the earliest Portuguese-language document seen that uses the term *margarina* to refer to margarine.

Note 3. This is the earliest Portuguese-language document seen (June 2009) that uses the term *graos verdes* to refer to green vegetable soybeans. Address: Prof. de Agricultura Geral–E.S.A. da U.R.E.M.G.–Vicosa, Brazil.

1918. **Product Name:** Jolly Joan Soymilk Powder.
Manufacturer's Name: Ener-G Cereal Co.
Manufacturer's Address: 1526 Utah South, Seattle, Washington.
Date of Introduction: 1962.
Ingredients: Soy flour, lecithin.
Wt/Vol., Packaging, Price: 15 oz bag in a box.
How Stored: Shelf stable.
New Product–Documentation: Talk with Sam M. Wylde, Chairman, Ener-G Foods, Inc. 1990. Oct. This company was founded in 1910 as Ener-G Cereal Co. in Seattle by Mr. L.J. McCarthy. The principal product originally was Jolly Joan Wheat Germ. This Jolly Joan Soymilk Powder was their first soy product, and an early product of its type in America. The FDA let them get away with using "milk" in the product name for about 5 years, then made them change it, since it did not contain milk (i.e. products that came from a mammary gland). So they changed the name to Jolly Joan Soyquick. Later (in about 1968-69) the Jolly Joan was replaced by Ener-G. Sam was with the company when the Soymilk Powder was launched. This was a powdered soy flour that had been treated (lecithinated) so that it could be mixed with water to make a milk. It was sold in a bag in box with recipes and a nutritional analysis on the sides. The main buyers were people with lactose intolerance. It was specifically marketed to those people, both adults and weaned infants.

The company's main business at this time was dietary foods.

1919. Genin, G. 1962. Le lait dans le monde [Milk in various countries of the world]. *Lait* (*Le*) 42(419-20):636-44. [Fre]
• ***Summary:*** The section titled "Japan: Manufacture of milk from soybeans" (p. 643) states: A former major in the Imperial army, Mr. Fujita, has found a way to furnish the Japanese population with an economical milk without increasing the importance of dairy animals. The milk which Fujita calls "Milkis" has a major advantage–its price is only one-third as much as that of cow's milk and the Department of Defense has created a pilot plant for the monthly production of 20,000 bottles (*flacons*) of this milk.

The milk is made from soybeans by a process which takes only 30 minutes. The national organizations which are working to develop the consumption of milk in this population are very interested in this new process. Address: Ingénieur E.P.C.I.

1920. **Product Name:** Vitasoy Soya Bean Drink (Sterilized in Narrow-Necked Soft Drink Bottles) [Malt].
Foreign Name: Wai-ta-nai.
Manufacturer's Name: Hong Kong Soya Bean Products Co. Ltd.
Manufacturer's Address: Aberdeen, Hong Kong.
Date of Introduction: 1962.
Wt/Vol., Packaging, Price: 6.25 oz soft drink bottle, sealed with a metal crown cap and sterilized.
How Stored: Shelf stable.
New Product–Documentation: Orr and Adair. 1967. Tropical Products Institute Report G-31. "The production of protein foods and concentrates from oilseeds." p. 70-71. Manufacturer: "The Hong Kong Soya Bean Products Co. Ltd., 29 Wong Chuk Hang Road, Aberdeen, Hong Kong. Date of Start of Production: 1940–discontinued 1942–recommenced 1945. Form of Product: Liquid 'milk': plain and malted. Ingredients: Soya, with added fat, calcium and vitamins. Composition: Plain 'milk': protein 3%; fat 2.5%; carbohydrate 5.7%; minerals 0.7%. Form of Packaging: Glass beverage bottles, sealed by metal crown."

"Volume of Sales: 2½ million cases, 60 million bottles annually. Channels of distribution: Retail trade essentially, but apparently some sales to schools and hospitals. Capacity of Plant: 240 8 oz bottles per minute. Cost Data:... manufacturing 15% of selling price; administration and overhead 5% of selling price; selling expenses 25% of selling price. Price Data: Plain 'Vitasoy': Ex-factory = H.K. $3.60 per case of 24 bottles or roughly 4/6d. per case or 2½d. per bottle. Assistance from Government/International Agencies: None. Quality Control Facilities: Internal laboratory, headed by graduate in bio-chemistry. Promotion: Extensive promotion over the years at dealer and consumer level. Still spend 5% of selling cost on advertising and promotion."

Vitasoy International Holdings Ltd. 1994. March 15. "New Issue..." Page 14 states: "The introduction in 1962 of a malt Vitasoy helped lead to further increases in sales."

1921. **Product Name:** [Soymilk].
Manufacturer's Name: Nihon Tanpaku Kogyo.
Manufacturer's Address: Japan.
Date of Introduction: 1962.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64. This was Japan's second commercial branded soymilk.

1922. Tsuchiya, Kanji. 1962. Dasshi daizu-ko no seisei hôhô [Method of refining defatted soybean powder]. *Japanese Patent* 16,658. Application filed 1961. [Jap]*

1923. Anderson, David W. 1962. Problems in formulation of soy milk. In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 166-74. [11 ref]
• ***Summary:*** Contents: Goitrogenicity of soy. Amino acid supplementation of soy milk. Summary. References. Address: Pharmaceutical Div., The Borden Co., 350 Madison Ave., New York 17, NY.

1924. Anson, M.L. 1962. Oilseed proteins in foods. *Archives of Biochemistry and Biophysics.* Supplement 1. p. 68-77. [23 ref]
• ***Summary:*** "A major occupation of man is to feed plant materials to animals and to use the animals as a source of animal protein foods. It is now possible, by applications of modern biochemistry and technology, to feed oilseed materials into a factory and to come out with protein foods similar to animal protein foods in nutritional value, taste and texture.

"Protein technologies were developed in the Orient thousands of years ago to produce products such as soybean curd and fermentation foods which still play a big role in the protein economies of hundreds of millions of people. The modern oilseed meals now produced at very low price give promise of being very useful in the fight against protein malnutrition in poor countries."

"During World War II, Henry Ford, who had the soybean religion, made large amounts of good 'ice cream' entirely from soy protein and fat, until he was stopped. The Chinese have a variety of cheese made from soybeans."

In the section titled "Ancient foods based on oilseeds," the author discusses soy milk and bean curd (tofu) in detail. He notes that traditional fermented foods serve primarily as a source of flavor, and perhaps of vitamins. "In Japan today scores of thousands of factories, big and little, make the traditional soy foods. These factories use up not only local soybeans but almost 10% of the huge American crop. The Japanese eat much more soy protein than meat protein." Address: 100 Eaton Square, London, S.W.1, England.

1925. Carroll, William R.; Muhrer, Merle E. 1962. The scientific contributions of George Washington Carver. Department of Interior, National Park Service. 60 p. See p. 20. Unpublished manuscript. [45* ref]
• ***Summary:*** The National Park Service commissioned this paper in connection with the Carver National Monument that it manages in Diamond Grove (also called Diamond) Missouri. The authors theorize that Carver may have been influenced in his peanut research by his knowledge of existing processes for making products from soybeans. "W.J. Morse, in an article on the soybean industry in the United States in 1917 reported that the Chinese had long used soybeans as a source of oil and food. Among the products they had developed were meal, flour, sauces, soybean milk, buttermilk, cheese, chocolate custards, etc. These products bear such a close resemblance to many of Carver's peanut products that it is quite possible he used these well established processes for his preparations and merely substituted peanuts for soybeans. Of course, scientific insight was necessary to see the possibilities of peanuts in terms of soybeans." Address: Dep. of Agricultural Chemistry, Univ. of Missouri, Columbia, Missouri.

1926. Cummins, J.S. ed. 1962. The travels and controversies of Friar Domingo Navarrete 1618-1686. *Works Issued by the Hakluyt Society* (*Cambridge, England*) No. 118. cxx + 475 p. Series 2. 2 vols. See Vol. 2, p. 195-96. Index. 28 cm. [273* ref]
• ***Summary:*** This work contains the "earliest accurate description by a European of food use of soybeans" (T. Hymowitz). The author, Domingo Fernández de Navarrete, is referred to as "Navarette" throughout this book. For details, see Navarrete's 1665 journal entry. Cummins states (p. cxix): "This edition is not a translation of the *Tratados,* for it is limited to the sixth book, namely the autobiographical section of the *Tratados.* Yet the section on tofu is almost identical (except in capitalization, italics, and punctuation) to the first English translation published in 1704 by

Churchill and Churchill. The title page notes that this work was "Edited from manuscript and printed sources by J.S. Cummins."

At the very end of Chapter XIII, titled "My journey to Che Kiang and stay there till the persecution," the author describes tofu in China. Note that Chekiang is today the name of a coastal province in eastern China, bounded on the north by Kiangsu province, on the south by Fukien [Fujian] province, and on the east by the East China Sea. Writing in the year 1665, Navarrete says (p. 195-96): "16. Before I proceed to the next Chapter, because I forgot it in the first Book, I will here briefly mention the most usual, common and cheap sort of Food all China abounds in, and which all Men in that Empire eat, from the Emperor to the meanest Chinese; the Emperor and great Men as a dainty, the common sort as necessary sustenance. It is call'd Teu Fu, that is, Paste of Kidney Beans.* I did not see how they made it. They drew the Milk out of the Kidney-Beans, and turning it, make great Cakes of it like Cheeses, as big as a large Sive [Sieve], and five or six fingers thick. All the Mass is as white as the very Snow, to look to nothing can be finer. It is eaten raw, but generally boil'd and dress'd with Herbs, Fish, and other things. Alone it is insipid, but very good dress'd as I say and excellent fry'd in Butter. They have it also dry'd and smok'd, and mix'd with Caraway-seeds, which is best of all. It is incredible what vast quantities of it are consum'd in China, and very hard to conceive there should be such abundance of Kidney-Beans. That Chinese who has Teu Fu, Herbs and Rice, needs no other Sustenance to work, and I think there is no body but has it, because they may have a Pound (which is above twenty Ounces) of it any where for a Half-penny. It is a great help in case of want, and is easy for carriage. It has one good Quality, which is, that it causes the different Airs and Seasons, which in that vast Region vary much, to make no alteration in the Body, and therefore they that travel from one Province to another make use of it. Teu Fu is one of the most remarkable things in China, there are many will leave pullets for it. If I am not deceiv'd, the Chinese of Manila [Philippines] make it, but no European eats it, which is perhaps because they have not tasted it, no more than they do Fritters fry'd in oil of *Ajonjoli* (a very small seed they have in Spain and India, which we have not**) which the Chinese make in that City, and is an extraordinary Dainty, of which Europeans do deprive themselves."

Footnotes: "*To fu, or beancurd, is made of the soya beans which were familiar to the servicemen in the East during the Second World War; few of them would 'leave Pullets for it (see Couling 46). **Ajonjoli, oil extracted from sesame (*Sesamum indicum*), used as an olive-oil substitute, a hair-dressing, and for medicinal purposes."

Near the end of Chapter 14, titled "My journey to the Imperial City, and residence there," Navarrete writes (p. 242-43, concerning the period 1666-1669): "19... My two Companions, three Servants and I continued in the Imperial City from the 28th of June till the 13th of September. During this time, bating Fish, Flesh and Wine, the Emperor allow'd all our Expence, as well as theirs; so that we had Rice, Wood, Herbs, Oil, and what they call Teu Fu [tofu] in abundance brought in to us; so that when we went away the Fathers of the Society that remain'd behind were stock'd for a great while with Rice, Wood, Oil and Vinegar." Note: The tofu, being a perishable food, would have been consumed within a day or two.

This first part of this book (p. xix–cxx) gives a detailed biography of Fernández Navarette. It begins: Few men have had more literate enemies and as many inventive biographers as Domingo Fernández de Navarrete (1618-86)..." The best of his life was spent working as a missionary in China, where he was a determined opponent of the evangelical methods of the 'Jesuit Mandarins.' On his return to Europe he wrote an account of China, the *Tratados... de la monarchia de China.* This is an enthusiastic compendium of contemporary knowledge of the Empire, which Navarrete constantly exalts as a Utopian state fit to be imitated by Europe... the author, wherever he went, had an observant eye, an open ear, and an ever ready pen... This edition of Navarette's travels is based on all of [his] writings, but principally upon the sixth book of the *Tratados"* an autobiographical account of his travels. Navarrete was born in 1618 in Castrogeriz, Spain (he was Castilian), and he died in 1686 on the island of Santo Domingo, where he was Archbishop and Primate of the Spanish Indies. In 1635 he became a Dominican friar in Peñafiel, Spain. In July 1645, at the age of 27, he volunteered for the Philippine mission. En route he spent 2 years in Mexico, from Aug. 1646. Landing in the Philippines on 23 June 1648, he did mission work among the Filipino Indians, then taught at the University, where his brilliant, curious mind was recognized. He then joined the Dominicans in China, arriving in Macao in 1658. "From the very beginning he seems to have fallen in love with China and its people," among who he now remained working until the outbreak of the persecution of 1664. He learned the Chinese language well–and loved it. He became very critical and accusing of the Jesuit missionaries in China–which later embroiled him in controversies with them. He reached Canton in March 1666, and spent the next 4 years under house arrest until Dec. 1669. Subsequently he travelled in many countries and underwent frightening adventures, finally arriving back in Spain in Dec. 1674. There, in Madrid, he wrote extensively–starting with his *Tradutos* [*sic, Tratados*] *historicos, politicos, ethicos y religiosos de la monarchia de China* (518 pages, divided into 7 Treatises) in the first half of 1675. In 1677 he was nominated Archbishop of Santo Domingo, where he arrived on 20 Sept. 1677. He died there of an illness in Feb. 1686. Address: King's College, Univ. of London.

1927. György, Paul; Omans, W.B.; Hau, E. W-S. 1962. Feeding value of soy milks for premature infants. In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 179-87. [9 ref]
• ***Summary:*** Discusses Sobee, Mull-Soy, Soyalac, and Saridele. The influence of processing on protein quality appears to be much greater in the case of soy than in the case of milk. For the soy-based formulas noted above, PER values from 1.39 to 2.20 (skim milk control is 2.63) are reported. Address: 1. Chairman of the Dep. of Pediatrics, Philadelphia General Hospital, Philadelphia, Pennsylvania.

1928. György, Paul (moderator); Anderson, D.W.; Fomon, S.J.; Hand, D.B.; Miller, H.W.; Sarett, H.P. 1962. Panel discussion on soy milk. In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 188-91.
• ***Summary:*** This discussion of the five papers in Section V ("Processing and feeding value of fluid and dry soy milks") focuses mainly on feeding soy milks to infants and children, rather than to adults.

"In introducing the panel discussion Dr. György said that FAO is writing a manual on milk and milk products. Several years ago FAO wrote a summary on milk. At the first two conferences 4 years ago there was considerable opposition to calling soy milk by that name. There is still opposition, but on the international level objections have subsided. Soy milk has taken its place along with human (or breast) milk, goat milk, and other milks which are normally designated to distinguish them from cow's milk.

"Dr. Fomon commented that it is important that a study be made on a number of babies (30 or more) from birth up to 8-9 months of age. They have some opportunity to do this with students' babies. Controls are breast fed or fed pooled human milk. Dr. György said that for premature babies breast milk is not satisfactory. In the Orient most mothers nurse their babies as long as they can, 1 to 2 years, and a higher protein diet is needed for the older babies to prevent the occurrence of kwashiorkor.

"Dr. Fomon expressed the opinion that for experimentation involving full-term babies the soy milk and human milk should be compared on an equal protein and fat basis." Address: 1. Chairman of the Dep. of Pediatrics, Philadelphia General Hospital, Philadelphia, Pennsylvania.

1929. Hand, D.B.; Steinkraus, K.H.; VanBuren, J.P.; Hackler, L.R.; Rawi, I. el; Pallesen, H.R. 1962. Pilot plant studies on soy milk. In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 157-65.
• ***Summary:*** Contents: Interrelation of soybean fractions. Procedure for pilot-plant production of full-fat soy milk fractions. Indices of quality in relation to processing conditions. Nutritional assessment. Conclusions. Pilot-plant equipment for soybean milk line: Lists 17 pieces of equipment. Address: Dep. of Food Science and Technology, New York State Agric. Exp. Station, Cornell Univ., Geneva, NY.

1930. Hayashi, Shizuka. 1962. Problems involved in increasing world-wide use of soybean products as foods in Japan. In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 200-06.
• ***Summary:*** Contents: Price. Quality. Margarine and shortening. Mayonnaise. Miso, shoyu, tofu. Soybean meal. Soy flour. Soy milk. Frozen tofu. Food sources of Japan.

The 400,000 tons of soybeans produced in Japan are used for foods. From approximately 1 million tons of imported soybeans, Japan produces 150,000 tons of oil and 700,000 tons of meal. "Japanese oil consumption is the poorest [i.e. lowest = best] among the world nations. We need to consume oil at more than 5 times the present quantity to reach the level of the western countries." In 1952 Japanese consumption of edible oils was 7.52 gm per person per day, increasing to 11.52 gm in 1960. Soybean oil supplies about 30% of Japan's total oil supply. The main obstacles to greater consumption are price and quality (due to flavor reversion). The leading oil is rapeseed oil. The main oils used in margarine and shortening are fish oil (35.8% of total), beef tallow (25.4%), whale oil (10.0%), and coconut oil (8.0%).

New developments with traditional Japanese soy foods include: Dried, powdered miso in instant form is now available. Soybean meal is now the main ingredient in shoyu, rather than whole soybeans. A few soy milk plants have been erected and bottled soy milk is now sold in the market in limited areas. A certain culture is used to eliminate the beany flavor. Today, soybeans and soybean products provide the average Japanese with 10.6 gm/day of protein (16% of total protein consumption of 67.7 gm), and 7.6 gm/day of fat (28% of total fat consumption of 26.7 gm). During the period 1934-38, average Japanese protein consumption was 54.9 gm per person per day and fat consumption was 13.2 gm (less than half what it is today). Address: Managing Director, Japanese American Soybean Inst., Nikkatsu International Building, Room 410, No. 1, 1-Chomo Yurakucho, Chiyoda-Ku, Tokyo, Japan.

1931. Hilbert, G.E. 1962. Foreign research program of U.S. Department of Agriculture on soybean protein products under Public Law 480. In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria,

IL: USDA NRRL. iii + 242 p. See p. 93-98.
• ***Summary:*** "For many years, the Department was financing with dollars a farm research program abroad."

"A considerable expansion of our foreign research program was effected a few years ago under Public Law 480. This program of research is financed with foreign currency accruing to the United States from the sale of surplus agricultural commodities, and, in a sense, trades surpluses for research results. Research in the field of economics, forestry, farm, marketing and utilization is carried out under this program. Projects are selected for financing which are of direct interest to the United States and also of interest to the foreign country.

"At the present time, 195 grants or research agreements have been executed in 20 countries in Europe, Asia, and Latin America. Funds are available to initiate programs in an additional 6 countries. Proposals from most of these countries are being processed at the present time. The annual cost of the grants already executed amounts to about the equivalent of $2-2½ million in foreign currency annually. Substantial funds are available for the expansion of this program.

"The Public Law 480 foreign research program is being administered by the Foreign Research and Technical Programs Division, Agricultural Research Service, U.S. Department of Agriculture, in Washington. A regional office has been established in Rome, Italy, to negotiate the costs of grants and administratively supervise the program in Europe and the Near East. A regional office has been established in New Delhi, India, also, to carry out the same functions in the Far East.

"The technical phases of the program–that is, the approval of projects on which grants are executed and the review of progress reports–are handled by the various research divisions in the Department. For example, all projects on the utilization of soybeans fall under our Northern Utilization Research and Development Division. All those dealing with the nutritional aspects of soybeans as a food are under the jurisdiction of the Institute of Home Economics.

"Ideas for new research projects may come from within the Department, from research organizations abroad, from our Research and Marketing Advisory Committees, from national commodity organizations, or from the processing industry. We are indebted to The Soybean Council of America for the interest it has taken in developing our research program on soybeans abroad. The Council has stimulated many foreign research groups to submit projects on improving uses for soybeans. It has brought to our attention, also, important problems on soybeans that need attention.

"In developing a program on soybeans we have been faced with the problem that most countries in which we have funds have had practically no knowledge or experience on the uses of soybeans, and have conducted very little research on their utilization. The opportunity has been very limited for financing research on the utilization of soybeans in laboratories with background experience on its products.

"Fortunately, the activities of UNICEF and FAO, on increasing the protein level of the diet in the developing areas of the world, and the powerful market development program of The Soybean Council of America, have stimulated great interest in many countries on the usage of soy products in the diet. These efforts have facilitated the development of our research program on soy products.

"As the primary emphasis of this conference is on soybean products for protein in human foods, the research work we are financing on soybean oil and fatty acids will not be discussed here. My talk will cover only those projects dealing with soybean proteinaceous foods, and with minor components in soy flour or soybean products which may affect their food value. A dozen or more projects of this kind, in half a dozen countries, are underway or will be shortly.

"At the National Institute of Nutrition in Rome, Italy, we have executed a grant with Professor Visco to finance research on the use of soybean protein products as supplements to wheat flour production of pasta, such as spaghetti and macaroni. The southern part of Italy depends to a large extent upon cereal grains as the main staple of the diet. Raising the protein level and quality of the diet in Italy could be done readily by increasing the protein content of pasta with soy protein products. Professor Visco has set as his objective an increase of 10 percent in the soy protein content of pasta. He believes this amount of soy protein in pasta would provide all the essential amino acids necessary for good nutrition. The Institute has produced pasta containing 10 percent by weight of soy protein. Pasta containing the type of commercial soy protein used was unaltered in cooking quality, but had a slight gray cast and slight change in flavor. The effect of lowering the content of soy protein on color and flavor of pasta is now being investigated. The effect of other sources of commercial soy protein on color and flavor will be studied, also. Professor Visco is interested in following up these studies by conducting nutritional investigations on groups of school children, using pasta fortified with soy protein.

"In Japan, we are negotiating a grant with the Food Research Institute, in Tokyo, for research on dried tofu. Fresh tofu is the most important soybean food in Japan. On a dry basis, its protein content ranges from 50 to 60 percent, and fat content from 21 to 50 percent. It has a bland flavor. It is eaten as such usually with soy sauce. Slabs are deep-fat fried [tofu], also, forming an envelope which is stuffed with hot rice. Fresh tofu is made in thousands of small plants, many of them family-run operations. Fresh tofu has a relatively short storage life comparable to that of fresh milk. Dried tofu, which is a spongelike product, has come into production in recent years. It has a shelf life of 6 months or

longer. However, the product is inferior to the fresh product in overall eating quality.

"Under the grant to be carried out at the Food Research Institute there will be studied the varietal effect of soybeans, and variation of processing conditions on the physical characteristics and flavor of dried tofu. Fresh and dried tofu have promise in supplementing the diet in the protein deficient areas of the world.

Miso is another important soybean food used in Japan. It is produced by the fermentation of soybeans with *Aspergillus oryzae*. The most popular use of miso in Japan is in soup. Miso soup plays an important part in the standard Japanese breakfast. Because of uneven uptake of water, not all varieties of soybeans can be used, or only with difficulty, in the traditional Japanese process for making miso. Most Japanese and Chinese varieties of soybeans are better than most American varieties. In preliminary experiments conducted at the Northern Utilization Research and Development Division, in cooperation with two Japanese miso experts, it was found that dehulled soybeans or soybean grits absorbed water uniformly and yielded excellent miso. Now we are interested in following up these studies on a pilot-plant scale using different varieties of soybeans, and carrying out the fermentation under various Japanese environmental conditions. A grant on this project is being negotiated with the Central Miso Institute.

"As it is produced at the present time, miso has a relatively high salt content. Salt is used in the process to control the microbiological population. Dr. Gyorgy informs me that miso with a greatly reduced salt content might make it more suitable for feeding infants and young children. The development of procedures for producing miso containing very little salt might broaden its usefulness." Continued. Address: Director, Foreign Research and Technical Programs Div., USDA, Agricultural Research Service, Washington 25, DC.

1932. Hilbert, G.E. 1962. Foreign research program of U.S. Department of Agriculture on soybean protein products under Public Law 480 (Continued–Document part II). In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 93-98.

• ***Summary:*** Continued: A related project on miso is under consideration in Israel. This is based upon producing a miso-type product from controlled amounts of oil ranging from none to that originally present in the bean. Japanese miso contains all the oil present in the bean.

"We are negotiating one other project with the Food Research Institute in Tokyo. This project deals with the development of procedures for producing a yogurt-type product from soy milk, and obtaining information on the changes that occur in the soybean components in the transformation. It is planned to have cooperative investigations on the nutritional value of the fermented soy milk conducted at the Institute of Nutrition Research under Dr. Arimoto. Although soy milk has been used for many years in the Orient as an infant food, the expansion of its use has been very slow, particularly in the underdeveloped areas of the world. At times, difficulties have been encountered in its large-scale production due either to lack of technical knowledge or to inadequate control methods. Soy milk may cause diarrhea or flatulence in some infants.

"It is possible that fermented soy milk may have advantages over soy milk. One potential advantage of fermented soy milk is that the acid may destroy undesirable microorganisms that too often occur under unsanitary conditions in underdeveloped areas of the world. The widespread use of yogurt in the original primitive areas of Northeastern Europe and Northern Asia may well have resulted from the comparatively greater safeness and stability of this product over milk. At the present time, 45 percent of all milk consumed in the USSR is in the form of yogurt, attesting its popularity and the fact that a taste for it can be acquired. Nutritional studies conducted in Europe have shown that yogurt is a highly nutritious product, and that digestibility is increased during the fermentation. Likewise, the fermentation of soy milk may lead to an improvement in its food value. At any rate, our hopes are high on this project.

"Fermented proteinaceous foods are produced and used in Indonesia. Three types are tempeh, ontjom, and ragi. Tempeh was just discussed by Dr. Steinkraus. Onjom is made by fermentation of peanut press cake with molds, probably the genus *Neurospora.* It is a popular food in West Java. Ragi is produced by a yeast-mold fermentation of rice flour and sugar. Little is known about the micro organisms effecting this fermentation. Ragi is not served as food. It is used in recipes for the preparation of other foods.

"More information on the microorganisms used in the fermentations to produce ontjom and ragi, and on the composition of these products, is needed. Similar types of products might be produced using other raw materials abundant in other underdeveloped countries. Knowledge on the quality of protein produced would be helpful in determining the usefulness of such products in upgrading the protein level of the diet.

"A grant is being negotiated with the Bandung Institute of Technology, Indonesia, on the isolation of pure cultures of microorganisms present in tempeh, ontjom, ragi, and other Indonesian fermented foods produced by different manufacturers in different parts of Java, as well as other islands of Indonesia. Variations of species used by different manufacturers and in different regions for the same type of food fermentation will be investigated under this grant also.

"Studies will be made of the chemical changes and physical transformations brought about by the pure cultures. This will involve an investigation of the products produced

in the fermentations including the proteins elaborated in all except the tempeh fermentation which already is receiving a great deal of attention. Pure cultures of the isolated microorganisms will be studied further and characterized at the Northern Utilization Research and Development Division.

"A number of grants on soybean protein have been executed or are being negotiated with research institutes in Israel.

"One of these deals with the effect of processing conditions on the yield and quality of isolated protein. This grant is being negotiated with Professor Zimmerman, of the Israel Institute of Technology. A great deal of work has been done in the United States and Japan on the commercialization of soy products. Large quantities are being produced, and some are being used for food purposes. However, there is need for more information on processing and drying of soy proteins, and the effect of processing conditions on flavor and nutritive value. This is the kind of research to be carried out in Dr. Zimmerman's laboratory. Also, he will study the flavor and acceptability of isolated soy protein when used in various Israeli-type foods. The effect of processing on the nutritive value of isolated soy protein will be determined by animal feeding tests.

"Although much information has been obtained by Dr. Allan K. Smith and others in the United States on the physical and chemical properties of soy protein, little is known about the complexes of protein in the bean or in the meal. There has been neglected the problem of protein complexes in the native state or formed in soybean oil meal processing operations. Whether protein-phytate complexes exist in the bean or result from interaction during processing operations is unknown. No information is available as to whether nucleoproteins, lipoproteins, and mucoproteins exist in soybeans. we have no knowledge, either, as to the interaction with protein of pigments, metal ions, and carbohydrates during processing of the beans.

"However, these changes affect the color, flavor, and (in view of the sensitivity of lysine) the nutritive value of the protein. This problem on the chemical, physical, and biochemical properties of protein complexes in soybeans will be studied under a grant which is being negotiated with Dr. Katchalski at the Weizmann Institute of Science. Dr. Katchalski's team has a worldwide reputation for the fine work they have done on the structure and modification of proteins. It is an ideal group to investigate this difficult and very important problem, the solution of which may lead to the enhancement of the food value of soy flour and soy protein.

"A grant is being negotiated with Dr. Guggenheim, at Hebrew University, on the development and biological evaluation of protein-rich foods from vegetable sources. Various mixtures of cereals with combinations of soya, sesame, sunflower, and chick peas will be studied. The nutritive value of different combinations of proteins will be assessed on growing rats. In vitro methods of measuring the essential amino acids will be made, also, and compared with levels of amino acids present in the blood of the portal veins of rats following a protein meal. Nutritional evaluation of the protein mixtures on humans will be carried out at a later stage.

"There has been a real need for the development of a rapid chemical method for measuring the biological value of proteins. Such a test would be very helpful in measuring change in nutritive value of proteins, including soy protein or flour, during processing and on storage. we are financing two studies on the development of such a method. One line of work is being carried out at the Israel Institute of Technology under Dr. Zimmerman, and the other at the University of Cambridge, England, under Dr. K.J. Carpenter.

"We are financing three basic investigations on certain minor components of soybeans which may affect the nutritive value of soy products. One of these is a comprehensive study of the simple sugar and oligosaccharides in soybeans. This work is being done at the University of Caen, France. Another investigation deals with a detailed study of the polysaccharides of soybeans, and is being carried out at the University of Edinburgh, Scotland, under Professor Hirst. The third deals with the isolation and characterization of saponins in soybeans and various processed soy products. This study also will include the exploration of methods for inactivating saponins in the processing of soybeans. This work is being done by Professor Bondi, Hebrew University, Israel.

"In this discussion I have summarized, briefly, the various lines of activity we are sponsoring abroad under Public Law 480 on soy protein and proteinaceous soy foods, and related investigations affecting the food value of soy products. It is hoped these investigations in countries where no work on soybeans has been done previously will stimulate additional research on soybeans, and lead to an increased recognition of the importance of soy products in the diet. It is believed these investigations will provide information that should be helpful in guiding efforts to upgrade the diet in protein deficient areas of the world." Address: Director, Foreign Research and Technical Programs Div., USDA, Agricultural Research Service, Washington 25, DC.

1933. Miller, Harry W. 1962. Traditional methods of processing and use of soy liquid and powdered milk. In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 149-56.

• ***Summary:*** "It is a new day when so many important sponsoring organizations join in evaluating the suitability of the protein of the humble soybean to meet the nutritional needs of the human subject, and to study practical ways of

extending its benefits in protein deficient diets.

"In August l940, I presented a paper entitled 'The Role of the Soybean in Human Nutrition' before the American Soybean Association at Dearborn, Michigan, and predicted that the day would come when we would find an awakened interest in this country in utilizing soy products as a part of the American menu. I believe we are rapidly approaching that goal, There is now an awakening in many lands to the needs of better nutrition, and it is timely that study and research be given to how we can utilize the values of the soy protein for universal race betterment.

"Soybeans have for centuries been the chief protein supplier in the heavily populated areas of Southeast Asia. It is well to examine methods of processing and utilization as practiced in the Orient. However, the per capita utilization of soybeans has been far below their needs, ranging from 15 to 50 pounds per annum in countries like China, Japan, and Korea, largely due to the inability of agriculture to keep pace with population.

"It was in these soy-producing and-utilizing countries that I had the opportunity over more than half a century to observe their methods of preparation, and to check the results in the feeding of soy products. Considerable leafy vegetables, stems and 'roots' have to a certain extent supplemented the diet with protein, so that adults of mature age probably get adequate protein. However, the appalling infant mortality and adolescent protein deficiency diseases have stressed the need for increased rations such as may be supplied by the soybean.

"Protein has its greatest contribution during the growing years of life. Three times the amount of protein per unit of body weight is needed the first year of life compared with the adult. During adolescence and the teenage years twice the amount of protein is required till they attain their normal body weight as in after life. If individuals are well grown with ample biologic protein their chances for long life expectancy are enhanced.

"With the infant's short intestinal tract and its immature digestive juices, foods have to be reduced to liquids to be usable. Consequently, a liquid food beverage, if supplied in sufficient quantity and quality, enables normal growth to proceed rapidly. Without it, growth is stunted; anemia, infection follows and many do not survive these years of inadequate food intake. Those that survive childhood often die early in life of degenerative diseases.

"The need of liquid nourishment following birth is evident from the fact that all mammals, including the human, have no provision for taking solid food, so as a starter food a lacteal secretion is by nature supplied, and to meet the need of the growing years of the human, various animal milks have been used. However, the supply is meager in the Afro-Asiatic countries.

"My attention was called to soybeans as a dietary food upon reaching China and living on Chinese cuisine. It was some 20 years later, in 1925, that I embarked on the development of a liquid beverage from the soybean. Considerable progress has since been made in improvement of such a food beverage and its use. However, it is only a few areas where nutritional use is made of soy milk, and much remains to be done in its improvement and distribution to combat malnutrition.

"The Oriental approach to processing the soybean is entirely opposite to that of the west. Western countries process the soybean by grinding it into fine flour after dehulling, and screening through very fine 200- or 500-mesh screens, or shall we call it, the milling operation. While in lands where soybeans have been used for centuries, they first hydrate the beans, or as we call it, use the wet-milling operation.

"In Eastern countries interest in soybeans has been primarily in its protein content, while the West has vied for its oil. It was my good fortune that I began my study of the soybean in the Orient where soybeans were used for human food, rather than for animal rations. Soaking the hard, dry bean was the first procedure, and it then is ground into a milklike slurry. The whole soybean is given a water soak for 8 hours, or after dehulling a water bath for 2 hours. In either case the bean doubles its original weight by water intake. It is then ready for the milling operations. This is accomplished with stone buhr mills, or disintegrators, that break up the continuity of the fiber, and expose its nutrient particles of protein, oil, carbohydrate, vitamins, and minerals to a water wash. The water-soluble nutrients are separated from the fiber portion by filtration. The amount of water used in the slurry mix, its temperature, whether hot or cold, and also the quality of beans, determines the ratio of soluble nutrients to those still clinging to the fiber.

"In fact, there are numerous techniques to be observed to get the dispersible protein and other nutrients in the highest soluble amounts. Beans differ, as also the aging of beans. The nutrient yield is greatest immediately after harvest time. Long heat exposure in warm climates, makes for less solubility. A proper soak is of great importance; then next the grinding of the beans. A small stream of water to give a tearing, rubbing action so as to thoroughly expose all soluble ingredients is preferred to a mill with a cutting action to mince into fine particles. Before filtration this slurry should be agitated and heated, which will yield an additional 10 percent to the soluble ingredients. Several methods of filtration, such as a shaking screen, a plate and frame pres, vacuum drum filters, or centrifuges of various types can be used. A re-grind of the fiber cake and a second extraction makes possible an extra 5 to 8 percent recovery of the solubles. A possible 92 percent of protein with other nutrients in proportion has been attained by grinding and filtration methods. In practical plant operations we expect 60 to 80 percent protein recovery of the original bean. This leaves considerable nutrients in the fiber or pulp, which is then used

for stock feed.

"The milky solution thus extracted is used either for cheese curds of various types, or is formulated and processed into a beverage milk–liquid or powdered. Soybeans are used in different countries in making a savory sauce, called Soy Sauce; a soup base as in Miso, or as a fermented bean as Japanese Natto. They are eaten as immature green beans in pod or shelled and are very delicious.

"Soy Milk: Trials have been made in the past to utilize soy milk by the Asiatics but for lack of proper processing methods such milk, as filtered and not formulated, was neither tasty nor nutritionally acceptable, giving rise to very unpleasant digestive responses. I have repeatedly asked in parts of China, Japan, and Korea why it was not used as a beverage, always with the same answer, that it gave rise to intestinal disturbances. So a cheese curd is used instead of milk. Curdling it into a cheese, through the use of calcium salts, vinegar or other coagulative agencies, has resulted in many savory food products. Heating this milk extract causes a scum film [yuba] to form, also very tasty, and the remaining portion is curdled and made into cheese cakes of varying dimensions and density. All such sheets and blocks of curd receive a second cook, or are fermented, which seems to render them more digestible.

"Soy cheese or curd is easy to market and very popular, being tastily flavored and combined in the Chinese cuisine as a meat, fowl, and fish replacer. The Japanese report 70 different forms or dishes utilizing soybeans, and the Chinese even more. Out of 1 pound of soybeans they make 4 pounds of curd called Tofu.

"While we have spent some time in Indonesia we have had little experience with Tempe–a fermented soybean food product.

"My contributions had to do with developing an easily digested and highly nutritious soy milk, and processing it sufficiently to render it acceptable to both infants and adults. The extract from the bean which is rich in protein can be formulated as desired with added fat, carbohydrate, minerals, and vitamins. These properties can be varied or formulated to that of human milk, or any other type of animal milk. The final product can be made in a single strength, or condensed to double strength and canned, or spray-dried as a powder.

"Our first work in developing a formulated soy milk dates back 56 years ago when we secured a Disper mill [Dispermill], or homogenizer, to constitute a formulated liquid. This soy milk was first used in the Shanghai Sanitarium and Hospital as a table beverage for nurses, helpers, staff, and patients of the institution, and later to the baby and children's ward of the Shanghai Clinic and Hospital. Here we had baby boarders, infants kept under observation on soy milk feeding for up to 2 years. The results of this feeding was reported in the China Medical Journal of 1957. Many other farmed out research studies were made, such as at the indigent hospital in the Philippines; at the Tokyo University, and the Ohio State University in America.

"Results on the Ohio State study are shown in Figure 1.

"The first commercial development was a soy milk dairy established in Shanghai in 1935, the process used was in-bottle sterilized milk, formulated to the standard of cow's milk; also a chocolate milk; and a soy-acidophilus milk, which was extensively marketed all over the city of Shanghai up until the plant was destroyed in 1937 by the bombing of Shanghai.

"A soy milk powder plant was also fabricated there, using a local made Grey Jensen spray dryer, which also came to an end in the same way at the same time.

"There are many technical problems involved in producing a satisfactory nutritional beverage from the soybean to simulate milk, which in the few moments we have would be impossible to enter into. These are gradually being solved, such as improved color, taste, stability, condensing as a double strength canned milk, and as an instant soluble powdered soy milk. On vacuum pan evaporation, due to the viscosity of soy milk, concentrating to more than 30 percent solids is the limit, as compared with animal milk at 45 percent solids. However, generally speaking, once a water extraction soy milk is obtained the same methods and equipment used by the dairy industry are applicable to produce it in various forms for marketing" (Continued). Address: M.D., Director Emeritus, International Nutrition Research Foundation, 11503 Pierce Blvd., Arlington, California.

1934. Miller, Harry W. 1962. Traditional methods of processing and use of soy liquid and powdered milk (Continued–Document part II). In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 149-56.

• ***Summary:*** Continued. "Once we have obtained a fiber-free milklike fluid from the soybean, containing the water dispersal nutrients of protein, oil, carbohydrate, minerals, and vitamins processed to make them nutritionally acceptable, it no becomes a question as to formulation. No standards have yet been set for the resulting formula. Composition of soy milk today has been a matter largely decided by the respective manufacturers.

"Dr. E. A. Ruddiman working in the early 4O's at Dearborn with the Ford Foundation, tackled this subject in a paper to the A.S.A. suggesting that cow's milk be the standard. Few pediatricians today accept that for infant feeding.

"We know fairly well what are obtained from the hydrated bean with 7 parts of water to 1 part of bean by weight; namely, 3.64 percent protein; 1.8 percent fat; and considering 40 percent of carbohydrate to be edible, a usable 1.5 percent dextrines, sucrose, and starch. In brief, the edible entities extracted from the soybean of fat and carbohydrates

are each half that of the protein.

"To this, additives can be added to formulate human milk, cow's milk, cream, and ice cream mixes of any variation desired. The types of beans used, methods of manufacture, causes variation in availability of nutrients and elements found in various preparations, so that chemical formulae do not always coincide with usability of nutrient.

"Thus far I have dealt with a nonfiber soy milk made either from the whole soybean, or dehulled, using only the cotyledons. This is the practice of the Orient and it is my belief that human nutrition is so important that we can afford to sacrifice to animal feed the fiber and small amount of ingredients that cling to it in order to obtain the rich ingredients in soluble form. It is still economical compared with other similar products on the market.

"However, some researchers have been making milk from the whole dehulled soybean used in entirety, giving us 3 percent fiber on a dry basis. For older children and adults this can do quite well when formulated. We have objected to the fiber on the grounds that animal milks are fiber free, and on coagulation we get a rough, tough curd as compared with a smooth, jellylike curd made from a fiber-free liquid. Isolated protein, either in entirety or combined with raw soy milk can be processed and formulated into a fiber-free milk. Here we need to be careful of having the proper additives. We have made fiber-free milk from the 70 percent soluble soy flakes or grits, and when fortified with vitamins and minerals, good growth records have resulted in animal feeding.

"We may say that protein is protein from the soybean, but too long processing at too high temperature, and too much exposure to chemical changes leaves a question in our minds as to whether we destroy its soy nutritive values. We do know that all soy milk needs a heat treatment above boiling to destroy the trypsin inhibitors.

"The one outstanding problem of soy milk, whether from the whole soybean, or its extracted solubles, is a characteristic soybean flavor. Since soy milk looks white like animal milk, those accustomed to animal milk think it should taste like cow's milk, especially since it is called a milk. The dairy people object to the word 'milk' used in reference to soy milk, claiming the term 'milk' designates an animal secretion.

"Trying to overcome this prejudice of the laity has led to much experimental work. We shall not be able to simulate the taste of cow's milk unless we use some derivative of animal milk, but we can mask the soy flavor by processing methods, also by additives of distinctive flavors.

"I wish to conclude this paper by referring to the widespread possibilities of the utilization of the soybean, and the economics involved. We assume that for adequate nutrition all nations of mankind need a milk beverage, especially in the very earliest years of life to promote adequate nutrition. The possibility of achieving this lies only with the soybean. The human, as well as all other mammals, require a milk for post-natal feedings. Soybeans can make this possible for the entire human race through improved and extended agricultural production and efficient processing methods, and within the reach of the meager economies of nations.

"Using the formula of animal milk, from l pound of soybeans we can obtain sufficient protein extracted to formulate a gallon of milk. This pound of soybeans yields all needed protein, half of the required oil, and some of the edible carbohydrate. The B vitamins, together with some minerals are present, and other vitamins can be added at low cost. At the market value of the sum total of constituents needed to constitute a gallon of formulated vitamized soy milk less than 15 cents is required, and these figures answer quite well for most parts of the world. While vitamins cost more in certain areas than they do here, added carbohydrates and the oil is cheaper in certain areas. The greatest expense, of course, is in processing equipment. Low-cost small pilot plants operated by cheap labor in countries of low economic resources seem very practical. These figures and statements are verified through the operation of several small pilot plants in Southeast Asia countries. The United States and China produce soybeans abundantly, and with the rising prices of soybeans, they are still the best buy of any agriculture product produced from the soil when their contained nutrients are used to sustain human life.

"It must be remembered that nearly all Afro-Asiatic people cannot afford containers, or the overhead cost of merchandising. They live largely on foods they produce and prepare at a consumer cost little above what the agriculture producer gets for his crops.

"The soybean is rightly called, because of its comparative wealth nutritionally, "gold from the soil." It ranks as the most outstanding product Americans can export if rightly processed for world nutritional relief. Great progress has been made in the adaptation of soy formulated foods for animal and pet diets. The soybean, in the light of what role it has had in preserving the millions of Southeast Asia people for centuries, deserves the combined efforts of scientists, nutritionists, and financiers to lift it into a human acceptable and economical available food.

"The soybean is variously called 'gold from the soil' or 'meat without bones.' With its multitudinous variety of ways to incorporate it in the human diet, I would like to give one more fitting title to it as a 'universal protective factor of diet.' Animal milk has served this role in Western lands, but is of limited availability. Soybeans incorporated in the national diets as a milk and cheese, and its many other recipes, if supplied in adequate quantities insures balanced nutrition. It is a body builder from infancy to the age limit. It is unique compared with other agriculture products in that it is available as a liquid, curd, or solid, as whole beans and flour.

"Yet, as a food supplier, the soybean has had little scientific research or the help of modern trained technicians.

We still hark back to the know-how of the Oriental people who have learned to relish the soybean and know of its building power, and enjoy its energy yield.

"We depend on flash pasteurization and a vacuum pull to de-bitter the beany odor and taste, but no one has come up with the answer, to what it is and from what it comes–the fat or carbohydrate component. We have had some success in a cheddar cheese, but so far have not been able to make a cheese that melts. It is to be hoped as a result of the study and interest that prompted this assembly that chemists, technicians, and dietitians, along with the agriculturists, can solve these interesting problems. It may be that an agronomist will come up with a new soybean with a delicious flavor." Address: M.D., Director Emeritus, International Nutrition Research Foundation, 11503 Pierce Blvd., Arlington, California.

1935. Nakayama, Osamu; Watanabe, Tokuji. 1962. Tônyû ni kansuru kenkyû [Studies on soybean milk]. *Eiyo to Shokuryo* (*J. of Japanese Society of Food and Nutrition*) 15(3):191-95. [2 ref. Jap; eng]

• ***Summary:*** "Soybean milk is prepared in the laboratory under various conditions to discuss the effects of the amount of water added, heating temperature and heating time on its chemical composition and physical properties. When the amount of water is less than 5 times [the amount] of soybean, a part of its protein becomes insoluble and the viscosity of the milk is unusually high. The viscosity of the milk after dilution is higher than that of the milk which is diluted before heating. The chemical composition and physical properties of the milks prepared by heating before and after filtration are compared. Although the chemical composition of both milks are not so different, the viscosity of the latter milk is lower than that of the former.

"When 1.0% NaCl or 10% glucose or sucrose are added to the milk, they increase somewhat the viscosity. By adding 0.15% NaCl before heating, the viscosity of the milk becomes fairly higher than by adding after heating.

"The characteristic odor of soybean milk can be removed by soaking soybeans in 0.01-0.1% hydrogen peroxide solution and putting hot steam into the milk for 10 minutes." Address: National Food Research Inst., Tokyo.

1936. Sarett, Herbert P. 1962. Nutritional studies relating to development of soy containing foods. In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 127-33. [6 ref]

• ***Summary:*** Contents: Soybean [infant] formula products. Precooked cereals. Special diets. Bibliography. Address: Dep. of Nutritional Research, Mead Johnson Research Center, Evansville 21, Indiana.

1937. Smith, Allan K. 1962. Problems involved in increasing world-wide use of soybean products as foods: Technical assistance in developing soybean markets. In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 214-16.

• ***Summary:*** "In Colombia the law requires the addition of a small amount of soy flour to wheat flour. However, I have been informed by a reliable correspondent that although the wheat millers buy the soy flour as required by law, they do not add it to the wheat flour because baking problems have not been solved." Address: Head, Meal Products Investigations, Oilseed Crops Lab., Northern Utilization R&D Div., Peoria, Illinois.

1938. Wik, Reynold Millard. 1962. Henry Ford's science and technology for rural America. *Technology and Culture* 3(2):247-58. Summer. [37* endnotes]

• ***Summary:*** "Unquestionably Ford's greatest contribution to the application of technology to American agriculture lay in his insistence that mechanical power should supersede animal power on the farm... The story of how Ford's mechanical contraptions changed rural life in America is well known. Not so well known, however, are his attempts to introduce scientific technology into American agriculture."

One of Ford's early scientific efforts to improve agriculture consisted of experiments to produce alcohol as a motor fuel by distilling it from farm crops. When World War I threatened to create a gasoline famine, he announced in 1915 that alcohol could be extracted from grain and from garbage. The new Fordson tractor would be designed to burn alcohol as well as gasoline; thus the supply of fuel would be unlimited... Although the Ford Motor Company experimented with alcohol distillation in the Engineering Laboratory in Dearborn from 1915 to 1917, the efforts were feeble and inconsistent.

Note that Ford did not invent the idea of fuel alcohol. "As early as 1908, the British attempted to secure motor fuel for transport in Africa by distilling alcohol from sugar cane. In the same year, the Hart-Parr Company of Charles City, Iowa, equipped some of their tractors in Idaho, Colorado, and Cuba with alcohol-burning carburetors."

In the spring of 1921 Ford exploded one of his journalistic bombshells "when he exclaimed, 'The cow must go.' To replace the milk produced by cows he proposed artificial milk made synthetically. His dislike of dairy cows stemmed from unpleasant experiences on his father's farm where milking had been a most disagreeable and exasperating chore. Now he regarded cows as inefficient and unsanitary animals. [Their milk carried tuberculosis.] At times he refused to drink milk. "When asked why he owned 150 head of excellent Durham and Ayrshire dairy cows and one of the best dairy barns in the state, he replied that these

were kept just to prove they were all wrong."

Yet it was the soybean which gave Ford his best opportunity to apply science and technology to farming practice. The 'Ford and the Beanstalk' story originated as another panacea to fight the depression following the stock market crash of 1929." Rejecting other plans, "Ford came up with his own self-help solution which called for closer cooperation between industry and agriculture. If industry could use more agricultural products, this new demand would raise prices of farm crops...

"After some experimentation in the new Edison Institute of Technology in Dearborn in 1930, Ford chemists chose the soybean as the most promising raw material... The company spent $1,250,000 on soybean research in 1932 and 1933. Three hundred varieties of the bean were planted on 8,000 acres on the Ford farms."

Note 1. This is the earliest document seen (Jan. 1998) that uses the word "technology" in connection with soybean farming and production.

Note 2. The author is one of the country's leading authorities on the history of American technology. Address: May Treat Morrison Prof. of American History, Mills College, Oakland, California 94613.

1939. Madison Foods. 1962? The story of Madison Foods. Madison, Tennessee. 17 p. Undated. 22 x 10 cm.
• ***Summary:*** Contents: The early history of Madison and the story of Madison Foods. Early pioneers (with photo taken in about 1909 including W.C. White, Ellen G. White, Mr. and Mrs. Edson White, P.T. Magan, Mother Druillard, and E.A. Sutherland). Industries. Madison hospital offers you. Tasty, healthful Madison Foods: High in proteins (cans of the following are shown): Cheze-O-Soy, Com-Pro, Dinner Morsels, Kreme-O-Soy, Madison Burger, Madison Links, Not Meat, Soy Beans in Tomato Sauce, Nu-Steaks, Stakelets, Soyburger, Yum, Vigorost, Zoy-Koff.

The home of Madison Foods. Dr. Claxton (former U.S. Commissioner of Education) says. Dr. P.A. Webber. Madison College is vegetarian. Madison meat alternates for all. Kreme-O-Soy (a new double-strength milk-like canned beverage).

J.B. Craw (with photo), manager of Madison Foods, says: "New life has come to Madison Foods! The expansion program is moving forward. In fact, the entire food factory is being remodeled; new equipment is steadily and carefully being installed, and new products manufactured.

"Kreme-O-Soy, double strength liquid, is now on the market. It is an entirely New soy milk, an entirely New Formula... in a little while we will have a powdered soy milk.

"We are glad to have H. Willis Miller, Jr., the son of H.W. Miller (China Doctor) with us. Willis is doing a wonderful job of engineering in the placing and manufacturing of newly designed equipment to fit our special

need for the new products that will be coming out one by one. We will soon have a modern plant of which we can be very proud."

Other new products: Madison Links, Com-Pro. A message from the president: Ralph M. Davidson (with photo. Note: He was president of Madison College from 1961 to 1963).

President Davidson notes: "Madison Foods, an integral part of the college educational program accomplishes a three-fold mission. First, the food factory furnishes remunerative work for students to earn their way in school. Secondly, it provides a laboratory where the student may learn to do useful work with his hands, thus giving him a balance to his educational program. Thirdly, the successfully operated food factory will bring in means to subsidize the educational and instructional departments of the college."

Other photos show: (1) The Madison Foods factory. (2) Various other school buildings. (3) E.A. Sutherland. (4) Ellen G. White. (5) Students making foods in the food factory. (6) Dr. Perry Webber with many canned Madison Foods. (7) Four close-ups of a can of Kreme-O-Soy. (8) Group photo: Sam Yoshimura (production manager), P.A. Webber (PhD, consultant in chemistry and nutrition), J.B. Craw (manager), Dr. Harry W. Miller (the China Doctor), and Frank Miller (sales dept.). Address: Madison, Tennessee.

1940. Ohsawa, G. 1962? Zen macrobiotics: The art of longevity and rejuvenation. New York, NY: Ohsawa Foundation. Printed in Japan. 218 p. Undated. Index. 17 cm.
• ***Summary:*** This is the second printed edition of Zen Macrobiotics. The cover is gray. The author is George Ohsawa. The content is basically the same as the first printed edition, except that (1) Typographical errors on pages 3, 7, and 62 have been corrected; (2) A folded, undated insert, titled "Dictionary of Macrobiotic Terms" was found in this printing between pages 216 and 217 (for details, see below).

The insert is 17.0 cm / 6.69 inches high by 30.0 cm / 11.81 inches wide. Folded crosswise into thirds, it fits perfectly into these books; (3) The information on pages 217 and 218 is different and updated. The following appears on page 218: Brazil (Casa Longavida, Sao Paulo), Sweden (Miss Ilse Clausnitzer, Stockholm), U.S.A. (Ohsawa Foundation, 61, W. 56th St., New York; Ohsawa Foundation, P.O. Box 238, Chico, California; Chico-San, Inc., 64, 5th Ave., Chico, California; Musubi, 61, W. 56th St., New York–Macrobiotic Restaurant).

Concerning the date of publication: Although the date is not given in or on the book, Carl Ferré (who owns an original of this 2nd Japan printing) notes (8 May 2011): "Chico-San is listed. This means it was after Nov. 1961 at the earliest and most likely very early in 1962. I say this because the address given is not the Mangrove Ave. one." "There is no 'Printed in Japan' in this book either but it is so similar to the earlier one that it has to be printed in Japan. It is also undated. It is not 'revised'..."

In the 3-column "Dictionary of Macrobiotic Terms" (insert), for each entry there is the word or term, its definition, and one page number on which that word appears. Because the page numbers refer to pages in this edition, the dictionary was probably published at about the same time as this book–or at the time of the previous edition in 1960. The following is a selection from the Dictionary, with pages given for soy-related words: Aduki: Japanese red bean. Ae: Dressing (vegetables) with soy bean paste [miso], orange juice, etc. (p. 96). Aemono: Japanese salad (p. 88). Age: Fried bean curd. An: Red [aduki] bean jam. Ankake: Pouring [aduki] jam. Bancha: Coarse green roasted a few minutes. Bansho: Bancha with soy sauce (p. 152). Daikon: Long, white Japanese radish. Dango: A dumpling. Dentie: Head of eggplant salted, kept, dried and then burned into a powder. Egoma: A type of sesame seed–most yang. Gobo: Burdock. Gomashio: Sesame salt. Goma Tofu: Sesame curds (p. 87). Goziru [gôjiru, gojiru]: Soup made of grated soy beans and vegetables ("Ziru" means soup in Japanese) (p. 84). Gyoza: A Chinese food–vegetable mixture wrapped in pieces of thin dough. Hako: A mold or box in Japanese. Haru Tea: A very yang herb beverage. Hiziki [Hijiki]: Spindle-shaped, small, black seaweed. Jinenjo: A wild potato or a Japanese yam. Karinto: A kind of deep-fried cookie. Kasha: Russian buckwheat grain preparation. Kayu: Thin rice preparation [porridge]. Kinpira: Burdock and carrots preparation. Kitune [Kitsune]: Boiled rice or noodles cooked with thin fried bean curds [*agé*] (p. 68). Kobu (or Konbu): A (sea) tangle coming from deep ocean waters. Kobu Maki: Kobu stuffed with vegetables. Koi-Koku: A special carp and miso soup (p. 109). Kokkoh: A creamed blended cereal. Konnyaku: A paste made from flour of this Japanese tuberose [tuber]. Kuzu: Powdered plant-gelatine obtained from kuzu plant. M.U. tea: A tea made of 15 blended herb's roots. Matuba [Matsuba]: Pine leaves. Miso: Soy bean paste (p. 65). Miso Ae: Boiled vegetables served with miso cream (p. 96). Misoni: Carrots and onions cooked with miso (p. 129). Mochigome: Glutinous rice. Moti [Mochi]: Rice cake. Musubi: A knot. Nisime [Nishime]: Same as Nituke. Nituke [Nitsuke]: Vegetables sauteed. Nori: Laver or sloke–a kind of seaweed. Ogura: Aduki (red bean) preparation. Omedato: Dessert made of roasted rice and red beans. Originally Japanese word for congratulation. Oshitashi: Boiled vegetables, served with Tamari (p. 97). Ransho: Egg–Tamari preparation. Renkon: Lotus root. Sashimi: Sliced raw fish. Sarashina: A kind of buckwheat dish. Originally it means the name of a place famous for producing good buckwheat. Siitake [Shiitake]: A kind of Japanese mushroom. Sio [Shio]: Salt. Sio Kobu [Shio Kombu]: A kobu (seaweed) preparation. Soba: Buckwheat. Sukiyaki: Fish (or beef) and vegetables cooked a la japonaise. Sushi: A rice preparation. Syo-ban [Sho-ban]: Coarse green tea with soy sauce (p. 101). Tahini: Sesame butter. Tai: A red snapper [fish]. Tamari: Traditional soy sauce (p. 62). Tekka: A preparation of minced lotus root, burdock root, carrot, ginger, and miso (p. 96). Tempura: Japanese process of deep-frying in oil. Tofu: White soya bean cheese (p. 134). Tororo: Wild potato [wild yam]. Udon: Wheat vermicelli or noodle or macaroni. Umeboshi: Japanese plum salted and conserved for years. Ume-sho-ban: Medicinal beverage [containing umeboshi and shoyu] (p. 156). Yannoh (Ohsawa coffee): A cereal coffee made of roasted rice, wheat, aduki, chick peas and chicory. Yomogi: Mugwort (or wormwood). Yuba: Soybean protein prepared into transparent paper-like sheets (p. 77). Zosui: A rice preparation. Zaru: A bamboo basket. Address: Ohsawa Foundation: 331 Riverside Dr., New York City. Secretary Aihara, 44 W. 96th St., New York City, U.S.A.

1941. Ontario Soya-Bean Growers' Marketing Board. 1962? About soybeans: "A know your industry presentation." Chatham, Ontario, Canada. 12 p. Undated. 23 x 11 cm.
• ***Summary:*** Contents: A message from Dick Smith, Chairman, OSGMB. The big three: Soybeans, soybean oil, and soybean meal. Other soybean products: Soybean flour, milk, cheese (tofu), sauce, and sprouts. Where soybeans are grown worldwide. The position of soybeans in world fats and oils production. The import and export pictures in 1961. Production of soybeans by county in Ontario. Marketing the crop. Soybean grades. Activities of OSGMB.

In 1961 Canadian soybean production accounted for only 30.5% of Canada's need for soybean oil, and 31% of the country's needs for soybean meal; the rest had to be imported. In 1954, in order to establish a healthy market situation, OSGMB initiated a soybean export program. "The establishment of this 'second market' has proven its intended worth in helping to maintain price levels in Canada. In 1961, Canadian exports of soybeans and the bushel equivalent of meal and oil totalled 11.7 million bushels." Address: Box 668, 143 Wellington St. West, Chatham, Ontario, Canada.

1942. Omans, W.B.; Leuterer, W.; György, P. 1963. Feeding value of soy milks for premature infants. *J. of Pediatrics* 62(1):98-106. Jan. [10 ref]
• ***Summary:*** Recently soy products have been included in the "Protein-rich food Program of World Health Organization [WHO], Food and Agriculture Organization [FAO], and United Nations Children's Fund" [UNICEF]. This program's goal is to prevent protein malnutrition, which is widespread among infants and preschool children in most tropical countries. A toasted full-fat soybean preparation, Sobee, supported better growth in rats (PER 2.3 ± 0.15) and infants than soybean water extracts like Soyalac, Saridele, and Mull-Soy. The authors found considerably more variability in weight gain than with feedings of cow's milk formula. Formulas made from toasted low-fat soy flour gave the best results (PER 2.43), followed by those made from full-fat soy flour (PER 2.40).

Note: This is the earliest report seen on the results of feeding soy protein formula to premature infants. Address: Dep. of Pediatrics, Philadelphia General Hospital, Pennsylvania.

1943. Senti, F.R. 1963. Soybeans–Their future as a food and feed crop. *Soybean Digest.* Jan. p. 16-20.
• ***Summary:*** "A thorough survey of the present and potential markets for both the oil and meal fractions of the soybean." Discusses food uses of soybean oil, fats and oils used in margarine (1946-61; graph), sources of high-protein concentrates or livestock and poultry feeds (1937-61; graph), polyunsaturated fatty acids in the U.S. diet, feed and food uses of soybean meal, growth in oilseed meal consumption, tofu, miso, tempeh, UNICEF's clinical trial with soy beverage for infants in Taiwan, Public Law 480 and soya. To date 12 projects sponsored by the NRRL and funded by P.L. 480 on various food aspects of soybean utilization have been activated in Italy, Spain, Scotland, Finland, Israel, and Poland.

Figure 1, "Fats and oils used in shortening (1946-61)" is a graph showing that in 1945, soybean oil was the main oil used, followed by cottonseed oil, with animal fats a distant third. In 1961 soybean oil is still the leader (47.6% of total fats used), followed by animal fats (33.3%), then cottonseed oil (16.7%).

Figure 2 is a graph showing that per capita consumption of liquid edible oils increased from about 6.2 lb in 1945 to 11.2 lb in 1961.

Figure 3, "Fats and oils used in margarine (1946-1961)" is a graph showing the total increasing from about 450 million lb in 1946 to about 1,350 million lb in 1961. In 1946 soybean oil and cottonseed oil each accounted for about 50% of the total oil. In 1961 soy oil accounted for about 78% of the total, followed by cottonseed oil and corn oil. Address: Director, NRRL, Peoria, Illinois.

1944. American Academy of Pediatrics, Committee on Nutrition. 1963. Appraisal of nutritional adequacy of infant formulas used as cow milk substitutes. *Pediatrics* 31(2):329-38. Feb. [60 ref]
• ***Summary:*** Discusses: Soyalac, Mull-Soy, and Sobee. The influence of processing on protein quality appears to be much greater in the case of soy than in the case of milk. For the soy-based formulas noted above, PER values from 1.3 to 2.0 (casein control is 2.5) are reported. Address: 1801 Hinman Ave., Evanston, Illinois.

1945. *British Vegetarian.* 1963. Society reports: Fruitarian discussion group. Jan/Feb. p. 22-23.
• ***Summary:*** On 5 Nov. 1962 Dr. Franklin spoke on "Plant Milk and Protein." He first discussed the changes taking place in scientific views on the amount of protein required by a healthy body. Then he said that "the transition from the animal protein of dairy products to the less concentrated plant protein of leaves (plus about 10% soya milk) comprising plant milk, must be made slowly. Samples of the milk were tested and found very pleasantly sweet and smooth to the palate."

Dr. Franklin said that preparations for large-scale factory production were well in hand. Supplies for Health Food Stores and for export to undernourished peoples were expected in 3 to 4 months.

1946. Cross, Leslie. 1963. The Plantmilk Society: Progress report. *British Vegetarian.* Jan/Feb. p. 7-8.
• ***Summary:*** Recent samples of the Society's leaf protein plantmilk "have shown a marked improvement in appearance, flavour, and palatability." The Society is working to raise money to set up a commercial-scale pilot plant to produce this "Milk of Human Kindness." The first samples of plantmilk were extracted from an exclusively leaf-protein base, with the protein being coagulated by heat. In later experimental samples, small amounts of soya or other vegetable protein were added. Current work is on extracting some of the protein from the leaves by slow enzymic digestion. The fat content of Plantmilk presently consists of soy oil and maize oil, but in the future some of the fat in the leaf may be used.

1947. Diamond, Holton W. 1963. Vegetable fat replacements for dairy products. Paper presented at meeting of the Massachusetts Dairy Tech Society. 21 p. Held Feb. 4. [9 ref]
• ***Summary:*** "The manufacture of vegetable fat replacements for dairy products has increased tremendously in the last few decades." In all cases the butter fat has been replaced by vegetable fat, but in many cases the entire finished food may be described as "all vegetable." "We have soybean milk, margarine, and 'mellorine.' We have the vegetable alternate for cottage cheese, and in certain parts of the Orient rather

elaborately cultured and fermented soybean materials are manufactured and used as replacement for cheddar and other types of cheeses." Address: Vice President–Research, Rich Products Corp., 1145 Niagara St., Buffalo 13, New York.

1948. Fukamachi, Chiharu; Abe, Kazuyoshi; Watanabe, Tokuji. 1963. Fukuro-iri tôfu genryô toshite no funmu kansô tônyû ni tsuite [Qualification of spray-dried soybean milk as the material of bagged tofu]. *Shokuryo Kenkyujo Kenkyu Hokoku* (*Report of the Food Research Institute*) No. 17. p. 129-31. March. Reprinted from Nippon Shokuhin Kogyo Gakkaishi 9:13 (1962). [4 ref. Jap; eng]
• ***Summary:*** Spray-dried whole soybean milk has recently appeared on the market in Japan. Tofu made with this milk was found to be excellent in firmness and its ability to hold water, compared to tofu made from fresh soymilk. For making bagged tofu, it is recommended that a mixture of dried and fresh soymilk be used, with 40% of the solids coming from the dried soymilk. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1949. Fukamachi, Chiharu; Abe, Kazuyoshi; Watanabe, Tokuji. 1963. Tônyû no gyôko ni oyobosu tenkabutsu no eikyô ni tsuite [Effects of additives on the coagulation of soybean milk by calcium salt]. *Shokuryo Kenkyujo Kenkyu Hokoku* (*Report of the Food Research Institute*) No. 17. p. 135-39. March. Reprinted from Nippon Shokuhin Kogyo Gakkaishi 9:19 (1962). [9 ref. Jap; eng]
• ***Summary:*** Tofu was coagulated with calcium sulfate calcium chloride, and sulfuric acid to compare their hardness and volume. The quality of the curd made with the acid was similar to that made with calcium chloride. Although the curd made with calcium sulfate was very soft and voluminous, it became smaller and harder and smaller in volume when a small amount of acid was added. Various kinds of agents were added to the soymilk before precipitation by calcium chloride to try to get a soft curd. Among these agents, sodium citrate and sodium polyphosphate seemed to be effective in making tofu softer and more voluminous, probably because of their high pH and their ability to increase the water-holding capacity of soy protein. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1950. Nakayama, Osamu; Watanabe, Tokuji. 1963. Tônyû ni kansuru kenkyû. I. [Studies on soybean milk. I.]. *Shokuryo Kenkyujo Kenkyu Hokoku* (*Report of the Food Research Institute*) No. 17. p. 144-47. March. [2 ref. Jap; eng]
• ***Summary:*** See summary at *Eiyo to Shokuryo* 15:191-95 (1962). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1951. Watanabe, Tokuji; Abe, Kazuyoshi. 1963. Kakushu san-rui oyobi en-rui ni yoru tônyû no gyôko ni tsuite [Studies on the coagulation of soybean milk by various kinds of acid and salt]. *Shokuryo Kenkyujo Kenkyu Hokoku* (*Report of the Food Research Institute*) No. 17. p. 140-43. March. [5 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1952. Watanabe, Tokuji; Nakayama, Osamu; Abe, Kazuyoshi. 1963. Tônyû no funmu kansô ni kansuru kenkyû [Study of spray-dried soya milk]. *Shokuryo Kenkyujo Kenkyu Hokoku* (*Report of the Food Research Institute*) No. 17. p. 124-28. March. Reprinted from Nosankaku Gijutsu Kenkyo Kaishi 8:288 (1961). [5 ref. Jap; eng]
• ***Summary:*** The nitrogen content is much higher with spray drying than with lyophilization. Spray-dried soymilk powder, which gelatinizes into tofu through dispersing in water and heating, is obtained from samples which contain calcium sulfate and sodium phosphate. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1953. *British Vegetarian.* 1963. Plant proteins and vegetable milks. March/April. p. 87-89. [1 ref]
• ***Summary:*** Discusses mostly leaf protein. Nutritionists agree that leaf protein should not form more than half of the total protein intake, and preferably much less. Amino acid deficiencies can be overcome by mixing the leaf protein with an equal amount of soya or groundnut protein and fortifying with vitamin B-12.

1954. *British Vegetarian.* 1963. "Plantmilk"–Progress report: The glowing year. March/April. p. 98. [1 ref]
• ***Summary:*** "Recently a good deal of serious and detailed work has been carried out with the object of making 1963 the year in which Plantmilk took its baby steps in the world of trade and commerce. This part of the work belongs to Plantmilk Ltd., the company formed by the Plantmilk Society in 1961 to carry the project forward as soon as the Society achieved its first main goal–to produce a satisfactory non-animal alternative to dairy or other animal milk."

Note. This is the earliest English-language document seen (Aug. 2013) that contains the term "Plantmilk Ltd."

1955. Honma, Osamu; Ono, H.; Nishihara, K. 1963. Daizu o tanpakushitsu gen toshita nyûji shoku no riyô ni tsuite [On the use of soybeans as a source of protein in infant diets]. *Chiryo* (*J. of Therapy, Tokyo*) 45(4):705-10. April. [28 ref. Jap]
• ***Summary:*** In Germany, soybeans are valued as a food with medicinal uses. There are some products on the market sold as Vollsojamehl (whole soy flour, made by Henselwerk in Magstadt) that are used in regular foods and medicinally by adults, but also by elderly people and young children. Soy-based infant formulas made in the USA include: Mull-Soy Liquid (made by Borden); Sobee Powder and Sobee Liquid (made by Mead Johnson); Soyalac Infant Powder,

Soyalac Infant Concentrated, and Soyagen Infant Powder (made by International Nutrition Lab. [Mt. Vernon, Ohio]). Those made in Germany include Soyakraft and Sojabasan (Henselwerk); Lactopriv; and Solactin. Address: Tokyo Keisatsu Byoin Shonika, Icho (Tokyo Police Hospital, Pediatric Div., Head).

1956. James, W.S. 1963. New sources of protein in a hungry world. *British Vegetarian.* March/April. p. 69-77.
• ***Summary:*** The world population is now doubling roughly every 40 years and by the end of this century it is expected to reach 6,000 million. A new source of protein has been found. Scientists have discovered ways of separating protein from the indigestible cellulose and fibre of waste vegetable matter, including leaves, grass, etc. One of the pioneers in this basic research is N.W. Pirie, F.R.S., head of the Biochemistry Department at Rothamsted Experimental Research Station, Herts. Pirie and his colleagues have developed a small "Village Unit" machine for extracting protein from vegetable matter. The leaf protein from these machines is a dark green cheeselike substance.

A chemical company has recently put up the necessary capital to form a subsidiary company named International Protein Products, Ltd., which has built a factory costing £300,000 at Plymouth, England, for extracting protein from various vegetable sources using I.H. Chayen's "Impulse Process." The protein concentrate now produced at Plymouth has been given the trade name Lypro; it consists of about 65% protein and 35% oil loosely combined. It looks very much like flour, has a very pale cream color, and a faint attractive nutty flavor.

The low biological value of some leaf proteins can be greatly improved by mixing them with equal weights of soya protein, in the form of commercial food products such as Soyalac (Loma Linda Foods) or Velactin (A. Wander Ltd.). Address: M.Sc.

1957. **Product Name:** [Lactopriv {Soy Based Infant Formula} (Powder)].
Foreign Name: Lactopriv.
Manufacturer's Name: Teopfer GmbH.
Manufacturer's Address: Heisingerstr. 6, Dietmannsried, West Germany.
Date of Introduction: 1963. April.
Ingredients: Incl. soy protein isolate.
New Product–Documentation: Honma and Nishihara. 1963. Chiryo (Journal of Therapy, Tokyo) 45(4):705. "On the use of soybeans as a protein source in infant diets." Lactopriv is mentioned as a soy-based infant formula but the manufacturer's name is not given.

Thomson. 1979. *Journal of the American Oil Chemists' Society.* March. p. 386-88. The product is now based on soy protein isolates. The manufacturer is Topfer GmbH, located at Heisingerstr. 6, Dietmannsried, West Germany. Phone: 083 74 80 41.

Soyfoods Center Computerized Mailing List. 1982. July 23. An alternative address is Ferdinandstr. 12, D-2000 Hamburg, West Germany. Phone: 04 03 01 31.

1958. **Product Name:** [Solactin (Soymilk)].
Foreign Name: Solactin.
Manufacturer's Name: Unknown.
Manufacturer's Address: West Germany.
Date of Introduction: 1963. April.
New Product–Documentation: Honma and Nishihara. 1963. Chiryo (Journal of Therapy, Tokyo) 45(4):705. "On the use of soybeans as a protein source in infant diets." Solactin is mentioned as a soy-based infant formula but the manufacturer's name is not given.

1959. General Mills, Inc., Specialty Products Div. 1963. From soy products, General Mills formulates new protein-rich foods (Ad). *Soybean Digest.* May. p. 5.
• ***Summary:*** "A management report from Mr. Sewall D. Andrews, Corporate Vice President and General Manager, General Mills Specialty Products Division."

"Here at the Specialty Products Division we are concentrating on new protein-rich food products for world feeding. We are manufacturing and marketing SMP (Soy Milk Powder) which, when mixed with water, makes a delicious beverage for school lunches and for supplementing diets of children unable to get cow's milk; also, through an agreement with Meals for Millions Foundation, MPF (Multi-Purpose Food) which provides, in concentrated form, the essential nutrients usually lacking from high carbohydrate diets. Using soybeans as the key, we have developed TSP (Toasted Soy Protein)–an unusually low cost, high quality protein completely pre-cooked, ready to use. Other protein foods from soybeans are in the developmental stage. When perfected, these too will contribute to improved world nutrition."

Photos show: (1) A small portrait photo of Mr. Sewall D. Andrews. (2) A half-page photo of a little girl, looking somewhat hungry, looking up at a woman holding a bowl of food in her left hand and a spoonful of that food in her right–food that she is about to feed to the little girl.

1960. Machida, Yoshiro. 1963. Seisei daizu tanpaku no yotô [Utilization of refined soy protein]. *Shokuhin to Kagaku* (*Food and Science*) No. 38. May. p. 42-47. [Jap]

1961. *Newsweek.* 1963. New foods and new hopes. 61:51. June 17.
• ***Summary:*** "It is a sad paradox that a child with a full stomach can die of malnutrition. The problem is not how much he eats, but rather what he eats. Without an adequate supply of protein, which enables a child's body and mind to grow, all the fats and carbohydrates he can eat will not help

him. One of the most promising ways out of this paradox is the development of new, high-protein foods, to supplement standard native fare of starchy foods such as cassava, manioc, yams, or plantains."

According to organizations like UNICEF and WHO, the world's two most promising sources of protein are considered to be fish flour and defatted oilseed meals, including those from soybeans, peanuts, cottonseeds, and coconuts. "UNICEF has helped start a project in Indonesia promoting Saridele, a soybean extract ideal for infant feeding. With such supplements, a child can be kept healthy from the time he is weaned, and loses his original source of protein, until he is 7 or 8, and the need for protein begins to diminish."

"UNICEF is cautiously optimistic. The agency's senior food technologist, Max Milner, said last week: 'We are beginning to see some glimmers of light.'"

1962. Hackler, L.R.; Hand, D.B.; Steinkraus, K.H.; Van Buren, J.P. 1963. A comparison of the nutritional value of protein from several soybean fractions. *J. of Nutrition* 80(2):205-10. June. [6 ref]
• ***Summary:*** In PER studies, several soybean fractions were fed to weanling rats. The results were somewhat surprising in that they indicated that the "residue from water extraction," or water-insoluble fraction, was the most nutritious.

Unextracted [full-fat] soybean flour was prepared by soaking dry soybeans overnight at room temperature in 3 times their weight of water. The beans were dehulled using a vegetable peeler and water flotation. The dehulled soybeans were drained, steamed for 1 hour at 100ºC, frozen at -40ºC then freeze-dried whole. The beans were then ground finely (through the 023 screen of a Rietz Disintegrator) with water. The soymilk and solids were separated in a plate filter while the milk was still cold. The soymilk was then cooked for 1 hour at 100ºC, concentrated, frozen, and freeze dried.

The PER for the different fractions and for casein were as follows: Casein 2.86, residue 2.71, dehulled soybean 2.51, curd [tofu] 2.20, soymilk 2.11, whey 1.93. Address: New York State Agric. Exp. Station, Geneva, New York.

1963. Sakata, Hajime; Enomoto, M.; Higuchi, Y. 1963. [Deodorization of soybean milk products]. *Japanese Patent* 11,939. July 12. 2 p. Application filed 30 Dec. 1961. (Chem. Abst. 60:6144a). [Jap]*
• ***Summary:*** Sodium sulfite was used to reduce the odor of soymilk, and the residual sodium sulfite was removed with an ion-exchange resin. Some hydrazine derivatives could also be used.

1964. Sakata, Hajime; Enomoto, M.; Higuchi, Y. 1963. [Deodorization of soybean milk products]. *Japanese Patent* 11,940. July 12. 2 p. Application filed 30 Dec. 1961. (Chem. Abst. 60:6144a). [Jap]*
• ***Summary:*** Deodorization was conducted by introducing hydrogen into the raw soymilk or mashed soybeans in the presence of Raney-Ni.

1965. Smith, Allan K. 1963. Foreign uses of soybean protein foods. *Cereal Science Today* 8(6):196, 198, 200, 210. July. [28 ref]
• ***Summary:*** Contents: Introduction (world food shortages). Technological assistance (by NRRL). Oriental traditional foods: Tofu, shoyu or soy sauce, miso or soy paste, monosodium glutamate, natto and kinako, soy beverage, tempeh (tempe). Recent food developments. Address: NRRL, Peoria, Illinois.

1966. Ghadimi, H.; Pecora, P. 1963. Free amino acids of different kinds of milk. *American J. of Clinical Nutrition* 13(2):75-81. Aug. [5 ref]
• ***Summary:*** Sobee and Mullsoy, milk substitutes made from soybeans, were included in the studies. A table shows their amino acid composition. Address: State Univ. of New York, Downstate Medical Center, Brooklyn, NY.

1967. Machida, Yoshiro. 1963. Shokuyô daizu tanpakushitsu to sono atarashii yôto [New uses of edible soy protein]. *Nippon Yukagaku Kyokaishi* (*J. of the Japanese Oil Science Society*) 11(8):461-67. Aug. Bessatsu. [10 ref. Jap] Address: Sugiyama Industrial Chemical Research, Tokyo, Japan.

1968. Rosenvold, Doris; Rosenvold, Lloyd. 1963. Rx recipes: A guide to healthful food preparation. Montrose, Colorado: Rosenvold Publications. Citadel Agencies, P.O. Box 135, Fairfield, Washington 99012. vii + 186 p. No index. 23 cm. Spiral bound.
• ***Summary:*** This vegan cookbook contains no foods from animal sources except honey. It was developed primarily to help patients with food allergies and cardio-vascular problems. Soy milk, soy flour, soy grits, and [whole dry] soy beans are used extensively throughout the book.

Chapter 9, "Milk and Cream Substitutes," gives recipes for pecan milk, unsweetened walnut milk, almond cream, coconut milk, homemade soybean milk, Loma Linda Soyagen (powdered), cashew cream, cashew milk, and walnut milk.

Chapter 11, "Entrees," contains recipes for: Creamed soy beans. Green soy beans. Supreme loaf (with Vegeburger plus Yeastex or Savita). Walnut roast (with rich soy milk). Scrambled "eggs" with Smokene (and soy cheese/To-fu). Scrambled "eggs" with chives (with soy cheese [tofu] and soy milk). To-fu with mushrooms. Baked rice and cheese (with to-fu). Scrambled "eggs" plain (with soy cheese [To-fu] and rich soy milk). Soy beans (boiled). Soy bean croquette (with "2 c. soy bean puree"). Soy bean loaf (with "2 c. mashed cooked soy beans"). Soy bean patties (with "1

c. soy cheese" [tofu]). Baked soy beans.

Chapter 19, "Foreign Dishes," contains a recipe for "How to make to-fu" (using Loma Linda Soyagen powder, curded with lemon juice), plus two tofu recipes. The companion volume to this book is titled *Nutrition for Life.*

1969. Tamura, T. 1963. Tônyû no gyôseki to denkaishitsu no gyôseki-ka [Coagulation numbers for soymilk and its electrolytes or salts]. *Kogyo Kagaku Zasshi* (*J. of the Society of Chemical Industry, Japan*) 66(8):1224-27. Aug. (Chem. Abst. 61:7615g). [7 ref. Jap]
Address: Osaka Furitsu Kogyo Shoreikan, Osaka-shi, Nishi-ku, ?-shima, kami-machi.

1970. Yoshino, K. 1963. Daizu san nyû no tsukurikata: Atarashii nôsan kakô [How to make soybean milk: A new agricultural product]. *Nogyo Oyobi Engei* (*Agriculture and Horticulture*) 38(8):1263-66. Aug. [Jap]
Address: Nogyo Koto Gakko, Chiba-ken, Japan.

1971. Chambers, John A. 1963. Soya in nutritional foods. *Arkady Review* (*Manchester, England*) 40(3):47-50. Sept.
• ***Summary:*** Soybeans which are high in protein and low in carbohydrates lend themselves to both specialty diets (slimming foods) and to food for those suffering from milk allergies, coeliac disease [celiac] and phenyl ketonuria. A photo (p. 49) shows "Some specialty foods containing soya." These include Metercal [spelled Metrecal in the USA] powder and wafers (made by Mead Johnson), Ovaltine, Farley's Gluten Free Biscuits, and Limmits ("The meal in a biscuit that helps you slim"). Address: BSc, Research Chemist, British Arkady Co., Ltd.

1972. Rackis, J.J.; Smith, A.K.; Nash, A.M.; Robbins, D.J.; Booth, A.N. 1963. Feeding studies on soybeans. Growth and pancreatic hypertrophy in rats fed soybean meal fractions. *Cereal Chemistry* 40(5):531-38. Sept. [11 ref]
Address: NRRL, Peoria, Illinois.

1973. Sanchez, Albert; Scharffenberg, J.A.; Register, U.D. 1963. Nutritive value of selected proteins and protein combinations. I. The biological value of proteins singly and in meal patterns with varying fat composition. *American J. of Clinical Nutrition* 13(4):243-49. Oct. [21 ref]
• ***Summary:*** Vegetable protein mixtures incorporated into human dietaries compare favorably with meat in growth and biological value studies in rats. Discusses the biological value of proteins singly and in meal patterns with varying fat composition. "Soybean milk" was included in experimental diets for rats. Address: Dep. of Biochemistry, School of Medicine, Loma Linda Univ., Loma Linda, California; International Nutrition Research Foundation, Riverside, California.

1974. Sanchez, Albert; Scharffenberg, J.A.; Register, U.D. 1963. Nutritive value of selected proteins and protein combinations. II. Biological value predictability. *American J. of Clinical Nutrition* 13(4):250-53. Oct. [13 ref]
Address: Dep. of Biochemistry, School of Medicine, Loma Linda Univ., Loma Linda, California; International Nutrition Research Foundation, Riverside, California.

1975. Board of Plantmilk Ltd. 1963. Introducing Plantmilk. *British Vegetarian.* Nov/Dec. p. 338-39.
• ***Summary:*** "Plantmilk is a man-made milk, made from the same basic raw material as that used by the cow–green leaf... Vitamins and fats of vegetable origin are incorporated, while the blending-in of protein from different plant sources [probably including soya] consolidates the amino acid balance."

"Plantmilk Ltd. is constructing a commercial pilot plant, for the manufacture of Plantmilk in the form of a triple-strength liquid, only requiring dilution with water to bring it down to normal strength. Production is planned to start about the end of this year (1963) or early in 1964." Address: Tithe Farm, Langley, Bucks. [Buckinghamshire, England].

1976. Uesugi, Yoshio. 1963. Hônen Seiyu K.K. 40 nen-shi [40 year history of Hohnen Oil Co.]. Tokyo: Hohnen Seiyu K.K. 307 p. Dec. Illust. 27 cm. [Jap]
• ***Summary:*** Contents: Preface. Photos of products and top managers. 1. History of the period before the company was founded (p. 1): Origin of the oil industry, brief history of the soy bean oil industry. 2. Founding of the company and company and establishment of its foundations (p. 7). 3. The company finally starts to grow (p. 33): Promotional activities for products, completion of soybean glue. 4. The Sino-Japanese war starts [July 1937] (p. 45): Honen Seiyu K.K. in Manchuria. 5. Confusion after the war (p. 71). 6. The change to an independent economy (*Jishu Keizai e Tenkan*) (p. 87). 7. Honen products (p. 147): Related oil products, defatted soybean meal, Yutaka Mamé, plywood glue and its changes, Honen Mera sheet siding or veneer (*keshôban*), lecithin, soymilk A, defoamer (*awakeshi-zai*), HOC powder for making mochi, HOC curd. 8. Present status (p. 171): 13 sub-chapters on company divisions. 9. Related companies and organizations (p. 217): Appendix. Pages 255-72 contain a detailed chronology of this major Japanese company, which crushes soybeans, and makes soy oil and soy protein products. My personal history, by Kintaro Sugiyama (p. 273). Closing remarks. Address: Japan.

1977. Watt, Bernice K.; Merrill, Annabel L. 1963. Composition of foods: Raw, processed, prepared. *USDA Agriculture Handbook* No. 8. 190 p. Dec. Revised. Reprinted in 1975 by Dover Publications (New York, NY). [35 ref]
• ***Summary:*** A classic. Address: Consumer and Food Economics Research Div., Agricultural Research Service,

USDA, Washington, DC.

1978. Dutra de Oliveira, J.E.; Scatena, L.; Souza, N. de. 1963. Metabolic studies of malnourished children fed formula providing amounts of protein similar to that of human milk. Report to the Nutrition Section of the National Institutes of Health, USA. *
Address: Faculdade de Medicina, Ribeirao Preto, Sao Paulo, Brazil.

1979. **Product Name:** [Solein {Soymilk}].
Foreign Name: Solein.
Manufacturer's Name: Laticinios Mococa.
Manufacturer's Address: Mococa, Brazil.
Date of Introduction: 1963.
Ingredients: Incl. soyamilk and nonfat dried cow's milk.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: Dutra de Oliveira & Scatena. 1967. *J. of Food Science.* 32:592-94. This mixture of 30% soymilk and 70% cow's milk, developed by Dr. Barretto, was made by a cold-grind process, which gave a beany flavor. In 1981 it was sold mainly at pharmacies in powdered and canned form.

E. Orr. 1972. Tropical Products Inst. G73. The use of protein-rich foods for the relief of malnutrition in developing countries: an analysis of experience. p. 14. "As a result of work carried out at the Medical School of Ribeirao Preto, University of Sao Paulo, Brazil, a local dairy company, Laticinios Mococa, started producing around 1963 Solein, a combination of soya milk and skimmed cow's milk, spray-dried. Early in 1967 the ex-factory price of Solein, bulk packed, was equivalent to $0.60 per kg compared with $0.96 for dried skim milk, and $1.06 for dried whole milk. Sales were made to the Government Children's Bureau for the feeding of young children but it appears that these purchases have been modest in size and irregular. The company is now proposing to launch the 'dietetical' market, apparently through drugstores, at a price tentatively fixed at the equivalent of US$1.54 per kg." This scheme is now operating irregularly.

R.H. Moretti. 1981. *Journal of the American Oil Chemists' Society.* March. p. 521. "Soy milk developments in Latin America."

1980. **Product Name:** Loma Linda All Purpose Soyagen (Milk Free Soy Beverage Powder).
Manufacturer's Name: Loma Linda Food Co.
Manufacturer's Address: 11503 Pierce St., Riverside, CA 92505. Phone: 714-687-7800 (3/88).
Date of Introduction: 1963.
Ingredients: Soy solids, corn syrup, soy oil, sugar, soy lecithin, salt, di-calcium phosphate, tri-sodium citrate, calcium carbonate, di-potassium phosphate, artificial flavors, vitamins (ascorbic acid, DL-alpha tocopheryl acetate, vitamin A palmitate, cholecalciferol, riboflavin, phytonadione, cyanocobalamin), ferrous sulfate, tri-potassium citrate.
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable.
Nutrition: Per 1 oz. powder (approximately ¼ cup making

one cup of liquid): Calories 130, protein 6 gm, carbohydrate 14 gm, fat 6 gm, cholesterol 0 mg, sodium 150 mg, potassium 210 mg.
New Product–Documentation: Label and color photo sent by Loma Linda Foods. 1988. Oct. 5. This product was introduced in 1963; the label is dated "9/78"–Sept. 1978. A less sophisticated version of this product with the same name appeared in 1948.

1981. **Product Name:** Coffee Rich (Frozen Liquid Coffee Whitener).
Manufacturer's Name: Rich Products Corporation.
Manufacturer's Address: Buffalo, New York.
Date of Introduction: 1963.
Ingredients: 1986: Water, corn syrup, partially hydrogenated soybean oil, mono and diglycerides. soy protein, sodium stearoyl lactylate, polysorbate 60, dipotassium phosphate, disodium phosphate, sodium acid pyrophosphate, artificial flavor and color.
Wt/Vol., Packaging, Price: 1986: 16 oz (454 gm) Pure Pak gable top carton.
How Stored: Frozen.
New Product–Documentation: Ad (undated, about 1960s). "It takes just a little Coffee Rich to make a tremendous cup of coffee." A small bottle of Coffee Rich is held between the thumb and forefinger of someone's hand.

Leaflet (undated, about 1960s). "Technical information. New liquid Rich's Coffee Rich." A photo shows that Coffee Rich is sold in a quart Pure-Pak carton. It is "an all-vegetable fat emulsion designed primarily for use in coffee." It can also be used in cooking, is non-perishable, has a good, uniform taste and its stability resists "feathering," oiling off, and separation defects. "Economical: Coffee Rich is not a substitute product. It is a superior new product... Savings on present costs is but one important feature." Quantitative analysis: Fat 12%, corn syrup solids 14%, sodium caseinate 0.80% (used as a major emulsion stabilizer), sodium ion 0.1%, cholesterol free, beta carotene supplies about 300 I.U. of vitamin A activity per quart, calories–160 per 100 gm.

Shurtleff & Aoyagi. 1985. History of Rich Products' work with soy proteins. When this product was launched in about 1960, it was based on coconut oil and contained no protein. "The lack of protein gave the product a long shelf life when sold refrigerated in dairy cases, as was planned. But the product started settling out, so the company switched to using sodium caseinate as a protein source, then in about 1963 began using soy protein (typically 0.75% by weight) as the main protein source. In the mid-1970s, soy oil replaced half the coconut oil, then later in the 1970s all of it. The dairy industry spent a small fortune trying to keep Coffee Rich off the market." The first lawsuit was in Louisiana in 1961. "By 1974 the number of court cases and victories for Rich Products had grown to 40. That year the Kansas Supreme Court declared Coffee Rich 'a new and distinct food' and the milk lobby gave up. Rich Products' success in these suits led to the creation of a new product category: Coffee whitener."

Package with Label sent by Dr. Walter Wolf of Peoria, Illinois. 2000. Aug. 5. The package is copyrighted 1986. Blue and red on white. Front panel: Illustration of a coffee cup with steam rising in front of a red circle. Text: CoffeeRich. "Great fresh taste! No cholesterol. 100% milk free. Low in sodium and saturated fats. Keep frozen."

1982. **Product Name:** Whitehouse Whipped Topping, Whitehouse Whipped Topping Base, and Whitehouse Presto Whip.
Manufacturer's Name: Whitehouse Products, Inc.
Manufacturer's Address: Livonia Dairy, 2001 S. Telegraph Rd. at Harvard, Dearborn, Michigan.
Date of Introduction: 1963.
New Product–Documentation: Talk with David and Harvey Whitehouse of Delsoy Products and Whitehouse Products. 1992. Feb. 4. Harvey Whitehouse bought out Bob Smith in 1963, and a month or so thereafter David became president of the company. Shortly after the buyout, the company name was changed from Delsoy Products to Whitehouse Products. The brand and logo then became Whitehouse and product names were changed. Delwhip Topping became Whitehouse Whipped Topping, Delwhip Topping Base became Whitehouse Whipped Topping Base, and Presto Whip became Whitehouse Presto Whip. All continued to be made with soy protein. At about the same time, the company began to private label their products for

other companies under other brands. They continued to sell the products under their own brands as well.

1983. Chao, Buwei Yang. 1963. How to cook and eat in Chinese. 3rd ed. New York, NY: Random House. xxvi + 249 p. Foreword by Hu Shih. Preface by Pearl S. Buck. Illust. Index. 21 cm.
• ***Summary:*** This edition is quite similar to the original 1945 edition, except that it has some new front matter (such as introductions to the second [1949] and third revised editions), new pages added here and there plus 16 pages of recipes added between pages 228 and 229, and new cooking techniques. The page layout is basically unchanged, but when new pages were added, they were numbered 160a, etc; thus the contents of page 203 is identical in all editions.

A new table (p. 29) lists widely used Chinese foods and seasonings in four columns: Chinese characters, Mandarin, Cantonese, and English. Soy related ingredients (in English, Mandarin, and Cantonese) are: (4) Oyster sauce: hao-yu, hou-yau. (6) Soy sauce (1): chiang-yu (M). Soy sauce (2): shi-yau (C). Soy sauce (3): ch'au-yau (C). (7) First quality soy sauce: sheng-ch'ou (M), shang-ch'au (C). Note 1. The first character means "fresh" or "live."

Note 2. This is the earliest English-language document seen (April 2012) that uses the term "sheng-ch'ou" (Mandarin) or the term "shang-ch'au" (Cantonese) or the term "chü-yau" to refer to a type or grade of Chinese soy sauce."

(8) Flour jam: t'ienmien-chiang (M), t'inmin-cheung (C). (9) Bean sauce: Yuanshih chiang (M), yünshi-cheung (C). Note 3. The middle character (shih / shi) refers to fermented black soybeans. (10) Hoisin sauce: haihsien chiang (M), hoisin-cheung (C). Note 4. This is the earliest document seen (April 2012) that mentions Hoisin sauce.

However, among the new pages added, there is a nice new chapter 22 titled "Soybean Foods" (p. 228c-228h). Its contents: Introduction and Buddhist mock meats. Homemade tofu: Equipment needed (electric blender, form for setting), ingredients (curded with gypsum), grinding and straining, heating and setting, forming, bean curd recipes. Homemade soybean milk. Using soybean lees (okara; dregs are the leftovers you throw away and lees are those you keep). Frozen bean curd. Soy sauce beans [Soybeans baked in soy sauce]. Preserved soybeans: Homemade fermented black soybeans with salt, ginger, and optional hot chili powder or hot red pepper.

Note: This is the earliest English-language document seen (Nov. 2011) that uses the term "Preserved soybeans" to refer to fermented black soybeans.

The introduction (p. 228c) states: "Under various guises the soybean is used in vegetarian restaurants, often under Buddhist auspices, to produce sumptuous dinners, featuring "sliced chicken breast," "roast duck," "baked ham," that not only fool the eye, but also the tongue, almost, but as always, I want to concentrate on the important, everyday things and de-emphasize the fancy and elaborate. Dishes with bean curd are cheap and easy to prepare. Those who can afford fancy dishes can combine it with meat, etc., but just plain cabbage and bean curd connotes home sweet home."

Pages 158-59 contain 3 new soy-related recipes: Fried bean curd. Oyster sauce friend bean curd. Sweet-sour fried bean curd.

Recipe 14.27 (p. 155-56), titled "Red-in-snow stirs fava beans" begins: "Horse beans look like lima beans but are not. They are also called Fava beans and frequently sold by Italians. In China they are known as 'silkworm beans.'" Address: Berkeley, California.

1984. Chaves, Nelson. 1963. Proteínas vegetais e trópicos [Vegetarian and tropical proteins]. Recife, Brazil: Imprensa Universitária. 151 + 5 p. Illust. Series: Coleçao nordestina, 2. [75+* ref. Por]
• ***Summary:*** Soyfoods and their nutritional value are discussed on pages 65-67, incl. soymilk (*leite de soja*), tempeh, miso, tofu, shoyu, and natto.

Note: This is the earliest Portuguese-language document seen (Sept. 2011) that mentions tempeh, which it calls "tempeh." Address: Universidade do Recife, Instituto de Fisiologia e Nutricao.

1985. Lager, Mildred; Jones, Dorothea Van Gundy. 1963. The soybean cookbook: Adventures in zestful eating. New York, NY: Devin-Adair Co. xiv + 240 p. Foreword by Ruth Stout. Index. 22 cm.
• ***Summary:*** The copyright page states: "Note: This is a revised and updated version of a privately printed book, *How to Use the Soybean*, by Mildred Lager which was first printed in 1955 and reprinted in 1959." This lacto-ovo-vegetarian cookbook contains over 350 recipes, including 72 tofu recipes.

Contents: Preface to 1955 edition. Preface to 1963 edition. Part I: The versatile soybean. History of the soybean. Nutritional value. Abbreviations and special terms. Soup to nuts: Introduction, green soybeans [green vegetable soybeans], dry soybeans, roasted soybeans, sprouted soybeans, the cow of China–soy milk (kinds of soy milk), "the meat without a bone"–tofu or soy cheese, the little giant among protein foods–soy flour, soy grits and bits (puffed grits), soy oil and soy butter, meat replacement foods, sandwich spreads, malts, coffee substitutes, soy sauce, other soy products (soy albumen, Glidden's product that contains on a dry basis 96.6% protein [soy protein isolate]).

Part II: Soybean recipes. Green soybeans. Dry soybeans. Roasted or toasted soybeans. Sprouted soybeans. Meat replacement dishes. Soy noodles, macaroni, and spaghetti. Sauces and gravies. Soy soups. Salads. Soy spreads and soy butter ["a butter resembling peanut butter may be made from finely ground soybeans or soy flour... Roasted soy butter

is made from the roasted beans that have been ground into a fine flour."]. Soy milk. Tofu or soy cheese. Soy cereals and breakfast dishes. Soy desserts. Soy candies. Soy flour breads: Full-fat soy flour, low-fat or fat-free soy flour. Pastry. Cookies. Cakes. Extra tips. Appendix. Menus.

The chapter titled "History of the Soybean" (p. 3-7) discusses: W.J. Morse and the U.S. Department of Agriculture, Dr. J.A. LeClerc, the American Soybean Association (which has held a national convention every year since it was founded in 1920), its publication *Soybean Digest*, Henry Ford and his work with both industrial and edible soy products, T.A. Van Gundy, Harry W. Miller, M.D., Dr. Clive McCay of Cornell University (Ithaca, New York), and the Sept. 1961 Conference on Soybean Products for Protein in Human Foods (held at Peoria, Illinois).

Concerning T.A. Van Gundy we read (p. 5): "The father of one of the authors, T.A. Van Gundy, became interested in the nutritional value of soybeans while attending the World's Fair in San Francisco in 1915, where they were featured in the Oriental exhibits. Upon going home he purchased some soybeans and began experimenting in them. As far as we know he was the first person on the Pacific Coast to develop a line of commercial foods from this wonder bean. By 1927 he had developed a number of palatable products which he manufactured and sold through health food stores. Soybean foods were virtually unknown at this time, and it took courage and perseverance to put them across."

Recipes for "Soy Ice Cream" (p. 175-76) now include vanilla, maple nut, orange, and strawberry flavors. A recipe for "Granola" (p. 161) calls for 1 cup soy flour. The rest of the ingredients (such as wheat and barley flour) appear to be similar to those found in the earliest granola recipes of the mid-1800s. Address: Southern California.

1986. Rombauer, Irma S.; Becker, Marion Rombauer. 1963. Joy of cooking. Indianapolis/New York: Bobbs-Merrill Co. [x] + 849 p. Illust. by Ginnie Hofmann and Ikki Matsumoto. Index. 24 cm.

• ***Summary:*** One of the great American cookbooks. A classic and an all-purpose cookbook, this is the earliest known authorized edition prepared by Marion Rombauer Becker–who transformed the book. Irma, her mother, died in 1962.

Soy-related recipes: Chop suey or Chow mein (with soy sauce, p. 229-30). Soybeans, green (p. 260). Shrimp teriyaki (with "½ cup pineapple juice" and "2 to 4 tablespoons soy sauce"–but no recipe for teriyaki sauce, p. 377). Sukiyaki (with "½ cup 3/4-inch squares bean curd: Tofu" and "2 cups bean sprouts or cooked, drained Shirataki," p. 402).

Vegetable milks (incl. soy bean milk, almond milk, p. 487-88). About non-wheat flours (incl. soy flour, corn meal, rice flour, rye flour, potato flour, tapioca and sago flour, arrowroot flour or starch, barley flour, cotton seed flour, peanut flour, oat flour and oatmeal, bean flour, p. 498-501). About commercial sauces (incl. soy sauce and Worcestershire sauce, p. 542. Note: Soy sauce is not mentioned as an ingredient in Worcestershire sauce). Cornell Triple-Rich flour formula (with 1 tablespoon soya flour, p. 556).

Also discusses Whole-grain or Graham flour (p. 498). And how to make "coconut milk" and coconut cream. "Coconut milk and cream are very sensitive to high heat. For this reason they are added to hot sauces at the last minute or are cooked over hot water." They are prized in curries [and many Indonesian tempeh recipes].

Note: There is no entry for "Sprouts" (or "soy sprouts") in the Index. However there is an entry for "Bean sprout, salad, p. 80; cooked, p. 259." On page 80 the recipe titled "Oriental beans sprout salad" calls for "1 cup drained bean sprouts." On page 259 the recipe for "Cooked bean sprouts" calls for "4 cups sprouted beans, Mung or edible soybeans or lentils."

1987. Rose, Ian F. 1963. Faith, love and seaweed. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 221 p. Illust. Index. 24 cm. [30+ ref]

• ***Summary:*** This book is written by the father of Murray Rose, now age 23, one of the world's greatest swimmers, and the winner of many Olympic gold medals. It is the true story of how Murray was raised on a vegetarian diet, with emphasis on raw foods, natural foods, natural living, and whole-food principles. By the age of 13, Murray's prowess was already making news. In 1956, at age 17, he became the youngest triple Olympic gold medalist in the entire history of sport. In Rome, 4 years later, he made Olympic history again by winning the 400 meter freestyle and thus becoming the first person to win a distance swimming event in two successive Olympics. In college he swam for the University of Southern California (USC).

Mr. Rose advises 10 important dietary habits: 1. Wait until you are hungry before eating. 2. Eat simply, paying attention to food combinations. 3. Eat moderately. 4. Chew food thoroughly. 5. Eat raw foods whenever possible. 6. Never eat when overtired, worried, or emotionally upset. 7. Avoid sauces and condiments. 8. Don't drink with meals. 9. Avoid drinking alcohol and smoking tobacco. 10. Avoid eating meat.

Rose uses 3 main sources of protein: (1) Seeds (especially sesame and sunflower seeds); (2) nuts, and legumes (especially soybeans); cheese and fertile eggs (but not cow's milk). Rose has "four magic foods that guard you against vitamin and mineral deficiencies": seaweed, rose hips (for vitamin C), brewer's yeast (for B vitamins), and any good source of vitamin E (such as wheat germ and wheat germ oil).

In chapter 8, "Our protein pyramid: Seeds, nuts, and dairy products," the section titled "Soybeans give us better protein than steak" (p. 115-17) begins: "The other legume that deserves a permanent place in our store cupboard is

the soybean. This is a better source of protein than meat or eggs as is demonstrated by the following table. In every case, soybeans come out ahead." Three tables compare meat, eggs, and soybeans for their content of essential amino acids, minerals, and vitamins. "It is not hard to conclude that soybeans could well be part of everyone's diet, whether or not we include meat. The use of soybean flour is a good idea, too. Merely by substituting as little as five percent in any recipe containing wheat flour, you will be greatly increasing the protein value of the food."

In the section on dairy products, there are subsections titled "The fallacy of cow's milk as a human food" (p. 117) and "The alternatives to cow's milk" (p. 121). "As an alternative to cow's milk we introduced soy milk into Murray's diet with success. Ready prepared soy milk is obtainable today in many health stores but it can be made at home with a blender. One way is as follows:..." Also discusses tahini milk and almond milk.

Page 186 states that cow's milk, if consumed at all, should be consumed raw. It is wise to specify "certified raw milk." "If only pasteurized milk is available it may be best to substitute soy milk or to use a home-made nut milk... Soybeans are one of the few legumes which contain complete protein. They may be purchased ready-cooked or dry."

The section titled "The best kind of fat–and how to select it" suggests that unsaturated fatty acids are good for health and animal fats are best omitted from the diet. "Their place should be taken by soy oil, sunflower oil, sesame oil, safflower oil, and other vegetable oils." The ratio of polyunsaturates to saturates is given for each. "Soy oil, extracted from the soybean,... contains a high percentage of polyunsaturated fatty acids." Address: Sydney, Australia.

1988. Tobe, John H. 1963. Milk. St. Catharines, ONT, Canada: Modern Publications Reg'd. *
Address: Canada.

1989. Yang, Hao-jan. 1963. The development and rational utilization of soybean. *U.S. Joint Publications Research Service. Translations from Communist China's Agriculture, Animal Husbandry and Materials* 41:39-51. Translated from *Ta Kung Pao* (Peiping), 11 March 1963, p. 3. [Eng]
• ***Summary:*** A general article about the problems connected with the utilization of soybeans as food, feed and for industrial purposes. Contents: Introduction. The functions of soybeans on the development of agricultural production. Several problems of the development of soybeans. The rational utilization of soybean resources.

Note: This "is a translation of an article by Yang Hao-jan (2799 3185 3544) in *Ta Kung Pao*, Peiping, 11 March 1963, p. 3." Address: China.

1990. **Product Name:** [Soyakraft {Powdered Infant Formula}].
Foreign Name: Soyakraft.
Manufacturer's Name: Henselwerk GmbH.
Manufacturer's Address: Magstadt bei Stuttgart, West Germany.
Date of Introduction: 1963?
Ingredients: Incl. Whole soybeans, corn, malt, beet sugar, cane sugar [sucrose], soy oil, calcium salts, vitamins B-6, B-2, nicotinic acid, B-12.
Nutrition: 100 gm dry product contain 450 calories. 100 ml of ready to drink product with 5% sugar contain 80 calories.
New Product–Documentation: Honma and Nishihara. 1963. Chiryo (Journal of Therapy, Tokyo) 45(4):705. "On the use of soybeans as a protein source in infant diets." Interview with Harald Roquette by Anthony Marrese. 1990. March 15. The company still makes Soyakraft.

Nikolaus Ossenbach. 1986. "Hensel Information. Scientific communication. Milchfrei Kinder-Ernährung [Raising children on a milk-free diet]." Published by Henselwerk GmbH. Discusses Soyakraft. Note: This was the earliest known soymilk in Europe to be fortified with calcium.

1991. **Product Name:** [Whole soy flour (For use in Infant Formulas)].
Foreign Name: Vollsojamehl.
Manufacturer's Name: Henselwerk GmbH.
Manufacturer's Address: Magstadt bei Stuttgart, West Germany.
Date of Introduction: 1963?
New Product–Documentation: Honma and Nishihara. 1963. Chiryo (Journal of Therapy, Tokyo) 45(4):705. "On the use of soybeans as a protein source in infant diets."

1992. **Product Name:** [Sojabasan {Soymilk}].
Foreign Name: Sojabasan.
Manufacturer's Name: Henselwerk GmbH.
Manufacturer's Address: Magstadt bei Stuttgart, West Germany.
Date of Introduction: 1963?
New Product–Documentation: Honma and Nishihara. 1963. Chiryo (Journal of Therapy, Tokyo) 45(4):705. "On the use of soybeans as a protein source in infant diets." Interview with Harald Roquette by Anthony Marrese. 1990. March 15. Henselwerk no longer makes Sojabasan.

1993. Nagata, Aikichi; Yamamoto, H.; Terashima, S.; Matsumoto, T.; Onishi, S.; Konishi, S. Assignors to Ajinomoto Company, Inc. 1964. [Beverages from oil-free soybean flakes]. *German Patent* 1,160,717. Jan. 2. 4 p. Japanese application filed 12 Sept. 1959. (Chem. Abst. 61:6287h). [Ger]*
• ***Summary:*** The final beverage is an orange juice substitute.

1994. André, Émile. 1964. Sur l'utilisation des graines de soja dans l'alimentation humaine par les populations d'Extrême-Orient [On the dietary utilization of soya beans in the Far East]. *Oleagineux* 19(1):37-39. Jan. English-language summary p. XXVIII. [1 ref. Fre; eng]
• ***Summary:*** The author gives the results of his research on lipoxidase, initially inspired in early 1931 by a young Chinese student M. Kiawo Hou. He also discusses soymilk (lait de soja or téou-jou), tofu (fromage de soja or téou-fou), yuba (téou-fi), soy oil (huile de soja), soy sauce (tsing yeou [sic, tsiang yeou?]), miso (miso de soja), and soy sprouts (germes de soja). The residue from making tofu and soymilk (okara) is fed to poultry and pigs. Soya oil is made by an archaic process that is very inefficient. "The residue, not perfectly separated from the oil, is consumed by the poorer classes." Address: France.

1995. Dahlqvist, Arne. 1964. Method for assay of intestinal disaccharidases. *Analytical Biochemistry* 7(1):18-25. Jan. [14 ref]
• ***Summary:*** This early monograph reviews at least 26 cases of lactose intolerance; 13 of them had lactosuria. Address: Dep. of Physiological Chemistry, Univ. of Lund, Lund, Sweden.

1996. James, Isabel. 1964. Domestic science bureau. *British Vegetarian.* Jan/Feb. p. 37-39.
• ***Summary:*** The article begins with a question from a reader: "Can you please tell me something about the value and use of soya bean and soya flour?" The author gives a Bircher Benner recipe for Soya Pancakes (with soya flour), and notes that Soyolk and Hi-Soy soya flours are sold in Health Food Stores. The latter product is made by The British Arkady Co. Ltd. and is good for use in confectionery.

She then discusses soya milk and tofu. In the UK, Dr. Frank Wokes, of the Nutritional Research Centre, has done a great deal of work on the "preparation of a soya based vegetable "milk" that would be a suitable substitute for cow's milk and acceptable to children who could not take cow's milk. Largely as a result of this work *Velactin* is now available from Health Food Stores, made by Messrs. A. Wander Ltd." She then gives a recipe for home-made Soya Cheese (also known as Soybean Curd or Tofu), made from full-fat soya flour and coagulated with lemon juice.

She also mentions soya sauce and gives details on growing soya beans in England. "If the crop matures some of the green beans may be used in salads or as green vegetables." Address: B.A.

1997. André, Émile; Hou, Kia-Wo. 1964. La lipoxydase. Sa découverte dans le résidu de la préparation du lait de soja [Lipoxidase. Its discovery in the residue by-product of soybean milk production]. *Oleagineux* 19(3):187-93. March. English-language summary, p. XXVII. [Fre; eng]
• ***Summary:*** "The cheese called *Teou-fou* in China is somewhat consumed in Paris and the region surrounding it, where the number of Chinese restaurants is greater than one could believe." Of the total restaurants in this area, about 35 are Chinese restaurants, 10 at Vietnamese, and only 5 are Japanese. They are visited both by people of those countries and by western consumers who are curious to taste exotic foods. "There were, and still are, two or three shops in and around Paris, where tofu (fromage de soja) is prepared daily and delivered to the restaurateurs who have ordered it. Mr. Kia-Wo Hou had friendly relations with one of the two established at Colombes and was able to easily procure the materials he needed."

Note: In about 1910 Li Yu-ying, a Chinese soyfoods pioneer, established a soyfoods manufacturing company named Usine de la Caséo-Sojaïne, at Vallées, near Colombes, outside of Paris. It is not clear how the current companies at Colombes are related to the earlier company. Address: 1. Conseil scientifique a l'R.H.O.; 2. Docteur es-Sciences de l'Universite de Paris.

1998. National Food Research Institute (Shokuryo Kenkyujo). 1964. Daizu tanpakushitsu shokuhin no bussei [Physical characteristics of soy protein foods]. *Shokuryo: Sono Kagaku to Gijutsu* (*Food: Its Science and Technology*) No. 7. p. 55-65. March. [Jap]
• ***Summary:*** Discusses soymilk, tofu, aburage, soy protein gel and curd, Gelsoy, isolated soy protein (bunri tanpaku). Address: Tokyo.

1999. *Food Processing* (*Chicago*). 1964. The courts are raising the 'imitation barrier.' 25(4):25-27, 30-32, 34. April.
• ***Summary:*** "In an unbroken series of favorable decisions, nine different courts in seven states have recognized the legal right of Coffee-Rich, Inc. of Buffalo, New York, *not* to use the crepe-word 'imitation' on the company's new coffee-Rich coffee whitener–a replacement for traditional dairy cream.

"Because the issues involved in the Kansas decision are typical of all seven states in which Coffee-Rich has overcome the legal challenge of local dairy interests, Food Processing is reproducing *in toto* the Syllabus and opinion handed down by the Kansas Supreme Court."

The states in which Rich Products has won its legal battles against the dairy industry and the dates of the decision are as follows: Louisiana, 17 Nov. 1961; Indiana, 18 May 1962; Virginia, 29 Oct. 1962; Kansas, 4 Sept. 1962; Washington state, 28 Jan. 1963; Wisconsin, 1 Nov. 1963; Michigan, 23 Dec. 1963. In each case it was decided that Coffee-Rich was not an imitation cream, milk, or half-and-half and therefore did not need to have the word "imitation" printed on its label. "General Counsel for Rich Products Corporation and its wholly owned subsidiary, Coffee Rich Inc., is Arnall, Golden & Gregory of Atlanta, Georgia. All

of the successful litigation has been handled by Ellis Arnall, Senior Partner, and Elliott H. Levitas, Junior Partner. Mr. Arnall is former Attorney General and Governor of Georgia."

Within the article is a 2-page sidebar titled "How a man's vision furthers new forms of food." It shows portraits of Robert E. Rich and Holton W. Diamond (holding a carton of Coffee-Rich), and states: "Weaning the world from the cow by means of tailor-made vegetable-fat and vegetable-and-protein products that do specific jobs better than their cow-born counterparts–and usually at much lower cost–has been almost a personal crusade for Robert E. Rich, President of Rich Products Corporation and Coffee-Rich, Inc., its wholly owned subsidiary.

"Like all crusades, this one is costly; Rich has spent upwards of a half-million dollars and continues to spend large sums of money for legal fees, court costs, etc., as he 'blazes the trail' for technological advance in state after state (see box score at left).

"Interestingly, considering the consternation he produces among entrenched dairy interests, Rich has a dairy-plant background, and even today continues to head up the largest solely-owned dairy in the U.S.

"Rich's pioneering in non-dairy whip toppings and whippable emulsions began immediately after World War II. As milk order administrator for the state of Michigan during the war, he had learned about the Ford Motor Company's George Washington Carver Laboratories' successful development of a continuous method of producing soy milk and cream by extracting soy protein from the bean

"In April, 1945, using a new batch-extraction process that surpassed the original Carver extraction method in efficiency, Rich produced his original soy-cream Whip Topping. By freezing it, he was able to market it throughout the U.S., over extended periods of time.

"The new synthetic product had several advantages over cream. It could be re-whipped, even several days after initial whipping. It produced almost twice the whipped yield of regular cream–more than tripling its liquid bulk when it was whipped. Stiffness and overrun were retained longer, and the product possessed markedly better keeping qualities. And, it cost less.

"In addition, when kept frozen, it can be stored for more than two years–then thawed and used. This is utterly beyond the capabilities of whipping cream.

"In 1956, Rich acquired the research "jewel" who since has boosted the company into the position of largest U.S. specialist manufacturer of whippable emulsions. Holton W. Diamond, who had been chief chemist of The George Washington Carver Laboratory of The Ford Motor Company, came to direct Rich Products' research.

"Diamond's 'Diamond Process' patents for producing vegetable-fat whippable emulsions enabled Rich to market a line of bases and toppings with remarkable shelf-life, resistance to mechanical breakdown, compatibility with fruit acids and other qualities that could not be approached by conventional cream-derived products.

"Newest all-vegetable-fat emulsion product–liquid 'Coffee-Rich' is a coffee 'whitener' which, although shipped frozen, exhibits great stability after thawing, remaining fresh up to two-to-three weeks under normal refrigeration. This unusually protracted shelf-life results principally from absence of protein–except for .8 per cent of sodium caseinate, used as stabilizer.

"Since Coffee-Rich is slow to sour or spoil or curdle, it eliminates a major problem encountered with coffee-vending machines. Restaurants, hospitals, cafeterias and other large-volume feeding outlets also are prime prospects."

Concerning Chil-Zert soy ice cream: In United States v. 651 Cases, Etc. the court held that Chil-Zert was an imitation of chocolate ice cream since it "contained the identical ingredients of Chocolate-flavored ice cream in approximately the same proportions, 'except that soy fat and soy protein are used therein in place of milk fat and milk protein'; that it was manufactured in substantially the same manner as Chocolate ice cream, and with the use of similar machinery; that it was similar in taste, appearance, color, texture, body and melting qualities; that it had identical use and that 'its composition differs only from ice cream in the substitution of a cheaper ingredient; namely vegetable oil in place of milk products.'"

2000. **Product Name:** Granogen (Powdered Soymilk for Adults).
Manufacturer's Name: Granose Foods Ltd. (Importer-Marketer). Made in the USA by Loma Linda Foods.
Manufacturer's Address: Stanborough Park, Watford, Herts., WD2 6JR, England. Phone: 0923-672281/2.
Date of Introduction: 1964. April.
Ingredients: Soya bean solids, corn syrup, soya oil, sugar, salt, lecithin, vitamins.
Wt/Vol., Packaging, Price: 1 lb can. Retails for 9 shillings 6 pence (4/64, England).
How Stored: Shelf stable.
Nutrition: Protein 22.5%, carbohydrate 46.8%, fat 22.6%, ash 4.2%, moisture 3.9%.
New Product–Documentation: *The British Vegetarian.* 1961. March/April. p. 93. "Soya milk for household use." Granose Foods will soon be in a position to supply two varieties of spray-dried soya milk, Soyalac and Soyagen, made by one of their associated companies, Loma Linda Food Company in Arlington, California. Soyalac is specially prepared for infants, whereas Soyagen is for general use. A table compares the nutritional composition of the two products.

The British Vegetarian. 1964. March/April. "Granogen: Soya Bean Milk Now Available." "Readers will be glad to know that a really delicious general purpose soya bean milk is now available in Britain and will shortly be on sale in Health Food Stores." Made in America, Granose is

imported and distributed to the trade by Granose Foods Ltd., Stanborough Park, Watford, Herts. Fortified with vitamin B-12, this fine white powder is sold in a 1-lb can for 9 shillings 6 pence.

Orr and Adair. 1967. Tropical Products Institute Report G-31. "The production of protein foods and concentrates from oilseeds." p. 72. Soyalac is made in both liquid and powder form by Loma Linda Foods. The powder is imported into the U.K. by Granose Foods Ltd. and sold under their brand name of Granogen. A nutritional analysis is given.

Leah Leneman. 1971. *The British Vegetarian.* Jan/Feb. p. 6. "Plantmilk and sex!" The author (and many other people she knows) prefers the taste of Granogen to that of Plamil as an alternative to cow's milk. Granogen, however is not made in Britain.

Listing in The Vegetarian Health Food Handbook (UK). 1974. p. 155. "Granogen Soya Milk by Granose Health Foods Ltd." Note the new company name.

Manufacturer's catalog. 1980. April. "Soya milk for adults with added vitamins and minerals. Of great value to those with milk allergies." Purves. 1981. Nutrition and Food Science. Jan/Feb. p. 5-6.

Letter from Adrian Peck, production manager at Granose Foods. 1990. July 11. This product has always been imported as a powder. Granose has never sold a liquid Granogen. Before 1988 it was named Granogen and made in the USA by Loma Linda Foods. From 1988 on it was renamed Soyagen and made in West Germany by DE-VAU-GE.

2001. **Product Name:** [Naga-di Powdered Soy Beverage].
Foreign Name: Naga-di {Pulver}.
Manufacturer's Name: Nago Naehrmittel AG. Then Lindt & Spruengli from 1971. Then Galactina Ltd. from 1980.
Manufacturer's Address: CH-4600 Olten, Switzerland. It was partly made at a plant in Sursee. Then Kilchberg near Zurich, Switzerland. Then Belp, Switzerland. Phone: 1-716-22-33.
Date of Introduction: 1964. April.
Ingredients: Made from whole soybeans (not isolates).
Wt/Vol., Packaging, Price: 500 mg heavy paperboard tube, lined inside with aluminum foil, and having aluminum and plastic lids.
How Stored: Shelf stable below 20ºC.
Nutrition: Per 100 gm.: Protein 20 gm, fat 15 gm, carbohydrates 61 gm (incl. 35 gm lactose, 15 gm glucose, 9 gm saccharose, 2.5 gm starches and oligosaccharides), calories 460, d-l-methionine 0.4 gm, sodium 110 mg.
New Product–Documentation: This was the world's earliest known enteral feeding product. Hartmann and Kapp. 1964. Schweizerische Medizinische Wochenschrift 94(34):1173-76. Aug. 22. "Experiences with dietary preparations: Influencing the serum lipids with the help of a dietary preparation based on soya." This is about Naga-di, a soy protein drink and commercial dietary formula made and marketed by Firma Nago AG (Nago Nährmittel AG) of Olten, Switzerland.

Note: *Webster's Dictionary* defines "enteral" (a term first used in 1903) as being the same as enteric (first used in 1869). The latter it defines as "1: of or relating to the intestines; broadly, alimentary. 2: of, relating to, or being a medicinal preparation treated to pass through the stomach unaltered and disintegrate in the intestines." The term "parenteral" (first used in about 1910) is defined as "situated or occurring outside the intestine; esp: introduced otherwise than by way of the intestines." Thus, intravenous feeding is a type of parenteral feeding.

Brochure published by Nago Nährmittel AG, Olten, in about 1966. "Naga-di. Biologisch vollwertige Diätnahrung zur Regulierung des Fett- und Cholesterinstoffwechels" (A biologically high-quality diet food for the regulation of fat and cholesterol metabolism). 4 p. 14 cm. square. Gives the nutritional composition, preparation, concentration, dosage, and indications in German, French, and Italian.

Talk with Conrad Seewer of Galactina. 1990. May 17 and 21. The first product in the Nago line was Naga-di. It was developed by Nago Olten for oral and enteral feeding, not for tube feeding. Afterwards they developed Naga Sonda for tube feeding. The company also made products like Ovomaltine (Ovaltine). He thinks the whole company merged in about 1971 with Lindt & Spruengli, which completed development of the line. Lindt & Spruengli is a large and famous chocolate company located near Zurich. Naga-di was made from whole soybeans; it contained no isolates. Trypsin inhibitors caused a problem in the beginning but it was later solved. One could make drinks from Naga-di, which could be fed either from a cup (mixed with other beverages such as coffee or chocolate, or with fruit) or it could be fed enterally, with a tube into the stomach. The product is no longer on the market. Being a chocolate manufacturer, Lindt & Spruengli was not able to distribute their product, considered a food for sick people, to hospitals. Galactina was able to distribute to this market. Galactina bought the Naga product line from L&S in 1979, and sales began in 1980. Galactina as a company did not work with soy products before that date. The main reason for buying this product line was the company's interest in soya, their existing distribution system to clinics, and their goal of diversifying into the field of clinical nutrition. One of Galactina's main businesses is the manufacturing and marketing of dietetic foodstuffs.

Talk with Peter Speck of Galactina. 1990. May 23. Nago Olten had a plant at Sursee. They wanted to produce a product for enteral tube feeding that contained no lactose or animal protein. Mr. Heinz Knell at Nago Olten (who is still alive, on pension) was responsible for the development of Naga-di and Naga-Sonda, both spray dried products. Nago Olten belongs to the Lindt & Spruengli group but he is not sure when Nago was purchased by Lindt & Spruengli. In 1979 this plant was sold to Galactina. When Peter arrived

at Galactina, the company made these two products only in dried form. Then in 1981 they started to produce them in a liquid form in Tetra Pak. Speck's first job at Galactina was to develop the liquid form of Naga Sonda in Tetra Pak. Speck would define "enteral" as relating to a tube that is put through the nose into the stomach. Enteral must involve a tube. There are two types of stomach feeding: oral feeding and enteral feeding. Enteral feeding is used for patients who are unconscious, or cannot eat with their mouth because of an operation or broken jaw or problems with their teeth. The other way of feeding such patients is by parenteral or intravenous feeding, by using a needle to run the solution into the veins. Enteral feeding makes much more sense if the patient's digestive system is okay. Of Galactina's clinical stomach feeding soy products, about 70% are fed enterally with a tube and 30% are fed orally without a tube. As soon as you can take food orally, you have more choices.

Letter (fax) from Mr. Heinz Knell of Lindt & Spruengli, Olten. 1990. July 12. This product was launched in April 1964 by Nago, Nährmittel, CH-4600 Olten. It was partly made in Sursee/Sprueken? It came in a 500 gm cardboard carton which was aluminum coated. It was a powder for the preparation of a diet drink for the regulation of fat and cholesterol metabolism. This was the first of the three pioneering soy products that he developed. Each was the first of its type, as far as he knows, based on soya. He learned how to make these products based on his own research. Each product was made starting with whole soybeans (not soy flour or isolates). The method used to prevent flatulence (intestinal gas) in infants is a company secret. Lindt & Spruengli was not involved in the development of the products. On 1 April 1971 Nago merged with Lindt & Spruengli. Galactina got involved in the development and marketing of these products in 1979.

Letter (fax) from Conrad Seewer of Galactina. 1990. July 13. A leaflet dated Aug. 1979 shows a canister of "naga-di" is cylindrical, with the silhouette bust of two hairless humans and horizontal lines. A dose of 900 gm contains 4,140 calories, and 1 carton contains 6 doses. A bag of 109 gm contains 500 calories, and 1 carton contains 50 bags (only for hospital use). Seewer adds: "This 900 gm cardboard tin, aluminum coated on the inside, as used for Naga Di and Naga Sonda. Bebe Nago was packed in a similar tin but smaller (500 gm)."

Note: This is the earliest known commercial soy product made by Nago Naehrmittel AG, which became Galactina Ltd. from 1980.

2002. Lo, K.S. 1964. Pioneering soy milk in Southeast Asia. *Soybean Digest.* May. p. 18, 20.

• ***Summary:*** "In 1962 we sold 2,500,000 cases of Vitasoy... Vitasoy has become the largest single seller in the local soft drink market. And this is no small achievement, when we are competing with such internationally known brands as Coca Cola, Pepsi Cola and Seven Up. We have certainly come a long way since we first got started in 1940 with a small setup to make 'milk' out of the soybean. How I came about it was quite an accident. I happened to be in Shanghai in 1937 and attended a talk given by the late Julian Arnold who was then commercial attache to the American Embassy in Nanking. He called soybean the 'Cow of China' and practically attributed to it the preservation of the Chinese race... I was very impressed by his talk and came away with soybean stuck in my mind. I soon returned to Hong Kong and decided to do some experiments in making a formulated soybean milk which could serve as a milk substitute. A few friends took an interest in my work, and a private limited company with a paidup capital of HK$15,000 was formed to put the product on the market. The small factory with its crude equipment was formally opened in March 1940 by the then director of medical services, Dr. Selwyn-Clarke. In my opening speech, I said that the aim and object of this new venture was to bring better nutrition to the masses of people at the price they could afford to pay. This has ever since remained the policy of our company. To this day the retail price of our Vitasoy is less than one-third the price of cow's milk.

"The first couple of years were extremely difficult. We soon found that, even among us Chinese to whom the soybean was by no means new, there was a strong prejudice against soy milk. They not only did not believe its nutritional values, but thought it could cause diarrhea, indigestion and stomach ache. At that stage the taste of our product, too, left much to be desired. Many consumers found it hard to take, because of the strong beany flavor and the slightly bitter taste. Another problem we had to face was the keeping quality of the soy milk. We followed the dairy industry by packing it in standard half-pint milk bottles and sealed them with paper cap and hood. They spoiled even quicker than milk unless they were kept under refrigeration all the time."

"Hurt by public prejudice and lack of marketing know-how, the business soon became a failure. When the Pacific War broke out in December 1942, the company had not only lost all its money, but also owed a large sum to me personally because I had to put up the money in order to keep it going. After the Japanese took over Hong Kong, they also took over our small factory and everything inside it. I left the Colony for Free China and remained there until the war was over.

"I returned to Hong Kong after the war was over, and my first task was to get Vitasoy back on the market. I was happy to find most of the equipment was left intact in the factory and by November 1945 Vitasoy [which was named Sunspot Soya Milk at the time] was on sale again. This time I decided to push my product to the small people in the street and to market it as a beverage rather than a milk substitute."

In 1953 the original milk bottle with a paper cap and hood was changed to a soft drink bottle with a metal crown cap. After sterilization by heat, it could be kept for months

without refrigeration. “This technical breakthrough gave the biggest impetus to the increase in sales volume.”

“Soft drink sales in Hong Kong are very seasonal, with 80% of the volume during the 6 summer months and the remaining 20% spread out from November to April. So we set to work on a heater which will keep Vitasoy hot during the cold weather. Its function will be just the opposite of an electric beverage cooler. After some initial failures we finally came out with a heater which has a capacity of heating up to 4 cases of Vitasoy at a time and always maintains a temperature of 145ºF. So at any time during the winter a customer can walk up to a store and ask for a bottle of hot Vitasoy which will take away the chill, and yet not hot enough to burn his lips... With the help of the heaters, we are able to maintain 50% of our peak summer sales through the winter months. Hot Vitasoy stands out uniquely among the soft drinks, because there is no other soft drink which one can drink hot!”

In 1963 the company built a new plant in Kowloon with twice the production capacity of the old original plant in Hong Kong. Today, Vitasoy is consumed by 250,000 people daily.

“The influence of our work does not stop within the bounds of this little island. We helped UNICEF train technicians to operate a soybean milk powder plant in Indonesia. In Singapore, Malaya and Thailand, private enterprise started soybean milk plants after having seen our success in Hong Kong.”

Photos show: (1) K.S. Lo. (2) Part of the crowd standing in line at the Vitasoy plant in Kowloon. Address: Hong Kong Soya Bean Products Co., Ltd.

2003. Madison Foods. Div. of Worthington Foods, Inc. 1964. Wholesale price list–order blank. Worthington, Ohio 43085. 1 p. July 1.

• ***Summary:*** Products in Madison Foods line (now owned by Worthington Foods) include: Cheze-O-Soy [canned tofu]. Com-Pro. Dinner Morsels. Madison Burger. Not Meat (plain or tomato). Nu-Steaks. Stake-Lets. Vigorost. Yum. Zoyburger. Kreme-O-Soy [canned soymilk]. Soy Beans (Boston). Zoy-Koff (regular, or fine grind).

Worthington now has warehouses in Portland, Oregon; Oakland, California (actually San Leandro); Washington, DC; and Madison, Tennessee. Address: Worthington, Ohio. Phone: 614-885-9511.

2004. Asahi Kasei Kogyo Company. 1964. [Soybean protein beverage]. *Japanese Patent* 16,324. Aug. 11. English-language summary in Soybean Digest, Feb. 1966, p. 52. [Jap]*

• ***Summary:*** Uses defatted soybean meal. Address: Osaka, Japan.

2005. Heiner, Douglas C.; Wilson, J.F.; Lahey, M.E. 1964. Sensitivity to cow’s milk. *J. of the American Medical Association* 189(7):563-67. Aug. 17. Council on Foods and Nutrition. [18 ref]

• ***Summary:*** Clinical sensitivity to cow’s milk has been estimated to occur in 0.3% to 7% of all children. Discusses the multiplicity of antigens in cow’s milk and variability of antibody responses, hypochromic microcytic anemia, and celiac disease.

Summary” Sensitivity to cow’s milk is difficult to recognize, to document, or to ascribe to any one constituent of the food... Recent evidence indicates that the ingestion of cow’s milk may cause the occult loss of significant quantities of blood into the gastrointestinal tracts of some children with hypochromic microcytic anemia.” Address: Dep. of Pediatrics, Univ. of Utah College of Medicine.

2006. Hartmann, G.; Kapp, H. 1964. Erfahrungen mit Praeparaten: Beeinflussung der Serumlipide mit Hilfe eines Diaetpraeparates auf Sojabasis (Naga-di) [Experiments with dietary preparations: Influencing the serum lipids with the help of a dietary preparation based on soya]. *Schweizerische Medizinische Wochenschrift* 94(34):1173-76. Aug. 22. [10 ref. Ger]

• ***Summary:*** This is about Naga-di, a soy protein drink and commercial dietary formula made or marketed by Firma Nago AG of Olten, Switzerland. “A commercial dietary formula prepared from soybeans was examined for a possible lipid-depressing effect in a total of 34 individuals with normal and elevated serum lipids. Addition of the preparation to the normal diet had no effect on serum lipids.

However, when about ¼ of the daily calorie intake was summarily replaced with the soybean preparation for 4 weeks, comparison with controls showed a slight decrease of serum lipids in normo-lipemic subjects and a marked decrease in the hyper-lipemic group. All lipid fractions are affected, the triglyceride fraction to a marked degree. Six subjects with slight to pronounced hyperlipemia showed a marked decrease in all lipid fractions after at least 12 days on pure formula diet. No undesirable side effects were observed.”

Note: This is the earliest document seen (Jan. 2010) showing reduction of cholesterol levels in response to soy protein in a scientific human study.

Also issued as an offprint pamphlet, promoting “naga-di” by Nago Nährmittel AG, Olten. Address: Medizinischen Universitaetsklinik Basel.

2007. Smith, A.K. 1964. The Mount Fuji meeting. An international symposium on oilseed protein foods. *Soybean Digest.* Aug. p. 18-20.

• ***Summary:*** The symposium, sponsored by the International Institute of Food Technology, was held on May 11-15 at the Mt. Fuji Hotel, Lake Yamanaka, Japan. “The 85 technologists participating in the program represented 20

countries and included 30 from Japan and 20 from the United States. An additional 26 technical observers represented the Japanese food industry." "The Mount Fuji symposium was a historic occasion for the advancement of oilseed protein foods, being the first time an international conference was devoted solely to this subject."

"Dr. Y. Sakurai of Tokyo University and George F. Stewart of the University of California, Davis, were co-chairman for the meeting. Dr. T.M. Anson, assisted by others, developed the program. Dr. Masahiro Nakano was chairman of a committee to collect and display oilseed protein foods."

"Soybeans, peanuts, cottonseed, sesame, and coconut were the five oilseeds included in the program as sources of food proteins. Because of their long history and extensive use for food, soybeans were the topics of a major part of the papers and discussion."

"Among the newer developments in the Orient, K.S. Lo of Hong Kong reported on his successful commercial operation in the daily production of 24,000 cases of soybean milk in his two plants. His milk is made from well-washed and dehulled soybeans. It contains about 3% protein, 2-3% fat, and 5-7% carbohydrates, with added vitamins and calcium. Mr. Lo's methods for marketing soymilk are unique; he is also a large dealer in bottled soft drinks, and he markets soy milk as a soft drink. His milk competes with soft drinks rather than with other forms of milk or other health foods. Regardless of his method of marketing, he feels that the product is serving an important nutritional function in the Hong Kong area." Note: Vitasoy is once again being fortified with vitamins and calcium.

Dr. Tokuji Watanabe of the Food Research Institute reported on new ways of making tofu, such as "packed or bagged tofu" which is increasing in popularity. The soymilk is coagulated with calcium sulfate inside a polyethylene or vinylidene chloride plastic bag followed by heating in a water bath. This new process saves time and labor. Several plants are now producing 20,000 bags per day. Tofu is now also being freshly prepared in the home from spray-dried soy milk, coagulated with calcium. "More than 285,000 metric tons of soybeans and 65,000 metric tons of soybean meal are consumed annually for making fresh tofu in Japan, and because of low cost and high food quality, its consumption is said to be increasing.

Concerning miso, koji is now being made by a continuous method in 20-inch deep metal trays. Miso soup is now sold in a dried form. Shoyu production consumes 250,000 metric tons of soybeans of the equivalent as meal.

"The use of soy flour and grits in the United States for edible purposes was estimated at 200 million pounds and in England at 40 million pounds. The largest use of soy flour in the United States was estimated at 50 million pounds for bread and other baked products. In England, most soy flour is the full fat, enzymatic active type and is used at about 0.75% for improving color and flavor of baked goods."

"While isolated soybean protein for industrial uses has been produced since 1937, the production for food protein dates only from 1959. The production of industrial protein is carried on by two U.S. producers and annual production was estimated to be in the range of 40-50 million pounds. Four U.S. companies were reported to be producing or engaged in extensive research on isolated protein for food uses. The newest to be manufactured is referred to as a protein concentrate. It is prepared by washing soy flakes either with 80% alcohol or with water at the isoelectric point of the protein (pH 4.5). The concentrates must contain 70% protein whereas the isolate is 95% or more. The largest use of the isolate and concentrate is in comminuted or ground meat products, also referred to as sausage-type meats. Soy protein concentrate can be legally used in sausage-type meats up to 3.5% of the finished product." Address: NRRL, Peoria, Illinois.

2008. Mustakas, G.C.; Griffin, E.L., Jr.; Allen, L.E.; Smith, O.B. 1964. Production and nutritional evaluation of extrusion-cooked full-fat soybean flour. *J. of the American Oil Chemists' Society* 41(9):607-14. Sept. [14 ref]

• ***Summary:*** The abstract begins: "A processing method for preparing full-fat soybean flours for human consumption by a new extrusion cooking method was developed." The paper continues: "The extrusion equipment described in this paper was used in 1961 to convert soybeans directly to full-fat meals for feed mixing. Swine feeding tests carried out on these meals at Purdue University [Indiana] were reported [Jimenez et al. 1961, in *Feedstuffs* 33(44):42] to give comparable weight gains and feed conversion efficiencies of regular defatted soybean meal with added fat.

"On the basis of the Purdue experiment, it was conceived that it might be possible to apply the cooker-extruder process to dehulled soybeans to produce an edible-grade full-fat soybean product which could be ground to a highly nutritious flour for human foods."

"A collaborative project was therefore sponsored by UNICEF, and undertaken by the Northern Utilization Res. & Dev. Div., ARS, USDA [NRRL], and the Wenger Mixer Manufacturing [Sabetha, Kansas] to develop and evaluate and evaluate a simplified extrusion cooking process for the production of full-fat soybean flour for edible uses." Contains an analysis of 12 soybean flours processed under different conditions. "The United Nations Children's Fund (UNICEF) has been improving local diets in the developing countries, especially of children and of pregnant and nursing mothers. Since [cow's] milk is a logical food for this group, UNICEF has assisted in building and equipping over 200 milk-processing plants in the developing countries to provide safe milk or milk powder."

"Asians have traditionally used soybean foods, generally in a moist form. Some of these are: soy milk (a water extract of the ground whole bean); tofu (a precipitated curd similar

to cottage cheese); and tempeh (a fermented product of the decorticated bean). Because of their relatively short shelf life they are usually made locally each day as a cottage or small village industry."

The product flavor was evaluated. "The prevention of off-flavors and odors which result from fat deterioration is of major importance." Only one lot was stabilized with an antioxidant. Accelerated stability tests were conducted on two lots at 100ºF and 113ºF for 1-39 weeks. The higher-temperature lot began to show evidence of rancidity by its elevated peroxide value of 6.4 at the end of 15 weeks, and this rancidity was strong at the end of 26 weeks when the peroxide value reached 54. The fresh products had a desired nutty flavor, and the strong beany-bitter flavor had been removed.

"Proposed Clinical Testing. A 1,000-lb lot of the milled soy flour has been forwarded to the P.N. Sarihusada Co., Jogjakarta, Indonesia, where it will be formulated and packaged for acceptability testing in the areas now supplied by the plant with the dried water-extracted soya milk formulation. Clinical and acceptability testing is being done by the College of Medicine of the National Taiwan University, Taipei, Taiwan. It is part of a large-scale clinical test with infants up to 12 months of age to compare the extruded soy flour formulated as a milk, with various other soybean products." Two illustrations show the extrusion equipment, which was operated by LaVon Wenger.

Note 1. This is the earliest document seen (Dec. 1997) that discusses extrusion cooking in connection with soybeans for food uses. This appears to be the first production of full-fat soy flour (FFSF) by an extrusion cooker.

Note 2. This is the earliest document seen (Sept. 2000) that describes the equipment used to make soy flour. Address: 1-2. NRRL, Peoria, Illinois; 3. Food Conservation Div., UNICEF, United Nations, New York; 4. Wenger Mixer Manufacturing, Kansas City, Missouri.

2009. **Product Name:** [Naga-Sonda {Powdered Soy Beverage for Enteral Tube Feeding}].
Foreign Name: Naga-Sonda {Pulver}.
Manufacturer's Name: Nago Naehrmittel AG. Then Lindt & Spruengli from 1971. Then Galactina Ltd. from 1980.
Manufacturer's Address: CH-4600 Olten, Switzerland. It was partly made at a plant in Sursee. Then Kilchberg near Zurich, Switzerland. Then Belp, Switzerland.
Date of Introduction: 1964. October.
Wt/Vol., Packaging, Price: 108 gm or 500 gm heavy paperboard tube, lined inside with aluminum foil, and having aluminum and plastic lids.
How Stored: Shelf stable.
Nutrition: Per 100 gm powder: Protein 19.4 gm, fat 15.7 gm, carbohydrate 57.9 gm, minerals 3.2 gm, water 3.8 gm, calories 463 kcal, sodium 296 mg, potassium 579 mg, chloride 528 mg, calcium 324 mg, phosphorus 347 mg, magnesium 111 mg, iron 5.9 mg, copper 0.7 mg, manganese 0.8 mg, zinc 4.6 mg...plus 13 vitamins.
New Product–Documentation: In French, sonde means "probe." This product is typically administered to a patient through a tube that goes in through the nose and down into the stomach. This is called enteral tube feeding or simply tube feeding. Products so fed may be called "tube feeding formulas."

Brochure published by Nago Nährmittel AG, Olten, in about 1966. "Naga-sonda. Biologisch vollwertige Sondennahrung." 4 p. 14 cm. square. Gives the nutritional composition, preparation, concentration, dosage, and indications in German, French, and Italian.

Talk with Peter Speck. 1983. This product, introduced in 1969, is sold to the dietetic and pharmaceutical markets for enteral tube feeding. Shurtleff & Aoyagi. 1984. Soymilk Industry and Market, Update. The company is presently making 40,000 liters/week of various types of soymilk from whole soybeans. Soya Bluebook. 1985. p. 85; 1986. p. 104, 111. Soya Bluebook. 1986. p. 111; 1989. p. 131. Talk with Peter Speck. 1990. June 2. Soya Bluebook contains a misprint. Naja Sonda (Dry product for enteral tube feeding) is actually Naga Sonda.

Galactina Diätetica. 1986. Naga-Sonda: Vollbilanzierte Trink- und Sondennahrung auf natuerlicher Basis [Naga-Sonda: A natural, fully-balanced drink and special food]. 18 page booklet with 15 references. This easily digestible product is a nutritionally balanced, low-bulk, natural drink and enteral food made with soy protein. It contains the required essential amino acids, essential fatty acids, minerals and vitamins, and trace elements. It contains no lactose, gluten, purines, or cholesterol. It is used mostly by doctors. Letter from Peter Speck. 1988. March 11. "Naga Sonda was launched in 1969 in dry form."

Letter (fax) from Mr. Heinz Knell of Lindt & Spruengli, Olten. 1990. July 12. This product was launched in Oct. 1964 by Nago, Nährmittel, CH-4600 Olten. It was partly made in Sursee/Sprueken? It came in 500 gm doses, in aluminum foil packets in a carton. It was a powder, which was dissolved in water for complete nutrition via a navel tube. This was one of the three pioneering soy products he developed. Each was the first of its type, as far as he knows, based on soya.

Letter (fax) from Conrad Seewer of Galactina. 1990. July 13. The soybeans for this product, even at the time it was launched, were purchased from the USA. From the soybeans a soymilk was made and vitamins and minerals were added.

2010. *Foreign Agriculture.* 1964. USDA promotes soy beverage, defatted grits in test project. 2(48):10. Nov. 30.
• ***Summary:*** A pilot project to test the consumer acceptance of U.S. defatted soy grits and soy beverage products will get underway within the next 3 months with the distribution of 7,500 tons to consumers in six foreign countries. Main

participants will be Brazil, Hong Kong, India, Korea, the Philippines, and Taiwan.

2011. Fomon, Samuel J.; Owen, G.M.; Thomas, L.N. 1964. Methionine, valine and isoleucine: Requirements during infancy: Growth and nitrogen balance studies with normal fullterm infants receiving soybean protein. *American J. of Diseases of Children* 108(5):487-93. Nov. [12 ref] Address: Dep. of Pediatrics, State Univ. of Iowa, Iowa City, IA 52241.

2012. Nichols, Teal. ed. 1964. Zen cookery. Chico, California: The Ohsawa Foundation. 83 p. Index. 22 cm. A second edition appeared in 1965.

• ***Summary:*** This is the earliest known macrobiotic cookbook written by an American, and its influence was profound.

Note 1. The Nov. 1964 edition of *Yin Yang* magazine, published in Chico, California, announced that the book had been published that month (Nov.).

"Acknowledgements: Our heartfelt gratitude goes to Lima Ohsawa, the foremost authority on Macrobiotic Cookery, without whose patient assistance and teaching this book would not have been possible. Many of the recipes appearing in Zen Cookery are from her collection in an earlier edition of Zen Macrobiotics. The Editor wishes further to thank the following people for recipes, suggestions, and invaluable comments: Joanne Hirsh, Dorothy Salant, Nina Bauman, Cornellia Aihara, Penny Smith, Shayne Oles, Betty Kennedy, and Jane Andrews."

"Zen Cookery is a collection of recipes gleaned from the files of many people, all of whom have adjusted their salt intake to suit their own needs. Their recipes reflect this."

Contents: 1. Grains. 2. Noodles. 3. Vegetables. 4. Soups. 5. Sauces. 6. Salads. 7. Inspirations from around the world. 8. Special dishes. 9. Miso soy bean paste. 10. Tamari soy sauce. 11. Breads. 12. Pancakes and crepes. 13. Pie doughs. 14. Desserts. 15. Beverages.

Note 2. This is the earliest English-language document seen (March 2012) that contains the term "tamari soy sauce." It is also the earliest English-language cook book seen that contains the word "tamari" or the term "tamari soy sauce."

Each recipe is numbered. Recipes mentioning soy in recipe name (and a few other recipes introducing foods new to the USA): 2. Rice with tamari soy sauce. 3. Rice with aduki beans. 4. Rice & aduki pudding. 7. Sesame rice. 9. Rice with chick peas (garbanzo). 21-28. Buckwheat recipes. 34. Bulghur. 48. Buckwheat noodles in soup (Soba with kombu). 50. Buckwheat noodles with fried bean curds [tofu]. 54. Buckwheat noodles with miso sauce. 55-56. Buckwheat noodles in kuzu sauce. 61. Udon with aduki. 62. Carrot sesame nituke [nitsuke]. 75. Scallion nituke with miso (soybean paste). 76. Carrot and onion nituke with miso. 77. Onion nituke with miso. 78. Vegetable miso stew. 79. Boiled pumpkin with miso. 80. Vegetable sauces with kuzu arrowroot (and tamari soy sauce).

81. Vegetables with tamari soy sauce and tahini. 98. Jinenjo (5 recipes). 101. Miso-vegetable relish. 102. Aduki beans, black [soy] beans, chick peas. 105. Baked chick peas. 106. Buckwheat-aduki pancakes. 107. Udon with aduki beans. 108. Chestnut-aduki gelatine. 109. Chick pea party dip (with tahini and tamari). 110-118. Sea vegetables (kombu, nori, hiziki, wakame, most with tamari). 119. Clear broth (with tamari). 122. Tamari-vegetable broth. or stock. 123. Miso soup (2 types). 124. Creamed miso soup. 125. Root vegetable soup with miso. 131. Soybean soup. 134. Wakame soup (with miso). 149. Sesame sauce. 150. Miso sauce. 151. Miso salad dressing. 152. Thick tamari soy sauce. 153. Tahini tamari soy sauce. 154. Onion tahini sauce (with tamari). 172. Wakame salad.

189. Clam miso. 190. Scallop miso-lemon. 203 Miso spread [with tahini]. 204. Miso sauce [with tahini and orange rind]. 205. Sauce for vegetables [with black sesame and miso]. 206. Scallion miso. 207. Miso salad dressing. 208. Miso-vegetable relish. 209. Miso soup. 210. Udon with miso sauce. 211. Rice porridge with miso. 212. Deep fried miso balls. 213. Carrots and onions miso. 214. Vegetables miso. 215. Tekka (2 types). 216. Tea with tamari soy sauce. 217. Tamari broth. 218. Stringbeans. 219. Dried radish (daikon). 220. Shredded sea vegetables (hiziki). 221. Thick tamari soy sauce. 222. Tahini-tamari sauce. 223. Vegetables with tahini-tamari soy sauce. 234. Aduki muffins. 238. Miso spread (for sandwiches). 239. Tahini-tamari spread. 246. Buckwheat aduki pancakes. 272. Aduki pudding. 273. Chestnut-aduki gelatine. 274. Kanten jello (with agar).

291. Grain Milk (Kokkoh [Kokoh]; a finely ground combination of roasted rice, glutinous rice, oatmeal, soybeans, and sesame seeds). 294. Tea with tamari soy sauce (syo-ban).

Note 3. This is the earliest document seen (Feb. 2005) that mentions Kokkoh (or Kokoh), a grain milk introduced by macrobiotics.

Note 4. Tofu, amazake, and seitan are not mentioned in this book. 287 is Ohsawa Coffee (Yannoh) and 288 is Dandelion Coffee.

Note 5. This is the earliest document seen (June 2000) that mentions the use of miso in a salad dressing (Nos. 151 and 207).

Note 6. In 1985, when writing a revised edition of this book titled *The First Macrobiotic Cookbook*, Herman Aihara wrote (p. v) that this 1964 edition, published by the Ohsawa Foundation of Chico, California, was first the edition of the various subsequent and very influential books with this title.

Note 7. This is the earliest document seen (March 2011) concerning Herman or Cornellia Aihara and macrobiotics (or soyfoods).

Note 8. Along with soyfoods, this cookbook (and its many successors) also introduced numerous other basic

Japanese foods such as aduki [azuki] beans (3-4, 102, 106-08, 234, 272-73), sea vegetables of all types, and soba. Address: Chico, California.

2013. Hand, D.B.; Steinkraus, K.H.; VanBuren, J.P.; Hackler, L.R.; Rawi, I. el; Pallesen, H.R. 1964. Pilot-plant studies on soymilk. *Food Technology* 18(12):139-42. Dec. [7 ref]
• ***Summary:*** Contents: Summary. Introduction. Experimental methods [cold-water grind]: Spray-dried water-extracted soymilk, soymilk from [unsoaked] dehulled soybeans, soymilk from soaked dehulled soybeans, spray-dried acid curd, soymilk residue [okara]. Results and discussion: Interrelation of soybean fractions, indices of quality in relation to processing conditions, nutritional assessment, studies on flavor.

Note 1. This is the earliest English-language document seen (June 2013) that uses the term "soymilk residue" (or "soy milk residue") to refer to okara.

This investigation was made to develop improvements in the process for making dried soymilk from whole soybeans for use in developing countries, and especially in the process used at the soymilk plant in Indonesia equipped by UNICEF. The authors made a dry soymilk of excellent quality directly from whole soybeans without including the typical water-extraction step. The yield is higher and labor costs are reduced. A homogenizer is added to the processing line, but an evaporator and filter press are eliminated.

Figures show: (1) Flow sheet for water-extracted soymilk. (2) Flow sheet for soymilk from dehulled whole soybeans. (3) "Distribution of solids and protein as percentages in fractions from soaked soybeans." When whole soybeans are soaked, 98.5% of the solids and 99.5% of the protein remain in the soaked beans; the rest goes into the soak water. When the soaked soybeans are ground and filtered, 65% of the solids from the original dry soybeans and 83% of the protein remains in the soymilk; 33.5% of the solids and 16.5% of the protein goes into the residue [okara]. When the soymilk is made into tofu by cooking, precipitation with 4% acetic acid, and pressing the curd, 49% of the solids from the original soybeans and 74% of the protein remain in the tofu; 16% of the solids and 9% of the protein go into the whey.

(4) "Distribution of solids and protein as percentages in fractions from dehulled soybeans." When whole dry soybeans were steamed lightly, then dehulled, 10% of the solids and 4% of the protein were lost in the hulls. When the dehulled whole soybeans were soaked in 3 times their weight of water, 10% of the solids in the original dry soybeans and 4.5% of the protein was lost in the soak water. This 80% of the solids and 89.5% of the protein remained in the soaked dehulled soybeans.

Tables show: (1) Composition of soymilk samples (% of total). (2) Taste panel comparison of soymilk samples: The water-extracted soymilk received the highest (i.e., best) score for flavor (6.7) and consistency (8.1), followed by the soymilk made from dehulled whole soybeans (6.1 and 6.8), then the soymilk made from dehulled soaked whole soybeans (5.2 and 5.8). The acid-precipitated curd received a very low flavor score (1.8) and low consistency score (1.8) because of its grittiness.

(3) Pilot plant equipment list: Names and sources of 17 pieces of equipment,

Note 2. This is the earliest document seen (Oct. 2003) with the word "soymilk" in the title from Cornell University's Department of Food Science and Technology, Geneva, New York. This was the first group to consistently spell "soymilk" as one word–the modern spelling. Address: New York State Agric. Exp. Station, Cornell Univ., Dep. of Food Science and Technology, Geneva, New York.

2014. Van Buren, J.P.; Steinkraus, K.H.; Hackler, L.R.; Rawi, I. el; Hand, D.B. 1964. Indices of protein quality in dried soymilks: Heat effects on soymilk. *J. of Agricultural and Food Chemistry* 12(6):524-28. Nov/Dec. [19 ref]
• ***Summary:*** "Soymilk powders were prepared by various heating and drying procedures." A study of protein damage during the process was conducted. For example, overheating increased the darkness of the product and decreased the available lysine. Table 1, "Indices of adequacy of heat treatment," shows the percentages of soluble nitrogen and residual trypsin inhibitor. Address: Cornell Univ., New York State Agric. Exp. Station, Dep. of Food Science and Technology, Geneva, New York.

2015. Chu, Dawson. 1964. The production of protein-rich foods in Republic of China. *Industry of Free China* 21(1):21-34. *
• ***Summary:*** As part of its program to promote the production of protein-rich foods, the Government of Taiwan is organizing rural co-operatives for the manufacture of soya milk.

2016. DeMaeyer, E.M. 1964. Clinical trials with full-fat soy formulation in Taiwan. FAO, WHO, and UNICEF Report. 10 p. *

2017. Poey, S.H. 1964. Trial of soy bean milk on children older than five months. In: Proceedings of the A-A Congress on Pediatrics. I. See p. 595. *

2018. **Product Name:** Soylack (Soy Beverage).
Manufacturer's Name: Soy Products Co.
Manufacturer's Address: 3054 East Court Ave., Des Moines 9, Iowa.
Date of Introduction: 1964.
New Product–Documentation: Soybean Blue Book. 1964. p. 107.

2019. **Product Name:** [TFA Soymilk].
Manufacturer's Name: Taiwan Farmer's Association.
Manufacturer's Address: Taiwan.
Date of Introduction: 1964.
Wt/Vol., Packaging, Price: Glass bottle.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 95, 98. This is a cooperative of many small soymilk producers was established in 1946 and began to make soymilk in 1964, using a process introduced by Dr. Harry Miller. By 1980 the TFA had 6 soymilk plants in operation, producing 11.18 million bottles (each 260 ml) or 2.91 million liters. The largest, Lo-Tung produced 5,820,000 bottles, the smallest 350,000.

2020. **Product Name:** Poluk Milk.
Manufacturer's Name: [Medium-sized Soft Drink Manufacturer].
Manufacturer's Address: Bangkok, Thailand.
Date of Introduction: 1964.
Wt/Vol., Packaging, Price: Bottle.
New Product–Documentation: E. Orr. 1972. Tropical Products Inst. G73. The use of protein-rich foods for the relief of malnutrition in developing countries: an analysis of experience. p. 15-16. "Poluk Milk has been produced in Thailand by a medium-sized soft drink manufacturer since 1964. It differs from the soya beverages mentioned above in that the soya milk is combined with powdered milk and butter. It could therefore be described as a milk extender but appears in fact to be marketed as a soft drink. Sales are in the region of 400,000 bottles per year, about half the capacity of the plant, and appear to be static. The main reason given for the failure of sales to expand is competition–as mentioned above the soft drink market in Thailand is highly competitive."

2021. Aykroyd, Wallace R.; Doughty, Joyce. 1964. Legumes in human nutrition. *FAO Nutritional Studies* No. 19. xi + 138 p. Reissued by FAO in 1982 (152 p.). [119 ref]
• ***Summary:*** Contents: Preface. Introduction. History of legumes. Production and consumption. Composition and nutritive value. Methods of processing and cooking: Soybean preparations in East Asia (p. 48-52)–Germination (sprouted soybeans), soybean curd (tofu, incl. *chou tofu* or "stinking soybean curd"), soy sauce (shoyu), soybean paste (miso), tempeh, natto, hamanatto, soybean "milk," fermented preparations from groundnuts. Groundnut flour.

Effects of processing on nutritive value: Soaking, decortication, heating, germination, fermentation (mentions tempeh), effects of storage.

Toxic substances. Legume proteins. Observations on the value of legumes in human feeding. The place of legumes in human diets. Appendixes: (1) Legumes eaten by man. (2) Nutritive value of important legumes. (3) Amino acid content of legumes. (4) Account of lathyrism in central India by General Sleeman. (5) Bibliography of soybean (11 references). Some legume recipes. References.

Soybeans are also mentioned on pages 15 (Table 1, "Important legumes"), 23 (Indonesia, soybean curd, soy sauce, tempeh), 23-24 (Japan, miso, shoyu, natto, tofu, Korea, Taiwan), 39-40 (carbohydrates in soybeans include "galactans, pentoses, and hemicelluloses which are poorly utilized." Fats: only the groundnut and soybean are important sources of it), 55 (heating and trypsin inhibitor, methionine and cystine, raw unheated soybean meal, saridele), 58 (fermentation, tempeh, PER), 75-76 (protein values), 81 (Dean used soybeans to treat a protein deficiency), 84 (soybeans in India), 97 (soybean curd).

Appendix 1, titled "Legumes eaten by man" (p. 101-14), lists the various legumes by their Latin names. The entry for *Psophocarpus tetragonolobus* gives its vernacular names as "Goa bean, asparagus pea, winged pea, winged bean, sesquidillas."

Note: This is the earliest English-language document seen (Aug. 2007) that uses the word "sesguidillas" to refer to the winged bean. Address: 1. Dep. of Human Nutrition, London School of Hygiene and Tropical Medicine; Former Director, Nutrition Div., FAO, Rome, Italy.

2022. Belden, Gail Chester; Congleton, W.L.; DeVoto, W.R.; et al. 1964. The protein paradox: Malnutrition, protein-rich foods, and the role of business. Management Reports, 38 Cummington St., Boston, MA 02215. ix + 145 p. No index. Also published by Nimrod Press, Boston, in 1965. 28 cm. [101 ref]
• ***Summary:*** Contents: Foreword by Nevin S. Scrimshaw, Massachusetts Inst. of Technology (MIT). Preface (by the 10 authors, May 1964). I. The problem and the challenge: Population and food supply, protein and nutrition, protein quality, getting the protein into the diet, the need for action. II. Pioneering commercial efforts–Approaches to product development and marketing: 1. ProNutro in South Africa: Incumbe–the initial product, development and testing of ProNutro, commercial test marketing, first national campaign, second national campaign, results of the national campaigns. 2. Incaparina in Latin America: Development of Incaparina, field trials, commercial policies on INCAP, advertising policies. 3. Incaparina in El Salvador and Nicaragua. 4. Incaparina in Guatemala. 5. Incaparina in Mexico. 6. Incaparina: Early development, test marketing, results of the first three months. 7. A protein-rich concentrate for Africa: Product development, commercial introduction. 8. Other approaches: Nestle corn-soy weaning food in Brazil, India [no soy], Senegal [no soy], Saridele [which means "essence of the bean"; a soymilk] in Indonesia, started in mid-1957. 9. Lessons from the case histories: Product development, price, packaging, distribution, promotion, grass roots facilities versus incremental expansion, results, government and medical support.

III. A look at quality problems and processing soybeans: Solvent extraction, water-extracted soy protein, full-fat soy flour. Cottonseed: Expeller process, pre-press solvent extraction. Peanuts. Fish: VioBin process (p. 78), Chile process, Bureau of Commercial Fisheries. Other protein sources: Protein isolates, protein from petroleum, other oilseeds, other plants. Conclusion. Note: The VioBin Corporation produces commercially a fish protein concentrate or fish flour at plants in New Bedford, Massachusetts; Monticello, Illinois; and Greenport, New York. "Ezra Levin, president of VioBin, states that his process can solve the malnutrition problem and that a one-time $300 million investment could finance enough permanent, self-sustaining facilities to overcome the world's animal protein deficit indefinitely." He has written a paper titled "The VioBin process for solvent extraction and dehydration of wet-fat products" (Monticello, Illinois, Sept. 1963) (p. 78).

IV. Are potential protein resources available?: Animal vs. vegetable protein. Oilseed resources. Marine resources. Protein resources and individual countries. V. The role of governments: United States government: Cooley loans, guarantees, information, research, Food for Peace, competition. Local governments.

VI. Commercial feasibility–attitudes and opinions: How well is industry informed? What approaches are being considered?: Commercial ventures, individual projects, incremental basis, licensing arrangements, cooperative efforts, government involvement. What are the bottlenecks?: Finding the commercial market, distribution, changing food habits, product development, motivation and personnel, technical problems, risk and economic return. What are the opportunities?: Profitability, future markets, public relations value, local government relations, social responsibility. Lack of consensus.

VII. Conclusions, reflections, and advice: Product development, production, promotion, distribution, getting started, words of caution. VIII. Bibliography. IX. Appendix.

Concerning Food for Peace (p. 102-04). "The Food for Peace program was an outgrowth of Public Law 480, passed in 1954. The original purpose of the law was to provide the United States with a means of disposing of surplus commodities by selling them for local currencies of needy countries. Total exports under this law accounted for 28% of total U.S. agricultural exports for the first nine years the law has been in operation." These exports were composed of the following: wheat and wheat flour (56%), fats and oils (16%), cotton (13%), feed grains (5%), rice (4%), dairy products (2%), and other commodities (4%). "In 1963 these exports amounted to 34% (in dollars) of the total United States economic assistance effort abroad.

"In administering Public Law 480 the various agencies involved are governed by the provisions of the four sections: Title I–sales for foreign currencies (63% of total shipments); Title II–emergency relief and economic development (11%); Title III–donations through voluntary agencies (25%); Title IV–credit sales for dollars (1%).

"The Department of Agriculture administered the program from 1954 until 1960, when President Kennedy created the office of the Director of Food for Peace program. This person reports directly to the President and coordinates the efforts of the many governmental agencies that are involved in the administration of Public Law 480." A diagram (p. 103) shows the Food for Peace operational [organization] chart. Immediately below the Director of Food for Peace are USDA, AID (Agency for International Development), State Department, Treasury Department, BOB [Bureau of the Budget, later Office of Management and Budget], Defense USIA & OEP Commerce [OEP is Office of Economic Programs within the Business and Defense Services Administration].

"Much of the free food is distributed through voluntary agencies ('Volagencies' on the chart). Such organizations as CARE, the Church World Service, Catholic Relief Services, the Jewish Joint Distribution Committee, and others have many projects that are largely dependent on PL–480 for food and seed. Shipping charges on these products are often paid by AID. Within the recipient country, the local government usually pays the distribution charges..."

"Perhaps the broadest Food for Peace activity is the school lunch feeding program under which 40 million children (as of August, 1963) receive daily lunches in many countries. Another important use of this food is as wages for community development projects; present Food for Work projects in 22 countries employ an estimated 700,000 workers. In this manner, the food has been used to encourage the building of schools in Bolivia, the planting of trees in Tunisia, and the construction of a road in Iran."

Note: This is the earliest document seen (Nov. 1999) that mentions Nestle's work with soy. Address: Boston, Massachusetts.

2023. Dutra de Oliveira, J.E.; Rolando, Edgardo. 1964. Fat absorption studies in undernourished children fed cow's milk or soya milk. In: Proceedings of the Sixth International Congress of Nutrition. Edinburgh and London: E. & S. Livingstone Ltd. xv + 683 p. See p. 566. Held 9-15 Aug. 1963 at Edinburgh, Scotland.

• ***Summary:*** It is commonly accepted that undernourished children are able to absorb little fat in their diets. Metabolic studies on the absorption of fats were conducted using a group of 29 undernourished children, ages 1 to 3 years, with and without clinical oedema. One group was fed skim [non-fat] cow's milk; there was little or no absorption of fat. A second group was fed soya milk, fat absorption was generally above 90%; no differences were observed in children with or without oedema. A third group was fed cow's milk containing similar amounts of fat as the soya

milk; they absorbed less of the fat than the group fed soya milk–usually less than 80% of intake. Thus the type of fat consumed by undernourished children seems to affect their ability to absorb it. Address: Faculdade de Medicina, Ribeirao Preto (Sao Paulo), Brazil.

2024. Jones, Dorothea Van Gundy. 1964. The soybean cookbook: Adventures in zestful eating. New York, NY: Gramercy Publishing Co., a divison of Crown Publishers Inc. Paperback published by Arco Publishing Co. Inc. xii + 240 p. Foreword by Ruth Stout. Index. 21 cm.

• ***Summary:*** This lacto-ovo-vegetarian cookbook is identical to the 1963 edition published by Devin-Adair except: (1) Mildred Lager, who died in Aug. 1960, is no longer listed as the author. Note: Mildred's husband, Ed Jones, married Dorothea Van Gundy, the present author. (2) The dust jacket is white, yellow, green and black on a blue background. A face, made of yellow and green soybeans, is wearing a chef's hat. (3) The publisher of the hardcover edition is now Gramercy rather than Devin-Adair. The copyright date (written in hard-to-read Roman numerals) is 1963, the same as the Devin-Adair edition. The date of publication is not given, but it must have been after 1963. We have taken the liberty of giving it as 1964. (4) The title of the second preface has been changed to "Preface to the revised edition" from "Preface to the 1963 edition." Both were written by Dorothea Van Gundy Jones of Arlington, California. Address: Arlington, California.

2025. Jones, Mary Lou. 1964. Better soybean recipes. Anacortes, Washington: Outdoor Pictures. 58 p. Index. 22 cm.

• ***Summary:*** This small book is primarily about soy milk–how to make and use it. Contents: Introduction. 1. Working tools. 2. How to make a portable stove with a portable oven and kerosene oil lamp. 3. Ingredients for recipes: Soybeans, lecithin, oil, calcium phytate, slippery elm, flax seed, herbs. 4. Preparation of soybeans.

5. Recipes (p. 21): Thickening (with slippery elm or lecithin), oil-lecithin mix, soy milk recipes (soybean liquid {"Refrigerate pulp to make Soy Cheese [p. 26], Cultured Cheese, or Soy Crackers [p. 31]," p. 23}, soy milk–basic, soy milk concentrate [the favorite, with salt, honey, and oil-lecithin mix], low fat soy milk concentrate, chocolate-like milk [carob], chocolate-like syrup [carob], soy cream {made with "1 cup Soybean Liquid" [soy milk] put in a liquefier with water, salt, slippery elm powder, then Whiz while adding lecithin and vanilla}, whipped cream [to ½ cup soy cream slowly add 2 tablespoons oil-lecithin mix in a blender], ice cream, custard pudding, basic soy cheese [not tofu, based on okara]), dressings and spreads (royal mayonnaise, salad dressing supreme [based on tofu], cheesy spread or dressing [based on tofu], soy butter or health margarine, royal soy margarine, butter spread [made with "soybean pulp" = okara], oil free butter spread [made with ½ cup soy milk, ¼ cup lecithin, a little salt, and one recipe of Soybean Pulp {okara; see p. 24}]).

Cereals (p. 30) (flax cereals [2 types], soy crackers [with soybean pulp], soybean and corn meal muffins [with whole soybeans], sprouted grain granola [breakfast cereal]). Soy bread recipes (eight-grain sprouted soy bread, whole wheat soy bread, bread recipes without soybeans, basic variable whole wheat bread, enriched whole wheat bread, bran whole wheat bread, carob bread, peanut bread, eight-grain sprouted bread), waffles (soy waffles, eight-grain soy waffles, pigeon feed waffles).

Entrees (p. 41) (gluten supreme [meat substitute], malt flavored ice cream, mayonnaise, salad dressing, concentrated dressing base, gravy, soybean souffle), dextrinizing (heating starchy foods to turn the starch into more easily digested sugar), suggestions for using prepared soybeans without using a liquifier [pickle cooked soybeans in concentrated dressing base], yogurt (soy-based medium for culture, yogurt made from soy milk), watermelon and cantaloupe seed, fresh kelp relish.

6. Sprouting seeds (including soybeans): Four methods, how to serve sprouts (incl. Sukiyaki). Some variations in making soy milk.

Page 22 is a directory of the names and addresses of major health food distributors in the USA: California: Kahan and Lessin Co. (Los Angeles, or San Francisco). Colorado: Health Food Sales Co. (Denver). Illinois: Health Food Jobbers, Inc. (Chicago). Massachusetts: Foods Inc. (Cambridge). Michigan: Health Food Distributors (Detroit). New York: Sherman Foods, Inc. or Balanced Foods, Inc. (New York City). Oklahoma: Akin Distributors (Tulsa). Oregon: Nu Vita Foods (Portland). Tennessee: Collegedale Distributors (Collegedale). Washington state: Kahan & Lessin Co. or Vital Foods Distributors (Seattle).

This book contains considerable information about gluten and the use of the gluten rinse water (as in breads or soups). Pages 41-42 contain a unique recipe for making 2 pounds of gluten at home from whole wheat flour. The gluten is then baked with a seasoning mix and the rinse water for 10 hours at 108ºF to make Gluten Supreme.

Concerning dextrinizing: "This process is acclaimed by many health authorities to be a more healthful way of eating some starchy foods. Many people who have digestive problems with starchy foods can eat them prepared by the dextrinizing process. This process is said to turn the starch into a more easily digested sugar." Breads, cereals, or flour can be dextrinized by baking at 225ºF until lightly browned.

Note: This is the earliest English-language document seen (June 2013) that uses the word "soybean pulp" to refer to okara. Address: Box 1326, Escondido, California.

2026. Lager, Mildred; Jones, Dorothea Van Gundy. 1964. Suggestions for the arthritic. Recipes and menus. Riverside,

California: Mrs. E.S. Jones. 68 p. 22 cm.
• ***Summary:*** Contents: Part I. Arthritis–The result of many conditions: Types of arthritis, causes of arthritis, suggestions, foods for the arthritic, my own case. General outline of the diet: Juice diet, limited diet, general diet. Other suggestions: Mental attitude, comments 1957, comments 1961. Part II. Menus. Carbohydrate content of fresh fruits. Carbohydrate content of dried fruits. Carbohydrate content of fresh vegetables. Recipes.

Mildred wrote that proper diet was the greatest factor in her recovery from arthritis. Based on her own experience and that of many others who she helped, she strongly opposed the use of dairy products, and thus used dairylike soy products in their place, especially soymilk, tofu, and soy flour or grits.

Mildred wrote in Aug. 1957 that it has been 32 years since she began her battle with arthritis. In a Feb. 1961 update to this book Dorothea wrote that Mildred died on 25 Jan. 1960. "Hers was a very remarkable life in that while still in her teens she was told, after examination at a noted medical clinic, that she had incurable arthritis and would never walk again, her feet and legs being completely ankelosed at that time. In spite of this verdict Mildred went home with a determination to show those doctors they were wrong, and show them she did, for before long she was back on her feet again. You already know her story. For the next forty years she battled arthritis, never quite winning but keeping it under control to the extent that she lived a normal life and made a remarkable contribution to the field of nutrition as, health food store owner and operator, author, lecturer, radio commentator and dietary consultant. She taught many arthritics how to overcome their handicaps, and if that was not possible, how to live with them. Her life made a real contribution and she left many friends as a result." Address: Riverside, California.

2027. Schwarz, Richard William. 1964. John Harvey Kellogg: American Health Reformer. PhD thesis in modern history, University of Michigan. vi + 504 p. 23 cm. [234 + 1,308 footnotes]
• ***Summary:*** This is one of the finest examples of recent Adventist scholarship. John Harvey Kellogg was born on 26 Feb. 1852 in rural Tyrone Township, Livingston County, Michigan. His parents were John Preston Kellogg and Ann Stanley, his second wife. His birth was spaced almost midway between those of his seven half- and eight full brothers and sisters. Contents: Preface. 1. The making of a health reformer. 2. "What manner of man." 3. Biologic Living: The Kellogg "Gospel of Health." 4. Kellogg and the Battle Creek Sanitarium. 5. Lecturer, author, publisher. 6. Surgeon and inventor. 7. His brother's keeper. 8. Kellogg's break with the Adventist church. 9. Food manufacturer and eugenist. 10. Concluding years. Bibliography: Primary sources (Manuscript collections, books by John Harvey Kellogg, articles by John Harvey Kellogg, newspapers and periodicals, official reports and records, interviews, other primary sources, secondary sources).

Concerning the invention of peanut butter: (p. 283-84): "Another important item in the modern American diet first introduced by Dr. Kellogg was peanut butter. Shortly after 1890, John Harvey had a quantity of roasted peanuts ground up into a paste for use by patients who had difficulty in masticating nuts well enough to digest them properly. Later the doctor decided that roasting caused the fat content of the nuts to begin to decompose and that this irritated the digestive organs. From that time forward Sanitarium peanut butter was made from nuts which had been steam-cooked rather than roasted. Kellogg devised a variety of other nut butters which he claimed were 'sweeter, more palatable, and more digestible' than regular butter. He directed that these nut butters be used as shortening in the preparation of all baked goods produced at the Sanitarium. John Harvey made no attempt to control through patents the production of either peanut butter or any of his other nut butters. He announced that he believed that these were products that 'the world ought to have; let everybody that wants it have it, and make the best use of it.'" Address: Univ. of Michigan.

2028. Vollmer, Marion W. 1964. Food: Health and efficiency. Lessons in nutrition and healthful food preparation. Revised ed. Nashville, Tennessee: Southern Publishing Association. 136 p. 23 cm.
• ***Summary:*** In this Seventh-day Adventist vegetarian cookbook, soy-related recipes include: Farmer soy breakfast hash (with Proteena, p. 34). Granola (with soy flour, p. 34). Bit o' soy waffles (with soy flour, p. 35). Cashew milk (p. 52). Soy nut milk (with soy milk powder, almonds & cashews, p. 52). Baked soybeans (with cooked whole soybean, p. 62). Gluten–how to prepare and serve it (incl. Gluten stroganoff, gluten cheeseburgers, 64-67). Soy cheese–how to make and serve it (tofu made from full fat soy flour and curded with lemon juice, p. 67-68). Soy cheese loaf (with tofu, p. 69). Soy cheese croquettes (with tofu, p. 69). A note on p. 69 states: "Tofu is fresh soybean curd. Sold in blocks under water in Oriental and some other markets. Canned soy cheese called Vegechee, Cheez-o-Soy, etc., may be substituted." Note: An earlier edition was published in 1954.

2029. Ohsawa, G. 1964? Macrobiotics: The art of longevity and rejuvenation. New York, Paris, Brussel [sic], Tokyo: Ohsawa Foundation. Printed in the U.S.A. by Eastern Technical Publications (Boston & New York). 218 p. Undated. Index. 17 cm.
• ***Summary:*** This is the earliest known American printing of "Zen Macrobiotics." The word "Zen" was removed from the title at Michio Kushi's suggestion. The cover is yellowish tan. The author is George Ohsawa.

Contents: Foreword: Two ways to happiness through

health. Preface: Health to peace. Books by the same author (7 in French, 9 in Japanese, one in English, plus 4 periodicals). Table of contents. 1. Macrobiotics and Oriental medicine. Why I have written this book. What is the philosophy of the Far East? 2. What is my therapy? Unhappiness, illness, crime. Incurable disease. Three categories of cure. What we must not cure. Satori. Courage, honesty justice. Tolerance. 3. The six main conditions of health and happiness. 4. Nothing shall be impossible to you. You should have infinite freedom. You must be your own doctor. 5. Ohsawa's macrobiotic cuisine. 6. Principal foods: Rice, buckwheat, udon etc., millet, raw rice etc. (p. 62-71, with recipes). 7. Secondary foods (p. 72-103, with recipes): Nituke, soup (lotus root ankake, kuzu gruel, cracknel yuba), pie, gyoza (piroshiki), chapati, jinenjo (wild potato, tororo). Egyptian beans (chick peas, *pois chiche*), beans (boiled soy beans with miso, gomoku beans, goziru [gojiru] soup, aduki beans), corn, aduki (ogura vermicelli), goma-tohu [sesame tofu], aemono (salads), varieties (chou farci, buckwheat crepe), wild vegetables, seaweeds (shi kobu [shio kombu], kobu maki, fried kobu, musubi kobu, kobu soup, matsuba kobu, salmon head kobu-maki, hiziki with lotus root, hiziki nitsuke, hiziki with "age," hiziki and soyabean, gomoku hiziki, hiziki rice), wild plants (dandelion leaves or root, aozu {wild spinach}, fuki), miso and tamari preparation (sauce miso, miso cream, muso [miso with tahini and orange peel], miso soup, carrot and onion au miso, vegetable au miso, oden au miso, buckwheat dango au miso, miso ae, tekka no. 1 and 2), syoyu [shoyu] (sakura rice, sauce au shoyu, sauce au sesame, bouillon au shoyu, ositasi [ohitashi], oatmeal cream, potage oatmeal, sauce bechamel a la sauce shoyu, mayonnaise a la sauce shoyu, sauce Lyonnaise; "Shoyu diluted with a little water is very good for Sasimi [Sashimi = raw fish] and fried oyster, tempura, fish Sukiyaki, tofu {vegetable cheese of soya beans}, etc."), beverages (rice tea, wheat tea, dandelion coffee, Ohsawa Coffee {Yannoh; incl. roasted and ground rice, wheat, aduki, chick peas, and chicory}, Kokkoh {incl. roasted rice, glutinous rice, oatmeal, soya beans, and sesame seeds}, Mu tea, syo-ban {coarse green tea with soy sauce}, kuzu [cream, with shoyu] {"A good drink for everyone"}, aduki juice, radish [daikon] drink no. 1 and 2, ransyo {one beaten egg + 50% of traditional Ohsawa shoyu}, soba tea, umeboshi juice, ume-syo-kuzu, special rice cream).

8. Special dishes. Desserts. 9. Yin and Yang. 10. Macrobiotic suggestions for various symptoms of disease (p. 131-36, with recipes): General suggestions (by disease), macrobiotic external treatment (tofu plaster, soya bean plaster, Dentie). 11. Specific curative dietary suggestions: Examples of diseases and their macrobiotic treatments. 12. Kokkoh: Macrobiotic food for baby. 13. On cooking. Salt. Folk medicine. Your history. Appendix: The case of Mr. E. (Cure in 10 hours). "Pro-forma death certificate of the American World Empire and its Gold Dynasty."

Ohsawa centers and friends (p. 217-18): England (Trustin Foods, London; Mrs. R. Takagi, London), France (Centre Ignoramus, Longue Vie, Guenmai [Genmai = brown rice], Yamato, Ohsawa-France; all in Paris). Germany (Miss M. Arnoldi, Heidelberg; Dr. P. Martin, Munich; Dr. Henning, Hamburg), Italy (Miss H. Onoda, Rome; Mrs. Baccolis, Rome), Japan (Nippon Centre Ignoramus, 8 Kasumi-cho, Minato-ku, Tokyo; Shinsekai, Osaka), Brazil (Casa Longavida, Sao Paulo), Sweden (Miss Ilse Clausnitzer, Stockholm), U.S.A. (Ohsawa Foundation, 61, W. 56th St., New York; Ohsawa Foundation, P.O. Box 238, Chico, California; Chico-San, Inc., 64, 5th Ave., Chico, California; Musubi, 61, W. 56th St., New York–Macrobiotic Restaurant).

This book is undated, but it contains clues as to when it was published. On page 190 is reference to an article in *Time* magazine dated 7 March 1960 about the sad state of health in the United States. Then on page 189, Ohsawa states: "Upon my arrival in the United States last November, I began my lectures on the philosophy and medicine of the Orient. I gave some in Los Angeles and San Francisco [California], but mostly in New York institutes and schools such as the Universalist Church, The New School for Social Research, Columbia University, New York City College, and the American Buddhist Academy. I have postponed my departure twice. But I am very happy as I have confirmed my assumption: marriage between paradoxical philosophy of the Orient and the materialistic techniques of precision of American science, which must be realized for the infinite freedom of Man and for world peace" (p. 189).

Concerning the date of publication, which is not given in or on the book. One guess is about 1964, because when you do a printing of a book, you want to print enough to last for at least two years. This 1962 + 2 = 1964. A pretty weak reason! Carl Ferré (6 and 8 May 2011) states: I've done enough printing to know that the book printed in the USA uses the same plates as the second printing in Japan except for two changes. They added "Printed in the USA by..." (in a different type face) to the back side of the first page, which is blank; and, they whited out "Zen" and the smaller "Macrobiotics" on the cover and title page and replaced both with one word: "Macrobiotics" (again, in a different type face). The rest of the book appears to be exactly the same as the second printing from Japan."

"My thinking is that 1964 is a pretty good guess because I believe it may have been arranged by the East Coast Group–thus, the word 'Zen' was off the title and it was printed by a printer in Boston and New York. This would be about the time Michio Kushi was getting settled in Massachusetts."

Note 1. These lines almost certainly describe Ohsawa's first visit to the United States. He arrived in November 1959 and stayed well into 1960.

Note 2. All recipes in this book are numbered, from No. 1 (Unpolished rice, p. 162) to No. 816 (Rice plaster, p. 136). The recipe numbers are identical to those published

in the mimeograph edition of *Zen Macrobiotics* (also titled *Macrobiotics–The Biological and Physiological Foundation of Zen Buddhism*), published in early 1960.

Note 3. The contents of this book is very similar to that of the earliest published edition of *Zen Macrobiotics*, which was printed in Japan and was 218 pages long.

2030. Cuatrecasas, Pedro; Lockwood, D.H.; Caldwell, J.R. 1965. Lactase deficiency in the adult: A common occurrence. *Lancet* i(7375):14-18. Jan. 2. [64 ref]
• ***Summary:*** "Interest in disaccharide metabolism has risen sharply in the past few years with the detection in infants of disaccharide [lactose] intolerance."

"Summary: 55% of adults are intolerant of lactose because of a deficiency of jejunal Beta-galactosidase (and cellobiase), and consequent inability to hydrolyse dietary lactose. Evidence that this is an acquired trait, a strong correlation with dietary milk deprivation, loss of symptoms with prolonged lactose intake, and decreased absorption with milk restriction, all suggest that intestinal lactase may be an adaptive enzyme. Genetic polymorphism is not, however, excluded." Address: 1. Washington Univ., St. Louis, Missouri; 2-3. Dep. of Medicine, Johns Hopkins Hospital and Johns Hopkins Univ. School of Medicine, Baltimore, Maryland.

2031. Banno Tsusho Company. 1965. [Deodorizing soybean milk]. *Japanese Patent* 3461. Feb. 23. English-language summary in Soybean Digest, Feb. 1966, p. 53. [Jap]*
• ***Summary:*** The soymilk is adjusted to pH 6.8 then subjected to dialysis with a suitable colloid impervious film and activated charcoal.

2032. James, W.S. 1965. The Vegetarian Nutritional Research Centre, 1959-1964. *British Vegetarian.* Jan/Feb. p. 29-32.
• ***Summary:*** Discusses the history and activities of the Centre, Wanderlac and Velactin, Frank Wokes, N.W. Pirie, Cyril Vesey, vitamin B-12, leaf proteins, etc.

The article begins: "Since the Research Centre was inaugurated in Stanborough Park near Watford in 1959, I have, as a member of its scientific sub-committee, been in close contact with its activities of which the following is a brief summary.

"Scientific investigations must be based on much previous experience. The Research Centre was fortunate in starting in 1959 under the guidance of Dr. Frank Wokes with over thirty years' experience of nutritional research especially on vegetarian foods. In 1958 [sic, 1959] this culminated in the marketing of the first British vegetable milk Wanderlac, now called Velactin (A. Wander Limited). At the inaugural meeting of the Research Centre there were several vegetarian experts whose investigations during the previous ten to fifteen years had done much to help directly or indirectly in the development of Wanderlac. These included Dr. W.W. Payne and Dr. Cyril Pink, who carried out clinic trials on babies at Great Ormond Street Children's Hospital and at the Vegetarian Nursing Home, Blackheath, respectively. Dr. Lester Smith, F.R.S., whose discovery of vitamin B-12 in 1948 gave a clue to the successful use of vegetable protein, was also present. As the Royal Society's adviser to the research project on vitamin B-12 in Stanborough School, in which the Research Centre has played a leading part, Dr. Lester Smith has taken increasing interest in its work.

"In October, 1959, the Research Centre helped to arrange a meeting in Manchester on leaf proteins, addresses being given by the leading expert Mr. N.W. Pirie, F.R.S., and by Dr. Wokes, who had for some years previously been studying these problems with Mr. Pirie."

"When the Research Centre started in 1959 its administrative headquarters were at Stanborough School where the headmaster, Mr. Richard Syme, its chairman until February, 1961, and his colleagues gave great help. Mr. Cyril Vesey, B.Sc., head of the school's science department, first functioned as Secretary and as Treasurer, but towards the end of 1960 handed the latter duties over to Mr. Ted Cox. Mr. Vesey, as well as taking an active part with Dr. Wokes and his son Richard in establishing the research laboratory, remained Secretary until 1964, when his secretarial duties were taken over by Mr. Ronald Luxton, another member of the school science department. Mr. Harry Leonard, B.A., a third member of the school staff, served as Committee Chairman in 1961 and again in 1963-1964.

"Steady increase in the Research Centre's activities showed the need for its own headquarters. In 1961 these were established at Dr. Wokes' residence, on the outskirts of Stanborough Park, close to the research laboratory. They contain the registered office of the Centre, also a library housing its books and records, providing a unique collection of information on vegetarian nutrition." Address: M.Sc., Chairman.

2033. Morinaga Milk Products Company. 1965. [Deodorizing soybean milk]. *Japanese Patent* 3462. Feb. 23. 2 p. English-language summary in Soybean Digest, Feb. 1966, p. 53. [Jap]*
• ***Summary:*** "In a method for thoroughly deodorizing soybean milk, the raw aqueous soybean extract is inoculated with one or more of the following species of bacteria: Leuconostoc diacetylactease; Leuconostoc dextranicum; and Leuconostoc citrovorum. The inoculated milk is fermented at 20º-25ºC for a period of from 12 to 30 hours at a pH of about 6.5."

Note: This is the earliest document seen (March 2013) concerning Morinaga and soy.

2034. Nagai, K. 1965. [Deodorizing soybean milk]. *Japanese*

Patent 3,459. Feb. 23. English-language summary in Soybean Digest, Feb. 1966, p. 52-53. [Jap]*

2035. Shurpalekar, S.R.; Korula, Soma; Chandrasekhara, M.R.; Swaminathan, M. 1965. Studies on the preparation, chemical composition and nutritive value of a spray-dried soya food suitable for feeding weaned infants. *J. of the Science of Food and Agriculture* (*London*) 16(2):90-94. Feb. [15 ref]
• ***Summary:*** Describes the results of studies using a spray-dried food based on full-fat soya flour, dextrin-maltose mixture, and hydrogenated groundnut oil fortified with DL-methionine and certain essential vitamins and minerals. The food contained 26% protein and 18% fat. The basic protein efficiency ratio was 2.47 but fortification with 4 gm/kg of DL-methionine markedly increased the PER to almost the same level as that of a control milk food of similar composition. "It may be concluded that in many developing regions where milk is in short supply and soya-bean is readily available, the spray-dried food costing only about 4s. per kg. and possessing an overall nutritive value comparable to that of a milk food of similar composition can be manufactured on large scale and used for supplementary feeding of weaned infants." Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

2036. Abbott, J.C. 1965. Protein rich foods from oilseeds: Economic aspects. *P.A.G. News Bulletin* (*Protein Advisory Group, WHO / FAO / UNICEF*) No. 5. p. 19-38. April. [15 ref]
• ***Summary:*** Table 1 lists annual consumption (in metric tons) of oilseed protein foods in some main consuming areas. Column 1: Miso, tofu, tempeh and other fermented or cooked soybean products: Mainland China 3,736,000. Japan 2,536,000. Indonesia 200,000. South Korea 160,000. Taiwan 153,000. Hong Kong 15,000. Malaya 15,000. Singapore 15,000.

Column 2: Soy milks: Singapore and Malaya 1,300 metric tons, Hong Kong 1,000.

Note: This is the earliest document seen (Aug. 2013) that contains industry or market statistics for soymilk by geographical region. Address: Chief, Marketing Branch, FAO Headquarters, Rome, Italy.

2037. DeMaeyer, E.M. 1965. Full-fat soy mixtures in the feeding of infants in Taiwan. *P.A.G. News Bulletin* (*Protein Advisory Group, WHO / FAO / UNICEF*) No. 5. p. 50-59. April. [2 ref]
• ***Summary:*** "In China soy products including soy milk are customarily not fed to children below the age of three years."

"These trials have thus established the usefulness of full-fat soy products as practical and satisfactory alternatives to infants' foods based on animal milk when they are fed at levels which are not critical from the protein and calorie viewpoint." Address: PAG, New York.

2038. Hafner, Fred H. 1965. No more milk! *Soybean Digest.* May. p. 22, 25.
• ***Summary:*** "In discussing the milk powder situation with various officials who are close to the situation, I found some who foresee the time when there will be *No More Milk* in surplus to distribute."

"Under sponsorship of the Soybean Council of America [SBC], food technologists and nutritionists cooperating with the SBC protein products subcommittee developed a product which they appropriately named soy beverage powder. About 2 years ago Washington [DC] representatives of SBC introduced the product in Washington to officials of USDA, FAS [Foreign Agricultural Service], ARS [Agricultural Research Service], AID [Agency for International Development] and Food for Peace. Reaction was most favorable."

"Soy beverage powder is a dry blend of the following ingredients: Toasted soy flour, sugar, milk powder, wheat starch, calcium di phosphate, stabilizer-flavor blend and vitamin-mineral premix." It contains 35% protein, 1.0% fat, 50% carbohydrates, 5% minerals, and 0.6% calcium, 0.7% phosphorus, plus vitamins A, C, B-12, D, and iodine.

"Soy beverage powder is available commercially and can be supplied in limited quantities now but in almost unlimited quantities within a year, costs no more than nonfat milk powder and can be flavored to suit the taste preference of the recipient country."

"Soy beverage powder represents the first major breakthrough toward providing a companion product to milk powder in a world no longer able to obtain a sufficient quantity to meet the ever increasing demand for it."

A round photo shows a tanker next to a grain terminal. Address: General Mills Inc., Minneapolis, Minnesota.

2039. Miller, Harry W. 1965. Meeting the world's nutritional needs with soy milk. *Soybean Digest.* May. p. 19-21.
• ***Summary:*** In East Asia, milk is in short supply and expensive. A replacement made from soybeans has proved acceptable both tastewise and nutritionally. Moreover, animals are not an efficient means of producing protein. In East Asia, soybeans for food use have traditionally been soaked and then milled. Thus a "wet milling operation" is used instead of dry milling, as to make flour. "For adult use, they have built up a number of soy protein dishes, called 'meat without bones'. However they have not taken into consideration the nutritional needs of infants and growing children, and malnutrition is seen everywhere in these developing countries."

"In Japan, 30 pounds per capita of soybean are consumed as food but to provide soy milk for infants and children another 15 pounds per capita need to be added." For soy milk processing two systems are in use: the small

community soy milk plant (the fresh milk may be dispensed from the conventional milk can without bottling, thus lowering the cost) and the large commercial bottling plant. "In Hong Kong, soy milk is made, bottled, and distributed everywhere in the colony for 3½ cents for a 7-ounce bottle. It has the largest sale of any bottled beverage in the colony... In Hong Kong are two factories of the most modern type, with upwards of 40 large delivery beverage trucks, under the genius and leadership of K.S. Lo, general manager. These plants daily manufacture some 25,000 cases each containing 24 bottles of soy milk [i.e. 600,000 bottles/day]. These are delivered to hospitals and schools, and this milk is on sale at all beverage places..." In Singapore, in Bangkok, Thailand, and in Manila, Philippines, soy milk is also made and well accepted. In Formosa, where 2-3 years ago there was only one soy milk plant in Taipei, today more than a dozen rural pilot plants have sprung up all over the country.

Photos show: (1) A bottling machine at a soy milk plant in Hong Kong. (2) Boy scouts in Hong Kong drinking bottled soy milk. Address: M.D., Director Emeritus, International Nutrition Research Foundation, Arlington, California.

2040. **Product Name:** [Baby Nago {Powdered Soy-Based Infant Formula}].
Foreign Name: Bébé Nago {Pulver}.
Manufacturer's Name: Nago Naehrmittel AG. Then Lindt & Spruengli from 1971. Then Galactina Ltd. from 1980.
Manufacturer's Address: CH-4600 Olten, Switzerland. It was partly made at a plant in Sursee. Then Kilchberg near Zurich, Switzerland. Then Belp, Switzerland. Phone: 1-716-22-33.
Date of Introduction: 1965. June.
Wt/Vol., Packaging, Price: 300 gm heavy paperboard tube, lined inside with aluminum foil, and having aluminum and plastic lids.
How Stored: Shelf stable below 20ºC.
New Product–Documentation: Talk with Conrad Seewer of Galactina. 1990. May 17. This product was part of the complete Naga line was developed by Nago Olten, which later merged with Lindt & Spruengli, a large chocolate company located near Zurich. It was introduced in the early 1960s at about the same time as Naga-di and Naga-Sonda. Both Lindt & Spruengli and Galactina always made it from soymilk made from whole soybeans rather than from soy protein isolates.

Letter (fax) from Mr. Heinz Knell of Lindt & Spruengli, Olten. 1990. July 12. This product was launched in June 1965 by Nago, Nährmittel, CH-4600 Olten. It was partly made in Sursee/Sprueken? It came in 300 gm aluminum-lined carton doses. It was a powder, used in general for infant nutrition, and especially for infant who were allergic to cow's milk or had galactosemia. This was one of the three pioneering soy products he developed. Each was the first of its type, as far as he knows, based on soya.

Webster's Third New International Dictionary (1963) defines galactosemia as "galactose [a sugar] in the blood of infants due to an inability to utilize galactose because of a congenital absence of an enzyme that normally changes the galactose of galactose-containing foods into glucose." *Webster's Dictionary* (Ninth Collegiate, 1985) defines galactose, a term first used in 1869, as a sugar $C_6H_{12}O_6$ less soluble and les sweet than glucose. It also defines galactosemia, a term first used in 1934, as "an inherited metabolic disorder in which galactose accumulates in the blood due to deficiency of an enzyme catalyzing its conversion to glucose."

2041. Rawi, Ihsan el; Oey, Kam Nio. 1965. Soya-rice baby food. *Paediatrica Indonesiana* 5(1-2):606-08. Jan/June. Supplement. [7 ref. Eng]
• ***Summary:*** Saridele is a commercial weaning food made in a factory in Jogja (Central Java). It is powdered soya milk fortified with vitamins and minerals. Animal trials (young albino rats) show that saridele has a high P.E.R. value, especially after adding rice flour. A table compares the PER of whole milk, skim milk, Saridele, fried tempeh, and fried whole soybeans.

The latter, which are the least expensive, are prepared as follows: Soak whole soybeans overnight in water (or for 1 hour in hot water). Remove the hulls by rubbing and pour off the hulls. Drain and rise the soybeans, then drain until dry. Deep fry the soaked whole soybeans in hot cooking oil until golden brown in color. Then grind or pound the fried beans.

"The combination of tempeh and red rice is a daily food for adults and older children." There is no reason why it cannot be made into a porridge and served to younger children after weaning. Address: Nutrition Inst., Ministry of Health, Jakarta, Indonesia.

2042. Pinchera, Aldo; MacGillivray, M.H.; Crawford, J.D.; Freeman, A.G. 1965. Thyroid refractoriness in an athyreotic cretin fed soybean formula. *New England J. of Medicine* 273(2):83-87. July 8. [17 ref]
Address: Depts. of Medicine and Pediatrics, Harvard Medical School, and the Medical Service (Thyroid Unit) the Children's Service, Massachusetts General Hospital.

2043. Thrapp, Dan L. 1965. Thousands owe lives to doctor's soybean "milk." Noted surgeon nutritionist, now 86, devised formula as missionary in 1925 [Dr. Harry Miller]. *Los Angeles Times.* July 31. p. 19. Saturday.
• ***Summary:*** "Starving babies, often cast out to die because the parents have no way to feed them, inspired Dr. Miller to undertake his research [on milk from soybeans 40 years ago]... Today in Hong Kong about 25,000 cases of 24 bottles in a case are delivered daily... In America, the use of soybean formula for infants is growing rapidly–at a rate of 15-20% a

year. Dr Miller has seen plants to create his product rise in China, Japan, Formosa, the Philippines, Singapore, Thailand, and, of course, Hong Kong. 'The nutritional qualities of the soybean are a gift to the world,' he said, 'and I have not copyright.' He said that U.S. studies showed that 14% of the people here are allergic to some degree to cow's milk and 7% of new-born infants get severely ill from cow's milk formula. There is no allergy rate from soybean milk, he said... Since 1960 he has been in Hong Kong raising money for two hospitals." One served refuges from Red China. As a surgeon, he has performed more than 3,000 goiter operations during his lifetime. Address: Times religion editor.

2044. De, Sasanka S. 1965. The present state of protein-rich food development in Asia and the Far East. *J. of Nutrition and Dietetics* (*India*) 2(3):166-76. July. [23 ref]
• ***Summary:*** Gives an excellent account of soymilk production in Asia during the mid-1960s and a brief history of the FAO/WHO/UNICEF/Protein-rich food program. "The First International Conference sponsored by FAO, WHO and Josiah Macy Jr. Foundation (New York) held in Jamaica in 1953, discussed the biological, technical and pathological aspects of protein malnutrition. The next Conference on 'Human protein requirements and their fulfillments in practice' held in Princeton in 1955 under the same sponsorship, gave detailed consideration to the testing of new protein rich foods before their use in child feeding was recommended.

"The Protein Advisory Group (PAG) was established by the Director-General of WHO in 1955 to 'act on behalf of WHO in rendering advice to FAO and UNICEF on the safety and suitability for human consumption of proposed new protein-rich foods.' The PAG... became a tripartite FAO/WHO/UNICEF Protein Advisory Group in 1961."

Soybean milk: "In 1939, K.S. Lo established a firm known as 'Hong Kong Soyabean Products' to produce sterilized bottled soya milk. The two plants of the firm in Hong Kong produce 12,000 cases (24 x 7-oz. bottles per case) a day."

Also discusses miso, natto, tempeh, full-fat soya flour, soya presscake and meal, groundnut protein isolate. Address: Regional Office for Asia and Far East, FAO, Bangkok, Thailand.

2045. Dinshah, Freya. 1965. The vegan kitchen. Malaga, New Jersey: The American Vegan Society. 16 p. Index. 28 cm. Spiral bound. *
• ***Summary:*** The first edition of this pioneering vegan cookbook was published as part of a special issue of the Dinshah's magazine *Ahimsa*, issued in July 1965. *The Vegan Kitchen* runs from pages 4 to 19. It was first published as a spiral-bound book in Jan. 1967, with the third edition. As of 1991, the book has sold more than 30,000 copies.

A lifetime vegetarian, the author (whose photo appears on page 2) was born and raised in England, has been a vegan since 1959, and the Secretary of the American Vegan Society since 1960. Married to AVS President H. Jay Dinshah, she is an accomplished author, lecturer, and teacher. Address: The American Vegan Society, 501 Old Harding Highway, Malaga, New Jersey.

2046. Gitzelmann, Richard; Auricchio, Salvatore. 1965. The handling of soya alpha-galactosides by a normal and a galactosemic child. *Pediatrics* 36(2):231-35. Aug. [23 ref]
• ***Summary:*** Soy formulas contain galactose [a sugar, less soluble and less sweet than glucose] in the form of the alpha-galactosides stachyose and raffinose. A soy formula was used in the treatment of galactosemia, an inherited metabolic disorder in which the sugar galactose accumulates in the blood due to deficiency of an enzyme catalyzing its conversion to glucose. Soybean oligosaccharides cannot be metabolized in the small intestinal tract by endogenous enzymes from the animal due to the absence of a-1, 6-Galactosidase activity in intestinal mucosa.

Note: This is the earliest document seen (Nov. 2003) that mentions alpha-galactosides in connection with soybeans. Address: M.D., Lab. for Metabolic Research, Univ. Children's Hospital, Zurich, Switzerland.

2047. Hackler, L.R.; Van Buren, J.P.; Steinkraus, K.H.; Rawi, I. el; Hand, D.B. 1965. Effect of heat treatment on nutritive value of soymilk protein fed to weanling rats. *J. of Food Science* 30(4):723-28. July/Aug. [11 ref]
• ***Summary:*** "The effect of heating soymilk at 93º and 121ºC for varying periods was evaluated in weanling rats. Also determined were trypsin inhibitor retention and available lysine values."

Soybeans were soaked overnight in 3 times their weight of tap water. While soaking, the soybeans absorbed approximately 1.2 times their weight in water.

Cooking soymilk at 93ºC for 1-6 hours made no sense as it did not improve its quality. However pressure cooking soymilk at 121ºC for 5-10 minutes gave the best results. Address: New York State Agricultural Experiment Station, Cornell Univ., Geneva, New York.

2048. **Product Name:** Plantmilk (Soymilk. Renamed Plamil by Oct. 1966. Called Soya Plantmilk in Feb. 1979. Later renamed Soya Milk).
Manufacturer's Name: Plantmilk Ltd. (Renamed Plamil Foods Ltd. in 1972).
Manufacturer's Address: Tithe Farm, High St., Langley, Slough, Buckinghamshire, England.
Date of Introduction: 1965. August.
Ingredients: Incl. soya protein isolate.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: *The British Vegetarian.* 1965. July/Aug. p. 316. "Availability of Plantmilk." "Our

private carrier service makes deliveries to the London and Birmingham areas, and to most towns in the following counties:-" Seventeen counties are listed. "Plantmilk may, therefore be obtained from your nearest Health Food Store in the above defined areas... Those living outside these counties may obtain supplies by mail order service from: 'Healthiways', 5 Tranquil Passage, Blackheath, London, S.E. 3."

The British Vegetarian. 1966. Jan/Feb. p. 34-38. "The development of Plantmilk." Plantmilk is sold in cans as a liquid, concentrated to twice the recommended concentration. "The protein content of plantmilk is higher than human milk and about the same as cow's. It is derived from two sources–leaves and soya."

The British Vegetarian. 1966. Sept/Oct. p. 444. "Plantmilk News." "The availability of 'Plamil' and other products made by Plantmilk Ltd. is now improved by the recent extension of our distribution service to Staffordshire, Worcestershire, Warwickshire, Derbyshire, Northamptonshire, Leicestershire, Bedfordshire, Hunts. [sic, Hampshire], Rutland, and North Norfolk. From 1st October supplies of our lines will be available to Health Food Stores anywhere in England, Scotland, Wales and Northern Ireland.

The British Vegetarian. 1967. March/April. p. 147. "Attractive new label for 'Plamil'" Cans of liquid Plamil plantmilk will soon be appearing in Health Food Stores with a more attractive label, bearing a pleasant scenic design in white and green, giving a fresh, country appearance." On p. 180, in a letter from C.A. Ling, we learn that Plantmilk Ltd. is located at Langley, Buckinghamshire, England. In the May/June 1967 issue, p. 246, we learn that the protein in Plamil "now comes mainly from soya (one of the best plant proteins nutritionally)."

Ad (full-page) in *The British Vegetarian.* 1968. Jan/Feb. p. 5. "The milk of tomorrow, today!" The label reads: "Plamil- Use like milk. Delicious used neat as a cream."

The British Vegetarian. 1969. Sept/Oct. p. 461-63. "Plantmilk."

Letter to *The British Vegetarian.* 1970. May/June. p. 206. "Cost of Plantmilk." The writer complains that at 3/4d. per tin it is too expensive.

Ad (¼-page) in *The British Vegetarian.* 1970. May/June. p. 207. "Meat and Milk." "You can't have one without the other!" Letter to *The British Vegetarian.* 1970. July/Aug. p. 290, 290. "Plantmilk" It is too expensive. "After all, 2s. 6d. per pint for Plamil against 11d. per pint for cow's milk is a big difference. [Note: Since 12d. = 12 pence = 1 shilling, Plamil costs 2.7 times as much as cow's milk.] Letter from Frank Wokes to *The British Vegetarian.* 1970. Sept/Oct. p. 462. It would be easier and cheaper to prepare plantmilk in India from soya beans grown domestically using Dr. Harry Miller's original method. The product would be cheaper than cow's milk.

Alive magazine. 1978. June. p. 14-15; Ad in *Alive* magazine. 1979. Jan/Feb. p. 19. Letter from Plamil Foods Ltd. They were the pioneers in liquid soya milk in England in 1965.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 118. "One of the first successful soymilks in Europe after World War II." The first soymilk made or sold in England after the war.

2049. *Soybean Digest.* 1965. A pilot program on soy beverage. Aug. p. 26.
• ***Summary:*** "A pilot Food for Peace program which will introduce soy beverage in six foreign countries will be launched shortly" by USDA and the Agency for International Development."

"The USDA will purchase 500 metric tons of full fat and 5,000 metric tons of defatted fortified soy beverage powder which will be distributed by U.S. voluntary relief agencies in ongoing Food for Peace programs.

"Tests will be conducted in school lunch programs, hospitals, orphanages, and maternal and child health centers." It will also be tested in CARE child feeding projects in India.

"The soy beverage, based on a formula developed by the Soybean Council of America, contains a milled soybean product as its principal ingredient with added nonfat dry milk and corn dextrose, fortified with vitamins and minerals. When mixed with water it provides a nutritious beverage for human diets." Photos show: (1) An elderly man (a Hong Kong refugee) holding a box bearing the U.S. AID logo. (2) Three children drinking from metal cups.

2050. *Times* (*London*). 1965. Delegates taste plantmilk: New liquid food. Sept. 1. p. 6, col. 6.
• ***Summary:*** "From our correspondent. Derby, Aug. 31. Drinka pinta milka day but make it plantmilk, Dr. Alan Stoddard advised delegates at the International Vegetarian Union's world congress at Swanwick, Derbyshire, today.

"Dr. Stoddard, a medical practitioner, is chairman of Plantmilk Ltd., a society founded to produce liquid food that is a commercial substitute for milk. Delegates were offered drinks for plantmilk: about 10 per cent of those who are vegetarians never drink cow's milk."

2051. Cook, L.N.; Andrews, B.F.; Falkner, F.T. 1965. Response of low birth weight infants to soybean formula. *Southern Medical Journal* 58:1594-95. Dec.
• ***Summary:*** "Ten infants weighing between 1200 and 2000 grams were fed a standard milk protein formula, 20 calories per ounce at 2.5 to 3 ounces per pound of body weight per day.

"Ten infants weighing between 1600 and 2270 grams were fed a soybean formula at 2.5 to 3 ounces per pound per day.

"Infants were continued on the soybean formula until

they reached a weight of 2250 grams or until clinical complications dictated the discontinuation of the formula.

"Results: The mean weight gain on the milk protein formula was 23.9 grams per day.

"The mean weight gain on the soybean formula was minus 8.24 grams per day.

"The above data may reflect the difference in nutritional value of the two formulae and would suggest that soybean preparations such as that mentioned above are of questionable value in the low birth weight infant." Address: Univ. of Louisville School of Medicine, Louisville, Kentucky.

2052. Gigon, Jean-Pierre; Hartmann, G. 1965. Soja als vollwertige Sondennahrung [Soya for high-quality enteral tube feeding]. *Zeitschrift fuer Klinische Medizin* 158(7):545-68. [35 ref. Ger; eng]

• ***Summary:*** About Naga-di and Naga-sonda, made by Firma Nago AG, Olten, Switzerland. Naga-sonda has a higher content of sodium chloride than Naga-di. In French, *sonde* means "probe." This product is typically administered to a patient through a tube that goes in through the nose and down into the stomach. "In a short time a new diet preparation (Naga-di, whose composition is shown in Table 5), used for the normalization of serum lipids, will be put on the market. This nutritional product, which has a high content of unsaturated fatty acids (85% of the total fatty acids) makes possible the lowering of cholesterol as well as total fats. The pure vegetable raw material is derived from the soybean... A clinical report was made on 15 patients, who were tube-fed exclusively this soy-based preparation for a total of 375 days (9-90 days uninterrupted each). Based on metabolic balance studies on 9 patients and clinical and biochemical controls, it was demonstrated that high-quality nutrition for a longer time period is possible. All patients studied were very sick, presenting a deep catabolism caused by tumors, paralysis, or severe infections. The nutritive effect of the soybean product could be demonstrated by: 1. Increase or constance of body weight. 2. Positive nitrogen balance in most patients. 3. Increase in the albumin / globulin ratio, partly to a normal level. 4. Amelioration of the general status.

"The individual tolerance of the soybean food is good; diarrheas have rarely been observed. The soybean product is considered a complete food of vegetable origin. The composition of amino acids is discussed." Address: Chirurgische Universitaetsklinik; 2. Medizinische Universitaetsklinik. Both: Buergerspital, Basel, Switzerland.

2053. Virendrasingh, Maharajkumar. 1965. Soybean–The crop without a peer: Answer to India's protein malnutrition. *Commerce* (*Bombay*) 111(2852):A120-A122. Dec. Annual number at back of volume. [13 ref]

• ***Summary:*** One of the oldest known crops, the soybean dates back about 5,000 years. It was first described in a materia as long ago as 3838 B.C. prepared by the Chinese Emperor Sheng-Nung [sic], who was known as the "Heavenly Farmer."

"Soybean eaters are more physically fit and have more stamina than people who subsist on rice, millet and other grains."

In 1804 the soybean was introduced to the USA [sic]. In 1898 many soybean varieties were imported and tested, but not until 1924 did it enter into the official record [sic], "according to pioneer, Bill Baker from California of soybean fame." The USA discovered the value of soybean during World War I, but gave it its rightful place during World War II.

"In India, as nutritionists and agronomists came to know of the immense possibilities and nutritional value of the soybean, attempts were made to grow it, but it has not caught on, perhaps because the varieties tried were unsuitable for propagation in the soil and climate of our country. Further, there was no ready market to take the small produce and it did not prove of economic advantage.

"High nutritive value at low cost: The soybean can be virtually regarded as 'the miracle golden bean of the twentieth century,' because it is an oilseed with a high protein content. The country that has this crop on a major scale or can develop it need not worry about protein malnutrition among its people.

"The soybean has the supreme quality of being the only vegetable protein to possess all the essential amino-acids required for maintenance and growth. It is a complete vegetable protein like meat, milk, eggs and cheese,..."

"Research workers at the Central Food and Technological Research Institute at Mysore maintain that the soybean contains twice the quantity of protein as the common pulses of India." For Indians today, the best source of oilseed protein from crops grown in India is the groundnut. "However, on equal production per acre, the soybean yields twice the quantity of protein. Therefore, if soybean growing can be developed, we stand a better chance of meeting the protein needs of our people.

"Uses in Indian diet: The Indian diet has a preponderance of cereals, especially rice and wheat, which of themselves do not have enough proteins and protective elements to build and maintain health.

"The soybean is described as the poor man's meat."

"Other protein products developed recently are soy beverages and soy soups. Soy beverage can replace milk. Two tablespoons stirred in a glass of water can provide the protein deficiency in our diet. Soy protein fibres have been developed and when flavoured can be so prepared that vegetarians can have the pleasure of having chicken and meat made from vegetable protein.

"Miss T. Phillip, Principal of the Institute of Catering Technology and bean Council of America, Inc., provided. The work was sponsored by us. These products can be

incorporated in popular Indian dishes as *Nimki, Sev, Samosas, Pakoder, Sambar, Alu Chole, Batata bhajee, Dalwada, Rava dosa, Oppuma* and sweets like *Ladoo, Shakarpara, pooran poli, Sooji Halva.* Soy flour did well in bakery product. Miss Phillip has reported excellent acceptability."

Soybean is an excellent source of low-priced, edible vegetable oil. "The first ever major agreement by the U.S. for the supply of soybean oil to India was signed on 30th September 1964 for a quantity of about 75,000 metric tons valued at about Rs. 9 crores. The oil began coming in March 1965. The price has averaged Rs. 1,525 a metric ton inclusive of freight and duties. On the whole, it has been half the price of domestic peanut oil. It has helped the *vanaspati* industry to meet its requirement of raw materials... Soybean oil helped to keep the price of *vanaspati* at a reasonable level as compared with liquid edible vegetable oils. The industry has approached the Government of India to request for another 150,000 metric tons of U.S. vegetable oil, and it is hoped at the time of writing this that it will come through. U.S. vegetable oil can be supplied under title I of P.L. 480."

Contains a long quotation by Glenn H. Pogeler, President of the Soybean Council of American, in a Dec. 1964 address to the Delhi Fats and Oils Symposium. It begins: "The United States consumer pays a smaller proportion of his income for food than any other consumer in this world."

Tables show: (1) India: Production of the five major oilseeds and their products (1958-59 to 1963-64)–Groundnut (by far the largest), rape and mustard, sesamum, linseed, and castor seed. (2) Oilseed yields (pounds per acre) of the above five (1958-59 to 1963-64): Peanuts (in the shell) have by far the largest yield–622 to 727 pounds/acre. (2A) Cost of protein content of major foods (wholesale on world market): The 3 least expensive sources (in U.S. cents per kg) are defatted soybean flour (40), fish flour (50), dried skim milk (51). (3) USA soybean oil and meal, supply and disposition. (3a) Consumption per caput per annum of (visible) food fats and oils (in lbs.): Netherlands 70, West Germany 56, Australia 49, USA 46, India 11. Address: Director for India, Soybean Council of America, Inc.

2054. DeMaeyer, E.M. 1965. Clinical trials with full-fat soy formulation in Taiwan, Republic of China. FAO, WHO, and UNICEF Report. 5 p. *

2055. Gigon, Jean-Pierre. 1965. Est-il possible de couvrir les besoins protéiniques de l'homme à l'aide de Soja? [Is it possible to cover the protein needs of humans with the aid of soya?]. *Bulletin de la Societe Scientifique d'Hygiene Alimentaire et d'Alimentation* 53(10-12):295-308. [22 ref. Fre]

• ***Summary:*** About Naga-di and Naga-sonda, tube feeding formulas (the latter with added sodium chloride) made by Nago Naehrmittel AG, Olten, Switzerland. Address: Clinique Universitaire de Chirurgie (Prof. R. Nissen), Hôpital des Bourgeois, Bale, Switzerland.

2056. Han, Giok Kian. 1965. The nutritional value of milk substitutes prepared from selected taro products, tofu and coconut milk. MSc thesis, University of Hawaii, Honolulu. [5] + 44 leaves. Illust. No. 437. *

• ***Summary:*** Includes bibliographic references (leaves 40-44).

2057. **Product Name:** Loma Linda Soyagen (Milk Free Soy Beverage Powder) [Carob].
Manufacturer's Name: Loma Linda Food Co.
Manufacturer's Address: 11503 Pierce St., Riverside, CA 92505. Phone: 714-687-7800 (3/88).
Date of Introduction: 1965.
Ingredients: Soy solids, brown sugar, soy oil, carob powder, soy lecithin, salt, tri-sodium citrate, calcium carbonate, vegetable mono- and di-glycerides, artificial and natural (vegetable) flavors, vitamins (ascorbic acid, beta-carotene, DL-alpha tocopheryl acetate, vitamin A palmitate, cholecalciferol, phytonadione, cyanocobalamin).
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable.
Nutrition: Per 1 oz powder (approximately ¼ cup): Calories 140, protein 6 gm, carbohydrate 16 gm, fat 6 gm, cholesterol 0 mg, sodium 160 mg, potassium 290 mg.
New Product–Documentation: Label sent by Loma Linda Foods. 1988. Oct. 5. This product was introduced in 1965; the label is dated "3/77"–March 1977. A less sophisticated version of this product with the same name appeared in 1948.

A color photo (taken in Sept. 1980 in California) shows different flavors and sizes of canned Soyagen and Soyalac.

2058. **Product Name:** Prosobee (Non-Dairy Infant Formula Based on Soy Protein Isolates) [Ready to Feed, or Concentrated Liquid].
Manufacturer's Name: Mead Johnson & Co.
Manufacturer's Address: 2404 W. Pennsylvania Ave., Evansville, IN 47721.
Date of Introduction: 1965.
Ingredients: Incl. soy protein isolate and water.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: Fomon. 1967. Infant Nutrition. Page 230 states that ProSobee contains a "soy isolate fortified with methionine." Harkins & Sarett. 1967. Journal of Nutrition. 91(2):213-18. Part I; Thomson. 1979. *Journal of the American Oil Chemists' Society.* March. p. 386-88; Shurtleff & Aoyagi. 1979. Soymilk Industry and Market. p. 11, 25, 28. "The first true infant formula based on soy protein isolates." Sold at Bill's Drugs in Lafayette, California. 1989. Sept. 7. A 13 oz can of concentrated formula, to which water must be added, retails for $1.69.

2059. **Product Name:** Kreme-O-Soy, and Infa-Soy (Hypoallergenic Baby Formula).
Manufacturer's Name: Nutrition International Corp. (Formerly Madison Foods).
Manufacturer's Address: Box 415, Madison, TN 37115.
Date of Introduction: 1965.
New Product–Documentation: Soybean Blue Book. 1965. p. 115. Also listed in 1970. Note: Kreme-O-Soy was soymilk.

2060. Onochie, B.E. 1965. The potential value of soybean as a protein supplement in Nigerian diet. In: 1965. Proceedings of the Agricultural Society of Nigeria. Papers presented at the Third Annual Conference. Vol. 4. See p. 43-45. [18 ref]
• ***Summary:*** "During the second World War years, the Department of Agriculture in Nigeria made investigations on methods of incorporating soya beans into the diet of Southern Nigerians. Attempts were made to prepare 'Akara balls;' this entailed soaking soya beans overnight to remove the testa, milling and preparing a paste which was later fried in small lots in palm oil... the final product was not accepted by the people because of a peculiar 'beany' taste which developed during the course of preparation. Another preparation–the 'olele' was similarly rejected on account of both the colour and taste.

"Possible uses of soya bean in Nigerian menu: Incorporation into bread, cowpea substitute, use in soups, soya bean milk." Address: Univ. of Ife, Ibadan Branch, Ibadan.

2061. Schneegans, Ernest.; Haarscher, A.; Prebay, H.; Huntzmann, F. 1965. Étude clinique et biologique d'un cas d'intolérance au lactose [Clinical and biological study of a case of lactose intolerance]. *Annales Paediatrici: International Review of Pediatrics* (*Basel*) 204:89+. [Fre]*
• ***Summary:*** Mentions that *un lait végétal* (*Vegelact*) was used effectively to treat an infant that was lactose intolerant and who had been vomiting and had diarrhea.

2062. Brandemuhl, William. 1965. Soybean utilization in Japan: Figures (Document part). San Francisco, California. xxii + 478 p. Unpublished manuscript. 28 cm. [189 ref]
• ***Summary:*** 1. Black soybeans from Japan's Tanba region and American Harosoy soybeans. 2. Soybeans growing on a dike. 3. Soybean plants drying on rack. 4. Soybean plants drying just prior to harvesting. 5. Soybean plants drying just prior to harvesting. 6. Soybean harvester. 7. Depodding rack and pod filled stalk. 8. Depodding soybeans. 9. Entrance to the Red Chinese Trade Fair held in Tokyo, during April, 1964. 10. One of the agricultural exhibits at the Chinese Trade Fair (corn and soybeans). 11. Soybeans and soybean plants exhibited at the Chinese Trade Fair. 12. Soybeans and other bean products that Red China is capable of exporting (exhibition at the Red Chinese Trade Fair). 13. Soybeans on display at retail store. 14. Soybeans on display at retail store. 15. Barge unloading of soybeans at oil mill. 16. Barge unloading of soybeans at oil mill. 17 Soybean tank receiver at oil mill. 18. Multi-spout soybean feeder at barge side. 19. An oil gift assortment.

20. Selling oil at a small oil retail shop. 21. Dispensing oil. 22. Selection of oil at oil retail shop (notice birds in cage at right). 23. Vegetable oil displayed with petroleum products. 24. Vegetable oil displayed with petroleum products. 25. Bottling facilities at oil wholesaler's. 26. Bottling facilities at oil wholesaler's. 27. Prepackaged oil products displayed at wholesaler's. 28. Seafood fried in soybean oil. 29. Selling soybean oil fried products. 30. Temperature controlled fryer. 31. At a chicken farm. 32. Handling 20 kilograms bags of chicken feed. 33. Soybean meal on top of other components of mixed feed prior to hand mixing. 34. Bag fastener for mixed feeds packed at wholesaler. 35. Fermenting agent for bakery (contains equal quantities of soybean flour, yeast, and water). 36. Silk worms eating mulberry leaves. 37. Silk worms eating soybean protein mixed with mulberry leaves. 38. Tofu. 39. Soybean grinder.

40. Soybean grinder. 41. Soybean grinder. 42. Open pit live steam cooker. 43. Open pit wood-stoked cooker. 44. Okara tank and press. 45. Outdated okara press. 46. Tonyu [soymilk] receiving tanks (precipitation tanks). 47. Removing water from precipitating curd. 48. Pressing tofu with stone weights. 49. Yakidofu. 50. Yakidofu being dippered into a shaping box. 51. Mechanical press for pressing yakidofu. 52. Cutting yakidofu. 53. Roasting yakidofu. 54. Kinugoshi tofu. 55. Aburaage. 56. Aburaage prior to being deep fried. 57. Frying sushiage, a product similar to aburaage. 58. Frying aburaage. 59. Hirosu: left front; atsuage: right front; sushiage: left rear; aburaage: center rear.

Note 1. This is the earliest English-language document seen (April 2013) that uses the word "Hirosu" to refer to Kyoto-style deep-fried tofu treasure balls.

Note 2. This is the earliest English-language document seen (April 2013) contains the word *atsuage* or the word *sushiage;* they refers to types of deep-fried tofu.

60. Okara for use as cattle feed. 61. Okara for food use. 62. Overall view of production portion of tofu plant. 63. Tofu peddler. 64. Tofu on display. 65. Bagged tofu. 66. Miso-shiru soup. 67. Dengaku (yakidofu covered with miso and placed over low heat). 68. Aburaage formed as a bag with rice inside. 69. Yudofu, Japan's most famous but not often eaten tofu dish. 70. Yudofu. 71. Miso. 72. Fermentation starting material (rice inoculated with bacteria). 73. The first step in making home miso. 74. Mashing soybeans for home miso. 75. Rice koji being used for home produced miso. 76. Salt being added to soybean and koji for the making of home miso. 77. Mixing home miso components. 78. Mixing home

miso components. 79. Freshly made home miso.

80. Home miso after one year natural fermentation. 81. Koji maker. 82. Koji filled boxes. 83. Autoclave for steaming soybeans. 84. Koji mixed with salt. 85. Wooden vat for miso fermentation. 86. Weights for pressing miso. 87. Removing miso from fermentation vat. 88. Mixing and grinding miso. 89. Degraining [grinding] miso. 90. Miso on display. 91. Miso packing and sealing instrument. 92. Packing miso in a plastic bag. 93. Beef and rice miso preserver. 94. Seafood and rice miso preserver. 95. Receiving soybean meal at shoyu factory. 96. Saline solution for shoyu production. 97. Fermenting moromi. 98. Equipment used for bubbling moromi. 99. Temperature control of moromi.

100. New moromi. 101. Moromi which has fermented nearly one year. 102. Hydraulic press for pressing moromi. 103. Running moromi into filter cloth. 104. Filter cloth containing moromi. 105. Raw shoyu storage tank. 106. Open press for previously pressed moromi. 107. Opening moromi filter cloth. 108. Removing shoyu kasu (shoyu presscake) from filter cloth. 109. Bagging shoyu kasu for sale as cattle food. 110. Quick method shoyu kasu. 111. Shoyu sterilization instrument. 113. Shoyu bottler. 114. Bottling shoyu by hand. 115. High speed labeling. 116. Hand labeling. 117. Preparing sauce for shipment. 118. Shoyu cold sauce. 119. Filling plastic bottles with shoyu for use in box lunches.

120. Broiled chicken coated with shoyu. 121. Fish marinated in shoyu. 122. Fish baked with shoyu. 123. Grilled eels basted with shoyu. 124. Daitokuji natto (look like raisins spread on a sheet of paper).

125. Cooker for steaming soybeans for natto. 126. Pressurized container for inoculating soybeans. 127. Inoculating soybeans for natto. 128. Traditional method of packing natto. 129. Traditional method of packing natto. 130. Incubation rack and traditional packages of natto. 131. Packaging inoculated soybeans prior to incubation. 132. Packaging inoculated soybeans prior to incubation. 133. Inoculated soybeans in recently introduced containers. 134. Natto incubation room. 135. Natto on display at egg shop.

136. Overall view of frozen tofu factory. 137. Precipitation containers for frozen tofu tonyu. 138. Smoothing frozen tofu curd. 139. Frozen tofu curd flowing into shaping box.

140. Shaping box for frozen tofu curd equipped with sheet metal guide. 141. Removing formed frozen tofu curd from sink. 142. Cutting formed curd into freezing size. 143. Sized curd in -20ºC freezer. 144. Sized curd in -5ºC degree freezer. 145. Defrosting frozen tofu. 146. Removing frozen tofu curd from centrifuge. 147. Inspecting frozen tofu curd for dryness. 148. Drying frozen tofu. 149. Grinding frozen tofu into marketable size. 150. Packing frozen tofu. 151. Frozen tofu on display. 152. Cooked frozen tofu displayed in food shop. 153. Cooked frozen tofu mixed with vegetables. 154. Packing kinako. 155. Kinako on display. 156. Covering pounded rice cake [mochi] with kinako. 157. Yuba. 158. Yuba hanging on rack above tonyu tank. 159. Lifting yuba from tonyu tank.

160. Fresh yuba. 161. Rolling fresh yuba into marketable form. 162. Combining fresh yuba with vegetables. 163. Rolling dry yuba. 164. Yuba on display. 165. Shoyu vats at tsukudani factory. 166. Tsukudani cooker. 167. Cooling tsukudani. 168. Nimame being marketed. 169. Nimame with shoyu and shrimp. 170. Nimame with shrimp. 171. Selling nimame. 172. Nimame as served. 173. Hamanatto. 174. Sun drying Hamanatto. 175. Close-up of sun-dried Hamanatto. 176. Pressing Hamanatto. 177. Grading Hamanatto. 178. Hamanatto on display. 179. Edamame.

180. Sprouting soybeans. 181. Sprouting soybean covered with straw. 182. Close-up of sprouting soybeans. 183. Sprouting soybeans. 184. Wetting down sprouting soybeans. 185. Soybean sprouts. 186. Mappe sprouts [Note 2. “Mappe” is not a Japanese word; mappe beans are imported from Burma]. 187. Soybean roasting oven. 188. Roasting soybeans. 189. Soybeans and seaweed. 190. Black soybeans in pounded rice cake [mochi].

Map of Japan. Address: San Francisco, California.

2063. Brandemuhl, William. 1965. Tofu (including Aburaage and related products): Frying Aburaage, Atsuage, Hirosu / Ganmodoki, Okara, Soybean Milk (Continued–Document part IV). In: William Brandemuhl. 1965. Soybean Utilization in Japan. San Francisco, California. xxii + 478 p. See p. 137-201, Unpublished manuscript. 28 cm. [18 ref]

• ***Summary:*** (Continued). “Frying Aburaage: Aburaage is usually fried in rapeseed oil with soybean oil being occasionally used. Frying is accomplished in two stages as Figure 56 indicates. The containers used to fry are usually housed with bricks and heated by oil and blower although wood is sometimes used. A wood stoked fryer has the disadvantage of uncontrollable temperature. The oil containers are provided with hoods but as seen in Figure 57 cleanliness is difficult to maintain.

“The number of double oil containers varies with the size of the maker with a slightly larger than average maker processing about 1,000 Aburaage at a frying rate of about 120-150 per hour so at least two vats are needed. Each of the double containers are about 28 inches square and 2½ inches deep. Although it seems that the containers are completely separated by a partition actually a three millimeter space exists between the bottom of the oil vat and the partition so that a certain amount of oil circulates between the two vats.

“Although most vats are as pictured in Figure 57 some have slanting sides for easier insertion of the raw Aburaage and conservation of oil. To insure even frying on both sides of the Aburaage as well as to increase speed of frying one of the two vats used for frying the same Aburaage has a wire mesh rack that is constructed to fit inside the vat. Such mesh is hinged to the container at the rear so by suitable attached

wire or rope, the mesh can be easily controlled. A weight is put on the mesh so that the buoyancy of the frying Aburaage will not raise the mesh and defeat its purpose. In addition to the above equipment three hand utensils are used for frying Aburaage, one is a dipper (seen in foreground of Figure 57), for pouring oil over the Aburaage, another is a wire mesh spatula about 10 inches in diameter (see Figure 58) used to turn and individually press certain Aburaage, and the third is a long metal forceps for removing the Aburaage from the oil. Although equipment is supposedly cleaned everyday the oil in use is unusually dark although clean oil usually stored in a tank above the working area delivers large quantities of oil quite often.

"Given the above equipment Aburaage are fried in the following fashion. About 12 Aburaage are taken by hand four at a time from the trays shown in Figure 56 and inserted into the number one vat of oil. The oil in this vat has a temperature of around lOOºC. Immediately upon insertion the Aburaage sink to the bottom of the oil. Two and one half minutes later they rise to the surface and at that time another batch of Aburaage are inserted in the same vat but the latter do not interfere with the frying of the first batch because they sink. As soon as the first batch rises they are turned and selectively pressed with the wire mesh spatula and the dipper mentioned above is used to pour oil from vat number two at 180-21Oº C onto the uncooked side of the Aburaage. About five minutes after insertion the Aburaage are transferred to vat number two and pressed under the surface of the oil with the hinged wire mesh and weight. About three to four minutes later the golden brown Aburaage are removed with the metal forceps and placed on a slanting wire rack adjacent to the number two vat. The length of frying time varies with the temperature of oil that each maker might use so that generalizations cannot be made, however each maker attempts to produce the largest Aburaage possible given the size of raw Aburaage used. If frying is successful the Aburaage will first become very puffed and then collapse having then a skin-like surface. The void space may then be used after suitable cutting for holding rice, one of the most popular ways to prepare Aburaage. The 1.8 liters of oil that are absorbed into 100 Aburaage make the protein rich Aburaage very rich in oil also. One reason why the use of meal has been successful for Aburaage is that oil absent from raw Aburaage is replaced in great part by frying.

"After excess oil has dripped from the Aburaage on the wire tray, they are removed and placed on another wire tray and stored in a wooden rack until marketed. The form the 240 gram Aburaage takes is as shown in the center rear of Figure 59.

"Sushiage is made using exactly the same materials and procedures as Aburaage except that Sushiage is less than one half the size of Aburaage as can be seen when comparing both in Figure 59 and Figure 57 (Sushiage) with Figure 58 (Aburaage). Length of frying Sushiage has to be compensated so that total frying time is usually less than eight minutes.

"The Japanese people delight in consuming a slice of raw fish set upon a small ball of rice but since fish is expensive a quantity of rice packed inside a split Sushiage often acts as an inexpensive substitute.

"Atsuage (see right front, Figure 59) may best be described as being two different products although marketed as the same. Standard Tofu which cannot be sold on the day it is processed is on the next day cut into triangular pieces one inch thick with legs about two and one half or three inches long. This product when fried only in the hot oil vat for a short time is called Atsuage. Since it is small it can easily be used when a piece of Aburaage is too large for the required use. Demand for Atsuage is usually higher than what can be made from the varying quantity material remaining each day so Atsuage also has to be made from regular batches of Aburaage resulting in products of two different qualities but not distinguished as such. A little known fact is that Tofu makers make nearly as much profit on cutting old regular Tofu into four pieces, frying, and selling as Atsuage as they do on selling regular Tofu.

"Hirosu (also called Ganmodoki) is pictured in Figure 59 on the left front. It is composed of old regular Tofu, old Yakidofu (after the roasted surface is removed), the trimmings obtained when cutting Aburaage products, a shredded vegetable (usually carrots), ground yam, and sesame seeds. The first three materials are put into a cotton bag and pressed with a stone or the mechanical press if it is free so that a great portion of the water is removed.

"After removing the material from the press, the shredded carrots, ground yam, and sesame seeds (the sesame seeds may also be placed in the top of the material after formed) are mixed together by hand. Then the paste-like material is shaped into balls the size of one scoop of ice cream. In fact an ice cream scoop is sometimes used for shaping; otherwise it is done by hand. The balls are then put in the low temperature oil vat and allowed to remain submerged for a short while, then transferred to the high temperature oil (180-200ºC) and fried until golden brown. Hirosu is more often used by poor people than other Aburaage products but not limited to same.

"Okara, as mentioned before, is the residue of the various filterings [sic] of the raw Tonyu. It is usually sold to dairy farms for feed at $.01 (four yen) a kilogram. Figure 60 shows a farm owned truck with Okara from a number of Tofu shops located in the farm's milk market. Not all Okara is fed to cows however, as it is also a popular food for rabbits, and Tofu delivery people also carry it for selling as dog food. Although for cleaning purpose other commercial products have replaced Okara, it can be used as a floor and hand cleaner. A small amount is also sold for human food (see Figure 61) with very poor people accounting for most of the food use.

"Soybean milk: Although other places in Asia use soybean milk with large and small scale factories producing same for a milk deficient population, in Japan soybean milk is not significantly consumed, although one modern factory is producing a similar product, however initiation of production is too recent to tell if this product will be successful. The Tonyu of Tofu production would seemingly be marketed but it is not because of the availability of fresh milk. Such was not the case up to about 25 years ago when nearly every Tofu shop sold Tonyu for direct human consumption and even for enriching other food products such as bakery goods.

"The Tofu factory: Figure 62 shows the production area of a Tofu factory employing six persons and producing the following amount of Tofu per day:

"Products. Pieces
"Regular Tofu 560
"Yakidofu 150
"Aburaage 1,200
"Sushiage 2,700
"Atsuage 400

"This factory is much larger than average yet for the above Production only 140-200 kilograms of soybeans are used. It might be imagined that to employ six people, hand work is the rule rather than the exception" (Continued). Address: San Francisco, California.

2064. Davis, Adelle. 1965. Let's get well. New York, NY: Harcourt, Brace & World. 476 p. Index. 18 cm. [2402* ref]
• ***Summary:*** This book is about various common health problems and diseases and how they can be treated or cured by changes in diet. These include cholesterol problems, heart attacks, overweight, ulcers, diabetes, arthritis, infections, skin problems, digestive tract problems, allergies, liver damage, gall bladder problems, gout, kidney diseases, blood pressure, disorders of the nervous system, anemia, women's problems, bone problems, surgery, accidents, burns, what about sex?, eye problems, cancer, Last chapters: The two unvarying rules, planning your nutrition program, a fortress against disease, medical references.

Soy lecithin, soy flour, soy milk, and soy oil (source of linolenic acid and vitamin E) are widely discussed.

"Adelle Davis [Miss], one of the country's best-known nutritionists, studied at Purdue Univ., graduated from the Univ. of California at Berkeley, and took postgraduate work at Columbia Univ. and the Univ. of California at Los Angeles before receiving her Master of Science degree in biochemistry from the Univ. of Southern California Medical School." Note the large number of references in this book. Her other books were "Let's Cook It Right" and "Let's Have Healthy Children." Over 8,000,000 Adelle Davis books in print. Note: Adelle Davis died in 1975. Address: Los Angeles, California.

2065. LaBarge, Margaret Wade. 1965. A baronial household in the thirteenth century. London: Eyre & Spottiswoode. 235 p. See p. 98-99. Illus. Index. 22 cm. [50* + 250+ endnotes]
• ***Summary:*** This is the earliest known "private account of the day to day life of an English noble family. It is based mainly on the household of Eleanor de Montfort (sister of Henry III and Countess of Leicestershire) in the fateful year 1265" (from the Publisher; rear cover).

The book is mainly a description of daily life in the medieval household of an earl. The earls of England were a small group–scarcely a dozen were active at any one time in the 13th century. All were wealthy, and had political power and close ties to the king. The symbol of an earl's power was his castle, and in this book the main castle is Dover Castle. The household account ("household roll") on which this book is based, is a summary made by the steward of the household's daily expenses. "The earliest of these private household accounts, one which consists of seven months of the year 1265, is that of the countess of Leicester" (p. 13).

Pages 98-99: A 14th century cookery book (*Forme of Cury,* 14, 87) "suggests that rice should be used as a side dish with meat, or in a 'blank-manger' [blancmange] with chicken meat, milk of almonds and fried almonds.

The combination of almonds and rice is found frequently, "since almonds play an important part in many medieval recipes. They were relatively cheap, and another staple of Anglo-Spanish trade. Besides being used in cooking, they were often blanched and served as dessert with dried fruits. The amounts used were very large; Edward's royal household used 28,500 pounds of almonds in 1286, as compared with 6,600 pounds of rice. [1] The countess bought 280 pounds of almonds during the period of the roll, and 5 pounds cost only 1*s.* [2] Almonds seem to have had still another use, as a cosmetic. King Edward's ten-year-old daughter, Eleanor, was provided twice with almond and violet oil for her own special use" [3]. Address: England.

2066. Li, Shih-chen. comp. 1965. Pen-ts'ao kang-mu [Collected essentials of herbs and trees. Illustrated compendium of pharmacopoeia with commentaries]. Hong Kong: Commercial Press. [Chi]*
• ***Summary:*** This 1965 edition of the classical work incorporates the following works on plants by earlier authors, now largely unpreserved, which were cited extensively by Schafer (1977) in his chapter: Chen, Ch'üan. *Yao hsing pên ts'ao.*

Ch'en, Ts-ang-ch'i. *Pên ts'ao shih i.*
Hsiao, Ping. *Ssu sheng pên ts'ao.*
Li, Hsün. *Hai yao pên ts'ao.*
Meng, Shen. *Shih liao pên ts'ao.*
Su, Kung. *T'ang pên ts'ao chu.*
Sun, Ssu-mo. *Ch'ien chin shih chih.*

2067. Poey, S.H. 1965. Trial of soy milk on children

older than 5 months. *Paediatrica Indonesiana* 5:599-605. Supplement. [4 ref. Eng]
• ***Summary:*** Indonesia is not self-sufficient in cow's milk, so large quantities are imported for infant feeding and other needs. For growing infants, breast milk or cow's milk is indispensable. But all the space where dairy cattle might be pastured is already used for growing rice.

So the Indonesian government is taking other steps to supply the population needs of its people. "It is already know that the soybean is a good source of protein. Since soybean can easily be grown in Indonesia, and is very popular among the population," there great hopes that it can fill these protein needs. "But can soybean replace the cow's milk entirely? Can it also replace breastmilk as the food for infants as cow's milk can do?

"The government has founded a soybean [sic, powdered soymilk] factory in Jogjakarta. The product, called saridele, has been tested on animals...;" the results show that it has a high P.E.R. value, especially after adding rice flour.

The purpose of this study is to try the soybean flour prepared by the government factory as a 100% substitute for cow's milk or breastmilk on infants of 5 months or older. Trials were conducted on 35 babies, which were divided into 3 groups. A number of the infants refused the soy bean milk. A graph shows that the infants fed soy bean milk has the slowest weight increase of the three groups; they weighed on average about 1 kg less at the age of 12 months than the infants in the other two groups. Address: Dep. of Child Health, School of Medicine, Univ. of Indonesia, Jakarta.

2068. Photograph of Végélact ad from about the 1960s. 1965? France. Undated.
• ***Summary:*** Letter (e-mail) from Hervé Berbille of France. My last purchase is in the attached file. I do not have any idea of when it was distributed (it is not a publication and the laboratoires Boutroux do not exist any longer), but I suppose it was in the 1960s.

2069. Worthington Foods, Inc. 1965? A food plan for fitness (Leaflet). Worthington, Ohio. 2 p. Undated. Front and back. 28 cm.
• ***Summary:*** This glossy color leaflet contains a "Daily food guide for growth, energy, maintenance and resistance." It recommends a vegetarian diet containing: 4 or more servings daily of fruits and vegetables. 3 or more servings daily from the milk and cheese group (incl. Soyamel–A Powdered Soy Milk). 2 or more servings daily of protein foods (incl. many canned or frozen Worthington products). 4 or more servings daily of breads and cereals. Limited servings daily of "Plus foods" such as oils and fats, sweets, desserts, etc.

On the back panel is a description of the vitamins and minerals needed in a healthy diet. Color photos show: Prime, White-Chik, Big Pats, Soyameat, Chili, Choplets, Veja-Links, Entrée, Prosage. Address: 900 Proprietors Rd., Worthington, Ohio 43085.

2070. Hartman, Warren E. 1966. Vegetarian protein foods. *Food Technology* 20(1):39-40. Jan.
• ***Summary:*** "Early Worthington products bore the mark and influence of John Harvey Kellogg and the Seventh-Day Adventists. In 1866 the Adventists established the forerunner of the Battle Creek Sanitarium and the Battle Creek Food Company, in Michigan. Continuous experimentation with materials and methods to provide a wholesome palatable non-flesh diet led to the invention of breakfast cereals, peanut butter, cereal coffee substitutes, and decaffeinated coffee. It is not generally realized that these products, now a regular part of the diet of both meat-eaters and vegetarians, emanated from the vegetarian habits of the early Adventists."

"Until recently, the majority of the U.S. population was

totally unaware of the so-called vegetarian protein food products, and the food industry gave them little more than passing attention. Undoubtedly, the greatest contribution to the present technology and status of vegetarian protein foods was that of Robert A. Boyer and his method of processing edible protein, first by solubilizing and then utilizing textile spinning techniques to orient the molecules in continuous filaments. Convinced of a future for vegetarian protein foods, Worthington obtained a license in 1957 under the Boyer patent..."

"In 1960, Worthington acquired Battle Creek Food Company, pioneer of the vegetarian protein foods industry. And in line with its modernization and diversification policy, Worthington has recently acquired Nutrition International Corporation and its subsidiary, Madison Foods, Tennessee. Prime interest focused on 'Infa-soy,' Nutrition International's highly palatable hypoallergenic liquid soy formula for infants. Another important addition to the Worthington complex is the new Research and Development Center...

"The first textured soybean protein fiber product marketed in the U.S. is Worthington's frozen 'Fri-Chik,' an extruded formulation simulating a small fried portion of white chicken meat. This same formulation was next canned in a light gravy and called 'Soyameat–Fried Chicken Style,' and was also later marketed as frozen and canned 'White-Chik' in large rolls for slicing, dicing, etc. The approximate analysis of these simulated chicken products: protein 20-26%, fat 18-25%, and carbohydrate 2-3%."

Note: This is the earliest English-language document seen (Dec. 2004) that uses the term "soybean protein fiber" to refer to edible spun soy protein fiber. Address: Worthington Foods, Inc., Worthington, Ohio.

2071. Stoddard, Alan. 1966. The development of plantmilk. *British Vegetarian.* Jan/Feb. p. 34-38.
• ***Summary:*** The article begins: "In 1847 the Vegetarian Society was founded. In 1944 the Vegan movement was started. In 1956 the Plantmilk Society was inaugurated. These are the historical dates of progressive humanitarian ideas in this country."

A number of nutritious alternatives to cow's milk have been put on the market: Velactin, Wanderlac, Soyalac, and Almondlac. The latest product is called Plantmilk. It is sold as a liquid, concentrated to twice the recommended concentration. "The protein content of plantmilk is higher than human milk and about the same as cow's. It is derived from two sources–leaves and soya. The fat is derived from the soya bean and palm oil, the carbohydrate from cane sugar and soya, the minerals from leaves and soya. Calcium is added to bring the level near to human milk and vitamins A and D and B-12 are also added." Vitamin B-12 is added at the level of 0.5 microgram per 100 gm of Plantmilk.

About £20,000 has already been spent on the research, development and production of Plantmilk. "Further improvements will be made until a perfect food is evolved.

"Most of the research into the formulation of the milk has been in the extraction of protein from leaves, cabbage, cauliflower, pea pods, etc.," and the greatest difficulty has been to separate the chlorophyll–the green part of the leaf–from the protein. It has finally been accomplished with activated carbon.

"First of all the cleaned cabbage leaves are broken down by an apparatus called a 'food Tec' which has large numbers of sharp blades which divide the cabbage into minute pieces. Water is added to carry the product to the next stage which is that of the separation of the chlorophyll by charcoal from the protein. This gives an almost clear fluid which is then heated to precipitate the protein. The filtrate is then concentrated to form what is now called the 'curd.' This vegetable protein has most of the amino-acids contained therein, but as it is lacking in two essential ones–methionine and cystine, we now have to add soya protein necessary for maintaining life.

"Complete analysis of protein into its component amino-acids is a complex and costly procedure. We have as yet, not had a quantitative analysis of the amino-acid content of Plantmilk but we do know that the sources–viz., the combination of leaf protein and soya protein contain the complete range of known amino-acids, and we are satisfied that Plantmilk alone would sustain healthy life from the protein point of view."

"A small amount of starch comes from the soya protein 'isolate.'" The various ingredients are placed in a mixer and then de-aerated before being fed into a Fryma, which homogenizes them.

Unfortunately reconstituted Plantmilk costs twice as much as cow's milk. And even at this price, the company is operating at a loss. The author urges all vegetarians to buy and use the product. The company's first goal is to make and sell 5,000 cans of Plantmilk a week. By comparison, 50 million pints of cow's milk are consumed each day in Britain. However its present plant and machinery is capable of producing only 2,000 cans/week. So they need bigger machinery and more staff.

Note: This is the earliest English-language document seen (Aug. 2003) that contains the term "soya protein isolate" (or "soya protein isolates"). Address: Chairman, Plantmilk Ltd.

2072. Fries, Joseph H. 1966. Experiences with allergy to soybean in the United States. *J. of Asthma Research* 3(3):209-11. March. Presented at the First International Symposium on Pediatric Allergy. Held 5-6 Nov. at Tokyo, Japan. [10 ref]
• ***Summary:*** The soybean occasionally proves to be highly allergenic in older children and adults. The author studied "30 allergic children of the atopic type all known to suffer from respiratory allergies such as asthma or allergic rhinitis. All either gave significantly positive reactions to

intracutaneous testing with soybean extract, or had been maintained for various periods of time during infancy on a soybean derived milk. Twenty-seven of the 30 children also gave positive intracutaneous reactions to one or more other legumes, suggesting the likelihood of cross sensitivity to these botanically related foods. Only 3 of the 15 children who had been fed soy milk in infancy failed to give a positive cutaneous test to that food, and even these gave positive tests to other legumes... In early infancy it would seem that the target area of allergic sensitivity to soybean is the gastrointestinal tract, and symptoms of diarrhea, abdominal distress, vomiting and the like were observed." Address: 52 Eighth Ave., Brooklyn, New York 11217.

2073. Johnstone, Douglas E.; Dutton, Arthur M. 1966. Dietary prophylaxis of allergic disease in children. *New England J. of Medicine* 274(13):715-19. March. [7 ref]
• ***Summary:*** The authors tried to decide whether feeding of soy-based formulas will actually suppress the incidence of allergy in infants known to be at risk. They followed 240 children until they were 10 years of age. One group was fed evaporated milk and the other a soybean formula. A difference was found between the two groups in the incidence of asthma and perennial rhinitis, 22.3% for the soybean and 42% for the milk. There was no difference in the incidence of hay fever. Address: Univ. of Rochester School of Medicine and Dentistry, Rochester, New York.

2074. James, Isabel. 1966. The use of whole foods. *British Vegetarian.* March/April. p. 141-48.
• ***Summary:*** This is the revised text of a lecture given by the author at the 18th International Vegetarian Union Congress at Swanwick in 1965. After defining whole foods she discusses vegetarian protein foods, including nuts, pulses, and yeast. Under Pulses, the main variety discussed is the soya bean. "This is truly a Wonder Bean!" It can be used to make flour, milk, curds and cheese [tofu], and soy sauce. Or the beans themselves can be soaked and cooked for a long time. "The by-products of the bean are also valuable for pasturage, dry fodder and silage. It seems a pity that such a valuable food should also be used for the production of soap, paint and high explosives!" Address: B.A.

2075. Thurston, Claude E. 1966. *Today's Food* passes 10th birthday. *Today's Food* (*Loma Linda Foods, Riverside, California*) 11(1):3. Spring.
• ***Summary:*** "As this *Today's Food* goes to press we are beginning our eleventh year of publication. Begun as a two-color paper in the spring of 1956, with a circulation of only a few thousand–mostly in California–*Today's Food* is now printed in full color and is circulated from coast to coast to every member of the Seventh-day Adventist church who wishes to receive it. Many thousands of non-Adventists have also requested that their names be placed on our subscription list because they are interested in our vegetarian program."

The Associate Editor, Dorothea Van Gundy Jones is "daughter of the late T.A. Van Gundy, pioneer developer of vegetarian protein loaves and soy milk... Upon completion of her Bachelor of Science Degree at the CME [College of Medical Evangelists] School of Dietetics, she served as a dietetic counselor to a Beverly Hills physician for a number of years before accepting a call to La Sierra College as Director of Food Service. For the past eleven years (during which she became Mrs. Edwin Jones) our nutritionist has traveled widely both in this country and abroad while conducting cooking classes, lecturing before civic groups, camp meetings, and professional organizations of physicians and dentists. Mrs. Jones has also made numerous TV appearances from coast to coast."

Photos show nice portraits of Editor F.W. Edwardy and Associate Editor Dorothea Jones. Address: PhD, Director, Research Lab., Loma Linda Foods.

2076. *Today's Food* (*Loma Linda Foods, Riverside, California*). 1966. Celebrating our 60th anniversary [Loma Linda Foods]. 11(1):5 (back cover). Spring.
• ***Summary:*** Loma Linda Foods has been guided by the wise counsel of Ellen G. White, who began discussing healthful nutrition in 1863. "Actually, the nutrition work of Seventh-day Adventists, who own and operate Loma Linda Foods, began 100 years ago at Battle Creek Michigan... But the denominational affiliation with the old Battle Creek San breakfast foods ended in 1903 and it was not until 1906 that it was reactivated at the Loma Linda Sanitarium in California. Here stoneground wheat bread and healthful cookies and fruit crackers were made in the sanitarium bakery, and in 1907 demand for the products from residents of the growing community forced the construction of a separate building. Here in a combination bakery and store, the business thrived for 30 years.

"Now known as Loma Linda Foods, the new factory continued making fine bread and cookies but added high protein products perfected to take the place of meat in vegetarian menus; whole grain breakfast foods; Breakfast Cup cereal drink [coffee substitute]; and about 1930, began making the first soy milk.

"Demand for Loma Linda Foods quickly outgrew the small delivery truck service developed within a 125 mile area, and when land for a new plant was offered by what was then La Sierra Junior College, ten miles west of Riverside, the move was made.

"Our present plant and Western Division general offices opened in 1938, and in 1951 the Eastern Division headquarters opened in Mount Vernon, Ohio. Developed for 25 years under the leadership of George T. Chapman from Australia, and now managed by Charles P. Miles, Loma Linda Foods is one of 30 food factories owned and operated by Seventh-day Adventists in Australia, New Zealand, South

America, England, France, Denmark, Germany, Switzerland, Africa and Japan.

"Some 300 workers, plus nearly 100 salesmen, are dedicated to the production and distribution of more than three dozen tasty products bearing the Loma Linda Foods label..."

Color photos show: The general offices and main Loma Linda Foods plant at Riverside. Sales representatives and management personnel of the Western Division of Loma Linda Foods.

2077. *Today's Food* (*Loma Linda Foods, Riverside, California*). 1966. None of these healthy youngsters was reared on milk. 11(1):1-3. Spring.
• ***Summary:*** Photos show many healthy infants and children. Commercial soymilk products include:

Soyagen: all-purpose, malt flavored, or carob flavored; in liquid or powdered form.

"Multigen: This new soy milk just now being placed on the market, is specially formulated to supply a total diet for those on a restricted menu. It supplies a higher fat and carbohydrate content and all the nutrition needed for those on a liquid dietary.

High-So-Pro: a high-protein powdered soymilk, low in fat, salt, and carbohydrates that is especially good for those on weight-reducing programs and ideal for diabetics.

"Instagen: an isolated protein soy milk, fortified to provide the essential vitamins and minerals. Instagen has a little lighter color, a little milder flavor, and is a little lower in price.

Whether or not you have dietary problems, if you wish to lower your cholesterol level, or would like to become a complete vegetarian, Loma Linda soy milks provide the easy answer.

"As to those who in years past complained of a 'beany' flavor in soy milk: try it once more–today's product is vastly improved! And for the diehard who still demands a completely different taste, the new Carob Soyagen with its rich chocolate-like flavor comes not only ready to drink, but may be used in any number of tasty recipes for puddings, ice cream, and other dishes."

2078. Vest, M.; Olafson, A.; Schenker, P. 1966. Eine neue Sojamilch als Nahrung fuer Fruehgeborene und reife Saeuglinge Vergleich mit Frauenmilch und adaptierter Kuhmilch [A new type of soymilk for feeding premature or full-term infants compared with mother's milk and modified cow's milk formula]. *Schweizerische Medizinische Wochenschrift* (*Journal Suisse de Medecine*) 96(23):762-68. June. [18 ref. Ger; fre; eng]
• ***Summary:*** The product examined is Bébénago made by Firma Nago, of Olten, Switzerland. "A vegetable infant milk made from soybeans by a new process in which the lipids are separated by centrifugation and kept suspended by the natural emulgators has been compared with breast milk and an adapted cow's milk (albumin milk). Each of the three groups comprised some 25 prematures and 10 full term infants, mainly aged between 1 and 3 months. Some infants, however, were observed for longer periods of up to 1 year. The following criteria were used to assess the results: gain in weight and length, total serum protein, amino-nitrogen, calcium, phosphorus, alkaline phosphatase, iron, optical density (as a measure of lipid content), hemoglobin, red cell, and reticulocyte count. Excretion of fat, fatty acids, and starch in the feces and the pH of the stools were estimated semiquantitatively. Under the conditions of the study the soybean preparation (Bébénago) was found to be equivalent to the other milk preparations tested." Address: From the University Children's Clinic Universitaetskinderklinik, Basel.

2079. *Time.* 1966. Commotion in the bean pit. 88:77-78. July 8.
• ***Summary:*** The soybean is now "the hottest item in the seething U.S. commodities market. Last week futures for soybeans, soybean oil and soybean meal set seasonal records after a month of wild trading." Prices tripled during the month.

"Introduced to the U.S. from Asia in 1804, the soybean did not become a significant agricultural product until World War II cut off normal U.S. imports of fats and oil. From a crop of 193 million bu. in 1945, output rose to 843.7 million bu., worth nearly $2.5 billion last fall. Soybeans are the U.S.'s most valuable agricultural export, ranking ahead of wheat and corn...

"Worthington Foods Inc. takes edible soybean fiber produced by Ralston Purina, turns it into meatless frankfurters, roast beef and fried chicken, sells them to Seventh-day Adventists and vegetarians. Archer-Daniels-Midland Co. is testing a soy beverage to be sold in powder form, and Central Soya has developed an ice cream-like frozen dessert made of soybeans.

"What interests researchers the most about the soybean is its high protein content (up to 50%), and this month Central Soya will begin mass production of Promine, an isolated soybean protein, at a new Chicago plant. Promine binds and emulsifies pulverized meats, such as sausages, meat loaf and bologna."

2080. Assigned to Nago Nahrmittel, A.G. 1966. Improvements in and relating to the production of an extract of soy milk. *British Patent* 1,036,057. July 13. 2 p. *
• ***Summary:*** A soy milk extract is prepared by steeping soy beans in water, wet grinding the soaked beans in the presence of an excess of water, heating the resultant mixture of ground material to above 120 C. to destroy trypsin inhibitor and subsequently cooling in vacuo to between 40 and 60 C. to deodorize the aqueous mixture, and after

physically separating the aqueous mixture into solid matter and an emulsion the latter is sterilized and concentrated. The steeping and/or the wet grinding of the soy beans may be effected in the presence of calcium hydroxide. Sterilization is effected by heating the emulsion to about 150 C. prior to concentration in a vacuum evaporator. The concentrate may be freeze dried, spray dried or dried in vacuo, in the latter two cases with the addition of 5-15% of carbohydrates prior to sterilization. Address: Olten, Switzerland.

2081. *Business Week.* 1966. Soybeans move up on the menu. July 23. p. 82, 84, 87.
• ***Summary:*** "General Mills, under its Betty Crocker Red Spoon trademark (A.D. Odell in charge), is test marketing the first of a series of projected foods spun out of a protein isolated from soy. Called Bac*Os, it is designed as a condiment and looks and tastes like lean, crumbled, cooked bacon. Priced at $0.69 for 3.25 ounces, the jar is equal to 1 lb of cooked bacon." Corn Products' (CPC) Best Foods Div. is marketing Skippy peanut butter containing the product. "Thomas J. Lipton, Inc., a Unilever subsidiary, recently launched four dried gourmet main dish meals including beef stroganoff and chicken la scala. Lipton has patented a process to use isolated soy protein (ISP) as a binder for dried meats... Ralston Purina has developed a series of spun soy protein foods resembling ham, chicken, and turkey out of ISP. It is selling its spun ISP base, Edi-Pro, to Worthington Foods Inc. Worthington has developed its own line of chicken and ham-like products for sale to religious groups.

"Central Soya makes an isolated soy protein binder called Promine, which goes into sausage and other processed meats. Sales of the binder at $0.35/lb–twice the cost of the binder it is replacing–are so promising that production will be doubled to 2.5 million lb monthly when a new plant opens in Chicago next month... In addition the company this fall hopes to start exporting a frozen soy dessert to tropical countries with no dairy industries." General Mills, Ralston, ADM, Central Soya, and Worthington combined spend some $4 million annually on research. Half of this sum is going into basic research and half into product development. ADM recently shipped 3 million lb of a new protein rich soy beverage to Latin America and the East Asia under a USDA program.

2082. *British Vegetarian.* 1966. Science Council of the International Vegetarian Union: SCIVU Abstract Service. July/Aug. p. 325-27. [9 ref]
• ***Summary:*** The Science Council has started an international service to collect and summarize scientific information about vegetarian nutrition from journals published around the world. The information is recorded in abstracts. Nine examples follow; three of them are about soya bean milk.

2083. Kirchner-Dean, Otto. comp. 1966. Soybean processing and utilization: A selected list of references, 1955-1965. *USDA Library List* No. 83. iv + 183 p. Aug. Author index. Subject index. 28 cm. [2218 ref]
• ***Summary:*** Contents: Part I: Processing. Meal. Oil. Beans. Part II: Utilization. Meal in feed. Oil in feed. Beans in feed. Meal in food. Oil in food (General, margarine). Beans in food (general, flour, milk, soy sauce). Meal for industrial uses (general, coatings). Oil for industrial uses (general, coatings, drying oils, paints, resins, soaps). Beans for industrial uses. Part III: Chemistry and research. Amino acids, bibliography, biochemistry, chromatography, composition, enzymes, fatty acids, lecithin, lipides, lipoxidase, organic chemistry, pesticide residues, phosphatides, proteins, research, sterols. Part IV: Miscellaneous. Argentina, Australia, Brazil, California, Canada, China, Congo, cook books, Far East, government loans, India, industry, international trade, Japan, laws and legislation, markets and marketing, nutrition, pesticide residues, varieties.

"All citations except those to patents have been examined and verified by the compiler. Patents cited were obtained from Chemical Abstracts. All foreign language titles have been translated into English with the original language indicated. [Warning: Many patent titles listed in this are different from those appearing on the actual patent.]

"Sources consulted: Agricultural Index, Bibliographic Index, Bibliography of Agriculture, Biological and Agricultural Index, Card Catalog of the National Agricultural Library, Chemical Abstracts, Dissertation Abstracts, Engineering Index, Food Science Abstracts, Journal of the Science of Food and Agriculture, Nutrition Reviews, and Pesticides Documentation Bulletin." Address: National Agricultural Library, Div. of Reference, Special Bibliographies Section.

2084. *Prevention* (*Emmaus, Pennsylvania*). 1966. Milk intolerance is widespread: Switzerland is learning how harmful dairy foods can be. Aug. p. 122-23. [1 ref]
• ***Summary:*** Summary of an article in *Medical News* (9 Oct. 1964) about the work of Dr. Haemmerli of Kantonspital, Zurich, Switzerland. Many adults who lack the intestinal enzyme lactase experience diarrhea, abdominal discomfort, and flatulence when they consume milk or dairy products. Address: Emmaus, Pennsylvania.

2085. Bayless, Theodore M.; Rosensweig, Norton S. 1966. A racial difference in incidence of lactase deficiency: A survey of milk intolerance and lactase deficiency in healthy adult males. *J. of the American Medical Association* 197(12):138-42. Sept. 19. [21 ref]
Address: Dep. of Medicine, Johns Hopkins Univ. School of Medicine, Baltimore, Maryland.

2086. *British Vegetarian.* 1966. Plantmilk news. Sept/Oct. p.

444.
• ***Summary:*** "The availability of 'Plamil' and other products made by Plantmilk Ltd. is now improved by the recent extension of our distribution service... From 1st October supplies of our lines will be available to Health Food Stores anywhere in England, Scotland, Wales and Northern Ireland."

Note. This is the earliest English-language document seen (Aug. 2013) that contains the term "Plamil." Address: England.

2087. Chandrasekhara, M.R.; Shurpalekar, S.R.; Subba Rau, B.H.; Kurien, S.; Shurpalekar, K.S. 1966. Development of infant foods based on soyabean. *J. of Food Science and Technology* (*Mysore, India*) 3(2):94-97. Oct. [6 ref]
• ***Summary:*** Discusses a process for the preparation of a spray-dried infant food based on soya dhal, skim milk powder and barley malt. The PER of the product is 2.7 as compared with 3.0 for skim milk. Addition of Dl-methionine to the product at the level of 1.1 gm per 16 gm nitrogen raises the PER to 3.0. Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

2088. Dutra de Oliveira, J.E.; Scatena, Luiz; Oliveira Netto, D. de; Duarte, Geraldo G. 1966. The nutritive value of soya milk and cow's milk in malnourished children: A comparative study. *J. of Pediatrics* 69(4):670-75. Oct. [11 ref]
• ***Summary:*** "Twenty-four malnourished children, 1 to 3 years of age, were fed soya milk or cow's milk with similar protein content." Soya milk compared favorably with nonfat cow's milk in the initial treatment of these children, and the results can be considered excellent. "These studies indicate that soya milk is a good source of protein for the correction and prevention of infantile malnutrition." Address: Faculdade de Medicina, Ribeirao Preto, Sao Paulo, Brazil.

2089. **Product Name:** Plamil Fudge.
Manufacturer's Name: Plantmilk Ltd. (Renamed Plamil Foods Ltd. in 1972).
Manufacturer's Address: Tithe Farm, High St., Langley, Slough, Buckinghamshire, England.
Date of Introduction: 1966. October.
Ingredients: Incl. Plamil plantmilk (made with soya protein isolate), chocolate, sweetener.
Wt/Vol., Packaging, Price: Half-pound block, ready cut for ease of breaking, film wrapped.
New Product–Documentation: *The British Vegetarian.* 1966. Sept/Oct. p. 444. "Plantmilk News." "Jack McClelland, the well-known swimming champion, has been acting as dietetic advisor to a number of athletes who are competing in the Commonwealth Games in Jamaica; and priority of place has been given to Plamil Fudge. It provides the easily assimilated energy needed by those undertaking long endurance races. Plamil Fudge has therefore become an integral part of the 'equipment' taken to Jamaica."

The British Vegetarian. 1967. Sept/Oct. p. 456. "Plamil Fudge Goes Mountaineering." "The Midlands Hindukush Himalayan Expedition (1967), now in the Himalayas, has taken a supply of Plamil Fudge as part of its food supplies... All Plamil Products (Plamil Plantmilk, Chocolate and Fudge)" contain no animal products.

The British Vegetarian. 1969. Sept/Oct. p. 463. "Plamil Fudge" is now available in a 2-color carton with an inner wrapping of white waxed paper. Each half-pound block, as before, is ready cut for easy breaking.

2090. **Product Name:** Plamil Chocolate.
Manufacturer's Name: Plantmilk Ltd. (Renamed Plamil Foods Ltd. in 1972).
Manufacturer's Address: Tithe Farm, High St., Langley, Slough, Buckinghamshire, England.
Date of Introduction: 1966. October.
Ingredients: Incl. soya protein isolate.
New Product–Documentation: *The British Vegetarian.* 1967. Sept/Oct. p. 456. "Plamil Fudge Goes Mountaineering." "All Plamil Products (Plamil Plantmilk, Chocolate and Fudge)" contain no animal products.

Ad in *The British Vegetarian.* 1969. May/June. p. 219. "The vegetarian chocolate is Plamil Chocolate." It is made by Plantmilk Ltd., Tithe Farm, High Street, Langley, Slough, Bucks. [Buckinghamshire], England. "This chocolate is also intriguingly different, and has just the kind of velvet-smooth taste that just asks for more... and more..."

2091. Swaminathan, M. 1966. The use of soyabean and its products in feeding infants and in the prevention of protein malnutrition in weaned infants and pre-school children in developing countries. *Indian J. of Nutrition and Dietetics* 3(4):138-50. Oct. [63 ref]
• ***Summary:*** Contents: Introduction. Chemical composition: Carbohydrates, fat, minerals, vitamins, proteins. Factors affecting the nutritive value of soya proteins: Trypsin and growth inhibitors, heat processing, other factors. Nutritive value of soya proteins (with or without methionine supplementation): Experiments with animals, experiments with human beings, supplementary value to other food proteins. Processed foods from soyabean for feeding infants and preschool children: Milk substitutes and infant foods, processed protein foods based on soya (soya flour, Multipurpose Food or MPF, soup powder). Foods based on soyabean and other oilseed meals: Precooked roller dried foods, extrusion-cooked full-fat soybean flour. Other soya products (soy protein isolate, tofu, natto, miso, tempeh, soy sauce). Conclusion. Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

2092. Miles, Charles P. Assignor to Pacific Union

Association of Seventh Day Adventists, doing business as Loma Linda, Foods (Riverside, California; a corporation of California). 1966. Process of producing milk from soy beans. *U.S. Patent* 3,288,614. Nov. 29. 3 p. Application filed 2 Nov. 1964. [2 ref]
• ***Summary:*** Miles was manager of the Loma Linda plant at Mt. Vernon, Ohio at the time. The process involves cracking, dehulling, flaking, blending with water (hot or cold), pressure cooking, homogenization, centrifugation, and formulation. Address: Riverside, California.

2093. Worthington Foods, Inc. 1966. Dealer wholesale price list–order blank. Worthington, Ohio 43085. 1 p. Dec. 1. 36 cm.
• ***Summary:*** New products in the Worthington Foods line include: Soyameat [or Soya-Meat] (Fried chicken, sliced chicken, diced chicken, sliced beef, diced beef, Salisbury steak). Bakon Yeast.

Worthington now owns the Madison Foods line of products including: Cheze-O-Soy, Dinner Morsels. Madison Burger, Not Meat (Regular or tomato). Nu-steaks. Yum. Zoy burger. Kreme-O-Soy. Infasoy.

Worthington now has warehouses in Battle Creek, Michigan; Dallas, Texas; Denver, Colorado; Los Angeles, California; Madison, Tennessee; South Lancaster, Massachusetts; Oakland, California (actually San Leandro); Portland, Oregon; Washington, DC. Address: Worthington, Ohio. Phone: 614-885-9511.

2094. **Product Name:** Isomil (Non-Dairy Infant Formula Based on Isolated Soy Protein) [Ready to Feed, Concentrated Liquid, or Powder].
Manufacturer's Name: Abbott Laboratories (Ross).
Manufacturer's Address: 625 Cleveland Ave., Columbus, OH 43216.
Date of Introduction: 1966.
Ingredients: Incl. soy protein isolate and water.
New Product–Documentation: Fomon. 1967. Infant Nutrition. Page 230 states that Isomil contains a "soy isolate fortified with methionine." Dean. 1973. Medical Journal of Australia. 1(26):1289-93. June 30; Thomson. 1979. *Journal of the American Oil Chemists' Society.* March. p. 386-88. The second isolate-based infant formula after Mead Johnson's Prosobee.

Italian-language Label for powdered Similac Isomil. 1985. Ingredients include corn syrup solids, saccharose, soy protein isolate (*proteine di soja isolate*), corn oil and coconut oil, mineral salts (calcium phosphate, calcium carbonate, potassium citrate, potassium chloride, magnesium chloride, sodium chloride, ferrous sulfate, zinc sulfate, cupric sulfate, potassium iodide,...), methionine,...

Sold at Bill's Drugs in Lafayette, California. 1989. Sept. 7. One quart ready to feed retails for $2.95.

2095. **Product Name:** Dairene: Imitation Vitamin D Milk (Powdered).
Manufacturer's Name: Dairene.
Manufacturer's Address: Miami, Florida. Phone: 305-534-5630.
Date of Introduction: 1966.
New Product–Documentation: Dairy Record. 1973. 74:23. "Soybean 'milk' producer gets underway in Florida." The soybean milk powder called Pureblend is manufactured from 35 ingredients in Newark, New Jersey. Talk with Eddie Goldstein. 1989. Feb. 27. This product (Dairene) was launched in 1966 in Miami. The stabilizer in Dairene was called Pureblend. Dairene's address is now 801 41st St. (Arthur Godfrey Rd.) #210, Miami Beach, FL 33140. Phone 305-534-5630.

2096. **Product Name:** Dairene TAC (Top-a-Cake), Dairene Sour Cream, and Dairene Coffee Cream.
Manufacturer's Name: Dairene.
Manufacturer's Address: Miami, Florida.
Date of Introduction: 1966.
New Product–Documentation: Talk with Eddie Goldstein. 1989. Feb. 27. These products were launched in 1966 in Miami, sold only to institutions. The sour cream was widely used for years by Howard Johnsons on their cheesecakes. The coffee cream sold for $0.32/quart vs. $0.80 for the dairy-based product.

2097. **Product Name:** Pure Soya Powder (for Making Soy Milk).
Manufacturer's Name: El Molino Mills.
Manufacturer's Address: 3060 W. Valley Blvd., Alhambra, CA 91803.
Date of Introduction: 1966.
New Product–Documentation: Soybean Blue Book. 1966. p. 110. *Soybean Digest.* 1969. Nov. "El Molino offers a number of soy foods including breakfast foods, soy milk, vegetable soybeans, soy sprouts, and soy flour and soy flour mixes." It is not clear whether this product is soy flour or powdered soy milk. June Ranill. 1976. The El Molino Cookbook. p. 88. This product was sold in 1976 but was apparently discontinued by 1980.

Soybean Digest Blue Book. 1977. p. 33. Address is now 345 N. Baldwin Park Blvd., City of Industry, California 91746. Soya Bluebook. 1980. p. 50. Company is now a Division of ACG Co.

2098. Han, P.J.; Choi, K.S.; Yoon, I.W. 1966. Soybean oil extraction methods and processing of bean milk and bean curd. *Nongsa Sihom Yon'gu Pogo* 9(1):247-59. *

2099. Hartman, Warren E. 1966. Research and development in synthetic foods. *New York State Association of Milk and Food Sanitarians, Annual Report* [19 ref]

• ***Summary:*** "Research and development in synthetic foods is no longer a skeptical venture. Today it is fast becoming an alarming necessity! Two most basic and major problems face the world today (1) The world population explosion accompanied by (2) The skyrocketing need for food. Synthetic foods are already a part of big business."

"Worthington Foods has been in the vegetarian protein food business for some 25 years. Primarily, the business was concerned with supplying such foods to consumers who had medical, philosophical, or religious reasons for wanting them. Early products were based on wheat proteins or 'gluten.' Worthington had accumulated considerable flavoring 'know-how' by the time soy products such as flakes, toasted grits and isolated protein became available. One of the first Worthington products based on soy protein was a powdered milk-like product, Soyamel, which was designed primarily as a hypoallergenic formula for infants and children who were allergic to milk... Perhaps one of the first companies to explore the protein spinning technique developed by Robert Boyer (U.S. Pat. # 2,682,466) was Worthington Foods. For the past ten years Worthington has pioneered in the field of vegetarian protein foods; seeking suitable protein isolates for spinning, developing spinning technology, formulating and adapting these spun protein fibers to acceptable consumer end-products."

"The present technology of spinning as practiced by Worthington Foods, uses as a raw material relatively pure soy protein isolate as obtained from Ralston Purina, Central Soya or other suppliers of protein isolates."

A photo shows Hartman, who has been with Worthington Foods since 1947. "His academic training was acquired at Andrews University, Berrien Springs, Michigan; University of Michigan, Ann Arbor; and at Massachusetts Institute of Technology. Dr. Hartman was employed as a biochemist- bacteriologist for four years by the Michigan State Department of Health Laboratories in Lansing, Michigan, and was a consultant-instructor for a year for the U.S. Public Health Service." Address: Director of Research and Development, Worthington Foods, Inc., Worthington, Ohio.

2100. **Product Name:** Loma Linda Hi-So-Pro (Powdered Soymilk for Diabetics. Low in Fat and Salt and Carbohydrates).
Manufacturer's Name: Loma Linda Foods.
Manufacturer's Address: 11503 Pierce St., Riverside, CA 92505.
Date of Introduction: 1966.
Wt/Vol., Packaging, Price: 12 oz. can.
New Product–Documentation: Today's Food. 1966. Wholesale price list. 1968. Sold in 12 oz. cans for $1.42 retail.

2101. **Product Name:** Loma Linda Instagen (Based on Isolated Soy Protein) [Fortified Concentrated Liquid].
Manufacturer's Name: Loma Linda Foods.
Manufacturer's Address: 11503 Pierce St., Riverside, CA 92505.
Date of Introduction: 1966.
Wt/Vol., Packaging, Price: 16 oz. can.
New Product–Documentation: Today's Food. 1966. Apparently not an infant formula; Wholesale price list. 1968. Instagen All Purpose Fortified. Sold in 16 oz. cans for $1.05 retail. Shurtleff & Aoyagi. 1984. Soymilk Industry and Market. p. 28. Later renamed "i-Soyalac."

2102. **Product Name:** Loma Linda Multigen (Soymilk).
Manufacturer's Name: Loma Linda Foods.
Manufacturer's Address: 11503 Pierce St., Riverside, CA 92505.
Date of Introduction: 1966.
Wt/Vol., Packaging, Price: 16 oz. can.
New Product–Documentation: Today's Food. 1966. "This new soymilk is specially formulated to supply a total diet for those on a restricted menu. It supplies a higher fat and carbohydrate content and all the nutrition needed for those on a liquid dietary." Wholesale price list. 1968. Sold in 16 oz. cans for $1.51 retail.

2103. Mattick, Leonard R.; Wilkens, W.F.; Hand, D.B. 1966. Precursors of volatile off-flavor in soy milk. [Cornell University]. Multilith report. *

2104. **Product Name:** Soyamel Banana Beverage (Soymilk).
Manufacturer's Name: Worthington Foods, Inc.
Manufacturer's Address: 900 Proprietors Rd., Worthington, OH 43085. Phone: 614-885-9511.
Date of Introduction: 1966.
New Product–Documentation: Wholesale price list. 1966. Dec. 1.

2105. Burkill, I.H. 1966. Dictionary of the economic products of the Malay Peninsula, 2nd ed. 2 vols. Kuala Lumpur, Malaysia: Ministry of Agriculture and Co-operatives. xiv + 2444 p. See vol. 1 (A-H), p. 1098-1103. Index. 24 cm. [11 ref]
• ***Summary:*** Information on the soy bean (*Glycine max*) is found under Glycine. Contents: Origin. Man has selected the more tropical races and is still selecting. Search for a race suitable for Malaya. Java, long ago, found one suitable for the drier parts of the island. Secondary uses as fodder, a cover crop, and green manure. High food-value of the seed. The seed, ripe or nearly ripe, as food. Its special use in diabetes. Artificial milk. Vegetable casein [for industrial uses]. substitute for coffee. Seedlings [sprouts] eaten. Sauces, &c., from the bean. Témpé made in Malaysia with the aid of a fungus. Teou-fu [tofu] prepared by the Chinese. Tao-

cho prepared [in Java] with the aid of fungus. Sho-yu or soy kechap. Miso, a Japanese preparation. The making of soy kechap in Java. Organisms in fermentation. Oil [soy-bean oil, or kachang oil]. Criminal use (hairs on the pods cause irritation within the digestive tract). Fibre (in the stem). Joss sticks (Ash of the stem is said to be used in joss-sticks in Indo-China). The soybean is frequently cultivated in Burma and Siam.

A photo (frontispiece) facing the title page shows Isaac Henry Burkill (1870-1965). This second edition is only slightly different from the original 1935 edition of which 2,000 copies were sold. This edition was published on behalf of the governments of Malaysia and Singapore by the Ministry of Agriculture and Cooperatives, Kuala Lumpur, Malaysia. Address: Director of Gardens, Straits Settlements (Singapore; 1912-1925).

2106. Dresner, Samuel H.; Siegel, Seymour. 1966. The Jewish dietary laws: Their meaning for our time. New York, NY: Burning Bush Press. 77 p. 20 cm. *
• ***Summary:*** Includes a guide to observance, by Seymour Siegel.

2107. Gould, Robert F. ed. 1966. World protein resources. *Advances in Chemistry Series* No. 57. xv + 285 p. (American Chemical Society, Washington, DC). [200* ref]
• ***Summary:*** Contains 20 papers from a symposium sponsored by the Division of Agricultural and Food Chemistry at the 150th meeting of the American Chemical Society, Atlantic City, New Jersey. Held 13-15 Sept. 1965. Aaron M. Altschul, Symposium Chairman. The papers are divided into the following groups: Outlook (6 papers), seed protein products (5), protein quality factors (4), and future developments (5). Contains a memorial tribute to Maurice Pate (1894-1965).

The Preface begins: "In the totality of the problem of overcoming the world food shortage, providing sufficient protein occupies a special place, first because it affects primarily children–not only as children in terms of their survival, but also in terms of their growth and development. Evidence is accumulating that protein deficiency during the preschool years could result in retarded mental and physical development. This problem also occupies a special place because it is becoming clear that to produce the amounts of protein concentrate needed, it will not be enough to extend the present 'classical' methods of producing animal protein; there will be the need to develop and exploit other sources of protein concentrate ranging from fish and oilseeds to petroleum." Address: American Chemical Society, Washington, DC.

2108. Heer, Jean. 1966. World events 1866-1966: The first hundred years of Nestlé. Vevey, Switzerland: Nestlé. 326 p. Illust. 27 cm. [45* ref]
• ***Summary:*** This is an English-language translation of *Reflets du Monde 1866-1966: Présence de Nestlé*, which was also published in German, Italian, and Spanish. It is a good overview of a century of world history, with emphasis on Europe, food, and politics. Enriched with many color photos, it unfortunately has no index.

Nestlé was founded in 1866 making infant milk foods. Initially it consisted of two separate businesses, 120 miles apart, at Cham and Vevey, Switzerland. They were rivals until 1905, when they merged to form the Nestlé and Anglo-Swiss Condensed Milk Company. Now Nestlé makes milk, cocoa, and coffee. In the war of 1870 [Franco-Prussian War], France was defeated by Germany. In 1947 Nestlé acquired Maggi in Kempttal; Maggi has archives. In 1960 Nestlé acquired the share capital of Crosse & Blackwell worldwide, selling canned soups, pickles, canned peas, beans and fish. This move increased Nestlé's manufacturing capacity by the addition of 11 factories, six of which were in Great Britain (including two at Dundee in Scotland). Crosse & Blackwell traces its origins back to 1706, but it got its present name in 1830 when two friends and employees, Edmund Crosse and Thomas Blackwell, bought out a firm that preserved foods for victualling long-distance vessels. In 1892 it became a limited company. After World War I they bought out two companies; one was E. Lazenby & Son Ltd., which had started in the kitchen of a middle-class housewife, Elizabeth Lazenby, wife of a London grocer, who prepared a sauce [Harvey's Sauce] which acquired a great reputation as a seasoning for meat dishes. Manufacture commercially was started in 1776, and remained a family business until taken over by Crosse & Blackwell in 1919. Address: Nestlé.

2109. Mascheville, Maria L.C. 1966. Coma bem e viva com saúde: Orientacao pratica sobre alimentos sadios, vegetarianos e iogues, receitas para cozinhar, indicacoes para criancas, doentes e sobre jejum e desintoxicacoes [How to live well and healthfully: Practical orientation to healthful, vegetarian and yogic food, with recipes for cooking, instructions for children and sick people, and on fasting and detoxification]. Sao Paulo, Brazil: Sociedade Beneficente S. Camilo, Departamento Gráfico. 247 p. Portrait. 22 cm. [Por]
• ***Summary:*** The author is a yoga master, also known as Maestra da Ioga, Swamini Sadhana. Soy-related recipes include: Soja (whole soybeans, p. 167). A comparison of the nutritional/chemical composition of meat and soybeans is given (p. 187-88). Soya beefsteak (with roasted soy flour {*farina de soja torrada*}, p. 188). Soymilk (p. 188). Whole soybeans (p. 189). Homemade soybeans and native beans. Soybean soup (with roasted soy flour). Soya ice cream or sherbet (*Sorvete de Soja*, p. 189). Soybean cakes or dumplings (p. 190). Soya croquettes. Bolinho de soja. Cocada de soja. Nhoque de soja (p. 191). Soybean salad. Assado de soja. Bife a Parmesa. File de soja. Pao com soja (p. 192).

Note 1. This is the earliest Portuguese-language document seen (March 2007) that mentions soy ice cream, which it calls *Sorvete de Soja.*

Note 2. This is the earliest Portuguese-language document seen (Nov. 2012) that mentions roasted soy soy flour, which it calls *farinha de soja torrada.*

2110. Milner, Max. 1966. General outlook for seed protein concentrates. *Advances in Chemistry Series* No. 57. p. 52-64. Chap. 5. World Protein Resources. [8 ref]

• ***Summary:*** "Seed proteins, particularly those of the cereals and legumes, are mainstays of human protein nutrition, providing several times more of this nutrient than animal proteins...

"World Protein Resources: The cereals contribute in round numbers 75 million metric tons of protein, of which wheat provides 25 million, rice 12 million and corn 20 million tons. The legumes, consisting of various beans, peas and lentils, in aggregate, provide, surprisingly, only about 8 million tons. Additional but minor plant sources of protein are tubers, including potatoes, and nuts. The world animal protein supply, including principally meat, milk, eggs, and fish, has been estimated to be about 20 million metric tons. And finally, the potential contribution of the oilseeds, which include principally soybeans, cottonseed, and peanuts, can be considered to be about equal to that of all the animal protein now available, 20 million tons per annum."

A long section titled "Soybeans" (p. 57-59) discuses soybeans and soyfoods, including tofu, miso, natto, tempeh, soybean milk, full-fat soybean flour, soy protein concentrates and isolates, and spun soy protein products. Address: UNICEF, United Nations, New York, NY; Present address: Office of Technical Cooperation and Research, Agency for International Developement, Washington, DC.

2111. Nelson, Andrew Nathaniel. 1966. The modern reader's Japanese-English character dictionary. Revised ed. Rutland, Vermont, and Tokyo, Japan: Charles E. Tuttle Co. 1109 p. Index. 24 cm. [15 ref. Jap; Eng]

• ***Summary:*** Radical 37 = dai or oh = big + 3 strokes = #1171 = *daizu* or *ômame* = soy bean (p. 290).

Radical 75 = tree; at left = ki hen. #2211 = eda of edamame. Radical 82 = Hair of animals, ke. Radical 85 = Water + 11 strokes = soymilk. Radical 151 = Bean + 7 strokes = mame (bean) or tou = toufu. Radical 164 = Liquid (Sake sukuri) + 11 strokes = shoyu no sho. Radical 201 = Yellow (variant is 11 strokes).

Soy related words: (1) Miso: *miso* (fermented [soy] bean paste; flattery, p. 247). *miso o tsukeru* (to make a mess of, p. 247). *miso shiru, misojiru* (bean-paste soup, p. 247). *miso mame* (soybeans, p. 247). *misoni* (boiling with bean paste, p. 247). *misozuke* (pickled in bean paste, p. 247). *misokoshi* (bean-paste strainer, p. 247). *misosuri* (grinding bean paste; flattery, p. 247). *temai miso* (self praise; bean paste of one's own making, p. 420). *miso dengaku* (tofu baked [grilled] with miso, p. 621). *konamiso* (powdered miso, p. 691). *nuka miso* (salted rice-bran paste, for pickling, p. 694). *karamiso* (salty miso, p. 869).

(2) Tôfu [tofu]: *yakkodôfu* [yakkodofu] (tofu cut in cubes, p. 47). *kôridôfu* [kori-dofu] (frozen tofu, p. 75). *unohana* (refuse from tofu, p. 119). *shimidôfu, kogoridôfu, kogodôfu* [shimi-dofu, kogo-dofu, kogori-dofu] (frozen tofu, p. 192).

Note 1. This is the earliest English-language document seen (April 2013) that contains the word *kogodôfu* (written as one word, with diacritics) which it says is the same as *shimidôfu,* all of which it defines as frozen tofu.

age (fried tofu, p. 447). *kara, okara* (tofu refuse, p. 525). *aburage* (fried tofu, p. 543). *yuba* (dried tofu [sic], p. 561). *yakidôfu* [yaki-dofu] (broiled bean curd, p. 578).

Note 2. This is the earliest English-language document seen (April 2013) that contains the word *yakidôfu* (written as one word, with diacritics).

nama-age (fried tofu, p. 618). *dengaku* (tofu baked with miso, p. 621). *inarizushi* (fried tofu stuffed with seasoned rice, p. 668). *tofu* (bean curd, tofu, p. 843). *kirazu* (tofu refuse [okara], p. 941). *kôyadôfu* (frozen tofu, p. 978).

toshi no mame ([soy] beans of the bean scattering ceremony, p. 88).

mitsumame (boiled [soy] beans with treacle / molasses, p. 328).

edamamé (green soybeans, p. 494). *irimame* (parched [soy] beans, p. 576).

nimame (boiled [soy] beans, p. 578).

nattô (fermented soy beans, p. 697).

tamari (soy sauce, p. 564).

azemame (soy beans grown on rice-field ridges, p. 624). *moyashi* (artificially sprouted beans, p. 780). *moyashi mame* (beans for sprouting, p. 781). *hôrai mame* (sugar-coated beans, p. 786).

kuromame (black soy bean, p. 992).

mame abura (soybean oil, p. 843). *tônyû* (soybean milk, p. 843). *kinako* (soybean flour, p. 991). Address: PhD, Tokyo, Japan.

2112. Neufeld, Don F. ed. 1966. Seventh-day Adventist encyclopedia. Washington, DC: Review and Herald Publishing Assoc. xviii + 1452 p. Commentary Reference Series, Vol. 10.

• ***Summary:*** This indispensable reference work contains excellent basic information and short histories. Entries related to food, diet and health include: Preface. Abbreviations. Alimentos Granix, Sociedad Anónima ("Granix Foods"; Buenos Aires Health Food Co., Argentina). American Temperance Society. Battle Creek College–See Andrews University. Battle Creek Health Center–See Battle Creek Sanitarium. Battle Creek Sanitarium (Michigan). Boulder-Colorado Sanitarium–See Boulder Memorial

Hospital (est. 1896) and its health food factory (1897). Boulder Memorial Hospital. Cedar Lake Academy (founded 1898), Copenhagen Food Company (Denmark). De-Vau-Ge Gesundkostwerk GmbH ("DVG Health Foods Factory"; German Health Food Factory). Diet. Fábrica de Productos Superbom (Brazil Food Factory).

Food companies (Church-owned, making health foods of various kinds, especially vegetarian protein foods and whole-grain cereal products. SDA Food manufacture began as a department of the Battle Creek Sanitarium, which produced Granola and other cereals and wafers for the patients. Sales were a by-product of diet therapy, as patients ordered foods for their own use after leaving the institution. Thus originated the Battle Creek Sanitarium Health Food Co.).

Good Health (magazine). Graham, Sylvester. Granose Foods Ltd., (began as The London Health Food Company importing foods from Dr. J.H. Kellogg. In 1899 a manufacturing company was formed under the name The International Health Association Limited, changed in 1926 to Granose Foods Ltd.). Boulder Memorial Hospital. Health and Temperance Missionary School. Health education–See Health evangelism. Health evangelism. Health food manufacture–See Food companies. Health journals (the first was *The Health Reformer*). Health principles. Health reform–See Diet; Health evangelism; Health principles; Medical work. Health Reform Institute–See Battle Creek Sanitarium. India–Medical Work–Sanitarium Health Food Co. Instituto Adventista del Uruguay (Uruguay Academy, Produtos Frutigran). International Health and Temperance Association–See American Temperance Society. International Health Association Limited–See Granose Foods Ltd. International Nutrition Research Foundation. International Temperance Association. Kellogg, John Harvey (1852-1943; M.D.). Kellogg, John Preston (1807-1881). Kellogg, Merritt Gardner (1832-1922). Kellogg, Will Keith (1860-1951; Cornflakes manufacturer). Loma Linda College of Evangelists–See Loma Linda University. Loma Linda Foods. Loma Linda University. Madison Institutions (incl. Madison College, Madison Foods, articles about Madison in periodicals). Medical work. National True Foods (Pty) Limited (Johannesburg, South Africa). Nebraska Sanitarium (1895). New England Memorial Hospital (1899). Nihon San-Iku Gakuin (Japan Missionary College, 1898, 1919, 1926, incl. Perry A. Weber). Noncombatancy (like conscientious objector, not bearing arms in wartime). PHAG (Produits Alimentaires Hygiéniques, Gland–Switzerland). Produits Alimentaires Hygiéniques, Gland–See PHAG. Prohibition (see also Temperance). Pur-Aliment (Food Factory; Clichy, France). St. Helena Sanitarium and Hospital (incl. health food factory, established in 1901). San-Iku Gakuin–See Nihon San-Iku Gakuin. Sanitarium principle (replaced by hospital principle). Sanitarium Health Food Company (Australia and New Zealand). Sanitariums and hospitals. Spicer, William Ambrose. Spicer Junior College. Spicer Memorial College. Stanborough College–See Stanborough School. Stanborough Press Limited (British Publishing House at Stanborough Park, Watford, Hertfordshire). Stanborough School. Stanborough Nursing and Maternity Home. Sunnydale Academy (Centralia Missouri; Sunnydale Foods started in 1946). Washington Adventist Hospital (1907). White, Ellen Gould (Harmon) (1827-1915). White, Ellen G., writings of. White, James Edson (1849-1928; 2nd son of James and Ellen White). White, James Springer (1821-1881). White, William Clarence (1854-1937, "Willie").

Note: The *Advent Review and Sabbath Herald* of 23 Oct. 1860 states (p. 179, col. 2): "Resolved, that we take the name of Seventh-day Adventists." Address: Washington, DC.

2113. Ohsawa, George. 1966. The book of judgment. The philosophy of Oriental medicine. Vol. II. Los Angeles, California: Ohsawa Foundation, Inc. 169 p. Revised and edited by Lou Oles and Shayne Oles Suehle. No index. 17 cm. First edition was 1960. [2 ref]

• ***Summary:*** In this book, Ohsawa is at his creative / outrageous best, with many big ideas. The author's name on the title page and cover is written "georges ohsawa." There are two slightly different 1966 editions of this book. In one, revised and edited by Lou Oles (which Soyinfo Center owns), a portrait photo shows Ohsawa from the waist up (frontispiece, facing the title page). In the other, revised and edited by Lou Oles and Shane Oles Suehle, a portrait photo shows Ohsawa (head and shoulders) laughing.

Contents: About the author (autobiographical). Preface. Introduction. 1. Medicine or faith? 2. The unique principle, a practical and dialectical classification. 3. The unique principle of the science and philosophy of the Far East. 4. Man's origin: What is disease?, the origin of nutrition–the vegetal, animal foods, why use milk?, embryological of Far Eastern mothers with emphasis on breast feeding, when milk becomes outlawed, supreme judging ability, the failings of Occidental medicine, sons of the vegetal mother, faith–prayer and fasting, the vegetal mother–yin, the mother of the elements & the birth of energy, genus Homo, a dialectical world & universal compass, man–the masterpiece of creation, magic spectacles–new Aladdin's lamp–solution of problems, food–living to eat–eating to live–quantity changes quality, economics of food, lack of supreme judging ability in orthodox allopathic medicine, conclusion–recapitulation.

5. Far Eastern medicine. 6. The order of the universe. 7. Supreme judging ability. Appendices: Good and evil, ethics and morality, public and individual salvation, individual and universal soul, Darwin's hypothesis, non-violence, samsara, the noble road to the eight virtues [Buddha's eightfold noble path], respect [reverence] for life, the infinite, the absolute, the eternal, the will, entropy, cancer and blood cancer, the narrow gate, freedom, despair, vitamins, insulin, the unique

principal.

"Animal foods: If we are compelled to eat animal foods, owing to climactic or economic conditions, we are to use them only in small quantities and also with special caution in order to deanimalize or vegetalize them with proper culinary preparation and efficient nutritional combinations. Anatomically speaking, according to his teeth and intestines, man is vegetarian. Why then should he depend for food upon the flesh or products of inferior animals? Depending upon adequate sources of food, the vegetable is normal, logical and sure. The opposite or carnivoral way is speculative. Utilizing the inferior and weaker always leads to the speculator's downfall.

"Why use milk? Why do we drink animal milk? In China and Japan, and even in India, the peoples lived a very happy, peaceful and long life, without drinking animal milk for thousands and thousands of years.

"Cow's milk is intended to be the nourishment of calves to form their constitution and their fundamental characteristics. There is no reason for man to live upon the milk of the animal, which is biologically and intellectually very inferior to him." Address: Los Angeles, California.

2114. Parpia, H.A.B.; Subramanian, N. 1966. Plant protein foods in India. *Advances in Chemistry Series* No. 57. p. 112-32. Chap. 9. World Protein Resources. [16 ref]
• ***Summary:*** The emphasis is on peanut proteins, including peanut protein isolate, milk substitutes, spray-dried infant foods, etc. Soy protein is mentioned only briefly (p. 118). Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

2115. Schenk, E.G.; Naundorf, G. 1966. Lexikon der tropischen, subtropischen und mediterranen Nahrungs- und Genussmittel [Dictionary of tropical, subtropical, and Mediterranean foods and food adjuncts (stimulants / enjoyables)]. Herford, Germany: Nicolaische Verlagsbuchhandlung Herford. xiv + 199 p. Index. 21 cm. Series: Manualia Nicolai 1. [200* ref. Ger]
• ***Summary:*** Pages 70-71 give a list of Japanese foods (after Mayerhofer and Pirquet 1926) in no apparent order, with the Japanese name followed by a translation of that name into German. Included in the long list are: Akamiso, miso, shiromiso, tofukasu [okara], daizu, fu [dried wheat gluten], kingyo-fu, kiri-fu, kiri-mochi [frozen and dried rice cake], ame [malt extract], mirin, aburage [tofu fried in vegetable oil], natto–Bohnenkäse, Tofu–Sojatopfen, Tonyu–Sojamilch, azuki [small red beans], kwansen-fu, kinako–Sojabohnenmehl, geröstet, amasake–unvergorener Sake, umeboshi, koritofu [frozen and dried tofu], midzuame [soft ame = rice syrup], shoyu–Sojasauce, yuba–eine Bohnenspeise. Plus many types of sea vegetables.

On pages 140-42 the following terms are defined in German: Soja [soya], Sojabohne [soybeans], Sojabohnenkäse [soy cheese or tofu], Sojabohnenmehl [soybean meal], Sojabohnenöl [soybean oil], Sojakäse [fermented soy cheese], Sojamilch [soymilk], Soja-Nahrungsmittel [soyfoods]: Koji, Miso, Tofu, Nato [sic, natto], kondensierte Soja-Milch [condensed soymilk], Japanische Verarbeitungen [Japanese processed foods: Japanische Soja-Sauce Shoju (Shoyu), Miso, Tofu], Soja-Nahrungsmittel, javanische [Javanese] soyfoods: Tao-Hoe, Tempeh, Ketjap, Tao-Tjiong [a term, and perhaps a product, between *doujiang* and *tao-tjo*, Indonesian-style miso], Sojatunken, Soja-Verarbeitungen: Sojamilch, Bohnenkäse, Teoufou (China), Tofu (Japan), Dan Phu (Vietnam), Natto (Japan), Tao-tehe (China).–Bohnenbrei Miso (Japan), Tao-tjiung (doujiang, China).–Sojasauce: Shogu [sic, Shoyu] (Japan), Tsiang-Yeou, Tao-yu (China), Ketjap (Java), Tuong (Vietnam).–Gärmittel: Kiut see (Japan). Then a table shows the nutritional composition of 8 of these foods.

Note 1. This is the earliest German-language document seen (April 2013) that uses the term *Sojabohnenkäse* ("soybean cheese") to refer to tofu.

Note 2. This book contains more than its fair share of errors and could be better organized. Address: 1. Prof. Dr. med. habil., Dr. phil. nat, Laurensberg ueber Aachen, Germany.

2116. Zen cookery: The philosophy of Oriental culture. Vol. I. Practical macrobiotics. 1966. Los Angeles, California: Ohsawa Foundation, Inc., The Ignoramus Press. 84 p. Index. 22cm.
• ***Summary:*** The revolutionary little reddish-orange or yellow book, with a black plastic comb binding, that introduced many to macrobiotic cooking. No author or editor is listed. The Ohsawa Foundation has branches in Los Angeles, New York, Wellesley, Paris, and Tokyo. Contents and format are identical to the 1964 edition edited by Teal Nichols, published by the Ohsawa Foundation of Chico–which see. Address: Ohsawa Foundation, Inc., 1434 N. Curson Ave., Los Angeles, California.

2117. Worthington Foods, Inc. 1966? Soyamel–Fresh tasting: Five different ways (Leaflet). Worthington, Ohio. 4 panels each side. Each panel: 22 x 9 cm. Undated.
• ***Summary:*** In the middle of the front panel is a photo of a boy and girl drinking soymilk from glasses. At the bottom of this panel is a photo of 5 cans of Worthington Soyamel: All Purpose, Instant Malt Flavor, Instantized All Purpose. Banana Beverage. And Fortified Soyamel: A Powdered Soy Milk.

Two pages of the leaflet describe these products and their nutritional composition. "Regular Soyamel, Fortified Soyamel, and Soyamel Banana Beverage are packed in a 1 lb. can, 4 lb. can and a 20 lb. carton. Instant Soyameal and Instant Malt Soyamel are packed in a 12 oz. can, 3 lb. can and 15 lb. carton." The ingredients of Soyamel are: "Soy

bean protein [probably soy protein isolate], soy bean oil, dextrose, soy bean lecithin, dextrins and maltose, sucrose, barley malt, salt, dicalcium phosphate, and added vitamin B-12. To make 1 glass of regular Soyamel place 1 cup of water in high-speed mixer or blender and add 6 level tablespoons of Soyamel. Mix until powder is dissolved. Refrigerate until used. To make instant Soyamel, add 1/3 cup of powder to 1 cup water. Stir until dissolved, or use blender. One pound of Soyamel will make a gallon of delicious, wholesome soy drink. When mixed, a quart of Soyamel will cost a little as $0.25 depending upon the richness desired."

Four pages of recipes are given. Address: 900 Proprietors Rd., Worthington, Ohio 43085.

2118. Hackler, L.R.; Stillings, B.R. 1967. Amino acid composition of heat processed soymilk and its correlation with nutritive value. *Cereal Chemistry* 44(1):70-77. Jan. [11 ref]

• ***Summary:*** The effect of heating soymilk at 93º and 121ºC for varying periods was evaluated in weanling rats. The effect of spray-drying inlet temperatures on the amino acids of soymilk were also investigated.

Soymilk heated for as long as 4 hours at 93ºC caused no significant changes in amino acid composition. On the other hand, processing temperatures of 121ºC caused decreases in some of the amino acids–especially cystine. Moreover, it was found that spray drying inlet temperature is critical and it was found that amino acids destroyed during spray-drying are different from those destroyed during pressure cooking (121ºC). Therefore temperatures must be carefully controlled in order to make soymilk of the highest nutritional quality. Address: Cornell Univ., Geneva, New York.

2119. *Science News.* 1967. Nature note: 'China cow.' 91(7):172. Feb. 18.

• ***Summary:*** A brief introduction to the soybean. "Last year in his Food for Freedom message, President Johnson asked for more soybean production and the farmers responded. More than 931 million bushels were grown in the United States," a substantial increase over the 1965 crop.

2120. Abdo, K.M.; King, K.W. 1967. Enzymatic modification of the extractability of protein from soybeans, *Glycine max. J. of Agricultural and Food Chemistry* 15(1):83-87. Jan/Feb. [22 ref]

• ***Summary:*** "Enzymes capable of improving the extractability of protein in soybeans from a control value of approximately 74 to 95% have been derived from *Pestalotiopsis westerdijkii.* The resulting soybean milk product appeared to be free of toxic components, and the protein was of a quality equal or superior to that of soybean milk prepared without enzymatic treatment."

"In most instances, existing processes for extracting soybean protein recover from 70 to 80% of the total protein... and the quality of the protein in the unextracted residue is superior to that of the soy milk protein."

Table III shows the effect of enzyme concentration on subsequent extraction of nitrogen from soybean residue [okara]. Table IV shows the time course of enzyme modification of nitrogen extractability Trichloracetic acid (TCA) is used for deproteinization.

Table III shows the effect of enzyme concentration on subsequent extraction of nitrogen from soybean residue. Table V shows the carbohydrate reaction products from degradation of soybean residue. Address: Dep. of Biochemistry & Nutrition, Virginia Polytechnic Inst., Blacksburg, Virginia.

2121. Harkins, Robert W.; Sarett, Herbert P. 1967. Methods of comparing protein quality of soybean infant formulas in the rat. *J. of Nutrition* 91(2):213-18. Part I. Feb. [13 ref]

• ***Summary:*** Discusses: Prosobee and Sobee (Mead Johnson), Mull-Soy (Borden), and Soyalac (Loma Linda, Riverside, California). Address: Dep. of Nutritional Research, Mead Johnson Research Center, Evansville, Indiana.

2122. Roberts, Hibbert Rice. 1967. The Meals for Millions Foundation: a study of a non-governmental organization (Continued–Document Part V). PhD thesis in Political Science, University of Washington. 288 leaves. [53 + 100+ footnotes]

• ***Summary:*** Continued: Chapter 5, "MFM and the United States government." "Over a period of nearly twenty years, the executive and legislative branches of the federal government have been a source of both assistance and frustration to MFM's staff as it sought to promote the use and production of MPF and MFP-type foods throughout the world." Dr. Allan K. Smith of the USDA's Northern Regional Research Laboratory (Peoria, Illinois), "an expert on soybean protein and its uses gave great encouragement to the infant Foundation [starting with a letter dated 30 Dec. 1947] and undoubtedly brought to its attention a potential source of technical advice,..." (p. 115-18).

The Bureau of Educational Affairs of the State Department provided ongoing help. The Foreign Training Division of USDA's Foreign Agricultural Service also responded favorably and now furnishes MFM the names and itinerary of individuals brought to the United States by the USDA to study American food and nutrition programs. "As a result, many foreign nutritionists, politicians, officials, and businessmen on U.S. government sponsored tours have visited MFM headquarters and have listened to Miss Rose and staff explain the MPF answer to protein scarcity in developing nations of the world." This "represents another step in the slow process of educating the citizens of other countries about the potential of vegetable proteins as a source of human food and the wisdom of manufacturing

MPF-type foods." Perhaps the U.S. "officials believed that the example of an American-supported voluntary agency motivatd by an unselfish desire to help improve the living conditions of people in other countries would create a favorable impression of the United States in the minds of its guests. In any case, the routing of visitors to MFM by two federal departments appears to be a satisfactory arrangement for everyone involved" (p. 118-20).

The U.S. government sometimes helped in transporting MPF to foreign countries for relief. In one case, in 1959-60, MFM sent (with transportation paid) "over 74,000 pounds of MPF to Hong Kong, Japan, the Philippines and Taiwan in less than a year" (p. 120). It might be seen as part of the fight against communism. Also discuses Public Law 480–the Agricultural Trade and Assistance Act of 1954, which was signed into law on 10 July 1954–which offered to pay for some shipping (p. 120). "The lack of an MFM representative in Washington, who could personally press appropriate officials, greatly hurt MFM."

In Feb. 1958, in a speech delivered at Caltech, President Richard Nixon mentioned "Multi-Purpose Food which has meant so much to undernourished peoples all over the world" and congratulated Dr. Borsook for his "imaginative work" (p. 132-33; See also *Pasadena Star News* 17 Feb. 1958).

Also discusses the Armed Forces, school lunch program, civil defense and bomb shelters, and the American Soybean Association. The "Foreign Agricultural Service of the USDA and the American Soybean Association had entered into an agreement, on 7 Feb. 1956, which committed 108 million yen or $300,000 of PL 480 counterpart funds for a project to 'expand the market for U.S. soybeans in Japan.'" This was part of Section 104 within Public Law 480. MFM unsuccessfully tried to attach itself to this agreement (p. 143).

Continues the discussion of PL 480, Senator Hubert Humphrey (encouraged MFM; cordial relationship), MFM's "ambitiously conceived but sporadically executed campaign to convince U.S. officials that high-protein vegetable supplements, i.e., MPF, should be incorporated into the relief and emergency feeding programs authorized by PL 480" (p. 144-51). George McGovern (Director of the Food for Peace program). Dec. 1961 Eddie Albert of MFM shows the film "People to People" to McGovern, who calls it "an inspiration" and requests a copy for his office (p. 154-55). But the benefits to MFM of all this effort were negligible.

At the national level, pressed by "a keen and understandable desire to augment the limited resources and modest capabilities of the Foundation, Miss Rose and Mr. Chamberlain seem to strike out in any direction that they feel might lead to an improvement in the fortunes of their organization. What started to be a relatively simple effort on the part of MFM to obtain a PL 480 grant of $18,000 to develop a Japanese version of MPF, soon spiraled into an increasingly complex campaign to alter the focus of the United States overseas surplus food disposal program. The question of whether MFM, or more specifically Miss Rose and Mr. Chamberlain, should embark on such a campaign was never raised" (p. 159).

Chapter 6, Meals for Millions and the United Nations Children's Fund (UNICEF). The apparent identity of interest between the Fund and the Foundation "helps to explain why Miss Rose and Mr. Chamberlain concentrated so heavily upon the establishment of a cooperative relationship with UNICEF" (p. 161). However from its beginning in 1947, when MFM first offered to donate MPF to UNICEF, until the present, this relationship was filled with disappointments and frustrations for MFM (p. 161-96).

Dr. James Hundley of UNICEF told a MFM delegation of three (on 26 Feb. 1958) that the Saridele (soybean milk powder) plant in Indonesia had cost UNICEF approximately $480,000. But villagers found the powder "difficult to blend with water and prone to absorb moisture and harden when left exposed to the air" (p. 179).

The unfortunate and unhappy relationship shattered unmistakably on 9 June 1959 when Dr. Henry Borsook delivered the opening address at the Second Annual Inter-American Food Congress in Miami Beach, Florida. The "answer he gave to the question posed in the title of his address, 'We can at this time provide fairly adequate nutrition for the world. Why isn't it being done?' included a bitter and poignant indictment of 'official agriculture' in general and United Nations nutritional scientists in particular" (p. 182-87). Thereafter, UNICEF officials showed no desire to cooperative with MFM. Yet both sides were at fault. "Thus, it is little wonder that MFM–UNICEF relations were filled with more discord than collaboration and understanding" (p. 196).

Chapter 7, "Meals for Millions overseas," concentrates on the development of the production of MPF-type foods in India and Brazil, where they are still (as of 1967) being produced, in order to describe and analyze MFM's approach to famine prevention (p. 197). "India: In 1957, Meals for Millions achieved its most significant advance in the field of hunger prevention when the Mysore Central Food Technological Research Institute [CFTRI] started to produce on a regular albeit limited basis an Indian version of American MPF for use in a school lunch program in the state of Mysore." The formulation was based on peanuts and bengal gram. But it was not until 1960 that a large-scale Indian MPF plant went into operation (p. 221-23). From 1946 to 1956 MFM gave India 1.39 million pounds of American MPF but there were ongoing problems with its distribution (p. 199-202).

Brazil: "In June 1956 a Brazilian company began processing its own soybean-based, fortified food supplement patterned after the American MPF." Here Maurice Abrahams had taken the initiative–not MFM. Pages 223-56 describe, step by step, the chain of events that led to the ill-fated

attempt to start making an MPF-type food in Brazil. The idea for this project "started in the later summer of 1953 when Mr. Abrahams, a United States citizen residing in Sao Paulo, Brazil, happened to read a glowing account of MFM and MPF in the July, 1953 issue of *Readers' Digest.* He was stimulated to think of the commercial potential, as well as the humanitarian value of an inexpensive soybean food if sold on a large scale to lower-income and malnourished Brazilians. After an exchange of letters with Miss Rose, Mr. Abrahams concluded that a commercial venture was feasible and flew to Los Angeles to discuss the details of a contract to produce MPF in Brazil. Though later events were to show that Mr. Abrahams had made an error in judgment, when they signed an agreement on 19 April 1954 [with Mr. Abrahams doing business as the Capital Research and Management Company], he and MFM's officers were highly optimistic about the great market potential of a Brazilian MPF." Details of the contract are given (p. 223-24). Continued. Address: Seattle, Washington.

2123. Ling, C.A. 1967. More about milk in our diet. *British Vegetarian.* March/April. p. 179-80. [1 ref]
• ***Summary:*** The author and many Britons believe that "from a humanitarian point of view the consumption of animal milk by human beings is wrong. This conviction follows from a realisation that the slaughterhouse and dairy products are interlinked and inseparable." Address: Plantmilk Ltd., Langley, Bucks., England.

2124. Bhat, Sudhakar. 1967. Rock-drilling rigs gifted by UNICEF are in use in Bihar. *Times of India* (*The*) (*Bombay*). May 4. p. 1.
• ***Summary:*** The rigs are being operated by the Special Relief Organization (Emergency Water Supply) in areas where deep drilling of wells through rock is necessary.

UNICEF's assistance to Bihar, and to the famine zones of adjacent Uttar Pradesh, has been substantial. About 3,200 tonnes (metric tons) of milk powder "and 3,800 tonnes of [powdered] soyabean milk have also been released for distribution in the scarcity areas by UNICEF."

Note 1. The "soyabean milk" was actually CSM (corn-soya-milk) a powdered relief food from the USA, made from a mixture of corn flour, defatted soy flour, and nonfat dried milk, plus added vitamins and minerals.

Note 2. In 1966-67 Bihar experienced a serious drought and harvest failure; a serious famine was barely averted by the timely arrival of food, water, and aid from the international community. Address: The Times of India News Service.

2125. *Times of India* (*The*) (*Bombay*). 1967. Catastrophe averted in Bihar, says Egger. May 19. p. 11.
• ***Summary:*** Dr. Charles A. Egger, head of the UNICEF office in India, said after a visit to Bihar that a large catastrophe had been averted, but that the battle against famine continued.

Dr. Egger said that UNICEF "had contributed 3,200 tonnes of milk powder and 3,800 tonnes of CSM (corn-soya-milk) high protein food for the school feeding programme."

2126. *Times of India* (*The*) (*Bombay*). 1967. Current topics: Soya bean milk. May 20. p. 6.
• ***Summary:*** More than a year ago the Central Committee for Food Standards said that the milk from slightly fewer than a million camels and slightly more than a million donkeys could make a useful addition to India's perennial year-round shortage of milk. It still says the same thing, but nothing has changed.

But there is still much that could be done. "Milk foods have been prepared from the soya bean with considerable success in both China and the United States." There is no reason why such vegetable milk could not also be made in India and used for feeding infants [after weaning] and young children.

2127. De, Sasanka S.; Russell, J.S.; Andrè, L.M. 1967. Soybean acceptability and consumer adoptability in relation to food habits in different parts of the world. *USDA Agricultural Research Service.* ARS-71-35. p. 20-27. May. Proceedings of International Conference on Soybean Protein Foods. Held 17-19 Oct. 1966 at Peoria, Illinois. [1 ref]
• ***Summary:*** Contents: Traditional soy products in the Far East: Soysauce, soy milk, bean curd, tempeh, natto and miso, roasted soy flour, kochu chang [Korean soybean miso], sprouted beans. Introduction [of soybeans] in other countries: Brazil, USSR, Africa, Latin America, Turkey. New types of products: Defatted soy flour, full-fat soy flour and beverages made from it developed by the Soybean Council of America. Justification: Cost of a pound of protein from different foods. Beef $4.60. Pork $4.30. Poultry $1.50. Nonfat dry milk solids $0.41. Dry beans $0.35. Soybeans $0.14. Attempted introductions: India. Factors involved in adoptability.

Soybean varieties can be divided into three basic groups: commercial, forage, and garden or vegetable varieties. The commercial and forage varieties do not cook easily and have a raw, beany flavor, whereas the garden varieties can be characterized as having a milk or nutty flavor.

"Kochu chang is produced in every household in Korea from mashed boiled [soy] beans which are hung in bags for 2 to 3 months. The product is broken up, dried, and ground. It is then mixed with ground red pepper [plus salt and water] and kept for some time before use."

This paper was presented by Leon Marie Andrè.

Note 1. This is the earliest English-language document seen (Jan. 2007) that contains the term "roasted soy flour." We read (p. 22): "This product is produced in small amounts and consumed with rice cake [mochi]. There is hardly any information on the nutritive value of the product."

Note 2. This is the earliest English-language document seen (March 2009) that uses the word "kochu chang" (or "kochu-chang") to refer to Korean-style red pepper and soybean paste (miso). Address: 1-2. Food and Agriculture Organization of the United Nations, Rome, Italy; 3. FAO Liaison Officer and adviser to UNICEF.

2128. Hand, David B. 1967. Formulated soy beverages for infants and preschool children. *USDA Agricultural Research Service*. ARS-71-35. p. 67-74. May. Proceedings of International Conference on Soybean Protein Foods. Held 17-19 Oct. 1966 at Peoria, Illinois. [8 ref]
• ***Summary:*** Contents: Introduction. Previous work. Wet versus dry processing. To soak or not to soak [soybeans used to make soy beverages]. Hot versus cold extraction. Conclusion.

Tables show: (1) Composition of soy milk fractions (percent on dry basis). (2) A summary of the effect of soybean fractions upon growth of weanling rats when diets supplied 10% protein. (3) Percent composition of a 24-hour soak water from dehulled soybeans. (4) Effects of soaking dehulled soybeans on content of protein, fat, and carbohydrate [incl. oligosaccharides raffinose and stachyose]. Address: New York State Agric. Exp. Station, Geneva, New York.

2129. Hill, Ronald A. 1967. Potential and use of soy protein for low-cost infant foods in India. *USDA Agricultural Research Service*. ARS-71-35. p. 223-24. May. Proceedings of International Conference on Soybean Protein Foods. Held 17-19 Oct. 1966 at Peoria, Illinois.
• ***Summary:*** Starts by discussing the very successful work of the Kaira Co-operative Milk Producers' Union Ltd. at Anand, 270 miles north of Bombay. Mr. V.H. Shah is production manager. They have 110,000 members and a turnover of $15 million a year. Their infant food named Amul is well known throughout India. The Co-operative has requested UNICEF's help in a new project to produce a weaning food consisting of a cereal-legume-milk mixture. Soybeans would serve as the legume. The cooperative has excellent relations with farmer members, and this could be used to promote interest in the cultivation of a new crop such as soybeans. Address: Senior Engineer, Food Conservation Div., UNICEF, United Nations, New York.

2130. Johnson, Dale W. 1967. Marketing soy protein products and problems of acceptance in foreign countries. *USDA Agricultural Research Service*. ARS-71-35. p. 195-204. May. Proceedings of International Conference on Soybean Protein Foods. Held 17-19 Oct. 1966 at Peoria, Illinois.
• ***Summary:*** "These edible products include soy flour and grits, isolated soy proteins, soy protein concentrates, soy milk products, and enzyme hydrolyzed soy proteins." Address: Executive Vice President, Crest Products Inc., Park Ridge, Illinois.

2131. Gorrill, A.D.L.; Thomas, J.W. 1967. Body weight changes, pancreas size and enzyme activity, and proteolytic enzyme activity and protein digestion in intestinal contents from calves fed soybean and milk protein diets. *J. of Nutrition* 92(2):215-23. June. [19 ref]
• ***Summary:*** Milk and soybean sources of dietary protein for calves were compared on the basis of growth, pancreatic enzymes, and intestinal proteolysis. Soy protein concentrates (called 71% crude protein soybean flour) gave better results than soy flour in calf milk replacers. This was attributed, at least in part, to the negligible trypsin inhibitor content of the soy protein concentrates. Address: Dep. of Dairy, Michigan State Univ., East Lansing, Michigan.

2132. Orr, Elizabeth; Adair, David. 1967. The production of protein foods and concentrates from oilseeds. *Tropical Products Institute Report* No. G31. 104 p. June. Also titled T.P.I. Report (London). [44 ref]
• ***Summary:*** Contents: Foreword. Acknowledgements. Introduction. 1. The use of oilseeds as a source of protein. 2. Oilseed resources. 3. The manufacture of protein flours by standard oil milling processes. 4. Some cost aspects of the manufacture of protein flour by standard oil milling processes. 5. Examples of the use of edible flours made by standard oil milling processes. 6. Full fat soya flours. 7. Oriental methods of processing soya. 8. Other processes for making protein products. 9. The distribution of protein products. 10. Current experience of making protein flours and foods from oilseeds. 11. The initiation of protein food programmes with particular reference to the role of the administrator. Appendices. 1. Protein nutrition. 2. Oilseed statistics. 3. Toxic hazards. 4. P.A.G. Guides [PAG]. 5. Aflatoxin. 6. Questionnaire. 7. Some examples of the cost of packaging oilseed-based protein foods. 8. Prices of edible oilseed products and protein flours and foods made from oilseeds. Bibliography. Chapters 6 and 7 are especially relevant to soyfoods.

"Full fat soya flour (FFSF) is manufactured in the USA by Archer Daniels Midland Co. and Central Soya, and in the UK by 3 firms: British Arkady Co. Ltd., Soya Foods Ltd., and British Soya Products Ltd. There are no official statistics for production in either country. A trade source of information has estimated UK usage of soya flour at 30,000 tons per annum, but this figure includes defatted soya flour made from meal imported from the USA. Full fat soya flours can be divided into 2 main categories: (a) flours used primarily for bleaching purposes in bread, and (b) general purpose flours. When the flour is to be used mainly for bleaching it is made from uncooked beans, since the natural enzymes in the bean must remain active until the bleaching process has been completed. It is estimated that about half

the full fat soya flour made in the UK is used in bread manufacture."

A table lists all known commercial full-fat soy flours, their composition and prices. Describes the Promo Process and Wenger Process for making FFSF, with cost data. Gives case histories for Pronutro in South Africa and Nutresco in [Southern] Rhodesia.

Chapter 7. Oriental methods of processing soya beans: Kinako ("a flour made from ground toasted [soy] beans, used in making cakes"). Fermentation products: Soya sauce (shoyu), miso, natto, tempeh. Developing the use of fermented products. Aqueous extracts: Soya milk and tofu, kori-tofu. Soya milk as a substitute for cow's milk. The package soy milk shop (including Tetra Pak and Prepac packaging; the Prepac system, developed by the S.E.A.B. Co., Villejuif, France, has a capacity of 1,500 packs/hour). Case histories for soya milk: Rural cooperatives in Taiwan, Saridele in Indonesia, and Vitasoy in Hong Kong. Soya milk made from soya flour: The 4 known manufacturers of soya milk are Promo Ltd. of the U.K. ("The product made by Promo is marketed under the brand name of 'Velactin' by the Wander company."), and Loma Linda Foods (Soyalac and Granogen), Mead Johnson (Sobee or Soybee), and Borden's Soy Processing Co., all of the USA. Promo and Loma Linda use the traditional Oriental method rather than using soy flour.

Note: This is the earliest document seen (Aug. 2013) concerning Tetra Pak and soy. Address: TPI, 56/62 Gray's Inn Road, London WC1.

2133. Plantmilk Ltd. 1967. Feeding baby on Plamil plantmilk: Up to 12/15 months. *British Vegetarian.* May/June. p. 245-48.
• ***Summary:*** The protein in Plamil comes mainly from soya. A table shows a baby feeding guide. Address: England.

2134. Saio, Kyoko; Koyama, E.; Watanabe, T. 1967. Protein–calcium–phytic acid relationships in soybean. I. Effects of calcium and phosphorus on solubility characteristics of soybean meal protein. *Agricultural and Biological Chemistry* 31(10):1195-1200. June. [12 ref]
• ***Summary:*** Discusses the solubility characteristics of soybean meal protein as a function of pH. Phosphorus and calcium have a very significant effect on the solubility of that protein. It is difficult to increase the calcium content in soy milk, since soy protein is coagulated and precipitated by calcium-protein interaction. The coagulated soy protein is not suitable for beverages. Address: 1&3. Food Research Inst., Ministry of Agriculture and Forestry; 2. Japan Tofu Assoc.

2135. Schmutz, W.G.; Cravens, W.W.; Soldner, W.L.; Hughes, D.L. 1967. Evaluation of a soybean protein concentrate in calf milk replacers (Abstract). *J. of Dairy Science* 50(6):993 (Abst. #P118). June.
• ***Summary:*** The authors compared an all milk control to three experimental milk replacers containing 8, 10, or 16.0% of an alcohol extracted "soy protein concentrate (Promosoy)" during a 4 week trial. "A commercial calf starter was also fed on an ad libitum basis."

Note: This is the earliest English-language document seen (Dec. 2005) that uses the term "soybean protein concentrate" to refer to a product containing 70% protein on a dry-weight basis. Address: Central Soya Co., Decatur, Indiana.

2136. *Los Angeles Times.* 1967. Pilot plant and training center opened by Meals for Millions. July 9. p. WS12.
• ***Summary:*** Meals for Millions has opened a demonstration pilot plant at 1800 Olympic Blvd., Santa Monica, California. Mark Sterner is foreman of the demonstration plant. It contains $40,000 worth of machinery and has the capacity to produce 3-4 tons of high-protein food supplement (or protein beverage) per day from oil seeds such as soy bean, sunflower, safflower, sesame, or cotton.

Also in the building is a "multitrax classroom, where foreign technical trainees can select verbal instruction from one of five different languages all of which are electronically synchronized with a rear projection visual presentation.

Starting later this month, students from the following countries will arrive at Meals for Millions to attend training classes: Bolivia, Brazil, Chile, Ecuador, Japan, Korea, Philippines, and Taiwan.

They will learn how to make the high protein food supplement or beverage from seeds indigenous to their home countries. They will also learn processing sanitation, packaging, marketing, and distribution, so they may start a self-help program when they arrive home.

2137. U.N.I. 1967. Soya products unit for Bombay. *Times of India* (*The*) (*Bombay*). July 15. p. 6.
• ***Summary:*** A plan to establish a plant in Bombay to make soya milk and soya products (from soya beans) has been licensed. The necessary equipment is being ordered from the United States.

"The programme is aimed at stimulating the use of soya beans, besides providing soya milk to serve as a supplement to animal milk."

In the Punjab, moreover, a unit has started testing the production of high-protein foods.

2138. Berg, Alan D. 1967. Malnutrition and national development. *Foreign Affairs* 46(1):126-36. Oct. Address: Washington, DC.

2139. Diamond, Holton W. 1967. Profit potential of new vegetable fat products. Paper presented at the 60th annual convention of the Milk Industry Foundation and the 63rd

annual convention of the International Association of Ice Cream Manufacturers. 9 p. Held jointly in Los Angeles, California. Session on Marketing and Technology, Tuesday, Oct. 24, 1967.
• ***Summary:*** Pages 5-6 state: "The finest vegetable milk which I have seen is that which was made at one time at the George Washington Carver Laboratory in Dearborn, Michigan. During my work there in the years between 1940 and 1946, a great deal of technology was developed in the manufacture of many kinds of vegetable dairy products. A pilot type soy bean milk plant in which we made 150 gallons per day of soy bean milk and soy bean cream was part of the laboratory. The milk and cream were supplied at no cost to mothers of infants who were allergic to cow's milk, and to others; and the technology was shared freely with all who were interested. The laboratory was supported by the late Henry Ford, and he visited us often. A very great deal has been done since, but much of the basic technology now in use in this field originated in this small laboratory, in research which was made possible by the interest of Henry Ford in the soy bean and in what has come to be called 'chemurgy,' the industrial use of the products of the farm and of the soil...

"If you will share with me one experience, you can imagine how I may have become prejudiced in my outlook on cultured cheeses. Across a period of several months, at my direction, a laboratory technician at the George Washington Carver Laboratory inoculated samples of soy bean milk and soy bean cream with portions of Cheddar, Limburger, Roquefort, Camembert, Liederkrantz and other cheeses." None of the workmen wanted to open the incubator door; in fact, they drew straws each Monday morning to see who would have to do it.

Concerning the concept of "imitation" products: "A product which is demonstrably less well suited to its intended *purposes* than is a well known precursor which it resembles and which is used for the same purposes is inferior. Because of its inferiority, it is properly labeled and referred to in a derogatory way as an 'imitation', for this word, both as an adjective and as a noun, connotes inferiority.

"We are no longer ashamed of new or mixed-ingredient materials merely because they are new or comprised of components of different origins." In almost every case they are less expensive, and in some cases they are clearly superior in at least some characteristics to their dairy counterparts. Address: Rex Diamond Laboratories, Inc., Detroit, Michigan.

2140. Dutra de Oliveira, J.E.; Scatena, L. 1967. Nutritional value of protein from a soybean milk powder. *J. of Food Science* 32(5):592-94. Sept/Oct. Also in Soja: Relatorio e Pesquisas. Ribeirao Preto. 1972. p. 11. Pinto 1978, p. 293. [8 ref]
Address: Faculdade de Medicina, Ribeirao Preto (Sao Paulo), Brazil.

2141. Henderickx, H.K.; Vanneste, G. 1967. Maïze-soybean mixtures as protein sources of high biological value. *Zeitschrift fuer Ernaehrungswissenschaft* 8(4):209-15. Oct. [15 ref. Eng]
• ***Summary:*** In the Luluabourg [later renamed Kananga] area of the Belgian Congo, there is a shortage of proteins. Animal protein is too expensive and in short supply. Therefore it appears necessary to solve the problem using plant proteins. Ground-nuts, beans, and sometimes voanszous (voandzeia subterrsmea [subterranea] Thou.) [Bambara groundnuts] are cultivated in the Luluabourg area and their growth is highly encouraged. "Another possibility would be the introduction of the soybean culture. Indeed from a nutritional point of view this could be a valuable improvement. The soybeans, adequately treated, is quantitatively and qualitatively one of the best vegetable protein sources. From an agricultural standpoint the soybean growth in this area is more favourable than that of other leguminosae as to yield, vegetation period, edaphic conditions, etc." The authors tried making soybean milk but with little or no success due to unsanitary conditions during preparation. But they got good results substituting soybeans for manioc in *bidia* using 25% soybean meal and 75% maize meal. It was sweetened with a piece of well matured banana. The nutritional value of the mixture was high, with a chemical score of 91. Address: 1. Dep. of Nutrition, Faculty of Agricultural Sciences, 235 Coupure, Gent (Belgium); 2. BP 110, Tshibashi-Luluabourg ([Belgian] Congo).

2142. Kapsiotis, G.D. 1967. A list of protein food mixtures. *PAG Bulletin* (*Protein Advisory Group, WHO / FAO / UNICEF*) No. 7. p. 71-73. Oct.
• ***Summary:*** For each product, the following information is given: Product name, country, composition, protein content (percentage), and price (in US$/kg) and packaging. Of the 18 products listed, the following 8 contain soya. Incaparina in Colombia and Mexico. Fortifex in Brazil. Pronutro in South Africa. Saridele in Indonesia. Prolo in the UK. CSM and CEPLAPRO in the USA.

Several interesting products do not contain soya: Peruvita in Peru contains quinua. Bal-Ahar in India (made by CFTRI) contains mixed wheat flour, vegetables and defatted oilseed flour, vitamins, calcium. Address: Food Science and Technology Branch, Nutrition Div., FAO, Rome, Italy.

2143. *Prevention* (*Emmaus, Pennsylvania*). 1967. The superior soybean. Oct. p. 60-62. [5 ref]
Address: Emmaus, Pennsylvania.

2144. Hackler, L.R.; Stillings, B.R.; Polimeni, R.J. 1967. Correlation of amino acid indices with nutritional quality of several soybean fractions. *Cereal Chemistry* 44(6):638-44.

Nov. [10 ref]
• ***Summary:*** The residue or water-insoluble fraction [from making soymilk, called okara] was the most nutritious fraction as measured by growth and PER; it contained more cystine and consequently more total sulfur amino acids than all other soybean fractions. Based on Clark soybeans ground with water, the residue contains 23.5% of the solids and 13.5% of the protein found in the original soybeans. The soy milk contains 65.0% of the solids and 83.0% of the protein.

The residue contains 23.1% crude protein, 17.3% lipid, and 4.5% water. Discusses the essential amino acid index (EAAI) and the requirement index (RI). The results of the amino acid composition of the soybean fractions (residue, soy milk, curd, whey protein, hulls, soak water) are reported in table 1 as grams of amino acid per 16 gm nitrogen. Table 2 gives the protein scores of the various soybean fractions based on essential acid index. Table 3 gives the protein scores of the various soybean fractions based on the requirement index. Table 7 shows that the residue contains the highest quality protein based on PER and EAAI, but second highest based on RI. Address: Cornell Univ.

2145. Lo, K.S. 1967. Development and marketing of soybean products for developing countries. Presented at Bangalore Conference, Mysore, India. Nov. *

2146. *Prevention* (*Emmaus, Pennsylvania*). 1967. Milk can cause adult diarrhea. Nov. p. 50-51. [1 ref]
• ***Summary:*** Summary of an article by Marshall Sparberg, M.D., in *Medical Digest* (Aug. 1967). The problem is due to lactose and lactase. Lactose is a combination of two sugars, glucose and galactose. It must be broken down (hydrolyzed) by the enzyme lactase before the body can digest it. Infants typically have plenty of lactase, but the level steadily decreases through childhood, until many adults have little–leading to lactose intolerance. Some demographic groups, such as Negroes, have less than others.

Prevention magazine has "long advocated the elimination of milk and milk products from the diets of adults. There are many less risky ways of acquiring the same nutrients contained in milk."

"Human beings are the only mammals that continue to drink milk into adult life. Nobody really knows why." Address: Emmaus, Pennsylvania.

2147. *SoyaScan Notes.* 1967. Chronology of soybeans, soyfoods and natural foods in the United States 1966-1967 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1966, April 9. Erewhon opens as a small (10-by 20-foot) macrobiotic and natural foods retail store at 303-B Newbury Street in Boston, Massachusetts. Aveline and Michio Kushi are the founders and Evan Root is the first retail store manager. Erewhon is the first food store of its kind in America, and it soon serves as a model for many other similar natural foods stores across America. Erewhon starts to grow in Oct. 1967 with the arrival of Paul Hawken.

The natural foods movement in America is in its infancy, advocating a return to traditional whole foods, naturally grown and processed. It's predecessor, the health foods movement (which started in the 1930s, based on the new public interest in vitamins), now largely sells vitamin, mineral, and protein supplements.

1966, Nov. America's first soybean checkoff program voted in by North Carolina soybean growers, who will pay half a cent per bushel checkoff on the 1966 crop. This new income source marks the start of a new era for the American Soybean Association.

1967. The All-India Coordinated Research Project on Soybean is founded in India, after about 4 years of pioneering soybean work there by American Land Grant Universities, funded largely by the Rockefeller Foundation. This story is well told in Carroll P. Streeter's book A Partnership to Improve Food Production in India (1969).

1967. Soy idli developed by Steinkraus and van Veen at Cornell University, New York. These small steamed cakes are the first traditional Indian fermented soyfood to be fortified with soy flour. The fortification of basic foods in Third World countries with soy flour becomes popular.

1967. Philsoy brand soymilk launched in Los Baños, Philippines, with aid from Cornell University food scientists Bourne and Steinkraus.

1967. Proceedings of International Conference on Soybean Protein Foods published by USDA Agricultural Research Service. The conference was held 17-19 Oct. 1966 at Peoria, Illinois. Many of the 276 attendees were pioneers in the field. A similar conference on Soybean Products for Protein in Human Foods had been held in 1961 at the same location. A major theme at both is that protein malnutrition is now the world's most widespread deficiency disease.

1967. Soybean production in Latin America reaches 1 million metric tons (tonnes), up 10-fold since 1953.

2148. Wilkens, W.F.; Mattick, L.R.; Hand, D.B. 1967. Effect of processing method on oxidative off-flavors of soybean milk. *Food Technology* 21(11):86-89. Dec. Based on paper presented at New York State Agric. Exp. Station. Cornell Univ. Geneva. June 30, 1966. 13 p. Babatunde 1979. [7 ref]
• ***Summary:*** Note: This classic study, the first to discover that the lipoxidase enzyme in soybeans causes off-flavors, played a major role in starting the modern soymilk boom and leading to improved-quality soy flours as well.

The authors found, by means of sophisticated chemical-analytical techniques (especially chromatography), that the enzyme lipoxidase, which is present in whole soybeans, is the cause of the beany flavor in soymilk. The off-flavors are not present in the whole dry soybeans but are formed during processing. As soon as the soaked or dry soybeans

are ground with water at a temperature below 80ºC (180ºF) (or the tissues of the soybean cotyledons are broken or damaged in any way in the presence of even a small amount of moisture), the lipoxidase enzyme almost immediately catalyzes off-flavor development by acting on the lipids (oils and fats) in the soybeans. In particular it catalyzes the oxidation of unsaturated fatty acids (principally linoleic and linolenic acids), which results in rancidity and off-flavor formation, and produces more than 80 compounds called volatiles, all having low molecular weights. The majority of these volatiles are reported to be ketones, aldehydes, and alcohols, and most impart undesirable flavors.

"An acceptable bland milk was produced by grinding unsoaked, dehulled soybeans with water at temperatures between 80 and 100ºC and maintaining the temperature for 10 minutes to completely inactivate the lipoxidase enzyme." Address: Cornell Univ., Geneva New York.

2149. **Product Name:** Neo-Mull-Soy (Non-Dairy Infant Formula Based on Soy Protein Isolate).
Manufacturer's Name: Borden, Inc. Pharmaceutical Products Div.
Manufacturer's Address: Headquarters: 350 Madison Ave., New York, NY 10017. Plant in Elgin, Illinois.
Date of Introduction: 1967.
Ingredients: Incl. water, soy protein isolate, vitamins and minerals.
New Product–Documentation: Bates et al. 1968. Annals of Allergy. 26(11):577-83. Nov. "Milk and soy formulas: A comparative growth study." Syntex. 1990. Press backgrounder. In 1967 The Borden Company developed Neo-Mull-Soy and Cho-Free, highly specialized infant feeding formulas designed for children who were allergic to milk products, or in the case of Cho-Free, to carbohydrates.

2150. **Product Name:** Jolly Joan Soyquick. Renamed Ener-G Soyquick in 1968.
Manufacturer's Name: Ener-G Cereal Co.
Manufacturer's Address: P.O. Box 24723, Seattle, WA 98124.
Date of Introduction: 1967.
Ingredients: Soya bean powder.
Wt/Vol., Packaging, Price: 397 gm carton.
How Stored: Shelf stable.
New Product–Documentation: Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). "Ener-G Foods Inc., P.O. Box 24723, Seattle, Washington 98124. Phone: 206-767-6660 (Makes soymilk and Jolly Joan Soyquik)."

Food Report (Lehmann). 1983. Aug. One carton of the powder mixed with water makes seven quarts of soymilk. Advertised in a women's magazine in Greece as "an easy alternative to milk." The company also makes Nutquik, containing ground almonds.

Frank Murray. 1984. More than One Slingshot. p. 45. Formerly known as Ener-G Cereal Co., it was started in 1910 by L.J. McCarthy. Now in Seattle, Washington. An early product was Jolly Joan Toasted Wheat Germ. They now make Soy Pancake Mix.

Talk with Sam M. Wylde, Chairman, Ener-G Foods, Inc. 1990. Oct. This product was originally named Soymilk Powder. They changed it to this name in 1967. Then they changed the name to Ener-G Soyquick in 1968, at the time they moved to Fox Ave. and changed the company name.

During World War II, when the German armies moved into Holland, they seized all the wheat, rye, oats, and barley, then sent them back to Germany to feed their own people. Suddenly a lot of Dutch people, who had been sick all their lives, suddenly got well. The cause was found to be an intolerance to the gluten found in these 4 crops. Two Dutch physicians did research on this and called the disease celiac-sprue disease. It is genetic defect found only in people of northern European extraction (the very people who tend NOT to be lactose intolerant), of which 1 in 200 people have the defect. In the rest of Europe, its 1 in 400. In the USA, 1 in 2,000 have it. Ener-G Foods moved in the direction of serving people on gluten-free diets, on kidney machines who needed a diet low in protein, sodium, potassium, and phosphorus, and kids with PKU (phenylketonuria). Their Soyquick, which is their only soy product, is now part of a line of special food for special diets. Their three best-selling products are Soyquick, Egg Replacer, and Rice Mix. The Soyquick is still used mainly for people with lactose intolerance, the same as in the early days. They also make an almond milk named Nutquick. In 1989 the company made its third move to 5960 First Ave. South, Seattle, WA 98108,– where they are now located.

2151. Tin Tin U, Daw; Thien, U Aung. 1967. Processing of soya milk. *Union of Burma J. of Science and Technology* 2:355-62. [7 ref. Eng]
• ***Summary:*** In 1963-64 in Burma about 17 million pounds of soybeans were produced. This article is about attempts to get rid of the slight unpleasant residual flavor in soya milk.

It was further discovered that the pH of soy-milk needs to be raised when used in coffee in order to prevent coagulation. This is not a problem, however, when soy-milk is used in tea or milo. Address: Food Technology Research Dep., Union of Burma Applied Research Inst.

2152. **Product Name:** Philsoy (Soymilk).
Manufacturer's Name: University of the Philippines at Los Baños.
Manufacturer's Address: Los Banos, Philippines.
Date of Introduction: 1967.
Wt/Vol., Packaging, Price: Glass bottle with crown cap.
New Product–Documentation: Bourne 1970, 1971; Puertollano et al. 1970; Bourne et al. 1976; Banzon &

Escueta 1979. A bottled soymilk. Due to a retail price which was lower than that of a competing skim milk, chocolate-flavored beverage, production reached 3,500 bottles/day. Production breakdowns halted the project. Talk with Rachel Cabato. 1989. May 28. Production of Philsoy stopped about 1-2 years ago.

2153. **Product Name:** Yeo's Soyabean Drink.
Manufacturer's Name: Yeo Hiap Seng Ltd.
Manufacturer's Address: 950 Dunearn Rd., Singapore.
Date of Introduction: 1967.
Wt/Vol., Packaging, Price: Tetra Pak Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 101. In 1967 it became the world's first soymilk to be sold in aseptic (UHT, Tetra Pak) cartons. Note: An aseptic product is one which is sterilized at UHT = Ultra High Temperature before packaging. By 1983 Yeo Hiap Seng was making 18.8 million liters/year of soymilk, the sixth largest in the world. Lee. 1986. Sunday Times (Singapore). Sept. 7. "Soya Bean Milk Packs More Water than Flavor." Yeo's sells for 35 cents per 250 ml. Comments: Sweet, very watery, not tasty.

Soya Bluebook Plus. 1997. p. 163. The company name and address have not changed. The postal code is Singapore 2158, Singapore. Phone: +65 466-2266. Fax: +65 466-4641. Contact: Desmond H.K. Ng or S.C. Toh.

2154. Bennett, Victor. 1967. The complete bean cookbook. New York, NY: Bonanza Books. 298 p. Preface by Senator Everett Dirkson. Index. 21 cm.
• ***Summary:*** The glossary (p. x-xii) defines bean curd (called *tou fu* in Chinese and *tofu* in Japanese). Soy-related recipes include: Salted soybeans (p. 8). Roasted soybeans (p. 8). Spiced soybeans (p. 10). Soybean milk soup (p. 38-39). Green soybean salad (p. 80; incl. "1 pound green soybeans, shelled, cooked, drained and cooled"). Molded sprout salad (p. 82, with sprouted soybeans). Soybean salad (p. 84). Soybean perfection salad (p. 84). Scalloped soybeans (p. 119). Scalloped green soybeans (p. 121; incl. "3 cups cooked green soybeans"). Soybean croquettes (p. 124). Bean stuffed peppers (p. 128, with "2 cups soybean pulp... prepared by pressing cooked soybeans through a coarse sieve or putting through a food grinder"). Bean stuffed tomatoes (p. 130, with soybean pulp). Scalloped eggplant (p. 131, with soy grits). Soy Welsh rabbit (p. 239, with soy flour). Soybean loaf (p. 239). Soybean curry (p. 240). Soybeans and salmon (p. 240). Soybean curd chop suey (p. 242). Soybean sprout casserole (p. 242). Soy cheese soufflé (p. 247, with soy grits or flour and 1 cup grated dairy cheese). Biscuits (p. 274, with soy flour). High soy yeast bread (p. 275). Yeast bread (p. 276, with full-fat soy flour). Coffee bread (p. 276, with low-fat soy flour). Currant nut bread (p. 277, with soy flour). Southern corn bread (p. 278). Whole wheat bread (p. 278). Doughnuts (p. 279). Bronze cake (p. 280). Griddle cakes (p. 280). Southern spoon bread (p. 282, with soy flour). Nut bread (p. 282). Nut mixture (p. 283, with soy grits). Dumplings (p. 283, with soy grits). Cherry pie (p. 284, with soy flour). Yeast rolls (p. 284). Spice cake (p. 285). Chinese almond cookies (p. 286). Butter crunch (p. 286). Orange cake (p. 287). Muffins (p. 288). Cocoa (p. 288, with soybean milk). Orange rolls (p. 289, with soy flour). Creamy rice with raisins (p. 289, and soybean milk). Waffles (p. 290, with soy flour). Egg nog (p. 290, with 2 cups dairy milk, 2 eggs, and 4 teaspoons soy flour). Molasses puffs (p. 291, with soy grits). Apple crisp (p. 291, with soy flour). Peanut butter cookies (p. 293). Brownies (p. 294, with "soyflour"). Oatmeal pudding (p. 294, with soybean milk). Peanut candy (p. 295, with soy flour). Boiled custard (p. 295, with soybean milk). Chocolate soufflé (p. 296, with soy grits). Apple betty (p. 296, with soy grits). Apple cobbler (p. 297, with soy flour). Fruit balls (p. 298, with soy flour). Sugar cookies (p. 298, with soy flour).

2155. Dutra de Oliveira, J.E.; Scatena, L.; Duarte, G.G. 1967. Metabolic studies of the supplementary value of animal and vegetable proteins. *Nutritio et Dieta* (*European Journal of Nutrition and Dietetics*) 9(4):249-58. Also in Soja: Relatorio de Trabalhos e Pesquisas. Ribeirao Preto: Departamento de Clinica Medica. Faculdade de Medicina. 1972. p. 17. [6 ref. Eng; ger; fre]
• ***Summary:*** "The study of the nutritive value of new sources of protein for infant feeding attracts great interest in various parts of the world. Mixtures of proteins, especially vegetable proteins, have been developed for such a purpose in Latin America, Africa, and India." A metabolic study was conducted on 24 children to test the supplementary value of animal and vegetable protein with a basic Brazilian diet. The vegetable sources of protein were soya milk, soya flour, and ground beans. Two nitrogen balance studies were carried out in each child. The vegetable proteins gave excellent results, and were much less expensive than their animal counterparts. Address: Brazil.

2156. Fomon, Samuel J. 1967. Infant nutrition. Philadelphia, Pennsylvania: W.B. Saunders Co. 299 p. Illust. 25 cm. See p. 228-33, Formulas from Protein from Soy. [86* ref]
• ***Summary:*** In Chapter 12, titled "Milk-free formulas" Table 12-1, "Formulas with protein from soy" (p. 229) gives detailed nutritional information on the following products: "Sobee (Mead), Mull-Soy Liquid (Borden), Mull-Soy Powder (Borden), Soyalac Liquid (Loma Linda), Soyalac Powder (Loma Linda), ProSobee (Mead), and Isomil (Ross)." A footnote states: "Protein of ProSobee and Isomil is the acid precipitated fraction, called soy protein isolate."

Page 230 continues: "Protein. Although two soy formulas made with soy flour (Mull-Soy and Sobee) have for years been widely used as milk substitutes, the greater whiteness and improved palatability of water-soluble soy

isolates makes it likely that in the future such isolates will replace soy flour as the source of protein for most soy formulas. ProSobee and Isomil contain a soy isolate fortified with methionine." Analyzes commercial formulas in terms of protein (incl. PER comparisons), carbohydrate, minerals, vitamins, and heat labile substances. Also describes the use of a soy formula to treat disaccharide intolerance and disaccharidase deficiency. Address: Iowa State.

2157. Hunter, Beatrice Trum. 1967. The natural foods cookbook. New York, NY: Pyramid Books. 368 p. Index. 18 cm.
• ***Summary:*** The content of this paperback edition is almost identical to that of the original 1961 hardcover edition, but the pagination is different. The Introduction by Clive and Jeanette is missing. On the cover of the 19th printing (Jan. 1974) is written: "Over a million copies sold." Address: White Mountains, New Hampshire.

2158. Manber, David. 1967. Wizard of Tuskegee: The life of George Washington Carver. New York, NY: Crowell-Collier Press. vi + 168 p. Illust. Index. 21 cm. [9 ref]
• ***Summary:*** George Washington Carver lived from about 1864 to 1943. This book is part of the series "America in the Making" written for teen-agers as an introduction to important American individuals, ideas, and events. The chapter titled "Carver Rediscovers the Peanut" notes that in 1904 the boll weevil was making it increasingly difficult to grow cotton in the South. So Carver urged farmers to plant less cotton and to raise cowpeas, sweet potatoes and peanuts to sell. "Although he had been successful at growing the soybean years before anyone had even heard of it, he did not suggest it to the farmer because he felt it was too different for southern farmers, too unfamiliar to appeal to them. Peanuts, on the other hand, were not at all strangers to Alabama farms. Almost every farmer had a little patch of peanuts somewhere near the house, grown for the children to eat." The peanut is a native of South America. "The Spanish conquistadors brought peanuts back to Spain with them. From there they found their way to Africa in the 17th century, and were brought to America by slave traders, who fed them to the slaves. 'Goober,' another word for the peanut, is actually an African word" (p. 118).

Carver developed hundreds of food and industrial products from the peanut, including milk, cream, and butter. "Peanut milk was a lifesaver in the Belgian Congo. Cows could not be raised there, because they would be devoured by leopards or diseased by flies... When missionaries started feeding the babies peanut milk, the babies lived and flourished.

"Carver lectured everywhere on the peanut and issued bulletins regularly. In addition, he lectured on the soybean and the many products that could be made of it: flour, meal, coffee, breakfast food, oil, milk. Again, however, he realized that southern unfamiliarity with the soybean would be a hindrance to its development" (p. 121).

"Carver published recipes for cooking peanuts for the home in 1913, but the original bulletin was in its sixth printing by 1916. It gave directions for growing, and 105 different ways of preparing the peanut for eating" (p. 125).

The first commercial crops of peanuts in Alabama were finally planted in 1917. Coffee County, Alabama, on the verge of bankruptcy in 1915, soon became the state's leading peanut growing county. In 1919 its largest town, Enterprise, erected a $25,000 shelling plant. It also honored Carver by placing a large monument in the town square. In May 1919 peanut growers met in Atlanta, Georgia, and organized the United Peanut Associations of America. They invited Carver, age 55, to speak about the peanut. Carver showed them his peanut products. "There were leather stains, wood stains, sauces, milk, skim milk, buttermilk, ice cream, evaporated milk, fruit punch. He showed them peanut coffee, instant coffee with cream. The *Peanut Promoter* for October 1920 wrote that the biggest thing at the convention had been the address of Professor Carver... The following January the association invited him to address the Ways and Means Committee of Congress." His presentation and exhibit there "was a powerful factor in the committee's decision to write a stiff tariff into the Fordney-McCumber Bill; the highest tariff the peanut industry ever had. The trade magazine *The Peanut World* wrote in their May 1921 issue: 'With profound pleasure and pride we dedicate an entire page to that incomparable genius to whose tireless energies and inquisitive mind the South and the country owe so much...'" (p. 139).

2159. Swaminathan, M.; Parpia, H.A.B. 1967. Milk substitutes based on oilseeds and nuts. *World Review of Nutrition and Dietetics* 8:184-206. [75 ref]
• ***Summary:*** The main types of milk substitutes discussed are soybean milk, peanut milk, coconut milk, almond milk, and cashew milk. Of these, soybean milk is considered to be the most important. Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

2160. Swaminathan, M. 1967. Availability of plant proteins. In: Anthony A. Albanese, ed. 1967. Newer Methods of Nutritional Biochemistry, with Applications and Interpretations. Vol. III. New York: Academic Press. xv + 527 p. See p. 197-241. [179 ref]
• ***Summary:*** Soy is mentioned briefly in various tables and other places throughout this chapter. The section titled "Use of Plant Proteins in Child Feeding" (p. 220-22), soymilk is discussed at length in the subsection on "Infant Foods" and soy flour and Multi-Purpose Food (MPF) in the subsection on "Processed Protein Foods."

Anthony A. Albanese was born in 1908. Address: Applied Nutrition and Dietetics Discipline, Central Food

Technological Research Inst. (CFTRI), Mysore, India.

2161. Valnet, Jean. 1967. Thérapeutique journalière par les légumes et les fruits [Daily therapy using vegetables and fruits]. Paris: Librairie Maloine S.A. 320 p. Illust. 20 cm. [Fre]
• ***Summary:*** Advocates a vegetarian diet. Pages 238-40 discuss therapeutic uses of the soybean, including soy flour, soy oil, soy sprouts, and soy milk. Address: Docteur.

2162. Colvin, B.M.; Ramsey, H.A. 1968. Growth of young calves and rats fed soy flour treated with acid or alkali. *J. of Dairy Science* 52(2):270-73. Feb. [1 ref]
Address: Dep. of Animal Science, North Carolina State Univ., Raleigh, North Carolina. Colvin's present address: Dep. of Biochemistry, Oklahoma State Univ., Stillwater, Oklahoma.

2163. *Prevention* (*Emmaus, Pennsylvania*). 1968. That cold could be an allergy. Feb. p. 71-73.
• ***Summary:*** In children, allergic reactions often resemble the common cold. According to Dr. Jerome Glaser, breast feeding protects the child. He says that most allergies in early infancy are due to food, and of these cow's milk is the chief offender.

Many will find this revelation shocking. Haven't we long been taught that milk and healthy children go together? That we milk for good teeth and healthy bones?

"Soy milk can help: If breast milk is not practical, Dr. Glaser suggests soybean milk. It can be given from birth as a supplementary feeding to breast milk."

Note: Prevention has opposed the use of cow's milk since July 1955; that same issue advised mothers to use soy milk as an alternative for babies who were allergic to cow's milk.

In August 1965 the findings of a British study were summarized, indicating that malabsorption of lactose (milk sugar) is due to a human deficiency in the enzyme lactase; this is a cause of 'functional' diarrhea.

In Aug. 1966 appeared "Milk intolerance is widespread."

In Nov. 1967 *Prevention* focused on the danger of milk-induced diarrhea in adults.

In Feb. 1971, in "Milk is not for grown-ups," readers were advised of the folly of giving away milk to hungry nations.

2164. Cerny, K.; Hajkova, S.; Pechar, J.; Van Vinh, V.; Rubin, A.; Zvolankova, K. 1968. A comparison of the efficacy of a soy flour-based milk substitute in feeding malnourished Vietnamese and eutrophic Czech infants. *J. of Tropical Pediatrics* 14(1):15-25. March. [30 ref]
• ***Summary:*** "The use of soybean in infant feeding first reported by Ruhrah (1909) has been given great attention ever since as a substitute for cow's milk in different forms of allergy, but increasingly in the treatment and prevention of protein-calorie malnutrition in infants and preschool children in developing countries.

The two main types of vegetable mixtures recommended for infant feeding are: (a) packaged commercial products of typically high nutritional value but costly due to expensive industrial processing, fortification, and (above all) packaging; (b) formulae based on low-cost natural ingredients available even in regions with an inadequate distribution network and cash economy.

This report details trials with a vegetable milk of type (b) based on full-fat soy flour fed to 40 Vietnamese infants and toddlers with different types of malnutrition and to 25 eutrophic (well-nourished) Czech infants. The results are complex. Address: 1. Inst. of Human Nutrition, Prague, Czechoslovakia.

2165. **Product Name:** [Saci {Liquid Soymilk} (Chocolate, or Caramel)].
Foreign Name: Saci.
Manufacturer's Name: Coca-Cola Refrescos, S.A.
Manufacturer's Address: Rio de Janeiro, Brazil.
Date of Introduction: 1968. March.
Ingredients: Soybean protein [isolate], powdered [cow's] milk, hydrogenated fat, sugar, carbohydrate, cocoa powder.
Wt/Vol., Packaging, Price: Sold in 6 oz soft drink bottles, sterilized with crown cap in 1968. Sold dry in multiwall paper bags. $1.76/kg in 1981.
How Stored: Shelf stable.
Nutrition: Biological value is 90% of casein. Per 100 gm: Protein 3 gm, fat 1.7 gm, with 15% added sucrose and vitamins A, D, B-1, B-2, B-6, B-12.
New Product–Documentation: *Soybean Digest.* 1968. March. p. 45. "Protein beverage by Coca-Cola." *Soybean Digest.* 1968. May. p. 23. "New weapons for the war on hunger: Latest high-protein soy beverage."

Bird, Kermit. 1968. "Foods of the future: Part I. Using conventional materials." *Food Product Development.* Oct/Nov. p. 32, 34. In Rio de Janeiro, Brazil, the Coca Cola Co. has been test marketing a beverage named Saci, bottled like a soft drink. A chocolate-flavored energy drink containing 3% protein; the protein comes from local Brazilian soybeans. The drink is promoted (see ad) as "Powerful" with "delicious energy." Photos show: (1) A bottle of Saci; (2) A graphic ad for the drink.

Russo, J.R. 1969. *Food Engineering.* June. p. 81-82. "Can new protein sources avert world shortage? Part II." In Brazil, Coca-Cola Co. has introduced Saci, a beverage containing about 3% protein. Saci is a chocolate flavored drink, made from cocoa beans and soybeans. Acceptance of chocolate Saci was encouraging and led to the recent introduction of caramel flavored Saci. Protein-rich Saci is sold in a 7-oz soft-drink type bottle (with a crown cap), which contains 6 gm of protein. A photo shows the bottle.

E. Orr. 1972. Tropical Products Inst. G73. The use of protein-rich foods for the relief of malnutrition in developing countries: an analysis of experience. p. 29-30. "Saci is manufactured by a branch of the Coca Cola company in Brazil. The enterprise had its roots in a decision by the parent company that since there was a need for protein products in developing countries there might be a demand for a nutritional beverage which the company could, with profit, meet. The company's food scientists were accordingly given the brief of developing a beverage with a good nutritional quality and a pleasant flavour which could be made available at a 'minimum price'. After more than a year's work a product was considered ready for consumer testing. Brazil was chosen for the initial launch primarily because soya is grown there and the bottling plant there is company-owned and not under franchise. (It might be noted that the company did not expect the production of Saci to reduce the market for Coca Cola and its other soft drinks since Saci is considered to be 'at the opposite end of the taste spectrum' from these). Consumer acceptability tests were carried out, leading in particular to the selection of chocolate as the flavour for the product. A well-known firm of industrial designers was employed for package design and the initial promotion was arranged by the Brazilian Office of McCann-Erickson Inc., one of the giants in the advertising field. Test marketing began in a small suburb of a major city in February, 1968. Certain changes were made as a result of this experience, e.g. an additional flavour was made available and the advertising was changed, to emphasise the healthful qualities of the product rather than attempting to explain protein deficiency and its consequences. No official information is available about the operational status of the Saci enterprise. However, no attempt has been made to launch it outside the market trial area, and in general there is reason to believe that the market response has been discouraging, and possibly so discouraging that the enterprise will be abandoned."

E. Orr. 1977. Food and Nutrition (U.N.). 3(2):2-10. "The contribution of new food mixtures to the relief of malnutrition."

Soya Bluebook. 1980. p. 50-51. For Brazil. Address is P.O. Drawer 1734, Atlanta, GA 30301; Pereira & Campos. 1981. *Journal of the American Oil Chemists' Society.* March. p. 357. Gives ingredients. Aguilera and Lusas. 1981. Journal of the American Oil Chemists' Society. March. p. 519. "Coca-Cola introduced a caramel-flavored protein beverage, Saci, which contained 3% soya protein, in Brazil in 1969. By 1976 the production was terminated and a new type of beverage using whey powder was being considered." R.H. Moretti. 1981. Journal of the American Oil Chemists' Society. March. p. 521. "Soy milk developments in Latin America." Saci was introduced in Brazil in 1968.

D.S. Bhatia. 1981? "Developing and marketing of protein-containing beverages." This unpublished manuscript, written by the Director of the Corporate Research and Development Department, The Coca-Cola Co., Atlanta, Georgia, contains the best discussion seen of Saci and its development. The sterilized beverage was launched in early 1968 in Rio de Janeiro, Brazil, and marketed for about 3 years.

Brian Fitzpatrick. 1982. Soya Milk in Asia. p. 261. States that Coca Cola Co. test marketed SACI in Brazil in 1969; Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 125-26. Marketing stopped in 1976.

2166. *Soybean Digest.* 1968. Protein beverage by Coca-Cola [SACI]. March. p. 45.
• ***Summary:*** "A noncarbonated beverage which includes soy milk designed to improve the protein in the diet has been announced by Coca-Cola Bottling Co., Atlanta [Georgia]. J. Paul Austin, president, said the product, called SACI, has been launched in Rio de Janeiro, Brazil, by Coca-Cola Refrescos, S.A. That particular market was selected because of the ready availability of Brazilian soybeans, machinery and talent for the undertaking. Also included in the beverage will be cocoa for chocolate flavor, sugar, and vitamins.

"USDA says a number of commercially produced high-protein foods in the form of tasty beverages, meatlike products, soups and candies are appearing in various parts of the world."

2167. Indian Council of Agricultural Research. 1968. Proceedings of the First Workshop Conference on Soybean. New Delhi, India: ICAR. 8 p. Held 4-5 April 1968 at the Indian Agricultural Research Institute.
• ***Summary:*** Dr. M.S. Swaminathan, Director of the Indian Agricultural Research Inst., welcomed the delegates. Various University of Illinois personnel were present. He noted that that "the most significant point that hindered the progress of soybean introduction in Indian Agriculture in a big way in the pre and post World War II periods [was the] bottleneck in marketing and utilisation of the soybean that was produced in different parts of the country. In the current post-Independence period he pointed out that the" situation is different.

"In view of the special importance of soybean in the antibiotic industry and a rich and cheap source of meat-like protein and milk-like invigorating drink, Dr. Swaminathan stressed the need for agricultural scientists of diverse disciplines to bend their energies toward attaining expeditiously the goal of introducing into cultivation soybean varieties adapted to different latitudinal zones in this country."

He pointed out "the current urgent demands for large quantities of soybean meal and oil by the existing antibiotic industries in India. This point, at the request of the Chair, was elaborated by Dr. Thirumalachar, Chief Mycologist, Hindustan Antibiotics Factory, Pimpri, Maharashtra, who was present at the workshop by special invitation.

"The Chair also informed the gathering that seed multiplication of Bragg and Clark varieties that grew well in the northern plains of India" will be accelerated by about 20 tonnes of imported seeds from the U.S.A. in the coming kharif season to be grown in isolation at Suratgarh (Rajasthan).

"At the request of the Chairman, Dr. Earl Leng of Illinois University, gave a talk on 'Soybeans for India–Promise and Problems.'

The chair later "related how soyabean could be a good substitute for *urid* [a pulse] and maize for rice in the preparation of *idli*, the nutritious breakfast food of south India.

"The inaugural session closed with a brief review of the working of the All India Soyabean Project during 1967, the first year of its operation, presented by the Project Coordinator, Shri H.B. Singh, who noted that he visited the various cooperating centers during the 1967 season. The trials at Pantnagar (U.P.), Jabalpur (M.P.), Kalyani (West Bengal), and Katrain (Himachal Pradesh) were all uniform and gave useful information.

Also discussed (with Dr. A.B. Joshi, Chair): Concluding session. Agronomic trials: Fertilizer trial, date of planting and plant population trial. Breeding (for the plains, for the hills, vegetable-type soybeans). Pests and diseases. Bacterial inoculation. Marketing. Address: Indian Agricultural and Research Inst., New Delhi.

2168. Hurd, Frank J.; Hurd, Rosalie. 1968. A good cook–Ten talents. Chisholm, Minnesota: Published by the authors. Printed by The College Press, Collegedale, Tennessee 37315. 354 p. Illust. Color plates. No index. 22 x 15 cm. Spiral bound. [1 ref]

• ***Summary:*** A very important, pioneering, indeed classic American vegan cookbook, which uses no animal products (except in one chapter at the end titled "Recipes Using Milk and Eggs," "for those who are in the transitional period. However, we encourage all those who still cling to milk and eggs to become acquainted with the facts concerning their use, and become weaned through this process"). Some recipes also use honey.

Contains more than 750 unique recipes (plus color photos), including many innovative soy recipes, including the first recipe for shakes made with soymilk ice cream.

In the Glossary (p. 11-17) are entries for lecithin (p. 13; "A food extracted from the soybean"), soybeans (p. 15-16), and tofu (p. 16), as well as agar-agar, almonds, carob, cashew nut, coconut, dulse, flaxseed, malted nuts (made from peanuts and cashew nuts with dry malt added), nuts, oils, peanut, sea kelp or dulse, sesame seed, and sesame tahini. A color photo (p. 55) shows soy sprouts. Soy-related recipes include: Homemade soy coffee (p. 66). Soybeans milks (p. 69; No. 1 costs $0.06/quart homemade. "Soybean pulp [okara] which remains can be made into various dishes. Try Soy Not-Meat," p. 202; No. 2 uses 1 cup plain soya starter). Banana milk shake (with chilled soy milk, p. 70). Banana carob milk shake #1 or #2 (with soy milk, p. 72). Molasses milk shake (with soy milk, p. 72). Soy-fig milk (p. 72). Milkless milk shakes (with non-dairy ice cream incl. soy milk powder, p. 72-73). Soy yogurt, cultured (p. 73-74; 3 recipes–made from whole soybeans, liquid Soyagen, or soy starter). Soya bread or rolls (p. 80). Vanilla ice cream (with soy milk powder optional, p. 125). Pineapple ice cream (with soy milk powder, p. 127). Banana soya ice cream (with rich soy milk, p. 128). Sesame soy cookies (p. 131, with 1½ cups raw sesame seeds). 7 grain granola (with 1 cup soy flour, p. 156). Easy granola (with soy flour, p. 157). Soy-millet patties or loaf (p. 182). Vegetable-nut loaf (with soy milk, p. 186). Green soy beans (p. 187; dry, green-seeded soybeans). Buckwheat, soy or whole wheat spaghetti (p. 192). Soybean curd #1 (homemade tofu using whole soybeans, curded with Epsom salt, p. 195). Soybean curd #2 (from soy flour, curded with lemon juice, p. 196). The tofu-making process is shown in six black-and-white photos. Ways to serve tofu (p. 196). "Scrambled eggs" (made with tofu, egg-free, p. 196). Tofu loaf (p. 198). Chinese nut loaf (with soymilk, p. 198). Vegetarian chow mein (with soy sprouts, p. 199). Peanut-soymeat (with soy flour, p. 200; steamed for 2-3 hours in greased cans). Soy not-meat (p. 202, with soaked ground soybeans or "the soybean pulp from the soy bean milk. This way the pulp is not wasted" [i.e. okara]). Peanut-soy round (p. 202). Soy meat (p. 203; made with 2 cups homemade gluten, 1 cup toasted ground peanuts, and 1 cup soaked blended soybeans, plus water, seasonings, oil and salt, steamed for 3 hours in greased cans). Soya peanut soufflé (p. 204). Soybean soufflé (p. 204). Tofu & rice croquettes (p. 206).

The chapter titled "Nuts, seeds, olives" (p. 209-20) includes: Glossary of nuts, raw nuts for your enzymes, nut notes, almond butter (king of the nuts), raw nut butters, cashew nut butter, cashew Brazil-nut butter, peanut butter, nut butter clusters, peanuts–oven blanched, dry roasting–soya nuts, malted nuts, browned sesame seeds, seed cereal topping (sunflower seeds, sesame seeds, flax seed), peanut butter-seed spread (tahini, sunflower seeds), peanut butter balls, simple sesame squares, sprouted sunflower clusters, olives, tree chestnuts, roasted chestnuts, roasted chick peas.

Green soy bean salad (p. 234; probably dry, green-seeded soybeans). Soybean sprouts salad (p. 234). Tofu cheese salads (p. 235). Tofu sun faces (p. 236). Pineapple tofu salad (p. 245). Pineapple tofu cottage cheese (p. 246). Lo-fat salad dressing (with soy yogurt, p. 251). Soy mayonnaise–eggless (4 types, p. 252-53). Soy butter (made with soybean flour, lightly dextrinized, p. 262). Soya starter (made with soy flour, p. 262). Soya yeast sandwich spread (p. 263). Super sandwich spread (with soybean pulp [probably okara, see p. 69], p. 264). Pimento-soy chee spread (p. 265). Sour cream–soy (p. 270). Soy whipped cream (p.

271; whirl in a blender ½ cup each soybean milk and soy oil, plus 1 tablespoon honey, ¼ teaspoon vanilla, and a pinch of salt). Tartar sauce, cheese (with soy mayonnaise and tofu, p. 273). Sprouts (p. 291-95). Fresh cucumbers with soy sour cream (p. 304). Celery and green soyas (p. 312; "2 cups green soy beans, frozen, canned, or fresh." Probably means green vegetable soybeans). Soya starter (base, made with soy flour, p. 326; keep a jar ready for quick use in making tasty spreads, milk and cream, mayonnaise, a binder when nut butter is not available. Dextrinizing the soy flour gives this Soya Starter a nutlike flavor).

Talk with Rosalie Hurd. 1991. June 3. *Ten Talents* is now going into its 44th printing. More than 250,000 copies have been sold. The latest was published by College Press in 1985. The first edition was published in May 1968. Frank, originally a chiropractor, is now a medical doctor. The Hurds now live most of the year in Fountain City, Wisconsin, where they run Alpine Springs, a live-in lifestyle program and center on 585 acres of land offering treatment and education in natural health.

Note 1. This is the earliest cookbook seen (May 2006) that contains a recipe for soy sour cream. For the basic recipe: Pour 3/4 cup soy bean milk into a blender. Gradually add 3/4 cup soy oil until desired thickness is reached. Stir in 1-2 tablespoons lemon juice and ¼ teaspoon salt. Chill. "Delicious on fresh cubed cucumbers with a dash of dill." An alternative recipe calls for the use of: ½ cup soy starter (not dextrinized, see p. 69, 262), ¼ cup water, and ½ teaspoon honey.

Note 2. This is the earliest English-language document seen (Nov. 2003) that contains the word "Soymeat" (p. 200), or the term "Soy Not-Meat," or the term "Soy Meat" (p. 203) as a recipe name.

Note 3. This is the earliest dated English-language document or book seen (Sept. 2012) that contains the modern term "Soy yogurt."

Talk with Rosalie and Dr. Frank Hurd. 2005. Feb. 9. Both have moved to Oregon to warmer weather. They have a daughter there. *Ten Talents* is now in its 48th printing. They are working on a revision. He was born in March 1936 and she in April 1937.

Talk with Rosalie Hurd. 2009. Jan. 19. Frank is still working as a doctor and she as his helper. They are both in good health. The greatly enlarged 40th anniversary edition of *Ten Talents* has been published and is now available.

The term "Ten Talents" comes from the teachings of Ellen G. White: "The one who understands the art of properly preparing food, and who uses this knowledge, is worthy of higher commendation than those engaged in any other line of work. This talent should be regarded as equal in value to ten talents; for its right use has much to do with keeping the human organism in health. Because so inseparably connected with life and health, it is the most valuable of all gifts" (Ellen G. White, *Counsels on Diet and Foods*, p. 251). Address: 1. D.C. [Doctor of Chiropractic]; 2. B.S. Both: Box 86A–Route 1, Chisholm, Minnesota 55719.

2169. *Soybean Digest.* 1968. New weapons for the war on hunger: Latest high-protein soy beverage. May. p. 23.
• ***Summary:*** "American industry, stimulated by a U.S. Agency for International Development (AID) subsidy program, has intensified its attack on world malnutrition, the 'war on hunger.' The new weapon in the offensive is high-protein food supplements."

"A new protein-base beverage, Saci, is being manufactured and test marketed in Brazil by the Coca Cola Co. Saci's main ingredients are soybean milk, flavoring, sugar and other essential ingredients for nutritional adequacy. It is vitamin enriched, sterilized and noncarbonated. Monsanto Co. has acquired an interest in the biggest selling soft drink in Hong Kong, a high-protein, soybean-based beverage called Vitasoy... Future plans call for Vitasoy to be bottled and marketed in Latin America as well as Southeast Asia. Last December the Yoo-Hoo Chocolate Beverage Corp. announced development of a new high-protein beverage. It will come in 4 types."

"Under phase I of the AID program, grants up to $30,000 were offered to U.S. companies to survey the availability of local ingredients, food tastes, customs and the economics of manufacture and distribution. Under phase II, companies would develop their own high-protein food additives, retaining a proprietary interest in the results. AID then offered grants of another $30,000 (phase III) for test-marketing the new products, to be paid back if the results were successful."

"The latest development in the soy beverage field is a product that looks and tastes like cow's milk, but costs half as much. Soypro International of Cedar Falls, Iowa, has developed the patent for the new beverage whose basic ingredient is soybeans."

"Cost is said to be around $0.20 per gallon unbottled. Production equipment for a 1,000-gallon-per-hour capacity plant is estimated at $200,000 installed."

2170. Wokes, Frank. 1968. Our aims [in starting publication of the journal Plant Foods for Human Nutrition]. *Plant Foods for Human Nutrition* 1(1):3-6. May. [5 ref]
Address: The Vegetarian Nutritional Research Centre, Watford, Herts [Hertfordshire], England; Editor of the new journal.

2171. Cherry, Flora F.; Cooper, M.D.; Stewart, R.A.; Platou, R.V. 1968. Cow versus soy formulas. Comparative evaluation in normal infants. *American J. of Diseases of Children* 115(6):677-92. June. [20 ref]
• ***Summary:*** Soy formula was fed to premature infants with good results. One factor that may impair growth or bone mineralization in infants fed soy-based formula is the low

methionine content. Address: Dep. of Pediatrics, Tulane Medical School, New Orleans, Louisiana.

2172. Colvin, B.M.; Ramsey, H.A. 1968. Soy flour in milk replacers for young calves. *J. of Dairy Science* 51(6):898-904. June. [18 ref]
• ***Summary:*** Calves were fed milk replacers containing fully-cooked soy flour as the only source of protein. The nutritive value of the soy flour can be markedly improved by treating the flour in an acid environment (pH 4.0 for 5 hours at 37ºC) prior to feeding. Address: Dep. of Animal Science, North Carolina State Univ., Raleigh, North Carolina.

2173. Hackler, L.R. 1968. The development of a high-protein soy beverage in alleviating malnutrition. In: Proceedings: Frontiers in Food Research. Geneva, New York: New York State Agric. Exp. Station. 159 p. See p. 138-42. Held 11-12 June 1968 at New York State Agric. Exp. Station, Cornell Univ., Geneva, NY. [10 ref]
• ***Summary:*** Food industries and universities in the USA are being encouraged to pursue or intensify their research into world malnutrition problems. Much of the funding for such work has come from various foundations and governmental agencies (Ford and Rockefeller Foundations, UNICEF, and US AID for example).

The potential value of soybeans in alleviating protein malnutrition has been well demonstrated by Bean (1967) who reported that 1 acre of land planted solely to soybeans will produce enough protein to satisfy a moderately active man's requirements for 2,224 days, whereas protein supplied by 1 acre of land devoted to beef cattle would supply the same man's requirements for only 77 days.

Wilkens et al. (1967) have recently reported a new way to make good-tasting soymilk. Grind unsoaked, dehulled soybeans with water at temperatures between 80ºC and 100ºC. It is important to maintain the temperature between 80ºC and 100ºC for 10 minutes to completely inactivate the lipoxidase enzymes that create off off-flavors.

Mattick (1968) recently isolated and identified the ethyl vinyl ketone as being partially responsible for the raw bean flavor in soybeans. Address: Assoc. Prof., Food Science and Technology, New York State Agric. Exp. Station, Cornell Univ., Geneva, New York.

2174. Kosikowski, Frank V. 1968. The problems of milk and imitation milk. *J. of Milk and Food Technology* 31(6):174-76. June. [9 ref]
• ***Summary:*** During the past decade, the dairy industry has been burdened with butterfat surpluses, and with the uncomfortable knowledge that butterfat consumption has been decreasing.

Imitation milk is defined as a beverage made to resemble milk but containing no dairy product. "It is destined to be the dairy farmer's greatest future adversary.

"Sodium caseinate is used as a 'non-dairy protein source' in imitation milk, although this chemical in reality is a derivative of milk and actually may exist as a natural component of cow's milk and surely does in fermented milk products. Ultimately however the soybean appears destined to become the principal source of protein for imitation milk."

Note: This is the earliest document seen (Aug. 2013) which states clearly that sodium caseinate, derived from dairy milk, can be considered a non-dairy product. Watch out vegans! The Code of Federal Regulations (CFR) states in Title 21, Part 101, Sect. 101.4 (Revised 1 April 2013): "(d) When foods characterized on the label as 'nondairy' contain a caseinate ingredient, the caseinate ingredient shall be followed by a parenthetical statement identifying its source. For example, if the manufacturer uses the term 'nondairy' on a creamer that contains sodium caseinate, it shall include a parenthetical term such as 'a milk derivative' after the listing of sodium caseinate in the ingredient list." Address: Cornell Univ., Ithaca, New York.

2175. Lo, Winston Yau-Lai; Steinkraus, K.H.; Hand, D.B. 1968. Heat sterilization of bottled soymilk. *Food Technology* 22(6):129-31. June. [9 ref]
• ***Summary:*** A temperature of 121ºC for 3 minutes is adequate to produce sterility of soymilk in 6-ounce soft drink bottles, but 4-5 minutes at 121ºC is recommended for development of optimum protein nutritive value in soymilk, and to give an additional safety factor. Address: Cornell Univ., Geneva, New York.

2176. Wilkens, W.F.; Badenhop, A.F. 1968. Lipoxidase and flavor formation. In: Proceedings: Frontiers in Food Research. Geneva, New York: New York State Agric. Exp. Station. 159 p. See p. 108-16. Held 11-12 June 1968 at New York State Agric. Exp. Station, Cornell Univ., Geneva, NY. [5 ref]
Address: 1. Asst. Prof.; 2. Post-doctorate Fellow: Both: Food Science and Technology, New York State Agric. Exp. Station, Cornel Univ., Geneva, New York.

2177. Eley, Cleveland P. 1968. Food uses of soy protein. *USDA Economic Research Service, ERS* No. 388. p. 27-30. Aug. Also in Marketing and Transportation Situation MTS-170, p. 27-30.
• ***Summary:*** Contents: Introduction. Forms of soy protein. Food uses of soy proteins and reasons for use. Simulated meat products. Limitations of soy protein for food use. Price and quantity of soy protein manufactured. Past growth and market potential.

The author believed that the use of soy proteins was increasing at the rate of 5-7% a year at that time. Estimated 1967 production and July 1968 prices of various soy proteins are given: Soy flour and grits (120-126 million lb, 6½-7 cents/pound). Soy concentrates (17-30 million lb, 18 cents/

pound). Soy isolates (20-25 million lb, 35-39 cents/pound). Enzyme modified soy meal products (small, 70-120 cents/pound).

Estimated uses of soy flour in 1967 (in million lb). Domestic use: Baked goods 50, incl. 6 million lb of enzyme active flour. Meat products 30. Soy beverage products 10. Dry cereals and baby foods 6. Enzyme active flours 7. Brewers flakes 3. Pasta and macaroni products 1. Miscellaneous 5-10. Commercial exports 10. U.S. Government purchases for CSM 100. Address: USDA, Marketing Economics Div.

2178. Lo, W.Y-Y.; Steinkraus, K.H.; Hand, D.B. 1968. Concentration of soymilk. *Food Technology* 22(8):96-98. Aug. [10 ref]
• ***Summary:*** Effects of sodium sulfite and sucrose on viscosity and dispersibility of protein in soymilk are reported. Address: New York State Agric. Exp. Station, Dep. of Food Science and Technology, Cornell Univ., Geneva, NY 14456.

2179. *Soybean Digest.* 1968. To introduce soy drink in South America. Aug. p. 26.
• ***Summary:*** A large photo shows a soft-drink type bottle of Puma, behind which is a large, alert Puma with a chain around its neck connected to the bottle. "Puma, a new protein soft drink developed by Monsanto Co., will initially be bottled and marketed in Georgetown, Guyana, South America...

"Soybeans supply the protein contained in Puma, a noncarbonated beverage. The product was developed through a joint venture between Monsanto and K.S. Lo, inventor of the similar Vitasoy protein beverage in Hong Kong. Soy-based Vitasoy has a substantial share of the Hong Kong soft drink market.

"'The drink was named Puma to convey the idea of the energy and vitality inherent in its protein content,' said Edward Wenner, manager of Monsanto's protein foods enterprise. Monsanto food technologists, while maintaining the nutritional quality of Vitasoy, structured Puma in flavor and appearance to meet preferences of people throughout the world.

"The Puma franchise was awarded in Guyana after the success potential for the product was assured by tests in that market, according to Wenner. Plans call for eventual expansion to other Latin American and Asian markets."

2180. Okumura, George K.; Wilkinson, Jack E. 1968. Process of producing soy milk from sprouted soy beans. *U.S. Patent* 3,399,997. Sept. 3. 3 p. Application filed 5 April 1965. [5 ref]
• ***Summary:*** Soybeans are cleaned, moistened, and sprouted at 90-100ºF for about 3 days to produce sprouts approximately ½ to 1½ inches long. The sprouting step is found to (1) largely eliminate the disagreeable aspect of soybean flavor in the final "soy-base milk," (2) improve the vitamin content of the soybeans, and (3) cause the soybean hulls to be loosened, thereby facilitating their subsequent removal. The sprouted soybeans are then ground to a slurry, using a stone grinder. Add water to the slurry and mix. Cook in a pressure cooker or open vat, then strain to remove the hot suspension liquor [soy milk]. Now slowly add and stir in a mixture of calcium sulphate and magnesium chloride to form a curd. Wash the precipitated curd, then removed all excess water, and press the curd in a cloth-lined forming box to make bean curd [tofu]. Now grind the curd to a very fine state using an emulsifying machine or colloid mill. Formulate the milk to resemble, as nearly as possible, natural cow's milk, by adding oil, sugar, salt, calcium gluconate and ferrous sulphate. To produce a fortified milk, vitamins A, D, and C may also be added. Pasteurize, homogenize, cool, and pack. Address: 1. 3151 S. Elm Ave., 93706; 2. 2411 Divisadero St., 93721. Both: Fresno, California.

2181. Lo, Winston Yau-Lai; Steinkraus, K.H.; Hand, D.B.; Hackler, L.R.; Wilkens, W.F. 1968. Soaking soybeans before extraction as it affects chemical composition and yield of soymilk. *Food Technology* 22(9):138-40. Sept. [11 ref]
• ***Summary:*** "As the soaking time for soybeans increased, larger quantities of water-soluble solids leached into the soak water, where they were they were lost in the usual methods of manufacturing soymilk. Analysis of the dry solids found in the soak water showed the following composition: 23.3% crude protein (of which 48.7% was non-protein nitrogen); 2.8% fat; 4.5% sucrose; 1.5% raffinose; 3.5% stachyose; and 63.7% other carbohydrates.

"Changes, apparently metabolic, in the soybeans during soaking caused protein to decrease from 43% in the non-soaked control to 38% for the 24-hour soak to 36% for the 72-hour soak. Non-protein nitrogen increased during the same intervals from 0.16% to 0.28% to 0.86%. Fat decreased during soaking for 24% to 19% (72-hour soak)." Address: Cornell Univ., Geneva New York.

2182. Lo, W.Y-Y.; Steinkraus, K.H.; Hand, D.B.; Wilkens, W.F.; Hackler, L.R. 1968. Yields of extracted solids in soymilk as affected by temperature of water of various pre-treatments of beans. *Food Technology* 22(10):120-22. Oct. [6 ref]
• ***Summary:*** "Soybeans soaked 8 hours before extraction yielded higher milk solids than unsoaked beans or bean flour in spite of a loss of 1.6% solids in the soak water. An extraction temperature between 55 and 65ºC gave the highest yields of solids in the milk regardless of the pre-treatment. Using beans pre-soaked at room temperature, extraction temperatures ranging from 45 to 80ºC gave higher yields of solids than other temperatures or pre-treatments. Temperatures of extraction above 85ºC resulted in substantial

decreases in the solids extracted in soymilk. A gradual rise in the pH of soymilk was observed as the temperature of extraction was increased from 30 to 95ºC."

"Pre-soaked beans yielded a higher average volume of soymilk than either non-soaked beans or bean flour... When beans were ground at temperatures above 85ºC, additional difficulties were encountered in filtering the soymilks, which resulted in decreased volumes in the soymilks produced."

"The Chinese have traditionally used pre-soaked beans ground with added water because of the difficulty of grinding dry beans in stone mills." Address: Cornell Univ., Geneva New York.

2183. Steinkraus, Keith H.; David, L.T.; Ramos, L.J.; Banzon, J. 1968. Development of flavored soymilks and soy/coconut milks for the Philippine market. *Philippine Agriculturist* 52(5):268-76. Oct. [12 ref]
• ***Summary:*** The most widely accepted formulation contained 10% by volume of coconut milk prepared by grinding grated coconut with water 1:1 (w/v) and filtering. A detailed description for making this product on a commercial scale is given.

"Soymilks distributed as soft drinks have become commercial successes in Hongkong (Lo, 1964), Bangkok, Thailand (Green Spot Ltd., personal communication, 1968), and Singapore (Yeo Hiap Seng Canning & Sauce Factory Ltd., personal communication, 1969). The flavors used in these soymilks include sugar, skim milk powder, full-fat spray-dried cow's milk, malt flavor, etc. The exact flavorings are industrial secrets." According to Malaspina (personal communication, 1969) "Coca-Cola Export Inc. has been market-testing a soymilk-based soft drink in Brazil. Flavorings used have included chocolate and caramel."

"In July 1967, U.S. AID / Washington [DC], through its office of War-on-Hunger, financed a project (Cornell Contract csd-1815) on the development of soy-based foods for infants and children. The project involved development of soymilks or soy/coconut milks and other soy-based foods with flavors acceptable to children in the Philippines." This paper reports the results of flavor studies conducted to develop those foods. Address: Agric. Exp. Station, Univ. of the Philippines.

2184. *Time.* 1968. Sipping soya through a straw. Nov. 15. p. 101-02.
• ***Summary:*** "Vitasoy has become the new soft-drink craze in the British crown colony. Vitasoy is a milky brew that is enriched with vitamins and offers 5.9 gm of protein in every bottle, or as much as a dish of spinach. A 6½ oz bottle costs $0.032, compared with $0.048 for the same size bottle of Coca-Cola. Sold either chilled in warm weather or warmed in cold, Vitasoy has captured 25% of the Hong Kong soft-drink market. This year an estimated 78 million bottles, second only to Coca-Cola's 100 million, will be sold from sidewalk stands, sampans and grocery stores for a total of $2,600,000. The drink's main drawback is that it tastes a good deal like liquid library paste.

"Still, the success of the product attracted the attention of the Monsanto Co. of St. Louis [Missouri]. It went in with Lo's Hong Kong Soya Bean Products Co. to create a new, more flavorful soybean drink called Puma, which has more than 100 flavor ingredients, including vanilla, orange and cinnamon. Monsanto's Hong Kong subsidiary, Lomond Ltd., will produce the powder concentrate for Puma. The first franchise operations are now being set up in Guiana and Taiwan, and several others are expected to follow soon in other parts of Asia and Latin America. Lo, who owns one-fifth of the company's shares and gets royalties on Puma sales, is managing director of Lomond. Monsanto hopes that under his hand the proverbial cow of China may yet yield a truly international soft drink and, in the bargain, a handy source of protein."

A photo shows K.S. Lo standing behind many stacked cases of Vitasoy in his Hong Kong plant. "Milking the 'cow of China.'"

2185. Bates, Richard D.; Barrett, W.W.; Anderson, D.W.; Saperstein, S. 1968. Milk and soy formulas: A comparative growth study. *Annals of Allergy* 26(11):577-83. Nov. [13 ref]
• ***Summary:*** Discusses Mull-Soy (made with soy flour) and Neo-Mull-Soy (made with soy protein isolate), both manufactured by Borden, Inc. A detailed nutritional analysis of both products is given. Concludes the Neo-Mull-Soy "supported growth and development of infants comparable to that of children raised on the soy flour (Mull-Soy) or milk formulas. A significant advantage of the formula used here, formulated from a soy protein isolate, was a lower incidence of anal irritation and loose stools as compared to any other soy formulations." Address: 1-2. Southwestern Medical School, Univ. of Texas, Dallas, TX; 3-4. Borden, Inc., 350 Madison Ave., New York, NY 10017.

2186. Bird, Kermit. 1968. Foods of the future: Part I. Using conventional materials. *Food Product Development* 2(5):32, 34, 36, 44, 82. Oct/Nov. [6 ref]
• ***Summary:*** In Rio de Janeiro, Brazil, the Coca Cola Co. has been test marketing a beverage named Saci, bottled like a soft drink. A chocolate-flavored energy drink containing 3% protein; the protein comes from local Brazilian soybeans. The drink is promoted (see ad) as "Powerful" with "delicious energy." Photos show: (1) A bottle of Saci; (2) A graphic ad for the drink.

Synthetic milk, which is now on sale in Southern California, contains vegetable oil, whey, and non-dairy ingredients. It's price is lower than that of cow's milk.

In Hong Kong, Vitasoy, "a soybean milk with a good amino acid balance, has been on the market for many years." It is sold in bottles at a low price, which enables to

compete with soft drinks. "Its main attraction seems to be its nutritional value. Since many soybean products have a 'beany' taste and cause intestinal gas in humans, it is doubtful whether this healthful, nutritious food drink will become a best-seller in the U.S. market until these problems are overcome."

If such drinks expand in foreign markets, they may provide an additional outlet for soybeans grown in the USA.

"Protein foods from plants are a current reality and a distinct future development opportunity. Many of our synthetic meat analogs of the future of the future will use proteins from soybeans, peanuts, sunflower, and perhaps cowpeas.

In Latin America, Incaparina was developed as a low-cost, nutritious, grain-based food. After 6 years of commercial development, annual sales are estimated to be 4.5 million pounds. Recently, makers of Incaparina have agreed to enrich the product with lysine, which will raise its protein quality to equal that of casein.

Corn [maize] could be an excellent protein source except that it lacks adequate amount of lysine and tryptophan–two of the eight essential amino acids the body cannot make for itself. But at Purdue University (Indiana), scientists have discovered "Opaque-2 and Floury-2," two "cereal grain germ plasms" that "upgrade the upgrade the protein quality of cereal grains to equal" that of milk and meat proteins.

Also discusses: Fish protein concentrate (FPC), fresh water fish farming (with giant carp and catfish), marine fish and shell-fish ranching, raising oysters in the ocean in Japan, ranching of wild animals (such as eland, wildebeest, and zebra in Africa–"instead of hunting them to extinction and replacing them with poorly adapted temperate zone species"). Address: Marketing Economics Div., Economic Research Service, USDA, Washington, DC.

2187. Chen, Philip S.; Chen, Helen D. 1968. Soybeans for health, longevity, and economy. 3rd ed. South Lancaster, Massachusetts: The Chemical Elements. xii + 242 p. Nov. Illust. Index. 21 cm. 1st ed. 1956. [24 ref]
• ***Summary:*** This book is identical to the original 1956 edition, third printing. Address: 1. Prof. of Chemistry, Atlantic Union College, South Lancaster, Massachusetts; 2. National Science Foundation Fellow, Cornell Univ.

2188. Chen, Philip Stanley; Chen, Helen D. 1968. Soybeans for health, longevity, and economy. 3rd ed. St. Catharines, ONT, Canada: Provoker Press. ix + 242 p. Illust. Index. 21 cm. [24 ref]
• ***Summary:*** This is a reprint of the 1956 edition published by The Chemical Elements (South Lancaster, Massachusetts)–except that Appendix B has been updated using the 1961 Soybean Blue Book.

On the copyright page is a detailed print history of this book: Copyright 1956, 1962 Philip Chen. Second printing, April 1957. Third printing, June 1959. Second edition, Jan. 1962. Third edition, Nov. 1968. Second printing, July 1970. Third printing, July 1975. Address: 1. Head of the Chemistry Dep. and Chairman of the Div. of Biology and Chemistry, Atlantic Union College, South Lancaster, Massachusetts; 2. National Science Foundation Fellow, Cornell Univ.

2189. **Product Name:** Hi-Pro (Protein Concentrate & Delightful All-Purpose Food).
Manufacturer's Name: Organic Foods and Gardens.
Manufacturer's Address: Ojai, California. Phone: 805-646-1287.
Date of Introduction: 1968. November.
Ingredients: Soy beans, wheat germ, brewer's yeast, alfalfa, kelp, carob, date sugar, sunflower seeds, unhulled [dehulled] sesame seeds.
Wt/Vol., Packaging, Price: 1 lb, 5 lb, or 15 lb bag.
How Stored: Shelf stable.
New Product–Documentation: Mail order catalog. 1968. Nov. See p, 5. This product may well have been based on Hi-So-Pro, a powdered soymilk made by Loma Linda Foods in nearby Southern California and introduced in 1962. The other ingredients could have been mixed in by Organic Foods and Gardens.

2190. *SoyaScan Notes.* 1968. Chronology of soybeans, soyfoods and natural foods in the United States 1968 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1968, March. Saci, a liquid soymilk in chocolate and caramel flavors, launched by Coca-Cola Industrias Ltda. in Brazil. Indicates growing interest in commercial soy beverages in Third World countries.

1968, April. First Workshop on Soybean held in New Delhi by the Indian Council of Agricultural Research.

1968, April. *Aerobics* by Dr. Kenneth Cooper published. The book soon becomes a major force in America's new wave of interest in health, fitness, and jogging.

1968, May. Conference on Protein Rich Food Products from Oilseeds held by the USDA in New Orleans, Louisiana. Oilseed proteins are increasingly seen as the answer to the "protein crisis."

1968, May. *Ten Talents* self-published by Frank and Rosalie Hurd of Chisolm, Minnesota. An early vegan cookbook (using no meat, eggs, or dairy products) with many innovative soy recipes.

1968. *International Action to Avert the Impending Protein Crisis*, a United Nations publication, recommends soybeans as the single most promising protein source to close the "protein gap."

1968, Aug. Erewhon starts importing foods from Japan, initially from Muso Shokuhin, then later by correspondence with Mr. Akiyoshi Kazama, who worked for an import/export company named Mitoku, which sold no food at that

time. The initial orders include red miso (made by one of George Ohsawa's cronies) and natural shoyu made by Marushima. These soon become high-volume items.

1968. *Plant Foods for Human Nutrition*, a scientific journal, starts publication from the Vegetarian Nutritional Research Centre, Watford, Herts, England. Runs many articles on soy nutrition and on vegan diets.

2191. **Product Name:** Plamil Pease Pudding.
Manufacturer's Name: Plantmilk Ltd. (Renamed Plamil Foods Ltd. in 1972).
Manufacturer's Address: Tithe Farm, High St., Langley, Slough, Buckinghamshire, England.
Date of Introduction: 1968. December.
Ingredients: Incl. soya protein isolate.
Wt/Vol., Packaging, Price: 15½ oz can or 7.75 oz can.
New Product–Documentation: *The British Vegetarian.* 1968. Nov/Dec. p. 533. "New Products by Plantmilk Ltd." This vegan product is available at "Health Stores" in two sizes of cans. The Family Size (15½ oz) retails for 1 shilling 7 pence, and the Picnic Size (7.75 oz.) retails for 11 pence.

2192. Tawa, Andre. 1968. Marketing soy proteins in the Lebanon. *Soybean Digest.* Dec. p. 13-14.
• ***Summary:*** "More than 50,000 people visited the soy protein stand at the Food Fair at Beyrouth and sampled ADM's textured vegetable protein in Lebanese foods."

"The Lebanon, a tiny Arab republic tucked away on the eastern corner of the Mediterranean Sea, is well known in international finance as the oil banker of the Gulf.

"The 2 million people of Lebanon, in ritzy-Riviera-like Beyrouth, or on the snow covered slopes of the ski resorts in the Cedars, do make an ideal market for any new food product."

"Estimated consumption of all meats is around 40,000 mt/year, 90% of which is imported." Note: "mt" = metric tons.

"Poultry growing is expanding rapidly and has become one of the major agricultural industries."

"Last year's imports of soybean meal rose to about 10,000 m.t., mostly bulk, from the U.S."

"A more challenging market, which is practically untouched, is the one for soy proteins in human consumption."

ADM is introducing its TVP to Beyrouth, Lebanon under the brand name Aminos; their goal is 1 lb/year per capita consumption. "Other soy proteins just being introduced to this market are soy flour for bakery products, soy milks, and other soy extenders for the meat packing industries."

2193. **Product Name:** Jolly Joan Wheat and Soy Pancake Mix, Whole-Wheat and Soy Pancake Mix.
Manufacturer's Name: Ener-G Cereal Co.
Manufacturer's Address: 6901 Fox Ave. South, Seattle, WA 98108.
Date of Introduction: 1968.
Ingredients: Wheat or whole wheat, whole soy flour, monocalcium phosphate, sodium bicarbonate.
Wt/Vol., Packaging, Price: 16 oz bag in a box.
How Stored: Shelf stable.
New Product–Documentation: Talk with Sam M. Wylde, Chairman, Ener-G Foods, Inc. 1990. Oct. These two products were introduced at about the same time in 1968, when the company moved to Fox Ave. Shortly after they were launched the company name was changed to Ener-G Foods Inc. and the brand was changed to Ener-G. Each product contained whole soy flour, purchased from ADM (Archer Daniels Midland Co.).

2194. *Federal Register.* 1968. Imitation milks and creams. 33(98):7456-58. *

2195. Fukushima, D. 1968. High-protein food products. In: Proceedings of the Western Hemisphere Nutritional Congress II. See p. 95. *

2196. **Product Name:** Haypro-T (Calf Milk Replacer Based on Soy Protein Concentrate).
Manufacturer's Name: Hayes Ashdod Ltd. Renamed Solbar Hatzor Ltd. in April 1987.
Manufacturer's Address: Habosem Street, Industrial Zone, P.O. Box 2230, Ashdod, Israel.
Date of Introduction: 1968.
How Stored: Shelf stable.
New Product–Documentation: Letters from Daniel Chajuss, founder and owner of Hayes Ashdod Ltd. 1992 June 23, and 1993 Jan. 5 and 14. "In 1968 Hayes [Ashdod Ltd.] started producing Haypro-T, a special soy protein concentrate, free of trypsin inhibition and free of antigenicity, for calves milk replacers as a substitute of milk proteins." Note: This is the earliest known commercial soy product used as a calf milk replacer.

2197. **Product Name:** [Soyamalt Soymilk (Strawberry, Vanilla, or Walnut)].
Foreign Name: Soyamalt (Fresa, Vainilla, y Nuez).
Manufacturer's Name: Industrial de Alimentos S.A.
Manufacturer's Address: 146 Poniente 789, Col. Ind. Vallejo, Mexico 17, DF, Mexico.
Date of Introduction: 1968.
Wt/Vol., Packaging, Price: Powdered.
How Stored: Shelf stable.
Nutrition: Vanilla (powdered): Protein 23.4%, carbohydrates 61.2%, fat 8.2%, crude fiber 0.82%, moisture 2.5%, ash 3.8%.
New Product–Documentation: F. Suberbie. 1975. Produccion y utilizacion de bebidas a base de soya.

In: American Soybean Assoc., ed. Memorias: Primera Conferencia Latinoamericana. p. 91. This product is sold mainly to industry and to institutions (day-care centers, hospitals, boarding schools, etc.). R.H. Moretti. 1981. *Journal of the American Oil Chemists' Society.* March. p. 521. "Soy milk developments in Latin America." In addition to Sustilac, Industrial de Alimentos also developed Isolac and Soyamalt. Soyamalt contains 24.4% proteins, 41.8% carbohydrates, 25.7% fat, and 1.9% fiber. J. Ponce Aguirre. 1982. History of Soyfoods in Mexico. In 1968 Felipe Suberbie and Felipe Tello of Industrial de Alimentos launched two commercial products: Isolac and Soyamalt. Only Soyamalt remains on the market.

2198. **Product Name:** [Isolac Soymilk].
Foreign Name: Isolac.
Manufacturer's Name: Industrial de Alimentos S.A.
Manufacturer's Address: 146 Poniente 789, Col. Ind. Vallejo, Mexico 17, DF, Mexico.
Date of Introduction: 1968.
Wt/Vol., Packaging, Price: Powdered.
How Stored: Shelf stable.
Nutrition: Protein 24.5%, carbohydrates 41.9%, fat 25.7%, crude fiber 2.0%, moisture 2.2%, ash 3.8%.
New Product–Documentation: F. Suberbie. 1975. Produccion y utilizacion de bebidas a base de soya. In: American Soybean Assoc., ed. Memorias: Primera Conferencia Latinoamericana. p. 90. This product was developed to replace or extend cow's milk. Reconstituted, it contains 10-12% solids. A table is given showing its amino acid content compared with the 1958 FAO recommendations. The limiting amino acids are tryptophan and methionine. R.H. Moretti. 1981. *Journal of the American Oil Chemists' Society.* March. p. 521. "Soy milk developments in Latin America." In addition to Sustilac, Industrial de Alimentos also developed Isolac and Soyamalt. Isolac contains 20.3% proteins, 47.2% carbohydrates, 25.7% fat, and 1.7% fiber.

J. Ponce Aguirre. 1982. History of Soyfoods in Mexico. In 1968 Felipe Suberbie and Felipe Tello of Industrial de Alimentos launched two commercial products: Isolac and Soyamalt. Only Soyamalt remains on the market.

2199. **Product Name:** [Sustilac Soymilk].
Foreign Name: Sustilac.
Manufacturer's Name: Industrial de Alimentos S.A.
Manufacturer's Address: 146 Poniente 789, Col. Ind. Vallejo, Mexico 17, DF, Mexico.
Date of Introduction: 1968.
Ingredients: Whole soy flour, cereal hydrolyzates, malt extract, vitamins, minerals.
Wt/Vol., Packaging, Price: Powdered. It is ivory in color.
How Stored: Shelf stable.
Nutrition: Per 100 gm powder: Calories 501, protein 20.3 gm, carbohydrates 47.2 gm, fat 25.7 gm, moisture 2.9 gm, ash 2.8 gm, crude fiber 1.1 gm. Reconstituted: Protein 3.0%, fat 3.7%, total solids 15%.
New Product–Documentation: F. Suberbie. 1975. Produccion y utilizacion de bebidas a base de soya. In: American Soybean Assoc., ed. Memorias: Primera Conferencia Latinoamericana. p. 89-90. Development of this product began in 1968 and it was ready by 1971. It was used and evaluated for treating cases of diarrhea in the pediatric hospital of Seguro Social, with good results (Luengas, Borbon and Col 1972). It is distributed by the Instituto Mexicano del Seguro Social (IMSS; Social Security), by the Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (ISSSTE; Social Security), and by specialized pharmacies.

R.H. Moretti. 1981. *Journal of the American Oil Chemists' Society.* March. p. 521. "Soy milk developments in Latin America... Sustilac was introduced in 1968. This soya milk is produced using pregerminated (sprouted) soybeans. The pregermination reduces the amount of oligosaccharides. Compañia Industrial de Alimentos (his company in Mexico) is still producing soya milk. All of its products are in powder form." J. Ponce Aguirre 1982. History of soyfoods in Mexico. In 1971 Felipe Suberbie and Felipe Tello of Industrial de Alimentos launched Sustilac, which is for infants who are allergic to cow's milk. Production ceased in 1979.

2200. **Product Name:** Loma Linda Soy Fortified Cereals [Ruskets, or Ruskets Crunchy].
Manufacturer's Name: Loma Linda Foods.
Manufacturer's Address: 11503 Pierce St., Riverside, CA 92505.
Date of Introduction: 1968.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: H.F. Meyer. 1960. Infant foods and feeding practices. A photo (p. 82) shows these two canned products. A photo of a baby's face appears on the front panel of each. See also p. 88 and 90. Page 121 gives a detailed analysis of the product. The powder, after being reconstituted, contains: Fat 3.2%, protein 2.85%, carbohydrates 5.4%. Calories per ounce: 18. Added vitamins and minerals: ferrous sulphate, calcium carbonate, dibasic calcium phosphate. Affected by terminal sterilization: No. How formulated or reconstituted: 1 vol. milk to 7 vols. water. Chemical definition and essential clinical uses: "Contains soya bean solids, dextrose, maltose, dextrins, sucrose, soya oil. A spray-dried soya food to serve the nutritional needs of the bottle-fed infant. Completely soluble and formulated to simulate human milk. Used for infants allergic to dairy milk."

2201. **Product Name:** [Nutri-Soja {Soy Isolate-Based Infant Formula} (Powder, or Concentrated Liquid)].
Foreign Name: Nutri-Soja.

Manufacturer's Name: N.V. Nutricia.
Manufacturer's Address: Stationstraat 186, Zoetermeer, Netherlands. Phone: 21 92 50.
Date of Introduction: 1968.
Ingredients: Glucose syrup [corn syrup solids], vegetable oil, soy protein isolate, minerals, vitamins, methionine, taurine, trace elements, L-carnitine.
Wt/Vol., Packaging, Price: 400 gm can.
How Stored: Shelf stable.
Nutrition: Per 100 gm powder: Protein 14.2 gm, fat (vegetable) 28.3 gm, carbohydrates 52.7 gm, moisture 3 gm, minerals 2.1 gm, vitamins 0.2 gm, energy 522 kcal (2215 kJ).
New Product–Documentation: Thomson. 1979. *Journal of the American Oil Chemists' Society.* March. p. 386-88. Soyfoods Center Computerized Mailing List. 1982. July 23. Product brochure. 1989. Nutri-Soja: When nature fails, Nutricia helps. This is a milk-free, saccharose-free infant formula made with soy protein isolate supplemented with L-methionine.

Letter from Barbara B. Rumpff. Loma Linda Foods. 1989. Nov. 30. Nutri-Soja was introduced in Europe in 1968. Nutricia N.V. was founded in 1901.

Label. 1989, received. 12.75 by 4.5 inches. Dark blue, black, red, orange, yellow, and green on orange. Illustration of bottle, teddy bear, and flowers. "Complete soy-based infant food." This is a powdered soymilk.

2202. Piquin, Alberto. 1968. Soja: cultivo del futuro argentino [Soybean: The crop of the future in Argentina]. *Revista de la Bolsa de Cereales* (*Buenos Aires*) No. 2811. p. 38-43. [8 ref. Spa]
• ***Summary:*** Contents: Introduction. Characteristics of the species. Early history in Argentina (from 1956). Quality of the raw material. Uses of soybeans: The plant (green forage, green manure, silage), green vegetable (*grano verde*), whole dry soybeans, vegetable milk (incl. curds, dry powder, condensed), powdered milk, flour, oil. Labor requirements. Varieties suited for 5 ecological zones in Argentina. Mechanical harvesting. Introduced varieties. Diseases and insect pests. Yields. Promotion of cultivation. Address: Ing. Agr., Coordinador Nacional Programa Soja, Salta, Argentina.

2203. Roane, J.; Crawford, L.V.; Hilty, L.; Stout, R.H. 1968. Observations on isolated protein soy formula as a feeding for infants with allergic disease. Lecture presented at the Annual Meeting of the American Medical Assoc. Held in San Francisco, California. *

2204. **Product Name:** Shaklee's Instant Protein Powder [Vanilla, Cocoa].
Manufacturer's Name: Shaklee Products. Formulated by Worthington in Richmond.
Manufacturer's Address: 1992 Alpine Way, Hayward, CA 94547. Phone: 415-954-3000.
Date of Introduction: 1968.
Ingredients: Lecithinated soy protein.
Wt/Vol., Packaging, Price: 1 lb can.
How Stored: Shelf stable.
New Product–Documentation: John R. Caella. 1978. *Cooking naturally: An evolutionary gourmet cuisine of natural foods.* p. 18. The author describes "Instant protein powder" which contains soya protein concentrate, fructose, lecithin, calcium carbonate, yeast, potassium chloride, and natural flavors. He then says that his favorite brand is "Shaklee's Instant Protein."

Talk with Ted Aarons of Protein Research Associates in Berkeley. 1988. Sept. 23. The first commercial application of the lecithinated protein process was with Shaklee's Instant Protein Powder, launched in about 1969. The process was licensed to Worthington, a custom formulator in Richmond or San Pablo that prepared the product for Shaklee. It was sold in 1-lb cans in vanilla, chocolate, and strawberry flavors. It sold very well to the general public via Shaklee's pyramid-type marketing organization. Dr. Shaklee (who may have gotten his doctorate in religious studies) founded Shaklee Products in 1948. He sold biodegradable soaps, cosmetics, and other health aids. For details, contact Shaklee in San Francisco (415-954-3000).

Letter and two Labels from John Westerdahl, MPH, RD, Project Manager, Health Sciences, Shaklee U.S., Inc., 444 Market St., San Francisco, California 94111. 1993. Aug. 31. The two undated Labels are for Instant Protein Drink Mix. "The earliest information I can find is that Instant Protein was on the market in 1968. The flavors were Vanilla and Cocoa. We've never had a strawberry flavor." The ingredients on the undated Cocoa flavor are: "Soy protein isolate, fructose, cocoa, tricalcium phosphate, calcium carbonate, glucose, soy lecithin, natural flavors, primary grown yeast, di-methionine, ferrous fumarate, niacin, calcium pantothenate, riboflavin, thiamine hydrochloride, pyridoxine hydrochloride."

2205. Abehsera, Michel. 1968. Zen macrobiotic cooking. New Hyde Park, New York: University Books/Avon. 224 p. Index. 18 cm. [15 ref]
• ***Summary:*** Abehsera's first macrobiotic cookbook contains a strict approach to macrobiotics. Includes many short stories by and about George Ohsawa.

In the Introduction, the author states (p. 13) that if he had been asked to write a cookbook 5 years ago, he would have been utterly amused, for he was in a precarious state of health and, for him, a cookbook was basically a collection of "recipes for stuffing one's belly.

"These five years have been an exhilarating adventure and happiness spent with my dear wife and children together with a 'thousand' friends. The anguished thoughts of a 28-year-old have been dissipated and he has been freed from the tortures and agony that previously pervaded his

existence.

"This new and happy change has been due to the profound influence of George Ohsawa, who made it possible for me to recover my health so that I could leave France [Paris] and journey to New York, the city of my dreams. Now, I have decided to write a cookbook."

Contains the following soy-related recipes: Miso spread (with sesame butter, p. 105). Miso onion spread (p. 106). Miso in green (with green pepper and scallion, p. 106-07). Miso soup (p. 117). Chinese soup (with miso, p. 120). La belle jardiniere (with miso, p. 123). Koi-koku (with carp, burdock, and miso, p. 125-26). French onion soup (with tamari, p. 132). Soup stock made with miso paste (p. 137). There are no tofu or seitan recipes in this book. It is not a vegetarian cookbook, since many recipes call for fish and seafood.

Monthly publications (p. 208): (1) *Yin-Yang*, Centre International Ignoramus, 26 Rue Lamartine, Paris 9eme, France. (2) *The Macro-Biotic Monthly*, Ignoramus Press, Los Angeles, California. (3) *The Order of the Universe*, Order of the Universe Publications, Box 203, Prudential Center Station, Boston, Massachusetts.

Shopping guide (p. 209-10): Those marked with an asterisk (*) welcome mail orders. (1) Chinese products (incl. tofu, woks): Wo Fat Co., 16 Bowery, New York, N.Y. 10013. Mon Fong Wo Co., 36 Pell St., New York, N.Y. 10013. Yuit Hing Market Corp., 23 Pell St., New York, N.Y. 10013.

(2) Organic fruits, vegetables and whole grains. Also oil, sea salt and many other health foods. * Good Earth–Natural Foods, Inc., 1336 First Ave., New York, N.Y. * Nature's Cupboard, 80 E. Seventh St., New York, NY. Living Foods Coop, Inc., 165 Ninth St., New York, N.Y. * Greenberg's. 125 First Ave., New York, N.Y.

The next two stores are the same as above but no fruits and vegetables: * Brownie's Natural Food Stores, 21 E. 16th St., New York, N.Y. * Kalustyan Orient Export Trading Corp., 123 Lexington Ave., New York,

(3) Japanese food products: Bancha tea, seaweed, Japanese vegetables, Japanese knives, soba and udon noodles, dried lotus, burdock, tofu, sesame seeds, bonito and other dried fish, tawashi [vegetable scrubbing brush], daikon [giant white radish]: * Japan Mart Inc., 239 W. 105th St., New York, N.Y. Katagiri & Co., Inc., 224 E. 59th St., New York, N.Y. Tanaka (K.) Co., Inc., 326 Amsterdam Ave., New York, N.Y.

(4) Wholesale organic products and all macrobiotic products: Chico San, Inc., 1262 Humboldt, Chico, California. The Infinity Co., New York, N.Y., 10012. Balanced Foods, 2500 83 St., North Bergen, N.J. [New Jersey]. Specialty Food, 116 W. Houston St., New York, N.Y.

Glossary (p. 211-15): Aduki or azuki beans, bancha, bonito flakes, brown rice, bulgur, burdock, cellophane noodles, chapati, couscous, daikon, ginseng tea, gomasio [gomashio], hiziki [hijiki], Japanese knife, kasha, kokkoh [grain milk; weaning food for babies], kuzu, lotus tea or kohren tea, miso, mu tea, nituke [nitsuke], nori, sea salt, semolina, soba, soy or soya sauce (see tamari), suribachi, tahini, tamari, tempura, tofu, udon, umeboshi plums, vegetable brush or tawashi, wok.

A few glossary definitions: "Tamari: A pure soy sauce concentrate, a byproduct of miso. Commercial soy sauce is not recommended; macrobiotic stores have the right kind."

"Tofu: A curd made of the liquid in which crushed soybeans have been softened; it is solidified by boiling" [sic].

Note: This book was published in London in 1969 by Anchor Press, Ltd. (201 p.). Address: New York.

2206. Borgstrom, Georg. 1968. Principles of food science: Food microbiology and biochemistry (Vol. 2). New York, NY: Macmillan. xiv + 473 p. Index. 26 cm. [9 ref]

• ***Summary:*** In Chapter 4, "Fermentation," is a section titled "soybeans" (p. 110-12) which discusses: Tofu or teou-fu, miso, sufu, natto, tempeh, taotjo and ketjap (shoyu / soy sauce).

"Frozen tofu (kori tofu, or koya dofu) is tofu that has been frozen for several weeks and dried. Aburage is fresh tofu dried in deep fat. Namaage is fresh tofu that has been surface-fried."

In Chapter 10, "Trends in food utilization," is a section titled "Soybean" (p. 297-301) which discusses: Soybean products and fermented products ("These foods are all rather unknown among Western peoples, although they are eaten by millions of people and constitute some of the most common foods on earth." Yet some "typical oriental soy foods," such as tofu and tempeh, are finding acceptance in the West. One soy product that is widely used in most parts of the world is soy sauce. Soy flour and soy grits were first made commercially in the USA in the early 1930s. Milk made from the soybean is important in China {see Vol. I, Chap. 15}. Fermented products include taotjo, soy sauce or ketjap). Soybean protein, including soybean oil and defatted soybean oil meal (In 1961, 9.5 million tons of soybean oil meal was used in the USA, mainly for animal foods, with special grades used for food and industrial products, such as isolated soybean protein. Purified proteins extracted from dehulled and defatted meal, when toasted, are used in "Civil Defense emergency rations" and by the "international organization Meals for Millions." Some 90% of the processed soybean oil in the USA now goes into food uses. Soybean oil is now the most important ingredient in oleomargarine {see Fig. 10.1}. About one-third of the soybeans moved off the farm are exported; Japan is our biggest customer {taking about 57%} followed by Western Europe {27%}, Canada {8%} and Israel {5%}). Soybean uses (Despite its nutritive value, "the soybean is not looked upon with favor in many areas" for two main reasons: it does not soften well during cooking and it is difficult to digest. Many other legumes share these problems, but they are generally require less

cooking. When soy flour is used, alone or with cereal flours, the drawbacks almost vanish. "Soybean milk is not comparable to animal milk or human milk except in protein content." And it usually has an unpleasant, bitter taste, but this can be removed at least cost by bulk processing. When soybean curd is made in the typical way, "many nutritious components are lost," yet it is easy to digest. Soy sauce can be used only as a condiment because of its high salt content. Germinated soybeans make an excellent vegetable, which is rich in vitamin C).

Table 10-1 (p. 300) shows utilization of soybean oil (in millions of pounds) (1947-49 to 1967). The columns are: Shortening (the largest use and steadily increasing), margarine, cooking, salad and other edible oils (No. 2), total for food uses, total nonfood uses.

Toasted soy protein (Made by General Mills, starting in Belmont, Iowa, and named Hi-Pro and Protein Plus. "The Belmont plant has been running at capacity to supply for American Civil Defense stockpiling of toasted soy protein"). MPF (Multi-Purpose Food) made by a joint venture between General Mills and the Meals for Millions foundation. Gelsoy (the "first vegetable protein found to have gelling properties"). Promine (an edible soy protein). Fibrotein (soy protein spun into edible filaments). Soybean oil (The initial purpose of the U.S. soybean crushing industry was to obtain oil. The residual meal was considered virtually useless).

Chapter 13, titled "The world food issue," is about world hunger, which is "an ever-present specter for 2.3 billion people of the present world population of 3.4 billion." These people are concentrated largely in warm parts of the globe. Also discusses "protein malnutrition" (the main problem) and the need for more animal protein. North America has an animal protein "intake nine times that of the Far East." A section on "Plant milks" (p. 428-29), which are made from pulses and cereals, includes a subsection titled "Soybeans" which begins: "Soybeans form the basis of the most widely used and successful plant milks in China, Hong Kong, Indonesia, and the Philippines. Such milk has recently become available in Europe and the United States, primarily for clinical purposes"–for children allergic to the proteins in cows' milk.

Notes: Many references, divided into English and non-English, books and papers, are given at the end of each chapter. Address: Michigan State Univ.

2207. Hahn, Emily. 1968. The cooking of China. New York, NY: Time-Life Books. 206 p. Illust. (many color photos). Index. 28 cm. Series: Foods of the World.

• ***Summary:*** Another superb work in this superlative series from the editors of Time-Life Books. This book is about cooking in China, where the author lived (in Shanghai), before the 1949 Communist revolution.

Contents: Introduction: The cooking of the world's oldest civilization. 1. An ancient and honorable art. 2. "Chinese cooking" in your own kitchen. 3. Secrets of savor and spice. A reverence for good food. 5. Oriental staff of life. 6. Gentle teas and strong spirits. 7. Feasts for festivals. 8. A cuisine for all continents.

China, the world's oldest existing civilization, has the world's most ancient cuisine–as well as one that is both great and profound (p. 6). When the Red Guards of China's Cultural Revolution appeared in the 1960s, they "attacked every symbol of what they regarded as bourgeois culture. Among the targets in Peking were the city's fine restaurants." In the process they destroyed much of China's culinary heritage–but only inside of China (p. 7). An article by Peggy Durdin in the *New York Times* was titled "Mao's great crime against cuisine" (p. 184). Chinese food is, of course, about life, but it is also about health, and it can resonate on numerous symbolic levels (p. 7).

The southern provinces of China, Fukien, Kwantung, Yunnan, and Kwangsi, enjoy tropical temperatures year round and more than 80 inches of rain. Here rice is the main crop. Yet China is a mountainous country, with 60% of its land at elevation 6,500 feet or higher; only 11% of its land can be cultivated (compared with 80% in the USA) (p. 10). Fukien, a coastal province to the south, makes the best soy sauce in China, and stewing is called "red cooking" because of the color imparted by the soy sauce (p. 16, 42).

Vegetable oil is very important in China because the Chinese rarely use butter (p. 29). "For protein the Chinese depend heavily on the soybean, which has for this reason been called the cow of the East." Soybean oil is used for cooking. Soybean milk is a good substitute for cow's milk. And "doctors, even Western doctors–prescribe it for babies who cannot get mothers milk and are allergic to cow's milk" [sic]. From soymilk one can make "bean curd, an exceptionally high-protein food known in China as 'the meat without bones.'" Bean curd is made by curdling soybean milk with gypsum, then pressing the curds into pieces about 3 inches square by ½ inch thick. "The thickened curd skin [sic, yuba] is a food by itself, with a more concentrated flavor. Fermented bean curd [fermented tofu] tastes much like cheese." Both soy and mung-bean sprouts are used in China, "In one form or another the soybean can be found in dishes eaten at every meal" (p. 29).

A two-page color photo spread and legend (p. 61-63) shows (numbered) basic Chinese ingredients, incl. "13. Fresh bean curd. 14. Dried bean-curd skin" [yuba]. Buddhist monks and nuns in China are strict vegetarians; special foods that simulate meat have been developed for them. These include vegetarian "duck made from crisp beancurd skin, colored and shaped to look like the bird's flesh" and "chicken roll in *hoisin* sauce, the 'chicken' made of soft soybean curd" (p. 64, 67, 70).

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "beancurd skin," apparently to refer to yuba.

A full-page color photo and legend (p. 74-75) shows (numbered) Chinese sauces and condiments, incl. "1. *Hoisin* sauce. 3. Soy sauce. 8. Yellow-bean paste, or thick bean sauce. 11. Fermented black beans. 14. Red bean [azuki] paste." "Among the best known of Chinese seasonings is soy sauce, which was mentioned in several Confucian classics as early as the Fifth Century B.C." [sic]. Other condiments made from soybeans are bean paste (for preserving and flavoring meat) and *hoisin* sauce (widely served with Peking duck). "It is said that the best grades of soy sauce can take as much as six to seven years of aging to reach perfection, and that the making of superb soy sauce requires 'as much art in its preparation as good French wines"' (p. 74-75, 77).

The controversy over M.S.G. is discussed. "A really god Chinese chef considers it a questionable shortcut for giving taste to second-rate foodstuffs, but most Chinese cooks admit that its use in certain dishes is perfectly valid" (p. 77-78).

The emperor Chien Lung (1735-1796), 4th ruler in the Manchu [Qing] dynasty, wrote an *Ode to Tea* (p. 91). In China there is an intimate association between eating and health (p. 91).

Recipes: "Steamed bass with fermented black beans *Tou-shih cheng hsien yu* (with "2 teaspoons fermented black beans," soy sauce, Chinese rice wine, and shredded fresh ginger root, p. 104).

Most festivals (each with a feast) in China are based on events of agricultural importance; the two most important are New Years and the Moon Festival (p. 155, 162, 164-65). A Peking duck is "brought to the exact degree of plumpness and tenderness through force-feeding," then roasted slowly, suspended by hooks, in a mud-lined oven "until the thick, fat skin becomes golden in color. This crackled skin is the choice part of the dish." The skin, a piece of the meat, a spring onion, and thick, sweet hoisin are served enfolded in a thin wheat-flour "pancake" (p. 158, 15).

The history of chop suey (unknown in China) and chow mein (had an honorable origin in China) are discussed (p. 178-79).

The first wave of Chinese to America came with the gold rush and transcontinental railway. Most were laborers from southern China. The first Chinatown in the USA was established in San Francisco (1850s), followed by New York City (Manhattan, 1870s). Most early American Chinese restaurants reflected their social status, serving inexpensive foods. In the early 20th century, as China's Republican revolution was gaining momentum, a second wave arrived to study. These young people, also mostly from southern China, came from far more prosperous backgrounds than those in the 1st wave and they wanted better food. Restaurants were started or upgraded to suit their tastes. Thus, it "was the southern school of cookery that first spread over the world outside China" (p. 179).

China has three great regional cuisines: Cantonese (southern), northern, and Szechuan (p. 179). Six photos show "The Americanization of the fortune cookie: Assembly line at a factory in New York City's Chinatown." A two-page spread shows many of the "fortunes" found in fortune cookies (p. 195-97).

"A guide to ingredients in Chinese cooking" (p. 198-99) includes: Bean curd, fresh: Square. Bean-curd skin [yuba] ("Thin stiff sheets of dried bean curd. Sold by weight... {5 to 6 sheets weigh about 1 ounce"}). Bean sprouts ("Young sprouts of the mung bean"). Black beans, fermented ("Strongly flavored, preserved black soybeans." Sold in cans or plastic bags). Brown bean sauce ("Thick sauce made from fermented yellow beans [huang dou = yellow soybeans], flour and salt. Sold in cans of 1 pound or more"). Hoisin sauce ("Sweet, brownish-red sauce made from soybeans, flour, sugar, water, spices, garlic and chili for use in cooking. Sold in 1-pound cans and up"). Oyster sauce ("Thick brown sauce with a rich flavor, made from oysters, soy sauce and brine"). Red bean paste ("Thick, sweet paste made from red soybeans" [sic, azuki beans]). Salted eggs and thousand-year eggs. Sesame seeds and sesame seed oil. Soy sauce ("Pungent, salty, brown liquid made from fermented soybeans, wheat, yeast [sic, mold] and salt"). Vegetable steak ("A vegetarian food that looks like a small beefsteak but is made from wheat gluten. Sold in cans"). Address: Author, lives in England with her husband.

2208. Hahn, Emily. 1968. Recipes: The cooking of China. New York, NY: Time-Life Books. 119 p. Illust. (many color photos). Index. 23 cm. Series: Foods of the World. Revised ed. 1973, 1980, 1981. [1 ref]

• ***Summary:*** A recipe for "Shua-yang-jou–Mongolian fire pot (rinsed lamb)" (p. 28-29) calls for "1 tablespoon fermented red bean curd, mashed."

Note: This is the earliest English-language document seen (Oct. 2011) that contains the term "red bean curd" or that uses the term "fermented red bean curd" (or "fermented red beancurd") to refer to red fermented tofu.

The excellent "Guide to ingredients used in Chinese cooking" (p. 115-19) is identical to that found in the larger companion volume, *The Cooking of China* (Hahn 1968, p. 198-99). Address: Author, lives in England with her husband.

2209. Hon, Hazel. comp. 1968. Three week vegetarian menu. Sydney, Australia: Published by the author. 88 p. 24 cm.

• ***Summary:*** This Seventh-day Adventist vegetarian cookbook uses lots of canned Adventist food products, gluten, and whole soybeans. The Four Basic Food Groups (p. 7) are fruits and vegetables, cereal and bread, protein (including legumes, cottage cheese, eggs, soy cheese, nuts, peanut butter, and various manufactured nuts, soybean and gluten products), and milk groups ("use milk or a suitable alternative such as soybean milk").

A table titled "Seasonings" (p. 8) divides them into (1) Not irritating. (2) Slightly irritating. (3) Strongly

irritating: Cloves, ginger, paprika (Hungarian). (4) Irritating, stimulating, harmful: Cayenne pepper, chili pepper, horse-radish, mustard, pepper (black or white). (5) Seasoning herbs: Oregano, tarragon, chervil, sage, basil or sweet basil, bouquet garni, marjoram, rosemary.

A table (p. 9) lists "Goods obtainable at all Sanitarium health food shops" including gluten flour, soya flour, Soyagen (liquid or powder). Sanitarium canned foods: Nutmeat, Nutolene, Soya Beans, Vegetarian Sausages, Lima Beans. Worthington Foods: Soya Meat in tins. Chicken Style sliced. Chicken Style diced. Beef Style sliced. Beef Style diced. Loma Linda: Vegelona, and Linkettes.

Three weeks of menus and recipes are given. Soy-related recipes include: Soya nut loaf (p. 30). Soybean omelette (p. 65). Soya vegetable loaf (p. 70). Soya mayonnaise (p. 71). Soya oven croquettes (p. 82).

Note: This is the earliest document seen (Oct. 2004) concerning the work of Sanitarium Foods in Australia with soy. Address: 54 Castle Howard Road, Cheltenham, N.S.W., Australia.

2210. Jones, Dorothea Van Gundy. 1968. The soybean cookbook: Adventures in zestful eating. New York, NY: Arc Books, Inc. ix + 240 p. Foreword by Ruth Stout. Index. 21 cm.
• ***Summary:*** This lacto-ovo-vegetarian cookbook is identical to the original 1963 paperback edition by the same title except that this is a hardcover edition and the publisher is listed as Arc Books rather than Arco Publishing. The publisher's address is the same. Address: Arlington, California.

2211. Roden, Claudia. 1968. A book of Middle Eastern food. London and Camden, New Jersey: Thomas Nelson and Sons, Ltd. 320 p. Illust. (by Edward Bawden. Color photos by Bruce Pinkard). Index. 26 x 20 cm. [20* ref]
• ***Summary:*** In the chapter titled "Cream salads," tahina [tahini] is discussed and used there as a major ingredient in 7 recipes (p. 35-40). The recipe for Tahina Cream Salad states (p. 35): "*Tahina* in its various forms is a great Middle Eastern favourite... and invariably appears as an accompaniment to most cold, and some hot, main dishes. *Tahina* itself is a paste made from sesame meal and can be found in all Greek stores and a few delicatessens." "Serve the *tahina* cream in a bowl and provide Arab or other bread to dip it in.

The section titled "Hummus: Chick Peas" (p. 36-37) begins: "These hard, round, corn-coloured peas, earthy in flavour and aesthetically attractive, lend themselves, as do most ingredients in the hands of Middle Eastern cooks, to an infinite variety of dishes. Mashed and smoothly puréed, they make an excellent base for a *tahina* cream or a meat soup." Next comes a recipe for *Hummus bi tahina* (Chick peas with tahina) which states: "This *tahina* salad is the most widely known and appreciated of all outside the Middle East... It makes an excellent appetizer served as a dip with... practically anything." One "exquisite and very delicate variation" is Tahina cream salad with almonds (p. 35). Note: This is the earliest English-language document seen (June 2008) that uses the term "Hummus" by itself to refer to chick peas (*Cicer arietinium*).

Ta'amia or falafel [felafel] is also in this chapter (p. 38-40). Made of dried white broad beans (*ful nabed*), they are served hot, accompanied by tahina.

Almonds are used in recipes throughout the book. A recipe for "Milk of almonds" [sweet almond milk] is given on p. 306. Address: [London, England].

2212. Thomsen, Nora. 1968. Sund mad [Healthy vegetarianism]. Odense, Denmark: Dansk Bogforlag. 247 p. Illust. Index. 16 plates. 25 cm. [Dan]
• ***Summary:*** In this Danish vegetarian cookbook, soy-related recipes include: Sojagroed (with soy flour, p. 15-16). Sojapostej (with soy flour, p. 29). Veg. postej (p. 29). Sojamayonnaise uden aeg (with Sojagen [Soyagen] soymilk powder). Sojaboennesalat (Soybean salad, with cooked soybeans, p. 37). Sojaboennesuppe (Soybean soup, p. 65). Sojaboenneretter (p. 88). Sojasteg (p. 88). Sojafrikadeller (p. 89). Sojaboenner naturel. Glutenretter: Fremstillig af gluten (p. 89-90). Sojaost (with Sojagen soymilk powder, p. 118). Sojamælk (with Sojagem soymilk powder, p. 201). Address: Denmark.

2213. Uphof, Johannes Cornelis Th. 1968. Dictionary of economic plants. 2nd ed., revised and enlarged. West Germany: Verlag von J. Cramer. 591 p. See Glycine max, p. 246. 25 cm.
• ***Summary:*** Lists briefly the many food, industrial, and feed uses of the soybean. For example: "Seeds are source of an oil, made into glycerine; used in enamels, varnishes, paints, waterproof goods, linoleum, hard soaps, liquid shampoo, paste soap for hospital use, oil cloth, used in metal moulding, foundry cores; used with rubber for manuf. mats, hose etc., rubber substitutes, lubricant, in printing inks. When refined used for cooking, salads, margarine, shortening." Address: Tampa, Florida. Emeritus Prof. of Botany. Formerly faculty member of the Michigan State Univ. and State Univ. of Arizona. Economic botanist to the Board of Economic Warfare, Washington, DC.

2214. Vithaldas, Yogi; Roberts, Susan. 1968. The yogi cook book. New York, NY: Crown Publishers, Inc. (Pyramid Books). 137 p. Illust. 22 cm.
• ***Summary:*** A vegetarian cookbook. The recipe for almond milk (p, 125) notes: "As champagne is to the Frenchman, so almond milk is to the Indian."

2215. Watanabe, Tokuji. 1968. Advanced technology in

non-fermented soybean foods in Japan. *JARQ* (*Japan Agricultural Research Quarterly*) 3(4):9-13. [7 ref. Eng]
• ***Summary:*** A landmark article, filled with new and accurate information. Contents: Introduction. Tofu and derived foods: Fresh tofu (incl. "momen tofu," "kinugoshi," and "packed tofu." Glucono-delta-lactone has been known for the past several years as a coagulant for kinugoshi and packed tofu), aburage ("Thin sliced tofu"), kori-tofu (also called "dried tofu" it is made by freezing hard fresh tofu). Soybean protein concentrates: Dried soybean milk, 70% protein concentrates, soybean protein curd. Isolated soybean protein. Soybean protein fiber (a thick solution of alkaline isolated soybean protein is forced through spinnerettes into a batch consisting of an acid and salt mixture). Conclusion.

Note. This is the earliest English-language document seen (April 2013) that uses the term *momen* refer to a type of tofu.

Each year about 2,000,000 metric tons of soybeans are consumed in Japan. Most of these are imported from the United States or Communist China. Of this total, about 1,300,000 metric tons are crushed to make soybean oil and meal; about 75% of defatted soybean meal is fed to animals. Of this total, one million metric tons (included a portion of the defatted soybean meal) are used by the food industry to make human foods and condiments.

Although the demand for soybeans in Japan is increasing steadily, domestic production is decreasing, largely because imported soybeans are less expensive.

Traditional Japanese fermented soybean foods include miso, soysauce, and natto. Traditional non-fermented foods include tofu, aburage, koritofu, and kinako. Moreover a number of new foods or food materials are derived from defatted soybeans; they can be used in fish and meat products.

In fresh tofu, a nitrofuran derivative is permitted to be added as a preservative in amounts up to 5 parts per million.

Kinugoshi is made by mixing thick soybean milk at about 70ºC with calcium sulfate suspended in water in a box which has no holes. The milk coagulates into a homogeneous gel without separation of curds and whey.

Packed tofu is made by mixing cold thick soybean milk with a calcium salt in sausage-shaped plastic film bags. Each bag is then sealed closed and immersed in hot water at 90º C for 40 minutes. The soybean milk coagulates into a homogeneous gel like kinugoshi. "Packed tofu is more sanitary, transportable and preservable than momen or kinugoshi."

In some modern factories, aburage is made on a larger scale than momen tofu, using a continuous deep-fryer. There are more than 10-20 aburage factories in Japan which consume at least 600 kg of soybeans per day.

A detailed description of the process for making kori-tofu is given. Several kori-tofu factories consume at least 10 metric tons of soybeans a day.

Small photos show: (1) Fresh tofu soaked in cold water ready to be sold. (2) Continuous manufacture of packed tofu (made with GDL). (3) Equipment for making packed tofu from spray dried soybean milk. (4) Continuous deep-frying equipment for making aburage. (5) Bird's-eye view of a large-scale kori-tofu factory. (6) Soaking tofu cakes in cold water for pre-cooling and removing excess calcium chloride in making kori-tofu. (7) Continuous freezing of cut tofu cakes in making kori-tofu.

Flow sheets show: (1) Kori-tofu making. (2) Fresh tofu making. Address: Head, Food and Nutrition Div., Food Research Inst., Japan.

2216. Worthington Foods, Inc. 1968? Tomorrow's foods today. Worthington, Ohio. 19 p. Undated. 28 cm. [3 ref]
• ***Summary:*** Contents: Message from management. Tomorrow's foods today. Research and development department, W.E. Hartman, director. Production department, Sam Brown, manager. Sales department, W. Kenneth Case, manager. The Worthington line. Engineering department, B.J. Knecht, chief engineer, B.L. Knecht, assistant engineer. Data processing department, John Dalton, manager. Credit and traffic, Al Foster, manager. Advertising department, Michael A. Jones, manager, James Converse, art director. Purchasing and office management, Luther Lyle, manager. Personnel department, Kenneth Innocent, manager. Accounting department, Richard Waters, manager. The future. The wonderful Choplet. Board of directors: James L. Hagle (chairman), Warren E. Hartman, Allan R. Buller, George T. Harding, III, M.D., Warren G. Harding, M.D., George E. McKay, Harrison Evans, M.D.

A color photo shows each of the products in the Worthington line. All are canned, except those followed by an asterisk: Cutlets, Fry Sticks, Vegetable Skallops, Sandwich Spread, Chili, Vegetarian Luncheon Slices*, Kaffir Tea, Soyameat, Vegetarian Dinner: Salisbury Steak Style*, Soyameat: Diced Chicken Style, Choplets, Vegetarian Pie: Chicken Style*, Vegetarian Dinner: Chicken Style*, Holiday Roast*, Prosage: Breakfast Treat*, Vegetarian Luncheon Slices: Smoked Beef Style*, Vegetable Steaks, Numete, Vegetarian Luncheon Slices: Use Like Corned Beef*, Soyameat: Diced Beef Style, Breading Meal: Fry and Loaf Mix, Vegetarian Dinner: Ham Style*, Soyameat: Beef Style Slices with Gravy, Soyameat: Sliced Chicken Style, Meat Loaf Mix*, Veja-Links, Soyamel: All Purpose, Saucettes, Infa-Soy, Soyamel: Banana Beverage, Fortified Soyamel: A Powdered Soy Milk. The section titled "The future" is prophetic. "Since 1962 Worthington Foods has been growing in sales by nearly 20 percent a year. This is significant but modest in comparison to what is coming. For in out opinion the growth of the vegetable protein industry very shortly will be astronomical. The reasons are fairly simple.

"First, these new foods not only taste good. They are nutritionally sound.

"Second, vegetable protein foods offer significant economies over traditional meats. When grazed, an acre of land offers approximately 43 pounds of protein. Plant that same acre to soybeans and the yield is about 450 pounds of protein. The economic advantages of vegetable proteins are widening rapidly today. They will continue to widen.

"Third, vegetable protein foods are more convenient, and convenience foods will soon dominate the food business. No long hours of marinating, basting, of baking are necessary with these new foods. No skin to peel or bones or fat to cut out. With vegetable protein foods, taste and tenderness are controlled. The housewife or chef need only heat and serve.

"A forth reason why the growth of this industry is going to be enormous shortly is because of the protein shortage in the world. The U.S. Department of Agriculture recently pointed out that even in the United States, 'Future protein needs must be met by chemically nurtured and protected plant materials. They certainly cannot be met by animal protein.'"

Note 1. This brochure contains an original illustration of each of the men mentioned above. Note 2. All three dated footnotes at the end of this brochure are from the year 1967, and the latest is Dec. 1967. Address: Worthington, Ohio.

2217. **Product Name:** [Tow-foo-fah (Oboro), and Soymilk]. **Manufacturer's Name:** Super-Soy Specialty. **Manufacturer's Address:** No. 19, Jalan Dato Teoh Siew Khor, Kluang, Johor, West Malaysia. Phone: 07-717558. **Date of Introduction:** 1969. January. **New Product–Documentation:** Form filled out by Richard F.C. Chan. The business was started on 1-9-1969. He uses 100 lb/day of soybeans. His business card describes him as a "Soycrafter. Soyfoods–Natural and Health Giving."

2218. *Washington Post, Times Herald.* 1969. Tofu: Anne's reader exchange. Feb. 13. p. D2.
• ***Summary:*** Describes how to make (at home) "soybean curd or Tofu from soya milk, canned or homemade," using lemon juice as a coagulant.

Also gives a very short recipe for making "soya milk from beans" at home.

2219. Hetrick, J.H. 1969. Imitation dairy products–Past, present, and future. *J. of the American Oil Chemists' Society* 46(2):58A-62A. Feb. [4 ref]
• ***Summary:*** This is a "history of substitute dairy products" and the impact on the market for dairy products.

1923–The Federal Filled Milk Act allowed for dairy milk products in which vegetable fat was substituted for milk fat [butter] in a skim milk base in states where such products was legal. Yet it made interstate commerce of such products in any form illegal. In Illinois, filled evaporated milk is still being with billboards which say: "If cows could, they'd give Milnot."

Milk and milk products, which are an important part of the U.S. diet, provide 77% of the calcium, 45% of the riboflavin, 24% of the protein, 12% of the Vitamin A, 10% of the thiamin, and significant quantities of B-6, B-12, pantothenic acid, folic acid, and essential trace minerals in the Nation's diet. Address: Dep. of Food Science, Univ. of Illinois, Urbana, Illinois 61801.

2220. Mattick, Leonard R.; Hand, David B. 1969. Identification of a volatile component in soybeans that contributes to the raw bean flavor. *J. of Agricultural and Food Chemistry* 17(1):15-17. Jan/Feb. [4 ref]
• ***Summary:*** The volatile component, ethyl vinyl ketone, has been identified by gas chromatography and mass spectrometry. The green bean odor and flavor have been attributed to this compound, which is not present in the intact raw bean, but whose formation is probably the result of enzymatic action when raw soybeans are macerated.

Note. This is the earliest English-language document seen (Nov. 2012) with the term "raw bean flavor" in the title–used to refer to off flavors in soybeans.

Note 2. This is the earliest English-language document seen (June 2013) that contains the term "ethyl vinyl ketone." It is considered responsible for undesirable soy flavors or odors. Address: Dep. of Food Science and Technology, Cornell Univ., Geneva, New York.

2221. Rubini, Milton E. 1969. Filled milk and artificial milk substitutes. *American J. of Clinical Nutrition* 22(2):163-67. Feb.
• ***Summary:*** Milk, filled with polyunsaturated fats such as Safflower, soya, corn, and cottonseed oils and fortified with vitamins A and D, is viewed by some professional nutritionists as an ideal nutritional, especially for the disadvantages population groups where price is critical. Soymilk is not mentioned.

Table 1 (p. 164) shows the nutritional composition of the milk of 15 species of mammals. Human milk has the highest sugar content (75; elephant milk has 73 and whale milk has only 4), the lowest content of protein (11; cow's milk has 35 and reindeer milk has 100), a relatively low fat content (35; cow's milk has 40, horse milk has 12, and porpoise milk has 460), and the lowest content of salts (3; cow's milk has 9 and reindeer milk has 14). Address: M.D.

2222. Badenhop, A.F.; Wilkens, W.F. 1969. The formation of 1-octen-3-ol in soybeans during soaking. *J. of the American Oil Chemists' Society* 46(3):179-82. March. [12 ref]
• ***Summary:*** Soaking soybeans in water as a pretreatment for the manufacture of soy milk was found to result in the production of significant quantities of 1-octen-3-ol. The flavor threshold of this compound was found to be between 0.5 and 1.0 parts per million. Address: New York State Agric.

Exp. Station, Dep. of Food Science and Technology, Cornell Univ., Geneva, New York 14456.

2223. U.P.I. (United Press International). 1969. India's joint ventures in Malaysia. *Times of India* (*The*) (*Bombay*). April 3. p. 16.
• ***Summary:*** Kuala Lumpur–Seven industrial concerns from India, three from the USA and one from Italy are seeking Malaysian partners to establish joint ventures in Malaysia–according to the commercial secretary of the Associated Chinese Chambers of Commerce.

"The proposals are for establishing factories in Malaysia for manufacturing furniture, abrasives, soyabean milk, shoes,... etc."

2224. Spilsbury, Calvin C. 1969. Three stages in Far East soybean markets. *Foreign Agriculture.* April 14. p. 6-8.
• ***Summary:*** Today soybean markets in the Far East, the original home of the soybean, have emerged from time-honored Eastern patterns and have differentiated into what may be called three types–traditional, transitional, and industrial. In traditional markets soybeans continue to be sold and used chiefly for human protein foods, and volumes traded are comparatively small. Also, volumes processed by modern methods are small. Transitional markets are characterized by larger volume, the modern processing of considerable quantities of soybeans for oil for human consumption, and the developing use of soybean meal for human food products and for high-protein animal feeds for emerging livestock and poultry industries. In industrial markets very large quantities of soybeans are efficiently imported, marketed, and processed for oils and fats for human use and for meal for vigorous livestock industries; at the same time soybeans are still used in traditional foods and soybean meal is used to make a variety of new food products.

Korea is a traditional soybean market. Nearly all soybeans are processed into human protein foods such as synthetic milk, flour, paste for soup [miso], curd for consumption in more solid form, mash, sprouted beans, soy sauce, and even fermented "cheese". About 60 to 70% of the domestic crop of about 200,000 tonnes annually is sold in the country's food markets directly to private and commercial consumers. Total imports in 1968 were 28,000 tonnes–all from the U.S.

Most processing of soybeans for human use is done in individual homes by housewives. For example, nearly every Korean family makes a product known as kochojang, or hot bean mash, which consists of powdered, fermented soybeans mixed with red pepper, salt, and water. Some foodmaking (soybean curd and soy sauce) is organized into cottage industry. Most of the soybeans imported from the U.S. are made into traditional soybean foods for rations for the Korean army by one large food factory. Crushing soybeans and other oilseeds for oil is done by about 100 small mills throughout the country. The estimated capacity of all the mills added together is about 200,000 tonnes per year of oilseeds of all types. The largest mills have capacities less than 25 tons per day.

In Taiwan, very little of the imported soybeans are used to make traditional Far East foods. The larger crushing and extraction facilities are clustered around large cities–Taipei, Taichung, Tainan, and Kaohsiung. Only the last is a port, and even there no mills are located on deep water. Imported soybeans are discharged by ships' equipment onto docks, where they are bagged and then stored. Bagged beans are sent by truck or rail to inland processing plants. Modern deep-water bulk discharge facilities are to be built at Kaohsiung along with storage for soybeans and grain.

Japan is the giant of Far Eastern markets for U.S. soybeans. One of the most important recent improvements in soybean logistics has been the development of modern deepwater grain and soybean terminals where soybeans can be rapidly discharged from ships' holds directly to storage, interim transportation, or crushing mills. The first fast-discharge elevator on deep water for soybeans or grain was built by an American-Japanese company. At present four terminals have been built in the Tokyo and Kobe areas, and two more are under construction. Unloading is accomplished by pneumatic suction tubes with capacities of 600 to 800 tons per hour (about 6,000 tonnes per 8-hour day). In Korea and Taiwan, facilities for the fast unloading of large tankers do not exist. Many large, new crushing mills have been built on harbor frontage rather than inland so that they can benefit from bulk transportation methods. The annual capacity of the 15 large, modern mills in Japan is estimated at 1.8 million tons of soybeans. The first mills in Japan were in the mountains because most oilseed crops were grown there. Address: Fats and Oils Div., Foreign Agricultural Service.

2225. Banzon, Julian; Steinkraus, Keith H. 1969. How to use soybeans from your garden. College of Agriculture, University of the Philippines. 5 p. Mimeographed circular. Distributed through Los Banos Extension Dept.
• ***Summary:*** Introduction (the importance of protein, of which soybeans are a good source). How to grow soybeans in the Philippines, by Richard Bradfield of IRRI. How to make soybean milk and other nutritious soybean foods: Steamed green soybeans, mature dry soybeans, soybean milk, tokua–soybean curd, taosi (soybeans fermented with *Aspergillus oryzae* mold), tempeh.

Note: This is the earliest English-language document seen (Nov. 2011) that uses the word *taosi* to refer to fermented black soybeans. Address: 1. Prof. of Chemistry; 2. Visiting Prof., Microbiology and Food Science. Both: Univ. of the Philippines, College of Agriculture, Laguna, Philippines.

2226. Binding, George J. 1969. The soya bean–a vegetable full of body-building protein. *British Vegetarian.* March/April. p. 155-57.
• ***Summary:*** The "soya bean has the highest protein content of any vegetable. As such it is God's gift to man and is a must for vegetarians. In the Far East it is known as 'the meat of the soil.'" The author spent many years in East Asia, where he studied the foods of the region. Soya beans can be used to make a wide variety of foods; the author briefly describes the following: Bean shoots [soy sprouts], soya bean milk, bean curd or vegetable cheese [tofu], yuba, natto, miso, soy sauce, and boiled whole soybeans.

Since World War II, America has become the largest producer of soya beans. Before that war, England was one of the largest importers of soya beans in the world. "All vegetarians should make certain of a sufficient daily intake of protein. There's no more effective and satisfying way of doing so than eating soya beans." Address: M.B.E.

2227. Breth, Fred E. 1969. Ersatz-foods: The danger ahead. *British Vegetarian.* March/April. p. 141-45.
• ***Summary:*** Writing in a critical tone, the author discusses the various products resembling meat and dairy products now available to American shoppers. "Turkey meat that has never held a feather and milk that has never been near a cow... These foods are making progress in markets around the world. Like the prospect or not, it is obvious we shall have to live with laboratory-bred proteins in the not-too-distant future." For more than a decade, food companies have been developing imitation animal proteins, based largely on soya bean proteins. Soya bean derivatives are being used to "stretch" low-cost meats.

"The American dairy industry has yet to find an answer to soya-protein based coffee whiteners, whipped cake toppings, cream-type and frozen desserts. The consuming public has fully accepted them some time ago–and likes them. Are synthetics a real threat to animal products? Expert opinion on this question is deeply divided." Mr. J.L. Hagle, president of Worthington Foods Inc. ("at present the major producer of 'synthetic foods'") believes that "Granted enough time, the relative efficiency of man-made foods will work in their favour."

"Professor C.O. Chichester, University of California, put it even more bluntly: '... the isolation of plant proteins and their processing into textured products may very well result in a major change in the eating habits of the world.'"

"'Meatless' meats, also called 'synthetic meats,' 'analogue meats' and 'textured meats' are made from isolated soya-protein (90 per cent. protein), which is a tasteless, odorless powder."

"Worthington Foods Inc. is already marketing about 30 different 'meat' items, including fried chicken, dried beef, meat loaf casserole, croquettes, chicken show mein, 'soymeat' sandwiches, sandwich spread, bacon bits and so on."

Experts predict plenty of competition in the field of "high-protein drinks" (H.P.D.s). Large companies like Monsanto (a chemical company), Pillsbury (a flour mill), and Swift (a meat packer) have already entered this market. They are all aware of the success story of "Vita-Soy" [Vitasoy], "a straight, three per cent. protein soya-bean milk drink," which sells 60 million bottles a year and has captured 25% of the Hong Kong soft drink market; it sells for as little as 5 pence per bottle. And they are aware of a similar powdered soy protein drink [Saridele] which contains 18% protein and is being marketed successfully in Djakarta, Indonesia and was introduced in 1957; 300 tons/year are now being produced.

The author concludes that these new foods are a necessity from the viewpoint of global nutrition.

Note: This is the earliest English-language document seen (Nov. 2003) that contains the term "meatless meats" or "meatless meat" (with any combination of quotation marks). Three other publications also used this term later in 1969.

2228. Cowan, Claude C., Jr.; Brownlee, R. C., Jr.; DeLoache, W.R.; Jackson, H.P.; Matthews, J.P., Jr. 1969. A soy protein isolate formula in the management of allergy in infants and children. *Southern Medical Journal* 62(4):389-93. April. [10 ref]
• ***Summary:*** The soy formula was successful in alleviating symptoms of allergy and maintaining an adequate nutritional state. Address: Chrisite Pediatric Group, Greenville, South Carolina.

2229. Moede, Herbert H.; Rogers, G.B.; Agnew, D.B.; Duewer, L. 1969. Synthetics and substitutes for agricultural products, a compendium: Meat and poultry substitutes. *USDA Economic Research Service, Miscellaneous Publication* No. 1141. p. 34-40. April.
• ***Summary:*** "Dale Johnson, an industry representative, estimated the following end uses for soy protein and grits to replace an animal-source raw material in commercial products in August 1967." The estimated quantity is in million pounds per year: Pet food 120, meat products–fresh, smoked, and canned 30, calf milk replacers 15, soy milk and beverage products 10. Address: USDA.

2230. *Soybean Digest.* 1969. Worldwide oils and fats. April. p. 58.
• ***Summary:*** Discusses: Rapeseed. Thailand. Palm oil. Spain. Korea. Asia. World. Iran.

"Thailand: The first Thai International trade fair–held Dec. 12-29 in Bangkok–drew over 750,000 people and introduced them to 422 U.S. food products including new textured vegetable protein items made from soybeans."

"Korea: Response to a new U.S. soy beverage tested as part of a Korean school lunch program has encouraged early introduction into the commercial market."

"Iran: Vegetable oil extraction and processing equipment worth $750,000 has been ordered by Iran from a British engineering firm..."

2231. Tabuchi, Ichiro. 1969. Tônyû inryo ni kansuru chôsa to kongo [A survey on soymilk and its future]. *Daizu Kaihatsu, Shokuhin Kaihatsu* (*Soybean Development, Food Development*). May 27. p. 10-15. [Jap]
• ***Summary:*** Contents: Why we started producing soymilk. First is the economic reason; getting soymilk directly from soybeans is less expensive than feeding cows and getting milk from them. Second is the health reason. Our school has 3 goals in our education; the help develop a sound mind in a sound body with high moral values. We also emphasize independence and self-sufficiency, in part be encouraging students to be active in one of the businesses that are part of the school. And we encourage students to produce, as much as possible, what we eat at school.

We used to run a self-sufficient dairy farm and produced milk, which we used at the school and sent any extra to the Tokyo Eisei Byôin (Tokyo Adventist Hospital), etc. But during World War II for about 2 years, Christianity in Japan received pressure from the Japanese government. After the war we lost the milk cows and couldn't run the dairy farm. We switched these plants to make other foods. At this time we were using the nonfat dry milk from the USA–which was not tasty, or a little milk which we got somewhere. But that was not enough for the growing children at school. We needed the least expensive and most nutritious milk we could find.

Right at this time, Dr. Harry W. Miller visited us. He was an honorary member of the Japan and American Soybean Association, and a developer and researcher of soymilk; he urged us to make soymilk.

But actually we were not so sure about making soymilk, so we hesitated. It was a long time later that we decided to do so.

The main reason for our hesitation was that even if we made soymilk, we were not sure that the children would like it and drink it. But as we think about it now, it was an unnecessary worry.

Anyway, Dr. Miller stayed for two months at our school and taught us how to make soymilk. He also gave three lectures on soymilk. mostly from a nutritional point of view. He did this because some thought that soymilk was nutritionally inferior to cow's milk and therefore it would not be a good idea to feed soymilk to growing children. Therefore he had to correct this point of view.

So in 1959, from the earnest recommendation (*nesshin na susume*) of Dr. Miller and the wise decision of our school principal, we discontinued the use of dairy milk and switched to soymilk only.

There was the opinion that we should keep both and let individuals decide which they wanted to drink.

It has been just ten years since we made the decision to switch to 100% soymilk. As I look back, I realize that we were now free of the work of feeding, caring for, and milking dairy cows; that was a big plus.

At present we make 1,000 bottles of soymilk a day, and this work is done by 1 person in half a day; it is very efficient.

Also discusses: Physical condition improves with ongoing soymilk consumption. Boys (male students) tend to like soymilk more than girls. Try not to lose the characteristics of soymilk.

Note: This is the earliest publication seen written by Mr. Tabuchi about soymilk and Soyalac. Address: Nihon San-iku Gakuin.

2232. Colvin, B.M.; Lowe, R.A.; Ramsey, H.A. 1969. Passage of digesta from the abomasum of a calf fed soy flour milk replacers and whole milk. *J. of Dairy Science* 52(5):687-88. May. [2 ref]
• ***Summary:*** Note: This is the earliest document seen that mentions abomasum or abomasal in connection with soy. *Webster's Dictionary* defines abomasum (derived from New Latin, via the Latin *ab + omasum* = the tripe of a bullock), a word first used in about 1760, as "the chamber of the ruminant stomach that is fourth and has a true digestive function." The adjective is abomasal. Address: Dep. of Animal Science, North Carolina State Univ., Raleigh, North Carolina 27607.

2233. Emerson, R.J. 1969. AID incentives to U.S. commercial operations in developing countries. *USDA Agricultural Research Service* ARS 72-71. p. 137-39. May.
• ***Summary:*** Discusses Saci to be made by the Coca Cola Company in Brazil, Vitasoy concentrate to be made by Monsanto in Southeast Asia and Latin America, and Incaparina made by Quaker Oats in Latin America. Gives details on AID incentives to private investment by U.S. companies in developing nations. Recently AID has established, within the Office of Private Resources, a Private Investment Center and a Private Resources Development Service. Address: Office of Private Resources, Agency for International Development, U.S. Dep. of State, Washington, DC.

2234. Hammann, W.C. 1969. Development and marketing of a soy-protein beverage. *USDA Agricultural Research Service* ARS 72-71. p. 101-04. May. [3 ref]
• ***Summary:*** Monsanto's objective is "The translation of Vitasoy, a nutrient soybean soft drink successfully sold in Hong Kong, into an internationally acceptable product to be marketed as a franchise beverage in various parts of the world." The author reviews the early history of Vitasoy, and notes that after introducing the beverage in soft drink bottles, the company "developed an effective advertising campaign.

His soft drink image told the customer that Vitasoy was good, and his advertising words and pictures told the customer it was good for him–'Vitasoy will make you grow taller, stronger, and prettier.' By these techniques Mr. Lo, in the face of sophisticated competition, now has a 24% share of the soft drink market in Hong Kong. He has proved that a business marketing a high-protein food can succeed."
The author then describes how Monsanto reformulated the product. They gave it "a yellow color, similar to that of egg yolk, a symbol of nutrition around the world." Giving the product a new flavor was the most difficult problem, but was solved by "careful control of the process for the soy base of our beverage to eliminate volatile fat oxidation products and prevent formation of bitter notes due to protein degradation. More important, it required development of flavor agents, to mask the bland but still apparent soy taste and the creation of a flavor compatible with the masking agents and stable to processing conditions." A complex group of emulsifiers and stabilizers were used to impart a creamy, homogeneous appearance. Each 6.5 oz serving contained 3.8 gm of protein (from soy), 94 calories, and 1/3 the minimum daily requirement of vitamins A, B-1, B-2, B-6, B-12, and niacinamide. Monsanto decided to sell the product as a dry concentrate, to be supplied to franchised bottlers, who would then mix it with sugar and water, and homogenize, bottle, and sterilize it. Recently two consumer acceptance tests were conducted in different countries. In city I, 61% of the respondents liked the product, and of these, 85% confirmed this like by taking more samples instead of money. In City II, 75% liked the product and 77% said they would buy. Consumers indicated they would be most likely to drink the product at lunchtime and other unspecified occasions.

Note: This product was named Puma and it was first sold in Guyana. It may have been the first commercial soy product to apply the "boiling water grind" principles developed at Cornell University (New York, by Wilkens, Mattick and Hand, 1967) for elimination of beany flavor. Address: Monsanto Company, St. Louis, Missouri.

2235. Hedges, Irwin R. 1969. Soybeans in the war on hunger. *Soybean Digest.* May. p. 13-17.
• ***Summary:*** Discusses protein-rich cereal-soy blends such as CSM ("the high-protein blend") and WSB (Wheat-Soy Blend) used in the Food for Freedom program. The article begins: "War on hunger: The U.S. government launched a War on Hunger 3 years ago [1966, under President Lyndon Johnson], based on the conviction that next to the pursuit of peace the world faces no issue more important than solving the food / population problem... world population was growing at a rate that would double the number of earth's inhabitants by the year 2000, while food production was lagging considerable behind the population growth rate."

"AID is providing incentive to private industry to develop, test and eventually produce for commercial distribution low-cost, high-protein foods and beverages. Under these incentive contracts, food processors receive grants to survey the market, determine costs and availability of indigenous commodities, and develop and test market for prototype foods and drinks." Under this plan, contracts have been signed with Monsanto for a soybean drink in Brazil, with Swift & Co. for soybean-based foods in Brazil, with Archer Daniels Midland for textured vegetable protein and other foods in Thailand, and with General Mills for a high-protein product in Pakistan. Monsanto's research in Brazil has already shown good results.

Concerning food and population: "Many developing countries show population growth rates of 2.5% to 3.5% per year, rates that double their population in 20 to 30 years. Two-thirds of the world's population live in the developing countries.

"Must curb population: These same countries also have great potential for increasing food production by the application of modern science and technology. But unless measures are taken to curb population growth, any likely or possible increase in food production will only postpone the crisis."

Photos show: Dr. A.M. Altschul and Dr. Max Milner. Address: Acting administrator, War on Hunger, Agency for International Development.

2236. Prater, A.N.; Powell, M.E.; Sterner, M.M. 1969. Use of oilseed proteins in dairy product substitutes. *USDA Agricultural Research Service* ARS 72-71. p. 87-90. May.
• ***Summary:*** "Sodium caseinate which is manufactured from nonfat milk is a high protein product with good biological value. The casein is first extracted from the milk with acid and is then converted into a soluble product by addition of a sodium compound. The remaining milk ingredients are discarded. Sodium caseinate is used in whole or in part as a substitute for the protein in nonfat milk solids, but the overall quality of the finished product is considered inferior from the taste palatability standpoint in direct proportion to the amount of substitution.

"Furthermore, sodium caseinate poses an interesting labeling situation. The Food and Drug Administration considers sodium caseinate to be a chemical product derived from milk. In some products which contain sodium caseinate the claim is made that there is no dairy product present. This is true when the legal definition of milk is applied, but the implied inference that no product from milk is present is misleading." Address: 1. Consultant, Encino, California; 2. Consultant, Glendale, CA; 3. Meals for Millions Foundation, Santa Monica, CA.

2237. Altschul, A.M. 1969. Combating malnutrition: New strategies through food science. *Plant Foods for Human Nutrition* 1(3):149-61. June. [7 ref]
• ***Summary:*** Fig. 3 (p. 152) is a graph that shows, for various

countries of the world, the percentage of total grain supplies fed to animals (Denmark and USA are highest at 72-78%) versus animal protein consumption (pounds per person per year) (Denmark and USA are highest at about 45 lb). Address: USDA, Washington, DC.

2238. Brown, Earl B.; Josephson, B.M.; Levine, H.S.; Rosen, M. 1969. A prospective study of allergy in a pediatric population: The role of heredity in the incidence of allergies, and experience with milk-free diet in the newborn. *American J. of Diseases of Children* 117:693-98. June. [10 ref]
• ***Summary:*** The author tried to decide whether feeding of soy-based formulas will actually suppress the incidence of allergy in infants known to be at risk. He studied 427 infants ages 12 to 17 months and found that 10.6% of the soybean group developed a disease of allergy compared with 13.3% in the milk group. This difference was considered too small to be significant.

Note: Vegetarian Times (March 1995, p. 85) defines a prospective study as "A type of epidemiological study that looks at events and behaviors in a population, then follows the group over the years to see what they do and what differences develop. More likely than retrospective studies to generate scientifically valid results." Address: Div. of Social Medicine, Montefiore Hospital and Medical Center, Bronx, New York.

2239. Kosikowski, Frank V. 1969. Role of imitation milk in feeding of tomorrow's population. *J. of Dairy Science* 52(6):756-60. June. [7 ref]
• ***Summary:*** Contents: Introduction. Present state of filled milk evolution in developing countries. Synthetic-like imitation milks. Growth of protein concentrate beverages. Acceptance, usage, costs and safety of imitation beverages. Attitudes. Role of imitations.

"Examples of protein concentrate beverages now available commercially or in pilot plant state include 'Saci,' a sterilized, noncarbonated chocolate-flavored, 3% soy protein nutrient beverage distributed by the Coca-Cola Company in Brazil."

There is a bright future for the synthetic-like imitation milk described earlier. "These imitations are bound to improve with time and it is likely that soybean isolates will replace sodium caseinates as the protein source." These imitation should try to attain protein and calcium levels equal to that of cow's milk. Address: Dep. of Food Science, Cornell Univ., Ithaca, New York 14850.

2240. Russo, J.R. 1969. Can new protein sources avert world shortage? Part II. *Food Engineering* 41(6):80-83. June.
• ***Summary:*** Part I of this article discussed protein in new forms such as fish protein concentrate, meat protein concentrate, and protein from petroleum. This part discusses protein from oilseeds, the least expensive and most promising source. Products containing soy include beverages such as Vitasoy in Hong Kong, ProNutro in South Africa, and Saci in Brazil. In Brazil, Cerealina has been introduced by Corn Products Company. Also discussed are synthetic amino acids, new foods from meat wastes, and food processing "wastes." Photos show a Saci bottle and an Incaparina bag. Address: Asst. ed., Food Engineering.

2241. Andrews, Billy F.; Cook, Larry N. 1969. Low birth-weight infants fed a new carbohydrate-free formula with different sugars. I. Growth and clinical course. *American J. of Clinical Nutrition* 22(7):845-50. July. [25 ref]
• ***Summary:*** Thirty premature infants were fed a new carbohydrate free formula (based on soy protein isolate) to which glucose, sucrose, and lactose were added. Growth of the infants was normal. The authors suggest "further clinical trials to explore the diagnostic and therapeutic uses of such carbohydrate-free formulas." Address: Univ. of Louisville School of Medicine, Kentucky.

2242. Schneider, Donald L.; Sarett, Herbert P. 1969. Growth of baby pigs fed infant soybean formulas. *J. of Nutrition* 98(3):279-87. July. [18 ref]
• ***Summary:*** "Newborn pigs were used to compare the nutritional quality of a recently developed soybean protein isolate (supplemented with methionine) with that of milk protein in 31-day studies."

This study had two parts. Results from Part I showed that the protein quality of the infant soybean formulas with isolate plus methionine was approximately 85% that of the milk protein. Address: Dep. of Nutritional Research, Mead Johnson Research Center, Evansville, Indiana.

2243. Wilkens, W.F.; Hackler, L.R. 1969. Effect of processing conditions on the composition of soymilk. *Cereal Chemistry* 46(4):391-97. July. [6 ref]
• ***Summary:*** Harosoy variety soybeans with 12-13% initial moisture content were used in these experiments. Dehulling was accomplished by heating the beans for 10 minutes at 105-110ºC in a circulatory air oven, cooling, then passing them through a properly spaced burr mill to loosen the hulls, without substantial cracking of the cotyledons. The hulls were separated by aspirating a moving bed of cracked soybeans.

Figures show: (2) That as the soak temperature of dehulled soybeans was increased from 25ºC to 65ºC, the total solids and total carbohydrates decreased the most; protein and lipids decreased only slightly.

(3) That the higher the soak temperature of dehulled soybeans, the faster the water uptake. However soaking at ambient temperature (30ºC) requires no energy for heating the soak water and results in the greatest water uptake after 2-3 hours of soak time.

(4) The effect of soak temperature and time on the water

uptake of whole soybeans. These soybeans, which are not dehulled, absorb water more slowly than dehulled soybeans. Whole soybeans soaked at 40ºC absorb the most water after 7 hours, whereas those soaked at 30ºC absorb the least.

(5) Effect of soak temperature and time on the composition and yield of soy milk prepared from whole soybeans with a 100ºC water extraction grinding (hot grind). Soak times: 1 3 and 6 hours. As the soak temperature of whole soybeans was increased from 25ºC to 65ºC, the total solids and total carbohydrates decreased the most; protein and lipids decreased only slightly.

(6) Relation of soak temperature and time to the volume of filtered soy milk recovered from dehulled soybeans at 100ºC water extraction grinding (boiling water grind). The volume of soy milk was greatest with a soak time of 3 hours at 40ºC. Address: New York State Agric. Exp. Station, Dep. of Food Science and Technology, Cornell Univ., Geneva, New York 14456.

2244. Leng, Earl R. 1969. The soya bean explores new territory. *World Farming* 11(8):8-9, 11-12. 14-15.
• ***Summary:*** Contents: Introduction. The potential. Will soya beans do any better? History of soybean research in India from 1965. Climatic factors. Variety selection. Seedbed preparation. Planting techniques. Weed control. Insect and disease pests. Harvesting and threshing. Seed storage. Utilization: Full-fat soy flour, soy milk.

For the last 3 years, the author has headed the University of Illinois' Coordinated Soya Bean Research Project in India. Under this program, he has conducted India's first extensive field trials using modern soybean varieties suited to Indian conditions. The soybean is almost unknown in many areas of the world, such as India and Africa, where protein is in acute short supply.

"Except for Indonesia, southern China, Taiwan, and the Philippines, soya beans were almost unknown in the tropical and sub-tropical regions of the world until about 1960. In the early 1960's work in southern Brazil rapidly; showed that good yields and high protein content of soya beans could be produced in that area. The varieties used were chiefly those grown in the Gulf Coast states of southern United States. Yields of 1,500 to over 2,000 pounds [per acre] were reported from experimental trials in both southern and central Brazil, and significant acreages are now grown in southern Brazil.

"In 1965 research workers with the University of Illinois, Urbana, Illinois, U.S.A., began intensive soya bean field trials at Pantnagar in northeastern India and at Jabalpur in the central part of the country under a USAID contract. The first year's results were only moderately encouraging; however, the 1966 trials at Pantnagar resulted in some yields over 3,000 pounds per acre. By 1968, it had been shown that yields up to nearly 4,000 pounds per acre could be produced both at Pantnagar and at Jabalpur. These outstanding results were achieved with varieties developed by U.S. Dept. of Agriculture plant breeders for the Gulf Coast states of southern U.S. From these results, it is now clear that high yields of soya beans can be obtained in much of India, between latitudes 23º and 30º."

A photo shows the Leng in a field of soybeans at Jabalpur, India. Address: Agronomist, Univ. of Illinois, Urbana.

2245. Orr, Martha Louise. 1969. Pantothenic acid, vitamin B-6, and vitamin B-12 in foods. *USDA Home Economics Research Report* No. 36. 53 p. Aug. [440* ref]
• ***Summary:*** Lists the content of these three vitamins (p. 25) for: Soybeans, mature, dry, raw. Fermented product, tempeh. Soybean flours (full-fat, high-fat, low-fat, and defatted). Soybean milk product, sweetened powder.

The percentage of vitamin B-6 in the form of pyridoxol, pyridoxal, and pyridoxamine is as follows: for soybeans (44, 44, 12) or (18, 77, 5), soyflour (63, 25, 12).

2246. Spilsbury, Calvin C. 1969. The U.S. soybean market in the Republic of China (Taiwan). *USDA Foreign Agricultural Service*. FAS M-209. 20 p. Aug. Summarized in Soybean Digest, Nov. 1969, p. 52.
• ***Summary:*** Contents: Foreword, by Howard A. Akers. Introduction. The market. The oilseed crushing industry: Organization and mill location, number and type of mills, crushing capacity. Soybean oil and foods: Soybean meal demand for swine, soybean meal demand for poultry. Domestic oilseed supplies: Soybeans, peanuts, rapeseed, sesame, minor oilseeds. Marketing: Discharging and handling facilities, freight costs, government controls, purchasing, credit, quality problems, crushing margins wide. Appendix: Directory of major soybean and oilseed crushing mills, by region.

The Foreword notes: "This small island made near-phenomenal strides in both agriculture and industry in the late 1950s and early 1960s, and by the mid-1960s was recognized as a growing dollar market for U.S. soybeans and soybean products." In 1965 Taiwan moved from aid to trade status. In 1966 soybeans were removed from controls, and with the booming economy of 1967-68, imports of soybean from the USA–all paid for in dollars,–leaped to record levels.

Today, Taiwan has one of the world's highest economic growth rates. Since the end of World War II, and especially since 1955, the Taiwan oilseed crushing industry has undergone a complete technological transformation. The country now boasts 36 solvent extraction plants, many of them with modern continuous systems.

In Taiwan today, per capita consumption of soybeans for food is estimated at around 5½ pounds/year, compared with about 4 pounds in 1958. Soybean oil is now Taiwan's major source of edible fats and oils; per capita consumption is about 6 pounds/year compared with 4 pounds/year for peanut

oil. Total per capita vegetable oil consumption is about 12 pounds/year. Per capita consumption of animal fats is 6-8 pounds/year.

Domestic production of soybeans rose from 4,000 metric tons (tonnes) in 1935-39 to 72,997 tonnes in 1968. Historically, imports of soybeans and soybean products have been large. In 1938 over 45,000 tonnes of soybeans and about 164,000 tonnes of soybean cake were imported, mainly from Manchuria.

In 1950, Taiwan's vegetable oil crushing industry was first organized into a trade association by a group of 20 crushers using screw presses. By 1967 some 86 crushers were members; this included 35 solvent-extraction operators. Known today as the Taiwan Regional Association of Vegetable Oil Expelling and Refining Industries, the group is located at 82 Nan Yuan Street in Taipei. Today in Taiwan there are 99 oilseed crushing mills with a total crushing capacity of 1.3 million tonnes–up from only 400,000 tonnes in 1954-55.

As in many countries of East Asia, the Taiwanese consumer has a taste preference for crude peanut oil, sesame oil, and rapeseed oil, in that order. For this reason, soybean oil is often marketed as a blend with peanut or rapeseed oil.

The soybeans required for the manufacture of bean curd [tofu], soybean paste [jiang], [soy] sauce, milk, and other foods are largely produced domestically. In 1969 an estimated 40,000 tons of soybeans will be required for bean curd and 3,000 tons for soybean sauce. "In the rural areas of Taiwan, soybean milk cooperatives have been organized under government auspices. Members use their own soybeans and make their soybean milk at common soybean milk shops."

A map (p. 9) shows the island of Taiwan, each of its prefectures, and where each of four oilseeds (soybeans, peanuts, rapeseed, sesame) are produced. Tables show: (1) Production of four oilseeds in Taiwan from 1965-1968. Peanut production decreased from 88,000 to 74,000 tonnes. Soybean production increased from 66,000 to 73,000 tonnes but was still No. 2 after peanuts (p. 8). (2) Taiwanese soybean production, imports, and utilization from 1955 to 1968 (p. 11). Address: Fats and Oils Div.

2247. Funchess, William H. 1969. Soybeans saved my life. *Soybean Digest.* Sept. p. 32-33.

• ***Summary:*** He was captured on November 4 [probably in 1950]. The snow began falling the day after he was captured by the Communists in North Korea. Just before he was captured, he had been shot by a machine gun, so every step was like walking on nails. He had already seen the Communist Chinese shoot and kill one of his men who could not walk. After several days of walking in the freezing cold, wearing only light clothing, he and the other American POWs finally reached a temporary prisoner of war camp. "Snow covered the ground and the temperature was 10 to 20 degrees below zero. Thirty-six of us were assigned to a mud house that had a straw roof, dirt floors, paper windows, and no heat. There was a bundle of dried corn stalks for bedding."

One day he noticed soybean stubble extending several inches through the snow. He found a stick, hobbled out to the small soybean field near his hut, pried out the soybeans from the frozen ground, and collected them one by one in his pocket. When the guard left his fire, Funchess placed the beans on a piece of tin in an effort to roast them. When he saw the guard returning, he would grab his beans and move out of sight. Occasionally, however, when he was not quick enough, his beans were kicked into the fire.

He had never eaten soybeans before but he knew they had a high protein content and would sustain life, so he determined "to acquire as many of those little life-giving nuggets as possible."

His daily rations were a cupful of cooked millet or corn that he got twice a day. He received no additional water from Nov. 4 until sometime in February. But he could eat snow–if he could stand the stomach cramps that followed.

He did not get a grain of salt or any meat for nearly 5 months. By that time, however, the Communists would occasionally throw several handfuls of soybeans into the pot of millet. He was so hungry and thin that those soybeans tasted better than anything he had ever eaten. But many of his fellow prisoners died of starvation. His weight dropped to 105 pounds. He and his friends knew they had to improve their diet.

When he was made to carry bags of soybeans, he learned to "accidentally" tear the bags and fill his pockets during every work detail. Occasionally he found earthen jars of fermented "soybean paste" [miso]. It did wonders to the millet seed that he was constantly eating.

After the peace negotiations began [on 10 July 1951], some 8-9 months after he was captured, their food supply improved. Whole soybeans were added to the rations. First they tried boiling whole beans in water; they enjoyed them seasoned only with salt. Then they cracked the soybeans and mixed them into their millet or rice. After a while they began to grow soybean sprouts, which they found very tasty–and when he enjoys to this day.

Finally they learned to make a product some of the men called "Tofu." The Communists gave them a coagulant, They added a small amount of tofu to everything they cooked–and he began to feel his strength returning. Then they learned to make soybean milk, which they also liked if they were careful not to scorch it. It was so rich, however, that they soon learned to drink only a few ounces at a time.

"Eventually a small amount of soybean oil was provided for cooking purposes... A small dish of oil and a cotton wick made an excellent light at night."

"Soybean oil worked well, too, for chapped hands. Some of us even found that it made pretty good hair tonic.

"While a prisoner of war I learned to appreciate the soybean for its life-giving characteristics. To me, the soybean became not a "way of life" but a "way to sustain life." Needless to say, I gained great affection for the little yellow bean that helped keep us alive in the prisoner of war camps of North Korea.

"Each fall at harvest I still collect some soybeans to roast. I always take great delight in offering roasted beans to my friends. Most people will accept only a few, but I can still sit down and enjoy them by the pocketful."

A portrait photo shows William H. Funchess. Address: County Agent, Allendale, South Carolina.

2248. *British Vegetarian.* 1969. Plantmilk. Sept/Oct. p. 461-63.

• ***Summary:*** In 1956 when the Plantmilk Society was formed, one of its main objectives was to try to find a humane alternative to cow's milk, so that vegetarians could be "released from association with the slaughter and unpublicised suffering caused by dairy farming... Put the bull to the cow, and when the calf comes, kill it–so we can have the milk." After years of research, with the guidance of nutritional experts, Plantmilk Ltd. was formed to make this milk, and in 1965 it made and sold its first cans of Plantmilk. Now, four years later, what is the status of the company and its products?

First, distribution of plantmilk has been extended throughout the UK and a start has been made on exports. Second, the taste and acceptance of the product have been improved by stages. Third, the medical value of using plantmilk to treat children or adults with allergies to cow's milk is becoming more widely recognized. However it is the ethical question which must most appeal to the convinced vegetarian–especially in this age of factory farming. A "meat-milk complex" has developed.

"Plantmilk Ltd. is a tiny, embryonic organisation which needs the help of every vegetarian if it is to survive." Three television documentaries have featured plantmilk, and it has been the focus of articles in newspapers and magazines worldwide. "What is missing so far is sufficient support from a sufficient number of users." Sales during the fiscal year just ended are up 30% over the previous year. This growth rate must be maintained and increased.

Photos: Inside the plantmilk factory, where a gleaming pile of cans is ready for the next batch of milk. Mr. William Stark, Production Manager, examines the color of the milk while Mr. John Cross watches the "mechanical cow." Mr. Leslie Cross, Managing Director of Plantmilk Ltd., and William Stark drink a toast, each holding high a glass of plantmilk.

2249. Gramsevaks Training Centre, Dharwar. 1969. Hand book on soyabean recipes. Mysore, India: Mysore Dept. of Agriculture. 18 p. Oct.

• ***Summary:*** Contents: Foreword, by Dr. H.R. Arakeri, Director of Agriculture, Bangalore. Preface. Introduction: Nutritional properties of soyabean, uses of soyabeans in the diet, processing of soyabean. Recipes (in these 26 Indian-style recipes the soyabean is used as soyabean dal {halved or whole, dry} or soyabean flour. One recipe is for homemade soyamilk, and one for Soyamalt–sprouted soybeans that are dried and ground).

"During the 1930s, soyabean was tried in Sindhu basin, Baroda State and black soils of Maharashta but did not become popular due to lack of knowledge of its cultivation practices, utility and marketability. This crop can be classified as a kharif crop, the months of June and July being suited for planting. In states like Mysore, where winter is less severe, it can also be grown in Rabi season, planting the crop during the 1st week of December."

"Attempts were made in the 1940s to introduce this crop afresh on large scale. It did not become very popular as a grain for human consumption. One of the reasons was that it had a strong odour and that it had to face competition with other pulses and oilseed crops." Address: Mysore, India.

2250. Proceedings of All India Workshop Conference on Processing, Utilisation & Marketing of Soybean (Second). 1969. Experiment Station, Pantnagar, Uttar Pradesh, India. (Govind Ballabh Pant Krishi Evam Prodyogik Vishwavidyalay). 181 p. Unnumbered. Held 7-9 Oct. 1969 at Uttar Pradesh Agricultural University, Pantnagar (District Nainital). 26 cm. [73 ref]

• ***Summary:*** Contents: Objectives and sponsors. Programme. Working committees. Welcome address. Inaugural address. Papers: Technology of processing soybeans, by M.W. Formo. Technology of soybean utilization, by S.S. Kalbag. Marketing of soy products, by S. Ghose. The role of the Government of India and international agencies in development of soybean in India, by P.R. Krishnaswamy & S. Ghose. Agro-economics aspects of soybean production in India, by I.J. Singh. Prospects for soybean foods in India, by N. Subramanian. Utilisation of soy flour for infant foods and foods for weaned children, by M.R. Chandrasekhara. Defatted and full-fat soy flours by conventional process, by F.E. Horan. Soy protein concentrates and isolates, by E.W. Meyer. Alternative processes for full-fat soy flours for use in developing countries, by G.C. Mustakas. Potential and use of soy protein for low-cost infant foods in India, by R.A. Hill. Potentials in marketing soy foods, by James J. O'Connor. Marketing soy protein products and problems of acceptance, by D.W. Johnson. Role of imitation milk in the feeding of tomorrow's population, by F.V. Kosikowski.

Conference sponsors: The Protein Food Assoc. of India; University of Illinois/USAID; Jawahar Lal [sic, JNKVV] Agricultural University; Indian Council of Agricultural Research; Uttar Pradesh Agricultural University. Address: Pantnagar, India.

2251. VJG. 1969. Advanced technology in non-fermented soybean foods in Japan, by T. Watanabe. *Food Science and Technology Abstracts* 1(10):1236. Oct. [1 ref]
• ***Summary:*** This is a summary (by VJG) of an article that appeared in *Japan Agricultural Research Quarterly* 3(4):9-13 (1968) [7 refs., Eng.].

The article discusses: "Preparation of fresh tofu, aburage (dehydrated and deep-fried tofu slices) and kori-tofu (frozen fresh tofu). Composition and methods of preparation of soybean protein concentrates (dried soybean milk, 70% protein concentrates, soybean protein curd),..."

Note 1. This is the earliest English-language document seen (April 2013) that contains the term "fried tofu slices" or the term "deep-fried tofu slices."

Note 2. This is the earliest English-language document seen (April 2013) that uses the term "frozen fresh tofu" to refer to dried-frozen tofu.

2252. Altschul, A.M. 1969. Food: Proteins for humans. *Chemical and Engineering News* 47(49):68-81. Nov. 24. [11 ref]
• ***Summary:*** Discuses private companies making protein foods as part of a USAID 3-year grant program to encourage U.S. companies to develop commercially viable protein foods for production and marketing in developing countries. A total of 14 projects were funded. A photo (p. 76) shows bottles of Puma from Guyana, Saci from Brazil, and Vitasoy from Hong Kong. Address: Special Asst. for Nutrition Improvement to the U.S. Secretary of Agriculture.

2253. Harrison, D.W. 1969. Analysis of the Uganda experience based on Africa Basic Foods Inc. Paper presented at United Nations Industrial Development Organization Expert Group Meeting on Soya Bean Processing and Use. 43 p. plus 6-page summary. Document: ID/WG.45/4. Held 17-21 Nov. 1969 at Peoria, Illinois.
• ***Summary:*** Africa Basic Foods (ABF) Ltd. was established in Uganda to develop soybeans as a food cash crop with small farmers, to produce and market low-cost soyfoods, and to educate the people about their value for good health. In 1965 ABF asked the Ministry of Agriculture at the Department of Agriculture at Makerere University to do research on soybean production. The company built a food factory 4 miles from Kampala, and by May 1966 was producing various soy-based foods, and marketed them throughout Uganda, especially to hospitals, schools, the government, and various institutions.

"The soya bean was introduced in Uganda from America and South Africa in 1938. Within a few years various varieties were tested and the crop distributed to the farmers. The crop increased in production as the demand from overseas grew during the wartime shortage of proteins in England.

"The highest acreage achieved during the Second World War was about 35,000 to 40,000 acres. After that time (about 1948) the acreage gradually dropped, due to lack of demand, to only a few thousand acres under cultivation by 1965.

"Since 1965, ABF Ltd. has been actively promoting the growth of soya beans. First, the Ministry of Agriculture initiated variety trials. Then in 1966 the University of Makerere Department of Agriculture started variety trials with over 50 varieties available. The crop production has grown very rapidly as the farmers heard of a local demand, and the price of 25 cents per pound (US¢ 3½). In 1968 about 12,000 to 15,000 tons were produced. A large share of this was used locally by the oil milling industry...

"Aside from the oil millers, there is an animal feed plant now operating in Uganda since about 1967, as well as our human food plant. The consumption from these two plants is small, about 352 tons and 120 tons respectively...

"Over 50% of the local production is perhaps exported."

By 1969 ABF was making the following (for each is given processing details, and the name and brand of equipment used): Roasted soybeans ground to a flour, soy milk sterilized in bottles (adapted from Dr. Harry Miller's method), soy cheese (tofu mixed with a little nonfat dry milk, curry, sage, and salt, packed into 1-inch diameter casings, pasteurized at 190ºF for 20 minutes, then cooled and refrigerated, p. 16-17), soy butter (like peanut butter, from soy flour, oil, sugar, and salt), soy bread mix (wheat flour fortified with 20% soy flour, plus sugar, nonfat dry milk, salt, and yeast), soy fortified maize flour (25% soy), school porridge, and soy porridge (soy fortified corn porridge).

Note: This is the earliest *published* English-language document seen (March 2007) that uses the term "soy cheese" to refer to a Western-style soy cheese.

In Dec. 1964 Dr. Harrison was hired by the government of Uganda, Buganda region, to serve as Director of Nutrition and Health Education, with emphasis on local, commercial production of high-protein foods (p. 28). Then ABF was registered in Uganda as a nonprofit corporation. Dr. Harrison and two of his government departmental employees "operate the entire scheme." Their salaries come entirely from the Uganda Government, so the government is to some extent helping to finance the project. The company has hired 3 other persons full time and one part time. They receive salaries from sales income. Address: President, Africa Basic Foods Inc., Kampala, Uganda.

2254. Kapsiotis, G.D. 1969. PAG and the FAO/WHO/UNICEF Protein Food Programme with special reference to soybean products. New York. 4 p. Nov. 13. Soy Products Document 2.1/25.
• ***Summary:*** Contents. 1. Brief history–The FAO/WHO/UNICEF Protein Advisory Group was established in 1955 with the purpose of advising WHO on nutritive problems concerned with the development of special protein-rich

foods. 2. PAG's scope of activities–Focus on development of protein foods for infants and children. 3. Focus on utilization of soy-beans and soy-bean products in human feeding–since 1956. 4. Attention to fermented soya bean products. 5. Saridele project for spray dried soy bean extract [soy milk] in Indonesia.

6. Survey of soy products available for human consumption. 7. Development of processing equipment for full fat soy bean flour. One Wenger unit, donated by UNICEF, has been installed in Taiwan. Another unit, also provided by UNICEF, will be installed at the Kaira Dairy Cooperative in India for the production of protein food mixtures for infants and children. 8. Dairy type foods based on soy protein isolates. 9. Studies on the economics of soy bean production, supply, processing and marketing. Two projects, in Turkey and Madagascar, are discussed briefly. 10. Conclusion.

The two projects: "One refers to Turkey where soy beans are produced in a restricted area on the Black Sea. The remodelling of the soy processing facilities through UNICEF and FAO assistance makes it possible to produce edible soy bean protein concentrates for the production and distribution of an enzyme treated and precooked infant food in Turkey. The second project, in its very early stage of preparation concerns Madagascar where there is a very serious effort of the Government to expand the culture of soy beans. Here it is anticipated that the commercial production of protein mixtures based essentially on rice and soy for infant and young children could be developed. In the same country, where there is a substantial production of bananas, some development work encouraged by FAO is now under way for the production of soy flour-banana mixtures for feeding of all age groups.

"In conclusion, it could be said that the PAG and its sponsoring Agencies are trying to find ways and means for introducing and expanding the culture of soy and for the utilization of it and its products in human feeding." Address: Nutrition Div., Rome, Italy.

2255. Saravacos, G.D. 1969. Sorption and diffusion of water in dry soybeans. *Food Technology* 23(11):145-47. Nov. [12 ref]
• ***Summary:*** Soybeans with higher moisture content absorb water more rapidly. Address: New York State Agric. Exp. Station, New York.

2256. Simpson, Alma. 1969. Here's a soy menu for the farm or family group. *Soybean Digest.* Nov. p. 38-39.
• ***Summary:*** The 10-course soy dinner menu uses the following products made by Worthington Foods or Fearn Soya Foods: Hi-Protein, Fried chicken style soy meat, Salisbury soy meat steak, Veja-Links soy meat, Soy powder (flour), Diced chicken soy meat, Soyamel (powdered soymilk). The author is the wife of Chas. V. Simpson, former American Soybean Assoc. director from Minnesota and a past president. Address: Tetonka Farms, Waterville, Minnesota; Wife of former American Soybean Assoc. director.

2257. *SoyaScan Notes.* 1969. Chronology of Eden Organic Foods, Inc. Renamed Eden Foods, Inc. in April 1971. Part I. 1969 to 1972. 31 Jan. 1992. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1969 Nov. 4–Eden Organic Foods is named and incorporated as a non-profit corporation by Bill Bolduc. Other names on the articles of incorporation are Judith Bolduc, Ronald Teeguarden, Gloria Dunn, and Linda Succop. It is a natural foods co-op retail store at 514 East William St. in Ann Arbor, Michigan. Bill is president of the company and his wife, Judy, is part-time secretary. The date of incorporation, Nov. 4, was selected by an astrologer, Michael Erlewine, because it was astrologically propitious. Michael also designed the Eden logo of four sprouts in a circle. Also in Nov. 1969 Eden begins selling soyfoods, tamari and miso purchased from Erewhon.

Prior to this, starting in about the summer of 1969, Ronnie Teeguarden and Gloria Dunn had started a loosely-knit food buying co-op–which had no name, no assets, no formal structure, and no bank account. Original or very early members included Tim and Pattie Redmond, Mark and Nancy Retzloff, Linda Succop, Iona Teeguarden, and Bob Thorson. On about 3-5 different occasions they collectively ordered macrobiotic staples (including tamari and miso) from Erewhon in Boston, Massachusetts, using the Erewhon catalog. When the foods arrived, the members got together and divided them up at the Teeguarden-Leabu General Store, at 209 South State St. in Ann Arbor. This general store, located in the basement below Marshall's Bookstore, carried mostly antique clothing and records, and the art of local artists. By September 1969, Bill and Judy Bolduc joined the food co-op. They also joined the Zen Macrobiotic Supper Club; all of its members were also members of the food co-op.

In the fall of 1969 the Teeguarden-Leabu second-hand store looked like it was about to close, which would leave the food co-op without a home. The group (especially Ronnie Teeguarden) convinced Bill Bolduc to take charge of the food co-op and find it a permanent home, which he did–in an upstairs apartment at 514 East William St. Members of the informal food-buying co-op who worked at Eden Organic Foods included Bill Bolduc, Gloria Dunn, and Tim Redmond. An environmental group named the Environmental Defense Education Network (EDEN) also operated out of the Teeguarden-Leabu General Store; it was from this group that Eden got its name. That fall, after the Eden Organic Foods co-op was up and running, Tim Redmond went to Boston to work and study at Sanae, a macrobiotic restaurant on 272A Newbury St.

1970 summer–Bill Bolduc establishes Eden's first contact with an organic food grower (Bill Vreeland of Ypsilanti, Michigan, who grows organic wheat and soybeans). He soon makes Eden's first direct purchase of organically grown wheat, which the company mills and sells.

1970 July 6–Eden Organic Foods, Inc is reorganized upon a stock basis. Bill Bolduc (who resides at 6210 Bethel Church Rd., Saline, Michigan) owns all the shares (1,000). Other people listed on this document are Judith Bolduc, Ronald Teeguarden, and Gloria Dunn.

1970 Sept.–The fledgling company has an offer from Cynthia Shevel to move into a newly decorated mini-mall at 211 South State St. on the main street of campus. They need money to finance the move. Tim Redmond's father says he will help finance the expansion only if the business is reorganized as a for-profit corporation. So Eden is changed into a for-profit corporation, and Redmond invests the $10,000 he borrowed from his father in Eden in exchange for 50% ownership. In Nov. 1970 Eden moves into the mini-mall (they register the new address on Nov. 17) and soon begins to mill flour and bake granola at the new store. Bolduc and Redmond are now equal partners.

1971 April 8–Bolduc registers a change in the company name to Eden Foods, Inc. from Eden Organic Foods, Inc. After the store was up and running, Redmond returns to Boston and Sanae restaurant, where he completed his studies.

1971 Jan.–Michael Potter is hired by Bill Bolduc. Mike had initially had a good-paying job at an art gallery in Royal Oak, Michigan. Then he began working for, and eventually became a partner in Joyous Revival, a macrobiotic and natural foods retail store in Birmingham, Michigan. At that time he and his wife, Carol Roller Potter (Ron Roller's sister), moved from Royal Oak to Walnut Lake, Michigan–to be nearer to Joyous Revival. In the fall of 1970 Michael Potter, while still working at Joyous Revival and at Bill Bolduc's request, had done volunteer work to try to help a failing new Eden retail store in downtown Detroit on the campus of Wayne State University. This store was owned jointly by Eden and two people named John and Darleen–two of the first people in the area interested in macrobiotics. By Jan. 1971 it had become evident that the store would not be able to survive financially, so Michael's first job after being hired was to make one last try to save it, then to help in shutting it down.

1971 May or June–Tim Redmond returns to Ann Arbor permanently, having finished his macrobiotic training in Boston. He planned to open a restaurant like Sanae in Ann Arbor but instead got increasingly involved with Eden Foods.

1971 June–Eden starts to wholesale natural foods out of the back of their retail store at 211 South State Street. They buy increasingly from original sources instead of other wholesalers. Buying clubs and co-ops come to the retail store to pick up their bulk foods.

1971 July–Eden's wholesale pricelist, dated July 26, shows that Eden is selling bulk (50 and 100 lb) soybeans, corn, soft wheat, and rye, which are being grown organically in Michigan (by Tom Vreeland). Eden stone-ground a portion of them into flour–on order. Eden is also selling numerous bulk and packaged grains, cereals, flours, and beans from Arrowhead Mills in Deaf Smith County, Texas; some are organically grown.

1971 early summer–Bill Bolduc asks Mike Potter to manage the Eden retail store at 211 South State St. Mike and his pregnant wife, Carol, move to Ann Arbor from Walnut Lake. By this time the company name was Eden Foods, Inc.

1971 Aug.–Eden Foods starts to distribute its wholesale bulk products, especially in the Detroit area. The company starts to bring in small trailer loads of staples from Arrowhead Mills in Texas. Bolduc and Redmond, realizing that Eden is the only natural foods store in the area, borrow some money and rent a 4,000 square foot Quonset hut warehouse on North Main Street north of Ann Arbor near the Huron River. They expand their wholesale and distribution operations.

1971 Oct.–Mike Potter is given 13.5% of the common stock of Eden Foods, Inc. largely to compensate him for his many hours of unpaid volunteer work. According to Michael Potter (Dec. 1986), at this point the common stock ownership of Eden Foods is: Between Bill and Judy Bolduc 43.5%, Tim Redmond 43.5%, and Michael Potter 13.5%. Potter later says (Feb. 1993) that Bill Bolduc and Tim Redmond now own the same number of shares, but Judy Bolduc owned a small number of shares so the Bolducs owned the largest block.

1972 fall–Ron Roller starts to work part time for Eden Foods. Continued. Address: 514 East William St. in Ann Arbor, Michigan. Phone: 313-769-8444.

2258. *SoyaScan Notes.* 1969. Chronology of Eden Foods, Inc. Part II. 1973 to Nov. 1981. 31 Jan. 1992. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Continued: 1973 March–Eden moves into a larger warehouse at 310 West Ann Street in Ann Arbor, sharing it with Midwest Natural Foods, which initially was not a competitor. At about this time, Ron Roller starts working full-time for Eden. While at this warehouse, in late 1973 or early 1974, Eden receives its first shipments of imported Japanese natural foods from Mr. Kazama of Mitoku in Tokyo. Tim Redmond had ordered these foods from Mr. Kazama at a meeting of the Natural Foods Distributors Association in Florida. Initially Eden was forced to import Erewhon-branded products. Redmond recalls that at this time he was working at and managing the warehouse and Potter was working at and managing the retail store. Redmond was managing the corporation because he controlled it.

1973 summer.–The Eden retail store moves to a much larger location at 330 Maynard St. in Ann Arbor, on the University of Michigan campus. It now includes three

operations under one roof in 6,000 square feet of leased space: A large natural foods retail store, a natural fast-food deli, and a natural foods bakery named Sun Bakery that had relocated itself from Kalamazoo, Michigan. This operation proved to be very profitable; it paid off all Eden's debts and paid for the new warehouse, offices, trucks, and equipment.

1973 July–Bill and Judy Bolduc leave Eden Foods, selling their stock to Mike Potter for $2,500 cash. Tim Redmond becomes president. Redmond ends up owning 51% and Potter 49% of the shares in Eden Foods. Potter recalls that he bought the stock directly from the Bolducs, then gave a small amount to Redmond so that Redmond would have majority ownership. Redmond recalls that the Bolducs sold their stock back to the corporation, then Redmond sold enough shares to Potter so that he (Redmond) would keep control with 51% of the shares.

1973 late or 1974 early–Potter and Redmond become equal owners of Eden Foods after Potter loans the company $44,000 (entrusted to him by his father), then converts the loan into an investment in the company in exchange for equal ownership.

1973 Sept.–Mike Potter becomes president of Eden Foods at the unanimous recommendation of an employee steering committee. At about this time Midwest Natural Foods starts to compete with Eden Foods, carrying many of the same products that Eden carries plus dairy products and frozen foods. Eden has never sold dairy products or frozen foods and, in the face of new competition from Midwest, Michael Potter reaffirms this position. This decision makes it impossible for Eden to become a full-line distributor like Midwest, and lays the groundwork for Eden's eventual decision in 1986 or 1987 to discontinue distribution to retail stores and focus on manufacturing of natural foods.

1974 spring–Eden moves from 310 West Ann St. into a larger warehouse at 4601 Platt Road. This move extricates Eden from what had become a "pathetic relationship" with Midwest Natural Foods. Redmond is sure that he and Potter became equal partners before this move.

1974 March 7-8–Michael Potter represents Eden at the meeting of Natural Foods Distributors at the Janus conference room in Seattle, Washington.

1974 Oct.–Potter makes the first of his eleven trips to the People's Republic of China. On the way back he visits Yuko Okada at the Muso Company in Osaka, Japan. Potter decides to import exclusively from Muso.

1977 Aug.–Eden Foods opens Turtle Island restaurant at 315 South State St. in Ann Arbor.

1979 spring–Cliff Adler, a painter renovating apartments in Ann Arbor, is hired by Michael Potter to work for Eden in Chicago, Illinois, to try to expand their sales to natural food retail stores. During that summer Cliff lends Eden Foods $100,000, for which he is paid bank interest rates. Tim Redmond, however, believes Cliff was hired as a salesman in 1976, and that on 15 March 1979 Cliff became a shareholder in Eden Foods, buying 10% of the stock.

1979 Nov. 26–The Eden warehouse at 4601 Platt Road is destroyed by a large fire. According to the *Ann Arbor News* (Nov. 27-29) total damages are estimated at $650,000. Eden Foods, organized in 1970, employs some 100 persons in distribution and production, supplies about 500 natural food stores and restaurants, has annual sales of about $5 million, and is said by its owners to be "the largest natural foods distributorship in the Midwest." This fire burned many of Eden's key records, including records that would have helped in determining dates and facts for this chronology. Eden has never kept a written chronology of key events in the company's history.

1979 Dec.–Within 10 days after the fire, the board of directors (Potter, Adler, and Redmond) meets, authorizes a large number of additional shares of common stock, and decides to give away (free of charge) shares of Eden Foods' common stock to six key employees/managers to try to motivate them to stay with the company and help try to rebuild it. They also decide to lay off 35 other people. Shortly thereafter Cliff Adler decides to convert his $100,000 loan to stock (equity)

1980 Jan.–Tim Redmond decides to leave Eden Foods; he leaves in May, selling most of his stock (he kept 1,000 shares) in exchange for ownership of the Maynard Street Connection, Inc., which has a retail store and restaurant at 330 Maynard St., which are now separate companies.

1980 Feb.–Now Michael Potter and Cliff Adler each own 34% of Eden Foods shares, Frank Dietrich (of Natural Foods, Inc., Toledo, Ohio) owns 10% (which he bought for $100,000), Ron Roller owns 5%, Michael Gordon 4%, Mark Cook 4%, Kathy Knor 3%, Bill Swaney 3%, and Bob Duha 3%. Michael Potter notes that four things saved Eden Foods (which now had a negative net worth of more than $800,000) after the fire: (1) Cliff Adler's conversion of his $100,000; (2) The incredible cooperation, generosity, and kindness that Eden received from its suppliers in the natural foods industry, and their trust that Eden would do its best to pay back they money at a time when interest rates were over 20%; (3) Frank Dietrick's investment of $100,000 in the company; and (4) The great effort made by natural foods retail stores and consumers to go out of their way help Eden survive by purchasing more Eden products. Note that it was not until Feb. 1982 that Eden ended up receiving from its insurer (Hartford Insurance Company) $400,000 net, or $0.50 for each dollar Eden felt it was owed.

1980 Nov.–Eden Foods headquarters moves into a 20,000 square foot building at 701 Tecumseh Road in the tiny town of Clinton (population 2,000) about 60 miles southwest of Detroit.

1981 Nov.–Erewhon Trading Co. files for Chapter 11 bankruptcy protection. Trying to keep up with the super-distributors in their region (especially Balanced Foods) Erewhon had moved into an 80,000 square foot warehouse

and added too many items to their product line too fast–which destroyed the company. Stow Mills picked up the bulk of their business, with Westbrae scooping up most of the business for their Japanese imports. Eden had not yet recovered enough financially to take advantage of this opportunity. Continued.

2259. *SoyaScan Notes.* 1969. Chronology of Eden Foods, Inc. Part III. 1983 to present. 31 Jan. 1992. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1983 July–Eden Foods surprises the U.S. natural foods industry by introducing Edensoy, a long-life soymilk in plain, carob, or cranberry flavors, imported from Marusan-Ai Co. in Japan, and packaged in a stand-up foil retort pouch.

1984 Jan.–The Muso Company of Osaka, Japan, appoints Eden Foods its General Agent for North America.

1984 March 2–A series of calamities hit Eden Foods in quick succession. The FDA (U.S. Food and Drug Administration) informs Eden Foods, in a strongly worded letter, that it considers eleven claims in a promotional pamphlet for Edensoy to be erroneous. The FDA advised that the "Good for Babies" section of the pamphlet be deleted.

1985 June 14–The FDA informs Michael Potter that a six-month-old child in Canada had become seriously ill after being fed the company's soymilk as an infant formula. The mother said her decision to forgo regular infant formula was inspired by Eden's own literature–the promotional pamphlet cited above which said that Edensoy was "Good for Babies." Eden took the position: "There's a problem and we're responsible for it." To date some 18 million packs of Edensoy have been sold.

1985 June 23–Eden Foods voluntarily mails 10,686 requests for a recall of the pamphlet to its distributors and to individual retail stores.

1985 July–Eden Foods forms a joint venture partnership with four Japanese companies, and incorporates in the state of Michigan as American Soy Products, Inc.

1985–Eden opens a west coast sales office and warehouse in San Francisco, California.

1986 May–The Lima Company of Belgium appoints Eden Foods its General Agent for North America.

1986 Nov.–American Soy Products, Inc. launches a new generation of Edensoy soymilk products, in original, vanilla, and carob flavors. Made at a large, new factory in Saline, Michigan, they are packaged in Tetra Brik Aseptic cartons. This is the earliest known aseptic soymilk plant in the USA.

1987 Jan. 1–Eden Foods stops distributing products directly to retail stores (which comprised only 10% of Eden's total sales), drops 150 products, and starts serving as a master distributor, selling only through other distributors. This decision had a very positive effect on Eden's growth; all the energy that was formerly required to attend to 10% of the business was now free to be focused on developing new products and the Eden brand.

1988 April 13–Cliff Adler and Michael Potter are in a serious car accident. Cliff is killed and Michael is seriously injured. Upon Cliff Adler's death, Michael immediately and automatically acquires Cliff's 34% share in the company–because Eden Foods Inc. and Michael and Cliff, jointly and severally, had a buy-sell contract that came into effect in the event that either Cliff or Michael should die. The value of Cliff's stock was $500,000. Michael pays this amount from his personal funds for the stock. Potter now owns a large majority of Eden Foods' stock.

1988 May–While Eden Foods is still reeling from the effects of the car accident, the FDA files charges against Eden for publishing inaccurate information in a pamphlet which stated that Edensoy was "Good for Babies." Eden's previous major effort to recall all of these pamphlets from retail stores apparently had little or no effect on the FDA charges.

1988–Eden Foods joins OCIA, the Organic Crop Improvement Association, for independent certification of organically-grown crops.

1989 Jan. 20–Nearly 6 years after Eden Foods published its ill-fated Edensoy pamphlet, the company is fined $110,000 by a federal judge in Detroit, and its president, Michael Potter, is fined $25,000 and sentenced to 30 days imprisonment. On Feb. 24 he begins to serve out his sentence in Bay City, Michigan.

1989 Oct. 12–Michael Potter is convicted of manslaughter and sentenced at the circuit court in Ann Arbor to 8-15 years in jail for his role in the April 1988 automobile accident that caused Cliff Adler's death. He begins to serve out his sentence in Oct. 1989 in Coldwater, Michigan. Ron Roller takes over as president of Eden Foods–the top position.

1989–Eden and OCIA establish standards for food processing as well as growing crops.

1991 mid-June–Ron Roller, president of Eden Foods, is asked to resign from his position. He chooses to leave and go to American Soy products to work full time. There he becomes CEO.

1992–Eden Foods now has 180 distributors, virtually all of whom distribute Edensoy. Owners of stock in Eden Foods include Mike Potter (who owns more than 50% of the shares), Tim Redmond, Mark Cook, Bill Swaney, and at least one other person.

1992 Aug.–Michael Potter returns to work at Eden Foods. He was re-sentenced and his sentence is changed to 60 months probation. 1993 Dec. 31–Potter purchases Tim Redmond's remaining 1,000 shares of Eden Foods stock, which Tim has kept since 1980.

2260. *Soybean Digest.* 1969. Fearn Soya Foods. Nov. p. 44.
• ***Summary:*** "Fearn Soya Foods has specialized in consumer food products based on the nutritional excellence of soy

throughout its 34-year history. Today Fearn manufactures and packages 20 soy products in its plant in Melrose Park, Illinois. These include pancake mix, cornbread mix, and wheat cereal plus soya, a 47% protein drink mix and protein tablets intended for athletes who want a very high-protein diet. Fearn markets an oil-roasted soy snack food in several flavors."

"The American Mt. Everest expedition used three Fearn products in its successful assault on the world's highest peak."

A photo shows a can of "Fearn's High Protein" for athletes. Vanilla flavor. 47% protein. An illustration on the front shows a basketball player shooting. Address: Melrose Park, Illinois 60160.

2261. *Soybean Digest.* 1969. The soy foods companies: El Molino Mills (Document part). Nov. p. 42.
• ***Summary:*** "El Molino Mills is a stone-ground, specialty milling business carried on by the three Vandercook brothers at Alhambra, California. It was begun by a Vandercook ancestor in Holland eight generations ago.

"El Molino offers a number of soy foods including breakfast foods, soy milk, vegetable soybeans, soy sprouts, and soy flour and soy flour mixes. Outlets include health food stores."

2262. *Soybean Digest.* 1969. The soy foods companies: Worthington Foods (Document part). Nov. p. 44.
• ***Summary:*** "Worthington Foods at Worthington, Ohio, is a foremost producer of some 55 vegetable protein foods, including vegetarian entrees, meatless meats, and milks. Many simulate meat, fish, fowl, or nuts. They have been on the scene only since 1962.

"Worthington's vegetable protein foods are marketed frozen, dehydrated, or canned, or as an ingredient in other foods. Since 1966, Worthington Foods has manufactured its own spun protein, which it formerly purchased from Ralston Purina Co., for its meatless meats."

2263. Swaminathan, M. 1969. The use of oilseeds and nuts in the feeding of infants and pre-school children in the developing countries. *Plant Foods for Human Nutrition* 1(4):205-35. Nov. [106 ref]
• ***Summary:*** "There is increasing recognition among nutrition workers that the diets consumed by the majority of infants and children belonging to low-income groups of the population in the developing countries are deficient in various important dietary essentials, such as protein, minerals and vitamins... The consequences of consuming such deficient diets are strikingly seen in the vulnerable segments of the population, viz. weaned infants, pre-school children and expectant and nursing mothers. Protein malnutrition is widely prevalent among the children belonging to the low-income groups of the population."

Protein-rich animal foods, such as milk, eggs, fish, meat, etc. are not available to these people in adequate quantities. Therefore there is a need for developing or providing low-cost nutritious foods to overcome these deficiencies. Considerable work has been carried out in recent years on the utilisation of protein-rich foods of plant origin such as oilseed meals and legumes. Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

2264. **Product Name:** Provide (Soy Protein and Dairy Whey Beverage).
Manufacturer's Name: Swift Chemical Co. Vegetable Protein Products. Subsidiary of Swift & Co.
Manufacturer's Address: 1211 W. 22nd St., Oak Brook, IL 60521.
Date of Introduction: 1969. November.
New Product–Documentation: *Soybean Digest.* 1969. Nov. p. 42. The soy foods companies. p. 42. Provide is a newly developed blend of soy protein and dairy whey, with applications in bakery, confectionery, snacks, and frozen dessert products. Provide is a one-for-one replacement for skim milk solids; it has equal functional properties and a very bland flavor. A patent on the process has been applied for. Provide comes as a spray-dried cream-colored powder, available at protein levels of 27-36%, and protein solubilities of 40-65%.

Soybean Digest Blue Book. 1971. p. 115.

2265. Worthington Foods, Inc. 1969. Dealer wholesale price list–order blank. Worthington, Ohio 43085. 1 p. Dec. 15.
• ***Summary:*** New products in the Worthington Foods line include: Salisbury Steak, Worthington "209," Stripple Zips, and Tamales.

The Madison Foods line of products now includes: Cheze-O-Soy, Madison Burger, Not Meat (Tomato). Yum. Infasoy. Address: Worthington, Ohio. Phone: 614-885-9511.

2266. *SoyaScan Notes.* 1969. Chronology of soybeans, soyfoods and natural foods in the United States 1969 plus overview of the 1960s (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1969 Jan. Volume 1, Number 1 of *Food Science and Technology Abstracts* published; the earliest records in it go back to Jan. 1968. It is created from the world's first computerized database specializing in food.

1969 Jan. Richard M. Nixon inaugurated as President of the United States. Clifford M. Hardin of Indiana is Secretary of Agriculture.

1969 March. Paul Hawken takes a 9-month trip to Japan and arranges for Mitoku and Muso Shokuhin to export natural foods to Erewhon.

1969 March. Soybean yields in tests top 100 bushels/acre for the first time.

1969 March. Essene Macrobiotic Supply starts business

in Philadelphia, Pennsylvania. Denny Waxman and Charles Smith are founders.

1969 June. A.E. Staley Manufacturing Co. acquires Gunther Products, a pioneer in the field of modified (enzyme hydrolyzed) soy whipping proteins. Gunther had been founded in 1948, incorporated in 1949.

1969 Aug. Erewhon–Los Angeles opens as a small macrobiotic natural foods retail store at 8003 Beverly Blvd. Bill Tara is the first manager.

1969. USAID starts actively encouraging U.S. businesses to launch low-cost commercial protein products in Third World countries.

1969 fall. Erewhon Natural Foods in Boston starts to distribute macrobiotic and natural foods. They had begun to wholesale these foods out of the back of their retail store in the spring of 1969. They are America's first natural foods distributor, and remain the largest for many years.

1969 Oct. *Protein-Enriched Cereal Foods for World Needs*, edited by Max Milner, published by American Assoc. of Cereal Chemists.

1969 Nov. Bac-o-Bits, meatless bacon bits made from extruded soy flour, start to be sold nationwide by General Mills. Its forerunner, Bac*O's, made from spun soy protein fiber, had been introduced in May 1966. Frozen Bontrae meat analogs are sold to the foodservice trade. This pioneering work by one of America's largest food companies indicated to the U.S. food industry that the time for soy protein foods of the future had arrived.

1969 Nov. 4. Eden Organic Foods incorporated in Ann Arbor, Michigan by Bill Bolduc, and their macrobiotic retail store begins operation, selling soyfoods including tamari and miso purchased from Erewhon. The company grew out of a loosely-knit food buying co-op which had started in about July 1967 but which had no name, no formal structure, and no bank account. Bolduc was joined 9 months later by Tim Redmond.

1969 Nov. 17-21. United Nations Industrial Development Organization Expert Group Meeting on Soya Bean Processing and Use held at Peoria, Illinois.

1969. The first of the new wave of tempeh shops in the Western world, Handelsonderneming van Dappern (later renamed Tempeh production Inc.) started by Robert van Dappern in Kerkrade, The Netherlands. It soon becomes the world's largest tempeh manufacturer.

1969. The Program for International Research, Improvement, and Development of Soybeans (PIRIDS) established at the University of Illinois with funding from a Rockefeller Foundation grant. The forerunner of INTSOY, it is directed by Earl R. Leng.

1960s overview:

Oilseed Proteins and the Protein Gap. Worldwide, there is a growing consensus that Third World countries are facing a "protein crisis," that protein malnutrition is the world's most widespread deficiency disease, and that low-cost oilseed proteins (such as defatted soybean meal and flour) offer the most promising hope for remedying the problem. The leading architect and proponent of this view is Dr. Aaron Altschul of Georgetown University School of Medicine. The United Nations' FAO/WHO/UNICEF Protein Advisory Group, composed of the world's leading authorities in the field, is very active from the mid- 1960s to the mid-1970s, supporting wider use of soy protein products and soyfoods.

Food for Peace Shipments of Soy Fortified Foods Begin. The first shipment of such foods, CSM (corn-soy-milk), took place in 1966, when 28,000 metric tons (tonnes) were shipped. The next year 54,000 tonnes were shipped. Shipments increased dramatically during the 1970s.

Growing Interest in Modern Soy Protein Products. These new products, including soy protein isolates and concentrates, and textured soy protein products, now appear to have major potential in the food systems of all countries.

Leading Soyfoods Research Centers in America are the Northern Regional Research Laboratory at Peoria, Illinois (Hesseltine, Wang, Mustakas, Wolf), and the New York State Agricultural Experiment Station at Geneva, New York (Steinkraus and Bourne).

Vitasoy sales are booming in Southeast Asia. The introduction of Vitasoy by K.S. Lo in Hong Kong in the early 1940s brought soymilk into the modern era. Takeoff began in 1955 when Vitasoy began to be marketed like a soft drink. Sales grew from 8.4 million bottles that year to 42 million in 1960 and 100 million in 1970, a 2.4-fold increase during the 1960s. By 1962 Vitasoy had become Hong Kong's best-selling soft drink, ahead of such internationally known brands as Coca-Cola, Pepsi-Cola, and Seven-Up.

Shoyu (Soy Sauce) Becomes a World Class Seasoning, Thanks to Kikkoman. Shoyu has long been the world's most popular seasoning other than salt, and Kikkoman has been the world's largest manufacturer since about 1918. During the 1960s Kikkoman internationalized its operations, developing new markets for shoyu throughout the world by exporting from Japan and promoting the products for use in Western-style recipes, largely with meat, fish, and poultry. Production climbed from 183,000 kiloliters in 1960 to 340,000 kl in 1970. During the same period its share of the Japanese shoyu market rose from 18% in 1960 to 30% in 1970.

Steady Rise in Soybean Production in Latin America and Africa. In Latin America production rose from 231,000 tonnes in 1960 to 1,535,000 tonnes in 1969, a 6.6-fold increase during the decade. Brazil accounted for 87% of that production in 1969, followed by Mexico and Colombia.

African soybean production rose from 27,000 tonnes in 1960 to 74,000 tonnes in 1969, a 2.7-fold increase. Nigeria accounted for 84% of that production in 1969, followed by South Africa and Ethiopia.

American Soybean Association Funding Increases Dramatically from Checkoff Programs. This was a decade

of great growth for ASA. In 1962 the Minnesota Soybean Growers Assoc., the first affiliated state association, was founded. The ASA's biggest breakthrough to date came in 1966, when soybean growers began to support their own market development and research activities (previously funded by USDA's Foreign Agricultural Service) using funds provided by state checkoff programs. Typically ½ to 1 cent of funding was generated from each bushel of soybeans sold in states where a checkoff referendum had passed. By the early 1970s the checkoff programs had begun to generate large sums of money, which allowed ASA to expand its activities. Expanded market development activities overseas led to a steady, long-term increase in soybean exports.

Soybean Changes from an Oilseed to a Protein Seed. Prior to the mid-1940s the soybean, worldwide, had been crushed primarily for its oil. The meal was considered a by-product. But in the post-war period, with growing affluence driving increased demand for meat, the demand for meal outstripped that for oil, and the oil became the by-product. This trend, which started in America, was in full swing by the 1960s and expanded to other countries thereafter.

Soybean Digest and ASA Interest in Soyfoods. During the past two decades *Soybean Digest* has published a steady stream of articles on soyfoods worldwide. Soyfoods were given big play at many ASA annual conventions. This interest in the USA had largely stopped by the mid-1970s, focusing on soybean production instead.

2267. Gorrill, A.D.L.; Nicholson, J.W.G. 1969. Growth, digestibility and nitrogen retention by calves fed milk replacers containing milk and soybean proteins supplemented with methionine. *Canadian J. of Animal Science* 49(3):315-21. Dec. [13 ref]
• ***Summary:*** "Milk replacers containing zero (all milk) or 70% of the total protein from a soybean protein concentrate..., with or without methionine supplementation, were fed to Holstein calves... It was concluded that the soybean protein concentrate could supply a major portion of the protein in milk replacers for rearing dairy calves." The soy protein was supplied by Promosoy, a soybean protein concentrate, supplied by Central Soya (Decatur, Illinois). Address: Research Station, Canada Agriculture, Fredericton, New Brunswick.

2268. Simoons, Frederick J. 1969. Primary adult lactose intolerance and the milking habit: A problem in biological and cultural interrelations. I. Review of the medical research. *American J. of Digestive Diseases* 14(12):819-36. Dec. Series II. [95 ref]
• ***Summary:*** Note: This is the earliest document seen with the term "lactose intolerance" in the title. *Webster's Dictionary* defines lactose (a term first used in 1858) as "a disaccharide sugar $C_{12}H_{22}O_{11}$ that is present in milk and yields glucose and galactose upon hydrolysis and yields especially lactic acid upon fermentation." Address: Dep. of Geography, Univ. of California, Davis, CA 95616.

2269. **Product Name:** Soy Milk.
Manufacturer's Name: Africa Basic Foods Inc.
Manufacturer's Address: Kampala, Uganda.
Date of Introduction: 1969.
Ingredients: For 20 gallons: Soybeans 20 lb., sugar 5 lb., salt 18 gm.
Wt/Vol., Packaging, Price: In sterilized bottles with crown caps.
How Stored: Shelf stable.
Nutrition: Protein 3.5%, fat 2.0%.
New Product–Documentation: Harrison. 1969. Analysis of the Uganda Experience Based on Africa Basic Foods Inc. p. 15-16. Interview with Dr. D.W. Harrison. 1982. Letter from Sam Yoshimura. 1982.

2270. **Product Name:** [Soymilk (Brand Named Soyalac by 1983)].
Manufacturer's Name: Alimentos Colpac. Affiliate of Liga Mexico Pan-Americana Medio Educacional A.C.
Manufacturer's Address: KM 13 Carratera Huatabampo, Apartado 502, Navojoa, Sonora, Mexico.
Date of Introduction: 1969.
New Product–Documentation: Soybean Blue Book. 1976. The company makes a "soy beverage." It is not clear whether this is a soy coffee or a soymilk. They are an affiliate of Liga Mexico Pan-Americana Medio Educacional A.C., KM 13 Carratera Huatabampo, Apartado 502, Navojoa. *Soybean Digest Bluebook.* 1979. p. 98.

Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). "COLPAC, Apartado 16, Montemoralos, Sonora, Mexico. Seventh-day Adventist soy dairy."

Letter from Robert Folkenberg. 1983. Feb. 15. This company, organized in 1969, presently makes about 3,000 liters/week of soymilk.

J. Ponce Aguirre. 1982. History of Soyfoods in Mexico. "In 1968 in Navojoa, Sonora, Alimentos Colpac began operations, run by Seventh-day Adventists. Paul Allred started production of textured soy flour and whole soy flour to make a base for soymilk." Soya Bluebook. 1983. p. 63. "Soyalac Soy Beverage." Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 128. "The first soymilk plant in Mexico was started in 1968 or 1969 by Seventh-day Adventists in Sonora, Navojoa. Its founder was Paul Allred, who also pioneered a similar plant in Egypt. This soymilk was made from whole soy flour."

2271. **Product Name:** [Magnolia Vitamin Enriched Soya Bean Drink].
Manufacturer's Name: Cold Storage (S) Pte. Ltd.
Manufacturer's Address: 277 Upper Bukit Timah Rd,

Singapore 2158. Or Empire Dock Keppel Rd., Singapore 0409.
Date of Introduction: 1969.
Wt/Vol., Packaging, Price: Glass bottle with crown cap.
New Product–Documentation: Soyfoods. 1981. Winter. p. 29. With photo; Brian Fitzpatrick. 1982. Soya Milk in Asia. p. 261. States that Singapore Cold Storage first launched this soymilk in 1969; Tetra Pak Co. 1983. Brochure. Packaged in Tetra Brik Aseptic 250 ml; Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 121. STS. 1985. Containers for Soymilk. Shows color photo of Tetra Brik carton. Dark blue, light blue, and red on white. Color photo. Tetra Brik carton. Blue and red on white with yellow soybeans. Color photo sent by Anders Lindner of STS. 1987. Nov. 14. Glass bottle with crown cap. Label is red and white. Boi. 1986. Sunday Times (Singapore). Sept. 7. "Soya Bean Milk Packs More Water than Flavor." Magnolia sells for 35 cents per 250 ml. Comments: Carries consumption deadline, sweet, thin, vague soya bean flavour. This product was considered the best among a group of 6 soymilks sold in Singapore because "it was the only brand with a hint of soya bean flavour."

2272. **Product Name:** Magnolia Vitamin Enriched Soya Bean Drink.
Manufacturer's Name: Cold Storage (S) Pte. Ltd.
Manufacturer's Address: Petaling Jaya, suburb of Kuala Lumpur, Malaysia.
Date of Introduction: 1969.
New Product–Documentation: Brian Fitzpatrick. 1982. Soya Milk in Asia. p. 261. States that Singapore Cold Storage first launched this soymilk in 1969. Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 121.

2273. **Product Name:** [Soyalac {Soymilk}].
Foreign Name: Soiyarakku Neo.
Manufacturer's Name: College Health Foods. Later renamed San-iku Foods.
Manufacturer's Address: 1-1 Nagaurataku, Sodegaura-machi, Kimizu-gun, Chiba-ken 299-02, Japan.
Date of Introduction: 1969.
Wt/Vol., Packaging, Price: 180 ml glass bottle. Caned by 1980.
New Product–Documentation: Letter from Charles D. Howes. 1978. Oct. List of Seventh-day Adventist soymilk plants. In Japan: San-iku Foods, Kanno 4162, Sodegaura-machi, Kimitsu-gun, Chiba-ken 299-02. M. Urumba, Manager. Hidekazu Watanabe, production manager for Soyalac.

Shurtleff & Aoyagi. 1979. Tofu & Soymilk Production. p. 227-28. Gives a detailed description of the method used to make Soyalac.

William Shurtleff. 1981. Soyfoods. p. 35. "Dr. Harry Miller: Taking soymilk around the world." "Starting in about 1955 Dr. Miller started to recommend that the Adventist-run Japan San-iku School serve soymilk instead of cow's milk to the students; however the staff hesitated because of its nutritional value and flavor. In 1957 two Japanese Adventists, Mr. Hidekazu Watanabe and Mr. Hanzo Ueda (who ran a tofu shop at the time), started making Japan's first soymilk on a small scale in Hachioji, Tokyo, bottling it in 180-ml bottles, and selling it locally. Mr. Watanabe later described the great value to them of Dr. Miller's ongoing technical, nutritional, and spiritual guidance. After some time, directors of the San-iku School visited the small soymilk plant, liked the soymilk flavor, and understood its nutritional value. In 1959 they bought similar equipment, set up a small plant in the school, and started to produce soymilk, which was bottled in 180-ml bottles and served to the students at every meal. In 1969 the San-iku School set up an independent food production company called College Health Foods (which later became today's San-iku Foods) and through it, with the help of Loma Linda Foods in America, began to produce Soyalac soymilk infant formula." By 1980 this product was canned in plain and carob flavors.

Letter (in Japanese) from Hidekazu Watanabe. 1981. July 19. Discusses the early history of this product. "The Ueda Tofu Shop in Hachioji helped with the product development; I was there at the time. In those days our name was San-iku Gakuin Shokuhin-bu (the food department of the San-iku School). The purpose was to provide a place of labor for the students and opportunities to learn food processing. It was not a business. Dr. Perry Webber was the principal of our school at the time." K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Soiyarakku Neo was introduced in 1969. It is now sold by Saniku Fuuzu in a 425 gm can and distributed nationwide.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64. "In 1958 Dr. Miller set up a small soymilk plant in the kitchen of the Adventist-run Tokyo Sanitarium. It was used to make soymilk, soy whipping cream, soymilk ice cream, and soy spread, which were served to the staff and patients. In 1959 a small soymilk plant was established in the Seventh-day Adventist San-iku School. From this year, Japan's oldest existing soymilk company, San-iku Foods, traces its origin. By 1982 San-iku Foods was Japan's fourth largest soymilk manufacturer.

Letter from San-iku Foods. 1990. June. This product was introduced in 1969.

Letter from Ichiro Tabuchi. 1990. July 4. In 1970 San-iku Foods became independent from the San-iku Gakuin Food Department and started to make and sell infant formula.

2274. **Product Name:** [Puma {Soymilk}].
Foreign Name: Puma.
Manufacturer's Name: Lomond Ltd. Subsidiary of Monsanto Co.
Manufacturer's Address: Hong Kong.

Date of Introduction: 1969.
Ingredients: Incl. isolated soy protein, banana flavor, sugar, vitamins.
Wt/Vol., Packaging, Price: Glass bottle with crown cap.
How Stored: Shelf stable.
Nutrition: 2.5% protein.
New Product–Documentation: *Soybean Digest.* 1968. "To introduce soy drink in South America." Aug. p. 26.

Time. 1968. "Sipping soya through a straw." Nov. 15. p. 102. Lomond Ltd., a joint venture of Monsanto and Hong Kong Soya Bean Products Co. Ltd., made a powder concentrate for Puma, based on isolated soy proteins, in Hong Kong, then shipped it to Guyana for bottling.

Chemical and Engineering News. 1970. Aug. 10. p. 37. "Fortified foods: the next revolution." "Puma (Beverage) by Dih, Ltd., Guyana; Monsanto. Composition: Vegetable protein, sugar, vitamins, flavor. Market status: Good acceptance after one year; marketed through soft drink system."

E. Orr. 1972. Tropical Products Inst. G73. The use of protein-rich foods for the relief of malnutrition in developing countries: an analysis of experience. p. 16. "The sale of Puma in Guyana is of relatively recent origin, dating from 1969. The concentrate was originally manufactured by the Monsanto company, which developed the product in the U.S.A., and bottled and distributed in Guyana by a local firm under the type of franchise arrangement characteristic of the soft drink industry. This firm also has the franchise for other conventional soft drinks. Monsanto sold Puma to the Quaker Oats Company in 1971. Monsanto, whose primary business is in chemicals, but which has diversified into food and other products, is known to have explored the possibility of entering the protein-rich food field for a considerable time before manufacturing Puma. The decision to concentrate on a beverage was made in view of the relatively high consumption of soft drinks in developing countries and the existence of 'excellent' channels of distribution; while the franchise system has certain economic advantages to both the lessor and the licensee. The company is stated to have carried out extensive research and development work for several years before formulating Puma. Its first concern was to get an acceptable product, after which considerations affecting other aspects of production, such as raw materials and processing, could be settled. 'We firmly believe that the reason for the failure of former protein or protein-enriched foods was that consumer acceptability was not considered of paramount importance. We believe it is the single most important factor of success of any food or beverage program'. Therefore the research and development work was carried out in conjunction with the programme of panel testing and consumer group testing which the company would carry out for any new food product it was developing.

"Puma is based on a soya isolate. It is strongly flavoured with banana, and in appearance resembles the conventional soft drink and not the usual soya milk type of beverage. The product 'image' which the publicity is primarily designed to promote is 'vigour'. The product was launched with a promotional campaign similar in type to the launching of a new food product in a sophisticated market, and apparently without assistance from Government or any other external agency. Sales are believed to be wholly on the retail market. Sales volume was around 29 million bottles per year in the early years and was said to have far exceeded the original target."

E. Orr. 1977. Food and Nutrition (U.N.). 3(2):2. By 1976, Puma was still in regular production.

Aguilera and Lusas. 1981. *Journal of the American Oil Chemists' Society.* March. p. 516. Monsanto launched Puma in Guyana in 1969. Based on Soya Isolate (ca. 2.5%), Puma had a strong banana flavor. In the early years, sales volume was around 29 million bottles/year, entirely on the retail market.

Note: This is the earliest known commercial soy product made in British Guiana.

2275. **Product Name:** [Luppy {Soymilk}].
Foreign Name: Luppy.
Manufacturer's Name: Luppy Tanpaku (House Shokuhin).
Manufacturer's Address: Minami Gotani 360-2, Yashio-shi, Saitama-ken 340, Japan. Phone: 048-924-5011.
Date of Introduction: 1969.
New Product–Documentation: Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that House Shokuhin first made commercial soymilk in Japan in 1969.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64. This was Japan's third commercial branded soymilk. Shurtleff and Aoyagi visited the company during the mid-1970s, but were not allowed to see the plant.

2276. Streeter, Carroll P. 1969. A partnership to improve food production in India. A special report from the Rockefeller Foundation. See p. 80-85. 27 cm.
• ***Summary:*** Discusses the all-India soybean research program that was launched in 1967, with technical guidance from the University of Illinois under a U.S. AID contract and financial support from the Indian Council of Agricultural Research.

2277. Altschul, Aaron M. 1969. Low-cost foods: Fortified cereals and protein beverages. In: M. Milner, ed. 1969. Protein-Enriched Cereal Foods for World Needs. St. Paul, MN: American Assoc. of Cereal Chemists. x + 343 p. See p. 82-96. [27 ref]
• ***Summary:*** Contents: The world food problem: Hunger and malnutrition are caused by poverty. Food quality vs. food cost. Improving food quality: Improving the quality of cereals, new protein foods. New foods program. Four

generations of protein foods (history). Food distribution within the family. Discussion: The relative importance of adequate nutrition, choosing the most effective approach to improved nutrition, the nature of the problem and the value of improvements. Conclusion.

Tables: (1) New Protein Food Program of the Agency for International Development (Feb. 1967 to July 1968): Countries and products that include soya: Brazil–Krause Milling, Monsanto, Swift. Kenya–Del Monte. Pakistan–General Mills. Thailand–Archer-Daniels-Midland. India–Swift. (2) Conventional and new protein sources (incl. oilseed protein). Address: USDA, Washington, DC.

2278. Burnett, Ray S. 1969. The role of soybean meal in the development and use of modern livestock and poultry feeds. Arlington, Virginia: Soybean Council of America, Inc. 37 p. 24 cm. Printed in Madrid, Spain. [54 ref]

• ***Summary:*** This booklet was printed in Madrid, Spain. Contents: Introduction. 1. Availability. 2. Technical advances: Heat processing of soybean meal, vitamins (B-2, B-12), minerals, amino acids and proteins, protein-energy ratio. 3. Specifications: 50% vs. 44% soy meal. 4. Increase in productivity from technical advances: Broilers, eggs, swine, beef cattle, calves and milk. 5. Formulation and feeding practices: Poultry nutrition for meat and eggs, turkeys, ducks, and pigeons, swine nutrition, cattle nutrition (growing-fattening cattle, milking cows, calf milk replacers {substituting soy flour for part or all of the dry skim milk}, calf starters {used only after calves are 24 days old}), sheep, horses and mules, miscellaneous (rabbit pellets, trout pellets, dog food, mink feed). 6. Continuing needs for improving efficiency of poultry and livestock production.

Contains 27 tables. Note 1. A box, with a logo, near the bottom of the title page states: “Soybean Council of America, Inc. Executive office: P.O. Box 9153, Arlington, Virginia 22209 USA. Cooperating with the United States Department of Agriculture.” Glenn Pogeler was executive director of the Soybean Council at this time. Address: Technical Director, Soybean Council of America, Inc., P.O. Box 9153, Arlington, Virginia 22209.

2279. Cooking good food. 1969. Order of the Universe Publications, Box 203, Prudential Center Station, Boston, MA 02199. 34 p. No index. 28 cm.

• ***Summary:*** A simple, concise source of the basic macrobiotic ideas adapted to the American way. Note 1. This booklet was written by Jim Ledbetter, a student of macrobiotic teacher Michio Kushi, although his name does not appear in it.

Contents: The traditional food of man. The way of eating. Salt and oil. Special foods. Useful kitchen items. Cooking brown rice. Cooking other grains. Cooking vegetables. Cooking sea vegetables. Cooking beans. Cooking soups. Cooking with flours (Cooking noodles, cooking creams, baking bread, variations with flour). Cooking animal food. Preparing salads. Preparing condiments. Preparing drinks. Cooking desserts. Plasters. Traveling and eating out. he manner of eating. The seven levels of cooking.

In Chapter 4, titled “Special Foods” is a section on “Soybean foods” (p. 6), which states: “The soybean has been called the ‘Vegetable Cow’ of the Orient. It is full of good vegetable quality protein (43%). It was not traditionally eaten without special preparation, because it is fairly yin, except by monks who wished to limit their sexual desires. When cured with salt, however, it was used as a daily food. You will find these traditional preparations very helpful in your kitchen.

“Tamari is the ancient form of soysauce, fermented for at least eighteen months from soybeans, salt, wheat or barley, and water, without chemicals or preservatives. It has a very distinctive, delicious taste. It is used mainly in cooking vegetables when it is added after salting and just before the end of cooking time, and in broths. It is rarely used directly on grains, but is often found on the table to use with deep-fried foods. Some women mix tamari with an equal amount of water to make it less strong.

“Miso is a paste made from the same ingredients as tamari. There are two varieties; one (Hacho) is a little harder and darker in texture than the other. It has many uses, especially in soups, in which case it is added towards the end of cooking time so that the wonderful digestion-aiding bacteria it contains will not be destroyed. (All of these soybean condiments produce their best flavor when cooked slightly.) Miso soup has a deep, satisfying bouillon flavor, and is often taken every day as a delicious source of energy. It is helpful to thin miso in a little water before adding it to soups and sauces.

“Morromi [sic, moromi] is the pulp from which tamari has been made. It has a very special tangy flavor, and is used like miso.

“Seitan or ‘Protein X’ is made from the same ingredients as the above condiments. A slightly different process produces a strong jerky which, when boiled or sauteed, resembles beef in appearance and taste. It is very good in soups” (p. 6). Note 2. This is the earliest document seen (March 2011) that mentions “seitan.” It is also the earliest English-language document seen (March 2011) that contains the word “seitan.” By placing seitan in the category of “Soybean Foods,” the author is apparently emphasizing the importance of soy sauce as one of its two main ingredients. He seems to have tasted seitan, but it is not clear that he knows what its other main ingredients are (wheat gluten, ginger, sesame oil) or how it is prepared.

“Tofu is made from fresh soybeans. This curd or ‘cheese’ is a good quality, strong yin food which is very refreshing for occasional use in summer when it is cooked with tamari. It is helpful to store tofu in water. The more yang pulp, which is usually thrown away, can sometimes to obtained from the Oriental stores which make tofu, and

used to make delicious casseroles or well-sauteed vegetable dishes."

The section on "Condiments" (p. 6-7) discusses Gomasio (Sesame salt), umeboshi (salted plums), and Tekka. The section on "Oriental vegetables" (p. 7) discusses lotus root, daikon, ginger root, Chinese cabbage, jinenjo (Japanese potato), and kuzu arrowroot.

In the chapter titled "Cooking Beans" the author considers "Aduki Beans" to be the "King of Beans."

"Black Beans: The imported Japanese black beans are higher nutritional quality and superior taste. They are very sweet, delicious beans. They should be soaked and boiled, because their skin can become loose and clog a pressure cooker spout."

"Miso Soup: This hearty bouillon is the staple everyday soup. Prepare vegetables and boil for at least one-half hour (if you want a really good soup); thin miso with a little of the stock in a bowl and add it to the soup towards the end. Do not boil the soup after adding miso or the beneficial digestion-aiding bacteria will be harmed. If it is simmered very slowly, it can be cooked from 5 minutes to one hour.

"Tamari Soup: Prepare as above using tamari instead of miso for flavoring. A simple tamari broth with onions or carrots and onions is often served over dishes such as noodles."

In the chapter titled "Preparing Condiments" (p. 27) we read: "Vegetable Miso. Slice vegetables finely and saute. Add diluted miso and water and cook. Scallions, chives, carrot tops and many other vegetables are good prepared in this manner. 'Tekka' is made from lotus root, burdock root and carrots. 'Sigure' [Shigure] ('November Rain') is prepared with lotus roots, carrots, and onions. A little freshly grated ginger is often added towards the end of the cooking. A small amount of these condiments is usually sufficient."

The chapter titled "Preparing drinks" (p. 28-29) discusses Mu tea, umeboshi tea, chicory, Yannoh [Ohsawa coffee], dandelion coffee, Bardan, Kokkoh, kuzu, ume-syo-kuzu, and daikon drink.

The chapter titled "Cooking Desserts" (p. 30) states: "Amasake (Homemade Rice Wine). For special occasions this drink is very smooth and sweet."

Tofu is also mentioned in the chapter titled "Plasters" (p. 31). "Tofu Plaster. Squeeze tofu (soy bean curd, see *Special Foods*) and mix with 10% flour to make it more manageable. Apply this to any painful, feverish, or inflamed area. Alternating tofu plasters with ginger compresses often helps stubborn cases."

Note 3 This is the earliest document seen (July 2000) that mentions "Hacho" miso (spelled that way). Subsequently, many macrobiotic publications used this word and spelled it that way.

The chapter titled "Cooking sea vegetables" briefly defines kombu, wakame, hiziki (the incorrect idea concerning "black rice" comes from a casual remark by Evan Root), arame, dulse, and nori (laver).

Note 4 One original edition of this booklet, sent to Soyfoods Center by Tim Redmond (a founder of Eden Foods), has one dark blue stalk of wheat against a light blue background. In the lower right corner of the cover the following has been stamped with a blue ink stamp: "Eden Organic Food Store, 514 E. William. Ann Arbor, Mich. [Michigan] 48104." Address: [Massachusetts].

2280. Cowan, J.C. 1969. Soybeans. In: Encyclopedia of Chemical Technology. Vol. 18. 2nd ed. New York: John Wiley & Sons (Interscience Publishers). See p. 599-614. 27 cm. [44 ref]

• ***Summary:*** Contents: Introduction: Composition, standards and trading rules. Handling and storage. Processing: Preparation, screw-press and extruder-cooker operations, solvent extraction. Soybean products: Oil, meal and meal products, soy flour and related products, soy sauce and other food specialties (soybean milk, tofu, miso, natto, tempeh, sprouted soybeans, green vegetable soybeans). Production and export. Bibliography.

"An estimated 50 million lb of soy flour was marketed in 1967. About one-half of this went into pet foods and the rest into foods for humans." Address: USDA.

2281. Heimann, Werner. 1969. Grundzüge der Lebensmittelchemie [Fundamentals of food chemistry]. Dresden, Germany: T. Steinkopff. xxiv + 610 p. See p. 381-82. Illust. 25 cm. [Ger]*

2282. Kawaguchi, Yutaka; Tsugo, Tomokichi. 1969. Daizu-nyû tanpaku tanpakushitsu no rikagaku-teki seishitsu ni oyobosu daizu-nyu no chôsei-hô to pH no eikyô [Effect of preparation methods and pH values on the physicochemical properties of protein in soybean milk]. *Eiyo to Shokuryo* (*J. of Japanese Society of Food and Nutrition*) 22(1):5-11. [17 ref. Jap; eng]

Address: Tokyo Univ., Nôgaku-bu, Nogeikagaku-ka.

2283. Kwon, Shin Han. 1969. Soybeans and soybean products in Vietnam. Saigon: Republic of Vietnam: Ministry of Land Reform and Development of Agriculture and Fisheries, Agricultural Research Inst. (Saigon). 113 p. 28 cm. [60 ref. Eng]

• ***Summary:*** Contents: Map of South Vietnam showing all provinces and their names. Preface, by the author. 1. Introduction: History of soybean, production and trade in the world and in Vietnam, utilization of soybean (uses, nutritive value of the soybean). 2. Botany of the soybean plant: Seed, stem and pubescence, leaves, flower parts, root and nodule bacteria, genetics. 3. Ecological requirement: Germination, temperature, rainfall, day length, soil. 4. Cultivation and storage: Planting (land preparation, depth of seeding, methods of seeding, rate of seeding, time of seeding,

rotation, erosion), fertilizer (manure, nodule bacteria, nitrogen, phosphorus, calcium, potash, molybdenum, application), insects (maggot fly, soybean insects found in Vietnam, control), diseases (root disease, foliage disease, seed disease), weed control, harvesting and threshing (harvesting time, methods of harvesting, drying). 5. Variety improvement: Aims of improvement (high yielding variety, disease resistance, insect resistance, day length, varieties tolerant to unfavorable soil conditions, seed size, seed color, oil and protein content in seed, palatability), introduction method, pure line selection method, breeding method (making the cross, pedigree method, bulk method), regional trials, variety purification and multiplication (breeder's seed, foundation seed, stock seed, extension seed, maintenance). 6. Seed certification standard. 7. Bibliography.

The author thanks for their help: Dr. Thai-Cong-Tung, Director of the Agriculture Research Institute, and Mr. Nguyen-Huu-Quyen, Manager of Eakmat Experiment Station.

"The history of soybean in Vietnam is meager, but the references by Loureiro (1790) and Rumphius (1747) mentioned the cultivation of soybean in Malaysia and Vietnam. Harmand (1877) collected wild soybean (*Glycine laotica*) in the Hue and Bassac areas, and the herbariums [herbarium specimens] are still available at the Agricultural Research Institute, Ministry of Agriculture, Vietnam." Since the history of Vietnam is closely related to that of China, it seems likely that the soybean has been cultivated for many centuries in what is today Vietnam (p. 1).

In Vietnam, the soybean is still not a very familiar crop to the majority of farmers. Although the acreage has gradually increased since 1958, production had not yet reached 10,000 tons by 1967. According to the *Agricultural Statistics Yearbook of Vietnam,* in 1966 in South Vietnam, total soybean acreage was 6,610 hectares and production was 7,585 metric tons, or 1.148 tonnes/ha (p. 7). The main soybean producing provinces are all in the southern half of South Vietnam: Long-Khanh (40% of total South Vietnamese acreage), An-Giang (20.4%), Chau-Doc, Kien-Phong, and Binh-Dinh (5%). In 1963 some 1,440 tones of soybeans were imported and in 1966 some 100 tonnes were exported (p. 6).

Table 4 shows an estimate of the costs and returns per hectare of growing soybeans at the Eakmat Agricultural Experiment Station in Ban-Me-Thuot in 1968. The net income or profit from one hectare was about VN$26,000, which is larger than for any other field crops, including: cassava (VN$22,766), mung beans ($20,267), sweet potatoes ($19,269), upland rice ($6,828), corn ($6,569), and peanuts (VN$5,100).

Uses: "In Vietnam, the soybean is not commonly used in daily food, but a number of foods such as soysauce, tuong [a soft kind of miso resembling Chinese chiang in consistency, and sold in crocks], bean curd, vermicelli, soymilk, soybean wine, chao [fermented tofu, sold in bottles], soybean oil, [soy] bean sprouts, and green pods [green vegetable soybeans] are available in the market and they are gradually becoming popular among Vietnamese.

Note: This is the 2nd earliest English-language document seen (Oct. 2011) that uses the word "chao" to refer to fermented tofu.

Photos (p. 11-12) show: (3) Bean sprouts and cooked beans with tomato sauce. (4) A shop that sells soybean products in a Saigon market. Soybean paste [tuong] is in big jars, chao [fermented tofu] is in bottles in front, and bean curds [tofu] are in the front left corner. (5) A Vietnamese girl frying bean curds in the market. (6) Bottles with labels showing various kinds of soy sauces made in Vietnam.

The highest yielding soybean varieties in Vietnam are presently Palmetto and E-32. In trials, they yield about 1 tonne per hectare. Address: FAO Agricultural Officer. Phone: Saigon 91.746.

2284. Moore, Raymond S. 1969. China Doctor: The life story of Harry Willis Miller. 2nd ed. Mountain View, California: Pacific Press. 215 p.

• ***Summary:*** The original edition of this book was published in 1961. This 1969 edition, although it has been completely re-set, contains only minor revisions: (1) A new color paperback cover shows a large illustration of Dr. Miller's face. (2) This second edition contains a 3-page Postscript (p. 150-52), which describes his work in Hong Kong (1960-65, 1969), Philippines (1966), expansion of his work with soymilk in Hong Kong ("The Hong Kong soft drink industry dispenses more milks derived from his soybean milk than all others combined"), other work with soy ("His grain-and-soybean-based foods are being adopted as alternates to meat in lands which cannot support animals as a principal diet source. They range from soy cheese, milk, ice cream, and butter-like spreads to simulated steaks, wieners, and sausages. These vegetable foods now are making headway even in the United States and other Western countries. In an era of population dilemmas, Harry Miller reminds the experts that meat, as compared with vegetable protein, takes several times the acreage to produce the same amount of food."), George McGovern and Food for Peace (1961) which resulted in sharply increased exports of soybeans from the USA. (3) The number of pages in the book has been reduced to 152, from the original 215. (4) The valuable index in the first edition has (unfortunately) been omitted. (5) The number of photos has been reduced to 11, from 16 in the first edition, and many photos from the first edition were omitted. New photos (located on unnumbered pages 142-47) show: (1) Harry and Maude Miller at the time of their wedding in 1902. (2) Dr. Miller with a woman victim of goiter in China. (3) Hong Kong Hospital for Chinese refugees at Tsuen Wan, completed in June, 1965. (4) Dr. Miller with little Mohammed Ali, a Bedouin child in Libya. (5) Harry and his wife Mary in 1957 waiting at the airport in Benghazi, Libya.

(6) Mr. Chan Shun donates 1 million Hong Kong dollars for the construction of a Seventh-day Adventist hospital in Hong Kong. Dr. Miller looks on. (7) In 1968 at Albuquerque, New Mexico, Dr. and Mrs. Miller are given a red-carpet welcome by Governor David F. Cargo.

2285. Soypro International Inc. 1969. A study of business prospects in the food industry of India. Cedar Falls, Iowa. iv + 87 p. Summarized as "Soybeans have good future in India" in Soybean Digest. 1969. Dec. p. 28. 28 cm. [20 ref]
• ***Summary:*** As part of The Canadian Food Advisory Team. For Malwa Economic Development Society (MEDS), Indore (which has expressed an interest in entering some aspect of the food industry in India). Sponsored by United Church of Canada.

Contents: Objectives and guidelines. Part I: Food resources and malnutrition. Food grains and pulses. Calories. Proteins: Legumes, oilseeds, milk, fish, poultry, meat. Fats and oils. Areas of food needs: Under-nourishment protein malnutrition. Summary and conclusions.

Part II: Food marketing. The non-market. Primary factors of the real market. Guidelines for product selection and production. Selling the product.

Part III: What is being done. Food ingredients: Grain processing, oilseeds for human nutrition. Consumer products: Protein foods for infants and children, foods for general consumption.

Part IV: Prospects for soybean production and soya food processing. Production: Yields, crop input, returns in relation to other crops. Market outlets and prices: Domestic markets for soy products, estimated prices. Soybean processing: Processing plants, storage, transportation, plant investment costs (new plants, converting existing plants to soybean processing). Low fiber meal and soy flour: Investment cost for production, marketing. Full-fat soy flour. Soy protein isolates. Specialty soy foods: Soy milk and related products, soy-based snack foods, cereals, dal. Conclusions.

Part V: Potential projects. Storage. Rice milling. Pulse milling. Soybean processing for soy flour, soy protein isolates. Sesame processing. Bread. Baby foods. High protein mixes. Synthetic milk or base for toned milk–related dairy products. Extruded high protein snacks / cereals. Low-cost quick-cooking dal. Food marketing and distribution.

List of references. Appendixes. Population of India. Recent production trends and current yields of key crops in India. Rough calculations of gross protein availability from local production in India.

This practical, business-oriented report focuses on low-cost high-protein foods designed to help private business meet India's problems of protein malnutrition, especially among infants and children. "Similarly, with fast rising interest in soybean production and utilization, considerable early attention had been given to this particular field..." In 1965-66, and in 1966-67 India had two devastating drought years. Prior to this, India has experienced four major droughts accompanied by famines since 1900: 1907-08, 1918-19 (the worst, with a 32.3% drop in agricultural output), 1920-21 (the second worst; 24.0% drop), and 1923-24 (16.6% drop).

Pulses, mostly in the form of dal ("the poor man's meat") have for many years been second only to food grains as a source of protein in Indian diets. Most pulses are dehulled by hand-powered stone mills at home before cooking, with a wastage of about 10%. However pulses are not keeping pace with the food grains in India's Green Revolution. Average yields are relatively low and response to fertilizer is low. Per capita consumption is static, or declining. India's main oilseeds in 1967-68 were (in descending order of output in million metric tons): groundnuts in the shell (5.83), cottonseed (2.00), rapeseed and mustard (1.48), sesame (0.42), and niger seed (0.10). Only groundnut, sesame, and niger also provide significant amounts of protein for humans. Yet after the oil is removed, most of the protein-rich oilseed cakes are used in livestock feeds or fertilizer, or exported; only about 10% of the available protein is used directly in human diets. There is now much interest in using more groundnut protein (as flour or isolate) in human foods; it has been used in toned milk. India's major source of animal protein is milk (both from water buffaloes and cows), with per capita daily consumption being 123 gm (4.4 oz).

Relatively little red meat is consumed in India; many states prohibit slaughter of cows. Goats and water buffaloes are the major sources of meat. According to CFTRI, 39% of Indians are deficient in proteins, and a high proportion of these are infants and children. Per capita availability of oils is 9.3 lb/year. 70 to 75% of all food produced stays on the farm and is consumed directly by the producers. Wheat is the main grain in north India, and rice in south India. About 25% of Indians are vegetarian by conviction, and "75% are now willing to eat animal products, with the latter percentage increasing every year. In practice, diets are still largely vegetarian because of the scarcity and cost of animal products." Prestige is the single most important marketing factor in part because India is still a highly class-conscious society. The market is highly segmented. Products need to be targeted separately at the top 3 or 4 of the 5 class segments. The high class line should be introduced first. Cheap food or "food for the poor" has little chance of succeeding in commercial channels. Except as food for children, it is very hard to sell food on the basis of its nutritional or health-giving benefits. Sampling is the most effective promotional technique.

Several companies produce dried baby foods from milk and sell them in tin cans. In 1968 the biggest seller was Amul (3,500 to 3,800 tons), made by Kaira Dairy Coop. The pioneer commercial weaning food in India was Farex, made by Glaxo and sold in tins at Rs. 13 per kg. Kaira Dairy Coop

launched Bal-Amul at Rs. 11 per kg and now produces 1,000 tons/year, expected to grow to 5,000 tons by 1974. Bal-Amul contains about 25% full-fat soy flour, 25% rice and wheat flour, 20% gram flour, 11% sugar, 10% nonfat dried milk, and 6-8% moisture. Processing equipment was donated by UNICEF. Soy flour and milk powder were donated by USAID. It will soon be offered in plastic bags at Rs. 7 to 8 per kg to reach a broader market. CSM contains 25% defatted or low-fat soy flour. Bal-Ahar contains 65% bulgur wheat, 25% groundnut flour, 10% Bengal gram [chickpea] flour plus vitamin/mineral pre-mix. Requiring 10-15 minutes cooking in water, it does not contain any soy. Use of CSM and Bal-Ahar is limited to food relief programs; they are not sold commercially.

MPF (Multi-Purpose Food, formulated under sponsorship of the Meals for Millions Foundation in the U.S.) consists of 75% groundnut flour, 25% Bengal gram flour, plus a vitamin/mineral pre-mix. Containing 45% protein, it sells for only Rs. 3.5/kg and is thus the cheapest protein source on the market and one of the best. However it has not met with any real success. 7 plants have been authorized to produce MPF in India. None are operating at capacity and most are not operating at all. Total output, currently 600 tons/year, is purchased largely by OXFAM for the Meals for Millions Foundation.

UNICEF is supplying an X-25 Wenger Cooker-extruder to CFTRI to experiment with extruded high-protein snacks. Note: The Wenger X-25 is a low-cost extrusion cooker / extruder. This is the earliest document seen (Jan. 2011) that mentions the use of a low-cost extrusion cooker.

The population of India has grown from 314.8 million in 1941 to about 533.3 million in 1969. Each year the population is growing by about 13 million people. Roughly 80% lives in rural areas. In terms of gross protein availability, the main sources produced in India (in million metric tons of protein) are: rice 3.03, pulses 2.69, wheat 2.49, groundnuts 1.12, milk 1.05, and jowar (sorghum) 0.91. Soy is not listed. Address: Cedar Falls, Iowa.

2286. Soypro International Inc. 1969. Part IV. Prospects for soybean production and soya food processing (Document part). In: A Study of Business Prospects in the Food Industry of India. 1969. Cedar Falls, Iowa. iv + 87 p. See p. 54-75. [7 ref]

• ***Summary:*** Contents: Production: Yields, crop input, returns in relation to other crops. Market outlets and prices: Domestic markets for soy products, estimated prices. Soybean processing: Processing plants, storage, transportation, plant investment costs (new plants, converting existing plants to soybean processing). Low fiber meal and soy flour: Investment cost for production, marketing. Full-fat soy flour. Soy protein isolates. Specialty soy foods: Soy milk and related products, soy-based snack foods, cereals, dal. Conclusions.

"Several years ago, test trials with soybeans indicated that they could be produced successfully and economically over a substantial portion of Central India. These included tests by the Indian Agricultural Research Institute near Delhi in 1956, tests by Michigan State researchers at Ranchi and by Missouri University at a number of stations in 1962.

"Since that time agricultural stations in many parts of India have been conducting studies on soybean production on a very wide scale, and at great depth. Many hundreds of soybean varieties from all over the world have been tested for adaptability to Indian growing conditions. Extensive tests of response to a wide range of agronomic conditions have been carried out...

"The most intensive work has been at Pantnagar (U.P.) and Jabalpur (M.P.) under a cooperative project of US/AID with the University of Illinois, the Indian Council of Agricultural Research, and the two Agricultural Universities, UPAU and JNAU."

Yields of 3,000 to 4,000 kg/ha have been reported in various locations. In general, soy is not competitive with groundnuts for the same land. Good soybean land is too heavy for groundnuts, and good groundnut land too light for soy. Soy can fit into maize cropping rotations, and it will apparently compete successfully with pulses for land because of the much higher yields and comparable market value. "Thus, if the industry provides a processor-market for domestic soybeans, it appears that soybean acreage and production will expand dramatically in the next few years...

"Many assumptions were being seriously discussed at the time of the Team's visit including: 1. That the market can take very large quantities (up to 1 million tons) of soy flour and soy proteins for human consumption. 2. That existing oilseed processing industry, operating at 60% capacity or less, is not properly located or equipped to crush soybeans.

"Investigations of the industry and the market indicated the following: 1. Soybean oil is well known to the trade due to large P.L. 480 receipts in recent years. It will sell at about 10% discount to groundnut oil on the open market. Present demand exceeds 100,000 tons per year–equivalent to 500,000 tons of beans. 2. A small tonnage of soybean meal could be sold in India for poultry feed at about 10% premium over groundnut meal... 3. Foreseeable potential demand for soybean flour or soy proteins, including its use in antibiotic manufacture, could scarcely exceed 100,000 tons per year within the next five years, even with heavy demand by Government and relief agencies for fortification and public feeding projects. However, since soy flour and soy protein are easier to use in foodstuffs than groundnut products, they would gradually tend to displace the latter in most bread and bakery products, confections, beverages, etc.

"Thus at one-ton-per-acre yields, 250,000 acres of soybeans would saturate the potential market in India for soy proteins for some time to come. Any larger acreages would be producing soybean meal for export. However, 250,000

acres would only meet about half of India's immediate needs for edible oils...

"Because of the large number and wide diversity of oilseed processing plants in India, the latitude for size and type of plant which might feasibly process soybeans is much greater than in any other country in our experience." A 300 ton/day plant operating 300 days/year would require 90,000 tons of soybeans. A new solvent extraction plant with this capacity would cost about $900,000 (Rs. 67.5 lakhs). Groundnut processing plants could be adapted to process soybeans without great expense (about $140,000 or Rs. 10.5 lakhs for a 300 ton/day plant). Tata indicated they would be glad to take all the soybeans they could get.

Potential markets are estimated as follows: For soybean flour (in tons/year): bread and related products 1,000, biscuits and confections 600, weaning foods 600, fortified flour (commercial) 500, and snack foods 500. This is about 10 tons/day. Note that Bal-Amul presently uses full-fat soya flour from the U.S. But it is very difficult to manufacture a good-quality full-fat soy flour, and it must be tailored to each application. For 50% protein (low-fiber) soybean meal: Pharmaceutical manufacturers 4,000, poultry feeders 4,000 minimum.

"Considerable interest is expressed in soy protein isolates, especially for toning milk and other dairy foods. Since the color and flavor of the best soy isolates is somewhat better than that of groundnut protein isolates, India could offer a good potential market in this area. If available, some soy isolates would also probably be used in lieu of groundnut isolates in biscuits, confections, and pharmaceutical lines."

Of the various potential specialty soy foods, "In terms of existing market demands, the most interesting product is soy-based synthetic milk, or a soy-protein milk-base for sale to dairies to be used in milk toning." Packaging will be a major problem. There is a severe milk shortage in most parts of India, and soy milk is superior in quality, as a base, compared with groundnut milk.

"Eventual market demand for soy flour could be substantial, depending on government policy and the continuing programs of relief agencies. It will hinge on the use of soy flour to fortify atta and maida, to use in high-protein gruels for relief feeding, and to supplement school lunch and institutional diets in various foods." Address: Cedar Falls, Iowa.

2287. **Product Name:** Whitehouse Coffee Fresh (Non-dairy Soy-based Coffee Creamer).
Manufacturer's Name: Whitehouse Products, Inc.
Manufacturer's Address: Livonia Dairy, 2001 S. Telegraph Rd. at Harvard, Dearborn, Michigan.
Date of Introduction: 1969?
New Product–Documentation: Talk with David and Harvey Whitehouse of Delsoy Products and Whitehouse Products. 1992. Feb. 4. In the late 1960s, Whitehouse Products (formerly Delsoy Products) developed a soy-based non-dairy creamer named Whitehouse Coffee Fresh. After several years the soy was replaced by another ingredient.

2288. Okumura, George K.; Wilkinson, Jack E. 1970. Preparation of vegetable protein-containing food products. *U.S. Patent* 3,490,914. Jan. 20. 4 p. Application filed 15 May 1967. [6 ref]
• ***Summary:*** "Water soluble protein is extracted by precipitation from de-fatted slurry of soy bean or other protein-containing vegetable material, and is then converted by a freezing step in a fibrous, sponge-like protein mass lacking the taste of soy or other starting material, which mass can then be further processed into a meat-like solid food or into a milk, or derivative of milk such as cheese, ice-cream, yogurt, etc., additional steps of finely comminuting the fibrous mass and adding water and other additives being utilized in producing the milk.

"This application is a continuation-in-part of our application Ser. No. 445,695, filed April 5, 1965, for Process of Producing Soy Milk from Sprouted Soy Beans, now Patent No. 3,399,997 and of our abandoned application Ser. No. 638,573, filed May 15, 1967, for Processing of Soy Food Products with Freeze Treatment." Address: 1. 3151 S. Elm Ave., 93706; 2. 2411 Divisadero St., 93721. Both: Fresno, California.

2289. Civetta, Armando. 1970. Re: Research in Colombia on soybean flour and soybean milk. Letter to Dr. J.J. Rackis, Oilseed Crops Laboratory, Northern Utilization R&D Div., ARS, USDA, Peoria, Illinois, Jan. 21. 2 p. Typed, with signature on letterhead.
• ***Summary:*** Civetta thanks Dr. Rackis for his cooperation and sympathy during Civetta's recent stay at Peoria, Illinois, during the UNIDO (United Nations Industrial Development Organization) conference in Nov. 1969. He is proposing to UNIDO that Dr. Rackis and Mr. Mustakas be invited to work at his institute for a while. Dr. Norton Young, the Director of his Institute, agrees with the idea. They would like help on two soy-related projects in Bogotá: (1) Low-fat soybean flour: Processing, functional properties, and its use in local foods. (2) Soybean milk: Use as a cow's milk substitute, processing and equipment design. Address: Project Leader, Instituto de Investigaciones Tecnologicas, Av. 30 No. 52A-77, Bogota, D.E., Colombia.

2290. Bourne, Malcolm C. 1970. Ingredient cost of soymilk. Mimeographed. 2 p. Jan. Unpublished manuscript.
• ***Summary:*** The main ingredient is whole dry soybeans. These costs are valid as of 1970. Address: Visiting Prof. of Food Science, U.P. College of Agriculture, Los Baños, Laguna.

2291. Centre de Documentation Internationale des Industries Utilisatrices de Produits Agricoles (CDIUPA). 1970--. IALINE (Industries Agro-Alimentaires en Ligne) base de données [IALINE (Food and Agricultural Industries On-Line) database]. 1, avenue des Olympiades–91300 Massy, France. [271542 ref. Fre]

• ***Summary:*** This is the world's best database for French-language publications related to food and nutrition. It first became available for use in Jan. 1970, and that is also the date of the earliest record in the database. It is produced by the Center for International Documentation on Industrial Utilization of Agricultural Products (CDIUPA), founded in 1965 by the French Ministry of Agriculture. CDIUPA is administered by APRIA (*Association pour la Promotion Industrie Agricole*), which is a member of the International Commission of Agricultural and Food Industries.

The current contents of the database is published in a monthly journal titled "Industries Agro-Alimentaires: Bibliographie Internationale," which began under that title in Jan. 1983. It was preceded by *Bibliographie Internationale des Industries Agro-Alimentaires. Bulletin Bibliographique* (published from Jan. 1967 to Dec. 1982). In the monthly journal, the citations are grouped under 6 broad headings: 1. General (with 8 subcategories). 2. Agro-food industries (industries agroalimentaires; with 17 subcategories; Many documents on soyfoods are cited in subcategory N titled *"Protéines d'origine animale, végétale, microbiologique, algues et levures aliments"*). 3. Fermentation industries (with 6 subcategories). 4. Food microbiology. 5. Food toxicology. 6. Utilization and adding value to agricultural and food-industry by-products. Biotechnology. The journal contains 3 indexes: Subject index. Index of sources (periodicals [with journal names written out in full], acts of congress, books, theses). Author index.

Information related to soyfoods is likely to be found under the following headings in the subject index: Aspergillus oryzae; Farine de soja (incl. soy flour, and roasted soy flour or kinako); Huile de soja (soy oil); Koji; Lait de soja (soymilk); Miso; Nato (incl. natto); Produit à base de soja (incl. dawa-dawa, kinema, soy cheese [western style], fermented black soybeans / Hamanatto, soynuts, soy ice cream, soy yogurt, thua-nao, yuba), Protéine de soja (soy protein products); Protéine de soja, Produit extrudé (extruded soy products); Protéines d'origine animale, végétale; Sauce de soja (soy sauce); Soja (incl. green vegetable soybeans); Soja, germe (soy sprouts); Sufu (fermented tofu); Tempeh; Tofu. Address: Massy, France. Phone: (1) 69.20.97.38.

2292. Puertollano, Carmen L.; Bourne, Malcolm C. 1970. How to make soymilk in your kitchen (Leaflet). College, Laguna, Philippines. 1 p. Feb. 3. Single sided. 28 cm. [12 ref]

• ***Summary:*** Uses the Cornell boiling water grind method. See also the Dec. 1976 edition by Dr. Bourne.

"Soymilk is the water extract of mature dry soybeans. It is a cheap source of protein. It is a nutritious beverage with a protein content equivalent to that of cow's milk.

"Steps in the production of soymilk:

"1. Wash thoroughly l cup dry clean soybeans.

"2. Soak for 4 to 16 hours in sufficient amount of water to keep the beans well covered throughout the soaking period. Make allowance for the beans to double in size during soaking.

"3. If the water is foamy after soaking, due to slight fermentation, pour off the water and wash the beans very well with a fresh lot of water. Drain the beans well.

"4. Divide the drained soaked beans into three equal portions. Grind each portion with 2 full cups boiling water in a pre-heated Waring blendor for 2-3 minutes. The Waring blendor is pre-heated by blending 2 cups of boiling water for approximately 1 minute.

"There are three types of Waring blendor available: plastic, glass, and stainless steel. If your Waring blendor is plastic make sure that it can stand boiling water. If it is made of glass it should be warmed first to avoid cracking due to sudden change of temperature. The stainless steel type is the most ideal to use but it is an expensive type of Waring blendor. Not all housewives can afford it.

"5. Strain the mixture in a muslin bag to remove the insoluble residue [okara]. Squeeze the bag to get as much of the milk as possible. The residue can be used as animal feed or for making cookies and candies.

"6. For every cup of filtered milk add 2 level tablespoons refined sugar.

"7. Heat the milk for at least 30 minutes in an open saucepan set on a boiling water bath to prevent scorching. Stir occasionally to prevent film formation. Take note of the original volume of the milk so that water lost by evaporation can be replaced.

"8. With one cup of dry beans approximately six to seven cups of milk is produced

"9. Add ½ tsp. vanilla essence when milk is cool (optional).

"10. The soymilk is now ready for drinking. It can be consumed hot or cold. Some people like to flavor it with chocolate or Ovaltine. The milk will keep for several days in the refrigerator but less than 24 hours without refrigeration." Address: Dep. of Chemistry, Univ. of the Philippines, College of Agriculture, College, Laguna, Philippines..

2293. Gould, Ira A.; Hansen, Paul M.T.; Harper, W.J.; Mikolajcik, E.M.; Vakaleris, D.G. 1970. Using soy proteins in new dairy foods. *Ohio Report on Research and Development* 55(1):20. Jan/Feb.

• ***Summary:*** "Dairy food scientists in the Department of Dairy Technology have been actively engaged in a variety of studies to determine the quality and characteristics of different soy protein isolates to be used in foods and how

these may best be incorporated into different dairy-type foods and beverages.

"The development of fluid milk-based beverages containing soy protein,... has been hampered in the past by extreme sensitivity of soy proteins to calcium and magnesium, especially under the effects of heat. In addition, soy proteins possess a characteristic 'beany-type' flavor which limits the amount of protein which can be used in bland, unflavored foods."

Research shows that soy protein can be made resistant to the harmful effect of calcium by the use food stabilizers (hydrophilic colloids) and by proper use of other minerals.

"Selected food stabilizers, such as Kappacarrageenin, carboxymethyl cellulose, and the Kappa fraction of milk casein, were all found to be effective in preventing the destabilization of soy protein in systems containing calcium in relatively high concentration. Also, heat-stable, fluid products were produced by a sequential incorporation of citrates, phosphates, and calcium in the fluid food to give a balance of minerals similar to that found in normal [cow's] milk."

"In one experiment, the flavor of soy protein isolate was improved by culturing a solution of the protein with lactic acid producing bacteria and then precipitating and re-isolating the protein." Address: Dep. of Dairy Technology, Ohio Agricultural Research and Development Center (OARDC), and Ohio State Univ.

2294. Puertollano, Carmen L.; Bourne, Malcolm C. 1970. How to make soymilk in your kitchen (Leaflet). Dept. of Chemistry, University of the Philippines, College of Agriculture, College, Laguna. 1 p. Feb. 3.

• ***Summary:*** This 10-step process uses the Cornell boiling-water grind method (to give soymilk with little or no beany flavor) and therefore requires a Waring blendor with a glass or stainless steel container.

One cup of dry soybeans makes 6-7 cups of soymilk. "6. For every cup of filtered milk add 2 level tablespoons of refined sugar" [too much sugar for good health!] and (optional, when the milk is cool) ½ teaspoon vanilla essence. "Some people like to flavor it with chocolate or Ovaltine." Address: Dep. of Chemistry, Univ. of the Philippines, College of Agriculture, College, Laguna.

2295. Erewhon Trading Co., Inc. 1970. Traditional foods: Importers, processors, distributors. Mail order catalogue. Boston, Massachusetts. 16 p. March 1. [2 ref]

• ***Summary:*** On the orange cover is the silhouette of three heads of grain on the plant, by a Japanese crest. The company sells the following types of foods: 1. Whole grains: Brown rice (short grain grown by Koda Brothers, in 6 weights from 2 lb. to 100 lb). "Not strictly organic, but the finest available in the U.S. today."

Note: The previous sentence, starting with "Not strictly organic" is deceptive and misleading. According to "Erewhon, A Biography," by Paul Hawken (*East West Journal*, Aug. 1973, p. 13) the short-grain brown rice being sold by Erewhon at this time was grown by the Lundberg brothers (Wehah Farm, Richvale, California) and harvested in the fall of 1969. But this rice was the result of a secret deal, so Koda Brothers is listed in the Catalog as the grower. According to the Koda website, Koda first started to convert some fields to organic in 2004. Moreover, this rice was not "the finest available in the U.S. today." The only organically grown brown rice in the USA in March 1970 was grown by the Lundberg Brothers (Wehah Farms) in Richvale, California. 1969 was the first year they had grown rice organically, and they grew 78 acres under contract with Chico-San, who agreed to buy all the brown rice grown on that acreage in exchange for the exclusive right to sell that rice. Chico-San sold half the rice in advance and had no trouble selling all of it. But they refused to sell any of the rice to Erewhon. In 1970 Lundberg expanded their exclusive organic brown rice acreage to 200 acres; that rice was harvested in the fall of 1971.

Sweet brown rice (also grown by Koda Bros.), buckwheat groats (Kasha, from Pocono Mts. in Pennsylvania), wheat berries (organically grown in the Golden Valley of North Dakota), millet (organically grown), barley, yellow and white corn (organically grown in Deaf Smith County, Texas), oats, rye (organically grown in Deaf Smith County, Texas). Table of prices for different weights. 2. Fresh stone ground flours. 3. Cereals, made from whole grains and milled in a manner to allow quick cooking, incl. Kokoh (which can be used as a milk substitute or prepared as a cereal for children). 3. Noodles (udon, soba, and shonai fu–wheat gluten cakes). 4. Beans: Azuki beans ("The King of Beans... Organically grown on the island of Hokkaido, Japan), black beans (a sweet black soybean imported from Japan. Organically grown), chickpeas, soybeans ("Organically grown in Pennsylvania. A food high in protein, vitamins and minerals. Should be soaked many hours before cooking. Particularly good if cooked with Kombu"), pinto beans, whole green lentils, red split lentils. Table of prices for different weights.

5. Sea vegetables: Nori (dried laver), kombu, wakame, hiziki, agar-agar. 6. Dried fish and vegetables: Bonita [sic, Bonito] flakes, chirimen iriko, daikon pickle, gourd strips (dried), daikon (dried radish). 6. Order form. 7. Beverages: Kukicha, mu herbal beverage, yannoh, lotus root powder, mugicha (barley tea), peppermint tea.

8. Soybean Products (imported from Japan): Soy sauce ("aged for at least 18 months"; 16 oz, 32 oz, ½ gallon, 1 gallon, 4.75 gallon keg). Mugi miso–Soybean puree ("Made by a special enzymatic process, this Miso is aged for 18 months. It is made from soybeans, barley, water and salt. It is ideal for making soups and sauces and blends well with tahini to make a spread for bread." 1 lb, 2 lb, 4 lb, 44 lb keg).

Hacho miso–Soybean puree ("A darker, stronger miso than Mugi Miso..."). Moromi ("A thick sauce removed from the bottom of the Soy Sauce kegs after fermentation. Its uses are unlimited in soups & sauces"; 7 oz.). Seitan ("A concentrated protein source made from wheat and soy sauce. When used in soups or sauteed in vegetables, it has a taste much like beef"; 3½ oz.).

9. Condiments: *Furikake*, kuzu arrowroot, tekka, umeboshi, sesame butter, Erewhon sesame tahini, sesame salt, white sea salt, grey sea salt. 10. Oils: Refined corn oil, corn germ oil, sesame oil. 11. Sundries: Sesame seeds, sunflower seeds, pumpkin seeds, popcorn, raisins (Thompsons), dried apricots, wheat germ (raw), apple butter, whole dried chestnuts. 12. Toilet articles: Dentie (tooth powder made from eggplant and salt), Aditi sesame shampoo, Orgene [Orjene] herbal shampoo, Fu-nori (seaweed shampoo), sesame coconut soap, vege oat soap.

13. Kitchen and tableware: Cookbooks: *Zen Cookery, Cooking with Grains and Vegetables, Cooking Good Food, Zen Macrobiotic Cooking.* Tableware: Rice paddles (bamboo), soy sauce dispenser, oil skimmer, bamboo tea strainer, vegetable press, vegetable brush, bamboo chopsticks (Japanese), chopsticks (Chinese), MAC knife (vegetable), vegetable knife, fish knife, grater, suribachi (3 sizes), Corona hand grinding flour mill ($10.95).

On the inside rear cover is a United Parcel Service rate chart. Address: 342 Newbury Street, Boston, Massachusetts 02115. Phone: 617-262-3420.

2296. Badenhop, A.F.; Hackler, L.R. 1970. Effects of soaking soybeans in sodium hydroxide solution as a pretreatment for soy milk production. *Cereal Science Today* 15(3):84-88. March. [21 ref]
Address: Cornell Univ., Geneva, New York.

2297. **Product Name:** [Mac-Curd Soy Milk].
Manufacturer's Name: Hohnen Oil Co. Ltd.
Manufacturer's Address: Mitsui Seimei Building Ltd., 1-chome Ohtemachi, Chiyoda-ku, Tokyo, Japan.
Date of Introduction: 1970. March.
New Product–Documentation: *Soybean Digest Blue Book.* 1970. p. 108; 1981. p. 60.

2298. Bourne, Malcolm C. 1970. Soybeans, food technology, and improved nutrition in southern Asia. Mimeographed text of a seminar given at the Ford Foundation, New Delhi, India. April 8. 14 p. Unpublished manuscript. [9 ref]
• ***Summary:*** Published in the Proceedings of the 3rd All India Soybean Conference, held 28-30 Sept. 1970 at Jabalpur, India. Tables: 1. Deaths among small children (ages 1-4) in various countries as a percentage of total deaths in population. 2. Comparison of soybean with other protein sources in the Philippines (As of early 1965 soy provides has the largest amount of protein per peso as purchased [559 gm vs. 287 for mungbean, which is second largest]). 3. Foods made from soybeans (12 types). 4. Comparison of the nutritional composition of soybeans with common dry beans. 5. Material balance in manufacture of soymilk. 6. Volatiles found in cold-grind soybeans. Postulated mechanism of formation of ethyl vinyl ketone in soymilk. 8. Boiling water process for soymilk (bottled or fresh). 9. Ingredient cost of soymilk. 9. Protein supplied by soymilk. Address: Visiting Prof. of Food Science, College of Agriculture, Univ. of the Philippines, College (Los Baños), Laguna, Philippines. Permanent address: New York State Agric. Exp. Station, Geneva, NY.

2299. Descamps, Hubert. 1970. Tamari et kokkoh: Source d'acides aminés [Tamari and kokkoh: Source of amino acids]. *Spirale* (*Brussels, Belgium*) No. 36. p. 13-16. May. [1 ref. Fre]
• ***Summary:*** Prof. Christophe of the laboratory of biochemistry and nutrition on the faculty of medicine of the U.L.B. has done an analysis of Kokkoh (grain coffee) and tamari. The composition of 8 amino acids is given for each product.

"Miso, another source of vegetable proteins, strongly resembles tamari, except that the dry extract is superior. Miso contains about 30-40% moisture. Thus it contains about 3 times the concentration of amino acids and other nutrients found in tamari. It is also clear that one cannot consume large quantities of miso. It is interesting to note that miso is very useful for making soups."

Note: This magazine began publication in 1964.

2300. Bourne, Malcolm C.; Puertollano, Carmen L. 1970. Pilot plant procedure for making PHILSOY [soymilk] at Los Baños, Philippines. Mimeographed. 4 p. June 2. Unpublished manuscript.
• ***Summary:*** The ten steps in the Cornell boiling-water grind procedure are described in the form of a two-column table: (1) Procedure. (2) Comments. The comments are much longer than the procedure.

The procedure is: 1. Soak clean whole soybeans in water at ambient temperature until saturated (about 4-5 hours). 2. Discard soak water. Remove any defective beans. 3. Preheat grinding machine (to ensure that the first lot of material ground does not fall below 80ºC). 4. Grind beans at ambient temperature with boiling water. Temperature of bean-water slurry must never fall below 80ºC (180ºF). It is advisable to hold the slurry at 80ºC. or higher for about 5 minutes before proceeding to next step. Ratio is 1 part of dry beans plus 10 parts by weight of water. This is approximately equivalent to 1 volume of soaked beans to 3 volumes of boiling water. 5. Boil [in open kettle] for 5 to 10 minutes. 6. Filer off insoluble residue [okara]. 7. Formulate. 8. Fill into 7 oz. bottles and seal. 9. Sterilize in steam for 12 minutes at 250ºF (15 lbs. pressure). 10. Cool in air.

General notes. "If a fresh product is desired that has not been sterilized, it is necessary to maintain the milk at near the boiling point for approximately 30 minutes in order to destroy the antitrypsin." Address: 1. Visiting Prof. of Food Science and Associate Director (Philippines) U.S. AID-Cornell Contract csd-1815; 2. Food Technologist, Univ. of the Philippines, College of Agriculture, Laguna, Philippines.

2301. Plantmilk Ltd. 1970. Meat and milk (Ad). *British Vegetarian.* May/June. p. 207.
• ***Summary:*** "You can't have one without the other. A cow can't make milk without first making a calf, for each lactation. She is robbed of her calf so that we can have her milk. The calf? More and more are imprisoned in factory farms. Every time you use milk, think of the baby calf in the factory farm. Plamil liquid plantmilk, from Health Stores, replaces milk." Address: Tithe Farm, High St., Langley, Slough, Buckinghamshire, England.

2302. Plantmilk Society. 1970. The cruel cost of milk (Ad). *British Vegetarian.* May/June. Rear cover.
• ***Summary:*** A large photo shows calves in a British factory farm, where they are "imprisoned for life in pens 2-feet by 5-feet" and are not allowed to turn around. They are put in the pens when they are about 5 days old. Most cows are made pregnant by artificial insemination.

After the age of about 3 weeks, most young milk cows are unable to turn around in their pens. In centered, bold letters: "Calves for rearing into meat come from dairy farms, whose products are: (1) calves, taken from their mothers so that we can have the milk, (2) milk, (3) worn out cows, slaughtered for beef."

"The nutritious plantmilk alternative to milk, made entirely from non-animal ingredients, has given *you* the opportunity to release yourself from supporting the vicious circle of the meat-milk complex. Plantmilk is obtainable from most Health Food Stores. Please support this humane effort."

Note: Plantmilk is now made largely from soybeans. This is the earliest English-language document seen (Aug. 2013) that uses the term "alternative to milk" to refer to soymilk. Address: 39 Willow Crescent, Exbridge, Middlesex, England.

2303. Wilkens, Walter F.; Lin, Lin M. 1970. Gas chromatographic and mass spectral analyses of soybean milk volatiles. *J. of Agricultural and Food Chemistry* 18(3):333-36. May/June. [34 ref]
Address: Cornell Univ., Geneva, New York.

2304. Wokes, Frank. 1970. India revisited: 1920-1970. *British Vegetarian.* May/June. p. 221-25.
• ***Summary:*** The author arrived in Bombay on 31 Jan. 1970 to participate in an international seminar on nutrition at the invitation of Prof. C.V. Ramakrishnan of Baroda University, India. He and his wife, Dr. Rajalakshmi, both lifelong vegetarians, are very interested in increasing production and consumption of plant foods in India. The author first visited India on 1 Feb. 1920.

In India there are plenty of cows but their milk yields is far lower than in Western countries. Since hygienic conditions are far from satisfactory, much of the milk is grossly contaminated. Therefore the Government of India, with the help of foreign aid, has established at Anand, near Baroda, a large dairy farm to which milk is brought by farmers from surrounding areas, pasteurized, and spray dried for sales in tins. "In this powdered baby food most of the protein now comes from plant foods, the proportion gradually being increased as investigations at CeFTRI [CFTRI = Central Food Technology Research Institute, at Mysore] show its suitability for replacing cow's milk protein, at a lower cost." CeFTRI has already made, on a pilot plant scale, non-dairy milks made entirely from plants, which it hopes eventually to commercialize.

"Many Indians, especially among the Jains and Theosophists, pressed me to suggest how they could make for general domestic use a liquid vegetable milk similar to that in my tins of Plamil. They listened with interest to my descriptions of what is being done at CeFTRI, where among other things a study is being made of *Vitasoy,* the liquid soya milk, made by wet grinding and processing of steeped soya beans by a method developed by Dr. Harry Miller, who first made soya milks in China nearly forty years ago [actually 1936] and described it to me over twenty years ago, when I first saw samples of his products. In Hong Kong, *Vitasoy* is said to be rivalling *Coca Cola* in public favour."

Also discusses CeFTRI's interest in leaf protein, and problems with aflatoxins in groundnuts in India.

2305. Roy, J.H.B. 1970. Protein in milk replacers for calves. *J. of the Science of Food and Agriculture* (*London*) 21(7):346-51. July. [39 ref]
Address: National Inst. for Research in Dairying, Shinfield, Reading, Berkshire, England.

2306. *Chemical and Engineering News.* 1970. Fortified foods: the next revolution. Growing number of AID-funded programs encourage development of low-cost, high-protein foods. 48(33):36-37, 39, 41, 43. Aug. 10.
• ***Summary:*** The magazine talked with three men who direct and assess many of the current projects in this new field. A photo of each man is shown: (1) Dr. Daniel Rosenfield, deputy director of the nutrition and agribusiness group at the USDA; (2) Dr. Martin J. Forman, director of the office of nutrition in the Agency for International Development (AID); and (3) Dr. Max Milner, senior food technologist in the food conservation division of the United Nations Children's Fund.

A table shows some low-cost fortified foods that have

found market acceptance (Source: League for International Food Education). Those containing soy are: Cerealina (weaning food) by CPC International (Brazil); Golden Elbow Macaroni by General Foods (Brazil); Kupagani Biscuits by Pyott Ltd. (Union of South Africa); ProNutro Cereal and ProNutro Soup by Food Corp (Pty.) Ltd, Durban, Natal, Republic of South Africa; Puma (soy beverage) by Dih, Ltd. (Guyana) and Monsanto; Vita Bean (soybean milk) by Yeoh Hiap Seng, Ltd. (Singapore); Vitalia (macaroni products) by Instituto de Investigaciones Tecnologicas (Bogota, Colombia); Yoo Hoo (milklike beverage) by Yoo Hoo Beverage Co. (Carlstadt, New Jersey; made from a "blend of animal and vegetable protein products"–soy is not specifically mentioned. Marketed in U.S. and abroad; produced in 14 countries).

Note: This is the earliest English-language document seen (Aug. 2013) that contains the term "milklike beverage" (or "milklike beverages").

The world's food supply and distribution are already failing to keep up with population increases. Each day, 10,000 people die of malnutrition according to Dr. Richard L. Hall, chairman of the executive board for SOS/70. And the situation appears to be steadily getting worse. "Malnutrition can also kill indirectly by leaving people alive but highly vulnerable to disease. The most critical type of malnutrition is caused by a lack of protein, he says."

Dr. Rosenfield believes that the "most critical type of malnutrition is caused by a lack of protein," and that fortification of traditional foods is the quickest, least expensive, and easiest way to make a real difference in combating malnutrition. The Green Revolution has brought about dramatic increases in production of some crops, but it has also brought with it "a host of problems that may put a damper on the usefulness of high-yield crops as a short-term solution to the food shortage, according to Dr. Rosenfield."

Dr. Milner sees a growing role for legumes. He feels that the outlook for protein from green plants such as alfalfa is "very sad."

A sidebar titled "Incaparina finds the going rough in Panama" begins: Incaparina, developed at INCAP, is a blend of corn and local sources of protein, soych as "cotton seed or soy bean."

2307. Briggs, George M. 1970. Memories of an "oldtimer." *Soybean Digest.* Aug. p. 50-53.

• ***Summary:*** "My personal interest in soybeans has spanned nearly 60 years–from September 1912 to the present. My introduction to the crop came when, with a fellow agricultural student at the University of Minnesota, we attempted to thresh out some soybeans with old fashioned flails in a high-sided boarded wagon box at the University Farm. In a half-hour's time we harvested about 10 pounds of little soybeans!"

"Following my graduation from the College of Agriculture of the University of Minnesota, I became the 14th county agricultural agent in Wisconsin, serving for 3½ years in Burnett County.

"This county has a large proportion of light, sandy soils. People needed a cash crop, as well as a legume hay. Soybeans seemed to offer an answer to the problem of producing cheaper feed. So, it was natural that we had considerable interest in the development of a program that would answer the needs of the farmer.

"During my Burnett County years, and later, in my years of agricultural extension work at the University of Wisconsin, it was my privilege to advise and counsel with people on farm crop culture. An attempt was made to establish a recommendation that farmers plant soybeans according to the rule of 1 acre for hay, 1 acre for seed, and 1 acre to plow under as green manure."

"The production of soybeans in Wisconsin, as well as in the whole country, was never too great until the combine was perfected." Dr. Harry Miller, an ASA member from Ohio, had been a missionary in China. "He related to me how he helped develop and distribute a soybean milk for Chinese infants who were deprived of nutritional foods.

"Soybean milk was introduced in many parts of this country. Over 50 years ago, one of my nephews in Minnesota was nurtured to health and growth by its use when regular milk could not be assimilated properly. The use of soybean milk as a regular milk substitute in special diets is now well established."

Also discusses early problems of soybean production, soybean hay which was piled in cocks then fed to dairy cows to increase their milk production, the slow acceptance of soybean meal for livestock feeding in America, how I.C. Bradley educated farmers about soybean meal, why Wisconsin didn't favor margarine, and work with the ASA.

Photos show: (1) Early shocks of soybean hay in a field. (2) Soybean pioneer V.P. Atwell (Stevens Point, Wisconsin) harvesting soys with an old-fashioned reaper. (3) Portrait: "George 'Soybean' Briggs was one of the founders of the American Soybean Association, and its fourth president. In fact, he may be the only member who was at the first meeting at Camden, Indiana" [at the Fouts Bros. farm]. Address: Univ. of Wisconsin, Agric. Exp. Station.

2308. Kon, Samuel; Wagner, J.R.; Guadagni, D.G.; Horvat, R.J. 1970. pH adjustment control of oxidative off-flavors during grinding of raw legume seeds. *J. of Food Science* 35(4):343-45. July/Aug. [19 ref]

• ***Summary:*** Many approaches have been taken to improve or reduce the undesirable flavors of soy products. Preventative measures include grinding soybeans under acidic conditions (pH 3.85 or lower). Address: USDA Western Utilization R&D Div., Albany, California.

2309. Simoons, Frederick J. 1970. Primary adult lactose

intolerance and the milking habit: A problem in biologic and cultural interrelations. II. A culture historical hypothesis. *American J. of Digestive Diseases* 15(8):695-710. Aug. Series II. [60 ref]
• ***Summary:*** Consideration of the conditions of genetic selection that may have led some groups of people to have high levels of lactase throughout life. Address: Dep. of Geography, Univ. of California, Davis, CA 95616.

2310. *Soybean Digest.* 1970. Dr. [Harry] Miller's lifelong work with soy foods. Aug. p. 37.
• ***Summary:*** Photos show: (1) Dr. Miller in Libya, 1957. (2) Dr. and Mrs. Miller with Madame and Generalissimo Chiang Kai-shek.

2311. Dinshah, Freya. 1970. The vegan kitchen. 6th ed. Malaga, New Jersey: The American Vegan Society. 44 p. Illust. Recipe index. Sept. Saddle stitched. 21 cm. The Ahimsa book series No. 2.
• ***Summary:*** With a bonus chapter: Why veganism? by Eva Batt. Page 6 notes that soya beans can be sprouted. The authors believe that the best way to eat cereal grains is to sprout them. In a section titled "About Vitamins" we read: "Some people, at least in the transition period, may wish to supplement the menus given, with a glassful of B-12 fortified soya-milk. In the USA, Loma Linda Soyagen and Worthington Soyamel are marketed in various flavors. In England there is Granogen, Velactin, and a leaf-protein milk known as Plantmilk or Plamil. (Plamil is now also being made available in North America)." Soy-related recipes include: Soya patties (with soya meal or flour, baked in an oiled dish, p. 20). How to shell green soya beans (p. 21). Soya loaf (with cooked soya beans, baked, p. 23). Soya milk (with soya powder/flour and dates, p. 24). Soya cheese Americana (tofu made with soya powder/flour and coagulated with lemon juice, p. 25). Australian soya cheese (tofu made with soya powder, coagulated with orange and lemon juice, jelled with agar-agar, p. 25). British Plantmilk cheese (tofu made with Plamil and lemon juice, p. 25). Vegan "mayonnaise" II (with soya milk and mashed potatoes, p. 26).

A lifetime vegetarian, the author has been a vegan since 1959, and the Secretary of the American Vegan Society since 1960. Married to AVS President H. Jay Dinshah, she is an accomplished author, lecturer, and teacher. Address: The American Vegan Society, 501 Old Harding Highway, Malaga, New Jersey 08328.

2312. Knapp, Ronald G. 1970. Itinerant merchants in T'ai-Wan [Taiwan]. *Journal of Geography* (*The*) 69(6):344-47. Sept. See p. 345. [5 ref]
• ***Summary:*** The itinerant merchant or peddler (*t'iao-fan*) sells his wares from place to place, moving on foot (sometimes "toting his goods in two baskets hung from a rhythmically bouncing pole"), by bicycle, etc. He sometimes sells in periodic markets, so common in developing countries.

Page 345: "These hawkers may be selling home-grown vegetables, fish, bean curd, ice cream, bamboo baskets... The hawker of prepared foods is often at once his own producer, distributor, and, of course, salesman. Bean curd milk (*tou-chiang*) [soymilk] and fried sticks of twisted dough (*yu-t'iao*) offer breakfast fare (Figure 4). Later in the day 'stinky bean curd' (*ch'ou tou-fu*) is peddled as a late afternoon snack. (Figure 5). Punctuality characterizes the daily arrival of the seller of any of these light foods..."

Figure 5, a black-and-white photo, shows a man frying *ch'ou tou-fu* at a pushcart stand.

Note: This is the earliest English-language document seen (Oct. 2011) that uses the word "stinky" or the term "stinky bean curd" to refer a special type of fermented tofu. Address: Asst. Prof. of Geography, State University College, New Paltz, New York 12561.

2313. *Soybean Digest.* 1970. China Doctor is now in paperback. Sept. p. 61.
• ***Summary:*** "*China Doctor,* the exciting story of Dr. Harry Miller who pioneered medicine and nutrition, notably with the soybean, is now available in paperback." While in the United States, Dr. Miller built a soymilk plant at Mt. Vernon, Ohio.

2314. *New York Times.* 1970. Filipino children hurt by poor diet: U.S. aiding effort to end widespread malnutrition. Oct. 4. p. 11.
• ***Summary:*** The village of San Andres Bukid, just off Manila's plush Ermita district, has a community center next to hundreds of shanties. A young nutritionist, Germelina Villarex, is helping to feed 60 village children, who have come to the center with their mothers. In each child's bowl was a mound of American wheat in a "cream soup made from corn-soybean-milk powder supplied by the United States Food for Peace Program and flavored with a local vegetable." Each group of 60 children is "graduated" every 2-3 months so that a new group can benefit.

The U.S. program is administered by the United States Agency for International Development. CARE, a voluntary agency, also helps in distributing the food.

2315. Arai, Soichi; Noguchi, M.; Yamashita, M.; Kato, H.; Fujimaki, M. 1970. Studies on flavor components in soybean. VI. Some evidence for occurrence of protein-flavor binding. *Agricultural and Biological Chemistry* 34(10):1569-73. Oct. [12 ref]
• ***Summary:*** This is the earliest publication seen suggesting that binding of off-flavors by proteins is a major cause of the persistence of these off-flavors. The hydrophobic binding of these components by soy protein has been implicated in the

occurrence of off-flavors. They also found that n-hexanal was one of the major contributors responsible for the beany odor of soybeans.

Note: This is the earliest document seen that uses the term "n-hexanal" or "hexanal" in connection with soybeans and their off-flavors. Address: Dep. of Agricultural Chemistry, Tokyo Univ.

2316. Fomon, S.J.; Ziegler, E.E.; Thomas, L.N.; Jensen, R.L.; Filer, L.J. Jr. 1970. Excretion of fat by normal full-term infants fed various milks and formulas. *American J. of Clinical Nutrition* 23(10):1299-1313. Oct. [27 ref]
Address: Dep. of Pediatrics, Univ. of Iowa, Iowa City.

2317. Sugimoto, H.; Van Buren, J.P. 1970. Removal of oligosaccharides from soy milk by an enzyme from *Aspergillus saitoi. J. of Food Science* 35(5):655-60. Sept/Oct. [32 ref]
• ***Summary:*** A partially purified preparation with alpha-galactosidase and invertase but free from protease was obtained from commercial *Aspergillus satoi* by simple molecular sieving. Address: Cornell Univ., Geneva, New York.

2318. Theuer, Richard C.; Sarett, Herbert P. 1970. Nutritional adequacy of soy isolate formulas in rats: Choline. *J. of Agricultural and Food Chemistry* 18(5):913-16. Sept/Oct. [22 ref]
Address: Mead Johnson Research Center, Evansville, Indiana 47721.

2319. Wilding, M.D. 1970. Oilseed proteins. Present utilization patterns. *J. of the American Oil Chemists' Society* 47(10):398-401. Oct. [10 ref]
• ***Summary:*** A review of the uses of soy protein. Soybean is the most economical source of protein in terms of yield/acre. Flavor problems have been solved. Textured soy protein is reported. Figure 1 shows the relative efficiencies of protein conversion from some major protein sources. "The time has now come as predicted by Harry W. Miller in 1943, that our chief interest in the soybean is in its value as a human food."

The first significant development in texturizing proteins was made by Robert Boyer in 1947; he developed an edible soy protein fiber using a process similar to that for making textile fibers. This process is described. Today such fibers are being produced commercially by General Mills, Worthington Foods, and Ralston Purina, and used in some very sophisticated "engineered meat-like items." General Mills recently announced its intention to construct a multimillion dollar plant to make these "fabricated engineered foods."

Figure 1 shows the number of days of protein requirement (by a moderately active man) produced by one acre, yielding selected food product. Legumes make very efficient use of the land, grains make fairly efficient use, and livestock make very inefficient use. Soybeans make the most efficient use of the land to produce protein; they will sustain a man for 2,224 days. Beef cattle make the least efficient use; they will sustain a man for only 77 days.

Tables show: (1) The estimated production and prices of soy proteins. Soy flour and grits (120-126 million lb, 7-8 cents/pound). Soy concentrates (19-33 million lb, 18-26 cents/pound). Soy isolates (24-38 million lb, 35-45 cents/pound). (2) Amount of soy flour (million lb) used in various applications (both extrapolated from Eley 1968). (3) Physical properties and functional advantages of textured soy protein.

Large amounts of soy protein are also now being used to make fluid beverages. In Brazil, the Coca-Cola Co. has launched Saci, a chocolate flavored soy beverage. In British Guiana, Monsanto is making Puma. In Hong Kong Vitasoy is a commercial success. Address: Research & Development Center, Swift & Co., Oak Brook, Illinois.

2320. Wokes, Frank. 1970. Plantmilk (Letter to the editor). *British Vegetarian.* Sept/Oct. p. 462.
• ***Summary:*** During his tour of research centers in India, his stock of Plamil samples was eagerly tasted by colleagues who wished such a product were available in India. Discussions with industrialists and research workers showed him that it would be easier and cheaper to prepare a plantmilk in India from soya beans grown domestically using Dr. Harry Miller's original method, which calls for wet-grinding soaked soya beans, then processing them into a vegetable milk. "The product would be cheaper than cow's milk, which in India is relatively scarce and expensive... In Hong Kong Dr. Miller's efforts have led to the production of a soya milk cheaper than the equivalent amount of cow's milk..."

Margarine would not be available today in the UK "at prices lower than that for butter if it had not been bought by vegetarians who helped Hugh Mapleton in his pioneer efforts on its production." Address: V.N.R.C. [Vegetarian Nutrition Research Centre], Watford, Herts., England.

2321. Fukushima, Danji.; van Buren, Jerome P. 1970. Effect of physical and chemical processing factors on the redispersibility of dried soy milk proteins. *Cereal Chemistry* 47(6):571-78. Nov. [8 ref]
Address: Cornell Univ., Geneva, New York.

2322. Fukushima, Danji.; van Buren, J.P. 1970. Mechanisms of protein insolubilization during the drying of soy milk. Role of disulfide and hydrophonic bonds. *Cereal Chemistry* 47(6):687-96. Nov. [9 ref]
• ***Summary:*** Insolubilization during drying was the result of polymerization, which took place through disulfide bonds, as indicated by the effects of sulfhydryl-blocking agents, and through hydrophobic bonds, as indicated by the effect of sodium dodecyl sulfate. Address: Cornell Univ., Geneva,

New York.

2323. Graham, George G.; Placko, R.P.; Morales, E.; Acevedo, G.; Cordano, A. 1970. Dietary protein quality in infants and children. VI. Isolated soy protein milk. *American J. of Diseases of Children* 120:419-23. Nov. [20 ref] Address: 1,3-5. Grace Dep. of Research, British American Hospital, Lima, Peru; 1-2&5. Dep. of Pediatrics, Baltimore City Hospital and Johns Hopkins Univ. School of Medicine, Baltimore, Maryland.

2324. Khaleque, A.; Bannatyne, W.R.; Wallace, G.M. 1970. Studies on the processing and properties of soymilk. I. Effect of preprocessing conditions on the flavour and compositions of soymilks. *J. of the Science of Food and Agriculture* (*London*) 21(11):579-83. Nov. [16 ref]
• ***Summary:*** Sodium carbonate and sodium hydroxide significantly reduced beany flavour in soymilk. Harasoy variety soyabeans, grown in New Zealand, were used throughout the experiment. Address: Dep. of Food Technology, Massey Univ., New Zealand.

2325. Mendoza, Josefina; Meyers, J.; Snyder, R. 1970. Soybean sensitivity: Case report. *Pediatrics* 46(5):774-76. Nov. [23 ref]
• ***Summary:*** "The purpose of this paper is to present a case of soybean milk sensitivity in a potentially allergic infant who was started on this product as a prophylactic measure to reduce the possibility of atopic disease." The author detected an acute anaphylactic response from infants. Address: 1. Coney Island Hospital, Ocean and Shore Parkways, Brooklyn, New York 11235.

2326. Puertollano, Carmen L.; Bourne, M.C.; Banzon, J.; Melgar, J.C. 1970. Effect of changes in the formulation of soymilk on its acceptability to Filipino children. *Philippine Agriculturist* 54(5&6):227-40. Oct/Nov. [9 ref]
• ***Summary:*** Dr. Bourne is a visiting professor from Cornell University (New York). A large-scale acceptability study using various soymilk formulations was conducted with approximately 400 Filipino school children as tasters. The soymilk was made using the boiling-water grind method, developed at Cornell, because it gives soymilk with little or no "beany" flavor. The various formulations ranged from 77.2% to 91.8% acceptability using a 7 point visual scale.

Soymilk containing 7% sugar had significantly higher acceptability than that containing 5% sugar. Soymilk containing 7% sucrose plus 20 ppm [parts per million] vanilla essence was accepted as the "standard" formula on the basis of acceptability and cost.

The addition of 2% coconut oil fat to the standard soymilk made almost no change in acceptability. The addition of chocolate resulted in a significant increase in acceptability. The use of 0.1% sodium hydroxide in the water used for soaking the soybeans increased acceptability slightly. A mixture of 25% carabao milk and 75% soymilk was not liked as well as pure soymilk. Serving the soymilk cold gave higher scores than serving it at room temperature. A comparative taste study shows that soymilk, when tasted first, has an acceptability approaching that of a popular cola beverage (89.3% vs. 89.8%). "There is a widely held opinion in the Philippines that cow's milk is indigestible because it gives stomach pains and/or flatus [gas] and diarrhea." None of these problems occurred after consuming soymilk. Address: Dep. of Agricultural Chemistry, Univ. of the Philippines' College of Agriculture.

2327. *Soybean Digest.* 1970. A Southeast Asia soy food firm. [Yeo Hiap Seng Ltd.]. Nov. p. 3.
• ***Summary:*** "A company that started as a family business making soybean products is today one of the largest food and beverage concerns in Southeast Asia. Yeo Hiap Seng Ltd. owns a number of manufacturing plants in Singapore and Malaysia and makes soybean products and also soft drinks and canned foods.

"Yeo Hiap Seng Ltd. started off using soybeans as a base for all its products. It made soy sauce, soybean paste, and other products that are basic necessities for Chinese food...

"In 1950, Yeo Hiap Seng Ltd. decided to undertake the processing of soy milk on a commercial scale. The firm successfully launched the first soy milk in bottles in 1952. This is marketed as a food beverage known as 'Beanvit' and retailed at the same price as other soft drinks...

In 1968 the company successfully introduced soymilk in a modern one-way container. "This form of packaging, which has been widely used for milk, is the tetrahedron-shape kraft paper lined with polyethylene-coated aluminum foil. The product is sterilized before filling.

"The soy milk is heated to 142ºC and held for 4 seconds, cooled instantly to the original temperature, then poured into the containers. This method of packaging under sterile conditions will enable the product to be kept for about 8 months without refrigeration. The product is much better in both appearance and taste than with the normal sterilization at 115ºC for 15 minutes. The container can be discarded after use.

"Yeo Hiap Seng Ltd. has recently introduced an improved soy milk, 'Vitabean.' Packed the same way, Vitabean is enriched with vitamins A, B1, B2, B6, C, D3 nicotinamide and pantothenic acid sufficient to provide half the normal daily vitamin requirements for adults. It has been found there are no great losses of heat-sensitive vitamins processed with this UHT [ultrahigh temperature] method.

"The company says it is looking forward to establishing Vitabean plants in other parts of the world." A photo shows a machine packaging Beanvit and Vitabean, with a woman standing nearby.

2328. *Soybean Digest.* 1970. Soy beverage fills nutrition gap. Nov. p. 25.

2329. **Product Name:** Vitabean (Soymilk Fortified with Vitamins).
Manufacturer's Name: Yeo Hiap Seng Ltd.
Manufacturer's Address: 950 Dunearn Rd., Singapore.
Date of Introduction: 1970. November.
Wt/Vol., Packaging, Price: Aseptic tetrahedron-shaped container.
New Product–Documentation: *Soybean Digest.* 1970. Nov. p. 3. "A Southeast Asia soy food firm." "Yeo Hiap Seng Ltd. has recently introduced an improved soy milk, 'Vitabean.' Packed the same way, Vitabean is enriched with vitamins A, B1, B2, B6, C, D3 nicotinamide and pantothenic acid sufficient to provide half the normal daily vitamin requirements for adults. It has been found there are no great losses of heat-sensitive vitamins processed with this UHT [ultrahigh temperature] method.

"The company says it is looking forward to establishing Vitabean plants in other parts of the world."

E. Orr. 1972. Tropical Products Inst. G73. The use of protein-rich foods for the relief of malnutrition in developing countries: an analysis of experience. p. 15. "More recently a form of Beanvit, with vitamin and mineral additives, called Vitabean has been on sale with Beanvit. The trend of sales is said to be satisfactory and the company has plans to expand production."

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 101. "It was fortified with half the adult Minimum Daily Requirement of most essential vitamins."

2330. Gorrill, A.D.L. 1970. Physical and chemical characteristics of soybean and milk proteins before and after treatment with dilute alkali. *Canadian J. of Animal Science* 50(3):745-47. Dec. [6 ref]
• ***Summary:*** Promosoy, a soybean protein concentrate (SPC) supplied by Central Soya (Decatur, Indiana) readily dispersed in dilute alkali to yield a thick syrup-like mixture, which does not settle out in a liquid diet. "It had a smooth, bland taste, compared with a chalk-like taste when mixed with water. *In vitro* protein digestion by pepsin was also increased by this mild alkali treatment." Address: Research Station, Canada Agriculture, Fredericton, New Brunswick.

2331. Shih, Vivian E. 1970. Soybean milk: A low-methionine substitute for cow's milk for children and adults. *J. of the American Dietetic Association* 57(6):520-22. Dec. [15 ref] Address: Massachusetts General Hospital and Harvard Medical School.

2332. Bourne, Malcolm C. 1970. Recent advances in soybean milk processing technology. *PAG Bulletin* (*Protein Advisory Group, WHO / FAO / UNICEF*) No. 10. p. 14-21. [8 ref]
• ***Summary:*** An excellent presentation of the "boiling water grind" technique developed by the Food Technology Group at Cornell University. Table 1 shows that, in the Philippines, the soybean provides almost twice as much protein per peso as its nearest competitor, the mungbean, and 19-times more protein per peso than pork. Address: Visiting Prof. of Food Science, Univ. of the Philippines, College of Agriculture, College (Los Baños), Laguna, Philippines. Permanent address: New York State Agric. Exp. Station, Cornell Univ., Geneva, NY 14456.

2333. **Product Name:** [Soyalac {Soymilk} (For General Use)].
Foreign Name: Soiyarakku Ippanyô.
Manufacturer's Name: College Health Foods. Later renamed San-iku Foods.
Manufacturer's Address: 1-1 Nagaurataku, Sodegaura-machi, Kimizu-gun, Chiba-ken 299-02, Japan.
Date of Introduction: 1970.
Wt/Vol., Packaging, Price: 425 gm can.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Soiyarakku Ippanyô was introduced in 1970. It is now sold by Saniku Fuuzu in a 425 gm can and distributed nationwide.

2334. Escueta, E. 1970. Effect of alkali additions on pH and flavor of aqueous soybean extracts. BSc thesis, University of the Philippines at Los Banos, Laguna, Philippines. *
• ***Summary:*** Soymilk treated with alkali sodium hydroxide of pH 7.0–7.5 is acceptable to Filipino tastes.

2335. **Product Name:** Kaset Cookies, Kaset Protein, Soya Milk, Kaset Noodles.
Manufacturer's Name: Institute of Food Research and Product Development, Kasetsart University.
Manufacturer's Address: Bangkok, Thailand.
Date of Introduction: 1970.
New Product–Documentation: E. Orr. 1972. Tropical Products Inst. G73. The use of protein-rich foods for the relief of malnutrition in developing countries: an analysis of experience. p. 28. "In Thailand, Kasetsart University, in collaboration with the Nutrition Division of the Ministry of Health, and assisted by USAID, has been experimenting with protein products for a number of years. Its particular interest is in the use of soya and the local mung bean. It manufactures four products: soya milk, cookies, noodles and 'Kaset Protein'–a combination of soya flour and mung bean with a protein content of 60 per cent–on a pilot plant scale. The products are disposed of through a school feeding programme and a few co-operative stores. Attempts to persuade local firms to take over the operation have not been successful."

A. Siegel et al. 1975. Cereal Chemistry 52(6):801-12.

Dec. "Development, acceptability, and nutritional evaluation of high-protein soy-supplemented rice noodles for Thai children."

2336. Barnard, W.G. 1970. Health via the carrot and other vegetables. St. Catharines, Ontario, Canada: The Provoker Press and Paul S. Eriksson, Inc. xiv + 144 p. No index. 19 cm.

• ***Summary:*** This is apparently a reprint (with several words missing from the title) of the original edition (which Soyfoods Center has never seen), published in about 1939 by the Natural Foods Institute of Cleveland, Ohio. This edition contains 37 short chapters on a variety of subjects such as: What causes good health and poor health? Personal experiences of the author. The natural laws that govern health–God's simple rules of natural living. About vitamins and minerals. Various health problems or diseases and testimonials of cures and prevention. Good and bad foods, etc. Enemies of health: Coffee, alcoholic liquors, tobacco, denatured foods, tea, cocoa, cola drinks.

The introduction begins: "One of the most wonderful gifts God gave to man is a healthy body. It costs not one penny to preserve your health, but it may cost you a fortune, untold suffering, yes, even life itself, once health is lost... Primitive man sustained himself on natural foods..." (p. ix). "In our opinion some of the worst enemies man has today are High Pressure Advertising of Denatured foods, drugs, etc... Through the powerful medium of radio, billboard, magazine, and newspaper advertising, the public has fastened themselves upon the use of aspirins, alkalizers, narcotics, pills, laxatives, seltzers, cold cures,... Some of the largest buildings in our cities are the hospitals... Oh, what tragedy!" Sadly man fails to recognize that he has brought all these diseases upon himself (p. xiii).

Chapter 3, titled "My personal experiences with carrots and other fruits and vegetables" (p. 11) begins: "For the past 14 years the writer has been lecturing in food shows, trade shows, and expositions on the proper preparation of foods. I lectured at the Century of Progress in Chicago [Illinois] in 1933 and again in 1934, and at the Great Lakes Exposition in Cleveland in 1936 and again in 1937. I am the founder of the Natural Foods Institute in Cleveland, Ohio. He has proclaimed the health-giving carrot to thousands.

"Up to ten years ago, I had been living the average life, eating anything and everything, drinking coffee, tea, cocoa, and colas. The base of my meal was potatoes and white bread. I acquired an excessive weight of 212 pounds. Heartburn followed every meal." He then describes a typical day's diet, loaded with meats, sugar, fat and refined foods–and the agony that followed. He lost his pep and ambition, and was refused life insurance because of sugar in his urine. His family became very concerned. A doctor warned him of the possibility of immanent death, and "prescribed a diet of milk, bananas, lots of raw vegetables and vegetable and fruit juices, which I heeded" (p. 14). He began to feel better from the first day. "Today I feel like a new man... at the age of sixty-six my recovery is so complete that I am now enjoying exceptionally good health" (p. 15).

"With the return of spirituous liquors [in Jan. 1934], cocktail recipes and cocktail bars are prevalent all over the land. We all know that alcoholic cocktails are injurious regardless of the content as long as alcohol prevails... There are cocktails however, that can be made from Nature's vegetables and fruits that are healthful, exhilarating and bracing." "A new machine called a liquefier propelled by electricity liquefies vegetables in from one to three minutes and marvelous Health-Cocktails can thus be prepared at least once each day for the entire family" (p. 16-17). He also mentions the "liquefier" on p. 34, and p. 53 ("liquefying machine"). So this book was apparently not written mainly to promote the liquefier. Note: This liquefier would later become known as a "blender" and Barnard's company would later make and market the Vita-Mix or Vitamix, a powerful type of blender.

"Constipation is a disease known mainly to the civilized races" (p. 29). Barnard regularly cites and summarizes the writings or Dr. John Harvey Kellogg.

Essential for good health is a "pure, red blood stream created by natural foods, fresh air, sunshine, and exercise. Soy bean products, spinach, parsley, celery, cabbage and beets, as well as carrots help make good red blood. Eat a plate of salad made of three grated carrots together with orange juice dressing. Drink freely of carrot juice daily" (p. 49). "Carrot juice and other vegetable and fruit juices can be included in the diet of every child every day." In growing boys or girls, beware of "False Sugar Appetites."

"A strict vegetarian diet is used in the treatment of cancer with notable success..." (p. 88).

Like many in the 1930s, the author believes that an alkaline diet fights acidosis and promotes good health (p. 91). "Salt is a very harmful substance if not used in moderation" (p. 119).

Chapter 35, titled "Soy bean (the perfect protein food)" (p. 127-28) begins: "For centuries the Chinese have used the Soy Bean as a source of protein and fat and the necessary Amino acids that are found in flesh foods. In America the production of the soy bean is now running into millions of bushels and vegetable meat factories and milk factories are springing up all over the country.

"Henry Ford, who has done so much to educate the American people to the value of the Soy Bean, recently made the prophecy that the cow and hog were destined to oblivion and we will soon be eating our meat from the Soy Bean and drinking our milk from the Soy Bean. In other words obtaining our food direct from the soil first hand instead of second hand..." "It is the experience of the Natural Foods Institute that babies taken from the natural mothers milk thrive on soy bean milk and we have found no one allergic to

it.

"Soy Meat substitutes, Soy Milk, Soy Flour, Soy Cheese [tofu], Soy Coffee substitutes, canned green soy beans, canned soy beans in tomato sauce, soya macaroni are fast becoming popular among health minded people."

In conclusion (p. 133-34): "In writing this book I have consistently followed one line of reasoning. It is agreed to by many physicians, dieticians [sic, dietitians], and food scientists, that vegetables and fruits are absolutely essential for maintaining good health, natural balance, and physical well being. I have tried to help those who are afflicted by giving this information." I also want to help those who are healthy to stay healthy. At the end of the book is a food dictionary and lists of acid-forming foods (bad) and foods with an alkaline reaction (good). Address: Cleveland, Ohio.

2337. Binding, George Joseph. 1970. About soya beans: Wonder source of protein and energy. London: Thorsons Publishers Ltd. 64 p. No index. 18 cm. About series, no. 35.
• ***Summary:*** A superficial introduction containing many errors. Contents: 1. Beans in general. 2. History of the soya bean. 3. Content of soya beans. 4. About lecithin–vital for retaining youth. 5. The soya bean in the Far East: Cooking in China, soya sauce, bean curd or tufu [sic, tofu], bean sprouts, soya bean milk, candied beans, Japan, natto, miso, Japanese soya sauce. 6. American influence on the soya bean. 7. Industrial uses in America. 8. The soya bean and world food shortage. 9. Soya bean recipes.

On page 10 we read: "For over 5,000 years this tiny seed has been the staple food of certain parts of the East, including North China, Japan, Korea, and some areas of India. The ancient Yogis, who were among the world's first vegetarians, placed great faith in the soya bean as a supplement to their meatless diet."

Note: Soyfoods Center has been unable (Aug. 2004) to find any documentation for the statement that the ancient yogis consumed soya beans. The earliest date we have seen (Aug. 2004) for the soybean growing in India is 1798 (Roxburgh 1832). The earliest document we have seen concerning the soybean in India is by Beckmann (1798). The earliest document seen (Aug. 2004) for soy products in India (soy sauce) is by Locke (1679). Address: England.

2338. Candeias, Olegário Ribeiro. 1970. Soja, vegetarianismo e saude (dialogo com o povo) [Soya, vegetarianism, and health (dialog with the people)]. Sao Paulo, Brazil: Composto e impresso pela Duplicadora Gráfica Batico. 355 p. Illust. 21 cm. [Por]
• ***Summary:*** The 62-year old author is a well-known and skilled vegetarian runner. A popular book emphasizing a unique health regimen and yoga. Address: Brazil.

2339. FAO/WHO/UNICEF Protein Advisory Group. 1970. Lives in peril: Protein and the child. *FAO/WHO/UNICEF Protein Advisory Group, World Food Problems* No. 12. 52 p.
• ***Summary:*** Contents: The vulnerable group. Questions of quality and quantity. Safe in the womb. Born to hunger. A chance for life. The protein gap. World Council on Protein (incl. Saridele and PAG).

This book is about the effects of hunger and population growth on children. It advocates increased use of plant proteins. Examples of protein food mixtures that contain soya are (p. 35): Incaparina (Colombia, Mexico), Fortifix (Brazil). Pronutro (South Africa). CSM (United States). Page 36 states that soy flour is the least expensive food protein source ($0.11/lb) and beef is the most expensive ($4.44/lb). Cereals provide almost half of the world's supply of proteins.

2340. Gassmann, B.; Heine, W.; Kietzmann, A. 1970. Ueber eine neue milchfrei Saeuglingsfertignahrung. Zusammensetzung und Vergleich mit Nahrungen auf Milchbasis [On a new nonmilk infant food. Composition and nutritional comparison with milk-based foods]. *Ernaehrungsforschung* 15(2):81-91. [23 ref. Ger] Address: 1-2. Universitaetskinderklinik, Rostok.

2341. Hong Kong Soya Bean Products Co. Ltd. 1970. The Hong Kong Soya Bean Products Co. Ltd. 1940-1970. Kowloon, Hong Kong. Annual Report. 17 p. Summarized in Soybean Digest, July 1971, p. 30. [Eng; chi]
• ***Summary:*** Written in both English and Chinese, this important document contains an detailed history of the company, which celebrates its year of founding as 1940.

Photos show: (1) K.S. Lo, Chairman. (2) Directors and employees in 1940 outside original Causeway Bay factory. (3) Aberdeen factory, an early photo. (4) Employees in 1950. (5) Employees in 1960. (6) Illustration of Kwun Tong factory opened in 1962. (7) Pepsi Cola bottling line. (8) Vitasoy bottles being capped. (9) Quality control. (10) Loading of trucks by more than 20 fork lift vehicles. (11) A retail outlet and cooler; About 15,000 stores sell Vitasoy in the Colony. (12) More than 100 trucks distribute Vitasoy and Pepsi Cola in Hongkong. (13-14) Vitasoy and Pepsi signs are seen everywhere in Hongkong. (15) The board of directors in 1970. (16) The five "Lo's" instant rice dishes soon to be marketed. (17) Meat dicing machine. Packaged Foods Division capable of processing 8,000 lb of meat/hour. (18) Three "Lo's" cheese spreads soon to be marketed. (19) Part of production plant–Cheese division. (20) "Lo's" weaning food–first product developed by the Extrusion Foods Div. (21) Packaging machine–Extrusion Foods Div.

A bar chart shows that annual sales grew from $5.1 million in 1960 to $17.0 million in 1965, to $30.0 million in 1969. The number of employees grew from 352 in 1960 to about 630 in 1970.

In 1937 K.S. Lo, the founder, who happened to be on a business visit to Shanghai, attended a lecture by Julian Arnold, then Trade Attache to the United States Embassy in

Nanking. The subject was "Soybean–The Cow of China." Lo left inspired to do something about the widespread nutritional diseases then found in Hongkong. "He applied to the government for a license to manufacture soymilk in 1938. He received such a discouraging and unfavorable reply from the Sanitary Board that he was forced to give up his plan. However, a year later, Dr. P.S. Selwyn Clarke took over the chair of the Sanitary Board, and day by chance he came across Lo's application. He telephoned Lo and assured him that he would issue him the necessary license.

"Lo was overjoyed and immediately went to raise a modest capital of $18,000. He put up a small factory at Causeway Bay and the plant was opened in March 1940 by Sir Man-Kam Lo... Sales remained poor for the first two years. By the end of 1941, when the Pacific War broke out, the Company was almost on the verge of bankruptcy. The factory was occupied by the Japanese soon after Hongkong fell and Lo left for Free China [Taiwan]. In Sept. 1945 he returned to Hongkong and production was restarted in Nov. of that year." Lo started to market his product as a soft drink through soft drink outlets, instead of like milk. Sales grew rapidly. By 1949 the company had accumulated enough capital to buy a piece of land and build a new factory in Aberdeen. In the meantime the company had also acquired the Greenspot franchise. So in 1950, the Aberdeen factory was opened and used for the bottling of Greenspot while Vitasoy remained at the Causeway Bay factory. In 1952 the bottle was changed to a soft drink bottle that was sterilized. Sales skyrocketed. In 1957 the company gave up the Greenspot franchise and acquired the Pepsi Cola bottling franchise. In 1962 a new 6-story, 300,000 square foot factory was opened in Kowloon. In 1964 the company invented a powdered soymilk. That year Lo was invited to present a paper at the "International Symposium on Oilseed Protein Foods" in Japan. His concepts caught the attention of UNICEF and FAO, which had been trying to find ways of increasing protein consumption in developing countries. A joint venture with Monsanto proved unsuccessful and was terminated last year. Monsanto was given a license to manufacture a powdered soymilk concentrate.

The company has created three new divisions. The Packaged Foods Division will be introducing in the spring a line of precooked foods which are ready for the table after simply heating. They include Chow Fan, Bar-B-Q Spare Rib, Dim Sum, etc. The Cheese Division will be launching this year 3 types of soymilk-based cheese spreads: Chinese Fu-Yu, European Blue Cheese, and English Cheddar. The Extrusion Foods Division is developing a high-protein weaning food, and hopes eventually to branch out into snack foods and meat substitutes.

2342. Hunter, R. 1970. Iron nutrition in infancy. In: Report of the 62nd Ross Conference on Pediatric Research. Columbus, Ohio. See p. 22. *

2343. Kanthamani, S. 1970. Tasty recipes from soybean. Jabalpur, India: Directorate of Extension and USAID, Jawaharlal Nehru Krishi Vishwa Vidyalaya. 100 p. Illust. 28 cm.

• ***Summary:*** The majority of the recipes use "full-fat soy flour." Lime juice is the coagulant used for making tofu. Textured soy flour is not mentioned.

Contents: Definition of terms. Substitutions. Glossary. Introduction. 1. Soybeans are rich food: Findings of nutrition research, soybeans are good for certain patients (diabetics, those with nervous disorders, those with acidity in blood tissues needing to be alkalinised), soybeans must be properly processed, how to make full-fat soy flour [at home]. 2. Fried soy products. 3. Soy sweets. 4. Roasted soy flour. 5. Baking. 6. Dals and vegetables. 7. Soy milk and milk products (including homemade soy milk and homemade soy paneer {tofu, p. 88-89}). 8. Miscellaneous. Appendix.

Note: This is the earliest document seen (April 2013) that contains the word "paneer" (spelled that way) used in connection with tofu or soy, or that contains the term "soy paneer." Paneer is a soft, fresh dairy cheese, widely consumed in India. It is more expensive than tofu.

Chapter 1 begins (p. 11): "A large proportion of the people of India are vegetarians who obtain only a small part of their protein from animal products, principally milk and milk products. Oilseeds are an important source of protein

to such persons. Both groundnuts and soybeans are rich in protein. However the protein content of soybeans is higher than that of groundnuts and the protein of soybeans is nutritionally superior to the protein of groundnuts."

Note 1. This is the earliest English-language document seen (Dec. 2005) that contains the term "roasted soy flour."

Note 2. The page facing the title page announces a Hindi version of this book, by the same author, which will be published soon. Address: Extension Specialist, Home Science, Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, India.

2344. Kawaguchi, Y.; Tsugo, T. 1970. Daizu nyû tanpakushitsu no rikagaku-teki seishitsu ni oyobosu kanetsu no eikyô [Effect of heating on the physicochemical properties of protein in soybean milk]. *Eiyo to Shokuryo* (*J. of Japanese Society of Food and Nutrition*) 23:98-107. [6 ref. Jap; eng]
Address: Tokyo Univ., Nôgaku-bu, Nogeikagaku-ka.

2345. Lopez Hernandez, Jose. 1970. Posibilidades industriales del poroto soja [Possible industrial uses of the soy bean]. *Revista Agronomica del Noroeste Argentino* 8(1/2):95-100. Presented at First Reunion Tecnica Nacional de Soja. [Spa]
• ***Summary:*** Contents: Derivatives for direct use in human nutrition: Soy oil, shortenings, margarines, lecithins, soy flours, soy flakes, soymilk, tofu. Derivatives for industrial utilization: Industrial protein. Address: Ing. Químico. Jefe Sec. Química E.E.A.T.

2346. Miller, Harry W. 1970. Nutritional value of soymilk. Riverside, California: International Nutrition Foundation. *
• ***Summary:*** Basic factual and nutritional information on soymilk. Address: Riverside, California.

2347. Piquin, Alberto. 1970. Soja: Pruebas de alimentacion [The soybean: Food trials]. *Revista Agronomica del Noroeste Argentino* 8(1/2):85-94. Presented at First Reunion Tecnica Nacional de Soja. [Spa]
Address: Estacion Experiment Nacional Agrop. de Salta (INTA).

2348. Schwarz, Richard W. 1970. John Harvey Kellogg, M.D. Nashville, Tennessee: Southern Publishing Assoc. 256 p. Illust. Index. 22 cm. See p. 44, 120-23, 243. Also published in 1970 by Andrews Univ. Press (Berrien Springs, Michigan).
• ***Summary:*** This excellent biography of Dr. J.H. Kellogg was originally written as a 1964 PhD thesis at the University of Michigan. Although it contains no references or footnotes, and thus lacks the documentation and completeness of the dissertation, it is still (March 2009) the best biography of Dr. Kellogg. The author is a Seventh-day Adventist.

Contents: Preface. 1. The boy foreshadows the man. 2. A convert (the early health reform and vegetarian movements in America). 3. From teacher to doctor. 4. A man is what he eats. 5. Changing American habits. 6. Developing the Battle Creek Sanitarium. 7. Sanitarium ups and downs. 8. A torrent of words. 9. Variations on a boyhood dream. 10. The unwilling surgeon. 11. Products of an active mind. 12. All work, but little play. 13. What manner of man. 14. Father of forty-two children. 15. His brother's keeper. 16. The ties of fifty years are broken. 17. Food manufacturing and family quarrels. 18. New outlets for promoting an old program. 19. The last battles. 20. An epilogue.

Concerning meat substitutes (p. 121-23): "During the years in which he directed the experiments which led to the production of flaked cereals, Bromose, and Malted Nuts, Dr. Kellogg also attempted to develop a substitute for meat from plant sources. He traced his interest in such a product to conversations with Dr. Charles W. Dabney, noted agricultural chemist and former president of the University of Tennessee. When Dabney was serving as President Cleveland's Assistant Secretary of Agriculture [probably about 1893-1897], he had discussed with Kellogg the problem of supplying adequate protein for the world's rapidly expanding population. The men agreed that it was better economics to use grain for human food than to feed it to animals and then use them for food. The problem, as Dabney saw it, was to produce a grain product which would have all the nutritional value and taste appeal of meat.

"In 1896 Kellogg announced that he had perfected the ideal substitute for meat in Nuttose, a nut product which he could prepare to taste much like beef or chicken... The doctor's interest in new vegetarian meatlike protein foods continued active until shortly before his death. Among some of the more popular creations later developed in his laboratories were Protose, Battle Creek Steaks, and Battle Creek Skallops. Various combinations of nuts and wheat gluten composed the principal ingredients in the imitation meats...

"Kellogg's last major food discovery was an artificial milk made principally from soybeans. He was particularly enthusiastic over soy milk because it proved an excellent host for the *acidophilus* bacteria which the doctor believed needed to be implanted in the intestinal tract in order for it to function perfectly. Shortly after Kellogg had developed soy acidophilus milk, he chanced to read that Marie, smallest of the Dionne quintuplets, was suffering from bowel trouble. Immediately wiring the quints' physician, Dr. A. R. Dafoe, he announced he was sending him a supply of soy acidophilus milk, which he was certain would cure Marie's problem. About ten days later he received a letter from Dafoe which indicated that the soy acidophilus milk had indeed corrected the situation and asked that a continuous supply be sent to Callander, Ontario [Canada], for the five little girls."

In summarizing Dr. Kellogg's major accomplishments,

the author notes (p. 243): "His introduction of peanut butter added another widely accepted item to the American diet, and it probably did more to provide a market for peanuts than did the efforts of any other person, with the possible exception of George Washington Carver. John Harvey's development of meatlike products from nuts and legumes combined with wheat gluten has not only helped to enrich the dietary of thousands of persons who for ethical, health, or religious reasons choose to be vegetarians, but such high-protein foods also hold possibilities for supplementing the diet in countries where the supply of meat is insufficient to provide enough protein for a rapidly expanding population."

Concerning Granola: In the early 1860s, Dr. James Caleb Jackson of Dansville, New York, developed Granula, America's first successful cold breakfast cereal, made solely from wheat. For 40 years, Dr. Jackson operated "Our Home on the Hillside," probably the most successful of the "water-cure" institutions that blossomed in the 1850s. "In an atmosphere approaching that of a European spa, Jackson provided hydropathic treatments and a special diet for as many as a thousand patients a year." In about the 1870s, at the Battle Creek Sanitarium, John Harvey Kellogg developed a similar product, which he named Granola. It differed from Jackson's Granula in that it consisted of several grains, and longer baking dextrinized the starch more thoroughly. "At first he apparently had no thought of selling it. He intended it solely for sanitarium patients. Gradually, however, as former patients and others interested in dietetic improvement sent to the sanitarium for Granola, a small commercial business developed, and Battle Creek thus took its first step toward becoming the 'Breakfast Food Capital of the World.'... Shortly after the production of Granola for patients at the sanitarium began in 1877, Dr. Kellogg organized the Sanitarium Food Company as a subsidiary of the Battle Creek Sanitarium. Operated as an adjunct to the sanitarium bakery, for more than a decade it marketed a variety of oatmeal, graham, and fruit crackers and whole-grain cooked cereals–all originally devised to provide variety in the menu of sanitarium patients." All products were made from whole grains without artificial additives, and all underwent prolonged high-temperature baking designed to dextrinize their starch. "By 1889 the Sanitarium Foods had become popular enough to warrant the establishment of a separate factory; Granola alone sold at the rate of two tons a week." But when Dr. Kellogg wanted to expand the business, other sanitarium doctors refused to vote the funds. So Dr. Kellogg launched the private Sanitas Food Company, relying heavily on his younger brother, Will Keith, who had served as his personal accountant and business manager since 1880. John Harvey's new flaked cereals and vegetable meats became the property of the Sanitas Company. In mid-1906 Dr. Kellogg decided to change Sanitas' corporate name to the Kellogg Food Company. Then: "In the spring of 1921, to avoid further difficulties with Will Kellogg's manufacturing business [Battle Creek Toasted Corn Flake Company], Dr. Kellogg changed his concern's name to the Battle Creek Food Company."

Concerning flaked breakfast cereals: The first ones were developed from wheat jointly by Dr. J.H. Kellogg and his brother Will, in about 1894. Dr. Kellogg named their first successful wheat flakes product Granose Flakes, and on 31 May 1894 he applied for a U.S. patent on "Flaked cereal and process for preparing same." But in 1903 courts declared the doctor's patent invalid. Will Kellogg developed the product into a great commercial success, in part by adding sugar to the malt and corn combination from which he made the flakes. "The sugar greatly enhanced the cereal's taste appeal, and, as a result, the Corn Flakes business was booming by late 1905." Will convinced his brother, John Harvey, to relinquish Sanitas' rights to Corn Flakes, and in early 1906 Will established a separate Battle Creek Toasted Corn Flake Company with outside financing. John Harvey agreed not to take an active part in the new company's management. Six months later John Harvey decided to change Sanitas' corporate name to the Kellogg Food Company. The new company "began operating in July 1908, with Dr. Kellogg owning all but two of its fifteen thousand shares of stock. Not only did the new company absorb the old Sanitas Company, but it also leased the entire plant, machinery, goodwill, and business of the Battle Creek Sanitarium Food Company, thus bringing the manufacture and distribution of all the food products with which Dr. Kellogg was associated into one organization. By then John Harvey had decided that it would be a good thing to put out all company products under the trade name 'Kellogg's.'"

Will became very upset when Dr. Kellogg attached the family name to his new food company and products. Eventually a series of legal battles developed between the two brothers over this and other products. Will Keith Kellogg is discussed on pages 64, 118-20, 122, 144, 148, 192, 210-18, 224, 237-38.

On pages 193-208 are 16 pages of excellent black-and-white photos from the life of Dr. Kellogg, starting with a portrait of him and his wife in 1884.

Reprinted in 2006 by Review and Herald Publishing Association (Hagerstown, Maryland)–but with the new subtitle: "Pioneering health reformer." Adventist pioneer series. On the new cover, on a snipe in the upper right corner: "Father of the health food industry." Address: Andrews Univ., Berrien Springs, Michigan.

2349. Schwarz, Richard W. 1970. Products of an active mind: Peanut butter (Document part). In: Richard W. Schwarz. 1970. John Harvey Kellogg, M.D. Nashville, Tennessee: Southern Publishing Assoc. 256 p. See p. 120-21.
• ***Summary:*** "Another important item in the American diet which Kellogg first introduced was peanut butter. Shortly after 1890, he had a quantity of roasted peanuts ground

up into a paste for use by patients who had difficulty in masticating nuts or peanuts (which are a legume) well enough to digest them properly. Later he decided that roasting caused the fat content to begin to decompose, irritating the digestive organs. From that time forward the sanitarium made its peanut butter from steam-cooked rather than roasted peanuts. Kellogg also devised a variety of nut butters, which he claimed were 'sweeter, more palatable, and more digestible' than regular butter. Making no attempt to secure patents which would let him control the production of either peanut butter or any of his nut butters, he announced that he believed that they were products that 'the world ought to have; let everybody that wants it have it, and make the best use of it.'

"During the decade following the appearance of peanut butter, Dr. Kellogg developed several other food products with a nut base. In 1896 he patented a product labeled 'Bromose,' which he claimed to be a vegetable equivalent of malted milk...

"At about the same time, John Harvey originated a similar product which he named Malted Nuts. Derived principally from peanuts and almonds, one could mix Malted Nuts with water to form a vegetable milk which Kellogg maintained looked 'exactly like milk, and tastes so nearly like it that it is a very satisfactory substitute.' He designed the latter product primarily for infants who could not tolerate cow's milk..." Address: Andrews Univ., Berrien Springs, Michigan.

2350. Singh, Rajeshwari (Mrs). comp. and ed. 1970. Soyahar: Indian recipes of soybean. Pantnagar, Nainital, India: U.P. Agricultural University. xxviii + 216 p. Illust. 25 cm.

• ***Summary:*** Contents: 1. Acknowledgment. 2. List of contributors. 3. Preface (by Singh). 4. General information: Introduction, how to soak soybeans, how to make soybean milk (at home or commercially), how to make soybean curd [tofu] (at home or commercially), how to make soybean flour (at home or commercially), cultivation of soybeans in India. Tables show: (1) The amino acid content of various vegetable and meat products. (2) Nutritive value of important legumes–groundnut, pigeon pea (arhar), chick pea (Bengal gram), soybean. (3) Chemical composition of some soybean products (seed, meal, flour, full fat flour, protein concentrate, isolate, textured food, beef analogue). (4) Nutritional value of the soybean compares with selected other foods. (5) Composition of mature green soybean [green vegetable soybeans, 70% water]. (6) Composition of dry soybeans. (6) Uses of vegetable protein products (soybean flours, soybean concentrates, isolated soy proteins, textured foods–incl. simulated meats). 5. Milk products (including homemade soy milk, homemade soy curd {dahi}, homemade soy cheese {paneer}). 6. Cereals and lentils. 7. Soups, curries, vegetables, chutney & raita. 8. Snack foods. 9. Indian sweets. 10. Cookies and confections. 11. Meat products (mostly meatless / vegetarian). 12. Useful cooking information. 13. Glossary: Hindi-English and English-Hindi. Contains 221 recipes. 4 p. of errata.

Photos show: On the cover, a young Indian girl drinking soymilk from a large glass (color). (1) The seven women who comprise Pantnagar's Soybean Utilization Team. (2) Mrs. D.P. Singh, honorary leader of the Team explain a fine point to Prof. Alvin Nelson. (3) Many Indian ladies in traditional Indian clothing standing behind a long table on which are soybean delicacies prepared in a conventional Indian kitchen. There are many color photos of prepared dishes. (4) A soybean plant with pods and leaves. Address: Pantnagar, India.

2351. Soybean Utilization Project. 1970. Soybean in your kitchen. Pantnagar (Nainital), U.P. India: G.B. Pant University of Agric. and Technology. ii + 35 p. 24 cm. [1 ref. Eng]

• ***Summary:*** Contents: Table of equivalent weights and measures. Cultural hints (for cultivating soybeans in India. Best varieties: Bragg, Hardee, Semmes). Soybean to fight protein hunger. Soy milk (how to make it at home), soy curd (dahi; how to make it at home, with cardamom), soy cheese (paneer; how to make it at home, curded with lemon juice), soy flour (whole, dehulled, ground in a flour mill), soy dal. Sweets. Salty snacks. Cookies and cakes. Soups-dals-curries. Glossary.

2352. Stobart, Tom. 1970. The International Wine and Food Society's guide to herbs, spices and flavourings. New York, NY: McGraw-Hill. 261 p. Illust. (part color). Index. 26 cm.

• ***Summary:*** For a book published in 1970, this book contains a great deal of original and useful information. Note that the word "seasoning(s)" does not appear in the title or the index. For many entries, the equivalent word in various European languages is given. In addition, for plants, the botanical name and family are usually given. Contents: Black and white illustrations. Colour plates. Introduction: The history of flavourings, the importance of flavourings, the origin of this book ("I come to this subject as a traveller who has lived in a number of different countries"), the scientific basis of flavouring, scientific, popular and foreign names, synthetic and harmful flavourings, flavouring in practice, growing herbs. An alphabet of herbs, spices and flavourings (The entries are in alphabetic order). Appendix.

Soy related entries: Harvey's sauce: "One of the old English sauces... In 1870, the courts decided there was no exclusive commercial right to the name 'Harvey's Sauce', as there are recipes for it dating back to at least the 17th century.

"Though there are many formulae, it is, in general, based on walnut and mushroom ketchup–flavoured with anchovy, garlic, and often soy sauce and vinegar. It has the

appearance of Worcestershire sauce, but is not hot although it does contain some chilli."

Soy [sauce]–Soya bean: "The soy bean is undoubtedly the world's most important legume." It can be eaten as a fresh bean [green vegetable soybeans], as a dried bean and as soybean flour. It is a leading source of cooking oil "much used as a substitute for olive oil in Spain." From it one can make a kind of milk [soymilk]. "In the East [East Asia], it is also fermented to make various kinds of curd and bean cheese. The soy product which concerns us is soy sauce."

It originated in China and "is thought to have been brought from China to Japan by a Buddhist priest about A.D. 500. In the West it became well known during the nineteenth century. It is one of the ingredients of Worcestershire sauce and Harvey's sauce."

Worcestershire sauce (p. 236-37): See also the original 1970 ed. published in England.

Also discusses: Ketchup, M.S.G., oil ("The word 'oil' is derived from 'olive'"), sesame (incl. tahina. "The pure oil is almost without taste or smell and does not easily go rancid in hot countries, which is one reason for its popularity"). Address: England.

2353. Varangoon, Pivan. 1970. Development of village scale beverage, coco-soya milk. Bangkok, Thailand: ASRCT Research Project No. 38/9, Report No. 7. 15 p. [3 ref]

• ***Summary:*** Contents: Foreword. Summary. Introduction. Materials and methods. Results and discussion. Ingredients cost. Conclusions. Acknowledgements. References. Appendixes I and II.

"Surveys in Thailand have shown that there is protein malnutrition in many places. Soybean is an important crop available in this country and a good source of protein." Coconut is very popular in Thai cookery for its good flavor.

Mr. Cyril Hunnikin of UNICEF suggested the ideas of combining soymilk and coconut and envisioned the possibility of making it on a village or home scale.

Two formulas for the soymilk are given: (1) Whole dehulled boiled soybeans are used. (2) The milk is extracted from whole soybeans using the "boiling water grind technique," developed by the Food Technology Group at Cornell Univ. (Geneva, New York) (Bourne 1970). Address: Tech. Research Inst., ASRCT, Bangkok.

2354. Weiss, Theodore J. 1970. Food oils and their uses. Westport, Connecticut: AVI Publishing Co., Inc. vii + 224 p. 2nd ed. 1983. [291* ref]

• ***Summary:*** Contents: Preface. 1. Chemical and physical properties of fats and oils (p. 1). 2. Commercial oil sources (p. 26). 3. Basic processing of fats and oils (p. 47). 4. Chemical adjuncts (p. 68). 5. Shortening–Introduction (p. 81). 6. Bakery shortenings (p. 97). 7. Frying shortenings and their utilization (p. 108). 8. Household shortenings (p. 126). 9. Margarine (p. 130). 10. Mayonnaise and salad dressings (p. 145). 11. Peanut butter (p. 177). 12. Confectionery coatings (p. 194). 13. Imitation dairy products (p. 214).

Discusses: Soybean oil and its fatty acid composition. "It is difficult to realize that soybean oil was hardly known in the United States prior to World War II. Since that time, the use of soybean oil has expanded in this country until its consumption for edible purposes amounts to 73% of all vegetable oils consumed." "Partially hydrogenated soybean oil is the major component of vegetable shortenings and ordinary margarines as currently formulated. Fully hydrogenated soybean oil crystallizes at the beta phase which limits its usage in this form (p. 27-28).

Hydrogenation, selectivity, and trans-isomers. Table 12 shows the composition of selectively and nonselectively hydrogenated soybean oil. Table 13 shows the fatty acid composition of hydrogenated soybean oil. Table 14 shows SFI [Solid Fat Index] values for soybean oil hydrogenated to various hardness levels and with a decrease in iodine value. "Contrary to popular opinion, ordinary margarines contain only a trace more of saturated fats than the oils from which they were prepared. They are harder because they contain higher levels of *trans*-acids which are, in fat, unsaturated." "Refractive index correlates very well with iodine value which is a good general method for expressing hardness of an oil. The relationship of iodine value to hardness depends on the type of oil in question. For example, hydrogenated cottonseed oil has a lower iodine value, perhaps by four units, than hydrogenated soybean oil of an equivalent degree of hardness" (p. 53-55).

Table 18 (p. 83) shows the "Hydrogenated soybean oil blend for margarine" with various iodine values, melting points, and SFI values.

"Liquid soybean oil develops a fishy odor on frying which is highly objectionable Soybean oil has been used in kitchens with exceptional ventilation to remove frying odors... Lightly hydrogenated and winterized soybean oils are available for frying purposes" (p. 114). Certain types of soybean oils can be used in frying potato chips (p. 120), or making oil-blanched French-fried potatoes (p. 123) or pressure-fried chicken (p. 123-24).

Solid shortenings: Most lard was used for making pie crusts and for frying. Some all-vegetable brands of shortening use as the base oil hydrogenated soybeans oil with an iodine value of 80-85. Some meat fat shortenings may contain tallow and hydrogenated soybean oil as well (p. 126-27).

Hydrogenated soybean oil with an iodine value of about 60 is widely used in margarine. Some brands of regular margarine contain 5-10% unhydrogenated liquid soybean oil "without apparent flavor problems." But it is normally too unstable to be used at high levels (p. 136). Bakery margarines are different from and more dense than bakery shortenings. They are used in baking cookies, pound cakes, and pastries. Lecithin is often omitted as bakery margarines

are not used for frying (p. 140).

Chapter 11 (p. 177-93) discusses peanut butter and includes a section titled "Soybean butter" (p. 182-83, soynut butter). Special attention is given to the method used by Pichel and Weiss to make "soybean butter."

The chapter titled "Imitation dairy products" (p. 214-18) notes: "There are two types of dairy-like products containing fats other than butterfat. 'Filled' products are made essentially from defatted milk, usually milk solids nonfat (msnf) or fluid skim milk, and a vegetable oil or fat. 'Imitation' dairy products contain no milk as such. In most cases, imitation dairy products are made from sodium caseinate, the major protein derived from milk sources." The sodium salt of soy protein (sodium soy proteinate) is also used in place of isolated milk protein.

Note 1: This is the earliest English-language document seen (Dec. 2012) that uses the term "soybean butter" to refer to soynut butter.

Note 2. This is the earliest English-language document seen (Aug. 2013) that uses the term "dairy-like" (or "dairy like") to refer to products resembling dairy products. Address: Research Chemist, USDA, Agriculture Research Service, Eastern Utilization Research and Development Div., Dairy Products Lab., Washington DC.

2355. Wiener, Joan. 1970. Victory through vegetables: With a section of recipes from the macrobiotic diet by Barbara Thralls. New York, NY, Chicago, Illinois, and San Francisco, California: Holt, Rinehart and Winston. ix + 163 p. Index. 22 cm.

• ***Summary:*** A vegetarian cookbook. The author, whose name on the title page is handwritten as Bordow, Joan Wiener, was born in 1944. Soy-related recipes include: Soybean milk and soy chaff [okara] (p. 15). Bean curd (from soybean milk) and instant bean curd (homemade, p. 15-16). Cream of rice and soybean soup (with "1 c. soybeans, cooked," p. 31). Soy nut salad (with soy nuts, p. 42). Bean curd sukiyaki (p. 49). Far Eastern dumplings (filled with cooked and mashed soybeans, p. 54). Macao noodles and vegetables (with bean curd and soy sauce, p. 56). Whole wheat role filled with bean curd (p. 59). Soybean tomato mix in stuffed peppers (with "2 c. soy chaff {please see p. 15"} [okara], p. 71-72). Soybean nuts (fried in butter, with salt, p. 93). Tahini miso spread (p. 136).

Note. This is the earliest English-language document seen (June 2013) that uses the term "soy chaff" to refer to okara.

2356. **Product Name:** Centrol CA (Emulsifier and Dispersing Agent for Calf Milk Replacer Formulating).
Manufacturer's Name: Central Soya Co., Chemurgy Div.
Manufacturer's Address: 1825 North Laramie Ave., Chicago, IL 60639. Phone: 312/237-8600.
Date of Introduction: 1970?
New Product–Documentation: Central Soya Technical Sales Bulletin. 1970? (Undated). LC 661. "The premium emulsifier and dispersing agent for calf milk replacer formulating." "Centrol CA is a lecithin product of Central Soya. When used at the recommended level of 2% calf milk replacer formulas, Centrol CA will:

"1. Insure prompt wetting and dispersing of the dry product when it is added to water.

"2. Maintain the dispersion in a uniform and stable form."

2357. *Detroit News.* 1971. George Washington Carver's right hand. Jan. 4.

• ***Summary:*** A biography of Austin W. Curtis, Jr., founder and director of the A.W. Curtis Laboratories at 454 Farnsworth in Detroit. A photo shows Curtis. Address: Michigan.

2358. Dimler, R.J. 1971. ED technology applied to commercial soy beverage. *Notes from the Director of the Northern Division* No. 1013. p. 1. Jan. 8.

• ***Summary:*** In Feb. 1969 Mr. J.E. Minesinger (chemist) and D.J. Keeler (manager) of Loma Linda Foods (Mt. Vernon, Ohio) visited the NRRC and learned about their process to inhibit the development of rancid flavors and odors in full-fat soy flour. Loma Linda adopted their process to inactivate lipoxygenase and now reports obtaining a highly significant improvement in the flavor of its soy beverage products.

"After receiving a sample of our new soy beverage, Mr. Minesinger came on Dec. 9 to discuss with Mr. Mustakas (ED = Engineering & Development) our research in more detail. Loma Linda is marketing 'Soyagen,' a spray-dried formulated soy milk powder selling at about $1.00 a pound. Each pound of water dilutes with water to make about 1 gallon of beverage. This new product is highly nutritious and is also available with a carob (chocolate-like) flavoring. Mr. Minesinger commented specifically about using our process to inactivate lipoxygenase to improve flavor quality." Address: Director.

2359. Harris, Jean. 1971. Engineered food is on the way! *News and Observer* (*Raleigh, North Carolina*). Jan. 17.

• ***Summary:*** Henry Ford's desire to make cloth from soy protein started the original research on "meat analogues." The technology for producing spun soy protein products developed from a process to produce casein fibers in Italy in the mid-1920s. A second group of "soy meats," called textured meat analogues, is made by an extrusion process applied to textured vegetable proteins made from soy protein isolates; one example is Bac-Os.

"Most of these soy meats are available only to the institutional trade. They are now in use in prisons, hospitals, and orphanages." Two manufacturers of such products are Loma Linda Foods and El Molino Mills.

In North Carolina a full soybean product, made from toasted soybeans, is sold under the name of Golden Nuggets; all Raleigh seems to be eating them.

Recipes are given for: Soya cake (with sifted soya flour). Soyanaise (with Soyamel soymilk). Golden nut pie crust (with soya flour). Soya cookies (with soya flour). Roasted soybeans (made from canned soybeans, either dry roasted at 350 degrees or deep fat fried). Puree of soybean soup (with sieved soybean pulp). Address: Food editor.

2360. Brozan, Nadine. 1971. If you've never seen a soybean before... *New York Times.* Jan. 23. p. 18.
• ***Summary:*** Denis Barber owns about 75,000 bushels of soybeans at any given time–yet he's never seen a soybean. As president of General Arbitrage, a New York commodity trading company, he buys and sells commodity futures. The soybeans he purchases are usually resold before the date he is required to take delivery; if they are not, they end up in a warehouse in Chicago.

In the financial world, the soybean is known as "the Cinderella crop." It contains more protein than any other vegetable–and costs less. Yet in America, soybeans are not widely available in food stores–except in health food stores and Chinese markets. Although supermarkets do not stock the bean, they do sell many products, ranging from salad dressings to pet foods, that contain soybean oil, meal, or flour. They also carry soy sauce and Worcestershire sauce. Babies allergic to cow's milk will probably be given soy milk. Observers of orthodox [kosher] Jewish dietary laws, which do not permit the consumption of meat and dairy products at the same meal, are now able to enjoy imitation sour cream, ice cream, or steaks–each made from the soybean. According to Mr. Barber, less than one half of one percent of the crop is used for human nutrition; its main use is as a meal for livestock.

Dr. Joseph J. Rackis, principal chemist for the Northern Marketing and Nutritional Research Division of USDA's Agricultural Research Service in Peoria, Illinois, agrees that most soybeans are processed into oil and meal. And even if more were available for sale as food, most people don't like their taste–according to a spokesman for General Foods.

The "future of the soybean probably rests more in what it can become than what it is." The food industry, scientists and nutritionists believe that the wave of the future lies in the simulation of foods from soybeans. Already they are transforming soybeans into "hamburgers, canned stews, bacon strips, hors d'oeuvre dips, chow mein, pasta, sea food, and a wide range of frozen dinners approximating ham, chicken and beef." A photo shows soybeans in a plastic bag.

2361. Robinson, W.B.; Bourne, M.S.; Steinkraus, K.H. 1971. Development of soy-based foods of high nutritive value for use in the Philippines. *National Technical Information Service. U.S. Department of Commerce.* PB-213-758. iv + 100 p. Jan. 31. 28 cm. (Washington, DC). Agency for International Development, Contract AID/csd-1815. [29 ref]
• ***Summary:*** Contents: Introduction. Results in the Philippines: Personnel, the Food Science pilot plant, laboratory studies on soy milk, pilot plant studies on soy milk production, acceptability of soy milks produced in the pilot plant, effect of alkali soaks and alkali addition on flavor acceptability of soy milks, variety trial, tests on soy milk by commercial firms, storage stability of soy milk, other soybean products, quick-cooking mungo beans, coconut milk beverages, coconut protein studies, concentrated coconut water, the future of soymilk research at Los Baños, extension activities. Engineering studies: Grinding, liquid-solids separation, spray drying, concentration of soy milk. Nutritional studies: Complementary and/or supplementary effect of various food proteins, effect of soaking soybeans in NaOH [sodium hydroxide] solutions on flavor and nutritional value, flavor and nutritional attributes of roasted soybeans, utilization of the residue from soy milk manufacture, nutritional value of several soybean varieties. Chemical and physical investigations: Identification of a volatile component in soybeans that contributes to the raw bean flavor, effect of processing methods on off-flavors of soybean milk. Volatile flavor components of coconut meat, effect of physical and chemical processing factors on the redispersibility of dried soy milk proteins, evaluation of monosaccharides, disaccharides, and corn syrups as dispersants for heat-processed dried soy milk proteins, removal of oligosaccharides from soy milk by an enzyme from *Aspergillus Saitoi*, an enzymatic process for a nutritional beverage based on soybean protein and lemon juice. Address: Dep. of Food Science and Technology, New York State Agric. Exp. Station, Geneva, New York.

2362. Bourne, Malcolm C. 1971. Production, acceptability, and nutrition aspects of soy beverages in the Philippines. Paper presented at the meeting on "Potentials for soy beverages in the Philippines" U.P. College of Agriculture, January. 11 p. [1 ref]
• ***Summary:*** An excellent summary, with some history. "About ten years ago the Food Technology Group at Cornell University [Geneva, New York] under the leadership of Dr. D.B. Hand became interested in the soybean as a rich source of low-cost protein. They quickly came to the conclusion that soymilk provided a god vehicle to bring a nutritious, low cost protein food to people in developing countries but that the bad flavor of soymilk was the principal obstacle to its widespread acceptance. A lengthy study of the chemistry, biochemistry and nutritional value of the soybean was initiated. In 1967 the Office of the War-on-Hunger of the U.S. Agency for International Development supported this research program with a grant which enabled the tempo of the research to be greatly increased. When Dr. Hand retired, Dr. W.B. Robinson became the Director of the team working

on this project.

"One member of the Cornell team, Dr. K.H. Steinkraus, who was Associate Director of the project, came to Los Baños in 1967 and initiated an important section of the research program, namely to develop a product under Philippine conditions that was highly acceptable to the Philippine palate." A "research project was started and a pilot plant for making soymilk was established in temporary quarters in the Agricultural Chemistry building. Dr. Steinkraus and his group conducted acceptability studies with 6th grade Filipino children in several schools in this area. In this study they found that it was necessary to add sugar to the soymilk in order to make it acceptable to Filipino schoolchildren and that 7% sugar was the optimum level. They found that the addition of vanilla flavoring improved acceptability Ninety five per cent of the children said they liked a formulation containing 7% sugar with added vanilla flavoring. The addition of chocolate flavoring increased acceptability to 96%." The Steinkraus group "also found that 5% coconut milk incorporated into soymilk containing 9% sugar made a good product with a 96% acceptability. Soymilk frozen in plastic bags in 60 ml. portions was very acceptable to the children as an ice candy."

"Dr. Bourne took Dr. Steinkraus' place as leader of the Los Baños group when Dr. Steinkraus returned to Cornel in June 1969 and continued the research program..." Address: College of Agriculture, Univ. of the Philippines, Laguna, Philippines (Visiting Prof.).

2363. Fries, Joseph H. 1971. Studies on the allergenicity of soy bean. *Annals of Allergy* 29(1):1-7. Jan. [17 ref]
• ***Summary:*** "Soy bean sensitivity is not uncommon and may imply cross sensitivity to other legumes. The soy bean may be carried more than a mile from its source, thus increasing the list of air pollutants." Provides additional evidence of a high incidence of soy sensitivity in older children with atopy on the basis of intracutaneous tests. Thus soy cannot be regarded as hypoallergenic in humans. Address: Dep. of Pediatrics, Nassau Hospital, Mineola, New York.

2364. Lo, Kwee-Seong. Assignor to Hong Kong Soya Bean Products Company, Ltd. 1971. Process for preparing a soybean beverage. *U.S. Patent* 3,563,762. Feb. 16. 5 p. Application filed 2 Aug. 1965. [5 ref]
• ***Summary:*** This invention relates to the production of a soybean beverage from a full-fat soybean powder. The powder, water, and a stabilizer are mixed and then homogenized at 8,000 lb per square inch to form a beverage, which may additionally be centrifuged and homogenized at a lower temperature.

To make the powder, soybeans are cleaned, toasted, quickly cooled by currents of cold air causing separation of the cotyledons and hull, and dehulled (dressed). The hulls and cotyledons are separated by aspiration, then the cotyledons are flaked in a hammermill. The flakes are cooked in a Wenger expansion cooker. Within the cooker they are preconditioned with steam. The resulting full-fat soy flour does not have any objectionable bitterness. The pellets are again toasted to reduce the moisture content to 3.5 to 4%, then rapidly cooled and ground in an Alpine mill to 270-300 mesh.

In making the beverage, homogenization should precede centrifugation. The stabilizer is carrageenan from the seaweed *Chondrus crispus* (Irish moss). The basic raw materials are water 50 gallons, soybean powder 67 lb, sucrose 50 lb, carrageenan 0.55 lb, refined soybean oil 20 lb, table salt 0.63 lb, sodium bicarbonate 0.32 lb, vitamin A 5.81 gm, vitamin B-1 1.31 gm, vitamin B-2 1.56 gm, niacinamide 14.0 gm.

The resulting soy beverage, which contains insoluble carbohydrates, contains 3.0% protein, 3.1% fat, 5.0% sucrose, 1.7% other carbohydrates, 0.4% ash, and 86.8% water.

To produce a soybean beverage with no insoluble carbohydrates, 80 lb of soybean powder were used, 30% of the coarse particles were centrifuged out, and no carrageenan was used. The beverage contained 2.4% protein, 2.7% fat, 5% sucrose, 1.0% other carbohydrates, 0.3% ash, and 88.6% water. The pH was 6.8. Address: Hong Kong.

2365. Leneman, Leah. 1971. Plantmilk and sex! *British Vegetarian.* Jan/Feb. p. 6.
• ***Summary:*** The author (and many other people she knows) prefers the taste of Granogen to that of Plamil as an alternative to cow's milk. Granogen, however is not made in Britain.

On a different subject, she finds sex outside of marriage to be a glorious and rewarding experience. Address: St. Pancras, London, W.C.1, England.

2366. *Prevention* (*Emmaus, Pennsylvania*). 1971. Milk is not for grown-ups: Most people can't tolerate it and nobody needs it. Why does our government insist on giving it to people who can't use it? Feb. p. 193-94, 196, 201-04. [2 ref]
• ***Summary:*** This article is based on articles in two medical journals: (1) "Adult milk intolerance" in *Medical Digest* (Aug. 1967) and (2) an editorial by Dr. Robert D. McCracken (an anthropologist at the Univ. of California School of Public Health) in the *J. of the American Medical Association* (28 Sept. 1970).

The first is about a man who was unable to sit through the Sunday morning church service without getting "sudden abdominal pain and urgent diarrhea." He was concerned that he might need psychiatric care. However his doctor, after an investigation of his eating habits, found that it was the several glasses of milk that he drank only on Sunday morning before church were the cause of his troubles. He was lactose intolerant. The problem was easily solved.

"Elimination of milk also eliminated the need for psychiatric care."

In the 2nd, Dr. McCracken believes that before the domestication of dairy animals some 9,000 to 11,000 years ago, humans–like all other animals–became lactose intolerant in early childhood, after they were weaned. However in ancient dairying cultures, individuals with the inherited "abnormality" of high lactase production beyond childhood, may have been favored for survival by natural selection. Dr. McCracken calls for "an immediate curtailment of all efforts directed at the feeding of lactose-rich foods to lactase-deficient adults,..."

During the mid-1960s, when the scientific literature reflected a growing awareness that large numbers of people worldwide cannot tolerate milk, there was a debate over whether you can "teach" your body to produce lactase by slowly increasing consumption of dairy foods. The consensus answer was "No."

For those who give up milk or never have consumed it, there are many other good sources of calcium. These include a bone meal supplement, or calcium rich foods such as collards, kale, turnip greens, egg yolk, molasses, soy beans, soy flour, etc.

2367. *Times of India* (*The*) (*Bombay*). 1971. Cheeseless cheese. March 7. p. 8.

• ***Summary:*** Last year, according to a report recently published by the U.N. Conference on Trade and Development, the growth rate of food production was 1% less than the population growth rate. Thus, "all the gains of world food production were eaten up by the population explosion."

Together with the intense worldwide efforts to increase food production are parallel efforts to find inexpensive, nutritious, and tasty substitute foods. Many of these are based on the soya bean, a high quality, low cost source of vegetable protein. Americans, for example, now enjoy meatless turkey roast (complete with a plastic wishbone), milkless milk, and soya sausage.

But will this solve the basic problem? How can people who eat traditional diets in developing countries be coaxed into trying something new–such as soya milk or cheeseless cheese. Perhaps, by making it seem fashionable, exotic, or one of the "in" foods enjoyed by "with it" people.

2368. "The Times of India" News Service. 1971. Crash plan to increase soyabean output. *Times of India* (*The*) (*Bombay*). March 19. p. 11.

• ***Summary:*** Pantnagar, March 18–When Mahatma Gandhi tried to popularise soyabean production and utilization in 1932, he was about 30 years ahead of his time.

Agricultural experts, who have now revived Gandhi's soyabean movement, emphasise that soyabean provides the answer to malnutrition, especially among young children.

According to one soyabean specialist at the Uttar Pradesh Agricultural University here, 'soyabean can effectively close the protein and edible oil gap in India.'"

All that is needed for a crash programme to increase soyabean production to begin is a soyabean processing plant with a capacity of about 250 tonnes a day. An American firm has said it would be willing to collaborate with an Indian partner in setting up such a plant, which would cost about Rs. 3 crores (30 million rupees). The plant would also have export potential.

One can make almost anything from the soybean–soymilk, milk shakes, soups, "kabab" and "Texgran" curry (which tastes very much like chicken curry), and chicken pulao.

Atta is the main ingredient of most varieties of Indian, Bangladeshi and Pakistani bread. It is a whole wheat-flour made from hard wheat grown across the Indian subcontinent. Flatbread made from atta, such as chapati, roti, naan and puri, are an integral part of Indian cuisine. Since hard wheats have a high gluten content, doughs made from atta flour are strong and can be rolled out very thin. Production of atta in India is now about 800,000 tonnes a year. It could be fortified by adding about 5% "soyflour" to make a protein-rich bread.

2369. Anderson, Earl V. 1971. The new priorities. Food: Preventing hunger and malnutrition. *Chemical and Engineering News* 49(10):19-22. March.

• ***Summary:*** This special report looks at new opportunites for chemists and chemical engineers in three areas: food, shelter, and health. Technology can help in solving the problems of world hunger and malnutrition. FAO "estimates that 2 billion people are hungry or undernourished, including several million Americans." USDA's Aaron M. Altschul believes that food technology, properly directed, can help solve these problems. In addition to the Green Revolution, there has been "the other Silent Revolution of this century,"... the explosive growth in our knowledge of foods and nutrition, and in the ability to engineer foods.

The emphasis has been on protein foods "because protein deficiency is the most universal nutritional problem... Of the 82 million tons consumed in the world, only 25 tons [31%] come from animal sources." Most of the animal protein is consumed by the 1 billion people in developed countries.

Protein deficiencies can be overcome by fortifying grains or natural protein concentrates–as from soybeans–with amino acids such as lysine. Or we can use new techniques for converting "inexpensive vegetable proteins into textured foods that look and taste much like the more expensive animal foods. Products have been made from vegetable protein that closely resemble beef, chicken, seafood, ham, and bacon. They cost less than the real thing yet they are nutritious and attractive. Such products from textured soy already are being widely marketed in the U.S., western

Europe, and Japan. In time they may become new protein sources in the less-developed countries.

"In fact, AID now is sponsoring studies of textured products in less developed countries. Archer-Daniels-Midland is conducting one in Thailand and General Mills in Pakistan."

But what should we call these new products? You can't call it meat because it isn't. "You can call it soybeans because nobody would buy it. These products have been called animal protein food analogs... But that's not a marketable name either. The name that industry and the Government seem to be settling on is textured protein products (TPP)." The FDA has proposed a standard for TPP.

"Vitasoy, a soybean soft drink that has been sold in Hong Kong for 25 years, has captured 25% of the soft drink market there." Based on that success, "Monsanto is marketing a soy protein beverage called Puma through a franchiser in Guyana. It is now the second most popular soft drink in the country (Coke is first). Coca Cola, meanwhile, is marketing a fruit-flavored beverage, Samson, in Dutch Guiana (Surinam).

"So far, soybeans are the major source of vegetable proteins used in food fortification and TPP products."

Also discusses: Cottonseed protein, proteins from peanuts, sunflower, and safflower seeds, fish protein concentrate (FPC), and single-cell protein from petroleum, computer controlled food processing lines, etc.

Photos show: (1) A line spinning soy protein fibers in a liquid bath, tended by a man in a white hard hat. (2) A black boy drinking Puma in Guyana. (3) "British Petroleum's protein-from-petroleum plant at Grangemouth, Scotland." It produces 4,000 tons/year of animal-grade protein by fermentation of Candida yeasts on a petroleum substrate. Address: Senior Editor, New York City.

2370. **Product Name:** Samson (Whey Beverage).
Manufacturer's Name: Coca Cola Co.
Manufacturer's Address: P.O. Drawer 1734, Atlanta, GA 30301.
Date of Introduction: 1971. March.
New Product–Documentation: Anderson, Earl V. 1971. "The new priorities. Food: Preventing hunger and malnutrition." *Chemical and Engineering News* 49(10):19-22. March. "Coca Cola, meanwhile, is marketing a fruit-flavored beverage, Samson, in Dutch Guiana (Surinam)." Note: Samson is a soft drink, though probably NOT fortified with soy protein.

S.M. Weisberg. 1972. Food Technology. Sept. p. 62-68. "Developing and marketing low-cost foods protein foods in developing countries."

Soya Bluebook. 1980. p. 50-51. "Georgia, Atlanta 30301–Coca Cola Co., P.O. Drawer 1734. Phone: 404-897-2121. Soymilk beverages for Brazil, Mexico and Surinam. Brand names: Samson and Saci. Note: This entry is misleading. See talk with Gene Tally, below.

Talk with Gene Tally of Coca-Cola Co. 1982. April. Gene is quite sure that none of the early Samson products contained soy. The trademarks say that the protein source can be whey or soy but all have been whey. The Coca-Cola Co. has never marketed a soy based beverage outside of Brazil–where they marketed Saci.

2371. Martin, Roy E. 1971. Edible soy proteins: Challenge and opportunity. *Soybean Digest Blue Book Issue.* p. 26-30, 32-33. March. [6 ref]
• ***Summary:*** Contents: Introduction ("A new frontier is being forged in food technology with the development of soy protein for human consumption"). The proteins defined (Soy flour, flakes, and grits). Types of soy flour (Full-fat, low-fat, defatted). Soy proteins. The concentrates. The isolates. The spun proteins. Textured proteins. Soy milk. Soy beverages. Blended foods (USDA CSM, WSB). Special products for overseas (Puma, Sobee {"A U.S. full-fat soy flour product nutritionally adequate to support infant growth, introduced in Taiwan"}, Cerealina, Pro-Nutro, Saridele, Saci, Nutresco, Nestle's soy-corn flour marketed in Brazil). How large is the market? Further reading.

Soy milk: "Soy milk has been used for centuries in the Orient for infant feeding [sic] and other purposes... the process has been refined and its application greatly extended in the Far East by Dr. H.W. Miller and others. K.S. Lo [of Vitasoy, Hong Kong] has been bottling soy milk as a nutritious low-cost soft drink and selling many millions of bottles yearly." In 1959 the World Health Organization built a $1 million soy milk plant in Indonesia [to make spray-dried Saridele]. In the Western soy protein [isolate] is used in soy-based infant forumlas. "It is also used by adults with allergies, diabetes, or who for other reasons prefer" a non-dairy milk.

Tables show: (1) New Protein Food Program of the Agency for International Development (an independent federal agency). Five columns show: Country. U.S. company. Date of product [launch]. Product description & contract [no product names are given]. Raw materials. Of the 11 products in 7 countries, eight contain soya. They are: Brazil, Krause Milling Co., March 1967. Brazil, Monsanto, June 1967. Brazil, Swift, April 1967 (two products). Kenya, Del Monte, June 1968. Pakistan, General Mills, June 1968. Thailand, ADM, Aug. 1968. India, Swift, July 1968.

(2) Protein cost per pound of various foods:
Beef (retail) $4.44.
Chicken (dressed) $1.50.
Wheat flour $0.60.
Bulgar wheat [bulgur] $0.47.
Peanut meal (defatted) $0.43.
Dry skim milk [nonfat dry milk] $0.40.
Wheat (whole) $0.30.
Cottonseed flour $0.17.

Fish meal (food) $0.14.

Soy flour (food) $0.11 (from Bean 1966).

(3) Efficiency of land use for protein production. Three columns give the name of the crop or animal, average yield per acre, and pounds of protein per acre.

Soya bean, 24.2 bu, 508 lb.

Other legumes, 20.7 bu, 293 lb.

Maize, 64.2 bu, 323 lb.

Wheat, 25.1 bu, 180 lb.

Milk, 2,780.0 lb, 97 lb.

Beef, 342.0 lb, 58 lb.

Note: No earlier source of this table can be found; it is not in Bean (1966).

Photos show: (1) Sukiyaki made with textured vegetable protein. (2) A stable whip of soy protein being ejected from the spout of a pressurized can onto the top of a parfait dessert. (3) Defatted soy flakes, which are the raw material for defatted soy flour, special soy protein, soy protein concentrate, isolated soy protein. Address: General Manager, Vegetable Protein Products, Swift Chemical Co.

2372. Sellars, William A.; Halpern, S.R.; Johnson, R.B.; Anderson, D.W., Jr.; Saperstein, S.; Shannon, B.S., Jr. 1971. New growth charts: Soy, cow, and breast milk comparison. *Annals of Allergy* 29:126-34. March. [16 ref]

• ***Summary:*** Growth of 1,583 infants from birth to one year is reported and new infant growth charts are presented. Supported by a research grant from Borden, Inc. Sub-groups by diet (breast, cow, and soy milk) and family history of allergy were compared using a computer. No differences were observed between the growth of those in the various sub-groups. However, compared to Iowa Growth Norms, these babies were taller.

"Babies were placed in one of three categories according to family history for allergy. It was considered to be immediately positive for allergy if siblings, half-siblings, or parents had a history of atopic disease, such as asthma, allergic rhinitis, atopic dermatitis, allergic gastroenteritis, or hives; remotely positive if atopic disease occurred in grandparents, aunts, or uncles but not cousins, and negative if there was no history of atopy." Address: Dep. of Pediatrics, Univ. of Texas Southwestern Medical School.

2373. Bayless, T.M.; Paige, D.M.; Ferry, G.D. 1971. Lactose intolerance and milk drinking habits. *Gastroenterology* 60(4):605-08. April. [7 ref]

• ***Summary:*** "Current evidence indicates that low lactase levels are the norm in the majority of adults in most populations in the world. Notable exceptions are Scandinavians and those of northern European extraction." Address: Dep. of Medicine, Johns Hopkins Univ., Baltimore, Maryland 21205.

2374. Sugimoto, H.; Van Buren, J.P. 1971. Evaluations of monosaccharides, disaccharides and corn syrups as dispersants for heat-processed dried soy milk proteins. *J. of Food Science* 36(2):346-48. March/April. [11 ref]

• ***Summary:*** Addition of some of these substances to heat-treated soy milk before drying improved redispersibility of resultant dried products. Address: New York State Agric. Exp. Station, Cornell Univ., Geneva, New York 14456. Sugimoto is presently with Kikkoman, at Noda, Japan.

2375. **Product Name:** Neo-Mull-Soy (Infant Formula Based on Soy Protein Isolate) [Ready to Feed, or Concentrated Liquid].
Manufacturer's Name: Syntex Laboratories.
Manufacturer's Address: 3401 Hillview Ave., Palo Alto, CA 94303.
Date of Introduction: 1971. April.
New Product–Documentation: Thomson. 1979. *Journal of the American Oil Chemists' Society.* March. p. 386-88.

Syntex. 1990. Press Backgrounder. In April 1971 Syntex acquired the Neo-Mull-Soy and Cho-Free infant formulas from The Borden Company. The acquisition included a primary manufacturing facility at Elgin, Illinois. In March-April 1978 Syntex ceased adding salt (sodium chloride) to the products out of concern that the sodium levels were too high. In July-August 1979 Syntex learned of an illness alleged to be related to the Use of Neo-Mull-Soy and Cho-Free. In Dec. 1980 Syntex ceased production of infant formulas due to lack of demand.

Talk with Linda Thomas, Manager of Media Relations at Syntex. 1990. Dec. 18. The only product Syntex bought from Borden was Neo-Mull-Soy. It was an unfortunate product and the lawsuits are still going on. It is still not clear that Neo-Mull-Soy caused the problems that many parents claim it did. A number of articles (see Michael Malloy's in Pediatrics) have been published in scientific journals vindicating Neo-Mull-Soy. Syntex is a research oriented drug company. Their best-selling product is Naprosyn (naproxen), America's largest selling prescription medicine for arthritis, which has been on the market for about 15 years. The second best seller is Anaprox. In 1944 Syntex, S.A. was founded in Mexico. The name was drawn from the word "synthesis." Several of the founders were Hungarian. Its initial work was with steroid hormones, especially progesterone, which were then used in oral contraceptives. Originally the hormones were extracted from the root of the barbasco yam plant, but soon they were synthesized.

According to the 1990 company brochure titled "Syntex Corporation:" In 1957 Syntex was incorporated in Panama, and in 1958 the company became publicly owned. In 1964 Syntex introduced its own branded oral contraceptive, Norinyl. U.S. administrative/research headquarters were established in Palo Alto, California. In 1972 Syntex introduced Naprosyn (naproxen), a non-steroidal anti-inflammatory drug. In 1981 Syntex was listed on the New

York Stock Exchange. In 1987 Syntex sales reached $1,000 million.

2376. Hansen, Barbara. 1971. Interest in Asia carries into Kitchen. *Los Angeles Times.* May 20. p. J16.
• ***Summary:*** Rosemary Brissenden, an anthropologist from the Australian National University at Canberra, has written a book (a work of love) titled "Joys and Subtleties," about the foods and cookery of Southeast Asia, especially Indonesia, Malaysia, Singapore, and Thailand. In 1957 she "spent three months in Java and Bali with a student delegation from Australia." They lived with Indonesian families and ate their food. The recipes in her book "are as authentic as close observation of cooks at work could make them." Moreover they call for the same ingredients used by the Indonesian cooks, such as Javanese soy sauce, coconut milk, laos [a root], lemon grass, trasi, tamarind, and curry leaves. These are now available in most big cities, mainly at Chinese markets.

Ms. Brissenden and her husband are just finishing a six month stay in Los Angeles.

2377. *Times of India* (*The*) (*Bombay*). 1971. Jagatjit Industries Limited: Speech of the chairman and managing director, Mr. L.P. Jaiswal. Company meeting. May 28. p. 4.
• ***Summary:*** He proposes to promote [establish] a company for the processing of soyabeans. There is protein shortage in India ad the production of Soyabean based products would have great potential. In the United States, soyabean has been a very beneficial crop to producers and Indian farmers are thinking along similar lines. During the next three years, he predicts that soyabean cultivation in India will be extended to near ten lakh [1 million] acres. Processing these soyabeans will yield Soya-Oil and Soya-flour [sic, defatted soyabean meal]. "Soya-flour will form raw material for the production of Soya Protein Concentrates, Isolates and formulated products like Infant weaning foods, High Protein foods, Soya milk and other beverages." This project will cost about Rupees three crores [30 million rupees]. A portrait photo shows Mr. L.P. Jaiswal.

2378. Mustakas, G.C.; Albrecht, W.J.; Bookwalter, G.N.; Sohns, V.E.; Griffin, E.L. Jr. 1971. New process for low-cost, high-protein beverage base. *Food Technology* 25(5):80-84, 86. May. [18 ref]
• ***Summary:*** Note. This is the earliest English-language document seen (Aug. 2013) that contains the term "protein beverage base" or the term "high-protein beverage base." These terms probably refer to soya milk. Address: Northern Agricultural Research Service, Peoria, Illinois.

2379. Wenger Manufacturing. 1971. Extrusion cooking of soy foods (Ad). *Soybean Digest.* May. p. 63.
• ***Summary:*** "Wenger Extrusion Cooking Systems offer a whole range of profitable and industry-proven products to the food processor:

"Textured vegetable proteins from defatted soy flours or flakes, protein concentrates or isolates, can be produced as chewy bits that have great market potential as meat extenders in soups, stews, hamburger, gravies, chili, meat loaf, dry soup mixes, sausages, wieners, curry, pot pies, tacos, enchiladas, stuffing, etc.

"Full fat soy can be cooked in such a way by extrusion cooking methods to control its growth inhibitors... these full fat soy proteins may be reduced to a flour for use in bread, pasta, infant foods, soy milk, soft drinks, allergy foods, and vegetarian diets."

"Precooked, cereal based, protein enriched foods." A photo of soybeans forms the top and right borders of this ad.

Note: This is the earliest document seen (July 2008) concerning textured soy protein concentrates. Address: 1807 Federal Reserve Bank Building, Kansas City, Missouri 64106.

2380. Chandrasekhara, M.R.; Ramanna, B.R.; Jagannath, K.S.; Ramanathan, P.K. 1971. Miltone vegetable toned milk. Use of peanut protein expands supply of milk. *Food Technology* 25(6):32-34. June. [13 ref]
• ***Summary:*** Discusses only peanut milk, not soymilk. CFTRI (Mysore) has developed a process for making neutralized spray-dried peanut protein isolate (92% protein). The isolate is also produced and distributed as a wet paste. Toned and double toned milks are made by mixing the reconstituted product with buffalo or cow's milk to yield toned milks containing either 3% fat and 8.5% nonfat solids or 1.5% fat and 9.0% nonfat solids. This can extend the present inadequate India dairy milk supply for the 100 million children under 6 years of age. Address: Protein Technology Discipline, CFTRI, Cheluvamba Mansion, Mysore–2A, India.

2381. Tabuchi, Ichiro. 1971. Saishoku-shugi no riron-teki haikei: Shokubutsu-sei tanpaku shokuhin kaihatsu ni okeru shûkyô-teki tachiba ni tsuite [Theoretical background on vegetarianism: The religious viewpoint in the development of vegetable protein foods]. *Shokuhin Kaihatsu* (*Up-to-Date Food Processing*) 6(6):31-35. June. [5 ref. Jap]
• ***Summary:*** Contents: Seventh-day Adventists. Ellen G. White's viewpoint. Seventh-day Adventist food enterprises and their purposes. Popularization of Soyalac made by San-iku Foods (Shokuhin) in Japan. The campaign for quitting tobacco in 5 days at the Adventist Tokyo Hospital (*Tokyo Eisei Byoin*).

The section on the popularization of Soyalac states: "Although in a recent issue of *Shokuhin Kaihatsu* magazine, soymilk was described as an illusory food (*maboroshi*), at least for us, it is a very real food, because San-iku Shokuhin has been making soymilk for the last 12 years and providing

it for our school dormitory cafeteria meals. We have gotten good results in both taste and nutrition. With this experience and Loma Linda's formula and technique (they make formulated dairylike [chôsei] soymilk), Neo-Soyalac was born. It is a superior, nutritious infant formula.

"Soyalac was developed by Dr. Harry W. Miller, who was the world's leading authority in the field of soymilk. He spent half a century researching and developing Soyalac. It started to be produced and sold in the 1940s. Since that time it has contributed as an infant formula, and a milk substitute for children who are allergic to or dislike dairy milk. Its effectiveness and safeness have been proved by clinical experimentation. Also, Soyalac was used after World War II as an especially nutritious food for the protein-rich food program of the World Health Organization (WHO), FAO, and UNICEF and it saved many children from starvation and kwashiorkor.

"San-iku Shokuhin is now starting this work in Japan. We are trying to popularize our soymilk through very special methods such as via our religious network, health food stores, and doctors detailings. Babies who can't drink cow's milk or had allergies have been saved. Those with rashes and sweat rashes have been cured. We have received many expressions of thanks. One mother raised her 3 children on soymilk only, and one of the three was selected at a healthy baby contest in her county (*gun*). Formulated soymilk is not a medicine, therefore we are not allowed to promote its medicinal effects. Nevertheless, these various good effects have been proved clinically and in actual experience.

"A century ago, Ellen G. White predicted that 'the time will come when we will not even drink dairy milk.' Now we feel that this prediction is coming true as we see our dairy milk contaminated with penicillin, BHC, DDT, etc. I feel that in this day and age our work to popularize soymilk, which contains no antibiotics, no chemicals, and no cholesterol, and which is so nutritious and healthy, is very meaningful." Address: Product Development Dep. (Kaihatsu-bu), San-iku Foods, Japan.

2382. Morrill, J.L.; Melton, S.L.; Dayton, A.D.; Guy, E.J.; Pallansch, M.J. 1971. Evaluation of milk replacers containing a soy protein concentrate and high whey. *J. of Dairy Science* 54(7):1060-63. July. [13 ref]
• ***Summary:*** The soy protein concentrate used was Promosoy, made by Central Soya Co. Address: 1-3. Depts. of Dairy and Poultry Science, and of Statistics and Computer Science, Kansas State Univ., Manhattan, Kansas 66502; 4-5. Dairy Products Lab., Eastern Utilization Research and Development Div., Washington, DC 20250. Melton's present address: 1804 Bob White Drive, Maryville, Tennessee 37801.

2383. *Soybean Digest.* 1971. Vitasoy observes 30th year. July. p. 30.
• ***Summary:*** "Hong Kong Soya Bean Products Co. Ltd. of Hong Kong has issued a brochure commemorating its 30 years in the food business there... The company will introduce this year, a high-protein weaning food, a soy cheese, and a line of pre-cooked packaged foods at a price within the reach of working people." A small photo shows youthful K.S. Lo.

Note: This 30th anniversary brochure was published in 1970. The company's first plant was opened in March 1940.

2384. *Prevention* (*Emmaus, Pennsylvania*). 1971. Poor countries won't thank us for milk. Aug. *

2385. Nitsan, Zafrira; Volcani, R.; Gordin, S.; Hasdai, A. 1971. Growth and nutrient utilization by calves fed milk replacers containing milk or soybean protein-concentrate heated to various degrees. *J. of Dairy Science* 54(9):1294-99. Sept. [16 ref]
• ***Summary:*** A locally-made "soybean protein concentrate, Hypro" (produced by Hypro {Ashdod} Ltd., Ashdod, Israel) was tested as a substitute for all of the nonfat dried milk in a commercial calf milk replacer formula (Milkvit). Hypro is made from unheated dehulled defatted soybean meal from which some of the high molecular weight carbohydrates have been removed. Heating improved the digestibility of the soybean protein from 72% for the raw to 88% for the heated. Soybean diets diminished markedly the incidence and severity of diarrhea. Address: 1. Dep. of Poultry Science; 2-4. Dep. of Dairy Science. All: The Volcani Inst. of Agricultural Research, Bet-Dagan, Israel.

2386. Sugimoto, H.; Van Buren, J.P.; Robinson, W.B. 1971. An enzymatic process for a protein-containing beverage based on soybean protein and lemon juice. *J. of Food Science* 36(5):729-31. Sept/Oct. [25 ref]
• ***Summary:*** Cooked suspensions of isolated soy protein were mixed with a small amount of acid protease preparation from *Trametes sanguines.* Address: New York State Agric. Exp. Station, Cornell Univ., Geneva, New York 14456. Sugimoto is presently with Kikkoman, at Noda, Japan.

2387. Wallace, G.M.; Khaleque, A. 1971. Studies on the processing and properties of soymilk. III. Factors affecting concentration of soymilk and its stability during heat sterilisation. *J. of the Science of Food and Agriculture* (*London*) 22(10):531-35. Oct. [19 ref]
• ***Summary:*** Soymilk that has been adequately heated to destroy its trypsin inhibitor is difficult to concentrate because its viscosity increases exponentially with the increase in its solids content. At about 17-18% total solids, a gel-like structure is formed. It was found that the sulphydryl-disulfide interchange reaction is largely responsible for the increase in viscosity of the concentrate up to about 16% total solids, but above this level other forces predominated. The conditions

necessary for the production of good quality canned soymilk are presented. The key is forewarming at 115ºC for 5 minutes prior to concentration. Address: Dep. of Food Technology, Massey Univ., Palmerston North, New Zealand.

2388. Wallace, G.M.; Bannatyne, W.R.; Khaleque, A. 1971. Studies on the processing and properties of soymilk. II. Effect of processing conditions on the trypsin inhibitor activity and the digestibility *in vitro* of proteins in various soymilk preparations. *J. of the Science of Food and Agriculture* (*London*) 22(10):526-31. Oct. [26 ref]
• ***Summary:*** Pre-soaking the soybean in 0.4 M sodium carbonate solution for 24 hours as a pretreatment facilitated deactivation of trypsin inhibitor activity. Other effects of carbonate presoaking are also discussed. Address: Dep. of Food Technology, Massey Univ., Palmerston North, New Zealand.

2389. Eden. 1971. Eden: Natural, organic. Serving mid-America with the food of the future (Ad). *East West Journal* 2(18):19. Nov. 30.
• ***Summary:*** "Complete selection of stoneground flour, whole grains, seeds and nuts, beans, nut butter, soap, cosmetics, unrefined vegetable oil, herbs & Tea, dried fruit, pasta, juice. Stardust cereals: Barleycorn, 7-grain, Kokoh, Rising Sun, Sherpa, Grainola, Rice Cream, Tempura."

Note 1. Kokoh (also called Grain Milk or Kokkoh) is a macrobiotic preparation typically containing a finely ground combination of roasted rice, glutinous rice, oatmeal, soybeans, and sesame seeds.

Note 2. Neither miso or soy sauce are mentioned in the ad.

This ad also appeared in the Dec. 15, 1972 issue (p. 19) of this magazine. Address: 330 Maynard St., Ann Arbor, Michigan 48108. Phone: Wholesale: (313) 769-8444. Retail: (313) 761-8134.

2390. **Product Name:** Kokoh.
Manufacturer's Name: Eden Foods.
Manufacturer's Address: 330 Maynard St., Ann Arbor, Michigan 48108. Phone: Wholesale: (313) 769-8444. Retail: (313) 761-8134.
Date of Introduction: 1971. November.
New Product–Documentation: Ad in East West Journal. 1971. Nov. 30. p. 19. "Eden: Natural, organic. Serving mid-America with the food of the future." Stardust cereals: Barleycorn, 7-grain, Kokoh, Rising Sun, Sherpa, Grainola, Rice Cream, Tempura." This ad also appeared in the Dec. 15, 1972 issue (p. 19) of this magazine.

Talk with Royce Seeger. 1993. Oct. 31. He began to work in the Eden Foods retail store in about the fall of 1970. One of his main jobs was roasting and grinding grains. About a year or two after he began work, Eden introduced Kokoh, a macrobiotic baby cereal, which contained roasted soy flour and was packed in the small biodegradable cello bags. All the ingredients were roasted together and then ground; soy was one of the ingredients. The soy was roasted more than it was for the plain soy flour.

Note: Kokoh (also called Grain Milk or Kokkoh) is a macrobiotic preparation typically containing a finely ground combination of roasted rice, glutinous rice, oatmeal, soybeans, and sesame seeds.

2391. **Product Name:** Soybean Flour–Full Fat (Organic, from Deaf Smith).
Manufacturer's Name: Erewhon Trading Co., Inc.
Manufacturer's Address: 33 Farnsworth St., Boston, MA 02210. Phone: (617) 542-1358.
Date of Introduction: 1971. November.
Wt/Vol., Packaging, Price: 50 lb.
How Stored: Shelf stable.
New Product–Documentation: Erewhon Trading Company Inc. 1971. Thanksgiving Day. [Nov.]. Price list. "Stoneground flours: Soybean Flour, full fat, organic Deaf Smith. 50 lb. $11.00."

Midwest Natural Foods Distributors, Inc. 1975. Catalog #7. Nov. Ann Arbor, Michigan. 108 p. See p. 3, 26. Bulk. "Soy Flour Deaf Smith Organic." 35 lb. Arrowhead Mills, "Soy Flour lightly toasted," 24 oz.

Ad in Tom Riker and Richard Roberts. 1979. *The Directory of Natural & Health Foods.* p. 57. Shows the label for "Organically grown–stone ground soy flour." 24 oz. On the front panel is a description of how to make soy milk from soy flour.

Note: This is the earliest document seen (Dec. 2001) concerning Arrowhead Mills and soy.

2392. Hammacher Schlemmer. 1971. Make your own delicious, healthful yogurt at home: Yogurtera (Ad). *New York Times.* Dec. 5. p. 50.
• ***Summary:*** "Be your own master yogurt-maker... in the convenience of your kitchen and at a savings of up to 75%. Yogurtera lets you make it from skim milk, whole milk, powdered or soybean milk." Add honey, fruits, or preserves for delicious variations. An illustration shows the Yogurtera, which is electric (it plus into the wall), comes with two quart-size brewing jars and instructions. By Bender Associates. $13.00 plus $0.95 for shipping and handling.

2393. Michael, Terry. 1971. Milk the soybeans? Foul-tasting whey not so bad. *News-Gazette* (*Champaign, Illinois*). Dec. 19.
• ***Summary:*** University of Illinois food scientists L.S. Wei and M.P. Steinberg are using enzyme-deactivated soybeans to develop products such as soymilk with added cow's milk whey (a by-product of cheese manufacture), soybean "peanut butter" (it contains no peanuts), and enzyme-deactivated soy flour. A large photo shows food scientists Wei and Steinberg

sitting at a table tasting these two products. Address: News-Gazette staff writer.

2394. *SoyaScan Notes.* 1971. Chronology of soybeans, soyfoods and natural foods in the United States 1971 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1971 Jan. East West Journal starts publication in Boston, Massachusetts.

1971 Feb. Westbrae Natural Foods, founded in late 1970, opens for business in Berkeley, California, as a natural foods retail store.

1971 Feb. Essene Traditional Foods begins operation as a macrobiotic natural foods distributor in Philadelphia, Pennsylvania. They sell miso and tamari.

1971 May. Tree of Life opens as a natural foods retail store in St. Augustine, Florida, founded by Irwin Carasso.

1971. The Food Protein Council (renamed Soy Protein Council in Dec. 1981) is established as a trade association for major manufacturers of soy protein for food use.

1971 Aug. 15. Richard Nixon devalues the U.S. dollar by cutting its tie with gold. It starts to float, thus changing many of the basics of international trade.

1971. India's first soyfoods development project starts at G.B. Pant University.

1971 Feb. Textured soy protein products authorized for use as meat extenders in National School Lunch Program.

1971 Sept. *Diet for a Small Planet,* by Frances Moore Lappé, published by Ballantine Books. A landmark book that plays a major role in the rise of interest in meatless diets.

1971 Sept. 3. Stephen Gaskin and several hundred friends and disciples purchase a 1700-acre farm at 156 Drakes Lane, Summertown, Louis County, Tennessee. Vegans (complete vegetarians) and long-haired hippies, they first planted soybeans in the spring of 1972. In December 1971 Alexander Lyon, who has a PhD degree in biochemistry, begins the community's first serious library research on soyfoods, especially soymilk and tempeh.

1971 Aug. 23. Laurelbrook Foods begins operation as a macrobiotic natural foods distributor in Forest Hill, Maryland–founded by Rod and Margie Coates. They kept a post office box in nearby Bel Air.

1971 fall. Eden Foods in Ann Arbor, Michigan, begins distributing macrobiotic natural foods. In June 1971 they had begun wholesaling these foods out of the back of their retail store.

1971. Shadowfax begins operation as a natural food distributor, founded by Charlie Smail.

1971. This year the natural foods boom in America can be said to have begun, pioneered by macrobiotic food distributors. Soyfoods rode to popularity on this wave. Food for Life in Chicago, Ceres in Colorado Springs, The Well in San Jose (CA), and Lifestream in British Columbia (Canada) also started at about this time.

1971. *Soybeans as a Food Source,* by Wolf and Cowan published by CRC Press. It focuses on modern soy protein products, offering an excellent review of the literature (86 pages and 276 references). A revised edition is published in 1975 (101 p., 416 references).

1971. First modern study on the effect of dietary protein on blood lipids titled "Plasma cholesterol levels and liver cholesterol biosynthesis in rabbits fed commercial or semisynthetic diets with and without added fats and oils," by Dr. K.K. Carroll (Dep. of Biochemistry, University of Ontario, Canada) published in *Atherosclerosis.* From 1977 on a group led by Sirtori in Milan, Italy, was actively pursuing this same line of research which showed that even in fat-free diets, animal proteins raise serum cholesterol and soy proteins lower it. As early as 1908 the Russian Ignatowski had shown that dietary protein plays a significant role in the development of atherosclerosis in rabbits, but his findings had been forgotten.

1971. African soybean production first tops 100,000 metric tons.

1971–Earl L. Butz replaces Clifford Hardin as U.S. Secretary of Agriculture, ushering in an era of free market agriculture which favors large producers.

2395. Gorrill, A.D.L.; Cameron, C.D.T.; Nicholson, J.W.G. 1971. Growth, digestibility and nitrogen retention by lambs fed liquid diets containing milk and soybean proteins. *Canadian J. of Animal Science* 51(3):663-67. Dec. [7 ref]
• ***Summary:*** "The soybean protein concentrate settled out of the liquid diet and therefore was not suitable for *ad libitum* feeding." Address: Research Station, Canada Agriculture, Fredericton, New Brunswick.

2396. Kosikowski, F.V. 1971. Nutritive and organoleptic characteristics of non-dairy imitation milks. *J. of Food Science* 36(7):1021. Nov/Dec. [11 ref]
Address: Cornell Univ., Ithaca, New York.

2397. Kretchmer, Norman. 1971. Memorial lecture: Lactose and lactase–a historical perspective. *Gastroenterology* 61(6):805-13. Dec. [48* ref]
Address: Dep. of Pediatrics, Stanford Univ. School of Medicine, Stanford, California.

2398. **Product Name:** [Fortesan Soy Beverage].
Manufacturer's Name: Crav Alimentos S.A.C.I.
Manufacturer's Address: Calle Cochrane 867-2 Piso, Valparaiso, Chile. Plant at Calle Limache 1320, Vina de Mar, Chile.
Date of Introduction: 1971.
New Product–Documentation: *Soybean Digest Bluebook.* 1979. p. 98. Gives the name and address of the manufacturer. Gil Harrison. 1981. J. of the American Oil Chemists' Soc. 58(3):445. March. "What's holding up the introduction of

soya into the human diet in Latin America?" "Since 1971, Chile has had a school lunch beverage called Fortesan, made from wheat flour and soya flour by a formula developed by Fernando Monckeberg."

Note: This is the earliest known commercial soy product made in Chile.

2399. **Product Name:** Dellac 25-28 SX (Whole Milk Powder Replacer).
Manufacturer's Name: Deltown Chemurgic Corp.
Manufacturer's Address: -
Date of Introduction: 1971.
Ingredients: Incl. soy protein isolate.
New Product–Documentation: Wolf and Cowan. 1971. *Soybeans as a Food Source.* p. 69.

2400. **Product Name:** [Jonnapu Soymilk].
Foreign Name: Jonnapu Tônyû.
Manufacturer's Name: Kenbi-sha K.K.
Manufacturer's Address: 4-22-40, Takadono, Asahi-ku, Osaka 535, Japan.
Date of Introduction: 1971.
Wt/Vol., Packaging, Price: 300 ml poly container.
New Product–Documentation: Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Kenbi-sha first made commercial soymilk in Japan in 1974.

K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Jonnapu Tônyû was introduced in a 300 ml poly container in 1971 and distributed nationwide.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64.

2401. McCracken, R.D. 1971. Lactase deficiency: An example of dietary evolution. *Current Anthropology* 12:495-517. *

2402. Aihara, Herman. 1971. Milk: A myth of civilization. *Macroguide* No. 10. 55 p. (Los Angeles: George Ohsawa Macrobiotic Foundation, Inc.). 21 cm. [14 ref]
Address: California.

2403. Al-Kishtaini, Sabah Fekhri. 1971. Methods of preparation and properties of water extracts of soybeans. PhD thesis, University of Illinois at Urbana-Champaign. 180 p. Page 5855 in volume 32/10-B of Dissertation Abstracts International. *
Address: Univ. of Illinois at Urbana-Champaign.

2404. Anyon, C.P.; Clarkson, K.G. 1971. A cause of iron-deficiency anaemia in infants. *New Zealand Medical Journal* 74:24-25. *

2405. Black, Patricia Hall; Carey, Ruth Little. 1971. Vegetarian cookery. 5 vols. Mountain View, California, Omaha, Nebraska, and Oshawa, Ontario, Canada: Pacific Press Publishing Assoc. Illust. by Henry Rasmussen. Recipe index. 24 cm.
• ***Summary:*** These are lacto-ovo vegetarian cookbooks. "Most of the recipes in these cookbooks have been collected over many years. Some came from association in years past with Paradise Valley Sanitarium and Hospital and with White Memorial Hospital; others came from more recent association with Loma Linda University." The complete nutritional composition of each recipe is given in that back of each book. Note 1. Monosodium glutamate is used in many recipes (For explanation, see Introduction to each volume). Other interesting meaty seasonings include Savorex, Smokene, and G. Washington Broth. Apparently generic names for meatlike products are used ("gluten burger" rather than "Gluten Burger") when more than one Adventist company makes such a product.

Contents: Vol. 1. Appetizers, beverages, salads, dressings and relishes, cooking guides. Vol. 2. Breads, soups, sandwiches. Vol. 3. Main dishes, vegetables. Vol. 4. Pies, cakes, cookies, desserts. Vol. 5. Exotic foods, candies, cooking for a crowd.

Soy- and gluten-related recipes include: Vol. 1: Nut and Soyameat pinwheels (with light Soyameat, p. 16-17). Soyameat puffs (with canned Soyameat, p. 17). Soybean milk (homemade, p. 30). Green beans and gluten salad (p. 37; Skallops [also spelled Scallops, gluten based] or Soyameat may be substituted for diced gluten). Chop suey salad (with Soyameat, or light or dark nutmeat, p. 44). Note 2. This is the earliest vegetarian or health food cookbook seen (June 2004) with "Appetizers" as one of the recipe categories.

Vol. 2: Whole wheat soy bread (with soy flour, electric mixer recipe, p. 15-16; Sponge method, p. 17). Soy cheese spread (with canned tofu, p. 44). Soy cheese and egg filling (with tofu, p. 44). Gluten spread (with canned gluten burger, p. 45). Hot burger sandwich patties (with canned gluten burger, p. 46). Hot gluten sandwich (with canned gluten steaks, p. 46). Hot savory sandwich (with Proast or other nutmeat, p. 47). Nutmeat and olive filling (with Proteena or Nuteena, p. 47). Savory Soyameat filling (p. 48). Soyameat and egg filling (with light Soyameat, p. 48). Soyameat, nut and olive filling (p. 48). Grilled gluten sandwiches (p. 52).

Vol. 3: Homemade gluten (. 15). Gluten roast (p. 15). Gluten burger loaf (with canned "gluten burger," p. 16). Primeburger loaf (with Primeburger [gluten], p. 16-17). Normandy loaf (with Proteena, p, 17). Walnut Proteena roast. Holiday roast (with gluten burger). Oatmeal herb loaf (with Vegeburger, p. 18). Nut roast (with Proteena, p. 21). Cashew nut and gluten loaf (p. 22). Seaside loaf (with Soyameat, p. 23). Ocean fillets (with Soyameat, p. 23). Soy soufflé burger (with dry soybeans, p. 24). Savory soy loaf (with canned soy cheese [tofu], p. 24). Soy cheese (or tofu) loaf (p. 24). Tofu loaf (no eggs, p. 25). Tofu (or soy cheese) patties (p. 25).

Browned tofu with mushrooms (p. 25). Nuteena balls (p. 26). Basic gluten balls (p. 26). Nutmeat and rice patties (with Proteena and Nuteena, p. 31). Cottage cheese gluten burgers (p. 31). Chum la King (with Vegesteaks, p. 33). Stroganoff (with canned Soyameat, p. 34). Gluten stroganoff (with canned gluten or Soyameat, p. 34). Savory gluten casserole (with canned Chickettes or other gluten preparation, p. 35). Scalloped Soyameat (with light or dark Soyameat, p. 36). Gluten steaks deluxe (with canned gluten steaks, p. 37). Gluten steaks with mushrooms (p. 37). Shish kebab (with gluten steaks or Tender Bits [made of gluten], p. 37-38). Hearty soybean casserole (with canned Zoyburger, p. 42). Garbanzo and cottage cheese loaf (with Vegeburger, p. 44). Stuffed green pepper (with canned Vegeburger, p. 46). Oriental rice casserole (with gluten or Chickettes, p. 49-50). Chop suey (with fresh tofu, p. 51). Quick chop suey or chow mein (with canned Soyameat, p. 51). Spaghetti marzetti (with canned Vegeburger and Smokene, p. 56). Lasagna (with gluten burger, p. 57). Tetrazzini (with canned white Soyameat, p. 57). Quick eggs Benedict (with beef-style smoked Soyameat, p. 61-62). Eggs con burger (with gluten burger, p. 62). Eggs Vienna (with 6 vegetable wieners, p. 63). Baked soybeans (p. 80). Soybeans creole. Soybeans southern style.

Vol. 4: Soy nut cookies (with 1 cup soy flour, p. 97). Vol. 5: Gluten stew (p. 14). Spanish gluten (p. 14). Gluten nut loaf (with canned gluten burger, p. 16). Ocean fillets (with gluten and Soyameat). Browned tofu (p. 22). Chop suey (with soy cheese [tofu], p. 23). Soy cheese patties (with canned tofu, p. 23). Gluten burger sandwiches (p. 31). Chinese sweet-sour gluten (with canned gluten steaks, p. 41). Sweet-sour Tender Bits (with canned Tender Bits or other gluten preparation, p. 42). Chinese evergreen tofu (p. 42). Japanese sukiyaki (with canned gluten, Tender Bits, or Scallops, p. 45). Scrambled tofu (p. 46). Philippine adobo (with gluten, Tender Bits, or Scallops, p. 48). Philippine gluten curry (p. 49). Philippine gluten escabeche (p. 49). Korean seasoned gluten (with canned gluten, p. 50). Indian gluten curry (with canned gluten, p. 52). Kurma (Indian, with Soyameat, p. 53). Soyameat Indian curry (with canned light Soyameat, p. 53-54). Brazilian Palmito soy loaf (with canned or cooked soybeans, p. 57). Brazilian-style gluten (p. 57).

Can sizes: Chickettes (20 oz). Gluten (14 oz or 20 oz). Gluten burger (14 oz, 28 oz, or 30 oz). Gluten steaks (14 oz). Nuteena (14 oz.). Primeburger (20 oz). Proteena (14 oz). Scallops (14 oz). Soyameat (9 oz or 13 oz). Soyameat, white (13 oz). Soy cheese (12 oz or 14 oz; tofu). Tender Bits (20 oz). Vegesteaks (14 oz). Zoyburger (19 oz). Address: 1. M.S.; 2. PhD.

2406. De, Sasanka S. 1971. Technology of production of edible flours and protein products from soybean. *FAO Agricultural Services Bulletin* No. 11. 151 p. AGS: ASB/11. [37 ref]

• ***Summary:*** Contents: Preface. Introduction. Oil milling operations. Quality control of edible flour and grits. Process procedure for production of soya flour and grits. Production of full-fat soya flour: Wenger process, Buehler process, simple process for villagers. Protein isolate: Advantages, process, yield and quality, Alfa-Laval process, estimated cost and calculations on economic return. Production of other soya products: Soy milk, Saridele, Stork method of soy milk production, pilot plant production of tempeh, protein fibers and meat analogs, extrusion-expansion products (meat analogs), bean curd (tofu). List of equipment suppliers. Annexes: PAG Microbiological requirements. 27 tables. 23 figures.

Note: This is the earliest document seen (July 2013) concerning Alfa-Laval's work with soy products (soy protein isolate). Address: Senior Food and Agricultural Industries Officer, Food and Agricultural Industries Service, FAO.

2407. Forster, L.L. 1971. Rheological properties of whole soybean milk and drum-dried full fat soy flour. MSc thesis, University of Illinois, Urbana. *
Address: Univ. of Illinois, Urbana, Illinois.

2408. Lao, Tian Ben. 1971. A study of the chemical changes relating to flavor of soybean extracts. PhD thesis, University of Illinois at Urbana-Champaign. 159 p. Page 5858 in volume 32/10-B of Dissertation Abstracts International. *
Address: Univ. of Illinois at Urbana-Champaign.

2409. Liang Shih-chiu [Shiqiu]. editor in chief. 1971. Zui xin shi yong Han Ying ci dian A new practical Chinese-English dictionary. [Taipei, Taiwan]: The Far East Book Co. Ltd. 1356 p. See p. 1037-38. 22 cm. [Eng; Chi]
• ***Summary:*** Gives the Chinese characters and their pronunciation (in Chinese) for the following soy-related terms: Pages 1037-38: Under "tou" or dow = beans and peas collectively. Soybean cake; bean curd; a semi-transparent film formed on the surface of soybean milk; a store where bean curd is made for sale; spiced and dried bean curd; soybean cheese; legume; (said of girls) in teens; the pods of beans or peas; soybean milk; fermented beans in paste form; residue of soybeans in making bean curd; fermented and seasoned soybeans; pisolite [bean + stone]; legumin; bean sprouts as a vegetable; soybean oil.

Page 563: Under "mao" = hair, fur, feather, down. Maodou = green, or tender, soybean. Address: Editor in Chief.

2410. *PAG Bulletin* (*Protein Advisory Group, WHO / FAO / UNICEF*). 1971. A low-cost protein soft drink from soybeans [made by Yeo Hiap Seng Ltd. in Singapore]. No. 11. p. 42.

2411. Tseng, Chieh-hsin. 1971. The consumption and demand for soybeans in Taiwan, China. PhD thesis,

Agricultural Economics, Ohio State University. xi + 160 p. Page 5975 in volume 32/11-A of Dissertation Abstracts International. 28 cm. [35 ref]
• ***Summary:*** Contents: I. Introduction: Background of agricultural economy, production, policy and importation of soybeans, soybean nutrition and utilization (soybean milk, soybean curd), problem identification and main objectives. II. Definitions, methodology, and procedures: Implication of consumption and demand, review of literature, factors identification and hypotheses, data collection and arrangement. III. Consumption of soybeans and their products: Consumption patterns and household expenditures (soybean oil, soybean curd, soybean seasoning, soybean made vegetarian food, soybeans, soybean milk, miscellaneous soybean foods, total soybean foods, soybean feeds), consumption of soybean foods–soybean equivalents, seasonal variation in soybean product consumption (soybean oil, soybean curd, soybean food products), substitutes for soybean products in Taiwan, Significance of Consumption function and elasticities. IV. Demand and marketing of soybeans: Trends in demand and price for soybeans, the demand function and its significance (results and significance), characteristics of soybean food products and their manufacturer (soybean curd, soybean oil and meal, the trends in demand), marketing of locally produced soybeans, projection of the future demand for soybeans. V. Summary and conclusions: Summary of findings, recommendations. Appendix A. Bibliography. Address: Ohio State Univ.

2412. Watanabe, Tokuji; Ebine, Hideo; Ohta, Teruo. eds. 1971. Daizu shokuhin [Soyfoods]. Tokyo: Korin Shoin. 271 p. Illust. Index. 22 cm. [134 ref. Jap; eng+]
• ***Summary:*** This is the best book published to date on soyfoods in Japan; however it is written in Japanese. Contents: 1. Classifications and varieties of soybeans (p. 1). 2. Physical characteristics of soybeans (p. 5). 3. Chemical characteristics of soybeans (p. 9). 4. Standards and methods of examining soybeans (p. 47). 5. Special characteristics and problems of using soybeans for food (p. 53).

6. Current status of the soybean industry in Japan (p. 63). 7. Soymilk and various types of tofu: Aburage (deep-fried tofu pouches), ganmodoki (deep-fried tofu burgers), kôri-dofu (dried frozen tofu), soymilk, and yuba (p. 75). 8. Fermented soyfoods: Natto (p. 123-40), shoyu (p. 141-67), miso (p. 168-95), fermented tofu (*rufu*) (p. 196-202). 9. Other soyfoods: Kinako (p. 203-04), soy sprouts or moyashi (p. 206-08), tempeh or tenpe (p. 209-17). 10. Quality and usage of defatted soybeans (*dasshi daizu*) (p. 219).

11. New food uses of soybeans and especially defatted soybeans (incl. 70% soy protein powder, soy protein curds, soy protein isolate, surimi gel, spun soy protein fibers) (p. 229). 12. Advice regarding supplying protein from organizations such as the United Nations and FAO (p. 257).

A 47-page translation of portions of this book (parts of Chapter 6 and all of Chapter 7) by Akiko Aoyagi and Chapters 8.1 and 8.2 by Alfred Birnbaum are available at Soyfoods Center.

Tokuji Watanabe was born in 1917. Hideo Ebine was born in 1921. Teruo Ota was born in 1926. Address: National Food Research Inst., Tokyo.

2413. **Product Name:** Sipso Soymilk.
Manufacturer's Name: Pantnagar Soymilk Products Pvt. Ltd.
Manufacturer's Address: G.B. Pant University of Agriculture and Technology, Pantnagar, Uttar Pradesh, India.
Date of Introduction: 1971?
Wt/Vol., Packaging, Price: Bottles. By 1986 200 ml Prepac plastic bags.
How Stored: Shelf stable.
New Product–Documentation: Note: This is the earliest known semi-commercial soymilk made in India.

L.K. Ferrier. 1975. INTSOY Series No. 6, p. 183. "Simple processing of whole soybeans." "Soy beverage base is presently marketed by G.B. Pant University, Pant Nagar, India. The selling price (which allows some profit) is about one-third that of cow's milk."

Letter from Surjan Singh. 1979. May. The soymilk plant was at 167 Cycle Market, Jhandewalan Extn., New Delhi.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 110. "By 1978 this plant had produced nearly one million bottles of soymilk, which had been sold to the students and test marketed. A New Delhi plant was established in 1979."

Label. 1986. Lindner. 1987. The World Soymilk Market. In 1987 this product is still on the market, being sold in Prepac aseptic 200 ml plastic bags. Oldest soymilk plant in India, in Delhi.

Letter from Dr. Prem S. Bhatnagar, Project Coordinator, All India Coordinated Research Poject on Sugarbeet, G.B. Pant University. 1985. May 10. A private sector company in Delhi named Sipso is making a soya milk which is now catching on. The address of Sipso is: Shri A.K. Mehra, Director, Pantnagar Soymilk Products Pvt. Ltd., B-68, Mayapuri Phase-1, New Delhi–110064.

INTSOY Newsletter. 1988. No. 40. p. 3. By Oct. 1988 "M/S Pantnagar Soy Products in New Delhi is currently producing about 100,000 packets of soymilk per day. Each packet contains about 200 milliliters of soymilk."

2414. Bourne, Malcolm C. 1972. Re: Equipment necessary to establish a small plant for making soymilk. Letter to Purchasing Dep., Rockefeller Foundation, 111 West 50th St., New York, NY 10020, Jan. 7. 4 p. Typed, with signature on letterhead.
• ***Summary:*** Describes 12 pieces of equipment needed to make 3,000 to 5,000 pints per day of soymilk, using the Cornell method, at a pilot plant in the Philippines. Address: Assoc. Prof., New York State Agric. Exp. Station, Dep. of

Food Science and Technology, Food Research Lab., Geneva, NY 14456. Phone: 315-787-2255.

2415. Mustakas, Gus C.; Albrecht, William J.; Bookwalter, George N. Assignors to the USA as represented by the Secretary of Agriculture. 1972. Production of vegetable protein beverage base. *U.S. Patent* 3,639,129. Feb. 1. 4 p. Application filed 9 April 1970. [4 ref]
• ***Summary:*** A rapid continuous process which utilizes vegetable protein flour to produce a highly nutritive protein beverage base powder that can be easily converted to a liquid product by merely adding water.

Note. This is the earliest English-language document seen (Aug. 2013) that contains the term "vegetable protein beverage base," which probably refers to soya milk. Address: NRRL, Peoria, Illinois.

2416. Arndt, Robert H. Assignor to Ralston Purina Company (St. Louis, Missouri). 1972. Method of preparing a simulated skim milk. *U.S. Patent* 3,642,492. Feb. 15. 6 p. Application filed 1 June 1967. [5 ref]
• ***Summary:*** "A method of preparing a commercially acceptable, nutritious substitute for dry skim milk as a food additive, comprising the basic steps of pretreating sweet dairy whey, separately pretreating isolated vegetable protein, particularly soy protein, by a dynamic physico-thermo-vapor flash treatment to remove objectionable flavors and odors, blending these pretreated ingredients in a certain controlled ratio, and adjusting the hydrogen ion content to a specific controlled range. The product is preferably flash dried to a powder." Address: St. Louis, Missouri.

2417. Arndt, Robert H. Assignor to Ralston Purina Company (St. Louis, Missouri). 1972. Method of preparing a simulated milk product. *U.S. Patent* 3,642,493. Feb. 15. 7 p. Application filed 1 June 1967. [5 ref]
• ***Summary:*** "A method of preparing a simulated whole milk beverage product by physico-thermo-vapor flash pretreating isolated vegetable protein, preferably isolated soy protein, and combining it with sweet dairy whey and special vegetable oil or fat formed by hydrogenating oil in a special procedure, and in controlled proportions, involving mixing of the isolated protein and vegetable oil together while reliquifying or suspending them in water, reliquifying the whey separately, if in dry form, blending the materials, adjusting the pH to a certain range, and homogenizing the materials in a special multiple stage manner." Address: St. Louis, Missouri.

2418. Ament, Marvin E.; Rubin, Cyrus E. 1972. Soy protein–another cause of the flat intestinal lesion. *Gastroenterology* 62(2):227-34. Feb. [25 ref]
• ***Summary:*** Soy protein can cause signs of gastrointestinal intolerance in infants. "This is a prospective study of the pathogenesis of a violent gastrointestinal reaction to soy protein in an infant. Within 24 hours of changing this 6-week-old infant's formula to soy milk, he developed sequentially: fever, leukocytosis, cyanosis, vomiting, massive blood-tinged mucoid diarrhea, dehydration, and metabolic acidosis. All symptoms disappeared after discontinuing soy milk. At 6 and 10 months the patient was given a single test feeding of soy milk formula and soy protein isolate respectively. All symptoms recurred promptly... This is the first documentation of a reversible flat jejunal lesion caused by feeding soy protein to a susceptible infant." Address: Dep. of Medicine, Univ. of Washington, Seattle, WA.

2419. Mahajan, N.C.; Peng, A.C. 1972. Soy milk and tofu: Food technologists test Oriental soybean foods. *Ohio Report on Research and Development* 57(1):14-15. Jan/Feb.
• ***Summary:*** Describes how to make soymilk and tofu on a home scale using an electric kitchen blender, a boiling water grind, and the use of calcium sulfate as a coagulant.

Table 1, "Protein content of soy milk," shows that: (1) When a cold water grind is used, 3.08 gm of protein end up in 100 ml of soy milk; 84.70% of the protein in the soybeans is recovered in the milk. The resulting residue [okara] weighs 12.70 gm and contains 14.73 gm of protein. (1) When a boiling water grind is used, 2.88 gm of protein end up in 100 ml of soy milk; 79.20% of the protein in the soybeans is recovered in the milk. The resulting residue [okara] weighs 16.70 gm and contains 20.71 gm of protein.

Table 1, "Protein content of tofu," shows that: (1) When a cold water grind is used, 50 gm of soybeans yield 24.60 gm of tofu; 73.80% of the protein in the soybeans is recovered in the tofu. The resulting whey contains 10.50% of protein. (1) When a boiling water grind is used, 50 gm of soybeans yield 23.00 gm of tofu; 68.30% of the protein in the soybeans is recovered in the tofu. The resulting whey contains 10.25% of protein.

In short, the boiling water grind gives soymilk with a better flavor but lower recovery of protein. Address: College of Agriculture, Palampur, Hemachal Pradesh, India; 2. Ohio State Univ.

2420. Thio, Goan Loo. 1972. Introduction of soybeans for human nutrition, Republic of Zambia. Amsterdam, Netherlands: Royal Tropical Institute, Dept. of Agricultural Research. iii + 48 p. Feb. 28 cm.
• ***Summary:*** Description of workshops held at 8 places in Zambia in August and Sept. 1971, teaching preparation and use of traditional foods made from soybeans (soymilk, tofu, tempeh, okara). Contents: Summary. Introduction. Programme. Equipment and raw materials. Finance. Language. Workshops: Lusaka morning workshop, Lusaka afternoon workshop, Kabwe workshop, Ndola workshop, Solwezi workshop, Katete workshop, Mansa workshop, Kasama workshop, Monze workshop. Conclusions.

Recommendations. Acknowledgments.

List of Annexes: I. Itinerary. II. Technical programme of soybean workshops. III. Soybeans, soybean products, and their applications (a brochure prepared for Zambia in June 1971; discusses soymilk, tofu, tempeh, fried soybeans [soynuts], boiled young whole soybeans [green vegetable soybeans], fried tofu, dried sliced tofu, soymilk residue flour [ground okara], soy croquettes (soyrolls, made from okara flour and soymilk), soy biscuits [made with okara flour], vegetable soysoup [with soymilk], tofu omelette, tofu salad with peanut sauce, soy-maize bread [with soymilk and tofu], average chemical composition of soybeans). IV. Examples of modified Zambian recipes with the addition of soybean products (using mostly tofu, soymilk, and okara flour). V. Preparation methods for soybean products adapted to village conditions: Soymilk, tofu. VI. Proposed training system. Address: Senior Technologist, Royal Tropical Institute, Dep. of Agricultural Research.

2421. Yasumatsu, Katsuhara; Toda, J.; Kajikawa, M.; et al. 1972. Studies on the functional properties of food-grade soybean products. I. Classification of soybean products by their chemical constituents and protein properties. *Agricultural and Biological Chemistry* 36(4):523-31. April. [17 ref]

• ***Summary:*** Chemical analyses of 43 commercial soybean products were conducted. Figures show: (1) Chemical composition of these commercial products. The horizontal axis shows content of chemical constituent. The vertical axis shows the number of products. (2) Protein properties of commercial products, including: Water dispersible nitrogen. Amount of native protein. Dispersible nitrogen in 3% NaCl. Dispersible nitrogen in acetic acid. Dispersible nitrogen in pH 2.0 solution. Dispersible nitrogen in pH 11.08 solution. Dispersible nitrogen in phosphatase, pH5.

"The principal component analysis was applied to correlation matrix among chemical constituents." "The same procedure was applied to correlation matrix among protein properties."

"Discussion: Food-grade soybean products are generally classified according to their processing method or protein contents. They are usually designated as soy flour, soy protein extract, soy protein concentrate and soy protein isolate, in order of increasing protein contents." A brief description of how each is made and its typical protein content is given. "Soy protein extract consists of water extractable components of defatted soy flour. This is produced by drying the so-called soy-milk."

Note: This is the earliest English-language document seen (June 2009) that contains the term "food-grade soybean" (or "food grade soybean")–referring to edible soy products. It is also the earliest English-language document seen (July 2009) that contains the term "food-grade soybean products" (or "food grade soybean products"). Address: Food Research Labs., Food Products Div., Takeda Chemical Industries, Ltd., Osaka, Japan.

2422. Barbaix, Erik. 1972. La verification scientifique du projet soja [Scientific verification of the soya project]. In: Comité de Coordination pour le Developpement en République du Zaïre (CODEZA). Séminaire National sur le Soja [National Seminar on Soya]. Kananga, Zaire. 191 p. See p. 94-103. Published in 1986. [2 ref. Fre]

• ***Summary:*** Discusses the nutritional value of soya, commercial products containing soya (such as Fortifex from Brazil, Pronutro from South Africa, or Saridele from Indonesia) from other countries, suggestions for establishing statistical health means (such as average birth weight, and infant growth curves) in Kananga, results of a survey measuring infants in Kananga. The author concludes: Theoretically, the soya project offers an ideal solution to the problem of protein deficiency. A series of verification tests will be necessary to prove that this project is living up to hopes. The first results of surveys have furnished a growth curve. These initial experiences have confirmed the beneficial effect of adding soya to the diet in a boarding situation. Address: Dr. at the Military Center, 1st Military Region, B.P. 1773, Kananga, Zaire.

2423. D'Heer, A. 1972. Utilisation du soya [Utilization of soya]. In: Comité de Coordination pour le Developpement en République du Zaïre (CODEZA). Séminaire National sur le Soja [National Seminar on Soya]. Kananga, Zaire. 191 p. See p. 65-93. Published in 1986. [2 ref. Fre]

• ***Summary:*** The author is a woman. Pages 65-68 discusses the use of soybeans in the form of soy flour, roasted soy flour, whole dry soybeans, and soymilk. Pages 69-93 are an appendix by the author titled "Some notes for those who give nutritional education in a traditional milieu." This offers many examples related to the soya campaign in Zaire. Applications include use in bidia (a paste consisting of about 65% water, 26% cassava (manioc) flour, and 9% corn flour), panadas (bread soups for infants), and soy flour (regular or roasted) as a fortifier for cassava flour. Address: Dietitian, O.M.S., B.P. 110, Kananga, Zaire.

2424. Ramsey, H.A.; Witaszek, P. 1972. Effect of chlorotetracycline on the performance of calves fed soy flour milk replacers (Abstract). *J. of Dairy Science* 55(5):705 (Abst. #P117). May.

• ***Summary:*** Chlortetracycline increased growth only slightly when added to the diet. Therefore it is unlikely that intestinal fermentation of oligosaccharides is a primary cause of poor growth in calves fed soy flour replacers for milk. Address: North Carolina State Univ., Raleigh, North Carolina.

2425. Sudweeks, E.M.; Ramsey, H.A. 1972. Growth of calves fed milk replacers prepared from different fractions

of fully cooked soy flour (Abstract). *J. of Dairy Science* 55(5):705. May.
Address: Dep. of Animal Science, Georgia Agric. Exp. Station.

2426. Wijnandt, J. 1972. La transformation des graines de soya en farine toastee [Processing soybeans to make roasted soy flour]. In: Comité de Coordination pour le Developpement en République du Zaïre (CODEZA). Séminaire National sur le Soja [National Seminar on Soya]. Kananga, Zaire. 191 p. See p. 135-44. Published in 1986. [Fre]
• ***Summary:*** Contents: Introduction. First trials with soybean utilization (1962-1965). Manufacture of roasted soy flour: Generalities, description of different processes. Commercialization: Purchase of the soybeans by ETSA (Ecole Technique Secondaire Supérieure d'Agriculture, de Tshibashi), transport, storage, resale price by commercial agents, sale and distribution, packaging, the soya cookie project. Conclusion. Appendix 1. Equipment used for a capacity of 15 kg/hour, with the CeCoCo 'Fuji' Coffee roaster (Torréfacteur CeCoCo, P.O. Box 8, Ibaraki, Osaka-Fu, Japan). Appendix 2. Equipment used for a capacity of 80 kg/hour, with Torréfacteur Probat." Appendix 3. Costs of actual daily production: 75% yield, 400 kg in 5 hours, 4 workers. Appendix 4. Recipe for cookies with soy flour used at the Inabanza Center from 1968-1973: wheat flour 600 gm, soya flour 300 gm, sugar 200 gm, lard or oil 120 gm, salt 5 gm, sodium bicarbonate 5 gm, ammonium bicarbonate 5 gm, water 200-250 cc. Recipe with corn, soya, and wheat to make 55 kg of cookies, containing 14% protein, 59% carbohydrates, 16% lipids, and 436 calories per 100 gm. Machines used at Bisoka for making soya cookies at the end of 1974 (type, brand, function, power use, capacity).

At the start of this project in 1961, the directors focused all of their attention on soybean cultivation, giving none to preparation of foods. But noting the lack of interest shown by the local people in consuming soybeans as such, they saw the necessity of giving more attention to utilization. The first utilization trials ran from 1962 to 1965; under the direction of Mrs. d'Heer, they tried unsuccessfully to use soybeans as whole soybeans, as soymilk, and as products made from soymilk. They tried to make a fermented soy yogurt using cultures sent from Wageningen. The product turned out well but the taste was foreign to the local people and it was too perishable. Investigation of powdered soymilk revealed that the equipment was too expensive and complicated. Then in 1969 they found that roasted soy flour worked very well in the local diet, to fortify cassava and corn products. A detailed description of the process and equipment is given. Key assistance was provided by ETSA (Ecole Technique Secondaire de Tshibashi). Address: ETSA–Tshibashi, B.P. 110, Kananga, Zaire.

2427. Willard, T.R.; Ramsey, H.A. 1972. Effect of treating soy flour with anhydrous hydrogen chloride on its value as a milk replacer ingredient for calves (Abstract). *J. of Dairy Science* 55(5):704 (Abst. #P115). May.
• ***Summary:*** Treatment of dry soy flour with anhydrous HCl (hydrogen chloride) improved its nutritional value for the calf. Address: North Carolina State Univ., Raleigh, North Carolina.

2428. Nitsan, Zafrira; Volcani, R.; Hasdai, A.; Gordin, S. 1972. Soybean protein substitute for milk protein in milk replacers for suckling calves. *J. of Dairy Science* 55(6):811-21. June. [20 ref]
Address: The Volcani Center, Agricultural Research Organization, Bet-Dagan, Israel.

2429. Nitzan, Zafrira; Volcani, R.; Hasdai, A.; Gordin, S. 1972. Soybean protein substitute for milk protein in milk replacers for suckling calves. *J. of Dairy Science* 55(6):811-21. June. [20 ref]
• ***Summary:*** Soy protein concentrates give better results than soy flour. Address: The Volcani Center, Agricultural Research Organization, Bet Dagan, Israel.

2430. **Product Name:** [Soja Semp {Powdered Infant Formula Based on Soy Protein Isolate}].
Foreign Name: Soja Semp.
Manufacturer's Name: Semper AB.
Manufacturer's Address: Sektor Industri, Sveavagen 166, Box 231 42, S-104 35 Stockholm, Sweden. Phone: 08-729-9700.
Date of Introduction: 1972. June.
Ingredients: Incl. soy protein isolate.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Thomson. 1979. *Journal of the American Oil Chemists' Society.* March. p. 386-88. Form filled out by Anders Eriksson. 1981. Nov. "Soja Semp is similar to Pro-Sobee, an infant formula based on soy protein isolate."

Soyfoods Center Computerized Mailing List. 1982. July 23. Phone: 08 24 77 00.

Talk with Ted Nordquist of Aros Sojaprodukter. 1988. March 27. He thinks the product was introduced in about 1970-72. The key man was Leif Christensen, with whom Ted now works; it was his formula. AB means Corporation (*Aktiebolag*).

Talk with Leif Christensen. 1990. July 6. Followed by letter (fax) of July 10. This was Semper's first product made from soybeans. The name is pronounced "SO-ya Semp." It was introduced in June 1972 as a complete mother's milk substitute in the form of a powdered infant formula based on soy isolate. At the time the following imported products were competitors: Sobee powder, based on soy flour, from Mead Johnson. Mullsoy liquid concentrate, based on soy flour,

from Syntex. In the Netherlands Abbott (M&R Laboratories) had a factory where they produced Isomil powder, based on soy isolates. In Feb. 1975 Semper introduced a new Soja Semp, a liquid concentrate, which see. Note: Anders Eriksson recently left to work at another company.

Note: This is the earliest known commercial soy product made in Sweden.

2431. *Soybean Digest.* 1972. A tasty soy-whey milk. June. p. 30.
• ***Summary:*** "Last year, University of Illinois food scientists A.I. Nelson, L.S. Wei, and Marvin Steinberg [at the University of Illinois] discovered a simple process to keep soybeans from developing an undesirable flavor and odor– by boiling the whole soybean before it was broken." The process inhibits or inactivates enzymes that cause this off-flavor. A photo shows Steinberg and Wei proposing a toast to the success of their soybean-cheese whey milk.

2432. Webber, Ella V. 1972. Perry A. Webber: Pioneer missionary in true education to Japan. Chattanooga, Tennessee: Southern Missionary College. 87 p. *
• ***Summary:*** Perry A. Webber was born on 15 June 1890 in Northville, Michigan. His parents became Seventh-day Adventists (SDAs) during his early childhood. In 1904 the family moved to Berrien Springs, Michigan, and Perry was educated there. In 1911 Perry graduated with a BA from Emmanuel Missionary College [in Berrien Springs] and in 1912 he was married to Ella Mae Verney.

In 1913 he was appointed by the SDA General Conference Foreign Mission Board to go, with his wife, as missionaries to Japan. In Tokyo they studied Japanese language for 2 years, then began pioneering educational work in Japan until 1927. For 4 years (1915-19) they worked in Fukuoka (in northern Kyushu), then returned to Tokyo. A son, Alfred B. Webber, was born in Dec. 1919; he later became a medical doctor. In Tokyo they worked at a school in Ogikubo. By 1921 Perry was teaching about the virtues of brown rice. In 1923 Perry found 25 acres of land in Sodegaura; in September of that year the Great Tokyo Earthquake (*Kanto Daishinsai*) took place. Later in 1923 the family returned to California because of the wife's respiratory problems. Harry Webber was born in Glendale. After a year in Honolulu, Hawaii, in 1934, they returned to Japan in the summer of 1925 and moved the college into the country. In the spring of 1926 the students and teachers started to build their own self-supporting school, with Perry as principal. This school later grew into the Japan Missionary College (*Saniku Gakuin*). The Japanese name means "three-sided school" since equal emphasis was placed on mental, moral, and manual development.

During these years Perry grew very fond of Japanese food and especially of Inari-zushi (made of deep-fried tofu pouches filled with vinegared rice). On his way to language school, he used to stop in regularly at the Shinoda Sushi Shop in Kanda (in Awaji-cho by the 1970s) to enjoy their Inari-zushi. The shop once developed a special Webber Sushi, named after him, and they used his name in some of their promotional materials. He was also very fond of regular tofu and of miso soup.

In 1927 the Webbers returned to America to educate themselves in good health. At this time Adventists believed that the true remedies are "pure air, sunlight, abstemiousness, rest, exercise, proper diet, the use of water, and trust in Divine power (*Ministry of Healing*, p. 127). In the fall of 1928 Perry entered Michigan State University to study biological chemistry while his wife, Ella Mae, studied nutrition; both were deeply interested in understanding the principles of good health. By May 1929 Perry was considered "one of our teachers" by Madison College in Madison, Tennessee.

During the early 1930s and the Great Depression, many students' only hope of getting an education was to rely on their own efforts. Madison, which offered a work-study program, became a very attractive alternative school.

In Sept. 1930 the family moved to Madison while Perry finished his thesis. In June 1931 Perry was awarded his PhD degree in biological chemistry, with special interest in chemistry and soyfoods development. At Madison he became a instructor of chemistry with a strong interest in food chemistry. In the following years he became the main person at Madison responsible for the school's growing involvement with soyfoods. In Nov. 1931 Perry wrote a long two-part article for *The Madison Survey* titled "Facts Concerning the Soybean." During the early 1930s he put a great deal of creative energy into expanding Madison's line of commercial soyfood products. Most of the products that were introduced between 1931 and 1934 were the result of his work. In August 1933 Perry Webber and Frances L. Dittes attended the annual convention of the American Soybean Association (ASA) in Baton Rouge, Louisiana. Webber presented a lecture with slides about the importance of soyfoods in Asia and their potential in America. He also prepared an exhibition of Madison soyfoods that was displayed at the convention. Webber was secretary-treasurer of the ASA for one year at this time. He visited Edsel A. Ruddiman at the Ford Motor Company and gave a talk to him and other leading research scientists about soyfoods. He was also a close friend of Dr. John Harvey Kellogg. He visited Kellogg, talked about soyfoods, and did some work developing a preservative for some of Kellogg's crackers.

Perry Webber worked at Madison until Sept. 1935 when, after a big farewell party, he returned to Japan to serve as principal of the Japan Missionary College (Saniku Gakuin). There he taught a lot about nutrition and the value of a vegetarian diet. In about 1936 Webber visited Dr. Harry Miller in Shanghai, China, and helped him set up a sanitation and research lab for analyzing the Vetose soymilk products at

his new plant.

From 1939 to 1943, during World War II, Webber was back in the USA, teaching at Madison as head of the chemistry department. He was also at Madison from 1946 to 1953 and from 1959 to 1962, each stay punctuated by work in Japan. While serving as an administrator at Madison Foods (1959-1963) he and Sam Yoshimura pulled the factory out of debt and put it several thousand dollars into the black in one year's time.

During his trip to Japan that began in the spring of 1953, he taught one food plant how to make gluten, soymilk, and soy croquettes. Also in 1953 he started a self-supporting organization at Mt. Akagi, about 125 miles northwest of Tokyo; there he worked for more than 7 years. In the winter of 1956 he suddenly became ill with pneumonia. He returned to America in the summer of 1958 and was found to have Parkinsonism; no medicine was prescribed until 1962. In 1966 Perry was an outpatient at the Madison Sanitarium / Hospital for a time, then he became a inpatient from Oct. 1967 to Jan. 1968. In Sept. 1968 he went to a convalescent home in Lodi, California. His son, Dr. Alfred B. Webber, was living and practicing medicine in Lodi. In 1969 he returned to the Wildwood Sanitarium, a self-supporting Seventh-day Adventist convalescent home and health care facility in Wildwood, Georgia (northern Georgia). He passed away there in January 1973 at age 82 of Parkinsonism.

2433. *Food Engineering.* 1972. Point up new developments. 44(7):121-26. July. See p. 121. [2 ref]
• ***Summary:*** Alfa-Laval is "experimenting with soya milk to improve its qualities." The company also sees enormous potential in leaf protein, with yields of 1-2 tons of crude protein per hectare. Alfa-Laval/De Laval Group is "one of the world's greatest food equipment and process engineering companies." Their equipment showroom is at Tumba, near Stockholm, Sweden.

Note: This is the earliest document seen (Aug. 2002) concerning Alfa-Laval's work with soya milk.

2434. *Food Processing* (*Chicago*). 1972. 'Good tasting' soy products. 33(7):F7-F9. Foods of Tomorrow section. Summer/ July.
• ***Summary:*** "Flavor plus processing advances improve marketability, parallel consumer interest and demand." Discusses soyfoods developed by Nelson, Steinberg, and Wei at the University of Illinois, Food Science Dept.: drum-dried whole soybeans and bananas, vanilla and chocolate flavored soybean milk shakes, soymilk and whey blend, canned soybeans, a soy spread resembling diet margarine, and soynut butter. "Additional products that appear possible are: a frozen ice cream type product using soy milk, powdered drink that could be added to regular or skim milk to make an instant breakfast type drink, ice cream bar, frozen puddings, high protein extruded snacks, nutritious breakfast cereal, and baby food cereal."

Photos show: (1) Soybean spread and soybean butter spread on crackers, bread, etc. (2) Vanilla and chocolate flavored soybean milk shakes. (3) "Pork & beans" (navy beans on left; soybeans on right).

Note: This is the earliest English-language document seen (Dec. 2003) that contains the term "soybean milk shakes."

2435. Jagatjit Industries Limited. 1972. Display ad: Company meeting. *Times of India* (*The*) (*Bombay*). Aug. 19. p. 8.
• ***Summary:*** This ad contains the text of a speech delivered by Mr. L.P. Jaiswal, chairman and managing director, at the company's 27th annual meeting.

"In regard to the Soya Bean Project you will be pleased to note that the State Industrial and Investment Corporation of Maharashtra Ltd. (SICOM) have agreed in principle to collaborate in the said project. This is a very interesting project. We propose to enter the protein field in a big way realising that mal-nutrition is one of the greatest problems facing our country at present. The problem of protein shortage and mal-nutrition is faced by most of the developing countries. We propose to be of help in tackling this problem by developing and marketing cheap protein foods made from Soya, which is a vegetable source, to supplement the diet of the vulnerable sections of the vast population of our country. It is proposed to set up in the State of Maharashtra, Plants for the manufacture of Soya-flour, Soya Protein Concentrates, Isolates, Formulated Products and Soya Milk Beverages."

A portrait photo shows Mr. L.P. Jaiswal. Address: Jagatjit Nagar, District Kapurthala, Punjab, India.

2436. Loring, Kay. 1972. Korean cafes keep growing. *Chicago Tribune*. Aug. 24. p. S_A6.
• ***Summary:*** This is a review of the restaurant Korea House in Chicago, where an estimated 10,000 people of Korean ancestry now reside. Four years ago there was only one Korean restaurant in the city; now there four. The main Korean seasonings are garlic, onion, red pepper, soy sauce, and sesame–plus kim chee (kimchi).

"No dairy products are used, because as in Japan and China, there is no room in this thickly populated country for dairy industries. Soy bean curds and soy milk are among substitutes." Vegetable oils, such as sesame oil and [soy] bean oil, are widely used in place of animal fats for cooking.

2437. Orr, Elizabeth. 1972. The use of protein-rich foods for the relief of malnutrition in developing countries: an analysis of experience. *Tropical Products Institute Report* No. G73. 71 p. Aug. Summary in PAG Bulletin (1973) 3(2):59. 28 cm. [17 ref]
• ***Summary:*** Contents: Acknowledgements. Foreword. I. Introduction: the protein problem and approaches to it.

II. Protein-rich food schemes (69 schemes are described): Introduction, schemes no longer in operation–and which ceased within a year of inception or after a market trial period, schemes no longer in operation–but which ran for more than one year before termination, schemes operating irregularly, schemes currently in regular production (beverages, other products), schemes at exploratory stages. III. Some aspects of protein-rich food schemes: Location, source of the idea, ownership of the enterprise, characteristics of the products (ingredients, composition, type of product), promotion, external assistance. IV. Evaluation of the protein-rich food approach: Summary of the outcome of the various schemes: Operational status, sales volume (the largest are Bal-Ahar, Vitasoy, and Pronutro), sales trend, distributive outlets. Reason for the outcome (success or failure). Impact on the protein problem: Production capacity, sales of Incaparina in Guatemala, income levels, prices of protein-rich foods (Bal-Amul is the most expensive since it is canned, followed by Pronutro), prices in relation to incomes, prices of competing products, distribution of protein-rich foods in rural areas. Impact made by protein-rich food schemes on the protein problem: Summary (very small). Future contribution of protein-rich foods to the protein problem. V. Initiation of protein-rich food schemes: guidelines for Government Administrators. References. Statistical appendix.

List of tables: Text: I. Daily protein requirements. II. Protein contents and protein biological values. III. Protein products/enterprises. IV. Cost of product allowances per child at retail prices. Appendix: I. Ownership of enterprise. II. Ingredients of protein-rich foods. III. Composition of protein-rich foods. IV. Outlets for protein-rich foods. V. Capacity of plant/sales. VI. Retail prices/protein prices. VII. National income in selected countries.

The following foods containing soya are discussed (see Table II, p. 66, for full list of ingredients, and Table III, p. 67, for nutritional composition). The percentage of soya in the product, when known, is shown in parentheses: Brazil: Incaparina (38%), Golden Elbow Macaroni (30%), Fortifex (47.5%), Solein, Cerealina, Saci (3% protein). Colombia: Incaparina Blanca (30%), Colombiharina (30%), Incaparina (20.9%), Duryea, Pochito (20.0% protein). Ethiopia: Faffa (18%). Guyana: Puma. Hong Kong: Vitasoy (3% protein). India: Bal-Amul (20-25%). Indonesia: Saridele (18-19% protein). Madagascar: Weaning Food (38%). Malaysia: Vitabean (2.75% protein). Mexico: Conasupo products (30%), Protea (24.0% protein). Mozambique: Super Maeu (10%). Singapore: Vitabean (2.75% protein). South Africa: Kupangi Biscuits, Pronutro. Taiwan: Weaning Food (30%). Thailand: Noodles, Poluk, Kaset Cookies, Kaset Protein. Turkey: Weaning Food (20%). Uganda: Soya Porridge (38%; 21.0% protein), Soya Maize (16.0% protein), School Porridge (15.0% Protein). U.S.A.: WSB (Wheat-soya blend, 20%), CSM (Corn-soya milk, 25%). Venezuela: Incaparina (19%). Zambia: Milk Biscuit (7.1%). Address: Foreign and Commonwealth Office (Overseas Development Administration), TPI, 56/62 Gray's Inn Rd., London WC1 8LU, England.

2438. Orr, Elizabeth. 1972. Vitasoy, made by Hong Kong Soya Bean Products Co. Ltd (Document part). *Tropical Products Institute Report* No. G73. p. 15. Aug.

• ***Summary:*** "The earliest of the enterprises making a soya-based beverage is the Hong Kong Soya Bean Products Co. Ltd. which began making Vitasoy in 1940, ceased operations when the factory was taken over by the Japanese in 1942, and recommenced in 1945. Vitasoy is made by the traditional Oriental process. Originally it was promoted primarily as a substitute for cow's milk, particularly for use by children, and it was delivered daily from the factory to consumers' homes in the same way as fresh milk. Initially sales were so poor that the company was on the verge of bankruptcy. There were a number of reasons for the unfavourable market reaction. The organoleptic appeal was poor, the product having a strong 'beany' flavour, and its keeping qualities–it was packed 'fresh' in milk bottles with paper closures–were even poorer than those of fresh cow's milk, and constant refrigeration was required. The major reason for the low sales was probably, however, the promotional approach. It was found that even among the Chinese population, who are well used to soya products, there was a prejudice against soya milk. It was not considered to have nutritional value and it was also thought to have undesirable side effects. Moreover, it was not the local custom to give cow's milk to children, this being regarded as a Western luxury. After the war these problems were tackled. The technology was improved, and with it the organoleptic qualities of the product. It was also sterilized, giving it a shelf life of several months. Most importantly, perhaps, the promotional approach was completely changed: it was promoted as a 'thirst-quenching drink' and distributed through the conventional soft drink outlets. The company also exploited a quality which soya milk has and the typical soft drink does not have: it is very palatable when heated. Heaters were sold to retailers, with the result that Vitasoy became much less of a seasonal product (80 per cent of the sales of soft drinks in Hong Kong normally take place during the six summer months). Along with these changes went a vigorous promotional effort which is said to have been maintained to the present. The company later took on the license for a conventional soft drink popular in the Far East, Greenspot, and in recent years has replaced Greenspot with the Pepsi Cola franchise. The handling of these two closely related products has obvious economic advantages. Demand for Vitasoy has been buoyant for many years and appears still to be following a rising trend. Sales increased from 2½ million cases per year in the mid-1960s to 5 million cases (120 million bottles) in 1970, and the capacity

of the plant has been trebled over the years. Vitasoy is undoubtedly a commercial success. In contrast to many of the other enterprises dealt with in this report, the producer responded to the market situation and showed considerable staying power. It may be significant that the company was not a multi-product enterprise: its prosperity depended for many years solely on the success of Vitasoy." Address: Foreign and Commonwealth Office (Overseas Development Administration), TPI, 56/62 Gray's Inn Rd., London WC1 8LU, England.

2439. Orr, Elizabeth. 1972. Full fat soya flour tested by Wei Chuan Foods Corp. in Taiwan (Document part). *Tropical Products Institute Report* No. G73. p. 31. Aug.
• ***Summary:*** "In Taiwan the Wei Chuan Foods Corporation has developed, with the assistance of the United Nations Agencies, a weaning food based on full fat soya flour cum dried skim milk. USAID has assisted with the provision of equipment and the Agencies have allocated US$50,000 for use primarily in market promotion and in subsidising the selling price in the interests of low-income consumers. This project provides an example of the length of time that can be required to finalise a scheme for the production of a protein-rich food. The Agencies began discussions with Government on the possible use of a soya-based product (originally a dried soya milk) for nutritional purposes as long ago as 1960 and the Wei Chuan company became interested at the end of 1964. Since then delays have been caused by technical problems involving processing (solved by assistance from the Agencies) and obtaining a formula acceptable to WHO, on whose approval continuing support by the other United Nations Agencies was dependent. The latter involved very extensive clinical tests, which demonstrated clearly the value of full-fat soya flour as a weaning food protein supplement. As a result of this work the time required for product formulation in schemes using this type of protein concentrate may be expected to be reduced.

"Another delaying factor has been the Wei Chuan company's very cautious approach to the market launch. The company has been concerned about the local availability of foodstuffs donated by the World Food Programme, and of commercial weaning foods, which are said to be of inferior quality but low in price." Address: Foreign and Commonwealth Office (Overseas Development Administration), TPI, 56/62 Gray's Inn Rd., London WC1 8LU, England.

2440. Williams, S.W.; Rathod, K.L. 1972. Prospects and emerging problems of market development for soybeans in India. *Indian Society of Agricultural Economics, Seminar Series* X. p. 65-84. Aug. (Seminar on Emerging Problems of Marketing Agricultural Commodities). [16 ref]
• ***Summary:*** This paper begins: "During the past six years, extensive trials have been made of improved, cream-colored varieties of soybeans in India. These trials were started at Uttar Pradesh Agricultural University, Pantnagar and at Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur. However, under an All-India Co-ordinated Research Project, in the last two or three years they have been carried on in many parts of the country. These trials have shown that, particularly in North-Central India, potential yields from soybeans should be comparable with yields in the United States, which now is the major soybean producing country. So far, most of the attention has been upon soybeans as a *kharif* season crop, but experiments in other growing seasons have suggested that, particularly in some parts of Uttar Pradesh, there may be a place for soybeans as an early spring crop.

"As a result of these findings, farmers have started to grow soybeans. In the first two or three years production was used almost entirely for seed multiplication but in 1970, with a crop of approximately 20,000 hectares, soybeans began to be available for commercial use (Table I)."

Tables show: (1) Progress and target of soybean acreage in India by state: In 1971 the total acreage (sole crop + mixed crop) was: Maharashtra 8,461 ha. Gujarat 3,200 ha. Uttar Pradesh 2,862 ha. Madhya Pradesh 1,600 ha. Himchal Pradesh 8000 ha. Four other states: 494 ha. Total: 17,417 ha.

(2) India's imports of soybean oil from the United States, 1966-67 to 1970-71. Year is April to March. 1966-67: 31,300 tonnes (metric tons). 1967-68: 109,400 tonnes. 1968-69: 76,400 tonnes. 1969-70: 101,400 tonnes. 1970-71 (until October): 47,800.

Food uses of soybeans: (1) Soybean flour. "A few private organisations have already come into the market with soy flour and biscuits and others plan to enter the market soon. Amul, an enterprising farmers' co-operative in Gujarat, has been selling Balamul, a weaning' food which contains ingredients from soybeans. The Indian Government has a supplementary feeding program involving Balahar, a food containing 15 per cent soybean flour, 15 per cent groundnut flour; and 70 per cent wheat flour. Production of Balahar approximates 50,000 tons this year with a goal of 60,000 tons next year."

(2) Soybean beverage (milk). (3) Textured soybean products, soybean concentrates and soybean isolates are more sophisticated high protein foods that have numerous potential uses. (4) Simple processed foods containing soybeans are now being developed. Examples include a soy-banana weanling food and use of whole soybeans in canned foods.

Problems in developing soybean marketing. Decisions in establishing processing facilities: In India, the scarcity and high price of edible oil will provide a strong incentive to extract oil from soybeans to be sold separately from the meal." The most efficient way to extract this oil is using large-scale solvent extraction plants.

Making best use of soybean meal. With "minor

exceptions, the soybean foods of the Orient are not made from soybean meal. Consequently, if India is to develop large-volume use of soybean meal in human foods, it must find ways to do it which no other country has yet developed on that scale." "Exports offer a potentially larger market soybean meal."

USAID is the U.S. Agency for International Development. Address: Univ. of Illinois/USAID and Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur -4, Madhya Pradesh.

2441. Gorrill, A.D.L.; Nicholson, J.W.G. 1972. Effects of neutralizing acid whey powder in milk replacers containing milk and soybean proteins on performance and abomosal and intestinal digestion in calves. *Canadian J. of Animal Science* 52(3):465-76. Sept. [15 ref]
• ***Summary:*** "We conclude that acid whey powder can be added to milk replacers at levels of about 23% and that adjusting the pH improves calf performance." Address: Research Station, Canada Agriculture, Fredericton, New Brunswick.

2442. Weisberg, Samuel M. 1972. Developing and marketing low-cost protein foods in developing countries. Experience indicates that private industry must play a major role. *Food Technology* 26(9):60, 62, 64, 66, 68. Sept.
• ***Summary:*** Presents case histories of the following low-cost protein foods: Reconstitutable powder products–ProNutro (Durban, South Africa), Nutresco (Salisbury, Rhodesia), Incaparina (Guatemala, Colombia, El Salvador, Brazil). Milky beverages–Vitasoy (Hong Kong), Vitabean (Yeo Hiap Seng Ltd., Singapore), Vitamilk (Bangkok, Thailand), Miltone (India). Soft drinks–Puma (soft drink developed by Monsanto and franchised to D'Aguiar Brothers (DIH) Ltd., Georgetown, Guyana), Samson (made by Coca-Cola Co., sold in Paramaribo, Surinam). Soup products–Nutrovite (Salisbury, Rhodesia; it "has been marketed for 7 years in Rhodesia, Mozambique, and Angola"), Protone (South Africa, no soy). Baked goods–Modern bread (India. "It is planned to improve the protein quality of the bread by means of groundnuts or soybeans, instead of through the use of amino acids)." Pasta products–Golden Elbow Macaroni, Sam Yang Noodles.

"Production of Vitasoy at present is at the rate of over 100 million 6½- and 8½-oz. bottles/yr, and sales have recently been exceeding the sales of conventional soft drinks such as Coca-Cola." Six reasons for the product's success are given, including strong marketing and advertising (5% of sales price goes for promotion and advertising). Address: Executive Director, League for International Food Education.

2443. Rodale, Robert. 1972. Milking the soybean. *Washington Post, Times Herald.* Oct. 26. p. H10.
• ***Summary:*** "The versatile, high-nutrient soybean can be processed easily into a kind of milk with several nutritional advantages over cow's milk. That may come as a shock to dairymen, but it's true."

Soy milk, which comes from a plant, contains little saturated fat, and is an alternative for people who are allergic to dairy milk. Describes how to make soymilk at home. Although it is easy to make an inexpensive, it is not popular in the USA; most Americans don't like the slight "beany" flavor.

However a food made from soy milk, whose taste does please our palates, is slowly gaining popularity. "That food has the rather unattractive name 'bean curd.'" You may have seen it on the menu at a Chinese or Japanese restaurant. The Chinese themselves call it [in Cantonese] *dow foo yuen* and the Japanese call it *tofu,* a name that is gaining popularity in the United States. Surprisingly, bean curd made in Taiwan and shipped to the U.S. in cans is labeled *tofu.*

"The big value of bean curd is that it offers a high-protein, good-tasting alternative to meat. It's a true convenience food, with outstanding culinary and nutritional values." Describes the many ways it can be used. It is not an exotic oriental food, but one that "has the potential to become a basic food eaten and enjoyed regularly by millions of Americans."

A recipe for Bean curd and Chinese cabbage soup calls for 4 cups homemade chicken stock and "¼ pound bean curd."

2444. Kretchmer, Norman. 1972. Lactose and lactase. *Scientific American* 227(4):70-78. Oct.
• ***Summary:*** The subtitle reads: "Lactose is milk sugar; the enzyme lactase breaks it down. For want of lactase most adults cannot digest milk. In populations that drink milk the adults have more lactase, perhaps through natural selection."

The adults of all animal species other than humans lack the enzyme lactase–"and so, it is now clear, do most human beings after between two and four years of age." The few human populations in which those who can tolerate lactose outnumber those who cannot include most northern European and white American ethnic groups."

Lactose is a disaccharide composed of the monosaccharides glucose and galactose. Lactase splits the disaccharide into its two monosaccharides. Human milk contains 7.5 grams of lactose per 100 ml whereas cow's milk contains 4.5 gm. Thus human milk tastes much sweeter. The only mammals whose milk is completely free of lactose–or any other carbohydrate–are certain of the Pinnipedia: the seals, sea lions and walruses of the Pacific basin.

Frederick J. Simoons of the University of California at Davis has developed a hypothesis to try to explain what events in human cultural history might have influenced the developed of tolerance to lactose in the adults of some groups. Humans apparently first began to milk animals such as cattle, sheep, goats, or reindeer about 10,000 years

ago. This was roughly 100 million years after the origin of mammals and long after the pattern of lactase activity had been well established in mammals. Because of a chance mutation, a selective advantage would have been conferred on those who had high enough lactase activity to tolerate lactase. That genetic mutation probably occurred at least 10,00 years ago. The people with the mutation for adult lactase activity could be members of a dairying culture, consume their own dairy products as food, then sell dairy products in the form of yogurt or cheese (whose fermentation process reduces the lactose content) to the general lactose-intolerant population.

These ideas have implications for national nutrition policy. Programs of indiscriminate, large-scale distribution of nonfat dry milk to lactose-intolerant populations should be modified, or the current attempts to supply lactose-free milk powder should be encouraged.

2445. Rodale, Robert. 1972. Milk from soybeans is a treat to cows. *Hartford Courant* (*Connecticut*). Nov. 1. p. 31.
• ***Summary:*** Soy milk can easily be made at home from the versatile, high-nutrient soybean. Dairymen should take notice that a food made from soy milk has a good taste and is slowly gaining in popularity. "That food goes under the rather unattractive name bean curd." It is widely served in Chinese restaurants. "The Chinese themselves call bean curd *dow foo yuen*, and to the Japanese its tofu, a name that's gaining popularity."

Bean curd or tofu is not an exotic Oriental food; it has the potential to become a basic new food, enjoyed regularly by millions of people. Tofu has already become popular on the West Coast; *Sunset* magazine recently published an article about it. The soybean is a huge crop for American farmers, yet only about 2% of it is used for human food. The rest is fed to animals or used to make industrial products.

There is also an interesting parallel between tofu and yogurt. Both are made by culturing milk, have special health benefits, and started as foreign foods with seemingly little appeal to Americans. Yogurt is now a mainstream American food, and the same could happen to tofu. Address: [Rodale Press, Emmaus, Pennsylvania].

2446. *Times* (*London*). 1972. Mechanical milkman by-passes the cow: Philip Howard looks at London–Non-bovine dairy producer. Nov. 1. p. 3, cols. 1-4.
• ***Summary:*** "There are men alive who can remember when cows were tethered in the parks of London, and small boys being taken for a walk, could buy a glass of milk, tepid from the udder, for a penny."

But Dr. Hugh Franklin has taken his "mechanical cow" from London to the countryside. A chemical engineer and nutrition consultant, Franklin has spent the past 8 years "in a poky Heath Robinson laboratory in darkest Fulham, developing an "artificial milk without the help of a cow.

"He has succeeded so well that he has removed his factory to Folkestone, where it produces three tons of Plantmilk a day. Today Dr. Franklin, who claims to be the first [sic] non-bovine industrial producer of milk in the world, is closing the Fulham laboratory where he invented the philosopher's stone that can turn old cabbage leaves into milk."

"Dr. Franklin has made Plantmilk from almost everything from pea pods to lucerne to pine needles and bracken, Jerusalem artichokes are particularly satisfactory milk producers; he has plans to extrude his milk from sugar cane leaves in Mexico and rice stalks and soya beans in India." The process is described in detail. He hopes to be producing "'instantizable' powder in 2-3 months.

Note: Fulham is in central London. Folkestone is on the English Channel, near Dover, southwest of London. Plantmilk Ltd. also came to be located in Folkestone, Kent, England.

2447. *Loma Linda University Observer* (*California*). 1972. China doctor noted surgeon, scientist, and missionary. Nov. 30. p. 7. [1 ref]
• ***Summary:*** A brief biography of Harry W. Miller, MD, "surgeon, scientist, financial genius, and missionary." He was "named alumnus of the year for 1968 by graduates of the School of Medicine [at Loma Linda University in California]. Dr. Miller, now 93, has been classed with Livingston, Judson, and Schweitzer as one of the greatest modern missionaries. When only 23 years of age, he turned his back on a promising career at the University of Chicago and went to China as a missionary."

"The Brilliant Blue Cross, highest awarded conferred by the government of the Republic of China, was presented to Dr. Miller by Generalissimo Chiang Kai-shek for his development of palatable milk from soybeans. This discovery is credited with saving the lives of countless Chinese children who otherwise would have starved."

A portrait photo shows Dr. Miller. Note: (1) Livingston was David Livingston (lived 1813-1873), Scottish missionary and explorer in Africa. Henry M. Stanley, who finally met him in Ujiji, Central Africa on 10 Nov. 1871 said "Doctor Livingstone, I presume?" (2) Judson was Andoniram Judson (1788-1850), American missionary to Burma. (3) Schweitzer was Albert Schweitzer, MD, (1875-1965), French theologian, philosopher, physician, and music scholar. Missionary physician and founder of Lambarene Hospital in French Equatorial Africa in 1913. He earned the PhD degrees and won the Nobel Peace Prize in 1952.

2448. Ram, Mahabal; Kempanna, C.; Balasubramanian, A. 1972. Soybean can raise nutritional status of human diet. *Indian Farming* 22(8):19, 21-22. Nov. Series 2.
• ***Summary:*** Malnutrition is a major problem in India and there is a shortage of proteins. On the national level, several

measures have been taken to augment the supply of protein-rich products like milk, egg, meat, fish, vegetables, pulses, etc. Yet is it alternative to explore alternative protein sources, such as the soybean, which has a high protein content (42%) and "occupies an exalted position amongst the protein-rich legumes."

Tables show: (1) Average nutritional composition of soybean. (2) Production of soy-protein in comparison with that of major pulses, cereals, milk, meat, etc. (3) Nutritive value of soybean and the other pulses. (4) Average weekly growth rate of rats on basal poor diet chapati containing soy-flour.

The final section briefly describes 13 methods of preparing different soybean recipes: (1) Soak soybeans in water then fry in deep fat. (2) Roast green soybeans in their pods. (3) Soak soybeans in water then bake. (4) Sprout soybeans. (5) Dahi bada. (6) Pakoda namkin [Pakora namkin; a pakora is a fritter–any kind of food coated in batter and deep fried]. (7) Pakoda sweet. (8) Gullab jamun. (9) Puri and chapati. (10) Vegetables. (11) Curd, made from soybean milk. (12) Add soymilk to tea in place of buffalo milk. (13) How to prepare soymilk at home. Also: Soybean oil can be used at home in place of mustard oil, coconut oil, groundnut oil, etc. Address: Indian Council of Agricultural Research, New Delhi.

2449. *SoyaScan Notes.* 1972. Chronology of soybeans, soyfoods and natural foods in the United States 1972 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** 1972 Jan. Janus begins operation as a macrobiotic natural foods distributor in Seattle, Washington. It is founded by George Gearhart and Blake Rankin.

1972 Feb. Tree of Life in St. Augustine, Florida, starts distributing natural foods. Founded by Irwin Carasso, this company would soon become the largest and most successful of its type.

1972 March. The Farm in Tennessee sets up a small plant and begins to make soymilk, which is rationed for use by babies and children.

1972 Sept. Frank Shorter wins the Olympic marathon, the first marathon victory by an American. A major boost to interest in running, exercise and fitness.

1972 Oct. William Shurtleff and Akiko Aoyagi start full time research on tofu in Japan, writing a book on the subject.

1972. *Soybeans: Chemistry and Technology,* by A.K. Smith and S.J. Circle, published.

1972. The Farm, a large spiritual and vegetarian community in Summertown, Tennessee, sets up a small "soy dairy" to make soymilk and tempeh for members, whose vegan diet contains no animal products, not even dairy products or eggs. This is the earliest known tempeh produced in a Caucasian-run tempeh shop in the U.S., although it is not sold commercially.

1972-74. World food crisis years. Photos of malnourished and starving children appear on the covers of leading magazines and in the TV news.

1972, July. Soviet wheat deal. The USSR suddenly purchases 18 million tons of wheat from the USA via Continental Grain, making it the largest food import deal in history. This starts an era of expanded U.S. agricultural trade with socialist countries. This massive Soviet purchase ends the long postwar period of food price stability.

1972. National Soybean Project established in Brazil.

1972. Soybean research starts at the International Institute of Tropical Agriculture (IITA), in Ibadan, Nigeria. The focus is on soybean production and varietal development. This gradually becomes the most important soybean research program in Africa, and plays a key role in helping national programs in Africa to get started.

2450. Gorrill, A.D.L.; Nicholson, J.W.G. 1972. Alkali treatment of soybean protein concentrate in milk replacers: its effects on digestion, nitrogen retention, and growth of lambs. *Canadian J. of Animal Science* 52(4):665-70. Dec. [11 ref. Eng; fre]

• ***Summary:*** "Alkali treatment to disperse a soybean protein concentrate (SPC) was studied in two milk replacer experiments, in which the SPC supplied 50% of the total nitrogen." Six lambs were used. Growth to 10 weeks of age was similar. Address: Research Station, Canada Agriculture, Fredericton, New Brunswick.

2451. Leung, W-T.W.; Butrum, R.R.; Chang, F.H. 1972. Food composition table for use in East Asia. Atlanta, Georgia: Center for Disease Control, U.S. Dept. of Health, Education, and Welfare. xiii + 334 p. Dec. No index. 30 cm.

• ***Summary:*** Part I. Proximate composition, mineral and vitamin contents of East Asian foods, by Woot-Tsuen Wu Leung, Ph.D. (Nutrition Program, Center for Disease Control, Dep. of Health, Education and Welfare), and Ritva Rauanheimo Butrum, M.S., and Flora Huang Chang, B.S. (Federation of American Societies for Experimental Biology).

Part II. Amino acid, fatty acid, certain B-vitamin and trace mineral content of some Asian foods, by M. Narayana Rao, Ph.D., and W. Polacchi (Food Policy and Nutrition Division, Food and Agriculture Organization of the United Nations).

In Part I, Food Group 3 titled "Grain legumes and legume products" (p. 16-22) gives the composition of the following (100 grams edible portion and as purchased): Adzuki beans (*Phaseolus angularis;* incl. "Azuki-an," and boiled sweetened). Asparagus bean: See Cowpea, yardlong. Asparagus pea: See Goabean. Bambara groundnut or jugo bean (*Voandzeia subterranea*). Bengal gram: See Chickpea. Blackeyed pea: See Cowpea, catjang. Blackgram: See Mung bean. Broad bean or horse bean (*Vicia faba;* incl. "Fuki-

mame" and "Otafuku mame"). Burma bean: See Lima bean. Butter bean: See Lima bean. Catjang pea: See Pigeonpea. Chickpea or Bengal gram (*Cicer arietinum*). Cowpea, all varieties (*Vigna* species). Cowpea, yardlong: See Cowpea, all varieties. Dhal: See Lentil. Dolichos, Australia pea (*Dolichos lignosus*). French bean: See Kidney bean. Goabean [goa bean], asparagus pea, or winged bean (*Psophocarpus tetragonolobus*). Golden gram: See Mung bean. Green gram: See Mung bean. Haricot bean: See Kidney bean. Hindu cowpea: See Cowpeas, all varieties. Horse grain or horse gram or Madras gram (*Dolichos uniflorus; D. biflorus*). Horsebean: See Broadbean. Note 1. This is the earliest English-language document seen (Jan. 2005) that uses the word "horsebean" or the word "broadbean" to refer to *Vicia faba*.

Horsegram: See Horse grain. Hyacinth bean or Indian butterbean (*Lablab niger; Dolichos lablab*). Indian bean: See Mung bean. Indian butterbean: See Hyacinth bean. Jackbean, common (*Canavalia ensiformis*). Jugo bean: See Bambara groundnut. Kidney bean, French bean, navy bean, pinto bean, snap bean, or string bean (*Phaseolus vulgaris;* incl. "Usura-mame"). Lentil or dhal (*Lens culinaris; Lens esculenta; Ervum lens*). Lima bean, butter bean, or Burma bean (*Phaseolus lunatus; Phaseolus limensis*).

Note 2. This is the earliest English-language document seen (May 2003) that uses the scientific name *Lens culinaris* to refer to lentils.

Note 3. This is the earliest English-language document seen (Jan. 2009) that uses the name "Burma bean" to refer to the lima bean.

Madras gram: See Horse grain. Mung bean, Indian bean, red bean, green gram, golden gram, or blackgram / black gram (*Phaseolus aureus; Vigna radiata;* incl. vermicelli, dried starch, starch jelly, instant powdered green or red products with sugar and flour added). Mung bean, black gram or urd (*Phaseolus mungo; Vigna mungo*). Navy bean: See Kidney bean. Peanut or groundnut (*Arachis hypogaea;* incl. raw, roasted, with or without shell, salted, parched, seasoned, fried, peanut flour, peanut butter, peanut milk, peanut cake–defatted, peanut cake–defatted and fermented [onchom]). Peas, garden or field (*Pisum* species; incl. parched–salted, "Uguisu-mame"). Pigeonpea, or catjang pea (*Cajanus cajan; Cajanus indicus*). Pinto bean: See Kidney. Red bean: See Mung bean. Rice bean (*Phaseolus calcaratus; Vigna calcarata*). Soybean and soy products (Glycine max; G. hispida; G. soja; p. 19-21), incl: Whole mature seeds–dried (yellow, black), whole immature seeds dried, whole seeds–salted (black, green, green soaked, fried, fermented {natto}, pickled, roasted), flour made from roasted soybeans, defatted soybeans–whole seeds. Soybean products: Curd–unpressed, curd–tofu–raw (plain, kinugoshi, fukuroiri), curd–tofu–fried (moist type, dried type–regular size, dried type–small size, canned, abura age), curd–roasted [grilled], curd–tofu–fermented (home-prepared, jarred), curd–tofu (dried–spongy square, preserved, dried–rope-like, commercial {fermented with chili pepper}–jarred), curd cheese, curd sheet (milk clot sheet {yuba}) (moist type, dried type, pickled in soysauce), curd–pressed–raw (plain, fermented, spiced, strips–semi-dry), miso (Japan) (plain, sweet {5.3% salt added}, salty–light {10.4% salt added}, salty–dark {11.7% salt added}, mame-miso {9.7% salt added}, powdered {18.5% salt added}), paste [jiang] (plain, fermented, red pepper added, sweet, malt), soybean milk (unenriched–unsweetened, "Kaset" {Thailand; canned–concentrated, fluid}, Saridele {a mixture of soybeans, sesame seeds or peanuts, with vitamins and calcium added–Indonesia}), soybean sauce (dark–thick, light–thin, unspecified), tempeh (fermented soybean product, Indonesia), "Budo-mame" (cooked [whole soybeans]–Japan), Soybean residue [okara] (liquid, powder). Urd: See Mungo bean. Velvetbean (*Mucuna utilis; Stizolobium utilis;* incl. dried or mold-treated {tempeh}). Winged bean: See Goabean, Indes.

Food Group 4 titled "Nuts and seeds (p. 23-29) includes: Almonds, hemp seeds–whole, perilla–common (*Perilla frutescens*), safflower seeds, sesame seeds, sunflower seeds (*Helianthus annuus*), watermelon seeds.

Food Group 5, titled "Vegetables and vegetable products" (p. 30-75) includes: Amaranth, mungbean sprouts, seaweeds (many types), soybeans–immature seeds [green vegetable soybeans], soybean sprouts (raw, cooked).

Note 4. This is the earliest English-language document seen (April 2013) that mentions silken tofu, which it calls (in a table): "Curd, tofu, raw: 'Kinugoshi,' Japanese preparation."

Note 5. This is the earliest English-language document seen (Nov. 2012) that contains the term "flour of roasted soybeans."

Note 6. This is the earliest English-language document seen (Oct. 2006) that uses the term "Blackeyed pea" to refer to the cow pea. Address: Dep. Health Education and Welfare.

2452. Manes, J. Damon; Fluckiger, H.B.; Schneider, D.L. 1972. Chromatographic analysis of vitamin K-1; Application to infant formula products. *J. of Agricultural and Food Chemistry* 20(6):1130-32. Nov/Dec. [12 ref]
• ***Summary:*** Vitamin K-1, the antihemorrhagic vitamin, occurs primarily in green plants. Infant formulas based on soy protein isolates have higher levels of vitamin K (74-94 micrograms/quart) than does cow's milk (18-53 mcg/quart). Address: Dep. of Nutritional Research, Mead Johnson Research Center, Evansville, Indiana 47721.

2453. **Product Name:** [Isomil {Powdered Infant Formula Based on Soy Protein Isolate}].
Foreign Name: Isomil.
Manufacturer's Name: Abbott (M&R Laboratories).
Manufacturer's Address: The Netherlands.

Date of Introduction: 1972.
Ingredients: Incl. soy protein isolate.
How Stored: Shelf stable.
New Product–Documentation: Letter (fax) from Leif Christensen of Semper. 1990. July 10. At the time Soja Semp was launched by Semper in June 1972, Abbott (M&R Laboratories) had a factory in the Netherlands where they produced Isomil powder, based on soy isolates.

2454. Chander Parkash. 1972. Utilization of soymilk in formulating some of the dairy products. MSc thesis, Panjab University, Chandigarh, India. *
Address: National Dairy Research Inst., Karnal (Haryana).

2455. Chen, W.L.; Chen, C.M. 1972. [Studies on processing of instant soy milk powder]. *Food Industry Research and Development Institute* (*Taiwan*), *Research Report* No. 35. [Chi]*
Address: Hsinchu, Taiwan.

2456. **Product Name:** Vitamite Non-Dairy Beverage Mix.
Manufacturer's Name: Dairy Specialties International (DSI).
Manufacturer's Address: 10800 Ambassador Blvd., St. Louis, Missouri.
Date of Introduction: 1972.
Wt/Vol., Packaging, Price: 25 oz. can.
How Stored: Shelf stable.
New Product–Documentation: Talk with Tom Mekus, Vice President of Sales and Marketing, at DSI toll-free number (1-800-643-3930). 1995. Nov. 13. The company's first product was a powder, introduced in 1972 and sold by mail order. Vitamite powder now comes in a 25 oz can which makes 8 quarts of liquid for less than the cost of cow's milk. It is sold at some drug stores (retails for about $6.99) and supermarkets ($5.99), but much of their business is by mail order. Two canisters via mail order cost $14.00 postpaid, delivered by UPS; so 16 quarts of liquid cost $0.88/quart. Six canisters at $34.50 delivered make 48 quarts, costing about $0.72/quart.

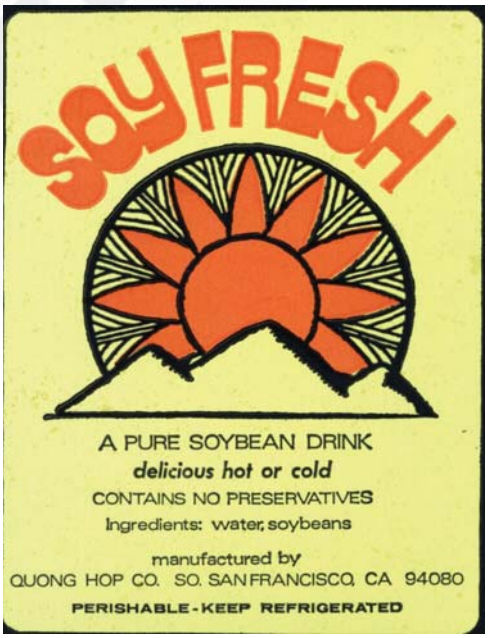
2457. **Product Name:** [Soymilk].
Foreign Name: Tônyû.
Manufacturer's Name: Ishihara Food Center K.K.
Manufacturer's Address: 2-8-11, Wakamiya, Ichikawa-shi, Chiba-ken 272. Japan.
Date of Introduction: 1972.
New Product–Documentation: Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Ishihara Food Center first made commercial soymilk in Japan in 1972.

K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk*. 2nd ed.]. p. 74. Ishihara Fuudo Sentaa introduced soymilk in 370 ml puroo packs. No date of introduction is given.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64. This was Japan's fourth commercial branded soymilk.

2458. Mahfouz, M.B. 1972. The use of soybean milk in dairying. MSc thesis, Ain Shams University. *
Address: Dep. of Food Science, Ain Shams Univ. Cairo, Egypt.

2459. **Product Name:** Soy Fresh Soy Drink (Soymilk) [Carob, Honey, Pure/Plain, Sugar Sweetened, Maple, Almond Honey].
Manufacturer's Name: Quong Hop & Co.
Manufacturer's Address: South San Francisco, CA 94080.
Date of Introduction: 1972.
Ingredients: Carob: Water, soybeans, carob, honey.
Wt/Vol., Packaging, Price: 1 quart plastic bottle, or 10.66 fluid oz (315 ml) Pure-Pak carton.
How Stored: Refrigerated, 7-10 day shelf life. Or frozen.
Nutrition: Per 1 cup: Calories 150, protein 8 gm, carbohydrate 17 gm, fat 4 gm.



New Product–Documentation: Label. 1981. 2.5 by 3.5 inches. Self adhesive. Orange and black on yellow. Sun-shaped Indian-like motif. "A pure soybean drink." Labels. 1981. 2 by 3 inches. Paper. Brown, orange or blue, respectively, on white. Sun-shaped Indian-like motif. "Delicious hot or cold." Soya Bluebook. 1980. p. 50. "Bottled soymilk." Address: 161 Beacon St., South San Francisco, CA 94080. Leviton. Soya Bluebook. 1981. p. 60. "Bottled soymilk; Carob, Honey, Plain, and Sugar." 1981. Soyfoods. Winter. p. 17. "They began Soy Fresh production in 1972, turning out a sugar-sweetened variety for the Oriental market and a honey-flavored soymilk for

the Caucasian natural foods market." Labels, 2 by 3 inches each, 1 color. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. Labels. 1984. 10.66 fl oz: 2.75 by 2.5 inches by 2.75 wide. 1 qt.: 2.75 by 7.5 inches by 2.75 wide. Paper carton. Brown, tan and orange. "Soyfresh is a delicious protein drink with no animal fat. Rich and satisfying. A great picker-upper anytime of day. Today, fresh soymilk products serve as a protein staple for over one third of the world's population. The soybean held such high esteem in China for centuries that this common legume has been called the 'Cow of China.' Soyfresh is a non-dairy beverage that delivers full-bodied taste and flavor. It has a consistency of rich whole milk without animal fat, and is easily substituted in your favorite cereal." Spot in Soyfoods. 1984. Summer. p. 43. Now in maple, natural, almond, and carob flavors., Pure-Pak quarts and half pints. Leaflet. 1986. 8½ by 11 inches, color. "There is Quality & Variety after 80!" Shows all products. Two-third of the product is sold refrigerated and one-third is sold frozen.

Product with Label purchased for $2.09 at Safeway supermarket in Lafayette, California. 1999. Jan. 17. This tall plastic quart of "SoyFresh Unsweetened Soy Beverage" was being sold in a large open-front refrigerated case with the Odwalla juices. Self-adhesive label. Blue, black, green, and yellow on white. Sticker: "Made with organic soybeans." Ingredients: Water, whole organic soybeans.

2460. Aihara, Herman. 1972. Miso & tamari. *Macroguide* (*San Francisco: George Ohsawa Macrobiotic Foundation*). No. 12. iii + 34 p. [3 ref]

• ***Summary:*** Contents: Preface. Part I: Miso. Introduction, the origin of miso, kinds of miso, ingredients (soybeans, barley, rice, salt, water) how to make miso [at home] (barley miso, rice miso, soybean miso, analytical comparison of the three kinds of miso, other types of miso, miso pickles) value of miso (protein, fat, minerals, poison prevention, heart disease, miso for beauty, stamina, miso for radiation and other diseases, miso soup), miso in the treatment of tuberculosis and atomic radiation exposure.

Part II: Tamari or traditional soy sauce. Introduction, history, chemical change of tamari, how to make tamari soy sauce at home, how to use soy sauce.

Part III: The other soybean foods. Tofu (preparation of soybean milk at home, coagulation of soybean protein, the formation of tofu in a mold [for homemade tofu], tofu for external treatment–tofu plaster, age–deep fried tofu [how to make at home]), natto (introduction, how to make natto at home).

Part IV: Appendix. Available publications, G.O.M.F. message.

Illustrations by Carl Campbell show: (1) Two traditional kegs of miso and a glass jar of tamari (title page). (2) Making mugi (barley) miso in Japan (9 steps; p. 10).

Note 1. This is the earliest English-language document seen (March 2009) that describes how to make miso at home. Recipes for three types of miso are given: Barley miso, rice miso, and soybean miso. The method is translated from *Miso University*, by K. Misumi (in Japanese). Fortunately, the exact amount of each of 5 ingredients is given, and nine excellent illustrations show the main steps in the traditional process. Unfortunately, the instructions are somewhat vague.

Note 2. This is the earliest English-language document seen (Jan. 2012) that describes how to make natto at home. Address: San Francisco, California.

2461. Food and Agriculture Organization of the United Nations (FAO). 1972. A selected bibliography of East-Asian foods and nutrition arranged according to subject matter and

area. [Washington, DC]: Food and Agriculture Organization of the United Nations; U.S. Dept. of Health, Education, and Welfare. vii + 296 p. Dec. 27 cm. [1500* ref]
• ***Summary:*** This book has two title pages and can be cited in two ways. See Leung (1972). Address: Dep. of Health Education and Welfare.

2462. Furia, Thomas E. ed. 1972. CRC handbook of food additives. 2nd ed. 2 vols. Cleveland, Ohio: CRC Press (a Division of The Chemical Rubber Co.). Vol. 1: xi + 998 p. Vol. 2. 412 p. Index. 27 cm. [624* ref]
• ***Summary:*** The many chapters are published by various authors. Contents of Vol. 1: Introduction. 1. Enzymes. 2. Vitamins and amino acids. 3. Antimicrobial food additives. 4. Antioxidants as food stabilizers. 5. Acidulants in food processing. 6. Sequestrants in food. 7. Gums. 8. Starch in the food industry. 9. Surface active agents. 10. Polyhydric alcohols. 11. Natural and synthetic flavorings. 12. Flavor potentiators. 13. Nonnutritive sweeteners. 14. Color additives in food. 15. Phosphates in food processing.

Contents of Vol. 2: Legal considerations on food additives. Antioxidants as stabilizers for fats, oils, and lipid-containing foods. Enzymes. Nonnutritive sweeteners: Saccharin and cyclamate. New sweeteners. Natural and artificial flavors. Synthetic food colors.

Vol. 1: Chapter 12, titled "Flavor potentiators" (p. 513-21), by Loren B. Sjöström (Vice-President, Arthur D. Little, Inc., Cambridge, Massachusetts) notes (p. 513): "In the context of flavor, the term 'potentiator' is only a few years old. The identification of flavor potentiators is a twentieth century accomplishment, an area of research still in its infancy." Yet seasonings (such as salt), as well as herbs and spices, have been used since ancient times.

The section on "Flavor enhancers" begins (p. 515): "The best known and most widely used flavor enhancer is monosodium glutamate (MSG). In 1866, a German chemist, Ritthausen, isolated glutamic acid. Later another chemist converted the acid to a sodium salt, monosodium glutamate. In doing their work, neither had any interest in flavor.

"More than 40 years later, in 1908, a Japanese chemist at the University of Tokyo, Dr. Kikunae Ikeda, discovered the flavor enhancing properties of MSG. Dr. Ikeda had set out to find out why and how a certain seaweed, *Laminaria japonica,* affected flavor. Japanese cooks had used this seaweed for centuries to improve the flavor of soups and certain other foods. Dr. Ikeda discovered that the ingredient in the seaweed that made the difference was MSG, and that it had an unusual ability to enhance or intensify the flavor of many high protein foods.

"After isolating MSG, Dr. Ikeda developed a process for extracting it from wheat flour and other flours. Working with the Japanese chemical company, Suzuki and Co., he supervised the construction of a plant and, as a partner with the company, began commercial production of MSG in 1909.

"There were several attempts to produce MSG in the United States in the years following, but it was not until the 1940's that large-scale MSG production began in this country. By 1968, U.S. production had grown to 46 million pounds per year and world consumption had increased to more than 150 million pounds per year."

The section titled "Types of potentiators" discusses 5'-nucleotides, maltol, dioctyl sodium sulfosuccinate, and several others. The 5'-nucleotides are synergistic with salt, and especially with MSG; they can have something like a multiplier effect in increasing the effectiveness of salt or MSG.

Note: Soy does not appear in the index of this book. Nor can we find it mentioned in Chapter 12. Yet there are scattered mentions throughout the book: Soy protein concentrate (p. 5). Soy sauce, tamari sauce, and miso–made for centuries in the Orient using fungal protease (p. 59). Studies on breads supplemented with soy, nonfat dry milk, and lysine (p. 114).

Experimental use of esters of *p*-hydrobenzoic acid in soy sauce and other foods (p. 128). Gas sterilants: Ethylene and propylene oxides. The ethylene oxide process was used during World War II to reduce the bacterial counts in soy flour and cereal products used in processed meat products for the Armed Forces (p. 156). An excellent acidulant for hams and soy bean curds [tofu] has been obtained by coating citric acid with suitable animal or plant oils (p. 242-43).

"Synthetic aroma for soy sauce," by K. Ebihara. 1954 Japanese patent No. 5250'54 (p. 258). Soy flour as a widely used binder for processed meat (p. 425). Soy flakes (31.5% parts by weight) and soy hulls (3.0%) as ingredients in "Soft moist pet food" (p. 445).

Cake doughnut mixes sometimes contain soy flour (p. 656). Completely synthetic coffee whiteners usually contain a combination of vegetable fats, sodium caseinate or soy protein, gums as viscosity stabilizers, phosphate or citrate salts as stabilizers for the proteins and as buffering agents, corn syrup solids or sugar as sweeteners and bodying agents, liquid-type emulsifiers, and colors to duplicate the color of cream (p. 671-72). Whipped toppings are used to replace high-fat cream products just as coffee whiteners are used to replace low-fat cream products. Both use protein, which may be soy protein (p. 672).

Imitation sour cream, sour cream dressings, and chip dips. Replacements for fermented cream products represent a growing market These non-dairy products contain vegetable oil / fat, protein (either soy protein or sodium caseinate [derived from milk], gum stabilizers, etc., p. 673). When partially hydrolyzed soy protein and sodium hexametaphosphate (SHMP) are added to dried egg white, an angel food cake mix can be prepared in which all of the ingredients can be included in a single mixing stage (p. 679). Gelsoy, a patented soy protein made from specially processed, defatted and dehulled soybean flakes, is reported

to have improved water- and fat-binding capabilities when treated with SHMP (p. 746, 778).

Improving protein whipping properties: Sevall and Schaeffer prepared protein whipping compositions from soy protein by combining the protein with SHMP etc. (p. 747). Gunther made an entirely new whipping protein composition by combining an enzyme-modified soy protein similar to Gelsoy, with gelatin and a polyphosphate (p. 747). A long table on the regulatory status of direct food additives mentions "Isolated soy protein" (p. 874-75); its use as a binder is regulated by the Meat Inspection Division (MID) of the USDA.

The word "soybean" is mentioned on 22 pages; all of these concern soybean oil except when noted (p. 65 {soybean protein}, 67 {soybean meal, soybean flour / flours}, 99, 114 {soybean products}, 192, 193, 197, 198, 207, 221, 222, 263, 264, 280, 289, 290, 319 {the soybean plant resembles the guar plant}, 350 {soybean protein, soybean methylcellulose}, 424, 746 {soybean flakes}, 747 {soybean protein}, 749 {soybean milk}). Address: Technical Development Manager, Industrial Chemicals Div., Geigy Chemical Corp., Ardsley, New York; President, Intechmark Corp., Palo Alto, California.

2463. *Gazeta do Agricultor* (*Mozambique*). 1972. A soja à sua mesa [The soybean at your table]. 24(272-283):255-56. [Por]

• ***Summary:*** The soybean is widely considered by nutritionists and dietitians to be a very nutritious food. The negro scientist George Washington Carver was a pioneer in its study. Among his discoveries were soy flour, soy oil, and substitutes for milk and for coffee. A detailed discussion of soy lecithin and its possible benefits is given. A stable soy flour is named Soyolk.

2464. Goldbeck, Nikki. 1972. Cooking what comes naturally: A natural foods cookbook featuring a month's worth of natural-vegetarian menus. Garden City, NY: Doubleday & Company, Inc. x + 230 p. Illust. by Bill Goldsmith. Index. 22 cm.

• ***Summary:*** In the section on Flour (p. 14-15), soy flour is mentioned. Under seasonings, the author advises (p. 22) to "Use Tamari or pure soy sauce, which has only water, whole wheat flour, and salt added." Recipes for Fried Brown Rice and Vegetables (p. 52) and Cabbage Salad with Carrot Dressing both use "Tamari Soy Sauce" and notes: "It is sold in all health food stores. If you cannot find it, substitute pure soy sauce to which no flavorings, colorings, or artificial ingredients have been added." Page 131 gives a recipe for Tamari Broth. In the section on "Ingredient Substitutions" under "Dairy Products," 1 cup milk is said to equal 1 cup soy milk. Address: R.D. 1, Box 452, Woodstock, New York 12498.

2465. Hewitt, Jean. 1972. The New York Times natural foods cookbook. New York, NY: Avon. 434 p. Index. 18 cm. [147* ref]

• ***Summary:*** Contains a surprisingly large collection of soy-related recipes, and several innovative uses for tofu, considering this relatively early date. The following recipes list soy in the title. Note that all use cooked or dry soybeans as the main soy ingredient unless otherwise stated in the title or in parentheses: Soy cheese appetizer (with tofu, p. 7). Soybean dip (p. 14). Vegetable-soy soup (with "1½ cups cooked soybeans {or 15½-ounce can, drained; see p. 157}," p. 47). Soy chili (p. 73). Soy meat loaf (p. 80). Vegetarian sausages (p. 111). Soybean soufflé (p. 111). Soybean and nut loaf (p. 112). Soybean and vegetable casserole (p. 112). Pressure cooked soybeans (p. 113). Baked soybeans I and II (p. 113-14). Soy burgers (p. 115). Soy-rice burgers (p. 115). Soybean patties (p. 116). Broiled soy cakes (p. 116). Curried soybeans (p. 155). Soybean pistou (p. 156). Soybeans with tomato sauce (p. 156). Cooking dried soybeans (with 2 cups {1 pound} dried soybeans, green or yellow," p. 157-58). Soybean cheese or curd (p. 158; how to make tofu at home using 1½ cups dried yellow soybeans and 1/3 cup lemon juice; this recipe will not work since the soybeans are never ground!). Marinated soybean salad (p. 181). Avocado-tofu dressing (p. 187). Basic tofu dressing (p. 190). Corn meal mush and soy grits (p. 211). Soya-carob bread (with soy flour, p. 257). Soy butterscotch pudding (with soy milk, p. 322). Soy nut coffeecake (with soy flour, full fat or low fat, p. 353). Soya cookies (with soy grits, p. 376). Soy mayonnaise (with soy flour, p. 394). Soybean spread (with "½ cup mashed cooked soybeans or soy flour," p. 394).

Although this book is not wholly vegetarian, it does contain a large selection of vegetarian entrees.

Note: This is the English-language document seen (Jan. 2007) that contains the term "Soy burger" (or "soy burger").

2466. Hill, Howard E. 1972. Introduction to lecithin. Los Angeles, California: Nash Publishing Corp. 81 p. No index. 21 cm.

• ***Summary:*** Contents: Introduction: What this book is all about. 1. Lecithin brings startling results: Case histories. 2. Are the claims made for lecithin valid? Lecithin and heart disease, cholesterol, soy oil. 3. Oil for the health of America: Soy oil, the source of lecithin, three main uses of soy oil, from hog fat to vegetable oil. 4. Commercial uses of lecithin in foods: Our number one cash crop. 5. From backstage to center stage: Lecithin enters new fields. 6. Do you need choline" A vital organ protection. 7. How to milk a soybean: Control of food allergies, lecithin as an emulsifier, the use and value of soy milk. 8. Health seed of a million uses: The uses and effects of lecithin, comparative protein values of common foods. 9. Faith without action: Primary energy boosters, secondary better-living boosters, biorhythm, the principle of daily growth.

The last 4 unnumbered pages of the book contain advertisements.

2467. Koaze, Yoshihisa; Nakajima, Yutaka; Eida, Toshiaki. 1972. Improvement of soybean products by microbial means. In: Proceedings of the [Sixth] International Symposium on Conversion and Manufacture of Foodstuffs by Microorganisms. Tokyo: Saikon Publishing Co. viii + 297 p. See p. 41-52. Held 5-9 Dec. 1971 at Kyoto, Japan. [19 ref]
• ***Summary:*** Starting with dehulled defatted soybean flour, and using a fermentation process followed by a purification process, the authors have developed a series of "Bland Soybean Protein Products." These products consistently received higher scores than isolated soy protein in organoleptic evaluation tests. Address: Food Research & Development Labs., Meiji Seika Kaisha Ltd., Kanagawa, Japan.

2468. Liener, I.E. 1972. Nutritional value of food protein products. In: A.K. Smith and S.J. Circle, eds. 1972. Soybeans: Chemistry and Technology. Westport, CT: AVI Publishing Co. xiii + 470 p. See p. 203-77. Chap. 7. [417 ref]
• ***Summary:*** Contents: 1. Introduction. 2. Protein and amino acid requirements of man: Protein requirements, amino acid requirements. 3. Evaluation of protein quality: Amino acid composition, biological techniques involving animals, protein efficiency ratio (PER), N-balance studies, plasma amino acids, experiments with human subjects, amino acid availability, in vitro techniques (physical tests, available lysine, tests for biologically active components [urease, trypsin inhibitor], enzymatic and microbiological techniques). 4. Nutritional significance of other soybean constituents: Available energy, vitamins (fat-soluble vitamins, water-soluble vitamins), minerals (calcium, phosphorus, zinc, other minerals), unknown growth factor(s).

5. Factors affecting the nutritive properties of soybean protein: heat treatment, supplementation with amino acids, storage, germination, effect of antibiotics, dietary source of carbohydrate. 6. Soybean products used for human consumption: Soybeans as a vegetable, soybean flour (incl. Multi-Purpose Food (MPF), "toasted full-fat soy flour" {referred to in Japan as "kinako"}, soybean milk, soybean curd, other fractions, protein concentrates, protein isolates (use in infant foods, use in textured foods), fermented products (tempeh, natto, miso).

Note. This is the earliest English-language document seen (Nov. 2012) that uses the term "toasted full-fat soy flour" to refer to kinako.

7. Use of soybean products as protein supplement: As supplement to wheat protein (bread, other baked goods), as supplement to corn, as supplement to rice, use in vegetable protein mixtures, peanut and other oilseed proteins, blends containing corn, other cereals and legumes. Address: Univ. of Minnesota.

2469. Roden, Claudia. 1972. A book of Middle Eastern food. New York, NY: Alfred A. Knopf. 453 + xiv p. Illust. 23 cm. [80 ref]*
• ***Summary:*** The contents of this book is similar to that of the original 1968 edition.

2470. Smith, A.K.; Circle, S.J. 1972. Protein products as food ingredients. In: A.K. Smith and S.J. Circle, eds. 1972. Soybeans: Chemistry and Technology. Westport, CT: AVI Publishing Co. xiii + 470 p. See p. 339-88. Chap. 10. [180 ref]
• ***Summary:*** Contents: 1. Flavor: Taste panel results, flavor components, plastein formation and flavor, plastein formation and nutrition, some food uses tolerant of soy flavor. 2. Bread and pastries: Soy flour history, effect of soy flour on baking characteristics, soy protein isolate in bread, soy flour and flavor, enzyme active soy flour, soy flour in Britain, detecting of soy flour in wheat flour. 3. Other baked goods: General, doughnuts, snack products. 4. Breakfast cereals. 5. Macaroni products. 6. Dairy-type products: Imitation milk, soy milk, filled milk, soybean cheese, imitation cream cheese, coffee whiteners, whip toppings, and frozen desserts, yogurt type products. 7. Comminuted meat products and meat analogs: Comminuted meat products, meat analogs, spun fiber type meat analog, extrusion-cooked type meat analog, heat-gelled type meat analog, meat fibers in heat-gelled protein matrix, assay of soy protein products in meat-type foods. 8. Gelling and aerating agents: Gelsoy as gelling agent, soy protein isolate as gelling agent, soy protein isolate as aerating agent, soy whey protein as aerating agent, enzyme modified isolates as aerating agent, foam-mat drying adjunct, foaming agent for soda water. 9. Miscellaneous food applications: Brew flakes, soups, gravies and sauces, confections, imitation nut meats, and [soy] nut butters, spray drying adjunct. 10. Nonfermented Oriental soybean foods: Introduction, Chinese soy milk, dried soybean whole and defatted milks, tofu (fresh tofu, bagged tofu, dried tofu, fried tofu), yuba, kinako ("The Japanese have a product which is similar to full-fat soy flour except that it is made from whole roasted soybean and this contains the seed coat"), soybean sprouts (compositional changes).

Concerning Brew Flakes (p. 373): "Soy flakes, grits, and peptones have been used since about 1937 or earlier (Burnett 1951) as adjuncts in brewing beer. Grits and ground meal from screw press processing were the first products used in brewing but later they were replaced by solvent-extracted flakes. The best results are obtained with flakes or flour having a high NSI (nitrogen solubility index) with a minimum of heat treatment in processing. Up to 0.75 lb. of flakes per barrel of beer has been recommended by Hayward (1941).

"The flakes may be used in the normal mashing operation to provide amino acids, peptides, minerals, and

vitamins as nutrients for the yeast. It was reported by Wahl (1944) and Wahl and Wahl (1937) that addition of hydrolyzed soybean protein directly to the beer improves foam stability, flavor, and body of the beer." Address: NRRL, Peoria, Illinois.

2471. Smith, A.K.; Circle, S.J. 1972. Historical background (on soybeans and soybean foods). In: A.K. Smith and S.J. Circle, eds. 1972. Soybeans: Chemistry and Technology. Westport, CT: AVI Publishing Co. xiii + 470 p. See p. 1-26. Chap. 1. [53 ref]

• ***Summary:*** Contents: 1. Introduction. 2. U.S. history: Introduction of soybeans, processing for oil, soybean oil. 3. Soybean meal and protein: Animal feed industry, poultry industry, industrial uses. 4. Soybean production. 5. Oriental history: Ancient history, Oriental fermented foods (shoyu, miso, tempeh, ontjom, natto, hamanatto, tao tjo [Indonesian-style miso], kochu chang, ketjap), Oriental nonfermented foods (soybean milk, tofu), wedge press. 6. Soybeans and world food problems: Green Revolution, protein supplements (high protein food formulations, AID funded), amino acids, CSM, cottage industries (tofu, kinako).

Concerning industrial uses (p. 8-9): Soybeans rose in popularity as an agricultural crop in the USA at a time when other crops such as corn, wheat, cotton, and tobacco were being produced in surplus quantities. Soybeans took over much of the acreage vacated by these crops. "At that early period it was the hope of many leaders of agriculture, government, and industry that much of the oil and protein of the soybean could be diverted from the food and feed industries into industrial products such as paints, varnishes, soap stock, plastics, adhesives, plywood glue, paper coating and lamination, paper sizing, textile fibers, and other uses... In 1936 the US organized the Regional Soybean Industrial Products Laboratory for this purpose. These new industrial uses were expected to help relieve the problem of farm surpluses... In 1935 the Glidden Company built the first plant for the isolation of industrial grade soybean protein (transferred to Central Soya in 1958). The largest use of industrial grade protein is in the paper-making industry, for coating and sizing of paper board.

"After World War I, soybean meal, because of its low cost, replaced casein as an adhesive for Douglas fir plywood glue, where it still retains a substantial part of the market for the interior grade product."

"While soybean proteins have several important industrial applications, especially in the paper industry for coating and sizing paper, which are expected to continue for years to come, the original dream of an ever-expanding industrial market [for soy proteins] has faded. In the polymer market it appears that for most applications the proteins cannot be made competitive with the increasing number of low cost, high quality synthetic resins... It is generally recognized that the increasing demand for proteins for feed and food will greatly surpass the anticipated industrial uses."

A graph (p. 1) shows: Soybean production in the United States for seed, 1940-1970. Address: 1. Oilseeds Protein Consultant, New Orleans, Louisiana; 2. Director, Protein Research, W.L. Clayton Research Center, Anderson Clayton Foods, Richardson, Texas.

2472. Smith, Allan K.; Circle, Sidney J. eds. 1972. Soybeans: Chemistry and technology. Vol. 1. Proteins. Westport, Connecticut: AVI Publishing Co. xi + 470 p. Illust. Index. 24 cm. [500+ ref]

• ***Summary:*** One of the best and most comprehensive reviews on the subject, with extensive information on modern soy protein products. Each of the 12 chapters is written by an expert on the subject, and each is cited separately. Volume 2 was never published. Address: 1. PhD, Oilseeds protein consultant, New Orleans, Louisiana; 2. PhD, Director, Protein Research, W.L. Clayton Research Center, Anderson Clayton Foods, Richardson, Texas.

2473. Smith, A.K.; Circle, S.J. 1972. Appendixes: Glossary of soybean terms: Terms used in conjunction with the processing of soybeans and the utilization of soy products. Official standards of The United States for soybeans. In: A.K. Smith and S.J. Circle, eds. 1972. Soybeans: Chemistry and Technology. Westport, CT: AVI Publishing Co. xiii + 470 p. See p. 438-56. Appendix. [4 ref]

• ***Summary:*** Glossary: Soybean(s), soybean processor, soybean processing (solvent extraction, mechanical processing, pre-press solvent processing), soybean oil, crude soybean oil, edible crude soybean oil, refined soybean oil, edible refined soybean oil, hydrogenated soybean oil, degummed soybean oil, winterized oil, technical grade refined soybean oil, soybean fatty acids, soybean soapstock, acidulated soybean soapstock, soybean lecithin, break material, sludge.

Soybean products: Ground soybeans, ground soybean hay, soybean hulls, solvent extracted soybean feed, soybean meal, dehulled solvent extracted soybean meal, soybean mill feed, soybean mill run, heat processed soybeans, nitrogen free extract (N.F.E.).

Standard specifications: Soybean chips, soybean cake, 41% protein soybean meal, soybean flakes, 44% protein soybean meal, dehulled soybean flakes, 50% protein solvent extracted soybean meal.

Soybean proteins: Soy flour, soy grits, soybean meal, defatted soy flour, low-fat soy flour, high-fat soy flour, full-fat soy flour, lecithinated soy flour, protein, isolated protein, toasting, textured protein products (TPP), meat analogs. Definitions: Soy grits and/or soy flour, isolated soy protein, soy protein concentrate.

Vegetable fats: Margarine, vegetable shortening.

Oriental foods: Soy sauce (shoyu), soy milk, miso, tofu, dried tofu, aburaage, kinako ("Ground toasted soybeans,

used for making Japanese-style cakes" [confections]), namaage, ganmodoki, tempeh, natto, yuba, moyashi (soybean sprouts), vanaspati, ghee.

Official standards of the U.S. for soybeans. Soy flour standards. Analytical data range of commercial soy protein. Some U.S. companies marketing soy protein food ingredients. Nitrogen solubility index (NSI). Protein dispersibility index (PDI). Urease activity. Water absorption of soy flour. Address: 1. Oilseeds Protein Consultant, New Orleans, Louisiana; 2. Director, Protein Research, Anderson Clayton Foods, Richardson, Texas.

2474. Thio, Goan Loo. 1972. Soybeans, soybean products and their application: A brochure prepared for a programme of introduction of soybeans for human nutrition in the Republic of Zambia. Royal Tropical Institute, 63 Mauritskade, Amsterdam-East, Netherlands. 48 p. Annex III in Thio 1972, Introduction of Soybeans for Human Nutrition, Republic of Zambia. See p. 19-36. June. [Eng]
• ***Summary:*** Contents: Introduction. Soybeans. Soybean products (incl. immature soybeans in the pods): Soymilk, soybean curd (soybean cheese or toufu [tofu]), soy steak (tempeh). Applications of soybeans and soybean products: Fried soybeans, boiled young whole soybeans, fried soybean curd (fried toufu), dried sliced toufu (toufu crisp), soymilk residue flour [okara ground to finer than 40 mesh], soycroquettes (soyrolls, with soymilk residue flour {finer than 40 mesh}), soybiscuits (with 50 grams of soymilk residue flour), vegetable soysoup (with 600 ml of soymilk), soy-omelette (toufu omelette, with "100 grams of toufu and 1 chicken egg"), toufu salad with peanut sauce (with "fried toufu slices"), soy maize bread (with "600 ml of soymilk" and "60 grams of soybean curd {toufu}, very finely mashed"). Appendix: Average chemical composition of soybeans. Address: RTI, Amsterdam East, Netherlands.

2475. **Product Name:** [Defatted Soy Flour, and Soy Beverage].
Manufacturer's Name: General Mills.
Manufacturer's Address: Lago Muritz 84-B, Mexico 17, D.F., Mexico. Phone: 531-31-15.
Date of Introduction: 1972?
New Product–Documentation: Talk with Gil Harrison of American Soybean Assoc. 1989. April 21. General Mills was the first company to make a defatted soy flour in Mexico. They had had their own little cereal-soy mixing plant. Their first experiments were done with a soy beverage (made from defatted soy flour and flavor) served to government dam workers. They probably started in the late 1960s and were definitely there by 1971. When they couldn't make it go, Don Reese purchased all the machinery from General Mills. He wouldn't let Gil Harrison into his plant on Lago Muritz in 1971. He made cereal-soy blends and a soy beverage, both containing sesame.

2476. Fomon, Samuel J.; Thomas, L.N.; Filer, L.J., Jr.; Anderson, T.A.; Bergmann, K.E. 1973. Requirements for protein and essential amino acids in early infancy. Studies with a soy-isolate formula. *Acta Paediatrica Scandinavica* 62(1):33-45. Jan. [23 ref]
• ***Summary:*** Rates of gain in length and weight by fullsize infants receiving 6 to 7 percent of calories from cow milk protein or soy protein were found to be similar to those by breastfed infants. Address: Dep. of Pediatrics, Univ. of Iowa, Iowa City.

2477. Misko, Karin. 1973. SeVa longevity cookery cookbook. Columbus, Ohio: Soybean Press. viii + 113 p. Jan. Illust. by Judy Post. Edited by Debora Bittaker. Introduction by Catherine Bicknell. 22 cm. [45 ref]
• ***Summary:*** A vegetarian cookbook from the SeVa Restaurant, printed on 100% recycled paper. Soy-related recipes include: Soy milk (p. 18). Tahini milk. Nut milk (p. 18). Miso vegetable soup (p. 25). Variety muffins (with soy flour, p. 36). Salad for Virgo (with green soybeans and roasted soybeans, p. 45). Miso-tahini sauce (p. 51). Brown sauce (with Tamari soy sauce or miso, p. 51). Stuffed cabbage rolls (with green soybeans and brown rice, p. 65). Campfire dinner (with cooked or canned soybeans, p. 65). Soy bean loaf (p. 73). Roasted soybeans (dry roasted, p. 84). Granola (with Soya granules, p. 84).

The glossary (p. 98-100) includes listings for cold-pressed oils, fertilized eggs, ginseng, glutin [sic, gluten], miso, seaweed, tamari soy sauce, and tofu ("a bean curd made from soybeans which is used for flavoring soups and sauces.")

Brand name products we use (p. 101; Note: Each contains soya). Smokene, Soyagen (spray-dried soymilk), and Vegeburger (Loma Linda Foods). Soya Granules (Fearn Soya Foods). Stripples (bacon alternative from Worthington Foods). Vege-Sal (Modern Products; flavored with soy bean extract). "Smokene: smoked seasoning spice made from toasted soy powder, dried yeast, soy sauce and condensed wood smoke. It is used for flavoring soups and sauces." Address: Columbus, Ohio.

2478. Cowan, J.C. 1973. Soybeans: Their uses are many and expanding all the time. *Crops and Soils Magazine* 25(5):10-14. Feb.
• ***Summary:*** Contents: Introduction. Processing needed. Oil products. Lecithin. Protein products. Texturized protein products. Foreign and fermented products. Future prospects. Address: NRRL, Peoria, Illinois.

2479. Steinkraus, K.H. Assignor to Cornell Research Foundation. 1973. Method for defatting soybean meal. *U.S. Patent* 3,721,569. March 20. 3 p. Application filed 1 March 1971. [4 ref]

Address: New York State Agric. Exp. Station, Geneva, NY 14456.

2480. Halpern, S.R.; Sellars, W.A.; Johnson, R.B.; Anderson, D.W.; Saperstein, S.; Reisch, J.S. 1973. Development of childhood allergy in infants fed breast, soy, or cow milk. *J. of Allergy and Clinical Immunology* 51(3):139-51. March. [28 ref]
Address: Dep. of Pediatrics and Div. of Biomathematics and Biostatistics, Dep. of Biophysics, Southwestern Medical School (Dallas), Univ. of Texas.

2481. Meals for Millions Foundation. 1973. Annual report 1972. Santa Monica, California: MFM Foundation. 16 p. 22 cm.
• ***Summary:*** Submitted by Mark M. Sterner, the new Executive Director. Cover is printed in beige, gold, and dark brown ink showing a stylized Mercator projection map of the world on a white background. The pages are unnumbered.

Contents: A letter from Charles Sweeney, President. Meals for Millions–an idea whose time has come [a phrase later used by the Hunger Project, founded by Werner Erhard, 1977]. Technical assistance: Ecuador (including growing soybeans), Sri Lanka (grow soybeans, make a soy beverage), Korea (developing a soy beverage in Santa Monica). Education: Training school, nutritional instruction. Nutritional programs: United States, overseas. MPF distribution during calendar year 1972: 145,395 lb were sent to 16 countries overseas and 31,215 lb were sent to locations in the USA for a grand total of 176,610 lb [71% as much as last year]. MFM in the news. Balance sheet (as of 31 Dec. 1972): Contributions and other revenues $399,147. Expenses $380,000. Assets and liabilities. History. Volunteers support MFM. Northern California advisory board. Bay Area committee. Board of Directors. A letter from Mark M. Sterner, Executive Director.

Photos show: (1) Charles Sweeney, President. (2) Mark M. Sterner. Plus many small photos. Address: 1800 Olympic Boulevard (P.O. Box 1666), Santa Monica, California 90406. Phone: 870-0451.

2482. Badenhop, A.F.; Hackler, L.R. 1973. Methionine supplementation of soy milk to correct cystine loss resulting from an alkaline soaking procedure. *J. of Food Science* 38(3):471-73. March/April. [15 ref]
Address: Cornell Univ., Geneva, New York.

2483. Rice, William. 1973. The fair-skinned soybean. *Washington Post.* May 10. p. E1, E16.
• ***Summary:*** The title of the continuation of the article on p. E16 is "The treasures beneath the surface of the fair skinned soybean." Mirror, mirror on the wall... The soybean is the fairest vegetable of all, for its dull yellow surface covers a treasure of protein and other nutrients. It is presented in many guises: "tofu (used in Oriental cooking as bean curd), green (fresh) soybeans (prepared as fresh limas, or eaten blanched or raw when very young), dried soybeans (eaten as peanuts or used as other dried beans in cooked dishes), soybean flour (can be mixed with other flours but lacks gluten and can therefore replace only 15 per cent or so of wheat flour in recipes), soy sauce (essential in Oriental cooking and mistakenly used in the manner of ketchup by many Americans 'eating Chinese'), tamari (pure soy–preferred by vegetarians), miso (fermented soybean paste), soybean milk (liquid or powdered), soybean grits and flakes, lecithin (supplement to control cholesterol build-up) and some others. Soybeans have long been available in health food stores."

Rising beef costs have led to the use of "textured vegetable protein" as an "extender" in ground beef products. Contains 4 recipes using cooked, canned or dry soybeans, or soy flour.

2484. Baker, E.C.; Mustakas, G.C. 1973. Heat inactivation of trypsin inhibitor, lipoxygenase and urease in soybeans: Effect of acid and base additives. *J. of the American Oil Chemists' Society* 50(5):137-41. May. [19 ref]
Address: NRRL, Peoria, Illinois.

2485. Johnson, P.E. 1973. High-protein foods for peace. *Cereal Science Today* 18(5):138-41, 148. May. [1 ref]
• ***Summary:*** A photo shows Nigerian children, suffering from acute malnutrition, being sweetened and flavored Instant CSM (corn-soya-milk) by UNICEF. There is a great need to fortify cereal foods in developing countries. Recently bread flour (fortified with soy flour at 6 parts per 100) has been approved for worldwide distribution. The first purchases of this soy-fortified flour on 18 Oct. 1972 totaled 6 million lb. As a start, it is planned to use soy-fortified flour in biscuits and buns for child-feeding programs in India and the Philippines. "In Hong Kong, a beverage called Vitasoy, made with a soya base, fortified with vitamin A, B vitamins, and sugar, has been highly successful, being marketed over a 30 year period. Present production is at the rate of more than 100 million bottles per year. A major expansion is now underway which will provide capacity for production of 400 million bottles of Vitasoy annually within 3 years." Address: Chief, Operations Div., Office of Food for Peace, Agency for International Development.

2486. *Toronto Star* (*Ontario, Canada*). 1973. The ugly soybean contains a wealth of protein, vitamins. June 6. p. 77.
• ***Summary:*** The article begins: "Mirror, mirror on the wall, what is the ugliest vegetable of all? The soybean. Some call it 'tasteless.' Others ask 'What do you do with it?' Cost-conscious cooks, nutritionists, and the food industry would be far more understanding."

Under the soybean's dull yellow surface is "a treasure

of protein, more than any other vegetable, and substantial amounts of calcium, iron, other minerals and vitamins B and E. Also the soybean has more changes of clothes than any beauty queen." Consider the following guises:

"Eaten like peanuts: Tofu (used in Oriental cooking as bean curd); green (fresh) soybeans (prepared as fresh, or eaten blanched...); dried soybeans (eaten as peanuts or used as other dried beans in cooked dishes); soybean flour (can be mixed with other flours but lacks gluten and can therefore replace only 15 per cent or so of wheat flour in recipes).

"Other aspects of the bean are: Soy sauce (essential in Oriental cooking and mistakenly used in the manner of ketchup by many North Americans 'eating Chinese'); Tamari (pure soy–preferred by vegetarians); miso (fermented soybean paste); soybean milk (liquid or powdered); soybean grits and flakes; lecithin (supplement to control cholesterol build-up)..."

"Soybeans have long been available in health food stores, and some of the larger supermarkets now carry them." The best variety for food use is said to be Bansei. Canned soybeans, which take less time to prepare, make a good beef extender.

Gives recipes for: Soybeans and mushrooms (with "2 cups cooked soybeans" and 1 tbsp. tamari or soy sauce). Baked soybeans (with "1 pound yellow soybeans picked over and washed." Let the beans soak in a large freezer container for 5 hours, then place them in the freezer for at least 24 hours to reduce the cooking time required. "Place frozen beans and liquid in a large kettle. Bring to a boil and simmer gently until tender, adding more hot water if necessary. This takes 2½ to 3½ hours"). Soybean-mint salad (with 2 cups cooked soybeans or 1 can {15½ ounces}), drained. Soy mayonnaise (with ½ cup soy flour).

2487. Robson, J.R.K.; Konlande, J.E.; Larkin, F.A.; O'Connor, P.A.; Liu, Hsi-Yen; Horner, J.M. 1973. Zen macrobiotic diets. *Lancet* i(7815):1237. June 9. [4 ref]
• ***Summary:*** An evaluation of Kokoh, a Zen macrobiotic vegetarian infant feeding mixture, which contains brown rice, glutinous rice, aduki beans, soybeans, oats, sesame seeds, and wheat. Two infants, ages 7 and 14 months, had been feed Kokoh in varying proportions before being admitted to the hospital. Both infants were very small and both had an energy intake of only 40% of the RDA. "The apprehension expressed by the American Medical Association (1971) concerning Zen macrobiotic diets appears to be well founded..." Address: School of Public Health, Univ. of Michigan, and Dep. of Pediatrics and Communicable Diseases, Medical Center, Univ. of Michigan, Ann Arbor, MI 48104.

2488. Dean, M.E. 1973. A study of normal infants fed a soya protein isolate formula. *Medical J. of Australia* 1(26):1289-93. June 30. [8 ref]
• ***Summary:*** A powdered soy formula (Similac-Isomil) when fed for 6 months to healthy, full-term infants, gave good growth. "The soya bean isolate formula appears to be an adequate nutritional source for normal Australian babies and compares at least as well as one of the most commonly used infant feeding formulæ in this country. The newer soya bean isolate appears to have none of the disadvantages previously associated with soya bean formulæ, apart from some perianal irritation in the first two weeks of life." This study was supported by Ross Laboratories. Address: Dep. of Pediatrics, Adelaide Children's Hospital, North Adelaide, SA 5006, Australia.

2489. Knapp, J.; Barness, L.A.; Hill, L.L.; Kaye, R.; Blattner, R.J. 1973. Growth and nitrogen balance in infants fed cereal proteins. *American J. of Clinical Nutrition* 26(6):586-90. June. [14 ref]
• ***Summary:*** "Fortified cereals have been recommended as sources of protein to combat protein deficiency, particularly in developing countries." Products provided: Soyalac, Loma Linda Company, Riverside, California; Toasted Soy Protein, General Mills, Minneapolis, Minnesota; and Indonesian Saridele.

"In short-term balance studies, little difference was found in nitrogen retention between milk and various vegetable protein mixtures, and cottonseed and rice alone..." Address: Driscoll Foundation Children's Hospital, Corpus Christi, Texas; Depts. of Pediatrics, Baylor Univ. College of Medicine and the Univ. of Pennsylvania School of Medicine [Texas].

2490. **Product Name:** Similac (Soy-Based Infant Formula).
Manufacturer's Name: Ross Laboratories.
Manufacturer's Address: 625 Cleveland Ave., Columbus, OH 43216.
Date of Introduction: 1973. June.
New Product–Documentation: H.F. Meyer. 1960. Infant foods and feeding practices. p. 88, 90, 109, 111. Ross Laboratories (Columbus 16, Ohio), makes four infant foods: Similac Liquid, Similac Powdered, Similac with Iron Liquid, and Similac with Iron Powdered. All are made from cow's milk. They are in the category "One-formula (ready-modified) mixtures." Dean. 1973. Medical Journal of Australia. 1(26):1289-93. June 30.

2491. United Press International (UPI). 1973. New soybean drink 'tastes like nothing–Unless it's flavored. *Detroit News.* July 4. p. F-7, col. 3.
• ***Summary:*** Three professors (Steinberg, Wei, and Nelson) at the University of Illinois (Urbana) say they have developed a soybean drink that offers all the nutritional benefits of milk at about one-third the cost. However, it is bland unless flavored.

2492. *Loma Linda Bulletin* (*Loma Linda, California*). 1973. China doctor [Harry W. Miller] decides against retirement at 94. July 18.
• ***Summary:*** Dr. Miller decided at the last moment to stay on for another year at the Seventh-day Adventist Hospital in Hong Kong. For 70 years he has served the Chinese people as a medical missionary. A large photo shows him, dressed in a shirt and tie, and holding a cop in one hand. The caption: "'Orient Angel–Dr. Harry Miller, Seventh-day Adventist medical missionary, doing what he loves best, passes out cups of soybean milk to undernourished children in a houseboat city on the Hong Kong waterfront."

2493. Taylor, Brent; Norman, A.P.; Orgel, H.A.; et al. 1973. Transient IgA [immunoglobulin A] deficiency and pathogenesis of infantile atopy. *Lancet.* ii(7281):111-13. July 21. [14 ref]
• ***Summary:*** Atopy runs in families. Prick sin tests were done with seven allergens–not including soy. Address: 1-2. Hospital for Sick Children and Queen Charlotte's Maternity Hospital, London.

2494. *Dairy Record.* 1973. Soybean "milk" producer gets underway in Florida. 74(2):23. July.
• ***Summary:*** "Dairene of Florida, a manufacturer of a soybean 'milk,' has announced plans to construct Dairene plants in Charlotte, North Carolina; Springfield, Missouri; Woonsocket, Rhode Island; and El Paso, Houston, and Dallas, Texas.

"Dairene received a favorable ruling last December when a Circuit Court judge ruled that the Dairene firm should be classified as a food producer, and not subject to regulation by the state agriculture department's dairy division.

"President of Dairene of Florida is Eddie Goldstein, who was previously associated with Reddi-Whip and Fount-Whip, imitation whipped cream manufacturers. Goldstein says the soybean milk powder, called Pureblend, is manufactured from 35 ingredients in Newark, New Jersey. His processing operation is simple: 'Mix the powder with water, run it through a pasteurizer at 170º, cool it down to 36º and you have milk.'

"Goldstein says that Miami will become the big test market for his products. He notes that 'Imitation Vitamin D Milk' will retail for 59 cents a half gallon in Miami stores and will have the advantage of 'complete uniformity.'"

2495. Harper, Anne. comp. 1973. Soybean processing and utilization: A partially annotated bibliography. Jakarta, Indonesia: Lembaga Ilmu Pengetahuan Indonesia (Indonesian Inst. of Sciences), Jl. Tjhik Ditiro 43, Jakarta. vi + 56 leaves. 30 cm. [440 ref. Eng]
• ***Summary:*** Contents: Preface (by Prof. Sarwono Prawirohardjo, Chairman, ASEAN Permanent Committee on Science and Technology). Introduction: The soybean (Glycine max), soybean meal and oil, food uses, industrial uses, scope of the bibliography ("excludes references to non-alimentary utilisation of soybeans" and to "references to alimentary utilisation where the harvested plant has not undergone processing by either fermentation or oil extraction"), terminology of soybean processing (soybean meal, soy flours and grits, solvent extraction, miscella, desolventizer-toaster, defatted soy flour, low-fat soy flour, high-fat soy flour, full-fat soy flour, lecithinated soy flour, soy protein concentrates, soy milk, Saridele, yuba, soybean curd [tofu], aburage, koritofu [kori-dofu, dried frozen tofu], soy protein isolate, protein fibre products {spun, spinnerettes}, extrusion-expansion products, fermentation products {ontjom, Neurospora sitophila, soysauce, shoyu, Aspergillus oryzae, koji, moromi, tamari, koikuchi, natto, miso, tempeh, Rhizopus oligosporus, soybean cheese, sufu, Mucor sufu}, Zygosaccharomyces).

General (p. 1). Fermentation products (p. 2-16). Soybean oil, meal, and protein (p. 17-42). Nutrition (p. 43-56). Note: 500 copies were printed. Address: Indonesia.

2496. Simoons, Frederick J. 1973. New light on ethnic differences in adult lactose intolerance. *American J. of Digestive Diseases* 18(7):595-611. July. Series II. [91* ref] Address: Dep. of Geography, Univ. of California, Davis, CA 95616.

2497. Williams, S.W.; Rathod, K.L. 1973. Potential utilization of soybeans for human food. *Agriculture and Agro-Industries Journal* (*Bombay*) 6(8):11-17. Aug. [18 ref]
• ***Summary:*** Contents: Introduction. Considerations in using soybeans for foods. Soybean products for human food. Whole bean food products: Fermented soy products (shoyu {soy sauce}, miso, sufu, tempeh, natto and hamanatto). Soybean beverage ("milk"). Simply processed soybean foods ("Boiled immature soybeans are a tasty vegetable." Also soy-banana weanling food). Soy protein products. Soybean flour and grits. Refined high protein soy foods (soy protein concentrate, soy protein isolate). Opportunity and challenge: "If soybeans prove to be a competitive crop on a large scale, they could plan an important role in alleviating nutritional deficiencies in India. But, if they are to do this, vast quantities of acceptable soybean products must be made available for human food at low cost. To accomplish this will be a tremendous challenge to both industry and government."

Endnote 7 states that CFTRI at Mysore is reported to have developed a spray-dried soy beverage powder having a good flavor. Address: 1. Prof. in Agricultural Economics, Univ. of Illinois, Illinois; 2. Marketing Economist for Soybean, Jawaharlal Nehru Krishi Vishwa Vidalaya, Jabalpur, Madhya Pradesh, India.

2498. *British Medical Journal.* 1973. Dietary advice for a

pregnant, vegetarian patient. iii(5882):689. Sept. 29. [1 ref]
• ***Summary:*** This question and answer column replies that the pregnant lacto-vegetarian probably obtains an adequate supply of nutrients for herself and the fetus, however it is recommend that she take vitamin and iron supplements. "If, however, the woman is a 'vegan' and refuses eggs and all dairy products, she may well be deficient in essential nutrients, mainly as a result of lack of animal protein. Several milk substitutes of vegetable origin are marketed and these can help to make good the deficiency. Nevertheless, many vegans have had to return to consuming milk and eggs to restore their health and it is likely that a vegan woman who is pregnant may need to do the same for the health of her future baby. Furthermore the vegan is very likely be to be very short of vitamin B-12. There is no satisfactory vegetable source of this vitamin but products of vegetable origin to which the vitamin has been added are available."

2499. **Product Name:** [Vegimil Vegetable Milk {Soymilk; Renamed Vegemil in 1984} (Vegemil A, Vegemil B, or Vegemil C)].
Foreign Name: Vegimil.
Manufacturer's Name: Dr. Chung's Foods Company, Ltd.
Manufacturer's Address: 194-24 Hwoi Hyun-dong 1-ka, Chung-ku, Seoul, South Korea.
Date of Introduction: 1973. October.
Wt/Vol., Packaging, Price: Bottle.
New Product–Documentation: Soya Bluebook. 1981. p. 60. "Vegimil Soy Milk. Other location: 296-5 Hagal-ri, Kihyeung-myon, Yong In-kun, Kyungki-do." Soya Bluebook. 1983. p. 63. "Vegimil."

Letter from Kyung Lee, ASA country director, Korea, to William Shurtleff at Soyfoods Center. 1983. Nov. 23. Gives history and production statistics. Soya Bluebook. 1984. p. 62. "Vegemil Soy Milk." Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 16, 81-83. This was Korea's first commercial soymilk to be produced on a large scale and bottled. In 1981 their output was estimated at 432 tonnes, increasing to 46,373 tonnes in 1983. STS. 1985. Containers for Soymilk. Shows bottle, green lettering, 180 ml.

Photocopy of Label sent by Anders Lindner. 1989. 200 ml. "Sweet Vegemil B, Soybean Milk."

Note: This is the earliest known commercial soy product made in Korea.

2500. Ilany (Feigenbaum), J. 1973. Soybean food for today and tomorrow. *Gordian* (*Hamburg*) 73(10):390-91. Oct.; 73(11):428-30. Nov.; 73(12):464-65. Dec. [21 ref. Eng; ger]
• ***Summary:*** "This is a short review of what is chiefly known at present of this wonderful bean, which only a few years ago, constituted a strange and exotic food." Contents: Introduction. Composition and nutritional value. Green soybeans. Sprouted soybeans. Soybean flours. Isolated proteins. Soy-food products of the Far East: Kinako, soymilk, yuba, "tofu or curd–soycheese," aburage, natto, Hamanatto, tempeh, miso, shoyu or soy sauce. Soybean oil. Lecithin.

Concerning tofu: Tofu made in the regular way "is called 'Fresh Tofu.' It does not keep long, even under refrigeration, unless it is further processed. For this purpose it may be canned, frozen, fried, smoked, or fermented."

Note: This is the earliest English-language document seen (April 2013) that contains the term "soycheese"; it uses this term to refer to regular tofu.

2501. **Product Name:** [Soya Vital].
Foreign Name: Soya Vital.
Manufacturer's Name: Lucas Meyer GmbH & Co.
Manufacturer's Address: Ausschlaeger Elbdeich 62, 2000 Hamburg 28, West Germany. Phone: (0411) 78 17 01.
Date of Introduction: 1973. November.
New Product–Documentation: Manufacturer's leaflet. 1973. Nov. 7. "Soyavital." It is a dietetic beverage of high biological value, to normalize fat and cholesterol metabolism. A powdered soybean extract, it is obtained from soybeans by a newly developed process. A table shows the nutritional composition: Protein 20.0%. Fat 15.0%. Carbohydrates 61.0%. Water 3.6%. 100 gm contains 460 calories.

2502. *Soybean Digest.* 1973. Milk without the cost of the cow. Nov. p. 36.
• ***Summary:*** About the work of Nelson and Wei at the University of Illinois.

2503. *SoyaScan Notes.* 1973. Chronology of soybeans, soyfoods and natural foods in the United States 1973 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1973. The Asian Vegetable Research and Development Center (AVRDC), an international agricultural research center in Taiwan, starts soybean research. It does early work in introducing soybeans to the tropics and semi-tropics.

1973. Nelson, Steinberg, and Wei at the University of Illinois develop the pre-blanch wet-grind method of making a suspended soymilk–without removing the okara and by using an homogenizer to pulverize the okara into tiny particles.

1973 March. Beef-soy blends, containing 25% hydrated textured soy flour and 75% ground beef, introduced to U.S. supermarket chains in response to skyrocketing hamburger prices. This opens a second large new market for such products, following the school lunch market. Early brands include Burger Pro, Plus Burger, and Pro/Teen. Advertising stresses lower cost than all-beef products and less shrinkage in cooking. By Sept. 1973 they had captured 29% of the ground beef market. At that time beef prices tumbled and by

Nov. 1975 the market share of the blends had fallen to only 10%.

1973, April-July. INTSOY (International Soybean Program) established at the University of Illinois, with funding from USAID, to do applied research on soybean production, varietal development, and utilization in tropical and subtropical environments and low-income countries. The International Soybean Variety Experiment (ISVEX) begins and by 1980 is being conducted in 110 countries.

1973 June. U.S. imposes a soybean export embargo, fearing that the drought-induced short supply will drive up domestic meat and poultry prices. Soybean prices soon explode into a new world of double digits, temporarily hitting $12 a bushel.

1973 June. Kikkoman opens the largest shoyu plant in the Western world at Walworth, Wisconsin, and starts production. Capacity is 10,000 kiloliters (2.6 million gallons) a year.

1973 Sept. The USDA removes all regulations for exporting agricultural products, thus lifting the June soybean embargo. But permanent damage has been done that undercuts confidence in the USA as a reliable soybean supplier and trading partner and stimulates numerous foreign countries (including Brazil and France) to expand their soybean production.

1973 Oct. Arab oil-producing nations (OPEC) abruptly increase petroleum prices fourfold, regulate the production of petroleum, and impose a total ban on oil exports to the U.S. after the outbreak of the Arab-Israeli war. The first oil shock results. Gasoline prices skyrocket. The ban is lifted on 18 March 1974.

1973 Nov. The first World Soy Protein Conference held in Munich, Germany, attended by over 1,100 delegates from 45 countries, and sponsored by the U.S. Foreign Agricultural Service and the American Soybean Association.

1973. Pro-Nuts, the first dry-roasted soynuts in the Western world, launched by Edible Soy products in Hudson, Iowa.

1973. Energy and Protein Requirements published by the Joint FAO/WHO Ad Hoc Expert Committee. It reduces protein requirements for adults by 20%. The National Academy of Sciences in the USA follows suit by lowering its RDA for protein by 25%. These two events essentially define away the "protein crisis," and mark a crucial turning point in the ongoing "protein versus calories" debate. Insufficient food energy comes to be viewed as the main nutritional problem in poor countries. If a person has sufficient calories (i.e. sufficient food), it is argued, protein intake is also likely to be adequate.

1973. Oregon enacts America's first organic food labeling law. A boost to organically grown crops.

1973. The era of biotechnology begins when Stanley Cohen of Stanford University and Herbert Boyer of the University of California at San Francisco successfully recombine ends of bacterial DNA after splicing a foreign gene in between. They call their handiwork "recombinant DNA," but the press preferred to call it "genetic engineering."

2504. Fung, W.P.; Tye, C.Y. 1973. Evaluation of soya bean milk as an antacid. *Singapore Medical Journal* 14(4):515-18. [5 ref]
• ***Summary:*** Soymilk has neutralizing properties like an antacid but is significantly less effective than a standard antacid like SIMECO, although it has no side effects. Address: Dep. of Medicine, Univ. of Singapore.

2505. Schroder, D.J.; Elliot, J.I.; Jackson, H. 1973. Nutritional studies on soybean curd produced by calcium sulfate precipitation of soybean milk: A research note. *J. of Food Science* 38(6):1091-92. Nov/Dec. [13 ref]
• ***Summary:*** In this study, soybean curd [tofu] was fed to rats as part of a test diet. The level of dietary protein in this diet was 22.31% and the PER was 1.71. The average protein quality (PER soybean curd / PER casein x 100) in this study was 84.6. This test diet meets the amino acid requirements of the rat for all amino acids except methionine. Address: Depts. of Food Science & Animal Science, Univ. of Alberta, Edmonton, Alberta, Canada.

2506. Escueta, E. 1973. Development of a process for the preparation of soymilk in rural areas. MSc thesis, University of the Philippines at Los Banos, Laguna, Philippines. *
• ***Summary:*** Presoaking soybeans in boiling water shortens the time of boiling necessary to inactivate the soybean trypsin inhibitor.

2507. **Product Name:** [Soymilk].
Manufacturer's Name: Haus Luppy.
Manufacturer's Address: Offices: Hakusan 4-30-12, Bunkyo-ku, Tokyo 112, Japan; Factory: Minami Gotani 360-2, Yashio-shi, Saitama-ken 340, Japan. Phone: 03-815-0159 (Offices). 0489024-5011 (Factory).
Date of Introduction: 1973.
New Product–Documentation: Shurtleff & Aoyagi. 1975. *The Book of Tofu.* p. 202. Shows an illustration of Luppy soymilk in a tetrahedronal aseptic Tetra-Pak carton.

Shurtleff & Aoyagi. 1979. Tofu & Soymilk Production. p. 199. Shows an illustration of Luppy soymilk in a tetrahedronal aseptic Tetra-Pak carton. Page 313 gives the company name and address. The founder and owner is Mr. Teisuke Yabuki who wrote *Tonyu no Shimpi* ("The Wonders of Soymilk"), Japan's first book on soymilk, a 160-page work published in 1974.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64. This was Japan's fifth commercial branded soymilk.

2508. **Product Name:** Lo's Weaning Food (Soy-Based, High Protein).
Manufacturer's Name: Hong Kong Soya Bean Products Co. Ltd.
Manufacturer's Address: Kowloon, Hong Kong.
Date of Introduction: 1973.
New Product–Documentation: The Hong Kong Soya Bean Products Co. Ltd. 1970. 30th anniversary annual report, 1940-1970. The Extrusion Foods Division is developing a high protein weaning food. "It has been clinically tested under the supervision of the Professor of Paediatrics at Hongkong University and further tests in Welfare Clinics and Homes are now in progress... Apart from weaning food and other types of baby food, this Division will also branch out its activities into the field of Snack Foods and Meat Substitutes. In fact, the Extrusion Foods Division offers the company the biggest scope for diversification, and the possibilities are unlimited."

Shurtleff & Aoyagi. 1983. Soymilk Industry & Market. p. 142. Talk with K.S. Lo. 1989. Oct. 6. This product was developed by Eugene Lo as a project requested by his father, K.S. Lo. It was introduced in about 1973 and was sold to nurseries and government health care centers. But after about 1-2 years, it was discontinued.

At about the same time Frank Lo, another of Mr. Lo's sons, developed a soymilk-based blue cheese. Taste tests were done on the product in Hong Kong, but it was never given on official name or trademark, and was never really marketed commercially.

2509. **Product Name:** [House Hon Tofu Mix (Instant Soybean Curd Mix)].
Foreign Name: Hausu Hontôfu.
Manufacturer's Name: House Food Industrial Company Ltd. (Hausu Shokuhin Kogyo).
Manufacturer's Address: Plant: Sano city (100 km north of Tokyo), Japan. Head offices: Mikuriya-Sakaemachi 1-5-7, Higashi Osaka City, Osaka, Japan.
Date of Introduction: 1973.
Ingredients: Soy bean [powdered soymilk], glucono delta-lactone.
Wt/Vol., Packaging, Price: 2.3 oz In USA $0.99 in 1983.
How Stored: Shelf stable.
New Product–Documentation: Article in *Japan in Pictures.* 1974. 16(1):12-15. "Bean curd, a subsidiary food as nutritious as meat. Instant bean curd developed in Japan." Two photos are given of the equipment in the plant and 6 of the package and how this instant silken tofu is prepared at home. At the modern plant, a mixture of ground soybeans and water "is applied to a centrifugal separator, which separates it into soymilk and refuse. The soymilk, which has been concentrated by being heated, is sprayed into a tank heated to 100ºC, a process which dehydrates the milk to produce a bean curd base in powdered form [powdered soymilk]. A unit quantity of this powder is packed in an aluminum-foil bag containing nitrogen gas, which is put on the market accompanied by a small amount of coagulant.

"Process to prepare bean curd on the spot. Put a bag of 'Hontofu' in 600 cc of water, which is to be agitated [with a whisk]. Boil about 3 minutes. Mix the accompanying coagulant [glucono delta-lactone] immediately after the flame is put out. Transfer the substance into the container [a plastic box shaped like a cake of tofu]. Leave it for about 20 minutes and a block of bean curd is ready. Bean curd taken out of container [into a bowl of water]." Spot (½ page with photo of package) in *Food Product Development.* 1976. May. p. 88. Discusses: Ingredients and description. Product application. Product history. Product concept.

Label. 1985, undated. Photo on front panel of Chilled Tofu in clear glass bowl and Simmering Tofu in a *nabe* pot.

Sakai. 1988. Bestways. March. p. 21. The powdered tofu market is dominated by House Food, an Osaka based manufacturer, that launched powdered tofu in 1973. Note: Actually House launched a packet of powdered soymilk with a coagulant.

House Foods America Corporation. Annual report 1996. p. 13. This product, *Hontofu,* was launched in 1973.

2510. **Product Name:** [Prolait {Soymilk}].
Foreign Name: Prolait.
Manufacturer's Name: Prolait S.A.
Manufacturer's Address: 14 rue Inkermann, B.P. 37, 79001 Niort, France. Phone: 49.24.09.42.
Date of Introduction: 1973.
New Product–Documentation: Richard Leviton. 1983. Trip to Europe with American Soybean Assoc. p. 6. Prolait Company in Southwest France has been making powdered soymilk since 1973. They have a Takai system.

Letter (fax) from Bernard Storup. 1990. June 6. Prolait S.A. (14 rue Inkermann) is a private, family-owned dairy group that makes mainly dry powdered milk (cow and goat milk). They were one of the first to get involved with soya culture in France. They began to make soymilk using a small Takai system in 1985, mainly for one distributor, Celnat (Z. Industrielle de Blavozy-St. Germain, 43700 Brives Charensac). This was a poor quality soymilk with a strong beany taste. They stopped production in 1988, when Celnat switched to selling soymilk made by Vandemoortele.

2511. Pupo, L.M.; Chaib, M.A.; Garruti, R.S.; Ferreira, L. 1973. Estudo sensorial do sabor de leite de soja [Taste-panel study of the flavor of soymilk]. *Suplemento de Ciencia e Cultura, Resumos* 25(6):429. Presented at the 25th Reuniao Anual da Sociedade Brasileira para o Progresso da Ciencia, Sao Paulo. 1973. [Por]*
Address: Brazil.

2512. **Product Name:** Soyalac (Soymilk) [Sweetened].

Manufacturer's Name: Spicer Health Foods, Spicer Memorial College.
Manufacturer's Address: Aundh Road, Ganeshkind Post, Poona 1, Maharashtra, India.
Date of Introduction: 1973.
Wt/Vol., Packaging, Price: Bottle.
New Product–Documentation: Note: This is the earliest known commercial soymilk made in India. Letter from Mr. Emerson David (Spicer Memorial College, Food Factory, Aundh Road, Ganeshkhind, Poona 411 007 India). 1975. July. He orders information about miso.

Letter from Charles D. Howes. 1978. Oct. List of Seventh-day Adventist soymilk plants.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 110. The plant started in 1972 or 1973.

Color photo sent by Anders Lindner of STS. 1987. Nov. 14. 150 ml bottle. Orange, white, black and yellow Label, with photo of baby's face. "Concentrated formula for infants and children (Hypoallergenic). Add water." This product is still on the market, sold in sterilized bottles.

2513. Albright, Nancy. 1973. The Rodale cookbook. Emmaus, Pennsylvania: Rodale Press Book Division. 486 p. Illust. Index. 25 x 20 cm.
• ***Summary:*** This book is based on natural foods but makes widespread use of meat, poultry, fish, and dairy products. Raw, unstrained clover honey is used as a sweetener instead of white sugar which "is dangerous to health..."

Basic information on soy: Soybean oil is good for sautéing (p. 4, 20). Tamari soy sauce is used for seasoning in preference to salt (p. 5, 20). Hints for cooking whole soybeans ("1. Soybeans require at least 8 hours of soaking and 2-3 hours of cooking–longer than any other legume." 2. Freezing soybeans after soaking decreases the amount of time needed to cook them, p. 16). Use soy powder or grits to add protein to meals (p. 21). Basic soy milk (from whole soybeans, p. 63). Cashew milk (p. 64). Sesame milk (p. 68).

Chapter 5, titled "Soybeans, eggs, and cheese," has an introduction to soybeans which begins: "For us in the Fitness House Kitchen 'discovering' the soybean has been a pleasant and surprising adventure. The soybean is one of the most versatile, fascinating and valuable of all plants" (p. 237-38). The chapter contains and many soy related recipes (p. 243-51): Methods for cooking soybeans ("Cover soybeans with cold water. Refrigerate or freeze overnight." Freezing will decrease the amount of cooking time needed. "Next day put the soybeans and their soaking water on to cook, using a large enough pot and leaving the lid slightly to one side so the soybeans will not boil over. Bring the beans to a boil then turn the heat down and simmer until they are tender, 2-3 hours." "1 cup dry soybeans will swell during soaking to 2½ to 3 cups. One pound of dry soybeans is about 2¼ cups"). Baked soybeans (with "1 lb. dry soybeans, soaked and cooked... Water soybeans were cooked in"). Barbecued soybeans. Soybean-cheese stuffed peppers (with cooked whole soybeans and cheddar cheese). Soy stuffed peppers (with pureed, cooked soybeans). Soybean chili. Soybean curry. Soybean loaf. Soybean-rice surprise casserole. Soybean-vegetable casserole. Soybean-stuffed eggplant.

Soy related recipes later in the book: Rice-bulgur-soy pilaf (with soy grits, p. 311). Wheat-soy-sesame bread (with soy flour & soy grits, p. 356). Soy milk custard (pudding, p. 400). Wheat-soy dessert (with soy flour, p. 401). Soybean pie (with chopped, roasted soybeans, p. 414). Soy peanut butter cookies (with soy flour).

Note: Neither tofu nor green vegetable soybeans are mentioned (by any name) in this book. In late 1976 (Dec. 6-7) Shurtleff and Aoyagi presented a program (lecture, slide show, food samples) at Rodale Press in Emmaus, attended by 40 members of the staff and employees. Hosts: Nancy N. Bailey and Robert Rodale. There was widespread interest in learning more about these foods. Shurtleff was "surprised they serve white sugar on their dining tables" at Fitness House.

Contains a very interesting directory of natural food stores in the United States (p. 448-76), including phone numbers and specialties.

On p. 242 are simple directions (and 2 photos) for making "yogurt 'cheese' to be used in place of cream cheese" in making dips, salads, or desserts. Address: Chef-Manager of Fitness House, the Rodale Press Dining Room, Emmaus, Pennsylvania 18049.

2514. Altman, Nathaniel. 1973. Eating for life: A book about vegetarianism. Wheaton, Illinois: The Theosophical Publishing House. xv + 142 p. Index. 21 cm. Series: A Quest Book Original. 2nd ed. 1977. Revised ed. 1984 (New York: Vegetus Books). [150+* ref]
• ***Summary:*** A scientifically sound and very well documented book about vegetarianism by a young man who draws a clear and logical picture for the need to eliminate excessive amounts of animal products from an ecological view as well as from the view of human physiology and humane standpoints.

Contents: 1. Dedication. Acknowledgments. Introduction, by Geoffrey Hodson. Preface. 1. The history of vegetarianism. 2. Comparative anatomy and physiology. 3. Vitality, health, and strength through a vegetarian diet. 4. Hygiene. 5. The world food shortage, economy, and ecology. 6. A vegetarian diet can save you money. 7. The sin of the slaughterhouse. 8. Rights for the animals? 9. Questions answered. 10. Vegetarianism: Not an end in itself. 11. Scientific nutrition. Appendices: A. What to eat if you don't eat meat. B. Selected vegetarian recipes. C. Vegetarianism in literature. D. Veganism? E. Some livestock by-products and their uses. F. Food values. G. Recommended reading.

Soybeans are discussed on p. 41 (inefficiency of a meat diet; efficiency of soybeans in producing protein per acre), p.

42 (77% of the soybean meal in the USA was fed directly to livestock in 1971), p. 83 (table showing daily requirements of essential amino acids, incl. those in cow's milk, soybean milk, whole wheat bread, etc.), p. 84 (table showing the protein content in various foods, including soybean milk, low-fat soybean flour, peanuts, peanut butter, etc.), p. 88 (table of saturated and unsaturated fats in foods, incl. soybeans, soybean milk, soybean oil, sesame seeds, etc.), p. 92 (table of calcium content of foods, incl. cooked soybeans, soybean milk, almonds, sesame seeds).

About the author: "Nathaniel Altman was born in 1948 in New York City, and graduated from the University of Wisconsin. He was raised as a meat eater but became a vegetarian at the age of twenty-one when he was studying in Latin America. He says that he decided to stop eating meat when he learned that man's violence toward the animals is related to the wars he wages with his own kind. At the age of twenty-three he decided to find out more about the subject of vegetarianism and this book is the result." Address: Ojai, California.

2515. Andersen, Lynn. 1973. Rainbow Farm cookbook. New York, NY: Harper & Row. 222 p. Illust. Index. 24 cm. Preface by Allen Gordon.

• ***Summary:*** This vegetarian cookbook, which has a macrobiotic flavor, is from Rainbow Farm, located on over 300 acres of mountain land in Phonecia, New York. Soy-related recipes include: Basic miso broth (p. 34). Miso vegetable soup #1. Miso soup #2 (p. 35). Soy butter dressing (made with 2 cups each oil and water, 3 tablespoons soy flour, and the juice of 2 lemons, p. 57). Miso vegetables (p. 67). Carrots and onions with tekka (miso, p. 67). Miso-onion spread (p. 76). Miso rice (p. 85). Tahini-miso spread (p. 108). Tahini-miso spread with vegetables (p. 108). Tahini-miso spread with seeds (p. 108). Tahini-tamari spread (p. 108). Miso balls (p. 111). Soy butter ("This is exactly the same as the whipped soy cream recipe" [which does not appear in this book], made with "soy powder," p. 111). Soy milk (with a blender, from soy beans, p. 118). Soy milk (without a blender, from soy flour, p. 118). Soy burgers (from okara, p. 119). Soy loaf (with cooked soy beans, p. 120). Tofu "(Chinese Soy Bean Cakes)" (curded with Epsom salt, p. 120). Miso sauce #1 and #2 (p. 126). Hiziki and tofu ([hijiki], p. 132). Egg noodles (with wheat and soy flours, p. 144). Soy milk with whole beans (p. 205). Soy milk with soy flour (p. 205).

A glossary of "New or Unfamiliar Foods" (p. 212-14) includes good descriptions of tamari, miso soy bean paste, kuzu, and tekka. Address: Phonecia, New York.

2516. Batt, Eva. 1973. What's cooking? A guide to good eating. Enfield, England: The Vegan Society. xxxii + 96 p. Illust. 21 cm. *

• ***Summary:*** This work has become widely accepted as the classic work on vegan cookery. In 1988 the address was: Vegan Society, 33/35 George St., Oxford OX1 2AY England. The society had 4,500 members. After Aug. 1990 the address became: 7 Battle Road, St. Leonards-on-Sea, East Sussex TN37 7AA, England. Address: UK. Phone: 865 722166.

2517. Carroll, Anstice; Vona, Embree De Persiis. 1973. The health food dictionary with recipes. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. vii + 200 p. Illust. by Vincenzo de Persiis Vona. Index. 24 cm.

• ***Summary:*** The foods, listed alphabetically, include: Adzuki (p. 1-2). Beans, dried (incl. soy beans, p. 17). Gluten flour (p. 74-75, incl. Gluten soy bread). Miso and Miso butter (p. 101). Morromi (p. 102). Mu Tea (p. 102). Nori (p. 106). Oil, vegetable (p. 113-14, incl. lecithin, peanut oil, olive oil, always refrigerate vegetable oil after opening; "Vegetable oils can (and should) be substituted for hydrogenated fats such as margarine, shortening, and lard in many recipes"). Peanut (p. 119-21). Peanut butter (p. 121-22). Soy grits (p. 156). Soy milk powder. Soy oil. Soy sauce (p. 156-57). Soybean (p. 159, incl. Soybean salad). Soybean, roasted (p. 160, incl. recipe for making at home). Tofu (p. 174-75, incl. recipe for Tofu-vegetable soup). Umeboshi (p. 175).

2518. Chen, Philip S.; Chung, Helen D. 1973. Soybeans for health and longer life. New Canaan, Connecticut: Keats Publishing, Inc. (A Pivot Health Book). xii + 178 p. Index. 18 cm.

• ***Summary:*** A revised and condensed pocketbook version of Chen and Chen 1956. Contents: Preface. Foreword. Introduction. Part I: Nutritive value of the soybean. 1. Protein. 2. Fat. 3. Carbohydrates and caloric value. 4. Minerals. 5. Vitamins. 6. Soybeans and world population. 7. Soybeans and disease.

Part II: Soy products. 8. Soybean oil: Phosphatides, margarine. 9. Soybean oil meal: Gelsoy, Multi-Purpose Food. 10. Soy flour. 11. Concentrated soy protein products: Soy protein concentrates (Griffith Laboratories makes Isopro and GL-301), soy protein isolates, and textured or spun soy proteins. 12. Soy milk. 13. Soy cheese (tofu). 14. Soy sauce. 15. Soybean sprouts.

Part III: Soybean culture and preservation. 16. Soybean culture. 17. Preservation of soybeans (preserving green soybeans by canning, freezing, and dehydration).

Part IV: Recipes. 18. Soybeans and soybean pulp. 19. Soy flour: Breads, cakes, cookies, pies, soups, other recipes. 20. Soy grits and soy flakes. 21. Soy milk. 22. Soy cheese. 23. Soybean sprouts. Appendix: Soybean utilization (chart). References. Address: USA.

2519. Cowan, J.C. 1973. Processing and products [soybeans]. In: B.E. Caldwell, ed. 1973. Soybeans: Improvement, Production, and Uses. Madison, Wisconsin: American Society of Agronomy. xviii + 681 p. See p. 619-

64. Chap. 20. [52 ref]

• ***Summary:*** Contents. 1. Introduction. 2. Processing for oil and meal: Preparation of flakes, solvents, extraction, desolventizer-toaster, degumming. 3. Conversion to edible oil products: Refining, bleaching, deodorization, hydrogenation. 4. Edible fat products: Salad and cooking oils, status of flavor stability, shortenings and margarine oils, lecithin. 5. Essential fatty acids and atherosclerosis. 6. Industrial uses of oil. 7. Meal for livestock and poultry: Nutritional aspects, factors affecting use of meals. 8. Edible protein products: Soy flour, concentrates and isolates, textured protein products (textured soy flour or textured soy protein fibers made into "meat analogues" resembling chicken, bacon, etc.). 9. Fermented and specialty foods: Tofu, soybean milk (an intermediate step in the manufacture of tofu), miso, shoyu (tamari, light-colored shoyu), sufu, tempeh, hamanatto, and natto.

Soybeans flow through a crushing plant as follows: First, they are cracked to release or loosen the hull and to break the cotyledon into about 4 parts. Shakers and aspirators separate the hull from the cracked cotyledons and rollers flake them. "Purified petroleum hydrocarbons known as hexane extract the oil from the flakes and the solvent is recovered. Moistened flakes are heated to inactivate the antinutritional factors and are converted to feeds for livestock and poultry. A small proportion of the flakes goes to a wide variety of soybean protein products including flour, isolates, and concentrates."

Tables show: (1) Utilization of soybean in U.S. in million pounds, every 5 years from Oct. 1933 to 1970 (Kromer 1970). (2) Use of soybean meal in the USA for feeding livestock and poultry (million tons). In 1969, the estimated amounts used were as follows: Cattle 3.43. Hogs 1.69. Other livestock 1.73. Total livestock: 6.85. Broilers 3.07. Hens and pullets 1.28. Other poultry 1.10. Total poultry 5.45. Total livestock + poultry 12.30. Note that cattle are the single biggest users. (3) Bleaching soybean oil (process, % clay and type, change in Lovibond color rating). (4) Effect of bleaching, citric acid, and light exposure on soybean salad oil. (5) Specifications for soybean oil. (6) Effect of linolenate content on flavor of soybean oil at elevated temperatures. (7) Composition of certain edible oil products from soybean oil and related products (salad oil, hydrogenated-winterized soybean salad oil, hydrogenated soybean oil liquid shortening, plastic shortening types I and II). (8) Changes in iron and copper content of soybean oil in commercial refining. (9) Properties of all-purpose and high-stability shortenings from all-hydrogenated vegetable oils and blends of animal fat and/or vegetable oil (iodine value, melting point, % linoleic acid, solid fat index {% solid at temperatures indicated}). (10) Typical analyses for mellorine and cookie and confectioner's fat. (11) Analytical data for typical margarine oils low and high in polyunsaturates (iodine value, melting point, % linoleic acid, solid fat index {% solid at temperatures indicated}). (12) NSPA–tentative lecithin specifications (NSPA, 1969-1970). (13) Composition of soybean lecithins. (14). Approximate composition of soybeans and meal products (whole bean, cotyledon, hull, hypocotyl, meal {cake–extruded, flakes–solvent extracted, dehulled flakes–extracted, mill feed–separated hulls, mill run–separated hulls}). (15) Amino acid analysis of soybean meal (44% protein and 49% protein {dehulled}) and corn. (16) Amino acid analysis of blends of soy flour with cereals and milk (Inglett 1968; Corn soy milk {CSM}, Millet soy milk, Wheat soy milk, etc.). (17) Partial formulas for young swine and boiler rations in percent total rations. (18) Partial formulas for dairy feeds (14% protein). A supplement to forage or roughage. (19) Soybean grits and flour–screensize. (20) Composition of soy flour. (21) Composition of 4 types of soy protein concentrates. (22) Uses for high-protein soy products (protein 70 [concentrates] and protein 90 [isolates]). Note: This is the earliest English-language document seen (Dec. 2004) that uses the term "protein 90" to refer to a soy protein isolate. (23) Amino acid analysis of fractions derived from dehulled extracted flakes (Rackis et. 1961, 1970). (24) Effect of cooking in salt solutions on texture of structured granules. (25) Composition and use (1,000 metric tons in 1964 and 1967) of soybeans for traditional foods in Japan (Use of whole soybeans in 1967 in 1,000 metric tons: Miso 169. Shoyu 15. Natto 47. Tofu 329. Total 642. Use of defatted flakes or grits in 1967 in 1,000 metric tons: Miso 8. Shoyu 154. Natto 0. Tofu 77. Total 284).

Figures show: (1) Flowchart: Processing of soybeans to oil and meal using hexane extraction. (2) Illustration: A modern soybean processing facility (aerial view, Central Soya, Inc.). (3) Schematic diagram / flowchart: Manufacture of edible soybean oil products (salad oil, salad and cooking oil, shortenings, margarines, liquid shortening). (4) Illustration: A continuous deodorizer for soybean oil. (5) Graph: Effect of prolonged storage at 100ºF on flavor score of hydrogenated-winterized soybean oil or soybean salad oil (nitrogen packed, air packed). (6) Illustration: Continuous chilling and working equipment for margarine production (Votator Div., Chemetron Corp.). (7) Flow diagram; Conversion of emulsions of margarine oils and ripened milk to conventional stick, whipped stick, and tub margarines (Votator Div.) (8) Chemical structure of prostaglandin-E_2, a fatty acid with hormone activity. (9) Diagram: Vapor-desolventizer- deodorizer for soybean flakes (Blaw-Knox Co.). (10) Flowchart and diagram: Operations with extruder-cooker. (11) Flow diagram: Manufacture of protein 70 [soy protein concentrate]. (12) Schematic diagram: Manufacture of soy protein isolate (Protein 90). (13) Photo: Chicken-simulated soy protein "meat" in three forms (Swift Edible Oil Co.). (14) Photo: Protein tow containing 16,000 monofilaments spread apart to show its fibrous nature; other tows in background (General Mills, Inc.). Address: NRRL, Peoria, Illinois.

2520. Crocco, Stephanie Carmela. 1973. Treatment of soy milk oligosaccharides by a homogeneric enzyme extract containing alpha-galactosidase. PhD thesis, The Louisiana State University and Agricultural and Mechanical College. 92 p. Page 878 in volume 35/02-B of Dissertation Abstracts International. *
Address: The Louisiana State Univ. and Agricultural and Mechanical College.

2521. Farmilant, Eunice. 1973. The natural foods sweet-tooth cookbook. New York, NY: Doubleday & Company, Inc. 182 p. Illust. (by Ed Nuckolls). Index. 22 cm. Pocketbook edition published in March 1978 by Jove Publications, New York. [10 ref]
• ***Summary:*** A tempting collection of more than 100 natural, healthful desserts made without sugar, honey, or artificial sweeteners. Recipes adapted from Far Eastern, Traditional European, and Classical American desserts. Soy-related information and recipes are (page numbers refer to the pocketbook edition): soy milk as an alternative for cow's milk (p. 12). Unrefined soy oil (p. 27). Koji and amasake (p. 29). Soy milk (p. 30). Soybean crêpes (with soybean flour, p. 65). Mock cream cheese cake (with tofu, p. 75-76). Tofu or soy cheese (homemade, 76-77). Amasake cookies (p. 83). Amasake (homemade from koji, p. 154-55). Soy cream sauce (with soybean flour, p. 161-62). Eggnog (with 3 eggs separated, 2 tablespoons barley malt extract or Amasake Syrup, 4 cups chilled Soy Milk, 1 teaspoon vanilla extract, and nutmeg, p. 172-73). Soy milk (homemade, p. 180). Food value charts (p. 185-87). Address: Food for Life store, Chicago.

2522. Fernando, G.W.E. 1973. Soya bean. The miracle crop of the 20th century. In: Ceylon Meals for Millions Foundation, ed. 1973. All about Soya Bean. Ceylon. 29 p. See p. 13-20. Abstract in: Ceylon Assoc. Advancement of Science, Proceedings, 29(1):69.
• ***Summary:*** Contents: Introduction. Recommended varieties: Hernon, Tainung (RI), Bragg, TK No. 5, Improved Pelican. Soya bean in multiple cropping programmes ("It produces two to three times more protein per acre per day than most other pulse crops"). Soil, climate and areas of production ("All well drained soils of the Dry Zone are suitable for the cultivation of the soya bean." "Soya bean can withstand short periods of drought and is not affected by excessive moisture in the soil compared to most other pulse crops"). Seed rate and spacing. Yields of soya bean. Oil and protein content (of 5 varieties. The protein content is over 40% and the oil content over 20%). Efficiency of land use for protein production. Fertilizers. Inoculation. Pests and diseases. Weed control. Storage. Uses of soya bean (defatted meal for animal food, oil for industrial uses as a paint vehicle or by condensation to alkyd resins, and for human food). Production of soya bean milk (summary of research by Malcolm C. Bourne). Crop budget: One acre of soya bean (Cost of inputs, outputs, and gross surplus [gross profit]). The irrigated output is 2,200 lbs worth 90 cents per lb = 1,980. Irrigated input costs = 565. Gross surplus = 1415 per acre.

"Experiments in Taiwan have shown that infants fed on soya milk gained body-weight and height at a rate comparable to that achieved by infants on cow's milk..."

In 1967 a programme was initiated "at the Agricultural Research Station, Maha-Illuppallama, where over 90 varieties were screened for their productivity under dry zone [irrigated] conditions." Five varieties are recommended.

Tables show: (1) Yields of six recommended varieties of soybean from 1966/67 Maha Rainfed to 1972/73 Maha Rainfed. The highest yields were all obtained during the 1969 Yala Irrigated season, ranging from 2708 to 2766 lbs / acre.

(2) Efficiency of land use for protein production (Source: Roy E. Martin, *Soya Bean Digest Blue Book Issue*, March 1970, p. 27). Three columns give the name of the crop or animal, average yield per acre, and pounds of protein per acre.

Soya bean, 24.2 bu, 508 lb.
Other legumes, 20.7 bu, 293 lb.
Maize, 64.2 bu, 323 lb.
Wheat, 25.1 bu, 180 lb.
Milk, 2,780.0 lb, 97 lb.
Beef, 342.0 lb, 58 lb. Address: Asst. Director of Agriculture (Research), Maha-Illuppallama.

2523. Ford, Marjorie Winn; Hillyard, Susan; Koock, Mary Faulk. 1973. The Deaf Smith country cookbook: Natural foods for family kitchens. New York, NY: Macmillan Publishing Co. (Collier Books). London: Collier Macmillan Publishers. xiv + 352 p. Preface by Frank Ford. Illust. Index. 24 cm. [7 ref]
• ***Summary:*** A pioneering natural foods cookbook, produced and copyrighted by Arrowhead Mills, Inc. of Hereford, Texas. Soy-related recipes include: Roasted soybeans (p. 42-43). Miso soup (with wakame, p. 53). Tamari bouillon (p. 57-58). Todo en la caldera (with soybeans and miso, p. 58). Miso sauce (p. 90-91). Thick tamari sauce (p. 91). Tofu (soybean cheese or bean curd, p. 98-99; an early recipe for homemade tofu made with vinegar or lemon juice as a coagulant. Lists 6 serving suggestions for tofu and 1 for the "soy mash" [okara]). Cooking flaked soybeans (p. 132-33). Soy sesame burgers (with 1/3 cup whole sesame seeds, p. 135-36). Rice pancake with tofu (p. 136). Soybean loaf (p. 138-39). Cooking with soybean flakes (p. 156). Blazing star timbales (with soybean flakes, p. 156-57). Tamale soy pie (with cooked soybeans or soybean flakes, p. 182-83). Soy milk (homemade, p. 292). In the last chapter titled "Natural Foods from Deaf Smith County," the following soy-related

foods are discussed: Soybean flakes (p. 324, 327), black beans (a type of soybeans, p. 326), soybeans and foods made from them (p. 327). Soybean flour (p. 328). Tamari roasted nuts and soybeans (p. 331). Tamari soy sauce (p. 334). Miso soybean paste (p. 334). Wheat gluten is not mentioned in this book. Frank Ford's preface shows him to be a devout Christian, organic farmer (in Deaf Smith County, Texas), and advocate of natural foods.

In about Sept. 1991 this early natural foods cookbook was reprinted with a new cover and subtitle ("Natural Foods for Natural Kitchens"). Over 300,000 copies are now in print. Address: 1. Arrowhead Mills, Hereford, Deaf Smith County, Texas; 2. Soquel, California; 3. Foods editor, *The Texas Star*.

2524. Gerrard, J.W.; MacKenzie, J.W.A.; Goluboff, N.; Garson, J.Z.; Maningas, C.S. 1973. Cow's milk allergy: prevalence and manifestations in an unselected series of newborns. *Acta Paediatrica Scandinavica, Supplement* 234:1-21. *

2525. Gomes, Pimentel. 1973. A soja [The soybean]. Rio de Janeiro, Brazil: Livraria Sao Jose. 15 p. [Por]
Address: Brazil.

2526. Gregory, Dick. 1973. Dick Gregory's natural diet for folks who eat: Cookin' with Mother Nature. New York, NY: Harper & Row, Perennial Library. xii + 171 p. Edited by James R. McGraw with Alvenia M. Fulton. 22 cm. [55 ref]
• ***Summary:*** An entertaining, informative guide to natural foods, vegetarian and fruitarian diets, raw foods, juices, and fasting. The author became a vegetarian in 1965 in part because of the influence and teachings of Dr. Martin Luther King on nonviolence. When he first fasted, in late 1967 for 40 days, his weight dropped from 280 lb to 97 lb. In 1972 he became a fruitarian.

On page 87 the author lists soybeans as a good source of protein, vitamin B, and calcium. "I'd say the soybean is the most likely 'hair restorer' around." Page 113 contains a recipe for making soybean milk at home; other health milks can also be made from sesame seeds, almonds, or pecans.

Pages 130-32 state: "Milk is the perfect food for Mother Nature's babies *only* if it is mother's milk. If babies are bottle fed they should only have Mother Nature's milk–soy, seed or nut milk–the milk intended for *human* baby consumption." 8 formulas containing soy, nut, or seed milk are given.
Address: USA.

2527. Heiser, Charles B., Jr. 1973. Seed to civilization: The story of man's food. San Francisco, California: W.H. Freeman and Co. xii + 243 p. Illust. Index. 23 cm. [83* ref]
• ***Summary:*** Chapter 6, "Poor man's meat: the legumes," contains a section on "Soybeans" (p. 131-33). Photos show: (1) A field of soybeans in the USA planted in rows, free of weeds. (2) Soybean plants ready for harvesting. For more detail, see the 1990 revised edition. Address: Prof. of Botany, Indiana Univ.

2528. It's your world vegetarian cookbook. 1973. Glendale, California: Seventh-day Adventist Church. 128 p. Foreword by U.D. Register, and Clive McCay. Illust. 23 cm.
• ***Summary:*** It's Your World" is a television series hosted by Art Linkletter (his photo faces table of contents) and sponsored by the Seventh-day Adventist Church in Glendale, California. Soy-related recipes include: Saucy soy sizzlers (no eggs, p. 10). Carrot nut loaf (with soy flour, p. 12). Millet gourmet balls (no eggs, with soy beans, p. 13). Danish Proteena balls (p. 17). Rediburgers (with Rediburger, p. 18). Festive loaf (with Vegeburger, p. 22). Mayflower loaf (no eggs, with soy beans, p. 22). Fresh tofu loaf (p. 25). Soy beans Hawaiian (with Loma Linda Boston Baked Beans, p. 37). Baked soybeans Americana (p. 39). Plantation soy special (with soy beans, p. 39). Browned tofu with mushrooms (p. 42). Viking Roast (with Holiday Roast [frozen, ready-to-bake soy loaf with a smoked turkey flavor], p. 56). Scrambled tofu (p. 56). Crispy tofu sticks (p. 57). Bit o'soy waffles (with soy flour, p. 65). Soy-oat waffles (with soy beans, p. 66). Soy cream topping (with Soyamel powder, p. 114). Soy nut milk (with soy milk powder, almonds, and cashews, p. 116). Soy half-and-half (with All Purpose Soyagen, p. 116).

Pages 118 and 119 list all commercial vegetable protein analogs made by Loma Linda Food Co (Arlington, California) and Worthington Foods, Inc. (Worthington, Ohio). Address: Glendale, California.

2529. Miller, Harry W., Jr. 1973. Observations from forty years of soy protein processing and engineering (Continued–Document part II). Cedar Falls, Iowa: Soypro International, Inc. 8 p. Undated. Unpublished manuscript.
• ***Summary:*** Continued: "Flavor was no problem as the public enjoyed the bean-like cereal flavor of soy. We calculated that, if we could produce a product of high keeping quality and automate the production, we could produce and sell soy milk for $0.20 a quart in comparison to cow's milk at $1.00 per quart. To do this we used wide mouth bottles with a metal crown cap. By sterilizing these bottles in a pressure retort, we had a milk that kept indefinitely without refrigeration. This allowed us to divide the city into four quarters, and by delivering a week's supply at a time we were able to provide house delivery with one fourth the equipment and personnel of our competitors. We had many customers living in other cities that bought a month's supply at a time and carried the empty bottles back to us.

"During our first month of operation, the cost was $1.10 per bottle. The second month was $0.40 per bottle, the third month $0.19 per bottle and the fourth month $0.12 per

bottle, which allowed a reasonable profit. We were unable to proceed further as the Japanese blew up the plant on August 7, 1937.

"Realizing the nutritive value of soy and its possibilities, and no longer being able to continue in the Far East, we established the 'International Nutrition Laboratory' in Mt. Vernon, Ohio.

"At first our endeavor was to perfect manufacturing equipment so we could return to the Orient and develop foods for low-income population. As a result, we worked with soy flour manufacturers and oil meal developers. Although many experiments were conducted in testing baking and roasting the bean, we learned very early that moist heat was best for developing high assimilability of this rich protein source.

"I believe I built some 21 different types of moist heat processors from pressure steam cookers to blowing line steam jets through liquid falls of the extracted protein. One day my father remarked, 'Son, you have more equipment out on the scrap pile than you have in the plant.'

"As World War II progressed, we found ourselves producing high protein products for feeding of people that had been undernourished due to the enemies' confiscation of food materials. However, as the war drew to a close, we saw a need for a change of income source. So, with the assistance of Dr. Baxter of Ohio State University, Soylac was brought on the market. Although we had to overcome diarrhea and other feeding problems, it was found that, with proper moist heat treatment and a proper balance of various carbohydrates and vegetable oil, we produced an infant milk that was readily accepted by the pediatricians.

"As we had a greater amount of soy protein fiber [okara] than extracted protein, we at first dried this and sold it for livestock feed.

"It was felt that meat analogs could not be produced from this protein casein residue. Again special equipment had to be made to handle and process this product so that palatability and high food value would result. With specially designed heat processes and modified meat manufacturing equipment, bolognas and beef-like cutlets were produced at first with the addition of wheat protein, later with soy spun protein fibers. As discussed in the latter part of this dissertation, we were also able to produce very satisfactory meatlike products entirely from the residue.

"In the late summer of 1960, I received a call from my father inviting me to a luncheon conference. Here I met Ronald Hill of UNICEF.

"After being introduced I was informed that UNICEF intended to install an infant formula plant in Indonesia under the direction of Dr. S.S. De of F.A.O.

"We were invited to be designers of the plant and I was to supervise the installation and training of the personnel to operate the installation.

"I was most fortunate to be assisted in the project by Dr. E.L. Rowe, a graduate Ph.D. from the University of Southern California. With his help at the Institute of Nutrition of Indonesia, and the assistance of the College of Medicine of the University of Indonesia we were able to determine the causes of diarrhea in infant feeding and correct it in our formula and processing methods.

"As in every country the natives of that locale must have a product that suits their individual organic reaction to nutrition in-take.

"It has not been possible to produce a product acceptable in all countries and cultures. Thus it has been necessary to adapt both production methods and formula to each area individually. In Indonesia we had a very delicate pH balance to maintain, and moisture quantities had to be regulated so the infant obtained a nutritious substance that its body could absorb without ill effects.

"Shortly after my return to the United States and during a periodic visit of my father, Dr. Perry Webber called upon us to assist Madison Foods to develop their soy products for greater market acceptance. They had some very commendable meat analogs using the combination of both soy and wheat derivatives. However, they wished to explore in the infant formula field which was creating a sizable market. Infasoy was originated at this time and a process was developed to increase the normal extracted quantity of protein from the traditional extraction method. This was done by the use of mechanical equipment and formulations. It was here, with a great quantity of wheat fiber in use, that we derived a method of using the soy residues [okara] to manufacture meat loaves, sausages, wieners, and bolognas entirely of soy except for seasoning materials and added fats. This greatly increased the nutritional value as well as the income derived from the sale of these products.

"As we were perfecting and developing equipment and products at Madison, a call came from Brazil for assistance in developing a soy and cow milk formula.

"As the Brazilian government felt that some animal product should be incorporated in this kind of formulation, processing experiments were carried out. As a result much was discovered in flavor control. It had long been determined that you could not mask the flavor of the soybeans. It was entirely a matter of using some of the flavors in the bean and eliminating the objectionable ones.

"While still at Madison I had a call to install a traditional soy milk plant in the Far East. Our technologies had progressed to the point that we had difficulty at first to retain sufficient soy flavor to satisfy the palate of the local clients. However, this was accomplished to the satisfaction of the customers.

"The last three years have been used in developing sophisticated analogous types of meat and milk. This has been accomplished in the laboratory and we feel will soon be available for countries now pressed with shortage of milk. Should milk fall short in dairy farming countries, we know

we can supplement this shortage with a vegetable source as acceptable as the product in shortage.

"In summary let me review:

"1. We are facing shortages in milk, which is produced with a ratio of 8 lbs. of feed to produce one gallon. We can produce a gallon of vegetable milk with a total of l lb. of fat, carbohydrate, and beans.

"2. A breakthrough in flavor control has been achieved, which eliminates the former taste objections.

"3. Breakthroughs have also been made in using the soy milk by-products for low cost meat analogues which are highly acceptable and nutritious.

"We have approached the time that the soybean protein will not only relieve food shortages but will also satisfy the most sophisticated taste." Address: Cedar Falls, Iowa.

2530. Miller, Harry W., Jr. 1973. Observations from forty years of soy protein processing and engineering. Cedar Falls, Iowa: Soypro International, Inc. 8 p. Undated. Unpublished manuscript.

• ***Summary:*** "It was a late summer morning 1922 in the State of Maryland that my father announced at the breakfast table that I would accompany him on a short trip to Frederick, Maryland to look at a stone burr mill he wished to purchase for some soy milk experiments he wanted to conduct.

"Protein had always been a high priority topic in our house as Dr. John Harvey Kellogg had made a deep impression on my father (Dr. Harry W. Miller, Sr.) during his student medical days at Battle Creek, Michigan.

"On the way to Frederick my father explained to me that the mill he wished to purchase was to be used to prepare soybeans so that a white milky fluid of suspensible protein could be extracted from the beans. Little did I realize that I was to be introduced to a research field that would dominate my work and studies the rest of my life.

"Having purchased the mill the next step was to find a proper location to conduct the experiment. One of Maryland's larger dairy farms was chosen for this, and after transporting the mill to the farm, it was bolted to heavy timbers and one of the dairy's tractors was used to turn the pulley on the mill.

"To a boy of ten it was more interesting than spectacular to see a white milky liquid run down out of the mill instead of seeing the milk being drawn from the udder of a cow. However, this experiment made a lasting impression on a ten year old who was always experimenting and constructing contraptions of his own.

"No, the liquid from that mill did not replace the milk produced on the farm. However, at the present rate of population increase, and ever-increasing shortages of grazing area to produce milk, we may in the future be looking to the use of this mill and its complementary equipment to supplement the animal products in lands of large dairy production.

"Shortly after my introduction to the first experiments on that dairy farm, I traveled to the land of the soybeans. This country was to become my home and source of information as my parents had accepted a call to mission service in China.

"Having been raised a strict vegetarian, the foods made from vegetables and grain sources were always a challenge to my curiosity.

"Roaming the streets of Shanghai every portable food caterer, street sidewalk restaurant, as well as the more sophisticated Buddhist (vegetarian) restaurant held a new horizon of future products made from the soybean.

"It was indelibly inscribed on my young mind that each procedure in each shop had a very definite and end-resulting purpose behind it.

"The first visit I made to a shop which produced these foods, the owner would address me. 'What is your honorable name,' and my answer would be, 'my humble name is "Show Me,'" translated small rice.

"My childish curiosity either amused the shop keepers or my youth intrigued them. Regardless, I was soon known as 'small rice.' in all these shops and home processing establishments and was allowed to roam at will and have my questions answered frankly–so much so, that I was able to get answers and ingredient names that my elders were unable to secure.

"Basically, the first step in extracting protein was to hydrate the bean. I found that each shop had some variation in soaking the bean. Hot water was used in one place and cold in another. Some added chemicals to the soaking water and others varied by prewashing the bean before soaking while others washed the beans after soaking.

"Although I knew that all their variations were vital to the end product, it was to be several years before I would be using these various steps to achieve end results.

"During my earliest experience with processing, I learned that enzyme action is definitely affected by these variations in procedure.

"The Orientals extract soy protein to produce soy curd, in its various forms, and soy skin or film membrane. Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "soy skin" or the term "film membrane" to refer to yuba.

"Soy curd is produced by coagulating the extracted, liquid-suspended protein. After being pressed from the granular residue [okara] of the bean, a liquid white protein suspension is left. Each shop had a different heat to bring the liquid to before adding the coagulatory chemical.

"Each producer had a different product for the customer. One would have a large cake of rather coarse curd. This they cut into blocks according to the purchaser's need. The buyer taking it would flavor and prepare it as he desired.

"Another shop would produce a firmer curd which was pressed into small cakes; some were flavored with sesame

oil; some peanut oil in which they were deep fried; and others were boiled in soy sauce and sold in this form to the customers.

"They also had what I called the yogurt shop. This was a very exacting procedure of heat control and quantity of coagulant to produce a yogurt-like curd which was chilled in bowls and served with rice malt poured on top to flavor it.

"There was one shop that pressed a fine curd till it was rather dry. These cakes were cut into square pieces about 3/4 of an inch square, were stacked on bamboo mat trays and placed in a culture-inoculated, heat-controlled room for three days. After this period the mold-covered squares were put loosely in glass jars in a hot pickling juice with ginger, ground red peppers, rice wine, brown sugar, and salt, and were sealed so the sauce would preserve the curd and flavor it [to make fermented tofu]. This product is sent all over the world to delight the palates of the Orientals.

"Perhaps the most interesting to me was the film protein [yuba] produced by heating the liquid extract to a definite regulated temperature and allowing a film to form on the top of it. This is picked up with a long chopstick and hung on a wire line to dry.

"Here again, liquid flavored films were produced by temperature changes. One way of changing the thickness of the film was to allow the liquid to evaporate so that the last films to be produced from a pot of liquid would be thicker than the first. Also, the fuel used would change the flavor of the film as the smoke from coal, charcoal rice straw and wet saw dust, or bamboo splints each had a definite taste.

"Not being satisfied with seeing these products made, I was determined to see how they were used; so 'Small Rice' would go to the kitchen of the Buddhist Restaurant long before dawn to watch the cooks soak these film in various sauces, some to be rolled tightly into bologna-like rolls and broiled for hours in a soy sauce, ginger, and anise flavored juice. This roll, when sliced, had a beef-jerky like flavor. Another was to lay the films one after another on top of each other to be sprinkled (each one) with rice wine, sesame oil and monosodium glutamate. These films were folded into a half moon shape, placed in bamboo trays and steamed for several hours. They were then placed on a screen to dry the surface moisture, then fried in deep sesame oil or peanut oil whichever flavor was desired.

"When these foods with various seasonings were served you would have anything from fish to turkey or duck.

"It was the eating of these Buddhist meats that gave me the courage in later life to learn to eat animal tissue, as I had been raised a strict vegetarian.

"Had I not learned to eat and taste these various animal products, I am afraid I would be like the official in India: when describing to him how we could make meat analogs from soy milk residue he asked, 'Well, what does chicken taste like?'

"This early experience in China was a challenge to make extensive study into each country's dietary and food flavor habits before designing a product for them.

"In the early 1930's with the encouragement of W.J. Morse and La Clara Reed of the U.S. Department of Agriculture, my father and I, using equipment supplied jointly by the Department and ourselves, produced a spray-dried soy milk formula which was granted a patent by the U.S. Patent Office, and which the American Medical Association accorded its own highly valued seal of acceptance for an infant formula.

"The first commercial plant was installed in Shanghai, China, during 1936 and 1937. Although we were using soy milk for feeding babies and institutional employees, due to the high price of pasteurized cow's milk there was a challenge to install a soy dairy to produce a vegetable milk at a low price."

Note 1. This is the earliest document seen (Aug. 2013) that uses the term "soy dairy" to refer to a facility which makes soymilk and related products from soybeans. Continued. Address: Cedar Falls, Iowa.

2531. Patwardhan, V.N.; White, Jonathan W., Jr. 1973. Problems associated with particular foods. In: National Academy of Sciences, National Research Council, Food and Nutrition Board, Food Protection Committee. 1973. Toxicants Occurring Naturally in Foods, 2nd ed. Washington, DC: National Academy of Sciences. vii + 624 p. See p. 477-507. Chap. 22. [47 ref]

• ***Summary:*** Includes a detailed discussion of disaccharide intolerance (lactose intolerance): Introduction, methods for detection, disaccharidase deficiency in infancy, lactase deficiency in children, adolescents, and adults, secondary lactase deficiency. Lactose intolerance was first reported as a congenital defect by Holzel, Schwarz, and Sutcliffe in 1959 (*Lancet* 1:1126). Address: 1. Div. of Nutrition, School of Medicine, Vanderbilt Univ., Nashville, Tennessee 37203 (Deceased 8 July 1971); 2. Eastern Regional Research Center, Northeastern Region, ARS/USDA, Philadelphia, Pennsylvania (authored section on Toxic Honeys only).

2532. Rosen, G.D. 1973. Factors governing the use of soya-bean and other oilseed proteins. In: J.W.G. Porter and B.A. Rolls, eds. 1973. Proteins in Human Nutrition. London and New York: Academic Press. See p. 383-95. Chap. 25. [2 ref]

• ***Summary:*** Contents: The importance of economic factors. Production influences. Protein-containing derivatives of oilseeds. Non-protein factors affecting utilization. New specialty products. Current and future competition for oilseed proteins.

Table IV on p. 292 lists the "Use of some soya-bean specialty products in the USA in 1969-70." Figures are in tons. Values in parentheses are in million dollars: Products: Coffee whiteners 35,000 ($63.0; Relatively little soya-bean material is used as yet in these materials due to inadequate

functional and flavor properties), Industrial isolates 26,000 ($12.5), Protein concentrates 18,000 ($7.5), Edible isolates 16,000 ($11.5), Textured soy flours 13,000 ($7.5), Soya-bean milk products 6,000 ($?), Soya-bean isolate meat analogs 1,500 ($3.2), Whipping isolates 600 ($1.0).

Applications: Pet foods 100,000, Industrial applications 70,000, Food aid programs 50,000, Baked goods 40,000, Meat products 20,000, Other food uses 18,000, Calf-milk replacers 10,000, Fermentation processes 6,000. The author concludes: "Table IV refers to approximately 400,000 tons of soya-bean-based specialty products in the USA, and this should be compared with 17½ million tons of soya-bean cakes and meals used in animal feeding." Address: Birchwood Lodge, The Birches, Farnborough, Kent, England.

2533. Singh, K.B.; Gill, K.S. 1973. Soybean. Ludhiana, India: Communication Centre, Punjab Agricultural University. 22 p. Plus 3 leaves of plates. [1 ref]
• ***Summary:*** Contents: Introduction. Climatic requirements. Soil. Rotation. Preparation of land. Manuring. Improved varieties. Sowing: Good seed, seed treatment, seed inoculation, time of sowing, seed-rate and spacing, methods of sowing, depth of sowing. Control of weeds. Irrigation. Diseases. Insect pests. Harvesting. Storage. Uses. Conclusions. Appendix (15 recipes).

Recipes include those for soy milk, soy-curd (dahi), soy-flour, soy-dal and many Indian dishes. Page 12 notes: "Soybean has wide industrial uses. Edible oil is used in the manufacture of *vanaspati.* Refined oil is used in the manufacturing of a large number of products, such as candles, electric insulations, fuel-oil, insecticides, greases, resins, paints, soaps, varnishes, etc. The oil is also used in the preparation of candy, ice-cream, chocolate coating, rubber, cosmetics, etc. Crude soybean fatty acids are used in manufacturing adhesive tape, lubricants, leather dressings, typewriter ribbons, carbon papers, etc." Address: 1. PhD, Senior pulse breeder; 2. PhD, Prof. & Head, Dep. of Plant Breeding, Punjab Agricultural Univ., Ludhiana, India.

2534. Sri Lanka Dept. of Agriculture. 1973. Soya bean: The miracle crop of the 20th century. Agricultural Information Div., 102 Union Place, Colombo 2. 8 p. 22 cm pr panel.
• ***Summary:*** This is a poster-size sheet of paper folded into fourths. On the cover is a photo of four men in a field of soya beans. The bottom half of this side, titled "Soya bean is the richest and cheapest source of proteins and fats in the world" discusses the country's need for soya bean oil (as a substitute for coconut oil) and meal. "The Oils and Fats Corporation, which requires 6,000 to 8,000 tons of soya bean annually for use in livestock rations over the five year plan period 1972-76, is prepared to pay producers Rs. 1,250/- per ton of soya bean delivered at its factory in Seeduwa. Meanwhile the Milk Board is exploring the possibilities of utilizing soya milk both as a substitute and a supplement to cow's milk in the manufacture of condensed milk and full-cream powdered milk.

Facing the title page is the "Crop budget"–Rainfed, one acre, and Irrigated one acre. The profit on irrigated land is Rs. 500 vs. only Rs. 175 on rainfed.

The fully opened poster is titled "Here's how to cultivate soya bean successfully." The 10 points are: "1. Potential area of production and planting seasons. 2. Recommended varieties (Hernon, T.K. No. 5, Tainung, Shi-Shi). 3. Land preparation and manuring. 4. Planting. 5. Irrigation. 6. Weeding. 7. Fertilizer top-dressing. 8. Plant protection. 9. Harvesting and yields. 10. Storage."

2535. Theroux, Paul. 1973. Saint Jack. Boston, Massachusetts: Houghton Mifflin Co. 247 p. See Chap. 5, p. 46, 50. 22 cm.
• ***Summary:*** This novel is set in Singapore. "Smale, Yates, and Coony were at the bar and over in an armchair drinking soybean milk and absorbed in the *Reader's Digest* sat old Mr. Tan Lim Hock" (p. 46).

"When Mr. Tan left the bar I sometimes did an imitation of him with his *Reader's Digest* and bottle of Vimto soybean milk" (p. 50).

2536. Valnet, Jean. 1973. Traitement des maladies par les légumes, les fruits, et les céréales. 4. édition, revue et augmentée [Treatment of illnesses using vegetables, fruits, and cereals. 4th ed. revised and enlarged]. Paris: Librairie Maloine S.A. 409 p. See p. 326-28. 19 cm. [Fre]
• ***Summary:*** The section titled "Soja" (p. 326-28) discusses: Synonym: Haricot d'Asie. Introduced to France in 1739. First cultivated on a large scale in 1932. Chemical composition. Dietetic properties. Uses: As a food supplement, above all for infants, and for those suffering from fatigue, demineralization, or nervousness. Methods of use: Whole soybeans, soy flour, soymilk, or soy oil may be used as part of the diet. In 1962 M.H. Vergnaud (secretary general of the Agricultural and Industrial Institute of Soya in Paris) prepared a dinner for the press entirely from soya. Details on soy oil.

The first edition was published under the title *Thérapeutique Journalière par les Légumes et les Fruits.* Address: Docteur, France.

2537. Wade, Carlson. 1973. Health secrets from the Orient. West Nyack, New York: Parker Publishing Co., Inc. 252 p. Index. 24 cm. Foreword by William S. Keezer, M.D.
• ***Summary:*** This "Hollywood-style" book of miracle foods, magic bullets, and eternal youth, unfortunately has no bibliography and only one reference (a footnote) in the chapter on soybeans. Chapter 12, titled "The miracle vegetable protein from the Orient–A key to forever-young vitality" (p. 153-63) is about soybeans and soy products.

Its contents: Introduction. Soybeans–A meatless source of complete protein. Soybeans–Meat without a bone. The magic ingredient in soybeans that helps promote perpetual youth: Secret youth power of soybean's lecithin, the magic power of lecithin, the ten youth-building powers of lecithin in soybeans, soybeans for better energy, improved memory and steady hands, secret ingredient (lecithin contains auxines). Why Orientals call soybeans their "perfect food." How soybeans gave Rose B. the look and feel of youth. A customer-friend offers Rose B. an Oriental soybean secret: Soybeans offer digestive balance, soybeans improve skin and hair health, soybeans improve the posture and finger flexibility, soybeans help create a youthful feeling internally and externally. How cooked soybeans offer protein-plus health benefits: Here's how it works (soybeans contain all essential amino acids but three of them–lysine, methionine and trypsin–are enhanced by cooking. "The soybean deserves its name–the 'holy bean'"). How to prepare soybeans (try to use organically grown soybeans; drink the cooking liquid as "soybean tea"). Soybeans offer vitality-boosting nutrients (and no starch). For health-plus, try soybean flour. The Oriental way to make soybean milk (recipe for "vegetable milk"). Why Orientals value soybean protein above meat protein. Meat protein may be less effective. Main points (Summary).

2538. Wilson, C. Anne. 1973. Food and drink in Britain: From the stone age to recent times. London: Constable. 472 p. + 16 unnumbered pages of plates. Illust. Index. 20 cm. Reprinted in 1984 by Penguin. [635 endnotes + 205 ref]
• ***Summary:*** An excellent, in-depth book, with sources carefully cited and an fine, extensive bibliography that is especially strong in the most ancient documents.

Discusses almond cream and almond milk, how they were prepared, and their role in medieval society. Almond milk was widely used (in place of animal milks) as part of the Lenten fast. But by the mid 1600s, the almonds were often omitted altogether and only animal milk used (p. 168).

Rice pottages were often cooked in almond milk. "Rice for fish days was tempered with almond milk only, and was usually sweetened with sugar" (p. 201).

Almond milk could be sweet or savory, depending on how it was drawn. "'Take fair almonds and blanch them and grind them with sugar into fair milk; or, 'Take raw almonds and blanch them and grind them and draw them through a strainer with fresh broth and wine into good stiff milk.' Even, on occasion, 'Take almonds, and draw a good milk thereof with water.' The great advantage of almond-milk was that it could be used as a substitute for cow's milk in fasting-day dishes. Drawn thicker, it became cream. And if it was boiled with a little wine or vinegar and strained through a canvas, the solid part could be eaten as almond-butter on fish days, especially in Lent. Poor people used bean-butter as a substitute.

"Marchpane or marzipan was a discovery of the later Middle Ages, dependent as it was upon the union of ground almonds with sugar. It may have been invented in Italy; at any rate the name is believed to have originated there, though it quickly spread into the other main languages of Europe" (p. 336). Address: Leeds, England.

2539. *Wind Bell* (*Zen Center, San Francisco, California*). 1973. Ejo Takata-Roshi. 12:21.
• ***Summary:*** "In December, 1972, Ejo Takata-roshi, the founder of the first Zendo in Mexico and long-time disciple of Yamada Mumon-roshi, visited San Francisco and Zen Center. He had visited once before when on the day of the opening ceremony of Tassajara in 1967 he appeared at the front gate on foot and presented Suzuki-roshi with a *kyosaku* (stick used to hit students during zazen).

"In Mexico he divides his time between his Zendo in Mexico City and an experimental soybean farm he has founded in mountainous Oaxaca province. He has taught the villagers there how to make milk and other derivative products from the soybeans in an effort to supplement the protein-deficient local diet.

"At Zen Center he spoke to the students in the Buddha Hall, using three different languages and as many translators, explaining his work with Mexico's poor people and his difficulties explaining Zen to the Mexican authorities."

A photo shows Takata-roshi with Oaxaca villagers.

Note: This is the earliest document seen (May 2009) concerning the modern soyfoods movement in Mexico and Central America.

2540. Woodroof, Jasper Guy. 1973. Peanuts: Production, processing, products. 2nd ed. Westport, Connecticut: AVI Publishing Co., Inc. xi + 330 p. Illust. Index. 24 cm. [100+* ref]
• ***Summary:*** Contents: 1. Historical background. 2. World production and marketing of peanuts. 3. The culture of peanuts. 4. Harvesting, curing, and shelling. 5. Storing peanuts. 6. Composition and nutritive value of peanuts. 7. Peanut butter. 8. Salted peanuts. 9. Peanut confections. 10. Peanut oil. 11. Technological developments in peanut uses (incl. peanut milk, flour, protein, peanut cheese, peanut baby and invalid food, peanut paste for shortening, peanut butter ice cream). Appendices: U.S. standards for farmers' stock white Spanish peanuts, Virginia-type peanuts, and runner peanuts (unshelled or shelled), U.S. standards for grades of peanut butter, technical inspection procedures for peanut butter, peanut butter: definition and standard of identity.

Peanuts (*Arachis hypogaea*, of the Leguminosae family) are also called groundnut, earth-nut, monkey nut, goober, pinda, pinder, or Manilla nut. They are indigenous to South America, probably Brazil or Peru, where they were known as early as 950 B.C. They were taken from there to Africa by early explorers and missionaries. They were brought

to North America from Africa by slave traders in the early colonial days and used as food for slaves while on shipboard. In America, peanuts were not extensively used until after the Civil War in 1865, and then for many years the crop was confined to Virginia and North Carolina. In about 1920 the ravages of the boll-weevil forced farmers in Georgia, Alabama, and Florida to substitute peanuts for cotton. In the early days peanuts were used almost entirely for fattening farm animals, especially pigs, turkeys, and chickens.

In 1899 a missionary, Archdeacon Thompson of the American Missionary Society, took quarts of peanuts in his luggage to China. Production of peanuts spread to every province of China and China is now the world's number two producer with approximately 2 million tons annually. India is by far the world's largest producer of peanuts, while the USA ranks fifth with 1 million tons. George Washington Carver made more than 300 food and industrial products from peanuts in Alabama before World War I. The American Museum of Peanut Butter History has been established in Chicago, Illinois; it covers the period from 1890 to 1925 [and is sponsored by Peter Pan Co.].

One of the first industrial organizations for the promotion of peanuts in America was the American Peanut Corp., founded by L.F. Bain in 1849 near Wakefield, Virginia. The next major company, Lummis and Co. in Norfolk, Virginia, was not founded until 1879, after the Civil War. The next four major companies, founded in 1890, 1892, and 1895, and 1900, were all founded in Virginia. Peanuts were the foundation of the swine industry in much of the Coastal Plain area of the Southeast. But peanuts were found to cause soft pork.

The spokesman for the industry since 1920 has been the *Peanut Journal and Nut World*, published in Suffolk, Virginia. The National Peanut Council was organized in 1940 in Pensacola, Florida, as a trade association for all branches of the industry.

Chapter 7, titled "Peanut Butter," contains a history of the subject: "Peanut butter is by far the most important product made from peanuts in the United States. Even though large quantities of peanuts are grown in other countries, practically none is consumed as peanuts. The history of peanut butter is obscure but dates from about 1890 when it was discovered that a very palatable paste or butter could be obtained by grinding peanuts. It soon became known as peanut butter, and presumably, was made from raw peanuts. A physician in St. Louis, Missouri, was reportedly the first to manufacture peanut butter commercially (Beattie 1936) [Note: Beattie 1936 makes no mention of any physician in St. Louis, Missouri in connection with peanut butter!] He recommended it for invalids because of its high nutritional value. It was said to be used in sanitariums elsewhere, especially at Battle Creek, Michigan, due to its high protein content, low carbohydrate content, and palatability. Due to the limited sale at first and lack of adequate equipment for manufacture, the price was too high for general use.

"Although roasted (parched) peanuts have been ground into a paste and mixed with honey and cocoa in South America for centuries, peanut butter as a North American food was apparently invented independently. The first product was shelled roasted peanuts chopped, ground, or beaten into a pulp in a cloth bag with salt added...

"About 1900 it was learned in the south that peanuts could be ground into a paste butter in the home. Soon it became a staple food and commercial production was greatly stimulated."

"The making of peanut butter was largely a local hit-or-miss operation until the Peanut Butter Manufacturers Association was organized about 1940. Until that time only 25% of edible peanuts were used in butter and little attention was given to varieties of peanuts, methods of roasting and blanching, grades of peanut butter, effect of particle size, means of preventing oil separation, improving speadability, preventing sticking to the roof of the mouth, extending the shelf-life, and formulas for using. By 1950, about half of all edible peanuts were used in butter, and by 1964 the proportion had risen to 63%."

As of 1962 about 53% of U.S. peanut butter was made from runner peanuts, 34% from Spanish peanuts, and 12% from Virginia peanuts.

Note: Talk with Jasper Guy Woodroof in Griffin, Georgia. 1993. Feb. 17. He does not know where he heard that a physician in St. Louis, Missouri, was the first to make peanut butter. Address: Prof. Emeritus of Food Science, Univ. of Georgia, Experiment, Georgia.

2541. Oles, Shayne. 1973? The new Zen cookery: Practical macrobiotics. Woodland Hills, California: Shayfer Corporation. 86 p. Undated. Index. 22 cm. Spiral bound.
• ***Summary:*** A revised edition of the first American macrobiotic cookbook, containing a wide variety of recipes from many sources. The cover is light orange. In the lower right corner is a sumi-e type brush illustration of some grasses and flowers. All recipes are numbered. The recipe numbers and page numbers are a little different from those in the 1966 edition published by Ignoramus Press in Los Angeles. Pages 59-62 (recipe nos. 210-21) are about Miso soybean paste. Pages 62-64 (recipe nos. 222-28) are about Tamari soy sauce.

Herman Aihara (Nov. 1990) has no idea why there are two versions of this book, both undated. Shayne Oles must have published one or both of these after Herman Aihara started the George Ohsawa Macrobiotic Foundation (any time after 1969). Only Shayne Oles would know. One clue is given in *Macrobiotics: Yesterday and Today* by Ron Kotzsch (1985, p. 170). "In 1966 Lou Oles, who with his wife Shane [sic, Shayne] had managed the revived Ohsawa Foundation, died, and Shane asked Herman [Aihara] to assist her. Herman began to travel to Los Angeles once a month to give lectures

at the Foundation headquarters. He was also instrumental in the publishing of Ohsawa's books, which were selling well on the East Coast as well as the West. By 1969, however, dissention had developed over the role of Shane's new husband in the organization. Herman resigned. In 1970 the Ohsawa Foundation dissolved. Aihara, who had moved to San Francisco [from Carmichael, near Sacramento], established the George Ohsawa Macrobiotic Foundation as a new educational and publishing organization."

No. 293, a recipe for "Grain coffee pudding," calls for "1 cup grain milk powder" [perhaps Kokkoh]. No. 300 is "Ohsawa coffee," a "grain coffee." Address: President of Ohsawa Foundation, California.

2542. American Soybean Assoc. ed. 1974. Proceedings: World Soy Protein Conference. *J. of the American Oil Chemists' Society* 51(1):47A-216A. Jan. Held 11-14 Nov. 1973 in Munich, Germany. 28 cm. [566 ref]
• ***Summary:*** Contents: Session I: World protein markets. Session II: Soy protein products, their production, and properties. Session III: Legal and regulatory aspects of soy utilization in foods. Session IV: Utilization of soy proteins in foods. Session V: Utilization of soy protein in foods. Session VI: Nutritional aspects of soy protein foods. Session VII: Future developments and prospects. Round-tables papers. Registration list (directory of participants). Directory of exhibitors and press.

Berwin Tilson, president of the American Soybean Assoc., notes in the introduction (inside front cover): In Oct. 1972 "It was felt that the time was right to gather together top representatives from all areas affecting the soy foods industry... 1,100 representatives from 47 countries actually attended." This was a pioneering and very important conference. It was opened by the U.S. Secretary of Agriculture Earl L. Butz, and senator Hubert Humphrey delivered a memorable, inspirational address. Many distinguished scientists and politicians also presented papers.

Exhibitors: Purina Protein Europe (Brussels, Belgium). Archer Daniels Brussels S.A. (Belgium). Cargill Inc. (Minneapolis, Minnesota). McKee CTIP (Rome, Italy). Central Soya International Inc.–Chemurgy Division (Brussels, Belgium), Alfa Laval AB (Tumba, Sweden; soymilk equipment). Staley Europe (Amsterdam, Holland). A/S N. Foss Electric (Hilleroed, Denmark). Westfalia Separator AG (Oelde, West Germany). A/S Nirg Atomizer (Soeborg/Copenhagen, Denmark). Nabisco Inc.–Protein Foods Div. (Fairlawn, New Jersey). Miles GmbH (Frankfurt am Main, Germany). Lucas Meyer und Edelsoja GmbH (Hamburg, Germany). General Mills Inc. (Minneapolis, Minnesota). Address: Hudson, Iowa.

2543. Circle, Sidney J. 1974. Soy proteins in dairy-type foods, beverages, confections, dietary, and other foods. *J. of the American Oil Chemists' Society* 51(1):198A-199A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973.
• ***Summary:*** Preparation and properties of the following soy-based product groups are given: Beverages: traditional unfermented soy milks, traditional fermented–yogurt-like milks, simulated milks based on soy protein isolate incl. fermented yogurt-like types, still non-carbonated beverages, carbonated beverages.

Simulated sweet creams. Sour cream. Margarine and spreads. Cheese-like foods: Tofu, sufu, simulated cream cheese, simulated cured and processed cheese, cheese spreads and dips. Frozen desserts (incl. ice cream and sherbet). Whipped toppings. Substitute nuts and fruits.

"Table vegetable, green soybeans, and [soy] bean sprouts. Available in canned form, also fresh in season in some areas. Dry beans can be sprouted in home.

"Soups. Protein fortification as thickener (soy flour, soy protein concentrate, or soy protein isolate) or in high protein noodles or croutons. Oriental use of yuba." Address: Anderson Clayton Foods, Richardson, Texas.

2544. Decock, Alain. 1974. Soy protein isolates in hypoallergenic infant formulations and humanized milks. *J. of the American Oil Chemists' Society* 51(1):199A-200A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973.
• ***Summary:*** Contents: Introduction. Soy protein isolates. Humanized milks. Address: Purina Protein Europe, Brussels, Belgium.

2545. Hutton, George H.W. 1974. International programs utilizing soy foods: The World Food Program. *J. of the American Oil Chemists' Society* 51(1):146A-148A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973.
• ***Summary:*** Contents: Abstract. Introduction. Use of soy foods in WFP [World Food Program] aid. Address: Resource Management Div., World Food Program, Food and Agriculture Organization (FAO), Rome, Italy.

2546. Meyer, Edwin W. 1974. Introduction to round-table discussion on soy protein in dairy-type foods, beverages, confections, dietary, and other foods. *J. of the American Oil Chemists' Society* 51(1):197A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973.
• ***Summary:*** "This session provides a forum for the discussion of the uses of soy protein products in specific foods such as: infant formulations and baby foods; coffee whiteners; whip toppings; cheese-like foods; frozen and chilled desserts; margarine and other spread products; beverages, including dietary and nutritional beverages of the carbonated, still, or milk-like varieties; confections, including candies; imitation nut meats and nut butters; whipping agents; and dietary foods, including calorie-

reduced foods." Address: Central Soya Co., Chicago, Illinois.

2547. Sterner, Mark M. 1974. Low-cost protein foods: Increasing their supply and acceptance in developing countries. *Cereal Science Today* 19(1):14-17. Jan. [2 ref]
• ***Summary:*** Contents: Introduction. Poverty and hunger. Population factors. Inexperienced leadership. Culture-oriented protein foods. Soy products. A total-development approach. New solutions needed. The tragedy of protein deficiency. Technical assistance and training.

World population is growing at about 1.5% each year while world agricultural production is increasing at the rate of about 2% annually. However, the heart of the problem of world protein supply is not what is happening on average or on the whole. "It is the fact that there are great differences in the consumption of proteins between countries, between socioeconomic groups within a country, and between family members in the home."

Today 64% of the world's population are "protein hungry." They do not consume enough protein. Sterner lived in Korea until 5 months ago and has seen the problem first hand. To his surprise, he was told by the administrator of a college in Sri Lanka, Ceylon, that the school's small soy-milk plant (put there by the father of soy milk, Dr. Harry Miller) is kept running at full capacity, when soybeans are available, to keep up with the demand of the college cafeteria. He explained that the students much prefer this unsophisticated form of soy milk to the dried soy milk (DSM) provided by CARE.

The article discusses the work of Meals for Millions and contains four photos related to that organization. Address: Exec. Director, Meals for Millions Foundation, Santa Monica, California.

2548. Weisberg, Samuel M. 1974. Nutritional experience with infant formulas containing soy. *J. of the American Oil Chemists' Society* 51(1):204A-07A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973. [35 ref]
• ***Summary:*** Contents: Introduction. Development of soy-based infant formulas. Problems with soy-based formulas and remedial measures. Clinical feeding results. Soy-cereal food blends. Technological and marketing aspects. References.

Of the various commercial soy-based infant formulas made in the USA, Isomil (Ross), Neo-Mull-Soy (Syntex), and ProSobee (Mead) are made from soy protein isolates, whereas Sobee (Mead) and Mull-Soy (Syntex) are made from soy flour. A detailed nutritional analysis of the two types of products is given.

"Development of soy-based infant formulas: It has been estimated that in 1973 ca. 10% of infants in the U.S. will be fed formulas based on soy protein isolate (1). In the U.S. in the 1950's and 1960's, infant formulas based on soy flour as the protein source in place of milk proteins were developed and marketed. These were among the better milk substitutes. However, the formulas often produced loose, malodorous stools and caused chafing in the diaper area.

"In the mid 1960's, water dispersible soy protein isolates became available. These permitted the formulation of infant foods white in color nearly odorless, and seldom causing loose or malodorous stools. In the process for producing the soy protein isolate, it became possible to remove indigestible or irritating components. In the 1970's, formulas based on soy protein isolate have largely replaced the soy flour formulas." Address: League for International Food Education, Washington, DC.

2549. Lundstedt, Erik; Lo, Frank Y. Assignors to Hong Kong Soya Bean Products Co., Ltd. (Kwun Tong, Kowloon, Hong Kong). 1974. Heat stable curd from soya bean milk and process of manufacture thereof. *Canadian Patent* 941,228. Feb. 5.
• ***Summary:*** Prepare soymilk with 6% solids. Add 1-10% by weight of edible fat. Heat to 93.5ºC with steam for 10 minutes. Homogenize at 2,500 lb. pressure. Cool to 24ºC. Add calcium chloride coagulant under strong agitation to form curds at below 49ºC. Heat to 71ºC. Cool to separate whey for superior smooth, silky curds. Hot pack by heating to at least 66ºC. Homogenize. Pump and pack hot. This is a curd, not cheese; there is no fermentation. Address: 1. South Chatham, Massachusetts; 2. Kwun Tong, Kowloon, Hong Kong.

2550. *Los Angeles Times.* 1974. Seldom-used soybean high in protein, unsaturated fats. Feb. 7. p. F2.
• ***Summary:*** Genevieve P. Ho, PhD, of the Agricultural Extension Service, USDA, University of California, explains that soybeans and soybean products have been staples in China for 4,000 years [sic, 3,000 years]. Among these products are "soybean curd, soybean milk, soybean sprouts and soy sauce..."

"In 1972, soybeans retailed for 14 cents a pound. Today they sell for 54 cents a pound in health food stores and 31 cents a pound in Oriental markets."

Describes how to cook dry soybeans at home. Soak soybeans overnight before cooking. they will swell to between 2½ to 3 times their original size.

To speed the process: Combine 3 cups water and 1 cup dry soybeans, bring to a boil, and continue to boil for 2 minutes. Turn off heat, cover, and let stand 1 hour. Soybeans are best cooked slowly and at low temperatures–for 3/4 to 1 hour.

Gives recipes for: Soybean casserole (with "2 cups soybeans, cooked, coarsely chopped"). Soybean cookies (with "1 cup cooked soybeans"). Bean curd soup (with "1 cup bean curd (tofu), broken in small pieces"). Bean curd and shrimp (with "1½ cups bean curd (tofu)" and "1 tbsp.

soy sauce").

2551. Kushi, Michio. 1974. Natural agriculture and food processing. *Michio Kushi Seminar Report* (*Brookline, Massachusetts*) No. 2. Feb. 12. p. 1-4. Edited by Ane & Mark Riegel.
• ***Summary:*** On Feb. 12 Mr. Kushi, a macrobiotic teacher, lectured on: Soybeans. Making tofu: Lemon juice and vinegar vs. nigari. Making natto.

For making tofu, Kushi recommends using nigari rather than lemon juice or vinegar, since the yang nigari balances the yin soybean.

The soybean, "according to our Unifying Principle of macrobiotics, belongs to the yin category. And if you are taking plenty of soybeans, then you become a fool... if you cook kombu together with soybeans, the taste is very good, and nutritionally it is a better balance."

Soybean milk is easy to make. It can often be a substitute for cow's or goat's milk. Soybean milk is yin. If you give this to a baby for a long period, the baby becomes very yin. It is better to give soybean milk for a short period. Address: Brookline, Massachusetts.

2552. Kushi, Michio. 1974. Natural agriculture and food processing. *Michio Kushi Seminar Report* (*Brookline, Massachusetts*) No. 3. Feb. 26 and 27. p. 5-30. Edited by Ane & Mark Riegel.
• ***Summary:*** On Feb. 26 Mr. Kushi, a macrobiotic teacher, lectured on: Tekka–"Tekka is used not only as a condiment, but also for medicinal use. Tekka is made from three different roots–carrots, burdock, and lotus roots." The "volume of miso is flexible... Homemade tekka is traditionally made in a cast iron frying pan." The Japanese word "tekka" derives from *tetsu* (which means iron) and *ka* (fire). "For medicinal use, yang miso is better."

Miso and miso manufacturing, including how to make malt (rice koji) (8 pages). Note: This section indicates that Mr. Kushi has some basic knowledge of the subject but there are many errors. 1. Koji is not malt (which refers to soaked, germinated cereal grains), but molded cereal grains or soybeans. 2. Koji kin is not malt bacteria, but koji molds. 3. One does not add enzymes to miso and enzymes do not grow. Even modern miso factories do not add enzymes when making miso. 4. The entire mixture is not stirred after 20-25 days to add oxygen. Kushi says you must keep miso for a least 6 months, but to cure sickness it must be kept for 2-5 years. Miso soup can compensate for the bad qualities of meat and eggs–so everyone should eat miso soup daily. Soup stocks and miso soup.

On Feb. 27 he discussed: General outline for making shoyu–soy sauce (4 p.), including discussions with Kikkoman on making natural shoyu starting with whole soybeans. In the early years after 1973, Kikkoman wanted to make natural shoyu and sent Kushi several samples, but he turned them all down, in large part because Kikkoman wanted to use defatted soybean meal instead of whole soybeans. Erewhon is buying shoyu from 3 companies in Japan. But Kushi says the quality is declining compared to five years ago [i.e., 1969], when it had powerful healing effects when taken with bancha or kuzu. He adds: "Around Boston or on our Ashburnham land, I really hope we can begin to make miso or soy sauce." Kushi says that now, after pasteurization, coloring and flavoring is added [not true, except in HVP soy sauce]. "Traditionally [in Japan] for this they used natural herbs. For a sweeter taste and darker color they traditionally used kanzô [kanrô?] or 'sweet grass = sweet herb.'"

"Formerly, until modern technological methods started to be applied, almost each village made their own shoyu like this, either as a joint community project, or someone with money made it and sold it to several villages."

Using bean and grain sprouts–moyashi (including soy sprouts). Other soybean products: Fried tofu (two methods for agé). Ganmodoki. Kori-tofu or koya-tofu (freeze-dried tofu). Soybean milk ("Soy milk is very yin." Note: Most Japanese and Japanese scientists consider soymilk to be an "alkaline" {*arukari-sei*} beverage, which therefore promotes good health). Yuba. In the discussion (p. 28), yogurt made by leaving soymilk unrefrigerated and "Chinese fermented tofu... fu nyu" are mentioned. The U.N. [United Nations] recommendations on food, using vegetable proteins.

Note: This is the earliest English-language document seen (April 2013) that uses the term "freeze-dried tofu" to refer to dried-frozen tofu. Freeze drying, which is an expensive, modern, high-tech process that uses a vacuum chamber to dry a frozen food, is not a good term to use for this traditional Japanese food which is air-dried naturally. Address: Brookline, Massachusetts.

2553. *Better Nutrition.* 1974. Food for thought. Feb. [1 ref]
• ***Summary:*** "The Overseas Development Council is calling for a Sino-American Soybean Research Institute for developing soybeans which will produce more beans per acre...

"Unfortunately, our country uses most of its domestic supply of soybeans as food for poultry and cattle. In the Far East soybeans are used directly as food for people, which is, of course, much more sensible. Soybean protein is as nearly complete a protein as exists in vegetarian food. Combined with cereals or nuts at the same meal, soybean food offers complete protein very inexpensively at the rate of 11 grams for every serving of the cooked dried beans.

"Other soybean products available in our country are loaded with high quality protein: soy flour, with up to 47 per cent protein, soybean curd (a kind of cheese) with almost 8 per cent protein, *miso* and *natto* with 11 and 17 per cent protein respectively.

"Soybean milk products are equally nourishing where

protein is concerned."

2554. Central Food Technological Research Inst. (CFTRI). 1974. International Symposium on Protein Foods and Concentrates, Proceedings. Mysore, India: CFTRI. vii + 450 p. Held 27 June–4 July 1967 at CFTRI, Mysore.
• ***Summary:*** This symposium was sponsored by the Council of Scientific and Industrial Research, India, and the Office of International Research, National Institutes of Health, U.S.A., and co-sponsored by the Food and Agriculture Organisation of the United Nations, with the active participation of the World Health Organization and the Association of Food Technologists, India.

Page 293 discusses kinugoshi tofu. Address: Mysore, India.

2555. Erhard, Darla. 1974. The new vegetarians. II. The Zen macrobiotic movement and other cults based on vegetarianism. *Nutrition Today* 9(1):20-27. Jan/Feb.
• ***Summary:*** This article is mainly a very critical assessment of the macrobiotic diet and movement introduced as a cure by George Ohsawa. It also discusses Sufi groups, the new Vrindaban International Society for Krishna Consciousness (founded in 1966 by his Divine Grace A.C. Bhaktivedanta Swami Prabhupada), and various vegan groups.

A pie chart on page 21 shows the various major food movements in the U.S. counterculture "and how they all lead to unscientific vegetarian forms of food faddism." Within the natural food movement are organic communes, Krishnas, vegans, Sufis, followers of the Ehret's mucusless diet healing system, and practitioners of Yoga. Within the health food movement are four major teachers: Paul C. Bragg, Herbert Shelton, Carleton Fredericks, and Adelle Davis. Within the "Cosmic Nutrition Movement" are Zen macrobiotics (yin/yang polarity), and the Messiah's Crusade (positive/negative polarity).

"Veganism is the philosophy and practice of compassionate living. Founded in England in 1944, the Vegan Society originally stressed the ethics of eating. The American Vegan Society, based in New Jersey, was founded in 1960 and is composed of individuals who are more health oriented. This Vegan philosophy was essentially based on Dr. Albert Schweitzer's concept of reverence for life, and Mahatma Gandhi's concept of Ahimsa, a Sanskrit term meaning non-killing and non-injury" [dynamic harmlessness] (p. 27). "Vegans who practice more restrictive diet interpretations may use Dr. Shelton's Food Combining System." Vegans and their children often use soya milk.

The reason is that the general natural foods movement is an example of unscientific food faddism is that the "Diet emphasizes natural and/or organic vegetables, fruits, legumes, grains, and usually dairy products, and restricts meat."

A sidebar briefly defines "Vegetarian terms" including amasake, miso, mochi, nirvana, tamari, tofu, and umeboshi.

Note: This is the earliest document seen (May 2002) concerning Sufism (or Islam) and Vegetarianism. Address: RD, MPH, Research Nutritionist, Clinical Study Center, San Francisco General Hospital, California.

2556. Gerner, Bob. 1974. Log of trip to Japan to study traditional natural foods, 28 Feb.–2 March 1974. Part I (Log–unpublished). Westbrae Natural Foods Inc., Berkeley, CA 94710. 26 p. Unpublished log. Handwritten. 20 x 8 cm.
• ***Summary:*** 1974 Feb. 28. Meet Bill Shurtleff and Mr. Masa Miyashita of Kikkoman export dept. (good man, speaks fluent English) at the Imperial Hotel (*Teikoku Hoteru*, built in the 1920s by Frank Lloyd Wright) in Tokyo. Talk for 4 hours. Westbrae hires Shurtleff as an interpreter and guide.

March 1. Dinner at Sasa-no-Yuki, beautiful old restaurant that specializes in tofu cuisine.

March 4, Monday. Visit Kikkoman in Noda with Shurtleff and Miyashita. Tour Plant #7, then Plant #4 (the Goyo-Gura), which produces the emperor's shoyu in the traditional, natural way. "Saw 5 batches of moromi mash from 1 month old to 12 months old, and tasted each one. Delicious. Great color change between the 1 month and the 12 month moromi. We saw all the traditional tools. The moromi vats were made of cedar and last approximately 200 years." See a movie on how shoyu is made. Lunch at a sushi shop. Visit two miso retail shops with Shurtleff near his home. One had 42-45 types of miso (mostly rice miso, with 1 each Hatcho, barley, and cooked miso), the other 32-35 types. Tasted many and learned the differences. I buy Saikyo sweet white miso and Hatcho miso.

March 5, Tues. Attend a cooking class at Lima Ohsawa's house, then have dinner with Lima and the class members. Sick for the next 2 days.

March 9, Sat. Call then meet Mr. Kazama of Mitoku. He represents Erewhon. We may import through Kikkoman's Pacific Trading. Plan trip to Sendai Miso-Shoyu. Sendai is interested in using organic soybeans to make shoyu but would like a contract stating that all of it will be purchased when done. Dinner at the natural foods restaurant, Hakumon run by a Frenchman named Pierre.

March 11, Mon. Meet Shurtleff early at Tokyo station. Take bullet train (Shinkansen) to visit two Hatcho miso plants (Hayakawa Kyuemon Shoten, and Ota Shoten in Okazaki city, Aichi prefecture). Both plants claim to be over 600 years old. They use modern steamers and koji rooms. They pile 4-6 tons of rocks atop each large vat of miso, age it for 2 summers. It becomes very mellow when fully aged. They also use about half of their Hatcho miso to make Akadashi miso. It also contains caramel coloring, barley syrup, MSG, shoyu, a white miso, and preservatives. They sell a lot of Akadashi but only a little Hatcho miso. Lunch at an udon noodle shop that hand makes and cuts the noodles. Lots of slurping. Then visit a plant that makes real tamari

and shoyu. All the tamari is mixed with junk. Train to Kyoto; stay at Friends World College. Note: This is the earliest English-language document seen (March 2012) that contains the term "real tamari."

March 12, Tues. Visit a tofu maker, a yuba maker (*Yuba Han*), then the company that makes Saikyo sweet white miso. The owner lies to us initially about his miso aging and caramel coloring (which tastes and looks like tar). Then he reverses himself without batting an eye. Lunch at a 300 year old Zen vegetarian restaurant (*Okutan* near *Nanzenji* temple); so beautiful that I start crying. Fantastic place. Light snow falling by the pond. Enjoy Simmering Tofu (*Yu-dofu*) in a broth. Then we go to a 400-year old tofu restaurant (*Nakamura-ro*) at a shrine (*Gion*) for dessert of *amazake* and *Dengaku* (skewered and braised with sweet miso). On to a second miso factory. It is a bore and the owner does not seem sincere but he has a great reputation among macrobiotics. He makes both natural and sweet white miso. Shurtleff visited him last year. For white miso the soybeans are boiled; for red miso they are steamed. Some white miso contains sodium thiosulphate bleach. Visit another yuba shop. They use granite grinding stones to make soymilk, cast iron pot to cook it in and copper skimming tables. A very beautiful place. Meet Ty Smith at a soba shop. He is a chain smoker, just quit working for Muso, and promoting a cooperative effort between Janus, Chico-San, Erewhon, and The Well to import foods from Japan. Evening at Jittoku coffee house, owned by an American, in a large old Japanese treasury (kura). Back to Tokyo by train. Talk until 1:00 A.M.

March 14, Thurs. Meet Kazama and Shurtleff, and take express train to Sendai Miso-Shoyu. We are treated royally by Mr. Muro. Long introduction and discussion. Visit their 2 plants, one modern, one traditional, natural. They make only rice miso. Their production of natural miso is more than all that imported to America by Erewhon and Janus. They age their natural shoyu 18-24 months at the request of Michio Kushi and Erewhon. They have 9 aging vats for the first year, then it is switched to other tanks. They invite us to have a shoyu taste test among 3 products: Kikkoman regular shoyu, Sendai regular, Sendai natural. Both Bill and I choose Kikkoman as best; good aroma, color, and taste. They congratulate us on our good taste. Sendai regular had very strong salty taste. We both liked the Sendai natural least; good color, no aroma, very mild taste. Sendai people say only one year is needed to ferment shoyu naturally. We might sell them organic soybeans (we had purchased 12 truckloads from a farmer) and get shoyu back in 1 year. We meet the president (Sasaki?), born 1928. Elegant geisha-hosted tempura and sushi dinner with president, 2 vice presidents, production manager, and a consulting professor (Shibasaki sensei). After dinner to a traditional bar for *doburoku* (thick, unrefined sake with a low alcohol content [or was it nigori-zake?]), then a sushi house. Shurtleff leaves for Tokyo on night train.

March 16, Sat. Visit Shurtleff and Aoyagi's home for lunch. We have dried-frozen tofu main dish, salad with creamy tofu dressing, strawberries with tofu whipped cream. Delicious. Then we learn how to make tofu at home. It's easy. I'll make it at home in California, then at our Westbrae Natural Foods retail store on Gilman Street (Note: This led to a long series of tofu classes by Gerner, Liz Horowitz, and later Shurtleff & Aoyagi; The retail store changed its name in late 1976 to Gilman Street Gourmet).

Note 1. This is the earliest document seen (April 2006) concerning Westbrae Natural Foods.

Note 2. This is the earliest English-language document seen (Jan. 2012) that contains the term "creamy tofu dressing" (or "dressings") a term coined by Shurtleff and Aoyagi in *The Book of Tofu* (p. 108).

Note 3. This is the earliest English-language document seen (April 2013) that uses the term "dried-frozen tofu." Continued. Address: President & Chairman of the Board, Westbrae Natural Foods Inc., 1224 10th St., Berkeley, California 94710.

2557. Gerner, Bob. 1974. Log of trip to Japan to study traditional natural foods, 28 Feb.–2 March 1974. Part II (Log–unpublished). Westbrae Natural Foods Inc., Berkeley, CA 94710. 26 p. Unpublished log. Handwritten. 20 x 8 cm. • ***Summary:*** Continued: March 19, Tues. Take bullet train to Kyoto to meet Steve Earle of Muso Shokuhin. We 3 go to Okayama to see Fuchu Miso, that makes mugi miso (the barley miso sold in our store) and sweet white miso. The president's wife is the epitome of Japanese woman. For lunch we have tofu burgers with Italian sauce and mushrooms in a bento made by Akiko. Delicious. Take a boat to Shodo-shima where Marushima Shoyu Co. is located. Island is also famous for toasted sesame oil. Arrive at a ryokan at 6:30 P.M. VIP treatment. Bath before dinner and served in private room by geisha. Too much fish! Note: This is the earliest English-language document seen (April 2013) that contains the term "tofu burgers."

March 20, Wed. Miso soup for breakfast. Visit Marushima Shoyu where Muso gets its "natural" shoyu for export to America. They have the newest wheat roasters (they roast it with sand), biggest presses. We see cement aging tanks in a temperature-controlled room, then onto a large red building with 150 aging tanks. But we see no whole soybeans, only soybean meal (*dasshi daizu*). "I feel the owner is a liar and this is a bogus operation. The scene gets heavy and ugly. Bill is great and presses on with questions." The owner claims that 40% of their shoyu is natural, aged for 3 years and made with whole soybeans; 60% made with soybean meal, temperature controlled for 7 months. Thus there should be about 120 vats of natural versus 60 regular. But where is the natural? Their faces turn red. We have caught them red handed. The owner take us to one musty, dirty old building with 25 vats, only 8 of which contain

shoyu, some only half full. Lots of cockroaches. Looks like no one ever goes here. Still no sign of a single whole soybean. Uneasy departure. Steve Earle is embarrassed. We take a train to Tokyo. We present Earle/Muso with a list of inconsistencies and ask for a written reply.

March 21, Thurs. Visit Mr. Kazama's miso factory (*Ikeda Kojiro Miso Shoten* in Kawaguchi-shi near Tokyo), that makes barley miso, the only brown rice miso in Japan, and shoyu. Call Ty Smith of Muso. He says Muso was very happy with our findings concerning the problems at Marushima, and that they have contacted a new source in Kyushu. Marushima said their president died a year or so ago and his son took over. They have lost the old feeling and tradition.

March 22, Fri. 6:00 A.M. Meet with Bill Shurtleff at his tofu master's tofu shop (*San-Gen-Ya*, run by Mr. Toshio Arai). We watch how he makes tofu. Beautiful place (12 feet square) attached to their home. Beautiful people; they don't speak English. Both make tofu starting early in the morning. He delivers in the afternoon and she sells out of the shop. He gave me hot rich soymilk (from *kinugoshi*) with wild mountain honey. Both incredible. So sweet and delicious. They also serve us freshly made agé, kinugoshi, and natto. Lunch at Shurtleff and Aoyagi's home: Noodles and tofu, Chinese fried tofu, tofu pudding, agé, kinugoshi, and mikan orange. We go over my notes from the miso factory. We copy all of his notes. Then I leave, very sad, but the friendship will remain. Akiko is a remarkable lady. Meet Mr. Kazama and go to Pacific Trading. Lousy meeting with Mr. Masaaki Miki (sales manager), and Masa Miyashita (export dept). Go to airport.

Results of the trip: (1) Westbrae started (about 9 months later) to import many varieties of miso, plus shoyu, and other products from Mr. Kazama in Japan. Bob Gerner was the founder, president, and chairman of the board of Westbrae; (2) Bob Gerner and Liz Horowitz taught "Tofu and Miso Cookery Classes" in Berkeley during 1976; (3) Westbrae published and distributed widely two brochures, *What is Miso?* (May 1976) and *What is Tofu?* (July 1976) written by Shurtleff and Aoyagi; (4) In 1976 Westbrae Natural Foods Inc. decided to sell its retail store at 1336 Gilman St. in order to focus on being a distributor and importer. The store had been losing money. Bob Gerner bought it in June 1976 for the low price offered by the highest bidder. He remodeled the store, renamed it Gilman Street Gourmet, and re-opened it in Sept. 1976. In the spring of 1977 Gerner added a deli to the store; there he made and sold Tofu Burgers, Tofu Treasure Balls, and Tofu Steaks Sauteed in Ginger Sauce. The same week that the deli opened, Gerner sold 3,000 to 4,000 of his new Tofu Burgers out of the Westbrae booth at the New Earth Exposition in San Francisco. Bob's nephew and sister (Margaret) made the tofu burgers. The burgers sold equally well at the same Expo in 1978 and 1979; (5) Shurtleff and Aoyagi wrote *The Book of Miso* and their New-age Foods Study Center moved toward becoming Soyfoods Center.

Note: In late November 1974 Mr. Kazama came to a meeting at Pajaro Dunes by Santa Cruz, sponsored by The Well. The idea was to set up a natural foods trade association. Erewhon wanted to control all imports of Japanese natural foods from Japan. Janus and The Well both had to import through Erewhon. They said Westbrae must buy through them via The Well (Roger Hillyard/Pure & Simple), and pay a 5% commission. Kazama had to defer to them. Gerner refused and they backed off. Ty Smith, now head of Erewhon, was upset that Westbrae was not paying a commission. Gerner told him "Tough." So Westbrae ended up importing from Kazama. Address: President & Chairman of the Board, Westbrae Natural Foods Inc., 1224 10th St., Berkeley, California 94710.

2558. Huang, Su-Huei. ed. 1974. Chinese snacks: Wei-Chuan cooking book. Taipei, Taiwan: Dept. of Home Economics, Wei-Chuan Foods Corp. 184 p. Illust. No index. 25 cm. [Eng]

• ***Summary:*** Almost every page contains a large color photo of a finished dish. Recipes include: Seaweed-bean curd broth (p. 7). Bean curd-rice noodle soup (p. 8-9). Egg flower soup with tofu (p. 10). Steamed spareribs with black beans over rice (with "fermented black beans," p. 14). Bean curd and vegetable soup (p. 14). Bean curd and oyster broth (p. 24). Chicken in black bean sauce over rice (p. 25). Red-cooked beef noodles (with black bean paste {pronounced "he do ban jiang"} and hot bean paste {"la do ban jiang"}, p. 47). Saucy noodles–"Ja jiang mien" (with pressed bean curd and sweet bean paste {"tien mien jiang"}, p. 59). Sweet almond-beancurd soup (p. 143). Sweet soybean milk ("Do jiang," p. 156). Salty [soy] bean milk (p. 156). Crispy Chinese crullers ("You tiau," p. 157; serve with sweet or salty soybean milk).

Also: Cantonese moon cakes (with red bean paste [azuki] filling, p. 133, with color photo). Crunchy sesame cakes (with red bean paste filling, p. 135). Tasty fried bean cakes (with red bean paste filling, p. 137). Sesame-bean paste puffs (with red bean paste filling, p. 141). Sweet almond-beancurd soup ("beancurd" made with agar and evaporated milk–no soy, p. 143). Address: 19 West Nanking Road, Taipei, Taiwan. Phone: 551-13564.

2559. *Japan in Pictures.* 1974. Bean curd, a subsidiary food as delicious as meat. Instant bean curd developed in Japan. 16(1):12-15. [1 ref. Eng]

• ***Summary:*** The first 2 pages of this article contain 6 color photos showing tofu in Japanese-style (Yu-dofu, Dengaku, Sukiyaki, and Clear Soup), and Chinese-style (Sheng Pan Tofu, Guo Tie Tofu) recipes. "A block of bean curd weighing 340 grams, measuring 7 x 10.5 x 3.5 centimeters and being sold for US$0.20, contains as much as 21 grams of protein. To take this much protein, one must drink 3 bottles (or 600 cc) of cow's milk at the cost of US$0.35.

The conventional (traditional) process for preparing bean curd is described. "In Japan as many as 38,000 bean curd makers are operating on a small scale. Under these circumstances the bean curd industry has been far from modernized."

The next two pages, titled "Modernization of bean curd making," compare the traditional process for making tofu (6 black-and-white photos show the Yuba Han yuba shop in Kyoto) with a modern process developed by House Food Industrial Company, and used to make "House Hontofu" at their new modern factory in the city of Sano, 100 km north of Tokyo. Two photos are given of the equipment in the plant and 6 of the package and how this instant bean curd [silken tofu] is prepared at home. At the modern plant, a mixture of ground soybeans and water "is applied to a centrifugal separator, which separates it into soymilk and refuse. The soymilk, which has been concentrated by being heated, is sprayed into a tank heated to 100ºC, a process which dehydrates the milk to produce a bean curd base in powdered form [powdered soymilk]. A unit quantity of this powder is packed in an aluminum-foil bag containing nitrogen gas, which is put on the market accompanied by a small amount of coagulant.

"Process to prepare bean curd on the spot. Put a bag of 'Hontofu' in 600 cc of water, which is to be agitated [with a whisk]. Boil about 3 minutes. Mix the accompanying coagulant [glucono delta-lactone] immediately after the flame is put out. Transfer the substance into the container [a plastic box shaped like a cake of tofu]. Leave it for about 20 minutes and a block of bean curd is ready. Bean curd taken out of container [into a bowl of water]." Address: Japan.

2560. Lo, K.S. 1974. Development and marketing of soybean products for developing countries. In: International Symposium on Protein Foods and Concentrates, Proceedings. Mysore, India: Central Food Technological Research Inst. (CFTRI). See p. 407-12. Held 27 June–4 July 1967 at CFTRI, Mysore. *
Address: Hong Kong.

2561. Mustakas, G.C. 1974. A new soy lipid-protein concentrate for beverages. *Cereal Science Today* 19(2):62-64, 69-73. Feb. [29 ref]
• ***Summary:*** Describes a new way to make liquid or spray-dried soymilk from finely pulverized tofu. A lipid-protein concentrate (LPC) curd was isolated from full-fat soy flour by isoelectric acid wash at pH 3.5. 94% of the protein in the original soybeans was recovered in the LPC. "Wet-milling in a colloid mill and homogenizing reduced the LPC to a fine particle size and gave a product with excellent suspension properties in water. The resuspended concentrate yielded a drink that was very bland, had smooth mouth-feel, was low in viscosity, and had other desirable beverage characteristics... The liquid product can be spray-dried to a reconstitutable powder, if desired, for convenience and for reduced shipping costs." The whey by-product has a high biological oxygen demand (BOD), which represents a serious disposal problem. Address: NRRL, Peoria, Illinois 61604.

2562. Nasution, S.; Sari Hasuda, P.N.; Nagera, D.J.L.K. 1974. Consumer acceptance and marketing of Saridele. In: International Symposium on Protein Foods and Concentrates, Proceedings. Mysore, India: Central Food Technological Research Inst. (CFTRI). See p. 398-406. Held 27 June–4 July 1967 at CFTRI, Mysore. *
Address: Indonesia.

2563. Pompei, Carlo; Bazzoni, Daniela. 1974. Formulazione di un sostituto del latte a base di proteine vegetali [Formulation of a milk substitute based on vegetable protein]. *Latte* (*Il*) 2:540-43. Feb. English-language summary in Dairy Science Abstracts 36:3400. [15 ref. Ita]
• ***Summary:*** Describes how to make soymilk, and gives its nutritional composition. Address: Inst. of Food Technology, Univ. of Milan, Milan, Italy.

2564. Fleming, Cecil. 1974. How to save on milk: Get it in a box. Powdered product a good calcium source. *Los Angeles Times.* March 14. p. G1.
• ***Summary:*** "Sacramento (AP)–California's 4,000 dairymen may have to slaughter 25% of their milk cows unless they are granted a price increase of 16 cents per gallon, an industry spokesman warned Wednesday.–LA Times, Feb. 28."

Dr. Genevieve Ho, nutritionist at the UC Agricultural Extension Service, suggests that consumers consider other less expensive dairy sources of calcium, such as instant nonfat dry milk, which can be reconstituted quickly and easily.

A table shows other sources of calcium, with the number of milligrams of calcium per unit. These include "Soybean curd (tofu)," which contains 64 mg of calcium per ¼ cup [= 256 mg per cup].

2565. Dullea, Georgia. 1974. You don't have to be a Seventh-Day Adventist to like their cooking. *New York Times.* March 25. p. 37.
• ***Summary:*** They are teaching vegetarian cooking classes, and they are good at it. One couple took the classes and have been meatless for five months. To satisfy their taste for meat, they are eating the "vegetable protein food the Adventists produce under the Loma Linda label. Four soy patties cost 50 cents compared to about $2 for the same amount of meat."

The world's 2 million Adventists are not all strict vegetarians; while such a diet is recommended by the church, it is not considered a test of faith. Most Adventists avoid coffee, tea, cola beverages, and strong spices. A recipe for eggless "Soy mayo" (using ½ cup soy milk powder) is given.

2566. Chiang, Cecilia Sun Yun; Carr, Allan. 1974. The Mandarin way. Boston, Massachusetts: Little, Brown and Co. xiv + 274 p. Index. 23 cm.
• ***Summary:*** This charming, interesting book ("as told to Allan Carr" by Cecilia) is combination biography and Chinese cookbook organized by months (moons)–so that it flows with the seasons and seasonal foods. For each of the twelve moons of the old lunar calendar, there is one chapter (e.g., First Moon) of Cecilia's memories of growing up in China, as one of 13 children in a family of great wealth, followed by an "Interlude" chapter on a particular theme (e.g., "Of shopping and its pleasures") with her favorite recipes for that time of year.

Soyfoods (including "soy" or "soy sauce," "fresh bean curd," and "preserved bean curd") are mentioned throughout the book–for example: Freshwater "dancing shrimp" were "eaten raw after being dipped in a tangy sauce of preserved bean curd [fermented tofu], pepper, soy sauce, coriander and wine" (p. 8). The pork shoulder was "'red-cooked' in soy [sauce] and wine..."

Note: This is the earliest English-language document seen (Oct. 2010) that uses the term "preserved bean curd" to refer to a type of fermented tofu.

Some measure of success in reproducing authentic meals outside of China "can be achieved if the basic supplies are obtained either by purchasing them in Chinese shops or ordering them by mail (several sources, with addresses, are given..." These include: "fresh ginger root, dried bean curd, dried bean curd [pressed tofu; doufu-gan], sheets [yuba], sesame seed paste, sesame seed oil,... soy sauce,... red bean paste [azuki, also called "1 can sweet red-bean paste" (p. 164)], hot bean sauce" (p. 21)).

Fish with hot spicy bean curd sauce (*Tou-pan la-yü*, with "1 tablespoon Szechwan hot bean curd paste," p. 50). Five-spiced spareribs, Peking style (with "2 tablespoons pale soy sauce," p. 71). Peking duck (with "hoisin (duck) sauce," p. 96). Red-cooked chicken with chestnuts (with "4 tablespoons dark soy sauce, Japanese Kikkoman or imported," p. 116). Chopped spinach with shredded bean curd (*Po-ts'ai pan tou-fu kan*, with "dry pressed bean curd," p. 138). Szechwan four season beans (with "1 heaping tablespoon hot soy bean paste," p. 162).

In San Francisco's Chinatown, where the shops are predominantly Cantonese, the "dry goods store provides me with pressed bean curd and bean curd sheets [yuba, doufu pi],..."

Talk with Cecilia Chiang. 2008. Nov. 15. She says that "bean curd sheets" refers to doufu pi or yuba; pressed bean curd to doufu-gan. "Hot bean sauce" is *la douban jiang*, which is *douban jiang* with hot chili peppers; both are made with soybeans. Red bean paste is the same as "sweet red bean paste," made with azuki beans (*xiao hong dou*), and the same as Japanese *an*. Address: 1. Founder and owner, The Mandarin restaurant, Ghirardelli Square, San Francisco, California.

2567. Leake, Rosemary D.; Schroeder, Kathleen C.; Benton, D.A.; Oh, W. 1974. Soy-based formula in the treatment of infantile diarrhea. *American J. of Diseases of Children* 127(3):374-76. March. [12 ref]
• ***Summary:*** A lactose-free formula containing isolated soy protein has been successful in treating infants with diarrhea during the gastroenteritis recovery phase. Twenty-two infants hospitalized for severe diarrhea were given, at random, a formula based on either soy protein isolate or skim milk. Infants recovering from nonbacterial gastroenteritis and fed a soy-based lactose-free formula had a 9% rate of diarrhea recurrence, contrasted with a 64% rate of recurrence for a similar group fed a milk-based formula. The researchers speculated that lactose intolerance secondary to diarrhea could be an important factor in causing recurrent diarrhea in infants fed a milk-based formula.

"The carbohydrate source is another major difference between soy- and cow's milk-based formulas. The lactose-free characteristic of soy-based formula could account for the higher success rate." "Lactose intolerance is particularly common among black and Oriental infants (Chung 1968; Bayless 1969). Black and Oriental infants were of equal distribution in our two groups and constituted 45% of the patients studied." Endnote: "A grant for this investigation and the formula used were provided by Ross Laboratories, Columbus, Ohio."

Note: This is the earliest document seen in which a soy formula or beverage is specifically recommended as a solution to the problem of lactose intolerance. Address: Dep. of Pediatrics, Harbor General Hospital, UCLA School of Medicine, 1000 W. Carson St., Torrance, California 90509.

2568. Robson, John R.K.; Konlande, J.E.; Larkin, F.A.; O'Connor, P.A.; Liu, Hsi-Yen. 1974. Zen macrobiotic dietary problems in infancy. *Pediatrics* 53(3):326-29. March. [20 ref]
• ***Summary:*** Two children, ages 7-13 months, fed Kokoh, a Zen macrobiotic food mixture consisting of cereal grains, legumes, and oil seeds, for several months had energy and protein intakes that were low enough to cause deficiencies to the point of retarded growth. Stresses increased nutritional supervision and education of families following macrobiotic diets. Address: Nutrition Program, School of Public Health, and the Dep. of Pediatrics and Communicable Diseases, Medical Center, Univ. of Michigan, Ann Arbor.

2569. Kay, Theodore. 1974. Soybeans in the Nigerian diet. *Samaru Agricultural Newsletter* 16(1):18-22. May. [Eng]
• ***Summary:*** Contents: Introduction. Nutritional value of the soya bean. Daily amino acid requirements for men, women, and children. Suggested methods of incorporating soya bean

into the Nigerian diet: Soya bean paste (soaked, uncooked soya beans, with the hulls on, ground to a white paste) and whole beans (not dehulled). Utilization of the paste: Directly for kosei (akara ball) and panke (puff-puff), for preparation of soya bean milk, which can be used to make protein-enriched pap, fu-fu, bean curd (to-fu), awara or wara. Use of the residue from preparation of soy bean milk [okara]: In Alele (moin-moin), or biscuits. Utilization of whole soya beans: baked, sweet baked powder, stew. Discussion: Why do we need soya bean in Nigeria? Five reasons are given. Acknowledgments to many co-workers.

The soya bean has been cultivated in the Far East since about 2800 B.C. It has [been] the main source of protein for all of East Asia, particularly for the vegetarian Buddhist. It has been used as bean curd (To-fu) and soya sauce in most parts of the Far East from Indonesia up to the Northern end of Japan, as soya bean milk in China, as soya paste (mi-so) in Japan, and as a fermented product (Tempe) in Indonesia.

The crop is well established in Benue Plateau State south of Makurdi, in the North-Western State around Abuja and in the southern part of North-Central State. However, it has been very difficult to cook the beans in a traditional West African way so it has never become popular in this country. Most of the soya bean produced in Nigeria has been exported as a cash crop, except a little for animal consumption. Address: Inst. for Agricultural Research, Samaru, Ahmadu Bello Univ., PMB 1044, Zaria, Nigeria.

2570. Moede, Herbert H. 1974. Cost of whey-soy-drink mix for human consumption. *Marketing Research Report* (*USDA Agricultural Marketing Service*) No. 1021. 8 p. May. [1 ref]
• ***Summary:*** "The estimated cost for a whey-soy-drink mix being tested for use as a supplementary food in beverage form for use in overseas preschool feeding programs was 20.30 cents per pound in August 1973 and 19.44 cents in January 1974. These figures are based on packaging in 50-pound export-type bags... Purchase price per pound of instant corn-soya-milk mix in June 1973 and January 1974 was 15.05 cents and 14.80 cents, respectively. In June 1973, the wholesale price of nonfat dry milk was 48.40 cents per pound and in January 1974 it was 54.04 cents per pound."

The ingredients in whey-soy-drink mix (Jan. 1974) are whey solids, full fat soy flour, soybean oil, corn sugar, mineral mix, vitamin mix. The ingredients in instant corn-soya-milk mix are corn meal (processed gelatinized), full fat soy flour (in lieu of defatted soy flour and oil), nonfat dry milk, mineral mix, vitamin mix, calcium phosphate. Address: Washington, DC.

2571. Nelson, A.I.; Ferrier, L.K. 1974. Foods from whole soybeans. *INTSOY Series* No. 2. p. 173-78. Proceedings of the Workshop on Soybeans for Tropical and Subtropical Conditions (College of Agric., Univ. of Illinois at Urbana-Champaign). [8 ref]
• ***Summary:*** Properly hydrated and blanched soybeans offer great potential for processing into a wide variety of food products. The following are some of the foods made at the University of Illinois: 1. Drum dried flakes: 100% whole soybean, soy-rice (50:50), soy-corn (50:50), soy-brown sugar-peanut (50:35:15), soy-banana (50:50) weaning food. 2. Canned and homecooked soybeans: Vegetarian soybean, three bean salad, soy with chicken, soy with pork, soy with lamb, pork with soybeans. 3. Soy beverages and beverage products: Plain beverage, chocolate beverage, blend of soy beverage and cottage cheese whey, ice cream (mocha flavor), yogurt. 4. Spreads: Diet spread (margarine flavor), dip, peanut butter analog [soynut butter]. 5. Snacks: Roasted soybean cotyledons [soynuts], extruded puffed rice and corn fortified with full fat soy flour. Address: 1. Prof.; 2. Asst. Prof. Both: Dep. of Food Science, Univ. of Illinois at Urbana-Champaign.

2572. *Times of India* (*The*) (*Bombay*). 1974. Soyamilk becoming a big draw. June 19. p. 6.
• ***Summary:*** Pantnagar–The soya-milk and beverage that has been produced at Pantnagar Agricultural University's pilot plant since last year has already become a big attraction, not only on campus but also in nearby towns, such as the hill station of Nainital, 75 km. away.

Nutritious, tasty and moderately priced, soyamilk that is mass produced is expected to help bridge the huge gap between the supply of and demand for regular milk in India.

The cost of making soyamilk is expected to be one-third to one-fourth the price of regular milk.

This soyamilk was developed at Pantnagar by three Indian and American scientists after three years of research under a PL-480 grant; Prof. B.P.N. Singh, Dr. Surjan Singh, and Prof. A.I. Nelson. The patent for the process and the equipment, filed in both India and the USA, is held jointly by Pantnagar University and Illinois University.

The development of the process for making soyamilk is just the beginning, said Dr. Surjan Singh. His team is in an advanced stage of research and development for making a variety of other soyamilk products "such as ice cream, curds [tofu], sweets and baby food."

2573. Kakade, M.L.; Rackis, J.J.; McGhee, J.E.; Puski, G. 1974. Determination of trypsin inhibitor activity of soy products: A collaborative analysis of an improved procedure. *Cereal Chemistry* 51(3):376-82. May/June. [4 ref]
• ***Summary:*** Describes a more accurate and reproducible process for measuring the trypsin inhibitor activity of soybeans than the method developed by Kakade in 1969 for measuring the antitryptic activity in raw soybeans. This new method is recommended for use in evaluating the percentage of trypsin inhibitors destroyed by heat in soybean samples. "Both raw and toasted, dehulled, defatted soy flours were evaluated for their trypsin inhibitor activity." Address: 1.

Land O'Lakes, Minneapolis, Minnesota; 2-3. NRRL, Peoria, Illinois. 4. Central Soya.

2574. Kalbrener, J.E.; Warner, K.; Eldridge, A.C. 1974. Flavors derived from linoleic and linolenic acid hydroperoxides. *Cereal Chemistry* 51(3):406-16. May/June. [16 ref]
• ***Summary:*** Hydroperoxides of linoleic and linolenic acid were prepared using soybean lipoxygenase. The flavor of linoleic acid hydroperoxide (50 ppm) was described by a trained taste panel as predominantly grassy/beany, musty/stale, and bitter. Linolenic acid hydroperoxide (10 ppm) was described was described with a variety of terms, the most predominant being grassy/beany, followed by bitter and astringent. Address: NRRL, Peoria, Illinois.

2575. Sinclair, Patricia; Vettel, Ruth S.; Davis, Carole A. 1974. Soybeans in family meals. *USDA Home and Garden Bulletin* No. 208. 26 p. June. Reprinted in 1977.
• ***Summary:*** Contents: Nutritive value. Using soybeans: Fresh soybeans, dry soybeans, soybean sprouts, soy flour, soy grits, soy milk, soybean mash (or pulp), soybean curd [tofu, sold in squares called "cakes"], soybean oil. Recipes: Main dishes, vegetables, salads, breads, soups, desserts, sauces, snacks. Index to recipes. Address: Consumer and Food Economics Inst., Agricultural Research Service.

2576. Chandrasekhara, M.R. 1974. Vegetable proteins for combatting protein malnutrition in developing countries. In: Proceedings Fourth International Congress Food Science and Technology. Madrid, Spain: International Union of Food Science & Technology. 6 vols. See vol. 5, p. 257-66. Held 23-27 Sept. 1974 at Madrid, Spain. [14 ref]
• ***Summary:*** Edible peanut flour is used in India to help the hungry and malnourished. Bal Ahar ("children's food") is a dry blend of flours from cereals, oil seed meals, and pulses; several formulas have been used, including one (Formula IV) containing 15% soya flour. Miltone, a milk-like preparation containing peanut protein isolate, has been produced at the Bangalore Dairy for the past six years; production has increased from 5,180 liters in 1966-67 to 1,047,797 liters in 1973-74.

Aflatoxin is a problem in peanut meal. In India, edible peanut protein concentrate is mostly used in child feeding programmes. Soya flour has recently been introduced, however large quantities are not yet available for feeding programmes. Yet the CARE organization in India is importing CSM (85% bulgar wheat flour and 15% solvent extracted soya flour) as well as soya flour, and using both in its programmes. Sesame flour is still in the developmental stage. A high protein food named India Multipurpose Food was used in school feeding programmes as a supplement to staple food; it was a blend of 75 parts edible peanut flour and 25 parts of chick pea flour–fortified with vitamins and minerals. Address: Project Administrator and Coordinator, Miltone Project, (Ministry of Agriculture) Bangalore Dairy, Bangalore–560029, India. Present address: 53, 13 Cross Road, Malleswaram, Bangalore, 560003, India.

2577. Holsinger, V.H.; Sutton, C.S.; Vettel, H.E.; et al. 1974. Production and properties of a nutritious beverage base from soy products and cheese whey. In: Proceedings Fourth International Congress Food Science and Technology. Madrid, Spain: International Union of Food Science & Technology. 6 vols. See vol. 5, p. 25-33. Held 23-27 Sept. 1974 at Madrid, Spain. [17 ref]
• ***Summary:*** The beverage base is made from fluid sweet cheese whey, full fat soy flour, soybean oil, and corn syrup solids; they are combined, pasteurized, homogenized, and condensed. Address: USDA, ARS, Eastern Regional Research Center, Philadelphia, Pennsylvania 19118.

2578. P.T.I. 1974. Pant varsity plans milk for millions project. *Times of India* (*The*) (*Bombay*). Oct. 4. p. 8.
• ***Summary:*** Pantnagar (Uttar Pradesh)–"The G.B. Pant university of agriculture and technology here proposes to start a 'milk for millions' project in collaboration with the World Bank, the Life Insurance Corporation, Central and state governments and the proposed cattle development corporation."

The project includes the introduction of "soymilk" (soyabean milk) as a supplement to regular milk for the first time. A new plant with an installed capacity of 10,000 liters per day of soymilk would cost only 1 million rupees. Except for the homogenizer, all of the equipment is available in India. The cost of production is expected to be 50-60 paise per litre.

The protein and fat content of the soymilk are equal to those of cow's milk. The milk can be transformed into curds [tofu], which will stay fresh for a week when stored at 5ºC.

2579. Brody, Jane E. 1974. Soybean has become the focus of drive to give more protein to world's hungry. *New York Times.* Oct. 12. p. 62.
• ***Summary:*** "This is the second of two articles on the drive to increase the amount of protein in the human diet." These are part of a series of articles examining the world food situation.

Americans are already familiar with at least two products made from soybeans: bacon-flavored bits and hamburger extender (also known as "textured vegetable protein"). Scientists believe that Americans will be among the hardest to please with new protein sources. General Mills, Inc. is presently test-marketing two soy protein meat analogues named "Country Cuts"–frozen, ready to eat cubes with the texture or flavor of chicken or ham. They are 25-40% less expensive than the meats they imitate. These products contain meat-like fibers made from defatted

soybean flour and pumped through a "spinnerette," which resembles a showerhead. The chewiness of the "Cuts" can be changed by adjusting the stretch on the fibrils as they pass through the spinnerette.

University of Illinois food scientists Steinberg, Wei, and Nelson are taking a different approach. Starting with the whole soybean (oil and all), they have developed a wide range of foods from soy "milk" and "yogurt" to an ice cream-like dessert, custard, and flakes–and gotten rid of the normal "beany" or "painty" flavor by heating the beans to inactivate the enzyme that causes it.

Another approach is fortification of foods with soy flour or the missing amino acids. Some are working to extract protein from green leaves or from waste, others to grow single-cell protein.

Some of these approaches are little more than ideas, on which a great deal of research needs to be done. However for others, such as "various soy foods" and fish protein concentrate, the technology has been nearly or completely worked out, at least on a pilot scale, and "could theoretically be incorporated soon into the diets of protein-starved people. But the obstacles to such incorporation are substantial."

Note 1. This is the earliest English-language document seen (Aug. 2013) that uses the term 'soy "milk"' in connection with soy milk.

Note 2. This article was reprinted in the *Times of India* (New Delhi) on 16 Oct. 1974 (p. 6) under the title "Looking for new protein sources in war on malnutrition."

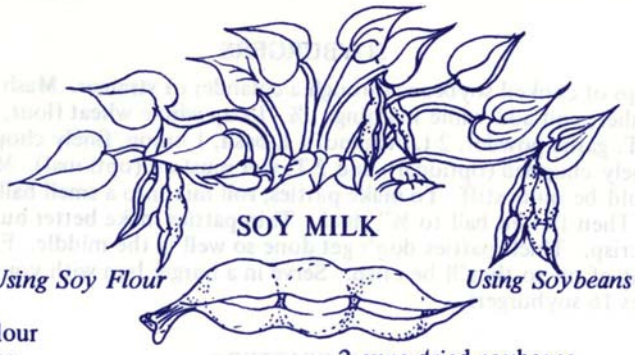
2580. Dinshah, Freya. 1974. The vegan kitchen. 9th ed. Malaga, New Jersey: The American Vegan Society. 48 p. Illust. Index. 29 cm. Spiral bound.
• ***Summary:*** A lifetime vegetarian, the author has been a vegan since 1959, and the Secretary of the American Vegan Society since 1960. Married to AVS President H. Jay Dinshah, she is an accomplished author, lecturer, and teacher. In this 9th edition, soy-related recipes include: Soya sprouts (p. 14). Soya patties (with soya flour, baked in an oiled dish, p. 23). Soya rounds (with whole soybeans, baked on a lightly oiled baking sheet, p. 24). Soya beans (dry roasted [soynuts], p. 25). How to shell green soya beans (p. 25). Soya loaf (with cooked soya beans, baked, p. 28). Soya butter (made with soya powder/flour, p. 29; this is not really soynut butter). Sesame/soya milk (with soya powder/flour and dates, p. 30-31; a photo shows a bag of Fearn Natural Soya Powder). Quick soya/tahini milk (with soya powder/flour, p. 32). Soya cheese Americana (tofu made with soya powder/flour and coagulated with lemon juice, p. 32). British Plantmilk cheese (tofu made with Plamil and lemon juice). Australian soya cheese (with soya powder, p. 33). Vegan soya/potato mayonnaise (with soya milk, p. 33). Basic jelled ice cream (with soya milk and agar-agar, p. 38).

The cover of this cookbook states: "Comprehensive total-vegetarian natural food system. Nutritionally balanced. Scientifically sound. Healthful and humane. Ethically unassailable. Ecologically superior. Recipes, menus, ideas, illustrations." Address: The American Vegan Society, 501 Old Harding Highway, Malaga, New Jersey.

2581. Farm, The. 1974. Yay soybeans! How you can eat better for less and help feed the world. Summertown, Tennessee: The Book Publishing Co. 14 p. Illust. 22 cm.
• ***Summary:*** This highly creative little booklet, printed with blue ink on white paper (a similar 1978 edition used brown ink on white paper), contains many original / pioneering soyfoods recipes (marked with an asterisk (*)). Contents: Living on soybeans. Some of our favorite ways to eat soybeans. Basic cooked soybeans: Soybeans and tortillas, Soybean stroganoff, Soyburgers, Soy fritters, Cheezy soybeans (Good Tasting Nutritional Yeast gives the cheezy flavor), Soy nuts (dry roasted), Soy coffee. Soy milk: Homemade using soy flour or using soybeans, Soy ice cream–"Ice Bean,"* (made with soy milk in vanilla or cocoa flavors), Soy yogurt* (p. 5, made with soymilk and starter from Chr. Hansen's Lab. in Milwaukee, Wisconsin). Soy flour: Basic salad and sandwich spread, Seasoned sandwich spread. Soy cheese* (made from fermented / soured soymilk), Soy cheesecake* (made with "soy cheese"), Cookie crust for cheesecake, Soy mayonnaise* (made with soymilk). Soy pulp [okara]: Introduction, Soy pulp burgers*, Scalloped potatoes and pulp, Soysage*, Protein spice cake (with soy pulp), Soy pulp cookies, and Soyola* (soy pulp granola). Eggless cookery: Introduction, Pancakes (with soymilk), Chocolate cake (with sour fresh soymilk), Soy soufflé (with soy flour). Good Tasting Nutritional Yeast: Introduction, Melty nutritional yeast "cheese," Nutritional yeast "cheese" crackers, Golden gravy. Nutrition of soybeans: Nutritional composition of 1 cup whole cooked soybeans, 1 cup sweetened soymilk, 1 cup mother's milk, 1 cup cow's milk. "We supplement our soymilk with vitamin A (150 mcg./cup), vitamin D (2.5 mcg./cup), and vitamin B12 (6 mcg./cup)." Composition of soymilk and soypulp (wet and dry, including PER). Some facts about people and food. Plenty.

Page 1 begins, "On The Farm we live on soybeans. They supply us with the protein part of our diet, taking the place of meat, fish, eggs, milk, and dairy products. We are complete vegetarians and don't eat any of those foods. We are growing 150 acres of soybeans this year to feed our community of 800 folks... We've been living, working, and growing on this diet for four years now, as a community, and many of us have been vegetarians longer than that. So far we've delivered 230 babies here on the Farm..." The last page notes that The Farm has "formed a new non-profit corporation called Plenty, with the following purposes, as stated in its charter: To help share out the world's food, resources, materials, and knowledge equitably for the benefit of all..."

The section titled "Soy Pulp" (p. 7) states: "If you make



SOY MILK

Using Soy Flour

4 cups soy flour
12 cups water

Bring water to a boil. Sprinkle soy flour into boiling water, stirring to prevent lumping. Lower heat (soymilk boils over easily so pay good attention) and simmer for one hour, stirring occasionally. (Some folks prefer to dip some of the boiling water out of the pot and mix it with the dry soy flour to make a paste, which is then poured into the remainder of the boiling water. This method prevents the lumps that sometimes form when dry soy flour is poured directly into the water.)

Using Soybeans

2 cups dried soybeans

Sort the soybeans and wash in cold water. Soak the soybeans until double in size – or overnight. (In hot weather, soak them under refrigeration. Slightly soured beans make thinner milk.) Rinse in colander after soaking.

Using three cups of water to one cup of soaked beans, liquefy in a blender or fine grind in a food grinder. Heat the mixture to a boil in a double boiler or heavy pot. Then simmer for 20 minutes stirring often.

Strain through a clean cloth (nylon, folded cheese cloth, diaper) placed in a colander or strainer. (For recipes using the pulp left in the cloth, see page 8 of this booklet.) Add a pinch of salt and sweeten the soymilk to taste. Serve it warm (delightful on a cold winter morning!) or chilled.

You can also flavor your soymilk with vanilla, almond, maple or other extracts, or with fruit or cocoa. Mixed in a blender, with a little oil, sugar and flavoring, it makes a smooth milkshake. Soymilk makes good puddings and soups, too. It can be made thicker or thinner, as desired, by adjusting the amount of water used. And it's good just plain, too.

Keep your soymilk refrigerated. It will sour overnight if left unrefrigerated in warm weather. (If your milk does sour, see page 6 of this booklet for how to make soy cheese out of it.)

SOY ICE CREAM – "ICE BEAN"

1¼ cups sugar
4 cups soy milk
a pinch of salt
¼ cup oil (more or less, depending on how rich you want it)
your favorite flavoring (e.g., 2 tsp. pure vanilla or 4 T. cocoa)

Blend ingredients together and pour mixture into your ice cream maker.

soymilk, you'll have soy pulp left in the cloth when your milk is done. Our soy dairy produces lots of pulp every day, and although the pulp contains less protein than the milk, the protein it has is high quality, so we've been putting our creative kitchen instincts to work developing new ways to use this nutritious foodage. We've found that soy pulp can be substituted for rice in many recipes. It also can be used in baked goods like cakes and cookies, where it gives a coconutty flavor when combined with sugar and vanilla extract..." Three recipes are given.

The last page is about "Plenty." "Living in Tennessee and eating our soybeans hasn't seemed like quite enough to be doing about world hunger and other areas of human need around the planet. So we have formed a new non-profit corporation called Plenty, with the following purposes, as stated in its charter:

"'To help share out the world's food, resources, materials, and knowledge equitably for the benefit of all.

"'To help and aid any people anywhere in the world who due to any natural or man-caused disaster such as drought, famine, flood, earthquake, tidal wave, weather imbalance, disease epidemic, storm, fire, insect devastation, crop failure, population imbalance, war, political oppression, religious oppression, racial discrimination, or greed, are in need of food, clothing, shelter, medical aid and supplies, resources, materials; agricultural, engineering, or scientific assistance or education; or anything else, to enable them to lead healthy, comfortable, responsible, and productive lives in the pursuit of happiness...

"'To accept donations, gifts, devises, bequests, and loans of food resources, materials, equipment, funds, stocks, bonds, and property of all kinds from any and all sources to help achieve the purposes of the corporation;

"'To establish and coordinate a group of volunteer workers who will help achieve the purposes of the corporation; such volunteers will not be salaried, but will receive only necessary subsistence...

"'To enter into any partnership or union of interest with others... or produce food, resources, materials, funds, or knowledge that will help achieve the purposes of the corporation;

"'To establish and operate orphanages and foster homes to care for and provide homes for orphans from all countries of the world...

"'To help and aid in finding homes with adopting parents for orphans from all countries of the world, and to help these orphans settle in these homes with adopting parents...'

"We really do have Plenty. Let's spread it around!

"For further information, write: Plenty, Route 1, Box 289, Summertown, Tennessee 38483."

Note 2. This is the earliest English-language document seen (June 2013) that uses the term "soy pulp" or the word "soypulp" to refer to okara.

Note 3. This is the earliest document (Oct. 2001) seen that contains a recipe for a soy cheesecake (one of two documents).

Note 4. This is the earliest document seen (June 2013) that uses the word "soysage" to refer to a meatless sausage-like food product in which soy pulp is the major ingredient. Whereas the original 1943 Soysage was a meatless dry mix, a yellow meal containing soy flour, peanut flour, cottonseed flour, etc., this Soysage is ready to be sliced and fried.

Note 5. This is the earliest document seen (Jan. 2010) concerning Plenty (Summertown, Tennessee).

Note 6. This is the earliest document seen (Feb. 2002) that mentions tofu (called "soy cheese") in connection with The Farm.

Note 7. This is the third earliest publication seen (Jan. 2003) in the SoyaScan database under the subject heading "Soyfoods Movement." Address: Tennessee.

2582. **Product Name:** [Marusan Soymilk (Plain, or with Barley Malt Syrup and Konbu); Mineral Soymilk (Plain, or with Barley Malt)].
Foreign Name: Marusan Doujan (or Doujang) (Plain or Bakuga-iri); Mineraru Doujan (or Doujang) (Plain or Bakuga-iri).
Manufacturer's Name: Okazaki Marusan K.K. (Marusan-Ai Co., Ltd.).
Manufacturer's Address: 1 Aza Arashita, Niki-cho, Okazaki-shi, Aichi-ken 444-21 Japan.
Date of Introduction: 1974. October.
Wt/Vol., Packaging, Price: 180 ml foil retort pouch (Doi-Pak).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. Tonyu [Soymilk. 2nd ed.]. p. 72. In Oct. 1974 Okazaki Marusan introduced 4 soymilk products, each in 180 ml Doi Pak: Mineraru Doujan, Mineraru Doujan Bakuga-iri, Marusan Doujan, and Marusan Doujan Bakuga-iri.

Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Okazaki Marusan first made commercial soymilk in Japan in 1974.

Label. 1983. Tetra Brik carton, 200 ml. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center; Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-68, 70-71. Their first soymilk, called Doujang (or Doujan, the Chinese word for "soymilk") contained extracts of pearl barley and konbu (a mineral-rich sea vegetable) and was sold at health food stores. In 1979 they introduced a 250-ml gable top carton and in 1980 a 200-ml Tetra Brik. By 1982 Marusan was Japan's second largest soymilk manufacturer. They may have been the largest, since much of their soymilk was sold in bulk to other companies, who repackaged it and sold it under their own brands.

Soya Bluebook. 1987. p. 90.

2583. Spira, Ruth Rodale. 1974. Naturally Chinese. Emmaus,

Pennsylvania: Rodale Press, Inc. iii + 346 p. Illust. Index. 25 cm. [8 ref]

• ***Summary:*** Soy-related recipes include: Deep-fried bean curd with sesame sauce (p. 91, with "4 cakes bean curd," each of which is cut into 9 pieces, dried on paper toweling, then deep fried at 375ºF). Chicken and bean curd stick soup (p. 109, with "¼ pound bean curd stick" [dried yuba sticks]). Bean curd and greens soup (p. 115, with "1½ pieces fresh bean curd" [tofu]). Stir-fried eggs with soybean sprouts (p. 226). Stir-fried eggs with bean curd (p. 227, with "2 fresh bean curd cakes or 1/3 pound homemade bean curd"). Bean curd sautéed with eggs (p. 258, with "4 cakes fresh bean curd"). Stir-fried bean curd with black mushrooms (p. 259). Stir-fried bean curd with squash (p. 260). Homemade bean curd with soybeans (p. 261-62, curded with vinegar or gypsum / calcium sulfate. The residue [okara], which is called "Soybean pulp, may be added to ground beef up to a 1 to 2 ratio." Step 8. "Remove curd from bag and mix with salt" is a new invention in making tofu–which ends up with a texture like cottage cheese and seasoned with salt). Homemade bean curd with soybean powder (p. 262-63, curded with vinegar or gypsum). Celery cabbage creamed in soy milk (p. 269, with "4 heaping teaspoons soybean powder." "2. Place soybean powder and water in a pint jar. Tighten lid and shake well. Add cornstarch and honey to soybean 'milk'"). Soybean sprouts with celery (p. 273). Spinach in soy sauce (p. 276). Vegetarian dish of the Buddhists (p. 277-78, with "2 ounces dried bean curd" [probably dried yuba sticks] and "3 cakes fresh bean curd").

"A guide to Chinese cooking ingredients" (p. 289-324) and "Glossary" (p. 325-26) describe: Bean curd (dow foo–tofu, incl. pressed curd {firmer}, canned bean curd {somewhat less creamy than the fresh}). Bean curd, dried (foo jook [dried yuba sticks]; tiem jook is sweeter than foo jook). Bean curd cheese (fooh yu [fermented tofu]). Bean paste, yellow (wong dow sa). Bean sauce, brown (min see jeung). Beans, black soy (kei tou). Beans, black fermented (dow see; these black soybeans are fermented, dried and salted). Hoisin sauce (hoy sin jeung. "A soybean-based sauce..."). Soybean sprouts (Da dow ngah).

Photos show: (1) Three squares ("pillows") of pressed bean curd. (2) A box of "Dried bean curd" [foo jook] (p. 296). (3) Black soybeans (enlarged) (p. 299). (4) A bag full of "Salted black bean (spiced)" (fermented black beans). Made by Koon Chun Sauce Factory, Hong Kong. (p. 300). Note: As of Nov. 2011 the company (in the New Territories, Hong Kong, with a website) is named "Koon Chun Hing Kee Soy & Sauce Factory Ltd."

2584. Stone, David E. 1974. Profile: Francis E. Calvert pioneer of soybean protein. *Food Engineering* 46(10):40, 42. Oct.

• ***Summary:*** Francis Earle Calvert was born in 1912 in Cambridge, Massachusetts. He was selected by Henry Ford to be part of a special group attending Ford's Wayside Technical School in Sudburry, Massachusetts. There was no tuition–a Godsend during the Great Depression. Then he attended Ford's Edison Institute at Dearborn, Michigan. Calvert's introduction to the soybean came directly from Ford himself–in the early 1930s. One day the great entrepreneur dropped in lugging a 100-pound sack of soybeans, saying that there must be something valuable in them since Orientals had been using them for 4,000 years. He challenged the young students to find out how to use them.

He and his young co-workers at the Greenfield Village laboratory had developed a destructive distillation process. It decomposed the soybeans using heat in a closed container. Later Calvert helped to design a new solvent extractor for soybean built like an Archimedes screw; it removed soybean oil using a counter-current solvent. Soon Calvert, and colleague Robert Boyer, were making spun protein fibers for upholstery in Ford cars, as well as plastic car parts.

Because soybeans were hard to get, the young men had to grow their own. They planted several thousand acres of soybeans, then had to develop mechanical equipment to harvest them. Now they set out to adapt them to human consumption. In 1936 the lab delivered fortified soymilk to Dearborn families, made a soy sherbet that was sold in the Ford employee cafeteria, and canned green soybeans for use as a vegetable.

Why do soybeans have a bitter taste? Its a survival mechanism.

The Drackett Corporation hired Calvert, and shortly thereafter they purchased the Ford Textile Fiber Division. They put Calvert in charge of basic protein research. In 1949 he was appointed research director at Drackett. In 1962 Calvert joined Ralston Purina Co. in special soy products research. He retired in Aug. 1973. Address: Product Mgr., Food Protein Div., Ralston Purina Co.

2585. Amchem Products, Inc. 1974. The soybean cookbook. Ambler, Pennsylvania: Amchem Products, Inc. 16 p. Nov. 21. 22 cm.

• ***Summary:*** "Acknowledgements: Most of the recipes contained in this booklet were prepared by: Miss Areva M. Abernathy, Univ. of Missouri; Univ. of Hawaii Extension Division; Miss. Dorothea Van Gundy Jones; Frances O. Van Duyne, Univ. of Illinois." Contents: The new food–Soybeans. History. Why use soybeans? Soybean varieties: Vegetable type and field variety. Soybeans are used in many forms: Green soybeans (served as a hot vegetable dish), freezing, canning. Soy flour and grits (14 recipes). Dried soybeans (9 recipes). Making and using soy milk (3 recipes). Grits (1 recipe). Soy sprouts (how to make + 5 recipes). Roasted soybeans (deep fat roasting or oven roasting; 2 recipes). Address: Ambler, Pennsylvania.

2586. *SoyaScan Notes.* 1974. Chronology of soybeans, soyfoods and natural foods in the United States 1974 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1974 March. The first issue of *Vegetarian Times* published by Paul Obis in Chicago.

1974 April. Bob Gerner (of Westbrae) and William Shurtleff (guide) travel throughout Japan searching for quality sources of traditional miso and soy sauce. Right after the trip, Westbrae starts importing these products.

1974 Aug. 9. President Nixon, elected in 1968 and 1972, resigns after the Watergate scandal. Gerald Ford succeeds him as president. Butz continues as Secretary of Agriculture.

1974. Brazil passes West Germany to become the world's second largest soybean crusher, after the U.S.

1974 late. Miles Laboratories / Worthington introduces the Morningstar Farms line of meat analogs based on spun soy protein fiber. Sold nationally at U.S. supermarkets.

1974 late. The Farm in Summertown, Tennessee, publishes *Yay Soybeans!*, a 14-page booklet containing many innovative soyfoods recipes, such as "soy ice cream–ice bean," soy yogurt," "soy cheese," "soy cheesecake," "soy mayonnaise," and "soysage" (a meatless okara & soymilk sausage). Most of the dairylike products were made with fresh or cultured soymilk. The Farm now grows 150 acres of soybeans to feed its community of 800 people. It has just established Plenty, a non-profit corporation "To help share out the world's food, resources, materials, and knowledge equitably for the benefit of all."

1974. The Farm in Summertown, Tennessee, publishes *Hey Beatnik*, which contains the earliest know use of the term "Soy Dairy." The Farm's soy dairy now makes 60 gallons of soymilk a day at a total cost of $0.30 per gallon.

1974. *Tofu Recipes*, the first book on tofu in English, written and self-published by Grace Kikuchi in Ann Arbor, Michigan. Spiral bound and 47 pages long, it gives a recipe for homemade tofu and uses tofu largely with fish and meat.

1974 Nov. World Food Conference in Rome. Delegates from 130 UN member countries adopt an international strategy to overcome world hunger and malnutrition.

1974-1975? Eden Foods starts to import natural foods, including miso and shoyu, from Japan.

2587. Stapleton, Thomas. 1974. Infant feeding in the People's Republic of China. *PAG Bulletin* (*Protein Advisory Group, WHO / FAO / UNICEF*) 4(4):31-33. Dec. Abstracted from Notes by a Visitor to China. [1 ref]
• ***Summary:*** "To nearly every medical observer who visits China, one of the most remarkable achievements is the virtual elimination of infant and childhood malnutrition." Breastfeeding and cow's milk have played an important role in this process. "In the early stages following Liberation, when cow's milk was in short supply, the Chinese developed a number of infant foods prepared from locally grown products, such as rice and soybeans." Address: Prof. of Child Health, Univ. of Sydney, Australia.

2588. **Product Name:** Promocaf (Soy Protein Concentrate Calf Milk Replacer).
Manufacturer's Name: Central Soya Co., Chemurgy Div.
Manufacturer's Address: 1825 North Laramie Ave., Chicago, IL 60639.
Date of Introduction: 1974.
New Product–Documentation: Central Soya Technical Service Bulletin. 1974? (Undated). "Product information sheet. Promocaf–Soy protein concentrate." "1. Definition. Promocaf is a soy protein concentrate developed by Central Soya's Chemurgy Division for use in animal rations; its application in calf milk replacers has proved particularly effective." It contains 70.0% protein (minimum) on a moisture-free basis. It is a cream-colored powder ground to 100 mesh particle size. Gives the nutritional composition, typical amino acid composition, and vitamin and mineral content. Note: The Chemurgy Div. is located at 1825 North Laramie Ave., Chicago, Illinois 60639.

Soya Bluebook. 1983. p. 64; 1984. p. 63.

2589. Chattaraj, J.; Ray, T.K. 1974. Utilization of soybean for the manufacture of milk and milk products. Unpublished data cited from National Dairy Research Inst. (NDRI), Karnal, Annual Report, 1974. *
Address: India.

2590. Farahat, S.E.; Abou El-Ella, W.M.; Mahran, G.; Hofi, A.A. 1974. The use of soy milk in fermented milk (Zabadi) manufacturing. *J. of Agricultural Research* (*Riyadh, Saudi Arabia*). 1:187-93. *
Address: Dep. of Food Science, Ain Shams Univ. Cairo, Egypt.

2591. Haque, M.M.; Rahman, K.; Begum, J.A. 1974. Studies on the utilization of soybean and soybean products. A Project Report: BSc (Agric. Engineering) Final Exam. Dept. of Food Technology and Rural Industries, Bangladesh Agricultural University, Mymensingh. Summarized in Soybean Research Abstracts (Bangladesh). 1978. p. 58.
• ***Summary:*** Three locally grown soybean varieties (C.N.S., Barmili, and C-Malaya) were analyzed for their nutritional composition. They contained 10.35% moisture, 45.2% protein, 18.35% fat, and 5.42% ash. They were made into soy biscuits (with wheat flour, and containing 18% protein) and soymilk, both of which were found to be acceptable to a taste panel.

Note: This is the earliest document seen (Oct. 2010) concerning soybeans in Bangladesh, or the cultivation of soybeans in Bangladesh after it became an independent nation in 1971. This document contains the earliest date seen for soybeans in Bangladesh, or for the cultivation

of soybeans in Bangladesh (1974) after it became an independent nation in 1971. It was named East Pakistan from 1947 to 1971. Before 1947 it was part of Bengal. Address: Dep. of Food Technology and Rural Industries, Bangladesh Agricultural Univ., Mymensingh, Bangladesh.

2592. Hinojosa, G.R.L.; Moretti, R.H. 1974. Contribuicao ao estudo de concentracao de leite de soja [Contribution to the study of the concentration of soymilk (Abstract)]. *Suplemento de Ciencia e Cultura, Resumos* 26(7):433. Presented at the 26th Reuniao Anual da Sociedade Brasileira para o Progresso da Ciencia. Sao Paulo. 1974. [Por]* Address: Brazil.

2593. Kay, Theodore. 1974. Le soja dans le regime alimentaire Nigerian [Soybeans in the Nigerian diet]. See p. 19-24. Unpublished manuscript. [Fre]
• ***Summary:*** Contents: Suggestion for incorporation in cooking: Soya bean paste and whole beans (not dehulled). Utilization of the paste: A. Directly (mix with flour of wheat or corn and beaten eggs to make deep-fried balls). B. To prepare soya bean milk: (a) From the paste with boiling water. (b) Using the Cornell method from soymilk. Use of the residue from preparation of soy bean milk [okara]: In biscuits, etc. Utilization of whole soya beans: baked, sweet baked powder, stew.

Recipes from the Mission of Toussiana (Upper Volta). 1. Sumbala, an aromatic product usually made from néré seeds was developed by the Centre Ménager [a family assistance center] of Toussiana. It is ready after 3 days. 2. Soymilk. 3. Soy fritters (deep fried balls made from soy flour, and seasoned with salt and pimento). 4. Soya Faros (a small white tuber whose nutritional value can be greatly improved if served with soy flour in a preparation steamed in leaves). 5. Soya *To*, a porridge made traditionally with sorghum and millet flour, but fortified with soy flour. Address: Inst. for Agricultural Research, Samaru, Ahmadu Bello Univ., PMB 1044, Zaria, Nigeria.

2594. **Product Name:** Soy Beverages.
Manufacturer's Name: Mandalay Food Products Inc.
Manufacturer's Address: 450 Broome St., New York, NY 10013.
Date of Introduction: 1974.
New Product–Documentation: Soya Bluebook. 1983. p. 62. John Tun, Mgr. Talk with Thein Win. 1987. Dec. 29. He is from Burma.

2595. **Product Name:** [Soymeal brand Soymilk (Sweetened, or Orange)].
Foreign Name: Soymeal.
Manufacturer's Name: Nikken / Tokyo Soymeal Co.
Manufacturer's Address: Nakakami-cho 110, Akishima-shi, Tokyo 196, Japan. Phone: 0425-43-1815.
Date of Introduction: 1974.
How Stored: 7 oz Pure-Pak cartons. Retail prices: See below.
New Product–Documentation: Shurtleff & Aoyagi. 1979. *Tofu & Soymilk Production.* Page 229 gives a detailed description of the process for making Soymeal brand soymilk based on a plant visit by William Shurtleff in 1977. It states: "The Nikken Company in Tokyo is a large maker of both sweetened and orange soymilk, producing about four thousand 7-ounce Pure-Pak cartons daily at the rate of 5,000 cartons per hour. In 1977, the sweetened soymilk sold for $0.21 per carton and the orange for $0.28. The former contains 12.1% solids (8.5% before formulation), 3.0% protein, 3.2% fat, 5.5% sugars, and 0.51% ash. The remarkably long shelf life (20 days) is made possible by strict cleanliness and thorough pasteurization. The live bacteria count per milliliter of milk averages 30; the legal limit for soymilk is 3,000 and for dairy milk 50,000. The total equipment, which is mostly modern stainless steel, was worth $230,000 at 1977 prices not including the packager which was worth $46,000. The patent holder for the process, Mr. Kanji Tsuchiya, is extremely helpful and has over 30 years of experience making soymilk."

Page 313 gives the company's name as "Nikken (Soymeal Co.)," the address, and phone number.

Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Tokyo Soymeal first made commercial soymilk in Japan in 1974.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64. The company name is given as "Tokyo Soymeal."

2596. **Product Name:** Soyamilk.
Manufacturer's Name: Soyghurt Food Products & Co.
Manufacturer's Address: Wardha Rd., Sitabuldi, Nagpur 440012, Maharashtra (MS), India.
Date of Introduction: 1974.
New Product–Documentation: S.L. Kothari. 1975, Nov. "Soyamilk: An ideal food." 13 p. This company was started in about 1974 by Dr. S.L. Kothari, formerly of the Dep. of Food Science & Technology, G.B. Pant Univ. of Agriculture and Technology, Pantnagar (Nainital), UP, India.

Letter from Peter Chowfin. 1983. The company (Soy Ghurt Food Products & Co.) was started in 1974-75.

2597. Altschul, Aaron M. ed. 1974. New protein foods. Vol. 1A. Technology. New York, NY: Academic Press. xiv + 511 p. [1750* ref]
• ***Summary:*** Contains 10 chapters by various authors. Five of these are cited separately. Address: Dep. of Community Medicine & International Health, Georgetown Univ. School of Medicine, Washington, DC.

2598. Altschul, Aaron M. 1974. Protein food technologies and the politics of food: An overview. In: A.M. Altschul, ed.

1974. New Protein Foods. Vol. 1A. Technology. New York: Academic Press. 511 p. See p. 1-38. Chap. 1. [43 ref]
• ***Summary:*** Contents: 1. The food problems–Political imperatives: General considerations, problems of insufficiency, problems of affluence. 2. The special role of protein: When food supply is limited, when food is abundant, protein in the abstract, implications. 3. Means for increasing protein supply. 4. The introduction of new food technologies: The role of the technology community, technology assessment. 5. The role of government: In the development of technology, reorientation of ongoing activities, food regulations, setting priorities. 6. Politicians and the scientific and technology community. 7. Commentary.

Page 26 states: Incaparina, developed by the Institute of Nutrition of Central America and Panama (sponsored by USAID), showed that "solely vegetable food mixtures could be formulated to supply all the protein and other nutrient needs of infants."

CSM, consisting of corn, soy flour, and dry milk, has been widely distributed by the U.S. government as a donation in times of crisis; it is not sold commercially.

"Bottled protein beverages on the soft drink model, pioneered by Vitasoy in Hong Kong, are being sold in Guyana, Surinam, Brazil, Thailand, and India. Some of these are carbonated." Most use soy as the source of low-cost protein. Address: Georgetown Univ. School of Medicine, Washington, DC.

2599. Ciancio, Pedro N. 1974. La soja y el problema alimentario del Paraguay. ed. 2 [The soybean and Paraguay's nutritional problem. 2nd ed.]. Asunción, Paraguay: Imprenta Nacional. 585 p. 22 cm. [50 ref. Spa; eng]*
• ***Summary:*** At head of title: *Ciencia de la nutrición* (*metabolismo*). Address: Prof., Dr., Asunción, Paraguay.

2600. Cottrell, Edyth Young. 1974. Soybean magic. Loma Linda, California: PHMS. 17 p. 12 cm. Accompanied by a color slide show.
• ***Summary:*** A title and brief description of each of the 79 slides is given. Address: Research Nutritionist, Loma Linda Univ. School of Health, Loma Linda, California.

2601. Cottrell, Edyth Young. 1974. The oats, peas, beans & barley cookbook. Santa Barbara, California: Woodbridge Press. 271 p. Illust. Index. 24 cm.
• ***Summary:*** This very creative Seventh-day Adventist vegetarian cookbook, featuring nature's most economical foods, contains 450 recipes including many using soybeans and gluten (see p. 59-68), and many color photos. One acre of soybeans will supply 34 times as many calories, 49 times as much protein, and 33 times as many vitamins as beef produced on one acre. Soy-related recipes include: Garbanzo-soy-oat patties with Brazil nuts (p. 39). Soybeans–Prairie gold (Boiled soybeans, p. 51. Freezing soaked soybeans helps to shorten the cooking time. The use of soft or spring water in soaking and cooking also helps to reduce the cooking time. The author adds salt to soybeans after they have been boiled for at least 1 hour. Baked soybeans (p. 52). Soy-oat patties with tomato sauce (with whole soybeans, p. 53). Tofu (p. 54, curded with calcium lactate or calcium carbonate, then seasoned with Vegex or Savorex). Creamed curd cheese: May be used as cottage cheese (p. 55; made with tofu curds and soy sour cream). Scrambled tofu (p. 56). Rice with tofu–Chicken style (p. 56-57). Home-baked bread (with soy flour, p. 70-76). Modified pioneer bread (with soy flour, p. 81). Pioneer soy bread (p. 82). Soy-oat waffles (p. 109). Barley-soy waffles. Cornmeal-soy waffles. Millet-soy waffles (p. 111). Rice-soy waffles (p. 112). Soya French toast (p. 116). Cornmeal with soy grits (p. 117). Corn granola (with soy flour, p. 118). Good earth granola (with soy flour, p. 119).

One chapter, titled "Soybean Magic" (p. 121-26) contains the following soy-related recipes: Soybean concentrate: Replaces milk and eggs in many recipes (Note: This is fresh soybean puree, or gô, made with the hot water grind method). Soy milk and concentrated soy milk. Cream sauces. Soy whipped topping. Soy cream. Soy sour cream. Sweet cream custard sauce.

Whipped soy topping (with fortified soy milk powder, p. 141). Cabbage baked in 'soy sour cream' (p. 165). Cauliflower baked in soy cream (p. 167). Soy mayonnaise (with concentrated soy milk, p. 195). Savory yeast spread with soy milk, p. 196).

Pages 255-67 give a nutritional analysis of each of the recipes in this book. A photo on the rear cover shows Cottrell. A second edition was published in 1980 by Woodbridge. As of early 1993 some 157,000 copies of this book are in print. Address: Research Nutritionist, Loma Linda Univ. School of Health, Loma Linda, California.

2602. Cristofaro, E.; Mottu, F.; Wuhrman, J.J. 1974. Involvement of the raffinose family of oligosaccharides in flatulence. In: H.L. Sipple and K.W. McNutt, eds. 1974. Sugar in Nutrition. New York, NY: Academic Press. See p. 313-26. *
• ***Summary:*** α-Galactosidase is useful in removing raffinose and stachyose from soymilk and soy whey.

2603. Dawson Mills. 1974. Annual report. Dawson, Minnesota. 16 p. 22 x 28 cm.
• ***Summary:*** The "Manager's report," by Joe Givens (p. 1-2), notes that the fiscal year ended 31 Aug. 1974 was "an extraordinary year in the life of your cooperative. New records were established in all phases of your business. Net savings for patrons reached a new high of $7,039,188. Over 13 million bushels of soybeans were processed into oil and meal. Prices paid for soybeans were at the highest in our history and averaged $6.01 a bushel." "A Soy Specialties

Division has been established... The processing equipment being installed in the new soy specialties tower should be operational in early 1975. A new product development and technical service laboratory is also under construction."

A page titled "DawSoy" states: "The world's requirement for food and especially for vegetable protein is ever increasing. The new soy food specialties plant provides Dawson Mills the opportunity to be involved in meeting this pressing need" by manufacturing soy grits, soy flour, and textured soy flour. "By using various heat treatments, soy flour and grits provide materials with a wide range of applications. Lightly toasted soy flour in combination with wheat flour produces a high protein material used in baking products. Moderately toasted flour and grits are used extensively in the pet food and milk replacer industries. Toasted soy grits combine with various grains to improve the nutritive value of these many food products. Textured soy flour is a fibrous material which is used to simulate meat in many meat and food products."

Pages then show: Patronage refunds by state (Minnesota, South Dakota, Iowa, and North Dakota), and within each state by cooperative elevator name. A decade of progress (processing and financial statistics 1965-1974). Bushels of soybean processed 1952-1974. Balance sheet. Contains many photos–both color and black-and-white. Address: Dawson, Minnesota. Phone: 612/769-4386.

2604. Estado do Rio Grande do Sul, Assembleia Legislativa, Comissao de Agricultura e Pecuaria. 1974. $oja [Soja] [Soya]. Rio Grande do Sul, Brazil: A Comissao. 414 p. No index. 23 cm. [53 ref. Por]
Address: Rio Grande do Sul, Brazil.

2605. Fomon, S.J. 1974. Infant nutrition. 2nd ed. Philadelphia, Pennsylvania: W.B. Saunders Co. xiii + 575 p. Illust. Index. 25 cm. [84+* ref]
• ***Summary:*** Soy is mentioned on pages 136, 223, 381, 386-89. Address: Dep. of Pediatrics, College of Medicine, Univ. of Iowa, Iowa City, IA 52242.

2606. Fomon, Samuel J.; Filer, L.J., Jr. 1974. Milks and formulas. In: S.J. Fomon, ed. 1974. Infant Nutrition. 2nd ed. Philadelphia, Pennsylvania: W.B. Saunders Co. xiii + 575 p. See p. 359-407. Chap. 15. [169* ref]
• ***Summary:*** A full-page table (Table 15-9. p. 381) titled "Examples of commercially prepared formulas with protein from soy isolate or soy flour" gives a detailed composition of each of the following two groups, each of which contains fats in the form of vegetable oils and carbohydrate in the form of corn syrup solids and/or sucrose: (1) Protein source–Soy isolate: Isomil (Ross Labs.), Neo-Mull-Soy (Syntex), ProSobee (Mead), and Nursoy (Wyeth). (2) Protein source–Soy flour: Sobee (Bristol Myers–* Not marketed in the United States). Mull-Soy (Syntex).

Soy is discussed in detail in the section on "Milk-free formulas and special formulas" (p. 386-90). This section begins: "Milk-free diets are utilized most commonly in management of infants who are allergic to milk or suspected of milk allergy" (p. 386).

The subsection on "Soy-based formulas" (p. 387) contains a good history of the development of such formulas: "In the United States in the 1950s and 1960s, formulas with protein contributed from soy flour were utilized as milk substitutes. Although more satisfactory than most other milk substitutes available at the time, parents complained that the formulas produced loose, somewhat malodorous stools that stained the diapers and not infrequently resulted in excoriation of the diaper area. The formulas were pale tan in color and had a slightly nutty odor.

"Formulas based on soy flour are rarely used in the United States at present. However, a great deal of information is available from animal studies and clinical experience With such formulas as Mull-Soy and Sobee (Table 15-9). Bebenago [Bebe Nago] (Nago) and Lactopriv (Töpfer

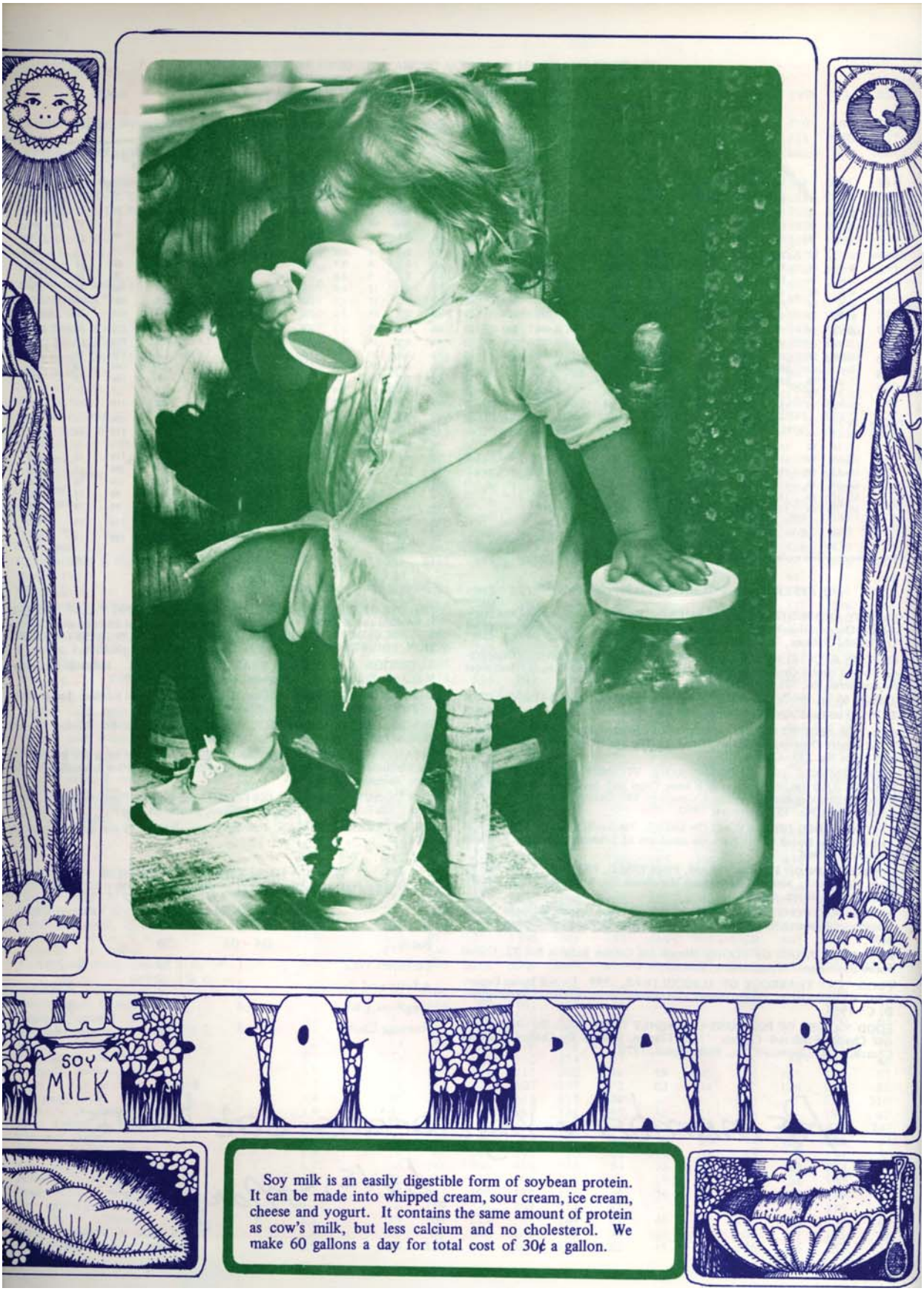
Topfer) are soy flour-based formulas marketed in Europe.

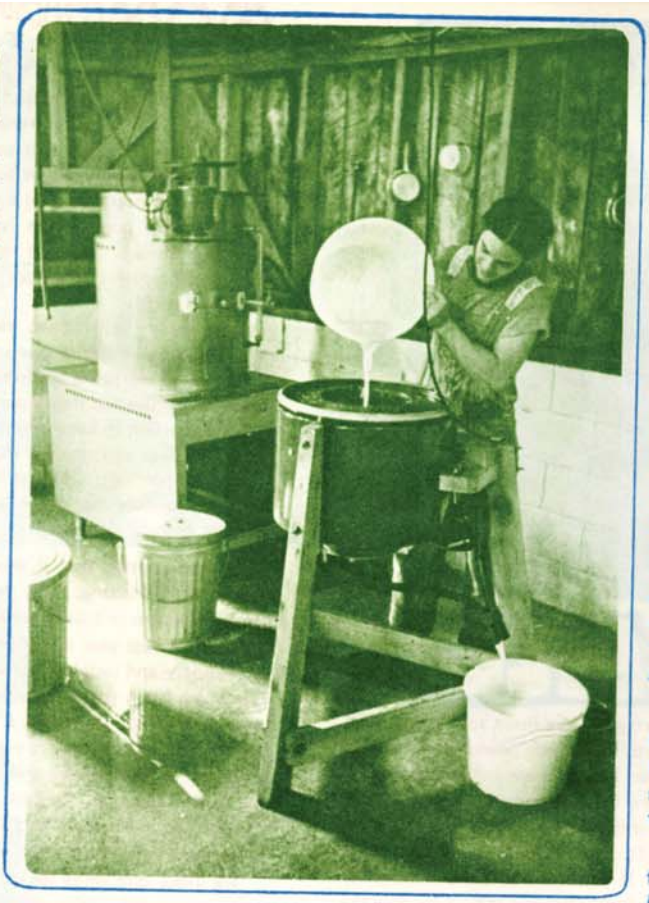
"In the mid 1960s, formulas with protein from water-soluble soy isolates rather than from soy flour became popular in the United States, and early in the 1970s these formulas almost completely replaced soy flour formulas. Soy-isolate formulas * are white in color, nearly odorless and are rarely reported to cause loose or malodorous stools. Unofficial estimates by manufacturers of infant formulas suggest that, in 1973, about 10 per cent of infants in the United States were fed soy-isolate formulas. Examples of soy-isolate formulas are included in Table 15-9."

Footnote: *"For convenience we have referred to soy protein isolate based formulas as 'soy isolate formulas' or 'soy isolate-based formulas.'" Address: Iowa.

2607. Gaskin, Stephen; Farm, The. 1974. Hey beatnik! This is The Farm book. Summertown, Tennessee: The Book Publishing Co. 100 p. Illust. No index. 28 cm. Pages are unnumbered.
• ***Summary:*** The Farm is a community of 600 people living on a 1,700 acre farm in Summertown, Tennessee. They have about 300 acres under cultivation, and during the summer about 200 of this is in soybeans. They practice a complete and total vegetarian diet; no one eats flesh foods or dairy products, drinks alcohol, or smokes tobacco. They do this for religious reasons, to be compassionate to animals and to leave enough food for everyone. "It is so grossly uneconomical and energy expensive to run soybeans through a cow and then eat the cow instead of just eating the soybeans that its virtually criminal."

One two-page spread titled "Yay Soybeans!" begins: "Here's a spiritual reason for being a vegetarian. You can





We fortify our milk with a standard dairy vitamin mixture containing vitamins A, B1, B2, D2, niacin, iron and iodine. We also add vitamin B12. Supplemental calcium can also be added.

Here's a recipe for making soy milk at home: Soak 4 cups of dry yellow soybeans overnight in cold water. Drain and rinse. Grind to a paste in a hand mill or blender. Add 1 gallon of water to the paste. Simmer one hour in a large double boiler, stirring frequently. Let it cool some, but keep stirring to keep the milk from "skinning." Strain through a diaper or cheesecloth to remove the pulp. Wring out the cloth with your hands until the pulp is fairly dry. Add a pinch of salt, and sugar to taste. Yield: 3 quarts.

In our soy dairy we use a slightly different process. We grow or buy bulk soybeans, which are cleaned in a small clipper-type seed cleaner. Then we grind them into grits—a little finer than cracked wheat. Next the grits are sifted to remove a certain amount of fine flour generated during grinding.

We make milk in 15-gallon batches in a large propane-fired double boiler equipped with a stainless steel stirrer driven by an electric motor. It takes 22 pounds of grits per batch, and each batch gets cooked at a simmering temperature for one hour. During cooking the grits soak up about an equal weight of water and double in volume. They're separated from the milk by pouring the mixture through a basket centrifuge, which works on the same principle as the spin-dry cycle in a washing machine. Then the milk is cooled and stored in a 100-gallon bulk milk tank, which has a built-in refrigeration unit. Vitamins and a little salt are added, and the milk is distributed to folks around the Farm the next day in milk cans and gallon bottles.

Our double boiler is made from a restaurant-sized coffee urn. We got it for $15 at an army auction. The basket centrifuge was made from an old front-loading washing machine, also obtained at an auction ($5). We removed the basic spinning basket, outlet hoses, motor and drive belt, and built a stand out of oak 2x4 to hold it as shown in the picture. The inside of the spinning basket is divided into three sections. We cut a double layer of standard aluminum window screen to fit each section. These screens need to be replaced about once a week.

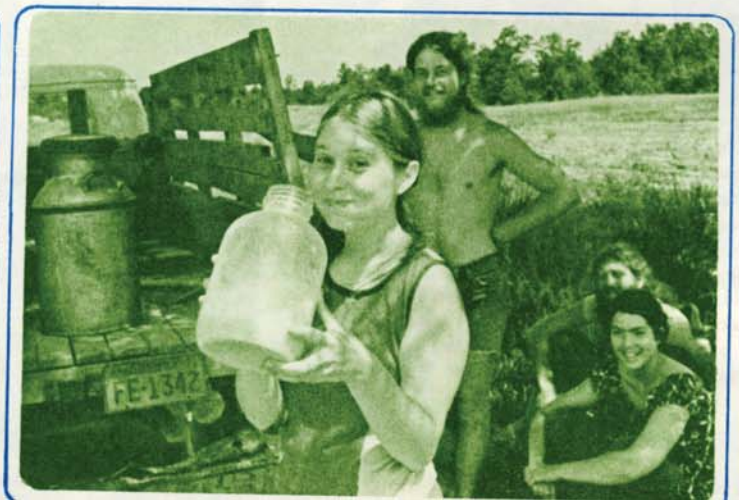
An alternate method, which we haven't tried but which would surely work, would be to use a press such as an old wine or cider press to squeeze the milk out of the pulp.

The bulk milk tank we got used for $150. The *Tennessee Farmer's Market Bulletin* frequently lists bulk milk tanks for sale. Most states probably have such a publication, and it would be a good place to look for equipment. Farm auctions are another good place to look.

Please write to the soy dairy if you have any questions about soy milk, or stop by for a visit and tour, and we'll be happy to give you a glass of milk to taste.

Love,

Alexander & the Soy Dairy



get ten times as much protein growing soybeans than eating beef cattle. If everyone was vegetarian, there would already be enough to go around, and no one would be hungry." It contains recipes for: Soy milk. Soy cheese (let soy milk stand in a warm place until the curd has separated from the whey, then boil the curds with salt, drain and press). Soy yogurt (cultured). Soy butter (made with 3/4 cups each soy flour and water, 1 teaspoon salt, and 1 cup oil). Soy mayonnaise. Granola (with soy flour). Raw gluten. Gluten roast. Fried gluten. Gluten burritos. Soybean stroganoff.

Another two-page spread is titled "The Soy Dairy: Soy Milk," by Alexander and the Soy Dairy. It begins: "Soy milk is an easily digestible form of soybean protein. It can be made into whipped cream, sour cream, ice cream, cheese and yogurt. It contains the same amount of protein as cow's milk, but less calcium and no cholesterol. We made 60 gallons a day for total cost of 30 cents a gallon." There follows a description of exactly how The Farm's soy dairy makes soymilk, what equipment is used, and where it was obtained. The text ends: "Please write to the soy dairy if you have any questions about soy milk, or stop by for a visit and tour, and we'll be happy to give you a glass of milk to taste. Love, Alexander and the Soy Dairy."

This book is loaded with wonderful photos, including: (1) Shunryu Suzuki, roshi. (2) A large field of soybeans. (3) Three long-haired members of The Farm eating (L-R): David Chalmers, Charles Hunnicutt, and Wilbur Jordan. (4) A little girl, Susannah Frohman, sitting on a stool drinking a cup of soymilk, with her other hand on a gallon jar of soymilk. (5) The inside of the soy dairy. (6) Leslie Jordan happily drinking soymilk from a gallon jar in front of a truck that is delivering soymilk in milk cans. Standing by the truck is Roger Kanies. Mitchell and Nancy Shapiro are sitting on the ground nearby. (7) Many views of Stephen Gaskin. (8) Growing, harvesting, crushing, and cooking sweet sorghum for use as a sweetener (a light, sweet syrup). Address: Summertown, Tennessee.

2608. Hannaford, Kathryn. 1974. Cosmic cookery. Berkeley, California: Starmast Publications. xixd + 264 p. Illust. by Lorena Laforest. 21 cm.
• ***Summary:*** This vegetarian cookbook contains 190 recipes created and tested at the communal One World Family Natural Foods Restaurant. Page 35 lists uses and seasonings of beans, including aduki beans and soy beans. Favorite seasonings for the latter are thyme, oregano, basil, green pepper, tomato, cheese, soy sauce, onion, or garlic. Soy-related recipes include: Soy grits (p. 75). Macroburger mix (with cooked soybeans, p. 83). Soy mayonnaise (with soy milk powder, p. 111). Chunky soy spread (p. 130). Miso tahini spread. Creamy soy spread (p. 131). Miso soup (p. 144). Miso-scallion broth (p. 145). Macro-sausage (with Soy Spread, p. 163). Spaghetti with miso sauce (p. 176). Super soybean casserole (p. 182). Miso sauce (p. 200). Soya carob nut brownies (with soy milk powder, p. 227). Address: Berkeley, California.

2609. Hanson, L.P. 1974. Vegetable protein processing. Park Ridge, New Jersey: Noyes Data Corporation. xii + 308 p. See p. 264-77. Illust. 25 cm. Company index. Inventor index. U.S. patent number index. Series: Food Technology Review, no. 16.
• ***Summary:*** The Foreword begins: "The detailed, descriptive information in this book is based on U.S. patents relating to the processing of proteins of vegetable origin.

"The book has a double purpose in that it supplies detailed technical information and can be used as a single guide to the U.S. patent literature in the field."

Contents: Introduction. General process for vegetable proteins: Removal of lipids, protein isolation processes, protein treatment processes, protein hydrolysates. Processing whole soybeans. Processing full fat soy products. Defatted soy products. Soy protein concentrates. Soy protein isolates. Soy hydrolysates: Enzymatic hydrolysis, hydrolysis under acid conditions nutrient amino acid compositions.

Cottonseed protein. Grain proteins (incl. wheat gluten and zein). Processing other vegetable proteins (sunflower meal, safflower seeds, sesame seeds, castor beans, peanuts, rapeseed, alfalfa, coconut, mistletoe).

Extruded fiber processing (incl. Boyer process). Other protein fiber production methods. Textured protein gels and expanded products. Consumer products (simulated milk products {high yield process from soybeans, soy milk from sprouted beans, deodorizing soybean and peanut milks, wet milling of vegetable protein, dispersible soy protein for milks, dual inoculation for flavor improvement of soy milk, lipoxygenase inactivated full fat soy flour for milk}, other dairy type products {soy yogurt, heat stable cheese from soy milk, blue cheese from soy milk}, paste spread, tofu, miso and tempa [tempeh] products, flavoring materials, miscellaneous products {whipping agents from soy protein, malt treatment of soy for use in cereals, soy protein–soy lecithin mixture}). Address: USA.

2610. Hinojosa, G.R.L. 1974. Contribuicao ao estudo da extracao e concentracao do leite de soja [Contribution to the study of the extraction and concentration of soy milk]. Master's thesis: Faculdade de Tecnologia de Alimentos, Campinas. 47 p. [Por]*
Address: Brazil.

2611. Hunter, Beatrice Trum. 1974. Favorite natural foods: Adapted from a series of programs on WGBH, Boston. New York, NY: Simon and Schuster. 219 p. Index. 21 cm. [154 ref]
• ***Summary:*** Contents: Foreword. 1. Vegetables, vegetables. 2. Perking up the salad bowl. 3. Sprouts (incl. legume seeds {alfalfa, chick pea, lentil, mung bean, peanut, pinto

bean, soybean}, grain seeds, vegetable seeds, herb seeds, weed seeds, oil seeds {flax, safflower, sesame, sunflower}). 4. Whole grains. 5. The Cornell mix [for bread; Dr. Clive McCay]. 6. Sourdough. 7. Sauerkraut. 8. Yogurt. 9. Soybeans. 10. Satisfying that sweet tooth: Dried fruit desserts, confections, snacks. 11. Of special concern: Baby foods, brown-bagging, party fare, making good foods even better. Appendix.

Contents of chapter 9, Soybeans: Introduction. Soybean sprouts. Fresh green soybeans as a vegetable: Freezing, canning, drying. Recipes for dry soybeans (Baked soybeans. Soybean tomato aspic). Making soybean pulp ("put cooked, drained soybeans through a meat grinder"; recipe for green peppers stuffed with soybean pulp). Roasting dry soybeans (soak, drain, and dry roast). Making soybean milk (recipes for spiced soybean milk, brown rice pudding with soybean milk). Making soybean curd (also called "soybean cheese" or "tofu." From soybean milk, from fermented soybean milk, from soybean flour, from soybeans). Using soybean flours (three types: high-fat or full-fat, low-fat or medium-fat, minimum-fat or fat-free). 100% soybean flour cookies (grain-free). Other soybean products you can buy: Soybean grits and soybean flakes (with 1 recipe). Soybean lecithin (with 2 recipes). Tamari, miso. The soybean and you: Meat alternatives, tempeh, textured vegetable protein products (inferior), fabricated soy foods in school lunch programs ("a nutritional crime"). Avoid mock foods.

About the author: She is the author of numerous books and winner of the French Company's Tastemakers Award. She and her husband, John, live in New Hampshire. Nationally known for her lectures and demonstrations on natural foods, she is a member of the Price-Pottenger Nutrition Foundation and twice a speaker for the Martha Jones Lectures in Nutrition at the Ashbury Theological Seminary in Kentucky. She holds a B.A. from Brooklyn College and a Master's degree from Columbia University. She has done graduate work at State Teachers College in Buffalo, New York, and at Harvard University. A small photo of Beatrice Trum Hunter appears on the front dust jacket of the hardcover edition. Address: New Hampshire.

2612. Johnson, John D.; Kretchmer, N.; Simoons, F.J. 1974. Lactose malabsorption: Its biology and history. *Advances in Pediatrics.* p. 197-237. [208* ref]
• ***Summary:*** Contents: Introduction. Lactose synthesis. Lactose digestion and absorption (beta galactosidase, lactase). Lactose malabsorption. Physiology of lactose malabsorption. Terminology. Diagnosis: Lactose loading test, intestinal biopsy, other tests. Types of lactose malabsorption: Congenital, secondary, ontogenetic. Historical geography of dairying and its relevance to the problem of lactose malabsorption among adults (A map, p. 216, shows that nonmilking predominates in East Asia, Southeast Asia, and central Africa). The genetic hypothesis (Table 3, p. 221, shows the lactose content of certain Old World fermented milk products, including products from mare's milk [kumiss], camel's milk [chal], cow's milk [kefir, yogurt], and water buffalo milk [dahi]). Summary. The question of policy.

"On the basis of historic and biologic data, it appears that the ability to digest lactose by an adult human is inherited as a dominant characteristic." "Lactose is a complex carbohydrate composed of glucose and galactose. It is synthesized in the epithelial cells in the mammary gland and then secreted into the milk of all mammals except those belonging to the general class of sea lions and seals of the Pacific basin." Most baby mammals can digest lactose because they have the enzyme lactase in their intestine. Lactase activity then decreases after early infancy. "All mammals are incapable of digesting lactose in adult life except for certain ethnic groups of humans." Address: 1. Section of Developmental Medicine, Dep. of Pediatrics, Stanford Univ., Stanford, California; 2. School of Medicine, Stanford; 3. Dep. of Geography, Univ. of California, Davis.

2613. Kloss, Jethro. 1974. The Back to Eden cookbook. Santa Barbara, California: Lifeline Books. "Published in arrangement with Woodbridge Press Publishing Company." 158 p. With Promise Kloss Moffett and Doris Kloss Gardiner. Illust. by Daniel Guild. 22 cm.
• ***Summary:*** For the bittersweet story of how this book came to be published, see interview with Doris Kloss Gardiner (Nov. 1990).

Facing p. 7 are photos of Jethro Kloss, his daughter Promise Kloss Moffitt, his granddaughter Doris Kloss Gardiner, and his son, Eden Kloss.

The chapter titled "Soy milk, soy cheese, soy butter and cream" (p. 35-40) has this contents: Introduction. Soy milk (homemade from whole soybeans). Quick soy milk (from soy flour). How to curd soy milk (with citric acid to make a smooth cheese [tofu]). Soy buttermilk. Soy butter (from soy flour and soy oil). Soy cream (from rich soy milk and soy oil). Soy cream cheese ("Use unsweetened Soy Milk. Let it stand until it thickens {not sour}, put it on the stove and boil a minute or two..."). Soy cottage cheese. Soy cheese (from raw peanut butter, tomato puree and Soy Milk). Quick soy cheese (from soy flour). Original soy cheese (using whole soybeans, hot water grind in a liquefier; curded with the juice of 2 lemons). A substitute for egg yolk (made from water, soy flour and soy oil). Address: USA.

2614. Kozel, Carlos. 1974. Guía de medicina natural. I. Salud y curación [Guide to natural medicine. I. Health and healing]. Viladrau (Gerona prov.), Spain: Ediciones Cedel. xii + 467 p. Illust. 23 cm. Vol. 1 of his Guía de Medicina Natural [Guide to Natural Medicine]. [Spa]
• ***Summary:*** About natural food and vegetarianism. Pages 185-91 discuss soya, which is called "vegetable meat" and from which one can obtain lecithin, soymilk, whole soy

flour, miso, tofu, shoyu, etc. The nutritional composition of soybeans is given.

2615. Luttrell, William Reed. 1974. Microbiological study of a pasteurized whole soybean beverage. MSc Thesis, Dep. of Food Science, University of Illinois. 116 p.
• ***Summary:*** Contents: Introduction. Literature review: Protein: Requirements and sources, soybeans, soymilk or soybean beverage and related products, microbiology of soymilk and soybean beverages. Materials and methods: manufacture of whole soybean beverage, physical and chemical analyses performed on whole soybean beverage, microbiological analyses, comparison of the storage stability of whole soybean beverage to that of cow's milk, isolation and classification of the bacterial flora in whole soybean beverage. Results and discussion: Composition of the whole soybean beverage, microbiological counts taken during the production of whole soybean beverage, changes in microbiological counts of whole soybean beverage during storage, changes in pH of whole soybean beverage during storage, changes in titratable acidity of whole soybean beverage during storage, changes in viscosity of whole soybean beverage during storage, changes in color of whole soybean beverage during storage, changes in organoleptic quality of soybean beverage during storage, storage stability of whole soybean beverage compared to cow's milk, classification of the bacterial flora present in soybean beverage, correlation of redox potential with changes in total count. Summary and conclusions. References. Appendix. Address: Dep. of Food Science, Univ. of Illinois.

2616. Masuda, Koh. editor in chief 1974. Kenkyusha's new Japanese-English dictionary. 4th edition. Tokyo: Kenkyusha. xiii + 2111 p. 27 cm. [Eng; jap]
• ***Summary:*** The first edition of this superb dictionary was published in 1918, the second in 1931, and the third in 1954. The words are listed in alphabetical order. Some of the definitions of soy-related terms are quite poor. Examples:

Daitokuji natto: not listed.

edamame: "green soybeans." [Better: Green vegetable soybeans, or Edamamé].

Hamananatto: not listed.

Hamanatto: not listed.

hiryôzu: not listed.

kinugoshi [tofu]: fine-grained *tofu.*

kogori-dôfu = kôya-dôfu.

Note. This is the earliest English-language document seen (April 2013) that uses the the term *kogori-dôfu* or the term *kôya-dôfu* to refer to dried-frozen tofu.

koikuchi shoyu: not listed.

kôji: *"koji."* Good.

miso: *"miso."* Good. Also defines: [ama-miso]: slightly-salted miso.

[miso-koshi]: a miso strainer.

[miso mame]: a soybean; a soya (bean).

[miso-shiru]: miso soup. And many more.

nattô: "fermented soybeans." [Better: Whole soybeans fermented with *Bacillus subtilis*]. Nattô-jiru: "Miso soup with minced fermented soybeans." Good.

nomame: not listed.

okara: bean-curd (*tofu*) refuse; lees of bean curd.

omiotsuke [Jap: Misoshiru] See miso [Miso soup; word used by women only].

otsuke [Jap: Misoshiru] Miso potage (soup).

saishikomi shoyu: not listed.

shitaji: soy. See shôyu.

shôyu: "soy (sauce)." Better: Soy sauce.

tamari: "(a kind of) soy; soy sauce; sauce from refined soy."

tôfu: "bean curd [cheese]; *tofu.*

[yaki-dofu]: "roasted bean curd."

[tofu itcho]: a piece (cake) of bean curd.

[tofu-ya]: "a tofu dealer (seller, maker)."

tônyû: "soybean (soya) milk." [Better: Soymilk, soya milk, or soybean milk].

tsurumame: not listed.

usukuchi shoyu: not listed.

yuba: "dried bean curds" [sic. Better: The protein-lipid film formed atop soymilk when it is heated].

2617. Null, Gary; Null, Steve. 1974. Protein for vegetarians. New York, NY: Pyramid Communications, Inc. 174 p. No index. 18 cm. [21 ref]
• ***Summary:*** Contents: 1. Vegetarianism. 2. Understanding proteins. 3. Understanding food values. 4. Understanding food combining. 5. Rational fasting. 6. Food value tables.

Soy related information: Soybean flour contains over 40% protein (p. 28). Table titled "Legumes" (p. 51) showing the average serving size, total protein, and usable protein, incl. soybeans or soy grits, and tofu. Table titled "Flour" (p. 56) including soybean flour, both defatted and full fat. Table titled "Vegetables" (p. 57) including soybean sprouts. Soybeans and products are also included in the long USDA food composition tables that fill pages 108-72. See p. 158 for dry soybeans, soy flour, flakes and grits, soybean curd, and soybean milk. See p. 171 for the minerals and excess of acidity (HCl) or alkalinity (NaOH) in mature soybeans. On the rear cover of the book: "Public enemy #1: The American diet."

Despite the title of this book, it has a color photo of a fish (and dry soybeans) on the cover. In chapter 3, the first two pages are about fish and seafood, starting with this puzzling statement: "Many people on a vegetarian diet will include seafood in their diets." Address: Nutrition Inst. of America, Inc., 200 West 86th St. #17A, New York, NY 10024.

2618. Ochomogo, M.G. 1974. An unfermented cheese from

soy-cow's milk mixture. Thesis, Louisiana State University. *
Address: Louisiana State Univ.

2619. Rachie, K.O.; Roberts, L.M. 1974. Grain legumes of the lowland tropics. *Advances in Agronomy* 26:1-132. See p. 83-85. [493 ref]
• ***Summary:*** The main plants discussed are peanuts, pigeon peas, cowpeas, and mung beans. However under "Humid Tropics" (p. 83-85) is a rather long discussion of soybeans, which "has been extensively grown for a long time as a basic food crop of the low elevations in southeastern Asia (Indonesia, Philippines, Malaysia). More recently, investigations in India, the West Indies, and both East and West Africa have demonstrated that soybeans can be very successfully grown in the lowland tropics under favorable conditions. At present there is no other species that can so consistently produce on a hectare per day basis both high yields of good quality protein and oil. The main deterrent to increasing production of this species in many tropical regions is lack of markets and understanding of its cultivation and utilization." Discusses: Adaptation and problems. Utilization ("green beans (vegetable)," split, sprouted, soy milk, soy sauce, tofu, tempeh). Recent investigations.

"Perhaps the most successful campaign to introduce soybeans and find solutions to production and utilization problems has been in India with assistance from a USAID-sponsored contract with the University of Illinois. In Africa, French-sponsored research organizations have centered their activities mainly in Madagascar with testing and management experiments in the Cameroons [Cameroon] and Centralafrique [central Africa]." In English-speaking Africa, breeding programs are in place in Tanzania and Nigeria. Address: 1. International Inst. of Tropical Agriculture, Ibadan, Nigeria; 1-2. The Rockefeller Foundation, New York, New York.

2620. Reed, Pierce M. 1974. Casein and caseinate. In: A.H. Johnson and M.S. Peterson, eds. 1974. Encyclopedia of Food Technology. Westport, Connecticut: AVI Publishing Co. xiv + 993 p. See p. 174-75. Illust. Index. 26 cm. [3 ref]
• ***Summary:*** Casein, one of man's oldest manufactured products, is the protein fraction of cow milk. Housewives may be most familiar with the product "in its purest dairy food form, not as casein, but as 'low fat" cottage cheese. Casein comprises about 3% of the weight of whole milk. Until the late 1940s, almost all casein produced was for industrial applications, such as glue and paper coating. However today, an estimated 60-70% of the casein produced is for edible use in the form of casein or caseinates.

Caseinates: Casein, because of its amphoteric properties, reacts with acids or bases to form salts–such as sodium caseinate or calcium caseinate. Casein solubilized with alkalies is known as caseinate. Caseinates provide both nutritional and functional properties. They are used nutritionally to fortify and give texture to breakfast foods, breads, etc. They are used functionally in nondairy coffee creamers, nondairy whip toppings, icings, etc. Address: Sheffield Chemical Div., Kraftco Corp., 2400 Morris Ave., Union, New Jersey 07083.

2621. Seventh-day Adventist Dietetic Assoc. 1974. About nutrition. Revised ed. Nashville, Tennessee: Southern Publishing Assoc. 192 p. Index. 20 cm. 1st ed. 1971. [50 ref]
• ***Summary:*** A layman's guide to vegetarian nutritional principles, including food groups, menu planning, and nutritional needs of various age groups. Individual authors are listed as Alice G. Marsh, Dorothy Christensen, Rose G. Stoia, and Sylvia M. Fagal. Coordinator: Darlene R. Schmitz.

Chapter 1 introduces the "Four Food Groups" which resemble a simple preschool puzzle. They are: Fruits and vegetables, cereals & breads, protein foods, and milk products. Soy products (including soy beverages) and gluten (wheat protein) are included in the protein foods group. A surprisingly strong (apparently slightly defensive) anti-food-faddist message runs throughout this book. Chapter 16 is titled "Current quackery." Chapter 17, titled "Food fads and facts," gives 13 examples of commonly encountered fallacies with explanations of the facts.

2622. Watanabe, Tokuji; Ebine, H.; Okada, M. 1974. New protein food technologies in Japan. In: A.M. Altschul, ed. 1974. New Protein Foods. Vol. 1A. Technology. New York: Academic Press. 511 p. See p. 414-53. Chap. 9. [80 ref]
• ***Summary:*** Contents: Introduction: Soy products, fish products, enzyme applications. Tofu: General description, new materials, new type products, large-scale production, trends in cost, kori-tofu and aburaage. Miso: General description, new technologies, new type products, problems of mycotoxin, packaging and preservation, trends in cost and consumption. Kamaboko and fish sausage–fish jelly: General description, new technologies, new materials–frozen surimi, packaging and preservation, trends in consumption. Textured vegetable protein: Soybean protein curd, wheat gluten, soybean protein sponge. Hydrolyzed vegetable protein (HVP). New enzyme applications: Liquefied fish protein concentrate (LFP), collagenase for poultry processing, removal of beany flavor from soybean by enzyme treatment, microbial rennet. The protein food structure of Japan.

Fig. 13 (p. 47) shows 3 pie charts, each giving the percentage of protein intake per capita from various sources at three different time periods. In 1921-25 only 9% of the total protein came from animal sources (6% from fish and 3% from other animal sources); 42% came from rice, 21% from soybeans, and 14% from cereal grains other than rice. In 1951-55, shortly after World War II, some 23% of the total protein came from animal sources (17% from fish and 6% from other animal sources–such as milk, eggs, chicken, pork,

and beef); 32% came from rice, 15% from soybeans, and 20% from cereal grains other than rice. In 1969, some 30% of Japan's total protein intake came from animal sources (21% from fish and 19% from other animal sources); 22% came from rice, 12% from soybeans, and 13% from cereal grains other than rice. Thus the main trend seen during this period is the steady increase in the percentage of protein from animal sources and the corresponding decrease from plant sources. Source: Food Balance Sheet. 1970. Ministry of Agriculture and Forestry. Fig. 14 shows that these trends are apparently related to increasing per capita income and GNP. Address: 1-2. National Food Research Inst., Ministry of Agriculture and Forestry, Tokyo, Japan; 3. Tokai Regional Fisheries Research Lab., Fishery Agency, Ministry of Agriculture and Forestry, Tokyo, Japan.

2623. Wilson, J.F.; Lahey, M.E.; Heiner, D.C. 1974. Studies on iron metabolism. *J. of Pediatrics* 84:335-44. *

2624. Woods, John. 1974. The protein-for-pennies cookbook. New York, NY: Peter H. Wyden. viii + 179 p. Index. 22 cm.
• ***Summary:*** Contents: All about the magic little bean. General note about soy products. Soybeans in the kitchen. 1. Casseroles. 2. The versatility of soy granules. 3. Soups and stews. 4. Salads. 5. Soybeans for the family. 6. Making your own super protein. 7. Soybean sprouts. 8. Mostly desserts. 9. Soy milk and soy yogurt. List of products and seasonings not generally used in western cooking. Suppliers of foreign food products. Contains many recipes. A photo on the inside rear dust jacket shows Texas-born John Woods, with a biographical sketch. Address: New York City.

2625. Yabuki, Teisuke. 1974. Tônyû no shinpi [The wonders of soymilk]. Tokyo: Sanrodo. 164 p. [Jap]
• ***Summary:*** This is Japan's first book on soymilk, written by the man who makes Luppy, Japan's first widely popular soymilk.

2626. American Soybean Assoc. 1974? Soybeans: From America's fertile soils the worlds versatile protein resource. Hudson, Iowa. 16 p. Undated. No page numbers. All color.
• ***Summary:*** On a page titled "Utilization," color photos show many soy products including: Milnot (can), Worthington Soyameat (can), Nabisco Sociables (paperboard box), Candied Pernuts: Toasted Soybeans (paperboard box), Bac*Os (glass jar), Crisco (shortening; can), Hain Soy Oil (glass jar), Dream Whip: Whipped Topping Mix (paperboard box), Hamburger Helper (paperboard box), Worthington Veja-Links (can), RG Lecithin (jar), Yoshihara Oil Mill, Ltd. Golden Soybean Salad Oil (can, 2 sizes), and 3 brands of bottled soymilk made in Korea. Another page shows Soyor bottled soy oil. The addresses of American Soybean Association offices in Hudson, Iowa (USA), Tokyo (Japan), Taipei (Taiwan), Brussels (Belgium), Hamburg (West Germany), Vienna (Austria), and Mexico City (Mexico) are given. Address: Hudson, Iowa.

2627. Pant (G.B.) University of Agriculture & Technology. 1974? A brief note on soy milk / beverage process. Pantnagar, Nainital, India: G.B. Pant University of Agriculture and Technology. 16 p. Undated. 24 cm.
• ***Summary:*** Contents: Introduction. Soymilk: Description and composition compared with cow's milk. Processing of soymilk (incl. flow chart; except for the imported homogenizer, all other pieces of equipment have been developed and designed at Pantnagar). Estimates of investment. Cost of production. Present scale of production ("A commercial unit having a capacity of 10,000 litre/ day for which designs etc. have already been developed is being established at Pantnagar"). Availability of know-how. Appendix: Cost of soymilk production (factory cost–10,000 liters per day): Variable cost, fixed cost, indirect cost. Cost of sweetening. Cost of packaging and distribution: In bulk cans (3.65 paise/liter), in 1 liter milk bottles (8.31), in sachets (11.71), in beverage bottles (29.00). Photos show: Soybean dehuller. Equipment in soymilk production plant; each piece is labelled, incl. heating tank, homogenizer, blending tank, colloid mill, wet grinder, blancher, etc. Address: Pantganar, Nainital, India.

2628. *Christian Science Monitor.* 1975. Low-cost soybeans: 'meat that grows on vines.' Jan. 16. p. 11.
• ***Summary:*** Soybeans come in many forms. There "are fresh soybeans in their fuzzy pods, dried soybeans, soy and wheat noodles, spaghetti and macaroni, soy grits, soy flour, soy milk, soy cheese [tofu], nutlike roasted soybeans, sprouted soybeans, textured soy, soy oil, and soy butter." When these are combined with other foods, the possibilities are almost without limit.

Soybeans are high in protein and low in cost–about 35 cents a pound.

Recipes: How to cook basic whole dried soybeans. Soyburgers (with 2 cups cooked soybeans and 1 cup cooked brown rice). Four ideas are given for adding cooked soybeans to other recipes. Finally, soy flour and its uses are discussed in detail. Now is a "perfect time to get acquainted with the versatile soybean." Address: Special to the Monitor.

2629. Andreas, Dwayne O. 1975. Presentation on ADM. Paper presented to the New York Society of Security Analysts. 11 p. Jan. 21. Unpublished manuscript.
• ***Summary:*** Mr. Andreas has been processing soybeans and other agricultural commodities constantly since 1938. Four of ADM's top executives come from competing companies: Mr. Walker from Ralston [Purina], Mr. Burket from Central Soya, Mr. Randall from Cargill, and Mr. Bean from Anderson-Clayton. In 1965, thanks to an entirely new technology that was developing for soybean processing,

ADM was transformed from a conglomerate into a non-conglomerate focusing on food technology. "Thanks to a great job that had been done in research, ADM received basic patents on TVP (Textured Vegetable Protein; TVP is a registered trademark). This knowledge was immediately commercialized and TVP has been very successful... it is now produced by some 12-13 different companies."

"The Marshall Plan developed Western Europe and Japan into the greatest cash customers that the United States ever had... This global internationalizing of food distribution had the effect of disorienting much of the entire food processing industry. That is, a plant that was not located so that it had access to the world markets might have become worthless or obsolete overnight. And dozens did."

Currently ADM has about 17% of the soybean processing business in the U.S., 17% of the wheat milling, 25% of the barley malting, 25% of the margarine oil business, 30% of the linseed oil, and 27% of the durum flour business (the basic flour for making pasta products).

A four-horse team is pulling ADM in a certain direction for the future. "One is the edible soy business which includes our TVP and soy flours, in which we are the leaders, and will soon include our soy protein concentrates. It is inevitable that edible soy proteins will increase in use over the next 20 years by leaps and bounds on a worldwide basis. And it is for no other reason than economic compulsion. The cost of making good quality high protein edible products out of soy is so low compared to other protein sources that it is just a matter of how long it will take the food companies to learn how to use it in more ways. In the soy flour business many soy flours are now being used to replace dried milk products just as margarine once replaced butter and this use is due to grow substantially in the next few years. The soy fortified bread and roll products you saw today are examples of how protein levels can be boosted by 50% with little or no increase in cost. ADM is the largest producer in the world of soy flour.

"TVP business has an enormous potential, maybe largely outside of the United States. In every country where there is a balance of payments problem, and where they are importing meat, we get a terrific tail wind from the government in selling TVP...

"The second thing going in our favor is the continuing worldwide expansion of the margarine business. Margarine is replacing butter, and that's a trend that is unstoppable. This trend is fundamental to our business, since about eighty percent of all of our fats and oils, corn oil, soybean oil, go in margarine.

"A third part of our business which has almost unlimited future growth is the soybean meal portion, where we make a refined [dehulled] grade of soybean meal that's used by the poultry industry all over the world. Under today's technology, poultry is by far the cheapest form of meat that's commercially produced. It will expand very much faster than either pork or beef, because it's so much cheaper and so easy to produce, and that business will continue to grow enormously, worldwide.

"The fourth horse of our four-horse team is the corn refining business." We produce corn syrup and fructose [two different products], which are experiencing very rapid growth in demand. Two other very good firms, Standard Brands and the A.E. Staley Co. are now producing fructose, but suddenly most of the soft drink people have decided to use fructose, creating an enormous demand. So "we changed our plans and now plan to produce about 480 million pounds of fructose by next winter and to double that by sometime in 1976."

So the four-horse team pulling ADM into the future is edible soy products, margarine, soybean meal, and refined corn sweeteners (corn syrup and fructose). Address: Chairman and CEO of ADM.

2630. deMan, J.M.; Stanley, D.W.; Rasper, R. 1975. Composition of Ontario soybeans and soymilk. *Canadian Institute of Food Science and Technology Journal* 8(1):1-8. Jan. [4 ref. Eng; fre]

• ***Summary:*** Samples of 55 varieties Ontario-grown soybeans were analyzed. All samples were made into soymilk and the composition of the milk was determined, including the content of phosphorus, calcium, and magnesium. The soymilk was subjected to ultrafiltration and the diffusate analyzed for soluble constituents. "Correlations of variables indicated that an increased protein level in the soybeans was accompanied by a decrease in fat." Sucrose was the predominant sugar; certain varieties were found to have a very low content of raffinose and stachyose, the oligosaccharides that cause flatulence. On average, 63.5% of the calcium in the soybeans was recovered in the soymilk. The soymilk from the 55 samples had the following mean composition: total solids 5.98%, protein 2.71% (3.64% maximum), fat 1.24% (0.72% minimum), soluble solids 2.03%, calcium 9.87 mg/100 ml (13.0 mg max.), protein recovery 72.69% (94.1% max., i.e. the percentage of protein in the soybeans that was recovered in the soymilk). Address: 1. Dep. of Food Science, Univ. of Guelph, Guelph, ONT (Biz 1985: Food Technology Services, 58 Applewood Cres., Guelph, ONT N1H 6B5). Phone: 519-821-3436.

2631. deMan, J.M.; Tanaka, M.; Stanley, D.W. 1975. Coagulation properties of soybean milk. *Canadian Institute of Food Science and Technology Journal* 8(1):9-11. Jan. [4 ref. Eng; fre]

• ***Summary:*** The coagulation properties of 55 samples of soybean milk coagulated with calcium sulfate were investigated. Clotting time was generally in the range of 10-50 seconds. "Clotting time decreased with the age of the soymilk. Addition of phosphates and citrate prolonged the clotting times. All samples produced a firm gel, even when the soymilk was three days old." Address: Dep. of Food

Science, Univ. of Guelph, Guelph, ONT, Canada N1G 2W1.

2632. Jonas, John J. 1975. Impact of vegetable proteins on dairy products. *J. of Milk and Food Technology* 38(1):39-43. Jan. [48 ref]

• ***Summary:*** A good review of the subject of vegetable protein milks. Contents: Abstract. Introduction. Milk analogues based on soy protein. Milk analogues based on peanut protein. Milk analogues based on coconut protein. Objective sensory methods. Cheese analogues based on soya. Cheese analogues based on other vegetable sources. Conclusions.

Note. This is the earliest English-language document seen (Aug. 2013) that contains "Milk analogues" used in connection with soymilk. Address: Kraftco Corp., Research and Development, Glenview, Illinois 60025.

2633. Pearce, Jean. 1975. Jean Pearce's How to get things done in Japan. Vol. 1. Tokyo: Japan Times Ltd. [iv] + 245 p. Jan. Index. 19 cm. [Eng]

• ***Summary:*** This book is composed of reprints of the popular and informative articles, answering questions from readers on a wide variety of subjects, that Jean Pearce wrote in her column in *The Japan Times* from 1 Jan. 1972 to 27 July 1974; they appear in this book in chronological order.

From 16 Oct. 1973 (p. 76): "Health foods" are now widely available in Japan, but familiar products are not always to be found. You can, however, find many soybean products, including natural soy sauce, and natural miso. "Try Nihon Kenko Shizenshoku in Shinbashi [Tokyo], phone 573-4181, or Shizenshoku Center in Shibuya, 461-7988. Both have restaurants that serve natural foods only."

Note: On pages 77-78 is a good history of Calpis.

From 8 Jan. 1974 (p. 118-19): "Health food remains a subject of interest... The basic Japanese diet, with a little discretion in the use of salt, is a health faddist's delight. Also on natural foods, a shop (Ishii Shoten, 1-2-7 Nishikata, Bunkyo-ku [Tokyo], phone 811-2457 in Japanese), that still makes by traditional methods roasted soybeans from mid-December through June, far superior, I'm told, to any of the imported varieties... 'A nice low-cal snack, and a good hors d'oeuvre...' They come with or without salt."

From 5 Feb. 1974 (p. 134): "A woman wants to learn how to make tofu. I have a recipe but I don't think I'll give it again. It is very difficult to do and the end result is more often failure than success. However, anyone can buy instant tofu at most Japanese food stores. It's easy to make, will be better than trying to do it yourself, and is inexpensive, ¥80 the last time I bought it but it has no doubt gone up. It makes two squares. The nigari she asks about is bittern, necessary for thickening [curding, coagulating]. Tofu is now available in many foreign countries. If you don't know where to look, call anyplace listed under Buddhist in the classified directory. Ask where they buy theirs."

From 12 March 1974 (p. 154-55): "Tofu lovers, united! There are lots of them and their sympathy was with the woman who was denied a do-it-yourself recipe in this very column. So kinder hearts provide the following.

"Two collectors [Shurtleff and Aoyagi] are compiling a book of tofu recipes, which includes a number for making tofu, using various solidifiers and soybean products. I'll let you know when it's published.

"A book, *Tofu Recipes,* was published by a tofu enthusiast after a year's visit to Japan. It is her first literary endeavor, a labor of love which will be understood by anyone who is a tofu devotee. Grace Kikuchi tells you how to make it and how to use it, relying on childhood memories and modern innovations. I'll be in the kitchen when I finish this column. You can be equally inspired if you send your order to Grace Kikuchi, 260 Sumac Lane, Ann Arbor, Michigan, U.S.A. Enclose $2.00. Somehow."

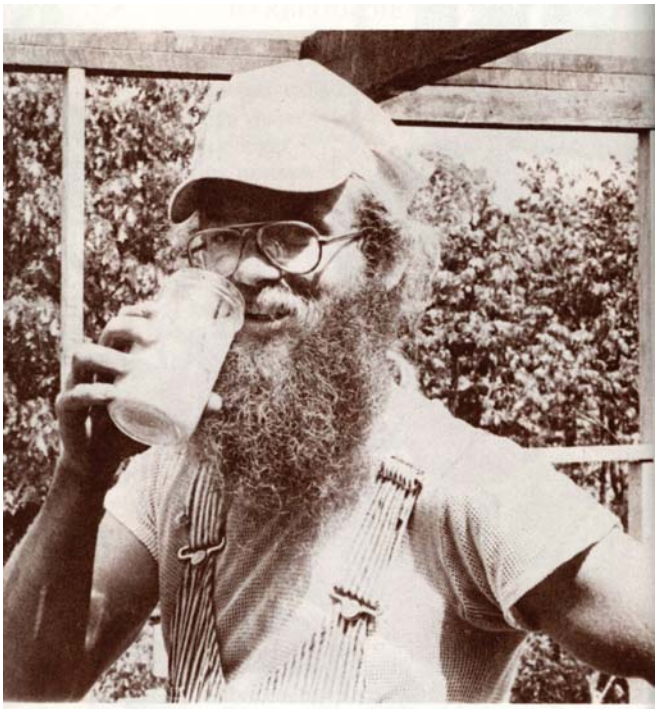
From 7 May 1974 (p. 184-85): "There is a new health food [natural food] restaurant in Tokyo, Hakumon ("White Gate"), just across from the Chuo University exit to the Shin Ochanomizu Station on the Chiyoda subway line, phone 291-9762. French owner Jimmy Dejeammes... I'd like to go back daily for the tofu that they make. Try the mochi made of brown rice and prepared in a variety of ways... All bread is baked there; high nutritional value... Among the beverages is Soyalac, made of soybean milk." It is made and distributed here by Saniku Shokuhin, the Seventh Day Adventist health food company. Neuroca, a Swiss coffee substitute, is also available at Hakumon. Phone before you go. Hakumon may be moving soon. Address: The Japan Times, Tokyo, Japan.

2634. Farm, The. 1975. The Farm vegetarian cookbook. Summertown, Tennessee: The Book Publishing Co. 128 p. Illust. Index. 18 cm. Revised edition by L. Hagler. 1978. 223 p.

• ***Summary:*** Expanding on the pioneering "Yay Soybeans!" (1974), this creative and creatively illustrated vegan cookbook contains many extremely innovative and original recipes including: Soybean Stroganoff. Soyburgers. Spaghetti Sauce with TVP. Soysage. Soy fritters. Indonesian fried tempeh. Soymilk. Tofu. Tofu spreads. Soy "yogurt." Soy "cheese." Soy "butter" (made with soy flour). "Cream cheese" (made with soymilk). Soy "mayonnaise." Soy "whipped cream." Soy "coffee." "Soy 'nuts.'" Soy pulp granola. Ice Bean [soy ice cream] (Recipes include: Pineapple "sherbet" and "Vanilla ice bean," each made with soy milk instead of dairy milk). Mellowmeal (breakfast cereal containing soy flour). Soy "yogurt" Danish pastry. Soy bread. Soy pulp cookies. Soy "cheese cake." Blintzes (filled with tofu).

Gluten recipes (p. 54-59) include: Basic gluten (feeds 8 generously). Gluten roast. Gluten burritos. Chili gluten. Oven-fried gluten. Janice's barbeque [barbecue] gluten ribs.

The rear cover states: "We are a large, long-haired



RICH SOY MILK
5 gallons

Sort and wash 10 cups of dry soybeans for every 5 gallons of milk you're going to make. Soak them overnight, or if you forgot to soak them, you can put the beans in warm water and they will swell up soft in 4 hours.

To strain the soy milk

Strain through a clean cloth (nylon, folded cheesecloth, diaper) placed in a colander or strainer. Add a pinch of salt and sweeten the soy milk to taste.

Serve it warm, chilled, flavored with vanilla, almond, maple or other extracts, or with fruit or cocoa. Mixed in a blender, with a little oil, sugar and flavoring, it makes a smooth milk-shake. Soy milk makes good puddings and soups.

spiritual community in Tennessee. We came together through open meetings in San Francisco with Stephen. We have 750 people, including 250 kids, living on 1,750 acres. This cookbook is to help as many people be vegetarians as possible without turning any of them off and making them think its strange or weird and to let people know that it tastes good, is nice, graceful, and it can be a turn-on, that it'd be really neat to eat, and make you look forward to meal-times and make you really happy to eat such good food." The Introduction, by Stephen, begins: "The thing about our cookbook is we don't want to be faddish or cultish or scare people off. We just honestly want them to know how to make it on vegies, even somebody who doesn't particularly have a moral reason for being a vegetarian, but just wants to eat a little cheaper, or somebody who learns to be a vegetarian to lose weight, 'cause you maintain a really healthy natural weight on vegetables... The main thing is that we're absolute vegetarians. We don't do meat or milk or eggs or cheese or fish or fowl."

"You can increase the world's food supply by being a vegetarian. So its good for everybody else, its good for the individual for health, and its good for the soul and the spirit not to be involved in killing. And I understand that vegetables are alive, but like I've said before, I've been to pig stickings, and I've been to rice boilings, and rice boilings have better vibrations than pig stickings."

Photos show: Facing title page: People planting white potatoes at the edge of a large field in front of the woods. The lady in front is Sylvia Tepper, Robert Tepper's wife. Pages: (1) Little Susannah Frohman eating a rolled up soybean tortilla. (3) Stephen Gaskin. (18) Ruth Thomas, making lunch in the kitchen of the only house on the property when Farm folks first came here. It housed The Farm's clinic, school, bank offices, and receptionist for a number of years until other facilities were built for these purposes. Ruth could make a mean soybean burger (which is pictured). (23) Laurie Sythe making potato soup on the other side of the same kitchen Ruth was pictured in. (35) Poblano chili plants. (60-61) Tempeh sliced to be round to fit on buns, resting on a plate (L) and a tray (R). (64). Uncle Bill (age 82, center, surrounded, from left by: Marilyn Keating, Jeffrey Keating, Ruth Thomas, Patrick Thomas, Uncle Bill, Joel Kachinsky, Roberta Kachinsky, Bruce Moore, Roslyn Moore {holding baby Sam}. All at their home on Schoolhouse

Ridge. The house, named "Kissingtree," was originally built for Stephen and family, but he declared it "too fancy" for him, and he passed it on to this group {women were mostly schoolteachers in our school}). (67) Janice Hunter making stir fry at the Tower Road House kitchen. (68) John Hurgeton drinking a glass of soymilk on a construction site somewhere. (71) Sue Ellen, who worked in The Farm's soy dairy, holding a glass of soymilk and relaxing. (89) Sour soymilk Danish pastry. (106) Jars of canned goods stored at the Farm's canning facility. Thanks to Cynthia Holzapfel for providing photo captions.

Illustrations appear on almost every page: On the front cover is a color illustration of a basket full of vegetables on a quilt. Many of the pages have illustrated borders or unique illustrations (line drawings) (flowers, plants, leaves, a pot of steaming food, psychedelic designs, native American motifs, etc.) where there would otherwise be empty space. Pages: (10) A Farm member eating, with one hand, a tortilla wrap filled with cooked whole soybeans. (20) A young woman in a kitchen facing the stove. (28-29) Illustrations of two Farm members making pizza. (65) Uncle Bill in a kitchen stirring a pot. (81) A pitcher labeled "Soy Milk." (83) An old-fashion, hand-turned ice cream machine for making Ice Bean. (88) Sour soymilk Danish pastry. (95) A happy man and a woman eating bagels. The man's finger, pointing up, serves as a bagel holder. Yum! (100) Overhead view of a round table with ten people eating. (105) A vase full of kitchen utensils. (113) A lady holding a cake–a very favorite recipe on The Farm. (120) A lady rolling out dough on a table.

Note 1. This book played an important role in introducing soyfoods (especially tempeh and soy ice cream), as well as a vegan diet, to America.

Note 2. This is earliest publication seen by The Farm that contains a tempeh recipe.

Note 3. This is the earliest document seen (Oct. 2008) that contains the word "vegies" (one of two documents).

Note 4. This is also the earliest document seen (Oct. 2008) that uses the word "barbeque" or "barbequed" rather than the standard "barbecue."

Note 5. Some sources (OCLC/WorldCat) cite Stephen Gaskin as the author of this book. Others cite Louise Dotzler; her maiden name was Louise Hagler, but she was married to Thomas Dotzler in 1975. Later that decade they separated and Louise reverted to using her maiden name As "Louise Hagler," she was the editor / author of several later revised and expanded editions of *The Farm Vegetarian Cookbook* (1978, 1988) plus several outstanding books about soyfoods published at The Farm. Address: Summertown, Tennessee.

2635. Fukushima, D. 1975. Tônyû no kagaku. Tokushu: Tônyû inryô no kaihatsu [The science of soymilk]. *Shokuhin Kaihatsu* (*Up-to-Date Food Processing*) 10(2):20-26. [34 ref. Jap]
Address: Noda Sangyo Kagaku Kenkyusho.

2636. Kay, Theodore; Ifeacho, C.L.; Onowu, G.; Udenze, V.; Nnamani, G.; Anazonwu-Bello, J.N.; Ifenu, F.; Modebe, V.; Emembolu, M. 1975. Use of soya bean to improve the protein content of the diet in West Africa and thus prevent kwashiorkor. *J. of Tropical Pediatrics and Environmental Child Health* 21(1B):45-48. Feb. Special issue. [Eng]
• ***Summary:*** Contents: Introduction. Nutritional value of soya bean Nigerian foods prepared with soya bean paste: Soya bean paste (soaked, ground soybeans without the "husk" removed), kosei (akara ball), panke (puff-puff). Nigerian foods prepared with soya bean milk: how to make the basic milk, wara (milk curd), and alele (moin-moin, made with soya milk residue [okara]). Note: "The above five recipes have been fully accepted in many parts of Nigeria. The taste and the preparation procedure of these traditional Nigerian foods made from soya beans worked out to be almost the same or very similar to the foods traditionally made from cow peas (white beans) for kosei and alele, wheat flour only for panke, and cow milk for wara."

Nigerian foods made with soya bean flour (pre-cooked): How to make the basic flour, protein enriched pap (with akamu), and protein-enriched fu-fu (with gari or cassava flour). Discussion.

"Soya bean is being successfully established in Nigeria, but it has been very difficult to cook in a traditional West African way so it has never become popular in this country. Most soya bean produced in Nigeria has been exported as cash crop except a little for animal consumption."

Kosai, alele, panke, and awara are traditional foods in Northern Nigeria, while akara ball, moin-moin and puff-puff are traditional foods in Southern Nigeria. Discussion: "Why do we need soya bean in Nigeria?" Five reasons are given. The first two are: "(1) It has higher protein content and net protein utilisation (NPU) than cowpeas, groundnut and other legumes. Moreover, soya bean is much cheaper than other legumes in Nigeria. (2) Soya bean flour and soya bean milk have little taste and can therefore be incorporated into traditional foods such as pap and fu-fu without changing the appearance, taste and texture." Address: 1. Dep. of Chemical Pathology, Faculty of Medicine, Ahmadu Bello Univ., Zaria, Nigeria; 2-5. East Central State Ministry of Health and Social Welfare, Enugu, Nigeria; 6. East Central State Ministry of Education, Enugu, Nigeria; 7-9. Univ. of Nigeria Teaching Hospital, Enugu, Nigeria.

2637. Meals for Millions Foundation. 1975. The question is not whether we will help, but how [Annual report 1974]. Santa Monica, California: MFM Foundation. 6 p. 28 cm.
• ***Summary:*** Mark M. Sterner is Executive Director. Cover is as if this were one issue of the *Meals for Millions Newsletter.* In the upper left corner is MFM's logo (slightly redesigned) of a plant growing out of mounded soil in a bowl which is half of a globe. Below that: "Self-help for a hungry world."

The pages are unnumbered.

Contents: MFM provides the "how" in Korean beverage plant (The plant began regular operation in July 1974, producing Super D soy beverage, bottled and inexpensive enough to compete with soft drinks. Mr. Jong-Yoon Chun is president of Sam Yang Foods). MFM sends seeding machine to Ecuador for planting soybeans. MFM moves into new self-help project in Midwest (Bootheel, Missouri). MFM's International Institute of Protein Food Technology (Patricia Stevens, program director, says "the course will bear the official title of 'Low-Cost, High Protein Foods'"). Tennessee. Uganda. New Mexico. Shipments of MPF to drought victims in countries bordering the rainless Sahara.

How MFM spent its donor dollars in 1973. Income: $486,544 (up 28.9% from last year) of which 3.4% used for general administration, 9.5% for public relations, 17.5% for fund raising, and 69% for programs.

Photos show: (1) Mark Sterner with Mr. Chun in Korea. (2) Korean woman operating bottling equipment. (3) Two Korean boys holding bottle of Super D beverage. Hank Sterner, MFM's Pilot Plant Supervisor, loading agricultural equipment for shipment of Ecuador. (4) Starving African children. Address: 1800 Olympic Boulevard (P.O. Box 1666), Santa Monica, California 90406. Phone: 870-0451.

2638. **Product Name:** [Soja Semp {Infant Formula Based on Soy Protein Isolate} (Concentrated Liquid)].
Foreign Name: Soja Semp (Koncentrerad).
Manufacturer's Name: Semper AB.
Manufacturer's Address: Sektor Industri, Sveavagen 166, Box 231 42, S-104 35 Stockholm, Sweden. Phone: 08-729-9700.
Date of Introduction: 1975. February.
Ingredients: Incl. soy protein isolate.
Wt/Vol., Packaging, Price: 450 ml can with pull top.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Thomson. 1979. *Journal of the American Oil Chemists' Society.* March. p. 386-88. Form filled out by Anders Eriksson. 1981. Nov. "Soja Semp is similar to Pro-Sobee, an infant formula based on soy protein isolate."

Soyfoods Center Computerized Mailing List. 1982. July 23. Phone: 08 24 77 00. Talk with Swedish food scientist. 1987. Dec. 5. Soy-based infant formulas are not widely used in Sweden, perhaps because of the low incidence of lactose intolerance and the high rate of breast feeding.

The Soybean Magazine (Published by Food Partner AB, 292 00 Karlshamn). 1988. p. 7. Sidebar on Soja Semp with photo of can and Label. Talk with Ted Nordquist of Aros Sojaprodukter. 1988. March 27. He thinks the product was introduced in the mid-1970s. The key man was Leif Christensen, with whom Ted now works.

Talk with Leif Christensen. 1990. July 6. Followed by letter (fax) of July 10. This was Semper's second product made from soybeans. The name is pronounced "SO-ya Semp." It was introduced in Feb. 1975, as a liquid concentrate based on soy isolate, UHT sterilized, and packed under aseptic conditions in 450 ml cans.

2639. Tabuchi, Ichiro. 1975. Nijû seiki no mana: Majikku beenzu no deban; Daizu-nyû no eikyô narabini chiryô kôka ni kansuru hôkoku. II. ["The manna of the 20th century." Magic beans' turn to go on stage: Report on the nutritional and therapeutic effects of soymilk]. *Shokuhin Kaihatsu* (*Up-to-Date Food Processing*) 10(2):27-31. Feb. [3 ref. Jap]
• ***Summary:*** Contents: Introduction. About the soymilk and Soyalac program. (Soyalac is made by San-iku Foods in Japan.) Nutritional and healing effects of formulated soymilk (*chôsei daizunyû*). Summary of clinical experiments with premature infants who were fed soymilk and then had body measurements taken, as reported by Dr. W.B. Omans et al. in the 1963 *Journal of Pediatrics* (62:98). Experiments on raising infants on soymilk at the Shanghai Hospital (*Eisei Byôin*) in China. Report on dairy milk allergies and their cures. Follow-up research on users of Soyalac. Experiments on the effects of soymilk on the growth of elementary and high school students. Conclusion.

Note: This is the earliest Japanese-language document seen (Aug. 2013) that uses the word *daizunyû* ("soybean milk") or the term *chôsei daizunyû* ("formulated soybean milk") to refer to soymilk. Address: San-iku Foods, Japan.

2640. Yamaguchi, Yuzo; Hattori, Renzo; Kikuchi, Mitsuo; Moroe, Tatsuo. 1975. Kôji-kin busei hôshu i yoru tônyû no dasshu to karuboniru kagôbutsu no kangen ni tsuite [Deodorization of soymilk and reduction of carbonyl compounds by the conidiospores of *Aspergillus oryzae*]. *Nippon Nogeikagaku Kaishi* (*J. of the Agricultural Chemical Society of Japan*) 49(2):113-18. Feb. [11 ref. Jap]
Address: Central Research Lab., Takasago Perfumery Co. Ltd., Tokyo, Japan.

2641. Camerman, A. 1975. Soybeans in Rwanda. *INTSOY Series* No. 6. p. 233. D.K. Whigham, ed. Soybean Production, Protection, and Utilization: Proceedings of a Conference for Scientists of Africa, the Middle East, and South Asia (College of Agric., Univ. of Illinois at Urbana-Champaign).
• ***Summary:*** "Soybeans were introduced into Rwanda by INEAC [Institut National pour l'Étude Agronomique du Congo Belge] in the 1920s. Farmers started showing interest in soybeans in 1960. In 1969 production amounted to 550 ha and in 1973 there were 1,640 ha. The main reasons for such interest are: 1. Intensive extension work by the nutrition centers scattered around the country. These centers have demonstrated how to cultivate and how to prepare soybeans in the form of milk, cheese, flour. 2. Soybeans are more resistant to diseases than beans (*Phaseolus vulgaris*), which

are a basic staple of Rwandans. 3. Soybeans are ecologically plastic (flexible).

"The most widespread variety is Palmetto from Colombia."

Inoculated soybeans at the Rubana station give yields of 1,800–2,000 kg/ha, and on peasant farms 1,400 kg/ha. ISAR has shown that inoculation is very important, being the equivalent to the application of fertilizer containing 50–100 kg of nitrogen per hectare.

"The government of Rwanda envisages building, by 1976, a polyvalent oil mill based mainly on peanuts and soybeans. As soon as the mill is completed, 5,000 ha could be put under soybeans.

"Starting in 1975, ISAR hopes to cooperate with the International Soybean Program (INTSOY) in order to introduce new high-yielding varieties as soon as possible." Address: Head, Botany Section, Inst. des Sciences Agronomiques du Rwanda (ISAR), Rubana, BP 167, Butare, Rwanda.

2642. Costa, S.I. da; Arkcoll, D.B. 1975. The industrial production of an organoleptically acceptable soybean milk. *INTSOY Series* No. 6. p. 174-77. D.K. Whigham, ed. Soybean Production, Protection, and Utilization: Proceedings of a Conference for Scientists of Africa, the Middle East, and South Asia (College of Agric., Univ. of Illinois at Urbana-Champaign). [3 ref]

• ***Summary:*** VITAL soymilk, developed by ITAL, is readily accepted by school children. The most popular flavors were strawberry, chocolate, vanilla, and banana, in that order. Address: 1. Head; 2. Advisor. Lipids & Proteins Section, ITAL, C.P. 139, Campinas, S.P., Brazil.

2643. Ferrier, L.K. 1975. Simple processing of whole soybeans. *INTSOY Series* No. 6. p. 178-88. D.K. Whigham, ed. Soybean Production, Protection, and Utilization: Proceedings of a Conference for Scientists of Africa, the Middle East, and South Asia (College of Agric., Univ. of Illinois at Urbana-Champaign). [17 ref]

• ***Summary:*** A review of the work at the University of Illinois with drum-dried flakes, home cooked and canned soybeans, soybean beverages and beverage products (incl. soy ice cream, yogurt, custard, and margarine), spreads (incl. a chip dip and a "soybean butter" that resembles peanut butter), snack foods (incl. dry roasted soynuts resembling peanuts and puffed snacks). Soy ogi is also discussed.

"The drum-dried flakes are made by preparing a smooth slurry of the cooked soybeans in water and drum-drying the slurry on a double drum drier. If the final product contains other materials, such as fruit or cereals, these are mixed in the soybean slurry and the combination is drum-dried. The dried flakes may be ground to any fineness desired. These flakes may be used directly, as a weaning food, or they may be mixed into other food such as baked goods to increase the protein content."

Concerning soy beverages and beverage products: A simple process was developed at the University of Illinois which allows the use of blanched soybeans to produce a stable soy beverage with *no* beany flavor. (A patent has been granted in France and Belgium, and is pending in other countries.) The major advantages of this process are an excellent mild flavor, no off-flavor, destruction of antinutritional factors, and increased nutritional value relative to most other soybean beverages. The major disadvantage is the necessity of homogenization in order to produce a stable suspension. The beverage based has been used to replace milk in products such as soy ice cream, soy yogurt, custard, and diet margarine, all of which are prepared by conventional methods. Soy beverage base is presently marketed by G.B. Pant University, Pant Nagar, India. The selling price (which allows some profit) is about one-third that of cow's milk. Address: Asst. Prof., Dep. of Food Science, International Soybean Program (INTSOY), Univ. of Illinois, INTSOY.

2644. Herath, H.M.E. 1975. Soybean cultivation in Sri Lanka: A progress report. *INTSOY Series* No. 6. p. 239-51. D.K. Whigham, ed. Soybean Production, Protection, and Utilization: Proceedings of a Conference for Scientists of Africa, the Middle East, and South Asia (College of Agric., Univ. of Illinois at Urbana-Champaign).

• ***Summary:*** "Soybean was first introduced to Sri Lanka in 1947. Various trials were carried out in the dry zone and hill country but, because soybean was unable to compete with other pulses, little attention was given to it...

"Failure of attempts to grow soybeans in the past has led to a general belief that they cannot be grown in Sri Lanka in sufficient quantities for commercial exploitation. In 1973, however, with the introduction of the first International Soybean Program (INTSOY) kits to Sri Lanka, it has been found that soybean does very well in most locations, and research since then has shown that there is a possibility of intercropping certain plantations with soybean...

"Soybean is mainly consumed in Sri Lanka as a substitute for lentils. There is also an increasing demand for soy flour used in a mixture with rice and wheat flour. Pilot projects for the production of soy milk, soy oil and blending of cowmilk for spray-drying have been initiated. Since there is a severe shortage of animal feed, soybean and its by-products are being increasingly used in the livestock industry.

"The acreage under soybean is increasing annually, from a few acres in 1971 to nearly 5,000 acres in 1974."

Detailed information on soybean production research is given, including yields for many varieties tested, nutritional composition of varieties, nodulation data, effect of spacing on yield, effects of pesticides on nodulation, and effect of storage at various temperatures and times on germination of

different varieties.

A map of Sri Lanka shows the "General agro-climatic zones of Sri Lanka and International Soybean Program (INTSOY) locations for 1974." Colombo and CARI are both in the West Zone in the southwest of the country. Address: Central Agricultural Research Inst., Peradeniya, Sri Lanka.

2645. Johnson, D.W. 1975. Soybean processing, products, characteristics, and uses. *INTSOY Series* No. 6. p. 157-73. D.K. Whigham, ed. Soybean Production, Protection, and Utilization: Proceedings of a Conference for Scientists of Africa, the Middle East, and South Asia (College of Agric., Univ. of Illinois at Urbana-Champaign).
• ***Summary:*** Table 14 shows "estimated current annual production of various edible soy products in the United States (1,000 metric tons): Soy flour and grits 340-450, soy protein concentrates 30, isolated soy proteins 25, textured soy proteins 90, spun protein fibers 8. Discusses processing techniques, products made from soybeans and their yields, other uses of soy products (pet foods, lecithin, soymilk incl. Vitasoy, cereal-soy blends such as CSM, soy flour products [incl. calf milk replacer]), and factors influenced by soy flour in various products.

It is estimated that 330,000 to 450,000 metric tons of soy meal, grits, flour, and textured soy proteins (flour) are used in U.S. pet foods each year. "On a protein basis, this undoubtedly makes up over 50 percent of the total protein consumed by pets, mainly dogs." In Hong Kong, Vitasoy reportedly outsells carbonated beverages. In 1973 an estimated 150 million bottles of Vitasoy were sold. Address: Food Ingredients, Wheeling, Illinois.

2646. Mmbaga, E.T. 1975. Highlights of soybean production in Tanzania. *INTSOY Series* No. 6. p. 252-53. D.K. Whigham, ed. Soybean Production, Protection, and Utilization: Proceedings of a Conference for Scientists of Africa, the Middle East, and South Asia (College of Agric., Univ. of Illinois at Urbana-Champaign).
• ***Summary:*** "Soybean... was first introduced at Amani, Tanga [region of today's Tanzania], in 1907 by the Germans, and during the second World War (1939-1947) the British tried to grow soybean in the West Lake Region but their efforts were in vain. The yields were terribly low due to poor varieties.

"The potential of soybean was realized later and a breeding program was initiated in 1955 and completed successfully in 1963 at Nachingwea, which was a good target for soybean improvement after the failure of a groundnut scheme. Nachingwea varieties proved suitable for low altitudes...

"General Agricultural Products Export Corporation (GAPEX) and National Milling Corporation are the two agents that buy all seed crops. These corporations are extremely dependable and, as a result, the farmers' interest in going into soybean production has been accelerated to some degree...

"Village soybean projects, United Nations Children's Fund, and nutrition extension services are the three main bodies involved in a campaign for better nutrition levels for the whole nation... Soy flour is at present being used in making porridge, at a ratio of one part soy flour to three parts maize flour. Breads of 10 percent soy flour and 90 percent wheat flour are common, especially in the Morogoro region. Porridge and soymilk are generally used extensively in school feeding programs and the acceptability of these products is very high.

"The processing of soybeans to soy flour is accomplished by using the locally existing mills...

"Future prospects for the soybean in Tanzania are absolutely bright." Address: Agricultural Research Inst. Ilonga, Private Bag, Kilosa, Tanzania.

2647. Moutia, S. 1975. Soybean: An old crop with a new outlook in Mauritius. *INTSOY Series* No. 6. p. 218-20. D.K. Whigham, ed. Soybean Production, Protection, and Utilization: Proceedings of a Conference for Scientists of Africa, the Middle East, and South Asia (College of Agric., Univ. of Illinois at Urbana-Champaign). [11 ref]
• ***Summary:*** An excellent history of soybean research and production in Mauritius, drawing on many original sources, from the pioneer P. Boname who grew the country's first soybeans several years prior to 1909.

"In Mauritius soybean meal was never popular as a constituent of animal feed, mainly because of its price and the distance from important centers of production. In the human diet, however, it never fell out of favor with the Mauritians of Chinese origin. In some places in Port Louis, soymilk and soybean curd are prepared in the home, and the curd is sold in the market and is available in meals in Chinese restaurants." Address: Ministry of Agriculture, Reduit, Mauritius.

2648. Panday, M. 1975. Soybeans in Nepal. *INTSOY Series* No. 6. p. 221-22. D.K. Whigham, ed. Soybean Production, Protection, and Utilization: Proceedings of a Conference for Scientists of Africa, the Middle East, and South Asia (College of Agric., Univ. of Illinois at Urbana-Champaign).
• ***Summary:*** "Soybean is the centuries-old crop in Nepal. Growing of soybean with maize and millet in intercropping is an old practice in Nepal. Not only soybeans, but almost all kinds of edible summer and winter legumes, are grown in an intercropping pattern...

"Due to lack of marketing facilities, our farmers grow the soybeans only for their self-sufficiency, leaving a very little amount to sell in the market. Our farmers feed the soybean flour to their cattle, especially cows and buffalo, during their lactating period in order to get more milk.

"Local methods of using soybeans in the human diet are:

(a) Roasted soybeans mixed with roasted corn are eaten in the daily tiffin. (b) Roasted soybean cotyledons mixed with garlic, onion pieces, salt, and chili are served as a cocktail. (c) Sprouted soybeans mixed with other sprouted pulses are used in vegetable soup. (d) Green soybean pods are eaten after steaming.

"Nowadays the soybean eating habits have been changed by the people. Some have started preparing milk, yogurt, and the like from soybean. Rice cooked in soya milk with some coconut pieces is becoming popular. People have started using soybean flour in their baby food." Address: Dep. of Agriculture, Education and Research, Khumaltar, Lalipur, Nepal.

2649. Ramsey, H.A.; Willard, T.R. 1975. Soy protein for milk replacers. *J. of Dairy Science* 58(3):436-41. March. [16 ref]

• ***Summary:*** Fully-cooked soy flour contains an inactive form of trypsin inhibitor that is converted to an active form at pH 7 to 9. This inhibitor can be destroyed by heating the soy flour in water. Address: Dep. of Animal Science, North Carolina State Univ., Raleigh, North Carolina 27607.

2650. Tajima, Makoto. 1975. [The amino acid composition of new protein products for food from soybean]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku* (*Report of the National Food Research Institute*) No. 30. p. 208-10. March. [18 ref. Jap; eng]

• ***Summary:*** These six new soy protein products include: (1) 7S-rich protein–high in lysine. (2) 11S-rich protein. (3) Sponge protein–low in lysine + methionine. (4) Soya milk protein #1 (freeze-dried). (5) Soya milk protein #2 (vacuum-dried). (6) Okara protein (treated with cellulase enzyme)–which had the highest protein quality of all.

Reprinted from *Eiyo to Shokuryo* (*J. of Japanese Society of Food and Nutrition*) 27(6):295-97 (1974). Address: National Food Research Inst., MAFF, Tokyo, Japan.

2651. Miller, Harry W. 1975. Re: On soymilk, tofu, and their production. Letter to William Shurtleff, c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan, April 30. 2 p. Typed, with signature on aerogram.

• ***Summary:*** "Yesterday Apr. 28 your letter arrived and it was so helpful and interesting. I am answering your enquiries as best I can. The first is the hot and the cold grind. Soybeans are finding their way in so many types of foods these days and I think you will find depending on their place in the foods we will find varying procedures. On account of costs economy must be considered. Our research tells us that grinding with Stone Buhrs and disintegration with blenders equal same water soluble amount of solids. On a large scale Grinders are cheaper than disintegrators but [for] small production blenders are better.

"Also our findings keeping the temperature under 150 degrees Fahr. of the slurry before filtering gives us approximately the same yield as [if] brought to 212 degrees [boiling]. So when we make soy milk the higher temperature to filtering brings out of the fiber more of the bean taste. This is a question debatable, I know.

"When making ToFu we bring the slurry just up to boiling and our directions is wrong on saying the water extract is treated same for tofu as for soy milk. We know that long boiling or high pressure for at least 7 to 8 minutes at 100 Centigrade is needed to rid the bean of trypsin inhibiter or perhaps gas former. But not for the tofu. The figure of adding 556 grams cerelose or corn syrup to 16 lbs or 7½ kilos soy extract for milk is rather high, more than 7%. Though 7% is about the standard for carbohydrate in Mother's Milk. And we are inclined to follow the formula of human milk rather than Cows Milk for mankind. In our regular milk formula we aim to add 6% carbohydrate, as carbohydrates of soybeans are questionable.

"Providing you get the soy flavor out in processing. I agree that soymilk is good with less corn syrup. The sheet I sent you is the first run off and it needs some corrections and the sugar content should be lowered 1¼%. I have tried to calculate what the total solids are in your finished soy milk. Your water dilution may be less than ours. Out of 5 pounds of soybeans we make 50 pounds of soy milk, slightly over 6 gallons. To this has been added 3 pounds cerelose, 3O grams salt, 1 pound of corn oil. The resulting milk tests 13% solids.

"You make reference to our cutting the curd in 2 inch squares. It is general practise in cheese makers in this country to cut the curd by that, as the curd begins to form you run a sharp-edged stick, or in cheese plants a stainless steel long knife passing three the slit area is curd, so that the curd gathers together between the cuttings, and they know when best to separate and place in cheese pressing boxes. This may not be necessary in soy curd but it seems to be a guide to us when to place and or transfer to the cheese pressing box.

"We surely have something to learn [about] how to make so much Tofu out of a pound of soy beans. Your beans may be a little heavier in protein as we find the large beans we get yield more protein, but not that difference. We have reached 3 pounds but that depends on when we stop dewatering the curd, but any curd more than 3 pounds out of 1 pound of soy beans is hard to handle. But on Tofu we have much to learn, however on Soymilk and building up of maximum yield of total water soluble solids as also taste wise, that is getting rid of the beany flavor, we have definitely made progress and I think moved ahead of any that we have heard of. As for mouth feel, possibly more concentrated formula may be acceptable. The ratio of ingredients we take to the human milk formula and not cows milk made to rear a calf, a hairy animal and rapid grower. I did not have time this evening to review you chapter 10 on soy milk, as I am writing this at home and it is filed at my office with Loma Linda Foods.

We have had experience in the above named coagulants, tried them all except sea water and sea salt. We mostly prefer Calcium sulphate and Glucono delta Lactone for convenience.

"I know that the Japanese are very meticulous in making the soy curd, and the people of using same. To translate their methods in writing, you have done very well, but still I can assure you that experience is needed in this field. Soy milk and Tofu the world as for western nations has yet to learn to use. Thanks for your letter and your points well taken and I remain, very sincerely yours, Harry Miller.

"Bill, I have written this letter at the end of a very busy day with many interruptions, so it is so poorly typed I almost decline to mail it but it does explain to you what we are doing. I assure you that soy foods are very hard to put over in U.S.A. but people are learning, they are very sensitive to soy flour and Tofu also soy Milk well made has a field for the future. HWM."

Note: Dr. Miller was age 95 years, 9 months and 28 days when he wrote this letter by himself, using a manual typewriter. He was born on 2 July 1879 in Ohio. Address: M.D., 11384 Norwood Ave., Riverside, California 92505.

2652. Crowley, Paul R. 1975. Practical feeding programs using soy protein as base. *J. of the American Oil Chemists' Society* 52(4):277A-279A. April. [2 ref]
• ***Summary:*** Contents: Abstract. Introduction. Nutritious processed foods. Use of soy protein in Title II commodities. WSDM [whey soy drink mix]. References. Address: National Economic Analysis Div., Economic Research Service, USDA, Washington DC 20250.

2653. Johnson, Dale W. 1975. Use of soy products in dairy product replacement. *J. of the American Oil Chemists' Society* 52(4):270A-271A. April. [4 ref]
• ***Summary:*** Contents: Abstract. Introduction. Soy milk products. References. Address: Food Ingredients Inc., Wheeling, Illinois 60090.

2654. Khaleque, A.; Wallace, G.M. 1975. Studies on the processing and properties of artificial milk. IV. Evaluation (in vitro) of nutritional quality of proteins in various heat-processed soymilks. *Bangladesh J. of Scientific and Industrial Research* 10(1&2):148-57. Jan/April. [27 ref]
• ***Summary:*** Presoaking soybeans in a sodium carbonate solution gives soymilk with an improved taste and nutritional value. Address: Dep. of Food Technology, Massey Univ., Palmerston North, New Zealand. 1. Present address: B.C.S.I.R. Laboratories, Dacca, Bangladesh.

2655. Tello, Felipe. 1975. Manufacturing and marketing of soy products for human consumption in Mexico. *J. of the American Oil Chemists' Society* 52(4):242A-43A. April. [22 ref]
• ***Summary:*** Contents: Abstract. Introduction. New protein sources. Soy in extending proteins. Soy processing in Mexico. References. Address: Industrial de Alimentos, S.A., Mexico City, Mexico.

2656. Akinyele, Isaac Olaolu; Rindsig, R.B.; Velu, J.G.; Harshbarger, K.E. 1975. Soy protein concentrate in milk replacers for the calf (Abstract). *J. of Dairy Science* 58(5):741. (Abst. # P9). May.
Address: Univ. of Illinois, Urbana.

2657. *Soybean Digest.* 1975. Mexico develops mechanical cow. May. p. 53.
• ***Summary:*** An engineer in Mexico, Manuel Rojo Castillo, has invented the equipment and manufacturing process for making highly nutritious soy milk directly from whole soybeans. "Plans are being made to build a prototype model in the near future funded by the Mexican government." This "mechanical cow" produces 10 liters of soy milk from each kg of whole dry soybeans. This new process significantly lowers the cost of making soy milk, while improving the flavor. Now "it is possible to obtain a texture equal to that of cow's milk with comparable nutritional value and price less than true milk."

"Although soy milk is high in protein, it has not previously been accepted due to the high price involved since it was made with soy flour; its odor and taste have been incompatible with the traditional taste; the sandlike sensation produced due to the size of the particles in suspension; and the decrease in protein content caused by eliminating the outside covering of the soybean to eliminate odor problems."

"In Mexico there exists a deficit of cow milk of 2.4 million liters daily... While principally designed for human consumption, the new soy milk can also be used in cheese and for feeding calves. As a milk replacer, the enormous volume of animal proteins would be saved which are presently wasted due to the premature slaughter of calves since it is costly to feed them with the cow's milk."

Note: This machine is different from the "Mechanical Cow" developed in Sao Paulo, Brazil, by Dr. Roberto H. Moretti of Vanguarda Mecanica. Development work on this Mechanical Cow began in 1976; it was patented in 1979. By Nov. 1980, according to Dr. Moretti, 80-90 Mechanical Cows were in operation in Brazil.

2658. *Soybean Digest.* 1975. ASA promotes soy for nutrition. May. p. 8-9.
• ***Summary:*** American Soybean Assoc. market development activities from the Mexico City regional office helped production of soy protein products from less than 2 tons daily in 1971 to over 35 tons daily at present. Proteida resulted from the first government effort to introduce texturized soy protein (TSP) into meat products. The factory to produce Proteida was inaugurated by Mexico's

President Echeverria in Sept. 1973. Initially only a few hundred pounds of meatballs and a pre-cooked patty called "Milanesa" were produced. "This patty requires no refrigeration and was developed by the National Nutrition Institute. Now this product is being sold in the government CONASUPO stores at a rate of approximately 110,000 lb/day at a very low price in low income areas. At a 25% TSP level this amounts to 27,500 lbs. of TSP daily." Proteida is produced by the Mexican government packinghouse.

Alborada is beef-flavored TVP which is made by the Miles/Worthington group. Sold in an attractive paperboard box, it "has received very good acceptance by the public and is being sold in all the leading supermarkets. It is also sold in large quantities to institutions such as restaurants, hospitals, meal packaging plants and canned food producers.

"Another TSP product, Protoleg, is the oldest product on the market. Its producer, Industrial de Alimentos, is now the largest manufacturer of soy protein products [in Mexico] and cannot keep up with the demand. It is the leader in Mexico with tasty and economically priced soy products that appeal to Mexican appetites.

"The largest volume of sales is soy flour for baking. The tortilla industry consumes some 60% of the total. The remaining 40% is about evenly divided between TSP and beverage or milklike products. The largest bakery in Mexico, Bimbo, plans to start producing a soy based milk substitute, containing sweet whey powder. The product will consume 5 million pounds of soy flour annually...

"Last December ASA's Mexico City office contracted for the services of an experienced home economist-nutritionist to give lectures, write articles and inform the public in general of the many benefits and advantages of soy protein. Mrs. Ruth S. Orellana has over 25 years experience in Mexico in human nutrition and diets and is doing an excellent job of promoting soy. ASA will soon publish a recipe booklet for soy based traditional dishes for Mexico and all Latin America. Mrs. Orellana will be travelling throughout the entire territory to spread the news about soy nutrition." A photo shows paperboard packages of the following products: Alborada, Protoleg, Rikiroz, Estrella Blanca, Soyacyt.

Note: This is the earliest English-language document seen (Aug. 2013) that uses the term "milklike products" (or "milklike product") in connection with soymilk.

2659. Miller, Harry W. 1975. Re: On soymilk, tofu, and their production. Letter to William Shurtleff, c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan, June 4. 2 p. Typed, with signature on aerogram.

• ***Summary:*** "Your much appreciated letter has been neglected along with considerable other correspondence. Two reasons we have been on a very crowded program of Research and that I have been away for a time. I do thank you for your notes on some of the items that we have written you.

"First point about the Cooking of soy milk. We are agreed on use of blender for home minimizing of soy bean particle size, though we do have a small Mexican mill use to grind soaked corn and works well but is hand driven and time consuming, can use for making peanut butter as well costs around US $15.00, hard to buy in U.S.A. The double boiler works quite well with brine in outer chamber and commercial salt is cheap here, but I also agree that by constant stirring, boiling can be carried on safely. The Chinese have an ideal system of steam jet cooking in which the lower chamber of a welded together double boiler in which steam is generated in the bottom pan and led by a pipe to the bottom of the cooking chamber so that you get no scorching and active boiling by the release of live steam into the milk of the upper pan. Its simple and takes the place of the steam boiler, except its adapted for milk and To fu making.

"Regards the richness of soymilk, we find the Americans like that thin soymilk best. Possibly its because the soy flavor is more diluted. The rule here in formulation is to make a gallon of Soy Milk out of one pound soybeans.

"As Soy milk keeps well for a week under refrigeration (40 degrees Fahr.) so the house wife likes to grind cook and prepare a weeks supply of soymilk for the family. But as yet the home method of making soymilk is just in the beginning and not many do it.

"You refer to the high percentage of cerelose used here in soymilk as compared with acceptance in Japan. Let me explain our position about the formulation of Soy Milk. The ratio of fat, protein and carbohydrate differs greatly as between cows milk, mare milk, pigs milk, water buffalo milk, human Milk and other animals. These proportions are reflected in the rate of growth, the question of a large hair coating as in the cow and sheep, the energy requirement as for energy nature does not choose to use Protein for combustion to work, its function is to repair muscles or care for protein loss in secretions and body regulators such as the ductless glands, Thyroid, adrenals etc., etc. for wach [?] animals growth an analysis should be the guide, for the first year of growth supplied by milk is a good guide. Human milk formula is fat 3.5%, protein 1.7 percent, Carbohydrate 6 to 7%. For an adult after growth 35 to 50 grams seems adequate Protein. Therefore we lean strongly to a standard formula for Soy Milk should be fat 3 to 3.5%, Protein 2 to 2.4%, Carbohydrate 6%. In a one to seven or eight dilution the soybean will yield almost 3% protein, a half the needed fat and so we add 2% fat in the form of liquid vegetable oil and as for carbohydrate edible carbohydrate is rated very low possibly not more than 1% so we add 5% sugar and prefer the cereal sugars with low sweetening effect such as corn syrup.

"Such a milk as I have just described and what we are making and aiming at can be used in cooking, baking as also

for general beverage purposes.

"Now just a final word on Tofu, and we have much to learn to get 8 [?] pounds of marketable Tofu out of one pound of soybeans. Since To fu is exposed to heat after its made as milk is not, thus we pressure cook milk 10 minutes and Tofu just brought to boiling point and then curdled. In Tofu Making here when the curd jells, by raking a paddle a few times thru same seems to hasten the curd preparation to be transferred to the pressing box. It need not be two inches 3 or 4 inches divisions. What you have written on soymilk and Tofu is most interesting. Regret delays. with best wishes, very sincerely, Harry W. Miller.

"We have much to learn and am now working on making a loaf Cheese. We have made some progress and believe that we shall solve the problem in time." Address: M.D., 11384 Norwood Ave., Riverside, California 92505.

2660. Fung, Wye-poh. 1975. Effect of soya bean milk on the healing of gastric ulcers: A controlled endoscopic study. *Medical J. of Australia* 1(23):717-18. June. [4 ref]
• ***Summary:*** Although the effect on gastric ulcer healing was not significant, soya bean milk was shown to be effective in the relief of peptic ulcer pain. The mean ulcer healing grade was 1.600 in the soya bean milk group as compared with 1.000 in the control group. Address: Dep. of Medicine, Univ. of Singapore.

2661. Miya, Emico Emília; Pupo, L.M.; Chaib, M.A.; Angelucci, E.; Tango, J.S.; Figueiredo, I.B.; Tosello, Y. 1975. Estudo sensorial de sabor do leite de soja [Sensorial studies on soymilk flavor]. *Boletim do Instituto de Tecnologia de Alimentos* No. 42. p. 43-54. June. [10 ref. Por; eng]
• ***Summary:*** A trained taste panel analyzed 20 soymilk samples representing five different treatments of four soybean varieties (IAC-1, Santa Maria, Vicoja, and Pelicano). It was found that treatments with sodium bicarbonate were preferred, because the soy flavor was slightly masked; this made the milk more acceptable. Address: Brazil.

2662. Wang, Li Chuan. 1975. Ultrasonic extraction of proteins from autoclaved soybean flakes. *J. of Food Science* 40(3):549-51. May/June. [10 ref]
• ***Summary:*** The protein was extracted from defatted soybean flakes, which were autoclaved or unautoclaved than treated by conventional stir or sonicated methods–giving various ultracentrifuge patterns. Address: USDA Northern Regional Research Lab., ARS, Peoria, Illinois 61604.

2663. Camargo, C.R.O.; Moretti, R.H. 1975. Rendimento de extracao de proteina de soja [Yield of protein extractions from soybeans (Abstract)]. In: Sociedade Brasileira para o Progresso da Ciencia, 27th Annual Meeting. See p. 495. Held at 9-16 July 1975 at Belo Horizonte. [Por]*
Address: Brazil.

2664. Hinojosa, G.R.L.; Gasparetto, C.A.; Moretti, R.H. 1975. Aspectos reologicos da concentracao de leite de soja [Rheological aspects of the concentration of soymilk (Abstract)]. In: Sociedade Brasileira para o Progresso da Ciencia, 27th Annual Meeting. See p. 495-96. Held 9-16 July at Belo Horizonte. [Por]*
Address: Brazil.

2665. Lopez, J.L.; Moretti, R.H. 1975. Estudo de misturas de leite de soja e seu valor nutricional [Study of soymilk mixtures and their nutritional value (Abstract)]. In: Sociedade Brasileira para o Progresso da Ciencia, 27th Annual Meeting. See p. 494-95. Held 9-16 July at Belo Horizonte. [Por]*
Address: Brazil.

2666. Musha, Soichiro; Takahashi, Yoshihisa. 1975. Daizu tanpakushitsu no [Enrichment of trace amounts of gold in water utilizing the coagulation of soybean protein and its determination by atomic absorption spectrometry and emission spectrography. Enrichment of trace metals utilizing the coagulation of soybean protein. II.]. *Bunseki Kagaku* (*Analytical Chemistry*) 24(7):395-99. July. [22 ref. Jap]
• ***Summary:*** By adding fixed amounts of soybean milk (the collector), and delta-gluconic lactone (GDL; the coagulant), to a sample solution containing trace amounts of gold, then heating the mixture to boiling in order to coagulate the protein, 99% of the remaining gold could be recovered. The coagulum (tofu) was separated from the suspension by a centrifuge and burned to ashes using a low-temperature plasma asher. Details for the optimum conditions are given.

"The proposed method was applied to the determination of gold at the order of (0.01–1) parts per billion in the sample solutions such as water, 3% NaCL water and artificial sea water. This method was also applied to the determination of gold in common salts." Address: 1. Dep. of Applied Chemistry, Faculty of Engineering, Univ. of Osaka Prefecture, Mozuume-machi, Sakai-shi, Osaka, Japan; 2. Industrial Research Laboratories, Kao Soap Co., Ltd., 1334, Minato-yakushubata, Wakayama-shi, Wakayama, Japan.

2667. Klemsrud, Judy. 1975. World vegetarians meet to talk–and eat. *New York Times*. Aug. 22. p. 37.
• ***Summary:*** About the World Vegetarian Congress, held at the University of Maine in Orono, Maine. Some 1,500 people from 30 countries attended the 12-day meeting. According to Jay Dinshah, president of the North American Vegetarian Society (which is host to the conference) most people are here for 3 reasons: (1) They think meat-eating is harmful to their health; (2) They came for ethical reasons, because they believe it is wrong to slaughter animals for food; and (3) They believe that vegetarianism would help

solve the world food crisis.

According to Mr. Dinshah, about 50% of the worlds nearly four billion people are already vegetarians, many of them for religious reasons or because they have no choice. In the United States about 10 million people are said to be vegetarians.

"Soya milk and cow milk are available at all times as are fruit juices, spring water, and herb tea." Attendees include Dr. Gordon Latto (a retired London naturopath, elected yesterday as president of the International Vegetarian Union), Helen and Scott Nearing (the reigning celebrities; he is age 92 and they own a farm nearby), comedian Dick Gregory, and author Nathaniel Altman.

Photos show: Dr. Gordon Latto, president of the International Vegetarian Union. A woman (Alexandra Lonc of Detroit, Michigan) in a t-shirt that states: "Be kind to animals–Don't eat them." Address: Special to the New York Times.

2668. Nelson, A.I.; Steinberg, M.P.; Wei, L.S. Assignors to University of Illinois Foundation. 1975. Soybean beverage and process. *U.S. Patent* 3,901,978. Aug. 26. 17 p. Application filed 6 July 1973. [10 ref]

• ***Summary:*** This is the earliest known University of Illinois soyfoods or soymilk patent. Based on a pre-blanch of intact soybean cotyledons, grinding, and homogenization of the slurry to yield a soymilk base containing the okara or soy fiber.

Dehulling is optional; its only purpose would be to decrease the fiber content and viscosity of the finished product. The base may be diluted with water to obtain a milk containing 3.6% protein and 1.8% fat. Such a product can maintain its physical and organoleptic stability for over one month at 34 def. F.

At the time of the patent application, Mr. A.S. Alpert, University Patents, Inc. (2777 Summer St., Largo Building, Stamford, Connecticut, 06901) the exclusive licensing agent, issued a 2-page statement titled "Soybean Beverages" which noted: Addition of a small amount of breakfast cocoa results in a tasty chocolate drink. "The base may be diluted with cottage cheese whey, presently an environmental pollutant, to obtain a highly nutritious and good-tasting milk-like beverage. Other products which have been prepared with this soy beverage base include a 'diet margarine' soft spread, frozen ice cream-like product, and a whipped shake product. These products have been taste-tested by numerous persons who have visited the University, and have received enthusiastic responses." Address: Dep. of Food Science, Univ. of Illinois, Urbana, IL.

2669. Dinshah, Freya. 1975. XXIII World Vegetarian Congress cook book. Malaga, New Jersey: North American Vegetarian Society. 40 p. Illust. No index. 27 cm. Spiral bound. Introduction by H. Jay Dinshah.

• ***Summary:*** This is a vegan cookbook. This congress is a milestone of the vegetarian movement both in North America and worldwide. "The International Vegetarian Union, founded in 1908, had held 22 previous Congresses from 1908 to 1973, each in the British Isles, continental Europe, or India." A congress is held every 2 years. The North American Vegetarian Society was created with two goals: (1) To bring about a complete renaissance of the vegetarian movement in the United States and Canada, and (2) To organize the 23rd Congress, which was held 16-28 Aug. 1975 at the University of Maine, Orono, Maine. Daily menus served at the Congress are listed on pages 7-8. Soya milk, and Willow Run Soya Lecithin Spread were available at each breakfast. Willow Run Spread, Soy Mayonnaise, Tamari Soy Sauce, Soya Milk, and Roasted Soya Beans were available at each lunch and dinner. Soy-related recipes include: Soya sprouts (p. 14-15). Soya butter (made with 3/4 cup soya powder, and ½ cup each soy oil and water, p. 16). Soy mayonnaise (with soya powder and Soyagen powder). Soya beans (boiled, then baked, p. 17). Soya peanut savory (with cooked soya beans, p. 20). Soya rounds (with cooked soya beans, baked, p. 20). Several tablespoons to 2/3 cup of Soyagen powder (powdered soymilk) or soya powder are used in many of the dessert recipes (p. 30-36). Soya milk (from soya powder, p. 32). Bread pudding (with soya milk, p. 32). Granola (with soya powder, p. 39). Page 40 lists 34 vegetarian societies affiliated with NAVS in the USA. Address: North American Vegetarian Society, 501 Old Harding Highway, Malaga, New Jersey.

2670. Prakash, C.; Sharma, S.P.; Mulay, C.A. 1975. Utilization of soymilk in flavoured milk preparation. *J. of Food Science and Technology* (*Mysore, India*) 12(4):163-65. July/Aug. [6 ref]

• ***Summary:*** (1) Standardized buffaloes' milk (3% fat, 8.5% solids non-fat) or (2) recombined milk (3% fat, 8.5% solids non-fat) prepared from skim milk spray dried at low heat plus ghee, was mixed with soymilk at 0, 10, 20, 30, and 40% levels, with the addition of 8% sugar. After homogenization and pasteurization, colour and synthetic flavour were added. Body and texture of the milk were improved by mixture of 20% or more of (1) or (2).

Flavored soymilk mixed with 30% or more of (1) or (2) was acceptable to 7 of 8 judges. Address: National Dairy Research Inst., Karnal, India.

2671. Fomon, Samuel J. 1975. What are infants fed in the United States? *Pediatrics* 56(3):350-54. Sept. [35 ref]

• ***Summary:*** About 10-15% of U.S. infants receive lactose-free soy protein isolate formula. Table III (p. 352) shows the estimated market share of the leading milk-based and milk-free [soy-based] infant formulas. It is estimated that four milk-free formulas are used for feeding 92% of all infants receiving commercially prepared milk-free formulas, as follows: Isomil (Ross) 43%. ProSobee (Mead Johnson) 24%.

Neo-Mull-Soy (Syntex) 18%. Soyalac (Loma Linda) 7%. Plus: Nursoy (Wyeth) 3%. All others 5%. The term "beikost" refers to "foods other than milk or formula fed to infants." Address: M.D., Dep. of Pediatrics, Univ. of Iowa, Iowa City, Iowa.

2672. **Product Name:** [Defatted Soy Flour, and Cereal-Soy Blends].
Manufacturer's Name: Productos Nutricionales, S.A. (Pronasa).
Manufacturer's Address: Lago Muritz 84-B, Mexico 17, D.F., Mexico. Phone: 531-31-15.
Date of Introduction: 1975. October.
New Product–Documentation: Talk with Gil Harrison of American Soybean Assoc. 1989. April 21. This company was run by Donald Reese, a graduate of Stanford University. He made defatted soy flour, and cereal-soy blends. General Mills was the first company to make a defatted soy flour in Mexico. They had had their own little cereal-soy mixing plant. Their first experiments were done with a soy beverage (made from defatted soy flour and flavor) served to government dam workers. They probably started in the late 1960s and were definitely there by 1971. When they couldn't make it go, Don Reese purchased all the machinery from General Mills. He wouldn't let Gil Harrison into his plant on Lago Muritz in 1971. He made cereal-soy blends and a soy beverage, both containing sesame. He ended up making all the infant formulas for Mead Johnson and others. The plant finally closed over a labor dispute. He is still is in Mexico but is no longer working with soy.

2673. Singer, Peter. 1975. Animal liberation: A new ethics for our treatment of animals. New York, NY: New York Review. Distributed by Random House. xix + 301 p. Oct. Illust. Index. 18 cm. Paperback edition published Sept. 1977 by Avon Discus. [200* ref]
• ***Summary:*** This book, a milestone in and "bible" of the animal rights movement worldwide, first popularized the concepts of animal rights and speciesism (pronounced SPEE-shees-iz-um, a term first used in 1973) as logical extensions of human rights and racism. It helped to make 1975 a year that saw explosive growth in the animal rights and vegetarian movements. Singer is an Australian academic.

The author, an Australian philosopher, argues for an end to oppression and exploitation of non-human animals, discusses animal experimentation and factory farming, and presents vegetarianism as an opportunity to take a political, economic, and moral stance in our daily lives.

Contents: Preface (It begins: "This book is about the tyranny of human over nonhuman animals. This tyranny has caused and today is still causing an amount of pain and suffering that can only be compared with that which resulted from the centuries of tyranny by white humans over black humans. The struggle against this tyranny is a struggle as important as any of the moral and social issues that have been fought over in recent years"). Acknowledgments. 1. All animals are equal... or why supporters of liberation for blacks and women should support animal liberation too. 2. Tools for research... or what the public doesn't know it is paying for. 3. Down on the factory farm... or what happened to your dinner when it was still an animal. 4. Becoming a vegetarian... or how to reduce animal suffering and human starvation at the same time. 5. Man's dominion... a short history of speciesism. 6. Speciesism today... defenses, rationalizations, and objections to animal liberation. Appendices: Cooking for liberated people (incl. Seventh-day Adventists, bread, peanut butter, tahini, miso, hummus, and Tartex, Chinese recipes, mung bean sprouts and tofu, Indian recipes, Middle Eastern recipes, flat Arabian bread, chickpeas and felafel, Italian recipes, macrobiotic recipes {incl. soy sauce, soybeans}, meat substitutes {incl. TVP, Granburger, Protoveg, Itona, Vitpro, Loma Linda meatless frankfurters, imitation bacon bits}, and milk substitutes–often made from soybeans), further reading, organizations.

Singer's book was not just a philosophical treatise. It was a call to action. Invoking the concept of speciesism, Singer deplored the historic attitude of humans toward non-humans as a "form of prejudice no less objectionable than racism or sexism," and urged that the liberation of animals become the next great cause after civil rights and the women's movement. Singer's popular book produced two important effects. First, it reintroduced to the anti-vivisectionist cause an intellectual basis, a philosophical orientation, and a moral focus. Second, it attracted to the animal rights cause a host of new activists who started many new organizations. The most active and visible of these has been PETA (People for the Ethical Treatment of Animals, in Washington, DC), which by 1988 was thought to have 200,000 dues paying members in the USA.

Singer maintains that: "to treat animals as resources and argue about when use is sustainable, is a classic example of economic rationalism running heedlessly over non-economic values. We should no more hand our wild animals over to the tender mercies of the market than we should hand our children over to the same market forces. Neither children nor wild animals are a 'product' or a 'resource' at all."

Note: This is the earliest document seen (Oct. 2009) that mentions Itona, a British maker of soymilk and meat alternatives. Address: Australia.

2674. Diaz Delgado, D. 1975. Valor nutritivo y uso potencial de las proteinas solubles e insolubles de la soya [Nutritive value and potential uses of soluble and insoluble soy proteins]. In: American Soybean Assoc., ed. 1975. Memorias: Primera Conferencia Latinoamericana Sobre la Proteina de Soya. Mexico City. 232 p. See p. 44-55. [5 ref. Spa]
• ***Summary:*** Provesol is a fine powder with a protein content

of 50%. Bebida Proteinica is a liquid containing 2.7% protein. These are apparently not commercial products. El Instituto de Bienestar Familiar de Colombia studies food and its availability. Address: Instituto de Investigaciones Technologicas de Colombia.

2675. **Product Name:** Jolly Joan Instant Soy Milk Powder.
Manufacturer's Name: Ener-G Cereal Co.
Manufacturer's Address: P.O. Box 24723, Seattle, WA 98124.
Date of Introduction: 1975. November.
Ingredients: Soya bean powder.
Wt/Vol., Packaging, Price: 18 oz.
How Stored: Shelf stable.
New Product–Documentation: Midwest Natural Foods Distributors, Inc. 1975. Catalog #7. Nov. Ann Arbor, Michigan. 108 p. See p. 39. Ener-G-Foods–Jolly Joan. "Inst. Soy Milk Powd." (18 oz).

2676. Gonzalez del Cueto, A.; Enrique Perez Romero, J. 1975. Eficiencias economicas comparativas de diversos productos alimenticios [Comparative economic efficiency of various food products]. In: American Soybean Assoc., ed. 1975. Memorias: Primera Conferencia Latinoamericana Sobre la Proteina de Soya. Mexico City. 232 p. See p. 104-18. [9 ref. Spa]
Address: Instituto Mexicano de Investigaciones Technologicas.

2677. Kothari, S.L. 1975. Soyamilk: An ideal food. Nagpur, India: Soyghurt Food Products & Co. 13 p. Nov.
• ***Summary:*** This is basically a promotional brochure for a bottled soyamilk product made by Soyghurt Food Products & Co. It contains photos of the product (apparently introduced in about 1974), of Dr. S.L. Kothari, and of the company's soyamilk stall at the Kanhan Agricultural Exhibition of 1975. Gives composition and nutritional value of the product, results of a lab test conducted in Aug. 1974 on both plain and flavored products at Nagpur, and numerous testimonials by individuals to the value of the product. Address: Soyghurt Food Products & Co., Wardha Road, Sitabuldi, Nagpur 440012, Maharashtra (MS), India. Phone: 22645.

2678. Midwest Natural Foods Distributors, Inc. 1975. Catalog #7. Nov. '75. Ann Arbor, Michigan. [vii] + 93 + 8 p. Index. Illust. 28 cm.
• ***Summary:*** This catalog, largely printed by a computer, contains many ads on unnumbered pages. Contents: Hi! Ordering and service information. Bulk: Whole grains, beans, seeds and nuts, dried fruit, nut butters, etc. Refrigerated and frozen ("Frozen meats {beef}–No DES, steroids, female hormones, antibiotics, or stimulants used in feeding; Chickens–No hormones & antibiotics. Ask for turkeys and hens during Thanksgiving." "Frozen soy products: soy milk and tofu soybean curd"). Books. Packaged (by company and product category). Index by product. Index by manufacturer.

"We are happy to announce that Midwest and Mountain High are now one entity... We go into the fall and winter seasons with a fall and winter catalog, delivery schedule, and computer system." For new developments, watch the monthly newsletter and sale sheets. "Your Friends at Midwest."

Includes the following ads (the number is that of the facing page). Wheat Stalk Soya Burger (Cotati, California, p. 17). Arrowhead Mills (p. 27). Dr. Bronner's Magic Soap (p. 32). Chico-San (p. 35). Erewhon (p. 41, incl. "Trail Mix, Niks"). Fearn Soya Foods (p. 42; shows a package of Fearn Soy/o Buckwheat Pancake Mix). Flavor Tree–Pernut soy beans (p. 42). Hain (p. 49, "Cold pressed safflower oil," mayonnaise, and margarine). Health Main (p. 54; soy is not mentioned–only natural potato chips and yogurt dressing & dip). Infinity Herbal Products Ltd. (p. 56). Malt-O-Meal–Soy Town (dry roasted soy beans, p. 60). NF Factors (Lafayette, Calif., p. 67. A photo shows a can of Protesoy). Pure & Simple (p. 72, 795 West Hedding St., San Jose, California 95126; mainly fruits, fruit juices, fruit butters, vinegars). Sovex (p. 83-84. "The fastest selling natural cereal line on the market... Here's the one that started it all, the original Crunchy Granola"). Viobin (wheat germ oil, p. 85F, 89). Tiger's Milk Products (p. 86).

Companies whose products are listed with ads include: Back to Nature (granola, p. 28). Country Natural (granola, p. 36). El Molino (p. 38-39; incl. Cara Coa Crunch Bar, Carob Fruit & Nut Bar, Carob Mint Candy, Chia Seeds, Flaxseed–Whole, Pumpkin seeds, Soybeans–whole, Soya flour, Soya grits, Carob Coated Soybeans). Ener-G-Foods–Jolly Joan (incl. Instant Soy Milk Powder, Wheat & Soy P&W [Pancake & Waffle] Mix {regular and low salt}, p. 39). Flavor Tree (Pernola cereal, Pernut soy beans–salted, cinnamon, salt free, garlic, Pernut toasted soybeans–salted, salt free, garlic, onion). Wok sets in gift box, Quaker City grain grinder, Corona hand mill (p. 58). Lassen Foods (granola, p. 60, 60F). Mac Knives (p. 60). Orjene (p. 70-71). Parkelp–Ocean Labs (p. 71, incl. Sea Zun).

The Chico-San Inc. ½-page ad (facing p. 35) features four products; a photo of each is given and each is K-Parve: Rice Cake San-Wich (filled with sesame seeds and Yinnies Rice Syrup). Yinnies Rice Syrup (natural sweetener, made from rice and barley). Yinnies (traditional oriental confection, wrapped like individual candies). Rice Cakes in 4 varieties: Salted or Unsalted, Rice Cakes with Millet–Salted. Rice Cakes with Buckwheat–Salted. "Other Chico-San Products: Organically grown brown rice. Lima soy sauce, miso (soybean puree), rice malt vinegar, sesame butter, sesame oil, nigari, barley koji, tekka, sesame salt, sea salt, salt plums, kuzu, organic rice cream, organic rice flour, black

soybeans, azuki beans, sea vegetables, mu tea, lotus root tea, twig tea, toothpowder, seaweed shampoo." Address: Ann Arbor, Michigan 48107. Phone: 313-769-8444 or in Area 313 1-800-552-6297.

2679. **Product Name:** Soy Milk [Plain, Carob], Tofu Soybean Curd.
Manufacturer's Name: Midwest Natural Foods Distributors, Inc.
Manufacturer's Address: Ann Arbor, Michigan. Phone: 313-769-8444 or in Area 313 1-800-552-6297.
Date of Introduction: 1975. November.
Wt/Vol., Packaging, Price: Soymilk: 16 or 32 oz. Tofu: 10 oz.
How Stored: Shelf stable.
New Product–Documentation: Midwest Natural Foods Distributors, Inc. 1975. Catalog #7. Nov. Ann Arbor, Michigan. 108 p. See p. 15. Frozen. "Soy products–soy milk has all amino acids, contains no animal fat, no lactose."

Note: There are several reasons for thinking that these two products were probably made or purchased from Health Valley or Health Maid in California: (1) In the first index, under "Soy Products," those from Health Maid are shown as appearing on pages 14-15. Although the name "Health Maid" does not appear on p. 15, there is good reason to believe that Health Maid was selling tofu by Nov. 1975; Shurtleff and Aoyagi visited their warehouse in Los Angeles in Jan. 1976 and saw their tofu. (2) The main entry for "Health Maid Natural Foods" states: "See also Refrigerated-Frozen." (3) Although located in Ann Arbor, Michigan, the same city as Midwest Natural Foods, The Soy Plant did not start making tofu until Jan. 1977, or soymilk until July 1977. (4) It would only make sense to freeze tofu and soymilk if they had to be shipped from a distant location, such as California. Freezing totally transforms the texture of tofu, and degrades the quality of soymilk. (5) In Midwest's Catalog 13, spring 1979, the same soymilk (frozen) and tofu (now refrigerated) products are shown as coming from "Hvly" (Health Valley).

2680. *Soybean Digest.* 1975. New soy foods–Japanese make switch. Nov. p. 24.
• ***Summary:*** Today "ASA [American Soybean Assoc.] market development is introducing in Japan a new form of soy protein in answer to the increasing westernization of Japanese tastes and to the high prices of meat and fish in Japan. The result is a boom in the new use of soy protein products, which take the form of textured soy protein meat extenders and meat substitutes, soy-fortified bread and macaroni products and soy milk. Only negligible amounts of soy protein materials were used in these types of foods in 1970... New soy protein was first introduced in the form of 'sloppy joes' in the Japanese school lunch program in 1972 by ASA."

2681. Suberbie, F. 1975. Produccion y utilizacion de bebidas a base de soya [Production and utilization of soy-based beverages]. In: American Soybean Assoc., ed. 1975. Memorias: Primera Conferencia Latinoamericana Sobre la Proteina de Soya. Mexico City. 232 p. See p. 88-93. [12 ref. Spa]
• ***Summary:*** Includes a discussion of various commercial products, such as Sustilac, Isolac, Soyamalt, and Soyacit. Address: Director General, Industrial de Alimentos, S.A., Mexico.

2682. Tovar Galvez, Luis Raul. 1975. Productos derivados del frijol soya tecnologias tradicionales en el Lejano Oriente [Traditional technology soy products in the Far East]. In: American Soybean Assoc., ed. 1975. Memorias: Primera Conferencia Latinoamericana Sobre la Proteina de Soya. Mexico City. 232 p. See p. 185-93. [14 ref. Spa]
• ***Summary:*** Descriptions of and flow sheets for the production of the following basic soyfoods are given: Miso, shoyu (*salsa de soya*), natto, tempeh, sufu (fermented tofu), and soy yogurt. A table shows the nutritional composition of each of these foods as well as yuba and kori-tôfu (dried-frozen tofu).

Note 1. This is the earliest Spanish-language document seen (Sept. 2011) that mentions tempeh, which it calls "tempeh."

Note 2. This is the earliest Spanish-language document seen (April 2013) that uses the term "kori-tôfu" to refer to dried-frozen tofu. Address: Faculdad de Quimica, UNAM, Mexico.

2683. Wei, L.S.; Steinberg, M.P.; Nelson, A.I. 1975. A new Illinois soybean beverage: Tasty, smooth, nutritious, and economical. *Illinois Research* 17(4):3-4. Fall.
• ***Summary:*** This is a relatively short description of the new 11-step process designed to inactivate the "lipoxygenase enzyme," which can produce a distinctly "painty" off-flavor in soymilk, whenever the beans are ground and exposed to water ambient temperatures. The fiber in the soybean is not removed, but rather is finely pulverized by grinding and homogenization to produce a stable colloidal system, in which the fiber and protein do not settle and the oil does not rise. "Instability of the colloidal system, causing a grainy mouth feel, can be a severe problem." The product obtained at the end of Step 5, called "Soybean beverage base," can be used to prepare such "dairy analogs" as yogurt and ice cream, as well as milk.

"The University of Illinois Foundation has recently patented this process in the United States and in a number of other countries. Already three U.S. companies and several foreign firms have been licensed to use the process in manufacturing the beverage, yogurt, ice cream, and similar products. We hope that some of these products will appear in your local supermarket before too many months have

passed."

Note 1. This is the earliest English-language document seen (Aug. 2013) that uses the term "dairy analog" (or "dairy analogue") to refer to soymilk.

Note 2. This is the earliest English-language document seen (Aug. 2013) that uses the term "soybean beverage base" to refer to a concentrated form of soymilk from which regular soymilk or soymilk products can be made by adding water, flavors, sweetener, etc. Address: 1. Assoc. Prof. of Food Science; 2. Prof. of Food Engineering; 3. Prof. of Food Processing. All: Univ. of Illinois, Urbana, Illinois.

2684. *SoyaScan Notes.* 1975. Chronology of soybeans, soyfoods and natural foods in the United States 1975 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Feb. Gale Randall starts America's first commercial Caucasian-run tempeh company in Unadilla, Nebraska.

March. Alec Evans starts the first of the new breed of Caucasian-run tofu shops in Corvallis, Oregon, named Welcome Home Bakery and Tofu Shop.

March. "Safe protein-calorie ratios in diets. The relative importance of protein and energy intake as causal factors in malnutrition" by P.R. Payne of the Department of Human Nutrition, London School of Hygiene and Tropical Medicine, published in the *American Journal of Clinical Nutrition.* Payne argues convincingly that food energy (calories) is more of a problem than protein.

April 29. Saigon falls, ending the Vietnam war.

July. Freezing weather in Parana, Brazil, kills many coffee trees, leading to a big expansion of soybean acreage.

Aug. 3-8. The first World Soybean Research Conference held in Champaign, Illinois, with 600 participants from nearly 50 countries. The 1073-page proceedings, edited by L.D. Hill, are published in 1976.

Aug. Japan Vegetable Protein Food Association founded to promote modern soy protein products, primarily soy protein isolates.

Oct. 25. William Shurtleff and Akiko Aoyagi conduct their first Tofu Class at Westbrae Natural Foods, Berkeley, Calif. Eight people attend. Also in 1975 Gordon Bennett becomes president of Westbrae.

Oct. "The Traditional Tofu Craftsman and His Shop," the first of the new wave of soyfoods articles, published in East West Journal. Contains excerpts from the forthcoming *Book of Tofu* by Shurtleff & Aoyagi.

Nov. 9-12. First Latin American Conference on Soy Protein, organized by the American Soybean Assoc., held in Mexico City.

Dec. 12. *The Book of Tofu* by Shurtleff and Aoyagi published by Autumn Press. This book launches the tofu boom and soyfoods movement in America.

Dec. Ganesha, a craftsman in Berkeley, makes America's first tofu boxes, handcrafted of wood.

Dec. 1975 to Jan. 1976 Shurtleff and Aoyagi do a Tofu and Miso California Tour, with 40 public programs in the Los Angeles Area and northern California.

* *The Farm Vegetarian Cookbook* published by The Farm's Book Publishing Co. in Summertown, Tennessee. Expanding on the ideas in *Yay Soybeans!* (1974), it contains many soyfoods recipes, plus the first popular information on tempeh and the first tempeh recipes to be published in any European language.

* Textured soy protein concentrates developed and introduced by three companies, incl. Griffith Laboratories and Central Soya (Response).

* Vitasoy soymilk in Hong Kong is first sold in Tetra Pak cartons.

* Latin American soybean production tops 10 million metric tons, up 10-fold since 1967.

* National Soybean Research Center (CNP-Soja) established at Londrina, Parana, Brazil, within EMBRAPA (The Brazilian Research Organization for Agriculture), to stimulate research and coordinate the efforts of the state programs.

2685. Autumn Press, Inc. 1975. Imagine... (Ad for The Book of Tofu by Shurtleff and Aoyagi). *Macrobiotic* (*The*) (*Chico, California*) No. 111. p. 61. Dec. [1 ref]

• ***Summary:*** "Imagine... How strange it would seem if in the world's greatest wheat-producing country most of the people had never tasted bread. Yet no less unusual is the present situation in America, the world's greatest producer of soybeans, where the majority of people have not yet tasted, seen or even heard of tofu."

The Book of Tofu is 8½ x 11. 336 pages and has over 300 illustrations, $6.95.

"A family of foods developed over thousands of years in China and Japan, tofu is East Asia's way of using soy protein to complement a diet low on the food chain. Now available commercially across America in over 10 different forms, tofu can also be made at home–for pennies! Quick-and-easy to use in almost every conceivable type of Western-style preparation ranging from dips to desserts, these time-tested natural foods open new vistas of creative, healthful menu-planning–while offering a revolutionary approach to meeting the world's critical food requirements.

"*The Book of Tofu* contains: Over 500 recipes culled from East and West. Easy-to-follow instructions for making 7 varieties of tofu (plus soymilk, yuba and tempeh) at home and on a community scale. An illustrated description of the art of making tofu in a traditional Japanese shop. The most detailed glossary of Japanese foods ever compiled in English. And much, much more."

Note: This is the earliest advertisement seen that mentions tofu. Address: P.O. Box 469, Soquel, California 95073.

2686. Ferreira, Vera Lucía Pupo; Shirose, Issao. 1975. Estudo sobre a aromatizacao do leite de soja destinado a merenda escolar [Study of the flavoring of soymilk for use in school meals]. *Boletim do Instituto de Tecnologia de Alimentos* (*Campinas, Brazil*) No. 44. p. 87-102. Dec. Summarized in Suplemento de Ciencia e Cultura, Resumos. 28(7):868.1976. [5 ref. Por]
• ***Summary:*** Flavors, used as essences, were: Strawberry, chocolate, coconut, red currant, vanilla, pineapple, and banana. Address: ITAL, Cx. Postal 139–13.000 Campinas, SP, Brazil.

2687. Pramanik, A. 1975. Soyabean–versatile protein 'stand in' for human diets. *Planter* (*The*) (*Kuala Lumpur, Malaysia*) 51(597):548-52. Dec. [9 ref]
• ***Summary:*** Discusses utilization of soyabean as a good substitute for meat, cereals, and cow's milk, in Asia. Address: Factory Manager, Dairy Products (M) Sdn. Bhd., Prai Industrial Complex, Penang, Malaysia.

2688. *Quick Frozen Foods.* 1975. National Frozen Food Convention Grand Award to Rich Products Corp. Dec. p. 46.
• ***Summary:*** "Rich Products Corp. was founded by Robert E. Rich Sr., in 1945, and that year did a gross business of $28,000. Its primary product then was a frozen pure-soy cream for whipping and baking.

"It was intended to be a substitute for dairy whipped cream, and had many advantages. In frozen form, it lasted almost indefinitely, was almost twice as nourishing as heavy cream, and whipped up to triple its bulk in 45 seconds. It was originally packaged in a milk-type, cone-shaped container.

"At first, most of the sales were at the retail level, but as time went by, institutional business and bulk sales became important factors. The success of frozen cream pies was almost entirely due to a coconut oil-based product also manufactured by Rich, which had none of the bacterial problems of dairy whipped cream and was of excellent flavor and texture...

"As Rich moved into the 60's, he began to champion a product called coffee whitener, which was a substitute for cream or milk in coffee. The dairy interests fought him with might and main... Dairy people wanted him to call his product imitation cream, but Rich stoutly maintained that his product was not cream, it was something new, and was satisfied to call it 'coffee whitener.'...

"At the present time, Rich Products does an estimated $100 million a year."

Photos show Robert E. Rich Sr., Robert Rich Jr., and the original ¼ page ad run in the Jan. 1946 issue of *Quick Frozen Foods.*

2689. Shurtleff, William; Aoyagi, Akiko. 1975. The book of tofu: Food for mankind. Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. Illust. by Akiko Aoyagi. Index. Dec. 28 cm. Rev. ed. 1977 Autumn Press, Brookline, MA. [53 ref]
• ***Summary:*** This pioneering work started the "tofu revolution" in America. Contents: Preface. Acknowledgements. Part I. Tofu: Food for mankind. 1. Protein East and West. 2. Tofu as a food: Introduction, rich in high quality protein (NPU, biological value, protein score, amino acid content), high protein complementarity (tofu contains an abundance of lysine, an essential amino acid that is deficient in many cereal grains; increase usable protein by combining tofu with wheat, rice, corn, etc.), easy to digest, an ideal diet food, low in saturated fats and free of cholesterol, rich in vitamins and minerals, a health-giving natural food, backbone of the meatless / vegetarian diet, free of chemical toxins, low in cost, easily made at home, quick & easy to use, versatile.

3. Getting started: Introduction, buying and storing tofu, basic ingredients (whole-wheat flour, miso {rice-, barley-, and soybean miso, special Japanese miso, Chinese chiang}, oil, brown rice, salt, shoyu {natural shoyu, shoyu, Chinese soy sauce, synthetic or chemical soy sauce}, sugar, vinegar, monosodium glutamate {MSG}), Japanese kitchen tools (each illustrated), preparatory techniques (salt rubbing, rinsing and pressing leeks and onions, soaking burdock root, reconstituting dried sea vegetables {dried hijiki, wakame, agar}, wheat gluten and kampyo [kanpyo], parboiling, cutting tofu and vegetables, using sesame seeds, toasting nori, preparing a steamer), basic recipes (soup stocks and broths {dashi}, basic shoyu dipping sauces {*tsuke-jiru*}, miso toppings {sweet simmered miso / *nerimiso,* miso sauté / *abura miso,* special miso toppings and dipping sauces, finger lickin' miso, and regular miso}, miso salad dressings, nut and seed butter toppings, spreads and dressings, basic sauces, rice, noodles and other basic preparations).

Our favorite tofu recipes (lists about 80 recipe names for each of the different types of tofu, plus soymilk, yuba, whole soybeans, gô, okara, and curds; very favorites that are also quick and easy to prepare are preceded by an asterisk).

Part II. Cooking with tofu: Recipes from East and West (500 recipes). 4. Soybeans: History of soybeans and "soybean foods," cooking with whole dry soybeans, roasted soybeans (*iri-mame*), fresh green soybeans (*edamame,* incl. a recipe for "Sweet emerald bean paste {*Jinda*}),*"* kinako (roasted full-fat soy flour, incl. Japanese health food treats such as *kinako amé, gokabo, kokusen, kankanbo,* and *abekawa mochi*), soybean sprouts (*daizu no moyashi*), natto ("sticky fermented whole soybeans," with "gossamer threads"), tempeh (fermented soybean cakes), Hamanatto and Daitokuji natto (raisin-like natto), modern western soybean foods (natural soy flour [full-fat], soy granules, defatted soy flour and grits, soy protein concentrates, soy protein isolates, spun protein fibers, textured vegetable protein {TVP}, soy oil products). 5. Gô (a thick white puree of well-soaked uncooked soybeans). 6. Okara or Unohana. 7.

Curds and whey. 8. Tofu (includes history, and preparatory techniques: Parboiling, draining, pressing {towel and fridge method, slanting press method, sliced tofu method}, squeezing, scrambling, reshaping, crumbling, grinding, homemade tofu (basic, from powdered soymilk, fermentation method related to soymilk yogurt), tofu quick and easy {incl. Chilled tofu–Hiya-yakko}, tofu dressings, spreads, dips and hors d'oeuvre {incl. Creamy tofu dressings and dips, Tofu mayonnaise dressing, Tofu tartare sauce, Tofu cream cheese, Tofu sour cream, Tofu cottage cheese, Tofu guacamole}, tofu in salads {Western style and Japanese style salads incl. Shira-ae}, tofu with sandwiches and toast, tofu in soups {Western style and Japanese style soups, incl. miso soup}, tofu in sauces, tofu in breakfast egg dishes, tofu baked, tofu sautéed, stir-fried or topped with sauces {incl. Mabo-dofu [Ma Po doufu]}, deep-fried tofu, tofu with grains, tofu broiled {incl. Tofu dengaku}, tofu simmered in one-pot cookery and seasoned broths, tofu steamed, tofu desserts {incl. Tofu whipped cream or yogurt, Banana tofu milkshake, Tofu icing, Tofu ice cream, Tofu cheesecake, Tofu-peanut butter cookies}).

9. Deep-fried tofu: Thick agé or nama-agé (incl. *atsu-agé* meaning "thick deep-fried tofu," "three-cornered agé" {*sankaku-agé*} in Kyoto, agé cubes {*kaku-agé*}, "five-color agé" {*gomoku-agé*}), ganmo or ganmodoki (incl. *hiryozu / hirosu,* "Flying Dragon's Heads," "treasure balls," "Ganmo treasure balls"), agé or aburagé (incl. *kiji,* "agé pouches," "crisp agé", *kanso aburagé,* "agé puffs," "fried soybean cakes," "hollow agé cubes," "Smoked tofu," p. 189-91, 197).

Note 1. This is the earliest English-language document seen (April 2013) that contains the following terms related to deep-fried tofu (p. 180-90): "Thick agé," *nama-agé, atsu-agé, Hiryozu,* "Dragon," "Flying Dragon's Heads," "treasure balls," "five-color agé," *gomoku-agé,* "Ganmo treasure balls." "fresh or raw deep-fried tofu," "three-cornered agé," *sankaku-agé,* "agé cubes," *kaku-agé, kiji.* "agé pouches," "crisp agé," *kanso aburagé,* "agé puffs," "fried soybean cakes," or "hollow agé cubes."

10. Soymilk. 11. Kinugoshi ("*Kinu* means 'silk'; *kosu* means 'to strain'; well named, kinugoshi tofu has a texture so smooth that it seems to have been strained through silk." It is made from concentrated soymilk). 12. Grilled tofu (incl. sukiyaki). 13. Frozen and dried-frozen tofu. 14. Yuba (incl. many meat alternatives such as Yuba mock broiled eels, Buddha's chicken, Buddha's ham, sausage). 15. Tofu and yuba in China, Taiwan, and Korea (incl. Savory tofu {*wu-hsiang kan*}; see p. 258 for illustrations of many meat alternatives, incl. Buddha's fish, chicken, drumsticks, and duck, plus vegetarian liver and tripe, molded pig's head, and molded ham). One type of Korean soybean miso is called *kotsu jang* [sic, *kochu jang*]. When tofu is served with miso [Korean-style, *Tenjang*] as the dominant seasoning, and with rice, "it becomes the popular *Tenjang Chige Pekpem"* (p. 262). 16. Special tofu.

Note 2. This is the earliest (and only) English-language document seen (March 2009) that uses the word "Tenjang" to refer to Korean-style soybean jang (miso).

Part III–Japanese farmhouse tofu: Making tofu for more and more people. 17. The quest. 18. Making community tofu. 19. The traditional craftsman. 20. Making tofu in the traditional way.

Appendices: A. Tofu restaurants in Japan; many are vegetarian: In Tokyo: Sasa-no-yuki / Sasanoyuki, Goemon, Hisago, Sanko-in, Shinoda-zushi, Dengaku (south of Tokyo in Kamakura). In Kyoto: Nakamura-ro, Okutan, Takocho, Izusen, Junsei, Nishiki, Hakuun-an, Rengetsu, Sagano, Sorin-an. Tea ceremony cuisine (*Kaiseki ryori*), Zen temple cookery or Buddhist vegetarian cookery (*Shojin ryori*), Tea ceremony cookery from China (*Fucha ryori*), Wild gathered cookery (*Sansai ryori*). A directory of these and others, with addresses and phone numbers, is given (p. 312).

B. Tofu shops in the West (Directory of 43 shops in the USA, 3 in Europe, and 3-7 in Latin America {Mexico City, Rio de Janeiro and Sao Paolo, Brazil}). C. People and institutions connected with tofu. D. Table of equivalents. Bibliography. Glossary. Index. About the authors (autobiographical sketches; a photo shows Shurtleff and Aoyagi, and gives their address as New-Age Foods Study Center, 278-28 Higashi Oizumi, Nerima-ku, Tokyo, Japan 177). Sending tofu in the four directions.

Pudding recipes include: Rice pudding with gô and apple (p. 76, incl. 2 cups soymilk). Tofu chawan-mushi (p. 147; Steamed egg-vegetable custard with tofu). Tofu fruit whips (p. 148). Tofu rice pudding (p. 150, incl. 1 cup soymilk). Tofu custard pudding (p. 152). Soymilk custard pudding (p. 208). Brown rice pudding (p. 208, with 2 cups soymilk). Soymilk chawan-mushi (p. 209). Chawan-mushi with yuba (p. 249).

Dessert recipes include: Tofu whipped cream or yogurt (p. 148; resembles a pudding or parfait). Tofu ice cream (p. 149, with chilled tofu, honey, vanilla extract and salt). Banana-tofu milkshake (p. 149). Tofu cream cheese dessert balls (p. 149). Tofu icing (for cake, p. 149). Tofu cheesecake (p. 150). Tofu-pineapple sherbet (p. 151). Also: Soymilk yogurt (cultured, p. 205). Healthy banana milkshake (p. 206). On p. 160 is a recipe for "Mock tuna salad with deep fried tofu."

Note 3. This is the earliest English-language document seen (March 2007) that uses the term "Tofu ice cream" to refer to soy ice cream or that contains a recipe for "Tofu ice cream."

Note 4. This is the earliest English-language document seen (April 2013) that uses the term "Tofu Cheesecake" and the first to give a recipe for a tofu cheesecake.

Note 5. This is the earliest English-language document seen (April 2013) that uses the term "Tofu Sour Cream" (p. 109) or that contains a recipe for "Tofu Sour Cream."

Note 6. This is the earliest English-language document

seen (April 2013) that uses the term "tofu milkshake" or that gives a recipe for a shake made with tofu.

Note 7. This is the earliest English-language document seen (Jan. 2012) that uses the term "sticky fermented" to refer to natto.

Note 8. This is the 2nd earliest English-language document seen (April 2013) that uses the term "dried-frozen tofu."

Note 9. This is the earliest English-language document seen (April 2013) that describes preparatory techniques for tofu (p. 96-98).

Note 10. This is the earliest English-language document seen (April 2013) that contains the term "smoked tofu."

Note 11. This is also the earliest English-language document seen (April 2013) that uses the term "kinugoshi tofu" to refer to silken tofu.

Note 12. As of March 2007, the various English-language editions of this book have sold more than 616,000 copies.

Note 13. This is the earliest English-language document seen (Aug. 2011) that contains the term "Modern Western soybean foods" (see p. 69), a term that Shurtleff would soon (by 1983) replace by the more accurate "Modern soy protein products."

Note 14. This is the earliest published English-language document seen (Jan. 2012) that contains the term "creamy tofu dressings" (or "dressing").

Note 15. This is the earliest English-language document seen (Sept. 2012) that contains the term "Soymilk yogurt."

Note 16. This is the earliest document seen (Oct. 2012) that contains an adequate or detailed description of how to make yuba at home.

Note 17. This is the earliest English-language document seen (June 2013) that contains the term "whole dry soybeans." Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

2690. Shurtleff, William; Aoyagi, Akiko. 1975. Tofu and yuba in China, Taiwan, and Korea (Document part). In: W. Shurtleff and A. Aoyagi. 1975. The Book of Tofu. Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. See p. 250-64.

• ***Summary:*** Contents: Introduction. Three varieties of tofu. Doufu: Known as *tojo* or *tokua* in the Philippines, or as *tahu* in Indonesia. Pressed tofu (*doufu-kan*)*:* Savory tofu (*wu-hsiang kan*), soy-sauce pressed tofu (*chiang-yu doufu-kan*), pressed tofu sheets (*pai-yeh,* incl. pressed tofu noodles or "beancurd shreds" {*doufu-ssu, kan-ssu*}, pressed tofu loops {*pai-yeh chieh*}, Buddha's Chicken {*su-chi*} or Buddha's Ham {*suhuo-t'ui*}, salted dry tofu {*doufu-kan*}). Chinese soft kinugoshi (*shui-doufu, sui-doufu, nen-doufu, nan-doufu, shin-kao doufu*). Warm soymilk curds: Chinese smooth curds (*doufu-nao, dou-nao;* often served for breakfast by street vendors), curds-in-whey (*doufu-hua*). Deep-fried tofu (*yu-doufu, cha-doufu, doufu-kuo, kuo-lao doufu*). Frozen tofu (*tung-doufu, ping-doufu*).

Note 1. This is the earliest English-language document seen (April 2013) that uses the term *tung-doufu* or the term *ping-doufu* to refer to frozen tofu.

Doufu-ru [fermented tofu]: white fermented tofu (*pai doufuru,* incl. 5 different types such as red pepper, sesame oil and red pepper, five-spice, etc.), red fermented tofu (*hung doufuru, nanru, nanyu,* made by adding Chinese red fermented rice [red rice koji] {*ang-tsao*} to the brining liquor to give it a deep red color, thick consistency, and distinctive flavor and aroma; soy sauce is generally used in place of rice wine; another variety is rose essence fermented tofu), stinky fermented tofu (*tsao-doufu, ch'ou doufu,* incl. green stinky fermented tofu), chiang-doufu (prepared by pickling firm cubes of tofu for several days in either Chinese-style miso {*chiang*} or soy sauce).

Soymilk (*doufu chiang, dou-chiang, dou-nai, dou-ru*)*:* Widely enjoyed as a spicy hot breakfast soup (p. 204) or a warm, sweetened beverage (p. 207). Sometimes sold bottled by street vendors.

Yuba: Yuba is much more popular and much less expensive in China and Taiwan than it is in Japan. There are hundreds of yuba shops throughout Taiwan and probably thousands in China, and yuba plays an important role in the nutritional life of the people in home and restaurant cookery. Called bean curd "skin" or "sheets" in most Chinese cookbooks, yuba is known in Mandarin as *doufu-p'i* ("tofu skin") or *doufu-i* ("tofu robes"). Remarkable Chinese ingenuity and creativity in giving the semblance of meat. In the display case of attractive restaurants or marketplace yuba shops are perfect replicas of plucked hens, roosters, and ducks, light-brown fish (complete with fins, gills, eyes, and mouth), juicy hams, tripe, liver, rolled meats, red sausage links, deep-fried drumsticks, and a life-sized pig's head–all made from yuba. Most of these imitation meat dishes are prepared by pressing fresh yuba into a hinged (wooden or aluminum) mold, clamping the mold closed, then steaming it until the yuba's shape is fixed. *Su-tsai* restaurants specialize in Buddhist vegetarian cookery. Names of prepared dishes: Buddha's Chicken (*suchi*), Buddha's Fish (*suyu, sushi*), Buddha's Duck (*suya*), Vegetarian Tripe (*taoto*) or Liver (*sukan*)*;* Molded Pig's Head (*tutao*), Molded Ham (*suhuo*), Sausage Links (*enchan*), Buddha's Drumsticks (*sutsai tsui*), Deep-fried Duck (*suya*). A full-page illustration (p. 258) shows these products. Fresh yuba. Dried yuba (*kan doufu-p'i,* incl. sweet yuba and Bamboo yuba {*fuchu* [*dried yuba sticks*]}). Tofu and yuba in Chinese cookery: Mandarin cookery, congee (rice porridge), "red broiled" sauces (*hong-sao*), meatless days, vegetarian restaurants.

The Chinese tofu shop: Description of the process for making tofu. Tofu in Korea. Recipes: Fermented tofu dressings, spreads, dips, and hors d'oeuvre. Fermented tofu in sauces, egg dishes, and with grains.

Illustrations show: (102) A woman cutting doufu at the marketplace. (103) Making pressed tofu using a hand-turned screw press. (104) Pressed tofu noodles. Buddha's chicken. (105) Street vendor selling soymilk curds. (106) Pressing tofu in forming boxes using stone weights. (107) Deep-frying agé triangles in a wok. (108) Threaded thick-agé cubes. (109) Net-like thick agé. (110) A soymilk vendor carrying bottled soymilk using a shoulder pole. (111) Yuba mock meats. (112) Yuba steaming pots. (113) Steam-heated drum can cooker in Chinese tofu shop. Doufu-ru [fermented tofu] cubes on plate, in bottle, in can. Woman selling tofu, seated by the street side.

Note 2. This is the earliest English-language document seen (April 2013) that uses the word "doufu" to refer to Chinese-style tofu.

Note 3. This is the earliest English-language document seen (Oct. 2012) that uses the word *fuchu* or the word *suohuo* or the term *suohuo-t'ui* or the term "tofu robes" or the term "tofu skin" to refer to yuba. Address: Lafayette, California.

2691. Shurtleff, William; Aoyagi, Akiko. 1975. The book of tofu: Food for mankind (Illustrations–line drawings). Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. Illust. by Akiko Aoyagi. Index. Dec. 28 cm. Rev. ed. 1977 Autumn Press, Brookline, MA. [53 ref]

• ***Summary:*** Continued: Illustrations (line drawings, both numbered and unnumbered) show: A hearth in a traditional Japanese farmhouse with tofu dengaku roasting around a bed of coals in a sunken open-hearth fireplace. An old Japanese plum tree blossoming in winter. Three pieces of skewered tofu dengaku with a sansho leaf atop each in a special serving box. A sprig of sansho with berries. Stylized top of a soybean plant in a circle. Fig. (4) Tofu products available in the West (tofu, dofu, kinugoshi, thick agé triangles, cubes, and cake, agé and agé puffs, hollow agé cubes, soymilk, tofu pudding, doufu-ru {white and red}, ganmo {patties, small balls, and treasure balls}, grilled tofu, dried-frozen tofu, instant powdered tofu, okara, dried yuba, soymilk curds, pressed tofu, savory tofu). A wooden cutting board and Japanese broad-bladed vegetable knife (nagiri-bôcho) with vegetables and tofu on a woven bamboo tray.

Note 1. This is the earliest English-language document seen (April 2013) that uses the term "treasure balls" to refer to Chinese-style tofu mixed with various finely-chopped vegetables, rolled into balls, and deep-fried tofu. (8) A wooden keg of red miso and a plastic bag of barley miso. (9) Shoyu in a metal can, wooden keg, glass bottle, and table-top dispenser. Traditional Japanese kitchen tools: *Miso-koshi* (woven bamboo strainer used in making miso soup). cutting board, Japanese vegetable knife, wooden spatula, bamboo rice paddle (*shamoji*) and spoon, woven bamboo colander or tray (*zaru*), suribachi, Japanese grater (*oroshi-gané*), sudaré (bamboo mat), pressing sack for tofu or soymilk, serrated tofu-slicing knife, tawashi scrub-brush (made of natural palm fiber), wok with draining rack and wooden lid, stir-frying ladle and spatula, long cooking-chopsticks, mesh skimmer, deep-frying thermometer, Chinese bamboo steamer (*seiro*), charcoal brazier (*konro, shichirin*), broiling screen. Covered pot steamer. Small lidded pottery pot. More kitchen tools (p. 50-51). (10) A soybean measuring box (*isshô-bako*). (11) The soybean plant. Two views of a soybean seed with seed coat, hilum, and hypocotyl labeled. A bag full of soybeans. Roasted soybeans in a woven bamboo tray (*zaru*). Edamamé in the pods. Three shapes of kinako treats. Soybean sprouts. Natto on a bamboo mat (*sudare*). Natto wrapped in rice straw as it ferments. A hand holding chopsticks that lift natto up from a bowl of natto–connected by gossamer threads. Tempeh (round and square pieces). Wrapping a small packet of inoculated soybeans to make tempeh. (15) Two Japanese women in traditional clothing using hand-turned grinding stones (quern) to grind soaked soybeans when making tofu. (16) Push-pull grinding stones. (17) Motor-driven grinding stones. (18) Water-powered millstones. (19) Wind-powered millstones. (20) Unohana. (21) A tofu maker sitting on a traditional lever press that presses soymilk from the okara in a pressing sack on a rack. A heavy iron skillet. (22) Folding okara omelet pouches. Okara doughnuts. (23) A bamboo colander. (24) A tofu maker weighting a colander with a brick so that whey will collect in it. (25) Ladling whey from curds; it foams! (27) A horse drinking whey from a wooden vat. Soymilk curds in a bamboo mat. (28) Ladling curds for Awayuki. (29) Fresh tofu in a plastic tub. (30) A tofu maker placing a weight on pressing lids as tofu is pressed in settling boxes (forming boxes). Transferring tofu-filled settling box to sink. Cutting a block of tofu into cakes under water. Eggplant halves in a yin-yang dance. Preparatory techniques used with tofu (slanting press, sliced tofu, squeezing, scrambling, reshaping, crumbling). (32) Utensils for making tofu at home. (33) Three designs for a homemade settling container. (34) Preparing homemade tofu (a-l). (35) Removing tofu from a farmhouse-style settling container (forming box). (36) Chilled tofu. Iceberg chilled tofu. A hot, moist, white towelette (*o-shibori*) is used to wipe the face and hands before (or occasionally after) a meal. Tofu salads in three Japanese pottery dishes. Japanese soups in three types of containers. (37) Chrysanthemum tofu. (38) Tofu poached egg. Tofu-stuffed green peppers. A wok. (39) Filling a wok with oil. (40) testing oil temperature in a wok. (41) Deep-frying tofu tempura–and (42) Serving it in a shallow bamboo basket. (43) Making *Kaki-agé*. (44) Dengaku Hoshi (from *Tofu Hyaku Chin*). (45) Skewered Tofu dengaku. Preparing Tofu dengaku in old Japan (from Hokusai's sketchbooks). (46) A variety of skewers. (47) Chinese firepots. (48) A Simmering Tofu wooden serving container heated by coals from within. (49) Miso oden. (50) Tofu wrapped in rice straw. (51) Nanzenji wrapped tofu. (52) Gisei-dofu. (53) Serving freshly deep-fried agé. (54) The deep-frying area of a traditional tofu shop. (55) Deep-frying

tools. (56) Wooden bamboo tray with raised sides. Chinese cleaver. (57) Nori-wrapped sushi with agé (making and serving; six drawings). Eating noodles from old Japan (from Hokusai's sketchbook). (58) Preparing homemade noodles. (59) The Oden man on a winter's eve. A pottery bowl of Oden. Kombu rolls. (60) Making konnyaku twists. (61) Nishime in a multi-layered lacquerware box. (61) Pressing tofu for thick agé in a tofu shop. (62) Deep-frying tofu for thick agé. (63) A tofu maker with deep-fried thick agé triangles on screen trays.

Note 2. This is the earliest English-language document seen (May 2012) that contains the terms "deep-fried thick agé triangles" (p. 181) or "hollow agé cubes" (p. 23).

(64) Stuffing thick agé. (65) Thick agé stuffed with onions. (66) Pressing tofu for ganmo. (67) Adding seeds and vegetables. (68) Deep-frying ganmo. (69) A farmhouse open-hearth fireplace with nabe kettle. (70) Preparing homemade ganmo. Ganmo balls in a draining tray. Ganmo cheeseburger. (71) Cutting tofu to make agé slices (*kiji*). (72) Deep frying agé. (73) Opening agé into pouches. Agé treasure pouches.

Note 3. This is the earliest English-language document seen (April 2013) that contains the term "treasure pouches" or the term "Agé treasure pouches" They refer to a Kyoto-style delicacy made with deep-fried tofu pouches.

(74) Agé pouches sealed with foodpicks. Inari shrine with Shinto torii. (75) Kampyo-tied pouches [kanpyo]. (76) Making rolled agé hors d'oeuvre. (77) Tofu maker ladling gô (fresh soy puree) into a cauldron. (78) Stirring down the gô. Pressing soymilk from okara with a hand-turned screw press. (79) Serving fresh soymilk in a tofu shop. Six Japanese commercial soymilk products. Little girl at The Farm (Summertown, Tennessee) seated on a small chair drinking a cup of soymilk. Chinese breakfast soymilk soup with deep-fried crullers (*Siento-chiang with yu-chiao tsao pi*). (80) Takigawa-dofu. (81) Tofu maker pouring the soymilk for kinugoshi tofu. (82) Adding solidifier. (83) Trimming kinugoshi from sides of box. (84) Modern lactone kinugoshi (with GDL). (85) Modern kinugoshi factory. (86) Sasa-no-Yuki's Gisei-dofu container. (87) Kinugoshi with ankake sauce. The entrance way to a traditional Japanese restaurant featuring tofu. Traditional metal skewer for making grilled tofu. (88) Traditional tofu maker grilling tofu over a charcoal brazier (*hibachi*). Grilling tofu in a traditional open hearth. (89) An early method of elaborate grilling. Pieces of tofu on different types of skewers. Farmhouse sukiyaki with grilled tofu. (90) Tying frozen tofu with rice straw. (91) Drying farmhouse frozen tofu. (92) Pressing frozen tofu at home. (93) Deep-fried frozen tofu with cheese. (94) Making deep-fried frozen tofu sandwiches (*Hakata-agé*). (95) Frozen tofu wrapped in kombu. (96) Steaming table in a yuba shop. Ten different types / shapes of yuba. (97) Lifting yuba away from soymilk. (98) Yuba sashimi. (99) Yuba envelopes. (100) Deep-fried yuba dengaku. (101) Folding yuba into bundles. Trimming half-dried yuba from a skewer. (102-113) Tofu and yuba in Taiwan, China, and Korea (see separate record). Sesame tofu in pottery bowl. (114) Traditional farmhouse tofu, tied into a package with rice straw rope. (115) Shirakawa-go farmhouses with water-powered rice-dehusker in foreground. (116) Making seawater tofu at Suwanose. Mortar and pestle for pounding mochi. Making community tofu: Western metal hand mill, hand-turned stone mill apparatus, faces of upper and lower stones, colander and cloth, two shapes of cooking pots, Japanese farmhouse earthen cooking stove, cooking pot set on cut-off oil drum, ladle, two wooden paddles, pressing rack, pressing okara, lever press, pressing sack, wooden settling [forming] container with cloths. (117) Making nigari with salt in bamboo colander, a traditional "salt boat" for refining salt of nigari. (119) Country farmhouse tofu (5 illust.). (121) Morning shopping at a tofu shop. (122) Diagram of a tofu-shop floor plan. (123) Modern pressure with hydraulic press. (124) Modern centrifuge with 3 soymilk barrels. Thirty-one unnumbered illustrations showing every step in making and selling tofu in a traditional Japanese shop (p. 299-306). (125) Cutting tofu for Dengaku (from *Tofu Hyaku Chin*). (126) Ladies busy making dengaku (from *Tofu Hyaku Chin*). (127) Hearth at Nakamura-ro. (128) The garden at Okutan. Six types of Japanese sea vegetables: Hijiki, aonori, wakame, agar, nori, kombu. (129) Japanese vegetables (27 illustrations). Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

2692. Shurtleff, William; Aoyagi, Akiko. 1975. The book of tofu: Food for mankind (Tables, graphs, and diagrams). Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. Illust. by Akiko Aoyagi. Index. Dec. 28 cm. Rev. ed. 1977 Autumn Press, Brookline, MA. [53 ref]

• ***Summary:*** Tables, graphs, diagrams (etc.) show: (1) Bar chart of per-acre yields of usable protein from different food sources: Soybeans 356, rice 265, corn 211... milk 82, eggs 78, meat (all types) 45, beef 20. (2) Graph of world meat consumption versus income: People in rich countries (those with high per capita income) tend to eat a lot of meat, while those in poor countries tend to eat little. Table showing percentage of protein by weight in 20 basic Western foods and foodstuffs. (3) Table of 18 tofu products available in the West: For each is given–Name used in this book, other names, description, where sold, how sold. (5) Table showing composition of nutrients in 100 gm of tofu and related products (16 products in all). (6) Graph of protein vs. moisture content in various types of tofu. Table of NPU (net protein utilization) ratings of 13 basic foods. (7) Table of amounts of essential amino acids and their percentages with minimum daily requirements in 100 gm portion of tofu. Table of amount of various foods combinations that provide exactly 50% of the daily adult male requirement of usable protein. Table showing the cost of one day's supply of usable protein from various foods.

(14) Diagram showing Gô as the source of all tofu products. (26) Percentage of original soybean protein contained in by-products of the tofu-making process: 73.5% ends up in the final tofu. (31) Effects of preparatory techniques on 1 cake of tofu: Final weight, percentage protein in final tofu, percent reduction in weight from water loss. Table of nutritional composition of soymilk, dairy milk, and mother's milk (compared on an equal water basis, p. 200). Table showing composition by weight of seawater (p. 282). Table of the composition of the solids in clean seawater: Sodium chloride 77.8%, magnesium chloride 9.5%, magnesium sulfate 6.6%, calcium sulfate 3.4%, potassium chloride 2.1%, magnesium bromide 0.2% (p. 283). Table of the composition of the liquid that drips out of natural / unrefined sea salt when making nigari (p. 284). Table of the composition of the solids in natural nigari (mostly magnesium chloride, p. 284). (120) Graph of soaking time vs. temperature for soybeans. Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

2693. Shurtleff, William; Aoyagi, Akiko. 1975. Soymilk (Document part). In: W. Shurtleff and A. Aoyagi. 1975. The Book of Tofu. Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. See p. 199-210. Chap. 10.
• ***Summary:*** Contents: Making soymilk in a Japanese tofu shop as part of the tofu-making process. Comparative analysis of the composition of soymilk, dairy milk, and mother's milk (human), each adjusted to the same percentage of water (88.6%) (with table). "Vegetable milks" prepared from other nuts (almonds, peanuts, walnuts, and coconut) and seeds (sunflower and sesame). Low cost of fresh soymilk, in East Asia and on The Farm (Summertown, Tennessee). Soymilk in Taiwan. History of Vitasoy and K.S. Lo. UNICF / FAO / WHO soymilk plant making Saridele dry soymilk in Indonesia. Smaller plants in Manila, Philippines, and Bangkok, Thailand. History of the work of Dr. Harry W. Miller in China (starting in 1936) and the USA (Soya Lac / Soyalac, 1939). Current status of soymilk sold as a beverage in Japan: Sold in tetrapak cartons or, in condensed form, in cans. Sold "in a variety of flavors (plain, honey, barley-malt, strawberry or chocolate) in virtually all natural and health food stores and at most supermarkets; some types are even dispensed from vending machines or delivered door to door." "Many Japanese tofu makers used to deliver a bottle of soymilk each morning to a large number of their regular customers, but the tradition has gradually declined with the increasing availability of commercial soymilk and the post-was trend toward drinking dairy milk." Address: Lafayette, California.

2694. Shurtleff, William; Aoyagi, Akiko. 1975. The book of tofu: Food for mankind (Recipes and food types with Japanese names). Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. Illust. by Akiko Aoyagi. Index. Dec. 28 cm. Rev. ed. 1977 Autumn Press, Brookline, MA. [53 ref]
• ***Summary:*** Teriyaki sauce (p. 48). Ankake sauce (p. 49). Sushi rice (Rice in vinegar dressing, p. 51). Gomashio (Sesame salt). Gari (Sweet vinegared gingerroot, p. 51). Budomame (Sweet soybeans, p. 62). Kombu mame, kuro mame, gomoku mame (p. 62). Iri-mame (Roasted soybeans, p, 63). Edamame (Fresh green soybeans, p. 63). Jinda (Sweet emerald bean paste [made with edamame], p. 64). Kinako (Roasted full-fat soy flour, p. 64). Abekawa mochi (with kinako, p. 65). Kinako amé or genkotsu amé (Kinako candy, p. 66). Daizu no moyashi (Soybean sprouts, p. 67). Natto (Sticky fermented whole soybeans, p. 67). Hamanatto and Daitokujinatto (also spelled Daitokuji-natto) (Raisin-like natto, p. 69). Gô (Fresh soy purée, p. 70+). Gôjiru (Thick miso soup with gô, p. 74). Bakudan agé (Deep-fried gô patties, p. 76). Okara or unohana (p. 77+).

Unohana-jiru (Chilled okara soup, p. 79). Unohana no iri-ni (Okara & vegetable sauté, p. 81). Unohana-iri (Unsweetened fried okara, p. 82). Unohana dango (fried okara patties, p. 82). Sushi okara chakin (Okara omelet pouches, p. 84). Oboro (curds, p. 87). Oboro-dofu (Warm soymilk curds, p. 90). Awayuki (homemade curd dumplings, p. 90). Karashi-dofu (Curd dumplings with mustard, p. 90). Gomoku-dofu (Five-color tofu, p. 105). Hiya-yakko (Chilled tofu, p. 105). Menoha-dofu, nameko-dofu (p. 106). Ryanban-doufu (Chinese-style chilled tofu, p. 107). Imokake-dofu (Chilled tofu with glutinous yam and egg, p. 107). Tofu no misozuke (Tofu pickled in miso, p. 110). Kanten-dofu (Jelled tofu, p. 114). Aemono and Shira-ae ("White salad," p. 114+, 160). Arare no aemono (Hailstones salad, p. 115). Suimono (Clear soup, p. 119). Kikka-dofu (Clear soup with chrysanthemum tofu, p. 120). Kenchin-jiru (p. 120). Tamago-toji (Japanese-style tofu, eggs & onions). Nanjen-dofu or Iritsuke-dofu (Chinese-style egg tofu, p. 123). Kenchin-yaki (p. 126). Iridofu [Iri-dofu] (Crumbly scrambled tofu, p. 128). Mabo-dofu [Ma po doufu] (Chinese-style tofu with red pepper sauce, p. 128). Hao-yu doufu (Chinese style oyster sauce & tofu, p. 129). Fanchie-dofu (Chinese-style tofu & tomatoes, p. 129). Tofu no kara-agé (Crisp agé slices, p. 131). Unagi-dofu (Tofu mock eels, p. 132). Kaminari agé (Thunderbolt tofu, p. 132). Agédashi-dofu [Agedashi-dofu] (Deep-fried tofu in dipping sauce, p. 133). Tendon (Deep-fried tofu with rice and broth, p. 133). Tofu furai (Breaded tofu cutlets, p. 134). Tempura (and batter and dipping sauce, p. 134). Zosui or Ojiya (Rice gruel, p. 138). Tofu dengaku (p. 139). Tofu teriyaki (p. 141). Yudofu or Tofu no mizutaki (Simmering tofu, p. 142). Nabeyaki-udon, Nabeyaki-soba, Udon-tsuki (p. 144). Yosenabe (p. 144). Miso oden (p. 145). Yukinabe (The snow pot, p. 148). Niyakko (p. 145). Tsuto-dofu or Komo-dofu (Simmered tofu wrapped in rice straw, p. 146). Tofu chawan-mushi (Steamed egg-vegetable custard, p. 147). Nanzen-ji no Tsusmi-dofu (Nanzen-ji wrapped tofu, p. 147). Yuzu-gama (Yuzu treasure pot, p. 147). Naruto-dofu

(Tofu spiral in butterbur leaves, p. 147). Gisei-dofu (Tofu cheesecake-like dessert, p. 152). Datémake [Datemaki] (Tofu-egg roll, p. 153). Noppei-jiru (Noppei soup, 163). Kinpira (Agé with carrots and burdock root, p. 167). Yaki-soba (Fried buckwheat noodles with deep-fried tofu, p. 168). Chahan or yaki-meshi (sizzling rice with deep-fried tofu, p. 168). Soboro (p. 169). Norimaki-zushi (Nori-wrapped sushi with agé, p. 170). Kitsune domburi (Fox domburi, p. 172). Kitsune soba or udon (Fox noodles, p. 172). Yamakake soba (Buckwheat noodles with grated glutinous yam and agé, p. 172). Hiyashi-soba (Noodles & deep-fried tofu in chilled broth, p. 172). Nikomi udon (Ganmo simmered with homemade noodles and miso, p. 173). Kabayaki or Yaki-Shinoda (Agé mock broiled eels, p. 174). Oden (p. 175-78). Nishime (p. 178-79). Horoku-yaki (Thick agé stuffed with onions, p. 183). Hiryozu (Ganmo treasure balls, p. 188). Inari-zushi (Vinegared sushi rice in sweetened agé pouches, p. 194). Fuku-bukuro (Agé treasure pouches with crunchy vegetables, p. 195). Takara-zutsumi (Sacks of gold, p. 195). Shinoda-maki (Matchstick vegetables wrapped in agé pouches, p. 195). Kinchaku and takara-bukuro (Drawstring purses and treasure bags, p. 196).

Note: This is the earliest English-language document seen (April 2013) that contains the term *Fuku-bukuro* or the term "treasure bags." They refers to a way of preparing deep-fried tofu pouches.

Hasami-age (Mashed potatoes deep-fried in agé pouches, p. 196). Shinoda-maki (Agé cabbage rolls, p. 197). Shinoda mushi (Steamed agé with tofu and vegetables). Soymilk chawan-mushi (p. 209). Yose-dofu (Jelled and molded soymilk dishes, p. 209). Takigawa-dofu (Swirling jelled soymilk, p. 210). Shikishi-dofu (Kinugoshi custard, p. 216). Kinugoshi tofu dishes from Sasa-no-yuki (p. 217-19): Hiya-yakko, yuzumiso-dofu, gisei-dofu, ankake-dofu, kijoyu, chiri-meshi, kuya-dofu or kuya-mushi, iridofu. Yaki-dofu (p. 220). Sukiyaki (p. 224-25). Koya-dofu or kori-dofu (Dried-frozen tofu, p. 226+). Tamago-toji (Frozen tofu with eggs and onions, p. 231). Gyoza [Chinese jiaozi] (p. 232). Oranda-ni (Deep-fried frozen tofu in lemon sauce, p. 234). Soboro (Grated frozen tofu rice topping, p. 234). Hakata-agé (Deep-fried frozen tofu sandwich, p. 235). Koya-dofu no kombu maki (Frozen tofu wrapped in kombu, p. 236). Sanshoku gohan (Three-color brown rice, p. 236). Fukuyose-ni (Frozen tofu simmered in sweetened broth, p. 236). Abekawa-dofu (Frozen tofu rolled in sweetened kinako, p. 237). Yuba (p. 238-42). Nama-yuba (Fresh yuba). Nama-gawaki or han-gawaki yuba (Half-dried yuba). Kanso- or hoshi-yuba (Dried yuba). Hira- or taira-yuba (Flat yuba sheets). Maki-yuba (Fresh yuba rolls). Komaki (Long yuba rolls). Kiri-komaki (Small yuba rolls). Musubi-yuba (Tied yuba). Omaki-, futomaki- or Uzumaki-yuba (Large yuba spirals). Oharagi yuba (Slightly flattened yuba roll tied with a thin piece of kombu). Amayuba (Sweet yuba). Kirehashi (Fresh yuba trimmings). Kuzu-yuba or mimi (Yuba flakes). Toyuba (Trough-shaped yuba, p. 242). Kaori yuba (Sweet miso deep-fried in fresh yuba, p. 244). Yawata-maki (Yuba-burdock root roll, p. 245). Toji yuba (deep-fried yuba with ginkgo nuts and lily bulbs, p. 245). Yuba no kabayaki (Yuba mock broiled eels, p. 245). Maze-gohan or Gomoku-zushi (Five-color sushi rice with agé, p. 169). Suhuo-t'ui (Homemade Buddha's ham). Tamago-toji yuba (Raw eggs cooked over hot yuba, p. 247). Tamago yuba (Deep-fried yuba in ankake sauce, p. 248). Kenchin-maki (Large yuba rolls with tofu and vegetables). Yuba shinjo (Yuba steamed with eggs, p. 249). Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

2695. **Product Name:** [Danpro Soy Protein Concentrates (Danpro A)].
Manufacturer's Name: Aarhus Oliefabrik A/S.
Manufacturer's Address: Bruunsgade 27, P.O. Box 50, 8100 Aarhus C, Denmark.
Date of Introduction: 1975.
New Product–Documentation: Huang et al. 1983. Ying Yang Hsueh Pao (Acta Nutrimenta Sinica) 5(2):187-96. They fed Danpro-A to piglets.

Soya Bluebook. 1984. p. 65.

Aarhus Olie Annual Report 1988. A diagram (p. 40) shows that Aarhus introduced Danpro A (a protein concentrate; A stands for "Animal." It is fed mainly to young calves and piglets) in 1975, Danpro H (H stands for "Human") in 1976, Danprotex in 1976... In 1974-75 Aarhus built the first factory in Europe for the manufacture of soya protein concentrates (p. 41).

2696. **Product Name:** Soft Tofu, Firm Tofu, Baked Tofu, Tofu Pudding, Soymilk.
Manufacturer's Name: American Food Co.
Manufacturer's Address: 800 S. Palm Ave. #5, Alhambra, CA 91803. Phone: 213-570-1620. Later 818-570-1620.
Date of Introduction: 1975.
How Stored: Refrigerated.
New Product–Documentation: Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). Gives the company's name, address (800 S. Palm St.), and phone number. ("A Chinese-American shop").

Talk with a company representative. 1988. Aug. 24. Jackson Wu, the president, will be back in 2 weeks. The company started making tofu in about 1974 or 1975. They launched all their products from day 1.

Product with Label purchased in Chinatown, Oakland, California. 1992. Oct. 28. 5 by 4.5 inches. Transparent film on water pack tub. Red, orange, black, and white. "AFC finest quality foods. 100% natural. High in protein. High in calcium. No cholesterol. Keep fresh. Change water. Keep refrigerated." Ingredients: Soybean, water, calcium sulfate. 4 pieces (of tofu). 19 oz. UPC indicia.

Talk with Raymond Lee. 1993. Oct. 13. Wy Ky's

foreman for many years was Yep Wing. One day the owner of Wy Ky had a conflict with Mr. Wing, so Mr. Wing left and helped to start American Food Co., taking many company secrets with him.

2697. **Product Name:** Sip a Soy (Soymilk) [Chocolate].
Manufacturer's Name: Beatrice Foods.
Manufacturer's Address: -
Date of Introduction: 1975.
Wt/Vol., Packaging, Price: Quart Pure-Pak carton.
How Stored: Refrigerated.
New Product–Documentation: Color slide (#T-107) of carton at Univ. of Illinois, Dept. of Food Science. This product was based on the process developed at the Univ. of Illinois at Urbana.

2698. Costa, Sebastiao Irineu da. 1975. Obtencao de leite de soja de boa qualidade [Obtaining good quality soymilk from soybeans]. Relatorio Final do Projeto FASEP 72/1468. 49 p. [Por]*
Address: Brazil.

2699. **Product Name:** Vitamite: 2% Fat Non-Dairy Beverage.
Manufacturer's Name: Dairy Specialties International (DSI).
Manufacturer's Address: 10800 Ambassador Blvd., St. Louis, Missouri.
Date of Introduction: 1975.
Ingredients: 1995: Water, corn syrup solids, partially hydrogenated canola oil, potassium caseinate (a milk derivative), isolated soy protein, tricalcium phosphate, dipotassium phosphate, carrageenan, salt, mono- and diglycerides, sodium stearoyl lactylate, guar gum, calcium d-pantothenate, vitamin A palmitate, vitamin D-3, riboflavin, pyridoxine hydrochloride, thiamine mononitrate, annatto (color), vitamin B-12.
Wt/Vol., Packaging, Price: Half gallon gable-top Pure Pak carton.
How Stored: Refrigerated.
New Product–Documentation: Talk with Tom Mekus, Vice President of Sales and Marketing, at DSI toll-free number (1-800-643-3930). 1995. Nov. 6. Vitamite liquid was first sold commercially in about 1975 in a half-gallon gable-top (Pure Pak) carton in liquid form, mostly to supermarkets. The company was headquartered in St. Louis and the first dairy that processed the powder into milk was a Kroger dairy in St. Louis; it has subsequently been sold and goes under a different name. Then Diehl acquired the company in the early 1980s, and because Diehl was a manufacturer of non-dairy products, they changed the name. In 1989 the company moved to Defiance, Ohio. Vitamite liquid in quart size was introduced in about 1991. Vitamite is sold in the dairy section at most supermarkets throughout most of the United States, including most Safeway supermarkets in California. It comes in both liquid and powdered forms. They are the licensee, Diehl Specialties International in Defiance, Ohio. Their factory there makes the powder base and ships it nationwide to dairies that process it into a liquid milk alternative then package it. Ryan Milks processes the powder in the California area. The company makes "2% white" (blue carton) and "2% chocolate." They are developing a non-fat version.

Product with Label purchased in dairy case at Safeway supermarket in Lafayette, California. 1995. Oct. 7.

2700. Harrison, G.G. 1975. Primary lactase deficiency: A problem in anthropological genetics. *American Anthropologist* 77:128-35. *

2701. **Product Name:** [Provesol {Soya Milk}].
Manufacturer's Name: Industria e Comercio de Oleos Vegetais S.A. (OLVEBRA).
Manufacturer's Address: Praca Osvaldo Cruz, 15-16*, P.O. Box 2016, Porto Alegre, RS, 90030, Brazil.
Date of Introduction: 1975.
Wt/Vol., Packaging, Price: Can.
How Stored: Shelf stable.
New Product–Documentation: R.H. Moretti. 1981. *Journal of the American Oil Chemists' Society. March.* p. 521. "Soy milk developments in Latin America." Provesol, a powdered soymilk produced by a modern process, was developed during the 1970s at IIT, Colombia, by Dr. Diaz Delgado. The process was later sold to a Brazilian company, Olvebra, which started producing soya milk in 1975 with the Coca-Cola pilot plant. Presently they are using a mixed process, which combines Coca-Cola and Provesol techniques. The product is sold canned in powder form under two brand names: Novo Milk and Nova Vida (which see). The Provesol composition is 50% protein, 25% fat, 19% carbohydrates, and 19% fiber.

2702. **Product Name:** [Soyacit Soymilk (Chocolate). Also named Soyacyt].
Foreign Name: Soyacit.
Manufacturer's Name: Industrial de Alimentos S.A.
Manufacturer's Address: 146 Poniente 789, Col. Ind. Vallejo, Mexico 17, DF, Mexico.
Date of Introduction: 1975.
Wt/Vol., Packaging, Price: Powdered.
How Stored: Shelf stable.
Nutrition: Per 100 gm: Calories 423, protein 20.0 gm, carbohydrates 60.0 gm, fat 10.5 gm, moisture 4.5 gm, ash 5.0 gm.
New Product–Documentation: *Soybean Digest.* 1975. May. p. 9. "ASA promotes soy for nutrition." A photo shows the paperboard package. On the front is a mother and child.

F. Suberbie. 1975. Produccion y utilizacion de bebidas a

base de soya. In: American Soybean Assoc., ed. Memorias: Primera Conferencia Latinoamericana. p. 91-92. This product can be dissolved in milk or water. It is distributed nationally by the Compania Nacional de Subsistencias Populares (CONASUPO), by the Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (ISSSTE; Social Security), and it is also found in many self service shops in Mexico City and many other cities in Mexico.

H.L. Wang, et al. 1979. Soybeans as human food–Unprocessed and simply processed. p. 36. Industrial de Alimentos produces and markets a soy beverage powder called Soyacyt. The product is a direct application of a beverage process developed at NRRC by G.C. Mustakas and associates and introduced to the company in 1971.

2703. Kuitunen, P.; Visakorpi, J.K.; Savilahti, E.; et al. 1975. Malabsorption syndrome with cow's milk intolerance: Clinical findings and course in 54 cases. *Archives of Disease in Childhood* 50:351. *

2704. **Product Name:** [Proton M {Powdered Soymilk}].
Foreign Name: Proton M.
Manufacturer's Name: Nihon Tanpaku / Japan Protein Industry Co. Ltd.
Manufacturer's Address: Higashi-cho 1920, Ogawa, Kodaira-shi, Tokyo, Japan. Phone: 0423-41-0831.
Date of Introduction: 1975.
New Product–Documentation: Shurtleff & Aoyagi. 1975. *The Book of Tofu.* Page 202 shows an illustration of a carton of powdered soymilk named Proton.

Shurtleff & Aoyagi. 1979. Tofu & Soymilk Production. p. 313. Gives the company name as "Nihon Tanpaku," and the address shown above. "A maker of powdered soymilk sold under the brand name Proton M and containing 42 to 45% protein.

Soya Bluebook. 1981. p. 63. The company name is given as Japan Protein Industry Co. Ltd. The address is given as: 1920 Ogawahigashi-cho, Kodaira City, Tokyo, Japan.

2705. **Product Name:** [Novo Milk [Soymilk Sweetened with Orange, Chocolate, Banana, or Strawberry Flavors], and Nova Vida (Soymilk)].
Foreign Name: Leite Novo Milke, and Nova Vida.
Manufacturer's Name: Olvebra SA–Industria e Comercio de Oleos Vegetais.
Manufacturer's Address: Praca Osvaldo Cruz, No. 15-16º, (Caixa Postal 2016), Andar, Porto Alegre, RGS, Brazil.
Date of Introduction: 1975.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: R.H. Moretti. 1981. *Journal of the American Oil Chemists' Society. March.* p. 521. "Soy milk developments in Latin America." Provesol, a powdered soymilk produced by a modern process, was developed during the 1970s at IIT, Colombia, by Dr. Diaz Delgado. The process was later sold to a Brazilian company, Olvebra, which started producing soya milk in 1975 with the Coca-Cola pilot plant. Presently they are using a mixed process, which combines Coca-Cola and Provesol techniques. The product is sold canned in powder form under two brand names: Novo Milk and Nova Vida. Novo Milk is sweetened and flavored orange, chocolate, banana, and strawberry. Nova Vida has the same Provesol composition of 50% protein, 25% fat, 19% carbohydrates, and 19% fiber. The main use of Nova Vida is in the school lunch program in Brazil. It is well accepted by school children. Letter from Jane Cadwell Pautz. 1982. May 29. The company makes Leite "Novo Milke" and Leite "Nova Vida." plain and flavored soy drinks.

2706. Pupo, L.M.; Chaib, M.A.; Garruti, R.S.; Pereira, L. 1975. [Organoleptic evaluation of soymilk]. *Revista Brasileria de Tecnologia* 6(1):111-16. [8 ref. Por; eng]*
• ***Summary:*** Soybeans cooked with sodium hydroxide solution added were preferred by a taste panel to soybeans boiled in plain water since the beany flavor was significantly decreased.

2707. **Product Name:** [Soyalac {Soymilk} (Plain, or Cocoa)].
Foreign Name: Soiyarakku Sutoreeto, Kokoa Soiyarakku.
Manufacturer's Name: San-iku Foods.
Manufacturer's Address: 1-1 Nagaurataku, Sodegaura-machi, Kimizu-gun, Chiba-ken 299-02, Japan.
Date of Introduction: 1975.
Wt/Vol., Packaging, Price: 250 gm can.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Both products purchased by William Shurtleff and Akiko Aoyagi in Japan. 1975-1976.

K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States (see next page) that Soiyarakku Sutoreeto, and Kokoa Soiyarakku were introduced in 1975 by Saniku Fuuzu in a 425 gm can and distributed nationwide.

2708. Toulec, R.; Coroller, J.Y. 1975. Application of soy protein concentrate in calf milk replacer. Brieuc, Rennes, France: Zoological Research Inst. *
Address: 65, Rue de Saint, Brieuc, Rennes, France.

2709. **Product Name:** Soymilk.
Manufacturer's Name: Welcome Home Bakery and Tofu Shop.
Manufacturer's Address: 231 S.W. 2nd St., Corvallis, OR 97330.
Date of Introduction: 1975.
New Product–Documentation: Shurtleff & Aoyagi. 1977. Jan. 28. Commercial Tofu Shops and Soy Dairies. Alec Evans. Letter from Alec Evans. 1981. Feb. One of his early products was soymilk.

2710. Bragg, Paul; Bragg, Patricia. 1975. Hi-protein meatless health recipes: With history and reasons. Desert Hot Springs, California: Health Science. 184 p. Illust. No index. 21 cm. • ***Summary:*** A vegetarian cookbook. Whereas Paul Bragg used to advocate moderate amounts of meat and fish in the diet, he now advocates a meatless / vegetarian diet. These recipes are free of salt and sugar. On the cover the word "Meatless" appears in large bold letters.

Contents: Total health for the total person. Food for thought (sayings). Introduction, by Patricia Bragg (p. 1-9. Strongly advocates a vegetarian diet. Your health food store can substitute for your meat market. Cured meats may cause cancer. Animal fats can be harmful. Vegetarian gourmet cookery). Abundant protein without meat: An arduous journey without meat (Guatemala), health and vitality in Africa's Atlas Mountains [Berbers in Morocco, Algeria, and Tunisia], Arab vegetarians in the Sahara desert, India produces many strong people on a vegetarian diet (incl. Gandhi, yogis. Paul was Gandhi's friend, and they hiked together over miles of hot, dusty roads in India), 175 years of vegetarianism in England (George Bernard Shaw, Bragg's personal friend, lived into his 90s), great vegetarians of the past, fruitarians–a type of vegetarianism, vegans–another type of vegetarian, lacto-vegetarians–the most popular type, vegetarians excel as athletes, degenerative diseases in an affluent society, animal proteins and fats connected with cancer, our malnourished youth, young people are awakening to the importance of good nutrition, a meatless diet must avoid protein deficiency, human individuality, 300,000 retardants born each year in the U.S., how to solve your nutritional problems, how much protein does the body need, protein-hungry hair, sprouts a tremendous source of vegetable protein (incl. soybean sprouts), you must have all the amino acids, vegetarian foods that are rich in amino acids (incl. peanuts, soy beans), B-12 supplement essential in vegetarian diet (soy beans have traces), raw fresh wheat germ also essential in a vegetarian diet, how I discovered the nutritional value of raw wheat germ, combine good nutrition with exercise, brewer's yeast as a vegetable protein–plus, buckwheat leads all grains in protein, buckwheat also rich in minerals and vitamins, here's how to serve buckwheat, use no salt!–its harmful, herbs and garlic add nutrition plus beautiful flavors, the Chinese Restaurant Syndrome, no nutritional value in MSG, Bragg Liquid Aminos (ad, p. 44; many of the recipes in this book call for Bragg Aminos).

Mushrooms an ancient nutritional delicacy. Mushrooms and mushroom recipes. Sesame seeds and recipes. Tahini and recipes. Hulled millet and recipes. Barley and recipe. Chinese yogurt or tofu (and 4 recipes). Suggestions for using Bragg Liquid Aminos (ad, p. 66).

Note: This is the earliest document seen (Aug. 2011) that contains the term "Bragg Liquid Aminos." Mexico gives us delicious meatless protein dishes. History of corn. Soybeans. Appetizers. Salads and dressings. Soups important in vegetarian diet. Vegetables. Casseroles. Entrees (incl. Soybean loaf). Egg and cheese dishes. Health beverages. Pineapple holds the secret of protein-digesting enzymes (smoothie recipes). Breads and grains. Sandwiches and fillings. Spreads. Health desserts (incl. Zesty protein confection {with 2/3 cup soy powder [protein isolate]}). Hi-protein carob brownies (with ½ cup soybean powder).

The Bragg travel diet (he takes along his own meatless food). Sickness is expensive (between 1950 and 1979, medical costs in the USA increased 1,568%). Very little money spent on preventive medicine. "Getting old"–True

or false? (False, no part of the human body is more than 7 years old, and our blood is replaced every 90 days). When you are healthy–you are happy! Individuals can extend their lives by natural living (examples of Vilcabamba in Ecuador, the Hunza in West Pakistan, and people in the highlands of the Soviet Caucasus; all eat very little meat). Natural diet ad exercise the secret of agelessness. Exercise improves circulation to all parts of the body. Why should man die? Man is not originally carnivorous (physiology and anatomy of the human body). The meatless way of eating is simple. What is a balanced diet? Easy method to balance your nutrition. Modern nutrition confuses even so-called experts (but is basically simple. Paul was "born and reared on a large farm in Virginia." They grew practically all their own foods and had their own gristmill). Health is easiest and safest way. Your body is your closest companion (Be careful about what you eat. The greatest thing in life is energy). Our personal message to you. Protein research data. Protein and calorie counter (a table showing calories, protein, and usable protein for many basic foods). Life's greatest treasure is radiant health. Your health food store: The specialist that is different (list incl. 3 Bragg products). Let your health food store be your meatless butcher shop. Food for thought (p. 182-84; quotations, most have the author given). From the authors ("This book was written for You... We Professional Nutritionists join hands in one common objective... Scientific Nutrition points the way–Nature's Way–the only lasting way to build a body free of degenerative diseases and premature aging..."). My favorite recipes (mostly blank page).

Advertisements: (1) Send for important free health bulletins. (2) Bragg live longer, live stronger self-improvement library (list of 25 books by Bragg, with prices).

From the authors. Brief biography of Patricia Bragg (on unnumbered page at end of book), Ph.D., Nutritionist, beauty and health consultant. Advisor to world leaders, glamorous Hollywood stars, singers, dancers, athletes. Lecturer and author (She says she is the daughter of Paul C. Bragg. An accomplished musician, dancer, tennis player, swimmer, and mountain climber. The youngest woman to ever have been granted a U.S. patent. Graduate of the University of California. Lists her famous clients).

The section on "Chinese yogurt or tofu" (p. 61-65) notes that many years ago, while Bragg was an associate editor of Bernarr MacFadden's famous *Physical Culture* Magazine, he "made one of the greatest nutritional discoveries" of his life. Macfadden asked Bragg to travel to Manchuria, a long and arduous trip, to study these people well known for their tremendous vitality, energy and health. He was well rewarded, for there he "discovered the magic of the soybean, the most potent of vegetable high-protein foods." He found that Manchurians eat low on the food chain, make soy milk and tofu. Tofu is sold in food stores throughout Hawaii, where he lives. Tofu is related [sic, unrelated] to spun soy protein. He gives recipes for: Chop suey with tofu. Vegetable casseroles using tofu. Tofu casserole supreme. Tofu & scrambled eggs.

The section titled "Soybeans" (p. 73-81) has the following contents: Herbs to savor soybeans (21 herbs). Soybeans (introduction). How to make soybean sprouts. Soybean recipes. Green soybeans. How to cook dried soybeans. Method for cooking beans. Soy milk. Soybean cheese (made by allowing soy milk to curdle in a warm place, without using a coagulant). Soybean casserole. Soybean and vegetable stew. Sauteed soybean sprouts and onions. Boston baked soybeans. Stuffed peppers with soybeans. Soybean sprouts en casserole. Soybean-rice loaf. Baked soybean croquettes. Soybean patties with tomato sauce. Soybean loaf (with soybean pulp [ground, cooked soybeans]). Stuffed soybean peppers.

Photos show: (1) Jack LaLanne, Patricia Bragg, Elaine LaLanne, Paul Bragg, standing together. (2) "Paul C. Bragg, N.D., Ph.D., Life Extension Specialist," in Hawaii, standing and smiling in front of tropical plants (facing p. 1). Note: This is the earliest document seen (April 2010) in which it is claimed that either Paul C. Bragg or Patricia Bragg have Ph.D. degrees. When and from where did they get them?

(3) "Paul C. Bragg and daughter Patricia" (p. 1). (4) Paul Bragg with the members of the "Longer Life, Health and Happiness Club" at Fort DeRussy on Waikiki Beach, Honolulu, Hawaii (p. 89). (5) "Paul Bragg and daughter Patricia" standing by the railing of a ship. They travel the world gathering health recipes (p. 156). (6) Paul Bragg and his daughter, Patricia, dressed in workout suits, running in place. and looking very healthy, happy, and energetic. They "carry out a vigorous morning exercise program every day and keep in peak physical condition" (p. 160). (7) Paul C. Bragg and Duncan McLean, age 83, England's oldest champion sprinter, running together in London's Regent' Park (p. 162). (8) Paul Bragg standing on Waikiki Beach with six female members of the Longer Life, Health and Happiness Club; all have both hands raised high (p. 171). Address: Health Science, Box 477, Desert Hot Springs, California 92240.

2711. Cerne, Vasili; Sintes Pros, Jorge. 1975. La soja: Su cultivo, su exceptional valor nutritivo y sus virtudes dieteticas y curativas [The soybean: Its cultivation, its exceptional nutritive value, and its dietetic and curative virtues]. Barcelona, Spain: Editorial Sintes. 224 p. Illust. Series: Biblioteca Naturista. [Spa]

• ***Summary:*** Contents: Introduction. 1. Origin and general information. 2. Botanical characteristics. 3. Species and varieties. 4. The soybean plant's nitrogen-rich nodules. 5. Surroundings and soil. 6. Preparation of the terrain. 7. Selection. 8. Planting and germination. 9. Cultural care. 10. Crop rotations using the soybean. 11. Intercropping with soybeans. 12. Harvesting the pods. 13. Harvesting the soybean as forage. 14. Yields. 15. The red beetle (*el*

coleóptero rojo, family *Elateridae*). 16. Soy oil: Lecithin and soy oil extraction using the Hansa-Muehle system. 17. Soya (*la soja*), the exceptional food: Soya in human nutrition, nutritional composition of the seeds, minerals and vitamins in soya, soya in the kitchen, soy sprouts, soymilk, soy casein, curds and soy cheese (*requesón y queso de soja*), soy flour, soy bread, defatted soy flakes? (*copos de soja*), soy meat (*carne de soja*), soy sauce. 18. The dietetic and therapeutic value of soya: Soya–the vegetable meat, soy proteins, soy oil, soy carbohydrates, digestibility, therapeutic uses, summary of properties and indications, soya in the macrobiotic diet. Appendix: A revolutionary food: The bread of Soyuva (3,600 calories, in existence by June 1974).

"In 1917 soybeans started to be cultivated in Spain thanks to the efforts of an architect from Tortosa, don Juan Abril Guanyabens, who was sick with diabetes. His physician, Dr. Maneget, director of the resort Caldes de Malavella (Gerona) had recommended this new food to counteract his diabetes. The magazine *Consejos para Vivir* (Advice for Living) stated in its issue no. 106 of March 1971 that the above-mentioned doctor, in 1918, published an article on the spectacular results of this plant and its healthy nutritional effects in the Barcelona periodical *La Veu de Catalunya."*

"In about the 1930s a Spanish farmer grew soybeans and found himself with big difficulties in selling the harvest, even though in other countries it was produced and consumed in huge quantities, due to its high nutritional value, its richness of protein, and its ability to enrich the soil with nitrogen. Nonetheless, there is no doubt that the cultivation of this plant can also provide Spain with substantial economic benefits.

"For this reason in 1934 the Ministry of Agriculture, as indicated by the engineer from Montes, don Juaquín Martín Laplaza, in an interesting work, gave 4 kg of seeds to the Division of Hydrology and Forests (*División Hidrológica Forestal*) to that the latter would conduct the appropriate tests concerning the cultivation of this plant. This was done, and care was taken to vary the locality, type of soil and terrain, climate, and irrigation.

"The locations chosen were: (1) a nursery in the mountains of Prades, between the city of Montblanch and the town of Rojals (province of Tarragona); (2) the city of Seo de Urgell, and (3) in la sierra del Cadí. These test plots were set on the outermost edges of the agricultural pastures and near the forest areas of high altitude, the very areas most likely to be unfavorable for growing soybeans." But despite this, the soybean plants gave good yields of both seeds and forage (p. 6-8). Address: Spain.

2712. Circle, S.J.; Smith, A.K. 1975. Soybeans: processing and products. In: N.W. Pirie, ed. 1975. Food Protein Sources. Cambridge, London, New York, Melbourne: Cambridge University Press. xx + 260 p. See p. 47-64. [88 ref]

• ***Summary:*** Contents: Introduction. Agronomy: Varieties, cultivation, yields. Soybean composition. Protein nutritional value. Traditional processing into nonfermented foods: Soybeans as a table vegetable ("cooked green soybeans. "Certain large-seeded varieties are often referred to as 'garden' or 'vegetable' type soybeans in contrast the better known {smaller seeded} 'field' type"), soy milk, tofu (soybean curd), yuba, kinako, salted soybeans, soybean sprouts. Traditional processing into fermented foods: Miso and shoyu, tempeh. Others (p. 55) include: natto, hamanatto, sufu (soy cheese), tao-tjo, kochu chang, ketjap, ontjom, and yogurt-like products.

Contemporary processing without defatting: 'Debittering' by aqueous treatment, whole bean processing, full-fat flour ("Extrusion cooking to produce full-fat soybean flour has received considerable attention"), soy milk and curd. Contemporary defatting processes: Defatting by aqueous processing, defatting with organic solvents, composite flour ("Substitutes or extenders for wheat flour in baked goods and pasta products are termed 'composite flours,' whether or not they contain some wheat." Many of these include soy protein products), soy flours, protein concentrates, protein isolates and textured soy products (Based on "protein fractionation after hexane defatting of soy meal." Recipes for using soy protein products in foods are available from several publications–which are listed). Address: Anderson Clayton Foods, W.L. Clayton Research Center, 3333 Central Expressway, Richardson, Texas 75080.

2713. Deer. 1975. The cookbook for people really who love animals. God's Religion, Route 2, Box 98E, Brooksville, FL 33512. 31 p. Illust. No index. 18 x 22 cm.

• ***Summary:*** This typewritten vegan cookbook with no price on it, copyrighted in 1975 by Burton Waldbaum, expresses the group's world view. The cover title is hand written below an illustration (line drawing) of a girl kneeling down with a cow, lamb, pig, and chicken. The book contains a good collection of 62 vegan recipes, which are straightforward, appetizing, and nutritious.

Contents: Introduction, by Sun. Thank you page, by Deer. Breakfasts (12 recipes). Main dishes: Sauté (5), Vegetable and grains (10), Potatoes (3), Variety dishes (4). Sauces (6). Soups (6). Salads (4). Dressings (3). Healthful treats (8). Glossary. Abbreviations. Memo section. Essential items for cooking.

This spiritual vegan community, founded by Burton Waldbaum (who is also called "Light"), was later renamed "World of God," and after that "Gentle World."

The Introduction begins: "The Human Race (that is, the race to reach human perfection) has evolved to an exciting point; at least this is true of these who are in the lead. There is a world of truly gentle people on this planet, growing stronger, and surer, and healthier, and happier, and higher every day. And it's time for the rest of the race to have a

good look at them, and to see that it's their gentleness that allows them to run faster and better; so that everyone can eventually reach the goal of evolving; so that everyone can win its rewards.

"In spite of all the pessimism, all the cruelty, all the brain dirtying, all the lies, all the injustice and all the hypocrisy; in spite of all the internal and external pollution that men and women have been heir to, there is a new breed emerging, and it's rising clear and sweet and free. Never before, in the history of the world, have so many people stood up in front of each other and announced, very bravely, 'I don't eat meat anymore.' And that standing up has been as a seed that has been nourished and spread, and that will bear much fruit in the New World–a world in which all creatures are gentle; all creatures are unafraid.

"... which is leading the world to a new, much higher, loving and understanding of GOD. Gentleness is the necessary beginning for a new world, but it is only the beginning..."

Soy-related recipes include: Granola (with "½ cup soy granules, {optional}," p. 5.). Bran muffins (with "1¼ cup soy milk {1 cup water and 4 T [tablespoons] soy flour}, p. 7). Oatmeal chewies (with "2 T soy powder," p. 7). Banana bread (with "2 T soy powder mixed with 2 T water," p. 7). Soy burgers (with soy beans and tamari, p. 10). Chick pea loaf (with soy powder, p. 11). Tahini tamari sauce (p. 19). Tomato soup (with soy powder, p. 21). Carob ice cream (with soy powder, p. 25). Vanilla ice cream (with soy powder, p. 25). Quick buckwheat pancakes (with soy or nut milk, and soy powder, p. 25). Carob cookies (with soy powder, p. 27). Carob cake (with soy or nut milk, and soy powder, p. 27). Frosting for carob cake (with soy powder, p. 28). Soy butter (Mix ¼ cup water, ½ cup soy powder or soy flour, ¼ cup oil, 1 tablespoon of sweetener, 1 tablespoon herba-mare [seasoning salt mixture]. Delicious with muffins, bread, or crackers). The glossary (p. 29) lists two soy products: "Soy powder–made from soy beans. Used instead of milk or eggs. As an egg substitute: 1 egg equals 1 tablespoon soy powder and 1½ tablespoons water. As a milk substitute: 4 tablespoons soy powder to 1 cup water, blend.

"Tamari–made from aged soybeans, A pure soy sauce. A definite must in all vegetarian kitchens. Used in almost everything that you will be cooking." Indeed, tamari is used to season more than half the recipes in this book; most are not specifically mentioned above. Address: Brooksville, Florida.

2714. Friedman, Mendel. ed. 1975. Protein nutritional quality of foods and feeds. Vol. 1, Part 2: Quality factors–plant breeding, composition, processing, and antinutrients. New York, NY: Marcel Dekker. xx + 674 p. Illust. Subject index. Author index. 24 cm.
• ***Summary:*** Soy is mentioned on the following pages: 46 (biological value), 164-82 (soy protein concentrate), 233 and 239 (soybean meal), 280-85 (soybean meal), 424 (soy flour), 442 (whey enrichment of soy), 464 (whey beverage with soy), 494 (tofu, urease), 507 (soy milk, soy proteinases), 527 (soy protein isolates), 528 (soy fiber, soy flour), 540 (soy protein–phytic acid complex), 595 (alkali treatment, tofu). Address: Western Regional Research Lab., ARS, USDA, Berkeley, California.

2715. Goulart, Frances Sheridan. 1975. Bum steers: How and why to make your own delicious high protein mock meats, fake fish & dairyless desserts, and avoid useless calories, cholesterol, sodium nitrate, salmonella, trichinosis & high prices. Old Greenwich, Connecticut: Chatham Press. 205 p. Illust. Recipe index. 21 x 19 cm.
• ***Summary:*** This vegetarian cookbook, interspersed with many well-selected anti-meat quotations, describes how to make meatless meats and non-dairy products at home. Contents: Introduction. On the block: Major mock-meat-making supplies. Vegebutchering: Master mock-meat recipe file. Bogus beef. Pseudo pork. Unreal veal. Sham lamb. Con game. Phony poultry. Fake fish. Un-innards. The vege-deli. Mocking up: General dishes. The mock crock. On the side. Dairyless desserts. Steerage (sources of unfamiliar ingredients).

Chapter 1 begins with an introduction to and nutritional composition of tofu, followed by the soybeans, gluten flour, other legumes, etc. Under "Flavors enhancers" are listed soy lecithin granules or flakes, miso, yeast extract (marmite), soy sauce and tamari, and Worcestershire sauce. Chapter 2 contains recipes for making gluten, tofu, grainola (with soy grits), a stock with miso for non-meat dishes (p. 32), mock milk I (made with soy flour), mock milk II (made with raw cashews or almonds), mock (soy) butter (made with soy flour), and mock cream (with soy flour and soy cream), and mock yogurt (with cashew nuts and soy yogurt culture).

Note: This is the earliest document seen (Sept. 2012) that mentions a non-soy, non-dairy yogurt–in this case one made with cashew nuts. A sampling of the many other soy-related recipes include: Moo-less ragout (with tofu, soy sauce, and soy butter, p. 43). Vegetarian rolladen (with cooked ground soybeans, p. 52). Good red meat (with gluten or tofu, p. 53). Greenbutcher's meatballs (with tofu, p. 57). Mock Mac I (burger with soybeans, p. 64-65). Pineapple pig (with tofu, p. 72). Half-calf (with tofu, p. 79). Surrogate salami (with "bean pulp (residue from making Tofu)" [okara], p. 125). Bumsteads: Two burgers for meat-totalers (with tofu, p. 131). Meatless mincemeat (p. 142). Soybean mustard (with soy sprouts, p. 165). Cow tow: Cowless milk candy (with soy milk powder). Jersey bounce: A moo-juice-less junket (with soy milk, p. 184). Bum bombe: Egg-less, cream free (with soy cream, p. 184). Two 100% vegetarian ice creams: Eggless, milkless (with soy powder, p. 186).

Many recipes also contain wheat gluten: Charisma: Char-broiled bum steers (p. 48). Pig-less pork sausage (p.

70-71). Roast loin of veal (p. 80). Fake steaks: Two sham schnitzels (p. 80-81). Vegetarian cutlets (p. 82). Mocking birds I (p. 83). Fruit stew (p. 86). Sham lamb (p. 89). Sham lamb curry (p. 91). Bum bunny (p. 97). Sweet breads (p. 121).

Aduki beans are used in Moo-less rice pudding (p. 183). Sources of ingredients include: Walnut Acres, Penns Creek, Pennsylvania 17862 (herbs, spices, oils, whole grains, flours, seaweeds, etc.). Erewhon Trading Co., 342 Newbury St., Boston, Massachusetts 02115 (seaweeds and general goods, grains, beans, vegetables, seeds, etc.). Shiloh Farms, Route 59, Box 97, Sulphur Springs, Arkansas 72768. Arrowhead Mills, Box 866, Hereford, Texas 79045. Dynamic Nutritional Products, P.O. Box 528, North Hollywood, California 91603 (Milk-free yogurt culture. Trade names: Soyadophilus and Theradophilus).

Sample quotation: "... traditional American reliance on meat, particularly beef, is perhaps the single largest inefficiency in world dietary patterns..."–*New York Times* Oct. 25, 1974. Address: Wilton, Connecticut.

2716. Hieu, Dinh trong. 1975. A propos de la "Conception vietnamienne de la boisson": les plantes utilisées dans la préparation des boissons au Vietnam [Concerning "The Vietnamese conception of a beverage": The plants utilized in the preparation of beverages in Vietnam]. *Cahiers d'Études Vietnamiennes* No. 2. p. 30-64. See p. 38 (B 4). [Fre]*

• ***Summary:*** The author distinguishes two types of soymilk: (1) A simple drink / candy. (2) A food itself.

However, both are considered as traditional Vietnamese foods, even if their respective role and nutritional importance does not seem equivalent.

2717. INTSOY. 1975. Proposal for soybean processing and development of village-based utilization: Sri Lanka. Urbana, Illinois: International Soybean Program. 32 p. 28 cm. Typewritten.

• ***Summary:*** "Project title: Development and demonstration of soybean foods for village and commercial uses."

"Project No.: This is an ancillary project of contract No. UNDP / SRL / 73 / 007-1 / AGOF covering several levels of product and process technology for the development and use of soybean food products. Funding of this project will cover equipment for a pilot plant, for rural extension processing and for training grants. A total of U.S. $454,000 is requested for this project. This will include all items of equipment for the first phase of operation and support for extension of the technology to the village level. It is proposed that UNICEF will contribute U.S. $227,000 and that CARE will contribute U.S. $227,000."

Contents: Part I–Background. A: Background of the project. The problem. Description of government's efforts to solve the problem and the proposal: Village level processing (weaning foods and meat substitutes, soy beverages, soy dhal), intermediate level technology, commercial type soy foods (full-fat soy flour, soy dhal, soy beverage, infant weaning foods), extension of technology to village, legume inoculant production. Institutional framework. Assistance already received by UNICEF. Justification for assistance.

B: Objectives of the project. Long range. Immediate. Part C: Management of project. Activities and targets. Time schedule. Work plan.

Part II–Commitments of government. Part III–Commitments of UNICEF and other International Agencies. Note: Equipment to be obtained in the U.S. includes much expensive high-tech equipment such as Gaulin Homogenizer $20,000. Proctor-Swartz tray drier pilot plant $20,000. Fitzpatrick Hammermill–Model DAS06 $8,000. Small drum drier and flaker GF model $20,000. Spray drier (pilot size) $50,000. Pin mill–Alpine contraplex 250 CW $30,000. Size classifier for fine powder–Alpine $30,000. Grand total U.S. $277,500.

Appendix I. Government provided building, equipment and supplies. II. Description of government inputs. Address: INTSOY.

2718. Kloss, Jethro. 1975. Back to Eden. Santa Barbara, California: Woodbridge Press. xx + 684 p. Illust. Index. 18 cm.

• ***Summary:*** After the copyright for the original 1939 edition of *Back to Eden* expired in 1967, the Kloss family, because of a complex set of circumstances, neglected to renew it. The book then went into the public domain. Woodbridge Press decided to publish it as a facsimile edition, but with pages xiii–xx of the front matter containing a new chapter titled "Jethro Kloss–the man and the legend" by Promise Kloss Moffett." It was billed on page 1 of that chapter as "An exclusive feature only in this Kloss family edition. An intimate, personal account by his daughter." This chapter contains four photos: (1) "Jethro Kloss in his early years of teaching and healing." (2) "Jethro Kloss with Amy, his second wife, in Minnesota with his daughter, Promise; her daughter, Mabel; and their first child, Lucille." (3) "Jethro Kloss operating men's hydrotherapy treatment room at Home Sanitarium." He is dressed in a sort of white togo; a patient is inside a large cylindrical chamber (resembling but larger than a 55-gallon drum with a horizontal axis) apparently filled with steam. (4) Labeling and packing cereal foods in Kloss' Tennessee manufacturing operation. On the cover of the paperback edition they put the famous Michelangelo scene from the Sistine chapel of God reaching out to touch Adam's extended finger, thus transmitting the gift of life. New text was added to the cover: "The complete text. A public domain edition. Not authorized by the Kloss family. The classic Back to Eden belongs to the public. There is 'provision in Nature for all the ills of man... and a remedy for every disease.' The secrets of Natural Healing made plain by the preeminent leader of the natural health movement. Herbs,

foods, treatments. World's best-known health book!"

On the cover of the hardcover edition was written "The Kloss family heirloom edition. The classic guide to herbal medicine, natural foods, and home remedies. The copyright page stated: "Copyright 1972, 1973, 1974, 1975 by Promise Kloss Moffett, Eden Kloss, and Doris Gardiner.

On the title page was written: "With exclusive features only in this Kloss family edition. American herbs for pleasure and health: natural nutrition with recipes and instructions for living the Edenic life."

For the bitter-sweet story of how this book came to be published, see interview with Doris Kloss Gardiner (Nov. 1990).

2719. Kulvinskas, Viktoras. 1975. Survival into the 21-st century: Planetary healers manual. Omangod Press, P.O. Box 255, Wethersfield, CT 06109. 323 p. Cover illust. by Peter Max. Introduction by Dick Gregory. Index. 28 cm. [259* ref]
• ***Summary:*** This book is about sprouts, sprouting, and a vegetarian live-foods diet. It is a catch-all of New-Age/ dietetic ideas assembled with the uncritical journalistic eye of a supermarket tabloid. Concerning soybeans the author states (p. 71): "The soybean is one of the most versatile foods. It is among the few seeds that have an alkaline ash. It will sour just like milk. Sprouted, it makes a delicious cheese and yogurt. It keeps well and can be bought organically grown for as low as 16 dollars per 100 pounds. Sprout for three days. Refrigerate. The best use of soybean sprouts is in making yogurt." On p. 257 is a recipe for Seed Yogurt (1 cup seeds plus 2 cups Rejuvelac). The preferred seeds are sunflower seeds. "A very bland, delicious yogurt can be made from sunflower alone, or from a mixture of cashew, almond, soy, pumpkin, and/or sesame... If using soybeans, soak them for at least 24 hours, changing water every 4 hours, finally draining. Blend to a creamy consistency using equal parts water and soybeans. The ferment has a delicious, sour taste. It is nutritionally superior to tofu and much less expensive." A recipe for Rejuvelac is given on the same page.

On p. 249 is a recipe for Soy Loaf using 2 cups soy bean sprouts. Copyright 1975 but published until 1979. Photos (on p. 323 and the inside rear cover) show Kulvinskas. He was born in Lithuania, and received his MSc degree in pure mathematics from the University of Connecticut, where he later taught math. For 6 years he was a computer consultant for Harvard Univ., MIT, Smithsonian Astrophysical Observatory, Appolo Project, etc. He retired in 1968 at age 29. He was co-founder with Dr. Ann Wigmore, of the Hippocrates Health Institute in Boston. He is presently director of the Survival Foundation, established in 1977.
Address: Wethersfield, Connecticut.

2720. Lopez Martinez, J.L. 1975. Estudo do processamento e avaliacao nutricional de misturas contendo leite de soja, milho, leite de vaca e soro de queijo [The processing and nutritional evaluation of mixtures containing soymilk, corn, cow's milk and cheese whey]. Master's thesis: Faculdade de Tecnologia de Alimentos, Campinas. 95 p. [Por]*
Address: Brazil.

2721. Noorbergen, Rene. 1975. Programmed to live: A scientific confirmation of health reform. Mountain View, California: Pacific Press Publishing Assoc. 159 p. No index. 18 cm. [158* footnotes]
• ***Summary:*** Contents: 1. Health care–The nation's vital problem. 2. Meat and fat–are they fit for consumption? 3. Sugar and alcohol–The fingers of death. 4. Cancer–Curse of the good life. 5. Nicotine and caffeine–The twin dangers. 6. Don't upset the body clock. 7. Forget the steak! Have an analog. 8. Embrace life–Don't be a statistic.

Quoting extensively from medical research and the writings of Ellen G. White, this book states the case for the Seventh-day Adventist diet and lifestyle, and against the unhealthy products listed above.

In 1904 only 67.7 deaths per 100,000 U.S. population were caused by cancer; today the figure has grown to 166.6–2.46 times as many. In 1904 heart disease caused 359.5 deaths per 100,000 population, but by 1972 it had jumped to 493.9–up 37%. Each hour in America, 144 heart attacks occur, and each year 600,000 people die of heart attacks. Thus more Americans die of heart attacks each year than died in all of World War II (400,000).

Before the Biblical deluge, God told humans to eat plants. But after the Flood, God granted Noah and his family permission to eat the flesh of the clean animals that had been preserved in the ark (Genesis 9:3) since every green thing had been destroyed by the food.

On the copyright page appreciation is expressed to Drs. Mervyn G. Hardinge, U.D. Register, and J.A. Scharffenberg.

2722. Nutrition Search, Inc. 1975. Nutrition almanac. New York, NY: McGraw-Hill. viii + 263 p. Illust. Index. 26 cm. *
• ***Summary:*** Page 71 states: "In addition to providing complete protein, soybeans contain vitamins and minerals in a natural relationship that is similar to the human body's needs."

"Soy milk: In comparison to cow's milk, soy milk is low in fats..."

"Malt is the germinated seeds of various grains, usually barley" (p. 76).

2723. Pontecorvo, A.J. 1975. La Soya y sus aplicaciones alimenticias en favor de las areas rurales de Mexico [The soybean and its applications as food for the rural areas of Mexico]. BSc thesis, National Autonomous University of Mexico (UNAM). [Spa]*
Address: National Autonomous Univ. of Mexico (UNAM).

2724. Rombauer, Irma S.; Becker, Marion Rombauer. 1975. Joy of cooking. Indianapolis/New York: Bobbs-Merrill Co. 915 p. Illust. by Ginnie Hofmann and Ikki Matsumoto. Index. 25 cm.

• ***Summary:*** One of the great American cookbooks. A classic and an all-purpose cookbook, this is the last edition revised by Marion Rombauer Becker. Soy-related recipes and descriptions include: Soy or lima bean casserole (p. 255-56). Soy cakes ("patties" of mashed cooked soybeans, rice, vegetables and eggs, rolled in sesame seeds and sauteed, p. 256). About fresh beans–edible soy beans (p. 284-85, with illustration {line drawing}). Green soybeans (cooked, p. 286; "Use the edible vegetable type, not field varieties of beans"). Low-fat tofu dressing (p. 369). About vegetable and nut milks: These are all nutritionally inferior to animal milks, "as their protein is of lower biologic value and their vitamin content is different." Almond and walnut milks have long been known in Europe. Native Americans used hickory and pecan milk. These milks, and coconut milk, with their delicate, fragile flavors "are a great delicacy in sauces and puddings." Gives recipes for almond milk, soybean milk (p. 534-35). Soybean curd or tofu (homemade, p. 535; "For other suggestions, see *The Book of Tofu,* by William Shurtleff and Akiko Aoyagi). Soybean paste or extender (cooked soybeans pressed through a colander, p. 535). Alternate or engineered foods (p. 535-36; textured vegetable proteins, "TVPs," CSM, WSB). Soy flour (p. 549). Soy meal (p. 549-50; coarser than flour). About seeds, grains, beans and peas–Roasted soybeans (p. 564). About commercial sauces–Soy sauce and shoyu (p. 574). Soy whole wheat bread (with soy flour, p. 608).

In the long, excellent section titled "Know your ingredients" (p. 519+), under "The capers and caperlike buds and seeds" (p. 580) we read: "Similar in Use are Chinese fermented black beans, or *toushi,* which are available in cans;..."

Note: This is the earliest English-language document seen (Nov. 2011) that uses the term "Chinese fermented black beans" or the word "toushi" to refer to fermented black soybeans.

As of April 1996 the book has not been revised since 1975. It is now a Scribner book published by Simon & Schuster. Hardcover price: $24.00. Address: Jennifer Becker, 38537 S.E. Hudson Rd., Sandy, Oregon 97055.

2725. Sass, Lorna J. 1975. To the king's taste: Richard II's book of feasts and recipes adapted for modern cooking. New York City, NY: The Metropolitan Museum of Art. 144 p. Illust. Index. 23 cm. [24 ref]

• ***Summary:*** From the fourteenth-century court of Richard II, "the best and royallest viander of all Christian kings," come forty delicious recipes from medieval England, all adapted for modern cooking by the author. Based on a medieval manuscript cookbook commissioned by Richard II in about 1390, the *Fourme of Cury* (Manner of Cookery) is one of the earliest extant recipe collections in Middle English. Many of the 196 recipes reveal the lust for grandeur and exoticism characteristic of the king's court, where 10,000 guests dined daily on delicacies prepared by 300 chefs.

The author, who holds a doctorate in medieval literature from Columbia University, found this work while doing research in the stacks of the Columbia University library. It was in a dark leather book, published by the Early English Text Society, titled *Two Fifteenth Century Cookery Books.*

Each recipe is given in its original Middle English, followed by a modern translation.

On pages 116 is a detailed recipe for "Cold Almond Milk," which comes from a different source–a rare manuscript (about 1467) in the Holkham collection. It is printed in Mrs. Alexander Napier, *A Noble Boke off Cookry ffor a Prynce houssolde* (London, 1882). A separate quotation from *Dyetary* (1542), by Boorde, attributes therapeutic value to almond milk (see p. 116, 128): "Almon mylk doth comforte the brest, and it doth mollyfe the bely, and provoketh uryne." Lorna Sass notes: "One of the most popular ingredients in medieval cookery, almond milk was used as a thickener and flavoring agent in a wide variety of meat and fruit dishes. It was also served hot or cold as a dip for making sops of toasted bread. Almond milk was apparently so commonly known that few cooks bothered to write the recipe down. The above instructions are therefore extremely valuable as the only published source known." She then gives a modern version of the recipe using ½ cup blanched almonds, water, honey, and salt as the only ingredients. The ancient recipe begins: "Cold Mylk of Almondes–To mak cold mylk of almondes put fair water in a pot with sugar or honey clarified so that it be douce. The salt it and set it on the fyere and when it is at boil scom and let it boile awhile. Then tak it from the fyre and let it kele. Then blanche youre almondes and grind them, and temper then with the same water to a good thik mylk, and put it to wyne [add wine] that it may have a good flavour ther of, and serve it..."

Talk with Lorna Sass. 1997. Feb. 15. She is quite sure that almond milk came to Europe from Arabic cookery, perhaps as early as the 8th century. Charles Perry, who lives near Los Angeles, California, is an expert on the history of Arabic cookery, and has written articles about it, as in *PPC* (*Petits Propos Culinaires,* London). Address: Culinary historian, New York City.

2726. Silverstein, Alvin; Silverstein, Virginia B. 1975. Beans: All about them. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 86 p. Illust. by Shirley Chan. Index. 22 cm. Summarized in Soybean Digest, Sept. 1975, p. 43. [7 ref]

• ***Summary:*** This excellent book for children discusses beans in legend and history, how to grow them, and their future as

a low-cost protein supplement. Includes experiments, bean recipes, and games.

Contents: Beans. The story of beans. The history of beans. Beans in legend and lore. The life story of the bean. Kinds of beans. Beans in the garden and the marketplace. Beans for the future. Fun with beans. Beans for good eating.

Page 2: "Kuan Yu, a great war god in Chinese folktales, was a bean curd [tofu] seller in his youth."

Pages 12-13, a brief (and partially accurate) history of the soybean, begin: "Soybeans are native to eastern Asia. The oldest written records of them date back to 2838 B.C. [sic], when Emperor Shen Nung of China wrote a description of the plant." Also mentions: The five sacred grains, soybean "milk," tofu, yuba, [soy] sauces, soybean paste, soybean sprouts, soybean oil, Engelbert Kaempfer, first introduced "to the United States around 1800 when a ship brought some to Philadelphia [Pennsylvania], Commodore Perry (1854), USDA tested about 10,000 different kinds. Now soybeans are the number one U.S. cash crop, accounting for more then 75% of the world's soybean supply. Soybeans are used as foods for humans (in the form of oil, flour, soy sauce, "milk substitutes, and meat substitutes and 'extenders'") and feeds for animals. They are also used in the manufacture of more than 250 industrial products, including paints, soaps, lubricants, adhesives, and fertilizer.

Page 16: "In China, beans were a good luck symbol. A person who wore a string of soybeans hidden around his neck was believed to possess magic powers to do amazing feats. Three dark soybeans soaked in sesame oil for three days were used to foretell the future."

The chapter "The life story of the bean" (p. 18-29) gives (with illustrations) a simple and accurate description of the bean seed and how it grows, discussing the hilum or seed scar, the micropyle or tiny hole at one end of the hilum, the seed coat, the two cotyledons in which food for the young growing plant are stored, the embryo nestled (a plant in miniature) between the cotyledons, with its two tiny leaves (the plumule), a little root (the radicle), and a stemlike part connecting them (the hypocotyl). When the seed is planted, and it germinates or sprouts, the "embryo root pokes its tip out through the micropyle and grows out into the soil. Tiny root hairs form along the growing root. They take in moisture and dissolved minerals from the soil." The hypocotyl grows until it "suddenly pushes up out of the soil–the first part of the seedling to emerge. It is bent over, for the cotyledons are still buried in the soil." The hypocotyl continues to grow. In a day or so the seed coat splits, then the top of the plant pops up out of the soil. "The empty seed coat is left behind, buried beneath the surface." Now the young bean seedling is growing straight up. The two seed leaves at the top unfold and grow quickly. Below them on the stem are the two cotyledons. As sun shines on the growing plant, its leaves, cotyledons, and stem begin to turn green–a turning point in the life of the plant.

For a while, the growing plant takes the food it needs from the reserves stored in the two cotyledons. But as these reserves are used up, they shrivel and finally fall off. Now the young plant must create its own food using chlorophyll and photosynthesis.

Chlorophyll traps energy from the sun. When examined under a magnifying glass, one can see that the surface of a plant leaf contains many tiny openings called stomates, which are usually open during the day and closed at night. "When the stomates are open, gases from the air pass freely in and out." Air is about 80% nitrogen, 20% oxygen, plus smaller amounts of carbon dioxide, water vapors, and others gases. In the leaves, "carbon dioxide and water are combined, using the sunlight energy trapped by chlorophyll, into sugar, starches, and other complicated chemicals. Scientists call this process photosynthesis (photo means light, and synthesis means a putting together)." The by-product, oxygen, passes out into the air through the stomates; it is the gas that humans and other mammals need to breathe.

Describes the underground activities related to plant growth, nodules, bacteria that live symbiotically in the roots and fix ammonia and nitrogen. Also describes the bean flower, its parts, self-pollination, the key role of bees, and how the seeds are formed from the flower.

The chapter "The soybean–Number one" (p. 36-39) describes the current status of the soybean in the USA. The chapter "Beans for the future" discusses modern developments such as CSM, soyfoods such as sufu, tempeh, miso, spun soy protein fibers, soybean meat analogs, textured vegetable protein (TVP).

When a bean seed sprouts, how does it know which way is "up"? "Could you ever get a seedling with its roots pointing up in the air and its shoot poking down into the soil?" Supposing you cut off all sunlight? No, plants have a built-in gravity sense which scientists call "geotropism." A plant hormone called an auxin causes the plant to bend upward–and toward the light (heliotropism). In 1888, the symbiotic partnership between legumes and nitrogen fixing bacteria was first discovered by Hellriegel and Wilfarth. There are short-day plants, long-day plants, and day-neutral plants; flowering will not begin until the length of days and nights is just right (p. 54-59). Bean recipes (p. 70-75). Address: 1. Prof. of Biology, Staten Island Community College, New York City; 2. Translator of Russian scientific materials.

2727. Smith, Ramona G. 1975. Basic soybean cooking for Bangladesh. Dacca: Mennonite Central Committee. xiii + 71 p. Illust. 24 cm. [9 ref]

• ***Summary:*** Contents: Notes. Acknowledgements. 1. An introduction to soybeans. 2. How to prepare soybeans for cooking. 3. Green soybeans. 4. Dry mature soybeans. 5. Soybean paste (mashed whole soybeans). 6. Soyflour. 7. Soymilk. Appendices: A. Comparison of nutrients in

soybean and common dhals. B. Comparison of nutrients in soyflour, whole wheat flour and white flour. C. Comparison of nutrients in soymilk and cow's milk. References. Address: Home Economist, Mennonite Central Committee.

2728. Thio, Goan Loo. 1975. Small-scale and home processing of soya beans with applications and recipes. *Royal Tropical Institute* (*Amsterdam*), *Dept. of Agric. Research. Communication* No. 64. vii + 51 p. Illust. Third ed., revised and enlarged. 1978. No. 64a. 59 p. 24 cm. [26 ref]

• ***Summary:*** Contents: 1. Introduction: History, botany, cultivation, pests and diseases, harvesting, yield and storage. 2. Chemical composition. 3. Nutritive value: Supplementation, trypsin inhibitor, hemagglutinins. 4. Small-scale and home processing methods: Soya milk, yogurt of soya milk, toufu (Soya bean curd), soya-bean sprouts, soya steak (Tempeh). 5. Applications of soya beans and soya-bean products [recipes]: Fried soya beans, cooked, young whole soy beans [green vegetable soybeans], flavoured soya milk, fried toufu, fried soya steak, dried sliced toufu (toufu crisp/crisps), soya flour (including soya-milk-residue flour [ground okara]). 6. Recipes based on soya bean products: soups with soya bean products, flavoured soya milk, soya yogurt with fruits, toufu bread/cake, toufu dishes, modified Zambian recipes, recipes with soya flour, soya shashlick (tofu kebab), and soya [tofu] spring roll. 7. Discussion. References. Note: Toufu = Tofu.

Note 1. This is the earliest English-language document seen (Jan. 2013) that uses the term "soya-bean sprouts" to refer to soy sprouts.

Note 2. This is the earliest document seen (Sept. 2012) that uses the term "soya yogurt" to refer to soy yogurt. Address: Dep. of Agricultural Research, Royal Tropical Inst., Amsterdam.

2729. Wynne-Tyson, Jon. 1975. Food for a future: The ecological priority of a humane diet. London: Davis-Poynter Ltd. 183 p. Index. 23 cm. [48 ref]

• ***Summary:*** One of the most important books on vegetarianism written during the 1970s. *The Times* (*London*) commented on Wynne-Tyson: "Perhaps his most subtle achievement is the slow revelation that the arguments for meat-eating are in fact those that are emotional and irrational."

Contents: 1. A vegetable love. 2. The social obligation. 3. The aberrant ape. 4. To the cradle from the grave. 5. Pathology or hygiene? 6. Values in perspective. 7. The further step. 8. Human or humane? 9. As old as man. Appendices.

Pages 94-95 and 100 discuss the nutritional value of soya beans, dried soya bean powder (soy flour), and Granogen powdered soya milk. Address: Fontwell, Sussex, England.

2730. Yuchi Pines Institute. 1975. "Blessed art thou, o land, when... thy princes eat... for strength, and not for drunkenness." Ecclesiastes 10:17. Seale, Alabama: Yuchi Pines Institute. 222 p. Undated. Illust. Index. 26 cm.

• ***Summary:*** A natural foods and vegetarian cookbook, with considerable nutritional information. On spine: "Eat for strength." Chapter III, titled "Dairy product substitutes" (p. 43-59) contains numerous recipes that use soy as an ingredient. Soy-related recipes include: Soy bread (p. 15, with soy flour). Soy-bran crackers (p. 25, with soy flour, lecithin, whole wheat flour, and bran). Soy crackers (p. 27, with whole soaked soybeans and lecithin). Soy noodles (p. 28, with Soy Base–see p. 46). Soy waffles (p. 41, with whole soaked soybeans). Double strength soy milk for cream (p. 45–Save pulp [okara] to use in Soy Crackers. Use rich soy milk as a base for Mayonnaise or Sour Cream, as Soy milk, or as Soy yogurt). Sour cream (p. 45, made with soy milk). Madison milk (p. 46, with whole dry soybeans). Banana soy milk (p. 46). Soy base and milk with various flavors (p. 46). Soy sour cream (p. 47). Vegetarian cream (p. 47, with double strength soy milk). Sesame spread (p. 48, with soy base). Soy cottage cheese (p. 52, with soy grits). Scrambled tofu–Soy cheese (p. 53). Tofu (homemade, 3 methods, from soy flour or whole soybeans). Soy yogurt (p. 54, from soy milk). Simple soy butter (p. 55, with soy flour or dry soybeans). Food yeast butter (p. 55, with Soyannaise). Soy butter (p. 57, with soy flour, lightly browned). Margarine [non-hydrogenated] (p. 58, with coconut oil, oil, hot water, lecithin, lemon juice, and onion salt). Carrot pie (p. 69, with soy milk and soy flour). Banana cream toast (p. 72, with soy or nut milk). Carob drink (p. 74, with soy or nut milk). Bread pudding (p. 75, with Soy base). Soaked soybeans (p. 85, 210). Soynuts I and II (p. 85-86). Soy patties I and II (p. 86, with mashed soybeans and peanut butter). Soy loaf (p. 87, with soaked soybeans). Soy cheese balls (p. 88, with Soy cottage cheese or chopped Tofu). Soy soufflé (p. 88, with soaked soybeans). "Salmon loaf" (p. 90, with soy flour). Soy corn chowder (p. 105, with Soy milk or Basic Cream Sauce). Cucumber soup (p. 106, with Soy milk or Basic Cream Sauce). Fresh cream of corn soup (p. 107, with Soy or nut milk). Vichyssoise (p. 109, with Soy or nut milk). Corn chowder (p. 110, with Soy or nut milk). Rice and soybean loaf (p. 119, with cooked soybeans). Basic cream sauce (p. 127, with Soy base). Soyonnaise I-IV (p. 133-34, incl. with Soyagen or canned Soyalac).

Recipes containing peanuts or wheat gluten: Nut cheese (p. 54). Emulsified peanut butter (p. 55). Peanut butter balls (p. 65). Peanut butter loaf (p. 86). Peanut butter Creole (p. 89). Chinese pepper steak (p. 93, with gluten). Nuttose (p. 95, with nut butter). Gluten (p. 96). Peanut butter gravy (p. 126). Grandmother's gravy (p. 126, with peanut butter).

A table titled "Irritating substances" (p. 123) lists the name of the substance, the chemical, and the effect.

The substances are: Black pepper, chili peppers, cayenne, horseradish, cloves, cinnamon, mustard seed, ginger, nutmeg, vinegar, baking soda, baking powder, salt (sodium chloride). On the facing page is a list of 25 "Safe herbs."

Note: A later edition of the book was copyrighted in 1979, then revised in 1983. The title was changed to "East for Strength" and the author was listed as Dr. Agatha Thrash. Yuchi Pines Institute (renamed Uchee Pines Inst. in the late 1980s or early 1990s) was founded in 1970 by Drs. Agatha and Calvin Thrash, who are both physicians and Seventh-day Adventists. As of April 1992 both are still living at Uchee Pines.

Talk with Dr. Agatha Thrash. 1999. June 4. This book was first published (with the above title) in 1975. They copyrighted it in 1979. Address: Route 1, Box 273, Seale, Alabama.

2731. Applied Scientific Research Corporation of Thailand (ASRCT). 1975? Chocolate soy beverage (Leaflet). Bangkok, Thailand. Undated.
Address: ASRCT, 196 Phahonyothin Rd., Bank Khen, Bangkok 9, Thailand.

2732. **Product Name:** Health Maid Soymilk [Plain].
Manufacturer's Name: Health Maid Natural Foods (Distributor).
Manufacturer's Address: Los Angeles, California.
Date of Introduction: 1975?
New Product–Documentation: Leaflet. Undated. "Health Maid Natural Foods Soymilk."

Note: Very little is known about this product. 1. Who made it? 2. Where was it made? 3. When was it launched?

2733. Meals for Millions. 1975? Meals for Millions presents: In their own way. A dramatic presentation of MFM's current work in Africa, Egypt, Korea (Leaflet). Santa Monica, California. 3 panels each side. Each panel: 21.5 x 9.5 cm. Undated.
• ***Summary:*** On the cover is a photo of an African woman seated, preparing food. Printed black on light blue.

"This slide show presentation... also focuses on a soy beverage plant in Korea which is making possible a low-cost, high-protein drink for the poor."

"This free 20 minute slide show comes complete with: (1) Narration on reel-to-reel tape and cassette tape. (2) Carousel with color slides. (3) Script with complete directions for handling on any standard projector (4) Literature for audience distribution." One panel is an order form. Address: P.O. Drawer 680, Santa Monica, California 90406. Phone: (213) 829-5337.

2734. Gallagher, James R. 1976. 'China Doctor' Harry Miller dies at 97 (News release). Washington, DC: Seventh-day Adventist Church. 4 p. Jan. 4.

• ***Summary:*** "Washington, D.C.–Harry Willis Miller, M.D., known to generations of Asians and Americans as the 'China Doctor,' died Saturday, January 1, in Riverside, California. He was 97.

"Dr. Miller reportedly suffered a massive heart attack on his way to Seventh-day Adventist morning church services.

"Famous in the Orient for his skill as a thyroid surgeon, Dr. Miller was also a pioneer in the field of nutrition. He developed the process of making soybean milk to feed malnourished Chinese children in areas where cow's milk was unavailable.

"Dr. Miller served as a physician to Chou En-lai, Madame Chiang Kai-shek, and once treated the Republic of China's first leader, Sun Yat-sen. During his first stay in mainland China he cured a Manchurian leader, Marshal Chang Hsueh-liang of the opium habit.

"His later years were devoted to research in vegetarian proteins and fund-raising for the establishment of 20 hospitals throughout the Far East. He returned from his work at the Hong Kong Adventist Hospital, which he helped found, just two years ago.

"Born in Ludlow Falls, Ohio, in 1879, Dr. Miller received his medical degree from American Medical Missionary College in 1902. The following year he was sent by the Seventh-day Adventist Church as one of its first missionaries to Central China. He went first to the small town of Hsintsai in Honan Province.

"Living in the shadow of the Boxer Rebellion, when many foreign missionaries were killed, Dr. Miller and his wife, Ethel, dressed as Chinese and gained the respect of rich and poor alike."

Ill health forced Dr. Miller to return to Washington, DC, where he remained until 1925. "The years 1925 to 1935 again saw Dr. Miller in mission service to China. He built Shanghai Sanitarium and Hospital, the first Adventist medical institution outside the United States, and the Wuhan Sanitarium and Hospital in Central China."

"The years of World War II found Dr. Miller in the United States once again, this time as medical director of the Mount Vernon Hospital in Ohio. While there, he founded the International Nutrition Laboratory, which carried out experiments on vegetarian protein products. The laboratory is now part of Loma Linda Foods, an Adventist-owned company.

"Dr. Miller returned to Shanghai in 1949, only to be evacuated in 1950 as the Communist revolution overflowed China."

During the 1950s Dr. Miller returned to research work in nutrition [related to his soy products] in both Ohio and California. He also worked as a surgeon and administrator in many countries worldwide. Then in 1960, at age 81, Miller was called to establish a hospital in Hong Kong. He remained in Hong Kong until 1974, practicing surgery and seeing patients in a weekly clinic. "By his own estimate,

Dr. Miller performed 6,000 thyroid operations and 'about 30,000' operations during the span of his 70-year career in medicine." In 1997 he returned to Riverside, California where [at Loma Linda Foods] he actively continued his nutrition research until his death.

"Dr. Miller served on the American Relief Administration at the appointment of President Woodrow Wilson. Among his famous American patients were Alexander Graham Bell and William Jennings Bryan, as well as several senators and congressmen.

"A book by Dr. Raymond Moore, *China Doctor* (Harper & Row, 1961), is available on the life and career of Dr. Miller. In a 1974 letter, President Richard Nixon commended him by writing, 'You leave an admirable legacy of compassion and accomplishment.'

"Dr. Miller is survived by his wife, the former Mary Greer, and four children by a previous marriage.

"Funeral services are scheduled in Loma Linda, California, on Wednesday, January 5. Willis H. Hackett, chairman of the Board of Trustees of Loma Linda Food Company, and Charles Taylor, associate director of the Department of Education of the General Conference of Seventh-day Adventists, will represent the world headquarters of the Adventist Church."

2735. Autumn Press, Inc. 1976. Imagine... (Ad for The Book of Tofu by Shurtleff and Aoyagi). *Mother Earth News* No. 37. Jan. p. 153. [1 ref]
• ***Summary:*** This exact same ad first appeared in Dec. 1975 in *Macrobiotic* (The) (Chico, California), No. 111. p. 61. Address: P.O. Box 469, Soquel, California 95073.

2736. **Product Name:** [Soycomil {Soya Protein Concentrate for Young Animals} (K is a fine powder for calf milk replacer, or P is a coarse powder for pelleted piglet feed)].
Foreign Name: Soycomil.
Manufacturer's Name: Unimills B.V. Renamed Loders Croklaan B.V. in 1986. Subsidiary of Unilever.
Manufacturer's Address: Lindtsedijk 8, 3336 LE Zwijndrecht, Netherlands.
Date of Introduction: 1976. January.
Wt/Vol., Packaging, Price: 25 kg valve bags and in bulk.
How Stored: Shelf stable.
New Product–Documentation: Soya Bluebook. 1980. p. 54; 1981. p. 64. This is the earliest listing seen for a soy protein concentrate outside the USA. No brand name is given. Note: This company is owned by Unilever. Soya Bluebook. 1987. p. 72. UniMills B.V., affiliate of Unilever N.V. of Rotterdam, makes Unico and Soycomil Soy Protein Concentrates, at Zwijndrecht. They contain 60.5% protein on a dry basis and come in a variety of particle sizes.

Talk with Carol Velthuis at Michigan State Univ. 1989. Aug. 9. The product, used only as a calf milk replacer, was introduced at least 10 years ago.

Spot in Feed Management (Mt. Morris, Illinois). 1989. Dec. These are two antigen-free soya protein concentrates. "As indigestible carbohydrates present in soybean meal, soya flour, and full fat soya are removed during the process, the digestibility of the protein is considerably improved... Soycomil is an ideal protein for early weaned piglets as diarrhea due to undigested proteins is prevented." The K type is for calves and the P is for piglets; the P is not a textured soy protein concentrate.

SoyaFoods (ASA, Europe). 1990. Spring/Summer. p. 2. Loders Croklaan will expand the capacity of its soy protein concentrate plant by 50% at its sister company, UniMills, in Germany.

Letter (fax) from Aat Visser of Loders Croklaan. 1990. Aug. 6 and Aug. 27. Before Nov. 1971 this company's name was Unimills B.V., based in Wormerveer, Netherlands. In Nov. 1971 Unimills was acquired by Unilever. In 1973 Unimills started to produce soya protein concentrates on a pilot plant scale. In Jan. 1976 Unimills introduced Soycomil K and P, soy protein concentrates for young animals, and Unico. Production was (and still is) at Lindtsedijk 8, 3336 LE Zwijndrecht, Netherlands. In Sept. 1986 the spelling of the name was changed from Unimills to UniMills, and the protein division was transferred to Loders Croklaan, at that time named simply Croklaan. The concentrates and flour are available in various particle sizes and degrees of functionality in 25 kg valve bags and in bulk.

Product brochure sent by Aat Visser. 1990. Aug. "Soycomil–The ideal protein for all young animals." Soycomil is a soya protein concentrate made by a special process and recommended in particular for use in feeds for young animals. Soycomil K is a fine powder, especially suitable for use in calf milk replacer. Soycomil P is a coarse powder, particularly suitable for pelleted piglet feed. Contents: Description. Manufacture. Quality control. Antigens (Loders Croklaan has developed a manufacturing process which effectively eliminates the soya antigens). Main uses. Product characteristics. Amino acid content. Biological analysis. Packaging/keepability. The advantages of Soycomil (11 are listed). Nutritive value of Soycomil: For veal calves, rearing calves, piglets, and mink.

This product is shown in the ADM Annual Report (Sept. 1992, page 11) as now being made by ADM at Europoort in 25 kg paper sacks.

2737. American Academy of Pediatrics, Committee on Nutrition. 1976. Commentary on breast-feeding and infant formulas, including proposed standards for formulas. *Pediatrics* 57(2):278-85. Feb. [20 ref]
Address: USA.

2738. Bourne, M.C.; Escueta, E.E.; Banzon, J. 1976. Effect of sodium alkalis and salts on pH and flavor of soymilk. *J. of Food Science* 41(1):62-66. Jan/Feb. [12 ref]

Address: 1. Cornell Univ., Geneva, New York; 2-3. Univ. of the Philippines, Laguna, Philippines.

2739. **Product Name:** Soya Plus: Imitation Milk [Plain, or Chocolate].
Manufacturer's Name: Daritein Foods, Inc.
Manufacturer's Address: Charlotte, North Carolina.
Date of Introduction: 1976. February.
Ingredients: -
Wt/Vol., Packaging, Price: Half gallon gable-top carton. Retails for $0.97 (1976/02).
How Stored: Refrigerated.
New Product–Documentation: Food Product Development. 1976. Feb. p. 54. Soya Plus: Imitation soy-based milk. Daritein Foods, Inc. Charlotte, N.C. A large photo shows the carton.

2740. *Food Product Development.* 1976. Soya Plus: Imitation soy-based milk. Daritein Foods, Inc. Charlotte, N.C. 10(1):54. Feb.

• ***Summary:*** This soy-based drink is available in plain and chocolate flavors. It contains no cholesterol, lactose, or animal fats. Each 8 oz serving contains 165 calories and 9 gm of protein. A large black-and-white photo shows the carton.

2741. Nelson, A.I.; Steinberg, M.P.; Wei, L.S. 1976. Illinois process for preparation of soymilk. *J. of Food Science* 41(1):57-61. Jan/Feb. [19 ref]
• ***Summary:*** Lipoxygenase is the principal cause of undesirable flavors in soybean products, especially soymilk. Address: Univ. of Illinois, Urbana, Illinois.

2742. Thananunkul, D.; Tanaka, M.; Chichester, C.O.; Lee, Tung-Ching. 1976. Degradation of raffinose and stachyose in soybean milk by α-galactosidase from *Mortierella vinacea.* Entrapment of α-galactosidase within polyacrylamide gel. *J. of Food Science* 41(1):173-75. Jan/Feb. [10 ref]
Address: Dep. of Food & Resource Chemistry, Univ. of Rhode Island, Kingston, RI 02881.

2743. Woodruff, Calvin W. 1976. Milk intolerances. *Nutrition Reviews* 34(2):33-37. Feb. [34 ref]
• ***Summary:*** Contents: Introduction. Protein. Diagnostic criteria. Immunological data. Cow's milk-wheat gluten intolerance. Fresh cow's milk intolerance. Lactose. Incidence. Genetic versus adaptive hypotheses. Implications.

The symptom complex now called lactose intolerance has been recognized in adult animals and humans for nearly 70 years, but only during the last 15 years has enough specific information been accumulated to describe in detail the biology and history of lactose intolerance. J.D. Johnson et al. (1974) have published a detailed review of the subject. Primary lactase deficiency is the normal state in mammals after the nursing period. Certain ethnic groups, those with a long history of cattle raising and milk drinking, maintain intestinal lactase activity into adult life. This phenomenon is genetic rather than adaptive. Address: M.D., School of Medicine, Univ. of Missouri, Columbia, MO.

2744. Drachenberg, Frederick G.; Allred, Paul E. 1976. Method of making soy milk. *U.S. Patent* 3,941,890. March 2. 6 p. Application filed 23 Oct. 1974. [3 ref]
• ***Summary:*** Dehulled soybeans are first cooked in a microwave oven for a long enough period of time to destroy the trypsin inhibitor present in the beans, but not long enough to roast the beans. After being milled with water, suitable enzymes are added to the slurry to dissolve or partially reduce in size particles which would otherwise form sediment in the finished product. Address: 1. 11674 Valverde, Riverside, California, CA, 92505; 2. Box 373, Loma Linda, CA, 92354.

2745. Coblentz, E.; Morrill, J.L.; Parrish, D.B.; Dayton, A.D. 1976. Nutritive value of thermoalkali-processed soy materials for young calves and rats. *J. of Dairy Science* 59(3):481-90. March. [30 ref]
• ***Summary:*** Experimental thermoalkali-processed soy protein concentrates were compared with sodium caseinate and Promocaf (a commercial calf milk replacer based on soy protein concentrate) as protein sources in calf milk replacers. Address: Depts. of Dairy and Poultry Sciences, Biochemistry, and Statistics, Kansas State Univ., Manhattan, Kansas 66506.

2746. Hashizume, Kazumoto; Shiratori, Makoto; Nakamura, Noriko; Watanabe, Tokuji. 1976. [Studies on the preparation conditions of soybean milk for tofu making: I. Effects of the ratio of water to soybean and ionic strength in the preparation of soybean milk on the properties of tofu]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku* (*Report of the National Food Research Institute*) No. 31. p. 192-96. March. [8 ref. Jap; eng]
• ***Summary:*** Reprinted from *Nihon Shokuhin Kogyo Gakkai Shi* (*J. of Food Science and Technology*) 22:38 (1975). Address: 1,3-4. National Food Research Inst., MAFF, Koto-ku, Tokyo, Japan; 2. Tokiwareitou Co., Ltd., Ina-shi, Nagano-ken.

2747. Hashizume, Kazumoto; Watanabe, Tokuji. 1976. [Studies of acid or alkali treatment of soybean protein: Note]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku* (*Report of the National Food Research Institute*) No. 31. p. 197-99. March. [18 ref. Jap; eng]
• ***Summary:*** Reprinted from *Nippon Nogeikagaku Kaishi* (*J. of the Agricultural Chemical Society of Japan*) 49(6):331-33 (1975). Address: National Food Research Inst., MAFF, Shiohama-cho, Koto-ku, Tokyo, Japan.

2748. Mane, Pratap V. 1976. Soyabean: Solving protein problem. *Oils and Oilseeds Journal* (*Bombay*) 28(3):23-25. Jan/March.
• ***Summary:*** "In recent years, India has been importing about one lakh tonnes [1 lakh = 100,000] of soyabean oil for us in the manufacture of hydrogenated oils (vanaspati ghee)." Moreover, soyabean has "suddenly gained importance because of its possible utilisation for production of artificial milk and other milk products.

Tables show: (1) Area, production and yield per hectare of oilseeds in India. In descending order of production (in million metric tons) they are: Groundnut (6.00), rape-mustard (1.90), sesamum (0.52), linseed (0.47), castor (0.14), soyabean (0.07), sunflower (0.35).

2749. Norinsho. 1976. Nihon shokuhin hyôjun seibunhyô [Food composition tables for Japan. 2nd ed]. Tokyo: Ishiyaku Shuppan K.K. 180 p. March 25. Index. 15 x 21 cm. [Jap]
• ***Summary:*** The first edition of this book was published on 15 Jan. 1964. The first revised edition (130th printing) was published on 25 Jan. 1969. This is the second revised edition (265th printing), published on 25 March 1976. Also published by Joshi Eiyo Daigaku Shuppan-bu.

For soybeans and soyfoods, see pages 33-35, 69, and 74 (basic nutritional composition), and 111-12 (amino acid composition).

Page 88, No. 812: Amazake. Per 100 gm. Calories 101, moisture 74.0 gm, protein 2.4 gm, fat 0.1 gm, carbohydrates (sugars 22.7 gm, fiber 0.6 gm), ash 0.2 gm, calcium 74 mg, phosphorus 25 mg, iron 0.4 mg, vitamin A 0 mg, vitamin B-1 0.08 mg, vitamin B-2 0.06 mg, nicotinic acid 0.06 mg, vitamin C 0 mg.

A later edition (after 1976), containing at least 298 pages, gives details on the following soy-related foods (p. 76-80): Japanese-grown whole soybeans (dry, or boiled). Whole dry USA-grown soybeans. Whole dry Chinese-grown soybeans. Green immature soybeans (edamame; raw, or boiled). Soybean sprouts (raw, or boiled). Defatted soybeans (whole, or dehulled). Kinako (soybeans roasted and ground). Budô-mame (soybeans boiled with shoyu). Momen tofu (regular). Kinugoshi tofu (silken). Soft tofu. Packed tofu. Okinawa tofu. Yaki-tofu (grilled). Nama-age. Abura-age. Ganmodoki. Kôri-dofu. Tofu-chikuwa (steamed type, or roasted type). Natto (fermented soybeans): Itohiki-natto, Goto natto, or tera-natto.

Miso: Rice-koji miso (sweet type, light yellow type, dark yellow type). Barley-koji miso. Soybean-koji miso. Dried miso. Kinzanji miso. Hishio-miso.

Other: Okara. Soymilk (regular, reconstituted, or soft drinks). Yuba (wet, or dried).

Page 254 gives the amino acid composition of soybeans and various soyfoods. Page 298 gives the protein scores, amino acid values, and chemical scores of selected foods. Page 8 gives the energy conversion factor for tofu, agé, and yuba.

2750. Clayton, Hugh. 1976. Firm tries to get milkmen to sell soya bean rival. *Times* (*London*). April 3. p. 2, cols. 3-4.
• ***Summary:*** Itona Products from Wigan, Lancashire, makes canned soya "milk" from soya flour. Mr. Hampson, sales director, said at the International Health Foods Fair in London that his company's product was meant for "those who object to the exploitation of animals or are allergic to cow's milk or believe that there is or will be an ever-increasing world food shortage."

Itona "has met dairy men in Lancashire to discuss selling it on the daily milk round." Meanwhile the EEC struggles to reduce its huge surplus of dairy products.

2751. Churella, Helen R.; Yao, Benita Co; Thomson, William A.B. 1976. Soybean trypsin inhibitor activity of soy infant formulas and its nutritional significance for the rat. *J. of Agricultural and Food Chemistry* 24(2):393-97. March/April. [22 ref]
• ***Summary:*** The soybean trypsin inhibitor (SBTI) activity of five soy-based infant formulas was determined by a method specifically designed to test their relatively low levels of SBTI. All formulas, except one, contained 15% or less of the SBTI activity of a soy protein isolate source typically used in the manufacture of such formulas. Resterilizing two of these formulas did not significantly reduce residual SBTI activity.

Weanling rats were fed a variety of soy-based formulas ranging in processing from unprocessed to fully processed

commercial products. "No pancreatic hypertrophy or hyperplasia was observed in any of the rats. Our results show that the level of SBTI in the soy infant formulas tested is low and of no nutritional significance for the rat."

The following commercial soy-based infant formulas were tested: Isomil (Ross Laboratories, Columbus, Ohio), ProSobee (Mead Johnson Lab., Evansville, Illinois), Neo-Mull-Soy and Mullsoy (Syntex Lab., Palo Alto, California), and Soyalac (Loma Linda Foods, Riverside, California). Trypsin inhibitor activity is expressed as trypsin units inhibited (TUI), and it was measured in trypsin units inhibited (TUI) per gram of protein. The soy protein isolate used to manufacture Isomil had an activity of 14.4. The activity of the five commercial products, each sold in concentrated form, ranged from 0.7 (for ProSobee) to 2.1 (for Mullsoy and Soyalac). The activity in ready-to-feed forms ranged from 1.6 to 8.1. Address: Ross Laboratories, Div. of Abbott Labs., Dep. of Product Development, Columbus, Ohio.

2752. Hartman, Warren E. 1976. Plant protein foods: From whence they came to where they are going? Paper presented at the American Chemical Society Symposium, "One Hundred Years of Agricultural and Food Chemistry–Challenges of Food Processing and Flavor: Past, Present, and Future." 20 p. April 7. Unpublished manuscript. [21 ref]
• ***Summary:*** Contains a detailed discussion of the work of Dr. John Harvey Kellogg, and other Seventh-day Adventist vegetarians, which greatly influenced Worthington. Their pragmatic approach led to the development of various meat analog products called "nutmeats." "Usually nuts were finely ground into a paste or nut butter and water was then added to produce an emulsion. To this emulsion was added flours, starches, cereals, or other ingredients. This white milk-like oil and water emulsion was then retorted or cooked to set up into a solid mass. This product could be diced or sliced for salads or used as a main entree. The texture of the resulting product depended mainly upon the degree of emulsification and the varying degree of particle sizes incorporated within the product.

Extracted wheat proteins or wheat gluten was also used as one of the basic raw materials for the early vegetarian protein products. The gluten or protein extraction process usually starts with a high protein hard wheat flour which is mixed with water to form a dough in a conventional dough mixer. This dough is repeatedly washed with water to remove the starch. The carbohydrate water is decantered off and the process repeated several times until the gluten reaches the desired protein content, typically around 72% protein on a dry basis. This dough-like elastic mass of gluten is cut into slices or cubes and cooked in boiling water where it expands and the protein simultaneously denatures, giving an expanded cellular chewy texture to the product. This product may be canned in a bouillon-type broth or may be ground through a chopper to simulate minced meat or hamburger. The wheat gluten also provided an elastic matrix for incorporation of nuts, grains, flours, legumes, and other vegetable material into a mass, when mixed vigorously at high speed with considerable shear for an extended length of time would yield a thin, string-like fibrous textured dough mass in which other materials could be incorporated. This product was also canned and cooked to produce a solid textured loaf-type product which served as a vegetarian entree, or was diced or ground for use in home recipes.

"Similar products are being manufactured today and wheat protein or wheat gluten is still an important basic raw material for its contribution to texture. The Worthington division of Miles Laboratories presently has a number of products based almost exclusively on wheat gluten which are peculiar, yet significantly textured protein products. Miles Laboratories also is becoming basic in the production of vital wheat gluten for utilization by industries throughout the world."

"Worthington Soyamel was the first soymilk-type beverage to be based on or formulated primarily from soy protein isolate." Also discusses spun soy protein fibers. Address: Worthington Foods, Worthington, Ohio.

2753. **Product Name:** [Soyalac {Soymilk} (Reduced Sugar, or No Added Sugar)].
Foreign Name: Soiyarakku (Gentô, Mukatô).
Manufacturer's Name: San-iku Foods.
Manufacturer's Address: 1-1 Nagaurataku, Sodegaura-machi, Kimizu-gun, Chiba-ken 299-02, Japan.
Date of Introduction: 1976. April.
Wt/Vol., Packaging, Price: 425 gm can.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Both products tasted by William Shurtleff in Hayama, Japan, at the home of Nahum and Beverly Stiskin while doing final proofreading and editing on *The Book of Miso.* 1976. May 19-23.

K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Soiyarakku Gentô was introduced in April 1976 and Soiyarakku Mukatô in June 1976. They are both now sold by Saniku Fuuzu in a 425 gm can and distributed nationwide.

2754. Shibasaki, Kazuo. 1976. Tônyû no kagaku [The science of soymilk]. *Shoku no Kagaka* (*Food Science Journal*) No. 29. p. 84-90. April. [Jap]
• ***Summary:*** Includes an early history of soymilk. Address: Tohoku Daigaku Nogakubu, Shokuryo Kagaku-ka, Kyoju [Prof., Dep. of Food Chemistry, Faculty of Agriculture, Tohoku Univ., Sendai, Miyagi-ken, Japan].

2755. Trivaldi, V.D. 1976. The moo the merrier: Push-button milk. *Times of India* (*The*) (*Bombay*). May 9. p. 8.
• ***Summary:*** A silly article that mentions both "soya milk"

and "soyabean milk."

Note: India is the world's largest producer of water buffalo milk, with 56,960,000 tonnes (metric tons) in 2007. The 2nd largest producer, Pakistan, had less than half as much 21.5 million tonnes. Water buffalo milk contains about 40% more protein, a little more than twice as much fat, and 66.7% more calories per 100 gm than cow's milk.

2756. Mital, B.K.; Steinkraus, K.H. 1976. Flavor acceptability of unfermented and lactic-fermented soy milks. *J. of Milk and Food Technology* 39(5):342-44. May. [11 ref]

• ***Summary:*** Soy milk prepared from soybean flour defatted by a Cornell University patented process (U.S. Patent No. 3,721,569) by aqueous extraction and addition of 2.5% refined soy oil and 2% sucrose was rated slightly inferior to fresh cow's milk in flavor. This soy milk was also fermented with 3 different lactic bacteria (*Streptococcus thermophilus, Lactobacillus acidophilus, and L. plantarum*) to produce a yogurt-like product, whose flavor was compared with that of fermented cow's milk. *S. thermophilus* produced the most acid and the soy yogurt that was rated closest to cow's milk yogurt fermented with the same organism. The soy milks fermented with the other two organisms were rated inferior to fermented cow's milk mainly because of their lower acidity. All three soy yogurts had a smooth texture, a satisfactory gelatinous curd and "were virtually devoid of objectionable flavor as only one panelist out of 27 recorded a slightly beany taste. Three panelists described the mouth-feel as chalky and six recorded persistent aftertaste. No panelist judged the fermented soy milks as unacceptable in flavor." However the 27-member taste panel preferred the higher acidity of the fermented cow's milk. Address: Cornell Univ., New York State Agric. Exp. Station, Geneva, NY 14456.

2757. Pontecorvo, Aldo J. 1976. Soybean foods for rural Mexico. *League for International Food Education* (*LIFE*) *Newsletter.* May. p. 1-3. [2 ref]

• ***Summary:*** "In rural Mexico, as in many other parts of the world, the main nutritional problem is the lack of food. As the number of mouths that must be fed increases, so does the need to develop methods and processes for preparing simple food products from local resources. The soybean is rapidly becoming such a resource in many parts of rural Mexico.

"Prior to 1969 soybeans were planted only in the states of Sonora and Sinaloa along the eastern coast of the Gulf of California. Soy is now grown in most of the states across the north of the country and in Jalisco, a west-central state. Production has been increasing over 6% a year with last year's production amounting to 500,000 tons. Varieties which can be grown in the more tropical states are also available, making possible an even greater increase.

"In addition to the locally grown soy, about 200,000 tons per year are being imported to meet Mexico's needs. Almost all of the imported soy is processed by the oil extraction industry with the residual meal being used in poultry and animal feeds.

"Presently soy consumed as human food amounts to only about 30 tons per day:

"Full-fat soy flour–18 tons.

"Soy milk and similar products–6 tons.

"Texturized soy protein [soy flour]–6 tons.

"The projected increase in consumption of these three basic products is 100 tons per day for the current year.

"Soy products are found in supermarkets and self-service stores in urban Mexico under such brand names as Soacit and Soyatole (soymilk products) and Alborada, Protoleg, and Molida (texturized soy protein products). Various soy products are being distributed by government agencies in all states of the country and are being used with good acceptance in employee and school feeding programs.

"However, these products are not often found in rural areas. Although the products themselves are fairly inexpensive to process, the costs of transportation and marketing place them out of reach of the lowest income groups.

"Therefore it is important to develop methods and processes for preparing simple soy products which can be used in the rural areas themselves.

"Starting with the simple process of Mustakas et al for processing crude soybeans, we have used other simple and primitive techniques to prepare soy foods for the rural village of Huautla and three other small villages near it in Oaxaca, one of the southernmost states of Mexico. The basic equipment used consists of a cracker, a winnower, and a grinder. Our modified process, using the same equipment, is as follows:

"(a) Crack the whole soybean without water

"(b) Winnow

"(c) Grind without water to obtain different particle sizes

"(d) Cook in boiling water for 20-25 minutes

"(e) Separate by sedimentation into milk, atole, and paste

"The amount of water used varies between seven and nine liters per kilo of soybeans. The exact amount depends upon (1) the water absorption capacity of the beans (which in turn depends upon the variety of soybean used) and (2) the end products desired.

"Three basic products can be manufactured from which a wide variety of dishes can be made depending on tradition and what other foodstuffs are locally available. Using the larger amounts of water, one obtains 6-7 liters of soybean milk (4% protein) and 2-3 kilos of soybean paste (18% protein). With seven liters of water in place of nine, 2-3 liters of a more concentrated heavy milk called atole, together with about the same amount of paste (8% protein), is obtained.

"The soybean milk, which has a short shelf life (about 8 hours) can be drunk as is, or it can be boiled with natural flavoring materials such as cinnamon, vanilla, or cocoa, to

make it even more acceptable. The soymilk is also used to make cheese [tofu]. Here again it is necessary to devise a simple process utilizing heat and/or acid to precipitate the proteins as a curd. This can be done by boiling the milk with the juice of a locally available citrus fruit (lemon, orange, grapefruit, lime) or with fermented pineapple or apple juice. After precipitation of the proteins, the normal cheese-making steps are followed. To preserve the cheese longer, salt, herbs, chilies, and spices can be added, making an aged cheese similar to cotija. This type of cheese can last for three or more months without decomposition.

"The atole, a thick beverage common to southern Mexico and Guatemala, can be consumed immediately or it can be used as a soup base to which locally available vegetables (potatoes, carrots, onions, etc.) are added.

"The paste is dried in traditional ovens to form cookies which can be eaten directly or ground into a flour and combined with corn or wheat flour for baking. The paste is also used as feed for chickens, rabbits, or pigs, thus supplying some meat to the diet.

"To make bread, two parts of dried ground soybean paste is combined with one part wheat flour and one part soybean milk. Other ingredients are sugar, honey, salt, and sodium bicarbonate (if available), or natural yeast, beer, or pulque (fermented cactus juice). The dough is baked for 30 minutes at 392ºF, a temperature that can be easily reached by the most rudimentary oven. Substituting corn flour for wheat flour gives a cookie-like product. It is significant that in these baked goods there is no need for cows milk, eggs, or any other ingredients which are difficult to obtain in rural areas; they have been replaced by the soybean."

Note: This is the earliest English-language document seen (June 2013) that contains the term "ground soybean paste" or "dried ground soybean paste."

"The equipment and processing we have described is intended to serve a single village or rural community. Depending upon the size of the village, it might be necessary to have more than one unit. The team effort required to set up such a processing system could lead to local employment, greater production, and a substantial increase in income if the products could be marketed or traded for other items not available in the community.

"We have described a simple system which could be used effectively in rural areas to produce a variety of soy-based products, given knowledge of the local needs and resources. But it must be remembered that whatever products are made, they must be consumed daily if they are to have a maximum impact on the problems of malnutrition in rural areas." Address: National Autonomous Univ. of Mexico (UNAM).

2758. Potter, Julia M.; Nestel, P.J. 1976. Greater bile acid excretion with soy bean than with cow milk in infants. *American J. of Clinical Nutrition* 29(5):546-551. May. [22 ref]

• ***Summary:*** Substitution of soymilk for cow milk, which lowers the plasma cholesterol in all infants, leads to an increase in bile acids and probably also in cholesterol excretion in young infants.

Note: *Webster's Dictionary* defines bile acid (a term first used in about 1881) as "any of several steroid acids (as cholic acid) of or derived from bile." Bile acids are related to cholesterol, and their excretion from the human body is considered desirable. This is the earliest document seen that mentions the effect of soya on excretion of bile acids. Address: Dep. of Clinical Science, The John Curtin School of Medical Research, The Australian National Univ., Canberra.

2759. Powell, Geraldine K. 1976. Enterocolitis in low-birth-weight infants associated with milk and soy protein intolerance. *J. of Pediatrics* 88(5):840-44. May. [23 ref]

• ***Summary:*** Enterocolitis in low-birth-weight infants has been associated with both cow's milk and soy protein intolerance. Address: Dep. of Pediatrics, Div. of Gastroenterology, Univ. of Texas Medical Branch, Galveston, TX 77550.

2760. Costa, Sebastiao Irineu da; Quast, D.Q.; Moretti, V.A.; Canto, W.L.; Cobbe, R.V. 1976. O emprego da soja na alimentacao humana [The use of soya in human nutrition]. *Boletim do Instituto de Tecnologia de Alimentos* (*Campinas, Sao Paulo, Brazil*) No. 46. p. 1-24. June. [Por; eng]

• ***Summary:*** Contents: Summary. Soya as a food. The main forms in which soya is used as a source of protein for human consumption: Defatted soy flour, whole soy flour, soy protein isolate, soy protein concentrate, textured soy protein, protein extract of soya; soy milk (*Extrato protéico da soja; "leite" de soja*), fried or roasted soybeans (*Soja frita ou torrada*), the soybean as a bean (*Soja como feijao*). Economic and nutritional consequences of large scale consumption of soy protein as human food: Introduction and examples, use of soya in meat products, use of soya for the enrichment of flour, use of Vital soymilk. Address: Brazil.

2761. **Product Name:** [Midori Soymilk (Mild, or Pure)].
Foreign Name: Midori Tônyû (Mairudo, Piyuwa).
Manufacturer's Name: Kyushu Nyugyo.
Manufacturer's Address: Kyushu, Japan.
Date of Introduction: 1976. June.
Wt/Vol., Packaging, Price: 200 ml, probably Pure Pak type carton.
How Stored: Refrigerated.
New Product–Documentation: Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Kyushu Nyugyo (Kyushu Milk Co.) first made commercial soymilk in Japan in 1976.

K. Tsuchiya. 1982. Dec. Tonyu [Soymilk. 2nd ed.]. p.

72. Note: Midori means "green" in Japanese.

2762. Mosha, Aleck. 1976. Food product applications in Tanzania. *LEC Report* No. 1. p. 127-29. D.E. Wilson, ed. Low-Cost Extrusion Cookers: International Workshop Proceedings. (Fort Collins, CO: Dep. of Agric. and Chemical Engineering, Colorado State Univ.). [5 ref]
• ***Summary:*** Malnutrition is a big problem in Tanzania, especially among infants, children, and pregnant and lactating women. Tanzania's official policy of food self-sufficiency requires that domestically grown foods must be used in the country's developing weaning food program. In 1972 Tanzania's leading food crops were bananas (1,205,743 tons), maize (880,886), cassava (792,850), sweet potatoes (234,151), sorghum (190,882), and rice (paddy, 170,903). Only 776 tons of soybeans were produced.

In the early 1960s, the enrichment of sembe (60% locally extracted maize flour) as well as the fortification of other local staple foods with high protein sources (such as soy flour and groundnut flour) were advocated and limited attempts were made. "Preliminary trials to feed maize-soy flour mixtures to adults and children in educational institutions showed that 5% soy could be added undetected to uji and ugali (local thin maize gruel, and thick maize flour paste, respectively). Systematic high-protein product development was undertaken by the Ministry of Agriculture" (including soy beans) in the late 1960s. Mixtures of maize and sorghum flour containing up to 25% soy flour were acceptable in child-feeding trials. "A village-level soy processing project (in which the villagers used hand-operated equipment for processing soybeans into full-fat flour, soy milk and curd) was started. The products were incorporated into local cereal staples, which were very well accepted. The project is still in progress, but it has been hampered by difficulties arising from the large labor input required by the hand-operated equipment. The use of power mills for decorticating and grinding the soybeans has been recommended." Address: Tanzania Food and Nutrition Center, Dar es Salaam, Tanzania.

2763. Harrison, Gilford R. 1976. Prospects for consumption of soya products in Latin America. Paper presented at Conference on Brazilian Soybeans: Facts and Outlook. 11 p. Held 5-8 July 1976 at Porto Alegre, Brazil.
• ***Summary:*** A very interesting paper. But with no A-level heads, it is difficult to summarize. Address: American Soybean Assoc., Mexico.

2764. Momcilovic, Berislav; Belonje, B.; Giroux, A.; Shah, B.G. 1976. Bioavailability of zinc in milk and soy protein-based infant formulas. *J. of Nutrition* 106(7):913-17. July. [19 ref]
• ***Summary:*** According to trials on young rats, to "provide equivalent amounts of available zinc, the total zinc content of the soy protein-based formula would need to be at least 20% higher than that of the formula containing milk protein." Address: Nutrition Research, Food Directorate, Dep. of Health and Welfare, Ottawa, Canada.

2765. Mustakas, Gus C. 1976. Trip report on visit to Meals for Millions (MFM) Foundation, 1800 Olympic Boulevard, Santa Monica, California 90406, on June 21-22, 1976. Peoria, Illinois. 3 p. July 16. Typed, with signature on letterhead. [1 ref]
• ***Summary:*** This is a report for the ED [Engineering and Development Laboratory] files. Contents: Personnel contacted: Mark Sterner, Hank Sterner, and Gideon Zeidler. What is MFM? Examples of six projects in various countries: (1) Soy milk project in Korea; (2) Soy beverage project in Cairo, Egypt; (3) Weaning food in Ghana; (4) Leaf protein in India; (5) Food processing project in Jamaica; (6) Soy beverage project in Ecuador. NRRC cooperative program with MFM–Soy beverage in Ecuador. Training institute: International Institute of Protein Technology (IIPFT; offers two 4-week courses in Santa Monica roughly twice each year). Extruder and texturized soy protein research. Patent policy. Future research at MFM. Future research cooperation with NRRC. Address: USDA ARS Northern Regional Research Center, Peoria, Illinois 61604.

2766. Anderson, Sylvia. 1976. Re: Tofu made from soy flour on The Farm in Summertown, Tennessee. Letter to William Shurtleff at New-Age Foods Study Center, Aug. 12. 2 p. Typed.
• ***Summary:*** Before Sylvia went to live on The Farm in Summertown, Tennessee, in June 1971, she had never heard of tofu. She first saw firm, pressed tofu in cakes about a year ago. The tofu they made on The Farm was a staple of her diet and one of her favorite foods. This was made from soy flour, and all the pulp [okara] was left in; it was squeezed to a roundish in cloth as the last step rather than being pressed into cakes. She suggests it be called "Tennessee Farm Tofu" or "Squeezed Tofu." It may be a new invention.

"Here's how it came to be: Stephen and his students gave up dairy (cow) products before or during the Caravan, and in the early days of The Farm folks were into commercial soy products like Soyagen and Soyamel (powdered soymilk, made by Worthington Foods) and Fearn's Soya Powders. The Farm store bought and distributed soy powder (Fearn's, I guess), from which we made cardboard tasting soymilk and chalky squeezed tofu from directions in *Ten Talents* (by Frank and Rosalie Hurd, 1968), which was The Farm's cooking scripture of that era.

"As priorities began to get shuffled around and we started growing our own soybeans, soy flour ground in The Farm mill replaced the old soya powder, and as the soy dairy got together, folks stopped making [soy] milk at home, but they kept on making tofu at home, converting the old soy

powder recipe to soy flour. At first we strained the pulp out of the milk before we solidified it, but that meant double straining, and you never could get all the very fine flour-pulp out anyhow, so somewhere along the way we tried it without straining out the flour and found that it made fine 'tofu'–by our standards, which were certainly far from those of a tofu master. But this kind of tofu has become a staple in the diet of several thousand people in America by now... And I'm teaching folks her in New Jersey how to make it as fast as I can... I've tried your homemade tofu method and its fun but a whole lot more energy-expensive than the method I'm used to, so I feel inclined to use it only for special occasions, and use the Tennessee Farm method for my every-day tofu cooking.

"So what I'm pushing here in New Jersey is this new American folk food... People here are digging it and wanting to know how to make it. I've been giving small demonstrations in people's homes quite a bit lately, and have at least three more scheduled this month. Two of these will be at Mormon church ladies' meetings. I didn't realize until recently, but the Mormons have a dietary teaching that goes: 'Yea, flesh also of beasts and of the fowls of the air, I, the Lord, have ordained for the use of man with thanksgiving; nevertheless they are to be used sparingly; And it is pleasing to me that they should not be used, only in times of winter, or of cold, or famine' (*Doctrine and Covenants,* SEct. 89:12-13). So the Mormon ladies in the area want to know how to feed their families soybeans!

"Here's a recent quote from Stephen: 'We *are* our brother's keeper. And our brother is the population of the planet.'" Address: 109 West Park Ave., Pleasantville, New Jersey 08232.

2767. Bates, Cynthia; Lyon, Alexander; Sorenson, S.; Keller, B.; Jenkins, Suzy. 1976. Beatnik tempeh making. Summertown, Tennessee: The Farm. 20 p. Undated. 28 cm. Mimeograph. [8 ref]

• ***Summary:*** Contents: Abstract. Introduction. Methods of preparing inoculum: Pure culture propagated on rice (California, Kentucky), dry inoculum (Tennessee), inoculum grown on sweet potatoes (Tennessee), serial transfer (Tennessee).

Methods for making tempeh: Making tempeh at home (5 lb.; soaking the beans, splitting the beans, second boiling, cooling the beans, inoculation, incubation), making tempeh for a large family group (about 4 kg [8.8 lb] per day), community scale production (25 kg [55 lb], Tennessee), commercial production in California (10 kg. [22 lb] per day). soy pulp [okara] tempeh. Quality control. A table compares "good tempeh" with "bad tempeh" in terms of texture, color, odor, uniformity, and taste. Tempeh is a great favorite on the Farm and easily digested.

Recipes for tempeh: Indonesian fried tempeh. Tempeh burger. German tempeh sandwich. Albert's tempeh topping. The great potential of tempeh. Expanding our tempeh operation (on the Tennessee Farm). Some facts about tempeh and food. References. Acknowledgement.

"Introduction: The Farm is a non-denominational religious community of 1,100 men, women and children living in southern Tennessee. We also have a dozen smaller communities living in other parts of the U.S., also in Canada, Europe and Guatemala. We are complete vegetarians: we eat no meat, eggs or dairy products because we found out that, on the average in the U.S., it takes eight pounds of feed protein to produce one pound of meat protein. We believe that by being vegetarians we can utilize our planet's resources more efficiently, and this make more food available for our hungry world.

"Over the last five and one-half years that we've been together, we've developed a tasty, nutritious diet of beans and grains that centers around soybeans as a protein source. We have a soy dairy that produces 120 gallons of soy milk fresh each day to supply our community. The Soy Dairy also makes soy yogurt, soy cheese and Ice Bean (soy milk ice cream) from the soy milk. We love the good tasting, versatile, high protein soybean and one of our favorite ways of eating it is the fermented product, tempeh. At present our communities are making tempeh in Tennessee, California [San Rafael], Colorado, Kentucky, New York, and Louisiana [Houma]."

"We plan to increase tempeh production on the Tennessee Farm to 135 kg. daily for the community, and to introduce it to neighboring towns." "Our Colorado Farm makes solar dehydrated tempeh chips for soup mix, and this operation could be expanded or duplicated."

"Acknowledgement: We would like to thank Don Wilson for the information on the California Farm method of making tempeh and inoculum." Thanks also to Diane Darling, "the Farm Tempeh Crew, and friends who've helped: Debra Heavens, Valerie Epstein, Paul Meltzer, Maureen Hale, Deborah Stevenson, Laurie Sythe, David Handel, JoAnn Else, Paula Denton, and Corey Ford.

Later summarized as "Utilization of Tempeh in North America" in K.H. Steinkraus, ed. 1983. *Handbook of Indigenous Fermented Foods.* New York: Marcel Dekker. p. 48-50. Address: The Farm, Summertown, Tennessee.

2768. **Product Name:** Ice Bean (Non-Dairy Frozen Dessert. Honey Sweetened. Named Soy Ice Bean from mid-1979 to early 1982) [Honey Vanilla, Carob, Strawberry, Chocolate, Wildberry, Mocha, Peanut Butter Carob Chip, Toasted Almond Fudge, or Almond Espresso].
Manufacturer's Name: Farm Food Company.
Manufacturer's Address: 820 "B" Street, San Rafael, CA 94901. Phone: 415-454-3797.
Date of Introduction: 1976. August.
Ingredients: Honey-Vanilla: Water, soybeans, honey, soy oil, vanilla, soy lecithin, carob bean, guar. 1979 Orange:

Soymilk, orange conc., honey, soy oil, vanilla, salt, veg. gum, lecithin.
Wt/Vol., Packaging, Price: Pint.
How Stored: Frozen.
New Product–Documentation: This pioneering product was first sold commercially in August 1976. Label. 1979, undated. 3 inch diameter. Rainbow colors surrounding a cone. "Mfg. by Farm Foods, San Francisco, CA 94107. 100% Vegetarian Frozen Dessert." Note 1. Farm Foods was the first genuine soyfoods company in the United States. It traced its origin to The Farm in Summertown, Tennessee. This is the earliest record seen (Feb. 2003) concerning Farm Foods; This was the first soyfoods product launched by Farm Foods. Note 2. *Webster's Dictionary* defines espresso (derived from the Italian *caffé espresso,* literally pressed out coffee), a word first used in 1945, as "coffee brewed by forcing steam through finely ground darkly roasted coffee beans." Note 3. This is the earliest record seen that uses the word "espresso" in connection with soy.

Ad in Whole Foods. 1979. Oct. p. 69. "Farm Foods Soy Ice Bean: The Completely Vegetarian Frozen Dessert." Leaflet, 1979. Spot in Whole Foods. 1981. Dec. p. 47. "Ingredients: Water, soy powder [powdered soymilk], honey, soy oil, vanilla extract, soy lecithin, locust bean gum, guar gum, Irish moss. 3 fl. oz. Summertown, Tennessee." Leaflet. 1982. 8½ by 11 inches. Color. "The Original Soy Ice Bean." Spot in Whole Foods. 1982. July. "New flavors are Pineapple Orange Sunshine, Almond Espresso, and Toasted Almond Fudge." Spot in Whole Foods. 1982. Oct. "Farm Foods Gets Ice Bean Trademark. 3-gallon tub size introduced."

Shurtleff & Aoyagi. 1985. Tofutti & Other Soy Ice Creams. p. 40-41. "In August 1976 members of The Farm opened The Farm Food Company (a natural food story, soyfoods restaurant, and soy dairy) at 820 "B" Street in San Rafael, California. There, using a batch Emery Thompson ice cream freezer and a soft serve machine, they started to make the first commercial Ice Bean. What a name! Was it a joke? No. It was the absolutely honest, unpretentious, tongue-in-cheek vegetarian all-American counterpart to such highfalutin pseudo-European names as Haagen-Dazs. Initially, most Ice Bean was sold in cones over the counter at The Farm Food Co. soda fountain and in pints in their freezer, but a little was distributed locally by Farm Foods van. Soon five flavors were available; strawberry was the favorite." In early 1978 The Farm Food Co. in San Rafael was closed. In July 1978 production started at 144 King St. in San Francisco.

Poster. Farm Foods. 1986. "The Scoop of the Year! Since 1975, Ice Bean has been made with the finest natural wholesome ingredients... Buy all nine honey-sweetened flavors."

2769. Farm Food Company. 1976. August. New soyfoods restaurant or deli. 820 B. St., San Rafael, CA 94901.
• ***Summary:*** Shurtleff & Aoyagi. 1976. Sept. Tofu & Miso America Tour Itinerary. Contact: Kathleen Sandler.

Questionnaire filled out by Robert & Constance Dolgin. 1980. Jan. The Farm Food Co. in San Rafael opened its deli in about Aug. 1976, and the same month started making tempeh, tofu and soymilk. Shurtleff & Aoyagi visited in Sept. 1976. A list is given of dishes containing soyfoods served at the deli during its first year in business: Fried tofu sandwiches, tofu salads [like eggless egg salads], tofu salad dressings, and tofu cheesecake; tempeh burger, deep-fried tempeh cutlet, tempeh with creamy tofu topping, and Indonesian delight (tempeh strips with peanut butter and miso sauce over rice); soymilk ice cream, soymilk shakes, soy yogurt, soymilk mayonnaise, and soy whipped creme; soybean stroganoff and burritos; TVP chili; and Vege-Links (canned Loma Linda meatless hot dogs). Also for sale at the food store were packaged tofu, soymilk, tempeh, soy mayo, and Ice Bean [soy ice cream], all made in the same building.

Shurtleff & Aoyagi. 1982. Report on Soyfoods Delis, Cafes & Restaurants. p. 3.

Laurie Sythe Praskin. 1985. "The Farm soy history: An overview." States (p. 3) that it was named "Farm Foods Cafe."

Note 1. This is America's first "soy deli," offering a host of highly creative and delicious recipes, served at a counter or tables.

Note 2. At this deli was developed and made the world's first "Tofu Salad," which would soon (made by various companies, including Farm Foods in San Francisco) become one of America's first popular tofu products, widely called "Eggless Egg Salad" (1977), "Tofu No-Egg Salad" (1978), and "Missing Egg Salad" (1978). Address: San Rafael, California. Phone: 415-454-3797.

2770. Mittal, Meenu; Quadri, M.A.; Kushawah, H.S.; Datta, I.C. 1976. Studies on preparation, standardization, and organoleptic scoring of soymilk. *J. of Food Science and Technology* (*Mysore, India*) 13(4):201-02. July/Aug. [11 ref] Address: Dep. of Biochemistry, College of Vet. Science & Animal Husbandry, J.N. Krishi Vishwa Vidyalaya, Jabalpur, India 482 001.

2771. **Product Name:** [Semper Tube Feeding Formula {Liquid, Based on Flour and Milk Protein}].
Foreign Name: Sondnäring.
Manufacturer's Name: Semper AB.
Manufacturer's Address: Sektor Industri, Sveavagen 166, Box 231 42, S-104 35 Stockholm, Sweden. Phone: 08-7299700.
Date of Introduction: 1976. August.
Ingredients: Incl. soy flour.
Wt/Vol., Packaging, Price: 450 ml cans.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Leif Christensen

of Semper. 1990. July 6. Followed by letter (fax) of June 10. He developed this product. It was launched in April 1976 after Soja Semp. Sond is the Swedish word for "tube," and Näring means "nutrition." Semper had been on the tube feeding market for several years when they introduced this product, partly based on soy flour, mainly for technical reasons. It was UHT-sterilized and packed under aseptic conditions in 450 ml cans. From 1980 until the present Semper has introduced 3 varieties of Sondnäring liquid, partly based on soy protein isolate, UHT-sterilized, in cans packed under aseptic conditions.

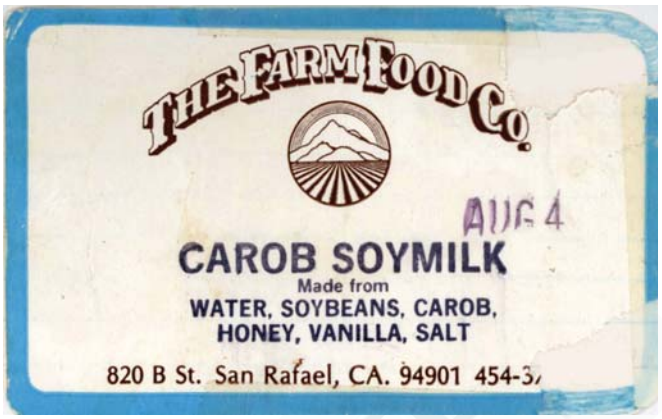
2772. The Wisconsin Farm Report. 1976. Ettrick, Wisconsin. 4 p.
• ***Summary:*** This branch of The Farm in Summertown, Tennessee, consists of 60 people living as voluntary peasants on 160 acres of land they purchased. "Our religious experiences made us want to build a community where love and truth were a daily reality." Discusses (with photos): Spiritual midwifery, farming (last year they grew 90 tons of soybeans), bank statement (they are incorporated in Wisconsin as a no-profit religious organization and have a common treasury), the school, construction, the mill, the ladder company, vegetarian diet and soy (they make their own soymilk). Address: Route 2, Ettrick, Wisconsin 54627.

2773. Nelson, A.I.; Singh, B.P.N.; Singh, S. Assignors to University of Illinois Foundation. 1976. Apparatus for the preparation of a soybean beverage base [low tech soybean dehuller]. *U.S. Patent* 3,981,234. Sept. 21. 2 drawings. [8 ref]
• ***Summary:*** For a favorable evaluation of this dehuller, see Shyeh, Rooda, and Nelson, 1980. It works well for dehulling soybeans when making tempeh or soymilk.

Note 4: In a 2-page letter to Bill Shurtleff dated 16 July 1984, A.I. Nelson says: "The hull separator is not patented and can be used by any interested parties." Address: Univ. of Illinois, Urbana, Illinois.

2774. **Product Name:** Carob Soymilk.
Manufacturer's Name: Farm Food Co.
Manufacturer's Address: 820 B St., San Rafael, CA 94901.
Date of Introduction: 1976. September.
Ingredients: Water, soybeans, carob, honey, vanilla, salt.
New Product–Documentation: Label. 1976. 4 by 2.5 inches. Self adhesive. Brown and blue on white. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.

2775. **Product Name:** Soyanaise (Non-Dairy Soymilk Mayonnaise).
Manufacturer's Name: Farm Food Co.
Manufacturer's Address: 820 B St., San Rafael, California.



Date of Introduction: 1976. September.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 60. "America's first known commercial soymilk mayonnaise."

2776. Bourne, M.C.; Clemente, M.G.; Banzon, J. 1976. Survey of suitability of thirty cultivars of soybeans for soymilk manufacture. *J. of Food Science* 41(5):1204-08. Sept/Oct. [29 ref]
Address: 1. Cornell Univ., Geneva, New York; 2-3. Univ. of the Philippines, Laguna, Philippines.

2777. Farnum, C.; Stanley, D.W.; Gray, J.I. 1976. Protein-lipid interactions in soy films. *Canadian Institute of Food Science and Technology Journal* 9(4):201-06. Oct. [17 ref. Eng; fre]
• ***Summary:*** Microscopic studies show that yuba films consist of a protein matrix in which lipid droplets are dispersed. On a dry weight bases, soybeans contain 20.25% lipids, 36.5% proteins, and 4.7% ash. Soymilk contains 17.8% lipids, 41.85% proteins, and 6.8% ash. Yuba contains 18.0% lipids, 46.3% proteins, and 3.9% ash. Comparing the fatty acid composition of the oil in soybeans with the oil in yuba, the percentage of palmitic acid increases by 6%, stearic acid decreases by 69.7%, oleic acid increases by 2%, linoleic acid increases by 6%, and palmitic acid decreases by 19.8%. Address: Dep. of Food Science, Univ. of Guelph, Guelph, Ontario.

2778. Khaleque, A. 1976. Studies on the processing and properties of artificial milk. V. Effect of processing conditions on the stability of proteins in various soymilk preparations. *Bangladesh J. of Scientific and Industrial Research* 11(1-4):70-78. Jan/Oct. [15 ref]
Address: BCISR Laboratories, Dacca, Bangladesh.

2779. Lashley, U. 1976. Re: Soybeans and soybean foods in Trinidad. Letter to H.L. Wang and associates at Northern Regional Research Center, Oct. 2 p. *
• ***Summary:*** Originally it was planned to grow soybeans in Trinidad, and crush them for oil (to replace coconut oil) and

meal (to feed to livestock). In Dec. 1975 Lever Brothers successfully crushed 7,000 kg of soybeans as a test. But then it was realized that the soy protein could be better utilized as a food. "Crop production personnel in the Chaguaramas Agricultural Development Project (CADP) and Home Economists at the John Donaldson Technical Institute have been collaborating to refine, demonstrate, and promote the production and utilization of locally grown soya. To this end, the agronomists have published a booklet on the growing of Soya while the Home Economists have produced several booklets and pamphlets with information on preparing dishes from soybeans. A booklet is about to be published.

"It might be of interest to you to note that Guyana, St. Kitts, and Trinidad and Tobago have embarked upon a program of Corn/Soya production in the hinterland of Guyana as part of the Caribbean Food Plan.

"It is envisaged that soon a programme will be formulated with the Extension Division in the Ministry of Agriculture, Lands and Fisheries to exhibit soya growing at vantage points in rural Trinidad and Tobago with accompanying demonstrations by Home Economists in food preparation. I am currently working in conjunction with the Government Broadcasting and Film Unit to produce a documentary on 'Soya for Food.' I am dealing with basic steps Cleaning, Soaking, and Blanching: I also hope to deal with the preparation of: 1. Soy milk, soy/choc milk; 2. Soy fudge, soy/choc fudge–a candy. 3. Soy/almond paste–marzipan. 4. Soynut butter. 5. Soy nuts. 6. Curried soybeans. 7. Phulouri (an East Indian dish using dhal)." (Cited by H.L. Wang, et al. 1979. Soybeans as human food–Unprocessed and simply processed. p. 33). Address: Home economist, John Donaldson Technical Inst., Ministry of Education, Port of Spain, Trinidad.

2780. Liener, Irvin E. 1976. Nutritional aspects of soy protein products. In: Archer Daniels Midland Co., comp. 1976. Edible Soy Protein Seminar. Decatur, Illinois. 220 p. See p. 13-85. Held in 1976 at Moscow, USSR and Warsaw, Poland. [265 ref]

• ***Summary:*** Contents: Nutritional value of the protein of individual soy products: General considerations, soybeans as a vegetable, soyflour, soybean milk, soybean curd, protein concentrates, protein isolates, fermented products. Blended soy products: Blend with wheat protein, blend with corn protein, blend with rice, vegetable-protein formulations, soy protein as meat extender. Textured meat analogs. Nutritional value of non-protein constituents: Available energy, crude fiber, vitamins (fat-soluble vitamins, water-soluble vitamins), minerals (calcium, phosphorus, zinc, other metals). Antinutritional factors: Heat-labile factors (trypsin inhibitor, hemagglutinins, other heat-labile factors), heat-stable factors (saponins, estrogens, flatulence factors, lysinoalanine). References. Tables.

Concerning lysinoalanine (p. 58-59): "Sternberg et al. (1975) have recently shown lysinoalanine to be widely distributed in cooked foods, commercial food preparations, and food ingredients, many of which had never been subjected to alkaline treatment. Many of these foods had levels of lysinoalanine which were considerably higher than those found in commercial samples of soy protein isolate. The wide distribution of lysinoalanine among commonly cooked foods would tend to indicate that" this is neither a novel protein nor a serious problem, as some humans have long been exposed to proteins containing lysinoalanine with apparent impunity. "Its presence in soy protein can hardly be considered a serious problem for man." Address: Dep. of Biochemistry, Univ. of Minnesota, St. Paul, MN 55108.

2781. Nelson, Alvin I.; Ferrier, Les K. 1976. Soybean processing using low level technology. Urbana, Illinois: University of Illinois. 34 p. Soybean Food Processing Terminal Report. Contract AID/TA/C-1294. 1 April 1976 to 31 Oct. 1976.

• ***Summary:*** The soybeans investigated were whole dry soybeans, soymilk, and tempeh. Address: Dep. of Food Science, Univ. of Illinois, Urbana, Illinois.

2782. Nelson, A.I. 1976. Sri Lanka Soybean Development Program. Report No. 4. University of Illinois, Urbana, Illinois: INTSOY. 13 p. Contract No. UNDP/SRL/73/007-1/ AGOG INTSOY.

• ***Summary:*** Prof. Nelson was in Sri Lanka from Aug. 29, 1976 through Sept. 29, 1976. Contents: Commercial Type Soy Food Products: Full-fat soybean flour; Soybean dhal; Soy beverage; Infant weaning foods. Product Concepts for Village and Home Use. Intermediate Level Technology Products. Extension of Technology to the Village Level. Legume Inoculant Production. Conclusions. Address: Prof. of Food Processing–International Agriculture, INTSOY.

2783. Robertson, Laurel; Flinders, Carol; Godfrey, Bronwen. 1976. Laurel's kitchen: A handbook for vegetarian cookery and nutrition. Nilgiri Press, Box 477, Petaluma, CA 94952. 508 p. Oct. Foreword by George M. Briggs, Prof. of Nutrition, Univ. of California, Berkeley. Illust. Index. 24 x 20 cm. Bantam Books pocketbook ed. Dec. 1978. 641 pages. [45 ref]

• ***Summary:*** One of the best, most original, and most influential books of lacto-ovo vegetarian recipes and nutritional information published during the 1970s. Handsomely illustrated with woodcuts by Laurel, this classic is divided into three parts: Part I, "Giving the Gift of Life (p. 10-62), is by Carol Flinders, a superb writer who majored in creative writing at Stanford University. It begins with her preface and a dedication that reads: "This book is dedicated to the glossy black calf on his way to the slaughterhouse many years ago, whose eyes met those of someone who could understand their appeal and inspire us, and thousands

of others like us, to give the gift of life." The first section describes how one woman, Laurel, made the transition from Sloppy Joes to vegetarian culinary and nutritional mastery. The second section, "The Keeper of the Keys, talks about alternate and traditional roles for women in the home and society.

Part II is recipes and menus (p. 65-297). Pages 66-69 introduce "The Four Food Groups": 1. Grains, legumes, nuts, & seeds. 2. Vegetables. 3. Fruit. 4. Milk & eggs. The "Four Food Groups for the Vegan" (p. 320-24) are grains-nuts-seeds, legumes, vegetables, and fruit.

Part III, "Nutrition for a Meatless Diet" (p. 298-486) is one of the best sources available on vegetarian nutrition. Of special value are the extensive tables on nutrient composition of foods, which include vitamins and minerals; they are up to date and well documented. A 22-page index adds to the books usefulness.

Soybeans and soy products are praised as an excellent source of low-cost high quality protein (p. 69). Pages 82-83 give details on soy flour (full-fat) and soy powder.

Soy-related recipes include: High protein bread (with soy flour, p. 91). Pumpernickel (with soy meal, p. 92). Soy bread (with cooked whole soybeans or soy grits, p. 92-93). Pine nut pinwheels (with Soy Spread, p. 97). Breakfast beans (p. 122). Better-Butter (p. 123, a blend of 1 cup each vegetable oil and butter plus 2 tablespoons each water and dried skim milk, ¼ teaspoon lecithin, and ½ teaspoon salt). Soy milk (basic information and how to make at home using the Cornell method, p. 134-36). Sandwich ideas (incl. Soy burgers, Tofu patty, Soy Pâté, p. 138). Soy spread (p. 140). Tofu-peanut butter spread (p. 141). Minestrone (p. 166). Creamy green soup (p. 170). Stuffed peppers (with soy grits, p. 202). Chinese vegetables & tofu (p. 217). Soybean stock (p. 224). Soy stock gravy (p. 229). Zucchini oat-flake loaf (with soy meal, p. 243). Vegetable bean noodle bake (with soybeans, p. 245). Beans (with "1 cup cooked soy pulp, or coarsely chopped soybeans," p. 257-60). Savory dinner loaf (with soy grits, p. 265). Soy burgers (p. 266). Neat balls (with Soy spread, p. 266). Tofu patties (p. 267).

Pages 299-486 are about nutrition for a meatless diet. Information on soy is given on pages 307, 322-24, 381 ("Soybean protein is a complete protein; its amino acid pattern conforms closely to that of milk."), 460 and 463-64 (tables of nutritional composition).

Note: The authors use the term "soy pulp" to refer to soybeans that have been cooked and ground, and the term "isoluble residue" (p. 136) to refer to okara. Address: California.

2784. Gillingham, Karen. 1976. Blender power: Get a boost from these high-energy blender drinks. *Los Angeles Times.* Nov. 9. p. I-10, I-14.
• ***Summary:*** "Energy drinks as we know them today–most agree–were were unveiled by Adelle Davis in the 1950s" [Tiger's Milk?]. Originally they were enjoyed by "health food scholars and Muscle Beach hopefuls."

Contains 15 recipes, each from a place that makes and retails them fresh. Only one is called a smoothie. Most contain a dairy product (such as milk, ice milk, ice cream, or yogurt), some fruit (bananas are most popular), and some ice. Eight contain 1-3 tablespoons of "protein powder." Two are non-dairy with cashew nut milk or coconut milk replacing the dairy products.

2785. Goodnight, Kenneth C., Jr.; Hartman, Grant H., Jr.; Marquardt, Robert F. Assignors to Mead Johnson & Company (Evansville, Indiana). 1976. Aqueous purified soy protein and beverage. *U.S. Patent* 3,995,071. Nov. 30. 9 p. Application filed 23 June 1975. [4 ref]
• ***Summary:*** Soy protein isolate is used to make a superior beverage. This invention describes a "process for the preparation of an improved soy protein having exceptionally low phytic acid [and phytate] content, improved digestibility, high water solubility, improved functional characteristics, lack of beany flavor with substantially improved palatability, a neutral protein with low ash content, and affords improved protein yield, and high retention of sulfur containing amino acids."

The soy protein "is prepared by aqueous extraction of defatted soy flakes, basification to a pH in excess of 10.1 and removal of insolubles. The clarified extract may be reduced in mineral and carbohydrates content by ultrafiltration. The purified aqueous extract may be advantageously used directly in the preparation of liquid dietary products without drying."

Note: Though Mead Johnson is a manufacturer of soy-based infant formulas, no mention of them is made in this patent. Address: Evansville, Indiana.

2786. Metz, Robert. 1976. Market place: University patent's stock reaction. *New York Times.* Nov. 30. p. 66.
• ***Summary:*** University Patents is a small corporation, whose stock is sold publicly, that was formed in 1964 as part of the University of Illinois. It markets patentable items for new technologies that result from the University's research. Initially a private firm, it later went public and began to work with other universities as well. It now represents six universities.

The company has licensed both Beatrice Foods and Bristol Myers to produce and market soy milk developed at the University of Illinois. It is often years before a patented product produces profits–if ever.

2787. Bhumiratana, Amara. 1976. Small-scale processing of soybeans for food in Thailand. *INTSOY Series* No. 10. p. 143-46. R.M. Goodman, ed. Expanding the Use of Soybeans (College of Agric., Univ. of Illinois at Urbana-Champaign).
• ***Summary:*** Contents: Introduction. Fermented soybeans.

Soymilk. Yuba. Yoghert [Soy yogurt, inoculated with *Lactobacillus bulgaricus* and *L. acidophilus* and incubated at 37ºC for 16-20 hours]. Chinese soya bean dessert (Taow Huey). Tofu (white or yellow). Sufu. Soybean snack (protein crisp; deep-fried sufu). Tempeh. Thai dessert. Kanom ping kaset. Baby food. Kaset noodle. Kaset protein. Note: There is a flowchart and photo of each product.

"The Institute of Food Research and Product Development, Kasetsart University, initiated several soybean utilization pilot projects five or six years ago. Using soybeans alone or combined with other ingredients, we have developed a range of products, such as baby foods, kaset protein, and snacks. Tests indicate that these foods are highly acceptable, being both palatable and nutritious. Some of these products are soon to be manufactured commercially by small-scale industries. This paper is a description of the soy food processing methods developed by the Institute." Address: Inst. of Food Research and Product Development, Kasetsart Univ., Bangkok, Thailand.

2788. Carlson, J. 1976. New interest in soy milk. *Soybean Digest.* Nov. p. 23-25.

2789. Ferrier, L.K. 1976. Simple processing of whole soybeans for food. *INTSOY Series* No. 10. p. 130-36. R.M. Goodman, ed. Expanding the Use of Soybeans (College of Agric., Univ. of Illinois at Urbana-Champaign). [19 ref]
• ***Summary:*** Contents: Introduction. Food uses for whole soybeans. Category I: Drum-dried flakes. Category II: Canned soybeans. Category III: Dairy product analogues (incl. mocha flavored ice cream, yogurt, peanut butter analogue). Category IV: Spreads. Category V: Snack foods. Appendix I: Prototype foods made from whole soybeans. Appendix II: Sauce formulations for canned soybean products. Discussion. For the drum-dried flakes: Blend in a "Waring Blendor." Address: Dep. of Food Science, Univ. of Illinois, Urbana, IL.

2790. Herath, E. 1976. Cultivation and uses of soybeans in Sri Lanka. *INTSOY Series* No. 10. p. 250-52. R.M. Goodman, ed. Expanding the Use of Soybeans (College of Agric., Univ. of Illinois at Urbana-Champaign).
• ***Summary:*** Contents: Introduction. Cropping patterns. Cultivation practices. Harvesting and storage. Varietal improvement. Fertilizer and plant nutrition studies. Microbiological investigations. Crop physiology studies. Seed storage, quality, viability, and seedling vigor. Utilisation research: Soybean milk and milk products, soy flour, soybean dhal, cooking time and storage, additional research planned. Extension.

"Plantation agriculture, with crops of tea, rubber, coconut, cocoa, and spices, forms the basis of Sri Lanka's economy. However, these crops, which are grown in the central highlands and in parts of the intermediate zones, comprise only a minor part of the total acreage of 16.2 million acres situated for the most part in the relatively underdeveloped dry zone...

"Soybean is a relatively new crop, having been introduced to farmers only in 1972. At present the acreage under soybeans is negligible and is confined primarily to a few large, privately-owned farms and to many small, scattered plots in the dry and intermediate zones. Production areas should total nearly 8,000 acres for 1976."

The Yala season (dry) is April to September. The Maha season (rainy / rain-fed) is October to February.

"The most significant contribution to soybean cultivation recently has been the introduction of commercial inoculants. Until this breakthrough, soybean yields and performance were erratic... With these inoculants all soybean varieties performed significantly better, giving consistently high yields of up to 3,540 pounds per acre in research plots."

"In the 1973 coordinated varietal trials, yields of 3,000 to 4,000 kg per hectare were recorded from the Asian variety Pb-1 and from the American varieties Hardee, Lee, Bragg, and Improved Pelican." Address: Dep. of Agriculture, Central Agricultural Research Inst., Peradeniya, Sri Lanka.

2791. Kellogg, Earl D.; Williams, Sheldon W. 1976. Viable alternatives for processing soybeans in a variety of situations. *INTSOY Series* No. 10. p. 148-153. R.M. Goodman, ed. Expanding the Use of Soybeans (College of Agric., Univ. of Illinois at Urbana-Champaign). [9 ref]
• ***Summary:*** Contents: Introduction. Viable alternatives for processing soybeans: Home and village processing alternatives (incl. small-scale extrusion cookers that cost $45,000), larger scale processing alternatives. Economic efficiency and choice of technique. Conclusion. Discussion. Address: 1. Multiple Cropping Project, Faculty of Agriculture, Chiang Mai Univ., Chiang Mai, Thailand; 2. Dep. of Agricultural Economics, Univ. of Illinois, Urbana, IL.

2792. Lee, Hong Suk; Park, K.Y.; Chung, B.J.; Park, J.S.; Yohe, J.M. 1976. The status of soybean production and research in Korea. *INTSOY Series* No. 10. p. 239-42. R.M. Goodman, ed. Expanding the Use of Soybeans (College of Agric., Univ. of Illinois at Urbana-Champaign).
• ***Summary:*** Contents: Introduction. Major problems related to increased soybean production: Weather, varietal improvement, planting time, soil fertility and pH, cultural practices (cropping systems, planting patterns, seed treatment and inoculation), soybean pathology and entomology. Present and future research problems.

"Good quality soybeans with large grain size have been cultivated for thousands of years in the middle and northern part of the east coast of Korea. Because soybeans have been grown primarily for subsistence, they have not been regarded as a cash crop by Korean farmers... Soybean cultivation in

1974 and 286,188.4 hectares, thus making soybeans the third major crop of Korea in hectarage...

"Soybean production has gradually increased from 231,994 metric tons in 1970 up to 318,576 metric tons in 1974. Although total soybean production has increased, it has not kept up with demand as indicated by the fact that imports have increased from 36,291 metric tons in 1970 up to 66,370 metric tons in 1974...

"Home consumption is the major area for soybean use, about 122,000 metric tons being consumed in 1974. Soybeans are prepared by mix-boiling with rice or vegetables, or are eaten in the form of curd, sprouts, sauce, paste, milk, and flour. The government uses soybeans primarily for military needs. Soybean oil is used for industrial purposes." Address: 1. College of Agriculture, Seoul National Univ.; 2. Corps Exp. Station, Office of Rural Development; 3-4. Inst. of Agricultural Science, Office of Rural Development; 5. Crop Improvement Research Center, Office of Rural Development. All: Suweon, Korea.

2793. Ohtsuru, Masaru; Kito, M.; Takeuchi, Y.; Ohnishi, S. 1976. Association of phosphatidylcholine with soybean protein. *Agricultural and Biological Chemistry* 40(11):2261-66. Nov. [8 ref]
Address: 1-2. Research Inst. for Food Science, Kyoto Univ., Kyoto 611, Japan; 3-4. Dep. of Biophysics, Kyoto Univ.

2794. Rathod, K.L. 1976. Developing soybean markets in India: Economic aspects. *INTSOY Series* No. 10. p. 154-57. R.M. Goodman, ed. Expanding the Use of Soybeans (College of Agric., Univ. of Illinois at Urbana-Champaign). [3 ref]
• ***Summary:*** Contents: Introduction. Potential supply and demand for soybeans: Supply, demand and market outlets. Constraints on attaining potential market: Quality and high price of seed, competitiveness of soybeans, investment and risks in processing, coordinating production and marketing. Market outlets for soy protein foods: Soy flour, soy beverage, textured soy products. Approaches to be considered.

"Soy flour, both full fat and defatted, is being used in bakery products, such as bread and biscuits. Bread produced by the various units of Modern Bakeries is now enriched with defatted soy flour, as well as with vitamins and minerals. Modern Bakeries is also producing a special bread, containing as much as 12 percent defatted soy flour, for the nutrition programme of the Social Welfare Department. During the period from April to December 1975 190 tons of Balamul, a soy-reinforced weaning food, were produced. During 1973-74 approximately 60 tons of soy flour were used in Balamul and during 1974-75 150 tons. In the Government's Balahar programme 250 tons of soy flour were used in 1974-75 and 1,500 tons in 1975-76.

"A pilot plant processing soymilk at Pantnagar has demonstrated the uses and the potential for such an enterprise in India. At Pantnagar and in the surrounding areas the sale of soymilk beverage indicates favourable consumer response...

"The Soya Products Research Association markets on a commercial scale three soy-based products, viz., TSP (textured soy protein), Protesnac, and Protein-plus. Among these products, TSP preparations constitute the major sales items and have been growing in popularity since they were first introduced. Consumers have responded favourably to TSP chunks and granules but not to TSP powder. The sale of Protesnac, a ready to eat snack made from defatted soy flour and rice, increased from 4 tons in 1972-73 to 19 tons in 1974-75. Protein-plus, a weaning food, has yet to be established on the market. In general, consumer response to textured soy products has been good, with a total of 172 tons of such products sold in 1974-75." Address: Dep. of Agricultural Economics, G.B. Pant Univ. of Agriculture and Technology, Pantnagar, India.

2795. Schmidt, R.H.; Bates, R.P. 1976. Sensory acceptability of fruit flavored oilseed milk formulations. *Proceedings of the Florida State Horticultural Society* 89:217-19. Nov. 2-4. (Published 1 May 1977). [11 ref]
• ***Summary:*** Soymilk, peanut milk, and 25% toned milks prepared from cow's milk extended with commercial peanut flour or soy protein concentrate were prepared. Yogurt-like products were made from these by fermentation with *Lactobacillus bulgaricus* and *Streptococcus thermophilus* in the presence of 2.5% added glucose, to a pH of 4.7. taste panel compared these with similar products made from cow's milk. Oilseed milks were generally judged inferior to cow's milk and peanut milks were judged inferior to soymilks. Commercial yogurt fruit flavorings of strawberry, raspberry, blueberry and orange greatly improved the sensory acceptance of the milk-like beverages and yogurt products. Homogenization significantly improved acceptance of yogurt-like products. Address: 300 Food Science Building, Food Science Dep., Univ. of Florida, IFAS, Gainesville, FL 32611.

2796. Winarno, F.G.; Karyadi, Darwin. 1976. Nutrition and processing of soybeans. *INTSOY Series* No. 10. p. 137-42. R.M. Goodman, ed. Expanding the Use of Soybeans (College of Agric., Univ. of Illinois at Urbana-Champaign). [21 ref]
• ***Summary:*** Contents: Introduction. Nutritional status. Soybeans as source of good-quality protein: Chemical composition, nutritive value, other components. Storage of soybeans. Processing and its effects on nutritive value: Effects of heating on nutritive value, effects of heating on flavor, soybean varieties and processing methods. High protein food mixtures: Saridele, Tempeh-fish-rice, soya-rice baby food, soybean residue-fish-rice (with okara), other food mixtures. Conclusion. Discussion.

"In 1952 the Institute of Nutrition started a study of soybean milk. As a result of the study, a factory was set up in Jogyakarta in 1957 with the assistance of FAO and UNICEF. The product, which was called Saridele, was made from soybeans, peanuts, and sesame seeds, and was fortified with minerals and vitamins. The nutrient composition of Saridele compared with that of cow's milk is shown in Table 6. The production of Saridele was discontinued after 1966 because of the irregular supply of soybeans and marketing problems." Address: 1. Agricultural Engineering and Product Technology, Bogor Agricultural Univ., Fate Meta, Jl. Gu Gede; 2. Nutrition Research and Development Centre. Both: Bogor, Indonesia.

2797. Miller, Harry W. 1976. Re: Your good work in introducing foods from the soya bean. Letter with Christmas card to William Shurtleff at New-Age Foods Study Center, Dec. 21. 1 p. Typed with signature.

• ***Summary:*** "My Dear Mr. Shurtleff–Your name comes to mind very often on account of our close association in the interest of nutrition to the people in America, and I feel you have done a wonderful job in educating the people regarding the value of using foods from Soya Beans. I think now that I have secured three of your Tofu books, but they are all gone, loaned and not returned, so I am ordering another to have sent to my home address on this envelope. I would be glad to mail a check for the exact amount including Postage so if you will send me that by return postage I will send a check for the same at once as I need some data you have given in same.

"Dr. Tojima Yamagata, Minister of Forestry and Agriculture for Japan, paid me a visit about a month ago and has supplied me with some recent pamphlets from his Dept. on Soy Milk. I have wondered if at anytime you are planning a trip to the Los Angeles or Riverside area. The book store here at La Sierra usually handles your book but they are all sold out. Therefore I am hastening to order from you direct, and always glad to hear from you, Yours very sincerely, Harry W. Miller, M.D."

This is a poignant letter and card. On 26 July 1977 Dr. Miller's wife, Mary E. Miller, (now a widow) sends the money Dr. Miller owed for *The Book of Tofu* he ordered and adds: "Please forgive my husband for this long delay, he died on Jan. 1 of this year. He went into the hospital on Nov. 19 of last year and never recovered from a severe heart attack at the age of 97." Address: M.D., 11384 Norwood Ave., Riverside, California 92505.

2798. *SoyaScan Notes.* 1976. Chronology of soybeans, soyfoods and natural foods in the United States 1976 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Feb. KQED-TV in San Francisco airs a 30-minute special titled "Tofu." It is an interview with William Shurtleff and recipe preparation by Akiko Aoyagi.

March. "The Joys of Soy" by Brenda Bortz, published in *Organic Gardening and Farming* magazine is the first major popular article on tempeh in America. In June, *Prevention* magazine runs a cover story on tempeh.

April. Soybeans: Brazil as a Competitive Force by J.M. Schultz and W.P. Mason submitted as a Harvard Business School MBA thesis. One of the best early in-depth analyses.

April. The second of the new wave of commercial Caucasian-run tofu shops is started by Peter and Judy Beane in Portland, Maine. There were at least 7 small commercial Caucasian-run tofu shops in America by the end of 1976.

May-June. *Mother Earth News* publishes the first of five long articles on soyfoods, each excerpted from *The Book of Tofu.*

June 2-5. First International Workshop on Low-Cost Extrusion Cookers held at Colorado State University, with 51 participants. Organized by Judson Harper and Richard Jansen, with funding from USAID through USDA. The 173-page proceedings, edited by Wilson and Stumpf, are published shortly thereafter. Cereal-soy blends are seen as having great promise for production in developing countries.

This year cereal-soy blends are first produced in Third World countries using low-cost extrusion cookers: Thriposha in Sri Lanka and Maisoy in Bolivia.

July 20. What is Tofu? pamphlet by Shurtleff and Aoyagi published by Westbrae Natural Foods in Berkeley.

Aug. 6. New-Age Foods Study Center established by Shurtleff and Aoyagi in Lafayette, California. The name was changed to The Soyfoods Center in Sept. 1980.

Aug. Larry Needleman of The Learning Tree in California introduces America's second tofu kit, which soon becomes the best-seller nationwide.

Aug. Farm Food Company, a branch of The Farm in Tennessee, opens America's first soy deli, in San Rafael, California. They served tofu sandwiches, salads, salad dressings, and cheesecakes; tempeh burgers, deep-fried tempeh cutlets, tempeh with creamy tofu topping, and Indonesian delight (tempeh strips); soymilk ice cream, shakes, yogurt, mayonnaise, and whipped creme; soybean stroganoff and burritos; and TVP chili. They essentially launched the concept of second-generation soyfood products.

Sept. 23. *The Book of Miso,* by Shurtleff and Aoyagi published by Autumn Press.

Sept. 29. Shurtleff and Aoyagi begin "Tofu and Miso America Tour." They do 70 public programs nationwide and travel 15,000 miles in their white Dodge van, continuing until 3 Feb. 1977. In the van they carry hundreds of copies of *The Book of Tofu* and *The Book of Miso* and many of Larry Needleman's tofu kits, plus little bags of natural nigari, all of which they sell at their programs. They usually have meals and spend the night with the people who have sponsored and organized their program. They also visit numerous soyfoods producers and researchers, including The Farm in Tennessee

from Dec. 21 to Jan. 2. After the tour, tofu shops started in most of the areas where they spoke.

Sept. Dr. Kenneth Bader becomes executive director of the American Soybean Association. With the help of increasing funding from checkoff programs, he ushers in an era of growth, and increased activity and strength for ASA.

Oct. 13-15. Seminars on the use of soy protein for foods and meal for feeds are held in Moscow, sponsored jointly by the U.S. Foreign Agricultural Service, the American Soybean Assoc., and the Food Protein Council. More than 200 Soviet officials attended.

Oct. *The Joy of Soy,* by Sylvia E. Anderson self-published in New Jersey.

Nov. Island Spring starts making tofu in Vashon, Washington. Founded by Luke Lukoskie and Sylvia Nogaki.

Dec. The term "soyfoods" (spelled as one word) is coined by Benjamin Hills of Surata Soyfoods in Eugene, Oregon, for use in their company name. It is first used in a book (*Tofu & Soymilk Production*) by Shurtleff and Aoyagi in July 1979, and as a magazine title in July 1980.

Dec. Morinaga Milk Industry Co. in Japan is granted the world's first patent on a method for manufacturing aseptically packaged tofu (in Tetra Brik cartons), U.S. Patent 4,000,326.

* Kibun, in Japan, introduces East Asia's first commercial fermented soymilk products, a line of acidophilus soymilk drinks brand-named Soena.

* Beginning of the rise of the modern soymilk industry in Japan. This is the first year that a significant amount of soymilk was sold.

* Kikkoman soy sauce passes La Choy to become America's best selling brand of soy sauce. The three major soy sauce markets are consumer retail, restaurants and other institutions, and industrial (for food processors). La Choy may still be the leader in consumer retail; Kikkoman leads in restaurants.

* Beef consumption in America peaks at 95.4 pounds per capita. It had risen rapidly from 38.6 lb/person in 1930. After 1976 it falls steadily, hitting 75 lb/person in 1985.

* National Soybean Research Program established in Brazil, building upon the National Soybean Project (1972) and the National Soybean Research Center (1975).

2799. Anderson, Sylvia E. 1976. The joy of soy. Pleasantville, New Jersey: New Life Press. 48 p. Dec. Illust. Index. 23 cm. Spiral bound. Rev. ed. 1977. Spiral bound.
• ***Summary:*** Contents: What is the joy of soy. Whole, dry soybeans ("My favorite way to cook whole, dry soybeans is to pressure cook them"). Soymilk. Tofu. Sweet tofu. TVP. Okara. This vegan cookbook was inspired by The Farm, a large spiritual community in Tennessee, where the author and her children lived for several years. "When I arrived on The Farm, I thought I didn't like soybeans... Now I love soybeans and soymilk–not because my tastebuds have changed and I've acquired a new taste for them, but because I've learned new ways to cook soybeans so that they taste good to those same old tastebuds.

"The recipes in 'The Joy of Soy' have been developed through feedback from members of The New Life Co-op (326 S. Main St., Pleasantville, New Jersey), where products made from them have been selling rapidly for the past nine months."

Note: The author's favorite recipes are: (1) Grandma's chickenless soup with Kreplach (and tofu, p. 19). (2) "Cheezy" soybean d'lishes (p. 6). (4) Garden salad d'lishes (with tofu, p. 21). (5) Pizza d'lishes (with tofu, p. 23). (6) Tofu cookie bars (sweet, p. 26). (7) Tofu cinnamon rolls (sweet, p. 27). (8) Tofu-filled carob cupcakes (sweet, p. 28). (9) Okara soysage (p. 40). (10) Soysage d'lishes (with TVP, p. 37). (11) Okara spice cake (sweet, p. 45). (12) Dairyless macaroni and cheese (with tofu, p. 15). Address: Pleasantville, New Jersey.

2800. Bourne, Malcolm C. 1976. How to make good tasting soy milk in your kitchen (Leaflet). Geneva, New York. 1 p. Dec. Single sided. 28 cm. [12 ref]
• ***Summary:*** Uses the Cornell boiling water grind method. Nine steps, including: "7. Heat th4e soy milk for at least 30 minutes in a saucepan set in a pan of boiling water to prevent scorching. Stir occasionally to prevent formation of a skin if the saucepan is not covered." See original Feb. 1970 edition. Address: Dep. of Food Science and Technology, Cornell Univ., Geneva, New York 14456.

2801. Monckeberg, Fernando; Yanez, E.; Ballester, D.; Merchack, N.; Jarpa, S.; Martner, J.; Alvarez, M.; Alvear, J.; Contreras, I.; et al. 1976. Desarrolo de una formula alimentaria (Fortesan) para-escolares [Development of a food formulation (Fortesan) for pre-school children]. *Archivos Latinoamericanos de Nutricion* 26(4):426-47. Dec. [12 ref. Spa; eng]
• ***Summary:*** Summary: The studies conducted on the development of a protein-rich mixture (Fortesan) intended for pre-school and school children are presented in this paper. This food is composed of 70% extruded wheat-soy blend, 25% non-fat dry milk and 5% cocoa powder. The purpose of this product is to substitute a fraction of the milk that the National Health Service (Chile) distributes freely to children up to 15 years of age. Fortesan contains 23% protein and provides 345 calories per 100 grams.

"The biological value of Fortesan was tested in both rats and children. The protein efficiency ratio (PER) was 2.6 as compared to 2.8 for casein; the net protein utilization (NPU) of Fortesan was 70 and that of casein was 72. Nitrogen balance studies showed a retention of 16.1% for milk and 29% for Fortesan. These results show that the protein of Fortesan has a biological quality comparable to that of milk.

"The long term acceptability of Fortesan was tested in

children attending a Kindergarten and in 440 families. In both cases acceptability was excellent.

"In summary, Fortesan is a food of high protein content, good biological quality and acceptability that can be used as a milk substitute in children. Based on these results the industrial production of Fortesan is highly recommended."

Note: In 1971 Dr. Fernando Monckeberg Barros was Director, Laboratorio de Investigaciones Pediatricas, Escuela de Medicina, Universidade de Chile, Santiago, Chile. Address: 1-13. Instituto de Nutricion y Tecnología de los Alimentos, Universidade de Chile.

2802. **Product Name:** [Danpro Soy Protein Concentrates (Danpro H, Danprotex)].
Manufacturer's Name: Aarhus Oliefabrik A/S.
Manufacturer's Address: Bruunsgade 27, P.O. Box 50, 8100 Aarhus C, Denmark.
Date of Introduction: 1976.
New Product–Documentation: Talk with followed by letter (fax) from Torben Svejgard, Marketing Manager of Aarhus Olie, Protein Div. 1989. July 12-13. The new plant was built in 1975 and Danpro was introduced in 1976. They were the first European company to make a powdered soy protein concentrate, and are still one of the few European companies making it. Danpro A is for animals, used mostly as a calf milk replacer. Danpro H is for humans. Aarhus was founded in 1871. Their main business has always been crushing, refining, and fractionating oilseeds. Danpro was their first soy protein product for food use.

Aarhus Olie Annual Report 1988. A diagram (p. 40) shows that Aarhus introduced Danpro A (a protein concentrate; A stands for "Animal." It is fed mainly to young calves and piglets) in 1975, Danpro H (H stands for "Human") in 1976, Danprotex in 1976... In 1974-75 Aarhus built the first factory in Europe for the manufacture of soya protein concentrates (p. 41).

Letter from Daniel Chajuss, founder and owner of Hayes Ashdod Ltd. 1992. June 23. "In 1973 the undersigned (Daniel Chajuss) sold know how and complete engineering designs to Aarhus Oliefabrik A/S, Aarhus, Denmark, to produce powdered and textured soy protein concentrates for human consumption, pet foods and calves milk replacers."

2803. **Product Name:** Dou-chiang (Soymilk).
Manufacturer's Name: American Food & Candy Co.
Manufacturer's Address: 166 San Lazaro St., Sunnyvale, CA 94086. Phone: 408-773-0612.
Date of Introduction: 1976.
Wt/Vol., Packaging, Price: Bulk retail. $2.00/gallon. Customers bring their own container.
How Stored: Refrigerated.
New Product–Documentation: Talk with Peggy Boyd (415-948-9191), then with English-speaking representative of the company. 1988. March 11. The company is run by Chinese Americans. Most do not speak English. They started about 10 years ago, and make many kinds of tofu plus soymilk.

2804. **Product Name:** [Soy Milk (Dairylike, Coffee, or Strawberry)].
Foreign Name: Asasyoku [Asashoku] Soy Milk, Soi Miruku.
Manufacturer's Name: Asahi Shokuhin.
Manufacturer's Address: Factory: Mochida Azacho-machi 1991, Oaza, Gyoda-shi, Saitama-ken 361, Japan. Phone: 1485-55-2351.
Date of Introduction: 1976.
Wt/Vol., Packaging, Price: 500 ml Pure-Pak cartons.
How Stored: Refrigerated.
New Product–Documentation: See next page. Product with Labels (Pure Pak cartons) purchased in 1976 at a Seiyu department store in Tokyo, Japan. Also in 1976 William Shurtleff visited the plant in Saitama where this soymilk was made. Leaflet. 8½ by 11 inches, color. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.

Brochure (8 pages, black and white, in Japanese). 1978? Asashoku Soi Miruku. On the cover is a photo of the carton.

Brochure (8 pages, black and white, in Japanese). 1978? Asahi Sokuhin K.K. On the cover is an aerial photo of the soymilk plant in Saitama Prefecture–surrounded by rice fields.

Shurtleff & Aoyagi. 1979. Tofu & Soymilk Production. p. 313. "Asahi Shokuhin, Factory: Mochida Azacho-machi 1991, Oaza, Gyoda-shi, Saitama-ken 361. Tel. 1485-55-2351. Head office: Higashi-kan 3-gai, Yamanote Bldg., Minami Ikebukuro 1-19-12, Toshima-ku, Tokyo 171, Japan. Tel. 03-987-2175. Attn. Mrs. Sato, Eigyo-bu. Maker of what we consider to be Japan's most delicious dairylike soymilk; plain (vanilla), coffee, and strawberry flavors. Sold in 500 cc cartons at Seiyu department stores." Note: This was an outstanding and innovative product, including its packaging in large, low-cost cartons.

Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Asahi Shokuhin first made commercial soymilk in Japan in 1976.

K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 73. States that Asashoku Soimiruku in 500 ml L cartons was first introduced in April 1982.

2805. Cabral, A.C.D.; Canto, W.L.; Madi, L.F.C.; Soler, R.M.; Santos, L.C. 1976. Consideracoes gerais sobre embalagens utilizaveis no acondicionamento do produto liquido Vital [General considerations on useful packaging of the liquid product Vital (Abstract)]. *Suplemento de Ciencia e Cultura, Resumos* 28(7):873. Presented at 28th Reuniao Anual da Sociedade Brasileira para o Progresso da Ciencia, Brasilia. 1976. [Por]*
Address: Brazil.

2806. **Product Name:** [Saci 200, and Saci 300 {Powdered Soy-and Dairy Beverages} (Chocolate)].
Manufacturer's Name: Coca-Cola Industrias LTDA.
Manufacturer's Address: Brazil.
Date of Introduction: 1976.
Ingredients: Incl. isolated soy protein, nonfat dried milk, white sugar.
Wt/Vol., Packaging, Price: Sold in sacks.
How Stored: Shelf stable.
New Product–Documentation: Darshan S. Bhatia. 1981? "Development and marketing of protein-containing beverages" (Unpublished manuscript). In 1976, when the Brazilian government announced its ambitious program to food school children, pregnant and nursing women, the Cocoa-Cola Co. developed powdered Saci according to specifications set by the government. Since then, the company has supplied beverage powders based on soya and milk proteins, and fortified with vitamins and minerals. Two types of Saci were developed, each obtaining 60% of its protein from soya and 40% from dairy sources. Saci 200 contained 200 calories per bottle, and Saci 300 contained 300 calories. The nutritional composition of each product is given. "Initially, only a chocolate-flavored product was made available to the schools but now mocha, strawberry and coconut flavors have been added to the line."

2807. Costa, Sebastiao Irineu da; Santos, L.C.; Canto, W.L.; et al. 1976. Producao do Vital [Production of Vital (soymilk) (Abstract)]. *Suplemento de Ciencia e Cultura, Resumos* 28(7):868. Presented at 28th Reuniao Anual da Sociedade Brasileira para o Progresso da Ciencia, Brasilia. 1976. [Por]* Address: Brazil.

2808. de Boer, F.C.; van Milt, P.; van den Broek, J. 1976. Soy concentrate as a replacer for skim milk powder in veal calf diets. Zwindrecht, Holland: Unimills B.V. * Address: Unimills B.V., Zwindrecht, Holland.

2809. **Product Name:** Vitasoy Soya Bean Drink (In Aseptic Tetra Pak Cartons) [Plain, or Malt].
Manufacturer's Name: Hong Kong Soya Bean Products Co. Ltd.
Manufacturer's Address: Hong Kong.
Date of Introduction: 1976.
Ingredients: Plain/sweetened: Water, soybean solids, soy oil, cane sugar (5.5%), salt, vitamins A, B-1, B-2, and niacinamide.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 6.25 oz.: Protein 5.9 gm, plus vitamins for 3.2 cents (US) in 1968.
New Product–Documentation: K.S. Lo. 1982. History of Vitasoy; Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 99-100, 130-53. Vitasoy was first sold in Tetra Pak (250 ml) from 1976; p. 99-100, 102. In 1978 Nestlé began making and marketing Bonus in Singapore. Exported to Hong Kong in 1978, it gave Vitasoy its first real brand-name competition.

Boi. 1986. Sunday Times (Singapore). Sept. 7. "Soya Bean Milk Packs More Water than Flavor." Vitasoy sells for 35 cents per 250 ml. Comments: Contains artificial flavour, carries consumption deadline, milky taste but not of soya bean, thick, no bean flavour.

2810. Huang, P.C.; Tung, T.C.; Chen, T.Y. 1976. Nutritive value of soybean milk formula supplemented with partially autolyzed egg in infants and rats. Presented at Republic of China-United States Cooperative Program, Seminar on Food Science and Nutrition, Taipei, Taiwan. *

2811. INTSOY. 1976. Development of improved varieties of soybeans. Urbana, Illinois: University of Illinois, College of Agriculture International Soybean Program. 140 p. Illust. No index. 28 cm. [84 ref]
• ***Summary:*** Final report on Contract AID/CM/ta-c-73-19. April 1, 1973 to March 31, 1976. Submitted to the U.S. Agency for International Development, Department or State, Washington, DC. The principal investigator and contractor was William N. Thompson. Total AID funding of contract to date: $980,605.

Summary of accomplishments: "An extensive program in soybean variety evaluation was conducted to acquire information on soybean varieties having potential for home and commercial production in the less-developed countries of the tropics and subtropics. By the third year of contract operations, 90 countries had volunteered to participate in the program. Seed from varieties exhibiting promising production characteristics was increased in Puerto Rico and was distributed during the last quarter of the contract for use in preliminary observation trials at selected locations in six countries...

"Research in soybean food use led to development of concepts for rapid preparation of weaning foods and soybean-cereal patties, a procedure for preparation of a soybean beverage for village use and the appropriate technologies for home and village level preparation of the foods and beverage. A study was made on the effects of using corn, rice or wheat flour as ingredients in drum dried soy-cereal weaning foods. Investigations were carried out on water uptake and use of sodium and ammonium bicarbonate and their effect/relationship to tenderness of cooked soybeans. Protein efficiency ratios were determined on many prototype foods made wholly or partly from field varieties of soybeans.

"Dissemination of research results was accelerated through an active publication series, a newsletter, regional workshops, training courses, and country programs. The

soybean development network was expanded through formal linkages between INTSOY and national and international organizations and with a host of individuals and institutions who share INTSOY's interest 'to expand the use of soybeans for human food.'"

Appendix IV (p. 97-134), titled "Soybean Food Use," summarizes accomplishments in more detail. An innovative sock filter and cradle filter for soymilk are illustrated and described. Appendix V, Project Output, is a bibliography of publications resulting from this research in the fields of: Soybean variety development (8 publications), Taxonomic Information Retrieval System (TAXIR; 5), Insect control and entomological studies (36), Soybean pathology (24 publications). Address: INTSOY, Univ. of Illinois.

2812. **Product Name:** [Soymilk].
Manufacturer's Name: Kyushu Milk Co. Ltd.
Manufacturer's Address: Moto-machi 4311, Oita-shi, Oita-ken 870, Japan.
Date of Introduction: 1976.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64. "A new era [in soymilk production in Japan] began in 1976 when Kyushu Milk Co., a long-established middle sized dairy milk company, started making soymilk."

2813. Machida, Yoshiro. 1976. Tônyû gyôkai no tenbô to kongo [A view of the soymilk industry and its future]. *Shokuhin Kaihatsu* (*Up-to-Date Food Processing*) 11(6):20-26. [Jap]
• ***Summary:*** This article is from a special issue titled "New Trends in Soymilk Development" (*Tônyû Kaihatsu no Shin Dôkô*). Address: Shokuhin Gijutsu Kenkyusho-cho, Gijutsu-shi.

2814. MacNaughton, Nancy L. 1976. Site visit to Peña Blanca–Panamerican Health Services Soy Milk Factory. Tegucigalpa, Honduras. Unpublished report to the Ministry of Natural Resources. *
• ***Summary:*** This plant is managed and operated by Dr. Steven Youngberg, a Seventh-day Adventist.

2815. MacNaughton, Nancy L.; Storms, Gayle E. 1976. Home level soy: Experimentation. Tegucigalpa, Honduras. Unpublished report. *
• ***Summary:*** Some of the experiments involved making soymilk at home.

2816. Okubo, Kazuo. 1976. Tônyû o chûshin to shita saikin no kenkyû [Recent research that centers on soymilk]. *Shokuhin Kaihatsu* (*Up-to-Date Food Processing*) 11(6):33-38. [24 ref. Jap]
• ***Summary:*** This article is from a special issue titled "New Trends in Soymilk Development" (*Tônyû Kaihatsu no Shin Dôkô*). Address: Yamagata Daigaku Kyoiku Gakubu Eiyo, Skokuhin Gaku Kenkyushitsu, Shokuhin Kaihatsu.

2817. **Product Name:** President Soy Bean Drink [Almond, Peanut, Coconut, Egg, Strawberry, Chocolate, Apple, or Orange].
Manufacturer's Name: President Enterprises Corp.
Manufacturer's Address: 2-20 Yan Harng, Tainan (Yungkan) 711, Taiwan. Plant at 1-20 Tahying Vill., Hsinshi, Tainan 744, Taiwan.
Date of Introduction: 1976.
Wt/Vol., Packaging, Price: 250 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: *Soybean Digest Blue Book.* 1978. p. 31; 1979. p. 98.

American Soybean Assoc. 1982. Checkoff Successfile. Taiwan #302. "Soymilk helps Taiwan bridge the nutrition gap." "The first commercial soymilk production in aseptic packages was started in 1976 by President Enterprises Corp. The corporation, which also operates a dairy plant producing cow's milk, has been extremely successful in the soymilk market. Their sales of flavored soymilk have grown rapidly in recent years, reaching a summer peak of 300,000 packs per day."

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 16, 95-98. In 1977 President became Taiwan's first large-scale soymilk producer. By 1980 they were exporting to Hong Kong, and by 1983 they were making 18.8 million liters/year, tying them for 6th largest in the world. Color photo of 250 ml Tetra Brik carton. Dark green, light green, orange, and yellow on white.

2818. **Product Name:** [Soymilk].
Manufacturer's Name: Soken-sha K.K.
Manufacturer's Address: 724 Katakura-cho, Kanagawa-ku, Yokohama-shi 221, Japan. Phone: 045-491-1441.
Date of Introduction: 1976.
New Product–Documentation: Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Soken-sha first made commercial soymilk in Japan in 1976.

K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 73. Sôken-sha introduced Benibana Tônyû (in plain and cocoa flavors) in Aug. 1982 in 200 ml long-life packs and distributed it nationwide.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64. The contact person is Mr. Kamoi.

2819. Steinkraus, Keith H. 1976. Soybean milk processing and technology. *Applied Nutrition* (*Calcutta*) 4(2):49-62. Lecture delivered to the Indian Dietetic Association. [31 ref]
• ***Summary:*** An excellent review of the subject. Contents: Abstract. Introduction. Historical aspects of soybean milk processing and technology. Commercial success among

soybean milks: Soyalac (made by Dr. Harry Miller and Loma Linda Food Co.), Infant formulas (incl. Sobee and Pro-Sobee [Mead Johnson], Mull-Soy [Borden], Isomil [Ross]), Saridele (in Indonesia), soft drink approach (Vitasoy made by Hong Kong Soya Bean Products Co. Ltd.; Vegemilk, Beanvit, and Vitabean made by Yeo Hiap Seng; Vitamilk made by Green Spot (Thailand) Ltd.; Philsoy in the Philippines), Taiwan Farmer's Cooperative soybean milks. Advances in soybean milk technology: Defatted soy process, residue (pulp) recovered from soybean milk manufacture, soybean milks simulating cow's milk, flavor problems, nutritional problems. Address: Dep. of Microbiology and Food Science, Cornell Univ.

2820. Tsuchiya, Kanji. 1976. Tônyû seizô gijutsu-sha no teigen [A proposal from a technician concerning soymilk production]. *Shokuhin Kaihatsu* (*Up-to-Date Food Processing*) 11(6):27-32. [Jap]
• ***Summary:*** This article is from a special issue titled "New Trends in Soymilk Development" (*Tônyû Kaihatsu no Shin Dôkô*). Address: K.K. Soimiiru (Soymeal).

2821. Utaka, K.; Fukazawa, C. 1976. Gelation mechanism of soybean proteins treated by ficin. In: 1976. Report of the 39th Daizu Shokuhin Kaihatsu Kenkyukai. Tokyo, Japan. See p. 3. *
• ***Summary:*** Ficin, a plant proteolytic enzyme, was able to coagulate soymilk. The resulting curd had a very bitter taste, but it could be improved if the ficin was purified by column chromatography.

2822. Wang, F.J.; Chen, W.L.; Lin, Y. 1976. [A study on the manufacture of high protein instant soy milk-cocoa powder]. *Food Industry Research and Development Institute* (*Taiwan*), *Research Report* No. 88. [Chi]*
Address: Hsinchu, Taiwan.

2823. Zakaria, Husin. 1976. Soyabean beverage processing. In: Proceedings of the First ASEAN Workshop on Soya Products. Kuala Lumpur, Malaysia: ASEAN Subcommittee on Protein. Held 23-27 Nov. 1976, Kuala, Lumpur. [Eng]*

2824. Adler, Kief. 1976. Beyond the staff of life: The wheatless-dairyless cookbook. Happy Camp, California: Naturegraph. 80 p. Recipe index. 22 cm. [9* ref]
• ***Summary:*** A vegan cookbook. Soy-related recipes include: Blueberry soycakes (with soy flour and lima bean flour, p. 20). Soy milk (made with soy milk powder, p. 21). Address: Windsor, California.

2825. Akinyele, Isaac Olaolu. 1976. Nutritional evaluation of soybean protein in milk replacers for young dairy calves. PhD thesis, University of Illinois at Urbana-Champaign. 147 p. Page 1981 in volume 37/05-B of Dissertation Abstracts International. *
Address: Univ. of Illinois at Urbana-Champaign.

2826. Aminlari, Mahmood. 1976. Spray drying of a full-fat soybean beverage. MSc thesis, Dep. of Food Science, University of Illinois. 63 p.
• ***Summary:*** The author received his BSc degree at Pahlavi University, Shiraz, Iran, in 1971. Contents: Introduction. Literature review: The world food problem, soybeans, the dehydration process, spray drying. Materials and methods: Preparation of soybean beverage base, preparation of soybean beverage, addition of cow's milk, spray drier, spray drying of soy beverage, packing, storage time and temperature, analytical methods, organoleptic evaluation of reconstituted spray. Results and discussion: Factors affecting PDI (Protein Dispersibility Index) of spray dried soy beverage, stability of spray dried soy beverage, organoleptic characteristics of spray dried soy beverage. Summary and conclusion. References. Address: Dep. of Food Science, Univ. of Illinois.

2827. Baker, David H.; Easter, Robert A. 1976. Soy protein as a source of amino acids for nonruminant animals. In: L.D. Hill, ed. 1976. World Soybean Research [Conference I: Proceedings]. Danville, Illinois: Interstate Printers and Publishers, Inc. xvii + 1073 p. See p. 969-76. [20 ref]
• ***Summary:*** Contents: Introduction. Soybean products in swine and poultry diets. Protein quality of soybean meal. References. Address: Dep. of Animal Science, Univ. of Illinois, Urbana-Champaign, IL.

2828. Ballentine, Martha. comp. 1976. Himalayan mountain cookery: A vegetarian cookbook. Honesdale, Pennsylvania: Himalayan International Institute of Yoga Science and Philosophy. 203 p. Introduction and comments by Rudolph Ballentine. Illust. Index. 22 cm.
• ***Summary:*** The author is the mother of Dr. Rudolph Ballentine; she was born in America [in South Carolina] and is grounded in the cooking tradition of rural South Carolina. "Working directly with Swami Rama and various Indian chefs at the Himalayan Institute, she has engaged in an extensive study of nutrition and food preparation. Soy-related recipes include: Soy/Mustard (cooked soybean and mustard greens, p. 60-61). Vegetables with soy powder sauce (with dry soymilk, p. 62-63). Nine jewels (Nauratni or Sarso aloo pullao, with cooked soybeans, p. 84-85). Soybean dahl (p. 109). Sweet and soy mung with soy [powder] (p. 116-17). Wheat-soy bread (p. 133). Hindu loaf (with soy flour, p. 140-41). Loaf (with soy flour, p. 142). Tofu (soy cheese, homemade with nigari, p. 157). Tofu cheese cake (p. 158-59). Scrambled tofu (p. 160). Soy milk kheer (a sweet dish, p. 184-85).

In the chapter on "Dairy" products, the author states (p. 147): "While soybeans are mentioned in the ancient

writings, their use has been rather limited until recent years, except in the mountains. However, the making of soy milk is not uncommon now even in the plains of India. Its cheese, *tofu,* can be used in much the same way as *paneer...* In the Himalayas, tofu was made by curdling the milk with sour yogurt or very tart fruit juices... Bean "dairy" products, like tofu, have many of the advantages of milk, plus many that milk does not possess. They are lighter and less likely to create mucus in the body. Moreover, they are cheaper and practical, since a container of soy beans can provide milk for weeks without requiring room for a cow, pasture, and all of the other difficulties that make it so problematic to supply people with enough dairy milk." Pages 150-51 give recipes for paneer and paneer cheese cake.

Talk with Martha Ballentine in South Carolina. 1993. May 3. She says that her son, Dr. Rudolph Ballentine, wrote the section stating that "soybeans are mentioned in the ancient writings" of India. Address: South Carolina.

2829. Batt, Eva. 1976. What's cooking? A guide to good eating. Revised ed. Enfield, Middlesex, England: The Vegan Society. xxxii + 100 p. Introductions by Gordon Latto, and by Muriel Dowding. Portrait. Index. 21 cm.
• ***Summary:*** A vegan cookbook, the first edition of which was published in 1973. The author has been a vegan for the past 16 years. She was the secretary of the Vegan Society for 5 years and has been the vice-president for the past 7 years.

The acknowledgements contains a poem which ends with the verse: "Old Mother Hubbard's sweet smelling cupboard, Has no meat for the doggie to chew; But he's happy to eat Vegetarian eat, Now she puts TVP in the stew." Page v. recommends Delice (non-dairy frozen dessert). Page x features a half-page section titled "Soya" focuses on soya flour and recommends the Soyolk brand, which has been heat treated. The section titled "Milk" (p. xv) notes that "The fortified vegetable milks such as Plamil, Granogen and Granolac are useful sources of all of these nutrients [found in cows milk] and a daily glass of one of these is a very good habit. Page xvi discusses Textured Vegetable Protein (TVP) and notes that the brands Vitpro and Protoveg also contain added vitamin B-12 in the unflavoured types. Soyanutta is a vegetable oil product that is praised for being "entirely free of any hydrogenated oils or fats."

On pages xxix to xxxii is 4-page advertorial titled "Why Plamil?" by Leslie J. Cross [Secretary, The Plantmilk Society, Uxbridge, England]; it talks about the suffering that dairy milk consumption by humans causes to calves and cows, gives a history of the Plantmilk Society (founded in June 1956 in London as a registered charity), the company named Plantmilk Ltd. (founded in 1961), and the production of its first non-dairy milk in 1965 at Langley, Bucks. (It as initially sold under the name Plantmilk, but later for legal reasons the brand was changed to Plamil). In 1972 the plantmilk factory at Langley was closed and moved to Folkestone, Kent–the very town where the idea of making such a milk first crystallized. Plamil, sold in 2 sizes of cans, is now extracted from the soya bean and contains added vitamins, including B-12. "In addition to plantmilk, the company also makes a non-animal replacement for dairy cream: this is sold in cans under the brand name of Plamil Delice. There is also a chocolate bar–Plamil Chocolate.

Soy-related recipes include: Junket (made with Plamil, p. 62). Frozen fruit nog (made with Granogen). Banana ice cream (with Plamil). Plamil ice cream (p. 63). Vegetable cream cheese (made with Plamil, Granogen, or Velactin, p. 82). Soya cheese (Cheddar style, made with Soyolk soy flour and margarine, p. 82). Soya compote (with Plamil and soya flakes, p. 82). Onion soup (with soya flour, p. 83).

Page 101 is about The Vegan Society, founded in 1944, and located at 47 Highlands Road, Leatherhead, Surrey, England. Mrs. K. Jannaway is Secretary. Address: England.

2830. Duquette, Susan. 1976. Sunburst Farm family cookbook. Santa Barbara, California: Woodbridge Press Publishing Co. 303 p. Illust. by Donna Wright. Photographs by Mehosh Dziadzio. From the Brotherhood of the Sun. Recipe index. 23 cm.
• ***Summary:*** "The Brotherhood of the Sun is a family of more than 300 people, who have dedicated themselves to living in harmony with all people and all things. Our desire is to follow the simple laws of God and nature. In order to create an environment in which this is possible, we have established four communities upon thousands of acres of farm and ranch land in the coastal mountains around Santa Barbara, California... In order to help support ourselves and to share with other people our way of life, we have established a large organic foods complex in Santa Barbara called Sunburst Organic Foods.

"This organization includes a large wholesale warehouse that ships food to stores across the country, six large retail markets (with future markets projected along the coast), a community store, a restaurant called 'The Farmer and the Fisherman,' a whole-grain bakery and a fresh juice-bottling plant that distributes along the west coast."

Although this natural foods cookbook is not entirely vegetarian (it includes a chapter titled "Fish," p. 100-123, and many fish and shellfish recipes), the rest of the book is vegetarian and one long chapter (p. 64-99) is titled "Vegetarian Main Dishes." The illustrations are beautiful.

Soy-related recipes include: Tofu-vegie soup (p. 17). Miso-onion soup (p. 17). Many recipes topped with "Baco-bits." Bean salad (with soy beans, p. 35). Sprouts (incl. soy sprouts, p. 38-39). Tamari-onion gravy (p. 63). Enchiladas (filled with tofu or soy beans, p. 85). Corn pudding with Baco-Bits (p. 168). Soy flour cakes (pancakes, p. 268).

The chapter titled "Beans and pasta" (p. 124-39) has a section on Soybeans subtitled "Or: How to get protein without really trying." Recipes and descriptions include:

How to cook whole soybeans (with or without pressure). Soybean loaf. Soyburgers. Soy milk. Tofu (curded with lemon juice or vinegar). Tamari and miso. Cheese-soybean soup. Soy nuts. Soy grits. Soy flakes. Soybean cheese spread.

The Glossary (p. 295-97) contains descriptions of gluten, lecithin (from the soybean), miso, protein powder, tamari, seaweeds, tofu. Address: Santa Barbara, California.

2831. Henisch, Bridget Ann. 1976. Fast and feast: Food in medieval society. University Park, Pennsylvania: Pennsylvania State University Press. 279 p. Illust. Index. 24 cm. [930* endnotes]

• ***Summary:*** This wonderful, scholarly book, true to its title, is based mainly on English sources of the 13th, 14th, and 15th centuries. Supplementary material has been drawn from other countries and other periods. The book is of special interest because of its many references to early non-dairy milks and creams–made from almonds and served during Lent.

Contents: 1. Introduction. 2. Mealtimes. 3. Fast and feast. 4. Cook and kitchen. 5. Methods and menus. 6. Laying the table. 7. Manners maketh man. 8. Entertainment: Surprise and sotelty [subtlety]. Notes. Suggestions for further reading.

The two longest and most important fasts were Advent and Lent, which preceded the two greatest feasts of the year, Christmas and Easter. Lent is the season most widely associated with fasting. Its length, six weeks, was chosen to recall Jesus' 40-day fast in the wilderness. The tone is sober, a penance to be endured, a sacrifice. Farmers had to offer a tenth of their harvest to their lord or the parish priest. On Fridays, the amount eaten need not be decreased, but meat could not be eaten, and was usually replaced by fish.

But Lent came with many more hardships. Only one meal was officially allowed, and in the early years it could not be eaten until the early evening, after the hour of vespers. In a decree of 817 a collation, a very light snack, no more than a drink and a morsel of bread, could be eaten just before bedtime. During Lent, no meat of any kind could be eaten–but fish could be substituted–especially red herring, often dried or salted. This prohibition was often expanded to cover other animal products–butter, cheese, milk, and eggs. Eggs were usually not consumed after Shrove Tuesday; they reappeared hardboiled on Easter Sunday. Though dairy products were greatly liked by the people, and they must have been in greatest abundance during the late spring and early summer, the period right after the six weeks of Lent, their consumption was forbidden in strict practice. Milk and cream could be replaced by their counterparts made of almonds. Liquor was widely consumed during Lent, and used in cooking. The last day before Lent, Shrove Tuesday, was a day of feasting, devouring all meat and eggs. Carnival was the days before and up to Shrove Tuesday. Lent began on Ash Wednesday.

"Provided it was too tiny to be deemed a meal, the most luxurious tidbit could be sucked and nibbled [such as] a morsel of almond butter, made from ground almonds pounded together and bound with sugar and rosewater,..." But these were expensive (p. 42).

Medieval recipe books indicate that, during Lent, cooks should use their skills to "find satisfactory substitutions for forbidden ingredients in familiar dishes." Because no meat, eggs, or butter could be used, major changes had to be made. Cooks "relied heavily on the almond," which added nourishment and good flavor to a meatless diet. Blanched, ground and steeped in water it yielded "milk of almonds." *Latte di mandorla* is still a favorite drink in southern Italy. This almond "milk" was used as the basis for soups and stews, and as a binder for pastry. A 15th century cookbook* offers two recipes, side by side, for little pastry turnovers; on fish days, milk of almonds takes the place of eggs (p. 44) (* Napier Mrs. A., ed. 1882. *A Noble Boke off Cookry* London: Elliot Stock. p. 47).

Almonds could be steeped two or three times to yield several batches of milk. "A liquid thickened with ground almonds became something more substantial, a moist purée, and was known as 'cream of almonds.' On a fish day, this cream might be used in place of eggs or beef marrow to thicken a sauce. In a 15th century cookbook, at the end of a recipe for Custard lumbarde, we read: "Anf if hit be in lenton, take creme of Almondes, And leve [leave out] the egges And the Mary [marrow]" (Austin, T., ed. 1888. *Two Fifteenth Century Cookery Books,* EETS {Early English Text Society} OS [Original Series] 91, 1888, p. 74).

The *Household Accounts of Richard de Swinfield* (1855, vol. 59, p. 68) describe how, in the year 1289/90, Bishop Swinfield's staff, unlocked their spice cupboards on Palm Sunday (the Sunday before Easter) "and transformed the obligatory fish dinner with almonds, sugar, ginger, and mustard" (p. 50).

Fried almonds were served around the edge of each bowl containing a white chicken stew to add color and a change of texture (p. 105) (See: Power, E., trans. 1928. *The Goodman of Paris* New York: Harcourt Brace, p. 264).

In the late 1200s, a draper in London, calculated the amount of money he had spent while courting a wealthy widow "on diverse deyntees as ffiges & reisins, almonds, prunes... pomegranats and orangs [figs, raisins, pomegranates, and oranges] (p. 113) (See: Thrupp, S. 1962. *The Merchant Class of Medieval London.* Ann Arbor, Michigan: University Press. p. 106-07).

Nuts were widely used in medieval recipes for their oil, nutritional value, and taste, and to add contrasts of brown or white color and firm, crisp texture (p. 121). "They yielded an oil in which other foods could be fried, and they decorated the finished masterpiece. A mock-hedgehog... made its appearance on the table bristling with fried almonds" (*Two Fifteenth Century Cookery Books* p. 38).

Fried almonds could also be scattered over a white rice

pudding to add their glistening brown color, but blanched almonds were called for with a pale purée of ground chicken and ground nuts (*Noble Boke* p. 109; *Two Fifteenth Century Cookery Books* p. 84).

To make pork pudding, ground pork, ground blanched almonds, and rice flour were simmered together. After chopped fried almonds were stirred in, the mixture was spooned onto a dish and decorated with more nuts and powdered ginger (*Two Fifteenth Century Cookery Books,* p. 28).

Page 122 gives details on almond cream and almond milk, how they were prepared and their role in medieval society. Almonds formed the base of two items mentioned repeatedly in recipe books, "almond cream and almond milk." To make the cream, simply blanch almonds [drop into boiling water, shock in cold water, rub and pick off the skins], grind them, and mix with water. Some instructions say that the mixture should be "akurd thick"–like solid milk curds. Put mixture in a pot over a fire, stir as it comes to a boil and until nicely thickened. Empty contents of pot onto a cloth stretched above a bowl. Stroke the underside of the cloth with a ladle to draw off most of the excess liquid. Gather corners of cloth to form an improvised bag, and hang for an hour or two over the bowl until the last drops drain away. Remove the white fibrous almond pulp from the bag, sprinkle with sugar, decorate with red anise and green borage leaves, then serve like a pale, soft, plump sausage (*Noble Boke,* p. 42-43; *Two Fifteenth Century Cookery Books* p. 91-92).

Almond milk was thinner than almond cream. Ground almonds were steeped in any liquid (water, wine, ale, or a broth of meat or fish) to make a "milk" whose consistency varied from "thryfty," or thin, to "good and styffe," depending on the ration of almonds to liquid. This could also be served as a soup by adding spice or sugar plus crisp, twice-toasted bread (*Two Fifteenth Century Cookery Books* p. 91, 16; *Noble Boke,* p. 75-76).

But almond milk was more frequently used as one of any ingredients in a recipe. For a savory pudding, combine ground capon, boiled rice, and almond milk, or spiced meatballs set in a sauce of almond milk thickened with rice. For a sweet spiced pudding, simmer rice in almond milk then divide into three parts: leave one white, make the second yellow with saffron, and the third green with parsley. Arrange spoonfuls of each elegantly on the serving plate (*Two Fifteenth Century Cookery Books* p. 85, 34, 20). Almond milk "was a godsend during Lent," for it provided nutrients which were in short supply.

In the year 1405 Lawrence Chateres, the kitchen officer of Croyland Abbey, was mentioned with special approval in the abbey's chronicle because he "gave 40 pounds to supply almond milk to refresh the convent on fish days" (H.T. Riley, trans. 1854. *Ingulph's Chronicle of the Abbey of Croyland.* London: Bohn. p. 359).

Note: Bridget was born in the United Kingdom. As of May 1999, she and her husband are retired and living in State College, Pennsylvania. Address: Independent researcher, State College, Pennsylvania.

2832. Hermana, -. 1976. Saving the protein waste from processing of legumes in Indonesia. In: M.A. Rifai, ed. 1976. ASEAN Grain Legumes. Bogor, Indonesia: Central Research Institute of Agriculture. 225 p. See p. 195-200. [11 ref]
• ***Summary:*** Contents: Introduction. The protein waste: Peanut soybean, mungbean. Utilization of the waste.

Tables show: (1) Food legumes available in Indonesia. The three columns are: Latin name, English name, and Indonesian name. Shows 22 food legumes available in Indonesia, from Ochse (1931) and Aykroyd (1969).

(2) Food legumes usually processed. Discusses hunkwe, made by extracting the starch from the mung bean or kacang ijo (*Vigna radiata,* now *Phaseolus aureus*) with water.

(3) Indonesian fermented foods made from waste products. Include dage (made from oncom), oncom (made from peanut presscake or okara), tempe bongkrek (made from coconut presscake), tempe gembus (okara tempeh), tempe mata kedele (made from the hypocotyl of the soybean).

(4) Nutritive composition of kecap (per cent): Both peanut kecap and soybean kecap. Address: Nutrition Research Inst., Bogor, Indonesia.

2833. Inprint Caribbean Ltd. 1976. Soybean cookbook: A guide to more nutritional cooking. Port of Spain, Trinidad: Inprint Caribbean Ltd. 48 p.
• ***Summary:*** After discussing the nutritional value of soybeans, this cookbook gives recipes, mostly for using whole soybeans, but also for making and/or using full fatted soyflour, soymilk, okara, and soynuts. Early in 1976 the publisher was "approached by representatives of the Chaguaramas Agricultural Development Project to edit and publish a soybean cookbook for distribution in Trinidad and Tobago. The German partners in the project at Chaguaramas were about to hand over the project to the Trinidad and Tobago Government, after six years of a cooperative effort, and it was felt that such a publication would make the project, and soya, more widely known to the people of Trinidad and Tobago." The cookbook was the idea and dream of Dr. H. Seidel, one of the German agricultural experts on the project. Publication costs were supported by local companies who advertised in the book and some of whose food products were listed by name in various recipes. Soy-related advertisers include Worthington Foods (via Trinidad Health Foods; p. 31) and Bontrae (via Quesnel & Fernandez; p. 32).

"Over the past four years in Trinidad and Tobago, through efforts at the Chaguaramas Agricultural Development Project (a cooperative venture between the

Government of Trinidad and Tobago and West Germany), considerable success has been achieved in the production of this rich bean" (p. 6-7). Address: Trinidad.

2834. Johnson, Dale W. 1976. Marketing and economic production–Summing up. In: L.D. Hill, ed. 1976. World Soybean Research [Conference I: Proceedings]. Danville, Illinois: Interstate Printers and Publishers, Inc. xvii + 1073 p. See p. 1014-17.
• ***Summary:*** Table 1 shows estimated production of edible soy protein products in 1974 and projections for 1985 in millions of pounds (1974/1985): Soy flour and grits 900/2000, soy protein concentrates 70/600. Isolated soy proteins 60/450, textured soy proteins (100/450). Soy milk-type products -/200.

"It will be noted from the table that what is referred to as soy milk-type products is currently almost non-existent, but will come into wider use in the next 10 years. It is felt that these soy milk-type products will find a place in the dairy industry as a partial replacement for whole milk and non-fat milk for partial or complete substitution in what would have to be referred to as 'imitation' dairy products. It is likely that these products will come to the forefront as better flavored soy products are developed." Address: Food Ingredients Inc., 1150 Willis Ave., Wheeling, Illinois 60090.

2835. Landman-Bogues, Jacqueline. 1976. Rastafarian food habits. *Cajanus: The Caribbean Food and Nutrition Institute Bi-Monthly* (*Trinidad*) 9(4):228-34. [9 ref]
• ***Summary:*** Rastafarians (including "lockmen"), a Jamaican religio-political cult, exclude meat and meat products from their diet. They do eat freshly caught fish and freshly harvested vegetables. Coconut milk is substituted for cow's milk. Many "rely on the 'organic' produce of their own kitchen gardens or plots;... brown sugar and honey replace granulated [white] sugar; processed or canned foods are avoided."

"Among the members of the cult, who are largely vegetarians, there are strict vegans as well as lacto-ovo vegetarians. Vegans exclude all animal foods from their diets, also processed, mass-produced foods–including "soya-based infant formulae." This can create "problems because incorrectly prepared soya will retain many anti-nutrients such as goitrogenicity, antitrypsin activity, phytates, and anti-vitamin activity." Soya 'milk' is not a traditional part of the Jamaican diet.

Ganga tea is made with marijuana leaves. There is a trend toward asceticism. Rastas "who have been in touch with the Essene cult are most likely to be vegans and to eat raw foods. Secular influences are also likely, such as contact with the Zen Macrobiotic cult and organic food enthusiasts in the Western world." Address: Recently Asst. Lecturer at the Tropical Metabolism Research Unit, Univ. of the West Indies.

2836. Lie, Goan-Hong; Oey, Kam-Nio; Prawiranegara, D.D.; Herlinda, J.; Sihombing, G.; Jus'at, I. 1976. Nutritive value of various legumes used in the Indonesian diet. In: M.A. Rifai, ed. 1976. ASEAN Grain Legumes. Bogor, Indonesia: Central Research Institute of Agriculture. 225 p. See p. 183-93.
• ***Summary:*** This general overview discusses soybeans (*Kacang kedelai*), tempeh, soy milk, "tahu or soycurd" [tofu], kecap, taoco [Indonesian-style miso], soy milk, residue of soy milk or tahu [okara] which may be fermented and sold as oncom. The average nutritional composition of the first 6 products is given. Address: Nutrition Research Inst., Jakarta, Indonesia.

2837. Lin, Florence. 1976. Florence Lin's Chinese vegetarian cookbook. New York, NY: Hawthorn Books. xix + 236 p. Illust. by Nai Gi. 24 cm.
• ***Summary:*** Contains a great deal of information on and recipes using soyfoods. Chinese food expert Barbara Tropp says this book has the best glossary available, and has very creative and interesting but drab recipes.

Hoisin sauce is a ground bean sauce to which sugar, garlic, and other flavorings have been added. It is the most popular commercially prepared flavored bean sauce.

Civilized Chinese patterns of eating were established by Confucius. The second great influence was Taoism, which advocated a simple diet, natural foods, and the basic belief that proper eating leads to good health. The third great influence was Buddhism, which was opposed to killing, so advocated a vegetarian diet. The art of vegetarian cookery was initially developed mainly in Buddhist monasteries; later it spread to private homes and restaurants.

To make good meatless broths use soybeans, soy sprouts, tough or wilted vegetables, mushrooms, and / or bamboo shoots. To make soy sprouts, it is best to use new-crop soybeans, which have the highest germination rate. This book contains many recipes that call for sea vegetables. Soy sauce is widely used in Chinese vegetarian recipes.

Chapter 3, titled "Soybeans, soybean products, and other legumes" contains much useful information and recipes. A diagram titled "Chart of soybean products" (p. 53) shows the complex relationships, includes Chinese characters for each product, and shows a few soy products that are not in the Glossary: Fermented soybean curd (*Fu ju*), comes in white (*pai*), red (*hung*) and spiced (*la*). The many interesting recipes, each with a Chinese name (with Chinese characters) and an English name include: *Su huo t'ui and su chi* (Mock ham), *Su ya* (mock pressed duck), and *Wu hsiang tou fu kan* (Seasoned pressed bean curd).

Glossary (soybeans, soybean products, and legumes, p. 208-13; Chinese characters are given): "Fresh young soybeans–*Mao tou:"* Delicious. They are in season in the early fall. "They come in dark fuzzy pods and are sold by

weight. Young soybeans are like corn and should be eaten as soon as they are picked from the plant. They may be cooked with or without the pods."

"Dried soybeans–*Huang tou:"* Yellow soybeans.

"Soybean sprouts–*Huang tou ya:"* Sold by weight. Best when made in cooler weather. "When bought fresh, they will keep in the refrigerator for 2-3 days, or longer if kept in a brown paper bag inside a plastic bag."

"Soybean milk–*Tou chiang:...* usually served hot as a beverage with breakfast."

"Soybean milk skin–Called by many names [*Fu yi, fu p'i;* see p. 53]. Each region has a different name for it, as does each food processor, and the thickness shape and wrapping may be different." Four kinds are readily available in Chinese food stores" (1) *Erh chu* is "cut into rectangles 1½ x 4 inches and 1/8 inch thick. The pieces some stacked and wrapped in paper, in half- or one-pound packages." (2) *Yüan chu* comes in sticks [dried yuba sticks]. When reconstituted, its thickness is about the same as *erh chu.* (3) *San pien fu chu* is half-moon shaped. When still soft, it is folded into 6 x 10-inch rectangles then dried. It is thinner than *erh chu.* (4) *Fu yi* "is the thinnest of the bean milk skins. It is paper thin and almost transparent. When dried it is very brittle, and must be handled very gently. It is used mainly to wrap fillings. It comes in stacks of 8-10 sheets..."

"Soybean milk residue–*Tou fu cha;"* [okara]. Can be a delicious ingredient in cooking. "What is not used for food is made into a feed for animals or put into the ground as fertilizer."

"Curdled soybean milk–*Tou fu hua:" Hua* means "flowers." These very tender curds are "eaten hot with soy sauce or cold with syrup as a snack." It is "sold only in bean curd factories by the pint."

"Bean curd coagulant–*Shou shih kao"* [calcium sulfate]: A "white substance which comes in powdered form. It is use to coagulate soybean milk to make *tou fu* (bean curd)."

"Tender soybean curd–*Nen tou fu:* When some water is removed from the curdled bean milk, it is known as fresh tender bean curd. It is cut into squares 4 x 4 by 1½ inches.

"Firm soybean curd–*Lao tou fu:* When a coagulant is added to the boiled bean milk of a different concentration and some of the water is removed, the milk becomes firm bean curd. It is firmer than the tender bean curd and is cut into 3 x 3 x 3/4-inch squares.

"Pressed bean curd sheet–*Pai yeh:* Fresh bean curd sheet looks almost like a sheet of unbleached muslin. When it is frozen, the color turns darker, to a light brown. It is made into square sheets of various sizes. It is used to wrap fillings and it is also sometimes cut into short strips and cooked in dishes along with seasoning vegetables. Pressed bean curd sheet is best eaten fresh..."

"Pressed soybean curd–*Tou fu kan*–plain: When even more water is pressed out of firm bean curd, it becomes pressed bean curd... it is almost like a firm cheese." It may be bought either plain (*Pai tou fu kan*) or seasoned (*Wu hsiang tou fu kan*). "The seasoned curd is cooked in soy sauce and star anise [*pa chiao*], giving it a brown color." "The white pressed bean curd should be soaked in salt water (made of 1 tablespoon salt to 4 cups water) in a covered container. The seasoned pressed bean curd should be soaked in salt water and soy sauce. If stored in the coldest part of the refrigerator, they will keep for several weeks."

"Fried soybean curd–*Yu tou fu:...* The bean curd is cut into 1½ inch cubes and deep fried in oil until a golden crust forms outside, which the inside... remains soft." It "is sold by weight, usually in half- or one-pound bags."

"Wheat gluten–*Mien ching:"* (p. 217). "Deep-fried gluten–*Yu mien ching:"* "Fresh or dried wheat gluten–*K'ao fu:"*

Glossary (condiments and seasonings, p. 219-23): "Soy sauce–*Chiang yu:"* The "most important seasoning liquid in Chinese cooking. Comes in light or dark, thick or thin. Dark or thick is *Lao ch'ou.* Light or thin is *Sheng ch'ou.* Soy sauce also comes in different "flavors, such as mushroom soy sauce and, for nonvegetarians, shrimp roe soy sauce. Flavored soy sauces are used mainly for dips and for special flavors in salads, noodles, and as a final touch to a dish."

Note: This is the earliest document seen (April 2012) that uses the term "mushroom soy" or the term "mushroom soy sauce" to refer to a type of dark soy sauce flavored with mushrooms, or that uses the term "Lao ch'ou" to refer to dark or thick Chinese soy sauce.

"Salted black beans–*Tou shih:"* These beans [fermented black soybeans] are "used to flavor bland foods, such as eggplant or bean curd." They are never eaten alone.

"Brown bean sauce–*Yüan shai shih:"* Made from "fermented soybeans and wheat flour mixed with salt and water. The beans in the sauce may be either ground (to make ground brown bean sauce–*Mo yüen shih*), or left whole. To this basic beans sauce, spice and other seasonings are added [in different proportions], creating many varieties" in "different regions of China. In Szechuan, large amounts of hot peppers and crush Szechuan peppercorns are added; in the northern provinces, garlic and scallions are used;..."

"Hoisin sauce–*Hai hsien chiang:"* A "ground bean sauce to which sugar, garlic, and other flavorings have been added. It is the most popular commercially prepared flavored bean sauce. It is used for cooking, or very often as a dip for deep-fried batter-dipped vegetables."

"Sesame paste–*Chih ma chiang:"* "Sesame oil–*Ma yu:"*

2838. Luttrell, William Reed. 1976. Development and evaluation of commercially sterile whole soybean beverage. PhD thesis, Dep. of Food Science, University of Illinois. 246 p. Page 4967 in volume 37/10-B of Dissertation Abstracts International.

• ***Summary:*** Contents: Introduction. Literature review: Proteins: Requirements and sources, soybeans, soymilk,

sterile, shelf-stable soybean beverages, effect of heat on protein. Materials and methods: Soybean beverage preparation, heat penetration measurement and minimum process time calculation, objective analysis, organoleptic analysis, statistical analyses, microbial analyses–spore counts, microscopic studies. Results and discussion: Heat penetration measurements and minimum process time calculations, still retort studies, agitort studies, comparison of still retort and agitort processing, future work. Summary and conclusions. References. Appendix. Vita. Address: Dep. of Food Science, Univ. of Illinois.

2839. Mallard, Gwen. 1976. Soy bean magic: Delicious recipes with soy beans, flour & grits. Saanichton, British Columbia, and Seattle, Washington: Hancock House Publishers. 80 p. Index. 18 cm.
• ***Summary:*** Contents: 1. Commercially bought soy products: Soy flour, soy grits, soybean milk, soy flakes (fine, or coarse), soybean oil, soybean lecithin, soy lecithin spread (butter substitute), soy noodles, macaroni and spaghetti, soy sauce, soy coffee, roasted soy nuts, baked and green soybeans (canned). 2. Homemade soy products: Soy milk from dry beans, quick soy milk (from soy flour), soy cream (from soy flour), "soy base" (from soy flour), soy cheese from soy flour [tofu] (curded with lemon juice), oven-roasted soybeans, toasted soy flakes (coarse), toasted soy flour, sprouted soybeans. 3. Soybean recipes: Breads 'n breakfasts, soups 'n salads 'n salad dressings, soy suppers, desserts and delights.

To make soy base (p. 14): Slowly add 2 cups cold water to sifted soy flour to make a smooth paste. Stir in 1 teaspoon salt. Place in a double boiler and "cook for 30 minutes over rapidly boiling water. This mixture will be thick when it is cooked. Soy base is ideal for enriching gravies, stews, puddings, and soups. It will also make an excellent sandwich spread."

Note: This is the earliest English-language document seen (Aug. 2013) that uses the term "soy base" as a noun in this way; within 10 years the term had acquired a different meaning.

On the rear cover is a biography of Gwen Mallard by Derrick Mallard, her husband. She was born in 1917 in Fernie, British Columbia; she lived with her parents and three brothers in a log cabin in the beautiful Elk Valley among Canada's majestic Rocky Mountains. In 1971 she helped launch a campaign against plans for shipping oil in Alaskan tankers along the coast of British Columbia with the inherent dangers of disastrous oil spills (Note: On 24 March 1989 the tanker Exxon Valdez ran aground and spilled 11 million gallons of heavy crude oil in Alaska's pristine Prince William Sound–the world's worst oil spill in history). Gwen runs a small health food store and restaurant 14 miles north of Victoria, British Columbia. Address: British Columbia, Canada.

2840. Merritt, Doris H. ed. 1976. Infant nutrition. Stroudsburg, Pennsylvania: Dowden, Hutchinson and Ross. 431 p. Series: Benchmark Papers in Human Physiology. No. 7. Index. 26 cm.
• ***Summary:*** A selection of facsimile copies of classic papers on the subject, arranged but subject, and within each subject chronologically, with the editor's comments on each subject. Soy is not mentioned in the index under soy, infant formulas, vegetable milks, or allergies. Address: Prof. of Pediatrics, Indiana School of Medicine, Indianapolis.

2841. Mustakas, G.C. 1976. Soy beverages in world feeding programs. In: L.D. Hill, ed. 1976. World Soybean Research [Conference I: Proceedings]. Danville, Illinois: Interstate Printers and Publishers, Inc. xvii + 1073 p. See p. 828-39. [6 ref]
• ***Summary:*** Contents: Introduction. Beverage powder number 1. Beverage powder number 2. Market potential. References. Address: NRRL ARS USDA, Peoria, Illinois.

2842. Neufeld, Don F. 1976. Seventh-day Adventist encyclopedia, 2nd ed.: Loma Linda Foods. Washington, DC: Review and Herald Publishing Assoc. 1640 p. See p. 797-98.
• ***Summary:*** "A nonprofit corporation manufacturing and distributing health foods in the United States and Canada. It is owned and operated by the General Conference of Seventh-day Adventists for the purposes of (a) furthering by all proper means a better knowledge of the laws of healthful living, (b) manufacturing and selling healthful foods and related products, and (c) encouraging and supporting benevolent, educational, and religious enterprises of the SDA Church. The main office, factory, and headquarters are at 11503 Pierce Street, Riverside, California; the second factory (featuring the production of soy milk in liquid and powdered form) is on Wooster Road, Mount Vernon, Ohio.

"Products include vegetarian protein foods (canned and frozen), soy milk, cereal coffee, gravy mixes, and canned soy beans.

"History. Forerunner of Loma Linda Foods was the Loma Linda Sanitarium bakery, which began operation in 1905. It was called The Sanitarium Food Company and its plant was situated on Anderson Street in Loma Linda. At first it manufactured a variety of breads and wafers, but it soon added other health food items. On Feb. 6, 1933, the name 'Loma Linda Food Company' was adopted, and on July 1, 1935, the first articles of incorporation were filed for a perpetual, nonprofit organization with a 12-member board of directors... On Nov. 14, 1937, groundbreaking ceremonies for a factory building were held on a nine-acre site donated by the Southern California Junior College (now La Sierra College) at Arlington (Riverside). The new factory began operations on July 16, 1938, the main product being Ruskets, a flaked whole-wheat biscuit cereal, but later more than 30

other products were added, the main emphasis being upon the development and perfection of high-protein foods of vegetable origin. The company also distributed related food items processed and packaged by others under the Loma Linda Foods label.

"On Jan. 1, 1951, Loma Linda Foods took over the business of the International Nutrition Laboratories, Inc., Mount Vernon, Ohio, purchased from Harry Willis Miller, M.D. Charles Percy Miles was named manager. The Canadian Division of Loma Linda Foods was established at Oshawa, Ontario, in 1962, on a site donated by Oshawa Missionary College (now Kingsway College). Frank L. Wessely was appointed its manager. It was closed in 1965.

"Loma Linda Foods has afforded financial support to the Seventh-day Adventist Dietetic Association and has provided fellowships to selected postgraduates of the School of Dietetics of Loma Linda University. By Jan. 1, 1965, it had also contributed to the denominational mission program more than $300,000, through the Loma Linda Foods label-saving plan for Sabbath school Investment.

"General Managers: G.T. Chapman, 1938-1962; C.P. Miles, 1963-1973; M.E. Dake, 1973." Address: Washington, DC.

2843. Neufeld, Don F. 1976. Seventh-day Adventist encyclopedia, 2nd ed.: DE-VAU-GE Gesundkostwerk GmbH (German Health Food Factory, Ltd.). Washington, DC: Review and Herald Publishing Assoc. 1640 p. See p. 389-90.
• ***Summary:*** "A firm in Hamburg, Germany, owned by the Euro-Africa Division, which makes a wide variety of products ranging from bread and cereal flakes to nut creams, vegetable spreads, meat analogs from soybeans, and diabetic food. The products are distributed through several channels, but mainly through health-food stores. The factory was founded in 1899 at Friedensau, near Magdeburg, and began operation in an old mill under the management of Augusto Pages. But since the factory was too small and too far from markets and sources of imported raw materials, such as fruits and nuts, to operate economically, a new plant was built at Hamburg shortly before World War I.

"In 1940 the political conditions in Germany forced the denomination to transfer the factory to four SDA trustees–Willie Luhr, the former manager, A. Vollmer, O. Schildhauer, and H. Niemann–who continued to operate it as a private company until the building was almost completely destroyed in an air raid on July 28, 1943. Some 12 months later the factory resumed production, but on a diminished scale.

"After World War II, in 1947, a new organization, formed by the former Central European Division, took over operation of the food factory from the remaining trustees. In 1966 a new building was constructed in north Hamburg, at Brodermannsweg 17. New soy products were developed, and a new sales force was organized. The rapid growth of sales, both in and outside Germany, made it necessary to lay plans for more space and greatly expanded facilities. Early in 1974 a new property was purchased in Lueneburg, an attractive industrial area of Germany. The yearly turnover exceeds $5 million."

Note: DE-VAU-GE is an abbreviation for "Deutscher Verein für Gesundheitspflege" (German Society for Health Care). Address: Washington, DC.

2844. Neufeld, Don F. 1976. Seventh-day Adventist encyclopedia, 2nd ed.: Sanitarium Health Food Company. Washington, DC: Review and Herald Publishing Assoc. 1640 p. See p. 1285-86.
• ***Summary:*** "A chain of health food factories, wholesale branches, and retail shops in Australia and New Zealand, operated by the Health Food Department of the Australasian Division... Headquarters for the firm are at 148 Fox Valley Road, Wahroonga, New South Wales, Australia.

"Products include Weet-Bix, a flaked-wheat breakfast-food biscuit; cornflakes, and other cereal foods; Marmite, a yeast-extract flavoring; peanut butter; vegetarian meats and textured vegetable protein; and soybean milk

"In 1973 the company was operating 12 factories in Australia and New Zealand and 8 large wholesale branches. There were 68 shops and 4 cafes scattered in the main cities of the two countries; 11 of these retail branches were in company-owned buildings. Total net worth was approximately $24.2 million. Approximately 1,700 workers were employed, and the company's products were stocked throughout the grocery trade in Australia and New Zealand. A growing export trade was also being developed, principal markets being the Southern Pacific and nearby Asian countries.

"The gross annual revenue sales were $46 million. In 1973 the company realized a profit of $2.7 million, of which $1.362 million went directly to the treasury of the Australasian Division for mission use. In addition, nearly half of the general administrative expenses of the division are met by the company as operational costs.

"History. The motivating influence leading to the establishment of health food work in Australasia is found in addresses given by Mrs. E.G. White at the Brighton, Victoria, camp meeting in 1893 and in Melbourne, Victoria, in 1895. She spoke of different aspects of the work, and urged the leaders to move forward along medical lines, including manufacturing of health foods and establishing of vegetarian restaurants. In response the Australasian Union Conference on Oct. 31, 1895–Resolved that the Executive Committee be urged to take steps to commence such work in the various large cities of these Colonies by the establishment of both houses and depots for the supply of Health Foods, Sanitary Clothing, etc. as the way may open (Minutes, p. 30).

"In 1897 a consignment of wheat biscuits, granola, gluten, and caramel cereal [grain coffee] arrived from Battle Creek, Michigan. A small factory was rented in North

Fitzroy, Melbourne, where the production of granola and caramel cereal was begun. The firm, registered April 27, 1898, was first known as the Sanitas Supply Company and then as the Sanitarium Health Food Agency. Processing was done under the direction of E.C. Halsey, from Battle Creek.

"The results of the Melbourne enterprise were not satisfactory, and Mrs. White counseled that the factory be moved to Cooranbong to be operated in conjunction with the Avondale School for Christian Workers (now Avondale College), to which the managing committee agreed... At this time the firm's present name was adopted. Operations at Cooranbong began in 1899.

"In all these early moves Mrs. White, who was residing in Australia at the time, gave important counsel for the health food work and shared in many of the major decisions relative to the development of the business. At first all sales of health foods were made through conference tract societies, but a retail shop was opened in Sydney in 1902 in association with the first vegetarian restaurant. However, the business was not financially successful, and by 1904, when the whole health food enterprise was heavily in debt, many of the denominational leaders favored closing it... Success was achieved, and in 1906 the first donation by the food company for island mission work was made.

"Between 1907 and 1913 shops and cafes were opened in Melbourne, Brisbane, and Adelaide, followed later by branches in Hobart and Perth. The manufacturing and wholesale sections of the business expanded rapidly in the period 1920-1935... In 1927 the company began to sell directly to retail grocery stores, bypassing the wholesale merchants.

"Two competing businesses were acquired in 1928 and 1929, respectively–Grain Products, manufacturers of Weet-Bix, and the Cerix Company, manufacturers of puffed cereals. These acquisitions widened and strengthened the company's activities.

"The development of the health food work in New Zealand paralleled that in Australia. Manufacturing began at Christchurch in 1900 in a small plant operated by E.C. Halsey, who had been transferred from Australia. Shops and cafes were opened in the main cities, and in 1921 a new factory was built in Christchurch under the management of A.J. Dyason. This was the beginning of an era of rapid growth, which has since continued. The Auckland and Christchurch factories of Grain Products, Ltd., were acquired in 1930. A third factory, in Palmerston North, began operation in 1952." Address: Washington, DC.

2845. Nippon Torui Kikin Kyokai. 1976. Daizu ni kansuru bunken mokuroku [List of documents on soybeans and soyfoods]. Tokyo: NTKK. Vol. 2, post 1961. 93 p. [Jap] Address: Tokyo, Japan.

2846. Ramsey, Harold A.; Willard, Tommy R. 1976. Utilization of soy protein by newborn mammals. In: L.D. Hill, ed. 1976. World Soybean Research [Conference I: Proceedings]. Danville, Illinois: Interstate Printers and Publishers, Inc. xvii + 1073 p. See p. 977-89. [6 ref]
• ***Summary:*** Discusses milk replacers. Contents: Introduction. Experimental results. Summary. References. Address: Dep. of Animal Science, North Carolina State Univ., Raleigh, NC.

2847. Ranill, June. 1976. The El Molino cookbook: Natural wholegrain foods from El Molino & CaraCoa. El Molino Mills, A division of ACG Co., Box 2250, City of Industry, CA 91476. 144 p. Illust. Index. 22 cm. Spiral bound.
• ***Summary:*** Contents: Part I: Description of grains, seeds, legumes & carob (1-2 pages about each with an illustration; barley, buckwheat, corn, millet, oats, brown rice, rye, triticale, wheat, alfalfa seed, chia seed, flaxseed, pumpkin seed, sesame seed, sunflower seed, lentils, mung beans, split peas, soybeans {p. 22-23}, carob, El Molino and CaraCoa products).

Part II: How to use and enjoy whole grains, seeds, legumes. Part III: Recipes (by Alice Walter).

This year El Molino Mills celebrates its 50th anniversary; thus it was founded in 1926. Soya powder is like soya flour, but it is more finely ground for use in beverages. "Soy flour is made from the raw bean, while soya flour is made from soybeans that have been lightly toasted. This 'toasting,' actually a moist heat treatment, enhances the flavor." El Molino soya flour is full-fat flour.

El Molino products (p. 26) include Soybeans (whole cooks best), and Carob coated soynuts. No soy flour or powder is mentioned.

Soybeans, soya flour, grits, and powder are used extensively throughout his book. White bread (with soy flour, p. 46). Honey oatmeal bread (p. 48). Cornell bread (p. 50). Soya bread (p. 51; 4.5 cups wheat flour and 1.5 cups soya flour, so 25% soya flour). Improved quickbreads (p. 68). Crunchy muffins (with soya grits, p. 70). Homemade muffin mix. Soya muffins (p. 72). Gluten sesame thins (p. 74). Homemade Granola (with 1 cup El Molino soya flour, p. 75). Soy nuts. Garlic soy nuts. Roasted soybeans (p. 85). Carob breakfast drink (with 1 tablespoon El Molino soya powder, p. 88). Bean salad (featuring soybeans, p. 92). Meatloaf (with soya grits, p. 97). Soybean loaf. Baked soybeans. Soybean chili (p. 101).

The section titled "Meatless dishes" (p. 102-112) features many soy and many gluten recipes: Soybean medley. Cooked soybeans (Basic). Soy cakes. Soybean paste (ground cooked soybeans). Stuffed peppers. Stuffed tomatoes (both with soybean paste). Baked soybean croquettes. Softened soya grits. Stuffed zucchini (with softened soya grits). Tofu (from soybeans curded with lemon juice). Soy cheese (made from soya powder). Cooked gluten (homemade, p. 110). Gluten cutlets. Gluten patties. Gluten roast. Eggs and soya

grits.

Soya milk (from soya powder, p. 115). Pineapple soya cocktail (with soya powder, p. 116). Soya applesauce cake (with soya flour or powder, p. 119). Improved cakes (p. 122). Peanut butter cookies (with soya flour, p. 125). Improved cookies (p. 128). Cookies for your puppy dog (p. 130). Sesame carob balls. Carob nut log (p. 137).

Sesame seed: On page 17 is a full page about sesame seeds and their uses, with an illustration of the sesame plant and its seeds. The Index contains more than 45 entries for "Sesame" including: Sesame butter (p. 17, 87). Sesame granola bars (p. 84). Sesame halvah (p. 17). Sesame milk (p. 17, 115). Sesame in muesli (p. 76). Sesame tahini dressing (p. 93). Address: City of Industry, California.

2848. Sarett, Herbert P. 1976. Soy-based infant formulas. In: L.D. Hill, ed. 1976. World Soybean Research [Conference I: Proceedings]. Danville, Illinois: Interstate Printers and Publishers, Inc. xvii + 1073 p. See p. 840-49. [24 ref]

• ***Summary:*** Contents: Introduction. Development of soy-based infant formulas. Protein quality of early soy formulas. Soy protein isolates for soy-based infant formulas. Conclusions. References.

"Development of soy-based infant formulas: 'Allergy' to cow's milk stimulated the first development of soy-based infant formula. For many years, infants who were unable to tolerate cows' milk formulas were all considered to be 'allergic' to milk proteins. Today, we realize that lactose, the carbohydrate in cows' milk, may have been the cause of the problem in some of the infants, especially those who had been ill, since gastrointestinal diseases and diarrhea often result in temporary deficiency of the enzyme lactase. In any event, soy flour was used to produce hypoallergenic infant formulas as milk-substitutes for feeding 'allergic' infants.

"In 1929, the powdered formula product Sobee, made from full-fat soy flour, was introduced by Mead Johnson... This early formula was dark tan in color, had a beany taste and contained complex carbohydrates and other factors from soybeans which led to flatus and poor smelling stools. It would probably not be aesthetically acceptable today, but in 1929, it was a godsend for infants allergic to milk.

"In 1937, liquid Mull-Soy [was] developed by the Borden Company... A powdered version of this product became available in the late 1940's." Liquid Sobee was introduced in 1954. ProSobee, based on soy protein isolates, was launched in 1965. "From technological and physiological standpoints, soy isolate has important advantages over soy flour in making an infant formula. The lower viscosity decreases heat requirements in sterilization, thereby resulting in better protein quality and a whiter formula; in addition, the absence of raffinose stachyose, and hemicelluloses decreases flatulence and stool problems." Address: V.P., Nutritional Science Resources, Mead Johnson Research Center, Evansville, Indiana.

2849. Schultz, John M.; Mason, William P. 1976. Soybeans: Brazil as a competitive force. MBA thesis, Harvard Business School. vii+ 151 leaves. 28 cm. [49 ref]

• ***Summary:*** This is the best report seen to date on the soybean industry in Brazil. Contents: Preface. Indexes of tables and figures. Introduction. 1. World food demand. 2. Fats, oil & meals. 3. Brazilian production. 4. Comparative cost of production. 5. Development of agricultural inputs and infrastructure. 6. Brazilian commercialization of soybeans and its products. 7. Government's role in the Brazilian soybean system. 8. Brazilian soybean supply-demand model. Summary & Conclusions. Appendices: Conversion rates, Glossary of Brazilian organizations. Bibliography.

Tables: (1) Change in world population growth. (2) World population, 2000: Less developed regions, developed regions, total–for high, medium, and low projections. (3) Where population is growing fastest (percentage growth from 1950 to 1970): Latin America 75% (doubling time 22 years), Africa 59%, Asia 52% (DT 24 years), Oceania 46%, North America 37%, Russia 35%, Europe 18%. (4) Percent of world population by regions: In 1973 developing world has 75% of total, developed world has 25%. In 2000 those figures are expected to change to 80% and 20%. (5) Per capita demand for related commodity groups by areas worldwide (kg per year): (6) Net demand for fats and oils by region: 1970, 1985, 2000. (7) Index of world net food demand by commodity: 1970, 1985, and 2000. (8) Index numbers of total and per caput food production. (9) Joint product derivation for 8 oilseeds (average percentage weight of oil and meal; soybean is 80 to 18). (10) World production of fats & oils, market shares for edible vegetable oil, palm oils, industrial oils, animal fats, marine oils (1965, 1970, 1975). (11) Gross fats & oil exports, for 13 oils and fats, annually from 1971/72 to 1974/75, with projections to 1980/81 at which time–#1 Palm oil 3.1 million metric tons (mmt). #2. Soybean oil 1.02 mmt. Sunflower oil 1.00 mmt. Butter 0.75 mmt. (12) World production of fats & oils, for 14 oils and fats. (13) Exports of fats & oils (vegetable & animal), Malaysia and Brazil. (14) U.S.A. food oils and fats domestic use, 1960, 1974, & 1985 projections. In 1960 the diet was 58% vegetable fats and 42% animal fats. In 1985 the projected diet was 90% vegetable fats and 10% animal fats. (15) Soybean yields for selected regions (1971-75): World average, USA, Brazil, China. (16) World cropland area by commodity, 1970. All cereals have 73.5% of the total, vs. 10.8% for oilseeds and 6.3% for pulses and nuts. (17) World soybean production (1970/71 to 1975/76): USA, Brazil, China, Others. "The U.S. embargo in 1973 gave Brazilian exports a boost as importing countries placed greater emphasis on double sourcing." (18) Cottonseed oil production and export for U.S. and world, 1970-1975. (19) Sunflower seed oil production, 1970-1975. (20) Palm oil: Production and exports in major producer-exporter countries

and the world annual 1965-75 with projections for 1976, 1980 and 1985. Countries are West Malaysia, Sabah (a Malaysian state located on the northeast tip of the island of Borneo), Indonesia, Ivory Coast, Zaire. (21) Value of four oil crops per hectare for selected countries. Crops: Oil palms, soybeans, sunflower, peanuts. Countries: West Malaysia, USA, USSR, Nigeria. Oil palms have by far the greatest oil yield and value per hectare. (22) Palm oil: Production in specified countries (Western hemisphere 3.5%, Africa 39.1%, Asia 57.4%): Forecast for 1975 and percentages. (23) Palm oil–local consumption vs. exports (1974): For West Malaysia (exports 96% of production), East Malaysia (92%), Indonesia (92%), Ivory Coast (60%), Zaire, Western Hemisphere. (24) Palm kernel oil–production and exports 1971-75. (25) Coconut oil: Production & export. (26) Lard production & export: Selected years. (27) Lard rendered per hog: USA. Yield of lard per hog in USA decreased from 13 kg in 1963 to 6.7 kg in 1974–as demand for lard decreased. (28) World meal production and gross exports by commodity: Selected years 1955, 1967, 1974. Soybean meal is always the leader by far, with cottonseed meal 2nd. (29) Present and projected world consumption of animal products: Poultry, pork, and beef. Poultry and hogs are the main consumers of soybean meal. Cattle consume mostly pasture and grass–as nature designed. (30) Protein meal: World production exports, share of market by commodity, 1955, 1970/71, 1974/75. Soybean meal is by far the leader, followed by cottonseed meal. A U.S. moratorium on soybean exports in 1973 and 1975 enabled Brazil to enter major markets as a source of dependable supply. (31) Soybean meal and seed, production and exports (U.S., Brazil, and world) (meal equivalents). (32) Peruvian fishmeal, production and exports. (33) Peruvian fishmeal exports, soybean equivalents. (34) Brazilian production by states. (35) Changes in acreage planted. (36) Land area of Rio Grande do Sul. (37) Parana production by regions. (38) Cultivated land in Sao Paulo. (39) Land area of central-west states. (40) Weighted average comparison of costs of production. (41) Comparison of fertilizer and lime costs (Brazil and the U.S.). (42) Comparison of machinery cost. (43) Brazilian labor rates. (44) Comparison of regional costs of production. (45) Seed soybean variety usage by state. (46) Fertilizer demand. (47) National fertilizer program. (48) Chemical demand. (49) Land costs by state. (50) 1974 storage capacity by states. (51) Comparison of transportation systems. (52) Capacities at main ports. (53) Comparison of average export profits. (54) 1975 crushing capacity by state. (55) Major crushing firms. (56) Exports. (57) Major importers of Brazilian soybeans and soybean products. (58) Exporter percentages of soybeans. (59) Brazilian ICM tax rates, Jan. 1, 1976. (60) Historical supply-demand relationships. (61) Projection of supply-demand relationships.

Figures: (1) World population growth (in millions) 1900-2000. (2) Soybeans and their products. (3) Relationship between beans and end products. (4) European Community: Apparent consumption of fats and oils, 1965-1975. (5) Oilseeds. (6) Price comparison, coconut, palm, and soybean oil, average monthly cash prices. (7) Per capita consumption of poultry meat. (8) Peruvian anchovy catch, 1960-1975. (9) Map of Brazil. (10) Comparison of average prices for wheat and soybeans at the farm level. (11) Comparison of wheat-soybean acreage. (12) Index changes of soybean production, acreage, and yields. (13) Map of Rio Grande do Sul. (14) Map of Parana. (15) Map of Sao Paulo. (16) Map of Santa Catarina. (17) Map of Central-west states. (18) Comparison of rainfall during growing season. (19) Industry structure. (20) Map of climatic conditions. (21) Map of soil conditions. (22) Brazilian railroad systems. (23) Export corridors program. (24) Comparison of Brazilians–U.S. prices at he farm. (25) Map of crushing facilities. (26) Per capita Brazilian vegetable oil demand. (27) Per capita Brazilian meat consumption. (28) Brazil's major agricultural exports. (29) Comparison of market share in exports of soybeans. (30) Schematic supply-demand relationships. (31) 1976 planting estimates (Based on wheat & soybean prices). Address: Harvard Business School, Cambridge, Massachusetts.

2850. Smartt, J. 1976. Tropical pulses. London: Longman. 348 p. Index. [275* ref]
• ***Summary:*** In the chapter on "Pulses in human nutrition," soya beans are mentioned (p. 92-95) under: Germinated seed. Fermented products: Soy sauce, soya bean paste, tempé, natto and Hamanatto. Extracted pulse proteins: Soya bean curd ('tofu'), soya bean 'milk.' Address: PhD, Senior lecturer in Biology, Univ. of Southampton.

2851. Tannenbaum, Steven R. 1976. Production and use of protein concentrates. In: N.S. Scrimshaw and M. Behar, eds. 1976. Nutrition and Agricultural Development: Significance and Potential for the Tropics. New York and London: Plenum Press. xxiv + 500 p. See p. 473-86. Chap. 40. With comments by A.D. Odell. Proceedings of the 14th International Biological Symposium, held 2-6 Dec. 1974 at Guatemala City, Guatemala. Proceedings of the 14th International Biological Symposium, held 2-6 Dec. 1974 at Guatemala City, Guatemala. [12 ref]
• ***Summary:*** Contents: Introduction. Oilseeds: Soybeans, other oilseeds. Marine protein concentrates. Single-cell protein. Use of protein concentrates in food products. Conclusions. References. Comment by Arthur D. Odell of Industrial Grain Products, Montreal, Canada: Vegetable proteins. Marine protein concentrates. Single-cell proteins. Address: Dep. of Nutrition & Food Science, MIT, Cambridge, Massachusetts.

2852. Wang, H.L.; Mustakas, G.C.; Wolf, W.J.; Wang, L.C.; Hesseltine, C.W.; Bagley, E.B. 1976. An inventory of

information on the utilization of unprocessed and simply processed soybeans as human food. Peoria, Illinois: USDA Northern Regional Research Center, Interdepartmental Report. AID AG/TAB-225-12-76. 197 p. AID contract report. Undated. No index. 27 cm. Spiral bound. [65 ref]

• ***Summary:*** Contents: Introduction. Home and village traditional soybean foods by country. 1. Soybean food uses and production in Asia. Soaking dry soybeans. In China: Tou chiang (soybean milk; preparation, ways of serving), tou fu (soybean curd; yen-lu is the Chinese name for nigari), tou fu nao (soft curd), tou fu kan (dry / firm bean curd), chien chang (pressed tofu sheets), yu tou fu (fried tou fu), tung tou fu (frozen tou fu), tou fu pi (protein-lipid film; yuba), huang tou ya (yellow bean sprout or soybean sprout), mao tou (hairy bean, green soybean, or immature soybean), dry soybeans (roasting and frying, stewing and boiling), roasted soybean flour. Fermented soybean foods. Production and consumption of soybeans (China and Taiwan).

Japan: Tofu (soybean curd), kinugoshi tofu, processed tofu products (aburage or age, nama-age and ganmo), kori tofu (dried-frozen tofu), yaki tofu (grill tofu), yuba (protein-lipid film), soybean milk, gô (ground soybean mash), daizu no moyashi (soybean sprouts), edamame (green vegetable soybeans), whole soybeans, kinako. Fermented soybean foods: Production and consumption.

Korea: Tubu (soybean curd), soybean sprouts, whole soybeans (green soybeans, parched or roasted soybeans, boiled soybeans), soybean flour ("Soybeans are first roasted and then ground to a flour. The flour is extensively used as an ingredient in various food preparations." Note: This is the earliest document seen (Nov. 2012) that mentions roasted whole soy flour in Korea–however no Korean name of this roasted soybean flour is given), soysauce, bean paste [Korean soybean miso], natto (no Korean name is given), production and consumption of soybeans.

Indonesia: Tahu or tahoo (soybean curd), bubuk kedele (soybean powder), tempe kedele, tempe gembus [the name in Central and East Java for okara tempeh], oncom tahu [the name in West Java for okara onchom], other soybean products (soybean sprouts, green soybeans, roasted and boiled soybeans, kecap or soysauce, tauco or bean paste [miso]), food mixtures (Saridele, Tempe-fish-rice or TFR, Soy-rice baby food, soybean residue [okara]-fish-rice), production and consumption of soybeans.

To make bubuk kedele (p. 58): "Soybeans of the white variety are roasted until no beany flavor can be detected. They are ground into a powder and mixed with such spices as garlic and chili. Bubuk kedele is kept in a jar and served on special occasions with a rice product, longtong (rice wrapped in banana leaves and boiled for 3 to 4 hours). Bubuk kedele is always homemade and is eaten by everyone" (Source: I. Gandjar 1976, personal communication).

Note 1. This is the earliest English-language document seen (Nov. 2012) that uses the word *bubuk* or the term *bubuk kedele* to refer to Indonesian roasted soy flour.

Thailand. Philippines: Soybean sprouts, soybean coffee, soybean cake (made from equal amounts of soybean flour and wheat flour), soybean milk, tou fu and processed tou fu products, production and consumption. Burma. India. Malaysia. Nepal. Singapore. Sri Lanka (Ceylon). Vietnam. West Asia [Middle East; Iran and Turkey]. References–Soybean food uses in Asia.

2. Soybean food uses and production in Africa. Ethiopia: Injera, wots and allichas, kitta, dabbo, dabokolo, porridge. Kenya. Morocco. Nigeria: Whole soybeans, soybean paste, corn-soy mixtures (soy-ogi). Tanzania. Uganda. Production. References–Soybean food uses in Africa.

3. Soybean food uses and production in Europe [both Eastern and Western]. 4. Soybean food uses and production in Latin America. Argentina. Bolivia. Brazil. Chile. Colombia. Ecuador. Guyana. Paraguay. Peru. Uruguay. Venezuela (fried arepas with textured soy). Mexico: New village process, commercial developments of soy-based food products, Gilford Harrison, Ruth Orellana, Seguras Social. Honduras. Costa Rica. Panama. Dominican Republic. Jamaica. Haiti. Trinidad. References–Soybean food uses in Latin America.

5. Soybean food uses and production in North America. United States: Oriental populations, vegetarian communes, The Farm in Tennessee. Canada. References–Soybean food uses in North America. 6. Soybean food uses in Oceania. Australia. New Zealand. 7. Summary of soybean food uses. Traditional soybean foods: Soybean milk, soybean curd and processed soybean curd products, protein-lipid film, soybean sprouts, tempe (tempeh), green soybeans, boiled soybeans, roasted soybeans, soybean flour, soysauce, fermented soybean paste, fermented whole soybeans [Toushih, hamanatto], natto, fermented soybean curd. Experimental soybean foods: Whole soybean foods, soybean paste, soy flour, soy beverage. Production and consumption.

8. Recent simple soybean processes, other than traditional. Simple village process for processing whole soybeans: Equipment, process, sanitation requirements, quality of product, evaluation of product in formulas and procedures for family and institutional use in developing countries. NRRC village process. Foods from whole soybeans developed at the University of Illinois (drum dried flakes, canned and homecooked soybeans, soy beverages and beverage products, spreads, snacks).

Ways of cooking and serving soybeans in the American diet. 9. Industrial processes. Industrial production and selling prices of edible soybean protein products. 10. Barriers to acceptability and utilization of soybeans in food and research recommendations: Availability. Cultural and social factors. Texture. Flavor. Nutrition and food safety. Technology development. Technology transfer. Research recommendations [concerning each of the above barriers].

Concerning Morocco: Cereal-soy blends have been

used extensively in Morocco; in fiscal year 1974 some 14.7 million lb were shipped to Morocco. Mmbaga (1975) reported that soy flour is being used in making porridge, with 1 part soy flour to 3 parts maize / corn flour.

Tables show: (1) Soybean production and imports in Taiwan, 1962-1975 (tonnes = metric tons, p. 33). Production rose from a 53,000 tonnes in 1962 to a peak of 75,200 tonnes in 1967, then fell to 61,900 tonnes in 1975. Imports skyrocketed from 62,400 tonnes in 1962 to a record 827,300 tonnes in 1975. (2) Consumption of soybean foods in Taiwan, 1964-1974 (kg/capita/year, p. 34). Total soybean foods not including tofu rose from 1.08 kg in 1964 to a peak of 2.61 kg in 1972 then fell to 1.99 kg in 1974. Consumption of tofu (80% water) rose from 18.75 kg in 1964 to a peak of 33.89 kg in 1972, then fell to 32.04 kg in 1974. (3) Supply and disposition of soybeans in Japan, 1971-1974 (p. 49). Total supply is beginning stocks, plus domestic production, and imports. Total disposition is crushing, plus traditional foods and feed. In 1974 imports accounted for 87.5% of the supply, and crushing accounted for 71.0% of the disposition. (4) Whole soybeans used in the production of traditional foods in Japan, 1970-74 (tonnes / metric tons, p. 50). Tofu and others rose from 508,000 in 1970 to 539,000 in 1974. Miso rose from 177,000 in 1970 to 192,000 in 1974. Shoyu rose from 13,000 in 1970 to 14,000 in 1974. (5) Defatted soybean meal used in the production of traditional foods in Japan, 1970-74 (tonnes / metric tons, p. 51). Shoyu rose from 163,000 in 1970 to 176,000 in 1974. Tofu and others was constant at 130,000 from 1971 to 1973. Miso decreased from 4,000 in 1970 to 2,000 in 1974. (6) Production of traditional soybean foods in Japan, 1970-74 (tonnes / metric tons, p. 52). Tofu and others rose from 1,867,800 in 1970 to 2,264,900 in 1973. Shoyu rose from 1,334,1000 in 1970 to 1,455,800 in 1974. Miso rose from 552,200 in 1970 to 587,200 in 1974. (7) Production and food use of beans [various types] and consumption of some soybean products in Korea, 1964-1967 (p. 56-57). In 1967 consumption (in tonnes / metric tons) was: Bean curd 290,000. Bean sprouts 270,000. Bean sauce 69,700. Bean paste 27,700. Total: 11.6 kg per capita per year. (8) Soybean production in Indonesia, 1960-1974 (p. 65). It rose from 442,862 tons in 1960 to 550,000 tons in 1974. (9) Consumption of soybeans in various parts of Indonesia in 1970 (p. 66). (10) Production of soybean foods in the province of Central Java, 1968-1972 (tons, p. 67). Kecap rose from 914,695 in 1968 to 1,524,000 in 1972. Tahu decreased from 18,570 in 1978 to 17,000 in 1972. Tempe rose from 506 in 1968 to 39,000 in 1972. (11) Area planted to soybeans and total soybean production in Thailand, 1964-1974 (p. 70). Area rose from 213,000 rais (6.25 rais = 1 ha) in 1964 to 1,016,000 rais in 1974. Production (in metric tons) rose from 31,300 in 1964 to 252,400 in 1974. (12) Utilization of soybeans by soybean-consuming countries, 1964-66 (based on FAO 1971 Food Balance Sheets, 1964-66 average, p. 150). The countries leading in per capita consumption (kg/person/year) are: China (PRC) 6.7. Japan 5.1. Korea(s) 5.0. Singapore 4.3. Indonesia 2.8. Malaysia 2.6. Taiwan (ROC) 1.1. (13) Amounts of cereal-soy blends distributed under Title II, Public Law 480 in fiscal year 1974 (p. 152-155). (14) U.S. exports of full-fat soy flour, 1974-75 (p. 156). Address: Northern Regional Research Center, Agricultural Research Service, Department of Agriculture, Peoria, Illinois 61604.

2853. Wei, L.S. 1976. Soybean food utilization research at University of Illinois. Paper presented to Chinese Modern Engineering and Technology Seminar, Taiwan. 20 p. 28 cm.
• ***Summary:*** Contents: Introduction. Development of canned soybean foods and fresh cooked foods. Weaning foods. Gruel. Beverages. Soft spreads (analog to peanut butter and analog to diet margarine). Frozen desserts. Snack foods ("oil roasted soy nuts and a puffed snack"). Effect of inactivation of lipoxygenase in the whole soybean on the extracted oil and meal quality. Flow sheets (p. 12-20). Address: Univ. of Illinois.

2854. Wei, L.S.; Nelson, A.I.; Steinberg, M.P. 1976. Dairy analogs from Illinois soybean beverage base. In: L.D. Hill, ed. 1976. World Soybean Research [Conference I: Proceedings]. Danville, Illinois: Interstate Printers and Publishers, Inc. xvii + 1073 p. See p. 850-60. [5 ref]
• ***Summary:*** Includes a section titled "Ice Cream Analog Preparation (Frozen Desserts)," with one formula. Contents: Introduction. Soybean beverage base preparation. Milk analog preparation. Yogurt analog preparation (fermented). Ice cream analog preparation (frozen desserts). Diet margarine analog preparation. Flavored dip preparation. Soy-whey beverage. References.

To make the yogurt analog: Make soybean beverage base with dehulled soybeans. Mix 3 parts Base with 1 part water. Neutralize to pH 7.0 with 6 N HCl (hydrochloric acid). Add sugars for fermentation: 1.25% lactose, 2.0% sucrose, and 2.0% dextrose hydrate. Heat to 180ºF. Homogenize at 3,500 psi (first stage) and 500 psi (second stage). Cool to 104ºF. Add 3% inoculum (mixed culture of *Lactobacillus bulgaricus* and *Streptococcus thermophilus*) as used by dairies. Incubate at 104ºF until pH drops to 4.3-4.4 (about 4.5 hours). Cool to about 60ºF in ice water bath and store at 34ºF overnight. Flavor with 25% by weight of yogurt fruit preserves. Package and store at 34ºF.

Note 1. This is the earliest English-language document seen (Aug. 2013) that uses the term "milk analog" to refer to soymilk.

Note 2. This is the earliest English-language document seen (Sept. 2012) that uses the term "Yogurt analog" (or "yogurt analogue") to refer to soy yogurt. Address: Dep. of Food Science, Univ. of Illinois, Urbana-Champaign.

2855. Winarno, F.G.; Hardjo, S.; Rumawas, F. 1976. The present status of soybean in Indonesia. Bogor, Indonesia:

FATEMETA, Bogor Agriculture University. xxiii + 128 p. 29 cm. [7 ref]

• ***Summary:*** The best and most comprehensive survey up to this time on the subject, it was done as part of the 1974 Industrial Census of the Central Bureau of Statistics. Full of valuable statistics and tables. Contents. Preface. Summary. List of tables. List of figures. I. Introduction. II. Objectives and survey methods: A. Objectives. B. Survey methods. III. Cultivation, product handling and protection: A. Botany of the soybean. B. Varieties. C. Growth requirements. D. Agronomy of soybean. E. Crop Management. F. Harvesting and product handling.

IV. Production: A. Harvested acreage, production and average soybean yield in Indonesia. B. Center production areas. C. Harvested acreage of soybean versus other food crops. D. Factors affecting soybean production. V. Farm management and soybean marketing in Indonesia: A. Farm management. B. Marketing of soybean.

VI. Soybean utilization (p. 52): A. Soybean products: Introduction, yuba, sere (from Bali: cooked whole soybeans, mixed with onions, hot pepper, turmeric, salt, and coconut presscake; molded into patties, sun dried, then deep fried), soybean milk, tofu (coagulated with *biang* or *sioko* {calcium sulphate}), soybean sprouts (*tauge*), soybean powder (soybeans that have been cooked, dried, dehulled, and pounded), soybean mixtures, kecap (Indonesian soy sauce), oncom (fermented soybean product, red or black), tauco (Indonesian-style miso), tempe. B. Soybean utilization: Utilization by farmer (in each of 6 provinces and total), utilization by processor (tempe, tofu, kecap, miscellaneous), census conducted by Central Bureau of Statistics, conversion factor for soybean products. C. Consumption of soybean and its processed products (by province). D. Other components. Appendixes.

Tables in body of text: (1) Brief description of recommended soybean varieties. (2-3). Insecticides used against Agromyza and *Phaedonia inclusa.* (4) Soybean harvest seasons in Indonesia (major harvest months, by province). (5-8) Harvested acreage, production, and average soybean yield during 1950-73, 1960-74, and in Java-Madura (1967-71, 1972, 1973, and 1974). (9) Soybean acreage in Java-Madura. (10) Major production areas in Java-Madura, and average 5-year yield, 1965-69. (11) Harvested acreage of soybeans vs. other crops in Java-Madura, 1971-72. (12) Production cost and value per hectare of soybeans. (13) Major trading and harvest months. (14-15) Percentage of farmer's share and marketing cost of the trade price in various provinces. (16) Percentage of farmer's share of the trade price. (17) Soybean utilization by farmers, 1975-76. (18-21) Production/consumption of tempeh, tofu, kecap, tauco, tauge, yuba, and sere.

(22-29) Raw material utilized by small-scale processors and by soybean home industries in Java and Jakarta. (30-31) Value of raw material and end products of small-scale industries over 3- and 12-month periods. (32) Conversion factor of soybean products to raw material. (33-36) Average daily consumption per capita of soybean and its processed products at villages in Lampung, Yogyakarta, East and West Java, and in 4 other provinces.

Concerning sprouts (*tauge*) in Indonesia (p. 67, 69): Tauge can be prepared from either soybean or mungbean. The average amount of soybean processed into tauge is about 8 qt [=quintal; 1 quintal = 100 kg = 220.46 lb] per year per processor. The average number of employees is 1 per processor with 30 workdays per month. The entire product is for sale.

Table 33 (p. 84), "Average daily consumption per capita of soybean and its processed products at several villages in Lampung (a province of Indonesia located on the southern tip of the island of Sumatra) is: Tempe 18.33 gm. Soy sprouts 6.51 gm. Tofu 3.36 gm. Oncom 2.34 gm. Soybean 0.29 gm. Okara tempeh 0.25 gm. Okara 0.03 gm.

Table 34 (p. 85), "Average daily consumption per capita of soybean and its processed products at several villages in Yogyakarta and East Java is: Tempe 20.08 / 4.63 gm. Soy sprouts 1.57 / 3.05 gm. Tofu 1.83 / 4.24 gm. Okara tempe 0.53 / NL gm. Soybean 0.35 / 1.07 gm. Okara tempeh 0.25 gm. Okara 0.03 gm.

Table 36 (p. 87), "Average daily consumption per capita of soybean and its processed products of sample family farmers in 4 provinces.

Tempe consumption is highest in Yogyakarta (20.08 gm) followed by Lampung (18.33), Tulungagung (4.63) and West Java (4.42).

Tofu consumption is highest in Tulungagung (4.42 gm) followed by Lampung (3.36), Yogyakarta (1.83) and West Java (0.78).

Soybean sprout consumption is highest in Lampung (6.51 gm) followed by Tulungagung (3.05) and Yogyakarta (1.57); no value is given for West Java.

Oncom [ontjom] consumption is highest in Lampung (2.34 gm) followed by West Java (0.69). Address: FATEMETA, Bogor Agricultural Univ., Indonesia.

2856. Yee, Vivien Chee-Nan Yeo. 1976. New products from soybeans. Meat extender, alcoholic beverage and protein rich flour. PhD thesis, Cornell University, Ithaca, New York. 92 p. Page 5596 in volume 37/11-B of Dissertation Abstracts International. [50+ ref]*

• ***Summary:*** The new products include two types of soy wines; one was made from soymilk and one from the whey left over after making tofu. Some 25% (w/v, weight-to-volume) of sucrose was added to the soymilk or tofu whey and the liquid was fermented anaerobically with a wine yeast, until the alcohol concentration reached 12% v/v or higher. With soymilk, the proteins precipitated out and had to be removed. Otherwise clarification and aging were the same as for any wine; the finished products were similar to sake.

Address: Cornell Univ., Ithaca, New York.

2857. Dugan, George. 1977. Dr. Harry W. Miller, 'China Doctor,' dies: Surgeon, 97, served as physician to Chou [En-lai] and Madame Chiang [Kai-shek]–a pioneer in nutrition. *New York Times.* Jan. 9. p. 36.
• ***Summary:*** Dr. Miller died on 1 Jan. 1977 in Riverside, California, at age 97 of a heart attack. A Seventh-day Adventist, he "developed a process for making soybean milk to feed poorly nourished Chinese children in areas where cows milk was unavailable."

In an interview 3 years ago at his clinic in Hong Kong, he "predicted that the world could become a vegetarian society by the end of this century." By then, he hoped people would realize that raising beef cattle requires the use of too much land and fodder. In recent years his main interests have been raising money for Adventist hospitals in Hong Kong and other parts of Asia, and helping people to switch from eating meat to a vegetarian diet.

He is survived by his wife, the former Mary Greer, and 4 children by a previous marriage. A portrait photo shows Dr. Harry Willis Miller.

2858. **Product Name:** [Soyafiltrate (Soymilk)].
Foreign Name: Sojatrank, Sojadrank, Filtraat van Soja, Filtrat de Soya, Filtrat von Soja.
Manufacturer's Name: Jonathan.
Manufacturer's Address: Holleweg 89, 2070 Ekeren (near Antwerp), Belgium. Phone: 03-664 58 48.
Date of Introduction: 1977. January.
Ingredients: Water, soya*. * = Organically grown.
Wt/Vol., Packaging, Price: 0.5 liter glass bottle.
Nutrition: Proteins 3.6 gm, fats 2.5 gm, carbohydrates 2.0 gm, minerals 0.3 gm, 45 calories (Kcal) per 100 gm.
New Product–Documentation: Soya Bluebook. 1986. p. 102. Label. Received 1988. 8.5 by 2.75 inches. Glossy paper. Orange and black on a pastoral background with sea gull and duckling. "Pure vegetable."

Form filled out by Jos van de Ponseele. 1989. Jan. 11. This product was introduced in Jan. 1977.

Note: This is the earliest known commercial soy product made by Jonathan in Belgium.

2859. Kagawa, Ryo. 1977. Shokuhin seibunhyô [Food composition tables for Japan]. Tokyo: Joshi Eiyo Daigaku Shuppan-bu. 145 p. Jan. 15 x 22 cm. [Jap]
• ***Summary:*** For tables of information on soybeans and soyfoods, see p. 21-22. Includes Kinako, soymilk, regular tofu, kinugoshi tofu, fukuro-iri tofu, yaki-dofu, abura-age, namaage, ganmodoki, kori-dofu, yuba, okara, natto, hamanatto, miso, red miso, light yellow salty miso, red salty miso, soybean miso, powdered miso. Address: Japan.

2860. **Product Name:** Laughing Grasshopper Tofu, and Soymilk.
Manufacturer's Name: Laughing Grasshopper Tofu Shop.
Manufacturer's Address: 3 Main St., Millers Falls, MA 01349.
Date of Introduction: 1977. January.
New Product–Documentation: Shurtleff & Aoyagi. 1976. Nov. 4. Visited on Tofu & Miso America Tour. Just prior to opening. Leviton, Leviton, and Timmins. 1977. Laughing Grasshopper Tofu Shop. Describes production of the tofu and soymilk. Shurtleff & Aoyagi. 1977. Jan. 28. Commercial Tofu Shops and Soy Dairies. The first batch of tofu was produced on 12 Jan. 1977. The company was founded by Richard and Kathy Leviton. Tom Timmins joined the partnership in Feb. 1977, and Michael Cohen joined as the fourth partner later that year. But Michael soon left to start his own tempeh manufacturing company, The Tempeh Works.

Poster. 14 by 18 inches. Reprinted in Soyfoods Marketing: Lafayette, CA: Soyfoods Center. "Laughing Grasshopper Tofu. Hand Made–in the Traditional manner from Organically Grown Soybeans and Nigari."

2861. Organically-grown soybeans start to be used by many companies in the United States and Europe to make commercial soyfoods (Important event). 1977. Jan.
• ***Summary:*** Here is a list of the pioneers, their companies

and their products–all introduced during 1977.

Jan. Southwest Tofu Co., Santa Fe, New Mexico (Tofu, Kathryn O. Bennett).

Jan. Jonathan, Ekren (near Antwerp) Belgium (Soymilk, Jos van de Ponseele).

Jan. The Soy Plant, Ann Arbor, Michigan (Tofu, Steve Fiering; July, Soymilk).

March. Surata Soyfoods, Eugene, Oregon (Nigari Tofu, Benjamin Hills).

June. Bhaga Tofu (renamed Lecanto Tofu Shop), Lecanto, Florida (Tofu, Marvel Huffman).

Sept. Quong Hop & Co., South San Francisco, California. (Tofu Dressing, Jim Miller & Stanley Lee).

Sept. White Wave, Boulder, Colorado. (Tofu, Steve Demos).

Nov. Redwood Natural Foods, Santa Rosa, California (Organic Tofu, Greg Hartman).

Sometime in 1977. Swan Foods, Miami, Florida. (Tofu Chip Dip, Tofu Baked with Tamari, Tofu (Marinated), Mary's Roasted Cashew Tofu Cheesecake, Mary's Tofu Rice Salad, Soy Melk, Tofu: Organic (Soybean Curd), Mary's Rice Pudding, Robert Pung & Mary Brooks).

2862. *Canadian Adventist Messenger.* 1977. Ten Talents cookbook not recommended. Feb. 1. p. 4.

• ***Summary:*** "The cookbook *A Good Cook, Ten Talents* has been placed on the not recommended book list by the General Conference Health Department. A review by dietitians, pharmacists and physicians has found the nutritional and medical information contained in the book to be generally unsound and in several instances actually dangerous.

"Persons using this cookbook are advised to view with caution any nutritional statements or medical advice which it contains. Especially dangerous are the recommendations regarding formulas and foods for infants and small children, certain herbal remedies (some of which are poisonous), the listing of several plant foods as 'valuable' sources of Vitamin B-12 or Vitamin D, and the recommendation that apricot kernels be added to soy milk to improve the flavor (apricot kernels are poisonous).

"For further information, please contact: Ella Mae Stoneburner, R.N., M.S., Associate Director, Dept. of Health, General Conf. of Seventh-Day Adventists, 6840 Eastern Ave., N.W., Washington, DC 20012."

2863. *SoyaScan Notes.* 1977. The origin and early history of Bean Machines (California) and Takai Tofu & Soymilk Equipment Co. (Japan) (Overview). Feb. 9. Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** 1977 Feb. 3–William Shurtleff and Akiko Aoyagi return home to 790 Los Palos Dr., Lafayette, California. Their four-month, 15,000-mile Tofu & Miso America USA tour ends. This was a huge, exciting, exhausting odyssey, that bore abundant fruit in the founding of new tofu shops almost everywhere they spoke.

Feb. 9–Meeting at 790 Los Palos Dr. in Lafayette with The Farm folks and Larry Needleman leads to establishment of Bean Machines Inc. (BMI), with Larry Needleman as owner and president. The Farm (Robert Dolgin and David Sandler, Farm Foods, 820 "B" St., San Rafael, California 94901) place a firm order for a Japanese (Takai) tofu system.

Feb. 12–Shurtleff and Aoyagi leave the USA and fly to Japan, arriving at Haneda Airport on Feb. 13. Shurtleff's main focus is to find a Japanese manufacturer of tofu and soymilk equipment that would like to develop an English-language illustrated catalog and establish a program for selling its equipment (plus other traditional small-scale equipment, made by other companies, that new American tofu makers may wish to order). From the American Soybean Association in Tokyo, Shurtleff learns about Takai Seisakusho, a tofu equipment manufacturer with long history (founded in 1917) and good reputation, located in Kanazawa, Japan.

March 28–Using a plain, typed form, Farm Foods (Dolgin and Sandler) order 16 pieces of tofu and soymilk equipment at a cost of $4,168. On the form is typed: "Please mail all orders prepaid to: Bean Machines, Inc., P.O. Box 829, Corte Madera, CA 94925."

March 30–Mary Pung, co-owner of Swan Foods, 8850 S.W. 116th St., Miami, Florida 33176 orders 8 pieces of tofu equipment for $4,973. Needleman forwards these two orders to Shurtleff in Japan.

1977 March 31. Larry Needleman applies for a Fictitious Name Statement for Bean Machines Inc. with the County of Marin. Larry and Bill Shurtleff are given as the owners

April 5–During two days of discussions and negotiations with Wataru Takai, son of the owner and young Director of the Overseas Department, who speaks good English, Shurtleff and Mr. Takai establish Takai Tofu & Soymilk Equipment Company and draft a long-term contract. Shurtleff stays two nights at the home of Wataru Takai and his wife.

June 5–The contract drafted on April 5 is finally signed by both Shurtleff and Takai. At the top of the document is Takai's new logo, designed by Akiko. It shows a lever, with a soybean as the fulcrum, moving the world.

June–Akiko soon gets more involved in designing Takai's first English-language catalog and letterhead, and Shurtleff works with Takai in giving accurate descriptions of each piece of equipment and each whole system.

July 19–Shurtleff and Aoyagi leave Japan (from Haneda) and fly to America (California).

1977 Aug. 16–The first English-language Takai Catalog arrives at our Center. This catalog was printed with green and black ink on glossy white paper.

1977 Oct. 14–Shurtleff signs Bean Machines, Inc. (BMI)

contract with Larry Needleman. He comes for dinner with a friend.

Oct. 19–Mr. Takai writes William Shurtleff a typewritten letter on the new Takai letterhead about 5-6 issues that he would like to see resolved as soon as possible. He wants to learn more about Underwriters Laboratories and their safety standards in the USA.

Oct. 30–Larry Needleman sends out the first BMI packets to existing tofu makers and potential customers.

Dec. 21–Mr. Takai writes Larry Needleman (at Bean Machines Inc., P.O. Box 881, San Rafael, CA 94901) a typewritten letter on the new Takai letterhead about equipment prices landed in San Francisco or Boston without BMI commissions.

1978 March 31–Mr. Takai sends Larry Needleman a 4-page typed letter which includes a new price list including 3% insurance.

April 4–Mr. Takai writes Larry Needleman (P.O. Box 76, Bodega, CA 94922): "Thank you for your orders. We shall send you Pro-Forma Invoice. Please open your L/C [Letter of Credit]. Shipment within one month after receipt of L/C."

1978 May 1–Bean Machines issues its typewritten (on yellow letterhead) Price List #2 covering 44 different pieces of equipment. "Whole system prices are not yet complete." The rear is devoted to "Ordering information and terms of sale." At about the same time, BMI sends out its first "Order form"–on white letterhead.

1978 May–Shurtleff and Aoyagi visit Wataru Takai's home in Kanazawa, Japan, to work on his tofu & soymilk equipment catalog.

1978 July 16–Wataru Takai arrives in the USA in preparation for the 1st Soycrafter's Conference in Ann Arbor, Michigan and to supervise the installation of a Takai system at Tokyo Food Co. in San Mateo.

July 26–The first Takai catalog of small and medium scale tofu equipment (printed with dark brown ink on glossy white paper) arrives in the USA.

At the historic Soycrafter's Conference. Larry Needleman is elected executive director. After the conference, Mr. Takai, with Needleman and Shurtleff, travel (July 30-Aug. 9), around the eastern United States visiting tofu companies.

1978 Nov. 7–Larry Needleman sends Wataru Takai a 4-page "Takai / BMI Contract" for his consideration and eventual signature.

1979 Feb. 14. Takai catalog of large scale tofu and soymilk equipment arrives. Printed with dark green ink on glossy white paper.

1979 May–BMI issues its Price List #5 for Takai Catalog of Small and Medium-sized Equipment.

1979 Sept. 16–Larry Needleman sends Wataru Takai a 2-page, typed, single spaced "Chronological list of Takai problems." The first of the 14 problems was "Nov. 1978–L/C expired because Takai didn't ship quickly enough. BMI extended the L/C but it expired again because of delay in Takai shipping."

1980 Jan. 19–New Takai small scale equipment catalog; 1,500 to USA, 500 to Japan.

1980 Feb. 27–Larry Needleman writes Shurtleff that he owes Shurtleff a total of $496.98 in 1979 commissions. "As far as payment of these commissions and repayment of the principal of your $3,500 loan to BMI, it is our intention to pay NAFSC both of these as quickly as possible."

1980 July 23–Larry Needleman says BMI will stop being Takai's agent.

1980 Aug. 22–Shurtleff writes Takai and encloses a letter from Bean Machines Inc. in which Larry Needleman explains that he is no longer an agent for Takai. "He has found it almost impossible to communicate with you and has finally decided to give up trying."

1980 Sept 18–Takai sells a tofu production plant to Heilongjiang Province Foreign Trade Import Company, Harbin, China. Takai will send 2-3 engineers for installation.

1981 May 17–Mr. Takai writes Richard Leviton that he would definitely like to display his Sub-System S30C at the Soyfoods Conference at Fort Collins, Colorado. He encloses $100 for the balance of the payment.

1981 June–Larry Needleman announces that he has developed and is now selling the Bean Machines BMI Model 100 Disintegrator–The "Mini Mite," a stainless steel soybean grinder which can grind 100 pounds of dry soybeans per hour and sells for $1,485.00. Detailed specifications are given along with 3 photos (one full page).

1981 Dec. 19–Mr. Takai writes Shurtleff a handwritten letter from Jakarta, Indonesia on Sari Pacific Jakarta Hotel. He is now getting orders for equipment from KOPTI Indonesia; he has met with Mr. A.R. Noor of Kopti, who plans to travel to the USA in Jan. 1982 and would like to visit and talk with Shurtleff. Takai plans to go to Bangkok and Hong Kong after Jakarta. "We will do good business in South East Asia."

1986 April 27–Larry Needleman sells Bean Machines Inc. (BMI) to Wally Rogers, plus Steve Fiering and Larry Needleman. As part of the deal, Shurtleff sells his interest in the company for about $4,900, plus $1,340 of overdue back commissions.

2864. *Review and Herald.* 1977. Deaths: Harry W. Miller. Feb. 24. p. 23.

• ***Summary:*** This obituary states that Dr. Miller was born on 2 July 1879 in Ludlow Falls, Ohio. He died on 1 Jan. 1977 in Riverside, California. As well as being a famous physician in Asia and the USA, "Dr. Miller was also a pioneer in the field of nutrition. He developed the process of making soybean milk to feed malnourished Chinese children in areas where cow's milk was unavailable."

He graduated from the American Medical Missionary

College [at Battle Creek, Michigan] in 1902. Shortly thereafter he married Maude Thompson and they went together to China, where he was one of the first medical missionaries. Two years after their arrival his new wife died, and in 1907 he returned to the United States. In 1908 he married Marie Iverson; they remained in Washington, DC until 1925. Then they returned to China.

During World War II Dr. Miller was once again in the United States, where he served as medical director of the Mount Vernon Hospital in Ohio. While there he founded the International Nutrition Laboratory, which [produced soymilk and a line of soy-based vegetarian food products and] carried out experiments in vegetarian protein products (now part of the Loma Linda Foods Company). He returned to Shanghai in 1949, but had to be evacuated in 1950 because of the political revolution. His second wife died in late 1950 in Washington, DC. In 1954 [at age 76] he married Mary Greer.

Survivors include his wife, Mary; three children by his second wife, Marie: Maude Anderson, Harry Miller, Jr., and Clarence Miller; and a sister, Alice (Mrs. Harry Morse). A small photo shows Dr. Miller. Address: Field Secretary, Far Eastern Div.

2865. Kay, Theodore; Ogunsola, V.A.; Eka, O.U. 1977. The prevention of beany taste development and the elimination of beany taste in preparing soya bean food in the rural community of Nigeria. *Samaru Agricultural Newsletter* 19(1):11-12. Feb. [2 ref]

• ***Summary:*** These two simple methods are applicable to rural Nigerians. Method 1, for a smaller quantity of soybeans: Soak soybeans in water overnight in water for about 12 hours. Boil plenty of water in a pot. Put the soaked beans in a small basket or sifter. The quantity of beans should not be more than 1/10 of the boiling water. Dip the basket containing the soaked beans into the boiling water, shaking constantly for 15 seconds. Do not dip for more than 30 seconds lest enzymes other than lipoxygenase be inactivated.

Method 2, for a larger quantity. Have ready a thermometer. Put the overnight soaked beans in the cooking pot (about half full) and cover them with fresh water. Heat the water, stirring constantly, to 90ºC. Remove from the fire and drain off the water.

"In Nigeria, since 1973, soya bean has been cooked into traditional foods which used to be prepared from cowpea and cow milk with very similar cooking processes, texture and taste." Address: Inst. for Agricultural Research, Samaru, Ahmadu Bello Univ., PMB 1044, Zaria, Nigeria.

2866. MacNaughton, Nancy; Castro, Roberto. 1977. Procesamiento de soya en Honduras [Soybean processing in Honduras]. Tegucigalpa, Honduras: Secretaria de Recursos Naturales, Dirección de Planificación Sectorial, Departamento de Proyectos. iii + 69 leaves. Feb. Illust. 28 cm. [37 ref. Spa]

• ***Summary:*** Contents: Summary and conclusions. 1. Introduction. 2. Antecedents: Work conducted (in the rest of the world {USA, Dr. Harry Miller in Shanghai}, China, Philippines, Rhodesia, Sierra Leone, Mauritania, Ethiopia, Ruanda, Nigeria, Nepal, Sri Lanka, Brazil, Bolivia & Maisoy, Paraguay, Chile, Ecuador {Meals for Millions}), in Mexico and Central America ({INCAP in Panama, Dr. Steven Youngberg, Guatemala, Belize, Costa Rica, Nicaragua}, in Honduras), the role of soya in human nutrition. 3. The project: Objectives, goals, development of the study (processing of soymilk {in the home, at the level of an organized group, at the semi-industrial level}, processing of other derivatives of soya / soyfoods {Queso de soya / tofu, harina de soya / soy flour, Brady Crop Cooker}, investments required {in the home, at the level of an organized group, at the semi-industrial level}). 4. Conclusions and recommendations: Conclusions. Recommendations. Bibliographic references (leaves 63-65). Appendix: Nutritional aspects of soya.

Figures show: (1) Flow diagram, with equipment, for the production of Vital soymilk. (2-3) Flow chart for the processing of full-fat soy flour by a simple village process. (4) Flow chart for the processing of full-fat soy flour to make soymilk. (5) Flow chart: Traditional process for the production of soymilk. (6) Flow chart: Process for the production of soymilk on the level of organized groups of farmers; INTSOY process. (7) Construction of a sock filter (INTSOY). (8) Flow chart: Process for the production of soymilk using the Unidad Portatil miller. (9) Flow chart: Process for the production of soymilk [with coco] used in the soymilk factory of Stephen Youngberg, in Peña Blanca, Honduras. Note: Dr. Youngberg is a Seventh-day Adventist. (10) Three flow diagrams: Process for the production of whole soy flour in the home–simple, toasted, and blanched. (11) Koehring Brady 206 Crop Cooker; 2-page brochure insert. (12) Koehring Brady Extruder Cooker; 2-page brochure insert.

Tables show: (1) Equipment needed for processing defatted soy flour; capacity 136 kg (300 lbs.) of soy flour in 8 hours of operation. (2) Characteristics and nutritional composition of soy beverage after filtration. (3) Initial investment in equipment used in making soymilk at the factory of Dr. Stephen Youngberg, in Peña Blanca, Honduras. (4) Cost estimates for the production of soymilk as made at the factory of Dr. Stephen Youngberg, in Peña Blanca, Honduras (in Lps. = lempiras). (5) Equipment and costs of the proposed Maisoy project in Honduras.

Page 20: Work with soy in Africa is relatively recent if compared with early recorded work with soy in Asia. Many of the developing African nations recognize the nutritional needs of their population and have started to experiment with the soybean and soy products. Soybean variety trials have been conducted in the Ivory Coast, Rhodesia, Sierra

Leone, and Mauritania. Ethiopia has incorporated soy flour and soybeans into traditional dishes. Ruanda and Nigeria have introduced soybean cultivation technology and local consumption, on account of the severe malnutrition that exists in those countries. Nigeria is producing soybeans for export."

Note: Looking at endnote 5 in this bibliography, which cites the source of this information about soy in Africa, it seems quite clear that the word "Mauritania" was accidentally and incorrectly substituted for the word "Mauritius" in the "Country Reports" (see p. 218 of these Reports).

Page 20: In Honduras. The Ministry of Natural Resources, in cooperation with other organizations, has conducted soybean cultivation / production trials in selected areas in Honduras. In Comayagua, the company named Compañía Mejores Alimentos [Best Foods Company] initiated commercial soybean production within the last few years. Small projects of soybean production and consumption are prospering in communities in the following areas: Sonaguera, Colón; Tela, Atlántida; Buena Fé, Santa Bárbara; Las Animas, El Paraíso; Olanchito, Yoro y Barrancho, Choluteca.

The goal of these projects is to introduce soya as a nutritional supplement in the local diet. These projects are carried out within homemaker's clubs, schools, child dining halls, and various communities, with the support of CARE, CARITAS, The National Board of Social Comfort, like our communities and local agronomics. The largest area for cultivating soybeans is five blocks and the smallest is a quarter block. The majority of these projects can be found in the first stages of experimentation but the participants foresee good results. These small-scale projects are important to note because they consist of cooperative efforts and are self-sufficient. On the other hand, the participants will manage their time and labor, and will be twice as motivated to incorporate soy into their daily menus. Address: Honduras.

2867. Plantmilk Foods. 1977. Which is the substitute? (Ad). *New Vegetarian* (*England*). Feb. p. 21.
• ***Summary:*** A 1/8 page ad. "(1) Cow milk? (meant only for the calf) or (2) Plamil soya plantmilk? (formulated for human nutrition).

"Plamil products available from progressive Health Stores.

"Literature (sae [self addressed envelope] please) from: Plantmilk Foods,..." Address: Plamil House, Bowles Well Gardens, Folkestone, Kent [UK].

2868. Shurtleff, William; Aoyagi, Akiko. 1977. Excerpts from *The Book of Tofu:* Soymilk. *Mother Earth News* No. 43. Jan/Feb. p. 40-42. [1 ref]
• ***Summary:*** Describes how to make soymilk and soymilk yogurt at home, and compares the nutritional value of soymilk with that of cow's milk and mother's milk, each adjusted to contain 88.6% water/moisture. Address: 790 Los Palos Dr., Lafayette, California 94549.

2869. *Soybean Digest.* 1977. Harry Miller dies. Feb. p. 41.
• ***Summary:*** "Harry W. Miller, M.D., died New Year's Day in California. Dr. Miller was renowned for his contributions to the use of soy products in human diets. He became interested in soy nutrition 74 years ago while visiting in China. His studies later led to the establishment of a soy milk dairy in Shanghai in 1937. Later plants were built in Hong Kong, Manila [Philippines], Bangkok [Thailand] and Malaysia.

"Dr. Miller will be missed by his many friends in ASA. He was 97 last July."

2870. Vyhmeister, Irma B.; Register, U.D.; Sonnenberg, Lydia M. 1977. Safe vegetarian diets for children. *Pediatric Clinics of North America* 24(1):203-10. Feb. [24 ref]
• ***Summary:*** A guide for management of vegetarian diets for infants and children. The three main categories of vegetarianism are lacto-vegetarian, lacto-ovo-vegetarian, and "total or strict vegetarian (vegan)." The latter diet, excluding all foods of animal origin, consists only of plant foods. Gives charts of food groups with sources, and sample menus for children of different age groups. "A variety of foods as unprocessed as practical is important when no animal foods are used in a vegetarian diet." Fortified soymilk and soya meat products are mentioned as providing necessary nutrients. Address: 1. Assoc. Prof. of Nutrition; 2. Prof.; 3. Assoc. Prof., All: Dep. of Nutrition, School of Health, Loma Linda Univ., Loma Linda, California.

2871. Brody, Jane E. 1977. Personal health. *New York Times.* March 2. p. 55.
• ***Summary:*** Discusses the basics of a balanced vegetarian diet, including food combinations that increase protein quality using "complimentary plant proteins"–where one supplies the amino acids deficient in the other, and vice versa. Examples include a peanut butter sandwich, and soybeans with sesame seeds. Even on a "strict vegetarian diet," adults rarely have difficulty getting enough protein to maintain good health.

The National Academy of Sciences recommends that vegetarians consume 2 servings a day of "high-protein meat alternatives," such as legumes, nuts, peanut butter, dairy products, eggs, or "meat analogs." A wide variety of such analogs, or "pretend" meats, made from vegetable protein, are now commercially available. Vegetarians who consume no animal products risk a vitamin B-12 deficiency; they can drink "fortified soy milk or take a B-12 supplement to prevent anemia and neurological damage."

2872. Fried, Ralph I. 1977. One hundred years of infant

feeding: Reflections on the development of the understanding of the relationship between infant behavior and infant nutrition. *Clinical Pediatrics* 16(3):215-218. March. Address: 3255 Greenway Rd., Shaker Heights, Ohio 44122.

2873. Shurtleff, William. 1977. Homemade soymilk. *Macrobiotic* (*The*) (*Chico, California*) No. 118. p. 17. March.
• ***Summary:*** A basic recipe using 2¼ cups soybeans. Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

2874. Tabuchi, Ichiro. 1977. Tônyû no chichi Miraa hakase: Soibinzu wa nijû seiki no mana desu yo [Dr. Miller, the father of soymilk: "Soybeans are indeed the manna of the 20th century"]. *Shin Eiyo* (*New Nutrition*) No. 90. p. 90-96. March. [Jap]
• ***Summary:*** The story of how Dr. Miller, San-iku Gakuin, and San-iku Foods pioneered soymilk in Japan. Contains 3 photos of Dr. Miller. Address: Nihon San-iku Gakuin Kôtô Gakkô, Fuku-Kôchô, Japan.

2875. Iso, James. 1977. Southeast Asia–emerging growth market for soybeans. *Foreign Agriculture.* April 11. p. 2-4.
• ***Summary:*** With rising incomes and changing eating habits whetting their appetite for meat and quality protein foods, four nations of Southeast Asia–the Philippines, Thailand, Malaysia, and Singapore–are turning to the world market for more livestock feed ingredients. Brazil–by gearing up its export program–has recently gained a substantial foothold in these markets. And soybeans and soybean products also have come from Asian suppliers like the People's Republic of China (PRC), Indonesia, and even Japan, the latter exporting soybean meal crushed from U.S. soybeans. Philippine imports of soybean meal in recent years have varied between 50,000 and 70,000 tons a year. The Philippines also is a viable market for soy proteins for food, thanks to the presence there of three major U.S. meatpackers. Some 50% of the processed meat produced by these firms has contained soy protein since the product's introduction into the Philippines in 1969. Ground red meat containing 20% soy protein enjoys good consumer acceptance. Owing to the large Chinese population in the Philippines, food soybean consumption already is significant. Although domestic soybeans make up the major supply for traditional foods, such as bean curds [tofu] and soy sauce, some 500-600 tons of these beans must be imported each month.

Thai soybean production has yet to make much headway. Thailand's climatic and soil conditions apparently have not been conducive to expansion, despite attempts by local growers and some Japanese interests to establish a large-scale industry in the highlands. In 1976, the country produced about 155,000 tons of soybeans, of which 20,000 tons were exported and the rest either used domestically for food or crushed. This year, if the Government approves, a multimillion-dollar soy protein plant will be constructed with the possibility of producing 10,000 tons of a soy infant food annually and 2,000 tons of meat analogue. The Institute of Feed Research and Product Development–a private Government-backed research organization affiliated with Kasetsart University–has spearheaded textured soy protein (TSP) and soy flour research. Malaysia is mainly noted for its huge and rapidly growing production of palm oil.

Although its population of 2.25 million is dwarfed by that of the rest of Southeast Asia, Singapore plays a disproportionately large role in the region's trade. This is because it is a major transshipment port for the region–and for Malaysia in particular. Most of the imported soybeans are crushed, although significant volumes of beans also are used in producing traditional soy foods for the large Chinese population. The only major soybean crusher outside of the Philippines is located in Singapore, an operation which the management anticipates will crush 100,000 tons of soybeans in calendar 1977. One firm is using soy proteins in canned foods, soy sauce, soft drinks, combined milk, and other products. Address: Foreign Market Development, Oilseeds and Products, Foreign Agricultural Service.

2876. Loetterle, Fred. 1977. Ton yu to tofu [Soymilk and tofu]. *California Living.* April 17. p. 40, 42, 44.
• ***Summary:*** About making tofu and soymilk at Azumaya. "With the precision of a great orchestra, 35 tofu makers dance through six dawns a week to coax the pre-soaked golden soybean into that meal of magic, that all-in-one soup-to-nuts food–tofu the humble, tofu the magnificent, tofu the quintessential actor/actress among all cuisine. Tofu! Tofu? Doufu? Dowfu? What is it, anyway? Is it some bloodless meat fashioned from the cooled and crushed essence of the soybean? Is it a cheese, formed as it is from the soymilk squeezed from the steamed beans and solidified by seawater or a related refinement such as calcium chloride? Is it a chewy bean cake, a jelly-like steak, ambrosia? Is it the world's longest running recipe...?

There are three tofu makers in San Francisco: "Azumaya Inc. of 95 Boutwell Street, the Wo Chong Co. of 1001 16th Street, and the Wo Hop Co. of 759 Clay Street. Also, there is one in South San Francisco (Quong Hop's, at 161 Beacon Street, a tradition in or near San Francisco since 1906), another one in Oakland and two in San Jose." Azumaya, at 95 Boutwell St., is run by four brothers (George, Jack, John, and Bill). It was founded on 17 January 1937 in a basement at 1636 Post Street, between Bush and Laguna streets. The Mizono's parents were Saichi and Matsuyo Mizono. "Their father was strengthened by a daily dish of the tofu he loved so well, usually enjoyed as boiled yudofu..." Tofu was made in old copper kettles using a stone grinder. "'We used to hand-crank everything,' recalls Bill. Brother John adds: 'Tofu has really snowballed in the last few years. Everybody here is getting into it as a new food. I think there is no limit

to its popularity, because it's so good for your diet.'" The company also produces kinugoshi tofu, and (in a converted doughnut machine) agé. The regular tofu now sells locally for $0.50/lb. Today they use 1,600 to 2,400 lb of Arkansas soybeans a day. Annual gross sales are now $1 million compared to $600,000 in 1969, when they moved into their fourth and present headquarters.

Includes a detailed description of the tofu-making process, and several semi-recipes. Tofu is referred to twice in the article as "soybean cake." Photos show: (1) "Pulling cheesecloth in preparation of removal of tofu from tray." Two men are working by hydraulic presses that press the cloth-wrapped curds into tofu in shallow, perforated stainless-steel forming boxes. (2) "Compressing the coagulated tofu." One man is pulling down on a metal, ratcheting lever press. (3) "Packaging tofu." Three men are placing the curds in shallow plastic tubs. The author closes with a strong recommendation for *The Book of Tofu* by Shurtleff and Aoyagi.

Note 1. This is the earliest English-language document seen (Aug 2013) that uses the term "ton yu" (only in the title) to refer to soymilk; the Japanese word for soymilk is *tônyû.*

Note 2. This is the earliest English-language document seen (April 2013) that uses the word "dowfu" to refer to Chinese-style tofu.

2877. Wang, Li Chuan. 1977. Extraction of proteins from vegetable seed compositions. *U.S. Patent* 4,018,755. April 19. 4 p. Application filed 12 May 1975. [7 ref]
• ***Summary:*** "Vegetable seed flakes, meal and the like prepared for extraction in the usual manner were treated with ultrasonic waves solubilizing the protein which was then recovered from solution. This sonifier gives effective sonic extraction."

2878. Banco Central de Nicaragua, Departamento de Investgaciones Tecnológicas, División Agricola. 1977. Guia para el cultivo de la soya en Nicaragua [Guide for the cultivation of soya in Nicaragua]. Managua, Nicaragua: Banco Central de Nicaragua. 22 p. April. 22 cm. [Spa]
• ***Summary:*** Contents: Introduction. Overview. Botanical description. Varieties. Ecological requirements: Soils, climate. Cultural practices: Preparation of the land, time of planting, distance between plants, density of planting, inoculation of the seed, planting depth, fertilization / fertilizers. Control of weeds: mechanical, chemical control. Pests and their control. Diseases. Harvest. Storage. Costs of production per manzana. Some recipes for preparing foods based on soya: Corn and soya bread. Whole soya flour. Fresh soymilk. Soy biscuits or crackers. Maizena with soymilk. Tofu (*Queso de leche de soya,* coagulated with lemon juice). Tortillas with corn and soya. Cooking whole soybeans. Address: Managua, Nicaragua.

2879. Heartsong, Toni & Bob. 1977. The Heartsong tofu cookbook. Miami, Florida: Banyan Books. 80 p. April. Illust. No index. 23 cm. Revised ed. 1978. 92 p.
• ***Summary:*** Contents: Acknowledgments. Dedication. Preface. Tofu is good for you. Make tofu. 1. Tofu main dishes (recipes). 2. Tofu salads. 3. Tofu in soups. 4. Tofu desserts. 5. Okara recipes. 6. Salad dressings, dips, sauces & creams. 7. Soybeans & milk & tidbits. Glossary. Bibliography. About the authors (autobiographical).

Dedication: "For those beings who have the will to discover the truth and the imagination to create with it."

Note: Ads for this book appeared in *Alternatives* (Miami, Florida) in April 1977 (Vol.1, No. 4, p. 32), May 1977 (Vol. 1, No. 5, p. 41, with a very favorable book review on pages 40-41). Address: Miami, Florida.

2880. Kolb, H. 1977. Herkoemmliche Verfahren zur Nutzung von Soja im asiatischen Raum [Traditional processes for using soya in Asia]. *Alimenta* 17(2):41-45. March/April. [35 ref. Ger]
• ***Summary:*** Discusses each of the following foods briefly and gives sources of further information: Kinako (roasted soy flour), soymilk, yuba, tofu, kori tofu (dried-frozen tofu), aburaage, namaage, kinugoshi tofu, sufu, soy cheese (Western style), soy yogurt, ganmodoki, natto, Hamanatto, koji, tempeh, miso, tao-tjo [Indonesian-style miso], kochu-jang, shoyu, and ketjap.

Note 1 This is the earliest German-language document seen (Oct. 2011) that uses the word "sufu" to refer to fermented tofu.

Note. This is the earliest German-language document seen (April 2013) that mentions silken tofu, which it calls *kinugoshi.* Address: Institut fuer Lebensmitteltechnologie, Frucht- und Gemuesetechnologie, Technische Universitaet Berlin, Koenigin-Luise-Strasse 27, D-1000 Berlin 33, West Germany.

2881. **Product Name:** Loma Linda Soyagen (Milk Free Soy Beverage Powder Containing No Cane or Beet Sugar).
Manufacturer's Name: Loma Linda Food Co.
Manufacturer's Address: 11503 Pierce St., Riverside, CA 92505. Phone: 714-687-7800 (3/88).
Date of Introduction: 1977. April.
Ingredients: Soy solids, corn syrup, soy oil, soy lecithin, salt, di-calcium phosphate, tri-calcium citrate, calcium carbonate, di-potassium phosphate, artificial flavors, vitamins (ascorbic acid, DL-alpha tocopheryl acetate, vitamin A palmitate, cholecalciferol, riboflavin, phytonadione, cyanocobalamin), ferrous sulfate, tri-potassium citrate.
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable.
Nutrition: Per 1 oz powder (approximately ¼ cup): Calories 130, protein 6 gm, carbohydrate 14 gm, fat 6 gm, cholesterol 0 mg, sodium 210 mg, potassium 210 mg.

New Product–Documentation: Label sent by Loma Linda Foods. 1988. Oct. 5. This product was introduced in 1977. A less sophisticated version with the same name appeared in 1948.

2882. Whitington, Peter F.; Gibson, Richard. 1977. Soy protein intolerance: Four patients with concomitant cow's milk intolerance. *Pediatrics* 59(5):730-32. May. [8 ref] Address: Dep. of Pediatrics, Univ. of Tennessee Center for the Health Sciences, Memphis, TN.

2883. Eka, O.U.; Kay, T. 1977. Chemical evaluation of the nutrient status of soya bean meals prepared using traditional methods. *Samaru Agricultural Newsletter* 19(2):76-81. June. [9 ref]
• ***Summary:*** Full-fat soy flour was used in place of the more popular cowpea flour to make popular Nigerian dishes such as bean cake (akara or kosei), puff-puff, moin-moin or alele (made with okara), and soya bean milk. The soybean products were generally richer in protein than their cowpea counterparts. The soya bean samples were supplied by the Institute for Agricultural Research, Ahmadu Bello University, Zaria. Address: Ahmadu Bello Univ., Zaria, Nigeria.

2884. Gaskin, Stephen. 1977. The plowboy papers: Stephen Gaskin and The Farm. *Mother Earth News* No. 45. May/June. p. 8, 10, 12, 14, 16, 18, 20, 22.
• ***Summary:*** This tells the story of The Farm, but it is not an interview. It seems more like excerpts from Hey Beatnik. "It all started in the fall of 1966 when someone decided to start an experimental college in San Francisco... and away over in the corner of the registration room a guy named Stephen Gaskin, a maverick English professor from San Francisco State Univ., put up a little sign which said he'd be teaching something called 'Monday Night Class.'" In late 1971 Stephen and his followers bought a 1,014 acre farm in Tennessee for $70/acre. It has since been expanded to 1,700 acres.

"Babies love soymilk. They can be weaned directly onto it and most of ours have been. It's especially good for babies who are allergic to cow's milk or who can't tolerate lactose. (Commercial non-allergenic baby formulas are made from soybeans.)

"We fortify our milk with vitamin B-12. In the winter, when we don't have fresh greens and there's less sunshine, we also add vitamins A and D." A recipe is given for making soymilk at home.

"When we work in the soy dairy we tie our hair back, wash our hands, and put on clean aprons. We believe that being spiritual means having a well-trained, efficient crew of folks who have fun working together... and that everyone should be able to go home after work 100% confident that we've made wholesome, sanitary, nutritious food." Address: 156 Drakes Lane, Summertown, Tennessee 38383.

2885. McFadden, Cyra. 1977. Serial: A year in the life of Marin County. New York, NY: Alfred A. Knopf. 111 p. See Chap. 8, p. 22. Illust. by Tom Cervenak. 28 cm.
• ***Summary:*** This work of "historical fiction" is set in California's trendy Marin County (just north of San Francisco and a center of "the revolution") during the

free-wheeling 1970s. Harvey had gotten to know Marlene, age 18 and a part-time student at the College of Marin, as she checked out his groceries at the supermarket. She expressed "horror at 'the garbage' he put into 'his one and only body.'" She explained that white flour could kill his enzymes. Marlene was seriously into nutrition–and into sex, and "since her interest in his one and only body turned out to be virtually limitless, Harvey ate his kelp and drank his soya milk without complaint. If the meals Marlene served him were rare and strange, so were the things she did to him afterward on the waterbed." He was beginning to feel like he'd gotten "in touch with the universe." Address: Marin County.

2886. Parihar, Asha S.; Mittal, M.; Datta, I.C.; Quadri, M.A.; Kushwah, H.S. 1977. Organoleptic evaluation and nutritive value of recipes of soymilk and soyresidue. *J. of Food Science and Technology* (*Mysore, India*) 14(3):130-32. May/June. [6 ref]
• ***Summary:*** Soyresidue [okara], the solid material remaining after soymilk preparation, can be used effectively for improving the nutritional value of traditional snacks like *Samosa.* Soyresidue snacks are 25-33% less expensive than the standard preparations.

"Soymilk ice cream was rated good and standard ice cream excellent. Soymilk custard was adjudged very good, and standard custard excellent.

Note 1. This is the earliest published English-language document seen (March 2007) that uses the term "soymilk ice cream" to refer to soy ice cream.

Note 2. This is the earliest English-language document seen (June 2013) that uses the word "soyresidue" to refer to okara. Address: Dep. of Biochemistry, College of Veterinary Science, Jabalpur, India.

2887. **Product Name:** Plamil Rice Soya Plantmilk Pudding With Sultanas (Later renamed Plamil Soya Milk Rice Pudding with Sultanas) [Sweetened with Sugar].
Manufacturer's Name: Plamil Foods Ltd.
Manufacturer's Address: Plamil House, Bowles Well Gardens, Folkestone, Kent, CT19 6PQ, England.
Date of Introduction: 1977. June.
Ingredients: Water, unpolished rice, soya protein isolate, sunflower oil, raw sugar, sultanas, natural vanilla essence, sea salt, emulsifier: soya lecithin, stabiliser: carrageen extract [carrageenan].
Wt/Vol., Packaging, Price: 439 gm (15.5 oz) can.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Ad in *Alive* magazine (UK). 1979. Jan/Feb. p. 19. Label for a can. 1980, undated. 4 by 9.5 inches. Yellow and white on brown. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. "Suitable for those allergic to cows milk." Brochure. 1990. Gives name as Plamil Soya Milk Rice Pudding.

Letter and Label sent by Arthur Ling, Managing Director of Plamil Foods. 1990. July 24. "The sweetened version of our soya milk Rice Pudding was introduced in June 1977." Label. 9.5 by 4.25 inches. Blue, yellow, white, green on brown. Color photo of a blue bowl containing the pudding and sultanas (raisins). "Organically grown unpolished rice. Gluten free. Suitable for those allergic to dairy milk. Contains no animal fats or other animal ingredient. Protein is from soya protein isolate which has far higher protein content pro rata than soya flour."

2888. Pomeranz, Y.; Shogren, M.D.; Finney, K.F. 1977. Flour from germinated soybeans in high-protein bread. *J. of Food Science* 42(3):824-27, 842. May/June. [21 ref]
• ***Summary:*** Fascinating scanning electron micrographs (photos) show: (1) Soy milk. (2) Germinated soy flour. (3) High temperature soy flour. (4) Ardex 550 (soy flour from ADM). Address: U.S. Grain Marketing Research Center, USDA ARS, Manhattan, Kansas 66502.

2889. Howes, Charles D. 1977. Re: The influence of Dr. John Harvey Kellogg on substitute foods and their developers in the USA. Letter to Mr. Stephen H. McNamara, Associate Chief Counsel for Food, U.S. Food and Drug Administration, Washington, DC., July 15. 2 p. Typed, with signature on letterhead. [1 ref]
• ***Summary:*** "Your paper in *Food Engineering,* June 1977 was read with interest. I do not intend to dispute any of the points made in it here, but would like to share with you a historical perspective of the development of substitute foods, A brighter future may be assured if we remind ourselves of the progress of the past.

"John Harvey Kellogg, M. D. promoted a simple vegetarian diet at the Battle Creek Sanitarium in Michigan which he headed during most of his 67 years at the medical institution (beginning in 1875/76). During this period he developed a unique program of diet, hydrotherapy and expert surgery which attracted people from around the country and the world. Patients included a number of leading people such as William Howard Taft, William Jennings Bryan, Roald Amundsen, Lowell Thomas, Alfred DuPont, John D. Rockefeller, Jr., J.C. Penney, Montgomery Ward, S.S. Kresge, etc., etc.

"As might be guessed, Kellogg's views on diet and health were widely spread throughout America and the world. In order to provide a satisfactory vegetarian breakfast Kellogg developed the breakfast cereal and Battle Creek became the prepared-cereal capital of the world. The breakfast cereal was a substitute for ham & eggs and other high meat breakfasts.

"Kellogg also invented vegetable protein foods which he served as substitutes for meat. This was the beginning of the meat analogue industry.

"Henry Ford II [sic, Henry Ford] was a patient of Dr.

Kellogg and Kellogg was a man who liked to share his ideas with anyone who would listen intelligently. Exactly what was shared we do not know, but back in Detroit Ford established a soy research team. The soy research team invented soy plastic (which was used in Ford automobile steering wheels for several years), soy fabric, and soy fiber [spun soy protein fiber]. When the research team was broken up the leading members joined the food industry and with additional developments produced vegetable fiber suitable for food products. This was the beginning of textured vegetable protein fiber.

"In order to promote his ideas more fully and leave a more lasting impression on the health of the world, Kellogg founded a medical school in connection With the Battle Creek Sanitarium. The American Medical Missionary College was granted a charter in 1895 and had two campuses–Battle Creek & Chicago. Much of the support for the medical school came from the food business. The school gave an excellent education and was soon fully accredited. Into this situation came Harry W. Miller, a medical student from Ohio. Harry Miller started working as a guide in the cereal factory to help support himself as a medical student. He became interested in the food business and became such an expert guide that Kellogg developed an interest in him. Miller was instructed by Kellogg in the area of food processing and read into food development as well as studied medicine. He became well-versed in both areas.

"When Miller graduated he married and soon sailed for China as a medical missionary. He noted malnutrition among infants and a high death rate among them. He also noted that soymilk was made by the people, but only the old people (no doubt those without teeth) drank it. In time Miller applied his knowledge of food processing methods to taking soymilk production out of the kitchen and making it on a large scale in a formulation suitable for infants. In the late 1930's China was invaded by the Japanese and the soymilk plant was bombed. After several adventures he was able to return to the U.S. and founded the first American soymilk plant.

"Thus a "Whole Picture" of substitute foods may be outlined in perspective thus:" A diagram shows John Harvey Kellogg, M.D. on the top line. Arrows point downward from him to those he influenced on the 2nd line: (1) Henry Ford II and the Soy Research Group. (2) Vegetable Protein Foods. (3) Breakfast Cereal. (4) Harry W. Miller, M.D. Arrows point downward to the 3rd row showing that: (1) Ford and the Soy Research Group developed Vegetable Protein Fiber. (2) Dr. Miller developed Soymilk & Soycheese. Arrows point downward to the 4th row showing that both Vegetable Protein Fiber and Vegetable Protein Foods led to the [commercial] development of Textured Vegetable Protein foods.

"I hope this background material will be helpful to you as you deal with the nutritional problems of engineered foods.

"Sincerely,..." Address: PhD, Technical Director, Loma Linda Foods, 13246 Wooster Rd., P.O. Box 388, Mount Vernon, Ohio 43050. Phone: (614) 397-7077.

2890. **Product Name:** [Midori Soymilk (Mild, or Pure)].
Foreign Name: Midori Tônyû (Mairudo, Piyuwa).
Manufacturer's Name: Kyushu Nyugyo.
Manufacturer's Address: Kyushu, Japan.
Date of Introduction: 1977. July.
Wt/Vol., Packaging, Price: 500 ml, probably Pure Pak type carton.
How Stored: Refrigerated.
New Product–Documentation: K. Tsuchiya. 1982. Dec. Tonyu [Soymilk. 2nd ed.]. p. 72. Note: Midori means "green" in Japanese. This is a larger size version of their first soymilk launched in Aug. 1976.

2891. **Product Name:** Soymilk [Honey & Vanilla, or Plain].
Manufacturer's Name: Soy Plant (The).
Manufacturer's Address: c/o Wildflour Community Bakery (a co-op), 4th Ave., Ann Arbor, MI 48104. In Jan. 1978 moved to 211 East Ann St. Phone: 313-663-0500.
Date of Introduction: 1977. July.
Ingredients: Water, organic soybeans.
Wt/Vol., Packaging, Price: ½ gallon plastic jug, or from a cooler.
How Stored: Refrigerated.
New Product–Documentation: Label in The Soy Plant scrapbook on p. 4. 3 by 4 inches. Black on white. Pressure sensitive. "Keep refrigerated. Made from water and organic soybeans by The Soy Plant, a people's business, Ann Arbor, Michigan, 48104. (313) 663-0500. Flavored. Just add a little honey and vanilla." An illustration shows soybean vines growing to left and right out of a rayed planet.

Steve Fiering. 1979. Whole Foods. Jan. p. 38, 40. "A Midwestern Interest in Tofu." This is included in a list of products presently produced by the company. Talk with Steve Fiering. 1988. June 10. This was the company's second commercial product. Production probably started when they were still at Wildflour, before they went to Eden's. No new products were introduced while at Edens. At Ann St. it was also sold in a plastic cooler (a Norris Milk Machine), stirred by a motorized paddle.

Talk with Steve Fiering, a founder of The Soy Plant in Ann Arbor. 2000. Dec. 3. The Soy Plant probably used organic soybeans from day one. They probably got them directly from the The People's Food Co-op, a retail store located next door. The plain soymilk was purchased mostly by Asian-Americans; they sweetened it with sugar–which they preferred to honey.

2892. **Product Name:** Fresh Joy o' Soy Soymilk (Natural Unflavored).
Manufacturer's Name: Tofu Shop (The).

Manufacturer's Address: 116 N. Oak St., Telluride, CO 81435.
Date of Introduction: 1977. July.
How Stored: Refrigerated.
New Product–Documentation: Letter from Matthew Schmit. 1988. July. This product was launched in July 1977 in Colorado. Talk with Matthew Schmit, founder and owner of Tofu Shop Specialty Foods, Inc. 2002. Sept. 19. They sold this soymilk in Telluride at the local Co-op–outside of their deli. It was probably sold in glass Mason jars with taped on labels.

2893. Nelson, A.I.; Steinberg, M.P.; Wei, L.S. Assignors to University of Illinois Foundation. 1977. Soybean beverage and process. *U.S. Patent* 4,041,187. Aug. 9. 13 p. Application filed 23 June 1975. [4 ref]
• ***Summary:*** Also describes soy yogurt. Address: Dep. of Food Science, Univ. of Illinois, Urbana, IL.

2894. Schutte, Leonard. 1977. Unilever's production of soy protein concentrate (Interview). *SoyaScan Notes.* Aug. 11. Conducted by Walter J. Wolf of NRRC, Peoria, Illinois.
• ***Summary:*** Unilever makes about 60 million lb/year of alcohol-extracted soy protein concentrate which is used largely in calf milk replacers. Their concentrate contains about 100 parts per mission (ppm) of iron. To get this level they must was the soybeans to remove soil. Concentrates with 150 ppm of iron are unacceptable for veal calves because the meat becomes red rather than remaining white. Concentrates with 120-130 ppm are borderline. They believe the alcohol process of making soy concentrates is the best because the combination of heat and alcohol inactivate an allergen to which calves are sensitive. The alcohol process is also better for off-flavor removal and uses less energy.

Unilever is also texturizing soy protein concentrate on a pilot scale but the food uses of this product are still small, so they have not yet built a commercial plant. Address: Unimills B.V., Lindtsedijk 8, Zwijndrecht, Holland.

2895. Leviton, Richard. 1977. Re: History of and current developments at Laughing Grasshopper Tofu Shop. Letter to William Shurtleff at New-Age Foods Study Center, Aug. 23– in reply to inquiry. 7 p. Typed, with signature.
• ***Summary:*** An excellent letter, full of useful details! "Laughing Grasshopper has grown rapidly and predictably since its inception last January." The company now produces 700 to 800 lb/day of tofu, 6 days a week, with 3 men working 8-10 hours each and a janitor working 6 hours. Altogether seven people are employed: four partners, two full-time employees, and one part timer. They earn $2.75 an hour and have an insurance program paid for by the business Summer sales have averaged $8,000/month. They are moving their shop of some 1,000 square feet to a new location of 7,000 square feet for only double the rent. They are looking for $30,000 in investments to finance their new venture. They are importing equipment from Japan. "This winter we intend to commence soymilk production; next spring: tempeh, soy mayonnaise, soy ice cream, and agé. We have potentially a very exciting and massive business on our hands."

"That's the bright side of the picture. While the sales have been soaring and visions of financial glory mounting, certain hard facts have made themselves known. Running a business is difficult. Last winter I came down with mononucleosis and was out for seven weeks. We have had very bad relations with our landlord who has burned us on an illegal plumbing job he did for us, shut our water off twice, in the middle of production, and has threatened to take us to court suing us $12,000 for damages done to his personal property. We have thrown out hundreds of pounds to terrible tofu, due to bad beans or bad nigari technique. We have run out of soybeans and been closed for days while we drove around finding some. We have been shut down by the town health department and given a month's time to move by the state hoard. We have experienced much indecision and emotional turmoil and the new corporate structure will probably have Tom Timmins and me as the two principal owners with the stockholders. We have been on educational television; a five minute spot featuring our shop and some dialogue and shown in Springfield, Massachusetts. A lot of equipment has broken down, or become unfit to use and we are ruining the floor (made of oak beams) even though we have 3 large floor drains.

"Most people only see the good tofu coming out of our shop; the vicissitudes of business are mercifully spared their consideration. But it's all a matter of attitude. We feel confident now about our prospects and feel we will somehow muddle through the mess and confusion we have created for ourselves."

Leviton then answers in detail the following questions asked by Shurtleff: How did you obtain equipment and ingredients? How did you learn to set up a shop? What type of equipment did you buy and how much did it cost? What about health inspectors and codes? How did you determine your prices and what are they? How did you choose the best variety of soybean to use? How and from whom do you buy your soybeans? Your nigari?

"Here are some replies to questions in your letter of May 5. We sell 8-ounce pieces of tofu for 21 cents each, 50 to a pail for $10.50 delivered, with a $2.10 deposit on the 5 gallon pail which we ask to get back. Retail sales (which are insignificant) are 25 cents a piece."

"We have tried 20 different soybean varieties and only a few make good, reliable tofu, i.e., firm, holds together, tastes good. In particular Wells, Rampage, and Prize have given excellent tofu... The oil content of the bean is important... You want as much protein and as little oil in the bean. If there is much oil, then the bags are clogged, the tofu is slimy,

the yields drop by 25%. We have found many brokers don't even know what kind of bean they are wholesaling. A good bean is a joy to work with, a bad bean is a nightmare. We are buying a truckload of beans from Agricultural Exports Co., Hudson, Iowa, for 24 cents a pound delivered." Address: LGTS, 3 Main St., Millers Falls, Massachusetts 01349.

2896. Aminlari, Mahmood; Ferrier, L.K.; Nelson, A.I. 1977. Protein dispersibility of spray-dried whole soybean milk base: Effect of processing variables. *J. of Food Science* 42(4):985-88. July/Aug. [26 ref]
Address: Dep. of Food Science, Univ. of Illinois.

2897. Shurtleff, William; Aoyagi, Akiko. 1977. Tofu & soymilk production: The Book of Tofu, volume II. Lafayette, California: New-Age Foods Study Center. 128 p. Aug. 1. Illust. by Akiko Aoyagi Shurtleff. No index. 28 cm.
• ***Summary:*** A rough photocopied manuscript with a yellow cover, created in response to a letters from many people requesting information on how to start a tofu shop. This book was published in finished form in 1979 under the same title, Tofu and Soymilk Production (336 p.).

Contents: 1. So you want to start a tofu shop or soy dairy? 2. Setting up shop; The community shop, the traditional shop, the steam-cooker shop, the pressure cooker shop, the soy dairy, the modern factory. 3. Ingredients. 4. Scientific data concerning the tofu-making process. 5. Tofu. 6. Firm tofu. 7. Using okara and whey. 8. Deep-fried tofu: Cutlets, burgers, and pouches. 9. Soymilk. 10. Soymilk ice cream, yogurt, kefir, mayonnaise, and cheese. 11. Silken tofu & soft tofu (Silken tofu is made from concentrated soymilk). 12. Lactone silken tofu. 13. Grilled tofu. 14. Wine-fermented tofu. 15. Dried-frozen tofu. 16. Yuba.

Appendix A: People and institutions connected with tofu & soymilk production. B: Sketches of tofu and yuba shops in Japan. C: So you want to study tofu in Japan? D: Table of equivalents.

Note 1. This is the earliest English-language document seen (April 2013) that uses the term "silken tofu" to refer to Japanese *kinugoshi* tofu.

Note 2. This is the earliest English-language document seen (Oct. 2011) that uses the term "wine-fermented tofu."
Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549; 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan.

2898. Takai Tofu & Soymilk Equipment Company. 1977. Takai catalog of small and medium-sized equipment. 307 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan. 3 panels each side. Each panel: 28 x 21.5 cm.
• ***Summary:*** This is Takai's first English-language catalog, conceived of and developed for Takai by William Shurtleff. Many early tofu makers in the USA and Europe ordered their equipment via this catalog.

The banner heading across the top of the first page is white letters on a green background. The body of the catalog is black letters on white glossy paper. Photos (printed in black on a light green screen) show the company's many pieces of equipment and systems for manufacturing tofu and soymilk. The logo, in the upper right corner, shows a lever on top of a bean moving the world. The catalog is divided into 2 sections: Basic Equipment and Whole Systems.

The text on page 1 reads: "Takai, Japan's largest and best known manufacturer of equipment for making tofu (bean curd) and soymilk, was founded in 1917 and now has about 60 percent of the total Japanese market production. Unlike other companies, we produce a full line of equipment ranging from inexpensive tools suited for traditional small-scale production to Japan's largest and most modern machinery capable of producing over 200,000 cakes of tofu daily. In this latter area, we have about 90% of the total Japanese market. Our equipment is designed for the preparation of all the seven basic types of Japanese tofu as well as soymilk on the scale of your choice to meet your budget.

"Over the past several decades we have had a great deal of experience exporting our equipment to Japanese and Chinese run shops and factories in America, Europe, and Southeast Asia. Now with the growing interest in soy products in the West, we have worked closely together with William Shurtleff, author of *The Book of Tofu,* to develop our first English-language catalog. Export routes are well established that make it possible for you to order directly from us, the manufacturer, to get your equipment at the lowest possible prices and with minimum delay. To give you the widest possible choice of Japan's best equipment, we are also including in our catalog a number of items widely used in Japan, produced by other well-known makers."

Letter (fax) from Wataru Takai. 1996. Aug. 2. Takai's records show that their first catalog, which is green, was printed by Dai Nippon Printing Co. in August 1977. Address: Ishikawa-ken, Japan. Phone: (0762) 48-1355.

2899. Rasmussen, Carol. 1977. Vegetarians straight off the farm: Soy is source of successful diet. *Chicago Tribune.* Sept. 8. p. E3, or p. W_A3, or p. N_83.
• ***Summary:*** This article is about The Farm, from Summertown, Tennessee, and their creative but strict vegetarian diet–that uses no meat, eggs, or dairy products." Margaret Nofziger explains that Farm members are not food faddists; they eat cocoa, sugar, and white flour.

Most of their nutrients comes from soybeans. They grow 250 acres of soybeans a year and turn a significant portion of these into an incredible array of foods such as soy flour and soy milk. The soy milk is made into soy yogurt, mayonnaise, a cheese, tofu, soy ice cream, and tempeh (which is a fermented soy product from Indonesia). The pulp [okara] that remains after making soy milk is used to make a meatless

sausage; it also add to cakes, cookies, and other baked goods. Also on The Farm, soybeans are roasted to make nuts, and ground to make coffee. They have published recipe booklet titled "Yay soybeans."

The Farm has a great deal of experience in cooking whole soybeans. The best way is to use a pressure cooker for 1 hour at 15 pounds pressure. Or you can cook them for at least 10 hours at atmospheric pressure.

A typical breakfast at The Farm might consist of toast, fried tofu, tea and sugar. Or perhaps fried potatoes and cheese [made from nutritional yeast] and hot soy milk and tea.

A cartoon has this caption: "Soybeans are the base for cheese, ice cream, sausage, and burgers." Address: Food Guide editor.

2900. *Times of India* (*The*) (*Bombay*). 1977. Kisans take keen interest in new strains, methods. Sept. 28. p. 4.
• ***Summary:*** Pantnagar (Uttar Pradesh)–Note: Kisan is probably the Indian word for a farmer or peasant.

At G.B. Pant agricultural university the soyabean is considered to be of immense importance to the agricultural economy of India. According to the university's vice-chancellor, Dr. K.G. Gollakota, the soyabean has found tremendous acceptance among the terai farmers, who are unable to keep up with the demand. A Rs. 1-crore (10 million rupees) plant has been constructed at Bareilly to process soyabean into oil and meal, and the farmers were expanding their cultivation to keep up with the plant's demand.

Soybean meal has been added to the ingredients for making "Mysore pauk" (based on chickpea powder or besan) and idlis (based on urad) without changing the flavour.

The boys and girls and the university's home science department have switched to drinking soyabean milk from Coca-Cola. The university, which developed a special variety of soyabean that gave a high yield of soyamilk, sold the franchise to two entrepreneurs in Delhi and Madhya Pradesh to produce something like 30,000 litres of soyamilk a day.

Note: It is unclear whether or not this soyamilk plant was every constructed.

2901. Archer Daniels Midland Co. 1977. Annual report. Decatur, Illinois. 33 p. 27 cm.
• ***Summary:*** Net sales in 1977 were $2,114 million, up from $1,647 million in 1976. Net earnings in 1977 were $61.4 million, down from $65.2 million in 1976. ADM's protein specialty division successfully introduced Ardex 700, a new soy protein concentrate, and Nutrisoy Fiber. A new light colored TVP was developed for extending fish. The company's TVP brand of textured vegetable proteins remains the largest selling textured product, both in the USA and worldwide (p. 5).

Textured soy protein concentrate products are called TVP/2. A new class of products designated as a soy beverage base are now being evaluated in dairy-type applications, such as milk replacers, cheese, and dessert bases (p. 11).

British Arkady Co.: Sales of TVP, now in its second full year of manufacture in Manchester, England, were up. Im memoriam: Thomas L. Daniels, died 23 May 1977. He was the son of John W. Daniels who founded Daniels Linseed Co. in 1902. Address: P.O. Box 1470, Decatur, Illinois 62525.

2902. Escueta, E.E.; Banzon, Julian. 1977. Preextraction boiling of soybeans as a pretreatment in soymilk preparation. *Philippine Agriculturist* 61(3&4):104-14. Aug/Sept. [27 ref]
Address: 1. Instructor; 2. Emeritus Prof. Both: Dep. of Food Science & Technology, College of Agriculture, Univ. of the Philippines at Los Baños, College, Laguna, Philippines.

2903. Halpin, Thomas C.; Byrne, W.J.; Ament, M.E. 1977. Colitis, persistent diarrhea, and soy protein intolerance. *J. of Pediatrics* 91(3):404-07. Sept. [8 ref]
• ***Summary:*** The authors describe soy protein-induced acute colitis with persistent diarrhea in four infants; they were intolerant to soy formula but not to cow's milk. Address: Dep. of Pediatrics, School of Medicine, Univ. of California, Los Angeles, CA 90024.

2904. Roy, J.H.B.; Stobo, I.J.F.; Shotton, Susan M.; Ganderton, P.; Gillies, Catherine M. 1977. The nutritive value of non-milk proteins for the preruminant calf. The effect of replacement of milk protein by soya-bean flour or fish-protein concentrate. *British J. of Nutrition* 38(2):167-87. Sept. [36 ref]
Address: National Inst. for Research in Dairying, Shinfield, Reading RG2 9AT, England.

2905. Tofu Shop (The). (Renamed Far Pavilions in late 1979). 1977. October. New soyfoods restaurant or deli. 116 N. Oak Street (Box 69), Telluride, CO 81435.
• ***Summary:*** Menu and promotional brochure for The Tofu Shop. 1978, Sept. 6 panels. On the front panel is a stunning circular photo of Rocky Mountains rising out of a misty valley. Around it is written: "The Tofu Shop" (above). "Juice bar–Dining–Catering–Wholesale kitchens" (below). Below that on the front panel: "116 North Oak Street. Next to the opera house. Telluride, Colorado. Call ahead for take-out: 728-9940."

Entrees (Served with soup or salad–$0.65 extra): Stir-fried tofu, rice & vegetables. Burgers: Soy burger, Tofu burger, Okara burger. Stuffed pitas: Grilled tofu & vegetables, Guacamole and tofu. Burritos: Spicy tofu and rice filling with guacamole. Smoothies: Carob, honey, soymilk with banana. Carrot sunny shake. Other refreshments: Miso broth, soymilk, whey from making tofu. Salads: Full plate tofu & guacamole salad, Tofu and vegetable salad, Okara salad. Fresh tofu. Grilled tofu. On the back panel is a lively, writhing dragon plus: "Uncompahgre

Natural Foods. Producers and suppliers of specialty foods for Colorado's western slope." Talk with Matthew Schmit, founder and owner of The Tofu Shop. 2002. Sept. 19. Matthew estimates that this undated menu was first printed in about Sept. 1978.

Menu for Far Pavilions. 1979, undated. 8 panels. Green on tan paper. "International vegetarian cuisine. Welcome hospitality. Located below the opera house. For details, see separate Menu entry for Far Pavilions.

Shurtleff & Aoyagi. 1982. Report on Soyfoods Delis, Cafes & Restaurants. p. 3. Started in Oct. 1977 by Matthew Schmit. Later run by Catherine Peterson.

Note: This is America's second "soy deli," offering a host of highly creative and delicious recipes. Address: Telluride, Colorado. Phone: 728-4441.

2906. Jung, A.L.; Carr, S.L. 1977. A soy protein formula and a milk-based formula. *Clinical Pediatrics* 16(11):982-85. Nov. [12 ref]
Address: 1. Assoc. Prof. of Pediatrics, Univ. of Utah Medical Center, Salt Lake City, UT 84132.

2907. Schmidt, R.H.; Mathews, R.F.; Davidson, S.M. 1977. Sensory acceptance of tomato salad-type yogurt systems from oilseed/dairy combinations. *Proceedings of the Florida State Horticultural Society* 90:201-04. Nov. [9 ref]
• ***Summary:*** Yogurt systems were prepared from whole milk fortified with oilseed protein (soy protein isolate or peanut flour) and from oilseed protein/dried skim-milk blends. Four yogurt systems were compared by a taste panel: Unflavored; tomato and spice; tomato, spice and vegetable; and fruit flavored. Tomato flavored was preferred to unflavored, and the addition of nonfat dry milk further improved the flavor. Heat processing at 70ºC for 10 min. and homogenization further improved sensory acceptance. Soy protein fortified yogurt systems had higher objective texture values than did other yogurt systems evaluated. Address: Dep. of Food Science & Human Nutrition, Univ. of Florida, IFAS, Gainesville, FL 32611.

2908. *Telluride Times* (*Colorado*). 1977. Tofu prepared daily in Telluride shop. Dec. 8. p. 11.
• ***Summary:*** "The Tofu Shop–a tofu factory and take-out health food store located in the Spectrum Shops–has been doing health since mid-September."

Business partners Matthew Schmit and Timothy Mecke started the Tofu Shop, which makes fresh tofu each morning in Telluride. Schmit was involved in setting up the Winterstash Food Co-op, and Mecke brought the art of making tofu to the enterprise. Both men are vegetarians.

Schmit, who starts making tofu at 6 a.m. each morning says anyone "is welcome to come down to observe and learn. 'It's a beautiful process, somewhat like meditation,' he says."

"The Tofu Shop distributes their products through Winterstash Food Co-op and Rose's market in Telluride, and through natural Food Stores in Durango... The Tofu Shop also offers a variety of take-out foods including salads, soups, soyburgers, sandwiches, sprouts, and soymilk." A photo shows Matthew Schmit, Susie Imbarrato, and Tim Mecke, all holding a tray of sprouts. Susie "runs the fresh juice bar and prepares the baked goods."

Note: This is the earliest article or published document seen (April 2013) concerning The Tofu Shop in Telluride, Colorado.

2909. *SoyaScan Notes.* 1977. Chronology of soybeans, soyfoods and natural foods in the United States 1977 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jan. 12. Laughing Grasshopper tofu shop starts making tofu in Millers Falls, Massachusetts. Founded by Richard and Kathy Leviton, Tom Timmins, and Michael Cohen in April 1976, it soon becomes the largest of the new breed of Caucasian-run U.S. tofu manufacturers. It was renamed The New England Soy Dairy in Nov. 1977, Tomsun Foods, Inc. in 1984, and Tomsun Foods International in 1986.

Jan. The Soy Plant starts making tofu inside Wildflower Community Bakery at Ann Arbor, Michigan. Steve Fiering is one of the organizers of America's first soyfoods co-op.

Jan. 20. Jimmy Carter inaugurated as president of the United States. Bob Bergland is Secretary of Agriculture.

March. Surata Soyfoods starts making tofu in Eugene, Oregon. America's second worker-owned soyfoods cooperative, organized by Benjamin Hills.

April 5. Takai Tofu & Soymilk Equipment Co. in Japan works with consultant William Shurtleff to acquire an English name, develop a unified equipment catalog, and establish international operations.

May. Flying Cloud Tofu (soon renamed The Tofu Shop, then Northern Soy) starts tofu production in Rochester, New York. Founders are Greg Weaver, Greg Mello, and Andy Schecter.

May 10-June 7. Shurtleff and Aoyagi travel to Indonesia to do field research on tempeh in preparation for a book on the subject.

Aug. 16. *Miso Production* by Shurtleff and Aoyagi published by New-Age Foods Study Center, the Center's first publication.

Sept. Article in *Mother Earth News* announces that tempeh starter and split whole soybeans are available from newly founded Farm Foods at The Farm in Tennessee. Orders start to pour in. Farm Foods continues The Farm's tradition, with a great deal of creative and influential work with soyfoods.

Sept. Swan Foods starts operation in Miami Florida, run by Robert Brooks and Mary Pung. They produce America's first commercial soymilk yogurt. After doing extremely

innovative pioneering work with second generation tofu products and advertising them nationwide, they go out of business in Dec. 1978 from trying to grow too fast.

Sept. White Wave starts making tofu in a bathtub in Boulder, Colorado. Founded by Steve Demos.

Oct. The Tofu Shop, America's second soy deli, opens in Telluride, Colorado. Founded by Matthew Schmit, it was later renamed Far Pavilions.

Oct. 14. Bean Machines Inc., America's first supplier of tofu and soymilk equipment, begins operations in California under the direction of Larry Needleman. Most of their equipment is imported from Takai in Japan.

Oct. *Soycraft,* a newsletter and America's first periodical focusing on soyfoods, begins publication. Initiated by David and Danette Briscoe of Lawrence, Kansas.

Nov. Redwood Natural Foods, Inc. in Santa Rosa, California, launches the world's first vacuum packed tofu. Redwood developed the packing process using tofu made by Quong Hop & Co.

Nov. Paul Duchesne starts selling Fried Rice & Tofu Sandwiches in Fairfax, California. His operation later becomes Wildwood Natural Foods.

* *The Heartsong Tofu Cookbook,* by Bob and Toni Heartsong self-published in Florida.

* Passage of the 200 mile offshore fishing limit law has a major impact on Japan's protein supplies, increasing interest in and use of soy protein products.

* By the end of 1977 there are at least 13 commercial Caucasian-run tofu shops in America.

* The Food and Agriculture Organization of the United Nations (FAO) establishes a European Cooperative Network on Soybean in which 14 countries participate, exchanging information on soybean production.

* Genentech becomes the first company founded specifically to apply recombinant DNA techniques for commercial purposes.

* In China, under new post-Maoist economic policies, soybean acreage starts to increase after almost 20 years of decline based on grain-first policies. Soybean production began a slow increase in the mid-1960s, despite declining acreage.

2910. Filisetti, T.M.C.C.; Mancini Filho, J.; Marquez, U.M.L.; Lajolo, F.M. 1977. Factores anti-nutricionais em produtos comerciais de soja [Antinutritional factors in some commercial soy products]. *Revista de Farmacia e Bioquimica da Universidade de Sao Paulo* 15(1-2):93-108. Jan/Dec. [42 ref. Por; eng]

• ***Summary:*** Using an NaCl extraction process, trypsin inhibitors were found in commercial soy products in the following concentrations (in units/mg of protein): Soy protein isolates (*isolado protéico*) 177.4, soy protein concentrates (*concentrado protéico*) 66.6, uncooked soybeans (*soja natural*) 48.1. toasted soy flour (*farina de soja tostada*) 9.8, soybean milk–type A (*leite de soja*) 5.8, soybean milk–type B (*leite de soja*) 3.4, and textured soy protein (*proteina texturizada*) 2.6.

Hemagglutinins in soybean products, which were shown to be more resistant to thermal processing, were found in all of the above products, in concentrations equal to 25% that of the original soybean content. Goitrogens–factors capable of decreasing by 30% iodine-131 capture by the rat thyroid gland–were found in soybean milk, toasted soybean flour, and soy protein isolates. Address: 1. Student, Post-Graduate Course in Food Science (*Ciencia dos Alimentos*); 2. Asst. Prof., Dep. of Food and Experimental Nutrition (Departamento de Alimentos e Nutricao Experimental). All: Faculdade de Ciencias Farmaceuticas, Universidade de Sao Paulo, Sao Paulo, Brazil.

2911. Goulart, Frances Sheridan. 1977. Soybeans. *Vegetarian Times* No. 22. Nov/Dec. p. 50-51.

• ***Summary:*** A superficial overview. Discusses "boiled whole beans, toasted whole beans, soybean butter, soymilk, notes on soyflour, soysauce, soy oil, tofu, soy yogurt, mock mocha java (soy coffee)."

2912. Swan Food Corp. 1977-1978. Introducing the Soybeanery–Natural food deli & bakery: Now open. Miami, Florida. 3 p. Undated. 28 cm. Catalog and price list.

• ***Summary:*** This retail catalog lists the company's soy products, iced herbal beverages, and baked goods & pastries–with prices. Serving take out orders–Soy products include: Sandwiches (made with wholewheat pita–pocket bread; all sandwiches served with fresh organic salad vegetables): Tofu–baked, regular, marinated, or caraway: $1.40. Eggless egg salad: $1.40. Tofu cream cheese: $1.05. Salads: House salad with sprouts plus tofu–baked, regular, marinated, or caraway: $1.35. Eggless egg salad: $1.35. Hot food: Soyburger sandwich: $1.30. Desserts (per slice): Mary's tofu cheese cake: $0.75. Mary's marble swirl cake: $0.75. Mary's devil's food cream cake: $0.75. Mary's carob cream cake: $0.75. Rice pudding [made with organic brown rice, soy melk, raisins, maple syrup, sea salt]: $1.10. Carob pudding: $1.10. Vanilla pudding: $1.10. Soyogurt: Strawberry, peach, plain (more flavours to come): $0.45. Granola: With soyogurt: $0.45. With soymelk & banana: $0.75. Drinks: Soy shake (carob, vanilla, strawberry). Soymelk. Non-soy: Herb teas. Coconut juice. Pinacolada. Smoothie (apple-banana). Sweet rice cookie. Oatmeal cookie. Hummus sandwich.

A page titled "Retail price list" lists many of the products shown above but at slightly higher prices. In addition: Tofu–regular: $1.00. Tofu–baked: $1.95. Tofu–marinated: $1.60. Tofu–caraway: $1.60. Soymilk [plain]: Quart: $1.00. Pint: $0.45. Soymilk (sweetened): Quart: $1.25. Pint: $0.45. Tofu cakes and pies (all 7-inch rounds): Tofu pie–cashew: $4.50 Mary's devil food cream cake: $4.50. Tofu chip dip: $1.25. Whole grain soyburgers: $1.15.

SOY BEAN PRODUCTS

NATURAL FOODS

SWAN FOOD CORP.
5758½ Bird Road
Miami, Florida 33155
Phone: (305) 667-7141

RETAIL PRICE LIST

TOFU -	Regular	$1.00
	Baked	$1.95
	Marinated	$1.60
	Caraway	$1.60
SOYMELK	Quart	$1.00
	Pint	.45
SOYMELK (sweetened) -	Quart	$1.25
	Pint	.45
ICED HERB TEA (sweetened) 5 blends, 4 straight teas		.50
ICED HERB TEA (unsweetened) Bancha, Mu		.50
CAROB MARBLE SWIRL CAKE (all caked & pies 7 inch rounds)		$4.50
TOFU PIE - CASHEW		$4.50
MARY'S CAROB CREAM CAKE		$4.50
MARY'S DEVILS FOOD CREAM CAKE		$4.50
TOFU CHIP DIP		$1.25
WHOLE GRAIN SOYBURGERS		$1.15
TOFU VEGETABLE STEW		$1.15
SOYOGURT (plain or with fruit)		.45
MARY'S OATMEAL COOKIES		.35
BARLEY MALT SYRUP		$1.15
SOY SHAKES -	Carob	.85
	Vanilla	.95
	Strawberry	$1.05
MARY'S EGGLESS EGG SALAD		$1.40
NORI ROLL		$1.50
NECTAREL		.70
NECTAREL GINSENG		.75

Tofu vegetable stew: $1.15. Soyogurt–plain or with fruit: $0.45. Soy shakes–Carob: $0.85. Vanilla: $0.95. Strawberry: $1.05. Mary's eggless egg salad: $1.40. Also–Nori roll. Nectarel ginseng.

Note 1. This is the earliest English-language document seen (Dec. 2003) that contains the term "soy shake."

Note 2. This is the earliest English-language document seen (May 2003) that uses the word "Hummus" (or "Hummous"), which is a paste of pureed chickpeas usually mixed with sesame tahini and/or sesame oil (plus seasonings or spices) and eaten as a dip or sandwich spread.

Note 3. This is the earliest English-language document seen (Sept. 2012) that uses the word "Soyogurt" to refer to soy yogurt.

Note 4. This is the earliest English-language document seen (Feb. 2013) that contains the term "Eggless egg salad" or the term "Mary's eggless egg salad."

Talk with Danny Paolucci. 1997. Dec. 1. Danny worked for Swan Foods from 1977 to 1978. He knew Robert Brooks and Mary Pung very well. He last saw Mary about 8 years ago. The foods described above were sold in a little (10 by 12 foot) storefront retail store and deli that was located in the same building as the tofu factory but faced the sidewalk on Bird Road. A young lady named Penny, from England, ran the store. It was take-out only–no tables, chairs, or sit-down space. There was one large glass deli case, from which they sold a great many of Mary's delicious tofu pies. Danny used to have all the recipes for those pies, but he loaned them to his yoga teacher. They also sold lots of herb teas in Pure-Pak quarts, plus many Wah Guru Chew bars–made by another company that was probably also run by disciples of Guru Maraji. Address: The Soybeanery, 5758½ Bird Rd., Miami, Florida, 33155. Phone: 305-667-7141.

2913. Soy Plant (The). 1977-1987. Scrapbook. Ann Arbor, Michigan. 54 p. 45 x 40 cm (18 x 16 inches). [49 ref]
• ***Summary:*** This large (18 by 15 inches) 34-ring binder has flexible brown covers and holds large black sheets with acetate sheet protectors. On each sheet are taped, in approximately chronological order, articles, photographs (both black-and-white and color), labels, menus, letterheads, etc. documenting the story of this company. An excellent scrapbook! Many of the documents will be cited separately. Some of the highlights (the numbers of the unnumbered pages appear in parentheses): (1) A letter of 12 Dec. 1977 to "Members of the Michigan Federation of Food Co-ops" announcing that The Soy Plant which produces tofu (at 330 Maynard), and The Grain Burger Collective which produces Grain Burger Mix (at 335 Catherine), both in Ann Arbor, Michigan, are organized as collectives. Both their products are available from the People's Warehouse. Two large black-and-white photos (each 5 by 7 inches) show: Jerry MacKinnon, with long hair and mustache, cutting a large block of tofu into cakes, and Steve Fiering pouring soaked soybeans into the hopper of a grinder. (4) Black-and-white labels for tofu and for soymilk. A one-page leaflet titled "Getting to know your tofu" from "The Soyplant." (7) Long article titled "One of the few U.S. tofu manufacturers right here in Ann Arbor."

On the last two pages of the scrapbook are two undated and unsigned, handwritten pages torn from a spiral-bound, lined notebook, that begin: "Important! We are under attack! A vicious beast unknown to us has snatched from life many a new Soy worker. This pernicious creature... has brutishly eaten, devoured and consumed no less than three new workers without the decency to let them call us before being eaten... This vile unknown entity must be stopped." "This vile beast... bears a striking resemblance to our much loved packing machine. Have we given birth to a monster?" "As Ché Guevara said North Americans live in the belly of a monster, although resembling a machine the monster is none other than the capitalist system... Rx: Revolution and Revolutionaries."

Location: As of Dec. 2000 this binder is owned by Bruce Rose, president of Rosewood Products, Inc., Ann Arbor, Michigan. Soyfoods Center has a photocopy of the contents of this entire scrapbook. Address: 330 Maynard, Ann Arbor, Michigan 48104. Phone: 313-663-0500.

2914. **Product Name:** Soymilk.
Manufacturer's Name: Adventist Health Education Foundation (Egypt Food Factory).
Manufacturer's Address: P.O. Box 12, Heliopolis, Cairo, Egypt.
Date of Introduction: 1977.
New Product–Documentation: Letter from Charles D. Howes. 1978. Oct. List of Seventh-day Adventist soymilk plants.

Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). Gives the company's name, address, and phone number. Owner: Habib Banna. Seventh-day Adventist soy dairy.

Note: This is the earliest known commercial soy product made in Egypt.

2915. Chander Mohan. 1977. Utilization of soybean and whey for the manufacture of weaning food of high protein efficiency ratio. PhD thesis, Panjab University, Chandigarh, India. *
Address: Panjab Univ., Chandigarh, India.

2916. **Product Name:** Fearn's Pure Soya Powder (for Making Soy Milk).
Manufacturer's Name: Fearn Soya Foods.
Manufacturer's Address: 4520 James Place, Melrose Park, IL 60160.
Date of Introduction: 1977.
New Product–Documentation: *Soybean Digest Blue Book.*

1977. p. 33.

2917. Ferreira, V.L.P.; et al. 1977. O comportamento do leite de soja "Vital" natural quanto aos aspectos físico-quimico organolépticos [The behavior of Vital brand soymilk with respect to its physical, chemical, and organoleptic aspects]. *Boletim do Instituto de Tecnologia de Alimentos* (*Campinas, Sao Paulo, Brazil*) No. 53. p. 53-68. [Por]*
Address: Brazil.

2918. **Product Name:** Granolac Infant Soya Milk (Powdered).
Manufacturer's Name: Granose Health Foods Ltd. (Marketer). Made in the USA by Loma Linda Foods.
Manufacturer's Address: Stanborough Park, Watford, Herts., WD2 6JR, England.
Date of Introduction: 1977.
Ingredients: Soya bean solids, corn syrup, soya oil, sugar, salt, lecithin, vitamins.
New Product–Documentation: *The British Vegetarian.* 1961. March/April. p. 93. "Soya milk for household use." Granose Foods will soon be in a position to supply two varieties of spray-dried soya milk, Soyalac and Soyagen, made by one of their associated companies, Loma Linda Food Company in Arlington, California. Soyalac is specially prepared for infants, whereas Soyagen is for general use. A table compares the nutritional composition of the two products.

Listing in International Vegetarian Health Food Handbook (UK). 1977-78. p. 189. "Granolac Infant Soya Milk by Granose Health Foods Ltd." Manufacturer's catalog. 1980. April. "Infant formula soya milk. As near to the taste, texture and nutritional value of mother's milk as is possible. Basic ingredients similar to Granogen, with modifications. Full analysis available."

Dorothy E.M. Francis. 1984. "Alternatives to Cow's Milk: Comparisons." p. 147-48. In: David L.J. Freed, ed. Health Hazards of Milk. London, Philadelphia, Toronto, etc.: Ballière Tindall. Granolac Infant, from Granose, is for infants older than 3 months.

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product was introduced in 1980. It is no longer on the market, and no label is available.

2919. **Product Name:** [Vital and Gestal {Soymilks}].
Foreign Name: Vital, and Gestal (Bebida a Base de Soja).
Manufacturer's Name: Instituto de Technologiade Alimentos (ITAL).
Manufacturer's Address: Campinas, Sao Paulo, Brazil.
Date of Introduction: 1977.
Wt/Vol., Packaging, Price: 200 ml.
New Product–Documentation: Costa & Arkcoll. 1975. INTSOY Series No. 6. P. 174-77; Costa et al. 1976. Suplemento de Ciencia e Cultura, Resumos 28(7):868. Pereira & Campos. 1981. *Journal of the American Oil Chemists' Society* 58(3):355-62. By 1977 VITAL was sold pasteurized in polyethylene bags and in powdered form.

R.H. Moretti. 1981. Journal of the American Oil Chemists' Society. March. p. 521. "Soy milk developments in Latin America." In 1975-76 two new projects were started in Brazil. ITAL, the Institute of Food Technology, developed a soya milk brand-named Vital. "It was first processed by dehulling soybeans, and later by hot grinding and extraction. The centrifuged and formulated soya milk was sterilized by UHT and aseptically packed in Tetra Pak cartons. Several flavors were developed and tested by school children and industry workers. It was well accepted but was limited by the high cost. Later, in 1977, Vital was also packed in polyethylene bags, but at that time only in pasteurized form. Vital can be kept refrigerated for 2-3 days. The same soya milk was also developed in powder form."

Photocopy of Label sent by Anders Lindner. 1989. On front panel are cartoon sketches of 6 boys and girls with arms held upward in the shape of a "V." "Produto a base de extrato de soja. Amostra experimental. Coloque na geladeira depois de aberto."

2920. **Product Name:** [Soena {Soymilk} (Lactic [Acidophilus], Celery, Carrot, Plain)].
Foreign Name: Soiina.
Manufacturer's Name: Kibun Health Foods K.K.
Manufacturer's Address: 1-11-8, Shin-Sayama, Sayama-shi, Saitama-ken, 350-13, Japan.
Date of Introduction: 1977.
Wt/Vol., Packaging, Price: Wide-mouth cup with foil lid.
How Stored: Refrigerated.
New Product–Documentation: Only the lactic (acidophilus) one of these soymilk products is cultured/fermented. Color photo from a Kibun brochure shows the product (Celery Cocktail) in the package (a cup) with a straw in the top.

Fukushima. 1978. In: American Soybean Assoc. ed. International Soya Protein Conference, Proceedings. Hudson,

Iowa: ASA. p. 40. "Recently, a new fermented drink using soybeans appeared on the market. This product is a drink which is made by the fermentation of soy milk by lactic acid bacteria."

Shurtleff & Aoyagi. 1979. Tofu & Soymilk Production. p. 313. "Kibon Foods, Odakyu Kashiwagi Biru 8-gai, Nishi Shinjuku 7-7-30, Shinjuku-ku, Tokyo 160, Japan. Tel. 03-365-5011. Attn. Mr. Mizumachi. Maker of Soena lactic soymilk drinks, and dairylike soymilk in Tetra Brik cartons."

Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Kibun first made commercial soymilk in Japan in 1977.

Brian Fitzpatrick. 1982. Soya Milk in Asia. States that Kibun first launched soymilk in Japan in 1976.

Poster, 6 by 8.5 inches, color. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.

2921. **Product Name:** [Soymilk].
Manufacturer's Name: Natural Foods.
Manufacturer's Address: Japan.
Date of Introduction: 1977.
New Product–Documentation: Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Natural Foods first made commercial soymilk in Japan in 1977.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64.

2922. Oku, E.O.; Eka, O.U. 1977. Chemical evaluation of nutritive value of soya pap and soya porridge: The Nigerian weaning foods (Unpublished data). Published in and cited by Ahmadu Bello University, Extension Bulletin No. 21. (Reprinted Nov. 1985). See p. 10, 74. Unpublished manuscript.
• ***Summary:*** Page 10 gives the average chemical composition of various Nigerian paps and porridges, including: Millet pap supplemented with soyabean flour. Millet pap supplemented with soyabean milk. Millet porridge supplemented with soyabean flour. Millet porridge supplemented with soyabean milk. In each case, the soy-fortified food was much richer in protein than the basic cereal food. Address: Nigeria.

2923. **Product Name:** Soy Melk [Pasteurized: Sweetened, or Carob].
Manufacturer's Name: Swan Food Corp.
Manufacturer's Address: 5758½ Bird Rd., Miami, FL 33155.
Date of Introduction: 1977.
Ingredients: Carob: Organic soybeans, pure water, carob powder, pure maple syrup, pure vanilla extract.
Wt/Vol., Packaging, Price: Pure-Pak carton: ½ pint wholesales for $0.35 or $0.38½; quart wholesales for $0.80 or $0.90 (April 1978).
How Stored: Refrigerated.
New Product–Documentation: See next page**.** Label. 1977. 2.75 by 3.5 inches by 2.75 wide. Pure-Pak gable-top carton (like a milk carton). Blue, green and red on vanilla. "Keep refrigerated. Contains no cholesterol. A little heaven on earth. The kingdom of heaven is within you. Hope you enjoy our nutritious soy melk. It's a delicious natural food product that can be substituted in any recipe calling for milk. Sweetened soy melk is ideal for desserts. It's great straight from the carton, too. Using whole, organic soybeans, our soy melk is high in protein and other valuable nutrients, and is an excellent food source. Please try our other fine products: Soy shakes, iced herb teas, tofu and other tofu products." On three of the four panels is a 1-inch diameter circular logo featuring a stylized swan, with two large wings symmetrical about a vertical axis and an arched neck on the left side. The other half of the arch is drawn in to form a heart, inside of which is written "Because we love you." Across the inside top are the large words "Swan Foods." A full-color rainbow arches below them and over the swan. At the top center, between the words "Swan Foods," are the smaller words "Nature's Finest" written one below the other; between them is an infinity sign.

"Swan Food Corp." order form and price list for distributors. 1978. April.

Ad (full page, black-and-white) in *Alternatives* magazine (Miami, Florida). 1978. July/Aug. p. 49. "Remember the name!" "Soy Melk (Sweetened & Carob)." Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.

2924. **Product Name:** Soy Shakes [Carob, Vanilla, or Strawberry].
Manufacturer's Name: Swan Foods Corporation.
Manufacturer's Address: 5758½ Bird Rd., Miami, FL 33155.
Date of Introduction: 1977.
Ingredients: Incl. soymilk.
Wt/Vol., Packaging, Price: 1 pint plastic bottle. Retails for $0.50-$0.60 (April 1978).
How Stored: Refrigerated.
New Product–Documentation: Label. 1977. 3 by 3.5 inches. 3-color. "Swan Food Corp." order form and price list for distributors. 1978. April.

Ad (full page, black-and-white) in *Alternatives* magazine (Miami, Florida). 1978. July/Aug. p. 49. "Remember the name!" "Soy Shakes (Carob, Vanilla & Strawberry)." Processing described by Shurtleff & Aoyagi. 1979. Tofu & Soymilk Production. p. 254. Note: These are America's earliest known commercial soymilk shakes.

2925. **Product Name:** Mary's Rice Pudding.
Manufacturer's Name: Swan Foods Corporation.
Manufacturer's Address: The Soybeanery, 5758½ Bird Rd., Miami, FL 33155.
Date of Introduction: 1977.
Ingredients: Organic brown rice, soy melk, raisins, maple syrup, sea salt.
Wt/Vol., Packaging, Price: 8 oz.
How Stored: Refrigerated.
New Product–Documentation: Label. 1977. 2 by 1¼ inches. Self adhesive. Black on white.

2926. Albright, Nancy. 1977. Rodale's naturally great foods cookbook: the best foods to use and how to use them in over 400 original recipes. Emmaus, Pennsylvania: Rodale Press. [vi] + 408 p. Illust. 24 cm. Reprinted in 1983 as
• ***Summary:*** This book is based on natural foods but makes widespread use of meat, poultry, fish, and dairy products. Raw, unstrained clover honey is used as a sweetener instead of white sugar which "is dangerous to health..."

"Natural foods restaurants are 'in'" (p. 2). "... the joys of natural foods" (p. 3). "... consumers are making a firm commitment to natural food cooking."

Soy related recipes: Rice and soy crepes (with ½ cup soy flour, p. 53). Whole soybean casserole (p. 74). Bulgur soybean loaf (with 3/4 cup soybeans, p. 81).

The section titled "The soybean" (p. 275-85) begins: "The queen of the legumes is the soybean. And its status is growing. From a relatively unknown commodity... it has finally come into its own in this country as an important food. The soybean is the vegetable that most nearly provides the complete protein necessary for good health." Discusses varieties suited to the family garden. Recipes: Green soybean and corn succotash (with green vegetable soybeans). Soy flour for added values: Soy pancakes. Soy cheeseburgers (with soy grits). Tofu (soybean curd): Mentions the Learning Tree tofu kit and The Book of Tofu, by Shurtleff and Aoyagi (1975, Autumn Press; no tofu recipes are given). Soy sauce (shoyu): Herbed soybean salad (with 1 cup soybeans). Fresh

vegetable and fruit stew with soybeans. Soybean-cabbage casserole. Soybean coffee. Soybean custard pie. Soy milk (homemade). Carrot soy loaf. Liver pate (with 1 cup soy pulp [okara] remaining from making soy milk). Mock pumpkin pie (with soy pulp). Scroggin (backpacker's food, with 3 cups soybeans, boiled). Soy potato dumplings (with ½ cup soy flour). Soy salad dressing (with 3/4 cup soy flour or powder).

A photo (facing copyright page) shows Nancy Albright cutting vegetables in Rodale's Fitness House kitchen. Address: Author of *The Rodale Cookbook*.

2927. Anderson, Eugene N., Jr.; Anderson, Marja L. 1977. [Food in] Modern China: South. In: K.C. Chang, ed. 1977. Food in Chinese Culture. New Haven, CT, and London: Yale Univ. Press. 429 p. See p. 317-382.

• ***Summary:*** Page 326 states: Soybeans–the fifth of the classic Five Staples (or Five Grains)–are usually the most important, although other legumes make a surprisingly good showing in south China, no doubt because soybeans grow better in the north. The soybean "produces more protein per acre and per pound than any other common humanly edible crop, plant, or animal. This has caused them to become more important than any animal food as a protein provider in China. The Chinese have long recognized their similarity to animal products and, indeed, have built up a huge cluster of imitation-meat foods (probably developed originally by, and certainly now associated with, vegetarian Buddhists). The Chinese lack of interest in dairy products is almost certainly, in part, a result of the fact that the soybean provides the same sorts of nutrition more economically–though a desire to differentiate themselves from the border nomads and to be independent of them in food economy must also be taken seriously as an explanation. (It is the classic Chinese explanation of the phenomenon but has been dismissed by those moderns who believe that all traditional explanations must necessarily be wrong.)

"Further discourse on the soybean belongs properly in the following section on food processing, for the soybean is used neither in its raw state nor, usually, in a simple boiled or roasted form. There are good reasons for this. The soybean, being so nutritious and succulent, has been faced with intense natural selection pressure by seed-eating insects and other animals; surviving soybean strains contain whole galleries of poisons and other unfortunate chemicals, which protect the seeds against destruction but make them dangerous food in the uncooked and unprotected state (Committee on Food Protection 1973). Simply prepared soybeans are not very digestible, since heat bonds some of the nutrients into hard-to-digest form in the intact bean. Thus almost all soybeans consumed in China are fermented, ground into flour, and then processed, sprouted, or otherwise milled."

"The soybean is so famous that one is surprised to discover from Buck that the broad bean outranks it in some parts of south China." However in genetically susceptible individuals, *Vicia faba* produces favism, a condition characterized by acute anemia and other unpleasant symptoms. Other important sources of protein are black soybeans (a variety of soybean mentioned by Buck) and sprouts from mung beans and soybeans (*tou ya*). Bean sprouts bridge the gap between grains and vegetables (*ts'ai*) (p. 326-27).

"A huge bowl of rice, a good mass of bean curd, and a dish of cabbages–fresh in season, otherwise pickled–is the classic fare of the everyday south Chinese world."

"The New World vegetables stand out as a special class because of their common and recent origin in China and their extreme importance. The white and sweet potatoes have become staples, as has corn. In addition to these, the peanut (*Arachis hypogaea*) has become the most important oilseed through much of south China, as well as a much used food" (p. 328). The peanut came from South America. Today, peanuts have become more important in areas where they are grown than rapeseed. Peanut and rapeseed oils are polyunsaturated and contain plenty of linoleic acid, a dietary requirement (p. 333, 343, 348). Mushrooms and their relatives are widely used in vegetarian dishes (p. 332).

The section on food processing (p. 337-41) notes that tragic practice of polishing rice, which removes most of the nutrients including fiber. There are many questions about the origins of pasta. Egg noodles probably originated in China. Italian spaghetti is similar to Chinese *mien* and ravioli to *chiao-tzu,* but they may have existed elsewhere before Marco Polo brought them to Italy from China. The technology of soybean process is too complex to discuss except briefly in this chapter. Most important is the production of bean curd or *tou-fu* (Cantonese *tau-fu,* Hokkien *tau-hu*). Hokkien cooks prefer a drier, firmer bean curd. Bean curd is often sold fried. The skin resulting from boiling soymilk [yuba] is skimmed off, dried, and widely used. "Other closely related processes produce the range of imitation meats developed by vegetarians, specifically Mahayana Buddhists. Credible imitations... are made for chicken, abalone, and other white meats, and even beef and pork. The West has picked up the idea and developed it much further, climaxing in the production of textured vegetable protein (TVP), but has–characteristically!–ignored the problem of making the result taste good. The ideal in the West seems to be to make it tasteless" (p. 339).

Concerning fish farming (p. 334-35): "Some fish, however, a pond-reared. Those that have been effectively domesticated are carps. These have several advantages: they produce vast amounts of protein per acre; they do not have to be specially fed since they eat algae and weedy grass and small animals of the ponds and pond fringes; they can live in foul water, and thus in stagnant ponds and market fish barrels; they are efficient converters, putting a large

percentage of their feed into growth; and relative to other fish, they are easy to breed in captivity. The first fish farmed in the world were probably the Chinese carps." However, no mention is made of soybeans being fed to the fish. Address: 1. Assoc. Prof. of Anthropology, Univ. of California at Riverside; 2. Riverside, California.

2928. Archer-Daniels-Midland. 1977. What's new: A 75 year report from Archer Daniels Midland Company. Decatur, Illinois. 12 p.
• ***Summary:*** "Our forerunner started in 1902 with a single mill and soon became a leading crusher of flaxseed... 75 years ago, ADM was strictly in the business of crushing flax for its oil, which was used primarily as a drying oil in paint... Today ADM is the bridge between two giant industries, agriculture and food... Total commitment to the baking industry has led us to add vital wheat gluten to our line of specialties recently. Gluten is the non-soluble protein in wheat. It is the part of wheat flour that makes it possible to make an elastic, cohesive dough from wheat flour. Adding vital wheat gluten enables bakers to use less expensive flours, it improves bread features such as loaf volume, flavor, softness. It's a necessary ingredient in the popular new variety breads."

In "1965 ADM introduced TVP brand textured vegetable protein. Ten years later we introduced a second generation of TVP containing 70% protein, along with a new soy protein concentrate. Today you'll find ADM's soy proteins in more than 600 brands of prepared foods on the grocer's shelves. Soups, chili, frozen dinners, pizza, gravies. You'll find other forms of soy protein in everything from beverages and baked goods to pet foods." Some of the most recent developments include: New soy variety breads, sweets that are good for kids (cookies based on the new Ardex soy protein concentrates), a new soy beverage based on new technology that tastes great and has the quality of nutrition needed by growing children, and Nutrisoy fiber (a soy bran). "Who needs high priced foods? Not the British. Cadbury's Soya Choice fills the bill. Based on TVP, these products are a raging success. It as the good flavor and nutrition of meat. At half the price." A color photo shows two cans of Cadbury's Soya Choice (Casserole Chunks, and Mince). A full-page black-and white photo on the facing page shows a person (perhaps William Atkinson) running a large extrusion cooker.

The last page is titled: "ADM Today: Where the people who feed the world buy their groceries." ADM Refined Oils makes Yelkin lecithins, margarine and shortening oils, and cooking oils. ADM Milling makes wheat gluten. ADM Protein Specialties makes: TVP textured vegetable protein (flavored and unflavored), TVP/2 textured vegetable protein concentrate (flavored and unflavored), Ardex 700 soy protein concentrate, Nutrisoy low and full fat soy flours, and Nutrisoy defatted soy flours and grits. Address: Archer Daniels Midland Company, Box 1470, Decatur, Illinois 62525.

2929. Chang, K.C. ed. 1977. Food in Chinese culture: Anthropological and historical perspectives. New Haven, Connecticut, and London: Yale University Press. 429 p. Illust. Index. 24 cm. [200+ ref]
• ***Summary:*** One of the finest scholarly overviews of food in Chinese culture ever written, with each chapter, arranged chronologically by dynasty, written by an expert in the field. Contents: Introduction, by K.C. Chang. 1. Ancient China, by K.C. Chang. 2. Han, by Ying-shih Yü. 3. T'ang, by Edward H. Schafer. 4. Sung, by Michael Friedman. 5. Yüan and Ming, by Frederick W. Mote. 6. Ch'ing, by Jonathan Spence. 7. Modern China: North, by Vera Y.N. Hsu and Francis L.K. Hsu. 8. Modern China: South, by E.N. Anderson, Jr. and Marja L. Anderson. Glossary of Chinese characters. Bibliography. Address: Prof. of Anthropology, Harvard Univ., Cambridge, Massachusetts.

2930. Chen, Jung. 1977. Microbiological evaluation of soymilk. MSc thesis, University of Hawaii. 52 p. [68 ref]* Address: Univ. of Hawaii.

2931. Dookeran, M.R. ed. 1977. Soybean. Your food of the future. Twenty simple recipes. Chaguaramas Agricultural Development Project, Macqueripe, Chaguaramas, Trinidad, West Indies. 11 p.
• ***Summary:*** Over the past four years Trinidad and Tobago has achieved considerable success in the production of this rich bean at the Chaguaramas Agricultural Development Project. Address: [Chief Technical Officer, Ministry of Agriculture].

2932. Farm, The. 1977. Vegetarian prenatal nutrition and high protein recipes. Summertown, Tennessee: The Book Publishing Co. 14 p. 22 cm.
• ***Summary:*** Printed with green ink on white paper. On the cover is a photo showing a field of soybeans, in neat rows free of weeds.

Contents: Introduction ("The Farm is a large longhair spiritual community of 1100 people in Tennessee... We are all complete vegetarians [vegans]. Ours is a soy-based vegetarian diet). Taking care of your self while you're pregnant (by Margaret, Nutritionist for the Farm, incl. iron, calcium, table of nutritional value of soybeans). Recipes: Basic cooked soybeans. Soybeans and tortillas. Soyburgers. Soybean stroganoff. Soy mayonnaise. Soy fritters. Soy yogurt. Soy milk (homemade using soybeans or soy flour) Tofu (Bean curd, homemade using whole soybeans and nigari or epsom salts). Soy cheese. Soy flour basic salad and sandwich spread. Seasoned sandwich spread. Hi-protein soy bread (incl. soy milk and soy flour). Soy souffle (incl. soy flour and nutritional yeast). Soy "nuts" (dry roasted or deep fried). T.V.P. Textured vegetable protein. T.V.P. tortilla

filling. Spaghetti sauce with T.V.P. Sloppy joes. Good tasting nutritional yeast (A good source of B vitamins. Distributed by The Good Tasting Yeast Company, c/o The Farm). Melty nutritional yeast "cheese." A word about B12 [vitamin B-12] ("If you are a complete vegetarian, eating only plant foods, you will need to supplement vitamin B12").

People at The Farm eat "soy ice cream" which is mentioned in the introduction, but no recipe is given. Address: The Farm, Summertown, Tennessee.

2933. Farm, The. 1977. Volume one: Sunday morning services on The Farm. Summertown, Tennessee: The Book Publishing Co. 159 p. Illust. No index. 21 cm.
• ***Summary:*** The Farm is a spiritual community in Tennessee. Stephen is the teacher. This book is excerpts of talks given by Stephen from Aug. 1975 to March 1977. Soyfoods and vegetarianism are mentioned occasionally. A few teachings: "Do not be distracted by any doctrines or dogmas... We are the energy amphibians; we live in the physical world and we live in the energy world... No Bodhisattva who is a real Bodhisattva cherishes any idea of a separated individuality whatsoever... Every time you have a glass of soy milk, or a piece of soy cheese or tofu, it is a loving gift from someone who was not paid, and did it out of their heart... Adversity is not to be avoided... The sober consciousness of waking bliss."

Photos show: Stephen Gaskin speaking (cover, facing table of contents, p. 18). Farm members meditating (many pages). Aerial views of The Farm (p. 94, 99). Young soybean plants about 3 inches high, probably growing on The Farm (p. 109). "Basically it comes down to really knowing that we are all One and knowing that God is real." Address: Summertown, Tennessee.

2934. Farthing, Bill. 1977. Odiyan country cookbook. Emeryville, California: Dharma. xii + 211 p. Illust. by Denise Anderson. Photos by Peter Ogilvie. Index. 20 cm.
• ***Summary:*** This lacto-ovo vegetarian cookbook is dedicated to Tarthang Tulku, Rimpoche, a Tibetan Buddhist teacher who is head of the Nyingma Institute, founded in 1969 in Berkeley, California, and of Odiyan, the Institute's country retreat center being built on a redwood forested mountain above the Pacific Ocean in northwestern Sonoma County, California. Odiyan is a transliteration of the Sanskrit name for the birthplace of Padmasambhava the great teacher who brought Buddhism to Tibet.

The Foreword notes: "Although our chickens produce many eggs, we are essentially on a correct balance of grains and beans or soy-dairy products to provide protein." A chapter titled "Home-Made Proteins" (p. 112-19) includes various soy-related recipes: Homemade soymilk. Homemade tofu. Kinugoshi. Tofu-nut butter (with ground walnuts, peanuts, almonds, or sesame seeds). Tofu and stir-fried vegetables. Sprouted soybean puree. A large photo shows community scale tofu-making equipment plus the observation: "If you enjoyed making your own bread, then you may find the soy-dairy a very rewarding aspect of cooking to explore."

Other soy-related recipes include: Soy-bean patties (p. 95). Miso and tahini spread (p. 130). Soymilk dressing (p. 131). Soy carob milk (p. 196). Soymilk lassi (p. 197). Nutmilk (made with 2 cups soymilk plus ½ cup almonds, walnuts, or cashews). Address: California.

2935. Hansra, R.K. (Miss). 1977. Evaluation of soy-whey weaning and supplementary food in terms of protein efficiency ratio, true digestibility and effect of its supplementation on the nutritional status of pre-school children. M.Sc. thesis, Punjab Aricultural University, Ludhiana. *
Address: India.

2936. Heide, Manfred. 1977. Vegetarische Ernaehrung: 193 Rezeptvorschlaege und Speiseplaene fuer ein Vierteljahr [Vegetarian nutrition and food: 193 recipe suggestions and meal plans for a quarter of a year]. Stuttgart, West Germany: Paracelsus Verlag. 133 p. Illust. (some color). Index. 24 cm. [13 ref. Ger]
• ***Summary:*** Chapter V, titled "Soya, and important food," discusses the nutritional value of soya and various soyfoods including soy oil, soy lecithin, soymilk, soy flour (and its use in diabetic diets), whole soybeans, textured soy protein (*Soja-Pflanzenfleisch*), soy sprouts, "We have every reason to incorporate soya into our diets!" Soya is so versatile. The introduction of soya into our kitchens can serve our health and keep our fitness for work. Soy-related recipes include: How to cook whole soybeans. How to make soy flour at home. How to sprout soybeans. Soy sprout salad. Soy sprouts with soy noodles and vegetables.

In other parts of the book, textured soy flour (*Sojafleisch*) is served with rice. Soy flour can be added to soups and sauces.

One half-page ad titled "No meal without protein" is run by Henselwerk GmbH, 7031 Magstadt bei Stuttgart. It states that Henselwerk in Magstadt is the pioneer company in processing soybeans. The company's products include: Hensel Vollsoja [Hensel whole soy flour], Hensel Soja fettarm [low-fat soy flour], Hensel Soja-Kost nach Hackfleischart [textured soy protein granules], Hensel Soja-Fleisch in Trockenwuerfeln [textured soy protein cubes], Hensel Soja-Flocken (whole soy flakes), Hensel Kleine gruene Sojabohnen zum Keimen (small green soybeans for sprouting).

A full-page ad titled "For your healthy day" is run by granoVita Soja-Kost. The 8 soy products shown are sold in Reform Houses. All but the first is sold in a can. Soja-Vita (*Fertig gewuerzte Bratlings-Mischung*). Pasta chuta Bolognese. Koletts (Cutlets). Soja-Goulasch (Soy Goulash

in Tomato Sauce). Soja-Curry (Soya Meat in Curry Sauce). Sojamilch (Soymilk). Soja-zart. Soja Wuerstchen (Soy Sausages). The author was born in 1934. Address: Germany.

2937. Hsu, Vera Y.N.; Hsu, Francis L.K. 1977. [Food in] Modern China: North. In: K.C. Chang, ed. 1977. Food in Chinese Culture. New Haven, CT, and London: Yale Univ. Press. 429 p. See p. 295-316. [2 ref]
• ***Summary:*** "Soybean grows easily as a companion crop with kaoliang or corn. It is consumed all over China" in various forms; as bean curd [toufu], soybean milk, *tou fu nao* ("bean brain"–slightly coagulated soymilk, softer than tofu), *tou cha* [okara] ("the finer remains of the soybean from which the bean milk has been extracted is usually fed to pigs, but can be the poor mans ta'si [side] dish").

Young soybeans in pods, freshly picked from the field, are boiled in water or baked on the fire and consumed as snacks. They are served with soy sauce and sesame oil and eaten by using the teeth to scrape the beans into one's mouth.

Other soybean products consumed in north China include: soybean sprouts (eaten after submersion in boiling water for 1-2 minutes), "fermented bean curd (*fu ju*), molded bean curd (*ch'ou tou fu*), dried bean curd [pressed bean curd] (*tou fu kan*) (p. 301).

Note: This is the earliest English-language document seen (Oct. 2011) that uses the term *ch'ou tou fu* or the term "molded bean curd." Address: 1. Evanston, Illinois; 2. Prof. of Anthropology, Northwestern Univ.

2938. Huhn, S. 1977. Efeito do ion cuprico no sobor do leite de soja [Effect of the copper ion on the flavor of soymilk]. Master's thesis: Universidade Federal de Vicosa, Vicosa. 42 p. [Por]*
Address: Brazil.

2939. Iijima, Tadashi. 1977. Preparation of soymilk from soy cotyledons by extraction with sodium bicarbonate solution. MSc Thesis, Dep. of Food Science, University of Illinois. 76 p.
• ***Summary:*** The author received his BSc degree from Chiba Univ. in Japan in 1972. Contents: Introduction. Literature review: World food shortage, soybeans, preparation of soymilk. Materials and methods: Materials, methods, analytical methods, organoleptic evaluation. Results and discussion: The effect of soybean dehulling temperature on the quality of resulting soymilk, effect of conditioning soybeans and soy flour on yield of soymilk, extraction conditions, effect of homogenization pressure and temperature on yield and quality of soymilk, proximate composition of soymilk, evaluation of alkali processed soymilk. Summary and conclusions. List of references. Appendix. Address: Dep. of Food Science, Univ. of Illinois.

2940. Jones, R.H.T. 1977. Congenital thrombocytopenia and milk allergy. *Archives of Disease in Childhood* 52:744-45. *

2941. Kanthamani, Sampathiengar. 1977. A new concept for home preparation of soymilk. MSc Thesis, Dep. of Food Science, University of Illinois. 97 p.
• ***Summary:*** The author received her BSc degree from Univ. of Allahabad, India, in 1962, her MA degree at Agra University, India, in 1965, and her M.Ext.Ed degree from the Univ. of Illinois in 1975.

Contents: Introduction. Literature review: Soybeans, soymilk. Materials and methods: Soymilk preparation, evaluation of soymilk. Results and discussion: Factors affecting quality and acceptability, stability as affected by time and temperature of storage, composition of soymilk in relation to method of preparation, evaluation of soymilks, soymilk residue. Summary and conclusions. List of references. Address: Dep. of Food Science, Univ. of Illinois.

2942. Kuntz, David Alan. 1977. Processing factors affecting the organoleptic quality of Illinois soy beverage. PhD thesis, Dep. of Food Science, University of Illinois. 337 p.
• ***Summary:*** Contents: Introduction. Literature review: Soybeans: culture and utilization, soybean seed composition and ultrastructure, organoleptic defects, soymilk. Materials and methods: Preparation of soy beverage, subjective evaluations, objective evaluations. Results and discussion: Identification of important criteria, processing variables, single factor comparisons, total lipid extraction, characterization of high and low organoleptic quality, future work. Summary and conclusions. Appendix. List of references. Vita. Address: Dep. of Food Science, Univ. of Illinois.

2943. Lowe, Victor Alberga. 1977. Ultrafiltration and spray drying of soymilk. Thesis, Dep. of Food Science, University of Illinois. *
Address: Dep. of Food Science, Univ. of Illinois.

2944. Orr, Elizabeth. 1977. The contribution of new food mixtures to the relief of malnutrition: A second look. *Food and Nutrition* (*U.N.*) 3(2):2-10. [4 ref]
• ***Summary:*** This is an update of the 1972 Tropical Products Institute study. A table lists products by continent and country, and categorizes them as exploratory stage, production terminated, production irregular/position not known, and in regular production, each with its year of introduction. Soy products terminated include Saci (1968) in Brazil and Saridele (1957) in Indonesia.

Soy products with production irregular or position not known include Soya Products in Mexico (introduced by Conasupo in the early 1960s) and Solein (1963) in Brazil.

Soy products in regular production include Puma (1969) in Guyana, Pronutro (1962) in South Africa, Soya Products (1968) in Uganda, Vitasoy (1940) in Hong Kong, Vitabean

(1952) in Malaysia and Singapore, and Soya Products (1963) in Thailand. Other soy products discussed include Superchil and Fortesan in Chile, Bienestarina in Colombia, Incaparina in Guatemala, Maisoy in Bolivia, Leche Avena in Ecuador, Nutri Nugget, Protesnac, Protein Plus, Shaktiahar, and Paushtikahar (all from Soya Production and Research Assoc., Bareilly) in India, and Thriposha in Sri Lanka.

Note: This is the earliest document seen (Nov. 2010) that mentions Thriposha. Address: Head, Marketing and Industrial Economics Dep., Tropical Products Inst., London.

2945. Oski, Frank A.; Bell, J.D. 1977. Don't drink your milk. New York, NY: Wyden Books. Excerpted in East West Journal, July 1978. p. 35-39. *
• ***Summary:*** This book was later published by Mollica Press, Syracuse, New York. A revised edition (but with the original 1977 LC code date) was published by Teach Services (Route 1, Box 182, Brushton, New York 12916. Phone: 518-358-2125). Address: Pediatrician.

2946. Pearson, Phyllis Strayer. 1977. Contemporary soya recipes. St. Louis, Missouri: American Soybean Assoc. 18 p. 19 cm.
• ***Summary:*** Contents: Introduction, by Elaine Brown. Using this cookbook: Soy cooking oil, soy margarine, soy shortening, soy sauce, whole soybeans, soy flour, soy granules, soy grits, soy milk, soya nuts, special cookbook features. Recipes: Spaghetti sauce. Salmon croquettes. Chili. Beans with ham. Chicken pie. Green bean casserole. Soya quiche. Tuna loaf. Asparagus casserole. Date bars. Pie crust. Banana bread. Peach surprise muffins. Caramel rolls. Banana cream pie. Soya doughnuts. Pumpkin bread. Cherry coffee cake. Protein and calorie analysis. Address: Home economist, P.O. Box 27300, St. Louis, Missouri.

2947. Priepke, Peter Eugene. 1977. Suspension stability of Illinois soybean beverage. PhD thesis, University of Illinois at Urbana-Champaign. 121 p. Page 128 in volume 38/01-B of Dissertation Abstracts International. *
Address: Univ. of Illinois at Urbana-Champaign.

2948. Rahman, Lutfur; Rubbi, S.F.; Shamsul Haque, M.; Zahidul Haque, M. eds. 1977. Annual report. *Bangladesh Co-ordinated Soybean Research Project, Annual Report* No. 2. 193 p. For 1976-77. (Bangladesh Agricultural Research Council, Dacca).
• ***Summary:*** This report covers the period from July 1976 to June 1977. The following organizations are involved in the program: Bangladesh Agricultural University at Mymensingh (BAU), Bangladesh Agricultural Research Institute (BARI), Bangladesh Rice Research Institute (BRRI), Bangladesh Council for Scientific & Industrial Research, Dacca (BCSIR), Institute of Nuclear Agriculture (INA), Sugarcane Research Institute (SRI), Rajshahi University (RU), Mennonite Central Committee (MCC; does not receive program funds), United Nations International Children Emergency Fund (UNICEF; does not receive program funds).

Information about the research conducted on soybean foods is given on pages 14-20 (soy biscuits, soy-flour, soymilk), and pages 172-83. The latter describes 3 experiments: 1. Preparation of different soy-recipes and studies on the nutritive value of the prepared products (soybean paste made from cooked whole soybeans). 2. Studies of soybean oil and the utilization of the oil and oil cakes. 3. Studies on the isolation, recovery and utilization of soy proteins for preparation of various food products (soymilk). Address: BARC, 130-C, Dhanmondi Residential Area, Road No. 1, Dacca–5, Bangladesh.

2949. Roquib, M.A. 1977. Soybean for health. Bidhan Chandra Krishi Vishwa Vidyalaya, Kalyani, West Bengal, India *
Address: Faculty of Agriculture, Bidhan Chandra Krishi Viswa Vidyalaya, West Bengal, India.

2950. Scott, Gavin. 1977. Hot pursuit. New York, NY: St. Martin's Press. 193 p. See Chap. 3, p. 26. 22 cm.
• ***Summary:*** Arriving by airplane in Singapore, which was like stepping into an oven and onto another planet, he walked "down street after street, drinking glass after glass of coconut milk, freshly-squeezed orange juice, mango juice, soya bean milk bought from little carts at every corner." Address: London, England.

2951. Takai Seisakusho. 1977. Takai Seisasakusho no kikai [Takai tofu production equipment leaflets (Portfolio)]. Takai Manufacturing Co., 1-1 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan: Takai Seisakusho. 25 inserts. [Jap]
• ***Summary:*** William Shurtleff contacted Takai Seisakusho, the largest and oldest manufacturer of tofu equipment in Japan, and asked if he could place an order for Farm Foods in San Rafael. Wataru Takai said that all the information about his equipment was on single-sheet color leaflets printed on both sides in Japanese. They agreed that Takai needed an English-language catalog of tofu equipment, the first such catalog ever to be created. The following glossy color leaflets (most numbered, all undated; each 25.5 x 18 cm, and printed with black and one color of ink on glossy white paper) were given to Shurtleff to use as the basis for his work: 1. Grinders. 2. To-100 system. 3. TM-100 system. 4. Boilers. 5. Mini-Star and other complete systems. 9. Hydraulic press. 10. Jack press, forming box table, and modern forming box. 11. Pressure cookers. 12. Tandem pressure cookers, and whole modern system. 13. Automated yaki-dofu broiler. 15. Three metal sinks, metal curding vat, tofu cutter, tofu forming box, silken tofu box and cutter. 16. Deep mixing plate, simple lever press. 17. Ganmodoki

mixing machine. Draining racks. 18. Mechanized deep fryers. 20. Two-chamber manual deep-fryer. 24. Rotary feeder–to move soybeans. 28. Pump. 30. Mechanized tofu press. 32. Case washer. 33. Continuous roller extractors (4 models). 35. Mechanized soymilk maker. 36. Mechanized soybean soaker and washer. 37. Mechanized tofu cooling tank. 38. Automated TGS-2 whole system. 39. Automated whole system. 40. Automated TGS whole systems (Nos. 1-4 and 10). 134. Automated tofu factory TGS 7-9.

Unnumbered leaflets: TM-100 whole system and other equipment (blue). Micro mini-plant TGS-4 (green). Order form. Address: Ishikawa-ken, Japan.

2952. Takai Seisakusho. 1977. Takai no tôfu kikai [Takai tofu production equipment (Brochure)]. Takai Manufacturing Co., 1-1 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan: Takai Seisakusho. 6 p. [Jap]
• ***Summary:*** On the cover are two square arrays of dots, one green and one blue, offset slightly to give the impression of three dimensionality. In the lower right is the address and phone number of Takai headquarters and five branches.

When the brochure is opened, the two left panels contain six large black-and-white photos: (1) Outside of factory No. 2. (2) Inside factory No. 2 with finished equipment standing on the floor. (3) An aerial view of the long bay of factory No. 1 showing many machines under construction. (4) Eight draftsmen at work in the design room. (5) Three women office workers in a modern office. (6) The exterior of factory No. 1. In the upper left of the far left panel is basic information about the company, which was founded in 1917. The inner right panel shows photos of five Takai tofu and soymilk systems, with a description of each. On one back panel are photos of four more larger systems. On the other back panel is a chronology of the company. Address: Ishikawa-ken, Japan.

2953. **Product Name:** [GranoVita Soymilk–Instant].
Foreign Name: GranoVita Sojamilch–Instant.
Manufacturer's Name: DE-VAU-GE Gesundkostwerk GmbH.
Manufacturer's Address: Luener Rennbahn 18, Postfach 1660, D-2120 Lueneburg (near Hamburg), West Germany. Phone: 04 13 11 89 41.
Date of Introduction: 1977?
Ingredients: Soybeans.
How Stored: Shelf stable.
New Product–Documentation: Full-page ad for 8 granoVita soy products in the book by Manfred Heide. 1977. *Vegetarische Ernährung: 193 Rezeptvorschläge und Speisepläne für ein Vierteljahr* [Vegetarian nutrition and food: 193 recipe suggestions and meal plans for a quarter of a year]. Stuttgart, West Germany: Paracelsus Verlag. This product is named "GranoVita Sojamilch–Instant. Rein pflanzliche Sojamilch-Nahrung."

2954. Huang, Carol Ann. 1977? Re: Work at the soy dairy on The Farm in Wisconsin. Letter to William Shurtleff. 1 p. Undated. Handwritten with signature on letterhead.
• ***Summary:*** Carol Ann thanks Bill for his bag [probably for making soymilk or tofu] and information on tempeh and miso. While Bonnie and John are in La Paz, Mexico, Carol is "doing the Soy Dairy." She wrote to Mitoku in Japan for some koji or koji starter, but they suggested she write Westbrae. "I'd love to get it together to make several big crocks of miso in the fall." Address: Route 2, Ettrick, Wisconsin 54627.

2955. Marine Colloids. 1977? Non-dairy imitation milk stabilized with carrageenan (Brochure). Springfield, New Jersey. Technical Bulletin No. 256. 3 p. Undated.

2956. Wells, Patricia. 1978. How to increase nonanimal protein in the daily diet. *New York Times.* Jan. 25. p. C6.
• ***Summary:*** It is no accident that Mexicans eat corn with their beans, that Italians combine pasta with their beans, or that Japanese sprinkle soy sauce on their rice. These are all simple ways of "combining incomplete vegetable proteins to create a balanced protein." The idea of "complimentary protein" is not new, but it has been popularized by the book Diet for a Small Planet, by Frances Moore Lappe.

When baking, experiment with soy products. In recipes calling for 2 cups wheat flour, for example, use ¼ cup soy flour and 1 3/4 cups wheat flour.

Gives 4 recipes, including: Leafy Chinese tofu (with sesame seeds, soy sauce, and brown rice). Vegetable rice curry (with soy grits and peanuts). Garbanzo spread.

2957. Ang, H.G.; Kwik, W.L.; Tan, S.F.; Theng, C.Y. 1978. Development of traditional and new soy products using defatted meal. In: American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings. Hudson, Iowa: ASA. 136 p. See p. 53-58.
• ***Summary:*** Contents: Abstracts. Introduction: Non-fermented products (soymilk, soybean curd, yuba), fermented products (soy sauce, soy cheese, tempeh), others (soybean sprouts, whole bean), soymilk and soymilk powder from defatted soymeal. Results and discussions: Preparation of soymilk powder. Conclusion. Address: Dep. of Scientific Services, Singapore.

2958. Aoki, Hiroshi. 1978. New soy protein food market and products in Japan. In: American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings. Hudson, Iowa: ASA. 136 p. See p. 66-69.
• ***Summary:*** Contents: Introduction. General survey of the new soy protein food products in Japan. Influence of the establishment of 200-mile economic zones. Utilization of new soy protein products for traditional soybean foods.

Concluding remarks.

Chronology of new soy protein food development:

1955–Undenatured, solvent-extracted, defatted soybean flakes start to be produced for use in tofu production. These flakes became the bases if the new soy protein products in Japan.

1960–Defatted soy flour for bread and confections.

1961–Soy protein concentrates for fish products.

1962–Soy protein extracts for dairy and meat products.

1965–Soy protein isolates.

1970–Spun soy protein fiber, and textured and structured protein.

Soymilk, which has not been a real traditional food in Japan (unlike China) can be viewed as a new protein product. Though no commercial trials have yet succeeded, very recent test market trials made by several manufacturers of soymilk made from whole soybeans and also from soy protein isolates, seem to suggest some possibilities of success. Address: Otsuma Women's Univ., Tokyo, Japan.

2959. Bhumiratana, Amara. 1978. Infant food supplement: A soya bean based product. In: American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings. Hudson, Iowa: ASA. 136 p. See p. 77-92. [5 ref]

• ***Summary:*** Contents: Abstract: Nutritional requirement for infant, development of food supplements (kaset soy milk, kaset infant food). Appendix I: Thai baby food standards. Appendix II: Joint FAO/WHO codex alimentarius commission draft standard for infant formula.

A table gives a detailed comparison of human milk and cow's milk. Though both contain about the same number of grams of solids per 100 gm (12.9 gm and 12.7 gm respectively), the human milk contains only one-third as much protein (1.1 gm vs. 3.3 gm) and 27% as much calcium (340 mg vs. 1250 mg). Address: Inst. of Food Research and Product Development, Kasetart Univ., Bangkok, Thailaland.

2960. Bressani, Ricardo. 1978. The quality of soybean protein as tested in children. In: American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings. Hudson, Iowa: ASA. 136 p. See p. 30-34. [17 ref]

• ***Summary:*** Contents: Introduction. Studies with soybean as the sole source of protein: As a milk substitute in infants and malnourished children, protein quality in children aged 8-12 years. As a protein supplement. Conclusions. Address: INCAP, Guatemala.

2961. Shurtleff, William. 1978. Household preparation of winged bean tempeh, tofu, milk, and sprouts. In: 1978. The Winged Bean. Los Banos, Laguna, Philippines: Philippine Council for Agriculture and Resources Research (PCARR). xvii + 448 p. See p. 335-39. Jan.

• ***Summary:*** This book consists of papers presented at the 1st International Symposium on Developing the Potentials of the Winged Bean. Held Jan. 1978, at Manila, Philippines. Contents: Introduction. Homemade winged bean tempeh: Recipe, directions, polyethylene (plastic) bags, baking pans or pie tins, good tempeh, immature tempeh, inedible tempeh, troubleshooting (tempeh is too wet, mold is sparse and does not bind beans tightly, tempeh contains black spots or patches, tempeh smells strongly of ammonia, mold grew abundantly in some places but sparsely in others). Homemade winged bean tofu: Recipe, directions, troubleshooting (low yield, small curds or crumbly tofu texture, coagulant was insufficient). Homemade winged bean milk: Recipe, directions, honey-vanilla, rich and creamy, carob-honey, malt, mocha, or coffee. Homemade red winged bean miso. Homemade winged bean sprouts.

Note: This is the earliest document seen (Jan. 2011) that describes how to make tofu from winged beans (Kantha 1983). Address: New-Age Foods Study Center, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

2962. Stein, Ellin. 1978. Making money making tofu. *Whole Foods* (*Berkeley, California*). Jan. p. 32-38.

• ***Summary:*** This multi-part article describes commercial operations at Farm Foods (San Rafael, California–"Down on the Farm"), Redwood Natural Foods (Santa Rosa, California), The Tofu Shop (Rochester, New York–"Hope in Rochester"), Surata Soyfoods (Eugene, Oregon–"Tofu Recipe Doubles in Oregon"), and The Soy Plant (Ann Arbor, Michigan–"Midwest Soy Plant Expects to Grow").

Note: This is the earliest document seen (Sept. 2011) that mentions "Surata Soyfoods," the first company with the word "Soyfoods" in the company name.

Part of the main article ("A Busy Grasshopper Waits for Profits") and a full-page sidebar titled "Making Tofu on Main Street" tells the story of Laughing Grasshopper Tofu Shop in Millers Falls, Massachusetts. "With *The Book of Tofu* as their guide, Ira and Kathleen Leviton founded the first occidental tofu shop in the northeastern USA in this sleepy papermill town in Aug. 1976. At the time the Levitons owned and operated Corn Creek Bakery in Greenfield, eight miles away, and they ran the two businesses until August 1977, when they closed Corn Creek due to a continuing labor dispute. Having formed a partnership with two men, Tom Timmins in August 1976 and Michael Cohen in February 1977, the Levitons found their 100 bread accounts quite eager to stock tofu. They are now producing over 800 pounds of tofu per day to service their 100 accounts... Grasshopper makes tofu with Prize variety soybean shipped from Iowa in trailer loads and stored in the plant...

"Fully believing that the tofu market can be doubled within the first quarter of 1978, Grasshopper is moving this month to a 3200-sq.-ft. plant in Greenfield that already

offers a well-drained concrete floor... Tofu production will be upgraded with the installation of $5,000 worth of Japanese tofu machinery... Cohen estimates daily tofu capacity will increase to 1,600 pounds. 'As soon as we can,' says Cohen, 'we'll have not only tofu, but deep-fried age, soymilk–flavored and unflavored, tempeh, and soy "ice cream." We feel the market is at our fingertips. We've never taken the step into a serious sales campaign, but I think we will. So far, we make the soft tofu, we give the soft sell.'"

Note 1. This is the first issue of *Whole Foods* magazine. This is also the earliest article on soy seen (Aug. 2002) in *Whole Foods* magazine.

2963. Swan Food Corp. 1978. Swan Foods: Remember the name! (Ad). *Alternatives* (*Miami, Florida*). 2(1):1. Jan.
• ***Summary:*** This full-page black-and-white ad (see next page) lists the company's soy products, iced herbal beverages, and baked goods & pastries. Soy products include: Baked tofu, Marinated tofu, Caraway tofu, Tofu chip dip, Soy melk (sweetened & carob), Soy shakes (carob, vanilla & strawberry), Soyogurt (a cultured soy product), Wholegrain soy burgers. Baked goods include: Tofu cheesecakes, Carob maple swirl, Mary's cream cake, Mary's devil's food cream cake–"and more to come."

On the top half of the ad is a large circular logo featuring a stylized swan, with two large wings symmetrical about a vertical axis and an arched neck on the left side. The other half of the arch is drawn in to form a heart, inside of which is written "Because we love you." Across the inside top are the large words "Swan Foods." A full-color rainbow arches below them and over the swan. At the top center, between the words "Swan Foods," are the smaller words "Nature's Finest" written one below the other; between them is an infinity sign.

Across the bottom of the ad is written: "Every Swan Soybean Product contains all 8 essential amino acids (which are necessary for a balanced diet) and have no cholesterol. Available in health and natural food stores. Retailers: Swan Quality Products are distributed by your local Natural Foods Distributor, or contact Swan Food Corp., 5758½ Bird Rd., Miami, FL 33155. In Miami enjoy all Swan Products at Swan's Retail Deli & Bakery, The Soybeanery, 5758½ Bird Rd."

Note 1. This is the earliest ad seen for soyfoods in a U.S. magazine or periodical by one of the new generation of soyfoods manufacturers.

Note 2. In 1978 Alternatives (a small-circulation counter-culture magazine) was located at P.O. Box 330139, Miami, Florida 33133. Phone: 305-856-6975. Ad inquiries: 305-856-2473. Editor & publisher: Chik Shank. West coast contact: Steven M. Haines: 415-841-9217.

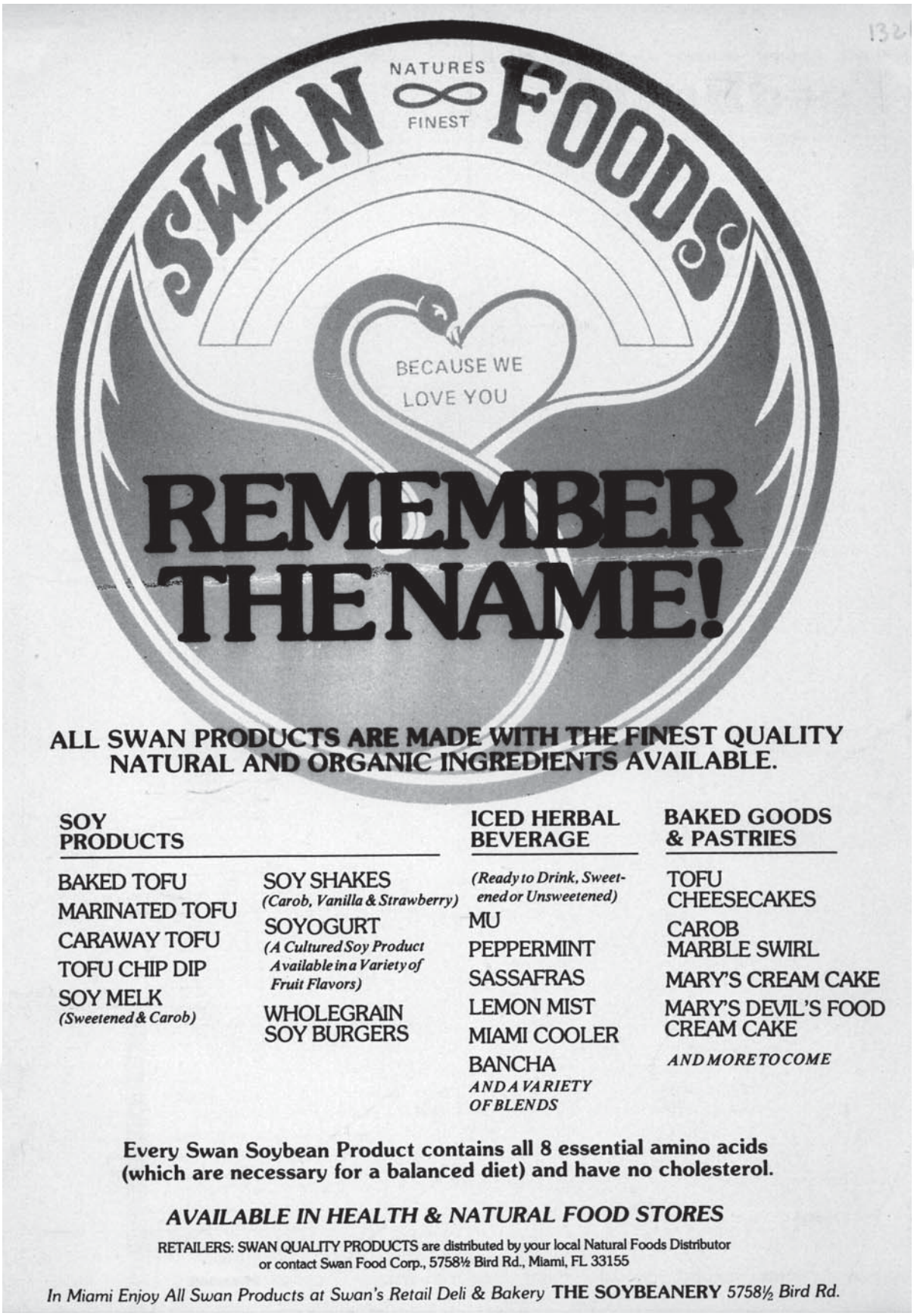
Note 3. This is the earliest known Swan Foods' ad published in *Alternatives* magazine–which began publication in August 1976. In May 1998 Jeanne Janson of Coral Gables (near Miami) checked every issue!

This full-page ad also appeared in the July/Aug. 1978 issue (p. 49) of this magazine. A half-page version of this ad appeared in the March, April (p. 45), May (p. 45, 49), June, September (p. 51), October (p. 51), November (p. 53), and December (p. 53) 1978 issues of this magazine. Thus Swan Foods has an ad (at least half-page in size) in every issue of *Alternatives* during 1978; then the ads disappear. Address: The Soybeanery, 5758½ Bird Rd., Miami, Florida, 33155.

2964. Tung, Ta-Cheng; Huang, P-C.; Chen, Y-T. 1978. Feeding of infants with a soybean milk-egg formula. In: American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings. Hudson, Iowa: ASA. 136 p. See p. 104-08. [4 ref]
Address: National Taiwan Univ., Taipei, Taiwan.

2965. Wang, Jun Ryun; Lee, Yang Hee. 1978. Traditional soybean foods in Korea. In: American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings. Hudson, Iowa: ASA. 136 p. See p. 43-47. [13 ref]
• ***Summary:*** "The origin of soy sauce and paste in Korean literature dates back to 683 A.D. (Shinmu King 3rd year of the United Silla period). Since an old Japanese literature [document], *Hwameyruitsuroku* [*Wamyô Ruijusho;* Collections of Japanese Names, by Subject], of Heyan [Heian] records that 'Maljang (Meju) is a Korean soy sauce and paste' and a record on Maljang was also observed in the ruins of Nara, it is evident that soy sauce and paste were introduced from Korea to Japan during the Nara period (645-793 A.D.). Therefore, it is believed that the beginning of their consumption in Korea should be in the third century of Kokuryo period."

"Soybean has been a major protein source in the Korean diet." In 1976 some 442,803 tonnes (metric tons) of soybeans were used in Korea as follows: oil and defatted meal 28.5%, curd (*tubu,* or tofu) 24.5%, paste (*doenjang*) 18.3%, soy sauce (*kanjang*) 10.6%, soy sprouts (*kongnamul*) 9.0%, hot soy paste (*kochujang,* made from meju, hot pepper flour, and cooked glutinous rice) 6.6%, soymilk (*kongkuk*) 0.14%, and other 2.4%. Other includes roasted soy flour (*konggomul,* used for coating rice cakes [mochi]), fried tofu (*yubu*), salted natto paste (*jeonkukjang / cheonkukjang*). *Doebiji* is fresh soybean puree, made by grinding soaked soybeans. When used as a food, it is usually cooked with vegetables, kimchi, and meat. Meju is balls of soybean koji like Japan's miso-dama. All fermented Korean soybean foods except Joenkukjang are prepared from meju. Its characteristic flavor results from *Aspergillus, Penicillium,* and *Mucor* species of molds on the surface of the balls and *Bacillus subtilis* on the inside. Damsuejang is a quick fermented soy paste made by crushing meju to a powder, adding a warm brine solution, then allowing it to ferment and ripen.



Note: This is the earliest English-language document seen (March 2009) that uses the word "Damsuejang" to refer to Korean-style soybean paste (miso).

The above usage is the equivalent of 12 kg per capita per year. The daily per capita consumption of soy sauce (kanjang) is 20 ml, of soybean paste (doenjang) is 15 gm, and of hot soybean paste is 10 gm. Most of the soy sauce (64%), doenjang (82%), and kochujang (76%) and all of the salted natto paste (joenkukjang) and quick fermented soy paste (damsuejang) are produced at a household level and consumed directly.

Both soybean production and imports have grown in recent years. In 1970 production was 231,994 tonnes, and imports were 36,291 tonnes for a total of 268,285 tonnes. In 1976 production was 294,949 tonnes (up 27% over 1970), and imports were 147,854 tonnes (4 times as much as in 1970) for a total of 442,803 tonnes (up 65% over 1970). Address: Korea Food Development Centre, Seoul, South Korea.

2966. Yu, Swee Yean; Ch'ng, Guan Choo. 1978. Soy bean foods in Malaysia. In: American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings. Hudson, Iowa: ASA. 136 p. See p. 48-52. [16 ref]
• ***Summary:*** Contents: Introduction. Fermented soya bean products: Soya sauce (manufacture of 'thin' (dilute) soya sauce, manufacture of 'thick' (viscous) soya sauce, microbiology of Malaysian soya sauce, stability of the product), tempeh, tau cheo (thick paste-like sauce), tao si (fermented black soybeans). Non-fermented soya bean products: Soya bean sprouts, tofu (semi-firm curd), tofu fah (soft curd), tow kwa (firm curd), tin chok (dried, flat sheets [yuba]), fu chok (dried, rope-like [dried yuba sticks]), tofu pok (deep-fried curd [tofu cubes]), chak tie (vegetarian [yuba] sausage), soya bean milk (tau cheong), meat analogues (soya flour is shaped into desired forms by hand). Nutritional data. Conclusion. Address: Universiti Pertanian Malaysia, Serdang.

2967. New England Soy Dairy Inc. 1978. Re: Announcing opening of New England Soy Dairy, Inc. Letter to customers and friends of the business, Feb. 17. 2 p. Typed, with signature on orange letterhead. [1 ref]
• ***Summary:*** "Dear friends. We are pleased to announce the opening of the New England Soy Dairy, Inc... As soon as we can hook up our deep fryer and practice making agé and agé pouches, we'll add them to our list of products... We have ordered a packaging machine that is scheduled to arrive in a few weeks." The company will then start making packaged tofu (now it is all sold in bulk), and may begin producing hard tofu (doufu), tofu pudding, and bottled soymilk. "The possibilities for freshly made soybean products seem almost endless. We are experimenting with a soy ice creme, and with miso. We'd really like to start producing tempeh this autumn... Our tofu price will remain at $0.44/lb to retailers." The company plans to pick up its first two distributors: Homestead Trading Co. and nearby Llama.

Shurtleff and Aoyagi, and their *Book of Tofu* and *Book of Tempeh* are mentioned in the letter. At the end: "Soy to the world, (Thanks to Akiko Aoyagi for the drawings)." A handwritten note at the end reads: "Bill & Akiko, We sent this around to our customers. We're still reading the B.ofT. [Book of Tofu]. Tom Timmins. P.S. Come visit us next time you're East."

Note: This is the earliest English-language document seen (March 2013) that contains the phrase "Soy to the world." Inspired by the new phrase, Akiko Aoyagi designed a wreath to send out with Bill and Akiko's Christmas cards later that year. Address: 305 Wells St., Greenfield, Massachusetts 01301. Phone: (413) 772-0746.

2968. Oberg, Elmer B. Assignor to Paul Taylor Company (Pasadena, California). 1978. Process for preparing stable full fat oilseed extract. *U.S. Patent* 4,075,361. Feb. 21. 8 p. Application filed 26 Nov. 1976. [6 ref]
• ***Summary:*** A full fat, stable food material derived from oilseeds is prepared by comminuting oilseeds in the presence of a hot (at least 180ºF, ideally near boiling) alkaline extract solution (preferably sodium hydroxide, with pH about 8), and then allowing the comminuted seeds to soak in the solution for about 3-7 minutes. After neutralizing the solution with preferably hydrochloric acid, the extract is clarified (centrifuged; the fiber is discarded) and heated to destroy anti-nutritional factors, concentrated, and spray dried. An illustration shows the required equipment. Address: Camarillo, California.

2969. Ramachandra, A. 1978. Customs procedures (Letter to the editor). *Times of India* (*The*) (*Bombay*). Feb. 23. p. 8.
• ***Summary:*** The writer is an Indian doctor who has been working in the USA for the past six years. He recently returned home with his family to visit relatives.

"I came to India with my son aged six months whose normal feed is soyabean milk." Not wanting to change the boy's diet during the one-month stay, he brought the required quantity. To his dismay, he was required by a customs official to pay duty on the item. He had to go to the supervisor to get the duty waived.

He urges that the vague customs rules be made more specific to take into account cases such as his. Address: M.D., New Delhi.

2970. Atherton, D.J.; Soothill, J.F.; Sewell, M.; Wells, R.S.; Chilvers, C.E.D. 1978. A double-blind controlled crossover trial of an antigen-avoidance diet in atopic eczema. *Lancet* i(8061):401-03. Feb. 25. [4 ref]
• ***Summary:*** Note: *Vegetarian Times* (March 1995, p. 85) defines a double blind study as one in which "Neither the

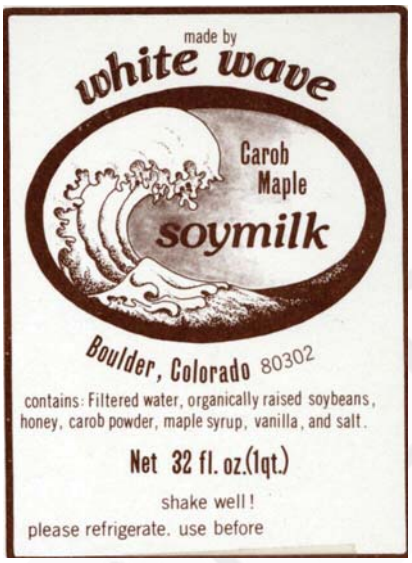
subjects nor the researchers are aware of the treatment being used. Provides the greatest precision because it removes any possibility of experimental bias."

A crossover design is defined as follows: "At different periods during the experiment, all subjects receive all possible treatments. For example, during a 10-week study of the effectiveness of a diet pill, researchers give half the subjects the pill and the other half a placebo. At week six, the treatments are switched. This design often gives more reliable data because the effects of the treatment and placebo are recorded for every subject." Address: 1-4. Hospital for Sick Children, Great Ormond St., and Inst. of Child Health, Guilford St.; 5. Dep. of Medical Statistics and Epidemiology, London School of Hygiene and Tropical Medicine, Keppel St. All: London WC1, England.

2971. **Product Name:** [Thick Soymilk].
Foreign Name: Tônyû Pururu.
Manufacturer's Name: Furuta Shokuhin Kogyo (Furata Foods Co.).
Manufacturer's Address: Japan.
Date of Introduction: 1978. February.
Wt/Vol., Packaging, Price: 60 gm poly cup.
How Stored: Refrigerated.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 73. This product was introduced in Feb. 1978 in a 60 gm poly cup, and distributed nationwide. Name of company with diacritics is: Furuta Shokuhin Kogyo.

2972. **Product Name:** Tofu Pudding (daufu-fa), and Soymilk.
Manufacturer's Name: Victor Food Products, Ltd.
Manufacturer's Address: 102 Hymus Rd., Scarborough, ONT, M1L 2C9, Canada. Phone: 416-752-0161.
Date of Introduction: 1978. February.
New Product–Documentation: Talk with Stephen Yu. 1990. March 5. He started making soyfoods in Feb. 1978. His first three products were tofu, tofu pudding (daufu-fa), and soymilk.

2973. **Product Name:** Soymilk [Plain, Honey-Sweetened, or Carob Maple].
Manufacturer's Name: White Wave.
Manufacturer's Address: 1738 Pearl St., Boulder, CO 80302.
Date of Introduction: 1978. February.
Ingredients: Filtered water, organically raised soybeans, honey, vanilla, salt.
Wt/Vol., Packaging, Price: 1 quart plastic bottle.
How Stored: Refrigerated.
New Product–Documentation: Labels. 1980. 2.5 by 3 inches. Self adhesive. Blue on white. Carob Maple: Brown on white. Reprinted in Tofu & Soymilk Production. 1979.



p. 234, and Soyfoods Marketing. Lafayette, CA: Soyfoods Center. Article in Soyfoods. 1981. Winter. p. 17. "Honey-sweetened." Interview with Steve Demos. 1987. Sept. Started in early 1978.

2974. *Town Crier* (*Greenfield, Massachusetts*). 1978. Tofu manufacturing plant opens. 12(3):1-2. March 22.
• ***Summary:*** "The New England Soy Dairy, 305 Wells Street, in Greenfield, has opened the doors on its new manufacturing plant... The firm has recently completed a long-projected expansion into more spacious and efficient facilities where it utilizes special tofu-making equipment imported from Japan enabling the company to produce nearly 10,000 pounds of tofu every week. The Soy Dairy ships this out all across New England, New York City, and Pennsylvania." The tofu, which retails for about $0.75/lb is "made from organically grown soybeans, water, and nigari, a coagulant extracted from seawater...

"The company uses the term 'dairy' to indicate its intention to provide a full range of alternative dairy-like products all derived from soybeans, including ice cream, yogurt, cream cheese, mayonnaise, whipped cream, tartar sauce, plain and flavored soymilk. In addition, other less familiar items will be introduced, such as miso soy bean paste, deep-fried tofu, and a fermented product, called tempeh. The Dairy operates at a medium level of technology, fusing traditional hand craftsmanship with modern labor saving equipment."

"The company is open Monday through Saturday, 8 a.m. to 6 p.m. and visitors are welcome." A photo shows Kathy Whelan Leviton cutting a large sheet of tofu into cakes.

Note: This is the earliest English-language document seen (Aug. 2013) that contains the word "dairy-like" (hyphenated) in connection with soyfoods.

2975. Gupta, Y.P.; Kapoor, A.C. 1978. Potential of soybean

for human consumption. *Indian Farming* 27(12):10-11, 13, 27. March. Series 2.
• ***Summary:*** "The work on soybean was originally initiated in 1882 but experimental trials were properly conducted in 1917 for its better selection. In 1932, Mahatma Gandhi made a strong plea to popularize the cultivation of soybean in India. However, it was not successful since the prevailing varieties were not suitable in crop rotation at that time, and the farmers were not able to market their produce economically...

"In India, interest in soybean research was revived in 1965-66 especially at the U.P. Agricultural University (Pantnagar) and at the J.N. Krishi Vishwa Vidyalaya (Jabalpur). Encouraged by the results at these Universities, and the growing interest of scientists in soybean research and the desire to meet the protein and oil shortages in this country, the Indian Council of Agricultural Research initiated an inter-disciplinary approach on soybean research in 1967 under the All-India Coordinated Project at different centres in various parts of the country. At present, the area under soybean cultivation in this country is 125,000 hectares with a total production of approximately 87,500 tons having an average yield of 700 kg/hectare." In India, high protein baby foods and pre-school children foods containing soy flour, such as Bal-Ahar and Bal Amul have been developed. Discusses the great untapped potential of the soybean for food uses in India. Address: Div. of Biochemistry, Indian Agricultural Research Inst., New Delhi.

2976. Kapoor, C.M.; Gupta, S.K. 1978. Dairy product analogs: A weaning food from soybean and whey. *Indian Dairyman* 30(3):179-81. March. [2 ref]
• ***Summary:*** "A child's life is determined, to a great extent, by the quality of food provided in its first five years. Serious dietary deficiencies in this period would damage health, inhibit growth, drain physical strength and possibly rob it of a chance to attain full mental development as has been clearly shown in several medical studies."

Milk protein is of superior quality. However milk and milk-based foods are out of the reach of many need children from low-income families. "Soybean protein ranks high in quality among the vegetable proteins besides being cheaper than most of the animal proteins... Soymilk or soybased formulae have been of considerable interest to nutritionists as a possible substitute for or supplement to cow or human milk particularly in the feeding of infants who are allergic to animal milk or have no access to it."

Tables show: (1) Essential amino acid requirements of infants compared with intake of protein from soymilk, cow milk, or human milk. The five columns show: (1) Amino acid. (2) Minimum requirement in mg per kg of body weight per day. (3-5) Amino acid provided by protein fed at a level of 2 gm of protein per kg of body weight per day. Note that soymilk is most deficient in the total sulphur amino acids (methionine + cystine), followed by tryptophane. (2) Physical properties of the soy-whey feeding food (SWFF). Nineteen properties (average values) are discussed. The whey was Cheddar cheese whey from buffalo milk–a waste product.

A flow diagram shows all basic steps in making of the weaning food. Experiments with albino rats show the weaning food had a PER of 3.24, which was higher than that of casein (2.50). The true digestibility was 86.0% vs. 94.9% for skim milk powder. "Child feeding trials with the product gave very encouraging results with respect to acceptability and value as a supplement" for feeding pre-school children. Address: Dairy Technology Div., National Dairy Research Inst., Karnal (Haryana), India.

2977. Bankhead, R.R.; Weingartner, K.E.; Kuntz, D.A.; Erdman, J.W., Jr. 1978. Effects of sodium bicarbonate blanch on the retention of micronutrients in soy beverage. *J. of Food Science* 43(2):345-48, 360. March/April. [8 ref]
Address: 2-4. Dep. of Food Science, Univ. of Illinois.

2978. Bustamante, Sergio A.; Schreck, Sheila. 1978. Anthropometric growth study of infants less than 1750 grams using three different formulas. *Pediatric Research* 12(4/2):430. (Abst. #402). April.
• ***Summary:*** The three formulas were (A) soybean based, 20 calories/oz, (B), cows milk based, 24 calories/oz, and (C) cows milk based, 24 calories/oz with lower osmolality. "Infants taking formulas B and C achieved the discharge weight (2100 gm) sooner than those on formula A; however, those on B and C had more digestive system complications (6 vs. 0) including necrotizing enterocolitis." Address: Univ. of Kansas School of Medicine-Wichita, Kansas. Wesley Medical Center, Wichita, Dep. of Pediatrics.

2979. Cheryan, Munir; Schlesser, Joseph E. 1978. Performance of a hollow fiber system for ultrafiltration of aqueous extracts of soybeans. *Lebensmittel-Wissenschaft + Technologie* (*Zurich*) 11(2):65-69. April. [25 ref. Eng]
Address: Dep. of Food Science, Univ. of Illinois, Urbana, IL 61801.

2980. Costa, Sebastiao Irineu da; Mori, Emília E.M. 1978. Principais formas de aproveitamento da soja na alimentacao humana [The principal uses of soya for human consumption]. *Boletim do Instituto de Tecnologia de Alimentos* (*Campinas, Sao Paulo, Brazil*) No. 56. p. 27-49. March/April. [11 ref. Por; eng]
• ***Summary:*** Contents: Summary. Introduction. Principal forms of soybeans used for human consumption: Consumption as beans, soymilk (*extrato protéico de soja* (*"leite de soja"*)), defatted soy flour (composition, microbiological quality), whole soy flour, textured soy protein / textured vegetable protein, advantages of using

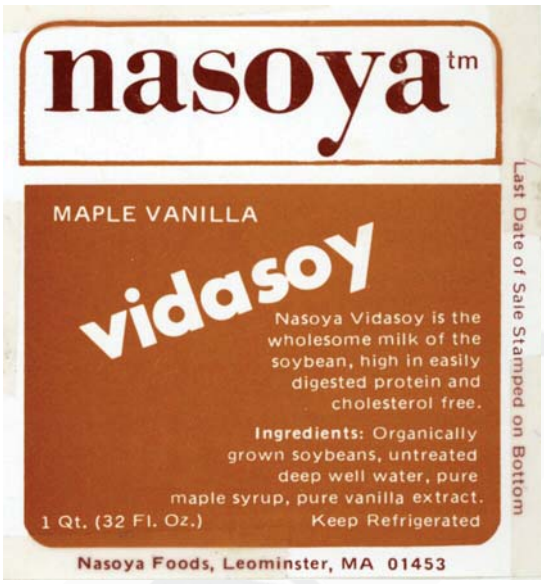
textured vegetable protein, use of textured protein in the U.S. School Lunch Program, soy protein concentrate and isolated soy protein. Economic reasons for using soy protein in human nutrition: Use of soya in meat products, use of soy flour for enriching other flours, use of VITAL (soymilk) is school lunches.

2981. Desai, Girish N.; Peng, Andrew C. 1978. Variety affects soymilk protein content. *Ohio Report on Research and Development* 63(2):30-31. March/April.
Address: 1. Borden Inc., Columbus, Ohio; 2. Ohio State Univ., Columbus, Ohio.

2982. Johnson, John Hal. 1978. Dr. John Hal Johnson's soybean delights. *Mother Earth News* No. 50. March/April. p. 72-73.
• ***Summary:*** This food scientist from Brigham Young University gives tips and recipes for using soy flour, soymilk, cooked soybeans, and soynuts. Address: Food Science Dep., Brigham Young Univ., Provo, Utah.

2983. Johnson, K.W.; Snyder, H.E. 1978. Soymilk: A comparison of processing methods on yields and composition. *J. of Food Science* 43(2):349-53. March/April. [15 ref]
Address: Iowa State Univ., Ames, Iowa.

2984. **Product Name:** Vidasoy (Maple-Vanilla Soymilk).
Manufacturer's Name: Nasoya Foods.
Manufacturer's Address: Mechanic St. Ext. (P.O. Box 841), Leominster, MA 01453.
Date of Introduction: 1978. April.
Ingredients: Organically grown soybeans, untreated deep well water, pure maple syrup, pure vanilla extract.
Wt/Vol., Packaging, Price: 16 oz plastic jug.
How Stored: Refrigerated.
New Product–Documentation: Letter from John Paino of Nasoya. 1979. Jan. 16. Nasoya discontinued its sweetened soymilk in Aug. 1978. There were spoilage problems after 3-5 days with the screw-cap plastic bottle and distribution system they used, although it would last 2-3 weeks in the walk-in at 34-38ºF. They could get 3-5 weeks if they bottled the soymilk at 180ºF or hotter, but this put quite a strain on their refrigeration system and the polyethylene bottles were very easily crushed due to softening while hot. Tetra Pak was considered ideal but too expensive. The best solution in retrospect was thought to be hot packing in Pure Pak cartons. "We feel that there is an excellent market potential for soymilk, but we were glad to be able to gracefully get out of making it. The most popular types of soymilk were the sweetened kinds, and we feel strongly that sweetened soymilk is not a good quality food for most people to take on a regular food basis. We arrived at this conviction after producing a maple-vanilla soymilk for over 2 months, while



watching the effects it produced on ourselves, friends and co-workers. It made us scattered, confused, and accident prone, and also created chronic intestinal problems, although it was cooked for over 30 minutes. Thus we did not wish to take responsibility for making sweetened soymilk available commercially."

Leviton. 1979. Soyfoods. Summer (July). p. 29. John Paino notes: "'We stopped making sweetened soymilk because we felt it made everyone too yin, it spaced people out. If you drink sweetened soymilk every day, you will loose touch with reality.' Bob Bergwall says that when Nasoya first introduced their soymilk last year, the market was wide open and they could have sold enormous quantities. 'But we didn't want to put out a product we couldn't believe in. We might produce a plain soymilk sometime.'"

Letter from John Paino. 1981. Jan. "We were the first to manufacture fresh soymilk for non-frozen distribution on the East Coast." Label. 1981. 3 inches square. Self adhesive. Red brown and tan on white. "Nasoya Vidasoy is the wholesome milk of the soybean, high in easily digested protein and cholesterol free." Reprinted in Tofu & Soymilk Production. 1979. p. 234, and Soyfoods Marketing. Lafayette, CA: Soyfoods Center.

Letter from John Paino of Nasoya. 1982. April. Vidasoy soymilk was introduced in April 1978 and discontinued in Aug. 1978.

Letter from John Paino of Nasoya. 1990. Sept. 25. Vidasoy was introduced in April 1978, the same month Nasoya introduced its first tofu product. It was packaged in 16 oz plastic jugs from Bercon Plastics, Gardner, Massachusetts. "It was discontinued because of: 1. Coagulation into curds and whey, or 'yogurt' in the container; 2. Insufficient funds to expand walk-in and repair ice water tank. I should have stuck with it! But alas, we were too inexperienced to realize that selling soymilk was a

lot more profitable than selling tofu, which was made very slowly and with much labor. Live an learn!"

2985. Omosaiye, O.; Cheryan, M.; Matthews, M.E. 1978. Removal of oligosaccharides from soybean water extracts by ultrafiltration. *J. of Food Science* 43(2):354-60. March/April. [50 ref]
• ***Summary:*** Omosaiye is a Nigerian graduate student. The group found that up to 96% of the oligosaccharides in soymilk could be removed by a two-stage ultrafiltration process. The final soymilk, on a dry basis, was found to contain 60% protein, 35% fat, and 0.6% oligosaccharides. Address: Dep. of Food Science, Univ. of Illinois, Urbana, IL 61801.

2986. Swan Food Corp. 1978. Order form and price list for distributors. April, 1978. Miami, Florida. 1 p. 36 cm.
• ***Summary:*** This wholesale catalog lists the company's soy bean products and natural foods. For each is given: Product description, case weights, wholesale unit prices (sizes A and B), units per case, total. Minimum order: $300.00. Prices–F.O.B. Soy products include: Regular tofu. Baked tofu. Marinated tofu. Caraway tofu. Soymelk (pints or quarts, unsweetened). Soymelk (pints or quarts, sweetened). Soymelk (pints or quarts, carob). Carob swirl cake (all cakes and pies are 7-inch rounds [= 7 inches in diameter]). Tofu pie–cashew. Mary's carob cream cake. Mary's devil's food cream cake. Tofu chip dip. Whole grain soy burgers. Tofu vegetable stew. Soyogurt (plain, strawberry, or peach; 8 oz.). Soy shakes (carob, vanilla, or strawberry; pint). Organic yellow certified soybeans (50 lb or 1 lb bags). Mary's eggless egg salad.

Non-soy products: Iced herb tea (sweetened, unsweetened Bancha, unsweetened Mu). Barley malt syrup. Fresh frozen organic orange juice (two sizes). Organic oranges. Address: 5758½ Bird Rd., Miami, Florida, 33155. Phone: 305-667-7141.

2987. Swan Food Corp. 1978. Order form and price list for retail stores. April, 1978. Miami, Florida. 1 p. 36 cm.
• ***Summary:*** This retail catalog lists the company's soy bean products and natural foods. The products are identical to those on the wholesale price list for distributors, but the prices are about 21% higher, the column showing "Units/case" does not appear on this retail form. Address: 5758½ Bird Rd., Miami, Florida, 33155. Phone: 305-667-7141.

2988. Timmins, Thomas. 1978. New products: Soymilk and agé. Capital investment program and project income summary. New England Soy Dairy, Inc., 305 Wells St., Greenfield, MA 01301. 4 p. Unpublished manuscript.
• ***Summary:*** They plan to sell soymilk in plain, honey, and carob flavors. Projected income for each flavor in dollars/week is $1,500, $850, and $550 respectively. The equipment is expected to cost $13,000. Address: Greenfield, Massachusetts.

2989. Bennett, Jean. 1978. Soybean curd: Ancient staple of the Oriental diet. *Los Angeles Times.* May 4. p. J25.
• ***Summary:*** An introduction to tofu, based on a talk with Dr. Genevieve Ho, home adviser, UC Extension Service; she was born in China and educated in the USA.

The use of bean curd in China was recorded in about 160 BC during the Han dynasty. With this long history of development and refinement, and with continuous regional and local innovation, it is easy to understand why bean curd has become so tremendously popular in China and in nearby countries, and why so many varieties exist today.

Ho adds that "fermented bean curd has sufficient vitamin B-12 to prevent pernicious anemia."

In East Asia, "Buddhists do not eat anything that contains blood. Nor do they eat milk, eggs, or shellfish." In this vegan diet, tofu is a very valuable food. "Strict vegetarian restaurants serve dinners and banquets made of food from only plant sources." Main dishes include mock chicken, mock fish, and mock sausage.

In our world, with increasing population and decreasing food supply, the soybean is "invaluable in helping us to return to original foods as opposed to converted foods." When a food is converted from a plant to an animal food, it requires 7-11 units of plant protein to obtain 1 unit of animal protein. "'No wonder I am always trying so hard to get people to eat more bean curd.' See also The Book of Tofu by Shurtleff and Aoyagi (Autumn Press, Box 469, Soquel, California 95073; $6.95). Includes 4 recipes for bean curd supplied by Dr. Ho. One of these, Hot spicy bean curd, includes "1½ teaspoons hot fermented bean paste" and "1 pound fresh bean curd, cut into ½-inch cubes" as ingredients.

A photo shows Dr. Ho at a market in Chinatown.

A comparative nutritional evaluation chart gives the nutritional composition of soybean curd, pressed soybean curd, milk (cow's, whole fluid), and soybean milk. Address: Times staff writer.

2990. Guhardja, Edi. 1978. Re: Names and descriptions of lesser-known Indonesian soyfoods. Letter to William Shurtleff at New-Age Foods Study Center, May 16–in reply to inquiry. 1 p. Typed, with signature.
• ***Summary:*** Dry roasted soybeans (Javanese: *Dele Sangan;* Sundanese: *Kedele Sangrai*). Raw soybeans, with or without their seed coats, are soaked in cold water for ½-1 day. Sometimes salt is added. The swollen beans are dried, roasted, then eaten with yellow rice (rice cooked in coconut milk with turmeric), or as a snack.

Tofu chips (Indonesian: *Krupuk Tahu*). Salted tofu is sliced into long, this pieces, which are dried in the sun, then broiled until crisp. They are eaten with Gado-Gado (cooked vegetables with peanut sauce) or as a snack.

"Fresh green soybeans in the pods" or "fresh vegetable (green) soybeans (Indonesian: *Kedelai Rebus*). Soybeans at the mature green stage are harvested by cutting the stems with the pods attached. The leaves are picked off the stems and the pods, still attached to the stems, are boiled until the seeds are soft. They are sold in bunches, with the stems tied together, and eaten as a snack.

Roasted soybean grits (Indonesian: *Bubuk Kedelai*). Roasted soybeans are pounded into grits, usually with a wooden mortar and pestle. The grits are spread over glutinous rice and grated coconut meat, then coconut sugar syrup is poured over the top. They are eaten as a snack. Address: Dr., Dep. of Botany, Bogor Agricultural Univ. (IPB) Bogor, West Java.

2991. Clayton, Hugh. 1978. Soya takes over from the cow. *Times* (*London*). May 23. p. 3, cols. 6-8.
• ***Summary:*** The article, written in a negative tone, begins: "Soya technology, which has already brought us beefless steak pudding and meatless mince, has taken another step forward." The International Health Foods Exhibition in London opens today. Itona Products, of Wigan, Lankashire, has a stand where they are sampling: Milkless rice pudding, "made from brown rice, unrefined sugar, and a milklike liquid made from soya-beans." It retails for about 28*p.* for a 10 oz. tin, or about twice as much as its dairy milk counterpart. Sold in health food shops instead of supermarkets, it "conjures up instant memories of bleak school meals." Mr. Jeff Hampson, managing director of Itona, was present at the company's stand "amid soya biscuits, soya milk 'that has never even seen a cow' and packets of soya that can be used to make something that looks and tastes like a fishcake." It is called "C Food." Itona "also introduced a small packet of roasted and salted soyabeans for sale as a casual snack," as well as a coffee substitute.

Itona now produces about "2,000 gallons a week of 'milk' made from soya flour," a tiny amount compared with the millions of gallons of real milk from Britain's cows. "Yet the health business remains one of the most buoyant in the food industry because of the new interest in unprocessed food..."

2992. Modipon Limited. 1978. Classified ad: Require for their soybean processing plant. *Times of India* (*The*) (*Bombay*). May 25. p. 13.
• ***Summary:*** "A new project estimated to cost about Rs. 10 crores [100 million rupees] for crushing soybeans and for the manufacture of defatted soy flour, soy textured food products, soy protein isolates & concentrates, the following personnel:" General manager, plant manager, marketing manager, superintendent (soybean extraction plant), superintendent (soy flour milling plant), superintendent (food products plant), food research scientists (for development of new foods for human consumption–including "soybean milk like products"; for development of new foods for poultry, cattle and other live stocks), soybean extension officer.

Concerning the food research scientists: "Candidates should be qualified graduates in food technology or post-graduates in food chemistry having minimum 6-8 years experience in the development of processed foods for human consumption / live stock feed. Persons having foreign qualifications and actual preparation of nutritious foods such as 'Balahar' and having done sufficient and solid development work on cooked, semi-cooked and other snack foods etc. will be preferred.

The soybean extension officer will encourage farmers in the area to grow more soyabeans (to keep the new plant well supplied), show them how to get optimum yields, and help them to solve whatever problems arise with their soyabean crop. Address: Modinagar–201 204, District Ghaziabad, Uttar Pradesh.

2993. Abou El-Ella, W.M.; Farahat, S.M.; Ghandour, M.A. 1978. Studies of some properties of milk/soymilk mixture. *Milchwissenschaft* 33(5):295-97. May. [10 ref]
• ***Summary:*** Mixtures of soymilk (10, 20, or 30%) and water buffaloes milk were used to make Egyptian style cheeses, coagulated with rennet. The effect on coagulation and curd firmness of different levels of soymilk added, sodium chloride, rennet, and renneting temperature were studied. The coagulation time was decreased by increasing the amount of rennet and the renneting temperature. Coagulation time increased as the amount of soymilk and salt added were increased. Curd firmness was increased by increasing the amount of rennet and raising renneting temperature, and decreased by increasing the soymilk added and the sodium chloride per cent. Address: Depts. of Food Science, Ain Shams and Zagazig Universities Cairo, Egypt. Phone: Eng; ger.

2994. **Product Name:** [Mamy {Soymilk} (Orange, or Pineapple)].
Manufacturer's Name: Agro-Nippo Produtos Alimenticios Ltda.
Manufacturer's Address: Av. José Alves de Mira 185, Piribuba, Sao Paulo, Brazil.
Date of Introduction: 1978. May.
Wt/Vol., Packaging, Price: 200 ml plastic bags, ready to drink.
New Product–Documentation: Letter from Jane Cadwell Pautz. 1982. May 29.

Letter (e-mail) from Jaime Nakamura of Brazil. 2012. Oct. 9. "I am attaching a form from Public Division of Food (Sao Paulo State's Health Secretary), dated 3 May 1978, when samples of Mamy were collected in order to develop product tests. Mamy was the first soymilk produced in Brazil and, we believe, the first in the world to combine soymilk +

fruit juice. Mamy was launched before 1978 initially in its pure format as usual soymilk produced in Japanese market (without any mix).

When Mamy was launched, it was impossible to be registered, since there were not laws to embrace that 'different milk.' The Brazilian President showed some kind of rejection regarding the taste of this new product–bad words in media. After all the investments, the Agro-Nippo team decided to find a solution to face these difficulties. After some tries, they decided to mix the juice of local fruits to minimize the strong taste of soymilk. And it worked! This is just a summary regarding the history of this company / brands.

The docs I'm sending to you are in Portuguese–anyway, I have the originals in my hand. There're more similar documents.

I hope to keep in touch with you in order to collaborate to enrich this kind of data and information.

2995. Cross, Leslie. 1978. Free plant milk. *Alive* (*England*). May. p. 6.
• ***Summary:*** "The Australian Govt. as long ago as 1965 empowered doctors to prescribe–at subsidised rates–soya milk to any child considered reactive to cowmilk..." Wander Pharmaceuticals made the first British plantmilk, Velactin. The Plantmilk Society, formed in 1956, is a Registered Charity. Address: Secretary, The Plantmilk Society, Uxbridge, England.

2996. Dominguez de Diez Gutiérrez, Blanca. 1978. Los mil y un usos de la soya [The 1001 uses of soya]. *Natura* (*Mexico*). May. p. 51-66. [2 ref. Spa]*
• ***Summary:*** Contents. Introduction. How to make soymilk (*leche de soya*). How to make cheese or tofu (*el queso o tofu*). Recipes based on fresh soy puree (*Go*). How to use soymilk. All the things you can do with tofu. What to do with okara (*el Okara*). Soy sprouts (*Los germinados de soya*). Kinako or roasted soy flour (*Kinako o polvo tostado de soya* (*harina*)). Soy coffee (*Soyafé o café de soya*). Soynuts (*soyanuez*).

Note 1. Most of the terminology in this article is derived from *The Book of Tofu* (by Shurtleff & Aoyagi), which is cited in the bibliography.

Note 2. This is the earliest Spanish-language document seen (Jan. 2005) that uses the word "soyanuez" to refer to soynuts.

Note 3. This is the earliest Spanish-language document seen (Nov. 2012) that mentions roasted soy flour, which it calls *Kinako o polvo tostado de soya* (*harina*). Address: Lived at Tepoztlan, Morelos. Address: Apdo Postal #21140, Mexico 04000 DF, Mexico.

2997. Holsinger, V.H.; Luddy, F.E.; Sutton, C.S.; et al. 1978. An oil fraction from edible beef tallow as a constituent of whey-soy drink mix. *J. of the American Oil Chemists' Society* 55(5):473-77. May. [33 ref]
Address: Eastern Regional Research Center, USDA, Philadelphia, Pennsylvania 19118.

2998. **Product Name:** Golden Archer Brown Rice Pudding (Non-Dairy Eggless Pudding).
Manufacturer's Name: Itona Products Ltd.
Manufacturer's Address: Leyland Mill Lane, Wigan WN1 2SB, England.
Date of Introduction: 1978. May.
Ingredients: Brown rice, soya flour, unrefined sugar, vegetable oil, sodium phosphate.
New Product–Documentation: Ad in *Alive* magazine. 1978. May. p. 2. "Made from whole brown rice with Soya Plantmilk and Unrefined Sugar."

Label. 1981, undated. "Itona Health Food. Soya 'Beanmilk' Rice Pudding. 100% non-animal. For use instead of milk rice pudding by vegans, vegetarians, as a health food and by people who are opposed to cruelty to animals." Itona Products Ltd. retail price list. 1980-81. 15 oz. retails for £0.54. Soya Bluebook. 1985. p. 102.

2999. **Product Name:** Golden Archer Soya Plantmilk.
Manufacturer's Name: Itona Products Ltd.
Manufacturer's Address: Leyland Mill Lane, Wigan WN1 2SB, England.
Date of Introduction: 1978. May.
New Product–Documentation: Ad in *Alive* magazine (UK). 1978. May. p. 2. "New lines from Itona: Milk that's never even seen a cow! It's 100% vegetable, made from soya and packed with protein and goodness. Keeps in the can as long as you want to keep it.... A wonderful food and its made without any exploitation of animals! Golden Archer Soya Plantmilk, the milk that's 100% non-animal."

Also in *Alive.* 1979. March/April. p. 2. "Milk that's never even seen a cow."

Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). "Itona Products Ltd., Wigan, England. Golden Archer Soyabean Milk."

3000. Itona Products Ltd. 1978. Banga or Burga? Itona do both! Tonabanga and Tonaburga. Great meal by Itona (Ad). *Alive* (*England*). May. p. 2.
• ***Summary:*** Full-page ad. "Tonabanga is an exciting new TVP Food Mix from Itona. Made from textured vegetable protein (without Monosodium Glutamate) and flavoured specially with selected spices it is a completely vegetarian replacement for sausages and sausage meat."

The right 1/3 of this ad, titled "New lines from Itona, lists many Itona vegetarian products: Granny Ann High Fibre Biscuits made with Soya Fibre. Golden Archer Soya Plantmilk (100% vegetable; "Milk that's never seen a cow"). Tona "C" Food–Fish Cake Style. Ito–Instead of coffee.

Golden Archer Brown Rice Pudding with Soya Plantmilk. Noots–Roasted Salted Soya Beans. Basic TVPs–Flavoured and natural (in 4 oz packs; all flavors are given).

A photo shows a woman holding up a burger in a bun and a sausage (banga) on a fork.

This same ad appeared in the Aug. 1978 issue (p. 2). Address: Leyland Mill Lane, Wigan [Lancashire, England].

3001. Kanthamani, S.; Nelson, A.I.; Steinberg, M.P. 1978. Home preparation of soymilk: A new concept. *INTSOY Series* No. 14. p. 5-11. Whole Soybean Foods for Home and Village Use (College of Agric., Univ. of Illinois at Urbana-Champaign). See Also Nelson 1978. [12 ref]
Address: Dep. of Food Science, Univ. of Illinois, Urbana.

3002. Koch, D.S.; Nelson, A.I.; Wei, L.S. 1978. Soybean breakfast and patty foods: Time and energy saving for home preparation. *INTSOY Series* No. 14. p. 12-20. Whole Soybean Foods for Home and Village Use (College of Agric., Univ. of Illinois at Urbana-Champaign). [7 ref]
• ***Summary:*** A quick method for making weaning foods and meat substitutes is to crush raw beans with a hammer mill or food mill, drop them into boiling water containing a small amount of sodium bicarbonate, and boil for 10 minutes. At that point other ingredients such as cereals, vegetables, or fruits can be added. The mixture is then simmered for 15 minutes and pureed before serving. Address: Dep. of Food Science, Univ. of Illinois.

3003. Nelson, A.I.; Steinberg, M.P.; Wei, L.S. eds. 1978. Whole soybean foods for home and village use. *INTSOY Series* No. 14. 31 p. May. (College of Agric., Univ. of Illinois at Urbana-Champaign). [26 ref]
• ***Summary:*** Contents: 1. Development of whole soybean foods for home use: Rationale, concept, and examples. 2. Home preparation of soy milk: A new concept. 3. Soybean breakfast and patty foods: Time and energy saving for home preparation. 4. Food products from whole soybeans. 5. Developing a soybean dal for India and other countries. Address: Univ. of Illinois, Urbana.

3004. Nelson, Alvin I. 1978. Sri Lanka Soybean Development Program. Report No. 18. University of Illinois, Urbana, Illinois: INTSOY. 11 p. Contract No. UNDP/SRL/73/007-1/AGOF INTSOY.
• ***Summary:*** Prof. Nelson arrived in Sri Lanka on 2 Feb. 1978 and departed on 25 April 1978. This is a report on his fifth visit. Discusses development and demonstration of soybean foods for village and commercial uses. Address: Food Processing Specialist, INTSOY.

3005. Polzin, H.W. 1978. Soy protein concentrate in milk replacers. In: 1978. Proceedings, 38th annual meeting, Nutrition Council of the American Feed Manufacturers Assoc. 23 p. See p. 16-18. [13 ref]
• ***Summary:*** A good review of the literature. "Soy protein is the most commonly used of the non-milk protein sources available for use in milk replacer formulations. Properly processed soy protein has a high nutritive value and is readily available as a by-product of the oil industry."
Address: 1701 N. Ft. Myer Drive, Arlington, Virginia 22209; By Jan. 1992: 1501 Wilson Blvd., Arlington, Virginia 22209. Phone: 703-524-0810.

3006. Zabel, Nancy L.; Harland, J.; Gormican, A.T.; Ganther, H.E. 1978. Selenium content of commercial formula diets. *American J. of Clinical Nutrition* 31(5):850-58. May. [39 ref]
• ***Summary:*** Analyses were conducted of the selenium content of infant formulas, formulas for tube feeding, food supplements, chemically defined diets, and total parenteral nutrition solutions. The following soy-based infant formulas were tested: Isomil (Ross Labs), Neomulsoy and Mullsoy (concentrated) (Syntex Labs). Nursoy (concentrated) (Wyeth Labs). Prosobee (concentrated) (Mead Johnson). They ranged from 0.006-0.025 micrograms of selenium (Se) per gm. These formulas would provide 6.3 to 13.3 micrograms Se to infants consuming 700 kcal/day. These levels would be inadequate to provide the safe and adequate range of selenium intake recommended by the FNB/NRC (1980) for infants 6 months to 1 year old (20-60 micrograms Se/day) or children aged 1-3 (20-80 micrograms Se/day). Address: Dep. of Nutritional Sciences, 1300 Linden Dr., Univ. of Wisconsin, Madison, WI 53706.

3007. Fussell, B.H. 1978. A tiny hamlet is vegetarians' hub. *New York Times.* June 11. Section 11. p. 16-17. Sunday. [2 ref]
• ***Summary:*** A profile of Jay and Freya Dinshah, founders of the North American Vegetarian Society and the American Vegan Society in Malaga, New Jersey. They also launched the North American affiliate of the International Vegetarian Union. "Everyone knows that vegetarianism in the United States is on the rise." There are now 60 to 70 vegetarian societies in America; the largest are in Washington, DC, Seattle, San Francisco, Los Angeles, and New York City.

"Mr. Dinshah and his wife, Freya, who is from Epsom, England, are both 'life vegetarians' (they were born into vegetarian families and have never tasted meat). Mr. Dinshah's father, Dinshah Ghadiali, was a prominent vegetarian teacher in the 1920's and 1930's, along with people like Bernard McFadden.

"Known also for inventions, including the 'Dinshah engine-tester,' which was used by American fighter planes in World War I, Dinshah Ghadiali came to the United States from Bombay [India] in 1905 and eventually settled in Malaga to raise his eight children."

A photo shows Jay and Freya. Recipes are given for Carobanana Ice Cream (with ½ cup soy powder) and Miami

Coconut Pie.

3008. *New York Times.* 1978. Pirate's paste and coconut milk. June 21. p. C6.
• ***Summary:*** Recipes are given for the dishes that comprise one type of "rijsttafel (A small Indonesian dinner for summer)." One of these is "Ketjap manis (Sweet soy sauce ketjap)" which has the following ingredients: 2½ cups sugar, 1 bottle (22 ounces) dark soy sauce, 2 cloves, peeled and crushed, 1 teaspoon star anise (see box), 2 slices laos (see box), and ½ cup water. The directions are giving, starting with caramelizing the sugar. Yields about 3 cups. It will keep for months if properly refrigerated.

3009. *Times of India* (*The*) (*Bombay*). 1978. Bihar plan to dig 50,000 wells before June. June 31. p. 4.
• ***Summary:*** Lucknow (the capital city of Uttar Pradesh)– Those farmers who grow soyabeans on the terai here have decided to establish a co-operative soyabean processing [crushing] plant here at a cost of Rs. 50 lakhs [5 million rupees].

New strains: The development of new soyabean strains is one of most important achievements of Govind Ballabh Pant Agriculture University in the Naini Tal [Nainital] district. Its researchers have also patented a processing for making soya milk, a beverage that has proved very popular.

Contrary to popular belief, the soyabean crop is now widely cultivated by the terai farmers and even the 1-crore (10 million rupees) soybean processing [crushing] plant that has been constructed at "nearby Bareilly is now unable to cope with the increasing output." Last year the farmers produced a record 150,000 quintals [1 quintal = 100 kg, so 15 million kg] because of the rising return [price] of Rs. 300 per quintal.

The farmers from around Lucknow met at the university when they decided to establish the co-operative plant to absorb their increasing soyabean production. Among those present at the meeting was the Union minister of state for agriculture, Mr. Bhanu Pratap Singh.

3010. Dominguez de Diez Gutiérrez, Blanca. 1978. Los mil y un usos de la soya [The 1001 uses of soya]. Mexico City: Editorial Posada. 15 p. [2 ref. Spa]
• ***Summary:*** This booklet was reprinted from the May 1978 issue of *Quadernos de Natura* magazine, p. 51-66. Blanca was born on 8 Nov. 1919. Address: Circulo Yoga de Tapasthana, A.C. Tepoztlan, Morelos, Mexico.

3011. Jacobs, Leonard. 1978. Menage: Vitamin B-12 in macrobiotic or strictly vegetarian diets. *East West Journal.* June. p. 10-11. [2 ref]
• ***Summary:*** A reader asks: "Many critics of a macrobiotic or strictly vegetarian diet point out the lack of a source of vitamin B-12. Can this essential vitamin actually be synthesized (or transmuted) by the body if one's diet is composed entirely of whole grains?"

Jacobs discusses vegetarian sources of vitamin B-12 (sea vegetables, microalgae {*Spirulina maxima*}, and fermented soy products including soy sauce and miso), and the results of a B-12 deficiency–pernicious anemia. Dr. Wolfgang Tilling, who administered a diet of only soymilk to undernourished children in Germany, is said to have "discovered the synthesis of vitamin B-12 in the intestines of these children." Address: Publisher, East West Journal.

3012. MacKinnon, Jerry; Fiering, Steve. 1978. An invitation. *Soycraft* (*Lawrence, Kansas*) 1(3):1. June.
• ***Summary:*** "The workers of the Soy Plant Soy Dairy would like to invite you to a national conference which is to be held in Ann Arbor, Michigan" on July 28-30, 1978. "We expect to have technical workshops on tofu, tempeh, soymilk and miso production as a base to begin from."

Note: The Soycrafters Association of North America (SANA) was founded at this meeting. Address: The Soy Plant, 211 East Ann St., Ann Arbor, Michigan 48104. Phone: (313) 663-0500.

3013. Plantmilk Ltd. 1978. Alternative infant feeding: A survey of Plantmilk case histories. *Alive* (*England*). June. p. 14-15.
• ***Summary:*** Contains a table prepared by Plantmilk Ltd. summarizing the health records of 31 children introduced to Plamil soymilk at ages ranging from a few days to 2 years. Information on each child is: name, reason for introduction to Plamil, Condition at time of introduction to Plamil, Weight, Age, Present Condition, Weight, Age. Concludes that Plamil can be used successfully in infant feeding. Arthur Ling is the managing director of Plantmilk Ltd.

3014. Shurtleff, Bill. 1978. News from New-Age Foods Study Center. *Soycraft* (*Lawrence, Kansas*) 1(3):3-5. June.
• ***Summary:*** This open letter begins: "Dear Soycrafters of North America: There has recently been growing interest in North America in starting a Soycrafters Union or Cooperative, perhaps along the lines of Japanese National Tofu, Miso, Shoyu, Natto, etc. Unions [Associations]. Such a development would seem to represent a great leap forward, of benefit to many in the expansion of consciousness and production of quality soyfoods in the Western world."

The author then summarizes five major functions of Japanese national trade associations related to soy products, and suggests how each of these be adapted to present American conditions and consciousness which are very different from those in Japan: Purchasing soybeans, maintaining a list of member shops, doing "soyfood publicity," publishing a newsletter, and establishing and running a nationwide center, information clearing house, and school for teaching production of low-technology "soyfoods"

to people from both developed and developing countries.

"How might this basic model be adapted to the United States? First, since soyfoods are still quite new in the USA, we might want to form one united front cooperative or union for all soycrafters or producers of soyfoods, rather than trying to form individual unions for tofu & soymilk, miso, tempeh, shoyu, etc. Given such a joint union, it would seem that all of the functions performed by the Japanese unions would be of great potential value to producers in North America. The key point, however, is that for the Union to work it must be financially viable and sound. Thus it must be created and supported by individual members who understand clearly that its functions are in their best interest, both in the short and long run."

"Second, we must remember that the number of shops presently producing soyfoods here is still very small. We have the names of 95 tofu shops and/or soy dairies in the United States plus 6 more in Canada, 9 tempeh shops, 8 miso shops, and one shoyu factory (Kikkoman). Of these, about 41 of the tofu shops and soy dairies, 5 of the tempeh shops, and 2 of the miso shops are 'new-age' types, newly started by Caucasian Americans. This latter group would probably form the initial nucleus of the Soycrafters Union, however after the benefits of membership could be clearly demonstrated, the more conservative Japanese producers might be eventually interested in joining."

"At the proposed First North American Soycrafters Convention to be held in Ann Arbor [Michigan] July 28-30 the above suggestions might be discussed one by one..."

At the end of the article is a form which new or existing tofu or soymilk manufacturers in the U.S. are invited to fill out and return to Shurtleff so that he can list them in the next edition of *The Book of Tofu.* Its asks for the name, address, and phone number of the company, the person(s) in charge, the date tofu or soymilk production started, the approximate cost of getting started, the average quantity of soybeans used per week, the soyfoods produced (in order of importance), the main pieces of equipment purchased, and equipment the company plans to purchase in the near future.

Note the early use of the terms "soyfoods" and "soyfood" in this article. The term "soyfoods" was coined by Surata Soyfoods of Eugene, Oregon, in Dec. 1976.

Note 2. This is the earliest document seen (Feb. 2013) that contains the term "low technology" (or "low tech"). Shurtleff coined this term to refer to soyfoods that could be made, and had long been made, using simple, traditional technologies, appropriate to Third World countries or relatively poor areas. Address: Director, New-Age Foods Study Center, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

3015. **Product Name:** Missing Egg Salad.
Manufacturer's Name: Soy Plant (The).
Manufacturer's Address: 211 East Ann St., Ann Arbor, MI 48104. Phone: 313-663-0500.
Date of Introduction: 1978. June.
Ingredients: Tofu, tahini, soyamaze [soy mayonnaise] (soymilk, safflower oil, cider vinegar, honey, salt), tamari, celery, onion, nutritional yeast, spices.
Wt/Vol., Packaging, Price: 12 oz. plastic tub.
How Stored: Refrigerated.
New Product–Documentation: Steve Fiering. 1979. Whole Foods. Jan. p. 38, 40. "A Midwestern Interest in Tofu." This is included in a list of products presently produced by the company. It contains eggless soy mayo and turmeric. Talk with Steve Fiering. 1988. June 10. The word "tofu" was not in the title. It was introduced before the Conference, and one of their first two deli items. It was later sold occasionally wholesale outside the deli. The eggless soy mayo was first introduced as a separate product in the deli about a year later.

Rectangular Label in Soy Plant scrapbook from 1979. 3 by 2 inches. Green on orange. 12 oz.

Square Label in Soy Plant scrapbook from about 1980. 3 by 3 inches. Black on white. 12 oz. Ingredients: Tofu, soynaise (soymilk, oil, vinegar, salt, honey), celery, parsley, onion, spices. 12 oz. Zip: 48104.

3016. **Product Name:** Ann Arbor Steamed Brown Bread.
Manufacturer's Name: Soy Plant (The).
Manufacturer's Address: 211 East Ann St., Ann Arbor, MI 48104. Phone: 313-663-0500.
Date of Introduction: 1978. June.
Ingredients: Okara (high fiber soy product), rye flour, soy milk, molasses, whole wheat flour, corn meal, safflower oil, raisins, walnuts, orange oil, vanilla.
How Stored: Shelf stable.
New Product–Documentation: Label in Soy Plant Scrapbook, next to article dated 4 Oct. 1978. 3 inches square. Black on white. An illustration shows a flower growing on a vine.

Talk with Steve Fiering, a founder of The Soy Plant in Ann Arbor. 2000. Dec. 3. This may have been the first way The Soy Plant discovered to use its okara as a food. Ann Elder developed the recipe. It was steamed in the Soy Plant kettle or commercial steamer (which they got for free from a salvage operation) because they didn't have an oven. Steve welded the 4-inch-diameter cylindrical stainless steel forms in which the bread was steamed. When done, they pushed the bread out one end. Steve thinks they started making this before the SANA conference in Ann Arbor in July 1978.

3017. Tofu Shop (The). 1978. Pricelist. Telluride, Colorado. 1 p. Undated.
• ***Summary:*** The Tofu Shop now sells 12 products: Tofu, 14 oz. Tofu, bulk (10 lb. minimum). Sprouts, alfalfa (8 oz or 1 lb). Sprouts, mixed (radish, lentil, alfalfa; 8 oz or 1 lb). Soymilk, quart, unflavored. Soymilk, quart, carob-honey. Soyburgers, frozen 5-pac. Fudge (super carob, cashew

coconut, or date coconut). Address: 116 N. Oak St., P.O. Box 69, Telluride, Colorado 81435.

3018. The foundation meeting of the Soycrafters Association of North America in Ann Arbor, Michigan. Photographs taken at that meeting. 1978. Ann Arbor, Michigan.
• ***Summary:*** This first meeting took place on 28-30 at the University of Michigan–Ann Arbor. Approximately 70 people attended. The goals of the meeting are outlined in the correspondence leading up to the meeting.

The soyfoods movement in America was interested in low-tech, traditional soyfoods, especially tofu, miso, tempeh, and soymilk, gradually expanding into soynuts, edamame, and dairy alternatives. However it also had numerous other objectives which many or most of the members advocated. A vegetarian diet / meatless diet, an end to the feedlot system and slaughterhouse system, working to address the root causes of world hunger, right livelihood, starting small businesses, etc.

The movement had only lukewarm interest in modern high-tech soyfoods such as soy protein isolates, concentrates, and textured soy flour–because: (1) These products were highly refined. (2) Many were a by-product of the feedlot system, which raised animals for slaughter. (3) None of the early members produced (or ate) these products.

At this meeting, a new organization was created on July 30, the Soycrafters Association of North America. Larry Needleman (Bean Machines, California) was elected director. Six people were elected to the steering committee: 1. Tom Timmins, New England Soy Dairy, Greenfield, Massachusetts. 2. Lester Karplus, Vegetarian, Inc., Champaign, Illinois. 3. Steve Fiering, The Soy Plant, Ann Arbor, Michigan. 4. Steve Demos, White Wave Tofu, Boulder, Colorado. 5. Kathryn Bennett-Clarke, Southwest Tofu, Santa Fe, New Mexico. 6. Bill Shurtleff, New-age Foods Study Center, Lafayette, California.

Twelve black-and-white photographs (each 3½ by 5 inches) were taken on 28-30 July 1978 at this meeting by William Shurtleff; they and their negatives are now located in the Soyfoods Center archives. Those identified in the photos include Tom Timmins (New England Soy Dairy), Steve Demos (White Wave), Larry Needleman (The Learning Tree), Greg Weaver (The Tofu Shop), Benjamin Hills (Surata Soyfoods), and Kathryn O. Bennett (Southwest Tofu Co., Santa Fe, New Mexico).

The first four photos were taken on the evening of Friday, July 28 at the opening meeting which was held upstairs in a large room at the University of Michigan (Ann Arbor) student union. Most attendees are dressed informally and seated in folding chairs, but some are sitting cross-legged on the floor. In two photos, Larry Needleman is standing and speaking to the group; Tom Timmins is seated to the right of center on the floor. The remaining eight photos were taken on July 29 in a room next door to The Soy Plant (Ann Arbor, Michigan) where the Association was established. The walls are covered with labeled gallon jars of herbs and foods. The attendees are seated in folding chairs. In the two photos shown here, Steve Demos is in the center, speaking.

Note: The last five frames on this reel of film are photos of people making tofu at the New England Soy Dairy in Greenfield, Massachusetts.

3019. Barr, G.W.; Martin, S.R.; Kakade, M.L.; Ryan, R.J.; Crane, F.M. 1978. Influence of modified protein in milk replacers on calf performance and health (Abstract). *J. of Dairy Science* 61:169. (Abst. #854). July.
• ***Summary:*** No significant differences in daily weight gain, milk replacer consumption, or inverse feed conversion were observed when modified soy protein was substituted for milk protein in seven 4-week trials of calf milk replacer. Address: Land O'Lakes, Inc., Minneapolis, Minnesota.

3020. Bellicchi, Kathy. 1978. New England Soy Dairy. *East West Journal.* July. p. 42-44.
• ***Summary:*** A good history of and introduction to the company. "New England Soy Dairy began a year and a half ago with four partners, Tom Timmins, Kathy and Ira Leviton, and Michael Cohen. Before they got together, Tom was working for a natural foods distributor [Llama, Toucan & Crow], Kathy and Ira were running a natural foods bakery, and Michael was living in Virginia in a satellite community of The Farm (an experience which provided him with a sound working knowledge of soybeans)... They went into business as the Laughing Grasshopper Tofu Shop..." Later the company moved to a much larger facility on the outskirts of Greenfield, Massachusetts. Today they make 1,600 lb of tofu per 8 hour day.

The company presently produces only tofu. However they are in the "process of perfecting a variety of other soy products, including soy milk, soy mayonnaise, dips for crackers and spreads for sandwiches, tempeh (split, hulled soybeans that are fermented), age (deep-fried tofu), and, eventually, ice cream."

Photos show: A barrel of soy milk being curded with nigari. Arthur Braverman standing by the tofu-making equipment at the center of the plant. Tofu being pressed in forming boxes. Ira Leviton carrying a tray of tofu ready for packaging.

3021. Eka, O.U. 1978. Chemical evaluation of nutritive value of soya paps and porridges, the Nigerian weaning foods. *Food Chemistry* 3(3):199-206. July. [30 ref]
• ***Summary:*** Paps and porridges fortified with soya bean milk or soy flour can serve as high-quality, low-cost weaning foods for children. Nutritionally they are comparable to "Soy Ogi" and other commercial foods such as Cerelac and Lactogen. Millet porridge fortified with soya bean milk had

the highest content of protein and essential amino acids. Address: Dep. of Biochemistry, Ahmadu Bello Univ., Zaria, Nigeria.

3022. Shurtleff, William. 1978. Report on trip to first meeting of Soycrafters Association of North America (Ann Arbor, Michigan, July 28-30), and subsequent trip around USA with Mr. Wataru Takai visiting tofu companies (July 30 to Aug. 9). P.O. Box 234, Lafayette, CA 94549. 2 p. Aug. Unpublished manuscript.

• ***Summary:*** July 16-23–Mr. Takai (Director of the Overseas Department for Takai Tofu & Soymilk Equipment Co. in Ishikawa-ken, Japan) flies into San Francisco, California, from Japan. He stays in San Francisco, and is present at the installation of a Takai tofu system at Tokyo Foods (Tokyo Food Co.; Mr. Horinouchi) in San Mateo, south of San Francisco. Shurtleff drives Mr. Takai to visit various tofu makers in the San Francisco Bay Area: Traditional Tofu in Oakland (meet with Ray Nagai and Gary Sato, who are having lots of problems), Azumaya in San Francisco (Bill Mizono), Quong Hop in South San Francisco (Stanley Lee), and Wo Chong in South San Francisco (Walter Louie).

July 24–Shurtleff and Aoyagi drive Mr. Takai to Lake Tahoe, where they all stay for two days and one night at the Shurtleff family cabin near Meeks Bay. July 26–The first Takai catalog of small and medium scale tofu equipment (printed with dark brown ink on glossy white paper) arrives in the USA.

July 27–Takai and Shurtleff fly together from San Francisco to Ann Arbor, Michigan, on an afternoon flight.

July 28-30–Meeting in Ann Arbor of about 70 soycrafters (mostly tofu makers) from around the United States. The conference opens on the evening of Friday, July 28. The first meeting is held upstairs in a large room at the University of Michigan student union–slide shows and discussions. Attendees stay in the university dormitory–which is largely empty since it was summer. On Saturday there are meetings and practical workshops throughout the day at The Soy Plant, 211 E. Ann St., several blocks from the university. Mr. Takai notes: "New tofu makers are young vegetarian. Almost all Caucasian with long hair and beards. They eat tofu instead of meat." On Sunday, July 30, the Soycrafters Association of North America is founded. Steve Fiering, Jerry MacKinnon, Sue Kalen, and co-workers at The Soy Plant (211 East Ann St.), in Ann Arbor, Michigan, organized and hosted the meeting–which was a great success. We elected an executive director (Larry Needleman of Bean Machines, California) and a Steering Committee [board of directors] of six: Tom Timmins, New England Soy Dairy, Massachusetts. Lester Karplus, Vegetarian, Inc., Illinois. Steve Fiering, The Soy Plant, Michigan. Steve Demos, White Wave Tofu, Colorado. Kathryn Bennett-Clarke, Southwest Tofu, New Mexico. Bill Shurtleff, New-age Foods Study Center, California.

After the meeting, Shurtleff and Takai travel around the United States, by airplane and rented cars, visiting existing tofu companies.

July 31, Monday–Fly from Ann Arbor to Boston, Massachusetts. From Boston we drive (using a rented car) to the New England Soy Dairy (Tom Timmins and Richard Leviton) and Nasoya (John Paino and Bob Bergwall); both are quite new companies. Mr. Takai notes: "New England was very woody and beautiful. First saw soy mayonnaise at the New England Soy Dairy; it was served in a dip at dinner. Nasoya extracted soymilk with a big hydraulic press." Mr. Takai noted that Japanese eat tofu itself, whereas Americans generally use it as an ingredient in recipes.

Aug. 1–Spend the afternoon in Boston's Chinatown visiting two or three old and well-established tofu makers. While walking through a fancy building in the area, Shurtleff first sees someone (a secretary) using a word processor.

Aug. 2, Wed.–Fly from Boston to New York City. Visit Hashizume (Mr. Yokoyama) and Tanaka-ya (Mr. Murakami), both well established tofu makers run by Japanese Americans. We then take the run-down, graffiti-scrawled subway to visit Tokyo Food Processing Corp. (c/o Japan Food Corp.) at 40 Varick Ave., Brooklyn (Terry Terahira and Mr. Shimazaki); this is also an established Japanese-American company that makes tofu and other Asian foods in a bombed out-looking, scary part of the city. Mr. Shimazaki notes that tofu is starting to become popular in America, and their tofu is selling well. One afternoon Shurtleff is invited to be on the Gary Null Show (radio) to talk about tofu. While in New York City, Shurtleff stays with Larry Needleman at the home of his parents (Hy & Sylvia, in New Hyde Park, just outside New York City), while Mr. Takai stays at a hotel in the city. One night Needleman and Shurtleff have dinner with Mr. Takai, as his guest, at the Rainbow Restaurant in Manhattan, near the top of some skyscraper. Mr. Takai had a black-and-white photo taken of the three seated at a dinner table; it appeared in the Japanese newspaper *Hokuriku Chunichi Shinbun* on 14 Sept. 1978, and Mr. Takai kept the original. Soyfoods Center also has a copy (8 by 10 inches, filed at Soyfoods Center). Our last morning in New York City (Saturday, Aug. 5), we three travel by subway to the southern tip of Manhattan and take a ride on the Staten Island Ferry.

Aug. 6, Sunday–Shurtleff and Takai fly to Miami, Florida, to visit Swan Foods, founded by Robert Brooks and Mary Pung; a new and extremely innovative company making tofu and soymilk (with organic soybeans), plus a line of soy yogurt, tofu cheesecakes, etc. and full-page nationwide ads. Mr. Takai recalls that Mr. Brooks wanted to start a chain of tofu businesses across the United States. Shurtleff conducts (and tapes) a long interview with Robert Brooks and Pung, and visits their home and tofu plant.

Aug. 8–Fly from Miami to Summertown, Tennessee, to visit The Farm Tofu Shop (Alan Praskin). Mr. Takai recalls

visiting Light Foods in St. Louis, Missouri, to deal with problems in their FM50 roller extractor.

Aug. 10–Fly from Tennessee to Denver, Colorado, to visit Denver Tofu (Mr. & Mrs. Haruhisa Yamamoto; an old, well-established Japanese-American company, which now filters all water used to make tofu). Shurtleff travels to nearby Boulder, Colorado, to visit White Wave on Pearl Street (Steve Demos, very new and small tofu maker).

Aug. 11–Fly from Denver to Los Angeles. Visit Hinode-ya (Mr. Yamauchi; an old, well-established Japanese-American company, perhaps the largest in America).

Aug. 12–Fly from Los Angeles to San Francisco.

Note: Mr. Takai's notes of his itinerary, which he wrote for himself in Japanese before and after the trip, indicate that he arrived in San Francisco on Aug. 12. But Shurtleff's notes indicate that he arrived in San Francisco and Lafayette on Aug. 9 (Wednesday). Shurtleff has clear memories of visiting Denver Tofu and White Wave, but no memories of visiting Tennessee or Los Angeles on this trip. Mr. Takai does not recall visiting Lake Tahoe. Address: New-age Foods Study Center, Lafayette, California.

3023. Sosulski, F.W.; Chakraborty, P.; Humbert, E.S. 1978. Legume-based imitation and blended milk products. *Canadian Institute of Food Science and Technology Journal* 11(3):117-23. July. [15 ref. Eng; fre]

• ***Summary:*** Protein isolates from ten legume species were evaluated as the protein component in imitation milks. While similar in protein content, the isolates exhibited a wide range in solubility, fat homogenization, viscosity, and conductivity. The legumes were ranked in the following descending order of preference for imitation milk production: lima bean (*Phaseolus lunatus,* 5.9), mung bean (*Vigna radiata,* 5.9), pea bean (*Phaseolus vulgaris,* 5.7), Great Northern bean (*Phaseolus vulgaris,* 5.6), lupine (*Lupinus angustifolius,* 5.4), field pea (*Pisum sativum arvense,* 5.2), lentil (*Lens culinaris,* 5.1), chickpea (*Cicer arietinum,* 5.1), soybean (*Glycine max,* 4.8), faba bean (*Vicia faba minor,* 4.1). Note the low ranking of soybeans. The lima bean had the best color ranking. Mung bean (4.1) had the best taste, followed by chickpea (4.0), lupine (3.6) and northern bean (3.6), all far ahead of soybean (2.8). Lupine (5.3) had the best odor, followed by mung bean (5.0), lentil (4.7), and lima bean (4.5), with soybean quite low at 3.3.

Note 1. It is not clear whether or not the soybeans used in this study were grown in Saskatchewan.

Note 2. This is the earliest English-language document seen (Jan. 2005) that uses the term "faba bean" (or "faba beans") to refer to *Vicia faba.* Address: Depts. of Crop Science and Dairy and Food Science, Univ. of Saskatchewan, Saskatoon, Sask, S7N 0W0, Canada.

3024. Takai Tofu & Soymilk Equipment Company. 1978. Takai catalog of small and medium-sized equipment. 307 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan. 6 p. 30 cm.

• ***Summary:*** This catalog, printed with dark brown ink on glossy white paper, was conceived of and developed for Takai by William Shurtleff. 42 photos in small, vertical rectangular frames show many individual pieces of equipment, and 5 photos show Takai's five systems for manufacturing tofu and soymilk. The catalog is divided into five sections: (1) Front page and introduction; (2) Basic equipment; (3) Whole systems; (4) Publications and information; (5) Ingredients. For more information, contact Wataru Takai.

Letter (fax) from Wataru Takai. 1996. Aug. 2. Takai's records show that their brown catalog of small-scale equipment was printed in July 1978. Address: Ishikawa-ken, Japan. Phone: (0762) 48-1355-59.

3025. **Product Name:** Vegetarian Soysage (Meatless Okara-based Sausage).
Manufacturer's Name: White Wave.
Manufacturer's Address: 3869 Walnut St., Boulder, CO 80301.
Date of Introduction: 1978. July.
Ingredients: 1978: Okara (soy fiber), nutritional yeast, wheat germ, whole wheat flour, soymilk, safflower oil, shoyu (soy sauce), herbs, and spices.
Wt/Vol., Packaging, Price: 8 oz disks in plastic wrap.
How Stored: Refrigerated.
New Product–Documentation: Label. 1979. 3.75 inches square (8 oz.). Paper. Brown on tan. Drawing of a happy pig with a wreath of flowers around its neck.

Label. 1981. 3 inch diameter (16 oz.). Paper. Brown on tan. Ingredients on labels are: Okara (soy fiber), nutritional yeast, wheat germ, whole wheat flour, safflower oil, shoyu (soy sauce), herbs and spices. Label and recipe given by Shurtleff & Aoyagi. 1979. Tofu & Soymilk Production. p. 169. Product Price List. 1979, winter. "Spicy vegetarian 'sausage type' soy patty. Slice thin or fry and use on pizza. 8 or 16 oz."

Interview with Steve Demos. 1987. In early 1978 they introduced soymilk. At about the same time they started to use the okara from their tofu to make one of America's earliest brands of soysage–if not *the* earliest! In late July 1978, at the first Soycrafters' Conference in Ann Arbor, Michigan, White Wave gave instructions for tube-processing of soysage.

3026. Fussell, B.H. 1978. Vegetarians find their faith bearing fruit. *New York Times.* Aug. 2. p. C7.

• ***Summary:*** In Selinsgrove, Pennsylvania, more than 300 people of all ages gathered last week for the fourth annual congress of the North American Vegetarian Society, whose president is H. Jay Dinshah. Meals at the meeting offered a variety of foods and drinks, including tahini, peanut and cashew butters, soy spreads, Soyagen cream, soy milk, and

Pero, a coffee-like beverage made of barley, chicory, rye and molasses. The message on one T-shirt read: "Animals should be seen but not hurt." All agreed that the message of vegetarianism is spreading. New York City now supports 35 vegetarian restaurants. World Vegetarian Day will be celebrated on Oct. 1 in Washington, DC.

While young people become vegetarians for moral reasons, their parents may do so for reasons of health.

3027. *Northern Union Outlook* (*Seventh-day Adventist; Minneapolis, Minnesota*). 1978. Hurds hold nutrition class at MJA. Aug. 7. p. 7.
• ***Summary:*** "May 1 through 4, Frank and Rosalie Hurd presented a Natural Nutrition class at the Minneapolis Junior Academy. Two-thirds of those participating were non-Adventists, with attendance averaging 50 per evening." The co-authors of the widely circulated *Ten Talents* cookbook taught about natural foods, meatless main dishes, and even how to make a delicious ice cream with cashew milk and honey.

3028. Fomon, Samuel J.; Strauss, Ronald G. 1978. Nutrient deficiencies in breast-fed infants. *New England J. of Medicine* 299(7):355-57. Aug. 17. [23 ref]
• ***Summary:*** "Although human milk is commonly believed to be a complete and perfect food for infants, deficiencies of vitamin K, vitamin D and iron may develop in normal, full-term infants breast-fed by apparently healthy women consuming conventional diets... Women with nutrient deficiencies [such as vitamin B-12] may produce milk with an unusually low content of a particular nutrient... Routine supplementation of the infant's diet with vitamin D and iron is desirable." What the fascinating case described by Higginbottom and her colleagues "makes clear once again is that strict vegetarians who do not supplement their diets are deficient in vitamin B-12, and children born of such mothers are apt to suffer serious consequences unless appropriate steps are taken." Address: Univ. of Iowa, Iowa City, IA 52242.

3029. Shurtleff, William. 1978. Re: Proposal to add new categories and information about soyfoods to *Soybean Digest Blue Book.* Letter to Mr. Lynn Munyer, editor, *Soybean Digest Blue Book,* P.O. Box 158, Hudson, Iowa 50643, Aug. 21. 2 p. Typed, with signature on letterhead.
• ***Summary:*** Contents: Introduction to publications and work of New-age Foods Study Center. Statistics on consumption of traditional soyfoods in East Asia. Tofu. Soymilk. Miso. Shoyu. Tempeh. Natto. Conclusion.

"Worldwide and increasingly in the United States the traditional soyfoods discussed in our books account for an extremely large proportion of world soybean consumption for human diets.

"Therefore we feel it is in the interest of the ASA [American Soybean Association] and American Soybean farmers to do more to introduce these traditional soyfoods to people around the world via your publications." Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

3030. Beuchat, Larry R.; Nail, B.J. 1978. Fermentation of peanut milk with *Lactobacillus bulgaricus* and *L. acidophilus. J. of Food Science* 43(4):1109-12. July/Aug. [15 ref]
• ***Summary:*** Preparation of the peanut milk: Soak 1 kg of peanuts in 2 liters of a 1.0% solution of sodium bicarbonate for 16-18 hours at 22ºC. Drain and discard liquid. Rinse well with tap water. Add 5 liters of tap water and grind, then allow this slurry to soak at 22ºC for 4-5 hours. Filter and discard solids to give peanut milk. Heat at 121ºC for 10 minutes to pasteurize; cool quickly. Add 2% (w/v) of lactose. Inoculate with two cultures: *Lactobacillus bulgaricus* NRRL B-1909 and *Lactobacillus acidophilus* NRRL B-1910 (1% w/v). Incubate at 37ºC for 3 days. A flow diagram shows the process.

The shortage of animal proteins in some parts of the world has created a need for developing processes by which plant proteins can be economically into diets. The acceptability of this fermented peanut milk competed favorably with that of buttermilk. Address: Dep. of Food Science, Univ. of Georgia Agric. Exp. Station, Experiment, GA 30212.

3031. **Product Name:** Tofu, and Soymilk.
Manufacturer's Name: Full of Beans Wholefoods.
Manufacturer's Address: 97 High St., Lewes, East Sussex, BN7 1XH, England. Phone: 079-16-2627.
Date of Introduction: 1978. August.
New Product–Documentation: Form filled out by John and Sarah Gosling. ca. 1982. They started in Aug. 1978. Now make regular and firm pressed tofu. Soyfoods Center Computerized Mailing List. 1982. July 23. Owners: John & Sara Gosling.

Shurtleff & Aoyagi. 1982. Soyfoods Industry: Directory & Databook. p. 3. Soya Bluebook. 1986. p. 107. Address is now 96-97 High St.

3032. **Product Name:** Soymilk.
Manufacturer's Name: Indonesian Tempeh Co.
Manufacturer's Address: Route 1, Palmyra, NE 68418.
Date of Introduction: 1978. August.
New Product–Documentation: Letter from Gale Randall. 1978. Aug. 28. Shurtleff & Aoyagi. 1979. July. New Tofu Shops & Soy Dairies in the West.

3033. Kuntz, D.A.; Nelson, A.I.; Steinberg, M.P.; Wei, L.S. 1978. Control of chalkiness in soymilk. *J. of Food Science* 43(4):1279-83. July/Aug. [13 ref]

Address: Univ. of Illinois, Urbana, Illinois.

3034. Wang, Li Chuan. 1978. Ultrasonic peptization of soybean proteins from autoclaved flakes, alcohol-washed flakes, and commercial samples. *J. of Food Science* 43(4):1311-13. July/Aug. [10 ref]
Address: NRRC, Peoria, Illinois.

3035. White Wave. 1978. White Wave through The Cow of China, offers food from the kingdom of plants. We make it all here in Boulder! 100% dairyless! (Poster). 1738 Pearl St., Boulder, CO 80302. 1 p. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.
• ***Summary:*** "Organic nigari tofu, Soymilk, Soysage, Missing egg salad, Tofu mayo, Baked savory tofu cutlets, Sweet bean tofu pie, Tofu cinnamon rolls, soy-sesame bars, Energy chews, Almond butter, Cashew butter, Peanut butter, Tahini, Figgies, Date coconut bars, Tofu 'meatball' sandwiches, 'Macro' pizza, Tofu turnovers, 'Sloppy joe' sandwiches, Tempeh." Address: Boulder, Colorado.

3036. Strayer, George M. 1978. Re: Vegetable-type and field-type soybeans suited for making tofu and soymilk. Letter to William Shurtleff at New-Age Foods Study Center, Sept. 8. 1 p. Typed, with signature on letterhead.
• ***Summary:*** Mr. Strayer's company sells 3 varieties of vegetable-type soybeans. Prize (FOB price $9.00 per 60 lb sack) is the best suited for making tofu and has the highest protein content. Kanrich ($9.00) is the next best suited and has the second highest protein content, but is gradually going out of production. Kim ($9.50) has a green seed coat and is the lowest of the three in protein content.

Of the 7 field-type soybean varieties sold by the company (all for $8.00 per 60 lb FOB), Corsoy is the best suited for tofu production, followed by Amsoy and Hawkeye. Chief is no longer in commercial production. Address: President, Agricultural Exports, Inc., P.O. Box 266, Hudson, Iowa 50643.

3037. Kennedy, Donald. 1978. Substitutes for milk, cream, and cheese: Standards of identity. *Federal Register* 43(182):42118-26. Sept. 19.
• ***Summary:*** This proposal by the FDA would establish standards of identity for substitutes for milk, cream and cheese–in response to petitions from the cheese industry. Contents: Summary. For further information. Supplementary information. Milk and cream substitutes. Cheese substitutes. Standards of identity versus common or usual name regulations. Other requirements. Nomenclature. Milk and cream substitutes: Description, nutritional equivalency, methods of analysis, nomenclature, label declaration. Cheese substitutes: Description, nutritional equivalency, methods of analysis, nomenclature, label declaration.

The Filled Milk Act of 1923 as declared unconstitutional in 1972 by the U.S. District Court for the Southern District of Illinois in *Milnot Co. v. Richardson.* The Filled Cheese Act of 6 June 1896 was repealed on 6 Oct. 1974 by the 93rd Congress. "The repeal of both these acts was recommended by the White House Conference on Food, Nutrition, and Health in December 1969. Consumers had expressed the desire for modified milk and cheese foods made with vegetable fats, but the development of such foods was inhibited by the restrictive nature of these acts."

"The Commissioner has observed the market and notes that many new dairy food substitutes are being sold with potentially misleading labeling. Many of these substitutes bear fanciful names while others have adopted 'imitation' dairy food labeling."

The National Cheese Institutes (NCI, 110 North Franklin St., Chicago, Illinois 60606) submitted a petition in 1975 proposing the establishment of a standard of identity for cheese analogs under the name 'Golana' (which is "analog" spelled backward). Thus one could market a "Golana Mozzarella cheese analog." "Imitation" suggests that a food has nutritional inferiority, while "substitute" or "alternate" suggests one food is intended to serve in place of another. Anderson Clayton Foods Co. of Dallas, Texas, submitted a petition dated 13 Aug. 1975 proposing the establishment of a common or usual name regulation for cheese substitutes under the name "Cheesana Cheese Substitutes." Address: Commissioner of Food and Drugs.

3038. **Product Name:** Soymayo. Eggless Imitation Mayonnaise (Soymilk Based).
Manufacturer's Name: New England Soy Dairy Inc.
Manufacturer's Address: 305 Wells St., Greenfield, MA 01301. Phone: 413-772-0746.
Date of Introduction: 1978. September.
Ingredients: Vegetable oil, water, organic soybeans, apple cider vinegar, sea salt, spices, guar gum.
Wt/Vol., Packaging, Price: 15 oz, 32 oz, or 1 gallon jars.
How Stored: Refrigerated.
New Product–Documentation: Interview with Richard Leviton. 1978. Sept. Label. 1978, undated. 4 by 3 inches. Paper. Blue on white. "Eggless. Imitation. No preservatives." Reprinted in Tofu & Soymilk Production. 1979. p. 254, and in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. New England Soy Dairy Product and Price List. 1978. Oct. 12. Ad in Soyfoods. 1980. Summer. p. 11.

3039. Shurtleff, William. 1978. New food from old ways. *Agenda* (*US-AID, Washington, DC*) 1(8):18-20. Sept.
• ***Summary:*** This periodical is published by the U.S. Agency for International Development. Discusses: Soybeans and world hunger, the inefficient ways that soybeans are used in industrialized countries by feeding them to animals, and alternative ways of using them in foods such as tofu, soymilk, tempeh, and miso. Address: New-Age Foods Study

We've got an alternative

White Wave

Soy Dairy

Center, P.O. Box 234, Lafayette, California 94549.

3040. *Soyanews* (*Sri Lanka*). 1978. Soya now at take-off stage. 1(1):1. Sept.
• ***Summary:*** "The Sri Lankan Soyabean Development Program is now at the take-off stage. The project, which officially began on March 1, 1975, is to be conducted over a seven to ten year period. The UNDP [United Nations Development Programme], which is helping to finance the soyabean development program proposed by the Sri Lankan Government, has contributed US$457,600. The counterpart distribution from the Sri Lankan Government has been Rs. [rupees] 4,840,880.

"Field trials conducted by the Department of Agriculture the last few years have shown that soyabean, originally a temperate climate plant, can adapt itself to tropical conditions. Field trials have been very encouraging with a record six tons per hectare in one instance. Under farm conditions yields have also been encouraging... ranging from 1,000 to 1,500 pounds per acre."

"In the first phase of this project the varieties well suited for Sri Lanka have been determined. The Department of Agriculture has also carried out extensive work on the agronomic practices such as weed, pest and disease control. And many Soya farmers are already applying this information for their benefit and the country's.

"The second and third phases of the Soyabean Development Program will cover utilisation and marketing. Already a pilot Soyabean Foods Research Centre has been built and equipped at the Central Agricultural Research Institute at Gannoruwa which will demonstrate the processing of soya based foods. The machinery already installed for this purpose is worth US$220,000 and has been contributed by CARE / UNICEF. Food processing demonstrations will begin before this year is out.

"Several commercial entrepreneurs have already visited the pilot Research Centre, now in its finishing stages, to inquire about the commercial prospects for processing soya foods. The Manager of the pilot plant, Mr. Wilmot Wijeratne said that the inquiries were about the processing of Soya based foods" (such as soyamilk and soya dhal) for popular consumption.

"At the pilot plant there will be demonstrations of food processing at the home, village and commercial levels." The program "will try to reach as many villages as possible."

A large photo shows: The National Milk Board's Soya Milk Bar at the Kandy Esala Agricultural Exhibition; it "turned out to be quite a success. 30,000 cups of soya milk were sold during the ten days of the exhibition."

3041. *Soyanews* (*Sri Lanka*). 1978. The seed that meets a million needs. 1(1):3. Sept.
• ***Summary:*** Gives a brief history of the soyabean worldwide (except in Sri Lanka) and its many uses are described briefly in the following categories: Mature beans: Whole, sprouts, flour, curds, roasted, milk, feeds. Oil. Lecithin: Food and non-food. Meal: Food products, feeds, industrial protein. Plants (incl. forage as silage, hay, and soilage). Immature beans (canned, dehydrated, fresh, quick-frozen, pickled, succotash).

Above each of the following words or terms is a photo: Infant foods. Cereal foods. Pharmaceuticals. Building materials. Adhesive. Feed (shows cows).

3042. Swan Food Corp. 1978. Swan Foods: Remember the name! (Ad). *Whole Foods or East West Journal* Inside rear cover.
• ***Summary:*** This full-page ad is almost identical to one which appeared in Alternatives magazine (Miami, Florida) in July/Aug. 1978 (p. 49) but with the following three small differences: (1) This full-page ad was published in a more expensive and prominent location–on the inside rear cover. (2) There is additional information about Soyogurt (A cultured soy product available in a variety of fruit flavors). (3) Of the iced herbal beverages, Sassafras has been added and Red Quencher removed. At the end of the beverage column is now written: "and a variety of blends."

Note: This ad was published in about August or September 1978 in an unknown counter-culture magazine in America. It was published on the inside rear cover. On the rear cover is an ad for Natural Nectar ice cream. Because of the latter ice cream ad, it seems most likely that this ad appeared in *Whole Foods*, which began publication in Jan. 1978. Alan Richman of Whole Foods (Jan. 1998) says the current publisher is now missing half of the 1978 issues and is missing 2 issues from 1979. While looking at a copy of this ad, he looked through all issues for these two years and could not find the ad. Address: The Soybeanery, 5758½ Bird Rd., Miami, Florida, 33155.

3043. Pollack, Susan R. 1978. Food for thought: Activist turns to the lowly soybean as tool to promote global change. *Detroit News*. Oct. 4. p. A-1, col. 5.
• ***Summary:*** The activist is Jerry MacKinnon, age 29. Five years ago he was shivering on the streets of Washington, DC, with thousands of angry anti-war activists protesting President Nixon's second inauguration. He's still struggling for social change, but now he's making tofu with six other vegetarians at The Soy Plant in Ann Arbor, Michigan. He has focused his political energy on two less dramatic movements: (1) Promoting the inexpensive, protein-rich soybean as an answer to world hunger; (2) Expanding America's network of "new wave" cooperatives. Still part of the Revolution, now he talks less and works more.

Tim Huang, is an emergency medical instructor who owns Yellow Bean Trucking Company, which distributes The Soy Plant's products. He also believes that soybeans are a revolutionary food–"right off the top of the food chain."

China's 800 million people use them to survive in place of meat. America, the world's leading producer of soybeans, feeds them to cows instead of to people.

The Soy Plant, at 211 East Ann St. in Ann Arbor, makes tofu, and soymilk (plain and flavored with honey-vanilla). The products are distributed to co-ops and natural food restaurants throughout Michigan and neighboring states by the Michigan Federation of Co-ops, Midwest Natural Foods of Ann Arbor, and Huang's trucking company.

The nonprofit Soy Plant has become a thriving wholesale-retail operation in less than a year. The work is shared and decisions are made jointly. The investment of almost $7,000 for equipment and supplies has come mostly from community residents, who receive as interest for each $100 loan a pound of tofu a week for the rest of their lives.

The plant is operating at near capacity, making 2,000 lb/week of tofu. But it's hard work and members have to be self-motivated.

Recently [in July] The Soy Plant hosted, in Arbor, the first national convention of tofu makers.

Sue Kalen, age 22, likes to experiment with tofu. She has made such delicacies as tofu pies, filled with raisins, banana, coconut, and carob; tofu tahini spread, and spiced tofu with poppy seeds, mustard, cayenne, garlic, and sunflower seeds.

According to Dr. Zane Helsel, an agronomist at Michigan State University, the soybean has become Michigan's fastest growing crop in recent years. Among grains, it is second only to corn as a cash producer. About 720,000 acres/year are grown in the state's southern five tiers of counties.

A photo shows Jerry MacKinnon pouring soaked soybeans into the hopper of a grinder and Steve Fiering pouring soybeans into a soaking tank. Address: News staff writer.

3044. Howes, Charles D. 1978. Re: Soymilk at Loma Linda Foods. Letter to William Shurtleff at New-age Foods Study Center, Oct. 12–in reply to inquiry. 2 p. Typed, with signature on letterhead. [1 ref]
• ***Summary:*** The soymilk output of this plant run about 2 million gallons per year. The input of soybeans is about 630 tons. Address: Loma Linda Foods, 13246 Wooster Rd., P.O. Box 388, Mount Vernon, Ohio 43050. Phone: (614) 397-7077.

3045. Curtis, Jan B. 1978. Re: Soymilk beverages produced and marketed by the Coca-Cola Company. Letter to William Shurtleff at New-Age Foods Study Center, Oct. 20–in reply to inquiry. 2 p. Typed, with signature on letterhead. Address: P.O. Drawer 1734, Atlanta, Georgia 30301. Phone: 404-897-2121.

3046. Shurtleff, William. 1978. Re: The Farm Vegetarian Cookbook. Letter to Margaret Gaskin, Laurie Praskin, Cynthia Bates, and Louise Hagler, The Farm, Summertown, Tennessee, Oct. 25. 1 p. Typed, with signature on letterhead (photocopy).
• ***Summary:*** "This morning I bought a copy of your new edition of *The Farm Vegetarian Cookbook* at Shambala in Berkeley and spent all day reading it. Akiko too. We both think it is a really outstanding job, one that will benefit people around the country and the world, and one that we look forward to learning a lot of new things from. The book has all the touches, so artistically and sensitively presented. We laughed over the illustration on page 95 of milking the cow-sized soybean or soybean sized cow, at the parfait [Vanilla pudding] on p. 102-03 that expands the more you open the book, etc. We look forward to trying out many of your soy recipes. With a book like that out, we feel we can retire from our work of trying to turn the world on to soy. You've done it, or at least provided a good start.

"We have a number of new books on soyfoods coming out soon, and you can be sure that we will make very favorable mention of your book in all of them. We will even try to get it into the Ballantine Books edition of the pocketbook mass-market *Book of Tofu* (175,000 copies first printing, out this January) but it may be too late. There will be numerous references in our *Book of Tempeh, Tempeh Production,* and *Tofu & Soymilk Production.* In the latter would you mind if we used a few of your recipes (e.g., Ice Bean) with credits, of course?" Address: New-Age Foods Study Center: U.S.A.–P.O. Box 234, Lafayette, CA 94549. Phone: 415-283-2991.

3047. Eastham, Edmund J.; Lichauco, T.; Grady, M.I.; Walker, W.A. 1978. Antigenicity of infant formulas: Role of immature intestine on protein permeability. *J. of Pediatrics* 93(4):561-64. Oct. [17 ref]
• ***Summary:*** It was demonstrated in a prospective feeding trial that soy protein is at least as antigenic as cow's milk protein. Address: Dep. of Pediatrics, Harvard Medical School; Pediatric Gastrointestinal Unit, Massachusetts General Hospital; and Pediatric Dep., Cambridge City Hospital, Boston, MA.

3048. Howes, Charles D. 1978. Re: Seventh-day Adventist soymilk plants. Letter to William Shurtleff at Soyfoods Center, Oct. 1 p. Typed. [1 ref]
• ***Summary:*** Lists the soymilk plants in Central & North America (4, in Mt. Vernon, Ohio; Sonora, Mexico; Montemorelos, Nueva Leon, Mexico; San Pedro Sula, Honduras), Asia (2, in Chiba-ken, Japan, and in Poona, India), and the Middle East (1, in Cairo, Egypt). Address: Loma Linda Foods, 13246 Wooster Rd., P.O. Box 388, Mount Vernon, Ohio 43050. Phone: (614) 397-7077.

3049. Jacobs, Leonard. 1978. Menage: My family has

been making soymilk and tofu practically every day, but we cannot figure out what to do with the leftover soybean pulp (okara). M. Weintraub, Gabriola, California. *East West Journal.* Oct. p. 12.
• ***Summary:*** Answer: One of the best uses for okara is in making tempeh. You can also steam okara with vegetables and compost the rest. Address: Publisher, East West Journal.

3050. Jagannath Rao, K.V. 1978. Studies on the effect of replacement of cow's milk by soymilk in the preparation of dairy product. MSc thesis, Dairy Technology, University of Agricultural Sciences, Hebbal, Bangalore. 90 p. Oct. [126 ref. Eng]
• ***Summary:*** The production of milk in India is estimated to be 23.5 million metric tons per annum. The per capita availability of milk in India is about 113 gm/day as against the recommended level of 280 gm/day. Milk contributes only about 10% of the protein to the average Indian diet. A recent Economic survey showed that 20 to 40% of the people in India were below the "poverty line." "Attempts have been made in using soy milk in milk extender at Jawaharlal Nehru Krishi Vishva Vidyalaya, Jabbalpur. G.B. Pant University of Agriculture and Technology, Pantnagar have developed equipment and facilities for manufacturing soymilk on a large scale. Soymilk is also commercially manufactured at Nagpur and Poona under different trade names. Dairy Project of the University of Agricultural Sciences, Hebbal, Bangalore is regularly manufacturing the flavoured soymilk which is being marketed to the staff and students of the University."

The author prepared soymilk using a modified version of the Illinois Method. Some was used as is and some was mixed in varying proportions with cow's milk to make "modified milk." Some combinations were flavored. Using modified milk, the author also prepared paneer (coagulated with citric acid), Kalakand, ice cream. Pasteurized flavored modified milk containing 40% soymilk was well accepted. Raspberry-flavored modified milk was liked best, followed by rose, cardamom, vanilla, and pineapple. Pasteurized flavored modified milk containing 50-70% soymilk was also well accepted. Paneer, kalkand, or ice cream containing 20-40% soymilk were well accepted. Address: Bangalore, India.

3051. **Product Name:** [Delicious Maisoy (Corn-Soya Beverage Mix)].
Foreign Name: Maisoy.
Manufacturer's Name: Maisoy, Inc.
Manufacturer's Address: Santa Cruz, Bolivia.
Date of Introduction: 1978. October.
Ingredients: Dehulled corn, whole soybeans (70:30), sugar, vitamin mix.
Wt/Vol., Packaging, Price: 150 gm cellophane-polyethylene bags.
How Stored: Shelf stable.
Nutrition: Per 100 gm.: Calories 407, proteins 17-20 gm, oil 6.55 gm, vitamins and minerals 344 mg, fiber 2.64 gm.
New Product–Documentation: P. Bleyer. 1979. LEC Report No. 7. p. 29-31. "The progress of Maisoy in Bolivia... In October 1978 we introduced new lines into the market to reach the low-income market." Delicious Maisoy will help solve their nutrition problem in an economic way. The product can be served in a baby's bottle, as a super breakfast drink, as refreshment, a snack, or a pudding.

Label (box) brought to Soyfoods Center, 1984. Oct. 17.

3052. New England Soy Dairy, Inc. 1978. Product and price list. October 12, 1978. 305 Wells St., Greenfield, MA 01301. 2 p.
• ***Summary:*** Includes tofu (bulk and packaged), Soymayo Eggless Imitation Mayonnaise, tofu recipes and posters. Coming soon: soymilk. On the mailing panel in bold blue caps: "Soy to the World." Address: Greenfield, Massachusetts.

3053. Powell, Geraldine K. 1978. Milk- and soy-induced enterocolitis of infancy: Clinical features and standardization of challenge. *J. of Pediatrics* 93(4):553-60. Oct. [46 ref]
• ***Summary:*** Soya intolerance may occur when fed immediately after milk protein-induced gastrointestinal damage has occurred. This casts doubt on its value in treating this condition. Address: Dep. of Pediatrics, Div. of Gastroenterology, Univ. of Texas Medical Branch, Galveston, TX 77550.

3054. Shurtleff, William. 1978. Protein source for the future. *PHP* (*Japan*). Oct. p. 8-18, 79-82. Illust. 18 cm.
• ***Summary:*** Contents: Introduction. Ten reasons why soybeans will be the protein source of the future: 1. Optimum land utilization. 2. Lowest cost source of protein in almost every country of the world. 3. High nutritional value. 4. Time tested for over 2,000 years. 5. Remarkably versatile. 6. Appropriate technology ("Traditional soyfoods can be produced in cottage industries"). 7. New dairylike products. 8. Soybeans are hardy and adaptive. 9. Free nitrogen fertilizer from nodules on soybean plants. 10. Great productivity potential.

Discusses new patterns of soy protein utilization, with specific reference and descriptions of tofu, soymilk, tempeh ("Indonesia's most popular soyfood"), miso, shoyu, whole dry soybeans, roasted soybeans, fresh green soybeans, soy flour, kinako, soy sprouts, and textured soy protein (TVP), yuba, and natto. Concludes with a discussion of new developments in the Western world.

Note: This is the earliest English-language document seen (Aug. 2013) that contains the word "dairylike" (written as one word) in connection with soyfoods. Address: New-Age Foods Study Center, P.O. Box 234 (951½ Mountain View Dr.), Lafayette, California 94549. Phone: 415-283-

2991.

3055. Shurtleff, William. 1978. Tofu shops and soy dairies in the West. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 2 p. Undated. Unpublished typescript.
• ***Summary:*** Lists the name, address, phone number and owner of all known tofu shops and soy dairies in the USA (alphabetically by state, and within each state alphabetically by city), Canada, Latin America, Europe, and Australia. There are 122 tofu shops and soy dairies in the USA and Canada, and 138 on the entire list.

This list appeared in the first Ballantine Books edition of *The Book of Tofu,* which was available on 22 Dec. 1978, although the date on the copyright page is Jan. 1979. We checked the last dummies on 23 Oct. 1978–which is the latest date we could have submitted this list. Address: Lafayette, California. Phone: 415-283-2991.

3056. *Soyanews* (*Sri Lanka*). 1978. Soya milk for curries report out. 1(2):1. Oct.
• ***Summary:*** The Soyabean Foods Research Centre has prepared a feasibility study of the processing of soya milk as a beverage and for use in curries."

"The report prepared for the National Milk Board gives a detailed breakdown of the equipment required and the costs of the processing of soya milk. The total outlay for the equipment is 650,000 US dollars. The report points out that a soya milk project, if implemented, can come to the relief of the coconut industry and reduce the demand for cow's milk.

3057. *Soyanews* (*Sri Lanka*). 1978. Free training for soya cooks. 1(2):1, 6. Oct.
• ***Summary:*** Starting at "the beginning of this month, the cafeteria run by the Central Agricultural Research Institute (CARI) and used by members of the Soyabean Foods Research Centre will serve soya based foods.

"The cafeteria's cook and manager were trained for a week (September 18-22) in methods of soya preparation as demonstrated by the Soyabean Foods Research Centre's specialist in home and village technology, Miss. S. Kanthamani. This training will be extended to personnel in other cafeterias, hotels and guest houses or any other institution interested in producing low cost nutritious meals.

"Already some organizations like the Lanka Mahila Samithi, Sarvodaya, Buddhist Associations and the Housewives' Association have expressed a desire to send their representatives for two week training sessions."

"For free soya milk recipe write Soyanews, P.O. Box 1024, Colombo."

3058. Starenkyj, Danièle. 1978. Le bonheur du végétarisme: Principes de vie & recettes. 2ième éd. [The happiness of vegetarianism: Principles of life and recipes. 2nd. ed.]. Armagh, Quebec, Canada: Orion. 351 p. Oct. Illust. by Stefan Starenkyj. Index. 23 cm. First ed. 1977. [26 ref. Fre]
• ***Summary:*** Soy-related recipes include: Soy coffee (p. 101). Soya souffle (with whole soybeans, p. 204). Chapter 14, titled "A cow in your kitchen" (p. 207-27), contains extensive information on soymilk, soymilk products, and problems with cow's milk. It's contents: Introduction. What is soya? The proteins of the soybean (*la fève soja*). The carbohydrates of the soybean. The vitamins and minerals of the soybean. The oils of the soybean. Soymilk: The cow of China. Reasons for replacing animal milk in your diet with soymilk: Many people are allergic to animal milk. Animal milk is a cause of anemia. Animal milk can be a cause of infection of the urinary tract, particularly in infants. Animal milk is polluted. Comparison of the composition of soymilk and cow's milk (100 gm each). How to make soymilk at home. Soymilk whipped cream. Soy mayonnaise without eggs. Soy yogurt (fermented). Tofu: The meat without bones. Nutritive value of tofu. How to make tofu at home. Tofu filets. Tofu steaks. Breaded tofu slices. Tofu pâté à tartiner. Grilled tofu. Okara (*La pulpe de soja*). Okara pâté (*Pâté à la pulpede soja*). Soya butter (*Buerre de soja;* made from 1 cup lightly grilled soy flour, 2 cups water, a little salt, and about ½ cup oil). Address: Ottawa, Canada.

3059. Aldridge, Tom; Schulbach, Herb. 1978. Water requirements for food production. *Soil and Water* No. 38. p. 13-17. (University of California Cooperative Extension). *
• ***Summary:*** In California, the number of gallons of water required to produce 1 edible pound of various crops is as follows, in descending order of amount required: Beef 5,214. Pork 1,630. Chicken 815. Egg 544. Milk 130. Grapes 70. Oranges 65. Apples 49. Carrots 33. Wheat 25. Potatoes 24. Lettuce 23. Tomatoes 23.

3060. Andres, Cal. 1978. Fermented / enzyme-treated food products. *Food Processing* (*Chicago*) 39(12):67-69. Nov.
• ***Summary:*** Peanut milk was added to cow's milk to make a yogurt-like product. The cow's milk was necessary to achieve a product with the desired viscosity. Address: Senior Associate Editor.

3061. Chen, Philip S.; Chung, Helen D. 1978. Soybeans for health and longer life. New Canaan, Connecticut: Keats Publishing, Inc. xii + 178 p. Index. 18 cm. (A Pivot Health Book).
• ***Summary:*** A revised and condensed pocketbook version of Chen and Chen 1956. Contents: Preface. Foreword. Introduction. Part I: Nutritive value of the soybean. 1. Protein. 2. Fat. 3. Carbohydrates and caloric value. 4. Minerals. 5. Vitamins. 6. Soybeans and world population. 7. Soybeans and disease.

Part II: Soy products. 8. Soybean oil: Phosphatides, margarine. 9. Soybean oil meal: Gelsoy, Multi-Purpose Food. 10. Soy flour. 11. Concentrated soy protein products:

Soy protein concentrates (Griffith Laboratories makes Isopro and GL-301), soy protein isolates, and textured or spun soy proteins. 12. Soy milk. 13. Soy cheese (tofu). 14. Soy sauce. 15. Soybean sprouts.

Part III: Soybean culture and preservation. 16. Soybean culture. 17. Preservation of soybeans (preserving green soybeans by canning, freezing, and dehydration).

Part IV: Recipes. 18. Soybeans and soybean pulp. 19. Soy flour: Breads, cakes, cookies, pies, soups, other recipes. 20. Soy grits and soy flakes. 21. Soy milk. 22. Soy cheese. 23. Soybean sprouts. Appendix: Soybean utilization (chart). References. Address: 1. PhD; 2. M.S. Both: USA.

3062. Swan Food Corp. 1978. Swan Foods: Remember the name! (Ad). *Alternatives* (*Miami, Florida*). 2(11):53. Nov.
• ***Summary:*** This half-page ad lists the company's soy products, iced herbal beverages, and baked goods & pastries. Soy products include: Baked tofu, Marinated tofu, Caraway tofu, Tofu chip dip, Tofu salad dressing, Soy melk (sweetened, or carob soy milk), Soyogurt (a cultured soy product), Wholegrain soy burgers. Baked goods include: Tofu cheesecakes, Carob maple swirl, "and more to come."

On the top half of the ad is a large circular logo featuring a stylized swan, with two large wings symmetrical about a vertical axis and an arched neck on the left side. The other half of the arch is drawn in to form a heart, inside of which is written "Because we love you." Across the inside top are the large words "Swan Foods." A rainbow arches below them and over the swan. At the top center, between the words "Swan Foods," are the smaller words "Nature's Finest" written one below the other; between them is an infinity sign.

Across the bottom of the ad is written: "Every Swan Soybean Product contains all 8 essential amino acids (which are necessary for a balanced diet) and have no cholesterol. Available in health & natural food stores. Retailers: Swan Quality Products are distributed by Tree of Life, Inc., or contact Swan Food Corp., 5758½ Bird Rd., Miami, Florida 33155. In Miami enjoy all Swan Products at Swan's Retail Deli & Bakery, The Soybeanery, 5758½ Bird Rd."

Note: A full-page Swan Foods ad that is very similar to his half-page ad was published in the July/August issue of this magazine. There are four differences between the two ads: (1) This November ad is smaller; Swan Foods went out of business one month later, in December 1978; (2) A Tofu Salad Dressing and Red Zinger tea appear in this ad but not in the earlier ad; (3) This ad states that Swan Foods' products are distributed by Tree of Life, Inc., a major distributor, whereas in July/August they had been "distributed by your local Natural Foods Distributor"–less impressive. (4) The following products appear in the earlier (July/August) ad but do not appear in this one: Soy Shakes (Carob, Vanilla & Strawberry), three iced herbal beverages (Lemon Mist, Miami Cooler, Red Quencher), and two baked goods & pastries (Mary's Cream Cake, and Mary's Devil's Food Cream Cake). Address: The Soybeanery, 5758½ Bird Rd., Miami, Florida, 33155.

3063. *SoyaScan Notes.* 1978. Chronology of soybeans, soyfoods and natural foods in the United States 1978 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jan. 25-27. International Soya Protein Food Conference held in Singapore, sponsored by the American Soybean Association. 400 people from 24 countries participated.

Jan. *Whole Foods* magazine starts publication in Berkeley, California, founded by Steven & Henrietta Haines, and Jim Schreiber. The first issue features an article titled "Making Money Making Tofu," about five tofu companies. Westbrae has a full-page color ad titled "Someday all of this will be as familiar as apple pie," showing five types of miso plus sea vegetables.

Feb. 17. Laughing Grasshopper tofu shop changes its name to New England Soy Dairy, Inc., the first company to use the term "soy dairy" in its name. Also in 1978 White Wave in Boulder, Colorado, publishes a charming poster announcing, "We've got an alternative. White Wave Soy Dairy." An illustration shows a man leading his cow, standing under a beanstalk, looking in wonder at the seeds, soybeans.

March. The Cow of China, America's third soy deli, run by White Wave, opens in Boulder, Colorado. It is later renamed Good Belly Deli.

April. Nasoya Foods Inc. starts making tofu and soymilk in Leominster, Massachusetts, inside a former dairy. Founded by John Paino and Robert Bergwall. May. 3. "What is this Thing Called Tofu" by Patricia Wells published in *The New York Times.*

May 22-25. Keystone Conference on Soy Protein and Human Nutrition held in Keystone, Colorado, organized by Ralston Purina. 105 registrants. The world's top researchers on the subject present 34 papers demonstrating a new scientific understanding of the quality of soy proteins for human nutrition. The influential 406-page proceedings, titled *Soy Protein & Human Nutrition,* are published in 1979, edited by Wilcke, Hopkins, and Waggle.

May. The Soy Deli opens at The Soy Plant in Ann Arbor, Michigan. America's fourth soy deli.

June. Brightsong Tofu, founded by Joel Brightbill and Bob Heartsong, starts making tofu in Redwood Valley, California. Sharon and Richard Rose bought the company in June, 1980 and in Nov. 1980 started The Real Food Tofu Cafe, a soy deli, adjacent to it.

June 26. First Takai catalog of tofu and soymilk equipment published, written by William Shurtleff. The first publication of its type in English, it helps start many new soyfoods companies.

July 28-31. First Soycrafters Conference held at The Soy

Plant in Ann Arbor, Michigan. Conceived and organized by Steve Fiering. 75 people attend. The Soycrafters Association of North America (SANA) is founded, with Larry Needleman as the first president and a board of directors.

Sept. First issue of *Soyanews* published in Sri Lanka.

Oct. *The Farm Vegetarian Cookbook* (revised ed.) by Louise Hagler published by The Farm's Book Publishing Co. in Tennessee.

Oct. Morinaga Milk Co. in Japan starts to export their tofu in aseptic Tetra Brik cartons worldwide. They issue a color recipe booklet to accompany their tofu.

Oct. Kendall Food Co. starts to make America's earliest known commercial amazake in Brookline Village, Massachusetts. Amazake is made from koji, as are miso and shoyu. Not even in Hawaii was commercial amazake made before this.

Oct. 29-Nov. 3. World Conference on Vegetable Food Proteins held in Amsterdam, The Netherlands. More than 1,000 participants. Sponsored by the American Soybean Assoc. and others.

Nov. The Tofu Shop, America's fifth soy deli-restaurant, opened in Rochester, New York, by Greg Weaver. Large and very creative menu. Later called The Tofu Gardens, and The Lotus Cafe.

Dec. American Soybean Association moves its headquarters from rural Hudson, Iowa, to St. Louis, Missouri, into greatly enlarged, modern offices.

Dec. *The Book of Tofu* (extensively revised, Americanized edition), by Shurtleff and Aoyagi published by Ballantine Books in a mass-market paperback edition. By 1987 the two editions have sold over 450,000 copies.

Dec. *Tofu Goes West,* by Gary Landgrebe published by Fresh Press.

Dec. *How to Cook with Miso,* by Aveline Kushi published by Japan Publications.

Dec. *Tofu Madness,* by Olszewski published by Island Spring tofu company in Washington.

Dec. Growing use of the term "shoyu" and less misuse of the term "tamari" in publications, indicating awareness of the difference between these two types of soy sauce.

* *Peaking Out on Tofu,* by Matthew Schmit self-published in Colorado.

* Soymilk Piima, resembling the traditional Finnish cultured dairy product, first made (on a home scale) by Pat Connolly in southern California.

* Soy oil: The King with no crown. A series of studies initiated by the American Soybean Assoc. in 1978 showed, surprisingly, that although soy oil is by far America's widely used oil (accounting for 84% of all vegetable oils and 58.3% of all edible oils and fats), most consumers are simply not aware that they are using soy oil. When 1,200 female heads of households were asked "What oils can you think of?" only 17% mentioned soy oil (52% mentioned corn oil, 36% peanut oil, and 23% safflower oil), and only 7% reported having purchased soy oil in the past 6 months. The ASA Market Development Foundation promptly began a campaign to increase product recognition and loyalty, improve product image, and to encourage manufacturers worldwide to identify soy oil on product labels. The slogan used is shown at the start of this paragraph.

3064. **Product Name:** [Soymilk, Soy Yogurt].
Manufacturer's Name: Alternatur.
Manufacturer's Address: Korte Spekstraat, Hallaar, Belgium.
Date of Introduction: 1978. December.
How Stored: Refrigerated.
New Product–Documentation: Shurtleff & Aoyagi. 1978, Dec. *The Book of Tofu* (Ballantine pocketbook edition). "Appendix B: Tofu Shops and Soy Dairies in the West." p. 400. Owner: Unknown.

Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). Gives the company's name and address. No phone number or owner. "Makes soymilk and yogurt."

3065. *East West Journal.* 1978. Soy boom. Dec. p. 18.
• ***Summary:*** "Over seventy people involved in the production of soy foods met in Ann Arbor, Michigan, this summer and established the Soycrafters Association of North America (SANA). The nonprofit organization will facilitate communication among the 140 businesses producing tofu, miso, soymilk, or tempeh. SANA reports soy foods have been received enthusiastically across the United States and Canada. Seventy new tofu shops and soy dairies have been established in thirty-one states in the last two years. For further information write SANA, Box 76, Bodega, California 94922."

3066. Hittle, Carl N. 1978. Soybean potential in Nepal: A report. Mimeographed, spiral-bound manuscript. 30 p. 28 cm. [26 ref]
• ***Summary:*** Dr. Hittle served as a soybean consultant in Nepal from Sept. 23 to Oct. 11, 1978. Contents: 1. Introduction. 2. Terms of reference for soybean consultant. 3. Background information: Soybean production, production research, evaluation of germplasm, local varieties and selections, preservation of soybean germplasm, rhizobial microbiology, economics of soybeans, soybean statistics, present uses of soybeans in Nepal, Food Research Services of the Ministry of Food, the dairy industry in Nepal, solvent extraction, CARE, UNICEF. 4. Observations at the research stations: Kakani Hill Station, Pakhribas Agricultural Centre, Lumle Agricultural Centre, Central Research Station–Khumaltar, Bhairawa Agricultural Farm, Rampur Agricultural Experiment Station, National Rice Station–Parwanipur.

Note 1. The first 3 stations are located in the hills,

Khumaltar is in the Kathmandu Valley, and the last 3 are located in the plains (Tarai [Terai]).

5. Comments and suggestions: Priority of soybeans, operational work plan, assignment of national staff, assignment of international staff, training, linkages, a national soybean research center. Appendixes. I. Itinerary of C. N. Hittle. II. Persons met by soybean consultant. III. List of background information. IV. Sarbottam Pitho (Super Flour made from 50% soybeans). Uses of soybeans.

The soybean is an ancient crop in Nepal. Generally its culture has been restricted to terraces and valleys ranging from 500 to 1,500 meters (1,642 to 4,925 feet) in altitude. Soybeans are usually grown at lower altitudes in single rows on the bunds of rice paddy fields, or at higher altitudes as an intercrop with maize or millet. Hectarage is difficult to estimate; estimates made from 1976 to 1978 range from 10,000 to 70,000 hectares. Yields are low, ranging from 300 to 500 kg/ha. This is because of the two ways soybeans are traditionally grown, because they rarely have been grown in the Tarai [Terai] (Plains area) where higher yields can be expected, and because little emphasis has been given to developing superior varieties and cultural practices.

Soybeans are used mainly for human food in Nepal by "roasting the dried seeds (parching) or as green vegetables (boiling or frying the green pods followed by shelling of the seeds and eating the green soybeans). Parched soybeans are frequently mixed with popped maize (corn) and eaten daily as tiffin. Green soybeans are frequently mixed with other vegetables to make curry. A snack food is prepared by removing the seed coat of parched soybeans, splitting the cotyledons and mixing with garlic, salt, and chilli powder. Sprouted soybeans are mixed with other sprouted pulses and used as vegetable soup. Fermented soya products include soya sauce and kirima [kinema]."

Soybeans are one of the main sources of protein for the majority of the people in the Hill regions. Only small quantities of soybeans reach the market.

Note 2. This is the earliest document seen (Jan. 2012) that uses the alternative spelling "kirima" to refer to kinema, a fermented soyfood from Nepal and a close relative of Nepalese kinema and Japanese natto. Address: Soybean consultant in Nepal.

3067. Robertson, Laurel; Flinders, Carol; Godfrey, Bronwen. 1978. Laurel's kitchen: A handbook for vegetarian cookery and nutrition. New York, NY: Bantam Books. xxi + 643 p. Dec. Foreword by George M. Briggs, Prof. of Nutrition, Univ. of California, Berkeley. Illust. Index. 18 cm. [45 ref]
• ***Summary:*** This is the unrevised pocketbook edition of the original classic, first published by Nilgiri Press in Oct. 1976. Address: California.

3068. Swan Food Corp. 1978. Collected papers (Archival collection). Miami, Florida. 5 file folders, 1½ linear inches.
• ***Summary:*** Swan Foods was the first soyfoods company in the United States to make a wide variety of innovative soyfoods products–and to make them from organically grown soybeans. The company's papers are located at Soyfoods Center in Lafayette, California. In December 1978, when the company declared bankruptcy after about two intense years in business, Danny Paolucci cleaned out the office, keeping all documents that he believed might be of future importance. He kept them for 19 years, then sent them to Bill Shurtleff at Soyfoods Center at Shurtleff's request. Most of the papers relate to recipes. There are no commercial papers (invoices, ledgers, etc.).

Folder 1: Bulk soyfoods recipes, typed. Each recipe is typed on a sheet of 8½ by 11 inch lined paper. Recipes made in a Hobart mixer are marked with an asterisk (*) after the recipe name. The recipes (listed alphabetically) are: Baked tofu (with tamari sauce for marinade, bake at 350ºF for 30-35 minutes). Caraway tofu (add 5 ingredients to curding tofu; stir and let curds form). Carob cream cake* with topping (incl. 2 gallons soymelk). Cashew carob swirl cake* (incl. 3 gallons soymelk). Devils food cream cake* (incl. 2 gallons soymelk and tofu topping). Eggless egg salad* (incl. 10 lb boiled and cooled Swan Tofu). Marinade for tofu (incl. 1 gallon tamari; mix all ingredients in a 5 gallon bucket, add sliced tofu, and seal). Soy burgers* (incl. 2 gallons each cooked rice and fresh okara, and 2½ cups tamari). Tofu chip dip* (large and small; the small incl. 6 lb tofu boiled and cooled, ¼ cup tamari, and ¼ cup umeboshi plum paste; the large incl. 42 lb tofu).

Folder 2: Lists of ingredients for various soyfoods products typed on Swan Foods' blue-on-white letterhead: The products (listed alphabetically) are: Carob swirl marble cake (non-dairy) (incl. soy milk). Okara granola. Roasted cashew tofu pie (incl. tofu and organic soy milk). Soyogurt (non-dairy): Note: These ingredients are handwritten below a sample label design on the back of the bottom half of a Swan Foods order form.

Folder 3: Legal-sized yellow lined note pad with 17 pages of notes written in blue ink–probably by Mary Pung. Subjects: *Nutrition Almanac* (soybeans and soy milk, p. 71; malt, p. 76). One page of 6 bibliographic references for publications related to soy, with a large note: "Sell *Book of Tofu*, etc. in shop." *The Health Food Dictionary* & recipes (mu tea, p. 102; soybean, p. 159; tofu, p. 174). *Diet for a Small Planet* (Lappé, 1975 ed.) (protein table III–Legumes; notes on tofu, p. 102, soy yogurt vs. milk yogurt, p. 128-29; tofu, p. 132). *Recipes for a Small Planet* (Ewald, 1973) (table showing no. of calories you have to consume in order to get one gram of usable protein, p. 16; notes on Net Protein Utilization). *Soybean Diet* (Herman Aihara, 1974) (table of nutrients in various foods; cow's milk, p. 44; soybeans can help with environmental problems, p. 4; soybeans vs. meat, p. 6, 8-9; tofu preparation, p. 115; nigari, p. 116; nutrient value of tofu, p. 125). *The Book of Tofu* (Shurtleff & Aoyagi,

1975) (moral and emotional appeal, health, religion, ecology, economic, p. 19; complementary proteins, p. 24, 26; easy to digest and diet food, p. 26; low in saturated fats and cholesterol, linoleic acid, rich in minerals and vitamins, p. 27; nigari, free of chemical toxins, p. 28; quick and easy to use, p. 29; ecological, nitrogen from the air, p. 55; okara, p. 77-78; uses of agé, deep-fried tofu, p. 154-55; soymilk, p. 200). Six interesting teas.

Folder 4: Handwritten recipes (some very rough) and notes, in pen and pencil, mostly on individual sheets of paper. Soy-related recipe names (listed alphabetically): Basic tofu cheesecake. Basic tofu pie. Carob marble cake. Carob on blonde with tofu topping (also called Blonde on carob; baked, with soy milk). Carob tofu pie. Dips in tofu containers: Chive tofu dip, pimento tofu dip, sea tofu dip, Italian herb tofu dip, pimento olive dip (ideas only). Dressings: Miso, avocado, green goddess, creamy garlic, red Russian, spinach Russian (ideas only). Eggless egg salad. Eggless tofu salad. Frozen tofu cutlets. Mary's deluxe pizza (with tofu, from "Swan Food Corp."). Milk shake. Nori rolls. Okara products: burgers, burritos, felafels (ideas only). Pumpkin pie. Quiche with tofu. Sweetened carob shake. Tofu lemon pie. Tofu mayonnaise. Tofu pie filling. Tofu pudding, vanilla. Tofu quiche lorraine [Note: According to the *Joy of Cooking* (1975, p. 254-55), early recipes for quiche called for bacon and cream, but later cheese was added. When sautéed onions were included, the dish was called Quiche Alsacienne. Quiche Lorraine now typically contains egg white, bacon, milk or cream, and Swiss cheese]. Tofu rice salad. Tofu tarts. Tofu turkey (Barbara's, with stuffing). Yogurt dressing. The names of some people are included: Diane Kellar. Sherry (nori rolls).

Folder 5: Other. Tear-off recipes published by Natural Recipes, 94 Bourne St., Boston, Massachusetts 02130. Carob brownies (copyright 1974). Carob cake (copyright 1975). Note: Neither of these recipes contains any soy. Address: 5758½ Bird Road, Miami, Florida 33155. Phone: (305) 667-7141.

3069. Calkins, P.H. 1978. Vegetable consumption patterns in five cities of Taiwan. *AVRDC Technical Bulletin* No. 5 (78-94). 25 p. (Shanhua, Taiwan). [5 ref]
Address: AVRDC.

3070. **Product Name:** [New Saci Enriched Milk Shake Powder {Powdered Soymilk}].
Manufacturer's Name: Coca-Cola Industrias LTDA.
Manufacturer's Address: Brazil.
Date of Introduction: 1978.
Ingredients: Incl. isolated soy protein, nonfat dried milk, white sugar, colloidal thickener.
Wt/Vol., Packaging, Price: Sold in sacks.
How Stored: Shelf stable.
Nutrition: 4.5% protein. 120 calories per 200 ml serving.
New Product–Documentation: Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). Coca Cola Industries, Ave. Suburbana No. 5, Rio de Janeiro, Brazil. Phone: 20.751. Contact: Mr. Vera de Caravalho (A maker of soymilk).

Pereira & Campos. 1981. *Journal of the American Oil Chemists' Society* March. p. 357. Gives ingredients. Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 125-26. Sold in sacks to the Brazilian government for distribution to institutions, primarily the School Feeding Program.

3071. Costa, Sebastiao Irineu da. 1978. A soja na producao de alimentos [Soybean in the production of foodstuffs]. In: EMBRAPA–Centro Nacional de Pesquisa de Soja, ed. 1978. Anaias do I Seminario Nacional de Pesquisa de Soja [National Seminar on Soybean Research]. Vol. 2. Londrina (PR), Brazil: EMBRAPA–CNPS. See p. 235-243. [12 ref. Por]
• ***Summary:*** "Soybean is the best source of low cost and high nutritional value protein for human and animal consumption. Its high lecithin content gives it the emulsifying characteristics necessary to the production of liquid or instant foodstuffs. This paper shows the existence of special technology for the production of some of these foods, such as pasteurized or sterilized soybean milk, soybean flakes and micropowdered soybean flour, as well as discusses their nutritional characteristics and uses." Address: Instituto de Technologia de Alimentos (ITAL), Cx. Postal 139, 13.100–Campinas, SP, Brazil.

3072. Del Valle, F.R.; Camacho, A.; Acosta, H.; Lujan, F.J. 1978. The Chihuahua, Mexico high nutrition low cost food program (Abstract). In: 1978. International Congress of Food Science and Technology–Abstracts. See p. 81. [Eng]*
• ***Summary:*** Describes production of nutritious, low-cost foods made at two plants. The products are extruded full-fat soy flour for enrichment of foods such as tortillas, soy milk (natural or chocolate flavor), soy ice cream, and soy sweets. Address: Chihuahua Center for Research and Technical Assistance, Calle 15 No. 305, Chihuahua, Mexico.

3073. **Product Name:** Farm Style Full Fat Soy Flour: Coarse Grind.
Manufacturer's Name: Farm Foods.
Manufacturer's Address: 156 Drakes Lane, Summertown, TN 38483.
Date of Introduction: 1978.
Ingredients: Soybeans.
Wt/Vol., Packaging, Price: 2.5 lb (1.14 kg). Poly bag inside a paper bag.
How Stored: Refrigerated.
New Product–Documentation: Label. 1978, dated. 4 by 9 inches. Brown, green, yellow and orange on beige. "Make soymilk and tofu at home. Recipes included." Farm Foods

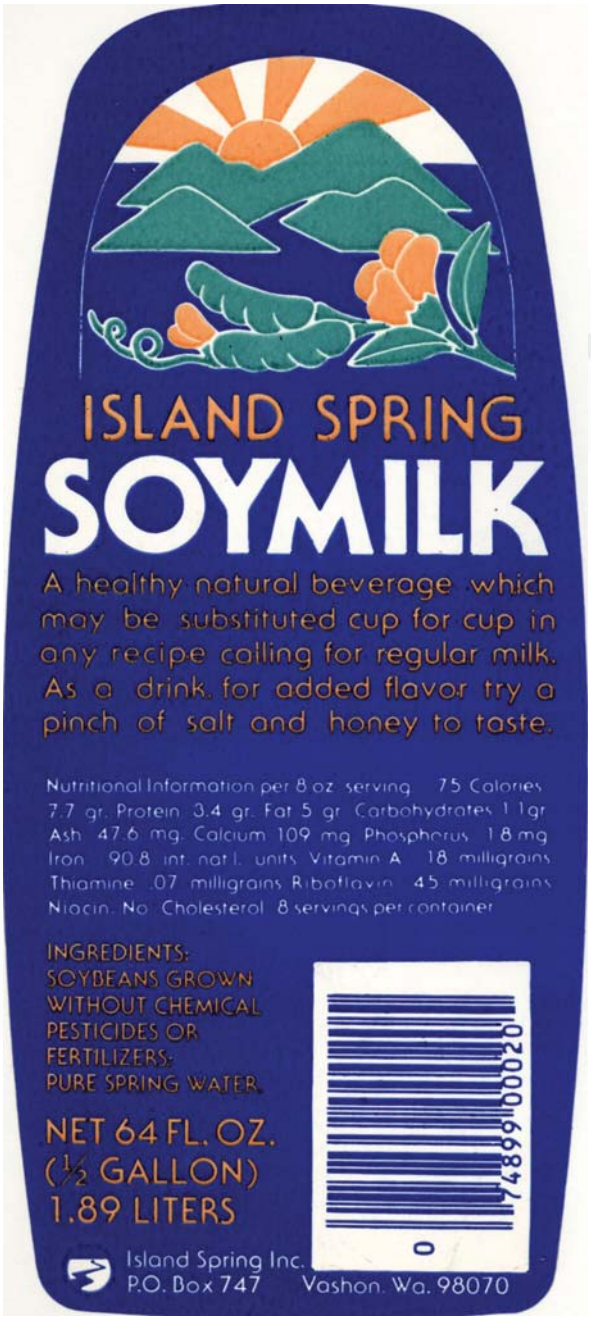
Products Catalog. 1978. p. 1.

Ad in Tom Riker and Richard Roberts. 1979. *The Directory of Natural & Health Foods.* p. 189. A photo shows the label. "Soyflour: This full-fat, farm style coarse ground flour is especially good for making soymilk and tofu at home. Farm Foods soy flour is ground fresh in Tennessee, and should be refrigerated. No preservatives have been added. Available in 2½ lb. display package and in bulk. Recipe flyer included."

3074. **Product Name:** Hinode Soymilk.
Manufacturer's Name: Hinode Tofu Company.
Manufacturer's Address: 526 Stanford Ave., Los Angeles, CA 90013.
Date of Introduction: 1978.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 32.

3075. **Product Name:** Island Spring Soymilk [Plain].
Manufacturer's Name: Island Spring, Inc.
Manufacturer's Address: P.O. Box 747, Vashon, WA 98070.
Date of Introduction: 1978.
Ingredients: Soybeans, water.
Wt/Vol., Packaging, Price: 64 fluid oz (½ gallon) 1.89 liters.
How Stored: Refrigerated.
Nutrition: Per 8 oz.: Calories 75, protein 7.7 gm, carbohydrate 5 gm, fat 3.4 gm.
New Product–Documentation: Leviton. 1981. Soyfoods. Winter. p. 17. Label. 1982. 2.75 by 7 inches. Self adhesive. Green, yellow/gold, white on blue. Illustration of sun or moon behind island mountains. "A healthy natural beverage which may be substituted cup for cup in any recipe calling for regular milk. As a drink, for added flavor try a pinch of salt and honey to taste."

3076. **Product Name:** Golden Archer Concentrated Soya Plantmilk: Soya "Beanmilk." (Soymilk).
Manufacturer's Name: Itona Products Ltd.
Manufacturer's Address: Leyland Mill Lane, Wigan, Lancashire, WN1 2SB, England.
Date of Introduction: 1978.
Ingredients: Soya flour, vegetable oil, unrefined sugar, lecithin, sodium phosphate.
Wt/Vol., Packaging, Price: 15 fluid oz 426 cc. can. Retails for 48 pence.
How Stored: Shelf stable.
New Product–Documentation: Label for a can (see next page). 1978, undated. 9.5 by 4 inches. Blue, yellow and black on white. "Itona Health Food. Soya 'Beanmilk.' Made from 100% non-animal sources. For use instead of milk custard by vegans, vegetarians, as a health food and by people who are opposed to cruelty to animals. Uses: As a



protein/energy drink straight or flavoured. In tea or coffee. In custards and milk puddings, etc. It can be used to replace milk in most recipes."

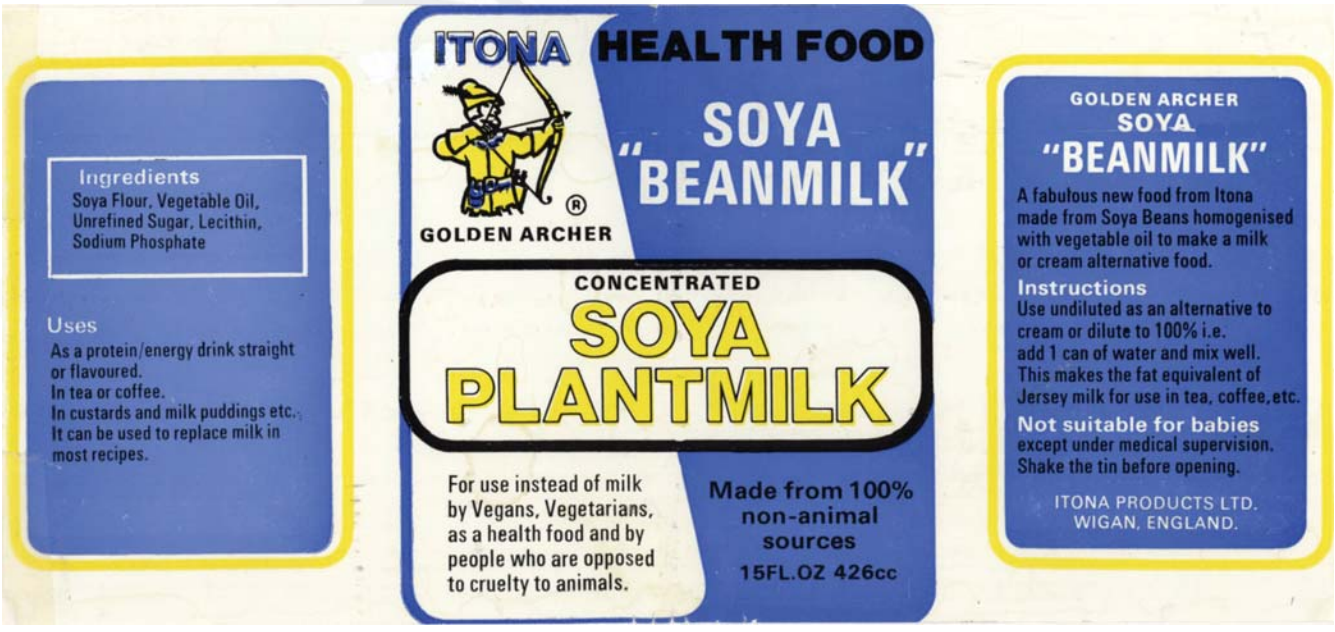
Ad in *Alive* magazine. 1979. May/June 1979 and July/Aug. p. 2. Itona Products Ltd. price list. 1980-81. Listed as "Soya Beanmilk, 15 oz of this product retails for £0.57." Manufacturer's catalog. 1980. "Itona Health Foods take the biscuit." A black-and-white photo shows the label. "Milk that's never seen a cow! It's 100% vegetable, made with soya and packed with protein and goodness... A wonderful food and its made without any exploitation of animals." Soya Bluebook. 1986. p. 103.

3077. **Product Name:** [Jonnapu Soymilk (Coffee)].
Foreign Name: Jonnapu Koohii.
Manufacturer's Name: Kenbi-sha K.K.
Manufacturer's Address: 4-22-40, Takadono, Asahi-ku, Osaka 535, Japan.
Date of Introduction: 1978.
Wt/Vol., Packaging, Price: 300 ml poly container.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Jonnapu Koohii was introduced in a 300 ml poly container in 1978 and distributed nationwide.

3078. Miya Mori, E.E.; Shirose, I.; Costa, S.I. 1978. Teste de campo sobre a aceitabilidade do "Vital" por escolares [Field test on the acceptability of VITAL (soymilk) by school children]. In: EMBRAPA–Centro Nacional de Pesquisa de Soja, ed. 1978. Anaias do I Seminario Nacional de Pesquisa de Soja [National Seminar on Soybean Research]. Vol. 2. Londrina (PR), Brazil: EMBRAPA–CNPS. See p. 255-63. [8 ref. Por]
Address: Instituto de Technologia de Alimentos (ITAL), Cx. Postal 139, 13.100–Campinas, SP, Brazil.

3079. Resenweig, Norton S. 1978. A review of dietary lactose and its varied utilization by man. Chicago, Illinois: The Whey Products Institute. *
• ***Summary:*** The following incidences of lactose intolerance are found in various countries and races: USA-white 19%, England 34%, Poland 29%, USA-Mexican 54%, Uganda 72%, USA-black 77%, Greek Cypriots 88%, South African Bantu 90%, Nigerian–Yoruba and Igbo 99%, Korea 100%, Chinese 100%.

3080. Sales, A.M.; Travaglini, D.A.; Travaglini, M.M.E.; Costa, S.I.; Ferreira, V.L.P. 1978. Desenvolvimento de formula para alimentacao a base de soja e leite de vaca [Development of an infant formula based on soybean and cow milk]. In: EMBRAPA–Centro Nacional de Pesquisa de



Soja, ed. 1978. Anaias do I Seminario Nacional de Pesquisa de Soja [National Seminar on Soybean Research]. Vol. 2. Londrina (PR), Brazil: EMBRAPA–CNPS. See p. 245-53. [14 ref. Por]
Address: Instituto de Technologia de Alimentos (ITAL), Cx. Postal 139–13.100–Campinas, SP, Brazil.

3081. Sarker, A.A.; Khaleque, A. 1978. Studies on the processing and properties of soymilk. *Bangladesh J. of Agriculture* 3(1):277-82. [12 ref]*
Address: Div. of Food Science & Technology, Bangladesh Council for Scientific and Industrial Research, Dacca.

3082. **Product Name:** [Tsin Tsin Soymilk].
Manufacturer's Name: Tsin Tsin Foods Industries.
Manufacturer's Address: 91, Sec. 3, Nanking East Rd., Taipei, 104, Taiwan. Plant at Chunghua, Taiwan.
Date of Introduction: 1978.
New Product–Documentation: American Soybean Assoc. 1982. Checkoff Successfile. Taiwan #302. "Soymilk helps Taiwan bridge the nutrition gap." Tsin-Tsin Foods, a major Taiwanese food company, has initiated its own soymilk production within the last two years.

Soya Bluebook. 1982. p. 63. Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 95-96. They started making soymilk in 1978, but had stopped by 1983.

3083. **Product Name:** Nestlé Bonus Soya Bean Milk [Plain, or Almond].
Manufacturer's Name: United Milk Co. Ltd. Nestlé (Thailand) Ltd.
Manufacturer's Address: 149 Teparuk Sukhumvit Rd., Samudprakarn Box 11-60, Bangkok 11, Thailand.
Date of Introduction: 1978.
Wt/Vol., Packaging, Price: 250 ml Tetra Brik Aseptic carton. Retails for 5.00 bhat (1984).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 99-100, 102. In 1978 Nestlé began making and marketing Bonus in Singapore. Exported to Hong Kong in 1978, it gave Vitasoy its first real brand-name competition. Color slide in Soyfoods Center Slide Library.

Photocopy of a page from a market study of unknown origin, sent by Anders Lindner. 1984. March 9. Bonus, is made in Thailand by United Milk Co. Ltd. in a plant with a production capacity of 4,000 liters/hour (UHT). It is packaged in Tetra Packs and can be classified as a milk product that is in competition with UHT milk.

Soya Bluebook. 1986. p. 104.

3084. Abehsera, Michel. 1978. Cooking with care & purpose: menus for strength and peace of mind. Brooklyn, New York: Swan House Publishing Co. [x] + 271 p. Index. 21 cm.
• ***Summary:*** A macrobiotic cookbook. From the front cover: "Toward the prevention and elimination of disease." "Amazing cures from the kitchen."

The chapter on "Legumes" (p. 39-45) includes: Cooking beans in a pressure cooker (chickpeas, lentils, aduki beans). Sweet beans casserole (with aduki beans). Soft adukis. Chickpea stew. Soja jardinire (with "1 cup cooked soya beans" and "2 tablespoons soy bean paste (miso)"). Bean sprouts (mung beans or lentils). Vegetarian cheese [tofu] (made with 2 cups soybeans, ½ cup lemon juice, salt, and cold water). Soya milk from soybeans. Soya milk from soya flour. Vegetarian cheese from soya flour [tofu].

Miso: The chapter on "Soups" begins with a long quotation by Dr. Tatsuichiro Akizuki, M.D. (no source is cited) about the use of miso to changes one's constitution and prevent radiation sickness (p. 49-52). Miso soup (p. 52). Miso sauce (p. 137). Miso spread (with tahini, p. 145). Miso pate (with aduki beans, p. 147).

A common seasoning in this book is "soya sauce." There are also many recipes for "seaweed" (p. 91-95).

Michel Abehsera arrived in the USA (New York City) from North Africa in 1964, and "was startled to find an entire generation of rootless youth." In the late 1960s he left the East Village [a largely residential neighborhood to the east of Greenwich Village on the west side of lower Manhattan in New York City] for Binghampton, New York, intending to slow the pace at which he had been living and to write a few books. His first book was *Cooking for Life* (1970, Swan House). Address: Brooklyn, New York.

3085. Brewster, Letitia; Jacobson, Michael F. 1978. The changing American diet. Center for Science in the Public Interest, 1755 S Street N.W., Washington, DC 20009. 80 p. No index. 22 cm. Update 1982 compares figures for 1976 and 1980, and gives percentage changes.
• ***Summary:*** A classic. Uses graphs to show changes in per capita "disappearance" of all basic foods (eggs, meat, milk and cheese, poultry, fruit, soft drinks, alcoholic beverages, fats and oils [broken down into vegetable oils, butter and margarine, and cooking fats]) and major nutrients (calories, fat, carbohydrate, protein, plus individual vitamins and minerals) from 1910 to 1976. Also shows the sources of our major nutrients.

Concerning alcohol (in terms of absolute alcohol): Per capita consumption peaked in the period 1810-1830 at a little over 7 gallons/person/year (mostly beer and cider), then fell sharply primarily as a result of the Temperance Movement. During the prohibition years of 1920-1933 no statistics were kept. When prohibition ended, consumption was just under 1 gallon/person/year but since then it has grown steadily to 2.69 gallons in 1975.

Concerning dry beans and peanuts: Consumption of dry beans was 6.5 pounds per person in 1910. It rose to 9.5

pounds in 1930 and has fallen ever since–to 6.5 pounds in 1975.

Consumption of peanuts rose dramatically from 2.5 pounds per person in 1910 to 6.5 pounds in 1945. It then fell back to 4 pounds in 1955, after which it has increased steadily to about 6 pounds in 1975. "In 1975, 46% of peanuts were ground into peanut butter; 22% were salted for snacks; and 17% were made into peanut candy."

Concerning fat consumption: "The most alarming change in our diet is our growing fat intake. In 1976, we consumed 27% more dietary fat (159 gm/person/day) than in 1909-13 (125 gm/person/day)... Most of our increased fat intake has come in the form of 'separated fats' and oils (margarine, vegetable oil, shortening, etc.)." Consumption of 'separated' fats and oils has jumped from 45 gm in 1921 to 70 gm in 1976. Consumption of animal fats has declined, while consumption of vegetable fats has skyrocketed from about 10 gm/person/day in 1920 to 58 gm/person/day in 1975.

Total red meat (beef, veal, pork, lamb, mutton, edible offals) consumption was 135 lb/person/year in 1910. It fell to 105 lb in 1935, then has risen steadily ever since to 162.5 lb in 1976.

Egg consumption was 305 per person per year in 1910. It rose to a peak of 403 in 1945, then has fallen ever since, reaching a low of 276 in 1976.

Total fluid milk consumption was 37 gallons/person/year in 1910. It rose to a peak of about 47 gallons in 1940, and has been falling ever since, to about 32 gallons in 1976. Soft drinks have lured Americans away from milk (p. 37-40).

Fig. 4 (p. 19) shows coffee, tea, and cocoa consumption. Coffee consumption (by far the largest of the three) peaked in 1945 at 16.5 pounds per person of raw green coffee beans. By 1976 it had dropped to about 11 pounds per person. The downward trend in consumption is said to be due to the rapid rise in coffee prices after 1945.

Fig. 7 (p. 22-23) shows butter and margarine consumption. In 1957 Americans first used more margarine than butter in their kitchens–8.6 lb/person of margarine and 8.3 lb of butter for a total of 16.9 lb/person. In 1910 the total of the two was about 20 lb/person, so the trend for consumption of the two has been downward–especially since 1935. Address: Washington, DC.

3086. Calella, John R. 1978. Cooking naturally: An evolutionary gourmet cuisine of natural foods. Berkeley, California: And/Or Press. ix + 112 + 5 p. Illust. by Pedro J. Gonzalez. Index. [81 ref]

• ***Summary:*** The author of this vegetarian cookbook, of Italian ancestry, is popularly known as "Organic John." He likes to use fresh foods, and he has a call-in radio show in San Francisco. In chapter 4, Ingredients (p. 16-), he discusses soya butter [margarine], miso, tamari, instant protein powder (incl. Shaklee's Instant Protein), lecithin granules, Soyamel powder (powdered soymilk made by Worthington Foods), Balanced protein seasoning (powdered HVP made from soybeans).

Chapter 10 (p. 79-83) contains a long section on soya beans, with recipes: Homemade soya bean curd (tofu). Things you can do with tofu. Soya patties (with dry soya beans). Soya bean loaf. Green soya bean mix (with dry green soya beans). Soya beans in a beet stew. Soya bean spread.

In the section on Fruit Sherbets, many of the recipes contain 2 tablespoons Soyamel (powdered soymilk) and lecithin granules. Address: Berkeley, California.

3087. Craig, T.W.; Huston, R.L.; Jonas, J.J.; et al. 1978. Proteins from dairy products. In: M. Milner, N.S. Scrimshaw, and D.I.C. Wang, eds. 1978. Protein Resources and Technology: Status and Research Needs. Westport, CT: AVI Publishing Co. xxi + 629 p. See p. 348-88. Chap. 20. [90 ref] Address: 1. Foods Div., Foremost Foods Co., 6363 Clark Ave., Dublin, California 94566.

3088. Dahlinger, John Côté; Leighton, Frances Spatz. 1978. The secret life of Henry Ford. Indianapolis/New York: Bobbs-Merrill Company Inc. 243 p. See p. 170-77. Index. 24 cm.

• ***Summary:*** The author was born on 9 April 1923 at Henry Ford Hospital. His mother was Evangeline C. Dahlinger, who was married at the time to Raymond C. Dahlinger, one of Henry Ford's most trusted employees and later Manager of the Ford Farms. The author makes the case convincingly that Henry Ford was his father, making him Henry Ford's illegitimate son.

Chapter 12, titled "Quadrapeds are out" (p. 170-77) contains extensive information about Ford's work with soybeans and soyfoods. Ford believed that the world of the future would be a world without quadrupeds. "We don't need horses. We've got the tractor. We've got the automobile. We don't need cows–we can make synthetic milk. We can make meat substitutes out of soybean and coconuts–you can hardly tell the difference. We don't need sheep. We will be able to make wool out of synthetic things–it will be better than wool... Ford had good reason to distrust horses. He told me that when he was a young boy, his foot caught in the stirrup when a horse bolted. He was dragged around and could have been killed. I don't recall ever seeing him ride a horse... Ford considered the horse a very inefficient instrument. He called it a thousand-pound hay-burning motor with one-horse power.

"As Henry Ford worked toward his great vision of a world that had no need of quadrupeds, I was his guinea pig. And I wasn't the only one. Everyone had to eat the strange concoctions he was putting together and calling milk, meat, and vegetables, depending on their color. Soybean milk was his triumph. I had to drink it while he asked me eagerly, 'Can you tell the difference? Isn't that a fine glass of milk?'

"I loved milk, but his soybean milk almost cured me. It tasted like chalk. I was perfectly satisfied with the job a cow did, and his version was simply terrible. For a time, Ford was eating so much ersatz foods he was concocting that Mrs. Ford worried about his health.

"Ford would eat soybean pie and drink the soybean milk that made even milk of magnesia taste good. Ford was working on a soybean body for an automobile. They used to say that if it didn't run, Ford could eat it.

Ford had a "car body built from the soil" with wheat straw, flax, and hemp [*Cannabis*] that proved to be so strong it was promoted in photo sessions by whacking it with an ax.

"Ford's ultimate triumph along the soybean line was the soybean dinner he himself dreamed up and had served at the time of the Ford exhibit at the Chicago Century of Progress Fair in August 1934." A list of the 16 items served is given; soy ice cream is not mentioned.

"I was about eleven [i.e. in about 1934] when Ford was at the peak of his excitement about soybeans. You had only to talk to him for five minutes and soybeans would enter the conversation. He kept bottles of soybean milk in our refrigerator in case he got thirsty and in case I weakened a little to drink a little too. I only drank it, however, under the greatest duress.

"I still have the recipe he gave to mother for making soybean milk. The formula was developed by his chemical engineers... Soak one-half pound soybeans overnight and grind to a fine powder. Add two quarts of water and heat in a double boiler for one-half hour. Strain liquid through a fine cloth and season with a dash of salt. Add one or two tablespoons of syrup to sweeten. A dash of banana oil can also be added to make it resemble cow's milk more closely. Ford was always shifting the formula around a trifle to see which sweetening syrup was best–maple or sorghum or honey–and whether a little more or less salt would improve the taste.

"Ford was evangelical about soybeans. He talked of how cooked soybeans tasted much better than lima beans did, and how soybean spread was much better for children than peanut butter. He advised me to try it in a soybean and jelly sandwich.

"Ford urged Mother to tell our cook to use a lot of soybeans in cooking and to overcome the strong flavor of the beans by adding plenty of onions. In his own household the cooks were ordered to sneak a few soybeans into every food on the table–into soup, salad, the peas or other vegetable of the day.

"Ford would now and then flash a letter around from some doctor or other who was grateful for Ford's experiments with soybean milk because babies who were allergic to cow's milk were able to use inexpensive, life-saving soybean milk. And also those adults who were allergic to milk were able to enjoy puddings and things that they had never been able to enjoy before.

"Incidentally, Ford's son was named after the man who was in charge of food research at Ford, Doctor Edsel Ruddiman. Ruddiman worked in the engineering lab and was one of Ford's favorite people. Ford, of course, worked closely with Dr. Ruddiman in maximizing the uses of soybeans." Ford also fancied soybean cottage cheese.

"If I recall correctly, Ford at one time had twenty thousand acres of soybeans under cultivation under Dad's direction, and it was said he was spending over a million dollars a year experimenting with the plant in various ways–as food, as plastic, as animal food, as a high-protein, low-calorie diet food, and as a source of industrial oils. Ford would brag about how there was nothing in the soybean plant that was wasted; even the stalk could be made into fiber.

"As Ford saw the world of the future–and I'm sorry it didn't come to pass–every farmer would become wealthy by running his own little factory, or 'cottage industry,' as Ford called it. He would produce soybeans in his field and make at least one soybean product for sale to factories or grocery stores.

"As Ford foresaw the world, farmers wouldn't need barns. 'With no animals, there need be no buildings on a farm except the granaries,' he said. Except, of course, the little farm factories..." (p. 176).

Henry Ford grew marijuana [hemp] for experimental reasons. It was "enclosed by a large cyclone fence. The Ford people thought it had all been destroyed after Ford died, but some years ago they found it growing wild again" (p. 177).

"His campaign against the quadruped never quite ceased. He was forever sounding off against four-footed animals, especially those that provided meat. As early as 1919 or '20 he had said that the world would be better off without meat... And he further insulted the cow by calling it 'the crudest machine in the world'" (p. 177).

Ford was as trim and lean as a split rail fence. He did not smoke or drink alcohol. He was a "health nut" and for a time he preached that sugar was dangerous (p. 78). At the top of things he disliked most were Franklin Roosevelt, "monied" Jews and Judaism, Catholics and Catholicism (p. 216).

3089. Delire, M.; Cambiaso, C.L.; Masson, P.L. 1978. Circulating immune complexes in infants fed on cow's milk. *J. of the American Medical Association* 254:1337-41. *

3090. Farm, The. 1978. Yay soybeans! How you can eat better for less and help feed the world. Second revised edition. Summertown, Tennessee: The Book Publishing Co. 14 p. Illust. 22 cm. 2nd rev. ed. 1978, 14 p.
• ***Summary:*** The first edition of this creative little booklet, published in 1974, was printed with blue ink on white paper; this 1978 edition uses brown ink on white paper. Contents: Living on soybeans. Some of our favorite ways to eat soybeans. Basic cooked soybeans: Soybeans and tortillas, Soybean stroganoff, Soy fritters, Cheezy soybeans

(Good Tasting Nutritional Yeast gives the cheezy flavor), Soyburgers, Soy nuts (dry roasted), Soy coffee. Soymilk: Using soybeans or using soy flour, Soy mayonnaise (made with soymilk), Soy yogurt.

Tofu: How to make at home (6 step process using nigari, epsom [sic, Epsom] salts, vinegar, or lemon juice as a coagulant), Tofu salad dressing, Tofu salad [like an eggless egg salad], Scrambled tofu, Pan fried tofu, Tofu cheesecake. Soy pulp: Introduction, Scalloped tomatoes and pulp, Soy pulp burgers, Soy pulp cookies. Soy flour: Basic salad and sandwich spread, Seasoned sandwich spread. TVP–Textured Vegetable Protein: Introduction, TVP tortilla and taco filling, Taco filling sauce, TVP spaghetti sauce, Sloppy Joes. Good Tasting Nutritional Yeast: Introduction, Melty cheese, Cheese crackers, Golden gravy, Yeast 'omelette.' Eggless cookery: Introduction, Pancakes (with soymilk), Chocolate cake (with sour soymilk), Cookie crust for cheesecake. A word about vitamin B-12. Some facts about people and food. Plenty. Address: Tennessee.

3091. Faryna, Paulette J. 1978. Soyabeans in the Nigerian diet. *Ahmadu Bello University, Extension Bulletin.* No. 21. 74 p. Home Economics Series No. 1. Reprinted in Nov. 1985. [64 ref]

• ***Summary:*** Contents: Acknowledgements (especially Mrs. V. Ogunsola of Home Economics Section, Samaru College of Agriculture, and Mr. T. Kay, Dept. of Chemical Pathology, Ahmadu Bello Univ., Zaria). Foreword. The history of soyabeans. The role of soyabeans in the diet. Soyabeans in Nigerian weaning foods. Protein deficiencies. The preparation of soyabeans. Soyabeans enriched paps and porridges. Soyabean soups. Soyabeans as a meal on their own. Soyabean patties. Soyabean sweet snack foods. Soyabean breads. Fermented soyabean products: Soyabean Daddawa, Soyabean Sprouts. Soyabean oriental delicacies: Tofu (curded with lemon juice, vinegar, kuka [the fruit of the baobab tree], calcium sulphate, or epsom salts), Basic Fried Tofu, Soyabean Cheese (with okara), Soy Yogurt. Appendix: Measurements. Home made ovens. Soyabean feeding trials with infants. References.

Note: This is the earliest English-language document seen (April 2013) that uses the term "soyabean cheese" to refer to tofu.

Includes 67 Nigerian-style recipes. Soybeans are used mostly in the form of "soybean paste" (fresh soy puree or gô) and homemade whole soy flour. To make the paste: Soak soybeans overnight, dehull by hand and float off hulls, grind cotyledons with a small amount of water, use in a cooked preparation. To make flour: Boil beans for 30 minutes, wash, soak in two times the volume of water for 12-24 hours, change water every 4-6 hours, sun-dry, grind.

Soyabeans were introduced to Nigeria in 1908, and most of the early research was carried out at the Moor Plantation in Ibadan. Germination of the imported seeds was a major problem, leading to the failure of early attempts to grow soybeans in Southern Nigeria. However subsequent trials in the Guinea Savannah belt proved successful. In 1928 soyabeans were successfully grown at the Samaru Experimental Station. This success encouraged the development of a programme which eventually resulted in the distribution of seed to subsistent farmers in order to establish soyabeans as a cash crop. A world shortage of oil seeds immediately after World War II accelerated the drive for increased soybean production in Nigeria.

A map (Fig. 1, p. 2) shows the main soybean growing area in Nigeria, which is in the Southern Guinea Zone; here a rainy season of 5 months or more discourages the cultivation of groundnuts and cowpeas. Benue state is the main soybean growing area, followed by the Abuja area in Niger State and the southern divisions in Kaduna State. The crop is planted in small holdings of 1 to 2 hectares per farmer. The most common variety planted is the Malayan variety.

Table I shows Nigerian soybean production and market value from 1957-58 to 1972-73. The peak production year was 1962-63 (26,450 long tons); only 234 tons were produced in 1972-73. Address: Extension Home Economist, Ahmadu Bello Univ., Agricultural Extension and Research Liaison Services, P.M.B. 1044, Samaru-Zaria, North Nigeria.

3092. Ford, Barbara. 1978. Future food: Alternate protein for the year 2000. New York, NY: William Morrow and Company, Inc. 300 p. Index. 22 cm. [40+ ref]

• ***Summary:*** The author concludes that soybeans are most likely to be the protein source of the future. Chapter 2, "The Cinderella Bean" (p. 32-53) and Chapter 3, "Soybeans, Oriental Style" (p. 54-71) both discuss the benefits of soybeans. Pages 37-38 note that soybeans were once called "haybeans" and their hay was called "haybean hay."

Note: This is the earliest English-language document seen (Oct. 2011) that which uses the term "haybean" or "haybeans."

The work of the USDA Northern Regional Research Lab. (NRRL) with soyfoods is described at length. While at the NRRL she first encountered "sufu." In "Chinese markets, sufu is not called sufu but 'bean curd' or 'bean cake.' As soon as I saw sufu I realized it has an image problem–not as unappetizing as natto, but distinctly unpleasant. Picture grayish chunks of some odd-looking material floating in a murky liquid, like biology specimens in a bottle, and you have a typical bottle of sufu.

"Sufu looks so bad that my husband, who has faithfully eaten a number of odd-looking sources of protein that I have purchased over the years, refused it. It took a little courage for me to tackle one of the grayish lumps myself but I finally ate one. To my surprise, it was good, rather like a tangy dairy cheese but with a distinctive, nonbeany flavor of its own" (p. 60-61).

Chapter 6, "It Ain't (Just) Hay," is about alfalfa leaf

protein and leaf protein concentrate. Research on leaf protein "really started during World War II, when British scientist N.W. Pirie suggested the use of leaves to augment dwindling meat supplies... Pirie's proposal never got underway during the war because of the costs involved, but after the war he was given a laboratory where he carried out most of the pioneering work on leaf protein."

Chapter 9, "SCP: Promises, Promises," is about single-cell proteins such as the bacteria *Cellulomonas* and *Pseudomonas* (the champion, which can double its weight in 9 minutes). A probable culprit in SCPs is "nucleic acids, which have been shown to cause elevated uric acids in humans if used over an extended period of time. Raised uric acid levels lead to gout, kidney stones, and gallstones. Some bacteria contain from 15 to 16 percent nucleic acids, a fairly high level. Yeasts and fungi contain from 6 to 11 percent, still a high level. Algae have less." It is recommended that humans not consume more than 2 grams (0.7 ounces) of nucleic acids per day. Address: USA.

3093. Gaskin, Ina May. 1978. Spiritual midwifery. Revised ed. Summertown, Tennessee: The Book Publishing Co. 473 p. Illust. Index. 23 cm. [10+* ref]
• ***Summary:*** The original 1975 edition of this pioneering book, by "Ina May and The Farm midwives" (380 p.) did not mention soyfoods. However in this edition, the section titled "Taking Care of Yourself While You're Pregnant: Nutrition" (p. 227-31) states: "You will need to increase your protein intake by about 30%. On the Farm, we are complete vegetarians, and our main source of protein is soybeans and soy products such as soymilk; soy yogurt; tofu (soybean curd); hard, pressed tofu (more concentrated); soymilk ice cream; and TVP–texturized vegetable protein. Soybeans and soy products are very high in protein of a quality comparable to eggs and mother's milk (the international standards for complete protein).

"You can get plenty of protein for pregnancy by eating daily one cup of soybeans plus 12 ounces of soymilk or yogurt, or ½ lb. tofu and a pint of soymilk, or one cup hydrated TVP and a cup of soymilk or soy yogurt, or one quart of soymilk or soy yogurt and ½ cup of soybeans. We highly recommend a vegetarian diet for a healthy pregnancy and life."

Note: This is the second earliest published English-language document seen (March 2007) that uses the term "soymilk ice cream." Address: The Farm, Summertown, Tennessee.

3094. Haedrich, Ken. 1978. Good food, good folks: A collection of vegetarian recipes from across America. Plainfield, New Jersey: American Impressions. 46 p. Illust. by Diane Haedrich. 21 cm.
• ***Summary:*** This booklet, printed with brown ink on beige paper, was published by the author. Some of the recipes are from other books, with proper acknowledgment. Contents: Dedication (to World Hunger Year, P.O. Box 1975, Garden City, New York 11530). Introduction (He owns a print shop. The book idea was conceived while listening to singer / songwriter Harry Chapin talking about world hunger on the radio). Recipes–Breads & butter. Soups. Main courses & salads. Desserts. Many of the recipes call for "milk or soymilk," and for "tamari or soy sauce."

Soy-related recipes: Tofu sandwich spread (p. 20). A tofu primer (incl. Tofu "mayonnaise" and praise for *The Book of Tofu,* by Shurtleff and Aoyagi). Soyburgers (p. 23). Sweet & sour soybeans (p. 26). The rear cover states that half the proceeds from sale of this book will be "donated to World Hunger Year–an educational, resource organization focusing on food and hunger issues of local and global impact." Address: Plainfield, New Jersey.

3095. Hagler, Louise. ed. 1978. The Farm vegetarian cookbook. Revised ed. Summertown, Tennessee: The Book Publishing Co. 223 p. Illust. Index. 22 cm.
• ***Summary:*** An expanded and extensively revised version of its pioneering and very creative and influential predecessor. There are excellent expanded sections on gluten (p. 76-81), tempeh and tempeh starter (p. 82-93), miso (p. 93), soymilk (p. 95-101), Ice Bean (soy ice cream, including recipes for 5 flavors), Frogurt (soymilk frozen yogurt, p. 107), soy yogurt (p. 108-13 including a non-fermented cheese made by draining soy yogurt curds in a cotton bag; from this "yogurt cheese" are made soy-based cottage cheese, sour cream, cream cheese, and cheesecake), tofu (p. 114-41), yuba (142-43), soy coffee, soy nuts, granola, and Soysage (p. 144-47), soy flour (p, 148-53), sprouts (incl. alfalfa, mung beans, and soybeans, p. 154-57). Address: Summertown, Tennessee.

3096. Hobson, Phyllis. 1978. The soybean book. Growing and using nature's miracle protein. Charlotte, Vermont: Garden Way Publishing. iv + 172 p. Illust. by Andrea Gray. Index. 23 cm.
• ***Summary:*** Contents: Why soybeans? How to grow, harvest, and store soybeans: Selecting seed (edible varieties and time to maturity for fresh soybeans and dried beans), sources of seed, how much seed, planting the seed, inoculation, germination, the developing plant, the harvest, storing beans. Saving seed. How to process soybeans: Fresh soybeans (in the pods), dried soybeans, soy grits, soy pulp (cooked, mashed dehulled soybeans), soy flour, soy milk (from whole soybeans or from soy flour; the remaining "pulp" may be added to meat loaves or casseroles), soy curd (tofu), soy sprouts. Recipes–Soybean "meats." Roasted soybeans. Fermented soybean cakes (tempeh). Soy beverages. Soy breads. Soy cereals. Soy desserts. Soybeans with eggs. Soy salads. Soy spreads. Soy snacks. Candy and cookies. Soy soups. Soymeat dishes. Soybeans with meat. Soybean vegetable dishes. Supper dishes. Growing soybeans

for animal feeds. Homemade dog and cat food. Using soybeans for soil improvement.

Note: The chapter on how to grow soybeans (p. 6-20) is especially useful. Address: USA.

3097. Holmes, Charlotte Van Gundy. 1978. Cooking for living. The art of healing. Sulfur Springs, Arkansas: Philadelphia Institute, Inc. 102 p. No index. 20 cm. [11* ref]
• ***Summary:*** The section titled "Soy beans" (p. 31-33) has the following contents: Introduction and list of different food products made from soy beans. Drying, freezing, canning, and tenderizing whole dry soybeans. How to make soybean milk: From beans, from soy flour, how to use the residue [okara] left from making soy milk. Soy cheese (also called "vegetable cheese" or "tofu"): How to make soy cheese from soy milk, how to make soy cream, how to make soy mayonnaise.

Also discusses: Homemade soy butter [soynut butter] (p. 57-58). Entrees (p. 58-60): Soy bean loaf, Soy cheese patties, Soy loaf, Soy grits loaf, Peanut butter patties. Soy sauce and Sovex (p. 83).

Note 1. The author's father, Theodore Van Gundy, was a soyfoods pioneer in southern California. The first printing of this book was in 1967, the second in 1970, and the third in 1973. Note 2. On the cover is written (as if it were the title): *Keys to Cooking for Living: Recipes and Menus.* Address: M.D., P.O. Box 308, Sulphur Springs, Arkansas 71768.

3098. Jelliffe, Derrick B.; Jelliffe, E.F. Patrice. 1978. Human milk in the modern world: Psychosocial, nutritional, and economic significance. Oxford and New York: Oxford University Press. 500 p. [1860* ref]
• ***Summary:*** An excellent, in-depth discussion of the role of breast feeding in both developed and developing countries. This book does not mention soy or lactose intolerance. Concerning *Lactobacillus bifidus:* It predominates in the intestinal flora of breast-fed infants. "The bifidus factor in human milk (combined with the low pH of the intestinal contents) facilitates the growth of *Lactobacillus bifidus* (Bifidobacteria), which appears to have an 'intestinal guardian' function, in particular checking the growth of undesirable, possibly harmful organisms, such as pathogenic *Escherichia coli.* Colonization of the alimentary canal differs in infants fed on cow's milk or human milk. The bacterial population is predominantly *L. bifidus* in the breast-fed (acquired during birth from the mother's vagina (Haenel 1970)), whereas the intestinal flora of babies fed on cow's milk is principally made of gram-negative bacteria, especially coliforms and bacterioides." See also Gothefors (1975).

Page 301 shows a graph of the rapid rise of La Leche League from 1960 on, especially after 1964. The author attributes this to a trend in the western world called "naturalism." Address: 1. Prof. of Public Health and Pediatrics, and Head, Div. of Population, Family and International Health, Univ. of Californi at Los Angeles (UCLA School of Public Health). Formerly Director, Caribbean Food and Nutrition Inst., Jamaica; 2. Lecturer at same place.

3099. Johnson, Lawrence Alan. 1978. Processing aqueous extracts of soybeans by rapid-hydration hydrothermal cooking. PhD thesis, Kansas State University. 195 p. Page 4797 in volume 39/10-B of Dissertation Abstracts International. *
Address: Kansas State Univ.

3100. Lee, Sok Kyu; Kniker, W.T.; Cook, C.D.; Heiner, D.C. 1978. Cow's milk-induced pulmonary disease in children. *Advances in Pediatrics* 25:39-57. [20 ref]
• ***Summary:*** "As a result of the high rate of ingestion of cow's milk (CM) in modern society, milk allergy has become an important problem in pediatric practice. In some children, pulmonary disease is a manifestation of milk allergy..."
Address: Div. of Immunology and Allergy and Allergy, Dep. of Pediatrics, Harbor General Hospital Campus, Univ. of California at Los Angeles;.

3101. Milner, Max; Scrimshaw, N.S.; Wang, D.I.C. eds. 1978. Protein resources and technology: Status and research needs. Westport, Connecticut: AVI Publishing Co. xxi + 629 p. Illust. Index. 26 cm. [400+ ref]
• ***Summary:*** Contents: Contributors. Preface. Acknowledgments. Section I: Summary and research recommendations. 1. Objectives and research recommendations. 2. Factors affecting protein supply and demand. 3. Common issues in the development and utilization of protein resources. 4. Status and potential of specific resources. Section II: Common issues and problems in protein resource development. 5. United States and world protein production and consumption. 6. Energy constraints in protein production. 7. Legal and regulatory barriers to the introduction of novel protein foods. 8. The politics of new protein: Obstacles and opportunities facing research and development. 9. The marketing factor for nonconventional-protein products. 10. Nutritional evaluation of proteins and protein requirements. 11. Toxicological aspects of protein production and processing. 12. Basic food science and technology problems affecting the properties and processing of protein resources. 13. The constraints on improving protein quality in plants by genetic means. 14. Research on nitrogen and carbon input to increase domestic crop protein production. Section III: A review of specific protein resources. 15. Grain crops. 16. Cereal proteins from grain processing. 17. Oilseed proteins. 18. Food legumes as a protein source. 19. Livestock animal production. 20. Proteins from dairy products. 21. Animal protein from meat, poultry and eggs. 22. Aquatic proteins. 23. Potatoes. 24.

Nonphotosynthetic single-cell protein. 25. Photosynthetic single-cell protein. 26. Leaf protein in relation to forage crop production and utilization. 27. Chemical synthesis of nutrients. Address: MIT, Cambridge, Massachusetts 02139.

3102. Mitsubishi Kasei. 1978. Tônyû no eiyô kôka [Nutritional effect of soymilk]. Tokyo: MK. 38 p. [27 ref. Jap]

3103. Orthoefer, Frank T. 1978. Processing and utilization [of soybeans]. In: A.G. Norman, ed. 1978. Soybean Physiology, Agronomy, and Utilization. New York: Academic Press. xii + 249 p. See p. 219-46. Chap. 7. [11 ref]
• ***Summary:*** Contents. 1. Introduction. 2. Composition of the seed: Proximate composition, protein composition, enzymes, lipid composition, carbohydrate composition, biologically active constituents. 3. Processing: Oil extraction, oil processing, processing of the meal. 4. Utilization: Soybean oil, protein products, textured proteins, modified soy proteins, specialty uses of soybean protein. 5. Future projections.

"The direct consumption of soybean protein in human foods accounts for only 26.5 million bushels of the 1,260 million bushel crop (Table XI, [2.1%]). The utilization of soybean proteins as food ingredients is expected to increase three to four times by 1985. By 1980 simulated meats and meat extenders are projected to reach a sales volume of nearly $2 billion. But even by 1985, the expected direct food usage of soybeans will only account for approximately 5% of the crop." Address: A.E. Staley Manufacturing Co., Decatur, Illinois 62525.

3104. Schmit, Matthew. 1978. Peaking out on tofu. Telluride, Colorado: Published by the author. [16] p. No index. 22 cm.
• ***Summary:*** This booklet (brown ink on tan paper) shows a horizon of snow-capped peaks on the cover and contains handwritten 20 recipes (brown ink on tan paper) using tofu or soymilk (2 recipes): Sesame cookies (with soymilk). Refried tofu burrito. Tofu burgers. Soy mayo. Hot n' spicy tofu. Sesame tofu paté. Tofu turkey basting sauce. Vegetable sukiyaki. Tofu loaf. Cabbage noodle bake (with tofu). Eggplant bulgar casserole with tofu sauce. Scrambled tofu 'n veges. Tofu zucchini quiche. Tofu Rubin. Cheeseless cheese sauce (with yeast). Tofu high protein sandwich spread. Tofu sandwich spread. Carob milk (using soymilk). The rear cover states: "these original recipes sprouted in the kitchen of the tofu shop and are prepared with care by the telluride tofool family using our own homemade soy products. Special thanks to: Catherine Peterson, Kathy Greene, Barton Coffman, Becca Smith, and Sharyn." Address: The Tofu Shop, 116 N. Oak St., Telluride, Colorado.

3105. Silterra, Reba G. 1978. Effect of soybean components on the viscosity of Illinois Soy Beverage. MSc thesis, Dep. of Food Science, University of Illinois. 64 p.
• ***Summary:*** The author received his BSc degree from Cornell Univ. in 1975. Contents: Introduction. Literature review: History, nutritional value of soy protein, soy beverage processes, composition of soybeans and Illinois soy beverage, viscosity of fluids, rheology of soy protein dispersion, soy polysaccharides and their rheology in aqueous dispersions, soy polysaccharides and their influence on viscosity. Materials and methods: Preparation of model systems, preparation of the Illinois soy beverage, pH adjustment, apparent viscosity by Brookfield, flow characteristics by Haake rotoviscometer, solids content, statistics. Results and discussion: Introduction, total soy solids concentration, formulation variables, homogenization pressure, characterization of model system viscosity. Summary and conclusions. List of references. Address: Dep. of Food Science, Univ. of Illinois.

3106. Smith, Allan K.; Circle, S.J. eds. 1978. Soybeans: Chemistry and technology. Vol. 1. Proteins. Revised. Westport, Connecticut: AVI Publishing Co. xiii + 470 p. Illust. Index. 24 cm. [500+ ref]
• ***Summary:*** This revised edition contains relatively few, unimportant changes from the original, classic 1972 edition. The following changes have been made: Addition of a 7-line preface to the "revised second printing" dated 4 Oct. 1977, updating of a graph of U.S. soybean production (p. 1). Updating (to 1976) of a table on U.S. and world production of important oilseeds (soybeans, cottonseeds, peanuts, sunflower, rape, sesame) (p. 2). Minor textual changes on pages 18-19. Addition of a table showing distribution of the 3 leading soybean varieties in 14 major states and the percentage of acreage harvested for each variety in 1976 (e.g., in Illinois, Williams accounted for 25.1% of harvested acreage, Amsoy 17.3%, and Wayne 12.8%). And updating of a table on U.S. soybean production by state showing acreage harvested, yield per acre, and production for 1974, 1975, and 1976 (p. 32).

The foreword, chapter titles, and index have not been changed at all. Note: Vol. 2 was never published. Address: 1. Oilseeds protein consultant, Hot Springs, Arkansas; 2. Oilseed protein consultant, Protein Technology, Richardson, Texas.

3107. Steinkraus, K.H. 1978. Imitation milks. In: M.S. Peterson and A.H. Johnson, eds. 1978. Encyclopedia of Food Science. Westport, CT: AVI Publishing Co. xviii + 1005 p. See p. 405-08. [21 ref]
• ***Summary:*** Synonyms and related terms: Simulated milks, milk substitutes, synthetic or artificial milks, milk analogues, vegetable protein milks, protein concentrate milks, soy milks.

Contents: Processing soybeans to soy milks. Defatted soy processes. Infant formulas. Indian peanut protein toned

milk (Miltone; Whole buffalo milk extended or "toned" with peanut protein isolate). Soft drink approach (Vitasoy, Yeo Hiap Seng, Green Spot). Flavor problems. Nutritional problems. Commercial prospects for the future. Address: Cornell Univ.

3108. Sussman, Vic S. 1978. The vegetarian alternative: A guide to a healthful and humane diet. Emmaus, Pennsylvania: Rodale Press. xvii + 286 p. Index. 22 cm. [39 ref]

• ***Summary:*** Explains the fundamentals of a vegetarian diet. Covers nutrition, protein requirements, health, world food crisis, recipes, and kitchen techniques. Paul Obis, editor of *Vegetarian Times,* has called this "the most complete, concise, and nondogmatic book we have come across." Keith Akers says that this is one of his four favorite books on vegetarianism.

This book contains extensive information on soyfoods (p. 248-50) including soymilk, tofu, tempeh, miso, and soy flour. The author's greatest praise is for tofu. Of *The Book of Tofu,* by Shurtleff and Aoyagi, he says (p. 274): "The most important book on food ever published for vegetarians–if not all the world. Clear prose and beautiful illustrations... Five hundred recipes for preparing this versatile and nutritious food. Buy this book..." Address: Travilah, Maryland.

3109. Wu, Jingrong. 1978. A Chinese-English dictionary. Beijing, China: Shang wu yin shu guan. 976 p. 27 cm. [Eng; Chi]

• ***Summary:*** This comprehensive dictionary uses pinyin romanization / transliteration, with accents; Chinese characters are given and definitions are in English. It contains over 6,000 single-character entries, including characters with variant tones. There are over 50,000 compound-character entries and over 70,000 compound words, set phrases and examples. The Chinese title is *Han Ying ci dan.* Soy-related terms include:

Page 92: chi, douchi; see Douchi below.

Page 125: Dadou (soybean, soya bean).

Page 164: Doubanjiang (thick broad-bean sauce). Doubing (defatted soya bean cake; bean cake). Douchi (fermented soya beans, salted or otherwise [fermented black soybeans]). Doufu (bean curd [tofu]). Doufufang (bean-curd plant [tofu shop]). Doufugan (dried bean curd [pressed tofu]). Doufunaor (jellied bean curd). Doufuru (fermented bean curd). Doufupi (skin of soya bean milk [yuba]; thin sheets of bean curd). Doujiang (soya-bean milk). Douqi (bean stalk). Dousha (sweetened bean paste). Douyou (soya-bean oil). Douzha (residue from beans after making soya-bean milk; bean dregs [okara]). Douzhipin (bean products [soyfoods]).

Pages 210-11: Fu (rotten, putrid). Furu (fermented bean curd). Fuzhu (dried bean milk cream in tight rolls [dried yuba sticks]).

Note: This is the earliest English-language document seen (Oct. 2012) that contains the term "dried bean milk cream" or the term "dried bean milk cream in tight rolls." Both probably refer to dried yuba sticks.

Page 294: Huangdou (soya bean, soybean [yellow soybean]).

Page 324: Jia (pod). Jiaguo (pod, legume).

Pages 336-37: Jiang (1. A thick sauce made from soya beans, flour, etc. 2. Cooked or picked in soy sauce, such as pork or braised pork; tomato sauce, ketchup). Jiangcai (vegetables pickled in soy sauce, pickles). Jiangyou (soy sauce, soy). Jiangyuan (a shop making and selling sauce, pickles; sauce and pickle shop).

Page 459: Maodou (young soya bean [edamame, green vegetable soybean]).

Pages 470-71: Mianjin (gluten [wheat gluten]). Miao (young plant, seedling).

Page 487: Nai (breasts, milk, suckle, breast-feed [dounai = soymilk]).

Page 553: Qi (beanstalk). Page 561: Qu (leaven, yeast, Aspergillus [koji]).

Page 661: Taijiquan (a kind of traditional Chinese shadow boxing [taichi]).

Page 957-59. Pinyin–Wade-Giles conversion tables.

Page 972: A brief Chinese chronology [of dynasties]. Address: Peking, China.

3110. Zurbel, Runa; Zurbel, Victor. 1978. The vegetarian family: With recipes for a healthier life. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 185 p. Edited by Lester Alexander. Illust. Index. 23 cm. [44 ref]

• ***Summary:*** The section on soybeans (p. 62-67) discusses soybeans and soyfoods, then gives recipes for: Basic soybeans. Mediterranean soybean casserole Soybean casserole. Soybean salad. Soy milk. Sesame soy milk. Roasted soybeans (baked). Other soy-related recipes include: Soyburgers (p. 80). Ginger tamari sauce (p. 118). Miso yogurt dip (p. 127).

The section titled "Basic Macrobiotic Cooking" discusses shoyu tamari, and miso, and gives recipes for: Miso soup. Miso spread. Nerimiso (Sweet simmered miso).

Chapter 7 (p. 88-101) is titled "Tofu: The food of the future–Discovered over two thousand years ago." A full-page photo opposite the title page shows a wooden forming box, with cakes of tofu and soybeans nearby. *The Book of Tofu,* by Shurtleff and Aoyagi, is praised and credited as the source of much of the information on tofu in this book. Recipes include: Quick tofu. Homemade traditional tofu. Tofu sandwich. Tofu salad. Tofu and peas. Tofu and snow peas. Tofu and Chinese vegetables. Tofu and [mung] bean sprouts. Tofu and sesame. Kinugoshi and how to make custard style kinugoshi. The chapter ends with 2 pages on tempeh, but no recipes.

3111. **Product Name:** [Soymilk].
Manufacturer's Name: Alimentos Integronaturales.
Manufacturer's Address: Apartado 16, Montemorelos, NL, Mexico.
Date of Introduction: 1978?
New Product–Documentation: Letter from Charles D. Howes. 1978. Oct. List of Seventh-day Adventist soymilk plants.

Shurtleff. 1981. Overseas Adventist Food Companies. p. 8. Letter from Robert Folkenberg. 1983. Feb. 15. The company is presently producing about 3,000 liters/week of soymilk.

3112. Asahi Shokuhin K.K. 1978? Asashoku soimiruku [Asahi Foods Company's soymilk (Leaflets)]. Saitama-ken, Japan. 7 p. Undated. [Jap]
• ***Summary:*** These two leaflets discuss the company's product in detail.

3113. Asahi Shokuhin. 1978? Asashoku soi miruku [Asahi Shokuhin soymilk]. Saitama-ken, Japan. 8 p. Undated. [Jap]

3114. Loma Linda Foods. 1978? Soyalac. Helpful information to those allergic to milk. Riverside, California. 34 p. Undated. Illust. 18 cm.
• ***Summary:*** On the cover is a mother (with long brown hair) holding a child in a blue blanket against an orange-red background.

Contents: Presented to. What is allergy? Asthma, eczema and colic. Soyalac: For infants, children and adults–milk free recipes for your pleasure. Four types of Soyalac are available (hypoallergenic, fiber free): i-Soyalac Concentrated, Soyalac Concentrated, Soyalac Ready-to-Serve, and Soyalac Powder. Suggestions on infant feeding: Ready to serve, concentrated liquid. Baby's birth record. Baby's immunization record [against 10 diseases + Schick test]. Baby's appointments for check-up. Growth record for. Beverages (each recipe in the recipes section calls for Soyalac). Hot breads. Main dishes. Soups, sauces and mayonnaise. Cookies. Desserts. Allergic foods checklist. Address: Riverside, California.

3115. **Product Name:** [Soymilk].
Manufacturer's Name: Pan American Health Service.
Manufacturer's Address: Box 191, Peña Blanca, San Pedro Sula, Honduras.
Date of Introduction: 1978?
New Product–Documentation: Letter from Charles D. Howes. 1978. Oct. List of Seventh-day Adventist soymilk plants.

Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). "Pan American Health Service, Box 191, San Pedro Sula, Honduras. Owner: Dr. Steven Youngberg. Seventh-day Adventist soy dairy."

Letter from Eric C. Fehlberg, Director, International Health Food Assoc. 1990. May 24. This organization no longer exists. Talk with Don Meinders of Pan American Health Service. 1992. Feb. 4. Dr. Steven Youngberg was the son of missionaries in India. When the family returned to the USA, he got his medical degree at Loma Linda University in the mid-1950s. His first medical practice was in the Texas border area, where he worked with poor Mexican laborers. He had a little medical van, and was very active with tuberculosis work. Then he went to Tabasco, the state in Mexico, and started a tuberculin hospital there. Then he went to Honduras in about 1961, bought land, and started the Pan American Health Service (PAHS) in the jungle. In about 1972 he started a soymilk plant and a bakery on the PAHS grounds. PAHS still exists and is very active, with a medical clinic, an orphanage for malnourished children, and a farm. The bakery produces the only whole-wheat bread in Honduras. But the soymilk plant is not presently in operation. About 6-8 years ago the soymilk equipment was disassembled by an administrator who wanted to sell it. Dr. Youngberg was in the USA at the time undergoing heart surgery. When he returned to Honduras, he immediately stopped any ideas of selling the soymilk plant. The parts are now in boxes. This soymilk was never sold commercially. It was only served at the clinic. Don was at the PAHS recently; he has been there for about 1 year and plans to stay down there. Dr. Youngberg is now about age 74-75, living in Texas, and well enough to talk. PAHS is a private foundation, privately funded with about half the funds coming from Seventh-day Adventists. A Mennonite group run by a woman doctor from the East Coast of the USA in San Pedro is producing a protein-rich "Soy Bar," like a granola bar.

Note: This may be the earliest known commercial soy product made in Honduras. However it is unclear whether or not this product, or any other soy product made by the PAHS was ever sold commercially. On the PAHS website (panamhealth.org), retrieved 3 Feb. 2009, the soymilk is mentioned but there is no indication that it was ever sold commercially. In 2001 Dr. Stephen Youngberg died in Ft. Worth, Texas; his body was buried in Peña Blanca, Honduras. We do not know enough about the "Soy Bar" to give it a "Commercial Soy Product" record.

3116. **Product Name:** Soymilk.
Manufacturer's Name: Rama Food Product Co., Ltd.
Manufacturer's Address: Bangkok, Thailand.
Date of Introduction: 1978?
New Product–Documentation: Soya Bluebook. 1981. p. 61. Bangkok. Soy beverage. Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 105-06.

3117. Fiering, Steve. 1979. A Midwestern interest in tofu [The Soy Plant in Ann Arbor, Michigan]. *Whole Foods* (*Berkeley, California*) 2(1):38, 40. Jan.
• ***Summary:*** This is basically a history of The Soy Plant and

some of its creative financing schemes. The Soy Plant began operation in August 1977. New products include soymilk, tempeh, spiced tofu, two spreads (one with eggless soy mayo and turmeric; one with tofu, sweet miso and tahini), ice bean [soy ice cream], tofu pies, okara peanut butter balls, and soy sausage. Address: The Soy Plant, Ann Arbor, Michigan.

3118. *Food Engineering.* 1979. Dairy products with soy protein. 51(1):ef-10, 11. Jan. [1 ref]
• ***Summary:*** Contents: Introduction: Coffee creamers and whip toppings. Soy isolate in yogurt. Soy-based infant formulas. Soy-whey drink mix. Soy in ice cream. Room for new technologies.

A table lists 15 soy-based infant formulas, showing the product name, form (powdered, ready to feed, or concentrated liquid), and manufacturer. The product names are Bon Lact, Espelin, Isomil, Lactopriv, Mull-Soy, Multilac, Neo-Mull-Soy, Nursoy, Nutri-Soja, Prosobee, Sobee, Soja Semp, Soyalac, i-Soyalac, Vegebaby.

3119. Industrial Services Centre. 1979. Soyabean processing industry in Nepal. Kathmandu, Nepal: Industrial Services Centre. ii + 39 p. + 15 p. Appendix. Jan. Prepared for NIDC. 39 cm. [1+ ref]
• ***Summary:*** Contents: Introduction. Background. Market: Uses and introduction of soybean products (soybean oil, flour and grits, milk, sauce, curd, lecithin, neutral spray dried soybean protein, soybean protein and flour in ice cream), possible uses of soybean products in Nepal, basic idea of consumption of soybean in Nepal, possibilities of export of soybean oil in India, general conclusion. Raw material. Technical. Financial. Conclusion.

"The purpose of this study is to examine the feasibility of setting up a soybean processing industry in Nepal and the report is prepared by the Centre at the request of the Nepal Industrial Development Corporation (NIDC), Kathmandu."

"Out of the various crops under cultivation in Nepal, soybean is one of them but a very little attention is given to the cultivation of this product. It is usually cultivated during the Monsoon time and harvested during November-December. The Department of Agriculture is carrying out varietal trials in the different stations with a view to introduce high yielding varieties and promote the cultivation of it in the different parts of the country. Although at present, it is cultivated mainly in the hilly regions at different altitudes ranging from 6000 to 4000 feet, the observations made at the plain region reveal that there is a possibility of extending its cultivation in the terai region too."

"Soybean oil: In India, soybean oil is being widely used in the manufacture of vegetable ghee and constitutes the major part of consumption in the Vanaspati industry. The little production of soybean oil in Nepal is being used as a cooking oil."

"Possible uses of soybean products in Nepal. A few of the soybean products that are in use in Nepal are soybean oil for cooking, soy curd and soy sauce in the restaurants and full-fat soy flour product by simple grinding in the different houses. If soybean oil could be made available, it may find its wide use in the future in the Vegetable Ghee Factory the installation and erection of which is nearly complete at Hetuuda, Soap factory, and in Paint Varnish industry to act as a film forming material. The soy sauce requirement of to-day in Nepal is met by the imports... Soy milk would be another product which might come into wide use in the future." Address: Balaju, Kathmandu, Nepal.

3120. Monroe, Linda. 1979. The many faces of tofu. *Alch Mist of Ann Arbor* (*Michigan*). Jan.
• ***Summary:*** The Soy Plant, located at 211 East Ann St., is a tofu shop–but they also make soysage, missing egg salad, tempeh, spiced tofu (various spices are added when curdling the soy milk), soy milk (regular or flavored with honey and vanilla), missing egg salad, tofu-tahini spread, tofu tarts (a tasty dessert). Coming soon: Soy Scream (soy milk ice cream), and Boston brown bread (steamed). Tofu is made four days a week. "Soy products can be and indeed are the staple of many vegetarian diets."

"The Soy Plant sells one pound cubes of tofu for 70 cents (if you bring your own container), 72 cents with their plastic bag, or 85 cents in their container [plastic tub]. They encourage people to bring their own containers so as to cut down the use of plastic." "The collective has been very creative with the versatile little soy bean. Their ideas seem to be endless. They have developed many tasty foods by experimenting with different combinations of ingredients."

"The Soy Plant is a cheerful, pleasant place to visit. You'll usually find samples of their different spreads and beverages. Any questions about soy products are gladly answered either by collective members or by just looking in any of the various books available there on tofu, miso and other soy products. You can be sure the collective will always be coming up with new items to surprise and satisfy your taste buds.

"The Soy Plant is open Mondays–Fridays, 10-6, and Saturday, 9-5."

In the middle of the article is The Soy Plant Logo, two soybean plants growing (to left and right) out of Planet Earth. Around the bottom is written "The Soy Plant."

Talk with Steve Fiering, a founder of The Soy Plant in Ann Arbor. 2000. Dec. 3. The title of this periodical derives from the word "Alchemist." The logo was Steve's idea, developed by Marge Bruchac, Susanna Middaugh, and Dan Ecclestone.

3121. Pelaez, R.; Walker, D.M. 1979. Milk replacers for preruminant lambs: Limiting amino acids in two soybean protein isolates determined with a change-over design. *Australian J. of Agricultural Research* 30(1):125-34. Jan. [15

ref]
• ***Summary:*** Methionine was the first limiting amino acid; Lysine and threonine were second limiting. The mean digestibility coefficient of nitrogen in isolated soy protein B (ISP-B) was 0.842, and the diets containing it were readily accepted by lambs. Address: 1. Departamento de Alimentacion, Facultad de Veterinaria de Leon, Leon, Spain; 2. Dep. of Animal Husbandry, Univ. of Sydney, NSW 2006, Australia.

3122. Shurtleff, William; Aoyagi, Akiko. 1979. The book of tofu: Food for mankind. Condensed and revised. New York, NY: Ballantine Books. A division of Random House, Inc. xii + 433 p. Jan. Illust. by Akiko Aoyagi Shurtleff. Index. 18 cm. [60 ref]
• ***Summary:*** This book has been extensively revised and updated. Many names of Japanese tofu have been Americanized. Contents: Preface. Acknowledgements. 1. Protein East and West. 2. Tofu as a food. 3. Getting started: Favorite tofu recipes. 4. Soybeans. 5. Fresh soy puree. 6. Okara (Soy pulp). 7. Curds and whey. 8. Tofu & firm tofu. 9. Deep-fried tofu: Deep-fried tofu cutlets, deep-fried tofu burgers & treasure balls (tofu treasure balls, p. 269), and deep-fried tofu pouches. 10. Soymilk. 11. Silken tofu. 12. Grilled tofu. 13. Frozen & dried-frozen tofu. 14. Fermented tofu. 15. Yuba. Appendices: A. Tofu restaurants in Japan. B. Tofu shops and soy dairies in the West. C. Varieties of tofu in East Asia. D. Table of equivalents. Bibliography. Glossary. Contains 250 recipes and 100 illustrations. Price: $2.95.

This new edition features: (1) New recipes: Over fifty new American-style tofu recipes including Creamy Tofu Dressings, Tofu Teriyaki, Tofu Burgers, Tofu Eggless Egg Salad, and the like. The key to the book is an updated list of favorite tofu recipes plus suggestions for incorporating them into a weekly menu (p. 56). (2) New sections: An extensive new introduction to Soy Protein Foods (p. 66), dairylike products made from tofu (p. 150), dairylike products made from soymilk (p. 302) including soymilk yogurt (fermented), ice cream, kefir, mayonnaise, whipped cream, popsicles, buttermilk, and soy shakes. (3) New chapters: Fermented Tofu and Varieties of Tofu in East Asia. (4) New basic methodologies: The key recipes for homemade tofu and homemade soymilk have been simplified and improved. (5) Updates: A complete listing of the 120 tofu shops and soy dairies now operating in the West; over 60 Caucasian-run shops have opened in the past two years. (6) New Americanized tofu names: Including deep-fried tofu burgers, deep-fried tofu cutlets, deep-fried tofu pouches, deep-fried tofu puffs, silken tofu, wine fermented tofu, and fresh soy puree. A major goal of this book is to coin English names for tofu products that will catch on and come to be used in labeling commercial products, in cookbooks, etc. (7) No sugar.

Note 1. This is the earliest English-language document seen (April 2013) that contains the following terms related to deep-fried tofu: "fried tofu cutlets" or "deep-fried tofu cutlets" (p. v, to refer to *nama-agé*), "fried tofu burgers" or "deep-fried tofu burgers (to refer to *ganmodoki*), "tofu treasure balls" or "deep-fried tofu treasure balls" (p. v, 269, to refer to *Hiryozu*), "fried tofu pouches" or "deep-fried tofu pouches" (p. v, to refer to *aburagé*).

Page 110: "In Japan, tofu is also called *momen-goshi* ('cotton-filtered') to distinguish it from its popular counterpart *kinu-goshi* ('silken tofu')." Note 4. This is the earliest English-language document seen (April 2013) that uses the term "silken tofu."

Note 5. This is the 2nd earliest English-language document seen (Oct. 2011) that contains the term "Wine-fermented tofu" (p. 361).

In Jan. 1988 a new printing (but not a new edition) of this book (the 13th), slightly revised, appeared. It had a new cover and many new small illustrations. The subtitle was "Protein Source of the Future–Now!" The heading: "The World's Bestselling Book on Tofu." Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

3123. Shurtleff, William. 1979. Protein source for the future. *Cosmos* (*NSW, Australia*) 6(6):1, 4-5. Jan.
• ***Summary:*** Gives ten reasons why soybeans will be the protein source of the future: 1. Optimum land utilization. 2. Lowest cost protein. 3. High nutritional value. 4. Time tested. 5. Remarkably versatile. 6. Appropriate technology. 7. New dairylike products. 8. Hardy and adaptive. 9. Free nitrogen fertilizer. 10. Energy and resource efficient. "All of these ten factors work together synergistically, reinforcing one another, to give added weight to the prediction that soybeans will be a key protein source for the future on plant earth."

Note: This information was published in July 1979 in *The Book of Tempeh* (p. 21-24). Address: Lafayette, California.

3124. Singh, B.B.; Saxena, M.C. 1979. Soybean production in India. *Indian Farming* 28(10):7-9. Jan. Series 2.
• ***Summary:*** The soybean has been traditionally grown in the northern hills and several other scattered areas of India for many centuries, although there is no available record as to when it was introduced to the country. It has become an essential part of the daily diet in those regions and has been known by various names such as Bhat, Bhatman, Bhatmas, Ramkulthi, Bhut, Kalitur, Teliakulth and Garryakalay. Since the varieties grown in these areas were apparently poor yielding types, with small black seeds and twiny growth habit, they did not become popular in India. Although several attempts have been made to popularize soybeans, these attempts have failed, probably due to lack of sustained efforts and systematic trials.

"A fresh interest in soybean became evident with the

preliminary studies conducted at Pantnagar and Jabalpur during the years 1963 to 1966 using improved varieties from the U.S.A. Some of the U.S. varieties yielded between 30 and 36 quintals per hectare (ha) which was almost 3 times as compared to the traditional kharif pulses. [Note: 1 quintal = 100 kg.] Encouraged by these results, the Indian Council of Agricultural Research initiated an All India Co-ordinated Research Project on Soybean in 1967 with 3 main centres (Pantnagar, Jabalpur and Delhi) and several sub-centres covering different agro-climatic regions. The main emphasis of the project has been to develop high-yielding varieties and package of cultural practices for soybean cultivation in various agro-climatic zones of India."

The acreage under soybean has been increasing every year, although not as fast as targeted, from the modest beginning of about 300 ha of soybean in kharif 1968. The total area under soybean in kharif 1975 was about 160,000 ha of which about 82,000 ha were in U.P. and about 40,000 ha in M.P. The fastest expansion in soybean cultivation has been in the low hills and foot-hills (Bharbar) of U.P. where the average yield of soybean has ranged from 20 to 36 quintals per ha giving the highest net return per acre as compared to any other crop. Soybean is also becoming popular in Madhya Pradesh on current fallows.

The main problem in expanding the area under soybean is the limited market for soybean and uncertainty of price.

"Most of the indigenous soybean varieties like 'Kalitur,' 'Bhat' and 'T-1" are black seeded and, therefore, many people feel that black color is better than yellow. This is not true... The main reason for growing these varieties in India is not the black seed color but the small seed size. It has been experimentally demonstrated that small seeded varieties do not lose viability during the storage and as such there is no germination problem."

Extensive research has been done in India on food uses of soybeans. Wheat flour fortified with soybean flour makes more nutritious and good quality chapati. Detailed processes have been established for preparing soy-milk, soy-cheese, soy-curd, soy-sweets, soy-nuts and soy-baby foods both at home level and at commercial scale. G.P. Pant University of Agriculture and Technology, Pantnagar has been running a pilot plant producing about 1,000 liters of soybean milk per day. Similar attempts are also being made at Nagpur.

"Industrial processing of soybean to produce protein-rich food has been initiated in the country, but only on a small scale. The defatted soy-flour available from some solvent extraction plants is being used by bakeries for making bread, chocolates and biscuits. The Soya Production and Research Association, Bareilly in collaboration with G.B. Pant University of Agriculture and Technology, Pantnagar have been manufacturing a series of products using an extruder cooker. Products like, 'Nutri Nugget' with 50% protein and 'Proteinsnack' with 15% protein have become extremely popular." Address: G.B. Pant Univ. of Agriculture & Technology, Pantnagar.

3125. *Soyanews* (*Sri Lanka*). 1979. Soya to the rescue of coconut. 1(5):1. Jan.
• ***Summary:*** "The destruction of over 2 million coconut trees in last November's cyclone has alerted the Government to the imminent shortage of coconuts for cooking, particularly in the Eastern Province.

"Mr. Ranjan Wijeratna, Secretary, Agricultural Development and Research summoned a ten-member committee appointed recently to co-ordinate the work of the Sri Lanka Soyabean Development program, to consider whether supplies of soya milk could overcome the threatened shortage of coconut milk.

Mr. Wijeratne told the committee that the Government was keen on setting up a soya milk manufacturing plant close to the area of cyclone destruction."

"The Soyabean Foods Research Centre as already been conducting in-service training courses and has trained about 30 field workers in the preparation of soya foods."

The names and affiliations of the ten members are given. They include: Mr. E. Herath, Department of Agriculture (Chairman). Dr. C.N. Hittle (INTSOY Consultant), Dr. H.E. Fernando and Mr. L.R. Senaratne (Dep. of Agriculture).

A photo shows a Sarvodaya worker learning the secrets of soya cooking at the home kitchen of the Soyabean Foods Research Centre, Gannoruwa. Training in soya cooking is free.

3126. *Soyanews* (*Sri Lanka*). 1979. Warming up with soya: Recipe. 1(5):1. Jan.
• ***Summary:*** "Mrs. Ellen Jayawardene, who works at the Home and Village Level Section of the Soyabean Foods Research Centre at Gannoruwa, says that shorter and easier ways of cooking soya, using soya flour and broken beans, have been discovered.

Three illustrations show: (1) Dehulling soyabeans using a traditional Sri Lankan *kurakkan gala* (hand turned stone mill, or quern). (2) Winnowing in a woven bamboo winnow to separate hulls. (3) Pouring dehulled and broken soya beans directly into a pot of boiling water on a wood stove.

A recipe for Soya cutlets is given.

3127. **Product Name:** Vitasoy (Soymilk).
Manufacturer's Name: Vitasoy (USA) Inc. (Importer). Made in Hong Kong by Hong Kong Soya Bean Products Co. Ltd.
Manufacturer's Address: San Francisco, California.
Date of Introduction: 1979. January.
Wt/Vol., Packaging, Price: 250 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Spot in Soyfoods. 1982. Winter. p. 56. "Vitasoy in America." Shurtleff & Aoyagi.

1984. Soymilk Industry & Market. p. 32-33, 43-44, 130-53. "In January 1979 Yvonne and Irene Lo incorporated The Soya Bean Products Co., N.A. (SBPC) as a marketing company for HKSBP's products in North America. They opened headquarters that month on Bush Street in San Francisco and began immediately to market and distribute plain and malted Vitasoy in Canada in 250 ml Tetra Brik Cartons. In February 1981 they introduced the same products to the USA, immediately after the U.S. Food and Drug Administration lifted its ban on aseptic Tetra Pak type cartons (because of a disproven concern over hydrogen peroxide residues from sterilization). Thereafter, many major Asian soymilk manufacturers also began to import soymilk to America."

3128. Wang, H.L.; Mustakas, G.C.; Wolf, W.J.; Wang, L.C.; Hesseltine, C.W.; Bagley, E.B. 1979. Soybeans as human food: Unprocessed and simply processed. *USDA Utilization Research Report* No. 5. iv + 54 p. Jan. Slightly revised, July 1979. Jan. No index. 28 cm. Compiled for USAID. [50+ ref]
• ***Summary:*** Contents: Introduction. 1. Soybean food uses in Asia. China: Soaking dry soybeans, tou chiang (soybean milk), tou fu (soybean curd), processed tou fu products, tou fu pi (protein-lipid films), huang tou ya (soybean sprouts), whole soybeans, fermented soybean foods, production and consumption.

Japan: Tofu (soybean curd), kinugoshi tofu, processed tofu products, yuba (protein-lipid film), soybean milk, gô (ground soybean mash), daizu no moyashi (soybean sprouts), whole soybeans (edamame {fresh green soybeans}, whole dry soybeans, kinako), fermented soybean foods: Production and consumption.

Korea: Tubu (soybean curd), processed tubu product, soybean sprouts, whole soybeans (green soybeans, parched or roasted soybeans, boiled soybeans), soybean flour ("Soybeans are first roasted and then ground into flour. The flour is used extensively as an ingredient in food preparations." Note: The name of the roasted soy flour is not given), fermented soybean foods (Soy sauce and [soy] bean paste are commonly used in Korea as flavoring agents. Natto is also enjoyed). production and consumption [of soybeans in Korea].

Indonesia: Tahu or tahoo (soybean curd), bubuk kedele (soybean powder. "Soybeans of the white variety are roasted until no beany flavor can be detected. They are ground into a powder and mixed with such spices as garlic and chili"), tempe kedele, tempe gembus [the name in Central and East Java for okara tempeh], oncom tahu [the name in West Java for okara onchom], other soybean products (soybean sprouts, green soybeans, roasted and boiled soybeans, kecap {soy sauce}, tauco {soybean paste}), food mixtures, production and consumption.

Thailand: Tofu (*tauhu*), soy sauce, green soybeans in the pods (*tourae*).

Philippines: Soybean sprouts, soybean coffee, soybean cake, soybean milk, tou fu and processed tou fu products, production and consumption.

Burma. India. Malaysia. Nepal. Singapore. Sri Lanka (Ceylon). Vietnam. Middle East. References–Soybean food uses in Asia.

2. Soybean food uses in Africa. Ethiopia: Injera, wots and allichas, kitta, dabbo, dabokolo, porridge. Kenya. Morocco. Nigeria: Whole soybeans, soybean paste, corn-soy mixtures (soy-ogi). Tanzania. Uganda. Production. References–Soybean food uses in Africa.

3. Soybean food uses in Europe and U.S.S.R.

4. Soybean food uses in Latin America. Argentina. Bolivia. Brazil. Chile. Colombia. Ecuador. Guyana. Paraguay. Peru. Uruguay. Venezuela. Mexico: New village process, commercial developments. Honduras. Costa Rica. Panama. Dominican Republic. Jamaica. Haiti. Trinidad. References–Soybean food uses in Latin America.

5. Soybean food uses in North America. United States. Canada. References–Soybean food uses in North America.

6. Soybean food uses in Australia. 7. Summary of soybean food uses. Traditional soybean foods: Soybean milk, soybean curd and processed soybean curd products, protein-lipid film, soybean sprouts, tempe (tempeh), green soybeans, boiled soybeans, roasted soybeans, soybean flour, soy sauce, fermented soybean paste, fermented whole soybeans, natto, fermented soybean curd. Experimental soybean foods: Whole soybean foods, soybean paste, soy flour, soy beverage. Production and consumption.

8. Simple village process for processing whole soybeans: Equipment, process, sanitation requirements, quality of product, evaluation of product in formulas and procedures for family and institutional use in developing countries. NRRC village process. 9. Industrial production and selling prices of edible soybean protein products.

10. Barriers to accepting and using soybeans in food: Availability. Cultural and social factors. Texture. Flavor. Nutrition and food safety. Technology development. Technology transfer.

Tables: (1) Soybean production, imports, and total supply in Taiwan, 1962-1975. (2) Consumption of soybean foods in Taiwan, 1964-1974 (incl. tofu, which increased from 18.75 kg per person per year in 1964 to 32.04 kg per person per year in 1974). (3) Supply and disposition of soybeans in Japan, 1971-1974. (4) Metric tons of whole soybeans used in the production of traditional foods (miso, shoyu, tofu and others) in Japan, 1970-1974, etc. Address: NRRC, Peoria, Illinois.

3129. *Whole Foods* (*Berkeley, California*). 1979. The beaning of Motown. 2(1):41. Jan.
• ***Summary:*** In January 1978, Carol Ann and Timothy Huang, founders of the Yellow Bean Trading Co. in Detroit, Michigan, started to distribute tofu, soymilk, and tempeh

made at The Soy Plant in Ann Arbor, Michigan. Yellow Bean takes the products to health and natural food stores, restaurants, fruit markets, and Oriental grocery stores in Detroit. In the beginning they distributed 100 lb/week of tofu; that figure has now risen to 400 lb/week. They also carry nutritional yeast, sprouts, textured vegetable protein, soybeans, soy flour, and *The Farm Vegetarian Cookbook,* which contains excellent soyfoods recipes.

Timothy and Carol Ann made soyfoods a major part of their diet while living on The Farm in Tennessee. They were married on a branch of The Farm in Wisconsin, where their son was born. Carol and Tim now also give demonstrations on how to cook with tofu and other soyfoods.

"As the wholesale business grows, the Huang family is now setting up a store and restaurant, Yellow Bean Vegetarian Foods. At first, the restaurant is planned as a carry-out, including a deli case." Later they hope to expand to a larger location, open a sit-down restaurant, and begin making their own tofu and soymilk.

The Huangs feel "really glad to be part of this 'revolution,' and offer what we've learned."

3130. *Whole Foods* (*Berkeley, California*). 1979. The food of the future. 2(1):22-24. Jan.

• ***Summary:*** The article begins: "Why devote an entire issue of *Whole Foods* to the subject of soyfoods? Soyfoods are a rapidly growing part of the natural foods industry..."

"The bringing of the 'Soyfoods Revolution' to the natural foods industry is the work of individuals, toying and playing with new recipes in their own kitchens and shops. No person deserves more credit for this revolution than William Shurtleff who, along with Akiko Aoyagi, wrote *The Book of Tofu,* and told us all how to do it. (An updated pocket-size version of *The Book of Tofu* is just off the presses of Ballantine Press.) Shurtleff travels the globe, sharing his expertise on soyfoods, covering topics as specific as chip-dip recipes and as broad as the role of soybean production in future patterns of world protein hunger.

"Other individuals, most of them with small soyfoods shops of their own, met recently to form the Soycrafters Association of North America (SANA), which is likely to serve as the backbone of the Soyfoods Revolution in the natural foods industry. [Note: This historic first meeting was held on 28-30 July 1978 at The Soy Plant in Ann Arbor, Michigan.] SANA selected Larry Needleman as its first president. Needleman, whose Bean Machines, Inc. imports the prime line of Takai tofu and soymilk equipment from Japan, has been a major source of information about soyfoods equipment for our industry.

"Needleman wrote about the spirit of the new organization at its first gathering in Ann Arbor.

"'Imagine a group of seventy people representing enthusiastic dedication (almost to the point of craziness) to the production and distribution of tofu and other soyfoods, gathered in an informal setting in a university town in the Midwest, with meetings scheduled from nine in the morning till eleven at night–and you've got a good idea of what went on... 'Sharing began immediately. Groups of people gathered here and there and began asking each other about their shop or organization. Those passing by would hear a familiar word such as 'yield' of [sic, or] 'pressure-cooker' and just stopped to join the conversation. It was apparent that here was a gathering destined to be stimulating and mutually beneficial...

"'The first evening, Bill Shurtleff set up a slide show about tofu and miso production in Japan. The presentation ran the gamut from small, traditional shops built over their own well, to large, fully-automated factories turning out tens of thousand of pounds per day. Bill answered questions and added a personal touch to the showing because he had shot the photos himself over a period of years, and was familiar with the language, traditions and production of the Japanese...

"'On Saturday morning, The Soy Plant showed us their method of producing tofu and soymilk. Those with less experience absorbed information and asked questions, and those with more experience volunteered information, clarified points and offered suggestions. Then Wataru Takai, the overseas manager for Takai Tofu and Soymilk Equipment Co., Japan's largest manufacturer of this equipment, explained principles behind each step of production, and the uses of the equipment...

"'At a later session, it was remarked that many soyfoods producers are operating on an inefficient and labor-intensive basis. Some felt this was a good way to begin, first becoming intimate with the steps of production and developing a market 'track record,' and then using that base to upgrade production by purchasing more sophisticated equipment. Others felt that the time and energy involved in putting together a makeshift shop which was outgrown in about six months would be better spent in the capital to start at higher technological level...

"'In one of the most popular and exciting discussions of the conference, the consensus of the group was that tofu and soymilk were the foods that Americans have been waiting for. A list of related products that have been marketed with incredible success included tofu burgers, no-egg salad, honey soymilk ice cream, tofu chip-dips and dressings, flavored soymilk, tofu 'mayonnaise,' and pressed, marinated tofu. There was unanimous agreement that it was these new soyfoods that would capture the interest and palate of middle America, people who had turned up their noses at that tasteless white cake of tofu floating in water...

"'Later we discussed the problems of proper storage and display of our products. In US food markets, tofu has usually been sold with Oriental foods in the vegetable section. Getting it moved to a cooler, more appropriate cheese display case, where it will stay fresh longer and compete favorably

with dairy products, has met with resistance...

"'In the evening, another slide show by Bill Shurtleff showed us how tempeh, a key protein source for millions of people in Indonesia, is quickly and simply produced as a cottage industry in their homes. Having sampled this unusual food at lunch, we were eager to learn about it because it was delectable. Somewhere between a deep-fried fish cake and Kentucky fried chicken in flavor and texture, it lent itself to use in a seemingly endless variety of ways...'

"Toward the end of the conference, discussion turned to marketing and finance. It was found that some firms lacked capital for growth, while others had enough capital but needed greater management skills to keep up with the growing demand for soyfoods. That demand is not uniform nationwide. Different regions show various levels of consumer awareness, interest in, and acceptance of soyfoods. Printed hand-out sheets and cooking classes were suggested as promotional efforts were an important part of the creation of a desirable image for soyfoods.

"Before leaving Ann Arbor, the participants formed the Soycrafters Association of North America as a trade association to promote soyfoods and exchange information among the members. With the founding of SANA, the Soyfoods Revolution took its longest recent stride. Soycrafters were no longer isolated persons, groups and shops, but had become a nationwide network devoted to the same purposes, sharing their experiences for mutual benefit and the ultimate benefit of the American consumer."

Note: The word "soyfoods" is used throughout this article.

3131. Howes, Charles D. 1979. Re: More about soymilk at Loma Linda Foods. Letter to William Shurtleff at New-age Foods Study Center, Feb. 12–in reply to inquiry. 2 p. Typed, with signature on letterhead. [3 ref]

• ***Summary:*** "We only use an isolate [soy protein isolate] in the infant formula i-Soyalac, all of our other products are made starting with the whole bean. i-Soyalac was developed several years ago in response to market demands. The main reason for the demand, I rather suppose, was due to the reduced flatulence associated with an isolate product. It is much more simple to make a product starting with the isolate so that if only one line were to be built it might be a little less expensive to formulate starting with the isolate due to reduced capital investment. However, even when all the necessary equipment is in, there is still some trade-off in making the isolate product vs. the whole bean product. Some of these are (a) reduced time for production when starting with an isolate, (b) reduced clean-up and sanitation because less equipment is used, (c) reduced need for storage space for bulk beans since the isolate comes in bags (d) no soy fines [okara].

"The advantages of starting with the bean over the isolate include (a) a better flavor (at least to some people), (b) better stability, (c) some oil from the bean is utilized, (d) the cost [of ingredients] is a little less than starting with isolate, but as mentioned above there is a trade-off and more equipment, steam, time, etc. are required and the problem of dealing with the soy fines must be handled.

"Trypsin inhibitor inactivation is approached realistically in our process. The paper by Baker & Mustakas (1973) is enclosed and might be helpful to you in your discussion of this problem. Infant formulas such as Soyalac contain only residual amounts of trypsin inhibitor since about 95-97% is destroyed during processing (see *J. Agric. Food Chem.* 24: 393-397 for exact levels).

"Dr. Harry W. Miller's International Nutrition Laboratory started making soymilk in the United States in the autumn of 1939. Production ended in the Shanghai plant on 13 August 1937 due to the war. The plant was destroyed by fire and bombing at the beginning of World War II. A copy of the rare booklet "The Story of Milk from the Soya Bean" published by Dr. Miller in 1944 is enclosed and will give some interesting details.

"The first American to work with soymilk (I believe) was John Harvey Kellogg under whom Dr. Miller worked and studied while in medical school. Dr. Kellogg was not only Harry Miller's supervisor at the food plant, but also the president of his medical school, and his professor in several classes. Enclosed are a couple of pages from Schwarz's biography of Kellogg that might be helpful in your study. Miller took a good idea and developed it into a manufactured product. Miller did a lot of research and development as well as engineering to make his idea a reality. The plant became part of Loma Linda Foods in 1950.

"Sincerely,... 3 enclosures." Address: Loma Linda Foods, 13246 Wooster Rd., P.O. Box 388, Mount Vernon, Ohio 43050. Phone: (614) 397-7077.

3132. Howes, Charles D. 1979. Re: Details about soymilk at Loma Linda Foods. Letter to William Shurtleff at New-age Foods Study Center, Feb. 27–in reply to inquiry. 1 p. Typed, with signature on letterhead. [1 ref]

• ***Summary:*** Discusses: His views on the boiling water grind. The researchers at Cornell University (Ithaca, New York) deserve full credit for the important work they did. Loma Linda was issued patent No. 3,288,614 in 1966 on the process they were using during the 1960s. Describes the steps in that patent issued to C.P. Miles. Address: Loma Linda Foods, 13246 Wooster Rd., P.O. Box 388, Mount Vernon, Ohio 43050. Phone: (614) 397-7077.

3133. Klein, Barbara P. 1979. Re: Comments on tofu and soymilk production manuscript. Trypsin inhibitors. Letter to William Shurtleff at New-Age Foods Study Center, Lafayette, Feb. 28. 1 p. Typed, with signature on letterhead.

• ***Summary:*** It is still unclear whether trypsin inhibitors are important in human nutrition, and if the 80% inactivation

which undoubtedly occurs during production of tofu and soymilk is adequate. She and co-workers have been doing some studies of trypsin inhibitor destruction in home cooked soybeans. The main objective is to determine if partially cooked ground soybeans can be satisfactorily incorporated into food products such as bread and meatloaves. Address: Asst. Prof., Foods and Nutrition, 274 Bevier Hall, College of Agriculture, Univ. of Illinois, Urbana, IL 61801. Phone: 217-333-3790.

3134. Sheridan, Margaret. 1979. Mighty bean zaps food bills, packs in protein. *Detroit News.* Feb. 28. p. E-1, E-9.
• ***Summary:*** A weak history of the soybean followed by recipes from the book *Barbara Farr's Super Soy* (Keats Publishing). The article begins: "Fed up with the soaring cost of meat? Dine like the cows. Eat soybeans. These homely beige beans have been nourishing livestock, peasants and dynasties for 5,000 years."

A great half-page illustration (cartoon), by John R. Clarey, shows Super Versatile Soy, a character like Superman with a bean-like body, a cape, and two thunderbolts in one hand. Address: News staff writer.

3135. Dominguez de Diez Gutiérrez, Blanca. 1979. Alimentacion integral para una vida plena: Los mil usos de la soya [Whole foods for a full life: The thousand uses of soya]. San Angel, Mexico: Editorial Posada. 232 p. Feb. Dedicated to Swami Pranavananda Saraswati. Illust. 21 cm. Series: Biblioteca Natura. [13 ref. Spa]
• ***Summary:*** Contents: Introduction. Satvic (pure) cookery and its contents. Part I: Food for the body. I. Transcendence. II. Satvic cookery (pure). 1. Balanced diet. III. What ingredients are necessary? Discusses whole grains, starting with a lengthy section on soya, plus 6 pages of nutritional tables. IV. How to start? (p. 71-140). Each of the following sections contains basic recipes and draws on *The Book of Tofu* by Shurtleff and Aoyagi. 1. Go (Fresh soy puree, *Masa de frijol de soya*). 2. Soymilk (*leche de soya*). 3. Tofu (*Cuajada de soya*). 4. Okara (*Sobrante* [*residue*] *de la masa de soya*). 5. Kinako (*Harina tostada de soya*), including soy coffee (*Soyafé–Cafe de soya*), soy nuts (*Soya–Nuez*), and whole dry soybeans (*Frijol de soya natural*). 6. Other soy products: Soy flour (*harina de soya*), soy chocolate (*choco soya*), soy oil (*aceite de soya*) are illustrated, but with no text.

V. What can be done with seeds? (p. 141-92) 1. Cereal grains, legumes, and oilseeds. Recipes–Pickles (Curtidos or encurtidos) and sauces in the style of the Hindu culinary art, to accompany dishes composed of cereals. 2. Sprouts (*Germinados,* p. 179-86, including *germinados de soya* = soy sprouts). 3. Coconuts. VI. Useful advice.

Part II: Food for the mind and spirit. Discusses the teachings of Swami Pranavananda Saraswati and yoga. A brief introduction to Swami Pranavananda and his world yoga mission.

Letter from Blanca. Though copyrighted in 1978, this book was not published (6,000 copies) until 1979. A second edition of 5,000 copies was published in Nov. 1979. Address: Mexico.

3136. Plamil Foods. 1979. Turn over to Plamil fare (Ad). *Alive* (*England*). Jan/Feb. p. 19.
• ***Summary:*** An 1/8 page ad. A cherub holds a heavenly scroll that announces: "Soya Plantmilk, Delice (cream replacement), Savree, Rice Pudding with Sultanas."

"Send for literature (sae [self addressed envelope]) please." Address: Plamil House, Bowles Well Gardens, Folkestone, Kent [UK].

3137. Takai Tofu & Soymilk Equipment Company. 1979. Takai catalog of large-scale equipment. 307 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan. 6 p. Feb. 30 cm.
• ***Summary:*** This catalog is printed with green ink on glossy white paper. 29 photos in horizontal rectangular frames show the company's many pieces of equipment and systems for manufacturing tofu and soymilk. The catalog is divided into five sections: (1) Front page and introduction; (2) Basic tofu & soymilk equipment; (3) Deep-frying equipment and systems; (4) Whole systems; (5) Ingredients & literature. For more information, contact Wataru Takai.

Letter (fax) from Wataru Takai. 1996. Aug. 2. Takai's records show that their green catalog of large-scale equipment was printed in Feb. 1979. Address: Ishikawa-ken, Japan. Phone: (0762) 48-1355-59.

3138. Zmora, Ehud; Gorodischer, R.; Bar-Ziv, J. 1979. Multiple nutritional deficiencies in infants from a strict vegetarian community. *American J. of Diseases of Children* 133(2):141-44. Feb. [16 ref]
• ***Summary:*** Four children, ages 5-13 months, from a religious vegan commune, the Black Hebrews in Israel, were studied. They began to arrive in Israel from the USA in 1967. Their number is estimated today as 1,000 and their social structure is that of a commune. Their diet is totally vegetarian. They showed severe protein/calorie and vitamin B-12 deficiencies. Deficiencies resulted from diets that were extremely low in both calories and protein. After starting to wean their children, starting at age 3 months, they fed them a variety of "totally vegetarian" foods including "almond milk" and "soya milk" which they prepared themselves. Address: Sokora Univ. Hospital, and Faculty of Health Sciences, Ben-Gurion Univ. of the Negev, Beer-Sheba, Israel.

3139. Turner, R.W.D. 1979. Vegan diet and health. *British Medical Journal* i(6163):613. March 3. [8 ref]
• ***Summary:*** This letter, by a non-vegetarian physician, recounts numerous health, ethical, and economic advantages

of a vegan diet. "It seems that plant (soya) milk is satisfactory for the infants of the few mothers who do not breast-feed their infants for nine months, as it is for adults. It has potential advantages over cows' milk, and further research is being undertaken in London. Meanwhile it is being used by hospitals for babies who are intolerant to cows' milk." Address: Dep. of Medicine, Univ. of Edinburgh, Edinburgh, Scotland.

3140. Davis, Melissa. 1979. The soy of cooking: Out of the field, into the kitchen. *Washington Post.* March 15. p. E1, E14, E20.
• ***Summary:*** Starts by discussing Henry Ford's interest in and work with soybeans. He wanted to find a way to "grow automobiles out of the soil. In 1940 he discovered that soybeans were his bumper crop."

Last week a milestone in soybean history was made on Capitol Hill [Washington, DC]. "About 500 people including senators, representatives, ambassadors, diplomats and freeloaders turned up at the International Soybean Fair.

While Chai Zemin (of the People's Republic of China) and Bob Bergland (U.S. Secretary of Agriculture) stood shaking hands, people pushed and shoved to get to the bar and to hors d'oeuvres made from every soybean product imaginable–soy flour, bean curd, textured vegetable protein (TVP), soy milk, soy sauce, etc. Also mentions tempeh and miso.

The event was largely sponsored by the Food Protein Council and its member companies. "There were a few interesting hors d'oeuvres including soy nuts and garlic smothered bean curd." Contains recipes.

3141. McGarrahan, Eugene T. 1979. Re: FDA regulations that would bear on the term "soymilk" and other soy products. Letter to William Shurtleff at New-Age Foods Study Center, March 22. 2 p. Typed, with signature on letterhead.
Address: Chief, Dairy and Lipid Products Branch (HFF-415), Div. of Food Technology, Food and Drug Administration, Public Health Service, Dep. of Health, Education, and Welfare, Washington, DC 20204.

3142. Andrews, W.H.; Wilson, C.R.; Poelma, P.L.; Romero, A.; Mislevic, P.B. 1979. Bacteriological survey of sixty health foods. *Applied and Environmental Microbiology* 37(3):559-66. March. [16 ref]
• ***Summary:*** "A bacteriological survey was performed on 1,960 food samples encompassing 60 types of health foods in the Baltimore-Washington, DC, metropolitan area. No consistent bacteriological distinction (aerobic plate counts, total coliform, and fecal coliform most probable numbers) was observed between foods labeled as organic (raised on soil with compost or nonchemical fertilizer and without applications of pesticides, fungicides, and herbicides) and their counterpart food types bearing no such label. Types and numbers of samples containing *Salmonella* were: sunflower seeds 4, soy flour 3, soy protein powder 2, soy milk powder 1... The occurrence of this pathogen in three types of soybean products should warrant further investigation of soybean derivatives as potentially significant sources of *Salmonella.*"

Though these organisms were isolated from these dry soy protein products, the products were not considered to be potentially hazardous. Their low water activity value prevents "rapid and progressive growth."

"Interestingly, soybeans themselves were one of the maximally sampled food types, yet *Salmonella* was not detected in any of the 60 soybean samples examined." It is conjectured that trypsin inhibitors, typically removed during processing the soybeans into food, may inhibit *Salmonella.* Address: Div. of Microbiology, Food and Drug Administration, Washington, DC 20204.

3143. *Ann Arbor Observer* (*Michigan*). 1979. One of the few U.S. tofu manufacturers is right here in Ann Arbor: At the Soy Plant on Ann Street a collectively-run business combines political and nutritional interests to produce over 2000 pounds of soybean curd weekly. March. p. 29. [1 ref]
• ***Summary:*** This February morning Steve Fierling [sic, Fiering] arrives at The Soy Plant at 5 a.m. to start the day's work in the back room of the former pizza carryout at 211 East Ann St. in Ann Arbor. He turns on the lights and the boiler, then starts cooking soy milk for the first batch of tofu. Fiering is part of a nine-member collective; this week he's the cooker. The first batch of tofu should be ready by 7 a.m. Making tofu is a demanding discipline. Fiering, Sue Kalen, Chris Coon, and Al Dynak were the original founders of The Soy Plant one and a half years ago. Steve originally came from Camden, New Jersey, to the University of Michigan, where he majored in geology and, as he puts it, "minored in extracurricular political activism." Politics led to a job as coordinator of the People's Food Co-op, and that led to helping to start The Soy Plant. The Soy Plant is one of the few places in America where people can buy fresh tofu daily. A low-cost vegetable source of protein, retails for $0.70/lb in the consumer's tub or $0.85 in a plastic tub.

Henry Ford was deeply interested in soybeans. He believed that "mechanized soybean production would help free the farmer from the drudgery of dealing with animals by eliminating the need for most meat... In fact his large demonstration soybean farm was near Macon, south of Saline, in Lenawee County." Tofu can become an economical vegetarian alternative to ground beef.

The company began as the Tofu Collective, a Sundays only operation at Wildflour Community Bakery around the corner on North Fourth Avenue. A few months later, in the summer of 1977, the name was changed to The Soy Plant, and the collective moved into the basement of Eden Foods, where it attempted to produce tofu to sell wholesale. Fiering

recalls that the early days were *really* hard. They used to work 14-16 hours a day. But the hard work paid off. By last spring The Soy Plant had the track record and credibility to be able to raise $10,000 in loans to purchase more efficient equipment and move into larger quarters at its present location on Ann Street near Fourth.

For each $100 loan, supporters were compensated with an unusual but sensible kind of interest: a pound of tofu each week, which yields a 35% annual return. Backers included both typical co-op supporters and quite a few native Asians eager to find a local source of fresh tofu.

Members of the collective now earn $3.25 an hour–a big increase over the $50 a week that they were paid in the beginning. But that cheap labor was the capital that got the business started. Current members of the collective are Fiering, Sue Kalen, Dan Ecclestone, Anne Elder, Kurt Getman, George Hanley, Mike Mazzie, Jerry McKenna [sic, MacKinnon], and Ann Wilson.

The Soy Plant makes its tofu in 50-pound batches. Of the more than 2,000 lb of tofu it makes each week, about 350 lb are sold at The Soy Plant retail store, where soy milk, soy byproducts, and prepared soy foods like sandwich spreads, missing egg salad, soysage, and pies are also sold. Another 1,700 lb/week of tofu goes to local restaurants, retail stores (incl. Meijer's Thrifty Acres, Asian-, and natural food stores), and to Midwest Natural Foods, which distributes the tofu to as far away as Pennsylvania and West Virginia.

Soy Plant workers have strong political motivations. They believe that soy products can help to solve world food problems. Fiering, a decentralist, talks about his personal beliefs. An excellent introduction to tofu is the 15-cent pamphlet titled "What is tofu?" available at The Soy Plant. It contains ten popular recipes plus basic information. "For the truly committed, there's the encyclopaedic *Book of Tofu: Food for Mankind* by William Shurtleff and Akiko Aoyagi." Shurtleff "has been the tofu guru for America in the 1970s, and this book has inspired and instructed most of the country's approximately fifty tofu shops operated by non-Asians."

A sidebar titled "Take-out tofu treats" mentions the following made and sold at The Soy Plant: Tofu-tahini spread. Tempeh–which resembles Brie cheese in texture and flavor. Tofu tarts in several flavors: pecan cream, pumpkin cream, yam, mocha, and lemon.

Photos by Peter Yates show: (1) Anne Elder adding soy puree to boiling water in the cooking kettle to make a foamy brew that is eventually curded to become tofu. (2) Steve Fiering filling one-pound tofu retail packages (in a bathtub) with water from a hose before shipping. Address: Ann Arbor, Michigan.

3144. **Product Name:** [Multilac {Soy Isolate-Based Infant Formula} (Powder)].
Foreign Name: Multilac.
Manufacturer's Name: Farmitalia Carlo Erbe S.p.A.
Manufacturer's Address: Via Imbonati 24, Milano 20159, Italy. Phone: 269-951.
Date of Introduction: 1979. March.
New Product–Documentation: Thomson. 1979. *Journal of the American Oil Chemists' Society.* March. p. 386-88. Soyfoods Center Computerized Mailing List. 1982. July 23.

3145. Kolar, C.W.; Cho, I.C.; Waltrous, W.L. 1979. Vegetable protein application in yogurt, coffee creamers and whip toppings. *J. of the American Oil Chemists' Society* 56(3):389-91. March.
• ***Summary:*** Contents: Abstract. Coffee creamers. Whip toppings. Yogurt.

"Soy proteins and, in particular, isolated soy proteins are being used in coffee creamers and whip toppings. With the increasing cost of traditional protein sources, more food manufacturers are investigating and utilizing soy proteins in other dairy type products. Isolated soy protein added as a replacement for the nonfat dry milk in the production of yogurt increased the viscosity and gel strength to a greater amount than nonfat dry milk and sodium caseinate added on an equivalent protein basis.

"Coffee creamers are generally grouped into 3 categories: liquid, frozen and dry.

"Whip toppings: Isolated soy proteins are being used in the manufacture of 4 types of whip toppings: (1) aerosol, (2) liquid, (3) frozen, and (4) frozen, prewhipped toppings.

"Yogurt: Two styles of yogurt are popular in the U.S. These are Swiss and sundae styles. The Swiss style is a stirred yogurt incubated in bulk. Fruit and flavorings are commonly combined with the yogurt before packaging. The sundae style is produced by the addition of fruit and flavoring to the retail cup followed by the addition of an inoculated milk to the container."

"Research has been conducted to investigate the potential use of isolated soy proteins as replacement of some of the stabilizer products such as plant hydrocolloids and sodium caseinate. The addition of isolated soy protein contributes to increased viscosity and gel strength and will contribute to the protein content while many of the stabilizer products do not... Isolated soy protein may be used to replace the nonfat dry milk or sodium caseinate that is added to milk to improve viscosity and texture of yogurt. In addition, the isolate is effective in reducing syneresis or whey separation from the gel structure of the yogurt." A photo shows Kolar.

Note: This is the earliest published document seen with the term "coffee creamers" (or "coffee creamer") in the title. Address: Ralston Purina Co., St. Louis, Missouri.

3146. **Product Name:** [Vegebaby {Non-Dairy Soy Isolate Infant Formula} (Ready to Feed)].
Foreign Name: Vegebaby.
Manufacturer's Name: Laboratoire Sopharga.

Manufacturer's Address: 5 Rue Bellini, 92806 Puteeux, France. Phone: 177-644-55.
Date of Introduction: 1979. March.
New Product–Documentation: Thomson. 1979. *Journal of the American Oil Chemists' Society.* March. p. 386-88. Soyfoods Center Computerized Mailing List. 1982. July 23.

3147. **Product Name:** Espelin (Soy-Based Infant Formula) [Powder].
Manufacturer's Name: Med-Nim (Pty) Ltd.
Manufacturer's Address: South Africa.
Date of Introduction: 1979. March.
New Product–Documentation: Thomson. 1979. *Journal of the American Oil Chemists' Society.* March. p. 386-88.

3148. **Product Name:** [Mapron Soymilk (Plain, with Orange Juice, Coffee Mix, or Fruit Sour {Apple & Prune})].
Foreign Name: Mapuron Tônyû (Sutoreeto, Orenji Kajû-iri, Koohi Mikksu, Fruutsu Sawaa).
Manufacturer's Name: Mitsubishi Chemical Foods Co., Ltd. (Mitsubishi Kasei Shokuhin).
Manufacturer's Address: Ginza 5-13-12, Chuo-ku, Tokyo 104, Japan.
Date of Introduction: 1979. March.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Shurtleff & Aoyagi. 1979. Tofu & Soymilk Production. p. 313. "Mitsubishi Chemical Industries Ltd., Marunouchi 2-5-2, Chiyoda-ku, Tokyo 100, Japan. Tel. 03-283-6659. Mr. Hideyuki Fukuzawa, manager, foods and food additives dept., New Enterprise division. Maker of isolate soymilk and soymilk kefir."

Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Mitsubishi Kasei Shokuhin first made commercial soymilk in Japan in 1979.

K. Tsuchiya. 1982. Dec. Tonyu [Soymilk. 2nd ed.]. p. 72. In March 1979 Mitsubishi Kasei Shokuhin launched Tonyu Mapuron (in Sutoreeto, Orenji Kajû-iri, Koohi Mikksu, and Fruutsu Sawaa flavors) in 200 ml aseptic cartons.

Labels. 1983. Tetra Brik carton, 200 ml. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center; Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-68. By 1982 Mitsubishi was Japan's third largest manufacturer of soymilk. Soya Bluebook. 1987. p. 90. Mitsubishi Chemical Industries, Ltd., Food Division, Marunouchi 2-5-2, Chiyoda-ku, Tokyo 100, Japan. Plant at Kurashiki-shi.

3149. Morr, C.V. 1979. Technical problems and opportunities in using vegetable proteins in dairy products. *J. of the American Oil Chemists' Society* 56(3):383-85. March. [18 ref]
• ***Summary:*** Contents: Abstract. Introduction. The need for improved soy protein isolates. Properties of milk proteins. Properties of soy proteins. Production of simulated dairy food systems. A photo shows Morr. Address: Dep. of Food Science, Clemson Univ., Clemson, South Carolina.

3150. *Plenty News* (*Summertown, Tennessee*). 1979. Soybean project in Guatemala highlands. 1(2):1-3. March.
• ***Summary:*** Plenty was incorporated on 4 Oct. 1974 in the State of Tennessee as a non-profit relief and development corporation. In Solola, Guatemala, Plenty will "be setting up a village-scale soy dairy to produce 100 pounds of tofu and 40 gallons of soy ice bean (ice cream made from soymilk) three times a week. The dairy will supply free ice bean for

local school lunch programs. It is intended that the dairy will produce low-cost, high-protein foods and become a local cottage industry, run by indigenous people of Solola. This project is co-sponsored by the NGO Division of the Canadian International Development Agency [CIDA] as phase one of an Integrated Development Project..." Some 1,500 pounds of soybeans have been donated by UNICEF. Suzy Jenkins is one of the soyfood teachers.

"In cooperation with UNICEF and the International Soybean Program (INTSOY), Plenty has screened 20 varieties of soybeans, determining which ones would grow at 6,000 feet in the Guatemalan highlands... The beans were successful, yielding up to 40 bushels per acre. Approximately 100 farmers from San Andreas Itzapa and neighboring towns will be planting trial patches of soybeans in their own fields this coming spring. Plenty will supply them with the seed of the best-performing varieties."

Contains many purple photos of soybeans and soyfoods in Guatemala, including: Suzy Jenkins carrying water in a pot on her head for a soymilk demonstration. A Guatemalan man standing waist-deep in a field of soybeans with a bearded Farm member looking on, smiling. Guatemalan women crushing soybeans in a metate, filtering out soymilk using a cloth sack, then drinking the soymilk. A little girl drinking soymilk from a big cup. Planting soybeans. Amaranth plants.

Note 1. This is the earliest document seen (April 2004) that mentions Solola, Guatemala, in connection with soy.

Note: This is the earliest document seen (Jan. 2003) concerning Plenty Canada. Address: 156 Drakes Lane, Summertown, Tennessee.

3151. Rackis, Joseph J. 1979. Soy protein foods. In: G.E. Inglett and G. Charalambous, eds. 1979. Tropical Foods: Chemistry and Nutrition. Vol. 1. New York: Academic Press. x + 701 p. See p. 485-510. [65 ref]
• ***Summary:*** Contents: Introduction: Production, human consumption. Constraints on the use of soy protein foods: Production, regulatory standards, nutrition, antinutritional factors, flatulence, functionality, flavor. Soy protein foods: Soybean beverages (soy-based infant formulas, soy beverages), fermented soybean milk, traditional Oriental soy foods, present status. Blended soy foods (Food for Peace / PL-480). Protein foods from immature and germinated soybeans. Summary. Address: NRRC, Agricultural Research, Science and Education Administration, USDA, Peoria, Illinois.

3152. Souza, Genevaldo de; Mori, E.E.M.; Costa, S.I. da. 1979. Estudos preliminares sobre a producao de doce pastoso misto de leite de soja [Preliminary studies on caramelized sweet condensed milk made of cow and soybean milks]. *Boletim do Instituto de Tecnologia de Alimentos* (*Campinas, Sao Paulo, Brazil*) 16(1):35-40. Jan/March. [4 ref. Por]
• ***Summary:*** The soybean "was used in liquid or powdered extract form to study the concentration of mixtures when prepared using an open kettle. The quantity of solids in the final product was 70% (73º Brix, approximately)."

3153. Thomson, W.A.B. 1979. Infant formulas and the use of vegetable protein. *J. of the American Oil Chemists' Society* 56(3):386-88. March. [15 ref]
• ***Summary:*** Contents: Abstract. Infant formulas and the use of vegetable protein. A photo shows Thomson. Table 2, titled "Soy-based infant formulas," gives the name, product form (P = powder. R = ready to eat. C = concentrated liquid) and manufacturer or each. Bon Lact, P, Wakodo Pharmaceuticals, Japan. Espelin, P, Med-Nim (PTY) Ltd., South Africa. Isomil, R C P, Abbott Laboratories (Ross), USA. Lactopriv, P, Topfer, West Germany. Mull-Soy, C, Syntex Laboratories, USA. Multilac, P. Carlo Erbe S.p.A., Italy. Neo-Mull-Soy, R C, Syntex Laboratories, USA. Nursoy, R C, Wyeth Laboratories, USA. Nutri-Soja, C P, N.V. Nutricia, The Netherlands. Prosobee, R C, Mead Johnson, USA. Sobee, P, Mead Johnson, USA. Soja Semp, C, Semper, Sweden. Soyalac, R C P, Loma Linda Foods, USA. i-Soyalac, C, Loma Linda Foods, USA. Vegebaby, R, Laboratoire Sopharga, France. Address: PhD, Ross Laboratories, 625 Cleveland Ave., Columbus, Ohio.

3154. **Product Name:** [Bon Lact {Soy-Based Infant Formula} (Powder)].
Foreign Name: Bon Lact.
Manufacturer's Name: Wakodo Pharmaceuticals.
Manufacturer's Address: Kaji-cho 2-12, Kanda, Chiyoda-ku, Tokyo, Japan. Phone: 03-252-0331.
Date of Introduction: 1979. March.
New Product–Documentation: Shurtleff & Aoyagi. 1975. *The Book of Tofu.* p. 202. "One type of powdered soymilk, called *Bonlact,* is especially formulated for infants and growing children." An illustration shows the cylindrical container.

Thomson. 1979. *Journal of the American Oil Chemists' Society.* March. p. 386-88.

3155. **Product Name:** [Senibon {Powdered Soymilk}].
Foreign Name: Senibon.
Manufacturer's Name: Wakodo Pharmaceuticals.
Manufacturer's Address: Kaji-cho 2-12, Kanda, Chiyoda-ku, Tokyo, Japan. Phone: 03-252-0331.
Date of Introduction: 1979. March.
New Product–Documentation: Shurtleff & Aoyagi. 1979. Tofu & Soymilk Production. p. 313. "A maker of powdered soymilk brand-named Senibon." The company's name is given as simply Wakodo. The address and phone number shown above are also given.

3156. Wilding, M. Dean. 1979. Vegetable protein application

in whey soy drink mix and ice cream. *J. of the American Oil Chemists' Society* 56(3):392-95. March. [6 ref]
• ***Summary:*** Contents: Abstract. Introduction. Whey-soy drink mix. Milk protein production trends. Soy isolate use in ice cream. A photo shows Wilding. Address: Kraft, Inc., R&D Center, 801 Waukegan Rd., Glenview, Illinois.

3157. Yang, Y.H. 1979. Easy-to-prepare soybean foods for villagers. In: G.E. Inglett and G. Charalambous, eds. 1979. Tropical Foods: Chemistry and Nutrition. Vol. 1. New York: Academic Press. x + 701 p. See p. 510-30. [17 ref]
• ***Summary:*** Contents: Introduction: Historical background, current soybean production, soybean–an efficient crop. Soybean for human consumption: Nutritional advantage, soybean utilization, special characteristics of soybean. Easy-to-prepare soybean foods for villagers: Admixing soybean in staple food, foods prepared with full-fat soya flour, other soybean foods (soybean milk, soybean sprout, other preparations). Programs encouraging soybean consumption: Encouraging soybean production, village food processing center, strengthening training and education.

Annexes: 1. Soybean acreage, yield, and production worldwide and by continent, 1961-1977. 2. Efficiency in energy, protein, and fat output of selected crops in different regions of the world. 3. Preparation of full-fat soya flour at village level. 4. Some popular household soybean preparations: Baked soybean in tomato sauce, pig's feet stewed with soybean, soybean cooked with small dry fish. Address: Resource Systems Inst., East-West Center, Honolulu, Hawaii.

3158. **Product Name:** Soy Coffee with Chicory, Soya Meat, Soya Soft Drink.
Manufacturer's Name: Spicer College Products & Services (dba Spicer's Food Specialties).
Manufacturer's Address: Aundh Road, Poona, 411 007, India.
Date of Introduction: 1979. April.
New Product–Documentation: Label and color photo. 1986. Shows package (box). Red, yellow, white, and brown with coffee in cup on front panel. "Delicious Drink. Caffeine Free." Net Wt. 200 gm.

Full-page ad in *The Times of India.* 1979. April 23. p. 11. "From the seed of the soya an idea is born." Spicer's Food Specialties now offers four unusual products for your health: Soya Meat, Soya Coffee (with the full, rich flavour of chicory), soya "milk substitute" (Soyalac–formulated to provide the full nutritive value of buffalo's milk), Soya soft drink–Plus! Wholesome Granola breakfast.

3159. Spicer's Food Specialties. 1979. Display ad: From the seed of the Soya an idea is born. *Times of India* (*The*) (*Bombay*). April 23. p. 11.
• ***Summary:*** A very interesting full-page ad, with lots of white space. In the very center is a large photo of a soyabean. Below it is the caption: "The world's richest source of protein."

In the left column: "4 unusual products for your health. 1. Soya Meat: Now you can eat meat yet stay vegetarian. The secret? Delicious protein-packed soya meat. It comes frozen fresh–just like regular meat. And you can mince it, fry it or roast it–to make korma, keema mutter, seekh kababs and more.

"2. Soya coffee: Now you can drink coffee to your health. Because we've taken out the coffee beans (and the caffeine) from your favourite beverage. Instead we've put in the goodness of soya beans and the full, rich flavour of chicory.

"3. Soya "milk substitute": Soyalac [canned soymilk]. Formulated to provide the full nutritive value of buffalo's milk. It's easy to digest–recommended by doctors around the world for children allergic to regular milk. It's easy to preserve–needs no refrigeration.

"4. Soya soft drink. When you're hot and thirsty, reach for the drink with a difference. A drink that nourishes as it refreshes. Low in fat, high in protein, its perfect for growing children as well as hardworking adults. Fill up the fridge at home. Introduce it to your workers in the company canteen. (Limited distribution).

"Plus! Delicious egg noodles. Wholesome Granola breakfast cereals. Spicy peanut bread."

In the right column: "From a very unusual company. At the age of 23, a young man gave up a promising medical career in America to come to Asia and serve the poor and the sick. In Japan and China he 'discovered' the soya bean and its extraordinarily high protein content.

"That man was Dr. Harry Miller, the inspiration behind Spicer's Food Specialties division. The institute, located near Poona, has its own farms and manufacturing facilities.

"Dr. Miller personally invented several soya products and initiated a continuing programme of developing and manufacturing soya and other health foods around the globe. Spicer's Food Specialties division is part of this world-wide programme.

"Its your assurance of up to date know-how, world class standards of hygiene and uncompromising quality control behind every product from Spicer's.

"Good taste and good sense. Spicer's Food Specialties. Exclusively marketed by Argosy Foods Division, 1st Floor, Dhiraj Chambers, Waudby Road, Bombay 400 001.

"Free! Mini information ad recipe booklet "Food for Thought" at your dealer–or write to Argosy Foods Division.

"Distributed by:" The names, addresses and phone number of four local distributors are given. "Available at better stores and supermarkets everywhere!"

Note: The first soy dairy in India was opened by Seventh-day Adventists in at Spicer Memorial College in Poona. In 1973 they began making soymilk (Soyalac) and

related products. As of Sept. 2010 Spicer Memorial College (which was established in 1915) is active and doing well at their original location, Aundh Road, Ganeshkind. Pune–411 007, India.

Note: An article in this newspaper on 17 Aug. 1973 titled "Ten, plus two, plus three: Time and the educator, by V.V. John, states: "Spicer Memorial College in Poona does the four-year degree syllabus of Poona university in less than half the time, and devotes the rest of the time to vocational and enrichment courses." One of the vocational courses may well have been working in the school's food factory and making soyamilk.

A subsequent article in the same newspaper on 19 Nov. 1974, titled "Career education," also by V.V. John, stated: "In fact, the work of this college qualifies it to be acclaimed a pace-setter." Address: [Poona / Pune, Maharashtra state], India.

3160. Shurtleff, William. 1979. Re: Request for clarification and additional information on making tempeh at Northern Soy. Letter to Andy Schecter at Northern Soy in Rochester, New York, April 29. 1 p. Typed, without signature (carbon copy). [1 ref]

• ***Summary:*** Shurtleff thanks Andy for his letter of March 31, asks him to check Shurtleff's rewritten description for the book *Tempeh Production,* then asks 7 questions with space after each for a response. Andy's handwritten responses are included.

Shurtleff's typewritten P.S. adds: *"Tofu & Soymilk Production* went to the printers last week. We hope to have it ready by the SANA conference. 320 pages." Andy's handwritten note at the end: "Keep up the good work, Bill! We're real interested in *The Book of Tempeh* [not yet published]–especially a pocket size edition will help us to get sales going." Address: New-age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

3161. Banzon, Julian A.; Escueta, Elias E. 1979. Progress in the technology of soymilk production. In: Hideo Chiba, et al., eds. 1979. Proceedings of the Fifth International Congress of Food Science and Technology (1978-Kyoto). Tokyo: Kodansha Ltd.; Amsterdam and New York: Elsevier Scientific Publishing Co. xi + 436 p. See Chapter 2.2, p. 74-78. Illust. Author index. Subject index. 26 cm. Series: Developments in Food Science, Vol. 2. [12 ref]

• ***Summary:*** Contents: Introduction. Progress in processing. Progress in increasing acceptability. Nutritional improvement. Soybean varieties. Customer presentation. Philippine experience in soymilk production (3-year history). Simplified soymilk production. Calculation methods.

"CDCP, a construction group involved in a variety of ventures, entered into a contract with the Food Science/ Technology Department of U.P. Los Banos, to produce PHILSOY, using the latter's 600 bottle/day pilot plant. PHILSOY was well received and production reached 3500 bottles/day. The retail price was kept below a competing skim milk chocolate-flavored beverage, and at about the same price as the better soft drinks. After about 3 years of operation, the venture stopped due to breakdown of the processing equipment which had been made to run at 3500 bottles/day even though it was designed for only 600 bottles/ day. Acquisition of additional equipment was imperative but the contracting parties failed to make a decision. The CDCP experience proved that soymilk production can be profitable in the Philippines. The need for a nutritious beverage is in the hinterlands where transporting a bottled product from a distant processor is expensive. The buying power is low, so that the unit price must also be low. The most expensive step is in-bottle sterilization. A cheaper system lies in serving soymilk "on draught", and prepared locally as a "home brew", a system not uncommon in the villages. Unsold soymilk can be converted to tofu, and the soy press-cake [okara] can be used as an ingredient of the locally made rice cakes (puto)."

Tables show: (1) Nutrient recoveries from different soybean varieties and processing methods (incl. Clark, Bragg, Hsi-Hsi. Protein recovery ranged from 95% to 71.8%. Solids recovery ranged from 89% to 42.2%). (2) Composition of seven soymilks. Address: Dep. of Food Science and Technology, Univ. of the Philippines, Los Baños College, Laguna, The Philippines.

3162. Borhan, M.; Snyder, H.E. 1979. Lipoxygenase destruction in whole soybeans by combinations of heating and soaking in ethanol. *J. of Food Science* 44(2):586-90. March/April. [17 ref]
Address: Dep. of Food Technology, Iowa State Univ., Ames.

3163. Duienga, Suzanne; Duienga, William. 1979. The Soy Plant. *Beansprout Flyer and Pocket Reader: Grand Rapids Food Co-op Newsletter* 2(3): April.

• ***Summary:*** "A current personal interest in soybeans combined with a concern about the high price of tofu at the coop led us to visit the Soy Plant in Ann Arbor. What we found was not a 'plant' or a factory at all, but a downhome group of people with a genuine interest in their work.

"Steve Fiering, the man who first envisioned the Soy Plant, stopped his work to show us around the shop and talk with us about his experiences and his soybean philosophy.

"When asked why Soy Plant tofu costs so much, Steve gave us some pretty impressive reasons. First of all the soybeans that the Plant uses are organic. Secondly, Steve values the people with whom he works and so wages ($4.00 per hour) reflect this. Lastly and most importantly, the Soy Plant is the first of its kind in this area. As with all first, 'We make mistakes and they cost money.'" Steve made much of the machinery in the shop himself.

"The Soy Plant already has a large line of delicious soy

products (all personally sampled and 'wholestomachally' approved of), including soysage, tempeh, soymilk, brown bread, sweet white miso, spiced tofu, spreads, tofu pies, and okara peanut butter balls. Free samples of the delectable spreads are available on the counter.

"During the visit our basic curiosity evolved into true inspiration. The Plant is a living, breathing, organically growing example of how a cooperative group of people can come together and make something happen. The place truly is a center of learning, staffed by people eager to share their newly found knowledge about the creating of this very old food.

"Do you often wonder what to make with this nutritious but strange stuff called tofu? Here are some delightful recipes:" The recipes, from *The Book of Tofu* by Shurtleff and Aoyagi, are for Tofu-nut butter spread or topping, and Banana-tofu milkshake. Address: Michigan.

3164. Forster, Lynn L.; Ferrier, L.K. 1979. Viscometric characteristics of whole soybean milk. *J. of Food Science* 44(2):583-85, 590. March/April. [19 ref]
Address: Dep. of Food Science, Univ. of Illinois. Forster presently with Quaker Oats Co, Barrington, IL; Ferrier with General Foods Corp., Tarrytown, New York 10591.

3165. Gilat, T. 1979. Lactase deficiency: The world pattern today. *Israel J. of Medical Sciences* 15(4):369-73. April. [39 ref]
• ***Summary:*** "When first described some 15 years ago, primary adult lactase deficiency appeared to be a rare condition of uncertain etiology. Numerous subsequent studies radically changed this impression." As many as 90% of Asians or blacks have an inability to digest lactose, or milk sugar. People with lactose intolerance learn to avoid most milk products because they often develop diarrhea, stomach cramps, and intestinal gas from milk sugar. Address: Dep. of Gastroenterology, Ichilov Municipal-Government Hospital and Sackler School of Medicine, Tel Aviv Univ., Tel Aviv, Israel.

3166. Itona Products Ltd. 1979. Milk that's never seen a cow (Ad). *Alive* (*England*). March/April. p. 2.
• ***Summary:*** "Golden Archer" Soya Plantmilk. The milk that's 100% non-animal.

The right 1/3 of this ad, titled "New lines from Itona, lists many Itona vegetarian products: Granny Ann High Fibre Biscuits made with Soya Fibre. Golden Archer Soya Plantmilk (100% vegetable; "Milk that's never seen a cow"). Tona "C" Food–Fish Cake Style. Ito–Instead of coffee. Golden Archer Brown Rice Pudding with Soya Plantmilk. Noots–Roasted Salted Soya Beans. Basic TVPs–Flavoured and natural (in 4 oz packs; all flavors are given).

A photo shows a smiling woman pouring soymilk from a can into a cup in her left hand. Address: Leyland Mill Lane, Wigan [Lancashire, England].

3167. **Product Name:** [Meiji Sunglow Soymilk (Plain)].
Foreign Name: Meiji San-guroo Tônyû (Pureen).
Manufacturer's Name: Meiji Milk Products Co. Ltd. (Meiji Nyugyo) (Marketer). Made in Japan by Marusan.
Manufacturer's Address: Kyobashi 2-3-6, Chuo-ku, Tokyo 104, Japan.
Date of Introduction: 1979. April.
New Product–Documentation: Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Meiji Nyugyo first made commercial soymilk in Japan in 1980.

K. Tsuchiya. 1982. Dec. Tonyu [Soymilk. 2nd ed.]. p. 72. Meiji Nyugyo launched Meiji San-guroo Tonyu (Pureen) in a 200 ml long-life (aseptic) carton in March 1981.

Soya Bluebook. 1984. p. 62. "Sungrow Soy Beverage." Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64. Tremendous momentum was added to the new soymilk boom "in April 1979, when Meiji Milk Co., Japan's second largest dairy milk company (sales of $1,400 million in 1982), started to sell Sunglow soymilk (made by Marusan but with the Meiji brand). Meiji first began to make their own soymilk in their own plant in March 1981."

3168. Newcomer, Albert D. 1979. Lactase deficiency. *Contemporary Nutrition* (*General Mills, Minneapolis, Minnesota*) 4(4):1-2. April. [6 ref]
• ***Summary:*** Contents: Introduction. Developmental pattern. Geographical distribution. Classification. Cause of symptoms. Diagnosis. Significance. Treatment. Summary. "Although intolerance to milk has been recognized for centuries, only during the last 20 years has it been established that the most common cause is deficiency of intestinal lactase activity. Interest in this topic has resulted in a remarkable melding of geographers, anthropologists, enzymologists and clinicians." Address: Rochester, Minnesota.

3169. Omosaiye, O.; Cheryan, M. 1979. Low-phytate, full-fat soy protein product by ultrafiltration of aqueous extracts of whole soybeans. *Cereal Chemistry* 56(2):58-62. March/April. [20 ref]
• ***Summary:*** The feasibility of using ultrafiltration (UF) to eliminate phytic acid from soymilk was studied. UF to a volume concentration of 5 resulted in 65, 43, and 27% elimination of phytic acid at pH 6.7, 8, and 10, respectively. Address: Dep. of Food Science, Univ. of Illinois, Urbana, IL 61801.

3170. Tofu Shop (The). 1979. Workshops in tofu-making on the community level (Portfolio). Telluride, Colorado. Eight inserts. 28 cm.
• ***Summary:*** Rather than being a typical portfolio, with many

inserts, that all arrive at one time, this is a collection of eight documents all related to a common theme.

(1) "Workshops in community level tofu-making: Beginning in April 1977, the Tofu Shop of Telluride, Colorado, is making available to interested groups and communities training workshops in tofu-making on the community level. Topics to be covered in these workshops will include: The process of tofu-making. Setting up shop. Other soy products. Marketing. Financing and fundraising. Bookkeeping and record keeping. Restaurants and delis, Nutritional info. Community education. The community food chain. The personal benefits. Inner-shop organization. Contacts and resources.

"Workshops are led by members of the Telluride Tofu Shop and may include an experience in tofu-making... Apprenticeships–The Telluride Tofu Shop also has a limited number of openings for workers / owners in its restaurant and wholesale business. A one year time commitment is required."

(2) "Dear ___: The Telluride Tofu Shop was born in October, 1977, when we moved into our small, unfurnished shop with a meager one-thousand dollars capital and began making tofu. Now in April, 1979, twelve of us operate a growing restaurant and wholesale food business with annual sales approaching fifty-thousand dollars annually. What happened during this period is something we want to share with other communities and groups of interested people." So we are offering a workshop in "How to Start a Community Tofu Shop." (3) "The community level tofu shop and the local food chain." A complex circular diagram shows many complex relationships.

(4) "Supplies and information for community level tofu-making." Lists five key organizations: (a) Soycrafters Association of North America (SANA; Greenfield, Massachusetts, Richard Leviton). (b) New-Age Foods Study Center (Lafayette, California; Books, brochures, tofu-making materials, slides, tapes, general info.). (c) Bean Machines Inc. (Bodega, California; Larry Needleman. Tofu-making equipment from Japan). (d) Farm Foods (Summertown, Tennessee. Attn. soydairy; tempeh starters, tvp, cookbook, general info.). (e) Westbrae Natural Foods (Emeryville, California; Nigari).

(5) A tofu recipe: For making approximately 15 pounds of tofu. Gives equipment, ingredients (soybeans and nigari), and recipe [process].

(6) A settling box press. Two views showing how to make one yourself.

(7) Soymilk: Nutritional information and recipes courtesy of The Spinning Kitchen, Boulder, Colorado.

(8) Our favorite tofu recipes.

Letter (e-mail) from Matthew Schmit. 2009. March 30. "Our motivation for doing tofu workshops was primarily to spread the word. But also hoping to make a little money.

"We (Christie Mather and myself) conducted three workshops in early 1979. There were approximately 12-15 participants per workshop. These workshops were far from Telluride, so there was no concern about competition.

"The first was in Arcata, CA, (little did I know I would be moving there soon), to a group known as the Arc Community which was trying to form an intentional community to purchase land. My sister and brother-in-law were members, hence our invitation. After we left, they began making tofu weekly in home kitchens and selling it informally in the community. When I moved to Arcata, I joined the group as they began planning to rent a production space. As it turned out, it was too big of a leap for them. Their effort dwindled. I went ahead and opened the Arcata shop. The Arc Community eventually disbanded.

"The second workshop was held in Ashland, Oregon, in the home of friends from Telluride. They were very involved in the Ashland Food Co-op. Later when the Co-op expanded and installed a commercial kitchen, co-op members began making tofu in-house. I visited them once during production after moving out to Arcata. Eventually, Ashland Soyworks started up and Co-op production stopped.

"The third workshop was held in The Dalles, Oregon, also in the home of ex-Telluridians. As far as I know, nothing every grew out of that." Address: 116 N. Oak St., P.O. Box 69, Telluride, Colorado 81435.

3171. Rhodes, Elizabeth. 1979. A tofu-tempeh tycoon on Vashon Island? *Seattle Times Magazine.* May 6. [1 ref]
• ***Summary:*** William Luke Lukoskie was born 24 November 1946 in Duluth, Minnesota. His Catholic family moved to Edmonds, Washington, in 1956 and he attended parochial schools. After earning a BA in philosophy (math minor) from Carroll College in Helena, Montana, he returned to Seattle. He enrolled in graduate business school at the University of Washington in 1968, then switched to working on a doctorate in educational psychology, then dropped out. In 1976 he founded Island Spring tofu factory. Today Island Spring produces tofu, tempeh, soymilk, Soyfreeze soy ice cream, and Delicious Steamed Tofu. Future products may include soy mayonnaise, soy yogurt, frozen tofu lasagna, and cheesecake. A photo shows Lukoskie smiling and holding a block of his tofu with a six-petaled flower pressed into the surface. Address: Seattle.

3172. Singh, Surjan. 1979. Re: Soymilk production at M/S Pantnagar Soya Milk Products Pvt. Ltd. Letter to William Shurtleff at New-Age Foods Study Center, May 12–in reply to inquiry of April 21. 2 p. Typed, with signature on letterhead.
• ***Summary:*** "M/S Pantnagar Soya Milk Products Pvt. Ltd. 167, Cycle Market, Jhandewalan Extn., New Delhi have started the manufacture of a soy beverage recently. The installed capacity of the plant is 50,000 bottles of 200 ml capacity per day. The product is marketed with the brand

name of SIPSO." Address: Prof. and Head, Dep. of Food Science & Technology. Govind Ballabh Pant, Univ. of Agriculture & Technology, Pantnagar, Dist. Nainital (India).

3173. *Times of India* (*The*) (*Bombay*). 1979. Classified ad: Wanted–Soya-Milk distributors. May 19. p. 15.
• ***Summary:*** A fairly small ad with a bold title and border: "A company manufacturing Soyabased products for the first time in India wishes to appoint Distributors in Bombay for Soyamilk–a 'Milk Substitute' for people allergic to regular milk and also for children with hyperallergenic conditions.

"Only parties with good financial standing and preferably experienced in distributing over-the-counter products need apply to Box W 809-S Times of India, Bombay 1."

Note: This ad was probably run by Spicer Memorial College, for several reasons: (1) They are located in Pune, southeast of Bombay. (2) On April 23 of this year (a little less than a month ago), their Spicer's Food Specialties ran a full page ad in this same newspaper advertising "Soya 'Milk Substitute.' Soyalac."

3174. Summers, J.L. 1979. Re: Information governing imitation and substitute foods. Letter to William Shurtleff at New-Age Foods Study Center, May 21–in reply to inquiry of April 10. 2 p. Typed, without signature on letterhead. Address: Asst. to the Director, Div. of Regulatory Guidance, Bureau of Foods, Food and Drug Administration, Public Health Service, Dep. of Health, Education, and Welfare, Washington, DC 20204.

3175. Smith, Robert A. 1979. Delsoy Products (1943-1963) (Document part, I) (Interview). In: 1979. The Ford Experimental Laboratory and the "Square House." Conducted by Donald V. Baut of Dearborn Historical Museum, May 31. 72 p. transcript. See p. 44-72.
• ***Summary:*** By the 1940s, many U.S. states had a fill [filled] milk law, which prevents the blending of vegetable fats (which cost about half as much as butterfat) with dairy products to make any product which simulates a milk product–such as ice cream or whipped cream. During World War II, a restriction stated that cream could not contain more than 18% butter fat, in order to conserve butter fat which was in short supply. To circumvent this law, two partners in Chicago, Illinois, Eric Russell Swanson (the production man, who owned the Swanson Dairy in Chicago) and Herbert Marshall Taylor (the promoter and salesman) formed the Russell Taylor Company and developed a whipping cream product made by adding 17% vegetable fat to cream containing 17% butterfat. It was a very successful product in the Chicago area and was eventually bought out by the Bowman Dairy Co. So they decided to come to Michigan, which didn't have a filled milk law, and develop a similar product–which they named Devonshire Topping. It, too, was very successful, so the Michigan dairies had the state legislature pass a law to prohibit it.

Taylor had read about Henry Ford's soybean milk through the publicity it was getting. He visited Bob Smith at the Carver Laboratory and asked if Smith could make whipping cream from soybeans. Smith had never tried this before but in a few days work at the Laboratory (using a soymilk process first developed at Moir House Lab) he had samples that Taylor was very pleased with. Taylor said he wanted to start producing the product commercially in Michigan using the Ford soybean base. Henry Ford said that he did not want to get into the business of producing soybean milk for sale, but he gave Smith permission to give Taylor small amounts to experiment with and to work with Taylor to design a plant to produce the soy base product in Dearborn. Ford wisely warned Smith to be very careful with Taylor (who looked like a promoter) and not to get involved in any stock deals.

Starting in the spring of 1943, Smith worked in his spare time, designed all the equipment (based on the design of the equipment in the Carver Laboratory but on a larger scale), and built a plant in the old Livonia Dairy at 2001 S. Telegraph Road (at Harvard) in Dearborn. Several other people also worked on the job. The plant's initial capacity was about 1,000 gallons per day (one shift). The equipment in Ford's Carver Lab was designed to produce 150 gallons of soymilk per day in a small non-stop stream. The funds needed to equip and establish the plant in Dearborn came from profits made by selling Devonshire Topping in Detroit. "In the latter part of 1943 we began production [of soy-based whip topping] in the [Livonia] dairy. We had lots of problems getting the equipment because of the war and the scarcity of materials. Eventually we got the thing going. We started experimentally, selling across state lines to test the law. We advised the Agricultural Department what we were doing. We shipped to Toledo and we sold in Detroit. The product sold very well. Of course, there was no whipping cream. We just couldn't make enough of the product to supply the demand."

To make Delsoy they started by making soymilk from low-fat soybean meal, then added vegetable oil and liquid sugar (a blend of a small amount of corn sugar and a larger amount of sucrose from either sugar cane or sugar beets) to make about 3,000 gallons a day of the base for the topping. The protein produces the foam that makes the whipping possible. The fat produces the stabilizing that keeps it whipped. The sugar is added to give a sweet flavor.

The name Delsoy was Herbert Marshall Taylor's idea. The filled milk product that his company had been selling previously in Detroit was named Devonshire Topping. But that name was contested by the people at Devonshire-Melba Co. and they prevailed. Taylor was going to have to change the name of his product, and at the same time he was changing it from a dairy-based product to a soy product–so

he thought of "delicious soy" or "Delsoy." In addition, the first letter was the same as the D in Devonshire, which would help in advertising the new product to former customers. The Russell Taylor Co. manufactured Delsoy for the first year or so, until the company name was changed to Delsoy Products. The company name was composed of Eric Russell Swanson's middle name and Herbert Marshall Taylor's last name.

Herbert Marshall Taylor "was the only son of a superintendent of the Canadian Pacific Railway. He had been raised in kind of a royal fashion. He rode around in private railroad cars and lived pretty well. He was very expert at spending money at a high rate of speed, which was one of our big problems after the company was formed. He spent money like it was going out of style and we always had trouble."

"Harvey Whitehouse was a dairyman in Detroit and he was hired to operate the Russell Taylor plant. It was in the Grand Trunk Terminal warehouse in Detroit [Russell-Taylor Inc., 1951 East Ferry Ave. at 3rd Ave, Detroit 11]. He didn't join us until after our plant was completed in Dearborn. When our Dearborn plant was completed, they shut down the warehouse plant in Detroit and he came out and operated the Dearborn plant. At that time I was working at Fords [the Ford Motor Co.] and I was just spending part of my time at the Delsoy product... it was somewhere in the fall of 1943 I believe... Harvey Whitehouse was hired because he was qualified to operate both refrigeration and steam equipment... He was hired from the Rosebud Dairy in Detroit to operate the equipment at the Russell Taylor warehouse on Third Avenue in Detroit. Russell Taylor had... rented an existing plant there, used it on a part-time basis, and paid for the use of the equipment on a per-gallon basis.

"Now when we started Delsoy Products, we had our refrigeration and we had hired our own people to deliver it... We never sold Delsoy out of that warehouse [on Ferry Ave. in Detroit]. All the Delsoy we sold out in the Dearborn plant. That was the Devonshire Topping that we sold out of the Ferry Avenue warehouse."

H.M. Taylor closed down Devonshire Topping because "he got in trouble with the War Food Board for using too much milk solids in his product. He used about four times his allocated amount of milk solids and was sued by the government and was found guilty. He and Swanson and the rest of the company were fined. They had to stop the operation on account of that." That was when they shut the warehouse in Detroit. At about the same time the filled milk law went into effect and they couldn't produce it any more. Delsoy had been in production for about a year before the lawsuit was settled with the government. Taylor got the larger of the two fines because he was the instigator and leader of the idea. "We were definitely anxious to get Taylor out of the company because he was definitely running us into the ground with his wild spending." Bob Smith put up the money for Taylor to keep him out of jail and in exchange took over Taylor's stock in the company–which gave Smith control of two-thirds of the company. But he decided it would be best to split the ownership among himself, Swanson, and Whitehouse. Address: Smith: 26351 Hollywood Ave., Roseville, Michigan 48066; Baut: Dearborn Historical Museum, 915 Brady St., Dearborn, Michigan 48124. Phone: Smith: 313-777-5394. Baut: 313-565-3000.

3176. Smith, Robert A. 1979. Henry Ford, George Washington Carver, and the Carver Laboratory. The plastic car and Edsel Ruddiman (Document part) (Interview). In: 1979. The Ford Experimental Laboratory and the "Square House." Conducted by Donald V. Baut of Dearborn Historical Museum, May 31. 72 p. transcript. See p. 15-43. • ***Summary:*** The Carver Laboratory developed because Mr. Carver had told Mr. Ford that he knew how to get rubber from domestic plants. World War II was on and Ford's main rubber supply had been cut off by the Japanese. "Mr. Ford was interested in finding out what Carver's plants were and what the process was. He decided to entertain Carver and get him to reveal the source of his rubber." He came to Smith one day and said he would like Smith to convert the waterworks (the plant that had once been the waterworks for the city of Dearborn) into a laboratory and to have it done in one week. "George Washington Carver was coming to Dearborn for a visit and this laboratory was going to be named in his honor. We were supposed to find out through this how to make rubber out of domestic plants." With all top Ford executives, Charles Lindbergh, the newsreel, newspaper, and wire service people plus photographers in attendance, "we had the big opening and dedicated the laboratory for work on soybeans." In July 1942, with Mr. Smith in charge, they spent the next 2 weeks with Carver and never did find out how to make rubber from domestic plants. They were convinced he did not know how, but said he did just for publicity.

After the big dedication. Smith moved all his equipment from Moir House to the Carver Lab, where he had a lot more room and equipment. But Bob, with his wife and two daughters, continued to live at the Square House in Dearborn until 1952, when he moved the house to Garden City. Eventually there were 25 employees at the Carver Lab, including 3 chemists. "One of the reasons for moving to the Carver Lab was to have more room to build a [soy] milk plant. He [Mr. Ford] wanted us to build a plant that would produce 150 gallons of milk a day." Prior to that time they had produced 1-2 quarts a day, all by hand work in the lab. After about 2 months they had the soymilk plant in operation. For the next few years they produced soymilk to supply the Henry Ford Hospital in Detroit and the Ford cafeterias. "The milk wasn't as good as cow's milk as far as flavor was concerned but it made good ice cream and we made a lot of ice cream from it." When asked if they used the

word "ice cream," Smith answered: "Well, it turned out there is a law against making anything that looks like ice cream if it's not made out of milk. The patent attorney said that we could probably fight it but it would be bad publicity for the company so we eventually discontinued it."

At the Carver Lab extensive research was also conducted on chlorophyll, since it is a very unique substance: (1) its chemical structure is almost identical to that of hemoglobin in the blood; and (2) it is responsible for transforming solar energy into the various nutrients that can be used by humans and animals. Mr. Ford found these facts fascinating. The Carver Lab became one of Henry Ford's favorite projects. Bob Smith worked at the Carver Lab from about July 1942 until August 1945; the main job at that time was production of soybean milk. Starting in about Sept. 1942 they made 150 gallons a day by a continuous process that worked around the clock. There were three shifts. The soymilk was made from purified [isolated] soy protein, hydrogenated soy oil, and corn sugar. Then they got involved in making ice cream for the cafeterias, the Ford Veterans and Ford Hospital. They also began testing the value of soybean milk in rats. "We found we could raise six generations of rats with nothing but soybean milk, which was, the doctors thought, pretty unusual. There are very few foods that you can eat exclusively and survive on for very long." In Aug. 1945 he left to work full time with the Russell Taylor Company making Delsoy [a soy-based non-dairy whip topping]. Clem Glotzhober took over the Lab after Smith left. Mr. Ford got sick in January 1945 when he was in Georgia and he never recovered.

Development of the plastic car was started at the chemical plant, where a solvent extractor produced soybean oil and meal. The defatted meal, when reacted with phenol formaldehyde, produced a good plastic, and many small molded plastic parts went into Ford cars. The story of the development of the plastic car is told. Hud McCarroll was supposed to be the engineer on the project. Lowell Overly designed the first plastic car. "That car was probably 40 or 50 years ahead of its time, like a lot of things Ford did." The first step was to build a plastic rear deck for Mercury. It was pulled off the molds in about 1938 and cost $3,500,000. Ford liked to slam this rear door with an axe that he carried in the trunk of his car. After the plastic car was demonstrated in 1941, it ended up in the basement of the Engineering Lab, covered with a piece of white cloth.

Smith (p. 25) then tells the story of how Mrs. Edsel Ruddiman wanted her husband, who was almost 80 years old, to retire. "So she spoke to Mr. Ford about getting him to retire. Instead of Ford saying, 'Edsel, I think you've worked long enough. You'd better retire,' or something like that, he just took his work away from him. He went into his laboratory one day and he said, 'I want everything cleaned out of here in the next couple of hours.' So dump trucks backed up to the door and threw everything out. Then they let Ruddiman sit there for a couple of months with nothing to do–in about 1941... He was very bitter about the way the boss was treating him." At times he cried. After a short time he quit. The Twin Lakes lab was also closed in 1941. Address: Smith: 26351 Hollywood Ave., Roseville, Michigan 48066; Baut: Dearborn Historical Museum, 915 Brady St., Dearborn, Michigan 48124. Phone: Smith: 313-777-5394. Baut: 313-565-3000.

3177. Smith, Robert A. 1979. Delsoy Products (1943-1963) (Document part, II) (Interview). In: 1979. The Ford Experimental Laboratory and the "Square House." Conducted by Donald V. Baut of Dearborn Historical Museum, May 31. 72 p. transcript. See p. 44-72.
• ***Summary:*** Bob Smith left the Ford Motor Co. in Aug. 1945 to work full time with Delsoy Products. Taylor and Smith each owned 1/3 of the stock, Swanson owned 1/6, and various other people owned the remaining 1/6. Swanson and Taylor put in the money and Smith contributed the know-how. Delsoy Topping sold very well because no dairy whipping cream was available. They shipped to Toledo, Ohio, and sold in Detroit, Michigan.

Taylor and Swanson were fined by the federal War Food Board for using too much milk solids in their original dairy-based whipping cream. Smith offered to pay off Taylor's $6,000 fine to get Taylor out of the company. Taylor was a lavish spender and the source of much conflict. At one point he tried to grab a majority of the stock for himself. Taylor's interest in the company was to develop a product and then sell the stock to make money on the stock rather than on the sale of the product. Smith, Swanson, and Whitehouse ending up owning Delsoy Products.

Originally Delsoy Topping was sold in paper containers purchased from the Sutherland Paper Co. in Kalamazoo, Michigan. Delsoy bought the containers by the carload, 300,000 at a time. When Sutherland went out of business, Delsoy switched to buying containers from the Crown Cork and Seal Co. in Philadelphia. During World War II Crown Cork and Seal had developed a pressurized metal can to use for insecticide sprays by the military. Delsoy was the first to realize that the can's unique valve (produced by the Super Whip Co. in Chicago and used with nitrous oxide gas) made it suitable for whipping cream. So the company modified its formula for Delsoy Topping, put it in this pressurized can, and in 1946 or 1947 named it Presto Whip. They were the first company to ever put a topping in a pressure can and sell it. It immediately became a huge success, was widely advertised, and was soon sold by every chain store in the area. Soon Delsoy Products was working 3 shifts, making 25,000 cans a day–sold mostly in the Detroit area. Soon they were selling the products over a range of 350 miles in lower Michigan, Ohio, and parts of Indiana, Pennsylvania, and New York. By 1963 they had 23 distributors. One of their first big customers was Awrey Bakery, a prestige

account, that bought 300 gallons/day, 5 days a week. They mixed equal parts of Delsoy and dairy whipped cream to get a superior product for use in cream puffs. Initially they refrigerated all products. Later they would freeze everything immediately and keep it frozen until it was distributed to the stores.

The process for making Delsoy Topping was a very technical and difficult one–even for people with much experience in making it. There was a patent application made under the name of Henry Ford and R.A. Smith but it was probably never completed or issued. Initially the soybeans were grown by Ford but after Delsoy Products began, "low temperature soybean meal" with high protein solubility and most of the fat removed was purchased from Central Soya. Being a vegetable product, it was subject to less bacterial deterioration than cream products. To further extend the shelf life, Smith adapted a machine that was developed for the sterilization of orange juice then used it to heat the product to 300 degrees for 1.5 seconds, followed by rapid cooling to produce a sterile product. Delsoy competed very favorably with similar dairy products. It was less expensive and each can contained 40% more product (10 oz vs. 6-7 oz), and it had superior whipping qualities with much higher whipped volume. Initially the can and valve cost about $0.11 and the product (Presto Whip) cost $0.06. It retailed for $0.29. At one point a chocolate flavor was introduced, but it was soon discontinued. They sold Delsoy Topping to institutions, in quarts to smaller bakeries, 5 gallon cans to larger bakeries, and 10-gallon cans to Awreys.

Zazu Pitts, a famous actress, "health addict," and close friend of Gloria Swanson got interested in the product, visited the Carver Lab to try the soybean milk, and for a while considered buying a franchise.

After Presto Whip was launched, Delsoy Products began a new company named Delsoy Distributors. The first big product they distributed was Hawaiian Punch. Later they started the Smith, Swanson, Whitehouse Brokerage Co. and distributed Good Luck Margarine, Red Star Yeast, Hawaiian Punch, etc.

In 1963 Bob Smith left the company; Harvey Whitehouse and his son David bought Bob's stock. Today Delsoy Products is named Whitehouse Products. Note: Bob Smith was born on 1 April 1913, so he was age 66 at the time of this interview.

Update: Talk with Richard B. Folsom of Canton, Michigan. 1992. Jan. 31. According to Don Baut, a curator at the Dearborn Historical Museum, Whitehouse Products was purchased in 1983 by C.J. Christoff & Sons of Lowell, Michigan.

Talk with Bob Ely at Chadalee Farms Inc. 1992. Feb. 4. The company is now called Chadalee Farms, Inc. and Christoff Gourmet Foods is one division. The only non-dairy product they still make that they acquired from Whitehouse Products is Chadalee Farms is imitation sour cream. They also private label it under other brands, such as Nuggett, Pocahontas, etc. Within the past few months they have discontinued the whipped toppings and the aerosol toppings. When they bought the products from Whitehouse they changed the brand name from Whitehouse to Chadalee Farms. Whitehouse and Chadalee also packed the products under many national brands. For more details, he suggests contacting Dave Whitehouse in Dearborn, Michigan, at 313-562-0242. Dave now works for Chadalee as a salesman. Address: Smith: 26351 Hollywood Ave., Roseville, Michigan 48066; Baut: Dearborn Historical Museum, 915 Brady St., Dearborn, Michigan 48124. Phone: Smith: 313-777-5394. Baut: 313-565-3000.

3178. Sullivan, Don; Smith, Robert A. 1979. The Ford Experimental Laboratory and the "Square House" (Interview). Conducted by Donald V. Baut of Dearborn Historical Museum, May 31. 72 p. transcript. See p. 1-15, 24-25. Acc. No. 79-48 & 79-48.1 in the Dearborn Historical Museum, and Acc. No. 1583 in the Henry Ford Museum. 28 cm.

• ***Summary:*** A very valuable document. The information about Ford's work with soybeans is supplied by Bob Smith. Smith joined the Ford Motor Co. on 13 Dec. 1926 when he started at the Ford Trade school at age 13. He took a 4-year course there and graduated in 1930 with the last class from Highland Park. After summer vacation in 1930 he began part-time work at the Rouge Plant and worked part-time in school. As a result of that he began to do experimental work at Greenfield Village, working in the experimental greenhouse, in connection with the chemical plant, which was established by Mr. Ford to find industrial uses for farm crops. "At that time we were in the depth of a very serious depression and Mr. Ford was very interested in finding employment for farm people... The farmer was one of the Ford Motor Company's best customers and Ford was interested in finding uses for the products they produced."

"Finally after a year or so, the way I heard it, Mr. Ford came into the laboratory one night all by himself and found a book we had there on the soybean; he apparently decided that was the thing to work on. The next day he came into the greenhouse and told me to clean everything out. He said, 'I'll be back in a few hours and I want everything out of here,' which was kind of a hard thing for us to do. We had been working on these tests for months and it seemed almost sacrilegious to destroy them at that point. But he was the boss so that is what we did... He said, 'From now on I don't want you to talk or think about working on anything but soybeans. That's the thing of the future.' I guess he was right because he made it a very important part of our agriculture and industry. I think now its the second or third largest crop in the country. At that time soybeans were almost unknown."

Initially the soybeans came from Ford Farms. "I think there were at least ten thousand acres of land within the

city limits of Dearborn that was the Ford farms. Later they also got soybeans from other farms. The first soybean plant was in Greenfield Village; it processed 6 tons of soybeans a day. Then they built a 24 ton-day-day plant at the Rouge, and 12 ton-a-day plants at Milan and Saline." The group was interested primarily in developing uses for soybean oil because the first product they developed (about 1 year was after starting research) was a very good paint based on soybean oil; it is still used on Ford cars and other companies are now using it too besides Ford. This paint had an advantage over lacquer, since when the latter dries it leaves little pits, which fill up with moisture and dirt and eventually cause the deterioration of the paint finish. "But with the soybean paint it dries like oxidation and finishes hard like a plate and has a more durable surface."

Ford was also a pioneer in developing equipment for extraction the oil from soybeans using a solvent (gasoline). Bob Boyer was in charge of soybean research for Ford. "Mr. Ford was always very actively interested in the work that was going on at the chemical plant and was there almost every day. Quite often he would come into the greenhouse where we were running experiments and would chin himself."

Edsel Ruddiman had his own laboratory up on one of the Twin Lakes. It was a beautiful little lab in an ideal, tranquil setting. Dr. Ruddiman was Ford's seat mate at Scotch Settlement School and also his brother-in-law because Ruddiman married Ford's sister. The lab had been his home before it was converted; he had several assistants there. Their primary job was to develop a milk to replace cow's milk. They worked with wheat, soybeans, and carrots. "He spent quite a few years trying to produce milk from various products... but it never got to a product that was satisfactory (p. 25). He was also in charge of the canning plant over on Southfield Road.

One day Henry Ford invited Bob Smith to go for a ride together in Ford's private car. "He asked me what we could do to get rid of the cow. We discussed milk and meat including manure" and composting.

From 30 July 1937 until 1952 Bob Smith lived in the Square House at the invitation of Henry Ford, who had built it himself in 1888. After about a year Ford asked him to set up a laboratory in the Moir House, which is about 1,500 feet north of the Square House. "He told me he wanted me to start a laboratory to get rid of the cow. He said, 'We got rid of the horse. Now we're going to get rid of the cow. I'd like you to work on soybeans and milk back here." Smith worked at the Moir House lab from about 1938 until the Carver Lab was opened in 1942. The only electricity in the lab was produced by a windmill. "That was probably the reason we were so successful so quickly." Ruddiman and other Ford researchers used their 110 volt current and modern conveniences such as electrical grinders to grind the soybeans. Smith was forced to take a different approach. He tried to dissolve the protein out of soybean meal instead of grinding it. Within 3-4 months he had a milk that Ford liked quite a bit. It looked and tasked quite a bit like milk. "He was so pleased he came in one day and asked for a sample of milk and we [Bob and his co-workers] gave it to him. He sat there drinking his milk and asked for some bread. Of course we baked bread there every day... So he sat there drinking his soybean milk and eating his rye bread. I was watching and I thought, 'Boy, here's the world's richest man eating plain bread with no butter and drinking this soybean milk and he thinks it's really good.' He said it was the best milk he ever tasted. In fact he wrote in this little black notebook that he carried all the time, "First good milk. No cow." After he had written it, he showed it to me." Later Mr. Ford asked Smith to try drum-drying and spray-drying the milk. Smith took the soymilk to a co-op spray drying plant in Adrian, Michigan, and had it spray dried. It turned out "pretty good." So at Ford's request Smith built a very small-scale (half-gallon) hand-powered spray drier at Moir House. It would dry about 1 ounce of soymilk a day.

At first Bob Smith worked at Moir House alone. Eventually he was joined by Clem Glotzhober, Don Jones and Ed Lang. Then Mr. Ford brought over Paul Foster, his Fair Lane cook. Whenever Ford travelled by train, Foster went with him as cook. When Ford wasn't out of town, Foster was at the Moir House, and later at the Carver Lab. "We baked bread for Mr. Ford every day, soybean bread naturally. He gave us orders to have food there all the time in case he wanted to eat."

They also made so-called soybean sandwiches (also called "grass sandwiches") for him there in April and May. They were a mixture of soybeans and various edible weeds such as dandelion, curly dock, etc. that they collected. "We would make a blend of them and grind them up together and make sandwiches out of soybean bread; Mr. Ford would often pick them up... We made two different kinds of sandwiches, one for Mrs. Ford and one for Mr. Ford." Address: Baut: Curator of Research, Dearborn Historical Museum, 915 Brady St., Dearborn, Michigan 48124. Phone: 313-565-3000.

3179. **Product Name:** Soy Moo Non-Dairy Soy Milk [Plain, or Carob].
Manufacturer's Name: Health Valley Natural Foods.
Manufacturer's Address: 700 Union St., Montebello, CA 90640.
Date of Introduction: 1979. May.
Ingredients: Pure filtered water, organic soybeans, soya oil, wild honey.
Wt/Vol., Packaging, Price: 15 fluid oz plastic bottles or 30 fluid oz Pure-Pak cartons.
How Stored: Frozen.
Nutrition: Per cup: 129 calories, 9 gm protein, 4 gm fat.
New Product–Documentation: Midwest Natural Foods

Distributors, Inc. 1979. Catalog 13. Spring, 1979. Ann Arbor, Michigan. iv + 290 p. See p. 248. Soy products. Refrigerated. "Health Valley Soy Milk." Plain or carob. Pints or quarts. "Soy milk has all amino acids. Contains no animal fats; no lactose."

Ad in Tom Riker and Richard Roberts. 1979. *The Directory of Natural & Health Foods.* p. 56. "The importance of Health Valley natural baby food soups." "Soy Moo: This is a very special milk substitute from Health Valley since it contains all naturally present vitamins and minerals found in the Soybean. It is a non-dairy product that contains all the essential and non-essential amino acids, twice as much protein as meat or fish, eight times more iron than cow's milk. Most important of all for babies intolerant of milk and dairy products, Soy Moo contains No Lactose." Address is 700 Union St., Montebello, California 90640.

Leviton. 1981. Soyfoods. Winter. p. 17. Soyfoods 1982. Summer. p. 33. Spot in Soyfoods. 1984. Summer. p. 45. Formerly sold frozen in Pure Paks, the product has been reformulated and repackaged in 16.9 oz. Tetra Brik cartons. STS. 1985. Cartons for Soymilk. Shows color photo of 15 fl. oz. Pure Pack carton. Dark blue, light blue, yellow, and white. "Cholesterol Free. No Sugar Added. From Organically Grown Soybeans."

3180. Midwest Natural Foods Distributors, Inc. 1979. Catalog 13. Spring, 1979. Ann Arbor, Michigan. iv + 290 p. Index by product category. Index of manufacturers. Index of advertisers. Illust. 28 cm.

• ***Summary:*** On the cover are two kites (colored orange and red) flying in the sky. This catalog, largely printed by a computer, contains many ads on numbered pages. Contents: Policies and terms. Catalog information. Packaged. Books. Refrigerated and frozen. Bulk. Literature and flyers. Indexes (3).

"One stop shopping... We are now a Full Line distributor." List of new lines. List of new products within existing lines. Symbols and abbreviations.

Suppliers are listed alphabetically: Arrowhead Mills, Balanced Brand [Balanced Foods, New Jersey], Bragg's (Liquid Aminos), Dr. Bronner's (with full page ad showing the doctor), Carmé (lecithin), Cedar Lakes, Cellu (Soy bean flour), Chico-San, A.A. Debole (Spaghetti sauce–soy conc), Dragon's Milk (Arica), Elam's (soy flour), El Molino, Ener-G–Jolly Joan, Erewhon (with "Erewhon West" full-page ad), Family Orchards (Tamari mixes, Trail mix), Fantastic Foods, Fantastic Falafel [Felafel], Fearn Soya Foods, Flavor Tree, Hain Pure Foods ("Cold pressed" vegetable oils, mayonnaise, nut butters), Hansen's juices, Health Valley (incl. Vegetarian Chili), Hi-Energy Foods (food bars), Hoffman's (protein powders, snack bars), Lact-Aid (p. 109, ad p. 118), Jack La Lanne, Lange's, R.G. Lecithin, Lifestream (p. 113, 251, ads p. 249-50), Malt-O-Meal, Maya Grainburgers (p. 119, ad p. 126–mix with tofu), Midland Lecithin, Miso Cup, Modern Products (Gayelord Hauser), Mus-L-On (MLO), NF Factors, Niblack ("Tamari toasted sunflower seeds," Tamari pumpkin seeds," raw or toasted wheat germ, unprocessed miller's bran), Old Stone Mill (soy), Orjene, Parkelp, Plus Produces (incl. Tiger's Milk), Richter Bros., Soken, Sovex, Viobin, Waring (blender, juicer), Westbrae.

Books, Talking Foods, Meats (nitrate and nitrite free), Poultry (no hormones or antibiotics), Soy Products (Health Valley soy milk, tofu), Soy Plant Tofu (nigari, and tofu sausage, p. 259-60), Tumaro's, Willow Run (Soybean spread [margarine]). Bulk–Beans, dry roasted soybeans, fruit & nut mixes (trail mix), nut butters, condiments, vegetable oils, pasta (with nomenclature), granola, teas & herbs. Literature & flyers. Indexes. Note: Many companies have a large selection of herbs. Address: 170 Aprill Dr., Ann Arbor, Michigan 48103. Phone: 313-769-8444 or in Area 313 1-800-552-6297.

3181. *Soyanews* (*Sri Lanka*). 1979. Historic event at Gannoruwa. 1(8):1, 8. April/May.

• ***Summary:*** Describes the grand opening of the Soyabean Foods Research Centre at the Central Agricultural Research Institute, Gannoruwa, on March 24. A photo (p. 1) shows Mr. E.L. Senanayake, Minister of Agricultural Development and Research, as he formally opens the Centre.

Three more photos (p. 8) show (see next page) the Minister doing different things at the plant. In one, he enjoys a glass of refreshing soya milk with his wife.

3182. *Soyanews* (*Sri Lanka*). 1979. Soya foods centre opens. 1(8):5. April/May.

• ***Summary:*** "The opening of the Soyabean Foods Research Centre was quite an event for the people of Gannoruwa. From early afternoon they waited patiently till the Minister of Agricultural Development and Research, Mr. E.L. Senanayake, had formally opened the Centre, for them to look at the production process inside the building, which was once a warehouse."

Photos show: (1) The front of the Centre, with people waiting. The name of the Centre appears to be written in three languages: Tamil, Sinhala, and English. (2) Trainees gathered in front of the "Soya Milk Bar."

(3) "Mr. E.L. Senanayake turns a hand operated grinding stone used to dehull soya at the home level training kitchen while Mr. Wilmot Wijeratne, Director of the Soya Foods Research Centre, and Mr. E.L. Senanayake look on."

3183. *Soyanews* (*Sri Lanka*). 1979. Pioneers in soya growing–the Maturata farmers: In the hilly terrain of Maturata, they have been growing soyabeans for years. 1(8):10-11. April/May.

• ***Summary:*** "They also know how to eat it, and, as a result, every paddy field around the Maturata region, in the Nuwara

Eliya district, is now fringed with soya to be harvested along with the paddy.

"The soyabeans grown in Maturata are considered an indigenous soyabean and agronomists call it the 'Nuwara Eliya Local.' It first came to the attention of Agricultural Officer, Mr. M.B. Medagama, when he was studying the pulse market in Kandy a few years back."

"Soyabean breeder S. Shanmugasundaram of the AVRDC thinks soyabeans were introduced to Sri Lanka [Ceylon] in the 17th century. That was the time of the Dutch occupation when many cultural practices were introduced from Indonesia." It is possible that the soyabean came along with batik and rambuttans.

Maturata, cool and hilly, is 3,600 feet above sea level. Yet the soyabean gives the farmer no trouble. "It does not ask for fertiliser nor does it cry to be sprayed."

The soyabeans are most often used for food in a dhal curry, they are served at teatime "in the form of *aggala,* a favorite Sinhala sweetmeat. Again it is the warmed and broken up beans that form the chief ingredient.

"Asked whether they made milk from soyabeans, they said they did. But the method is different. They first roast the beans until they give a sheen. Then they pound and sift the flour. The flour is then mixed with hot water which then turns into milk [of coffee]. The children find the roasted bean even more appetizing than the milk."

Many "housewives use the tender leaf of the soya plant to make *melluns."*

The practice of growing soyabeans around the paddy fields is spreading to surrounding areas.

Photos show: (1) "Paddy fields carved out from Maturata hillsides. Soya is grown on the ridges." (2) "A group of peasants from the village of Ketiyaathana." (3) "Soya growing alongside paddy."

3184. Lui, Henry. 1979. Re: Request for information about manufacture of soy bean milk. Letter to Dr. Walter Wolf, Leader, Meal Products Research, Oilseed Crops Laboratory, Northern Regional Research Center, Peoria, Illinois 61604, June 7. 1 p. Handwritten, with signature on letterhead.
• ***Summary:*** Mr. Lui is contemplating the manufacture of soy bean milk and requests some literature on this product.

The soybean Hawkeye and Harosoy are known for their high protein content, but they are not available in the New York area. Are there some other varieties that are as good or even better for making soymilk? Do you have information on the nutritional composition of various soybean varieties? In the New York area is difficult to find suppliers of these kinds of soybeans. He looked in the Blue Book of the Soybean Digest, but didn't find any suppliers.

In reply (June 20), Dr. Wolf sends two reprints of articles on soy beverages by his colleague, Mr. G.C. Mustakas–who is absent due to illness. In regard to Hawkeye or Harosoy variety soybeans, they are no longer grown commercially in significant amounts; Beeson is one variety that has replaced them for food uses.

Two firms that supply Beeson are: (1) Farmer City Grain Co., 201 West North Street, Farmer City, Illinois 61842. (2) Mico Incorporated, Box 1508, Bloomington, Illinois 61701. Address: Oriental Food Products Co., 53-82 57th Drive, Maspeth, Long Island, New York 11378. Phone: 894-3325 or 996-5021.

3185. Naudé, S.P.E.; Prinsloo, J.G.; Haupt, C.E. 1979. Comparison between a humanized cow's milk and a soy product for premature infants. *South African Medical Journal* 55(24):982-86. June 9. [11 ref]
• ***Summary:*** "A soy-based infant feed was compared with a humanized cow's milk product in [40] newborn preterm babies... The trial lasted 35 days for each patient... With formula intakes of 200 ml/kg/day,... the body weights and serum albumin levels of the babies receiving the soy product were significantly lower than those of babies on the cow's milk formula at the end of the trial. Until more work has been done, we suggest that soy formulas should be employed with caution in the feeding of small preterm infants." Address: Dep. of Paediatrics, Univ. of Pretoria and Kalafong Hospital, Pretoria, South Africa.

3186. Sprague, Terry. 1979. Non-Orientals turn out tofu for Brattleboro buyers: New England Soy Dairy Co. *Reformer* (*Brattleboro, Vermont*). June 23. p. 7-8. Saturday.
• ***Summary:*** The New England Soy Dairy is in Greenfield, Massachusetts. "The Americanization of tofu is a major goal of the Soy Dairy Co. Stephen Hassel [sic, Hassell], the company's product development manager, foresees a time when the bean curd is served in school lunch programs, fast food stores and in place of the ever increasingly expensive meat and cheese. He likens the future of tofu to what is happening now with yogurt."

New England Soy Dairy has committed itself to testing soybeans on 30 acres of land in western Massachusetts. The company will buy the seed. In the meantime, the company imports organically grown soybeans from the Midwest and makes them into tofu. "Soy Dairy Co. is owned by two major investors. Eventually they hope to have it owned by those who work there. But it won't be a cooperative... The firm now produces 20,000 pounds of tofu a week, an increase of 12,000 pounds a week since last June. And a new system has been purchased that should produce three times that amount. The company currently is working 24 hours a day with one shift just for clean up.

"A number of new products are currently being test marketed, including soy milk, an 'eggless egg salad, and a soft syrup product which will be similar to soft ice creams. 'We'd like to make a fresh baby formula substitute also,' Hassel said." Four photos show tofu being made at the Soy Dairy.

3187. Bringe, A.N.; Barr, G.W. 1979. Effect of protein source of milk replacer on performance of dairy calves in cold housing. *J. of Dairy Science* 62(Supplement 1):100-01. (Abst. # P53). June.
• ***Summary:*** Forty Holstein calves were randomly assigned at birth to two 10% fat milk replacer treatments containing either all milk protein or 70% modified soy protein and 30% milk protein. The protein sources of the two milk replacers tested did not significantly affect average daily gain or health of the calves raised in hutches from December to May. Address: 1. Univ. of Wisconsin, Madison; 2. Land O'Lakes, Inc., Minneapolis, Minnesota.

3188. *New Roots* (*Greenfield, Massachusetts*). 1979. Beans, beans... The magical plant. No. 6. p. 16. May/June.
• ***Summary:*** Part 1: The New England Soy Dairy (305 Wells St., Greenfield, Massachusetts), has prepared a 50-page information packet about growing soybeans in New England. An illustration shows the storefront of a soy dairy with large signs for "soy milk" and "tofu" in the window.

Part 2: Bill Boyd (RD2, RT318, Phelps, NY 14532) writes that "A group of farmers in central New York State have been meeting for the past year to investigate whether a soybean processing [crushing] plant would do well in central New York State. They have noted the paradox that while New York and bordering states make up one of the largest soybean consuming areas in the world, over 3/4 of the beans grown in New York are exported for processing in the Midwest. Hmmm."

3189. Shurtleff, William. 1979. The tofu and soymilk industry in the United States (News release). Lafayette, California: New-Age Foods Study Center. 1 p. June.
• ***Summary:*** The first statistics compiled on the U.S. soyfoods industry. "There are presently 150 tofu shops and soy dairies in the U.S. Ninety of these, mostly run by Caucasian Americans, have opened within the past 3 years since publication of *The Book of Tofu;* they now have about 35% of the industry sales. The remaining 60 are Japanese and Chinese run; they have an estimated 65% of the market. The industry has a brisk sales growth rate of 25% per year.

"The largest tofu factory in the U.S. is the Matsuda-Hinode company in Los Angeles; they produce about 16,000 pounds of tofu a day under fourteen different labels. The largest of the new breed of Caucasian-run plants is the New England Soy Dairy in Greenfield, Massachusetts. Founded in 1977, it now produces some 4,500 pounds of tofu a day and expects revenues of $750,000 in 1979. In its April 12 front page story on the tofu industry, *The Wall Street Journal* focused on The New England Soy Dairy.

"The U.S. tofu and soymilk industry presently uses approximately 7000 tons of dry soybeans per year.

"In July of 1978, tofu and soymilk producers founded the Soycrafters Association of North America (SANA), an educational and trade association. Its quarterly publication *Soycraft* is the primary source of information on soy protein foods in the Western World. For details contact:

"Ira Leviton, president

"Soycrafters Association of North America

"305 Wells St.

"Greenfield, MA 01301

"Worldwide, the tofu and soymilk industry is rapidly expanding. There are presently a total of 211,000 producers, including 38,000 in Japan, 158,000 in mainland China, 11,000 in Indonesia, 2500 in Taiwan, and 1470 in Korea. The largest tofu factories, located in Japan, produce over 100,000 pounds of tofu a day (15,000 tons a year) and the largest soy dairy [Vitasoy], located in Hong Kong, produces 500,000 bottles of soymilk a day (150 million bottles a year).

"Most of the new tofu shops and soy dairies in the U.S. have gotten into production using the technical manual *Tofu & Soymilk Production* by William Shurtleff & Akiko Aoyagi (who also wrote *The Book of Tofu,* which now has over a quarter million copies in print). This technical manual is available for $17.50 from:

"New-Age Foods Study Center

"P.O. Box 234

"Lafayette, CA 94549. Tel: 415-283-2991." Address: 790 Los Palos Manor, Lafayette, California 94549.

3190. Shurtleff, William; Aoyagi, Akiko. 1979. The book of tempeh: A super soyfood from Indonesia. New York, NY: Harper & Row. 160 p. Illust. by Akiko Aoyagi Shurtleff. Index. July. 28 cm. [24 ref]

• ***Summary:*** Contents: Acknowledgments. What is tempeh? Preface. 1. Soybeans–Protein source of the future: Introduction, the causes of hunger and starvation–two analyses (*The Twenty-Ninth Day,* by Lester Brown–population, affluence; *Food First: Beyond the Myth of Scarcity,* by Lappé and Collins–population, narrow focus on increasing food productivity, international food exploitation, land monopolization and misuse, cash crop system of export agriculture). Ten reasons soy will be the protein source of the future: 1. Optimum land utilization. 2. Lowest cost protein. 3. High nutritional value. 4. Time tested. 5. Remarkably versatile. 6. Appropriate technology. 7. New dairylike products. 8. Hardy and adaptive. 9. Free nitrogen fertilizer. 10. Energy and resource efficient. "All of these ten factors work together synergistically, reinforcing one another, to give added weight to the prediction that soybeans will be a key protein source for the future on plant earth." Present patterns of soy protein utilization. New developments. An idea whose time has come.

2. Tempeh as a food. 3. Getting started (incl. basic preparatory techniques and 18 recipes, incl. a recipe for sweet Indonesian soy sauce {*kechap manis*}). Favorite tempeh recipes (13 Western favorites, 6 non-fried favorites, and 12 Indonesian favorites; also Suggestions for serving tempeh throughout the day). 4. Western-style and Oriental tempeh recipes (68 recipes). 5. Indonesian tempeh recipes (70 recipes). 6. Making tempeh at home or in a community. 7. Making tempeh starter. 8. The Indonesian tempeh shop. Map of Southeast Asia, including Indonesia. Map of Java, Madura, and Bali (p. 144). Appendix A: A brief history of tempeh East and West. Appendix B: Tempeh shops in the West. Weights, Measures, and Equivalents. Glossary. Bibliography. About the authors. About the New-Age Foods Study Center.

This book contains the first sizeable collection of American-style and Indonesian tempeh recipes (130 in all), the first illustrated descriptions of making tempeh, tempeh starter, and onchom on various scales in Indonesian tempeh shops, the first history of tempeh, detailed discussion of tempeh in Indonesian culture and of the many varieties of Indonesian tempeh, and the first recommendations for commercial names for the more than 30 types of tempeh that could easily be made in the West. It also contains chapters and reviews of the literature on tempeh nutrition and the microbiology and biochemistry of tempeh fermentation, plus the largest bibliography on tempeh to date (including many new Indonesian references), an annotated listing of 61 people and organizations around the world connected with tempeh, and the first list of tempeh companies in the West.

Page 26 states: "Modern soy-protein products, such as textured soy proteins, are increasingly available at supermarkets, often in forms that simulate the fibrous, chewy texture of meat."

Note 1. This is the earliest known book in any language worldwide devoted entirely to tempeh. Note 2. This is the earliest English-language document seen (Aug. 2011) that contains the term "modern soy protein products;" Shurtleff would soon start to use it to refer to defatted soy flour or grits, soy protein concentrates, soy protein isolates, and textured soy protein products.

Illustrations (line drawings; unnumbered, not including "spots"). Indonesian dancer in sarong and crown. Balinese lion mask dancer. Two Indonesian women dancing. Cuts of fresh tempeh on a woven bamboo tray. Woman in a traditional Indonesian kitchen cooking tempeh. Terraced

rice patties in Java. Woman selling tempeh in Bali market. Masked Indonesian figure. Soybeans in the pod. A hand holding dry soybeans over a sack of such soybeans. Three women selling beans and grains in a Javanese market. Two men selling tempeh in a Javanese market. Balinese mask. Indonesian mortar and pestle. Traditional oil skimmer for deep frying. A wok. Tamarind paste and pods. Soy sprouts. Pieces of tempeh on a bamboo tray Gado-gado. Laos root & chilies. Palm sugar. Chilies. Indonesian woman carrying fruits in a bowl on her head. Salam leaf. Botok tempeh. Peté beans. Winged and masked Balinese figure. Indonesian spices. Soybean (enlarged). Cartoon of a fuzzy little critter driving his tiny tractor over a cake of tempeh, inoculating it with a secret enzyme (The Farm, Summertown, Tennessee). Placing tempeh into a homemade Styrofoam incubator. Cross section of good tempeh and bad. Winged beans. Close-up of outside of a homemade tempeh incubator. Dry soybeans in pods on plant. Woman in the USA making tempeh. A deep woven bamboo basket for treading soaked soybeans. Ten steps in the process for making traditional soy tempeh in a small shop (GIZI, Bogor). Twenty steps in the process for making and delivering traditional soy tempeh in a large shop (Oeben, Bandung). Two views of a modern dehuller and dehuller-separator. Five steps showing making tempeh in plastic bags. Three steps showing making tempeh in banana-leaf wrappers. Fourteen steps in the process for making and delivering Malang tempeh.

Map of Southeast Asia. Map of Java, Madura, and Bali (incl. West, Central and East Java). Indonesian stilt house (house on stilts, famous among the Dayak in Borneo, the Minangkabu and Batak of Sumatra, and the Toraja of Sulawesi). Woman selling leaf-wrapped tempeh in a Balinese market (color, rear cover).

Numbered figures (line drawings unless otherwise stated. The number before the decimal refers to the chapter number). 1.1 Table: The changing pattern of world grain trade (exporters and importers). 1.2 Graph: Projected population densities in various regions of the world. 1.3 Bar chart: Per capita protein consumption in rich and poor countries. 1.4 Bar chart: Per acre yields of usable protein from various food sources (pounds per acre). 1.5 Graph: Word soybean production (1965-1977). 1.6 Bar chart: Protein consumed vs. protein returned from milk, eggs, chicken, pork, beef. 1.7. Where the world's money goes (yearly global and U.S.).

2.1 Table: Percentage of protein in various foods. 2.2 Table: Composition of nutrients in 100 grams of tempeh of different types. 2.3 Table: Protein quality (NPU) of various foods. 2.4 Table: Amino acid composition of tempeh compared with the FAO/WHO reference pattern. 2.5 Bar cart: Limiting amino acids in rice and tempeh. 2.6 Table: Combining foods to increase protein. 2.7 Bar chart: Grams of dietary fiber in 100 grams of various foods. 2.8 Table: Fatty acids in soy tempeh. 2.9 Table: Vitamins and minerals in soy tempeh. 2.0 Table: Price of one day's supply of usable protein from various foods.

3.1 Bar chart: Comparison of nutrients in brown and white rice. 3.2 Shoyu (natural soy sauce) in four wooden keg, can, bottle, and small dispenser. 3.3 Grating a coconut. 3.4 Mortar & pestle (two types). 3.5 Cross section of a coconut in the husk. 3.6 Making coconut milk (7 steps). 3.7 Ladies in a Javanese market selling chilies (in mounds). 4.1 Deep-frying tempeh, with all utensils shown. 4.2 Shallow-frying tempeh. 4.3 Seasoned crisp tempeh with dip. 4.4 Tempeh shish kebab. 4.5 Coriander & garlic crisp tempeh. 4.6 Tempeh fondue. 4.7 Making tempeh-filled pot-stickers or gyoza. 4.8 Tempeh pita bread sandwich. 4.9 Tempeh burger. 4.10 Tortilla with tempeh & guacamole. 4.11 Tempeh guacamole. 4.12 Tomatoes stuffed with tempeh.

5.1 Woman in an Indonesian village kitchen. 5.2 Woman grinding spices with a mortar. 5.3 Table: Indonesia's 7 most popular tempeh recipes, in descending order of popularity: Tempeh goreng, tempeh bachem, keripik tempeh, sayur lodeh, sambal goreng tempeh, terik tempeh, sambal goreng kering tempeh. Recipes for each are given. 5.4 Selling traditional banana-leaf wrapped tempeh in Yogyakarta, Java. 5.5 Deep-frying tempeh keripik in batter. 5.6 Deep-frying tempeh keripik in Javanese market. 5.7 Botok tempeh #1. 5.8 Botok tempeh #2. 5.9 Gadon tempeh. 5.10. Folding leaf wrappers for gadon tempeh. 5.11 Rolling leaf wrappers for pepes tempeh. 5.12. Pepes tempeh on broiler and packets ready to serve. 5.13 Folding leaf wrappers for Balinese pepesan. 5.15. Saté tempeh on broiler. 5.15 Saté vendor in Java. 5.16. Saté manis tempeh. 5.17 Tempeh sambal accompaniment for rice.

6.1 Flowchart for homemade soy tempeh. 6.2 Tempeh incubator (home-made). 6.3 Good soy tempeh (diagonally sliced). 6.4 Four types of homemade tempeh. 6.5 Wooden tempeh incubation tray designs. 6.6 Community tempeh incubator. 6.7 Graph: Tempeh incubation time versus temperature for soy tempeh (shows slow, moderate, and quick combinations).

7.1 Graph: Loss of tempeh starter potency when stored at various temperatures and humidities. 7.2 Sporulated tempeh for starter in bread pan. 7.3 Dry-strainer spore extraction. 7.4 Sporulated rice, pressure cooker, and Mason jar method of making tempeh starter. 7.5 Picking leaves from a hibiscus tree for tempeh starter. 7.6 Arranging inoculated soybeans on hibiscus leaves. 7.7 Covering hibiscus leaf sandwiches in trays. 7.8 Hibiscus leaves for tempeh starter ready to use. 7.9 Hibiscus inoculum leaves on round tray. 7.10 Drying inoculum leaves in sun on roof. 7.11 Tying inoculum leaves under rafters to dry.

8.1 Flowchart for basic Indonesian soy tempeh method. 8.2. A small Indonesian tempeh shop (floor plan). 8.3 Floor plan of the large Oeben tempeh shop in Bandung, Java. 8.4 Flowchart for Malang tempeh.

A color photo shows a high-quality cake of tempeh

sliced on a plate. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

3191. Shurtleff, William; Aoyagi, Akiko. 1979. The book of tempeh: A super soyfood from Indonesia. Professional hardcover edition. New York, NY: Harper & Row. 248 p. Illust. by Akiko Aoyagi Shurtleff. Index. July. 28 cm. [190 ref]

• ***Summary:*** A special cloth-bound professional edition of *The Book of Tempeh* prepared for libraries, commercial tempeh producers, microbiologists, students of Indonesian foods, and those who love fine books. In addition to the full contents of the paperback edition, it contains the following lengthy appendixes: B: Tempeh in Indonesia (an overview of the tempeh industry and market, including the number of shops by province, per capita consumption, etc.). C: The Varieties of Tempeh. D: Soybean Production and Traditional Soyfoods in Indonesia. E: The Microbiology & Chemistry of Tempeh Fermentation. H. Onchom or Ontjom. A Glossary of Indonesian Foods (the most extensive one available in English). Bibliography on Tempeh containing over 190 entries: Works on the world food crisis, works on tempeh cookery or Indonesian cuisine, scientific journal articles on tempeh, early Dutch- and German-language works on tempeh, Indonesian-language works about tempeh, key English-language works on microbiology, film and color slides on tempeh. Illustration of an Indonesian dancer. Expanded Index. A great deal of original research is contained in the extra 88 pages and 54 illustrations.

Appendix C, "The varieties of tempeh, states: "The many varieties of tempeh may be grouped into five basic types, according to the primary ingredient used: legumes, grains & soy, grains, presscake residues, and nonlegume seeds. Legume tempehs: Soy tempeh (*témpé kedelé or kedelai,* made from the seeds of *Glycine max*). Velvet-bean tempeh (*tempe benguk or tempe koro benguk,* made from the seeds of *Mucuna pruriens,* which are called *kara benguk* in Indonesian). Winged-bean tempeh (*tempe kecipir,* made from the seeds of *Psophocarpus tetragonolobus*). Leucaena tempeh (*tempe lamtoro or tempe mlandingan,* made from the seeds of *Leucena leucocephala*). Mung bean tempeh (*tempe kacang hijau,* made from the seeds of *Vigna radiata,* which are called *kachang hijau* in Indonesian). Broad-bean or fava-bean tempeh (*tempe kacang babi,* made from the seeds of *Vicia faba,* also called horse beans). Sesban-bean tempeh (*tempe turi,* made from the seeds of *Sesbania grandiflora*). Pigeon-pea tempeh (*tempe kacang iris,* made from the seeds of *Cajanus cajan*). Green-bean tempeh (*tempe kacang merah,* made from the seeds of *Phaseolus vulgaris,* which are called *kacang buncis* in Indonesian). Lima-bean tempeh (*tempe kara or tempe kara kratok,* made from the seeds of *Phaseolus lunatus*). Lablab-bean tempeh (*tempe kara-kara or tempe koro wedus,* made from the seeds of *Lablab purpureus,* which is called hyacinth bean in the USA). Jack-bean tempeh (*tempe kara bedong or tempe kara pedang,* made from the seeds of some strains of *Canavalia ensiformis*). Lupin tempeh (developed in Australia, made from the seeds of the narrow-leafed sweet lupin (*Lupinus angustifolius*) or the Andean lupin (*Lupinus mutabilis*)). Cowpea or black-eyed pea tempeh (developed in West Africa and Thailand, made from the seeds of *Vigna unguiculata*). Note: Chickpeas (garbanzo beans), baby limas, and great northern beans have also been used to make tempeh.

Grain & soy tempehs: Wheat & soy tempeh, barley & soy tempeh, rice & soy tempeh, bulgur & soy tempeh. Grain tempehs: Barley, rice, wheat, oats, and rye have been used with good results.

Presscake tempehs: Okara tempeh (called *tempe gembus* in Central and East Java where it is most popular, and called *oncom hitam* in West Java where it is not widely used). Peanut presscake tempeh (called black onchom (*oncom hitam*) in the Bogor region of West Java where it is most widely consumed, or white onchom (*oncom putih*) in the Tasikmalaya region, or "tempeh from peanut presscake" (*tempe bungkil kacang*) in East Java). Coconut presscake tempeh (*tempe bongkrek, tempe bungkil kelapa, or tempe kapuk*) comes in several varieties and can be can be poisonous if the pathogenic aerobic bacterium *Pseudomonas cocovenenans* grows on it and produces either yellow-colored toxoflavin or the more toxic colorless bongkrek acid. Peanut- & coconut-presscake tempeh (*tempe menjes*). Mung-bean-presscake tempeh (*oncom hitam or oncom ampas kacang hijau*). Soy- & peanut-presscake tempeh. Defatted soy-meal tempeh.

Seed tempehs (nonleguminous): Rubberseed tempeh (*tempe kaloko*) is made from the seeds of the rubber tree (*Hevea brasiliemsis*). Okra tempeh. Sesame & soy tempeh. Tempeh extenders and adulterants: Okara, cassava, mung-bean presscake, soybean hulls, sweet potato, coconut- or peanut presscake, papaya. The stages of tempeh fermentation (underripe to overripe): Premature tempeh (*tempe koro*), mature tempeh, slightly overripe tempeh (*tempe semangit or tempe lanas*), overripe tempeh (*tempe busuk or tempe bosok*), rotten tempeh. Tempeh wrappers.

Appendix D: "Soybean production and traditional soyfoods in Indonesia" discusses: Soybean production in Indonesia, traditional Indonesian soyfoods: Kechap (*kecap / ketjap, incl. kecap manis*), taucho (*tauco or taoco*), okara onchom, sereh (*sere*), taokoan or takoa, tofu (*tahu*). Other nonfermented soyfoods: Soy sprouts (*taugé kedele*), yuba (*bungah tahu*), soymilk, roasted soybeans (*dele sangan, kedele sangrai*), roasted soy grits or full-fat flour (*bubuk kedele*), fresh green soybeans (*kedelai rebus*).

Note: This is the earliest English-language document seen (March. 2009) uses the word "taucho" (spelled in that way) to refer to Indonesian-style miso.

Appendix E: "The microbiology and chemistry of tempeh fermentation" discusses: What are fungi?, general

characteristics of *Rhizopus* molds, *Rhizopus* species used to make tempeh, pure cultures versus mixed cultures, preparing soybeans for fermentation, requirements for mold growth, general changes during tempeh fermentation, changes in nutrients and digestibility, the finished tempeh, the advantages and disadvantages of tempeh fermentation, suggestions for further research.

Appendix H: "Onchom or ontjom" discusses: Introduction. The varieties of onchom (*onchom merah* or *onchom beureum*)*:* Peanut-presscake onchom, okara onchom, soy onchom, coconut-presscake onchom. Making peanut-presscake onchom in a commercial shop. Making okara onchom in a commercial shop. The microbiology of onchom. Laboratory studies of onchom. Aflatoxins. Works on onchom and Neurospora. People connected with onchom and Neurospora. Continued. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

3192. Finer, Steven. 1979. Oriental tofu factory arrives in New England. *Christian Science Monitor.* July 5. Food section. p. 17. New England edition.
• ***Summary:*** About the New England Soy Dairy. Describes how tofu is made there using soy milk coagulated with nigari–in much the same way rennet works with cheese. The whey, a by-product, is discarded and the curds are pressed in large stainless steel boxes.

By the end of 1979 the Soy Dairy expects to be using more than 25,000 pounds of soybeans a week, according to founder Tom Timmins. Later this year he hopes to introduce four flavors of soy milk, soy mayonnaise, and a variety of soy cutlets.

Also discusses *The Book of Tofu* by Shurtleff and Aoyagi. Gives recipes for Tofu Guacamole and Marion's Saucy Tofu.

3193. Sheridan, Margaret. 1979. Soybeans sprout on Detroit's east side [Yellow Bean Trading Co.]. *Detroit News.* July 11. p. 1E, 6E.
• ***Summary:*** Tim and Carol Ann Huang, both vegetarians, learned about soyfoods while living on The Farm in Tennessee. Both had experience cooking. The Yellow Bean Trading Company, which they opened recently [March 1979] on Mack Ave. in Detroit, is a natural foods store and deli. "Yellow Bean is really an information center on soybeans," says Carol Ann. The deli offers: Whole wheat sandwiches with sprouts and crunchy vegetable spreads; blocks of tofu (soybean cheese); pies with whole-wheat crusts and creamy fillings like peanut butter, carob, or cocoa; egg rolls and nori rolls. All the products contain soy–often tofu. For their two children, Eva and Ethan, the Huangs use soy flour in pancakes and soy pulp [okara] in baked goods. They concoct milkshakes using soymilk and use Ice Bean instead of ice cream. A large photo shows Carol Ann slicing tofu on a plate surrounded by many dishes containing tofu. Address: News Staff Writer.

3194. Gupta, A.K. 1979. Re: Work with soybean utilization in India. Letter to William Shurtleff at New-Age Foods Study Center, July 28. 1 p. Typed, with signature.
• ***Summary:*** He and his group have done considerable work in the field of soybean utilization. Their main interest has been to study the biochemical, nutritional, technological, and sensory aspects of soy flour, soy-milk, soy-milk powder, soy-wheat blend, vegetable soybeans, black soybeans and parched soybeans with a view to popularize them for human consumption. They have published a series of research papers and reports.

He requests copies of books by Shurtleff on tofu, soy-milk and miso at the earliest convenience and hopes these will be supplied free of charge. Address: PhD, Food Scientist, I/c Crop Quality & Food Science Section, Dep. of Plant Breeding & Genetics, J.N. Krishi Vishwa Vidyalaya, Jabalpur-48204, Madhya Pradesh, India.

3195. Bean Machines, Inc. 1979. North America's most complete source of tofu and soymilk equipment (Ad). *Soycraft* (*Greenfield, Massachusetts*) 1(1):25. Summer.
• ***Summary:*** "Agents for Takai Tofu & Soymilk Equipment. Okita Enterprises Inc., Berkel VCM. Rietz disintegrators. Founded in 1977 to bring the best of the world's tofu and soymilk equipment to the rapidly growing American soyfoods industry.

"Catalogues available upon request." Address: P.O. Box 76, Bodega, California.

3196. **Product Name:** [Soymilk, based on full fat soy flour (Plain, or Malted)].
Manufacturer's Name: CIATECH.
Manufacturer's Address: Bolivar 806, Delicias, Chihuahua, Mexico.
Date of Introduction: 1979. July.
New Product–Documentation: Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). Gives the company's name, address, and phone number. Owner: Armando Camacho Griensen. Soymilk from full fat soy flour.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 128. "Widely used commercially as an egg replacer, in baked goods, and in a frozen ice-cream-like product. Some 5,000 liters a day were being made by 1981."

3197. Harper, Judson; Valle, Francisco R. del. 1979. Mexican soy plant. *Food Engineering International* (*Chilton's*) 4(7):22-23. July.
• ***Summary:*** This plant, built at a cost of $150,000, began producing full-fat soy flour in 1978 at Delicias, Chihuahua, Mexico. The project has been supervised by CIATECH (Chihuahua Center for Research and Technical Assistance).

The plant is based on low-cost Brady extruder. A list of 10 potential applications is given: Egg substitute, soy drinks, pasta products, ice cream, cookies/cakes, candies and sweets, sausages, snacks, blended flours, breads. Address: 1. Dep. of Agricultural and Chemical Engineering, Colorado State Univ., Fort Collins, Colorado; 2. CIATECH, Chihuahua, Chihuahua, Mexico.

3198. J.F. [Janice Fillip]. 1979. In times of Plenty. *Whole Foods* (*Berkeley, California*). July. p. 9-10.
• ***Summary:*** Discusses the work of Plenty (run by The Farm in Tennessee) in Guatemala and Tennessee. In Guatemala: "When an earthquake devastated Guatemala in 1976, some members of the Plenty team went there to assess the damage... Drawing on eight years of experience in soybean cultivation and soyfood production on The Farm, Plenty volunteers introduced the high-protein soybean to local farmers in hops of enhancing the Guatemalan diet. Experiments in adapting soybeans to tropical highland growing conditions captured the interest of local farmers who began planting soybeans from seeds donated by UNICEF. Plenty started teaching local women how to make soymilk and tofu with native utensils. Note: This earthquake, which struck Guatemala on 4 Feb. 1976, magnitude 7.5, killed 22,778 people.

"Funded by UNICEF, Plenty is now involved in construction of a soy dairy in Solola, the Cakchiquel capital, near Lake Atitlan. The dairy is expected to produce 100 pounds of tofu and 40 gallons of soy ice bean (soymilk ice cream) three times a week and to supply free ice bean to school lunch programs. The solar-powered soy dairy is designed to become a cottage industry for local people to produce low-cost, high-protein foods.

"At Plenty-On-The-Farm, a Village Technology training program provides instruction for Third World trainees in nutrition and soy production, agriculture, mechanics, village construction, radio communications and electronics, solar and water systems, primary health care and midwifery. Trainees are given free room and board at The Farm while they study. The program has already trained 27 people from Guatemala, Mozambique, West Germany, Portugal, South Africa, Brazil and India, and there is currently a backlog of people applying to study in the program."

3199. Kjellman, N.-I. M.; Johansson, S.G.O. 1979. Soy versus cow's milk in infants with a biparental history of atopic disease: development of atopic disease and immunoglobulins from birth to 4 years of age. *Clinical Allergy* 9(4):347-58. July. [32 ref]
• ***Summary:*** Forty-eight children with a bi-parental history of atopic disease (allergy) were followed from birth to 4 years of age. The study was unable to detect a beneficial effect from soy feeding.

Note: *Webster's Dictionary* defines immunoglobulin (a term first used in 1953) as "any of the vertebrate serum proteins that are made up of light chains and heavy chains usually linked by disulfide bonds and include all antibodies." Address: Dep. of Pediatrics, University Hospital, Linköping; and Blood Centre, University Hospital, Uppsala, Sweden.

3200. Leviton, Richard. 1979. The soy delicatessen. *Soycraft* (*Greenfield, Massachusetts*) 1(1):12-18. Summer.
• ***Summary:*** Describes The Tofu Shop (Rochester, New York), The Soy Plant (Ann Arbor, Michigan), The Cow of China (Boulder, Colorado), and The Tofu Shop (Telluride, Colorado).

Photos taken at The Tofu Shop in Rochester show: Greg Weaver at the counter serving a woman (cover photo). The inside of the restaurant, including two women seated at a wooden table and the large menu on the wall in the back. A woman employee cutting vegetables in the kitchen. Another woman working in the kitchen. A close-up of the wooden menu on the back wall (with prices; * = organically grown), which offers: Deli: Tofu*, tempeh*, soy mayo, soysage, soy milk*. Salads: Deviled tofu, tempeh, tossed. Dips (with tofu): Onion, dill. Hot sandwiches: Tofu burger, tofelafel, sloppy joe tempeh, tempeh Reuben, temptation! Cold sandwiches: Deviled tofu, tempeh salad. Casseroles: Tofu-spinach pie, tofu Italiano. Soups: Miso, soup of the day. Sampler plate. Special of the week: Ginger garlic sauce over tofu, rice and sauteed vegetables. Desserts: Lemon cream pie, tofu carob-mint pie, chocolate-mint pie, gingerbread, peanut butter cookies. Drinks: Soymilk, herb tea*, vegetable juice*, apple cider, Bambu (a roasted grain coffee), Banilla shake (with frozen bananas and soymilk), carobanana. The deli case at White Wave. The outside of The Cow of China.

Note 1. This is the earliest document seen (Feb. 2007) that mentions the use of frozen bananas to add thickness to a smoothie–a breakthrough idea.

"Matthew Schmit–proprietor of The Tofu Shop, in Telluride, Colorado, Juice Bar, Dining, Catering, Wholesale Kitchens, 'producers and suppliers of specialty foods for the western slope–operates a soy-based restaurant that seats about thirty people and has waiters and waitresses. The Restaurant, which opened in October 1977, and had gross sales last year of twenty thousand dollars, is open six days a week from 11:00 A.M. to 9:30 P.M. Matthew astonished me with the figure of one thousand dollars as the initial capital investment for this business, which now produces 250 pounds of tofu for weekly wholesale distribution in addition to the flourishing restaurant.

"The menu, which features a stunning photograph of Rocky Mountains rising out of a misty valley, and which they use as a promotional brochure, delineates the fare: Entrees (Stir-fried tofu, Rice & vegetables; Soy burgers, Tofu burgers, Okara burgers, Grilled tofu & vegetables in pita bread, Guacamole & tofu, Spicy tofu & rice filling with guacamole for burritos); Smoothies (Carob-honey soymilk

with banana, Carrot sunny shake); Beverages (Miso broth, soymilk, [soy] whey); and Salads (Tofu & guacamole salad, okara salad, tofu & vegetable salad).” Matthew explains the okara salad and whey.

“Matthew and his associates regard the tofu and soyfoods as an entrance into an expanded food processing line for their local market, a move that will lessen their dependence on only one or two products. Believing that every community should have its own fresh tofu, Matthew adds that ‘everyone develops their own business according to the nature of their community.’” During the holiday season, Matthew’s community created an exotic recipe for “tofu turkey.” “Chunks of tofu are seasoned and basted, often carved in the shape of turkeys, and baked for an entire day”–after which “they taste exactly like turkey.”

Note 2. This is the English-language document seen (Jan. 2007) that contains the term “Okara burgers” (or “Okara burger”). Address: Sunrise Farm, 100 Heath Rd., Colrain, Massachusetts 01340.

3201. Leviton, Richard. 1979. Nasoya: Soyfoods for the everyday American consumer. *Soycraft* (*Greenfield, Massachusetts*) 1(1):26-29. Summer.

• ***Summary:*** This is the earliest known in-depth story published on Nasoya Foods. The company was conceived on 5 March 1977 by “John Paino and Bob Bergwall (Nasoya’s two owners), who have known each other since college some 10 years ago. At the time Bob was making tofu boxes in Boston and working as a laboratory technician for the state; John was a manufacturer’s representative for a welding company in Concord. Before this, both John and Bob were sailors, skippering yachts from Cape Cod to the West Indies.”

That March they scoured the counties west of Boston looking for an old dairy. Finally they purchased Harper’s Dairy, in Leominster near Route Two, primarily for its superb well and well water. Nasoya produced its first batch of tofu in late April 1978. Their system was designed to produce 2,000 lb/day of tofu. “After only one year’s operation, they have already achieved their envisioned goal of 10,000 lb/week and are concerned that their shop–which is 1,200 square feet, with a 10 by 12 foot walk-in cooler, and three 35-foot trailers–is nearing its capacity. John expects they will have to move and set up an even larger facility in the next year. ‘After one year of tofu-making,’ Bob remarks, ‘we feel we are beginning to learn how to make tofu properly...’” These days John and Bob, burned out from too much hands-on tofu making, spend their time managing the business. John’s wife, Sarah, keeps the books. There follows a detailed description of the plant’s equipment and tofu-making process. The finished tofu is placed in individual plastic tubs and sealed with a manual “monkey-packer” heat sealer. The company’s main competitor, New England Soy Dairy (located 60 miles to the west) had a firm hold on the natural foods market, causing Nasoya to look at other markets, such as institutions. But finding little interest there, they were forced to compete for the natural foods market.

John Paino notes: “’We stopped making sweetened soymilk because we felt it made everyone too yin, it spaced people out. If you drink sweetened soymilk every day, you will loose touch with reality.’ Bob Bergwall says that when Nasoya first introduced their soymilk last year, the market was wide open and they could have sold enormous quantities. ‘But we didn’t want to put out a product we couldn’t believe in. We might produce a plain soymilk sometime.’”

“This summer Nasoya will release a new line of tofu products, including soy mayonnaise, ‘eggless’ egg salad, and an onion, a dill, and a zesty Italian dip.” Address: Colrain, Massachusetts.

3202. **Product Name:** [Soyavén (Soy-Oats Infant Formula, Soy-Corn Blend)].
Foreign Name: Soyavén (Fórmula alimenticia para lactantes, a base de soya y avéna).
Manufacturer’s Name: PADSA: Productos Alimenticios Delicias S.A.
Manufacturer’s Address: Apartado Postal 376, Zona Industrial, 33000 Ciudad Delicias, Chihuahua, Mexico. Phone: (147) 2-30-93.
Date of Introduction: 1979. July.
Ingredients: Sucrose [white sugar] 34.1%, dehulled soybeans 32.1%, pearled oats 25.6%, vegetable oil 5.8%, tricalcium phosphate 1.2%, salt (NaCl, 0.5%), vitamins and minerals 0.4%, DL-methionine 0.2%, milk flavor 0.1%.
Wt/Vol., Packaging, Price: 454 gm (1 lb) can with plastic lid.
How Stored: Shelf stable.
Nutrition: Per 100 gm.: Calories 398, protein 17.0 gm, carbohydrate 61.7 gm, fat 14.5 gm, cholesterol 0 mg.
New Product–Documentation: *Soybean Digest.* 1982. Jan. p. 64. “Mexico adds soy product. Mexican President Jose Lopez Portillo recently announced Soya-vena, a soy/oatmeal blend, has been added to the Mexican government’s list of basic food basket items. The soy-enriched product will be used in future price indices, will be promoted nationally and be recognized as a sound nutritious product, says ASA [American Soybean Assoc.] Latin America Director Gil Harrison.”

N.H. Marmelstein. 1983. Food Technology. Aug. p. 64-72. “Soy-oats infant formula helps fight malnutrition in Mexico.” Commercial production began in July 1979. In November 1981, Soyavén was presented the National Bank of Mexico’s 1980 Science and Technology Award for its value in fighting malnutrition in Mexico. In June 1983 this product won the IFT (Institute of Food Technologists) Food Technology Industrial Achievement Award.

Primera Reunion Panamericana de Extrusion de

Alimentos. 1984. Nov. p. 451. Photo of can. Soya Bluebook. 1984. p. 63, 68. Label transcription from Nicole Black. 1988. Jan. Found in a store in Guanajuato.

3203. Shurtleff, William; Aoyagi, Akiko. 1979. Tofu & soymilk production: A craft and technical manual. Lafayette, California: New-Age Foods Study Center (Renamed Soyfoods Center in Sept. 1980). 336 p. Illust. by Akiko Aoyagi Shurtleff. Index. July. 28 cm. First published in Aug. 1977 as a rough photocopied manuscript with a yellow cover. [223 ref]

• ***Summary:*** Contents: Preface. 1. How to start a tofu shop or soy dairy. 2. Setting up shop; The community or village shop; The traditional caldron shop; The steam cooker plant; The pressure cooker plant; The soy dairy; The automatic steam cooker plant; The modern factory. 3. Ingredients. 4. Sanitation and safety. 5. Principles of tofu & soymilk production. 6. Tofu. 7. Firm tofu, pressed tofu & smoked tofu. 8. Foods made from tofu: Introduction, creamy tofu dressing, tofu chip dip, tofu mayonnaise, tofu cream cheese, cottage cheese, sour cream, tartare sauce, tofu eggless egg spread or missing egg salad, tofunafish spread or salad, tofu rice salad, tofu cheesecake (Sprucetree Baking Co. and White Wave), tofu pies, tofu creamies or tofu-coconut cream bars, tofu tarts, tofu turnovers, tofu puddings, fruit whips, custards and parfaits, tofu cinnamon rolls, tofu whipped cream, tofu icing and cream cakes, marinated tofu (fried or baked, p. 166), tofu jerkey [sic, jerky] (p. 166), teriyaki tofu, tofu teriyaki, savory baked tofu, savory pressed tofu (with five spice powder, *wu-hsiang toufu-kan*), nori rolls with brown rice & tofu, tofu & brown rice burgers, tofu baby foods, tofu in ready-made sandwiches. 9. Using okara, whey, curds & hulls. Deep-fried tofu (cutlets, cubes, burgers, treasure balls, burger balls, pouches, puffs). 11. Soymilk. 12. Dairylike products made from soymilk: Frozen soymilk desserts (soymilk ice cream, frozen soymilk yogurt, soymilk sherbets, soysicles, frozen soymilk custard, ice soymilk), fermented or cultured soymilks (soymilk yogurt, acidophilus soymilk, soymilk kefir, soymilk piima, soymilk buttermilk and other fermented milks), soymilk cheeses (unripened fresh, unripened soft {quark, queso blanco, panir, etc.}, ripened soymilk cheeses), soymilk mayonnaise, soy shakes and energy drinks, soymilk eggnog (soy nog), soymilk whipped cream, chip dips, puddings, custards. 13. Silken tofu & pressed silken tofu (Silken tofu is made from concentrated soymilk). 14. Lactone silken tofu (GDL). 15 Grilled tofu. 16. Fermented tofu. 17. Dried-frozen tofu. 18. Yuba. Appendix A: Resources. People & institutions connected with tofu & soymilk production. B: Weights, measures & equivalents. Bibliography. About the New-Age Foods Study Center.

See ¼-page ads in *East West Journal.* 1979. Dec. p. 4. 1980. Jan. p. 19.

Note 1. This is the earliest English-language book seen with the term "soymilk," spelled as one word, in the title.

Note 2. This is the earliest document seen (Feb. 2002) that mentions tofu jerky or any kind of soy jerky.

Note 3. This is also the earliest English-language document seen (April 2013) that uses the word "quark," or "queso blanco" in connection with soy cheese or tofu.

Note 4. This is the earliest English-language document seen (Sept. 2012) that contains the term "cultured soymilks" (or "cultured soymilk").

Note 5. This is the earliest English-language document seen (Sept. 2012) that contains the term "ripened soymilk cheeses" (or "ripened soymilk cheese").

Note 6. This is the 2nd earliest English-language document seen (April 2013) that uses the term "smoked tofu," but the first that uses it in its modern sense.

Note 7. This book contains the most detailed and complete descriptions seen to date (Oct. 2012) of how to make tofu, soymilk, and yuba on a commercial scale.

Note 8. This book was first printed on 1 Aug. 1977 in a photocopied and rough-typed edition with a yellow and black cover.

Note 8. Reviews of this book appeared in many publications: (1) Richard Leviton. 1980. *Soycraft* (Massachusetts). 2(1):63-64. Winter. "An indispensable operating manual for soyfoods entrepreneurs... The illustrations alone make the book a valuable reference tool... a sustained inspiration. The only book of its kind in English." (2) *Food Chain* (Intermediate Technology, England). 1997. No. 20. March. p. 6. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

3204. Shurtleff, William; Aoyagi, Akiko. 1979. The book of tempeh: A super soyfood from Indonesia. Professional hardcover edition (Continued). New York, NY: Harper & Row. 248 p. Illust. by Akiko Aoyagi Shurtleff. Index. July. 28 cm. [190 ref]

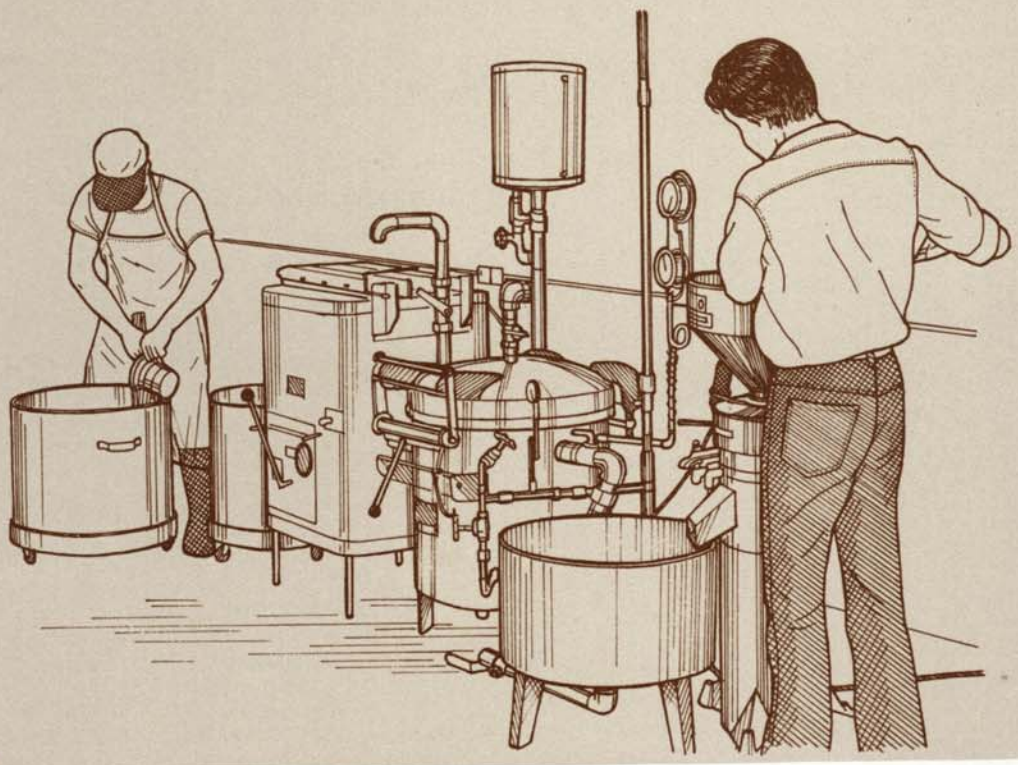
• ***Summary:*** Continued: Numbered figures (line drawings unless otherwise stated. The capital letter before the decimal refers to the appendix number). B.1 Table: Tempeh shops in Indonesia by province: Home-industry scale. B.2 Table: Relative frequency of tempeh consumption in Indonesia (by province). B.3 Carrying tempeh to market in Java using a shoulder pole and trays stacked on two baskets. B.4 Cost of one day's supply of protein in Indonesia.

C.1 Table: Edible grain legumes. C.2 Map: Distribution of legumes in southeast Asia. C.3 Winged bean, showing leaves, pods, flowers and beans. C.4 Leucaena leaves and pods (*peté china*). C.5 Reduction in bongkrek toxicity from bongkrek acid during fermentation (Ko 1977). Okra. Packets of tempeh, ready to sell, wrapped in leaves and tied. A large soybean, with hilum showing.

D.1 Table: Soybean production in Indonesia (1950-1976). D.2 Table: Major Indonesian food crops, D.3 Table: Indonesian soybean production and yields (by province). D.4 Map: Major soybean producing districts in Java (1976;

TOFU & SOYMILK PRODUCTION

THE BOOK OF TOFU , VOLUME II



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most are in East Java, led by Jemper and Pasuruan). Table: Daily per capita consumption of tempeh (by province, led by Central Java, then West Nusa Tenggara, Yogyakarta, and East Java). Table: Percent of dietary protein supplied by major food categories (led by cereal grains, then fish, nonlegume vegetables, and soy products). Table: Percentage of dietary protein supplied by soy products (by province, led by Central Java, then East Java, Yogyakarta, and West Java). D.5 Table: Statistics on production and consumption of basic Indonesian soyfoods (led by tempeh, then tofu, kechap, taucho). D.6 Star anise. Grinding soybeans for tofu using traditional push-pull stone mills. Pouring soy curds into cloth-lined forming box. Javanese shadow puppet (*wayang kulit*).

Note. This is the earliest English-language document seen (April 2013) that uses the term "soy curds in connection with tofu. The curds, when pressed in the box, will become tofu.

Table: Classification of *Rhizopus oligosporus.* E.1 Two stages in the germination of a spore (after 1½ and 10 hours). E.2 Two successive views of hyphal tip growth at half-hour intervals.

E.3 Rhizopus oligosporus (Frazier 1957, showing sporangium, columella, apophysis, sporangiophores, stolon, sporangiospores, node, rhizoid). E.4 *Rhizopus stolonifer.* A. Columella and attached spores. B. Collapsed (invaginated) columella (Webster 1970).

E.5 Life cycle of *Rhizopus* (Raven and Everet 1976). E.6 Graph: Changes in tempeh oil and moisture content during fermentation (Sudarmadji 1977). E.7 Graph: Three phases of tempeh fermentation (rapid, transition, and deterioration; Sudarmadji 1977). E.8 Graph: Changes occurring during tempeh fermentation (temperature, soluble solids, pH, soluble nitrogen, and reducing solids; Steinkraus et al. 1960). E.9 Graph: Yields of tempeh and of solids and different stages of the fermentation process (100 gm of whole dry soybeans yield 173 gm of tempeh on average; Steinkraus 1960; Murata 1967). E.10 Table: Loss of solids and protein during tempeh fermentation. E.11 Table: Percentage changes in composition of key essential amino acids during tempeh fermentation. E.12 Table: PER (protein efficiency ratio, a measure of protein quality for humans) changes during tempeh fermentation. E.13 Graph: Changes in concentration of three carbohydrates during tempeh fermentation (sucrose, stachyose, and raffinose, all decrease; Shallenberger et al. 1976). E.14 Table: Amount of B-complex vitamins in 100 gm of tempeh vs. 100 gm unfermented soybeans (all increase in tempeh except thiamine {vitamin B-1}). Changes in peroxide value and TBA value tempeh and soy flour during storage at 37ºC (98.6ºF; both rise rapidly in soybeans, but stay near zero and stable for tempeh; Watanabe et al. 1971).

H.1 Table: Foods known in Indonesia as "onchom" (made from peanuts or soybeans). H.2 Selling onchom in a Javanese market. H.3 Graph: Changes in soy onchom during fermentation (temperature, soluble solids, pH, soluble nitrogen, and reducing solids; Steinkraus et al. 1965). H.4 Flowchart for preparation of peanut presscake onchom. Unnumbered illustrations show 12 steps in the process of making onchom in a commercial shop in Indonesia. Neurospora: Budding conidia, conidiophore. H.5 Graph: Reduction in onchom aflatoxin during fermentation with *Neurospora* (Ko 1974). A thermometer, showing both Fahrenheit and Centigrade.

Glossary of Indonesian foods, spices, etc. Agar. Amaranth, Indonesian. Apem. Arak. Aren sugar. Aromatic ginger. Asam. Bananas (pisang). Basil. Bawang merah. Bawang putih. Bayam. Bean sprouts. Belimbing. Blachan. Brem. Bumbu. Candlenuts (kemiri). Carambola (belimbing). Cassava. Chabé. Chayoté. Chilies (red, green, fiery dwarf). Two-page spread (p. 220-21) showing illustrations of Indonesian natural foods. Choko. Citrus leaves. Cloves. Coconut. Coconut, grated. Coconut milk and cream. Coconut oil. Coconut water. Coriander. Cumin. Dageh. Daun asam. Daun jeruk purut. Daun salam. Daun seré. Daun-so. Durian. Fermented fish. Fermented fish sauce. Fruits. Galangal, greater. Galangal, lesser. Gingerroot. Indonesian amaranth. Jackfruit. Jaggery. Jinten or jintan. Kangkung leaves. Kecap (kecap) or ketjap. Kemangi leaves. Kemiri. Kenchur root. Ketjap. Ketumbar. Kluwak. Koji. Kolang-kaling. Krupuk. Kunyit. Labu siam. Laos root. Lemongrass. Lime leaves. Lombok. Melinjo leaves. Mochi, Indonesian (*uli*). Mung-bean sprouts. Nutmeg. Okara. Onchom or ontjom. Palm sugar. Pandanus leaf. Pasta. Pepper. Peté beans. Petis. Peuyeum. Prawn paste. Putjung nuts. Ragi. Rempeyek. Rice. Salam leaf. Sambals. Santan, Sayur asin. Seré or serai. Shallots. Shrimp crisps. Shrimp paste. Soursop. Soy sauce, Indonesian. Star fruit. Swamp cabbage. Tahu. Tamarind. Taocho, tauco, taoco, or taotjo. Taogé or taugé. Tape. Tapioca. Taucho or tauco. Terasi. Tofu. Trasi. Tuak or tuwak. Turmeric. Winged bean. Note on monosodium glutamate. A woman holding a tray of leaf-wrapped tempeh in Surinam. Photo of Shurtleff and Aoyagi on inside rear dust jacket. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

3205. *Soycraft* (*Greenfield, Massachusetts*). 1979. Soymilk ice cream in Guatemala. 1(1):50-51. Summer.
• ***Summary:*** This spring Plenty commenced installation of a small scale soy dairy, which will manufacture soymilk ice cream and tofu, in the Indigenous Municipal Building in Solola, Guatemala. Plenty received a $30,000 grant from CIDA (the Canadian International Development Agency) for the project.

3206. *Soycraft* (*Greenfield, Massachusetts*). 1979. New England Soy Dairy plans expansion. 1(1):10. Summer.
• ***Summary:*** "Equipment being used to produce 25,000 pounds of tofu weekly is designed to make only 10,000 pounds weekly. The company plans to triple its soymilk

capacity and double its tofu production. It will introduce plain and flavored soymilk beverages, tofu salad, soy mayonnaise, deep-fried tofu cutlets, and soymilk ice cream, sometime this summer."

3207. Takai. 1979. Takai Tofu & Soymilk Equipment Co. (Ad). *Soycraft* (*Greenfield, Massachusetts*) 1(1):39. Summer.
• ***Summary:*** This full-page ad: (1) Gives an introduction to the company. (2) Explains that they have worked closely with William Shurtleff, author of *The Book of Tofu* to develop their first English-language catalog. (3) States that they are working with Bean Machines, Inc., a California-based company to get Takai equipment to customers at the lowest possible prices with the minimum delay. (4) Shows illustrations of 11 pieces of Takai equipment, ranging from traditional to modern. (5) Gives the address, phone number, and logo of both Bean Machines and Takai. Address: 307 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan.

3208. **Product Name:** Tofu Creamies (or Tofu-Coconut Cream Bars).
Manufacturer's Name: White Wave.
Manufacturer's Address: 3869 Walnut St., Boulder, CO 80301.
Date of Introduction: 1979. July.
Ingredients: Crust: Whole wheat flour, cut oats, oil, shredded coconut, sea salt. Filling: Tofu, bananas, honey, oil, vanilla, arrowroot, sea salt, shredded coconut.
How Stored: Refrigerated.
New Product–Documentation: Recipe given by Shurtleff & Aoyagi. 1979. Tofu & Soymilk Production. p. 165.

3209. **Product Name:** Tofu Cinnamon Rolls.
Manufacturer's Name: White Wave.
Manufacturer's Address: 3869 Walnut St., Boulder, CO 80301.
Date of Introduction: 1979. July.
Ingredients: Glaze: Margarine, honey, walnuts, raisins. Filling: Tofu, walnuts, honey, vanilla, cinnamon, salt. Dough: Whole wheat flour, soymilk, raisins, honey, oil, baking powder, salt.
Wt/Vol., Packaging, Price: Retails for $0.66 each.
How Stored: Refrigerated.
New Product–Documentation: Recipe given by Shurtleff & Aoyagi. 1979. Tofu & Soymilk Production. p. 166.

3210. Howes, Charles D. 1979. Re: Soymilk processes developed by Seventh-day Adventists. Letter to William Shurtleff at Soyfoods Center, Aug. 15–in reply to inquiry. 1 p. Typed, with signature on letterhead. [1 ref]
• ***Summary:*** "The microwave process of making soymilk was developed by Paul Allred who has had some past experience in soymilk production. For example, he established a soymilk plant in Mexico while he was an Adventist missionary and educator there. He has also been a moving force behind the plant in Egypt. The initial patent for the process (#3,941,890) is enclosed. This outlines the microwave process in some detail. Mr. Allred is located at the Loma Linda Foods plant in Riverside so if you would like to visit with him and perhaps see his cooker you might give him a call and arrange for a visit."

"I do not think that we will be using this process in the U.S. in the immediate future due to relatively low throughput and capital investment problems. However, as higher powered equipment becomes available this may well change." Address: Loma Linda Foods, 13246 Wooster Rd., P.O. Box 388, Mount Vernon, Ohio 43050. Phone: (614) 397-7077.

3211. New-age Foods Study Center. 1979. Catalog of publications & materials by William Shurtleff & Akiko Aoyagi [mail order]. P.O. Box 234, Lafayette, CA 94549. 1 p. Front and back. 36 x 22 cm. Aug. 24.
• ***Summary:*** This single page leaflet, 8½ by 14 inches, is printed on both sides with brown and teal blue ink on white Classic Laid paper. The Japanese-style logo is waves and a moon in a circle. The following items are available: The Book of Tofu (Ballantine $2.95). Tofu & Soymilk Production ($17.95). The Book of Tofu: Food for Mankind (Autumn Press $7.95). The Book of Tempeh (paperback and professional hardcover editions). Tempeh Production ($13.95). The Book of Miso (Autumn Press). Miso Production. Pamphlets (5). Tofu kit. Color slide sets. Soycraft magazine (and information about Soycrafters Assoc.). Catalogs of tofu & soymilk equipment (Bean Machines). Natural nigari. Tempeh starter (contact Farm Foods). Koji & koji starter. Pressing sacks & straining bags. The Book of Kudzu. A large sidebar is titled "New-Age Foods Study Center." Address: Lafayette, California. Phone: 415-283-3161.

3212. Omosaiye, O.; Cheryan, M. 1979. Ultrafiltration of soybean water extracts: Processing characteristics and yields. *J. of Food Science* 44(4):1027-31. July/Aug. [14 ref] Address: Dep. of Food Science, Univ. of Illinois, Urbana, IL 61807.

3213. **Product Name:** Plamil Carob-ean (Carob Soymilk).
Manufacturer's Name: Plamil Foods.
Manufacturer's Address: Bowles Well Garden, Folkestone, England.
Date of Introduction: 1979. August.
Ingredients: Incl. soymilk, carob powder.
New Product–Documentation: Ad in Alive magazine. 1979. July/Aug. p. 5.

Letter from Arthur Ling, Managing Director of Plamil Foods. 1990. July 24. The Carob-ean has been discontinued for lack of sales.

3214. *Plenty News* (*Summertown, Tennessee*). 1979. Guatemala. 1(3):2-3. Aug.
• ***Summary:*** After the 1976 earthquake that devastated Guatemala, "Plenty became involved with the construction of hundreds of homes, schools, and clinics... Foundation and walls have been completed on a 22- by 44-foot solar dairy being constructed in the village of San Bartolo. Work is continuing with the building of roof trusses, final solar design, and delivery of the tons of equipment. The first step in the solar aspect of the project is a water pre-heater."

In a sidebar, Laurie Praskin, soy technician with Plenty Guatemala, writes: "...our soy demonstrations are going good... you keep seeing kids you want to bring home and feed for awhile. It feels great to be teaching their mothers how to make soymilk and tofu, and giving them nutritional information... it's good to see these malnourished kids stuff their faces with tofu and soy milk... protein... they all love it...

"As a result of holding one class last year in San Martin, 45 ladies were inspired to plant soybeans this year... This is really the heart of the project, to introduce The Noble Bean so they can be recognized and used at the village level, in the homes, so they can become a regular part of the life and diet..."

Photos show: (1) Villagers constructing a gravity-fed water system. (2) Plenty volunteer Jane Graf with a little Guatemalan girl (looking healthy and happy): "She's been fed a soy-based diet, loved a lot..." (3) Members of Plenty's Agricultural Project preparing for variety trials in Solola (altitude 7,200 feet) with soybeans, amaranth, quinoa, and winged beans–all high protein crops that grow in the tropical highlands. Address: 156 Drakes Lane, Summertown, Tennessee 38483.

3215. Simonds, Nina. 1979. Chinese cuisine: Soybeans. *Gourmet* 39:28-29, 74-77. Aug.
• ***Summary:*** After a brief history of soya in China, gives recipes for: Fried soybeans [soynuts]. Sweet soybean milk. Stir-fried soybean sprouts red-in-snow (incl. how to sprout soybeans). Braised soybeans and meatballs. Spareribs and soybean sprout soup. Stuffed wheat gluten balls with soybean sprouts (*Mien Chin Jou Yüan*). Braised bean sticks [*fu tsu;* dried yuba sticks] with black mushrooms. Buddha's delight (*Lo Han Su Ts'ai*). Stuffed bean curd rolls. Sweet-and-sour fish in bean milk skin [yuba]. Bean milk skin (*fu p'i*) and eggplant rolls.

3216. Kanthamani, S. 1979. Re: Introducing soyfoods to India. Letter to William Shurtleff at New-Age Foods Study Center, Sept. 3. 2 p. Handwritten on aerogram.
• ***Summary:*** She thanks Shurtleff for the copy of *The Book of Tofu.* She resigned her job in Sri Lanka in July 1979; the situation was unsatisfactory and there was too much discrimination. She has had a few offers in India but she is still debating whether to accept a job or start her own business.

She is revising her book *Tasty Recipes from Soyabean.* She is looking for a publisher. When she succeeds in getting the revised edition published, she will send a copy to Shurtleff.

She would not recommend use of a nylon sock for soya milk preparation because of sanitation problems, however a thin white cloth works well. Her level of preparing soyamilk at the home level has become very popular as there has been a scarcity of coconuts. Sinhala people [in Sri Lanka] usually use coconut milk for preparing all types of curries. "Now they have replaced coconut milk with soyamilk." She provides here new address [see above]. Address: 559-A 10th A Main Rd., V Block, Jayanagar, Bangalore 560041, India.

3217. Tripp, J.H.; Francis, D.E.M.; Knight, J.A.; Harries, J.T. 1979. Infant feeding practices: a cause for concern. *British Medical Journal.* ii(6191):707-09. Sept. 22. [24 ref] Address: 1-2. Senior Registrar and Group Chief Dietitian (respectively), Hospital for Sick Children, Great Ormond Street; 3. Veterinary Officer, Zoological Society of London, Regent's Park; 4. Inst. of Child Health and Hospital for Sick Children. All: London, England.

3218. Esko, Wendy. 1979. Introducing macrobiotic cooking. Tokyo: Japan Publications. 144 p. Foreword by Aveline Kushi. Preface by Edward Esko (both written June 1978). Illust. by Bonnie Harris. Index. 26 cm. Reprinted in 2006 by Square One Publishers (Long Island, NY, 240 p.).
• ***Summary:*** The author was introduced to macrobiotics in upstate New York in about 1971. This is her first book on macrobiotics. It was originally published under the title of *An Introduction to Macrobiotic Cooking* by the East West Foundation, 17 Station Street, Brookline, Massachusetts 02146. Though copyrighted in 1978, the first edition appeared in Sept. 1979. The fourth printing was May 1981.

The chapter titled "Beans including tofu and natto" gives descriptions of and recipes for making: Japanese black beans (black soybeans, p. 54; "These beans are therapeutic for the sexual organs and will relieve an overly yang condition caused by too much animal food or fish.") Soybeans (p. 54. "These beans are the most yin of the bean family... It is recommended that soybeans be eaten only occasionally as a separate side dish. Because they are very yin, they should be cooked with yang vegetables such as lotus root or burdock, for balance. The best way to eat soybeans is in the form of *tofu, okara, natto, tempeh,* and, of course, miso and tamari.") Tofu, and Homemade tofu (curded with nigari, p. 54-55). Okara (p. 55-56). Tofu and corn. Tofu, onions and water cress. Dried tofu (dried-frozen, p. 57). Yuba (dried soy milk; how to make at home). Vegetables and dried soy milk (p. 57). Ganmodoki (Tofu and jinenjo patties, p. 57-58). Natto

(description and how to make at home, p. 58-59).

Other soy-related recipes include: Tofu soup (p. 68). Miso soup (p. 69-70, basic, or quick). Watercress miso soup (p. 71). Daikon and sweet rice dumpling soup (with miso). Chinese cabbage and tofu miso soup (p. 71). Aveline Kushi's miso stuffed lotus root (p. 86). Tofu dressing (p. 91). Miso-tahini spread (p. 92). Miso-sesame spread (p. 92). Miso-lemon sauce (p. 93). Tofu dip (p. 93). Miso with scallions (p. 95). Tamari (description, p. 95). Tekka (made with Hatcho miso, p. 96). Miso pickles (p. 100-01). Tamari pickles (p. 101). Tofu plaster (p. 130). Ume-Sho-Kuzu drink (with umeboshi, tamari and kuzu, p. 131). Ume-sho-bancha (with tamari, p. 131). Use of tamari, miso, and tekka (p. 132).

Also includes instructions for making amasake at home (p. 116; it is a natural sweetener made from fermented sweet rice), and a recipe for Amasake bread (p. 107), instructions for making seitan at home (p. 46-47, using 3½ lb of hard spring or hard winter whole wheat flour; spring wheat flour produces a much softer texture of seitan than the winter variety), and recipes for seitan stew, seitan-barley soup, sauteed vegetables and seitan, stuffed cabbage with seitan, and seitan croquettes (p. 47-49), plus recipes for leftover seitan (p. 125). Address: East West Foundation, near Boston/ Cambridge, Massachusetts.

3219. Forbes, Richard M.; Weingartner, K.E.; Parker, H.M.; Bell, R.M.; Erdman, J.W., Jr. 1979. Bioavailability to rats of zinc, magnesium, and calcium in casein-, egg- and soy protein-containing diets. *J. of Nutrition* 109(9):1652-60. Sept. [23 ref]

• ***Summary:*** The bioavailability of zinc and magnesium differ for general categories of soy protein products, including full fat soy flour (SF), freeze-dried soy beverage (SB), and soy concentrate (SC), when fed to weanling rats. Zinc was poorly available from these soy products, especially SC. Magnesium was highly available from SF and SB. Calcium added to all soy products was highly available. Address: Dep. of Animal Science, and Dep. of Food Science, Univ. of Illinois, Urbana, Illinois 61801.

3220. Carlin, Margaret. 1979. Soy to the world! Tofu is cheap, nutritious and low in calories. *Albuquerque Tribune* (*New Mexico*). Oct. 23. p. B-1. [1 ref]

• ***Summary:*** About Southwest Soy Foods. "Tofu has fed Orientals for thousands of years, and now Americans are learning to appreciate the bland white nutritious stuff.

"Tofu is bean curd, a custard-like cake made from curdled soybean milk. It is cheap, high in protein, low in calories and saturated fats and it has no cholesterol. Anybody trying to lose weight can enjoy tofu with a clear conscience.

"Tofu is practically tasteless so it blends well with other flavors. It is delicious fried, baked in souffles and casseroles, broiled, scrambled and made into burgers, tacos, enchiladas, tamales, lasagna and almost anyway you like." Tofu mayonnaise is good tasting but low in calories.

"Tofu is showing up on vegetarian restaurant menus, health food store shelves and in Oriental shops and supermarkets as well." Stephen and Kathryn Bennett Clarke own Southwest Soy Foods in Santa Fe, New Mexico. It started only 18 months ago but now makes more than 2,400 pounds/week of tofu. Their tofu is also sold in Albuquerque. "Mrs. Clarke wandered into the world of tofu because her daughter, Madena, 9, was allergic to milk." She learned about soy milk and before long she was making her own tofu.

"She and her husband also were inspired by 'The Book of Tofu,' by William Shurtleff and Akiko Aoyagi ($6.95), a book widely regarded as definitive. When it was published a few years ago, the book created an explosion of interest in tofu, and resulted in the opening of many tofu shops throughout the country, including the Clarke venture in Santa Fe." "Tofu costs from $1.09 to about $1.20 a pound."

Of course, if you make your own tofu at home it costs much less. "An Albuquerque engineer, Al Geduld, has designed a wooden tofu maker [tofu kit] which sells for $20."

Recipes from Kathryn Clarke include: Tofu mayonnaise. Missing egg salad. Ruthie's tofu / seafood stir fry. Tofu protein pops. Photos show: (1) Overhead view of Stephen Clarke stirring soy milk before adding the curdling agent. (2) Stephen Clarke, Kathryn Clarke, and Thalia Plantian, standing behind a sink in which their tofu is cooling. Address: Tribune Accent Editor.

3221. Farm Foods. 1979. Soy Ice Bean: The completely vegetarian frozen dessert (Ad). *Whole Foods* (*Berkeley, California*). Oct. p. 69.

• ***Summary:*** "Made from fresh soymilk. Tastes great. Comes in vanilla, carob, strawberry, orange, banana, and chocolate. Allergic to cow's milk? Try this, its cool. Has no animal products in it. No cholesterol. Natural? Sure is. (No additives or preservatives). Soybeans are a complete protein. It's good for you." Address: 144 King St., San Francisco, California 94107.

3222. *Food Product Development.* 1979. Improved soy flour-oil blend answers beverage base needs. 13(10):52. Oct.

• ***Summary:*** Nutrisoy 101, an improved soy flour-soy oil blend (2:1) produced by ADM Foods, imparts a highly acceptable flavor, texture, and mouthfeel to beverages, thus expanding soy flour's previously limited potential as a beverage base. It readily disperses in cold water with agitation, and remains in suspension for 3 days, or if carrageenan is added, for 1 week. It can be used as an economic replacement for milk solids, as in milk shakes or flavored milks. It can be fermented with lactic acid to yield a soy yogurt or cultured sour cream dressing. It can also serve as a low-cost replacement for milk-protein counterparts in

dips, sauces, and salad dressings. Sample formulations for vanilla and chocolate soy beverages are given.

3223. Ohta, Teruo; Takano, Kenji; Nikkuni, Ikumi; Hashizume, K.; Saio, K. 1979. Shokuhin-yô daizu no chôki hokan-chû no hinshitsu henka [Soybean quality change and its influence on food processing]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku* (*Report of the National Food Research Institute*) No. 35. p. 56-70. Oct. [6 ref. Jap; eng]
• ***Summary:*** As soybeans were stored for 1 year, the changes in their quality were measured and the effects of these changes on natto, tofu, and aburage were investigated under different temperatures (15, 25, and 35ºC) and humidity (RH = Relative Humidity 60, 70, and 80%). New crop (recently harvested) soybeans grown in the USA and China were used in this experiment.

Soybean quality deteriorated with time, and there were definite measurable changes in the ability to germinate / sprout, acid values, titratable acidity, Nitrogen Solubility Index (NSI), solids extracted in soakwater, and extraction rates of protein and solids into soybean milk.

The passage of time in storage led to harder cooked beans for natto, lower yield of soybean milk and tofu, lower coagulation rate in tofu, and less ability to expand during deep frying in aburage.

Increased temperatures and relative humidity increased the rate of soybean quality deterioration as measured above, and increased RH caused more deterioration than the increased temperature. Therefore, soybeans awaiting processing into natto, tofu, or aburage should be stored in a cool, dry place. Address: National Food Research Inst. (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan.

3224. Taira, Harue; Taira, Hirokadzu; Mori, Y.; Ushirogi, T.; Fujimori, I. 1979. Daizu shushi no kansô shori hôhô to sono hinshitsu ni tsuite. IV. [Influence of dry treatment after harvest on quality of soybean seeds. IV. Suitability for food processing of stored seeds]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku* (*Report of the National Food Research Institute*) No. 35. p. 160-71. Oct. [11 ref. Jap; eng]
• ***Summary:*** The effects of dry treatment (drying) after harvest on the physical properties, chemical composition, and suitability for food processing of soybean seeds were investigated. The heat treatments were natural drying and air drying using heated and non-heated air at 20, 30, and 40ºC.

The seeds were then stored at 15ºC with RH (Relative Humidity) of 65% and 75%, at 30ºC with RH of 65% and 75%, and at room temperature and humidity in a paper bag for 30, 60, 120, 180, 270, and 360 days, respectively. These various storage conditions were further investigated for their effects on suitability for food processing.

At a given RH, the seed moisture rose as the temperature rose; many figures are given. Seed quality degenerated as storage time increased. The following decreased: absorbability of water in seeds, rate of germination, extractability of protein from soaked seeds by hot water, pH of soybean milk, and ratio of weight of steamed seeds to raw seeds. And the following increased: soluble matter and protein in soak water, moisture content, hardness and darkness of color of steamed seeds.

Conclusion: Soybeans should be stored in a cool, dry place, ideally at a temperature of 15ºC (50ºF) or below and an RN of 75% or below. Remarkable deterioration was observed at 30ºC with RH of 75%. Seeds heat dried at 40ºC showed a significant decrease in suitability for making miso, natto, or cooked soybeans. Tofu making was less affected by drying the seeds with heated air.

Reprinted from *Proceedings of the Crop Science Society of Japan* (*Nippon Sakumotsu Gakkai Kiji*) 48(2):291-302 (1979). Address: 1-2. National Food Research Inst., Ministry of Agriculture, Forestry and Fisheries (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan; 3-4. Hokkaido Prefectural Central Agric. Exp. Station, Naganuma, Hokkaido 069-13.

3225. Ohlund, Tim. 1979. Re: Ted Nordquist and Aros Soymilk Products in Sweden. Letter to William Shurtleff at New-Age Foods Study Center, P.O. Box 234, Lafayette, California, Nov. 26. 1 p. Handwritten.
• ***Summary:*** "Ted [Nordquist], a business man named Gunnar, a Korean–Professor Kim, and myself are now deeply involved in setting up the Aros Soymilk Products company. We've found a suitable factory location in Örsundsbro (my village) at a reasonable price. Now the architect is busy working out the floor plan [500 square meters] which will have to be approved by the health authorities. An estimate of the factory remodeling plus all other prospected costs will be the basis for a loan from the State development agency. We hope to get a loan for the whole shebang. The interest rate and other conditions will be very favorable. If all goes well we hope to start production of tofu, soymilk, salad dressing and later a few other products next fall. We'll let you know more later as it develops. Love–Tim, Annalena & Finn."

Note: The date of this letter is not clear. It was probably 26 Nov. 1979 but could be 20 April 1979, with a follow-up card from Tim on 5 Dec. 1979 (or 12 May 1979). The books were finally sent on 10 Dec. 1979. Address: Box 559A, 19063 Örsundsbro, Sweden.

3226. Shurtleff, William. 1979. Rapid growth of tofu shops and soy dairies in North America (News release). Lafayette, California: New-Age Foods Study Center. 1 p. Nov.
• ***Summary:*** "There are presently 164 tofu shops and soy dairies in North America and, as shown in the accompanying graph, the increase in numbers is rapidly accelerating. Ninety-six of these run by Caucasian Americans have opened

in the past 3 years since publication of *The Book of Tofu,* by Shurtleff & Aoyagi, which has sold over a quarter of a million copies. The industry has a brisk sales growth rate of 25 to 30% a year, and uses an estimated 35% of the industry sales; the 68 Oriental shops have 65%.

"The largest tofu factory in the U.S. is the Matsuda-Hinode company in Los Angeles; they produce about 16,000 pounds of tofu a day under 14 different labels. The largest of the new breed of Caucasian-run plants is the New England Soy Dairy in Greenfield, Massachusetts. Founded in 1977, it now produces some 4,500 pounds of tofu a day and expects revenues of $750,000 in 1979. In its April 12 front page story on the tofu industry, *The Wall Street Journal* focused on The New England Soy Dairy...

"Worldwide, the tofu and soymilk industry is rapidly expanding. There are presently a total of 211,000 producers, including 38,000 in Japan, 158,000 in mainland China, 11,000 in Indonesia, 2,500 in Taiwan, and 1,470 in Korea. The largest tofu factories, located in Japan, produce over 100,000 pounds of tofu a day (15,000 tons a year) and the largest soy dairy, located in Hong Kong, produces 500,000 bottles of soymilk a day (150 million bottles a year).

"Most of the new tofu shops and soy dairies in the U.S. have gotten into production using the technical manual *Tofu & Soymilk Production* by William Shurtleff & Akiko Aoyagi, which has just been published in both paperback and hardback editions." Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

3227. *SoyaScan Notes.* 1979. Chronology of soybeans, soyfoods and natural foods in the United States 1979 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Jan. Yvonne and Irene Lo incorporate The Soya Bean Products Co., N.A. in San Francisco as a marketing company and immediately begin to import and distribute Vitasoy, the world's most popular soymilk, to Canada from their parent company in Hong Kong. It is not yet sold in America due to an FDA ban on aseptic Tetra Pak cartons.

Jan. Soycrafters Association of North America headquarters moves to Colrain, Massachusetts. Richard Leviton takes over as Director. Decides to edit and publish *Soycraft* magazine.

Jan. "The Soyfoods Revolution" published as a cover story by *Whole Foods* magazine.

Jan. 15-18. Second International Workshop on Low-Cost Extrusion Cookers held in Dar es Salaam, Tanzania, with 43 participants.

Feb. Takai catalog of large scale equipment published.

Feb. 9. Judith Rubenstein, institutional consultant for the New England Soy dairy, initiates a correspondence with Carol Tucker Foreman, Director of Child Nutrition programs at USDA, on the subjects of tofu standards and acceptance of tofu in USDA Child Nutrition Programs, including the school lunch program. Four letters are exchanged between Feb. and Aug. 1979. This is the start of work of tofu standards and tofu in school lunch programs.

Feb. *Natural Foods Merchandiser* magazine starts publication, founded by Doug and Karen Greene.

March 11. KOPTI is founded in Indonesia. It soon functions as an active, effective trade association for Indonesian tempeh and tofu manufacturers. By June 1986 it has more than 12,000 members from 40 cooperatives, and is promoting mechanization of production.

March. Soycrafters Assoc. and Quong Hop & Co. have adjoining booths at the New Earth Expo in San Francisco. 6,000 people sample free tofu burgers, tofu chip dips. Farm Foods sells Ice Bean (soymilk ice cream) and tofu cheesecakes. Gilman Street Gourmet sells tofu burgers.

March. Oak Feed Miso Company founded by Sandy Pukel, John Belleme, and Barry Evans. Joe Carpenter, Michio Kushi, and James Kenny are also involved. It is soon renamed American Miso Co.

March 26-29. World Soybean Research Conference II held at North Carolina State University. The 897-page proceedings, edited by F.T. Corbin, are published in 1980.

March. Food Protein Council holds International Soybean Fair in Washington, D.C. Many Congressmen, consular officials, etc. attend and sample soy protein products and tofu dips.

March. The Ohio Miso Company, founded by Thom Leonard and Richard Kluding, begins production in Ohio. America's first Caucasian-run miso company.

March. Richard Leviton takes a 3-week soyfoods research trip to the Midwest. Establishes many important contacts.

April. *New England Soy Dairy Product and Merchandising Guide* published.

April 12. "Good Old Bean Curd Is Suddenly Popular, But You Call It Tofu" by W.M. Bulkeley published as a front page article in *The Wall Street Journal.*

May 24. "The Americanization of Bean Curd," an expansion of Bulkeley's April article, published in the *Washington Post.*

May. Quong Hop & Co. in San Francisco introduces vacuum packed firm tofu, tofu cutlets, tofu burgers, and teriyaki tofu. Each of the latter three products is the earliest known product of its type in America.

June. *The Tofu Cookbook* by Kathy Bauer and Juel Andersen published by Rodale Press.

June 29. An internal FDA memorandum is prepared by FDA headquarters personnel to set forth the agency's views on the attributes of tofu. Publication of a "pull date" on tofu packages is encouraged.

July. Farm Foods starts national advertising of tempeh starter and tempeh kits.

July. David Mintz, owner of Mintz's Buffet, a kosher Jewish deli in New York City, first learns of tofu from

Pesach Lazaroff, a young Jewish vegetarian. That summer Lazaroff spends many hours working with Mintz as a paid consultant, developing tofu recipes. Mintz later becomes rich and famous for developing Tofutti, a soy ice cream. Over the years Mintz pushed the date that he supposedly learned about tofu further and further back, from 1979 to 1976, to 1974, then finally to 1972.

July. *The Book of Tempeh,* by Shurtleff and Aoyagi published by Harper & Row in both large-format paperback and professional hardcover editions. The world's first book about tempeh.

July. *Tofu & Soymilk Production,* by Shurtleff and Aoyagi published by The Soyfoods Center. This is the first book to use the term "soyfoods" in English.

July 17. "Tofu–The Oriental Way to High-Protein, Low-Calorie Meals" published by *Family Circle.*

July 23. Judith Rubenstein (see Feb. above) writes the Commissioner of the FDA requesting that the agency establish a standard of identity for tofu. She notes that the Director of Nutrition and Technical Services for USDA suggested that FDA give top priority to this issue. Issues of imitation tofu products and bacterial contamination are raised.

July 26-29. Second Soycrafters of North America Conference: "Producing and Marketing Soyfoods," held at Hampshire College, Amherst, Massachusetts, organized by Richard Leviton and financed on a shoestring. A major milestone for the U.S. soyfoods industry. 230 people attend and the content is a great success, but Leviton loses $1,000 on the venture. The first issue of Soycraft magazine, written and published (1,900 copies) by Leviton, is distributed at the conference. In the keynote address, Shurtleff notes that the biggest challenges facing the industry are to build a strong trade association with adequate funding, and to develop soyfoods standards.

July. *Alimentacion Integral Para Una Vida Plena: Los Mil Usos de la Soya* (*Integral Nutrition for a Full Life: The Thousand Uses of Soya*), by Blanca Dominguez published by Editorial Posada in Mexico. The country's first book on soyfoods.

Aug. Robert Rodale and Rodale Press gives strong support to *Soycraft* magazine, with ads and a nice mention in an article, which brings in 135 subscriptions in November.

Sept. The Soycrafters Apprenticeship Program is started by Luke Lukoskie at Island Spring, Vashon, Washington. Here people can spend about 3 weeks getting hands-on experience in making tofu, soymilk, and tempeh.

Sept. Tempeh Works, America's first Caucasian-run commercial tempeh shop in a commercial building and making only tempeh, starts production in Greenfield, Massachusetts. Founded and run by Michael Cohen.

Sept. Many articles about the Amherst Soyfoods Conference published in national magazines, such as *New Age.*

Sept. New England Soy Dairy opens America's first in-house tofu & soymilk sanitation laboratory.

Sept. "Chinese Cuisine: Bean Curd" by Nina Simonds published in Gourmet magazine.

Nov. 26. A fire destroys Eden Foods warehouse and $800,000 inventory. The company, struggling for life, moves to rural Clinton, Michigan.

Oct. The Great American Tofu Cookbook by Patricia McGruter published by Autumn Press.

Dec. Rodale Press contacts Richard Leviton to announce plans to do a Soybean Newsletter, with Leviton as editor. The idea later falls through.

Dec. *Frijol Soja* (Soybeans) published in Peru by INTSOY.

Dec. *The Soysage Cookbook,* by Cloud and Burdett self-published in Vermont.

* San-J tamari starts to be imported to America from Japan.

* California and Maine become the second and third states to enact organic labeling laws. California's becomes a model and a standard for many other similar laws, and it is cited on many soyfood product labels. By 1988 there are 12 states with organic laws, and 5 more planned.

* Tofu production in Japan tops 1.1 million metric tons for the first time.

* Soybean research in America begins to shift from emphasis on production to emphasis on utilization.

* Syntex corporation of Palo Alto, California, recalls its soymilk Neo Mull Soy after it is found to be missing a key nutrient, chloride. Many children who used this product were mentally damaged.

* Lauhoff Grain Corp. acquired by Bunge.

* 1979-82. Years of the "salt craze." Growing concern with the level sodium in American food products begins to hurt sales of miso and shoyu. Continued.

3228. *SoyaScan Notes.* 1979. Chronology of soybeans, soyfoods and natural foods in the United States 1970s (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Overview of the 1970s:

The Soyfoods Movement Begins. This industry focused on traditional, low-tech soyfoods such as tofu, soymilk, tempeh, and miso. Many of the pioneer Caucasian-American (non-Asian) soyfoods companies started during this decade, often for philosophical and ideological reasons. The founding of the Soycrafters Association of North America in July 1978 marks the beginning of this movement.

By Dec. 1979 there are 159 tofu manufacturers in the United States. Ninety of these are run by Caucasian Americans and are less than 3 years old. There are also 18 tempeh companies and 3 commercial miso companies (not including those in Hawaii).

Natural Foods and Vegetarian Movements Grow. The

basic philosophy of natural foods and vegetarianism became more widely accepted, and this greatly helped the soyfoods movement.

Unprecedented Interest in Nutrition, Health, and Fitness. During this decade, the interest in nutrition grew dramatically, both among consumers and professionals. Consumers, seeking ways of protecting themselves from the ravages of heart disease and cancer, try more healthful diets. Exercise and looking healthy are now "in." For example, the New York Marathon, which had 55 finishers (no women) in 1970, boasted 10,477 finishers (including 1,621 women) in 1979. Preventive medicine is becoming a new profession.

Steady Increase in Population of Asian-Americans. The number of Asian- and Pacific-Americans living in the USA increased from about 800,000 in 1960 to 1,369,000 in 1970 to 3,500,000 in 1980, at which time they comprised 1.5% of the total U.S. population. Their burgeoning numbers were a major factor in steadily growth of the soyfoods industry, since many Asians use soyfoods in their daily diets.

U.S. Soy Sauce and Miso Consumption Grows. Soy sauce consumption grew from about 9,000 kiloliters in 1970 to about 38,000 kl in 1979, a 4.2-fold increase during the decade. In 1974 domestic production passed imports.

U.S. miso consumption grew from about 750 metric tons (tonnes) in 1970 to about 1,800 tonnes in 1979, a 2.4 fold increase.

Shipments of Soy-Fortified Foods in the Food For Peace (P.L. 480) Program Jumps. Shipments of two products in 1970 totaled 131,000 tonnes. In 1979 a record 664,000 tonnes of ten products were shipped to needy countries, a 5-fold increase during the decade. In 1979, the main products whipped were SFB (soy-fortified bulgur), CSM (corn-soy-milk), and WSB (wheat-soy blend).

The Ongoing Protein-Versus-Calories Debate. As Nevin Scrimshaw concluded prophetically in his insightful 1977 lecture "Through a Glass Darkly: Discerning the Practical Implications of Human Dietary Protein-Energy Interrelationships": "To the extent that the pendulum swung too far in emphasizing protein in the 1960s, and too far in emphasizing calories in the 1970s, it must come to a more appropriate position for the 1980s and beyond." He noted that two big protein issues concerned (1) human requirements for protein at different ages and physiological states, and (2) the evaluation of the protein quality of foods as related to human requirements.

Reappraisal of the Value of Plant and Animal Proteins. During the late 1960s and early 1970s, animal proteins probably reached their historical peak of popularity in the U.S. A diet rich in animal protein was considered a "better diet." However during the 1970s a growing body of nutritional and ecological evidence, and changing attitudes toward world hunger and animal rights, led to a new appreciation of the quality, now more broadly defined, of plant (and soy) proteins. They were more healthful, less expensive, more efficient in utilizing farmland, energy and water, less polluting, and obviated animal slaughter.

Switch from Animal to Vegetable Fats. In the early 1950s Americans were consuming approximately equal amounts of animal and vegetable fats. By 1978 the ratio of vegetable to animal fat was 84 to 16. The same shift occurred worldwide, where the 1978 ratio was 71 to 29.

There were at least three basic reasons for this shift: (1) The growing concern, especially after 1960, with the health dangers associated with consumption of saturated fats and cholesterol, most of which came from animal fats such as butter and lard; (2) Hydrogenation, which allowed vegetable oils to be used in making substitutes for butter and lard (i.e., margarine and shortening); and (3) the lower price of vegetable oils, shortening, and margarine.

Production of soy oil grew dramatically during the postwar period, filling most of the increased demand for vegetable oil.

Boom Years for U.S. Agriculture. The 1970s was a decade of rapid growth for U.S. farmers. With high inflation and low interest rates, American farm products dominated world trade. The boom ended with the second "Oil Shock" of 1979-80, which set off the most serious recession of the post-war era, and marked the start of the Latin American debt crisis that later had a major negative effect on U.S. soybean farmers. 1979 was the last year of roughly 50 years of essentially non-stop, rapid soybean growth. During the next decade, U.S. soybean production zigzagged sideways and declined slightly.

Rapid Increases in Soybean Production in New Third World Countries. Prior to the 1970s, soybeans had never been widely grown in the tropics or semi-tropics (except perhaps in Indonesia). But during this decade a host of countries in such areas started to grow soybeans on a large scale for the first time. Major causes for this were the U.S. soybean boycott of 1973, the pioneering work done by INTSOY in Illinois, IITA in Nigeria, and AVRDC in Taiwan, and the development of day-neutral soybean cultivars that gave high yields at low latitudes. The major areas of rapid new production growth were...

Latin America. Total production increased from 1,746,000 tonnes in 1970 to 15,384,000 tonnes in 1979, an 8.8 fold increase during the decade. Latin America's three leading soybean producers in 1979 were Brazil, Argentina, and Mexico. Brazil's production rose 7.8 fold between 1970 and 1979, but Argentina's jumped 137-fold!

In 1979 soybean production in Latin American passed that in all of Asia, the birthplace of this ancient crop, and became second only to that of North America (61,722,000 tonnes in 1979/80).

In 1974, Brazil passed China to become the world's second largest soybean producing nation after the USA. The ranking in 1979 by tonnage was USA, Brazil, China, Argentina, Mexico, Indonesia, Paraguay, USSR, Romania,

India, and North Korea.

Africa. Total production increased from 67,000 tonnes in 1970 to 300,000 tonnes in 1979, an 4.5 fold increase during the decade. By 1979 Egypt had become the largest producing country, followed by Zimbabwe, Nigeria, and South Africa. This promising growth was doubly important because it came at a time of steadily falling per capita food production in Africa as a whole, down 20% from 1970 to 1987.

India. Total production increased from a mere 18,000 tonnes in 1971 (production was negligible in 1970) to 450,000 tonnes in 1980, an astonishing 25-fold increase in ten years, and a growth rate greater than that of Latin America. Meanwhile, in Asia as a whole soybean production was slowly declining.

3229. **Product Name:** [Drinho Soya Bean Drink].
Foreign Name: Drinho Minuman Kacang Soya.
Manufacturer's Name: Ace Canning Corporation Sdn. Bhd. Imported to Singapore by Lam Soon Oil & Soap.
Manufacturer's Address: Jalan 205, P.O. Box 8, Petaling Jaya, Selangor, Malaysia.
Date of Introduction: 1979. December.
Wt/Vol., Packaging, Price: 250 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Brian Fitzpatrick. 1982. Soya Milk in Asia. States that Ace Canning launched the product in 1980. Tetra Pak Co. 1983. Brochure. Packaged in Tetra Brik Aseptic 250 ml. Shurtleff & Aoyagi. Soya Bluebook. 1983. p. 63. 1984. Soymilk Industry & Market. p. 121. Color photo. Package is orange, white, yellow and tan, with yellow soybeans. Boi. 1986. Sunday Times (Singapore). Sept. 7. "Soya Bean Milk Packs More Water than Flavor." Drinho sells for 35 cents per 250 ml. Comments: Too sweet, thick, artificial taste, no soya bean flavor, not tasty.

3230. Escueta, E.E.; Banzon, J. 1979. Comparative acceptability of soymilks produced by different processing methods. *Philippine Agriculturist* 62(4):248-54. Oct/Dec. [19 ref]
• ***Summary:*** Soymilks were prepared by 5 different methods: 1. Boiling-water grind technique; 2. Cold grind process followed by 30 minute boiling in a steam jacketed kettle; 3. Cold grind process followed by 30 minutes boiling by direct steam injection; 4. Soymilk from soaked soybeans plus 3 minute immersion boiling; and 5. Soymilk from unsoaked beans plus 5 minute immersion boiling.

"Soymilks produced by the 5 methods were acceptable to the Filipino tasters with previous experience with soymilk. Process 4 was more acceptable (though not significant) than the other soymilks. Addition of 1% chocolate powder further increased the acceptability of the soymilks.

"The study shows that some factors other than the lipoxygenase enzyme action on the fats of the soybeans affect the acceptability of the soymilks." Address: Asst. Prof. and Emeritus Prof. respectively, Dep. of Food Science & Technology, Univ. of Philippines at Los Baños, College, Laguna, Philippines.

3231. Fomon, Samuel J.; Ziegler, E.E.; Filer, L.J., Jr.; Nelson, S.E.; Edwards, B.B. 1979. Methionine fortification of a soy protein formula fed to infants. *American J. of Clinical Nutrition* 32(12):2460-71. Dec. [19 ref]
• ***Summary:*** Normal infants fed a formula providing 2.25 gm/100 kcal of a soy protein isolate not fortified with methionine performed less well during the first 6 weeks of life than did breast-fed infants and infants fed milk-based formulas or other soy isolate-based formulas fortified with methionine. The limiting nutrient appears to have been methionine. Address: Dep. of Pediatrics, College of Medicine, Univ. of Iowa, Iowa City, IA 52242.

3232. Instituto de Investigaciones Agro-Industriales (IIA); INTSOY. 1979. Recetario frijol soya [Soybean recipes]. Lima, Peru: IIA. 96 p. 20 cm. [Spa]
• ***Summary:*** These recipes were developed by Carmen Echeandia de Calderon of IIA. The Integral Project for Soya Development (Proyecto Integral de Desarollo de la Soya–PIDES) in Peru is the result of an agreement signed between USAID and Peru's Instituto de Investigaciones Agro-Industriales (IIA). The recipes are divided as follows: Drinks (incl. soymilk). Entrees. Souffles, fritters, and pastry. Creams and soups. Stews and others. Desserts and sweets. Address: Lima, Peru.

3233. New-Age Foods. 1979. Start your own tofu shop or soy dairy–Here's the book that shows you how: *Tofu & Soymilk Production,* by William Shurtleff and Akiko Aoyagi (Ad). *East West Journal.* Dec. p. 4.
• ***Summary:*** This ¼-page black-and-white ad includes a photo of the book's cover. The authors also wrote *The Book of Tofu,* with over a quarter million copies in print. The book "is a guidebook to a new vocation and a new way of life, that has been used to start over 100 tofu shops in America in the past two years... Free with each book: Illustrated catalog of tofu & soymilk equipment, list of tofu shops in the West, and applications for Soycrafters Apprenticeship Program, Soycrafters Association of North America, and *Soycraft* Magazine. Order now! Paperback $17.95. Hardback $22.95. Postage free. Available only from the publisher. Send prepaid orders to:"

Note: This ad also appeared in the Jan. 1980 issue (p. 19) of this magazine. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

3234. Obis, Clare Barrett. 1979. Vegetarian nutrition for pregnant and breast-feeding women. *Vegetarian Times* No. 34. Nov/Dec. p. 42, 44-46.

• ***Summary:*** Describes how to meet the special nutritional needs of pregnancy with a well-balanced vegetarian diet using vegetarian and vegan sources of nutrients. Contents: Introduction. Protein. Iron. Vitamin D. Vitamin A. Vitamin C. Vitamin B-6 (riboflavin). Vitamin B-12. Calcium. Supplements. Final words. Resources.

3235. Soy Plant (The). 1979. Tofu gratuity (Leaflet). Ann Arbor, Michigan. 1 p. Undated. 11 x 9 cm.
• ***Summary:*** This tiny, hand-lettered "take one" reads: "Gift certificates may be purchased at a 10% discount through January 31st 1981. Visit our retail store, 211 E. Ann, Ann Arbor, Michigan. 663-0500." An illustration shows a wheel with spokes; on each spoke is written: Tempeh, soysage, tofu, soymilk, miso. Across the diameter: "Soy foods for body & planet." In large letters across the bottom: "The Soy Plant." Address: 211 East Ann St., Ann Arbor, Michigan. Phone: (313) 663-0500.

3236. *Soyanews* (*Sri Lanka*). 1979. Five thousand children each had a cup of soyamilk... (Photo caption). 2(5/6):1. Nov/Dec.
• ***Summary:*** "... on Sunday, 18 November, when the YMCA ad YWCA organised a Fun and Food occasion for children at the Sugathadasa Indoor Stadium. The day started with a cup of soyamilk, which is an excellent way for everyone to start every day."

Two photos show children with paper cups of soyamilk.

3237. *Vegetarian Times.* 1979. The New England Soy Dairy. No. 34. Nov/Dec. p. 52, 54-56.
• ***Summary:*** "In January, 1977 Richard and Kathleen Leviton started a 'cottage' business, which they felt would enable them to make enough money working two or three days a week, to allow them to have the rest of their time off for other pursuits." Laughing Grasshopper's sales of tofu hit $70,000 the first year. "In February, 1978 the Levitons convinced some of their friends and a few private investors to ante up $50,000 for an expansion program. They changed their name to 'The New England Soy Dairy,' incorporated, sold stock (to raise the money), imported large-capacity tofu equipment from Japan, and moved to a new, larger location in Greenfield." Today the Soy Dairy produces on average 22,000 lb/week of tofu. Sales have been increasing by about 300% a year notes President and Sales Manager Tom Timmins. Annual sales are estimated at more than $500,000, which makes the Soy Dairy the largest Caucasian-owned tofu manufacturer in the USA. The company sells about 30 cases a week of soy mayonnaise. A soy milk is scheduled to be introduced at the end of this year and a soy-based ice cream next spring. Photos show: Tofu being packaged into plastic water-filled tubs. A man cutting tofu into one-pound cakes.

3238. **Product Name:** [Danprofiber].
Manufacturer's Name: Aarhus Oliefabrik A/S.
Manufacturer's Address: Bruunsgade 27, P.O. Box 50, 8100 Aarhus C, Denmark.
Date of Introduction: 1979.
New Product–Documentation: Aarhus Olie Annual Report 1988. A diagram (p. 40) shows that Aarhus introduced Danprofiber in 1979. It was made in their protein factory.

3239. **Product Name:** Soymilk.
Manufacturer's Name: Bean Mountain Soy Dairy.
Manufacturer's Address: 121 W. Howard St., Boone, NC 28607.
Date of Introduction: 1979.
New Product–Documentation: Mashburn. 1980. The Sentinel. Feb. 15. p. 7.

3240. Chen, W.L.; Li, C.F.; Wu, S.; Li, C.H.; Feng, L.H. 1979. [Study on the manufacture of instant soy milk powder for infants]. *Food Industry Research and Development Institute* (*Taiwan*), *Research Report* No. 140. [Chi]* Address: Hsinchu, Taiwan.

3241. **Product Name:** [Green Milk (Soy Milk Beverage), and Hae Pyo Doo Yoo Soymilk].
Foreign Name: Green Milk, Hae Pyo Doo Yoo.
Manufacturer's Name: Green Milk Co., Subsidiary of Dong Bang Oil and Flour Mills Co., Ltd.
Manufacturer's Address: No. 2 Yangpyung-dong 4-ka, Yungdungpo-ku, Seoul, South Korea. Plant at Jin Hae, Kyung Nam.
Date of Introduction: 1979.
New Product–Documentation: Soya Bluebook. 1981. p. 60.

Letter from Kyung Lee, ASA country director, Korea, to William Shurtleff at Soyfoods Center. 1983. Nov. 23. Gives history and production statistics.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 16, 81-83. Dong Bang, Korea's biggest oilseed crusher, established a subsidiary, Green Milk Co., in 1979 in Seoul to make Green Milk brand soymilk. In 1981 they made an estimated 3,000 tons in four flavors, packaged in cartons, increasing to 5,253 tons in 1983.

3242. Han, B.-H.; Kim, K.-S.; Chom, D.-J. 1979. Processing of soybean powder with soybean and krill. *Bulletin of the Korean Fisheries Society* 12(3):137-41. [Eng]*
• ***Summary:*** Soy curd [tofu] was made using the traditional process. The use of 3% glucono-delta-lactone (GDL) at 90ºC gave the highest bulk yield in relation to the crude protein of the tofu. Soy curd powder was prepared by spray drying soybean milk. It was then suspended in water and coagulated by adding GDL at 90ºC. When krill autolysate was dried with the soymilk then made into tofu, coagulated under the

same conditions, it produced a softer tofu. Another powder, made by spray drying the mixture of soybean milk, krill autolysate, and GDL could be coagulated by suspending in water, bringing to a boil, then letting it stand at room temperature for 2 minutes.

Note: Krill (*Euphasia superba*) are planktonic crustaceans and larvae that constitute the main food of baleen whales. Address: Dep. of Food Science & Technology, National Fisheries Univ., Busan, Korea.

3243. **Product Name:** Soymilk.
Manufacturer's Name: Institute of Buddhist Dialectics.
Manufacturer's Address: Macleod Ganj, Dharmasala, Dist. Kangra, Himchal Pradesh (HP) 176219, India.
Date of Introduction: 1979.
New Product–Documentation: Letter from Institute. 1987. Person is charge: Kalsang. The Buddhist monks from Tibet use 6.5 kg/week of dry soybeans. Note: This is the earliest commercial product seen made by Tibetans (one of two documents), although not in Tibet.

3244. **Product Name:** [Plus Soymilk (Dairylike, Lactic Fermented, Fruit [Mikan Orange, Apple & Pineapple Mix], or Coffee/Barley Malt Syrup)].
Foreign Name: Purasu Tônyû.
Manufacturer's Name: Kibun Health Foods Co.
Manufacturer's Address: 1-11-8, Shin Sayama, Sayama-shi, Saitama-ken 350-13, Japan.
Date of Introduction: 1979.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64, 68-70. States that Kibun began making soymilk in 1977. By 1982 Kibun was the largest soymilk manufacturer in Japan and in the world.

3245. Lajolo, F.M.; Filisetti, T.M.C.C. 1979. Thyroid active factor from processed soybean products (Abstract). Paper presented at meeting of Institute of Food Technologists, St. Louis, Missouri. See Abstract 21.
• ***Summary:*** A crude extract was obtained from hexane-defatted soybean flour by water extraction and acetone fractionation. It was active in depressing the uptake of iodine-131 by the thyroid glands of live rats 24 hours after administration by stomach tubing. "The depressing activity was present only when the extract or the flour had been previously autoclaved." It was also found in commercial products such as soybean milk, soy protein concentrate, and toasted soy flour. "Tested in semi-chronic experiments with rats, the extract was able to induce changes in thyroid thyrosines and thyroxine. No influence on growth of the autoclave extract was found. The formation of an active factor during processing is proposed and its biological significance is discussed." Address: Depto. de Alimentos e Nutricao Experimental, Faculdade de Ciencias Farmaceuticas-USP, Caixa Postal 30.786, Sao Paulo, SP, Brazil.

3246. **Product Name:** [Soya Bean Drink].
Manufacturer's Name: Lam Soon.
Manufacturer's Address: Petaling Jaya, Selangor, Malaysia.
Date of Introduction: 1979.
Wt/Vol., Packaging, Price: 250 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Letter from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30. Alfa-Laval sold a complete soymilk plant to Lam Soon in Malaysia. It had a capacity of 5,000 liters/hour and began operation in 1979.

Letter from Consulate General of Malaysia. (Los Angeles, California). 1982. Aug. 3. One of the three soymilk manufacturers in Malaysia is: Lam Soon Oil & Soap Mfg. Sdn. Bhd., Jalan 205, P.O. Box 8, Petaling Jaya, Selangor, Malaysia. Phone: 03-572755.

3247. **Product Name:** Loma Linda i-Soyalac (Non-Dairy Infant Formula Based on Isolated Soy Protein) [Concentrated Liquid].
Manufacturer's Name: Loma Linda Foods.
Manufacturer's Address: 11503 Pierce St., Riverside, CA 92515.
Date of Introduction: 1979.
New Product–Documentation: See next two pages. Thomson. 1979. *Journal of the American Oil Chemists' Society.* March. p. 386-88; Leaflet. 8½ by 11 inches, color. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. Leaflet. 1983. i-Soyalac. Second best [to breast milk].

3248. **Product Name:** Loma Linda Soyalac (Non-Dairy Infant Formula) [Ready to Serve, Concentrated Liquid, Powdered].
Manufacturer's Name: Loma Linda Foods.
Manufacturer's Address: 11503 Pierce St., Riverside, CA 92515.
Date of Introduction: 1979.
Ingredients: Ready to serve: Water, soybean solids, corn syrup, sugar, soy oil, calcium carbonate, soy lecithin, sodium citrate, dicalcium phosphate, calcium citrate, dipotassium phosphate, potassium chloride, salt, calcium carrageenan, ascorbic acid,...
Wt/Vol., Packaging, Price: Canned. 32 fl oz. (1 qt).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Three labels sent by Loma Linda Foods. 1980.

3249. **Product Name:** Bean Beverage (Soymilk). Later renamed Soymilk.
Manufacturer's Name: Madison Tofu Co-op. Renamed Bountiful Bean Plant Soyfood Cooperative in 1979.

Manufacturer's Address: 903 Williamson St., Madison, WI 53703. Phone: 608-251-0595.
Date of Introduction: 1979.
Ingredients: Vanilla: Water, organic soybeans, honey, vanilla ext. [extract].
Wt/Vol., Packaging, Price: 1 quart glass jar.
How Stored: Refrigerated.
New Product–Documentation: Interview with Deborah Bachmann. 1987. Dec. 29. James Lubbe. 1988. March. Abbreviated History of the Bountiful Bean. In 1984 vanilla and maple soymilk were introduced, and in 1985 malt soymilk. Prior to July 1984 the company bottled their soymilk in glass jars (Mrs. Clark's mayo jars), since they could be recycled and were thus ecologically sound. The company paid $0.25 per jar and washed them by hand. Few were recycled back to the company and cash outlays were huge. Thereafter they sold the soymilk in plastic jugs, and in re-usable 2-gallon pails. Label. 1985. Vanilla. 2.5 by 4 inches. Blue on white. Plain is black on white, and Malt is brown on white.

Labels for plain and vanilla soymilk sent by Elizabeth Hanson of Bountiful Bean. 1991. Nov. 12. Same labels as above, but company is now located in Ridgeway, Wisconsin 53582.

Leaflet sent by Paul Olson, new owner of Bountiful Bean Soyfoods. 1993. Nov. 19. The company still makes soymilk.

3250. **Product Name:** Nestlé Bonus Soya Bean Milk [Plain, or Almond].
Manufacturer's Name: Nestlé Products (M) Ltd.
Manufacturer's Address: Singapore.
Date of Introduction: 1979.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 99-100, 102. In 1979 Nestlé began making and marketing Bonus in Singapore. Exported to Hong Kong, it gave Vitasoy its first real brand-name competition. Color slide in Soyfoods Center Slide Library. Color photo. Pea green, dark green, and orange yellow on white. "Flavoured Soya Bean Milk. Vitamin Enriched."

3251. **Product Name:** Mamalak (Infant Formula), Manna (Food Supplement), and Complete (Complete Meal).
Manufacturer's Name: Nutrition Dynamics International (NDI).
Manufacturer's Address: Damghan (Also spelled Damkan or Damgham), Iran.
Date of Introduction: 1979.
How Stored: Shelf stable.
New Product–Documentation: Resume: Erwin David Rabhan. 1999. Letter from Jim Douglas to James Abourezk. 1999. July 6. Interview with David Rabhan. 1999. Aug. 25. Gives more details on this project.

Note: This is the earliest known commercial soyfood product made in Iran.

3252. **Product Name:** Soy Fortified Rice, and Whey Soy Drink Mix (WSD).
Manufacturer's Name: P.L. 480 Food for Peace Program.
Manufacturer's Address: USDA, Washington, DC.
Date of Introduction: 1979.
How Stored: Shelf stable.
New Product–Documentation: These 2 products were discontinued after 1 year.

3253. **Product Name:** Bonsoy (Soymilk).
Manufacturer's Name: Spiral Foods (Importer). Made in Japan by Marusan. Imported via Muso Shokuhin.
Manufacturer's Address: Melbourne, Australia.
Date of Introduction: 1979.

Second best.

We formulated i-soyalac to provide your baby a nutritionally balanced food that is

complete with the vitamins, minerals and essential amino acids all infants need. At least 100% of the U.S. RDA.

Also i-soyalac is entirely free from both cow's milk and corn derivatives and very low in soy carbohydrates.

In addition, our two-piece 14-ounce cans contain no soldered seams, thereby reducing the possibility of contamination from environmental exposure to lead.

We also make Soyalac, the only soy-based infant formula made from an extract of the whole soybean. That means Soyalac retains the natural goodness of the soybean for complete nutrition, yet it is still a completely milk-free product.

Loma Linda infant formulas are available in concentrate, ready-to-serve or powder form.

So as you can see, both i-soyalac and Soyalac have been formulated to provide complete nutrition for all babies. In fact, because it simulates it nutritionally, i-soyalac is the next best thing to mother's milk.

Loma Linda®

For further information, write Loma Linda Foods, 11503 Pierce Street, Riverside, CA 92515, or ask your pediatrician.

Ingredients: Water, soybeans, pearl barley, kombu (sea vegetable), barley malt.
New Product–Documentation: Australian Dairy Foods. 1986. Feb. p. 84. A photo shows Barley Malt Bonsoy in a Tetra Brik carton. It is imported from Japan. Shurtleff & Aoyagi. 1986. Soymilk Industry and Market, Update. Australian Dairy Foods. 1986. Feb. p. 84.

Sojarei (Austria) price list. 1989. Jan. The company markets this product in plain and cocoa flavors, in 500 ml and 1 liter sizes.

Talk with Ron Roller of Eden Foods. 1992. Feb. 26. When he visited the Muso office in Osaka, Japan, in Sept. 1982, he noticed very large shipments of soymilk in aseptic foil retort pouches, made by Marusan, being shipped to Spiral Foods (run by James Wilson) a macrobiotic distributor in Melbourne, Australia.

Talk with Yuko Okada. 1992. July 16. Muso first exported soymilk (Bonsoy) from Japan in about 1979 to Spiral Foods in Australia, owned by Jim Wilson. This soymilk was packaged in a foil retort pouch.

3254. **Product Name:** Soymilque.
Manufacturer's Name: Sunbow Farm Products.
Manufacturer's Address: Route 2, Box 46, Corvallis, OR 97330.
Date of Introduction: 1979.
Ingredients: Well water, organically grown soybeans.
How Stored: Refrigerated.

New Product–Documentation: Shurtleff & Aoyagi. 1979. July. New Tofu Shops & Soy Dairies in the West; Mia Posner & Harry McCormick. Label sent by Sunbow. 1980? 3.5 inches square. Black on white. "Sweeten to taste. Best when fresh. If contents thicken and separate, use in baking for light muffins, pancakes, bread, etc. Container recyclable as solar mass wall, scoop, or flower pot."

3255. **Product Name:** Firm Tofu, Soft Tofu, Fried Tofu, Flavored Tofu (Wu-Hsiang Kan), and Soymilk.
Manufacturer's Name: Superfoods.
Manufacturer's Address: 1257 4th St. N.E., Washington, DC 20002. Phone: 202-546-5205.
Date of Introduction: 1979.
New Product–Documentation: Call from Paul Wilson, PhD of Chapel Hill, North Carolina. 1996. July 2. When he was in Washington, DC, recently, he bought soymilk, fried tofu, marinated tofu, and silken tofu made by a local company named Superfoods. The soymilk was very sweet.

Talk with Tom Lee, founder and owner of Superfoods. 1996. July 2. Tom, who is Chinese-American, started this company in 1979 in Maryland. The name was slightly different at that time. In 1981 or 1982 he moved the company to its present address in Washington, DC. His main competition in the local tofu market comes from two Korean-run companies.

3256. **Product Name:** Nursoy (Iron Fortified Soy Protein Infant Formula).
Manufacturer's Name: Wyeth Laboratories Inc.
Manufacturer's Address: King of Prussia Rd., Wayne, PA 19087. Phone: 215-688-4400.
Date of Introduction: 1979.
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable.
Nutrition: 87% water, 6.7% sucrose, 3.4% vegetable oils, 2.3% isolated soy protein on a ready to feed basis.
New Product–Documentation: Thomson. 1979. *Journal of the American Oil Chemists' Society.* March. p. 386-88. Label. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.

Koo. 1988. Journal of Parenteral and Enteral Nutrition. 12(2):171. Gives manufacturer as Wyeth Laboratories, Philadelphia, Pennsylvania.

Talk with company employee. 1990. Oct. 31. The company's name changed on about July 1988 to Wyeth Ayerst Laboratories Inc., now located at 555 E. Lancaster Ave., St. Davids, PA 19087. Phone: 215-971-5734.

3257. **Product Name:** Yeo's Soya Bean Drink. Boisson au Soja (Soymilk).
Manufacturer's Name: Yeo Hiap Seng Ltd. in Singapore.
Manufacturer's Address: 950 Dunearn Rd., Singapore.
Date of Introduction: 1979.
Ingredients: Water, extract of soya bean, cane sugar (10/91).
Wt/Vol., Packaging, Price: 250 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Color photo sent by Anders

Lindner of STS. 1987. Nov. 14. 250 ml Tetra Brik carton, Orange, green, and yellow on white. Shows large yellow soybeans.

Label sent by Anthony Marrese. 1991. Oct. 7. 1-liter Tetra Brik carton. Red, green, and brown on white. Shows large brown soybeans. Retails for DM 3.49. Purchased at a new Japanese food store that just opened in Bremen, Germany. The 1-liter product is now made by Yeo Hiap Seng (Malaysia) Berhad, 7 Jalan Tandang, 46050 Petaling Jaya, Selangor, Malaysia. It is imported to Europe by Tang Freres, 48 Avenue d'Lvry, 75013 Paris, France. Use before 18 March 1992.

3258. **Product Name:** [Yeo's Soya Bean Drink (Soymilk)].
Foreign Name: Boisson au soja; Sojamilch-Getraenk; Tounai.
Manufacturer's Name: YHS (USA) Inc. (Importer). Made in Singapore by Yeo Hiap Seng Ltd.
Manufacturer's Address: 1744 Junction Ave., San Jose, CA 95112.
Date of Introduction: 1979.
Ingredients: Water, extract of soya bean with sugar added.
Wt/Vol., Packaging, Price: 10 fluid oz (300 ml). Can with pull tab top.
How Stored: Shelf stable.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 33, 44-45. Label (can). Light green red, and tan on dark green. Name in English, French, and Chinese characters. Packed at 950 Dunearn Rd., Singapore 2158. Label. 1988. July. The German name has now been added to the can.

3259. Ament, Marvin Earl. 1979. Intestinal malabsorption: Soy milk protein sensitivity. In: Victor C. Vaughan, III, R.J. McKay, Jr., and R.E. Behrman, eds. 1979. Nelson Textbook of Pediatrics, 11th ed. Philadelphia, Pennsylvania: W.B. Saunders Co. xxiii + 2170 p. See p. 1035, 1075-91. Illust. Index. 27 cm. [1 soy ref]
• ***Summary:*** This is a massive and authoritative textbook on the subject, with each section written by one or more experts on that subject. Each of the three main editors is an M.D., as is the Senior Editor, Waldo E. Nelson.

In Chapter 11, "The digestive system" (p. 1019+) is a long section on "The intestinal tract" (p. 1035-1109).

A subsection titled "Intestinal malabsorption" (p. 1075-91) is by Marvin Ament. Within this, section 11.44, "Malabsorption syndromes" (p. 1080+) contains subsections on "Cow's milk protein sensitivity" and "Soy milk protein sensitivity" (p. 1082). In the references section at the end, there is 1 reference (p. 1090) to soy protein (Ament and Rubin 1972).

The section on "Soy milk protein sensitivity" states that soy protein isolate is the primary protein in all soy milk formulas. It "can cause a violent gastrointestinal reaction in susceptible infants." The mechanism of this reaction and injury are unknown. "The upper intestinal mucosa loses villous structure and becomes flat within 24 hours of challenge with soy protein isolate; recovery occurs within a few days. Clinical symptoms are described.

Note: Unfortunately, we are not told what percentage of infants have a negative reaction to soy milk protein. Address: M.D., Prof. of Pediatrics, Chief, Div. of Pediatric Gastroenterology and Nutrition, UCLA Center for the Health Sciences, Los Angeles, California.

3260. Aoki, Hiroshi; Ito, Kiyoe. 1979. Chôri to daizu [Cooking and soybeans]. Gakken Shoin K.K., Tokyo. 173 p. Illust. Index. 22 cm. [151 ref. Jap]
• ***Summary:*** Contents. I. Cooking and soybeans. II. Soybean molecules and soybean protein. III. Cooking and traditional soy protein foods. 1. Cooked whole soybeans (nimame), green vegetable soybeans (yude-mame, edamame), soy sprouts. 2. Roasted soy flour (kinako). 3. Tofu. 4. Deep-fried tofu pouches and tofu burgers (aburaage and ganmodoki). 5. Dried frozen tofu (kori-dofu). 6. Yuba. 7. Natto. 8. Tempeh. 9. Soymilk. 10. Miso (Miso soup, miso-ni, ae-mono). 11. Shoyu. IV. Cooking and new soy protein products. Address: 1. Prof., Otsuma Joshi Daigaku; 2. Prof., Tokyo Gaku Gei Dai.

3261. Ashraf, Hea-Ran Lee. 1979. Flavor and composition of soymilk as influenced by ethanolic soaking, heating, and pH control. PhD thesis, Iowa State University. 89 p. Page 5190 in volume 40/11-B of Dissertation Abstracts International. * Address: Iowa State Univ., Ames, Iowa.

3262. Barer-Stein, Thelma. 1979. You eat what you are: A study of ethnic food traditions. Canada: McClelland & Stewart, Ltd. xii + 13-624 p. Index. 23 cm. [550+* ref]
• ***Summary:*** This is largely a compilation of information from many other books and articles. On the cover is a color painting of The Gardener (or Vertumnus), from his series, The Four Seasons, c. 1590, by Giuseppe Arcimboldo (or Arcimboldi) of Milano.

In Chapter 12, on China, the section titled "Meats and alternates" (p. 110-13) notes that the soybean is called the "Chinese Cow" [sic, "Cow of China"] because of its versatility. Soybeans are used as whole dry beans and as sprouts, or they can be made into a firm white curd called "Chinese cheese" [sic], which can be used in many different ways. Soybean milk may be used in much the same way that westerners use cow's milk. They are fermented to make the favourite condiment, soy sauce. "Bean curd sauce is fermented bean curd that is packed in jars and sold as red bean curd sauce or white bean curd sauce,..." Cantonese names for soy products are (p. 111-12): Mien chiang: A syrup-like sweet bean paste. Dow-foo (tofu). Foo yu (fermented tofu). Tiem jook (dried yuba, broken into pieces

[sweet dried yuba sticks]). Wow doo [Wu dou]. Black soybeans. Dow see [doushi, fermented black soybeans]: Salted, fermented black bean paste [sic, fermented black soybeans] often garlic flavoured and used in small amounts as a condiment or seasoning.

In Chapter 30, on Japan, the section titled "Meats and alternates" (p. 336-37) notes that products made from soybeans include: (1) "Shoyu, a sweetish soy sauce made from wheat and barley [sic], soybeans, salt, and water." (2) Miso, or "fermented soybean paste," used mostly for flavouring soups [miso soup]. (3) Tofu, or soybean curd, is a staple in Japanese cookery. "Its smooth, custard-like texture and bland flavour make it an ideal ingredient. It is extremely versatile and readily absorbs other flavours. Many "restaurants in Japan take great pride in their tofu dishes."

In Chapter 31, on Korea, the section titled "Fruits and vegetables" (p. 350-51) discusses soybeans and their products at length. Soy sauce is used to season *kim* (nori) and other edible seaweeds. Soy sauce is an ingredient in "hot pepper mash" [*kochu jang*]**.** Soybeans are used to make "soybean mash" [*doen jang*]**.** Dry soybeans are roasted in an iron pot, then ground, and the roasted soy flour is used as a garnish over rice cakes [mochi] or plain cooked rice; children enjoy eating the coarser roasted bits that are sifted out of roasted flour or meal. Soybeans sprouts are eaten lightly cooked as a vegetable. Soybeans are also made into tofu (*tu bu*)*;* a brief description of the process is given, in which the drained curds are left in their hemp bag to form a firm cake, which may be cut, dipped into soy sauce, or fried in sesame oil. "Oil can also be made from the soybeans, but it is not commonly used or prepared."

Although commercial soy sauce, made in factories, is now widely available, many Korean households still prepare their own soy sauce each fall. Boiled soybeans are pounded, molded into a cone shape, and set to dry until hard. They are then wrapped with rice straw, hung from eves, rafters or ceilings, and allowed to ferment for several weeks [until they become *meju*]**.** During the winter, these fermented cones may be stored in huge rice-straw bags kept in a cool place.

In the spring, break the cone into small pieces and place in a large earthenware jar, nearly filled with water. Add salt, spices, red peppers, and a few charcoal lumps. Leave this in the sun for a few days [sic, 30-60 days] until the molded soybean chunks float to the top and the resulting liquid turns black. Ladle out and filter the black liquid, then boil it to make soy sauce. The solids remaining in the jar are used as soybean mash [after the charcoal is removed].

A portrait photo of the author, with a brief biography, appear on the rear cover and in the Introduction. Address: Ph.D. student, Ontario Inst. for Studies in Education, Toronto, Ontario, Canada.

3263. Bauer, Cathy; Andersen, Juel. 1979. The tofu cookbook. Emmaus, Pennsylvania: Rodale Press. xix + 188 p. Illust. Woodcuts by David Frampton. Index. 23 cm.
• ***Summary:*** Text atop the title page reads: "The no-cholesterol, high-protein food from the Orient as it can be used in your kitchen." Contents: Recipes in this book. 1. What is tofu? 2. Getting better acquainted: Saving money with tofu, waste of land, tofu and better nutrition, growing your own. 3. Making tofu: equipment, solidifier, process, making tofu in quantity. 4. Using tofu: fresh tofu, aging tofu, making firmer tofu, freezing it, serving it plain and simple, tofu for vegetarians, tofu for dieters, becoming an innovator. 5. Okara and whey: Okara, whey. 6. Soymilk: Soymilk recipes in this book, how to make it, koumiss, milkshakes. 7. Processed soy protein (PSP): What is processed soy protein?, PSP recipes in this book.

The Recipes: 8. Main dishes. 9. Side dishes and preparations. 10. Soup, sandwich, and salad. 11. Baking with Okara; bread crackers, and pastries. 12. Sauces, dips, and spreads. 13. Breakfasts. 14. Desserts: Pies, cakes, cookies, and assorted fancies. 15. Kids' specials and baby food. Appendices: A. Substituting flours. B. Composition of spices. C. Miscellaneous substitutions. D. Table of equivalents. E. Fahrenheit and Celsius equivalents. F. Recommended daily dietary allowances.

Note: As of Sept. 1989, 105,528 copies of this book have been sold by Rodale Press. 2,000 copies are still in stock. Address: California.

3264. Borhan, Manoochehr. 1979. Lipoxygenase activity and protein solubility in extracts from soybeans treated with heat and ethanol. PhD thesis, Iowa State University. 110 p. Page 149 in volume 40/01-B of Dissertation Abstracts International. *
Address: Iowa State Univ., Ames, Iowa.

3265. Costa, S.I. 1979. A soja na producao de alimentos [Soybean in the production of foodstuffs]. In: EMBRAPA–CNPS. 1979. Anais do I Seminario Nacional de Pesquisa de Soja [Proceedings of the First National Seminar on Soybean Research. vol. 2]. Londrina (Parana), Brazil: EMBRAPA–Centro Nacional de Pesquisa de Soja (CNPS). 389 p. See p. 235-43. Held 24-30 Sept. 1978 at Londrina, Brazil. [12 ref. Por; eng]
• ***Summary:*** Contents: Summary. Introduction. Soymilk (*leite de soja*)**.** Soy flakes (*flocos de soja*)**.** Micropulverized soy flour. A flowchart (*fluxograma*) shows how each of these soy products are made. The summary begins: "Soybean is the best source for low cost and high nutritional value protein for human and animal consumption." Address: Instituto de Tecnologia de Alimentos (ITAL), 13.100–Campinas, SP [Brazil]. Phone: 23-9850.

3266. Doyle, Rodger Pirnie. 1979. The vegetarian handbook: A guide to vegetarian nutrition and foods. New York, NY: Crown Publishers. x + 182 p. Illust. Index. 24 cm. [20+ ref]

• ***Summary:*** Table 3, "Daily food guide for vegan adults" (p. 30) recommends soy milk, tofu, and fermented soybean curd [fermented tofu].

The section titled "Weaning infants on vegan diets" (p. 40-44) also discusses soy milk and The Farm in Tennessee. Soy milk is also recommended for pregnant and lactating women (p. 54-55).

Chapter 9, titled "A pair of unusual diets," discusses macrobiotic diets and fruitarian diets. The author is quite critical of a number of macrobiotic practices and teachings: Studies have shown nutritional deficiencies. Restricted intake of liquids may lead to kidney stones and kidney failure. "The greatest danger of a macrobiotic diet is not to adults but to newly weaned infants... Don't wean infants on Kokoh... Wean them instead on either milk or fortified soy milk."

Page 93 states: "Soybeans are among the most valuable of vegetarian foods, not only because of their high-quality protein but because they can be made into soy milk and tofu (soybean curd)... Two other soy products that are widely used in the United States are soy sauce and miso." Pages 96-97 discuss soy milk and textured vegetable protein (TVP).

3267. Escueta, Elias E. 1979. Effect of boiling treatment and gata (coconut cream) addition to soymilk on the chemical, rheological, and sensory properties of tofu. PhD thesis, Cornell University. 155 p. Page 5304 in volume 39/11-B of Dissertation Abstracts International. *
Address: Cornell Univ.

3268. Fomon, Samuel J.; Ziegler, Ekhard E. 1979. Soy protein isolates in infant feeding. In: H.L. Wilcke, D.T. Hopkins, and D.H. Waggle, eds. 1979. Soy Protein and Human Nutrition. New York: Academic Press. xiv + 406 p. See p. 79-99. [19 ref]
• ***Summary:*** Summarizes the results of 37 studies on nitrogen balance and concludes that, in an infant formula, soy protein isolate (Edi-Pro A) fortified with methionine, is at least as satisfactory as protein from cow's milk. Infants fed fortified soy milk, cow's milk, or human milk as 6% of their energy intake, retained similar amounts of nitrogen. In experiments where the protein level was 8-11% or 12-16% of energy intake, the nitrogen balance from soy formula was similar to that from cow's milk. Older infants receiving methionine fortified soy milk retained more nitrogen than did their counterparts receiving cow's milk.

Contents: Adequacy of soy protein isolates fortified with methionine: Nitrogen balance studies, growth studies. Methionine supplementation. Summary. Discussion.
Address: 1. Univ. Hospital, Univ. of Iowa, Iowa City, IA 52242; 2. Univ. of Iowa.

3269. Gabr, Mamdouh; Maraghi, S.; Morsi, S. 1979. Management of lactose intolerance secondary to acute diarrhea with a soy-based, lactose-free formula. *Clinical Therapeutics* 2(4):271-76. [7 ref]
• ***Summary:*** An isolated soy protein formula containing a mixture of sucrose and corn syrup was found more effective in infants recovering from non-bacterial diarrhea than a standard lactose-containing formula. In a study with 58 patients of the management of lactose intolerance secondary to acute diarrhea, the authors determined that (1) High recurrence rates of diarrhea after reintroduction of a milk-based formula are caused by secondary lactose intolerance, and (2) Infants with secondary lactose intolerance can establish disaccharide activity while on a soy-based, lactose-free formula.

Note: This is the second earliest document seen in which a soy formula or beverage is specifically recommended as a solution to the problem of lactose intolerance. Address: Cairo Univ. Faculty of Medicine, Dep. of Pediatrics and Clinical Pathology, Cairo, Egypt.

3270. Hong Kong Soya Bean Products Co., Ltd. 1979. Vita profits: A healthy way to grow (Brochure). Hong Kong. 6 panels. 18 x 18 cm.
• ***Summary:*** This full color, glossy brochure shows the company's many colorful packages. Vita Juice (6 flavors). Vitasoy (3). Vita teas (3). "Vita beverages keep better, sell better in Tetra Brik packs." Address: Export Dep., 41 Heung Yip Rd., Aberdeen, Hong Kong. Phone: 5-528211. Cable address: "Vitasoy".

3271. Ko Swan Djien; Kelholt, A.J.; Kampelmacher, E.H. 1979. Inhibition of toxin production in tempe bongkrek. In: P. Matangkasombu, ed. 1979. Proceedings of the Fifth International Conference on Global Impacts of Applied Microbiology. Bangkok: GIAM V Secretariat. xxxviii + 535 p. See p. 375-88. Held 21-26 Nov. 1977 in Bangkok, Thailand. [14 ref. Eng]
• ***Summary:*** Salt (NaCl) was added to tempe bongkrek to effectively inhibit toxin production. Tempe bongkrek is made of partly defatted coconut residue which remains after coconut meat is pressed to obtain oil, or when shredded coconut meat is extracted with water to obtain coconut milk. Outbreaks of food poisoning by tempe bongkrek still occur periodically. During the latest large outbreak, shortly after the new year in 1977, more than 400 persons were involved and more than 70 victims died. Address: Dep. of Food Science, Agricultural Univ., Wageningen, Netherlands.

3272. L'Aurore. 1979. La cuisine au tofu: Un art Japonais [Tofu cuisine: A Japanese art]. Quebec, Canada: L'Aurore. 192 p. Illust. No index. 14 x 22 cm. [Fre]
• ***Summary:*** Contents: I. Introduction: Table of derivatives of soybeans. Some numbers [statistics]. II. Tofu: Utensils, coagulants, method of preparation of tofu, method of preparation of kinugoshi tofu. Other preparations: Soymilk. Soymilk yoghurt [yogurt]. III. Getting started: Fundamental

ingredients, tools of the art, techniques for preparing foods. Fundamental recipes: Bouillons, sauces to accompany basic soy sauce, preparations to accompany basic miso, basic sauces, rice, noodles, sesame salt, grilled soybeans, kofu [wheat gluten]. Recipes using gô, okara, tofu, soymilk, kinugoshi tofu, yuba. Glossary. Useful addresses. Bibliography.

Note 1. This book is largely based on and pirated from *The Book of Tofu* by Shurtleff and Aoyagi (1975).

Note 2. This is the earliest French-language document seen (April 2013) that mentions silken tofu, which it refers to as *kinogoshi*. Address: Quebec, Canada.

3273. Miya Mori, E.E.; Shirose, I.; Costa, S.I. 1979. Teste de campo sobre aceitabilidade do VITAL por escolares [Field test on the acceptability of VITAL soymilk by school children]. In: EMBRAPA–CNPS. 1979. Anais do I Seminario Nacional de Pesquisa de Soja [Proceedings of the First National Seminar on Soybean Research. vol. 2]. Londrina (Parana), Brazil: EMBRAPA–Centro Nacional de Pesquisa de Soja (CNPS). 389 p. See p. 255-63. Held 24-30 Sept. 1978 at Londrina, Brazil. [8 ref. Por; eng]

• ***Summary:*** The acceptability of Vital soymilk on 1,497 school children ages 7-14 in school meal programs was tested at five locations in Sao Paulo using seven different flavors. Vanilla and chocolate, being preferred by the children in Monte Mar, the first location, was selected for tests in the other locations.

The arithmetic mean of acceptance approached 77%, but was 87.7% and 85.2% in the two schools where it was liked most. Address: Instituto de Tecnologia de Alimentos (ITAL), Cx. Postal 139, 13.100 Campinas, SP, Brazil. Phone: 23-9850.

3274. New England Soy Dairy Inc. 1979. Product and merchandising guide. Greenfield, Massachusetts. 18 p. Illust. No index. 28 cm.

• ***Summary:*** Contents: About NESD. What is tofu? Why buy tofu?: Consumer benefits, retailer benefits, institution benefits (shows package label). Why buy Soy Dairy tofu?: High quality ingredients (soybeans, natural nigari, water), good taste, freshness, long shelf life (18 days from day of production), sales service, product liability insurance. How tofu is made (with 7 large photos showing each step). The many uses of tofu. Nutritional highlights. Nutritional information: Tofu, firm tofu. Point-of-purchase materials and program (incl. 3 recipe brochures, color poster). Letters of recommendation. Kosher letter (1 Sept. 1978 from Rabbinical Council of New England; Tofu and Soymayo have been granted the KVH symbol of Kashruth endorsement). Care and handling: Packaged tofu, bulk tofu. New products and guarantees. Price list (enclosure).

"New products scheduled for release in 1979 are plain and flavored soymilk, deep-fried ready-to-eat tofu cutlets, eggless no-cholesterol mayonnaise, and soymilk ice cream. In the testing stages are soymilk yogurt and soymilk kefir, and other traditional foods made from soybeans... Guarantee: New England Soy Dairy guarantees the quality and integrity of all its products." Address: 305 Wells St., Greenfield, Massachusetts 01301. Phone: (413) 772-0746.

3275. New England Soy Dairy Inc. 1979. Soy Dairy tofu (Poster). 305 Wells St., Greenfield, MA 01301. 1 p. 44 x 28 cm. Color. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.

• ***Summary:*** This large and colorful poster (see next page) has a yellow title and color photos of prepared tofu dishes on a black background. The photos on the top two-thirds are: 1. Tofu tomato cheese sauce on broccoli. 2. Tofu garlic dressing on a green salad and alfalfa sprouts. 3. Tofu strawberry whip in a stem glass. 4. Soy milk. 5. Deep fried sweet & sour tofu. 6. Organic Soy Dairy Tofu. 7. Organic Soy Dairy Firm Tofu. The bottom one-third is text and explanation. Address: Greenfield, Massachusetts.

3276. Ng Sock Nye. 1979. Soya bean–Nutritious food for the people. Malaysia: Institut Masyarakat Berhad, 9 Lorong Kucing, Pulau Tikus, Penang. 19 p. Illust. 21 cm. [3 ref]

• ***Summary:*** A very original and informative booklet, containing a photo or illustration (line drawing) of most of the soyfood products discussed.

Contents: Nutritional value of soya bean, soya bean milk (tau chui [soymilk]), soya bean curd (tau fu fah [soymilk curds]), soya bean jelly (tau fu [tofu]), fried bean cake cubes (tau fu pok [deep-fried tofu cubes]), bean cakes (tau kuah [pressed tofu]), dried soya strands (tau ki / fu chok [dried yuba sticks]), soya skin sheets (tau pui; dried yuba), sweet bamboo (t'im chok [sweet dried] yuba), vegetarian duck (chai ak [Buddha's duck made from seasoned and steamed yuba]), vegetarian salted fish (chai kiam hu [Buddha's fish made from tofu spread on yuba]), vegetarian meat (chai tu kar [Buddha's ham made from seasoned yuba; may be steamed]), soya bean sprouts (tau geh [soy sprouts]), soya sauce (tau eu [soy sauce]), salted soya beans (tau chio [Malaysian fermented black soybeans]). Bibliography.

On page 18 is a photo of all the soyfood products discussed on one table, each neatly labeled with its Malaysian name.

3277. NV Vandemoortele. 1979. Soyamel: A new source of proteins. NV Vandemoortele, Protein Division, Prins Albertlaan 12, B-8700 Izegem, Belgium; NV Befico, Marsveldplein 5–bus 28, B-1050 Brussels–Belgium. 9 p. 30 cm. [Eng]

• ***Summary:*** Contents: Soya: A source of proteins. Agronomy of soya (a hectare of land planted to soya will yield 500 kg of protein; this is more than any other plant or animal. Beef makes least efficient use of the land). Nutrition (soy proteins

are high in quality). Soyamel: A new protein source ("The industrial process developed by the Vandemoortele Group yields as high-quality soya bean-based drink" containing 3.3% protein and 44 calories per 100 gm. An illustration (line drawing) shows imaginary (never commercially produced) 1-liter and 500 ml Tetra Brik Aseptic cartons of Famalac energy drink in chocolate and vanilla flavors. A child is shown drinking the product from a glass with a straw). Soyamel: A reliable production process (shows the equipment and a flowchart of the process).

Vandemoortele, your partner: "The industrial concept of the Soyamel processing plant has been developed by the Protein Division of the Vandemoortele Group. Established in 1879, the Belgian Food Group Vandemoortele ranks among the most important food processing industrial companies of Europe in the field of edible oils and fats, and protein foods. The Group operates wholly-owned manufacturing and marketing subsidiaries in Belgium, the Netherlands, France, Great Britain, and the Federal Republic of Germany... The group employs over 1,700 persons and achieved a total turnover of $600 million (US) in 1978." Photos show three large Vandemoortele plants.

A foldout on the last page shows a cutaway view of a large soymilk plant. "Standard production capacities: 4,000 liters/hour or 20 million liters/year; 6,000 liters/hour or 30 million liters/year; 8,000 liters/hour or 40 million liters/year. The Vandemoortele Group has developed a compact installation.

"Yield: 1 kg soya beans produces an average of 5 to 8 liters [= 6½ quarts] soya bean milk and some residues for animal feeding. Vandemoortele is also willing to assume the technical management of the plant for a limited period of time. In this way Vandemoortele will be able to guarantee the best plant start-up in relation to local circumstances."

Note 1. Talk with Philippe Vandemoortele. 1990. June 4. This booklet, published before Alpro was established, was designed to sell turnkey soymilk plants. The protein division of N.V. Vandemoortele started the company's soymilk research. As long as it was only doing research and losing money there was no need to start a new company. Alpro started when it was clear that there would be income from the sale of the first turnkey plant. At that time, the protein division of N.V. Vandemoortele turned into Alpro, and the former then ceased to exist. Soyamel was a term that was coined for future soymilk products. Alpro first began to actually sell Soyamel in March 1981. In about 1983 it looked as if a company named Soyamel Nigeria Ltd. would buy a turnkey plant, but the deal never went through.

Note 2. This is the earliest document seen (July 2013) concerning Alpro or its predecessors in Belgium.

Note 3. The term Soyamel, a registered trademark of Worthington Foods Inc., was first used in about 1954 to refer to a powdered soymilk made by Worthington. Address: Izegem, Belgium. Phone: (051) 30 22 22.

3278. Okita Enterprises, Inc. 1979. Masuko Sangyo Miniplant: Tofu & soy milk machine. 960 E. 12th St., Los Angeles, CA 90021. 12 p. Undated. 28 cm.
• ***Summary:*** A photo on the cover shows the Masuko Sangyo Miniplant on a blue background. Okita Enterprises is the sole agent in the USA for the equipment shown in this catalog. Okita has a training center at 723 S. Stanford Ave., Los Angeles, California 90021. The body of the catalog shows photos and gives details on the following equipment: The Miniplant and related parts (p. 2-5). The Super Masukoroider, a soybean grinder with special non-permeable grinding stones made by Masuko Sangyo K.K. in Japan (p. 6-7). Various sizes of manual and automatic tray packagers, the smallest of which is the Monkey Packer 1 (p. 8-9). The new Asahi Container (tofu pressing and forming box), made of stainless steel and Tofu-Tex "cloth" by Toyo Plant in Japan. Address: Los Angeles, California. Phone: (213) 629-2206.

3279. Okita Enterprises, Inc. 1979. Sany Ace "Unit": Unit type sanitary plant [Automatic tofu & soy milk machine]. 960 E. 12th St., Los Angeles, CA 90021. 6 p. 30 cm.
• ***Summary:*** On the cover is a photo of the Sany Ace plant on a blue and white background. The manufacturer is Sato Shoji Co. Ltd. in Japan. Okita Enterprises is an importer of this equipment. Contents: DEvelopment of the "Sany Ace (Unit)." Characteristics of Sany Ace. Flow sheet, with the names and a mechanical drawing of each piece of equipment in the system. Features of the grinding unit, boiling unit, and squeezing unit (with a photo of each). Option: Advanced separator for labor saving: Vibrating screen, Brown squeezing unit (with photos of both). Address: Los Angeles, California. Phone: (213) 629-2206.

3280. Okita Enterprises, Inc. 1979. Rietz Manufacturing Co. 960 E. 12th St., Los Angeles, CA 90021. 4 p. Undated. 28 cm.
• ***Summary:*** A black-and-white photo on the front cover shows a Rietz disintegrator on a green background. A black-and-white photo on the rear cover shows a Rietz tofu and soymilk cooker on a white background. The inside two pages show mechanical drawings of these two pieces of equipment integrated into the OK-FRSB 1000 tofu plant, which has a capacity of 10-15 gallons/minute. The text states that this "could very well become the Tofu plant of the future." Note: Rietz (c/o Bepex Corp.) is located in Santa Rosa, California. Address: Los Angeles, California. Phone: (213) 629-2206.

3281. Omosaiye, Oluniyi Babatunde. 1979. Hollow fiber ultrafiltration of water extracts of soybeans. PhD thesis, University of Illinois at Urbana-Champaign. 221 p. Page 151 in volume 40/01-B of Dissertation Abstracts International. * Address: Univ. of Illinois at Urbana-Champaign.

3282. Pollard, Douglas C. 1979. Sprouts for dieters. Cobalt, ONT, Canada: Highway Book Shop. vi + 89 p. Illust. No index. 18 x 11 cm.
• ***Summary:*** Contents: Preface. Note. Sprouts: A valuable food for dieters. Seeds to sprout (discusses 37 varieties, including soybeans [p. 30]). Sprouting containers. How to sprout. Suggested ways to use sprouts. Soy-related recipes: Soy vegetable soup (p. 58). Creole soy sprouts (p. 71). Soybeans (74). Soy sprout butter (81). Soy sprout milk (84). Address: Cobalt, ONT, P0J 1C0, Canada.

3283. Rattazzi, Ilaria; Rivetti, Franz. 1979. La soia. Semi e germogli: come coltivarli, prepararli e cuocerli. Gli abbinamenti con carne e verdure. Come prepare il go, il latte di soia e il tofu [Soybeans. Seeds and sprouts: how to grow, prepare, and cook them. Combining with meat and vegetables. How to prepare fresh soy puree (gô), soymilk, and tofu]. Milano, Italy: Sonzogno. 127 p. [73 ref. Ita]
• ***Summary:*** Contains many recipes. Address: Italy.

3284. Riker, Tom; Roberts, Richard. 1979. Directory of natural and health foods: A sourcebook for dietary revolution. New York, NY: Putnam (A Paragon Book). 320 p. Index. 37 cm.
• ***Summary:*** The first part of this book (p. 7-49) consists of essays on natural foods and nutrition (some reprinted). Part two is a commercial catalog/directory of natural foods available in 1979; it lists and describes (with may photos and labels) products from most of the major U.S. natural foods manufacturers. An Index (p. 293-308) lists participating companies alphabetically.

Soy-related products include: Hain Super-E Soy Oil and Crude [unrefined] Soy Oil (Los Angeles, California, p. 55). Health Valley Soy Moo (Montebello, California, p. 56). Edward & Sons Miso-Cup (Union, New Jersey, p. 57). Family Orchards Fruit & Nut mixes, incl. Back Packer+*, Hi-Fiber Mix+, Hi-Iron Mix+, Hi-Protein Mix+*, Hiker's Helper, Mixed Nuts*, Mountain Munchies*, Tamari Mixed Nuts* (+ = contains Soy Nuts; * = contains Tamari Peanuts) (Berkeley, California, p. 60-61). Niblack Tamari Pumpkin Seeds (Pepitas), Tamari Roasted Sunflower Seeds, Liquid Lecithin, Granular Lecithin (Rochester, New York, p. 72-73). Arrowhead Mills Unrefined Soybean Oil (Hereford, Texas, p. 75). Good Morning New England Granola incl. Cashew-Raisin Bran-ola (with okara soy fiber), Happy Trails Mix (with roasted soynuts) (Amherst, Massachusetts, p. 79). Elam's Soy Flour (Broadview, Illinois, p. 81).

A long section on Erewhon and its products (p. 84-108) is probably the reproduction of an Erewhon catalog. Erewhon is now located at 3 East Street, Cambridge, MA 02141. Following several pages about the company and its philosophy and standards, each of its major products is discussed in detail, often with nutritional analyses. A label for Soy Flour (organically-grown stone-ground, 24 oz.) is shown; the main recommended use is for making soy milk! A major part of the presentation is titled "Japanese food guide." Products described include: Umeboshi (2 pages): Plums pickled in brine (umeboshi). Umeboshi paste. Plum concentrate (*bainiku ekisu*). Miso (2 pages): Hatcho, waka-Hatcho, soybean, barley, brown rice, rice, and natto miso varieties. Tekka (made with Hatcho miso). Sweets made from mizu ame [rice syrup]. Nigari. Gomashio. Koji starters for various types of miso or shoyu. Goma-muso (60% barley miso and 40% whole sesame seed butter). *Gomamiso furikake* (with barley miso, whole roasted sesame seeds, and shredded nori seaweed). Kombu candy. Kokkoh. Dried tofu (*Kohya-dofu*). Brown rice sake. Mirin. Gluten cakes (*Kuruma-fu*). Seitan (Gluten cooked in shoyu). Rice crackers seasoned with tamari soy sauce. Kuzu (3 pages). Tamari and shoyu (4 pages; Johsen Shoyu is made in Sendai and tamari is made by San-jirushi Co.). Seaweeds (4 pages): Kanten, arame, hijiki, kombu, ne-kombu, nori, seasoned nori, kanten, kanten flakes, wakame, and mekabu.

Good Food brand Soy-Millet Bread (Austin, Texas, p. 120). Arrowhead Mills Bulgur-Soy Grits (p. 121). Erewhon Morning Cereal, and Infant Cereal (each containing soy beans). Chico-San Black Soybeans (imported), and Azuki Beans (Dainagon imported small red), and Lima Soy Sauce (Chico, California, p. 126-27). Arrowhead Mills 7 Grain Cereal, and Deaf Smith Crunch (granola-type cold cereal) (each contains soybeans, p. 130).

The section on pages 188-197 is titled "Soy." It lists Farm Foods Tempeh Kit, Tempeh Starter, Natural Nigari for Curding Tofu, Soyflour, Whole Cleaned Soybeans, Good for Ya Textured Vegetable Protein (Summertown, Tennessee, p. 189). New England Soy Dairy Tofu (with many tofu recipes, Greenfield, Massachusetts, p. 192-96).

The Redwood Sprouter Co. sprouter containing Soy Sprouts (1976, Austin, Texas, p. 202-04). Worthington Foods (a photo shows their line of 38 products). Millstone Burger-Like (with soy flour and TVP), Wheat Fries (with wheat gluten), Tender Cuts (with wheat protein and soy flour) (Penryn, California, p. 222-23). Sunrise Health Products Lecithin Granules (p. 274-75).

3285. **Product Name:** [Tofu kit].
Foreign Name: Tofu kit.
Manufacturer's Name: Roland A. di Centa.
Manufacturer's Address: Via Maffei, Milan, Italy.
Date of Introduction: 1979. January.
New Product–Documentation: Ad (in French, 2 inches square, black and white) in Le Compas (France). 1981. No. 17. Spring. p. 52. "Tofu kit. Contains everything to prepare tofu in your own home, including a 16-page booklet and enough nigari for two batches of tofu. Price: 120 francs, postpaid. Send a check to De Centa, 12, rue des Patriarches, 750-05, Paris."

An undated booklet accompanied this tofu kit made in Italy by Roland A. di Centa, Italy's first Caucasian tofu maker. On the yellow cover of the French-language booklet the word "tofu" is also written using Chinese characters. Contents of the booklet: Tofu: What is tofu?, vitality and energy, proteins, easy to digest, saturated fats and cholesterol, easy to prepare in recipes, make tofu at home using the tofu kit. The tofu kit and its contents. Details on the tofu kit and how to use it. How to store and press tofu. How to make tofu at home: Detailed instructions with illustrations. Ingredients used in preparing tofu recipes: Tamari, miso, kuzu, unrefined sea salt, sesame oil, sesame seeds and gomashio, tahini (most sold at macrobiotic food stores). Recipes for using tofu. Recipes for using okara. Soymilk.

Note: This booklet was sent with a letter by Roland A. di Centa. 1993. Aug. 9. For details, see that letter.

3286. **Product Name:** [Tofu kit].
Foreign Name: Tau-fu kit.
Manufacturer's Name: Roland A. di Centa.
Manufacturer's Address: Via Maffei, Milan, Italy.
Date of Introduction: 1979. January.
New Product–Documentation: An undated booklet accompanied this tofu kit made in Italy by Roland A. di Centa, Italy's first Caucasian tofu maker. On the white cover of the Italian-language booklet the word "Tau-Fu Kit" is written in brown outline letters. Contents of the booklet: Tofu: What is tofu?, vitality and energy, proteins, easy to digest, saturated fats and cholesterol, easy to prepare in recipes, make tofu at home using the tofu kit. The tofu kit and its contents. Details on the tofu kit and how to use it. How to store and press tofu. How to make tofu at home: Detailed instructions with illustrations. Ingredients used in preparing tofu recipes: Tamari, miso, kuzu, unrefined sea salt, sesame oil, sesame seeds and gomashio, tahini (most sold at macrobiotic food stores). Recipes for using tofu. Recipes for using okara. Soymilk.

Note: This booklet was sent with a letter by Roland A. di Centa. 1993. Aug. 9. For details, see that letter.

3287. Sales, A.M.; Travaglini, D.A.; Travaglini, M.M.E.; Costa, S.I.; Ferreira, V.L.P. 1979. Desenvolimento de formula para alimentacao infantil a base de soja e leite de vaca [Development of infant food formula based on soybean and cow milk]. In: EMBRAPA–CNPS. 1979. Anais do I Seminario Nacional de Pesquisa de Soja [Proceedings of the First National Seminar on Soybean Research. vol. 2]. Londrina (Parana), Brazil: EMBRAPA–Centro Nacional de Pesquisa de Soja (CNPS). 389 p. See p. 245-53. Held 24-30 Sept. 1978 at Londrina, Brazil. [14 ref. Por; eng]
• ***Summary:*** Contents: Summary. Introduction. Material and methods. Results and discussion. Flowcharts for formulas A, B, and C. Contains 4 tables. The goal of this work was to develop a food formula, based on soy protein and whole milk, fortified with man vitamins and minerals, for infants above 6 months of age, in order to improve the nutritional status of nursing infants and pre-school children. Three formulas were developed and compared. The soy protein component was an extract (soymilk) of whole soy flour. The formulas contained 1.8 to 4.5 gm of protein per 100 kilocalories. The biological value was above 85% when compared to casein. The PER raged from 2.18 to 2.48 and the *in vivo* digestibility from 79.9 to 81.6. Address: Instituto de Tecnologia de Alimentos (ITAL), Cx. Postal, 139–13.100–Campinas, SP [Brazil]. Phone: 23-9850.

3288. Scharf, Stanley Saul. 1979. The coagulation of soybean milk by the action of heat and papain. PhD thesis, Dep. of Food Science, Cornell University, Ithaca, New York. 189 p. Page 2591 in volume 40/06-B of Dissertation Abstracts International.
Address: Cornell Univ., Ithaca, New York.

3289. Smith, Elizabeth Bernice. 1979. Vegetarian meal-planing guide: A lacto-ovo-vegetarian diet. Winnipeg, Manitoba, Canada: Hyperion Press Ltd. 104 p. Illust. (some color). 21 x 22 cm. [57+ ref]
• ***Summary:*** At head of title: "Dr. Elizabeth Smith's New World of Eating." Table 5e (p. 25) lists calories for meat alternates group. Soybean sprouts, miso, soybean curd (tofu), soybean milk, and TVP are moderate calorie, while soybeans and soy grits are high calorie.

Page 47 notes: "Generally speaking, legumes are moderately deficient in methionine. Soybeans are an exception, as are their by-products, tempeh (fermented), tofu (the curd formed for soya), and soybean milk. All these are roughly equivalent in quality to cow's milk.

Page 49 notes that when breast feeding is not possible, soyamilk may be formulated as a very satisfactory substitute; vitamin B-12 must supplement it in pill form. "An infant who cannot tolerate cow's milk because of allergy and cannot be breast fed may accept a soybean formula until 3 to 4 months of age. At weaning, according to Fomon, the child should continue to receive by cup either soybean formula or soybean milk fortified with vitamin B-12.

Pages 54-56 describe in detail how to sprout soybeans at home, and how to prepare homemade soymilk and tofu (soybean curd). It is advised that fermented soybean products such as miso and tempeh not be produced at home "as the control of the fermentation process by specific micro-organisms is too difficult to achieve without specialized training and equipment."

Soy-related recipes include: American soybean loaf (with soaked, ground soybeans, p. 76). Soybeans printanier (with cooked soybeans). Soya sesame loaf. Soya cheese balls (with cooked, seasoned soybeans). Soybean casserole (p. 77). Sprouted soybean Creole. Sprouted soybeans au gratin. Bean sprout chop suey (with tofu, p. 77). Skillet soya sprouts

and beans (p. 78). Soybean stroganov (p. 78). Address: Winnipeg, Manitoba, Canada.

3290. *SoyaScan Notes.* 1979. Consumption of dairy milk in EEC countries in 1979 (Overview). Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** Figures in kg per capita per year. In descending order:

Ireland 190.6.
Denmark 138.2.
UK 136.5.
Netherlands 109.1.
France 83.5.
Italy 79.0.
Belgium / Luxembourg 74.4.
Germany 73.6.
Main source: AID–Verbraucherdienst 26(1981), Heft 8.

3291. Voldeng, Harvey D. 1979. Soybeans in Canada–Past, present and future. Based on an article [sic, manuscript] by Dr. H. Voldeng. In: 1979. Fats and Oils in Canada: Annual Review. Ottawa, Ontario, Canada: Grain Marketing Office, Dept. of Industry, Trade and Commerce, Agriculture Canada. [vi] + 95 p. See p. 1-10. Chap. 1. [7 ref]
• ***Summary:*** Contents: Introduction. Introduction of soybeans to Canada. Importance of the soybean [worldwide]. Utilization. Food uses of soybeans: Oriental foods–Soy milk, tofu, sufu, miso, soy sauce, tempeh, Hamanatto, natto. Western ingredients–Full fat flour, defatted flour, soy protein concentrates (70% protein), soy protein isolate (more than 90% protein), textured soybean protein. Soybeans in Ontario. Development of short season varieties. Soybeans in Quebec and the Maritimes. Soybeans in the Prairies (southern Manitoba and Alberta).

A table shows soybean acreage in Ontario's leading counties in 1978. Kent 205,000. Essex 192,000. Lambton 170,000. Elgin 63,000. Middlesex 40,000. Other 7,000. Total (Ontario) 705,000 acres.

Soybeans grown in Ontario can be crushed at three plants: (1) Victory Soya Mills (owned by Procter and Gamble) in Toronto. (2) Canadian Vegetable Oil Processing Limited (owned by Canada Packers) in Hamilton. (3) The recently completed Maple Leaf Monarch plant (affiliated with Unilever Corporation) in Windsor. Total crushing capacity in Ontario is about 35 million bushels per year.

The CSP Foods Plant in Altona, Manitoba, has in some years crushed limited amounts of soybeans imported from the U.S.

"Development of short season varieties: The justification for the effort to develop a large acreage outside of southwestern Ontario has been the magnitude of imports of soybeans, meal and oil. This has been and continues to be sizeable. The situation (in metric tons = tonnes) is outlined below for the 1977/78 crop year: (1) Whole soybeans: Production 527,361. Imports 262,835. exports 64,173. Domestic crushing 728,400.

(2) Soybean oil: Imports 28,100. Exports 1,400. Domestic production 125,600.

(3) Soybean meal: Imports 376,300. Exports 45,600. Domestic production 575,400. Source: *Fats and Oils in Canada, Annual Review,* 1978.

Letter (e-mail) from Dr. H. Voldeng of Agriculture and Agri-Foods Canada. 2010. Feb. 16. The original "article" was not an article but a manuscript that was sent to the publishers of this volume; they reduced the length slightly. It was never published separately, no longer exists, and cannot be cited separately. Address: Agriculture Canada, Ottawa, Ontario.

3292. Waggle, D.H.; Kolar, C.W. 1979. Types of soy protein products. In: H.L. Wilcke, D.T. Hopkins, and D.H. Waggle, eds. 1979. Soy Protein and Human Nutrition. New York: Academic Press. xiv + 406 p. See p. 19-51. [42 ref]
• ***Summary:*** Contents: Introduction. Soybean supply: Seed structure and composition, composition of source material, storage and handling, soybean oil, food products from defatted soybeans, soy flours and grits, soy protein concentrates, isolated soy protein, amino acid and mineral composition. Food uses of soy proteins: Meat products, baked products, infant formulas and food, food analogs, dairy type foods (yogurt, sour cream, frozen desserts, cheese, and dip-type products), protein supplements, other uses. Address: Ralston Purina, Checkerboard Square, St. Louis, Missouri 63188.

3293. Loma Linda Foods. 1979? To your health, naturally! Recipes and catalog. Riverside, California. 10 panels. Undated. Front and back. Each panel: 16 x 10 cm.
• ***Summary:*** The cover of this very informative catalog is dark brown and orange-brown on beige, with a rustic illustration of a man and a woman with two horses and a plow in front of a small barn. Loma Linda Foods–Since 1906." Contents of the front panels: The Loma Linda story (history). Names of vegetarian products made by Loma Linda with a recipe for each: 1. Stew-Pac, Dinner Cuts, Tender Bits (canned). 2. Meatless Fried Chicken (frozen in carton). 3. Sandwich spread (canned). 4. Soybeans–Boston Style, Chili Beans, Green Soybeans (canned). 5. Savorex (plastic tub). 6. Tender Rounds (meatless meatballs) with Gravy. Fried Chicken with Gravy (canned). 7. Soyalac. i-soyalac (canned). 8. Meatless Breakfast Sausage (chub). 9. Redi-Burger. Vege-Burger (canned). Vita-Burger (Chunks or Regular; dry in box). 10. Nuteena (with peanuts and soy flour). Proteena (nut loaf). Vegelona (canned). 11. Gravy Quik (Meatless Gravy–Chicken Style, Brown, Mushroom, Onion, Smoky Bits, Country Style). Spaghetti Sauce Mix (foil pouches). 12. Long Links. Linketts. Big Franks. Little Links (canned). 13. Meatless Slices (Roast Beef, Bologna,

Chicken, Turkey, Salami; frozen in carton). 14. Soyagen (soy beverage; Carob, All Purpose {liquid}, Carob, All Purpose, No Sucrose {dry in canister}).

The back is divided into 14 rectangles of various sizes, one for each family of products described on the front. A color photo and description accompanies each of the 46 products. Address: Riverside, California.

3294. White, Jim. 1980. Close encounter of the tofu kind: A white custardy thing zooms out of the Orient onto your lunch counter. *Toronto Star* (*Ontario, Canada*). Jan. 18. Family section.

• ***Summary:*** This full-page feature states: "Brace yourself, Toronto, for the experience, because there's every indication tofu's going to do more than hover on the horizon like a fleet of sci-fi spacecraft." Victor Food Products in Scarborough [a suburb of Ontario] says that sales of tofu have nearly tripled in one year, from 720 lb/day to more than 1,900 lb/day. Shoppers can now buy tofu in selected Dominion, Lowlaws, Miracle Mart, and A&P outlets. "When the big boys take a bite of the action, you know something is cooking."

The article includes a listing of tofu makers and retailers in the Toronto area. Makers: (1) Pyung Hwa Co., 2139 Dundas St. W. Jhasun Koo. Phone: 534-0237. Korean-style tofu. Firm, 10-oz. cakes cost $0.55. (2) Wah Chong Co., 88 Ossington. Phone: 532-0841. Chinese style. $1.20/dozen. (3) Yet Sing Co., 11 Baldwin St. Phone: 863-0818. Custardy tofu. $0.70/dozen. (4) Victor Food Products. A photo shows Stephen Yu, standing with has packaged tofu and soymilk products.

Paul Smith, owner of Baldwin St. Natural Foods, runs a small night class once a month on making tofu. Branson Hospital (Seventh-day Adventist) has been serving vegetarian meals to patients for 22 years. Much of the protein comes from soyamilk, soya curd, and other soya products. Interest in tofu has been spread by the publication of *The Book of Tofu,* by William Shurtleff and Akiko Aoyagi. Address: Star Food Writer.

3295. *British Medical Journal.* 1980. How necessary are elimination diets in childhood? 280(6208):138. Jan. 19. [8 ref]

• ***Summary:*** Discusses part of the controversy on the value of soy in elimination diets.

3296. Praskin, Laurie. 1980. Re: Plenty's work with soyfoods in Solola, Guatemala. Letter to William Shurtleff at Soyfoods Center, Jan. 28. 2 p. Typed, with signature.

• ***Summary:*** Plenty, run by The Farm in Tennessee, is introducing soymilk, tofu, and soy ice cream to the Guatemalan highlands and building a soy dairy in Solola. Address: Plenty, San Bartolo, Solola, Solola, Guatemala.

3297. ASEAN Sub-Committee on Protein. 1980. ASEAN Protein Project. Bangkok, Thailand. 24 p. Jan. Illust. 29 cm. [Eng]

• ***Summary:*** Contents: Introduction (incl. history, programs, and budget). Administration (incl. list of workshops held by the ASEAN Sub-Committee on Protein). Research and development. High-protein low-cost foods. Full-fat soy flour (a plant at Chiang Rai, northern Thailand, produces 100 tons/month). Fermented foods (incl. soy sauce). Soy products (incl. tofu). ASEAN network (directory).

"The ASEAN Protein Project was conceived at a joint research project on soybeans and protein-rich foods at the first meeting of the ASEAN Permanent Committee on Science and Technology held in August 1971 in Indonesia. Meetings of food specialists soon followed, one in September 1972 in Malaysia and another in November 1972 in Indonesia. At a further meeting in August 1974, involving Australian technical experts, four areas for research co-operation were identified, namely: (1) Identification, development, and utilisation of low-cost, protein-rich foods for children and other vulnerable groups. (2) Processing and utilisation of full fat soy flour (3) Improvement of fermentation technology; and (4) Microbiological culture collection.

Workshops held by the ASEAN Sub-Committee that concern soya include: 1st Workshop on soy products (1976, Kuala Lumpur, Malaysia). 3rd Workshop on culture collection (1977, Bangkok, Thailand). 4th Workshop on soy sauce manufacturing techniques (1978, Singapore). 5th Workshop on solid substrate fermentation (1978, Bandung, Indonesia). 8th Workshop on extruder technology (1980, Bangkok, Thailand).

Photos show: (1-4) Participants, meetings, and tours. (5-6) Full fat soy plant at Chiang Rai, Thailand. (7) Commercial soy sauce factory. Address: Bangkok, Thailand.

3298. **Product Name:** [GranoVita Soja Drink, and Carob Drink].
Foreign Name: GranoVita Soya Drink, Caroba Drink.
Manufacturer's Name: DE-VAU-GE Gesundkostwerk GmbH (Marketer). Made in Belgium by Alpro.
Manufacturer's Address: Luener Rennbahn 18, Postfach 1660, D-2120 Lueneburg (near Hamburg), West Germany.
Date of Introduction: 1980. January.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 123; STS. 1985. Containers for Soymilk. Shows color photo of 500 ml Tetra Brik carton. Orange and green on white. "Made purely from plants. Free of cholesterol. Rich in protein (Rein pflanzlich. Cholesterinfrei. Eiweissreich)." Manufacturer's catalog. 1983. GranoVita. Health-food & natural food from Germany. 6 p. plus 3-page price list. With color photos and ingredients

for all products. Retail price is DM1 for 0.5 liter. R. Leviton. 1983. Report on trip to Europe with American Soybean Assoc. Oct-Nov. p. 17. Product seen in Reformhaus health food store in Zurich, Switzerland. Sold for F1.75/500 ml.

Form filled out by Alpro. 1990. May 30. Alpro began making this product (2 flavors) in Jan. 1980 in 500 ml cartons.

3299. *Soyanews* (*Sri Lanka*). 1980. Deadlines set for soya milk: Substitute for ten million coconuts a year. 2(7):1, 7. Jan.

• ***Summary:*** "The best soya news of 1979 may well be the government's decision to produce drum-dried soya milk at Anuradhapura, in the heart of the country's best soya land.

"At a conference held by the Acting Minister of Agricultural Research and Development, Mr. Chandra Bandara, the following time table was set:

"Dec. 1979–Finalise floating a public company. March 1980–Finalise specifications for tenders. April 1980–Call for tenders for machinery and equipment. May 1980–Finalise awards. And best of all: Jan. 1981–Commissioning of the plant.

"Forbes and Walker will float a public company in consultation with Industrial and Commercial Consultants Ltd., who may handle the incorporation of the company, call for tenders, appoint suppliers of machinery and equipment, appoint contractors to build the plant, in short everything up to the point of commissioning, when the key is turned.

"The factory is expected to produce 4,000 lbs. of dried milk a day. Working 250 days a year it would produce one million pounds of dried milk which can substitute for ten million coconuts in the nation's kitchens."

The price of coconuts has been rising rapidly, and using soymilk made from domestic soyabeans has some foreign exchange benefits. A flow chart shows the basic steps and equipment used in making drum dried soya milk at the plant.

3300. Soothill, J.F. 1980. Elimination diets in childhood. *British Medical Journal* 280(6211):401-02. Feb. 9. [2 ref]

• ***Summary:*** Part of the controversy on the value of soy in elimination diets. Address: Dep. of Immunology, Inst. of Child Health, London WC1N 1EH, England.

3301. Mashburn, Rick. 1980. From beans to 'cheese.' *Sentinel* (*The*) (*Winston-Salem, North Carolina*). Feb. 15. p. 7. [1 ref]

• ***Summary:*** About Jerry MacKinnon and Bean Mountain Soy Dairy of Boone, North Carolina. The shop makes 1,000 lb/week of tofu plus some tempeh and soymilk. MacKinnon left a tofu business he started in Ann Arbor with four other people 2 years ago when it grew too big. "MacKinnon seems reluctant to start sermonizing on the virtues of tofu. He'd much rather hand out a copy of a chapter from *The Book of Tofu,* by William Shurtleff. Crowell, however, is a more zealous missionary." Concerning the future of tofu, he notes: "As soon as General Foods realize Americans are gonna eat tofu, we'll be out of business." Four photos show Jerry MacKinnon, with beard and hat, cooking 50 lb of ground soybeans in steam-jacketed cooker. A portrait shows Marc Crowell. A label for the company's tofu product.

3302. Leviton, Richard. 1980. Sanitary practices and soyfoods production. *Soycraft* (*Colrain, Massachusetts*) 1(2):24-31. Winter. [8 ref]

• ***Summary:*** Discusses: Bacteria, on overview. Six bacterial families. The view from the health department: "In Massachusetts the following serve as guidelines for evaluating tofu: 1. Total plate count: no more than 100,000 colonies/gm product. 2. Total coliform: no more than 100 colonies/gm product. 3. *Staphylococcus:* no "coagulase positive" Staph. Coagulase negative Staph. do not cause food poisoning. 4. Minimal enteric (human intestinal) bacteria, e.g. *Escherichia coli.* 5. Zero or very low product tolerance for pathogenic organisms, depending on the type, e.g. *Salmonella, Klebsiella, Shigella.* 6. Holding temperature of product less than 40ºF or greater than 150ºF." These are compared with milk standards. Recommended building, floor, and drain specifications are discussed. For unpasteurized tofu, the Massachusetts Dept. of Public Health recommends a 7-8 day shelf life, and would like to see (1) a maximum allowable bacterial count established for soyfoods, and (2) what are the ideal lowest counts achievable under good manufacturing practices.

Setting up an in-house sanitation laboratory. Last summer New England Soy Dairy employed Amy Braveman, an undergraduate in microbiology and chemistry at the Univ. of Mass. to set up such a lab. Details and photos are given. Typical pH values on the soymilk production line are: bean soak water 6.5, slurry 6.7, soymilk 6.6, tofu curds 5.9. Actual plate count and coliform count for various pieces of equipment and stages in the tofu manufacturing process are given. Phase II of the companies total sanitation program is discussed. Address: Colrain, Massachusetts.

3303. Plamil Foods Ltd. 1980. Plamil (Ad). *Alive* (*England*). Jan/Feb. p. 16.

• ***Summary:*** An 1/8 page ad. "For health's sake, make sure you have the right fats. Plamil soya plantmilk & derivative products are rich in polyunsaturates. Send for literature (s.a.e. please)." Address: Bowles Well Gardens, Folkestone, Kent [UK].

3304. *Plenty News* (*Summertown, Tennessee*). 1980. Soybeans in the Third World. 1(4):4-5. Winter.

• ***Summary:*** "Soy dairy [in Guatemala]: The village soy dairy in San Bartolo is now complete. The building was constructed during the summer and fall of 1979 in conjunction with the men of the community. The

inauguration for the 22 by 44 foot soy dairy occurred on February 15, 1980."

"Several hundred local people and officials attended and enjoyed the festivities and free ice bean. Augustin Xocuic, (pictured above) President of the San Bartolo Community Association, spoke warmly of the cooperation and help given by Plenty."

"The dairy has a split-level design for gravity feed production and also contains a sawdust stove for water heating."

"The dairy is capable of producing 200 pounds of tofu and 35 gallons of ice bean daily. Some will go out free to schools. We will be test marketing the soy products to determine the viability of the soy dairy as a self-sustaining cottage industry.

"The construction of the dairy was a community effort on the part of the people of San Bartolo. Training in soy dairy management will also involve interested members of this community."

"This pilot project has drawn a great deal of interest from other international organizations."

"Tofu is a complete protein and when it is served with a grain food like tortillas or bread it has even more protein value. Ice bean is naturally the popular way to eat the 'Noble Bean'."

Lesotho: "During 1979 Plenty introduced soybean in Lesotho. A demonstration of soy technology for home use was held at the National Agricultural Show in Maseru last June. The booth sparked much interest. Soy demonstrations have been held in the Sebapala villages and were met with acceptance and enthusiasm.

Photos show: (1) The soy dairy equipment being loaded for shipment to Guatemala. (2) Augustin Xocuic of San Bartolo talking with two people from Plenty. (3) A Plenty volunteer and a Guatemalan stirring soymilk with a wooden paddle. (4) A view of the new soy dairy in San Bartolo from the outside. (5) Two little Guatemalan girls enjoying soy ice cream on a cone. (6) A Plenty volunteer (Suzy Jenkins) and a Guatemalan woman each demonstrating tofu on a tortilla. "At the annual fair in the square in Solola, we were invited to set up a booth featuring tofu on tortillas. On the first day we 'sold out' in half an hour... on the second day it all sold out in ten minutes." (7) A Plenty volunteer (man) standing behind a long wooden table on which are soyfoods and simple equipment for making them at home. Looking on are 6-8 people from Lesotho. (8) A Plenty volunteer and a kid from Lesotho serving soymilk in cups to many other African kids. "In Lesotho, Plenty's volunteers have begun soy demonstration classes for native villagers in the Sebapala area. In Africa, as in Guatemala, the 'Noble Bean' has been welcomed with great interest and enthusiasm."

3305. Schuette, Sally A.; Zemel, M.B.; Linkswiler, H.M. 1980. Studies on the mechanism of protein-induced hypercalciuria in older men and women. *J. of Nutrition* 110(2):305-15. Feb. [40 ref]

• ***Summary:*** When urea and amino acids enter the kidneys on the way to elimination in urine, they cause not only the loss of excess water but also the excretion of large amounts of minerals. Address: Dep. of Nutritional Sciences, Univ. of Wisconsin, Madison, WI 53706.

3306. *Soyanews* (*Sri Lanka*). 1980. Soyabeans make the front page. 2(8):1, 7. Feb.

• ***Summary:*** "A news item in the national press and broadcast on the radio said that the Anuradhapura plant (*Soyanews,* Nov-Dec. 1980, this page) will produce full-fat soya flour (FFSF) in addition to drum dried soya milk (DDSM) as well. It is to be mixed with wheat four to produce a more nutritious loaf of bread. The goals of better bread and less coconut milk are so much closer."

"The Thriposha processing complex at Ja-Ela will also help. The Marketing Department bakery in Colombo recently made bread fortified with 2% soya."

Redd Barna, the Norwegian Save the Children organisation, would like to help develop weaning using soya.

A Sinhalese illustration shows a Sri Lankan farmer squeezed in a vice between the jaws of Price and Marketing. If farmers are to grow soyabeans, they must get a reasonable price from their sale and make a reasonable profit.

3307. *Soycraft* (*Colrain, Massachusetts*). 1980. Soyfoods deli update. 1(2):10. Winter.

• ***Summary:*** Discusses Yellow Bean Trading Co. (Detroit, Michigan), The Tofu Shop (Rochester, New York), and The Cow of China (Boulder, Colorado), and The Soy Plant Deli (Ann Arbor, Michigan).

"The Yellow Bean Trading Company of Detroit, Michigan, began business in September 1978, with a truck, garage, and cooler, as Timothy and Carol Huang delivered tofu, tempeh, soysage, and soymilk, made by the Ann Arbor Soy Plant, around the metropolitan area. But in March 1979, they opened a retail delicatessen because they 'wanted to teach people about soyfoods by letting them taste them, which is better than reading about them in books.' The deli retails groceries, juices, herbs, teas, dry grains, bulk tofu, bottled soymilk, nori rolls, tofu carob creme pies, and tofu salad. The Yellow Bean has seating for fourteen and they are planning to introduce hot food items, such as tofu spinach pies, tofu lasagna, rice with tempeh, and bean and vegetable dishes." Though currently losing money, the deli grosses about $600 each six-day week.

Greg Weaver of The Tofu Shop in Rochester reports that August 1979 was their biggest month all year; they grossed $2,000/week. Autumn sales averaged about $1,700/week. During the World Series in October they invented the Not Dog–a hot dog based on baked tofu.

Steve Fiering of the Soy Plant deli in Ann Arbor reports

steady sales of about $1,000 a week. Steve Demos at the Cow of China deli in Boulder reports that retail sales peaked in August at $450/day. Now they range from $1,700 to $2,000/week.

3308. Takai. 1980. Takai Tofu & Soymilk Equipment Co. (Ad). *Soycraft* (*Colrain, Massachusetts*) 1(2):54-55. Winter.
• ***Summary:*** This 2-page ad gives basic information about the company. Photos show: (1) "Our modern tofu and soymilk equipment factory." (2) Takai continuous roller extractor. (3) Takai automatic duplex pressure cooker system (S180). (4) Takai pressure cooker system (S40A). (5) Pressure cooker. (6) Hydraulic press. (7) Takai automatic pressure cooker system (W30C). Address: 307 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan.

3309. Bronson, Gail. 1980. Breast-feeding advocates increasingly question safety, nutritional value of infants' formulas. *Wall Street Journal.* March 21. p. 40.
• ***Summary:*** At least 130 infants became ill after receiving Neo-Mull Soy, a processed soybean formula, made by Syntex Laboratories (a subsidiary of Syntex Corp.), a pharmaceutical company located in Palo Alto, California. The formula was found to contain too little sodium chloride–common table salt. Fortunately, none of the infants died.

Cow's milk is the basis for about 80% of all U.S. infant formulas, and soy protein for about 20%–according to Syntex. America's best-selling infant formula is Similac, made by Ross Laboratories of Columbus, Ohio; it has over 50% of the market, and is followed by products made by Mead Johnson (a subsidiary of Bristol-Myers Co., Evansville, Indiana), and Wyeth Laboratories (a division of American Home Products Corp., Philadelphia, Pennsylvania).

3310. Island Spring Inc. 1980. Can you make a living making tempeh? (Ad). In: William Shurtleff and Akiko Akiko. 1980. Tempeh Production: The Book of Tempeh, Volume II. Lafayette, California: New-Age Foods Study Center. 176 p. See p. 171.
• ***Summary:*** This quarter-page black-and-white ad is for the Soycrafters Apprenticeship Program, a professional 21-day intensive "hands-on" course in the commercial production and marketing of tempeh, tofu, soymilk, and related soyfoods. Address: P.O. Box 747, Vashon Island, Washington 98070. Phone: (206) 622-6448.

3311. *Vegetarian Times.* 1980. Japanese remove "soybean taste." No. 36. March. p. 14-15.
• ***Summary:*** "Scientists at the Dep. of Food Science and Technology at Kyoto Univ. have found a way to treat defatted soybean extract with an enzyme which removes the 'beany' flavor that many people find disagreeable."

3312. Dunn, Carole. 1980. Soya beans are good for human 'beans.' *Chronicle, Tuesday Magazine* (*Eumundi, Australia*). April 15. p. 11.
• ***Summary:*** Cyril and Elly Cain, originally from the USA but now living in Imbil, are selling soyfoods at the Saturday morning Eumundi market, including soymilk drinks, smoothies, plain tofu, flavored tofu dips and spreads, tofu sandwiches and burgers, Soysage rolls, ice bean (soy ice cream), and a variety of cakes and pies such as tofu cheesecake. A photo shows Elly smiling as she makes a sale at a tofu & soymilk stall; Cyril appears in the background.

3313. Belt, Becky; Jelepis, Kathy. 1980. Tofu takes many forms. *Dispatch* (*Columbus, Ohio*). April 23.
• ***Summary:*** Bill Lutz and Mick Vissman, two entrepreneurs in their 20s, recently started Rainstar Foods, which distributes tofu and other natural foods. They also started the Hip Pocket Tofu Deli [on 1 March 1980]; its popular items include: Chili with tofu, Eggless "egg salad," Saltimbocca (marinated tofu cuts), Tofu burger, Guacamole, and Tofu onion-garlic dips. Soy foods like soymilk, soysage, and seitan roast are also on the menu. For dessert there is tofu cheesecake and banana cream pie. All recipes used at the deli were developed by chef Dennis Prutsman, who cooked with tofu for 15 years in San Francisco, California. No recipes are given.

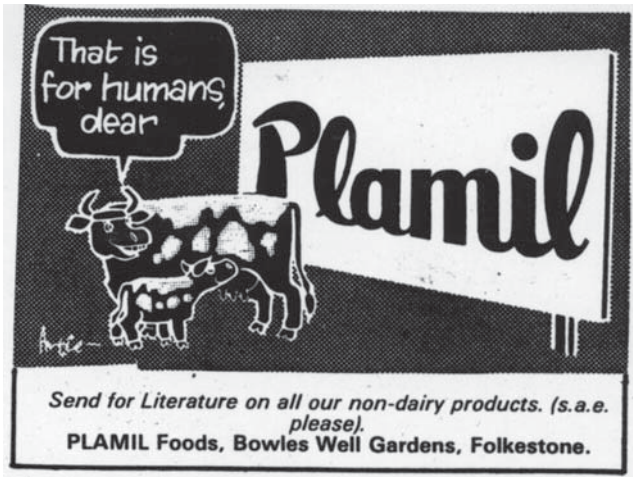
3314. Ling, C.A. 1980. Time catches up with Plamil. *Alive* (*England*). March/April. p. 15.
• ***Summary:*** This year is the 15th anniversary of Plamil Foods Ltd. (formerly named Plantmilk Ltd.), "as it celebrates 15 years of marketing the well-known Plamil soya plant milk," which is sold in virtually every health food store in the country.

Plamil Delice is a replacement for dairy cream. Plamil Rice Pudding was made to replace its dairy counterpart. Address: Managing director, Plamil Foods Ltd., Bowles Well Garden, Folkestone, England.

3315. Plamil Foods Ltd. 1980. Plamil (Ad). *Alive* (*England*). March/April. p. 7.
• ***Summary:*** An 1/8 page ad. A cartoon (by Artie; see next page) shows a cow and her calf standing in front of a huge billboard on which is written "Plamil" (in black letters on white). The mother cow says: "That is for humans, dear."

Below the cartoon: "Send for literature on all our non-dairy products (s.a.e. please)." Address: Bowles Well Gardens, Folkestone, Kent [UK].

3316. Priepke, P.E.; Wei, L.S.; Nelson, A.I.; Steinberg, M.P. 1980. Suspension stability of Illinois soybean beverage. *J. of Food Science* 45(2):242-45. March/April. [12 ref]
Address: Dep. of Food Science, Univ. of Illinois.



3317. Steinkraus, Keith H. 1980. Guideline for the production of soybean milk and soybean curd at the village level. *Food and Nutrition Bulletin* (*United Nations Univ.*) 2(2):29-30. April.
• ***Summary:*** A step-by-step guide to making each product using simple equipment. Address: Cornell Univ., Geneva, New York.

3318. Hope, Jane; Bright-See, E. 1980. Milk digestion aid now in liquid form: Nutrition matters. *Toronto Star* (*Ontario, Canada*). May 14. p. D3.
• ***Summary:*** Those who don't drink milk because they can't digest its lactose [a sugar], might want to try LactAid; just add 4-5 drops to a glass of milk.

Other people are forced to avoid milk and milk products because they are allergic to milk protein. Babies with milk allergies are often given formulas based on soy protein. "Since soy protein is a high quality protein, the babies grow just as well as if they were getting regular milk."

Adults who are allergic to daily milk might "consider using the soy products which are available in many Chinese grocery stores. These include soybean milk and bean curd (also known as tofu or dow fu). The protein in these products is very good." And they contain no lactose.

Small photos show Jane Bright and Dr. E. Bright-See.

3319. **Product Name:** Promax 70 (Soy Protein Concentrate).
Manufacturer's Name: Griffith Laboratories.
Manufacturer's Address: 12200 S. Central Ave., Alsip, IL 60658.
Date of Introduction: 1980. May.
New Product–Documentation: Moore, Karen. 1980. "Upgraded soy protein concentrate exhibits improved functional properties: Emulsification, fat and moisture binding ability approaches or equals that of soy isolate, casein and NFDM. Processed meat, snacks and milk replacers are end use applications." *Food Product Development* 14(5):62, 64. May. About Promax 70.

Two 1-page leaflets sent by Griffith Laboratories. 1980. One, titled "Promax-70 Soy Protein Concentrate," gives a detailed nutritional analysis. The other, titled "See the Promax Difference," shows six model oil/water emulsion systems in glass jars. "Note Promax-70's superior performance in maintaining stability against proteins costing considerably more." Soya Bluebook. 1982. p. 64.

3320. Okada, M.; Miyura, Y.; Komeyasu, M. 1980. [Effect of heat treatment on flavor of soy milk]. *Nippon Shokuhin Kogyo Gakkaishi* (*J. of the Japanese Society for Food Science and Technology*) 27(5):245-51. May. [Jap; eng]*

3321. **Product Name:** [Soyalac {Soymilk} (New Plain Type)].
Foreign Name: Soiyarakku Neo Sutoreeto Taipu.
Manufacturer's Name: San-iku Foods.
Manufacturer's Address: 1-1 Nagaurataku, Sodegaura-machi, Kimizu-gun, Chiba-ken 299-02, Japan.
Date of Introduction: 1980. May.
Wt/Vol., Packaging, Price: 250 gm can.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Neo Sutoreeto Taipu was introduced in May 1980 by Saniku Fuuzu in a 250 gm can and distributed nationwide.

3322. Sayavun, Daranee; Tontsirin, Kraisid. 1980. Effectiveness of "Kaset Soy Milk" in treatment of infants with diarrhea. *ASEAN Protein Project Newsletter* No. 6. p. 5-6. May. [Eng]
• ***Summary:*** Soymilk, an inexpensive product, was found to be effective in the treatment of acute diarrhea in infants. Address: Mahidol Univ., Bangkok, Thailand.

3323. *Consumer Reports.* 1980. Soybeans–the "meat" that grows on vines. 45(6):360. June.
• ***Summary:*** This sidebar to the article "Vegetarianism: Can you get by without meat?" gives a brief description of the soybean and its food uses. "Roasted soybeans [soynuts] can be a delicious snack food." A small amount of soy flour added to bread or pasta dough appreciably increases those foods' protein content. Sprouted soybeans can be eaten cooked or as a salad vegetable and are a good source of vitamin C.

"Soybeans can be made into a milk that, when fortified, can supply nutrients usually obtained from cow's milk. That's important for total vegetarians or those allergic to milk protein. Soy milk can be made into a cheese: soybean curd, or tofu, familiar to many as the little white cubes floating in the soup at a Chinese restaurant." Also mentions soy sauce, miso, tempeh, and meat extenders or meat analogs.

3324. Jayawardene, Ellen. 1980. Sri Lanka soya recipes. Unpublished manuscript. 15 p. Undated. Unpublished typescript. [Eng]
• ***Summary:*** "In soyabean cookery, time is saved by using broken soyabeans." Contains the following 29 recipes: Soya curry (with broken soyabeans). Soya sambol (with blanched roasted soybeans). Soya string hoppers (with soya flour). Soya waddai (with broken soyabeans). Soya milk (1, made from finely ground raw soya flour). Soya milk curry. Soya milk residue and wheat roti (with okara). Soya murukku (with "full fat soyaflour"). Soyabean milk (2, made from soyabeans). Soya pakoda [pakora] (with soya residue or soya flour). Soya tofu (made from 5 cups soya milk). Tofu curry. Soya milk watalappam (with jaggery or *kitul*). Soya rice thosai [Indian = dosa, dosai] (with broken soyabeans). Soya wheat thosai. Soya rice hoppers (with soya flour). Soya rice kanjee (kande, congee [from Tamil; rice porridge or gruel]; with soya flour or soya milk). Soya–rice keum (with blanched roasted soyabeans). Soya kurakkan roti (*karukkan* = millet; with processed soya flour). Soya groundnut sweet (with blanched and roasted soyabeans). Soyamilk with broken beans. Soya pittu (with soya milk residue). Soya kiri bhat (with soya milk). Soya vegetable mixed curry (with broken soyabeans). 25. Soya coconut chutney (Indian type; with blanched and roasted soyabeans). Fried soyabeans. Soya mixture (with fried soyabeans and flattened rice–*Habala Peti*). Soya rice aluwa [halva, halwa] (with dehulled soyabeans). Soya potato cutlets (with broken soyabeans).

3325. **Product Name:** Tofu Spinach Quiche (Eggless).
Manufacturer's Name: Legume.
Manufacturer's Address: 112 West 75th St., New York, NY 10023. Phone: 212-362-6616.
Date of Introduction: 1980. June.
Ingredients: Tofu, soymilk, soy oil, spinach onions, mozzarella cheese, garlic, soy margarine, spices. Crust: Whole wheat flour, soy margarine, sea salt.
Wt/Vol., Packaging, Price: 10 oz.
How Stored: Refrigerated or frozen.
New Product–Documentation: Letter from Chandri Speer to Bill Shurtleff. 1980. June 23. "We are doing business as Legume and have created a kosher product line including tofu-spinach quiche (eggless), whipped tofu mousse pie, and soon to include contemporary chile..." Label. 1980, undated. 3.25 by 4 inches. "Complete protein meals by Legume. 100% natural. No preservatives. No sugar. No artificial additives... If frozen, bake for 35-40 minutes." This is an early American frozen tofu entree. It is eggless and kosher, but not dairyless. Shurtleff & Aoyagi. 1980. List of soyfoods products.

3326. **Product Name:** Legume Tofu Muffin [Tofu-Carrot-Bran, or Tofu-Banana-Bran].
Manufacturer's Name: Legume.
Manufacturer's Address: 112 West 75th St., New York, NY 10023. Phone: 212-362-6616.
Date of Introduction: 1980. June.
Ingredients: Carrot-Bran: Whole wheat flour, bran, carrots, honey, tofu, soymilk, raisins, soy margarine, safflower oil, baking powder, arrowroot, sea salt, natural flavorings.
Wt/Vol., Packaging, Price: 4 oz, cellophane wrapped.
How Stored: Shelf stable.
New Product–Documentation: Label. 1980, undated. 1.5 by 2 inches. "The complete protein snack by Legume. All natural."

3327. Leviton, Richard. 1980. Kicking the dairy habit: Healthy soyfoods are putting old cows out to pasture. *East West Journal.* June. p. 60-65.
• ***Summary:*** Discusses: The infant soyfoods industry. Luke Lukoskie. Soyfoods industry and market statistics. The soy deli. Five established soy delis in the USA. Third Annual Soycrafters Association Conference next month at the University of Illinois. Media coverage of tofu.

Tofu and soymilk recipes (from *The Book of Tofu,* by William Shurtleff and Akiko Aoyagi). Gives six tofu recipes and 3 soymilk recipes. Address: 1. Publisher and editor of *Soycraft,* 100 Heath Rd., Colrain, Massachusetts 01340.

3328. **Product Name:** Soysage (Meatless Okara-based Sausage).
Manufacturer's Name: Light Foods Inc.
Manufacturer's Address: 6144 Bartmer, St. Louis, MO 63133.
Date of Introduction: 1980. June.
Ingredients: Okara (Soypulp), whole wheat, flour, soymilk, nutritional yeast, wheat germ, safflower oil, bulghur wheat, soy grits, shoyu, honey, barley malt, sesame seeds, herbs & spices.
Wt/Vol., Packaging, Price: 20 oz (1 lb 4 oz), 567 gm.
How Stored: Refrigerated.
Nutrition: Per 2 oz.: Calories 147, protein 6.3 gm, carbohydrate 16.5 gm, fat 6.1 gm, sodium 292 mg.
New Product–Documentation: Label. 1980. June. 3 inches square. Self adhesive. Purple on white. Illustration of a winged unicorn jumping across a stream in front of a rising or setting sun. "No preservatives."

Barbara G. Ostmann. 1980. Post-Dispatch (St. Louis, Missouri). Oct. 29. p. 1E, 4E. "Time for tofu." Bob Davis' company Light Foods Inc. makes Soysage (soy "sausage").

Label. 1981, undated. 3 inches square. Self adhesive. Purple on white. Illustration of a winged unicorn rearing on its hind legs jumping across a stream in front of the rising or setting sun. "No preservatives. Please refrigerate." The size is now 22 oz (567 gm) plastic wrapped.

Leviton. 1981. Soyfoods. Summer. p. 42. "They produce up to 300 pounds weekly." 1983. Winter. p. 48. Gives name now as Light Soysage and ingredients as: Okara, bulghur

wheat, whole wheat flour, wheat germ, nutritional yeast, sesame seeds, shoyu, oil, mustard, soymilk, and 10 different seasonings.

3329. Long, Alan; Ling, Arthur. 1980. Plant milks and infant feeding. Infant feeding practices: A cause for concern. Clarification and facts: A reply by Arthur Ling of Plamil Foods. *Alive* (*England*). May/June. p. 18. [1 ref]
• ***Summary:*** Within the last year 15 severely ill babies have been treated at 2 London hospitals because the parents have fed them alternative milks "in good faith on the basis of publications or on the recommendations of those providing advice" (see *British Medical Journal*). The report mentions Plamil, which is said to be low in calcium, vitamin D, and potassium. Plamil should not be used as the sole food for babies. Ling replies that Plamil contains at least 80 mg of calcium per 100 gm, compared with 33 mg in human milk and 125 mg in cow's milk, as well as 70 mg of potassium per 100 gm. Vitamin D levels have always been adequate. Address: 1. MD, England.

3330. May, C.D.; Remigio, L.; Bock, S.A. 1980. Usefulness of measurement of antibodies in serum in diagnosis of sensitivity to cow milk and soy proteins in early childhood. *Allergy* 35(4):301-10. June. [24 ref]
• ***Summary:*** Over 50 children, 4-30 months of age, with suspicious histories of adverse reactions to cow milk or soy products were investigated. Soy protein is only weakly antigenic in man. Address: Dep. of Pediatrics, Univ. of Colorado Medical School and National Jewish Hospital and Research Center, Denver, Colorado.

3331. Shurtleff, William. 1980. Notes from INTSOY Short Course in soybean processing, SANA Conference (Urbana, Illinois), and subsequent research trip. Lafayette, California: New-Age Foods Study Center. 143 p. Unpublished manuscript. 28 cm. Spiral bound.
• ***Summary:*** This five-week INTSOY short course at the University of Illinois at Urbana began on 16 June 1980. Contents: Introduction (John Santas, Tom McGowen, Dr. Siedler, D. L.S. Wei). Tour of Food Science Lab. History of INTSOY, by Dr. Thompson. Soybean nutrition, by John Erdman. Soybean grading methods, by D. Wei. A.E. Staley Mfg. Co., by Hank Parker. Soybean oil and margarine, by E.G. Perkins. Soybean crushing, by Ross Brian. Soybean agronomy, by Bill Judy. Antinutritional factors in soybeans, by Dr. Wei. Harvesting, drying, and handling raw soybeans, by Gene Shove. Field trip to University of Illinois agricultural machinery dept. Soybean nutrition, by Barbara Klein. Livestock feeding, by Don Bray. Processing whole soybeans for food, by Dr. A.I. Nelson. Ralston Purina Co. and soy protein isolates, by Dr. Kolar. Film titled "Protein for People" from Ralston Purina.

Third week: Margarine, by Dr. Wei. Quality control of soy protein products, by Dr. Wei. Field trip to Kraft Foods Humco plant in Champaign, Illinois (Margarine, Vegemite). Wenger, extrusion cooking, and textured protein foods, by Randy McDonald. Low-cost extrusion cookers and cooking, by A.I. Nelson. Field trip to Lauhoff Grain Co. (good manufacturing practices). Drying foods, by Dr. Wei. Soya in Third World countries, by Dr. Thompson.

Fourth week: Soybean dal, by Dr. Nelson. Visit to Ted Hymowitz who is writing a book on the history of soybeans (p. 56). Sensory evaluation, by Dr. Tobias. Oriental soyfoods, by Dr. Wei.

Fifth week. Soymilk, soy yogurt, and soynuts, by Dr. Nelson (Kibun). Griffith Laboratories, by Ann Daniels (incl. history, HVP, soy protein concentrate, TVP). Home and village level production of soybean foods, by Dr. Nelson. Soy flour and soy fortified baked goods, by Dr. Cho-Chen Tsen of Kansas State Univ. Soybean crushing, soy flour, and plant sizes, by Sheldon Williams.

Shurtleff research trip. Visits to ADM and A.E. Staley Mfg. Co. in Decatur, Illinois, American Soybean Assoc. in St. Louis, Missouri (Read William Morse's 1929-31 journal of trip to East Asia). Talks with David Hildebrand, Mike Tarano. Address: P.O. Box 234, Lafayette, California 94549.

3332. Shurtleff, William. 1980. Notes on visit to Kraft in Glenview, Illinois and meeting with Dean Wilding and his research team. Lafayette, California. 1 p. June. Unpublished typescript.
• ***Summary:*** In 1975 Kraft bought Carnation's soy protein isolate plant at Coshocton, Ohio, and started soy research at that time. They now have 14 people in the protein products working primarily on soy. They are not looking mainly at soy protein isolates, but rather at full-fat soy flour (ffsf), made from defatted soybean meal produced by ADM and Central Soya.

They hot grind at 13% solids in an Urschel Comitrol, then spray dry the ffsf, which contains 40% protein and 25% fat. They remove the insolubles to make soymilk, then remove the sugars to make a full-fat isolate. The key area of use of soy is in imitation cheeses–which have better flavor but less functionality. Isolates cost $0.90/lb vs. $1.50 for casein. They are also interested in imitation fermented cream cheese.

Dean Wilding, the head of the team, is a fine man, vegetarian, Mormon, interested in natural foods.

They ferment their soy protein isolate with one pure culture, which gives it a new flavor; they then use this in experimental process cheeses in place of some sodium caseinate–which comes from cow's milk. We tasted this product. Kraft is apparently doing very little work on new products and not much with soy. Address: Lafayette, California.

3333. **Product Name:** Soy Melk [Plain, or Honey-

Flavored].
Manufacturer's Name: Sunshine Soy Co. Inc.
Manufacturer's Address: 4015 Laguna St., Suite "H," Coral Gables, FL 33146. Phone: 305-447-1277.
Date of Introduction: 1980. June.
Wt/Vol., Packaging, Price: Quart retails for $1.05.
New Product–Documentation: Sunshine Soy Company. 1980. Retail price list–Effective May 1980. "Soy Melk–Plain." One quart retails for $1.05. One case of 12 quarts weighs 23 lb 4 oz and retails for $12.60.

Needleman. 1981. Soyfoods. Summer. p. 29-30. "Tofu plant profiles: Swan Gardens and Sunshine Soy (Miami)." Danny Paolucci started Sunshine Soy in June 1980.

3334. Thompson, William N. 1980. History of work with soy and views on the potential of soyfoods around the world (Interview). Conducted by William Shurtleff of Soyfoods Center, July 3. 3 p. transcript.
• ***Summary:*** 1. What is your background and how did you become interested in soy and INTSOY? Ans: He grew up on a farm in Illinois when soy was still a very small crop. In college, he was an ag economist, specializing in farm management, with work on the economics of various types of cropping systems. In 1965 he helped to develop an agricultural university in Sierra Leone, This experience was very valuable in orienting him toward the problems of the developing world. Since then, most of his work has been on these problems. He has had short-term assignments in India, Nepal, and Thailand, where he developed research and education organizations. He is the first director of Intsoy. He had no special interest in soy before joining Intsoy except that soy and maize are major crops in Illinois. He is mainly an administrator, not a technical man. His major role has been to develop an institutional structure to make knowledge on soy available worldwide.

2. What do you feel are the two or three main advancements that INTSOY has made worldwide? (a) Facilitate worldwide network to improve communications among people interested in soy. Regional conferences, newsletter, publication series, training courses at the Univ. of Illinois. (b) Focus on the key problems of soy in tropical countries. Intsoy has more impact in India than in any other country. The India program started in 1965 (funded by US AID) with the cooperation of Indian food scientists and agronomists, specially at Pantnagar and Bareilly. The two university development projects in India were in Madhya Pradesh and Uttar Pradesh. Then the Coordinated Research Project on Soybeans was developed–both utilization and production. The results were exciting. Intsoy grew out of that program as the potential became clear. Now India has 1 million acres in soybeans. Develop soybean varieties that will grow in areas where it was formerly not thought possible. Develop new Maturity Groups 0 and 00 to the north and 9 and 10 to the south as soybeans are grown ever closer to the equator. Work on soybean diseases (mosaic virus), pest control. Intsoy has done more work in soybean production than in utilization. It is hard to get financing for utilization.

New soybean countries working with Intsoy: Ecuador now has 30,000 acres of soybeans, Egypt 50,000 acres, Ivory Coast, Pakistan (good yields), Colombia, Guatemala (work with Plenty from Tennessee), Indonesia, Thailand, Zambia, Kenya, Ghana, and Nigeria. (c) The method for boiling and processing whole soybeans using sodium bicarbonate has been a breakthrough. Soy + cereals make low-cost infant foods.

3. Do you feel that in 20 to 30 years most countries in the world will be growing and processing soybeans. Yes, he thinks that, in the next 15-30 years, most developing countries will have soybeans growing somewhere in their country. This will take adaptive research domestically. Some areas and climate in most countries are suited to soybeans, which can now be grown under a wide range of conditions. The soybean is a high producer of both energy (calories) and protein per hectare.

4. What are your views on low-technology soyfoods in Third World Countries? Which particular foods do you feel will become widely used in South Asia, South America, and Africa. Intsoy's primary orientation is low-tech–using less capital and more labor. The Sri Lanka program is medium- to low-tech. Intsoy is proud of that program and its training activities. There is great potential to expand soybean utilization in this way.

5. How do you feel about the use of soy in livestock feeds in poor countries? Is there a danger that the upper classes will use most of the soy protein to make their meat leaving little for direct food use? This is not much of a problem since prices for soy will always be low for use as livestock feed. We should use soy to help as many people as possible. The more affluent, with economic and political power, will consume more animal proteins and soy. Soy will easily find its way into feed. We need strategies to get soy to the poor–those who need it most. It can also be used in feeds for animals of the poor. Intsoy's bias is to help soy find its way into the diets of low-income people. We must be very careful with the crop that is displaced, so that a net gain results. In India, the soybean fit in as a monsoon crop where no other crop was grown. Beware of the Brazil problem. Intsoy did some variety testing in the Amazon in Brazil. They now have varieties that yield very well in northern Brazil. Brazil has lifted some technologies from the U.S., such as highly mechanized farms, but this will not work in northeastern Brazil. There has been aggressive government support and subsidies for soy in Brazil. Dr. Thompson has lots of respect for Brazil and the government's support for agricultural development. Now they need to work on nutrition and food uses. The main problem for Intsoy is to figure out how soy can met the needs of a particular country or region; not to get soy growing everywhere.

6. Are you aware of a deemphasizing of the role of protein in the diet in Third World countries? How might this affect soy? If we grow enough grains, will the protein take care of itself? Soy fits in nicely with the Green Revolution, although this revolution has led to a decrease in legume production in India. This leads to more funding for IRRI and less for soy. But there is still a problem of protein in some countries that have done a lot to meet calorie needs. It is an oversimplification to say that a diet with adequate calories will contain enough protein. Indians now realize this. They now want more dairy milk–the white revolution.

7. Recent findings at MIT and INCAP have shown that for humans soy protein is approximately equal in quality to that of milk and meats. How long do you think it will be before this finding has an impact in America and the Third World? Dairy milk is no longer considered to contain higher quality protein than soymilk. Dr. Thompson thinks this research data is solid. Perhaps more important, we can produce 4 times as much protein from a unit area of land in the form of soymilk than of dairy milk. So the key problems are acceptability and cost.

In the U.S., as with margarine replacing butter, there is a gradual move toward vegetable proteins. That move is faster in the Third World where people have less choice with their food dollars. Dr. Thompson thinks that when people are introduced to soyfoods in the Third World, they will generally like them, and buy or make them. They are not as resistant to change as we might think–as shown clearly in the Sri Lanka program. Moreover, ingredients like ground whole soybeans or soy flour can be added to baked goods or tortillas where people are not aware that they are eating a more nutritional food.

8. How might the Soycrafters Association and our New-Age Foods Study Center cooperate with INTSOY? Specific projects? He thinks our two organizations are more oriented toward the USA, whereas Intsoy is oriented toward the Third World. Yet he sees good opportunities for cooperation–as in Intsoy learning more about traditional Asian soyfoods such as tofu, tempeh, miso, etc. He hopes our two organizations can have more of an impact on the Third World. Les Ferrier has done lots of overseas utilization work. Maybe we could be on a technical advisory committee (TAC).

9. Would you favor legislation requiring 5-10% fortification of items such as baked goods and chapaties in poor countries growing soybeans if this did not decrease the acceptability of the foods. How might it affect cost? Is there any such legislation?

10. Any other comments? Intsoy's annual budget is less than $2 million, including $850,000 from AID for Urbana and Puerto Rico. IRRI's budget is about $15 million. Part of the reason for the difference is due to the reevaluation of the importance of protein in human diets. Address: Director, INTSOY, Univ. of Illinois at Urbana-Champaign, Urbana, Illinois.

3335. American Dietetic Association. 1980. Position paper on the vegetarian approach to eating. *J. of the American Dietetic Association* 77(1):61-70. July. [54 ref]

• ***Summary:*** This position paper is surprisingly supportive of a lacto-ovo vegetarian diet, although the ADA continues to feel that combining proteins is important. It states that "a growing body of scientific evidence supports a positive relationship between the consumption of a plant-based diet and the prevention of certain diseases," including coronary heart disease, osteoporosis, and gastrointestinal and reproductive cancers.

Contents: Introduction. Definition of terms: Vegetarian, vegetarianism, traditional vegetarians, total vegetarians or vegans, lacto-vegetarians, semi-vegetarians or partial vegetarians, new vegetarians (since 1960, incl. yogic vegetarians, Hare Krishnas or Krishnas, Sufis, Sikhs, Macrobiotics), fruitarians, raw food eaters, individualistic vegetarians, alternative life style diet. Other terms which relate to vegetarianism: Natural foods, organic foods, unrefined foods, unprocessed foods, health foods, meat analogs (look and taste like meat), nutritional or food yeast, milk substitute (alternate) (usually based on soy. "Calcium, zinc, vitamins A, B-12, D, and K, and thiamin are all substantially lower (or missing) in these home-made products than in breast milk or other proprietary formulas"), fermented foods (incl. soy sauce, miso, tempeh–may contain some vitamin B-12), seaweeds and algae.

Vegetarianism past and present: Historical perspectives (omnivorous diets), vegetarianism in the U.S. today (it is more popular than at any time in the nation's history). Nutrition issues: Proteins, energy, carbohydrates and fats, vitamins and minerals (vitamins B-12 and D, calcium and riboflavin, iron and phytic acid, zinc and phytates). Groups with special physiologic risks: Pregnant and lactating women, infants and children (lacto-ovo- and lacto-vegetarian diets, vegan diets–the use of properly fortified soy milk is strongly recommended, vitamins and minerals), adults with special health problems (lactose intolerance, diabetes mellitus). Implications of vegetarian diets for health promotion and prevention and treatment of disease: Coronary heart disease, cancer, obesity, dental caries, osteoporosis. Menu planning guidelines for vegetarians. Meat analogs. Summary. The President's page: Esther A. Winterfeldt, PhD, RD, on "Position papers."

"Macrobiotics–persons who consume vegan or vegetarian diets which involve extensive non-animal food avoidances, use of unprocessed, unrefined, 'natural', and 'organic' foods; and also, in some forms, fluid restriction. Tamari, miso, and various seaweeds are used extensively and are believed to be endowed with special properties.

"Vegetarianism–past and present: The American Dietetic Association recognizes that most of mankind for much of human history has subsisted on near-vegetarian diets. The

vast majority of the population of the world today continues to eat vegetarian or semi-vegetarian diets for economic, philosophical, religious, cultural, or other reasons. The matter of motivation is crucial, because it affects the diet adopted, adherence to it, and other characteristics of life style."

"Nutrition issues: The American Dietetic Association affirms that a well planned diet, consisting of a variety of largely unrefined plant foods supplemented with some milk and eggs (lacto-ovo vegetarian diet) meets all known nutrient needs. Furthermore, a total plant dietary can be made adequate by careful planning, giving proper attention to specific nutrients which may be in a less available form or in lower concentration or absent in plant foods."

Note: This is the earliest English-language document seen (June 2002) that uses the term "plant-based diet" to refer to one that contains no animal products.

3336. Blix, Glen. 1980. The story of Dr. Harry Miller, soyfoods evangelist. Paper presented at the Third Annual Soyfoods Conference. 4 p. Held in 13-19 July at Univ. of Illinois, Urbana, Illinois.
• ***Summary:*** No notes of this speech survive. For an expanded version of the talk see: Shurtleff, William. 1981. "Dr. Harry Miller: Taking soymilk around the world." *Soyfoods* 1(4):28-36. Winter. Address: Loma Linda Foods, Mt. Vernon, Ohio.

3337. Everybody's Vegetarian Restaurant. 1980. July. New soyfoods restaurant or deli. 120 21st Ave. North, Nashville, Tennessee.
• ***Summary:*** Menu sent by Richard Leviton, obtained while visiting the restaurant. 1982. April.

Leviton, Richard. 1982. "Everybody's Restaurant. The Farm brings soyfoods to Nashville." *Soyfoods*. Summer. p. 38-39.

Shurtleff & Aoyagi. 1982. Report on Soyfoods Delis, Cafes & Restaurants. p. 3. Started July 1980 by members of The Farm, in Summertown, Tennessee. Address: Nashville, Tennessee. Phone: 329-2000.

3338. Fox, Madeline. 1980. Tofu and special diets: Soyfoods and human nutrition. *Soyfoods* 1(3):9. Summer.
• ***Summary:*** Contents: Introduction. Heart disease and atherosclerosis. Diabetes. Hypoglycemia. Lactose intolerance.

In diabetic diets, tofu is low in carbohydrates (2.25 gm per 3 oz) and saturated fat (0.9 gm), contains no cholesterol, is low in calories (112.5) and is a good source of protein (12 gm). Address: Marketing Director, New England Soy Dairy, Greenfield, Massachusetts.

3339. Island Spring Inc. 1980. Can you make a living making tofu? (Ad). *Soyfoods* 1(3):8. Summer.
• ***Summary:*** This quarter-page black-and-white ad is for the Soycrafters Apprenticeship Program, a professional 21-day intensive "hands-on" course in the commercial production and marketing of tempeh, tofu, soymilk, and related soyfoods. Address: P.O. Box 747, Vashon Island, Washington 98070. Phone: (206) 622-6448.

3340. **Product Name:** Tofu, and Soymilk.
Manufacturer's Name: Jack and the Beanstalk.
Manufacturer's Address: Buckeye Building, 65 W. Carmel Valley Rd. (P.O. Box 525), Carmel Valley, CA 93924. Phone: 408-659-4366.
Date of Introduction: 1980. July.
How Stored: Refrigerated.
New Product–Documentation: Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). Gives the company's name, address, and phone number. The owners are Paula and Nobukatsu Terui. Bill and Akiko Shurtleff visited them and stayed overnight at their home in the Carmel Valley at about the time they started production.

Michael Shedlin. 1985. Monterey Life. Feb. p. 12 "Tofu: That chameleon of the food world." Buck and Leslie Patton, owners of Jack and the Beanstalk, make tofu in Carmel Valley Village. They make 1,700 lb/week of nigari tofu.

Letter announcing sale of business. 1985. "Jack and the Beanstalk began manufacturing tofu in July 1980. Leslie and Buck Patton bought the business in May 1983. It is the only tofu manufacturer in Monterey County. Current tofu production is 1,800 to 2,000 lb/week. Soymilk production is about 15 gallons a week [it is not clear when soymilk production started]. Sale price is $50,000. The gross income grew from $43,705 in 1981 to $81,000 in 1985, when profit was $13,100."

Talk with Russel Hicks of Sweet Earth. 1991. Jan. 31. His company now buys its tofu from Jack and the Beanstalk, which is located in Salinas.

Talk with Albert Park, owner. 1991. Feb. 1. The company, whose name has not changed, is now located at 401 Victor Way, Suite 16, Salinas, California 93907. The previous owner, Mr. Hun Kim, moved it to that location from Carmel Valley about 5 years ago. Both Mr. Kim and Mr. Park are Korean-Americans. The company now makes only 3 products: tofu, soymilk, and soybean sprouts. It is a very small business that makes 1,500 to 1,700 lb/week of tofu.

3341. Leviton, Richard. 1980. Soyfoods in Toronto. *Soyfoods* 1(3):14-19. Summer.
• ***Summary:*** Discusses Vital Eat, Pyung Hwa, Soy City Foods, and Victor Food Products. Victor Food products (102 Hymus Rd., Scarborough, Ontario, Canada M1L 2C9) was founded and is owned and managed by Mr. Stephen Yu. In the 3,600 square foot tofu factory, 13 workers (mostly Vietnamese refugees) produce 1,900 lb/day of tofu, 750

gallons/week of Nutrisoya soymilk, and about 200 quarts/day of kinugoshi soybean pudding. Mr. Yu, who was born in China and educated in California, came to Toronto in 1977 to make an initial market survey. He opened his plant in Feb. 1978, with an initial production of 900 lb/day. Mr. Yu now has accounts in all major Toronto supermarket chains. He reaches about 40% of the Oriental market and about 40% of the overall soyfoods market. He speaks fluent English and is "far more forward looking and market conscious than his Oriental competitors in the Toronto area." His production process and equipment are described in detail. Last summer he appeared on a 10-minute television feature that depicted the story of soybeans from field to shop to table. This was followed, in Jan. 1980, by a major article which profiled his company in the *Toronto Star.* This publicity ushered his tofu into the three big supermarket chains not yet carrying it and sales in the four chains that were rose 100%. Note: This is the earliest document seen (April 2001) that mentions Victor Food Products in Canada.

Soy City Foods, at 2847 Dundas St., is a new soy production site due to open in the spring. Pat Guardino is general manager and Leonard Bugyra is sales manager. The company is a subsidiary of Golden Age, Inc., a spiritual group which operates a successful vegetarian restaurant downtown and is currently installing a second one next door. The company will start by producing about 600 lb/day of tofu, as well as soymilk and soysage. They will supply their contiguous restaurant and sell bulk soyfoods from their own retail counter in the storefront. They will also produce tofu cheesecakes and okara cookies in the restaurant.

Photos show: (1) Soy City Foods and its owners (incl. Pat Guardino) under the storefront sign. (2) Pyung Hwa Tofu Shop, with cakes of tofu cooling in a bathtub. (3) Stephen Yu of Victor Food Products with Nutrisoya soymilk. Address: Colrain, Massachusetts.

3342. Leviton, Richard. 1980. Effective soyfoods marketing: "We want to do for tofu what flavors did for yogurt." *Soyfoods* 1(3):46-51. Summer.
• ***Summary:*** Discusses the tofu marketing strategies of: (1) Steve Demos at White Wave (Boulder, Colorado); he makes 7,500 lb/week of tofu and tofu products; (2) John Paino of Nasoya Foods (Leominster, Massachusetts). Nasoya makes four tofu spreads and a tofu mayonnaise; (3) Luke Lukoskie of Island Spring, Inc. (Vashon, Washington). Each week the company produces 10,000 lb of tofu, five flavors of Soyfreeze (soymilk ice cream), soyloaf, tempeh, soymilk, and spicy Korean tofu; (4) Madeline Fox, director of Marketing at the New England Soy Dairy (Greenfield, Massachusetts).

Photos show: (1) Tom Timmins (rear view) addressing a soyfoods press conference audience in Boston. (2) A waiter in a black bow tie setting up the tofu buffet at the Seventh Inn.

Note: This is an earliest document seen comparing the marketing of tofu to yogurt (the dairy product) in the title. Address: Colrain, Massachusetts.

3343. **Product Name:** Soydairy Numu (Soymilk).
Manufacturer's Name: New England Soy Dairy Inc.
Manufacturer's Address: 305 Wells St., Greenfield, MA 01301.
Date of Introduction: 1980. July.
Ingredients: Water, soybeans (grown without artificial chemical materials), barley malt, honey.
Wt/Vol., Packaging, Price: Quart.
New Product–Documentation: Ad in Soyfoods. 1980. Summer. p. 11. "Numu. New England Soy Dairy brings you a unique nutritional beverage. Blast off with Numu." Soya Bluebook. 1980. p. 51. "Pure-Pak Soymilk." Article in Soyfoods. 1981. Winter. p. 18-19.

3344. New-Age Foods. 1980. Calling all soycrafters... Start your own soyfoods business. Tofu, soymilk, tempeh, miso. Here are the books that show you how! (Ad). *Soyfoods* 1(3):45. Summer.
• ***Summary:*** This 2/3 page ad is for three books by Shurtleff and Aoyagi: *Tofu & Soymilk Production. Tempeh Production. Miso Production.*

"Since publication in 1976 of *The Book of Tofu* by William Shurtleff & Akiko Aoyagi (there are now a quarter million copies in print), more than 120 new tofu shops and soy dairies have been started in North America. Based on the authors' *Book of Tempeh* and *Book of Miso,* many new tempeh and miso shops have also come into being. The founders of these shops have joined to form the Soycrafters Association of North America. Indeed a growing number of people are joining the Soyfoods Revolution and finding that the soycrafting arts offer just the type of creative, satisfying, and financially rewarding work and way of life they have long been seeking–plus an opportunity to make a vital contribution to the future.

"Three beautiful technical manuals: Based on over seven years of research with master craftsmen and modern producers in the U.S. and around the world, Shurtleff and Aoyagi have prepared three beautiful craft and technical manuals, containing all the information you'll need to start and run your own soyfoods business on any of various scales and budgets from low-cost community shops up to large modern plants. These books, used to start virtually all the shops mentioned above, each come in a handsome large (8½ by 11-inch) format, filled with informative illustrations."

A brief description is given of each, along with the price, and a photo of the cover. "Free with each book: A list of all tofu, tempeh, or miso shops in the West, and applications for the Soycrafters Apprenticeship program, Soycrafters Assoc. of North America, and *Soyfoods Magazine."*

Note: Each time William Shurtleff contributed a full-

length article to a magazine, always free of charge, the magazine agreed to run this ad in exchange. Address: New-Age Foods, P.O. Box 234, Lafayette, California.

3345. Shurtleff, William. 1980. Microwave cooked dairylike soymilk. *Soyfoods* 1(3):4-5. Summer. [1 ref]
Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

3346. *Soyfoods.* 1980. Soyfoods to the American taste: An interview with Drs. Clifford Hesseltine and Hwa L. Wang. 1(3):58-62. Summer. [1 ref]
• ***Summary:*** Dr. Hesseltine has just returned from a six-week trip to East Asia. In Taiwan he studied soy sauce fermentation and gave advice on setting up a national collection of microorganisms used in soybean fermentations. In Indonesia he attended an international symposium on various aspects of fermentation as a method a processing foods, with an emphasis on soybeans in Southeast Asia. "These people look to us in the West as far as science is concerned. Suddenly we see scientific institutions in the U.S. and now in Europe being interested in high protein foods made from soybeans. The East Asians follow and say, 'Well, if its very interesting for the West, then we should be interested in it.'" There is increasing interest in traditional, lightly-processed soyfoods.

Way back in 1963 the NRRL did research on making tempeh perforated plastic bags. Today, "on the island of Java, 90 percent of tempeh is now produced using plastic bags, including the tempeh I saw being sold on the street,..."

Dr. Wang, who was born and raised in China, recently returned there to visit family. She noted: "To me, it is a very sad story... Even tofu is rationed now. You can't buy tofu every day, probably once a week." "Soy sauce is not hard to get. Miso never had as much importance as in Japan... Tofu and soymilk are the two foods that were very common before. We stayed at a hotel and we only had soymilk once a week, in the morning for breakfast. And tofu, I don't even remember having eaten any."

"Dr. Hesseltine: Natto is one of the most rapidly growing fermented soyfoods in Japan, which surprised me, over something like miso. Natto has become more popular because it's supposed to be the great aid for digestion. In the new form, natto is much more acceptable as a food because the old, traditional type is sticky (it's a real mess) and this isn't. This is coated, so what you get is like small peanuts coated with powder; they don't stick to your hands."

Dr. Hesseltine: "What I saw in Taiwan really fascinated me–pressed tofu sheets [*pai-yeh*]. We would like to see the soycrafters making some recommendations [for us] as to practical areas of research for soybeans."

Portrait photos show (1) Dr. Clifford Hesseltine. (2) Dr. H.L. Wang. Two photos of each, seated. Address: NRRC, Peoria, Illinois.

3347. **Product Name:** Soynaise: Imitation Mayonnaise.
Manufacturer's Name: Soyplant Co-op Inc. (The).
Manufacturer's Address: 711 Airport Blvd., Suite 1, Ann Arbor, MI 48104. Phone: 313-663-8638.
Date of Introduction: 1980. July.
Ingredients: Tofu (soymilk, nigari), sesame oil, soymilk (organic soybeans, water), cider vinegar, honey, salt, garlic, dulse, love.
Wt/Vol., Packaging, Price: 12 oz.
How Stored: Refrigerated.
New Product–Documentation: Label in Soy Plant scrapbook from about 1980. 3 by 3 inches. Black on white. 12 oz. "Please reuse or recycle this container." This product was sold in plastic tubs, unpasteurized, like a fresh dressing.

3348. **Product Name:** VFP Nutrisoya (Soymilk).
Manufacturer's Name: Victor Food Products, Ltd.
Manufacturer's Address: 102 Hymus Rd., Scarborough, ONT, M1L 2C9, Canada. Phone: 416-752-0161.
Date of Introduction: 1980. July.
Wt/Vol., Packaging, Price: Plastic bottle, about 1 liter.
How Stored: Refrigerated.
New Product–Documentation: Leviton. 1980. Soyfoods. Summer. p. 17. The company makes 750 gallons a week, flavored with sugar. In plastic quarts. Leviton. 1981. Soyfoods. Winter. p. 55. A black-and-white photo shows 6 of the plastic bottles. The size looks like about 1 liter. Soya Bluebook. 1986. p. 102.

3349. Thalman, Margaret Morse. 1980. Re: William J. Morse, her father. Letter to William Shurtleff at Soyfoods Center, Aug. 26. 2 p. Handwritten.
• ***Summary:*** "It has taken me a few days to locate some articles and photos that I think you could use. [While in East Asia] We made copies of articles from several publications of various dates. Most of the photographs were glued into scrapbooks and I was hesitant about taking pages from them to send to you. However, I found a few loose photos that I hope will do."

"I am very impressed at how much the soy foods industry has progressed these past few years.

"It might interest you to know that one of my grandsons, Michael Morse Garrison, was allergic to cow's milk as an infant and had to have soy milk. My father would have been very pleased to know how all his exploration and research helped his great-grandson." Address: 22 Interlaken Rd., Eastchester, New York 10709.

3350. Dinshah, Freya. 1980. More vegan recipes. Malaga, New Jersey: American Vegan Society. 27 p. Aug. No index. 22 cm. Spiral bound.
• ***Summary:*** Soy-related recipes include: Soy bean cheese spread (with cooked, ground soybeans, p. 5). Slicing soya

cheese (with vegetable margarine and soya powder/flour, p. 5). Simple soy cheese (with soya powder and nutritional yeast, p. 5). South Jersey soy patties (with soy granules, p. 7). Corn bread (with soya powder/flour, p. 9). Sesame soy milk (with soya powder/flour, p. 11). Sunflower soy milk (with soya powder/flour, p. 11). Scrambled tofu, Tofu salad dressing, Yeasted tofu, Tofu Cantonese, Tofu, mushrooms and greens, Tofu in savory crumbs, Tofu turino, Tasty tofu strips (baked with soy sauce) (all p. 15). A photo on the title page shows the author. Address: 501 Old Harding Highway, Malaga, New Jersey 08328.

3351. Ener-G Foods, Inc. 1980. Good tasting allergy foods (Ad). *Health Foods Retailing* 44(8):207. Aug.
• ***Summary:*** A full page black and white ad, featuring the Ener-G logo. "For wheat, egg, and milk-free diets. Formerly Jolly Joan." A full-page photo shows the company's products, including Pure Soyquick (a dry soymilk), and a list of these products. Many are made from rice, and some from barley or oats. Address: P.O. Box 24723, Seattle, Washington.

3352. *Health Foods Retailing.* 1980. Part I. 44(8):1-98. Aug.
• ***Summary:*** Selected full-page ads and articles: (1) Norganic–Wheat pilaf (Anaheim, CA, p. 7). (2) "Health Valley's great pasta dinners," from Health Valley Natural Foods. Whole wheat pasta, tomato sauce and raw milk (Montebello, CA 90640, p. 11). (3) "Richlife natural protein drink a meal." Each can (11.5 oz) "contains a balanced formula of vitamins and minerals with over 20 grams of protein from nonfat dry milk, peanuts, soy and whole milk (Anaheim, CA, p. 15). (4) Hain specials for September include 15% off Natural Teriyaki Marinade and Tenderizer Mix (p. 17). (5) Solgar Co.–Lecithin granules, Formula VM-75 (Lynbrook, New York, p. 29, 33). (6) Tiger's Milk Nutrition Boosters, come in colorful new packaging and four flavors: Unsweetened Plain, Carob, Vanilla, or Cocoa. In 12, 24, or 36 oz. cans. From Plus Products (Irvine, California 92714, p. 43).

(7) "Federal court issues injunction against FDA protein regulations." "The regulations, which were to go into effect Aug. 4, would require that warning labels be put on certain food products deriving 50% or more of their caloric value from protein; the warning required varies according to the use for which the product in question is promoted, but in the case of protein products promoted for use in weight reduction, the warning includes the statement that "Very low calorie protein diets... may cause serious illness or death" (p. 50).

(8) "Lectures boost business," by Mary Conte. Photos show: (a) A hugely muscled man in a tiny swim suit, with the caption: "Dr. Franco Columbu, a former Mr. Universe, lectures on body building." (b) Jack LaLanne, "a famous TV personality," dressed in a striped suit and lecturing. (c) Dr. Robert C. Atkins on the cover of his book "Dr. Atkins Diet Revolution." (d) Dr. Allan D. Cott (p. 51).

(9) "Europe's Helfex attracts U.S. trade." Helfex is "Europe's International Health Food Exhibition, held from May 18 to 21 in Brighton, England," the historic seaside town (p. 67, 228). (10) Naturade–Elastin (p. 82). (11) Alta-Dena Dairy, which was established in 1945, sells kefirs, youghurts, frozen youghurts, and Golden Honey ice creams, ice milks, and cheeses (City of Industry, CA, p. 83). (12) The Pavo Co., Inc.–Distributor since 1931 (Minneapolis, Minnesota, p. 96). (13) American Dietaids–Papaya enzyme with chlorophyll (p. 97).

3353. Ling, C.A. 1980. Plamil steps ahead. *Alive* (*England*). July/Aug. p. 12.
• ***Summary:*** Dairy milk is subsidised by a price support system in England; this enriches the dairy industry. Factory farms are exempted from a tax rate. Soybeans are subject to an import tax. Address: Managing director, Plamil Foods, England.

3354. **Product Name:** Soymilk or Soy Juice [Maple-Maple, Honey-Nilla, Carob, or Plain].
Manufacturer's Name: Redwood Valley Soyfoods Unlimited.
Manufacturer's Address: P.O. Box 371, Redwood Valley, CA 94570.
Date of Introduction: 1980. August.
Ingredients: Soy Juice: Well water, organic soybeans.
Wt/Vol., Packaging, Price: Plastic pints, quarts, half-gallons.
How Stored: Refrigerated.
New Product–Documentation: See next page. Label for Soy Juice. 1980. 2 by 3 inches. Self adhesive. Black on white. "100% Vegan Organic Pure." Leviton. 1981. Soyfoods. Winter. p. 17; Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 32. Letter from Richard Rose. 1987. Aug. 29. This product was not introduced until 1980. Initially it was called soymilk. Then, when that term was found to be illegal, it was voluntarily (with tongue in cheek) changed to "soy juice." "Name changes depended on whether the state Department of Food and Agriculture, or the Department of Health were hassling us." Finally the plain was changed to Fresh & Lite and each flavored soymilk was given a fanciful name: Maple Maple, Honey-Nilla, ChocoLite.

Label. 1983. 1.5 by 3 inches. Self adhesive. Honey-Nilla: Black on yellow. Maple-Maple: Blue on white. Plain: Red on white. 2 different label designs. One with double square on edge; the other without. The labels without square have bird logo.

3355. Pinnick, Sinclair. 1980. Re: Dr. Harry Miller and his work with soyfoods. Letter to William Shurtleff at Soyfoods Center, Sept. 10. 1 p. Typed.

• ***Summary:*** "Dr. Miller was always the first one to start the day's work at his Mount Vernon plant. One morning he climbed into the starch tank and was overcome by the fumes. Another worker came in and found him and pulled him out thus saving his life. Another time he was experimenting with a new formula and cut the end of his finger off in the food grinder. He calmly picked up the severed part, walked into his office and sewed it back on.

"In 1948 he sent me to the Philippines to set up the plant there. He and his second wife came over during my stay there. In Manila he was treated as a very important person. In Mt. Vernon he was just Dr. Miller, a friend of all.

"In 1972 the Southern Asia division asked me to go to Poona [Pune, southeast of Bombay, in Maharashtra state], India and set up a plant at Spicer Memorial College. In March of 1973 Dr. Miller flew over from Hong Kong to get us started in production. He would work all day with us at the food factory and then spend nearly every evening speaking to some group on healthful living. There seemed to be no limit to his endurance."

Note: Dr. Harry W. Miller was a vegetarian throughout his life. Address: 16042 Bivelbliss, Mt. Vernon, Ohio. Phone: 614-397-8213.

3356. Thalman, Margaret Morse. 1980. Memories of her father, William J. Morse (Interview). Conducted by William Shurtleff of Soyfoods Center, Sept. 18 and Oct. 3. 1 p. transcript.

• ***Summary:*** William Morse, her father, as born on 10 May 1884 in Lowville, New York (upstate). His father was a butcher. W.J. Morse's wife, Edna, went on the trip to East Asia, as did Margaret, who was an only child. Edna kept diaries for her daughter and wrote down what happened every day–in child's language such as "Played in the park."

William Morse wrote much of the book about soybean foods that he hoped to publish. He wrote it by hand on yellow lined paper; it was never published and she has sent the manuscript to the American Soybean Association.

During World War II W.J. Morse was under a great deal of pressure. A great many people called on him for information. He first became aware that he had an ulcer in about 1943, and this affected his diet. He lost a lot of weight (you can see it in the photos of him from that period) and he had to go on a "baby food diet." He ate soft, bland foods including soymilk, tofu and acidophilus soymilk and yogurt. He bought soyfoods at the Seventh-day Adventist health food store in Takoma Park, Maryland–including the soy ice cream he loved. She does not recall that he ever made tofu or soymilk at home.

After returning from their two years in East Asia, he

and his wife used soyfoods regularly in their diet. He liked very much to make sukiyaki for dinner, especially for guests or special occasions. He had a low sukiyaki table made by having the legs cut of a regular table. Everyone would sit on cushions on the floor, with an electric hot plate on the table. His sukiyaki recipe always included tofu.

He and his wife liked to put soy flour in homemade breads and waffles. He did not eat a lot of meat but neither was he a vegetarian. He ate Boston baked soybeans when his wife fixed them.

William Morse bought the house in Tacoma Park, DC, in 1917 and lived there until he retired, shortly after which he and his wife moved to Eastchester New York, where he lived the rest of his life.

He spent the last ten years of his life writing his book (from time to time she typed up his notes), doing lots of gardening and reading, and writing many letters. He kept in touch with the world of soy.

His office, where he had shelved with packaged soyfoods, was in Washington, DC. He did not move his office to Beltsville until about 1939–when all of USDA moved there.

Note: P.H. Dorsett was born on 21 April 1862. So at the time the expedition first arrived in Japan he was age 67. Dorsett had a grown daughter.

"William Morse was a gentle, soft-spoken person, who liked others and they liked him. He liked to tease, and the secretaries at his office all loved it. He was a very easy person to get along with; he was slow to anger and never cursed. He wasn't aggressive; where some might push, he would give in. He was intelligent. His work came first. He was not financially ambitious." He was a rather heavy cigarette smoker. His daughter remarked that "If anything upset him, he didn't let it out on his fellow workers."

"His friends and co-workers called him "Bill." His family called him "Will."

She still has her diaries and some of her father's small notebooks of the trip plus many photographs glued into scrapbooks. She has no files of his left; she sent them all to the American Soybean Association.

Verna Donavan was W.J. Morse's secretary at USDA starting not long before he went to the Orient to study soybeans. After Morse returned, when the Bureau of Home Economics became interested in soybeans, the two of them were often asked to come over and to taste the soybean dishes they had prepared.

Update. 2004. April 14. She has a book that was given to her father when he retired from USDA. In it are letters from many companies (cereal companies, oil companies, etc.) praising his work. It also has letters of praise from his co-workers and his superiors. Address: 22 Interlaken Rd., Eastchester, New York 10709. Phone: 914-632-2508.

3357. Harrison, Connie S. 1980. Group seeks to export soybeans to China along with U.S. hog-feeding practice. *Wall Street Journal.* Sept. 24. p. 36.
• ***Summary:*** The American Soybean Association (ASA) sees a huge untapped market for American soybeans to feed China's 300 million hogs. The group recently sent 15 of its members to China to tout their product. The problem is, the Chinese see soybeans as a food for people, not as feed for hogs. Dairy farmers in Shanghai routinely kill baby male calves within 2 days of their birth. To Chinese dairy farmers, milk is too valuable to waste on raising unproductive males. But the ASA is providing the Chinese with samples of a soy-based milk replacer that can be fed to baby calves; when they grow up, they can be killed and sold for their meat.

In 1979 China bought 850,000 tonnes of U.S. soybeans, which was 10 times its earlier purchase. Before normalization of diplomatic relations between China and the USA, China preferred to buy its soybeans from Brazil or Argentina. Address: Staff reporter.

3358. Hope, Jane; Bright-See, E. 1980. Vegetarian diets need good planning: Nutrition. *Toronto Star* (*Ontario, Canada*). Sept. 24. p. C-3.
• ***Summary:*** Describes the different types of vegetarians and their different needs. The section titled "Soy protein" begins: "But the amount and quality of protein in plant foods is usually lower than that found in animal foods. The exception, of course, is soy protein. Soy products, such as cakes [tofu?] and soy milk, are excellent sources of protein."

Discusses protein complementarity and good books on vegetarian nutrition and recipes.

3359. Sass, Lorna J. 1980. A couple on a tofu mission in the West. *New York Times.* Sept. 24. p. C3. Reprinted in the San Francisco Chronicle. Nov. 12. p. 22.
• ***Summary:*** About William Shurtleff and Akiko Aoyagi, authors of *The Book of Tofu.* A large photo shows each person. "The two people most responsible for catapulting tofu from the wok into the frying pan are William Shurtleff and Akiko Aoyagi." In the early 1970s they began to work on introducing this inexpensive foodstuff, high in protein and free of cholesterol, to the United States. Concerned that there is a world food crisis, they are committed to the philosophy expressed in the book *Diet for a Small Planet,* that if people in Western cultures relied on beans and grains rather than meat, the problem would start to improve. Shurtleff says that they wanted to find a way to make soy foods appealing to Big Mac [hamburger] fans. "'We decided to try to do for tofu and other soy foods what Johnny Appleseed did for apples.'"

A graduate of Stanford University in physics and industrial engineering, Shurtleff first became interested in natural foods and a healthy diet starting in 1968, while living at the Tassajara Zen Mountain Center near Carmel Valley, California. In 1971 he went to live in Japan where, as a student with little money, he found he could eat for as

little as 30 cents a day by relying on tofu as his major source of protein. There he met Miss Akiko Aoyagi, a Tokyo-born fashion designer who was also fine cook. Using the seven different types of Japanese tofu, she prepared her favorite tofu recipes for him. A turning point came when they shared a meal at Japan's oldest haute cuisine tofu restaurant [Sasa-no-yuki, in Tokyo].

At the time they had no publishing experience and only about $100 between them. Yet within several weeks they had found a publisher and were hired on a part-time basis by an American company to do interpreting, that paid enough to free them to research the subject thoroughly for the next four years.

In December 1975 their first book, *The Book of Tofu,* as published by Autumn Press, a small publisher originally headquartered in Japan and now in Massachusetts, interested in both tofu and vegetarianism. The book was received so enthusiastically–over 100,000 copies are now in print, that Ballantine Books decided last year to publish a revised mass market pocket-book edition.

In 1975 they founded the New-Age Foods Study Center, with offices in Tokyo and Lafayette. Their center has published three volumes: *Tofu and Soymilk Production* ($17.95), *Tempeh Production* ($15.95), and *Miso Production* ($17.95). These books are directed at people interested in manufacturing "soy foods." In 1978 they helped to found the Soycrafters Association of North America. Last July the association held its third annual conference.

Lorna Sass is also the "general editor of the forthcoming reprint series of significant historical cook books." Address: Culinary historian, New York.

3360. Blix, Glen. 1980. Soymilk and soy-based infant formula in America (Interview). *SoyaScan Notes.* Sept. 26. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** In 1979 Loma Linda made 2.24 million gallons of ready-to-use Soyalac infant formula, and 1.0 million gallons of Soyagen (soymilk for adults, plus small amounts [400-500 per year] of Granolac and Granogen which are sold in the United Kingdom), for a total of 3.24 million gallons. Some of the Soyalac (named i-Soyalac) is made with isolated soy protein. In 1979 Loma Linda used 1.5 million lb of soybeans to make soymilk, working 190 days a year.

Only two companies in America make soymilk for adults. Loma Linda has 60% of the market and Worthington Foods has 40%.

Market shares in the soy-based infant formula market are approximately: Ross Laboratories 50% (Isomel; 14,720,000 gallons ready to serve), Mead Johnson 40% (Prosobee; 14,080,000 gallons), Loma Linda 7% (Soyalac; 2,240,000 gallons), and Wyeth Laboratories (in Pennsylvania) 3% (Nursoy; 960,000 gallons). Syntex is now out of business. Note that Worthington Foods does not make any infant formula. Ross and Mead Johnson originally entered the infant formula market with dairy-based products, then later added soy-based products. Glen thinks that ProSobee, which is made in the USA, is a powdered product sold only outside the USA. Loma Linda sells infant formula in a 32-ounce can. It is given a UHT short time sterilization at Pet Milk in Coldwater, Ohio, then packed. Address: Loma Linda Foods, Mt. Vernon, Ohio.

3361. **Product Name:** [Soymilk].
Manufacturer's Name: Alimentos Colpac.
Manufacturer's Address: Apartado 134 Navojoa, Nuevo Leon, Mexico.
Date of Introduction: 1980. September.
New Product–Documentation: Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). "COLPAC, Apartado 134, Navojoa, Nuevo Leon, Mexico. Owner: Jose Farrara. A Seventh-day Adventist soy dairy."

3362. **Product Name:** Tofu (Hard & Soft), Tofu/Okara By-Products, Soymilk.
Manufacturer's Name: Cleveland Tofu Co.
Manufacturer's Address: 1797 Radnor St., Cleveland Heights, OH 44118. Phone: 216-371-3222.
Date of Introduction: 1980. September.
Ingredients: Tofu: Water, organic soybeans, nigari.
Wt/Vol., Packaging, Price: Tofu: 1 lb.
How Stored: Refrigerated.
New Product–Documentation: Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). Gives the company's name, address, and phone number. Owners: Paul Sheldon & Bob Karr.

Label. 1982, dated. 4 inch diameter. Green on clear plastic lid. "Keep refrigerated. Store in fresh water." Founded by Bob Carr. Form filled out by Brooks Jones and Bob Carr. They started on 22 March 1982. They presently make hard & soft pressed tofu, tofu/okara by-products, and soymilk.

Levin. 1984. Crain's Cleveland Business Weekly. Feb. 19. "Cleveland Tofu Co. must educate the market."

Dun & Bradstreet database search. 1984. May. Company has two names: Ohio Tofu Company Inc. and Cleveland Tofu. Address: 6210 White Ave., Cleveland, Ohio 44103. Phone: 216-361-8638. Year started: 1983. Sales this year: $250,000. Employees: 11. Principals: Brooks Jones, President; Robert N. Carr, Vice President.

Talk with someone from Ohio. 1988. Feb. 22. Brooks Jones had to close his business in December 1987. His plant was in a bad part of town and he had to spend all his profits on security guards.

Talk with Charles Meeker of VitaLite Foods. 1992. Feb. 27. Charles does not know why Brooks went out of business but he has heard that his father was extremely wealthy and he was just doing the tofu business as a sort of hobby. He didn't really need the money. A year or so ago

he was painting strips on parking lots, and now he is in the consulting business. Moreover, he ran the business poorly. When Vitalite Foods bought the Cleveland Tofu name and trademarks from Brooks, he did not even know the names of his accounts. His records were poor. The man who did the deliveries knew where the accounts were but Brooks didn't. Cleveland Tofu was selling a lot of tofu at the time VitaLite took it over.

3363. Dubois, Donald K. 1980. Soy products in bakery foods. *AIB Research Department, Technical Bulletin* 2(9):1-10. Sept. [12 ref]

• ***Summary:*** Contents: Introduction. Processing of soy products. Quality factors. Defatted soy flour. Enzyme active soy flour. Full fat, high fat and lecithinated soy flours. Soy grits. Soy protein concentrates. Soy protein isolates. Milk replacer blends. Soy bran. Nutrition. Products. Summary.

AIB stands for the American Institute of Baking. "Soy products, because of their unique functional and nutritional properties, have become major ingredients in many food systems. The use of soy protein as an ingredient, extender, or analog has spread to every category of food, and consumption of edible soy protein in the United States has grown from less than one hundred million pounds per year in the early 1960's to over one billion pounds per year in 1978."

Ten tables give the nutritional composition plus NSI (Nitrogen Solubility Index) and PDI (Protein Dispersibility Index) of different soy products, and the manufacturer of each, as follows: Table IV–15 defatted soy flours: A.E. Staley: Bland 50, I-200, and F-200. ADM Company: Baker's Nutrisoy, Nutrisoy, and Toasted Nutrisoy. Central Soya Co.: Soyafluff 200W. Cargill, Inc.: 70 PDI Soy Flour and 20 PDI Soy Flour. Dawson Food Ingredients: Dawsoy Flour 100/70, Dawsoy Flour 200/20, Dawsoy Flour 200/70, and Dawsoy Flour 200/88. Farmland Industries: 200L and 200E.

Table V–2 enzyme active soy flours: ADM Company: Nutrisoy 7-B. Cargill, Inc.: 90 PDI Soy Flour.

Table VI–1 full fat soy flour made by Ingredients Systems, Inc.

Table VII–1 low fat soy flour made by Food Ingredients.

Table VIII–4 refatted soy flours made by ADM: 15% High Fat, Bakers Nutrisoy, Toasted Nutrisoy T-6, and Nutrisoy 220T.

Table IX–8 lecithinated soy flours: ADM Company: Soylec C6, Soylec C15, and Soylec T15. Central Soya: Soyalose 105W and Soyarich 115W. Cargill, Inc.: 3% Relecithinated soy flour, 6% Relicithinated soy flour, and 15% Relecithinated soy flour.

Table X–13 brands of soy grits: ADM Company: Defatted Soy Grits 8-20, Defatted Soy Grits 20-40, Defatted Soy Grits 40-80, and Defatted Soy Grits 80-0. A.E. Staley: Bland 50-Medium Grits and Bland 50-Coarse Grits. Lauhoff: Soy Grits 5/16, Soy Grits 8/30, and Soy Grits 20/0. Dawson Food Ind. [sic, Ingredients]: Dawson Grits 10, Dawson Grits 20, Dawson Grits 40, and Dawson Grits 60.

Table XI–3 "soy protein concentrates": Griffith Labs: Promax 70. ADM Company: Ardex 700F and Ardex 700G. A.R. Staley: Sta-Pro.

Table XII–16 "soy isolates" (incl. pH, particle size, and special properties of each): Ralston Purina: Edipro A, Supro HD 90, Protein 220, Supro 350, Supro 610, Supro 620, Supro 630, Supro 660, and Supro 710. Dawson Food Ind.: Isoprime 900, Isoprime 900GL, Isoprime 900G, and Isoprime 900L. Grain Processing Corp.: Pro-Fam S-955 and Pro-Fam S-970.

Table XIII–1 type of soy bran: Nutrisoy Fiber, made by ADM. Address: American Inst. of Baking, Manhattan, Kansas.

3364. Grossman, Harvey; Duggan, E.; McCamman, S.; Welchert, E.; Hellerstein, S. 1980. The dietary chloride deficiency syndrome. *Pediatrics* 66(3):366-74. Sept. [24 ref]

• ***Summary:*** "Chronic depletion of body chloride developed in a group of infants ingesting a diet consisting almost exclusively of chloride deficient Neo-Mull-Soy. Ten of the 12 infants were on this diet three to five months before loss of appetite, failure to thrive, muscle weakness, and lethargy led to a diagnostic evaluation. The outstanding laboratory features were severe hypokalemic metabolic alkalosis, low urinary chloride concentrations (<10 mEq/liter), and erythrocyturia. There was marked decrease in weight for age in all 12 infants...

"In our review of the literature we have found no documentation of other instances of chloride deficiency in the human as a consequence of dietary chloride lack alone." Address: The Children's Mercy Hospital, 24th at Gillham Rd., Kansas City, Missouri 64108.

3365. *League for International Food Education* (*LIFE*) *Newsletter.* 1980. Soybeans in Guatemala. Sept. p. 3.

• ***Summary:*** "With 1500 lbs of soybeans donated by UNICEF, Plenty has been teaching the people of Guatemala, concentrating on the wives of farmers who have shown an interest in growing soybeans, how to make soymilk and tofu (bean curd) using a metate and utensils traditionally found in their homes.

"Classes are held once a week for four students at a time. All students have learned the process in one lesson. They return to their homes provided with cheesecloth and small bags of beans. After they use those, they can return for more. Most students have successfully made tofu in their homes and say their families like it.

"Plenty plans to set up a village-scale soy processing plant which will produce 100 lbs of tofu and forty gallons of icebean (ice cream made from soymilk) three times a week. Funded by Plenty and CIDA/Canada, the plant will supply free icebean for school lunch programs. After an initial period of training, the soy plant will evolve into a

local cottage industry and a means of financial support for members of the community.

"For further information, please write to: Suzy Jenkins; Soy Technician; Plenty; 156 Drakes Lane; Summertown, Tennessee 38483 USA."

3366. Myers, Steve. 1980. [Farm Foods' original soy Ice Bean is on the market again (News release)]. Summertown, Tennessee: Farm Foods. 1 p. Undated.
• ***Summary:*** "Dear People, Our plant moves are complete and Farm Foods' original soy 'Ice Bean' is back. It is now available in these flavors: carob, vanilla, and strawberry, and comes in pints, 5 oz. cups, and 3 gallon tubs.

The original soy 'Ice Bean' is similar in flavor and texture to ice cream, but contains no milk products and no cholesterol. "Ice Bean" is completely vegetarian and contains all natural ingredients: soy powder, pure honey, soy oil, natural fruit and flavors, lecithin, guar gum, and salt. But best of all it tastes great and it's good for you."

To help understand this news release, we will quote from *Tofutti and Other Soy Ice Creams,* by Shurtleff and Aoyagi (1985, p. 46-47). "In 1980 Ice Bean was America's best known non-dairy soy-based frozen dessert, though its following was still relatively small, and concentrated in California. In February or March of that year, Farm Foods moved its operations from San Francisco to headquarters in Tennessee, signaling a commitment to expand Ice Bean's market from regional to national. Farm Foods realized that they had a virtual monopoly on soymilk ice cream, for which national demand was growing faster than they could supply. The company was also aware of the huge potential market on the East Coast from kosher Jews and natural foods devotees. Moreover, the landlord had tripled the rent on their building in San Francisco. So they sold their big ice cream freezer to a frozen dairy yogurt maker and pulled up roots.

"Back on the land in rural Tennessee, Farm Foods' directors reformulated Ice Bean and had it manufactured at a dairy ice cream plant in Nashville, later in Memphis. The Farm Foods' crew made the soy ice cream there with the help of a plant technician. They applied to register the name Ice Bean as a trademark in 1980 and were granted this in October 1982. When they applied for kosher certification in New York with the oldest and largest certifier (O-U), the rabbi told them that this was the first non-dairy frozen dessert that he had ever certified as kosher and pareve. 1980 was the year that Ice Bean really began to go national, and in December Farm Foods started its first national advertising campaign, with full-page color ads in at least four national health food, counter culture, and vegetarian magazines."

"Initially the reformulated Ice Bean was made using powdered soymilk produced by Loma Linda Foods (at the plant in Mt. Vernon, Ohio, built by Dr. Harry Miller); the vacuum-pan deodorization process reduced volatile beany flavors found in typical soymilk. But in about 1983 Farm Foods switched to fresh soymilk made by Dr. Miller's son, Willis Miller, at nearby Miller's Soy in Tennessee, using a special patented process. Starting in mid-1984 (after Miller's Soy went out of business) all of the soymilk was produced in Summertown, Tennessee, at The Farm's own soy dairy." Address: President, Farm Foods, 156 Drakes Lane, Summertown, Tennessee 38483.

3367. Redwood Valley Soyfoods Unlimited. 1980. [Real Food Tofu Shop and Café] (News release). 8473 East Rd., Redwood Valley, CA 95470. 1 p. Sept.
• ***Summary:*** "Redwood Valley Soyfoods Unlimited is proud to announce their opening of the Real Food Tofu Shop and Cafe. It is a 14-seat restaurant serving lunch and dinner with deli products featuring our Brightsong Tofu." The tofu shop is behind the cafe. The wholesale food processing kitchen manufactures Tofu Cheesecake, Soy Juice, Tofu Treat, Tofu Dips and Dressings, Marinated Salad, Soyannaise, Soy Loaf, frozen dinners and various sandwiches. "The cafe is the only one of its type west of Colorado."

Note 1. A leaflet (printed with black ink on pink paper, undated, 8½ by 11 inches, single sided) titled "Brightsong. The Real Food Tofu Café," gives details: Air conditioned. Smoke free. 8473 East Road, Redwood Valley. Sandwiches $2.00: Tofunafish, Baked-spice tofu, Missing egg salad, Happy Chicken Salad, Hummous, Tofummus, Stuffed mochi. Not dogs. Burgers $2.50: Tempeh, Tofu, Soysage. Desserts: Creamies, Cheesecake, Cookies, Ice Bean, Banana Split, Frozen Joy. Salads: Missing Egg... Drinks: Soy shake, soymilk, Spirulina smoothies.

Note 2. This is the earliest document seen (Sept. 2011) that mentions "Redwood Valley Soyfoods Unlimited."

Note 3. On 31 Oct. 1979 Brightsong Tofu ordered *The Book of Tempeh* (professional edition) and *Tempeh Production* (Vol. II, manuscript). Address: Redwood Valley, California.

3368. Shurtleff, William. 1980. Tofu shops and soy dairies in the West. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 2 p. Sept. Unpublished typescript.
• ***Summary:*** Lists the name, address, phone number and owner of all known tofu shops and soy dairies in the USA (alphabetically by state), Canada, Latin America, Europe, Australia & New Zealand, Africa, and the Middle East. Address: Lafayette, California. Phone: 415-283-2991.

3369. **Product Name:** Soymilk, and Soymilk Ice Cream.
Manufacturer's Name: Vita-Green Enterprises.
Manufacturer's Address: 5411 Lake Washington Blvd. South, Seattle, WA 98118. Phone: 206-237-0900.
Date of Introduction: 1980. September.
How Stored: Frozen.
New Product–Documentation: Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages,

typeset). Gives the company's name, address, and two phone numbers (also 722-7772). Owner: Harry Dea.

3370. Boyer, Robert A. 1980. Work with Henry Ford and soybeans. I (Interview). Conducted by William Shurtleff of Soyfoods Center, Oct. 18. 2 p. transcript.
• ***Summary:*** The Henry Ford Trade School was not the same as the Edison Institute of Technology. Boyer attended the Trade School.

In the mid- to late-1930s Henry Ford held several luncheons where the press and other famous or influential people were invited. He served a complete meal from soup to nuts. Out of these events came a 19-page booklet published in about 1936 by the Edison Institute and titled "Recipes for Soy Bean Foods." The purpose of these meals was to popularize soybeans and thereby to help farmers. But Ford was most interested in finding industrial uses for farm crops. He was deeply interested in the fact that soy had been used in the Orient for so long by millions of people as a key source of protein in the diet. But he had been interested in health before he got interested in soybeans. Still, he was very involved personally with soybeans as foods; he used them a lot in his own diet.

Ford grew his own soybeans on over 10,000 acres he bought in southern Michigan. The idea was not to help farmers by buying their beans but to encourage farmers to grow soybeans then process them in small-scale solvent extractors on their own farms. Eventually this village industry concept proved to be uneconomical so it was abandoned.

In about 1932 Ford set up his first solvent extractor near the River Rouge plant. About a year later he set up a plant to make soy protein isolates from the meal produced by the solvent extractor. In about the mid-1930s Ford built a soymilk plant in Greenfield Village. It was just a demonstration plant that made several hundred gallons of soymilk a day. The plant was part of the larger research effort; none of the milk was sold commercially. With the arrival of World War II, the process was taken by Bob Smith, one of the fellows who developed it, and used as the basis for a private plant [Delsoy Products] in Dearborn where he sold a lot of soymilk for use in whipped toppings, baked goods and frostings. It was quite successful. A big bakery in Detroit used a lot of the topping. As a result of that, the Rich Products Co. in Buffalo, New York, started making the same type of product and became very big. One of Bob Smith's workers [Holton "Rex" Diamond] went to Rich Products and made a big success of it. Rich is very well known; they also make coffee creamers.

Henry Ford was not a vegetarian. He ate like most Americans at the time, and he ate many steaks–even though he knew meat was not the best thing for you. Mrs. Ford suffered from arthritis and he sought diets to help her.

World War II killed the idea of the plastic car. The company would have needed to spend lots on dies to make it commercial. Also each plastic body took too long to produce; it had to cure for 3 minutes in the die. Young Henry Ford II threw out everything [not directly related to automobiles] that his grandfather was interested in. General Motors was actually the first company to make a commercial car with a plastic body–the Corvette, whose body was made of fiberglass.

Edsel Ruddiman was the man who got Ford interested in the food side of soybeans. Ruddiman was quite old. He had his own lab (which he got in about 1930-31) and was a very good scientist. He and Boyer worked closely together since their labs were nearby.

Ford grew 10,000 acres of soybeans in southern Michigan. Ford set up his first solvent extraction plant in about 1932 and his soy protein isolate plant a year later. Ford was personally very involved with soyfoods. He used them a lot in his own diet. He built a soymilk plant in Greenfield Village in the mid-1930s as part of his research efforts. He made several hundred gallons a day. The milk was not sold commercially. After the start of World War II the process was taken over by Bob Smith, one of the fellows working on it. Smith built a private plant in Dearborn where he made the milk into frostings for use in baked goods. It was quite successful. A big bakery in Detroit used a lot of it. As a result of that, Rich Product Corp. in Buffalo, New York, got interested and eventually became very successful. One of Bob Smith's workers, Rex Diamond, went to work for Rich. They also made non-dairy coffee creamers and milk.

Boyer was director of research for The Drackett Co. from 1943-1949.

Ralston Purina's edible soy isolate plant was in Louisville, Kentucky. It was hard at the beginning to get people to use isolates. Mead Johnson started using an isolate in their infant formula. Address: 632 Edgewater Dr., Apt. 731, Dunedin, Florida 33528. Phone: 813-734-2415.

3371. Ostmann, Barbara Gibbs. 1980. Using soybeans: From milk to nuts. *Post-Dispatch* (*St. Louis, Missouri*). Oct. 22. p. 3B. Food section. [1 ref]
• ***Summary:*** Contains recipes–adapted from various books–for: Soynuts. Speedy soy flour. Quick and easy soy milk. Egg-sprout patties (with soybean sprouts). Spicy soybean salad (with whole dry soybeans). Soy vegetable soup (with cooked soybeans and soybean cooking liquid). Soy burgers (with cooked soybeans). Soft sandwich buns (with soy milk). Soy bread (with soy milk). An illustration (line drawing from *The Soybean Book*) shows a soybean leaf and four pods. Address: Post-Dispatch Food Editor.

3372. Siedler, -. 1980. Re: Research on soyfoods in the Department of Food Science, Univ. of Illinois. Letter to William Shurtleff at Soyfoods Center, Oct. 28. 1 p. Handwritten responses on Soyfoods Center letterhead.

• ***Summary:*** The earliest research in this department appeared in a 1955 MSc thesis titled "Treatment and utilization of extracted soybean flakes for human consumption."

The main soyfoods studied to date by this department have been: (1) Dairy analogs: Soymilk, chocolate soymilk, yogurt, ice cream, and diet margarine. (2) Weaning foods: Soy-cereal and soy-fruit.

Dr. Siedler estimates that 10 theses and 15 articles have resulted from the department's research on soyfoods. The main researchers have been Wei, Nelson, and Steinberg.

3373. Arshad, M.; Aslam, M.; Sheikh, Iftikhar Ali. 1980. Preparation of soymilk from soybean. *Pakistan J. of Scientific and Industrial Research* 23(5):218-20. Oct. [11 ref. Eng]
• ***Summary:*** A soymilk free of bitter and beany flavor his been developed and standardized. The net protein utilization (NPU) of this soymilk was only slightly lower than that of skim milk (84.6% vs. 84.7%). The protein efficiency ratio (PER) was 2.4 (compared with 2.6 for casein). Net dietary protein (NDP) was 7.05 calories (compared with 7.55 for skim milk). Address: PCSIR Lab., Lahore 16, Pakistan.

3374. Erdman, J.W., Jr.; Weingartner, K.E.; Mustakas, G.C.; Schmutz, R.D.; Parker, H.M.; Forbes, R.M. 1980. Zinc and magnesium bioavailability from acid-precipitated and neutralized soybean protein products. *J. of Food Science* 45(5):1193-99. Sept/Oct. [28 ref]
• ***Summary:*** Zinc bioavailability may differ for general categories of soy protein products, including flours, beverage, concentrate, and isolate. Address: 1-2. Dep. of Food Science, 567 Bevier Hall, Univ. of Illinois, Urbana, IL 68101; 3-4. NRRC, Peoria, Illinois; 5-6. Dep. of Animal Science, Univ. of Illinois.

3375. Filisetti, T.M.C.C.; Lajolo, F.M. 1980. Thyroid active factor in heated soybean products. *J. of Food Science* 45(5):1179-82, 1186. Sept/Oct. [16 ref]
• ***Summary:*** A crude extract was obtained from hexane-defatted soybean flour by water extraction and acetone fractionation. It was active in depressing the uptake of iodine-131 by the thyroid glands of live rats 24 hours after administration by stomach tubing. "The inhibitory effect was evident at 24 hours only when either the extract or the flour had been previously autoclaved. Similar results were recorded when extracts from commercial products such as [dried] soybean milk, soy protein concentrate, and toasted soy flour were used. However, using extracts from unheated raw soy flour, the inhibitory effect was only present 6 hours after ingestion and it subsequently disappeared. The active factor is not precipitated by 90% ethanol. Isolated soybean isoflavones, either autoclaved or nonautoclaved, did not show any inhibitory activity."

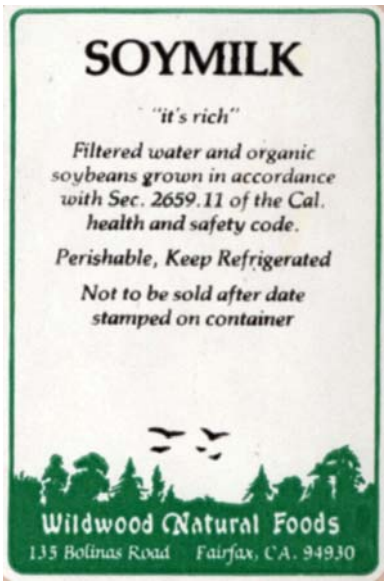
The factor appears to be heat stable since all the products tested had been previously heated during normal processing. The factor is not related to phenolics and it may be activated during heating. Address: Depto. de Alimentos e Nutricao Experimental, Faculdade de Ciencias Farmaceuticas-USP, Caixa Postal 30.786, Sao Paulo, SP, Brazil.

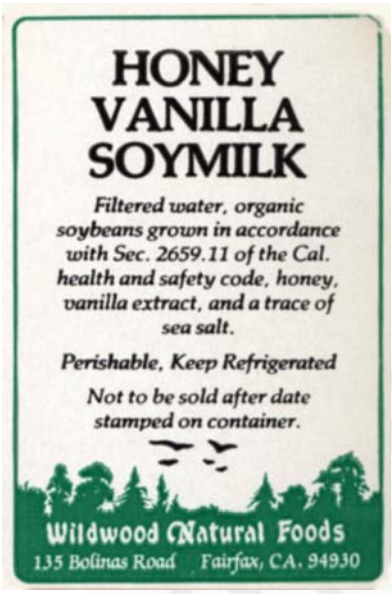
3376. Lah, Carol L.; Cheryan, Munir. 1980. Protein solubility characteristics of an ultrafiltered full-fat soybean product. *J. of Agricultural and Food Chemistry* 28(5):911-16. Sept/Oct. [34 ref]
• ***Summary:*** The product is a close relative of soymilk made from ground whole soybeans. The study focused on protein dispersibility index (PDI) as a function of pH and the concentration of various salts. For acidic and neutral pH values, the PDI was higher than that of the raw material and of a commercial soy protein isolate. Address: Dep. of Food Science, Univ. of Illinois, Urbana, IL 61801.

3377. **Product Name:** Soyloaf.
Manufacturer's Name: Light Foods Inc.
Manufacturer's Address: 6144 Bartmer, St. Louis, MO 63133. Phone: 314-721-3960.
Date of Introduction: 1980. October.
Ingredients: Okara, whole wheat flour, nutritional yeast, wheat germ, safflower oil, soymilk, coconut, bulgur, soy grits, mustard, tomato table sauce, barley malt, sesame seeds, herbs & spices.
Wt/Vol., Packaging, Price: 20 oz (567 gm) container.
How Stored: Refrigerated.
New Product–Documentation: Barbara G. Ostmann. 1980. Post-Dispatch (St. Louis, Missouri). Oct. 29. p. 1E, 4E. "Time for tofu." Bob Davis' company Light Foods Inc. makes Soyloaf (soy "meatloaf").

Label. 3 inches square. Self adhesive. Orange on white. Winged unicorn rearing on its hind feet before an orange moon. "No preservatives. Please refrigerate." Leviton. 1981. Soyfoods. Summer. p. 42. "They produce up to 100 20-ounce containers of Soyloaf."

3378. TNO and IIT. 1980. Précis of the final report on the Colombian-Netherlands project for "Utilization of soybean proteins for human consumption," Colombia, 1977–1979. Wageningen, Netherlands: The Netherlands Organization for Applied Scientific Research (TNO) and Instituto de Investigaciones Technologicas (IIT). 12 p.
• ***Summary:*** The following products and related processes were developed or improved for use in Colombia: Soy beverage, soy cheese (tofu), soy yogurt, roasted soybeans, quick-cooking soybeans, full-fat soy flour, soy-enriched arepas or maize cakes. IIT is the Instituto de Investigaciones Tecnologicas, Bogota, Colombia.





3379. **Product Name:** Soymilk, or Honey Vanilla Soymilk. Renamed Yo Soy! by about Sept. 1981.
Manufacturer's Name: Wildwood Natural Foods.
Manufacturer's Address: 135 Bolinas Rd., Fairfax, CA 94930. Phone: 415-459-3919.
Date of Introduction: 1980. October.
Ingredients: Honey-Vanilla: Filtered water, organic soybean grown in accordance with Sec. 2659.11 of the Cal. health and safety code, honey, vanilla extract, and a trace of sea salt.
Wt/Vol., Packaging, Price: Pint or quart plastic bottle.
How Stored: Refrigerated.
New Product–Documentation: Soyfoods. 1983. Summer. p. 42-43. Labels sent by Wildwood on their letterhead. 1983, undated. 2 by 3 inches. Self adhesive. Black and green on ivory. Silhouette of woods with birds. "It's rich. Not to be sold after date stamped on container." The product names are "Soymilk" and "Honey Vanilla Soymilk."

Talk with Billy Bramblett, an owner of Wildwood. 1998. Aug. 8. Soymilk was not a product made from day one. Billy would estimate that Wildwood started bottling soymilk (plain and honey-vanilla) in the spring of 1981. Because Wildwood was distributed outside the country they were in (Marin), their products suddenly became regulated by the state–rather than the county. Shortly after this product, labeled "Soymilk" was launched, the California Department of Health sent two women (dressed in lab coats) to the plant; they went through every product Wildwood had, took samples, examined labels, etc. They found various problems with Wildwood's labels. So they went back to Wildwood and told them how to change their labels to bring them into compliance with state labeling law. Paul Orbuch was in charge of Wildwood's labels at the time; he was a photographer, so he had a lot to do with the text and graphic design of the labels. A guy who came along (sort of a Nazi type) told Billy "You can't use the word "Soymilk." Billy asked "Why not? I've got a book right here, written by Shurtleff and Aoyagi, that says its soymilk." He said, "If it's milk, the label must say "dairy," otherwise it must say "imitation." Billy shot back, "How about milk of magnesia." The guy got really mad–like a bureaucrat without an answer, and said "Look–Change the label or we're gonna pull the product." Billy had a huge debate with this guy for about 2 months. Wildwood toyed with the idea of calling it *Tonyu,* which is the Japanese word for soymilk, but they realized nobody would know what that meant. They wanted to keep the word "Soy" in the name, so Billy came up with "Yo Soy," which is a palindrome.

Talk with Paul Duchesne, founder of Wildwood. 1998. Aug. 28. Paul still has detailed typewritten records showing sales of individual Wildwood products in 1980 and 1981. According to these records, Wildwood first made and sold soymilk in October 1980; $32,00 worth of plain soymilk was sold that month. The company consistently made soymilk from that time on. Sales increased to $34 in November. In November Wildwood added Honey Soymilk and sold a total of $40.00 worth of the two flavors that month. By July 1981 Wildwood was selling $200/month of Honey Soymilk and $172/month of plain.

3380. Shurtleff, William; Aoyagi, Akiko. 1980. Henry Ford and Robert Boyer: History of work with soya. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 25 p. Nov. 3. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. Contents: Introduction: Ford. Early research with soybean oil and meal: 1928 chemurgic movement (joining of farm and industry), setting up Edison Lab, Dec. 1931 soybean chosen as most promising crop for use in industry and as a food, 1931 encouragement of farmers to grow soy, biographical sketches of Boyer and Ruddiman, soy oil (used in car paints and pioneer work in solvent extraction),

meal, isolates, molded parts, plastic pilot plant, cottage industries, barn solvent mills, 1934 World's Fair. Ford, Ruddiman, and soyfoods: Soyfoods press luncheons (not all were impressed), 50 recipe cookbook, soymilk (commercial and personal), personal interest in soyfoods, Greenfield Village (soy flour and green vegetable soybeans), Ford's views on health. Development of the plastic car: Glidden first commercial plant for industrial soy protein isolates (1935), Ralston's food use plant in 1960, Ford built 3 small oil plants 1937-39, grew own soybeans, connection with American Soybean Association, soybean plastic car (trunk lid unharmed when hit by ax), jokes, soy a minor element in later structural plastics, idea lost in files, General Motors' plastic Corvette introduced 1953, lots of plastic by 1980 (but not from renewable resources like soy). Boyer's soybean wool and edible protein fibers: Soybean wool and history of fibers, wool pilot plant, how to make edible soy fibers, discovery of food protein idea. Henry Ford's passing: Death in 1947, his contribution (quotes), actually not much soy used in Ford's auto and tractor factories. Boyer's development of meat analogs: Drackett purchase of Ford protein spinning operation, first visit to Worthington (Sept. 1949), Corn Products Company purchase of first license on edible protein fiber patent, Swift purchase of exclusive rights from 1950-54, 1951-52 Unilever license for production outside U.S., Worthington purchase of license 1956, advantages and limitations, licenses after Worthington, royalties and consulting, Boyer's quality evaluation, the future. Address: Lafayette, California. Phone: 415-283-2991.

3381. Watanabe, Hidekazu. 1980. Re: Early work by San-iku Foods in Japan with tofu and soymilk. Letter to William Shurtleff at Soyfoods Center, Nov. 20. 5 p. Handwritten, with signature on letterhead. [Jap; eng]

• ***Summary:*** Starting in about 1955 Dr. Harry Miller began to recommend that the Saniku school in Japan serve soymilk instead of dairy milk to its students. But the school decided not to do this because they thought the taste of the soymilk was not very good and it was considered less nutritious than cow's milk; moreover, it would cost a lot of money to buy soymilk equipment.

In 1957 Mr. Hanzo Ueda (who had previously worked at the post office in Hachioji and was a Seventh-day Adventist) was running a tofu shop. He and Mr. Hidekazu Watanabe were making soymilk at the tofu shop, packing it in 180 ml bottles, and selling it around Hachioji–under Dr. Miller's guidance.

In 1959 people from the Saniku school visited the tofu shop and gained confidence. They bought similar (but not identical) equipment, and started to produce soymilk at the school. They bottled it in 180 ml containers and started to serve it to 500 students at every meal.

Ten years later, in 1969, they started to produce Soyalac infant formula soymilk with help from Loma Linda Foods in America. They produced it at College Health Foods–a separate organization from the Saniku school.

Dr. Miller gave us helpful advice on technical and nutritional matters, and furthermore he always supported our spirit and spirituality as we developed the soymilk plant (1959) and the infant formula (1969). In 1969 Luppy Kôsan began to make Luppy soymilk. This was the first really serious commercial soymilk product in Japan.

Note: See also Mr. Watanabe's follow-up letter of July 1981. Address: San-iku Foods, Sodegaura-machi, Chiba-ken 299-02, Japan.

3382. Goodbrad, John. 1980. History of Sovex Natural Foods, Inc. and other small Adventist food companies (Interview). Conducted by William Shurtleff of Soyfoods Center, Nov. 26. 1 p. transcript.

• ***Summary:*** Sovex is a private company. John and his wife are Seventh-day Adventists, as are many of the company's employees. John worked at the Boulder Sanitarium (also called the "San," in Boulder, Colorado) from 1947 to 1953; the Sanitarium owned 8 health food stores and he was in charge of them. During the time he was in Boulder, the Sanitarium did not manufacture any foods; they had already gotten out of that business.

Then he went to work for Collegedale Distributors (in Collegedale, Tennessee), which was owned by Southern Missionary College. They made, and still make, granola.

Sovex was founded in 1953 by the Hurlingers in Holly, Michigan. The company's original product was Sovex, a flavor concentrate paste, made from a mixture of brewer's yeast and soy sauce. In 1964 John bought the business and moved it to Collegedale, Tennessee, where he worked.

In 1981 Sovex products containing soy include Prothin Snack Chips, Vege-Pat (textured soy flour, in sausage, burger, and chili flavors), and Granola (their main product line, in nine flavors, many of which contain soy grits).

Sovex had no relationship with Madison Foods (of Madison, Tennessee). Madison was one of the pioneers in the meat substitute field. They were purchased by Worthington Foods, which phased out the Madison products. John has eaten Madison products on and off for over 50 years, but has had no direct contact with them for a number of years. John has a copy of *Back to Eden,* autographed by Jethro Kloss.

A Mr. White, who was a grandson of Ellen G. White, had a super soymilk recipe about 20 years ago. He started with soy flour, ran it through an homogenizer, then sweetened it with honey. People loved the flavor; it was fresh, not canned. He called it Nu-Milk and made it on the sly at the Southern Missionary College dairy in Collegedale, Tennessee. It was illegal because there are laws against putting anything but milk in a milk processing plant.

John just talked with Frank Miller (phone: 817-641-8343), who used to work for Madison Foods and who now owns Texas Protein Products, a company that sells TVP in

Texas. Another key man was Bruce Stepanske, who made soymilk at Madison until it was discontinued. Address: President, Sovex Natural Foods, Inc., Box 310, Collegedale, Tennessee 37315. Phone: 615-396-3145 (or 2111).

3383. Lah, Carol L.; Cheryan, Munir. 1980. Emulsifying properties of a full-fat soy protein product produced by ultrafiltration. *Lebensmittel-Wissenschaft + Technologie* (*Zurich*) 13(5):259-63. Nov. [17 ref]
• ***Summary:*** This protein product, made from a relative of soymilk made from ground whole soybeans, is similar to Promine D. Address: Dep. of Food Science, Dairy Manufactures Building, Univ. of Illinois, Urbana.

3384. Tally, Gene. 1980. The Coca-Cola Company's work with soymilk in Brazil (Saci) and Mexico (Samson) (Interview). Conducted by William Shurtleff of Soyfoods Center, Dec. 1. 2 p. transcript.
• ***Summary:*** Coca-Cola Co. (CCC) taste panels have found that soymilk made with soy protein isolate is more acceptable than soymilk made from soybeans; it has less beany taste and less bitterness–a more neutral taste. Most promising is an isolate-based soymilk. Gene says: In terms of acceptance, we've got the best soymilk so far, and we've tasted all the others." The only soft drink fortified with soy protein that CCC now sells is Saci (pronounced sa-SEE) in Brazil. Until recently, Saci has only been sold institutionally to the Brazilian School Feeding Program. Recently CCC has cut through red tape in the Brazilian government and gotten additional flavors approved. Formerly chocolate was the only flavor; now they have approval for coconut, vanilla, and café au lait (with coffee and sugar). Acceptance among Brazilian adults has not been too encouraging, except when the drink is made like a milk shake with a colloidal thickener.

60% of the people in Brazil do not drink milk, due to its shortage and high price–so soymilk is an economical alternative. CCC can make soymilk for 25% less than cow's milk including the packaging. The product has not yet hit the market, but CCC hopes to retail it in Brazil for about 25% less than milk.

A new tack is to export this soymilk, made in Brazil, to Japan, since Brazil is the world's #2 producer of soybeans and #1 producer of sugar. CCC presently plans to export it in powdered form and reconstitute it in Japan.

Samson, which CCC now makes Mexico is a whey product; it contains no soy. In Southeast Asia CCC is test marketing a soymilk product with a range of flavors in a joint venture with K.S. Lo and Vitasoy.

In the early 1960s. K.S. Lo was selling *almost* as much soymilk as Coke–of which he was the bottler and distributor. But now sales of Vitasoy are flat; they have hit a mature market situation, and with larger packages Coke is way ahead of Vitasoy. But at that time, when Mr. Lo proved what he could do, CCC got interested. "We've had a dialog and a joint venture with Mr. Lo and his family for over ten years. That now includes our joint venture with a soy-based product in Thailand."

Gene thinks CCC is almost ready to enter the soymilk market in the USA; they are waiting for the Tetra Brik package and process to be approved by the USDA, and he thinks that approval is immanent. Hydrogen peroxide is used to purge the carton before it is filled, but there is not trace of it after it is flushed through. The same process is used in a number of other food processing systems. Its turned into a real witch hunt and the Tetra Pak people are about to lose their patience.

Gene has lived and worked in Japan for 5 years, Singapore for 3, and Hong Kong for 2. So he knows the East Asian soft drink and beverage market from direct experience. Address: Coca-Cola Co., Atlanta, Georgia.

3385. Wakana, Teruo; Okubo, Kunio; Hanaoka, Yutaka. Assignors to Kibun Company, Ltd. (Tokyo, Japan). 1980. Process for producing soybean milk. *U.S. Patent* 4,241,100. Dec. 23. 4 p. Application filed 11 Sept. 1978. [10 ref]
• ***Summary:*** Unsteeped soybeans are boiled in an alkaline aqueous medium for a few minutes to inactivate the lipoxygenase enzyme before grinding the beans. "A process for producing soybean milk without undesirable beany flavor or bitterness and giving soft and pleasant feel to the tongue, which comprises cooking unsoaked soybeans in an aqueous medium for as short a period as practicable, grinding the boiled soybeans while bringing them into contact with a sodium bicarbonate aqueous solution at a relatively high temperature, extracting the soyprotein and other water soluble components from the ground soybeans and removing a substantial amount of the solids from the slurry." Address: 1. Hidaka, Japan; 2. Ogose, Japan; 3. Akishima, Japan.

3386. Lowe, Janet. 1980. City's first tofu plant due soon in Hillcrest: San Diego Soy Dairy hopes a demand for exotic food will follow. *San Diego Daily Transcript.* Dec. 24. p. 1A, 12A.
• ***Summary:*** "Gary Stein is building the San Diego Soy Dairy in a building next to the Kung Food restaurant on Fifth Avenue. Kung Food will use part of the former gasoline station for a bakery, and Stein will use the remaining space for his steam injected cauldron system. Stein says his plant should be operating by Jan. 15."

Note: In late 1980 Gary C. Stein of San Diego Soy Dairy (P.O. Box 33778, San Diego, CA 92103. Phone: 714-692-0132) wrote an undated letter on his company's letterhead which stated: "Dear friends, Our new company, the San Diego Soy Dairy, is happy to announce that we will soon be producing tofu and soy milk on a daily basis. By early January we will be able to serve your store or restaurant with fresh tofu and soy milk. We are using only organically grown soy beans and filtered water in our process."

"It would be great service to us if you would indicate on the enclosed card your interest in fresh tofu and soy milk and return the card to us. If you would like to met with a representative of our please indicate that on the card or call 692-0132. We will be happy to answer any further questions. Thank you for your help." Address: San Diego, California.

3387. Root, Waverley. 1980. Soybean: An underdog sneaks up on the world's diet. *Los Angeles Times.* Dec. 29. p. I15.
• ***Summary:*** "Mahatma Gandhi, after much experimentation with various diets, expressed the opinion that the world's best staple food was the soybean."

This article focuses on uses of whole soybeans and unfermented soybean products such as: Fried soybeans [soynuts] in China and Japan. Cooked whole soybeans, which may be added to soups. The young unripe beans [green vegetable soybeans] may be eaten raw in salads.

Whole mature soybeans may be soaked, ground and made into a white liquid which looks like milk. In China "soybean milk is prescribed for babies allergic to human milk, and it is also recommended for invalids."

"Soybean milk is used in cooking in both China and Japan. It is because of this product that the soybean has been called 'the cow of China.'"

For adult Chinese a "typical breakfast is hot soybean milk with bread–a sesame bun or a cruller."

"A byproduct of soybean milk is soybean milk skin (*fu p'i*)" [yuba] which forms on the surface of heated soymilk and can be skimmed off and dried into sheets.

Dried yuba can be "rolled up and deep fried to make the crisp crusty bean sticks (*fu tzu*)" [dried yuba sticks] which appear in both Chinese and vegetarian dishes.

A by-product of the manufacture of soymilk is okara, a high-fiber sediment that is generally fed to pigs in China. Yet okara can be made into pancakes, etc.

"The most important derivative of soybean milk is bean curd [tofu],..." In China it is often pressed, and in both China and Japan it is deep-fried. Or it can be frozen and dried.

3388. *SoyaScan Notes.* 1980. Chronology of soybeans, soyfoods and natural foods in the United States 1980 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jan. 4. An embargo on the sale of grain to the USSR is announced by President Carter in retaliation for the Soviet invasion of Afghanistan. Though the embargo was lifted in 1981, it led to a subsequent reduction on Soviet purchases of U.S. soybeans and products.

Feb. Second issue of *Soycraft* magazine published by Leviton. 5,000 copies. On Shurtleff's suggestion, Leviton decides to change the magazine's name to *Soyfoods* in future issues.

Feb. New England Soy Dairy holds a big press conference and soyfoods luncheon in Boston.

Feb. First statistics on the size of the U.S. soyfoods industry and market published by SANA (Soyfoods Association of North America) and The Soyfoods Center.

Feb. Plenty, a Third World development and relief organization run by The Farm in Tennessee, works with the people of Solola, Guatemala to open a solar-heated soy dairy. They make tofu and soy ice cream. Partial funding comes from Canadian International Development Agency (CIDA). A promising, original concept and model for taking soybeans and soyfoods to Third World countries.

March 10. Tempeh Production by Shurtleff and Aoyagi published by The Soyfoods Center.

March. Trader Vic (Bergeron), internationally famous San Francisco restaurateur, publishes a poster titled "Put a Little Tofu in Your Life," containing a lovely Polynesian girl and names of tofu recipes served at his restaurants. Three major newspaper stories on his tofu cuisine follow.

March. Soja Soyfoods Cafe opens in Toronto, Canada.

March. Hip Pocket Tofu Deli and Rainstar, a distributor of soyfoods, open at same location in Columbus, Ohio.

March. A second commercial source of tempeh starter culture is now available from Ann Arbor Biological Supply and GEM Cultures, run by Gordon McBride and Betty Stechmeyer.

April. "Climbing Curd," an article on tofu, published in Time magazine, as a result of the New England Soy Dairy Press Conference in February.

May. New England Soy Dairy puts Numu brand soymilk on the market after 2 years of product development. It is quickly withdrawn and dropped, due to short shelf life.

May 5 -June 9. Shurtleff and Aoyagi do Soyfoods America Tour: 20 public programs, 30 media interviews, and 5,800 miles of driving to promote and teach about tempeh and tofu. Ends in Champaign, Illinois where Shurtleff attends the INTSOY Short Course on Soybean Processing for 2 months.

May. Gary and Chandri Barat start selling soyfoods (Whipped Tofu Mousse Pie, Tofu Muffins, Tofu Spinach Quiche) at street fairs in New York City under the name Legume. During 1980 both Legume and Quong Hop & Co. in South San Francisco introduce tofu quiches (both sold frozen); these are America's first tofu entrees to be sold frozen.

June. "Tofu" by Nancy DeRoin published as a cover story by *Cuisine magazine.*

June. U.S. Supreme Court rules that man-made organisms created by genetic manipulation can be granted copyright protection. This ushers in a new era of research on and commercialization of soybean varieties by private companies.

June. INTSOY and Land of Lincoln Soybean Farmers establish International Soybean Institute, headed by Russ Odell, to expand soybean utilization overseas.

June. American Soybean Association's *Soya Bluebook*

publishes its first information on the new wave of U.S. soyfoods producers.

July. *Das Miso Buch* (The Book of Miso), by Shurtleff and Aoyagi published in German by Ahorn Verlag.

July 9-13. Third Annual Soycrafters Conference at the University of Illinois. Organized and financed by Richard Leviton. 270-285 attendees from 10 foreign countries. Very successful, with a profit of $7,000. Third issue of Soyfoods magazine published by Leviton. A new Board of Directors is elected with Luke Lukoskie as chairman.

July. Mark Brawerman starts Jolly Licks (later renamed Pacific Trading Co.), a soyfoods marketer-distributor, in San Francisco. First product is soymilk ice cream. Quickly expands to tofu cheesecakes, tofu tamales, etc. Best existing model of this new concept.

Aug. 15. Archer Daniels Midland Co. enters the soy protein isolate market with its purchase of Central Soya's isolate plant.

Aug. Wildwood Natural Foods, Inc. formed in Fairfax, California. Original owners are Paul Duchesne, Paul Orbuch, Bill Bramblett, and Frank Rosenmayr. They do very creative work with prepared, convenience tofu products, such as sandwiches and salads.

Aug. *Tofu: Everybody's Guide,* by Stephen Cherniske published by Mother's Inn Center for Creative Living.

Aug. *The Soy of Cooking,* by Norton and Wagner self-published.

Aug. 20. "Tofu Gaining Popularity as a Cheap Protein Source," by Sylvia Porter published in the *Washington Post.* This is the earliest known publication to mention David Mintz's work with tofu. It describes the numerous deli products he makes from tofu. Ice cream is not mentioned.

Sept. 3. "Tofu: Trader Vic's Creativity Americanizes an Asian Staple" by Harvey Steiman published in San Francisco Examiner. Trader Vic is one of America's foremost restaurateurs.

Sept. Richard Leviton (Soyfoods Association) and Thelma Dalman (food service director for Santa Cruz city school system) lobby for tofu in Washington, D.C. USDA grants 1-time approval for a test program using tofu in Santa Cruz County School Lunches. But this failed to set a national precedent.

Sept. Soyfoods Association board holds first meeting in Colrain, Mass. Plans fund raising program that fizzles.

Sept. 17. New-Age Foods Study Center (run by Shurtleff & Aoyagi) changes its name to The Soyfoods Center. Creates new logo and letterhead.

Sept. 24. "A Couple on a Tofu Mission in the West" (about William Shurtleff and Akiko Aoyagi) by Lorna Sass, published in The New York Times.

Oct. First issue of *The Beanfield* (named after a chapter in *Walden* by Henry David Thoreau) a monthly soyfoods newsletter, published by Leviton. Name changed to *Soyfoods Monthly* in March 1982.

Oct. Tofu and The Bountiful Bean Plant in Madison, Wisconsin are on the Today Show for 2 minutes. This TV segment is aired 2-3 times.

Oct. 13. "With his Book on Tofu William Shurtleff Hopes to Bring Soy to the World" by Dianna Waggoner published in *People* magazine (circulation 3.4 million). The same issue noted: "Model Cheryl Tiegs" has been eating tofu for several years and gives it some of the credit for helping her to lose 35 pounds in 1972. Her favorite recipe for Oriental Pudding (with "1 block tofu (4 ounces)") is published.

Oct. Severe nationwide shortages of peanuts and peanut butter. Soyfoods producers miss a golden opportunity to make and sell soynut butter.

Nov. 9-14. World Conference on Soya Processing and Utilization held in Acapulco, Mexico, organized primarily by the American Soybean Assoc. 1,100 participants from 35 nations; of these approximately 300 registrants and 250 student attendees were from Latin America. Proceedings published in March 1981 issue of Journal of the American Oil Chemists' Society. Leviton attends and mans a SANA booth, but is not invited to speak.

Nov. Soyfoods Center publishes three pamphlets on soyfoods in Spanish: *Que es el Tofu? Que es el Tempeh? Que es el Miso?*

Nov. *East West Journal* and Michio Kushi stop misusing the term "tamari" and start using the proper term, shoyu or "natural shoyu."

Dec. The Soyfoods Center and Soyfoods magazine merge and computerize their mailing lists of people and organizations world wide actively interested in soyfoods. 5,000 names now on list. Soyfoods Center pays all costs of computerization. By mid-1981 there were 10,600 names in 50 categories. List is available for rent.

Dec. Farm Foods starts national ad campaign for Soy Ice Bean with full-page color ads in national magazines: New Age, Whole Foods, East West Journal, and Vegetarian Times.

Dec. First branch of the International Soyfoods Center Network starts in Sweden, run by Ted Nordquist. Headquarters are in Lafayette, California.

Dec. *The Tofu Primer* by Juel Andersen published by Creative Arts.

Dec. Soymilk viili first made (on a home scale) by Gordon McBride and Betty Stechmeyer of GEM Cultures in Fort Bragg, northern California. This cultured milk product, similar to the traditional Finnish dairy product, has a thick consistency almost like honey.

Dec. New England Soy Dairy becomes the first of the new generation of Caucasian-run tofu companies to top $1 million in annual sales (they hit $1.2 million). With only 6 workers in the plant, they are making $4,000 profit per month during the last quarter.

* In Diamond v. Chakrabarty, the U.S. Supreme Court upholds by 5 to 4 the patentability of genetically

altered microorganisms, opening the door to greater patent protection for any modified life forms.

3389. Allred, Paul. 1980. Re: Work with soymilk and Loma Linda Foods. Letter to William Shurtleff at Soyfoods Center, Dec. 2 p. Typed, with signature on letterhead.
• ***Summary:*** "I became interested in the soybean potential at the World's Fair in Chicago in 1934 when Henry Ford displayed all of the parts that he made from the soybean. They... made gear shift knobs to sell. This made quite an impression on me and I bought one of the knobs. Later around 1940 I learned of the work Harry Miller was doing and followed his work through the years and became personally acquainted with him. I began to experiment with soy milk as early as 1940 and at present am with Loma Linda Foods still experimenting." Address: California.

3390. Bau, H.M.; Debry, G. 1980. L'art de l'utilisation du soja: Habitudes et traditions [The art of soya utilization: Customs and traditions]. *Cahiers de Nutrition et de Dietetique* 15(4):277-84. Oct/Dec. [40 ref. Fre; eng]
• ***Summary:*** "For many centuries, soybeans have meant meat, milk, cheese, bread, and oil to the people of Asia. Because of their great food value, they not only have long had a definite place in the oriental diet but now belong in the diet of America and of the entire world. In Europe, the use of soybean products in the quotidian diet is still limited, however it is sure that they will be an important factor in the balanced diet of the future."

Note 1. Soyfoods Center has a 16-page English-language translation of this article.

Note 2. *Webster's Dictionary* defines quotidian (derived from the French *quot* = as many as + *dies* = day) as "occurring every day." Address: University of Nancy, France.

3391. Fernando, L.H. 1980. Cereals and pulses as sources of food. *Alafua Agricultural Bulletin* (*Apia, Western Samoa*) 5(4):12-14. Oct/Dec. [3 ref]
• ***Summary:*** "In terms of edible dry weight more than two-thirds of the world's nutritional requirements of human food is supplied by the cereals. Of the proteins supplied, half is contributed by the cereals, as compared with less than one-third from animal sources. The rest of the proteins for humans is derived largely from pulses.

"Cereals and pulses are therefore important in human nutrition. For this reason their possible value supplementing root crops in the South Pacific is worthy of consideration. At the outset, however, I should acknowledge traditional attitudes to cereals and pulses in this region and possible causes underlaying apparent indifference to these foods in countries other than Fiji... Pulses such as soyabean, peanut, pigeon pea, cowpea and winged bean are promising, except that crops such as peanut are eaten by rodents before harvest. The pulses will supply much needed protein, cheaper than from animal sources." The author then discusses three cereals (maize, sorghum, and rice) and four pulses (soyabean, peanut, winged bean, and cowpea).

Concerning the soyabean: It "is the most important of the pulses, followed by the peanut... There is a range of soyabean varieties and some of these are well adapted to tropical conditions. A few varieties have been grown very successfully at the University of the South Pacific School of Agriculture at Alafua in 1979 and experiments are being continued. The crop takes three months from sowing to harvest, the plant sheds its leaves, and the stem with the pods can be uprooted. Cultivation is easy, and like other legumes, nitrogen-fixing bacteria of the Rhizobium type that are found in the root nodules are able to fix atmospheric nitrogen, thus saving expenditure that would otherwise be necessary for nitrogenous fertilizer. Soyabean is now the most important source of vegetable oil; soyabean milk is a substitute for cows milk, particularly where cattle rearing is not a practice. After extraction of oil, the residual cake is a high-protein food or feed." Also discusses: Peanut, winged bean, and cowpea.

Note: This is the earliest document seen (March 2010) concerning soybeans in Samoa (formerly Western Samoa), or the cultivation of soybeans in Samoa. This document contains the earliest date seen for soybeans in Samoa (April 1979), or the cultivation of soybeans in Samoa (1979, probably in about April). The source of these soybeans was Sri Lanka. In April 1979 L.H. Fernando brought 3 varieties of soyabeans (Bragg, PB1, and Improved Pelican) from Sri Lanka to Western Samoa. Address: Head, Crop Production Dep., USP [Univ. of the South Pacific] School of Agriculture, Box 890, Apia, Western Samoa.

3392. Tofu Shop (The). 1980. December. New soyfoods restaurant or deli. 768 18th St., Arcata, CA 95521.
• ***Summary:*** Matthew Schmit. 1981 Feb. 13. "Fresh tofu comes to Northern Cal." "The Tofu Shop of Arcata, California, officially opened its doors on December 12, 1980..."

Questionnaire filled out by owner of restaurant or deli. 1982. Restaurant opened for business in Dec. 1980. Lists the company's most popular soy-based menu items in descending order of popularity: 1. Tofuburger (authentic). 2. Tofu-vegetable sushi rolls. 3. Tofu spinach turnovers. 4. Tofu pumpkin pie. 5. Tofu cream pie. 6. Tofu vegetable patties. 7. Tofu tahini salad. 8. Tofu potato salad. 9. Carob soy pudding. 10. Happy-dragon soydrink. The highest weekly total sales over the past 6-2 months: $1,200 in Oct. 1981 because of deli expansion and return of students to Humboldt State. The average weekly deli sales during this period: $850. Note: The company also sells $850/week wholesale. Average hourly wages paid to workers: $3.50. The business startup cost (amount of money it cost to get the business started):

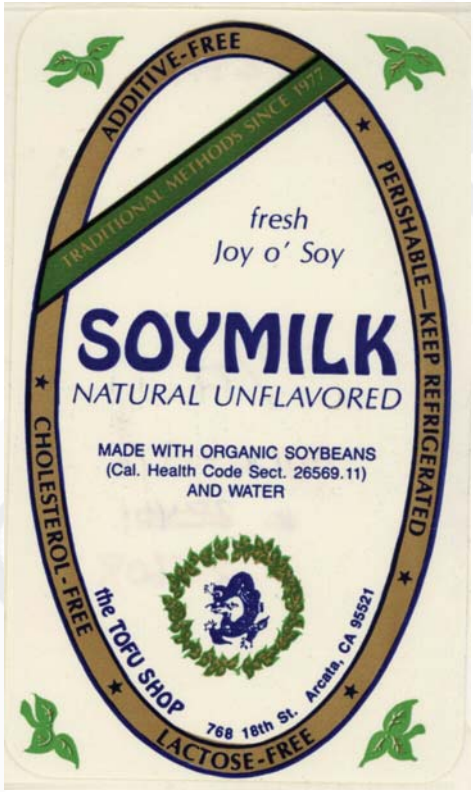
$11,000. Current profitability status: Profitable. Plans for the future: Deli display cooler, steam table for hot food, tempeh production. Advice the owner would give to someone starting a similar business: Choose the perfect community. Prepare a detailed business prospectus. Obtain sufficient capital (plus some extra). Prepare for at least one year of double-time work. Love soyfoods. Be professional. Other: "Our goal has been to develop a model for the 'all-American neighborhood tofu shop,' which produces its own fresh tofu and other soy products; where the neighbor down the street can grab a quick bite on the run, or pick up staple groceries (tofu, soymilk, soy margarine, bread, etc.) for home cooking. A large portion of our business is from people who walk to our shop. A balance of wholesale / retail and deli foods / groceries makes small scale tofu production feasible."

Shurtleff & Aoyagi. 1982. Report on Soyfoods Delis, Cafes & Restaurants. p. 3. Started in Dec. 1980 by Matthew & Suzanne Schmit, who formerly ran Far Pavilions in Telluride, Colorado.

Packet from Matthew Schmit. 2002. Sept. 24. He encloses three original, undated menu leaflets, all vegetarian: (1) Earliest, printed in about 1982, is dark blue ink on tan paper. 3 panels each side, each panel 22 x 9 cm. The menu is on the inside 3 panels. On the 1st panel: Welcome! The Tofu Shop Deli and Grocery. A nice (3 by 2¼ inch) illustration of "The Tofu Shop Specialty Grocery and Deli" appears in the center. "We make our own tofu fresh daily..." (2) Similar. Printed in about 1987. Blue ink on light beige paper. Prices have risen a little. (3) Larger. Printed in about 1992, green ink on beige recycled paper, 8½ by 14 inches, folded into 4 panels on each side. More menu items in these categories: Green salads. Deli salads. Tofu salads. Burgers. Sandwiches. House specialties. Soups & sides. Beverages. Tofu cold-cuts. Address: Arcata, California.

3393. **Product Name:** Carob-Soy Pudding.
Manufacturer's Name: Tofu Shop (The).
Manufacturer's Address: 768 18th St., Arcata, CA 95521.
Date of Introduction: 1980. December.
Ingredients: Tofu, carob, honey, soymilk, walnuts, coconut, spices.
Wt/Vol., Packaging, Price: 8 oz.
How Stored: Refrigerated.
New Product–Documentation: Leaflet 1980, undated. "New deli foods from The Tofu Shop" (768 18th St., Arcata, California 95521). "Your local soyfoods producer." In the upper left corner is a dragon in a round circle. In the lower right is a little man whose body is a paper deli takeout container; he has two arms and two legs, and is wearing a top hat.

3394. **Product Name:** Fresh Joy o' Soy Soymilk [Natural Unflavored].
Manufacturer's Name: Tofu Shop (The).
Manufacturer's Address: 768 18th St., Arcata, CA 95521.
Date of Introduction: 1980. December.
Ingredients: Organic soybeans (California Health Code, Sect. 26569.11), and water.
Wt/Vol., Packaging, Price: Pint or quart plastic bottles.
How Stored: Refrigerated.



New Product–Documentation: Leaflet 1980, undated. "New deli foods from The Tofu Shop" (768 18th St., Arcata, California 95521). "Your local soyfoods producer." In the upper left corner is a dragon in a round circle. In the lower right is a little man whose body is a paper deli takeout container; he has two arms and two legs, and is wearing a top hat. Pints or quarts.

Label. Received July 1988. 2.5 by 4 inches, vertical oval. Self adhesive. Gold, blue, and green on white. "Fresh Joy o' Soy Soymilk. Natural Unflavored." "Additive-Free. Traditional Methods Since 1977. Cholesterol-Free. Lactose Free." Address: 768 18th St., Arcata, California 95521.

Note: This is the company's 2nd and nicest soymilk label in Arcata; it was first used in 1983 The first (sent by Matthew Schmit in March 2009), which first appeared in Dec. 1980, was round, 3 inches in diameter, green and yellow on white. A large, horizontal, white oval in the middle enabled the product name ingredients, and volume to be stamped on in blue ink, as follows: "Fresh Joy O' Soy. Ingredients: Water, organic soybeans. 16 Fluid ounces (1 pint)."

As of 2002, the unflavored soymilk is sold in pints, quarts, half gallons, and gallons.

3395. Tofu Shop (The). 1980. New deli foods from The Tofu Shop (Leaflet). Arcata, California. 1 p. Single sided.
• ***Summary:*** Across the bottom is written: "Your local soyfoods producer." In the upper left corner is a dragon in a round circle. In the lower right is a little man whose body is a paper deli takeout container; he has two arms (with white-gloved hands), two legs (with white spats and black shoes), and is wearing a top hat.

The top half of this leaflet reads: "Dear friends and customers, We hope you'll try our new, ready-to-eat deli foods! They're all made with our traditional-style tofu. Each item is tasty, low in calories, and cholesterol free. And of course, they're all packed with high quality protein.

"Every tofu shop deli product you order is custom-made just for you, and delivered fresh to the northcoast cooperative warehouse in Eureka. This means a high quality product for your customers, and a good shelf life for you.

"You can help by keeping these fresh foods well refrigerated (34-37ºf) and observing the pull date on each label. Thank you.

"Happy eating, The Tofu Shop

"P.S. Just a note about our tofu! It's handmade right here in northwestern California, shipped fresh, and our traditional slow-cooking technique gives it a sweet, delicate taste."

On the bottom half are listed (with ingredients and weights, but without prices) soy products made by the company: Tofu: 14 oz. 14 oz package, or 10 lb bulk. Soymilk: Unflavored pints or quarts. Salads (8 oz): Potato-Tofu Salad, Tahini-Tofu Salad, Tofu Egg(less) Salad. Desserts (8-10 oz): Carob-Soy Pudding, Cocoa-Carob Creme Pie, Pina-Colada Creme Pie, Pumpkin-Tofu Pie. Address: 768 18th St., Arcata, California 95521.

3396. Tofu Shop Deli & Grocery. 1980. Welcome to the Tofu Shop (Sign). 768 18th St., Arcata, CA 95521.
• ***Summary:*** Sign (8½ by 11 inches, in black calligraphy on white) sent by Matthew Schmit 2002 Sept. 24. It was located inside the Tofu Shop. "A blending of the delicatessens of the West with the tofu shops of the Orient. We produce tofu, soymilk and other soyfoods using traditional methods and demonstrate how these versatile foods are adapted to the Western Diet. Try our take-out deli. We use the finest ingredients which are often organic and locally produced. Browse our shelves for specially chosen condiments and grocery items to tastefully enhance your own homecooking with soyfoods. Thank you for you patronage." Address: Arcata, California. Phone: 707-822-7409.

3397. **Product Name:** Soymilk [Plain], and Soysage.
Manufacturer's Name: Central Soyfoods.
Manufacturer's Address: 11 W. 14th St., Lawrence, KS 66044. Phone: 913-843-0653.
Date of Introduction: 1980.
Wt/Vol., Packaging, Price: Soymilk: Glass jar. Later in ½-gallon plastic bottle.
How Stored: Refrigerated.
New Product–Documentation: Talk with Jim Cooley of Central Soyfoods. 1989. Feb. 16. The original plain soymilk had nothing added. It is presently sold only from the shop. Competition from Tetra Pak soymilks has hurt his sales. In March 1990 the company was selling only 10 gallons/week of soymilk and only directly out of the shop. It retailed for $1.80 per half gallon.

3398. Chaij-Rhys, S. 1980. A diet pattern for total vegetarians. *Adventist Review* (*Hagerstown, Maryland*) 157:1014-15. *
• ***Summary:*** This food guide was prepared specifically for vegans, especially vegan Seventh-day Adventists. An attractive feature of this guide is its use of a simple numerical formula to help the user remember serving recommendations. The plan calls for 1 daily serving of nuts, seeds, or legumes; two servings of fortified protein-rich foods such as fortified soymilk or meat analogs; three servings of vegetables; four servings of fruit; and five servings of grains and cereals.

3399. Chen, Steve. 1980. Nutrition and production of soymilk. Paper presented in Bangkok, Thailand. Taipei, Taiwan: American Soybean Assoc. 10 p. [4 ref. Eng]
• ***Summary:*** Contents: Introduction: Commercial products mentioned include President and Wei-Chuan in Taiwan; Vitamilk in Bangkok (Thailand); Magnolia, Bonus, Yeo Hiap Seng, and Drinho in Singapore and Magnolia. Nutrition of soymilk: Composition of soybeans, antinutritional factors, composition of soymilk. Production of soymilk: Purposes of soymilk production, varieties of soymilk, basic steps of soymilk production, beany flavor of soymilk, production methods, soymilk quality standards. Conclusions. Address: American Soybean Assoc., Taiwan.

3400. **Product Name:** [Soymilk (Plain, Vanilla, Coffee)].
Foreign Name: Tônyû (Banira, Koohii).
Manufacturer's Name: Chiba Seisen Shokuhin Kogyo. (Chiba Fresh Foods Manufacturing Co., Ltd.).
Manufacturer's Address: 1788 Mizunuma Chonan-machi, Chosei-gun, Chiba-ken 297-01 Japan.
Date of Introduction: 1980.
New Product–Documentation: Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Chiba Seisen Shokuhin Kogyo first made commercial soymilk in Japan in 1980.

K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. This company introduced Tônyû, Tônyû Banira, and Tônyû Koohii in 300 ml puroo packs. No date of introduction is given. packs.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64.

3401. **Product Name:** Soy Drink (Soymilk).
Manufacturer's Name: Denver Tofu Co.
Manufacturer's Address: 6150 N. Federal Blvd., Westminster (N. Denver), CO 80221. Phone: 808-538-1305.
Date of Introduction: 1980.
New Product–Documentation: Talk with Haru Yamamoto. 1988. Aug. 25.

3402. **Product Name:** Soy Ice Bean (Named Soy Ice Bean from mid-1979 to early 1982. Honey Sweetened) [Honey Vanilla, Carob, Strawberry, Orange, Banana, Chocolate, Wildberry, Mocha, or Peanut Butter Carob Chip].
Manufacturer's Name: Farm Foods.
Manufacturer's Address: 156 Drakes Lane, Summertown, TN 38483.
Date of Introduction: 1980.
Ingredients: Almond Espresso: Water, soy powder [powdered soymilk], honey, soy oil, almonds, pure coffee concentrate, soy lecithin, locust bean gum, guar gum, Irish moss.
Wt/Vol., Packaging, Price: 16 fluid oz (1 pint) carton.
How Stored: Frozen.
New Product–Documentation: Labels. Brown and white on orange wood motif. "Serve soft for full flavor. Non dairy frozen dessert."

Ad in *Whole Foods.* About 1980-81. p. 69. "Farm Foods Soy Ice Bean. The completely vegetarian frozen dessert." Note: The powdered soymilk in this product was made by Loma Linda Foods in Mt. Vernon, Ohio. Shurtleff and Aoyagi. 1985. *Tofutti and Other Soy Ice Creams.* p. 46-47.

3403. **Product Name:** [Soyatole Soymilk].
Foreign Name: Soyatole.
Manufacturer's Name: Industrial de Alimentos S.A.
Manufacturer's Address: 146 Poniente 789, Col. Ind. Vallejo, Mexico 17, DF, Mexico.
Date of Introduction: 1980.
New Product–Documentation: Soya Bluebook. 1980. p. 51; 1982. p. 63.

3404. **Product Name:** Island Spring Soymilk (Flavored) [Raspberry, Orange, Vanilla, Coffee].
Manufacturer's Name: Island Spring, Inc.
Manufacturer's Address: P.O. Box 747, Vashon, WA 98070.
Date of Introduction: 1980.
Ingredients: Raspberry: Soy milk with mixed fruit concentrate and raspberry concentrate.
Wt/Vol., Packaging, Price: 8 fluid oz (236 ml) plastic jar.
How Stored: Refrigerated.
New Product–Documentation: Labels. 1980. 5.5 by 1.75 inches. Self adhesive. Raspberry is black and white on raspberry. Orange flavor is black and white on orange. "100% Non-Dairy. No sugar. No preservatives." Talk with Luke Lukoskie. 1987. Oct. 19. Island Spring Inc. Fact Sheet and Price List. 1988. This product is still being sold. Now called "Soymilk" and sold 16 quarts or 9 half gallons to the case. Form filled out by Yvonne Kuperberg. 1988. Oct. 1. Gives flavors. Not currently produced.

3405. Itona Products Ltd. 1980. The story of a milk that isn't (Leaflet). Wigan, England. 4 panels each side. Each panel: 23 x 10 cm.
• ***Summary:*** Other products include brown rice pudding, soya custard, Granymels, Noot Bar. Address: Leyland Mill Lane, Wigan, England.

3406. Itona Products Ltd. 1980. Itona health foods take the biscuit! (Catalog). Leyland Mill Lane, Wigan, Lancashire, England. 6 p.
• ***Summary:*** The following soyfoods are listed with photos of most labels: Golden Archer brand Soya Plantmilk, Brown Rice Pudding, Beanmilk Custard. Granny Ann brand High Fibre Biscuits, Noots (roasted salted soya beans), Noot Bar, Beanmilk Chunky Bar. Itona TVP, Beef flavoured mince, or chunks, Natural chunks, Tonabanga, Tonaburga, Tona 'C' Food (like seafood). Address: Wigan, England.

3407. **Product Name:** Lactasoy (U.H.T. Soymilk/Cow's Milk Blend).
Manufacturer's Name: Kickapoo (Thailand) Co. Ltd.
Manufacturer's Address: 3532 Sukhumvit Rd., Bangna, Bangkok 26, Thailand.
Date of Introduction: 1980.
Ingredients: 1989: Soybean 10%, sugar 7%, whole milk powder 2.5%, vegetable fat 1.7%.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton. Later 250 ml. Retails for 5.50 bhat (1984).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Soya Bluebook. 1982. p. 78. "Lactasoy." Tetra Pak Co. 1983. Brochure. Packaged in Tetra Brik Aseptic 250 ml. at top of front panel: "Supplementary Food." Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 105, 121.

A photocopy of a page from a market study of unknown origin, sent by Anders Lindner. 1984. March 9. Lactasoy, is made by Kickapoo Thailand Co. Ltd. in a plant with a production capacity of 4,000 liters/hour (UHT). It is packaged in Tetra Packs and can be classified as a milk product that is in competition with UHT milk.

Photocopy of Label sent by Anders Lindner. 1989. "Supplementary food."

Letter from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30. Alfa-Laval sold a complete soymilk plant to Kickapoo in Thailand. It had a capacity of 4,000 liters/hour and began operation in 1980.

Label sent by Claire Wickens from Thailand. 1994.

June 15. 250 ml. Blue on white. Ingredients: Soybean 10%, sugar 7%, whole milk 2.5%, vegetable fat 1.7%. The product is now packed in a Combibloc carton. The address has not changed.

3408. **Product Name:** Bottled Soymilk.
Manufacturer's Name: Matsuda-Hinode Tofu Co.
Manufacturer's Address: 526 Stanford Ave., Los Angeles, CA 90013.
Date of Introduction: 1980.
Wt/Vol., Packaging, Price: Bottle.
New Product–Documentation: Soya Bluebook. 1980. p. 50.

3409. **Product Name:** Vito or Vita (Powdered Soymilk).
Manufacturer's Name: Nestlé Products (M) Ltd.
Manufacturer's Address: Malaysia or Philippines.
Date of Introduction: 1980.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 123. "By 1980 Nestlé was selling a powdered soymilk in Malaysia and the Philippines, brand named Vito or Vita, thus becoming the first company to market soymilk regionally in Southeast Asia."

Michael Loh. 1990. "An overview of export opportunities in the new markets." Filipro, Inc., which is the Philippines' licensee for Nestle S.A., reported increasing market acceptance of its re-launched powdered soya milk product Vita (chocolate flavor), and a soy-based baby cereal named Ceresoy.

3410. **Product Name:** Soymilk.
Manufacturer's Name: Pyung Hwa Food Co. Inc.
Manufacturer's Address: 2139 Dundas St., Toronto, ONT, M6R 1X1, Canada. Phone: 416-534-0237.
Date of Introduction: 1980.
Wt/Vol., Packaging, Price: 600 gm.
How Stored: Refrigerated.
New Product–Documentation: Talk with Jhasun Koo, owner and founder. 1989. May 4. He started making soymilk in 1980, but no longer makes it.

3411. Quong Hop & Co. 1980. Quong Hop. Quality soy foods since 1906. Now vacuum packed. Recipes inside (Leaflet). South San Francisco, California. 3 panels each side. Each panel: 22 x 9 cm.
• ***Summary:*** Contains 6 recipes, one for each of their products, with a color photo of each. The products are Soy Milk, Savory Baked Tofu, New Leaf Tofu Burgers, Fresh Tofu, Deep-Fried Tofu Cutlets, and New Leaf Tofu Dressing.

The top half of one panel shows an old black-and-white photo of two men standing in a Chinese food store, surrounded by wooden, boxes, sacks, and shelves. Plainly visible on the back wall is a wooden plaque with two large gold letters bearing the company name. [Note: In a 1986 leaflet from Quong Hop & Co. we are told that this photo was of "The Family Store, 1911"]. The Chinese characters for "Quong Hop" appear on the back wall. The text reads: "The traditional soy foods of China have been our family's business for three generations. Since 1906, when our doors opened in San Francisco's Chinese settlement, we have maintained a firm commitment to quality in every product we manufacture. In 1976, we were the first company to pioneer a return to the use of traditional, time-proven methods and completely natural ingredients in the commercial manufacturing of fresh tofu and soy milk. Today, our organic Nigari tofu is widely regarded as the finest made. To further develop the expanding soy foods marketplace, we are now offering a complete line of vacuum-packed soy products. Our historical commitment to quality and, more recently, to the adaptation of soy foods to the American marketplace, have

placed us at the forefront of the 'Soy Foods Revolution'. We offer a growing line of soy products based on Western Recipes, including Tofu, Burgers, Creamy Tofu Dressing, and soon Tofu Salad and other items." Address: 161 Beacon St., South San Francisco, California 94080.

3412. **Product Name:** Tofu Cutlets Marinara.
Manufacturer's Name: Quong Hop & Co.
Manufacturer's Address: 161 Beacon St., South San Francisco, CA 94080. Phone: 415-873-4444.
Date of Introduction: 1980.
Ingredients: Tofu cutlets (organic tofu, whole wheat flour, wheat germ, soy milk, safflower oil), tomato sauce (water, tomato paste, onion, spices, salt), cheese.
Wt/Vol., Packaging, Price: 10.5 oz.
How Stored: Frozen.
New Product–Documentation: Label. 1981. 3 by 2 inches. Self adhesive. Red and brown on white. Shurtleff & Aoyagi. "From the Soy Deli. New Leaf Quality Soyfoods." 1980. List of soyfoods products. Frozen entree. Talk with Ben Lee. 1988. Sept. 30. Introduced in 1980. Frozen.

3413. **Product Name:** Tofu Eggplant Marinara.
Manufacturer's Name: Quong Hop & Co.
Manufacturer's Address: 161 Beacon St., South San Francisco, CA 94080. Phone: 415-873-4444.
Date of Introduction: 1980.
Ingredients: Organic tofu, eggplant, breading (whole wheat flour, wheat germ, soymilk), safflower oil, tomato sauce (water, tomato paste, spices, salt), cheese.
Wt/Vol., Packaging, Price: 10.5 oz.
How Stored: Frozen.
New Product–Documentation: Label. 1980. 3 by 2 inches. Self adhesive. Red and orange on white. "From the Soy Deli." Baking instructions. Shurtleff & Aoyagi. 1980. List of soyfoods products. Frozen entree. Ad in Whole Foods. 1981. Sept. Talk with Ben Lee. 1988. Sept. 30. Introduced in 1980.

3414. **Product Name:** Dari-Pro Products (Isolated Soy Proteins Blended with Carbohydrates).
Manufacturer's Name: Ralston Purina Co.
Manufacturer's Address: Checkerboard Square, St. Louis, MO 63164.
Date of Introduction: 1980.
New Product–Documentation: Designed as a functional replacement for nonfat dry milk in specialized applications.

3415. **Product Name:** Brightsong Tofu Soysage (Meatless Okara-based Sausage).
Manufacturer's Name: Redwood Valley Soyfoods Unlimited.
Manufacturer's Address: P.O. Box 371, Redwood Valley, CA 94570.
Date of Introduction: 1980.
Ingredients: Okara, wheat germ, whole wheat flour, nutritional yeast, unrefined safflower oil, soymilk, shoyu, natural herbs and spices.
Wt/Vol., Packaging, Price: 1 lb units.
How Stored: Refrigerated.
New Product–Documentation: Label. 1980. 4 by 3.5 inches. Self adhesive. Black on white. "100% Vegetarian. To use: Remove lid, bake 350º / 40 minutes, or form patties or balls and cook. Pizzas too!" Ingredients: Okara, wheat germ, whole wheat flour, nutritional yeast, unrefined safflower oil, Soy Juice, tamari, natural herbs and spices.

Label. 1980. 5.5 by 4.5 inches. Paper. Red, black and blue on white. "New! A 100% vegetarian meat substitute. No preservatives or chemical additives. High protein and fiber, low calorie and fat. No cholesterol." Ingredients on label: Organic okara (soy fiber), toasted wheat germ, Red Star T-6635 nutritional yeast, organic whole wheat flour, safflower oil, well water, tamari, honey, garlic, onion, salt and other natural herbs and spices.

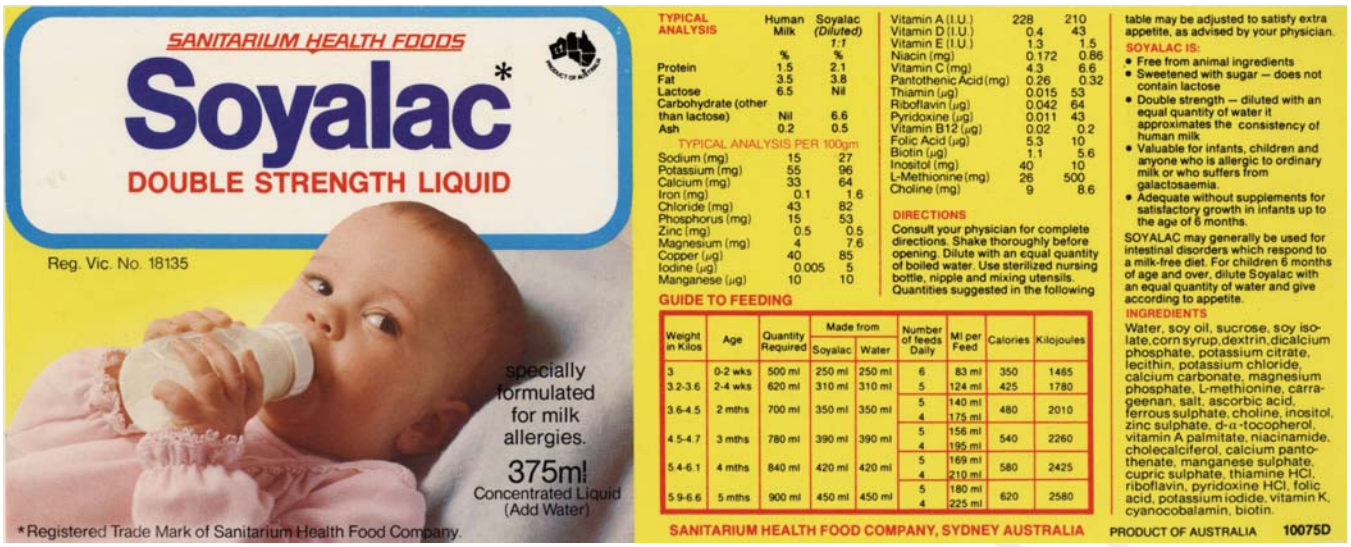
Label. 1981. 3 inches square. Self adhesive. Red and blue on white. "New! Just slice, heat and eat!" Ingredients: Organic okara, organic whole wheat flour, toasted wheat germ, nutritional yeast, safflower oil, well water, shoyu tamari, honey, garlic and other natural herbs and spices. Label. 1981. 3.5 by 4 inches. Self adhesive. Red on white. "Pre-baked! Use on pizzas or burgers, fried or baked. Great scrambled with Missing-Egg Salad." Ingredients: Organic soy fines, organic whole wheat flour, peanuts, toasted wheat germ, nutritional yeast, soy oil, filtered water, real tamari, honey, garlic, salt and other natural spices.

Leviton 1981. Soyfoods. Summer. p. 42. "Weekly sales are 100 pounds."

Spot in Whole Foods. 1982. April. p. 60. "Convenience Soyfoods." Spot in Soyfoods. 1982. Summer. p. 56. "Prepared Tofu Salads and Desserts. Use as you would meat." 16 oz. portions.

Spot in Whole Foods. 1983. Nov. "Soysage Repackaged."

3416. **Product Name:** Sanitarium Health Foods Soyalac Double Strength Liquid (Soymilk).
Manufacturer's Name: Sanitarium Health Food Co.
Manufacturer's Address: 148 Fox Valley Rd., Wahroonga, N.S.W. 2076, Australia.
Date of Introduction: 1980.
Ingredients: Water, soy oil, sucrose, soy isolate, corn syrup, dextrin, dicalcium phosphate, potassium citrate, lecithin, potassium chloride, calcium carbonate, magnesium phosphate, L-methionine, carrageenan, salt, ascorbic acid, ferrous sulphate, choline, inositol, zinc sulphate, d-alpha-tocopherol, vitamin A palmitate, niacinamide, cholecalciferol, calcium pantothenate, manganese sulphate, cupric sulphate, thiamine HCL, riboflavin, pyridoxine HCl, folic acid, potassium iodide, vitamin K, cyanocobalamin,



biotin.
Wt/Vol., Packaging, Price: 375 ml can.
How Stored: Shelf stable.
Nutrition: Diluted 1:1: Protein 2.1%, fat 3.8%, carbohydrate other than lactose 6.6%, ash 0.5%.
New Product–Documentation: Soya Bluebook. 1980. p. 51. Letter from Sanitarium Health Food Co. 1981. Label. 10 by 3.5 inches. Full color with yellow background. Photo shows baby drinking from a bottle. "Specially formulated for milk allergies."

3417. Schugel, L.M. 1980. Recent calf milk replacer research. In: Minnesota Nutrition Conference. See p. 37-45. *

3418. **Product Name:** [Semper Tube Feeding Formula {Liquid, Based on Soy Protein Isolate and Milk Protein}].
Foreign Name: Sondnäring.
Manufacturer's Name: Semper AB.
Manufacturer's Address: Sektor Industri, Sveavagen 166, Box 231 42, S-104 35 Stockholm, Sweden. Phone: 08-7299700.
Date of Introduction: 1980.
Ingredients: Incl. soy protein isolate.
Wt/Vol., Packaging, Price: Cans.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Form filled out by Anders Eriksson. 1981. Nov. "The tube feeding formula is based on soy protein isolate and milk protein."

Talk with Leif Christensen of Semper. 1990. July 6. Followed by letter (fax) of July 10. From 1980 until the present Semper has introduced 3 varieties of Sondnäring liquid, partly based on soy isolate, UHT-sterilized, in cans packed under aseptic conditions.

3419. Singh, B.P.N. 1980. Soy milk powder plant and full fat soya flour plant. INTSOY Sri Lanka Soybean Development Programme. *
• ***Summary:*** Singh was in Sri Lanka from 5 March to 6 May 1980.

3420. **Product Name:** Procon CMR (Soy Protein Concentrate Calf Milk Replacer).
Manufacturer's Name: Staley (A.E.) Manufacturing Co.
Manufacturer's Address: 2200 E. Eldorado St., Decatur, IL 62525.
Date of Introduction: 1980.
New Product–Documentation: Manufacturer's catalog. 1980. Staley Protein Products. 100 lb of skim milk powder can be replaced with the following: Procon CMR 46.7 lb, Sweet whole dried whey 32.6 lb, choice white grease 16.0 lb, dicalcium phosphate 3.8 lb, dl-Methionine 0.4 lb, 1-Lysine 0.5 lb.

3421. Travaglini, D.A.; Aguirre, J.M. de; Travaglini, M.M.E.; Silveira, E.T.F.; Delazarim, I.; Figueiredo, I.B. de. 1980. [Manufacture of dried soymilk]. *Coletanea do Instituto de Tecnologia de Alimentos* (*Campinas*) 11:139-52. [22 ref. Por; eng]*
• ***Summary:*** The authors conducted pilot plant studies on the manufacture of spray-dried soymilk. The process is described. Address: Inst. de Technologia de Alimentos, Campinas, Sao Paulo, Brazil.

3422. **Product Name:** [Tofu, and Soymilk].
Manufacturer's Name: Unimave Tofu.
Manufacturer's Address: Rua Mouzinho da Silveira 25, 1200 Lisboa, Portugal.
Date of Introduction: 1980.
New Product–Documentation: Letter from Sjon Welters. 1982. April 16. "In Portugal some macrobiotic centres are busy in promoting soyfoods as part of the macrobiotic diet. They produce tofu and soymilk on a small scale. This macrobiotic centre is very active and did have a lot of

success and publications. A friend who studied at Manna for a while, José Parracho is planning to make tempeh and tofu in Portugal. The business will be Quinta da Portugesa in Setubal."

Letter from Miguel de Abreu in Belgium. 1989. Oct. 2. His profession is a natural foods, macrobiotic, vegetarian cook. He began in April 1978, when he started cooking at Unimave, a vegetarian macrobiotic cooperative in Lisbon, Portugal. "Around 1980 we started making tofu and soymilk at Unimave on a community scale... Today I am living in [Oostduinkerke] Belgium with my wife and we would like to start making tofu" and tofu products.

Note: This is the earliest known commercial soy product made in Portugal.

3423. **Product Name:** [Soy Bean Drink (Egg, Peanut, or Sesame)].
Manufacturer's Name: Wei-Chuan Foods Corp.
Manufacturer's Address: 125 Sunchiang Rd., Taipei, Taiwan. Plant at No. 518, Chung-Hsin Rd., Sec. 5, San-Chung City, Taiwan.
Date of Introduction: 1980.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Soya Bluebook. 1981. p. 61.

American Soybean Assoc. 1982. Checkoff Successfile. Taiwan #302. "Soymilk helps Taiwan bridge the nutrition gap." Wei-chuan Foods, a major Taiwanese food company, has initiated its own soymilk production within the last two years.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 96, 98. Taiwan's largest producer of dairy products is its second largest producer of soymilk. Photocopy of Label sent by Anders Lindner. 1989. Illustration on the front panel of one carton shows a smiling Bugs Bunny type rabbit, and on another carton is a Mickey Mouse. Text in Chinese.

3424. **Product Name:** [Wei-kan Soy Bean Drink].
Manufacturer's Name: Wei-kan Co.
Manufacturer's Address: Taiwan.
Date of Introduction: 1980.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: American Soybean Assoc. 1982. Checkoff Successfile. Taiwan #302. "Soymilk helps Taiwan bridge the nutrition gap." The Wei-kan Co., a major Taiwanese food company, has initiated its own soymilk production within the last two years.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 96. Color photo sent by Anders Lindner of STS. 1987. Nov. 14. Red and blue on white.

3425. Bahna, Sami L.; Heiner, Douglas C. 1980. Allergies to milk. New York, NY: Grune & Stratton. 202 p.

• ***Summary:*** "The demand for wet nurses grew considerably during the 17th and 18th centuries. Women of high social level in European countries increasingly wanted to use surrogate breast-feeding, claiming that breast-feeding might ruin their figures or impair their health. As Wickers implied, perhaps the greatest force behind the declining popularity of nursing among the well-to-do was that it interfered with the mother's participation in social activities. Animal milk for infant feeding rose in popularity about the middle of the eighteenth century, with a preference of ass's and goat's milk over cow's milk.

"At the beginning of the twentieth century, reports of milk allergy began to appear in the German medical literature... Reports in the British literature did not appear until the 1940s. Since then, increasing numbers of physicians have become aware of the condition, and a spate of articles has been published confirming that cow's milk allergy is a real problem, that it can involve several systems of the human body, and that it may be manifest in a wide variety of symptoms and signs." Address: 1. Asst. Prof. of Pediatrics, Louisiana State Univ; 2. Prof. of Pediatrics, UCLA.

3426. Billoni, Mike. 1980. Thirty years below zero. Buffalo, New York: Rich Products Corp. 149 p. Unpublished manuscript. 28 cm.
• ***Summary:*** A colorful history of Bob Rich and Rich Products. Contents: 1. Introduction. 2. Early years. 3. Early athlete (football). 4. Coach. 5. Marriage (to Janet). 6. Wilber Farms Dairy. 7. War Food Administration (and Henry Ford's work with soy). 8. Growth of [soy-based] whip topping. 9. The institutional customer. 10. Aerosol cans. 11. Eclairs. 12. Bobby (Robert Edward Rich Jr.). 13. Jones-Rich (in 1960 Rich and Wilber Farms Dairy acquired the R.W. Jones Dairy; the combination was the largest dairy in Buffalo, New York). 14. Coffee Rich (and Rex Diamond, including the reason that Bob Rich felt he had no choice, in 1964, to terminate Rex Diamond. The U.S. Food and Drug Administration had ruled that sodium caseinate was not a dairy product, "even though it originally may have been derived from skim milk solids." Coffee Rich was the "first non-dairy frozen coffee creamer in the world"), 15. Ellis Arnall (fighting lawsuits by the dairy industry against Rich's dairylike products and winning every one!). 16. Acquisitions.

"Ford believed the cow should be replaced and set up the George Washington Carver laboratory for experiments with the soybean.

"These experiments resulted in a soybean milk which was supplied to Ford Hospital. The purchasing agent invited Rich to visit the laboratory and he readily accepted. It was in the laboratory where he met the laboratory manager, Holton 'Rex' Diamond, who showed Rich the continuous soybean extraction system the Ford Company patented.

"When Rich told Diamond of his interest in manufacturing a soybean cream, with emulsifiers added,

that could be whipped, Diamond suggested he contact the Ford Motor Company to obtain the rights to their continuous extraction system.

"Diamond told Rich that Mr. Ford was not interested in seeing the use of soybean milk products expanded but that Ford Motor Company would grant him the rights to their 'Rube McNutt' [sic, Rube Goldberg or Boob McNutt] system for $1.

"When Rich returned to Buffalo that weekend, he visited with his friend, Dr. Alexander Schwarcman, who was director of research at the Spencer Kellogg Company. Dr. Schwarcman was most enthusiastic about the idea of a whipping cream from an all-vegetable source.

"Rich continued working as the Milk Market administrator for the state of Michigan but on his return to Buffalo every weekend, he spent more time overseeing the development of his soybean cream project than he did on his Wilbur Farms Dairy operation.

"'When we realized we had something here I wrote the Ford Motor Company asking for the patent rights, which I had been told were readily available, but I did not receive an answer,' Rich recalled."

Ford's general consul told rich that Ford did not want to be responsible for creating competition for America's dairy farmers. Rich took that news to Howard Faust in Buffalo; Faust told Rich that he thought they could extract the protein from the soybean using a batch system–which meant (if it worked) he would not need the Ford patent.

The system designed by Faust extracted 68% of the protein from the soy flakes, whereas Ford's continuous process extracted only 32%–a huge improvement.

"Realizing he was on to something big, Bob Rich Sr. incorporated Rich Products in November 1944. His 12-truck garage behind the Wilber Farms building was converted into a laboratory and a production plant for a non-dairy whipping cream while a nearby city-owned piece of property was leased to house the trucks of the dairy.

"In January 1945, Rich Sr. resigned his position as Michigan's Milk Market administrator to return to Buffalo to devote all of his time to this new breakthrough in the dairy business."

Bob Rich's father, who had been a dairyman all of his life, thought his son's new venture was "nonsense." But Bob Rich's wife noted: "He has always had an incredible drive and a keen foresight to see a light at the end of the tunnel. He knows what he wants to achieve in everything he does. That has proven to be a real gift" (p. 7-6 to 7-8).

"The industry founded by Robert E. Rich Sr. on April 1, 1945, owes its inception to the food restrictions and government red tape imposed by World War II conditions... Sales of whipping cream were forbidden during the war. So Bob Rich Sr. went to the soybean to find a replacement."

Rich recalls: "Our first production run of whip topping was on March 30, 1945, and we sent it out to our Wilbur Farms Dairy retail customers, with a note attached. 'The miracle cream from the soybean.'" This cream was "much less expensive, would last longer, and whip better."

By the late 1940s Reddi-wip. sold in an aerosol can, had become a big competitor. By 1952 Rich products had eight salesmen in the field. On Saturday mornings Rich would meet in his office with his Whip Topping team: Jerry Hannon, Herb Kusche, Joe Robida, Rex Diamond, and Ed Andrews (p. 10-6).

Pete Slaughter, a Rich salesman from Texas, found a remarkably simple way to demonstrate grocery store to buyers that Rich's Whip Topping superior to Sta-Wip, made by the Reddi-Wip company. He simply sprayed each onto a separate blotter. The Sta-Wip was absorbed into the blotter whereas the Whip Topping stood up in a nice mound (p. 10-8 to 10-9). Address: Buffalo, New York.

3427. Binding, G.J. 1980. About soya beans: Wonder source of protein and energy. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. and New York: Pyramid Books. 64 p. 18 cm. 1st ed. 1970. About series, no. 35.
• ***Summary:*** Contents: 1. Beans in general. 2. History of the soya bean. 3. Content of soya beans. 4. About lecithin–vital for retaining youth. 5. The soya bean in the Far East. 6. American influence on the soya bean. 7. Industrial uses in America. 8. The soya bean and world food shortage. 9. Soya bean recipes.

A section titled "Wonder food–God's gift to man" (p. 10) states: "For over 5,000 years this tiny seed has been the staple food of certain parts of the East, including North China, Japan, Korea, and some areas of India. The ancient Yogis, who were among the world's first vegetarians, placed great faith in the soya bean as a supplement to their meatless diet." On the cover is a color photo showing TVP, lecithin, soymilk, soy sauce, miso, soya bean oil, soya flour, and soya sprouts.

Note 1. The copyright page states: "First published 1970. Second impression 1971. Third impression 1977. Second Edition, revised and reset 1980." Note 2. This book has no preface by Carlson Wade. Address: F.R.H.S., England.

3428. Blesa, O.; Ellenrieder, G.; Geronazzo, H.; Macoritto, A. 1980. Las mezclas de leche de vaca con "leche de soja". Estudios sobre su aceptabilidad y eliminacion de antinutrientes [Mixtures of cow's milk and soy milk. Studies on acceptability and elimination of antinutrients]. *Anales de Bromatologia* 32(4):327-35. [11 ref. Spa]
• ***Summary:*** A mixture of 20% hot-grind soymilk and 60% cow's milk was found to be most acceptable. Address: Instituto de Investigaciones para la Industria Quimica (I.N.I.Q.U.I.), Universidad Nacional de Salta. Buenos Aires 177-4400. Salta (Argentina).

3429. Chen, Steve; Wang, E. 1980. Huang-dou shu-pin [Soy

foods]. Taipei, Taiwan: American Soybean Assoc. 248 p. Illust. 19 cm. [Chi]
• ***Summary:*** On the cover is written: "In celebration for the 10th anniversary of ASA/Taiwan. American Soybean Association. China Nutrition Society. China Institute of Food Science Technology. China Food Health, Nutrition Research Foundation." Contains many photos and graphs. Address: American Soybean Assoc.

3430. Corbin, Frederick T. ed. 1980. World Soybean Research Conference II: Abstracts. Boulder, Colorado: Westview Press. 124 p. Conference held 26-29 March 1979 at North Carolina State Univ. Author index. 24 cm.
• ***Summary:*** The World Soybean Research Conference II was held on 26-29 March 1979 at North Carolina State University. This volume contains summaries of the more than 200 papers, both invited and contributed, presented at that meeting. The full proceedings contains 74 of the invited papers in full.

Contents: Keynote addresses. Mineral nutrition. Engineering. Nitrogen fixation. Entomology. Utilization. Breeding. Physiology. Production. Protein and oil. Plant pathology. Modeling soybean systems. Regional. Agribusiness. Marketing, transport and storage. Weed control. Research techniques. Addendum. Address: Prof. of Crop Science; North Carolina State Univ., Raleigh.

3431. Davies, D.F.; Rees, B.W.G.; Davies, P.T.G. 1980. Cow's milk antibodies and coronary heart disease (Letter to the editor). *Lancet* i:1190. *

3432. Easterday, Kate Cusick. 1980. The peaceable kitchen cookbook: Recipes for personal and global well-being. New York, NY, Toronto, Canada: Paulist Press. 313 p. Illust. by Ragna Tischler Goddard. 21 cm. [28 ref]
• ***Summary:*** A vegetarian cookbook. Page 45 describes how to sprout various seeds and beans, including soybeans. The section titled "Soybeans Simplified" (p. 66-75) begins by asking "Why are soybeans so highly praised?" then gives recipes for: Basic cook soybeans. Soyburgers (from cooked, mashed soybeans). How to make soy milk (12 cups, using soy flour or soybeans). Soy "coffee." Tofu (soybean curd). Tofu sandwich spread. How to roast soybeans (dry). The last page of the section, titled "Soybean Terminology" gives 1-2 line descriptions of: Soy grits, soy meal, soy granules, soy flour, soy powder (extra fine soy flour, used to make soy milk), soya (implies that the product has been toasted), roasted soybeans, tofu, miso, tamari.

Other soy-related recipes include: Wheat-soy pancakes (with soy flour, p. 169). Soy fritters (with mashed soybeans, p. 222). Simple soy bean loaf (p. 228). Vegetarian sukiyaki (with tofu and soy sauce, p. 231). Soy cheesecake (with tofu, p. 291). Address: Illinois.

3433. Fessler, Stella Lau. 1980. Chinese meatless cooking. New York, NY and Scarborough, Ontario, Canada: New American Library. 298 p. Illust. by Janet Nelson. Index. 20 cm.
• ***Summary:*** This vegetarian cookbook, which contains more than 180 recipes, demonstrates vividly how much Chinese vegetarian cookery depends on soyfoods–especially tofu (bean curd). The glossary includes excellent descriptions of bean curd–fermented red (*nan-ru*), bean curd–fermented white (*tofu-ru*), bean curd–pressed threads or noodles, bean curd sheets (*tofu-pi* [*yuba*]), bean curd sheets (*er-ju*), bean curd sheets–pressed or hundred-leaf (*bai-yeh*), bean curd sticks (folded bean curd sheets), brown bean paste or brown bean sauce, bean paste–Szechuan hot bean or spicy soy, bean sprouts–soy or yellow, fermented or salted black beans, Hoisin sauce, Oyster sauce (with soy), soy sauce, soy sauce–light or thin.

The chapter on soups stocks notes that soybeans or soybean sprouts have a delicate flavor and are most suitable for making stock. Soy sprouts, which are much larger than mung bean sprouts, have a more chewy texture and a very sweet, delicate taste; they are often used to strengthen the flavor of a dish (see recipe p. 90).

Soy-related recipes (each with the name written in Chinese characters) include: Mixed pressed bean curd threads (p. 68). Spinach and deep-fried bean curd puff salad (p. 70). Soybean sprout salad (p. 73). Pressed bean curd salad (p. 76). Monks in a storm of wind and snow (Asparagus and bean curd salad, p. 82). Soybean sprout stock (p. 90). Deep-fried bean curd and mung bean noodle soup (p. 93). Spinach and bean curd soup (p. 98). Seaweed and bean curd soup (p. 99). Soybean soup (p. 100). Soybean with fried gluten soup (p. 101). Asparagus and bean curd soup (p. 106). Goddess of Mercy (Kuan-yin) soup (With bean curd and tiger lily bulbs, p. 112-13).

One long chapter (p. 118-160) is titled "Bean curd dishes, mock meat dishes, and mock fish dishes." It gives good definitions of and home-scale recipes for: Bean curd. Deep-fried bean curd puffs. Plain pressed bean curd cakes. Five-spice pressed bean curd cakes. Braised deep-fried bean curd puffs. Bean curd with oyster sauce (not vegetarian). Braised bean curd. Spicy bean curd. Steamed bean curd with spicy bean paste sauce. Bean curd with tomatoes. Bean curd with fresh mushrooms. Cold bean curd. Stubborn stones' obeisance (Fried bean curd with vegetables). Braised frozen bean curd with chives. Braised Fukien [Fujian] bean curd. Stir-fried Chinese chives with pressed bean curd. Stir-fried pressed bean curd with carrots and bamboo shoots. Mock lion's head (with five-spice pressed bean curd). Stir-fried green peppers with mock meat (pressed bean curd). Mock moo goo gai pan (Stir-fried pressed bean curd with vegetables). Mock roast duck (with dried bean curd sheets and soy sauce). Mock soy sauce chicken (with fresh or frozen hundred-leaf bean curd sheets). Mock velvet chicken

(fried bean curd with egg whites). Spicy mock chicken (with mock soy sauce chicken). Mock ham (with dried bean curd sheets). Bock abalone (braised gluten balls). Mock mu-shu pork (with five-spice pressed bean curd, shredded). Fried mock squab (with chopped pressed bean curd). Mock twice-cooked pork (with five spice pressed bean curd). Bean curd with thousand-year eggs.

Other interesting recipes include: Wheat gluten (homemade mein jin or vegetable steak, p. 165-66; At Chinese grocery stores, wheat gluten is sold in various forms–fried, dried, steamed, boiled, canned, and frozen). Fried gluten balls. Boiled gluten. Lo Han vegetable dish (with fried wheat gluten balls, p. 169-70). Chinese mustard greens in black bean sauce (p. 173-74). Stir-fried leeks with bean curd (p. 186). Fresh soybeans stir-fried with fresh mushrooms (p. 187). Boiled fresh soybeans in their pods (p. 188). Bean sprouts stir fried with wheat gluten (p. 190). Stir-fried soybean sprouts with bean curd puffs (p. 191). Cauliflower and bean curd sticks (p. 192). Winter melon with red fermented bean curd sauce (p. 195). Stir-fried asparagus with fermented bean curd (p. 197). Stir-fried lettuce with white fermented bean curd sauce (p. 198). Sweet and sour fried gluten and cabbage (p. 208). Two immortals in the apricot garden (fried gluten with vegetables and almonds, p. 209). Braised eggs with bean curd sticks (p. 213-14). Scrambled eggs with fermented bean curd (p. 214). Bean curd with salted eggs (p. 216-17). Wonton soup (with fresh bean curd, p. 233-34). Fried wontons (filled with five-spice pressed bean curd, coarsely chopped). Soybean milk, sweet soybean milk, and salty soybean milk (p. 247-48). Deep-fried crullers (*yu chiao;* sometimes served in hot soymilk, p. 249-50). Noodles with spicy bean paste sauce (and five-spice pressed bean curd, p. 258-59).

Note 1. This is the earliest English-language document seen (Oct. 2011) that uses the term "red fermented bean curd" to refer to red fermented tofu.

Note 2. This is the earliest English-language document seen (Oct. 2011) that uses the term "white fermented bean curd" to refer to regular white fermented tofu. Address: Cornell Univ., Ithaca, New York.

3434. Hanssen, Maurice. 1980. Country kitchen recipes with soya beans. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 32 p. Illust. 14 x 14 cm.
• ***Summary:*** Contents: Introduction. Plain cooked soya beans. Tofu. Serving tofu. Cheese 'n beans. Soya bean sprout soup. Double blessing soya eggs. Soya bean omelette. Sprouts and scrambled eggs. Soya suey. Soya soup. Cocktail soya beans. Soyaburger. Chilli con carne. Potato and soya bean salad. Soya milk. Soya bake. Soya salads. Spiced soya beans. Address: Northamptonshire, England.

3435. Hong Kong Soya Bean Products Co. Ltd. 1980. The Hong Kong Soya Bean Products Co. Limited: 1940-1980. Hong Kong: HKSBP. 24 p. In English and Chinese. [Eng; Chi]
• ***Summary:*** K.S. Lo writes that the 1970s have been a decade of ups and downs. "For no sooner had we launched a new range of products, namely, precooked Chinese dishes, infant weaning food, and cheese from soybean milk; then we were forced to suspend all three. What was thought to be a great leap forward in diversification, turned out to be a great flop. The expensive lesson learned is never to leap before one learns to run." Fortunately the next venture, a line of fruit juices and traditional flavored teas in Tetra Brik cartons, was successful as "all the new products became extremely popular from the moment of launching."

Today over 10,000 shops in Hong Kong and the New Territories carry Vita products. Sales gave grown from HK$24.7 in 1970/71 to HK$106.3 in 1979/80. In 1972 the Vitasoy line was expanded with the addition of a larger and 10 oz bottle, which became very popular. In 1975 the company installed the first Tetra Brik packaging line in Hong Kong and launched UHT Vitasoy. The disposable pack was accepted immediately.

"In 1976, on seeing the success of the new Tetra Brik container, the company decided to branch out into the packaging of fruit juices. An initial line of 4 flavors was selected: orange, mango, guava, and kalamansi. This new range was so successful that over 30% of the juice market was captured in the first 2 years of marketing. Then 3 more items were added to the Tetra Brik Line: Chrysanthemum Tea, Sugar Cane Juice and Lemon Tea." In 1978 the new Aberdeen factory was completed and that summer Vita carbonated drinks were launched in 4 flavors: Cola, orange, cream soda, and root beer. The principal of "consumer sovereignty" was followed.

In 1979 the company entered into an agreement with the People's Republic of China to expand and modernize the Kwong Ming Dairy Farm in Shum Chun. Also in 1979 exporting of the full range of Tetra Brik products to other parts of the world commenced. As part of its community service program the company is currently supplying multi-vitamin fortified Vitasoy to refugee camps. Color photos show: (1) K.S. Lo, seated informally on the arm of a chair, dressed in coat and tie. (2) A bottle of Vitasoy. (3) Young people in Hong Kong happily socializing and drinking Vitasoy, "Hong Kong's favourite high protein drink." (4) A map of the world (2-page spread) showing "International export markets" of HKSPB. (5) The outside of the Aberdeen plant. (6) Two packaging lines. (7) The R&D lab. (7) The board of directors seated around a long oval wooden table. All new soy and non-soy products are sold under the Vitasoy or Vita brands (2-page spread). Address: Hong Kong.

3436. Hyoe, Murakami; Richie, Donald. eds. 1980. A hundred *more* things Japanese. Tokyo: Japan Culture Institute. 215 p. Illust. (some color). 22 cm. [Eng]

• ***Summary:*** The section titled *Daizu* (soybeans, p. 48-49) begins with the often-told story of Ogyû Sorai (1666-1728), one of the outstanding Confucian scholars of the Edo / Kamakura period and official tutor to the shogun. When Sorai was young and poor, he was unable to afford any food other than okara, the lees of tôfu (soybean curd). The local tofu maker would occasionally take pity on him and treat him to a feast of fresh tofu. Yet far from being malnourished or sick from his okara diet, the young man thrived on this protein-rich food, and went on to become a great man.

The great soy triumvirate–soy sauce, miso, and tofu–towers high in Japanese cookery. Other foods from the soybean are soy milk, soy oil, and yuba.

A song from the Edo period states: "The nightingale stays far from the crowds.

"Twelve kilometers from the saké shop,

"Eight kilometers from the tofu shop."

A large photo shows a tofu-maker cutting cakes of tofu.

A yatai (p. 66) is a movable nighttime street stall from which food and drink are sold. They are a compact wooden restaurant on wheels. The food may include oden, fried bean-curd cakes [fried tofu].

On pages 44-45 is a section on "Umeboshi (pickled plums) and on pages 46-47 a section on "Kaisô (algae; seaweed [sea vegetables]). These include wakame, which is invariably found floating in the morning's miso soup. Also nori, tengusa / agar, hijiki, and konbu. Address: Tokyo.

3437. Imai, Yoshitsugu. 1980. Anata no kenko o mamoru, tônyû no subete [All about soymilk to keep you healthy]. Aichi Prefecture, Japan: Marusan Shokuhin. 86 p. [Jap]

3438. Jordan, Darryl; Jenkins, Suzy. 1980. Plenty Agricultural Program: Guatemala. Summertown, Tennessee: Plenty. 46 p. Illust. 28 cm. Presented to UNICEF Guatemala.
• ***Summary:*** This is the single best report on the innovative 1978 Plenty-UNICEF project in the San Andres Itzapa area (Chimaltenango) of the Guatemala highlands. Most of the report focuses on trials with soybeans and other crops (written by Darryl Jordan), but there is also an excellent supplement, with 15 magnificent, lively photos showing the local people involved in the soy dairy project. Many of these photos were taken by Jenny Banks Bryant and others.

Contents: Preface, by Edward Sierra, executive director of Plenty. Soybean variety trials. Photoperiod response experiment. Soybean insects and diseases. Continuation of the soybean project. Grain amaranth. Quinoa. Winged bean. Cover crops and crop rotations. Nematodes. Fertilizer use. Seed collection. Plenty report for UNICEF, by Suzy Jenkins (Plenty soy technician). Supplement: Soy utilization and nutrition. List of figures: Field data for soy variety trials. Graphs of soybean yield data. Three graphs of soybean yield data. Yield equivalents for soybeans. Oil and protein analyses. Relative yields of protein for various crops. Crop rotation.

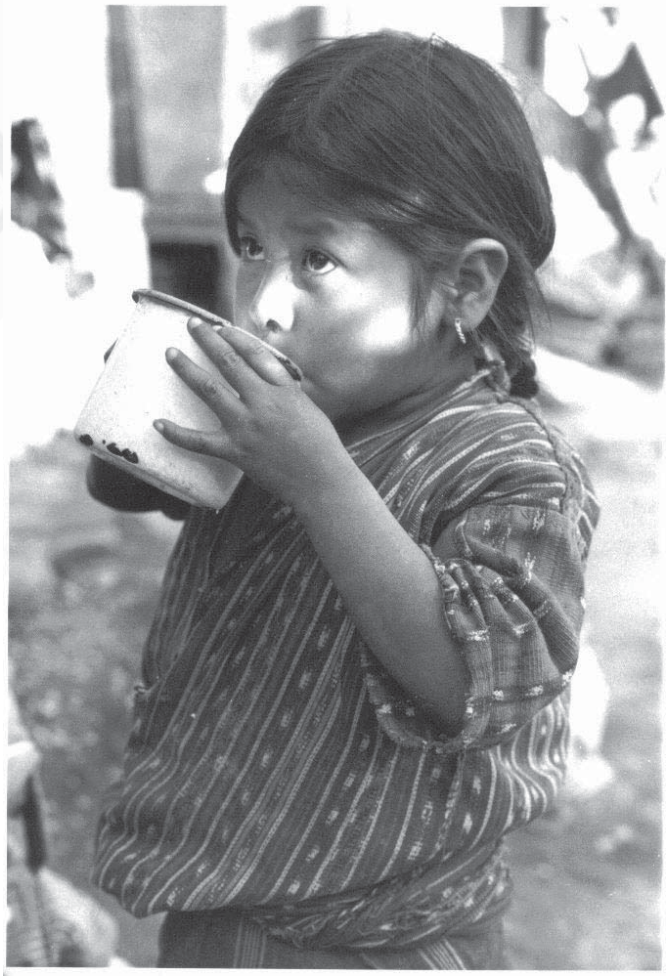
A table (p. 12) shows field data on INTSOY variety trials in 1978. The highest yields came from the soybean varieties Davis (40.1 bushels/acre = 4,161 lb/manzana; 1.7 manzanas = 1 hectare), Cobb (34.6 bu/acre = 3,590 lb/manz.), Bossier (32.8 bu/acre = 3,400 lb/manz.), Forrest (31.4 bu/acre = 3,251 lb/manz.).

Photos in the Plenty report for UNICEF show: (1-3) Severely malnourished babies lying on their backs. (4) Suzy Jenkins holding Baby Cruz, now age 8 months, after 4 months of soymilk. "She is one of several children who were able to regain good health."

(5) Suzy Jenkins (5' 4"), a Plenty volunteer (on left) walking with her friend Juana (4' 10"), each carrying water in a pot on their heads for a soy demonstration in Solola. "Juana stands about the average height for the ladies of Guatemala. She eats a protein-deficient diet.

(6) A Mayan lady grinding soaked soybeans on a *metate*, traditionally used for grinding corn / maize. (7) Add the ground soybeans and, stirring regularly, cook for 20 minutes over a wood fire. Suzy stirs.

(8) Ladle the cooked soybean slurry into a colander lined with several layers of cheesecloth and set over a pot to



catch the soymilk. Soy pulp [okara] remains behind in the cheesecloth.

(9) "Soymilk, slightly sweetened, contains 9.1 grams of protein per cup. One pint of soymilk or 1 cup of tofu will provide nearly one-half of a child's total protein requirement for a day. Children love it." (10). To make soy cheese [tofu]: Add vinegar (or other coagulant) to hot soymilk, causing it to separate into curds and whey. Ladle or gently pour the mixture into a colander lined with several layers of cheesecloth and placed over a pot. The cheesecloth catches the curds, while the whey drains through into the pot. The whey can be used as a soup stock; it contains some vitamins and other nutrients.

(11) A happy group enjoying their soymilk. (12) Press the curds to make tofu, which can be sliced and fried, eaten plain with salt, or scrambled and fried with onions and tomatoes. A boy, standing, is enjoying a tofu sandwich. (13-15). People eating tofu, which is a complete protein; when served with grain foods like tortillas or bread, its protein quality is increased. Address: 1. Plenty Agricultural Technician; 2. Plenty Soy Utilization Technician. Both: The Farm, Summertown, Tennessee.

3439. Kasin, Miriam. 1980. The age of enlightenment cookbook. New York, NY: Arco Publishing, Inc. v + 342 p. Illust. Index. 25 cm. [1 ref]

• ***Summary:*** A vegetarian cookbook. The chapter on Basic Ingredients discusses dairy substitutes (incl. recipes for soy milk [made from whole soybeans or soy flour], coconut milk, nut milk {from blanched almonds or raw cashews}, and soy margarine [free of preservatives]), bean curd (as a substitute for panir), and soy flour. The chapter on beans (p. 129-37) has recipes for: Roasted soybeans. Aduki (azuki) beans. Stewed soybeans. Soyburgers. Soy loaf. Bean curd (tofu or dofu). Stir-fried or deep-fried bean curd. Scrambled bean curd.

Other soy-related recipes include: Soy mayonnaise (p. 170). Soyburgers or tofu sandwiches (p. 186). Soy spread or dip (with whole soybeans, p. 187). Soy noodles (with equal parts soy flour and unbleached white flour, p. 201). Noodles and bean curd (Japan, kitsune udon or domburi, p. 205).

3440. Miller, Lani; Rodgers, Diane. 1980. We love your body. Seattle, Washington: Morse Press, Inc. vii + 256 p. Illust. by Joanie Oliver. 25 cm.
• ***Summary:*** A natural foods, vegetarian cookbook. The glossary describes soybeans (incl. soy flour, milk, and tempeh, p. 246), tamari sauce, and tofu (p. 247).

3441. Nelson, A.I.; Wei, L.S.; Steinberg, M.P. 1980. Foods from whole soybeans. In: F.T. Corbin, ed. 1980. World Soybean Research Conference II: Proceedings. Boulder, Colorado: Westview Press. xv + 897 p. See p. 745-62. [12 ref]
• ***Summary:*** Contents: Introduction: Nutritional value. A concept for preparation of whole soybeans for human food use: Inactivation of the lipoxygenase system, use of sodium bicarbonate blanch, inactivation of anti-nutritional factors, effects of quality and variety of soybeans for direct food use, use of the concept. Home preparation of soymilk: Introduction, experimental, results and discussion, conclusions, recommendations. Soybean breakfast and patty foods: Introduction, raw bean treatments, hydration, tenderization, trypsin inhibitor inactivation, soybean foods.

Weaning or breakfast foods: Soy-whole wheat, soy-corn, soy-sweet potato. Fried patty meat substitute: Soy-potato, soy-rice. Conclusions. Notes. Address: Dep. of Food Science, Univ. of Illinois, Urbana, IL 61801.

3442. Null, Gary. 1980. The new vegetarian cookbook. New York, NY: Macmillan Publishing Co., Inc.; London: Collier Macmillan Publishers. x + 310 p. Recipe index. 24 cm.
• ***Summary:*** One chapter (p. 52-60) titled "Soybeans and Soybean Products" discusses: "Whole, raw soybeans" [green vegetable soybeans], dried soybeans, soybean milk soy flour, soy grits, soy flakes, tempeh, tamari, miso, and tofu. The long section on tofu begins: "As a high-quality source of complete protein, tofu (soybean curd, usually called bean curd) is hard to beat, not to mention inexpensive, low in calories and versatile." It ends: "As you become more familiar with tofu, you'll come up with many of your own innovations. But no matter how you choose to serve this natural, high-protein food, serve it often and savor its benefits!"

Page 78, under "Bean Sprouts," states that "Soybeans make the most delicious sprouts, but are a little more difficult to grow" than mung bean sprouts. Page 88 notes that tamari and miso are good alternatives to salt.

Soy-related recipes include: Miso tofu soup (p. 132-33). The section titled "Tofu Dishes" (p. 199-208) includes: Butternut tofu. Tofu cauliflower casserole. Herby tofu croquettes. Mushroom and tofu sautéed in miso. Tofu Orleans. Red and green peppers with tofu. Soba tofu dinner. Tofu eggplant Parmesan. Yogurt tofu casserole [with cow's milk yogurt]. Tomato tofu and kidney beans. Bulghur, lentil and tofu casserole. Tofu à la king. Sesame tofu (Tofu plus sesame seeds). Hot breakfast for two (tofu with oatmeal, raisins, and walnuts).

Soy-enriched wheat berry bread (p. 242). Page 304 contains a list of food suppliers, including Chico San, East West Journal Mail Order, and Walnut Acres (Penns Creek, Pennsylvania). Address: New York City, NY.

3443. Orlowski, J.K.; Nelson, A.I.; Wei, L.S. 1980. Effect of formulation and processing variables on the quality of soybean yogurt (Abstract). In: F.T. Corbin, ed. 1980. World Soybean Research Conference II: Abstracts. Boulder, Colorado: Westview Press. 124 p. See p. 34.
• ***Summary:*** "Soybean yogurt was prepared using Illinois process soybean base developed by Nelson, et al., (1975). This base contains 7.5 percent soy solids, about 3.8 percent protein and is excellent for making yogurt since it is bland and has no beany off-flavors. A frozen culture of *Streptococcus thermophilus* and *Lactobacillus bulgaricus* was used to inoculate sterile, 2 percent fat cows' milk for preparation of a medium used for inoculation of soy base...

"Six percent added sugar as 3 percent sucrose and 3 percent cerelose, fermented to a pH of 4.21, was the preferred sample. This was probably due to its desirable sugar / acid balance. The Illinois process soybean yogurt is also adaptable to flavoring with fruit and appears promising as a new food product."

Note: This is the earliest English-language document seen (Aug. 2013) that uses the term "soy base" to refer to a concentrated form of soymilk from which regular soymilk or soymilk products (such as soybean yogurt) can be made by adding water, flavors, sweetener, etc. Up to this time, researchers at the University of Illinois generally used the term "soybean beverage base" instead of soy base. Address: Dep. of Food Science, Univ. of Illinois, Urbana, Illinois.

3444. Pennington, Jean A.T.; Church, Helen Nichols. eds. 1980. Bowes and Church's food values of portions commonly used. 13th ed. Philadelphia, Pennsylvania: J.B. Lippincott Co. xvii + 186 p. Index. 28 cm. 1st ed. was 1937. 2nd ed. was 1939. 10th ed. was 1966. [62 ref]
• ***Summary:*** The index contains entries for: Beans (but no soy). Cheese and cheese food (but alternatives). Cheez-its, Chili–vegetarian. Float, Dairy Queen. Flour. French fried potatoes (Arthur Treachers, Burger Chef, Burger King, Dairy Queen, Long John Silver's, McDonald's, Wendys). Ice cream bars. Infant formulas (Isomil–Ross Labs, L-Soyalac–Loma Linda, Neomullsoy–Syntex, Nursoy, ProSobee–Mead Johnson, Soyalac–Loma Linda). Irishmoss [Irish moss]. Milk (goat, human, Indian buffalo, reindeer, sheep, soybean, whole). Miso. Natto. Oils. Soyamaise dressing (p. 122). Soyamel. Soybeans, fermented. Soybean curd. Soybean flour. Soybean milk. Soybean nuts. Soybean oil. Soybean protein. Soysauce. Teriyaki sauce. Tigers Milk Bar. Tofu. Tom Collins. Veg Skalops. Veja-Links. Vegeburger. Vegetarian products made mostly by Worthington Foods and Loma Linda (p. 22-23): Beef style roll, Chicken style, Chic-Ketts, Chili, Corned beef style, Croquettes, Dinner cuts, Fry Sticks, Gran Burger, Meatloaf mix, Nuteena, Prosage, Proteena, Rediburger, Smoked beef style, Stakelets, Stripples, Tasteecuts, Turkey Style–Smoked, Vega-links, Vegeburger, Veg Skallops, Vegetarian Burger, Vitaburger, Wham. Yogurt.

Aluminum is not among the lists of trace minerals in foods in the back. The book *does* list the following as trace minerals: chromium, cobalt, fluoride, iodine, molybdenum, nickel, selenium, and tin. Address: 1. Formerly Instructor of Nutrition, City College of San Francisco, San Francisco, California [Now with U.S. Food and Drug Administration, Washington, DC]. Phone: 202-245-1064.

3445. Roquib, M. 1980. Utilization of soybean (*Glycine max* (L.) Merr.) as a supplementary human food to combat protein malnutrition in West Bengal, India (Abstract). In: F.T. Corbin, ed. 1980. World Soybean Research Conference II: Abstracts. Boulder, Colorado: Westview Press. 124 p. See p. 37.

• ***Summary:*** Recently major efforts have been made to extend soybean cultivation throughout the State of West Bengal, India, and work has been started to popularize soybean as a food among people in low and middle income groups. In 1976-78, as part of this effort, an experiment was conducted to (1) test the acceptability of full-fat soy flour, whole soybeans, and soybean milk among consumers; (2) test the acceptability of chapatties [chapatis] made from regular wheat flour to that made with wheat + soy flour in varying proportions; (3) explore the possibilities of introducing soy-based tiffin foods and finding their costs.

Consumers generally accepted foods in which soy flour or whole soybeans were substituted. They did not accept soymilk as such, but they were very willing to accept foods prepared using soymilk or "soymilk residue" [okara]. Chapatties made with 0, 10, 15, and 20% "full-fat soyflour were equally acceptable in terms of texture, smell, taste, and cooking qualities. With fresh and good-quality soyflour, its proportion can be raised to 25 percent in such foods." Address: Faculty of Agriculture, Bidhan Chandra Krishi Viswa Vidyalaya, West Bengal, India.

3446. Thio, Goan Loo. 1980. Processing and application of soya beans for human nutrition at home and village levels (Abstract). In: F.T. Corbin, ed. 1980. World Soybean Research Conference II: Abstracts. Boulder, Colorado: Westview Press. 124 p. See p. 35-36.
• ***Summary:*** "It is of utmost importance that the less developed and the developing countries avail themselves of simple methods for processing soya beans into easily digestible soya products, which can be manufactured at home and village levels. These products should have a high nutritive value and preferably a neutral, bland taste, so that they can be incorporated into local dishes of the countries concerned, without the risk of being refused by the population. Because of the neutral bland taste, these soya products will take on the taste and flavor of the national dish into which they are incorporated. In this way they will in most cases be directly accepted by the consumers. Soya products like soya milk and soya bean curd (also called toufu [tofu]), which have proved to be high quality protein sources and which have existed for thousands of years, can easily be flavored or spiced so that they will become as delicious as meat and fish dishes.

"Soya milk can be prepared easily at home and village levels just like soya bean curd and soya steak (also called tempeh). The most important factor is the absence of the beany taste in these products, and also the absence of trypsin inhibitors and of hemagglutinins. Especially for babies and toddlers these two antinutritive factors should be inactivated. As they both belong to the proteins, simple heat treatment during a few minutes at temperatures above 90 C is sufficient. With soya products prepared at home and village levels, a great variety of delicious dishes and high quality weaning food can be prepared." Address: Royal Tropical Inst., Amsterdam, The Netherlands.

3447. Tsuchiya, Kanji. 1980. Tônyû: Yomigaetta dentô shokuhin [Soymilk: Traditional food that's make a comeback]. Tokyo: Shokuhin Kenkyusha. 176 p. 2nd edition published in Dec. 1982. Illust. 17 cm. [Jap]
• ***Summary:*** This is the best book seen on soymilk in Japanese. For contents and details, see the enlarged 2nd edition (Dec. 1982). A portrait photo on the rear cover shows the author, Kanji Tsuchiya, and gives a brief biography. Address: Technical consultant, Okazaki Marusan, Japan.

3448. Worthington Foods, Inc. Div. of Miles Laboratories, Inc. 1980. Facts & recipes. Worthington Soyamel (Leaflet). Worthington, Ohio. 4 panels each side. Each panel: 22 x 9 cm.
• ***Summary:*** One panel is facts about Soyamel (powdered soymilk) and 5½ panels are recipes.

"Family-pleasing Soyamel is available in
"Regular (12 oz., 4 lb. and 20 lb),
"Fortified (12 oz., 4 lb. and 20 lb),
"Instant (10 oz., 3½ lb. and 18 lb), and
"Instant Malt (3½ lb. and 18 lb) at many fine stores."
Address: Worthington, Ohio.

3449. Yntema, Sharon K. 1980. Vegetarian baby: A sensible guide for parents. Ithaca, New York: McBooks Press. 224 p. Illust. by Tom Parker. Index. 22 cm. 2nd ed. 1984. [150* ref]
• ***Summary:*** A good handbook for vegetarian as well as vegan parents. Contains nutrition facts as well as good tips for feeding babies, plus special recipes for babies. Covers babies up to two years of age. Contains extensive, positive information about soyfoods, especially tofu and soymilk, including the nutritional value, specific uses in infant nutrition, and how to make each food at home. Tofu may be introduced to an infant's diet at age 8-9 months. Appendix B contains brief reviews of baby food cookbooks, most published after 1970. The author was born in 1951. Address: Ithaca, New York.

3450. INTSOY. 1980? Soybean Foods Research Centre (SFRC), Gannoruwa (Brochure). 3 p. Undated. Publisher not given.
• ***Summary:*** Contents: Introduction. Home level. Village level. Commercial level: Full fat soya flour, coconut milk substitute, soya cereal extrusion cooked blends, soya milk (beverage), soya oil and meal, soya and cassava extrusion cooked blends, soya-maize extrusion cooked blends, Oriental soya foods (tofu and tempeh), soya sauce. Future plans.

3451. Pural. 1980? Spécialités Pural [Pural specialties]. France: 14 p. Undated. 21 cm. [Fre]
• ***Summary:*** This Seventh-day Adventist company sells

the following soy-related products: Sojlactis (soymilk). Sojanelles (meatless soya quenelles or dumplings). Granotose and Frika-Vita. Grano-san (a paté that includes soy flour). Sandwich-san (with soy flour). New products: Sojanelles épicées, Pasta-Chuta (with soy proteins). Sojafleish (soymeat based on TVP).

3452. **Product Name:** SoyAmaze (Soy Mayonnaise).
Manufacturer's Name: Soy Plant (The).
Manufacturer's Address: 211 East Ann St., Ann Arbor, MI 48104. Phone: 313-663-0500.
Date of Introduction: 1980?
Ingredients: Soymilk, safflower oil, sesame oil, cider vinegar, honey, salt.
Wt/Vol., Packaging, Price: 16 oz.
How Stored: Refrigerated.
New Product–Documentation: Label in Soy Plant scrapbook from about 1980. 4½ by 3 inches. Black on white. 16 oz. "Serving suggestions; Use in cold salads, on sandwiches. Add spices, or chives, serve on baked potatoes, rice & vegetables, or tofu filets... (Separation may occur, stir before using)." This product was sold in plastic tubs, unpasteurized, like a fresh dressing.

3453. Bushman, Don H. 1981. Re: Soy beverage manufacturers in Southeast Asia. Letter to William Shurtleff at New-Age Foods Study Center, Jan. 9–in reply to inquiry of Nov. 26. 1 p. Typed, with signature.
• ***Summary:*** In Thailand: Green Spot started producing soy beverage in the early 1970s. At least three other companies, Coca-Cola, Nestle, and Siam Foods have plans to start making Soy beverage in Thailand in the next year.

In the Philippines, Nestle started making a Soy beverage (Vita) in Nov. 1988.

In Southeast Asia, soy beverages are advertised almost daily on TV, in newspapers, etc., but only for brand promotion. Address: Director, South-East Asia, Room 1501, 15th floor, Liat Towers Orchard Rd., Singapore 0923. Phone: 737-6233.

3454. Root, Waverley. 1981. A cordial bow to the byproducts of the soybean. *Los Angeles Times.* Jan. 15. p. J42.
• ***Summary:*** This article is indebted to: Simonds, Nina. 1979. "Chinese cuisine: Bean curd." *Gourmet.* Sept. p. 28-29, 84-91.

The soybean, which offers extraordinary versatility as a human food, can be transformed into soybean milk, "the soybean milk skin [yuba] derived from the milk, the bean sticks [dried yuba sticks] made from the milk skin, the also edible sediment given off by the milk [okara], untreated bean curd [regular tofu and perhaps silken tofu], pressed bean curd which produces bean curd noodles [pressed tofu noodles], more tightly compressed bean curd cakes, and frozen-and-thawed bean curd [dried frozen tofu]." Note: This is the earliest English-language document seen (April 2013) that uses the term "frozen-and-thawed bean curd" to refer to dried-frozen tofu.

In the process of making "pressed bean curd, another soybean food is created–bean curd skin [*pai yeh,* pressed tofu sheets], which should not be confused with soybean milk skin [yuba]. Dried bean curd skin," which needs no refrigeration and is often stuffed, for example with chopped meat, is sold by weight by Chinese specialty shops throughout the world; five or six sheets weigh one ounce.

"There is a whole family of foods made from fermented bean curd" [fermented tofu]. Bean curd can be fermented in various ways. Bean curd loaves, for example, can be stored for the winter in a cool dark place; micro-organisms from the air cause fermentation. "The loaves acquire a fungoid coating, which has to be scraped off, and as far as I know is not used for food,..." Fermented bean curd, which has been called "soybean cheese," is easier to digest than unfermented bean curd. Bean curd can also be marinated in rice wine, flavored with spices, and then allowed to ferment. A most unusual type of fermented tofu is stinky bean curd (*sh'ou tou fu*), a favorite Chinese snack. In Taipei, there are many street vendors who ply the streets with their portable deep fryers. This fermented tofu is usually deep-fried and usually eaten with one's choice of soy sauce, vinegar, mashed garlic, and chili paste.

Other fermented foods include miso, natto, hamanatto (which is of Korean origin), tempeh (of Indonesian origin), and shoyu (Soybean sauce, soy sauce).

"It is said that the best grades of soy sauce can take as much as six to seven years of aging to reach perfection, and that the making of a superb soy sauce requires 'as much art in its preparation as good French wines.'"

Flavorings are added to some Chinese soy sauce "various herbs, especially citronella; spices (ginger); aromatic vegetables (onions); and not only fermented fish, but even fermented chicken meat. To produce three liters (3.1 quarts) of sauce requires on kilogram (2.2 pounds) of beans.

"Fukien has the reputation of producing the best soy bean sauce in China and consequently stews many foods in it, giving them a color which has caused the culinary techniques of this region to be called 'red cooking.'"

Soybean sauce is "often an important ingredient in many more complicated sauces–for instance Hoisin sauce in China and Worcestershire sauce in England."

3455. Flinders, Carol. 1981. Notes from Laurel's Kitchen: Chinese cooking, vegetarian style, uses soybeans for meat. *Hartford Courant* (*Connecticut*). Jan. 21. p. E8.
• ***Summary:*** The traditional teachings of both Buddhism and Taoism prohibit the eating of any food that requires killing animals, birds, fish, or other sea creatures. For this reason "the native culinary genius of China has produced a superb vegetarian cuisine. It has flourished for centuries, mainly in

Buddhist monasteries."

Now Stella Lau Fessler has written "Chinese Meatless Cooking" which contains authentic recipes. The next step is to locate a store in your town that sells Oriental foods. Tofu, sesame oil, and even shiitake mushrooms are now widely available.

"Soybeans make an impressive showing throughout the recipes: As tofu in many forms (did you know there's a fermented tofu, 'tofu-ru,' which aficionados compare with blue cheese?), as soybean milk, and even as just plain soybeans, boiled fresh in the pods."

3456. Stechmeyer, Betty. 1981. Re: The Finnish clabbered milk product, "viilia." Letter to William Shurtleff at Soyfoods Center, Jan. 28. 1 p. Typed, with signature.
• ***Summary:*** "I've been working with a Finnish clabbered milk product, "viilia," which makes a very passable soy milk cultured product. Dr. Wang in Peoria [Illinois] is quite excited about its potential as a totally vegan cultured soy milk product. She now has a starter and was in hopes of having a full-time researcher work on it. The ultimate deadline would be [to have] cultures available at the SANA conference in July." Address: GEM Cultures, 30301 Sherwood Rd., Ft. Bragg, California 95437.

3457. **Product Name:** [Soymilk, and Soy Yogurt].
Manufacturer's Name: Alternatur.
Manufacturer's Address: Korte Spekstraat, Hallaar, Belgium.
Date of Introduction: 1981. January.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1981. March 4. This was the second earliest known soy yogurt made in Europe, and the first made after 1911.

3458. Dominguez de Diez Gutiérrez, Blanca. 1981. Re: Teaching about tofu, soymilk, and other soyfoods in Mexico. Letter to William Shurtleff at Soyfoods Center.
• ***Summary:*** Blanca never really ran a tofu shop in Mexico. She only taught how to make it, especially in Jalapa, Veracruz. Address: Apartado Postal 65, Zacatepec, Morelos, Mexico.

3459. **Product Name:** Granose Soya Milk (Plain, or with Carob).
Manufacturer's Name: Granose Foods Ltd. (Marketer). Made in Belgium by Alpro.
Manufacturer's Address: Stanborough Park, Watford, Herts., WD2 6JR, England.
Date of Introduction: 1981. January.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1983. July 20. STS. 1985. Containers for Soymilk. Shows color photo of 500 ml Tetra Brik carton. Orange and green on white. "100% Vegetable. Rich in protein. High in polyunsaturates." Use by 7/84.

Form filled out by Alpro. 1990. May 30. Alpro began making this product (2 flavors) in Jan. 1981 in 500 ml cartons. Granose stopped buying it from Alpro in Dec. 1984; DE-VAU-GE became the new source.

Note: This is the earliest product seen in Britain that uses "Soya Milk" as the product name.

3460. **Product Name:** Soymilk [Plain].
Manufacturer's Name: Lecanto Tofu.
Manufacturer's Address: Route 2, Box 764, Lake Butler, FL 32054. Or: Route 3, Box 150, Lake City, FL 32055.
Date of Introduction: 1981. January.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1981. Jan. 22. Owner: Jean Huffman. Address is given as P.O. Box 444, Lecanto, Florida 32661. Talk with Marvel Huffman. 1988. May 17. She made this soymilk mainly for the Chinese in Gainesville.

3461. **Product Name:** Frozen Buddha (Soymilk Ice Cream) [Chocolate Mint, Pineapple Coconut, Lemon Coffee, Chocolate Almond, Lime Ginger, Carob, Blueberry, Maple Walnut, Vanilla, Apricot, or Holiday Spice Eggnog].
Manufacturer's Name: Metta Tofu Products.
Manufacturer's Address: Wren Rd., Denman Island, BC, V0R 1T0, Canada.
Date of Introduction: 1981. January.
How Stored: Frozen.
New Product–Documentation: Letter from Lulu Yoshihara of Denman Island, BC, Canada. 1981. Sept. 9. Last spring, her neighbor Ray Lipovsky, "the tofu man," started making Frozen Buddha, "a soy ice cream, which is very, very popular (because it is very, very delicious). I'll enclose the lid with this letter..."

Label. 1982. Undated.

Letter from Ray Lipovsky in reply to questions from William Shurtleff. 1982. Aug. 8. Q5. When did you start making Frozen Buddha [soy ice cream]? Ans: Jan. 1981.

Spot in Soyfoods. 1983. Winter. p. 49-50. "How to Freeze the Buddha." Monthly production of 1,500 liters in the winter.

3462. Soy Plant Co-op Inc. (The). 1981. Price list effective 1/28/81 [28 Jan. 1981]. Ann Arbor, Michigan. 1 p. 28 cm.
• ***Summary:*** This hand-lettered sheet contains four columns: Manufacturer, product, unit price, and case price. The Soy Plant is manufacturer of: Tofu, plain soy milk, flavored soy milk, tempeh, miso garlic dressing, and Soyanaise (soy mayo). Other manufacturers are Sunshower (fruit juices and butters), Hills Brothers (apple cider), Toper (pickles), Westbrae (miso–3 types), and Canadian Soya (Soya Lecithin

Spread, non-hydrogenated). Address: 711 Airport Blvd., Suite #1, Ann Arbor, Michigan 48104. Phone: 313-663-TOFU (663-8638).

3463. Webber, Harry. 1981. Perry Webber, Madison College, and Madison Foods (Interview). Conducted by William Shurtleff of Soyfoods Center, Feb. 8. 2 p. transcript.
• ***Summary:*** Harry Webber, the son of Perry A. Webber, attended Madison College from 1930 to 1935, then 1939-1943. He left in 1943 to go to medical school. Harry remembers the foods served at Madison. Vigorost was a gluten meat invented by Perry. There was also Nutmete or Notmete, and several others. They were served to students and widely retailed at health food stores. Ed Bisalski, the sales manager, traveled around the USA selling these foods.

Perry Webber first went to Madison in about 1931. He earned his doctoral degree at Michigan State, graduating in about 1930-31, then went to Madison. Years before that he had been a missionary in Japan.

Harry went to Japan with his father, Perry, for 3 years. Harry's mother has written a biography of Perry; he will send Soyfoods Center a copy. Emmanuel Missionary College asked that she write the book. His interest was in food chemistry. He was head of the chemistry department at Madison. In the early 1930s he got interested in soy.

P.A. Webber and his family went to Japan from 1935 to 1939, then came back to the USA just before World War II, and went to Madison College–where Perry did lots of work with soyfoods.

Perry Webber was good friends with Dr. Harry Miller and he got interested in soymilk through Dr. Miller, probably first in Japan. He visited with Dr. Miller in Japan and saw his program, but Perry was interested in soymilk before 1935. His brother was in Tokyo at the Adventist hospital.

Sam Yoshiwara knew Perry Webber well and was one of his students in Japan. Perry sponsored him to come to the USA. Sam worked in the food factory at Madison College.

There is a small book about Sutherland and Madison by a man who taught Spanish at Madison. Address: M.D., 913 Meadowwood Dr., Modesto, California 95355. Phone: 209-521-1410 OF. 209-529-4291 HM.

3464. Chen, Steve. 1981. Re: Soymilk in Taiwan. Letter to William Shurtleff at Soyfoods Center, Feb. 9–in reply to inquiry. 2 p. Typed, with signature on letterhead (photocopy).
• ***Summary:*** (1) Our major soymilk producers in Taiwan are:

(a) Wei Chuan Food Ind. Corp., No. 125, Sung-Chiang Rd., Taipei, Taiwan. They started making soymilk in 1980 and now make about 50,000 packs/day. Product names: Wei Chuan Soy Bean Drink. Flavoured Soymilk (Egg & Peanut).

(b) President Enterprise Corp., No. 2-20, Yen-Hang, Yuan Kang Hsing, Tainan, Taiwan. They started making soymilk in 1978 and now make about 200,000 packs/day (15 million liters/year). Product names: Flavoured Soybean Milk (Eggs, milk, peanut, strawberry).

(c) Tsin Tsin Food Industry Corp. No. 91, Section 3, Nanking East Rd., Taipei, Taiwan. They started making soymilk in 1978 and now make about [?] packs/day. Product names: Tsin Tsin Soya Bean Milk (Original flavour).

(2) Taiwan Tofu Association: Mr. Y.P. Yang, Secretary-General No. 9, Lane 133, Taiyuan Road, Taipei, Taiwan.

(3) We have announced your four books in our *Food Today,* December, 1977 to our 10,000 readers.

(4) Soymilk in the Cantonese is "Tou Chuang" while in the Mandarin "Tou Chiang".

(5) There are six soymilk plants operated by the local Farmers' Associations (FA). Their individual production in 1980 (in bottles):

Pao-shan 980,000
Chu-tung 850,000
Feng-lin 350,000
Lo-tung 5,820,000
Yuan-shan 2,150,000
Chia-Li 1,030,000.

They market their soymilk locally, within their townships. They started making soymilk in 1983 and now make a total of about 4.55 million liters/year.

(7) Greenspot in Thailand started making soymilk in 1958.

(8) I don't know when Yeo Hiap Seng`s soymilk changed to Vitabean and I have not heard of Vegemilk.

(9) The most recent developments with soyfoods in Taiwan are: automatic production of tofu using Japanese Takai equipment; continuous production of bean skin [yuba] by the automatic equipment; and enrichment of meat balls and fish balls with soy proteins.

(10) Per capita consumption of tofu in Taiwan is:
1975–37.07 kg. (= 81.55 lb.)
1976–37.62 kg.
1977–32.79 kg.
1978–35.80 kg.
1979–34.93 kg.
Source: Taiwan Food Balance Sheet (JCRR and CAPD).

Sincerely yours, Steve. Address: Country Director, American Soybean Assoc./Taiwan, Taiwan Branch Office, P.O. Box 3512, Taipei, Taiwan, The Republic of China. Phone: 7815880,7812110.

3465. Miller, Jim. 1981. Re: Chronology of Quong Hop's firsts in American soyfoods. Letter to William Shurtleff at Soyfoods Center, Feb. 9. 1 p. Typed, with signature on letterhead.
• ***Summary:*** In response to Shurtleff's request for additional information about Quong Hop's "contributions to the making of soyfoods history in the West, I thought I would send along the following list of firsts and other significant things pertaining to our own involvement in soyfoods, just to set the record straight."

1972–"The first orientally owned and operated tofu company to make a significant move to introduce tofu to the American consumer."

1972–"The first producer of fresh soymilk for the health and natural food as well as the oriental food market."

1973 Jan.–"The first to promote tofu in its many varieties as an economical and nutritious alternative to meat and dairy products using the enclosed pamphlet and other p.o.p. [point of purchase] material for supermarket promotions."

1975 Dec.–"The first commercial producer of tofu to use organically grown soybeans."

1976 Aug.–"The first commercial producer of tofu to use natural nigari."

1977 June–"The first commercial producer of tofu burgers" [labeled "Tofu Burgers"]. Note: Azumaya started commercial production of tofu burgers labeled "Ganmodoki" in about 1937.

1978 April–"The first producer of vacuum packed nigari tofu."

1980 May–"The first to produce aseptically packed creamy tofu dressings requiring no refrigeration."

1980 Sept.–"The first to produce a line of frozen tofu entrees for sale to the Western market for natural convenience stores." Address: Quong Hop & Co., 161 Beacon St., South San Francisco, California 94080. Phone: 415-873-4444.

3466. Stechmeyer, Betty. 1981. Re: Just a brief note to accompany the "viilia" starter. Letter to William Shurtleff at Soyfoods Center, Jan. 28. 1 p. Typed, with signature.
• ***Summary:*** "Most of my references are 80 year old Finns from here in Ft. Bragg." Gordon McBride's mother is Finnish and age 82.

"She says that traditionally viilia starter was spread in a soup bowl to which was added 'fresh' (straight from the cow) milk 'at blood temperature.' Cover with a paper or cloth to keep it clean and leave it at room temperature for a day or two. The creamy top layer is called viilia which was thicker and the portion of choice. The lower, less rich, piima was often whipped for a refreshing drink.

"My experience with making soy viilia has resulted with good consistency, and a slightly 'beany' flavor that is easily masked by fruits, etc. if one wishes. I have had little to no luck keeping a soymilk starter for more than a few generations with each succeeding batch being weaker in consistency" [than the one before it].

"Homogenized milk will not give the layering because of the mixing of the butterfat but gives a fine viilia starter for soy."

Note: The next day Akiko made out first soy viilia and we liked it very much. Address: GEM Cultures, 30301 Sherwood Rd., Ft. Bragg, California 95437.

3467. Howse, Eric. 1981. Seventh-day Adventist work with soyfoods worldwide (Interview). Conducted by William Shurtleff of Soyfoods Center, Feb. 12. 2 p. transcript.
• ***Summary:*** Howes was the International Director at the General Conference in Washington, DC, until he retired. Soyfoods are a rapidly growing component of Adventist food work worldwide. Discusses: Sanitarium Health Food Co. in Australia, DE-VAU-GE in West Germany, Granose Foods in England. A major new component is low-cost extruders making TVP. Address: 6471 Penn National Drive, Fayetteville, Pennsylvania 17222. Phone: 717-352-7239.

3468. Schmit, Matthew. 1981. Fresh tofu comes to Northern Cal. Arcata, Clifornia. 2 p. Feb. 13. Unpublished manuscript.
• ***Summary:*** "The Tofu Shop of Arcata, California, officially opened its doors on December 12, 1980, after a year of low-key planning and three months of shop/equipment renovation. Owners Matthew and Susanne Schmit label the shop 'a soy deli and whole grain bakery,' and have designed the wholesale and retail operation to be a family run business.

"Upon entering the 500 sq. ft. shop, customers find themselves in a quaint, hand-crafted retail area, offering a full line of whole grain breads and a variety of 'tofu-support grocery items' such as sauces, condiments, sea vegetables, grains, and cookbooks. Deli specials, recipes-of-the-week, and soy news items are listed on central bulletin boards. Regular deli features include soymilk, tofu cheesecake, tofu-pumpkin pie, ganmo patties, and tofu-spinach turnovers. Behind the service counter customers can see dough mixers and baking ovens, and portions of the tofu-making process are also visible from the shop's front windows–all an attempt to bring the consumers closer to the source of their food.

"The traditional-style cauldron shop is presently producing 100 pounds of firm nigari tofu per day with a capacity of 300 pounds per day. The equipment is all American made and adapted to its present function. Grinding is done with a C.W. Bell steel plate grinder. Soymilk is extracted with a traditional cider press. Settling boxes are actually stainless steel steam table inserts with drilled holes. Pressing is done with a custom-made jig using cargo jacks as adapted by Surata Soyfoods of Eugene, Oregon (Soyfoods, Summer, 1981).

"Future plans for the shop include upgrading the tofu equipment to increase production capabilities, and at the same time developing the deli facility to attract a larger cross-section of the community. Matthew and Susanne Schmit are dedicated to the community-level tofu shop concept and are happy to play a part in the growth of a viable small shop model in the United States. For information call or write: The Tofu Shop, P.O. Box 4716, 768 18th Street, Arcata, California, 95521. Phone: (707) 822-7409." Address: 768 18th St., Arcata, California 95521. Phone: 707-822-7409.

3469. Yoshimura, Sam. 1981. Re: Chronology of work at Madison Foods and reminiscences. Letter to William Shurtleff at Soyfoods Center, Feb. 20. 2 p. Typed, with signature.

• ***Summary:*** 1937-1943. Sam attended Madison College and received a B.S. degree in nutrition in 1941. "At that time extensive study on soy beans and human nutrition was conducted at the college under the direction of Francis Dittes, (Ph.D. in nutrition) Phillip Chen, (Ph.D. in chemistry) and Perry Webber (Ph.D. in nutrition). Madison Foods (owned by the college) was manufacturing various canned and dried vegetable protein products including Kre-O-Soy (soy milk) and Cheze-O-Soy (seasoned tofu) and marketed them nationally. I received valuable experience working in the food plant.

1943-1946. Sam went to Emmanuel Missionary College located in Berrien Springs, Michigan (now renamed Andrews University), and received a B.S. degree in agriculture in 1945.

1945-1956. Sam returned to Japan and re-established San-iku Foods (owned by the Japan Missionary College). The college was closed during World War II. The company made canned and baked products based on wheat and soy proteins and marketed them extensively, including at Mitsukoshi, Seibu and other department stores. A series of pilot scale tests of soy milk production was conducted under the direction of Dr. Harry Miller. However, they did not start commercial production due to the somewhat weak public response to the product.

1956-1963. He worked for Madison Foods in Tennessee, where he was responsible for managing the production, research, and development program. Various canned vegetable protein products were produced. Madison Burger based on wheat and soy protein and improved Cheze-O-Soy were well accepted by the market. At the beginning of 1962, production of Infa Soy using Dr. Harry Miller's formula, was started under the direction of his son, Willis Miller; J.B. Craw was general manager at that time.

1963-1964. Sam left Madison Foods and went to work for Madison Hospital (owned by the organization). He was assigned to develop economical vegetable protein products suitable for hospitals, schools and other institutions. A series of frozen products including the so-called "Sam's Chicken," made with wheat protein [gluten] and tofu, were formulated. The product was well accepted by institutions as it had a torn chicken-like texture. "It was a least expensive product. I understand a dish prepared with Sam's Chicken (supplied by Southern Missionary College) received recognition at the International Restaurant Show in Chicago several years ago.

1965 to present. He joined Worthington Foods after Worthington acquired Madison Foods. Worthington sent him to Africa Basic Foods Inc. in Uganda, East Africa, to assist development of soy protein products. During his 6-month stay the company produced soy milk, tofu, CSM (combination of corn, soy and powdered skim milk) and other high protein products for hospitals and the school lunch program. It was a missionary project for the company to take part in solving kwashiorkor problems. It was an unforgettable and rewarding experience for Sam. He is a staff member of the R&D department, especially assigned to develop new products. He is also a professional member of the Institute of Food Technologists.

For information regarding Krem-O-Soy and other products from the early days of Madison Foods, contact Dr. Register (Chairman, Dep. of Nutrition, Loma Linda Univ.) or Dr. Shirou Kunihara at the same university. They were students at Madison College and did R&D work for the food plant. The son of Dr. Philip Chen (deceased) is at the Weimar Institute, Box A, Weimar, California 95736. Address: 8200 Colonial Meadows, Westerville, Ohio 43081. Phone: 614-882-0625.

3470. Adler, Jerry; et al. 1981. The browning of America: Drought, waste and pollution threaten a water shortage whose impact may rival the energy crisis [of the 1970s]. *Newsweek.* Feb. 23. p. 26-30, 35-37.

• ***Summary:*** In the western states, the "Federal government has spent billions of dollars to divert water so farmers can grow crops on arid land, but that creates trouble of another kind; mineral residue from decades of irrigation has poisoned once fertile soils...

"Most alarming of all, vast underground reserves of water, deposited over thousands of years, have been seriously depleted in a matter of decades. All water comes as rain from the sky, but 92% of it either evaporates immediately or runs off, unused, to the oceans. One-quarter of the water that irrigates, powers and bathes America is taken from an ancient network of underground aquifers. In 1950, the nation took 12 trillion gallons of water out of the ground; by 1980, the figure had more than doubled, and each day, 21 billion more gallons flow out than seep in. Water from the great Ogallala Aquifer (map, page 28), which stretches from West Texas to northern Nebraska, is being used up, as irrevocably–and some would say as wantonly–as the oil that lies beneath it... 'there are some people projecting that as early as the year 2000, there will be parts of Nebraska with their water supplies so depleted that farming may never return.' The nation's water outlook now is frighteningly reminiscent of the oil outlook a decade ago...

"The energy crisis and the water shortage are inextricably linked. The limiting factor in irrigation tends to be the high cost of electricity to run the pumps as the water table recedes...

"Just as Americans have discovered the hidden energy costs in a multitude of products–in refrigerating a steak, for example, on its way to the butcher–they are about to discover the hidden water costs. Beginning with the water

that irrigated the corn that was fed to the steer, the steak may have accounted for 3,500 gallons. The water that goes into a 1,000-pound steer would float a destroyer. It takes 14,935 gallons of water to grow a bushel of wheat, 60,000 gallons to produce a ton of steel, 120 gallons to put a single egg on the breakfast table."

The Ogallala Aquifer, named "after an Indian tribe that once roamed the High Plains, is perhaps the largest underground reservoir of fresh water in the world–an estimated 2,000 million acre feet (1 acre foot = 325,851 gallons) trapped in sand, gravel, and silt laid down by the rivers of the Pliocene and early Pleistocene." Eventually the river and plentiful rain waters were trapped between a layer of impermeable shale on the bottom and an erosion-resistant rock cap on top. "Every year farmers withdraw more water from the Ogallala than the entire flow of the Colorado River. But because sparse rain barely penetrates to the aquifer, very little water flows back in. Water tables are falling from 6 inches to 3 feet a year, and, on average, the Ogallala has 40 years of useful life remaining; in some localities the bottom will be reached much sooner...

"Already, irrigated acreage is declining in five of the six states that draw water from the Ogallala, with predictable results: lower yields and a shift down the water scale from corn crops to cotton or sorghum... Gerald Higgins, an economist with the Texas Department of Water Resources, predicts that 'corn will disappear from the Texas High Plains within the next few years.'...

"But like most states, Texas lets its farmers pump away. The last American frontier is underground, where miners, developers and big farmers race each other to the bottom of the aquifer... For years, Houston [Texas] slowly sank as water was sucked from beneath it; California's San Joaquin Valley has dropped by nearly 30 feet in some places. The compacted subsoil loses its capacity to hold water, so that even if pumping stopped the aquifers could never fully recharge. There are innumerable large and small aquifers underlying the United States, supplying nearly one-half its drinking water."

"Innocent practice of irrigation can cause ecological havoc. Irrigation water carries dissolved salts, which build up in poorly drained soil as the water evaporates and eventually make it impossible to grow most crops. By 1990, as much as a quarter of California's immensely productive San Joaquin Valley could be threatened."

How the nation spends its water (all figures in 1,000 million gallons. Source: U.S. Water Resources Council). Rainfall and other precipitation: +4,200. Evaporation -2,787. Streams to the oceans, Mexico, and Canada -1,328. Input into ground water -61. Withdrawn from ground water +82 (so deficit of 21,000 million gallons of year as America overdraws its ground-water supply). Consumption (106, all minus): Agriculture 87.7 (82.7% of total consumption), manufacturing and minerals 8.2, domestic (people in and around their homes) 7.3 (6.9% of total consumption), power generation 1.4, public lands 1.4.

Another basic problem is water pollution. "Not even 4,000,000 million gallons of rain a day can dilute the results of decades of folly and greed... Cattle feedlots in Iowa, pesticide-laden potato fields in Long Island and bacteria from human sewage have all contaminated precious ground water... The contamination of ground water is almost irreversible."

"Even the seemingly innocent practice of irrigation can cause ecological havoc. Irrigation water carries dissolved salts, which build up in poorly drained soil as the water evaporates and eventually make it impossible to grow most crops. By 1990, as much as a quarter of California's immensely productive San Joaquin Valley could be threatened."

Page 36 discusses the fight over Colorado River water, the $1,600 million Central Arizona Project which will deliver more than 1 million acre-feet a year to fast-growing Phoenix and Tucson, water wars in Los Angeles and Inyo County over the Owens River, and the Peripheral Canal (which was later defeated by voters). "The government's century-old policy of encouraging the settling of the West through cheap water is increasingly viewed as an anachronism... The old pork-barrel approach to Western water projects in Congress is also breaking down... In the long run Americans will have to learn that the era of cheap water, like the era of cheap energy before it, is over."

A sidebar describes how Israel makes very efficient use of its scarce water–25 inches of annual rainfall.

3471. Del Valle, F.R.; Villanueva, H.; Reyes-Govea, J.; Escobedo, M.; Bourges, H.; Ponce, J.; Munoz, M.J. 1981. Development, evaluation and industrial production of a powdered soy-oats infant formula using a low-cost extruder. *J. of Food Science* 46(1):192-97. Jan/Feb. [24 ref] Address: Chihuahua, Mexico.

3472. *Food Engineering International* (*Chilton's*). 1981. 'Mechanical cow' gives milk made from soya. Jan/Feb. p. 54-56. [Eng; ger; fre; spa]

• ***Summary:*** Brazil is considering a plan that would extend the nation's milk supply by mixing 30% of a soy milk with the cow milk supply. Soy bean prices are low in Brazil, and a liter of soy milk can be manufactured for one third to one fourth the cost of a liter of cow milk. Soy milk is not new to Brazil; From 1968-1970 Coca-Cola Co. introduced experimental soy milk production, but the project was discontinued because the price was still too high and the packaging was expensive.

Now Roberto Moretti, a food technology professor, has developed a mini soy milk plant popularly called the "Mechanical Cow," which is easy to run, compact, and relatively inexpensive; installed in schools, factories,

hospitals, etc. it can make inexpensive soymilk (US$0.10/liter, flavored, sterilized and refrigerated) that needs no packaging. One "mechanical cow" can produce 200 liters/hour. Moretti also produces a dryer. Some hospitals are using the mechanical cow to make soymilk that is mixed at the 30% level with cow milk to lower the price of the latter.

3473. **Product Name:** Soybean Beverage (Soymilk).
Manufacturer's Name: Hoven Foods.
Manufacturer's Address: 506 6th Ave. South, Seattle, WA 98104.
Date of Introduction: 1981. February.
Ingredients: Water, soybean extract, sugar, sodium bicarbonate, sodium benzoate.
New Product–Documentation: Leviton. 1981. Soyfoods. Winter. p. 17.

3474. John, Harrison W. 1981. Adventist food industries: Recent developments. *Spectrum: Journal of the Association of Adventist Forums* 11(3):28-36. Feb.
• ***Summary:*** One of the most informative articles ever written about Seventh-day Adventist food companies worldwide. "Ever since Ellen G. White's health reform message of 1863, Seventh-day Adventists have had a 'theology' of nutrition." In 1979 food sales for Adventist manufacturing and marketing companies totaled $188 million, up 95% over 1974 sales of $96 million, and up 3.68 times over 1970 sales of $51 million. The most successful company is Sanitarium Health Food Company in Australia. Sales for the 5-year period 1975-75 totaled $400 million. Their most popular product is read-to-eat "Weet Bix," a breakfast cereal that outsells Kellogg's Corn Flakes.

In Europe: Earned income figures for 1978 were impressive. DE-VAU-GE's income was $12.2 million (second only to Sanitarium Health Foods in Australia). Nutana's was $7.6 million ($10 million in 1979), and Granose's was $1.8 million. Nutana showed an impressive tenfold sales increase from 1973 to 1979.

Profit figures, however, were not impressive. In 1978 Granose lost about $295,000 and Nutana $5,903. DE-VAU-GE's profits were unknown. Granose had been a consistent money looser; between 1975 and 1978 it lost an average of $101,000 a year and its net worth decreased from $331,902 in 1975 to $113,515 in 1978. Thus in October 1979 Sanitarium Health Foods of Australia was asked to take over the management of ailing Granose. Loma Linda Foods in the USA has also had problems. Though 1978 sales were $11.7 million, they lost $390,000. In April 1980 management and control of LLF was transferred to Sanitarium of Australia. In about 1978 Granix in Argentina and Superbom in Brazil entered the vegetable protein market with TVP and are currently producing 700 tons/year. In 1976 a "World Foods Service Expansion Program" was started to finance expansion of food production into countries having serious nutritional problems. Low-cost extrusion cookers making TVP were a key part of this program. Address: Rockville, Maryland.

3475. Johnson, L.A.; Deyoe, C.W.; Hoover, W.J. 1981. Yield and quality of soymilk processed by steam-infusion cooking. *J. of Food Science* 46(1):239-43, 248. Jan/Feb. [18 ref] Address: 1. Food Protein R&D Center, Texas A&M Univ; 2-3. Kansas State Univ.

3476. **Product Name:** Soy-Ya!
Manufacturer's Name: Joy of Soy.
Manufacturer's Address: Minneapolis, Minnesota.
Date of Introduction: 1981. February.
New Product–Documentation: Leviton. 1981. Soyfoods. Winter. p. 17. "A honey-flavored soymilk provided in quarts and pints."

Leaflet (front and back, printed black on yellowish orange). 1981. "Soy-Ya!" "Soy-ya! is a nutritional alternative to dairy milk made from soybeans and water." Contains a nutritional analysis plus 6 recipes.

3477. Leviton, Richard. 1981. World Soya Conference: Exporting mainstream soybean technology. *Soyfoods* 1(4):13-15. Winter.
• ***Summary:*** A report on the week-long World Conference and Exposition on Soya Processing and Utilization, convened in Acapulco, Mexico on 9 Nov. 1980. It attracted over 600 technical registrants, 200 exhibitor personnel and spouses, and 200 daytime Mexican students from a total of 42 nations. Address: Colrain, Massachusetts.

3478. Leviton, Richard. 1981. Making soymilk in America. *Soyfoods* 1(4):16-24. Winter.
• ***Summary:*** A review of soymilks available nationwide and a detailed analysis of Numu, New England Soy Dairy's problematic soymilk and the reasons for its failure in September 1980, at a cost of $40,000. Also discusses: Vitasoy (imported to California). President Soybean Drink (imported to California). Soy Fresh (made by Quong Hop in California since 1972). Soy Moo (made by Health Valley in California). Fresh Soybean Juice (made by Wy Ky of Los Angeles). Soymilk (made by Mighty Soy). Soybean Beverage (made by Hoven Foods, Seattle). Soy Juice (made by Redwood Valley Soyfoods Unlimited [Richard Rose]). Plain Soymilk (made by Island Spring, Vashon, Washington). Nutrisoya (made by Victor Food Products, Toronto, Canada). Soy-Ya! (made by Joy of Soy, Minneapolis, Minnesota). Soy Milk (made by White Wave of Boulder, Colorado). Soyalac and Soyagen (made by Loma Linda of Mt. Vernon, Ohio). In 1978 Nasoya introduced Vidasoy–prematurely; it was a disaster. A photo shows Stephen Yu holding a bottle of Victor Foods' Nutrisoya. Address: Colrain, Massachusetts.

3479. Leviton, Richard. 1981. Putting tofu in the lunch boxes of America: A report on serious soyfoods marketing. *Soyfoods* 1(4):54-61. Winter.
• ***Summary:*** About New England Soy Dairy, Timothy Metzger and Dannon Yogurt, Larry Needleman and Bean Machines, Thelma Dalman (Food Service Director for Santa Cruz city school system), Al Jacobson (The Wizard of Foods, "a tidy, bustling, elfin, walking idea man") and his Garden of Eatin', Paul Duchesne and Wildwood Natural Foods, Steve Demos and White Wave. A photo shows Victor Food Products on sale in Canada: VFP Tofu, and VFP Nutrisoya soymilk.

A sidebar by Timothy Metzger, gives an interesting history of marketing dairy yogurt in America. Dannon introduced its yogurt to the U.S. some 38 years ago (i.e. about 1943). Concerning Wildwood (p. 61): "In Fairfax, just over the hills from the Golden Gate Bridge and San Francisco, Paul Duchesne's Wildwood Natural Foods appears to fulfill the dreams of many soyfoods proprietors by combining both light tofu manufacture with light sandwich production in a clean, efficient, and industrious little shop. Mr. Duchesne designed his shop as a tofu showcase with broad wall-to-wall front windows so that passers-by may glimpse tofu production during the days. Wildwood produces a line of eight packaged vegetarian sandwiches including *Brown Rice and Tofu Sandwich* (with vegetables in a whole wheat bun), *Tofu Vegetable Salad, Two Beans in a Bun, Carrot-Raisin Salad, Marinated Bean Salad,* and *Beet Salad.* While they enjoy the luxury of a delivery van for San Francisco accounts, Mr. Duchesne impressed upon me the fun of using a bicycle that pulls a small flat trailer for on-the-street sales in Fairfax on those endless California summer days when folks are out relaxing on their skateboards and zipping down the street on roller skates and sailboats crisscross Sausalito Bay." Address: Colrain, Massachusetts.

3480. Leviton, Richard. 1981. With spoon in hand: A survey of soymilk ice creams. *Soyfoods* 1(4):62-64. Winter.
• ***Summary:*** Soymilk ice creams are on the rise in America. Discusses: Ice Bean (made by Farm Foods in San Francisco, but removed from the market in early 1980). Jolly Licks Ice-C-Bean (developed and marketed by Mark Brawerman's Jolly Licks of San Francisco). Soy Freeze (made by Island Spring of Vashon, Washington). Soy Dream (formerly named Ice Dream Frozen Dessert, made by Quong Hop & Co. in South San Francisco). Soy Dream (developed and marketed by Al Jacobsen's Garden of Eatin' in Los Angeles). Polar Bean (made by White Wave Soyfoods of Boulder, Colorado). Soy Dream (made by Joy of Soy in Minneapolis, Minnesota). Sunflower Frozen Desserts (made by Susan Gershuny and Kirk Meyer of Tivoli, New York). Soy Softee (made by Cindy and Steve Hassell of The Granary in Northampton, Massachusetts, and sold from a soft serve machine in their retail store).

For most products, the flavors and ingredients are given. Photos show: Cindy Hassell of the Granary in Massachusetts holding up a cone filled with her Soy Softee. Many pints of Ice Dream. Mark Brawerman of Jolly Licks. Address: Colrain, Massachusetts.

3481. Leviton, Richard. 1981. Tofu plant profiles: Soycrafters on the Island [Luke and Suni Lukoskie of Island Spring on Vashon Island, near Seattle, Washington]. *Soyfoods* 1(4):42-44. Winter.
• ***Summary:*** "From the back step of Island Spring's soyfoods plant on Vashon Island near Seattle, Washington, when you take a moment's break from making tofu and look out over the orchard and small plane airstrip, you enjoy a stunning view (when the sky is clear) of towering, snowcapped Mt. Rainier, rising 14,000 feet above sea level some 120 miles to the south. Island Spring, Inc., founded in 1977 by Luke Lukoskie and Suni Kim, his wife, shares space in a broad, squat building with Wax Cannery, a small-scale orchardist and fruit juice bottling company that constructed the Island Spring production space to their specifications. Outside the tofu plant, there's a miscellany of second-hand steam kettles and bulk holding tanks and Army surplus discards, that Mr. Lukoskie was quick to scrounge up and rejuvenate for his production needs.

"The Island Spring plant is tightly laid out with five long aisles of equipment, workspace, and production supplies, flanked by an overhead loft that runs along the back wall and houses dry materials, coagulants, labels, and boxes. Immediately outside the shop, a metal silo stores 50,000 pounds of dry bulk soybeans which are augured, when needed, into the shop for soaking in either steam kettles on wheels or in stainless steel twin compartment moveable tanks. The soaked beans are then scaled up in measures (the batch size is 140 pounds of beans and 30 gallons of water) on a large industrial scale wrapped in plastic against the ubiquitous moisture, placed in polyethylene tubs, and hoisted to the floor of their five-foot raised platform. The worker mounts the platform to dump the hydrated beans into the hopper of their soybean mill (a J.C. Ford Master wet corn grinder, which they bought for $2,850 in 1976; 548 Monterey Pass Road, Monterey Park, CA).

"The worker tends two adjacent 60-gallon steam kettles that receive (alternately) the ground soybean puree from the mill; the foam is sprayed down with cold water, and when the cooking is finished, the slurry is pumped into their home-made, hand-hydraulic soymilk press. After extraction, the soymilk is pumped into one of three steam kettles that serve as curding barrels. Each barrel, which has a 120-pound capacity, produces three 40-pound batches of tofu curds, or enough for three forming boxes. The soymilk is coagulated using either nigari or calcium sulfate. The curds are then ladled into the three forming boxes, most of the whey is drained off before ladling, and buckets filled with water are

hoisted on top of the lids for weight. The finished tofu is sliced on the lid which floats in the water in the cooling tank; it's sliced according to an imprinted grid that forms a cutting pattern on the tofu during pressing. The cooling tank, which is 25 feet long and was purchased for only $300, holds 1,800 pounds of tofu, has circulating cold water, and freon coils for chilling the water (not presently used). Metal screens on four-inch risers are set on the tank bottom to facilitate packing and to prevent the tofu from making contact with the tank bottom. Almost all of the tofu (silken and regular) is packaged in 16-ounce tubs, then packed in cardboard boxes and cooled until delivery. In late October the daily tofu production was 15 batches (1,800 pounds) requiring four people working 6½ hour shifts. Mr. Lukoskie reports that 70 percent of their tofu sales are to Washington supermarkets.

"Island Spring produces both regular and silken tofu (calcium sulfate-based, made every 10 days in 120-pound batches) for a weekly total of 10,000 pounds. One thousand pounds are converted into Delicious Steamed Tofu, fresh griddled slabs of tofu packed in a soy sauce, 480 pounds of Soyloaf, 210 quarts of Soyfreeze [soy ice cream] (described in With Spoon in Hand, this issue), nine gallons of soymilk daily, and some 700 pounds of soy tempeh every week.

"Let's look briefly at the Island Spring tempeh process. For tempeh, the daily batch size is 80 pounds of dry soybeans that produces 260 eight-ounce units. They use a CeCoCo dehuller for bean dehulling, an item they purchased second-hand in 1976 for less than $1,000 (purchased originally in Japan in 1966); this removes most of the hulls and the rest are skimmed off when the beans are boiled. The dehulled beans are kept at a racing boil for 30 minutes in a portable steam kettle, followed by spin-drying in the centrifuge. This requires three or four loads to get the beans sufficiently dry. This stage is slow as each load handles only 25 pounds of beans.

"The inoculated beans are packed in shallow tofu tubs which have no bottom aeration or drainage; therefore excess moisture in the beans condenses on the top lid and "rains" down on the fermenting soybeans (rather than escaping as steam), sometimes causing spoilage or retardation of the Rhizopus. The beans and inoculant are blended thoroughly in a Leland rotary mixer and vinegar is added; then the inoculated beans are scooped out and placed in eight-ounce tubs to be stacked on trays on moveable bakery racks. The tubs are heat-sealed with film and holes are pricked in the film with a special nail punch. This punch has been sterilized for one hour in a special Sterilizing Hood that purifies and filters air with fans and ultraviolet light; the hood is also used as a sterile workspace for tempeh starter production. The tempeh is incubated in a 6 foot x 6 foot incubator at 85ºF for 12 to 18 hours. For the last step, they apply 'crack-and-peel' tempeh labels over the pin-pricked film, and refrigerate until delivery.

"As a soy plant, Island Spring is a model to emulate, impressive for its efficiency, economy and scale, thrift, ingenuity, and product wholesomeness. Specifically, here are 14 points of commendation: (1) their bulk soybean storage and auguring system, one of only a few such systems in the country; (2) the innovative use of steam kettles and the concept of 'kettles on wheels' which saves space; (3) the efficient but inexpensive dehuller and wet grinder, both not commonly known; (4) the trim production floor layout designed for compartmentalization of products, high-volume production, and efficiency; (5) the large cooling tank with inside raised mesh and freon coils' that was still inexpensive; (6) the use of removable steam injection hoses for the 'kettles on wheels'; (7) the marvelous steaming bell that is lowered over the racks of Soyloaf to the floor with a steam hose injected in the side, then hoisted up out of the way when not in use;

"(8) iodine dip buckets for hand disinfecting, soaking tanks for production cloths, and the general high level of sanitation awareness; (9) the Sterilizing Hood used for tempeh starter production and purification of the nail punch; (10) the use of shallow broad sinks at the curding barrel stations for utensils used in coagulation; (11) the electric insect grill suspended from the ceiling; (12) the simple pumping system that moves the puree from the grinder to cooker, slurry from cooker to press, and soymilk from press to curding barrels; (13) the use of both nigari and calcium sulfate, unusual among Western shops; (14) their unique batch-piecework payment schedule that enables some production workers to earn over $7 an hour, including a health plan and flexible schedule, making Island Spring workers just about the highest paid soycrafters in the country.

"Island Spring has not only mastered the demands of engineering a smooth production system with low-technology, low-expense solutions, they have also introduced North America's pioneer Soycrafters Apprenticeship Program, an invaluable service where soycrafters are trained for three weeks in all aspects of soyfoods production and business management. Apprenticeship Program Director Steven Sloan reports they receive 50 inquiries a month, that they have graduated 15 students already, and that several of them have since inaugurated their own soy plants in places like Utah and Mexico. Other innovations continue. The tempeh makers are experimenting with producing preformed tempeh burgers by incubating the tempeh in round petri dishes; already they are selling 75 four-ounce patties weekly. To streamline tofu production, Mr. Lukoskie will install a new Okita three-compartment cooker and a Brown-Sweco soymilk extraction unit; and to simplify forming box tofu pressing, he will construct a series of overhead hydraulic beam presses with cement weights. With this new system he expects to increase his production capacity per hour by 25 percent. In addition, Island Spring is the first shop in America to install Bean Machine's brand new BMI Disintegrator for soybean grinding.

"As for new products, Younghee Kim, Suni Kim's sister, is developing a commercial *kim che* [*kimchi, kim chee, kimchee*] (fermented Chinese cabbage, very popular among Koreans) for the Western, rather than Oriental (which has suppliers) market in Seattle. Their label describes *kim che* as 'a spicy Korean pickled condiment in a piquant sauce,' and includes, in one-pint jars, 'napa cabbage, green onions, garlic, ginger, red pepper, water, salt.' *Kim che* contains no preservatives with a shelf life of at least 50 days, and requires refrigeration after opening."

Photos show: (1) Emptying hot okara into a steel barrel at Island Spring. (2) Suni Kim Lukoskie. (3-4) Two views of the inside of the plant. (5) Laminar sterilizing hood for tempeh-starter. Address: Colrain, Massachusetts.

3482. Leviton, Richard. 1981. Tofu plant profiles: Competing in the Diho Market [Maung Myint and Mrs. Jin Yee Lee of Mighty Soy in Los Angeles, California]. *Soyfoods* 1(4):46. Winter.

• ***Summary:*** Mighty Soy opened in August 1980. The two owners employ three workers. Together each day they produce 700 pounds of tofu (both silken and firm), 500 pints of soymilk, and 100 x 14-ounce containers of Soybean Gelatin Dessert (a pudding made by adding gelatin to hot soymilk). The prestigious Diho Market is "an Oriental supermarket with the largest section of tofu, soymilk, tofu pouches, and soy products I've ever seen in a store." The tofu arrives here at $0.42 a pound wholesale and the competition is fierce among companies like Hinode, Wy Ky, American Foods, and Mighty Soy. Photos show: Maung Myint. His hydraulic forming box presses. Address: Colrain, Massachusetts.

3483. Moretti, Roberto H. 1981. The Mechanical Cow: Low cost soymilk machine. *Soyfoods* 1(4):53. Winter.

• ***Summary:*** An illustration (line drawing) shows the Mechanical Cow, made by Vanguarda Mecanica in Brazil. A group of light, simple, easy to maintain pieces of equipment, it makes low-cost soymilk in four stages: (1) Soaking soybeans; (2) Grinding the soybeans in water at 98ºC, filtering the mixture in synthetic cloth and a centrifuge; (3) Formulation; (4) Sterilization (continually in a heat exchanger at 133ºC for 2 minutes) and cooling.

All machine parts that contact the soymilk are made with stainless steel. Production capacity is 200 liters/hour; 1 kg of soybeans yields 8 liters of soymilk containing 3% protein.

Vanguarda Mecanica complements its soymilk machine with a Dryer of Soymilk Residue [okara] which is practical and economical. In 2 hours and 10 minutes it can dry 20-22 kg of okara–the amount resulting from 2 hours of soymilk production.

Dr. Moretti has sold 90 mechanical cows, which are in operation in Brazil, Paraguay, Ecuador, and the Seychelles Islands. The soymilk machine costs $15,000 and the okara drier costs $12,000, both F.O.B. Brazil. Moretti's Cow won first prize in 1979 among 200 patented inventions in Brazil. He is looking for American distributors. Address: Dr., Vanguarda Mecanica, Av. Prof. Atillo Martini, 374, Cidade Universitaria, Barao Geraldo, Campinas, Sao Paulo, Brazil.

3484. **Product Name:** [PHAG Soya Drink].
Foreign Name: PHAG Soja-Drink.
Manufacturer's Name: PHAG Sàrl (Produits Hygièniques Alimentaires Gland) (Marketer-Distributor). Made in Belgium by Alpro.
Manufacturer's Address: La Ligniere, CH-1196 Gland, Switzerland. Phone: 022/64 11 18.
Date of Introduction: 1981. February.
Wt/Vol., Packaging, Price: 0.5 liter Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: This company was founded in 1895. Leviton. 1983. Report on soyfoods research and speaking trip to Europe with American Soybean Assoc., Oct. 8–Nov. 15. p. 17. Product seen at Reformhaeuser in Switzerland. Retailed for F1.65/500 ml.

Letter from Remy Mayer of PHAG. 1990. Oct. 2. This product was introduced in Feb. 1981. His company distributed the product, which was made by a manufacturer in Belgium [probably Alpro]. "PHAG is written officially in capital letters. It is an abbreviation of 'Produits Hygièniques Alimentaires Gland.'" On the company's letterhead, the logo is an illustration of the profile of a squirrel. Below the logo is written: "Force de la nature–Kraft der Natur" ("The Power of Nature"). After the company's name is written "Alimentation naturele–Neuzeitliche Nahrungsmittel" ("Natural foods–Modern foods"). New labels were created in 1985 after DE-VAU-GE began soymilk production.

Labels sent by Mayer. 1991. Jan. 24. 500 ml and 1 liter Tetra Brik Aseptic cartons. Red and green on white.

3485. **Product Name:** President Soybean Drink.
Manufacturer's Name: President Foods Co. (Importer). Made in Taiwan by President Enterprises Corp.
Manufacturer's Address: Hawaii.
Date of Introduction: 1981. February.
Ingredients: Soybean, refined sugar, filtered water, emulsifier, skim milk powder, vitamins A, B-1, B-2.
Wt/Vol., Packaging, Price: 8.5 fluid oz package.
New Product–Documentation: Leviton. 1981. Soyfoods. Winter. p. 17. "This imported product is available in California Chinatowns." Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 16, 33, 46, 95-98. "President, a large food conglomerate and the largest soymilk maker in Taiwan, set up offices in Hawaii by early 1981, then began to import to the U.S. Its first test market was in Seattle."

3486. Purves, Rebecca. 1981. Vegan diets for young children. *Nutrition and Food Science.* Jan/Feb. p. 4-6. [8 ref]
• ***Summary:*** In 1944 a group of strict vegetarians formed the Vegan Society and called their diet a vegan diet to distinguish it from an ordinary vegetarian diet. Vegans are people who do not eat any food of animal origin. In recent years vegetarian and, to a lesser extent, vegan diets have increased in popularity. The usual reason is ethical: a distaste for eating animal flesh and the abhorrence of animal suffering. The children's diet contained soya milks (Plamil and Granogen). There are hazards of a vegan diet though: Bulkiness (especially for children), monotony, deficiency of vitamins B-12 and D. Conclusion: The anthropometric measurements made indicated that the children were growing normally, although there was a tendency for them to be shorter in stature and lighter in weight when compared with standards. Address: Nutrition Dep., Queen Elizabeth College, Univ. of London, England.

3487. Shurtleff, William. 1981. Dr. Harry Miller: Taking soymilk around the world. *Soyfoods* 1(4):28-36. Winter.
• ***Summary:*** Contents: Introduction. Growing up (1879-1902): Birth, early contact with Dr. J.H. Kellogg, marriage. Early years in China (1903-1911). Washington, DC (1912-1925). Pioneering soymilk in China (1925-1939): Research, development of plant, destruction of plant 13 Aug. 1937, U.S. patent, No. 2,078,962 for soymilk process and equipment, work before return to U.S. Introducing soyfoods to America (1939-1949): In Mt. Vernon, new products, work with AMA, American Soybean Assoc. speaker and lifetime member 1958, contact with K.S. Lo and Vitasoy. Research and work around the world (1949-1977): Quick visit to Shanghai, death of second wife, sale of International Nutrition Foundation, Taiwan work, Indonesian plant, Trinidad, Libya, Japan, old age and relationship with William Shurtleff, the "Great Man." Contains 5 photos, and a sidebar titled "Early History of Soymilk."

Among the many people who pioneered in bringing soyfoods to America and to the West, two men of great vision, dedication, and perseverance deserve special mention: Dr. Harry W. Miller and William J. Morse. Dr. Miller, the well-known 'China Doctor'(after his biography by that title), was a world-famous missionary doctor and surgeon, and founder of more than 15 Seventh-day Adventist hospitals around the world. He was one of those unique individuals who was both a dreamer and a doer, and who inspired almost everyone who knew him.

"Like W.J. Morse, he considered it his personal 'responsibility to awaken the West to the wonders of the soybean and to promote its use as food. (But where Morse was interested in soybean agronomy, livestock feeding, and food, Miller was interested only in food uses.) Dr. Miller can also be considered the founder of the modern soymilk renaissance in Asia. The development and popularization of soyfoods, and especially soymilk, was his lifelong hobby and despite his other numerous and demanding careers, he never lacked the time, over a span of almost 75 years, to continue his ongoing research and work in this new field that he loved so well.

"Growing Up (1879-1902): The first of five children of Amanda Ehlers and John Oliver Miller, Harry was born in a log cabin on a farm in the small town of Ludlow Falls, Ohio (just north of Dayton) on 2 July 1879. His father was a school teacher. He later wrote that he delighted in working on the family farm but found it 'disgusting' to have to kill and eat the animals he had raised. When he was 12, Harry's parents became Seventh-day Adventists. Two years later, after much study, at the annual camp meeting, he and a friend decided to be baptized and become Adventist church members.

"At age 15 Harry entered secondary school at the Adventist-run Mt. Vernon Academy in Mt. Vernon, Ohio. He loved the strict, puritan atmosphere, the vegetarian diet, and the teachings of the church. In 1898, at age 19, he enrolled in medical school at the newly opened, Adventist-run American Medical Missionary College in Battle Creek, Michigan, which was associated with Dr. John Harvey Kellogg's Battle Creek Sanitarium (founded in 1866), the largest and most progressive medical institution of its kind in America at that time, and the birthplace of modern dietetics. Opposing the popular cures of the day (drugs, bleeding, etc.), the sanitarium recommended diet (especially a simple grain-based vegetarian diet), exercise, hydrotherapy and good mental health as the foundations of healthful living and natural healing. These teachings had a lifelong effect on Miller.

"Working to pay his own tuition, room, and board, Miller led guided tours through the sanitarium and food factory, which forced him to learn more about the various foods (America's first meat analogs and breakfast cereals) and how they were made. Miller was deeply influenced by the personality and teachings of Dr. J.H. Kellogg, who personally taught a number of the classes Miller attended, treated him like a son, and helped put him through college. One of America's great pioneers of both nutrition and of soyfoods, Kellogg stressed to the small class the importance of preventive medicine, nutrition, and diet. He strongly opposed the use of alcohol, tobacco, caffeine, and narcotics. Miller later noted that almost all the students in the small class lived past the age of 90; Kellogg lived to age 91, Miller to 97½ and one classmate to 101.

"Miller graduated in 1902 and was married to a classmate-doctor, Maude Thompson, the same year. During an internship autopsy, Dr. Miller cut his finger badly and suddenly contracted systemic blastomycosis, an infection considered at the time to be fatal. With deep faith he prayed to God, promising that if he were to be healed, he would go anywhere in the Lord's service. To the astonishment of

his doctors, Miller was miraculously healed. This greatly deepened his faith. Shortly thereafter a call came from the Adventist church for a missionary doctor in China. Miller accepted the challenge. For the rest of his life he prayed for his patients before all operations (minor or major), and, according to others, apparently his great faith was rewarded by their recovery.

"Early Years in China (1903-1911): In October 1903, Dr. Miller and Maude, together with another physician couple, sailed for China, stopping briefly in Japan. In Kobe, at the home of fellow Adventists, Myrtle Lockwood first introduced Miller to soyfoods serving an entree called Tofu Loaf, with which Miller was particularly impressed. In China the couple went deep into the interior, near the center of Honan Province, where they found great poverty and malnutrition. They both learned Chinese, dressed like the local people, and even adopted the hair style of a long queue and shaved pate. They also ate Chinese foods, and soon Miller was visiting local tofu shops, learning about and sampling tofu, yuba, curds, soymilk, and the like. He found that tofu was much more widely consumed than soymilk, although the latter was quite widely used as a spicy hot breakfast soup and a warm, sweetened beverage. Dr. Miller later said (1961) that many Chinese and other East Asians told him that they did not drink much soymilk since they believed it caused them intestinal disturbances, which tofu did not. Perhaps this was why soymilk was not generally fed to infants-and children.

"In 1905, Dr. Miller's beloved wife died suddenly of an unknown disease. He was 26. 0ut of his deep sadness grew an even deeper commitment to help the impoverished and suffering millions of China. After a brief return to America two years later, where he married Marie Iverson, Miller returned to Shanghai. Two daughters were born in 1908 and 1910. Then Dr. Miller contracted a severe unknown disease and was forced to return to America in 1911.

"Washington, D.C. (1912-1925): Miller eventually managed to heal himself of what he later learned was a vitamin deficiency illness called sprue. During recovery he taught the Bible at Mt. Vernon Academy, his former alma mater and in 1912 his first son. Harry Willis, Jr., was born. Soon he was called to the position of medical superintendent and surgeon of the Adventist-run Washington Sanitarium and Hospital, which he developed into a Mecca for congressional leaders of the day. He became consulting physician to three U.S. presidents. In Washington he pioneered new techniques of thyroid goiter surgery, which lowered fatalities from 50 percent to about one percent. He eventually performed over 6,000 goiter surgeries around the world. In Washington he also met Dr. W.J. Morse and Dr. J.A. LeClerc, both soy pioneers from the USDA. He later wrote that these men filled him with 'inspiration, enthusiasm, and information,' and both later made frequent visits to Miller's soymilk plant in Ohio. In 1915 a fourth child, Clarence, was born.

"Prior to 1917 the Sanitarium had used a lot of dairy products on its vegetarian menus, but in that year, with World War I under way, all milk supplies from the local dairy were requisitioned by the Walter Reed Military Hospital. The sanitarium bought its own herd, but the problems that Miller found with contamination, animal disease (tuberculosis), and the like, convinced him of the need to develop a good alternative to dairy milk. In the small food plant connected with the hospital, where several soyfoods were already being produced for use in the lacto-vegetarian diet, Miller began a few basic soymilk experiments in 1925." Continued. Address: Lafayette, California.

3488. Shurtleff, William. 1981. Soymilk at Loma Linda. *Soyfoods* 1(4):24-26. Winter.

• ***Summary:*** This is a detailed, step by step description of how soymilk is made by Loma Linda Foods at their plant in Mt. Vernon, Ohio, based on the author's visit to that plant. Loma Linda sells nine types of soymilk under two brand names: Soyalac is specially formulated for infants and Soyagen is for adults. Soyalac constitutes 75-80% of the companies total sales. i-Soyalac is an infant soymilk made from soy protein isolates; like regular Soyalac it is sold canned in 3 forms: concentrated, ready-to-feed, and powdered. Regular Soyalac outsells the isolate-based product by 2 to 1. "Of all the Loma Linda soymilks, their best seller is Soyalac concentrate, followed by their i-Soyalac concentrate, their ready-to-feed Soyalac, and then their powdered Soyalac. Their main competitor is Worthington's Soyamel, which is sold powdered in Pure Pak cartons at health food stores.

"Of the 70-75% of all babies in the U.S. that are raised on a formula rather than breastfed, 25% of these are fed a soy-based formula and 75% a dairy-based formula. Loma Linda presently has about 7% of the soy-based infant formula market. The largest shares of that market are held by Ross Labs' Isomel (approximately 50%), and Mead Johnson's Prosobee (40%). Wyeth Labs in Pennsylvania also has a 3% share... Of the adult soymilk market, Loma Linda's Soyagen (made with whole soyabeans) has about 60% and Worthington's Soyamel (made with soy protein isolates) has about 40%."

One interesting observation is that babies raised on a soy-based infant formula generally have a strong dislike for the flavor of cow's milk. Some 7% of U.S. babies are allergic to cow's milk and a small percentage are allergic to the lactose in mother's milk. Address: Soyfoods Center, Lafayette, California.

3489. Shurtleff, William. 1981. Dr. Harry Miller: Taking soymilk around the world (Continued–Document part II). *Soyfoods* 1(4):28-36. Winter.

• ***Summary:*** Continued. "Pioneering Soymilk in China (1925-1939): In 1925 Miller accepted the church's invitation

to return to Shanghai to develop a network of Adventist health care facilities, the first of which was the Shanghai Sanitarium and Hospital, which opened January 1, 1928, with Dr. Miller as medical director. Deeply touched by the high infant mortality rate caused by malnutrition, Dr. Miller began again in 1926 to turn his attention to soymilk, working on it steadily in his spare time at a small food plant located behind the hospital building. A growing number of orphaned infants began to appear at the hospital. Their only hope of finding food was to find a wet nurse or to be fed cow's milk, which was very expensive in China and which not all infants tolerated well.

"Dr. Miller was determined to develop a soymilk that had good flavor and digestibility, could be formulated to nutritional equivalency to mother's milk, was low in cost, and had a good storage life. Preparing his soymilk at the small soy plant in the typical Chinese way, with cold extraction of the soymilk from the okara, followed by cooking, he began to study ways to remove the beany flavor and make the soymilk more digestible.

"On his medical travels in other parts of China, and in Korea and Japan, he visited tofu shops and studied their methods. He believed that the beany flavor resulted from natural oils in the soybean; perhaps if the soymilk were spray dried and then reformulated with fresh soy oil, the flavor would improve.

"In the early 1930s, returning to America on furlough, he purchased the necessary equipment for a small soy dairy and had it shipped to China; a motorized stone mill, an American extractor, and a small homogenizer. Soon he was making improved formulated soymilk for the babies, patients, and staff at the Shanghai Sanitarium. The Chinese, too, liked the flavor. Some friends cajoled that it was 'undignified for a talented surgeon to be always playing around with beans.' Miller was undaunted, yet the beany flavor persisted.

"One day, in the mid 1930s, the breakthrough came as he was standing in the kitchen of the compound working with slurry from a tofu maker. He later wrote: 'I heard a divine voice behind me that said "why don't you cook it longer with live steam?" No one had ever thought of that before. Soon the staff and patients noticed the improved flavor and digestibility, and he added some soy oil or peanut oil during homogenization to make it even better. With new enthusiasm he began more baby feeding experiments. Soymilk was added to what was called the sanitarium's 'Universal Diet,' which also included whole wheat bread and half polished rice, plus other soyfoods. During a trip to the Philippines at this time he learned from refiners of coconut oil that steam distillation and flash pasteurization improved flavor of foods containing fats by driving off volatile oils and gases.

"So promising was the new product that Miller began to move forward on three fronts: controlled feeding studies on infants, establishment of a commercial soy, dairy, and application for a U.S. patent. In 1932 Dr. Miller had established the Vetose Nutritional Laboratory for furtherance of his research. For two years (1936-37) he fed formulated soymilk to several hundred small children at the Shanghai Clinic, running control tests with fresh cow's milk and various types of American and European prepared baby foods. The study turned out well and the results were published in the April 1936 issue of the prestigious *Chinese Medical Journal*, an English-language publication read widely in the U.S. and China. Here it was officially noted that babies could be nourished from birth fully as well with soymilk as with animal milks. This led to increased interest in the product. Dr. Miller later wrote: 'I regarded that work as of far greater importance than the building up of the sanitarium because it had to do with the preservation of thousands of lives that otherwise would be lost if they did not have a proper substitute for mother's breast milk, since cow' milk is beyond the economic level of the Chinese people and almost all Oriental races.' In later years follow-up infant feeding studies were done by other researchers using Dr. Miller's soymilk at the Indigent Hospital in the Philippines, at Tokyo University, and at Ohio State University at the Children's Hospital in Columbus, Ohio.

"In January 1936 Dr. Miller and his oldest son, Willis (who did much of the plant design and equipment construction and was the production manager), opened a full-scale soy dairy, the first of its kind in the world, on Pingliang Road in Shanghai, not far from the Shanghai clinic. The milk was cooked with live steam in open-top kettles. Soon a fresh liquid beverage, called Vetose Soya Milk, was available in natural, chocolate, and acidophilus flavors, in half-pint and quart bottles. The tangy acidophilus, cultured, bottled (but not sterilized) and delivered chilled was a real favorite. Ice cream was sold to institutions and meat analogs were under development. Production skyrocketed, doubling each month. Eventually the entire city of Shanghai had a soymilk route with thousands of families receiving door to door deliveries (by three-wheel pedicycles with carts behind them) of 3,000 quarts and 4,000 half-pints a day. The commercial product sold for less than dairy milks and cost less than one-fourth as much to produce. The soymilk proved so successful that it was soon included in rations for the Chinese army. A system for making dehydrated soymilk was also set up using a locally made Grey Jensen spray dryer; the government planned to use the dehydrated soymilk in rations that were lighter in weight and could be stored longer.

"But the Japanese were now invading China and on August 13, 1937, just eight months after the plant opened, it was totally destroyed by Japanese crossfire and bombs. (At the same time another soy dairy was being run by Julean Arnold of California and Nellie Lee, a Chinese, both of the China Nutritional Aid Council, in Dr. Fu's Children's Hospital in Shanghai. They provided their soymilk to 25,000 to 37,000 refugee children a day and distributed millions of

biscuits containing 40 percent okara from their soy dairy.) The Japanese occupied Shanghai in November, 1937, and soon thereafter the Shanghai Sanitarium was closed, to become a refugee center. The political situation forced Miller to leave Shanghai.

On May 4, 1937, while his Shanghai soy dairy was still in full swing, Dr. Miller was awarded U.S. Patent No. 2,078,962. He introduced methods for eliminating beany flavor, and for the use of a centrifuge, and an homogenizer. In the patent he referred to his product as 'vegetable milk;' however subsequent pressure from the powerful dairy industry and the USDA convinced him to Latinize the name to Soya-Lac. This term was first used in late 1939 for Miller's first American soymilk; the spelling had been changed to the present one-word Soyalac by September 1941.

"Miller's patented process was as follows: Soak 1 part by weight of soybeans in 8 parts of water at 60 to 75ºF for 6 to 10 hours. Grind well in a burr mill, adding a little water while grinding, to produce a mixture of 20 gallons water and 25 pounds ground beans. Extract the soymilk through a fine cloth in a centrifuge at 2,500 RPM in either of two ways: (1) before heating; or (2) after bringing to a boil, stirring constantly, in a caldron and simmering briefly. Now to the simmering soymilk add 7 pounds each grain sugar (dextrose, maltose) and oil plus 3 ounces salt. Return to the boil and simmer, stirring constantly, for 30 to 60 minutes, or until the flavor changes from 'beany' to 'nutty.' Homogenize in a colloid mill or homogenizer to give a milk containing 3.5 to 4 percent protein and 5 percent fat. Cool, bottle, and refrigerate, or dehydrate.

"From late 1937, Dr. Miller was in Hankow-Wuhan establishing the Wuhan Sanitarium Hospital, where he also had a small soy dairy. Eventually over 15,000 Chinese refugees, escaping the Japanese troops in the north, filled the hospital compound. Finally in January 1939, as the war got too hot, Dr. Miller left China and returned to America in April of that year." Continued. Address: Lafayette, California.

3490. Shurtleff, William. 1981. Dr. Harry Miller: Taking soymilk around the world (Continued–Document part III). *Soyfoods* 1(4):28-36. Winter.

• ***Summary:*** Continued. "Introducing Soyfoods to America: Undaunted, Dr. Miller returned to the U.S., convinced that soymilk was destined for worldwide acceptance. He decided to settle in Mt. Vernon, Ohio, where he had formerly gone to school and later taught. Dr. Miller's oldest son, Willis, had returned from Shanghai after the plant there had been destroyed and in 1938 started his own business, Miller's Soy Foods, in Utica, New York. Later that year it moved to Washington, DC, and was successfully marketing canned soymilk, okara spreads, and gluten cutlets.

"When Dr; Miller returned to the U.S. he suggested that he and his son go into business together; Willis liked the idea. Working with his son, Dr. Miller set up a company called the International Nutrition Foundation and then began searching for a suitable site in Mt. Vernon for their new soy dairy. Soon they found a 140-acre farm, containing a number of fine springs, located several miles outside of town–and for the remarkably low price of $7,000. Dr. Miller borrowed money from his brother Clarence to purchase this farm, then moved into the one large house on the property. Willis moved his soyfoods equipment from Washington, DC, into a garage near the house and got the plant running while the new buildings were being built. In April 1939 Clarence, Dr. Miller's second son, left his job in Washington, DC, and went to Mt. Vernon to help with the work; he later became accountant and treasurer of the soy business. To help raise money for the soymilk operation, Dr. Miller set up a private part time medical practice, with an office in one wing of the local hospital. Although he had very little money, Dr. Miller made plans for a 60- by 130-foot building, which he planned to enlarge later by adding a second story. A local high school had been recently torn down and he obtained all the bricks for free if he would haul them away. So each evening after his medical work was done, Dr. Miller and his sons trucked the bricks over to their land, cleaned them, and built the new soy dairy building. The surgeon's skilled hands were not too delicate for the rough work. The original building still stands strong; today it houses the office, lab, and pilot plant where Loma Linda still makes Soyalac.

"The new plant was completed in the fall of 1939 and the first products, canned Soya Lac (made in a pressure cooker and fortified with vitamins and minerals) and Soy-A-Malt were available late that year; powdered Soya Lac was first produced in 1940. But contrary to Miller's expectations, the American public was simply not ready for soymilk; acceptance was painfully slow. He decided that, in order to survive, he would have to develop new products, try to get his soymilk approved by the American Medical Association, and, in the meantime, sell his soymilk and related soyfoods to ready markets in East Asia.

"With his typical boundless energy, Dr. Miller, now 61 years old, started by setting up a plant near the soy dairy to can fresh green soybeans of the tasty, large-seeded or vegetable variety, which were grown on the farm. Partially because of the mushrooming growth of interest in soyfoods during World War II (due to the rationing and high prices of meat, milk, eggs, and cheese), these found a ready market and became his most profitable product, with 40,000 cases a year being sold at supermarkets and health food stores around the Midwest by 1943. The company's best selling product (which was not as profitable due to the high production costs) was Miller's Cutlets, a canned gluten entree. He began to develop other meat analogs similar to those developed initially by Dr. J.H. Kellogg at Battle Creek. He now perfected his acidophilus soymilk

but sold it only to the local Mt. Vernon hospital since he did not want to kill the culture by sterilization required for long distance distribution. (In 1934, Kellogg had patented a similar acidophilus soymilk.) He made tofu from his basic soymilk and did extensive experiments, working with Ohio State University, in making a fermented tofu cheese; tofu was pressed as hard as possible, inoculated with Cheddar microorganisms, then allowed to ripen. The product was fairly good but often excess moisture in the tofu led to the growth of unfriendly bacteria. Next came a soymilk ice cream. Dr. Miller put all of his medical income into the soyfoods business and by 1940 the company was producing an exciting line of vegetarian soyfoods and meat substitutes, sold nationwide, mostly at health food stores. A pamphlet of that year lists the following, all sold under the brand name 'Miller's': Soya Lac, a liquid soymilk in natural and chocolate flavors sold in 13 ounce and 30 ounce cans. Soy-A-Malt, spray dried soymilk in natural and chocolate flavors in one-pound cans. Soya Sauce, produced in South China. Soya Curd, made by coagulating Soya Lac with lactic acid to make curds, then blending this with tomato puree, pimento, and soy sauce. Soya Loaf, made from a seasoned mixture of okara (soy pulp and gluten). Soya Spread, for sandwiches, also made from okara and sold in 16-ounce jars. Whole Soya Bean Flour, a naturally alkaline full-fat soy flour. Green Soya Beans, canned, vegetable type. Giant Soya Beans, cooked and canned mature vegetable-type soybeans, and Soya Beans with Tomato Sauce, edible soybeans canned with tomato puree and malt.

"Products added years later included Vegetable Chili Con Carne and Vegetable Chop Suey, both sold in 16-ounce jars with wheat gluten used in place of meat. In 1942 Kellogg's Battle Creek Food Company had a similar line of soyfoods: Soy Protose (a meat analog), Soy Gluten Wafers, canned Green Soybeans, Soy Flour, Soykee (soy coffee), and Soy Acidophilus. A few years later Dr. Miller developed Vege-Links, the world's first meatless wiener, made of seasoned okara and wheat gluten packed in a sausage casing, and Vege-Chee, a cheese analog made of curdled soymilk.

"During the years that he was developing new products, Dr. Miller made countless trips to the American Medical Association trying to convince them that the research he had done in China proved that his Soyalac was an acceptable substitute for dairy milk in feeding both infants and adults. But the AMA, apparently strongly influenced by the dairy industry, refused to grant any recognition to the product. Finally, after one fruitless trip, a member of the board took Dr. Miller aside and explained frankly that he would never get endorsement for his product unless he started to market his product specifically for that 7 percent of U.S. infants who are allergic to cow's milk, and avoided unfriendly comparisons with cow's milk. Dr. Miller was not too pleased, since he had hoped that soymilk would gradually replace cow's milk in the American diet. He felt that soymilk made much more efficient use of the world's land to feed people, and that it was a lower cost, more healthful product of comparable nutritional value. Yet he reluctantly accepted the AMA's advice and within a few months had their approval. Soyalac began to be prescribed by physicians for allergic infants and soon started to sell quite well." Continued. Address: Lafayette, California.

3491. Shurtleff, William. 1981. Dr. Harry Miller: Taking soymilk around the world (Continued–Document part IV). *Soyfoods* 1(4):28-36. Winter.

• ***Summary:*** Continued. "From 1939 to 1941 most of Miller's powdered soymilk and some of his other soyfoods were sold in the Philippines and China. However World War II cut off his business, so he began to promote his soymilk more vigorously in the U.S. not only as an allergy-free infant formula that would not clog the nipple, but as a healthful beverage that alkalized the bloodstream and was good for diabetics, postoperative patients, ulcer and colitis patients, and those with atherosclerosis.

"Before World War II started, Dr. Miller had set up a branch of his International Nutrition Laboratory and a Soymilk plant in the Philippines at 41 Nagtahan in Manila. It was run by Paul Sycip (pronounced SIS-up), a private Chinese Christian (but not Adventist) businessman, who had come briefly to Mt. Vernon to learn Miller's process, and buy equipment. Miller was in the Philippines helping to set up the plant when the Japanese attacked. During the war the Japanese stole all of the soymilk equipment but did not harm the building. In 1948 Mr. Sinclair Pinnick, a foreman at the Mt. Vernon plant since 1944, went to the Philippines, took new equipment, and got the plant reestablished. It produced regular soymilk, the first ever in the Philippines.

"The expanding success of Soyalac encouraged the growth of competing products but Dr. Miller didn't mind. A true evangelist, he was happy to see the message finally reaching the people.

"To fully appreciate Dr. Miller's great energy and diverse talents, we should note that during the early 1940's, as he developed, produced, and marketed his line of innovative new soyfoods, he also maintained an active medical practice, partially because the other two doctors at the hospital where he worked were called for military duty, and partially to support his work. Prior to World War II he would fly to the Philippines about once a year, do 12 to 15 thyroid surgeries a day for two to three weeks, give half of his income to the hospital there, then return to America with the balance. In 1942 he and his brother bought the local hospital in Mt. Vernon where he worked; his son Clarence came in to manage, renovate, and expand it. Miller was the only surgeon in Knox County (population 35,000).

"At his Mt. Vernon soy dairy, Miller was always the first one to start the day's work. One day, while experimenting with a new formula, he cut off end of his finger in a food

grinder. He calmly picked up the severed part, walked into his office, and sewed it back on.

"During the years he spent introducing soyfoods to America, Dr. Miller was one of the most active supporters of the American Soybean Association, a regular speaker at conventions and contributor of articles to the Soybean Digest. His first speech was "The Role of the Soybean in Human Nutrition" (1940) and his first article "Soybeans and the Orient" (1943), was followed by "Feeding the World with Soya" (1946), "Survey of Soy Foods in East Asia" (1948), and others. Then in September 1958 he was made an honorary member of the Association and awarded a gold medal.

"By the late 1930s the seeds that Dr. Miller had planted in East Asia began to sprout. It is interesting to note that most of the remarkable expansion of interest in and production of soymilk that has taken place throughout Asia during the last half of the twentieth century can trace its origins directly back to the work of Dr. Miller.

"While Dr. Miller was in Shanghai, an Adventist named Howard Hoover had come and learned the soymilk process, then started his own soy dairy and health food plant in a mission school in Canton in about 1938. This was the first offshoot.

"In 1940 Mr. K.S. Lo of Hong Kong asked Hoover if he would help him set up a plant. Hoover got approval from Miller, then went to Hong Kong and designed Lo's first plant. [Note: K.S. Lo recalls the origin of has company quite differently; we accept his version of the story]. By 1940 Lo's Hong Kong Milk Factory was making homogenized soymilk and selling it in natural and chocolate flavors, like dairy milk, in standard half-pint bottles sealed with a paper cap and hood. The soymilk was sweeter and a little thinner than Miller's and had more of the natural (so-called beany) flavor, which the Chinese prefer. By 1942, when the Pacific War broke out, Lo's company had gone broke. But in 1945, after the war, the company reopened as the Hong Kong Soya Bean Products Co., Ltd, and reintroduced their product, now called Vitasoy, not as a milk substitute, but as the world's first soymilk soft drink. By 1974 Vitasoy passed Coca Cola to become Hong Kong's best selling soft drink, with sales of 150 million bottles a year. In the meantime many other large soymilk plants had started up in Singapore, Malaysia, and Thailand.

"In 1948 the Chinese Quartermaster Department, with the help of Dr. Miller's son, Willis, set up the largest soymilk plant in the world in Shanghai, using a process patterned after that used in Ohio, to make spray-dried soymilk. Costing over $1,000,000, it had a capacity of 5 tons of dry soymilk every 12 hours. The dried soymilk would be mixed with puffed rice, pressed into wafers, and packed into cans, then opened in the field and soaked with hot water for rations. The plant was completed and ready for operation (Dr. Miller was at the dedication ceremony) just prior to the Communist takeover of Shanghai in 1949.

"Research and Work Around The World (1949-1977): In 1949, at age 70, Dr. Miller accepted the invitation of the Adventist church to take over the direction of the Shanghai Sanitarium and reestablish a soy dairy there. China was in the throes of revolutionary war and Shanghai was still held by the Nationalist forces. A daring pilot dropped Miller at the besieged Shanghai airport, hardly pausing to stop. But Shanghai fell to the Communists in May 1949; Miller was soon evacuated, and returned to America.

"In 1950 Dr. Miller's second wife died. Shortly thereafter he decided to sell his Mt. Vernon business. There was the increasing pressure of running a food plant and although sales were good ($1.25 million gross in 1950) profits were only $120,000 due to high taxes. He wanted to devote more of his time to research and medicine. Although offered a large sum of money by a private company outside the Adventist denomination, he decided to divide the company into two parts, the meat analogs and the soymilk plus related products, and sell these to Adventist-run firms. In June 1950 he sold the meat-analog part of his business (gluten meats, nut loaves, frankfurters, etc.) to Worthington Foods in Worthington, Ohio, a private company owned by Adventist laymen that had been making meat analogs since 1939. They bought the patents, recipes and formulas, equipment, technology, and good will that went with Miller's meat analog business. Most of these analogs contained no soy. Worthington kept the brand name "Miller's" for several years thereafter as they sold Miller's Cutlets, Miller's Burger, Miller's Stew, Vege-Links, and the like. Willis Miller worked with Worthington for some time after the sale.

"In early 1951, Dr. Miller sold the rest of his business at a very low price (book value) to Loma Linda Foods of Riverside, California. This sale included the Mt. Vernon land, buildings, equipment, technology, and recipes and formulas for soymilk, canned fresh green soybeans, Vege-Cheese (a canned tofu cottage cheese) and related products. All these products continued to be produced in Ohio. Loma Linda Foods, an integral part of the Seventh-day Adventist Church, was founded in 1906 and had run a plant in Riverside making meat analogs, soymilk, and other foods since 1936. Dr. Miller had always believed that the process for making soymilk was not something that he had originated; the key to it had been a gift to him from a higher power. Thus, he felt it was simply not his to sell. So he gave the process to the Adventist church but sold the rest of the business to Loma Linda Foods (they operate the Mt. Vernon plant to this day), and loaned them the money to buy it. They paid him in installments and he returned half of the money to them for them to set up laboratories and a pilot plant in their headquarters at 11503 Pierce Boulevard in Riverside (the town was then called Arlington). Here he established the International Nutrition Research Foundation, which he further endowed heavily with his own funds; 95

percent of its future research was on soyfoods. He bought a home nearby. For the three years following his wife's death he worked intensively on soyfoods research. In 1951 Loma Linda first introduced Soyagen, a lightly fortified soymilk for adults to match their Soyalac for babies. Miller did extensive work on further eliminating the beany flavor from soymilk using a vacuum pan and flash pasteurization. By 1958 his labs had developed new and improved soymilks, soy cream, improved acidophilus soymilk and ice cream, cottage cheese, a soy-cream cheese spread, cholesterol-free cheese, and a non-dairy margarine." Continued. Address: Lafayette, California.

3492. Shurtleff, William. 1981. Dr. Harry Miller: Taking soymilk around the world (Continued–Document part V). *Soyfoods* 1(4):28-36. Winter.

• ***Summary:*** Continued. "In 1953, at the age of 74, he married for a third time (his wife was about 35) and shortly thereafter was asked to establish an Adventist Sanitarium in Taipei, Taiwan. With it, of course, he started a soy dairy at a school, which supplied the school, the Sanitarium, and the surrounding community with soymilk daily. In 1956, when it came time for Miller to leave Taiwan, Generalissimo Chiang Kai-shek personally gave him China's highest award, the Blue Star of China, in appreciation for his tireless service to the people of China in saving the lives of thousands of infants with the use of soymilk and in establishing some twelve sanitarium-hospital clinics. At the time, the Generalissimo, who had been a former patient of Dr. Miller's, recalled how he had become so fond of the sanitarium's soymilk that he had once sent his private plane over 1,000 miles to Shanghai to replenish his supply.

"In 1954 the World Health Organization became interested in Miller's work with soymilk. His oldest son, H.W. (Bill) Miller supervised the construction of a joint FAO / UNICEF soymilk plant in Yogyakarta, Java, Indonesia, which opened in 1957 and produced about two tons a day of a spray-dried soymilk called Saridele.

"After filling in for other surgeons in Trinidad and Libya from 1956 to 1957, Miller went to Japan in 1957 to spend seven months as medical director and surgeon at the Tokyo Sanitarium-Hospital. He was now 79. Despite his busy medical routine, he found time to set up a small soymilk pilot plant in the hospital kitchen where they made soymilk, soy whipping cream, soy ice cream, and soy spread, which were served to the staff and patients. In cooperation with the Japanese Ministry of Health, he then developed the concept of helping existing small tofu producers to set up a soymilk operation right in their shops by adding on a boiler, pressure cooker, homogenizer, cooler, and bottler. The equipment could be installed for less than $2,000 and would enable each plant to produce 150 pounds of tofu and 200 gallons of soymilk a day using three trained workers. Miller personally helped at least one small rural tofu shop set up such a system; their soymilk was sold fresh and hot or cold and bottled for half the price of fresh dairy milk.

"Starting in about 1955 Dr. Miller began to recommend that the Adventist-run Japan Saniku School serve soymilk instead of cow's milk to the students; however the staff hesitated because of questions about its nutritional value and flavor. In 1957 two Japanese Adventists, Mr. Hidekazu Watanabe and Mr. Hanzo Ueda (who ran a tofu shop at the time) started making Japan's first soymilk on a small scale in Hachioji, Tokyo, bottling it in 180-ml bottles, and selling it locally. Mr. Watanabe later described the great value to them of Dr. Miller's ongoing technical, nutritional, and spiritual guidance.

"After some time, directors of the Saniku School visited the small soymilk plant, liked the soymilk flavor, and understood its nutritional value. In 1959 they bought similar equipment, set up a small plant in the school, and started to produce soymilk, which was bottled in 180-ml bottles and served to the students at every meal. In 1969 the Saniku School set up an independent food production company called College Health Foods (which later became today's Saniku Foods) and through it, with the help of Loma Linda Foods in America, began to produce Soyalac soymilk infant formula. That same year, the Luppy Soymilk Company started and went on to produce Japan's first widely popular commercial soymilk.

"By 1980 Japan's largest soymilk producers were Kibun Foods (33,000 pacs a day), Saniku Foods (23,000 pacs a day), Okazaki Marusan (23,000 pacs a day), and Mitsubishi Kasei (18,000 pacs a day), A typical pac is 200 ml (6.8 fluid ounces).

"Prior to 1960, a small soymilk plant similar to those established by Miller in Japan, was set up at the Adventist-run Mountain View College in Central Mindanao, Philippines. The college farm raised edible soybeans and the 700 students were served fresh soymilk each morning for breakfast and fresh tofu for lunch.

"In 1960 Dr. Miller again accepted the invitation of the Adventist church to start a new hospital, this time in Hong Kong. As always, it was accompanied by a little soymilk plant. By 1960 soy dairies had also been established in Hong Kong at the South China Union College and at an Adventist-run college in Bandung, Indonesia.

"Dr. Miller spent most of his time from 1960 to 1973 in East Asia. He practiced surgery until the age of 93. In 1961 his biography *China Doctor* by Raymond S. Moore was published by Harper & Bros. In 1963 Dorothea Van Gundy Jones in *The Soybean Cookbook* wrote: 'Certainly Dr. Miller has done more than any other person to introduce soybeans and soybean products, especially the milk, to the population of this country.'

"In 1973 Dr. Miller formally retired from medical practice and returned to California, where he spent the last few years of his life doing the work he loved so much:

soyfoods research. He lived about one mile from Loma Linda Foods in Riverside, and he walked to work each morning. He continued his experiments with tofu and soymilk, making improved acidophilus soymilk, tofu-based cheese, and cheese spreads. He made a good tofu-based Cheddar cheese but could not make it melt. His later years were not as productive as they might have been since, in old age, he had lost most of his sense of smell; when he would ask others how new products tasted, they would often tend to flatter him instead of giving an honest and objective response. Yet this work was still of real potential value.

"In 1972 the Southern Asia Division of the Adventist church asked Mr. Pinnick of Mt. Vernon to go to India to set up a soymilk plant at their Spicer Memorial College in Poona. In March 1973 Dr. Miller flew over from Hong Kong to help the operation get started. Pinnick writes: 'He would work all day with us at the plant (at age 94) then spend nearly-every evening speaking to some group on healthful living. There seemed to be no limit to his endurance.'

"Starting in 1975, while in Japan, I exchanged numerous letters with Dr. Miller. He typed each letter himself and was always full of questions about new developments in tofu and soymilk production in Japan. In 1976 he sponsored and hosted a program about tofu and soymilk that my wife and I did for several hundred members of the faculty and community of Loma Linda University, La Sierra campus. During the day of our visit he took us through his pilot plant and described his latest experiments making tofu-based fermented cheese spreads. He seemed extremely alert and well informed.

"Dr. Miller died on New Year's Day, 1977, at the age of 97, just as he was getting ready to go to his beloved church.

"Harry Miller was a shining example of what the Chinese call 'The Great Man.' He dedicated his life to the welfare of all beings, human and nonhuman. He chose a life of voluntary simplicity, finding his real joy in giving. Close associates estimate that, in professional fees alone, he turned over some $2.5 million to the hospitals, church, and nutritional work with which he was connected. Spiritual values were at the center of his life. Though world famous, he was the most humble of men; though very busy, he had time for each person who needed him. His vision was fifty years ahead of his time. He left an indelible impression on the world. Would that he could he here with us now to see the blossoming of his work in America and around the globe.

"The author wishes to give special thanks to Dr. Miller's two sons, Willis and Clarence, and to Glen Blix, plant manager at the Loma Linda Mt. Vernon plant, for extensive information provided in interviews and letters. For a bibliography of Dr. Miller's publications, send a SASE to *Soyfoods* magazine." Address: Lafayette, California.

3493. Shurtleff, William. 1981. Early history of soymilk. *Soyfoods* 1(4):31. Winter.

• ***Summary:*** Note: This was published as a sidebar to the article "Dr. Harry Miller: Taking soymilk around the world."

"It is important to understand Dr. Miller's soymilk research, writing, and product development in their proper historical perspective.

"Soymilk is thought to have been developed in China by Liu An, King of Huai-nan in about 164 B.C. In most parts of China, soymilk has long been used as a spicy hot breakfast soup (*sien tou-chiang*) or as a warm, sweetened beverage (*t'ien tou-chiang*). Yet it had not traditionally been used as a substitute for mothers milk or cow's milk in infant feeding. and its nutritive value for infant feeding was virtually unknown. By 1923, as described with photographs by Piper and Morse in their classic, *The Soybean,* a soymilk factory in Changsha, China (p. 231) was selling soymilk in bottles, each sealed with paper, and carried in baskets suspended from shoulder poles. This was 13 years before Dr. Miller's soy dairy opened in Shanghai.

"The first known mention of soymilk in a Western publication was in 1895 by H.C. Prinsen Geerligs, a Dutch scientist who lived and traveled in Southeast Asia, and wrote an article entitled *'Einige Chinese Voedingsmiddelen Mit Soyabonen Bereid'* [Some Chinese Foods Made with Soybeans]. The first English-language article on soymilk, entitled 'Soybeans and Soybean Products,' was published by H. Trimble in 1896 in the *American Journal of Pharmacology.* In 1906 Katayama in Tokyo wrote 'Condensed Vegetable Milk,' and in 1907 J. Rurah published the first article on infant formulas entitled 'The Soybean in infant Feeding' in *Archives of Pediatrics,* followed in 1910 by 'The Soybean as an Article of Diet for infants.' Some 30 journal articles had been published by 1928 and at least 66 by 1936. In 1926 Dr. Ernest Tso of the Peking Union Medical College published his first of many studies in English on feeding infants water-extracted soymilk. Entitled 'Soybean Milk–Infant Feeding,' it appeared in the *American Journal of Physiology.* He published five more similar studies prior to 1931.

"The first patent for soymilk was issued to Li Yu Ying in Britain in 1910. A German patent was issued to Goessel in 1911. The first U.S. patents were issued to Goessel (1913), Li Yu Ying (1913) and Monahan and Pope (1915); the latter was the first issued to American citizens. By the time Dr. Miller started his soymilk research in 1925, some 30 patents had been granted; there were 66 patents by the time Dr. Miller received his in 1936.

"Soymilk was being produced in the West as early as 1911, when a Chinese plant near Paris was reported to produce soymilk, fermented soymilk, tofu, soy sauce, soy flour, soy bread, soy preserves, etc. (Beltzer 1911). Allergy to cow's milk and lactose intolerance stimulated the development of the first soy-based infant formulas in the U.S. Most of these were made from soy flour and contained the fiber in the soymilk. In 1929 Mead Johnson Co. produced

the first soy-based infant formula in America. Called Sobee, it was made from a mixture of full-fat soy and barley flours homogenized with olive oil, had a dark tan color and beany flavor, and contained many complex carbohydrates that led to intestinal gas (flatus) and poor-smelling stools, but in 1929 it was a godsend to infants allergic to cow's milk (Sarett 1976). Also in 1929 Dr. Ernest Tso in Peking published a nutritional study of Sobee, entitled 'A Vegetable Milk Substitute in North China,' in the *American Journal of Physiology.* (At this time Dr. Miller knew both Dr. Tso and Sobee well).
The second commercial soymilk in America was developed by Dr. Julius F. Muller. In 1934, while director of allergy research for the Borden Company, he developed a soymilk product for his own child, who was highly allergic to dairy milk. in 1936-37 this liquid milk, made from homogenized soy flour, was introduced by Borden as Mull-Soy. In 1934 Dr. J.H. Kellogg received the first U.S. patent on a method for making acidophilus soymilk; Miller had produced a similar product in China in 1936.

"By 1935 Henry Ford was running a soymilk pilot plant near his main automobile factory in Michigan. By 1936 Loma Linda Foods was making soymilk in southern California. By 1938 Dr. Miller's son, Willis, was making canned soymilk in New York and Washington, DC, and in early 1939 Jethro Kloss had written *Back to Eden* containing many creative soymilk recipes and he may have been producing soymilk at his health food factory near Nashville, Tennessee... all this prior to Dr. Miller's introduction of Soyalac to America in the fall of 1939.

"Although it is clear that Dr. Miller was not the first to do research on soymilk, receive a patent, or produce a commercial product, he still deserves great credit for almost single-handedly popularizing the use of soymilk on a large scale around the world, especially for feeding infants suffering from allergies or malnutrition, for starting the first large scale commercial soy dairy in East Asia and assisting in the foundation of many subsequent ones, and for producing the first major commercial fiber-free soymilk in America, a product that was generally considered to be better tasting and less prone to clog nipples than the various flour-based products, although at least one set of tests showed it to have a significantly lower protein quality as measured by PER (Gyorgy 1962).

"Although Dr. Miller originally intended soymilk for general consumption, it has come to be most widely used in America for feeding babies. Today, the U.S. infant formula market is comprised of 75 percent dairy milk based products and 25 percent soymilk; Soyalac has only five to six percent of the latter market (all competing products are made from soy protein isolates). A full 75 to 80 percent of all Loma Linda's soymilk goes to feed babies." Address: P.O. Box 234, Lafayette, California.

3494. **Product Name:** Fresh Soybean Juice (Soymilk. Renamed Wy Ky Soy Beverage by 1983).
Manufacturer's Name: Wy Ky Food Products Inc.
Manufacturer's Address: 235-37 San Fernando Rd., Los Angeles, CA 90031.
Date of Introduction: 1981. February.
Ingredients: Soybeans, water, natural flavorings.
Wt/Vol., Packaging, Price: 16 oz plastic bottle.
How Stored: Refrigerated.
New Product–Documentation: Leviton. 1981. Soyfoods. Winter. p. 17. Soya Bluebook. 1983. p. 63.

3495. Miller, Harry Willis, Jr. ("Willis"). 1981. Work with soymilk in the United States and China (Interview). Conducted by William Shurtleff of Soyfoods Center, March 8. 2 p. transcript.
• ***Summary:*** Discusses his work with soymilk around the world. Address: 450 Neeleys Bend Rd., Madison, Tennessee 37115. Phone: 615-868-2483.

3496. Lo, K.S. 1981. Re: Early history of Hong Kong Soya Bean Products Co., Ltd., makers of Vitasoy. Letter to William Shurtleff at Soyfoods Center, March 19. 3 p. Typed, with signature on letterhead.
• ***Summary:*** William Shurtleff sent K.S. Lo a copy of an article he [Shurtleff] had written about Dr. Harry Miller, and asked for Mr. Lo's comments. "Strangely enough, it was Julian [sic, Julean] Arnold and not Dr. [Harry] Miller who first launched me onto the road of making soya bean milk. I happened to be in Shanghai in the Winter of 1936, and, while there, I attended a talk given by Julian Arnold on the subject: 'Soya Bean, the Cow of China'. I soon left Shanghai to return to Hong Kong, but, Arnold's message kept ringing in my head. Not long after, Japan invaded China and the first wave of refugees started to arrive in Hong Kong in 1938 [sic, 1939]. As I recall, a refugee camp was set up in Argyle Street on Kowloon side to receive them. Most of these refugees were either sick or suffering from malnutrition and required urgent medical care. Some of them were suffering from beri-beri. A small group of volunteers including myself used to visit the camp to find out what could be done for them. And when I saw so many were unable to walk because of beri-beri, the story of the wonder bean, as related to Arnold, came to my mind. I, therefore, suggested to our group to buy some soya bean, a stone-mill and a cooking pan and sent them to the camp. We enlisted a group of people from the camp to prepare soya bean milk in the crudest form and gave one bowl to each person every morning. The results were quite startling, as many of them showed significant improvement in their health after the first month. This little experiment gave me the full confidence in the nutritional value of soya bean milk and I decided to make it available to the masses of people in Hong Kong who could not afford to buy cows' milk.

"It is far from my intention to try to belittle Dr. Miller's

contribution in the development of soya bean food, but, I think it is fair to say each of us develop our own products and marketed them independently. He concentrated more in promoting it among medical profession, hospitals and churches; whereas I took it to the street level and catered to the mass market in competition with the soft drinks. As the result, the sales of my Company are far greater than any governmental or private institution could have hope to reach. Last year alone, my Company sold over 8 million cases of soya bean milk in Hong Kong, and, since 1979, we had been exporting our products, packed in tetrabrik, to all parts of the world. There can be no question that our commercial success in Hong Kong has inspired many other companies throughout Asia and other parts of the world to follow suit.

"I thank you once again for sending me your article and I hope that my comments will help to put the record straight."

"P.S. After 45 years when it first started in a refugee camp, Vitasoy is still serving the refugees of another era. To-day, they are distributed daily to all the Vietnamese Refugees Camps in Hongkong to bring better nutrition to the Vietnamese children. I am also send you a copy of the 40th Anniversary Brochure of my Company." Address: Chairman, Hong Kong Soya Bean Products Co., Ltd., 41 Heung Yip Rd. Aberdeen, Hong Kong. Phone: 5-528211.

3497. Hicks, Alastair. 1981. Re: History of the full-fat soy flour factory in Thailand. Letter to William Shurtleff at Soyfoods Center, March 25. 2 p. Typed, with signature on letterhead.

• ***Summary:*** "The full fat soy flour factory in Thailand commenced production of soyflour during commissioning trials which I ran in the week April 24-28, 1978, as food engineer to the project. The location is Mae Chan, a small village outside Chiang Rai in the far north of Thailand, near the Golden Triangle. The plant was initiated by the ASEAN Sub-Committee on Protein, whose chairman is Professor Amara Bhumiratana, Director of the Institute of Food Research and Product Development (IFRPD), Kasetsart University, Bangkok, Thailand.

"The king of Thailand, King Bhumibol Adulyadej, provided the land and buildings, as part of the Thai contribution to the project. One aim of the Royal Preserved Foods Project is to encourage Hill tribe farmers to grow crops other than opium poppies, in this case, nutritious soybeans, as part of an overall crop substitution program...

"The factory is able to make the following products: cleaned soybeans (up to 3 ton/hour); clean, cracked, debittered soybeans (a possible tempeh raw material); enzyme inactive full fat soyflour. The latter products can be produced at 1.1 tonne/hour. Enzyme active products could also be produced. Most of the full fat soyflour is utilized in the production of Kaset Infant food, a baby food produced at the I.F.R.P.D. in Bangkok. This product in turn is supplied to the hundreds of baby health centers throughout Thailand.

"For further information on these and other details, I suggest you write to Professor Amara... Meanwhile, I would like you to record the Department of Food Technology, Hawkesbury Agricultural College of Advanced Education, Richmond, N.S.W., Australia, as a center for soyfoods processing and research in Australia.

"We have an ongoing program of agricultural research in soybean varieties suitable for the Asian market. Related to this we have developed tofu trials and soybean canning trials. Presently we are developing soymilk from full fat soyflour and tempeh as a soyfood in Australia." Address: Lecturer, Dep. of Food Technology, Hawkesbury Agricultural College, Richmond, NSW 2753, Australia. Phone: (045) 701 333.

3498. Hergenrather, J.; Hlady, G.; Wallace, B.; Savage, E. 1981. Pollutants in the breast milk of vegetarians. *New England J. of Medicine* 304(13):792. March 26. Letter. [3 ref]

Address: 1-3. Ethos Research Group, Summertown, Tennessee 38483. 4. Colorado Epidemiologic Studies Center, Ft. Collins, CO 80523.

3499. Lo, K.S. 1981. Re: Two letters of appreciation for Vitasoy soya bean milk. Letter to William Shurtleff at Soyfoods Center, March 31. 3 p. Typed, with signature on letterhead.

• ***Summary:*** Mr. Lo encloses letters from H.D. Dale, M.D., Medical Director, Sham Shui Po Transit Centre, Kowloon, and Walter Schmidt, Coordinator of Refugee Activities, Hong Kong Christian Service, Migration Services Dept. The Vitasoy was given to refugees from Vietnam in late 1979– children under age 5 and old people over age 65, and to all pregnant women. "There was a marked improvement in the general health of all those receiving this added supplement." Address: Chairman, Hong Kong Soya Bean Products Co., Ltd., 41 Heung Yip Rd. Aberdeen, Hong Kong. Phone: 5-528211.

3500. Aguilera, J.M.; Lusas, E.W. 1981. Review of earlier soya-protein fortified foods to relieve malnutrition in less developed countries. *J. of the American Oil Chemists' Society* 58(3):514-20. March. [50 ref]

• ***Summary:*** Contents: Introduction. Types of soya products: Soybean milk (Philsoy in the Philippines [3,500 bottles/day], unnamed products made in India [a small plant at a university makes nearly 700 liters/day], Mexico, and Brazil), soya-based beverages (Vitasoy in Hong Kong [produced about 120 million bottles in 1970], Puma in Guyana [in the early years, sales volume was about 29 million bottles/year; by 1976 Puma was still in regular production], Saci in Brazil [introduced in 1969, discontinued in 1976], an unnamed spray-dried infant beverage from full-fat soy flour in Mexico [developed by the NRRC at Peoria, Illinois],

whey-soya drink mix [WSDM] developed by USAID), soya-fortified cereals (Ten PL-480 products such as CSM, CSB, WSB, WSDM used worldwide [a table shows product names, percentage soya flour, percentage protein increase by fortification, and amount of soy flour used in tonnes; the most soy flour has been used in CSM, CSB, and WSB], Superchil and Fortesan in Chile, Incaparina no. 14 in Colombia, ProNutro in South Africa, Maisoy in Bolivia, Lisha in Tanzania, Thriposha in Sri Lanka, Leche Avena in Ecuador, Cerex in Guyana, Faffa in Ethiopia, Bienestarina [Bienstarina] in Colombia, and a milk-like formula using soya flour in Venezuela). Soya-based infant formulas. Conclusions. Address: Food Protein R&D Center, Texas A&M Univ.

3501. **Product Name:** Soyamel (Plain Soymilk with Vitamins).
Manufacturer's Name: Alpro.
Manufacturer's Address: Zuidkaai 33, B-8700 Izegem, Belgium.
Date of Introduction: 1981. March.
New Product–Documentation: N.V. Vandemoortele Protein Division (manufacturer's brochure). 1979. "Soyamel: A New Source of Proteins. 9 p. Gives details about Soyamel soymilk, including the nutritional composition and technology used to manufacture it, but does not say that the product is being made commercially.

Soyfoods Center Computerized Mailing List. 1982. Feb. 22. The company is listed as N.V. Vandemoortele. The first listing for Alpro appears on 20 June 1983. Chr. Daems is Marketing Manager. Phone: 51 30 96 01.

Form filled out by Alpro. 1990. May 30. Alpro began making this product (plain with vitamins) in March 1981 in 500 ml cartons. This was the first of Alpro's own soymilk brands, sold only in drug stores and pharmacies.

Note 1. The product was announced about 2 years before it was available.

Note 2. The term Soyamel, a registered trademark of Worthington Foods Inc., was first used in about 1954 to refer to a powdered soymilk made by Worthington.

3502. **Product Name:** Soymilk.
Manufacturer's Name: Aqua Agra.
Manufacturer's Address: 100 Highline Dr., Longwood, FL 32750. Phone: 305-339-8157.
Date of Introduction: 1981. March.
How Stored: Refrigerated.
New Product–Documentation: Talk with Don Wilson, founder and former owner of Aqua Agra. 1993. Nov. 24. In early 1981 Don started making soymilk, which he sold in bulk to the nearby Seventh-day Adventist Florida Hospital–but not to any of the chain stores. He sold about 300 gallons a week.

3503. Barr, G. 1981. Soybean meal in calf milk replacers. *J. of the American Oil Chemists' Society* 58(3):313-20. March. [58 ref]
• ***Summary:*** A major review of the literature on this subject. Address: Land O'Lakes, Fort Dodge, Iowa.

3504. Beslagic, S. 1981. Replacement of egg and milk with soya protein in pasta. *J. of the American Oil Chemists' Society* 58(3):535-38. March.
Address: Yugoslavia.

3505. Dubois, Donald K.; Hoover, William J. 1981. Soya protein products in cereal grain foods. *J. of the American Oil Chemists' Society* 58(3):343-46. March. [12 ref]
• ***Summary:*** Contents: Abstract. Introduction. Quality factors. Defatted soy flour. Enzyme-active soya flour (defatted; "processed to retain its lipoxidase enzyme activity. This enzyme effects changes in bread doughs which result in the bleaching of carotenoid pigments and which produce peroxides that strengthen gluten proteins"). Full-fat, high-fat and lecithinated soya flours. Soya grits. Soya protein concentrates. Soya protein isolates. Milk replacer blends (to replace nonfat dried milk in baked goods). Soya bran / fiber. Nutrition. A photo shows W.J. Hoover.

An estimated 132 million lb of soya flour was sold to the baking industry in 1978.

Making soy protein isolates involves three main steps: (1) The protein is extracted from defatted soy flour; (2) The protein-rich curd is precipitated (isolated) from the soya whey; (3) The isolated proteins are neutralized to a pH of 6.5 to 7.

The largest use for soya products in the bakery foods industry is in combination with other ingredients, such as sweet dairy whey, to replaced nonfat dry milk in baked goods. Milk replacer blends containing 20-40% protein are sold commercially.

"Soya bran / fiber" is made by toasting then grinding the soybean seed coat. The resulting product has a crude fiber content of about 38%, making it one of the highest fiber sources available commercially. It can be used in multigrain breads, in blended fiber systems or as the sole source of added fiber in such breads.

Note: This is the earliest English-language document seen (June 2013) that uses the term "Soya bran" to refer to soy bran.

Adding soy protein to white bread increases its nutritional value. The approximate PER for different types of white bread is as follows: Regular–0.7. With 3% soya flour added–0.83. With 6% soya flour–1.3. With 12% soy flour 1.95. In addition to increases in protein quality, at the 12% soya flour level, the protein content is increased by 50%. Wheat flour fortified with soy protein has been used worldwide in mass feeding programs, including school lunch programs, since 1975. This commodity is available through

the U.S. Food for Peace Programs (P.L. 480). Address: American Inst. of Baking, Manhattan, Kansas.

3506. Dutra de Oliveira, J.E.; dos Santos, J.E. 1981. Soybean products for feeding infants, children and adults under nutritional stress. *J. of the American Oil Chemists' Society* 58(3):366-70. March. [15 ref]
Address: Faculdade de Medicina, 14100 Ribeirao Preto, Sao Paulo, Brazil.

3507. Fukushima, D. 1981. Soy proteins for foods centering around soy sauce and tofu. *J. of the American Oil Chemists' Society* 58(3):346-54. March. [41 ref]
• ***Summary:*** Contents: Abstract. Introduction. Soy sauce varieties: Koikuchi, usukuchi, tamari, saishikomi, and shiro shoyu. Soy sauce manufacturing process (for each of the 5 types). Miso. Other fermented products: Tempeh and natto. Tofu and related products: Regular and silken tofu, dried-frozen tofu, deep-fried tofu. Fermented tofu (Sufu). Other soy products: Soy milk, fermented soy milk beverages, yuba.

This paper discusses traditional Oriental soy protein foods which are growing rapidly in popularity in the USA among non-Asian-Americans.

"Generally speaking, soy sauce is divided into two groups: fermented soy sauce and chemical soy sauce. Fermented soy sauce has a long history as a human food, whereas chemical soy sauce has a history of only several decades. In fermented soy sauce, the proteins and carbohydrates contained in the materials are hydrolyzed very slowly under mild conditions below 30ºC for over six months, whereas in chemical soy sauce they are hydrolyzed quickly by hydrochloric acid at 80ºC for 8-10 hours. Chemical hydrolysis is a cheap and rapid process, but during the hydrolysis, various secondary reactions occur and produce undesirable compounds, e.g. dark humins, furfurol, dimethyl sulfide, hydrogen sulfide, levulinic acid and formic acid, which are not present in fermented soy sauce. Furfurol, dimethyl sulfide and hydrogen sulfide, which have strong, bad odors in themselves, are derived from pentose, methionine, and sulfur-containing amino acids respectively. Furthermore, tryptophane, one of the nutritionally important amino acids, is destroyed almost completely. As shown in Figure 1 [two chromatograms], the main organic acid of fermented soy sauce is lactic acid, whereas the main organic acid of chemical soy sauce is formic acid. Levulinic acid, present in chemical soy sauce, does not exist naturally.

"To improve the odors of chemical soy sauce, semichemical soy sauce was devised. It is made by hydrolyzing raw soybeans with a lower concentration of hydrochloric acid (7-8%) as the first step, followed by fermenting the hydrolysate with osmophilic yeasts in the presence of wheat koji." In Japan, chemical soy sauce is not used as a soy sauce in itself, but as an extender for fermented soy sauce.

Table 1 gives the typical chemical composition (per 100 ml) of the five varieties of traditional soy sauce in Japan, including Bé [Baumé; a measure of the relative density of liquids], sodium (koikuchi is lowest at 17.6%, usukuchi is highest at 19.2%), total nitrogen (koikuchi has 1.55 gm, tamari has 2.55 gm or 65% more), formol nitrogen, reducing sugar, alcohol (koikuchi is 2.2%, by far the highest), pH (ranges from 4.6 to 4.8), and color.

A brief description of each of the five traditional varieties: (1) Koikuchi: This "dark-colored" shoyu is by far the most popular of the five types of fermented soy sauce in Japan, comprising 85% of the total. It is an all-purpose seasoning with a strong aroma, complex flavor, and deep, reddish-brown color. These characteristics are mainly derived from the use of equal amounts of wheat and soybeans in the koji; (2) Usukuchi [light-colored] shoyu is characterized by a lighter, red-brownish color and a milder flavor and aroma. It is used mainly for cooking when one wishes to preserve the original flavor and color of the food itself. As in koikuchi, equal amounts of soybeans and wheat are used in the koji, but the fermentation is done under conditions which prevent the development of a dark color. (3) Tamari shoyu has a higher amino acid content, but it lacks aroma. The koji is made primarily from soybeans with little or no wheat. (4) Saishikomi (twice-fermented) shoyu is made using equal amounts of wheat and soybeans in the koji, but using raw (unpasteurized) soy sauce instead of salt solution, which is mixed with the harvested koji. Saishikomi is characterized by aroma and full-bodied taste. (5) Shiro (clear, or "white") shoyu is made by using a very high ratio of wheat to soybeans in the koji, and further by fermentation under conditions which prevent dark color development. It is characterized by a very light yellow to tan color, though the amino acid content is very low because of the low soybean content in the koji. Flow sheets (Figures 2-5) show the process for manufacturing koikuchi, usukuchi, and tamari shoyu. Each has three basic parts: Koji making process, brine fermentation process, and refining process.

Concerning soy sauce production and consumption: The total annual production of soy sauce in Japan in 1979 reported by the Japanese Agricultural Standard (JAS) was 1,252,431 kiloliters (kl). In 1979 in Japan, about 70% of the soy sauce products in Japan were purely fermented, 25% contained some semichemical soy sauce, and the remaining 5% contained chemical (HVP) soy sauce. The most recent estimates of annual consumption of soy sauce in the USA are as follows: Fermented soy sauce 17,850 kl; Chemical (HVP) soy sauce 25,500 kl. Within fermented soy sauce, production of koikuchi soy sauce is estimated to be 16,500 kl/year.

In Japan an "instant tofu powder" is actually a spray-dried soy milk. This product was made and introduced by *Nihon Tanpaku Kogyo* (Japan Protein Industry) about 15 years ago (ca. 1966) and was used mainly as a raw material for making regular or silken tofu in order to save time.

"Recently, however [1973], the product was placed on the market as an instant powdered tofu [named *Hausu Hontôfu*] by Hausu [House] Foods Co."

Other figures show: (5) Manufacturing process of rice miso. (6) Manufacturing processes of soy milk used for making tofu, regular tofu, and silken tofu. (7) Manufacturing process of freeze-dried tofu (kori-tofu). (8) Manufacturing process of fermented soy milk beverage. *Lactobacillus casei, L. acidophilus,* and *L. bulgaricus* are usually used as starters. One such product recently appeared on the market in Japan.

A photo shows D. Fukushima. Address: Kikkoman Foods, Inc., Walworth, Wisconsin 53184.

3508. Harrison, G.R. 1981. What's holding up the introduction of soya into the human diet in Latin America? *J. of the American Oil Chemists' Society* 58(3):443-46. March.
• ***Summary:*** An excellent analysis, with many specific examples, of why soya is not more widely used in foods in Latin America. There have been many failures in trying to get soya products introduced. "In 1975, Brazil tried a law requiring 3% soya flour in all bread and baking products. The law was never enforced because the flour millers, as well as the bakers, refused to comply. Why?" Probably because it would require some changes in the manufacturing process and add some extra work.

"In Colombia in the early 1970s, it was required to add 10% soya flour to bread. The flour was not blended with the soya and the small separate package of soya flour was taken out, thrown away, or sold. The regulation was not enforced because the bakers refused to cooperate. In Mexico, 60% of the soya flour used for human consumption is used in bakery products. Our bakers use soya flour for its functional properties, not for nutritional value. They may not understand nutrition but they do understand moisture retention, longer shelf life, more even browning, better texture and better color. Also, they understand economy when they can partially substitute for eggs and milk in dessert breads and cakes using soy flour, enabling them to sell their product cheaper without affecting either profits or nutritional value... We see successful sales of soya flour to bakers and a bright spot in the otherwise rather dull picture of soya for human consumption." The article concludes: "Governments cannot force people to eat 'nutrition,' because the majority of people are not nutrition-minded. Poorer people will not eat specially prepared 'poor people food,' even if it is free. They want to eat what rich people eat. And last, but not least, the only way to introduce a new food is to provide an economic motive to the food service industry so they will blend the new, cheaper food with existing, well-known dishes. It is imperative to request the blessing of the government, if not their active participation. We believe that surely, by now, we have no governments that refuse to accept soya products as healthful and nutritious foods for human consumption." A photo shows Gil Harrison. Address: American Soybean Assoc., Mexico City 5, D.F., Mexico.

3509. Holmes, Charlotte Van Gundy. 1981. The life of T.A. Van Gundy (Three interviews). Conducted by William Shurtleff of Soyfoods Center, March-May 1981. 6 p. transcript. Also 3 letters from Charlottte in March, April, and May 1981.
• ***Summary:*** Birth and early life: Theodore Ananias Van Gundy (his friends called him "Van") was born on 8 July 1874 in the tiny rural community of Osoflaco, near Arroyo Grande, on the California Coast midway between San Francisco and Los Angeles. In 1886, at age 12, he became a Seventh-day Adventist, and began to show his mechanical talent by building an engine powered by steam from his mother's stove. He went to college in Healdsburg, California.

Early work with peanut butter: In 1897, at about age 23, he began his first commercial food production, making peanut butter (which, at the time, was a new food) with Dr. Hare in Fresno, California. In February 1898 he married Lulu Pond and moved to San Jose. It is not known what became of his peanut butter business.

Founding La Sierra Industries in 1928: In the fall of 1928 (probably not in 1927 as reported by Dorothea Van Gundy Jones in 1963), T.A. Van Gundy moved to La Sierra, California (now a suburb of Riverside) and started La Sierra Industries, the business that would make his famous as a soyfoods pioneer. The plant was on a lot behind his brother-in-law's home. By continuous experimentation and using equipment he designed and built himself, he soon developed a line of eleven soyfood products, plus canned garbanzos (chick peas), brown rice, and whole wheat. The first eight La Sierra-brand soyfood products were probably on the market by late 1929. They included Smoein (bacon-flavored smoked soy powder), Soy Beans (canned, unseasoned green-seeded type or with tomato sauce; his next products developed after Smoein), Soy Milk (canned, with the beany flavor removed by processing with live steam), Soy Cheese (canned tofu, with pimiento added to prevent graying after canning), Soy Flour, Soy Mamenoka (roasted soy flour; a Chinese name), Soy-Co (soy coffee substitute with an excellent coffeelike flavor; coarse grind or fine), B-Nuts or Beanuts (oil-roasted soynuts), B-Nut Butter (soynut butter made from B-Nuts), Soy Spread (canned okara or soy pulp, salt, mace, and other seasonings; it had a soft consistency and was said to taste and smell like "potted chicken"), Soy Gluten (a meat analog made of soy spread mixed with ground wheat gluten, resembling Dr. John Harvey Kellogg's Protose, but with soy), and Soy Cereal. In 1929 or 1930 he designed and built the mill that produced this Soy Cereal, a ready-to-eat, toasted and shredded, all-soy product. Address: California.

3510. Itona Products Ltd. 1981. Retail price list. Itona Works, Leyland Mill Lane, Wigan, WN1 2SB, England. 1 p. Undated.

• ***Summary:*** The list of all-vegetarian products includes: Minced beef. Beef chunks. Ham chunks. Unflavoured mince. Minced beef. Beef chunks. Ham chunks. Tonabanga. Tonaburga. Tona 'C' food fish cake mix. Golden Archer Soya Beanmilk. Golden Archer brown rice pudding. Granny Ann high fibre biscuits. Ito coffee substitute. Noots. Noot bar. Granymels. Golden Archer Beanmilk Custard. Beanoot butter. Super soya lecithin powder 500.

The company's directors are: E.J. Hampson, M. Armitage, D.J. Hampson (sales director), and J.T. Hampson. Address: Wigan, England. Phone: Wigan 34761/2.

3511. Liener, I.E. 1981. Factors affecting the nutritional quality of soya products. *J. of the American Oil Chemists' Society* 58(3):406-15. March. [145 ref]

• ***Summary:*** Contents: Abstract. Introduction. Heat-labile factors: Protease inhibitors (incl. trypsin inhibitors), lectins (hemagglutinins; they have the unique property of binding carbohydrate substances), goitrogens, antivitamins (antivitamin D, antivitamin E, and antivitamin B-12), phytate, phytic acid. Heat-stable factors: Estrogens (incl. isoflavones, genistin, daidzin, coumestrol), saponins, flatulence factors, lysinoalanine, allergenicity.

Goitrogens: Unheated soybeans have been reported to cause significant enlargement of the thyroid gland of rats and chicks; this effect can be counteracted by supplementing the diet with iodine (as potassium iodide) or partially eliminated by heat. Several cases of goiter have also been reported in human infants fed soybean milk, a situation which could likewise be alleviated by iodine supplementation. Therefore iodine supplementation of soyamilk infant formulas is recommended as a precautionary measure against the goitrogenic potential of this product.

The component responsible for the goitrogenic effect of soybeans is still unknown. It appears to be concentrated mainly in the curd, but goitrogenic activity has also been detected to a lesser extent in toasted soya flours, concentrates, and isolates. Unlike most goitrogenic plants of the Cruciferae family, soybeans do not contain glucosinolates. The goitrogenic principle in soybeans has been reported to be a low molecular weight oligopeptide; this appears to be inconsistent with the observation that the goitrogenicity of soybean curd was not eliminated by proteolytic digestion.

Most of the evidence indicates that, whatever the goitrogenic principle is, it seems to exert its effect by inhibiting the uptake of iodine into the thyroid gland. However other researchers believe that goiter from soy-containing diets may result from an increased fecal loss of thyroxine or a simple iodine deficiency (Halverson et al. 1949; Van Middlesworth 1957; Beck 1958; Hydowitz 1960; Shepard et al. 1960). One study (Kimura et al. 1976) found that female rats which were fed defatted soybeans with an iodine-free diet for 6-12 months showed thyroid carcinomas. This effect, however, was completely prevented by iodine supplementation.

"Heat-stable factors: Estrogens. The banning of the use of diethylstilbestrol [DES] as a growth stimulant for animals in meat and poultry production has served to focus attention on the possible toxic effects of naturally occurring estrogens." Fig. 9 shows the structure and formula of isoflavonoid compounds isolated from soybeans (Naim et al. 1974). Table 9 shows the estrogenicity of compounds isolated from soybeans and their potency relative to DES. The compounds are genistin, daidzin, glycitein 7-O-Beta-glucoside, and coumestrol. All figures are from other sources (Naim et al. 1974; Bickoff et al. 1962; Knuckles et al. 1976). Address: Dep. of Biochemistry, College of Biological Sciences, Univ. of Minnesota, St. Paul, MN 55108.

3512. **Product Name:** [Meiji Sunglow Soymilk (Plain)].
Foreign Name: Meiji San-guroo Tônyû (Pureen).
Manufacturer's Name: Meiji Milk Products Co. Ltd. (Meiji Nyugyo).
Manufacturer's Address: Kyobashi 2-3-6, Chuo-ku, Tokyo 104, Japan.
Date of Introduction: 1981. March.
Wt/Vol., Packaging, Price: 200 ml aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. Tonyu [Soymilk. 2nd ed.]. p. 72. Meiji Nyugyo launched Meiji San-guroo Tonyu (Pureen) in a 200 ml long-life (aseptic) carton in March 1981.

Soya Bluebook. 1983. p. 63. "Sungrow Soy Beverage." Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64. Note that Meiji started to market Sunglow soymilk, made and private labeled for them by Marusan, in April, 1979.

3513. Moretti, R.H. 1981. Soy milk developments in Latin America. *J. of the American Oil Chemists' Society* 58(3):521-22. March.

• ***Summary:*** Dr. Harry Miller introduced soy milk into Latin America. From his writings, a Brazilian, Dr. Barretto of Laticinios Mococa, developed Solein, a mixture of 30% soya milk and 70% cow's milk; it was introduced in 1967. Still sold, it is powdered and canned. Almost simultaneously Dr. Suberbie in Mexico developed Sustilac, introduced in 1968, and made from sprouted soybeans. The pregermination reduces the amount of oligosaccharides. His company, Compañia Industrial de Alimentos, still produces soya milk, with all products being in powdered form. They also developed Isolac (20.3% protein) and Soyamalt (24.4% protein). Soyamalt is sold in strawberry, vanilla, and nut flavors. In 1968 the Coca Cola Co. introduced into Brazil the soya milk Saci in 200 ml bottles.

During the 1970s powdered Provesol was developed in IIT, Colombia, by Dr. Diaz Delgado. The process was

later sold to a Brazilian company, Olvebra, which started production in 1975 with the Coca-Cola pilot plant. The canned powdered product is sold as Novo Milk (sweetened, with orange, chocolate, banana, and strawberry flavors), and as Novo Vida, which has the same composition as Provesol (50% protein, 25% fat, 19% carbohydrates, and 19% fiber). Novo Vida is widely used in the school lunch program in Brazil, and well accepted.

In 1975-76 ITAL, the Inst. of Food Technology in Brazil, developed a soya milk brand named Vital. It was packaged in Tetra Pak cartons. Several flavors were developed and tested by school children and industrial workers. It was well accepted but limited by the high cost. In 1977 it was packed in polyethylene bags with a 2-3 day shelf life.

"In 1976 a new concept of soya milk processing was developed in Brazil. This technique consists of producing on a small scale, the soya milk at the market spot. The project was called 'mechanical cow' and produces 200 liters/hour of sterilized soya milk with 3.0% protein, 1.9% fat, 1.2% carbohydrates, 0.5% ash, 8.0% added sugar and at pH 7.0.

"This project was introduced in 1977 and, presently, there are 80-90 'mechanical cows' in Brazil." The is idea already being exported to Paraguay, the Seychelles Islands, and Ecuador. A detailed description of the process and its main advantages are given. Being very inexpensive, "the equipment can be bought by very small entrepreneurs, or by the government to implement school lunch programs or health programs. The equipment uses only water and electricity and does not need a steam generator.

"Presently, the Brazilian federal government gives tax exemptions for this equipment when it is bought in a full package: Mechanical Cow, polyethylene bag filler, and residue [okara] dryer, which shows Brazil's interest in the project and also the success of the product all over the country.

One kg of soybeans can produce 8 liters of 3% soya protein milk, which has the antitrypsin factor correctly inactivated. Packed soya milk can stand for 2 days at room temperature and 10 days refrigerated at 5ºC. The cost to make 1 liter of this formulated soya milk is US $1.10. Address: Dep. Food Technology, FEA/UNICAMP, Sao Paulo, Brazil.

3514. **Product Name:** [Soymilk (Plain, Coffee, Orange)]. **Foreign Name:** Morinaga Tônyû (Pureen, Koohii, Orenji). **Manufacturer's Name:** Morinaga Milk Co. (Morinaga Nyugyo) (Marketer). Made in Japan by Mitsubishi. **Manufacturer's Address:** Shiba 5-33-1, Minato-ku, Tokyo 108, Japan.
Date of Introduction: 1981. March.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Morinaga Nyugyo first sold commercial soymilk in Japan in 1981.

K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 73. States that these three products were introduced in Nov. 1981 in 200 ml long-life packs, and distributed nationwide. Product (coffee flavor) with Label (200 ml Tetra Brik carton) purchased in Tokyo in June 1983.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64. In March 1981, Morinaga Milk Co., Japan's third largest milk company, was licensed by Mitsubishi to distribute their soymilk.

3515. Naidoo, B.T.; Chunterpurshad, I.; Mahyoodeen, A.B.G.; Pather, G. 1981. The use of a soy isolate based

formula in the treatment of infantile diarrhoea [diarrhea]. *J. of International Medical Research* (*England*) 9(3):232-35. March. [10 ref]
• ***Summary:*** "Lactose intolerance interferes with the recovery phase in patients with severe diarrhoea. A controlled comparison of a lactose-free soy isolate formula (Isomil) and a standard cow's milk-based formula in 112 infants with severe diarrhoea [diarrhea] showed a significant advantage for the lactose-free formula. All the infants were dehydrated on admission and required initial intravenous therapy. The response rate in the two groups was, respectively, 93% and 75%." Address: Dep. of Paediatrics, R.K. Khan's Provincial Hospital, Mobeni, Durban, Rep. of South Africa.

3516. Pereira, Lygia; Campos, Sonia D.S. de. 1981. Soya protein products for institutional feeding systems (in Brazil). *J. of the American Oil Chemists' Society* 58(3):355-62. March. [20 ref]
• ***Summary:*** A detailed look at soyfoods (such as Vital and Gestal soymilks) developed by ITAL, and a listing of 47 commercial institutional soyfood products produced by 9 companies in Brazil in 1980. Address: Instituto de Tecnologia de Almentos (ITAL), Caixa Posta 139, 13.100 Campinas, Sao Paulo, Brazil.

3517. *Prevention* (*Emmaus, Pennsylvania*). 1981. A health food dictionary: Soybeans. March. p. 144-46.
• ***Summary:*** Soybean foods include soybean oil, tofu, tamari, soy milk, tempeh, miso, soybean sprouts, soy flour, soy ice cream, and soy nuts.

The article ends: "Do yourself a favor. Get to know the soybean." Address: Emmaus, Pennsylvania.

3518. Russo, J.R.; Bannar, R. 1981. Aseptic packaging: How far will it go? *Food Engineering* 53(3):49-60. March.

3519. Soycrafters Assoc. of North America; Soyfoods Center. 1981. Estimated soyfoods industry statistics (News release). Sunrise Farm, Heath Rd., Colrain, MA 01340. 1 p. March. Updated in Aug. 1981.
• ***Summary:*** 1. Number of companies manufacturing tofu, tempeh, miso, soynuts, soy sprouts, soy sauce, secondary soyfoods, soy delis & restaurants, in the USA, Canada, and Latin America. 2. Production statistics for USA and Canada: Raw soybean usage, food production, employees, and retail sales value are given for 4 types of tofu makers (caldron, steam kettle, pressure cooker, factory), tempeh, soynuts, and soy delis and restaurants. With totals. Actual gathering of statistics was done largely by Soyfoods Center. Address: 1. Richard Leviton, Colrain, Massachusetts; 2. W. Shurtleff, Lafayette, California.

3520. Ye, E-C. 1981. Case-control study of 100 gastric cancer cases. *Zhonghua Yu Fang Yi Xue Za Zhi* (*Chinese J. of Preventive Medicine* [*Peking*]) 15(2):107-09. March. [Chi; eng]*
• ***Summary:*** A case-control study of 100 gastric-cancer and age-matched controls conducted in Shanghai, China, showed significantly lower relative cancer risk among those who consumed soymilk frequently. Address: China.

3521. Webber, Alfred B. 1981. Perry Webber, Madison College, and Madison Foods (Interview). Conducted by William Shurtleff of Soyfoods Center, April 3. 2 p. transcript.
• ***Summary:*** Alfred is a son of Perry Webber. Perry's first interest in soyfoods started in Japan, during his first stay there in 1912. He loved Japanese food, and he ate lots of it, but he especially liked Inari-zushi, which contained aburage [dep-fried tofu pouches]. He used to go to the Shinoda sushi-ya, a sushi shop in Kanda (now Awajicho)–stopping in on his way to language school. At one time they named a type of sushi type after him, calling it the "Webber Sushi. He was used in some of their promotional material. Perry was also very fond of tofu and of miso soup, but he got interested in soyfoods via aburage. The thought is was a delicious form of protein, not known or used in U.S.

2. Perry met Dr. Harry Miller in about 1936 when Miller was a missionary in China; a number of meetings were held in Shanghai. Alfred was attending the SDA Far Eastern Academy in Shanghai, when his dad came from Japan to China. The main reason for Perry's trip was for him to set up a research lab for analyzine soymilk products in Dr. Miller's soymilk plant in Shanghai. Perry was biochemist and had graduated with a PhD.

Not much soy used in the early days of Saniku Foods. In 1935 Saniku started using soy, he thinks. But mostly they used puffed rice and wheat, and nutmeat.

Madison Foods had difficulty processing soy flour to make into milk, before it was made into tofu. They ordered a mill from Japan for this and began grinding whole soaked soybeans to make tofu. Perry liked plain tofu and wanted to sell it like this in the U.S., but at Madison they wanted to season it to make "Soy Cheese" [seasoned tofu]. Perry helped to develop Vigorost (which Alfred loved) and Yum.

Alfred thinks production of soymilk at Madison was started in 1935-37, when Perry had returned to Japan. During those years it really became a commercial product. When Perry returned to Madison in 1939-40, Madison was already well into production. So Alfred does not know to what extent Perry helped to develop it.

Another person who knowns details in Sam Yoshimura, a student of Perry's in Japan. He is the best man to talk to about production of soyfoods in the U.S. He was a great friend of Perry's, and he developed new food products.

Perry was treasurer of the American Soybean Association (ASA) in about 1933 or 34. He may have been secretary too. Alfred went with Perry to the ASA convention

at Baton Rouge, Louisiana, where Perry gave a slide show and lecture on soybeans and soyfoods in the Orient. Alfred also went with Perry to the research labs at Ford Motor Co. and talked with Edsel Ruddiman; they did not meet Henry Ford, however Perry gave a talk to leading Ford research scientists.

Perry was a great friend of Dr. John Harvey Kellogg. He did reasearch work for the Kellogg Food Co. He visited Dr. Kellogg and talked about soyfoods. He also developed preservatives for crackers for the Sanitariun Food Co.

Alfred suggests I talk with Ed Bisalski, who is now in Arkansas. Address: M.D., 24424 Univ. Ave., No. 122, Loma Linda, California 92354.

3522. Bonsembiante, Mario; Rioni, M.; Bittante, G.; Aghina, C. 1981. Fonti proteiche alternative all caseina nei sostitutivi del latte per vitelli in svezzamento [Protein feedstuffs to substitute for casein in milk replacers for weaning]. *Zootecnica e Nutrizione Animale* 7(2):89-108. April. [66 ref. Ita]
Address: 1. Professore ordinario, Istituto di Zootecnica, Via Gradenigo, 6-35100 Padova [Padua], Italy.

3523. Chen, Steve. 1981. Nutrition and production of soymilk. *Food Industries Monthly* 13(4):5-13. April. [1 ref. Eng]
• ***Summary:*** Originally presented in Bangkok, Thailand in 1980, then published as a 10-page booklet by the American Soybean Assoc., Taiwan. Address: Country Director, American Soybean Assoc., Taiwan.

3524. Dutra de Oliveira, J.E. 1981. Methionine supplementation of soy protein formulas. *American J. of Clinical Nutrition* 34(4):605-06. April. [6 ref]
• ***Summary:*** Research shows that methionine supplementation definitely helps rats. However, there are too many discrepancies in the available data to generalize about the effect of methionine supplementation on soya products used for human consumption–including infant formulas. Whether such supplementation is beneficial or not in a soya product depends on many factors, such as the type of product used, the nature of processing, the amount of protein added to the formula, and the method of biological testing. Address: Faculdade de Medicina, Univ. of Sao Paulo, Ribeirao Preto, SP, Brazil.

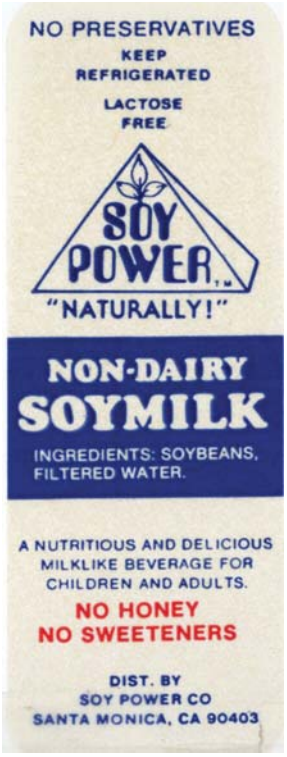
3525. **Product Name:** Amasake Rice Pudding [Plain, or Cinnamon].
Manufacturer's Name: Fresh Foods.
Manufacturer's Address: Boulder, Colorado.
Date of Introduction: 1981. April.
Ingredients: Brown rice, koji, spring water.
Wt/Vol., Packaging, Price: First in bulk, then in 8 oz and 16 oz plastic tubs.
How Stored: Refrigerated.
New Product–Documentation: Talk with Robert Nissenbaum. 1988. Feb. 7 and 11. In 1983 Gloria Gilbert of Fresh Foods in Boulder was making amazake and selling it as a pudding in small tubs. She never made a beverage. This product was introduced before her Rice Dream. She also made regular sandwiches and deli-type products.

Talks with Gloria Gilbert. 1988, Feb. 22, and 1989 Sept. 11. She learned about amazake in late 1980 from Rebecca Greenwood (Wood), and she learned how to make it from *The Book of Miso* by Shurtleff and Aoyagi. In April 1981 she started making Amasake Rice Pudding in Boulder. She is sure of the date because it was just after the assassination attempt on President Reagan in March 1982; the same day she sprained her ankle. That injury led her to decide that she wanted to change her lifestyle and work for herself, making amasake and selling it at Pearl Street Market. The first flavor was plain, followed by cinnamon. Initially she made it out of her home kitchen. In Dec. 1981 she bought a sandwich business from Marty Roth and Barbara Svenning to expand her product line. Note that Gloria was making amazake before she ever met Martin and Barbara. In Jan. 1982 she first gave her business a name, Fresh Foods, registered it as a legitimate food processor, got her first labels and logo, rented a commercial kitchen from a Greek guy, perhaps on Walnut Street, in Boulder, and made the amazake and the sandwiches there. At Then she made her food products at Rainbow Juices' kitchen, then at a kitchen on Sterling Drive. The ingredients were just brown rice, koji, and spring water. It was sold initially in bulk (she distributed it in 5-gallon plastic pails) at the deli of the Pearl Street Market. She had no label; the deli had its own sign. After it did very well there, she then packaged it in 8 and 16 oz. tubs. All her products were made in the purist macrobiotic way, with the bran left in. She now works for Louis Harris & Associates, the pollsters. Her favorite amazake now is that made by Creative Kitchens in Florida, plain and carob.

Note: This is the earliest known commercial pudding based on rice or amazake.

3526. Luttrell, W.R.; Wei, L.S.; Nelson, A.I.; Steinberg, M.P. 1981. Cooked flavor in sterile Illinois soybean beverage. *J. of Food Science* 46(2):373-76, 382. March/April. [26 ref]
Address: Dep. of Food Science, Univ. of Illinois, Urbana, Illinois.

3527. **Product Name:** Soymilk [Honey, Carob, or Plain].
Manufacturer's Name: Soy Power Company, Inc. (Distributor). Made in Los Angeles by Wy Ky.
Manufacturer's Address: 235 Montana Ave. #105, Santa Monica, CA 90403.
Date of Introduction: 1981. April.
Ingredients: Carob: Soybeans, filtered water, honey, carob.
How Stored: Refrigerated.



New Product–Documentation: Labels. 1981. 1.5 by 4 inches. Self adhesive. Honey: Red on white. Plain: Blue on white. Carob: Brown on white. "No preservatives. Lactose free." On Plain and Honey: "A nutritious and delicious milklike beverage for children and adults." Talk with Kevin Cross. 1988. Sept. 22. Originally made by Wy Ky. Now made by Mighty Soy in Los Angeles.

3528. *Soyanews* (*Sri Lanka*). 1981. Hospitals take to soya milk. 3(9):1. April.
• ***Summary:*** "Two hospitals in Kandy... are now using soya milk in the preparation of curries for patients." They started in February of this year. The patients and staff who tasted the curries can't tell the difference. "The soya bean milk is supplied by the Gannoruwa Soyabean Foods Research Centre in powdered form. Kitchen staff in the two hospitals are pleased with the use of soya milk as preparation is now shorter and less tedious.

"A 250 gm packet of soya milk powder is equivalent to the amount of milk extracted from about 5 coconuts, the manager of SFRC, Mr. T.D. Siriwardena told Soyanews."

"He added that the hospitals using soya milk can make further savings and added nutritional gains if they prepare the soya milk in their own kitchens from raw soaked beans.

"This would involve, he said, the use of a motorised stone grinder which can be turned out locally. But the long term advantages are many, Mr. Siriwardene said. As Tofu is an excellent food for invalids and convalescents, the next step in the preparation of soya milk is the making of tofu..." The residue [okara] is available at no extra cost for making rotis, and it can partly replace the coconut that goes into pol sambol.

"Last year the General Hospital in Colombo tried out using the slurry (the ground paste from soaked soyabeans) directly in curried and found that it was well received by patients."

Note: Sri Lanka may be the first developing country to begin to grasp the great potential of soymilk and tofu for its food culture.

3529. Soyfoods Center; Soycrafters Assoc. of North America. 1981. Soyfoods production in America and the West (News release). Lafayette, California: New-Age Foods Study Center. 1 p. April. Updated in Sept. 1981 in a neater format.
• ***Summary:*** A table shows production statistics for 25 types of soyfoods. Number of manufacturers in the USA, Canada, Other West, Total; Tons of raw soybeans/year used by each food. Yield of food from 1 unit weight of soybeans. Wholesale value. Retail value. Number of people employed. Address: P.O. Box 234, Lafayette, California 94549.

3530. *Toyo Shinpo* (*Soyfoods News*). 1981. Tônyû shijô no ?? [Soymilk market in Japan]. May 11. p. 3. [Jap]
• ***Summary:*** Mr. Machida estimates that the amount of soymilk produced in Japan was 4,000 tonnes (metric tons) in 1978, 8,000 tonnes in 1979, and 10,000 tonnes in 1980, worth 300 million yen (US$13 million). The retail price for 200 ml averages 60 yen. Much effort is being put into promoting the slogan "Drink the healthful alkaline beverage" on TV. In March of this year, Meiji Nyugyo started making SunGlow Soymilk.

3531. Shurtleff, William. 1981. Analysis of the U.S. and Western world tofu industry. Lafayette, California: Soyfoods Center. 1 p. May 17. Unpublished typescript.
• ***Summary:*** In this 1-page summary, prepared for Kikkoman Corporation, a table gives the following statistics for the years 1979, 1980, and 1981: Number of tofu manufacturers in the USA (120, 145, 159), Canada (7, 14, 19), other non-Asia, total. Raw soybeans used (tons/year) in USA. Percentage of total raw soybeans used for all soyfoods in the USA. Yield (pounds of tofu made from 1 pound of soybeans) (2.5). Tons of tofu produced in USA (16,250, 20,500, 26,000). Wholesale value (million dollars) (12.0, 17.5, 25.0). Retail value (million dollars) (23.2, 33.9, 48.5). Number of production employees (602, 759, 965).

Notes: The largest food uses of soybeans in the USA in 1981 are: Soy flour and grits (defatted) 52.6% (of all soybeans used), textured soy flour (incl. TVP) 19.7%, soy protein isolates 16.9%, soy protein concentrates 7.7%, soy sauce 1.2%, tofu 0.8%, soymilk and dairylike products 0.6%.

Estimates of regional markets for tofu: Largest market–California. Second largest–East Coast from Massachusetts

to Maryland. Third largest–Pacific Northwest. Fourth largest–Northern Midwest (Wisconsin, Michigan, Illinois, Minnesota, Indiana).

Addresses of tofu manufacturers is included. Address: The Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

3532. Anuradha Industries. 1981. Display ad: Amisoy: Spray dried soyabean milk powder. *Times of India* (*The*) (*Bombay*). May 24. p. 13.

• ***Summary:*** The top half of this full page ad shows an Indian woman doctor (wearing eyeglasses and appearing quite westernized) looking at a large can of 'Amisoy.' "Working for several years we have now succeeded in manufacturing a spray dried soyabean milk powder comparable to those in International Market.

"Amisoy is readily constituted into a palatable beverage (Soya milk). Fortified with all essential vitamins and minerals and has been tested experimentally. A special infant food of clinically established value. A good diet supplement for those hypersensitive to milk."

"Marketed by Anuradha Industries."

Note: "Amisoy" was the name of the earliest isolated soy protein developed by Central Soya Co. in Chicago, Illinois, USA in the early 1950s. It is not known if this soya milk and the name of the isolated soy protein are related in any way. Is the isolate an ingredient in the soya milk? Address: 1, Shriniketan, 14, M.K. Road, Bombay–400 020. Phone: 311803.

3533. **Product Name:** Amisoy: Spray dried soyabean milk powder.
Manufacturer's Name: Anuradha Industries.
Manufacturer's Address: Bombay, India. Phone: 311803.
Date of Introduction: 1981. May.
How Stored: Shelf stable.
New Product–Documentation: Ad by Anuradha Industries in *Times of India.* 1981. May 24, p. 13. The product is still on the market in Jan. 1982.

3534. **Product Name:** [Asashoku Soymilk (Dairylike, Coffee, or Orange)].
Foreign Name: Asashoku (Soimiruku, Koohii, Orenji).
Manufacturer's Name: Asahi Shokuhin.
Manufacturer's Address: San Shain 60 40F, 3-1-1, Higashi-Ikebukuro, Toshima-ku, Tokyo 170, Japan.
Date of Introduction: 1981. May.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Products with Labels (Tetra Brik cartons), purchased in Tokyo in June 1983. 200 ml. Each carton has an illustration of a lion on 3 panels. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.

K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 73. States that these 3 flavors, in 200 ml Tetra Brik cartons, were introduced in May 1981, and distributed to most of central Japan.

3535. Callenbach, John C.; Sheehan, M.B.; Abramson, S.J.; Hall, R.T. 1981. Etiologic factors in rickets of very low-birth-weight infants. *J. of Pediatrics* 98(5):800-05. May. [10 ref]

• ***Summary:*** Describes a high rate of rickets in preterm infants fed soy-based formula. Address: Section of Neonatology, The Children's Mercy Hospital, Univ. of Missouri Kansas City School of Medicine, Kansas City,

Missouri.

3536. Central Soya Company, Inc. 1981. Fact sheet: Products, Central Soya Company, Inc. and subsidiaries (Leaflet). Fort Wayne, Indiana. 2 p. May. FS-17. 28 cm.
• ***Summary:*** Lists all of the company's current products, including the brand name and the customers to whom each is sold. Major soy products include: Soy flours (Soyafluff, Soyabits, Soyalose, Soyarich). Textured soy proteins (Centex, Response, Bontrae). Edible soy protein concentrates (Promosoy, Promocaf). Lecithin (Actiflo, Centrol, Centrophil, Centrolene, Centrolex, Centromix, Centrophase, Centrocap, RG Lecithin). Refined edible vegetable oils (Centrasoy, Centracreme, Centracote). Packaged vegetable shortenings (Centrasoy, private label).

Soybean mill feed (Soybran Flakes). Livestock and poultry feeds (Master Mix, Provimi). Soybean meal (Central, Flow Coated). Address: Fort Wayne, Indiana 46802. Phone: 219-425-5100.

3537. Hildebrand, D.F.; Hymowitz, T. 1981. Two soybean genotypes lacking lipoxygenase-1. *J. of the American Oil Chemists' Society* 58(5):583-86. May. [32 ref]
• ***Summary:*** The USDA soybean germplasm collection was screened for genotypes lacking lipoxygenase-1. Two varieties or plant introductions (PI) were found: 133226 from Indonesia and PI 408251 from Korea.

Lipoxygenase [linoleate: O_2 autoreductase, EC 1.13.11.12] is widely considered to be the principal cause of the undesirable flavors in soy products, especially soymilk. Moreover, the lipid hydroperoxides resulting from lipoxygenase action can lead to loss of nutritive value by the destruction of certain vitamins and protein. In addition, lipid hydroperoxides and their breakdown products may have toxic effects.

Soybean seeds contain at least three lipoxygenase isozymes, each having a molecular weight (MW) of about 100,000. With linoleic acid the substrate, lipoxygenase-1 (L-1) has a pH optimum at 9.5, L-2 has a pH optimum at 6.5, and L-3 has a broad pH optimum from 4.5 to 9.0. The isoelectric points of the three isoenzymes are also different. L-1 is the most acidic. L-1 is the most reactive with free linoleic acid, whereas L-2 and L-3 are most reactive with methyllinoleate or trilinolein. On an equal protein basis, L-1 is 2.5 times as active as L-2 at its optimum pH, and L-2 is 2.5 times as active as L-3 or L-3b. L-1 is at least 36 rimes more stable than L-2 at 69ºC. Address: Dep. of Agronomy, Univ. of Illinois at Urbana-Champaign, Urbana, Illinois 61801.

3538. **Product Name:** Canned Tofu, Instant Powdered Tofu [Powdered Soymilk with a Separate Coagulant], Silken Tofu.
Manufacturer's Name: Japan Food Corp. (Importer). Made in Japan.
Manufacturer's Address: San Francisco, California.
Date of Introduction: 1981. May.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: FIND/SVP. 1981, May. "The tofu market: Overview of a high-potential industry." p. 103. A tofu importer.

3539. Keltner, Steve; Druding, David; Littell, Annee. 1981. New Arkansas regional tofu producer: Summercorn Soyfoods. *Swallows* (*Newsletter of the New Destiny Federation of Food Co-ops, Fayetteville, Arkansas*). Spring. p. 8-9.
• ***Summary:*** The soyfoods business grew out of Summercorn Bakery. It is now producing tofu, soymilk, and soysage. Contains 6 photos of the tofu making equipment, including photos of Keltner, Druding, and Claudia Smith. Annee is Druding's wife.

3540. Obis, Clare Barrett. 1981. The versatile soybean. *Vegetarian Times* No. 46. May. p. 66-71. [7 ref]
• ***Summary:*** One place you won't hear any arguments about soybeans is in the kitchen of knowledgeable cooks. "High in protein, fiber and minerals, soybeans are one of nature's truly universal miracle foods." "Here is a sampling of recipes from some of our favorite cookbooks" (cites 7).

How to use soy flour. Soy coffee cake (with 1 cup soy milk and 1 cup soy flour). Tofu cheesecake. Spiced tofu marinade. Tofu spinach pie. Soy burgers. Soya paté. Scotch eggs. Arancini Siciliani (Soybean and rice croquettes). Creamy tofu dip or dressing. Dairyless, eggless quiche. Scherezade casserole. Shepherd's pie (with tofu). Zuccanoes. Spicy Sichuan tofu. Soy stock gravy. Tofu stroganoff. Tofu stuffed mushrooms. Vegetable bean noodle bake. Address: Chicago, Illinois.

3541. Shenai, J.P.; Jhaveri, B.M.; Reynolds, J.W.; Huston, R.K.; Babson, S.G. 1981. Nutritional balance studies in very low-birth-weight infants: Role of soy formula. *Pediatrics* 67(5):631-37. May. [29 ref]
• ***Summary:*** Describes a high rate of rickets in preterm infants fed soy-based formula. Address: Dep. of Pediatrics, Univ. of Oregon Health Sciences Center, Portland, OR.

3542. **Product Name:** Non-Dairy Soymilk.
Manufacturer's Name: Summercorn Foods Inc.
Manufacturer's Address: 401 Watson, Fayetteville, AR 72701. Phone: 501-521-9338.
Date of Introduction: 1981. May.
Ingredients: Filtered water, organic whole soybeans.
How Stored: Refrigerated.
New Product–Documentation: Steve, David and Annee. 1981. Spring. Swallows. Summercorn Soyfoods is now producing tofu, soymilk, and soysage. Label. 1981. 2 inch diameter. Black on white. "Sugar and salt free. Keep

refrigerated."

3543. Wang, Hwa L. 1981. Oriental soybean foods: Simple techniques produce many varieties. *Food Development* 15(5):29-34. May.
• ***Summary:*** Methods of preparation are given for the following soyfoods: Tofu, soy sauce, miso, hamanatto, sufu, tempeh, natto. A table gives local names, descriptions, and uses for traditional East-Asian non-fermented soyfoods: "Fresh green soybeans (mao-tou, edamame)," soybean sprouts (huang-tou-ya, daizu no moyashi), soybean milk (tou-chiang), protein-lipid film (tou-fu-pi, yuba), soybean curd (tofu, tou-fu, tubu, tahoo, touhu, taufoo, dou-fu, dan-fu), and soybean flour (tou-fen, kinako). Local names, organisms used, substrate, and description of the product are given for traditional East-Asian fermented soyfoods: soy sauce, miso, hamanatto, sufu, tempeh, and natto.

Note: This is the earliest English-language document seen (April 2013) that uses the word "taufoo" to refer to Chinese-style tofu. Address: NRRC, Peoria, Illinois.

3544. Jacklin, Michele. 1981. The Good Harvest Food Coop Inc. Soy what? For 10 years! *Hartford Courant* (*Connecticut*). June 18. p. B5E.
• ***Summary:*** Good Harvest, in Middletown, Connecticut (about 10 miles south of Hartford), is celebrating its 10th anniversary. The membership numbers between 600 and 700 depending on the time of year. The produce still looks fresh and the loaves of bread (some of which use soy as an ingredient) are freshly baked. "The tofu, sesame tahini paste, seven kinds of granola and carob are popular items, but not for junk food addicts who need their daily fix of additives and preservatives."

Several months ago the food coop added a snack bar, whose menu changes daily. "Favorites include lentil stew, sandwiches stuffed with hummus (garbanzo beans) and guacamole, tofu (soy bean curd) pot pie, carrot juice and carob brownies." During warm weather, "soy milk softees," which resemble milkshakes, are very popular. Meat and fish are not sold. Address: Staff writer.

3545. Lo, K.S. 1981. Re: More on the early history of Hong Kong Soya Bean Products Co., Ltd., makers of Vitasoy. Letter to William Shurtleff at Soyfoods Center, June 26. 2 p. Typed, with signature on letterhead.
• ***Summary:*** This letter contains Mr. Lo's responses to six questions asked by William Shurtleff in a letter dated 25 April 1981. (1) Mr. Lo does not have a history of his company in English. Having retired from active management of the company, he does not like to dig into past records. (3) "In the year 1936, I was working for the late Mr. EU Tong-Sen, a multi-millionaire from Malaysia. I was in Shanghai on a certain mission on his behalf and spent about six months there. I was then 26 years of age... (4) The sales of my company in 1980 of eight million cases include both bottles and tetrabriks products packed 24 bottles or briks to a case." Address: Chairman, Hong Kong Soya Bean Products Co., Ltd., 41 Heung Yip Rd. Aberdeen, Hong Kong. Phone: 5-528211.

3546. Murray, Megan Baldrige. 1981. Tofu fever in New York. 3 p. June 30. Unpublished English-language manuscript. Published in Japanese in Sept.
• ***Summary:*** "This American tofu lover, David Mintz... started experimenting with tofu as a milk and cheese substitute five years ago [i.e. in 1976]... Mintz found that he could make cream sauces, quiches, and souffles without needing to use dairy products if instead he used tofu. Says Mintz, 'I've got tofu fever. Its a food of the future, a miracle food... The whole secret is tofu's flexibility. It lends itself to becoming Dutch chocolate ice cream, and it can also become roast duck... I dream about it. Its a miracle food I never expected to see. I have to learn how to harness it.'

"After several years experimentation with ice creams based on tofu, Mintz is now producing his own tofu ice creams... in several flavors: vanilla, chocolate, maple-walnut, peach, apple, apricot rum, and peanut butter & chocolate. He is making 275 gallons a week... Mintz loves to introduce his customers to tofu. He is proud of the tofu wedding he recently planned, in which the bride and groom started off their married life on a tofu menu." Address: New York.

3547. *Toronto Star* (*Ontario, Canada*). 1981. Meals are meatless for many families (Advertorial). June 30. p. B13. Advertising supplement.
• ***Summary:*** "There's a quiet revolution shaping up on your dinner table.

"Many families are eating meat analogue (meat substitute to you and me). Long acclaimed by many vegetarians and members of the Seventh-Day Adventist church, the meat analogue looks and tastes about as much like meat as margarine resembles butter, and that's close enough for many.

"Some are frozen and ready to serve, some come in sealed tins and complete a recipe, others in packages, dehydrated so that you can slip them into your knapsack when you aren't making stews and casseroles at home. Names like Vegetarian Burger, Sizzleburgers, Prosage Links and Big Franks abound, not to mention Vegetarian Stakelets, Stripples (like bacon). You name your favorite meat, fowl, or fish and manufacturers such as Loma Linda Foods or Worthington Foods will probably be able to offer a reasonable facsimile.

"The soybean has been a staple of the oriental diet for hundreds, if not thousands of years. It is a complete protein, and enthusiasts are quick to note the absence of cholesterol and animal fat content. Add wheat gluten to capture the 'mouth feel' of flesh food, peanuts for the taste and fibrous

texture, a bit of seasoning here and there, extrude the whole, cook to taste, and voila, the meat analogue!

"Soybean drink [soymilk] is another entrant in the huge North American beverage sweepstakes. With its white colour and nut-like flavour, it offers an alternative to milk for drinking and cooking."

3548. *Daizu Geppo* (*Soybean Monthly News*). 1981. Saikin no tônyû shijô o kataru [Discussion of Japan's soymilk market today]. June. p. 4-23. [Jap]
• ***Summary:*** On May 22 industry leaders from various companies met to discuss the market. The industry is only about 10 years old. In 1980 the value of soymilk was estimated to be about 3,000 million yen, and in 1981 it was 5,000 million yen. About 3,000 tons of soybeans are used to produce soymilk compared with 450,000 tons for tofu. Soymilk and cow's milk complement one another as products, rather than competing. One is animal and the other is vegetable. Kids need more animal protein and adults need more vegetable protein. Soymilk gives stamina whereas dairy milk gives growth. The price of soymilk is a little higher than that of dairy milk. About 10% of Japanese are allergic to dairy milk. Kibun makes soymilk potage (thick and creamy soup) and also ice cream. Drinking a 50:50 mixture of soymilk and dairy milk gives a better flavor and complementary nutrition. At any department of the Kibun company they answer the phone by saying "Tonyu no Kibun" (Kibun, the soymilk company).

3549. *Daizu Geppo* (*Soybean Monthly News*). 1981. Tônyû-rui no Nihon Nôrin Kakaku (JAS) ni tsuite [Japan's JAS standards for soymilk]. June. p. 24. [Jap]
• ***Summary:*** This is the earliest document seen (Sept. 2000) concerning soymilk standards or a standard of identity for soymilk.

3550. Krieger, Verena. 1981. Die schweizerische Sojaforschung [Soybean research in Switzerland]. Bruchmattstr. 24, CH-6003 Lucerne, Switzerland. 2 p. June. Unpublished manuscript. [Ger]
• ***Summary:*** Most Swiss people would be astonished to hear that there is a Swiss Soybean Growers Assoc. (*Vereinigung schweizerischer Soja-Produzenten; VSSP*), established in Nov. 1973 through the efforts of Dipl. agricultural engineer Edgar W. Schweizer. Following Schweizer's untimely death [on 15 April 1979], most of the practical soybean cultural experiments ceased. But private industry such as Nestlé is now showing active interest. Address: Lucerne, Switzerland.

3551. **Product Name:** [Midori Soymilk (Plain, Soft, with Barley Malt Syrup, or Fermented)].
Foreign Name: Midori Tônyû (Sutoreeto, Sofuto, Bakuga, Hakko).
Manufacturer's Name: Kyushu Nyugyo.
Manufacturer's Address: Kyushu, Japan.
Date of Introduction: 1981. June.
Wt/Vol., Packaging, Price: 200 ml aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. Tonyu [Soymilk. 2nd ed.]. p. 72. Note: Midori means "green" in Japanese.

3552. Leviton, Richard. 1981. The soybeaning of the American kitchen. In: R.B. Yepson, ed. 1981. Home Food Systems. Emmaus, Pennsylvania: Rodale Press. 475 p. See p. 99-115. [14 ref]
• ***Summary:*** The United States is the world's leading producer of soybeans, harvesting 136 billion pounds a year. Yet instead of enjoying foods made directly from soybeans, we feed them first to animals, converting them into meat and dairy products.

"Meanwhile, East Asians, who have lived with the soybean for millennia, and who are not as affluent as we, have a simple, economical and healthful answer: simple, nutritious, inexpensive foods such as tofu, tempeh, soymilk, miso, and many others less known in the West." Address: Colrain, Massachusetts 01340.

3553. **Product Name:** [Soyalac Healthy Child {Soymilk}].
Foreign Name: Soiyarakku Genki na Ko.
Manufacturer's Name: San-iku Foods.
Manufacturer's Address: 1-1 Nagaurataku, Sodegaura-machi, Kimizu-gun, Chiba-ken 299-02, Japan.
Date of Introduction: 1981. June.
Wt/Vol., Packaging, Price: 425 gm can.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Soiyarakku Genki no Ko was introduced in June 1981 in a 425 gm can and distributed nationwide.

3554. Smith, Paul. 1981. Re: Pioneering work with debittered full fat soy flour and with soybeans in Australia. Soybean production in Australia. Letter to William Shurtleff at Soyfoods Center, undated. 2 p. Handwritten. Plus comments on draft of History chapter.
• ***Summary:*** Comments on "History of Soya in Australia" manuscript: Vincent R. Smith was a soyfoods pioneer in Australia. In 1951-52 he began to manufacture Australia's first whole (full-fat) heat-treated (debittered) soy flour. From 1953-54 to 1974-75 V.R. Smith also canned soybeans in tomato sauce or puree. In 1956 he founded Soy Products of Australia Pty. Ltd. Between 1965 and 1974-75 Mr. Smith developed and manufactured two soyabean meat substitutes–Soya Bean Luncheon Loaf, and Savoury Roast–for Bellevue Health Supplies, as part of his product range within F.G. Roberts' Health Foods Proprietary Ltd. This latter company has since been absorbed within Soy Products of Australia

Pty. Ltd. Technically and nutritionally these products were excellent, but they were discontinued due to rising labour costs, the small Australian market, and competition from larger, more highly automated companies like Sanitarium and Heinz. At the time, possibly due to the very cheap cost of meat in Australia, there was very little market interest in soyabeans either as a food, meat substitute, and/or extender.

By 1981 Soya Products of Australia Pty. Ltd. was making debittered full-fat soy flour and grits, Soy Crunch (a breakfast cereal containing soy grits), Soy Compound (containing dry soymilk, whole soy flour, malt, and lactose), and several types of Muesli containing soy grits. The company's main role is in supplying high grade, human consumption quality raw (enzyme active) and debittered (heat-treated) soy grits and soy flour to industry [food processors] for a wide variety of uses: cakes, biscuits, bread, bread premixes, pizzas, breakfast cereals and mueslis, hamburgers, smallgoods, baby foods, soy milk, soy ice cream, tofu, and calf- and piglet rations.

Interest in soyfoods is growing in Australia, and will continue to grow fostered by increasing health consciousness and the rising prices of meats of all kinds. After the end of the Vietnam war in 1975, there was a big influx of Vietnamese into Australia, swelling the number to 50,000, of which 30,000 are ethnic Chinese. There are also some 10,000 Indonesians currently residing in Sydney alone.

Letter: "Thank you for your hospitality during my visit to the USA... We are now more than fully occupied running, maintaining, and expanding our soy flour mill and our health food business. In the last two years we have made substantial improvements in our quality control, throughput, and heat-treatment process. We have also been working on improving our bulk unloading and grain cleaning system, and plans for extending and further automating our plant are well in hand... We are actively participating in research and development work on soy flour and its end uses: particularly in the areas of liquid and powdered soymilks and soy ice cream.

"We were amongst the first people in Australia to use soya beans to make products for human consumption, in particular heat-treated or debittered full fat soy flour. We were actively involved with the first commercial crops of soybeans grown in Australia in the early 1950s at Kingaroy; we even had a plot of several varieties of soyabeans growing in our own backyard for several years from about 1953-55. Though the bushes grow, the soybeans never mature properly. We also did some interesting work in canning beans in tomato sauce or purée and in manufacturing soy meat substitutes. In addition to our conventional bakery and small goods outlets, our own specialty products and breakfast cereals, we are now supplying several small manufacturers of tofu, soymilk with soybeans, soy flour (raw), and soy grits (raw) and have recently become involved in tempeh manufacture. The trend here in Australia is definitely following that in the USA and interest seems to have grown dramatically in the last year or so. Soyfoods seem to have taken off... Unless you can afford shiploads, freight to Australia is a killer, so we do our best to avoid importing soybeans.

"I am enclosing a recent newspaper article about a tofu producer. We supply him with soy flour for making his tofu and soymilk."

Concerning soyabean production in Australia: "Soyabeans are widely grown in Australia from just north of Shepparton in Victoria (120 miles north of Melbourne), through the Riverina district of southern New South Wales (NSW), through central, north, and northeastern NSW; the Darling Downs area (around Toowoomba) and Kingaroy districts of Queensland. More recently soyabeans have been grown in Western Australia, near Perth.

"A great deal of work has gone into developing suitable varieties of soyabeans for Australian conditions; much of this has been built on American research and experience. U.S., Chinese and Australian beans, while generally similar, are very different to handle and process, in our experience.

"Initially, soyabeans were grown under natural rainfall but this is now rare as bean size tends to be small and yield poor. Soyabeans are definitely not suited to dryland farming techniques. Nearly all soya beans now grown in Australia are grown under irrigation."

Update (March 1995): Paul Smith joined this family-run company in April 1980. In 1981 he was just starting to learn about its history. By 1986 he had done extensive research and writing (which see) on the company history, which showed that it had much earlier and very interesting origins. Address: Soy Products of Australia Pty. Ltd., 69 Power Road, Bayswater, VIC 3153, Australia. Phone: (03) 729-1738 or 729-3611.

3555. *Soyanews* (*Sri Lanka*). 1981. Letters: Milk plant. 3(11):2. June.

• ***Summary:*** The writer is "planning to introduce soya milk and its by-products to South India and we would like to know more about soyabeans and how to run a small soya milk plant on a commercial scale."

Ans: Get "in touch first with the Head of the Department of Food Technology of the Pantnagar University, Pantnagar, India. They have helped to set up a 50,000 bottles a day soyamilk plant [that make Sipso brand soyamilk] in Delhi."

3556. Vaidehi, M.P. 1981. A few soyabean products requiring better attention. *Lal-Baugh Journal* (*The*) 26(2). April/June. [Eng]

• ***Summary:*** "Soyabean should be considered not primarily as a meat substitute, but rather as a food ranking with meat, eggs, milk, and cheese, in protein content and supplementing these foods in the diet."

"The most popular south Indian fermented breakfast foods are 'idli' and 'dose'" [dosai]. Their batters are naturally

fermented with wild yeasts present in the atmosphere. Soya dhal could be used as a partial replacement for black gram dhal in making either of these popular foods. A recipe is given.

Recipes are also given for making tempeh, tempeh chips, tempeh curry, soy milk, soy curd and butter milk, tofu (like paneer). Cow's milk paneer retails for over Rs. 25/- per kg. whereas tofu retails for Rs. 8-10 per kg–less than half the price.

Note. This is the earliest English-language document seen (Oct. 2012) that suggests the use of the soya dhal or soya bean in preparing "dose" [dosai]. Address: Univ. of Agricultural Sciences, Bangalore, India.

3557. *Nation's Restaurant News.* 1981. Healthy tofu winning converts. Food of the future? July 6. p. 25.
• ***Summary:*** About Dik Rose, owner of Soyfoods Cafe in Redwood Valley, California. He serves sandwiches, soups, burgers, desserts and dips–all made with tofu. "His tiny restaurant, which has 10 seats, has been in operation three years and does about $2,000 a week in sales." Rose is not alone. Tofu is "becoming a mainstay at small nutrition-oriented restaurants across the country." Rose also owns a tofu company, which makes about 1,500 lb/week plus 40 gallons of soymilk. None of the foods served in the cafe contain any animal products. Items on the menu are described.

3558. Watanabe, Hidekazu. 1981. Re: Early work by San-iku Foods in Japan with tofu and soymilk. Letter to William Shurtleff at Soyfoods Center, July 19. 2 p. Handwritten. [Jap]
• ***Summary:*** Discusses the early history of this product. "The Ueda Tofu Shop in Hachioji helped with the development of our first soymilk in 1957; I was there at the time. In those days our name was *San-iku Gakuin Shokuhin-bu,* not San-iku Foods. The purpose was to provide a place of labor for the students and opportunities to learn food processing. It was not a business. Dr. Perry Webber was the principal of our school at the time. I think that our company did not make commercial soymilk before 1957. The food company is said to have been founded in 1928 in connection with the school, but legally it did not become an independent company until December 1970."

Note: In 1969 the food company, named College Health Foods (later renamed San-iku Foods), introduced Soyalac soymilk. Address: San-iku Foods, Sodegaura-machi, Chiba-ken 299-02, Japan.

3559. *Toyo Shinpo* (*Soyfoods News*). 1981. [Japanese soymilk companies and their products]. July 21. p. 25. [Jap]
• ***Summary:*** A large and very interesting table shows that 14 companies are now selling soymilk in Japan, and 7 companies are making it. For each company is given: Soymilk product name in Japanese [and English]. Volume (all are 200 ml). Retail price in yen: Either 70 or 80 yen. Package type (all are Tetra Brik Aseptic; each has a straw attached to the back). Shelf life: All are 60 days.

The manufacturers are: (1) Kibun Foods: Plain Soymilk (Tonyu Sutoreeto [Straight]). Vegetable Soymilk (Tonyu Yasai). Fruit Soymilk (Tonyu Kaju). Barley Malt Soymilk (Tonyu Bakuga).

(2) Okazaki Marusan: Marusan Soymilk (Marusan Tonyu). Marusan Orange (Marusan Orenji). Marusan Barley Malt (Marusan Bakuga).

(3) Mitsubishi Kasei: Maburon. Maburon Orange (Maburon Orenji). Maburon Coffee (Maburon Koohii). Maburon Honey (Maburon Hachimitsu).

(4) Meiji Nyugyo: Sunglow Soymilk (Sanguroo Tonyu).

(5) Midori Shokuhin. Midori Soymilk Plain (Midori Tonyu Sutoreeto). Midori Soymilk Soft (Midori Tonyu Sofuto).

(6) Asahi Shokuhin: Soymilk (Soimiruku). Soymilk Orange (Soimiruku Orenji). Soymilk Coffee (Soimiruku Koohii).

(7) Saniku Foods: Soya Neo Cocoa (Soia Neo Kokoa).

Note: A large black-and-white photo in this issue or a nearby issue this year shows 25 different soymilk packages, including 3 Soyalac cans.

3560. Leviton, Richard. comp. 1981. Soyfoods in America. The Fourth Annual Soycrafters Association Conference on Producing and Marketing Soyfoods: Schedule, abstracts, expo information, the menu, registration list, and directory of instructors. Colrain, Massachusetts: Soycrafters Assoc. 150 p. Held 8-12 July 1981 at Colorado State Univ., Ft. Collins, CO. No index. 28 cm.
• ***Summary:*** These proceedings were given to the registrants when they arrived. Schedule: Wed., July 8. Lectures: Directions for the soyfoods industry, by Richard Leviton. Soyfoods: Protein source of the future, by William Shurtleff.

Thurs., July 9. Class period 1: Review of tofu-making equipment, by Larry Needleman. International soyfoods cooking class, by Melodie Phipps. Small business management, by Dr. Harry Kreuckeberg. Tofu plant tour. Seminars: Sensory evaluation, part I, by Adrian Pearson. Soyfoods & human nutrition, part I, by Dr. Joseph Rackis, chairman. Home soymilk preparation, by Linda Gilbert. Tempeh production laboratory, by Dr. Clifford Hesseltine [NRRC, Peoria, Illinois], chairman. Class period 2: Soyfoods master chef cooking class, by Akiko Aoyagi. The Real Food Tofu Cafe, by Dik Rose. Soyfoods marketing strategies, by Dr. Harry Krueckeberg. Tofu plant tour. Tempeh production laboratory II, by Dr. Clifford Hesseltine, chairman. Lecture: Low cost extrusion cooking, by Dr. Judson Harper. Expo opens. Class period 3: Cooking soyfoods, macrobiotic style, by Rebecca Greenwood. Effective advertising and promotion, by Dr. Harry Krueckeberg. Seminars: Levels of tofu production, Luke Lukoskie, chairman. Introduction

to nutrition and dietary analysis, by Jennifer Andersen & Suzy Pelican. Lectures: The view from tofu towers, by Thelma Dalman. The history of soybeans in the West, by Dr. Theodore Hymowitz. The year in review: Progress, problems & challenges, by William Shurtleff.

Fri., July 10. Class period 4: Tofu in Ecuador cooking class, by Ricardo Jennings. Quality control of soy products, by Dr. Joseph Maga. Labor / management relations, by Dr. Ron Wiggins. Demonstrations: Tofu making, at White Wave, Boulder, Colorado. Soymilk ice cream, by Jamie Stunkard & Al Jacobson. Extrusion cooking, by Dr. Ron Tribelhorn. Seminars: Soyfoods & human nutrition, by Dr. J. Rackis, chairman. Sensory evaluation, part 2, by Adrian Pearson. Business management, by William Scott. Class period 5: Soyfoods master chef cooking class, part 2, by Akiko Aoyagi. The small tofu shop, by Dik Rose. Tempeh making demonstration, at White Wave. Lecture: The nutritional value of extruded foods, by Dr. Richard Jansen. Expo open. Class period 6: How to open a tofu or tempeh plant, by William Shurtleff. Infant and child nutrition, by Dr. Barbara Smith. Soyfoods desserts cooking class, by Darrilyn Jackson. Seminar: Recall programs for soyfoods, by Dr. Joseph Rakosky. Lecture: Soyfoods & the natural foods industry, by Gil Johnson. Tofu cheesecake bake-off awards. Live music & refreshments.

Sat., July 11. How to open a tofu business on nothing down, by Al Jacobson. Soyfoods & the kosher market, by Chananyah Kronenberg. Government taxes and small business, by Dr. Terry Lantry. Demonstrations: Design and maintenance of the soy plant, by Steve Fiering (at White Wave). Soysage production, by Jamie Stunkard & Bob Davis (at White Wave). Seminars: Quality assurance programs, by Dr. Joseph Rakosky. Tofu and institutional feeding, by Thelma Dalman and Maxine Prairie. Class period 8: Sweden's first tofu plant, by Dr. Ted Nordquist. Quick home tempeh method, by Linda Gilbert. Frozen tofu cooking class, by Robin Clute. Expo open. Lecture: Tofu from cottonseeds, by Dr. Khee Choon Rhee. Class period 9: Tempeh microbiology and technology, by Chananyah Kronenberg. Financial management, by Dr. Oscar Varela. Tofu production cost control and analysis, by John Baldwin. Mexican village soya cooking class, by Blanca Dominguez. Seminar: Principles of tofu production, by Dr. Hwa Wang, Dr. C. Hesseltine, Dr. K.C. Rhee. Dinner. Square dance.

Sunday, July 12. Class period 10: Soyfoods in the North Woods cooking class, by Demetria Nanos Hamdorf. Workers & management / conflict resolution. What are organic soybeans, by Ardell Andersen. Open technical seminar on soyfoods, by William Shurtleff. Tempeh producers roundtable: Dr. Clifford Hesseltine, chairman. Lectures: The woman's role in promoting soya in Mexico, by Blanca Dominguez. Morinaga aseptically packaged tofu, by Kunisuke Kuwahara. Closing remarks, by Richard Leviton.

A SANA business meeting was held on Sat. July 11, starting at 7:00 p.m., moderated by Luke Lukoskie of Island Spring (president) and Richard Leviton (Executive Director). Format: President's report, by Luke Lukoskie. Financial report, by Richard Leviton. Proposals, by Richard Leviton. Open discussion. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

3561. Londin, Louise. 1981. Soy delis & Mintz's Buffet. *Soyfoods* No. 5. p. 6-7. Summer.
• ***Summary:*** Discusses the Good Nature Deli in Oak Park, Illinois, started on 14 December 1980 by Kevin O'Brien and Mary Ellen Sackett; The Soyateria in Toronto, Canada, situated in front of Soy City Foods and started in 1980 by Jon Cloud; and Mintz's Buffet (Glatt Kosher Cookery and Catering) in New York City. "David Mintz's popular recent contribution to tofu cookery is his creamy, delicious Tofu Ice Kream, which has been attracting large numbers of people into the shop. It is an original blend of tofu, soymilk, fresh fruits, natural essences of apples, figs and raisins, pure wildflower honey, egg whites, and soy oil. It comes in such tempting flavors as country vanilla, old fashioned chocolate, strawberries n' kream, peaches n' kream, apples n' kream, dutch nut chocolate, and apricot rum. At the Buffet, they call him Mintz, the Prince of Tofu." Photos show: David Mintz at his Tofu Time ice cream machine. The deli case at Mintz's Buffet.

3562. Mathew, Annie; Raut, D.S. 1981. Effect of soyamilk on the growth of malnourished children admitted to hospital wards. *Indian J. of Nutrition and Dietetics* 18(7):260-67. July. [14 ref]
Address: 1. Dietition, Kasturba Hospital, Sevagram, Warda (Maharashtra).

3563. McBride, Gordon; Stechmeyer, Betty. 1981. Soy viilia: New soymilk yogurt culture. *Soyfoods* No. 5. p. 7-8. Summer.
• ***Summary:*** "At Gem Cultures we have essentially 'discovered' a soy product that is new, easy to make, and represents a distinct flavor and texture improvement over the other soymilk products we have tasted. The product is so new that we don't have a catchy name for it yet. We will call it soy viilia in honor of its historical heritage as a cultured milk product.

"But what is viilia? Traditionally it has been a cultured cow's milk product popular in the Finnish community in Northern California. It was made with raw milk and a 'starter' in a dish at cool, room temperature (often as low as 65ºF, 17ºC) and at times in an air-cooled pantry. Viilia was made with nonhomogenized milk; the cream layer rose and separated from the lower skim milk layer, making the final product also layered. In Northern California it was eaten as a dessert or snack, often with a Finnish rye bread, *riiska.* Relatives of ours who have visited Finland report that

viilia is consumed in much the same way there, and that it is readily available in food stores, restaurants, and coffee shops. We have never seen viilia commercially available in the U.S. The 'starter' is simply a teaspoon or so of viilia taken from a mature dish. If someone loses their starter, there is no problem; simply wander over to a neighbor, ask for a spoonful, and start another batch.

"From the mixing of warmed milk and the starter, the culture takes 24 hours to mature. It can be stored several days in a pantry or up to a week in the refrigerator. The flavor is subtly sweeter than plain yogurt but by no means sugary. The texture is smooth. Once in a while a starter 'goes bad' usually from disuse, and produces an off-flavored product. It should be discarded and a good starter procured.

"Once raw milk became unavailable in California people began to make viilia from homogenized, pasteurized milk from the store. The only difference was that the cream-skim milk layering was absent. To simulate the quality of old-fashioned raw milk viilia, it is possible to put starter in a dish, pour in milk, then carefully pour a layer of whipping cream over the surface. Viilia was almost always consumed directly from the dish. Occasionally, sugar and cinnamon were sprinkled on, especially for the youngsters. It is surprising that viilia has not been used in many other ways, as sour cream has, but we believe such uses will be discovered in time.

"Now, why is this bit of Scandinavian foodlore in *Soyfoods?* In a nutshell: we have recently discovered that when viilia is mixed with fresh soymilk and sweetened with a little honey, it makes a custardlike product with excellent texture and virtually no 'beany' flavor. Fruit or flavorings may be added, but are not necessary. We were visited by a customer and her three-year-old daughter and offered them a sample of plain soy viilia. The youngster happily consumed the majority of it leaving only a taste for her mother. We felt soy-viilia passed an important test.

"Moreover soy-viilia can be used as a starter for three or four generations of batches. However, since this is a preliminary report, we recommend for the present that starter be carried on cow's milk since we know that on milk it is stable and dependable for hundreds of generations. The more often it is used, the more stable and dependable is the product, much as with sourdough or yogurt.

"As soon as we realized that our little amalgam of Scandinavian cuisine and the 'cow of the orient' offered what many in the soyfoods industry were looking for (a new soymilk yogurt culture) we sent samples to the Northern Regional Research Laboratory in Peoria, Illinois. Dr. Hwa Wang of the NRRL reported soy viilia to be quite palatable and she began a research project to isolate the responsible microorganisms.

"Although the final taxonomic identification is not complete, preliminary indications suggest that the several organisms involved are different from the University of Illinois patented soymilk yogurt (*Streptococcus thermophilis* and *Lactobacillus bulgaricus*) or the other Finnish cultured milk product piima (*Streptococcus diaceticus, Streptococcus cremoris, Leuconostoc citrovorum,* and the fungus *Oospora lactis*). Later reports will furnish this information in detail. Neither do we at this point have information regarding the fat, protein, carbohydrate, vitamin, calorie, or mineral content of either cow's milk or soymilk viilia. This will come in time.

"Therefore, at this point, we simply want to report on this new dimension in fermented soyfoods. Viilia can be made easily at home within the range of normal room temperatures, using standard household utensils and no special incubators. We don't claim it will restore vitality, falling hair, or cure any human ailments. We do claim Viilia is an interesting food made from either milk or soymilk. We claim it's a treat. We have starters available at GEM Cultures and anyone interested should write for prices." Address: GEM Cultures, 30301 Sherwood Rd., Ft. Bragg, California 95437.

3564. Needleman, Larry. 1981. Tofu plant profiles: Swan Gardens, Miami. *Soyfoods* No. 5. p. 26-27. Summer.
• ***Summary:*** Swan Gardens, located in Industrial Miami, is a family-run business which was started by and is now owned by Jocelyn and Dick McIntyre. It has 6 employees, including the McIntyre's daughter and, earlier, Jocelyn's mother. "The company began in St. Ignatius, Montana in 1978 where they produced 500 pounds of tofu weekly from a small shop situated on an organic vegetable farm, Jocelyn McIntyre had been making tofu at home for 8 years previously and finally yielded to her friends' encouragement to produce tofu commercially. In August 1979 they sold their company and farm and used the proceeds to launch Swan Gardens in Miami, which they opened in January 1980. They wanted to get into tofu in a big way and Miami seemed like a promising, wide-open market. Today they manufacture 2,100 lb of firm, vacuum packaged tofu, 5 to 6 days weekly, and distribute over 50% of it outside of Florida, often as far as Illinois and Ohio." A detailed description of the tofu production process and equipment is given. "What I find most impressive about Swan Gardens is their excellent application of American equipment to fashion a smooth production flow in a very clean and well maintained plant. They are among a few innovative companies that are trying vacuum-packing tofu as a way to extend shelf life and attract customers. Jocelyn McIntyre describes the company as 'a stable, solid business with a good work crew.' They are preparing an okara tempeh for the market and plan to release soysage and baked tofu in the future." Photos show: (1) Dick McIntyre and his daughter, Cecilia/Ceci, standing behind a 200 gallon tank of soymilk (p. 26). Ceci and her grandmother (Joci's mom) preparing tofu for vacuum packaging (p. 27). Address: Bean Machines Inc., Bodega, California.

3565. Needleman, Larry. 1981. Tofu plant profiles: Sunshine Soy, Miami. *Soyfoods* No. 5. p. 29-30. Summer.
• ***Summary:*** Sunshine Soy is owned and operated by Danny Paolucci in Coral Gables, a suburb of Miami. "Starting in 1970 when he became acquainted with the vegetarian diet and the food uses of soybeans, Mr. Paolucci has been 'screaming soybeans,' as he remarks. In the mid-1970s he was cook at the Mt. Baldy Zen Center in California where he experimented with soybean dishes and made community scale miso. In 1974 he wanted to open a soy plant but there was no technology or information available; existing Oriental plants were unwilling to help him. In December 1977 he linked up as manager with the meteoric Swan Foods of Miami, an early multiproducts soy company that in its one intense year of business lost some $140,000. Mr. Paolucci emerged from the experience with considerable insight and some manufacturing equipment so that in June 1980 he was able to launch his own soy venture"–Sunshine Soy.

The company now makes 500-750 lb of tofu a day, plus tempeh, baked tofu, soymilk, miso salad dressing, and soysage. Photos show: Danny Paolucci. A hydraulic forming box press. A clamshell sealer. A Chisholm-Ryder screw extractor; unfortunately it is no longer manufactured. Address: Bean Machines Inc., Bodega, California.

3566. Rakosky, Joseph, Jr. 1981. Tempeh today: Report from Indonesia. *Soyfoods* No. 5. p. 34-35. Summer.
• ***Summary:*** This year Rakosky traveled to Southeast Asia on behalf of the American Soybean Association (ASA), the Foreign Agricultural Service (FAS), and the USDA. He visited five countries: Philippines, Singapore, Malaysia, Thailand, and Indonesia. The purpose of his trip was to encourage people to use soy protein products in their foods and the report his impressions on the market potential.

In Indonesia he found that soymilk was being made in villages by licensed businesses for use in schools; it was flavored with ginger and contained 8% added sugar and 0.03% salt. Plans were underway to start a special soymilk project in which the beverage would be retorted, then distributed in shelf-stable cans and bottles.

Dr. F.G. Winarno, head of Nutritional Research and Development at the Agricultural Institute of Bogor in Jakarta, is involved in a program to improve the nutritional level of Indonesians living in villages. His group is concerned with the design and construction of equipment suitable for village level food processing.

Dr. Winarno said the biggest change in tempe processing occurred in 1976 when the university showed tempe makers that they could get a better product, faster, by incubating their inoculated soybeans in plastic bags rather than in the traditional banana leaves. "'Twenty years ago the people of Java ate tempe and the Chinese ate tofu,' Dr. Winarno explained. 'Today they are both considered national dishes for the Indonesian people.'" About 70% of the soybeans in Indonesia are used to make tempe, with 20% used to make tofu. The biggest tofu maker in Indonesia uses a little less than 10 metric tons per day.

There follows a detailed description of how tempe and tempe starter are made commercially in a traditional Indonesian shop. "The government requires tempe shops to offer small preparation areas for villagers to use to make their own tempe."

"While the Chinese make up about 4% of the total population, they control about 80% of the wealth; obviously they are the country's businessmen, an imbalance the government is trying to correct."

KOPTI is an cooperative organization of independent tempe and tofu makers, mostly small companies, with a current membership of 2,035. To become a member, a company pays a one-time fee (depending on the size of the company) then a monthly fee of $1.62. Members buy their soybeans from KOPTI, which presently handles 4,800 metric tons a month and uses its large volume to get low prices. KOPTI also helps its members upgrade their products and schools them in sanitary practices.

"Since tempe is so popular in Indonesia, one would expect to find it in local supermarkets, but it cannot be found there." A photo shows a small tempe shop in Jakarta, with soybeans being soaked in metal barrels. Address: Morton Grove, Illinois.

3567. Shurtleff, William; Aoyagi, Akiko. 1981. Das Tofu-Buch: Nahrung fuer alle Band 2 [The book of tofu: Food for mankind. Vol. 2]. Soyen, West Germany: Ahorn Verlag. 288 p. Illust. by Akiko Aoyagi Shurtleff. Index. July. 23 x 21 cm. Translated from the English by Rainer Bosch and Gudrun Klein. [43 ref. Ger]
• ***Summary:*** Contains 500 recipes. Contents: How to use this book. Preface. Acknowledgements. 1. Protein East and West. 2. Tofu as a food. 3. Getting started. 4. Soybeans. 5. Fresh soybean puree (*Frisches Sojapüree*). 6. Okara. 7. Soymilk curds and soymilk (*Sojaquark und Sojamolke*). 8. Tofu (History, how to make at home, basic preparatory techniques). 9. Recipes for regular and firm tofu. 10. Deep-fried tofu: tofu cutlets, burgers, and pouches (*Vorfritierter Tofu: Tofuschnitzel, Tofuburger, Tofutaschen*). 11. Grilled tofu (*Gegrillter Tofu*). 12. Frozen and dried-frozen tofu (*Gefrorener Tofu und gefriergetrockneter Tofu*). 13. Fermented tofu (*Fermentierter Tofu*). 14. Soymilk (*Sojamilch*). 15. Silken tofu (*Seidentofu*). 16. Yuba. 15. Tofu and yuba in China, Taiwan, and Korea. 17. Farmhouse tofu for large families. 19. The ethos and tradition of handmade tofu production. 20. Making tofu in a traditional shop. Appendices: A. Tofu restaurants in Japan. B. Varieties of tofu in East Asia. C. People and institutions connected with tofu worldwide (Incl. directory of tofu manufacturers). D. Sources of supply for tofu production. Bibliography.

Glossary. Favorite tofu recipes. About the authors and their work (autobiographical). Tofu–An opportunity for poor and rich lands. The tofu kit (from Sojaquelle in West Germany and Oekullus in Switzerland).

Note 1. This is the earliest publication seen (April 2013) that uses term "Tofurei" to refer to tofu shops / manufacturers. The term was coined by Gabriele Furth-Kuby of Ahorn Verlag.

Note 2. "Sojaquark" is used to refer to soymilk curds rather than to tofu. Published in a hardcover edition only. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

3568. Shurtleff, William. 1981. William Morse: The father of soybeans in America (Continued–Part II). *Soyfoods* No. 5. p. 56-60. Summer.

• ***Summary:*** Continued: "It is truly remarkable that the authors were able to write such a complete and detailed book when neither of them had been to East Asia. (Morse would later spend two years there; 1929-1931.) Most of the book was actually written by Morse who, nevertheless, kindly listed Piper as the senior author. He gathered his information and photographs by extensive correspondence with researchers throughout East Asia and apparently drew heavily on a large collection of books on Chinese agriculture called the Swingle Collection, named after Walter T. Swingle of the Office of Crop Physiology, who spoke Chinese, had traveled extensively in the Orient collecting plants and the books, and had housed them at the USDA library, where Morse did much of his research. Decades ahead of its time, *The Soybean* soon became the standard work on the subject and was referred to by many as 'the soybean bible.' Dr. Piper died in February 1926 at the age of 69.

"Morse's fine work was already starting to give real substance to Piper's dream. In 1920, Morse helped to found the American Soybean Association (ASA) and thereafter helped to unify and direct an ongoing program of research and experimentation. Morse distributed seed from new introductions to anyone interested in soybeans. Among his closest contacts at the State Agricultural Experiment Stations were W.L. Burlison in Illinois and C.B. Williams in North Carolina. As late as 1927, most soybean agronomy research was still done on plots in Washington, D.C. outside the USDA south building. Morse sent out seeds to the states but farmers had problems; they shattered at maturity, were hard to harvest, and were abrasive on the binder canvas in those days before combines. Thus in the early years the tide of interest in soybeans ebbed and flowed. Doubters were always ready to laugh at anyone who talked of the soybean becoming a major U.S. farm crop. But this only served to spur Morse on to greater efforts. He was a very effective extension worker with many contacts, a deep knowledge of his subject, and good intuition. His desk at the USDA soon became the clearing house for information about the soybean. In 1927 he wrote: 'We may keep this work going and place the soybean where it belongs–in the King row with King Corn and King Cotton.'

"The Dorsett-Morse Expedition to East Asia (1929-1931): In the late 1920s it became evident to the USDA that the soybean had definite promise as a crop in America and it was decided to send W.J. Morse and P.H. Dorsett to East Asia for two years on what was officially known as the Oriental Agricultural Exploration Expedition (but which people interested in soy usually call the Morse Expedition) to 'make investigations regarding the utilization of the soybean in Oriental countries and the securing of varieties that might be of value to widespread American conditions' (Morse, 1929). In 1929 when the expedition left, Morse was age 45 and had worked on soybeans with the USDA for 22 years. Dorsett (1862-1943), now age 67, was a plant explorer from the USDA Office of Plant Introduction; he was described by a fellow agricultural explorer, David Fairchild, as one of the most ingenious and indefatigable workers he had ever known. Whereas Morse was a specialist, interested in soybeans, Dorsett was a generalist, interested mainly in persimmons, but also in grasses, forages, and other plants.

"During the expedition, Morse and Dorsett kept detailed daily journal notebooks, which were typewritten after the trip and bound in 17 hardback volumes. These volumes, primarily the work of Dorsett, also contain correspondence plus thousands of black-and-white photographs taken by both men. In the bound volumes there are several references to a 'special report on the soybean and its products' that Morse intended to write. Apparently he never completed it, although he did complete detailed chapters on tofu and soymilk. The only original copy of the documents described above is in the archives of the American Soybean Association in St. Louis, Missouri. [Note: As of 2011, it is in Rare and Special Collections, at the National Agricultural Library, Beltsville, Maryland].

"The group arrived in Tokyo on March 18, 1929, and set up headquarters. In August they traveled to Hokkaido, the northernmost island of Japan and center of soybean production, where they studied both soybean cultivation and food uses. In December 1929 they returned to Tokyo and spent full time until March 1930 collecting soyfoods and studying their production and use. On April 1, 1930, they arrived in Dairen, Manchuria, to study soybean cultivation and oil extraction. Dorsett left Morse in the summer of 1930 and went to Peking. He did not rejoin Morse on the trip, although he wrote regularly. Morse went to Korea on August 22, to Mukden in Manchuria on September 29, back to Dairen, the oil-processing capital of East Asia, and then to Peking on October 20; Morse apparently spent only 20 days in China on the entire trip. In late December they took a ship from Dairen back to Kyoto and then Tokyo. On February 17, after several more months of soyfoods research in Tokyo, they sailed for America, arriving in San Francisco

on March 4, 1931. Morse's collection efforts–months of tramping through the fields of East Asia–were a bonanza. He discovered that almost every village in the Orient had its own distinctive soybean varieties, developed during thousands of years of close cultivation and inbreeding. Unlike their Western counterparts, Chinese farmers didn't think of looking for improved varieties in nearby villages and then growing these in their own village. They loyally grew the varieties that had been handed down by their honorable ancestors, and wouldn't dream of growing a variety handed down by someone else's ancestors. Morse's major accomplishments on the expedition were: (1) he collected approximately 4,600 distinct soybean seed samples representing roughly 2,000 soybean varieties and including 150 large-seeded vegetable type varieties collected mostly in Korea and Japan; all of these were introduced into the U.S. germplasm collection; (2) he realized for the first time the superiority and potential of the vegetable-type soybeans for food use and later played the leading role in propagating them and teaching others of their value; (3) he developed a much better understanding of soybean growing methods and technology; and (4) he collected more than [commercial] 250 food products made from soybeans, which he took back to America, and did by far the most extensive studies on soyfood production of any Westerner up to that time.

"In his journals and letters, Morse wrote more than once that he was 'amazed at the extent to which the soybean was used for food in Japan.' He was intrigued by the techniques for making tofu, miso, shoyu, natto, and other soyfoods, spent many days in small shops with producers, and described their processes in great detail, taking hundreds of pages of typed text with hundreds of photographs.

"The two-year trip was a tremendous adventure for both Morse and Dorsett. Morse later remarked that he considered it the highlight of his career. He was finally able to fully grasp the great potential of the soybean, which he had only been able to glimpse through his years of reading and work in America." Continued. Address: Soyfoods Center, P.O. Box 234, Lafayette, California.

3569. Shurtleff, William. 1981. William Morse: The father of soybeans in America (Continued–Part III). *Soyfoods* No. 5. p. 56-60. Summer.

• ***Summary:*** Continued: "Later years in America (1931-1959): Morse returned to America in March 1931 with great enthusiasm and interest in transmitting to America all that he had learned in East Asia. He was now a principal agronomist at the USDA Bureau of Plant Industry. With the stage set for the fruition of years of work and research that would transform the place of the soybean in the Western world, let us pause for a minute to ask, 'What kind of a man was Bill Morse?'

"In appearance, he was tall and lean, with a kind face and soft features. Farmers all over America, with whom he had met and talked in their fields, might remember his baggy suspendered pants, loose tie, and slouched hat, his great interest in their problems and successes.

"George Strayer, editor for 27 years of the American Soybean Association's *Soybean Digest,* who had known Morse since 1927, said of him: 'He was a quiet, unassuming, yet brilliant fellow, not particularly dynamic as a speechmaker, but intensely interested in seeing soybeans progress. He would sit up half the night talking with people about soybeans and soyfoods.'

"An article by Mary Burr Pieters in the September 1944 *Soybean Digest* described Morse as 'modest and retiring but sure and right as rain... He studied, he traveled, he toiled, he experimented–he exhorted–and the result of all of this singleness of purpose and devotion surely borders on fantastic.'

"Edward J. Dies, his close colleague, described him in Gold from the Soil as 'heedless of material gain or personal honor, shy, modest, agreeable, and easy going, but with the repressed intensity of a crusader.' Martin G. Weiss, who worked under Morse for many years and succeeded him when Morse retired, said of him: 'He was a kindly man, always willing to encourage and give moral support to his subordinates. He was loved by all, and his employees worked hard–they never wished to disappoint him.' His daughter Margaret described him in 1980 by saying: 'He was a gentle, soft-spoken person, who liked others and they liked him. He liked to tease, and the secretaries at his office all loved it. He was a very easy person to get along with; he was slow to anger and never cursed. He wasn't aggressive; where some might push, he would give in. He was intelligent. His work came first. He was not financially ambitious.'

"After returning from East Asia, Morse was more interested than ever in soyfoods, and much of the subsequent increasing interest in America derives from his efforts. He expanded his work with the USDA Office of Home Economics in Washington, D.C. and interested researchers in the Department of Home Economics at the University of Illinois to get involved with research on soyfoods, especially on use of the large-seeded, vegetable-type soybeans he had brought back from East Asia. He encouraged development of soyfoods recipes suited to American tastes and talked a lot about soyfoods at American Soybean Association meetings and many other gatherings. Working with others, he was largely responsible for the development of soy flour and grits. One entire wall of Morse's Washington office was covered with floor-to-ceiling shelves, filled with soyfood samples from Asia.

Except for Dr. Harry Miller, Morse was probably the first soy researcher in America to make soyfoods a regular part of his diet. While in East Asia, he and his family had become very fond of Oriental cooking, and especially of soyfoods, and they enjoyed them often after returning to America. Of the many recipes they brought back from

the Orient, Morse's favorite was sukiyaki. He built a low sukiyaki table with a hot plate on top and cushions around it on the floor in his home and at every opportunity would invite over guests to serve them his specialty which of course featured tofu and sprouts. He also liked to take family and friends out to a good Chinese or Japanese restaurant. The family enjoyed using soy flour when making breads, muffins, or waffles. Morse's mother [Edna] liked to cook him fresh green soybeans and his wife regularly fixed him her favorite Boston Baked Soybeans. Morse loved soymilk ice cream; one magazine ran a full-page photo of him happily eating it. He also regularly enjoyed tofu, soymilk (plain and acidophilus), and soymilk yogurt, and these foods became increasingly important in his largely meatless diet after he found he had an ulcer. In fact he once told George Strayer that, with his ulcer, he felt these soyfoods had greatly extended his life and good health.

"Morse also actively continued his soybean selection and propagation work at the Arlington Farm. He realized more than ever that if the soybean was to become a national crop that hundreds of different varieties, adaptable to different latitudes, soils, and climates, would have to be found and developed by breeding. He was especially interested in working with farmers and the USDA to stimulate research and development on the vegetable-type soybeans, which had been little more than a curiosity prior to his trip to East Asia. While Morse was the first to popularize the vegetable-type soybeans, he was not the first to introduce them. The variety Easycook (which took less than half as long as most field-type soybeans to become tender after boiling) was introduced to the U.S. in 1894 and the Hahto was introduced in 1915. Morse mentioned both of these in *The Soybean* in 1923 but did not mention the term 'vegetable-type soybeans,' and was apparently unaware of their significance. Many of the vegetable-type soybeans that Morse brought back from East Asia were grown out and starting in 1934, distributed to various state agricultural experiment stations for trial.

"Up until 1928, Morse, in charge of soybean research, had been the only USDA employee working full time in this field. In 1928 the USDA hired a second full-time soybean researcher, Jackson L. Cartter, who had just graduated with a master's degree from Iowa State College. From 1928 to 1933 Cartter did soybean research on a farm in Holgate, Ohio that was managed by the Ohio Experiment Station. From 1933 to 1936 Cartter worked directly under Morse at the USDA Experiment Station, Arlington Farm, Virginia; he tested, grew out, and classified many of the soybeans from Morse's trip to East Asia. In 1936 Cartter helped to organize the U.S. Regional Soybean Laboratory at the University of Illinois. He became the first director of its agronomic division and was placed in charge of the soybean breeding program for the 12 Midwestern states; he studied the soybean's oil and protein composition, and served as director of the laboratory until his retirement in 1965.

"Unfortunately the long-term results of Morse's collection efforts in East Asia are not what they might have been. It was estimated in 1980 that only 25,000 acres of the 70.1-million-acre U.S. soybean crop were planted in vegetable-type soybeans, a mere 0.04 percent of the total. They have never become popular here for various reasons; they give 20 to 30 percent lower per-acre yields than field-type soybeans, tend to shatter easily at maturity and are thus hard to harvest, and consequently sell for 12 to 18 percent more than other soybeans. If they were less expensive, large amounts would probably be used in East Asia to make tofu, soymilk, tempeh, and miso by producers who already buy their beans from America." Continued. Address: Soyfoods Center, P.O. Box 234, Lafayette, California.

3570. Shurtleff, William. 1981. William Morse: The father of soybeans in America (Continued–Part IV). *Soyfoods* No. 5. p. 56-60. Summer.

• ***Summary:*** Continued: "Moreover, in the U.S. only about 11,350 tons of soybeans (a mere 0.02 percent of the total U.S. crop) are used directly as food in a lightly processed form that allows the virtues of the vegetable-type bean (better flavor and texture, higher protein, larger seeds) to shine through. About half of the U.S. vegetable-type soybeans are exported to soyfoods producers in Japan and Europe and half are used for American soyfoods. The major uses, in order of importance, are for tofu, soynuts, soymilk, whole canned (mature) soybeans, and tempeh.

"Bill Morse was a strong supporter of the American Soybean Association. He was at the founding meeting in 1920 and was elected president three times (1924, 1925, and 1932). Pioneer soybean grower, E.F. 'Soybean' Johnson later said that 'for many years the ASA existed mainly through Morse's untiring efforts.' He was the mainspring that kept the clock ticking year after year through good times and bad. In 1944 George Strayer said: 'Morse might be called the 'daddy' of the American Soybean Association as well as of the soybean in America, since our organization has probably leaned on him more than any other man through the years. He has always been a guiding light and missed few if any meetings (except 1929-31 when he was in Asia). It is doubtful if anyone can equal his record.'

"Morse was a highly competent researcher and a prolific writer. Between 1910 and 1950 he wrote some 87 articles and bulletins on soybeans and soyfoods, including The Soybean–in addition to making hundreds of speeches. Many of his articles appeared in publications of the American Soybean Association. He was editor of the Association's first publication in 1928 entitled *Proceedings of the American Soybean Association,* which contained 192 pages of papers given at the annual ASA conferences between 1925 and 1927. He contributed several papers to this volume, including 'The Distribution of Soybeans in the U.S.' (1927).

He was also a frequent contributor to the *Soybean Digest,* which the ASA started in November 1940.

"The first article on soyfoods run by *Soybean Digest* was an article by Morse about vegetable-type fresh green soybeans entitled 'Shanghied... A Super Food' (July 1941). His second article was also on vegetable-type soybeans, 'Soys in Food: Future of Vegetable Varieties' (September 1945). In 1951 he wrote 'What's in a Name,' describing the significance of the poetic names given to varieties of soybeans in East Asia.

"In November 1949, when Morse retired after 42 years of service, he was known throughout the world, but especially in the U.S. and East Asia, for his work on soybeans and soyfoods. In 1907, when he started work, the soybean was such a small crop that no records of its production were kept. One measure of the success of his work is the amazing expansion of the crop from about two million bushels in 1919 to 9.4 million in 1929, 91 million in 1939, and 200 million in 1949.

"On retirement, Morse turned his work over to Martin G. Weiss, a professor of plant breeding and genetics from Iowa State University. From his home in Takoma Park, Maryland, where he had lived since 1917, Morse moved to Eastchester, New York, next door to his daughter, Margaret, who had accompanied him on the trip to East Asia. During the last ten years of his life he worked from time to time on his book on soyfoods (which, unfortunately, he never finished), did a lot of reading and gardening (he planted his own vegetable-type soybeans and enjoyed them each spring as fresh green soybeans, or later in the season, as mature cooked soybeans), and kept in active touch with the world of soybeans and soyfoods through many visitors and an extensive correspondence. He continued to enjoy soyfoods in his home meals.

"On the morning of July 30, 1959, at age 75, William J. Morse died of a cerebral hemorrhage at his home in Eastchester, New York.

"The work of Bill Morse runs like a bright thread through the whole tapestry of soybean and soyfood development in the Western world. We can pay no greater tribute to the man than to carry on his work and help fulfill his dream.

"For their help in providing information related to this article, the author would like to thank Mrs. Walter Thalman (Morse's daughter), George Strayer, Martin G. Weiss, Theodore Hymowitz, Jackson Cartter, R.W. Howell, and Verna Donavan." Address: Soyfoods Center, P.O. Box 234, Lafayette, California.

3571. **Product Name:** No Cow Soy Drink (Soymilk).
Manufacturer's Name: Soy Shop.
Manufacturer's Address: 1081 Memorial Dr. S.E., Atlanta, GA 30317.
Date of Introduction: 1981. July.
Wt/Vol., Packaging, Price: 1 quart plastic bottle.
New Product–Documentation: Leaflet. 1981. July. Soyfoods: Tempeh, Soysage, & No Cow Soy Drink. Label shown in STS "Containers for Soymilk." Brown on yellow.

3572. *Soyfoods.* 1981. Mini-Mite Bean Mill. No. 5. p. 55. Summer.
• ***Summary:*** "The need by the small-scale, traditional-style tofu shop for an inexpensive, all stainless steel, sanitary soybean mill prompted Bean Machines, Inc. to develop their new 'Mini-Mite.' This economy model uses the same heavy rotor, screen, and control disc as their huskier models, but utilizes standard food service industry stainless steel containers for its housing. The result is a powerful, but lighter, machine, powered by a two-horsepower motor with a capacity of 100 pounds of dry soybeans per hour, compared with capacities of 300 and 600 pounds for the heavier-duty models. The Model M6C combines simplicity and efficiency and uses a 'butterfly' rotor rotating at 3600 rpm (driven by a two horsepower, 115/230 volt single-phase motor, painted with sanitary white enamel) within a 360 degree stainless steel screen. The control flow disc meters the beans for an even, steady feed. The M6C is constructed from lightweight 304 stainless steel with sanitary surface finish inside and outside. The Mini-Mite has a 3¼-inch diameter inlet, a 2 x 3 inch outlet, a two-blade removable hammer with one full circle perforated screen (inside dimension 6 inches x 2 7/16 inch high). The Mini-Mite comes with a one-year warranty against mechanical defects and sells for $1485 with a four-week delivery time. For more information, write: Bean Machines, Inc., P.O. Box 76, Bodega, CA 94922; tel. (707) 876-3341." Address: Bean Machines, Inc., P.O. Box 76, Bodega, California 94922.

3573. Sass, Lorna J. 1981. Soy foods: Versatile, cheap and on the rise. *New York Times.* Aug. 12. p. C1, C6. Widely syndicated.
• ***Summary:*** The article begins: "Soy foods have come west and, apparently, are here to stay. No longer restricted exclusively to the world of woks and cleavers, soybeans in America are now patted into soyburgers, and tofu (soybean curd) is puréed into soy mayonnaise, baked into 'cheesecake' and fried as 'cutlets,' while soy milk emerges from the blender as a frothy carob shake or from the freezer as cantaloupe 'ice cream.'

"Because soy foods are an inexpensive source of protein, low in fat and completely cholesterol-free, they have been attracting more and more attention among the growing number of weight-conscious, health-conscious and dollar-conscious Americans. Until recently, soy sauce was the only soy product familiar to most Americans.

Contains a long discussion of David Mintz (owner of Mintz's Buffet, a kosher delicatessen at 1040 Third Avenue at 62nd Street). He makes a tofu ice cream, and a tofu-

spinach quiche. "A large Japanese company wants to buy exclusive rights to distribute Mintz's tofutti 'ice cream' in Japan. 'The more dishes I make with tofu, the better my business is,' said Mr. Mintz." He is frequently called upon to cater "tofu weddings."

Also discusses Light Foods in St. Louis (Missouri), and the Rochester Soy Deli (in New York). "Two of the people most responsible for introducing soy foods to Americans are William Shurtleff and his wife, Akiko Aoyagi, who in 1975 wrote 'The Book of Tofu,' a comprehensive cookbook and introduction to the untapped potential of soy foods as an alternate source of protein."

There follow seven recipes featuring tofu and tempeh: Mintz's tofu herb dip. Breaded tofu cutlets (with frozen tofu. Might also be called "Fillet of tofu," plus a note on how to freeze tofu at home). Tofu tartare sauce. Tempeh salad. Carob-tofu-mint pie. Whole wheat pastry crust (with soy milk and soy oil). Lotus Cafe not-dogs (meatless hot dogs).

Next comes a section titled "Learning more about soy: A listing of useful books." For example: "There is no more thorough book on the history and myriad Oriental forms of tofu than the profusely illustrated *"Book of Tofu,"* by William Shurtleff and Akiko Aoyagi (Autumn Press / Random House; 334 pages; $8.95). First published in 1975, it is credited by most tofu cookbooks as the one that 'spread the light.' The hundreds of recipes, mostly Oriental in style, will fascinate adventurous cooks. Beginners may prefer the condensed, somewhat more Americanized version (Ballantine, 433 pages, $2.95)."

The long article ends with a helpful sidebar titled "How to buy and store tofu." "A four-ounce piece of tofu (bean curd) sells for about 30 cents..." One main difference "between the tofu sold in health food stores and the Oriental-style tofu sold by many greengrocers is the type of coagulant used. Tofu from health food stores is almost always made with nigari (primarily magnesium chloride and trace mineral elements derived from evaporated seawater), while Oriental tofu makers generally use calcium sulphate."

A photo shows Katherine Iselin with some of the special sandwiches at the Tofu Shop, a fast-food soy deli in Rochester, New York. She is wearing a Soyboy Tofu T-shirt. On the wall behind her is the restaurant menu.

Note: A similar article titled "Out of the wok and into the frying pan" appeared in *The Durham Sun* (9 Sept. 1981, Section B).

Another similar article titled "More budget-conscious Americans are hitting the soy–its not just sauce" appeared in the *Chicago Tribune* (29 Oct. 1981, p. W_A21).

3574. Spencer, Colin. 1981. Food: Bean feast. *Guardian* (*Manchester*). Aug. 14. p. 7.
• ***Summary:*** A recent cartoon in the *New Yorker* showed a wife serving a suckling pig, as her husband sourly remarked, "Not tofu disguised again." "Tofu is a soybean curd" that has been made in China more 2,000 years. In the 6th century, Buddhist monks made elaborate imitations of fish and poultry out of tofu. "In the United States, thanks to the moral health movement, tofu has become an 'in' food."

Although Americans constitute only 6% of the world's population, they consume 30% of its meat and dairy products. "The vegetarian minority–estimated at 10 million–are blazingly articulate in their diatribes against this injustice.

"William Shurtleff and Akiko Aoyagi have again written the definitive work, *The Book of Tofu* [Autumn Press] £4.50, available at Cranks and all health stores which stock a wide range of publications."

In England, Granose Foods Ltd. makes soya milk; it is delicious and such a book for vegans and children allergic to dairy milk. A new brand of tofu is now available. Sunwheel Foods, whose products are always impeccable in quality, are selling a tofu made by Morinaga and imported from Japan. It retails for 60 pence for 297 gm. Contains 4 recipes using Morinaga [silken] tofu: Stir-fried tofu. Sesame tofu. Tofu salad dressing. Tofu-stuffed pancakes. Address: [England].

3575. Ferrer, Jorge F.; Kenyon, S.J.; Gupta, P. 1981. Milk of dairy cows frequently contains a leukemogenic virus. *Science* 213(4511):1014-16. Aug. 21. [24 ref]
• ***Summary:*** In the United States, more than 20% of the dairy cows are infected with leukemia viruses, especially Bovine leukemia virus (BLV). When these viruses are fed to chimpanzees, the experimental animals develop leukemia. Address: Univ. of Pennsylvania School of Veterinary Medicine, New Bolton Center, Kennett Square, Philadelphia, Pennsylvania 19348.

3576. Krieger, Verena. 1981. Gestern Steak, Morgen Tofu: Oder was man mit einer Bohne so alles machen kann [Yesterday steak, tomorrow tofu: Or all the things that can be made with one bean]. *Tages Anzeiger Magazin* No. 34. p. 6-12. Aug. 22. Also translated in English, French, and Italian. [4 ref. Ger; Eng; Ita; Fre]
• ***Summary:*** A lengthy, pioneering account of the virtues of tofu, and its development in the USA and Switzerland by the Sunday supplement to Switzerland's biggest daily newspaper. Contains numerous color photos of soyfoods from around the world. Also defines and discusses soymilk, miso, tamari, shoyu, and soy sauce, tempeh, and soy sprouts. Discusses the work of Edgar W. Schweizer (underway by 1977) in attempting to grow soybean varieties suited to Switzerland.

The Geneva restaurant "La Moisson" has had tofu on the menu for 5 years. In Bern, in the beginning of July, the restaurant "Sesam" was acquired by the first Swiss organic food store (*Bioladen*), the "Lotusbluemli" (Little Lotus Blossom). Since Sesam opened, the people of Bern have been able to get to know a rich treasure of dishes from tofu made at Sesam, as well as many applications of miso

and shoyu or tamari. The vegetarian restaurant "Bristol" in Lucerne is launching tofu as its summer hit this year, in the form of Tofu Schnitzels and Burgers... In organic food shops, Reform Houses and Oriental specialty shops, miso and soy sauce are available. The following places in Switzerland sell fresh tofu, which they make on the spot: (1) Centre macrobiotique de Lausanne, ruelle de Bourg 7, 1003 Lausanne. (2) S. Gänterli, Vonmattsrr. 50, 6003 Lucern. (3) Le Grain d'Or, rue Voltair 27, 1201 Geneva. (4) De Lade, Oberaltstadt 8, 6300 Zug. (5) S. Lotusbluemli, Gerechtigkeitsgasse 17, 3011 Bern. (6) Madal Bal, Kreuzplatz 10, 8032 Zurich. On the last page of the article is an ad for Soyana in Zurich.

Note: The Italian-language edition of this article is titled "Ieri bistecca, domani il tofu." It is the earliest Italian-language document seen (Sept. 2011) that mentions tempeh, which it calls "tempeh." Address: Lucerne, Switzerland.

3577. Ashraf, Hea-Ran Lee; Snyder, H.E. 1981. Influence of ethanolic soaking of soybeans on flavor and lipoxygenase activity of soymilk. *J. of Food Science* 46(4):1201-1204. July/Aug. [14 ref]
Address: 1-2. Dep. of Food Technology, Iowa State Univ. Now 1. Div. of Human Development, Southern Illinois Univ., Carbondale, IL 62901; 2. Dep. of Horticultural Food Science, Univ. of Arkansas, Fayetteville.

3578. Cruz, R.; Batistela, J.C.; Wosiacki, G. 1981. Microbial α-galactosidase for soymilk processing. *J. of Food Science* 46(4):1196-1200. July/Aug. [33 ref]
Address: Departamento de Tecnologia de Alimentos e Medicamentos, Centro de Ciencias Rurais e de Tecnologia da Fundacao, Universidade Estadual de Londrina, Caixa Postal 6001, 86100, Londrina, PR, Brazil.

3579. **Product Name:** [Soymilk (Dairylike, or with Barley Malt Syrup)].
Foreign Name: Tônyû (Shiro, Bakuga-iri).
Manufacturer's Name: Nagano Tomato.
Manufacturer's Address: Japan.
Date of Introduction: 1981. August.
Wt/Vol., Packaging, Price: 195 gm can.
New Product–Documentation: Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Nagano Tomato first made commercial soymilk in Japan in 1981.

K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. These products were introduced in Aug. 1981 in 195 gm cans and distributed nationwide.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64.

3580. *Nutrition Reviews.* 1981. Exploring cow's milk and soy protein sensitivity in human infants. 39(8):305-07. Aug. [11 ref]
• ***Summary:*** "Soy proteins are not 'hypoallergenic.' They offer the same potential for damage to the intestinal mucosa as cow's milk protein. Soy protein isolate, the primary protein in all soy milk formulas, can cause a violent gastrointestinal reaction in susceptible infants. Clinical features are non-specific and include fever, leukocytosis, vomiting, blood-tinged mucoid diarrhea, carbohydrate intolerance, dehydration and metabolic acidosis. Soy and cow's milk protein-induced colitis are clinically and pathologically similar."

"In 1953, P. György [Gyorgy] reported a growth factor for *Lactobacillus bifidus* in human milk that was not found in cow's milk. He noted that infants fed human milk in sufficient quantities displayed a generally higher resistance to respiratory and intestinal infections when compared to infants receiving cow's milk. György's laboratory and clinical work paved the way for other investigations of the biochemical, cytologic and microbiologic characteristics of human milk that make it a unique food for human infants."

3581. Shurtleff, William; Aoyagi, Akiko. 1981. History of Butler Food Products (Document part). In: William Shurtleff and A. Aoyagi. 1981. History of Small Seventh-day Adventist Food Companies and Sanitariums. 8 p. See p. 4-6. Unpublished manuscript. Available online at www.soyinfocenter.com. [1 ref]
• ***Summary:*** In operation from 1939 to 1946, this was a private company in Cedar Lake, Michigan. "This creative company was founded in 1939 by Howard O. Butler and run primarily as a family enterprise. Butler got interested in soyfoods from people he knew at Madison Foods in Tennessee. He hired people with prior experience in soyfoods production; Howard Hoover (who made soymilk with Dr. Miller in East Asia) and a Mr. Roose. An initial aim of the business was to offer jobs for Adventist youth to pay their tuition at nearby Cedar Lake Academy, although the business was not formally connected with the Academy. The company's primary product, first produced in 1942, was 'Soya Butter,' actually what we would now call soy margarine; it contained 79% lightly hydrogenated soy oil, soymilk (18% by weight), salt, vitamin A carotene (as a natural coloring), and butter flavor. The melting point was 110ºF (43ºC). Butler advertised the product as being nonfattening.

"He soon ran into problems with the government concerning his soya butter. In August 1944 the *Soybean Digest* reported that 'H.L. Hoover, manager of the firm, claims that he is the victim of conflicting federal and state regulations, and that he cannot comply with one set of regulations without violating others. Hoover points out that while the Food & Drug Administration prohibits his company from labeling the product oleomargarine without the addition of dairy products to it, the Bureau of Internal

Revenue classifies it as oleomargarine for taxing purposes.' Margarine was then defined as vegetable oils churned with dairy milk; Butler used soymilk in place of dairy milk to give a completely vegetarian product. Furthermore, it was claimed by the Bureau of Dairying in Lansing, Michigan, that the product had been illegally colored in imitation of butter, and in several instances had been sold as butter. In August 1944 cases were pending in circuit and U.S. courts, awaiting trial. In May 1945 a federal judge in Cleveland, Ohio ruled that Butler's Soya Butter was not taxable as margarine and should not be labeled as margarine, but shortly thereafter the Ohio Department of Agriculture, in variance with the federal ruling, classified soya butter as colored margarine, which could not be sold legally in Ohio. In June 1945 the American Soybean Association came out in favor of a congressional bill to define soya butter as being distinct from margarine. Finally in December 1945, at which time the company was manufacturing 100,000 units of soya butter a month, a federal judge in Detroit ruled that the product was oleomargarine as defined by the internal revenue code, and therefore subject to back taxes of 10 cents a pound on every pound made to date. The three-year battle and the ruling assessing an estimated $150,000 in back taxes drove the company out of business in 1946. In about 1950, while typing out an appeal to the government to reconsider his case, Butler suffered a fatal heart attack. Shortly after his death, the margarine law was changed and the tax (on other companies) removed.

"During the early 1940s, Butler Foods was a thriving operation. In early 1942 they were making a nice line of nine soyfoods including ready to eat Soy-Fruit & Nut Cereal (with figs, dates, and bran), ViM-eat Soy-Nut-Loaf, ViM Soy-Nut Cheese, Soy-Kawfee, Entire Soybean Flour (i.e. full-fat), Entire Soybean Wheat Flour Mix (70:30), Soybeans with Tomato Sauce, ViM-ilk (soymilk) and Soy-Nuts. An attractive brochure, which described the company's products and gave recipes, noted that some of the soybeans were 'grown on Butler's own mineralized farm.' In mid-1942 Soya Butter was added to the line. The company also made bulk soymilk for use in its Soya Butter. In September 1943 Butler Foods ran a full-page ad in the *Soybean Digest* headlined 'New Foods from the Wonder Bean' showing pictures of cans of Butler's Soynut Cheese, Vegeburger, Soya Nut-Loaf, Soya Butter, and Vegetarian Chops. The chops, his most popular meat analog, were a blend of wheat gluten and soy flour, sliced, pre-cooked, then canned in a broth made of soy sauce and other savory seasonings. A September 1945 ad showed that Butler's Meatlike had been added to the line.

"After the government tax ruling of 1946, Cedar Lake Academy leased Butler's property and tried to operate the food business for 2 years, but the plant was too big and the company had now lost its vital income from sales of soya butter. The Academy food business ceased operation in 1949. The supervisor at that time, Vesper Sias, who had worked at Butler Foods since 1942, then left and started his own company, Cedar Lake, in November 1949." Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

3582. *Soyanews* (*Sri Lanka*). 1981. How to do it–Making soya milk: for hotels, restaurants and hostels. 3(12-1):4-5. Aug.
• ***Summary:*** Contents: Introduction. Equipment (incl. a commercial Waring blender). Procedure. Ingredient requirements for 1.5 kg of soyabean. Cost estimate for 100 litres or 178 pints of soya milk (Rs. 189.50, or Rs. 0.88 per litre for ingredients to make plain soya milk or Rs. 1.50 to make sweetened chocolate soya milk). Illustrations (line drawings) show a heavy duty Waring blender and a pot.

3583. Leviton, Richard; Shurtleff, William. 1981. U.S. per capita consumption of soyfoods grows to nearly 9 pounds per year (News release). Soyfoods Assoc., Sunrise Farm, Heath Rd., Colrain, MA 01340; and Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 4 p. Sept. 4. Published in Soyfoods, winter 1982, p. 6. [2 ref]
• ***Summary:*** Compiled largely by Shurtleff, circulated by Leviton. "In 1981 Americans spent $4.57 per capita on soyfoods [not including soy oil] while consuming 4.9% of the U.S. soybean crop–possibly an all-time high." Address: 1. Colrain, Massachusetts; Lafayette, California.

3584. *Nation's Restaurant News.* 1981. Tofu triggers big boom for Mintz's. Sept. 14. p. 48.
• ***Summary:*** "Since David Mintz [the owner of Mintz's Buffet], introduced tofu into his food store, 14-seat restaurant and catering business, sales have grown to $1 million and he now expects to develop other tofu restaurants in the city."

Mintz says of tofu: "It's the food of the future." "Mintz offers tofu in noodle charlotte, spinach quiche, egg rolls, cheesecake, bran muffins in blueberry, carrot apple, strawberry rhubarb, banana, pineapple and dutch apple, to name just a few items. His most popular item is an imitation ice cream made with tofu and called 'tofu ice kream.' This nondairy frozen dessert is made with tofu, soy milk, fresh fruits, natural essences of apples, figs, raisins, wildflower honey, egg whites and soy oil. It comes in flavors such as country vanilla, old fashioned chocolate, strawberries and 'kream,' dutch nut chocolate, and apricot rum... Mintz also operates a catering business which accounts for about half his sales."

Note: This is the earliest English-language document seen (March 2007) that uses the term "nondairy frozen dessert" to refer to soy ice cream.

"Mintz developed an interest in tofu about four years ago [1977] and many of the recipes are his own concoctions. Because tofu is pareve (neither meat nor dairy), Mintz was able to develop kosher dishes previously off limits in a kosher diet since meat and dairy can not be mixed." Products

made with tofu now account for two-third of Mintz's sales. A large photo shows the front exterior of Mintz's buffet. The signs over the windows read: "Take home foods. Party catering. Strictly kosher. Glatt kosher buffet catering."

3585. Shurtleff, William; Aoyagi, Akiko. 1981. Li Yu-ying and Usine de la Caseo-Sojaine, Paris: History of work with soyfoods. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 13 p. Sept. 15. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. Contents: Introduction: Contribution. Early life and work: Birth date and place, 1905 soymilk paper at Second International Dairy Congress in Paris, 1908 establishment of laboratory for soymilk studies in Paris. Early soyfoods patents: Description of five British patents applied for in 1910 and granted by 1912, U.S. patent for "Method of Manufacturing Products from Soja" applied for in 1911 and granted in 1913. Major books and articles: First book *Dadou* in 1910 written in Chinese, 1911-1912 article series, published 1912 as book *La Soja,* basic concept and contents. Introduction of soyfoods in Paris: Start of Usine de la Caséo-Sojaine northwest of Paris, products made, serving products to distinguished groups, presentation of food at 3 international expositions, trip to Nanking Exposition 1911, decline in popularity by 1916. Effects of Li's work: Influence on books, fears of products, Soyama-Werke in Germany. Work with soy in China after 1927. Address: Lafayette, California. Phone: 415-283-2991.

3586. Centell, Linda. 1981. Tofu pioneer crosses the Rockies to establish neighborhood soy deli [Matthew Schmit and The Tofu Shop in Arcata, California]. *Union* (*Arcata, California*). Sept. 24. p. 17.
• ***Summary:*** Schmit started selling tofu products in a restaurant in Telluride, Colorado, 3-4 years ago. Now he makes tofu and at his deli sells sushi rolls, spinach pies with tofu, soymilk, herb onion dip, salads, pumpkin pies, cookies, carob pudding, and tofu burgers. Photos show: (1) Schmit holding a handful of Minnesota certified organic soybeans. (2) Melanie Patrick holding up a cake of tofu. (3) Happy Dragon Soydrink and products made with tofu. Address: Arcata, California.

3587. Shurtleff, William; Aoyagi, Akiko. 1981. Dr. Harry W. Miller: History of his work with soyfoods. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 21 p. Sept. 29. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. Contents: Introduction. Growing up (1879-1902): Birth, early contact with Dr. J.H. Kellogg, marriage. Early years in China (1903-1911). Washington, DC (1912-1925). Pioneering soymilk in China (1925-1939): Research, development of plant, destruction of plant 13 Aug. 1937, U.S. patent, No. 2,078,962 for soymilk process and equipment, work before return to U.S. Introducing soyfoods to America (1939-1949): In Mt. Vernon, new products, work with AMA, American Soybean Assoc. speaker and lifetime member 1958, Vitasoy. Research and work around the world (1949-1977): Quick visit to Shanghai, death of second wife, sale of International Nutrition Foundation, Taiwan work, Indonesian plant, Trinidad, Libya, Japan, old age and relationship with William Shurtleff, the "Great Man." Address: Lafayette, California. Phone: 415-283-2991.

3588. Alfa-Laval. 1981. Steritherm: The most economical UHT system on the market. Lund, Sweden. 12 p. Manufacturer's catalog. Color. [Eng]
• ***Summary:*** "Why Alfa-Laval sells more UHT plants than all other suppliers put together. By the end of 1980 Alfa-Laval had delivered more than 350 UHT sterilizers to 55 countries.

"More than half of all new UHT plants delivered in recent years have come from Alfa-Laval, most of them the indirect *Steritherm* type." The capacity ranges from 1,000 to 30,000 liters/hour (265- 7 950 U.S. gallons/hour).

"Up to around 1960 it was impossible to mistake sterilized milk for pasteurized milk. The former, heated in an autoclave for a quarter of an hour or more at temperatures above 100ºC (212ºF), was easily recognizable by its cooked flavor and slightly brownish color. The coming of UHT changed all that. UHT is a much less brutal form of treatment."

Alfa-Laval based its Steritherm design on the plate heat exchanger (PHE). Address: Lund, Sweden.

3589. **Product Name:** [Soymilk Dessert].
Foreign Name: Tônyû Dezaato.
Manufacturer's Name: Asahi Foods (Asahi Fuuzu).
Manufacturer's Address: Japan.
Date of Introduction: 1981. September.
Wt/Vol., Packaging, Price: 60 gm plastic cup.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Tônyû Dezaato was introduced in Sept. 1981 by Asahi Fuuzu in a 60 gm plastic cup and distributed nationwide.

3590. Hymowitz, T.; Newell, C.A. 1981. Taxonomy of the genus *Glycine*, domestication and uses of soybeans. *Economic Botany* 35(3):272-88. Sept. [100 ref]
• ***Summary:*** Contents: Taxonomic history of *Glycine.* Domestication [and dissemination of the soybean]. Uses [of the soybean] (The four most important foods developed from the soybean in East Asia are miso, shoyu (soy sauce), tempeh, and tofu). "These traditional foods have little physical or flavor identity with the original bean. Hence it is not too surprising that Marco Polo, who raveled from Venice

to Cathay and throughout the Orient between 1271 and 1295, makes no mention of the soybean (Rugoff, 1961)."

The earliest accurate description by a European seen for the use of soybeans as food was by Friar Domingo Navarrete. He wrote about them in 1665.

East Asian nonfermented soy foods: Tofu, soy milk, yuba, kinako, sprouts, green soybeans.

East Asian fermented soy foods: Miso, soy sauce, tempeh. Soy uses in the West: Oil, protein (from defatted soybean meal). A brief history of each of these foods is given.

Tables: (1) The species of *Glycine* according to Linnaeus, 1753, and their subsequent classification. (2) The genus *Glycine* L. according to Bentham (1864, 1865). (3) The genus *Glycine* L. according to Hermann (1962). (4) The genus *Glycine* Willd. as revised by Verdcourt (1966, 1970). (5) The genus *Glycine* Willd. as accurately delimited.

Figures: (1) *Shu,* the archaic character for soybeans (five stages in the character's development; Hu {1963} believes that the shu pictograph can be traced back to approximately the 11th century B.C.). Address: Dep. of Agronomy, Univ. of Illinois, Urbana.

3591. Inkson, Ms.; Mann, E.J. comp. 1981. Thesaurus: Food Science and Technology Abstracts. 2nd ed. Shinfield, Reading, England: IFIS (International Food Information Service). 238 p. No index. 30 cm. First edition, 1977. [Eng]
• ***Summary:*** The Introduction states: "The original IFIS word list, issued in 1970, did not attempt to give more than the barest outline of the relations between the terms encountered. In 1977, therefore, an FSTA Thesaurus was published, in which the basic structuring of the material found in FSTA was set out. The Thesaurus was designed to give maximum compatibility with the EEC Multilingual (English / French / German / Italian) Food Thesaurus, published in 1979 (and itself based largely on the FSTA system for the English version), and to take into account the needs of on-line users."

The terms are divided into headings (main terms or descriptors), which are printed in capital letters, and lead-in terms (non-descriptors) printed in lower case. Additional information is included in square brackets. The following abbreviations show the types of relationship between terms: BT = broader terms. NT = narrower terms. RT = related terms. UF = used for. lead-in term followed by "see" heading (e.g. bean curd see TOFU).

Soy-related terms: Beverages: UF soy milk. Lecithins: BT Emulsifiers, Phospholipids. UF phosphatidylcholine. Legumes: NT Soybeans. Miso: BT Soy Products. natto: see Soy Products. Sauces: NT Soy Sauces. soy flour: see Soy Products. soy milk: see Beverages; Soy Products.

Soy Products: BT Soybeans, Vegetable Products, Fermented Products. NT Miso, Soy Proteins, Soy Sauces, Soybean Oils. UF natto, nyufu, soy flour, soy milk, sufu, tempeh, tofu, tsukudani, vital.

Soy Proteins: BT Protein Products, Soy Products, Proteins Vegetable. RT Textured Vegetable Proteins. UF okara protein, Promine [Central Soya Co.], Supro 620, yuba.

Soy Sauces: BT Fermented Products, Sauces, Soy Products. UF moromi, shoyu.

Soybean Oils: BT Oils Vegetable, Soy Products. Soybeans (*Glycine max*)*:* BT Legumes, Oilseeds. NT Soy Products.

Note: This is the earliest document seen (Sept. 2003) that is a thesaurus containing terms related to soybeans and soy products. Address: IFIS (International Food Information Service), Lane End House, Shinfield, Reading RG2 9BB, England.

3592. Mintz's Buffet. 1981. Mintz's tofu buffet menu. 1040 Third Ave. (between 61st & 62nd Streets, near Bloomingdale's), New York, NY 10021. 1 p. Undated.
• ***Summary:*** This handwritten, undated menu (which includes prices) was probably printed in about Sept. 1981. It could have originated as early as August 1980–by which time Mintz's was serving quiches and tofu muffins. By Feb. 1981 they were serving egg rolls. Soy-related menu items include: Vegetable salads: Steamed broccoli with tofu-mustard sauce ($3.99/lb). Tofu-vegetable quiches: Broccoli, spinach, zuccini [sic, zucchini], mixed vegetable, cauliflower ($4.95). Vegetable tofu pies: Spinach, broccoli, cauliflower, zuccini ($2.75). Tofu-bran muffins: Strawberry-rhubarb, apple-walnut, blueberry-bran, carrot-apple, pecan, lemon-granola, pineapple-coconut, cherry-granola. Tofu-eggrolls: Spinach, Chinese vegetable, tabouli, tofu blintzes. Hot tofu items: Soy burgers, with tempeh & soy milk. Soy pizza, with nutritional yeast ($1.50). Eggplant Parmesan, with soy milk topping ($6.99/lb). At the bottom right is a floral design above the words: "An affair to remember."

Note: No ice cream of any kind is on the menu. Address: New York City. Phone: 212-751-9367.

3593. Mintz's Buffet. 1981. Tofu Time menu. 1040 Third Ave. (between 61st & 62nd Streets), New York, NY 10021. 1 p. Undated. 28 cm.
• ***Summary:*** This printed, undated menu (which includes prices) was probably printed in about Sept. 1981. Tofu is included in every item on the menu.

Tofu bran muffins ($0.95 each): Strawberry rhubarb, blueberry, carrot apple, pineapple, dutch apple, banana. Tofu vegetable salads ($3.99): Cauliflower, eggplant, steamed broccoli with mustard sauce, spinach, broccoli, zuccini [sic, zucchini]. Tofu vegetable pies ($2.75): Cauliflower, zuccini, spinach, broccoli. Tofu Ice Kream (Country vanilla, old fashioned chocolate, strawberries n'kream, peaches n'kream, apples n'kream, Dutch nut chocolate, apricot rum).

"All tofu dishes are completely natural and free of preservatives." Glatt Kosher. Louise Londin / Design. Address: New York City. Phone: 212-751-9367.

3594. Souza, Genevaldo de; Shirose, I.; do Valle, J.L.E.; Ferriera, V.L.P.; de Figueiredo, I.B. 1981. Aceitabilidade do doce de leite pastoso misto de leite de vaca e extracto proteico líquido de soja [Acceptability of a confection made of condensed milk mixed with cow's milk and soymilk]. *Boletim do Instituto de Tecnologia de Alimentos* (*Campinas, Sao Paulo, Brazil*) 18(3):395-411. July/Sept. [22 ref. Por] Address: Campinas, Sao Paulo, Brazil.

3595. *Soyanews* (*Sri Lanka*). 1981. Snack foods sales up at fair. 4(1):1, 8. Sept.
• ***Summary:*** The Soya Sales Centre conducted by the Department of Agriculture during the Kandy Esala Fair last month had, once again, a successful run with a turnover reaching record levels. This was the fourth year in succession" that the Centre was open at the fair.

"The Sales Centre opened for the first time in 1978 with only a soya milk bar run by the Milk Board which produced the milk from its Pallekele factory. A cup of chilled soya milk was sold at -/25 cents. It was an instant success with 30,000 cups of milk sold during the first ten days.

"In 1979 more soya foods were put out for sale at the Esala Fair Soya Sales Centre which was taken charge of by the Department of Agriculture for the first time."

"On sale at the 1979 exhibition were soya nuts [oil roasted soyabeans], murukku [a deep-fried snack, popular in southern India and Sri Lanka], and cutlets which were all turned out at the home level kitchen of the Soyabean Foods Research Centre in Gannoruwa.

In 1980 "Soya ice cream which was on sale for the first time was the most popular item and along with the rising demand each night of the fair for fried [soya] nuts, cutlets and [soya] milk it was clear that soyafoods had come to stay."

This year soya ice cream was popular again; the new soyafood on sale was tempeh. "Both tempeh and tofu had satisfactory sales considering that they were not items that could be consumed on the spot."

3596. Soyfoods Center; Soycrafters Assoc. of North America. 1981. Soyfoods production in America and the West (Report). Lafayette, California. 1 p. Sept.
• ***Summary:*** This full-page table (see next page) contains statistics for the following soyfoods and soy ingredients: Low technology, traditional. Tofu & tofu products. Tempeh. Soymilk & soymilk products. Soy sauce, shoyu & tamari. Soynuts & soynut butter. Miso. Soy sprouts. Whole dry or mature soybeans. Whole soy flour & grits, full fat. Fermented soymilk. Fermented tofu. Fresh green soybeans. Roasted soy flour & soy coffee. Natto, thua nao & kinema. Yuba. Soy nuggets (Hamanatto, tou-ch'ih [Fermented black soybeans]). Soy delis and restaurants. Secondary soyfoods prod-distributors. Soyfoods marketer-distributors. Subtotal.

High technology, modern [soy ingredients]: Soy flour & grits, defatted. TSP / TVP (extruded soy flour). Soy protein concentrates. Soy protein isolates. Meat analogs (secondary products), Soy oil.

Subtotal: High tech. Total: Low tech & high tech.

This table has 12 columns with information about each soyfood. (1) Type of soyfood. (2-5) Number of manufacturers: USA, Canada, Other West, Total. (6-7) Raw soybeans used (tons / year): USA, % of total used. (8) Yield (lbs of food from 1 lb of soybeans). USA only–(9) Tons produced. (10) Wholesale value (million $). (11) Retail value (million $). (12) Number of employees.

Note: Total retail value in USA is $998 million. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

3597. Travaglini, Décio Antonio; Aguirre, J.M. de; Travaglini, M.M.E.; Sales, A.M.; Angelucci, E.; Arima, H.K. 1981. Composicao química e característica nutricional do extrato de soja em pó [Chemical composition and nutritional characteristics of a spray dried soymilk]. *Boletim do Instituto de Tecnologia de Alimentos* (*Campinas, Sao Paulo, Brazil*) 18(3):385-93. July/Sept. [22 ref. Por]
• ***Summary:*** This powdered soymilk was made on a pilot plant scale according to a processign technique developed at the Instituto de Tecnologia de Alimentos–ITAL. Address: Campinas, Sao Paulo, Brazil.

3598. **Product Name:** Yo Soy [Plain, or Honey-Vanilla]. Later renamed Yo Soy!
Manufacturer's Name: Wildwood Natural Foods.
Manufacturer's Address: 31 Bolinas Rd., Fairfax, CA 94930. Phone: 415-459-3919.
Date of Introduction: 1981. September.
Ingredients: Honey-Vanilla: Filtered water, organic soybean grown in accordance with Sec. 2659.11 of the Cal. health and safety code, honey, vanilla extract, and a trace of sea salt.
Wt/Vol., Packaging, Price: Pint or quart plastic bottle.
How Stored: Refrigerated.
New Product–Documentation: Aug. 15–Bill Shurtleff saw this new brand of soymilk at Living Foods, University Ave., Berkeley.

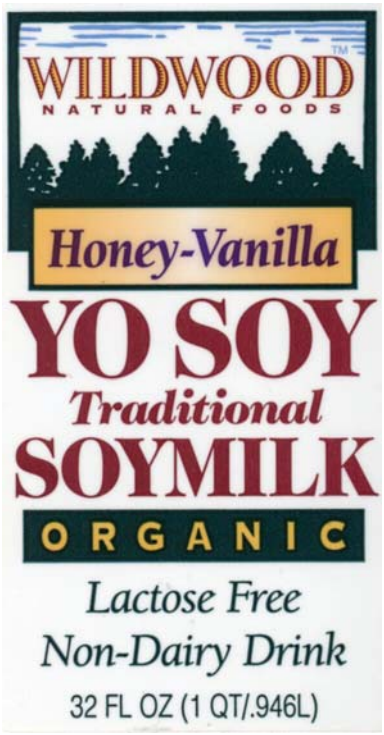
Label for Plain flavor (see page after next) sent by Claire and Jim Wickens of Lafayette. 1993. Sept. 1.75 by 3.75 inches. Self adhesive. Blue and green on white.

Talk with and Label sent by Bill Bramblett, part owner of Wildwood Natural Foods. 1998. Aug. 8. Yo Soy! is a palindrome. He thinks this product was introduced in about the fall of 1981 at Fairfax. It replaced an identical product that had formerly been called "Soymilk."

3599. *Santa Cruz Mobile News.* 1981. A restaurant with accent on health. Oct. 2. p. 19.
• ***Summary:*** About the Well Bean Deli, 349 Soquel Ave.,

Soyfoods Production in America and the West Year 1981 Month September

	Type of Soyfood	Number of Manufacturers USA	Canada	Other West	Total	Raw Soybeans Used (Tons/Year) USA Only USA	% of Total	Yield	Tons Produced	Whsl. Value $ Million	Retail Value $ Million	Number Employee
	LOW TECHNOLOGY, TRADITIONAL											
A	Tofu & Tofu Products	154	19	37	210	9,079	0.8	2.5	22,700	25.0	50.4	1258
B	Tempeh	32	2	8	42	282		1.75	494	1.5	1.78	50
C	Soymilk & Soymilk Products	14	1	47(1)	62	8,100	0.6	18.0	148,000	84.0	118.0	140
D	Soy Sauce, Shoyu, and Tamari	15	0	2	17	15,232	1.2	3.6	54,837	145.0	203.0	120
E	Soynuts & Soynut Butter	12	0	3	15	3,600	0.2	0.8	2,750	3.3	4.6	48
F	Miso	10	2	4	16	454		4.4	2,000	3.4	4.8	30
G	Soy Sprouts	5	1	1	7	70		9.0	360	0.2	0.25	15
H	Whole Dry or Mature Soybeans	6	0	1	7	100		1.0	100	0.04	0.06	12
I	Whole Soy Flour & Grits, full fat	4	0	18	22	10		0.8	8	—	—	8
J	Fermented Soymilk	1	0	2(1)	3	1		18.0	9	—	—	1
K	Fermented Tofu	1	0	0	0	1		2.0	1	—	—	2
L	Fresh Green Soybeans	0	0	0	0	0		1.0	0	—	—	0
M	Roasted Soy Flour & Soy Coffee	1	1	0	2	1		0.8	1	—	—	0
N	Natto, Thua Nao, and Kenima	2	0	0	2	30		2.0	30	0.02	0.03	6
P	Yuba	1	0	0	1	30		0.5	15	0.02	0.03	4
Q	Soy Nuggets (Hamanatto, Tou-ch'ih)	0	0	0	0	0		2.0	0	0	0	0
R	Soy Delis and Restaurants	11	2	0	13						1.0	52
S	Secondary Soyfoods Prod-Distrib	3	0	0	3						0.3	12
T	Soyfoods Marketer-Distributors	12	0	1	13						8.0	36
	Subtotal: Producers/ +Secondary RST	284	25	124	435	36,990	3.0		~~23,130~~ 231,305	262.5	392.3	1794
	HIGH TECHNOLOGY, MODERN											
U1	Soy Flour & Grits, defatted	12	2	23	55	666,700	52.6	0.6	400,000	136.0	190.4	120
U2	TSP/TVP (extruded soy flour)	2				250,000	19.7	0.6	200,000	128.0	179.2	120
U3	Soy Protein Concentrates	3				97,800	7.7	0.45	45,000	40.5	56.7	15
U4	Soy Protein Isolates	3				214,285	16.9	0.21	45,000	90.0	126.0	15
V	Meat Analogs (secondary products)	6	0	2	8				20,000	32.0	55.0	60
W	Soy Oil	(53)	(2)	(28)	(83)			0.15				
	Subtotal: High Tech	36	2	25	63	1,228,785	97.0		710,000	426.5	615.6	330
	Total: Low & High Tech	320	28	149	498	1,265,775	100.0		~~733,130~~ 941,305	689.0	998.0	2124
	(1) Includes Asia											



Santa Cruz, California. It was started less than 2 months ago by Kevin Van Slooten. A photo shows part of the menu on the wall. Many of the dishes feature tofu or tempeh–Tofu burger, tempeh burger, missing egg salad or sandwich, tempeh mock chicken salad, tofuna salad or sandwich, tempeh salad, soy milk, tofu cheesecakes, etc. Address: Santa Cruz, California.

3600. Shurtleff, William; Aoyagi, Akiko. 1981. History of Loma Linda Foods. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 8 p. Oct. 4. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. Contents: Background. Early years (1906-1937): Sanitarium Food Co. (1905-06); first soyfoods (copied from Van Gundy): Smokene (1921), tofu, soymilk, and soy sandwich spread (1933-34); no one at Loma Linda knows how these foods originated. New plant (1938-1950): Started 1938 under Chapman, World War II years. The 1950's: Acquisition of Dr. Harry Miller's company, International Nutrition Laboratories (1951). The 1960's. The 1970's and 1980's: Many new products from 1972, products in 1981, 1980 takeover by Sanitarium Health Foods Co. of Australia, present. Address: Lafayette, California. Phone: 415-283-2991.

3601. Shurtleff, William; Aoyagi, Akiko. 1981. History of overseas Adventist food companies. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 8 p. Oct. 7. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. Contents: Introduction: Start by Miller, rapid growth, extruders, new soymilk, future priorities. Asia. Australia and New Zealand: Before 1954, first soyfood in 1954, recent. Europe. Latin America. Africa. Address: Lafayette, California. Phone: 415-283-2991.

3602. Shurtleff, William; Aoyagi, Akiko. 1981. History of major U.S. soya research centers. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 24 p. Oct. 12. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. Contents: Introduction. University of Illinois and INTSOY: Home Economics Department's work (in the 1930's, 1940-1961, and 1974-1981), Food Science Department (1955-1981), International Soybean Program (INTSOY) founded July 1973, large number of talented faculty made the Univ. of Illinois one of the world's top soy research centers. Iowa State University. Cornell University: First work with soy 1883, first soyfoods work in 1927 (soymilk thesis by Y.T. Chiu), one of leading centers of U.S. soyfoods research during World War II (see chapter on Clive and Jeanette McCay), rebirth of interest in soyfoods in late 1950's, 1960 paper on tempeh, soymilk work 1963-1980, other soyfoods studied, arrival of Dr. Van Veen in 1962 (had studied tempeh since 1932, had lived in Indonesia, and had a lifelong interest in tempeh), renewed program of soybean development and production initiated in New York state in 1964. USDA Northern Regional Research Center (NRRC): Originated with 1929 USDA soybean lab in Ohio, 1936 soybean lab in Urbana, IL, transferred to Peoria, IL, 1942, expanded research on food uses of soybeans and soy oil, fermentation division headed by Langlykke, work on soy sauce, life of Dr. A.K. Smith, at NRRC from 1942-1964, arrival of Drs. Watanabe and Shibasaki, Smith one of first American researchers to realize the potential of tofu, work with miso, 1960 arrival of respected Indonesian microbiologist Ko Swan Djien, work on tempeh, NRRC hosted 2 of first major conferences on soy protein foods in 1961 and 1966, sponsorship of overseas contract work, expansion of research in 1960's, soy flour extrusion, Rackis' work with oligosaccharides (flatulence-causing factor in soybeans), life of Dr. C.W. Hesseltine, 1962 arrival of Dr. H.L. Wang at fermentation lab, Mustakas' studies on soymilk, NRRC's interest in soyfoods steadily growing, legitimizes soyfoods to people in U.S. and around the world. INTSOY: Founding, 5 basic objectives, main accomplishments with soybeans, main accomplishments with soyfoods. Address: Lafayette, California. Phone: 415-283-2991.

3603. Weerasooria, W.S. 1981. Re: Soyabean project for prisons. Letter to Mr. John Westborg, Redd Barna Representative in Sri Lanka, 54 Davidson Rd., Colombo 3, Sri Lanka, Oct. 16. 1 p. Typed, without signature.
• ***Summary:*** First discusses Mrs. Y.Y. Kim's project proposal to use soya milk as a substitute for coconut milk in the

Welikade / Welikada Prison Hospital. The project is now underway.

The writer has been told that a processing unit is to be established in the Prisons for making soya flour for distributions. The project will cost an estimated Rs. 50,0000. The writer would be grateful if Redd Barna would kindly consider providing this Rs. 50,000 to the Commissioner of Prisons, Mr. Delgoda.

Copies of this letter are sent to: (1) Dr. Raja Amarasekara, Director, Food & Nutrition Policy Planning Div. (2) Commissioner of Prisons, Mr. Delgoda. (3) Mr. Y.Y. Kim, UNDP Office, Colombo. Address: Secretary, Ministry of Plan Implementation, Sri Lanka.

3604. Shurtleff, William; Aoyagi, Akiko. 1981. Mildred Lager: History of work with soyfoods. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 9 p. Oct. 19. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. The full history is available on our website at www.soyinfocenter.com. Just search for Lager in the search box. Or, in the left navigation bar, click "A Comprehensive History of Soy," then scroll down to Chapter 76, "Mildred Lager..."

Contents: Introduction. Early years (1908-32): Birth, arthritis from 1925, self-cure with diet, arrival in Los Angeles, center of interest in health foods and a perfect place to study and influence soyfoods. The House of Better Living and early work with soy (1933-1939): House established 1933, its aims, Jan. 1934 radio program on K.F.A.C., 1935 monthly newsletter, free classes (one on soy flour in 1936), unclear how interest in soyfoods developed, diet research, 3 early books and booklets, influence of Ed Jones and Dorothea Van Gundy, "Food Facts" column in *California Health News* from 1936, one of the first to distinguish between natural and health foods. Two early catalogs: March 1936 catalog with listing of the 27 soyfoods marketed in Los Angeles, 1938 enlarged catalog with 26 new soyfoods listed. Mildred and her books about soyfoods: What kind of person she was, 1942 booklet *Soy Bean Recipes: 150 Ways to use Soy Beans as Meat, Milk, Cheese and Bread,* 1945 major work, *The Useful Soybean: A Plus Factor in Modern Nutrition,* president of National Dietary Association and vice president of Health Food Dealers of Southern California, married Ed Jones 1946, stopped health work, self-published *How to Use the Soybean: A Plus Factor in Modern Nutrition* in 1955, new edition of her diabetic diets booklet, death in 1960 from cortisone treatments for arthritis, marriage of Ed Jones to Dorothea Van Gundy in 1960, their revision of her book, conclusion.

As of Sept. 2009, this history is available on the Soyinfo Center website, www.soyinfocenter.com. Address: Lafayette, California. Phone: 415-283-2991.

3605. Cohen, Richard L. 1981. Local tofu makers and sellers trying to stir up interest within food market. *San Francisco Business Journal.* Oct. 20. p. 18-19.
• ***Summary:*** This interview with Jim Miller begins with the early history of Quong Hop & Co. The characters "Quong Hop" can be translated as "expanding oneness" or "immense unity." The company is one of the largest tofu makers on the West Coast, and, so far as the company knows, "it is the oldest in the country having been started shortly before the 1906 earthquake and fire in San Francisco.

Founded by Lee Sing How on Wentworth Street in [San Francisco's] Chinatown, the company spent the year after the earthquake in Oakland, and then returned to San Francisco to a new location on Waverly Place.

"During those early years, tofu was manufactured daily on the premises and sold."

"It was customary for many in San Francisco's Chinese community to get up at dawn and go to their local tofu shop–which had been open since 2 a.m.–and buy their daily needs."

Quong Hop did well as a business until the start of World War II when a shortage of soybeans occurred, since almost all of the company's soybeans used at that time were imported from China. So Quong Hop "stopped making regular tofu and restricted its product line to regular tofu, a product used as a condiment."

In the early 1960s the company moved to a new location on Folsom Street, maintaining its factory but eliminating its retail store.

Then the natural foods movement arrived and Quong Hop was swept up in it. In 1971 the company decided "to expand its product line back to what it had once been, several varieties of tofu and soymilk." But Quong Hop's main customers remained basically the same; Chinese Americans. In 1976 Quong Hop began using completely natural ingredients–including natural nigari.

Today Quong Hop's products are distributed to three main types of markets: (1) Oriental groceries and restaurants. (2) health and natural food stores. (3) supermarkets and other restaurants.

Photos show: (1) Jim Miller. (2) Some of Quong Hop's many soyfood products.

3606. Selliers, Francois de. 1981. Soymilk around the world (Interview). Conducted by William Shurtleff of Soyfoods Center, Oct. 21. 1 p. transcript. [Eng]
• ***Summary:*** In Belgium, Van der Moortele makes soymilk near Ghent–3,000 liters/hour. Ralston Purina also makes soymilk somewhere. John Wilson is Alfa-Laval's soymilk specialist. Suspended vs. clarified soymilk is Alfa-Laval's terminology for whole-bean vs. traditional filtered. Alfa-Laval, which has a patent on suspended soymilk, built a new soymilk plant in Malaysia. Kikapoo is a soymilk company in Thailand. De Selliers has the names and addresses (which he will send) of 3-4 soymilk makers in Thailand, 2 in Belgium,

and 1 in Malaysia.

Mr. de Selliers, who knows many people at the World Bank, believes it would cost less than $800 million to provide soymilk to all the children in the 60 poorest countries–those with annual per capita income of less than $1,000. In those countries, 70% of the population is in pre-primary school and 11.25% is in primary school; there are 81.7 million children in those two categories. One would need 21.8 liters per child to feed it 250 cc for 195 days a year. The capital cost is about $1,000 million. The World Bank would pay for 30% of the milk initially; the local government would be the basic buyer. The World Bank could pay $50 million easily. Samuel Basta is in the Food and Nutrition Dept. of the World Bank.

The first step for de Selliers is to have the World Bank fund a $1.2 million feasibility study, which would use many consultants. Then he would raise $250 million and establish a soymilk committee. Like so many others he asks "Why has the soy bean and soymilk been so slow to catch on in the West?"

In certain regions of Africa, the soybean has been cultivated for more than 150 years. Soy dishes such as Sumbala, Faros, To, etc. have been introduced.

Thimonnier makes thick plastic packs (named Doy-n-pack pouches) like Tetra Pack. Other companies whose equipment could be used to package soymilk are DRV and PrePac. Get information on co-extrusion of polyethylene film. In East Asia the enzyme lactase is mixed with cow's milk to get rid of the lactose; they let it stand for 7 days. Address: Chairman, IIDC (International Investment & Development Corp.) Belgium, Belgium S.A., Rond-Point de l'Etoile 3, Boite 8, B-1050 Brussels, Belgium. Phone: (02) 640-68 00.

3607. Tsuchiya, Kanji. 1981. Yuyô shujitsu kara naru nyûjô mata wa funjô no shokuhin seizô-hô [Method of making milklike food or powdered food from oilseeds]. *Japanese Patent* 44,701. Oct. 21. [Jap]
• ***Summary:*** This is the author's key patent for a machine used to inactivate enzymes in soybeans for soymilk. Marusan and Kibun now use this machine, a diagram of which is given on the last page.

3608. Miller, Harry Willis, Jr. 1981. Work with soymilk in the United States and China (Interview). Conducted by William Shurtleff of Soyfoods Center, Oct. 25. 2 p. transcript.
• ***Summary:*** "Willis" Miller was born in 1912. In 1921 he did the first tests with soymilk at the Washington Sanitarium in Maryland. Discusses the work in Shanghai, with soymilk of T.A. Van Gundy, at the Van Gundy plant after T.A. died, with Loma Linda Foods, and with Madison Foods. Address: 450 Neeleys Bend Rd., Madison, Tennessee 37115. Phone: 615-868-2483.

3609. Sass, Lorna J. 1981. More budget-conscious Americans are hitting the soy–its not just sauce. *Chicago Tribune.* Oct. 29. p. N_B19.
• ***Summary:*** This article first appeared as: Sass, Lorna J. 1981. "Soy foods: Versatile, cheap and on the rise." *New York Times.* Aug. 12. p. C1, C6.

3610. Storup, Bernard; Ruel, Françoise. 1981. Re: Studying tofu in America and starting work with tofu in France. Letter to William Shurtleff at Soyfoods Center, Oct. 31. 6 p. Typed, with signature. [2 ref. Eng]
• ***Summary:*** Bernard and Françoise enjoyed the 8 months they spent studying soyfoods in the USA, and have now been back in France for nearly 10 weeks. "During the time we were in the U.S., we had a rather good survey of the small and medium scale tofu industry, and I think we learned a lot from all the people we met, and very often what not to do.

"I have been really surprised by the quality of the welcome we had all along our way, as well as the spirit prevailing among most of the people involved with soyfoods (we did not visit the big factories). This too has been a good lesson. Another small surprise has been the general lack of technical experience of most of the people working with tofu... They could learn a great deal from the dairy industry–chiefly the small and medium scale cheese-making industry–by using the techniques and the equipment (very often not expensive) employed when curding, putting in pressing boxes by gravity, pressing, etc."

Concerning Li Yu-ying, "we went with Jean de Preneuf to the location of 'La Société Française pour l'exploitation du soja et de ses dérivés,' located at 48 Rue Denis Papin, Les Vallées, Colombes (west of Paris). The buildings had been pulled down about 20 years ago, but were used for other manufacture since at least the beginning of the thirties. We met an old man who has always lived in the neighborhood and remembers that 'some Chinese people were making cakes there before the first world war.' So, it is certain that this address was the one of Li's plant in 1912. We have been to the town hall of Colombes, but nobody was able to help us. We have to come back there at the end of November...

"Since our return to France, we had have, with Jean de Preneuf, a lot of contacts with different people to introduce, at least, the idea of soyfoods. We met people of the medical corps, all having an important role in scientific research (Dr. Sautier, INSERM, Hôpital Bichat, Paris; Dr. Mirouse, Dean of the Faculty of Medicine in Montpellier–the most important in France) working on plant proteins for years (as Dr. Cheftel, Universite de Montpellier, who has been to Japan several times and has worked on soymilk with experimental equipment made by Alfa-Laval) and people from INRA (Institut National de la Recherche Scientifique). All these people knew or at least had heard about tofu, and are ready to help us in their own field (analysis or sometimes

technical assistance).

"We also met people from large industry (researchers for Nestlé, and an executive of Prolait) to ask if they had worked on soy products other than T.V.P. and soymilk formulas for infants. They all knew tofu and other soyfoods very well but said that 'the market in Europe is not ready yet for this.' Finally, we met organic soybean producers (and non-organic too); we wanted to know more about the future policy of the Economic European Community on soybeans...

"Actually, 9000 hectares of soya (22,500 acres) are cultivated in France, mostly in the south of France. Soya represents in value the second largest (after oil) national import for the French budget.

"In France, we can find tofu only in very few places, most of the time at a prohibitive price, between $4 and $7 a kilo. Vietnamese shops in all big cities have tofu, but their tofu is rather special with a sandy texture and a strong (sour) taste. We found only one (bad) tempeh producer in Paris. For these reasons, we have thought more and more that it would be a good thing to open a tofu shop and to work at the same time on the informational level. We are now working on a small recipe book (adapted to the French habits) as well as on a technical flyer, a pamphlet and other things...

"We are thinking of starting a Soyfood Center in France but we will tell you about this in the future as soon as we have found a new place to settle (it should be near Paris). We have already made an application.

"Jean de Preneuf contacted different (good) publishers, and one said *The Book of Tofu* has been found to be very interesting by a committee of readers. We are now waiting for a definitive answer from this publisher (Editions Denoel, one of the best in France, by quality and volume)."

Accompanying the letter are photocopies of books by Li Yu-ying and Grandvoinnet (1912) and Rouest (1921) which Shurtleff had been unable to find in America. Key portions were highlighted in yellow and translated into English.

Note: This is the earliest document seen (Feb. 2013) concerning Société Soy or its founders, Bernard and Françoise Storup. The company's first soy product was launched in June 1982. Address: 48 Rue Bouffard, 33000 Bordeaux, France.

3611. Alfa-Laval Export. 1981. Boisson protéïque au soja: Spécialement étudié pour les pays tropicaux [Soy protein beverage: Special study for tropical countries]. B.P. 57, 78340 Les Clayes-sous-Bois, France. 16 p. 30 cm. [Fre; Eng]
• ***Summary:*** On the color cover of this booklet is an orange map of Africa, behind a green soybean plant with pods and flowers. Contents: Comparison of soya and other protein sources. Soya. General information on soya drinks. Description of the process, with diagram. Technical features of the module (with 6 color photos of equipment). Nutrition, production, and cost. Composition of soymilk made using the Alfa-Laval process. Storage. Nutritional value. Guarantees. Organization and after-sales service worldwide: The company has affiliates or representatives in 125 countries.

Alfa-Laval also has a full English-language translation of this booklet, dated 19 Oct. 1981. The company developed this booklet especially for Africa, to market their automated soymilk equipment there. Their small-scale plant has a capacity of 2,000 liters/day. They use the "whole bean method" to make "suspended soymilk," in which no okara is discarded; it is finely pulverized and homogenized into the soymilk to form a suspension. Alfa-Laval's head office is in Sweden; the African soymilk group is headquartered in France. "In Africa, in certain regions where the soybean has been cultivated for more than 150 years, methods of making and consuming soymilk have been acquired. Traditional foods are enriched or completed with dishes based on soya such as 'Sumbala,' 'Faros,' or 'To.'" Address: Les Clayes-sous-Bois, France.

3612. Dharmadasa, H.G. 1981. Re: Introduction of soya bean as a substitute for coconuts in Welikada Prison. Letter to The Commissioner of Prisons (L.P. Delgoda), Prison Head Quarters, Colombo, Sri Lanka, undated. 2 p. Typed, with signature.
• ***Summary:*** The writer wishes to report on further progress made since his earlier report of 31 Aug. 1981. Soya was first used in the Welikada Kitchen on 28 Aug. 1981 on an experimental basis, and it continues to be used up to the present.

The kitchen feeds, on average, about 2,000 prisoners daily. During the past 2½ months, 40% of the coconuts used in the preparation of curries have been replaced by soya. Initially the prisoners did not know that any soya was being used in their diet and none of them felt any difference. Now the prisoners have come to know that soya is being so used and they have been told the dietary value of soya. "The inmates have now come to accept it as a part of their diet. During this experimental stage none of the prisoners complained about the use of soya in their diet.

"Normally the soya paste is dissolved with coconut milk in preparing the curries." But on some occasions the curries have been made with soya and no coconut milk; this resulted in a thicker gravy which the prisoners appreciated.

The use of soya results in a large financial saving. During the month of September about 10,200 fewer coconuts were used, being replaced by soya. This resulted in a saving of about Rs. 7,880 for that one month. The prison presently buys its soya paste from a private firm. But if it had its own grinding and liquidising machine, the saving would have been about Rs. 15,000 or more.

The experiment carried out at the Prison Hospital, initiated by Mrs. Kim of the U.N.D.P., showed that in small institutions a modified version of *karahan gala* could be used to make soya paste.

"I have also introduced soya meat [textured soy protein] in lieu of beef in the prisoners diet." It is served only one a week at present. This saves at least 12 cattle a year from the national herd, although little financial saving is realized.

If one liquidiser were bought for the Colombo prisons it could supply the requirements of all three prisons in Colombo, and would enable the system to double its savings.

Note: The name of this prison in Colombo is spelled both "Welikada" and "Welikade." As of Nov. 2010 it is generally spelled "Welikada" on the Web. In late July 1983 it was the scene of a massacre of 53 Tamil prisoners. Address: Superintendent Welikada Prison, Colombo, Sri Lanka.

3613. Donnelly, L.S.; Busta, F.F. 1981. Alternative procedures for enumeration of *Desulfotomaculum nigrificans* spores in raw ingredients of soy protein-based products. *J. of Food Science* 46(5):1527-31. Sept/Oct. [11 ref]
• ***Summary:*** This bacterium, formerly named *Clostridium nigrificans,* is a thermophilic, anaerobic sporeformer. It was first identified in 1927 as the cause of "sulphur stinker" spoilage in canned sweet corn; it creates hydrogen sulfide, which causes this odor in low-acid foods. It grows better in a modified infant soy formula broth than in other media tested. Address: 1. Dep. of Food Science, Clemson Univ., Clemson, South Carolina 29631; 2. Dep. of Food Science and Nutrition, Univ. of Minnesota, 1334 Eckles Ave., St. Paul, Minnesota 55108.

3614. Lima N.V. 1981. Lima natural foods pricelist. Lima Foods, Edgar Gevaertdreef 10, B-9830 Sint-Martens-Latem, Belgium. 12 p. Catalog. 30 cm. [Eng]
• ***Summary:*** Lima has been making organic, unrefined foods, without additives, for 20 years. Organic quality is guaranteed. Contents: Whole cereal grains. Stone-ground whole flours (incl. soya flour, 500 gm). Whole pulses (incl. soya, and azuki, each 500 gm). Coffee substitutes (incl. Yannoh with azuki, Dandelio [dandelion root], roasted barley, and chicory). Lima specialties (incl. Kokoh with azuki flour, Seitanpast [Vegetable spread with seitan]). Oriental specialties: Tamari-shoyu (from soya and wheat), Tamari, Hatcho miso, Barley miso, rice miso, instant miso soup (with dried vegetables), Kozou (kuzu), Mebosi (umeboshi), Tekka (natural seasoning with miso). Seaweeds. Unrefined oils. Sea salt. Vegetable protein products: Seitan (vegetable protein concentrate, 150 gm jar), Seitan goulash (seitan with vegetables), Soya filtrate (soyamilk), Tofu (curdled soya filtrate). Concentrated soups (incl. azuki soup). Books (incl. 2 cookbooks by Anette Gevaert). Address: Lima Foods, Edgar Gevaertdreef 10, Sint-Martens-Latem 9830, Belgium.

3615. **Product Name:** Soymilk [Honey-Vanilla, Plain, or Carob].
Manufacturer's Name: San Diego Soy Dairy.
Manufacturer's Address: 2965 5th Ave., San Diego, CA 92103.
Date of Introduction: 1981. October.
Ingredients: Organically grown soybeans, filtered water, honey and vanilla or unsulphured molasses and vanilla.
Wt/Vol., Packaging, Price: 16 fluid oz plastic bottle.
How Stored: Refrigerated.

New Product–Documentation: Label. 1981. 1.75 by 2.75. Self adhesive. Honey-Vanilla: Blue on white. Plain: Red on tan. Talk with Gary Stein. 1989. Feb. 17. He recalls that these products were introduced in about Oct. 1981. Product with Label purchased at Open Sesame in Lafayette. 1991. Feb. 16. 2 by 4.12 inches. Black, red, and grey on beige. Color illustration of a stream flowing down from snow-capped mountains, through a forest, into a meadow with flowers. "100% non-dairy" 1 pint plastic bottle. Plain and vanilla flavors. San Diego Soy Dairy, San Diego, California 92103.

3616. Soy Plant (The). 1981. An all-soy deli: Tofu, miso, soymilk, tamari, tempeh (Ad). *Ann Arbor Calendar* (*Michigan*). Oct. p. 21.
• ***Summary:*** At the top of this small ad (2½ by 1.75 inches) is the collective's logo. At the bottom: "Present this ad for a 10% discount on listed items through 10/31/81. Limit one per customer." Address: 211 East Ann St., Ann Arbor, Michigan 48104. Phone: 663-0500.

3617. Richter, W.O.; Weisweiler, P.; Schwandt, P. 1981. Beeinflussung der Serumlipoproteine durch Sojabohneneiweiss [Influencing the serum lipoproteins using soy protein]. *Muenchener Medizinische Wochenschrift* 12(123):1755-56. Nov. 13. [13 ref. Ger]
• ***Summary:*** Populations with a high proportion of plant protein in their diet have a lower cholesterol level than the general population. Address: Medizinische Klinik II, Klinikum Grosshadern der Universitaet, Marchioninistr. 15,

D-8000 Munich 70.

3618. DeMaeyer, E.M. 1981. Re: Establishing small plants for making soy milk in developing countries. Letter to Mr. F. de Selliers de Moranville, Chairman, International Investment & Development Corporation, Rind-Point de l'Etoile 3, Bte. 8, 1050 Brussels, Belgium, Nov. 16. 2 p. Typed, with signature on letterhead.
• ***Summary:*** "I refer to your letter of 5 November, 1981, and to the meeting which took place in my Office on 13 November, 1981. I found the documentation you sent me in advance of our meeting and your explanations during the meeting most interesting and I wish to congratulate you for the initiative you have taken.

"The establishment of small plants for the production of soy milk at the local level will certainly provide the population of developing countries with a nutritious drink that would definitely benefit them. Pre-school and school age children should be the main targets of such projects because their protein requirements are relatively larger than those of other individuals and they are therefore usually in need of protein supplementation. Energy intake in these groups may also be deficient and for this reason the production of a full-fat soy milk would definitely be better because of its higher energy concentration.

"WHO, FAO and UNICEF, have been involved in the establishment of small plants (capacity; 1,0OO-2,000 tons per year) for the production of protein-rich weaning foods in developing countries during the last 15 years. Some of these projects have more or less failed for various reasons, including poor management, lack of local technical skills, unsanitary environmental conditions, interruptions in the supply of raw materials, and many other reasons. On the other hand, some projects have survived and are slowly progressing, although they cannot be considered as unmitigated successes. This is to say that you should be prepared for some difficulties and even some failures in some countries. Finally, I should like to add that the product you envisage is by no means a cheap one and that its marketing will therefore be reserved to the middle-class, unless the government decides to subsidize it or to buy part of the production for free distribution to the lower classes of the society or to school children.

"Your project is therefore of great interest to WHO. We very much regret that we cannot participate in it or support it because of our present financial constraints. We shall, nevertheless, be pleased to receive any information that you may wish to share with us concerning the progress made in its development." Address: World Health Organization, 1211 Geneva, Switzerland.

3619. Selliers, Francois de. 1981. Re: A program to address malnutrition in India. History of soyfoods in Africa. Letter to William Shurtleff at Soyfoods Center, Nov. 20–in reply to inquiry of Oct. 21. 2 p. Typed, with signature. [Eng]
• ***Summary:*** The committee has been formed. "I have learned much about malnutrition problems since I have visited with you and agree that the short analysis which we present in the proposal document would be insufficient if we were to write a thesis about the subject. However the message passes easily despite that weakness as every person which I have met is very conscious of the problem."

People are suffering, so he will devote his energy to get the country survey going and assemble the financing needed for its implementation.

India must be studied as soon as possible, but the extent of the study already frightens some potential financiers. Moreover, "India is successfully producing soya foods in two states."

In Zaire, it appears that soybeans foods have been consumed for a very long time. They were introduced by Catholic missionaries such as the "Pères Blancs d'Afrique" and the "Pères de Scheut." "One of my assistants is researching the matter in more depth at the libraries of these religious orders. These food products were made on a community scale and little factual data seems to be available."

"An anecdote told to me by telephone by Father Rosman from the order of the Pères Blancs": "In the early 1930s, Monseigneur Mathysse, Bishop of Bunia in the Ituri region [in northeastern Zaire] organized the production of soya milk for distribution by one or several dispensaries under his rule and the children which would come to receive the milk would ask if they could have some 'Monseigneur milk.'"

"Sumbala, Faros and To are a sort of porridge produced in Upper Volta [later Burkina Faso] with crushed soybeans, water and flavors. I am also investigating further the origin." Address: Chairman, IIDC (International Investment & Development Corp.) Belgium, Belgium S.A., Rond-Point de l'Etoile 3, Boite 8, B-1050 Brussels, Belgium. Phone: (02) 640-68 00.

3620. Caloussis, Mr. 1981. Nestle's work with soymilk (Interview). *SoyaScan Notes.* Nov. 27. Conducted by William Shurtleff of Soyfoods Center. [Eng]
• ***Summary:*** Nestle is now making and marketing soymilk in Malaysia and Singapore. The Singapore venture started in 1979; it is doing well. Nestle owns the controlling interest, with minority local ownership. They are now test marketing their soymilk in Thailand. Nestle is also test marketing a powdered soymilk to health food markets in the Philippines. Named "Vita," it is made at a pilot plant in Japan. Nutrend is a weaning food product made in the Philippines from locally grown soybeans and wheat.

Thimonnier in Lyons, France, makes Flexi-pouch, but it is more expensive [than aseptic packaging] when you take into consideration the cost to deliver one unit.

Maggi is owned by Nestle; seasonings are their main

products. Maggi really grew on its dehydrated soups–an instant food at the start of the industrial revolution. Kempthal is near Zurich, and Maggi is still located there. The original owner was Julius Maggi in Switzerland. This story is told in a book on the history of Nestle, which Mr. Caloussis will send. The man in charge of Nestle public relations is Mr. Edward Fasel in Vevey, Switzerland.

Concerning Nestle and infant formulas: In the late 1900s Mr. Nestle started making infant weaning foods out of cow's milk and cereal. Today each country has its own independent marketing program. The problem for Nestle started in England with a book titled *The Baby Killers.* Then another group in Nestle spoke out against Nestle, and Nestle sued them. This got big, negative press coverage. Infant formulas are only 3-4% of Nestle's business. The company's best-selling products are Nescafe (coffee) and various milk products.

3621. McBride, Gordon; Stechmeyer, Betty. 1981. Re: Making viilia in the traditional way. Letter to William Shurtleff at Soyfoods Center, Nov. 28. 2 p. Handwritten.
• ***Summary:*** "The traditional one bowl per person method produces a viilia with the creamy layer undisturbed, which is the sine qua non for a viiliaphili Finn." "We try to emphasize regular use to keep the culture vigorous. Our Living Viilia Starter is about a tablespoon in a small screw-capped vial." Address: GEM Cultures, 30301 Sherwood Rd., Ft. Bragg, California 95437.

3622. Andres, Cal. 1981. Prototype products include higher protein, lower calorie, lower cost frozen desserts, milk based drinks. *Food Processing* (*Chicago*) 42(12):60-61. Nov.
• ***Summary:*** ADM Foods has used high fructose corn syrup (HFCS) and isolated soy protein to develop a new family of "dairy compatible" products that "will permit dairy managers to expand product lines and to improve equipment utilization and operating costs. All products can be made under normal process conditions on existing equipment." The two main product types are non-dairy frozen desserts and drinks. Ingredients, formulas, nutritional information, and cost savings are discussed.

Note: This is the earliest document seen that mentions either "high fructose corn syrup" or "HFCS" in connection with soy. Address: Senior Associate Editor.

3623. *Plenty Canada News* (*Lanark, Ontario, Canada*). 1981. Integrated rural development program [Lesotho, Africa]. Fall. p. 2.
• ***Summary:*** "At the Motsemocha Village Technology Centre four sleeping huts have now been completed and others are being built... and the masons have begun building the sandstone walls of the soy dairy."

"Soy demonstrations instructing local Basotho people about the home preparation of soy foods continue. Local response and requests for further training has encouraged expansion of this program. One half litre of soy milk per day for children and one litre of soy milk for adults or its equivalent from other soy foods provides approximately 3/4 of the minimum daily requirement of protein."

A photo shows two round huts, one with a conical thatched roof and the other with no roof yet. Address: R.R. 3, Lanark, Ontario K0G 1K0, Canada.

3624. Selliers, Francois de. 1981. A solution to malnutrition. Committee for the Promotion of Soya Milk Manufacturing in Low Income Countries, Comsoy. 45 p. Nov. Unpublished manuscript. [200+ ref]
Address: Chairman, IIDC (International Investment & Development Corp.) Belgium, Belgium S.A., Rond-Point de l'Etoile 3, Boite 8, B-1050 Brussels, Belgium. Phone: (02) 640-68 00.

3625. Selliers, Francois de. 1981. Proposal for the financing of a systematic implementation of soya milk plants in the world. Brussels, Belgium: International Investment and Development Corp. 20 p. Nov. Unpublished manuscript.
• ***Summary:*** This study, which is also said to be authored by the "Committee for the Promotion of Soya Milk Manufacturing in Low Income Countries 'Comsoy,'" consists of several parts. (1) Proposal–11 pages, dated Oct. 1981. (2) Soja bean milk: Presentation for the state of Kenya–2 pages, dated 14 Dec. 1981. (3) Members of the Committee: Eleven who have formally accepted membership, one who has accepted membership in principle, and six who are being invited–1 page, dated 4 Nov. 1981. (4) Memorandum to members of Comsoy: Meetings of Mr. Deselliers; trips to the United States, October 4 to 8 and Oct. 17 to 29, 1981. Discusses persons met on the trip incl. at the IFC (International Finance Corporation), the World Bank, A.I.D., U.S. Department of Agriculture, UNICEF, Bristol-Myers Company, Archer Daniels Midland Co., Appropriate Technology–6 pages, dated 5 Nov. 1981. Address: Chairman, IIDC (International Investment & Development Corp.) Belgium, Belgium S.A., Rond-Point de l'Etoile 3, Boite 8, B-1050 Brussels, Belgium. Phone: (02) 640-68 00.

3626. **Product Name:** Furama Soy Drink [Unsweetened, or Sweetened].
Manufacturer's Name: Soyfoods of America.
Manufacturer's Address: 1091 E. Hamilton Rd., Duarte, CA 91010. Phone: 213-681-5393.
Date of Introduction: 1981. November.
Ingredients: Sweetened: Water, soybeans, sugar.
Wt/Vol., Packaging, Price: 12 oz polyethylene bottles.
How Stored: Refrigerated.
Nutrition: Per 8 oz. unsweetened: Calories 70, protein 7 gm, carbohydrates 5 gm, fat 3 gm.
New Product–Documentation: Leviton. 1982. Soyfoods.

Summer. p. 30-31. "About 20,000 bottles of plain and sweetened soymilk are produced weekly." Ad in Soyfoods. 1984. Summer. p. 3. "Sold in pint, quart, or half-gallon polyethylene bottles. Pasteurized 4-week shelf life." Talk with Ken Lee. 1988. Aug. 29. This product was launched in Nov. 1981. It is now his best-selling, accounting for almost half of his company's sales. Mrs. Lee recalls the introduction date to be June 1982. Labels. 1988. Self adhesive. 1.5 by 4 inches. Red, black, and white (sweetened) or yellow, brown and white (unsweetened).

3627. *Parade* (*Washington Post, Sunday ed.*). 1981. Henry Ford's Soybean fixation. Dec. 13. p. 24.
• ***Summary:*** Henry Ford "worshipped the soybean with a feeling akin to reverence. To him it was the cure for all of mankind's woes, as rich in manufacturing applications as in dietary value... At the peak of Ford's soybean mania, his company was growing more than 300 varieties of the plant on 8,000 acres and buying an additional 500,000 bushels yearly from Michigan farmers... No meal was served in his home without soybeans or their derivatives on the table, and a pitcher of cold soybean milk was always in the refrigerator for parched guests. Once Ford appeared at a convention dressed in a suit and matching tie woven of soy-derived fabric. At the 1934 Century of Progress Fair in Chicago, his company served a 16-course soybean dinner." Address: Washington, DC.

3628. Jootla, Susan Elbaum. 1981. Re: Making miso and tofu at home in India. Letter to William Shurtleff at Soyfoods Center, Dec. 15. 2 p. Typed, with signature.
• ***Summary:*** She and her husband have used up their first batch of homemade white miso and are now consuming a great pot of modified red miso. She thanks William and Akiko Shurtleff for the guidance their Book of Miso and Book of Tofu have given them in making these soybean products over the past few years.

She gives details of their experiments making tofu and miso 7,000 feet up in India's western Himalayas. Her husband had been trying unsuccessfully ever since he worked in Indonesia in the 1950s. Finally a friend who worked in a Florida health food store sent them The Book of Tofu. Using Epsom salts and an electric blender they succeeded in making good tofu. Susan then wrote an article on making tofu in India for an Indian woman's magazine, which was published in the spring of 1979. She is working on another longer article.

Having conquered tofu, she turned to miso. The big problem was getting koji starter, which she eventually obtained from Kikkoman in Tokyo.

Susan is now thinking of making tofu commercially on a small scale to cater to the interest evinced by several boarding houses in town. There are already a few soyamilk producers in India. In India, Susan uses tofu as "a substitute for paneer, which is the fresh cheese from milk, drained and pressed briefly to a compact solid texture. Tofu can be used in curries and pakoras (a very common snack, spicy fritters) in almost the same way as paneer is traditionally prepared, thus decreasing the problem of tofu's novel taste.

"We have also found that okara can be incorporated into dough for chapaties [chapatis], in equal proportions to the wholewheat flour. When the dough is seasoned with salt and ground cumin and coriander seeds, and baked as a chapati on a cast iron griddle, the resultant thick bread should be attractive for Indian cooks who begin to make tofu but are reluctant to waste the residue.

"As you can see, we are tofu enthusiasts and are trying to spread an appreciation of soyfoods in this country in a small way. So far, texturized soy protein is the only product that seems to have caught on here." Doubtless, this is because it does not require refrigeration, is not affected by heat or moisture, and is a useful and inexpensive meal stretcher.

Note: As of April 2008, Susan has long practiced Buddhist meditation and is the author of many related books. Google "Susan Elbaum Jootle" and you will see. Address: Jeet Villa, Dalhousie, H.P. [Himchal Pradesh], India.

3629. Flinders, Carol. 1981. Problems are immediately encountered when considering 'dry milk alternates': Notes from Laurel's Kitchen. *Hartford Courant* (*Connecticut*). Dec. 26. p. E13.
• ***Summary:*** Begins by discussing (and criticizing) such a product based on "sweet dairy whey." "Now let's be perfectly clear. I don't at all agree that 'Every Body Needs Milk.' Perfectly adequate diets can be devised without dairy products, particularly if soy foods are used."

3630. Lyon, Alexander. 1981. Early history of tempeh, soy ice cream, and other soyfoods at The Farm in Tennessee (Interview). Conducted by William Shurtleff of Soyfoods Center, Dec. 26. 1 p. transcript. Includes follow-up interview of 18 Feb. 1985.
• ***Summary:*** The first cake of tempeh (just one cake) was made from whole soybeans, then the rest were all made with okara. They did not make whole soy tempeh since they had no way to dehull the soybeans. They only started making tempeh from whole soybeans after the splits were available for use in tempeh kits. Now most of the tempeh is made from whole soybeans rather than okara. Cynthia Bates was one of the first to work with tempeh and to stay with it. They used a food dehydrator as an incubator.

Members of The Farm Soy Dairy crew (Alexander, Marlene Pantos, Joanne Elfe, Myra Traugot) first started making soymilk ice cream during the summer of 1972 or 1973, using homemade soymilk, a hand-crank machine provided by Melvin Stiriff, and fresh blackberries gathered at a patch behind the soy dairy. Needless to say, the product

was a hit, since no dairy products were consumed in the community and soymilk was still rationed among community members. The crew made this non-dairy ice cream 6-12 times during the first summer. A year or two later The Farm invested $100 in four tiny table-top Glacier ice cream machines that made 1-2 quarts at a time. Production grew, but it was all consumed within the community.

In 1974 The Farm's publications "Hey Beatnik" and "Yay Soybeans!" both mentioned soymilk ice cream.

After production of Ice Bean was moved from San Francisco, California, to Tennessee, Steve Meyers and Michael Moorman became the two key soy ice cream people. Address: Summertown, Tennessee.

3631. *SoyaScan Notes.* 1981. Chronology of soybeans, soyfoods and natural foods in the United States 1981 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Jan. *Soyfoods* magazine issue No. 4 published. Silver cover. 10,000 copies published. Steve Fiering loans SANA money for mailing it and agrees to make a loan for a test mailing.

Jan. Union activity begins at New England Soy Dairy.

Jan. Boxed tofu (1 lb. vacuum packed in a box with a window) first made by Zakhi Soyfoods in Fort Wayne, Indiana. This important innovation of packaging tofu in a box was later employed by New England Soy Dairy (1982), Quong Hop & Co. (1983), Swan Gardens (1983), and White Wave (1985).

Jan. Hain Food Co. starts nationwide color ads for Natural Onion and Jalapeno (Soy) Bean Dips.

Jan. Travis Burgeson of Pacific Tempeh near San Francisco, CA, introduces the world's first commercial tempeh burger.

Jan. Paul's Tofu & Tempeh, the first European tempeh company in Europe outside of the Netherlands, opens in England.

Jan 20. Ronald Reagan inaugurated as president of the United States. His Secretary of Agriculture is John R. Block. The regulatory climate in Washington begins to shift toward less federal regulation and more encouragement for industries to regulate themselves. The Republican administration favors free-market policies with less government regulation and involvement.

Jan. 23. Legume, run by Gary and Chandri Barat, is incorporated in New York, then that month moves to Verona, New Jersey.

Feb. 2. Island Spring in Washington becomes America's first unionized tofu plant.

Feb. San-Jirushi International starts its first major American ad campaign using the slogan "San-J is the real tamari." The full-color, full-page national ads aim to clarify the confusion between tamari and shoyu created by the macrobiotic movement.

Feb. Soyfoods Unlimited tempeh plant starts operation in San Francisco area. It is the most modern U.S. tempeh plant, although output is small.

Feb. Vitasoy soymilk and Morinaga tofu start to be imported and sold in the USA from Hong Kong and Japan respectively, immediately after the FDA lifts its ban on aseptic Tetra Pak type cartons. Morinaga tofu was sold by Beech Nut California Corporation, a joint venture with Beech Nuts Food Corp., established in 1977 in San Jose, California.

Feb. "Soyfoods Catching On" by Judith Brown published in *USDA National Food Review.* About tofu and tempeh.

Feb. Many tempeh plants switch to using GEM cultures tempeh starter.

March 1. Svadesha Pflanzen-Feinkost, West Germany's first commercial tofu company, starts production. Founded by Swami Anand Svadesha (Rudiger Urban) in Fuerth im Wald.

March. Institute of Food Technologists meeting at New England Soy Dairy. Tour, dinner, and speeches.

March. Richard Leviton on National Public Radio's "All Things Considered" talks for 10 minutes about soyfoods to 2 million people.

March. *The Book of Miso,* by Shurtleff and Aoyagi published by Ballantine Books in a mass market paperback edition.

April. USDA decides to establish tofu standards, then announce them in the Federal Register, but this plan is dropped in September, amid controversy over changes in the School Lunch Program.

April. Dr. Cook at Kansas State University publishes a paper on the possible inhibitory effects of soy proteins on nonheme iron absorption in humans. USDA becomes concerned.

April. *Tofu at Center Stage,* by Gary Landgrebe published by Fresh Press. First tofu cookbook containing many recipes calling for use of meat.

April. Bean Machines introduces new sanitary disintegrators/ grinders for tofu and soymilk production.

April. "The Miso-Master's Apprentice," by John Belleme published in *East West Journal.*

May. "The Amazing Tofumobile," by Janice Fillip, about Wildwood Natural Foods, published in *East West Journal.* Revival of interest in small tofu shops in areas where there is a high density of interest and high food consciousness, and rediscovery of soyfoods craftsmanship.

May. *Tofu Boken* by Ted Nordquist and Tim Ohlund published by Aros Sojaprodukter in Sweden. Europe's first book on tofu.

June. *Tofu Fever in New York,* by Megan B. Murray notes that David Mintz is making 275 gallons of tofu ice cream a week. This is the earliest known publication on his work with soy ice cream. He had been making it for 3-4

months.

June. "Surprise, It's Soy" by Barbara Bassett published in *Bestways.*

June. FIND/SVP survey of the U.S. tofu industry and tofu consumer survey published. 33% of respondents in major metropolitan areas were aware of tofu and 10% had purchased it. Predicts market will grow 32% a year for the next 6 years... an over-optimistic prediction.

June 29. "Trader Vic Bergeron Offers Timely Tips for Tofu" by Rose Dosti published in *Los Angeles Times.*

July. *Soyfoods* magazine is incorporated by Richard Leviton, and offers stock.

July 8-12. Fourth Annual Soycrafters Convention at Colorado State University. 240 people from 18 nations attend, 210 pay. First National Tofu Cheesecake Bakeoff and Soyfoods Equipment/Supplies Expo in the western world.

July. Mary Tolan selected Registered Young Dietitian of the Year by the American Dietetic Association. Invited to present speech on "Tofu–Food of the Future" at ADA convention in Philadelphia.

July. *Tofu Cookbook,* by Sally Sheppard published by Jack's Beanstalk.

July. "Soybean Ice Creams: Getting your Licks In" by Richard Leviton published in *Vegetarian Times.*

July. Soyfoods Center is working to build the world's largest library of documents on soyfoods, each with a bibliographic card, filed by author. Also building a large library of color slides on soyfoods.

Aug. "Tofu, Tofu Everywhere," by Karen Dukess published in *The New York Times'* Business section.

Aug. "Soyfoods: The Future Is Here but Are You Ready" by Alan Richman published by *Health Foods Business* as a cover story.

Aug. 12. "Soy Foods: Versatile, Cheap and on the Rise" by Lorna Sass, and "A Source of Quality Protein" by Jane Brody published in *The New York Times,* and syndicated nationwide.

Aug. "My Favorite Tempeh Recipes" by Aveline Kushi published in *East West Journal.*

Aug. *Delights of Tofu,* by Fox, O'Connor and Timmins published by New England Soy Dairy.

Aug. *Das Tofu Book,* by Shurtleff and Aoyagi published in Germany by Ahorn Verlag.

Sept. "Soyfoods Report" published by *Natural Food Merchandiser.*

Sept. *Home Soyfood Equipment,* by Ray Wolf published by Rodale Press.

Sept. 13. At SANA Board of Directors Meeting held near San Francisco, the Soycrafters Association of North America has its name changed to Soyfoods Association of North America to broaden scope and support base.

Sept. SANA and The Soyfoods Center do a major press release on soyfoods production and consumption in America to 250 key media. Many magazines publish this report and conduct radio interviews.

Sept. Okita Enterprises takes 22 tofu and bean sprout makers to Japan for a 10-day tour. SANA executives Richard Leviton and Luke Lukoskie make important contacts with Japanese tofu trade officials and publications.

Sept. USDA publishes tofu regulations in the Federal Register, then withdraws entire school lunch revisions and revokes permission given to the Santa Cruz (Calif.) school system to use tofu in school lunches.

Sept. Dr. Hirayama of the National Cancer Center in Japan announces that miso soup is effective in combating stomach cancer and stroke.

Oct. "Things Go Better With Soyburgers: The New All-American Food" by Richard Leviton published in *East West Journal* as a cover story.

Oct. *Cook with Tofu,* by Christina Clarke published by Avon Books in mass market edition.

Oct. John Belleme's American Miso Corp. begins miso production in North Carolina.

Oct. Workers at Hinode Tofu Co. in Los Angeles go on strike for 2 weeks.

Oct. *Nasoya Tofu Cookbook,* published by Nasoya Foods.

Oct. *O Livro da Soja,* by Jane Cadwell published in Brazil by Editora Ground. One of the country's first books on soyfoods.

Nov. 10. Erewhon, America's natural foods pioneer, files for Chapter 11 reorganization under the U.S. bankruptcy laws. On 2 April 1982 Erewhon is sold to Nature Food Centers.

Nov. Autumn Press, publisher of *The Book of Tofu,* original edition, files for Chapter 11 bankruptcy.

Nov. New England Soy Dairy announces 28-Day Self Life Advantage Pasteurized Tofu in a 2/3 page ad in *Natural Foods Merchandiser.*

Nov. Soyfoods Unlimited advertises tempeh burgers in *Natural Foods Merchandiser.*

Nov. The Ministry of Agriculture and Forestry in Japan announces a Japanese Agricultural Standard (JAS) for soymilk. The soymilk boom in Japan starts.

Dec. *Juel Andersen's Tofu Kitchen* published by Bantam Books in mass- market paperback.

Dec. "World's Best Tofu Cheesecake" by Richard Leviton published in *Vegetarian Times.*

Dec. Food Protein Council, a trade association, changes its name to Soy Protein Council, since all of its members make only soy protein products.

Dec. *La Soya y Sus Derivados* (*Tofu, Tempeh, Miso*), by Shurtleff and Aoyagi published by Quadernos de Natura in Mexico.

Dec. *The Tofu-Miso High Efficiency Diet,* by Yoshiaki Omura M.D. published by Arco Publ.

Dec. *Cooking with Tofu.* by Mary Anna DuSablon published by Garden Way.

Dec. There are now 158 tofu manufacturers and 41 tempeh manufactures in the USA.

Dec. The Farm Vegetarian Cookbook published as *Soja Total* in German.

* Global economic activity is shifting from the Atlantic to the Pacific. In 1981 Asia passed Europe to become the largest market for U.S. agricultural products. In fiscal 1981 Japan bought $6,700 million worth of U.S. farm products.

* Soybean breeders, which have formerly focused their research efforts on increasing quantity (yield) of soybeans, now start to give more attention to quality (composition). Increasing total protein, methionine, and oil, and decreasing linolenic acid and antinutritional factors are priorities.

* U.S. soybean exports reach their peak this year of 25 million metric tons (tonnes). By 1987 they have fallen to 18 million tonnes, a 28% drop, due largely to competition from Brazil and Argentina, and to foreign subsidies. The market changes from a seller's to a buyer's market.

3632. Andersen, Juel. 1981. Juel Andersen's tofu kitchen. New York, NY: Bantam Books. x + 211 p. Illust. by Juel Andersen. Index. Dec. 18 cm.
• ***Summary:*** Contents: An introduction. Tofu is... Making tofu and soymilk. Recipes–Salad dressings, dips, appetizers, and sauces. Salads and sandwiches. The tofu burger. Soups. Tofu for dinner. Tofu for breakfast and brunch. Baking with tofu. Desserts: Pies, puddings, and pastries. Beverages. Afterword. Appendix 1: Protein and protein complementarity, including a table showing the RDA for grams of protein for children, males, females, and pregnant and lactating women of different ages, weights and heights. Appendix 2: Substitutions and equivalents. Appendix 3: Nutrients in selected foods (mostly protein sources). Address: California.

3633. Bushman, Don H. 1981. Re: Soymilk manufacturers in Southeast Asia. Letter to William Shurtleff at New-Age Foods Study Center, Dec.–in reply to inquiry of Dec. 10. 1 p. Typed, with signature.
• ***Summary:*** Gives the name, address, and phone number of the following companies in Singapore: Carnation Co. (S) Pte Ltd. Fraser & Neave (S) Pte. Food Specialties Singapore (Pte) Ltd. (Affiliate of Nestle). Also Rama Food Products Co. of Bangkok, Thailand. Address: Director, South-East Asia, Room 1501, 15th floor, Liat Towers Orchard Rd., Singapore 0923. Phone: 737-6233.

3634. **Product Name:** Soy Ice Bean (3 fl. oz. single serving size) [Vanilla, or Carob].
Manufacturer's Name: Farm Foods.
Manufacturer's Address: 156 Drakes Lane, Summertown, TN 38483.
Date of Introduction: 1981. December.
Ingredients: Vanilla: Water, soy powder [powdered soymilk], honey, soy oil, vanilla extract, soy lecithin, locust bean gum, guar gum, Irish moss.
Wt/Vol., Packaging, Price: 3 fl. oz. cup.
How Stored: Frozen.
New Product–Documentation: Spot in *Whole Foods.* 1981. Dec. p. 47. "Soy Ice Bean." Soy Ice Bean from Farm Foods is now available in a new 3 ounce single serving size. A photo shows the product and label.

3635. Java Murni. 1981. Reserve now for Java Murni's Vegetarian X-mas dinner. 4509 Adams St., Carlsbad, California.
• ***Summary:*** The dinner will we held on Dec. 26 and 27 from 5-7 or 7:15 to 10 p.m. The menu is given: Soup: Soto (mild) or Laksa (spicy). Appetizers: Gulung rebung (bamboo shoots wrapped in crispy tofu). Tofu kembang (tofu flowers). Salad: Gado-gado (with peanut dressing). Urap (with coconut dressing).

Entree: Tempeh treat (tempeh braised in Indonesian soy and safflower oil). Tofu-saus-richa (tofu in sweet-and-sour spicy sauce). Sambal goreng boontjis (green beans in savoury sauce). Sayur lodeh (vegetables in coconut milk). Chah tempeh (mixed tempeh & vegetables). Keringan tempeh (sweet-piquant tempeh). Satay tempeh (barbecue tempeh). Beehun goreng (rice noodles). Soyex malakka (soy cubes in malakka sauce). Nasi kuning (yellow rice).

Dessert: Onde-onde (mung beans wrapped in glutinous rice and sesame). Pisang goreng (coated fried banana).

Dinner includes all the above: Per person $12.95.

A map shows the way to the restaurant. Illustrations: A bamboo border. A large Javanese shadow puppet on the left border, looking right. Address: Carlsbad, California. Phone: 434-4131.

3636. **Product Name:** Soynog (Soymilk-based Eggless Eggnog. Renamed Lite Nog in 1982 and Tofu Nog in 1985).
Manufacturer's Name: Redwood Valley Soyfoods Unlimited.
Manufacturer's Address: P.O. Box 371, Redwood Valley, CA 94570.
Date of Introduction: 1981. December.
Ingredients: Brightsong soymilk and tofu, honey, maple syrup, spices, lecithin.
Wt/Vol., Packaging, Price: Pint bottles.
How Stored: Refrigerated.
New Product–Documentation: Spot in Whole Foods. 1983. Jan. p. 39. "Winter dairy-free treats." Brightsong Light Foods has introduced two new special products for the winter season. SoyNog is an egg and dairy-free blend of Brightsong Soymilk and Tofu, honey, maple syrup from Shady Maple Farms, vanilla, spices and lecithin. SoyNog is a cholesterol-free alternative to egg nog, packed in pint bottles.

Spot in Soyfoods. 1983. Winter. p. 48. "For a Soyful Christmas... Soynog." Shurtleff & Aoyagi. 1984. Soymilk

Industry & Market. p. 60.

Note: This is the earliest known commercial soy-based eggless eggnog.

3637. Selliers, Francois de. 1981. Report concerning his activity with soya milk, some correspondence, and a revised Comsoy file. Brussels, Belgium: International Investment and Development Corp. 15 p. Nov. Unpublished manuscript. • ***Summary:*** Dr. de Selliers is working at the highest levels to try to raise interest in and funds for establishing a network of soymilk factories in developing countries. Contents: Letter to Sheikh Ahmed Zaki Yamani, Minister of Petroleum and Mineral Resources, Riyadh, Saudi Arabia (Nov. 12, 2 p.). Letter to Dr. A.W. Clausen, President, The World Bank, 1818 H Street N.W., Washington, DC 20433 USA (Nov. 10, 3 p.). Reply from Clausen (Dec. 8, 1 p.). Letter from Dr. Vernon R. Young, Ph.D., Prof. of Nutritional Biochemistry, Massachusetts Institute of Technology, Laboratory of Human Nutrition, 18 Vasser St., Cambridge, Massachusetts 02139 (Dec. 4, 1 p.). Reply to Young (Dec. 18, 4 p.). Letter to His Excellency Mr. W.E. Mwangale, Minister of Tourism, Nairobi, Kenya (Dec. 14, 1 p.).

Activity Report of Dr. de Selliers' international travels (Dec. 18, 2 p.). Address: Chairman, IIDC (International Investment & Development Corp.) Belgium, Belgium S.A., Rond-Point de l'Etoile 3, Boite 8, B-1050 Brussels, Belgium. Phone: (02) 640-68 00.

3638. **Product Name:** Tempeh (Soy & Okara), Tofu, Soysage, Egg-less Salad, Flavored Soymilk (Carob & Honey, or Maple).
Manufacturer's Name: Soy Beings.
Manufacturer's Address: 13-C Railroad Square, Waterville, ME 04901. Phone: 207-872-8790.
Date of Introduction: 1981. December.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1981. Dec. 8. Owner: Richard Tory. Shurtleff & Aoyagi. 1982. Soyfoods Industry: Directory & Databook. p. 1. Form filled out by Richard Tory. ca. 1982. This is a 5-person collective. "We have a small, light catering business and wholesale sandwich business selling locally to natural food stores, etc. Potato salad, tofu dips, tempeh sandwiches, whole wheat tofu pizza, and natural pastries." The tofu contains nigari and organically grown soybeans. Soysage is made with nutritional yeast, safflower oil, honey and spices in an okara base. Egg-less salad made with tofu and eggless mayonnaise.

3639. Soyfoods Center; Soycrafters Assn. of North America. 1981. Per capita use of soyfoods grows to nearly 9 lbs. in U.S. *Vegetarian Times* No. 52. Dec. p. 6.
• ***Summary:*** Based on a Sept. 1981 news release copyrighted by the Soyfoods Center and the Soycrafters Assoc. of North America, this summary of a market study gives for each major soyfood product the number of manufacturers in the USA, Canada, and worldwide. The tons/year of raw soybeans used. And (in the USA only) the tons of food produced, wholesale value, retail value, and number of employees.

In the USA, the number of manufacturers, tons of product produced, and retail value in million dollars are as follows for low technology, traditional: Tofu and tofu products (154, 22,700, $50.4), tempeh (32, 494, $1.78), soymilk and soymilk products (14, 148,000, $118.0), soy sauce, shoyu & tamari (15, 54,837, $203.0), soynuts and soynut butter (12, 2,750, $4.6), miso (10, 2,000, $4.8), soy sprouts (5, 360, $0.25), etc. Subtotals for low-tech (284 manufacturers, 231,305 tons produced, $392.25 retail value).

For high-technology, modern: Soy flour & grits, defatted (12, 400,000, $190.4), textured, extruded soy flour (TSP/TVP) (2, 200,000, $179.2), soy protein concentrates (3, 45,000, $56.7), soy protein isolates (3, 45,000, $126.0), meat analogs (secondary products) (6, 20,000, $55,000). Subtotals for high-tech (26 manufacturers, 710,000 tons produced, $615.6 retail value). Total low and high tech: 310 manufacturers, 941,305 tons produced, and $1,007.85 million dollars.

The news release reads: "Americans are consuming an average of nearly nine pounds of foods made from soybeans per year, according to the Soycrafters Association of North America and the Soyfoods Center. The largest growth is occurring in the consumption of tofu (or beancurd) and tempeh (fermented patties).

"Traditional soyfoods, which include tofu, tempeh, soymilk, miso, soy sprouts, soynuts and soy sauce, account for $390.7 million in annual retail sales. High technology, modern soy protein foods, which include soy flour and grits, soy protein isolates and concentrates, extruded soy flour and meat analogs, account for $615.6 million in annual sales. This amounts to nearly $1 billion worth of soy products consumed by Americans per year.

"Per capita consumption of the low technology foods is now at 2.13 lbs. per year, while consumption of the high technology foods, which are generally used as ingredients in other products, is now at 6.45 lbs. These figures represent a steady growth in consumption of the large soybean crop produced annually; the greatest part of the crop goes to feed livestock. In 1980, for example, only 2.1% of the 60 million ton crop was used in America for food, which is believed to be the highest percentage ever; 57% of that crop, however, was exported.

"The director of the Soycrafters Association, Richard Leviton, and William Shurtleff of the Soyfoods Center have forecast the following trends for soyfoods use in the United States over the next five years:

"A steady growth in the use of tofu and tempeh by non-vegetarians.

"Growth in the use of convenient, prepared foods made

from soyfoods.

"The Big Tempeh Boom" an upsurge in the use of fermented soy patties.

"Large corporations will start marketing secondary soyfoods (such as dips and dressings) via national advertising.

Also published in *New Age* (Jan. 1982, p. 17) under the title "Tofu Takes Over."

3640. Tsuchiya, Kanji. 1981. Processing equipment for soy milk. English translation of a Japanese article in Beverage Japan (31 Dec. 1981, p. 18-23). 13 p. Unpublished manuscript.
• ***Summary:*** An excellent technical work by one of Japan's leading authorities on soymilk product and equipment, who is also Marusan's chief soymilk technician. Contents: 1. Worldwide interest in health foods and the soymilk boom. 2. The basic way of thinking about processing soymilk. 3. Processing and equipment. Flowcharts, ingredients, dehulling and enzyme inactivation (dry heating, soaking in hot water, grinding in hot water, grinding in water without oxygen, intercepting air with nitrogen, steaming), grinding and separation, formulation and sterilization, deodorization and homogenization. Address: Seikensha Co., Midori 4-18-2, Sumida-ku, Tokyo. Phone: 03-634-2061.

3641. Wolf, Walter J. 1981. Foreign travel report. Peoria, Illinois. 4 p. Dec. 18. Typed, with signature.
• ***Summary:*** "Country visited: Japan, Oct. 10-21, 1981. Purpose of trip: (a) Participate in the U.S./Japan Cooperative Program in Natural Resources (UJNR), Protein Resources Panel Meeting; (b) participate in UJNR panel study tour; (c) visit research institutes and industrial laboratories working on soybean proteins; and (d) participate in symposium on soy protein foods. Summary: The UJNR meeting in Tsukuba included 10 presentations by seven Japanese research workers from six different research institutes and three U.S. scientists from three USDA regional research centers. Topics discussed included... (f) single cell protein production from soybean cooking waste waters; (g) soybean storage; (h) food uses of soy protein; and (i) nutritional evaluation of soy proteins. The study tour included a visit to a miso and soy milk factory which was impressive and confirms earlier reports that soy milk has become very popular in Japan in the past 5 years. Visits to industrial laboratories revealed that soy proteins are now used in a large variety of foods. Flavor is one of the last problems holding back development of soy protein-based foods."

The UJNR program, initiated in 1964, plays an important role in implementing the policy of scientific cooperation between the United States and Japan. The protein panel was organized in 1968, and there are now 17 different panels in UJNR.

Dr. Ebine reported that about 790,000 metric tons (29 million bushels) of soybeans are used in traditional Japanese foods–miso, natto, tofu. Organizations visited included Okazaki Marusan Co. Ltd (makes miso, soy milk, and soy yogurt), Research Institute for Food Science of Kyoto University at Uji, Nisshin Oil Mills Ltd., Ajinomoto Co., Inc., Fujipurina Protein Ltd. (Fuji Oil Co. has a joint venture with Ralston Purina Co.). Address: Leader, Meal Products Research, Oilseed Crops Lab., Northern Regional Research Center, Peoria, Illinois 61604.

3642. White, Arthur L. 1981-1986. Biography of Ellen G. White. 6 vols. Washington, DC, and Hagerstown, Maryland: Review and Herald Publishing Assoc. Illust. 23 cm. *
• ***Summary:*** This biography, considered the best to date of Ellen G. White, was written by her grandson, Arthur. The titles of the individual volumes are:

(1) "The Early Years, 1827-1862."
(2) "The Progressive Years, 1862-1876."
(3) "The Lonely Years, 1876-1891."
(4) "The Australian Years, 1891-1900."
(5) "The Early Elmshaven Years, 1900-1905."
(6) "The Later Elmshaven Years, 1905-1915."

Each of these volumes has an index, which helps locate materials. The Health Reform visions are mentioned in volume 2 on pages 11, 16-22 (3rd. vision), 71, 73, 80-81,83, and 111.

Ellen apparently never used the word "gluten" in her own writings. This word "gluten" appears in connection with her, in her biography, Vol. 4, p. 433. Her biographer quotes an article from the *Union Conference Record* (a Seventh-day Adventist publication in Australia) of 1 Dec. 1899, to show what products are being made by the Sanitarium Food Co. in Australia. "They are now manufacturing granose biscuits, granose flakes, bromose, nuttose, antiseptic tablets [charcoal tablets], granola, caramel cereal [grain coffee], nut butter, wheatmeal biscuits, gluten biscuits, and gluten meal."

3643. **Product Name:** Dixon (Bottled Soymilk).
Manufacturer's Name: Amoy Canning Corp. (Singapore) Ltd.
Manufacturer's Address: 254 Bukit Timah Rd, 13 km, Singapore.
Date of Introduction: 1981.
Wt/Vol., Packaging, Price: Bottle.
New Product–Documentation: Soya Bluebook. 1981. p. 61. "Soy beverage." Color photo sent by Anders Lindner of STS. 1987. Nov. 14. 285 ml bottle. Red letters on white background.

3644. **Product Name:** Bonsoy (Soymilk).
Manufacturer's Name: Bean Supreme (Importer). Made in Japan by Marusan. Imported via Muso Shokuhin.
Manufacturer's Address: New Zealand.
Date of Introduction: 1981.

Ingredients: Water, soybeans, pearl barley, kombu (sea vegetable), barley malt.
New Product–Documentation: Talk with Yuko Okada. 1992. July 16. Muso first exported Bonsoy soymilk to Bean Supreme in about 1981. This soymilk was packaged in a foil retort pouch.

April 2010. There was a national food recall of Bonsoy because of its high iodine content, which was believed to cause thyroid problems.

3645. **Product Name:** Soy Beverages [Raspberry, Banana, Strawberry].
Manufacturer's Name: British Arkady Co. Ltd.
Manufacturer's Address: Old Trafford, Manchester, M16 0NJ, England.
Date of Introduction: 1981.
Ingredients: Incl. soy protein isolates.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1981. March 4. Soya Bluebook. 1982. p. 63; 1986. p. 102. Now a subsidiary of Archer Daniels Midland Co.

Richard Leviton. 1983. Nov. p. 22. At Anuga, British Arkady received lots of interest in their isolate soymilk. It was sold in Tetra Pak in raspberry, banana, and strawberry flavors.

3646. **Product Name:** Soy Beverage.
Manufacturer's Name: Carnation Company (M) Sdn. Berhad.
Manufacturer's Address: 27, Jalan Telawi Tiga, Bungsar Baru, Kuala Lumpur, Malaysia.
Date of Introduction: 1981.
New Product–Documentation: Soya Bluebook. 1981. p. 61.

3647. **Product Name:** Soy Beverage.
Manufacturer's Name: Carnation Company (Singapore) Pte Ltd. Subsidiary of Carnation International, Los Angeles.
Date of Introduction: 1981.
New Product–Documentation: Soya Bluebook. 1981. p. 61.

3648. **Product Name:** Soy Beverage.
Manufacturer's Name: Food Specialties Singapore (Pte) Ltd. Affiliate of Nestlé Companies.
Manufacturer's Address: Singapore.
Date of Introduction: 1981.
New Product–Documentation: Soya Bluebook. 1981. p. 61.

3649. **Product Name:** F&N (Soymilk).
Manufacturer's Name: Fraser & Neave (Singapore) Pte, Ltd., Food Div.
Manufacturer's Address: 253, Pandan Loop, Singapore 0512, Singapore.
Date of Introduction: 1981.
Wt/Vol., Packaging, Price: Glass bottle.
New Product–Documentation: Soya Bluebook. 1981. p. 61. No brand name given. Address: Singapore 1024. Color Photo from STS. 1987. 285 ml glass bottle with red lettering on white circles.

3650. **Product Name:** [Naga-Sonda (Liquid Soy Beverage in Tetra Pak)].
Foreign Name: Naga-Sonda.
Manufacturer's Name: Galactina Ltd.
Manufacturer's Address: Birkenwej 1-6, CH-3123 Belp, Switzerland. Phone: 031-81-1111.
Date of Introduction: 1981.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Letter from Peter Speck. 1988. March 11. Gives introduction date. This product does not contain soy protein isolates.

3651. **Product Name:** Granose Soya Dessert (Vanilla, Chocolate, Strawberry, or Banana).
Manufacturer's Name: Granose Foods Ltd. (Marketer). Made in Germany by DE-VAU-GE.
Manufacturer's Address: Stanborough Park, Watford, Herts., WD2 6JR, England.
Date of Introduction: 1981.
New Product–Documentation: Lindner. 1987. The World Soymilk Market.

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by DE-VAU-GE, was introduced in 1981 in Vanilla, Chocolate, Strawberry, and Banana flavors. The desserts were made by Alpro in Feb. 1984.

Form filled out by Philippe Vandemoortele of Alpro. 1991. Sept. 4. The desserts were first made for Granose by Alpro in Feb. 1984 in Vanilla and Chocolate flavors.

3652. **Product Name:** Golden Archer Soya Plantmilk Custard (Non-Dairy Eggless Custard Made from Soya Flour).
Manufacturer's Name: Itona Products Ltd.
Manufacturer's Address: Leyland Mill Lane, Wigan WN1 2SB, England.
Date of Introduction: 1981.
Ingredients: Unrefined brown sugar, food starch, soya flour, vegetable oil, sodium phosphate, natural flavour and colour.
Wt/Vol., Packaging, Price: 14.5 fluid oz (412 cc). Can.
How Stored: Shelf stable.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1981. Jan. 22. Label. 1981,

undated. "Itona Health Food. Made with 'Beanmilk.' A non animal Plantmilk made into a custard. All the goodness of soya plus the wholesome food value of starch. For use instead of milk custard by vegans, vegetarians, as a health food and by people who are opposed to animal cruelty. Also suitable for people who are allergic to cow's milk." Itona Products Ltd. retail price list. 1980-81. Soya Bluebook. 1985. p. 102. Note: This flour was probably made by British Arkady Co.

3653. **Product Name:** Granny Ann Noot Bar.
Manufacturer's Name: Itona Products Ltd.
Manufacturer's Address: Leyland Mill Lane, Wigan WN1 2SB, England.
Date of Introduction: 1981.
Ingredients: Raw sugar, vegetable fat, roasted soya beans, soya flour [used to make beanmilk], cocoa, lecithin, natural flavour.
Wt/Vol., Packaging, Price: 80 gm.
How Stored: Shelf stable.
New Product–Documentation: Itona Products Ltd. retail price list. 1980-81. Manufacturer's catalog. 1980. "Itona Health Foods take the biscuit." A black-and-white photo shows the label and ingredients. "With Beanmilk. Completely Natural. A tasty and nutritious snack free from animal or synthetic additives. Roasted soya beans in a raw sugar, cocoa, plant milk, and vegetable fat base."

3654. **Product Name:** Granny Ann Beanmilk Chunky Bar.
Manufacturer's Name: Itona Products Ltd.
Manufacturer's Address: Leyland Mill Lane, Wigan WN1 2SB, England.
Date of Introduction: 1981.
Ingredients: Raw sugar, vegetable fat, soya flour, cocoa, lecithin, natural flavour.
Wt/Vol., Packaging, Price: 80 gm.
How Stored: Shelf stable.
New Product–Documentation: Manufacturer's catalog. 1980. "Itona Health Foods take the biscuit." A black-and-white photo shows the label and ingredients. "Completely Natural. A tasty and nutritious snack free from animal or synthetic additives–made from a blend of raw sugar, cocoa, plantmilk in a vegetable fat base."

3655. Kleinman, R.E.; Bloch, K.J.; Walker, W.A. 1981. Gut induced anaphylaxis and uptake of a bystander protein: An amplification of anaphylactic sensitivity (Abstract). *Pediatric Research* 15:598. (Abst. #936). *

3656. **Product Name:** Mrs. Cheng's Soy Beverages.
Manufacturer's Name: Mrs. Cheng's Soybean Products Inc.
Manufacturer's Address: 1829 E. Palolo Ave., Honolulu, Oahu, HI 96816.
Date of Introduction: 1981.
New Product–Documentation: Honolulu City Directory. 1981. p. 275. Mrs. Cheng's Soy Bean Products. 1829 E. Palolo Ave., Honolulu. Soya Bluebook. 1983. p. 62. 1987. Listed in Honolulu City Directories up to present.

3657. **Product Name:** [Nikko-Mame Defatted Soybean Flakes for Shoyu and Miso, Sakae-Mame Soy Flour for Tofu, ProtFlour Soy Flour for Food and Milk Replacer, Nikoprotein High Protein for Food].
Manufacturer's Name: Nihon Koyu Co. Ltd.
Manufacturer's Address: No. 32 Bungocho, Higashi-ku, Osaka, Japan.
Date of Introduction: 1981.
New Product–Documentation: Soya Bluebook. 1981. p. 63.

3658. **Product Name:** [Violeta Powdered Soymilk].
Manufacturer's Name: Olvebra SA–Industria e Comercio de Oleos Vegetais.
Manufacturer's Address: Praca Osvaldo Cruz, No. 15-16*, Andar, Porto Alegre, RGS, Brazil.
Date of Introduction: 1981.
New Product–Documentation: Soya Bluebook. 1981. p. 60.

3659. **Product Name:** Plamil Soya Plantmilk (Concentrated).
Manufacturer's Name: Plamil Foods Ltd.
Manufacturer's Address: Plamil House, Bowles Well Gardens, Folkestone, Kent CT19 6PQ, England.
Date of Introduction: 1981.
Ingredients: Soya protein [isolate], sunflower oil, raw sugar, calcium phosphate, sea salt, soya lecithin, carrageen extract [carrageenan].
Wt/Vol., Packaging, Price: 410 ml (14.4 fluid oz) can.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1981. Jan. 22. Label 1981. 9.5 by 4 inches (see next page). Paper on can. Red, blue, yellow and white on green. Picture of table with pouring can and pitcher of Soya Plantmilk into glass, cake, cereal, cup and teapot. "Suitable for those allergic to cows milk. High in polyunsaturates. Free from animal fats. Simply dilute with equal volume of water." Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. "Suitable for those allergic to cows milk."

Color photo on cover of Journal of the American Oil Chemists' Society. Dec. 1984. The product name is now Plamil Soya Milk: Concentrated. Red, white, blue, and green. On the left side of the front panel is an illustration (line drawing) showing the contents of a Tetra Brik Aseptic carton of the product being poured over strawberries. The text reads: "Use concentrated as a dessert dressing." The

right side shows the same contents plus a measuring cup of water being poured into a glass. The text reads: "Dilute with equal volume of water to replace cow's milk."

Ad in The Vegan. 1987. p. 6. "Sugar free. Concentrated. Excellent source of protein. 100% non-dairy. Salt free." Its counterpart is "Ready to Use."

Ad (half page, black ad white) in The Vegan. 1989. Spring. p. 28. "Did you know that vitamin B-12 is far more easily assimilated from Plamil Soya Milk than from a tablet... and that a survey taken from medical reports by our half-marathon contestants as many consume Plamil Soya Milk because of its vitamin D-2 content than for any other nutrient." Note: This was the earliest known liquid soymilk made in Europe for adults that was fortified with calcium.

3660. **Product Name:** Mum's Soybean Drink (Soymilk).
Manufacturer's Name: Sam Ward Co. (Importer). Nishimoto Trading Co. (Distributor). Made in Japan.
Manufacturer's Address: Los Angeles, California (Both).
Date of Introduction: 1981.
Ingredients: Water, soy beans, maltose, corn oil, salt.
Wt/Vol., Packaging, Price: 6.7 fluid oz (200 ml).
How Stored: Refrigerated.
New Product–Documentation: Label. 1981, dated. 2.5 by 3.25 inches by 1.5 wide. Paper carton. Red, blue, green and white. Drawing of glass with drink and straw. Information on label written in both English and Japanese.

3661. Schwandt, P.; Richter, W.O.; Weisweiler, P. 1981. Soybean protein and serum cholesterol. *Atherosclerosis* 40:371-72. *

3662. **Product Name:** [Soymilk].
Manufacturer's Name: Seventh-day Adventist Food Company in Colombia.
Manufacturer's Address: Colombia.
Date of Introduction: 1981.
New Product–Documentation: Shurtleff. 1981. Overseas Adventist Food Companies. p. 8.

3663. Shurtleff, William. 1981. Tofu: Eating healthy in community [How to make tofu and/or soymilk on a community scale]. *Communities–A Journal of Cooperative Living* (*Oroville, California*) p. 17-23.
• ***Summary:*** Gives details of and illustrations show: Processes and equipment used for making tofu and/or soymilk on a community scale at the Farallones Institute (Dillon Beach, California), Ramagiri–Blue Mountain Center of Meditation (Petaluma, California), Sunbow Farm (Corvallis, Oregon), and The Farm (Summertown, Tennessee). Address: Soyfoods Center, P.O. Box 234, Lafayette, California.

3664. **Product Name:** Tempeh Salad.
Manufacturer's Name: Soy Plant (The).
Manufacturer's Address: 711 Airport Blvd., Suite #1, Ann Arbor, Michigan 48104. Phone: 313-663-8638.
Date of Introduction: 1981.
Ingredients: Tempeh (organic soybeans, Rhizopus culture, vinegar), simmered in shoyu & water, Soynaise (soymilk, oil, vinegar, spices), carrots, celery, green onions, parsley, basil.
Wt/Vol., Packaging, Price: 12 oz. plastic tub.
How Stored: Refrigerated.
New Product–Documentation: Label in Soy Plant scrapbook. 1980. 2.75 by 2.5 inches. Black on white.

3665. **Product Name:** Soy Compound.
Manufacturer's Name: Soy Products of Australia Pty. Ltd.
Manufacturer's Address: 69 Power Road, Bayswater, VIC 3153, Australia. Phone: (03) 729-1738.
Date of Introduction: 1981.
Ingredients: 1995: Soy, lactose, malt.
Wt/Vol., Packaging, Price: 1 kg plastic bag.
How Stored: Store in a cool, dry, dark place.
New Product–Documentation: Letter from Paul Smith of Soy Products of Australia Pty. Ltd. 1981. This company makes Soy Compound (containing dry soymilk, whole soy flour, malt, and lactose). Letter from Paul Smith. 1995 April 1. p. 5. It appears that Soy Compound, as it is now known, evolved out of Malto-Soy Drink and Soy Milk Compound, both of which were launched in Sept. 1939; their lack of popularity was partly die to the poor quality and flavour of some of the imported soy used and there being no chocolate or roasted chicory added to mask the flavour.

3666. Tsuchiya, Kanji. 1981. Tônyû seizô no shin gijutsu to sôchi kara hôsô made [New technology and equipment for soymilk production, including packaging]. *Beverage Japan* 4(2):18-24. Translated as "Processing equipment for soy milk". [Jap; eng]
Address: Director, Malsan Food Co., Ltd., Tokyo, Japan.

3667. Wood, Brian J.B.; Hounam, Laura. 1981. Dairy products from soy beans. In: 1981. Proceedings of Dairy Symposium at the Food Industries Exhibition, London. See p. 19-23. [16 ref]
• ***Summary:*** Contents: Introduction. History (of soy milk). Preparation and nature of traditional soy-milk and tofu. Practical aspects of soy milk and tofu. Products derived from tofu (salted tofu, smoked tofu, spiced and flavored tofu, tofu burgers, Sufu {resembling Camembert cheese}). Economic considerations. Address: 1. Dep. of Applied Microbiology; 2. Centre for Industrial Innovation. Both: Univ. of Strathclyde, Glasgow, Scotland.

3668. **Product Name:** [Yakult Soymilk (Dairylike)].
Foreign Name: Yakuruto Rakkumii.
Manufacturer's Name: Yakult (Yakuruto Honsha).
Manufacturer's Address: Japan.
Date of Introduction: 1981.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Toyo Shinpo (Soyfoods News). 1982. July 21. "The soymilk industry and market in Japan." States that Yakuruto first made commercial soymilk in Japan in 1981.

Label, Tetra Brik carton (see next page), 200 ml. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center; Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64.

Note: In 1971 in Japan more than 17 million bottles a day of a beverage containing live lactobacilli were consumed. Most of these were made by Yakuruto [Yakult] (Yakult Institute for Microbiological Research, Kunitachi-shi, Tokyo, Japan).

3669. **Product Name:** Yeo's Soy Beverage.
Manufacturer's Name: Yeo Hiap Seng (Malaysia) Berhad. Affiliate of Yeo Hiap Seng, Singapore.
Manufacturer's Address: No. 7, Jalan Tandang, P.O. Box 229, Petaling Jaya, Selangor, Malaysia.
Date of Introduction: 1981.
New Product–Documentation: Soya Bluebook. 1981. p. 61.

Letter from Consulate General of Malaysia. (Los

Angeles, California). 1982. Aug. 3. One of the three soymilk manufacturers in Malaysia is: Yeo Hiap Seng (M) Bhd., 7, Jalan Tandang, P.O. Box 229, Petaling Jaya, Selangor, Malaysia. Phone: 03-573733. Soya Bluebook. 1986. p. 103. Soya Bluebook Plus. 1997. p. 156. Yeo Hiap Seng (M) BHD is still located at 7 Jalan Tandang, Petaling Jaya 46050, Selangor, Malaysia. Phone: +60 03 571-3733. Fax: +60 03 791-3509.

3670. Altman, Nathaniel. 1981. Nathaniel Altman's total vegetarian cooking. New Canaan, Connecticut: Keats Publishing, Inc. 229 p. Index. 18 cm. Series: A Pivot Original Health Book. [180 ref]

• ***Summary:*** The author was born in 1948. The first page of the book begins: "It's not just spinach. The vegetarian way of eating is incredibly varied, employing such exotic, appealing foods as calcium-rich hijiki, tempeh from Indonesia, and tofu."

The glossary (p. 139-44) describes: Lecithin, milk (soy), miso, soybeans, soy grits, sprouts (incl. soy), tamari, tempeh, tofu, and textured vegetable protein (TVP).

Chapter 11, titled "A vegetarian diet can save you money" (p. 146-51) mentions soybeans and soyfoods (incl. soy milk powder, dry tofu [probably dried-frozen tofu], soy sprouts, soy flour, soy sauce, tofu) repeatedly as low-cost sources of protein.

The book has several very interesting appendixes: C. The vegetarian bookshelf (p. 208-10). D. Vegetarian contacts–Some vegetarian societies and publications (p. 211-12). Bibliography by chapter (p. 213-20).

3671. Aoki, Hiroshi. 1981. Misoshiru sanbai kenkô-hô [Three bowls of miso soup daily for good health]. Tokyo: Goma Books. 220 p. Illust. 20 cm. [Jap]

• ***Summary:*** Miso soups and health recipes. He worked for food companies, including Ajinomoto, for 30 years on development of new soy protein foods. A popularizing book. Discusses Hirayama.

Contents: Preface. Why are miso soups and soyfoods appreciated again now? 1. The many benefits from eating miso soups and soyfoods every day. 2. The Japanese people have forgotten the goodness of miso soups and soyfoods. 3. Healthy soyfoods: From miso to soymilk (miso, natto, shoyu, tofu, deep-fried tofu pouches, dried-frozen tofu, yuba, okara, kinako {roasted whole soy flour}, soymilk, soy oil). 4. Miso soups and soybean cooking make a healthy body. Soybean recipes which are suited to people in the younger generation. Mother's favorite recipes are good for health, too. Appendix. Maps of Japan showing areas of miso soups and natto.

3672. Bragg, Paul C.; Bragg, Patricia. 1981. Hi protein vegetarian health recipes: With history and reasons. Santa Barbara, California: Health Science. 184 p. Illust. No index. 21 cm.

• ***Summary:*** This book is quite similar to the 1975 edition, however one word in the title has been changed (to vegetarian meatless from meatless), and small changes have been made on several pages following Paul Bragg's death in Dec. 1976. Nevertheless, the book gives the strong impression that Paul Bragg is still alive. Whereas he used to advocate moderate amounts of meat and fish in the diet, he now advocates a vegetarian diet [which is becoming increasingly popular, especially among young people, in the USA]. On the book's cover these words appear in large bold letters: "Vegetarian. Salt free. Sugar free."

We will discuss here only the changes that have been made in the 1980 edition. The copyright page states that this is the fifth printing. The address of Health Science, the

publisher, has changed to Box 7, Santa Barbara, California 93102–from Hot Springs, California.

At the bottom of the next page a message has been added, which starts: "Our sincere blessings to you dear friends, who make out lives so worthwhile and fulfilled by reading our teachings on natural living as our Creator laid down for all of us to follow... Our prayers reach out to you for the best in health and happiness..." Signed Paul C. Bragg and Patricia Bragg.

On the page facing page 1, under the large photo of Bragg, is a different caption: "Paul C. Bragg in Hawaii, where he spends much of his time during the latter years of his vigorous, long life (almost a century!)." Describes how he writes, teaches, and exercise each day. Below that is "An old English Prayer," which begins: "Give us, Lord, a bit of sun, / A bit of work and a bit of fun. / "... Our daily whole grain bread and a bit of nut butter."

On page 66, at the bottom of the full-page ad for Bragg Liquid Aminos, readers are directed to order from a new address: Live Food Products, Box 7, Santa Barbara, CA 93102. "For 8 ounces of Bragg New Super Concentrated Liquid Aminos send $3.50 which covers postage and handling." Note: In 1975 the price was $2.99 for 16 ounces of "Bragg Liquid Aminos."

On page 81, an illustration of a pot and vegetables has been replaced by an illustration of Ponce de Leon, with a message about how he searched for the fountain of youth. "If he had only known–it's within us." There is also a new quotation from Patricia Bragg which states: "The more natural food you eat, the more radiant health you will enjoy and you will be better able to promote the higher life of love and brotherhood."

On page 157, the section titled "Sickness is expensive," has been updated (new statistics) and slightly expanded.

On page 160, a new photo, titled "When you are healthy–You are happy! shows the members of the "Longer Life, Health and Happiness Club" at Fort DeRussy on Waikiki Beach, Honolulu, Hawaii.

The end of the book (after a blank page titled "My favorite recipes") contains: Advertisements: (1) Send for important free health bulletins. (2) Bragg live longer, live stronger self-improvement library (list of 25 books by Bragg, with prices). From the authors. Brief biography of Patricia Bragg, Ph.D., Nutritionist, beauty and health consultant. Advisor to world leaders, glamorous Hollywood stars, singers, dancers, athletes. Lecturer and author (She says she is the daughter of Paul C. Bragg. An accomplished musician, dancer, tennis player, swimmer, and mountain climber. The youngest woman to ever have been granted a U.S. patent. Graduate of the University of California. Lists her famous clients). Biography of Paul C. Bragg. Address: 1. N.D., Ph.D., Life Extension Specialist; 2. Beauty and diet expert. Both: Santa Barbara, California, and Honolulu, Hawaii.

3673. Cadwell, Jane. 1981. O Livro da Soja [The book of soya]. Sao Paulo, Brazil: Editora Ground Ltda. 79 p. Illust. Index. 21 cm. [Por]

• ***Summary:*** Contents: Preface. Introduction. The soybean. Soybeans and health (nutritional composition). Our daily foods and our health. Auxiliary foods and ingredients (incl. miso). Kitchen utensils. Recipes: Whole soybeans (incl. cooked ground soybeans, green vegetable soybeans {*Soja fresca* (*verde*)}, soynuts {*castanhas de soja*}) Soymilk (incl. homemade using the Cornell method, soymilk yogurt), okara, tofu (incl. homemade, tofu miso soup, cakes, pies, baby foods).

Jane writes in a letter dated 5 July 1982 of her book: "My book is the first one [published in Brazil] exclusively on soyfoods. The intent was to show people all the varieties of things that they could make starting principally from whole dry soybeans. Consequently I did not include the topics of miso, soyflour, and textured proteins. I began writing the book as a result of a government campaign last year to get people to use soybeans in place of regular beans. As you probably know, rice and beans is really the principal dish at the noon and evening meals. There was a shortage of the regular beans and the price was very high... Consequently the government campaign to introduce soybeans. They were ridiculously cheap, yet there was hardly any information on how to use them. Thus–my book... Soybeans are now available in many supermarkets and well as health food stores and oriental shops." Address: Brazil.

3674. Clement, Jean-Michel. 1981. Larousse agricole [Larousse agricole]. Paris: Larousse. [viii + 1208 p. See p. 1045-48. [Fre]

• ***Summary:*** Contents of the section titled "Soja, soya:" Introduction. Botany. Biology. Cultivation: Crop rotation, fertilizer, varieties, planting, chemical weed control, harvest, chlorosis and plant diseases. Utilization: Soymilk, soy oil and meal. Economics.

An very interesting map (p. 1047) shows France with an outline of each department. Superimposed in 3 different shades are three zones (from north to south): (1) Where commercial soybean cultivation is not possible. (2) Where soybean cultivation is problematic at present. (3) When soybean cultivation is normally possible–in the southern one-third of France between about 42 and 46 degrees north latitude, which is about the latitude of Michigan, Wisconsin, and Minnesota in the USA. Address: France.

3675. Cottrell, Edyth Young. 1981. Mrs. Cottrell's stretching-the-food-dollar cookbook. Santa Barbara, California: Woodbridge Press. 127 p. Recipe index. 22 cm.

• ***Summary:*** A natural foods, vegetarian cookbook. Incorporates *Stretching the Food Dollar* and *Supplement to Stretching the Food Dollar.* A color photo on the cover shows the author.

Page 15 discusses soy milk, soy milk powder, soy flour, and nut milk. Many recipes (especially recipes for breads and other baked goods) call for the use of these products. Soy-related recipes include: Basic wheat-soy bread I & II (with soy flour, p. 21-22). Golden triple-rich bread (with soy flour and soy milk, p. 23). Rice-soy bread (with soy flour p. 27). Soy-nut bread (with soy flour and ground cooked soy beans, p. 30). Soy mayonnaise (with soy milk powder, p. 71). Savory soy loaf or patties (with soy sprouts, p. 80). How to sprout soybeans (p. 89). Soy sauce (p. 90). Address: Formerly, Research Nutritionist, Loma Linda Univ., Loma Linda, California; As of March 1993, living in Spokane, Washington.

3676. Duthie, Iain F. 1981. Protein utilisation in feeds and milk replacers. In: D.W. Stanley, E.D. Murray, and D.H. Lees, eds. 1981. Utilization of Protein Resources. Westport, CT: Food & Nutrition Press, Inc. 403 p. See p. 303-27. Chap. 16. [53* ref]
• ***Summary:*** Page 316 notes under Milk Replacers: "During the first few weeks of life, amylolytic enzyme activity in the calf's digestive system is low and it develops slowly, and so the calf is unable to digest and tolerate natural starches, or only small quantities of starch in the diet, until ruminant function takes over from monogastric digestive function at about 6 to 8 weeks of age... It was only comparatively recently, in the mid-1950's, that it was found possible to rear calves on milk substitutes based on dried milk products, except for access to colostrum for the first few days of life."

Soy protein concentrates give considerably better results than soybean flour in calf feeding. Toasted concentrates work better than untoasted ones. "Reports from the field suggest that users are not particularly happy with the performance of soybean products when substituting for all or a major part of dried skim milk, tending to restrict levels of incorporation according to the type of product employed." Address: Consultant, Cobham, Surrey, KT11 2QW, England.

3677. Fomon, S.J.; Ziegler, E.E.; Nelson, S.E.; Edwards, B.B. 1981. Cow milk feeding in infancy: Gastro-intestinal blood loss and iron nutritional status. *J. of Pediatrics* 98:540-45. *

3678. Forster, Dorothy. 1981. Cooking with Tvp: Exciting, nutritious and economic dishes using textured soya protein. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 96 p. Recipe index. 18 cm.
• ***Summary:*** Contents: Introduction. 1. Soups. 2. Sea food favorites [vegetarian, with dulse often used as a seasoning]. 3. Main meals with mince. 4. Main meals with chiplets. 5. Main meals with chunks. 6. Main meals with slices (or chunks). 7. Some dishes with soya grits.

Tvp is made from de-fatted soya flour which is extruded through a die, under pressure, to make the different sizes of particles. "There are several varieties and we suggest you experiment until you find the type you are happy with... When reconstituted, Tvp can absorb twice its own weight in liquid. Thus 150g (5 oz) will be equal 450g (1 lb) of meat, when soaked."

Soya grits (with 2 recipes) and soya milk are also discussed. "There are several makes of soya milk on the market in either liquid or powder form as a useful alternative to milk." Miso is mentioned as a seasoning for TVP.

Suppliers of Tvp in the UK are: Lotus Foods Ltd. in London (formed by the author, Dorothy Foster), Direct Foods Limited in Petersfield, Hampshire (Proto-veg Tvp), Itona Products Ltd. in Wigan, Lancs., Life and Health Foods in Norwich, and Marigold Health Foods Ltd. in London (Vitpro Tvp). Address: England.

3679. Hoshijo, Kathy. 1981. Kathy cooks... naturally. The Self Sufficiency Assoc., P.O. Box 1122, Glendale, CA 91209. 497 p. Illust. Index. 28 cm.
• ***Summary:*** This excellent natural-foods, vegetarian cookbook, written with a nice balance of heart and mind, contains over 1,000 recipes–many written from an Hawaiian viewpoint. The lovely and talented author is the hostess of a popular TV series "Kathy's Kitchen." In the long chapter titled "Soybeans" (p. 349-92) is an introduction to the nutritional value of soybeans and soyfoods, plus many recipes for using and making the following at home: Whole dry soybeans (often cooked and mashed; 13 recipes), soy nuts (deep-fried or dry roasted), kinako (roasted soybean flour; homemade + 1 recipe), soy milk (homemade + 19 recipes), yuba (homemade + 11 recipes), okara (15 recipes), tofu (homemade + 50 recipes), frozen tofu ("Homemade TVP" + 7 recipes), miso (18 recipes). Address: Self-Sufficiency Assoc., 2525 South King St., Honolulu, Hawaii 96826, or P.O. Box 1122, Glendale, California 91209.

3680. Jaffrey, Madhur. 1981. Madhur Jaffrey's World-of-the-East vegetarian cookery. New York, NY: Alfred A. Knopf, Inc. 461 p. Illust. by Susan Gaber. Index. 20 x 20 cm. A second edition was published in 1983 in London by J. Cape.
• ***Summary:*** The Indian woman author of this creative book presents 21 recipes for bean curd (tofu), 7 for tempeh, and some for yuba and miso. Green soy beans with sauce (p. 7). Cabbage with miso (p. 15). Eggplant slices with white miso (p. 22-23). Fresh soy beans, steamed (p. 57). Spinach with fermented bean curd (p. 59). Stuffed yellow squash (with yuba, p. 62-64). Pecel (Vegetable salad with spicy peanut sauce, plus tofu and tempeh; p. 73-74). Tempura (with tofu; p. 75-77). Soy bean sprouts (how to grow; p. 100). Soy-bean and mung-bean sprouts seasoned with sesame oil (p. 105). Tempeh, Fried tempeh, Fried, preseasoned tempeh, Sambal goreng tempeh kering (Sweet and sour tempeh), Tempeh cooked in coconut milk (p. 108-110). Thai fried rice (with Red Bean Curd or Nam Yee [red fermented tofu]; p. 150-51).

One chapter (p. 160-89) is titled "Soy milk, bean curd, and wheat gluten." Making your own soy milk. Making your own bean curd. Udofu (*Yudofu,* simmering bean curd with seasonings). Bean curd with watercress. Korean-style bean curd in a hot water bath. *Hiya-yakko* (Chilled bean curd). Bean curd with Chinese parsley. Bean curd with broccoli. Cabbage cooked with bean curd. Bean curd with a deliciously spicy sauce. Carrots and beans with bean curd dressing. Bean curd, mushrooms, and peanuts in hoisin sauce. Sautéed bean curd. Tofu dengaku (Toasted bean curd with a miso topping). Fried bean curd cubes, soy-bean sprouts sautéed with fried bean curd. Fried bean curd with a sweet-and-sour sauce. Fried bean curd cakes with a mustard surprise. Inari-zushi ("Bags" of fried bean curd stuffed with sushi rice). Pressed bean curd with cabbage. Salad of pressed bean curd, mung-bean sprouts, and agar-agar. How to make fried and baked wheat gluten balls (plus 5 gluten recipes). Buddha's delight (with yuba and fried bean curd).

Chawanmushi (Steamed savory custards, with tofu; p. 192-94). Omelette with bean curd (p. 198-99). Soy sauce eggs (p. 209). Paneer (milk cheese; p. 237-40). Hot or cold noodles with a soy-sauce dressing (p. 248). Noodles with a hot-and-sour bean sauce (p. 250). Vegetarian mee krob (Crisp noodles with pressed bean curd and eggs, from Thailand, p. 255-56). Noodles with quail eggs, mushrooms, spinach, and yuba (Japan; p. 256-57). Hoppers (yeast pancakes from Sri Lanka). Roti (Flat whole-wheat bread). Delicious stock made with soy-bean sprouts. Clear soup with enok mushrooms, bean curd skins [yuba], and spinach (p. 297). Clear soup with soft bean curd and celery cabbage (p. 298). Miso soup with bean curd (p. 307). Miso soup with carrots and mushrooms (p. 308). Fried, munchable soy beans [soynuts] (p. 321-22). Potato and tempeh patties (p. 339). Dipping sauces (with soy sauce; p. 357-59). Kombu relish (with soy sauce, p. 374). Shoyu daikon (White radish pickled in soy sauce). Ginger quick-pickled soy sauce (p. 375). Aomidaikon (Quick pickled small white radishes, with slightly sweet yellow miso; p. 377-78). Chinese-style jellied bean-curd sweetmeat with a peanut topping (p. 399-400).

General information (p. 418-36; lots on soyfoods, see: bean curd [regular, fried, fermented (Nam Yee), pressed, pressed seasoned], kochu chang [jang], miso, soy-, tempeh, yuba). Sources (of ingredients; p. 437-40). Address: New York City, NY.

3681. Jansen, G. Richard. 1981. Amino acid fortification. In: A.M. Altschul and H.L. Wilcke, eds. 1981. New Protein Foods. Vol. 4. Animal Protein Supplies, Part B. New York: Academic Press. xix + 378 p. See p. 161-204 Chap. VII. [259* ref]

• ***Summary:*** Contents: Introduction. Significance of protein quality. Measurement of protein quality. Protein-energy interactions: Animal studies, human studies–adults, human studies–pregnancy and lactation, human studies–children, protein quality–energy interactions, comment. Amino acid fortification: Supporting data: Methionine fortification, lysine fortification. Applications in animal nutrition: methionine fortification, lysine fortification. Applications in human nutrition: methionine fortification, lysine fortification. Discussion. Summary.

Fortification of soy-based infant formulas with methionine is now widely practiced in the United States. Although the published data suggests that this is not necessary (since excellent growth has been demonstrated with unfortified formulas), methionine does increase the protein quality of soy for the human infant, and therefore, is currently considered desirable. Address: Dep. of Food Science and Nutrition, Colorado State Univ., Fort Collins, Colorado 80523.

3682. Khair, Abul. 1981. Irrigated soybean production in Bangladesh. *INTSOY Series* No. 20. p. 151-54. W.H. Judy and J.A. Jackobs, eds. Irrigated Soybean Production in Arid and Semi-Arid Regions (College of Agric., Univ. of Illinois at Urbana-Champaign).

• ***Summary:*** "Because soybeans are so important as a food crop and as an oil crop, the government has launched a comprehensive program to promote the large-scale production of soybeans. The Bangladesh Coordinated Soybean Research Project was established in 1975 to conduct research on the introduction, cultivation, and use of soybeans in Bangladesh.

"Agricultural conditions in Bangladesh are ideal for producing soybeans throughout the year. Soybean yields compare well with the yields of other oil-producing crops. Not only soybean oil, but soybean cake, bread, and milk are very popular.

"Only a few hundred hectares of land are now under irrigated soybean cultivation. The Bangladesh Coordinated Soybean Research Project and the Mennonite Central Committee are trying to popularize soybeans in Bangladesh. It is expected that a large portion of cultivable land will be planted to soybeans by the Bangladesh Agricultural Development Corporation, the Directorate of Agriculture (Extension and Management), the Mennonite Central Committee, and the Bangladesh Coordinated Soybean Research Project. From the record of the last few years, the observation can be made that the average yield of soybeans in Bangladesh is very encouraging, ranging from two to three tons per hectare, depending on the management practices used and the season of production." Address: Asst. Prof., Dep. of Irrigation and Water Management, Bangladesh Agricultural Univ., Mymensingh, Bangladesh.

3683. Kloss, Jethro. 1981. Back to Eden: A human interest story of health and restoration to be found in herb, root, and bark. Loma Linda, California: Back to Eden Books. xxxii + 684 p. Illust. Index. 18 cm. Kloss Family Heirloom Edition.

• ***Summary:*** One of the most creative and original sources of early soyfoods recipes, which include "Soybean Cream" and "Soybean Ice Cream." This revised edition contains the complete original text of this classic work on healing herbs, home remedies, diet, and health–plus 16 pages of new family recollections by Jethro Kloss' daughter, son, and granddaughter at the beginning of the book, and 16 pages of previously unpublished photographs in the middle of the book. This edition was first copyrighted in 1972. The book has been published continuously by the Kloss family since 1946. A blurb on the cover of the 1981 printing (which retails for $2.95) states: "Two million copy bestseller. The complete original text [with the same page numbers]. New family additions!" A color illustration by Harry Anderson shows a man and woman seated by an idyllic river, surrounded by birds and animals, in the Garden of Eden. The rear cover states that this is "The heirloom authorized Kloss family edition."

The contents of the book, except for the new sections mentioned above, are identical to the original 1939 edition. But the recollections of Jethro Kloss by his children and granddaughter contain a wealth of new and interesting information. The recollections by his daughter Promise Kloss Moffett note: "My father was born on a large farm near Manitowac, Wisconsin, on April 27, 1863. The ninth of eleven children born to his pioneering parents lived a healthy and happy life in that primitive Indian country...

"When he was about twenty, he went to Florida and worked in the orange groves, finally owning a large grove at Deland. Later he attended school in Nebraska and then in Battle Creek, Michigan. While in Battle Creek he worked closely with the then revolutionary medical leadership of the world-renowned Battle Creek Sanitarium. He saw clearly the disastrous results of the use of dangerous drugs then prevalent in caring for the sick. He developed further his own philosophy and understanding of the laws of nature...

"He was married March 5, 1900 to Miss Carrie Stilson, who had trained as a Bible worker and teacher and had labored in a mission in Madison, Wisconsin and taught several terms of grade school. At that time he was a licensed minister in Wisconsin and they established their home at Rose Lawn. Two children were born to this union, Promise Joy and Paul, who died when only four weeks old of whooping cough. During these years, besides my father's ministerial work, my parent's operated a branch of the Battle Creek Sanitarium and also sold Battle Creek Sanitarium health foods. My mother died in July of 1905.

"In March, 1907, my father married Mrs. Amy Ponwith, a widow with a small daughter, Mabel. My father and step-mother owned and operated an attractive sanitarium in pleasant surroundings in St. Peter, Minnesota, which they named *The Home Sanitarium...* Their daughter Lucile was born here in St. Peter in 1908 and their son, Eden, in 1910.

"Next the Kloss's became interested in the self-supporting work being conducted in the south and visited some of the schools in North Carolina and Tennessee. About 1911 they sold the sanitarium in Minnesota and moved to Fountain Head, Tennessee, where their youngest daughter, Naomi, was born in 1913. Here they bought a 250 acre farm, built a large house and barn, and raised many kinds of fruits and vegetables...

"A later development in good health was his creation of a significant health food manufacturing operation in Amqui, Tennessee after receiving a call from them to take charge of their food factory...

"Before this factory was sold to the Nashville Agricultural Normal Institute he was shipping health foods all over the United States and Canada. It was during this time at this place that he originated many new health food recipes. This establishment later became a part of what has since become the well-known Madison College near Nashville, Tennessee.

"Our next move was to Brooke, Virginia where [in 1921] papa established a health food factory and retail market. Each of us children was pressed into service in one way or another with this family enterprise. At times we would be helping with some food experiment, or perhaps in typing and retyping the material that later became *Back to Eden,* which was many years in preparation. Jethro Kloss's son Eden was for many years his right hand helper. Whatever my father did in spreading the gospel of health and natural living, he did with all his might and trained his children in that same pattern of living...

"One of my favorite memories as a family is the daily worship hour when Father would gather his family of seven about him and we would sing hymns, read Bible verses around the circle, and pray together. He was a gentle but firm family leader.

"Although a strict disciplinarian, my father was warm-hearted and affectionate–devoted to his family. When he was away from home, we invariably received a letter from 'papa' every day...

"Eventually this health food factory at Brooke, Virginia was taken over by my step-sister, Mabel and her husband.

"The Kloss's then moved to Washington, D.C. and carried on his work of treating the sick, lecturing on health and a more intensive study of herbs and preparation of his book, *Back to Eden.* I still have in my possession an attractive menu... for a Demonstration Dinner he gave March 27, 1933, at the Dodge Hotel in Washington, D.C. The menu was completely vegetarian and included 'Sweetbreads a la Kloss.' The pumpkin pie and strawberry sundae were made with soy milk...

"*Back to Eden* was at last published in 1939, the fruition of much toil and sacrifice for many years by the entire Kloss family... [Jethro's] wife Amy [Pettis] Kloss died in 1944 at Fredericksburg, Virginia...

"In 1945 papa became acquainted with Mr. and Mrs.

Deloe Robert Hiatt on a trip to Madison, Tennessee. Together they found a property at Coalmont, Tennessee, where the Hiatts took over the promotion and publication of *Back to Eden...* [Jethro] peacefully went to sleep in June of 1946, his eighty-fourth year [but he was age 83], and today rests in a little cemetery in Tennessee."

The recollections by his son, Eden, note: "I was born in St. Peter, Minnesota, on February 10, 1910, to Jethro and Amy Kloss... After the move to Tennessee, my parents developed a plant for the manufacture of a line of vegetarian meat substitutes, cereals, crackers, and other items, at Amqui, near Nashville. (Our business was called the Nashville Sanitarium Food Factory.) Many of my early memories center on that large two-story factory, where raw materials were transformed into good-tasting, healthful food products...

"My father was an untiring worker. He would be up hours before the rest of the family–building fires, starting cracker dough, and making everything ready so that the work could go full speed ahead when the workers arrived in the morning... One day when Eden was burned while canning tomatoes, Jethro rushed him to the Madison Sanitarium for treatment. Kloss also made gluten there.

"When I was nine or ten years old, the factory was sold to the private school at Madison and transferred to that campus, and our family traveled in our pickup truck, camping en route, from Tennessee to Virginia. Here, at a town named Brooke, we found an ideal location–a plot of ground with a building in which we could make and sell health foods and teach people about healthful living...

"It was here at Brooke, Virginia, that Papa started to put in uncounted hours working on the beginnings of his book, *Back to Eden.*

"After some years, my oldest sister and her husband took over the food factory, and my parents moved to Takoma Park (on the outskirts of Washington, D.C.)...

"Papa's travels to give lectures and food demonstrations took him to places like Miami, Florida, and Houston, Texas."

There are also recollections by his granddaughter, Doris Joyce Kloss Gardiner. In about 1939-40 she used to be with her grandparents when they visited relatives in Falmouth, Virginia, just north of Fredericksburg. There she helped make soymilk: "Nor was I happy to stand at the stove stirring and stirring large kettles of soybean milk (so the milk wouldn't stick and be scorched)–a laborious and time-consuming process. But Grandpa's soybean milk was delicious, and so were the twenty or so other soy products that he originated and produced–including meat substitutes and soybean bread, butter, cheese, and ice cream...

"Often Grandpa would prepare soybean ice cream to serve at the close of his lectures or cooking demonstrations. One of my favorite treats was to lick the paddle from the ice-cream freezer before we left home to go to the lecture...

"Grandpa and Grandma Kloss died when I was in my mid-teens." The frontispiece (facing the title page) is a portrait photo of Jethro Kloss. An original of this photo was sent to Soyfoods Center in 1985 by Doris Kloss Gardiner of Loma Linda, California. On the 4th page of photos in the center section is an ad by "Kethro Kloss Health Food Company, Brooke, Virginia." Photos show two hand grinders, a large-scale gas-fired pressure cooker, a large stove-top pressure cooker, and a hand scaler. The text begins: "We manufacture a large line of health foods." In 1921 Kloss opened this health food factory in Brooke, VA, and it as on this site that he began writing *Back to Eden.* Address: P.O. Box 1439, Loma Linda, California 92354.

3684. Kloss, Jethro. 1981. The Back to Eden cookbook. Loma Linda, California: Back to Eden Books. 159 p. Illust. by Daniel Guild. Index. 22 cm.

• ***Summary:*** The yellow cover of this 1981 edition ($2.95) features a color illustration (by Harry Anderson) showing a man and woman seated by an idyllic river, surrounded by birds and animals, in the Garden of Eden. The cover text states: "From the renowned author of Back to Eden. This is a golden treasury of recipes and priceless information on natural foods for health and healing. Based on the work of the late Jethro Kloss. Published under the supervision of Promise Kloss Moffett and Doris Kloss Gardiner. The copyright page of the 1981 printing states that the book is published and distributed by Back to Eden Books, P.O. Box 1439, Loma Linda, California 92354. The book is copyrighted by Doris Kloss Gardiner, Promise Kloss Moffett, and Eden P. Kloss. The book was previously published by Woodbridge Press under ISBN 0-912800-05-4.

Contents: Jethro Kloss... Pioneer nutritionist. Return to Eden... Return to happiness. Soy milk, cheese, butter, and cream. Nut milk, cheese, butter, and cream. Main dishes. Using sprouted seeds (including soybean sprouts). Bread... A health food. Life-giving breads. Natural breakfast foods. Soups... Total nutrition. Salads and dressings. Vegetables. Sauces, seasonings, and spreads. Desserts for health. Coffees, teas, and broths (including a recipe for making soybean coffee at home, p. 151).

The chapter titled "Nut milk, cheese, butter and cream" has recipes for: Nut milk (made from raw peanut butter). Nut cheese (from raw peanut butter and soy butter). Dieters nut cheese (from raw peanut butter). Malted nut cream (from raw peanut butter and malt powder). Superb peanut butter. Blanched peanut butter (add water to make into milk or cream). Simple peanut butter. To blanch peanuts. Nut meal. Nut butter cream (add warm water to nut butter).

Photos (p. 6 and 9) show: daughter Promise Kloss Moffett, son Eden Kloss, and granddaughter Doris Kloss Gardiner. Address: P.O. Box 1439, Loma Linda, California 92354.

3685. Ko Swan Djien. 1981. Fermented foods of Indonesia

except those based on soybeans. *Advances in Biotechnology* 2:525-30. [37 ref]
• ***Summary:*** Foods discussed include oncom [ontjom, onchom] (chiefly made of peanut presscake fermented with Neurospora species of molds), tempe bongkrek (made from coconut presscake obtained from coconut-oil factories where oil is pressed from copra, or from partly defatted coconut residue which is left when shredded coconut meat is extracted with water to obtain coconut milk for preparing dishes for family consumption; also discusses bongkrek poisoning and its history in Indonesia), tapé, and dagé. Address: Dep. of Food Science, Agricultural Univ., Wageningen, The Netherlands.

3686. Lin, Chuan-chia; Li, Hsueh-chu; Wang, Ying; Chang, Ying; Chou, Chi-yuan (Zhou, Qhi-yuan). 1981. [Studies on milk-substitutes. V. The nutritive effect of milk substitutes 5410 on infants as compared with human or cow's milk diets]. *Ying Yang Hsueh Pao* (*Acta Nutrimenta Sinica*) 3(3):133-48. [Chi; eng]*
Address: Inst. of Health, Chinese Academy of Medical Sciences, Beijing.

3687. McMurry, Linda O. 1981. George Washington Carver: Scientist and symbol. Oxford (England), New York, Toronto, Melbourne: Oxford University Press. x + 367 p. Index. 20 cm. [697* footnotes]
• ***Summary:*** An excellent, scholarly biography that separates the man from his myth. Carver emerges as "a gifted teacher, a gentle spirit, a keen intelligence and loving friend." His work with peanuts and his friendship with Henry Ford are discussed. In the index (which is poorly done), no mention is made of Carver's work with soybeans. However p. 91 states: "Soybeans and alfalfa were only two of several crops tested by Carver, often in cooperation with the USDA. Strangely, he failed in his attempt to cultivate kudzu, but he was especially delighted with the soybean results because the crop provided abundant forage 'of the nicest possible kind.' His interest was increased by the visit of a northern agriculturist to inspect Tuskegee's soybean work, and he was intrigued by the growing interest in soybeans as a source of vegetable oil. In 1914 he expanded his soybean experiments in cooperation with a New Jersey paint company and tested five varieties to determine the tonnage of forage, number of bushels of beans, quantity of oil, and fertilization properties each variety yielded." Of the 3 footnotes, one relates only to kudzu, and the others two are only in the Booker T. Washington Papers (edited by Louis R. Harlan); they are not on the microfilm of the George Washington Carver papers owned by the Library of Congress.

Booker T. Washington died on 14 Nov. 1914. "His death marked the end of an era both in race relations and in the career of George Washington Carver. During the next year a series of events brought Carver out of the shadows and into a place of national prominence that rivaled Washington's." After giving half a year's salary to the Booker T. Washington Memorial Fund, Carver dejectedly wrote Washington's secretary, Emmett Scott, "I am sure Mr. Washington never knew how much I loved him and the cause for which he gave his life." Robert Russa Mouton, who took Washington's place as principal of Tuskegee brought brighter days for Carver. In the fall of 1915 Carver received two remarkable invitations and honors: One to serve on the advisory board of the National Agricultural Society, followed by one to become a fellow of the Royal Society for the Arts in Britain. In 1919 Moton gave Carver (now addressed with the prestigious title of "professor") an unsolicited increase in salary, Carver's first in 20 years. After 1916 Craver, now very busy and often traveling, gradually discontinued his classroom teaching, and by 1925 finished his plot work at the experiment station. He was becoming a "creative chemist." In Dec. 1916, in his continued quest for commercial success, Carver submitted to Emmett J. Scott a list of 15 products "now ready for the market." A rubber substitute derived from sweet potato and various wood stains seemed promising; soybeans were also on the list. But by 1919 he wished to remain unentangled in the "business end" of his discoveries.

Prior to 1919 Carver focused his research attention on sweet potatoes and seemed well on his way to becoming the "Sweet Potato Man." But in Sept. 1919 he discovered peanut milk–"a discovery that ultimately shaped the course of his career... The creation of the Peanut Man began with the discovery of peanut milk, and Carver had great hopes for its commercial success. He envisioned it not as a substitute for cow's milk, but as a 'distinct product in the diet of the human family" with unique qualities and uses... Carver also believed that peanut milk provided a cheap source of protein, for a pint could be made from only a '3 ounce glassful of peanuts.' Indeed he claimed his method of making milk was more efficient than that of a cow... Others seemed to agree that peanut milk was a viable commercial item, but Carver's dreams of finally providing a practical product were dashed when he learned that an Englishman had already patented a process for making peanut milk in 1917... In 1921 Carver considered taking 'out a patent over his by proving my process is superior in many ways,' but he never did, and the Englishman was unable to exploit the patent profitably, possibly because he demanded $150,000 and a 3 percent royalty."

In June 1923 Carver won the prestigious Spingarn Medal of the NAACP. (The NAACP had been organized in 1909 during the heyday of Jim Crow legislation as an alternative to Booker T. Washington's accomodationist program; by 1923 the NAACP was winning the battle for leadership.) In 1928 Carver received an honorary doctor of science degree from Simpson College in Iowa, which he had attended from Sept. 1890 to 1891 mainly to study art. This honorary degree was especially appreciated, since questions

about the title "Doctor" had previously embarrassed Carver.

In 1933 Henry A. Wallace became Secretary of Agriculture under Franklin D. Roosevelt and served from 1933-1945, later becoming Vice President of the United States. A renowned plant breeder from Iowa State College, he had been a boy there when Carver was a student and he later credited Carver with giving him his first and lifelong interest in plants. He called Carver the "kindliest, most patient teacher I ever knew." An innovative leader, Wallace sought ways to help hard-hit farmers out of the Depression. He shifted USDA's policy away from increasing agricultural production toward decreasing production and increasing demand by finding new uses for crops. "Although utilization research had never been completely ignored by the USDA, the Depression marked a turning point, with more emphasis on the kind of research that Carver had focused on for forty years. But when the USDA turned serious attention to this field, it did so with a level of funding that quickly made Carver's work obsolete. Section 202 of the Agricultural Adjustment Act of 1938 provided for four regional research laboratories 'devoted primarily to those farm commodities in which there are regular or seasonal surpluses, and their products and by products.' Its enactment was a major victory for the chemurgic movement, which recognized Carver as a patron saint... Thus 1938 marked the end of one phase of Carver's career. His [declining] health and limited funds prevented any significant new research. More and more he came to see himself as a trailblazer who had shown the way and was now ready to step aside and let others follow his path."

In 1935 Austin W. Curtis, Jr. had come to Tuskegee and soon been accepted by Carver as his assistant. The year 1937 marked the beginning of what became a deluge of awards–thanks in part to help from Tuskegee and Curtis. That year Carver was invited to speak at a chemurgic conference hosted by Henry Ford in Dearborn, Michigan. His speech was well received. He was invited to the main banquet but, because of his feels concerning segregation, he made a point of sitting outside the hall until everyone had eaten, "even though Henry Ford considered him one of the most honored guests." "Ford's interest in the chemurgic movement drew him to Carver, and after they finally met at the Dearborn conference they corresponded and visited each other regularly. They shared eccentric genius and an enormous mutual respect." Carver admired Ford's policy of hiring blacks for both skilled and unskilled jobs in his automobile plants.

On 10 Feb. 1940 the George Washington Carver Foundation was officially incorporated–again with key help from Austin Curtis. As early as July 1937 a flyer soliciting contributions had been distributed, but it was mostly funded by Carver's life savings of $32,374. A museum became one of the foundation's main activities.

A photo (p. 288) shows Carver and Ford standing together. Carver was also a close friend of Henry A. Wallace.

In 1939 Carver, though his health had begun to decline rapidly, traveled to Ways, Georgia, for the dedication of the George Washington Carver School, established by Henry Ford on his Ways plantation. Carver spent the entire day with Ford. In 1942 extensive press coverage attended a "tribute by Henry Ford, who erected a Carver memorial cabin at Greenfield Village and established a nutritional laboratory in Carver's honor at Dearborn. Carver went to Michigan for several weeks..." Address: Assoc. Prof. of History, North Carolina State Univ.

3688. Paige, David M.; Bayless, Theodore M. eds. 1981. Lactose digestion: Clinical and nutritional implications. Baltimore, Maryland: The Johns Hopkins University Press. xix + 280 p. Illust. 24 cm. *
• ***Summary:*** This highly recommended, scholarly work explores the subject in detail, listing numerous references including many of the more than 1,700 research and clinical papers dealing with this and related subjects.

3689. *Quadernos de Natura* (*Editorial Posada, Mexico*). 1981. Alimentacion natural balanceada [Balanced natural nutrition]. No. 12. 96 p. [10 ref. Spa]
• ***Summary:*** Contains information on: How to make soymilk at home (p. 70-71). Homemade soy flour (p. 71-72). Homemade soy yogurt (p. 72-73).

3690. Shandler, Michael; Shandler, Nina. 1981. The complete guide and cookbook for raising your child as a vegetarian. New York, NY: Schocken Books. xiv + 337 p. Index. 24 cm. [65 ref]
• ***Summary:*** On p. 22 soybeans and rice are used to illustrate protein complementarity. Fats survival plan (p. 70-71): Describes how to make clarified butter (ghee); it is superior to other fats for frying purposes and is not subject to the same polymerization as vegetable oils. "Eggs do not constitute a cholesterol risk," but "soy milk and tofu are... excellent high-protein substitutes for eggs if your children are allergic." Good sources of protein during pregnancy include beans, grains, tofu, gluten, dairy products, and soy products. Use complementary proteins together. Tofu can be blended into creamy salad dressings.

"Homemade soy milk is deficient in vitamin B-12, vitamin D, and calcium. Commercial soy drinks for infants [infant formulas] are fortified with these and other nutrients but often contain sugar and other detrimental additives" (p. 110).

"After approximately 1 month of eating solid foods, a second series of foods can be introduced to your infant." These may include puréed tofu or light miso soups (p. 116-17).

Soy-related recipes include: Whole wheat soy flakes (p. 206). Tamari broth with dumplings (and soy flour, p.

216). Nondairy cream of vegetable soup (with tofu, p. 216). Summer cucumber tofu soup (p. 218). Soyburgers (with whole soybeans, p. 222-23). Barbecued tofu sandwiches (p. 226). Tofu cheesie macaroni (p. 232). Tofu noodle casserole. Fried tofu over rice. Tomato tofu lo mien (p. 233-34). Tofu and rice seaweed rolls (p. 236). Pizza (with soy flour and gluten flour, p. 236-37). Creamed spinach with tofu (p. 254). Tamari-glazed "trees" (Broccoli, p. 255). Vegan dips (p. 264-65): Avocado tofu dip. Cucumber tofu dip. Nondairy dressings (p. 271-72): Tofu dressing. Nut and soy milks (p. 311-13): Fortified soy milk. Carob soy milk. Spiced soy milk. Almond milk. Cashew milk. Coconut milk. Tahini milk. Nondairy sandwich fillers (p. 320-21): Soy sandwich "meat" (with whole soybeans and tamari soy sauce). Tofu sandwich spread.

3691. Stobart, Tom; Owen, Millie. 1981. The cook's encyclopedia: Ingredients and processes. New York, NY: Harper & Row, Publishers, Inc. xii + 547 p. Illust. 25 cm. [20 ref]

• ***Summary:*** Soy related entries include: Bean curd (incl. tofu). Bean-curd cheese [fermented tofu]. Bean paste and bean sauce (incl. Red bean paste) is sweet and made from adzuki beans. Yellow bean paste is made from soybeans and is salty and pungent. "Fermented salted black beans" is made from a black variety of soybeans; these salted black beans can be used to make "black bean sauce" which can be used as a flavoring in fish, lobster, chicken, and pork dishes.

Soybean (incl. soya bean, soja bean, flour {"pork soya links" used in Britain during World War II}, sprouts, soy oil, soy sauce, soymilk, vegetable yogurt [soy yogurt], vegetable cheese [soy cheese], tempeh, bean curd skin [yuba], miso, tamari, soy sauce, soy protein isolate, soy granules or grits, textured plant protein [textured soy protein]). The name in four European languages is given.

Soy sauce or shoyu (It "is said to be one of the ingredients of Worcestershire sauce." Incl. the "very heavy Indonesian *ketjap* {*ketjap manis or ketjap benteng*}, which is a type of soy sauce,..."). The name in four European languages is given.

Textured plant protein (a high-protein foodstuff manufactured from plants (soybeans, peanuts, wheat, cottonseed, etc.). "Originally it was aimed at the vegetarian market." Also called "textured vegetable protein" in the USA. Incl. textured soy flour, textured soy protein gel and fibers).

Worcestershire sauce: Begins with a history (starting in 1837) based on the fanciful story so widely known. "Thus was born what is probably the world's best-known and most ubiquitous bottled sauce, one which has become a standard ingredient." Note: How about soy sauce? "The exact formula is secret. Although it is much imitated, nobody seems to be able to get quite the taste of the original."

Also contains entries for adzuki, ketchup ("Javanese katjap [ketjap], for example, is a very sweet soy sauce"), peanut (groundut or monkey nut), pulses, seaweed, sesame seed, tahini.

Note: Millie Owen prepared the American edition of this book. Address: 1. Hassocks, Sussex, England; 2. Northfield, Vermont.

3692. Tranggono, -. 1981. Studies on the stability of dried soybean curds. PhD thesis, Michigan State University. 161 p. Page 2294 in volume 42/06-B Dissertation Abstracts International. *

• ***Summary:*** Tofu was prepared by conventional methods and modified by addition of either sesame milk or ground sesame and air dried, frozen, aged, thawed and then air dried, dried frozen or freeze dried. Stability of the dried products with respect to lipid oxidation and non-enzymic browning were studied. Accelerated storage studies were conducted at 37ºC and 50ºC. Peroxide values, diene conjugated and thiobarbituric acid tests were used to follow oxidative changes in lipids. Results are discussed in detail. It is concluded that oxygen appears to be the primary cause of product deterioration. Optimum water activity for storage with respect to lipid oxidation and browning was 0.22. Loss of available lysine was correlated with browning (increased at high temperatures and in products with ground sesame). Address: Michigan State Univ.

3693. Urbanski, Gregory Eugene. 1981. Rheological properties of soybean and soybean-solute systems. PhD thesis, University of Illinois at Urbana-Champaign. 200 p. Page 2856 in volume 42/07-B Dissertation Abstracts International. *

Address: Univ. of Illinois at Urbana-Champaign.

3694. Vaidehi, M.P.; Vijayakumari, J. 1981. Soya delights: Recipes for the use of soybean. Hebbal, Bangalore 560-024, India: University of Agricultural Sciences. xii + 106 p. Illust. No index. 22 cm. All India Coordinated Research Project on Soybean. [17 ref]

• ***Summary:*** Contents: 1. Introduction: Importance of soybean in Indian diet, processing method of soybeans, University of Illinois methods of processing for home and village level use, industrial processing of soybeans, soybean cultivation details, glossary. 2. Boiling method for soy dishes. 3. Roasting method for soy dishes. 4. Steaming method for soy dishes. 5. Frying method for soy dishes. 6. Baking method for soy preparations. 7. Sweet dishes from soybeans. 8. Soy milk and its preparation. 9. Soy fermented foods (tempeh). Tables and figures (12). Address: 1. PhD; 2. Mrs., instructor. Both: Univ. of Agricultural Sciences, Bangalore, India.

3695. Wolf, Ray; Hoffman, Jim; Keough, Carol. ed. 1981. Home soyfood equipment: Build-it-yourself. For production

and use of high-protein, low-calorie tofu, tempeh, and soymilk. Emmaus, Pennsylvania: Rodale Press. 84 p. Illust. No index. 22 x 29 cm.
• ***Summary:*** For production and use of high-protein, low-calorie tofu, tempeh, and soymilk. Contents: Section I. Introduction. 1. What soyfoods are. 2. Using soyfoods (recipes). Section II. Introduction. 3. Tofu box. 4. Pot-mount press. 5. Table-mount press. 6. Tempeh incubator. Section III. Blueprints. Address: Rodale Press, 33 East Minor St., Emmaus, Pennsylvania 18049.

3696. World of God. 1981. The cookbook for people who love animals. 2nd ed. Route 2, Box 98E, Brooksville, Florida 33512. 176 p. Edited by Butterflies. Illust. and cover design by Flowers. Recipe index. 26 cm. Spiral bound. The 4th edition was copyright in 1987. [31 ref]
• ***Summary:*** The top of the title page reads: "Over 300 totally vegetarian recipes. From beginner to gourmet. No meat. No eggs. No dairy. No honey." At the bottom of the title page is a field of red and orange flowers, with butterflies around them, and a rayed sun overhead against a light yellow background. This is a good, spiral-bound collection of vegan recipes, which are straightforward, appetizing, and nutritious. Special section includes recipes for cat and dog food.

The book is interspersed with nice quotations about vegetarianism, veganism, and animal rights from great thinkers such as Longfellow, Emerson, Schopenhauer, John Gallsworthy, Jeremy Bentham, Cicero, Herbert M. Shelton, John Ruskin, John Stuart Mill, Tagore, Plutarch, Tolstoy, Cardinal Newman, George Bernard Shaw, Thoreau, St. Francis, Leonardo da Vinci, Harriet Beecher Stowe, Romain Rolland, and Friedrich W. Nietzsche.

The glossary of ingredients lists okara, soy powder, tamari, tofu. "Soy powder [whole soy flour]–Made from cooked soybeans, it contains all the natural oil of the soybean. Used in casseroles, sweets, and for making soy milk. It can also be used as an egg substitute. Use 1 heaping tablespoon soy powder and 2 tablespoons water in place of 1 egg."

Recipes with soyfood terms in the title include: Quick instant soy milk (p. 12). Soy milk. Soy yogurt (p. 13, made from tofu, frozen and non-frozen bananas, etc; not fermented). Soy margarine (p. 13). Soy tofu. Scrambled tofu. Tofu cottage cheese (p. 14). Tofu cream cheese (p. 15). Bran muffins (with soymilk, p. 22). Most baked goods include soymilk in place of dairy milk. Miso soup (p. 37). Tofu eggless salad. Okara salad (p. 54). Tofu potato salad (p. 56). Tomato tofu salad (p. 57). Tofu tahini dressing. Blond miso dressing (p. 67). Orange tamari dressing. Soy mayonnaise (p. 68). Miso spread (p. 69). Hot miso dressing (p. 73). Tahini-tamari sauce (p. 75). Stuffed tomato with soybeans (p. 92). Tofu saute (p. 104). Potatoes with tofu. Noodle tofu (p. 105). Tofu bean-thread saute (p. 106). Matzoh tofu bake (p. 124). Soy burgers (p. 131). Okara cylinders (p. 132). Tofu cheesecake (p. 141). Carob tofu cream pie (p. 143). Recipes for dogs and cats: Okara delight (p. 163). Soybean mash (p. 164). Instant soybean-meal dinner (p. 165).

At the back is a 6-page section titled "The Spirit of Ahimsa" by H. Jay Dinshah, president of the American Vegan Society. It is excerpted from his books "Out of the Jungle" and "Here's Harmlessness."

Note: This is the earliest document seen (Sept. 2012) that mentions (or gives a recipe for) a nonfermented soy yogurt. Address: Brooksville, Florida.

3697. Yeo Hiap Seng Ltd. 1981. Annual report. Singapore. 32 p. [Eng]
• ***Summary:*** The cover is black on silver with the Yeo's logo embossed on it. Yeo Hiap Seng Ltd. is actually a group of companies including: Yeo Hiap Seng (Hong Kong) Ltd., Yeo Hiap Seng (International) Ltd., YHS (USA) Inc., YHS Trading (Canada) Ltd.

Notice is given that the 26th Annual General Meeting of the company is to be held in Singapore.

The Five-year statistical record (p. 32) shows that Group Sales have increased from $39.478 million in 1977 to $98.777 million in 1981.

After-tax profit before extraordinary items has increased from $4.314 million in 1977 to $6.396 million in 1981. Address: Singapore.

3698. Yepson, Roger B. ed. 1981. Home food systems. Emmaus, Pennsylvania: Rodale Press, Inc. 475 p. Illust. Index. 29 cm. [15 ref]
• ***Summary:*** Extensive, positive information on soyfoods is contained in the chapters on Grains (and bread, see p. 35), Beans (p. 94-95, 99-115; tofu, tempeh), Sprouting (p. 120, 125, 127), Canning (p. 203), and The Home Dairy (p. 298; soymilk, soy yogurt). Reviews and photos of many soyfoods books are given, with a sample recipe from most.

Pages 298 notes: "Soymilk is low in riboflavin (vitamin B-2), totally lacking in vitamin B-12, and has drastically less calcium than dairy milk. On the other hand, soymilk is lower in carbohydrates, has 12% fewer calories, 25% less fat, no cholesterol, and contains 15 times more iron than cow's milk." Address: Emmaus, Pennsylvania.

3699. Bhatia, Darshan S. 1981? Development and marketing of protein-containing beverages. Atlanta, Georgia: The Coca-Cola Co. 15 p. Undated. Unpublished manuscript.
• ***Summary:*** "In the mid 1960's nutritionists and public health authorities in some developing countries started advocating the fortification of some soft drinks with proteins and other nutrients. The rationale behind this was that soft drinks, being ubiquitous and popular with children, could be suitable vehicles for increasing their nutrient intake.

"In response to this situation and with good intentions, The Coca-Cola Company decided to develop protein-

containing beverages and to market them by utilizing its extensive distribution network in several developing countries... Brazil, having an abundant availability of soybean, was chosen as the first market. Further, it was decided to develop initially a non-carbonated milk-like bottled beverage, using soybean as the sole source of protein.

"The first such product was given the brand name "Saci"–a mythical character in Brazilian folklore. Saci was a sterilized beverage containing 3.0% protein and seven vitamins. Sterilization was necessary because of the non-acid character of the beverage (pH 6.8).

"Several prototypes in various flavors were consumer tested to ascertain preference and the two flavors–chocolate and caramel–were selected for commercialization. The beverage was launched in early 1968 in Rio de Janeiro, Brazil and marketed [in glass bottles] for about 3 years. The product was withdrawn as the marketing objectives in terms of volume and profitability were not achieved." Four observations made concerning Saci are then given.

Next a product named Samson, based on casein (a milk protein) was launched in Paramaribo, Surinam [Suriname], in June 1970 in a 200 ml glass bottle. Samson Power Bar, a non-dairy frozen dessert, was also launched at that time. The marketing was discontinued after about 7 years.

Next, a protein-containing soft drink product named Tai was launched in Brazil. The generic name "Samson" was given to beverage powders. A liquid version of Samson called "Sanson" was launched in Mexico in 1978 and sold in bottles like a soft drink.

In 1976, when the Brazilian government announced its ambitious program to food school children, pregnant and nursing women, the Cocoa-Cola Co. developed powdered Saci according to specifications set by the government. Since then, the company has supplied beverage powders based on soya and milk proteins, and fortified with vitamins and minerals. Two types of Saci were developed, each obtaining 60% of its protein from soya and 40% from dairy sources. Saci 200 contained 200 calories per bottle, and Saci 300 contained 300 calories. The nutritional composition of each product is given. "Initially, only a chocolate-flavored product was made available to the schools but now mocha, strawberry and coconut flavors have been added to the line."

Whey-based Samson is now available in cans and Tetra-Brik cartons. The soya + milk or soy-based beverage has a satisfactory shelf life in Tetra Brik. UHT Saci contains 6.0 gm of protein and 4.0 gm of fat per 200 ml pack. The protein source is either soya or and 80:20 soya:dairy milk blend. The availability of fairly bland soy protein hydrolysate may make new types of products available. Address: Director, Corporate Research and Development Department, The Coca-Cola Co., Atlanta, Georgia.

3700. **Product Name:** [GranoVita Sojagen Instant].
Foreign Name: GranoVita Sojagen Instant.
Manufacturer's Name: DE-VAU-GE Gesundkostwerk GmbH.
Manufacturer's Address: Luener Rennbahn 18, Postfach 1660, D-2120 Lueneburg (near Hamburg), West Germany. Phone: 04 13 11 89 41.
Date of Introduction: 1981?
Ingredients: Soybeans.
Wt/Vol., Packaging, Price: 450 gm. Wholesales for DM 11.60.
How Stored: Shelf stable.
New Product–Documentation: Manufacturer's catalog. 1981. May 1. DE-VAU-GE Sortiments-Preisliste. 4 p.

Soyfoods Center Computerized Mailing List. 1982. July 23.

Manufacturer's catalog. 1983. GranoVita. Health-food & natural food from Germany. 6 p. plus 3-page price list. With color photos and ingredients for all products. Rein pflanzliche Soja-Nahrung. Retail price is DM 10.24 for 450 gm.

Manufacturer's brochure. 1989? "GranoVita Soja-Drinks und -Desserts... ein erfrischender Genuss [a refreshing enjoyment]. 6 pages, with many color photos. Contains a brief description of Sojagen and Sojagen Plus, with a color photo of both packages/boxes. The Sojagen box is red, dark green, light green and white. A color illustration shows a glass of milk in front of soybean leaves and pods. "A soya food made purely from plants. Milk free. Lactose free. Gluten free. Weight: 350 gm. Neuform certification symbol.

3701. *EUVEPRO Newsletter.* 1981?--. Serial/periodical. European Vegetable Protein Federation, Rue de l'Orme 19, B-1040, Brussels.
• ***Summary:*** Euvepro was founded in 1978, with some support from the American Soybean Association. In 1983 it had about 60 members, both industrial consumers and manufacturers. Leviton (nov. 1983) reported that at that time one of Euvepro's principal efforts was to change the tariff classification on soymilk, thereby permitting increased trading through lower taxes. Claudio Rochietta of Cargill is chairman of the upcoming Euvepro Conference. Address: Europe.

3702. *Nitto-Kyo News* (*Japan Soymilk Association News*). 1981? Serial/periodical. Tokyo, Japan: Nihon Tonyu Kyokai (Japan Soymilk Association). Frequency: Monthly. [Jap]
• ***Summary:*** Soyinfo Center owns: No. 25 (10 Jan. 1983) to No. 44 (10 Nov. 1984). Plus a cover letter. Address: Ogura-Biru, Shimbashi 2-11-8, Minato-ku, Tokyo 105, Japan.

3703. **Product Name:** [Soymilk].
Manufacturer's Name: Produtos Alimenticios Superbom.
Manufacturer's Address: Caixa Postal 8633, 01051 Sao Paulo, Brazil.
Date of Introduction: 1981?

New Product–Documentation: Shurtleff. 1981. Overseas Adventist Food Companies. p. 8.

3704. *Tetra News.* 1981? Soymilk becomes new mainstay of product lines at Okazaki Marusan Co. Undated.
• ***Summary:*** Okazaki Marusan Co. was established in 1952 and has grown rapidly in the past 3 decades to become one of Japan's five major miso manufacturers. Miso presently accounts for over 80% of the company's total sales revenues. Mr. Michinobu Nabeta, Managing Director, says the company's short-term objective is "to become a health foods manufacturer."

"The first product resulting from Marusan's R&D program for soymilk launched a decade ago was 'Doujan' (Chinese for soymilk) which was commercialized eight years ago. 'Doujan contains the essence extracted from pearl barley and kelp and is a health food that is marketed through a health-conscious consumer organization that has a good reputation,' Mr. Nabeta comments.

"It's Marusan Tonyu (soymilk) in a 250 ml gable-top carton went on sale 2 years ago, and last year Tonyu in a Tetra Brik Aseptic 200 ml carton was introduced... The company's 'Tonyu,' 'Orange Tonyu' and 'Malt & Tonyu,' all in Tetra AB cartons [and on the market by 21 July 1981 in 200 ml cartons] are distributed nationwide to supermarkets; thus, the sale of these products is growing.

"In recent years the soymilk market [in Japan] has expanded steadily, and it is estimated that the market will grow from ¥3,100 million in 1980 to ¥5,000 to ¥6,000 million this year. 'The market will reach ¥6,000 million or thereabouts this year; many believe the market will grow by 30% in 1983, though part of the industry predicts a ¥10,000 million market. In the future we expect the market to grow to a ¥50,000 million to ¥60,000 million market, or comparable to the tomato juice market. Our company and other soymilk suppliers hope that the soymilk market will eventually share 10% of the cow's milk market,' Mr. Nabeta says."

"The company has been tapped by some U.S. companies [including Eden Foods] for soymilk manufacturing ventures in the U.S., but Mr. Nabeta believes the company should concentrate on the domestic market, at least for the time being."

3705. **Product Name:** [Soy fortified instant formula].
Manufacturer's Name: Venezuelan School Lunch Program.
Manufacturer's Address: Venezuela.
Date of Introduction: 1981?
Ingredients: Rice flour, nonfat dry milk solids, soya flour, flavors, and vitamin/mineral mix.
How Stored: Shelf stable.
New Product–Documentation: Aguilera and Lusas. 1981. *Journal of the American Oil Chemists' Society.* March. p. 519. The Venezuelan School Lunch program has replaced pasteurized milk with an instant formula that costs 25% less. Ingredients are listed (W. Jaffe, personal communication).

3706. Anuradha Industries. 1982. Classified ad: Requires result oriented sales representative... *Times of India* (*The*) (*Bombay*). Jan. 2. p. 3.
• ***Summary:*** A medium sized ad with a border: "... for 'Amisoy' Spray Dried Soya Milk Powder. Candidate must be fluent in English and have a flair for meeting doctors. Contact: 311803, 259704." Address: Safed Pool, Kurla Andheri Road, Bombay–400 072.

3707. Tchah, Kyun Hi. 1982. Re: Dr. Chung's Foods Co., the largest soymilk manufacturer in South Korea. Letter to Dr. Chevalier F. De Selliers de Moranville, Jan. 5. 1 p. Typed, with signature.
Address: Advisor to the President, Dr. Chung's Food Co., Ltd. Head Office, Business Dep. Insong Bldg. 18G 194.15 I-Ka, Hoehyun-Dong, Choong-Ku, Seoul, Korea. Phone: 23-2151-4-28--1234-3158.

3708. Lo, K.S. 1982. Re: History of Hong Kong Soya Bean Products Co. Ltd. Letter to William Shurtleff at Soyfoods Center, Jan. 15–in reply to inquiry. 10 p. Typed, without signature.
• ***Summary:*** This is the most comprehensive history of the company ever written by Mr. Lo, the founder. Address: Chairman [and founder], HKSBP Co., Ltd., 41, Heung Yip Rd., Aberdeen, Hong Kong. Phone: 5-528211.

3709. Lo, Yvonne. 1982. Re: History of Hong Kong Soya Bean Products Co. Ltd. Letter to William Shurtleff at Soyfoods Center, Jan. 15. 1 p. Typed, with signature on letterhead.
• ***Summary:*** Yvonne encloses a history of Vitasoy between 1940 and 1980. She invites Shurtleff to let her know if he needs more information. Address: The Soya Bean Products Co., N.A. Inc., 185 Berry St., Suite 158, San Francisco, CA 94107. Phone: (415) 974-1118.

3710. Sass, Lorna J. 1982. Budget-conscious Americans are hitting the soy–its not just sauce. *Chicago Tribune.* Jan. 21. p. S_A151.
• ***Summary:*** This article first appeared as: Sass, Lorna J. 1981. "Soy foods: Versatile, cheap and on the rise." *New York Times.* Aug. 12. p. C1, C6. It first appeared in the *Chicago Tribune* on 29 Oct. 1981 (p. N_B19).

3711. Selliers, Francois de. 1982. Re: Three new soymilk manufacturers in Asia. Letter to William Shurtleff at New-Age Foods Study Center, Jan. 27–in reply to inquiry of Dec. 22. 1 p. Typed, with signature. [Eng]
• ***Summary:*** They are: Kickapoo Co. Ltd. in Thailand, makers of Lactasoy. United Milk Co. Ltd. in Thailand; part

of the Nestlé Group, they make Bonus brand soymilk. Dr. Chung's Foods Co. Ltd. of Korea. Address: Chairman, IIDC (International Investment & Development Corp.) Belgium, Belgium S.A., Rond-Point de l'Etoile 3, Boite 8, B-1050 Brussels, Belgium. Phone: (02) 640-68 00.

3712. Campos, O.F.; Huber, J.T.; Morrill, J.L.; Brownson, R.K.; Dayton, A.D.; Harrison, H.J.S.; Warner, R.G. 1982. Spray dried fish solubles or soy protein concentrate in milk replacer formulations. *J. of Dairy Science* 65(1):97-104. Jan. [13 ref]
Address: 1-2. Dep. of Animal Science, Michigan State Univ., East Lansing, Michigan 48824; 3-5. Depts. of Animal Science and Industry, and Statistics, Kansas State Univ., Manhattan, Kansas 66506; 6-7. Dep. of Animal Science, Cornell Univ., Ithaca, New York 14853.

3713. Dominguez de Diez Gutiérrez, Blanca. 1982. Re: Introducing soyfoods to Mexico. Letter to William Shurtleff at Soyfoods Center, Jan.–in reply to inquiry. 5 p. Typed. [Eng]
• ***Summary:*** The following is Blanca's response to and editing of a history of her work with soyfoods in Mexico, written by William Shurtleff and sent to her, requesting that she check it for accuracy. Shurtleff's history is a based largely on letters from Blanca to Shurtleff in the early 1980s.

An independent soyfoods pioneer in Mexico who deserves special mention is Blanca Domínguez de Diez Gutiérrez, a small, sparkling-eyed woman who, initially alone and unfunded, has taught the many uses of soyfoods to people (especially women in poor villages) throughout Mexico. She became interested in soyfoods after reading *The Book of Tofu* in 1976. In 1977 she founded a Yoga Center in the village of Tepoztlan, Morelos, but after seeing poverty and malnutrition all around her, she gave up her position as president of the Center to devote herself entirely to teaching others about soyfoods and better nutrition. She developed a low-cost, tasty, and easy-to-practice system of nutrition based on protein complementarity from soyfoods and grains (including underutilized grains widely used only for livestock feed) plus the use of sprouts [including soy sprouts]. Using this nutritious model, which was a great success wherever it was introduced, she began to develop soyfoods recipes and preparatory techniques that were suited to local tastes and would help lower income people to help themselves and provide their families with better nutrition. In 1977 Dominguez's booklet 'Los Mil Usos de la Soya' (The Thousand Uses of Soy) was published as an entire issue of the popular magazine *Quadernos de Natura* by Editorial Posada. Shortly thereafter the magazine published two articles about Dominguez's work ('The Soy Cooperative' [1980] and 'The Woman who is Taking Soy to the Countryside' [April 1978]) and then in 1978 a major book on soyfoods and Dominguez's system of nutrition featuring soyfoods and whole grains: *Alimentacion Integral Para Una Vida Plena: Los Mil Usos de la Soya.* Focusing on low-technology soyfoods such as fresh soy puree, soymilk, tofu, okara, roasted soy flour, and soy sprouts, plus many original recipes, this was the first book of its type in Latin America. A second printing was out within a year.

"Dominguez was one of the first people in Latin America to grasp the spirit of the soyfoods movement in the U.S. and to see the great potential for working directly with the people to introduce soyfoods 'from the bottom up.' Her fine publications were accompanied by lots of hard work with local people. In the 1970s in Tepoztlan she founded the Soya Cooperative Padma Xochitl, with the help of three teachers there whose students regularly fell asleep in class from lack of a proper breakfast–or any breakfast at all. A number of people joined with Dominguez, working with a most creative and generous spirit, to make the Cooperative into a very active and extremely effective center of soyfoods information: Victor Ariel Barcenas, Albino Quiroz, Marisela Penaloza de Quiroz, and Coti Nava deserve special mention. The fine work started here first reached the people of Morelos, then quickly spread throughout Mexico. It proved that soyfoods in conjunction with the new yet traditional diet were well received wherever they were tried.

"Dominguez was a creative and inspiring teacher and the people with whom she worked felt her love and care. She developed Tofu Chorizo (like a garlic sausage), enchiladas, and tamales, pozole (stew) soy-flour enriched masa, and many soymilk recipes. Women understood quickly when she showed that from 16 pesos of soybeans they could get 10 liters of soymilk (worth 130 pesos) and 1.5 kg of okara (worth 150 pesos). She asked that women pay for their classes by teaching 10 other women what they had learned. Deploring that food had fallen into the hands of men, who thought only of its monetary and rarely of its nutritional value, she never failed to teach of the dangers of junk foods (like proliferating soft drinks) and the ease with which traditional diets could be improved with soy.

"Dominguez worked closely with a host of other people, who in turn became soyfoods teachers. Maria Esther Rosete of IMSS did pioneering work with Dominguez introducing soyfoods into her area and to the workers and their wives at a big sugar mill in Zacatepec. They gave many demonstrations and trained volunteers who introduced the healthful diet in many places in the state of Morelos. In 1980 Maria Esther was transferred to Xalapa, Veracruz, where she continued her work with soyfoods with great effectiveness. In 1981, Dominguez was invited to train a group of social workers, nutritionists, and cooking teachers there to take the diet to villagers, schools, and the poorest sections of the city. In 1979 Dominguez was invited by the Teachers College in the state of Durango to train a group of teachers in using soybeans. Today this college has a one-semester course in the theory and practice of soyfoods use, directed particularly

at rural teachers. Señora Elvia de Jesus Hidalgo de Sanchez, one of Dominguez's former students from Tepoztlan, who initiated he program, has also trained one hundred volunteers from the DIF (Family Integral Development) in Durango and given many soyfoods courses throughout the state of Durango, including at the Agricultural Experiment Center. Starting in 1979 Laura Mendez, earlier from the Tepoztlan Cooperative, worked with Dominguez and many others to introduce soyfoods to the state of Mexico. Obdulia Herrera Bazan, Dr. and Mrs. Arturo Aldama, Arcadia Ramirez, and many others also did fine work with soyfoods.

"In late 1981 Dominguez, who had previously worked entirely without outside financial support, was invited by DIF in the state of Veracruz to work for one year as an employee teaching about soyfoods. She developed a nutritional program for the state and trained a group of young nutritionists, who taught soyfoods to housewives, jails, orphanages, etc. throughout the state, emphasizing home preparation of low-cost substitutes for meat and milk. The program was a great success, and many of these and other workers gave generously of their time, energy and money with almost missionary zeal in the strong belief that soyfoods could play a key role in uplifting the poor and improving their diet. Throughout this ongoing work, Dominguez viewed her efforts as a part of their spiritual practice of Yoga, to serve others selflessly and lovingly, to help relieve suffering." Address: Mexico City.

3714. Mann, Ernest J. 1982. Soya bean-dairy blends. *Dairy Industries International* 47(1):11-12. Jan. [20 ref]

3715. May, C.D.; Fomon, S.J.; Remigio, L. 1982. Immunologic consequences of feeding infants with cow milk and soy products. *Acta Paediatrica Scandinavica* 71(1):43-51. Jan. [12 ref]
Address: Dep. of Pediatrics, National Jewish Hospital and Research Center, Denver, Colorado & Dep. of Pediatrics, Univ. of Iowa, Iowa City.

3716. **Product Name:** Tofu, and Soymilk.
Manufacturer's Name: Midwest Soy Products, Inc.
Manufacturer's Address: 608 S. Belmont Ave., Champaign, IL 61820. Phone: 217-398-57560180.
Date of Introduction: 1982. January.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1982. Sept. 17. Owner: Anthony & Patricia Kao.

3717. Midwinter, R.E.; Moore, W.J.; Soothill, J.F.; Turner, M.W.; Colley, J.R.T. 1982. Infant feeding and atopy (Letter). *Lancet* i(8267):339. Feb. 6.
• ***Summary:*** This British group claims a beneficial effect of feeding soy protein, but their data has not yet been published. Address: Dep. of Immunology, Inst. of Child Health, London WC1N 1EH, England.

3718. Shurtleff, William; Aoyagi, Akiko. 1982. History of research on the nutritional value, biochemistry, and therapeutic usage of soybeans and soyfoods. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 59 p. Feb. 13. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. Contents: Introduction. Part I: Soyfoods nutrition and traditional East Asian diets. Need for cooking to maximize nutritional value. The cereal-legume protein model to maximize protein quality and quantity, and reduce degenerative diseases. Food processing techniques to reduce flatulence. Medicinal uses of the soybean. Part II: Modern research on soyfoods nutrition. Protein overview. The First Food, Agriculture, and Nutrition Revolution, 1850-1920. Diabetic diets and soyfoods. Vitamins overview. World War I and soy nutrition. Protein quality, 1880-1920. The 1930's: The Great Depression, the Great Drought, acid-base balance in foods. The 1940's: Soybean trypsin inhibitors, soy fortified breads, essential amino acids. The 1950's: Overview, soymilk formulas and infant feeding. The 1960's: The Second American Agriculture, Food, and Nutrition Revolution; diet and coronary heart disease, soybean trypsin inhibitors update, soyfoods and flatulence. The 1970's: Changing U.S. diet, interest in soyfoods, reappraisal of the value of animal and plant proteins, world hunger (protein vs. calories debate), critiques of protein quality measurement, human protein studies, coronary heart disease and diet, soyfoods and cholesterol, cancer and diet, antinutritional factors in soybeans, mineral bioavailability, breeding soybeans to upgrade nutritional quality. The 1980's: Future and outlook. Address: Lafayette, California. Phone: 415-283-2991.

3719. Dominguez de Diez Gutiérrez, Blanca. 1982. Re: Current work with soyfoods in Mexico. Letter to William Shurtleff at Soyfoods Center, Feb. 16. 4 p. Typed, with signature. [Eng]
• ***Summary:*** "We are making the most incredible tamales." Blanca's maiden name is Dominguez. Her husband's double surname is Diez Gutierrez. She has decided to use only her maiden name–otherwise it is too long. She regrets that she does not know her husband's address.

"I have gone to three good agricultural libraries. When I enquire about the history of soya in Mexico, the librarian looks at me wide-eyed. So they bring out all they have on soya, plenty of information, but no history. I know Manuel Gamio wrote about it and was a great promoter." But Blanca has been unable to find any of his books.

"Soya flour was widely used by the Social Security in Mexico for many years; they began in the 1960s, and only recently gave it up. It was distributed freely among the

people. It was never very successful and was not accepted permanently, because only the Social Security distributed it. I have been told that many years ago, even as early as the 1940s, the soya bean was sold or introduced in some shops; but it later was removed because people rejected it. They tried cooking it like Mexican beans, which are much softer and cook into a nice gravy sort of sauce. This soya bean never cooked, was hard as a rock, so it did not succeed. Now many people realize you must learn how to use it, and are willing to learn.

"I am sure there was some very goos stuff around in the 1930s. I have this clue from an old teacher, who told me she had some notes, which sounded terrific." But she has not yet been able to find them.

"You must write to Dr. Nuren Banfunzi (Apdo. Postal #6, Iguala, Guerrero). He has made many important contributions to Mexico in the field of Soya, among them creating the variety BM2, with no odor or beany taste, so that people do not reject the milk for human consumption. He might have all the information you need. He is now working in *el tecnológico* of Monterrey; also in Queretaro and also in Michoacan. He has been in contact with many fine people (incl. one lady in Michoacan) who are doing a lot to take the soya to the common folk. I am sure he can help you. He is a scientist. We are very good friends, and he has done a lot to introduce the soya to the ordinary housewife, even creating some recipes himself.

"Soya is almost like a conversion. When people adopt it, they turn inside out." Blanca encloses a sheet of the names she uses for basic soyfoods in Spanish. "Soyafoods = *alimentos de soya.* Fresh green soybeans = *frijol de soya tierno* (no special name). Soya nuts = I call them *soya-nuez* and so do my students, but this is only amongst us. Soya sprouts = *germinados de soya.* Roasted soya flour = *harina de soya tostada.* Coffee = I call it *soyafee* but this is only known among my students and at the cooperative I founded in Tepoztlán. Soya-choc = I call it *soyalate,* same as above. Tofu = *tofu o queso de soya o cuajada* (curd) *de soya.* Okara = *Okara o pasta de soya.* Soya oil = *aceite de soya.* Soy flour = *harina de soya.* Textured soya protein products = *productos de soya texturizada.* Soya grits: are not known here. Roasted soya beans with salt = like peanuts, I call them *soya-huates,* but my names are not well known yet, only among those who study with me. Gô = *masa de soya* which looks very much like the corn dough with which we make tortillas." Note: This is the earliest English-language document seen (Nov. 2012) that contains the term "roasted soya flour."

"In Mexico there are some commercial products: *Chocosoya,* like chocolate soya to drink with water or milk. *Soyavena,* a soya powder for children, soya and oats. *Pinole de soya,* is soya powder with cinnamon and sugar. *Horchata de soya,* invented by me but very well known, soya milk with plenty of ice, cinnamon, vanilla and sugar (I made it in Denver [Colorado, at the annual Soyfoods Conference])." Address: Apdo. Postal 226, Jalapa, Veracruz, Mexico.

3720. O'Brien, Jane M. 1982. Re: Re-thinking starting a tofu and soymilk factory in Ireland. Letter to William Shurtleff at Soyfoods Center, Feb. 17. 1 p. Typed, with signature.
• ***Summary:*** "We have had to backpedal a bit on any plans for a tofu and soymilk factory for many reasons–there is just not presently enough demand to warrant such a venture, but the time will come eventually.

"My book is coming along midst all the other things that are happening which have to do with family life, Baha'i life, and my interest in the many aspects of health and healing." Address: 7 Woodside Drive, Rathfarnham, Dublin 14, Ireland. Phone: 909-769.

3721. Brody, Jane E. 1982. Winged bean hailed as a potent weapon against malnutrition. *New York Times.* Feb. 23. p. C1, C4. [1 ref]
• ***Summary:*** "The winged bean, a plant virtually unknown six years ago, has definitely taken off." Prof. Theodore Hymowitz says, "it's like an ice cream cone–you eat the whole thing." "The winged bean seed rivals the soybean in the quantity and quality of its protein."

Like the soybean, the winged bean can be pressed to obtain an edible oil. It can also be sprouted, or made into tofu, tempeh ("an Indonesian fermented bean cake") or a nutritious milk-like drink. Address: New York.

3722. Alfa-Laval. 1982. Douru [Soymilk]. Lund, Sweden. 12 p. Feb. [Chi]
• ***Summary:*** Note: This is the earliest Chinese-language document seen (Aug. 2013) that uses the term "douru" ("bean milk") to refer to soymilk. The word is rarely used in Chinese. Address: Sweden.

3723. **Product Name:** [Soymilk Mousse with Barley Malt Syrup].
Foreign Name: Bakuga-iri Tônyû Muusu.
Manufacturer's Name: Asahi Foods (Asahi Fuuzu).
Manufacturer's Address: Japan.
Date of Introduction: 1982. February.
Wt/Vol., Packaging, Price: 2 x 100 gm plastic cup.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Bakuga-iri Tônyû Muusu was introduced in Feb. 1982 by Asahi Fuuzu in 2 x 100 gm plastic cups and distributed nationwide.

3724. *Brik Pak-Age.* 1982. Brik Pak Inc. breaks ground for first U.S. plant. 1(2):1. Winter.
• ***Summary:*** "On Friday December 19, Brik Pak Inc. broke ground for Phase I of a $40 million packaging material plant in Denton, Texas. The plant will supply packaging material for aseptic Brik Pak filling machines used by U.S. customers.

The plant is scheduled to begin operation in Spring, 1984, and to be fully staffed and in full production by late 1984.

"Worldwide, Tetra Pak presently has 23 production factories.

"According to H.F. Kirchdorfen President and CEO, 'Denton was selected because of its central Texas location, its proximity to excellent air and ground transportation, and the availability of a professional work force.'

"The 52.6 acre site was purchased from Barworth Corporation. Construction will begin immediately on Phase I, which will consist of 210,000 sq. ft."

An illustration shows an aerial view of the plant–the first Brik Pak Inc. plant in the United States.

3725. **Product Name:** [Soymilk].
Foreign Name: Leche de Soya.
Manufacturer's Name: Centro de Soya, Soy Dairy.
Manufacturer's Address: Barrio San Bartolo, Molino Belen, Solola, Guatemala; Apartado Postal 118, 07091 Solola.
Date of Introduction: 1982. February.
Ingredients: Water, soybeans.
Wt/Vol., Packaging, Price: Sold in 1 gallon plastic containers brought by the people who buy the soymilk. Retails for Q. 1.25 per gallon.
How Stored: Refrigerated.
New Product–Documentation: Jenkins, Praskin, and Praskin. 1982. Plenty Integrated Soy Program, Guatemala. p. 21, 33. Letter from Amado del Valle. 1987. July 22. From January-July 1987 the soy dairy produced 3,777 gallons of soymilk. Interview with Laurie Praskin. 1987. Nov. 30. This soymilk was only sold, as such, to people in the community who brought a container to the soy dairy. It was not packaged for sale elsewhere. Letter from Amado del Valle. 1988. March 16.

3726. Chow, Edward T.S.; Wei, L.S.; Steinberg, M.P.; DeVor, R.E. 1982. Application of two-level fractional factorial designs in development of a soybean whipped topping. *J. of Food Science* 48(1):230-34. Jan/Feb. [23 ref]
Address: Dep. of Food Science, Univ. of Illinois, Urbana.

3727. Leviton, Richard. 1982. Soy delis: Fast, natural, and growing. *Soyfoods.* Winter. p. 35-37.
• ***Summary:*** Discusses the Well Bean Deli in Santa Cruz (with a photo of Kevin Van Slooten); Real Food Tofu Cafe in Redwood Valley; and The Tofu Shop in Arcata. All in California. 2-3 photos show each location.

Concerning The Tofu Shop (768 18th St., Arcata, CA 95521): It "combines retail take-out with small scale tofu production and bakery products in a wood-lined airy storefront. Owner Matthew Schmit (who earlier managed a soy deli in Telluride, Colorado) has filled his 1,000 square feet with a small commercial cauldron-style tofu shop, small bakery, and 200 square foot retail front, all of which he launched on $11,000 investment on December 15, 1980. The cozy retail space features racks of soy cookbooks and crackers, teas, packaged miso, tofu and tempeh kits, noodles, seaweed, and a handsome reach-in cooler where the tofu herb burgers, tofu spinach pies, vegetable tofu sushi rolls, tofu tahini salad, tofu herb dip, tofu cream pies, and bottled soymilk are displayed. Monthly sales average $3,500 with some outside distribution of tofu, soymilk, and burgers. The deli attracts walk-in customers from the nearby Humboldt branch of the University of California while tofu burgers and tofu spinach turnovers are probably the most popular products at the deli." Photos show: (1) Matthew Schmit standing at the wood-lined counter. (2) Matthew and Susan [Suzanne] Schmit with their shop's specialties.

Concerning the Real Food Tofu Cafe (8473 East Rd., Redwood Valley, California): The Tofu Cafe is "in the tiny inland town of Redwood Valley (population: 400). Real Food (billed as 'Vegetarian whole foods, specializing in delights from the humble soybean') opened its 900 square foot facility (which includes in-house tofu production and secondary tofu products) in November 1980. The cafe is open for leisurely lunches, from noon until four and the customer often feels as if he is dining in someone's large, lovely living room. The deli is outfitted with wall-to-wall carpeting, an authentic rock wall, hefty wooden tables, plants. The decor, in fact, in most soy delis is typically tasteful, low key, earthy, and exudes a subdued sense of quality. 'Anyone who runs a soy deli,' Dik Rose remarks 'should make secondaries because of their promotional value for the deli name.' Rose's cafe, which is the retail branch of his Brightsong Tofu Company, produces Missing Egg Tofu Salad, Tofummus, Almond Tofu Creamie, and Strawberry Tofu Creamie, packaged in 8 ounce plastic tubs, and shipped frozen (with a 17 day refrigerated shelf life) around the San Francisco market. Missing Egg Tofu Salad sandwich and banana carob soymilk shakes are the deli best sellers, the average ticket is $3.50, and take-out and sit-down each draw 50 percent." Photos show: (3) The inside of the deli. (2) Dik and Sharon Rose behind the counter, with their large menu on the wall behind them. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

3728. Ontario Soya-Bean Growers' Marketing Board. 1982. "Canadian soyabean mission, South East Asia, Feb. 12th–27th, 1982: Mission member reports." 1982. Canadian soyabean mission, South East Asia, Feb. 12th–27th, 1982: Mission member reports. Chatham, Ontario: Ontario Soya-Bean Growers' Marketing Board. 12 p. Feb. 12 p. Feb. 24 x 11 cm. [Eng]
• ***Summary:*** Contents: Comments, by Peter H. Epp, Chairman. Japan: Home Shokuhin Tofu Manufacturing Co., Komatsuya Shokuhin (natto mfg. plant), Nihon Miso (manufacturing plant), Japan Miso Assoc., Japan Tofu

Assoc., Federation of Japan Natto Manufacturers' Cooperative Society, Wako Shokuryo Co. (makes natto; Jacob Hartz in Arkansas supplies them with "936X" variety small-sized natto soybeans; Wako also supplies Nihon Miso Mfg. Plant), X-Can Far East Ltd. Korea: Seoul meeting at embassy, Chung's Food Ltd., Agriculture and Fisheries Development Corp., Korean Soybean Curd Cooperative Manufacturing Assoc. Singapore: Okura & Company Ltd., Eng Huat Pte. Ltd., Intraco. Malaysia: Yeo Hiap Seng Co. Ltd. (the largest manufacturer of soymilk in Malaysia and Singapore). Follow-up. Conclusion.

Each of the following members of the mission wrote a chapter in this book, discussing each visit mentioned in the contents: Peter H. Epp, Bernard Calhoun, Otis McGregor, Richard I. Buzzell, M.D. Pennell (General Manager, R&D, H.J. Heinz Company of Canada Ltd.), Michael Loh (Export Development Specialist, Ontario Ministry of Agriculture and Food).

Details are given on the soybean characteristics desired for each type of soyfood product, especially in the chapter by Dr. Buzzell. Popular soybean varieties include: For Miso: Enlei [Enrei], Fujimejiro, Harcor.

For natto: The main natto specifications are: 1. Seed size–small but fully developed, less than 5.0 mm diameter if possible. 2. Round seed. 3. Total sugar content < 22%. 4. Oil content > 19%. 5. White / yellow hilum. Best natto varieties: Jizuka (the smallest, from Ibaraki prefecture) and Suzuhime (small, from Hokkaido), "two domestic [Japanese] varieties used for superior quality natto, were priced at $100 U.S. for 60 kg. The U.S. varieties which have been, and are being used presently, are not satisfactory. Both Nattawa and Pioneer 1677 varieties should adapt well to the natto product." Jennett (H24) from the USA is good. (p. 5, "Natto specifications Japan, unnumbered page near rear).

For tofu: Amsoy, Coles, Harcor.

Letter from Fred Brandenburg of OSGMB. 1994. Nov. 9. "Regarding export promotion before 1982, any activities would have been part of larger government sponsored trade missions. For example, in 1979 Otis McGregor participated in a mission to Asia which was co-ordinated by Michael Loh. It included a number of marketing boards and associations from Canada."

Note: This is the earliest document seen (Dec. 1998) that (apparently) mentions the soybean variety Enrei. Address: P.O. Box 1199, Chatham, ONT N7M 5L8, Canada. Phone: 519-352-7730.

3729. **Product Name:** Soymilk [Honey-Vanilla, Carob, or Plain].
Manufacturer's Name: Palomar Mountain Soyfoods.
Manufacturer's Address: 31405 N. Highway 395, Escondido, CA 92025. Phone: 714-749-2476.
Date of Introduction: 1982. February.
New Product–Documentation: Talk with Alex Press. 1990. Feb. 28. He started selling this product in about Feb. 1983.

3730. **Product Name:** [Haimaru / Haimiru Soyalac {Soymilk} (Plain, or Cocoa)].
Foreign Name: Haimaru Kokoa, Haimaru Soiyarakku.
Manufacturer's Name: San-iku Foods.
Manufacturer's Address: 1-1 Nagaurataku, Sodegaura-machi, Kimizu-gun, Chiba-ken 299-02, Japan.
Date of Introduction: 1982. February.
Wt/Vol., Packaging, Price: 180 gm foil retort pouch (standing pouch).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Haimaru Kokoa, and Haimaru Soiyarakku were introduced in Feb. 1982 by Saniku Fuuzu in a 180 gm standing pouch and distributed nationwide.

3731. Shurtleff, William. 1982. Viili is heavenly. *Soyfoods.* Winter. p. 10.
• ***Summary:*** "In *Soyfoods* No. 5 (Summer 1981) there appeared one of the first articles in English about the

delectable Finnish cultured food *viili* (It was mistakenly called *viilia* in the article). For the past nine months we have prepared soymilk viili at home once a week using a starter obtained from GEM Cultures. We've enjoyed it almost daily, drizzled over applesauce, blueberries, or strawberries, or topped with granola. We have shared our culture with many of our friends who, like us, enjoy the mild, creamy-rich flavor and the unique thick, honeylike yet slightly 'stretchy' consistency, plus the convenience. Unlike yogurt, soymilk viili can be made at room temperature without an incubator and without having to boil the cups or jar it's made in to sterilize it.

"Finland has two favorite fermented milk products: viili and piima. Viili is eaten and piima is drunk. Viili comes in two varieties: 'long' which is stretchier and incubated at a lower temperature and 'short' which is less stretchy. Long viili, when at its best (or so the Finns claim) is so elastic you have to cut it with scissors! A number of scientific journal articles have been published about viili in Europe; they report that the main fermentation organism is the bacterium *Streptococcus cremoris.* In Swedish, viili is called *fil.*

"We have found one trick that greatly improves our soymilk viili; to each quart of soymilk, add 2 teaspoons of honey and 4 to 8 drops of vanilla extract. Otherwise follow the instructions that come with the culture.

"A good source of viili culture in America is GEM Cultures, 30301 Sherwood Rd., Ft. Bragg, CA 95437. (Tel. 707-964-2922). Send $4.00 for fresh viili culture." Address: Soyfoods Center, P.O. Box 234, Lafayette, California.

3732. Shurtleff, William; Aoyagi, Akiko. 1982. Tofu & soymilk production: A craft and technical manual. Lafayette, California: Soyfoods Center. 336 p. Illust. by Akiko Aoyagi Shurtleff. Index. Feb. 28 cm. [223 ref]
• ***Summary:*** The contents is identical to that of the original Aug. 1979 edition, but the publisher's name has changed to Soyfoods Center from New-Age Foods Study Center. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

3733. **Product Name:** Tofu, and Soymilk.
Manufacturer's Name: Soyfoods Australia (Renamed Nutrisoy. Pty Ltd. by 1987).
Manufacturer's Address: Rear 355 Parramatta Rd., Leichhardt, NSW 2040, Australia. Phone: 560 0792.
Date of Introduction: 1982. February.
New Product–Documentation: Letter from T. [Tony] Wondal. 1982. Dec. 17 (only stamp-dated envelope survives); Soyfoods Center Computerized Mailing List. 1983. June 20. Owners: Marcea Newman Weber and John Fenwick. Phone: 025-600-792. They make tofu and soymilk.

Letter from Marcea Newman Weber. 1995. Feb. 12. The company moved to 14/2 Paton Place, Manly Vale, NSW 2093 in about 1983, and Pty. Ltd. was added to the company name in about 1984.

Letter from Marcea Newman Weber. 1995. March 3. "We started making tofu in Leichhardt in 1982–first part of the year."

3734. *Soyfoods.* 1982. Soyfoods marketer. Winter. p. 57.
• ***Summary:*** "Mark Brawerman's Pacific Trading Co. distributes a diverse line of frozen and refrigerated soyfoods around the greater San Francisco area. Besides his stock of yogurt, cheeses, juices, eggless honey dairy ice cream, and middle eastern specialty foods, Brawerman distributes soyfoods from three West coast producers including Island Spring (Smoked Soyloaf, Steamed Tofu), Redwood Valley (Almond Creamie, Berry Creamie, Soysage, Tofumous, Missing Egg), and Soyfoods Unlimited (Tempeh, Tempeh Burger). Brawerman also handles two brand name lines of his own, Jolly Licks Non-Dairy Frozen Desserts and Living Lightly. The Jolly Licks line of soymilk ice creams was introduced in July 1980 and includes these flavors: Toasted Almond, Strawberry, Coffee, Carob, Orange, Carob Mint, Vanilla, Chocolate, (in pints and 5 oz cups). The Living Lightly line includes soft and firm tofu (water-packed and vacuum packed), tofu cutlets, SoyMoo beverage (plain, vanilla-cinnamon, in pints and quarts), two flavors of Tofu No-Cheese Cake (Hawaiian, Strawberry, at 12 oz), and six frozen tofu entrees, (Tofu Tamale, 7 and 12 oz; Tofu Enchilada, 12 oz; Tofu Lasagna, 18 oz; Tofu Ravioli, 14 oz; Tofu Italian Salad, 8 oz; and Tofu No Egg Salad, 8 oz)."

3735. Yavelow, Jonathan; Gidlund, M.; Troll, W. 1982. Protease inhibitors from processed legumes effectively inhibit superoxide generation in response to TPA. *Carcinogenesis* 3(2):135-38. Feb. [32 ref]
• ***Summary:*** Protease inhibitors in soybeans and tofu block cancerous tumors. The significance of protease inhibitors in edible legumes and the possible role of free oxygen radicals in tumor promotion are discussed. TPA is the tumor promoter 12-O-tetradecanoyl-phorbol-13-acetate. The tests were done in vitro using human enzymes. Address: Dep. of Environmental Medicine, New York Univ. Medical Center, 550 First Ave., New York, NY 10016.

3736. Yeh, S.W.; Wei, L.S.; Nelson, A.I.; Steinberg, M.P. 1982. Freeze-thaw stability of Illinois soybean beverage. *J. of Food Science* 47(1):299-302. Jan/Feb. [20 ref]
Address: Dep. of Food Science, Univ. of Illinois, Urbana.

3737. Funcación Tao-Fu. 1982. Proyecto piloto para la produccion e introduccion de los productos derivados de la soya en Quito, Ecuador [Pilot project for the production and introduction of soyfoods to Quito, Ecuador]. Quito, Ecuador. iii + 21 p. March 1. Unpublished manuscript. [Spa]
• ***Summary:*** Proposal submitted by Richard Jennings and Ismael Janisch. In Feb. 1980 la Fundacion Tao-Fu began

its work to introduce soy protein foods to Ecuador. To date, they have developed tofu (seasoned and natural), tempeh, soy yogurt, and soymilk. Address: Casilla 252-A, Quito, Ecuador.

3738. Lo Kwee Seong: Speech conferring degree of Doctor of Laws, *honoris causa.* 1982. Hong Kong. 5 p. Unpublished typescript. March 4.
• ***Summary:*** This speech, which begins "Mr. Chancellor [of the University of Hong Kong], I have the honour to present..." contains a biography of K.S. Lo, a history of his work in establishing the Hong Kong Soya Bean Products Co., Ltd. and a history of his community service and personal interests.

"Mr. Chancellor, for his public service Lo Kwee Seong has been honoured by Her Majesty [the queen of England] with the O.B.E. in 1971 and the C.B.E. in 1978." Address: Hong Kong.

3739. Lopez, Alejandro. 1982. El trabajo del maestro Ejo Takata con la soya en Mexico [Re: The work of Zen master Ejo Takata with soya in Mexico]. Letter to William Shurtleff at Soyfoods Center, March 19. 3 p. Typed, with signature. [Spa; eng]
• ***Summary:*** In 1969 Rev. Ejo Takata, a Japanese Zen monk and later Zen master who first arrived in Mexico in 1967, began his work with soyfoods. That year, while traveling in the mountains of Oaxaca state, he became aware of the malnutrition among the Mixes and Mazatecos Indians. With the help of the Japanese agronomist Toshihiko Onuki and of a group of Mexicans from the School of Agriculture of Chapingo and of his Zen A.C. community, he established an experimental soybean farm in Oaxaca and promoted the cultivation of soybeans and the use of soyfoods among the Indian communities. He taught the Indians how to make soymilk and how to use the okara (soy pulp) in making corn tortillas. He gave demonstrations in more than 100 communities and in almost all of these the soyfoods were received with such enthusiasm that they became and remain a part of the daily diet. They are made from soybeans now grown locally by the Indians. In 1971 Takata and co-workers opened a dining room at the Universidad Nacional Autonomo de Mexico. During the next 6 months they gave demonstrations and prepared 200 meals a day based on soyfoods including soymilk, okara with green vegetables, tortas with fresh soy puree, tofu in various recipes, crackers (*galletas*), breads, etc. In 1972 they began to give soyfoods demonstrations to the National Workers Syndicate of the ISSSTE, and to peasants and farm workers' organizations. They traveled widely into the countryside and their presentations and food were always well received. This work played a significant role in paving the way for soyfoods in Mexico. In 1973 the President of Mexico, Lic. Luis Echeverria, at a reception, recognized Rev. Takata for the work he had done with soybeans and soyfoods, then inaugurated a national soy program. In 1976 Takata and colleagues established an organization to teach appropriate technology (for food and energy), including soyfoods production. This work expanded in 1981 to the application of Japanese low-cost soyfoods equipment to small businesses, and participation in a national food program called Sistema Alimentario Mexicano (SAM). Takata and his co-workers have demonstrated vividly what individuals can do to help bring soybeans and soyfoods to the people in a country where they are not known. Address: Lic. Alejandro Lopez, Zen A.C., Ave. Revolucion #2036, San Angel, Mexico, DF, Mexico.

3740. Lo, Yvonne. 1982. Work with Vitasoy (Interview). *SoyaScan Notes.* March 23. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Yvonne has been involved with the company since 1978. Her father, K.S. Lo is now writing a book on pottery and trying to get in published in England.

Wai-ta means "vitality" in Chinese and Waita Ming is the word for "vitamin(s)."

The drop in Vitasoy's during 1974 and 1975 was due to a combination of recession and terrible inflation in soybean and sugar prices, which essentially tripled production costs. Shurtleff would like year by year statistics for sales of Vitasoy during the 1970s if possible.

Vitasoy in malt flavor was introduced in the mid-1960s.

Tetra Pak is more expensive than bottles; at one time that Pak was 45% of total costs. Recent prices in HK$ (Hong Kong dollars) for Vitasoy plain and malt were: Bottles: For plain–7 oz $0.60 and 10 oz $0.80. For malt–8 oz $0.80. Tetra Pak (8 oz / 250 ml) was $0.90 for plain and $1.00 for malt.

As of 1981 the company sells more bottles than Tetra Pak cartons, however Tetra Pak sales have increased by 50% a year for the past 3 years. Why does HKSBP but Tetra Pak cartons if they are more expensive? They are safer, more modern, and more stylish.

The company is now in the process of changing its name. Shurtleff suggests "Vitasoy." The original name was the Hong Kong Soyabean Co. Later that was changed to Hong Kong Soya Bean Products Co., Ltd. Yvonne does not know when that change was made.

The company is not yet publicly held; it is owned by the Lo family. Yet the family is thinking about going public.

In Hong Kong, Young and Rubicon, designers, have the HKSB account. Address: Vitasoy USA, San Francisco, California.

3741. Kojima, Yoshiko. 1982. Re: The soymilk industry in Japan. Letter to William Shurtleff at Soyfoods Center, March 25–in reply to inquiry. 4 p. Typed, with signature on letterhead.
• ***Summary:*** In Japan, at present the four largest soy milk

makers are given below in descending order of production [largest first]:

1. Kibun Health Foods K.K., 1-11-8, Shin-Sayama, Sayama-shi, Saitama pref. 350-13. Tel. No. 0429-53-7001.

2. Okazaki Marusan K.K., 1, Aza Arashita, Niki-cho, Okazaki-shi, Aichi-pref. 444-21. Tel. No. 0564-45-3111.

3. Mitsubishi Chemical Foods Co., Ltd., 5-13-12, Ginza, Chuo-ku, Tokyo 104. Tel. No. 03-542-6499.

4. Kyushu Milk Co., Ltd., 4311 Moto-machi, Oita-shi, Oita-pref. 870. Tel. No. 0975-43-4135.

About 40 companies are producing soy milk in Japan. Those who are the members of Soy Milk Association are shown on the attached sheets.

The first commercial soy milk in Japan was made in 1959 by Saniku Foods–Food Div. of Seventh Day Adventist group in Japan under the instruction of Dr. Harry Miller.

With best regards, Sincerely,...

The attached sheets are titled "List of soy milk producing companies in Japan who belong to the Japan Soymilk Association." The name, address, and phone number of 17 companies are given. These include the four largest soymilk makers given on page 1. Address: Associate Country Director for Human Nutrition, American Soybean Association, 11th Floor, Akasaka Tokyu Building, 2-14-3 Nagata-cho, Chiyoda-ku, Tokyo 100, Japan.

3742. Ponce Aguirre, Joaquín. 1982. Re: Soyaven, soy based infant formula. Letter to William Shurtleff at New-Age Foods Study Center, March 27. 1 p. Typed, with signature.
• ***Summary:*** His company produces Soyaven in Mexico. Address: General Manager, Productos Alimenticios Delicias, S.A., Apartado Postal #376. 33000 Dc. Delicias, Chih México.

3743. Bhatnagar, Prem Swaroop; Ram, Harihar. 1982. [Soybeans in] India. *INTSOY Series* No. 22. p. 143-48. J.B. Sinclair and J.A. Jackobs, eds. Soybean Seed Quality and Stand Establishment (College of Agric., Univ. of Illinois at Urbana-Champaign). [10 ref]
• ***Summary:*** Contents: Introduction. Soybean research. Varietal improvement. Production technology. Plant protection. Soybean development. Food uses and utilization pattern. Feed uses of soybean in livestock and poultry industry. Acknowledgment.

"The crop (mainly black-seeded) has long been grown in India in the northern hills and other scattered pockets under various names, such as Bhatmas, Kalitur, and Bhat... Mahatma Gandhi advocated the popularization of soybeans among the masses... They produce roughly 2.5 times greater yield than other pulse crops and have about double the quantity of protein...

"Encouraged by the promising results of systematic studies at Pantnagar and Jabalpur in 1963 using soybean cultivars from the U.S.A., in 1967 the Indian Council of Agricultural Research launched an interdisciplinary, multilocational, coordinated research project on soybeans. The headquarters of the All-Indian Coordinated Research Project on Soybeans, at Pantnagar, initially had three main centers and six subcenters. However, during the Fifth Five-Year Plan, the project was expanded to five main centers and twelve subcenters to cover different agroclimatic regions of the country. In addition, soybean research is voluntarily conducted at various locations...

"The cultivar development program started in 1963... With our meager beginning of about 300 ha of soybeans in 1968, the coverage in soybeans has steadily increased to about 600,000 ha in Kharif in 1980-81...

"In India, various soybean products similar to conventional dishes have been standardized at G.B. Pant University of Agriculture and Technology, Pantnagar; J. Nehru Krishi Vishwa Vidyalaya, Jabalpur; University of Agricultural Sciences, Bangalore; CFTRI, Mysore; and other places. Products of oriental origin as well as those similar to western products like bread, biscuits, cake, pastry, and soy milk have become very popular, and various kinds of manufactured products, namely, Nutri-nuggett, Protein-plus, Protesnoc, Shakti-ahar, and Soya-stattu are available. Commercial organizations have been making extrusion products, using the Wenger X-25 Extrusion Cooker and full-fat and defatted soy flour. A considerable quantity of soybeans is being solvent-extracted; the cake is exported for animal feed, and the oil is used for hydrogenated fat production.

"The pattern of soybean utilization in India is based on both Japanese and American types... The main problems in expanding the area under soybeans in India are the limited market and the uncertainty of the financial return." Address: 1. Project Coordinator, All-India Coordinated Research Project on Soybean (ICAR); 2. Soybean Breeder. Both: G.B. Pant Univ. of Agriculture and Technology, Pantnagar, Nainital, U.P., India.

3744. **Product Name:** Tofu Burger.
Manufacturer's Name: Bud, Inc.
Manufacturer's Address: 1100 Wicomico St., Baltimore, MD 21230.
Date of Introduction: 1982. March.
Ingredients: Natural nigari tofu, carrots, cabbage, onion, celery, okara, soymilk, sesame seeds, sunflower seeds, soybean oil, sea salt, spices.
Wt/Vol., Packaging, Price: 7 oz vacuum pack.
How Stored: Refrigerated or frozen.
Nutrition: Per 3.5 oz.: Calories 190, calories 12 gm, carbohydrates 11 gm, fat 12 gm, sodium 250 mg (250 mg/100 gm).
New Product–Documentation: Label. 1982. March (dated). 4.5 inches square. Black and white on yellow. "Keep frozen. Completely vegetarian. All natural. No

preservatives." Logo reads: "Soyfoods for a healthy world"; This company is run by a Taiwanese family.

This product is still being sold with the same label in July 1992.

3745. Gupta, S.K.; Arora, Anil. 1982. Development of jowar-soybean-skim milk based weaning food. *Indian J. of Dairy Science* 35(1):62-67. March. Based on the junior author's MSc thesis. [13 ref]
• ***Summary:*** "Although India is the [world's] third largest producer of milk, because of its burgeoning population, the per capita consumption of milk amounts to only 136 gm. Milk is quite expensive and thus not within the reach of a large majority of our population."

"A process was standardized for the manufacture of roller dried cereal based weaning food by combining jowar, soybean and skim milk... The formulation 60:30:10 had the highest PER [Protein Efficiency Ratio] (2.6, compared to 2.5 of casein). All the formulations were acceptable as powder, as gruel containing 15% sugar (on dry matter basis) and without or with strawberry flavour. The powder could be stored for more than 120 days at room temperature (37ºC) in polyethylene bags. The JSM [jowar-soybean-skim milk] weaning food could be manufactured at an estimated cost of only Rs 8.00/kg." Address: Div. of Dairy Technology, National Dairy Research Inst., Karnal-132 001, India.

3746. Herath, H.M.E. 1982. [Soybeans in] Sri Lanka. *INTSOY Series* No. 22. p. 172-75. J.B. Sinclair and J.A. Jackobs, eds. Soybean Seed Quality and Stand Establishment (College of Agric., Univ. of Illinois at Urbana-Champaign).
• ***Summary:*** Contents: Introduction. Liquid soymilk. Dried soymilk. Full fat soy flour. Soy-fortified bakery and other products. Low cost weaning food. Tofu. Tempeh. Soy dhal. Home level training and demonstrations.

"At the present time, the government has included soybeans with a few other field crops into a floor price system. During the last 12 months, the demand for soybeans has increased tremendously, with their use by some agencies in fortification programs... There is an immediate demand for 30,000 ha of soybeans. This target will be achieved by 1982.

"The bulk of the area under soybeans is presently confined to the rainfed highland... The primary objective of the Sri Lanka program is to develop a balanced soybean industry including production, marketing, processing and utilization...

"Accomplishments of the Soybean Food Research Centre (SFRC) include: Liquid soymilk. Dried soymilk: Nearly 5,000 lbs of dried soymilk (DSM) was manufactured... as a coconut milk extender/substitute. DSM has been found acceptable as a coconut milk extender by General Hospital in Kandy and Teaching Hospital in Peradeniya. The Rajarata Food Grain Processing Co., Ltd., a joint venture of the GSL and the private sector, is putting up a 4-ton FFSF/DSM plant in Maha Illuppallama, under the technical guidance of the staff at the SFRC.

"Full fat soy flour:... Nearly 70,000 lbs of FFSF has been produced at the pilot plant and sold through various sales outlets for fortifying wheat/rice flour at 5-10 percent levels... Soy-fortified noodles are being successfully marketed by Forbes and Walker...

"Tofu: Regular production of about 20 lbs of tofu per day has been done with a view to testing its acceptance for use in various curry preparations... Tempeh: Processing parameters for the production of tempeh at the cottage scale have been standardized... Soy dhal.

"By May, 1981, 1,077 trainees had followed the one- to two-week regular course, and 483 had completed the 'Sandwich Course.' More than one hundred demonstrations have involved about 6,000 participants, both from governmental and voluntary organizations." Address: Coordinator, Sri Lanka Soyabean Production Project, Deputy Director of Horticulture, Ministry of Agricultural R&D, Sri Lanka.

3747. **Product Name:** [Koshin Soymilk Pudding].
Foreign Name: Kôshin Tônyû Purin.
Manufacturer's Name: Koshin Nyugyo (Koshin Milk Co.).
Manufacturer's Address: Japan.
Date of Introduction: 1982. March.
Wt/Vol., Packaging, Price: 100 gm Styrofoam cup with legs.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 73. This product was introduced in March 1982 in a 100-gm cup with Styrofoam legs, and distributed in many parts of Japan. Company name with diacritics is: Kôshin Nyûgyô.

3748. **Product Name:** [Koshin Soymilk (Orange, Strawberry, With Blueberry Sauce)].
Foreign Name: Kôshin (Orenji, Sutoroberii, Buruuberri Soosu-iri).
Manufacturer's Name: Koshin Nyugyo (Koshin Milk Co.).
Manufacturer's Address: Japan.
Date of Introduction: 1982. March.
Wt/Vol., Packaging, Price: 100 gm Styrofoam cup with legs.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 73. These products were introduced in March 1982, each in a 100-gm cup with Styrofoam legs, and distributed in many parts of Japan. Company name with diacritics is: Kôshin Nyûgyô.

3749. **Product Name:** [Sujaata Original Soymilk].
Foreign Name: Sujaata no Gen Tônyû.
Manufacturer's Name: Nagoya Seiraku.

Manufacturer's Address: Japan.
Date of Introduction: 1982. March.
Wt/Vol., Packaging, Price: 500 ml long-life Pure Pak carton.
How Stored: Refrigerated.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that this product was introduced in March 1982 in a long-life Pure Pak and distributed nationwide.

3750. Quebral, Florenco C. 1982. [Soybeans in] The Philippines. *INTSOY Series* No. 22. p. 166-71. J.B. Sinclair and J.A. Jackobs, eds. Soybean Seed Quality and Stand Establishment (College of Agric., Univ. of Illinois at Urbana-Champaign).
• ***Summary:*** Contents: Introduction. Cultivar improvement. Planting. Inoculation and fertilization. Pests and diseases. Intensive cropping. Utilization. Costs and returns. Marketing. Marketing program. Areas that need attention. Cooperating agencies.

"The domestic supply of soybeans has never been sufficient to meet national demands for food, feed, and industrial uses. Total domestic soybean production in 1978 was reported to be 7,099 metric tons. Approximately 176,000 metric tons of soybeans, costing $30.8 million, were imported.

"To boost domestic production, the government has launched projects like Masaganang Maisan, the white corn and feed grains program, and the National Soybean Development Program...

"Researchers at the University of the Philippines at Los Baños have produced bottled soymilk (Philsoy) using the hot water grind technique... Fermented soybean products, such as soy sauce, soy cheese (tokwa [tofu]), soy paste (miso), soy curds (tahuri [tofu in brine]), and canned salted beans (tausi [fermented black soybeans]) are the most common soybean products used as ingredients in traditional Filipino dishes. A cheese-like product served with sugar syrup (taho) is sold by ambulant peddlers in urban centers." Address: Prof. of Plant Pathology, College of Agriculture, the Univ. of the Philippines at Los Baños.

3751. Saio, Kyoko; Nikkuni, Ikumi; Ando, Yoko; Otsuru, Masaru; Takeuchi, Yutaka; Kito, Makoto. 1982. Soybean quality changes during model storage studies. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku* (*Report of the National Food Research Institute*) No. 40. p. 189-95. March. [14 ref. Eng; jap]
• ***Summary:*** Reprinted from *Cereal Chemistry* 57:77-82 (1980). Address: 1-2. National Food Research Inst. (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan.

3752. Senanayake, E.L. 1982. Soybeans as food through the ages. *INTSOY Series* No. 22. p. 3-4. J.B. Sinclair and J.A. Jackobs, eds. Soybean Seed Quality and Stand Improvement (College of Agric., Univ. of Illinois at Urbana-Champaign).
• ***Summary:*** "It is true that my country [Sri Lanka] goes back 2,523 years and has not suffered a great deal from famine. But in the recent past, in 1973, '74, and '75, there was an unprecedented drought, and I saw people eating things that normally the people of our country do not eat.

"The soybean, which is called a miracle bean, is fairly new to us. Prior to the Second World War, the late Mr. Walter Moragoda, Chief Propaganda Officer in the Agriculture Department, encouraged the growing of soybeans. But the crop was adopted only in the village home gardens. We owe a great debt of gratitude to the late Mr. Bill Golden, who, with his untiring efforts, interested the Agriculture Department and the people of Sri Lanka in the soybean. His efforts got us into INTSOY, which has benefited us greatly. Since 1975, through UNDP and FAO assistance, we have had the assistance of Dr. Carl Hittle and his team, who have developed soybeans to a great extent in this country. We must thank UNICEF and CARE for having sponsored the pilot factory at Gannoruwa...

"I am happy to see Mrs. Y.Y. Kim here in this hall. [Note: She is the wife of Gai W. Kim, of UNDP, Sri Lanka]. She, in her own silent way, has been propagating the use of soybeans at the village level... Mrs. Kim has taught housewives to use the ordinary grinding stone to reduce soybean seed to a powder that is edible... I think CARE, by introducing Thriposha, has introduced an infant milk food that I hope will catch on in the future and not only stop the drain of our foreign exchange in importing infant milk foods but also give our children a wholesome protein diet...

"We are experimenting with the possibility of using 10 percent soybean flour in baking our bread, which will save a tremendous amount of money spent in foreign exchange. Soya milk for infants is also being promoted by the new Soy Foods Research Centre (SFRC)." Address: Minister, Ministry of Agricultural Development and Research, Government of Sri Lanka.

3753. Soy Plant Co-op Inc. (The). 1982. Price list effective 3/22/82 [22 March 1982]. Ann Arbor, Michigan. 1 p. 28 cm.
• ***Summary:*** This typewritten sheet contains three columns: Supplier, product, and price. The Soy Plant is supplier of (packaged or in bulk): Tofu (1 lb tub), plain soy milk and flavored soy milk (quarts), tempeh (8 oz), soysage (8 oz), miso garlic dressing (16 oz), Soyanaise (soy mayo, 16 oz), carob tofu pies, missing egg salad, tofu spinach quiche, gomaseao [gomashio]. Other suppliers are Micro Farms (alfalfa- or mung bean sprouts), Westbrae Foods (miso–3 types), The Grocery (The Tofu Cookbooklet), and Learning Tree (tofu kit, $13.50 each).

New products available soon: Tempeh salad. Tofu tahini spread. Address: 711 Airport Blvd., Suite #1, Ann Arbor,

Michigan 48104. Phone: (313) 663-8638.

3754. *SoyaScan Notes.* 1982. Chronology of Great Eastern Sun Trading Company in North Carolina. 26 Jan. 1994. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1982 March–The company is founded by Barry Evans. Martin Roth is the first manager. The original purpose is to be a distributor for the miso made by American Miso Company. But the company soon decides to import Japanese macrobiotic products from Mitoku (the first order was placed in Jan. 1982) and later to become a manufacturer.

1984 July–Great Eastern Sun starts to import Ah Soy (soymilk, in chocolate, vanilla, and original flavors). Made in Japan by San-iku Foods, and sold in a stand-up foil retort pouch, it soon becomes very popular. Don DeBona is the first product manager. Address: 92 Macintosh Rd., Asheville, North Carolina 28806.

3755. Vijayalakshmi, K.; Vaidehi, M.P. 1982. Nutritional quality of tofu from soymilk and blends of soymilk, sunflower seed milk and skim milk. *Nutrition Reports International* 25(3):519-24. March. [7 ref]
• ***Summary:*** Tofu made from Soy and Skim Milk (60+40) contains the highest total protein (52.28% dry weight basis) when compared to Soy Tofu (47.38%) or Soy + Sunflower seed milk (44.27%) or Soy + Sunflower seed milk + Skim milk (49.17%).

Note. This is the earliest English-language document seen (Aug. 2013) that contains the term "Sunflower seed milk." Address: Dep. of Rural Home Science, Univ. of Agricultural Sciences, Bangalore 560024, India.

3756. Yeo, Alan. 1982. Re: Brief history of Yeo Hiap Seng's work with soymilk. Letter to William Shurtleff at Soyfoods Center, April 1–in reply to March 24 inquiry. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "1. Our Company first introduced commercial soybean milk in bottle in Singapore in the year 1954.

"2. The name of the product was 'Beanvit.' Subsequently we changed it to "Yeo's Soybean Drink.

"3. It started as a sterilized bottle product.

"4. In 1967 we packed it in tetra pak tetrahedron shape (285 ml) aseptically. This was changed to tetra brik (250 ml) in 1974.

"Please note that we were the first Company in the world to use this form of aseptic packaging for soybean milk.

"5. The product is very well accepted in Singapore and Malaysia.

"6. We are not certain which year Vitasoy started commercial production in Hongkong. We believe they started after 1954.

"7. We do not have any articles on soybean milk.

"8. Soon after the introduction of soy milk in tetrahedron, we produce another product called 'Vitabean' in the same packaging. Vitabean is soybean milk fortified with multi vitamins which contain half the minimum daily requirements of most of the essential vitamins. The ultra high temperature treatment made this addition of vitamins possible. The sterilization process would have destroyed most of the added vitamins."

"Yours sincerely,..." Address: Managing Director, Yeo Hiap Seng Ltd., 950, Dunearn Road, Singapore 21. Phone: 662266.

3757. Tally, Gene. 1982. The Coca-Cola Company's work with soymilk in Brazil (Saci) and Mexico (Samson) (Interview). Conducted by William Shurtleff of Soyfoods Center, April 2. 2 p. transcript.
• ***Summary:*** The Coca-Cola Co.'s (CCC) first protein drink was a whey product in Surinam–the forerunner of Sansom in Mexico. Gene is quite sure that none of the early Samson products contained soy. The trademarks say that the protein source can be whey or soy but all have been whey.

CCC has never marketed a soy based beverage outside of Brazil–where they marketed Saci. Coke's first financial success with a protein fortified beverage was with whey Samson in Mexico. In Brazil, soy Saci was a financial disaster. After inflation gets under control in Brazil, CCC will try a joint venture there with mass market retail soymilk. They will steer clear of government programs such as the school feeding program.

In Japan, Fuji Purina does not like to produce soy protein isolate because the effluent causes environmental problems and expenses. They do make some but they buy most of what they use or sell from Ralston Purina in the USA. Address: Coca-Cola Co., Atlanta, Georgia.

3758. Shurtleff, William; Aoyagi, Akiko. 1982. History of soymilk and dairylike soymilk products. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 53 p. April 4. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. Contents: Introduction. Etymology. Four stages of growth. Part I: History in Chinese-speaking Asia. Origin and early development. Roots of East Asia's soymilk renaissance. Hong Kong and Vitasoy. Singapore. Taiwan. Part II: History in non-Chinese speaking Asia. Japan. India. Philippines. Vietnam. Indonesia. Thailand. Malaysia. Korea. Sri Lanka. Part III: History in Europe. The early years (1739-1919). 1920-1939. 1940-1959. 1960-1980. Part IV: History in the United States. The early years (1898-1919). 1920-1939. 1940-1959. 1960-1980. Part V: History in Latin America and Africa. Part VI: Soymilk overview and future. Part VII: Dairylike soymilk products (nonfermented). Soymilk ice cream, 1918. Soymilk cream and whipped cream, 1932. Soymilk custards and puddings, 1935. Soymilk mayonnaise, 1936. Soymilk shakes, 1944. Soy nog, 1944. Nonfermented

soymilk cheese, 1973. Other.

Note: This is the earliest English-language document seen (Dec. 2003) that contains the term "soymilk shakes" (or "soymilk shake"). Address: Lafayette, California. Phone: 415-283-2991.

3759. Welters, Sjon. 1982. Re: Recent developments with soyfoods in Europe, and ties with macrobiotics. Letter to William Shurtleff at Soyfoods Center, April 16. 6 p. Typed, with signature on letterhead (photocopy).

• ***Summary:*** This letter, whose letterhead reads "Manna Natuurlijke Levensmiddelen," contains names and addresses of many new soyfoods companies, many of them started by people interested in macrobiotics. Names and addresses of the following companies are given: Tofu Denmark (in Valby, run by Per Fruergaard, a macrobiotic), Bernard Storup, Ab & Paulien Schaft (Dutch, setting up a small shop in Baillestavy, France, to make miso, shoyu, natto, and koji), Traditions du Grain (Jean Luc Alonso is setting up a macrobiotic tempeh shop in Ivry France; they will start this summer), Paul Jones (Tofu shop in London), Saskia de Jong (may make miso in Ireland), de Brandnetel (tofu shop in Antwerp, Belgium), Jonathan (makes tofu, ganmo, seitan, mochi in Ekeren, Belgium. Run by J. v. Ponseele), Seven Arrows (Leuven, Belgium; making tofu), Lima Foods (now sell miso made at their plant and farm in France), Witte Wonder (Den Haag, Netherlands), De Morgenstond (Bakkeveen, Netherlands), Jakso (Heerewaarden, Netherlands. Run by Peter Dekker. The first and only shop making tempeh from organic soybeans), Firma Lembekker (Amsterdam), Unimave (Lisbon, Portugal), Jose Parracho (Setubal, Portugal), Swame [sic, Swami] Anand Svadesha (Furth im Wald, West Germany), Bittersuess (Cologne, West Germany. Attn: Thomas Kasas/Karas). Three distributors of soyfoods and natural foods in Germany are YinYang (Berlin), Rapunzel (Heimraadshofe), and Mutter Erde (Werbelen). In Finland: Luonnonruokakauppa AUMA (Helsinki). In Switzerland: Verena Krieger of Sojalade (Engelberg, tofu shop), Hans Rudolph Opplinger (Cham, tofu shop), Marty Halsley (Nyon, tofu & tempeh), Restaurant Sesam (Bern). P. Ton van Oers is a Dutch priest who works in Kananga, Zaire. The natives have grown soya for 10 years and he is thinking of making tofu and soymilk from them.

"In Great Britain the East West Centre is very active in promoting soyfoods. As a part of the Kushi Institute program they have home-scale processing, in which tofu, tempeh, and miso-making are taught by Jon Sandler [Sandifer?]. He is the tempehmaker of the EWC too at Community Health Foundation, 188 Old St., London EC1. In the Netherlands, a great deal of soyfoods promotion is done by the East West Center and Manna. As you probably know, Manna was the first to introduce miso, tamari, shoyu, tempeh, tofu and koji to the larger public and we are still the main promoters of soyfoods as part of a more natural, vegetarian, and economic diet. Manna has been followed by a lot of other distributors of natural and health foods. We have two competitors in the tofu business: Witte Wonder and De Morgenstond.

"At the moment I'm the only teacher giving lectures on homescale miso-, tofu-, tempeh-, shoyu-, tamari-, natto-, and koji-making in the Netherlands. Mainly at the East West Centre and sometimes at different places in the country. People are starting to get interested."

Note: This is the earliest document seen (Jan. 2003) concerning the work of Swami Anand Svadesha of West Germany, and of Thomas Karas of Bittersuess (Cologne, West Germany). Address: Stichting Natuurvoeding Amsterdam, Meeuwenlaan 70, 1021 JK Amsterdam-N, Netherlands. Phone: 020-323977.

3760. Kim, Gai W. 1982. Re: Details of introducing tofu [Boncheese] to Sri Lanka. More on replacing coconut milk with soymilk. Letter to William Shurtleff at Soyfoods Center, April 23–in reply to inquiry of April 13. 2 p. Typed, with signature.

• ***Summary:*** "Thank you for your letter dated 13 April 1982 asking me for information about Sri Lanka's first tofu shop."

The name of the show was Boncheese, 128 Kitulwatte Rd., Colombo, Sri Lanka. Phone: 596-992. Owner: Mr. U.N. Gunasekera; he is one of the few big contractors in Sri Lanka.

Work on the factory was completed by March 1980. The product, Boncheese, was publicly retailed at a stall in Kolpetty Market, the largest market in Colombo. The factory had to be closed from December, 1980 to March, 1981 due to a shortage of soybeans in the local market. At the moment, Cornel's Super Market, which opened in early August, the only Super Market in Colombo, is the sole sales outlet for Boncheese; 60 lb per day is supplied.

Sri Lankans usually cut tofu into ½-inch cubes and deep fry them before adding them to curry in place of whole boiled eggs or beef. Foreigners and Sri Lankans who have lived abroad are the best customers. "I have already given quite a few demonstrations on how to use tofu but, I think, more efforts should be made.

"I named tofu as 'Boncheese' in order to give Sri Lankans a name that was more familiar to them. Locally any bean is called 'Bonchi.' I added 'Cheese' to make it 'Boncheese' because of its similarity in texture and in the way it is made like *farmer's cheese* which I used to replace with tofu when it as not available.

Sri Lankans use coconut milk to make their curries; it is not only very expensive but also very rich in cholesterol [high in saturated fats]. So far I succeeded in replacing coconut milk with diluted soya paste at the kitchens of Colombo General Hospital and Welikade Prison. The Boncheese factory delivers about 30 kg (dry weight) of soybeans wet ground every morning to those institutions 365 days a year. Since 500 gm of soybean replaces 10 coconuts,

600 coconuts are not used and that means 100% saving in cost to the institutions.

At my urging, the Nutrition section of the Ministry of Plan Implementation already ordered two grinding machines from Bean Machines, Inc. One machine will be given to the Welikade Prison kitchen so that it will not only be self-sufficient in making its own soy paste (at the moment only 30% of the coconut milk is replaced by soy paste) but will also be able to make tofu and soy bread. The prison farms are already growing their own soybeans! Address: c/o UNDP in Sri Lanka, P.O. Box 1505, Colombo, Sri Lanka.

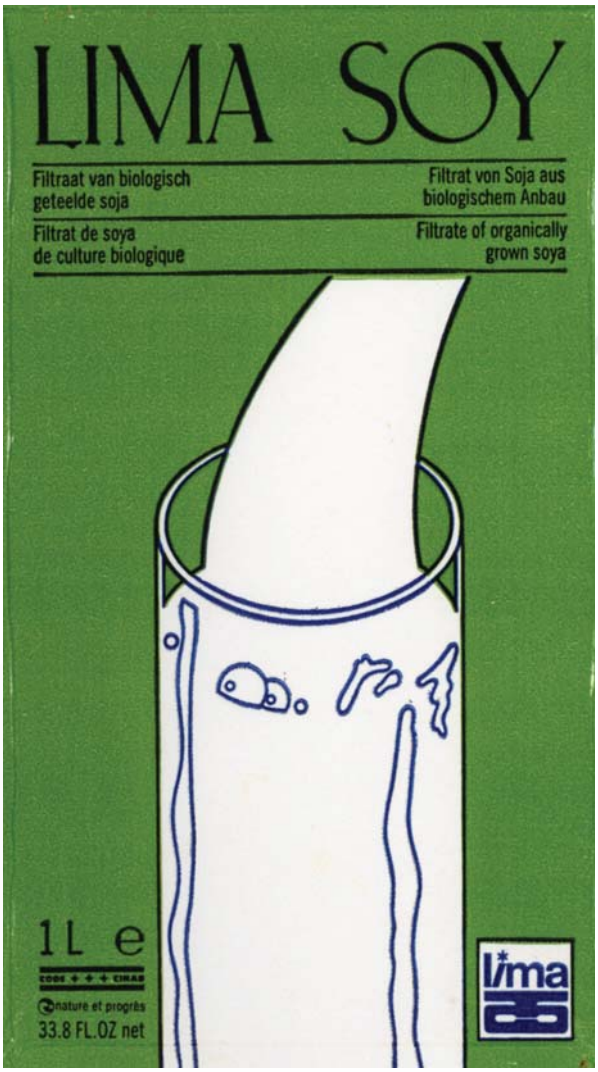
3761. **Product Name:** Soybean Curd, and Soy Milk.
Manufacturer's Name: Dae Han and Company.
Manufacturer's Address: 18300 S.W. Boones Ferry Rd., Durham, OR 97223. Phone: 503-620-8983.
Date of Introduction: 1982. April.
New Product–Documentation: Form filled out by Yeun Mo Koo (Korean). The company started on 1 April 1982.

Talk with Paul Moss, who has worked with Dae Han for 7 years. 1990. May 28. The company name is now Dae Han, Inc., 737 S.E. Alder St., Portland, Oregon 97214. Phone: 503-233-8638. Paul plans to use their plant to make tempeh. Labels sent by Paul Moss. 1990. May 10. The soymilk is now called Fresh Wonder Soy (Plain Soy Beverage). The two types of tofu are Organic Regular Tofu (Japanese Style), and Organic Firm Tofu (Chinese Style). Both are certified kosher by Rabbi Yonah H. Geller.

3762. Everybody's Vegetarian Restaurant. 1982. Menu. Nashville, Tennessee. 1 p.
• ***Summary:*** Contains many recipes using tofu, tempeh, cooked whole soybeans, plus soymilk ice cream ("The original soy milk Ice Bean" in cones, cups, milk shakes, or sundaes), soy sour cream or mayo, soy milk shakes, tofu cheesecake, and apple crisp a la mode. Address: 120 21st Ave. North, Nashville, Tennessee. Phone: 329-2000.

3763. **Product Name:** [Organic Soya Drink].
Foreign Name: Boisson de Soya Organique.
Manufacturer's Name: Les Aliments Horium Foods Inc.
Manufacturer's Address: 1050 rue Lacasse Street, C1-18, Montreal, QUE, H4C 2Z3, Canada. Phone: 514-933-4605.
Date of Introduction: 1982. April.
Ingredients: Extract of Soyabean, water.
How Stored: Refrigerated.
Nutrition: Per 100 gm.: Calories 25, protein 4.4 gm, carbohydrate 3.4 gm, fat 2.5 gm, water 88.6 gm.
New Product–Documentation: Label. 1988, received. 5.5 by 2.5 inches. Red and blue on white. In French and English.

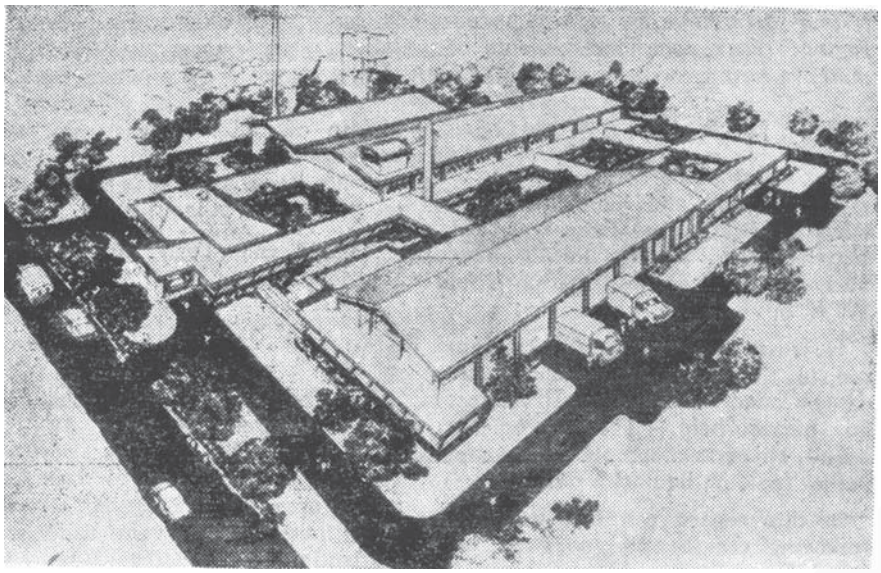
3764. **Product Name:** [Lima Soy (Soymilk)].
Foreign Name: Lima Soy.
Manufacturer's Name: Lima Foods. Made in Belgium by



Jonathan.
Manufacturer's Address: Edgar Gevaertdreef 10, B-9830 Sint-Martens-Latem, Belgium.
Date of Introduction: 1982. April.
Ingredients: Water, organically grown soybeans.
Wt/Vol., Packaging, Price: 0.5 liter or 1 liter Tetra Brik Aseptic carton. Retails for DM 4.40 in Germany (1/90).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Protein 3.6 gm, fat 2.6 gm, carbohydrates 1.0 gm, minerals 0.2 gm.
New Product–Documentation: Letter from Sjon Welters. 1982. April 16. "Jonathan is a macrobiotic food company. They make the tofu and soymilk for Lima Foods in Belgium which is sold all over Europe. It is sterilized, so it keeps a long time.

Labels sent 1986 are white, black and blue on green. Soymilk is being poured into a tall glass.

Soyfoods Center Computerized Mailing List. 1982. July 23. Address is Moulin d'Andiran, 47170 Mezin, France. Phone: 58 65 10 02.



Note: This is the earliest French-language document seen (Aug. 2013) that uses the term *soy* to refer to soymilk.

3765. *Soyanews* (*Sri Lanka*). 1982. Soya milk factory comes up. 4(8):1. April.
• ***Summary:*** "A plant to produce dried soya milk at the rate of 4 tons per day is being set up at Maha Illuppallama in the Anuradhapura district. Dried soya milk powder (DSM) in half pound packs is expected to reach the market by the end of the year.

"Nearly all the equipment needed for the processing of dried soya milk powder has arrived. At present, the foundations are being laid and the building, which is pre-fabricated, is expected to be ready by June."

"The Rs. 27 million project to manufacture DSM is the result of a move to overcome the rising price of coconuts, a prime ingredient in the Sri Lankan meal. The Rajarata Food Grain Processing Co. Ltd., which was floated for this purpose, is a limited liability company backed by both the public and private sectors." It was incorporated in Oct. 1980. The company's chairman is Mr. R.S. Wijesekara who is also Chairman of Messrs. Forbes and Walker Ltd."

An illustration (architect's rendering) shows an aerial view of the plant.

3766. *Soybean Digest.* 1982. Chinese feeding trials: "Mo-o-o-ove over Bossie." April. p. 74.
• ***Summary:*** "Chinese dairymen learned firsthand soy-based milk replacers are a cost effective substitute for whole milk. An ASA [American Soybean Assoc.] feeding trial shows calves fed soy-based milk replacer gain more weight and have fewer digestive problems than calves fed whole milk. 'Competition for milk between humans and animals is severe in China,' says ASA animal nutritionist Ken Lepley. 'There isn't enough milk so the Chinese kill male calves at birth to save milk for heifers.' Feeding trials were set up in June at Shanghai Dairy Farm Number Two. Since then China has invited ASA to establish a joint trade office in Peking."

3767. **Product Name:** [Agricultural Cooperative Mirusoy Soymilk {Some varieties contain dairy milk}].
Foreign Name: Nôkyô Mirusooi {Shuruibetsu wa nyû-iri}.
Manufacturer's Name: Zenkoku Nokyo Chokuhan (National Agricultural Cooperative Direct Sale).
Manufacturer's Address: Japan.
Date of Introduction: 1982. April.
Wt/Vol., Packaging, Price: 500 ml paper pack.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. These products were introduced in April 1982 in 500 ml paper packs and distributed Tokyo, Osaka, and Nagoya. Some varieties contained dairy milk. Name of organization with diacritics is: Zenkoku Nôkyô Chokuhan.

3768. Holt, John. 1982. Re: New developments at The Regular Tofu Co. Letter to William Shurtleff at Soyfoods Center, May 1. 1 p. Handwritten, with signature on letterhead.
• ***Summary:*** "Having used your book to learn how to make tofu, we now have a small business here making about 700 lb/week of tofu and about 2,500 tofu burgers per week. We give our okara to a pig farmer... We sell the tofu vacuum packaged. As yet we don't have a means of packaging soya milk. It is sold over here in Tetra Briks and is very expensive. We want to expand the business to make larger quantities of tofu (regular and silken if possible) and to sell soymilk more cheaply... At present, our equipment is very similar, I should imagine, to a small Japanese tofu shop. We use nigari.

An accompanying form states that this company started business in Dec. 1981 and now uses 50-100 lb/day of dry soybeans. Address: 75 Chandos St., Leicestershire LE2 1BU, England. Phone: (0533) 549839.

3769. Ponce Aguirre, Joaquín. 1982. Historia de los alimentos de soya en Mexico [Re: History of soyfoods in Mexico]. Letter to William Shurtleff at Soyfoods Center, May 10. 2 p. Typed, with initials on letterhead. [1 ref. Spa; eng+]
• ***Summary:*** The archives of the Federal Institutions have collected descriptions of the various efforts to cultivate soybeans in our area. The earliest document seen that mentions attempts to grow soybeans in Mexico dates from 1911, when the country was in the throes of revolution. Perhaps for this reason, the project did not prosper. In 1932

experimental plantings were carried out in Veracruz, but were discontinued in 1935. In 1942 seeds were imported from the USA but again the experiments ended in failure. Finally soybeans came to be adapted to Mexican conditions and in 1959 an area of 1,600 ha was planted in the Yaqui Valley in the state of Sonora. The first commercial soyfood in Mexico was Mead Johnson's Sobee, introduced in 1955, for infants and nursing mothers who could not tolerate milk. It is still on the market.

Note: This document contains the earliest date seen for the cultivation of soybeans in Mexico (1911) (one of three documents). The source of these soybeans is unknown. Address: General Manager, PADSA, Productos Alimenticios Delicias, S.A., Apartado Postal 376, Cd. Delicias, Chihuahua 33000, Mexico. Phone: 2-30-93.

3770. Lo, K.S. 1982. Re: Draft copy and questions concerning history of Hong Kong Soya Bean Products Co. Ltd. Letter to William Shurtleff at Soyfoods Center, May 26– in reply to inquiry. 3 p. Typed, with signature on letterhead.
• ***Summary:*** Includes answers to 8 questions asked by Shurtleff: "(3B) I see the greatest opportunity for the growth of Vitasoy in future lies in China where it has the world's largest population and therefore the greatest need for a supplementary food such as vita soy.

"(3C) The sales figures from 1970 to 1981 are as follows: Sales decreased from 4.2 million cases of 24 bottles each in 1970 to 2.5 million in 1975, to 4.4 million in 1980, and 5.6 million in 1981.

"(3D) There is a lot of truth in your statement that most carbonated drinks are harmful to health. But, there is very little that one can do about it until the future generation are better educated as far as selection of food and drinks are concerned.

"(3I) To the best of my knowledge, there is no western company making Soybean milk in the People's Republic of China at the moment.

"(3J) With regard to Puma in British Guiana, Monsanto sold the entire outfit to the local bottler back in 1969. Whatever was marketed after that date was carried out by the local bottler and certainly not by Monsanto." Address: Chairman [and founder], HKSBP Co., Ltd., 41, Heung Yip Rd., Aberdeen, Hong Kong. Phone: 5-528211.

3771. Questions relating to [history of] Vitasoy. 1982. Questions answered on Soyfoods Center letterhead by K.S. Lo and returned on May 26 to SC. 2 p. Unpublished typescript. March 4.
• ***Summary:*** Questions: (1) Concerns many dates. (2) Requires only a very short and simple answer. For (3) See #81197. Address: Hong Kong.

3772. Pautz, Jane Abe Cadwell. 1982. Re: Directory of soyfoods manufacturers in Sao Paulo, Brazil, and comments on the availability of these foods. Letter to William Shurtleff at Soyfoods Center, May 29. 3 p. Typed.
• ***Summary:*** List all known companies in Sao Paulo that make soyfood products. A separate listing is given for each product with the full company name and address. The product categories include: Tofu and tofu products (2 companies). Soymilk (4). Shoyu (3). Sellers of whole dry soybeans (1). Lecithin (1). Soyflour (1; soyflour is available in many stores without a brand name). TSP / TVP (2).

"As you know we have a large Japanese colony here in the country. I am only aware of what is here in Sao Paulo."

"Soynuts are available in health food stores in small unlabeled packages. I have not seen soynut butter. Misso (miso) is plentiful. Soy sprouts are sometimes available in open-air markets along with other Japanese products. They aren't common. Fresh green soybeans [edamamé] are also available at certain times of the year in these markets. Of course there is lots of soyoil. I think that Sanbra is one of the big producers or sales company of the beans [soybeans]. In some of the healthfood stores there is a product available called 'carne de soja' (literally "soy meat [textured soy flour]). There is no brand name and I have not experimented with it."

"I will be working on a book of tofu recipes during this vacation. The publisher wants to publish it yet this year.

"Last year I gave 3 lessons in working with soyfoods at the Nestlé experimental kitchen here in Sao Paulo, and may be working with a new health foods store / restaurant in developing foods. I would like to see them try some typical soy-deli kinds of things. There is a lot of interest here, new stores of 'produtos naturais' [natural food products] and vegetarian restaurants are quite popular." Address: Rua Spinagés 1974 Apto. 61, 01258 Sao Paulo, Brazil.

3773. **Product Name:** [Powdered Soymilk, Soy Coffee, Whole Soybeans, Dehulled Soybeans].
Manufacturer's Name: Casa da Soja.
Manufacturer's Address: Sao Joao, 1436, Centro, Sao Paulo, Brazil.
Date of Introduction: 1982. May.
New Product–Documentation: Letter from Jane Cadwell Pautz. 1982. May 29. "Also this is the only soy restaurant that I know of, but they don't do much with tofu."

3774. Danish Turnkey Dairies Ltd. 1982. Annual report 1981/82. 2 Europaplads, P.O. Box 146, DK-8100 Aarhus C, Denmark. 8 p. 30 cm.
• ***Summary:*** The section titled "The DTD group of companies" (inside front cover) shows that "Foreign subsidiaries" include Integrated Processing Technologies in the USA and Soya Technology Systems Ltd. in Hong Kong [Singapore?]. A diagram shows that "STS" is a "non-milk" company. No further details concerning STS are given.

Note: This is the earliest document seen (July 2013)

concerning Soya Technology Systems (STS). Address: Aarhus, Denmark. Phone: +45 6 12 4155.

3775. Fitzpatrick, Brian. 1982. Soya milk in Asia. In: Theng Chye Yam, W-L Kwik, and C-Y Fong, eds. 1982. Proceedings of Food Conference 1982. viii + 382 p. See p. 261-62. Held 16-20 May 1982 in Singapore. Publ: Singapore Inst. of Food Science & Technology.
• ***Summary:*** Contents: History. Consumption of soymilk. Nutrition. Soymilk- the product. Unprocessed raw materials suitability. Clarified and suspended products. Packaging. Yields for clarified and suspended. Product mix (yogurt, tofu, ice cream). Present market.

Recent introductions of commercial soymilk products include: Green Spot Bangkok (1960), Coca Cola test market of SACI in Brazil (1969), Singapore Cold Storage (1969), Kibun, Japan (1976), and Ace Canning (1980). Address: Alfa-Laval South East Asia, Singapore.

3776. Krieger, Verena. 1982. Die tausend Talente von Tofu [The thousand talents of tofu]. *Natuerlich* 2(5):69-73. May. [Ger]
• ***Summary:*** An excellent overview, with numerous color photos of recipes, products, and plants. "Tofu found its way to Europe not over the steppes of Asia but through the kitchens of North America, starting with *The Book of Tofu* by Shurtleff and Aoyagi."

Contents: What is tofu? Why tofu? Soya–king of the beans (Switzerland imports 100,000 tonnes of soybeans each year to feed to animals). Tofu and its brothers. Is soy an exotic plant? The most important traditional soyfoods of East Asia: Tofu, miso, soymilk, tamari, shoyu and soy sauce (*sojasauce*), tempeh, soy sprouts (*sojakeime*).

3777. **Product Name:** [Supermil Soymilk].
Foreign Name: Supermil.
Manufacturer's Name: Kwang Ju.
Manufacturer's Address: South Korea.
Date of Introduction: 1982. May.
New Product–Documentation: Letter from Kyung Lee, ASA country director, Korea, to William Shurtleff at Soyfoods Center. 1983. Nov. 23. Gives history and production statistics.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 81-83. They produced an estimated 1,272 tonnes in 1983.

3778. Leviton, Richard. 1982. Discovering Japanese soyfoods. *Vegetarian Times* No. 57. May. p. 60-62, 65. [1 ref]
• ***Summary:*** Recently Richard Leviton traveled to Japan with a group of Americans to get a firsthand look at the Japanese soyfoods industry. There he got his first look at the fabled neighborhood corner tofu shop. He discusses tofu (the Japanese consume 10 million cakes a day) and tofu manufacturers (large and small), types of tofu include silken tofu (called kinugoshi), fresh soft tofu called momen. "In the typical supermarket we counted as many as 60 different soyfood items (often several brands or product sizes), ranging from fresh miso and tofu to packaged soymilk and shoyu, natto, dried frozen tofu, yuba rolls and kinako powder."

Also: Takatsuka Marugo (a large tofu maker that churns out 100,000 lb/day of tofu), Yuba Han (a traditional yuba shop in Kyoto), Asahimatsu Kori-dofu Co., natto, Hamanatto, soymilk, cooked soybeans with wakame, soy sprouts, kinako powder, packaged green soybeans in the pods, miso (fresh and freeze-dried), Linda Barber (an American home economist who is teaching at Kobe Girl's College in Nishinomiya, and also teaching American-style tofu recipes to Japanese housewives via television and the print media), and Sasa-no-Yuki, a 279-year old restaurant that specializes in tofu cookery.

Photos show: (1) Eleven different tofu dishes in bowls as served at Sasa-no-Yuki restaurant in Tokyo. (2) A man hanging up fresh yuba at Yuba Han. (3) Members of the group seated on tatami mats on the floor around a huge table enjoying dishes served at Sasa-no-Yuki. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

3779. **Product Name:** [Macrozen {Powdered Soymilk}].
Manufacturer's Name: Macrozen.
Manufacturer's Address: Consulheiro Furtado 704, Liberdade, Sao Paulo, Brazil.
Date of Introduction: 1982. May.
How Stored: Shelf stable.
New Product–Documentation: Letter from Jane Cadwell Pautz. 1982. May 29. "Soymilk in powder form, also whole beans."

3780. Mason, Robert M.; Carden, John L. 1982. Controlled ecological life support system: Research and development guidelines. Moffett Field, California: National Aeronautics and Space Administration (NASA). 99 p. May. 28 cm. Report No. NASA CP-2232–NASA Conference Publication 2232. Proceedings of a NASA workshop held 9-12 Jan. 1979 at Ames Research Center, Moffett Field, California.
• ***Summary:*** Contents: Preface. List of figures and tables. 1. Introduction: Background, approach, overview of report, references (5 refs). 2. Evaluation of a ground based manned demonstration as a milestone in CELSS development: Introduction, summary of workshop findings (Group 1), food production (Group 2), waste processing (Group 3), systems engineering and modeling (Group 4), ecology-systems safety (Group 5). 3. Development requirements for a successful ground based CELSS demonstration (Introduction plus comments from the five groups). 4. Research recommendations (Introduction plus comments from the five groups). Appendixes: A. Individual research recommendations (Group 2). B. Interactions of waste

processing group with other groups. C. Group membership. D. Names and addresses of workshop participants.

"Preface: The purpose of this workshop was to consider research and development guidelines for Controlled Ecological Life Support Systems. (CELSS)" and to "Identify considerations critical to a successful ground-based manned CELSS demonstration (GBCD)." "The workshop was supported by NASA as a part of the work under Grant No. NSG-2323."

In Chap. 3 (p. 21) the Nutrition and Food Processing Group (Group 1) states: "Some conventional sources are advanced (i.e. soy milk, oriental 'cheeses' [such as tofu], fabricated meats, textured vegetable protein, sausages, and candy),..." Much recycling is involved, including "food regeneration from wastes" (incl. higher plants grown in urine). Higher plants have many valuable functions in addition to food production for humans: air revitalization including addition of oxygen and removal of carbon dioxide and certain gaseous contaminants, conversion of wastes into food, aesthetic value, etc. Vegetarian diets, and use of algae (single cell proteins) are considered important.

The first paper in Appendix A is titled "Quantitative analysis of biomass production and compatibility studies of early maturing soybean cultivars for GBCD, by Jagmohan Joshi, Univ. of Maryland (Eastern Shore at Princess Ann). It begins: Justification: Soybean is one of the recommended plants to be grown in GBCD This has been clearly shown by various investigators in the earlier studies conducted for NASA. In CELSS it is very important to know the total amount of biomass produced by each crop." Six early maturing soybean will be grown under hydroponic conditions. Note: This is the earliest document seen (July 1999) concerning space travel and soy. Address: 1. METRICS, Inc.; 2. Georgia Inst. of Technology. Both: Atlanta, Georgia.

3781. **Product Name:** [Nisshin Soymilk (Plain, Coffee, of Mixed Fruits)].
Foreign Name: Sutoreeto, Koohii, Furuutsu Mikksu.
Manufacturer's Name: Nisshin Oil Mills, Ltd. (Nisshin Seiyu K.K.).
Manufacturer's Address: Shinkawa 1-23-1, Chuo-ku, Tokyo, Japan.
Date of Introduction: 1982. May.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 73. These products were introduced in May 1982 in 200 ml Tetra Brik cartons, and distributed only in the Kantô, Tôkai, Chubu, and Kinki regions, which is most of central Japan from Tokyo to Osaka.

3782. Shurtleff, William; Aoyagi, Akiko. 1982. Soyfoods directory and databook. 1st ed. Lafayette, California: Soyfoods Center. 21 p. May. 28 cm. 2nd ed. published in June as Soyfoods Industry: Directory and Databook. 56 p. [24 ref]
• ***Summary:*** A detailed study of the rapidly emerging soyfoods industry and market. Contains original statistics compiled by the Soyfoods Center through interviews with companies. Contents: 1. Names and addresses of soyfoods manufacturers in the Western world, plus major soymilk, miso, shoyu, and yuba manufacturers in East Asia. 2. Analysis of the soyfoods industry in the U.S. 3. Soyfoods production statistics for America and the West. 4. America's prime soyfoods market regions. 5. The tofu industry in the West: Three-year analysis of the tofu industry in the West. The U.S. Tofu market: overview and outlook. Graph of number of tempeh and tofu manufacturers in the West. North America's twenty largest tofu manufacturers. 6. Analysis of the soymilk industry in the United States. 7. Key institutions working with soyfoods in the West.

Note: This is the first market study published by Shurtleff and Aoyagi. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

3783. Soyplant Co-op Inc. (The). 1982. Price list: Effective 5/21/82 (Leaflet). Ann Arbor, Michigan. 1 p. 28 cm.
• ***Summary:*** This is a photocopy sheet, black on white. At the top center is the company logo, two soybean plants growing out of a round Planet Earth. Office hours: 9:00–4:00 M-F. These are wholesale prices, with suggested retail prices listed in parentheses. "A minimum order of $25.00 is required for all deliveries."

Tofu–1# tub. $0.85 per lb ($1.10).

Tofu–Bulk. $0.70 per lb plus 5¢/lb outside Ann Arbor.

Plain soy milk. $0.80 per quart ($1.04).

Flavored soy milk. $0.88 per quart ($1.14).

Plain soy milk–Bulk. $2.10 per gallon (5–gallon minimum).

Flavored soy milk–Bulk. $2.50 per gallon (5–gallon minimum).

Tempeh. $0.90 per half lb ($1.25).

Tempeh–Bulk. $12.00 per 8 lb sheet. Address: 771 Airport Blvd. Suite 1, Ann Arbor, Michigan 48104. Phone: (313) 663-8638.

3784. **Product Name:** [Yakult Soymilk (Plain, Coffee, Orange, With Corn)].
Foreign Name: Yakuruto Rakkumii (Tônyû Pureen, Koohii, Orenji, Koon).
Manufacturer's Name: Yakult (Yakuruto Honsha).
Manufacturer's Address: Japan.
Date of Introduction: 1982. May.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.

New Product–Documentation: Toyo Shinpo (Soyfoods News). 1982. May 1. Yakuruto has started selling four flavors of soymilk (Plain, Orange, Corn, Coffee) in Tetra Brik cartons for about 80 yen per pack, They are buying the soymilk from Mitsubishi Kasei, but they are planning to develop their own fermented soymilk later.

K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 73. States that Yakult (a famous Japanese maker of fermented dairy milk products) introduced these 4 products in May 1982, in 200 ml long-life packs, and distributed them in Tokyo, Nagoya, and Osaka.

Product with Label (200 ml Tetra Brik carton) purchased in Tokyo in June 1983. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center; Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64.

3785. **Product Name:** [Soymilk (Plain, Coffee, or Banana)].
Foreign Name: Pureen, Koohii, Banana.
Manufacturer's Name: Yamato Shokuhin (Yamato Foods).
Manufacturer's Address: Japan.
Date of Introduction: 1982. May.
Wt/Vol., Packaging, Price: 200 ml blow-molded polyethylene pack (*buro yôki*).
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. These products were introduced in May 1982 in 200 ml buro packs.

3786. **Product Name:** [Zazen {Powdered Soymilk}].
Manufacturer's Name: Zazen.
Manufacturer's Address: Rua Sao Paulo, Liberdade, Sao Paulo, Brazil.
Date of Introduction: 1982. May.
New Product–Documentation: Letter from Jane Cadwell Pautz. 1982. May 29.

3787. Nave, Robert W. 1982. Re: History of work with soyfoods and soybeans at SPRA in India. Letter to William Shurtleff at Soyfoods Center, June 5. 7 p. Typed (single spaced), with signature on letterhead.
• ***Summary:*** Gives details of his pioneering work, starting in 1968 when he was working at the Nave Technical Institute, Shahjahanpur, UP, India. In March 1970 Nave visited Joe Wenger and his plant in Sabetha, Kansas. He was impressed and the Wenger company then offered to give him the machinery (a Wenger X-25 extruder) necessary to set up a pilot project making extruded soy flour in India. During 1970 USAID in Delhi and the G.B. Pant University joined the proposed project. "From 1970 to late 1971 or early 1972 the project operated as NTI Soya Products. It was set up as a Part of Nave Technical Institute. After the University became a partner, the name was changed to Soya Production & Research Association. The association has been set up as a charitable company...

"SPRA produced Nutri Nugget (TVP), Protesnac (a soya-rice spiced snack), Protein Plus (a corn-soya weaning food), Nutriahar (a wheat-soya–fullfat [full-fat]–weaning food) and extruded fullfat soya flour. SPRA has not produced soymilk, tofu, etc. except on an experimental basis."

SPRA started building a factory in March 1971 at Bereilly. In July 1972 SPRA produced 40 tons of corn-soy weaning food for some feeding trials to be conducted by USAID in Madras state. Nutri Nugget (TVP) was the company's first product; the defatted soybean meal was originally purchased from Prag Ice & Oil Mills, and then from General Foods of Indore (owned by the Sahara brothers). In 1978 the company began having problems with its factory manager (George Grundy) and with production. Grundy and an electrical contractor, Kalim, had been approached by the Sahara brothers to build an extruder for them and set up a competing factory. "Grundy and Kalim then took our machinery apart on the pretext of maintenance and copied it, mostly at SPRA expense."

"Nutrela is produced by Ruchi. Ruchi is the name of one of Kailash Shahra's daughters after whom the company is named. The first extruder they used in this plant is the one made by Grundy as explained above. Unfortunately and in spite of their large media campaign their impact has been negative. They have gone so far as to provide retailers with new packages into which to fill the contents of the outdated packages which did not sell. Because they have little or no quality control, neither Meal Maker nor Nutrela sell well in the markets where Nutri Nugget is available. Both took the wordings used on their boxes and in their ads almost verbatim from the Nutri Nugget boxes and ads...

"Dr. Al Nelson was the key figure in setting up the soybean utilization lab at Pantnagar. Dr. Surjan Singh was head of the department of Food Science and Technology and in charge of the utilization lab. Both were key people in the University's roll in working with us when we were setting up the SPRA–although it had already existed for almost a year at NTI Soya Products.

"As far as I know, no one is extracting soy oil by expellers. All is being extracted by solvent. In Nagpur, someone who had been in the states for some time set up a soy milk project which has local distribution and was a private commercial effort...

"The government figures on soybean cultivation are not accurate. It is less than they say–largely because certain agricultural officers pad figures in order to make their efforts look better. However, cultivation is on the increase and will increase even faster when the market becomes adequately developed to assure sale of the crop.

"Almost as long as I can remember, it has been possible to get tofu in various foods in Chinese restaurants in India. I assume the Chinese were making this for their own limited use but did not try to market it outside.

"I have heard of soy flour being used in idli but think it is very limited if at all. Defatted soy flour and soybeans just

aren't available in most places. I have never seen defatted soya flour on sale in retail stores anywhere. If it is now available, it has come very recently...

"TVP is the major soy food product in India. I imagine the total production of this is not much more than 200 tons per month at present but that this is more restricted by ability to produce than lack of market.

"I think the first solvent extraction of soy oil was in about 1969 or 1970.

"When I was in India last April 1982, the milk production at Pantnagar was closed and Sipso was not doing well. In both cases it seemed to be more because of management problems than anything else. The product was good. I have no knowledge of the Jabalpur plant.

"Possibly 50% of the people in India would eat eggs, meat, fish or poultry if they could afford them. Perhaps 20% eat these regularly. There is a great market for soy foods in India and it will grow at an increasingly rapid rate until India is one of the biggest users of soy foods in the world. It is a natural for soya foods if they are produced in a way that suits Indian tastes and conditions."

Attached is a 3-page news release (undated) about: (1) Dr. Vivian Erasmus, a native of India and general manager of SPRA in Bareilly, Uttar Pradesh, who will be in Minnesota from June 24 to July 13. A full-page biography is given. (2) SPRA in India; it is an association of the Methodist Church in India through the Nave Technical Institute (80% shares) and the G.B. Pant University of Agriculture (20% shares). The Methodist Church in India is affiliated to the United Methodist Church of the U.S. "All surplus earnings of the association are use to support charitable projects." The "main impact of SPRA has been in private homes through distribution and sales of its products in retail outlets. It now has nation-wide distribution. Its products include textured soy protein under the name of Nutri Nugget, a soy rice snack, a wheat soy weaning food and full-fat soy flour. Due to the pioneering work of SPRA, soybean based foods are now well established in India." Address: Compatible Technology, Inc, 7600 Harold Ave., Minneapolis, Minnesota 55427. Phone: (612) 545-0378.

3788. *Medical World News.* 1982. Subbing soy drinks for milk cuts high lipids. 23(12):61. June 7. [1 ref]
• ***Summary:*** High cholesterol levels can be lowered by substituting a soy protein extract for some dietary source of animal protein–according to study director Kenneth K. Carroll (Dep. of Biochemistry, Univ. of Western Ontario, London, ONT, N6A 5C1, Canada). Replacing cow's milk with a soy-protein preparation for 6 weeks reduced plasma cholesterol levels in 5 of 33 subjects with abnormally high initial cholesterol levels. The drinks each contained the same amount of butterfat and calories. Similar replacement of meat or eggs would be possible.

3789. Alfa-Laval. 1982. Standard clarified soy milk plant, 4,500 liter/hour: Budget quotation to the Department of Agriculture, Mozambique. Lund, Sweden. 40 p. June 14. Unpublished typescript.
• ***Summary:*** This is budget quotation no. U2-G/HD/2/2135. The total price FOB is 10,361,500 Swedish crowns, or US$1,360,000, not including packaging equipment or material. The most expensive components are installation and commissioning (2.5 million crowns) and UHT treatment (1,572,300 crowns). Mozambique did not buy this plant. They bought one from Alpro in Belgium.

Equipment terminology: Centrifugal pump–"Application: Pumping soy concentrate through cooler... to buffer tanks" (p. 17). Plate heat exchanger–"Application: Cooling of soy concentrate" (p. 21). Centrifugal pump–"Application: Pumping soy concentrate to the blending tanks" (p. 23).

Note: This is the earliest English-language document seen (Aug. 2013) that uses the word "soy concentrate" to refer to soymilk concentrate. Address: Lund, Sweden.

3790. Bernard, Alain. 1982. Re: Work with soyfoods at Auroville, India. Letter to William Shurtleff at Soyfoods Center, June 24–in reply to inquiry of March 17. 1 p. Handwritten, with signature on aerogramme.
• ***Summary:*** "We would like, in addition to the toffu [tofu] making, to start more developing the consumption of Soya Milk." He asks: (1) How can make it so it keeps for more than a few hours in tropical climates. (2) What other ingredients can be added to the milk to make it more palatable, in order for people to accept it more quickly. Address: "Pour Tous" Food Processing Unit, Aspiration–Auroville, Kottakuppam 605104, South India.

3791. Lee, Bill. 1982. History of Wy Ky and its struggle to enter the Los Angeles tofu market (Interview). Conducted by William Shurtleff of Soyfoods Center, June 29. 1 p. transcript.
• ***Summary:*** Wy Ky started in July 1970. Bill was the first Chinese-American tofu manufacturer in Los Angeles Chinatown. Matsuda-Hinode, which then controlled 100% of the Los Angeles Chinese tofu market, used every trick in the book to try to keep Bill out of the market, but to no avail. Eventually Wy Ky captured 90% of the Los Angeles Chinese tofu market, but now has 60-65% after other Chinese tofu makers came in.

Note: In 1984 Bill sold his to Yuk-Ming Man and Mrs. Ho, who is the mother of David and Elaine Ho. The latter two people run the company.

Talk with Raymond Lea. 1993. Oct. 13. His father, William Lee, founded this business. He was the first Chinese-American tofu maker in Los Angeles Chinatown. In about 1988 Wy Ky stopped manufacturing tofu, tofu products, and soymilk, but they continue to distribute and

sell these products which are made by other companies; Hinoichi makes the basic tofu, Furama makes the soymilk, and Visoy makes a pudding. At the Wy Ky plant there are two walk-in refrigerators where the soyfoods products are stored. All the equipment is in the basement. Bill Lee, the founder, died in Jan. 1993 while on a trip to the Philippines. He had been divorced in about 1980 and sold the business in 1984. Raymond is assembling a team to try to buy back the company. Address: Owner, Wy Ky Food Products Inc., 237 San Fernando Rd., Los Angeles, California 90031.

3792. **Product Name:** No Cow Soymilk [Plain, Cinnamon-Honey, or Carob Honey].
Manufacturer's Name: Appropriate Foods, Inc.
Manufacturer's Address: P.O. Box 57, Sea Cliff, NY 11579. Phone: 718-342-7222.
Date of Introduction: 1982. June.
Ingredients: Carob-honey: Organic soybeans, honey, carob.
Wt/Vol., Packaging, Price: Pint or quart.
How Stored: Refrigerated.
New Product–Documentation: Labels. 1982. June 15. 2 by 3.5 inches. One color on white. "Better than any udder." Whole Life. 1986. April. p. 63-64. They make 150 gallons/week of soymilk. Interview with Robert Werz. 1987. Sept. 9. Soya Bluebook. 1986. p. 101.

3793. **Product Name:** Soy Milk.
Manufacturer's Name: Ashland Soy Works.
Manufacturer's Address: 280 Helman St., Ashland, OR 97520. Phone: 503-482-1865.
Date of Introduction: 1982. June.
Ingredients: Water, organically grown soybeans.
How Stored: Refrigerated.
New Product–Documentation: Label. 1982. June. 2 by 3 inches. Brown on tan with white border. "Non-Dairy Product. High protein. No cholesterol. No artificial ingredients. Keep refrigerated." Talk with Diana Muhs. 1988. Feb. 10. The company started making soyfoods in October 1981. Their first product was tofu, followed by soymilk about a year later.

3794. Check, William A. 1982. Switch to soy protein for boring but healthful diet. *J. of the American Medical Association* 247(22):3045-46. June. 11. [3 ref]

3795. **Product Name:** Hi-C Soya Bean Milk.
Manufacturer's Name: Coca-Cola Company.
Manufacturer's Address: Swire Bottlers HK Ltd., GPO Box 1, Hong Kong.
Date of Introduction: 1982. June.
Wt/Vol., Packaging, Price: 250 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: "Enriched with soya bean protein and Vitamins A, B1, B2, B3, B6, B12, C, D, and E."
New Product–Documentation: Label. Tetra Brik carton,

250 ml, 3 color. Packaged by Swire Bottlers Ltd. under the authority of The Coca-Cola Company. Soya Bluebook. 1983. p. 62. Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 100. The product introduced to the Hong Kong market in June 1982 was made from soybeans, not soy protein isolates. It was withdrawn in late 1982 and reintroduced in May 1983.

Letter from K.S. Lo of Vitasoy. 1984. March 2. "The first launch of this product was a flop. They had to withdraw all the products from the market and re-launched it in the second half of last year." They now have about 5% of the Hong Kong soymilk market.

3796. **Product Name:** Hi-C Soya Milk.
Manufacturer's Name: Coca-Cola Company.
Manufacturer's Address: 310 North Ave., P.O. Drawer 1734, Atlanta, GA 30301.
Date of Introduction: 1982. June.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 100. Soya Bluebook. 1986. p. 102.

3797. DeGregorio, R.M.; Barr, G.W.; Stahel, N.; Crane, F.M. 1982. Modified soy protein as a protein source in calf milk replacer (Abstract). *J. of Dairy Science* 65(Supplement 1):123 (Abst. #P91).
• ***Summary:*** Three different isonitrogenous milk replacers (all with the same protein content) were used to feed 226 Holstein bull calves: 1. All milk, 2. heated soy flour (66% milk protein replacement), and 3. modified soy protein (66% milk protein replacement). The use of modified soy protein or all milk gave better calf weight gains and gain / feed ratios than when heated soy flour was used. Consumption of milk replacement was greatest when modified soy protein was used.

Note: This is in the Program–Seventy-seventh Annual Meeting of the American Dairy Science Association, The Pennsylvania State University, University Park, Pennsylvania, June 27-30, 1982. Address: Land O'Lakes, Minneapolis, Minnesota.

3798. Fernando, L.H.; Asghar, M.; Chase, R.G.; Fitzgerald, J.; McDonnell, M.R. 1982. Field experiments with cereals and grain legumes in W. Samoa. *Alafua Agricultural Bulletin* (*Apia, Western Samoa*) 7(2):40-46. April/June. [9 ref]
• ***Summary:*** In the section on "Grain legumes or pulses," the first plant discussed is the "Soya bean (*Glycine Max* L): This is the most important of the pulses, because of its oil and protein contents. However, in the islands of the South Pacific this is not yet regarded as a useful crop. Small extents of soya bean have however been grown. The varieties Bragg, PB-1 and Improved Pelican introduced from Sri Lanka in 1979 were grown very successfully in small plots at Alafua in 1981. In these varieties high yield was found to be dependent on the number of pods per plant (Singh 1980) and both seed number and seed size (Taufa 1981).

"The variety Davis from Hawaii was used at Nu'u in 1981 in legume inoculation experiments in association with the Project for Nitrogen Fixation by Tropical Agricultural Legumes (NifTAL). In all the efforts made so far from 1979, growth and pod production have been very impressive even with little or no fertilizer... In an experiment at Nu'u in 1981, sponsored by NifTAL, plots which were sown with inoculated seed yielded 3458 kg/ha of seed...

"Sixteen elite varieties of soya bean were received in 1982 from the Intsoy International Soybean Program conducted by the University of Illinois, and these are now ready for sowing in a replicated field experiment at Alafua.

"The critical factor in soya bean production is to bring the plants into maturity in the dry weather of June and July; sowing is therefore best done in April.

"If soya bean is grown for the unripe seed, for use as a vegetable, it does not need to be harvested in dry weather. The green pod is harvested and the immature seed is eaten [after boiling]... Soya milk is a substitute for cow's milk..." Address: 1,4-5. Dep. of Crop Production; 2-3. Dep. of Soils Science. All: School of Agriculture, Univ. of the South Pacific, Apia, Western Samoa.

3799. Garner, R.W.; Martin, D.L.; Weber, D.J. 1982. Allergenicity of soybean milk replacers fed to calves (Abstract). *J. of Dairy Science* 65:122. (Abst. #P89). June 27-30.
• ***Summary:*** Aromatic compounds have recently been implicated as prominent factors in causation of human allergies. Benzyl isothiocyanate has been identified as a prominent allergen in soybeans. When calves were fed whole cow's milk to which benzyl isothiocyanate was added to duplicate the levels found in soy-based calf milk replacers, their growth rates and gastrointestinal functions were identical to those fed the milk replacer. Address: Brigham Young Univ., Provo, Utah.

3800. Howe, J.M.; Hoff, J.E. 1982. Plant diversity to support humans in a CELSS ground-based demonstrator. Moffett Field, California: National Aeronautics and Space Administration (NASA). 51 p. June. 28 cm. Report No. NASA CR-166357. [49 ref]
• ***Summary:*** Prepared under NASA Grant NSG-2401. CELSS stands for "controlled ecological life support systems." Contents: Introduction. Human nutritional requirements in CELSS-GD: Nutrient composition of total plant [vegan] diets (energy, protein, vitamins, minerals), interaction of dietary components, stress. Bioavailability studies of minerals: Rationale (calcium, iron, zinc), experimental procedure (planning of diet, experimental animals), results, experiment IV. Summary. Bibliography of CELSS reports.

Appendix A is a 14-day total vegetarian [vegan] cycle

menu. Soy products appear as follows (B = Breakfast, L = Lunch, D = Dinner): Day 1–Sandwich of soy pate (L), soy milk (L&D, 1 cup each). Day 2–Tofu (L, ¼ cup), soy milk (L). Day 3–Soy milk (D). Day 4–Soy milk (B&L). Day 5–Soy milk (B&L), soy burgers (L, 2). Days 6 and 7 = none. Day 8–Soybeans (D, 1 cup). Day 9–Soy milk (B&D), soy bean and winter squash (L, ½ cup each), soy sauce with cooked veggies & brown rice. Day 10–Soy milk (B). Day 11–Soy milk (L). Day 12–Soy meat analogue (D, 3 oz). Address: 1. Dep. of Food and Nutrition; 2. Dep. of Horticulture. Both: Purdue Univ., West Lafayette, Indiana 47907.

3801. **Product Name:** Vege-Pro (Soymilk) [Coffee & Malt, Blended Juices, Plain (Dairylike), or Lactic Fermented].
Manufacturer's Name: Kibun Health Foods Co.
Manufacturer's Address: Saitama-ken, Japan.
Date of Introduction: 1982. June.
Ingredients: Coffee: Water, soybean, corn syrup, malt extract, corn oil, coffee extract, caramel (color), calcium lactate, sucrose fatty acid ester, salt, artificial flavor, carrageenan. Blended Juices: Water, soybean, corn syrup, orange, apple and pineapple juice from concentrate, propylene glycol, citric acid, calcium lactate, carotene, paprika, artificial flavor.
Wt/Vol., Packaging, Price: 6.75 fluid oz, 200 ml Tetra Brik Aseptic carton.
How Stored: Refrigerated.
Nutrition: Per 6.75 fl oz.: Coffee: Calories 140, protein 4 gm, carbohydrate 20 gm, fat 5 gm. Blended Juices: Calories 110, protein 3 gm, carbohydrate 22 gm, fat 2 gm.
New Product–Documentation: Labels. 1984. 2.5 by 3.25 inches by 1.5 wide. Paper carton. Coffee: Red, black, yellow, white on brown. Bird flying over coffee beans illustration. Blended Juices: Red, green, black, white on yellow. Bird flying over fruit illustration. Vegetable: Red, yellow, black, white on green. Bird flying over trees illustration. "Vege-Pro tastes so much richer than ordinary vegetable juice. Enjoy this extra-refreshing blended vegetable drink that supplies protein and vitamins. What a delicious way to treat yourself to good nutrition everyday." Tetra Brick packages, 3 color, 200 ml. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. "Vegetable protein drink." Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 33, 46.

3802. **Product Name:** [Meito Soymilk (Plain, Coffee, Grapefruit, or Fruit Mix)].
Foreign Name: Meitô Tônyû (Pureen, Koohii, Gureepu Furuutsu, Furuutsu Mikksu).
Manufacturer's Name: Kyôdo Nyûgyô (Kyodo Nyugyo Cooperative Milk Co.).
Manufacturer's Address: Japan.
Date of Introduction: 1982. June.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 73. States that these products were introduced in June 1982 and distributed nationwide. Name of company with diacritics is: Kyôdo Nyûgyô.

3803. Lotus Cafe (The). 1982. Menu. Rochester, New York. June.
• ***Summary:*** This original menu, dated June 1982 and typed on beige paper, is divided into: Soups. Salads (incl. Hummus, Devilled tofu, Tempeh salad). Sandwiches (all with the Lotus Cafe's original tofu mayonnaise): Tofuburger, Tempehburger, Not dog, Tempeh Reuben, Pita sandwiches in Syrian pocket bread (incl. Tofulafel, Temptation). Entrees: Incl. Tofu spinach pie, Tofu ravioli, Tofu and sauce with brown rice and marinated tofu. Side dishes. Beverages: Incl. Shakes with fresh soymilk (Banilla, Carobanana, Banana

colada), freshly made juices, sparklings, glass of soymilk or carob soymilk. Desserts: Incl. Almond cream cheese tart, Maple walnut pudding, carob brownie, ice cream (Ice Bean). Address: 686 Monroe Ave., Rochester, New York 14607.

3804. **Product Name:** [Mapron Soymilk (Dairylike with Honey)].
Foreign Name: Mapuron Tônyû (Hachimitsu-iri).
Manufacturer's Name: Mitsubishi Chemical Foods Co., Ltd. (Mitsubishi Kasei Shokuhin).
Manufacturer's Address: Ginza 5-13-12, Chuo-ku, Tokyo 104, Japan.
Date of Introduction: 1982. June.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. Tonyu [Soymilk. 2nd ed.]. p. 72. In June 1982 Mitsubishi Kasei Shokuhin launched Tonyu Mapuron (in Hachimitsu-iri flavor) in 200 ml aseptic cartons.

3805. **Product Name:** [Marusan Soymilk (Dairylike or with Barley Malt Syrup)].
Foreign Name: Marusan Tônyû, Bakuga Tônyû.
Manufacturer's Name: Okazaki Marusan K.K. (Marusan-Ai Co., Ltd.).
Manufacturer's Address: 1 Aza Arashita, Niki-cho, Okazaki-shi, Aichi-ken 444-21 Japan.
Date of Introduction: 1982. June.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. Tonyu [Soymilk. 2nd ed.]. p. 72. In June 1982 Okazaki Marusan introduced 2 soymilk products, each in 500 ml long-life cartons: Marusan Tonyu, and Bakuga Tonyu. These products are distributed mostly in central Japan (in the Chûbu Chiho), in the area around Okazaki.

3806. Shurtleff, William; Aoyagi, Akiko. 1982. Soyfoods industry: directory and databook. 2nd ed. Lafayette, California: Soyfoods Center. 56 p. June. 28 cm. [24 ref]
• ***Summary:*** A detailed study of the rapidly emerging soyfoods industry and market. Contains original statistics compiled by the Soyfoods Center through interviews with companies. Contents: 1. Terminology: The many types of soyfoods. I. Traditional low-technology soyfoods. 1A–Nonfermented soyfoods: Fresh green soybeans, whole dry soybeans, soynuts and soynut butter, soy sprouts, whole soy flour & grits, roasted soy flour [kinako] & soy coffee, soymilk and dairylike soymilk products, tofu (eight types), okara or soy pulp, yuba.

1B–Fermented soyfoods: Tempeh, miso, soy sauce, shoyu & tamari, natto & thua-nao, fermented tofu & soymilk, soy nuggets [fermented black soybeans] (Hamanatto & tou-ch'ih).

II. Modern soy protein foods: Defatted soy flour, grits & flakes, soy protein concentrates, textured soy protein products, soy protein isolates.

III. Soy oil products: Soy salad oil & cooking oil, soy oil margarine & shortening, soy lecithin.

2. Soyfoods industry directory: Names and addresses of over 850 soyfoods manufacturers in the Western world, plus major soymilk, miso, shoyu, and yuba manufacturers in East Asia. 3. Analysis of the soyfoods industry in the U.S.

4. Trends in U.S. and world soybean production: Graph

of world soybean production (1922-1979) including graphs for the world total, USA, Asia total, and Latin America. Graph of U.S. soybean production, yields, and exports (1924-1979).

5. Analysis of the tofu industry in the West: The U.S. tofu market: overview and outlook. Graph of the number of tofu (and tempeh) manufacturers in the West from 1975 to 1982. Four-year analysis of the tofu industry in the West. Listing of North America's largest tofu manufacturers and their weekly tofu output. Japan's largest tofu manufacturers and their daily output. Favorite tofu, soymilk, and tempeh recipes as served at U.S. soyfoods, delis, cafes, and restaurants, or marketed as ready-to-serve products. Books on tofu published in America.

6. Analysis of the tempeh industry in the West: Graph of number of tempeh manufacturers. Recipes. Listing of North America's largest tempeh manufacturers and their weekly output.

7. Analysis of the worldwide soymilk industry: Analysis of the soymilk industry in the United States. Analysis of the soymilk industry in Japan. Major Japanese soymilk companies and their products.

8. Analysis of the soy sauce / shoyu and miso industries worldwide. Statistics on fermented soyfoods in East Asia. The soy sauce market in the United States (1981). U.S. imports of soy sauce. Graph (1947-1981. Source: U.S. General Imports, Schedule A. Commodity by Country. U.S. Dept. of Commerce, Bureau of Census). U.S. imports of soy sauce. Table (1947-1981. Source: U.S. General Imports, etc. See above). The shoyu / soy sauce market in Japan. Graph. (1886-1980. Includes: Number of manufacturers. Per capita consumption. Shoyu production. Kikkoman's market share (%)). The miso market in Japan. Graph. (1930-1980. Includes: Per capita consumption. Total miso production. Factory production. Number of manufacturers. Home production. Amount of soybeans used). Overview of the miso market in the United States. Miso exports from Japan (1981). Japan's ten largest miso manufacturers and their output.

9. Other: Analysis of the soynuts industry in the U.S. North America's larger soyfoods delis, cafes & restaurants. The soybean crushing industry; overview.

10. Soyfoods terminology and standards (Glossary of soyfoods terms): I. Traditional nonfermented soyfoods: Fresh green soybeans, okara, roasted soy flour (soy coffee, soy chocolate), soybeans, soymilk (soymilk ice cream, soymilk soft serve, frozen soymilk yogurt, soymilk mayonnaise, soy shakes, soy nog, soymilk whipped cream), soynuts, soy sprouts, tofu (regular tofu, deep-fried tofu {deep-fried tofu cutlets called nama-age or atsu-age in Japan, deep-fried tofu burgers or burger balls, called ganmodoki or hiryozu in Japan, deep fried tofu pouches (called aburage in Japan; the words "deep-fried" may be dropped from the names after the initial usage, and in recipes or on package labels, if desired}), silken tofu {made without separation of curds and whey, called kinugoshi in Japan; modern types, all made with glucono delta-lactone as coagulant, and all known in Japanese as juten-dofu, are packaged lactone silken tofu, bagged lactone silken tofu (fukuro-dofu), sealed lactone silken tofu (buro-dofu), and Ever-Fresh Lactone Silken Tofu (in Tetra-Pak}), grilled tofu, frozen and dried-frozen tofu. (Note 1. It is illegal to describe the latter product as "freeze-dried tofu," since freeze-drying is a completely different process), terms associated with making tofu {fresh soy puree, a coagulant or curding agent, forming box, filter bag or pressing sack, tofu comes in cakes, not blocks}), whole soy flour, flakes and grits, yuba.

II. Traditional fermented soyfoods: Fermented soymilk products (soymilk yogurt {Soy Yogurt, Soyogurt, Soygurt}, acidophilus soymilk, soymilk kefir, viili, piima, buttermilk {Soy Kefir, etc.}), fermented tofu (wine-fermented tofu, brine-fermented tofu), miso (rice miso, barley miso, soybean miso, Chinese soybean chiang), natto (thua-nao from Thailand and kinema from Nepal; all are non-salted), fermented black soybeans [fermented black soybeans] (Chinese fermented black soybeans know as shih, tou-ch'ih, tou-shih, or dow-si; savory fermented black soybeans called Hamanatto in Japan, Daitokuji fermented black soybeans called Daitokuji natto in Japan, Philippine fermented black soybeans called tausi or tao-si in the Philippines, Indonesian soy nugget paste called tauco, formerly spelled tao-tjo, Malaysian soy nugget sauce called tao-si), soy sauce (shoyu. The five basic types of Japanese shoyu are: regular shoyu called koikuchi shoyu in Japanese, light-colored shoyu called usukuchi shoyu, tamari shoyu, clear shoyu called shiro shoyu, and rich shoyu called saishikomi shoyu), tempeh, other fermented soyfoods.

Note 2. This is the earliest document seen (Sept. 2012) that uses the word "Soygurt" to refer to soy yogurt.

III. Soy oil and modern soy protein foods: soy oil, defatted soy flour, flakes and grits, soy protein concentrate, soy protein isolate, textured soy protein products (TSP, TVP is a registered trademark of the Archer Daniels Midland Company and cannot be used as a generic name for this product), meat analogs (foods typically made from spun soy protein fibers to resemble meat, fish, or poultry products).

11. Names of soyfoods around the world: Names of 40 products. Brazilian / Portuguese names. British English names. Chinese names (fermented tofu is Toufu-ju or Sufu). French names, German names. Japanese names. Spanish names.

12. Key institutions working with soyfoods in the West: The Soyfoods Center, Soyfoods Association of North America, INTSOY, American Soybean Association, Bean Machines, Inc., Soycrafters Apprenticeship Program, USDA Northern Regional Research Center, Sojaquelle.

About The Soyfoods Center.

Note 3. This is the 2nd market study published by

Shurtleff. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

3807. Stutts, J.A.; Morrill, J.L.; Dayton, A.D. 1982. Effect of dietary extruded soybeans and type of housing on calf performance (Abstract). *J. of Dairy Science* 65(Supplement 1):123 (Abst. #P92). *
• ***Summary:*** Note: This is in the Program–Seventy-seventh Annual Meeting of the American Dairy Science Association, The Pennsylvania State University, University Park, Pennsylvania, June 27-30, 1982. Address: Kansas State Univ., Manhattan, Kansas.

3808. **Product Name:** [Soymilk (Barley Malt Syrup, Orange, or Dairylike)].
Foreign Name: Tônyû (Bakuga, Orenji, Chôsei).
Manufacturer's Name: Sugiyo.
Manufacturer's Address: Japan.
Date of Introduction: 1982. June.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 73. These products were introduced in June 1982 in 200 ml Tetra Pak and paper pack cartons, and distributed nationwide.

3809. Tofu Shop (The). 1982. Take-out deli (Menu). 768 18th St., Arcata, CA 95521. 3 panels each side. Each panel: 22 x 9 cm. Undated.
• ***Summary:*** This 6-panel leaflet and menu is mostly hand-written but partly printed. On the front cover is the logo of a dragon in a circle. "9-6 Monday–Saturday. Hot food served 12-6 daily. In a hurry? Call ahead: 822-7409. Your local soyfoods producer." One panel, titled "Welcome to the tofu shop," states that this is "one of only a handful of traditional-style tofu shops in the Western Hemisphere."

Another titled "Inside our sandwiches" lists the ingredients in each sandwich. Soy-related menu items include: Sandwiches: Tofuburger. Dragonburger. Tofucadoburger. Spinach turnover (with tofu filling). Sesame tofu pocket. Mexican pastry (a mini-burrito filled with spicy tofu). Fuji roll (with rice, [mung] bean sprouts, tofu, and miso). Sushi roll (with nattoh miso filling). Tofu burrito. Salads: Potato-tofu. Tahini-tofu. Desserts. Beverages: Soymilk. Sides: Tamari, olive and lemon. Sesame tofu dressing. Miso onion sauce. Tofu vegie patty. Baked tofu cutlet. Specialty groceries: Tofu, miso, condiments, crackers, recipes, supplies for tofu and miso making. Address: Arcata, California. Phone: 707-822-7409.

3810. Urbanski, G.E.; Wei, L.S.; Steinberg, M.P.; Nelson, A.I. 1982. Effect of solutes on rheology of soy flour and its components. *J. of Food Science* 47(3):792-95, 799. May/June. [19 ref]
Address: Dep. of Food Science, Univ. of Illinois, Urbana.

3811. Urbanski, G.E.; Wei, L.S.; Nelson, A.I.; Steinberg, M.P. 1982. Rheology and water imbibing of major fractions of soybean beverage. *J. of Food Science* 47(3):1021-22. May/June.
Address: Dep. of Food Science, Univ. of Illinois, Urbana. Urbanski is now with Quaker Oat Co.

3812. Vitasoy (USA) Inc. 1982. Try Vitasoy: Soya bean and malted soya bean drinks, anytime, anywhere! (Poster). San Francisco, California. 1 p. 31 x 61 cm. Reprinted in Soyfoods magazine, Winter 1983, p. 64.
• ***Summary:*** Displayed during the summer of 1982 in selected buses in San Francisco. Also reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. Address: San Francisco, California.

3813. Dominguez de Diez Gutiérrez, Blanca. 1982. Re: Names of soyfoods around the world: Spanish. Form filled out and returned to William Shurtleff at Soyfoods Center, July 9. 1 p. Handwritten. [Eng; Spa]
• ***Summary:*** Gives the names of all the various soyfoods in Spanish. Note: A typed list of these names is published in *Soyfoods Industry and Market: Directory and Databook,* 1985. 5th ed. p. 164.

"Fresh green soybeans–Frijol de soya tierno o ejote de soya. Whole dry soybeans–La soya, Frijol de soya. Black soybeans–Frijol de soya negro. Fresh soy puree–Pure de frijol de soya. Soy sprouts–Germinados de soya. Soynuts–Soya-nuez (nuez means walnuts or pecans), Soya-huate (means peanuts from cacahuate). Oil roasted soynuts–Soya nuez tostada (meaning nut). Dry roasted soynuts–Soya-huate tostado (meaning peanuts). Soynut butter–Mantequilla de soya. Roasted soy flour–Harina de soya tostada (kinako). Soy coffee–Soyafee. Soy chocolate–Soyalate. Soymilk–Leche de soya. Soymilk ice cream–Helado de leche de soya. Soymilk curds–Cuajada de soya, Jocoque de leche de soya. Tofu–Tofu, Queso de soya, Cuajada de soya. Soft tofu–Tofu blando. (Regular) Tofu–Tofu comun. Firm Tofu–Tofu firme. Extra firm tofu–Tofu extra firme. (Deep fried) Tofu cutlets–chuletas de tofu. (Deep fried) Tofu burgers–Hamburguesas o tortitas de tofu. (Deep fried) Tofu pouches–Saquitos de tofu. Silken tofu–Tofu sedoso. Pressed silken tofu–Tofu sedoso prensado. Grilled tofu–Tofu a la parrilla. Dried frozen tofu–Tofu seco congelado. Okara or soy pulp–Okara, pasta de soya, pulpa de soya. Yuba–Yuba. Fermented black soybeans–Palanquetas de soya. Miso or soybean jian–Miso (el). Soy sauce–Salsa de soya. Shoyu–Shoyu (el). Tamari–Tamari. HVP soy sauce–Have not found it. Tempeh–Tempeh (el). Fermented tofu–tofu fermentado. Fermented / cultured soymilk–Leche de soya fermentada. Natto, thua-nao, kinema–Natto (el). Soy oil–aceite de soya. Soy lecithin–

Lecitina de soya. Soy flour–Harina de soya. Whole (full fat) soy flour–Harina de soya entera. Defatted soy flour–Harina de soya degrasada. Soy grits and flakes–Soya martajada y hojuelas de soya. Cereal-soy blends (CSM, WSB, etc.)–Soyavena (with oatmeal). Soy protein concentrate–Concentrado de proteina de soya. Soy protein isolate–Aislado de soya. Textured soy protein products–Productos de soya texturizada. Textured soy flour, TSF, or TSP–Harina de soya texturizada. Textured soy concentrates–Concentrados de soya texturizada. Textured soy isolate–Aislados de soya texturizada. Spun soy protein fibers–Fibra de proteía hilada de soya. Soy casmar, Soya Cocoa, Coco soya–Beverages made with chocolate or cocoa. Pastisoya–Like spaghetti or noodles of different kinds made with soy flour–commercial products. Vegesoya–Commercial products for soups. Soya mex and Chocosoya–for beverages. Soya pac–Textured soya like meat, also a commercial product." Address: Apdo. Postal 226, Jalapa, Veracruz, Mexico.

3814. *Toyo Shinpo* (*Soyfoods News*). 1982. Tônyû no peeji: 2-3 baizô no urigae o tassei. Sudeni 150 oku shijô keisei no koemo [The soymilk industry and market in Japan: Sales have increased 2-3 fold to an estimated 15,000 million yen per year]. July 21. p. 26. [Jap; eng+]

• ***Summary:*** Industry sources say that the Japanese soymilk market has already reached about 15,000 million yen. The order in which companies started making or marketing soymilk is: 1959 San-iku Foods. 1969 House Shokuhin. 1972 Ishihara Food Center. 1974 Tokyo Soymeal, Kenbi-Sha, Okazaki Marusan. 1976 Asahi Shokuhin, Soken-sha, Kyushu Nyugyo. 1977 Kibun, Natural Foods. 1979 Mitsubishi Kasei Shokuhin. 1980 Chiba Seisen Shokuhin Kogyo, Meiji Nyugyo. 1981 Yakuruto, Nagano Tomato, Morinaga Nyugyo. 1982. Seven-Up Inryo. Among these, House Shokuhin and Tokyo Soymeal have discontinued.

Major Japanese brands of soymilk, aseptically packaged in Tetra Brik cartons are (percentages indicate market share): Kibun Foods (Plain, Yogurt flavored, Fruit, Barley Malt & Coffee), 41.7%; Okazaki Marusan (Plain, Orange, Barley malt), 23.3%; Mitsubishi Kasei (Maburon plain, Orange, Coffee, Honey), 10.0%; San-iku Foods (Soya Neo Cocoa), 8.0%; Kyushu Nyugyo, 6.0%; Meiji Nyugyo (Sun-Glow), 5.8%; Kenbisha, 2.5%; Asahi Shokuhin (Plain, Orange, Coffee), 2.5%; Soken-sha, 1.3%; and Natural Foods, 1.3%. Most sizes are 200 ml, which retail for 75 yen with a 60 day shelf life.

Companies with the largest number of different soymilk products are: (1) Okazaki Marusan has 15 products including soymilk in a Pure-Pak carton (500 ml for 150 yen) and in a can (195 gm); (2) Kyushu Nyugyo has 13 products incl. Midori Tonyu; (3) San-Iku Foods has 10 products, including canned soymilk; (4) Kibun has 8 products. Mitsubishi Kasei is taking a different approach; they have only 5 items (honey, coffee, fruits, sour, and plain) but are aiming at large production.

Kibun's sales have been very good, especially after they switched to the Brik Pak-type carton. Last year they had sales of 2,500 million yen and they are aiming to double that this year. Industry analysts believe that Kibun will be the industry leader for a while.

Mitsubishi Kasei established Mitsubishi Kasei Shokuhin in January of this year, and transferred all soymilk sales to that new department. They are hoping this year's sales will be three times as large as last years, hopefully 1,800 to 2,000 million yen. They are now constructing a new soymilk plant in Okayama, and when it is done they hope sales will reach 8,000 million yen.

Okazaki Marusan has grown 20-fold in the past 5 years. They predict this year's soymilk sales to be 2,000 million yen.

A photo shows 24 soymilk products. Most are in Brik Pak Aseptic cartons. Three Soyalac products are in cans. One product is in a retort pouch.

3815. *Toyo Shinpo* (*Soyfoods News*). 1982. [Quick soymilk cooling machine, manufactured by Toritsu Reiki Seizo K.K.]. July 21.

• ***Summary:*** The counter-top machine is for keeping retail soymilk cool. The company is located at 4-26-6 Ueno, Taito-ku, Tokyo 110, Japan. Phone: 03-841-0330.

3816. Tally, Gene. 1982. The Coca-Cola Company's work with soymilk in Asia (Interview). Conducted by William Shurtleff of Soyfoods Center, July 29. 1 p. transcript.

• ***Summary:*** Coca-Cola Co. (CCC) does not have a soymilk on the market in Thailand; they are still at the talking stage.

CCC has introduced soymilk, named H-C, in Hong Kong. They use their franchise Coca-Cola bottler there. They just bottle soymilk like any other soft drink by using soy proten isolates. So no need for a soymilk plant or buying soybeans etc. This is the way soft drink companies can easily get into soymilk.

In the Philippines, CCC is not presently involved with soymilk. The Magnolia Dairy Co. is owned by the same group that owns the Coke business in the Philippines. They have made it in the past, are not doing it now, but will resume soon, after they develop a new formulation. In the future they will probably not use Coke's soymilk formulations. Get from Dong Bang in Korea, or a group in Belgium, which has technology. Not the same as the Singapore company. This is a split-off of the Singapore company.

CCC has not yet introduced soymilk in USA, but they are looking at it. They are now in a feasibility study. They have Tetra Brik lines in the U.S. making Hi-C juices. The company's decision to go or no-go is imminent. We'll be the first to know.

Lots of talk with Vitasoy in the past about a joint venture

in Hong Kong.

Thailand. CCC would probably contract with one of the local dairy companies there to co-pack for them. Probably Siam Foods. Its a bit early; only in the talk stage. Originally did a lot of exploratory work concerning Thailand with Vitasoy but it took a long time and the Los wanted to use their own formula, so they went different ways. CCC may not get a product on the market for Thailand in less than 1-1½% years.

Talley would like to be marketing manager for Morinaga's tofu products in the US. Address: Coca-Cola Co., Atlanta, Georgia.

3817. **Product Name:** Ardex (Soy Protein Isolates) [DHV, D, F, SP-6, or R].
Manufacturer's Name: Archer Daniels Midland Co.
Manufacturer's Address: 4666 Faries Parkway, Decatur, IL 62526.
Date of Introduction: 1982. July.
How Stored: Shelf stable.
New Product–Documentation: Manufacturer's catalog, ADM Foods/Protein Specialties. 1981. *ADM edible products/81.* The section titled "Proteins" (p. 19) describes these four types of "Ardex isolated soy proteins: Isolated Soy Proteins have the specific functions of imparting to products the added value of nutrition and replacing costly ingredients that are either diminishing in availability or expanding in cost. Many times both.

"An isolate also functions to control the quality in the production process. It allows for production variables, where the ingredients it replaces probably won't.

"The result is a more quality consistent product. Consequently, many food producers use isolates in combination with their present formulations to increase product consistency as well as reduce ingredient costs."

Manufacturer's catalog. 1982. Feb. "Soy beverage concepts using Ardex isolated soy proteins." Ardex F and Ardex SP-6 are recommended for making milk-like beverages. Ardex R with pH properly adjusted can also be used. The ingredient cost of 8 oz. of whole milk is 8.6 cents, compared with 3.2 cents for unflavored soy beverage, 3.7 cents for chocolate soy beverage, and 8.3 cents for soy fortified milk. Ingredients in the unflavored soy beverage are Ardex F 3.62% (dry weight basis), ADM 468 partially hydrogenated soy oil 2%, Cornsweet 42 (fructose) 8%, emulsifier 0.25%, salt 0.08%, and stabilizer 0.02%. Total solids are 13.97%, protein 3.47%, fat 2%, and calories 67.7 per 100 gm.

Soyfoods. 1982. Summer. p. 7-8. Ardex F is a highly dispersible isolate that can replace nonfat milk solids.

Soya Bluebook. 1982. p. 64. No brand names given. Note: This is the first time that ADM has appeared in the Soya Bluebook as a maker of edible soy protein isolates.
Soya Bluebook. 1983. p. 64. No brand names given.

Manufacturer's catalog. 1987. DHV is salt tolerant, non-dusting, highly dispersible. D is adhesive, emulsifier & emulsion stabilizing. F and SP-6 are non-gelling, readily dispersible. RH is isoelectric pH isolate.

3818. **Product Name:** [Asashoku Soymilk (Plain, or Dairylike)].
Foreign Name: Gen Tônyû, Asashoku Soimiruku.
Manufacturer's Name: Asahi Shokuhin.
Manufacturer's Address: San Shain 60 40F, 3-1-1, Higashi-Ikeburo, Toshima-ku, Tokyo 170, Japan.
Date of Introduction: 1982. July.
Wt/Vol., Packaging, Price: 1 liter Pure Pak cartons.
How Stored: Refrigerated.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 73. States that these 2 products, in "L packs" (1 liter Pure Pak cartons), were introduced in July (Gen) and August (Soimiruku) of 1982, and distributed to most of central Japan.

3819. Campos, O.F.; Huber, J.T.; Bergen, W.G. 1982. Partial substitution of milk protein with spray-dried fish solubles or soy protein concentrates in calf milk replacers. *J. of Dairy Science* 65(7):1240-46. July. [24 ref]
Address: Dep. of Animal Science, Michigan State Univ., East Lansing, Michigan 48824.

3820. *Energy Bulletin.* 1982. Thai pedal-powered soy grinder produces milk. July. p. 13.

3821. Itona Products Ltd. 1982. Dairy replacement foods (Ad). *Here's Health.* July. p. 94.
• ***Summary:*** This full-page black-and-white ad also appeared in *The Vegetarian.* 1984. May. p. 2. "These are important and very special health foods. Foods sold under the Granny Ann and Golden Archer brands all have one thing in common–they don't contain cow's milk or any other animal ingredient. This is important for a variety of reasons. Many people are allergic to dairy milk whilst others are rightly concerned about the ethical, medical, and social considerations.

"The 'Milk' and 'Milk-Base' ingredients in Granny Ann and Golden Archer foods are derived from the soya bean. Not from cows.

"These Dairy Replacement Foods also have further, decided advantages. The flavours are quite excellent and the nutritional values are very high. They are exceptionally good foods which you really should try–whatever reason you may have."

Photos show 11 of the company's products: Itona TVP (chunks, ham flavor). Itona TVP food mix: Itonaburga (burger style). Itona Tonabana: Sausage Style. Granny Ann Noots. Granny Ann Grannymels: Caramels. Granny Ann Noot Bar (with "Roasted, salted beans. Handy packets"). Granny Ann Beanmilk Chunky Bar ("A thick Beanmilk bar

but without the Noots"). Golden Archer Soya Beanmilk ("From soya not cows"). Golden Archer Brown Rice Pudding ("Whole brown rice with Beanmilk and unrefined sugar"). Golden Archer Custard ("Made entirely from non-animal ingredients"). Golden Archer Beancream ("A wonderfully rich cream made from Beanmilk"). Granny Ann High Fibre Biscuits ("A convenient and tasty way to take your daily fibre. Made with soya fibre–better than bran").

Note: It is unclear whether this "soya fibre" is okara or soy bran (ground soybean hulls). Since Itona is also selling soymilk, of which okara is a byproduct, okara seems more likely.

"'Granny Ann,' 'Golden Archer' and 'Itona' foods are made by Itona Products Limited, Leyland Mill Lane, Wigan. Send large SASE for leaflet."

3822. **Product Name:** [Soymilk (Plain, With Vegetable Juice, Fruit, Barley Malt Syrup)].
Foreign Name: Tônyû (Sutoreeto, Yasai, Kajû, Bakuga).
Manufacturer's Name: Kibun Health Foods Co.
Manufacturer's Address: Saitama-ken, Japan.
Date of Introduction: 1982. July.
Wt/Vol., Packaging, Price: 200 ml Brik Pak Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Toyo Shimpo. 1982. July 21. Product with Label purchased at department store in Japan. 1983. June. For a detailed analysis of this and many other Japanese soymilk products collected in Tokyo in June 1983 see: Shurtleff, William; Aoyagi, Akiko. 1984. *Soymilk Industry and Market: Worldwide and Country-by-Country Analysis.* 2 vols. Lafayette, California: Soyfoods Center. Feb. 28 cm. See Vol. 1, p. 162-66.

3823. Leviton, Richard. 1982. Touring for soyfoods. *Soyfoods.* Summer. p. 32-37, 41.
• ***Summary:*** At The Farm in Tennessee, the soy dairy, managed by Chuck Haren, "operates 3 days a week, turning out 7,500 lb/week of calcium sulfate tofu for immediate consumption by the Farm's 1,300 soyfood lovers." They use a Sweco-Brown filtration system. The okara is composted. They make 600 gallons per week of fresh soymilk. Their tempeh shop makes 700 lb/week of fresh tempeh–the 7th largest in the UA. Both the tofu and tempeh plants have been used as training grounds for apprentices from Europe, South America, and Africa, who come to The Farm to stay for 6 month sessions. A ice cream manufacturer in Memphis makes their Ice Bean. Plenty is active in Haiti, where they are providing soymilk for malnourished children, and in Lesotho, South Africa, where they are aiding in the construction of a village soy dairy and demo site as part of the Motsemocha Village Technology Center. They recently conducted a Caribbean cruise with 8 soy technicians.

Legume: "Gary and Chandri Barat and Robert Shapiro have a booming company on their hands after 1 year of business with an impressive line of prepared frozen tofu entrees and desserts. Jan. 1981 rented facility in Verona, New Jersey. May 1981 Celantano started co-packing. Photos show: Chandri Barat, Gary Barat, and Robert Shapiro of Legume (see also photo on p. 3).

The following people and their companies are also discussed, with photos: Tim Nusser of Rising Sun Soy Farms (Columbus, Ohio). Jim Saunders of Real Foods (tofu shop in a supermarket in Allentown, Pennsylvania). Renate and Karl Krummenoehl of Cricklewood Soyfoods. Jamie and Nancy Stunkard of Nature's Grace. Joel Dee of Edward & Sons in Saluda, North Carolina (marketers of Miso-Cup). Henry Salazar of Sam Sung Tofu Co. Eileen Foote and Eileen Judge of Kingdom Foods. Bob Hunt of Blue Ridge Soyfoods. Soya Food Products in Cincinnati (Ben & Nina Yamaguchi). Rising Sun Soy Farms. Bill Lutz of Hip Pocket Tofu Deli (Columbus, Ohio). Robert Marrochessi and Bill Spear of The Bridge (Middletown, Connecticut, macrobiotic, run by Roberto Marrocchesi and Bill Spear. Began tofu production in March 1981). Suzy Jenkins and Laurie Praskin of Plenty (Summertown, Tennessee). Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

3824. Leviton, Richard. 1982. Everybody's Restaurant. The Farm brings soyfoods to Nashville. *Soyfoods.* Summer. p. 38-39.
• ***Summary:*** Everybody's Vegetarian Restaurant, founded and owned by Judd and Diane Hoffman, opened in July 1980 in the university district of Nashville, Tennessee, and now seats 45. Many of the items on the meatless and dairyless [vegan] menu feature soyfoods–especially tofu, soymilk, and tempeh. The facility has 2,700 square feet, with 1,500 for retail and 1,200 for kitchen. The 12 restaurant workers, who are all members of The Farm (Summertown, Tennessee), live together communally in a large house outside Nashville.

Photos show: (1) Judd and Diane Hoffman. (2) A view of the front of the restaurant from outside. (3) Inside the kitchen. Address: Colrain, Massachusetts.

3825. Leviton, Richard. 1982. Soyfoods of America. High volume Duarte company takes on California market. *Soyfoods.* Summer. p. 30-31.
• ***Summary:*** America's first yuba plant opened in September 1981, requiring nearly one million dollars of startup capital. They move 18,000 lb/week of tofu in the very competitive Los Angeles market. Their lines are Furama and Nature's Touch.

Photos show: 1. The company's line of yuba, tofu, and soymilk products; 2. Ken Lee with his innovative semiautomatic yuba machine and freshly packaged sheets; 3. The part of the plant that makes tofu and soymilk; 4. Ken Lee and sales manager Doug Fiske holding water-packed and vacuum-packed tofu. Address: Colrain, Massachusetts.

3826. **Product Name:** [PHAG Carob Drink].
Foreign Name: PHAG Caroba-Drink.
Manufacturer's Name: PHAG Sàrl (Produits Hygièniques Alimentaires Gland) (Marketer-Distributor). Made in Belgium by Alpro.
Manufacturer's Address: La Ligniere, CH-1196 Gland, Switzerland. Phone: 022/64 11 18.
Date of Introduction: 1982. July.
Wt/Vol., Packaging, Price: 0.5 liter Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Letter from Remy Mayer of PHAG. 1990. Oct. 2. This product was introduced in July 1982. His company distributed the product, which was made by a manufacturer in Belgium [probably Alpro].

3827. **Product Name:** [Cheerio Soymilk].
Foreign Name: Cherio Tônyû.
Manufacturer's Name: Seven-Up Inryo (Sebun Appu Inryo).
Manufacturer's Address: Japan.
Date of Introduction: 1982. July.
Wt/Vol., Packaging, Price: 250 gm can.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Toyo Shinpo. 1982. July 21. "The soymilk industry and market in Japan." States that Seven-up Inryo first sold commercial soymilk in Japan in 1982.

K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Cherio Tônyû was introduced before Dec. 1982 by Sebun Appu Inryô in a 250 gm can.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64.

3828. *Soyfoods.* 1982. Soy isolates: New tofu ingredient? [ADM Foods]. Summer. p. 7-8.
• ***Summary:*** "ADM Food's search for new applications for its high protein soy isolates have led them to frozen soymilk dessert, a flavored soymilk beverage, imitation cheeses, and, most recently, silken tofu.

"ADM, one of the nation's largest soy isolate producers, located in Decatur, Illinois, has been devoting considerable research effort to find new product applications for its basic soy ingredient, isolated soy protein. Initial commercial interest in isolates (which contain 90% protein, as most of the carbohydrates have been removed) began in the 1930s when they had industrial uses such as paper coatings. But by 1967, at least 22 million pounds were produced, and by 1981, annual production was estimated at 90 million pounds as isolates were used in numerous foods.

"Soy isolate production begins with defatted soybean flakes, from which protein is extracted, in an aqueous solution, from the insoluble residue with the aid of screens or centrifuges. The 'soy curd' is precipitated at the isoelectric point (pH 4.5, where the solubility of the protein is at a minimum) using a food grade acid such as acetic or phosphoric. The curds and whey are separated by centrifuging, the curds are washed, then neutralized with food grade alkali. Finally the isolate is spray-dried for storage.

"Recently ADM Foods announced the development of a 'wet' curd isolated soy protein" that has maximum functional properties. The curd is suitable for interaction with milk, whey, and egg proteins in foods. The wet curd can be used as a partial replacement (up to 50%) for casein (a milk-derived protein) in imitation mozzarella cheeses, and as a coffee whitener that will not coagulate after immersion in the hot liquid. The soy isolate slurry is not heat denatured, has a pH of 4.5, solids content of 23%, is easily pumped, can be delivered in stainless steel tanks of 45,000 pounds capacity, and is stable for two days at room temperature.

"At first glance, soy isolates may seem a world away from everyday tofumaking, yet this year ADM researchers began experimenting with their Ardex isolated soy protein for a silken tofulike product and even custom designed yogurt type desserts. A soy beverage base, made from soy isolate, is heated to 80ºC; then 1% (by weight) glucono-delta-lactone (GDL) is added. After 20 minutes the milk has set to a yogurt-style smooth consistency. To make a 'firmer' silken tofu, ADM scientists added (5% by weight) kappa-carrageenan and 0.5% tetrapotassium phosphate to the beverage before heating.

"This method, ADM researchers suggest, greatly simplifies the tofumaking process while providing significant cost reductions. 'These products can be formulated to achieve up to 80% ingredient cost reductions compared to conventional tofu,' their report states. The use of soy isolates also allows for the extension of several dairy systems using soy such as puddings, sour cream, yogurt, baby food, and frozen desserts.

"ADM Foods has experimented with three processing methods for preparing a soymilk beverage including batch pasteurization, high temperature, short time pasteurization, and ultra high temperature (UHT) for aseptic packaging.

"For the batch method, water at 50-55ºC is agitated while the soy isolate powder is mixed in, followed by corn sweetener (fructose) and vegetable oil. The mix is heated to 60ºC and held for 30 minutes with constant agitation.

"Next comes a two stage hot homogenization (at 2500 psi, then 500 psi) followed by immediate cooling to 5ºC. Flavorings are added and the product is packaged for storage. The ingredient cost per 8 fluid ounce serving for unflavored soy beverage is $0.032 compared to $0.086 for whole milk. The cost per pound of protein served is $1.701 compared to milk's $4.938. The soy beverage's nutritional profile includes 3.47% protein, 2.00% fat, total solids l3.97%, and 67.70 calories per 100 grams.

"The soy isolate has been applied in making frozen

soymilk ice creams that yield protein contents twice the level of those in standard ice creams. With the isolate-based desserts, as the fat content is reduced, the caloric density is also reduced, so that a 4% fat soy dessert has about 20% less calories than standard ice cream, while a 2% fat dessert has nearly 30% fewer calories. The ingredients include Ardex soy isolate, sucrose, CornSweet (corn sweetener), corn syrup, stabilizer, emulsifier, while the ingredient cost is $0.017 compared to $0.048 for standard ice cream–a savings of 64.6%. Nutritionally, the product is comparable to standard ice creams, with 1.8% protein, 2.00% fat, 142.50 calories per 100 grams, and 117 calories per 4 fluid ounce serving.

"ADM representatives provided samples of their strawberry soymilk dessert along with chocolate and unflavored (but sweetened) soymilk beverage at the recent U.S. International Food Show in New York City."

3829. **Product Name:** Mild Italian Soysage (Meatless Okara-based Sausage).
Manufacturer's Name: Swan Gardens.
Manufacturer's Address: 940 17th St., Miami Beach, FL 33139. Phone: 305-324-8910.
Date of Introduction: 1982. July.
Ingredients: Soy press cake, whole wheat flour, nutritional yeast, soy oil, soy milk, salt, seasonings, spices.
Wt/Vol., Packaging, Price: 8 oz. Retails for $1.79.
How Stored: Refrigerated.
New Product–Documentation: Find/SVP. 1981. May. The Tofu Market. Gives Miami Beach address. Spot in Soyfoods. 1982. Summer. p. 55. "Vacuum Packed Soysage." 250 lb are produced weekly.

Soyfoods. 1983. Summer. p. 43. They make a "spicy Soysage."

Label. 1985, undated. 3.25 inch diameter. Self adhesive. Blue and red on shiny gold. An illustration shows a swan on lotus. "Ready to eat!" Made by Swan Gardens, Inc. Miami, Florida 33127.

3830. Gardiner, Doris Kloss. 1982. Re: Jethro Kloss' work with soyfoods. Letter to William Shurtleff at Soyfoods Center, Aug. 3. 1 p. Answers handwritten after typewritten questions on Soyfoods Center stationery.
• ***Summary:*** Doris is Jethro Kloss' only grandchild. She was born on 28 Feb. 1929 in Miami, Florida. Concerning her grandfather's work with soy ice cream she recalls: "My mother and I, my uncle Eden, and my grandfather spent the winter of 1935-36 in Miami, Florida. I know he was preparing soy ice cream to serve at the close of his lectures and food demonstrations at that time. I used to get to lick the freezer paddles before he left for the lectures.

"I have no idea where and when and why Jethro Kloss became interested in soybeans. The soy foods that I remember that he made and that I ate as a child were the soy ice cream (of course!), delicious soy bean bread, soy bean butter, soy milk, soy cheese, pie crust, soy coffee, broth, soy mayonnaise, and soy bean roast.

"I just talked with my aunt (Promise Kloss Moffett), who lives in Hagerstown, Maryland, and who turned 79 today, and she does not recall if Jethro used any soy in the commercial health foods he made at the Nashville Sanitarium Food Company (which was sold in 1919-1920). She said that she does recall his experimenting with soy beans when they lived in Brooke, Virginia (in about 1924)." Address: Back to Eden Books, P.O. Box 1439, Loma Linda, California 92354. Phone: (714) 796-9615.

3831. Parker, Joyce. 1982. Re: Soyfoods and soybeans in Nepal. Letter to William Shurtleff at Soyfoods Center, Aug. 28. 3 p. Handwritten with signature on letterhead of the Britain Nepal Medical Trust (Koshi Anchal).
• ***Summary:*** She is a Peace Corps volunteer living in the eastern middle hills of Nepal, eating the local food, and going crazy. Nepal is extremely diverse culturally, so what is done in one part of the country may not be true of other parts. Tofu is made in Kathmandu, the capital of Nepal, but only on a very small scale. In the eastern middle hills, soybeans are used mostly for a snack (*khaajaa*) in the early afternoon, often with tea–to sustain people until the evening meal. "The snack I'm familiar with is called *Bhatmas ani chiuraa*... and is made with soybeans and beaten rice. The mature soybeans are roasted over an open hearth, usually in a heavy cast iron wok–stirred with a stick continuously (the pan is dry but well seasoned) for 5-10 minutes. Remove from heat–put into a *jato* (primitive grinding stone) only to split the soybeans in half. A small amount of *mattitel* (mustard oil) is heated until the smoke rises (otherwise the taste is foul)–pyaaj (green onion–chopped fine) and jursaani (chili pepper also chopped fine) and fresh ginger are added, and next the bhaatmas–stir until they are covered with the oil mixture–salt is also added. It is then served hot or cold over the beaten rice. Its delicious–a real favorite with me–puts a bit of crunch into your diet.

"Soybeans are usually grown in a companion planting system with the *makai* (corn) or along the borders of the rice *khets* (irrigated fields). I have never seen the soybean grown in a *bari* (dry field) as a main crop. Main crops include rice, wheat and corn. Soybeans are always an afterthought. There is a British Aid Agricultural Farm at Pakhribas (in the Kosi Zone of eastern Nepal, 3 hours from Dhankuta) working on soybean trials." They came up with 3 varieties of soybeans which will grow in different terrains. More technical information can be gathered from them.

The Limbu live in the high hills and are "junglely types." "One of my co-workers is of Limbu origin and was the only one that knew about kinema or kenima (couldn't get the correct spelling but will keep trying). It seems it is a good trekking food. They make a soup of it and pour it over rice–keeps well–easy to cook. Lentils, a much preferred

food, take too long to make on the trail. After my trip to Ilam–investigating the Limbu land–I'll write more specific details. From what I could gather:" Boil soybeans until they are soft. Grind to a mush with a local mortar and pestle. Add ashes (*kharain*) from the cooking stove (*chulo*) and mix with the soybeans. Place in a bamboo basket (*dhahi*), cover, and leave for 24 hours. Remove from basket, place on a bamboo mat, and dry in the sun. Recipes vary. "I have never tasted any but it sounds awful. More research is required. I'll keep you informed."

Newsflash–the SCF clinic is looking into using soymilk as a substitute food for babies–only when the mother is unable to breast-feed. We have also discussed possible weaning foods. One problem–soymilk is not high in calories; both calories and protein are rare commodities. "The value of the soybean's body building protein would be lost and just burned off as energy." The biggest problem here is just a lack of food. The Nepali diet is healthy but too many mouths to feed. Address: c/o U.S. Peace Corps, P.O. Box 613, Kathmandu, Nepal.

3832. Brown, Judy A. 1982. Soyfoods are catching on. The soyfoods industry has shown astonishing growth. Who created the boom and why? *Whole Life Times* No. 20. p. 34-36. July/Aug.
• ***Summary:*** Contents: Introduction. Idealism guides many soycrafters. Soybean goldmine. Tofu. Tempeh. Miso. Soymilk. Soy inhibitions. Wave of the future. Photos show: William Shurtleff and Akiko Aoyagi. Richard Leviton. Michael Cohen.

3833. **Product Name:** Ceres Natural Soy Milk.
Manufacturer's Name: Ceres Natural Foods Pty. Ltd. (Importer & Distributor). Made in Japan.
Manufacturer's Address: East Bentleigh, Victoria, Australia.
Date of Introduction: 1982. August.
Wt/Vol., Packaging, Price: 180 ml pouch.
How Stored: Shelf stable.
New Product–Documentation: Talk with Don Lazzaro of Ceres Natural Foods. 1995. June 6. Their first imported product was named Ceres Natural Soy Milk. The label was an "oversticker" on a narrow plastic (not foil) stand up pouch in those days. It was made by either Marusan or Saniku.

Letter (fax) from Don Lazzaro of Ceres Natural Foods. 1995. June 15. In Aug. 1982 they introduced a soymilk product in a 180 ml pouch with a Ceres label, made by and imported from Saniku Foods in Japan. In Oct. 1983 this pouch was redesigned and became available in four flavours [probably natural, vanilla, barley malt, and one other]. During the mid-1980s, Ceres also imported and sold the Westbrae Westsoy and Ah Soy brands from the USA.

3834. **Product Name:** [Eggmil Soymilk].
Foreign Name: Eggmil.
Manufacturer's Name: Dae Won.
Manufacturer's Address: South Korea.
Date of Introduction: 1982. August.
New Product–Documentation: Letter from Kyung Lee, ASA country director, Korea, to William Shurtleff at Soyfoods Center. 1983. Nov. 23. Gives history and production statistics.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 81-83. They produced an estimated 1,400 tonnes in 1983.

3835. **Product Name:** [Thick Soymilk Coffee].
Foreign Name: Tônyû Pururu Koohii.
Manufacturer's Name: Furuta Shokuhin Kogyo (Furata Foods Co.).
Manufacturer's Address: Japan.
Date of Introduction: 1982. August.
Wt/Vol., Packaging, Price: 60 gm poly cup.
How Stored: Refrigerated.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 73. This product was introduced in August 1982 in a 60 gm poly cup, and distributed nationwide. Name of company with diacritics is: Furuta Shokuhin Kôgyô.

3836. Gruskay, Frank L. 1982. Comparison of breast, cow, and soy feedings in the prevention of onset of allergic disease: A 15-year prospective study. *Clinical Pediatrics* 21(8):486-91. Aug. [28 ref]
• ***Summary:*** Soy feeding from birth in high-risk infants does not have a beneficial effect. Address: Dep. of Pediatrics, Yale Univ. School of Medicine; Pediatric Allergy Clinic, Hospital of St. Raphael, New Haven, Connecticut.

3837. **Product Name:** [Meiji Sunglow Soymilk (With Barley Malt Syrup)].
Foreign Name: Meiji San-guroo Tônyû (Bakuga).
Manufacturer's Name: Meiji Milk Products Co. Ltd. (Meiji Nyugyo).
Manufacturer's Address: Kyobashi 2-3-6, Chuo-ku, Tokyo 104, Japan.
Date of Introduction: 1982. August.
Wt/Vol., Packaging, Price: 200 ml aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. Tonyu [Soymilk. 2nd ed.]. p. 72. Meiji Nyugyo launched Meiji San-guroo Tonyu (Pureen) in a 200 ml long-life (aseptic) carton in March 1981.

Soya Bluebook. 1983. p. 63. "Sungrow Soy Beverage." Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64. Note that Meiji started to market Sunglow soymilk, made and private labeled for them by Marusan, in April, 1979.

3838. Moorman, Michael. 1982. Ice cream: Another soy surprise. *Bestways*. Aug. p. 78, 81. [2 ref]
• ***Summary:*** Describes The Farm's work with soy ice cream in the USA, Guatemala, and Haiti, and their soy dairy in Lesotho. "Plenty, the relief organization of the Farm community based in Summertown, Tennessee, built a village soy dairy and tofu shop in Solola, Guatemala, with the help of local Indians and funding from the Canadian International Development Agency, UNICEF, and Plenty donations. In February, 1980, the Solola soy dairy began production and started selling soy ice cream and tofu from the dairy and in the local market place. The soy dairy is currently operated by local people trained by Plenty technicians. Free soy ice cream is distributed to poor and undernourished children through the nearby schools...

"Plenty technicians also went to Haiti and worked with Mother Teresa's Sisters of Charity. They made soy milk ice cream there for malnourished children. After training some of the people in how to use soybeans, they left equipment for them–including an ice cream machine–so they could continue on their own...

"Another arm of Plenty is reaching out to Lesotho, South Africa, where technicians are building a Village Technology Center. One of the stone huts of the Center will be used as a soy demonstration kitchen, where local villagers will be taught how to process soybeans at home. Plenty's projects are just one example of how soyfoods can be introduced into a foreign culture."

Four recipes are given for homemade soy ice cream, each based on soymilk. Note: This is an early document concerning soybean products (soy ice cream) in Lesotho. Address: Production Manager, Farm Foods, Summertown, Tennessee.

3839. **Product Name:** [Safflower Soymilk (Plain, or Cocoa)].
Foreign Name: Benibana Tônyû (Pureen, Kokoa).
Manufacturer's Name: Soken-sha K.K.
Manufacturer's Address: 724 Katakura-cho, Kanagawa-ku, Yokohama-shi 221, Japan.
Date of Introduction: 1982. August.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. Sôken-sha introduced Benibana Tônyû (in plain and cocoa flavors) in Aug. 1982 in 200 ml long-life packs and distributed it nationwide.

3840. **Product Name:** Tempeh, Tofu Tart (Tofu Pudding) [Chofu with Carob, Vanillafu with Vanilla, Lemonfu with Lemon, and Bananafu with Banana], Cottage Tofu.
Manufacturer's Name: Star Soyfoods.
Manufacturer's Address: Route 2, Box 337, Sandpoint, ID 83864. Phone: 208-265-4720.
Date of Introduction: 1982. August.
Ingredients: Tofu Tart: Crust: Vegan graham crackers, soy margarine. Soy Whip: Soy oil, soy milk, honey, vanilla. Fillings: Tofu, honey, vanilla for Vanillafu; plus lemon juice, soy oil and lemon rind for Lemonfu; carob powder and soy milk for Chofu; bananas, soy oil and lemon juice for Bananafu.
Wt/Vol., Packaging, Price: Tempeh: 8 oz. perforated poly bag sealed in a printed outer bag. Tart and Cottage Tofu: 2-4 oz small clear plastic cup with snap-on lid.
How Stored: Refrigerated.
New Product–Documentation: Order from Penny Billiter of Rt. 2, Box 337, Sandpoint, Idaho. 1981. Oct. 23. She orders 100 "What is Tempeh" pamphlets. On Dec. 8 she writes: "I have found your books very helpful and full of information. Thanks."

Form filled out by Penny A. Billiter. ca. 1981. Label with a smiling orange star is enclosed. "I am making tempeh, mock happy chicken, and baked tofu for the three health food outlets here in Sandpoint. I am only using 3-4 lb dry beans/week." Second form states the company started officially on 3 August 1982. Makes Tempeh and Tofu Tarts. Label. 1982, undated. 3.5 by 4 inches. Blue and orange on white. Label. 1983. 2 by 2 inches. Self adhesive. Blue on white with orange smiling star. Soyfoods Center Computerized Mailing List. 1982. July 23. Owner: Penny Billiter.

Talk with Penny Billiter Miller. 1993. Feb. 23. She still lives in Sandpoint and is still interested in soyfoods. She called the tarts "puddings" and she made several flavors: carob, vanilla, and banana. Sometimes she omitted the graham-cracker crust and just sold the product as a pudding. The Cottage Tofu, introduced at about the same time as the tempeh and tarts, was on the market for only a short time; she did it through the local food co-op. She still has records.

3841. Stickler, Gunnar B. 1982. A reevaluation of the case against cow's milk. *Clinical Pediatrics* 21(8):492-93. Aug. [6 ref]
• ***Summary:*** Some 70% of African-Americans may be lactose intolerant. Address: Dep. of Pediatrics, Mayo Clinic, Rochester, Minnesota 55905.

3842. Vijayalakshmi, K.; Vaidehi, M.P. 1982. Evaluation of tofu and its products prepared from soymilk and combination with sunflower seed milk and skimmilk [skim milk]. *J. of Food Science and Technology* (*Mysore, India*) 19(4):139-42. July/Aug. [8 ref]
• ***Summary:*** "Tofus from soymilk and combinations with sunflower seed milk and skimmilk were developed as a ready-to-use and prepare base for various Indian dishes." A sensory panel decided that tofu made from soymilk or from 60% soymilk and 40% skimmilk was acceptable, whereas tofu made from 60% soy and 40% sunflower seed milk or from 60% soymilk + 20% sunflower seed milk + 20% skimmilk were not acceptable.

Two snack foods, Burfi and Pakoda [Pakora], prepared

from the acceptable tofu were both acceptable with no significant difference ($P < 0.05$) among the products.

Note: A pakora is a fritter–any kind of food coated in batter and deep fried. Address: Dep. of Rural Home Science, Univ. of Agricultural Sciences, Hebbal, Bangalore 560 024, India.

3843. Wagner, Martha. 1982. Dairyless cooking. *Vegetarian Times.* Aug. p. 46-48.
• ***Summary:*** It's easy when you learn how to use soy milk, tofu, and nut milks as dairy substitutes. Contains recipes for: Soy milk (homemade). Tofu sour cream. Tofu creme (like whipped cream). Cashew nut cream. Nut milk (using almonds, cashews, or brazil nuts). Cashew milk gravy. Address: White Crane Publications, P.O. Box 3081, Eugene, Oregon 97403.

3844. McLeod, John. 1982. Re: Soyfoods in Costa Rica. Letter to William Shurtleff at Soyfoods Center, Sept. 10. 1 p. Typed, with signature on letterhead.
Address: CARE-Costa Rica, Apartado 3571, Correo Central, 1999 San Jose, Costa Rica. Phone: 21-19-78.

3845. Woo, P. 1982. Anti-inflammatory drugs are the key. *General Practitioner* 55. Sept. 17. *

3846. Tally, Gene. 1982. The Coca-Cola Company's work with soymilk in Hong Kong (Interview). Conducted by William Shurtleff of Soyfoods Center, Sept. 27. 1 p. transcript.
Address: Coca-Cola Co., Atlanta, Georgia.

3847. **Product Name:** Soymilk (Unflavored).
Manufacturer's Name: American Soyfood Industries.
Manufacturer's Address: 419 Frankford Ave., Baltimore, MD 21206.
Date of Introduction: 1982. September.
Wt/Vol., Packaging, Price: Quarts, half gallon, and gallon.
How Stored: Refrigerated.
New Product–Documentation: Talk with Larry C. Betzler of American Soyfood Industries. 1988. April 1. The product has nothing added. Just plain basic soymilk.

3848. **Product Name:** Firm Tofu: Soybean Curd Cake, Soymilk, Soy Sprouts.
Manufacturer's Name: Chunco Foods Inc.
Manufacturer's Address: P.O. Box 883, Kansas City, MO 64141. Phone: 913-362-8097.
Date of Introduction: 1982. September.
Ingredients: Tofu: Soy beans, water, nigari (calcium sulphate).
Wt/Vol., Packaging, Price: 16 oz packed in water in molded plastic tray with heat-sealed, peel-off plastic film lid.
How Stored: Refrigerated.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1982. Sept. 17. President: Peter Chun. Talk with and business card from Peter Chun at Soyfoods Conference in Seattle, Washington. 1982. He is a Korean-American, who presently makes tofu, soymilk, and soy sprouts. Label. 1983, undated. 5.5 by 4.25 inches. Plastic film. Blue, black, and orange on clear film. "No preservatives. Keep refrigerated." Contains serving suggestions. In March 1990 his tofu retailed for $1.29 for 18 oz. It was very low priced and probably not pasteurized.

3849. Lo, Yvonne; Tsui, Hilton. 1982. Market study on soymilk beverage [in USA]. San Francisco, California: Vitasoy USA. 59 p. Sept. Unpublished manuscript.
Address: San Francisco.

3850. Patil, G.R.; Gupta, S.K. 1982. High-protein beverage from cheese whey and soybean. III. Effect of methionine fortification on the protein efficiency ratio. *Indian J. of Dairy Science* 35(3):365-66. Sept. [10 ref. Eng]
• ***Summary:*** Soybeans have as their limiting amino acids the two sulfur-containing amino acids–methionine and cystine. "Use of cheese whey proteins a rich source of sulphur-containing amino acids, with soyprotein has been reported to give a blend of high PER.

The soy-whey beverage developed by the authors in Part I of this series derived 25% of its total protein from whey.
Address: Div. of Dairy Technology, National Dairy Research Inst., Karnal-132001, India.

3851. Shurtleff, William; Aoyagi, Akiko. comps. 1982. Soyfoods labels, posters & other graphics. Lafayette, California: Soyfoods Center. 185 p. Sept. Illust. No index. 28 cm. 2nd ed. 1984. 6 vols. 685 p. total.
• ***Summary:*** Contents: 1. Tofu. 2. Other tofu types. 3. Secondary tofu products. 4. Tempeh. 5. Secondary tempeh products. 6. Soymilk. 7. Soymilk products. 8. Soy sauce, shoyu & tamari. 9. Miso. 10. Soynuts. 11. Other soyfoods. 12. Letterheads & business cards. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

3852. **Product Name:** Tofu, Tofu Cakes, Tofu Sandwiches, and Soymilk.
Manufacturer's Name: Tofu Shop.
Manufacturer's Address: 78 Bridge Rd., Richmond, Melbourne, VIC, Australia. Phone: 03-429-6024 or 6204.
Date of Introduction: 1982. September.
New Product–Documentation: Form filled out by Malcolm Green. 1983. They also operate a deli serving soyburgers, sushi rolls, kanten (agar) sweets, tofu rice sandwiches, various soy drinks, and health foods. They use 10-15 lb/day of dry soybeans.

Soyfoods Center Computerized Mailing List. 1983. June 20. Owner: Malcolm Green.

Newspaper article by Jeni Port. 1983. "The tofu is here!" (Title of newspaper and exact date unknown). A photo shows Malcolm and Guna Green and their baby, Georgia, in their Richmond home, the first tofu shop in Melbourne. At "The Tofu Shop" (78 Bridge Road, Richmond) Malcolm and Guna make and sell a variety of soy foods, "specialising in tofu and tempting tofu cakes and sandwiches for the take away trade. It seems incongruous that the former butcher shop now contains Melbourne's first retail outlet for tofu, a food so strongly associated with vegetarianism." Making tofu is an art "that has taken Malcolm many years to master." They also sell soy milk for 90 cents a litre.

Letter from Darren Fletcher of Darkville, Melbourne. 1984. Sept. 4. "I've decided I don't want to commit myself to the tofu business. Too much long and hard work and I really think Melbourne has enough tofu shops. I also work with Malcolm Green's Tofu Shop."

3853. *Vegetarian Times.* 1982. Lowering cholesterol with soy milk. Sept.
• ***Summary:*** This good news comes from a series of investigations by scientists at the University of Western Ontario, London, Canada. Researchers Dr. Nina Mercer, Bernard Wolfe, Ken Carroll, and Patricia Giovanetti have found that the addition of soy protein to one's diet will reduce serum cholesterol levels regardless of dietary considerations.

This research was published in the *Journal of the American Medical Association* (11 June 1982).

3854. *Toyo Shinpo* (*Soyfoods News*). 1982. Tônyû ôte meekaa. Zokuzoku to setsubi zôkyô. Gosanke no shea arasoi shiretsu. Shijô 40% nerau Kibun. Kôchô no Nisshin wa jisha seisan e [Japan's biggest soymilk manufacturers: They have greatly improved their capabilities. The 3 big makers (Kibun, Marusan, Mitsubishi) are competing vigorously for market share. Kibun is aiming at 40%. Nisshin plans to produce its own soymilk]. Oct. 1. p. 1. [Jap]
• ***Summary:*** Sales of soymilk in Japan have doubled every year. By August of 1982 soymilk sales had already reached 5,000 million yen, which is double that of last year. Kibun is constructing two new soymilk plants; one each in Gifu prefecture and Hiroshima prefecture. They are expected to open in April 1983 and each plant will be able to produce 300,000 cartons per day. After these two plants open, Kibun will have a total production capacity of 1,200,000 cartons/day which is 40% of Japan's total soymilk industry capacity.

In June Okazaki Marusan completed the equipment to produce soymilk in large cartons (500 ml each). They now produce 300,000 cartons/day of 200 ml each, and 4,000 cartons/day of 500 ml. So far this year, up to September, Marusan has sold about 3,000 million yen of soymilk. They are hoping to expand their market share to 30% from their former 10%.

Mitsubishi Kasei Shokuhin was founded in February of this year; it became an independent company from Mitsubishi Kasei Kogyo. Their production at Kashima in Ibaraki prefecture is 270,000 cartons/day, each 200 ml. Mitsubishi is constructing a new plant at Kurashiki (Mizushima), in which they can produce 300,000 cartons/day (200 ml each). After these two new plants open Mitsubishi will have a capacity of 600,000 cartons/day. After the spring of 1983 they expect to be Japan's second largest soymilk manufacturer, with a capacity of 600,000 cartons/day and sales of 5,000 million yen/year. They are planning to open two more plants in the Chukin and Kyushu areas next year.

Meiji Nyugyo started to sell soymilk in March 1981 with a brand made by another company and private-labeled for them. In July 1982 they opened a new plant of their own. By March 1983 they hope to have soymilk sales of 1,500 to 2,000 million yen. Their former sales were 500 million yen. They have plans to expand production and hope to become the industry's second largest producer as soon as possible.

3855. Appropriate Foods, Inc. 1982. Eat Appropriately! [Catalog and price list]. P.O. Box 57, Sea Cliff, NY 11579.
• ***Summary:*** The following lines are carried and distributed: Tempeh Brothers, No Cow (Soymilk), Nasoya, The Bridge (Amazake, Seitan, Tofu Salad), Grainaissance (mochi), Island Sprouts (alfalfa), Sunshine Soyfoods (soysage), Sister Shorter (tofu spinach pie).

Note: This is the earliest document seen (Sept. 2011) that mentions Tempeh Brothers or Appropriate Foods. Address: Sea Cliff, New York.

3856. Del Valle, Francisco R. 1982. Industry-government nutritional improvement programs. *Food Technology* 36(10):120, 122-24, 126, 128-29. Oct. [15 ref]
• ***Summary:*** Contents: Introduction. Six programs implemented. Extrusion plant forms basis of programs (low-cost Brady extruder and an Alpine flour mill). Uses of full-fat soy flour. Production of soy-oat products. Soy beverage plant established. Organoleptic quality of soymilk beverages. Tortilla flour enrichment program. Nutritious, low-cost food made by plant. Breakfast program begun in schools. Other nutritional programs provided. Address: President, Fundacion de Estudios Alimentarios y Nutricionales, A.P. 1545, Sucursal C, Chihuahua, Chih., Mexico.

3857. Department of Agricultural and Chemical Engineering, Colorado State Univ. 1982. Costa Rica protocol. Productora Costariccense de Alimentos. *LEC Report* No. 12. 13 p. Oct. [Eng]
• ***Summary:*** Plant at Tirrases de Curridabat, San Jose, Costa Rica. Managed and operated by CARE, Costa Rica. Address: Colorado.

3858. Jaffe, Werner G.; Guerra, Marisa. 1982. Soya para uso

humano [Soya for human use]. In: Seminario Internacional sobre el Majoramiento de la Soya en Areas Tropicales. Caracas, Venezuela: Fundacion Polar. 8 p. Held in Oct. 1982 in Caracas, Venezuela. [Spa]
• ***Summary:*** Contents: Nutritional and alimentary characteristics (*Caracteristicas alimentarias*)*:* One can distinguish at least 3 main motives for the use of soy products in human nutrition: (1) For their functional characteristics; for example the ability of soy protein isolates to absorb considerable quantities of water when injected into ham. (2) To reduce the cost of animal products, such as milk, eggs, etc. which they replace or extend; for example soy protein isolates can replace non-fat dry milk in mayonnaise, or textured soy protein can replace up to 30% of ground beef, or soymilk can be carbonated to make a nutritious soft drink. (3) Soy has a great potential in the fight against malnutrition because of its low cost and high nutritional value; many liquid formulas for infants and children have been developed. In our country, maize flour enriched with soy flour has been used for 6 years in the programs of the National Institute of Nutrition (*Instituto Nacional de Nutricion*) with considerable excitement.

Products that can be obtained from soya: whole soy flours and defatted soy flours (*harinas integrales y desengrasadas*), soy milks, soy protein concentrates, isolates (*aisolados*) and textured soy proteins. Soybeans are crushed in oil and cake (*torta;* meal). The oil is refined to obtain oils for food or industrial use, and lecithin–which is an emulsifier with multiple uses. The cake is used as a feed for animals, or it can be processed to make defatted soy flour, or soy proteins for food or industrial use. Soy flours made this way in Venezuela are called soyarinas. Soymilk is made from the whole soybean; it has the same protein content as cows milk but its flavor is different. The simplest protein products are the flour and grits / semolina (*semola*), which have a protein content of 40% if the oil is not extracted, or 50% if it is extracted. The grits must be larger than 100 mesh (*mallas*).

The use of soya: Soya as innumerable uses from industrial uses (from adhesives {*pegamentos*}, soaps, etc.) to human food and animal feeds. The greatest potential is in the utilization of the proteins in the area of nutritional improvement. Also as functional ingredients in food products.

At the present time there are many foods in which soy proteins are used: biscuits, breads, crackers, pastas, sausages, salami (*salchichones;* a cured sausage, fermented and air dried), meat balls / fish cakes, soups, puddings, cereals for infant feeding, infant formulas, dietetic foods, anti-allergenic foods, drinks, etc.

In Venezuela, soya is used mainly as an ingredient in animal feeds and as an edible oil. However, in recent years, some soy products have been introduced in different foods. The national Institute of Nutrition, in its programs of supplementary foods, has included soy crackers, corn griddle cakes (*arepas*), and instant, pasteurized *chicha.* Moreover, in popular and school foods, soy flours are used in cakes (*tortas*), and textured soy flour in meat balls and soups.

In Venezuela, in 1979 the Soy Council (*El Consejo de Soya*) was established and in 1980 a working group on the Use of Soya for Human Consumption (*Uso de la Soya para el Consumo Humano*). Address: 1. Dr., Profesor titular y coordinacion del curso Postgrado de Planificacion Alimentaria y Nutricion, Facultad de Ciencias de la Universidad Central de Venezuela; 2. Lic., Docente e Investigadora de la Universidad Simon Bolivar, Division de Ciencias Biologicas, Departamento de Tecnologia de Procesos Biologicos y Bioquimicos, Sartenejas, Estado Miranda [Venezuela].

3859. **Product Name:** [Seo Ju Mill Soymilk].
Foreign Name: Seo Ju Mill.
Manufacturer's Name: Seo Ju Industry.
Manufacturer's Address: South Korea.
Date of Introduction: 1982. October.
New Product–Documentation: Letter from Kyung Lee, ASA country director, Korea, to William Shurtleff at Soyfoods Center. 1983. Nov. 23. Gives history and production statistics.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 16, 81-83. They produced an estimated 4,800 tonnes in 1983.

3860. Shinwell, Eric D.; Gorodischer, R. 1982. Totally vegetarian diets and infant nutrition. *Pediatrics* 70(4):582-86. Oct. [24 ref]
• ***Summary:*** Observations on the deleterious effects of a totally vegetarian diet in infancy are reported, and the difficulties encountered in the prevention of nutritional deficiencies in a vegan religious community are discussed. Twenty-five infants of this community seen at a hospital showed evidence of protein-calorie malnutrition, iron- and vitamin B-12-deficient anemia, rickets, zinc deficiency, and multiple recurrent infections. Evidence of growth retardation also was found in 47 infants seen at a local mother-child health (well-baby) clinic. The main constituent of the infants' diet after the age of 3 months (a prepared "soya milk") was extremely dilute, with a very low caloric value (13.7 kcal/100ml). Persistent attempts to find dietary modifications that would satisfy both the vegan philosophy and also the recommended dietary allowances failed. Address: Ben-Gurion Univ. of the Negev, Beer-Sheba, Israel.

3861. **Product Name:** Tofu, Soymilk, Soysage, Seasoned Tofu, Falafel Made with Okara, Granola with Okara.
Manufacturer's Name: Springfield Community Foods.
Manufacturer's Address: 300 N. Waverly, Springfield, MO 65802. Phone: 417-866-1337.
Date of Introduction: 1982. October.

New Product–Documentation: Letter from Jim Hawkins. 1982. Oct. 12. Nice letterhead. "Home Town Tempeh is one of several businesses operating under one roof as Springfield Community Foods. The tofu shop in association with Springfield Community Foods makes tofu, soymilk, soysage & seasoned tofu. Other products available at the store include falafel made with okara, granola with okara, tempeh & tofu sandwiches (in pocket bread made by our in-house baker). The deli section is evolving, and other soy products are in the works, including a tofu dressing/dip and tempeh salad."

Soyfoods Center Computerized Mailing List. 1983. June 20. Muckfoot Farms and Springfield Community Tofu are both listed as tofu manufacturers at 300 N. Waverly, Springfield, Missouri 65802. Phone: 417-866-1337. Owner of Muckfield is Paul Day.

3862. Nelson, A.I. 1982. History of work with soyfoods in India and at the University of Illinois (Interview). Conducted by William Shurtleff of Soyfoods Center, Nov. 28. 2 p. transcript.

• ***Summary:*** He went to India for the first time in 1969, for 3 months. At that time very little work was done in the USA on low-tech soyfoods except soymilk at Cornell and the NRRC (Peoria, Illinois). He visited Cornell but they were not really doing anything with soymilk at the time; however they had worked out plans for a soymilk processing plant. They didn't have many food products in mind except soymilk. That lack is what encouraged researchers at the University of Illinois (Nelson, Wei, and Steinberg) to start working on developing a soymilk process, shortly after he returned from India in 1969. Their first soymilk prototype was ready in Jan. 1970. Then they began to develop weaning foods, breakfast foods, etc.

Prof. Nelson went to India again from the 1971 (fall) to 1973, almost two full years. He was one of the last to leave since G.B. Pant University wanted him to continue helping them. Address: Prof., Dep. of Food Science, Univ. of Illinois.

3863. **Product Name:** [Marusan Soymilk Soup (Potage Style)].
Foreign Name: Marusan Tônyû Suupu.
Manufacturer's Name: Okazaki Marusan K.K. (Marusan-Ai Co., Ltd.).
Manufacturer's Address: 1 Aza Arashita, Niki-cho, Okazaki-shi, Aichi-ken 444-21 Japan.
Date of Introduction: 1982. November.
Wt/Vol., Packaging, Price: 180 ml pack. Retails for ¥130 per pack.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Article in Toyo Shinpo (Soyfoods News). 1982. Nov. 1. Marusan's 6 new products. Soymilk Soup (potage style). Shelf life: 70 days at regular room temperature. 180 gm per pack; 30 packs per case. 1 pack costs 130 yen. Heat a pack in boiling water for 5 minutes, then serve.

3864. *Soyanews* (*Sri Lanka*). 1982. Soya saves the coconut. 5(3):1. Nov.

• ***Summary:*** By mixing two parts coconut milk with one part soya milk, the Welikada Prison has saved 108,000 coconuts in one year. The also relieved the pressure on the kitchen budget. "At present soya milk is supplied to the prison in the form of a paste [soy base]... This paste is then added to curries. Now the Welikada Prison will be able to make it own paste because, with the saving it has made, it has bought two grinding machines from Bean Machines, U.S.A.

"One of these machines will be installed at the Bogambara Prison, Kandy. There are also plans to install more of these machines at the Anuradhapura, Jaffna, and Mahara prisons." Soymilk is considered more healthful than coconut milk. "There have been no complaints from the prisoners regarding any changes of taste.

"The commissioner of prisons also said that with these new machines it will be possible to begin a new prison's industry–making soyafoods. Already he was planning to use the residue left after making soya milk by incorporating it in the bread made in the prison bakery. Tofu also could be made and put on sale.

"There are other soyafoods that can be made and they are now looking into the possibilities of making soya sauce, soya ice cream and soya yogurt.

"The Commissioner of Prisons, Mr. Delgoda, thanked Mrs. Gai Kim, wife of the Resident Representative of the UNDP, Mr. Y.Y. Kim, for suggesting the introduction of soya into the diet of prisoners."

A photo shows a man standing next to "the grinding machine installed at the Welikade Prison. The machine grinds 100 pounds in an hour."

3865. Taitz, L.S. 1982. Soy feeding in infancy. *Archives of Disease in Childhood* 57(11):814-15. Nov. [20 ref]

• ***Summary:*** "Growing concern over intolerance of cows' milk protein is leading to more frequent diagnosis of the condition... Intolerance of cows' milk can be divided into 2 major types. The first is gastrointestinal intolerance associated with diarrhoea [diarrhea]... The second comprises the more common forms of atopy. In infancy eczema is the usual manifestation... Estimates of the incidence range widely, varying from 0.1% to 8%. A reasonable working figure would be that of the order of 0.5%."

"The basic assumption underlying the use of soy as a substitute for cows' milk is that it is less allergenic. There are 2 main reasons for its use: (1) as a replacement for milk feeds where proved or putative milk protein intolerance or allergy exists; (2) used prophylactically in infants who are considered to be at high risk of allergy, particularly those with a family history of atopy."

"Conclusions: (1) There is conflicting evidence on whether soy formula feeding will lead to a lower incidence of allergy in infants predisposed to atopy. It may benefit some infants with atopic eczema. (2) The occurrence of soy intolerance in at least some infants with milk protein-induced gastro-intestinal damage, calls into question its use in this disease. Proved cows' milk protein intolerance should be treated with formulae consisting of protein hydrolysates. The diagnosis of this condition should not be made without careful evaluation by an expert in the field. (3) The indiscriminate use of soy formula for vague symptoms and signs not proved to be due to cows' milk intolerance is to be avoided. (4) Soy feeds should not be freely available without prescription and should only occasionally need to be prescribed." Address: Dep. of Paediatrics, The Children's Hospital, Western Bank, Sheffield S10 2TH, England.

3866. *Toyo Shinpo* (*Soyfoods News*). 1982. [Mitsubishi Kasei expands their soymilk production]. Dec. 1.
• ***Summary:*** Mitsubishi is building soymilk plants in Kurashiki-shi (city) and Ibaragi-ken (prefecture). The plants are expected to be completed sometime in the spring of 1983.

At that time Mitsubishi will become the 2nd largest soymilk maker in Japan, after Kibun. They are also planning to develop and sell yogurt-type soymilks. Their goal is 1.6 million packs per day (50,000 metric tons/year).

3867. *Toyo Shinpo* (*Soyfoods News*). 1982. [Daie, large supermarket and department store company, has launched their own brand of soymilk]. Dec. 1.
• ***Summary:*** Daie is pronounced dai-EH. The brand will be Captain Cook Cut & Balance. They have four flavors: Plain soymilk (200 ml). Coffee soymilk (200 ml). Mixed fruits soymilk (200 ml). Soymilk ice (ice cream?) (500 ml).

3868. Angove, Ruth. 1982. Re: Soya in Nepal. Letter to William Shurtleff at Soyfoods Center, Dec. 6–in reply to inquiry of Nov. 20. 1 p. Typed, with signature.
• ***Summary:*** In Nepal, "Soya is mainly grown and utilized on the spot. We think it is a valuable resource for the subsistence farmer in inaccessible hilly areas of Nepal where food trading is minimal.

"Soya beans can be roasted and used with beaten rice, or just eaten roasted alone. My own impression is that 'Makai Bhatmaas' [Bhatmas] (popped corn and roasted soya beans) are more popular, when available.

"My colleague, Miriam Krantz [CDAP, Lalitpur] has developed a simple formula which is tailored to the needs of nursing mothers and children in the Kathmandu Valley. It is made from 1 part (by volume) each wheat and corn, and 2 parts soybeans. Each is cleaned and roasted separately, then finely ground, either on the domestic grindstone which is in every home, or in larger quantities at a mill. The resulting flours should be sifted through a coarse cloth then mixed together. Mix with boiling water to the desired consistency; it is like "Lito," "Diro," or "Tsampa" and can be used by any ethnic group.

A nutritional analysis of this mixture is given. "We have called the original mixture 'Sarbottham Pito' or Super Flour.

"Commercial utilization and elaborate soya preparation seem unlikely to benefit those in most need, as the price of soya and soya preparations would be too high. At one time we thought of promoting soya milk but have found it impractical... Out main concern is production of soya itself..." Address: Nutrition Advisor, United Mission to Nepal, G.P.O. Box 126, Kathmandu, Nepal. Phone: 12179.

3869. Folkenberg, Robert. 1982. The Seventh-Day Adventist Inter-American Food Company, and Dr. Steven Youngberg's soymilk plant in Honduras (Interview). Conducted by William Shurtleff of Soyfoods Center, Dec. 10. 1 p. transcript.
• ***Summary:*** Dr. Steven Youngberg arrived in Honduras in about 1959-61. He is a self-supporting SDA medical missionary. He operates an orphanage and a small clinic, and has done quite a bit of work with foods, including soyfoods. Folkenberg lived there from 1970-74 and knew him well. Youngberg began making soymilk at an early date. He had a large plant as well as a portable plant. He set up the portable one at a fairground in San Pedro Sula. He had a fine product and it was well accepted, but it was not well marketed or distributed. Address: Inter-American Food Co., P.O. Box 340760 (760 Ponce de Leon Blvd.), Coral Gables, Florida 33134. Phone: 305-443-7471.

3870. Shurtleff, William; Aoyagi, Akiko. 1982. History of soybeans and soyfoods in Latin America. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 39 p. Dec. 10. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. Contents: Historical overview. Brazil. Mexico. Argentina. Paraguay and Uruguay. Central America: Costa Rica, Guatemala. Caribbean and Guianas (including Suriname). Andean countries. Address: Lafayette, California. Phone: 415-283-2991.

3871. Rose, Richard. 1982. Re: Enclosing new labels using new logo. Letter to William Shurtleff at Soyfoods Center, Dec. 28. 1 p. Typed, with signature on letterhead (photocopy).
• ***Summary:*** "Dear Bill: Enclosed are some samples of our current labels using the new logo Bear in mind that these are still just interim labels, until the new 3-color ones are completed. We are also working on a radical new package for the vacuum-packed tofu.

"Carol Flinders is writing an article on Brightsong–it should be out in early January. It's for her column.

"Due to popular demand we've dropped the Sonoma Natural Foods bit. Just good ol' Brightsong Light Foods now. We are working on a shake now. Probably a Cocacarob Shake.

"Any ideas on how to get soy products certified for the Women, Infants and Children (WIC) program?

"Glad to hear your hip is healing well. Hope you and Akiko had & good holiday season. Sincerely, Dik Rose." Address: Brightsong Light Foods, P.O. Box 603, Petaluma, California 94953. Phone: 1-707-778-8638.

3872. *SoyaScan Notes.* 1982. Chronology of soybeans, soyfoods and natural foods in the United States 1982 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Jan. White Wave in Colorado is the first company to get its tofu placed in the yogurt / dairy case in supermarkets.

Jan. Legume, Inc. launches Tofu Lasagna, frozen in a box. It is soon followed by Tofu Ravioli.

Jan. *The Incredible Tofu Cookbook, California Style,* by Immegart and Dansby self published.

Jan. New England Soy Dairy launches "Year of the Dog" Chinese New Year tofu promotion and nets 47% immediate sales increase.

Jan. Island Spring survives industry's first publicized tofu recall and the discovery of new tofu spoilage microorganism, *Yersinia enterolitica.*

Jan. ADM becomes sponsor of "This Week with David Brinkley" on Sunday ABC TV, with 4.4 million viewers.

Jan. Soyfoods Unlimited in California introduces tempeh burgers and ships them air freight to East Coast markets; Pacific Tempeh in California follows suit.

Feb. Yuba is first produced and sold commercially in the Western world by Ken Lee of Soyfoods of America, in Duarte, southern California. Trial production had begun in Nov. 1981.

Feb. *Soyfoods* magazine No. 6 (yellow cover) published.

Feb. Many large ads run by San-J (tamari), New England Soy Dairy, and Legume in major national trade journals.

Feb. Unicorn Restaurant in Miami has $15,000 gourmet, soy / natural foods banquet to welcome chef Ron Pikarski, who makes elegant tofu dishes and carves a swan from soy butter.

Feb. Nasoya buys $50,000 Kutter vacuum-packaging machine, which helps to popularize this packaging style for tofu.

March. *Tofu Fantasies,* by Juel Andersen published by Creative Arts.

March. USDA issues new school lunch regulations, fails to approve tofu for use.

March. Inaccurate, damaging article on iron binding by soy proteins appears in San Francisco Chronicle and Los Angeles Times.

March. Fifteen soyfoods companies exhibit at Natural Foods Expo, Anaheim, CA. Richard Leviton gives key speech. 5,000 visitors see expo. Pacific Tempeh unveils new full-color tempeh burger poster.

March. Big increase in European soyfoods companies; there are now 11.

March. Name of *The Beanfield* newsletter changed to *Soyfoods Monthly.*

March. Great Eastern Sun trading company founded in North Carolina by Barry Evans.

April. At New York's International Food Show, Quong Hop, Yeo's, and President brand soymilks, and Veda's Bayou Delights (tofu / tempeh pot pies) exhibit. ADM serves soy isolate ice cream and soymilk.

April. Quong Hop unveils its new Soy Deli marketing concept for retail using posters and tofu entrees sold frozen.

April. Jack's Beanstalk in Utah does creative work at introducing tofu to institutions. Develops 30 bulk recipe cards scaled to 100 servings.

April. ADM unveils work with glucono delta-lactone (GDL) and soy isolates in making tofu.

April. *Toyo Shimpo,* Japan's tofu newspaper, gives extensive coverage to upcoming Soyfoods Come West conference in Seattle.

May. Island Spring releases two 5-minute color video tapes demonstrating tofu cooking for showing in supermarkets.

May. Public schools in Hawaii granted permission to use tofu in meals.

May. *Soyfoods Directory and Databook.* by Shurtleff and Aoyagi published by Soyfoods Center, the first book of its type listing all soyfoods companies and industry and market statistics, 21 pages. Second edition published in June as *Soyfoods Industry: Directory and Databook,* 52 p.

May. William Shurtleff and Mark Fruin receive a grant from Kikkoman to write a book on soy sauce.

May. *Cook with Tofu,* by Christina Clarke is 2nd runner-up in R.T. French's Tastemaker awards for cookbooks.

May. Clearway Tofu sponsors the first Mother's Day Tofu Fair in Santa Cruz, California, with tofu recipe competition, music, and prizes.

June. Vitasoy USA runs color display ads for soymilk on San Francisco buses.

June. Kibun of Japan exhibits four flavors of soymilk in Tetra Pak cartons at National Restaurant Show in Chicago.

June 16. *The New York Times* runs an article on Dieter Hannig, Director of Food Research for Hilton Hotels. His many tofu recipes on microfiche are sent to 86 Hiltons worldwide.

June. Bestways magazine begins 3-part series on soyfoods by Bonnie Mandoe.

June. *The Soy Dairy: A Way to Save the Small Farm,* by MacCormack published by Sunbow Farm.

June. *The Book of Nigari Technique* (in English) published by Yoshikawa Kagaku in Japan.

June. Metta Tofu Products in Denman Island, B.C., Canada, introduces Frozen Buddha soymilk ice cream.

June. Haarmann & Reimer debuts flavors for tofu and okara at IFT convention in Las Vegas.

June. Royal American Foods is launched in Kansas City with $1 million startup capital to sell TVP entrees, tofu-like products via multi-level marketing system.

June. Granny Goose Potato Chips does extensive radio advertising in California for a new potato chip. Ad makes frequent, positive reference to tofu. First national radio ads mentioning tofu.

June. Farm Foods presents Ice Bean at American Booksellers Convention at Anaheim, California, along with previews of their new tofu cookbook.

July. "Discover Tofu" published by *Cosmopolitan* magazine.

July. Farm Foods receives a U.S. trademark for "Ice Bean" as a soy ice cream.

July. Light Foods excites NNFA convention in New Orleans with debut of Light Links, the world's first tofu hot dogs.

July. Eden's Orchard tofu / soymilk ice cream introduced in New York by Heller Enterprises.

July. Richard Jennings announces a new formula for okara / barley tempeh; later purchases Southwest Soyfoods, relocates company in Santa Fe, New Mexico. Continued.

3873. **Product Name:** Provamel Soya Drink [Choco {Chocolate}, or Plain {With Sugar}].
Manufacturer's Name: Alpro.
Manufacturer's Address: Zuidkaai 33, B-8700 Izegem, Belgium.
Date of Introduction: 1982. December.
Wt/Vol., Packaging, Price: 250 ml, 500 ml, 1000 ml.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Form filled out by Alpro. 1990. May 30. Alpro began making this product (2 flavors) in Dec. 1982 in 500 ml cartons. The Provamel line is sold in health food stores in Europe, whereas the Alpro line is sold in supermarkets.

3874. **Product Name:** Provamel Soya Dessert [Chocolate].
Manufacturer's Name: Alpro.
Manufacturer's Address: Zuidkaai 33, B-8700 Izegem, Belgium.
Date of Introduction: 1982. December.
Wt/Vol., Packaging, Price: 250 ml, 500 ml, 1000 ml.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Form filled out by Alpro. 1990. May 30. Alpro began making this product in Dec. 1982 in 500 ml cartons.

Form filled out by Philippe Vandemoortele of Alpro.

1991. Sept. 4. The first soya dessert made by Alpro under the Provamel label was launched in Dec. 1982. It was originally sold in choco and plain (with sugar) flavors.

3875. Hitzman, J.W.; Nelson, A.I.; Wei, L.S. 1982. Effect of added oil on soy beverage quality. *J. of Food Science* 47(6):2064-65. Nov/Dec. [12 ref]
Address: Dep. of Food Science, Univ. of Illinois, Urbana.

3876. **Product Name:** Amazake Pudding (Apple-Raisin, Almond, Banana Coconut, or Banana).
Manufacturer's Name: Infinite Foods.
Manufacturer's Address: 1872 East Schiller St., Philadelphia, PA 19134. Phone: 215-739-8578.
Date of Introduction: 1982. December.
New Product–Documentation: Bob Schiering. 1988. Jan. 18. U.S. Amazake Manufacturers Update. Based on interviews with 8 companies. The company was founded in 1982 and James Budnicki started to make amazake that June. He makes both Amazake Drink and Amazake Puddings. His main source of influence was macrobiotics.

3877. Patil, G.R.; Gupta, S.K. 1982. High-protein beverage from cheese whey and soybean. I. Manufacturing process. *Indian J. of Dairy Science* 35(4):492-96. Dec. Based on Patil's 1980 PhD thesis, Kurukshetra Univ., Kurukshetra. [19 ref]
• ***Summary:*** Soybean cotyledon slurry or soy protein-lipid concentrate (SPLC) was mixed with condensed whey (CW) or lactose reduced condensed whey (LRCW) to give 5 different soy protein to whey protein ratios. The mixture was then processed to give a soy whey beverage. The optimum ratio was 3:1, with a protein concentration of 4% and a sugar concentration of 7%. Strawberry flavor increased

the acceptability. The beverage could be spray-dried satisfactorily by adding the sugar along with water soluble vitamins and methionine after drying. Address: Div. of Dairy Technology, National Dairy Research Inst., Karnal 132001.

3878. Patil, G.R.; Gupta, S.K. 1982. High protein beverage from cheese whey and soybean. II. Storage stability. *Indian J. of Dairy Science* 35(4):418-21. Dec. Based on Patil's 1980 PhD thesis, Kurukshetra Univ., Kurukshetra. [5 ref]
• ***Summary:*** Spray-dried soy-whey beverage was packaged in polyethylene bags or lacquered tin cans and stored for 6 months at 5ºC and 30ºC at about 80% relative humidity. Sensory evaluation of reconstituted samples showed that the dried product could be stored at 5ºC for 6 months in the cans and 5 months in the bags, and at 37ºC for 4 months in the cans and 2 months in the bags. Address: Div. of Dairy Technology, National Dairy Research Inst., Karnal 132001.

3879. Rajor, R.B.; Gupta, S.K. 1982. Soft-serve ice cream from soybean and buttermilk. II. Drying and storage studies. *Indian J. of Dairy Science* 35(4):410-17. Dec. Based on Rajor's PhD thesis, Panjab Univ., Chandigarh. [14 ref. Eng]
• ***Summary:*** A soft serve ice cream mix with ratio of 1.3 soybean solids-non-fat (SNF) to 1 buttermilk SNF, and containing 12% SNF, 9% fat, and 15% sugar, was successfully spray dried. To prevent caramelization, the mix was prepared with 7.5% sugar and the remaining sugar was added by dry-blending before packaging. The mix could be stored for 12 months refrigerated at 5ºC in polyethylene bags or lacquered tin cans (LTC), or in LTC with nitrogen at 30ºC for 8 months. Without nitrogen at 30ºC it could be stored for 4 months in LTC or 32 months in polyethylene bags. Sensory scores of the ice cream prepared from the mix decreased with increasing storage time. Address: Div. of Dairy Technology, National Dairy Research Inst., Karnal 132001.

3880. Tsuchiya, Kanji. 1982. Tônyû. Shinban [Soymilk. 2nd ed.]. Tokyo: Shoku no Joho-sha. 223 p. First edition was published in 1980. Illust. 17 cm. [Jap]
• ***Summary:*** This is the best book seen to date on soymilk in Japanese. A detailed chronology of tofu and soymilk is given on pages 173-76. Over 20 years ago, when Mr. Tsuchiya was plant manager of the Kyôdo Nyûgyo dairy milk plant at Matsumoto, he became interested in using soy protein to replace dairy protein. Although soybean crushers had investigated the use of defatted soybean meal, the techniques for removing the beany flavor and smell were not yet good enough to allow substitution of soy protein for milk solids. At that time there was a shortage of imported nonfat milk for use in ice cream bars. It was said that a small numbers of manufacturers of the inexpensive ice cream products were already using some soy protein to increase their over-run. "Discovering this, Nisshin Seiyu, after some research, found a method of removing the beany smell by fermentation with a yeast; they asked if Kyodo Nyugyo could make a test run of 10 kg of spray-dried soymilk in our plant. So they dissolved soy powder (*daizu-ko;* which had been defatted at a low temperature) in water, added yeast, waited until the reaction was finished, diluted it with some water, and put it in a spray dryer. Yet the spray drying caused some protein denaturation and an increase in the viscosity of the soy powder, which made it difficult to pump the solution to the top of the spray dryer. Glucose was used to replace half the soy powder. The spray-dried powder would not dissolve in water and the resulting mixture had a muddy brown color, a flavor that was too sweet, and a beany flavor. It was useless. They had discovered that defatted soybean meal and nonfat dried milk behave differently. Defatted soybean meal contains about 20% sugars, but less than 1/3 of these are water soluble and many have a very complicated structure and high viscosity."

Therefore they started to study the basic nature of defatted soybean powder (*dasshi daizu-ko*) and after much trial and error, in 1961 they applied for a Japanese patent on "The method of refining defatted soybean powder" (*Dasshi daizu-ko no seisei hôhô*). They were issued the patent (#16,658) in 1962. The key to the success of this patent was the use of meta potassium bisulfite (*meta jûaryusan karium*), which lowers the viscosity, bleaches it and increases the amount of soluble nitrogen. Not enough of the beany flavor had been removed, yet at that time it was an excellent product, which could be used in place up to 30% of nonfat dried milk to make an ice cream product without a beany flavor. Mr. Masaharu Sato (who is presently head of the soybean department of Kyodo Nyugyo's central research lab) was the person who contributed most to the discovery. He is now conducting research on tofu and soymilk. "I still see him often since we are both members of Soyfoods Development Study Group (*Daizu Shokuhin Kaihatsu Kenkyû-kai*). He recently told me, 'After that incident, I became captivated by soy protein.'"

"After about 2 years of research, during the summer we received an order from Nisshin Seiyu for 200 tons of soy protein. Our plant had been losing money for a long time, and this discovery helped to make some profit during my time of work there. I will never forget it. I feel real gratitude to Nisshin Seiyu for helping us to become captivated by soybeans."

At about that time dairy farmers throughout Japan began to compete with one another in a price war which lowered milk prices. The battle between them and the owners of dairy milk companies got worse and worse. Among the leaders of this struggle were progressive dairy farmers in Matsumoto. "Although we made soy powder very secretly, one of the plant workers, who was the son of a dairy farmer, leaked the secret. This caused an uproar (we were using soy powder instead of dairy milk) and the local farmers asked us to stop immediately. However we decided to continue making soy

powder for various reasons: (1) We had to fulfill the order that we had accepted; (2) Since we simply processed soy and sold it to another company, this had no effect on our plant's use of unprocessed dairy milk; (3) The soy business allowed out plant to operate profitably and this allowed us to return some money on the dairy farmers' investment." For a variety of complex reasons related to this conflict, Mr. Tsuchiya was fired as plant manager for Kyodo Nyugyo's Matsumoto dairy milk plant. Though his retirement was very near, he left the dairy industry without regret to continue his research on soy powder (p. 14-19).

"Meeting with Dr. Miller: During the period 1965-1969 I was involved in the founding of Taiwan Ryokusô Kogyô Kôshi, and I took a leadership role in constructing modern plants to make powdered soymilk and chlorella. One of the leaders in the chlorella industry, the late Dr. Yoshio Takechi, was in charge of the chlorella cultivation department and I was in charge of chlorella product development and of powdered soymilk production. In 1966 Dr. W.A. [sic, Harry W.] Miller (who was a founder of Loma Linda Foods) and his son visited our company, under the guidance of Dr. Taisei of Taikei University. At that time Dr. Miller stood on the platform atop our spray dryer, which was 20 meters tall and had 500 liters/hour capacity. Admiring it, he said: 'I've never seen a soymilk plant which has this much facilities!' He also tasted the soymilk (from which the beany flavor had been removed) and said 'I wonder if you have to refine soymilk to this degree for Chinese people.' His words left a strong impression in my memory. Sure enough, when the factory was completed and we launched our canned soymilk powder, we heard Chinese saying, 'This is not real soymilk. It's an imitation.' But we did a good marketing campaign and soon the soymilk started selling. When my 2-year contract ended, I returned to Japan. After that, the products produced in this plant were used as food for the Taiwanese army and were not sold to the public. Moreover, because of the chlorella boom in Japan, the spray dryer was used for chlorella and soymilk production stopped. Since I had great expectations for this plant, I was greatly disappointed.

"Right after I returned to Japan in 1970, I was asked to provide technical assistance to Keijô Shison Shokuhin Kenkyusho, a research lab in Korea headed by pediatrician Son Zaien. I visited there several times and even drafted a floor plan, then suddenly the Japanese government told me that the money which had been available for helping Koreans was no longer available, so I could do no more" (p. 18-21; see p. 53 for more on soymilk in Korea). Continued. Address: Technical consultant, Okazaki Marusan, Japan.

3881. Tsuchiya, Kanji. 1982. Tônyû. Shinban [Soymilk. 2nd ed.] (Continued–Document part II). Tokyo: Shoku no Joho-sha. 223 p. First edition was published in 1980. Illust. 17 cm. [Jap]

• ***Summary:*** Continued. Pages 31-32. In the literature of Japan's Muromachi period it is written that after eating confections (*tenshin* such as okashi, oyatsu) they ate light and simple food (*tanpaku na tabemono*). One of the latter was called *tofu no uwamono,* which means yuba.

A flow diagram (p. 35-36) gives Chinese names of soymilk, yuba, fermented tofu, etc.

Part III (p. 39-64) titled "Soymilk around the world," has chapters on the USA, Korea, Hong Kong, China, Taiwan, Southeast Asia, and Europe. Soymilk in America (p. 47-52) includes a 1975 table showing major manufacturers of soymilk and soy-based infant formula, their location, and the names of their products. Soymilk in Korea (p. 53-54): In 1968 the Keijo Shison Shokuhin Kenkyujo made soymilk using the regular tofu making equipment adjusted to make a product as similar as possible to dairy milk, then bottled it in cider bottles, pasteurized it, and sold it. They made 500 to 800 bottles a day and sold it nationwide. It was brownish in color and tasted like soybean cooking liquid; there was no comparison between that and today's soymilk in quality. The head of this research lab was Dr. Son Zaien, who also ran the children's hospital and was a professor of pediatrics at Seoul Medical University. As a pediatrician his concern was that the soymilk promote the growth and health of children; he was not concerned about its acceptance among adults. The children accepted it within 2-3 days. Later, in May 1982, Tsuchiya visited Korea again. They had developed their own method of making soymilk and the soymilk plant had been expanded. Now they produced 500,000 bottles a day (180 cc each, retort sterilized); they call it Vegemil / Vegemeal. It contains added fat and sugar to make it closer to dairy milk., but the sugar content is 10%, which is sweeter than Japanese soymilk. The plant is built on a lot of 4-5,000 tsubo and has 24 retort sterilizers; each machine has 2,500 bottles capacity. Tôhô Yuryô, as part of a Korean technical joint venture with Kibun in Japan, is going to make 120-130,000 Tetra Brik cartons (each 200 cc). Also other dairy milk makers (Sojû and Sangan) are going to have some sort of equipment to start making soymilk. Also, I head that Tôa Shokuhin (K.K.), a pharmaceutical company, is planning a joint venture with Meiji in Japan to make soymilk.

Also, Lotte Chilsung Beverage Co. is planning to use Marusan's (Japan) technology to make soymilk. They are constructing a plant to start to making soymilk in Feb. 1983.–The population of Korea is about 40 million and the GNP 24,000 million won (unit of currency) a year; it is the largest in Asia. But it is a tough war for market share among these fine companies.

Soymilk in Taiwan (p. 57-61): People who were born in Taiwan [the former Japanese colony of Formosa (1895-1945)] have Japanese food habits and don't like soymilk as much as the Chinese. Also, Taiwanese young people don't like soymilk much. In mainland China people only drink water that has been boiled and cooled–just as they do with tea. The same with soymilk. They boil soymilk in a flat

pan (*hira-nabe*) for 20-30 minutes before selling it. The buyers don't buy it without seeing that it has been properly boiled. If you cook soymilk in a flat pan for a long time, you can eliminate much of the beany smell and flavor, the antidigestion substances, and harmful bacteria. They don't care about a little burned flavor, bitterness, or beany flavor. But this is ancient wisdom. There they continue to drink soymilk up to this day and it is still very popular. It is said that the annual sale of soymilk in Taiwan is about 5,000 million yen.

In China, sellers of ice candy (like ice Popsicles) call out loudly *kaishui bingo. Kaishui* means boiled and cooled water. *Bingo* means Popsicle.

In the Philippines, about 10 years ago, the University of the Philippines developed soymilk and a blend of soymilk and coconut milk for American children. It was test marketed among the students and teachers of elementary schools, junior and senior high schools, and universities. It was acceptable only to comparatively well educated people. A 200 ml bottle (about 7 ounces) sold for 15 cents, making it more expensive than most other drinks. The taste was plain but the bean smell was not completely removed. In October 1982 Dr. William G. Padorina and other economically influential people came to Japan at the request of President Ferdinand Marcos and studied Marusan's soymilk plant. They are planning a Food Development Symposium in Feb. 1983 and they would like to have nutritious soy products that contain coconut oil (they account for 70% of the world's production). They have asked Marusan to cooperate in the effort.

In Denmark, a company named Starna [Nutana?] makes various soyfoods such as textured soy flour (*daizu nikku*), defatted soymilk, and soymilk. They are selling these products in Denmark and neighboring countries. *The Book of Tofu* by Shurtleff and Aoyagi is mentioned on pages 46 and 117.

Okazaki Marusan makes a soy yogurt named *Tôgurt / Tôguruto* in Japanese. The character *tô,* which means bean, is also the first character in the word *tôfu* (p. 71). Address: Technical consultant, Okazaki Marusan, Japan.

3882. Tsuchiya, Kanji. 1982. [Soymilk in Japan, and its history (Document part)]. In: Kanji Tsuchiya. 1982. Tônyû. Shinban [Soymilk. 2nd ed.]. Tokyo: Shoku no Joho-sha. 223 p. First edition was published in 1980. [Jap]

• ***Summary:*** Building a plant specialized in making soymilk (p. 21-24): After my two overseas attempts ended in failure, I returned to studying the basics. With the help of a friend, I had a soymilk test plant (55 liters/hour) built on the outskirts of Sendai, in the Tohoku region. There I worked on making soymilk with less beany flavor and better digestibility. Over a period of about 2½ years I completed development of a new heating system (Japanese Patent No. 19,928 issued in 1973), and also completed a report on digestibility of soymilk with my co-worker Kazuhiro Ootomo. In order to test the results of my research, I went to Tokyo in 1974. I found an investor, taught my techniques to Tokyo Soymeal K.K., spent 9,000,000 yen, and started to build a soymilk plant in the Tokyo area. At about this time other early soymilk manufacturers like House Luppy, Soyalac, etc. were building the market slowly but steadily, making about 10,000 to 20,000 packs/day. Our company, Tokyo Soymeal, cut into this market share, and spent 3 very tough years. But finally we were producing 6,000 packs/day and we first started to break even financially. Our soymilk product, named Soymeal, marketed as a soft drink, had a good flavor and was accepted as a new type of soymilk by consumers.

"However I realized at that time that soymilk was being sold only in the health food market. Because of that, no regular mainstream consumers bought our soymilk since distributors placed it only in Diet- and Health food stores, and in the drug section of other stores. Thus our share of the milk or beverage markets was extremely small, and expansion was difficult. Our next step was to change consumers preconceptions about soymilk.

"I want to make a tasty soymilk: Rather than placing emphasis on health or medical care, beauty care, changing one's constitution, etc. I wanted to make a soymilk product that was simply delicious and nutritious. But unfortunately our Soymeal company had to close its plant in December 1978 because the landlord sold the land on which the plant was located. This land was located next to the Tachikawa U.S. military base, and when the U.S. army gave the land back to the Japanese government, the price of land in the whole area rose. Thus our landlord wanted to sell his land too.

"In order to use my past effort and experience to make a new start, I was planning to build a plant in the Chûbu area. I did not have the means to do this by myself, but by good fortune, in 1979 Okazaki Marusan K.K. decided to help this enterprise and I was accepted as a member of their company. And furthermore it is planned to build a plant that can produce 4 times as much soymilk as plants that existed in May 1980. I would like to produce the best soymilk in Japan. The Japanese Department of Food, Agriculture, and Forestry is now studying soymilk with the intent of establishing a JAS standard in 1980."

Pages 50-52 show a chart of different brands of soymilk and soy-based infant formulas sold in the USA, with the name of the manufacturer, ingredients, and/or composition. These include: Loma Linda Food Co. of Arlington, California (Soyagen [liquid or powder], Soyalac); Mead Johnson & Co. of Evansville, Indiana (Metrecal, Sobee); Dietetic Food Co. Inc. of Brooklyn, New York (Diamel no Sorina); Ovaltine Food Products of Villa Park, Illinois (Ovaltine, 2 types which contain soy protein); Gerber Food Products of Fremont, Michigan; Plus Products of Los Angeles, California; Borden Co. of New York (Mullsoy, 2

types); Pavo Co. Ice of Minneapolis, Minnesota.

Early history of soymilk: In the *Teikun Orai,* written during the Muromachi (Ashikaga) period in Japan, the word *tofu-kan* appears in the section titled *Shojin Ryori* (Buddhist Vegetarian Cookery). That word used to mean "tofu soup" but it actually refers to what Japanese today call soymilk (*tônyû*). In the book *Sôgo Daisô-shi,* written in about 1417-1473 by Ise no Jôshin, there is a section on cooking okara (*unohana*). Mr. Tsuchiya thinks this soup was similar to today's soymilk except that the okara had not been removed. The author was the ancestor of Ise no Teijô, who lived during the Tokugawa (Edo) period and wrote that the word *Tofu-kan* should actually be pronounced *Tofu-ko,* and means "soup" (*shiru*). When the last character is pronounced "kan" it means "yokan." Note: Could Mr. Tsuchiya be confusing Manpukuji's tofukan (hard tofu) with the word tofukan that means soymilk?

A table (p. 72-75) lists all Japanese soymilk products made to date, including the name of the manufacturer, the exact date of introduction, range of distribution, package size and type, and retail price. Products sold by the following companies are listed: Kibun, Okazaki Marusan, Mitsubishi Kasei Shokuhin, Meiji Nyugyo, Kyushu Nyugyo, Nisshi Seiyu, Asahi Shokuhin, Kyodo Nyugyo, Yakuruto Honsha, Furuta Shokuhin Kogyo, Morinaga Nyugyo, Sugiyo, Koshin Nyugyo, Kenbi-Sha, Saniku Foods / Fuuzu, Nagoya Seiraku, Nagano Tomato, Zenkoku Nokyo Chokuhan (Nokyo), Yamato Shokuhin, Sokensha, Ishihara Fuudo Senta, Chiba Seisen Shokuhin Kogyo, Asahi Fuuzum Sebun-Irebun (7-11), Fukushima-ken Rakuren, Nacuraru Fuuzu (Natural Foods), Sebun Appu Inryo (7-Up). This entire table has been translated by Soyfoods Center; printed copies are filed with the book. The word processing filename is d:\w\hss\MilkJap1.doc. In addition, most of these soymilk products have a commercial soy products (CSP) record in the SoyaScan database. Address: Technical consultant, Okazaki Marusan, Japan.

3883. Wolkomir, Richard. 1982. It's coffee! It's milk! It's superbean. *American Way.* Dec. p. 57-58, 60-61. [1 ref]
• ***Summary:*** "The winged bean, a nutritious plant that flourishes in the tropics, is almost entirely edible and may head off starvation in food-short lands." Address: Montpelier, Vermont.

3884. Arguello, A.R.; Gollan, J.J. 1982. Pilot scale production of soya milk. *Boletin Tecnico LABAL* 3(4):13-19. [7 ref. Eng]*
Address: Seccion de Cereales, Lab. de Tecnologia de Alimentos, Apartado 189, Mangua, Nicaragua.

3885. **Product Name:** Soyannaize or Soyanaise [Garlic, Mint, or Parsley].
Manufacturer's Name: Bean Machine.
Manufacturer's Address: 45 Maes Ingli, Newport, Pembrokeshire Coast National Park, Wales, UK. Phone: 820-896.
Date of Introduction: 1982.
Ingredients: Incl. soya milk, soy flour, flavorings.
How Stored: Refrigerated, 10 day shelf life.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1983. June 20. Owner: Zorah Groom.

Jon and Zorah Groom. 1985. La Lettre de L'ARTS. No. 3. p. 8. "Bean Machine story."

Carolyn Rees. 1987. April. Soyfoods (ESFA). "The Bean Machine story." Soyanaise is a vegan mayonnaise. It comes in 3 flavors: garlic, mint, and parsley. "The only real problem we are finding is separation during sterilization. We hope to bring it to the market as soon as we perfect it. We had to take it off the market due to short shelf life."

Letter from Simon Bailey. 1988. Oct. 10. Ceased trading.

3886. Bulungu Ngandu, -. 1982. Effet de la technologie de fabrication sur la composition physico-chimique du lait de soja stable [Effect of technology on the physico-chemical composition of stable soymilk]. *TFE, Polytechnique, UNILU* 1981-1982. [Fre]*

3887. Canto, W.; et al. 1982. Leite de soja líquido: Uma opcao alimentar. Estudos economicos–Alimentos Processados [Liquid soymilk: A food choice. Economic studies on processed foods]. *Boletim do Instituto de Tecnologia de Alimentos* (*Campinas, Sao Paulo, Brazil*) No. 13. [Por]*
Address: Brazil.

3888. **Product Name:** Soycow (Soymilk).
Manufacturer's Name: Dayspring Soyacraft Corporation.
Manufacturer's Address: 626 Esquimalt Rd., No. 5., P.O. Box 7285, Station D., Victoria, BC, V9A 3L4, Canada. Phone: 604-382-2144.
Date of Introduction: 1982.
New Product–Documentation: Form filled out by Michael and Paul Hsieh. ca. 1982. Soya Bluebook. 1986. p. 102.

3889. **Product Name:** [Lactovisoy {Soy Beverage Based on Isolated Soy Protein}].
Manufacturer's Name: Especialidades Alimenticias S.A. (ESPALSA).
Manufacturer's Address: Ave. Principal, Urbaniz, Edf. Oficentro, El Cafetal, Aptdo. 3367, Caracas, Venezuela.
Date of Introduction: 1982.
New Product–Documentation: Soya Bluebook. 1985. p. 90. Lactovisoy is called a soy flour. Letter from Gil Harrison of American Soybean Assoc. 1989. April 11. "We have a new office in Caracas, Venezuela, and the director is Dr.

Jose Felix Chavez who worked with the National Nutrition Institute there and was responsible for the introduction of a soy protein based beverage for children called Lactovisoy, which is distributed under a state sponsored nutrition program for children." Talk with Gil Harrison. 1989. April 17. Every year the government buys tons of Lactovisoy, which they distribute to needy people. There are 2-3 manufacturers, who bid on it every year. It is a mixture of milk powder and soy protein isolate, plus vitamins, minerals, and flavors. It was introduced in about 1981-82 by the National Nutrition Institute. Jose Felix came to the Soy Protein Conference in Acapulco, paid by ASA. He was on the program. At the time he was still working for the National Nutrition Inst., and developing the formula. It came out the next year. Before that he was working for Gerber.

3890. Far Pavilions. 1982. Menu. 116 N. Oak Street (Box 69), Telluride, CO 81435.
• ***Summary:*** The front panel of this 8-panel menu (Green on tan paper) states: "International vegetarian cuisine. Welcome hospitality. Located below the opera house." The menu (which gives no prices) begins: "Our recipes are traditional as well as our own creations, all using pure and natural foods." Gives a definition of tofu and how it is made, then notes: "We make tofu in this traditional way regularly at Far Pavilions. In our kitchens, tofu is prepared in a wide variety of ways to show how this new high-protein, non-dairy food can be included in your menu. We also make regular use of the nutritious by-products of tofu-making: the soymilk and the soy fiber (okara)."

Soy-related menu items include: Soup of the day. Salad (dressings include "tamari sauce"): Mixed vegetable and sprouts with guacamole, full (or half) plate salad with tofu and guacamole. Salad specialties: Tofu and vegetable, okara salad, hummus, tabouli. Daily specials from the wok: Stir-fried tofu, rice, and vegetables, tofu and vegetables, stir-fried okara and vegetables. Stuffed pitas: Grilled tofu and vegetables, guacamole and tofu, falafels. Burgers: Soy burger, tofu burger, okara burger. Burritos: Spicy tofu and rice filling with guacamole. Extras: Fresh tofu, grilled tofu. Smoothies: Carob shake (with banana and sesame). Carob-honey soymilk. Nutritional yeast–20 cents extra. Other refreshments: Hot miso broth (cup). Soy milk. Desserts: Ask us! "For reservations, catering, or take out, call 728-4441." Address: Telluride, Colorado. Phone: 728-4441.

3891. **Product Name:** Tofu, and Soymilk.
Manufacturer's Name: Green Valley Farms Tofu.
Manufacturer's Address: Box 56, Avondale, PA 19311. Phone: 215-268-2456.
Date of Introduction: 1982.
New Product–Documentation: Card labeled "New Tofu Shops." Owner is Warren Reynolds. Debbie Wygent. 1986. Local News (West Chester, Pennsylvania). Sept. 14. P. C-2, C-6. "Old farm produces a new protein [Warren Reynolds at Green Valley Farms]."

3892. Lothe, L.; Lindberg, T.; Jakobsson, I. 1982. Cow's milk formula as a cause of infantile colic: A double-blind study. *Pediatrics* 70:7. [7 ref]*

3893. **Product Name:** [Soymilk].
Manufacturer's Name: Meito Milk Co.
Manufacturer's Address: Japan.
Date of Introduction: 1982.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64.

3894. **Product Name:** Tofu, and Soymilk.
Manufacturer's Name: Michigan Soy Products Co., Inc.
Manufacturer's Address: 1213 N. Main St., Royal Oak, MI 48067. Phone: 313-544-7742.
Date of Introduction: 1982.
New Product–Documentation: Blair. 1987. Detroit News. Nov. 4. p. 1E, 2E. Tofu. Talk with Dorothy Hwang. 1988. Feb. 18. She presently makes 2,000 lb/week of tofu.

3895. **Product Name:** Soymilk. Renamed Soydrink by 1984.
Manufacturer's Name: MU Tofu Shop.
Manufacturer's Address: 1735 W. Greenleaf, Chicago, IL 60626. Phone: 312-743-1339.
Date of Introduction: 1982.
How Stored: Refrigerated.
New Product–Documentation: Talk with Rebecca Uchida. 1990. May 14. They have been making tofu and soymilk since 1979. Note: See 1998 talk with Yoshi.

Label for "Soydrink" sent by MU Tofu Shop. 1998. July 2. They still make this soymilk. 2¼ by 4¼ inches. Orange on white. "16 fl. oz. Keep refrigerated. Ingredients: Organic soybeans and water. 1735 Greenleaf, Chicago, Illinois 60626." On the label are the Japanese characters for soymilk. A note says they have been making this soymilk since 1984. Talk with Terri Sangrash, office manager at Mu Tofu. 1998. July 13. Terri started working at MU in 1983, and they first really started selling soymilk with a label to various customers in 1984; they may have sold it to one customer as early as 1979 without a label. They had a labeling problem, so they had to change the name to Soydrink. Talk with Yoshi Uchida. 1998. July 13. He thinks they first made and sold soymilk in about 1982, in bulk to a restaurant named Blind Faith in Evanston, Illinois. It was in a half gallon container with no label. He is quite sure they were not making soymilk in 1979–but all his records for that period have been destroyed.

3896. **Product Name:** Noble Bean Tempeh Soysage (Using Tempeh in Place of the Typical Okara).

Manufacturer's Name: North Coast Tempeh Co.
Manufacturer's Address: 18320 Euclid Ave., Cleveland, OH 44112.
Date of Introduction: 1982.
Ingredients: Tempeh with wheat flour, soymilk, oil, tamari, garlic, barley malt, mustard, seasonings.
Wt/Vol., Packaging, Price: 8 oz.
How Stored: Refrigerated or frozen.
New Product–Documentation: Label. 1982. 4.25 inch diameter. Blue, green, yellow and red on white. Logo of Jack and the Beanstalk. "No cholesterol." Jeff Narten. 1987. "History of North Coast Tempeh and its Products." 4 p. Dec. 7.

3897. **Product Name:** [Marusan Soy and Azuki Milk].
Manufacturer's Name: Okazaki Marusan K.K. (Marusan-Ai Co., Ltd.).
Manufacturer's Address: 1 Aza Arashita, Niki-cho, Okazaki-shi, Aichi-ken 444-21 Japan.
Date of Introduction: 1982.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Ron Roller of American Soy Products. 1992. Feb. 26. One interesting product is a soy & azuki milk, which Marusan launched in about 1982; Ron is not sure if it is still on the market.

3898. Okubo, K.; Furubayashi, Y.; Takahashi, K. 1982. [Flavor of glycosides contained in soymilk]. *Shokuhin to Kaihatsu* (*Food Processing*) 18(6):16-21. [Jap]*
• ***Summary:*** Saponins and their aglycones/aglicons, sapogenols, in soybeans contain bitter flavors. Saponin A has the greatest intensity of bitter flavor, about 3 times that of saponin B and sapogenol A. Therefore saponin is very important as a compound responsible for the bitter flavor in soymilk. 73% of Saponin A resides in the soybean cotyledon, 8% in the hypocotyl, and 19% in the hull. Though the hypocotyl and hull account for only 7.2% of the weight of a typical soybean, they contain 27% of the Saponin A. Therefore the first step in the most modern soymilk processes is the removal of the hull and cotyledon by dehulling to remove about one-third of the beany flavor.

3899. **Product Name:** Living Lightly Soy Moo (Soymilk) [Vanilla].
Manufacturer's Name: Pacific Trading Co.
Manufacturer's Address: San Francisco, California.
Date of Introduction: 1982.
Ingredients: Soymilk (water, organically grown soybeans), honey, vanilla, cinnamon.
Wt/Vol., Packaging, Price: 16 fl. oz. (1 pint).
How Stored: Refrigerated.
New Product–Documentation: Label sent by Mark Brawerman. 1982. Brown, blue and black on white. Round, 3-inchs diameter. Illustration shows two seagulls flying above waves and below the sun.

3900. Real Food Tofu Cafe (The). 1982. Brightsong–Menu. 8473 East Rd., Redwood Valley, CA 95470.
• ***Summary:*** The circular logo shows a soybean plant. The hand-written menu begins: "Vegetarian whole foods, specializing in delights from the humble soybean. Free tastes and recipes too. Low-cal, high protein, cholesterol-free, grease-less complete foods! Air conditioned. Smoke free. Tuesday-Friday 12:00–4:00.

Sandwiches $2.00: Tofunofish, baked-spice tofu, missing egg salad, happy-chicken salad, hummous, tofummus, stuffed mochi, not dogs. Desserts: Creamies, cheesecake, cookies, fruit bars, Ice Bean, banana split, frozen joy. Burgers $2.50: Tempeh, tofu, soysage. Drinks: Pure-fruit smoothies, fresh carrot juice, soy shake, apple juice, mineral water, Rush sodas, spirulina smoothies, soymilk, herb tea. Plus! Daily specials. To-go orders Fresh Brightsong tofu and other packaged soyfoods for your convenience. Address: Redwood Valley, California. Phone: (707) 485-7050.

3901. *Revista del Instituto de Investigaciones Technologicas* (*Colombia*). 1982. [Two important studies]. 23(138):23-28. [Spa]*
• ***Summary:*** Conclusions and recommendations are presented from 2 joint studies of the Colombian and Netherlands government (via IIT and TNO).

1. Utilization of soy proteins for human consumption (p. 23-33). Experimental and technical studies, nutritive value, consumer acceptance, marketing trials, and preference tests were carried out on a soymilk beverage, soy cheese, soy yoghurt, toasted soybeans, full-fat soy flour, and soy-enriched arepas.

Mixed flours (p. 34-38). This project concerned commercial production and utilization of a flour containing 80% wheat, 17% rice, and 3% soy flour. Address: Colombia.

3902. **Product Name:** Soymilk [Honey-Almond, or Coconut].
Manufacturer's Name: San Diego Soy Dairy.
Manufacturer's Address: 2965 5th Ave., San Diego, CA 92103.
Date of Introduction: 1982.
Wt/Vol., Packaging, Price: Plastic bottle.
New Product–Documentation: Talk with Gary Stein. 1989. Feb. 17. He recalls that these products were introduced in 1982.

Product with Label purchased at Open Sesame in Lafayette. 1991. Feb. 16. 2 by 4.12 inches. Black, red, and grey on beige. Color illustration of a stream flowing down from snow-capped mountains, through a forest, into a meadow with flowers. "100% non-dairy" 1 pint plastic bottle. $1.29. Almond flavor. Ingredients: Organically grown soy beans, filtered water, honey, pure almond extract. San

Diego Soy Dairy, San Diego, California 92103. This brand has been sold at the store for about 1 month.

3903. **Product Name:** [Semper Oral Supplement {Liquid, Partly Based on Soy Protein Isolate}].
Foreign Name: Kosttillägg.
Manufacturer's Name: Semper AB.
Manufacturer's Address: Sektor Industri, Sveavagen 166, Box 231 42, S-104 35 Stockholm, Sweden. Phone: 08-7299700.
Date of Introduction: 1982.
Ingredients: Incl. soy protein isolate.
Wt/Vol., Packaging, Price: 425 ml cans.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Letter (fax) from Leif Christensen of Semper. 1990. July 10. In 1982 Semper introduced 4 varieties of Kosttillägg liquid, partly based on soy isolate, UHT-sterilized, packed in 425 ml cans under aseptic conditions. In 1987 the very same products were introduced in 225 ml Tetra Brik cartons.

3904. Soyateria (The). 1982. Soyfoods specialty shop: Menu. 2847 Dundas St. West, Toronto, ONT, M6P 1Y6, Canada. 1 p.
• ***Summary:*** The menu includes the following soy-related dishes: Hot sandwiches: Tofu not dog. Tofu okara superwich. Soyball submarines. Tofuna submarine. Soysalad submarine. Soy reuben. Tofu delight. Specials: Agé. Side orders: Tofu macaroni salad. Tofu dip–for chips or vegetables. Salad-sandwich spreads: Tofuna. Soya. Tofu macaroni. Beverages: Cashew nut milk. Soymilk shakes (Banilla, Carobana). Desserts: Cheese cake. Puddings. Address: Toronto, ONT, Canada. Phone: 416-762-1257.

3905. **Product Name:** Soya Milk.
Manufacturer's Name: Superior (Tofu) Soy Products Co.
Manufacturer's Address: 1752 Commercial Dr., Vancouver, BC, V5N 4A3, Canada. Phone: 604-253-1050.
Date of Introduction: 1982.
New Product–Documentation: Business card from Percy Chan. Received 1987. Sept. Chinese characters read: Douchiang.

Talk with Rita Chan, owner. 1997. June 23. She and her husband started this company in 1982 at 1752 Commercial Dr., Vancouver. They made soymilk from day one.

3906. **Product Name:** [Soymilk].
Manufacturer's Name: Takeda Yakuhin.
Manufacturer's Address: Japan.
Date of Introduction: 1982.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64.

3907. Tosovic, T. 1982. [Use of soybean products in the milk processing industry]. *Hrana i Ishrana* (*Food and Nutrition*) 23(1/2):43-49. [27 ref. Ser; eng]*
• ***Summary:*** This review, referring mainly to developments in the USA, compares the composition of soymilk and cow's milk, and discusses the production of dairy-type products made from soymilk or soy protein isolate (including soy curd [tofu], yoghurt, cheese, and non-dairy creamers) and the use of soy products with milk or caseinates to produce fatty spreads, filled milks, cultured milk products, etc. Address: Visa Pedagoska Skola za Ekonomiku Domacinstva, Yugoslavia.

3908. **Product Name:** Jack 'n Jill Soybean Milk [Regular, or Almond].
Manufacturer's Name: Universal Robina Corporation (CFC).
Manufacturer's Address: E. Rodriguez Ave., Bagong Ilog Pasig, Metro Manila, Philippines.
Date of Introduction: 1982.
Ingredients: Extracts from soybean, milk solids, cane sugar, vegetable fat, approved emulsifier & stabilizer, and flavour. Enriched with vitamins A, B-1, B-2, B-6, C, D, and Niacin.
New Product–Documentation: Soya Bluebook. 1982. p. 63. Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 107. Soya Bluebook. 1986. p. 104. Color photo says "Manufactured for HK Peggy Foods Co. Ltd. by CFC Corporation, Philippines." Anders Lindner writes, "Made by Peggy Foods Philippines for sale in Hong Kong." Photocopy of Label sent by Anders Lindner. 1989. Illustration on the front panel shows a single almond. "Almond flavour soybean milk." Product name and ingredients also written in Chinese.

3909. Well Bean Deli (The). 1982. Menu. Santa Cruz, California. 1 p.
• ***Summary:*** Hot sandwiches: Tofu burger. Tofu Santa Cruz. Tempeh burger. TLT. Falafel burger. Mochi burrito. Bean taco.

Cold sandwiches: Missing egg sandwich. Tempeh salad sandwich. Sushi rolls.

Soups with Ak Mak crackers: Miso. Cream of mushroom (changed daily).

Spreads: Tossed. Tofu salad. Tempeh salad. Salad of the day.

Special entree: Tofu quiche. Tofu eggplant Parmesan (changed daily).

From the deli: Tempeh salad. Missing egg salad. Tempeh chips. Garlic onion dip. Tahini dip. Burger mix. Soy yogurt. Fresh fruit salad.

Desserts: Carob mint pie. Tofu cheesecake. Fresh fruit salad.

Drinks: Carobanana shake. Shake-a-leg hi protein drink. Strawbanana shake. Soymilk–plain, carob. Herb teas (assorted). Fruit smoothie–apple plus choice of orange plus two fruits.

Note: This deli was previously located at 349 Soquel Avenue, Santa Cruz. Address: 594 Redwood Dr., Santa Cruz, California 95060. Phone: (408) 427-2586.

3910. **Product Name:** [Soymilk].
Manufacturer's Name: Zenno.
Manufacturer's Address: Japan.
Date of Introduction: 1982.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64, 74. Zenno is Japan's biggest co-op.

3911. **Product Name:** [Soymilk and Dairy Milk Blend].
Manufacturer's Name: Zenno.
Manufacturer's Address: Japan.
Date of Introduction: 1982.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64, 74. Zenno, Japan's biggest co-op, introduced a soy-dairy blend in 1982 but dropped it after 6 months.

3912. Alfa-Laval. 1982. Soy milk. Product and process. Lund, Sweden. 10 p.
Address: Lund, Sweden.

3913. American Soybean Assoc. 1982. Soymilk helps Taiwan bridge the nutrition gap. *Checkoff Successfile.* Taiwan #302. 2 p.
• ***Summary:*** Soymilk, a nutritious and refreshing drink, has been made and consumed in Taiwan for centuries. But traditionally soymilk has been produced fresh daily by small roadside hawkers. "The soymilk production was very inefficient, small scale, and unsanitary.

"A major roadblock to effectively increase soymilk consumption in Taiwan has been that several major food companies which are interested in soymilk production are already involved in producing cows milk. They are concerned that the production and successful marketing of soymilk would cut into the existing market for cows milk."

"ASA/Taiwan contacted major food companies to encourage them to engage in the large scale commercial production of soymilk... ASA/Taiwan assisted manufacturers in developing production of flavored soymilk. Today soymilk consumers can select from several flavors including plain, strawberry, peanut, egg, milk, chocolate, coffee, and apple."

"The first commercial soymilk production in aseptic packages was started in 1976 by President Enterprises Corp. The corporation, which also operates a dairy plant producing cow's milk, has been extremely successful in the soymilk market. Their sales of flavored soymilk have grown rapidly in recent years, reaching a summer peak of 300,000 packs per day.

"The experience of President Enterprises Corp. has shown that there is little competition for cows milk from increased sale of soymilk." As a result of President's success, three other major food companies–Wei-chuan Foods, Tsin-Tsin Foods, and Wei-kan Co.–have initiated their own soymilk production in the last two years. "Today it is estimated that over one million bushels of U.S. soybeans... valued at over $8 million are used in soymilk production in Taiwan. Soybean use for soymilk has more than doubled in the last 10 years."

A photo shows four aseptic Brik Pak cartons of soymilk made in Taiwan. Address: ASA.

3914. Aykroyd, Wallace R.; Doughty, Joyce. 1982. Legumes in human nutrition. 2nd ed. Revised by Joyce Doughty and Ann Walker. Rome, Italy: Food and Agriculture Organization of the United Nations (FAO). viii + 152 p. Illust. 28 cm. The original edition was 1964. [293* ref. Eng]
• ***Summary:*** Contents: Preface. Introduction. History of legumes. Production and consumption. Composition and nutritive value. Methods of processing and cooking. Effects of processing on nutritive value. Toxic substances. Legume proteins. Observations on the value of legumes in human feeding. The place of legumes in human diets. Appendixes. References.

On pages 49-51 are sub-sections on: Traditional fermented soybean products (methods of home preparation are detailed in Appendix 5, p. 120-22): Soy sauce (shoyu), soy paste (miso), tempeh, natto, Hammanatto. Protein separation and other extraction techniques. Soy-milk. Soybean curd (tofu). Modern products from soybeans. Soy flour and grits. Soy protein concentrates. Isolated soy protein.

Under tofu (p. 50): "The curd may also be fermented to make soy-cheeses, which resemble the more highly flavoured European cheeses. These are known in China as *chou tofu,* which means stinking bean curd." See also p. 120, where yuba is mentioned.

Note: This 1982 edition was made by revising the original 1964 edition. Ann Walker is from the Dep. of Food Science, University of Reading. Dr. Wallace Aykroyd died in Feb. 1979 just as he was taking the first steps toward this revision. Address: 1. Dep. of Human Nutrition, London School of Hygiene and Tropical Medicine; Former Director, Nutrition Div., FAO, Rome, Italy.

3915. Bio-data of Mr. K.S. Lo, C.B.E., J.P. 1982. Hong Kong. 3 p. Unpublished typescript. Undated.
• ***Summary:*** This could also be called a resumé or CV. (1) Date of birth: 2 Feb. 1910. (2) Place of birth: Kwang Tung Province, China. (3) Education: B.A. (Commerce), University of Hong Kong. Member of Institute of Food Technologists.

(4) Honors and decorations: Honorary Doctorate Degree of Law–4 March 1982. Commander of the British Empire (C.B.E.). Justice of Peace (J.P.). Civil Defence Long

Service Medal. (5) Community service (Past and present): 26 positions [very impressive]. (6) Wife's name: Maggie, CHU Tsuk Ping. (7) Her date of birth: 27 July 1914. (8) Her education: Lingnam University. (9) Number of children: Six. Address: Hong Kong.

3916. Blair Island. 1982. Menu. Eugene, Oegon. 1 p. both sides. 24 x 11 cm. Black on yellow.
• ***Summary:*** This soy deli serves breakfast and lunch. Soy-related products in the breakfast menu include: Tofu pocket (sauteed tofu in a pita pocket). Tofu scrambles (Blair Island style tofu, sauteed onions and cheddar cheese). Tofu breakfasts: "Blair Island style tofu is pressed, then sauteed with seven herbs, spices, and shoyu. Served with sprouts, fresh-baked toast or muffin and a side of sweet and sour tomato sauce. Regular (tofu, sprouts and sauce), or Special (tofu smothered with mushrooms and onions)." Side orders: Cup of tofu. Cashew milk.

Lunch. Tofu tia (tofu with sprouts and sauce wrapped in a corn tortilla). Tofu pocket sandwich. Tempeh tia. Tia special. Buddah burger (tofu-mushroom burger). Temptation (tempeh burger). Tempeh burrito. Bean burrito with tofu sour cream. Salads with tofu sour cream dressing. Tofu cheesecake desserts with different toppings.

Note: This company was in business in Aug. 1979, located on an island between two branches of the road. Address: 325 Blair Blvd., Eugene, Oregon 97402. Phone: 683-5117.

3917. Canto, Wilson Leite do; Moretti, Vasco Antonio; Filho, José Gasparino; Almeida, Laura A.S. Brochado de; Santos, Luis Carlos dos. 1982. "Leite" de Soja Liquido: Uma opçao alimentar [Liquid soymilk: A food option]. *Estudos Economicos–Alimentos Processados* (*Campinas, SP, Brazil*) No. 13. 135 p. [Por]
• ***Summary:*** Presents the different industrial steps used to obtain liquid soybean milk both in the pasteurized and sterilized forms. Both are packaged in one liter bags or packs.

An economic analysis was developed indicating the fixed investment and the working capital required to establish and run a processing plant producing a total volume of 50,000 liters of soybean milk/day. The cost/liter of the product was calculated, as well as the yearly total net revenue and the break-even point of the industrial unit. Address: Instituto de Technologia de Alimentos–ITAL, Campinas, Sao Paulo, Brazil.

3918. Chen, Jiying. 1982. Yi dai zhen qi ren: Li Shizeng zhuan [Legend of a generation: Biography of Li Shizeng (Li Yu-ying)]. Taipei, Taiwan: Jin dai Zhongguo chu ban she: Zong jing xiao Zhong yang wen wu gong ying she, min guo 71 [1982]. 4 + 4 + 4 + 350 p. + [8] p. of plates. Illust. 22 cm. Series: Xian lie xian xian zhuan ji cong kan, Jin dai Zhongguo cong shu. [5 ref. Cht]
• ***Summary:*** Li Shizeng is the "courtesy name" of Li Yu-ying. Li's courtesy name was used mostly in his political and public life. This book is written using the Taiwanese form of Chinese characters, which most Chinese from mainland China have great difficulty reading. The author of this book is a woman.

Contents: 1. Ancestry. 2. Birth and childhood. 3. Life as a young adult. 4. From Yi He Tuan to founding of Republic of China. 5. Political life while studying abroad. 6. Cruise on Xin Ming and others. 7. Jin De Club and the Work-Study Club. 8. World Club. 9. Li Huang-works while studying abroad. 10. Summary of the life of work-study students in France. 11. Club of Chinese in France and Communist Party in France. 12. Li Shuhua–works while studying abroad. 13. End of the Ch'ing Dynasty and the National Palace Museum. 14. Revolutionary Army and University of China-France. 15. The meaning of Revolution and Social Movement of Saving the Republic Party and the Country. 16. Start and end of Beijing University. 17. Founding of Federal Beijing Research Institute and Development, and the Result. 18. Transformation of Pan Yang and Government movement to Taiwan. 19. Late life of Li Shizeng and Mung Do. 20. Li's legacy.

Li's work with soybeans: Page 41. Li attended a university in France, where he majored in biochemistry. He discovered that, not only could many kinds of nutritious food be made with soybeans, but soybeans could also be used to make fake ivory, which no one had ever discovered before. He wrote his first book, *The Soybean,* which was published in France. Note: There is no mention that Li did any work with soybeans when he returned to China.

Pages 42-43: After staying in France for 6 years, Li Yu-ying went back to China in order to raise funds for his tofu company. Six months later, he returned to France with 5 workers. They bought machines and set up the tofu company at a place near Paris, called Colombes. The name of the company is *Usine Caseo-Sojaine,* and it produces foods made from soybeans.

Page 44. In 1909, Sun Zhong-shan [Sun Yat-sen] (founder of the Republic of China) visited the company and wrote, "My friend Li Shizeng has conducted research on soybeans, and advocates eating soybean foods instead of meat." That is the principle of the tofu company.

Pages 110-11: Mr. Li was a biochemistry major while he was studying in France. The company only made sweet soy bean cake for Chinese workers and dried bean curd. He tested the nutritional composition of soybeans. The result: Soy beans contain more oil and protein than milk. He founded a tofu company in Paris and a vegetarian restaurant. Unfortunately the French didn't like to eat tofu; they didn't even like soy milk. So the business of the tofu company was not so good towards that end.

Li Shizeng's genealogy: Father: Li Hong-Zao (1819-

1897), who had 2 wives. The 2nd wife (Yang Shao-Ji) was the mother of Li Shizeng (Li Yu-Ying). Li Yu-Ying had 5 brothers and 4 sisters. Li was the 5th boy in the family. Brothers (Birth and death dates not given): (1) Li Zhao-Ying. 2nd and 3rd brothers died at early age. (4) Li Kuan-Ying. (5) Li Yu-Ying (Li Shizeng). Sisters (Birth and Death dates not given): (2nd sister) Li Shu-Yi; died at early age. (4th sister) Li Shu Lian; died at early age.

There were four women involved in Li Shizeng's life. He was married 3 times, and lived with one other woman. First wife: Yao Tong-Yi. Married in 1897 when Li was 17. Yao, who was Li's cousin, died in 1940. They had two children, a boy (Li Zongwei) (1899-1976) who married Ji Xieng-Zhan, and a girl (Li Yamei) (birth and death dates not given) who married Zhu Guangyi. Li Shizeng had two grandsons and one granddaughter from this marriage: Grandsons: Li Da-Yang. Li Er-Yang. Granddaughter: Li Ai-Lian.

After Yao died, Li Shizeng was in a relationship with an American woman called Mrs. Vegetarian (Ru Su). They met in New York and were involved with each other there from 1943-1947. Li's second wife: Lin Su Shan. Married in 1947. Lin died in 1954. Li's third wife: Tian Baotian. Married in 1957 when Li was 77. Tian was 42. Tian later moved to the USA and stayed there for the rest of her life.

On page 349 is Li's biography.

Note: Li Yu-ying, a soyfoods pioneer in Paris, France, lived 29 May 1881 to 3 Sept. 1973. Of the 8 glossy pages of plates, there are 7 photos of Li, including one portrait and three in considerable detail. These photos show:

(1) Li Shizeng in about 1961. (2, top): Li Shizeng and classmates in 1900; Li is in the top row, far right. (3, bottom): Founders of World Club (right to left): Li Shizeng, Zheng Jing-Jiang, Wu Zhu-Hui.

(4) Li Shizeng and the president of Republic Party [in Taiwan] in 1953.

(5) Li Shizeng and his third wife Tian Baotian in 1958. (6, top): Li Shizeng in 1972.

(7, bottom): Li Shizeng giving a speech in Taiwan in 1973. Address: Big Lake Road, Inner Lake, Taipei, Taiwan (ROC).

3919. Chow, Edward T.S. 1982. Performance of ingredients in a soybean whipped topping. PhD thesis, University of Illinois at Urbana-Champaign. 142 p. Page 2845 in volume 43/09-B Dissertation Abstracts International. *
Address: Univ. of Illinois at Urbana-Champaign.

3920. Coyle, L. Patrick, Jr. 1982. The world encyclopedia of food. New York, NY: Facts on File, Inc. xv + 790 p. Illust. Index. 28 cm.
• ***Summary:*** Contains basic information (sometimes interesting, often superficial, with quite a few errors) about some 4,000 foods and beverages, including worldwide staples (potatoes, soybeans, apples), local specialties, delicacies, major brand-name products (Coca-Cola) and oddities (penguin eggs, grasshoppers). With 200 line drawings, 150 black-and-white photos, and 50 color plates.

See entries for soybean (incl. black soybeans, fermented tofu, miso, soybean flour, soybean milk, soybean oil, soy sauce, tempeh; tofu, "white soybeans"), and Worcestershire sauce (which "is said to contain more than 100 ingredients, including soy sauce, vinegar, molasses, chili, anchovies, garlic, shallots, tamarinds, limes and many spices").

Tofu: "A fermented form of this, called stinking tofu, is a favorite snack of the Chinese. It has a pungent smell and is usually deepfried [deep fried] and seasoned with soy sauce, vinegar, mashed garlic or chili paste. The food value is high..." (p. 643).

Note: This is the earliest English-language document seen (Oct. 2011) that contains the term "stinking tofu."

Also has entries for: Almond, chufa, peanut, peanut butter, peanut oil, seaweed (incl. algae, dulse, laver, rock weed / sea wrack, agar-agar, carrageen, kelp), sesame (with illustration of leaves, flower, and pods). Address: Freelance writer, Oceanside, California.

3921. Daenzer, A. Walter. 1982. Tofu, die Einladung ins Schlaraffenland [Tofu, invitation to the land of plenty]. Zurich, Switzerland: Verlag Bewusstes Dasein. 97 p. Illust. 21 cm. [Ger]
• ***Summary:*** Contains 100 recipes. Contents: 1. Soy protein–Food of the future. 2. What is tofu? 3. How is tofu produced. 3. A visit to the Soyana tofu shop (Tofurei; includes a discussion of Sri Chinmoy and 8 photos of the Soyana tofu-making process). 4. The value of organic tofu for nutrition and the diet. 6. Tofu and soymilk in developing countries. 7. 100 tofu recipes from the land of milk and honey.

The author talks a lot about purines, antibiotics, hormones, and cholesterol in meat. Also emphasizes organically grown (biologisch) soybeans and tofu (made at Tofurei), and Reform Houses. Living Farms, one source of organic soybeans, was founded on 6 Jan. 1975. Address: Soyana, Zurich, Switzerland.

3922. Dunea, G. 1982. Beyond the etheric. *British Medical Journal* 285:428-29. *

3923. Hagler, Louise. 1982. Soja Total. Das vegetarische Kochbuch der Tennessee-Farm [Total soya. The vegetarian cookbook of the Tennessee-Farm]. Hamburg, West Germany: Papyrus Verlag. 200 p. Translation by Elizabeth Leihs of *The Farm Vegetarian Cookbook* (1978, English). Illust. 21 cm. [Ger]
• ***Summary:*** This interesting vegan cookbook book is loaded with creative recipes, illustrations (line drawings), and black-and-white photos. Contents: Beans. Soyameat (TVP). Italian dishes. Chili rellenos, nixatamal and masa. Nutritional

yeast. Knishes. Soups. Uncle Bill's recipes. Gluten. Tempeh. Miso. Soymilk. Ice Bean (Soymilk ice cream, p. 4, 96-98). Soy yogurt. Tofu. Pureed tofu. Yuba. Soy coffee. Soynuts. Soya pulp (okara). Soy flour. Vegetables. Bread. Cereal grain recipes. Breakfast breads and pancakes. Desserts. Nutritional advice.

Note: This is the earliest German-language document seen (March 2007) that mentions soy ice cream, which it calls *Soja-Eiskrem, Eis-Bohnen,* or *Schokoladen-Bohnen-Eiskrem.* Address: Summertown, Tennessee.

3924. Henderson, Bruce R. 1982. Oakland organic: A vegan primer. Albany, New York: Caboose Press. 200 p. Illust. 23 cm. [24 ref]

• ***Summary:*** This is a book about veganism which contains a few vegan recipes near the back. It focuses on the San Francisco Bay Area and urban areas, and contains extensive information about soybeans and soyfoods, much of it inspired by *Yay Soybeans,* from The Farm in Summertown, Tennessee. As follows: Miso, and Soya-Mineral Bouillon (Dr. Bronner's) (p. 19). Soy as an alternative protein source (p. 37-43). Soymilk (p. 53-56; Jethro Kloss). More soy (p. 57-61; soy pulp [okara] pudding, soysage, Garden of Eatin' Soy Jerky (illustration of package), Brightsong Missing Egg Tofu Salad (illustration), soy yogurt (fermented), soy tofu–hard, baked, or fried). Sprouting (p. 67-70; incl. soybeans). Fermented foods (p. 71-74; incl. tempeh, raw tofu). Snacks & quick foods (p. 88-96; incl. Ice Bean–soy ice cream, Ice-C-Bean). Miso and soy sauce (p. 120-21). Soy-related recipes: Baked apples with miso (p. 185-86). Tofu cheesecake (p. 188-89). Soysage (p. 193). Soy ice bean (p. 195). Note: Bruce Henderson was born in 1946. Address: Oakland, California.

3925. H.K.S.B.P. [Hong Kong Soya Bean Products Co.] growth pattern from 1941-1980. 1982. Hong Kong. 1 p. Unpublished typescript. Undated.

• ***Summary:*** Gives statistics for the years 1941, 1955, 1960, 1965, 1970, 1975 and 1980. For each of these years gives: Paid up capital ($HK): Grew from $25,000 in 1941 to $26.5 million in 1980. Sales in bottles/backs: Grew from 8.4 million in 1955 to 129.6 million packs of Vitasoy and 136.8 million packs of all other Vita products in 1980. Sales in HK$: Grew from 87,000 in 1941 to $210 million in 1980. Address: Hong Kong.

3926. Horsley, Janet. 1982. Bean cuisine. Stable Court, England: Prism Press. 89 p. Illust. (by Andrew Pomeroy). 20 cm. General index. Recipe index. U.S. edition published in 1989 by Avery Publishing Group (Garden City, New York). * Address: England.

3927. Jenkins, Suzy; Praskin, L.; Praskin, A. 1982. Plenty integrated soy program, Guatemala. Summertown, Tennessee: The Book Publishing Co. 48 p. Illust. 28 cm.

• ***Summary:*** This remarkable, inspirational, creative booklet contains the best summary of Plenty's Solola Soy Program, with 71 excellent black-and-white photos, many of them taken by Jenny Banks Bryant and others. "Plenty Canada" (founded in 1976 by a group of Canadians) provided the funding for this project and Plenty International provided the volunteers. It was a very successful and innovative project, that unfortunately was suspended in 1980 when the political situation became too dangerous for Americans to stay in the area. Happily, it was restarted by Plenty Canada in mid-1985 and as of early 1988 is active and growing.

Contents: Plenty. Preface. Soy agricultural program. Soy demonstration program. Soy extension program. Step-by-step demonstration process (how to make soymilk and tofu in a Guatemalan village). Plenty Solola soy dairy. Soy dairy floor plan and flow sheet. Step-by-step production procedures. Marketing soy products. Poor people and nutrition. Training apprentices. Appendix.

The Preface, by Plenty director David Purviance, notes that Plenty went to Guatemala in 1976 to help with reconstruction following a severe earthquake. Plenty set up a primary health care program and an orphanage. "In these programs, we fed soymilk to the children who were brought to us for care. The beneficial effects on these malnourished kids were unmistakable. Many of the Indian mothers observed that our own children remained healthy on a soy-based diet. Living in the village and learning the language and lifestyle of the people, Plenty volunteers remained accessible to our Indian neighbors.

"In 1978, agronomist Daryl Jordan began testing the feasibility of growing soybeans in the highland area. The results were good, and Suzy Jenkins started demonstrating how to make soymilk and tofu in some of the local homes. As interest and support for the soybeans grew, they were joined by Laurie and Alan Praskin to help expand the project. During the next two years, their efforts produced a three-phase program of soy introduction that improved the lives of several thousand Guatemalan Indians. What follows is their account of a program that included the cultivation of soybeans by village farmers, home demonstration of soy preparation techniques and the creation of a village-scale soy dairy which produces soy ice cream and tofu for sale in the local market and for free distribution to hungry kids."

Page 15 states: "The Extension Program was implemented by one soy technician and the 18 trained cooperative extensionists. In six months over 1,000 men and women were taught how to make soymilk and tofu through this program. One hundred ten classes were held in 74 different areas." Photos show tofu and soymilk being made. Thirteen photos (p. 12-17) show the step-by-step process for making tofu in a Guatemalan village, including:

(1) San Martin soy extensionists preparing tofu at a nutrition class.

Twenty-four photos (p. 18-32) show the Solola Soy Dairy, including its construction, inside, outside, floor plan, and the step-by-step process for making tofu and soy ice cream. Page 21 states: "The soy dairy started operation in February of 1980. It produces approximately 90 to 100 gallons of soy ice cream and 60 to 75 pounds of tofu a week. Its maximum production capacity with the present equipment is 200 gallons of ice cream and 450 pounds of tofu a week. It was stocked with a year and a half supply of soybeans and has since been supporting itself by selling soy ice cream and tofu from the dairy in the local marketplace."

(2) "The soy dairy is open for selling tofu and soy ice cream seven days a week. Suzy Jenkins hands soft-serve soy ice cream in cones from a soy dairy window (p. 32).

(3) Little Mayan girl eating seasoned tofu from a bowl. "A one-half pound serving of tofu sells for 25 cents [U.S.] and contains: 163 calories (10% of the Recommended Dietary Allowance for a child age 4-6 years), and 17.7 grams of protein (59% of RDA) (p. 37).

(4) Little Mayan girl licking a big soy ice cream cone as she runs. "Our soy ice cream contains soymilk, tofu, sugar and oil, which make it abundant in calories and protein. A half-cup serving of our soy ice cream sells for 10 cents and contains 183.4 calories" (11% of the Recommended Dietary Allowance for a child age 4-6 years) and 3.1 grams of protein (10% of RDA) (p. 38).

In the chapter titled "Marketing soy products," a photo (p. 33) shows the Soy dairy booth in the Solola market. The sign over the window reads: "Helados y Queso–Hecho de frijoles de soya" ["Ice cream and cheese–Made from soybeans"]. Photos on the next two pages show: Mayan women preparing tofu to be sold on tortillas at the Solola State Annual Fair. The booth at the fair with a sign advertising soy ice cream and tofu. Guatemalan soldiers enjoying soy ice cream cones. Many happy kids holding up soy ice cream cones. A Plenty volunteer "giving away soy ice cream to 180 children at a school in a rural village."

Note: This is the earliest document seen (Jan. 2003) that mentions "Plenty Canada" (see p. 4). Address: The Farm, Summertown, Tennessee.

3928. Kushi, Micho; Kushi, Aveline. 1982. Macrobiotic dietary recommendations. East West Foundation, P.O. Box 850, Brookline Village, MA 02147. 48 p. 22 cm. [15 ref]
• ***Summary:*** Contents: Introduction. Standard dietary recommendations. Recommended daily proportions. Foods to reduce or avoid for better health. Way of life suggestions. Daily reflections. Suggestions for patients with cancer or other serious illnesses. Special dishes. Home remedies. Baby food suggestions. Kitchen utensils. Nutritional considerations. East West Foundation information. Glossary. Bibliography.

Compiled with the help of Edward Esko, Murray Snyder, Bill Spear and Bill Tara. Address: Brookline Village, Massachusetts. Phone: -.

3929. Leneman, Leah. 1982. Vegan cooking. Wellingborough, Northamptonshire, England: Thorsons Publishing Group. 126 p. *
• ***Summary:*** Contains an introduction to tofu, a recipe for making tofu at home, and 9 recipes using tofu. A recipe for making soya milk at home is also given, and soya milk is used in a number of recipes. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

3930. Loma Linda Foods. 1982. Pour a glass of fresh nutrition. It's a Loma Linda lunchtime (Poster). Riverside, California. 1 p.
• ***Summary:*** "Kids and grownups put their bodies through some pretty tough workouts most days."

"Taste is important. Nutrition is essential." A small photo shows 3 cans of Soyagen. A large photo (the lower half of the poster) shows a full glass of soymilk surrounded by (left to right) a sliced loaf of brown bread on a breadboard, a clear glass pitcher of half full of soymilk, a dark-brown woven basket of fruit, sliced cantaloupe and sliced tomatoes on lettuce on a slice of brown bread, and a clear glass bowl of white flowers with yellow centers. Address: Riverside, California.

3931. Machida, Yoshiro. 1982. Atarashii tônyû no kenkô-hô [Soymilk: The new way to good health]. Tokyo: Jukai Shuppan. 127 p. [Jap]*

3932. Moretti, Vasco Antonio; Filho, José Gasparino; Canto, Wilson Leite do; Almeida, Laura A.S. Brochado de; Travaglini, Décio Antonio; Bicudo Neto, Luis de Campos. 1982. Estudo técnico-economico de uma unidade de produçao de "leite" de soja em pó [Technical-economical study of a unit for production of powdered soymilk]. *Estudos Economicos–Alimentos Processados* (*Campinas, SP, Brazil*) No. 14. 47 p. [Por]
• ***Summary:*** The unit can produce a maximum of 1,340 kg/hour of powdered soymilk and 516 kg/hour of dry residue (okara). Contents: Summary. Introduction. Objectives. Review of the literature. Methods, data, and procedures. Description of the process. Uses and market. Economic evaluation of the unit operating for one, two, or three shifts a day. Rate of return and economic viability. Summary of economic indicators. Bibliography. Appendix. Address: Instituto de Technologia de Alimentos–ITAL, Campinas, Sao Paulo, Brazil.

3933. Muller, L.L. 1982. What the different branches of the food industry require from dairy ingredients. Dairy vs. non-dairy [soy] ingredients. Technological and functional aspects. *International Dairy Federation, Bulletin* No. 147. p. 89-94. Presented in Luxembourg, 21 May 1981. [26 ref]

• ***Summary:*** The advantages and disadvantages of soy protein instead of milk are considered. Based on seminar proceedings held in Luxembourg in May 1981. Address: Dairy Research Lab., CSIRO Div. of Food Research, P.O. Box 20, Highett, Victoria 3190, Australia.

3934. Nakano, Eisha; Stephan, Barbara B. 1982. Japanese stencil dyeing: Paste-resist techniques. New York and Tokyo: Weatherhill. ix + 143 p. Index. 27 cm. [46* ref]
• ***Summary:*** Both authors are women living in America. Eisha Nakano, a graduate of the junior division of the Women's University of Fine Arts, Tokyo, is a stencil artist with long experience teaching katazome (stencil dyeing) to Westerners. The katazome process consists of cutting a paper stencil, preparing the resist paste (made of glutinous rice flour [*mochiko*] and rice bran [nuka]), choosing and preparing the fabric or paper which will be dyed, applying the paste to the fabric or paper using the stencil, letting the paste dry, preparing and applying sizing to the fabric or paper, dyeing the fabric by applying the dye or pigment with a brush, sometimes steaming the fabric, then washing off the paste to reveal the design, and finishing the fabric. The cloth is not dyed in the areas where paste was applied; thus katazome is the direct opposite of the silk-screen technique. Soybeans have traditionally been used in the katazome process in two ways: As sizing and as pigment-binding agents.

Chapter 6, "Sizing the fabric," states (p. 69-73). "The sizing most widely used for katazome, however, is *gojiru* [actually uncooked diluted soybean liquid, or soymilk], a liquid extracted from soaked and ground soybeans. The reason that soybeans are such a good sizing agent is not just that they are cheap and plentiful but also that they are rich in protein, which has adhesive-like qualities. Once the liquid is brushed onto the cloth, the protein begins to undergo a structural change, known as denaturation, whereby it is rendered insoluble. This not only makes the sizing permanent; it also helps reinforce the bond between the fiber and the subsequently applied dye, ensuring good colorfastness... As sizing, the soybean liquid is highly diluted, so the effect is little more than a light starching."

To prepare the soybean sizing for 5-6 meters (16-20 feet) of narrow-width cotton fabric, choose a dry warm day. Soak about ¼ cup (50 gm) whole soybeans in ample water for 5-6 hours in summer or overnight in winter. Drain off the water and have ready an equivalent volume of fresh water. Crush the softened soybeans in a blender or suribachi, adding the fresh water as necessary. Pour the liquified [liquefied] soybeans into a cloth filter bag made of organdy or coarse muslin then squeeze over a bowl to extract the concentrated uncooked soymilk, whose volume should be about equal to that of the swollen beans. Now dilute the concentrated soymilk with 8 to 10 parts water, or until it has the translucence of nonfat milk. Now apply the soybean liquid sizing to the fabric using a wide brush following the details given. Stretch the fabric tight and allow it to dry. The soybean liquid must be used fairly quickly, lest it spoil.

Concentrated soybean liquid is also used in traditional Japanese pigment dyeing as a thinner and binder for many pigments. "Pigments differ from dyes in that they are opaque, are insoluble in water, and have little or no affinity for textile fibers. Instead of penetrating the fabric, the finely ground particles lie on the surface, held by any number of film-forming binders. In traditional Japanese dyeing, this binder has generally been derived from soybeans... In traditional pigment dyeing, the color is bound to the fabric through a change in molecular structure that occurs when the protein found in the soybeans dries and turns into an insoluble compound. For the color to be fast, the soybean liquid with which the pigment is mixed must be fairly concentrated, much more so than when used as sizing." Whereas the volume of water added to concentrated soybean liquid for sizing is 8-10 parts, for mixing pigments it should be 1 part for detail or accent color, or 3 parts for background color. After dyeing, the color is fixed with alum solution.

Talk with John Marshall (24 July 1991), a Berkeley artist who was apprenticed to a natural dyer in Japan from 1971-1976 and who uses natural plant dyes: Protein is used in a number of ways in ethnic textile dying. The Japanese and Chinese use soymilk as their source of protein. The people in Pompei used egg white / albumin, while those in Okinawa use dairy milk. The purpose is to coat the fabric and to serve as a primer or *gesso* on which the natural dyes are applied. Real gesso is powdered marble and a binder. In Japan, a dyer would stretch a piece of fabric made from any natural fiber, then apply the soymilk to it using a brush; 1 coat is usually enough but some artists use 2-3 coats. John makes his own soymilk from whole soybeans; he learned how in Japan as part of the dye process. In traditional Japanese dyeing the cloth was not immersed or dipped in the soymilk. Let the cloth dry until it is no longer wet, then it is ready to be dyed, for example using tie-dye (dunked), paste-resist (made from powdered glutinous rice and bran; leave it stretched, as with katazome), batik (with wax resist), or a solid color. Address: 1. Cincinnati, Ohio; 2. USA.

3935. Nippon Shokuryo Shinbun-sha. 1982. Shokuhin sangyô jiten [Encyclopedia of the Japanese food industry. 3rd ed. 2 vols.]. Tokyo: NSS. 528 p. [Jap]
• ***Summary:*** Contains substantial entries for the following soy-related foods: Tofu and tofu products (p. 81-87), frozen and dried-frozen tofu (p. 96-97), natto (p. 98-101), and vegetable oils (p. 107-13). Address: Japan.

3936. Plenty International. 1982. Soy Demonstration Program: Introducing soyfoods to the Third World. A step by step guide for demonstrating soymilk and tofu preparation. Summertown, Tennessee. 16 p. Undated. Illust. 21 cm.

• ***Summary:*** Actually written by Suzy Jenkins and Laurie Praskin, this booklet is a summary of two larger works published in 1980 (written by Darryl Jordan and Suzie Jenkins) and earlier in 1982 (by Suzy, Laurie and Alan Praskin).

As interesting as it is innovative, this summary focuses on Plenty International's Soy Demonstration Project in Guatemala, showing how soybeans are being grown in local villages and women are making soymilk and tofu using traditional equipment. All Guatemalans are shown in traditional Mayan clothing (*traje*).

Contents: Introduction. Soy extension program. A soy demonstration in photographs: Soaking the beans, grinding, cooking, straining, soymilk, curding tofu, straining the curds, storing the products. Helpful hints. Recipes. A nutritional comparison. Soybean agricultural impact statement.

Black and white photos show soyfoods and people in Guatemala. These include: (1) A little Guatemalan girl, kneeling, licking her fingers as she eats seasoned tofu from a bowl. (2) Women smiling and laughing as they grind soybeans on traditional stone *metate.* (3) Women's nutrition group (with children) from San Jose Poaquil standing behind their soybean patch. (4) Simple tools needed for making tofu. (5) Close-up of a woman grinding soybeans on a *metate.* (6-8) Cooking ground soy slurry and filtering the soymilk from the pulp. (9) A little girl drinking a big cup of soymilk. (10-14) Curding the tofu, straining the curds, and pressing the tofu. (15) Girl eating tofu on a bun. (16) A happy group of Guatemalans and Americans standing around a stove, enjoying soymilk and tofu. (17) Soybean variety trials in Solola, Guatemala. Elevation: 7,200 feet (2,195 meters). (18) A little bustling along as she licks a cone of soymilk ice cream.

On the rear cover: "The Soy Demonstration Project was funded by Plenty International, UNICEF (United National International Children's Educational Fund) and CIDA (Canadian International Development Agency), and donations from supporters." For further information write: "Suzy Jenkins or Laurie Praskin, Plenty Soy Technicians, 156 Drakes Lane, Summertown, Tennessee 38483 USA." Address: Summertown, Tennessee.

3937. Re: Names of soyfoods around the world: French. 1982. Form filled out by William Shurtleff based on sources given below. 1 p. [Eng; Fre]

• ***Summary:*** Gives the names of the main soyfoods in French. Sources: Bernard Storup; Bau & Debry, of France.

"Soyfoods–Aliments à base de soja.

Fresh green soybeans (edamamé)–Edamamé. Soja frais.

Whole dry soybeans–(haricots de) Soja sec / secs.

Black soybeans -

Fresh soy puree–Purée de soja.

Soy sprouts–Pousses de soja. Soja germe.

Soynuts–Soja grillé. Graines de soja grillées.

Oil roasted soynuts–Graines de soja grillées (à l'huile). Soja grillé, revenu dans l'huile.

Dry roasted soynuts–Soja grillé à sec. Graines de soja grillées à sec (or sans huile). Haricots de soja, grillés à sec.

Soynut butter–Buerre de soja grillé.

Roasted soy flour–Farine de soja grillé.

Soy coffee–Cafe de soja.

Soy chocolate–Chocolat de soja.

Soymilk–As of Feb. 2012 only the terms "boisson au soja" or "jus de soja" or "tonyu" (the Japanese word for "soymilk") can be used legally on commercial soymilk products in France–because of dairy lobby protests. The term "lait de soja" is generally used in cookbooks, books, articles, etc.

Soymilk ice cream -

Soymilk curds -

Tofu (regular)–Tofu or Tofou (le). Note: Many French speakers, who are also soyfoods experts, prefer "Tofou."

Soft tofu–Tofu mou.

Firm Tofu–Tofu ferme. Extra firm tofu–Tofu très ferme.

(Deep fried) Tofu cutlets–Tranches de tofu frites.

(Deep fried) Tofu burgers–Tofuburgers frits. Burgers de tofu (frits).

(Deep fried) Tofu pouches–Poches de tofu (frites).

Silken tofu–Tofu soyeux.

Pressed silken tofu–Tofu soyeux.

Grilled tofu–Tofu grillé.

Dried frozen tofu–Tofu séché. Tofu déshydraté.

Okara or soy pulp–Okara (l').

Yuba–Yuba (le).

Dried yuba sticks -

Sweet dried yuba -

Fermented black soybeans -

Miso or soybean jiang–Miso (le).

Soy sauce–Sauce de soja. Sauce soja. Shoyou (le).

Chinese sauces -

Tamari–Tamari (le).

Tempeh–Tempeh (le).

Fermented tofu–Tofu fermenté (au vin).

Fermented soymilk–Lait de soja fermenté.

Natto, thua-nao, kinema–Natto (le).

Soy oil–Huile de soja.

Soy lecithin–Lecithine de soja.

Soy flour–Farine de soja.

Whole (full fat) soy flour–Farine de soja entière.

Defatted soy flour–Farine de soja dégraissée.

Soy grits and flakes–Flocons et granule de soja.

Cereal-soy blends (CSM, WSB, etc.) -

Soy protein concentrate–Proteine de soja concentrée.

Soy protein isolate / Isolated soy protein–Isolat de proteines de soja. Proteine de soja isolée.

Textured soy protein products–Protéines de soja texturées (Produits à base de proteines de soja texturée).

Textured soy flour, TSF, or TSP–Farine de soja texturé.

Textured soy concentrates–Concentrat de soja texturé.

Textured soy isolate–Isolate de soja texturé.

Spun soy protein fibers. Address: Soyinfo Center, Lafayette, California 94549.

3938. Segall, J. 1982. Communicable disease associated with milk and dairy products. *British Medical Journal* 285:575. *

3939. Seventh-day Adventist Dietetic Assoc. 1982. Diet manual, including a vegetarian meal plan. 6th ed. Seventh-day Adventist Dietetic Assoc., P.O. Box 75, Loma Linda, California 92354. 537 p. In a 3-ring binder with tabbed dividers. Index. 30 x 29 cm.

• ***Summary:*** This comprehensive guide to planning, selection, and coordination of vegetarian diets was edited by Georgia Hodgkin, M.S., R.D.; Susan Maloney, M.S., R.D., was the managing editor. Previous editions were published in 1960, 1965, 1970, 1975, 1978, and 1982. Each chapter has an author and a reviewer. References are found at the end of each chapter.

Contents: Introduction. Normal nutrient needs. Nutrition for pregnancy and lactation. Pediatric diets. Gastrointestinal diets. Renal diets. Cardiac diets. Diabetic and related diets. Mineral modified diets. Diet for acute care. Nutrition and immunity. Nutritional support and enteric feedings. Geriatric and rehabilitation diets. Test diets. Nutrition and drugs. Nutrition for exercise and weight control. Appendixes (11) including: Ingredients of selected vegetable protein foods (108 products, mostly made by Seventh-day Adventist companies). Nutrient composition of selected vegetable protein foods (the same 108 products whose ingredients are given above). Addresses of selected Seventh-day Adventist hospitals (16 hospitals). Selected vegetarian cookbooks (15 citations). Selected books concerning a vegetarian diet (7 citations). Tables (79 tables). List of figures (10 figures). Address: Loma Linda, California.

3940. Shufu-no-tomo-sha. 1982. Tônyû wa konnani kiku [Soymilk works this well]. Tokyo: Shufu-no-tomo-sha. 184 p. [Jap]*

3941. Simonds, Nina. 1982. Classic Chinese cuisine. Boston, Massachusetts: Houghton Mifflin. xi + 353 p. Illust. Map. Index. 23 cm.

• ***Summary:*** This is a remarkable book by one who is part "of a new generation of American chefs and food writers." The Pinyin system of romanization, "which was officially adopted by the People's Republic of China in 1979, has been used for most of the Chinese words in this book" (p. vi).

A map of China (facing page 1) shows the individual provinces and the four main culinary schools: northern, western, eastern, and southern–as explained on pages 1-4. Taiwan is considered part of the eastern school. The southern school is comprised of only two provinces: Guangdong (which includes the city of Guangzhou–formerly named Canton) and Guangxi.

Soyfoods are used and discussed liberally throughout this book. The section titled "Condiments, seasonings, and special ingredients" (p. 5-11) gives detailed discussions of hoisin sauce, oyster sauce, soy sauce (the three grades are light, medium and heavy, with light having a delicate and slightly more subtle flavor than the other varieties), sweet bean sauce (and bean pastes including brown bean paste and yellow bean paste), fermented black beans (and black bean sauce).

The next section, "Selected fresh and pickled vegetables" (p. 11-14) has an entry for bean sprouts (the two main types are sprouted from mung beans {which are green} and soybeans {which are yellow}; soybean sprouts have a stronger flavor and require longer cooking).

Soy related recipes: Beef with noodles in a pot (with "2 cakes bean curd," p. 76). Cold spicy noodles (with "2 cakes bean curd, about 3 inches square and 1 inch thick," p. 80).

One chapter, titled "Soybeans and bean curd" (p. 113-29) begins with a charming introduction to "stinky bean curd" (fermented tofu). As evening fell after dinner, luscious scents and fragrances filled the air. Yet there was "a putrid smell that defied classification. What was that baffling, pungent odor, present in every part of the city." After a bit of research she soon discovered that it came from "stinky bean curd (*chou dou fu*), a favorite snack of the Chinese." Vendors of this unusual "delicacy ran rampant all over the city with their portable deep deep-fryers. My Chinese surrogate sister and brothers, who were great fans of the stuff, used to race outside, armed with empty bowls and chopsticks, at the sound of the stinky bean curd man's call. (The smell usually preceded him by two blocks, giving everyone plenty of notice.)" It is "made by fermenting fresh bean curd squares in a brine with assorted spices and pickled vegetables." The resulting cakes are deep-fried... until golden and eaten with soy sauce, vinegar, mashed garlic, or chili paste."

The soybean is used to make various Chinese seasonings including soy sauce, hoisin sauce, sweet bean sauce or paste, and hot bean paste. Fresh green soybeans are cooked and served with soy sauce and sesame oil. Whole dry soybeans are fried and eaten as a snack.

"The nutritious properties of the soybean further explain why it is so popular with the health-conscious Chinese."

Heating soybean milk gives "bean milk sheets (*fu pi*)" [yuba]. Also mentions "bean curd sticks (*fu zu*)" [dried yuba sticks], bean curd sheets (*bai ye*)," and "bean curd noodles (*gan si*)." In terms of consistency, the three basic types of bean curd are soft, medium, and hard (*dou fu gan*)." "Bean curd is also fermented in rice wine and spices to make a popular seasoning (*dou fu ru*), which has a "slightly cheeselike flavor."

Nina concludes the introduction: "As most nutritionists will agree, the soybean and its many by-products are the

foods of the future." Line drawings show: soybeans, bean curd, bean milk sheets, bean curd sheets, bean curd sticks, and bean curd noodles. Recipes in this soy chapter: Meatball and soybean casserole (with "4 cups dry soybeans, p. 116). Sweet soybean milk (How to make at home; the Chinese equivalent of America's cup of coffee for breakfast, with 2 cups dry soybeans and 1 cup sugar. Typically accompanied by a sesame flat bread {*shao bing*} and a fried cruller {*you tiao*}). Stir-fried soybean sprouts with red-in-snow. Stuffed bean curd rolls (with "8 dried bean curd sheets or bean milk sheets"). Sweet-and-sour fish slices (with "10 dried bean milk sheets"). Eggplant rolls (with "6 dried bean milk sheets"). Buddha's delight (a well-known vegetarian dish, with "2 ounces bean curd sticks"). Cold tossed bean curd and celery shreds (from Sichuan, with "8 cakes bean curd, about 3 inches square and 1 inch thick"). Red-cooked bean curd. Braised bean curd with black mushrooms in oyster sauce (from Sichuan). Stuffed bean curd (from Canton). Ma po bean curd (from Sichuan). Eight-treasure stir-fried vegetables with meat (with "3 cakes bean curd, about 3 inches square and 1 inch thick"). Northern-style bean curd (p. 129).

More soy related recipes: Steamed fish fillets in black bean sauce (with "1 tablespoon fermented black beans, rinsed, drained, and minced," p. 183). Double-cooked pork slices (with "3 cakes bean curd," p. 230). Steamed spareribs in black bean sauce (with "2 tablespoons fermented black beans, rinsed, drained, and coarsely chopped," p. 234). Stuffed peppers in black bean sauce (with "1 tablespoon fermented black beans, rinsed, drained, and minced," p. 272).

One entire chapter is titled "Vegetarian dishes" (p. 279-94). The introduction discusses the Kuantu Temple (a Buddhist-Taoist sanctuary about 1 hour drive from Taipei), and the origin of vegetarian cuisine in China in early Buddhist and Taoist monastery kitchens. Wheat gluten (*mian jin*) and related preparations such as deep-fried wheat gluten balls (*mian jin pao*) steamed wheat gluten chunks (*kao fu*), plus seasonings such as "pickled bean curd (*dou fu ru*)" are often used. Soy related: Broccoli in mock crabmeat sauce (with "1 cake bean curd," p. 285). Vegetarian lion's head (with "4 cakes bean curd," p. 287). Mock goose (with "20 bean milk sheets" [yuba], p. 290-91). Vegetarian eight treasures (with "2 cakes bean curd," p. 291). Wheat gluten (how to make at home from wheat flour, p. 292).

More soy related: Eight-treasure mixed soup pot (with 2 cakes bean curd," p. 310-11). Hot and sour soup (with "2 cakes bean curd," p. 316).

About the author: A photo of Nina Simonds (in Chinese clothing) appears on the inside rear dust jacket. She studied Chinese food and cooking, language and culture, in Taiwan for more than three years (she arrived there at age 19) with Chinese master chefs at the Wei-Chuan school in Taipei, while living with a Chinese family. She subsequently received the Grand Diplôme from La Varenne École de Cuisine in Paris, where she also taught Chinese cooking. "For the past eight years (prior to 1982) she has taught in cooking schools all over the United States and Canada and her articles have appeared in *Gourmet* and *Cuisine* magazines and the *Boston Globe"* (from the inside rear dust jacket). Address: Salem, Massachusetts.

3942. STS–Soya Technology Systems Ltd. 1982. Soymilk. 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 31 p. Illust. 21 cm. 2nd ed. 1984. [10 ref]
• ***Summary:*** Contents: Soybeans, a few basic facts. Soybeans, a historical background. Soymilk. Soymilk Flavor. The word soy. Principles of soymilk production. Dairylike soymilk. Basic soymilk production methods. Soymilk nutritional aspects. References. On the white cover is the green STS logo with a gold soybean in the lower right corner. Address: Singapore.

3943. STS–Soya Technology Systems Ltd. 1982. Dounai [Soymilk]. 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 30 p. 21 cm. [Chi]
• ***Summary:*** A Chinese-language translation of the English-language booklet having this same title also published in 1982. Address: Singapore.

3944. STS–Soya Technology Systems Ltd. 1982. Dounai [Soymilk]. 11 Dhoby Ghaut #12-05, Cathay Building, Singapore 0922. 29 p. Illust. 21 cm. [10 ref. Eng; chi]
• ***Summary:*** Contents: Soybeans, a few basic facts. Soybeans, a historical background. Soymilk. Soymilk Flavor. The word soy. Principles of soymilk production. Dairylike soymilk. Basic soymilk production methods. Soymilk nutritional aspects. References.

Note: This is the earliest [and only] Chinese-language document seen (Aug. 2013) that uses the term "dounai" ("bean milk") to refer to soymilk. The word is rarely used in Chinese. Address: Singapore.

3945. Thrash, Agatha Moody; Thrash, Calvin L., Jr. 1982. Nutrition for vegetarians. Seale, Alabama: NewLifestyle Books. 155 p. Illust. Index. 28 cm. [249* ref]
• ***Summary:*** Both authors are physicians (MDs) and Seventh-day Adventists. A well-documented and thoroughly researched study. One important section of the book is devoted to the bodily functions of digestion, thirst, appetite, metabolism, and the endocrine system. For 11 years the authors had the rare privilege of directly observing and serving the medical needs, if any, of up to 150 pure vegetarians (vegans) at a medical missionary training center in Alabama. Soymilk is discussed on pages 111, 113. Address: Route 1, Box 441, Seale, Alabama 36875-9127.

3946. Unicorn Village. 1982. Tofu comes West. A remarkably versatile healthful food. Protein for less (Poster). Tucson, Arizona. 1 p. 27 x 34 cm.

• ***Summary:*** Near the top of this large color poster is a unicorn galloping across the top of a globe. In the center is a place to attach recipes, with an arrow pointing to it: "Take one." Color photos to the left and right show: (1) Fried tofu, sprouts, and tomato sandwich, with a glass of soy milk in the background. (2) Two stemmed parfait glasses filled with strawberry tofu pudding and Banana tofu pudding. Address: 332 E. Seventh Street, Tucson, Arizona 85705.

3947. Vandemoortele NV. 1982. Vandemoortele, your European partner. Vandemoortele NV, Prins Albertlaan 12, B-8700 Izegem, Belgium. 26 p. Color. [Eng]
• ***Summary:*** A photo on the cover of this glossy booklet shows the globe, focusing on Europe. The company has numerous subsidiaries and plants. In Belgium: Safinco NV [the holding company for the other companies], Vandemoortele NV, Vamo Mills NV, Vamix NV, Samo NV, Alpro NV, Edo NV, Metro NV, Befico NV. In France: Vamo sarl. In the Netherlands: Vandemoortele NV. In West Germany: Meylip GmbH. In England: Vandemoortele U.K. Ltd. Note: NV is an abbreviation for *Naamloze Vennootschap* [a limited liability company; literally a nameless or anonymous partnership or company]. Photos in this booklet show color aerial views of many of these plants. There is a color illustration of "The NV Vamo Mills new soya bean processing plant at Ghent (operational December 1980)."

"The fundamental changes in the balance of world power have resulted in a re-think in our company's overall commercial strategy. An important aspect of this strategy focuses attention on the supply of raw materials, since the majority of these have to be imported. European industry will soon have to realize that it will only be able to continue acquiring raw materials if it turns to providing high technology products at competitive prices for both home and export markets. As a result, our group has decided to make a concerted effort to encourage the development of high technology products and thereby safeguard supplies of raw materials from abroad."

"What Vandemoortele means in figures: processing of oilseeds: 1,540,000 tons. Refining of fats and oils: 300,000 tons. Production of margarines and edible fats: 130,000 tons. Total industrial production area: 101 acres. Number of employees: 1,850. Growth of the Vandemoortele Group: 1977: 12,436,000,000 BF (Belgian francs). 1981 (estimated): 20,000,000,000 BF. Vegetable oil brands include 3 x Gold, Roda, and Reddy. Margarine brands include Fama, Reddy, Roda, and Vitelma. And there is Reddy mayonnaise, Reddy Vinaigrette, Samo snacks (chips and curls), Gold Cup industrial margarines and doughs, Vam-O-Mix and Whip Jumbo bread improvers, Risso catering supplies, Fama exported oils, margarines and energy drinks (incl. Fama Soya Oil and Fama Sojabean Oil).

"Vandemoortele: Leading 'crusher' in Europe." NV Vamo Mills has a total production capacity of 1,540,000 tons per year, with daily production reaching 5 million kg. From soybeans, Vamo Mills also makes Soya Oil "degummed," Soya Lecithin Vamoline, and Soya Tourteaux-Schroot (Meal). One page discusses NV Alpro and Soyamel. Two photos show the Vandemoortele R&D department.

Note: This is the earliest English-language document seen (Sept. 2006) that uses the term "Sojabean Oil" to refer to soybean oil.

3948. Vitasoy (USA) Inc. 1982. Vitasoy. Anytime, anywhere (Poster). San Francisco, California. 1 p. 28 x 36 cm. Color. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.
• ***Summary:*** "Vitasoy. Fresh and naturally good. High in protein and low in calories. Take Vitasoy along anytime, anywhere."

A color photo shows a carton of Vitasoy Soya Bean Drink against a tan background. Partly behind it and to its right is a glass, into which another carton is pouring this soymilk. Address: San Francisco, California.

3949. Vitasoy (USA) Inc. 1982. Vitasoy. It's different. It's delicious. It's healthy (Leaflet). San Francisco, California. 4 panels. Front and back. 17.6 x 17.6 cm.
• ***Summary:*** Glossy color, cardstock (see next page). On the front are three cartons of Vitasoy UHT soya bean milk with both English letters and Chinese characters equally prominent. The left and right cartons are unflavored, printed with blue, turquoise and red on white. The middle carton is Malt flavored, printed with dark brown and white on lighter brown. The background is orange-brown at the bottom shading up to black at the top.

The left inside panel shows Vitasoy teas and the right inside panel and the rear show Vita juices. Address: San Francisco, California.

3950. Wondafrash, Teshome. 1982. Physical and chemical characteristics of cow's milk extended with soymilk. PhD thesis, University of Illinois at Urbana-Champaign. 327 p. Page 2846 in volume 43/09-B Dissertation Abstracts International. *
Address: Univ. of Illinois at Urbana-Champaign.

3951. Yoshikawa-Shoji Co. Ltd. 1982. The book of nigari tofu & nama-age tofu technique. Honmachi Wako Building, 2-50 Kita-Kyuhoji-machi, Higashi-ku, Osaka, Japan. 18 p. 26 cm. [Eng]
• ***Summary:*** This company, founded in 1861, is the oldest maker of nigari in Japan today. They make two three types: Maruzen Micro Neoekis (in fine granular, and an older flake style), and traditional solid nigari in cans. Micro Neoekis, introduced 20 years ago, is purified magnesium chloride.

Contents: Characteristics of nigari tofu. Micro-Neoekis. Real nigari and delicious tofu. Which nigari is best for tofu?

It's different... it's delicious... it's healthy.

Vitasoy is a refreshing, well-established, non-carbonated drink made from soya beans. It has a smooth, creamy taste that appeals to people of all ages.

It's available in both malt and regular flavours, and now comes in a big ½-litre (500 ml) size in addition to the popular ¼-litre (250 ml) size.

Vitasoy is enriched with the natural goodness of soya beans, so it's packed with Vitamins A, B and B_2. Plus Vitasoy contians no preservatives.

Vitasoy is manufactured under the strictest hygenic conditions and quality control, and is sterilized under the UHT process before packaging in Tetra Briks.

Basic characteristics of nigari. Storage of nigari. General method of making tofu. Varieties of tofu. How to make high quality products. Characteristics of high quality soymilk for tofu. How to judge the quality of soymilk. How to make soymilk. Other comments. How to make regular tofu. When is more coagulant needed? When is less coagulant needed? Methods for coagulation with nigari. How to add Micro-Neoekis. How to make silken tofu. Reasons for failure. How to make packaged tofu. Reasons whey appears. How to make tofu for deep-frying. Major points to observe in coagulation. How to coagulate. Magnesium chloride 1,2 method. How to make egg tofu. Address: Osaka, Japan. Phone: 06-261-6767.

3952. *Brik Pak-Age.* 1982--. Serial/periodical. Dallas, Texas: Brik Pak Inc. Vol. 1, No. 1. Summer 1982. Quarterly. Address: Dallas, Texas.

3953. Desert Gardens. 1982? New soyfoods restaurant or deli. 702 Main St., Safford, AZ 85546.
• ***Summary:*** Menu sent by owner Katerina Lewis about 1982. "One of our main staples is tofu..." Soy-related recipes include–Appetizers: Eggless salad (with tofu), Brazilian bean dip (with tofu), French onion dip (with tofu & miso), California guacamole (with tofu). Side dishes: Potato tofu knish, Chili beans & tofu, Baked potatoes (with tofu sour cream), Tofu pizza. Deli: Tofu cottage cheese, Soy sour cream, Tofu cream cheese. Entrees: Sicilian eggplant Parmesan (with tofu), Tofu & fresh vegetable saute, The combo (featuring breaded tofu cutlets). Sandwiches: Tofuburger with millet, Sizzling tofu, Guacamole, Tofagel (tofu, sprouts, and tomato on a toasted bagel). Beverages: Soy milk, Soy shakes. Desserts: Tofu cheesecake. Soybean ice cream. Address: Safford, Arizona. Phone: 428-5132.

3954. **Product Name:** Coconut Soymilk.
Manufacturer's Name: Earth Angel Soyfoods.
Manufacturer's Address: 53 Stanley Ave., Mt. Waverley (E. Oakleigh), VIC 3149, Australia. Phone: 544-8020.
Date of Introduction: 1982?
Ingredients: Soymilk made from organically grown soybeans, coconut milk, and honey.
How Stored: Refrigerated.
New Product–Documentation: Letter and Label sent by Debbie Schmetzer of Earth Angel Soyfoods. 1983. Feb. 19. "I am interested in improving our soymilk. At present we are making coconut soymilk sweetened with honey... Do you have any information on how the Japanese (Bonsoy) soymilk is made, using pearl barley and barley malt as sweeteners?"
Label. 8.5 by 2.5 inches. Paper. Dark blue on beige. Coconut trees with sun peeping out from between them. Shurtleff & Aoyagi. 1986. Soymilk Industry and Market, Update.

3955. **Product Name:** Soy Pate.
Manufacturer's Name: Earth Angel Soyfoods.
Manufacturer's Address: 53 Stanley Ave., Mt. Waverley (E. Oakleigh), VIC 3149, Australia. Phone: 544-8020.
Date of Introduction: 1982?
Ingredients: Okara, soymilk, brewer's yeast, tamari, oil, herbs and spices.
Wt/Vol., Packaging, Price: 250 gm.
How Stored: Refrigerated.
New Product–Documentation: Label. 3.5 inches diameter. Paper. Green on white. Illustration of winged pixie between two groups of leaves. "Great on sandwiches, toast, or appetizers. No additives or preservatives. No additives or preservatives. Keep refrigerated."

3956. **Product Name:** [Rakuo Soymilk].
Foreign Name: Rakuô Tônyû.
Manufacturer's Name: Fukushima-ken Rakuren.
Manufacturer's Address: Japan.
Date of Introduction: 1982?
Wt/Vol., Packaging, Price: 200 ml long-life pack.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Rakuô Tônyû was introduced before Dec. 1982 by Fukushima-ken Rakuren in a

200 ml long-life pack.

3957. **Product Name:** [Soymilk].
Manufacturer's Name: Industrias Covac.
Manufacturer's Address: Alajuela, Costa Rica.
Date of Introduction: 1982?
New Product–Documentation: Letter from Robert Folkenberg. 1983. Feb. 15. "This company, organized in 1967, is presently producing about 1,000 liters/week of soy milk."

3958. **Product Name:** [Soymilk (Plain, or with Barley Malt Syrup)].
Foreign Name: Tônyû, Tônyû Bakuga-iri.
Manufacturer's Name: Natural Foods (Nachuraru Fuuzu).
Manufacturer's Address: Japan.
Date of Introduction: 1982?
Wt/Vol., Packaging, Price: 195 gm can.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Tônyû and Bakuga-iri Tônyû were introduced before Dec. 1982 by Nachuraru Fuuzu in a 195 gm can.

3959. **Product Name:** [Soymilk].
Foreign Name: Tônyû.
Manufacturer's Name: Seven-Eleven (Sebun Irebun).
Manufacturer's Address: Japan.
Date of Introduction: 1982?
Wt/Vol., Packaging, Price: 200 ml long-life pack.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: K. Tsuchiya. 1982. Dec. *Tonyu* [*Soymilk.* 2nd ed.]. p. 74. States that Tônyû was introduced before Dec. 1982 by Sebun Irebun (7-11) in a 200 ml long-life pack. Note: 7-11 is a U.S. based convenience food store chain.

3960. Sun Youth Machinery Co., Ltd. 1982? Automatic tofu, dried bean curd and soybean milk making equipment. Factory: No. 6, lane 229, Hwa Chen Rd., Hsin Juang Taipei Hsien, Taiwan. 12 p. Manufacturer's catalog. Undated.
• ***Summary:*** "Dried bean curd" probably refers to pressed tofu (*doufugan; W.-G. toufu kan*). Address: Taipei, Taiwan.

3961. *Toyo Shinpo* (*Soyfoods News*). 1983. Ima, naze tônyû no buumu nano ka? Tônyû no rekishi wa furui [Why is there now a soymilk boom in Japan? Soymilk has a long history]. Jan. 1. [Jap]

3962. *Toyo Shinpo* (*Soyfoods News*). 1983. [Soymilk: The big three companies, Kibun, Marusan, and Mitsubishi Kasei control over 60% of the market]. Jan. 1. p. 38. [Jap]
• ***Summary:*** Last year their soymilk sales in Japan were: Kibun about 5,000 million yen. Okazaki Marusan about 3,500 million yen. Mitsubishi Kasei about 2,000 million yen.

3963. Selliers, Francois de. 1983. Comsoy: 1982 activity report. Brussels, Belgium. 5 + 3 p. Jan. 14.
• ***Summary:*** The first 5 pages are the report of activities. The last 5 pages are the names and addresses to whom the report should be sent. Address: Chairman, IIDC (International Investment & Development Corp.) Belgium, Belgium S.A., Rond-Point de l'Etoile 3, Boite 8, B-1050 Brussels, Belgium. Phone: (02) 640-68 00.

3964. Uchi, Osamu; Hatanaka, Chiaki. Assignors to Mitsubishi Chemical Industries Limited (Tokyo, Japan). 1983. Method for extracting ingredients of oil-containing seeds. *U.S. Patent* 4,369,198. Jan. 18. 8 p. Application filed 15 Aug. 1978. [9 ref]
• ***Summary:*** This patent concerns soymilk. "A method for extracting ingredients of oil-containing seeds comprising triturating [crushing] uncrushed seeds, which have not been soaked in water, in deoxygenated hot water of from 70ºC to the boiling point under the anaerobic condition is disclosed. By this method, the ingredients of oil-containing seeds can be extracted with higher extraction rate, lower viscosity, lower peroxide value and reduced odor." Address: 1. Fujisawa, Japan; 2. Tokyo, Japan.

3965. Flinders, Carol. 1983. Tofu industry prepared for boom times in '80s. *Hartford Courant* (*Connecticut*). Jan. 19. p. E2.
• ***Summary:*** "That faint rumble that you hear just offstage is the tofu industry, tooling up for its Great Leap Forward in the 1980s." Yearly production are expected to grow to 200 million pounds by 1986, from 50 million pounds now.

Carol met with Dik and Sharon Rose, co-owners of Brightsong Light Foods of Petaluma, California. They operate out of what used to be a poultry processing plant; Petaluma used to be the "chicken capital of the West."

Brightsong makes 400 lb/day of tofu, as well as "soy milk, soyshakes, and a number of tofu-based salads, spreads, and desserts.

"Brightsong is an example of the first phase of the soyfoods industry–low profit margin, relatively low volume and very labor intensive."

An illustration shows the Brightsong logo. There is a recipe for Hot and sour tofu soup.

3966. Khalili, Mehrdad. 1983. Re: Planning to design soymilk plant in Iran. Letter to Soycrafters Association of North America, 305 Wells St., Greenfield, MA 01301, Jan. 29. 1 p. Typed, with signature on letterhead.
• ***Summary:*** Sangvan Co. is planning to design the first Iranian soymilk plant (Capacity 25 to 50 tons/day).

He would be very glad to receive any information in this respect and a sample copy of *Soycraft* magazine. Thanking

you in anticipation. Sincerely yours,... Address: Director, Sangvan Co., Industrial & Engineering Services, P.O. Box 54/274, Tehran, Iran. Phone: 235600, 649100.

3967. **Product Name:** Vegie Burger.
Manufacturer's Name: Bud, Inc.
Manufacturer's Address: 1100 Wicomico St., Baltimore, MD 21230.
Date of Introduction: 1983. January.
Ingredients: Natural nigari tofu, carrots, cabbage, onion, celery, potato, yam, okara, soymilk, sesame seeds, sunflower seeds, soybean oil, sea salt, spices.
Wt/Vol., Packaging, Price: 7 oz vacuum pack.
How Stored: Frozen.
Nutrition: Per 3.5 oz.: Calories 210, calories 12 gm, carbohydrates 13 gm, fat 13 gm, sodium 235 mg (235 mg/100 gm).
New Product–Documentation: Label. 1983. Jan. (dated). 4.5 inches square. Black and white on reddish-purple. "Keep frozen. Completely vegetarian. All natural. No preservatives." Logo reads: "Soyfoods for a healthy world"; East West. 1987. June. p. 65.

3968. Gabr, M.; Maraghi, S.; Morsi, S. 1983. Management of lactose intolerance secondary to protein calorie malnutrition with soy-based, lactose-free formula. *Nutrition Reports International* 27(1):51-58. Jan. [10 ref]
• ***Summary:*** An isolated soy protein formula containing a mixture of sucrose and corn syrup was found more effective in infants recovering from kwashiorkor than a standard lactose-containing formula. Address: Depts. of Pediatrics and Clinical Pathology, Cairo Univ., Faculty of Medicine, Cairo, Egypt.

3969. Ornish, Dean. 1983. Stress, diet, and your heart. New York, NY: Holt, Rinehart and Winston. xxi + 392 p. Foreword by Alexander Leaf, M.D., Illust. Printed in 1983 by New American Library (Signet Books). 24 cm. [224+ ref]
• ***Summary:*** The title page states: "With a Foreword by Alexander Leaf, MD. Original recipes by Martha Rose Shulman." This is Dean Ornish's first book on the benefits of diet, stress reduction, and exercise in reducing heart disease. Grains, legumes and vegetables are the staples in this low-fat, vegetarian diet. Dairy products (such as milk and yogurt) are used sparingly.

In the section on the "Five Food Groups," the subsection titled "Legumes" includes azuki beans, miso, soybeans, soy flour, soy milk, tempeh, and tofu.

The recipes–which are innovative, tasty and nutritious–were developed by Martha Rose Shulman and she wrote most of Chapters 14-20.

The word "tofu" appears on 46 pages in this book, soy flakes appears on 10 pages, and soy milk appears on 5 pages, soy flour on 2 pages and tempeh on 1 page. Soy-related recipes and information include: Soy flakes, tofu (p. 161-63). Modified sautéed eggplant (p. 164-65). Brief descriptions of azuki beans, soybeans, soy flakes, and soy grits (p. 175-76). Instant soy milk (such as Fearn or Jolly Joan), Tofu–description and uses (p. 181). Recipe for Brown rice, barley, soy grits (p. 182). General cooking directions for legumes (p. 184-87). Very simple cooked soybeans ("The size of the pot is especially important with soybeans, which bubble up dramatically," p. 185). Cooked soy flakes (p. 188). Herbed tofu spread (p. 207-08). Apple spice tofu morning spread (nice on toasted morning bread or muffins, p. 208, 279, 290). Peanut butter banana tofu spread (209). Nutty tofu cheese substitute (p. 236-37). Roasted soybeans (dry roasted = baked, p. 239-40). Homemade granola (with "½ cup soy flour," p. 241-42). Deep-dish vegetable pie (with cooked soy flakes, p. 252-54). Eggplant and rice casserole (with soy grits, p. 257-58). Sprouts, tomato, and white bean spread sandwich (with dry roasted soybeans cracked in a blender, p. 260). Tofu banana cream pie (p. 266-67). Gazpacho (p. 269-70). Pizza (homemade, with Tofu cream sauce, p. 271-73). Brown rice salad (with dry roasted soybeans, p. 279). Buckwheat noodle salad with hot and sour dressing (and dry roasted soybeans, p. 282-83). Bulgur-spinach salad with poppy seed dressing (p. 285). Curried tofu and vegetables (p. 287). Mushroom and barley soup (with soy flakes, p. 291). Pasta with vegetables (and dry roasted soybeans, p. 296). Pasta with vegetables (and dry roasted soybeans, p. 296). Millet raisin pudding (with "¼ cup instant soy milk {such as Fearn}," p. 298). Spaghetti sauce with tofu tomato sauce (p. 298-99). Grated zucchini casserole with eggplant sauce (and dry roasted soybeans, p. 301-02). Couscous casserole (with "½ pound {2 cakes"} tofu, p. 321). Soybean-grains casserole (with "2 cups cooked soybeans or soy flakes, p. 325-26).

For information on a vegetarian diet, see p. 3, 144-50.

The excellent Foreword by Dr. Alexander Leaf, M.D. (Chairman, Dep. of Preventive Medicine and Clinical Epidemiology, Harvard Medical School) notes that coronary heart disease is now the leading cause of death in our western industrialized world. Medicine has been grappling with this modern killer largely by trying to cure coronary artery disease–angina and nonfatal heart attacks–rather than to prevent it. "With heart attacks accounting for as many deaths annually in the United States as all other causes of death combined, we are dealing with a modern epidemic still taking a toll of 600,000 lives per year... Many of these deaths are sudden..." The major risk factors for future heart attacks are cigarette smoking, arterial hypertension, elevated serum cholesterol, Type A personality, etc. "What is still lacking in the logical chain is evidence that reducing the risk factors in a given individual will prevent the occurrence of coronary artery disease in that person." Dr. Ornish, through his research and preventive approach, is seeking the evidence for that missing link. Nevertheless "the prudent person will benefit his or her well-being, and very possibly his or her

heart as well, by adopting and adhering to the dietary and stress modification programs Dr. Ornish has presented" in this important book. Address: M.D., Sausalito, California.

3970. *Toyo Shinpo* (*Soyfoods News*). 1983. Tônyû bureddo [Soymilk bread now made and sold by Shin-Shin Do] Feb. 1. [Jap]

3971. *Toyo Shinpo* (*Soyfoods News*). 1983. [Yakult is distributing its soymilk by the same route as its long-famous probiotic product]. Feb. 1. [1 ref. Jap]
• ***Summary:*** Grandmothers and others on bicycles deliver it door to door.

People predict that soymilk added to foods (such as bread, noodles, etc.) will grow faster than that used as a beverage. Address: Japan.

3972. *Toyo Shinpo* (*Soyfoods News*). 1983. [Kirin, the big beer maker, is now selling and distributing Koiwai Soymilk in a can]. Feb. 1. [Jap]
• ***Summary:*** It is sweetened with barley malt syrup (*bakuga iri*).

3973. Panchal, Chinu. 1983. Soyamilk proves 'elixir' to sick baby. *Times of India* (*The*) (*Bombay*). Feb. 12. p. 13.
• ***Summary:*** Nagpur–The parents of a four-day-old baby girl found that she could not digest breast milk or infant formulas based on cow's milk. Doctors finally diagnosed the problem as "lactose intolerance."

"Dr. S.W. Chorgude, a child specialist, then suggested that the child be given soyamilk," which was available locally thanks to a factory established in Nagpur by Dr. Shantilal Kothari, a former professor at Pantnagar agricultural university. It worked wonders. Within 1½ months the child became as healthy as any normal baby.

An estimated 2% of the children in India suffer from lactose intolerance; they lack the enzyme lactase which digests the lactose, the natural sugar in milk. When they are fed milk, this lack causes flatulence, diarrhoea, and other stomach problems. Soyamilk [infant formula] contains all the ingredients required for infants to grow, without the lactose sugar.

Dr. Kothari uses a process developed in India to make the soyamilk. He told the *Times of India* that he has been carrying on a long and (so far) fruitless correspondence with the state [Maharashtra] food and drugs administration to have soyamilk officially recognised as a food.

Since the baby's remarkable recovery, all three of the hospitals in Nagpur have begun substituting soyamilk for regular milk in the diets of their patients.

According to the superintendent of the Mayo hospital, the soyamilk has worked very well and it has saved the hospital a lot of money–since soyamilk costs Rs. 2.46 compared with 3.50 for the same quantity of dairy milk.

A photo shows the healthy baby lying on her back. Behind her is a carton of soyamilk in bottles and a sign that reads "Soyamilk." Address: M.D., New Delhi.

3974. Folkenberg, Robert. 1983. Re: History of work with soyfoods by the Seventh-day Adventist (SDA) Inter-American Division in Latin America. Letter to William Shurtleff at Soyfoods Center, Feb. 15. 3 p. Typed, without signature on letterhead.
• ***Summary:*** The first SDA food factory in South America was Granix in Buenos Aires, Argentina, in 1938. Today Superbom of Brazil is the largest producer, making an estimated 30 tons/month of textured soy flour (TVP). In the Caribbean region, Industrias Covac in Alajuela, Costa Rica, was the first organized in 1967, followed by Alimentos Colpac of Mexico in 1969 and Westico foods in Jamaica in 1970. Today Alimentos Colpac makes about 10 tons/week of TVP and 3,000 liters/week of soymilk. Westico Foods makes 2 tons/week of TVP, which is expected to increase dramatically in the near future. Industrias Covac makes about 3 tons/week of TVP and 1,000 liters/week of soymilk. Alimentos Integronaturales in Montemorelos, Mexico makes about 3,000 liters/week of soymilk. They and Productos Icolpan in Colombia will soon start producing TVP. Address: Field Secretary, Inter-American Div., P.O. Box 340760 (760 Ponce de Leon Blvd.), Coral Gables, Florida 33134. Phone: 305-443-7471.

3975. Marbach, William D.; Ukai, Nancy. 1983. Tokyo's soybean blockade. *Newsweek*. Feb. 28. p. 63.
• ***Summary:*** "Archer-Daniels-Midland of Decatur, Illinois would like to export soy isolate to Japan so that it can cash in on the latest Japanese health-food craze–soybean milk. (Making soybean milk, or *tonyu*, from soy isolate is simple: just add water, flavors and heat). The trouble is that ADM's soy isolate is a threat to an industry the Japanese would like to develop to replace the old-fashioned way of making tonyu by crushing and boiling the beans.

"When ADM applied to the Japanese Ministry of Agriculture for a 'Japan Agricultural Seal' (JAS)–without which Japan's quality-conscious consumer would resists the product–the request was denied. 'According to the Japanese Agricultural Standard, whole soybeans must be the main ingredient of soy milk,' the ministry ruled...

"'The product must already be on the Japanese market before we consider it a candidate for the JAS mark,' said one ministry official. A Japanese Catch-22...

"Fuji Oil Co., a big soybean processor, already makes lower-grade isolate for other products and is reportedly getting ready to enter the booming $100 million tonyu [soymilk] market." Address: Tokyo, Japan.

3976. Chang, Ying; Liu Sheng-jie; Zhou, Qhi-yuan. 1983. [Studies on milk substitutes. VII. The digestibility and

energy utilization of soybean milk-substitute in infant]. *Ying Yang Hsueh Pao* (*Acta Nutrimenta Sinica*) 5(1):51-58. Feb. [2 ref. Chi; eng]
Address: Inst. of Health, Chinese Academy of Medical Sciences, Beijing, China.

3977. Chou, Chi-yuan. 1983. Studies on the use of soybean food in infant feeding in China and the development of formula 5410. *Food and Nutrition Bulletin* (*United Nations Univ.*) 5(1):45-52. Feb. [10 ref]
• ***Summary:*** Historical background: In China, since ancient times, the soybean and soybean foods have been considered nutritious and delicious. Even soybean milk has long been consumed by Chinese adults. Today, soybean milk "is a popular breakfast food item sold in many small restaurants in the morning in almost every large and small city, but it had never been used to feed infants before 1927.

"In the vast agricultural areas of China, animal milk is not a regular daily food item. When infants cannot obtain sufficient mother's milk, it is only natural to use cereal flours such as wheat or rice and wheat plus a little cane sugar as milk substitutes. This traditional method of feeding has been practiced over hundreds or even thousands of years.

"In the light of modern knowledge of nutrition, it was realized that such cereal preparations are not adequate to meet the requirements of a growing child. To modern medical and health scientists, it has become an urgent and interesting problem to search for an inexpensive but nutritious infant food to substitute for animal milk and the traditional cereal flour products when mother's milk is inadequate.

"Dr. Ernest Tso, Professor of Pediatrics of the former Peking Union Medical College in 1928, was the first in China to use fresh soybean milk to feed an infant (Tso 1928). Fresh soybean milk was supplemented with calcium lactate, common salt, and cane sugar. During the eight months of feeding with this basic diet, the infant received other foods such as egg yolk, fish liver oil, orange juice, and green vegetable puree, with soybean milk, protein furnishing about 20 per cent of the total dietary energy.

Following this successful attempt, Tso, Yee, and Chen (1928), Tso and Chu (1931), Tso and Chang (1931), and Fan, Wu, and Chu (1940) continued to work with fresh soybean milk, spray-dried soybean milk powder, or roasted soybean flour diets for a number of infants in the hospital. Guy and Yeh (1938), working at the Peking First Health Station, fed 15 infants fresh soybean milk and 49 infants roasted soybean flour preparations at the babies' own homes and reported that all of the infants had normal weight and height gains. Research along this line was then interrupted for 12 years [during World War II and the Chinese Communist revolution].

The remainder of this article is about the development of soybean infant formula 5410, which began in 1953 "with a team in the Department of Nutrition of the then National Institute of Health, now the Department of Nutrition and Food Hygiene of the Institute of Health of the Chinese Academy of Medical Sciences. On the basis of the findings of previous workers and newer knowledge of nutrition, the aim was to construct a milk substitute with easily obtainable raw materials and a simple method of preparation, nutritionally comparable to human milk or cow's milk formula, palatable and acceptable to young infants, and to be sold at a reasonably low price to meet the financial status of most families, especially those in the rural areas." The formula consists of (by weight): Soybean flour 28.0%. Rice flour 45.0%. Cane sugar 16.5%. Egg yolk powder 5.0%. Soybean oil 3.0%. Bone powder 1.5%. Millets 0.5%. Common salt 0.5%. Potassium iodine (later supplemented) 0.25 mg per kg of mixture. A detailed method for preparing the formula is given. Address: Inst. of Health, Chinese Academy of Medical Sciences, Beijing, People's Republic of China.

3978. **Product Name:** Light Soysage (Meatless Okara-based Sausage).
Manufacturer's Name: Light Foods Inc.
Manufacturer's Address: 6144 Bartmer, St. Louis, MO 63133. Phone: 314-721-3960.
Date of Introduction: 1983. February.
Ingredients: Okara (soy pulp), whole wheat flour, soymilk, nutritional yeast, wheat germ, soy oil, bulgar wheat, shoyu, honey, sesame seeds, herbs & spices.
Wt/Vol., Packaging, Price: 12 oz sausage-like dark reddish brown paperboard tube.
Nutrition: Per 2 oz.: Calories 147, protein 6.3 gm, carbohydrate 16.5 gm, fat 6.1 gm, sodium 292 mg.
New Product–Documentation: Spot in Whole Foods. 1983. Jan. p. 39. "New Tofu Line. Light Foods, Inc. presents a new dimension to soyfoods: Light Links, Light Tofulogna and Light Soysage.

Label. 1988 received. Chub-packed in a pre-printed sausage-style casing. 10 by 3 inches. Orange, yellow, and reddish brown. With label printed directly on tube. "Pre-cooked. Meatless. 100% cholesterol free."

Talk with Bob Davis, founder of Light Foods. 1994. May 7. This product was similar to his first Soysage except that the packaging was different; the Light Soysage was chub packed. Other products in this line that were chub packed were Light Tofulona and Light Loaf. The latter product was never commercialized.

3979. Light Foods Inc. 1983. Light Foods Inc. is proud to present tomorrow, today: A light line of distinction (Leaflet). St. Louis, Missouri. 1 p. Feb. Front and back.
• ***Summary:*** This 4-panel leaflet is printed with brown ink on beige paper. On the front panel is a stylized smiling sun. On the two inner panels are descriptions of the following

meatless products, each with ingredients and nutrition facts. Right page: Light Links (tofu hot dog) [launched July 1982], Light Soysage (sausage featuring okara, whole wheat flour, and soymilk), Light Tofulogna (featuring tofu and okara).

Right page (the label of each product is shown): Crusts (frozen): Golden Crusts (featuring whole wheat flour and soy margarine), Amazing Crusts (featuring cornmeal, okara, whole wheat flour). Pie in the Sky (Tofu Spinach Pie, Tofu Tamale Pie [launched June 1983], Tofu Apple Pie).

Back panel: "Thank you for your attention. In the spirit of light. In Joy."

Talk with Robert Davis. 2007. June 5. He recently underwent a personal transformation of spiritual death, dying to the Self and opening of the heart. The illustration of the sun was probably drawn by Martha Johnson. He will soon be moving to Nelson, BC, in the Kootenays (mountains) near Kootenay Lake to create the Shunya Institute, a safe space. Address: 6144 Bartmer, St. Louis, Missouri 63133. Phone: (314) 721-3960.

3980. Liu, Shengjie; Chang, Ying; Zhou, Qhi-yuan. 1983. [Studies on milk-substitutes. VI. Absorption and retention of nitrogen, calcium, and phosphorus of soybean milk-substitute by infants]. *Ying Yang Hsueh Pao* (*Acta Nutrimenta Sinica*) 5(1):39-49. Feb. [15 ref. Chi; eng]
• ***Summary:*** Nine male infants, age 37-77 days, fed soymilk and a control for 8-16 weeks. Address: Inst. of Health, Chinese Academy of Medical Sciences, Beijing.

3981. Shurtleff, William; Aoyagi, Akiko. 1983. The soyfoods industry and market: Directory and databook 1983. 3rd ed. Lafayette, California: Soyfoods Center. 112 p. Feb. No 28 cm. [191 ref]
• ***Summary:*** As of May 1982, America's four largest tempeh makers (in lb/week) are Pacific Tempeh (5,000, California, started 1980), Tempeh Works (4,250, Massachusetts, started 1979), Soyfoods Unlimited (3,000, California, started 1981), White Wave (1,900, Colorado, started 1979). About 17,455 lb/week of tempeh are sold by 15 companies in the USA.

Reviewed by Walter J. Wolf in *Cereal Foods World* (Oct. 1983). Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

3982. *Soyanews* (*Sri Lanka*). 1983. Anuradhapura's DSM plant. 5(6):1. Feb.
• ***Summary:*** "Machinery is being fitted up at the Dried Soya Milk (DSM) plant at Maha Illuppallama in the soya-growing district of Anuradhapura. Test runs have already been conducted on some of the equipment and the plant is expected to be ready for the commissioning at the end of this month... DSM is primarily intended to be used as a substitute for or as an extender of coconut milk used in curries. It can also be used to enhance the nutritional value, taste and appearance for popularly consumed foods. DSM is prepared by the Raja Rata Food Grains Processing Company which is a joint venture of the Public and Private sectors."

Photos show: (1) The inside of the plant, with many machines. (2) The outside of the plant.

3983. *Soybean Digest.* 1983. Asians thirst for soydrink. Feb. p. 80.

3984. *Soyfoods.* 1983. Soyfoods mini-boom underway in Europe. Winter. p. 8-9.
• ***Summary:*** "'This year we became aware that the kind of developments that took place in the U.S. in 1977-78 are now taking place in Europe with the sudden increase in the number of soyfoods companies,' reports Bill Shurtleff of The Soyfoods Center. 'Historically speaking, this will probably be the most important event for the soyfoods industry in 1982. Europe is coming on strong and it's a tradition of soyfoods that goes back 130 years that is now being revived.'

"Most of the impetus for soyfoods in Europe apparently stems from the vigor of the macrobiotic community. Per Fruergaard started Tofu Denmark in Valby and has encountered legal problems regarding the use of nigari. In Paris, France, Bernard Storup purchased a Takai tofu system; Ab and Paulien Schaft are setting up a small plant in Baillestavy to make miso, shoyu, natto, and koji; in Ivry, Jean Luc Alonso's macrobiotic center, Traditions du Grain, prepares for tempeh production.

"In the British Isles, Paul Jones' Tofu Shop in London, England, has been active since 1981 while Community Health Foundation, also in London, promotes homescale tofu, tempeh, and misomaking. In Dublin, Ireland, Jane O'Brien gives tofu cooking classes, has published a tofu cookbook and is considering commercial production.

"The macrobiotic movement is strong in Belgium where de Brandnetel, a large Antwerp-based distributor of natural foods, operates a tofu shop in the rear of their retail store. Jonathan Company in Ekeren makes 3000 pounds of tofu weekly, along with seitan, mochi, soups, canned foods, and soymilk. Seven Arrows in Leuven is another small tofu shop in operation in Belgium.

"In the Netherlands Manna was the first company to introduce soyfoods to the public and is now an important promoter. Manna's John Welters (who provided much of this information) lectures on homescale soy processing and reports interest and sales are rising as are the number of magazine articles on soyfoods. Manna itself markets tofu spreads and distributes a joint equipment price list with Takai Company of Japan. Witte Wonder in The Hague makes tofu, as does De Morgenstond in Bakkeveen, while Peter Dekker's Jakso produces tempeh. In Portugal, Unimave promotes soy as part of the macrobiotic diet and makes small amounts of tofu and soymilk; Jose Parracho in Setubal is starting a self-sufficient center involving tofu and tempeh production.

"In Soyen, West Germany, Wolfgang Furth-Kuby, who

published *Das Tofu Buch* (by William Shurtleff) in German, is interested in tofu production at his Sojaquelle. Tofu producers are Swame [sic, Swami] Anand Svadesha in Furth-im-Wald, Thomas Kasas [sic, Karas] who installed a tofu system last summer at his Bittersuess [later Soyastern] in Cologne, and Alexander Nabben in Munich.

"In Sweden Tim Ohlund and Ted Nordquist have been operating Aros Sojaprodukter since early 1981 in Örsundsbro using a Takai pressure cooker system and vacuum packaging. In Rimini, Italy, Gilberto Bianchini makes tofu at Community Foods. And Switzerland is the home of four soy companies including Restaurant Sesam in Bern, an active macrobiotic center with homescale tofu and seitan production; Marty Halsey makes tofu in Nyon; Hans Opplinger produces tofu in Chan; and Verena Krieger operates Sojalade in Luzern (Lucerne).

"Sojalade, whose tofu output at mid-summer 1982 was 1000 pounds weekly, is a company launched mainly on the results of an article Ms. Krieger published ('Yesterday Steak, Tomorrow Tofu') in a Swiss Sunday magazine. Krieger then established her shop to meet the expected tofu demand stirred up by her article. Swiss national television ran a 30 minute feature on soybeans this year in which Krieger made a brief demonstration of 5 tofu dishes. 'Since then tofu has been a favorite child of the media,' she says, adding that tofu appeared in the pages of *Blick,* a mass market newspaper."

Photos show: (1) European representatives at the international Soyfoods Come West conference in Seattle, Washington: Gilberto Bianchini, Marina Casazza (Italy); Joanna White (Switzerland); Kym Olsen (England); Wolfgang Furth-Kuby (W. Germany); Tim Ohlund (Sweden); Roger Kayes (England). (2) Ted Nordquist and Tim Ohlund of Aros Sojaprodukter, Sweden's first tofu company.

3985. Taira, Harue; Takagi, Hideo; Kokubun, K.; Koyama, S.; Hoshino, S.; Miyauchi, N. 1983. Kokusan daizu no hinshitsu. II. Futsû hatake to suiden tenkan saibai daizu shijitsu no kagaku seibun sosei oyobi kakô tekisei no sai [Quality of soybean seeds grown in Japan. II. Differences in the chemical composition and suitability for food processing between upland and drained paddy field cultures / crops]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku* (*Report of the National Food Research Institute*) No. 41. p. 14-33. Feb. [33 ref. Jap; eng]

• ***Summary:*** The chemical composition and suitability for making tofu, miso, natto and cooked whole soybeans were investigated with 78 seed samples of 31 varieties which were grown in upland and drained paddy fields at five Agricultural Experiment Stations in 1980.

The qualities tested were chemical composition (moisture, protein, and oil content) and suitability for food processing as measured by weight of 100 seeds, weight increase ratio of soaked seed, germination ratio, solid matter content of soaking water, solid matter extractability, pH, color of soybean milk, weight increase ratio by steaming, moisture content, softness, and color of steamed seeds. Drained paddy field cultivation, as compared with upland cultivation, gave high moisture and heavy weight of 100 seeds, and low *x* color value of soybean milk and steamed soybean seeds.

From the results of contribution ratios, it was shown that the moisture content of soybean seeds was influenced by cultural conditions, whereas the chemical composition of protein and oil, and all the suitabilities for food processing were influenced by variety. Address: 1. National Food Research Inst. (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305; 2. Hokkaido Agric. Exp. Station, Hitsujigaoka, Sapporo, Hokkaido; 3. Tohoku National Agric. Exp. Station, Kariwano, Akita; 4. Hokuriku National Agric. Exp. Station, Joetsu, Niigata; 5. Niigata Agric. Exp. Station, Nagaoka, Niigata; 6. Ehime Agric. Exp. Station, Dogoichiman, Matsuyama, Ehime. All: Japan.

3986. Weingartner, Karl E.; Nelson, A.I.; Erdman, J.W., Jr. 1983. Effects of calcium addition on stability and sensory properties of soy beverage. *J. of Food Science* 48(1):256-57, 263. Jan/Feb. [11 ref]

• ***Summary:*** Pasteurized or thermally processed soy beverages (6% soy solids) were fortified to a comparable level of cow's milk with calcium using mixtures of calcium citrate and tricalcium phosphate to soy beverage. These fortified pasteurized products had acceptable sensory properties. Addition of these calcium salts did not adversely affect protein stability of the beverage. Calcium citrate addition caused a decrease in beverage pH and viscosity. Thermally processed (still retort and agitort) canned beverages containing calcium salts were stable for 6 months when stored at 1º C or at room temperature.

Although the authors made a soy protein beverage containing a heterogeneous suspension of calcium citrate and calcium phosphate, they found it difficult to make a homogeneous and stable soy protein solution containing more than 100 mg/100 gm of free calcium ion. Address: Dep. of Food Science, Univ. of Illinois.

3987. Bisalski, Ed. 1983. More on Madison Foods (Interview). Conducted by William Shurtleff of Soyfoods Center, March 1. 1 p. transcript.

• ***Summary:*** Miller [was it Dr. Miller or his son, Willis?] invited Bisalski to he manager of his soymilk factory. Miller is a fine man but he always wants to be in control. Ed went there in about 1948. Before that he was at Madison. After studying at Madison he went to Peabody for graduate work in nutrition. He worked with Dr. Miller for 6 weeks, then he realized he couldn't work with him any longer. Dr. Miller was always changing schedules. Miller couldn't develop an organisation, didn't stick with budgets, bought equipment he

couldn't pay for.

Note: My observation: few good saints are good businessmen.

Neither Kellogg nor Sutherland were good businessmen. Kellogg was a tyrant, always in control. Sutherland was more amenable. No one could work with Kellogg; it was either obey or be fired. That was with the food businesses. In medicine he commanded the respect of everyone. One of the greatest surgeons in the world. Bisalski is now age 80, a vegetarian. Vegetarian diet really shows up as one ages. He does 40 push ups every morning, plus lots of exercises. Ed was born on 1 Feb. 1903. "The Lord bless you as you prepare this book"–he says. He is now writing a book on nutrition and lifestyle. Doctors were the last to find out about nutrition, diet, and health. Address: 3123 E. Miller Rd., Bancroft, Michigan 48414. Phone: 517-634-5203.

3988. Oka, Tadashi. 1983. [History of the soymilk industry in Japan]. *Toyo Shinpo* (*Soyfoods News*). March 1. [Jap]
• ***Summary:*** In 1957 (Showa 32) one tofu maker in Hachiôji, Tokyo, was making several hundred 180 cc bottles of soymilk and selling it. This tofu maker was a Seventh-day Adventist and it is said that he received Dr. Harry W. Miller's guidance when learning how to make soymilk.

It is said that after visiting this tofu shop, in 1959 Saniku Gakuin [a Seventh-day Adventist school] decided to serve soymilk in their school lunch program.

So Seventh-day Adventists pioneered modern soymilk in Japan.

Around 1962 Nihon Tanpaku Kôgyô [Kogyo, K.K.] ordered Japan's self-defense forces (*jieitai*) to do taste tests of their soymilk. This company was making soymilk powder and selling it, so they were looking for a market for their product. But there were some problems with its heavy smell, so that flavored soymilks (such as orange) were popular, but their plain soymilk was not well accepted.

Mr. Kanji Tsuchiya, who had been working for Kyôdô Nyûgyô (Kyodyo Nyugyo, a dairy milk company) for more than 10 years, got very interested in developing soymilk. In 1965-69 he helped to set up a soymilk plant in Taiwan (capacity 500 liters/hour). But the soymilk made in his plant didn't have its natural beany flavor, so Taiwanese consumers thought it was fake. Dr. Harry W. Miller, who visited his plant at that time, told him that he didn't have to refine soymilk that much for Chinese customers.

Mr. Teisuke Yabuki, of Japan's Ministry of Agriculture (Monbu-sho, Gakumu, kyoku-cho) started soymilk research because of Ryukichi Sekiya, who was interested in soymilk and used lactic acid bacteria to remove the beany flavor when making soymilk. He conducted taste tests and a kindergarten and an elementary school, but the taste was unacceptable and nobody was interested. He asked other people to do this research but didn't get good results. Mr. Yabuki asked if he could do his research and development on soymilk and asked Onihara (Shinnojo?) at Tokyo Agricultural University (*Tokyo Nôgyô Daigaku*) to do the research. At that time Mr. Yabuki was the president of Yakult (Jôtô Yakuruto Hanbai K.K.). He continued Mr. R. Sekiya, spent 9 years and a lot of money, and at last in 1968 he was able to start a small scale soymilk pilot plant. He bottled his soymilk and gave it away to his friends, to test the product and the process; his energy went into his product No. 1.

In Oct. 1969 Mr. Yabuki named his soymilk Luppy and started selling it. This was exactly 10 years after Nihon Saniku Gakuin started to provide soymilk in their own way.

But Mr. Yabuki was the president of Yakult at that time; he was selling about 13,000 bottles per day of Yakult [a small probiotic beverage] and had about 500 workers. He had to build a soymilk plant in Sept. 1968, found Luppy Tanpaku Kagaku Kenkyûsho and chose the package (Tetra Pak Aseptic) for his soymilk. Finally he was asked to choose between Yakult and Luppy. He suffered a lot but finally chose Luppy, resigning as president of Yakult. Mr. Yabuki had been using the Yakult sales and distribution network to sell his soymilk. On 31 Dec. 1972 he severed his relationship with Yakult.

It happened this way. When Mr. Yabuki was talking to Yakult's main office (*honsha*) House Shokuhin Kôgyô K.K. got interested in soymilk and started trying to persuade Mr. Yabuki into working for them. House Shokuhin Kôgyô K.K. made powdered tofu and had been selling it and were interested in soyfoods.

In April 1973 House Luppy (K.K.) was founded. Mr. Yabuki became its president and took responsibility for making the company's soymilk; House Shokuhin took charge of marketing and selling the soymilk.

A large food manufacturing company like House entering the soymilk was expected to have a big effect on expanding that market.

In 1973, soymilk brands in Japan were: (1) Soyalac (canned) made by Saniku Foods. (2) Shinko White made by Shinkô Shôbai. (3) Bonlact made by Wakôdo (Wakodo). (4) Luppy made by House Luppy. Because of expensive packaging and the use of fructose and honey, Luppy was quite a bit more expensive than the others (45 yen per 180 cc at that time).

In Nov. 1974 Tokyo Soymeal started. The technician Kanji Tsuchiya, who was from Kyôdo Nyûgyo, helped to make this soymilk plant. Mr. Tsuchiya's main idea was to make good-tasting soymilk in a clean, modern plant, resembling a dairy milk plant.

A chronology looks like this:

1959–Nihon Saniku Gakuin.

1969 Oct.–Luppy Tanpaku Kagaku Kenkyusho (Yakult / Yakuruto).

1971–Saniku Foods.

1972 April–House Luppy (New company from Luppy Tanpaku Kagaku Kenkyusho). They closed in 1979.

1973 Nov.–Tokyo Soymeal. They closed in Dec. 1978.
1975 July–Asahi Shokuhin.
1976–Kyodo Nyugyo.
1976–Marusan.
1977–Kibun / Kibon.
1981–Mitsubishi. But Mitsubishi had started testing soymilk in about 1972.

3989. *Toyo Shinpo* (*Soyfoods News*). 1983. [Yukijirushi Milk Co., one of Japan's largest milk companies, started selling soymilk on 10 March 1983]. March 1. [Jap]
• ***Summary:*** Their brand name is Yukijirushi Soymilk (*Yukijirushi no Tonyu*). They are selling three flavors: (1) Plain–90 yen retail. (2) Barley Malt Coffee–100 yen retail. (3) Yogurt flavor–100 yen retail.

Each is sold in 250 cc Tetra Brik cartons with 90 days shelf life. From one pack you can get all your vitamin E requirement for one day (a man needs about 10 mg, and each pack contains 15 mg). Yukijirushi is buying raw soymilk material from Nisshin and making it into their soymilk now. A photo shows the front of each of the 3 packages.

3990. Tepper, Robert. 1983. Farm Foods and Ice Bean (Interview). *SoyaScan Notes*. March 2. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Farm Foods presently has 37 distributors nationwide for Ice Bean. More than 10 of those are in California. The "soy powder" in the product is spray dried soymilk. Ice Bean is made at an ice cream plant in Memphis. People from Farm Foods make it there 2 days a week with the help of a plant technician. In 1982 sales of Ice Bean were almost $500,000. There are now 1,200 people living on The Farm, and almost half are children. Farm Foods started as a name under which The Farm sold its surplus produce to local food stores in Tennessee. Farm Foods in now mostly Ice Bean plus some tempeh starter sales. Ice Bean's future is to expand into supermarkets. Address: Summertown, Tennessee.

3991. Welters, Sjon. 1983. Re: Brief history of Stichting Natuurvoeding Amsterdam and Manna Natuurvoeding B.V. (Manna Natural Foods) in the Netherlands. Letter to William Shurtleff at Soyfoods Center, March 2. 2 p. Typed, with signature on letterhead.
• ***Summary:*** "Manna was started in 1971 by Adelbert and Wieke Nelissen with a few hundred guilders in a small garage where some natural food products were sold. One year later they gave it an official status by founding the Natural Foods Foundation Amsterdam [Stichting Natuurvoeding Amsterdam; this Manna started as a foundation, and Manna was their brand]. Their first store was on Rozenstraat in Amsterdam. Two years later a second store was opened and the first sourdough bakery in Holland opened. The name of the bread became 'Manna.' Soon after this a third and fourth store opened in other parts of Amsterdam while at the end of 1975 the distribution of bread, nutbutters, cereals and miso, tamari, shoyu, and seaweeds began all over the Netherlands. In 1976 it became clear that a warehouse should be rented. Meanwhile production grew and more and more stores carried Manna products. Again a new Manna store started. In 1977 the warehouse was moved to a bigger place. Another new store opened its doors. We began making tofu and were the first to do so with organic beans and nigari. Also soymilk and seitan were produced. In 1978 sales went steadily up. In 1979 two new stores were opened.

"Meanwhile the East West Center was founded by Adelbert and Wieke, promoting natural foods as part of a healthy and natural way of living. This was a great help for Manna. Two more stores opened in 1980 and 1981. In the beginning of 1982, Manna suffered from bankruptcy and was started one day later as Manna Natural Foods, a holding company mainly owned by the Foundation 'Manna Natural Foods' [Manna Natuurvoeding B.V.; B.V., pronounced Bay Fay, is an abbreviation for Besloten Vennootschap, which means a private company with limited liability]. A reorganization was necessary but the promotion and sales of quality natural foods went on.

"In 1983 Manna is going steady and probably will cooperate with other natural foods distributors to form one strong network of farmers, producers, distributors and retailers. The purpose will be to eliminate competition and put more energy into publications and promoting by cooking classes, radio and television programs and education.

"Soyfoods played quite an important role in the history of Manna because it was the soyfoods Manna promoted that made it different from the other health and natural food businesses. Because Manna is based on the macrobiotic view of life, miso, tamari, tofu and so forth were an essential part of the diet of the Manna people.

"Instead of the cheese, milk, yogurt (of which consumption is one of the highest in the Netherlands) we advise soyfoods as a healthy alternative. We did no business in dairy foods. Soyfoods are the number one product to introduce in Netherlands. A great deal of sickness in the Netherlands is caused by the overconsumption of dairy foods, meet and eggs (and other animal products). From this point of view Manna is a unique company in Holland, even in the alternative natural foods business. This difference is a reason of conflict with them. Only by eating a diet which is based mainly on vegetable products such as grains, legumes, soyfoods, seaweeds, fruits and nuts, etc., can a healthy and peaceful world be created. No animals can be mistreated and no land wasted, or misused or destroyed." Address: Manna, Meeuwenlaan 70, 1021 JK Amsterdam-N, Netherlands.

3992. Plamil Foods Ltd. 1983. Re: Pioneering soymilk in England. Letter to William Shurtleff at Soyfoods Center,

March 3. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "We were pioneers in England of liquid soya milk in 1965 and at that time the labelling authorities in the country would not permit us to use the definition of 'soya milk' or 'soy milk' and insisted that we used the terminology 'plantmilk'. We have taken this matter up from time to time with the Trading Standards Office (responsible for carrying out the labelling laws) and understand that the matter is at long last being centrally reviewed, so that we hope we may be able before long to use the terminology 'soya milk'.

"We obtain our soya protein isolate from Arkady ADM, Skerton Road, Old Trafford, Manchester M16 ONJ. We shall be obtaining from them shortly some TVP for a Goulash we propose marketing and also some de-fatted soya for a non-dairy chocolate bar we shall be producing i.e. with soya in place of milk." Address: Plamil House, Bowles Well Gardens, Dover Road, Folkestone, Kent, England CT19 6PQ. Phone: Folkestone (0303) 58588.

3993. Tally, Gene. 1983. The Coca-Cola Company and soymilk (Interview). Conducted by William Shurtleff of Soyfoods Center, March 20. 1 p. transcript.
• ***Summary:*** Coca-Cola Co. (CCC) has basically pulled out of the soft drink business, except for Hong Kong, where their Hi-C competes with Vitasoy. They are doing well in Hong Kong but they have no intention of pursuing soymilk in Japan, Brazil, etc.

He worked for CCC for 4 years and traveled worldwide. Nobody took Gene's place when he left CCC. He is back into marketing soft drinks for Sunkist, and is no longer involved with soymilk.

He thinks Morinaga will eventually be No. 1 in soymilk in Japan. Address: Sunkist soft drinks.

3994. **Product Name:** [Sun-Dew Soymilk].
Foreign Name: Sun Dew.
Manufacturer's Name: Dong-A Foods Co. Ltd.
Manufacturer's Address: 450-1 Suksoo-Dong, Anyang City, Kyung Ki-Do, South Korea.
Date of Introduction: 1983. March.
New Product–Documentation: Letter from Kyung Lee, ASA country director, Korea, to William Shurtleff at Soyfoods Center. 1983. Nov. 23. Gives history and production statistics.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 81-83. They produced an estimated 4,067 tonnes in 1983. Soya Bluebook. 1984. p. 79. Interview with Mr. Chung's nephew. 1986. Feb. 9. This product is Korea's second best selling soymilk after Vegemil, a distant second.

Photocopy of Label sent by Anders Lindner. 1989. An illustration on the front panel shows a pastoral house surrounded by trees, with a rainbow and sun overhead. In the lower left corner is written "tonyu inryo" (soymilk beverage) in Japanese characters.

3995. Hankin, Lester; Hanna, J. Gordon. 1983. Quality of tofu and other soy products. *Connecticut Agricultural Experiment Station, Bulletin* No. 810. 4 p. March. [8 ref]
• ***Summary:*** This cooperative study by the Connecticut Agric. Exp. Station and the Connecticut Department of Consumer Protection analyzed the microbial and nutrient content of 17 soy products: 5 tofu products made by New England Soy Dairy (Greenfield, Massachusetts), Firm Organic Tofu, and Tofu Slices (Marinated and Broiled) made by Nasoya Foods (Leominster, MA), Soy-Moo soymilk sold by Health Valley Natural Foods (Montebello, California), Tempeh Burgers made by Soyfoods Unlimited (San Leandro, CA), Tempeh Burger made by Pacific Tempeh (Emeryville, CA), Tofu Lasagna with Sauce marketed by Legume, Inc. (Bloomfield, New Jersey), Tempeh made by Tempeh Works (Cambridge, MA), Genmai Miso distributed by Erewhon, Inc. (Cambridge, MA), Kome Miso distributed by Tree of Life (St. Augustine, Florida), and 3 tofu products made by The Bridge (Middletown, Connecticut). Ingredients of each product are given.

The study showed high levels of bacterial contamination in many of the products, much higher than for dairy products. Only 41% met the coliform bacteria standard of less than 10 per gram of product, 29% met yeast standard of less than 10/gm, 41% met the 10 mold standard of less than 10/gm, and only 12% met the standard for total aerobic bacterial count (less than 25,000/gm). In addition, soyfoods generally contained more fat than claimed.

This report had widespread repercussions for the soyfoods industry, which (in the short term) were negative. The authors had previously published studies on the microbiological quality of numerous dairy products. Address: P.O. Box 1106, New Haven, CT 06504. Phone: 203-789-7272.

3996. Ling, C.A. 1983. Re: Plamil Foods Ltd. Letter to William Shurtleff at Soyfoods Center, March 3–in reply to inquiry. 1 p.
• ***Summary:*** 1. Your company name? Plamil Foods Ltd. (formerly Plantmilk Ltd.).

2. In what year did your company start doing business? 1965.

3. In what year did your company make its first food product using soy as a major ingredient? 1965.

4. What type of product was this first product and what was its brand name? Plamil soya milk (The word "Plamil"–from Plant Milk–was initially registered as a trade mark).

5. What products contains soy does your company now make? Could you send us your present price list and product brochure? Please list below, in order of importance, your three most popular / bestselling soyfoods:

Plamil soya plantmilk in both canned and tetrapak carton versions.

Plamil Rice Pudding with Sultanas.

Plamil Delice [Cream Alternative].

Plamil Carob-ean [a "chocolate" type drink].

Plamil Carob Fruit and Nut Bar

6. If not proprietary information, how many people are employed by your company, and what are your approximate sales of soyfoods?

Seven staff. £100,000 [$139,000].

7. Any additional information, articles, flyers, statistics, etc. that you could send us about your work with soyfoods would be greatly appreciated. Also samples!

Labels herewith

Thank you very much for your help. Address: Managing director, Plamil Foods, England.

3997. Ling, C.A. 1983. Re: Plamil Foods Ltd. Letter to William Shurtleff at Soyfoods Center, March 3. 1 p. Typed, with signature on letterhead.

• ***Summary:*** "You will gather from the attached completed questionnaire that we were the pioneers of a liquid soya milk in this country in 1965 and the enclosed labels and literature will give you further background information.

In answer to your questions... may we say that we obtain our soya protein isolate from Arkady ADM, Skerton Road, Old Trafford, Manchester M16 ONJ. We shall be obtaining from them shortly some TVP for a Goulash we propose marketing and also some de-fatted soya for a non-dairy chocolate bar we shall be producing i.e., with soya in place of milk. Regretfully we cannot say in answer to 55 and 56 whether the British Soya Products Ltd. or Soy Foods Ltd. are still in business as we have no connection with either company;

"We have already stated that we were pioneers in this country of liquid soya milk in 1965 and at that time the labeling authorities in the country would not permit us to use the definition of 'soya milk' or 'soy milk' and insisted that we used the terminology 'plantmilk'. We have taken this matter up from time to time with the Trading Standards Office (responsible for carrying out the labelling laws) and understand that the matter is at long last being centrally reviewed, so that we hope we may be able before long to use the terminology "soya milk". When you re-write your summary in numerical order relating to the UK, perhaps you would be good enough to make mention that we were the pioneers of a liquid soya milk here in 1965. After it being the sole one on the market for a number of years in the country, Itona decided to bring out one approximately five years ago and Granose also entered the market with one a couple of years ago. So we appear to have stimulated their interest!

"Yours faithfully, Plamil Foods Ltd." Address: Managing Director, Plamil Foods, Plamil House, Bowles Well Gardens, Dover Road, Folkestone, Kent CT19 6PQ, England. Phone: Folkestone (0303) 58588.

3998. *Nutrition Reviews.* 1983. Antibody formation to cow's milk protein or soya protein. 41(3):80-82. March. [4 ref]

• ***Summary:*** Antibodies to 5 cow's milk proteins and soya protein were measured in 64 babies at 112 days of age. The subjects were fed, from birth, soya preparations (37 babies), cow's milk preparations (19 babies), or cow's milk-soya preparation combinations. Cow's milk protein antibody formation is not modified by early feeding with soya protein.

3999. Shurtleff, William; Greenslade, David. 1983. Mahatma Gandhi: Soyfoods pioneer in India. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549 USA. 2 p. March. Published in part in Vegetarian Times, June 1983, p. 4. Unpublished manuscript. [5 ref]

• ***Summary:*** Although it is well known that Mahatma Gandhi revitalized the vegetarian movement in India, it is less well known that he was one of India's first pioneers to introduce soybeans and soyfoods. His work during the 1930s still serves as an inspiration to many Indians, who are today transforming India into one of the world's leading soybean growing and soyfoods using countries.

Gandhi's earliest known mention of soybeans or soyfoods was in the July 1935 issue of *Harijan,* his popular magazine for village uplift. There he referred to a book by Dr. H.V. Tilak called *Balanced Diets.* Dr. Tilak's book was based in an orphanage of over a hundred children, whose diet was made richer in protein and more balanced by the addition of soybeans.

In September 1935, Gandhi reprinted a report on soybeans by the Bombay Health Association. This article listed the nutritional and medicinal values of soybeans and also explained how to make soymilk, soy flour, and soy coffee. The October issue of *Harijan* reported that the kitchens at Gandhi's ashram has introduced experimental rations of soybeans into the communal diet. The same article compared soybeans with eggs, wheat, and ghee. Since the more economical soybeans were rich in protein and oil, Gandhi later ordered reductions in the portions of wheat and ghee and suggested that all beans, other than soy, be omitted altogether.

November's *Harijan* reported that soybeans were being boiled, steamed, and used in soups. The ration of ghee had been stopped and soybean portions increased. Gandhi pointed out that everyone seemed to thrive on the new diet. in the same issue, Gandhi reprinted a leaflet by the Baroda State Food Office describing soybean crop cultivation. By December 1935, *Harijan* reports that soybeans had become a substantial part of the diet at Gandhi's ashram.

The December 1935 and January 1936 issues printed a dozen soyfood recipes, including the techniques for making, "TO-FU," "shoyu-sauce," and "soya bean sprouts," Gandhi said he was particularly fond of the sprouts.

By September 1936 *Harijan* was recommending an exhaustive book on soybeans written by F.S. Kale, an

Englishman in charge of the Baroda State Food Service Department. Entitled, *The Soya Bean: Its Value in Dietetics; Cultivation and Uses,* this was the first book on soyfoods published in India. *Harijan* also carried a report on soybean cultivation experiments in the USA and the Soviet Union in the same issue.

By 1936, after careful consideration of economic, nutritional and medicinal evidence, Gandhi wholeheartedly favored the cultivation and widespread use of soybean in India and his magazine ran lists of prices and of the places where soybeans could be obtained.

We lose track of Gandhi's interest in soyfoods in late 1936. However in 1949 his ideas were republished in *Diet and Diet Reform,* a book which sold thousands of copies. The fact that Gandhi took such an interest in soybeans and soyfoods is a major source of encouragement to the many Indians working in this burgeoning field today. In 1982 India produced 500,000 metric tons of soybeans, making it the world's ninth largest producer, and soyfoods (such as TVP, soymilk, and soy oil) were catching on rapidly in this country where an estimated 50 percent of the population is vegetarian, and another 30 percent eats only a very small amount of meat. Address: Lafayette, California.

4000. *Soyanews* (*Sri Lanka*). 1983. Raja Rata Food Grain introduces DSM [Dried Soya Milk]. 5(7):1, 3. March.
• ***Summary:*** Raja Rata Food Grain Processing Company introduced its main product, Dried Soya Milk powder, at a soya cookery exhibition / demonstration held last month at the YWCA, Rotunda Gardens, Colombo."

This event was also held to say farewell to Mrs. Kai Kim who, in her spare time and working independently, has helped to make soyafoods popular among Sri Lankans. Mrs. Kim is the wife of the Resident Representative of the UNDP, Mr. Y.Y. Kim.

"Mrs. Kim brought her Korean knowledge and experience in helping to introduce soyafoods to the public. She was instrumental in introducing soya milk to the Colombo Hospital and Prisons, for use in the form of a slurry, as a substitute for coconut milk." The Chairman of Raja Rata, Mr. R.S. Wijesekara, "thanked Mrs. Kim for her tireless and dedicated services to helping to add a highly nutritive food to the diet of the Sri Lankans."

A large photo shows Mrs. Gai Kim, Mr. R.S. Wijesekara, and others at the event.

Note: Dried Soya Milk powder will be on sale by about the middle of this year (p. 3).

4001. *Soyanews* (*Sri Lanka*). 1983. Prisons expand use of soya. 5(7):7-8. March.
• ***Summary:*** "After the new machine [disintegrator / grinder] was installed in Welikada Prison last September, there has been a further saving of nearly Rs. 65,000 during a period of three months from September 1982 to December 1982."

"In addition, the work camps and open prisons have also cultivated soya this maha [rainy season]."

"The Department of Prisons which has shown that large savings are possible by using soya in institutional feeding has now branched into the production of other soyafoods like soya fortified bread and yogurt.

"Exhibition: Independence day celebrations held in Kandy this year featured an Agricultural and Technical Exhibition..." At the soyafoods stall, ice cream sold for Rs. 2/-, soyamilk for Rs. 1/- and 100 grams of fried tempeh was 1/-.

"In the eight days that the exhibition ran many more thousands came to know and understand the immense potential of the bean that is at present the cheapest pulse in the market" where it retails for Rs. 4.00 to 4.50 per 500 gm.

A photo shows a field of soyabeans at the open prison camp, Anuradhapura.

4002. *Toyo Shinpo* (*Soyfoods News*). 1983. [How much will Japan's soymilk market expand]. April 1. [Jap]

4003. Palm, Göran. 1983. Tofu ersaetter allt fran koett till mjoelk [Tofu, a substitute for everything from meat to milk]. *Uppsala Nya Tidning* (*Sweden*). April 6. p. 10. [Swe] Address: Sweden.

4004. Rose, Richard. 1983. Re: The great soymilk wars and strict labeling regulations. Letter to William Shurtleff at Soyfoods Center, April 18. 2 p. Typed, with signature on letterhead (photocopy).
• ***Summary:*** "Dear Bill: Hope all is well with you and Akiko. I see you will be at the Whole Life Expo. Please stop by our booth #158. We'll have a few very new products there.

"At some point in May I would like to stop by and show you what our expansion plans are. I think you will be interested. We've put together a financing proposal and business / marketing plan and projections We have gotten very positive rejections, which is to say they thought the presentation and plan were well done but they had no capital, were too far away, it was too small... We are currently in discussions with a few others tho. Looks promising. It took about two years to prepare and research the plan.

"The latest in the great soymilk wars is that the state food & ag dept. has told us to stop using the word soymilk. After researching it this is what it boils down to: in 1982 laws were passed relative to non-dairy products in California. It defines non-dairy frozen dessert and a few others, as well as banning the sale of a soymilk with other than a trade or suggestive name. Even the generic or common name *cannot* be listed on the label. A first in food packaging laws. Thus we must call it Vitasoy, Fresh&Light (the one we chose), etc. but we can't also call it soybean beverage, etc. A company challenged it on the grounds that it was in conflict with

federal laws requiring the common name, but the company lost in court. The law also states that to even make "products resembling milk products (PRMP)," the definition of which is provided and could be construed to include tofu, soymilk, salads, desserts, etc., the plant must be a registered PRMP plant and be regulated by the state Food and Ag and each PRMP product must be registered with them at a cost of S25/ year. The plant certification costs $1OO/year. The law also states that the standards for the product that your product resembles are applicable to your PRMP, i.e., milk standards for soymilk, cheese standards for tofu etc.

"To the best of my knowledge no one has had the Food and Ag come down hard on them in the soy industry, but that possibility certainly exists. We decided to be as low-profile as possible and change our labels, copies of which I'll send to you when we receive them. We feel it opens up new possibilities for the re-positioning and marketing of soymilk. We also intend to become a PRMP plant as very little work is needed to bring our facility to PRMP code, which is essentially dairy code.

"What is desperately needed in California are new laws written by the soy industry reflecting the unique needs and products we have. This must be done right away before other states follow suit, our industry gets big enough to alarm the dairy lobby, and while we are still a low profile industry. The soy industry is in need of standards relating to purity, identity, additives, labeling, etc. and if we don't initiate them, a bureaucrat will.

"Also re: sufu [fermented tofu]. State law states that no food may have more than ½ of 1 percent alcohol by volume in it, otherwise it is an alcoholic product. This would seem to indicate that sufu is not legal to sell in California.

"An over-zealous young health officer in Sonoma County is trying to outlaw the self-service sale of bulk tofu. He is citing the law that says "potentially hazardous foods may not be sold in bulk". The store personnel must dispense the tofu. He is trying to enforce this in Sonoma County only, and meeting great resistance. Dr. York sent a letter stating that the sale of properly refrigerated bulk tofu presents no public health hazard. It is ironic because the retailers in this county are very careful about how they handle tofu and other foods, but in Marin tofu and dairy sandwiches are displayed for hours at room temperature, the tofu is presented in a very sloppy and hap-hazard fashion (bulk that is), with no care taken with sanitation, etc.

"I hope to see you at the Whole Life Expo. Take care. Dik Rose"

"P.S. We followed your suggestion and dropped the Sonoma Natural Foods. We are now officially known as Brightsong Light Foods. Our P.O. Box has been changed from 603 to 2536, same town and zip." Address: Brightsong Light Foods, P.O. Box 603, Petaluma, California 94953. Phone: 707-778-8638.

4005. Rose, Richard. 1983. Re: Enclosing new soymilk label. Letter to William Shurtleff at Soyfoods Center, April 26. 1 p. Typed, with signature on letterhead (photocopy).
• ***Summary:*** "Dear Bill: Enclosed is our new plain soymilk label, conforming to Food and Ag laws.

"Another point I forgot to mention is that the law forbids depiction of agricultural or dairy activities by symbol or word on the labels. So tradenames such as Soy Juice, Soy Moo or NuMu are not acceptable in California. Also if one adds fat or oil to the soymilk it becomes an imitation milk instead of a product resembling milk product, and is subject to more stringent regulations.

"We are in the process of re-doing our labels, and cleaning them up.

"Will send you new ones.

"See you Saturday.

"Yours truly, Dik." Address: Brightsong Light Foods, P.O. Box 603, Petaluma, California 94953. Phone: 707-778-8638.

4006. Akinyele, Isaac Olaolu; Harshbarger, K.E. 1983. Performance of young calves fed soybean protein replacers. *J. of Dairy Science* 66(4):825-32. April. [20 ref]
• ***Summary:*** The authors evaluated soybean protein in calf replacers in two 12-week trials. In trial 1, twelve 5-day-old Holstein calves were given 3 milk replacers: milk protein, soy protein concentrate, and full-fat soy flour. The diets contained 26% crude protein. In trial 2, 18 calves were used and the diet contained 30% crude protein. Milk protein had the highest apparent digestibility and full fat soy flour had the lowest. Address: Dep. of Dairy Science, Univ. of Illinois, Urbana, Illinois 61801.

4007. Chien, J.T.; Snyder, H.E. 1983. Detection and control of soymilk astringency. *J. of Food Science* 48(2):438-40. March/April. [9 ref]
Address: 1. Formerly Univ. of Arkansas, now with Purdue Univ.; 2. Dep. of Food Science, Univ. of Arkansas, Fayetteville, AR 72701.

4008. Kitulwate Gardens. 1983. Products of soya (Ad). *Soyanews* (*Sri Lanka*) 5(8):7. April.
• ***Summary:*** "The low cost, high quality protein–Now available for supermarkets, hotels, hospitals, restaurants, etc.

"(1) Soya bean curd–For superb curries and various exotic dishes–substitute for meat. Price per pound Rs. 11/-.

"(2) Soya paste [apparently ground, soaked soyabeans]–A highly nutritious, economical and convenient substitute for coconut milk. Price per pound Rs. 10/-.

"(3) Soya residue [okara]–(From bean curd preparation) for deliciously light rotis, pitta, etc. Price per pound Rs. 2/-.

"All the above prepared very hygienically. Orders will be undertaken now." A map gives directions to Kitulwatte Gardens. Address: 128 Kitulwatte Rd., Off Elwitigala,

Mawatha, Colombo 8, Sri Lanka. Phone: 597759 or 596992.

4009. O'Brien, Jane. 1983. The magic of tofu and other soybean products. Wellingborough, England: Thorsons Publishers Ltd. 128 p. April. Illust. by Niall Morris and Clive Birch. Index. 20 cm. [6 ref]
• ***Summary:*** Written in large letters at the top of the cover: "The Best of Vegetarian Cooking." Contents. Foreword. Introduction (incl. tempeh, soy flour, miso, tamari). 1. Making your own tofu. 2. A word about the recipes. 3. Recipes. 4. Soymilk. 5. Other soybean products (Okara, gô, yuba, soynuts). 6. Soybeans as beans. 7. Food value of soyfoods. 8. History of the soybean. Further reading.

Jane was a soyfoods pioneer in Ireland. In the Introduction (p. 18-21) Jane explains that "I was frequently ill as a child, and on several occasions I was very near to death's door." Yet as she got older, she grew to enjoy gourmet food and gourmet cooking. The man who became her husband gave her the first book she read on natural foods. "As soon as I became aware that food contributed to the maintenance or destruction of health, I began a lifetime of experimentation. I changed from refined foods to whole foods, gave up eating red meat, studied macrobiotics, so much so that over ten years ago I went to Boston [Massachusetts] with two children under the age of four, and pregnant with a third, to study the subject, and I continued from there to develop my own system." Her husband, an actor, is now quite happy with her cooking, after "an austerity programme involving giving up meat, cutting down on and nearly eliminating dairy food, getting rid of sugar."

"I have been working on creating meals that are increasingly more healthful for over seventeen years now [since 1966], and I find it a fascinating study. It is wonderful to witness the vast improvement in my own health..." Her son Quinn is now 15 years old. Her religion is Baha'i. "In furthering my interest in natural foods, I have given cooking classes in Dublin [Ireland] for over ten years [since 1973], not steadily, but from time to time when there were people interested. In the early days of my cooking classes, I also imported the necessary foods: whole grains, beans, miso and natural soy sauce from suppliers in England as they were not available in shops here in Dublin. There was no other way of getting these foods for my family. During the cooking classes I sold much of the stock... That led to the beginning of Ireland's first natural food store which I started with my husband's patient assistance, but which we left to someone else for many reasons."

"Several years ago I began to use tofu and soyfoods and to include them in the cooking classes. Because I was so interested in learning more about them, I attended the soyfoods conference held in Illinois in 1980 and the one in Colorado in 1981... I think that I became so excited about tofu, soymilk and soyfoods really because I had long been a lover of puddings, custard, and creamy toppings, often made with dairy foods. However, because I needed to cut down on my use of dairy foods, I had nearly eliminated all of those things from my diet. When I discovered that it was possible, not only to make tofu and soymilk successfully in my own kitchen, but to use it for very accurate substitutions of my childhood favorites which were far more healthful than the things I had eaten as a child, I was thrilled."

Note: On 9 November 1979 Mrs. Jane M. O'Brien (7 Woodside Drive, Rathfarnham, Dublin 14, Ireland), ordered books on tofu, tofu & soymilk production, miso, and tempeh from Shurtleff & Aoyagi at Soyfoods Center in California.

Talk with Jane O'Brien. 1980. July 13. She developed the many recipes in this book using soybeans that she imported from England to Ireland, starting in about 1980.

Letter from Jane O'Brien. 1983. May 28. This book was published in April 1983. "It is presently on sale in England but not yet here in Ireland." Address: 7 Woodside Dr., Rathfarnham, Dublin 14, Ireland.

4010. Saio, Kyoko. 1983. Furukute atarashii shokuhin, tônyû [Old and new food, soymilk]. *Shoku no Kagaku* (*Food Science Journal*) No. 71. p. 58-71. April. [12 ref. Jap] Address: National Food Research Inst. (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan: Tanpakushitsu Kenkyu Shitsu-cho.

4011. *Shokuhin Nippon* (*Japanese Foods*). 1983. [Special issue on soymilk in Japan]. 15(5):1-104. April. [Jap]
• ***Summary:*** On the cover is a photo of Kibun soymilk in a Tetra Brik package. Address: Japan.

4012. *Soyanews* (*Sri Lanka*). 1983. Book review: The art of selling soyafoods. 5(8):4-5, 8. April.
• ***Summary:*** A full page, positive review (by. S. Pathiravitana) of *Soyfoods Labels, Posters, and Other Graphics* (1982), compiled by Shurtleff and Aoyagi. On page 4 is a review of the book plus a photo of "Cheeseless cheesecake with peach glaze." On page 5 are black and white reproductions of five labels.

4013. *Soybean Digest.* 1983. Move over Cola (Letter to the editor). April. p. 4
• ***Summary:*** "On page 80 of the February 1983 issue of Soybean Digest, you reported the popularity of a soybean drink among the Japanese. As soybean producers, we were very interested and would like more information on this beverage.

"E.S. Reed, Elizabeth City, North Carolina. "'Soymilk is an inexpensive and easy way for protein-deficient people to upgrade their diets,' says Steve Chen, ASA director of Taiwan. That 's a major reason why the protein-rich drink is so popular in Eastern countries.

"Making soymilk is basically a three-step process: soaking soybeans and grinding them in water and straining

the mixture. The process is an old one-discovered by the Chinese about 2000 years ago. Later modifications have added new flavors: vanilla, strawberry, peanut, chocolate, milk, coffee and apple.

"Japanese soymilk industry sources predict that by 1985 the soymilk industry in Japan will use 3.6 million bushels of soybeans. So the popular drink also provides a good market for US. soybean exports.–Ed."

Note: ASA (American Soybean Association) is starting to get interested in soyfoods! But only overseas, so far.

4014. *Soyfoods Monthly* (*Colrain, Massachusetts*). 1983. Bureaucratic flak on terminology. 3(4):2. April.
• ***Summary:*** "According to Wildwood Natural Foods, Fair fax, CA, the California Food & Agriculture Dept. has told them to desist from labelling their soy beverage 'soymilk' unless they wish to be inspected as a dairy or else register as an imitation milk. The California State Health Dept. has instructed them to desist terming a product 'tempeh burger' because of labelling confusion with hamburgers. The company is planning to contest both lings."

4015. Sunset international vegetarian cook book. 1983. Menlo Park, California: Lane Publishing Co. 96 p. April. Illust. 28 cm. Retitled Vegetarian Favorites in 1987.
• ***Summary:*** This book is by the editors of Sunset books and Sunset magazine; the supervising editor is Maureen Williams Zimmerman. A table titled "Choosing nutritiously" (p. 5) shows that soybeans are a good source of thiamin (B-1), niacin, vitamin B-6, folic acid, calcium, and iron. Another table titled "Protein partnerships" (p. 7) states that soybeans and soyfoods (soybean curd/tofu, soy flour, soy milk, and tempeh), like dairy products and eggs, have no limiting amino acid. Soy-related recipes include: Miso grilled mushrooms (p. 14; Japan). Golden tofu cauliflower soup (p. 34; Thailand). Greens & tofu in peanut sauce (p. 48; Thailand). Stir-fried tofu & vegetables (p. 50; Vietnam). Whole wheat & soy pasta (p. 52). Mandarin pancakes with spicy tofu filling (p. 70; China). Address: Menlo Park. Phone: 415-321-3600.

4016. Dreyer, Lawrence. 1983. Re: Work with soya in Austria. Letter to William Shurtleff at Soyfoods Center, May 1. 3 p. Handwritten, with signature. [Eng]
• ***Summary:*** "Herr Anton Wolf was here yesterday and told me that only 100 hectares of soybeans were planted in Austria in 1982. The yield was about 2,500 kg/ha."

Dreyer's main work is as the architect of the additions they are making to their facilities in Wiener Neustadt. At present they have a small shop and restaurant. There will be a new area for producing tofu on a small scale, gluten, mochi, bread. "At present we produce a limited quantity of tofu with equipment bought in Japan... A group of people loosely related to us uses a small centrifuge to make soymilk. This group has also recently started making tempeh... I have given copies of your chapter on "History of Soya in Austria" to Anton Wolf." Address: Weg der Natur, Austria.

4017. *Toyo Shinpo* (*Soyfoods News*). 1983. [Kanazawa Tofu Association has developed a soymilk sold in gusseted plastic pouches]. May 1. [Jap]
• ***Summary:*** It is sold in tofu shops and at kiosks in or near train stations. A photo shows the front of the package.

4018. Giles, Wesley R. 1983. IPT, Vitasoy, and Shurtleff's trip to China as a consultant for STS (Interview). Conducted by William Shurtleff of Soyfoods Center, May 2. 3 p. transcript. Handwritten.
• ***Summary:*** IPT is an engineering and contracting company. They are specialists in designing and building manufacturing plants, and installing the equipment–especially plants that make dairy-type products. Vitasoy is talking with IPT about building a soymilk plant for them in America. IPT and STS could work as either competitors or cooperators. STS could be the major contractor and hire IPT.

There is a Kibun-Alfa Laval joint venture to sell soymilk plants worldwide.

STS was established by DTD and Dong Bang in Korea. Anders Lindner does not own any of it; he is just an employee of DTD.

DTD would like William Shurtleff to serve as a consultant for STS in China. He would go there with a team of two other STS men for 17 days and make presentations in numerous cities to groups and companies interested in starting soymilk plants. The rate would be about $6,000 plus expenses. Address: President, Intereps, P.O. Box 966, Orinda, California 94563-0956. Phone: (415) 253-1065.

4019. Loh, Eleanor. 1983. Re: Production of soya bean milk in Tetra Pak cartons in seven Asian countries, 1978-1982. Letter to Anders Lindner at STS in Singapore, May 9–in reply to inquiry. 1 p. Typed.
• ***Summary:*** These statistics refer only to the amount of soymilk (in million packages) packed in Tetra Pak Aseptic cartons.

(1) Taiwan increased from 15.9 in 1978 to 79.2 in 1982

(2) Hong Kong increased from 28.1 in 1978 to 55.0 in 1982.

(3) Malaysia increased from 28.1 in 1978 to 44.3 in 1982.

(4) Korea increased from 5.2 in 1979 to 33.0 in 1982.

(5) Thailand increased from 13.9 in 1981 to 16.7 in 1982.

(6) Singapore increased from 1.9 in 1978 to 9.6 in 1982.

(7) Philippines was 0.7 in 1982.

The total increased from 62.9 (15.7 million liters) in 1978 to a peak of 268.4 (67.2 million liters) in 1981, decreasing to 238.2 (59.6 million liters) in 1983. Address:

Brik Pak Inc., Singapore. Phone: 662266.

4020. Rose, Richard. 1983. Re: Enclosing redesigned soymilk label. Letter to William Shurtleff at Soyfoods Center, May 16. 1 p. Typed, with signature on letterhead (photocopy).
• ***Summary:*** "Dear Bill: Enclosed are our new, redesigned labels, including the now-legal soymilks. I stopped by your lecture at the Whole Life Expo, the tail end that is. Did you get a chance to try our Chocolate Mousse? It was the hit of the show. Its introduction has been very successful so far. I would like to come by your house soon and show you our plans. They are very exciting and I think you'd be interested in seeing it. If that is possible please let me know." Address: Brightsong Light Foods, P.O. Box 603, Petaluma, California 94953. Phone: 707-778-8638.

4021. *Yomiuri Shinbun* (*Yomiuri Daily News, Tokyo*). 1983. Niowanai nattô [Natto that doesn't smell: Tempeh]. May 20. Evening ed. p. 14. [Jap]
• ***Summary:*** Tempeh is very different from natto: it is fermented with a mold, whereas natto is fermented with a bacterium. Natto is indigenous to Japan, whereas tempeh is indigenous to Java, and neither is widely consumed in the country of the other. Yet both are fermented soyfoods.

Natto is growing more popular as a breakfast food in Japan–related to the growing interest in natural foods, vegetable protein, and riding the same wave of popularity as soymilk. Young people are eating less rice. In 1982 each family in Japan spent ¥1,531 on natto, up 12% from the previous year. Dr. Teruo Ohta says one reason Japanese have the greatest longevity is because they eat a lot of plant protein instead of animal protein. Representative of these plant protein foods are soyfoods. But miso and shoyu contain salt, and tofu and soymilk contain no dietary fiber. Natto (like tempeh) is doubly good in that it contains fiber but no salt.

But the rice Japanese usually eat with natto is steadily decreasing; will this eventually cause a decrease in natto consumption as well? Maybe only those older than middle age are the main natto consumers.

This article uses the term "tempeh natto" three times. Note: We think this is unfortunate and confusing. Last year Dr. Ohta visited natto plants in Indonesia. Medical research shows natto is good for health.

Did natto originate in China? Was that Chinese natto salted or not? Was it disseminated by Buddhist monks to Japan and Southeast Asia?

Next month the Japanese National Natto Association will send a delegation to Java (Indonesia) to study tempeh.

4022. *Toyo Shinpo* (*Soyfoods News*). 1983. [Tamura Yakuhin has created a new company, Tamura Kassei K.K. which is selling soymilk in a new type of Pure Pak carton]. May 21. [Jap]
• ***Summary:*** This carton is a five-layer laminate: Polyethylene, paper, polyethylene, aluminum, and polyethylene. The soymilk stays fresh at room temperature for 60 days. The brand is Tamura Tonyu, sold in 3 flavors: 1. Plain Soymilk (*Jun Tonyu*) in 200 and 300 ml. 2. Dairylike Soymilk (*Chosei Tonyu*) in 200 and 300 ml. 3. Soymilk Soup (*Tonyu Suupu*) in 80 and 300 ml.

The soymilk, made by a new natural method, has a good flavor.

4023. Hooten, Dan. 1983. Dawson Mills closing down their flour and grit operations. Estimate of soy protein isolate production capacities (Interview). *SoyaScan Notes.* May 24. Conducted by Walter J. Wolf of NRRC, Peoria, Illinois.
• ***Summary:*** Dawson Mills [as of June 1] will discontinue production of soy flour, soy grits, and textured soy flour, because the products are not selling well; the factory is located too far from the markets. They formerly shipped soy flour to the West Coast for PL-480 programs, but that market has dried up.

His estimate of total U.S. isolate production capacity (not including Kraft) is 104 to 110 million lb/year, as follows: ADM 20-25. GPC 14-15. Ralston Purina 70 as follows: Memphis, Tennessee 20; Pryor, Oklahoma 30; Louisville, Kentucky 20.

Wayne Pruitt of Griffith Laboratories (5 April 1983) does not know whether Land O'Lakes will continue production of their calf starter material (intermediate in properties between a flour and a concentrate). Address: Industrial Sales, Land O'Lakes, Eau Clair, Wisconsin.

4024. MacKay, I.B. (Mrs.). 1983. Re: History of Soya Foods Ltd. Letter to William Shurtleff at Soyfoods Center, May 24. 3 p. Typed, with signature on letterhead. Plus many photocopies of early ads. [5 ref]
• ***Summary:*** "Unfortunately, we could not find any evidence that Dr. Chas. E. Fearn was in any way connected with our company... Soya Foods Ltd. was formed on 6 Feb. 1933. The partners in the business at the time were the Ferree brothers, who were of Dutch extraction. Prior to that date, there are newspaper cuttings referring to 1929 and 1930 and mentioning that 'a company was formed for the production of Dr. Berczeller's soya flour in this country'–The Soya Flour Manufacturing Co. Ltd. of 7 Mincing Lane, London E.C.3–and 'a large and well-equipped factory has been erected where large scale production can be effected.' Thus, Dr. Berczeller's Soyolk, soya flour, was hailed as "The Great New National Food" and The Soya Flour Manufacturing Co. Ltd. was the first in this country to introduce soya and its benefits to the nation... In 1930 a book was published, by C.J. Ferree (later one of the Directors of Soya Foods Ltd.), 'The Soya Bean and the New Soya Flour.'

"In 1933, The Soya Flour Manufacturing Co. Ltd.

changed its name to Soya Foods Ltd... In September 1941 it moved to new offices at Boreham Holt, Elstree, with the mills at Rickmansworth, Hertfordshire. The mill was a small plant and during the war years beans were rationed and all supplies came from the then Oil and Fats Division of the Ministry of Foods. This control still existed up to 1952.

"Mr. J.C. Ferree was the Chairman and Managing Director of Soya Foods Ltd. for 19 years. He left the company in March 1952 to work on other projects. He was, in his Soya Foods days, a founder of the Soya Overseas Development Co. which was composed of practically all the soya manufacturers in Britain. He was also the originator of 'Soylac' and an author of many books and articles on the soya bean.

"Soya Foods Ltd. offered products like 'Soyolk'–the pioneer edible soya flour for all foods, 'Diasoy'–the special enzyme-active soya flour for bread and, 'Soypro'–the fat reduced soya flour... 'Soylac' was another product and it was a milk like powder for use in cakes and confectionery. 'Proton' appeared in advertising in 1946 as processed powder for foodstuffs, ice cream, etc. 'Soylac' was last produced in 1952.

"During the war soya became one of the most important foodstuffs, being used widely in bread and sausages as a substitute for meat. Soya also gained vast military importance both as a foodstuff... and as a component for explosives and other war chemicals which were manufactured from it...

"Soya Foods Ltd. was purchased by Spillers Ltd. in 1945 (and is still part of the Group) and moved to its new address at 40 St. Mary Axe, London EC3, with manufacturing works still at Rickmansworth, Herts.

"Products were being added to the range. 'Vitasoy'–mentioned in the advertising in 1948 was a dehydrated, pasteurised and vitaminised infant and vegetarian food. 'Colmiks'–ice cream powder, appeared in 1949, 'Soyzipan'–cake topping and ingredient for making macaroons etc., in 1950. Other products were 'Hot-Mix'–complete ice cream powder.

"In the 1950s, Soya Foods Ltd. expanded further with a new plant in Cardiff. Extracted soya bean meal, defatted soya flour and de-gummed soya bean oil were added to its products.

"Prior to 1952 the Board of Directors were J. Twomney, J.C. Ferree, Mr. Laycock and David James. Mr. Laycock was the Technical Director and assisted in the erection of the Cardiff plant.

"In January, 1956 the plant was relocated to Bermondsey, S.E. London. In 1968 the factory and soya mill were rebuilt and this modernised factory produces the current wide range of soya flours and food ingredients.

"Today, Soya Foods Ltd. is a company within the Dalgety-Spillers Group, and closely linked with Spillers Milling Ltd., with vast research and development back-up at the Group's laboratories in Cambridge.

"The Head Office is at New Malden House, 1 Blagdon Road, New Malden, Surrey, where the Directors and Sales Administration are situated. Production is located in Bermondsey and local depots are strategically placed around the UK to back up the National sales team.

"The Company specializes in the manufacture and sale of soya flours and baking improvers and believes in operating with a strong technical bias, and the strength and benefit of this can be seen in the quality and sophistication of the products. A major contributor to this is the RTC (The Research and Technology Centre), where all research and development is centered. The RTC occupies a three-acre site in Cambridge and employs 180 people with professional qualifications and experience in a wide range of skills and disciplines.

"Today, Soya Foods Ltd. sells sophisticated bread improvers which fulfill the requirements of the modern processes used in bread and morning goods production. The product range is vast, and it includes all purpose improvers, specialist improvers and now bakery concentrates, together with ingredients for flour confectionery.

"Ongoing product development ensures new ingredients being developed all the time. Soya Foods Ltd. now sells specialized ingredients, including Soyolk, to many parts of the food manufacturing industry."

Following this information are 6 pages of photocopies of early articles and advertisements (starting in Feb. 1929) about the Company. Address: Business Development Asst., Soya Foods Ltd., New Malden House, 1 Blagdon Road, New Malden, Surry KT3 4TB, England. Phone: 01-949-6100.

4025. Shurtleff, William. 1983. Fly from California to Hong Kong: First impressions, May 26 (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 1. Unpublished manuscript. • ***Summary:*** May 24. I leave by jet for China, from Lafayette, California, my trip paid for by Danish Turnkey Dairies (DTD/STS).

May 25. In Hong Kong with jet lag. Stay at Sheraton Kowloon, meet John Davies and Asger Somer Hansen of DTD.

Singapore soymilk regulations: The protein content must be greater than 2% to label / call it "soymilk"; if less, it must be labeled "soy drink."

When soymilk in a Tetra Pak carton stands for 6-8 months, there is: (1) Physical oil separation. (2) Graying of the color. (3) Some of the enzymes, which are not inactivated by UHT (Ultra-High Temperature) processing, can coagulate the soy protein.

I buy and taste Coca-Cola's soymilk in Hong Kong. The flavor is mediocre, a little watery and cereal-like, but not bad. A 250 ml carton retails for $HK 1.5, about US$0.22.

Ma Po Doufu (Japanese: Mabo-dofu) is a popular Chinese dish from Sichuan (W.-G. Szechuan) province. It is of fairly recent origin.

Note: It is a combination of tofu (bean curd) set in a spicy chili- and bean-based sauce, typically a thin, oily, and bright red suspension, and often cooked with minced meat, usually pork or beef. The character "ma" stands for "mazi," which refers to a person whose face is disfigured by pockmarks. "Po" translates as "old woman." Thus "Ma Po" is an old woman whose face is pockmarked. According to a Chinese legend, the pock-marked old woman lived in the Chinese city of Chengdu (Chengtu)–the capital of Sichuan province in southwest China.

Due to her condition, her home was placed on the outskirts of the city. By coincidence, it was near a road where traders often passed. Although the rich merchants could afford to stay within the numerous inns of the prosperous city while waiting for their goods to sell, poor farmers would stay in cheaper inns scattered along the sides of roads on the outskirts of the ancient city.

According to *Mrs. Chiang's Szechwan Cookbook:* "Eugene Wu, the Librarian of the Harvard Yenching Library, grew up in Chengtu and claims that as a schoolboy he used to eat Pock-Marked Ma's Bean Curd or mapo doufu, at a restaurant run by the original Pock-Marked Ma herself. You ordered by weight, so many grams of bean curd and so many grams of meat, and your serving would be weighed out and cooked as you watched. It arrived at the table fresh, fragrant, and so spicy hot, or la, that it actually caused sweat to break out."

Nowadays there are several Mapo Dofu restaurants in Chengdu. (Source: Wikipedia, at Mapo doufu, retrieved 26 June 2011).

"Dim Sum" literally means "dot heart." Lo Han Tsai ("Monk's Food") is a vegetarian recipe served at Chinese New Year. When tofu is a prominent ingredient it is called "Lo Han Tsai Doufu."

There are two words for deep-fried tofu: (1) *You doufu* (literally "Oil doufu"). (2) *Zha doufu* ("Deep-Fried Doufu"). The first has bigger holes in it.

Note: This is the earliest English-language document seen (April 2013) that contains the term *You doufu.*

Since the 1930s, affluent city people have consumed cow's milk in China.

The soymilk label of Dong Bang (from Korea) is similar to that of Kibun from Japan. An illustration (line drawing) shows the Dong Bang label. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4026. Shurtleff, William. 1983. Talk with Louis Chiang about tofu plants he sold in China (Hong Kong, May 27) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 2-3. Unpublished manuscript.

• ***Summary:*** Tofu plants he sold in China. He has sold two lines to Guangdong province, the province in which Guangzhou (formerly Canton) is located. One line can process 500 kg/hour of dry soybeans. Shurtleff asks: Why do they not go low-tech? Answer: Because they want to modernize; they want everything the best and the newest. Tofu is a monopoly in China; only one organization handles it. Louis feels that the large plant is rational. The key is to retrain those who were not educated during the cultural revolution,

Advice: Preparing a catalog and advertizing letters is a waste of time. Best to find a decision maker directly, via the right channel. You need personal connections, built up gradually, which takes time. Finding the right man may take 3-6 months. They must know your background and purpose. Many Westerners get frustrated if they have no orders after 1-2 years; they must be patient. He also feels it is important that old plants should be demolished.

The proper introduction is very important. Beware of making outside contacts. Stick with your invited group. Let them make contacts and allow contacts.

In Beijing there is a "Food Research Institute." They may be of help.

Ask key contacts for a letter from their organization, on letterhead. Don't discuss politics or economics–its to sensitive.

In China, tofu production may have increased, but quality may have decreased. Party leaders, not food technology experts, make decisions. They are now trying to change that. Scientists and intellectuals had a very low status, but now some are trying to put them in front. But the masses resist. They either use fast radical means or go slowly.

His tofu equipment was paid for by Chinese money–the equivalent of $500,000 for two lines.

Louis Chiang would like to work with Takai Tofu & Soymilk Equipment Co., especially if Takai developed a continuous process system. Takai sold a production line to Harbin but it is not working now.

Research people are hungry for knowledge; the bureaucrats are not.

With new private, personal freedoms, people are generally happier.

Hong Kong yuba: See the trade promotion council, a government organization on the 3rd floor of the Connaught Centre, an office tower in Hong Kong. They have a research library.

Mr. Wang says: Ask the trade promotion council to ring and introduce me as a researcher.

They want immediate gain, not long term research, so our soymilk seminars at various places in China may not work.

He likes Deng Xiaoping (who initiated the Four Modernizations, in December 1978 at the Third Plenum

of the 11th Central Committee); he is not so fond of Hua Guofeng.

China is now learning about tofu technology from Japan.

Adding almond to soymilk improves its flavor.

All his trade is with China. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4027. Lo, K.S. 1983. Thoughts on Vitasoy, soymilk, cow's milk, and doing business in China (Hong Kong, May 28) (Interview). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to Hong Kong, China, Singapore, and Japan: May 29 to July 10, 1983. Lafayette, California: Soyfoods Center. 117 p. See p. 3-4. Unpublished manuscript.

• ***Summary:*** We drive in a nice car to the beautiful Clearwater Bay Country Club (he is a member), on the ocean, on the wild, verdant side of Hong Kong–which Shurtleff did know even existed.

If Mr. Lo were in charge of setting food policy in China, he would have the country produce 90% soymilk and 10% cow's milk. This is the way to optimize resource use and be sure a nutritious beverage is available to most Chinese.

In China, dairy milk has the image of being much more modern than soymilk. Mr. Lo thinks it is very important to give soymilk a modern name and image.

Roughly 80% of Chinese have no problem with lactose intolerance, especially if they start drinking cow's milk when young and keep drinking it in moderate amounts.

Chinese in Hong Kong like soymilk best when it has 60-65% of the beany flavor left in.

The first time the Coca-Cola Co. tried to introduce a soymilk in Hong Kong, it was a big flop. Then they re-introduced it in May 1983 (earlier this month); the results are not yet in.

Bahdin Singh is Coke's soy technologist in Atlanta, Georgia.

Vitasoy's biggest problem in doing business with China is how to get profits out of the country in a foreign currency.

The American Soybean Association (ASA) had planned to donate a soymilk pilot plant to China, but the deal broke down over textile export quotas, and also because China reduced its imports of U.S. soybeans.

Mr. Lo seems very wise, kind, extremely talented, and humble–a true gentleman with a very alert mind.

Concerning Hong Kong's future: Because China will control all factories, airports, water, etc. north of Boundary Road, they will, in effect, control southern Kowloon and Hong Kong Island after 1998.

The price of soymilk in Hong Kong supermarkets, for 250 ml. Note that HK$6.65 = US$1.00, so one Hong Kong dollar is US$0.15. Vitasoy HK$1.20. High-C HK$1.00.

Later that afternoon: I think it was here that I first heard and saw a CD-ROM. It was playing rock & roll music, very loud and beautiful, downstairs at a mall in Hong Kong. The room was packed with speakers–some as tall as a man–and young people. I remember the remarkable clarity of the sound, and the fact that you could choose a song or a track, as on a juke box. I learn that there is no needle (or any other mechanical device) that can touch or scratch the disk. The music is played entirely from coded numbers! Has a digital revolution begun? Address: Founder and President, Hong Kong Soya Bean Products Co. Ltd., Hong Kong.

4028. O'Brien, Jane M. 1983. Re: Recent history of soybeans and soyfoods in Ireland. Letter to William Shurtleff at Soyfoods Center, May 28–in reply to inquiry. 1 p. Typed, with signature.

• ***Summary:*** "I was in touch with Tony Walshe at the Golden Dawn Restaurant in Dublin who said that they have been selling tofu more or less regularly since 1979. They use it in the restaurant for various recipes, but at the moment, I believe they could use more than they are able to get.

"There is an oriental [tofu] shop in Dublin which must have been open for about a year now which supplies tofu regularly, I gather. I never seem to be in town when it is open because it opens at 11:00 a.m., and when I shop I am usually in town before 9:00 and ready to leave as early as possible...

"Philip Guiney has been wholesaling Morinaga tofu for about a year now, and it seems to be moving for him...

"Ken Kinsella of Kelkin Naturproducts Ltd. has been wholesaling Granose Soya Milk for about 18 months now, and it is selling quite well for him because of the numbers of people who suffer from lactose intolerance and because of the general interest in getting away from dairy [products]. Ken's daughter, Hillary Kinsella, with a friend of hers, did a project called "Soya–The Modern Food" for the Young Scientists Exhibition in January 1983, for which she won two awards, and she is planning to do it again with further information in 1984, also for the Young Scientists Exhibition.

"For my part, I have taught tofu making in some of my cooking classes a couple of years ago, but I haven't given any cooking classes for the last couple of years for various reasons. Roughly from September 1983 through May of 1983, I provided about 12 pounds of tofu per week which Kelkin Naturproducts delivered to the Golden Dawn restaurant as a kind of pilot project to try to determine the demand for tofu in this area. At the end of that period, we discontinued it for a number of reasons and we felt that the time was not yet right to consider tofu production an economic possibility in this country. In fact, in many ways, we feel that soy milk might be a better starting off point here, but we are still not ready to do anything about it at this time." Address: 7 Woodside Drive, Rathfarnham, Dublin 14, Ireland. Phone: 909-769.

4029. Shurtleff, William. 1983. Masterplan 2000. Marusan's soymilk (Hong Kong, May 28) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods

Center. 117 p. See p. 4. Unpublished manuscript.
• ***Summary:*** Today, May 28, in Hong Kong I learned about and partially read "Master Plan 2000." In 1981 the 12th Party Congress in China decided to set a goal of supplying 250 mL of milk (cow and soy.) to each person by the year 2000. To implement this goal, the Danish government and Danish Turnkey Dairy (DTD) developed the master plan 2000, which related to all aspects of cow's milk and soymilk production, processing, and distribution in China. The first DTD cow's milk plant was in AnDa in Heilongjiang. Most people think the 250 mL/day goal is unrealistically high.

Seven Danish firms, including DTD, developed Masterplan 2000. It is not clear whether they were asked to by China or if they and the Danish Government initiated the idea.

Afterwards I tasted three types of Marusan soymilk sold in Hong Kong: (1) Mixed fruits (Delicious). Passion fruit and apple juice. (2) Lactic fermented–yogurt style. (3) Orange.

On Sunday, May 29, our group (John Davies and Asger Somer Hansen of Danish Turnkey Dairies {DTD}, and I) took an airplane from Hong Kong to Guangzhou (Canton.) My first day in China's Guangdong province, which is adjoining Hong Kong, is very different from the rest of China. It is more affluent, western, and capitalistic. They also speak Cantonese. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4030. Shurtleff, William. 1983. Fly from Hong Kong to Guangzhou (Canton); Give seminar on soymilk (May 29-30) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 5-6. Unpublished manuscript.
• ***Summary:*** On Sunday, May 29. Our group of three (John Davies and Asger Somer Hansen of Danish Turnkey Dairies {DTD}, and I) took an airplane from Hong Kong to Guangzhou, in the far southwest of China. Today is my first day in the People's Republic of China. Canton is very different from the rest of China, more affluent, western, capitalistic. The people speak Cantonese. Seminar rehearsal.

May 30, Monday. In our nice Chinese hotel, built around a big garden, I conduct my first of four seminars on soymilk for government officials China. I have prepared a 2-hour slide show with 60 color slides. The main topics: (1) Ten reasons soybeans will be the protein source of the future (2) The role of soymilk in China's modernization program (3) Various products a soy dairy can make from soymilk (ice cream, tofu, yogurt, yuba, etc.) (4) The advantages of a combined soy-cow dairy (5) Soymilk as a modern food.

Part II: DTD described its soymilk process and we served 3 samples: plain, sweetened, and chocolate. Out of the 35 participants, most liked the plain-unsweetened flavor best. They said it was free of grassy and burnt flavors and was not too thick or too thin. The second favorite was the sweetened. Only 1 person rated the chocolate as the best. The thickness was just right; the sweetness too. They would like to drink it hot in the winter. A general complaint regarding the sweetened and the chocolate was that they coated the mouth and were too thick, but I noted that they were not cold when served.

1. Soymilk could be used to make ice sticks. 2. *Mingun* = a type of firm, deep-fried tofu. 3. Bamboo yuba [dried yuba sticks]–*Fu Chuk* in Cantonese. 4. There is a lot of dried Yuba in Guangzhou. 5. Henan is a major soybean growing region in China.

Lawrence Yung-Lu Li.

1. Dr. Chow (initials = I.C. or En-Tsu) got a PhD on tofu in the USA in the 1930s from Cornell University (Ithaca, New York). See Cal (Berkeley) thesis list of dissertation abstracts. 2. Guangzhou dairy is planning to make soymilk. 3. There are no books on tofu in China, new or old.

May 31. I walk out in the early morning to watch thousands of people doing Tai-chi. I conduct Guangzhou seminar #2. Then drive out into the Guangdong countryside to see proposed DTD dairy site. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4031. Bermudes, Fernando. 1983. Building a soy dairy [in Lesotho]. *Soyanews* (*Sri Lanka*) 5(9):4-5, 8. May.
• ***Summary:*** Plenty has "successfully introduced soya as a garden crop and a useful addition to local diets."

"Under the Soyabean Agricultural Project and the Village Soya Dairy Project, soyabean cooking demonstrations are being carried on in some of the villages of the project area. The women grind soaked soyabeans using a traditional "leloala" grinding stone. Then they make soya milk and tofu, using the leftover soya pulp [okara] to make "makoenya."

A pilot village soya dairy is now being built, at Motsemocha, designed to produce about 100 litres of soyamilk per day. Plenty's first experiment in planting soyabeans in Lesotho was in 1979/80 in the Sabapala area of Quthing district. This initial crop was badly damaged by frost and drought. This past season, Plenty planted 35 different soyabean varieties. Five varieties were from the Republic of South Africa; sixteen were from the INTSOY's ISVEX program, a 12 came from AVRDC (Taiwan).

Photos show: (1) Lesotho women preparing soya milk–but not at the soy dairy. (2) Soya ice cream being sold at the Solola Soya Dairy, Guatemala. Address: Soy Technician, Plenty International, Lesotho.

4032. **Product Name:** Orange Sunshine (Soymilk-Orange Juice Beverage).
Manufacturer's Name: Brightsong Light Foods.
Manufacturer's Address: 100-A Poultry St. (P.O. Box 2536), Petaluma, CA 94953.
Date of Introduction: 1983. May.

Ingredients: Soymilk, orange juice, honey, soy oil.
Wt/Vol., Packaging, Price: ½ pints.
How Stored: Refrigerated.
New Product–Documentation: Letter from Richard Rose. 1987. Aug. 29.

4033. **Product Name:** [Soyo Soymilk].
Foreign Name: Soyo.
Manufacturer's Name: Celnat S.A. Later made in Belgium by Alpro.
Manufacturer's Address: Z.I. de Blavozy-Saint-Germain, 43700 Blavozy (Brives Charensac), France. Phone: 71.03.04.14.
Date of Introduction: 1983. May.
Wt/Vol., Packaging, Price: 1 liter Tetra Pak Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1983. Jan. 17. Celnat Sarl, 38 Ave. Charles-Dupuy, 43700 Brives-Charensac, France. Phone: 71 09 23 84.

Richard Leviton. 1983. Oct. 16. Trip to Europe with American Soybean Assoc. Celnat began production of Soy, a soymilk in Tetra Pak liters, in May 1983. Z.I. Blavozy, St. Germain, 43700 Brives Charensac. Phone: 71-030414.

Letter from Bernard Storup. 1984. March 22. "A new type of soymilk is Soyo, made with organic soybeans, non sugary, Tetra packed, sold by Celnat S.A. at Z.I. de Blavozy-St. Germain, 43700, Brives Charensac." This company is also an organic bean grocer. Soyo is made with a small Takai W-30B system in a big French dairy plant: Prolait S.A. in Niort, 85000 France.

Letter from Mr. Noboru Sakaguchi in France. ca. 1984. "Natural soymilk maker: Celnat." Gives address, above. But phone is (71) 08.04.14. Ad in Le Compas. 1986. March-April. p. 36. Now listed as an importer.

Leaflet. 1989. "Soyo: Soymilk from organically grown soybeans. Soya: Food of health." This 6-panel, black and blue-green leaflet describes Soyo soymilk and desserts, shows how to use the soymilk to make tofu at home, and gives 4 recipes.

4034. **Product Name:** [Kibun Soymilk (With Coffee, With Fruit Juice, Tonyu, Yogurt-Type)].
Manufacturer's Name: Kibun Co. Ltd.
Manufacturer's Address: Tokyo, Japan.
Date of Introduction: 1983. May.
Ingredients: With Coffee: Soybeans, water, glucose, fructose, malt extract, coffee powder, corn oil, coffee flavor, salt.
Wt/Vol., Packaging, Price: HK$1.20 per 200 ml carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Imported by: Kibun Foods Singapore PTE, Ltd., 15, Fishery Port Road, Singapore 2261. When William Shurtleff was in Singapore in May 1983 he purchased these four products and saved the labels. The products are made in Japan.

4035. **Product Name:** [Lotte Doo Yoo {Soymilk}].
Foreign Name: Lotte Doo Yoo.
Manufacturer's Name: Lotte Chilsung Beverage Co. Ltd.
Manufacturer's Address: South Korea.
Date of Introduction: 1983. May.
New Product–Documentation: Letter from Kyung Lee, ASA country director, Korea, to William Shurtleff at Soyfoods Center. 1983. Nov. 23. Gives history and production statistics.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 81-83. This company produced an estimated 3,830 tonnes in 1983.

4036. **Product Name:** [Vitaleche].
Foreign Name: Vitaleche.
Manufacturer's Name: Productora Costarricense de Alimentos (PROCOA) (Distributor).
Manufacturer's Address: Apartado 8-5780, 1000 San Jose, Costa Rica.
Date of Introduction: 1983. May.
Ingredients: Nonfat dry milk (50%), sugar (34.5%), soy flour (10%), vanilla (5%), and cinnamon (0.5%).
New Product–Documentation: Letter from John McLeod of CARE-Honduras. 1984. July 10. During 1983 his company made 3,400 metric tons of Vitaleche, which contained 10% soya.

4037. Shurtleff, William. 1983. Fly from Guangzhou (Canton) via Changsha to Zhengzhou (June 1 to 3) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 6-8. Unpublished manuscript.
• ***Summary:*** June 1. Take a long walk around the major market in Guangzhou. I don't see much tofu [*dow foo*]. It is always in 18 inch squares, 2 inches thick. Also saw *dow-gan* (pressed brown tofu squares) and *dow-pok* (small deep-fried tofu cubes).

11:00 Fly to Zhengzhou (capital of Henan province). Turbulent airplane ride; after a very long wait in a small airport, it is decided we must stay overnight at Changsha.

June 2, Thursday. Zhengzhou seminar #1 on ground floor of hotel lobby. Maotai banquet #1 in evening, with ten toasts and a 25-course meal.

Question: How does the cost of aseptic Tetra Pak cartons compare with the cost of other aseptic or sterile pouches, bottles or cans?

Ching-sha Fujook is Bamboo yuba [dried yuba sticks] in a medium-thick tan sauce at the Maotai banquet.

Question: Is China now a net importer or exporter of soybeans?

June 3, Friday. Zhengzhou. 6:00 a.m. walk with Eddie Siu to the big Zhengzhou market (largely indoors). See lots of soft tofu and soymilk. For each type of product you must stand in a different line, and each line is very long–sometimes requiring a wait of 20-30 minutes! I thought the Communist motto was "Serve the people." What a huge waste of everyone's time.

Types of tofu: Most is soft tofu (*Shui-doufu,* like Japanese Momen-dofu, made with the separation of curds and whey) 15 slabs on wood boards 18 x 18 x 4 to 5 inches thick. Pieces are cut with a knife, weighed in a scoop on a hand held lever arm, and put into customer's bag. (b) Dofu-gan, tan squares 1.5 x 1.5 x 3/8 inches. (c) "Thousand sheets" are very thin (like paper). 10-inch squares called *qian zhang.* (d) Tofu rolls (dou-fu? = maki) 3 inches in diameter and 8 inches long make of tofu wrapped in cloth and boiled (illustration). (e) Doufu-ru = fermented tofu in jars. (f) Doufu-fen = soy flour (full fat?) used to make tofu and soymilk. (g) A semi-firm tofu.

Buying: You must present a ration ticket an also pay money. 500 grams of *shui-dofu* costs 10 cents (i.e., ¥0.10). If you use up your tofu ration tickets, you may go to a separate place and use a grain ration ticket, but it costs more.

Soy sprouts: Saw 2 baskets (wicker 18 inch diameter, 14 inch deep) sold outdoors next to 5 baskets of mung beans. *Lu Dou-Ya* = mung sprouts. *Huang Dou-Ya* = soy sprouts.

Note: This is the earliest English-language document seen (Jan. 2013) that uses the term "Huang Dou-Ya" (regardless of capitalization or hyphenation) to refer to soy sprouts.

Flour: *Doufu-fen.* Probably whole soy flour? In a plastic bag containing 500 grams? Instructions read (in Chinese):

1. To make soymilk (*dou-jiang*)*:* Add 13-15 *jin* (6.5 to 7.5 kg or liters) of water (cold or hot) to contents of bag, adding a little at first to make a paste. Then, add the rest and mix/beat until contents of bag are smooth and bring to a boil.

2. To make *doufu-fa* (tofu curds): Proceed as for soymilk using any 3-4 kg of water per bag. Then, add coagulant (what coagulant? No pack of it in the bag) to 0.15 kg of water. Pour boiled milk into coagulant solution and let stand for 5-10 minutes.

3. To make doufu: Wrap tofu curds (#2) in a cloth and press for 20 minutes. (Made in Zhengzhou: Tel. 26644)

This product is widely sold. 1 bag cost ¥0.40?

Soymilk is now one of the hottest subjects in the food field in China. Interest has grown rapidly since 1982 because (1) Vitasoy's success in Hong Kong (yet Vitasoy still has no plant in China and no joint venture). (2) Japan and Southeast Asia's soymilk success. (3) Alfa-Laval-Kibun and DTD's competing efforts to sell soymilk plants to China. I predict that there will soon (in 3-10 years) be many modern soymilk plants in China, most run by the Ministry of Light Industry.

One of the new AB-9 Tetra Pak machines sells for about $665,000 in July 1983. It has a capacity of 3,000 liter/hr of milk.

Jiaozi = (Chiao-tsi) = meat dumplings.

Tetra Pak is a family-run business. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4038. Leviton, Richard. 1983. Notes from a visit to Eden Foods of Michigan. 19 p. June 4. Unpublished typescript.
• ***Summary:*** These notes were condensed into an excellent article in *East West Journal* (April 1984) titled "The organic Garden of Eden: A Michigan-based natural foods company stresses quality and fidelity." Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

4039. Shurtleff, William. 1983. Fly from Zhengzhou to Beijing. Meet Danny Wang at EAC (East Asiatic Company) office (June 4) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 8-10. Unpublished manuscript.
• ***Summary:*** We stay at the Beijing Airport Hotel. Soymilk territory: In China there is some clash/rivalry between agricultural people and light industry people for control of soymilk. So, we let the provincial government in Heilongjiang arrange our tour/program. The soybean research institute (SBRI) at Harbin is mainly soybean breeding. It recently achieved a breakthrough in making a new soy beverage. For this process and technology, it received an award.

To our Harbin seminar will come (1) SBRI (2) the Bureau of Light Industry (3) the Bureau of Agriculture (4) maybe Northeastern Agricultural College.

Cow's milk in China: Annual per capita consumption is 1 kg says Danny Wang. It is used mostly by and rationed for people up to 3 years old and those over 70. There is a big emphasis on recombined milk. The total dairy milk output is growing at 20% a year. But, more soybeans are grown near major population centers.

What percentage of China's soybean crop must be used to provide 1 billion Chinese with 250 mL/day of soymilk given 6 kg milk from 1 kg dry beans? Answer: 15.25 million metric tons (tonnes). But China's present soybean production is only 10 million metric tons per year. K.S. Lo (of Vitasoy) said that if he were setting policy in China, he would produce 90% soymilk and 10% cow's milk. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4040. Shurtleff, William. 1983. In Harbin (June 6-7) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 10-12. Unpublished manuscript.
• ***Summary:*** 6:00 a.m. I walk to the local market. See one stall (a mobile cart) selling gelled tofu curds (*doufu-fa*) over which is poured a sweet brown sauce then topped with some

diced red chilies and green herbs. Served with deep-fried breadsticks. One other place serves soymilk hot with deep-fried breadsticks. No tofu at all in the market. Some say it is sold only in winter. No other soyfoods seen.

Soymilk terminology: (1) Dou Nai–it sounds more modern than "Dou Jiang." Implies or connotes no beany flavor, is thicker and has a higher protein content. (2) Dou Ru–(Alfa-Laval used this) is harder to pronounce.

[Henan Area grows lots of soybeans]: more than Heilongjiang? The money to build soymilk plants in China is partially foreign capital. People and institutions are falling all over each other to help China develop "China Orient Leasing." 50% are Japanese.

Eaton [Eton], A consortium from Cleveland, Ohio, is planning to build a $50 million oil extraction and protein refining plant in Jiamusi. Oil = extract, refine, make margarine, shortening, etc. Protein = feed, isolate, concentrate, tofu and soymilk production.

Tuesday June 7, 1983 (Harbin): Min-Lite = the Ministry of Light Industry is interested in a soymilk plant. Also, the State Farm Bureau (Bean processing division) and the Soybean Institute is working in breeding (for both protein and oil), diseases, and physiology.

Soymilk Taste Tests in Harbin: Chocolate was vastly the first choice, second was sweetened, third was plain / dairy-like. They dislike added oil in soymilk and would like to try fruit-flavored soymilk (apple, pineapple). Added fat coats the mouth with a greasy / gummy film. Vitasoy has no added fat.

Dou Ru Fen: Niu Nai Mai Jing. 205 gm. This product consists of a white powder containing 10% cow's milk powder, 40% soymilk powder (spray-dried traditional soymilk, not soy flour), and 50% (!!) sugar. 1000 tonnes a year are made, starting in 1978 or 1979. Sold to housewives who use it to make breakfast soymilk. Costs RMB 0.78–0.80 = 70-80 cents. Cow's milk powder is stirred into hot soymilk. The mixture is concentrated and spray dried. Also made in Beijing, but this one is the best quality.

Pure: Soymilk powder is made in Beijing by Beijing Foodstuff Corp. since 1980. Called Doujiang-Fen (Soymilk powder) and also retailed to housewives for breakfast use. It is 50% powdered soymilk and 50% sugar. It is spray dried.

Fresh green soybeans (Maodou = Hairy bean): Mostly eaten by farmers. Also sold in markets. Not packaged or canned. Whole dried soybeans: some canned in China. It is sold in Beijing.

Tofu in Heilongjiang: None is sold during the summer because it spoils easily and people do not like to eat tofu in the summer. A lot is sold in winter.

Soybean use: Of China's 9 million tonnes produced, one man estimates that 80% of soybeans are crushed. The meal is used mainly for feed, but some for tofu, soy sauce, and textured vegetable protein (TVP).

Main uses for foods made with whole soybeans in approximate order: (1) Tofu and kan-dofu. (2) Soymilk. (3) Soy sauce. (4) Miso = Doujiang. (5) Yuba. (6) Fermented tofu.

Main uses for foods made with defatted soybean meal: (1) Tofu. (2) Soy Sauce. (3) Miso. (4) Soymilk.

Soy nuggets [fermented black soybeans] are made only in the south of China. This state farm bureau man estimates that there are 200,000 tofu shops in China, one in every village, but there are no statistics on tofu.

Big tofu factory in Harbin. Ministry of Light Industry people in charge. He does not think as many soybeans will ever be used for soymilk as for tofu.

Many government groups are doing research on soyfoods, such as tofu and soy sauce, but no single group. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4041. Zhang, Furu. 1983. Soybeans and soyfoods in Heilongjiang (Interview; Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 13-14. Unpublished manuscript.
• ***Summary:*** Heilongjiang is by far China's biggest soybean producing province. Main interest now is to process more of the province's soybeans before shipping them out. Most soybean production is under the direction of the State Farm Bureau, which has huge farms. 1.5 million mou = 250,000 acres. By 1990, they hope that 2/3 of the soybeans submitted to the federal government will be processed in the province. By 1985, they hope to process 1.25 million tonnes.

Processing means (1) oil extraction = crushing plants, and (2) soymilk plants starting from the whole bean. Most crushing is now done in Shanghai and Beijing. Now, 70% of the beans leave the province unprocessed.

For the crushing plants, they plan to use protein for feed, isolates, concentrates, and TSP. With Eton, they hope to build 3 plants, each with a capacity of 300,000 tonnes/year of beans. They hope that the first will be done by 1984-1985 and the last by 1988-89, but they are still in negotiations. Of the protein, 50% will be used for food, 50% for feed. Some will be exported. The isolates will be used in China in sausages, artificial meat.

They also want to build 6 plants to make soymilk powder (30 tons/day of milk). There already is a small soymilk plant in operation. They hope to build the last of the 6 by 1987. They also want to make fluid soymilk for local consumption. They want to start with pilot plant to (1) test market soymilk (2) train on the process (3) show it to others. DTD plant (costing $2 million) makes 4,000 liters/hr of milk. He wants to process 10 tons of dry beans/day.

Financing is the problem: (1) Joint venture. DTD provides equipment and China provides buildings and labor (2) Try to get loan from Danish government state loan (The problem is always "How will China pay for these projects?"). DTD's Anda Dairy plant was financed by Danish

state loan.

In total soybean production, China's big 3 are: (1) Heilongjiang. (2) Jilin. (3) Liaoning. Heilongjiang also exports soybeans to Japan and Southeast Asia. 500,000 tonnes of soybeans in 1982 from Heilongjiang. This is 2/3 of China's total exports. He has been told by the Ministry of Agriculture to help increase China's per capita protein consumption.

We met with 3 men from Heilongjiang Bureau of State Farm. Jiamusi, Heilongjiang.

(1) Zhang Furu, Deputy Director = Decision Maker (2) Ma Zhensheng. Engineer in soybean processing. Excellent man. Gave him 3 books (3) Yin Zhiwei. Chemical engineer.

In the afternoon, I walk along the Sungari river with John Davies, who is trying to quit smoking. This river flows northeast to join the Amur then enters the sea in Russia.

Harbin seminar #2 in hotel room. Address: Prof., Deputy Director, Heilongjiang Bureau of State Farm. Phone: 415-283-2991.

4042. Shurtleff, William. 1983. In Harbin (June 8). Interview with Zhang Guodong. Next morning in Harbin. Afternoon fly from Harbin to Beijing (June 9) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 14-16. Unpublished manuscript.

• ***Summary:*** Hong Kong will revert to China on 30 June 1997 at midnight.

Mr. Li Weicheng is Director, Bureau of Light Industry, DTD says he is their most important man in China. We served him and others Hi-C, Vitasoy, and 3 types of soymilk made by DTD. Everyone present likes Hi-C better than Vitasoy. Mr. Li likes the 3 DTD soymilks better, but he likes them all the same. He says the plain has no beany flavor. Key point. Chinese (at least in Heilongjiang) do not like beany flavor in soymilk.

Interview with Zhang Guodong, Director, Soybean Research Institute, Heilongjiang.

China's six largest soybean producing provinces are: (1) Heilongjiang. (2) Hunan. (3) Shandong. (4) Anhui. (5) Jilin. (6) Liaoning.

Soybean production in China is increasing. In 1978 the Chinese government raised the price it pays farmers for soybeans. It was raised again in 1982 to 34.5 fen per chin (1 chin = 500 grams). This is the same as the price fro 3 chin (1,500 gm) of maize. Also, farmers growing soybeans get top priority fertilizer–especially phosphorus. Both programs are nationwide. It is believed that these new incentives will lead to increased soybean production.

Heilongjiang province now has 25 million mou = 4.25 million acres planted to soybeans. The main work now is to increase soybean yield. The present yield is 75-90 kg/mou, with a goal of 125 kg/mou by 1990. One problem here is the long, cold weather (there are only 80 frost-free days in northern Heilongjiang) and the northerly latitude. Also, expanding hectarage for all crops in the Three-River Plain area must be done near the eastern border.

The Soybean Research Institute in Heilongjiang was founded in 1975. It now employs 71 people with an annual budget of 200,000 yuan. Its main purpose is to breed better soybean varieties for Heilongjiang–for higher yield, and higher oil + protein. Also to develop new technology and management practices for farmers, improved chemical fertilizer use effectiveness, better understanding of diseases, physiology, etc.

Important developments: (1) Several good soybean species and ones with improved photosynthesis. (2) A package of practices that will enable farmers to get yields of 3,000 kg/ha. (3) Inexpensive harvester developed in Jilin province.

The FAO Project. Funding of $525,000. It will run from 7 Feb. 1982 to Aug. 1984. To import U.S. consultants, send students abroad for training (4 to USA, 2 to Italy). Import lab and farm equipment.

They are working with breeding wild soybeans for resistance to drought and to disease, plus high protein content.

In China there is no terminology to distinguish vegetable-type vs. field-type soybeans. But vegetable type are large, and grown mostly in southern China for use as green vegetable soybeans [edamame]. Soybeans for canning whole are not grown or sold in northern China.

More than 50% of China's soybeans are crushed, but this percentage is decreasing as the standard of living rises, since more people want soyfoods such as tofu.

China's leading soyfoods in order of importance: (1) Tofu, all types, including fermented tofu. (2) Chinese-style miso (doujiang). (3) Soy sauce (jiangyou). (4) Soymilk. (5) All others. Most of the fermented tofu, yuba, and fermented black soybeans are found in southern China.

Defatted soybean meal is used mostly in feeds. In Jilin there is a Soybean Research Institute with similar goals as the one in Heilongjiang. There is some cooperation between the two. Shao Rongchun is the Institute's director at Jilin.

Soyfood research and uses: Research on soyfoods is conducted at Heilongjiang Commercial College, which is under the Bureau of Commerce. An ASA representative will visit them in mid-June. They are working on soy protein isolates, artificial meat, etc. One good book is *Integrated Application of Soybeans* (*Dadou te zhung he liyun*), published in 1958 by the Shanghai Bureau of Cereals. It's about soyfoods. Many soy history books have been written since 1949.

A new soy beverage is made in Heilongjiang and sold in Harbin. He does not know who developed it. It is a refreshing nondairy summer drink named Jinbo Juice, but it is not like soymilk.

The future of soybeans in Heilongjiang and China looks very good. Production will grow since yields are low and the Ministry of Agriculture is interested in expanding production and protein from soybeans–not from meat. It is for the people of China.

At the end of July will be the Jilin Seminar, #2 USA-China Soybean Symposium. For a list of topics ask Intsoy.

June 9. Morning in Harbin. One company in Heilongjiang makes a powdered milk which is soy-dairy blend; they make their own soymilk by the traditional method. Address: Wan Da Shan Foodstuff Factory. Farm No. 8511, [Bureau of State Farm]. Heilongjiang province. Product name: Cow's Milk Malted Soymilk Powdered (*Instant Niunai Maijing*). Brand: WanDaShan. Label of ingredients: Added maltose, glucose, sucrose. Gives protein complementarity. Mix 3 tablespoons of the powder with hot water to make a paste, then add more hot water. Keep powder cool and dry after opening. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4043. Shurtleff, William. 1983. In Beijing. Our guide. Meet Mr. Pan (June 9) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 17-18. Unpublished manuscript.

• ***Summary:*** Morning: Ms. Chen Xihau is our guide. She says fear is everywhere in China. Everyone is a potential spy.

Fermented tofu (*doufu-ru*) and soy nuggets (*douchi*, [fermented black soybeans]) are sold in "salty vegetable" (*sien tsai*) shops.

Mr. Pan is the top man in the federal Ministry of Light Industry (MinLight). Super guy. He is director of the Food Industry Bureau. He is interested in developing a soymilk industry in China. Cow's milk cannot meet the demands of a large population. A new policy in China is to increase soybean production. Recently the American Soybean Association (ASA) sponsored 6 MinLight (Ministry of Light Industry) people (both federal and Beijing municipality) on a trip to study soymilk production in Hong Kong, Japan, and Thailand. They are now considering whether or not to use the "wet" or "dry" process. He says that Vitasoy uses the dry process.

The traditional Chinese method of making soymilk extracts / recovers only about 60% of the protein in the soybeans; the modern method and technology recovers 80-85%.

New products he would like to make from soymilk are ice cream (he saw it in Japan, tasted it and liked it), yogurt, and infant foods. He would like to use soybean protein in meat products (they are testing this now). He attended a recent meeting in Shanghai (not related to ASA) on the use of soy protein isolates. China seems unaware of the vast potential of soy flour.

He says that the government policy based on direct use of the soybean as food makes better use of the land than use in a feedlot or feeding soybeans to animals and then eating the animals. The policy is for plant protein to be the major source of protein and for animal protein to be secondary.

Vitasoy is Witanai (pronounced wi-TAH-nai). Hi-C is Yangwan.

For soymilk, Mr. Pan prefers the term *douru* to *dounai*.

Danny Wang says the World Bank is helping to finance reclamation of 2 million ha (hectares) of farmland in the three rivers area of Heilongjiang. One-third of this will be planted to soybeans. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4044. Shurtleff, William. 1983. Meet Susan Scurlock, American Embassy Agricultural Attache (Attaché) in Beijing (June 9) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 18-20. Unpublished manuscript.

• ***Summary:*** Sources of information on soybean production in China: The *China Review of Agriculture*. 1981 outlook for 1982 is my best source of overall summary of her data.

Her best sources, as U.S. Ag Attache, are (1) Statistical Yearbook of China. The best primary data, but 1½ years late. I got all relevant data in the 1981 edition. (2) Four Chinese researchers at the embassy read Chinese newspapers for all of Chinese's provinces, looking all over for clues. (3) Travel to the provinces for information from each province. (4) Meet with Beijing Ministry of Agriculture (its Foreign Affairs Bureau) but they usually have poor data. (5) Most Chinese trade statistics come from other countries.

My best channel for the latest statistics and summaries is to call the USDA Foreign Agricultural Service (FAS) or the USDA Economic Research Service (ERS) and to ask for the latest data in their computers on soybeans, foreign country production, imports and exports.

ERS has the best data on soybeans in China. They only do research and have commodity analysts, especially for the USA. In the USA, phone 202-447-8676. FAS promotes the exports of U.S. farm products. Susan works for FAS in their oilseeds division. Phone: 202-447-7037 or 8809. Jerry Harvey is the head of the FAS oilseeds division. Ralph Detro is an oilseeds analyst. Deborah Pumphrey is with FAS oilseeds.

Data on soybean production in Heilongjiang from a Heilongjiang newspaper dated 15 May 1983 stated that the province's soybean production in 1982 was 2.55 million metric tons. This was up 26.8% from 1981.

Total soybean production statistics in China:

In 1980 some 7.94 million metric tons were produced on 7.226 million hectares.

In 1981 some 9.33 million metric tons were produced on 8.024 million hectares.

In 1982 some 9.03 million metric tons were produced on

8.226 million hectares.

In 1980 the central government increased the soybean "procurement price."

But 1.25 million metric tons of soybeans in storage at the same time is not enough for the needs of food (tofu) and compound feeds–due to mismanagement.

China both exports and imports soybeans. They export since it is easier to export from Heilongjiang to Japan than to ship to south China. In 1982 China imported no soybeans from the USA–partly related to textile quotas. After a huge jump in textile imports from China, the U.S. limited the growth rate. But China is not really importing soybeans from anyone. In China today soybeans are mostly grown on the dykes around rice paddies. In 1981 Hunan and Anhui both doubled soybean production. Yet tofu is scarce.

The main activities of the American Soybean Association in China: They are in it for the long pull. (1) To promote compound feeds, which are seen as the wave of the future. (2) To promote the use of new technologies–for making soy protein isolates and concentrates, soymilk, etc. There will be a "Soybean Symposium" in Jilin. Susan does not foresee much growth of soybean production in China. However she does see much growth in rice, cotton, and tobacco production. And rapeseed production doubled in two years.

That evening we have a maotai banquet with Mr. Pan. We discuss the following:

Meiji makes soymilk ice cream in Japan.

Ice stick prices in China: Sugar and flavor–3 fen. Sugar, flavor and a little milk–5 fen. Sugar, flavor and much milk–15 fen.

Of four soy experts from southern China, none has heard of tou-cha-ping (Chinese tempeh).

Beijing soymilk flavor tests: 15 people prefer sweetened soymilk vs. 12 people prefer it unsweetened (plain). The majority like chocolate, yet they would like it better if it were less thick; the sweetness is just right. They also like sour orange which has the consistency of soy yogurt.

Pre-Pak: These are inexpensive plastic bags for milk or other beverages; widely used in Europe, and some in Japan. China is thinking of using these for packaging soymilk.

Alfa-Laval soymilk systems are promoted by ASA; they do not know DTD.

In China, dried yuba sticks are known as *fuzhu* (in pinyin). Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4045. Singh, Surjan. 1983. Re: Coconut milk and soymilk in Sri Lanka. Letter to Mr. Anders Lindner, STS-Soya Technology Systems, 505 Cathay Building, Singapore 0922, June 9. 2 p. Typed, with signature on letterhead. Address: Project Advisor, Food Processing Specialist, Sri Lanka Soybean Project (Sep. of Agriculture), Soybean Foods Research Centre, Gannoruwa, Peradeniya, Sri Lanka. Phone: 08-8246.

4046. Shurtleff, William. 1983. In Beijing (June 10-11) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 20-23. Unpublished manuscript.

• ***Summary:*** Soy sauce, miso, and fermented tofu (*doufu-ru*) are all sold at one type of store, a pickle shop that sells salted foods. I visited one of these named *Tien Yuan Jiang Yuen.* A color photo shows various types of soy sauce sold in Beijing.

In the market, the sign above the soyfoods section reads *Douzhi Shipin.* In this section they sell *fuzhu* (bamboo yuba [dried yuba sticks]), Doufu-fen (a type of soy flour made in Beijing), cubes of fried tofu (1 inch on a side, called *doubao*).

Note: This is the earliest English-language document seen (April 2013) that contains the term *doubao.*

In 1949 the East Asiatic Co. (which is owned by rich Danes) was the leading exporter of soybeans from China. They started exporting soybeans from China in the 1920s. When exporting, they had offices in Dalien (Dairen), Harbin, etc. The company now has about 80,000 employees worldwide. It is the biggest company in Denmark and the biggest foreign trading company in China, except for several Japanese companies such as Marubeni, Nissho Iwai, etc.

June 11, Saturday. Beijing seminar #1 in downstairs room. Talk with Mr. Chen of the Food and Fermentation Research Institute. Mr. Chen says the most popular vegetable oils in China are: 1. Peanut. 2. Soy (not generally refined). 3. Rapeseed.

Two organizations do research on soyfoods in Beijing: (1) His Food and Fermentation Research Institute (under MinLight, the Ministry of Light Industry); three people who work there are Mr. Chen, Mr. Dai Jiakun, and Mrs. Xu Lin. (2) Beijing Municipal Food Research Institute; contact Mr. Dai Xinjun (Dong [East] Zongbu Lane, Beijing).

Four acid tests for the buyer of any soymilk process and equipment: (1) Equipment cost (fixed). (2) Processing cost (including labor, energy, water, etc.). (3) Soymilk flavor. (4) Protein and solids recovery (percentage).

The Chinese name for thin pressed tofu sheets ("1,000 sheets / 1,000 folds) is Qianzhang or Baiyeh.

The best local markets (which have more variety of produce in the winter) are: Chongwen Vegetable Market and Xidan Vegetable Market (Chinese characters are given for both). The Chinese term for "soyfoods" is *dadou shipin* ("soybean products").

There is a new Chinese method (in Shanghai) for continuous pressed tofu sheets.

Commercial soy products made by Mr. Chen's institute: (1) Formulated soymilk for infant food. (2) Soy protein concentrate. (3) Later a modern soymilk plant will use this to make (1). Plain and sweetened soymilk in glass bottles,

plus fruit (citrus = orange flavor) and malt. There are some technical problems with using plastics bags as soymilk containers; they leak and are fairly expensive. Later he will work on a lactic soymilk drink.

Research on soy sauce: Improved method. Low salt, done in factories in Beijing and Shanghai.

Most soy oil in Beijing is not refined. People like the flavor OK, but they do not know the refined flavor. Rapeseed oil is used mostly in South China. In Beijing, mostly peanut and soy oil; peanut is more expensive and has a higher class image. Rapeseed is the cheapest but people don't like it.

The debate over more meat vs. more protein. Recently Chinese officials have come to understand the problem better. Send him *Diet for a Small Planet,* by Lappé.

In 3-4 months, Mr. Chen will send me an article about soyfoods in China–Tell Ira Leviton.

I visit a bookstore and buy a pinyin dictionary and a book (published last year in Chinese) about tofu. Visit the Forbidden City and a very famous square in central Beijing. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4047. Foley, Terrence B. 1983. Work with soybeans and soyfoods in China (Interview). *SoyaScan Notes.* June 12. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** This interview was conducted in the dining room of a major hotel for foreigners in Beijing. Mr. Foley has been the American Soybean Association's country director for China for about 2 years. A previous interview gives his background and credentials. Shurtleff had prepared a list of questions to ask him.

Terry wants to hire a human nutritionist (Beth Branthaver, married name Woon; her husband is in the military, and she is working on a PhD in nutrition).

Human nutrition is the first interest in China. In China, people live in little boxes; society is very secretive. Terry formerly taught Chinese language and history, and was in the military.

In China, knowledge is power. Therefore they don't like to publish statistics. Secrecy. The other reason for no statistics is "socialist methodology" and the fact that China is not yet used to the scientific viewpoint, and methodology. "There is obsessive, pervasive, perverse secrecy." They feel no need and make no effort to compile statistics, and even if they did, they wouldn't give them to foreigners. Tofu is too informal to track; its like asking how many tortillas are made in Mexico.

There is very little modern, mass production of any foods, except for export. They want modern soyfoods for export to get hard currency. Agriculture is now the top priority in China and the government is very interested in improving food production. They are making great strides in agriculture, for example exporting swine.

In Thailand Terry's soymilk group visited Greenspot. K.S. Lo (of Vitasoy) wants a joint venture but to sell the product under his brand. The Chinese basically want to steal Lo's technology, then sell the soymilk back to Hong Kong and put him out of business.

Ministries in China don't do what you'd think. There is no cross communication between Ministries. They are intensely competitive among one another. Now profit is no longer a dirty word in China. Tofu shops are under the jurisdiction of the Ministry of Commerce. The Ministry of Light Industry (MinLight) does canning and processing of some foods, esp. canned, jarred, and bottled foods. Commerce does sausages, grain handling, and setting prices. Terry is very fond of MinLight; they are open, competent, cooperative. Mr. Pan is Chairman of the National Taste Testing Board. He's very sharp and nice. Many bureaucrats are very dull; but not the plant managers. In the ministries, overlapping and diffusion of responsibilities is a big problem, as is inefficiency. China's soymilk expert is Chen Xihau. Three ministries are interested in soy. The Bureau of State Farms is under the Ministry of Agriculture. Communes are not under the Ministry of Agriculture. Commune is a new name for "town." A state farm is basically a new project, on reclaimed land, with a planned development. They all look like army bases, with dorms and all.

ASA is active in sending soy-related teams abroad, and bringing in soy technicians. Doing basic promotion on animal feeding and human foods. Big interest in improving the human diet. This is the most rudimentary of all the world's ASA programs. In July a team of six from the Harbin Commercial College under Prof. Wu Mung will go to USA to study soy protein foods (modern). The team makeup is strongly influenced by ideology and politics, i.e., who is chosen to go. ASA cannot pick the members. In Sept. a second team from Ministry of Commerce will go to USA, to study modern soy protein products. China is interested in self-sufficiency. Cut off from the rest of the world, they don't like to buy from abroad. Terry does not see much expansion in soybean production. Their "midwest" = main soybean belt (northeastern China) is on about the same latitude as America's New England / Maine.

The peak historical year for soybean production in China was 1955, with 10 million tonnes.

The Western view of history presently is that great new, impersonal forces are the main determining factor. China believes more in the effect of individuals, but also with some historical determinism.

The masses in China will demand more meats. Building a livestock industry is a very high priority of China's. Current trends. 1. Big beef industry in the prairies, on land that cannot be used for food. Chinese may destroy their grasslands. 2. Conflict between people's demand for meat and a rational food policy for maximizing food resource use. 3. Huge plans to promote milk as the perfect source of protein. It is now rationed, sold like a prescription item

(except the yogurt drinks) to people under 3 or over 70 years old. Not even pregnant mothers can get it. Cow's milk has much more prestige than soymilk. They plan to use soymilk as an interim product until their cow's milk industry is developed. 4. Fascination with modern technology, like all Third World countries. They have a hangup about being backward, maybe inferiority complex. 5. Tendency to look for shortcuts. 6. Soy protein isolates and other modern, high-tech soyfoods are attracting much more interested than other types of soyfoods; a some what childish attitude. They want only the most modern, the biggest, the one with the *most* protein (isolates). The *mystique* of isolates. They want to use them in baby foods, carbonated beverages, soymilk, etc.

Chinese foods are chopped into little chunks, then fried with sauces and spices. Textured soy protein (TSP) fits into this pattern perfectly. In addition, China is like one big military base or institutional feeding system. Thus it is easy to introduce modern soy protein products like TSP; they understand it like U.S. foodservice institutions. There is No popular resistance to it. There is an isolate plant in Manchuria. Which? They also want to make some TSP in the Nanyuan plant in southern suburbs of Beijing.

Extruders in the USA grew out of the process for extruding plastics. Chinese extraction plants do not adequately toast their soybean meal, which leads to bad flavor and poor nutritional quality. No one likes soy flour. This is not a basic lack of interest, just a reluctance to use a poor quality product.

Foley is part of a generation of Sinologists who couldn't get to China. US-China relations have deteriorated during the past 1½ yrs. Problems: 1. Textile quotas are symbolic of the problem. 2. Taiwan recognition. Terry wants to stay in China a long time so tries to be very careful not to offend anyone.

Transportation: Food doesn't move much by road. They use boats. There is a shortage of railcars. Port and dock facilities for imports are woefully inadequate for grains. This creates domestic "exports" problems. The 7-9 international ports incl. Shanghai, Tientsin, Dahlien.

Travelers don't get sick much in China. Foods are not eaten raw. Tea is boiled; all food is cooked. Continued. Address: Director, China Office, American Soybean Assoc.

4048. Foley, Terrence B. 1983. Work with soybeans and soyfoods in China (Continued–Part II) (Interview). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 27-28. Unpublished manuscript.

• ***Summary:*** Continued. Soy oil: 90% is degummed crude, packed in 55 gallon drums and distributed by trucks. Shanghai is the leading center of oil refining. Only 20% of China's internal is solvent extracted; the rest is expelled. Largest plant is 350 tonnes/day, solvent extracting. Most are 50-150 tones/day. Oil is rationed. In retail shops it's pumped out of 55-gallon drums into your personal bottle, about 1 liter/month. Only about 5-10% of all soy oil in China is refined, and much of that by commercial crushers.

People in Northeast China and Shanghai like soy oil especially. Canton only uses peanut oil. It's also a function of price. After refining, they make margarine, shortening, and dressings in Shanghai. In China, there is a problem with sickness from eating raw veggies in salads.

The Chinese are extremely conservative with food. They do not like foreign food. During his soymilk tour to Japan, the group ate no Japanese food at all on the trip. They found a Chinese restaurant for every meal!!!

Do the Chinese prefer refined soy oil to crude?

In 1997, the U.S. Wheat Association built a full-scale bakery in China. Ed Quinones and Dennis Blankenship were very excited about the potential of soymilk worldwide. Quinones is the regional manager for Asia and Latin America. He is Terry's boss. A 6 man team & the American Soybeans Association agreed to build China a soymilk pilot plant. Now, they want a big one, with one factory equaling 2,000 L/hr. Mr. Pan thinks 2,000 L/hr is the ideal plant size. The China soybean embargo also affects the ability to raise funds for the Chinese market. Everyone likes the idea but doesn't have the money beyond $30,000 for the demo plant.

Cyrus Eaton's company pioneered trade with the Communists. It got together with Farmland, the largest agricultural co-op in the USA. Gene Vickers and Bob Bergland of Farmland-Eaton (in Crystal City, Virginia) are working on the Manchuria plant project. He is concerned that they may not be up to it. He hears that it's off.

Question #8. No idea; total blank. Only 5% of the soybeans in China are used for feed. There is a lot of unease and soybean trips and inhibitors. A little soybean meal is still used for fertilizer. Most solvent extraction is done with variants of the Rotocel design, not the Desmet.

Question #13. Everyone fries everything, like doufu and soy sauce. There is a great need for milk. Soy flour won't succeed until the Ministry of Commerce does better toasting or does subsequent toasting in food plants. There is great potential in China for tofu and soymilk. The Chinese system "falls apart in the middle from bureaucratic sludge."

There are no trade associations in the Chinese soyfoods industry; this is one reason for the slowness to modernize.

The Chinese don't know much about soy protein isolates and concentrates, but they are convinced they can be used to advantage. They want to make them in China, not import them. They aren't sure which applications are best. There are lots of applications for tofu and soymilk production. USA uses concentrates and isolates in modern foods; China has no modern foods.

Alfa-Laval. The concept of offering soymilk to Beijing on a 1 year trial basis is still under discussion and isn't yet finalized. John Wilson will decide. It's probably about 500 liters/hr, not 2000 liters/hr. It's not yet in the bag, at all.

That project will not obviate the need for the American Soybean Association's $30,000 pilot plant. In Shenyang and Shanghai, he's not sure whether or not Alfa-Laval has contracts, but they have made some progress. These are autonomous municipalities, so they have their own funds.

The crux of the American Soybean Association's programs are teams and technical travel. Terry wants to draw more on East Asian trips. Countries are at various stages of development here, but the Chinese have no interest in low level technology. All third world countries must have the *best,* yet they espouse self-sufficiency, not small-is-beautiful. They eschew foreign or traditional things.

Soybean acreage in China: Heilongjiang. World Bank. Heilongjiang is reducing soybean acreage by 20%.

Exports from China: Exported meal. Low price, low quality. The cost of U.S. soybeans delivered to South China is probably less than the cost of soybeans "imported" from Heilongjiang.

The Chinese have never imported much U.S. soybeans, around 500,000 tonnes maximum. They cut this off after the textile quotas squabble, only because it wasn't important to them. This is a symbolic gesture. They could do without it. Terry expects they will be a *net* soybean importer over the next 5-10 years. Brazil has no export office in China, but does have a few traders.

Terry does not know how much soybeans are grown on the banks of rice paddies or about the Jilin seminar, as he was not invited. He's not interested in Chinese expansion of soybean production and, like Susan, does not think it will expand much.

American Soybean Association dispenses technology; China must receive and implement it.

In Beijing, the Chinese eat fermented black soybeans when they have a fever.

The word for "soybean" is *da dou,* not *huang dou. Da dou fen* refers to soy meal and cake. *Dou bing* is soybean cake.

The American Soybean Association (ASA) is like an agricultural extension office. They dispense publications and do translations.

Foley does not now get *Soyfoods* magazine. What a shame.

American Soybean Association is committed to upgrading Chinese soybeans and animal technology.

There is a 25% discount on books bought by Foley from us. Send him a list of all of our books and check history materials.

Foley would like Leviton to come to China when he visits East Asia but visas are nightmarish to get, as are hotel reservations.

The tofu and soymilk production plant in Tientsin (which is Peking's port) is under the Ministry of Commerce. Also, there are oil plants in the southern suburbs.

We talked for a long time about the need for a Soyfoods Industry Directory in China, giving names, addresses, phone numbers, and key contact people of major organizations or researchers involved actively with soyfoods. We made a sample table of contents. Terry will follow up on this. Perhaps give it to Beth as a project. I met Beth in the Beijing Hotel that night and we discussed it. Address: Director, China Office, American Soybean Assoc.

4049. Shurtleff, William. 1983. In Beijing (Monday, June 13) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 32-33. Unpublished manuscript.

• ***Summary:*** Some reflections: China has not yet begun to modernize its tofu and miso industries like Japan has.

From Terrence Foley, try to get a list of key people involved with soy in China for our mailing list.

Morning in the Beijing market: A line of 15-20 people. No fresh tofu. Lots of (1) Deep-fried tofu cubes. (2) Tofu noodles/shreds. (3) Scraps of firm tofu that have been simmered in soy sauce (heat and salt extend the shelf life). (4) Deep-fried or simmered tofu "fingers"–1½ by 1½ by 5 inches. (5) Tofu roll made of pressed sheets. Most tofu in the market this morning uses soy sauce simmering or deep-frying to preserve it; there is no refrigeration and no fresh "white" tofu.

Vegetarian delicatessen named Quan Zu Zhai at Ba Mien Tsao near Wang Fujin: At 8:15 a van pulls up and unloads its total contents of buckets and trays of 18 types of meatless meat analogs, each with a name and price listed on a board. They are all either simmered in soy sauce, or made of deep-fried tofu and/or yuba. 30 foods are listed on the price list. The foods were put out on shelves. 25 people of all ages lined up early to wait for the foods, mostly (they say) for health reasons. All of the foods are dark brown and most are amorphous / without form. There are no forms of ducks, chicken, fish, etc. However there are many rolls, large and small. 8 workers are employed here in a big black room. The fresh, dark foods are stored in huge crockery vats.

Terrence Foley of ASA says: Dou p'o is half-processed soybean meal or "soy slop," after half of the oil has been pressed out.

Gunnar Lynum is the new head of ASA Japan.

He has seen green vegetable soybeans (*maodou*) for sale in big baskets in local outdoor markets.

There is no margarine or shortening sold at present in China, since there is no refining or hydrogenation.

Lecithin: After degumming soy oil in China, lots of lecithin remains, but the Chinese don't know what to do with it.

China is the most xenophobic country Foley has ever experienced. During the Qing (Manchu) dynasty in China (1644-1912), they created a foreign affairs bureau to deal with *fangui* (foreign devils, foreigners). Though they fear

and loathe foreigners, they are also fascinated by them. Foreigners live in hotels in a ghetto and dislike China intensely; they gripe all the time and are under constant surveillance. Most foreigners can stay / last in China only 1 year. They feel humiliated and frustrated.

Chinese are most fascinated by foreign technology. China allows foreigners in China largely in hopes of acquiring their technology and know-how. Chinese do not want bourgeois, capitalistic ways and culture contaminating their society. They reject and repudiate everything foreign except technology = the gimmick or black box.

The Chinese delegation that Foley took to Japan ate no food except Chinese food; they had no interest in and would not touch Japanese food. However they were very interested in learning as much as possible about Japanese technology– in this case soybean technology.

Southern China has a very different culture than northern China. Northerners are sodbusters, aggressive, and they fit in overseas.

A key man I should meet is Professor Wu Meng of Harbin Commercial College. He started the Heilongjiang Soybean Association, and is now studying soybean isolates and concentrates. He will soon visit the USA.

Mao Zedong underestimated the importance of science and technology in the modern world.

Most soybeans in northeast China are double cropped after wheat or corn: farmers must race to harvest the soybeans before the snows or killing cold.

John Deere is the #1 farm equipment manufacturer worldwide. International Harvester is #2 and Massey Ferguson is #3.

Dou tung (2 Chinese characters given = 2 Cc) are finger-sized pieces of pressed tofu that are deep-fried. They are from Fujian, China (on the mainland, opposite Taiwan).

A deep-fried cutlet net I have seen in Beijing is called Lan Hua Gan (3 Cc); Lan-Hua is a kind of flower. After seep frying it is simmered in a soy-based liquid.

Yen Lu (2 Cc) is nigari, used to make firm tofu. Shi Gao is calcium sulfate, used to make softer tofu. Lu Dou are mung beans, used in many ways.

ASA is run by Midwest farmers / farm boys who think of soybeans as sources of livestock feed and oil. They think the soyfoods movement is irrelevant. But by the late 1970s trends worldwide have forced ASA to take serious interest in soyfoods. Many offices have hired a human nutritionist (e.g., Ruth Orelenna in Mexico, Sabrine Lee in Singapore, Beth in Beijing). ASA tried to get Foley to focus on hogs, but he knows humans represent a much bigger market; 2 billion people vs. 200 million hogs. Foley says it is fine to mention his name and what he has told me repeatedly in the article I will write about this trip to China. Foley was a hippie in San Francisco. He is very supportive of soyfoods, and personally loves tofu and soymilk. I find him to be a very good man. We talk and I take notes for 6 hours. We are on the same wavelength.

Statistical (and other) information about soyfoods in China is in surprisingly short supply, and what does exist is hard to find. There are no private companies so individuals with a personal interest or historical sense. People are assigned to do the jobs they do. There is only a very superficial soy "culture."

Joe Rakosky has lots of fine color slides and charts on soy protein products.

I must meet Ed Quinones; we have similar interests. Quinones is the regional manager for Asia and Latin America. He is Terry's boss.

Big food markets in Beijing, in order of size / importance: (1) Ching Wen Sai Chua. (2) Dong Dan. (3) Chao Yan. They open at 7:30 or 8:00 each morning. Get there early before all foods are sold out. Sunday morning has the best selection of all foods.

The lack of fridges

refrigerators in China is a key factor in the limited availability of fresh tofu; people buy it shortly before they eat it. This factor is also important in all Third World countries.

Su jiang rou is meat or tofu pickled in jiang (Chinese miso).

The place I visited that makes meat analogs is Quan Su Zhai at Ba Mien near Wan Fu Jin.

In a salted foods shop I see La Jiang-you, a type of soy sauce. What is it? How is it made?

At the morning market, 80 people are waiting in line for fish, 40 for vegetables. What a huge waste of people's time. Why not have 2-3 lines instead of one. The retailers just stand there, almost dead-looking. There is no tofu left by 3:30 p.m. Bean threads are sold in the "bean products / foods shop."

KoKo = Ke Ke Doufu Fen, 250 gm. Made in Beijing. Soymilk powder with chocolate flavor.

Most yuba in Beijing is dried yuba sticks. It is tough, so it will not break during shipping.

Da Dou Tanpaku Shokuhin is a leathery looking type of extruded soy flour. Tan in color, sold in a 500 gm bag. Lots of these bags are seen in the market. Made in Beijing. It doesn't seem to be selling to well.

In Japan in the late 1950s and early 1960s, the advent of refrigeration in plants, distribution, retail and homes played a major role in the expansion of tofu into large factories and the gradual demise of small tofu shops. The lack of refrigeration has limited the modernization of the tofu industry in China, as has the switch decentralized to centralized state-controlled markets. Are there no traditional outdoor markets in Beijing? Are all markets in these huge uninviting warehouse-like buildings? Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4050. Okada, Mrs. 1983. Kibun's interest in and involvement

with soymilk (Interview). Conducted by William Shurtleff of Soyfoods Center, June 21. 1 p. transcript.
• ***Summary:*** Kibun was founded in 1938 as a company selling foods from the sea (seafoods such as *kamaboko, tsukudani, Oden no zairyo*). In 1969 Mr. Nozaki of the R&D department started research on soymilk. In 1973 a laboratory for soymilk was set up in Saitama city, Saitama prefecture. and commercial soymilk production started there in 1977. The product, brand-named Soena, was sold in 200 ml wide-mouth cups. The first flavors, all introduced that year, included a lactic fermented product, pineapple, etc. (see slide).

In about 1973 Kibun started to diversify out of just foods. Today they are a conglomerate, with more than 50 companies, including companies doing advertising, food engineering, publicity, and selling computers.

Kibun does not use the traditional Illinois method, or any variation thereof. They couldn't use it since Mitsubishi bought the rights to the Illinois patent for the Japanese market and Kibun bought the rights for overseas. So Mr./Dr. Nozaki developed and patented a new method; there are many patents, including equipment patents (the food engineering company makes these machines).

Over the years they have launched many flavors including vegetable juices with soymilk (carrot) but in June 1983 they have just 4 flavors, of which plain is the best seller. Their lactic flavored product is new and has always been fermented. In May 1983 they opened two new soymilk plants, one in Hiroshima and one in Gifu, both bigger than the original Saitama plant.

Their working arrangement at present with Alfa-Laval is *not* a typical joint venture. Alfa-Laval is in the business of selling equipment. When they find a client they agree, according to a contract existing between Alfa-Laval and Kibun, to tell the potential client that their preferred soymilk process supplier is Kibun. Thus Alfa-Laval is like a matchmaker for Kibun. Kibun then signs a separate contract with the potential soymilk manufacturer. It could be a joint venture or a license of the Kibun patents and technology, including patented equipment, made by Kibun's food engineering company.

Kibun's soymilk operations are run by a separate company called Kibun Health Food Co., established in 19 (exact date unknown).

Mr./Dr. Nozaki would be willing to meet with me, but what would we discuss? Its all secret.

Does Alfa-Laval get a kickback from introducing a potential client to Kibun? Address: Home Economist for Kibun, Japan. Phone: 544-2781.

4051. Tsuchiya, Kanji. 1983. Soymilk industry and market in Japan (Interview). Conducted by William Shurtleff of Soyfoods Center in Japan, June 26. 2 p. transcript. [Eng]
• ***Summary:*** We saw this large sign (1 by 3 feet) in a local tofu shop window: *Mainichi Ippai. Tofuya no jun Tonyu*– which means: "A glassful every day! Pure / Plain soymilk from your local tofu shop."

All Tetra Brik Aseptic soymilk is much more expensive than cow's milk.

In the 2nd edition of Tsuchiya's book, only the production section has been changed; it contains a newer and more complete description of the soymilk production process.

Lord Liu An of Wainan who supposedly invented tofu was from the far south of China, near Vietnam. Tie this into the Java tofu discovery.

See p. 220 of Tsuchiya's book for a tofu and soymilk chronology.

Get used books in Japan at Kanda used bookstores.

Of the various books Tsuchiya owns on the history of Japanese foods, the best is the tattered old book, *Nihon Shokumotsu-shi,* by Adachi and Sakuria. 1934. See Kinako (p. 203). Okara (p. 291).

Cows milk came to Japan from China in the *Kotoku Tenno* era, in Choreki 3rd year.

Heian Period, first used the character for milk (in the word Raw / Fresh Milk) in the *Shinsen Seishiroku* (2 Chinese characters given).

In Tsuchiya's Soymilk book, p. 36. *Toju* = bean liquid, first appeared in the Kamakura period, in the book *Jidai Kamonjo.*

Kibun bought Alfa-Laval machines but they did not work; they had to be cleaned every 4 hours. So Kibun developed a steam infuser that injects steam into the plate heater. Kibun did not apply for a patent. Alfa-Laval now makes the machine Kibun invented, and also has no patent. With a patent you reveal a secret process. It's too risky.

Mr. Yamauchi of Hinode often visited with Marusan in Japan.

In Japan, Marusan is thought to be No. 1 in total soymilk production and sales–if you include bulk soymilk. Marusan has 3 soymilk factories in Okazaki, plus one each in Chiba and Aichi. Bulk soymilk is canned by other companies and used in bread, etc.

There was a big jump in soymilk production in Japan in 1982.

Companies that Marusan sells soymilk to resell it under their own brand.

Mitsubishi also sells a lot of bulk soymilk.

To date, 25 companies have been permitted to use the JAS mark.

Companies who buy Marusan's bulk soymilk include Sakura Shokuhin, Dai Tonyugyo, Nagano Tomato, and 2-3 others. Second largest soymilk maker in (total production) is Kibun. No 3 is Mitsubishi (which makes lots of bulk), Meiji and Asahi are tied for 4th.

Defoamer. Most soymilk makers use a defoamer. Silicon resin is popular but expensive. They also use monoglycerides

or sugar esters. Marusan uses a high temperature process that requires no chemical defoamer.

To make lactic fermented soymilk inoculate it with *L. Bulgaricus* and *L. thermophilus,* and hold at 37ºC for 18-20 hours to produce lactic acid. Some products are sold with lactic acid bacteria still alive. These are sold as dairy products and often have 3% added milk solids.

Marusan makes a firm soymilk yogurt sold only in Aichi Prefecture in plain, strawberry, and orange flavors, in a *happo styrol* package shaped like a Quonset hut. When was it introduced?

Many Japanese soymilks use calcium lactate to fortify the product with calcium. It coagulates the milk but the structure is later broken up with an homogenizer.

Tsuchiya prefers to use calcium carbonate, which does not dissolve or coagulate.

For emulsifiers, monoglycerides are outlawed. Sugar esters (*shoto no shibosan* ester) are okay. Some researchers believe that monoglycerides cause cancer = are carcinogenic.

Chakukoryo are artificial / synthetic flavors = chemically synthesized.

Marusan prefers to use maltose, a complex sugar, since it does not brown upon high temperature treatment or get caramelized or bitter.

Asahi no longer uses the defatted soymeal method. It is too expensive.

Since about 1981 all major manufacturers of soymilk in Japan have used roughly the same process. Tsuchiya published a key article on the basic process. Marusan was not upset, and within 6 months all had standardized their processes. This process is based on the 1967 Cornell discovery of the effect of heat on lipoxygenase enzymes.

Adding sodium bicarbonate improves the protein recovery, but its use is not allowed in pure (*jun*) soymilk except to neutralize old beans... and then one need not list it on the label.

The KEY is to crush the soybeans before adding boiling water, otherwise there is off flavor development at the center of the beans. Marusan has a patent; see page 131 of 1st edition of Tsuchiya's Soymilk book. #28385? Kibun has no patents.

Ask Tsuchiya all relevant DTD questions.

Tsuchiya has a 1932 Encyclopedia (*Hyakka Jiten*). Copy p. 1169 soymilk, p. 1184 tofu. See also Mame maki, kinako, moyashi, Okashi.

Kibun bought 50 copies of Tsuchiya's book on Soymilk.

Compare Marusan and Kibun flavors. Tsuchiya is a consultant for Marusan. Marusan has: 1. No additives. 2. High temperature processing.

Kibun makes no plain/pure soymilk.

Marusan is thinking of building a plant in Los Angeles, perhaps with Hinode / Mr. Yamauchi.

Does Kibun use any other artificial flavors besides milk flavor?

Which company (when) first used the present soymilk process in Japan? What are the key "know how" steps? Address: Tokyo [Technical consultant, Okazaki Marusan, Japan].

4052. *China Daily.* 1983. Baby formula plant now under construction. June 28.
• ***Summary:*** "China is building a plant with machinery donated by the United Nations Children's Fund [UNICEF] to produce 4,000 tons of baby formula a year Xinhua reported on Sunday.

"The plant in Shanghai will produce a formula developed by UN and Chinese nutrition experts made of rice and soybean powder, sugar, vegetable oil, various vitamins and inorganic salts.

"The formula is expected to be a nutritious milk substitute for children six months to three years old, it said. The plant is to start trial operation in September." Address: China.

4053. **Product Name:** [Soymilk Powder (Chocolate, or Cocoa)].
Foreign Name: Dourufen (Qiaokeli, or KeKe).
Manufacturer's Name: Beijing Shi Shi Pin Niang Zao Yan Jiu Suo (Beijing Brewing Research Center).
Manufacturer's Address: Beijing, China.
Date of Introduction: 1983. June.
How Stored: Shelf stable.
New Product–Documentation: Label. 1983, undated. 6 by 8 inches. Plastic. Qiaokeli: Red and white on clear. KeKe: Orange and white on clear. In 250 gm plastic bag. "Add 10 times hot water to drink."

4054. **Product Name:** Fresh&Light (Plain Soymilk).
Manufacturer's Name: Brightsong Light Foods.
Manufacturer's Address: 100-A Poultry St. (P.O. Box 2536), Petaluma, CA 94953.
Date of Introduction: 1983. June.
Ingredients: Water, soybeans.
Wt/Vol., Packaging, Price: Plastic pints, quarts, or ½ gallons.
How Stored: Refrigerated.
New Product–Documentation: Letter from Richard Rose. 1987. Aug. 29.

4055. *Dairi Fuudo* (*Daily Foods Science*). 1983. [Special issue on soymilk]. June. [Jap]
• ***Summary:*** The cover shows 4 different soymilk containers in a red, blue, and white photo. Address: Japan.

4056. Danish Turnkey Dairies. 1983. Soymilk seminars, People's Republic of China, and Report of DTD's future work with soymilk, May-June 1983. Aarhus, Denmark: DTD. 25 p. 31 cm.

• ***Summary:*** Contents: Introduction. Places visited and persons met. Report on observations and findings. Content of seminars.

"Mr. William Shurtleff was hired by DTD to accompany John Davies and Jens Peter Graverholt, together with Eddie Siu of EAC Hong Kong on a three week trip to China to present DTD's soymilk plants and program."

"Four seminars were given, each lasting approx. 1½ days: (1) Guangzhou, Guangdong Province, May 30-31. 26 participants.

"(2) Zhengzhou, Henan Province, June 2-3. 14 participants.

"(3) Harbin, Heilongjiang Province, June 6-7. 22 participants.

"(4) Beijing, Beijing Shi, June 10-11. 25 participants." Address: Aarhus, Denmark.

4057. Davis, William L. 1983. Japan: Surge in soy milk popularity could benefit U.S. *Foreign Agriculture.* June. p. 22.
• ***Summary:*** The growing popularity of soy milk in Japan is good news for U.S. soybean farmers. Current production is estimated at 70,000 tonnes/year, valued at $87.5 million. The industry expects the market to expand to over $260 million as several large firms are now starting production. Currently 11 major firms are producing soy milk. Tofu shops also market soy milk. Soy milk puddings are also now on the market. Address: Agricultural Counselor, Tokyo.

4058. **Product Name:** [Tofu, and Soymilk].
Manufacturer's Name: Ets. Co-Lu.
Manufacturer's Address: 38 Rue Chateaubriand, 13007 Marseilles, France. Phone: 913-144-14.
Date of Introduction: 1983. June.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1983. June 20. Owner: Andrew Moody. Leviton. 1988. Oct. 16. Trip to Europe with American Soybean Assoc. This traditional Vietnamese-run company makes about 700 kg/week of tofu for the local Asian market. Also makes soymilk.

4059. Gullo, Karen. 1983. Soyfoods consumption hits all-time high. *Vegetarian Times.* June. p. 12. [1 ref]
• ***Summary:*** This is a review and summary of *Soyfoods Industry Directory and Databook 1983* by Shurtleff and Aoyagi. 1982 USA production and retail sales figures are given for the following foods: Tofu (27,500 tons, $50 million in 1981), tempeh (450 tons, $2 million), and miso (750 tons). Four factors contributing to the growth of soyfoods are summarized. "Low-calorie convenience soyfoods products and frozen, meatless 'heat and serve' entrees will play and important role in soyfood's entrance into the mainstream American diet... Dairy-like soymilk and soymilk shakes, yogurt and ice cream, tofu cottage cheese and tofu burgers will soon be low-cost, low-calorie alternatives to mainstream supermarket fare."

4060. Herrmann, Karl. 1983. Ueber Sojabohnen und Sojaprodukte [On soybeans and soybean products]. *Ernaehrungs-Umschau* 30(6):175-79. June. [17 ref. Ger]
• ***Summary:*** Contents: Introduction, nutritional composition, amino acids in soy sauce. Unfermented soy products: Soymilk, tofu (*sojaquark*), aburage, kori-tofu, yuba, kinako. Fermented soy products: Soy sauce, miso (*sojapaste*), tempeh, sufu, natto. Address: Instutut fuer Lebensmittelchemie, Hannover Univ., Wunstorfer Str. 14, D-3000 Hannover 91 [West Germany].

4061. Island Spring Inc. 1983. Make a living making tofu! (Ad). *Soyfoods* Summer. p. 72.
• ***Summary:*** This quarter-page black-and-white ad is for the Soycrafters Apprenticeship Program, a professional 21-day intensive "hands-on" course in the commercial production and marketing of tempeh, tofu, soymilk, and related soyfoods. "Start your own soyfoods enterprise!... Join the soyfoods movement!." Address: P.O. Box 747, Vashon Island, Washington 98070. Phone: (206) 622-6448.

4062. Meyer, Nancy R.; Stuart, Mary A.; Weaver, Connie M. 1983. Bioavailability of zinc from defatted soy flour, soy hulls and whole eggs as determined by intrinsic and extrinsic labeling techniques. *J. of Nutrition* 113(6):1255-64. June. [29 ref]
• ***Summary:*** This study was conducted on male rats. Although soybeans contain significant quantities of zinc, the availability of this zinc from soy products are reported to be poor. Soybeans contain both phytic acid and fiber, which reduce mineral absorption. The zinc in soy flour and soy beverage is more available than that in soy protein isolates and concentrates. This is probably due to a decreased solubility of complexes formed between amino acid side chains, phytic acid, and minerals.

In part I of this study, retention of zinc from intrinsically labeled soybean flour (73%) was significantly less than from a zinc chloride isotope extrinsically added to a soy flour-based diet. Address: 1&5. Dep. of Food Science, Univ. of Illinois, Urbana, IL 61801; 2-3. Dep. of Foods & Nutrition, Purdue Univ., West Lafayette, Indiana 47907.

4063. Shurtleff, William. 1983. Soymilk and China's modernization program. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 4 p. Unpublished manuscript.
• ***Summary:*** Outline of a lecture accompanying a color slide show presented by Shurtleff in June 1983 to groups interested in purchasing modern soymilk plants in various provinces in China. Address: Lafayette, California.

4064. Shurtleff, William. comp. 1983. Main Japanese

soymilk manufacturers and their products–June 1983. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549 USA. 4 p. Unpublished typescript.
• ***Summary:*** This table contains six columns: Manufacturer, brand name, package size, type of packaging, launch date, and distribution (nationwide).

The manufacturers are: Kibun. Okazaki Marusan. Mitsubishi Kasei Shokuhin. Meiji Nyugyo. Kyushu Nyugyo. Nisshin Seiyu. Asahi Shokuhin. Kyodo Nyugyo. Yakuruto Honsha. Furuta Shokuhin Kogyo. Morinaga Nyugyo. Sugiyo. Koshin Nyugyo. Kenbi-sha. Saniku Foods (Saniku Fuuzu). Nagoya Seiraku. Nagano Tomato. Zenkoku Nokyo Chokuhan (Nôkyô). Yamato Shokuhin. Sokensha (Sôkensha). Ishihara Fuudo Sentaa. Chiba Seisen Shokuhin Kogyo (Kôkyô). Asahi Fuuzu. Sebun Irebun (7-11). Fukushima-ken Rakuren. Nacuraru Fuuzu (Natural Foods). Sebun Appu Inryo (Seven-Up). Address: Lafayette, California.

4065. Shurtleff, William. 1983. Soymilk seminars in China, May-June 1983, and proposals for future DTD work with soymilk. Singapore. 12 p. 28 cm.
• ***Summary:*** This report begins: "1.1 The Key Question DTD must face and study in depth is the potential for soymilk worldwide during the next 5-20 years in East Asia (especially China), the Third World in general, and in industrialized nations.

"Will soymilk be a minor part of DTD income (l-2%) or does it have the potential of being 20-30% of sales in 10 years? If the latter is true, then it is essential that DTD start now to develop stronger commitment to soymilk and greater expertise in this field.

"1.2 Evidence of Potential Growth

"1.2.1 Hong Kong–This was the first market for modern soymilk, pioneered by Vitasoy (soydrink made by Hong Kong Soya Bean Products Company Ltd.) from l945. Vitasoy's production grew from 50 million packs in l962 to 100 million in 1970, to 130 million in 198l. Yeo Hiap Seng and Coca-Cola Hi-C also have significant shares of the Hong Kong market.

"1.2.2 Japan–Production nationwide grew from 4 million litres in 1978 to 46 million litres in 1982, worth US$61 million.

"1.2.3 South East Asia–Since 1975 soymilk has taken off in all these nations except Indonesia. Competition is fierce.

"Major Untapped Markets–China is unquestionably the largest untapped market. It has a long tradition of using soymilk, is interested in modernization, is committed in 'Masterplan 2,000' to greatly expanding production of both soy and dairy milk, has a major need for the nutrients of soymilk (protein, calories, minerals), and could make many products from this milk such as ice cream, ice stick, yoghurt, tofu, yuba, etc. This China market is as big as all others combined." Address: Singapore.

4066. *Soyfoods.* 1983. Our first designed-for-America soymilk [Edensoy]. Summer. p. 6.

4067. *Soyfoods.* 1983. The Miami soyfoods scene [Heartsong Tofu, Sunshine Soy, Swan Foods, Swan Gardens, Unicorn Village, Oak Feed Store]. Summer. p. 38-39, 43.
• ***Summary:*** In Miami, three major tofu companies make about 25,000 pounds a week of vacuum packed tofu, prepared tofu products, and tempeh.

Brightsong Tofu: Bob and Toni Heartsong began making tofu in "1976 in a south Miami cottage style tofu shop which lasted until 1978. Making 900 pounds of hand-made tofu every week, the Heartsongs pioneered the Miami market, fully one year before the legendary and short-lived Swan Foods was opened in 1977. In January 1978 the Heartsongs moved to Redwood Valley, California, to help launch Brightsong Tofu. Meanwhile in 1977 they had written and Banyan Books had published, *The Heartsong Tofu Cookbook,* one of the first designed-for-tofu cooking guides. Bob Heartsong then worked in Hawaii for Mrs. Cheng's Soybean Products where he made 600 pounds of tofu daily."

Finally, the Heartsongs, peripatetic tofumakers, returned to Miami and in January 1982 opened Heartsong Tofu, a "1,200 square foot plant where today they produce 4,500 pounds of vacuum packed tofu each week (with an 18-day shelf life)." The company employs 6 full-time and 2 part-time workers. A list of their tofu products and equipment is given. The Grand Union supermarket chain sells $2,200/week of their tofu products.

"Sunshine Soy, owned and managed by Danny Paolucci, occupies 2,500 square feet, in suburban Coral Gables, of what once was a Borden's walk-in cooler... Paolucci opened Sunshine in June 1980, a company which today produces 4,000 pounds of tofu and various secondary products every week.

"Previously Paolucci served as production manager for Swan Foods until its closing in December 1978. [Note: Swan Foods opened in 1977.] Paolucci often measures his Sunshine Soy's sensible survival against Swan Foods exciting but disastrous history. Swan Foods was, unfortunately, a textbook example of uncontrolled growth marked by nonmanagement: no competition, distribution by the formidable Tree of Life, a wildly innovative product line, a quadrupling of sales in the first 18 months, $2,200 in weekly sales–ending in a disheartening crash. Their product line included baked, marinated, regular, and caraway tofus, soymilk (1,000 quarts weekly), tofu cashew pie, tofu dips and salads, soy yogurts, and soymilk shakes.

"Sunshine Soy, which employs four workers, has a privately labelled vacuum packed tofu (Golden Harvest brand) in most of Florida's 100 General Nutrition Centers; Tree of Life, out of St. Augustine, handles the distribution."

Swan Gardens: "Commanding the top tofu market position in Miami, Jocelyn and Richard McIntyre's Swan Gardens, which moved to south Florida in 1979 from Montana, produces 15,000 pounds each week of vacuum packed tofu. Their 10,000 square foot plant uses only 3 production workers, each working 10 hour days, 5 days weekly–a model of streamlining. In March 1982 Swan introduced their boxed tofu (see New Products, this issue) featuring their firm (16.6% protein) tofu which sells for $1.19 a pound in produce at Winn Dixie. A major Florida distributor moves an estimated 5,000 pounds of their dealer brand every week as far north as Washington, DC. Recently Swan introduced an okara tempeh with a two week refrigerated shelf life, and this product joins their Spicy Soysage and Baked Tofu, also vacuum packed. Swan Gardens tofu is pre-dated 4 weeks for the supermarkets but McIntyre claims it remains microbially sound for 6 weeks. The company is comfortably profitable."

Photos show: (1-2) Bob Heartsong, with tofu pressing in stainless steel forming boxes, and a close-up of his line of products. (3-4) Danny Paolucci and a close-up of his line of products. (5) A close-up of Swan Gardens' products.

"On the retail natural foods level, four major stores share the bulk of Miami soyfoods sales. The Unicorn Village in North Miami Beach is stocked with 25 soy products... The Unicorn itself prepares a Tofu Cottage Salad, Eggless Egg Tofu Salad, Baked Tofu, and Tofu Onion Dip in their restaurant for retail sale in their adjoining store." Also discusses: The Oak Feed Store, a macrobiotic retailer in Coconut Grove (carries 44 soy products). Sundance Natural Foods in downtown Miami (many tofu-based deli items prepared in their kitchen). Nature's Touch in Miami.

4068. *Soyfoods.* 1983. Wildwood's sandwich power [Tofu sandwiches from Wildwood Natural Foods in Fairfax, California]. Summer. p. 42.

• ***Summary:*** "Wildwood Natural Foods has carved out a successful market niche in the competitive Bay Area soyfoods scene with their daily delivery of fresh tofu sandwiches and tempeh salads. The three year old company has built its reputation and sales volume on same-day freshness as all products reach the stores by 12 noon on the same day as manufacture. Wildwood's concept, backed by their in-house tofu shop, is eminently worth imitating in other similarly strong retail marketplaces.

"The Wildwood shop begins bustling with sandwich-making activity at 5 a.m. six mornings a week as about a dozen (out of a 35 member staff) workers prepare the daily quota of 800 sandwiches completing them by 10 when the truckers take them down to San Francisco, about 60 minutes drive away. With their 340 square foot steam kettle tofu shop, Wildwood, located in Fairfax, California, produces 2200 pounds of nigari tofu every week of which one half is used for sandwiches, the other half for distribution as bulk tofu under the "UFO" brand name ("us feeding ourselves"). In the busy summer months, sandwich production can easily soar to 6000 a week; surprisingly the returns on day-old sandwiches is only 5%.

"Under the guidance of Paul Duchesne and Bill Bramblett, the company was launched in August 1980 [Note: Actually that was when Wildwood began manufacturing tofu, on 8 Aug. 1980; they had incorporated in April or May 1980]. Duchesne had been supplying Marin County with his brown rice and tofu sandwiches since 1975 [Note: Actually since late 1977] when Bramblett suggested they expand his concept, make tofu, and distribute a wider line of tofu sandwiches.

"Today in mid-1983 (with partners Bramblett, Frank Rosenmayr, and Paul Orbuch) Wildwood distributes an impressive line of sandwiches (which retail for $2.25 each) including Avo-Tofu, Brown Rice & Tofu, Mustard Brown Rice & Tofu, Curry Brown Rice and Tofu, Sushi, Tofu Steak, Supreme Bean Tempeh Burger, Hijiki Rice Pie, and Seventh Heaven Bread. They also make prepared salads, packaged in 12 ounce containers which retail for $2.25, including Curry Tofu, Tofu Vegetable, Temptation, Potato, Hummus, Tabooli, and Good Puddin', in addition to bottled plain and honey-vanilla soymilk. The salads are dated for 7 days and the sandwiches for 1 although they stay fresh for 2 days.

"To service their Bay Area accounts, Wildwood employs four drivers who ply four different routes, which often take them further north to Santa Rosa or south to Santa Cruz. The limit to fresh sandwich distribution, Paul Orbuch explains, is simply how far they can be transported after production and before 12 noon, the cut-off period as the lunch hour business is crucial to retail sandwich sales.

"Wildwood's distribution system also handles local natural foods products such as Grain Dance seitan, Evolutionary Bean's Not Cheesecakes, and Solar Tacos (with soy protein). Wildwood's line, states Orbuch, is now moving into supermarkets, their Brown rice and Tofu sandwich accounts for 30% of total sandwich sales, and their products are handled by at least two area college lunch concession stands. Wildwood has been noted for their novel pedal-powered Tofumobile which they use in the summertime to bicycle sandwiches around to stores in trendy Marin County."

4069. *Soyfoods.* 1983. The soyfoods industry on display [at Natural Foods Merchandiser Expo in Anaheim, California and Whole Life Times Expo in San Francisco]. Summer. p. 7.

• ***Summary:*** Sixteen soyfoods companies exhibited at Anaheim to 7,600 paying visitors. "Six soyfoods companies shared an official Soyfoods Association booth, where they retailed their own products and provided liberal tasting samples as well. Participants included Legume Inc. (tofu pizza, tofu lasagna), Farm Foods (Ice Bean, in cones), Quong

Hop (tofu burgers, tofu canolli, soymilk), Sonoma Specialty Foods (tofu salads, tofu cheesecakes), Laughing Moon (vegetable tofu turnovers), and San-Jirushi International (samples of San-J Real Tamari). The Association booth, one of 10 food catering booths at the Expo, was 'packed solid through the whole show,' reports Farm Foods' Robert Tepper."

"William Shurtleff gave a one hour speech and slide presentation on soyfoods to an enthusiastic audience."

Other interesting companies include: Pacific Tempeh, Light Foods, Essential Foods, Garden of Eatin', Living Lightly, Kibun, Westbrae Natural Foods, Edward & Sons, Cedarlane Foods, Morinaga, Worthington Foods.

Interesting products: Light Links tofu "hotdogs," Ravioli, Tofumale Tamale, Tempehroni Pizza, Chili Con Tempeh, Tempeh Enchilada.

Photos (without captions) show: (1) Danielle Lin of Laughing Moon. (2) Steve Snyder of Hinode. (3) The Morinaga booth, with Mr. Seishiro Ikegami.

4070. **Product Name:** Tofu, and Soymilk.
Manufacturer's Name: Stewart Batchelder Tofu.
Manufacturer's Address: 6 Tweed St., N. Lancaster, High Bentham, England.
Date of Introduction: 1983. June.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1983. June 20. Owner: Stewart Batchelder/Batcheldor. The company has a second address in addition to the one listed above: Wholefoods Shop, Singl St., 78-A Penny St., Lancaster, England. Neither location has a phone.

4071. **Product Name:** [Tofu Powder].
Foreign Name: Doufufen.
Manufacturer's Name: Zheng Zhou Shi Shu Cai Gong Si, Nan Guan Fu Shipin Chang (Zheng Zhou City Vegetable Company, South District Food Factory).
Manufacturer's Address: Zheng Zhou, China.
Date of Introduction: 1983. June.
New Product–Documentation: Label. 1983, undated. In plastic bag. Instructions for making soymilk, tofu curds, silken tofu, and firm tofu.

4072. Tsuchiya, Kanji. 1983. Gusseted foil retort pouches (Interview). Conducted by William Shurtleff of Soyfoods Center in Japan, July 6. 1 p. transcript. [Eng]
• ***Summary:*** In Japan this pack is called a "stand pack." The process patent and machines are owned by Robert Bosch GmbH in West Germany. The packaging and printing in Japan is done by Toppan Insatsu, a big printing company. There is very little problem with leakers outside the filling plant. The product can be stored at room temperature without problems, especially if it is hot packed (at 95ºC). The filling process resembles that for Tetra Pak, but no hydrogen peroxide (*kasanka suiso*) is used. If it is not hot packed, it is usually retorted, like a can. The laminated plastic material will withstand this. Marusan was the first in Japan to introduce this pack, in about 1981. They now have 2 machines, each putting out 6,000 packs an hour.

Tsuchiya thinks this is the *best* pack for China and other Third World countries. The hot pack product would have a storage life at room temperature of 1 month without refrigeration; only 1 in 10,000 would spoil. Address: Tokyo [Technical consultant, Okazaki Marusan, Japan].

4073. Ota, Mr. 1983. Mitsubishi Trading Company's interest in and involvement with soymilk (Interview). Conducted by William Shurtleff of Soyfoods Center, July 18. 2 p. transcript.
• ***Summary:*** Mr. Ota is in the USA trying to find a company to do a joint venture making soymilk in America, for two purposes. (1) To sell powdered soymilk in Japan, especially to the baking industry, and especially small bakers, who cannot buy liquid soymilk in bulk. (2) To sell soymilk in USA to help offset or underwrite the costs of (1).

In Japan, Marusan, Kibun, and Mitsubishi all have the same installed capacity for soymilk production.

Recently Kibun, a relatively small company, underwent a severe cash flow crisis by overdoing their expansion. So they had to turn to Kamogawa Kikai, a much larger company, and ask them to make most of their soymilk. Kamogawa is a Kibun associated company. I think Kibun makes only 30% of their own milk. Kamogawa can borrow money much more easily than Kibun. Marusan is also vulnerable for the same reason.

Mitsubishi Shoji (the Trading Co) thinks that Meiji will eventually be the strongest soymilk supplier in Japan. All soymilk makers can be divided into three major types: (1) Smaller companies making soymilk as one of various products (Marusan, Kibun), (2) Dairy Companies (Meiji, Morinaga, Yukijirushi), and (3) Soft Drink and Beer Companies (Kirin, etc.).

All soymilk makers in Japan are now making big profits. The ex-factory production and overhead costs for one 200-ml pack of soymilk, including the package itself is about 25 to 30 yen ($O.105 to $0.126). Of this, by far the biggest portion is the carton, and a Tetra Brik carton costs about 10 yen ($0.042); it costs slightly less for big manufacturers who have more bargaining power to negotiate with Tetra Pak. Mitsubishi says that in most cases there is no need to sell soymilk in Tetra Pak in Japan, and predicts that many companies will soon abandon it for less expensive packaging, such as Pure-Pak, which costs about half as much as Tetra Pak. Meiji will be strongest for three reasons: 1. They have very good dairy experience and dairy distribution routes. 2. They can easily use Pure-Pak or have big bargaining power to get lower Tetra Pak Prices. 3. The head of the company, Mr. Shimaura, wants to greatly expand

Meiji's soyfoods operations.

Japanese have three basic beliefs conducive to soymilk sales that Americans don't have. 1. Plant protein is better than animal protein. 2. Alkaline foods are good for health. 3. Soyfoods are good for you.

In the old days (pre-1960s), soymilk didn't taste good, but it was thought to be good for you. Samurai drank soymilk in Kyushu. The big improvement in soymilk flavor has bean one major reason for its recent rise in popularity.

Nowadays Kibun and Marusan are doing lots of TV advertising. There are even articles in porno magazines claiming that drinking soymilk will increase one's sexual energy and potency. The vitamin E in soymilk also is thought to help this and to slow the aging process.

Japanese consumers of soymilk tend to be those with an above average level of education. Many drink soymilk for rational reasons, which (says Mitsubishi) is why most prefer dairylike to plain. In Japan plain is called *Jun* (pure) and dairylike is called plain.

Soymilk was Mitsubishi Kasei's first food product–ever! Mitsubishi bought equipment and know how from House Shokuhin (when?). Mitsubishi sells lots of soymilk to other companies, who package it under their own brand.

Meiji's soymilk production process is almost entirely automated. Only 3 workers are required. One to discard defective packages, one to package cartons in crates, and one for general checkup and inspection.

IOM (Indiana, Ohio, Michigan) soybeans have high moisture content. Kibun uses IOM, which is why they do not make plain (*Jun*) soymilk. But IOM cost $295 a tonne (metric ton) whereas the better quality Beeson, an identity preserved soybean, cost $506 a tonne, or about 71% more. Yet from the farmer, both cost the same. The difference is mostly in the handling costs.

In Japan there is no formal/JAS distinction between whole soy flour and powdered soymilk. They are used interchangeably and both called "soymilk." Many companies in Japan now make one of these two products, as for use in breads, noodles, etc. The sales in 1982 were 3 billion yen ($1O.98 million), increasing to an expected 7 billion yen in 1983. Because of high energy costs for drying soymilk in Japan, Mitsubishi is considering producing powdered soymilk in America, using Beeson soybeans. Whole soy flour is called *zenshi daizu-fun* = full-fat soy flour. Virtually all of the Tetra Pak soymilk in Japan is sold refrigerated–even though it need not be. The canned soymilk may or may not be refrigerated. Address: Mitsubishi Shoji.

4074. Dominguez de Diez Gutiérrez, Blanca. 1983. Re: Work with soyfoods in Jalapa, Mexico. Letter to William Shurtleff at Soyfoods Center, July 20. 1 p. Handwritten.

• ***Summary:*** When your book on soya history "is published I would like very much to purchase several. Please tell me where it is available. It will be a great help for me spreading the use of soya, as now the government is really making an effort to have it planted and consumed, of course in some states more than others. It will serve me as an introduction, so I think it shall be God sent in many ways.

"Have thought a lot about your osteoporosis. How are you? I think it would be better for babies to have both cow & soya milk if their parents can afford it & pure soya milk in case they are very poor. Milk from cows has become a luxury, also meat, so soya more than ever will be a means of survival, although I still worry about the calcium. Have thought of including egg shell pulverized.

"Have not forgotten the newsletter. Am getting ready for it. What in particular would you like published. I think now we could include lots of information from your books, history book & soya news in Mexico. A lot of things are happening." Address: Apdo. Postal #226, Jalapa, Veracruz, Mexico.

4075. *Toyo Shinpo* (*Soyfoods News*). 1983. [Tofu shop soymilk: Many have a soymilk dispenser that is succeeding]. July 21. p. 36. [Jap]

• ***Summary:*** 90 tofu shops in Kobe have a soymilk dispenser. Customers can drink soymilk on the spot or buy 1 liter of soymilk for 380 yen, including the cost of the container (polyethylene).

In Aichi, soymilk is most popular among people in their 40s, Most like a paper pack rather than a can, plastic, etc.

4076. Snyder, Steve. 1983. Mr. Yamauchi and Hinode's interest in and involvement with soymilk (Interview). *SoyaScan Notes.* July 30.

• ***Summary:*** Steve called me to ask various questions. Then Shurtleff asked him if Hinode was still planning to make and market soymilk. He said "no." Shurtleff asked why?

1. The main reason was that it was getting too expensive to put together the whole project. Initially it was estimated to cost $500,000. Now it looked like $4.5 million.

2. The market: Steve did a lot of market research. It looked promising in that he could get a lot of distribution but not so promising for repeat purchases. He talked to a great many people and felt it would require spending a lot of money to convince people to buy the product again.

3. Placement of product in stores: This is the key point. Do you position soymilk as a children's juice, in the dairy section, in self standing end cases, in the adult section, with nutrition section, in the produce section with tofu?

4. The name is also a big problem. He tried to trademark "Tonyu"–the Japanese name for soymilk–but failed.

So finally they gave up, even though Marusan was actively pursuing a joint venture and wanted to invest and provide technical assistance. I think he said that Shoan had even ordered two Tetra Brik machines.

Steve is now working on development of a Tofu Parfait. Tofu is a big plus in the product. He has orders for 70,000

cases the first 6 weeks.

Steve says Shurtleff must visit Ms. Gooch's in Los Angeles. Super natural foods supermarket.

Steve thought the SANA [Soycrafters Association of North America] meeting was very positive. He was delighted that Jack Mizono was elected vice president. and that Tom Timmins is on the standards committee.

Steve is planning to do a program for 100 or more nutritionists and foodservice people on tofu; Thelma Dalman will speak. He will give away a packet of info, including a free copy of our books. Address: Marketing, Hinode, Los Angeles, California. Phone: 544-2781.

4077. Brightsong Light Foods. 1983. Handmakers of these fine light foods: Premium Tofu, Marinated Tofu, Cottage Salad, Missing Egg Salad... (Leaflet). Petaluma, California. 3 panels each side. Each panel: 22 x 9.5 cm.

• ***Summary:*** The front panel of this leaflet, printed blue on white, lists 14 soy products made by the company. They are: Premium Tofu, Marinated Tofu, Cottage Salad, Missing-Egg Salad, Bright-Burger, Soysage, Chocolate Lite Mousse, Amaretto-Almond Lite&Creamy, Almond Lite&Creamy, Strawberry Diet DeLite, Orange Sunshine protein drink, Fresh&Light soymilk, Honey-Nilla soymilk, Maple-Maple soymilk.

The logo is a flying bird with a white throat. The slogan: "Where good taste and nutrition come naturally." The inside three panels discuss: About Brightsong (since 1978). What makes Brightsong Tofu so special. About the other Brightsong products.

Note: This particular leaflet, which was sent to Steve Fiering, c/o The Soy Plant,... Ann Arbor, Michigan 48104, is postmarked 21 Jul 1983. Address: P.O. Box 2536, Petaluma, California 94953. Phone: 707-778-8638.

4078. **Product Name:** Edensoy (Soymilk) [Plain, or Carob].
Manufacturer's Name: Eden Foods, Inc. (Importer). Made in Japan by Marusan-Ai Co., Ltd.
Manufacturer's Address: 701 Tecumseh, Clinton, MI 49236.
Date of Introduction: 1983. July.
Ingredients: Plain: Water, soybeans, kombu seaweed, pearl barley. Carob: Water, soybeans, pearl barley, barley malt, carob, kombu.
Wt/Vol., Packaging, Price: 6 fluid oz (180 ml) free-standing retort pouch.
How Stored: Shelf stable.
Nutrition: Plain: 89.9% water, 1.9% protein, 1.5% fat, 7% carbohydrates, 48 calories/100 gm.
New Product–Documentation: Labels. 1983. 3.25 by 6 inches. Plastic. Carob: Brown, and yellow on silver package. Plain: Navy and light blue on silver. "Natural soy beverage. No cholesterol. Easy to digest. Made from whole soybeans. Edensoy has been known in the East since the earliest times as more than a drink, but a food. It may be served hot or cold and is suitable for a variety of diets and recipes." Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. "Cup of Health."

The use of kombu as an ingredient offers at least three benefits: (1) Natural thickener. (2) Adds salt without having to list salt on the label. (3) Adds various minerals.

Article in Soyfoods. 1983. Summer. p. 6. "Eden Foods imported the first 300,000 units of 6-ounce packages in June 1983 from Japan." The product was officially launched in July at a trade show.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 45-46.

East West Journal. 1984. June. p. 68. "Taking the moo out of milk." Shows a black-and-white photo of Edensoy plain and carob flavors in stand-up retort pouches. The package is made of a 5-layer coated aluminum foil film. The inside layer is a cellulose-based biodegradable film. The outermost layer is a gas-resistant plastic which ensures a 1-year unrefrigerated shelf-life for the product.

Dairy Record. 1985. Sept. p. 86. Cranberry Edensoy added in May 1985. Shurtleff & Aoyagi. 1986. Soymilk Industry and Market, Update. By March 1986 Edensoy was selling very well, at the rate of about 600,000 units (28,125 gallons) per month. But sales have not increased much recently.

Talk with Ron Roller of American Soy Products (formerly of Eden Foods) in Saline, Michigan. 1991. Nov. 27. At the time this product was introduced, the exchange rate with Japan was good, and Eden's imported Japanese foods, including soyfoods, entered a period of rapid growth. Erewhon had just gone out of business, and macrobiotics was very popular. Macrobiotic foods peaked during the years 1984-1986 in part because there were not many other quality [certified organic] prepared natural foods, nor were there many major companies in the natural foods industry (Westbrae, Arrowhead Mills, Eden, etc.). Since then, many good-quality prepared natural foods have become available, and many are easier to relate to and more convenient.

4079. Guo, Xiang-ao. 1983. Research on heat denaturation of soy protein after solvent extraction, and traditional Chinese soy foods. *INTSOY Series* No. 25. p. 64-66. B.J. Irwin, J.B. Sinclair, and Wang Jin-ling, eds. Soybean Research in China and the United States (College of Agric., Univ. of Illinois at Urbana-Champaign).

• ***Summary:*** Solvent extracted soybean flakes and meals (moisture content 9.6%) were subjected to 80ºC, 90ºC, and 100-105ºC temperatures for 15 or 20 minutes. The critical temperature for protein denaturation was 80ºC. At higher temperatures, solvent-extracted soybean meal was denatured more rapidly than soy flakes. Preparation of the following traditional Chinese soyfoods was described briefly: Soy sprouts (*dou ya*), soybean jiang (*dou jiang*), fermented black

soybeans (*dou chi*), soy sauce (*jiang you*), soy beverage (*dou jiang*), tofu (regular and soft, *doufu*), firm tofu (*doufu gan*), pressed tofu sheets (*doufu yi*), vegetarian chicken (*su ji*), fried tofu (*you-doufu*), fermented tofu (*doufu-lu*), and yuba (*doufu pi*).

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term *doufu pi* (spelled in pinyin) to refer to yuba, which he describes as follows: "Soy beverage is poured into a shallow pan and heated slowly. A protein film forms on the surface. This film is rolled and dried until it resembles bamboo. The taste and composition are similar to textured soy protein. It is a very nourishing food." Address: Zhengzhou Grain College, China.

4080. Irwin, Bonnie J.; Sinclair, J.B.; Wang, Jinling. eds. 1983. Soybean research in China and the United States. *INTSOY Series* No. 25. viii + 194 p. July. 28 cm. Proceedings of the First China/USA Soybean Symposium and Working Group Meeting. Held 26-30 July 1982 at University of Illinois (College of Agric., Univ. of Illinois at Urbana-Champaign). [150+ ref]
• ***Summary:*** "A significant amount of soy flour and soy protein concentrate is used in milk replacers for feeding calves. Soy flour and grits, and more limited amounts of soy protein concentrate and soy protein isolates, are used in pet foods." In the U.S. the combined production of soy four, grits, and modern soy protein products "used for human and specialty animal feeds is probably in the range of 1 million metric tons per year.

In a subsequent discussion, D.W. Johnson stated that "a rough summary of U.S. annual soy products production would be: soyflour and grits 600 million kg, textured soy flour 70 million kg, soy protein concentrate 55 million kg, and soy protein isolate 55 million kg." Production of spun soy protein fiber is negligible. Address: 1-2. Univ. of Illinois, Urbana; 3. Northeast China Agricultural College, Harbin, Heilongjiang, China.

4081. **Product Name:** To-Neu Natural Soy Beverage.
Manufacturer's Name: San-J International, Inc. (Importer). Made in Japan by Kibun Foods.
Manufacturer's Address: Colonial Heights, Virginia.
Date of Introduction: 1983. July.
Ingredients: Water, soybean, corn oil, honey, lecithin, calcium lactate, carrageenan.
Wt/Vol., Packaging, Price: 6.76 fluid oz (200 ml). Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 6.76 fl oz.: Calories 117, protein 7 gm, carbohydrate 3 gm, fat 9 gm.
New Product–Documentation: Label. 1983. 2.5 by 3.25 inches by 1.5 wide. Paper carton. Orange, yellow, black, and white on green. "A refreshing new beverage made from whole soybeans! In the Orient, 'to-nyu' means 'soymilk.' Kibun TO-NEU is cholesterol free, and contains more protein than ordinary milk. TO-NEU is also rich in vitamin E." Ad in Whole Foods (see next page). 1983. July. "To-Neu soy drink is packaged to stay fresh and nutritious for months. The trick is keeping it around that long."

Talk with Michael Fountain of San-J. 1984. Feb. 15. San-J says they only test marketed Kibun To-Neu; it was not a true launch that failed. They were supposed to come out with at least one other flavor. The big problem was that they had only plain. They planned to get carob but were unable to. Fountain thinks that Eden Foods' carob outsells their plain by 10 or 15 to 1. San-J will re-launch later with 4 flavors, probably in early 1985.

Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 46-47. Front label reads: "San-J Kibun TO-NEU Natural Soy Beverage, Non-Dairy." Kibun specified that San-J could only sell the product to the natural and health food trades. Promoted for use as a refreshing drink, as a cereal topping, or in place of milk in sauces, soups, and desserts.

4082. *Toyo Shinpo* (*Soyfoods News*). 1983. [Mitsubishi this year will increase the number of its soymilk vending machines in Japan to 3,000]. Aug. 1. [Jap]
• ***Summary:*** They now have 2,000.

4083. Klatt, Craig. 1983. Update on Worthington Foods and other Seventh-day Adventist companies making soyfoods (Interview). *SoyaScan Notes*. Aug. 8. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Worthington Foods is going stronger than ever. They are expanding into new, more natural products, such as Tofu Garden Patties, as part of their Natural Touch line. They plan to develop more new products in this line. Worthington bought back their company from Miles Laboratories for less than they sold it for, and got a new factory and the Morningstar Farms line as part of the deal.

Payless and Longs drug stores in California sell Loma Linda infant formula.

Country Life, formerly Cedar Lake, now imports bottled soymilk (free of sugar) from Japan, and has a chain of vegetarian restaurants, including one on Wall Street. Address: Manager, Adventist Book Center, 2300 Nourse Rd., Pleasant Hill, California 94523. Phone: 415-685-4300.

4084. Davies, John. 1983. Re: Reflections on trip together to China. DTD masterplan. Letter to William Shurtleff at Soyfoods Center, Aug. 11–in reply to inquiry. 3 p. Typed, with signature on letterhead.
• ***Summary:*** The Masterplan began in 1979 when DTD's Managing Director, Joern B. Jensen, during a fact finding mission in the People's Republic of China, came to an agreement with the relevant governmental institutions that DTD would conduct an investigation on how to improve the Chinese Dairy Industry.

TO-NEU SOY DRINK IS PACKAGED TO STAY FRESH AND NUTRITIOUS FOR MONTHS. THE TRICK IS KEEPING IT AROUND THAT LONG.

TO-NEU (tow-new) Soy Drink is a healthy, natural beverage made from soybeans. Long a staple in the Japanese diet, soybeans are cholesterol-free, high in protein, and a rich source of important minerals plus vitamins B and E.

Serve TO-NEU chilled as a refreshing pick-me-up. Pour it over breakfast cereal. Pack it in school lunches, or use it in place of milk in sauces, soups, and desserts.

Tetra-Pak® containers keep TO-NEU first-day fresh for months without refrigeration. That makes it easy for you to keep plenty on hand without fear of spoilage. The difficult part will be keeping it in stock once your family's tried it.

San-J International, Colonial Heights, VA 23834 san-j

As a result, Sino-Danish joint committee meetings were held in Beijing in May 1980. Address: Danish Turnkey Dairies Ltd., 2 Europaplads, P.O. Box 146, DK-8100 Aarhus C., Denmark. Phone: +45-6 12 4155.

4085. *Toyo Shinpo* (*Soyfoods News*). 1983. [The main reasons for Japan's soymilk boom]. Aug. 11. [Jap]
• ***Summary:*** Japanese are getting more interested in health. Concept of the healthy elite; the elite must be healthy. Influence of U.S. vegetarians. Popularization of long-life [Aseptic / UHT] packaging [which has a long shelf life, even without refrigeration]. The flavor of soymilk has improved greatly. Mass communications in Japan took an interest in soymilk. Japan's dairy milk industry (Meiji Nyugyo, etc.) got interested in soymilk which gave a impetus to the new industry.

JAS [Japanese Agricultural Standards] were established for soymilk.

Note: The above are not in any particular order. They came out of a conference on soymilk.

4086. Smith, Robert Archer. 1983. Work with and recollections of Henry Ford (Interview). Conducted by Richard B. Folsom of Canton Township, Michigan. Aug. 15. 37 p. typed transcript.
• ***Summary:*** Robert A. Smith was born in Detroit, Michigan, on 1 April 1913. He spent much of his childhood in Detroit. In 1926 he entered the Ford Trade School and graduated as valedictorian of his class in 1930 at age 17. In 1931 he was placed in charge of the Greenfield Village Experimental Greenhouse, trying to find out how waste materials from farms could be used as plant fertilizers. Henry Ford would come in and chin himself on a beam in the Greenhouse. Bob Boyer, who was in charge of the chemical plant, was Smith's boss. Beginning in late 1933, Bob began to work under the personal direction and guidance of Henry Ford on many unique projects. Henry Ford was so impressed with Bob that in the spring of 1937, he invited Bob and his wife (Roberta) to move into the "Square House," which Ford had built himself in 1888. The Smiths moved into the house on Henry Ford's 74th birthday–July 30, 1937. Also in 1937, Henry Ford ordered a laboratory built for Bob in another former Ford residence, the "Moir House." Bob worked in the "Moir House" until 1942 when he was ordered by Henry Ford to move into the new Carver Laboratory, which was formerly the Dearborn Waterworks. In 1943 Bob co-founded Delsoy Products Corp. (with Henry Ford's complete approval) to develop, produce, and market soy-related foods. Bob ended his career with the Ford Motor Co. in Aug. 1945, when it became apparent to him that Henry Ford would soon retire. The two men had worked very closely together for 12 years. Bob chose not to continue to work without the guidance, inspiration, and genius of Henry Ford. Bob retired from Delsoy in 1963.

In early 1937 Henry Ford drove Smith over to Moir House and on the way told Smith about how he would like to get rid of cows. Ford asked Smith to work at Moir house to develop a milk that made no use of cows. The Moir House lab was very simple, with the only electricity generated by a windmill. Nearby, Dr. Edsel Ruddiman had a modern lab with fancy equipment and electricity. Nevertheless, Smith's approach was to isolate the various components of the soybean (protein, fats, etc.), then re-blend those that were desired. He blended isolated soy protein (from soybean meal) with hydrogenated soy bean oil and in a few months had a product that looked and tasted quite a bit like milk. Ford came by every day to see how things were going and to offer encouragement and suggestions. The day this new product was ready, Ford liked it a lot. He wrote in his little book: "First... Good Milk... No Cow!, then he showed Smith the notebook. This was in about mid-1938. Henry came to the Moir House lab to relax and get away from the pressures of work. He was a good teller of stories and jokes when only a few people were around.

After Henry's son, Edsel, died in about 1943, Henry's health began to decline. He never seemed to be the same again. The sparkle went out of his eyes and his energy declined.

Smith regrets that he never visited Henry Ford at Fair Lane during his last years when he was sick in bed. "I think he would have liked to have known what I was doing with the soybean milk project. You know we had made it a commercial success [through Delsoy Products]." Mr. Smith greatly enjoyed his association with Henry Ford. Next to his wife, Ford was the most important person in his life.

David L. Lewis (1976, p. 486) says of the square house: "In addition to Fair Lane, four dwellings in which the Fords lived remain. The 'square house' or 'honeymoon house,' which Clara designed and for which Henry cut the timber and helped build, was the couple's home from 1889-91. Ford always kept a watchful eye on the place, and in 1937 installed a young company chemist, Robert Smith, and his family in it. When the structure was threatened by highway expansion in 1952, the Smiths removed it a few miles west to 29835 Beechwood, Garden City." Address: Smith: 26351 Hollywood Ave., Roseville, Michigan 48066; Folsom: 46000 Geddes Rd., Canton Township, Michigan (near Dearborn). Phone: Smith: 313-777-5394. Folsom: 313-495-1379.

4087. Bryan, Ford R. 1983. Dearborn's Chemical Park. III. The Carver Food Laboratory. *Dearborn Historian* (*The*) No. 3. p. 90-97. Summer. [23 ref]
• ***Summary:*** A good overview of Henry Ford's work with soybeans starting in about 1930 when Robert Boyer was brought to Dearborn to work at Greenfield Village and put in charge of the Chemical Plant. Ford's stated objective was to "find industrial uses for farm products." "Mr. Boyer's summary of the first year accomplishments describes work

extracting oils from orange peels and furfural from garbage, as well as work on wheat, soybeans, and carrots. Boyer's 1931 summary report [i.e. report of work conducted during the year 1931, written in Jan. 1932] was sent to Mr. Ford at Fort Myers, Florida... In a separate building near the Engineering Laboratory in Dearborn, Dr. Edsel Ruddiman, Henry's boyhood schoolmate, was working with wheat, soybeans, carrots and tomatoes to 'make milk without a cow.'

"In 1932 [sic, Dec. 1931] Mr. Ford issued orders to concentrate on the soybean. His tractors began to plant and harvest thousands of acres. In a 25-acre field on Greenfield Village property some 500 experimental varieties of soybeans were grown. In Sept. 1932 Dr. Ruddiman and Mr. Boyer attended the American Soybean Association convention in Washington, DC. That year the Village Chemical Plant was extracting 6 tons per day of soybean oil. The Rouge plant started with 24 tons a day, followed by the Milan and Saline plants. These industries utilized the oil in making paints and plastics. The small Village Plant led the parade, however, with soybean milk, bread, ice cream, and an experimental plastic car (chassis excluded). The soybean foods became standard fare at the Ford plant cafeterias and at Ford Hospital. The ice cream–most delicious–was for years sold as Del(icious) Soy(bean) Topping" [i.e. Delsoy Topping; actually it was a soy-based whipped topping, not an ice cream].

Ford had known of the work of Dr. George Washington Carver since about 1910 but they probably first met in 1936 at the Second Dearborn Conference of the National Farm Chemurgic Council. Both were vegetarians with similar interests, and firm believers in natural foods. Dr. Carver's assistant, Mr. [Austin W.] Curtis, spent the summer (ca. 1940) working with Robert Boyer in The Soybean Laboratory.

In July 1942 Dr. Carver came to Dearborn and dedicated the "Nutritional Laboratory" of the Ford Motor Co. It was in the old Water Works building. Soon the laboratory, with its eventual 25 people under Mr. Robert A. Smith, went into volume production of soybean milk and ice cream. On 5 Jan. 1943 Dr. Carver died in Tuskegee, Alabama. The Nutritional Laboratory, soon better known as the Carver Laboratory, operated for at least a while after 1945, when Robert Smith left to go into business for himself, and Clem Glotzhober took charge. After Mr. Ford died on 7 April 1947, the building was again essentially abandoned. Address: Dearborn, Michigan.

4088. Bryan, Ford R. 1983. Dearborn's Chemical Park. III. The Carver Food Laboratory. *Dearborn Historian* (*The*) No. 3. p. 90-97. Summer. [23 ref]

• ***Summary:*** A good overview of Henry Ford's work with soybeans starting in about 1930 when Robert Boyer was brought to Dearborn to work at Greenfield Village and put in charge of the Chemical Plant. Ford's stated objective was to "find industrial uses for farm products." "Mr. Boyer's summary of the first year accomplishments describes work extracting oils from orange peels and furfural from garbage, as well as work on wheat, soybeans, and carrots. Boyer's 1931 summary report [i.e. report of work conducted during the year 1931, written in Jan. 1932] was sent to Mr. Ford at Fort Myers, Florida... In a separate building near the Engineering Laboratory in Dearborn, Dr. Edsel Ruddiman, Henry's boyhood schoolmate, was working with wheat, soybeans, carrots and tomatoes to 'make milk without a cow.'

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4089. **Product Name:** [Biodelis {Soy Beverage}].
Foreign Name: Biodelis.
Manufacturer's Name: Galactina Ltd.

Manufacturer's Address: Birkenwej 1-6, CH-3123 Belp, Switzerland.
Date of Introduction: 1983. August.
New Product–Documentation: Soya Bluebook. 1985. p. 85; 1986. p. 104. Talk with Conrad Seewer of Galactina. 1990. May 21. This product is for clinical feeding. Made from whole soybeans, it is made for medical use and marketed only to clinics and hospital, not to the consumer. It is a liquid food in Tetra Pack. It is a complete meal for people on liquid or partially liquid diets.

Talk with Peter Speck. 1990. May 23. Vita Drink is sold in Switzerland. It is very similar to Biodelis, which is sold only in France. The base and flavors are the same but the vitamin and mineral content is slightly different to meet the different regulations in each country.

Letter from Conrad Seewer of Galactina. 1990. July 13. The first exports to France were in Aug. 1983. No labels are available.

4090. **Product Name:** [Lima Soy (Organic Soymilk)].
Foreign Name: Lima Soy.
Manufacturer's Name: Lima Foods. Made in Belgium by Alpro.
Manufacturer's Address: Edgar Gevaertdreef 10, B-9830 Sint-Martens-Latem, Belgium.
Date of Introduction: 1983. August.
New Product–Documentation: Richard Leviton. 1983. Nov. Alpro makes the soymilk for Lima using organically grown soybeans from France. These are twice as expensive as regular soybeans.

Letter from Bernard Storup. 1984. March 22. One new type of soymilk is Lima Soya Drink, sold by Société Lima-Andiran, made by Vandemoortele Co. [Alpro] in Belgium. It uses organic soybeans, is non-sugary and Tetra Packed.

Leaflet. 1986. Lima Natural Gourmet Recipes from Europe. Contains a color photo of all products. Label reads: "Filtrat de soya."

Lima catalogue, price list, and color product brochure. 1989. Shows the Label. Tetra Brik carton. Blue and white on light green. An illustration (line drawing) shows white soymilk being poured into a glass. "Lima Soy is a filtrate of yellow soybeans obtained without additives. The filtrate of soya is light and nourishing. It contains no cholesterol and few calories for its high protein value." Note the interesting name of this product. Traditionally, the term "soy" used in a product name such as this would refer to a type of soy sauce. Now, in part because of European dairy laws forbidding use of the term "soymilk," the term "soy" has come to refer to soymilk, rather than soy sauce.

Label sent by Anthony Marrese. 1990. Jan. Liter carton. Dark blue and white on green. "Filtrate of organically grown soya. Without addition of sugar. Best before 12-06-90." Written in Dutch, French, German, English, Italian, Spanish, Danish, Swedish, and 1 other language. Nature et Progres logo. CINAB logo.

Form filled out by Philippe Vandemoortele of Alpro. 1991. Sept. 4. Soymilk made with organically grown soybeans by Alpro for Lima Foods was introduced in Aug. 1983.

4091. Liu, Dong-sheng; Liu, Sheng-jie; Chou, Chi-yuan. 1983. [Studies on milk substitutes. XI. The nutritive value of Guang Ming soybean milk-substitute on rats]. *Ying Yang Hsueh Pao* (*Acta Nutrimenta Sinica*) 5(3):215-24. Aug. [17 ref. Chi; eng]
Address: Inst. of Health, Chinese Academy of Medical Sciences, Beijing, China.

4092. Mermelstein, Neil H. 1983. Soy-oats infant formula helps fight malnutrition in Mexico. *Food Technology* 37(8):64-72. Aug.
• ***Summary:*** Contents: Introduction. The benefits of Soyaven. The product (incl. the formula, nutrient analysis, and photo of the container). The process (totally dry; the soybeans are cooked at 320ºF for about 90 seconds in a low-cost extruder that generates heat by friction). The development (history of the concept and product from March 1978). Photos of key people involved in the development of the product (incl. Dr. Francisco R. del Valle, Dr. Hector Bourges, Joaquin Ponce Aguirre) and of the PADSA plant. Other products. "The development and commercialization of Soyavén, a nutritious, low-cost infant formula that is helping to alleviate malnutrition in Mexico, has earned the 1983 Food Technology Industrial Achievement Award... This year, the award is presented to Fundación de Estudios Alimentarios y Nutricionales, A.C. (Food and Nutrition Studies Foundation, hereinafter referred to as Fundación) and Productos Alimenticios Delicias, S.A. de C.V. (Delicias Food Products, hereinafter referred to as PADSA). Both organizations are located in Chihuahua, Mexico's largest state. Fundación is located in the city of Chihuahua, the state capital, and PADSA is located in the city of Delicias, 50 miles to the south, in one of the state's most important agricultural districts. Fundación was founded in October 1980... PADSA, established in 1977, manufactures and distributes Soyavén throughout Mexico... Soyavén is a powdered infant formula based on soy and oats (*soya* and *avena* in Spanish)."

Commercial production of Soyavén began in July 1979. In November 1981, Soyavén was presented the National Bank of Mexico's 1980 Science and Technology Award for its value in fighting malnutrition in Mexico. Soyaven sells for about half the price of the least expensive milk-based infant formulas in subsidized Conasuper stores. Currently 48,000 cans per month are being sold throughout Mexico, most in Mexico City. Address: Assoc. editor.

4093. **Product Name:** [Soy Harmony Powdered Soymilk {With Added Vitamins and Methionine} (Prune, or Royal)].

Manufacturer's Name: Nihon Harmony K.K.
Manufacturer's Address: Tokyo, Japan.
Date of Introduction: 1983. August.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: Toyo Shinpo. 1984. Feb. 21. It can be added to hamburger, meatballs or other meat dishes to give more protein or made into a drink or dessert. 450 gm can costs 4,000 yen.

4094. Qi, Jin-ling; Qing, Ke-xian; Chang, Ying; Chou, Chi-yuan. 1983. [Studies on milk substitutes. XII. The nutritive value of a spray-dried soybean milk su-substitute as compared with those of whole cow's milk powder and human milk]. *Ying Yang Hsueh Pao* (*Acta Nutrimenta Sinica*) 5(3):225-36. Aug. [9 ref. Chi; eng]
Address: Inst. of Pediatrics and Inst. of Health, Chinese Academy of Medical Sciences, Beijing, China.

4095. Shurtleff, William. 1983. Log of soyfoods research trip to Hong Kong, China, Singapore, and Japan: May 29 to July 10, 1983 (Unpublished report). Soyfoods Center, P.O. Box 234, Lafayette, CA 94549 USA. 117 p. Aug. Unpublished manuscript.
• ***Summary:*** Contents: Hong Kong: K.S. Lo and Vitasoy. May 29 (Sunday)–Plane from Hong Kong to Guangzhou City (Canton) in Guangdong (Kwantung) province. China: Guangzhou (May 29-30), Zhengzhou, Beijing, Harbin, Beijing #2 (Scurlock, Chen Xi-Hau, Joe Rakosky, Terrence Foley, local markets, vegetarian deli). Singapore: STS and Anders Lindner, Alan Yeo, American Soybean Association (Don Bushman, Sabrine Lee, Lars Wiederman).

Japan: Seiyu department store, Kibun, ASA Tokyo (Ms. Kojima), Kanji Tsuchiya, Japan Soymilk Assoc., Sano Rinji, Kikori, Prasad and natural foods, Goro Kanasugi and tempeh, Tsuchiya soymilk #1, Kikkoman at Noda (Yokotsuka #1, Mizunuma, Plant #6 modern, Yokotsuka #2, Goyo Gura, Noda Museum, Noda Library, Mr. Ichiyama), Morinaga, Kikkoman Tokyo, Japan Packaged Tofu Assoc., Natto statistics, Asahimatsu, Natto-tempeh meeting, Mr. Katoh, Nakano Masahiro, Mr. Iitsuka of Kikkoman, Daizu Shokuhin Kaihatsu, Tsuchiya #2, Nagayama, soynuts, oil association, kinako, Ishige, Mr. Mori and soy sprouts, Katoh, Arai-san, Kodansha, Nagayama and kinako, Dr. Nakano #2, Arai shoyu, Tsuchiya #3, Tenmi. Address: Lafayette, California.

4096. Shurtleff, William; Aoyagi, Akiko. 1983. The book of tofu. 2nd ed. Berkeley, California: Ten Speed Press. 336 p. Illust. by Akiko Aoyagi Shurtleff. Index. Aug. 28 cm. [321 ref]
• ***Summary:*** Three parts of this new edition have been extensively revised and updated: (1) "Tofu Makers in the West" (p. 313-16) has been updated and now includes 310 tofu producers in the Western world (with the name, address, phone number, and contact person for each company), arranged by state or foreign country. This is the only tofu book containing such a directory.

(2) The "Bibliography" (p. 319-324) has been greatly expanded and updated. It now contains 321 publications on tofu, including all known scientific and nutritional journal articles, the 33 books about tofu written in North America since publication of the first edition of *The Book of Tofu* in 1975, and other key articles and books about tofu from East Asia and Europe, the earliest from Europe dating back to 1613!

(3) An updated listing of "People and Institutions Connected with Tofu" in the U.S. and around the world, including researchers, major tofu manufacturers in Japan, trade associations, publications, equipment dealers, and tofu apprenticeship programs.

The "Glossary" (p. 325-27) has been condensed to make space for the expanded bibliography and back matter. There is a new page about the Soyfoods Center (p. 333). The page "About the Authors" (autobiographical) has been expanded, and the photograph has been updated. "Sending Tofu to the Four Directions" (p. 335) and the inside rear cover have both been updated. Still contains 500 vegetarian recipes–both western and eastern style.

Note: A news release of 17 Aug. 1983 states: "The Book of Tofu, which introduced the Western world to tofu and inspired the founding of more than 200 tofu shops and soy dairies in North America, has sold 340,000 copies to date, making it the world's best-seller on this popular new 'protein source of the future.'" Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4097. Shurtleff, William; Aoyagi, Akiko. 1983. History of soyfoods in China. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 19 p. Aug. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. Contents: Introduction: Soyfoods widely used in all parts of China. Overview of Chinese food and diet. Animal products and soyfoods as protein sources in China. China's great cuisines and soyfoods. General characteristics of Chinese soyfoods industry. Information on soyfoods. Soy trade associations. Attitudes toward technology, modernization, and traditional soyfoods. Private enterprise, bureaucracy, and competing ministries. Availability of soyfoods. Address: Lafayette, California. Phone: 415-283-2991.

4098. Anderson, Jack. 1983. Inquiry about infant formula heeded too late. *Washington Post.* Sept. 1. p. VAN21, or VAC21, or VAS19, or MDP15, or MDM17, or DC13.
• ***Summary:*** About Neo Mull Soy, an infant formula made by Syntex Laboratories, Inc., of Palo Alto. In March 1978 Syntex decided to stop adding sodium chloride (table salt) to Neo Mull Soy. Yet chloride is an essential nutrient for babies.

Unfortunately, Syntex had stopped testing for chloride a few months before it changed the formula. "No one knows how many babies who took Neo Mull Soy have experienced disorders in later years." One parent whose son was affected describes what happened. When Neo Mull Soy was recalled in Aug. 1979 it was to late to help her son.

Syntex added sodium chloride back into their infant formula and relaunched it in Sept. 1979. But because of poor sales, the company stopped making Neo Mull Soy in the fall of 1980.

4099. *Toyo Shinpo* (*Soyfoods News*). 1983. Tônyû paudaa [Soymilk powder; Kyushu Nyugyo {Kyushu Milk Co.} is developing it] Sept. 1. [Jap]
• ***Summary:*** It has no soy or "beany" flavor and dissolves well.

4100. *Toyo Shinpo* (*Soyfoods News*). 1983. Tônyû paudaa [Marusan changed its name to Marusan-Ai in Jan. 1983]. Sept. 1. [Jap]
• ***Summary:*** The word "Ai" is written with the character meaning "Love." Marusan has also launched a new Matcha (green tea) soymilk, but Nisshin came out with that flavor first.

4101. *Toyo Shinpo* (*Soyfoods News*). 1983. [Japan soymilk sales in 1982 were 12,500 million yen, up 56% over 1981]. Sept. 1. [Jap]

4102. K.S. Lo., Chairman, The Hong Kong Soya Bean Products Co., Ltd. (Photograph). 1983.
• ***Summary:*** K.S. Lo, founder and chairman of HKSBP, standing next to a case of Vitasoy soymilk at the company's main plant in Hong Kong.

4103. Shurtleff, William; Aoyagi, Akiko. 1983. Dr. Charles E. Fearn and Fearn Soya Foods: History of work with soyfoods. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 17 p. Sept. 2. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. Contents: Introduction: Summary, unfortunate lack of documentation. Early years in Europe: Birth in about 1869-71 in Cook County, England, he was married in England and became a physician, research showing that vitamin B was not a single vitamin but a group or complex of vitamins, not clear how introduced to soyfoods (though possibly through Solac, England's first soymilk), work during World War I as a physician in the English Royal Army Medical Corps in charge of a hospital in England. Early work in the USA (1917-1929): Called by President Wilson, quote from Paul Richard's history, interesting that a British physician

took such an interest in soyfoods and work with farmers, founded Soyex Co. in New York (1920) according to Richard 1955, moved to Chicago and started Fearn Labs (1923), founded Fearn Soya Foods Co. (1925), familiarity with Berczeller, analysis of coin collection for clues to travels, in Europe in 1929, first documentation of involvement with soy (1929), director of Soya Flour Mfg. Co. in London on the way to the U.S., treatment of infant allergies with soy as a substitute for milk. Soyex Co. and Fearn Soya Foods (1930-39): Horvath (1933) discusses Soyex Co. in Nutley, New Jersey, pamphlets written before 1934, strong opinions (whole soy flour far superior to defatted soy flour, too much carbohydrate in American diet, soy flour should be made from a blend of soybeans), sold Fearn Laboratories (1934) and turned Soya Food Products over to it, later history of Fearn Labs, establishment of Fearn Soya Foods Co. (1935), many new products, list of products with earliest date of mention, pamphlets by Fearn Soya Foods 1935-38, sales to health food market by trying to reach physicians, switch from making soy flour to buying from Shellabarger (1937) and Spencer Kellogg (1946), Los Angeles business with Thomas J.M. "Malcolm" McBride, Viana "scientific reducing diet" fiasco, McBride sets up own company and slanders Fearn, friendship with LeClerc of USDA. 1940-59: World War II helped Fearn's shrinking product line, establishment of Soy Food Mills with Richard Thomas, Golden Soy Griddle Cake Mix, encourages USDA to develop soy fortified foods for famine relief (1946), development of soup base seasonings with Harry Belleville in San Clemente, California, death in June 1949 at about age 79 at a (mental?) hospital in Elgin, Illinois (near Chicago), purchase of company in Sept. 1949 for $500 by Paul Richard, summary (good ideas, poor businessman), hardships for Paul Richard in 1950's (loss of formulas, 1955 flood). 1960-1980's: Death of Paul Richard in 1960, takeover of business by son Elwood, sale to brother Lou in 1970, real growth starting in 1973, 1982 name change to Fearn Natural Foods, same strong commitment to soy. Address: Lafayette, California. Phone: 415-283-2991.

4104. Tsuchiya, Kanji. 1983. Re: Soymilk in Japan. Letter to William Shurtleff at Soyfoods Center, Sept. 6. 1 p. Handwritten. [Eng]

• ***Summary:*** "Thank you for sending me your book with your letter. I am very glad you described the Tokyo Soy Meal-Nikkan soymilk process and my work."

Thank you also for telling other soymilk companies about me and my work. At the end of July I received a letter from Mr. Anders Lindner of Soya Technology Systems (STS) in Singapore. He asked if he could me meet here in Japan in September. I replied saying that would be fine. We have not yet decided a date. Sincerely,... Address: Tokyo [Technical consultant, Okazaki Marusan, Japan].

4105. Shurtleff, William. 1983. Re: Joint venture with K.S. Lo to have books by Shurtleff and Aoyagi translated into Chinese and sold in China. Letter to Mr. K.S. Lo, Hong Kong Soya Bean Products Co. Ltd., 41, Heung Yip Rd., Aberdeen, Hong Kong, Sept. 24. 2 p. Typed, with signature (carbon copy).

• ***Summary:*** "I was so pleased to see you again in San Francisco and to have found a way that our two companies can work together to mutual benefit. I am very excited about having our books translated into Chinese, starting with *Tofu & Soymilk Production.* If that is successful, I hope we can explore publication of our *Book of Tofu* in Chinese as well. This book also contains extensive information on soymilk.

"As I understand our agreement, we will proceed as follows: 1. You will find a quality translator and arrange to have the book translated at your expense." Three other basic ideas are listed.

Note: Mr. Lo took the book to various publishers in China and Hong Kong, but none were interested in publishing it. What could the Chinese possibly learn from a Westerner about making tofu or soymilk? So the project never got off the ground. Address: Director, Soyfoods Center, P.O. Box 234, Lafayette, California. Phone: 415-283-2991.

4106. Chen, Steve. 1983. Re: Per capita consumption of soyfoods, soybean curd (wet), and fresh milk in Taiwan, 1964-1981. Letter to Mr. and Mrs. Bill Shurtleff, Director and Associate Director, The Soyfoods Center, P.O. Box 234, Lafayette, CA 94549, Sept. 27. 4 p. Typed, with signature on letterhead.

• ***Summary:*** Steve recently visited Soyfoods Center and he thanks Akiko for the "delicious and nutritious lunch" she cooked.

A full-page table shows: "Taiwan: Per capita consumption of soyfoods, soybean curd (wet), and fresh cow's milk in Taiwan (in Kg). Soyfoods have increased from 1.08 kg in 1964 to 2.76 kg in 1981, Soybean curd [tofu] (wet) has increased from 18.75 kg in 1964 to 32.77 kg in 1981. Fresh [cow's] milk has increased from 0.93 kg in 1964 to 2.69 kg in 1981.

Total production of cow's milk (in metric tons) has increased from 13,650 in 1965 to 47,740 in 1980. Source (for the first 3 columns of statistics): (1) Food Balance Sheet, Council for Agricultural Planning and Development. Source (for the last column): *Taiwan Agricultural Yearbook.*

Dr. Chen then gives some names and addresses connected with soyfoods: (1) Official in charge of Farmers Association's soymi1k operations: Mr. S. Lee, Chief, Food Processing Dept. Council for Agric. Planning & Development (CAPD), No. 37, Nan Hai Road, Taipei, Taiwan ROC. Tel: 3317541.

(2) Agency involved in soyfood research: Dr. Paul Ma, Director, Food Industry Research & Development Inst., No. 233, Shih-Ping Road, Hsin-chu, Taiwan ROC. Tel: (035)-

223191-193.

Makers of instant soymilk powder and full-fat soy f1our: (1) Mr. C.K. Lin, Chairman. Milestone New Foods Co. Ltd., 86 Chung-Hsiao Road Taichung, Taiwan ROC. Tel: (042)-223451.

(2) Mr. C.S. Wang, Chairman, Way Cheien Industrial Co. Ltd., No 6, Kong 7 Road, You-shih Industria1 Dist., Ta-chia Cheng, Taichung County, Taiwan ROC. Tel: (046)-814462, -811390.

Taiwan Soysauce and Condiment Association, 4th floor, No. 24, Pei-Ping Road, Taipei, Taiwan ROC. Tel: 341-0739, 351-7726. Mr. S. C. Chow, President.

Makers of Packaged Tofu: (1) Heng-Yi Food Ind. Co. Ltd., 687, Chien-kong Road, Shan-Ming District, Kaohsiung, Taiwan ROC. Tel: (O7)-3843939, -3823041 C.C. Lu, Chairman.

(2) Chia Yun Food Co. Ltd., No. 1, Chien-Kong Road. Chia-Tai Industry District, Tai-pao Hsiang, Chia-yi, Taiwan ROC Tel: (052)-372386, -372387 M.S. Tsai, Chairman.

(3) Nan-Yang Tofu Plant, No. 55, Lane 301, Nan-Yang Road Feng-Yuan, Taichung, Taiwan ROC. Tel: (O45)-232988. J.H. Chang, Chairman.

(4) Huang-Ta-Mu Food Co. Ltd., 56, Ho-Ping Road, Ta-Hsi, Taoyuan, Taiwan, ROC. Tel: (033)-882055. P.H. Huang, Chairman.

(5) Wang-Li-Hsiang Tofu Co., 123, Chung-Yang Road, Ta-Hsi, Taoyuan, Taiwan, ROC. Tel: (033)-882262. C.W. Chiang, Chairman.

(6) Hsuan-Fu Enterprise Co. Ltd., 4, First Industry Road, Yung-Kuan Village, Ping-Cheng Hsiang, Taoyuan, Taiwan ROC. Tel: (033)-593172. S.H. Kou, Chairman. Address: PhD, Country Director/Taiwan, American Soybean Association, P.O. Box 3512 Taipei, Taiwan, R.O.C.

4107. American Academy of Pediatrics, Committee on Nutrition. 1983. Soy-protein formulas: Recommendations for use in infant feeding. *Pediatrics* 72(3):359-63. Sept. Summarized in American Family Physician, April 1984. [56 ref]

• ***Summary:*** Contents: Introduction. Composition of soy-protein formulas. Use in full-term infants. Use in lactose intolerance and galactosemia. Use in premature infants. Management of cow's milk allergy. Prophylaxis of allergic disease in newborn infants. Treatment of colic. Conclusions and recommendations.

Soy protein formulas account for 10-15% of infant formulas currently used in the USA. While less allergenic than cow's milk, they may still cause allergies in infants. Address: USA.

4108. Farm Foods. 1983. American Soybean Association samples soy milk and Ice Bean (News release). 156 Drakes Lane, Summertown, TN 39483. 1 p. Sept.

• ***Summary:*** 2,800 people attended the annual ASA meeting in Nashville, Tennessee. They sampled soymilk and Ice Bean. "The products we tasted were excellent," said Ed Quinones, division Manager from Asia and Latin America. Address: Summertown, Tennessee.

4109. Fruin, W. Mark; Shurtleff, William. 1983. A soyfoods training center network: Soyfoods technology transfer from the United States and Japan to East, Southeast, and South Asia. Palo Alto, California. 29 p. 28 cm.

• ***Summary:*** Contents: 1. Introduction. 2. Japan: Asia's leading source of soyfoods technology. 3. America: World's leading supplier of soybeans. 4. Soybeans in U.S.-Asian economic and trade relations. 5. The aims of this proposal. 6. Groups interested in expanding food uses of soybeans in Asia. 7. The Sri Lanka success story. 8. United States-Japan soyfoods technology transfer. 9. Project investigators, collaborators, advisors. 10. Conclusion.

Note: This Fulbright grant proposal was submitted on 28 Sept. 1983 to Ms. Jennifer Keefe, Program Officer, Council for International Exchange of Scholars, Eleven Dupont Circle, N.W., Washington, DC 20036. Accompanying it were CVs for Fruin and Shurtleff, plus letters supporting the project from the following collaborators: Kanji Tsuchiya (Japan), Gunnar Lynum (American Soybean Assoc. director for Japan), Tokuji Watanabe (Prof., Food Science Lab., Kyoritsu Women's Univ., Japan), Harold E. Kauffman (INTSOY Director, Urbana, Illinois), Michael A. Phillips (Director, Market Development, ASA, St. Louis, Missouri), and P.S. Bhatnagar (All India Coordinated Research Project on Soybean, G.B. Pant Univ. of Agriculture and Science, Pantnagar, UP, India). Address: 1. Prof., 4060 Amaranta Ave., Palo Alto, California 94306; 2. Director, Soyfoods Center, P.O. Box 234, Lafayette, CA 94549.

4110. **Product Name:** Green World Festive Frozen Dessert (Non-Dairy Tofu Ice Cream) [Carob, Carob Mint, Vanilla, Strawberry, Blueberry, Piña Colada, Raspberry, Banana-Coconut, Tofrutti].
Manufacturer's Name: Green World, Inc.
Manufacturer's Address: Mayfield Stage, Boise, ID 83706.
Date of Introduction: 1983. September.
Ingredients: Tofu, soymilk, honey, oil, carob, lecithin, vanilla.
Wt/Vol., Packaging, Price: 16 fluid oz (1 pint). Retails for $1.19 to $1.25.
How Stored: Frozen.
New Product–Documentation: Boise Statesman. 1984. June 6. Shurtleff & Aoyagi. 1985. Tofutti & Other Soy Ice Creams. p. 77. Interview with James Herrington. 1987. Dec. 30. The Tofrutti flavor, introduced in the fall of 1983, was before he had ever heard of Tofutti. It contained pineapple, orange, banana, and apricot. The first two flavors were carob and carob mint. This is their second most successful and

profitable product after tofu.

4111. Leviton, Richard. 1983. Report on soyfoods research trip across America, September 1983. Colrain, Massachusetts. 8 p. Unpublished typescript.
• ***Summary:*** Visited or discusses: Grainaissance (makes amazake and mochi), Brightsong (Dik / Richard Rose), Sonoma Specialty Foods (California), Northern Soy (Rochester, New York), Southwest Soyfoods (Richard Jennings), White Wave (Steve Demos, Boulder, Colorado), Quong Hop & Co. (South San Francisco, California), Modern Fare (Loveland, Ohio), Soyfoods Unlimited (Valerie, Gary and John Robertson, San Leandro, California). Soyfoods Center (Lafayette, California), Soyfoods of America (Doug Fiske and Ken Lee, Los Angeles), Real Foods (Polk St., San Francisco), Tumaros (Los Angeles), Unicorn (Terry Dalton, Florida), Japantown and Rainbow Grocery (San Francisco), Berkeley Natural Grocer and Berkeley Co-op (Bob Gerner, California), Hinode Tofu Co., Edensoy, Farm Foods, New England Soy Dairy, and Nasoya (Leominster, Massachusetts). Legume (Gary & Chandri Barat, New York City), Lotos / Lotus Cafe (Greg Weaver, Rochester, New York).

NRRL (Hesseltine and Wang, Peoria, Illinois): Their work is in mixed starter culture fermentation, vitamin B-12 work. Japanese man from Tokyo to work one year on natto at NRRL, paid by Japanese government. B-12 can withstand some heat during cooking and the percentage of B-12 lost depends on the initial percentage present. Natto research: examine all Japanese publications for review article. Experiment using U.S. soybeans to make natto since the Japanese buy Chinese beans for their thinner seed coat. See what happens to the oil to protein ratio during fermentation. Natto as such has no possibilities in the U.S. as it is a slimy food with a rotten smell; hard to tolerate. There might be vitamin B-12 in natto produced by *Bacillus subtilis.* Koreans have done lots of B-12 research with kimchee and other pickled vegetables. Earl Swain died this summer of a heart attack at age 36. Natto research will help U.S. soybean exports. USDA bureaucrats are making it difficult for Dr. Hesseltine to do natto research. They have 65 objectives, but Dr. Wang's projects don't fit any of them clearly, so they won't mention "food" in their research outlines, just fermentation methods. Secretary of Agriculture John Block [served 1981-86 under President Ronald Regan] says the U.S. needs more ag exports and more basic information about crops uses, so he is in support of this natto research.

Out of business: Michiana Soyfoods, St. Ignatius shop, Sunshine Soy, Heartsong, probably Joy of Soy and a Korean shop in Salt Lake City, Utah.

Concerning soymilk: 10. In Oak Park, Illinois, a natural foods retailer says Edensoy outsells San-J by two to one. (Note: San-J imports "To-Neu Natural Soy Beverage" made in Japan by Kibun). Teenagers buy the carob Edensoy along with popcorn in the store, and use it as a soft drink. But most retailers say the Eden package [stand-up foil retort pouch] is a disaster; it is impossible to open without scissors, then if you squeeze, it sometimes spills out. San-J [in a Tetra Brik carton] is convenient but the taste is poor and the front graphics are confusing–too many words and images. According to Shurtleff, both are inferior products compared to Japan's best.

22. Concerning Edensoy at the NNFA show in Denver, Colorado: Mike Potter says "it went over great." He sold two container loads right away. People liked the package and the taste. About 4,000 people sampled it and were "generally amazed." The results were as good as they could want; it generated interest and excitement. Now they are setting up the distribution system. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

4112. **Product Name:** Tofu, Soymilk, Soymilk Yogurt.
Manufacturer's Name: Merrickville Bakery & Tofu.
Manufacturer's Address: St. Lawrence Street, Merrickville, ONT, K0G 1N0, Canada. Phone: 613-269-3200.
Date of Introduction: 1983. September.
New Product–Documentation: Form filled out by Steven Rowat. He uses 2 lb/day of dry soybeans. The tofu shop does not have its own name. Started 15 Sept. 1983.

4113. **Product Name:** Tofu, and Soymilk.
Manufacturer's Name: Plenty Soyfoods.
Manufacturer's Address: P.O. Box 21, Mount Moorosi, Quthing District, Lesotho.
Date of Introduction: 1983. September
How Stored: Refrigerated.
New Product–Documentation: Talk with Peter Schweitzer of Plenty USA. 1994. June 7. Chuck Haren of Plenty helped to set up this soy dairy which had solar cells on the roof and was located inside a traditional, round Lesotho house with a thatched roof. Peter does not know whether or not it is still in operation.

Note: These are the earliest commercial soy products seen in Lesotho.

4114. Shurtleff, William. 1983. Notes from a phone talk with Richard Leviton concerning his trip across the USA in Sept. 1983 visiting soyfoods companies and giving talks. Lafayette, California. 3 p. Sept. Unpublished manuscript.
• ***Summary:*** Discusses: Nasoya, New England Soy Dairy (doing radio ads and videos in supers; making 45,000 lb/week of tofu), Hinode tofu, Lotus Cafe, Penguino's (chocolate is their favorite soy ice cream favorite), Northern Soy and Wegman's, Vegetarian Times, Emperor of Japan to give Dr. Clifford Hesseltine a high medal at the end of November, Bob Davis plans to move to Nevada City (California), Kraft bought 15 Okita packaging machines.

Richard Jennings, his marriage, Southwest Soyfoods, and chilled water as an alternative to pasteurization; his shop in Ecuador is now closed. Nasoya makes 22,000 lb/ week of tofu with no outside money. David Mintz was on Good Morning America talking about Tofutti. The Farm (Summertown, Tennessee) now makes only liquid soymilk, no powder. Tom Leonard and Jim Hemminger are selling tofu to Community Mercantile. Leonard was in Arkansas in 1977, first batch of miso in Dec. 1978. Now makes 500 lb/ week. Well Spring is a new miso maker in Colorado. White Wave (Boulder, Colorado) is making 12,000 lb/week of tofu and doing well financially, as new frozen entrees & nut butters, tofu lasagne. Edensoy is outselling SanJ soymilk by 2 to 1. Time magazine Sept. 19 insert. American Dietetic Assoc. will list tofu as a good protein source. Jim Cooley of Lawrence, Kansas. He started making tofu in 1977. Legume Inc.'s new product line out Oct. 5; lists names of each product. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4115. Potter, Michael. 1983. Edensoy and Eden Foods (Interview). *SoyaScan Notes.* Oct. 3.
• ***Summary:*** Eden Foods has already sold 3 containers of Edensoy, imported from Japan. Each container holds 61,800 coil packs. People taste the carob first and they like it. But in both Australia and the UK, they switched to plain, making it the most popular there.

The Eden Foods warehouse was burned by arsonists outside the company. The principals took a lie detector test and passed with flying colors, then the insurance company refused to pay; so they had to settle out of court. Address: CEO, Eden Foods, Clinton, Michigan. Phone: 544-2781.

4116. Wilson, John C. 1983. Early work with soymilk and recent developments (Interview). *SoyaScan Notes.* Oct. 4. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Wilson has been involved with soymilk since 1967, when he was technical manager for Cold Storage Group (CSG) in Singapore and Malaysia. His background was in dairy technology. To help CSG launch a soymilk, he studied traditional tofu processes in Singapore, then mechanized the process. He set up CSG's first line in Kuala Lumpur in 1969, actually at Petaling Jaya, a satellite of Kuala Lumpur. The soymilk was sold under the Magnolia brand, but owned by CSG.

This was not the first soymilk in the area. Alfa-Laval sold Yeo Hiap Seng a UHT plant for soymilk operation in about 1967, and another in 1969.

Note: The 2nd plant in Singapore Shurtleff visited was owned by Cold Storage Group.

Wilson joined Alfa-Laval in 1971. Alfa-Laval was researching soymilk from a particular angle, with no success. By 1977 Wilson had been in Africa, Australia. He found a big demand for soymilk plants in Asia.

For Ace Canning, he designed the Lam Soon plant in Kuala Lumpur, Malaysia.

In 1978 sold a plant to Kickapoo, in Bangkok, Thailand, with reduced beany flavor soymilk, but strong cooked = burnt flavor. They copied the overcooked flavor of Greenspot, overcooked through sterilizing in the bottles.

Legislation in Bangkok says manufacturers must add 50% by weight of soybeans of nonfat dry milk (NFDM). This makes it a healthy product, if not it's a luxury product. Greenspot got this legislation passed after people developed a taste for Greenspot's product. Greenspot has been in business since the mid-1960s. That legislation has been in force from the mid-1970s until now. So it forces all soymilk to contain NFDM. There is a heavy tax on pure soymilk without NFDM.

Nestle started in about 1980 in Bangkok. They have not done well. But they had bad luck with Bonus in Singapore. The Department of Health banned its production claiming it was not properly sterilized.

The greatest successes: Vitasoy #1 in Southeast Asia. Kibun #1 in Japan. Kibun has now commissioned three new factories, which are now on stream. They use machinery from Alfa-Laval and from others. Alfa does the engineering, Kibun does the formulation

Alfa-Laval and Kibun have an agreement which was signed in late 1982. If a customer licenses the process from Kibun, Alfa-Laval will supply the plant. Kibun will supply technical know-how, formulation, and quality control, and receive the license fee direct. There are separate fees and no kickbacks between Alfa-Laval and Kibun. and Alfa-Laval can supply anyone else with plants. Kibun is expert in formulation and Alfa-Laval is strong in plant design.

The Japanese soymilk process is basically the Illinois process with a clarifier toward the end. He is surprised that the Illinois Patent office is not complaining. The basic concept is to inactivate the enzymes at the bean stage before grinding. However cooking prior to grinding dramatically lowers the protein yield to 40-45%. The key to a standardized way of comparing yields (of protein) is to specify an acceptable level of remaining fiber, which he suggests be l% or less by volume after a standard centrifugation test. If you have less fiber, you get much lower yields. We need an international standard for fiber.

Lawrence Johnson at the University of Texas claimed 82-85% protein yield with steam injection (*Journal of Food Science* 46(1): 239-43, 48) but Alfa-Laval's tests showed that it didn't work.

Wilson has a super set of color overhead projector slides on soymilk. Invite him back again to do a show for us.

Kibun uses its own process with Alfa-Laval equipment, not Alfa-Laval's process. Kibun licenses others to use its process then usually asks Alfa-Laval to supply the plant. Alfa-Laval buys grinders from Switzerland.

Alfa-Laval's most important contribution is not just the

equipment but the automated system and automatic cleanup = clean in place (CIP). Perhaps their main component is the Sterilizer. Two types = Steritherm or VTIS = Vacu therm. Japanese like this, but its expensive and expensive to run. And it strips out added fruit aromas.

Wilson (1983) said that US laws on UHT are ridiculous and antiquated. Makes it very expensive to build machines for the US market. The real problem is Not the hydrogen peroxide problem.

In killing = inactivating enzymes, the protein solidified in the fiber like hard-boiled eggs.

Alfa-Laval is in the lead in simplifying and automating tofu plants. They are now testing a plant that allows 1 man and a computer to make tofu from beans to packaging.

Cost effective soymilk: Absolute lowest output is 11OO liters/hr. Practical lowest is 1500 liters/hr. Local laws affect the price. They have many systems for different markets; China different from Japan. The really economical plant is 2,000 liters/hr.

The three key considerations in determining a plant are (1) The type of soymilk (beany or not) desired. (2) The type of packaging. (3) The output in liters per hour. Address: Soya Process Product Manager, Alfa-Laval, Box 1008, S-221 03, Lund, Sweden.

4117. Johnson, L.A.; Hoover, W.J.; Deyoe, C.W. 1983. Soymilk process. *U.S. Patent* 4,409,256. Oct. 11. 1 p. Application filed 13 March 1981. [7 ref]
• ***Summary:*** Based on direct infusion of steam into the soy slurry. Note: This is the earliest English-language patent seen with the term "Soymilk" in the title. Address: 1. College Station, Texas; 2-3. Manhattan, Kansas.

4118. Lindner, Anders. 1983. Soymilk worldwide and STS (Interview). Conducted by William Shurtleff of Soyfoods Center, Oct. 20. 1 p. transcript.
• ***Summary:*** On Oct. 20 Anders Lindner, managing director of STS, visited Soyfoods Center, where this interview was conducted.

Seikensha built all the key Marusan soymilk equipment. Anders was shown through the Marusan plant in Okazaki.

Seikensha is a 55-year-old company. Ask for their catalog. They are now building small soymilk plants and dehulling equipment.

Deodorizer is the name for the vacuum stripper,

STS's best prospects for soymilk plants are in South Africa, Cameroon, Indonesia, India, Thailand, maybe Sinaloa, Mexico, China, and Taiwan. Taiwanese want to use soy protein isolates to keep investments low.

Tetra Pak's biggest competitor is Pure-Pak. Ex-Cell-O / Excello Corp. makes Pure Pak Machines. They make their money on the machines, and license the packaging to many local companies. Tetra's biggest competitor for aseptic packaging is Jagenberg Co. in Germany. Their packaging system is called Block Pack (sp?) Their aseptic system is called Combi Bloc. Get their address from the German consulate. Address: STS, Singapore.

4119. Owen, David. 1983. Freezer shock. *CalToday.* Oct. 23. p. 13-16.
• ***Summary:*** About Rich Products' Freeze Flo, which allows (for example) frozen strawberries to be soft and sweet and firm at temperatures far below freezing. "When Bob Rich graduated from the University of Buffalo, his father gave him $5,000. Bob used the money to make a down payment on a dairy. He disliked the milk business as intensely as his father did, but he wanted to assert his independence.

"During World War II, Rich worked for the War Production Board and was appointed milk administrator for the state of Michigan. His job was to divert excess milk supplies to thirsty American soldiers. One day he paid a visit to the George Washington Carver Laboratory, a research institution endowed by Henry Ford. The laboratory's principal activity was supplying Detroit's Ford Hospital with a product Rich had never seen before: milk made from soybeans.

"In a certain sense, Henry Ford's career can be viewed as a plot to eradicate large domestic animals. Having rendered the horse obsolete with his automobile, he had now set out to eliminate the cow. Carver scientists spent their days striving to realize their benefactor's vision of a cattle-free society. Periodically Ford threw parties for journalists at which he served nothing but milk, ice cream, hamburgers, cheese and other foods made from soybeans. He even built a soybean car.

"Ford's antagonism toward cows struck a chord in Robert E. Rich. Bob Rich, after all, was a second-generation hater of the dairy business.

"'I'd always said that the cow was the most inefficient manufacturing plant in America,' he explains. 'Its product is 87 percent water, and it's high in bacteria, and it has to be pasteurized...'

"In November 1944, he founded Rich Products Corp. to manufacture his invention, converting his dairy's garage into the production plant for the world's first non-dairy whipped topping. Its name: Whip Topping.

"At first, Rich distributed Whip Topping to the customers on his milk routes, billing it variously as 'the Miracle Cream from the soybean' and 'Gold from the Soil.' The early months were not a fabulous success. 'We were not chemists,' an employee later admitted. But gradually Rich refined his formula, and in 1946 he was invited to make a sales presentation to a refrigerated-food distributor on Long Island. He packed some samples in dry ice and newspaper and took the overnight train to New York.

"The following morning, while 50 salesmen looked on, Rich took out his samples and discovered with horror that they had frozen solid. He began to perspire. Cow's cream,

he knew, would not whip after freezing. 'I thought briefly about telling them I had brought them all together to unveil a great way to keep newspapers cold.' He stalled for as long as he could, then borrowed a knife and hacked nervously at his frozen soybean cream until he could fit the pieces into a mixing bowl. He held his breath. 'It whipped to perfection.'

"No one was more surprised than Bob Rich. But he had the presence of mind to realize that he had done more than escape from a potentially embarrassing situation: He had invented the world's first frozen non-dairy whipped topping. That meant that his market was no longer limited to Buffalo. Now he could sell Whip Topping anywhere in the world. Quite by accident, Rich Products Corp. had entered the age of frozen food."

4120. **Product Name:** Farm Soy Dairy Soymilk.
Manufacturer's Name: Farm Soy Dairy.
Manufacturer's Address: 156 Drakes Lane (P.O. Box 96), Summertown, TN 38483. Phone: 615-964-2529.
Date of Introduction: 1983. October.
Wt/Vol., Packaging, Price: ½ gallon plastic jugs.
How Stored: Refrigerated.
New Product–Documentation: Talk with Michael Lee, owner. 1988. Oct. 12. They make about 75 gallons a week.

4121. Isralow, Sharon. 1983. Beyond better nutrition: A close-up of potential multiplier effects of food aid, combined with other development resources, in Costa Rica. *Horizons.* Oct. p. 22-27.
• ***Summary:*** Discusses Costa Rica's first soybean processing plant, located on the outskirts of San Jose and run by CARE; it makes soy flour then processes it into Vitaleche (a soy & nonfat dry milk beverage), Frescorchata (a corn-soy-milk blend), Masarina (a corn-soy flour used to extend meat or make empanadas and tortillas), or, on a smaller scale, Nutrisoy (a beverage made from soy and milk). "Four years ago, CARE started operating the plant with $318,000 of its own money and a $500,000 AID grant. The Costa Rican Ministry of Health provided the land. Operating expenses, initially financed from the Costa Rican government treasury, now come from funds generated through P.L. 480 sales. Last year the plant broke even for the first time.

"Originally set up to supply a nationwide supplemental feeding program, the project has come a long way since its beginning in 1976... Meanwhile, as the plant's technology evolves, plans are being made to transfer the operation to a private Costa Rican company, probably by the end of fiscal 1984."

"The plant employs 25 Costa Ricans, trained in plant operations by Colorado Sate University (CSU)... Key CARE staff in Costa Rica–former Country Director Justin Jackson and John McLeod, deputy director of CARE's Costa Rica office, and George Menegay–all have experience setting up food processing plants in other developing nations."

4122. Leviton, Richard. 1983. The market boom for soyfoods in the United States. Paper presented before the Euvepro General Assembly, Parma, Italy. Oct. 11. 13 p. Unpublished typescript on Soyfoods magazine letterhead..
• ***Summary:*** An excellent overview of the subject, presented with color slides. Contents: Introduction. The U.S. soyfoods industry and market. Eight reasons for the soyfoods boom in America. New U.S. soyfoods products. Ten trends in the soyfoods market. The European soyfoods boom (what it is and 4 steps to expand it). Conclusions. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

4123. Leviton, Richard. 1983. The soy deli case. *Whole Foods* (*Berkeley, California*). Oct. p. 27-28.
• ***Summary:*** "The Hinode Tofu Company of Los Angeles recently propelled the industry years by running a series of full page, full color ads for their branded tofu in regional editions of *Good Housekeeping, Weight Watchers, Runner's World, Bon Appetit,* and the Los Angeles *Times* (circulation: one million). Their ad included a 15¢ discount coupon (eight million were printed in total). Edward & Sons has been advertising its Miso-Cup instant soups and Miso+Plus Chive and Jalapeno dry miso dips in national trade and consumer publications. And Farm Foods, with their expanding line of Ice Bean soy ice creams (hard packed and soft-serve) recently launched a cooperative advertising and discount program in cooperation with retailers..."

The Real Food Store on Polk Street in San Francisco has introduced what is probably the first distinctly labeled soy case. It consists of a self-standing reach-in cooler filled with about 34 different soyfood products, from bulk and packaged tofu to soymilk and tempeh burgers.

"At press time, Bread & Circus, a leading natural foods retailer in Boston, was planning a week-long soy promotion in cooperation with a half dozen Bay State producers... Elsewhere, Tree of Life, Florida's $35 million distributor and manufacturer, designated August as Soyfoods Month and ran promotions in their 60-page monthly newsletter sent to their 2,000 accounts. Soyfoods were presented as that month's 'Super Specials' with 'deep pocket discount' for retailers, reports Morris Shriftman, vice president." Address: Colrain, Massachusetts.

4124. Prescott, Helen. 1983. Okara: A meal for the asking. *Mother Earth News* No. 83. Sept/Oct. p. 36-38. [4 ref]
• ***Summary:*** Defines okara, tells how to use it and where to get it, and describes how to make 1 gallon of soymilk and ½ gallon of okara (with photos). Contains recipes for: Okara treats. Crunchy carobola. Apple anarchy. Soyburger supreme. Raisin-soy cookies. No-meat sausage rolls. Okara corn bread. Lists 3 books that contain additional information.

4125. **Product Name:** Rajasoya Multipurpose Nutritional

Soya Milk Powder. Renamed Raja Soya Dried Soya Milk Powder by 1986.
Manufacturer's Name: Rajarata Food Grain Processing Co., Ltd.
Manufacturer's Address: Plant: Maha Illuppallama, Anuradhapura, North Central Province, Sri Lanka. Office: 29 Braybrooke St., Colombo 2.
Date of Introduction: 1983. October.
Ingredients: Whole soy flour.
Wt/Vol., Packaging, Price: 250 gm plastic bag retails for Rs. 11/50 (3/88).
How Stored: Shelf stable.
Nutrition: "Not less than 45% protein. 20% polyunsaturated fat. Free of cholesterol." "Analysis done by Soya Foods Centre shows: Moisture 4.5%, protein 47.4%, fat 22.9%, ash 3.7%.

New Product–Documentation: *Soyanews* (Sri Lanka). 1983. Sept. p. 1. "Rajasoya enters the market." "The Rajarata Food Grains Processing Co, began a nationwide advertising campaign this month for its first product–Raja Soya, a multi-purpose soya flour that comes in two packs, 250 grams and 50 grams. The product is expected to be on sale in October when the formal opening of the factory [at Maha Illuppallama] is to be held. A large photo shows packets of Rajasoya being sealed at the plant. Photos on pages 4-5 show: (1) "The seed cleaning machine removes stone and other inert material before sending the seed to dehulling and blanching. (2) Blanching the seeds for 20 minutes in boiling water. (3) The blanched seed being delivered to bins. (4) "The blanched seeds are flaked in this [towering] machine and sent to the dryer and later for grinding into powder." Note: Is this soya flour or powdered soya milk (without the fiber removed)?

Label (photocopy). 1984. This is a whole soy flour that seems to be mislabeled as a powdered soymilk. Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 112. "The product was used as a coconut milk substitute." Production began in September 1983. Soyanews. 1986. Form filled out by Jane Gleason. 1988. March 25 she met with Mr. Upali Madawala, marketing manager. Rajarata is a largely government owned venture which distributes the product to the plantation sector in the island under a free feeding program. It was introduced as a coconut milk substitute and as a supplement to rice and wheat flours. Only small quantities are marketed retail in spite of a Rs. 1.2 million advertising campaign conducted several years ago. In 1986 the company used 30,000 kg/month of soybeans. In March 1988 15,000 kg/month. The decrease was because Estate Sector laborers were opting for cash, wheat, flour, or rice in preference to soy flour within the government free feeding program. The company buys soybeans for Rs 9/85 per kg from the Paddy Marketing Board. "There is no infrastructure to purchase from the private sector delivered." Label. 1988. 6.5 x 7.5 inches. Plastic bag. Orange, green, and tan on white. "Free of cholesterol."

4126. STS–Soya Technology Systems Ltd. 1983. Project proposal for 2000 liters/hour soymilk plant. 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 24 p. Oct.
• ***Summary:*** Contents: Introduction, investment estimate, design data and technical aspects, technical description, cost/profit calculation, drawings. Address: Singapore.

4127. STS–Soya Technology Systems. 1983. 250 liter/hour Agrolactor (Brochure). 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 4 p. Also published in Chinese. [Eng; Chi]
• ***Summary:*** Note: This is the earliest document seen (July 2013) concerning Actimonde or the Agrolactor system. Address: Singapore.

4128. *Tetra News* (*Singapore*). 1983. Soya bean: The meat of the Orient. Oct. p. 6-7.
• ***Summary:*** For centuries, the soya bean has been the king of beans in East Asia. "Almost every Asian household eats

the bean in various guises–as soya milk, tofu, soya sauce or beancurd." It makes sense to eat the soya bean–it's one of the least expensive sources of high-quality protein.

"One leading soya bean drink producer in Malaysia and Singapore is Yeo Hiap Seng. For years, this company has been distributing soya bean drink in bottles besides marketing other traditional popular soft drinks like chrysanthemum and herb-tea.

"What Yeo Hiap Seng has developed is a set of soft drinks which are traditionally close to the people who have grown up with these drinks which they used to buy from street hawkers. 'What we have also done.' says Mr Francis Lim, Group Marketing Manager at Yeo's, 'is modernise production and pack them in bottles and packages.'

"Yeo Hiap Seng also distributes a vitaminised soya bean drink in Tetra Brik Aseptic cartons and sold under the brand name Vitabean. `What we are giving consumers is a soft drink with a plus–with vitamins added to make it a nutritious drink. And no preservatives are used,' Mr Lim stresses.

"While Yeo's bottled soya bean drink is produced for on-premise selling. Vitabean packages cater more to home consumers. 'Packages are lighter, disposable and very convenient for consumers living in highrises,' Mr Lim says. Yeo's Vitabean is exported to Hong Kong, UK, Australia, Canada and the USA.

"While companies like Yeo Hiap Seng market their soya bean beverage as a soft drink, others like Nestle market their product, Bonus, as soya milk. This is not purely a case of terminology. Legally, a soya beverage can only be marketed as soyamilk if it contains at least two per cent protein by weight of volume.

"And in their quests for product individuality, manufacturers have come up with a sweet list of flavours for their soya drinks. For example. President Enterprises Corporation in Taiwan produces soya drink in almond, peanut, coconut, egg, strawberry, chocolate, apple and orange flavours. One of the two flavours Nestle chose for their soya milk is fragrant pandan. There is also a sesame-flavoured soya drink marketed by Wei Chuan Foods Corporation in Taiwan.

"In whatever flavour, soya drink or milk makes a better soft drink in terms of value for money compared to the empty calories of conventional soft drinks."

Photos show: (1) A Tetra Brik package of Morinaga Ever Fresh Silken Tofu. (2) About 30 different East Asian soymilk products in Tetra Brik cartons.

4129. Chen, Steve. 1983. Re: Soymilk, soy sprouts, and tofu in Taiwan. Letter to William Shurtleff at Soyfoods Center, Nov. 16. 1 p. Typed, with signature.
• ***Summary:*** It is estimated that in 1982 Taiwan used 26,250 tonnes (metric tons) of soybeans to make 262,500 tonnes of soymilk. Thus 1 kg of soybeans yields 10 kg of soymilk. This amount of soymilk is 5.5 times as much as the amount of cow's milk produced in Taiwan (47,740 tonnes). Taiwan's population is 18.5 million. The per capita consumption of soymilk is estimated at 14.2 kg in 1982.

There is no large manufacturer of soy sprouts in Taiwan. Tai-yi is the brand name of the packaged tofu made by the Nan-Yang Tofu Plant.

"Thanks again for your kind and warm hospitality which you and Akiko extended me during my last visit to your Soyfoods Center." Address: Country Director, American Soybean Assoc., P.O. Box 3512, Taipei, Taiwan. Phone: 7815880.

4130. Shurtleff, William; Aoyagi, Akiko. 1983. Dr. D.W. Harrison and Africa Basic Foods: History of work with soyfoods. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 10 p. Nov. 22. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. D.W. Harrison is an African-American physician and a Seventh-day Adventist. Contents: Introduction. Early years: Birth and education, army, first trip to Africa, attraction of Ghana's Nkrumah, Meals for Millions. Work in Ghana (1960-63): contract as surgeon, start of farm machinery company, start of bakery and small school, return to U.S. in 1963. Work in Uganda (1964-71): Attractions of Uganda, hired by Uganda government, establishment of Africa Basic Foods (ABF, 1965), 3 objectives, expansion of soybean production, early food production, home-roasted soy flour, grants, equipment, church ties, 3 early products, marketing and demonstrations, end of government contract, start of private medical practice, Worthington Foods purchase of ABF stock and loan of Sam Yoshimura, new tofu and soymilk products, soynuts and soynut butter, Wenger's extruder, speech to United Nations Industrial Development Organization (1969), balance of business and service, Idi Amin and 1970's instability to present. Work in Kenya (1974-82): Move to Kisii, work with soybean production, start of New Soya Enterprises. Summary. Address: Lafayette, California. Phone: 415-283-2991.

4131. Lee, Kyung. 1983. Re: The soymilk industry and market in Korea. Letter to William Shurtleff at Soyfoods Center, Nov. 23. 3 p. Typed, with signature on letterhead.
• ***Summary:*** "Unfortunately, there is no book or publication either in English or Korean about the history of soybeans or soyfoods in Korea. I am enclosing a book "Science of soybean, tofu and soybean sprout," written by Dr. K.H. Kim. This book discusses the technical procedure to make different soy foods such as tofu and soybean sprout. I hope you can make a good use of this book.

"As far as soy milk industry is concerned, it can be said that soy milk industry is one of the fastest growing food industries in Korea.

"The leading soy milk maker is Chung's Food, which

markets Vegimil (brand). Chung's Food began soy milk business in 1973 and observed the 1Oth anniversary in October.

"The second largest maker is Dong Bang, which markets Green Milk and Hae Pyo Doo Yoo (brands). Dong Bang entered the soy milk market in September 1979.

"The third largest maker is Seo Ju Industry, which markets Seo Ju Mill. It entered the market in October 1982.

"As of March this year, there were 9 makers, out of which three companies went bankrupt. Later during the year, Lotte Chilsung entered the market in May. Currently there are 7 makers.

"Their status is as shown on the attached paper. On The average, one kg of soybeans produces 6 kg of soy milk. The usage of soybeans as allocated by the National Agricultural Corporation was as follows in 1983;

"Chung's Food 7,500 MT (metric tons)

"Dong Bang 2,000

"Lotte Chilsung 800 (Makes Lotte Doo Yoo, started May 1983)

"Dong A 700 (Makes Sun Dew, started March 1983)

"Dae Won 200 (Makes Eggmil, started August 1982)

"Kwang Ju 200 (Makes Supermil, started May 1982)

"Seo Ju * Not using soybeans, but rather soy protein concentrate.

All soymilk in Korea is sold in 180 cc Aseptic cartons.

Dong Bang's sales volume includes soymilk sold to ice cream makers in bulk. Out of the total of 170,000 cartons per day, about 70% is sold in consumer packages and the rest is sold in bulk, which is then converted to consumer package equivalent. Address: Country Director, American Soybean Assoc., P.O. Box 1704, USIS Bldg., 63 Eul Ji Ro 1Ka, Chung Ku, Seoul, Korea. Phone: 722-2601 X-4368.

4132. *Brik Pak-Age.* 1983. In memoriam [Ruben Rausing]. 1(4):3 (insert). Fall.

• ***Summary:*** "Ruben Rausing, founder of The Tetra Pak Group, passed away Wednesday, August 10, 1983 at the age of 88.

"Dr. Rausing is known for inventing the tetrahedron Carton, a triangular package for liquid foods which led to the establishment of the multi-national Company Tetra Pak. During his lifetime, Dr Rausing saw his developments used in 86 Countries.

"His original concepts for packaging and distribution of food, formulated in the 1930s, still serve as standards throughout the world."

4133. **Product Name:** Nuclear Freeze (Soymilk Ice Cream Pops) [Carob-Mint, Raspberry, Maple-Walnut, or Banana-Coconut].
Manufacturer's Name: Garden of Eatin'.
Manufacturer's Address: Los Angeles, California.
Date of Introduction: 1983. November.
Ingredients: Banana Coconut: Soy milk (made from organically grown soybeans and water), bananas, coconut, honey, soy oil, lemon juice, natural vegetable stabilizers (guar, carrageenan, pectin).
Wt/Vol., Packaging, Price: 3 fluid oz on a stick.
How Stored: Frozen.
New Product–Documentation: Spot in Soyfoods. 1984. Summer. p. 43. A sort of 3-ounce soymilk popsicle on a stick developed by Al Jacobson. "One of the tastiest yet lightest soyfoods desserts on the market." Leaflet. 1983, dated. "Jelly beans, no!. Nuclear Freeze, Yes! We have it! 4 Delicious Flavors." Leaflet. 1983, dated. "Get involved in Nuclear Freeze. 100% non-dairy frozen delight. It's delicious!"

4134. Leviton, Richard. 1983. Report of soyfoods research and speaking trip to Europe with American Soybean Assoc., Oct. 8–Nov. 15, 1983. Colrain, Massachusetts. 82 p. Unpublished typescript. 28 cm.

• ***Summary:*** Describes visits to or discusses: ASA Belgium (Dennis Blankenship, Rita Batens, Michael Martin), Parma, Euvepro Conference, Parmalat, Guy Coudert and Dr. Sabin president of ONIDOL, Anuga, Jonathan, Société Soy (Bernard Storup, Jean de Preneuf), Le Bol en Bois, Budapest (Hungary), Agrimpex (Hungary), Migros, Sojalade / Die Genossenschafts Tofurei (Verena Krieger), Galactina, Soyana (Walter Daenzer), Alpro (Belgium; Philip Vandemoortele and Christian Daems), Aarhus (Denmark), Witte Wonder, Manna, Cauldron Foods Ltd. (Phillip Marshall, Peter Fagan). Contains a directory of principal people contacted, listed by country. Those not mentioned above are: England: Wild Oats Wholefoods (Mike & Loes Abrahams), British Arkady Co. (Bill Pringle), Sunworld Inc. (David White), Health Foods Manufacturers' Association (Britain). Belgium: ASA, Le Paradoxe (Dota Figuera). China Trading, Ralston Purina (A.G. van der Horn), Premier Foods (Pauline Six Chan). Italy: Cargill SpA (Claudio Rocchietta), Parmalat SpA (Dr. Alberto Rota, Mr. Barilla), ASA (Sergio Monari). France: Robert Bonneterre, Aux Rayons Verts. Germany: European Federation of Health Products Manufacturers (Wolfgang Reinsch, Bad Homburg). Hungary: Central Food Research Inst. (Balint Czukor), Agrimpex (Potori Karoly). Denmark: Danish Turnkey Dairies, Det Gronne Kokken. Netherlands: Witte Wonder Products (Niko van Hagen), Manna (Hans den Hoed), Albert Heijn Supermarkets, Dutch Seed Crushers & Oil Processors Assoc. (Dr. C.J.M. Meershoek). Switzerland: Sojalade (Verena Krieger), Soyana (Walter Daenzer). Austria: Tom Brennan.

Bound in the back of the report are photocopies of labels and promotional materials (graphics) from the following companies: Witte Wonder, Société Soy (Cerny), Cauldron Foods, Manna, Dansk Tofu (Sdr. Vinge Gl. Mejeri, 8860 Ulstrup), Sojalade, Bonneterre, Mutter Erde, Genossenschaftstofurei Engel (Dorfplatz, Ottenbach).

Note: This is the earliest document seen (May 2005) that

mentions Parmalat in connection with soy.

Migros (p. 18-19) is Switzerland's biggest supermarket / department store; it sells some whole wheat products. Consumers oppose them for their size, but they attract foreign customers. Natural foods people are very political; they are opposed to Third World imports. Migros is expected to start selling tofu soon. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

4135. Leviton, Richard. 1983. Brief history of Cauldron Foods Ltd. (Document part). In: R. Leviton. 1983. Report of Trip to Europe with American Soybean Assoc. 82 p. See p. 26-27. Unpublished manuscript.

• ***Summary:*** Based on an interview with Philip Marshall and Peter Fagan. These two men started their partnership in Cauldron Foods in Sept. 1981. Philip was previously a partner with Paul Jones, and at the time he joined with Peter he was already a Bristol tofu maker selling some tofu in bulk to the converted. They spent 12 months searching for premises. They now make 1,200–1,500 lb/week of tofu, all in one day. They started business doing burgers and tofu, handed out leaflets, and did recipe demos for shops. They prepared and served tofu quiche, cheesecake, mayo, and burgers.

The company was built on the burger. In 1982, selling 6,000 burgers a week, they reached plant capacity in their old 350 square foot plant and in Feb. 1983 they moved to their present location 1,200 square foot plant in Bristol. In 1981 there were 17 natural food stores in Bristol. Today (11/83) there are 24, more per capita than anywhere else in England. In Jan. 1984 Cauldron Foods and Bean Machine (from Wales) will host an all-day meeting in Bristol to form a Tofu & Soymilk Producers Association for England. The main item on the agenda is to take action on "burger" as a product name. Address: Colrain, Massachusetts.

4136. Leviton, Richard. 1983. Visit with Christian Daems and Philippe Vandemoortele at Alpro, Izegem, Belgium. Oct. 28 (Document part). In: R. Leviton. 1983. Report of Trip to Europe with American Soybean Assoc. 82 p. See p. 21. Unpublished manuscript.

• ***Summary:*** Vandemoortele doesn't like soy protein isolates in soymilk because of their poor image. A good tasting plain soymilk is possible if it is properly made. Isolate-based foods don't have the old basic food Oriental image. They also don't like isolates because, if the product's sales become large, the dairy industry will jump on the isolates for fakery and low quality. If used in place of dairy, the product would be called 100% synthetic. So not using isolates is a defensive measure. Codex Alimentarius (in Feb. 1984) will look at this issue. They may allow the term "soymilk" if a product is made from whole soybeans, but "soy drink" if it is made from isolates.

Alpro is opening a new soymilk plant in Ghent in Feb. 1984–the biggest in the world. They will make a 100% natural product from liquid and powder. [Note: Alpro never ended up making the powdered soymilk, says Philippe Vandemoortele 9/91.] This soymilk plant will have a sewage treatment system to recover all the water. The okara will be sold to the mixed feed industry. They will try to make soymilk powder at the same price as subsidized dairy milk and sell the powder for reconstitution. Alpro soymilk will be sold in supermarkets by Sept. 1984. They want high margins, will do promotions, and plan new products. Vandemoortele uses 50,000 tons of soybeans every 2 weeks [for all products, not just soymilk]. Alpro uses organically grown beans from France to make soymilk for Lima Foods in Belgium; these are 100% more expensive than regular soybeans. They will look to the USA and Asia for more markets for this output since the European market is too small. They will focus on areas that have a protein shortage or lactose intolerance. They have sold one turnkey soymilk plant to Madagascar. Alfa-Laval has not sold any soymilk plants recently due to currency problems.

Europe is such a bad market for soymilk, in part because of the many languages. With 10 European countries and languages, labeling requirements make it very complicated to market one food uniformly. Alpro sells more soymilk in north Belgium than in the south. There are more macrobiotics and more money in the north. This is typical for Europe as a whole with natural foods.

At ANUGA, British Arkady received lots of interest in their soymilk made from soy protein isolates, and health foods interest in their soy proteins. It is a Tetra Pack soymilk in raspberry, banana, and strawberry flavors. They exhibited meats and biscuits using isolates. A.E. Staley was pushing isolates for bakery uses.

Michael Martin of the American Soybean Assoc. explains European regulation problems. Soymilk is taxed at 17% when it is traded in the EC. This Value Added Tax (VAT) would be only 6% if soymilk were reclassified as a health food instead of a liquid, powder, or paste. The VAT varies by country but is usually higher on beverages. Dinner with Martin at Le Paradoxe, a natural foods restaurant in Brussels. They serve "croquettes de soja, tofu brochette, and Tofu Ganmo (2 burgers). There are 6 natural foods restaurants in Brussels and all use tofu. The Japanese wanted Alpro to do their soymilk in Europe. They started soymilk in 1975 with the idea of bringing alternative vegetable sources to developing countries.

Vandemoortele's sales are now $600 million/year. In 1936 Philippe's grandfather imported Manchurian soybeans for crushing in Europe. Vandemoortele, which now competes with Unilever in margarine, has a high level of expertise in R&D.

"We sample Alpro soymilk. One tastes thin, metallic, then gives a fatty mouthfeel. Another with sugar and vanilla is too sweet. I'm not impressed with them.

"Philippe is about age 35 and macrobiotically oriented in diet. Very confident, perhaps overly."

The tofu market is completely different from that of soymilk. Tofu is all education work and no comparison of products. With soymilk, there is comparison, but no education work needed. Philippe and Christian are concerned that most of the low-tech soyfoods industry and retailers in Europe are unskilled, small, and unprofessional. They don't want the average public to associate their soymilk with this vegetarian style. They want it to be seen not as a special food, but for everyone.

The European vegetable protein industry made a classic blunder. They put soy steaks in German supermarkets in the 1970s using TVP from British Arkady and ADM. Address: Colrain, Massachusetts.

4137. Leviton, Richard. 1983. Visit to Danish Turnkey Dairies Ltd. at Aarhus, Denmark. Nov. 1 (Document part). In: R. Leviton. 1983. Report of Trip to Europe with American Soybean Assoc. 82 p. See p. 22. Unpublished manuscript.

• ***Summary:*** After making a presentation for 1 hour and 45 minutes, Leviton had lunch with Bengt Ginslov (manager, product development), Holger Christensen (finance director), and K.E. Knudsen (VP, services).

DTD, founded in 1969, has 600 employees. They have initiated 200 dairy projects worldwide, and have built more plants than their competition. Alfa-Laval has to use their own equipment, but DTD can pick from anyone. 1982 sales were 1,200 million krone (or US$132 million; 1 krone is US$0.11).

They started work on soymilk in 1981 and 3% of their effort is now in soymilk, with 35 people at work on the soymilk project. They haven't sold a soymilk plant yet, but they have interested parties in China, the USA (maybe Vitasoy, unconfirmed), and Sri Lanka. Address: Colrain, Massachusetts.

4138. Leviton, Richard. 1983. Brief history of Soyana and Walter Daenzer (Document part). In: R. Leviton. 1983. Report of Trip to Europe with American Soybean Assoc. 82 p. See p. 19-20. Unpublished manuscript.

• ***Summary:*** Based on an interview with Walter Daenzer. Soyana is Switzerland's largest tofu company. Soyana's factory and office are at two very different locations in Zurich. Daenzer, who first became familiar with soy in New York City, has been a vegetarian for 15 years. He first saw soy as textured meats. The company began in 1980, when they started to re-package sell TVP in consumer-size in Zurich. He did 1-3 demos/week that year. "De Gustation" then published his first cookbook about soy protein.

In Sept. 1981 he started to plan tofu production, then on 1 Feb. 1982 he began to produce tofu, and now produces about 6,000 lb/week (2,727 kg/week) of very firm tofu with 13% protein. Of this, it sells about 40 kg/month in bulk to the University of Zurich. The company, which has 5 production and 3 office employees, makes tofu 3 days/week and burgers 1 day/week. They use a Takai W30C system. Daenzer didn't want to use water-filled tubs for packing the tofu, so he uses a Tiromat form-fill-seal vacuum packer that gives tofu a 2-week shelf life (dated), but could actually go to 3 weeks.

Soyana also makes several shelf-stable tofu spreads and dips, packaged in tins, pasteurized, with a 6-month shelf life. "Zurich has the most innovative, dynamic people in Switzerland, I am told, with an international atmosphere; there is a widespread interest in trying new foods." Soyana displays the Biona symbol (a "Y") on its products in recognition of having passed the inspection by the federation of Swiss Reform Houses (about 400 shops). Biona is an association of Reform House stores, "VRSD," with 400 members, called in Swiss the Assoc. of Swiss Reform & Diet Specialty Stores. It corresponds to West Germany's Neuform which has 2,500 members. Only one-half of these shops have refrigeration facilities. The Soyana brand is sold only in Biona stores, whereas Soyana's Sojaquelle brand is sold elsewhere. The *"Bioladen"* stores are more like American natural foods stores. There are 60 of these in Switzerland; they are environmentally oriented, political, and wholistic.

Soyana's director says that Migros, Switzerland's leading supermarket chain with about 2,000 stores and 70-80% of Swiss food sales, is likely to sell tofu, but under its own label and possibly manufactured in-house. Migros has a bad reputation among food manufacturers, because Migros often starts selling a company's product, then if it becomes successful they make their own product and drop the original manufacturer. Co-op is the second largest Swiss food chain. Meanwhile, Soyana is active presenting cooking classes on tofu, has published two tofu cookbooks (each has sold 10,000 copies), and have a third at the printers, *Tofu Kur* (actually it ended up being titled *Schlank mit Tofu*) in full color, a weight-loss book with 127 low-calorie tofu recipes. It should be out in Nov. 1983. Weight Watchers International contributed 30 recipes to the book.

In April 1982 Daenzer tested Tetra Pak soymilk using taste panels and got good reports. The milk was made using his Takai system and flavored with honey. The Swiss Milk Industry Assoc. protested, asking the Tetra Pak company to stop working with Soyana, and they did. 95% of all Swiss milk is in Tetra Pak cartons so if people see a soymilk in such a carton they assume it is dairy milk. Address: Colrain, Massachusetts.

4139. **Product Name:** [Manna Soy Beverages].
Foreign Name: Manna Sojamelk.
Manufacturer's Name: Manna Natuurvoeding B.V.
Manufacturer's Address: Meeuwenlaan 70, 1021JK, Amsterdam, The Netherlands.
Date of Introduction: 1983. November.

Wt/Vol., Packaging, Price: 0.34 liter bottle retails for 1.75 guilder (11/83).
New Product–Documentation: Richard Leviton. 1983. Trip to Europe with American Soybean Assoc. Oct/Nov. Unpublished manuscript. p. 24-25. On 3 Nov. 1983 Manna was still located at Meeuwenlaan 70 in Amsterdam.

Soya Bluebook. 1985. p. 85; 1986. p. 104. Letter from Sjon Welters. 1989. Aug. 10. 350 ml bottle was introduced in 1981.

4140. Shurtleff, William; Aoyagi, Akiko. 1983. Tofu & soymilk production. 2nd ed. Lafayette, California: Soyfoods Center. 344 p. Illust. by Akiko Aoyagi Shurtleff. Index. Nov. 28 cm. [223 ref]
• ***Summary:*** Some information in Chapter 1, Appendix A, and many advertisements have been changed. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4141. *Vegetarian Times.* 1983. From nuts to milk. Nov. p. 35-36, 53.
• ***Summary:*** Contains a long section on soymilk, "a lovely beverage and well worth a try." Includes a brief description of how to make soymilk at home. No other nut milks are described.

4142. *Toyo Shinpo* (*Soyfoods News*). 1983. Izen juyô junchô [The demand is still strong for soymilk in Japan]. Dec. 1. [Jap]
• ***Summary:*** It is said in regular newspapers and food industry newspapers that in 1983 soymilk industry sales reached 35,000 million yen and are expected to grow well in 1984. But Mr. Okayama of the soymilk association thinks the figure was more like 25,000 million yen, and that next year the industry will reach 35,000 million.

Sales in 1980 were 3,000 million yen. In 1981 6,000 million yen. In 1982 12,000 million yen.

Plain soymilk (Jun) showed the best growth, and 200 ml was the most popular size. Large volume packages didn't sell well. In summer dairylike soymilk (*chosei tonyu*) and soymilk drinks (*tonyu inryo*) sold well but as a year-round product plain soymilk (nothing added) was the best seller.

1982 sales up to August were: Kibun 9,500 million yen. Nisshin Seiyu 2,700 million yen. From Sept. 1982 to Sept. 1983 Marusan-Ai almost reached their goal of 6,500 million yen.

4143. *Toyo Shinpo* (*Soyfoods News*). 1983. [Kibun is still the biggest soymilk maker in Japan, with a 45% market share]. Dec. 1. [Jap]

4144. *Toyo Shinpo* (*Soyfoods News*). 1983. [Study of health food buyers in Saitama prefecture, Japan]. Dec. 1. [Jap]
• ***Summary:*** The biggest buyers of health foods in Japan are women in their 50s and 60s; they are more interested in men. Sea vegetables and vinegar are the two health foods used most frequently (both are alkaline foods and are rich in minerals).

When asked which foods they believed are good for their health, these women replied: Sea vegetables 89.3%. Vinegar 87.9%. Yogurt 71.6%. Health tea 34.4%. Prunes 22.6%. Sports drinks 16.0%.

4145. Southwell, Jane. 1983. Re: Discontinuing Soy Deli at 211 East Ann St. in Ann Arbor. Letter to "Community loan holder," Dec. 5. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "We no longer operate the Soy Deli at 211 East Ann St. The People's Produce Coop, which shares that building space with the Herb and Spice Coop, now handles Soyplant products. You can continue to pick up tofu and soymilk as payment on the principal of your loan, if this is the option you chose. Coordinators of the Produce Coop are keeping records for the Loan Program, and we appreciate their willingness to do this. Other Soyplant products are still available. We apologize for any confusion this change-over may have caused.

"We are seeing a gradual but steady improvement in the company's position. Beginning this month, we will repay loans at the rate of $100 a month, according to the list of loan holders we have compiled who requested cash repayment. We will increase the rate as quickly as we can." Address: The Soyplant, 711 Airport Blvd., Suite #1, Ann Arbor, Michigan 48104. Phone: (313) 663-8638.

4146. Howes, Eric. 1983. Meals for Millions (MFM) Foundation (Interview). *SoyaScan Notes.* Dec. 19. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** MFM was doing good work when Mark H. Sterner was directing it; then when Peter Davies came in, it went down hill. Hank Sterner, Mark's son, has his own extruder company. Hank has much longer experience at this than Mark. Peter got MFM much more involved in working with governments and not necessarily doing the field work themselves. Mark is a very knowledgeable man, with very wide experience. Mark would be a good person to interview about Meals for Millions. A business card shows that Mark H. Sterner is President, Appropriate Engineering & Mfg. Co., P.O. Box 40, Norco, California 91760. Phone: (714) 784-5877. Mark manufactures a low cost extrusion cooker that makes 300 lb per hour–of CSM or textured soy protein.

When Mark was director, MFM ran a school training people from overseas in both soymilk production and soy extrusion. In Santa Monica, MFM had a Sprout-Waldron extruder and also a small Wenger X-15 extruder. It was a practical, hands-on program. To make soymilk, they used the traditional Asian water extraction method.

4147. *Toyo Shinpo* (*Soyfoods News*). 1983. Kankoku demo tônyû buumu [Soymilk boom in Korea, too]. Dec. 21. p. 1.

[Jap]

4148. *SoyaScan Notes.* 1983. Soymilk and dairy milk prices in California, December 1983 (Overview). Dec. 28. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** In Lafayette, California, whole fluid cow's milk retails for $0.39/pint (1 pint = 16 ounces) and nonfat cow's milk retails for about $0.43/quart. Milk is the least expensive popular beverage, less expensive than Coca-Cola, beer, or orange juice. Prices of unflavored fluid soymilks are as follows: Vitasoy, 8.4 oz. Tetra Brik sold to the Asian-American market $0.35 (which is the equivalent of $0.67 per pint), Quong Hop Soy Fresh 10.16 oz. Pure Pak carton $0.59 ($0.89/pint), Wildwood Yosoy pint plastic bottle $1.05, Brightsong Honey-Vanilla pint plastic bottle $1.08, San-J To-Neu 6.76 oz. Tetra Brik $0.74 ($1.75/pint), Edensoy 6.0 oz. retort pouch $0.74 ($1.97/pint). Vitasoy, the least expensive soymilk, is 1.72 times as expensive as cow's milk. The average price of the pint equivalents of all 6 U.S. soymilk products mentioned above is $1.24 a pint (which would be $2.48/quart). Thus the average soymilk in a typical pack is 3.53 times as expensive as dairy milk per unit volume.

4149. *SoyaScan Notes.* 1983. Chronology of soybeans, soyfoods and natural foods in the United States 1983 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jan. 16. Larry Needleman decides to sell Bean Machines. Looking for a buyer. Jan. 24. "Legume, Company Finds Niche Selling Frozen Foods Made with Tofu, published by The Wall Street Journal.

Feb. *Soyfoods* magazine No. 8 published by Richard Leviton. Blue cover, 5,000 copies

Feb. 6-8. Sixteen soyfoods companies exhibit at the Natural Foods Expo. in Anaheim, California. A new trade association named Soyfoods Association of America (SAA) is formed; it is basically a restructured version of the original Soyfoods Association of North America, which was founded in July 1978 and which now ceases to be active. SAA elects a new board of directors; Michael Austin is chosen new Executive Director and Gary Barat of Legume becomes new President. Fourteen companies pledge $12,000. Headquarters established in New York City.

Feb. 7. The First Great Tofu Burger, a dry mix, made in Oakland, introduced at Anaheim Natural Foods Expo.

Feb. 18. Wm. Shurtleff has idea for forming a Soy Sauce Council to help encourage soy sauce companies to join Soyfoods Association, develop soy sauce terminology and standards, and eliminate mislabeling.

Feb. Jack's Beanstalk, innovative tofu company in Salt Lake City, goes out of business.

March 10. *Soyfoods Industry and Market: Directory and Databook 1983* published by Soyfoods Center, accompanied by glossy flyer and catalog of professional publications and services.

March 10. *Tempeh Primer,* by Juel Andersen and Robin Clute, published.

March 14. Connecticut Agricultural Experiment Station, in Bulletin 810 "Quality of Tofu and Other Soy Products," reports high bacterial and coliform counts. A virtual expose, revealing the tofu industry's erratic quality control, it gets wide media coverage and hurts sales of New England and New York tofu companies.

March. Hinode Tofu Co. starts major tofu ad and coupon campaign, with full-page ads in four national magazines. Most extensive national publicity ever done for tofu. Triggers lawsuit from a rice company over the Hinode brand, with which Hinode Tofu Co. is subsequently forced to part.

April 27-30. Six soyfoods companies exhibit at Whole Life Expo in San Francisco, as part of Soyfoods Association's booth. Shurtleff presents a speech and color slide show.

April. Hartz Seed Co. is purchased by Monsanto.

May. *The Au Naturel Tofu Manual,* by Chloe & Abraham Fox self-published in Canada. Vol. 1 is *Tofu Recipes for Families.* Vol. 2 is *Modern Jewish Tofu Cooking.*

May 3. Michael Austin mails out Soyfoods Association Charter Member letter. By year's end $18,000 in membership fees had been raised.

May 4. Richard Leviton decides to move to California.

May 8-11. Hinode Tofu Co. exhibits five flavors of Tofu Parfait at the prestigious and influential Food Marketing Institute convention in Chicago, a major national supermarket convention, attended by 20,000.

May 9. Dr. Hwa L. Wang of USDA NRRC speaks on "Tofu and Tempeh as Potential Protein Sources in the Western Diet" at the American Oil Chemists' Society symposium on "Potential New Protein Sources" in Chicago.

May 16. Quong Hop & Co. introduces the first Soy Deli cooler display case to Raley's supermarkets in Reno and Sacramento. In July they introduce the idea to Safeway supermarkets in California. By August there are Soy Delis in ten Safeway supermarkets in the San Francisco Bay Area.

May 18. The New York Times article on "Bacteria in Soy Products" as a follow-up on the Connecticut tofu contamination report.

May 24. Wm. Shurtleff goes to China for three weeks to study soyfoods, sponsored by Danish Turnkey Dairies; the first trip for this purpose since Dr. A.K. Smith of the USDA went there in 1949. Shurtleff writes 75-page report on *Soybeans and Soyfoods in China: 1949-83.* After China, Wm. and Akiko Shurtleff spend 3 weeks studying the soymilk industry and market in Japan.

May 31. Leviton and Wang speak on the soyfoods industry at Iowa State University conference on grains and legumes.

June. Worthington Foods introduces Tofu Garden Patties, developed for the health food market as part of a

larger new line of natural food products, all sold under the Natural Touch brand. This is a new trend for the company and they commit money to promoting it. In 1984 they launch Okara Patties (which contain okara as the 4th ingredient).

June. *Quantity Tofu Recipes for Institutions & Restaurants,* by Gary Landgrebe published by Soyfoods magazine and Fresh Press.

June. *The Magic of Tofu,* by Jane O'Brien of Ireland published by Thorsons in the UK.

June. *Tofu: Not Just for the Health of It,* by Jana H. Crutchfield self-published.

June. *Handbook of Indigenous Fermented Foods,* edited by Keith H. Steinkraus, published by Marcel Dekker. Extensive original material on traditional soyfoods. It soon becomes a classic.

June. *Soyfoods* magazine No. 9 published, 7,000 copies. *Soyfoods Newsletter* published in new typeset, 4-page format with new design.

June. Torigoe Seifun, Japan's fifth-largest flour miller, starts production of tempeh. This is the earliest known commercial tempeh ever made in Japan.

July 1. Quong Hop & Co. purchases Pacific Tempeh Co.

July. INTSOY publishes *Proceedings of the First China/USA Soybean Symposium,* held July 1982 at the University of Illinois.

July 3-Aug. 22. Richard Leviton in England, lectures on soyfoods in London and Leicester, and does some soyfoods research.

July 25. Soyfoods Association meeting in Denver. Tom Timmins, president of Tomsun Foods Inc. (one of the companies seriously affected by negative publicity on tofu quality) is asked to be head of the Soyfoods Association's Standards Committee, and to appoint people to work with him on the development of standards, especially tofu standards. In October he sends a 4-page survey letter concerning soyfoods standards to the 18-person Soyfoods Association Standards Committee that he has appointed.

July 28-Aug. 2. Second US/China Soybean Research Symposium, held in Jilin, China

July. NNFA show in Denver. Eden Foods surprises the natural foods industry by launching designed-for-America Edensoy in plain and carob flavors. Made in Japan by Marusan-Ai and exported by Muso, it is packed in a 6-ounce retort pouch. San-J's To-Neu brand soymilk is also debuted in Tetra Brik cartons.

Eden Foods is the first Caucasian-American company to import soymilk, and their gamble soon pays off; sales skyrocket, sparked by an extensive magazine advertising campaign. Between Sept. and Dec. 1983 over 1 million packs are sold. A host of competitors rush to follow Eden's lead... and many of them go to Muso. Eden objects.

July 31. Fifth Anniversary of the founding of the Soyfoods Association of North America.

Late July. Hot, dry summer weather heats up the price of soybeans from $6/bu to over $9.50/bu in August and September, falling back to $8 in December.

Aug. 15. *Time* magazine article on stylish ice creams has a paragraph on Tofutti soy ice cream.

Aug. 15. Delegation of four soyfoods experts from People's Republic of China spends 5 hours at The Soyfoods Center. First stop of the first Chinese soyfoods team to visit the USA.

Aug. 15. Soyfoods Center makes the first photocopy of the entire Log of the Dorsett-Morse Expedition to East Asia, 1929-31. 6,170 pages. The only original is owned by the American Soybean Assoc. in St. Louis.

Aug. Farm Foods serves Ice Bean soymilk ice cream at the American Soybean Association convention in Nashville, Tennessee.

Sept. Legume in New Jersey, in their second public stock offering in 15 months, raises an additional $400,000 ($300,000 net).

Sept. Continental Soyfoods, run by Pat Aylward in Minneapolis, goes out of business.

Sept. 9. Leviton leaves Massachusetts, moves Soyfoods magazine to Encinitas, California. But he decides to leave there a week later.

Sept. 21. New Ten Speed Press edition of *The Book of Miso,* by Shurtleff and Aoyagi published. Extensively revised. Shows miso consumption in U.S. has increased 300% since 1975.

Sept. 25. Open House at new headquarters of Soyfoods Center for 30 people, including Nancy Dailey, who is writing a major story on soybeans for *National Geographic* magazine, and for Richard Leviton, newly arrived in California. Shurtleff shows color slides of soyfoods in China.

Sept. 26–Oct. 1. Symposium on "Soybean in Tropical and Subtropical Cropping Systems" held at Tsukuba, Japan. About 200 people attended. Proceedings were published in 1985.

Sept. 28. Soyfoods Center buys its first computer and begins computerization, which soon leads to development of the world's three largest computerized databases focusing on soyfoods and the soybean industry–from which this chronology is compiled.

4150. *SoyaScan Notes.* 1983. Chronology of soybeans, soyfoods and natural foods in the United States 1983 (Continued) (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued. Oct. 9 to Nov. 14. Leviton travels to Europe as a consultant for the American Soybean Association. Gives six speeches on soyfoods in Italy, Belgium, Denmark, France, Netherlands, and Hungary. The 50-minute speech in Italy is about the soyfoods industry in the USA, presented to 150 members of EUVEPRO, the European Vegetable Protein Association. Leviton studies soyfoods throughout Europe, the first representative of the

American soyfoods movement to do so. He reports that virtually all tofu in Europe is vacuum packaged. On Oct. 28, ASA Belgium Office expresses interest in sponsoring a European Soyfoods Conference and a European Soyfoods Newsletter. Leviton writes a 56-page report on the trip.

Oct. New England Soy Dairy starts to sell its tofu under the Tomsun brand.

Oct. The world's first spray-dried tofu is introduced by Clofine Dairy & Food Products of Linwood, New Jersey. St. Peter Creamery first began spray-drying soymilk powder in late 1984, and tofu in the summer of 1985, under the Oberg patent.

Oct. Kikkoman: Company, Clan, and Community (358 p.) by W. Mark Fruin published by Harvard University Press as part of their series Studies in Business History.

Oct. Major reorganization of The Farm in Tennessee. It is no longer a cooperative. Every participant must pay his/her own way. All workers earn wages. The soy dairy sells its tofu and soymilk to Farm residents. Farm Foods becomes an independent, for-profit corporation.

Nov. Hymowitz and Harlan's "The Introduction of the Soybean to North America by Samuel Bowen in 1765" published in Economic Botany. This brilliant piece of historical research pushes the introduction date back 39 years, and shows that by the late 1760s Bowen, in Georgia, was making soy sauce and exporting it to England. It also credits Benjamin Franklin with the earliest known reference by an American to tofu, in 1770.

Nov. 11. Wm. Shurtleff and Gordon Bennett (Westbrae Natural Foods) mail out a packet including proposed U.S. soy sauce standards, English translation of Japanese Shoyu Standards, and proposal for formation of a Soy Sauce Council to 60 companies connected with soy sauce in the USA.

Nov. Soyfoods Assoc. officers meet with David Mintz of Tofu Time (maker of Tofutti) asking him to either use tofu as an ingredient in Tofutti or drop the term "tofu" from his product name and stop stating or insinuating that his product contains tofu.

Nov. 11. Wm Shurtleff writes a strongly worded letter to Mintz threatening to report the matter to the Securities and Exchange Commission and the FDA if Mintz fails to stop deceptive practices. Mintz quickly re-adds tofu to Tofutti.

Nov. 19. House Shokuhin Kogyo, a major Japanese food company, invests $2.5 million in Hinode Tofu Co. in Los Angeles as part of a joint venture to expand tofu production.

Nov. 25. Dr. Clifford W. Hesseltine of the USDA NRRC receives the award of the Third Class of the Order of the Rising Sun from the Emperor of Japan in recognition of the meritorious services he has rendered: proving the safety of Japan's traditional fermented foods, training Japanese scientists, and promoting technical cooperation in the field of food fermentation between the United States and Japan.

Dec. New England Soy Dairy, in a half-page article in *Inc.* magazine, is named as one of America's 500 fastest growing small private companies.

Dec. Inari Trading Co. in Michigan develops a delicious Christmas Soynut Sampler with seven flavors of Super Soys, including yogurt-coated, carob-coated, and butter-toffee. Runs full page color ad in Soybean Digest.

Dec. *International Bibliography of Soybeans* (3 volumes, 2,500 pages) published in Brazil. 19,571 references total, under 75 subject headings, all published during 1970-1982. Volume III contains author and subject indexes. Mostly soybean agronomy, but 1,584 references on soyfoods.

Dec. 1. The title of *Soyfoods Monthly* is changed to *Soyfoods Newsletter.*

Dec. 5-7. Symposium on Soybean Utilization held at Ibadan, Nigeria, Sponsored by IITA. First event of this type in Africa.

Dec. 8. Tofu Time Inc. in New York raises $3.2 million ($2.4 million net) in their first public stock offering, to finance national marketing of Tofutti soy-based ice cream.

Dec. 10. Doug Fiske becomes majority owner (55%) of *Soyfoods* magazine, Leviton owns 45%. Fiske will take over most publishing responsibilities. Leviton moves to San Francisco Bay Area.

Dec. Soyastern starts to make tofu in West Germany. By 1987 they are the country's largest tofu manufacturer, making 4,000 kg/week.

* *Eurosoya,* the annual publication of the European Cooperative Network on Soybean, begins.

* Soymilk production peaks in Japan at 116,724 kl. By 1986 it has fallen to 43,392 kl, which is only 37% of the peak.

1983 New Trends:

New Capital and Expertise are Flowing into the Soyfoods Industry, leading to many exciting new ideas and products and marketing programs. A dozen or so large companies with nationwide marketing are emerging.

New Emphasis on Soyfoods Marketing, now that production techniques have been fairly well mastered, is seen throughout the industry, and is reflected in new editorial and advertising policies of *Soyfoods* magazine.

Brand-Name Promotion by larger companies is surpassing generic or commodity promotion.

Stylish Second-Generation Products, prepared convenience soyfoods, are appearing with better product quality, better marketing and promotional programs, and better packaging and graphics. These are the fastest growing component of the soyfoods industry.

Extensive Professional Advertising of Soyfoods in natural and health food consumer magazines, as by Legume, Eden Foods, San-J, Hinode, Edward & Sons, and Pure & Simple. Each of these companies run very attractive, professional ads. Brightsong Light Foods has top graphics for a small company.

Exhibits at National Trade Shows are now a matter of

course: The Natural Food Merchandiser show, followed by the National Nutritional Foods Association (NNFA) show are most popular.

Tofu Market Control is Increasingly Concentrated in the hands of large manufacturers, who distribute nationally and have professional marketing. Most companies are getting much more professional, but many small tofu companies are going out of business. The total number of companies is stabilizing.

Soymilk Makes its First Big Splash in the American Caucasian Market, led by Eden Foods' Edensoy. Vitasoy has big plans for early 1984. Vitasoy had the largest total imports in 1983, but mostly sold to the Asian-American market. Large new soymilk plants are planned to open in 1985.

East Asian Soymilk Sales are Skyrocketing, leading to a general soyfoods Renaissance, and reevaluation of traditional soyfoods staples. Production of soymilk in Japan tops 100,000 metric tons (tones) for the first time, reaching 116,724 tonnes, up 71% over last year. The per capita consumption of soybeans in Japan is 5.8 kg/year, up 3.6% from last year.

Soy Ice Cream is becoming fashionable. Made with tofu, soymilk, and/or isolated soy protein, it is emerging as a major way that Americans are discovering soyfoods.

Tofu industry is vulnerable to sanitation and credibility problems as vividly demonstrated by the Connecticut quality / contamination report in March and subsequent adverse publicity, and by a Tofutti mislabeling incident in November. The industry urgently needs standards and better sanitation. Tofu souring and spoilage is the tofu industry's number one problem.

The Soy Deli Concept: Defunct or Ready for Takeoff? No new openings and some closings. But more and more natural food and vegetarian restaurants are starting to use soyfoods, and Chinese and Japanese restaurants are increasing their traditional use. In Soyfoods No. 9, Leviton calculated that as much as 16% of all tofu made in the U.S. is being served in restaurants, but this figure is probably far too high. Most promising, plans by Tofu Time/Tofutti to open a chain of natural, fast food restaurants featuring tofu, soymilk and other soyfoods could bring the Soy Deli concept new life and widespread publicity as a healthful alternative to McDonald's, Burger King, and the like.

European Soyfoods Industry is Flourishing, with lots of innovation. Large producers of tofu and tempeh are emerging in the Netherlands.

Tempeh is Starting to Take Off in Japan and interest is rising rapidly: 13 articles were published on tempeh in Japan this year, followed by 20 in both 1984 and 1986.

4151. *Ann Arbor Observer* (*Michigan*). 1983. [A pair of retrenchments]. Dec. [1 ref]
• ***Summary:*** On Ann Street, just west of Fourth, The Soy Plant is discontinuing its retail operation. "The Herb and Spice and Produce co-ops, which have shared the one-time pizzeria at 211 East Ann with the Soy Plant, have taken over the sale of tofu, tempeh, and soy milk, and will continue to redeem the loans the Soy Plant is paying off in bean curd. But the Soy Plant's specialty deli items (which include soy cheesecake and tofu quiche) will now be sold through Arbor Farms instead." Address: Ann Arbor, Michigan.

4152. **Product Name:** Pureharvest Organic Soy Drink [Natural, or Vanilla].
Manufacturer's Name: Ceres Natural Foods Pty. Ltd. (Importer & Distributor). Made in Japan.
Manufacturer's Address: East Bentleigh, Victoria, Australia.
Date of Introduction: 1983. December.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik.
How Stored: Refrigerate after opening.
New Product–Documentation: Letter (fax) from Don Lazzaro of Ceres Natural Foods. 1995. June 15. In Dec. 1983 they introduced soymilk in vanilla and natural flavors, in 200 ml Tetra Brik cartons, made by and imported from Kibun in Japan.

4153. **Product Name:** Golden Life.
Manufacturer's Name: Martin Pharmaceuticals. Div. of the Nicholas Kiwi Co.
Manufacturer's Address: Australia.
Date of Introduction: 1983. December.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic cartons.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Geoff Wilson. 1987. Jan. Soyfoods (ESFA). Jan. The dates in this article are not clear. The product is said to be "the first Australian soy drink, launched late last year. A sport drink, it contains dextrose and is being packed in tetrabrik cartons in the Leongatha factory of Murray Goulburn Cooperative, Australia's largest farm-owned dairy company. However other soy-based foods are not yet expected to be produced by other dairy companies, because of the anger the new soymilk technology's threat has caused among hard-pressed dairy farmers... The product is currently being sold through health food stores But other manufacturers are tipping that a range of soy based dairy food substitutes will become available to supermarkets in 1985. One health food shop in Melbourne has reported a tenfold sale of soy drinks over the last 6 months. They are made from isolated soy protein."

4154. **Product Name:** Coco Pudding (100% Dairyless).
Manufacturer's Name: San Diego Soy Dairy.
Manufacturer's Address: 2965 5th Ave., San Diego, CA 92103.
Date of Introduction: 1983. December.
Ingredients: Tofu (organically grown soybeans, filtered water, natural nigari), soymilk, coco powder [cocoa powder],

honey, malt syrup, vanilla.
Wt/Vol., Packaging, Price: 4 oz (113.5 gm).
How Stored: Refrigerated.
New Product–Documentation: Label sent by Gary Stein. 1989. 2.5 inch diameter. Dark blue and light blue on white. Talk with Gary Stein. 1989. Feb. 17. He thinks this product was introduced in about Dec. 1983.

4155. STS–Soya Technology Systems Ltd. 1983. Questionnaire. 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 8 p. Dec.
• ***Summary:*** Asks potential clients many questions to aid in developing a turnkey soymilk plant to suit their needs. A Chinese edition of this was published in 1987 in Singapore.

Accompanying this are three STS pressure sensitive soymilk labels for display purposes only–since the company has none of its own commercial products. Address: Singapore.

4156. Wee, Jae-Joon; Lee, Hyong-Joo. 1983. [Coprecipitation characteristics of cheese whey and soybean proteins]. *Han'guk Nonghwa Hakhoe Chi* (*J. of the Korean Agricultural Chemical Society*) 26(4):199-204. Dec. [24 ref. Kor; eng]
• ***Summary:*** "As a way of utilizing cheese whey to fortify sulfur-bearing amino acids to soybean protein, whey-soybean coagulum was made from whey-soy milk mixture and optimum conditions for coprecipitation of the two proteins were determined." Address: Dep. of Food Science and Technology, College of Agriculture, Seoul National Univ., Suwon, South Korea.

4157. **Product Name:** Wonder-Vite Soymilk Drinks [Plain, or Carob-Honey].
Manufacturer's Name: Blissquik (Natural) Food Products.
Manufacturer's Address: 37 Hammett St., Townsville, QLD 4812, Australia.
Date of Introduction: 1983.
New Product–Documentation: Manufacturer's catalog. 1983, undated. Letter from C.H. Lee of Blissquik Food Products. 1992. Feb. 17. The only soy product his company is now making is soymilk (plain and flavoured). They started in 1983, not 1981. He is interested in making soy ice cream and soy yogurt in the near future. His company also makes Wonder-Vite Biodynamic Loaf (which contains "soyflour" as the second ingredient), Super Sprouts, Super Alfalfa Sprouts, and Mixed Vegies.

4158. **Product Name:** Melobev (Soymilk).
Manufacturer's Name: Dairyland Products Inc.
Manufacturer's Address: 5345 W. 125th St., Savage, MN 55378.
Date of Introduction: 1983.
New Product–Documentation: Soya Bluebook. 1983. p. 62.

4159. Eden Foods, Inc. 1983. Expand your horizons. Edensoy (Leaflet). Clinton, MI 49236. 1 p. Single sided. 28 x 22 cm. Also widely run as an ad.
• ***Summary:*** A color illustration (see next page) shows a boy climbing out on a rock over a pond with a meadow and mountains in the background. Superimposed on this are two large foil retort packages of Edensoy (plain and carob). A table compares the nutritional value of Edensoy/whole cow's milk. Key differences are (gm per 100 gm): Calories 40/65. Protein 3.4/3.0. Fat 3.0/3.3. Ash 0.6/0.8. Calcium 40 mg/100 mg. Iron 1.5 mg/0.05 mg. Also appeared as an ad in *Natural Foods Merchandiser.* 1984. Jan. p. 10 (unnumbered) of 12-page color advertising insert. Soyfoods Pavilion '84. Marketing soyfoods in America. Address: Clinton, Michigan.

Phone: (517) 456-7424.

4160. Eden Foods, Inc. 1983. Process for making soy milk [in Japan, by Marusan] (Leaflet). Clinton, Michigan. 2 panels each side. Each panel: 28 x 21.6 cm. Undated.
• ***Summary:*** Printed with dark green ink on glossy white paper. The purpose of this very interesting leaflet is to give a detailed technical description of the process for making and packaging (in retort pouches) Edensoy soymilk, and to give a floor plan showing the different pieces of equipment used and their location in the building. We applaud Eden Foods for their openness in disclosing exactly how their soymilk is made and packaged.

"Process for making soy milk (the numbers refer to the machines on the diagram): "Cleaned soybeans are fed through a cyclone chamber (105) removing loose skins and hulls. Then the beans are mechanically compressed (crushed slightly) to loosen the skins away from the rest of the bean (106). Next into the enzyme invalidator (106) where they are slowly augured through and cooked with steam, which enters the chamber at 266 ºF, and pressure, which is maintained at 57 lb/sq. in. (201).

"Steam is continuously being added and removed. This releases and destroys enzymes that cause undesirable smells. Enzymes are carried away in the spent steam. The soybeans are in this enzyme invalidator (201) for 30 seconds. From here they go into a grinder (203) and are mixed with hot water (80-85%) and then pumped into the ultrimizer colloid mill (205) where the particle size is reduced to pass through a 200 mesh screen. This is then pumped into a centrifuge (207), which removes the fiber down to about 11.5% solids. This liquid is then decanted in the receiving tank (208) and then deaerated by vacuum in the deaerating tank (209). Soy liquid is now moved to agitating blending tanks (211), and then pumped to seasoning tanks (213), where other ingredients are added. The liquid is now between 122ºF and 140ºF. It is now moved to the first homogenizer (216) and then back to the seasoning tanks (211).

"From there it goes into pasteurizing and smell removing (218) where it is heated with steam and pasteurized at between 266ºF and 275ºF. It is now moved to the high pressure homogenizer (219) and homogenized at 194ºF and 220 lb/sq. inch. The liquid is now passed through a plate cooler (220) where its temperature is reduced to 35 ºF and stored in aseptic tanks (221).

"CIP unit (222) is used to flush and clean the system.

"Once moisture has been introduced to the beans, the only surface that the mash or liquid comes in contact with is SUS 316L stainless steel.

"The soy milk has a specific gravity of between 1.03 and 1.04. The percent of solids is controlled by testing the soy milk after production, then adding the other ingredients to bring it up to standard.

"The soy liquid is tested for solids, PH, Brix : first, after mixing with other ingredients, second, just before packaging, and third, after it comes out of the retort."

"Process for packaging and retort sterilization of soy milk." The same kind of detailed description is given. "The filling machine is a Bosch Form, Fill, and Seal Machine, model number BMR-200ST. It is in a separate packaging room.

"The film used is an RF-P high temperature laminate manufactured by the Toyo Seikan Kaisha Co., Ltd. of Japan." Address: 701 Tecumseh Rd., Clinton, Michigan 49236. Phone: (517) 456-7424.

4161. **Product Name:** [Vita Drink {Soy Beverage} (Vanilla, Chocolate, or Strawberry)].
Foreign Name: Vita Drink.
Manufacturer's Name: Galactina Ltd.
Manufacturer's Address: Birkenwej 1-6, CH-3123 Belp, Switzerland.
Date of Introduction: 1983.
Ingredients: Vanilla: Water, soybeans, maltodextrine, saccharose, sunflower seed oil, mineral salts, vanilla aroma, DL-methionine, vitamins (A, B-1, B-2, B-6, B-12, biotin, C, E, folic acid, pantothenic acid, PP).
Wt/Vol., Packaging, Price: 250 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per carton: Protein 9.7 gm, lipids 7.25 gm (of which 3.9 gm essential linolenic acid), 30 gm carbohydrates, 1.6 gm minerals.
New Product–Documentation: Talk with Peter Speck. 1983. Letter from Peter Speck. 1988. March 11. "In 1983 we developed, in addition to the products for enteral tube feeding, flavored drinks, called Vita Drink, with a very similar composition. In 1987 this line was completed with a protein-enriched product line: Biodelis Plus and Vita Drink Plus."

Labels sent by Peter Speck. 1988. All 3 flavors. Chocolate is brown, red, and white. "Biologically high value/complete diet and energy/recovery drink made from plants. Sterilized (Uperisiert/Uperisee)."

Brochure in German sent by Peter Speck. 1988. "Galactine Vita Drink." 14 p. 21 cm.

Talk with Peter Speck. 1990. May 23. Vita Drink is sold in Switzerland. It is very similar to Biodelis, which is sold only in France. The base and flavors are the same but the vitamin and mineral content is slightly different to meet the different regulations in each country.

4162. Gbikpi, Pascal. 1983. The [Cameroon] Western Highlands soybean pilot project. 6 p. Unpublished manuscript.
• ***Summary:*** Contents: History of the project. The Western highlands. The soybean pilot project: Production, utilization from whole grains (human consumption, animal

consumption), utilization for processed soybeans (human consumption, animal nutrition).

The first soybean varieties were introduced in the Western Province in 1924. However it was only in 1974 that an intensive research program was implemented by the agricultural research station at Dschang. In 1978 a French company named EMC-SATEC conducted a feasibility study, commissioned by the Cameroonian government, of a processing plant, seed multiplication farm, and storage units. In June 1980 an evaluation team decided that it would be wiser to postpone this processing unit and replace it by a pilot phase which is the present Soybean Pilot Project.

This pilot project, which is in the Western Province (one of Cameroon's 10 provinces), started in Jan. 1981. Its has worked on both soybean production and utilization. Concerning production: From Jan. 1981 to Dec. 1983, the Project distributed 43,000 kg of soybean seed to approximately 12,000 farmers, free of charge and with an insecticide (methylparaphene). Two crops were grown each year. Those planted during the first half of the year gave an average yield of 1,700 kg/ha in 1981; those planted during the second dryer and darker half yielded 750 kg/ha. Three years of experience have shown that production is feasible, however the main problem is that farmers consider the price they receive to be too low.

Concerning utilization: A survey which reached 1,331 families in the Western Province who had already consumed soybeans allowed the Project to print a booklet containing 28 recipes which used soybean paste or flour as an ingredient. Soybean flour, added to bread at the 3% level, drew a 73% favorable rating. Soybean milks flavored with coconut and banana, made in France by Alfa-Laval, were submitted to a taste panel. The addition of 10% baked full-fat soy flour gave an excellent biscuit containing 11% protein. The addition of 10% soy flour to cassava flour does not significantly change the color, flavor, or physical properties of the couscous (called "fufu") by it increases the protein content six-fold. In April 1982, 24 tons of defatted soybean meal were produced at a solvent extraction plant in Douala; the plant ordinarily processes palm kernels. Address: UCCAO–Projet Soja, P.O. Box 1002, Bafoussam, Cameroon.

4163. **Product Name:** Nutrameal Nutritional Food (Soy Flour Mix, or for Making Soymilk).
Manufacturer's Name: Global Nutrameal, Inc.
Manufacturer's Address: R.R., Box 6122, Spirit Lake, IA 51360.
Date of Introduction: 1983.
New Product–Documentation: Soya Bluebook. 1983. p. 62, 68.

4164. **Product Name:** Jack 'n Jill Malt Soybean Milk.
Manufacturer's Name: H.K. Peggy Foods Co. Ltd. (Importer). Made in the Philippines by CFC Corp.
Manufacturer's Address: Hong Kong.
Date of Introduction: 1983.
Wt/Vol., Packaging, Price: 250 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Tetra Brik Co. 1983. Brochure. Tetra Brik aseptic 250 ml.

4165. **Product Name:** [Powdered Soymilk].
Foreign Name: Novomilk.
Manufacturer's Name: Industria e Comercio de Oleos Vegetais S.A. (OLVEBRA).
Manufacturer's Address: Main Office: Praca Osvaldo Cruz, 15-16* andar, P.O. Box 2016, Porto Alegre, RS, 90030, Brazil.
Date of Introduction: 1983.
New Product–Documentation: Soya Bluebook. 1983. p. 63. "Hydrosoluble soybean extract as powder soy milk." 1984. p. 62; 1986. p. 102. Spelled "Novomilke." Also spelled that way 1987, p. 90.

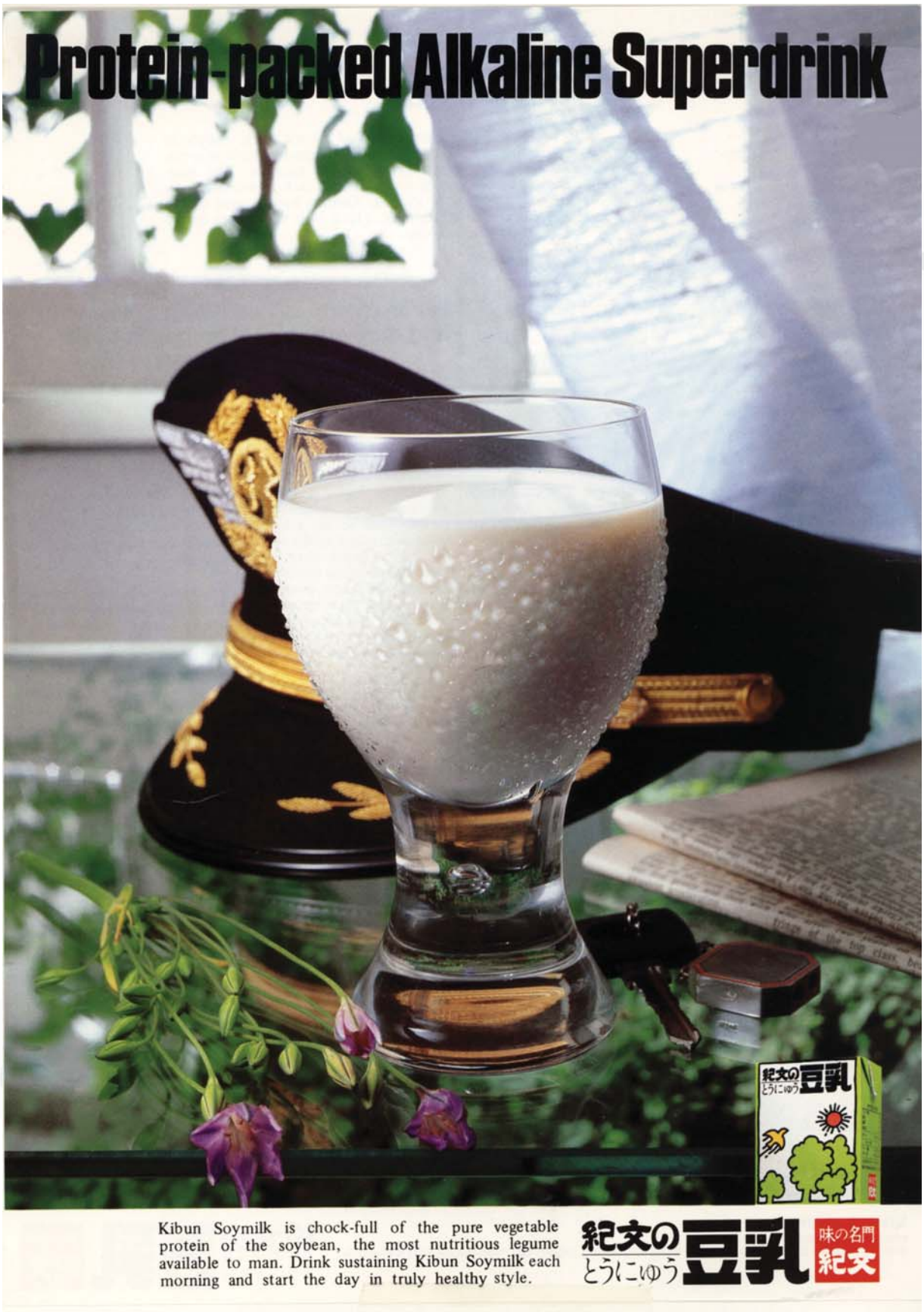
4166. Jimenez-Gallegos, Maria del Socorro. 1983. Estudios del efecto de la adicion de peroxido y de leche de soya a leche de vaca sobre la calidad del queso fresco [Studies on the effect of adding peroxide and soy milk to cow's milk for the quality of fresh cheese]. Thesis. Universidad de San Carlos de Guatemala. 84 p. Illust. [Spa]*

4167. Kibun Co. Ltd. 1983. Protein-packed alkaline superdrink (Soymilk) (Poster). Tokyo, Japan. 1 p. 26 x 20 cm. Color. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. [Eng]
• ***Summary:*** See next page. "Kibun Soymilk is chock-full of the pure vegetable protein of the soybean, the most nutritious legume available to man. Drink sustaining Kibun Soymilk each morning and start the day in a truly healthy style."

A color photo shows a glass of soymilk on a glass table in front of a pilots cap and a folded newspaper. In the lower right ocrner is a carton of Kibun soymilk. Address: Japan.

4168. **Product Name:** Dawn Soya Bean Drink.
Manufacturer's Name: Malaysia Dairy Industries Private Ltd.
Manufacturer's Address: 2, Davidson Road, Singapore 13. Phone: 886421/7.
Date of Introduction: 1983.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 102-03.

Letter from Anders Lindner of STS. 1984. March 9. Dawn is still made by Malaysia Dairy Industries Private Ltd. (Singapore; Thio Kong Poon, Chairman and managing director of both companies) / Malaysia Milk Sdn. Bhd. (Malaysia; Vitagen). Business cards for each are enclosed.



4169. **Product Name:** Marigold Soya Bean Drink.
Manufacturer's Name: Malaysia Milk Industries Ltd.
Manufacturer's Address: Petaling Jaya, 7 Jalan 19/1, Selangor, Malaysia. Also made in Singapore.
Date of Introduction: 1983.
Wt/Vol., Packaging, Price: 250 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Singapore & Malaysia Soymilk Market Study. 1982.

Letter from Consulate General of Malaysia. (Los Angeles, California). 1982. Aug. 3. One of the three soymilk manufacturers in Malaysia is: Malaysia Milk Sdn. Bhd., 7 Jalan 19/1, Petaling Jaya, Selangor, Malaysia. Phone: 03-574388.

Shurtleff & Aoyagi. 1984. Soymilk Industry & market. p. 102-03. STS. 1985. Containers for Soymilk. Shows Tetra Brik carton, green and yellow on white. Lee. 1986. Sunday Times (Singapore). Sept. 7. "Soya Bean Milk Packs More Water than Flavor." Marigold sells for 35 cents per 250 ml. Comments: Contains artificial flavour, sweet, thin, slightly artificial, not tasty.

4170. **Product Name:** [Dawn Soya Bean Drink].
Foreign Name: Dawn Minuman Kacang Soya.
Manufacturer's Name: Malaysia Milk Sdn. Bhd. (Industries Ltd.).
Manufacturer's Address: No. 7, Jalan 19/1, Petaling Jaya, Selangor, Malaysia. Phone: 774388.
Date of Introduction: 1983.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Singapore & Malaysia Soymilk Market Study. 1982; Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 102-03.

Letter from Anders Lindner of STS. 1984. March 9. Dawn is still made by Malaysia Dairy Industries Private Ltd. (Singapore; Thio Kong Poon, Chairman and managing director of both companies) / Malaysia Milk Sdn. Bhd. (Malaysia; Vitagen). Business cards for each are enclosed. Color photo of Tetra Brik carton. Yellow, brown, and red on white. Big yellow soybeans.

4171. **Product Name:** Mighty Soy (Soymilk).
Manufacturer's Name: Mighty Soy, Inc.
Manufacturer's Address: 2805 E. Washington Blvd., Los Angeles, CA 90023.
Date of Introduction: 1983.
New Product–Documentation: Soya Bluebook. 1983. p. 62; 1986. p. 102. Address is now 1227 S. Eastern Ave., Los Angeles, California 90022.

4172. Mikami, Yasuo. 1983. Re: The soymilk market in Japan. Letter to Richard Leviton, Director, Soyfoods Association of North America, Sunrise Farm, Heath Rd., Colrain, MA 01340, Dec. 7. 1 p. Typed, with signature on letterhead. [Eng]
• ***Summary:*** "We thank you for your visit to our stand at the ANUGA in Cologne. You may recall, we discussed the situation of soybean products such as soy milk, soy protein etc in Japan.

"Soy milk market of Japan has been surprisingly expanded during this several years and the total consumption of this year will be one hundred million dollars which is approximately 3 percent of regular cow milk market.

"We are also interested in soy products market in U.S.A.

"We shall be grateful if you will let us have the contemporary situation and the forecast of soy products including To Fu [tofu], soy milk and etc. in United States.

"We do hope to hear from you soon, and remain. Very truly yours,..." Address: Marketing Div., Nisshin Oil Mills, Ltd., Shinkawa 1-23-1, Chuo-ku, Tokyo 104, Japan..

4173. **Product Name:** Soymilk.
Manufacturer's Name: Miller-Soy.
Manufacturer's Address: Route 2, 208-B. Greenbrier, TN 37073.
Date of Introduction: 1983.
New Product–Documentation: Soya Bluebook. 1983. p. 62.

4174. **Product Name:** [Nisshin Soymilk (Fruit {Prune-Apple}, or Matcha {Powdered Green Tea})].
Manufacturer's Name: Nisshin Oil Mills, Ltd. (Nisshin Seiyu K.K.).
Manufacturer's Address: Shinkawa 1-23-1, Chuo-ku, Tokyo, Japan.
Date of Introduction: 1983.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: See next page. Labels, Tetra Brik carton, 200 ml. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. Soya Bluebook. 1984. p. 62.

4175. **Product Name:** Nomura Soy Beverage.
Manufacturer's Name: Nomura Tofu Co., Inc.
Manufacturer's Address: 2904 W. Fullerton, Chicago, IL 60647.
Date of Introduction: 1983.
New Product–Documentation: Soya Bluebook. 1983. p. 62.

4176. Obara, Tetsujiro. 1983. "Daizu Kaihatsu" hakkan 15 shûnen o shuku toshite [Celebration of the 15th anniversary of the publication of *Soybean Development*]. *Shokuhin Kaihatsu* (*Up-to-Date Food Processing*) 18(6):23-31. [Jap]

• ***Summary:*** A nice, large photo (p. 23) shows Dr. Obara. On pages 24-31 are ½-page comments by 17 Japanese soy-industry leaders (with a small, round photo of each) concerning this 15th anniversary. Among those featured are Yoshiko Kojima and Kanji Tsuchiya (who also discusses the history of his work with soymilk in Japan). Address: Tokyo Kyoiku Daigaku Meiyo Kyôju. Tokyo Nôgyô Daigaku Kyakuin Kyôju.

4177. Okubo, Kazuyoshi; Furabayashi, Y.; Takahashi, M. 1983. Tônyû no haitôtai seibun ni motozuita teimisei ni tsuite [Improvement of the soymilk and tofu process based on the behavior of undesirable flavor components such as glycosides]. *Shokuhin Kaihatsu* (*Up-to-Date Food Processing*) 18(6):16-21. [14 ref. Jap]
• ***Summary:*** Describes methods for improving the flavor of soymilk and tofu based on the elimination of undesirable taste components, such as glycosides. The isoflavone aglucones have a much more astringent and bitter taste than the isoflavone glucosides. Address: Yamagata Daigaku Kyoiku Gakubu, Shokuhin Eiyogaku Kenkyu Shitsu.

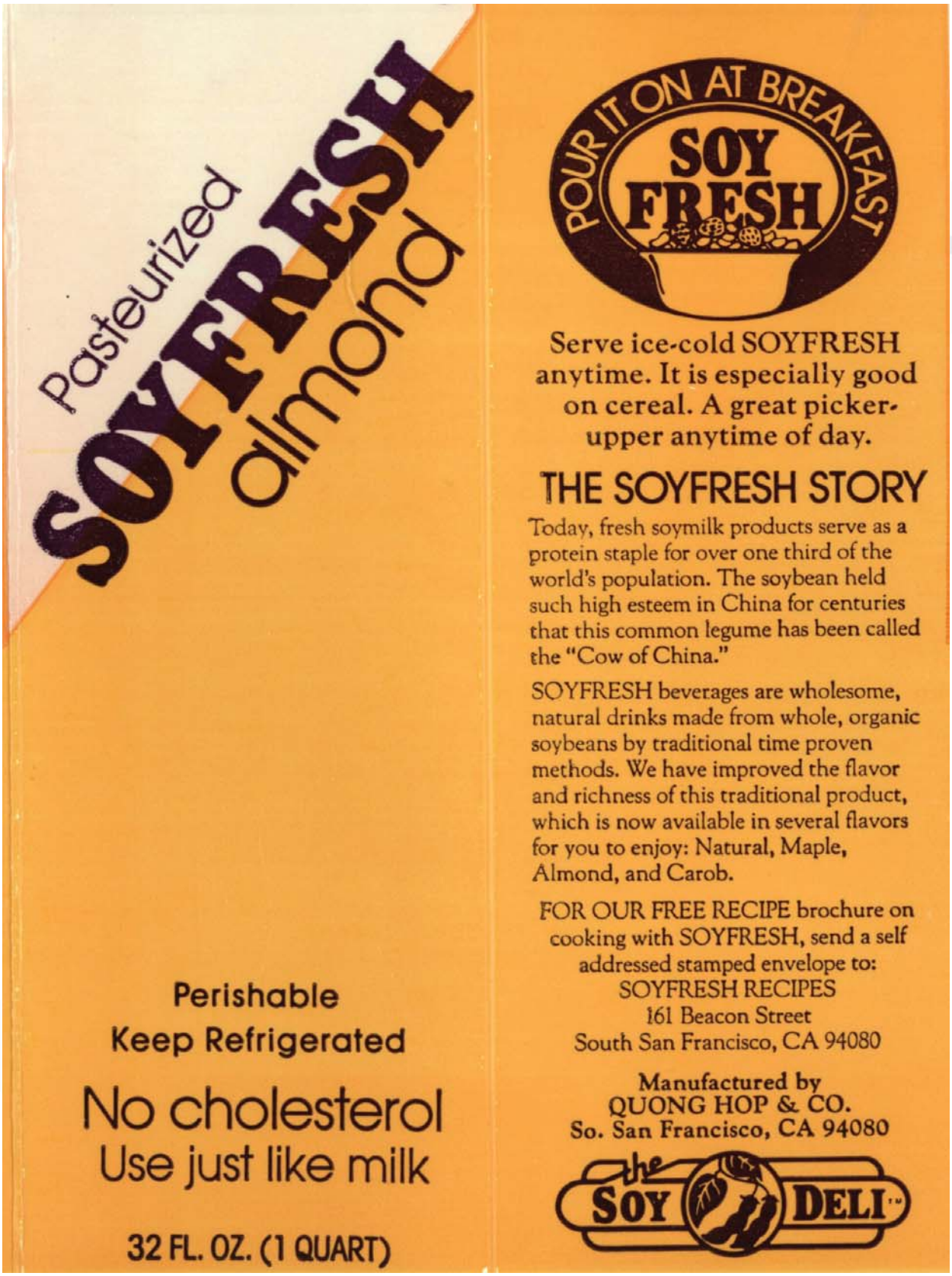
4178. Poley, J.R.; Klein, A.W. 1983. Scanning electron microscopy of soy protein induced damage of small bowel mucosa in infants. *J. of Pediatric Gastroenterology and Nutrition* 2:271-76. *

4179. **Product Name:** Pasteurized SoyFresh (Soymilk) [Unsweetened, Natural, Almond, Maple, or Carob].
Manufacturer's Name: Quong Hop & Co.
Manufacturer's Address: 161 Beacon St., South San Francisco, CA 94080. Phone: 415-873-4444.
Date of Introduction: 1983.
Ingredients: Carob: Water, organic soybeans (grown accordance with California Health and Safety Code 26569.11), honey, barley malt, carob.
Wt/Vol., Packaging, Price: 23 fl. oz (1 quart) Pure Pak Carton (Ex-Cell-O Corp. by Weyerhauser).
How Stored: Refrigerated.
New Product–Documentation: See next page. Label purchased in 1983. Leaflet. 1986. 8½ by 11 inches, color. "There is Quality & Variety after 80!" Shows all products. In Pure-Pak quarts and pints. Labels sent by Quong Hop (Carob, Natural). Note: This is one of America's first commercial refrigerated soymilk products.

4180. **Product Name:** Soymilk [Honey, or Maple].
Manufacturer's Name: San Diego Soy Dairy.
Manufacturer's Address: 2965 5th Ave., San Diego, CA 92103.
Date of Introduction: 1983.
Wt/Vol., Packaging, Price: Plastic bottle.
New Product–Documentation: Talk with Gary Stein. 1989. Feb. 17. He recalls that these products were introduced in 1983. He still has 7 flavors of soymilk on the market.

Product with Label purchased at Open Sesame in Lafayette. 1991. Feb. 16. 2 by 4.12 inches. Black, red, and grey on beige. Color illustration of a stream flowing down from snow-capped mountains, through a forest, into a meadow with flowers. "100% non-dairy" 1 pint plastic bottle. $1.29. Maple flavor. San Diego Soy Dairy, San Diego, California 92103.

4181. **Product Name:** Joyce Soya Bean Milk.
Manufacturer's Name: Siam Food Products Co. Ltd.
Manufacturer's Address: Thailand.
Date of Introduction: 1983.
Wt/Vol., Packaging, Price: 250 ml Tetra Brik Aseptic



carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Tetra Pak Co. 1983. Brochure. Packaged in Tetra Brik aseptic 250 ml.

4182. **Product Name:** Soy Leche (Soymilk).
Manufacturer's Name: Southwest Soyfoods.
Manufacturer's Address: 2889 Trades West Rd., Santa Fe, NM 87501. Phone: 505-471-8979.
Date of Introduction: 1983.
Ingredients: Water, organically grown soybeans.
Wt/Vol., Packaging, Price: 1 quart bottle. Retails for $0.75 (9/90, New Mexico).
How Stored: Refrigerated.
New Product–Documentation: Talk with Richard Jennings. 1987. Dec. 28. Gave date of introduction. "Soy Leche" means "I am milk" in Spanish. Richard started at Southwest Soyfoods on 15 July 1982. The company has always been named Southwest Soyfoods. At that time only tofu and one kind of tamale (red chile) were on the market. Katherine Bennett started the company in 1979. Unicorn Village is out of business. For details contact Tucson Co-op Warehouse. "I'm working on Tempeh Chips and a Miso Butter Replacer."

Label sent by Richard Jennings. 1990. Sept. 28. 2.5 by 3 inches. Self adhesive. Red on white. "How to use soy leche. As a milk substitute in cooking and baking. Soy drink: Add to this bottle 2 T [tablespoons] honey, 3-4 drops vanilla, a pinch of salt. Mix well. Soy shake: Blend 1 cup soy leche, 2 bananas, 1 T honey, dash of cinnamon or nutmeg."

4183. **Product Name:** Soya Dhal.
Manufacturer's Name: Soya Foods Research Centre. Sri Lanka Dept. of Agriculture.
Manufacturer's Address: P.O. Box 53, Peradeniya, Sri Lanka.
Date of Introduction: 1983.
Ingredients: Extruded soya beans.
Wt/Vol., Packaging, Price: 250 gm plastic bag with Plenty label retails for Rs. 5/-. 250 gm Soya Foods Research Centre product without label retails for Rs. 4/-.
How Stored: Shelf stable.
Nutrition: 38-39% protein.
New Product–Documentation: Label. 1988. 3.5 by 3 inches. Purple on white paper. "Soya Dhal. Add sufficient water and bring to a boil. Cook for 5 minutes. Add paripoo spices, chilli powder, coconut milk as required." In English and Sinhalese. Form filled out by Jane Gleason. On 23 March 1988 she met with Mr. H.G. Jayatissa, Project Manager, at Plenty Soya Food Centre.

4184. Soya Technologies Systems (STS. Div. of Danish Turnkey Dairies). 1983. Soymilk seminars in China, and the USSR. Paper presented in these two countries. 31 p. total. Unpublished manuscript. *
• ***Summary:*** The lectures were presented by John Davies and Sven Boejgaard of STS. Address: STS, Singapore.

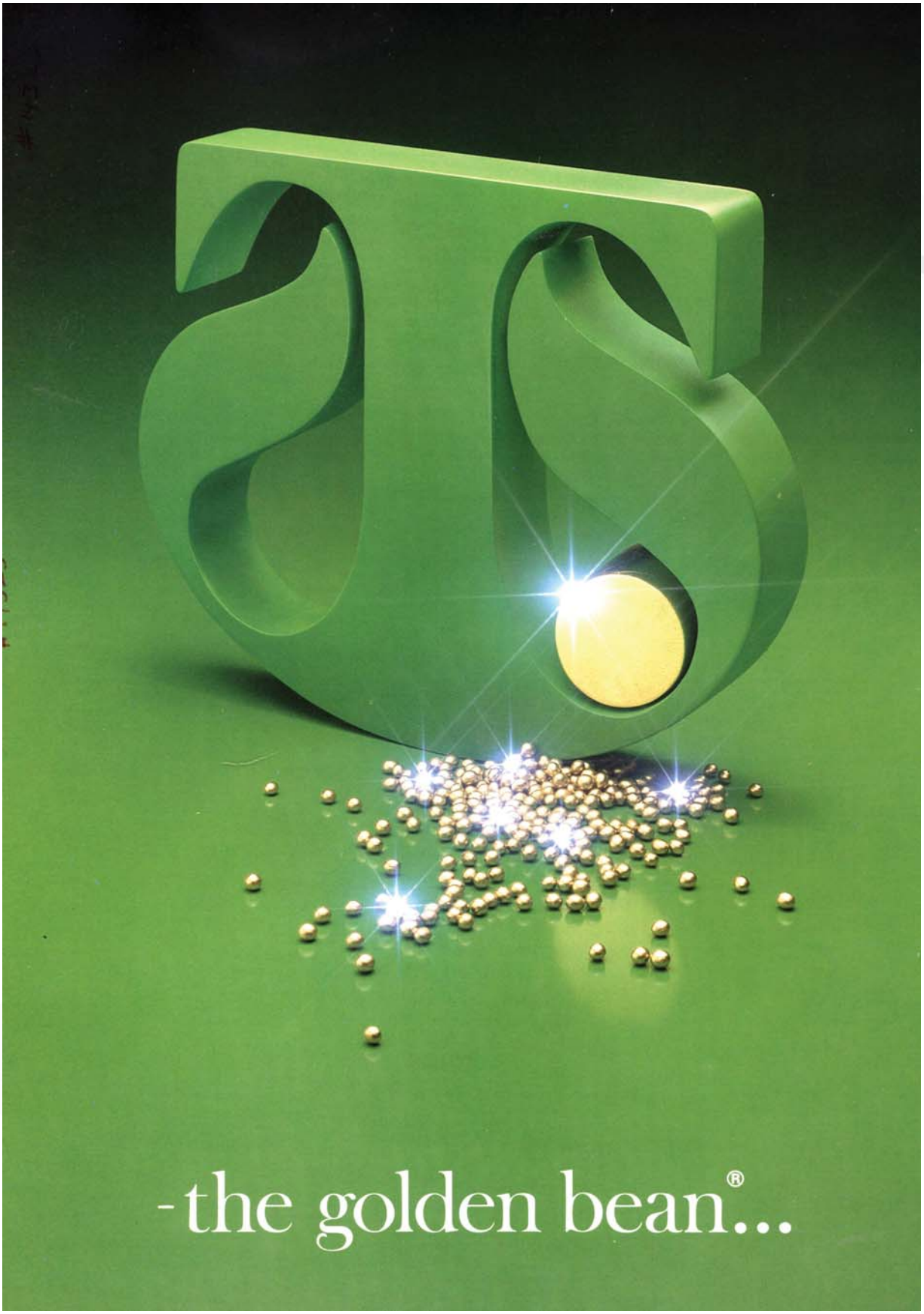
4185. Soyfoods company business cards. 1983. 1 p.
• ***Summary:*** 1. Nature's Inn (New York, New York).
2. Creative Soyfoods Inc. (River Falls, Wisconsin).
3. Spring Creek Soy Dairy (Spencer, West Virginia).
4. New England Soy Dairy Inc. (Greenfield, Massachusetts).
5. Light Foods Inc. (St. Louis, Missouri).
6. Osoja–La Maison du Tofu (Carouge, Geneva, Switzerland).
7. Cauldron Foods (Fishponds, Bristol, UK).
8. STS-Soya Technology Systems LTD. (Central, Hong Kong).

4186. Soyfoods company logos. 1983. 1 p.
• ***Summary:*** 1. Jack and the Beanstalk Tofu (Carmel, California).
2. Nutrinal SRL (Santa Cruz, Bolivia).
3. Golden Soy Foods Incorporated (Athens, Ohio).
4. STS-Soya Technology Systems LTD. (San Francisco, California & Hong Kong).
5. BrightSong (California).
6. Legume (Montville, New Jersey).
7. Nasoya Foods (Leominster, Massachusetts).
8. Fresh Tofu Inc. (Allentown, Pennsylvania).
9. Toffait Manufacturing Ltd. (Calgary, Alberta, Canada).

4187. STS–Soya Technology Systems. 1983. The Golden Bean (Soymilk) (Poster). 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 1 p. 2 x 3 feet, color. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.
• ***Summary:*** A very stylish design (see next page) from this new manufacturer of equipment for making soymilk. Address: Singapore.

4188. **Product Name:** [Soy–Cow's Milk–Wakame Extract Blend].
Foreign Name: Tônyû 60% + Gyûnyû 30%–Wakame Ekisu 10%.
Manufacturer's Name: Sujiyata Payaki.
Manufacturer's Address: Nagoya, Japan.
Date of Introduction: 1983.
How Stored: Refrigerated.
New Product–Documentation: This colorful Japanese-language label was purchased in Japan in mid-1983. It is blue, green, red, and yellow on white. On the front panel is the yellow silhouette of a boy (Urashima Taro) riding on a sea turtle.

4189. **Product Name:** [Soymilk].



Manufacturer's Name: Tamura Kasei.
Manufacturer's Address: Japan.
Date of Introduction: 1983.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 63-64.

4190. **Product Name:** Wel Pac (Soymilk).
Manufacturer's Name: Tokyo Food Processing Corp.
Manufacturer's Address: 40 Varick Ave., Brooklyn, NY 11237.
Date of Introduction: 1983.
New Product–Documentation: Soya Bluebook. 1986. p. 102. Now an affiliate of JFC International. Interview with Liz Appel. 1987. Oct. 7. She says this is her main soymilk competition. Made by JFC International. Sold in Korean produce stores.

4191. **Product Name:** [Snow Brand Soymilk (Coffee, or "Yogurt Flavored")].
Foreign Name: Yuki-jirushi no Tônyû (Koohii, Yooguruto Fureebaa).
Manufacturer's Name: Yuki-Jirushi Milk Co.
Manufacturer's Address: Tokyo, Japan.
Date of Introduction: 1983.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Label, Tetra Brik carton, 200 ml. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center; Shurtleff & Aoyagi. 1984. Soyfoods Industry & Market. p. 63-64, 66. This is Japan's largest dairy products company, with sales of $1,776 million in FY 1982.

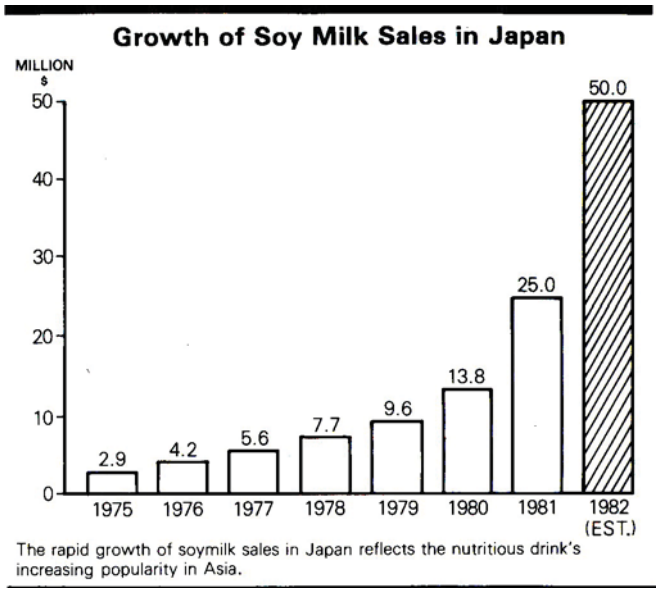
Color photo on cover of Journal of the American Oil Chemists' Society. Dec. 1984. The 250 ml Tetra Brik carton is dark blue, light blue, and white on beige.

4192. Ziegelitz, R. 1983. Soy milk. *Confectionery Manufacture and Marketing* 29(9):5, 7. [3 ref]*

4193. American Soybean Assoc. 1983. ASA helps quench Asian thirst for soymilk. *Checkoff Successfile.* Asia #804. 2 p.
• ***Summary:*** Problem: Soymilk has been a staple in China for centuries. "But the 'beany' taste limited its appeal. Also, in many areas soymilk was made and sold by roadside vendors, and production was inefficient or unsanitary.

"Program: ASA promoted soymilk in Japan, Taiwan, Korea and Singapore. ASA staff worked with food companies to stimulate large scale soymilk production. ASA technicians helped develop new, appealing soymilk flavors. ASA participated in food shows, gave demonstrations and sent out educational pamphlets depicting soymilk's health benefits and good taste.

"Results: Asian soymilk consumption has soared. Consumption in Japan is expected to jump over 200 percent from 1981 to 1982, using almost 1 million bushels of soybeans. Korean soymilk consumption has doubled, requiring over 1 million bushels of beans. Taiwan consumers are drinking over 180,000 gallons of soymilk daily, using over 950,000 bushels of soybeans annually."



The rapid growth of soymilk sales in Japan reflects the nutritious drink's increasing popularity in Asia.

A bar chart shows "Growth of soy milk sales in Japan" from 1975 to 1981, with 1982 estimated. The growth has been exponential.

4194. Aubert, Emmanuelle. 1983. Les 9 grains d'or dans la cuisine [The nine golden grains in the cuisine. 2nd ed.]. Paris: Le Courrier du Livre. 286 p. Illust. by C. Galinet. Index. 22 cm. [Fre]

• ***Summary:*** The subtitle on the cover reads: 400 simple and savory recipes. Menus and advice on good health. Contents: Introduction. 1. The cereals (see p. 28-31 for instructions for making seitan at home from 500 gm wheat flour, plus 8 seitan recipes). 2. Breads. 3. Legumes: Cooking legumes, lentils, haricots, dry peas, chick-peas, azuki beans, soya. 4. Vegetables. 5. Soups. 6. Animal products. 7. Condiments, aromatics, and sauces (incl. tamari and miso). 8. Desserts. 9. Beverages. 10. 80 menu ideas. 11. Pregnancy and the feeding of young infants. 12. Some natural remedies. Where to buy supplies.

Soy-related recipes include: Making tofu at home (p. 87-91; illustrations and method taken without credit or permission from *The Book of Tofu* by Shurtleff & Aoyagi). Yuba. Grilled tofu (p. 91). Tofu with nuts (*noix*) and miso. Skewered tofu. Tofu salad (p. 92). Tofu with vegetables. Onions with tofu. Okara croquettes. Soymilk with fruits (p. 93). Making tempeh at home (p. 94-95). Tempeh goreng. Tempeh bachem (p. 95). Keripik tempeh (tempeh chips; p. 96). Tempeh croutons (p. 96). Pate of vegetables with tofu (p. 126). Jardinière au tofu (p. 128). Peas with tofu (p. 128). Soy sprouts made from mung beans (p. 129-30).

Pages 191-94 give basic information on the following fermented soya condiments: tamari, miso (Hacho [sic, Hatcho] miso, barley miso, rice miso). Pages 278-79 list manufacturers and handlers of various foods used in this book, and pages 280-81 give their addresses: Yellow soybeans: Celnat, Les Sept Marches, Le Seuil, Lima. Miso: Celnat, Lima, Les Sept Marches, Le Seuil, le Bol en Bois, Tenryu. Only Lima and Les Sept Marches manufacture miso in France. Tamari: Celnat, Le Seuil, Les Sept Marches, Lima, le Bol en Bois, Tenryu. Nigari: Le Bol en Bois, Tenryu. Tofu: Le Bol en Bois, Tenryu, Soy. Tempeh: Traditions du Grain, Le Bol en Bois. Tempeh culture: Semailles. Koji: Les Sept Marches, Tenryu, Le Bol en Bois. Amasaké: Traditions du Grain. Soymilk: Celnat, Lima.

A photo on the rear cover shows Aubert, a woman.

Note: This is the earliest French-language document seen that mentions amazake, which it calls "Amasaké." Address: France.

4195. Brewster, Letitia; Jacobson, Michael F. 1983. The changing American diet. 2nd ed. Center for Science in the Public Interest, 1755 S Street N.W., Washington, DC 20009. 87 p.

• ***Summary:*** A classic, documenting with easy-to-read graphs the changes in per capita consumption of all basic American foods since 1910. Address: Washington, DC.

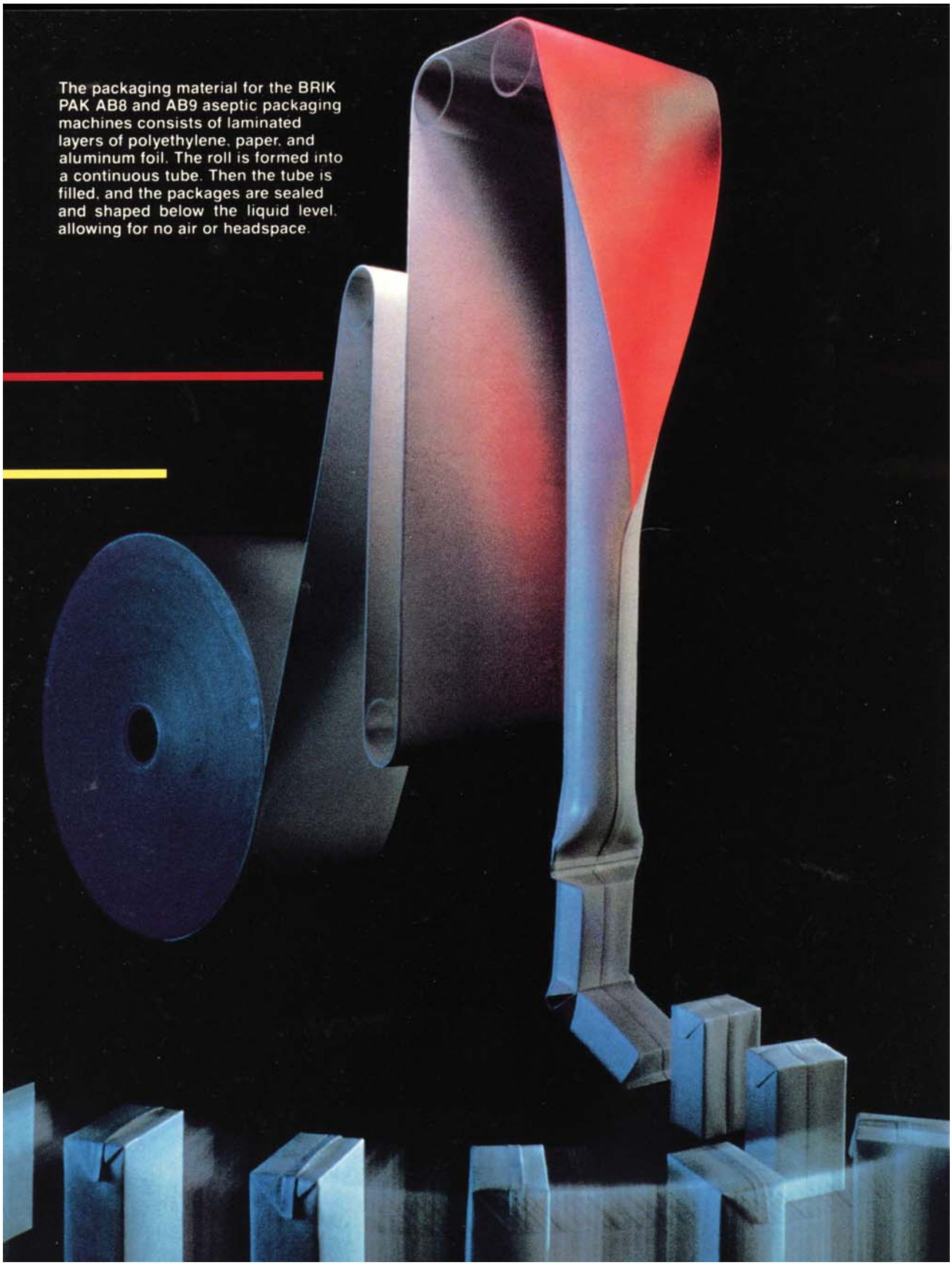
4196. Brik Pak Inc. 1983. From the leader in aseptic packaging... Brik Pak Inc. Dallas, Texas: Brik Pak Inc. 6 p. 28 cm.

• ***Summary:*** This glossy color catalog (see next page) describes and photos show aseptic packaging equipment and material. Brik Pak Inc. is a member of the Tetra Pak Group, which invented flexible aseptic packaging. A full page illustration shows very nicely how a Brik Pak carton is made from a reel of packaging material. Address: Marketing Dep., 4885 Alpha Road, Suite 100, Dallas, Texas 75234. Phone: (214) 934-0338.

4197. Bryan, Ford R. 1983. A prized friendship: Henry Ford and George Washington Carver. *Greenfield Village Herald* (*Dearborn, Michigan*) 12(2):90-95.

• ***Summary:*** "Beginning in 1937 and continuing until Carver's death in 1943, the two men maintained a correspondence on a variety of subjects." Their letters are now in the Ford Archives and Research Library in Dearborn, Michigan. In 1896 Carver became the first black person to graduate from Iowa State University. His thesis was titled "Plants as Modified by Man." The Tuskegee Institute in Alabama was organized in 1881 by Booker T. Washington to offer practical education for black students. As head of the Tuskegee Research and Experiment Station at the Tuskegee Institute, Carver revolutionized Southern agriculture while earning a worldwide reputation. In 1906, when the boll weevil struck the cotton crop, Carver recommended peanuts as a replacement crop.

"Meanwhile Ford, having gone on to increasing success as an industrialist, became fearful that the automobile which he had helped spread far and wide had destroyed many of the



traditional values to which he was committed. He therefore started on the course that in 1929 led to the establishment of The Edison Institute, comprising Henry Ford Museum and Greenfield Village. Within the village grounds, he built a chemical laboratory and a greenhouse with the objective of finding 'industrial uses for farm products.' Robert Boyer was put in charge of what was called the Chemical Plant. In his account of the plant's first year of operation in 1931, Boyer mentioned the extraction of oils from orange peels, and furfural–a liquid aldehyde–from garbage, as well as experiments with wheat, soybeans, and carrots.

"... in a building near the Engineering Laboratory in Dearborn, Dr. Edsel Ruddiman, Ford's boyhood schoolmate, was experimenting with wheat, soybeans, carrots, and tomatoes in an effort to 'make milk without a cow.'

"In early 1932, Ford issued orders to concentrate on the soybean. His tractors began to plant thousands of acres. In a 25-acre field on Greenfield Village property, some 500 experimental varieties of soybeans were grown. That year the village chemical plant extracted six tons per day of soybean oil, using it to produce soybean bread, milk, butter, ice cream, and an experimental plastic car (chassis excluded)." Carver's extremely competent research assistant was Austin W. Curtis, Jr.

In 1937 Ford and Carver first met; Carver spoke at the meeting of the National Farm Chemurgic Council in Dearborn. In March 1938 Ford made his first of several visits to Tuskegee. After the Fords visited Carver in March 1940, Carver wrote Mrs. Ford and sent her samples of some meatless soy-based gravies he had developed. "I made this same gravy substituting the soy beans. I ground them up very fine and made a very rich milk, and to one pint of this milk I used a tablespoon of soy bean oil. This was cooked down until it creamed, became thick like the richest creamed chicken gravy.

"I hope you and Mr. Ford will try these gravies. They are so rich in protein and other food nutrients and the meat can be greatly reduced, and with some other of Mr. Ford's fine soy bean products, can be left off altogether." Ford and Carver were in complete agreement that plants, not animals, were the solution to human problems. In about 1940 Austin Curtis spent a summer in Dearborn working with Robert Boyer in the Soybean Laboratory.

"The Fords traveled to Tuskegee in early March 1941, to dedicate the George Washington Carver Museum there, inscribing their names in the cement and donating soybeans and a variety of soybean plastic car parts to be placed in the cornerstone."

In the summer of 1942 Ford had a log cabin replica of Carver's birthplace constructed in Greenfield Village and converted the abandoned Dearborn Water Works building into the "Nutritional Laboratory" of the Ford Motor Company. Carver came to Dearborn to dedicate the new laboratory and log cabin in July 1942. The laboratory, under the direction of Robert Smith, soon began producing soybean milk and ice cream. "The soybean foods became standard fare at the Ford plant cafeteria and at Henry Ford Hospital in Detroit. The ice cream–most delicious–was later marketed independently by Robert Smith, a Ford Laboratory manager, as Del(icious) Soy(bean) Topping." Note after talk with Ford Bryan (3 Dec. 1992): Delsoy Topping was a soy-based whipped topping, like whipped cream. It was not an ice cream and Robert Smith never commercialized a soy-based ice cream.

Shortly after Carver died on 5 Jan. 1943, Ford said, in a public statement, "Dr. Carver had the brain of a scientist and the heart of a saint." Address: Dearborn, Michigan.

4198. Burwash, Peter; Tullius, John. 1983. Peter Burwash's vegetarian primer. New York, NY: Atheneum. xvii + 227 p. Illust. No index. 24 cm. [23 ref]

• ***Summary:*** "An incredibly energetic and highly motivated man, Peter Burwash has been described as the most famous vegetarian athlete in the world today." He is best known as a tennis player.

Contents: Contents

Part I: The vegetarian fugitive. Becoming a fugitive. The myth of vegetarianism. So you want to be a fugitive?

Part II: If it's good enough for Pythagoras, it's good enough for me: A short history of vegetarianism. Pythagoras. The Romans, The Renaissance and Enlightenment. Byron, Tolstoy, and Wagner. Gandhi. George Bernard Shaw.

Part III: The pros and cons of meat-eating. Are you turning your body into a garbage can? Is man designed to eat meat? (carnivores, omnivores, herbivores, frugivores, what about man? Man is clearly a frugivore, just like the anthropoid apes, our immediate ancestors). Diseases and impurities in the animals we eat (undulant fever, trichinosis, salmonellosis, toxins in fish). Chemicals we pump into our animals (pesticides in meat, antibiotics in meat, growth promoters, tranquilizers, what slaughtering can do, what the butcher does when he gets his chance). Diseases related to meat-eating (heart disease, cancer, kidney and intestinal disease). The ethical side of vegetarianism (ecological considerations, the waste of our energy and water, the cruelty of modern farming, experimenting with animals, the slaughterhouse).

Part IV: Going vegetarian. Phase One: The nutritional concerns. An adequate diet without meat (making the change gradually, is a vegetarian diet adequate, variety and balance–the keys to a healthy diet, the four basic food groups). Protein (getting the right amounts of protein, but does a vegetarian diet supply enough protein?, protein complementing–yes or no?). Fats and Cholesterol (saturated or unsaturated–does it matter?). Carbohydrates and Sugar (are carbohydrates fattening?, fiber). The Special Problems of a Vegetarian Diet (veganism, the lacto-ovo vegetarian diet, crank diets).

Part V: Going vegetarian. Phase Two: Making Your Vegetarian Diet Work. Shopping for Vegetarian Foods (where to shop, what to look for, grains, legumes, nuts and seeds, dairy products, sweeteneers, oils, fruits and vegetables, miscellaneous foods). Weird foods, or What'll I do with this bag of tofu? (the soybean and its relatives, other weird foods). Selecting vegetables and fruits (vegetables, fruits). The basic preparation of vegetarian foods (basic cooking of vegetables, basic cooking of grains, basic cooking of beans, sprouts). Dining Out (restaurants, handling yourself in a vegetarian restaurant, dining at 40,000 feet).

Part VI: Vegetarianism and the athlete. The vegetarian athlete. How an athlete gets his energy (carbohydrates or protein for energy?, carbohydrate loading, eating before competition, the importance of drinking water).

Part VII: Vegetarian recipes (breakfast, lunch, soups, homemade bread and pastry, salads, dinner, sauces, desserts).

The chapter on "Weird foods" has many nice, very positive things to say (p. 121-23) about tofu, soy milk, soy flour, soy grits, tamari, miso, tempeh okara, lecithin granules and liquid lecithin.

Soy related recipes: Mystery sandwich spread (with 1 cup whole soybeans, cooked until soft, p. 174). Eggless mayonnaise (with soy milk, p. 188). Tofu cabbage casserole (p. 196). Almond stir-fried vegetables with tofu (p. 208-09). Sweet and sour tofu (p. 209). Tofu cheesecake (p. 216-17).

4199. Chen, Steve. 1983. Soymilk. A drink from the great earth. American Soybean Assoc., P.O. Box 3512, Taipei, Taiwan. 38 p. [18 ref. Eng]
• ***Summary:*** Provides general information about soymilk, its nutritional properties, production, and markets. Address: American Soybean Assoc., Taipei, Taiwan.

4200. *Dairy Mail International* (*Danish Turnkey Dairies Ltd., Aarhus, Denmark*). 1983. Soymilk. No. 16. 30 p. [10 ref]
• ***Summary:*** This entire issue of the periodical is devoted to this one subject. No author is given, but it was probably written by Anders Lindner. On the inside front cover, next to the table of contents, is this "Note from the editor": "In the continuous effort to close the ever-broadening protein gap it is no longer enough to just consider cow's milk. Other protein sources must be taken into consideration. One of the most important sources of protein known today is the soybean. As a raw material soybeans are the basis of a wide range of high nutrition products. Soybeans have long been known as China's cow and one of the most popular soybean products, particularly in the Far East, is soymilk. There is no doubt that soymilk has great potential now that an industrialized process has been made possible. We hope that this issue of *Dairy Mail International* will open your eyes to the many possibilities of soymilk as a source of protein."

Contents: Soybeans–A few basic facts. Soybeans–Historical background. Soymilk. Soymilk flavour. The word "soy." Principles of soymilk production: Soybean varieties, dehulling, soaking, grinding, amount of water added, cooking, soymilk extraction, protein and solids recovery and yields, (typically 65% of the protein and 55% of the solids from the soybeans are recovered in the soymilk), flavouring and yields, fortification, homogenization, chalkiness, shelf life, heat treatment & packaging (UHT or ultra high temperature treatment is 140ºC for 2 seconds. Sterilization in a retort / autoclave is 121ºC for 20 minutes), cost and price. Dairylike soymilk: Introduction, soymilk infant formulas, soymilk blends (blended with dairy milk or nonfat dry milk solids), powdered soymilk. Basic soymilk production methods. Soymilk–Nutritional aspects.

4201. Danish Dairy Delegation. 1983. Dairy development proposal: The People's Republic of China–1983. Denmark: DDD. 137 p. Illust. 30 cm. See p. 41 for soymilk.
• ***Summary:*** Soymilk is mentioned only once in this book, published mainly by Danish Turnkey Dairies. In the section titled "Other dairy products" is the following short paragraph: "Soya milk: With recent technological improvements it is today possible to produce a vegetable milk product which is rich in protein and minerals and which is without any off-flavour or rancid taste." A photo at the bottom of the page of soybeans growing in a field bears the caption: "China is one of the world's biggest producers of soyabeans." Address: Denmark.

4202. DE-VAU-GE Gesundkostwerk GmbH. 1983. GranoVita. Health-food & natural food from Germany. Natural nutrition for young and old for every day. P.O. Box 1660, D-2120 Lueneburg, West Germany. 6 p. Manufacturer's catalog. [Eng]
• ***Summary:*** This full-color manufacturer's catalog contains a color photo of each of the company's products and a listing of ingredients. All are natural, vegetarian foods. The lines are Soya-Products, Sandwich-spreads, Baby food, Fruit- and Grain bars, Nut-Creams, Wholemeal Breakfast, Herbal drugs, Drinks (soymilks and coffee substitutes), and Boesen grain-mill. Contains a concise history of the company. Today the Lueneburg plant employs about 120 workers. The company supplies 2,500 health food stores in West Germany and has business dealings worldwide. "By our motto 'One a week a meatless day with granoVita soya-food' more and more customers are induced to try the wholesome and tasty soya-products." In 1977 DE-VAU-GE acquired the Boesen Bakery Ltd. which employs 130 workers. In 1982 total sales for granoVita and Boesen were 50 million DM (German marks). Address: Lueneburg, West Germany.

4203. Eden Foods, Inc. 1983. Edensoy. Clinton, MI 49236. 12 p. 21 cm.
• ***Summary:*** This booklet was written by Mike Potter to

explain the uses of Edensoy. Inset in the red cover, a color photo shows a glass of soymilk next to a blue package Edensoy plain (retort pouch). On the inside front cover a large illustration shows a soybean with the bold caption "Look and feel great." Contents: What is Edensoy? Edensoy–Quality ingredients. Soyfoods popularity: Just another fad? Edensoy–An alkaline food. Good for young and old. Edensoy compares very favorably with cow's milk (2 tables). What about cholesterol. Rich in iron. Good for babies.* Versatile. About the maker. On the inside rear cover, a color photo shows the modern stainless steel equipment used to make Edensoy in Japan. The outside rear cover shows the Eden crane logo with a Muso banner in its beak.

* The paragraph titled "Good for babies later got Eden Foods into big trouble with the FDA. It reads as follows: "Nothing can surpass mother's milk for young children and we strongly recommend breast feeding, but when this is not possible, Edensoy is a quality substitute. It may be used with confidence for bottle fed babies that cannot tolerate the substances found in liquid and powdered formulas or are unable to tolerate dairy milk. Infant formula was developed because babies under the age of one year cannot tolerate (digest) cow's milk.

"Vegetable quality babies cry less." Address: Clinton, Michigan. Phone: (517) 456-7424.

4204. Editors of *China Pictorial,* Beijing. 1983. Chinese cuisine from the master chefs of China. Boston, Massachusetts, and Toronto, Ontario, Canada: Little, Brown and Co. 240 p. Illust. Index. 26 x 24 cm.

• ***Summary:*** An overview with many color illustrations. The section titled "The ingredients" contains color photos of them plus a glossary that includes Chinese names: Dried bean curd stick, dried bean curd sheets, bean curd fresh gluten, fried gluten (p. 42-43). Soybean paste (salted and fermented), fermented bean curd, soy sauce (p. 47). Qingdou (green soybean), huangdouya (soybean sprouts) (p. 51). Doufu (bean curd, tofu), fuzhu (dried soybean milk [dried yuba sticks]), mianjin (gluten), youpi (dried soybean curd sheets [pressed tofu sheets]), kaofu (wheat gluten / vegetable steak) (p. 52). Jiangyou (soy sauce) (p. 54). Huang jiang (soybean paste, salted and fermented), jiangdoufu (fermented bean curd).

White soup (bai tang, with soybean sprouts, p. 56).

Folk nutrition: "All illnesses originate from what is taken into the mouth." On this page is a description of the therapeutic properties of: "Soybeans: their flavor is sweet, raw; their character is warm, and when fried [or cooked] it becomes hot..."

A long section on soybeans (p. 74) begins: "They are the pivot-point of Chinese flavor and nutrition." Includes brief descriptions of how to make soybean milk, bean curd, deep-fried bean curds, "bean curd puffs," and yuba.

Soy-related recipes: Slab bacon with fermented bean curd (Nanru kouru, with "3 cubes fermented bean curd, p. 113). Sweet bean paste sauce (tiendoujiang, for Peking duck; it is made from "fermented black soybeans," p. 140). Braised "shark's fin in white sauce (baipa yuchi, with white soup and soy sauce, p. 199). Mrs. Pockmark's bean curd (mapo doufu, p. 207). Silkworm cocoon bean curd (canjian doufu, p. 208).

Note: This is the earliest English-language document seen (Nov. 2011) that uses the term "fermented black soybeans" to refer to fermented black soybeans.

There is a section of seven vegetarian recipes (p. 199-205).

4205. Flaws, Bob; Wolfe, Honora Lee. 1983. Prince Wen Hui's cook: Chinese dietary therapy. Brookline, Massachusetts: Paradigm Publications. v + 201 p. Index. 23 cm. [16 + 25 footnotes]

• ***Summary:*** The story of Prince Wen and his cook appears in Chuang-Tzu's *Inner Chapters* (trans. G.F. Feng & J. English, New York: Vintage Books, 1974, p. 55). Diet is the third of the Eight Limbs of Classical Chinese Medicine. The other 7 limbs are meditation, exercise, astrology, geomancy, massage, herbology, and acupuncture.

If a man is diagnosed as having a liver imbalance, such as "liver fire blazing upwards," he should consume food and herbs that will sedate, calm, and cool the liver and lower the Yang; foods that raise the Yang, produce internal fire, or aggravate the liver should be avoided.

Page 35 notes that foods that are energetically cool and cold include soy products (such as tofu, tempeh, soymilk). Foods that produce fluid and are damp in nature include soybean and tofu.

In the section titled "Categorization of Foods," a number of individual foods are analyzed in detail, based on characteristics described below: Aduki bean, agar (p. 143), alfalfa, almond, and amasake (fermented glutinous rice) (p. 144), black soybean (p. 148), gluten (seitan, p. 158), kudzu root powder (p. 161), seaweed (p. 179), soybean (p. 181), soybean oil (p. 181), and tofu (p. 185).

Taking tofu, then black soybeans, as examples of the format used. Tofu: Nature: Cool. Flavor: Sweet. Meridian: Lungs, large intestine, stomach. Direction: Descending. Quality: Yin and yang. Elemental quality: Earth. Treatment principles: Tonifies Qi [ch'i] and Blood, clears Heat, sedates Yang, tones Yin, harmonizes the Middle Burner, produces Fluid, lubricates Dryness, counteracts toxins. Commonly used in the treatment of conjunctivitis, chronic amoebic dysentery, diabetes, sulfur poisoning, and alcoholism. Contraindications: spermatorrhea.

Black soybean: Nature: Neutral. Flavor: Sweet. Meridian: spleen and Kidneys. Direction: Ascending. Quality: Yang. Elemental quality: Earth. Treatment principles: Tonifies Qi [ch'i] and Blood, activates the Blood, benefits Water, expels Wind, counteracts toxins. Commonly used in the treatment of edema, Wind Bi (rheumatism),

jaundice, beriberi, and spasms.

The remedial recipes are divided into Chinese (p. 96-116) and American (p. 117-35) types. Soy-related recipes include: Lord Buddha's delight casserole (with tofu, p. 88-89). Clams with black bean garlic sauce (with salted black beans [fermented black soybeans], p. 91). Five jewel casserole (with tofu or tempeh, p. 92). Quick braised soybean sprouts (p. 104).

Amasake cheesecake with cherry topping (p. 119). Shepherd's pie with seitan (Gluten meat, p. 122). Ginger seitan beef (p. 122). Seitan veal marsala (p. 129). Aduki bean brownies (p. 133). Dairyless pumpkin pie (with soymilk or cashew milk, p. 135). Many recipes use soy sauce or tamari in their braising liquid. The cookbook also uses meat, poultry, fish, and sugar quite extensively.

4206. Fujimori, Ikuo. 1983. Daizu. Shizen kindaabukku [Soybeans. Natural children's book]. Tokyo: Fureberu-kan K.K. 30 p. Illust. by Akira SETO. 26 cm. [Jap]
• ***Summary:*** A children's book with superb color illustrations. Shows how to make natto, tofu, and soy sprouts at home. A large color photo (p. 10-11; 2-page spread), titled "All made from soybeans," shows kinako, miso, shoyu, soymilk, yuba in a bowl of clear soup, ganmodoki, abura-age, cooked whole soybeans (*nimamé*), okara sauteed with vegetables, dengaku (made with tofu and miso), and atsu-agé. Address: Daizu kairyo no dai-ichi ninsha [President, Takeya Miso Co., Nagano, Japan].

4207. Herrmann, Karl. 1983. Exotische Lebensmittel. Inhaltsstoffe und Verwendung [Exotic foods. Ingredients and uses]. Berlin, Heidelberg, & New York: Springer-Verlag. x + 175 p. Illust. 21 cm. See p. 111-19. Sojabohnenprodukte. [18 ref. Ger]
• ***Summary:*** The chapter on legumes contains brief introductions to soybeans, green vegetable soybeans (*unreife Sojabohnen*), soy sprouts (*Sojabohnensprossen, Sojabohnenkeimlinge*), soymilk (*Sojamilch*), tofu (*Tofu, Sojaquark*), soy sauce (*Sojasosse, Shoyu*), miso (*Miso, Sojapaste*), tempeh (*Tempeh*), fermented tofu (*Sufu, chinesischer Sojabohnen-Käse*), and natto (*Natto, fermentierte ganze Sojabohnen*). Tables shows the nutritional composition of tofu, deep-fried tofu pouches (*Aburage*), dried-frozen tofu (*Kori-Tofu*), yuba (*Yuba*), roasted soy flour (*Kinako*), and miso, plus defatted soybean meal (*entfettetes Sojabohnenmehl;* 51% protein), and soybean concentrate (*Sojabohnen Konzentrat;* 64.9% protein). Address: West Germany.

4208. Jaffrey, Madhur. 1983. Eastern vegetarian cookery. London: Jonathan Cape. xii + 531 p. Illust. by Susan Gaber. Index. 24 cm.
• ***Summary:*** This is an expanded version of *Madhur Jaffrey's World-of-the-East vegetarian cookery* (1981, New York). The author of this creative book, a woman, was born in British India on 13 Aug. 1933. She first became known as an actress in India, but later found fame as a food writer. She has lived in America for more than 20 years. She presents 21 recipes for bean curd (tofu), 7 for tempeh, and some for yuba and miso. Soy-related recipes include: Aubergine slices with white miso (Japan, p. 4-5). Green beans with soy sauce (Japan, p. 20), Cabbage with miso (Japan, p. 29). Lotus root with soy-sauce dressing (Korea / Japan / Hong Kong, p. 46-47). Yellow pumpkin cooked with soy sauce (Japan, p. 74-75). Fresh soy beans, steamed (China, p. 76, with "fresh green soy beans in their pods"). Yien Koo's Spinach with fermented bean curd (China, p. 78-79). Pecel (Vegetable salad with spicy peanut sauce, plus tofu and tempeh; Indonesia, p. 87). Tempura (with tofu; Japan, p. 89-92). Soy bean sprouts (how to grow, p. 119). Soy-bean and mung-bean sprouts seasoned with sesame oil (Korea, p. 123-24). Tempeh, Fried tempeh, Fried, pre-seasoned tempeh, Sambal goreng tempeh kering (Sweet and sour tempeh), Tempeh cooked in coconut milk (Indonesia, p. 127-30). Thai fried rice (with red fermented tofu, p. 176).

Chapter 4 (p. 187-221), titled "Soy milk, bean curd, and wheat gluten," contains the following: Introduction to each ingredient. Soy milk (making your own at home). Making your own bean curd. Udofu (Yudofu, simmering bean curd with seasonings, Japan). Bean curd with watercress (Singapore Chinese). Bean curd with fresh coriander (Taiwan). Korean-style bean curd in a hot water bath. *Hiya-yakko* (Chilled bean curd, Japan). Bean curd with broccoli (Hong Kong). Cabbage cooked with bean curd (Japan). Bean curd with a deliciously spicy sauce (China). Carrots and beans with a bean-curd dressing (Japan). Bean curd, mushrooms, and peanuts in hoisin sauce (Chinese style). Sautéed bean curd (Korea). Tofu dengaku (Toasted bean curd with a miso topping, Japan). Fried bean-curd cubes (Most of East Asia). Soy-bean sprouts sautéed with fried bean curd (China). Fried bean curd with a sweet-and-sour sauce (China). Fried bean curd cakes with a mustard surprise (Japan). Inari-zushi ("Bags" of fried bean curd stuffed with sushi rice, Japan). Pressed bean curd with cabbage (China). Salad of pressed bean curd, mung-bean sprouts, and agar-agar (China). How to make fried and baked wheat-gluten balls. Stew of baked wheat gluten, potato, turnip, carrot, and cabbage rolls (Japan, p. 215). Fried wheat gluten with broccoli, carrot, and mushrooms (China). Fried wheat gluten and potato stew (Indian style). Shredded wheat gluten and Cabbage with fennel seeds (Indian style). Buddha's delight (A mixed Chinese stew, Hong Kong; with yuba, fried tofu, and fried wheat gluten balls).

Chawanmushi (Steamed savory custards, with tofu; Japan, p. 223-26). Omelette with bean curd (Japan, p. 230-31). Soy-sauce eggs (Thailand / China, p. 245). Paneer (Fresh cheese from cow's milk; India, p. 277-78). Hot or cold noodles with a soy-sauce dressing (China, p. 288).

Noodles with a hot-and-sour bean sauce (China, p. 290). Vegetarian mee krob (Crisp noodles with pressed bean curd and eggs; Thailand, p. 296-97). Noodles with quail eggs, mushrooms, spinach, and yuba (Japan; p. 298-99). Hoppers (yeast pancakes; Sri Lanka, p. 315). Roti (Flat whole-wheat bread; India, p. 320). Delicious stock made with soy-bean sprouts (p. 340). Clear soup with mushrooms, bean curd skins [yuba], and spinach (Japan, p. 346). Clear soup with soft bean curd and Chinese leaves (p. 346). Miso soup with bean curd (Japan, p. 357). Miso soup with carrots and mushrooms (Japan, p. 358). Fried, munchable soy beans [soynuts] (China, p. 373). Potato and tempeh patties (Indonesia, p. 394). Dipping sauces (with soy sauce, p. 414-17, incl. kochu chang–Korean soy sauce). Kombu relish (with soy sauce; Japan, p. 435). Shoyu daikon (White radish pickled in soy sauce; Japan, p. 436). Ginger quick-pickled soy sauce (China, p. 436). Aomidaikon (Quick pickled small white radishes, with slightly sweet yellow miso; Japan, p. 438-39). Chinese-style jellied bean-curd sweetmeat with a peanut topping (Singapore, p. 462-63).

General information [like a glossary] (p. 481-506): See: Bean curd (regular, fried, fermented {*fu-ju, nam-ye, tao-hoo-yee,* red bean curd}, pressed {*doufu kan*}, pressed seasoned {*pai doufu kan*}, dried bean-curd skin or yuba). Beans (azuki, soy). Bean sauce (made from fermented soy beans). Chilli paste with soy bean (and garlic). Hoisin sauce. Miso. Nam yee (see Bean curd, fermented). Nigari. Soy beans, fresh. Soy-bean sprouts. Soy milk. Soy sauce (incl. Japanese, Chinese dark and light, Japanese usukuchi, Indonesian ketjap manis). Tao Hoo Yee (see Bean curd, fermented). Tempeh. Yuba. Sources (of ingredients; p. 507-10). Address: New York City, NY.

4209. Joshi Eiyo Daigaku. 1983. Tôfu kukkingu [Tofu cooking]. Tokyo: JED Shuppan-bu. Kyo no Okazu No. 9. 128 p. Illust. Index. 19 cm. [Jap]
• ***Summary:*** Contents: From tofu in Japanese to tofu in English: Modern thoughts on tofu. Ikuko Hisamatsu's healthy tofu menu: Homemade tofu, western style tofu recipes, second generation tofu products and recipes, okara, natto, soymilk. Fujiko Sakami's Japanese style recipes: Homemade second generation tofu products taste better, Japanese style tofu recipes, okara. Seiko Osato's Chinese-style recipes: Introducing the taste of the homeland of tofu in China, Chinese second generation tofu products. Other comments: The history of tofu, the roots of tofu, the challenge of homemade tofu, tricks of Western style tofu recipes, European and American tofu cooking. Note: A color photo accompanies each recipe. Address: Tokyo, Japan.

4210. Kushi, Michio; Jack, Alex. 1983. The cancer prevention diet: Michio Kushi's nutritional blueprint for the relief and prevention of disease. New York, NY: St. Martin's Press. xi + 460 p. Index. 22 cm. [32 ref]
• ***Summary:*** In this book, cancer preventing effects are attributed to miso (p. 50-51, 220-21, 304-06), and to soybeans (p. 51, 154-55, 293, 306). Natto, soymilk, tamari, tempeh, and tofu are also discussed.

Pages 50-51 note: "A ten-year study completed in 1981 by the National Cancer Center of Japan reported that people who ate miso soup daily were 33 percent less likely to contract stomach cancer than those who never ate miso soup. The study also found that miso was effective in preventing heart and liver diseases...

"Soybeans, a major source of protein in the macrobiotic diet, have been singled out as especially effective in reducing tumors. The active ingredient in soybeans is called a protease inhibitor. Laboratory tests show that soybeans and certain other beans and seeds containing this factor added to the diet prevent the development of breast, stomach, and skin tumors. Whole soybeans and soy products, including miso, tamari soy sauce, tofu, tempeh, and natto are staples of the macrobiotic diet... At St. Luke's Hospital in Nagasaki, a group of macrobiotic doctors and patients who had survived the atomic bombing on August 9, 1945 subsequently protected themselves against potentially lethal doses of radiation on a diet of brown rice, miso soup, sea vegetables, and sea salt."

Pages 220-21 contain a long excerpt from the account of Dr. Tatsuichiro Akizuki, director of internal medicine at St. Francis's Hospital in Nagasaki. He survived the world's first atomic bomb attack on 9 Aug. 1945. He believed that the main reason that neither he nor any of his co-workers at the hospital suffered or died from radiation was because of their diet, based on miso, brown rice, and sea vegetables.

Pages 293, and 304-06 summarize a number of publications which seem to show that consumption of soybeans, miso, or soymilk may prevent cancer. Pages 391-99 contain soyfoods recipes. Address: Boston, Massachusetts.

4211. Lorchirachoonkul, Sophon. 1983. Physico-chemical interactions of ingredients in formulating imitation milk. PhD thesis, Texas A&M University. 122 p. Page 117 in volume 45/01-B of Dissertation Abstracts International. * Address: Texas A&M Univ.

4212. Plenty International. 1983. Caribbean islands: Another rotten day in Paradise (Leaflet). Summertown, Tennessee. 1 p. Front and back. 3 panels each side. Undated. Illust. 28 cm.
• ***Summary:*** A map shows the proposed voyage of the ship *Fri* (rhymes with "Free"), a 105-foot sailing ship, from northern Florida, through the Caribbean, then back to home port. They plan to visit St. Vincent, St. Lucia, Dominica, Antigua, and Haiti. "And in the long run: Food self-sufficiency can happen on these islands. Plenty soy technicians will stay to help local farmers grow and process soybeans into protein-rich foods such as soy milk, tofu and

soy ice cream. This will help fill the need for protein in their diet."

A postcard, printed with blue ink on white, requests donations for: Caribbean project. Guatemalan refugee fund. Wherever needed. "$5 included to mail me–Guatemala: A Commentary on Human Rights."

Note: This cruise stirred up considerable controversy concerning appropriate use of limited funds. Address: Summertown, Tennessee.

4213. Rasic, Jeremija Lj.; Kurmann, Joseph A. 1983. Bifidobacteria and their role: Microbiological, nutritional-physiological, medical and technological aspects and bibliography. Basel, Boston, Stuttgart: Birkhaeuser Verlag. 295 p. Illust. 24 cm. Experientia Supplementum Vol. 39, and Fermented Fresh Milk Products and Their Cultures #2. [1225* ref]

• ***Summary:*** Probably the best and most comprehensive work on this genus of bacteria, which are widely believed to be beneficial to humans. This is the earliest known book about bifidobacteria, the predominant intestinal organisms of breast-fed infants and the major component of the large intestinal flora of human beings. Bifidobacteria were first isolated and described by the French researcher Henry Tissier in the period 1899 to 1900. He named the type species *Bacillus bifidus* and found them to be the predominant organisms in the stools of breast-fed infants.

The history of study of this organism can be divided into 2 periods: 1899-1957, and 1957 to the present. From 1923-1934 the bacterium was named *Bacteriodes bifidus* in *Bergey's Manual* (eds. 1-4), then from 1939-1957 it was named *Lactobacillus bifidus* in the same book (eds. 5-7). Finally in the 8th edition of *Bergey's Manual* (1974) these organisms were designated as a separate genus, *Bifidobacterium,* comprising 11 species. They are non-motile and non-sporeforming rods. Their optimum growth temperature is 36-38ºC. Scientific investigations during the first period were concerned with: "the growth-promoting factors for bifidobacteria; the occurrence of these organisms in the human intestinal tract; their significance in the health of infants; and the devising of culture media for the isolation and maintenance of strains." During the second period, knowledge concerning bifidobacteria advanced rapidly. In 1957 Dehnert divided them into 5 groups. Growth promoting factors were discovered.

Chapter 6, titled "Nutritive and health values of dairy foods containing bifidobacteria" states that "Bifidobacteria may play significant roles in the intestinal tract of infants. They produce organic acids which inhibit the growth of undesirable bacteria, and stimulate intestinal peristalsis. Their consumption also influences the metabolism of the gut bacteria, and some reports have indicated the possible value of bifidobacteria in improving the nutrition of infants.

"This potentially beneficial role of bifidobacteria in the intestinal tract of babies and children has led to their suggested use as dietary adjuncts in combination with their growth-promoting substances. Consequently cultured milk products containing *B. bifidum* (*L. bifidus*) may improve the nutritional and health values of the weaning diet.

"The use of *B. bifidum* together with *L. acidophilus* for the treatment of the side-effects of antibiotic therapy has shown beneficial results.

"Many reports have indicated the role of lactulose and/or *B. bifidum* in the compensational detoxication of subjects with chronic liver disease." Fig. 6.3 (p. 89) compares the protein composition of cow's ilk, human milk, and humanized breast milk substitute. Cow's milk contains much more casein than human milk, much less α-lactalbumin, and a significant amount of Beta-lactoglobulin of which none is found in human milk. Human milk contains lysozyme and lactoferrin, which are not found in cow's milk or humanized breast milk substitute. Address: 1. Food Research Inst., Rumenacka 103, Novi Sad, Belgrade, Yugoslavia; 2. Agricultural Inst., CH-1725 Grangeneuve-Fribourg, Switzerland.

4214. Register, U.D.; Crooks, Hulda. 1983. Nutritionally adequate vegetarian diets. In: Miloslav Rechcigl, ed. 1983. CRC Handbook of Nutritional Supplements. Vol. I. Human Use. Boca Raton, FL: CRC Press. See p. 331-42. [41 ref]

• ***Summary:*** Contents: Introduction. What is a vegetarian diet? Protein requirement. Lacto-ovovegetarian diet. Lactovegetarian diet. Total vegetarian diet. Adequacy of plant proteins. Planning the vegetarian diet. Meat analogs.

There are three basic types of "nonflesh diets": 1. Lacto-ovovegetarians include dairy products and eggs in their diets. 2. Lactovegetarians use only dairy products in addition to plant foods. 3. Total or pure vegetarians avoid all animal products. Many total vegetarians (vegans) "substitute soymilk and soy products for dairy products"; some refuse "even to wear shoes made of leather." Address: 1. Prof. and Chairman, Dep. of Nutrition; 2. Research Asst., Health Education Dep. Both: School of Health, Loma Linda Univ., Loma Linda, California.

4215. Rohé, Fred. 1983. The complete book of natural foods. Boulder, Colorado: Shambhala. xvi + 491 p. Illust. Index. 26 cm. [120 ref]

• ***Summary:*** This book is about "The New American Diet," which is an "omnivarian" diet including some fish and meat. Chapter 14, titled "New and future natural foods," contains a section titled "Soy foods" (p. 162-65) including tofu, tempeh, miso, soy sauce, soy milk, and other soy products (yuba and sufu). The work of William Shurtleff and Aoyagi, and their Soyfoods Center, is mentioned 2-3 times. Toward the back of the book are many soyfoods recipes.

The Prologue tells Rohe's life story and pioneering work with natural foods. In 1964, at the ripe old age of

27, he didn't feel good, didn't look good, and didn't like it–the result of years of smoking, drinking, eating bad food and "burning the candle at both ends." "It was time to do something about it. Adelle Davis became my guru and Thom Hamilton–the health foods store owner who sold me [her book] *Let's Eat Right to Keep Fit* became my mentor." Within a few months he was feeling much better. "So in 1965 I bought a small health food store in the Sunset district of San Francisco." It was named Sunset Health Foods." He discarded most of the dietetic foods on the shelves and replaced them with "old-fashioned groceries–basic stuff, traditional, simple, whole food... What was evolving was a modern version of an old-fashioned grocery store." He would provide information instead of hype, bulk retail foods sold out of barrels, crocks, jars, and drawers instead of packaged products, food instead of food supplements. He renamed the store "New Age Natural Foods."

"My career ended in 1973, after eight years. New Age Natural Foods had served as a model for what were called in those days 'hippie food stores.' It is credited as being the prototype natural foods store, as distinct from a health food store." Since 1973 Fred continued to work in the natural foods industry. In 1979, in his capacity as a consultant, he met the people of Sunburst Farms, who are his collaborators on this book. "Sunburst is the realization of a vision experienced in 1951 by its founder Norm Paulsen, while he was living as a student monk studying yoga at the Self-Realization Fellowship in Los Angeles. He moved to the Santa Barbara area, and while operating a construction business in 1968 established Sunburst Farms as a group of people living communally under spiritual principles on 160 acres of land in the mountains above Santa Barbara. The community-owned business, Sunburst Natural Foods, grew foods organically and flourished. In 1970 they opened a natural foods retail store in Santa Barbara. The community grew to include a second ranch and a total membership of over 200 people. "The business came to include manufacturing and wholesaling as well as retailing. There are now five Sunburst Farmer's Markets, two of them–in Goleta and Ventura–large, complete, natural foods supermarkets. Sunburst also owns and operates a natural foods restaurant, 'The Farmer and the Fisherman,' 35 miles north of Santa Barbara along the coastal highway." Then Norm envisioned a new direction and everything changed. They traded their 6,000 acre coastal ranch for land in northeastern Nevada totaling over 500,000 acres. "It could hardly have been a more radical change. But the soil is rich in minerals and there is abundant water from artesian wells. They are responding strongly to the challenge of, as they say, 'making the desert bloom as a rose.'"

"Appendix eight: Recommended reading list" (p. 470-78) includes a section titled "Soyfoods."

This book was Re-published in 1986 as *Nature's Kitchen* by Garden Way in Brattleboro, Vermont.

Interview with Fred Rohe. 1988. Nov. 3. Fred bought Sunset Health Foods in 1965 and transformed it into New Age Natural Foods at 1326 Ninth Ave. in San Francisco. Address: 4014 Lincoln Way, San Francisco, California 94122. Phone: 415-564-7024.

4216. Sadowitz, P.D.; Oski, F.A. 1983. Iron status and infant feeding practices in an urban ambulatory center. *Pediatrics* 72:33-36. *

4217. Shurtleff, William; Aoyagi, Akiko. 1983. History of soybeans and soyfoods: Past, present and future. 4 vols. Lafayette, California: Soyfoods Center. 2,400 p. manuscript. Forthcoming. 28 cm. [27500+ ref]
• ***Summary:*** The most comprehensive book of its type ever written. Most chapters are now available in manuscript form. Those that are, are listed individually in this database. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4218. Shurtleff, William; Aoyagi, Akiko. 1983. Leaders of the Soyfoods Movement in Europe (Document part). In: Shurtleff and Aoyagi. 1983. Soyfoods Industry and Market: Directory and Databook. 3rd ed. Lafayette, CA: Soyfoods Center. 121 p. See p. 109.
• ***Summary:*** The name, address, and phone number of the following people are given: Wolfgang Furth-Kuby of Sojaquelle, Peter Wiegand of Auenland Tofu, and Boo Massobrio of Weg Der Natur in West Germany. Verena Krieger and Walter Daenzer of Soyana in Switzerland. Sjon Welters of Manna Natural Foods in the Netherlands. Ted Nordquist and Tim Ohlund of Aros Sojaprodukter in Sweden. Bernard Storup of Soy SARL and Alexander Nabben of Europa Farm in France. Gilberto Bianchini of Community Food in Italy. Kym Olsen in England. Pierre Gevaert of Lima Foods in Belgium. Jane O'Brien in Ireland. Dr. Brian J.B. Wood of the University of Strathclyde, Microbiology Department, in Scotland. Lawrence Dreyer of Weg Der Natur in Austria. As of July 1982 there are 609 European names and addresses on the Soyfoods Center Mailing List. Address: Lafayette, California. Phone: 415-283-2991.

4219. Soy Power Co. 1983. Everything you wanted to know about tofu–But were afraid to ask (Leaflet). Santa Monica, California. 2 panels each side. Each panel: 14 x 11 cm.
• ***Summary:*** Contains basic information about tofu, 6 recipes, and a list of Soy Power products: Silken tofu, Chinese tofu, Pressed tofu, Savory baked tofu, Whatta salad, Fiesta salad, Hi-Pro tempeh burger, and Non-dairy soymilk (Plain, Carob & honey). Printed with purple ink on light gray paper. Soy Power's logo is a pyramid. Address: 2811-A Ocean Park Blvd., Santa Monica, California 90405.

4220. Swaminathan, Mahadeva. 1983. Oilseed and nut

proteins. In: Miloslav Rechcigl, ed. 1983. CRC Handbook of Nutritional Supplements. Vol. I. Human Use. Boca Raton, FL: CRC Press. 564 p. See p. 3-27. [147* ref]
• ***Summary:*** Contents: Introduction. Production: Soybeans, cottonseed, sesame seed, copra, sunflower seed. The chemical composition and nutritive value of the proteins of certain oilseeds and nuts: Chemical composition, essential amino acid composition and nutritive value of proteins, amino acid supplementation of the proteins of oilseeds and nuts. Deleterious constituents present in oilseeds and legumes. Effect of processing on the nutritive value. Processed foods based on oilseeds and their meals: Preparation of edible meals, protein isolates from oilseeds and nuts. Infant foods and milk substitutes from oilseeds and nuts: Infant foods and milk substitutes from soybeans (soy milk, dried soybean milk, large-scale production), nutritive value of soybean milk and soybean milk proteins (animal experiments, treatment of protein malnutrition in children), feeding experiments with infants and children, milk substitutes and infant foods from peanuts, nutritive value of peanut milk and its proteins, feeding trials with infants and children, coconut milk and products based on coconut milk. Milk substitutes based on other nuts and oilseeds: Almond milk, cashewnut milk. Protein foods based on oilseed meals and isolates: Supplements based on soybean meal, on peanut meal, on cottonseed flour, on sesame flour, on coconut meal, on sunflower seed meal. Other processed products based on oilseeds and nuts and their meals: Products based on peanut and peanut flour, enriched tapioca flour and macaroni products, products based on soybean and soybean meal (baked products, macaroni products, tofu, natto, tempeh), foods based on protein isolates from peanut and soybean, products based on peanut protein isolate, products based on soy protein isolate (infant foods, textured food products). Conclusion.

Table 13 (p. 18) lists "Supplementary foods for weaned infants and preschool children." The following contain soya (usually defatted soy flour): Protein Food I and II (India). Fortifex (Brazil). Cerealina (Brazil; with full-fat soy flour). Multipurpose Food, CSM, WSB (USA). Pronutro (South Africa).

Note: On pages 156-57 is a brief description of quark, a non-fermented edible milk protein product widely used in Germany. It is a fresh, uncured cheese, usually sold in bulk form. Versatile and easy to use, it is made by coagulating the milk exactly like cottage cheese, "but instead of cutting, cooking, and washing the curd particles, the whole coagulum is passed through a specially designed centrifuge" to separate the whey from the solidified protein curd, which is then cooled and packaged in bulk. When made under sanitary conditions, the quark has a good shelf life under refrigeration. Some 30-40 different food products based on quark (such as spreads, dips, and desserts) are now sold in western and eastern Europe. A survey concluded that quark has considerable potential in the USA if (like yogurt, the most newly accepted dairy food in the USA) it is well advertised and promoted. Address: Retired, Applied Nutrition and Dietetics Discipline, and Emeritus Scientist, CFTRI, Mysore, India.

4221. Wang, H.L. 1983. Oriental soybean foods. In: Ivan A. Wolff, ed. 1983. CRC Handbook of Processing and Utilization in Agriculture. Vol. II: Part 2. Plant Products. Boca Raton, FL: CRC Press, Inc. See p. 91-106. Illust. Index. 26 cm. CRC Series in Agriculture. [10 ref]
• ***Summary:*** Contents: Introduction. Traditional nonfermented soybean foods. Fermented soybean foods. Tables: (1) Oriental nonfermented soybean foods: Fresh green soybeans, soybean sprouts, soybean milk, protein-lipid film [yuba], soybean curd [tofu], soybean flour (local names: Tou-fen, kinako). (2A) Composition of some indigenous soybean foods, 100 g, edible portion. (2B) Composition of some indigenous soybean foods, 100 g, edible portion. (3) Essential amino acid content of some indigenous soybean foods. (4) Oriental fermented soybean foods. (5) Characteristics of rice miso in relation to fermentation condition. (6) Average composition of soy sauce made from whole soybeans and defatted soybean meal. (7) Composition of various types of miso.

Figures: (1) Flow sheet for the preparation of soybean milk and its related products. (2) Flow sheet for manufacture of soy sauce. (3) Flow sheet for manufacture of miso. (4) Flow sheet for making hamanatto. (5) Flow sheet for preparation of sufu. (6) Flow sheet for tempeh fermentation. (7) Flow sheet for preparation of natto.

Note: Vol. 1 is "Animal products." Vol. 2 is "Plant products," Part A. Vol. 3 is "Plant products," Part B. Address: NRRC, Peoria, Illinois.

4222. Women's Auxiliary to the Alumni Association, Loma Linda University, School of Medicine. 1983. An apple a day: Vegetarian cookery by doctors' wives. Vol. II. Loma Linda, California: WAAA. 240 p. Index. 23 cm. [8 ref]
• ***Summary:*** A Seventh-day Adventist lacto-ovo vegetarian cookbook. The Cookbook Committee editor is Mrs. Georgia E. Hodgkin, M.S., R.D., Asst. Professor, Dep. of Nutrition and Dietetics, School of Allied Health Professions, Loma Linda Univ. Soy-related recipes include: Soy milk shake (p. 11). Spring rolls (with FriChik Soyameat, p. 15). Soy chicken salad (with canned soy chicken, p. 33, 34). Soya chick fruit salad (p. 35). Soyannaise (p. 43). Tofu cornbread (p. 49). "Tuna" burgers (with canned chicken-style Soyameat, p. 60). Savory soybean burgers (with whole soybeans, p. 61). Chicken-style spread (with canned chicken-style Soyameat, p. 62). Mild sloppy Joes (with Vegeburger, p. 64). Soy chicken spread (with Worthington's fried-style Soy chicken, p. 65). Tofu, peanut butter, and banana spread (p. 67). Whole wheat-soy waffles (with soy flour, p. 70).

Crunchy granola (with soy flour, p. 74).

Many of the entrees (p. 77-143) call for canned, frozen, or dry soy-based meatlike products. McKay's seasoning (chicken-style) and G. Washington broth, Vegex, Sovex, and Savita are also widely used. The following is but a sampler: Tofu roast (p. 81). Soy bean loaf (p. 82). Soy cheese loaf (with tofu, p. 82). Chicken loaf (with chicken-style soyameat, p. 85). Soyameat broccoli casserole (chicken-style, p. 86). Onion tofu (p. 93). Easy tofu casserole (p. 94). Tofu casserole (p. 94). Lasagne (with textured vegetable protein, p. 95). Soy bean patties (p. 110). Tofu balls (p. 113). Soy beans, southern style (p. 115). Delicious baked soybeans (p. 116). Stir fry vegetables with tofu (p. 127). Tofu quiche (p. 133). Soybean soufflé (p. 138).

Tofu fruit whip (p. 171). There is a chapter titled "Foods for Fifty" (p. 185-201) including: Curried rice with soyameat (p. 195). Address: Loma Linda Univ., School of Medicine, 11136-A Anderson St., Loma Linda, California 92354.

4223. Woodroof, Jasper Guy. ed. 1983. Peanuts: Production, processing, products. 3rd ed. Westport, Connecticut: AVI Publishing Co., Inc. xiv + 414 p. Illust. Index. 24 cm. [100+* ref]

• ***Summary:*** All chapters are by J.G. Woodroof unless otherwise noted. Contents: 1. Historical background. 2. Production and marketing of peanuts in the United States, by D.H. Carley. 3. World production and trade of peanuts, by D.H. Carley. 4. The culture of peanuts. 5. Harvesting, curing, and shelling. 6. Storing peanuts. 7. The aflatoxin crisis, by T.H. Sanders. 8. Composition and nutritive value of peanuts. 9. Peanut butter. 10. Salted peanuts. 11. Peanut confections. 12. Peanut oil. Diversified food uses for peanuts, by Kay H. McWatters: Introduction, white and whole wheat peanut bread, variety breads, cookies, cakes and brownies, doughnuts and sweet yeast products, pies, peanut milk, peanut yogurt, and peanut cheese-type systems, frozen desserts, nonmilk beverages, soups and gruels, peanuts with meats, peanut snack products, breakfast cereals, summary. 14. Peanut protein properties, processes, and products, by John P. Cherry. 15. Nonfood uses for peanuts. Summary and future outlook. Appendices: 1. U.S. standards for peanuts: Farmers' stock white Spanish peanuts, Virginia-type peanuts, and runner peanuts (unshelled or shelled). 2. U.S. standards for grades of peanut butter. 3. Technical inspection procedures for peanut butter. 4. Peanut butter: definition and standard of identity. 5. Common conversions. Address: Prof. Emeritus, Dep. of Food Science, Univ. of Georgia Agric. Exp. Station, Experiment, Georgia. Phone: 404-227-3376.

4224. World of God, Inc. 1983. The cookbook for people who love animals. 2nd ed. Umatilla, Florida. 192 p. Edited by Butterflies. Illust. and cover design by Flowers. No index. 26 cm.

• ***Summary:*** This vegan cookbook is only slightly different from the 1981 edition by the same title, but is 16 pages longer. Recipes with soyfood terms in the title are the same and on the same pages as those in the 1981 edition, except the following recipes added at the back of the book: Avocado-tofu dinner (p. 166). Stuffed avocado with tofu (p. 178). Spaghetti and tofu. Baked macaroni and tofu (p. 180). Tofu omelette (p. 181). Tofu cutlets (p. 182).

The book is interspersed with most of the same nice quotations about vegetarianism, veganism, and animal rights from great thinkers found in the 1981 edition. Address: P.O. Box 1418, Umatilla, Florida 32784.

4225. Yeo Hiap Seng Ltd. 1983. Yeo's quality foods and beverages. Singapore. 25 p. [Eng]

• ***Summary:*** "Yeo Hiap Seng's heritage dates back to 1900 in China. The Company started operations in Singapore in 1935, as a manufacturer of fine soya sauces." A photo shows the store front at one of its early locations. Many color photos show the company's products, which include the following soyfood products: Soy sprouts, salted black beans, salted yellow beans, hoi sin sauce, crushed yellow bean sauce, black bean sauce, salted soya beans, soy sauces (light or dark), and Yeo's soya bean drink (canned). Most product names are given in English, French, and Chinese. The company has offices (whose address and phone are given) in Singapore, Malaysia, Hong Kong, United Kingdom, USA (San Jose, California), and Canada (Richmond, BC).

Photos from this booklet show: (1) One of the company's early offices–the date and place are not given. (2) Yeo's range of Oriental sauces. (3) Yeo's Eastern condiments.

Photos (by William Shurtleff) show: (4) The company's soy sauce products. (5) Other related soy products. Address: Singapore.

4226. Galactina, AG. 1983? Galactina. 3123 Belp, Switzerland. 12 p. 24 x 24 cm. Undated.

• ***Summary:*** On page 6 we read: "Naga-Sonda is a fully-balanced, low-bulk, natural food concentrate for the complete nourishment of adults and children.

"Naga-Sonda is produced from soya by a new process and contains all the essential nutritional constituents such as albumen, fats, carbohydrates, essential amino-acids, vitamins, minerals and trace elements.

"Naga-Sonda is chiefly employed as an ideal, easily digested complete nutrient for feeding by tube in:

"disorders of the swallowing process and oesophagus

"neuro and maxillary surgical operations

"progressive muscular distrophy

"refusal to eat (anorexia)

"loss of consciousness etc.

"Naga-Sonda is free from lactose, possesses ideal osmolarity, and reduces cholesterine.

"Naga-Sonda is available either in powder form

[introduced in Oct. 1964], which is easily prepared simply by adding water, or ready for use as a concentrated liquid [introduced in 1981]."

A photo shows Naga-Sonda products and packages. Address: Belp, Switzerland.

4227. Johnson, L.A. 1983? No. 3. Soymilk technologies. College Station, Texas: Food Protein R&D Center, Texas A&M Univ. 6 p. Unpublished typescript. Undated. 28 cm. [41 ref]
Address: Food Protein R&D Center, Texas A&M Univ., College Station, TX 77843.

4228. **Product Name:** K.K. (Bottled Soymilk).
Manufacturer's Name: King? Kong (KK) Food Products Sdn. Bhd.
Manufacturer's Address: Sabah, East Malaysia.
Date of Introduction: 1983?
Wt/Vol., Packaging, Price: Bottle.
New Product–Documentation: Color photo of Label from STS. 1987. Bottle with red and yellow label.

4229. Nisshin Oil Mills, Ltd. 1983? [Soybean proteins (Catalog)]. Japan. 1 p. Undated. [Jap]
• ***Summary:*** This 1-page color leaflet shows 5 soy protein products made by Nisshin. For each, a photo shows the product in a shallow white bowl, and a nutritional analysis is given; for the first three the package (a 10 kg multiwall paper sack) is also shown. The products are: Soymee S (textured soy protein, 51% protein and 1% fat, probably textured soy flour). Sol-P 600 (powdered product for use in various kinds of fish paste, based on soy protein concentrate; 64% protein and 1% fat). Sol-P-S (powdered soymilk, 27.5% protein and 28.5% fat). Imitation bacon bits (31.5% protein and 39.4% fat). Full fat soybean flour (39% protein and 20% fat).
Address: Japan.

4230. Paradise Distributors. 1983? The latest scoop. . . Tofutti. Its a natural beauty. All natural nondairy tofu frozen dessert. 5 luscious flavors (Leaflet). Torrance, California. 2 panels each side. Each panel: 22 x 14 cm. Undated.
• ***Summary:*** "Tofutti's light, rich taste comes from mixing tofu, soy milk, fresh fruits and pure wild honey into a completely natural frozen dessert." The product is said to contain only 128 calories per 4 oz. serving. Ingredients are listed as "Pasteurized tofu dessert base (water, high fructose corn sweetener, honey, soybean oil, tofu isolated soy protein), all natural flavorings (if chocolate, cocoa is added), soy lecithin, vegetable gums (guar seed, carob bean, carrogeenan [sic, carrageenan]), salt." The use of the term "tofu isolated soy protein" is deceptive, perhaps illegal.

This leaflet was being passed out by Paradise employees at the Natural Foods Merchandiser trade show at Anaheim, California, March, 1984. Address: 18655 Western Ave. (P.O. Box 6396), Torrance, California 90504.

4231. **Product Name:** Butterfly brand Soyabean Drink.
Manufacturer's Name: Pioneer Corporation (Distributor).
Manufacturer's Address: China.
Date of Introduction: 1983?
Ingredients: Cane sugar, soya bean.
Wt/Vol., Packaging, Price: 30 gm foil pouch.
How Stored: Shelf stable.
New Product–Documentation: Label. 1983. A granular product in a small foil packet. "High Protein. Instant." Just mix contents of packet with 8 oz hot or cold water.

4232. *Toyo Shinpo* (*Soyfoods News*). 1984. [Main additives to soymilk in Japan]. Jan. 1. [Jap]
• ***Summary:*** Preservative (*hozon ryo*). Antioxidant (*sanka bôshizai*). Artificial flavor and/or fragrance (*chakko*). Sweetener (*kanmi*). Emulsifier (*nyûka*). Foam extinguisher (*awakeshi*). pH regulator (*pH chôsei*). Quality improver (*hinshitsu kairyo*). Coagulant (*gyôki, gyôkozai*).

4233. Chen, Steve. 1984. Re: Answers to questions about the soymilk and dairy milk industries in Taiwan. Letter to William Shurtleff at Soyfoods Center, Jan. 31–in reply to inquiry of Jan. 23. 2 p. Typed, with signature on letterhead.
• ***Summary:*** Shurtleff asked: 1. What year did President actually start making soymilk. Was it 1977 or l978?. You have told me both. Ans: "The Pulse Quality Food Corporation was established on Oct. 22, 1983. The President Corp. was one of its major share holders. The Pulse started soymilk production in 1975, which was the first large scale commercial soymilk production in Taiwan. Due to a defect of Tetra Pak packaging, the Pulse venture was concluded in February, 1977. The Pulse venture was then bought out by the President Corp and changed to Tetra Brick packaging and started full scale operation in 1978 under new management."

2. What percent of all soymilk consumed in Taiwan would you estimate is sold in aseptic (Brik Pak) cartons? What is the average size in ml of such a carton? Ans: About 10% of all soymilk was consumed in Brick Paks and another 10% in glass bottles, tin cans, plastic pouches. The remaining soymilk was consumed without packaging. The size of Tetra Brick is 250 ml. The glass bottle is 260 ml.

3. Do you have any figures for total cow's milk consumption in Taiwan = production plus imports? Is this the same as the category "per capita fresh milk" on your chart? Ans: The per capita fresh milk consumption is only derived from local production of cow's milk Taiwan (Unit: kg): Per capita consumption of fresh dairy milk increased from 2.42 in 1978 to 2.88 in 1982. Per capita consumption of all dairy milk (including fresh milk, evaporated and condensed milk, milk powder and non-fat milk powder) increased from 5.27 in 1978 to 5.87 in 1982.

4. Is the TFA soymilk sold in 260 ml bottles? Ans:

Yes, TFA soymilk is sold in 260 ml glass bottles and small quantities of flavored soymilk (coffee) in tin can of 250 ml.

5. It is difficult to add local cow's milk of 48,000 MT (liquid) to the imported dairy products of 60,000 MT (semi- and solid, such as evaporated, condensed milk, milk powder and non-fat milk powder). Much of NFMP is used in bakery, ice cream and other food industry. Address: PhD, Country Director/Taiwan, American Soybean Association, P.O. Box 3512 Taipei, Taiwan, R.O.C.

4234. Alfa-Laval Food & Dairy Engineering AB. 1984. Soy milk allied products. Text for explanation of overhead set III. Lund, Sweden. 25 p. Jan. Unpublished manuscript. [Eng]
• ***Summary:*** Probably developed and presented by John Wilson, this document contains reproductions of the 38 slides, tables, and charts used in the presentation, plus text to describe each.

Picture 8. Soy milk plant design depends upon protein balance between: "Protein in soy base and protein in product." A table mentions 11% of concentrate (p. 6).

Picture 11 describes a plant to produce 3,000 kg/hour of soy milk. Equipment requirements include: "Soy base extraction unit size–294 kg/hour of soybeans. Soy base at 5.5% protein–1,495 kg/hour. Soy base storage–17,945 kg/day" (p. 8).

Picture 13 describes "The soy base extraction process" A diagram titled "Extraction" shows "Soy milk extract out" (p. 8).

Picture 15 discusses "Features of Alfa-Laval's soy milk base extraction system" include: Continuous. Maximized protein recovery. Enzyme lipoxygenase destruction to 100%. Waste heat recovery. Hermetic grinding. No foam suppressant chemicals required. Cleaning in place.

18-20. Decanter centrifuge. 21. Enzyme and trypsin inhibitor deactivation and deodorization. 22. Deodorization. 23. Cooling and storage. 24. Dairylike products you can make from soy milk. 25-26. Blending. 27. Clarification (no longer included as standard equipment). 28. VTIS system of direct steam injection into product for UHT processing. 29-30. Steritherm UHT process and features. 31. Recombining and "recombined soy milk" which can be made "from soy protein isolates or from soy milk concentrates or from spray dried soy milk powder." 34. Other product possibilities (incl. "concentrated soy milk"). 38. Mentions "soy base extract." Address: Dept. FD, Box 1008, S-221 03 Lund, Sweden.

4235. *Food Engineering.* 1984. These tasty frozen desserts can be high protein: Frozen desserts are reformulated to double the protein at much less cost. You can cut calories, too. And with good taste. 56(1):49. Jan.
• ***Summary:*** Dr. L. Steven Young is Manager of Product Applications for ADM Foods (1825 N. Laramie, Chicago, Illinois 60639). He has used Ardex Isolated Soy Proteins and Cornsweet 55 (55% high fructose corn syrup) and vegetable oils to replace the milk protein, lactose and sucrose, and butterfat in traditional ice cream. The new products can have twice the protein of standard ice cream at less cost. A good example of how ADM's formulations can succeed is in the Trinidad School Lunch Program. Young reports: "They're using a product that is actually a soy protein fortified milk made with MSNF (milk solids not fat), vegetable oil, isolate, and sweetener." This lower cost product has all the nutrition of milk and twice the protein.

4236. Koehler, Lennart; Meeuwisse, G.; Mortensson, W. 1984. Food intake and growth of infants between six and twenty-six weeks of age on breast milk, cow's milk, or soy formula. *Acta Paediatrica Scandinavica* 73(1):40-48. Jan. [20 ref]
• ***Summary:*** "In 59 normal infants attending well-baby clinics, food consumption was registered until 26 and growth until 52 weeks of age. They were either breast-fed or formula-fed with a cow's milk product or a soy protein product... The soy formula-fed children, who happened to be 200 g. heavier at birth, had lower weight gains during the first 6 weeks than the other 2 groups. Thereafter, the average weights of the soy formula group did not differ from the other groups. At 3 months, the soy formula-fed children displayed a slower mineralisation and maturation of bone, but the difference was no longer significant when re-examined at 6 months. Formulas based on soy protein isolates seem to be acceptable as substitutes for cow's milk formulas in feeding normal infants." Address: Dep. of Pediatrics and Dep. of Diagnostic Radiology, University Hospital, Lund, Sweden.

4237. **Product Name:** [Soymilk].
Foreign Name: Salsa Lait Dilue.
Manufacturer's Name: Lalasoa SA (Societe Anonym).
Manufacturer's Address: Ambatolampy, Madagascar.
Date of Introduction: 1984. January.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable.
New Product–Documentation: Letter from Philippe Vandemoortele, General Manager, Alpro. 1984. Jan. 2. Gives the name and address of the soymilk plant they built in Madagascar. Lalasoa S.A., c/o F.N.I., Maison des Produits 5ème étage, B.P. 719, Antananarivo, Madagascar.

Letter from Chr. Daems. 1984. Feb. 7. Alpro sold a turnkey soymilk plant to a company in Madagascar, which started making soymilk in Jan. 1984.

Label. 1987, undated. Dark and light green on white. Talk with Anders Lindner. 1987. The World Soymilk Market. This product is still being made. The company is run by a woman, Regina.

Letter from Anders Lindner. 1990. April 26. "The Alpro soymilk line sold to Lalosa in Madagascar in 1982

cost US$11 million and the management there feels that it produces a low-quality product. Asger Somer Hansen of STS inspected the plant 2 years ago as the company wanted to know if it could be rebuilt to produce a proper product. I don't know the current situation."

Note: This is the earliest known commercial soy product made in Madagascar.

4238. *Soyanews* (*Sri Lanka*). 1984. A soya factory in soya country. 6(5):1, 7. Jan. [1 ref]
• ***Summary:*** On 1 Dec. 1982 the new dried soya milk factory located at Maha Illuppallama, in the heart of soyabean country [in the dry zone just south of Anuradhapura], was commissioned by the Minister of Agricultural Research and Development, Mr. Gamani Jaysuria. The plant has a capacity of 4 tons per day.

"Speaking on the occasion, Mr. Jayasuriya congratulated Mr. R.S. Wijesekara, Chairman of the Raja Rata Food Grain Processing Co. Ltd. and representative of the private sector, on taking a bold decision to participate in a joint venture...

"The private sector has been reluctant hitherto to enter agricultural projects because of the risks entailed... But Mr. Wijesekara, a pioneer himself in the production of soya as a commercial crop as well as in the marketing of soya products, was confident in the success of setting up a soya based agro-industry.

"The Raja Rata Food Grain Processing Co. Ltd. was formed on Oct. 2, 1980 with a capital cost of Rs. 27 million. The Company is supported by several public organisations including the Paddy Marketing Board, Lanka Milk Foods (C.W.E.) Ltd. and the Mahaweli Development Authority. The Employees Trust Fund, which represents over 1.4 million employees in the public and private sectors of Sri Lanka holds 60,000 shares of Rs. 10 each.

"The dried soya milk factory... had its soft opening last September when it began commercial operations combined with test runs. But the demand for Rajasoya, the company's first product which is recommended as a substitute for coconut milk, was so overwhelming that the factory is now called upon to extend its full capacity.

"At the time of the formal opening the factory was producing 1.8 tons a day of Rajasoya. Arrangements are now being made to operate a second sift which will produce the factory's maximum capacity of 4 tons a day to meet the country's demand for a substitute for coconut milk following an unprecedented drop in the production of coconuts caused by recent droughts."

Rajasoya can also be used in weaning foods for infants and added to breakfast foods to boost nutrition.

A large photo shows flaked soya beans being removed on a conveyor belt to the drier, before being ground to make Rajasoya.

Note 1. This factory appears to be making whole (full-fat) soya flour rather than dried soya milk, since the okara is not removed from the flour.

2. As of Nov. 2010 no trace of this company or its product (Rajasoya) can be found on the Web.

4239. *Soyanews* (*Sri Lanka*). 1984. Consumer guide: Three kinds of [soya] flour. 6(5):6. Jan. [1 ref]
• ***Summary:*** (1) Regular whole soya flour is made by the Cereal Products Factory in Kundasale. The flour is popular with bakers. "It can also be used as a substitute for coconut milk but its dispersibility in water is not as good as the flour prepared by the second method.

(2) The soya beans are dehulled and blanched for 20 minutes, then passed through rollers and flaked. The flakes are dried and then finely ground to a powder. This flour has good dispersibility in water. Called Rajasoya, it is made by the Rajarata Food Grain Processing Co. It is widely referred to as "dry soya milk."

(3) A third method of making whole soya flour is by extrusion cooking. This flour is available only at the Soyabean Foods Research Centre at Gannoruwa.

4240. Soyfoods Assoc. of America. 1984. Soyfoods Pavilion '84. Marketing soyfoods in America (Ad). *Natural Foods Merchandiser.* Jan. 12-page color advertising insert.
• ***Summary:*** Contains large color ads by Legume Inc. (6 frozen tofu entrees), Erewhon, Inc. (shoyu tamari), Vitasoy (USA), Inc. (natural and coconut soy drink, sweetened with maple syrup), San-J International, Inc. (tamari, teriyaki sauce, tamari crackers, teriyaki crackers), Tofu-Time, Inc. (Tofutti "nondairy tofu frozen dessert"), Eden Foods, Inc. (Edensoy soy beverage in plain and carob flavors, retort pouch), and Westbrae Natural Foods (natural ramen in 100% whole-wheat, buckwheat, brown rice, mushroom, seaweed, miso, 5-spice, and curry flavors).

Contains black-and-white ads by Westbrae Natural Foods (shoyu, tamari, and soy sauce), Chico-San, Inc. (imported miso and soysauce), Fantastic Foods, Inc. (tofu burger mix), Penguino's, Inc. (dairy-free frozen dessert), Nasoya Foods (Firm Style Tofu, Soft Style Tofu, Marinated & Broiled Tofu, Tofu Burgers, Tempeh, Tempeh Burgers, Tofu Vegi-Dip [Creamy Dill, Soyannaise, Bleu Cheese, Onion, Creamy Garlic], Corn Cakes [Plain with Bran, Blueberry, Cranberry]; Non-soy products in the "Oriental Cuisine" line include Fresh Noodles, Wonton Skins, Egg Roll Wrappers), Hinode Tofu Co. and Azumaya, Inc. ("The #1 and #2 tofu producers in America").

The only article, whose author is not given, is titled "Soyfoods Pavilion debuts at Natural Foods Expo '84." On the front cover of the insert is a list of members of the Soyfoods Association of America (formed in Feb. 1983) that participated in Natural Foods Expo '84. In addition to the advertisers mentioned above, they include: Farm Foods, Laughing Moon Food Co., Paradise Distributors, Inc., Soyfoods Magazine, Tempeh Works, Inc., and White Wave,

Inc. Address: 526 East 20th St., New York, NY 10009.

4241. Vitasoy (USA) Inc. 1984. Vitasoy invites you to taste the goodness (Ad). *Natural Foods Merchandiser.* Jan. p. 4 (unnumbered) of 12-page color advertising insert. Soyfoods Pavilion '84. Marketing soyfoods in America.
• ***Summary:*** In the middle of this full-page color ad, a photo shows two cartons (8.4 fl. oz / 250 ml) of Vitasoy Natural Soy Drink (in red, yellow, and brown on white), on a wooden table. To their left is a glass of soymilk. Behind them is a jug of maple syrup and two coconuts–one opened to show the white coconut meat. And behind them is a dark green coconut leaf against a black background. In the lower left corner: "Great taste at booth 648" [in the Natural Foods Expo '84 at Anaheim, California].

The text below the photo reads: "We're at booth 648 with two great-tasting, nutritious drinks. They're brand new and we hope you'll stop by to try both.

"To create Coconut Vitasoy we blend real coconut milk and pure maple syrup with soy goodness. Delicious and completely free of cholesterol.

"We sweeten Original Vitasoy with pure maple syrup–just enough to delight your palate. You'd never dream a drink this creamy could be so low in fat."

"Vitasoy is a natural source of vegetable protein. We're sure your customers will like that. They'll find only wholesome ingredients in Vitasoy and, of course, no preservatives.

"Convenient Tetra-Brik packaging keeps our drinks fresh for months even without refrigeration."

"We've been producing soyfoods for over 40 years. Today Vitasoy is number one in soy drink sales worldwide. That's more than 100 million units per year. Our experience has enabled us to create refreshing new drinks for American tastes.

"Coconut Vitasoy. Original Vitasoy. Taste the goodness."

In large letters on the front of each carton is written: "Natural Soy Drink." Above these letters on the coconut flavor is written "Coconut," but the word "Original" does not appear anywhere on the package of the "original" flavor. Thus, the flavor is described in the text of the ad, yet the word "Original" does not appear on the package.

Note: This is the earliest English-language document seen (June 1999) that uses the word "Original" to refer to a soymilk flavor–in this case slightly sweetened, dairylike soymilk. Address: 435A Brannan St., San Francisco, California 94107.

4242. Lindner, Anders. 1984. Re: Contract signed for soymilk plant in Indonesia. Letter to William Shurtleff at Soyfoods Center, Feb. 6. 1 p. Handwritten, with signature on letterhead. Plus 3 p. inserts.
• ***Summary:*** Sri Lanka is next. Then People's Republic of China. He encloses a copy of STS' new soymilk booklet. Address: STS, 1501 Hutchinson House, Central, Hong Kong; 505 Cathay Building, Singapore 0922. Phone: 338-6259.

4243. Daems, Chr. 1984. Re: Alpro's commercial soymilk products. Letter to William Shurtleff at Soyfoods Center, Feb. 7. 1 p. Typed, with signature on letterhead. [1 ref]
• ***Summary:*** Alpro started commercial production of soymilk in 1979 at a plant in Izegem with a capacity of 6,000 liters/hour. Soymilk production in their new plant in Ghent is expected to start in May 1984. They have 3 brands of their own: Soyamel, Alpro, and Provamel. They also sell their soymilk to several companies who use their own brand. The best known are DE-VAU-GE in Germany and Granose Foods in England. They have recently started selling to Health Valley in California under the latter's brand.

They sold a turnkey soymilk plant to a company in Madagascar, which started making soymilk in Jan. 1984. They were attempting to sell compact soymilk plants with capacities of 2,000 to 4,000 liters/hour to other countries. Address: Alpro, Zuidkaai 33, B-8700 Izegem, Belgium.

4244. Blix, Glen. 1984. Re: Update on soymilk and soy-based infant formula in America. Letter to William Shurtleff at Soyfoods Center, Feb. 8. 2 p. Typed, with signature on letterhead.
• ***Summary:*** "It is our feeling that the soy market has not grown appreciatively over the last couple of years due to a reduction in incidence of use among pediatricians. The American Academy of Pediatrics has recommended that soy use be somewhat more restricted than it has been in the past, due to their fears regarding mineral uptake, etc. I would therefore still place the total gallons of infant formula consumed in the United States at approximately 32 million gallons.

"I believe that Ross and Mead Johnson have achieved somewhat more equitable market share, with Ross possibly commanding 46 percent of the total soy formula market, or approximately l5 million gallons, with Mead Johnson some where in the range of 44 percent or 14 million gallons. We believe that Loma Linda, with the Soyalac and i-Soyalac products sells in the range of 7 percent of the market, with Wyeth being in fourth place at the 3 percent level. This would mean that Loma Linda's market share is approximately 2 million gallons, with Wyeth coming in at approximately 1 million gallons of infant formula.

"I believe the same will be true regarding the adult Soyagen formulation, with Loma Linda Foods still retaining at least 60 percent of the total market, with approximately 1 million gallons of product, Worthington Soyamel would make up the balance of 40 percent of the adult beverage sold with approximately 0.7 million gallons.

Regarding your question concerning the percentage of sales to Seventh-Day Adventists, again, the data we have is somewhat sketchy, but I believe that less than 5 percent

of the total baby formula goes into Seventh-Day Adventist households. However, the Soyagen will probably be the reverse of that, with close to 80 to 90 percent of the Soyagen sold being consumed by Seventh-Day Adventists.

"Seventh-Day Adventists would tend to use the soy based beverage primarily due to their interpretation of certain health counsels given by Ellen White, believing that the discontinuance of all dairy products would be advantageous to health. Of course, the standard allergy problems which many adults experience, as well as lactose intolerance which is particularly prevalent among the black and oriental races, are also significant factors." Address: Vice-President of Marketing, Loma Linda Foods, 11503 Pierce St., Riverside, California 92515. Phone: (714) 687-7800.

4245. Margarida, Jose. 1984. Re: Interest in making tofu and soymilk commercially in Puerto Rico. Letter to William Shurtleff at Soyfoods Center, Feb. 8. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "I am very interested in starting a tofu and soymilk facility to serve Puerto Rico, Latin America, and the Caribbean.

"Many of these Caribbean islands represent an ideal showcase to demonstrate the versatility and logic of soyfoods to solve the world hunger problem and the malnutrition-poverty trap. It's an ideal showcase because many of these islands are not dominated by U.S. food industry interests and therefore you don't have to "fight" the powerful meat and dairy lobbies to introduce new alternatives."

He then asks four questions. William Shurtleff replied and sent him a list of 51 names connected with soyfoods and soybeans in the Caribbean. It is not known if he ever started a commercial business / shop. Address: Compostela 1804, College Park, Rio Piedras, Puerto Rico 00921. Phone: (809) 758-4983.

4246. Lo, Yvonne. 1984. Founding and history of Vitasoy (USA) Inc. (Interview). Conducted by William Shurtleff of Soyfoods Center, Feb. 10. 2 p. transcript.
• ***Summary:*** Yvonne had the idea and took the risk. The Soya Bean Products Co., N.A. Inc. was incorporated in Jan. 1979. It was a marketing Co. Yvonne and Irene Lo (her sister) were equal stockholders. She was now an entrepreneur. Their first office was (in Jan. 1979) was on Bush St., then they moved to 185 Berry St., then to 435A Brannan St.

In April 1982 Yvonne and Irene sold their company to the parent company, Hong Kong Soya Bean Products Co., Ltd. (HKSBP, founded by her father, K.S. Lo), when the parent company got serious about the U.S. market. They made good money from the sale, and plan to use it to raise capital and facilitate long-term operations. Yvonne's company is now an affiliate of HKSBP, and she owns none of it.

Yvonne graduated from a Canadian university and worked as a city planner for 6 years in Toronto, Ontario. She decided to drop her professional career to become a soy entrepreneur. She felt she was more suited for business; her heart was in marketing. So in early 1979 she switched careers and professions. She had done nothing with her father's company (HKSBP) before starting her own company.

In the early 1970s, HKSBP started using the dry process for making soymilk; before that it had used the typical wet-grind process. Address: 435A Brannan St., San Francisco, California 94107.

4247. Shurtleff, William; Aoyagi, Akiko. 1984. K.S. Lo and the history of Vitasoy in Hong Kong and North America. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 24 p. Feb. 10. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** A comprehensive history of the subject. Contents: Introduction. The early years (1910-1944): Birth and education (K.S. Lo was born on 2 Feb. 1910), Julian Arnold's speech on soybeans in 1937, 1939 refugee camp in Kowloon, sets up soymilk shop, sees potential, sets up The Hong Kong Soya Bean Products Company (HKSBP) with 4 friends in 1939, hard times, spoilage, work with Dr. Y.T. Chiu, schools accept soymilk, Howard Hoover, HKSBP goes broke 1941, refugee in Free China during Japanese occupation of Hong Kong. Starting over (1944-1959): Sold in milk bottles through soft drink outlets as a noncarbonated beverage, new market of common people, instant success, started adding vitamins 1948, franchise for Greenspot orangeade, new plant in Aberdeen, Hong Kong, first sterilized soymilk allowing long shelf life 1953, breakthrough greatly increased demand, competitors forced change of name from Vitamilk to Vitasoy in 1953, other companies copy soft-drink marketing approach, UNICEF interest, train Indonesian technicians, granted Pepsi-Cola bottling franchise in 1957, sold Vitasoy heated during cold months. The 1960's continuing growth: Five-fold growth from 1955-1960, start of mass promotion, slogan "Vitasoy makes you taller, stronger, and more attractive," Hong Kong's best selling soft drink in 1962, introduction of malt Vitasoy, new Kowloon plant built 1962-1963, 1964 presentation of paper at UNICEF symposium in Tokyo, choice of Monsanto to market Vitasoy world-wide, their lack of food experience a problem, media coverage, multinationals follow Coca Cola's lead and start producing soymilk. The 1970's, diversification and internationalization: Sons' new products fail due to poor marketing, conversion to dry process for making Vitasoy, drop in sales due to inflation and depression, four major decisions, new slogan "Vitasoy is more than just a simple soft drink," introduction of Tetra Brik cartons, diversification into fruit drinks and teas, ending of Pepsi franchise 1977, strong sales rebound after 1975, new Aberdeen plant 1978, addition of carbonated soft drinks

to product line summer of 1978, Lo's retirement 1978, leadership of HKSBP to 2 sons, refugee feeding from 1975 on, diversification into dairying 1979, start of export to world market in 1979, overview of market position, competition, new slogan "Taste the feeling" in 1983, prices and ingredients, China's big potential. Vitasoy in North America: First Asian soymilk imported to North America, The Soya Bean Products Co., N.A. Inc. (SBPC) incorporated in San Francisco, California, by Lo's 2 daughters as marketing company, SBPC sold to HKSBP and renamed Vitasoy USA, Inc. in 1982, 60% sales increase, extensive market research on American attitudes and taste preferences, announcement of American products and soymilk plant in CA. The present and future: Same problems as Kikkoman in expanding into world market, changing future markets. Address: Lafayette, California. Phone: 415-283-2991.

4248. Calvert, Francis E. 1984. Work with Ford and Drackett on soybeans (Interview). Conducted by William Shurtleff of Soyfoods Center, Feb. 19. 3 p. transcript.

• ***Summary:*** Francis (Frank) Calvert was first introduced to soybeans after he went to Detroit. In about 1931, Ford arrived at the Chemical Plant in Greenfield Village (also a lab and a pilot plant), with a 20 pound sack of soybeans. He threw them on the workbench and said, "More people eat these than anything else. There must be something awfully good about them. Why don't you fellows find out what it is." They were already doing research on agricultural wastes and chemurgy, on almost every crop you could think of.

Their first problem was getting soybeans. There were none available. Within the next year or two they planted thousands of acres themselves. Ford plowed up a big field and planted quarter acre plots with different varieties. It was an enormous quantity. Even though they didn't know what to do with them, it was Ford's style. He did nothing small. They raised hundreds of quarter acre plots, testing different varieties.

Dr. Edsel Ruddiman, after whom Edsel Ford was named, was a nutritionist and pharmacologist. He ran the food laboratory and made lots of the foods served in the Ford cafeteria to Ford employees. They were first sold as samples, but didn't sell well because of the flavor. From about 1932-33, the products included soy milk, soy cheeses, and soy ice cream and sherbets. Soynuts were also made in a counter-current fryer in rectangular buckets on a chain. The employees ate most of the products and tourists consumed some. Food was also served from the kitchen at the Wayside Inn in the village. Products were provided as a snack, but most were given as samples, and a few were sold.

Both Atkinson and Calvert, research chemists, reported to Boyer. Calvert left Ford in 1938 and went to Drackett. Boyer and Atkinson left later to do work on soy-based plastics.

ADM bought The Drackett soybean crushing plant in about 1957. Calvert went with ADM for about 5 years, until 1960-61. From 1962-74, he worked for Ralston Purina. In December 1958 Ralston purchased Procter & Gamble's plant in Louisville, Kentucky, and were already somewhat involved with isolates; they began working with foods after 1962.

Ralston went into dietary products and infant formulas in about 1963-64, supplying soy protein isolates to most of the infant formula manufacturers such as Miles and Wyeth Labs. Ralston, Loma Linda and Worthington were the biggest suppliers of infant formula from 1962-74.

Don Walker, Vice President of Ralston Purina, took a strong interest in soy protein. Ralston took the lead primarily because of the strong interest and leadership of Hal Dean, then Chairman of the Board and CEO. Dean was the key motivating force from the early 1960s. He firmly believed in and supported soy protein development.

Ford was the father of the soybean industry in the U.S. He had an impact just through his interest in soybeans. He planted soybeans and promoted and merchandised them in the same way he promoted the industrial barn at the World's Fair in Chicago. Ford set up an extraction plant and actually extracted oil and molded gearshift balls at the Industrial Barn at the Fair. People couldn't believe their eyes! Ford was the single largest soybean grower in the U.S. at that time.

Note: Frank Calvert passed away in about 1986. Address: 1513 Northlin, Kirkwood, Missouri 63122. Phone: 314-822-3187.

4249. United Press International (UPI). 1984. 'McDonald Duck' attack hits China. *Toronto Star* (*Ontario, Canada*). Feb. 20. p. A3.

• ***Summary:*** "China is about to open its first Western-style fast food restaurant, using Donald Duck to lead the hamburger and french fries revolution. Other foods on the menu will be hot dogs, ice cream cones, and box lunches.

The Peking restaurant is named Yi Li Fast Food–Yi Li being the name of Peking's best-known bakery, which will supply the buns. The red neon sign is in English, not Chinese, and all the furniture (tables, chairs in the 60-seat dining area) and atmosphere is Western. Large pictures of American cartoon character Donald Duck are on the walls inside, on the food packaging, and even on the roof.

"For the less adventurous, traditional Chinese snacks of soybean milk, salted duck eggs and long slabs of fried dough sticks will be sold."

4250. *Toyo Shinpo* (*Soyfoods News*). 1984. Soi Haamonii [Soy Harmony is a powdered soymilk]. Feb. 21. [Jap]

• ***Summary:*** Last year, on 1 Aug. 1983 Nihon Harmony KK (a corporation) was established. They are producing powdered soymilk using US soybeans and adding vitamins and methionine. You can add this powder to hamburger, meatballs, or any meat dishes to give them more protein. Or

use it as a drink or dessert. A 450 gm can costs 4,000 yen. Flavors: Prune and Royal.

4251. **Product Name:** Provamel Soya Drink [Without Sugar].
Manufacturer's Name: Alpro.
Manufacturer's Address: Zuidkaai 33, B-8700 Izegem, Belgium.
Date of Introduction: 1984. February.
Wt/Vol., Packaging, Price: 250 ml, 500 ml, 1000 ml.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Food Report (Lehmann). 1984. Aug. Described in leaflets issued to health food stores in the Netherlands. Labels. 1988. No sugar or salt, with sugar and salt. Talk with Ted Nordquist of Aros Sojaprodukter, Sweden. 1988. March 27. "In late 1984 the only soy drink sold in Scandinavia was GranoVita, made for DE-VAU-GE by Alpro in Belgium. When DE-VAU-GE started their own soymilk plant (constructed by STS), Alpro introduced their own soymilk line brand-named Provamel [launched in Dec. 1982]. They marketed it in Scandinavia, competing with GranoVita."

Simon Bailey. 1988. Natural Choice. Aug. 15. A photo shows the Label. "No added sugar. 100% natural. Free of animal fats." CSP form filled out by Simon Bailey. 1988. Sept. 28. Gives date as Feb. 1984. All made with organic soybeans. Adds honey & malt flavor. The importer in England is Vandemoortele (UK) Ltd., Ashley House, 86-94 High St., Hounslow, Middlesex TW3 1NH. Phone: 01-577 2727.

Label sent by Anthony Marrese. 1990. March 22. Green and yellow on white. 1 liter Tetra Brik carton, without addition of sugar. In French, Dutch, Italian, and German. "Organic." Retails for DM 3.85. Imported and distributed by Lucas Meyer s.r.l. Consumer Div., Vigonza (Padova).

4252. **Product Name:** [Soyavit, and Soyalet].
Foreign Name: Soyavit, Soyalet.
Manufacturer's Name: Creation.
Manufacturer's Address: Z.I. Rue de Montréal, Ville la Grand, 74108, France. Phone: 50 38 44 19.
Date of Introduction: 1984. February.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1984. Feb. 7. EMB Creation, B.P. 158, 74102 Annemasse, France. Makes canned soymilk powder.

Ad in DietExpo '89 (Paris) catalog. 1989. Oct. p. 44.

4253. **Product Name:** Granose Soya Dessert (Vanilla, or Chocolate).
Manufacturer's Name: Granose Foods Ltd. (Marketer). Made in Belgium by Alpro.
Manufacturer's Address: Stanborough Park, Watford, Herts., WD2 6JR, England.
Date of Introduction: 1984. February.
New Product–Documentation: Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by DE-VAU-GE, was introduced in 1981 in Vanilla, Chocolate, Strawberry, and Banana flavors. The desserts were made by Alpro in Feb. 1984.

Form filled out by Philippe Vandemoortele of Alpro. 1991. Sept. 4. The desserts were first made for Granose by Alpro in Feb. 1984 in Vanilla and Chocolate flavors.

4254. **Product Name:** Soy Moo (Soymilk) [Plain, or Carob].
Manufacturer's Name: Health Valley Natural Foods (Importer). Made in Ghent, Belgium by NV Vandemoortele, Protein Div.
Manufacturer's Address: 700 Union St., Montebello, CA 90640.
Date of Introduction: 1984. February.
Wt/Vol., Packaging, Price: 16.9 oz Tetra Brik Aseptic carton. Retail: $1.75 for plain or $1.99 for carob.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Food Report (Lehmann). 1984. March. A 16.9 oz aseptic carton. Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 33, 44. "In late 1983 Alpro/Vandemoortele picked their first master distributor in the U.S., Health Valley in Los Angeles, which will appoint the product's actual distributors."

Talk with George Mateljan, founder of Health Valley. 1985. Oct. 20. Soy Moo is made by Alpro/Vandemoortele in Belgium.

Shurtleff & Aoyagi. 1985. Soymilk Industry and Market, Update. "During early 1985 Alpro continued to make a private-label soymilk, brand-named Soy Moo, for Health Valley in Los Angeles. Then in mid-1985 Health Valley switched to having their product made in America, probably from powdered soymilk, packaged in 250 ml and 1 liter Tetra Brik cartons by a contract packer in the western USA."

Golbitz. 1987. Soya Newsletter. March/April. p. 8. After severing ties with Vandemoortele in 1985, Health Valley worked for nearly a year on a new Soy Moo soymilk and re-launched the produced in the fall of 1986.

Soyfoods Center taste test. 1988. Sept. 4. Watery. Brown color. Powdery taste but OK, not bad.

4255. Johnson, Lamar D.; Wilson, L.A. 1984. Influence of soybean variety and the method of processing in tofu manufacturing: Comparison of methods for measuring soluble solids in soymilk. *J. of Food Science* 49(1):202-04. Jan/Feb. [11 ref]
• ***Summary:*** The percentage solids in soymilk was measured using three methods: light scattering, refractive index, and hydrometry. Light scattering was found to be the most accurate.

The soybean varieties Vinton, Amsoy 71 and Weber were hydrated then used to make soymilk by grinding in (A) 20-25ºC water, (B) 100ºC (boiling) water and holding the slurry above 90ºC for 10 minutes, and (C) soaking the soybeans in 45ºC 15% ethanol solution for 12 hours and grinding in 20-25ºC water. Address: Food Technology Dep., Iowa State Univ.

4256. Kadan, R.S.; Ziegler, G.M., Jr. 1984. Effects of ingredients on iron distribution in spray-dried experimental soy beverage. *Cereal Chemistry* 61(1):5-8. Jan/Feb. [19 ref] Address: Southern Regional Research Center, USDA, P.O. Box 19687, New Orleans, Louisiana 70179.

4257. Nagasawa, Taro; Miyakawa, H.; Mizuguchi, K.; Kato, R.; Shimamura, S.; Kuwahara, K.; Kawashima, T.; Okonogi, S. 1984. Tônyû no kanetsu shori ga tôfu no iro, kôdo tokuni hozonsei ni oyobosu eikyô [Effect of heat treatment of soymilk on color, consistency and particularly keeping quality of tofu]. *Nippon Shokuhin Kogyo Gakkaishi* (*J. of the Japanese Society for Food Science and Technology*) 31(2):92-103. [21 ref. Jap; eng]
• ***Summary:*** Tofu made from soymilk thermally processed by the newly-developed HGU method had a better flavor and kept fresh longer than tofu made from typical UHT processed soymilk. By allowing spore-forming microorganisms to germinate before the final heat treatment, the latter can be conducted at 125ºC, rather than the typical 130ºC. Address: 1. Faculty of Agriculture, Tamagawa Univ., 6-1-1 Tamagawagakuen, Machida-shi, Tokyo 194; 2; 2-6,8. Central Research Lab., Morinaga Milk Indsutry Co. Ltd., 4-4-22 Meguro, Meguro-ku, Tokyo 153, Japan.

4258. Shurtleff, William; Aoyagi, Akiko. 1984. Soymilk industry and market: Worldwide and country-by-country analysis. 2 vols. Lafayette, California: Soyfoods Center. Vol. 1, 199 p. Vol. 2, 100 p. Feb. 28 cm. [165 ref]
• ***Summary:*** A comprehensive overview, worldwide, with extensive historical information. The first study of its type, with many statistics, graphs, and tables. Volume 1 is the market study, and Volume 2 is black-and-white copies of soymilk labels and other graphics.

Contents: 1. Introduction. 2. Directory of soymilk manufacturers and related companies worldwide. 3. Definitions and varieties of soymilk. 4. Overview of world soymilk industry and market, and future outlook. 5. United States soymilk industry and market. 6. Japan. 7. Korea. 8. China. 9. Taiwan. 10. Hong Kong. 11. Singapore and Malaysia. 12. Southeast and South Asia: (13. Vietnam. 14. Thailand. 15. Philippines. 16. Indonesia. 17. India. 18. Sri Lanka). 19. Europe (Incl. Plamil Foods in England, Tetra Pak Group in Sweden, Alfa-Laval and John Wilson in Sweden, Danish Turnkey Dairies–DTD and Soya Technology Systems (STS), Alpro / Vandemoortele in Belgium, Nestle, F. de Selliers in Belgium, Dansk Soyakagefabrik in Denmark, Lima Andiran in France, Galactina in Belp, Switzerland, and Semper A.B. in Sweden).

20. Latin America. 21. Africa. 22. History of Vitasoy in Hong Kong. 23. Two modern soymilk manufacturing processes: Marusan and Alfa-Laval. 24. Etymology of the word "soymilk" worldwide. 25. Analysis of ingredients in 49 popular Japanese soymilk products. 26. Bibliography. 27. About the Soyfoods Center. A table on p. 12 gives an overview of world soymilk production in 1983 ranked in descending order of annual per capita consumption. These statistics do not include China (PRC) or soy-based infant formulas, usually made from soy protein isolate. 1. Taiwan, 210 million liters, 11.1 liters / capita, growing at 30% per year. 2. Hong Kong, 39.1 million liters, 7.5 liters / capita, growing at 10% per year. 3. Singapore, 11.2 million liters, 4.7 liters / capita, growing at 15% per year. 4. South Korea, 67.0 million liters, 1.60 liters / capita, growing at 60% per year. 5. Malaysia, 21.4 million liters, 1.53 liters / capita. 6. Japan, 131.8 million liters, 1,10 liters / capita, growing at 101% per year. 7. Thailand, 50.0 million liters, 1.00 liters / capita. 8. USA, 9.6 million liters, 0.04 liters / capita. Total world production: 548.3 million liters.

Page 36 gives an overview of the U.S. market for soy-based infant formulas and adult soymilk. Production of soy-based infant formulas (on a ready to serve basis) in 1983 was as follows: Ross Laboratories made 14,720,000 gallons of Isomil (i). Mead Johnson made 14,080,000 gallons of Prosobee. Loma Linda made 2,240,000 gallons of Soyalac. And Wyeth Labs made 960,000 gallons of Nursoy. Thus 32,000,000 gallons of soy-based infant formula were made in the USA in 1983.

Also in 1983, consumption of soymilk by adults in the USA was as follows: 1,743,000 gallons were made by specialized soymilk manufacturers in the USA (Loma Linda Soyagen 1,000,000 gallons; Worthington Soyamel 670,000 gallons, Miller's Soy (private label) 73,000 gallons). 690,000 gallons were imported (328,000 gallons of Vitasoy by Vitasoy USA, 254,000 gallons of Yeo's by YHS, 50,000 gallons of Edensoy by Eden Foods, 25,000 gallons of President by President, 25,000 gallons of Kibun by Kibun, 8,000 gallons of To-Neu by San-J International). 250,000 gallons were made fresh by tofu companies (45,000 gallons by Mighty Soy, 41,000 gallons by Victor Foods [Scarborough, Ontario, Canada], 39,000 gallons by Quong Hop & Co., 35,000 gallons by Wy Ky, and 90,000 gallons by others).

Yield. 1 ton of raw soybeans yields approximately 4,320 gallons of soymilk. Conversion: 3.785 liters = 1 gallon.

On page 56 is a table of "Large natural food distributors in the US" with the dollar figure being estimated annual sales in millions of dollars."

1. Rainbow Distributing (Denver, Colorado) $13.
2. Arrowhead Mills (Hereford, Texas) $12.

3. Eden Foods (Clinton, Michigan) $10.
4. Rock Island Foods (Ignacio, California) $10.
5. Westbrae Natural Foods (Emeryville, California) $9.
6. Pacific Rim (Seattle, Washington) $7.
7. Cornucopia Natural Foods (Coventry, Rhode Island) $7.

Total estimated sales for the top 7 distributors: $68 million a year.

Note: This book was favorably reviewed by: (1) Andrew C. Peng, Professor, Food Processing and Technology, Dep. of Horticulture, The Ohio State University, Columbus, Ohio, in *Food Technology* Oct. 1984, p. 160. (2) Toyo Shinpo (Soyfoods News, in Japanese). 1984. Aug. 1. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4259. Shurtleff, William; Aoyagi, Akiko. 1984. Brief history of Yeo Hiap Seng Ltd. and the company's work with soymilk worldwide (Document part). In: Shurtleff and Aoyagi. 1984. Soymilk Industry and Market: Worldwide and Country by Country Analysis. Vol. 1. 177 p. See p. 100-02.

• ***Summary:*** "Soymilk entered the modern age in Singapore in 1954, when Yeo Hiap Seng introduced the first commercial bottled soymilk. The company traces its origins to the year 1900 when the patriarch of the Yeo family, Mr. Yang (in the Amoy dialect, his name was pronounced Yeo Keng Lian) purchased a small company named "Hiap Seng" in the city of Chang-chou (Zhang Zhou), Fukien (Fujian) province, China. "Hiap Seng" means "unite to succeed." Yeo Keng Lian changed the company's name to reflect his family's ownership. He worked as a manufacturer and retailer of fermented soybean seasonings: soy sauce (*jiang-you*), Chinese-style miso (*dou-jiang*), and fermented tofu (*furu*). All three products were sold from day one under the "Light House" brand.

Note: This is the earliest English-language document seen (Oct. 2011) that uses the word "furu" to refer to fermented tofu.

By working together, the family did succeed. Their soy sauce, fermented in the traditional Chinese way in wooden vats and earthenware jars, was of superior quality and the business prospered. The original plant was located near the center of Chang-chou. In about 1920 a second plant was established in the eastern part of the city, and in the late 1920s a third plant was set up in the southern part of the city. Each of the three fermented soy products were produced in all three plants; the second and third plants also produced some pickled vegetables.

In 1935, during the Japanese invasion of China, when life was difficult and unsettled in Fukien province, Yeo Keng Lian sent his eldest son, Yeo Thian In, to Singapore to investigate possibilities there. The son founded the Yeo Hiap Seng Sauce Factory at 410 Outram Road, Singapore 3. He was joined shortly by the rest of the family. The company continued to make the same three fermented soy products that it had made since 1900 in China. In 1947 the growing business was moved into larger quarters at 950 Dunearn Road, its present location. The move out of China was a wise one, for in 1949 the three Yeo Hiap Seng plants in Fukien were taken over by the Chinese Communists. By the mid-1940s, Yeo's quality soy sauce was a common sight in Singapore.

In 1950 YHS decided to diversify into canned products, such as chicken curry, fish, and meat. Then in 1954 they launched their first soymilk. Called Beanvit, it was subsequently renamed Yeo's Soybean Drink. A rather sweet soymilk sold like a soft drink in sterilized bottles, it was marketed in both Singapore and Malaysia, where it was the first product of its type. (Vitasoy was first sold like a soft drink in sterilized bottles in Hong Kong in 1953.) In 1955 the company changed its structure to that of a "Limited" (Ltd.) company. In 1958-59 YHS expanded its soft drink line by bottling favorite traditional Chinese beverages, such as chrysanthemum teas and herb teas. In 1962 YHS began its first export sales to Hong Kong. In 1967 YHS soymilk and teas were first sold in UHT (Ultra High Temperature) aseptic Tetra Pak cartons (tetrahedral/pyramid shaped; 285 ml).

"YHS was the world's first company to package soymilk in aseptic Tetra Pak cartons, and the first to use Tetra Pak for any beverage in Singapore. (Vitasoy in Hong Kong did not start using Tetra Pak until 1976). Shortly after introducing sweetened soymilk in the tetrahedral pack, YHS launched enriched Vitabean in the same carton. It was fortified with half of the adult Minimum Daily Requirement of most essential vitamins. Sterilization in bottles would have destroyed most of the added vitamins, but the UHT process did not. In 1974 packaging was changed to Tetra Brik (250 ml), but bottling continued. During the late 1970's YHS changed its soymilk brand name to Yeo's. By 1976 Yeo Hiap Seng's soymilk production had climbed to 50 million bottles and cartons a year, and by 1980 to 75 million (250,000 a day), prompting the company to build a new plant to double its capacity. In 1983 YHS had the biggest share of the Singapore soymilk market (Alan Yeo, personal communication, 1982, 1983).

"Yeo Hiap Seng pioneered soymilk throughout Southeast Asia. In 1959 they opened their first soymilk plant at Kuala Lumpur in Malaysia. By 1984 they had four soymilk plants there at Kuala Lumpur, Jahore Baru, Prai, and Kuching. Malaysia, with its 14 million people, was a bigger market than Singapore, with its 2.4 million people. By 1984 YHS had the lion's share of the Malaysian soymilk market. During the 1970's, YHS started exporting soymilk to Hong Kong (where they got a small share of the market). In 1979 they began exporting canned soymilk to the USA, where they had offices and a warehouse in San Jose, California. In early 1983 they introduced a low-sugar soymilk to the US. Sales, however, were slow. YHS was not interested in the China market, since they thought that

it would be too difficult to get profits out in hard currency. They were franchising their soymilk process and technology in Indonesia, where the product is being marketed under the YHS name. They plan to share in the promotion, too.

Starting in 1974 Yeo Hiap Seng began a new phase of its expansion and diversification by acquiring the Singapore franchises for Pepsi-Cola and Mirinda. These were followed by franchises for Schweppes in 1985 and 7-Up in 1986. In 1985 the company acquired distribution rights for Budweiser beer and in 1987 they branched out into prawn farming.

"The 1981 Annual Report of Yeo Hiap Seng Ltd. shows that this publicly held company was run by Yeo Thian In (Chairman) and Alan Yeo Chee Yeow (Managing Director). From 1977 to 1981, sales of all products grew from $39.5 to $95.8 million and pre-tax profits from $7.1 to $11.5 million. Their Soft Drinks Division, one of the largest in Singapore, Malaysia, and Hong Kong, provided the main thrust of company growth." Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4260. Shurtleff, William; Aoyagi, Akiko. 1984. Brief history of Alpro in Belgium (Document part). In: Shurtleff and Aoyagi. 1984. Soymilk Industry and Market: Worldwide and Country by Country Analysis. Vol. 1. 177 p. See p. 122-23.
• ***Summary:*** "In 1975 Alpro, the Protein Division of the Vandemoortele group started making soymilk; they decided to introduce alternative, vegetable proteins to developing countries. This Group, established in 1879, by the 1980s ranked as one of Europe's largest food processing companies in the fields of edible oils and fats, and protein foods. In 1978 the Group employed over 1,700 people and had annual sales of over $600 million. In 1979 Alpro started commercial production of soymilk at a plant in Izegem with a capacity of 6,000 liters/hour. They also sold a turnkey soymilk plant to Madagascar (it started production in January 1984) and were attempting to sell compact soymilk plants with capacities from 4,000 to 8,000 liters/hour to other countries. In May 1984 Alpro opened a new soymilk plant at Ghent, reputed to be the largest in the world. The 100% natural soymilk is made from whole soybeans, not soy protein isolates, and is sold under three brands: Soyamel, Alpro, and Provamel. Alpro will look to the U.S. and Asia for additional markets for this product, since the European market is small. They plan to focus on areas with protein shortages or lactose intolerance. In October 1983 an Alpro representative visited the USA and lined up Health Valley in Los Angeles as a master distributor. In early 1984 Alpro got distribution on the East Coast of the USA. Alpro sells quite a bit of its soymilk to other European food companies, which sell it under their individual brands. DE-VAU-GE in West Germany and Granose in England, for example, sell plain and carob soymilks (made by Alpro) in 500 ml packs. The main figures behind Alpro are Philip Vandemoortele (Managing Director) and Christian Daems (Marketing Manager)." Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4261. Shurtleff, William; Aoyagi, Akiko. 1984. Brief history of Alfa-Laval's work with soymilk worldwide (Document part). In: Shurtleff and Aoyagi. 1984. Soymilk Industry and Market: Worldwide and Country by Country Analysis. Vol. 1. 177 p. See p. 120-22.
• ***Summary:*** "Alfa-Laval, the world's largest supplier of dairy plants and systems, with some 10,000 employees, celebrated its hundredth anniversary in Sweden in 1983. It was a pioneer in the development of UHT (ultra high temperature) sterilization plants for dairy milk in the early 1960s. Continuous process UHT, guaranteeing milk and juices a shelf life of a month or more without refrigeration, and giving milk a much better flavor than autoclaved sterilized milk, caught on rapidly in Europe and many developing countries. By 1978 UHT milk, which slowly replaced pasteurized and refrigerated milk, had about 40% of the market in Europe. Alfa-Laval made UHT systems based on both direct heating (injection of high pressure steam into the milk flow to bring the temperature up to 135–140ºC) and indirect heating (in a plate heater, to 140ºC for 4 seconds). Alfa-Laval's direct system was called VTIS (Vacu-Therm Instant Sterilizer) and their indirect system, considered the more advanced and economical of the two, was called Steritherm.

"Starting in the early 1960s Alfa-Laval began to sell soymilk system components to soymilk manufacturers in East Asia. The UHT VTIS system was found to work very well, since the vacuum stripped off beany flavors. Alfa installed a VTIS for Yeo Hiap Seng in 1967 and one for Hong Kong Soya Bean Products Co. (makers of Vitasoy) in 1974.

"A key man behind Alfa-Laval's growing interest in soymilk is John Wilson, who got involved with soymilk in 1967, as technical manager for the Cold Storage Group (CSG) in Singapore and Malaysia. His background was in dairy technology. To help CSG launch a soymilk product, he studied traditional tofu processes in Singapore, then mechanized them. He set up CSG's first soymilk line in Petaling Jaya, a suburb of Kuala Lumpur, Malaysia, in 1969, and then another in Singapore later that year.

"In 1971 Wilson joined Alfa-Laval and started developing complete process lines for soymilk, based on a suspended (unfiltered) product made from full-fat enzyme-active soy flour. But only one plant for making suspended soymilk was ever sold (to Africa in 1982). In 1978 soymilk technology R&D was centered under John Wilson in Alfa-Laval, at Lund, Sweden. Systems for making clarified (filtered) soymilk with low bean flavor were developed.

"Alfa-Laval sold complete soymilk lines to Lam Soon (Ace Canning) in Kuala Lumpur, Malaysia (operation started in December 1979) and Kickapoo, in Bangkok, Thailand (from Feb. 1981). By early 1984 they had sold equipment

or entire plants to at least twelve soymilk manufacturers in East Asia, including many of the largest (Hong Kong Soya Bean Product Co., Kibun, Dong Bang, President, Siam Food Prods., etc.).

"In 1981-82 Alfa stepped up its soymilk activities dramatically. It published attractive and informative 10-to-15-page large-format booklets on soymilk and its production in English, Chinese, and French, and began heavy promotion worldwide. Alfa-Laval went after the China market in a big way. They offered to install a soymilk plant in Beijing for the Ministry of Light Industry to use for one year, free of charge on a trial basis. Their 12-page brochure in Chinese on soymilk (*Douru*) was widely circulated. During a 3-month period in 1983 they sent five soymilk delegations to China, and began to set up an office in Hong Kong, run by a China trader with ten years experience, to focus on the China market.

"In late 1982 Alfa-Laval and Kibun (in Japan) formed a powerful alliance by signing an important, interesting, and unorthodox agreement. Alfa-Laval supplied Kibun with some of Kibun's original soymilk equipment, but eventually Kibun had to modify it extensively. Now, when Alfa-Laval finds a new equipment client, they tell the client, according to the agreement, that Kibun is their preferred supplier of the soymilk process. Kibun then signs a separate contract with the client for technical assistance, including product formulation and quality control. This could be a joint venture, a license for Kibun patents and technology, and/or purchase of actual patented equipment made by Kibun's food engineering company. Likewise, when Kibun licenses others to use its process, it often asks Alfa-Laval to supply the plant. There are no kickbacks between Alfa-Laval and Kibun. The arrangement works nicely since Alfa-Laval is strong in plant design, while Kibun is strong in processing technology and formulation. Yet Kibun holds no soymilk patents.

"Alfa-Laval has made a major contribution to soymilk production by being the world's first company to develop and sell an automated soymilk system. Their system is based on their UHT sterilizer, and incorporates an automated clean-in-place cleanup system. By inactivating the soybean enzymes at the bean stage, before grinding, the system produces a good-tasting soymilk. The economical plant size has a capacity of 2,000 liters/hr, with 1,500 liters/hr the economical minimum." Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4262. Shurtleff, William; Aoyagi, Akiko. 1984. Brief history of Soya Technology Systems (STS-DTD) work with soymilk worldwide (Document part). In: Shurtleff and Aoyagi. 1984. Soymilk Industry and Market: Worldwide and Country by Country Analysis. Vol. 1. 177 p. See p. 122.
• ***Summary:*** "In 1982 Danish Turnkey Dairies (DTD), a major competitor of Alfa-Laval in the field of supplying dairy plants and equipment, decided to compete in supplying soymilk plants as well. Founded in 1969 by Jorn Jensen in Denmark, DTD was acquired in about 1979 by DDS, The Danish Sugar Corporation. By 1983 DTD had built 117 dairy plants in 35 countries. In May 1982 DTD established Soya Technology Systems to focus on soymilk technology. STS opened their main office in Singapore under the direction of Anders Lindner, who had previously worked for 15 years with Tetra Pak. STS licenses soymilk technology, and processes. They published a fine booklet on soymilk and sent out 4,500 copies worldwide in January 1983. A new, improved edition was published and widely disseminated in early 1984. STS is active worldwide in promoting soymilk and selling their systems. In early 1984 they sold a 4,000 liter/hour plant in Sri Lanka. The company emphasized the concept of "Turnkey," which is "single source responsibility. You are guaranteed a complete plant at a fixed price on a fixed date, producing exactly what you had in mind." One of the DTD group of companies called IPT (Integrated Processing Technologies) is an engineering and contracting company that works with STS to design and build plants and install equipment." Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4263. Shurtleff, William; Aoyagi, Akiko. 1984. K.S. Lo and the history of Vitasoy in Hong Kong and North America. (Document part I). In: Shurtleff and Aoyagi. 1984. Soymilk Industry and Market: Worldwide and Country by Country Analysis. Vol. 1. 177 p. See p. 130-153.
• ***Summary:*** Starting in the late 1950s a renaissance of interest in soymilk began in East Asia, eventually spreading from its center in Hong Kong to all countries in the area, and from there to other parts of the world. The company that inspired this development was K.S. Lo's Hong Kong Soya Bean Products Co., Ltd. (HKSBP), makers of the world-famous soymilk, Vitasoy. As of 1984, no person alive had done more to further the world's interest in soymilk (or in soyfoods) than K.S. Lo.

Early Years (1910-1944). Lo Kwee Seong was born on 2 February 1910 in Kwangtung, China. At age 10 he went to Malaya with his mother and at age 20 he went to Hong Kong. In 1935 he graduated from the University of Hong Kong with a BA degree in commerce and business. After graduation he joined the company where his father worked and was soon appointed Hong Kong manager of the firm's real estate branch.

The story of Vitasoy begins in the winter of 1937, when K.S. Lo, then 27 years old, happened to be in Shanghai on other business. There he attended a talk entitled "Soya Bean: The Cow of China," presented by the American Julean Arnold, then the commercial attaché to the American Embassy in Nanking, and actively involved in relief work using soymilk. Lo later wrote (1964), "Arnold called the soybean the 'Cow of China' and practically attributed to it the preservation of the Chinese race. He said the fact that

the Chinese as a race were able to maintain their physical fitness for over 5,000 years in a land where meat was so rare was entirely due to the people's inclusion of soybeans in their diet. I was impressed by his talk and came away with soybeans stuck in my mind." Even after Lo returned to Hong Kong, Arnold's message kept returning to him.

Several years later, in 1939, following the Japanese invasion of China, the first wave of Chinese refugees arrived in Hong Kong. A refugee camp was set up in Argyle Street, Kowloon. A small group of volunteers, including Lo, went to see what could be done to help. Most of the refugees were sick or suffering from malnutrition, including beri-beri and pellagra. Seeing this, Lo again recalled Julean Arnold's message of the promise of the soybean. With the group of friends he raised some money and purchased some soybeans and brown sugar, a stone mill, a kettle, and some cheese cloth. The group set up a small soymilk shop right in the camp and taught the refugees how to make soymilk for themselves. Each refugee received one bowlful every morning. Lo later wrote: "The results were quite startling, as many of them showed significant improvement in their health after the first month. This little experiment gave me full confidence in the nutritional value of soy bean milk and I decided to make it available to the masses of people in Hong Kong who could not afford to buy cow's milk" (Lo, personal communication, March 1981).

In 1939 Lo and four of his friends got together and formed The Hong Kong Soya Bean Products Company (HKSBP), with paid-up capital of HK$15,000. (The company name was expanded to The Hong Kong Soya Bean Products Company, Ltd. in March 1940). The original plant and processing equipment, designed by the founders and located at Causeway Bay (on the site where the Plaza Hotel now stands), officially began operations on 7 March 1940. In his inaugural speech, Lo stated that the company's aim was to provide nutritious soymilk for the masses at the lowest possible price–an aim that has not changed over the years. In those days, when nutritional deficiency diseases such as beri-beri and pellagra were still widely prevalent in Hong Kong, this aim was doubly urgent and important. Yet the day after the plant opened, exactly nine bottles of the product, called VITAMILK, were sold. A dozen delivery boys delivered Vitamilk door-to-door each morning. The strongest supporter of the fledgling operation was a Britisher, Dr. Selwyn-Clarke, then director of Medical and Health Services. The only government official aware of the nutritional value of soymilk, he gave orders that all government hospitals should use the new product instead of cow's milk for all third-class patients.

The first few years were filled with problems. Lo wrote in 1964: "We soon found that, even among us Chinese to whom the soybean was by no means new, there was a strong prejudice against soy milk. They not only did not believe its nutritional values, but they also thought it could cause diarrhea, indigestion, and stomach ache. At that stage the taste of our product, too, left much to be desired. Many customers found it hard to take, because of the strong beany flavor and the slightly bitter taste. Another problem we had to face was the keeping quality of the soy milk. We followed the dairy industry by packing it in standard half-pint milk bottles and sealing them with a paper cap and hood. They spoiled even quicker than milk unless they were kept under refrigeration all the time. As they were packed like dairy milk, we had no choice but to market them as a milk substitute. It was not until years later that we found it was a mistake to adopt such a marketing approach. For among the Chinese community, giving milk to children was considered to be a Western luxury, which only the very rich could afford. And of course to the rich, cost was no problem."

Sales continued to be slow, only 300-400 bottles a day. During the summer, sometimes as many bottles spoiled as were sold. Something had to be done. Lo began working with Dr. Y.T. Chiu, who had a written his PhD thesis at Cornell University in 1927 on methods for improving soymilk and its production, and in 1929 had published an article on the subject in China. Their goal was to get locals schools to start using Vitamilk. Speeches on soymilk and nutrition by Chiu were followed by tasting sessions conducted by Lo at the schools. The idea worked. In fact it was a major breakthrough, and today schools remain the company's single most important customer. After the first year, distribution was extended from Hong Kong Island onto the Kowloon peninsula on the mainland. There a combination soymilk cafe and distribution depot was set up. The spot proved popular with students and young people.

In the spring of 1941, Howard Hoover, who had started and run a small Seventh-day Adventist soy dairy in Canton (Guangzhou), had left that city after it fell to the Japanese. While waiting to return to the US he worked with Lo for 6 months. He taught Lo how to homogenize coconut oil into the soymilk to give it a richer flavor then helped to install the company's first Cherry Burrell homogenizer.

By mid-1941 sales of Vitamilk had risen to 1,000 bottles a day. But that was far below the break-even point, and by December 1941, when World War II broke out, the company went broke. Lo, abandoned by his partners, had sunk HK$30,000 of his own money into the venture.

Sixteen days later Hong Kong surrendered to the Japanese. Four months after the occupation Lo left for Free China (the part of China not occupied by Japanese), taking with him his family of four children. They finally settled down as refugees in a small town called Linshan on the border between Kwantung and Kwansi, west of Canton. Here again the soybean provided Lo with a livelihood and probably saved the family's life. Lo put up a makeshift building and called it The Cafe. After buying a stone mill, he started to make soymilk and home-made cakes, and thus made a living until World War II was over. Their fifth child,

Irene, was born during this hard time. Lo's wife had no breast milk to feed her since she had not nursed the other children. Irene was thus raised on soymilk which, the family felt, saved her life. Continued. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4264. Shurtleff, William; Aoyagi, Akiko. 1984. K.S. Lo and the history of Vitasoy in Hong Kong and North America. (Continued–Document part II). In: Shurtleff and Aoyagi. 1984. Soymilk Industry and Market: Worldwide and Country by Country Analysis. Vol. 1. 177 p. See p. 130-153.
• ***Summary:*** Continued. Starting Over (1944-1959). The British Navy returned to Hong Kong on 31 August 1944, after the Japanese surrender. Lo returned 2 weeks later and quickly got back his plant from the Custodian of Enemy Properties. He was glad to find that the Japanese had left most of his equipment intact. He borrowed HK$50,000 from a friend and by November 1945 Vitamilk was back on the market. At this time, everything was scarce in Hong Kong and only one company had resumed production of soft drinks. Lo seized the opportunity to sell his soymilk, still in milk-type bottles with paper cap and hood, through soft drink outlets instead of delivering it to households. Now he presented it to the typical man on the street as a noncarbonated beverage rather than as a morning milk substitute. In the "small people in the street," Lo wrote in 1964, "I found my best friends and customers, who have remained the backbone of my business even to this day. Our sales increased so rapidly thereafter that our only problems were how to step up production and enlarge the areas of distribution."

In about 1948 Lo first started adding vitamins to his soymilk. He was probably the first person in the world to do this. Although it was sold somewhat like a soft drink, Vitamilk aimed at replacing the empty calories of conventional soft drinks with protein and essential nutrients.

In 1949, having paid off his loan in less than a year, Lo bought a piece of land in Aberdeen, Hong Kong, and started to build a new plant. However before it was finished Lo had been chosen to be the Hong Kong franchise for Greenspot, a large California-based manufacturer of orange concentrate. When the Aberdeen factory opened in 1950 it was Greenspot orangeade that was made there. Vitamilk stayed in the old factory at Causeway Bay, because Lo could not afford to move it.

For years Lo had dreamed of being able to sell his soymilk in soft-drink type bottles, sterilized to give a shelf life of 6 months without refrigeration–just like the Greenspot they were now bottling. But there were extra problems involved in bottling soymilk this way. Experts with whom Lo consulted said that it probably could not be done without the use of a preservative, but that if anyone figured out how to do it without preservatives, they would become rich. Lo decided to accept the challenge. He hired a man with a US degree in dairy science and asked him to try to sterilize soymilk in Greenspot capped glass bottles. After repeated failures, explosions, and injuries, the project was a success. The two men were overjoyed, for they realized that now, at last, soymilk could be marketed exactly like soft drinks without the handicaps of the milk bottle and short shelf life.

In about 1953 Vitamilk first came on the market in soft-drink bottles, sealed with a metal crown cap and sterilized to allow it to keep for months. Now the soymilk operation was moved into the new plant at Aberdeen and the soymilk was distributed on the same truck as Greenspot. Retailers who previously could order only a dozen bottles at a time for lack of refrigeration space, could now take up to a dozen cases. A major marketing barrier had been broken. Vitasoy had been remade, and was the first beverage of its kind in the world. With this new approach, Lo discovered a new market that has continued to remain the backbone of his business. The change of product concept and distribution channel brought immediate success, and sales began to increase dramatically. For many years thereafter Lo's biggest problem was how to produce enough soymilk to keep up with the growing demand, as sales would sometimes double or triple in one year. By 1958 a million cases (24 million bottles) a year were being sold.

This fast expansion attracted the attention of many, both in and outside of Hong Kong. In Hong Kong the success of Vitamilk aroused the envy and jealousy of companies making competing beverages. They formed a lobby to get the Urban Council to forbid Lo from using the word "milk" in his product name. In 1953, after some wrangling, a compromise was reached whereby Lo was allowed to retain the Chinese characters in his registered trademark if he changed the English name of his product from VITAMILK to VITASOY. The characters were *Wai-ta Nai; Wai-ta* means "vitality" in Chinese, and also forms a part of the Chinese word for "vitamin," *wai-ta ming. Nai* means "milk," such as cow's milk. Lo was not the first person in the world to use the term Vitasoy. It had been used as early as 1936 in the USA as the name for a "soybean milk powder" by Soya Health Products in New York, and as early as 1948 as the name for "vitamin and enriched infant and vegetarian food" made with soy flour by Soya Foods Ltd. in England.

Soon after Vitasoy caught on in Hong Kong, other companies began to jump on the bandwagon, following Lo's basic marketing concepts. In about 1948 in Manila, Soya Lac, launched as a milk substitute in 1941, was reintroduced as a healthful soft drink. In 1954 Yeo Hiap Seng, a big Chinese food manufacturer in Singapore, launched its first soymilk. Called BEANVIT (later renamed Yeo's Soybean Drink) it was sold as a soft drink in sterilized bottles, the first product of its type in Singapore and Malaysia. (In 1967 Yeo Hiap Seng's soymilk became the first in the world to be sold in Tetra Pak, the new tetrahedronal aseptic and disposable cartons, requiring no refrigeration.) In 1958

Green Spot in Thailand started making soymilk, followed in 1959 by Saniku Foods in Tokyo. The pioneers of what would eventually become East Asia's soymilk boom were starting to grow, drawing their inspiration from Vitasoy in Hong Kong.

Outside of Hong Kong, Vitasoy had begun to catch the attention of people in the United Nations, especially those in UNICEF and FAO. Representatives of these organizations, when passing through Hong Kong, often wanted to visit Lo's plant. Thus, in the late 1950s, when UNICEF decided to assist Indonesia in setting up a soymilk plant, four Indonesian technicians were sent for 3 months work and training at Lo's factory.

In 1957 HKSBP was granted the Pepsi-Cola bottling franchise for Hong Kong, which they kept until 1976. Although they did not make any profit on the franchise during all those years, they did manage to learn from the Pepsi people a good deal about marketing, which they employed to advantage in marketing their own products.

In about 1959 Lo set out to find a way to make Vitasoy popular year-round. In Hong Kong 80% of all soft drinks were sold during the 6 warm months, and only 20% from November to April. That year Lo developed a heater that would heat up to four cases (96 bottles) of Vitasoy at a time, and keep them hot (145ºF) during the chilly weather. The idea caught on and retail store owners loved it, for it helped their beverage sales during the typically slack cold months. Customers loved it too, for Vitasoy was the only soft drink available that one could enjoy piping hot to take away the winter's chill. With the help of the winter heaters and the introduction of chocolate-flavored Vitasoy (also in 1959), sales again shot upwards. And throughout the 6 cold months they now stayed at 50% of peak summer sales. Continued. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4265. Shurtleff, William; Aoyagi, Akiko. 1984. K.S. Lo and the history of Vitasoy in Hong Kong and North America. (Continued–Document part III). In: Shurtleff and Aoyagi. 1984. Soymilk Industry and Market: Worldwide and Country by Country Analysis. Vol. 1. 177 p. See p. 130-153.

• ***Summary:*** Continued. The 1960s, Continuing Growth. During the period from 1955 to 1960 sales of Vitasoy grew 5-fold, from 8.4 million bottles in 1955 to 42 million in 1960. This represented a remarkable compound rate of 38% a year, the highest rate in the company's history up to the present. The time had come to launch a new phase of the business: mass promotion.

In the early 1960s, with sales skyrocketing, Lo set out to take full marketing advantage of the breakthroughs he had made in packaging, distribution, and market domination. He launched a major, modern advertising campaign. The slogan (used until 1975), emphasizing health and nutrition, introduced a much wider public to Vitasoy and its new name. It proclaimed: "Vitasoy makes you taller, stronger, and more attractive."

During the 1960s, sales increased 2.4-fold, climbing to 60 million bottles a year in 1962, then to 67 million in 1965 and 100.8 million in 1970, for a very healthy compound growth rate of 9.2% a year during the decade. By 1962 Vitasoy had become Hong Kong's best-selling soft drink, ahead of such internationally known brands as Coca-Cola, Pepsi-Cola, and Seven-Up (Lo 1964). In 1964 Vitasoy retailed for less than one-third the price of cow's milk in Hong Kong. In the mid-1960s Malt Vitasoy was introduced and soon became very popular. By 1968 Vitasoy had captured an impressive 24% of the highly competitive Hong Kong soft drink market. Here, indeed, was a soybean Cinderella success story.

In 1961 Vitasoy, which had met no competition from brand-named soymilks since its origin, suddenly had its first real rival. Fung Lik Nai, meaning "milk filled with energy and power," was launched that year, only to disappear after one season. Again Vitasoy shared the market only with tiny street-side makers of traditional soymilk.

In 1962-63 HKSBP built a new plant in Kowloon, doubling the production capacity of the old plant in Hong Kong. By the first year it was operating at 90% of capacity. The plant had the most modern, mechanized equipment, including a continuous automatic sterilizer for the sealed bottles.

In 1964 Lo was invited to present a paper on his experience in promoting Vitasoy at the International Symposium on Oilseed Protein Foods organized by UNICEF in Tokyo. The paper was hailed for its description of the commercial marketing of a protein-rich soft drink. It was published in the May 1964 issue of *Soybean Digest.* Because of Vitasoy's proven success, the United States was now willing to grant outright financial aid to any American company willing to introduce protein-enriched soft drinks in any Latin American country. UNICEF was also willing to give financial and technical aid to companies interested in starting similar projects in developing countries in Asia or Africa. Right after the Tokyo conference Lo was approached by more than half a dozen multinational companies, who wanted to franchise Lo's Vitasoy process on a worldwide basis. Lo finally chose to go with Monsanto, a chemical company based in St. Louis, Missouri. Monsanto wanted to diversify into food processing, using Vitasoy as the key catalyst for its new department. Most of the other companies were already heavily into food processing and Vitasoy would be just another item for them. Monsanto and Lo set up a Hong Kong subsidiary, Lomond Ltd., of which Lo owned one-fifth of the stock and got royalties on sales.

The choice of Monsanto, however, proved to be a serious mistake, for they had no experience in developing and marketing a new food. Instead of going out and finding interested bottlers, they spent 3 years on fruitless research,

hoping to develop a concentrate (based on soy protein isolates and containing more than 100 flavor ingredients, including vanilla, orange, and cinnamon) with an improved flavor that they could sell to prospective bottlers like Coca-Cola's secret formula. In August 1968 Monsanto announced that it planned to bottle and market a soymilk soft drink in Guyana, South America, with plans for eventual expansion to other Latin American and Asian markets (*Soybean Digest,* Aug. 1968; *TIME* 1968). The new isolate-based drink, called Puma, containing about 2.5% protein, was launched in 1969. It had a strong banana flavor. In the early years about 29 million bottles were sold annually, all through retail outlets. Yet from Lo's point of view, the Puma project had only limited success. In 1969, when the heavy chemical industry turned sour, Monsanto, itself in larger trouble, stopped putting new money and energy into the project, and they soon sold the entire operation to the local bottler (who was still making Puma in 1976; Aguilera and Lusas 1981). This whole debacle was Lo's biggest setback to date. He had had a world market at his fingertips and lost it. After this apparent failure he was never able to renegotiate with other multinationals. Once again, he would be forced to start all over using an entirely new approach–but that would have to wait until the late 1970s (Lo 1982).

One of Lo's greatest admirers was Dr. Harry Miller, who had pioneered soymilk production in Shanghai in 1936. He and Lo had first met in Hong Kong after World War II. Miller visited the Vitasoy plant. Lo remembers him as "quite business minded and interesting in getting people to use his soymilk manufacturing process, on which he would collect a small royalty." Miller wrote two articles about Vitasoy in the *Soybean Digest* in June 1948 and May 1965. Miller, who was one of the first to see the great potential of soymilk for China, was apparently delighted that Lo had been able to so successfully manifest this potential. In the 1965 article he spoke of Lo's "genius and leadership" and how some 40 large delivery trucks distributed Vitasoy to hospitals and schools. It retailed from street vendors for slightly more than 3 cents (US) per 7-ounce bottle.

"By the late 1960s the international media began to take notice of Vitasoy's meteoric rise to popularity. In 1968 *Time* magazine ran an article stating that "Vitasoy has become the new soft-drink craze of the British Crown Colony. A 6.5 oz. bottle costs 3.5 cents, compared with 4.8 cents for the same sized bottle of Coca-Cola. Vitasoy has captured 25% of the Hong Kong soft-drink market. This year an estimated 78 million bottles, second only to Coca-Cola's 100 million, will be sold from sidewalk stands, sampans and grocery stores for a total of $2,600,000." In about 1974 a major East Asian business magazine did a long story on Lo, his company, and Vitasoy.

As soon as Lo had proved the potential of soymilk, the giant Coca-Cola Company got interested. In 1966 they started a Protein Beverage Project within the company and in 1968 introduced their first soymilk, Saci, in Brazil. Coke was smart enough to join the trend rather than fight it. Eventually other huge multinational corporations, including Mitsubishi in Japan and Nestle in Europe (in the late 1970s) followed Vitasoy's lead, further sparking the soymilk renaissance. Continued. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4266. Shurtleff, William; Aoyagi, Akiko. 1984. K.S. Lo and the history of Vitasoy in Hong Kong and North America. (Continued–Document part IV). In: Shurtleff and Aoyagi. 1984. Soymilk Industry and Market: Worldwide and Country by Country Analysis. Vol. 1. 177 p. See p. 130-153.
• ***Summary:*** Continued. The 1970s, Diversification and Internationalization. The early 1970s were filled with problems for Hong Kong Soya Bean Products Co., Ltd. During the 1960s Lo had sent his three sons abroad for higher education in fields where the company business needed more professional expertise. Eugene got a degree in biochemistry, Frank in dairy science, and Winston in food technology. A number of patents were granted to the company during the 1970s (Lo 1971; Lundstedt and Lo 1973). As each son returned, he was assigned a project to work on. Eugene developed a soy-based infant weaning food, Frank a soymilk-based blue cheese, and Winston a process for packaging precooked Chinese TV dinners. Each of the three sons was successful in developing his product and the company launched them in the early 1970s, in what was thought would be a great leap forward in diversification. Unfortunately, the marketing plans for each product failed and the entire venture ended up as a great flop. Lo later wrote, "The expensive lesson learned is never to leap before you learn to run." HKSBP returned to its specialty, beverages and Vitasoy.

One positive outcome of research at this period was that in the early 1970s Vitasoy started to be made by the "dry process," rather than the former "wet grind" process. Additional research found ways to recover in the milk 90% of the protein originally in the soybeans. The whole soybeans were subject to optimum conditions of dry heat and pressure, then dehulled and milled to a flour. The flour was soaked in hot water then boiled in a continuous cooker. The milk was extracted in a continuous centrifuge, then formulated, and bottled. The final product contained 2% protein (Shurtleff and Aoyagi 1979).

From 1973 on a series of crises struck. The combination of skyrocketing prices for energy (after the OPEC price hike), soybeans (after the US soybean embargo), and sugar essentially tripled Vitasoy production costs. The price of a bottle of Vitasoy, which had stayed at 20 cents (HK) during the 1950s and 1960s had to be increased sharply in 1974. A recession hit at the same time and sales plunged from 100.8 million bottles in 1970 to a low of 80.4 million in 1975. Something had to be done. During 1975-77 Lo made four

major decisions: to give Vitasoy a new image that would allow it to compete head to head with soft drinks, to package Vitasoy in Tetra Brik cartons, to introduce a new line of products based on fruit juices and Chinese teas in Tetra Brik cartons, and to drop the franchise agreement with Pepsi-Cola.

To revive slumping sales and reflect the spirit of the mid-1970s, Vitasoy needed a new image, which would let it compete with soft drinks. The new slogan, replacing the long-popular nutritional one, proclaimed: "Vitasoy is more than just a simple soft drink."

Vitasoy's first UHT (ultra high temperature) Tetra Brik packaging line began operation in 1976 and the new concept proved to be a great success. Thereafter Vitasoy was sold in both Tetra Brik cartons and glass bottles in sweetened plain and malt flavors. The advantages of the Tetra Brik containers were that they required no refrigeration, they were disposable (unlike bottles which had to be recycled and washed before use), they had a modern fashionable image, they allowed more colorful and vivid package design, they were lighter and more compact to ship, and they were safer, being unable to break or to harbor the potentially dangerous substances sometimes found in returned bottles. Their one big disadvantage was their high cost, which at one time was calculated to be 45% of total production costs of a unit of Vitasoy. Hence the company was forced to sell a package of Tetra Brik Vitasoy for 20-25% more than a bottle of the same volume. (Actually bottling would be more expensive if two new systems were compared.)

Later in 1976, on seeing the popularity of the new Tetra Brik carton, the company decided to diversify by marketing a new line of juice drinks, containing at least 50% natural fruit juices plus water and flavors. An initial line of four flavors was selected: orange, mango, guava, and kalamansi. Sold in 250-ml Tetra Brik cartons and brand-named Vita, these captured 30% of the Hong Kong juice market within 2 years. Then three more items were added to the line: Chrysanthemum Tea, Sugar Cane Juice, and Lemon Tea. A black currant juice and lemon and herbal teas were added later. All the new juice drinks and teas became extremely popular from the moment of introduction.

The decision to terminate the Pepsi-Cola franchise in 1977 marked the close of an era. HKSBP had made almost no money on the franchise, but had learned a great deal about marketing beverages. They were now in a position to take full advantage of this valuable knowledge.

The result of these four bold decisions (combined with some larger market factors) was dramatic. Sales of Vitasoy rebounded sharply after 1975, reaching 129.6 million bottles and packs in 1980, for a respectable compound annual growth rate of 10% during those last 5 years. Despite the discontinuance of the Pepsi franchise, sales of the juices and teas added further to the rapid increase in the company's total sales.

In 1978 a new plant in Aberdeen (41 Heung Yip Rd.) was completed and equipped with the most modern soft drink equipment. The company's head offices were also located there. In the summer of 1978 Vita carbonated soft drinks were added to HKSBP's product line. The four flavors were Cola, Orange, Cream Soda, and Root Beer. The company that had started out to provide an alternative to the empty calories of soft drinks was now selling them under the new philosophy that customers should be given what they wanted, even if these beverages were (as the company acknowledged) "harmful to health."

Also in 1978 the company's founder, K.S. Lo, retired from the post of Managing Director, while retaining the position of Chairman of the Board of Directors. In addition to his pioneering business work, he also had a long and distinguished career of public service in Hong Kong and was a respected collector and student of Chinese ceramics. He handed the leadership of HKSBP over to his two sons, Winston and Frank. Winston soon became Executive Chairman and Managing Director. K.S. Lo had founded his business on a basic faith in the soybean and confidence in his efforts to make it a success. For 38 years he had been the leading pioneer of soymilk in East Asia, and had played a key role in giving the soybean and soymilk a new, very positive, and modern image in the land of their birth.

Following the end of the Vietnam war in 1975 and the subsequent conflicts and famines in Cambodia and other nearby countries, refugees streamed into Hong Kong. Once again Vitasoy returned to play its original role. Working with the Red Cross, the United Nations, and Church groups, the company provided multi-vitamin fortified Vitasoy at half the regular price to refugees in Hong Kong and Cambodia. Letters from refugee workers testified that Vitasoy helped cure nutritional deficiency diseases and was especially important in improving the health of children under the age of 5, old people over 65, and pregnant women.

In 1979 the company decided to diversify again, this time into dairy farming. They entered into a joint venture with the People's Republic of China via the provincial government of Guangdong (Kwantung) to expand and modernize the Kwong Ming Dairy Farm in Shum Chun, 60 km across the border from Hong Kong. They helped to enlarge the herd of dairy cows and took full responsibility for marketing all of the dairy's products, initially in Hong Kong. By 1981 they were selling 15 tons of fresh cow's milk daily in Hong Kong under the Vita brand, using Vitasoy distribution channels. Higher living standards in Hong Kong had stimulated demand for cow's milk. The company saw Vitasoy and cow's milk as complementing one another rather than competing, allowing the business to cater to all economic sectors of the population. Yet the venture had significance far beyond the area of marketing milk. It was a first step into a potentially huge new market, China, where Vitasoy might once again be called on to play its original

role as a stylish source of high-quality, low-cost protein for the masses–1,000 million strong!

In 1979 a major new phase in the history of HKSBP began, as it started to export products, packed in Tetra Brik, to countries throughout the world. The ambition of making Vitasoy an international drink was being rekindled almost 15 years after the joint venture with Monsanto had fizzled. This time HKSBP, much larger and wiser than before, would take on the task itself. The key factor that now made exports viable was the use of Tetra Brik packaging. Exporting a bottled soymilk, then having to either recycle the bottles back to Hong Kong or discard them overseas, was simply too costly. Moreover there was a rapid rise of interest in soymilk in Western countries, primarily from Asian immigrants, but increasingly from those interested in natural foods or alternatives to dairy products. By the early 1980s exports were going to over 20 countries, both developed and developing. By 1983 exports of all HKSBP products (including Vitasoy) were growing at 35-40% a year, with a large portion going to the newly opened Singapore and Malaysia markets, and to North America, as described below.

HKSBP continued to explore the possibilities of making and/or marketing soymilk overseas with multinational corporations. For example, it had lengthy negotiations in 1980 with the Coca-Cola Co. concerning a joint venture for test marketing various flavors of soymilk in Thailand. Interestingly, the deal fell through over failure to reach an agreement regarding nondisclosure of HKSBP's technical know-how. Continued. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4267. Shurtleff, William; Aoyagi, Akiko. 1984. K.S. Lo and the history of Vitasoy in Hong Kong and North America. (Continued–Document part V). In: Shurtleff and Aoyagi. 1984. Soymilk Industry and Market: Worldwide and Country by Country Analysis. Vol. 1. 177 p. See p. 130-153.

• ***Summary:*** Continued. An overview of HKSBP's market position in the early 1980s showed the following. By 1980 sales (by number of cartons or bottles) of the many and varied non-soy Vita products had passed sales of Vitasoy. Sales of Vitasoy were growing steadily, from 130 million Tetra Brik cartons and bottles (converted to 250-ml equivalents) in 1980 to 150 million in 1983, for a 5% compound annual growth rate in a mature market. In 1983 all products made by HKSBP's accounted for 35% of the Hong Kong Beverage market, second only to the Swire/Coca-Cola Company's products with 42%. Vitasoy, which had had no competition from brand-named soymilks since 1961, suddenly had to worry about competitors again. Nestle's Bonus (launched in 1978), President's soymilk (launched in 1980), and Coca-Cola's Hi-C soymilk (launched June 1982) took away some of Vitasoy's market monopoly. Yet in 1983, according to Hong Kong Beverage Association statistics, Vitasoy had a commanding 96% of the fast-paced Hong Kong soymilk market, versus only 4% for Hi-C. Bonus and President had insignificant shares. Hong Kong had the world's second highest per capita consumption of soymilk (after Taiwan), about 8.2 liters a year. In 1983 Vitasoy was given a new slogan which proclaimed: "Taste the Feeling."

In 1980-81 Vitasoy prices in Hong Kong dollars were as follows: Bottles, 60 cents for 7 oz. and 80 cents for 10 oz. of plain Vitasoy and 80 cents for 8 oz. of malted Vitasoy; Tetra Brik (250 ml or 8.45 oz.), 90 cents for plain and $1.00 for malted. Ingredients in the plain (sweetened) Vitasoy sold in Hong Kong were water, soybean solids, soy oil, cane sugar (5.5%), and salt, plus vitamins A, B-1, B-2, and niacinimide. The exported Vitasoy contained no added vitamins. A typical 250-ml carton of Vitasoy for export contained 100 calories, 16 grams (6.1%) carbohydrates, 5 grams (2.0%) protein, and 3 grams (1.1%) soy oil. In 1981 the company had sold more Vitasoy in bottles than in Tetra Pack, but sales of the latter had increased by 50% a year since 1978. In 1983 sales in Tetra Pak led bottles 6 to 4.

For HKSBP China represented the great untapped market of the future, but also the great unknown. In 1983 HKSBP made two small but important new moves into China, building on experience from the Kwong Ming Dairy Farm. First, the company began to export Vitasoy to China's new Special Economic Zones. And second, they worked with the Chinese on a venture in Shanghai called Jing Jiang United Food Processing Co. Ltd. Initially HKSBP worked as a technical consultant on the project, but negotiations were underway for a joint venture. In August 1983 the plant's first product, Vita orange drink, was produced for a national sports meet. It is hoped that soymilk, perhaps called Vitasoy, will be the company's next product.

Vitasoy in North America. Vitasoy was the first Asian soymilk to be imported to North America. This venture was pioneered by K.S. Lo's two entrepreneurial daughters, Yvonne and Irene. Yvonne, who actually ran the operation, had graduated from a Canadian university then worked for 6 years as a city planner in Toronto, before realizing that her heart was really in business and marketing. In January 1979 Yvonne and Irene incorporated The Soya Bean Products Co., N.A. Inc. (SBPC) as a marketing company for HKSBP's products in North America. They opened headquarters that month on Bush Street in San Francisco, then began immediately to market and distribute plain and malted Vitasoy in Canada, in 8.4-oz. (250-ml) Tetra Brik cartons. In February 1981 they introduced the same products to the USA, immediately after the FDA lifted its ban on Tetra Pak (because of a disproven concern over hydrogen peroxide residues from sterilization). By 1982 some 3.2 million cartons of Vitasoy a year were being sold in the US and Canada.

The venture was so successful that in April 1982, to raise capital and facilitate long-term operations with Hong Kong, Yvonne and Irene sold their company to HKSBP,

which renamed the US affiliate Vitasoy USA, Inc. The parent company now took a serious interest in the US market. In 1983 sales of Vitasoy increased to 5 million cartons, up a whopping 60% from the previous year. The 1983 figure equaled 328,125 gallons or 1.24 million liters. An estimated 90% of this soymilk was sold to the Oriental market; of this, 80% was sold to Chinese, and the rest to Vietnamese, Filipinos, and other ethnic groups. Roughly 45% of all Vitasoy was sold in the three western coastal states. Vitasoy distributed its own products in the San Francisco Bay Area (the single area of greatest sales), northern California, Oregon, and Washington. Other companies, appointed by Vitasoy, sold the product in southern California, and elsewhere in the US and Canada, in 10 market areas designated as having a high concentration of Oriental Americans.

In 1983 Vitasoy was by far America's leading imported soymilk, accounting for just under 50% of total soymilk imports. Heady with success, Vitasoy USA announced in late 1983 that it would launch two American-style products in March 1984 at the big natural foods trade show in Anaheim, California. These would be called Vitasoy Original and Vitasoy Coconut. Each would bear the subtitle: "Natural Soy Drink, Sweetened with Maple Syrup." They would be marketed to the natural and health food trades as a healthful and nutritious beverage, under the slogan "Taste the Goodness." Marketing to mainstream consumers was also planned. Prices in the two markets were expected to be $0.65 and $0.55 respectively (maple syrup was a major part of the product cost), as compared with $0.35 for Vitasoy with a higher water content, sweetened with sugar, sold in the Asian-American market.

In developing these products Vitasoy USA did extensive and thorough, original research on American attitudes to and taste preferences for soymilk. Working with American marketing and product development professionals, they ran "focus group" and "intercept" studies. In September 1982 Yvonne Lo and Hilton Tsui issued a 59-page in-house report titled Market Study of Soymilk Beverage, packed with original information, plus an overview of the US beverage industry and a marketing plan.

Most important, the company announced in late 1983 (after an unsuccessful attempt to acquire majority ownership of the New England Soy Dairy) that it had purchased land in Brisbane, California (just south of San Francisco) and had signed a contract to build a large soymilk plant there. This plant, scheduled to open in 1985, would clearly introduce a new stage in the history of soymilk in America, for HKSBP would be the first major Asian soymilk manufacturer to start a plant in the West.

The Present and Future. The year 1984 saw the Hong Kong Soya Bean Products Co., Ltd. as the world's third largest manufacturer of soymilk (after Kibun in Japan and Chung's Food in Korea), and one of the largest exporters. The tiny size of the Hong Kong market (only 5.2 million people, compared with 120 million in Japan and 42 million in Korea) had been a major factor limiting the company's growth. But now HKSBP was poised on the edge of an era of great potential growth in a world market. The challenges of internationalization, diversification, public versus family ownership, exports versus local manufacture, marketing Asian products in the West, company name changes with diversification, etc. all bear striking resemblance to those faced by Kikkoman, as discussed in Chapter 79 of our book *History of Soybeans and Soyfoods.* We expect that HKSBP, though much smaller than Kikkoman, will follow many of the same patterns; hopefully it will be as successful as Kikkoman has been.

The relatively small Hong Kong market will play a smaller and smaller role in the company's future. The greatest potential for growth may well lie in China. Efforts to introduce Vitasoy into school lunch programs in Third World countries and to help such countries make better use of domestic soybeans for human nutrition could bear great fruit in countries such as Mexico, India, Argentina, Brazil, Paraguay, and Indonesia. In these areas, domestic joint-venture plants probably hold greater promise than imports, since they help rather than hurt foreign exchange balances. Note: Three updates:

1990 Aug. 3–Vitasoy acquires Nasoya Foods (Leominster, Massachusetts).

1990 Sept. 24–Company name changed to Vitasoy International Holdings from Hong Kong Soya Bean Products Co. Ltd.

1993 May 27–Vitasoy acquires Azumaya Inc. (South San Francisco, California). Azumaya (Originally Azumaya Tofu Seizo-sho) had been making tofu in San Francisco since at least 1930. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4268. Shurtleff, William; Aoyagi, Akiko. 1984. Large natural and health food distributors in the United States (Document part). In: Shurtleff and Aoyagi. 1984. Soymilk Industry and Market: Worldwide and Country by Country Analysis. Vol. 1. 177 p. See p. 56-57.

• ***Summary:*** These two tables (see next page) were compiled from various reliable sources: (1) Natural food distributors. (2) Health food distributors. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4269. Shurtleff, William; Aoyagi, Akiko. 1984. Japan: Soymilk industry and market (Document part). In: Shurtleff and Aoyagi. 1984. Soymilk Industry and Market: Worldwide and Country by Country Analysis. Vol. 1. 177 p. See p. 63-81.

• ***Summary:*** Historical. Soymilk was not a part of the traditional diet in Japan, as it was in China. Cow's milk, which entered Japan in about 1000 A.D., likewise, never

Company Name	City and State	Estimated Annual Sales ($ Million)
1. Rainbow Distributing	Denver, CO	13
2. Arrowhead Mills	Hereford, TX	12
3. Eden Foods	Clinton, MI	10
4. Rock Island Foods	Ignacio, CA	10
5. Westbrae Natural Foods	Emeryville, CA	9
6. Pacific Rim	Seattle, WA	7
7. Cornucopia Natural Foods	Coventry, RI	7
	Total for top seven.....	68

Company Name	City and State		Estimated Annual Sales ($ Million)
1. General Nutrition Corp.	Pittsburg, PA		450
2. Balanced Foods Group			148
Balanced Foods, Hdqtrs	North Bergen, NJ	($40)	
Akin Southwest Dist	Tulsa, OK	($38)	
Akin Dist of Florida	Jacksonville, FL	($30)	
Midwest Natural Foods	Ann Arbor, MI	($20)	
Northwest Dietetics	Kent, WA	($20)	
3. Tree of Life Group			74
Tree of Life, Hdqtrs	St Augustine, FL	($55)	
Health Foods Inc.	Chicago, IL	($19)	
4. Kahan & Lessin (K&L)	Compton, CA		44
5. Nature's Best	Torrance, CA		24
6. Landstrom Co.	South San Francisco		22
7. Stow Mills	Brattleboro, VT		21
8. Collegedale Distributors	Collegedale, TN		12
	Total for top eight...		795

1959 Saniku Foods

1962 Nihon Tanpaku Kogyo

1969 Luppy Tanpaku*

1972 Ishihara Food Center

1973 House Luppy*

1974 Tokyo Soymeal*, Kenbi-sha, Okazaki Marusan/Marusan Ai

1976 Asahi Shokuhin, Soken-sha, Kyushu Milk Co.

1977 Kibun, Natural Foods

1979 Mitsubishi Foods

1980 Chiba Seisen Shokuhin Kogyo

1981 Yakult, Nagano Tomato, Meiji Milk Co., Morinaga Milk Co.

1982 Seven-Up Inryo, Meito Milk Co., Zenno, Takeda Yakuhin

1983 Yuki-jirushi Milk Co, Tamura Kasei. There are rumors that Kikkoman and Ajinomoto may start soon.

Market Size and Growth Rate: The following statistics show the increase in size of the Japanese soymilk market:

Year	Production (Metric Tons)	Ex-Factory Value (Million Yen)	Ex-Factory Value (Million US$)	Raw Soybeans Used (Metric Tons)
1975			2.9	
1976			4.2	
1977			5.6	
1978	4,000		7.7	
1979	8,000		9.6	
1980	10,000	3,000	13.8	
1981	17,280	6,000	25.0	3,000
1982	68,245	13,000	61.2	9,039
1983	131,750 est	25,000 est	108.2	17,500 est

Source: Japan Soymilk Assoc., Norin Suisan-sho, and Kanji Tsuchiya, 1983-84.

Leading Soymilk Manufacturers and their Market Share. All major soymilk companies can be divided into three types: (1) Medium sized food companies making soymilk as one of various products (Marusan, Kibun), (2) Huge dairy companies (Meiji, Morinaga, Yuki-jirushi), and (3) Soft drink and beer companies (Kirin, etc.).

Toyo Shimpo (21 July 1982) gave the market shares of major soymilk manufacturers as follows. Inexplicably, the total comes to 110.1%

1. Kibun Foods 41.7%
2. Okazaki Marusan..... 23.3%
3. Mitsubishi Kasei..... 10.0%
4. Saniku Foods 8.0%
5. Kyushu Milk Co. 6.0%
6. Meiji Milk Co. 5.8%
7. Kenbi-sha 2.5%
8. Asahi Shokuhin 2.5%
9. Soken-sha 1.3%
10. Natural Foods 1.3%

Others 7.7%

These figures can be misleading, however. In mid-1983 Kibun, Marusan, and Mitsubishi all had the same installed capacity for soymilk production. One top industry analyst claimed that Marusan's actual production was larger than Kibun's, but that much of Marusan's soymilk was sold in bulk to other companies (Sakura Shokuhin, Dai Tonyu-gyo, Nagano Tomato, and 2-3 others), who repackaged and sold it under their own brands, or used it in breads, etc. After Marusan in total (including bulk) production were Kibun,

became a part of the basic diet. Reference to soymilk (then called *toju* or "bean liquid") may have appeared as early as the 1100s, but the first clear reference was not published until 1895, when Inouye did one of the world's first nutritional analyses of soymilk, and compared it to cow's milk. In 1906 Katayama wrote two articles on soymilk; in one he described preparation of a fermented soymilk cheese, similar to Swiss cheese. Yet both Inouye and Katayama wrote in English. In 1924 Sato Yoshitane wrote a book called *Daizu Kakko,* which is said to contain the earliest known reference to the word soymilk (*tônyu*), written with the present characters.

From this time on (and perhaps from an earlier date) some Japanese (an estimated 1% of the population) would order fresh soymilk from their local tofu shop, usually for health-related reasons, as in diabetic diets or for mothers who had difficulties with breast feeding, or because it was thought or found to be a health-giving beverage.

The earliest known commercial production of soymilk in Japan dates back to the influence of Dr. Harry Miller. In 1957 two Japanese Seventh-day Adventists, following his inspiration, started making soymilk in Hachioji, Tokyo, and selling it locally in 180 ml cartons. In 1958 Dr. Miller set up a small soymilk plant in the kitchen of the Adventist Tokyo Sanitarium. It was used to make soymilk, soy whipping cream, soymilk ice cream, and soy spread, which were served to the staff and patients. In 1959 a small soymilk plant was established in the Seventh-day Adventist Saniku School. From this year, Japan's oldest existing soymilk company, Saniku Foods, traces its origin.

A chronology of the starting date of Japanese soymilk companies is as follows. Only three, each followed by an asterisk, are no longer in business:

During the period from 1973 to 1976 soymilk started to become quite popular in Japan, largely because of developments in processing technology that made it possible to produce soymilk with a bland (non-beany) flavor, and because of promotion by the new soymilk companies. In 1974 Japan's first major book on soymilk was published. By 1976 the Japanese were making the best soymilk in the world–by Western standards.

A new era began in 1976 when Kyushu Milk Co., a long-established, middle sized dairy milk company, started making soymilk. Tremendous momentum was added to this new direction in April l979, when Meiji Milk Co., Japan's second largest milk company also started to sell soymilk (made by Marusan but with the Meiji brand). Meiji first began to make their own soymilk in their own plant in March 1981. That same month Morinaga Milk Co. was licensed by Mitsubishi to distribute their soymilk. Quickly thereafter each of the other major Japanese milk companies (Meito, Yuki-jirushi) followed suit, joining the wave of the future rather than fighting it. Their analysis was that fundamentally soymilk and cow's milk were complementary rather than competing products, and that making soymilk would allow a company to expand its market size by reaching people who did not ordinarily drink cow's milk. In retrospect, this analysis has proven to be correct.

What has since often been called "The Soymilk Boom" really started in Japan in about 1981-82. The main reasons for this were:

1. A growing interest among Japanese in good health and nutrition, through improved diet. A corollary of this was the concept that the elite should be especially healthy, both to improve their own performance and well being, and to set an example for others. The American health, natural foods, soyfoods, and vegetarian movements all had a significant influence on Japanese attitudes toward good health.

2. Improved soymilk quality/flavor, and a growing number of varieties and flavors.

3. Popularization of packaging (such as Tetra Brik aseptic cartons) that would give the soymilk a long shelf life, allowing nationwide distribution from one large soymilk plant.

4. Strong interest and support by the media/mass communications followed, after 1981, by extensive advertising and promotion on TV (especially by Kibun and Marusan), in the print media, and with in-store demos by soymilk companies.

5. The aggressive marketing of soymilk by all of Japan's major milk companies.

6. The establishment of Japanese Agricultural Standards (JAS) for soymilk in May 1981.

7. Large numbers of tofu shops starting selling fresh soymilk (containing its natural "beany" flavor), starting in about mid-1982.

8. Large manufacturers and distributors of beverages and related food products started to buy soymilk in bulk from manufacturers, then to market and distribute it under their own labels. Examples: Kirin Beer, Kagome (a large ketchup maker), Suntory, etc.

From 1978 to 1983 the soymilk market in Japan, on average, more than doubled each year, making it the fast growing food market in Japan! Many new brands started appearing in 1982 and there was a big jump in production. Soymilk was the star and darling of the media and it played a major role in enhancing the image and sales of all soyfoods in Japan.

Market Size and Growth Rate: The following statistics show the increase in size of the Japanese soymilk market: Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4270. Slough, David. 1984. Milk of human ingenuity and entrepreneurial skill. *Asian Business* 20(2):21-23. Feb. Cover story. See also related article on page 27.
• ***Summary:*** Discusses Hong Kong Soya Bean Products Co. Ltd.'s new connections with China. "The privately owned mini-transnational beverage maker's first product, Vitasoy,

was made from China-sourced soyabeans and its latest product, milk, comes from the dairy farm it established in Guangdong province. The author repeatedly gives the company's name as "Vita."

In 1982 the company had an authorized and paid-up capital of HK$210 million, 70% of which was owned by the Lo family, with the rest privately disposed among more distant relatives and friends. Turnover that year was HK$244 million, and the profits are estimated at 15-20% of turnover. A fair market value for the company is estimated at about HK$750 million.

"Those figures demonstrate quite remarkable growth for a traditional Chinese family-run company formed in 1940 with an initial capital of only HK$18,000. In its first year of operation turnover based on a single product operation was less than HK$90,000. It had 20 employees then and operated in rented premises. Despite a close-down during the Japanese occupation and a financially disastrous entry in the early 1970s into the fast food business, the company enjoyed steady growth to the mid-1970s and impressive growth thereafter."

"In Hong Kong, Vita owns assets valued at HK$220 million, it operates two plants with a combined floor area of 38,000 square meters, and has a labour force of 950. Production of beverages is running in excess of 12 million 24-unit cases per year. It supplies something like 30% of the local soft drinks market."

But now the company is diversifying into dairy milk. In China, Vita has a 5-year compensation trade agreement with the Guangdong Province Guangming Overseas Chinese farm where 1,200 people and 3,500 milch cows produce 8,000 tonnes of fresh milk a year. That agreement cost the company HK$22.7 in borrowed investment capital. Vita has used that milk to capture 60% of the Hong Kong milk market. Vita looks all set to monopolize the Hong Kong fresh milk market by late 1987. "Under that agreement, Vita provided the livestock, technological know-how, equipment, managerial expertise and market for the product of 4 dairy farms and a centralised milk processing facility."

The dairy farm isn't Vita's only investment in China. In late 1983 Winston Lo signed a US$5 million joint venture agreement to establish a vegetable processing facility in Guangdong province. It will pack and chill up to 20 tonnes of green leaf vegetables a day, for sale in Hong Kong.

"Vitasoy was the company's sole product–ignoring a venture into fast foods–until 1976. Turnover rose from HK$87,000 in 1941 to HK$3.3 million by 1955, HK$12.6 million by 1965 and HK$40.2 million by 1975. In 1975, while founder K.S. Lo was still at the helm, Vita installed the first Tetra-brik packaging line in Hong Kong and launched the UHT version of Vitasoy. The time, the product and the packaging were right. Sales took off. Under Winston Lo, Vita then decided to branch out into the packaging of juices. It started with orange, mango, guava and kalamansi and captured 30% of the fruit juice market in just 2 years. Chrysanthemum tea, lemon tea, herbal tea, lime juice and cane juice soon followed. Other lines and carbonated drinks (orange, cola, cream soda and root beer) were added to give Vita a product for every sector of the soft drink market. Vita products are now exported."

"Vita now purchases at least 50% of its soyabeans from Canada and the USA–despite the fact that soya beans from those countries have been developed for oil extraction rather than protein extraction (the latter is the case with Chinese soyabeans) and therefore give a lower protein yield. There are no plans for a public flotation of shares in Vita. Founder K.S. Lo is still wielding considerable power as chairman of the board of directors. Day to day management is in the hands of managing director Winston Lo and deputy managing director Frank Lo."

4271. Slough, David. 1984. Like father, like son. *Asian Business* 20(2):27. Feb. Cover story. See also related article on pages 21-23.

• ***Summary:*** This is an interview with Winston Lo of Hong Kong Soya Bean Products Co. Ltd., whose photo is on the magazine's cover. "Winston Lo, 42 years old, became managing director of the family owned Hong Kong Soya Bean Products Co. Ltd. in 1976 when his father, K.S. Lo–current chairman and entrepreneurial founder of the company–retired from that position. In 1967, Winston Lo–the fifth born son–graduated from New York's Cornell University with a masters degree in food science and technology. He immediately joined his father's company and was eventually appointed director of research and development and later general manager. He introduced aseptic Tetra-brik packaging for the company's then sole product–a soyabean protein drink marketed as Vitasoy–and a range of new drinks: teas, juices and, more recently, fresh cows' milk and milk drinks. Since he has been at the helm, the company's turnover and profits have increased at least seven-fold."

When Vitasoy was launched by K.S. Lo in 1940, it was "virtually the only alternative available to people who, like most southern Chinese, found cow's milk both unpalatable and indigestible. By the time other manufacturers got in on the act we had a 25% share of the Hong Kong soft drinks market. We had also started to diversify into other beverages and were beginning to export. Then as Hong Kong people developed a taste for milk–the result of modern bottle feeding practices, the fast food boom and overseas education or work for large numbers of Hong Kong Chinese–we got into large scale production and marketing of milk."

Questioned about some of the company's projects which were "much less than successful," Lo responded, "You must be referring to our premature and quickly aborted entry into fast food production and marketing back in the early 1970s. We started to produce pre-cooked Chinese dishes,

infant weaning food and a 'cheese' from soyabean milk. The Hong Kong population wasn't ready for them and we lacked experience outside our then one-product operation. But we learned a lot from that failure. We haven't repeated it."

The company diversified into fruit juices in 1976. It is now also diversifying geographically in terms of assets and revenue producing activities, perhaps in anticipation or fear of China's inevitable resumption of sovereignty over Hong Kong. Lo notes that "We intend to have a third of our eggs in the Hong Kong basket, a third in the China basket and the rest spread around the world before the end of the decade."

4272. *Soyanews* (*Sri Lanka*). 1984. Consumer guide: Tofu, soya mash and soya milk. 6(6):6, 8. Feb. [1 ref]
• ***Summary:*** These three soya foods "are being produced by Sri Lanka's only tofu shop at 123 Kitulwatta Gardens off Elvitigala Mawatha, Borella, Colombo 8." In this full page article the name "Soya House" is never mentioned. A photo shows a man carrying bottles of sterilised soyamilk in a metal rack. On the white wall next to him is a large sign that reads: "Soya House Specials. Soya Milk (substitute for coconut milk). Soya bean curd [tofu]. Soya mash [okara]." On the right side of the sign is a large cartoon illustration of a smiling soya bean with a collar and necktie. To the left of the bean we read: "I come from Soya House: Better known for quality."

Note: It appears that the name of Sri Lanka's only tofu shop is "Soya House." But why does the article not make this clear?

4273. Wyeth Laboratories. 1984. Cow's milk intolerance. Wysoy (Ad). *Human Nutrition: Applied Nutrition* (*London*) 38A(1):Facing title page. Feb. [1 ref]
• ***Summary:*** Wyeth Laboratories makes Wysoy, "a nutritionally complete infant soy formula:–milk protein free, lactose free. Wysoy is widely used in hospitals and is available as powder and ready-to-feed. Wysoy can also be used by older children and adults." A photo shows a can of Wysoy powder, and Wysoy soy protein baby formula. Address: Huntercombe Lane South Maidenhead, Berks. SL6 0PH.

4274. Lo, K.S. 1984. Re: Vitasoy production, market share, and history. Letter to William Shurtleff at Soyfoods Center, March 2. 3 p. Typed, without signature on letterhead.
• ***Summary:*** Market shares by company of the Hong Kong soymilk market, according to the latest survey figures, are Vitasoy 94.7%, Hi-C (Coca-Cola Co.) 5%, and Yeo's (Yeo Hiap Seng) 0.3%. Bonus is out of the market altogether.

There have been many competitors in the Hong Kong soymilk market throughout the years. The first was A.S. Watson's "Wood-lit-nai" which was launched in about 1955. It was withdrawn a couple of years later. Now there are only two other brands on the market.

Sales (in 250 ml unit equivalents) for the past 3 years are 1981 = 5,600,000, 1982 = 5,800,000, and 1983 = 5,700,000.

Negotiations for a soymilk joint venture with China in Shanghai never took off. They were unable to find a way of remitting Vitasoy's share of earnings in foreign currency. Address: Chairman, Hong Kong Soya Bean Products Co., Ltd., 41 Heung Yip Rd. Aberdeen, Hong Kong. Phone: 5-528211.

4275. Lindner, Anders. 1984. Re: Soymilk and Soya Technology Systems (STS). Letter to William Shurtleff at Soyfoods Center, March 9–in reply to inquiry. 2 p. Typed, with signature on letterhead. Plus 3 p. inserts.
• ***Summary:*** Answers questions about Alfa-Laval, Marusan and Seikensha, Dawn soymilk made by Malaysia Dairy Industries, Green Spot (Thailand) owned by Mr. C.C. Cheung, packaging variables, Yeo Hiap Seng.

Attachments: (1) Photocopies of business cards for Thio Kong Poon of Malaysia Dairy Industries Pvt. Ltd. of Singapore. (2) Thio Keng Poon of Malaysia Milk Sdn. Bhd. (Malaysia; Vitagen brand). (3) C.C. Cheung of Green Spot (Thailand) Ltd. (Green Spot, Vitamilk, and F&N brands). (4) Information about three soyabean milk manufacturers in Thailand: Green Spot (Vitamilk brand), Kickapoo (Lactasoy), United Milk Co. (Bonus), plus product sizes and prices. Address: STS, 1501 Hutchinson House, Central, Hong Kong; 505 Cathay Building, Singapore 0922. Phone: 338-6259.

4276. Sterner, Mark H. 1984. More on work with Meals for Millions Foundation, 1966-1973 (Interview). Conducted by William Shurtleff of Soyfoods Center, March 13. 2 p. typed transcript.
• ***Summary:*** A major change in Meals for Millions took place on 14 Sept. 1964 when Florence Rose was replaced by Jerry Miller as executive director. In about 1965 the new officers at MFM began to lay plans for a new building. Clifford Clinton provided moral support from the wings. Funds for the Santa Monica building came from Morris Asimow, PhD (who was president of MFM at the time) and Jerry Miller; they co-signed a note with a Santa Monica bank, which was later converted to a mortgage. The mortgage was paid off over the years by contributions to MFM during Sterner's period there. There were no land grants. Construction started in 1965 and MFM moved into the new building in April 1966. They wanted a building of their own located outside of Los Angeles where they could have a pilot plant and offices.

In India, the original MPF-type food was developed at Mysore based on peanut meal and Bengal gram. It was later manufactured by Gopi Agarwal and his brothers in J.B. Protein Food Industries. They had a peanut pressing operation in northeast India. They started making it in about 1965 and called it Multi-Purpose Food; it did not contain

soy. MFM, instead of sending MPF from the United States, sent money to India to help pay for distribution.

Bob Nave and SPRA of the Methodist Mission, sometime after that, put in a soy extrusion operation. At a later date, just before Mark left MFM, there was an effort with Nave to produce second generation foods. Nave's mission had received MPF from the USA then bought it from the Agarwals. Then Nave got an extruder and started to make a similar product. So MPF sparked Nave's interest; eventually he went into second generation foods. Also, someone in the south of India made a little MPF using peanut meal, but no soy. Lots of peanuts were available, but aflatoxins were a problem.

MFM was more involved in image building than in truth; it was a big problem in the early days. Everyone wanted to embellish the story to help raise funds. For example, the early newsletters said that one meal of MPF cost only 3 cents. No! That was the cost to manufacture it in Los Angeles, not the cost when it arrived for a hungry person in Europe.

Adine Laugh was a promotion person, employed by MFM to promote the organization. When Mark arrived he worked a lot to bring truth back into the picture. Clifford Clinton was a very dedicated man, but there were several years in about 1963-64 when he was alienated from MFM. He got involved with a chiropractic doctor or healer [Dr. Omar Fareed] who sort of mesmerized him. That doctor was flamboyant and lived in Beverly Hills. He threatened to take over MFM but the board would not allow it. Clinton resigned, but soon returned. After Clifford Clinton died, his wife and son were on the board.

The original MPF was based on uncooked soy grits, but early on it became available in both soy flour and soy grit form. This lasted until the 1970s, whereafter it was based entirely on toasted soy grits. Note: General Mills, Inc. began to make Multi-Purpose Food in Dec. 1959; it was based on toasted soy grits.

Mark visited the United Rescue Mission (URM) in Taiwan; they helped care for refugees from mainland China. They may well have received MPF.

In 1966 Mark was hired by MFM (not as new program head) to develop the protein food technologies that would use indigenous third world ingredients and to develop a technology transfer curriculum. That led to a more professional reputation for MFM. Mark worked in that position from 1966 to 1972, when he went to Korea. During that time, Jerry Miller was executive director, followed by Irvin Saunders, a retired colonel, followed by Mark.

In about 1973 USAID in Washington, DC, began to give MFM $1.3 million a year. Some of this money was earmarked for building a workshop, and for enlarging labs and classroom facilities and the program itself.

This month the Korean MFM project [based on extrusion cooking] is being turned over to a Korean MFM foundation to be funded by Koreans for work in Korea. When Mark was director of technology transfer, soymilk equipment was donated by Sam Tubin. A Chinese banker in Los Angeles wanted to set up a soymilk plant there. In 1967-68 he set it up to make soymilk to be bottled in soda pop bottles. He never got it off the ground, although he had all the equipment–which lay around unused for a year or so. Sam Tubin bought the equipment to produce a beverage from fish meal using the Viobin process for making fish meal. That didn't work out, so Sam donated the equipment, worth $250,000 to MFM.

While Mark was in Korea he made connections with the Sam Young Co., a large manufacturer or ramen (instant noodles). They wanted to start making soymilk, so Mark installed MFM's soymilk equipment at their plant outside Seoul and they paid MFM for it in installments in Korean money. Using that money, MFM set up a program in Korea with an in-country director. And they set up an extruder and project in Wanju funded by payments from the soymilk plant.

The soymilk plant began operating in about 1973. They did it in a big way, made 5,000 bottles a day, and soon expanded the plant. Mark thinks the soymilk product was named Super-D; it came in plain (sweetened) and chocolate flavors. MFM's Korean project became self-supporting when one province took on the program to provide infant and weaning foods, as well as commercial foods that were sold. On 20 March 1984 (in about a week) the project will be officially turned over to the Koreans. MFM has been putting a little money into the project. The extrusion project is also very alive. Now the provincial government is trying to persuade other provincial governments to build their own LEC (low cost extrusion cooker) plants.

Starting in about 1966, at the Santa Monica center they used to demonstrate all the state of the art methods of making soymilk including hot grind, whole raw bean, using soy protein isolates, etc. Mark does not know if any of that work took hold and was applied anywhere. It was all pretty academic. The tuition of most students was paid by MFM or by a commercial company.

MPF was an important, pioneering idea and food. History is partly the result of huge, impersonal forces, and partly the work of particular remarkable men and women, who are often pioneers. They have a vision and an idea and are willing to take a risk and to work hard to manifest that idea.

A good historian should be able to trace great movements and ideas back to the men and women whose ideas and vision started them, and then to give them life and to give them credit for what they have seen and done. Clifford Clinton was clearly one such man. Address: Former director, Meals for Millions Foundation.

4277. Robert-Stolow, Johanne B. 1984. Ingredient listing for tofu ["Soymilk" acceptable term for use in Canada].

Manufactured Foods Div., Consumer Products Branch, Hull, Quebec, Canada. 1 p. March 21. Unpublished manuscript.
• ***Summary:*** "To: Regional Managers Attention: Regional Food Specialists in Halifax, Toronto, Winnipeg, Vancouver.

"Subject: Ingredient listing for TOFU. At a recent meeting with Agriculture Canada, it was agreed that the term, 'soymilk' would be the acceptable designation for the aqueous extract of soybeans used in the manufacturing of TOFU. This decision was based on a review of the research literature where the term 'soymilk' has been in use for 60 years or more. It can therefore be argued, as in the case of cocoanut milk, that the common name 'soymilk' is well established within this particular trade, thus barring any objection from the dairy industry.

"'Soymilk' is obtained via the following process... (A flowchart is given). The soymilk is then processed further to produce the TOFU.

"Please be advised that we will be recommending the use of this name and of its French equivalent "jus de soya" (MAPAQ) for labelling. For the sake of uniformity, we would appreciate your doing likewise. We thank you in advance for your cooperation in this matter."

Note: Victor Food Products of Toronto petitioned the government to legalize use of the word "soymilk" in labeling tofu. There followed a lengthy and expensive court battle; on April 27 Victor Food Products finally prevailed. The court ruled that "soymilk" is the "common and ordinary term" for the product, used since 1918 in scientific articles and commerce. Thus it cannot be squelched by dairy interests. Address: Manufactured Food Div., Consumer Products Branch, Government of Canada, Hull, Quebec.

4278. Hesseltine, C.W. 1984. Re: Research on natto. Interest in letters of Frank N. Meyer concerning fermented foods and soybeans. Letter to William Shurtleff at Soyfoods Center, March 22. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "It will be some time before we get a review of natto published since our emphasis just now is to do as much laboratory work as possible. Our interest currently is a study of the genetic stability of *Bacillus natto* which, under many conditions, runs down rapidly. Secondly, we are looking at whether *B. natto* is a separate species from *B. subtilis.*

"Your comments on the letters of the USDA Plant Explorer, Frank N. Meyer, are especially interesting. Where can I see the letters that deal with fermented foods or even soybeans? Next summer I am preparing a lecture on the involvement of USDA in soybean fermented products. I knew there was a man by the name of Meyer associated with soybean exploration, but I was not aware of his description of any soybean foods. I would like to mention these letters since the first scientific paper from USDA was a paper by Church on angkak [red fermented rice] in 1920.

"Thank you also for the information on soy milk and your proposed terminology and standard for tofu. This should be circulated to people in the industry to get their reaction and suggestions as to whether they can live with the standards." Address: Chief, Fermentation Lab., USDA/NRRL, Peoria, Illinois.

4279. Storup, Bernard. 1984. Re: New developments at Société Soy. Letter to William Shurtleff at Soyfoods Center, March 22. 3 p. Typed, with signature on letterhead (photocopy). [Eng]
• ***Summary:*** "A brief history of Société Soy: Oct. 1981–Sept. 1982. Search for a place to settle near Paris, choose and install equipment. The company's first commercial production began in June 1982.

"Oct. 1982–May 1983. Production of tofu (firm for the natural food market and soft for the Japanese community–30,000 Japanese living in Paris); distribution by our own means in Paris only.

"From May 1983. Nationwide distribution of firm tofu–vacuum packed, 24 day shelf-life–and tofuburgers (called 'Croque Tofou') by Paris based distributors (actually, from Rungis, which is the biggest market of its kind in the world, and a key point for fresh products for western Europe).

"We carry 5 types of burgers (see labels), with 26 day shelf-life (we could put 2 months, according to a strict microbiological survey we ran, but prefer to shorten it in order to have a more regular rotation).

"This week have begun a nationwide advertising promotion for 'tonic burgers' (in Paris subway, on the national radio); it is run by a fast food chain that wants to promote a more dietetic way of eating. We make the burgers.

"We should double our production within the next 6 months; We don't really have time to develop new products, at least for this year.

"We are presently making 2,500 kg/week of tofu, including 1,400 kg/week of burgers; one year ago we were making 1,000 kg/week.

"Some news from Europe: Several types of soymilk have recently been put on the market: Lima Soya Drink, Sojal, and Soyo.

"I think the biggest tofu manufacturer in Europe is Vanka-Kawat in Rijswijk, Holland. They sell about 30,000 pieces of tofu (250 gm and 450 gm) per week, mostly for the Asian (Indonesian) community. They also make sprouts and tempeh. They have an automatic plant with only European equipment; there is no way to visit it.

"The French dairy lobby (France is the world's leader in cheese consumption) has recently clearly defined its new priorities: fight by all means against all kinds of substitutes for dairy products–above all soymilk." Address: Société Soy, Plateau de l'Ardennais, 91590 Cerny, France. Phone: (6) 457 52 01.

4280. Vansickle, Janice. 1984. Bean worth weight in gold. *Windsor Star* (*Essex County, Ontario, Canada*). March 26. p.

B1-B2.
• ***Summary:*** Soybeans are now Essex County's major field crop and the third largest cash crop in Ontario province (with a value of more than $203 million in 1982), but few people know what happens to the golden nuggets after they leave the farm. Most of the soybeans are crushed in Canada to make soybean oil and meal. Last week the Ontario Soya-Bean Growers' Marketing Board held a symposium in Toronto titled "Ontario soybeans–A journey into the next century." Sheldon Hauck, vice-president of the Soy Protein Council in the USA and one of the speakers estimated that soy protein is an ingredient in over 2,500 readily available grocery store items. Contains a nice history of the soybean in Canada. Ontario now exports soybeans to 20 countries, "including major shipments to Japan, which buys only top quality soybeans and turns them into soyamilk, soyaflour, tofu, miso–a soyapaste for soup–and natto–a fermented soybean used as an appetizer." Speaker after speaker confirmed a bright future for soybean exports. Moreover, all supermarkets in Windsor now carry tofu, a soya curd. Soy oil is found in margarine and cooking oils. Soy protein appears in soya sauce, simulated bacon bits, and infant formulas. The H.J. Heinz Company in Leamington has been working with the marketing board to develop a line of processed soybean products for the retail market.

Ontario's three soybean crushing plants are experiencing hard times, in part due to competition from canola oil (which enjoys subsidized freight rates); they are operating at 62% of capacity and could be forced to shut down. Photos show: A pair of cupped hands holding soybeans. Peter Epp, chairman of the Ontario Soybean Growers Marketing Board.

Note: This is the earliest English-language document seen (March 2009) that uses the term "soyapaste" to refer to miso. Address: Star agriculture reporter.

4281. Bhatnagar, P.S. 1984. Soybean in India–Retrospective and perspective. *Tropical Agriculture Research Series* No. 17. p. 11-22. March. International Symposium on Soybean in the Tropics and Subtropics. [22 ref]
• ***Summary:*** Contents: Introduction. Soybean in India. A fallacy. Soybean development. Research in India. Seed production. Production technology. Microbiology. Plant protection. Product development, utilization and production economics. Constraints to rapid expansion of soybean.

Table 1 shows imports of soybeans and soy oil to India from 1970-71 to 1979-80. Imports of soybeans were zero or insignificant except for 516 tons in 1978-79. Imports of soy oil fluctuated widely, from 78,956 tons in 1970-71, to only 3,509 tons in 1975-76, reaching a peak of 350,617 tons in 1978-79. Address: Project Coordinator, All-India Coordinated Research Project on Soybean, ICAR, G.B. Pant Univ. of Agriculture and Technology, Pantnagar 263145, U.P., India.

4282. Caty, Thérèse. 1984. Dossier: Le soja [Dossier on soyfoods in France]. *France Dietetique.* Feb/March. p. 24-31. [Fre]
• ***Summary:*** This extremely interesting article gives an introduction to the various soyfoods, then list all known soyfoods products sold in France, complete with the brand, product name, ingredients, nutritional composition, weight or volume, and packaging. The last half of the paper is a French translation of a paper titled "The American boom in traditional soy products," presented by Richard Leviton on 11 Oct. 1983 at a conference in Parma, Italy.

The following products, manufacturers/marketers (and brands) are listed: 1. Whole soybeans and flour: Lima (Organic soybeans, organic whole soy flour). 2. Textured soya: Charusse, Soyavit. 3. Convenience prepared foods for vegetarians: Pural (Frika Vita, Sojafleisch, Pasta Chuta, Sojavite, Soja Mignon, Sojanelles, Sojanelles épicées), Hera (Croq Meal, Herameal, Végémeal, Potage), Fritini (Aux herbes). 4. Liquid soymilk: Celnat (Soyo), Lima, Pural (Sojlactis), Sapov (Sojal), Provamel (Soya Drink, Soya dessert choco [a pudding, made by Alpro in Belgium]), Naturvit (Soyalet, Soyalet sans sucre). 5. Tofu: Le Bol en Bois (Koya-dofu), Soy (Tofu, Croque Tofu [6 types]). 6. Tempeh: Traditions du Grain. 7. Miso: Celnat (Brown rice miso imported from Japan, Barley miso), Lima (Hatcho miso, barley miso). 8. Soy sauce: Celnat (Shoyou), Lima (Tamari, Tamari Shoyu). Address: France.

4283. Chen, W.L. 1984. Soybean processing for food use in Taiwan. *Tropical Agriculture Research Series* No. 17. p. 143-52. March. International Symposium on Soybean in the Tropics and Subtropics. [18 ref. Eng]
• ***Summary:*** Contents: Abstract. Introduction. Soy milk. Instant soy milk powder. Tofu. Soybean pudding. Hard beancurd. Hard beancurd thread. Spiced and dried hard beancurd. Soy protein-lipid film and its products. Sufu (Chinese cheese). Chou tofu [ch'ou toufu] (fetid tofu, fermented). Dehulled soybean powder (enzyme active, full fat; used to prepare soy milk or soy pudding in factories, schools, and homes).

Note: This is the earliest English-language document seen (Oct. 2011) that uses the term "fetid tofu" to refer to stinky tofu.

In 1982 Taiwan imported 1,150,433 tons of soybeans from the USA, and grew 11,942 tons of soybeans in Taiwan. 80% of the soybeans are crushed to make soybean oil and meal, and the remaining 20% are made into versatile soybean foods. In 1983 two new brands of instant soy milk powder appeared on the market in Taiwan. More than 1,400 small tofu plants are located throughout Taiwan. They make and sell their products on the same day. Only two large, modern plants produce packaged and refrigerated tofu. A continuous film-forming method for making yuba was developed by FIRDI in 1977. Address: Food Technologist, Food Industry

Research and Development Inst. (FIRDI), P.O. Box 246, Hsinchu, Taiwan 300.

4284. Epp, Peter H. 1984. The Ontario Soya-Bean Growers' Marketing Board's view of the next century. In: Ontario Soya-Bean Growers' Marketing Board. ed. 1984. Ontario Soybean Symposium. Chatham, Ontario, Canada: OSGMB. 319 p. See p. 302-311.
• ***Summary:*** Discusses: Soybean pricing and the open tariff-free border with the USA. The Oleomargarine Act. Minimum Compensatory Rates (MCR's) and why they have put the Ontario soybean crushing industry in jeopardy (The program, established by the Canadian Transport Commission, originally encouraged the movement of raw rapeseed from Western to Eastern Canada. The government has poured $3 million annually into the program, which ends up subsidizing rapeseed oil in Ontario), the present status and potential of soybean crushing in Ontario (in 1982-83 three Ontario crushers crushed 1 million tonnes of soybeans). Market development.

Tables and graphs show the following, related to Canadian edible oil production, from 1973-1983: Margarine oil, shortening oil, cooking and salad oil, soymeal and rapemeal, soyoil and rapeoil. Note that for cooking and salad oil, rapeoil has always and increasingly exceeded soy oil production during this period. Total rapeoil production passed soyoil production in about 1975 and is now more than double that of soyoil. Soymeal production has always exceeded rapemeal production.

Note: This is the earliest English-language document seen (Oct. 2007) that contains the word "rapeoil." Address: Chairman, OSGMB, Leamington, ONT, Canada.

4285. Fieldman, Anita. 1984. Spotlight on Westbrae Natural Foods. *Whole Foods.* March. p. 22.
• ***Summary:*** The company was started in 1970 by Gordon Bennett, Kristin Brun, and a few friends making and distributing granola and fruit juice for San Francisco Bay Area stores. Today Westbrae is a $7 million corporation with a line of 150 products in a 50,000 square foot facility in Emeryville, California. Most of the Westbrae labels are designed by San Francisco artist David Gauger. The company deals with about 50 distributors and 1-2 brokers. They do not sell directly to retailers. A photo shows Gordon Bennett.

4286. Gustafson, Nancy J. 1984. What diet can do for diabetics. *Vegetarian Times.* March. p. 32-35, 60. [4 ref]
• ***Summary:*** "Diabetes affects over 10 million Americans, with another four million undiagnosed. It is the eighth most common cause of blindness. Its incidence increases at a rate of six percent yearly."

"Vegetarianism fits in beautifully with the new diet plans for diabetics. Not only is it safe for diabetics to eat vegetarian, but most diabetics are now encouraged to eat more plant foods and less fat, particularly animal fat."

"If you are a non-dairy vegetarian and do not drink at least two cups of fortified soymilk daily, you may need to supplement with 4 micrograms vitamin B-12." Each list contains choices "for both dairy and non-dairy vegetarians,..." (p. 34). A table at the bottom of page 34 titled "Putting yourself on a weight loss program" has this note at the bottom: "For non-dairy vegetarians who prefer not to use fortified soymilk, substitute one fruit and one protein food exchange for each milk exchange omitted." Address: MSc, RD.

4287. Howell, R.W. 1984. Contribution of soybeans to the agriculture of the USA. *Tropical Agriculture Research Series* No. 17. p. 127-32. March. International Symposium on Soybean in the Tropics and Subtropics.
• ***Summary:*** An excellent historical overview. "Perhaps the most important person in soybean history in the United States was William J. Morse, who was appointed in 1907 to be in charge of soybean research in the US Department of Agriculture." Morse "led the development of the cooperative research program of the USDA and the State Agricultural Experiment Stations until 1949. This cooperation, which Mr. Morse had encouraged for many years, was formalized by an agreement between USDA and several stations in 1936. The cooperative program continues in its essentials, but is vastly expanded at the present time. Mr. Morse died in 1959."

1920–Dr. Clyde Melvin Woodworth, a geneticist, joined the faculty of the University of Illinois at Urbana. He was the first breeder / geneticist with primary responsibility for soybeans at this university. He constructed the first chromosome map for soybeans [1933]. He developed the varieties Illini and Chief, and made the cross which led to the variety Lincoln. In 1943 Lincoln was released jointly by the University of Illinois, USDA, and several other universities. It "was the first variety to be developed from a purposeful hybridization and was the first to be cooperatively released under the agreement of 1936.

"A contemporary and colleague of Dr. Woodworth was Professor Jay Courtland Hackleman, a crops extension specialist at the University of Illinois. Professor Hackleman was an ardent promoter of soybeans. He and his extension colleagues in other states appreciated the potential of soybeans and strongly encouraged farmers to try them on their farms."

1921-1951–Professor William Leonidas Burlison was head of the department of Agronomy at the University of Illinois. Along with Woodworth and Hackleman, he was instrumental in the establishment of soybeans in Illinois agriculture.

"These people had counterparts in many states who were equally enthusiastic and effective in encouraging farmers to grow soybeans."

1928–J.L. Cartter, a graduate student at the University of Wisconsin, was hired by the USDA as a soybean agronomist. In 1936, when the US Regional Soybean Industrial Products Laboratory was established, Mr. Cartter moved to Urbana, Illinois, to lead the production research at the Laboratory. He continued at that position until his retirement in 1965.

"Plant breeders were employed by USDA and stationed at Iowa State and Purdue [West Lafayette, Indiana] Universities, at later at Stoneville, Mississippi, North Carolina State Univ., and the Universities of Florida, Missouri, and Minnesota, in addition to Illinois."

1949–After the retirement of W.J. Morse, Dr. Weiss took over his position as leader of Soybean Investigations at USDA; he served in that position from 1949 to 1953. "Under Weiss' leadership the soybean germplasm collection was formalized and facilities established at Urbana, Illinois, and Stoneville, Mississippi, for preservation and management of the collection." Weiss was followed by Herbert W. Johnson (1954-1964), who next to Morse probably had the greatest influence on the development of soybean research.

Before 1965, the only U.S. company "with a soybean development was the Coker's Pedigreed Seed Co. of South Carolina, where Henry Webb was the soybean breeder. In 1965 a group of midwestern seed companies joined to form the Soybean Research Foundation, Inc. (S.R.F.), and employed A.L. Matson of Missouri as a soybean breeder. During the 1970s many companies established soybean variety development groups following enactment by Congress of the Plant Variety Protection Act of 1970. Consequently the number of varieties available to farmers has increased manyfold. In 1983 it is estimated that at least 300 different varieties were offered for sale in Illinois alone."

Also discusses protecting soybeans from diseases, insects, nematodes and weeds, as well as plant physiologists who worked on soybeans (he pioneering work being done by Garner and Allard on photoperiodism). The Northern Regional Research Center at Peoria, Illinois; since 1942 soybean utilization research as been based here. International programs including INTSOY. Growing interest in food uses of soybeans (tofu, soymilk) including the Soycrafters Association. Rise of the soybean processing industry. The American Soybean Association. Address: Emeritus Prof., Former Head, Dep. of Agronomy, Univ. of Illinois, Urbana, IL.

4288. Kantha, S. Sri; Erdman, John W., Jr. 1984. The winged bean as an oil and protein source: A review. *J. of the American Oil Chemists' Society* 61(3):515-26. March. [160* ref]

• ***Summary:*** The past 10 years of published literature concerning nutritional studies on and uses of the winged bean are reviewed, including its origin and cultivation, its overall proximate composition, its nutritional value and antinutritional factors, the functional properties of its proteins, and its use in protein based foods (supplemented breads, weaning food products, fermented products, winged bean milk and tofu). Address: Dep. of Food Science, Univ. of Illinois, Urbana.

4289. Konno, S. 1984. Soybean production in Japan. *Tropical Agriculture Research Series* No. 17. p. 95-102. March. International Symposium on Soybean in the Tropics and Subtropics.

• ***Summary:*** Abstract. Trend in soybean production. Trends in supply and consumption of soybeans. Methods of cultivation currently applied in Japan. Soybean research and extension. Government participation in and support of soybean production. Future prospects of soybean production and main constraints. Discussion. Tables: (1) Production and trade of soybeans in Japan. (2) Soybean consumption in Japan. (3) Varieties registered during the last decade. Figures: (1) Soybean production by region in Japan (1983). (2) Planting and harvesting time of soybean in Japan. (3) Centers for breeding and research on soybean affiliated to the Ministry of Agriculture, Forestry and Fisheries in Japan. Address: Tropical Agriculture Research Center, Yatabe, Tsukuba, Ibaraki 305, Japan.

4290. Krieger, Verena. 1984. Die Tofu Kueche: Koestliches aus Soja [Tofu cookery: Delicacies from soya]. Tanner + Staehelin Verlag, Waserstrasse 16, CH-8029, Zurich, Switzerland. 171 p. Illust. No index. 18 cm. [Ger]

• ***Summary:*** Contents: Resume. Why tofu? List of 120 recipes. Explanation of recipe terms. Meeting with tofu. Into the tofu adventure. Tofu–a fresh product. Fresh plain tofu for experts and epicures. Scrambled & stir-fried tofu to add taste. Pressed tofu and tofu burgers. Fried tofu. Tofu in hot-pots and casseroles. Tofu in baked dishes. Frozen and dried-frozen tofu. Transforming tofu in a blender. Making tofu yourself and how to use the okara. The raw material–soybeans: From the Emperor's table into the feed trough, the treasure of East Asia's art of long-life is a hope for our time, soybean production in Europe, growing soybeans in your own garden. Tofu as the cornerstone of an environmentally sound and healthy diet. Natural ingredients from A to Z. Basic recipes for cooking with whole grains. Making soymilk from whole soybeans or soy flour. Tofu for special diets.

Many full-page black-and-white photos show tofu dishes. A small photo (p. 4) shows Verena Krieger. Note: Leviton (1983, p. 18) gives the publication date as Dec. 1983, but Krieger (7/90) says that is incorrect.

4291. Liu, Shengjie; Guo, Shiping; Chou, Chiyuan (Zhou, Qhi-yuan). 1984. [Studies on milk substitutes. X. The role of egg yolk powder on the growth promoting effect of soybean milk substitute 5410]. *Ying Yang Hsueh Pao* (*Acta Nutrimenta Sinica*) 6(1):13-20. March. [4 ref. Chi; eng]

Address: Inst. of Health, Chinese Academy of Medical Sciences, Beijing.

4292. Meals for Millions / Freedom from Hunger Foundation. 1984. Annual report 1983: Self-help for a hungry world. Davis, California: MFM / FFH Foundation. 16 p. 21.5 x 9.5 cm.
• ***Summary:*** Peter J. Davies is President. Philip E. Barton is chairperson, board of trustees. On the brownish-red, black and white cover is a photo of a mother smiling at her child. MFM's logo of a plant growing in an upturned bowl is on the front cover.

There is a 1-page message from Barton and a 2-page message from Davies. The latter notes: "In 1983 your foundation started two new Applied Nutrition Programs in Sierra Leone and Kenya."

"A milestone was achieved when our staff moved into our new International Center at Davis last March. And we were especially excited to receive a magnificent check for $225,000 from the Kresge Foundation in April; full payment of their challenge grant." Meals for Millions philosophy. MFM has "Applied Nutrition Programs" (ANPs) in Ecuador, Honduras, Sierra Leone, Kenya, Korea, Thailand, Antigua, U.S. Southwest, Papago Applied Nutrition Program (on the Papago Indian Reservation near Tucson, Arizona). Solutions through appropriate technology.

"Korea: At the end of 1983 MFM phased out its direct participation, turning over its programs to an independent local body;... MFM began to work in Korea just after the Korean War, helping a company to produce a high protein soy beverage for schoolchildren. In 1976 we began an Applied Nutrition Program in Wonseong County, which has grown tremendously."

Thailand: "Last July the men, women and children in 53 villages and 29 schools began planting the 753 kilograms of soybeans distributed by MFM. Villages which were previously quiet and listless, 'seem to have come alive.'"

Total income: $1.894 million. Address: P.O. Box 2000, Davis, California 95617. Phone: (916) 758-6200.

4293. Saio, Kyoko. 1984. Dietary pattern and soybean processing in Japan today. *Tropical Agriculture Research Series* No. 17. p. 153-61. March. International Symposium on Soybean in the Tropics and Subtropics. [1 ref. Eng]
• ***Summary:*** Abstract. Consumption of soybeans in Japan. Varieties and processing of soybean foods. Traditional technology for modern products and emerging technology applied to traditional foods. Reference. Discussion. Tables: (1) Intake of Kcal/day/person. (2) Intake of protein/day/person. (3) Intake of fat/day/person. (4) Comparison of intake of nutrients among various nations. (5) Supply and demand of whole soybeans in Japan. (6) Detailed use of whole soybeans supplied for food. Figures: (1) Flow sheet of Momen Tofu preparation. (2) Flow sheet of Kori Tofu preparation. (3) Flow sheet of Shoyu (soy sauce) preparation. (4) Flow sheet of Kome Miso preparation. (5) Flow sheet of soy milk preparation. (6) Manufacture of vegetable protein products. Address: National Food Research Inst., Yatabe, Tsukuba, Ibaraki 305, Japan.

4294. *Soya Foods* (*ASA, Europe*). 1984. Soyfoods in Belgium: An interview with Pauline Six-Chan. No. 1. p. 8. March.
• ***Summary:*** "Pauline Six-Chan was born in Singapore. She is a graduate in food science from Michigan State University (U.S.). During her study she met her husband, who is Belgian. In 1978, after finishing her studies at Michigan State, she came with her fiancé to Belgium, and got married. Being a major in food science, Pauline started then looking for a job in the food area. It was very hard to find an appropriate job in a Belgian food company. So she decided to start her own business in 1980. An ethnic shop and production of soysprouts!

"Pauline, of Asian origin and brought up with soyproducts, is aware of the versatility and nutritional value of these products. She is very interested in soyproducts as they have a lot of potential–they are so easy to use. Soyproducts also have an economic advantage–they are less expensive than other food products with the same nutritional value.

Q: "What soyproducts are currently available to Belgian consumers? Pauline: Soydrink, soypudding, tofu, tempeh, bean-curd sheets, miso (bean paste), soy sauce, soysprouts, soyflour, soymilk, soy oil. Soydrink and soypudding you can get in reformhouses but tofu, tempeh, miso etc you can only buy in the ethnic stores.

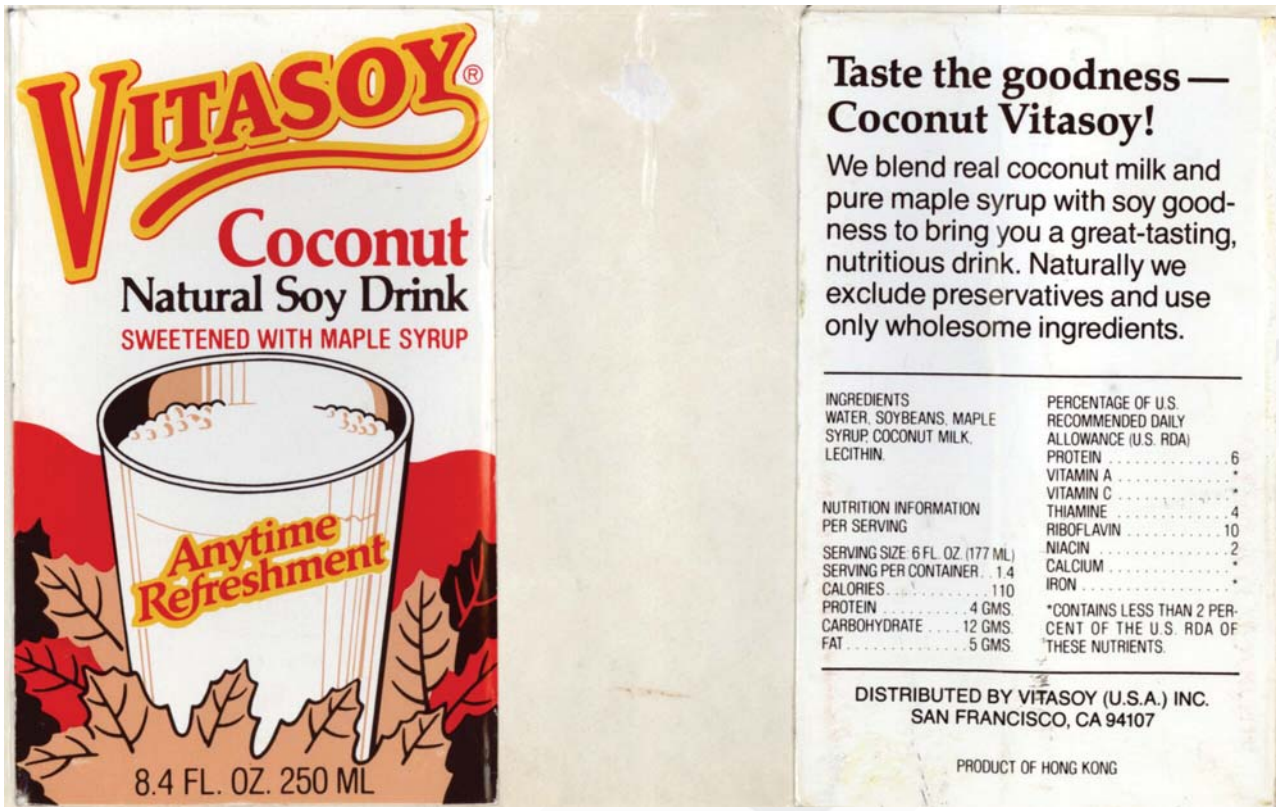
Q: "Who buys soyfoods? Pauline: There are people who want a more balanced diet, more vegetable protein and less cholesterol. In general, there is no specific age group or people with a certain lifestyle who buy soyfoods. I know a lot of older people in their 60s, who are conscious about a healthy diet and who do want to use more vegetable proteins. People knowing e.g. soy oil–a healthy natural product, cholesterol free–sometimes make the relationship to other soy products, and are very keen on using them.

"People who know the products will buy them–Asians as well as Belgians. Asians do buy more soyproducts because it is a part of their daily diet. Also, most of the vegetarians know these products and buy them. However, the general public has to be taught through cooking demonstrations and info leaflets.

Q: "What do Belgian consumers know about tofu?

"Pauline: Belgian consumers know very little about soyproducts because these products are originally not a part of their daily diet and they are not commonly available everywhere at the moment.

Q: "What are you doing to tell Belgian consumers about soyfoods?



"Pauline: My primary goal is to introduce soyproducts to Belgian consumers and to teach them how to use these healthy products in their daily diet.

"We demonstrate to Belgian consumers how to use the soyproducts and this through demos in various small supermarkets, institutions, hospitals, schools, housewife organizations, doctors,... I am also organizing demos in my own shop every first Saturday of the month. I distribute recipes–provide people with background information on where soyproducts come from, on the nutritional value of the products, on how easily soyproducts can be used in the daily diet, how soyproducts can be incorporated with the vegetables and meat that people eat normally every day." Address: Premier Foods, Diestsestr. 197, 3000 Leuven, Belgium.

4295. Suzuki, Steven. 1984. Pacific Rim potential for edible soybeans. In: Ontario Soya-Bean Growers' Marketing Board. ed. 1984. Ontario Soybean Symposium. Chatham, Ontario, Canada: OSGMB. 319 p. See p. 224-41.

• ***Summary:*** Soybeans were first exported from Canada about 12 years ago when a Japanese house approached the Ontario Soybean Grower's Marketing Board for a trial shipment to Japan. The trial worked out very well and in a short time Ontario's soybean exports became a multi-million dollar business. Ontario soybeans are very clean, the quality is comparable to Japanese and Chinese soybeans, and the supply is consistent. However the price is high in relation to Chinese and U.S. soybeans. As a result, Ontario soybeans are sold in high-priced markets, as for making premium quality miso or soyamilk. The supply of Chinese soybeans is irregular. Address: Manager, Grain Trading Section, Okura & Co. America Ltd., New York, NY.

4296. **Product Name:** Vitasoy Natural Soy Drink [Coconut, Chocolate, or Original].
Manufacturer's Name: Vitasoy (USA) Inc. (Importer). Made in Hong Kong.
Manufacturer's Address: San Francisco, CA 94107.
Date of Introduction: 1984. March.
Ingredients: Natural: Water, soybeans, maple syrup, coconut milk, lecithin.
Wt/Vol., Packaging, Price: 8.4 fluid oz, 250 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 6 fl oz.: Coconut and Natural: Calories 110, protein 4 gm, carbohydrate 12 gm, fat 5 gm. Chocolate: Calories 120, protein 3 gm, carbohydrate 17 gm, fat 4 gm.
New Product–Documentation: Taste test of samples in Seattle. 1982. July 9. Ten Americans at the annual soyfoods conference did a blind taste test comparing 11 brands and flavors of soymilk. The highest scores were given to Mitsubishi orange (57), Mitsubishi coffee (57), Asahi dairylike (lion face; 54), Vitasoy T4 (47), and Midori (46).

Labels. 1984. 2.25 by 4.25 inches by 1.5 wide. Paper carton. Variations of red, yellow, dark brown and tan on white for different flavors. Illustration of a glass filled with soy drink. In large letters on the front of each carton is

written: "Natural Soy Drink." Above these letters on the coconut flavor is written "Coconut," but the word "Original" does not appear anywhere on the package of the "original" flavor. Thus, the flavor was described as "Original" in the company ads (*see Natural Foods Merchandiser,* Jan. 1984) and brochures, yet the word "Original" does not appear on the package.

Note: Vitasoy apparently coined the word "Original" to refer to slightly sweetened, dairylike soymilk. This is the earliest known commercial soymilk that uses the word "Original" to describe its flavor. Below "Natural Soy Drink," in smaller red letters is written: "Sweetened with maple syrup." On the glass is written "Anytime Refreshment," in red letters with a yellow border. Around the base of the glass are beige, brown, red, or yellow maple leaves–indicating that the product is sweetened with maple syrup.

Ad in Natural Foods Merchandiser. 1984. Jan. "Vitasoy invites you to taste the goodness." "To create Coconut Vitasoy we blend real coconut milk and pure maple syrup with soy goodness. Delicious and completely free of cholesterol. We sweeten Original Vitasoy with pure maple syrup–just enough to delight your palate. You'd never dream a drink this creamy could be so low in fat." Ad in *Soyfoods* magazine. Summer [Aug.]. p. 35 "Vitasoy. It's what your customers are asking for. Taste the goodness!" "Original Vitasoy. Coconut Vitasoy. And now rich, creamy Chocolate Vitasoy. Three delicious, healthful drinks–just what your customers are asking for."

Labels, Tetra Brik package, 2.5 by 4 inches, 250 ml. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. "Sweetened with maple syrup. Anytime refreshment."

Talk with Steve Snyder, Vitasoy USA's national sales manager. 1985. Oct. 9. They are not promoting Vitasoy at all now, though it is still sold at Safeway (Sacramento) and Raley's. They are developing new products. The size of the fresh soymilk market in the USA is only $5-6 million and sales seem to be leveling off.

Talk with Steve Snyder. 1986. May 8. The product died very fast. Its main liabilities were maple syrup sweetener (Mrs. Gooch wouldn't let it in her stores, and it raised the price; Vitasoy buys maple sugar, not syrup, from Shady Maple Farms), and poor flavor(s). Dancer Fitzgerald was the ad agency. The company is now reformulating and redesigning the package. Vitasoy in Hong Kong got new equipment and hired a new technologist, Trevor Collins, from Australia.

4297. Vitasoy (USA) Inc. 1984. Vitasoy (Portfolio). 435A Brannan St., San Francisco, CA 94107. One insert. March. 30 cm.

• ***Summary:*** The portfolio is pure white with the word "Vitasoy" printed in raised letters (embossed, with a registered trademark symbol) across the top of the front. The one insert is a 4-page color brochure. At the top of page 1, in white letters, is written "Taste the goodness..." Across the bottom: "Vitasoy." In the middle, a large color photo shows two cartons (8.4 fl. oz / 250 ml) of Vitasoy Natural Soy Drink (in red, yellow, and brown on white), on a wooden table. To their left is a glass of soymilk. Behind them is a jug of maple syrup and two coconuts–one opened to show the white coconut meat. And behind them is a dark green coconut leaf against a black background.

Page 2, titled "Introducing Vitasoy," describes these new products and notes that "We've been producing soy foods for over 40 years."

Page 3, titled "Vitasoy's healthful profile," lists the ingredients and nutritional information for: Original Vitasoy, Coconut Vitasoy, and Chocolate Vitasoy.

The past page gives pack/size, UPC code, case weight, and dimensions for each of the three products. Address: San Francisco, California. Phone: (415) 974-1118.

4298. Wang, Hwa L. 1984. Tofu and tempeh as potential protein sources in the Western diet. *J. of the American Oil Chemists' Society* 61(3):528-34. March. [22 ref]

• ***Summary:*** Contents: Abstract (uses the word "soybean foods" several times). Introduction. Traditional soybean foods. Trends in market growth for tofu and tempeh (based on statistics gathered by Shurtleff & Aoyagi of The Soyfoods Center in California, 1983). Tofu. Tempeh.

Traditional soybean foods can be classified as either nonfermented or fermented. Tables show: (1) Oriental nonfermented soybean foods (gives food name, local names, description, uses): Fresh green soybeans (local names: mao-tou, edamame). Soybean sprouts (huang-tou-ya, daizu no moyashi). Soybean milk (tou-chiang). Protein-lipid film (tou-fu-pi, yuba). Soybean curd (tofu, tou-fu, tubu, tahoo, touhu, tau-foo, dou-fu, dau-fu). Soybean flour (tou-fen, kinako) (Wang 1983).

(2) Oriental fermented soybean foods (gives food name, local names, microorganisms used, substrate, nature of product): Soy sauce (local names: chiang-yu, shoyu, toyo, kanjang, ketjap, see-iu). Miso (chiang, doenjang, soybean paste). Hamanatto [fermented black soybeans] (tou-shih, tao-si, tao-tjo [sic]). Sufu (fu-ru, fu-ju, tou-fu-ju, bean cake, Chinese cheese). Tempeh (tempe kedelee). Natto.

(3) Tofu industry in the United States (No. of manufacturers and annual production in 1975, 1979, 1981, 1982, and 1983).

(4) Soybean solids and proteins in soybean soak water as affected by soaking conditions (temperature vs. time; Lowry protein / Lowry's protein). (5) Ratio of protein to oil content of tofu and soy milk as affected by protein content of soybeans (for different soybean varieties; the highest ratios come from the varieties Wase-Kogane, Vinton, Toyosuzu, and Coles).

Figures: (1) Flow diagram for the preparation of tofu.

(2) Graph: In vitro digestibility of soybean milk as affected by the duration of boiling. Best digestibility is 12-14 minutes. (3) Four graphs: Relationship of concentration and type of coagulant to the yield of tofu. Coagulants are calcium sulfate, calcium chloride, magnesium sulfate, and magnesium chloride. The 4 graphs are: Gross weight of tofu. Moisture content. Total solids recovery. Nitrogen recovery. Calcium sulfate gives the highest values on all four graphs. (4) Four graphs: Relationship of concentration and type of coagulant to the texture characteristics of tofu. Same coagulants. The four graphs are: Hardness. Brittleness. Cohesiveness. Elasticity. (5) Flow diagram for tempeh fermentation. Address: NRRC, ARS, USDA, Peoria, Illinois 61604.

4299. Wernham, Les. 1984. Exports–Problems and opportunities [for Canadian soybeans]. In: Ontario Soya-Bean Growers' Marketing Board. ed. 1984. Ontario Soybean Symposium. Chatham, Ontario, Canada: OSGMB. 319 p. See p. 246-53.
• ***Summary:*** Soybean exports from Ontario have expanded dramatically during the past 10 years; in 1982 they reached a high of 132,000 tonnes worth $44 million. The East Asian market including Japan, Korea, Hong Kong, and Malaysia accounted for 81% of Ontario's export soybean sales in 1983, with an additional 8% going to Europe. The main buyers in 1982 were: Japan 47,414 tonnes, Netherlands 19,545 tonnes, Singapore 18,039 tonnes, Indonesia 16,652 tonnes, Hong Kong 15,234 tonnes.

Most of these soybeans are sold for human consumption. "For example, one of Sweden's foremost pharmaceutical manufacturers has in the past years been that country's largest single importer of Canadian soybeans. Taking about 3,000 tons annually, this company produced a patented intravenous nourishment called Intralipid." Tiny soybeans (5 mm diameter or less) are used to make bean sprouts and natto. For soybean exports, freight constitutes an average 21% of the net delivered cost to the buyer in his country. They are shipped in bagged or bulk (20 or 40 foot) containers. The main focus of breeding should be to develop varieties that do not carry a common bitterness or beany flavor. Address: Grain Manager, King Grain, Chatham, ONT, Canada.

4300. Simpson, Rita J. 1984. Re: 1982 statistics on production of soybean-based products in Tetra Brik packages. Letter to William Shurtleff at Soyfoods Center, April 18. 1 p. Typed, with signature on letterhead.
• ***Summary:*** The products include plain and flavored soybean milk, plus tofu (million liters):

Japan 51.0
Hong Kong 15.0
Malaysia 11.5
Korea 7.0
Thailand 4.0
Singapore 2.5

"Our international office is aware of your need for the 1983 statistics and I will forward them when received." Address: Vice President, Information, Brik Pak Inc., P.O. Box 802605, Dallas, Texas 75380. Phone: 214 934-0338.

4301. Lo, K.S. 1984. History of Vitasoy (Interview). Conducted by William Shurtleff of Soyfoods Center, April 23. 1 p. transcript. In Lafayette, California.
• ***Summary:*** Discusses: UNICEF interest in Vitasoy (they saw the plant many times), package sizes, Greenspot, current negotiations with China, the dry process for making soymilk using a Wenger extruder (the company started using it right after the joint venture with Monsanto. It is easier to control, gives less off flavors, gives higher protein recovery without the use of enzymes, and is less expensive), early advertising campaign slogans, the trademark Vita (registered by a now defunct noodle company in Hong Kong). Address: 41, Heung Yip Rd., Aberdeen, Hong Kong. Phone: 5-528211.

4302. Rubenstein (Howard J.) Associates, Inc. 1984. David Mintz: The prince of tofu (News release). New York. 2 p. April 24.
• ***Summary:*** "In 1972, while searching for a milk substitute for desserts, pastries, pies and sauces, David Mintz 'discovered' the soy bean product [tofu]." In September 1981 Tofu Time Inc. was founded and on 8 December 1983 it went public. Apparently Tofu Time's first news release. Address: New York.

4303. Lewis, Joseph. 1984. Soymilk and soyfoods in Canada (Interview). *SoyaScan Notes*. April 27. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Use of the word "soymilk" has been legalized in Canada, but users are not allowed to state that it is free of cholesterol or lactose. Joe will send details in a letter.

The key to getting permission from the Canadian government was to show that the word "soymilk" existed before 1922. Joe will send soymilk patents issued before 1922.

Dr. John Demann is one of the world's foremost authorities on soyfoods. He works closely with Victory Foods and was the keynote speaker at a recent soy symposium in London, Ontario.

In March 1984 there was a super soybean symposium in Canada; Joe will photocopy and send the proceedings.

The single best source of historical material on soy in Canada is the National Archives in Ottawa. It is all on computer going back to the 1920s. He thinks one could find 50 pounds of historical material.

Tofu Products International in Markham, Canada, makes very dirty [unsanitary] tofu; many cakes are also underweight. Its a bad company, is ruining the tofu industry

in Canada, and seems to exist only for quick profits. Address: 102 Hymus Rd., Scarborough, Ontario, Canada M1L 2C9. Phone: 416-752-0161.

4304. Alfa-Laval. 1984. Food & Dairy Laboratory. Lund, Sweden. 6 p. April. 30 cm
• ***Summary:*** This laboratory "is located at Alfa-Laval Food & Dairy Engineering Laboratory in Lund, Sweden." Content of this color brochure with many photos: A complete laboratory for your food product development. Continuous is the key-word. Secrecy essential. Laboratory layout (includes both dairy and "soy bean processes" plus Analysis room, Contherm and Convap, Centritherm, Sterilab, Steritherm, Steritank, Aseptic packaging, and Personnel room). Aseptic processing. Evaporation. Thermal treatment. Multi-processing facilities. Packaging. Analyses. Experienced personnel. Food & Dairy Laboratory at your service. Address: Alfa-Laval, Lund, Sweden.

4305. **Product Name:** [Alpro Soya Drink {Soymilk} (Plain, or Chocolate)].
Foreign Name: Alpro Soya Drink (Plain, Choco).
Manufacturer's Name: Alpro.
Manufacturer's Address: Zuidkaai 33, B-8700 Izegem, Belgium.
Date of Introduction: 1984. April.
Wt/Vol., Packaging, Price: 0.5 liter retails for BF 22.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Soya Foods (ASA, Belgium). 1984. July. p. 1. "Soya milk in Belgium. Alpro N.V., part of the Vandemoortele Group, has just launched Soya Drink in the Belgian supermarket chain Delhaize. Sold in half liter Tetrapacks [Tetra Pak cartons], Soya Drink is available in two flavors: natural and chocolate. Marketing Director Chris Daems says... so far things look good. Alpro's Soya Drink is produced from whole soybeans according to the traditional soymilk process, but with the latest equipment. Attractive point of sale leaflets in French and Dutch give detailed nutritional information."

Color photo on cover of Journal of the American Oil Chemists' Society. Dec. 1984, and on page 1785 of the same issue. On the front panel is an illustration (line drawing) of glass of soymilk in a silhouetted field of soybeans in front of an orange sun. A seal on the right side says, in Dutch, "Vegetal. 100% Plantaardig" (Non-dairy, 100% from plants). Soya Bluebook. 1986. p. 102.

Shurtleff & Aoyagi. 1985. Soymilk Industry and Market, Update. Launched in Belgium in about April 1984. Distributed in Italy by Lucas Meyer by mid-1985.

Leaflet (color, 2 panels each side, each panel 21 x 15 cm, in French). 1989. *Alpro: La force végétale du soja* (Alpro: The plant power of soya). The front panel has a color photo of 4 varieties of Alpro Soya Drinks (plain, enriched with calcium, without added sugar or salt, chocolate) and 2 Alpro Soya Desserts (vanilla and chocolate). The text reads: 100% natural. 100% from plants (végétal). No cholesterol. No lactose. Rich in vegetable protein. The back gives packaging and shipping information and a nutritional analysis of the 6 products. Sold in France by Distriborg, Division Alpro France, Chemin du Grand Revoyet, F-69230 Saint-Génis-Laval. Phone: 72.39.94.25.

Leaflet (color, 2 panels each side, each panel 21 x 15 cm, in French). 1989. *Alpro Soya Drink. Enrichi au calcium, ca vous fait un homme* (Alpro Soya Drink. Enriched with calcium, that makes you into a man). A color photo on the cover shows a boy, leaning back on his heels, as he pulls the reins on a rocking horse.

Form filled out by Alpro. 1990. May 30. Alpro began making this product (in plain and choco flavors) in March 1984 in 500 ml cartons. It is sold only in supermarkets (multiples).

4306. Bates, Cynthia. 1984. Re: History of The Farm's work with tempeh. Letter to William Shurtleff at Soyfoods Center, undated. 3 p. Typed, with signature on letterhead.
• ***Summary:*** Alexander [Lyon] and Dianne Darling began experimenting with tempeh in about 1972. Dr. Hesseltine had sent some literature and starter culture on the hunch we would be interested. I did not work at the [Soy] Dairy at this time, but I have been told about this time space by others who did work there then. Alexander was the Dairy straw boss and overview person; he set up the [soy] milk operation and ran it. Dianne mostly worked with the cultures and got into miso for the most part, I was told, but didn't get into tempeh so much because she thought large scale production was not practical. Occasionally she and Alexander would make a small batch of tempeh, enough for the people who worked there to get a taste. Deborah Flowers started working at the Dairy and liked tempeh, and wanted to turn the Farm onto it. She made a couple of large batches, incubated in the boiler room at the Canning and Freezing plant, that were served for breakfast two different times at our community kitchen; that was the first time I tasted it. Deborah was trying to figure out ways to produce enough spores, a limiting factor along with the lack of an incubator...

"In 1974 I was researching algae for alternative protein sources in human foods and wanted to start an algae farm. I joined the [Soy] Dairy because soy systems looked like a good intermediate step that would accomplish the same ends (i.e. feed more people with less waste). One day we (the Dairy [soy] milk crew, Mary Hubbard, Marsha Ellis, JoAnne Else, and I) made some soy pulp [okara] sausages. Soon after I adopted the project and built an incubator out of an old refrigerator. JoAnne showed me the way the Dairy was currently making spores–inoculating petri dishes of chopped sweet potatoes (sterilized) with cultures in test tubes. Alexander taught me basis lab procedure: transferring cultures with a needle, making agar slants, doing serial

dilutions.

"November 1974 is the first recorded batch of tempeh in the Tempeh Shop, but I was not keeping very good records at the time. I made 20-30 pound batches out of soy pulp [okara] for the rest of the year. Alexander [Lyon] scored us the Flour Mill's old bean dryer for an incubator which we used into 1975. At that time Alexander was still the overall manager of the [Soy] Dairy and, although he didn't actually work at the tempeh shop, he would come in and do a project sometimes, be encouraging, give advice. He was the Dairy expediter and teacher. Deborah Heavens and Valerie Epstein both worked at the Tempeh Shop at different times in its first year."

"So far I haven't been able to come up with a documented date on the first printed instructions [for making tempeh]. They were most likely written in 1975 after *The Farm Vegetarian Cookbook* came out, but they may have been published in late 1975 or early 1976."

For a history of The Farm's pioneering work with tempeh to about 1984 see: *History of Tempeh, a Fermented Soyfood from Indonesia,* by William Shurtleff and Akiko Aoyagi (1985). Available on Google Books in full view. Address: The Tempeh Lab., P.O. Box 208, Summertown, Tennessee 38483. Phone: 615/964-2286.

4307. Cusumano, Camille. 1984. Tofu, tempeh, & other soy delights: Enjoying traditional Oriental soyfoods in American-style cuisine. Emmaus, Pennsylvania: Rodale Press. x + 261 p. Illust. Index. April. 23 x 20 cm.

• ***Summary:*** Each chapter on a specific food describes (with illustrations and nutritional information) how to prepare that food at home, followed by many recipes. Contents: 1. The coming age of soyfoods cuisine. 2. Tofu 3. Tempeh. 4. Soymilk. 5. Japanese soyfoods. 6. Whole dry soybeans. 7. Fresh green soybeans. 8. Soy sprouts. 9. Soy flour and soy grits. 10. Soy sauces. 11. The soyfoods pantry.

Scattered throughout the books are 1-page descriptions of various American soyfoods companies, each accompanied by a black-and-white photo. Photos show: Greg Weaver and two other workers at The Lotus Cafe, Rochester, New York (p. 83). Sharon Rose of Brightsong Light Foods, Petaluma, California (p. 142). Steve and Sara Yurman of The Soy Shop, Atlanta, Georgia (p. 169). A craftsman cutting tofu at Tomsun Foods, Greenfield, Massachusetts (p. 195). Toby Alves of Blair Island Natural Foods Restaurant, Eugene, Oregon. A worker making brown rice and tofu sandwiches at Wildwood Natural Foods, Fairfax, California (p. 235). The company is owned by Bill Bramblett, Paul Orbuch, and Frank Rosenmayer.

Note: As of Sept. 1989 some 25,688 copies of this book had been sold by Rodale Press. It was sold out and will not be reprinted. Address: Rodale Press, Emmaus, Pennsylvania.

4308. Leviton, Richard. 1984. The organic Garden of Eden: A Michigan-based natural foods company [Eden Foods] stresses quality and fidelity. *East West Journal.* April. p. 18, 20-23.

• ***Summary:*** A good history of Eden Foods (although the early dates are incorrect), which has blossomed from a student-run co-op in Michigan in 1967, to a nationally recognized name in 1984. Based on an interview with Mike Potter, who had become interested in macrobiotics in 1967 when, sick with hepatitis in California, he met Herman and Cornellia Aihara and found that macrobiotics "all articulated my own intuition." Potter is now a seasoned businessman, with 13 trips to the People's Republic of China and 7 to Japan.

"Eden's beginnings are a little vague, Mike Potter explains... In July 1967 a group of students in Ann Arbor began distributing macrobiotic staples from Boston. This effort eventually led to a co-op called Eden Foods; in 1968 it became a full-fledged, though small, retail store. Around 1969 Potter visited Ann Arbor and the brand new Eden Foods. At the time, he was busy managing a natural foods store in nearby Birmingham [Michigan].

"In these days Judy and Bill Bolduc and Tim Redmond owned the 1,500 square foot Eden store. By 1971 the group was milling flour and baking granola and they asked Mike [Potter] to become a manager with an ownership position. In 1973 they moved the manufacturing end into a much larger building a half block away, and sales topped $175,000 a year. By late 1973 Eden was sharing a building with competitor Midwest Natural Foods and co-distributing products. They also relocated their retail store, adding on a natural foods restaurant and a whole grain bakery, and employed 25 people. By 1972 Potter and the Bolducs had begun to distribute their products using first a Dodge van, then a couple of refrigerated twenty-food trucks. But all this relocating and moving the retail store about, which had been underwriting the wholesale and manufacturing aspects, used up their cash flow. Financial troubles ensued. Mike bought out the Bolducs. 'I can make this thing work, he told them.

"Potter traveled to Japan and made important contacts with Muso, a leading macrobiotic supplier. Eden imported Erewhon-branded products directly from Japan. They started searching Michigan farms for organic crops... A cornerstone of Eden policy since 1973 is support of local Michigan farmers. Eden supports sixteen farms in Saginaw Bay which grow organic grains and beans (and three organic rice growers elsewhere) for a total of 6,000 acres [in 1984]–up from 1,000 in 1977... In 1977 Eden opened Turtle Island restaurant, which stayed open until the fire. In 1978 Eden started to advertise in magazines. But the company had grown wobbly, bureaucratized, and unwieldy."

"Late in the evening of November 26, 1979 the Eden warehouse was consumed and destroyed by flames... An estimated $800,000 in inventory, machinery, and supplies were lost, much of it irreplaceable, since the eventual insurance settlement covered barely one half the loss. Most

old-timers at Eden agree that the fire was ultimately highly beneficial... 'The fire was constructive,' says Ron Roller. 'The energy here was stagnated, with too many departments each claiming a turf. The management was in disarray; a change was needed...' The Eden of 1979–2,400 products, 100 employees, a natural foods restaurant, a whole grain bakery, a retail store in Ann Arbor, several tractor trailer trucks, a $50,000 computer with eight terminals, a 10,000 square foot building–burned to the ground. Eden, somehow, was out of operation for only two weeks after the fire. Immediately it began to function in an empty 5,000 square foot building next door (the truck garage). They got the cash flowing again on an inventory staggeringly depleted. The insurance company gave them a depressingly small advance against damages and refused to settle on the claim. Eden was advised to declare bankruptcy." About a year after the fire, construction on the new building was completed. By 1980 Eden had moved into this 20,000 square foot building at 701 Tecumseh Road in the tiny town of Clinton, Michigan, (population 2,000) about 60 miles southwest of Detroit. It was 27 months [2¼ years] before the final settlement.

In 1982 Eden imported 25 container loads (each weighing 35,000 lb) of Japanese natural foods, including natto miso and buckwheat miso. Ron Roller is now purchasing manager, Bena Burda is sales manager, Bill Swaney is production manager, and Kathy Nohr is office manager. Cliff Adler and Mike Gorman are also key co-workers. The company has nine shareholders, of whom seven are daily employees. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

4309. Shurtleff, William; Aoyagi, Akiko. 1984. Soyfoods industry and market: Directory and databook 1984. 4th ed. Lafayette, California: Soyfoods Center. 203 p. April. 28 cm. [325 ref]
• ***Summary:*** Traditional soyfoods, which include tofu, tempeh, soymilk. miso, soy sprouts, soynuts and soy sauce accounted for $465 million in annual domestic retail sales. High-tech, modern soy protein foods, which include soy flour and grits, soy protein isolates and concentrates, extrusion textured soy flour and meat analogs, totaled $501 million. When the two sectors are tallied together, Americans spent $966 million in 1984 for soyfoods... not including soy oil or exported products. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4310. Soyplant (The). 1984. Pickup distributor price list effective April 16, 1984 and subject to change. Ann Arbor, Michigan. 1 p. 28 cm.
• ***Summary:*** This typewritten sheet lists products made by the Soyplant and their prices: Tofu tubs in milk crates. Tofu tubs in cardboard cases. Spiced tofu tubs. Tempetaco tubs. Temperoni tubs. Tofu bulk. Spiced tofu bulk. Soymilk (plain or flavored). Tempeh (8 oz or 8 lb sheet). Soysage (8 oz, 1 lb). Tempeh burgers (3 per package). Tempeh burgers (bulk, 50 singles). Address: 711 Airport Blvd., Suite #1, Ann Arbor, Michigan 48104. Phone: (313)-663-8638.

4311. Soyplant (The). 1984. Produce co-op price list–Delivered. Effective April 30, 1984 and subject to change. Ann Arbor, Michigan. 1 p. 28 cm.
• ***Summary:*** This typewritten sheet lists products made by the Soyplant and their prices: Tofu bulk. Spiced tofu bulk. Soymilk (plain or flavored). Dofu Gan savory baked [tofu]. Soysage (8 oz). Tempeh (8 oz). Tempeh burgers (3 per package). TempeTaco. Temperoni. Address: 711 Airport Blvd., Suite #1, Ann Arbor, Michigan 48104. Phone: (313)-663-8638.

4312. *Tetra News* (*Singapore*). 1984. Hai! Its the soya-milk boom in Japan. April. p. 8-10.

4313. *Presse* (*La*) (*Montreal, QUE, Canada*). 1984. Le soya, la protéine de l'avenir pour les gens d'ici [The soybean, protein source of the future for people here?]. May 2. [Fre]
• ***Summary:*** Canada is now a major exporter of soybeans to East Asia. Some return in the form of soymilk and tofu.

4314. Pendleton, Jennifer. 1984. Vitasoy challenges soft drinks. *Advertising Age.* May 7.
• ***Summary:*** "Vitasoy (USA), San Francisco, the American arm of Hong Kong-based Hong Kong Soya Bean Products Co. Ltd., will introduce Vitasoy, an unusual high-protein drink, in northern California in June. The debut is the first step of an eventual national rollout. The company named Wilton, Coombs & Colnett, San Francisco, to handle the product's introduction. Print and radio ads for Vitasoy are expected to start in July."

"In Hong Kong,... Vitasoy has a 38% share of the soft-drink market there, compared with Coca-Cola's 42% share. While Vitasoy is new to the general U.S. market, the company has been selling it and a line of fruit juices for 3 years in Oriental food stores in the U.S."

"The company intends to promote Vitasoy as a healthy soft drink, but it's determined not to limit itself to the health market. Vitasoy will be positioned as an 'anytime refreshment.'"

4315. Tsuchiya, Kanji. 1984. Re: Soymilk in China, Hong Kong, and Japan. Letter to William Shurtleff at Soyfoods Center, May 12. 5 p. Handwritten. [Jap]
• ***Summary:*** Thanks for the complimentary copy of your book *Soymilk Industry and Market* (SIM). "The content is really outstanding. This is the world's most detailed and in-depth report on soymilk, and I doubt anything will surpass it in the future."

He recommended it at a special soymilk seminar. Ms. Kojima of ASA reviewed it in *Nittokyo News* (Japan Soymilk

Assoc. Newsletter). He'll try to get it reviewed in *Toyo Shimpo* and he'll recommend that Marusan buy a copy at future meetings.

His recent trip to China: In Hong Kong he found Kibun soymilk in department stores. He met with Vitasoy's asst. director. He found Vitasoy deodorizing technology far inferior to that of Japan. Vitasoy agrees and wants to improve it. The plant is old fashioned. He says they soak the soybeans, then grind. Really? Their milk is too sweet.

In Peking, they have decided to install a 350 liter/hr test plant he designed in the Central Government's Heikokyo division, food fermentation Industry Science Research Lab, which is 30 km northwest of Beijing. He went there to discuss installation and train the workers. The site is now under construction. For 2 days he met with technologists, who asked many good questions. It is a 3-stage plant, compact, all automatic and continuous, like a scaled-down Marusan plant that will fit in a space 5 x 10 meters. Improved design will give 10% higher yield than Marusan's plant. They are also planning to make tofu with it, leaving the okara in to give a higher tofu yield and firmer texture.

This equipment will be shipped from Tokyo at end of May and arrive in Peking in mid-June. No packaging equipment has yet been ordered. They plan for now to sell in bottles thru refrigerated outlets.

(p. 4). The same type of plant exactly will be installed in the Liaoning Food Industry Research Lab. in Shenyang city. He held a 3-day workshop there. The equipment will be shipped from Tokyo in mid-July. He will go back there in 3 months. Starting on June 18 somewhere in these northeast provinces there will be a 1-week soymilk expo and workshop. In June he'll go back to these two places to help with production runs. On SIM p. 93 the following is a more detailed explanation of what happened. At that time 20 engineers from the Peking Government were sent to visit the Marusan plant. They came in 5 or 6 groups at different times. Tsuchiya took them on tours of the plant. They said that in China there is a long history of making soymilk so they don't need to learn anything from Japan.

They felt the Japanese were too sensitive about beany flavor, so Japanese equipment was not suited to make soymilk for Chinese tastes, and moreover they didn't want to spend/waste all that much money. But they later realized, after researching the details of the processes and equipment used by Kibun, Alfa Laval, and DTD that Marusan had the equipment that they needed, so they decided to order it.

Page 5: Part of the equipment they ordered will be made by Seikensha, which made most of the equipment in each Marusan plant. If test results in China are good, they will install full-scale plants of 2,000 to 4,000 liter capacity in various places in China. They want to keep production decentralized and small enough so that the equipment does not stand idle.

China's knowledge of sanitation and complex technology is too rudimentary to allow aseptic packaging. He thinks they will either retort or perhaps for groups that use a lot at one time (communes, schools, factories) ship it fresh and chilled in bulk.

Other provinces that have asked Marusan for bids are Henan, Hebei, Fujian, and Canton (Guangzhou). So it looks like Tsuchiya will be busy for the next 2-3 years.

Best wishes. Address: Tokyo [Technical consultant, Okazaki Marusan, Japan].

4316. *Toyo Shinpo* (*Soyfoods News*). 1984. Tônyû men [Soymilk noodles are made by Ajia Protein, a soymilk maker]. May 21. [Jap]
• ***Summary:*** A soba maker is buying soymilk from Ajia Protein [Asia Protein] to put in his soba.

4317. *Toyo Shinpo* (*Soyfoods News*). 1984. Tônyû Fuea nado [Japan Soymilk Association will hold soymilk fairs on May 30 and June 27]. May 21. [Jap]

4318. Wilson, John C. 1984. New soymilk process developed by Alfa-Laval (Interview). *SoyaScan Notes.* May 21. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The description Alfa-Laval wrote of its soymilk process is now out of date. They now have a new brochure. They no longer steep the soybeans in water, since the deodorizer could not take out the flavor, which is not volatile. Thus the flavor problem was before the grind stage. The Illinois method reduces protein recovery.

Now Alfa-Laval does a hermetic grind, with no air present. They do not dehull, just clean the soybeans. The hulls only cause viscosity. They do a hermetic [air free] hot grind with hot dry beans and hot water. John will send copies of the new brochure. Address: Soya Process Product Manager, Alfa-Laval, Box 1008, S-221 03, Lund, Sweden.

4319. Singh, Minu. 1984. Kinema and other soyfoods in Nepal (Interview). Conducted by William Shurtleff of Soyfoods Center, May 25. 2 p. transcript.
• ***Summary:*** The name of this fermented soyfood is kinema or kinima (not kenima); it is usually pronounced kee-NAY-muh. The food is most widely consumed in Darjeeling which is now in West Bengal, India (but was formerly part of Nepal) and in southern Nepal. Typical Nepalis who speak Hindi do not know this food, nor is it known in Kathmandu. It is used mostly by non-Brahmins and it has a very strong flavor and smell; she did not like it. She knows how to make kinema because a friend used to make it at her home. Boil soybeans for about 2 hours (in Nepal mostly black soybeans, and in Darjeeling some yellow soybeans are used). Pour the cooked soybeans into banana leaves, cover very tightly, put into a paper bag, then put in a warm place for 5 days. No inoculant was used and at the end of the 5 days she recalls that it "smelled terrible." Wash the kinema then cook it with

tomatoes, ginger and garlic. After cooking it did not smell so bad.

Note: This is the earliest document seen (Oct. 2010) that uses the word "kinima" to refer to kinema, a fermented soyfood from Nepal and a close relative of Nepalese kinema and Japanese natto.

In Nepal, green vegetable soybeans are called *hariyo bhatmas* (*hariyo* means "green" and *bhatmas* is the Nepali word for soybean). They are consumed all over Nepal, boiled in the pods, then the green beans are removed and eaten as is with a little salt as a snack; sometimes they are seasoned with black pepper or hot chili, and sometimes they are used in a curry with potatoes. Whole dry soybeans are soaked overnight then cooked with potatoes.

She worked with the Peace Corps for 9 years as a language coordinator. In about 1980 she worked on a project with the Peace Corps making roasted soy flour at a Nepal maternity home. They called it Poshilo Bito ("Nutrition Flour"). They would mix dry soybeans with some corn, barley and wheat. Roast the mixture, grind it, put it in packets, and distribute it free of charge to the poor and to hospitals. She also taught these people how to make it. To prepare: Mix the flour with boiling milk or water. Address: 2708 Virginia St., Berkeley, California 94709. Phone: 415-848-1481.

4320. Lewis, Joseph. 1984. Re: The word "soymilk" has just been legalized in Canada after a long process. Letter to William Shurtleff at Soyfoods Center, May 27. 2 p. [1 ref]
• ***Summary:*** Victor Foods has finally received written permission to use the word "soymilk" from Consumer & Corporate Affairs, Canada, the body that reviews all labels submitted to them for correctness and makes most of Canada's policies regarding labeling.

"It was a long fight and we received no support from any of the other soyfoods processors here in Canada. This seems to be the rule... let Victor do it at his expense and we will be able to use the new regulations at no expense to us.

"We are most interested in the new [soyfoods] association that is being presently formed [by Frances Boyte] and would like very much to be a part of it. How do we go about this?"

Note: This is the earliest document seen (Jan. 2010) that mentions a soyfoods association in Canada–although it was not established until 1985. Address: 102 Hymus Rd., Scarborough, Ontario, Canada M1L 2C9. Phone: 416-752-0161.

4321. **Product Name:** [Soymilk Noodles].
Foreign Name: Tônyû Men.
Manufacturer's Name: Ajia Protein.
Manufacturer's Address: Japan.
Date of Introduction: 1984. May.
New Product–Documentation: Toyo Shinpo. 1984. May 21.

4322. **Product Name:** Soy Drink (Soymilk), and Soysage (Meatless Sausage).
Manufacturer's Name: Green World, Inc.
Manufacturer's Address: Mayfield Stage, Boise, ID 83706.
Date of Introduction: 1984. May.
New Product–Documentation: Interview with James Herrington. 1987. Dec. 30.

4323. **Product Name:** Soymilk.
Manufacturer's Name: Maritime Foods.
Manufacturer's Address: Portland, Maine.
Date of Introduction: 1984. May.
How Stored: Refrigerated.
New Product–Documentation: Barbara and Leonard Jacobs. 1987. *Cooking with Seitan: Delicious Natural Foods from Whole Grains.* Current U.S. seitan manufacturers include Maritime Foods in Portland, Maine. Rosemary Whittaker is currently producing 50 pounds of seitan each week. She also makes fresh soymilk.

Talk with Rosemary Whittaker (Phone: 207-767-5968). 1991. Nov. 17. She and her husband Dwight started Maritime Foods in about the spring of 1984. Their daughter, Emily, was born on November 18 of that year. Their first and only product was fresh soymilk, flavored with barley malt and kombu. They discontinued the business in about 1987, because they could not find a refrigerated distributor for their soymilk, because Dwight (a food scientist) had a stroke and she had 2 babies.

4324. Soyfoods Center. 1984. Tempeh (color slide show). P.O. Box 234, Lafayette, CA 94549. 75 slides. Narration with each set.
• ***Summary:*** Slide show (#4). 1. The Soyfoods Center Presents... 2. Tempeh is a delicious high-protein fermented or cultured soyfood. Sold in 3/4-inch thick cakes and usually deep or shallow-fried until crisp and golden brown, tempeh has a flavor and texture resembling those of southern-fried chicken or fish sticks. For centuries a backbone of the Indonesian diet, tempeh is prepared fresh each morning at some 41,000 shops on Java alone. 3. Tempeh is increasingly available at reasonable prices throughout the United States, especially at natural or health food stores, or at Indonesian specialty shops. Tempeh is an excellent source of nutrients, containing 50 percent more protein than hamburger and completely free of cholesterol; it is also the world's richest known source of vegetarian vitamin B-12. Like all soyfoods, tempeh is rich in lysine, the essential amino acid in shortest supply in most cereal grains. Serving tempeh and grain at the same meal boosts the amount of usable protein by up to 40 percent. 4. Tempeh has many virtues. 5. It promises to be an important part of meatless diets and of the new emerging

American cuisine.

6. A typical package of tempeh. 7. There are various types of tempeh. 8. Here is a kit for making tempeh at home; it contains everything you will need. 9. Tempeh at a market in Bali, Indonesia. 10. Different sized packages of tempeh in Indonesia; made and sold wrapped in banana leaves.

11. Tempeh sold in a market place in Java. On the left is tofu simmered in turmeric, a natural preservative. 12. Now let's learn how to make tempeh at home. The soybeans can be dehulled either wet or dry. We prefer wet dehulling. But this is how it is done dry. For best results with dry dehulling, preheat the soybeans at 250ºF in an oven for 10 minutes, or just until the hulls split. 13. Tempeh is easily made at home. Begin by combining 2½ cups soybeans with 7½ cups water in a large pot. 14. Bring just to a boil. 15. Then remove from heat, cover, and allow to stand for 8 to 16 hours.

16. Carefully pour off water from pot then vigorously rub beans between the palms of both hands for 3 to 4 minutes to remove hulls. 17. Then pour off hulls into a strainer. Repeat this process several times until all the beans are dehulled. 18. To the drained beans in the pot add 10 cups (hot) water and 1½ tablespoons vinegar. 19. Bring to a boil and cook, uncovered, for 45 minutes, then pour contents of pot into a large colander and allow beans to drain well. 20. Then allow beans to dry for 20 to 30 minutes on a double layer of absorbent toweling.

21. To make the container for incubation you can use Ziploc bags, baking pans, pie tins, etc. We prefer Ziploc bags. Take two 7-by-8-inch polyethylene bags and, using an ice pick, make holes in a grid pattern every ½ inch. 22. When the soybeans have cooled to body temperature and are well dried, transfer them to a separate clean tray for inoculation. 23. Now we are ready to inoculate them. The inoculum, tempeh starter, is available from The Farm in Tennessee or from Organic Gardening magazine. Once you buy one small packet you can make more of your own, using illustrated instructions in our book of tempeh. To inoculate, simply take 1 teaspoon of starter, sprinkle it over the beans... 24. And mix well. 25. Then spoon half of the inoculated beans into each of the two perforated bags.

26. Flatten each bag to a thickness of ½ to 3/4 inch. 27. Then place bags in an incubator. This incubator is made from a Styrofoam cooler or picnic basket heated by a 20-watt electric bulb regulated by an aquarium or chick brooder thermostat. A water heater room or any other place as warm as 86ºF (30ºC) can serve as an incubator. 28. Incubate the tempeh at 86 to 88ºF for 22 to 26 hours. When done, the beans should be bound together firmly into fragrant white cakes. 29. A large cake of finished tempeh and tempeh in burger rounds made in yogurt containers. 30. Here is an incubator made from two cardboard boxes, the space between the larger and the smaller being filled with batting for insulation. Note the perforated rack on which the tempeh is placed.

31. Good tempeh looks like this when sliced. 32. Tempeh is as versatile and delicious as it is nutritious and inexpensive. Most of the tempeh in Indonesia is served deep-fried or shallow-fried to give it a crisp texture and savory flavor. Here tempeh is being shallow fried to make crisp tempeh chips. 33. Crisp tempeh chips with creamy tofu dip. 34. Tofu burger. 35. Tofu burgers (open faced) made with round tempeh patties.

36. Some people like to grill their burgers first with a miso sauce. 37. Label of tempeh patties. 38. TLT; Tempeh, Lettuce & Tomato Sandwich. 39. Tempeh Sloppy Joe. 40. Canning Tempeh Sloppy Joe.

41. Tempeh burritos or tacos. 42. Tempeh in pita bread. 43. Tempeh Guacamole and Crisp Tempeh Bits on tortillas. 44. Breaded Tempeh Cutlets or Croquettes. 45. Tempeh Lumpia, a Filipino dish.

46. Tempeh Gyoza or Egg Rolls. 47. Tempeh Felafels; Temptations. 48. Tempeh is delicious simmered in coconut milk with herbs and spices. The milk is easily made at home in a blender as described in *The Book of Tempeh.* 49. Simply pour the mixture of coconut pulverized with hot water into a strainer and press out the coconut milk with your fingertips. 50. Tempeh starter can also be made at home. Here is a method for growing it on soybeans and sifting off the spores. 50A. It can also be grown on pressure cooked white rice, cooked in a Mason jar.

51. Now to Indonesia. A sketch of a large Indonesian tempeh shop. 52. In a few areas, tempeh is incubated packed in bamboo halves. 53. Close-up. 54. Carrying the tempeh to market. 55. Indonesian tempeh wrapped in banana leaves and polyethylene bags.

56. Tempeh in small packets wrapped with banana leaves in the Yogyakarta market, May 1977. 57. Close-up. 58. Here is a wife cooking tempeh in a typical village kitchen. 59. Thin tempeh slices at the marketplace are dipped in a batter of spiced coconut milk and rice flour, then deep-fried to make tempeh chips. 60. Here are tempeh cutlets, seasonings, and chips.

61. Other ready-to-eat tempeh items in a West Javanese market. 62. Tempeh chips in a marketplace in Yogyakarta, Java. 63. Making grilled tempeh on skewers like shish kebab over a home barbecue. 64. Making Sate, a similar skewered delicacy with a wonderful dipping sauce, sold here by a street vendor. 65. Javanese markets are a festival of colors. Most tempeh cuisine includes a load of blazing hot chilies...

66... which are ground by hand in stone mortars for use in sauces. 67. Like most traditional societies, Indonesia has a grain-centered diet. The colors of natural grains and beans in the markets are a feast for the eyes. 68. In Indonesia the remarkable winged bean is also made into tempeh; or it can be made into tofu or deep-fried tofu. 69. A close relative of tempeh is onchom, which is usually made from peanut presscake or okara with a Neurospora mold. It is sold in cakes in the markets of West Java. 70... and may have a

distinctive orange color from the mycelium.

71. To make onchom, steamed peanut presscake is packed into molds, 72. Inoculated with onchom from a previous fermentation, 73. Placed in an incubator where it generates its own heat from fermentation, 74. And looks like this when it is finished. Address: Lafayette, California.

4325. Wolf, W.J. 1984. Food uses of edible soybean protein products in the United States. In: S. Wong, et al., eds. 1984. Proceedings of the Second U.S.-China Soybean Symposium. Washington, DC: USDA OICD. xix + 464 p. See p. 442-43. [3 ref]

• ***Summary:*** Discusses defatted soy flours, soy protein concentrates, soy protein isolates, and textured soy protein isolates. Both isolates and concentrates are widely used in processed meats. Other applications for isolates are in whole and nonfat dry milk replacers, coffee whiteners (coffee cream analogs), cake mixes, beverage products, confections, and infant formulas–which are widely fed to infants who are allergic to cow's milk. Therefore soy may be the only source of dietary protein during the first few months of life. In the USA, the levels of nutrients required in infant formulas are specified by the Infant Formula Act of 1980, based largely on recommendations of the Committee on Nutrition of the American Academy of Pediatrics. For example, the minimum protein requirement is 1.8 gm/100kcal and the quality of the protein source must be at least nutritionally equivalent to casein. Address: ARS/USDA.

4326. Speck, Peter. 1984. Making soymilk dietetic and pharmaceutical products in Switzerland (Interview). Conducted by William Shurtleff of Soyfoods Center in Lafayette, June 2. 1 p. transcript. [Eng]

• ***Summary:*** They have a soymilk plant with 1,000 liters/hour capacity. It is located near Sursee but will soon be moved. They make about 40,000 liters a week of soymilk from whole soybeans. They [Naga Olten] started making only dry product 11-12 years ago, but 2-3 years ago began liquid Tetra Brik. This plant does not run full time. They are now getting a new plant of the same capacity from Alfa-Laval.

Ensure makes a product similar to theirs in the USA, but it may not contain any soy.

They find that using sodium bicarbonate gives their soymilk a more neutral and much more acceptable flavor. Does anyone in Japan do this? How does Galactina use it. Preblanch?

Alfa-Laval now uses direct steam (only?) for cooking their soymilk.

PHAG is a big Swiss distributor to the Reformhauser.

Alpro sells various brands of soymilk in Europe. Alpro is the only big soymilk maker, but their quality is poor. Their carob and plain are not good at all. Alpro is not growing well. It's too hard to compete with milk in Europe.

Nago Olten started their soy business making soy for tube feeding in 1969. Lindt and Sprungli bought Nago Olten in the 1970s, then Galactina bought the company from them in 1979. Initially they sold a dry product. In 1981 they introduced entero feeding in liquid Tetra Brik. In 1983 they introduced three flavors of Vita Drink with 20% solids in 250 ml liquid Tetra Pak: vanilla, cocoa, and strawberry (*erdbeeren*) sold to clinics and hospitals. They export this to France as Bio-Delis. Major features of this product are free of lactose (very important, especially after surgery, when people temporarily lose their lactose tolerance) and free of cholesterol. What is Bebe Nago? When introduced? Address: Galactina, Switzerland.

4327. Wilson, Geoff. 1984. Soymilk "bomb" primed to scatter dairy hopes. *National Farmer* (*Australia*) No. 11. June 14-27. p. 24-26. New Series.

• ***Summary:*** "The development of a soybean milk indistinguishable from cow's milk poses the most serious threat to dairying in nearly 20 years–its like a time bomb on a fast clock... The impact of soymilk on this country's dairy industries is likely to make the margarine wars of the late 1960s look like a kindergarten spat... And even now one of Australia's biggest dairy co-operatives is planning to be ready to swing into soymilk production next year... Soymilk made for about 13 cents a litre puts it at about half what most Australian dairymen now receive for market milk..." Address: P.O. Box 283, Caulfield South, 3162 Victoria, Australia.

4328. Wilson, Geoff. 1984. Expatriate Australians boosting soy. *National Farmer* (*Australia*) No. 11. June 14-27. p. 25. New Series.

• ***Summary:*** John Wilson, who developed the Alfa-Laval soymilk system, is now based in Lund, Sweden. Owen Price is managing director of the Dairy Farm group of companies in Hong Kong. He is guiding his company toward soy products. "The first formulation he admits to is a soy ice-cream well suited to the expanding Hong Kong market. Others can be expected. However Price may well become a force in the supermarket selling of soymilk foods in Australia, as part of his company controls 106 supermarkets in Australia (as well as 140 supermarkets in Asia)–through Franklins in Australia, noted for its cut-price retailing, and its rapid expansion into Queensland and Victoria." Address: P.O. Box 283, Caulfield South, 3162 Victoria, Australia.

4329. Alfa-Laval. 1984. Soymilk: Product and process. Lund, Sweden. 12 p. June.

• ***Summary:*** A color brochure containing many photos and diagrams: Contents: Foreword. Soybeans–background. Nutrition. Soy milk–the product. Cultivation and yield. Processing. Salient features of the Alfa-Laval soy milk process lines. Packaging. Economy.

"After centrifugal separation of the slurry to remove fibre residue (commonly known as 'okara'), the clarified soya base that has been extracted goes on to deactivation of residual enzymes and trypsin inhibitor, and from there to deodorization."

Note: This is the earliest English-language document seen (Aug. 2013) that uses the term "clarified soya base" to refer to soy base (with the okara removed). Address: Alfa-Laval, Lund, Sweden.

4330. Appropriate Foods, Inc. 1984. Eat Appropriately! Summer catalog '84. 137 New Hyde Park Rd, Franklin, NY 11010.
• ***Summary:*** The following lines are carried and distributed: Appropriate Foods (tempeh, soymilk), New York Soy Deli, Grainaissance (amazake and mochi), Garden of Eatin', McZand Products, N.Y. Miso, Nasoya, Nutri-Gest, The Soy Source, Sister Shorter, Swan Gardens, Sprout Delights, Willow Run Margarine, Great Eastern Sun (all of their products). Address: Franklin Park, New York.

4331. Chandrasiri, Vasina. 1984. Assessment of protein quality in soybean processed foods: Available lysine contents. *J. of the National Research Council of Thailand* 16(1):35-50. Jan/June. [18 ref. Eng; tha]
• ***Summary:*** Available lysine contents of soybeans and 10 soyfoods was determined as follows: raw soybeans 6.62 g/16 g nitrogen, cooked soybeans 6.12, white tofu 5.64, yellow tofu 6.24, soft curd tofu 5.63, tube tofu 6.17, yuba 8.13, soymilk 4.43, soy sprouts 3.79 (each g/16g N).

Values for fermented soyfoods were as follows: white soybean paste [miso] 4.72, black soybean paste 3.72, fermented curdcake (okara) 5.35. 30 minutes of boiling did not reduce the available lysine significantly. The study concluded that there was no reduction in available lysine content of soybeans before they were made into fermented or non-fermented soyfoods. There was no change in the amount of available lysine in the non-fermented soyfoods, but there was a small, statistically significant reduction in fermented soyfoods. Address: School of Home Economics, Sukothaithammatirat Univ., Thailand.

4332. Eden Foods, Inc. 1984. From the bounty of Eden (Ad for Edensoy soymilk). *Vegetarian Times.* June. p. 21.
• ***Summary:*** Full page, color (see next page). The top half of the ad shows an illustration of a modern Garden of Eden. A family is enjoying a picnic in idyllic surroundings, with a border of flowers, fruits, nuts, butterflies, etc. The bottom half shows a mother with her 5-year-old daughter, who is drinking Edensoy from a glass. Across the bottom is Eden's colorful symbol of a crane with a banner in its bill bearing the word "Muso" in red.

This ad also appeared in East West Journal. 1984. June. Rear cover. Aug. Inside front cover. And in *Natural Foods Merchandiser.* 1987. July, p. 67.

Note: This is the 2nd earliest ad seen for Edensoy. Address: Clinton, Michigan 49236. Phone: 800-248-0301.

4333. Huff, Murray W.; Giovannetti, P.M.; Wolfe, B.M. 1984. Turnover of very low-density lipoprotein-apoprotein B is increased by substitution of soybean protein for meat and dairy in the diets of hypercholesterolemic men. *American J. of Clinical Nutrition* 39(6):888-97. June. [45 ref]
Address: Senior Research Fellow of The Ontario Heart Foundation, Dep. of Medicine, Univ. Hospital, 339 Windermere Road, London, Ontario, Canada N6A 5A5.

4334. Leneman, Leah. 1984. The foods that are soya good. *Vegetarian* (*The*). May/June. p. 12.
• ***Summary:*** "Soya foods are playing an increasingly important role in the American health food movement, a positive trend which hopefully will be echoed in the U.K. By soya foods I do not mean TVP (which has never really caught on in a big way in the States), but tofu (soya bean curd) and tempeh. These are low-cost, low-technology products simple enough to make in your kitchen." In America the movement away from dairy products is for reasons of health rather than ethics. In Britain, ethics come first. Cholesterol is the real bugbear to Americans. In New York the author tasted a soft-serve tofu ice cream with a "creamy texture I would not have believed possible in a dairyless product."

4335. Sotelo, Angela; Hernandez, M.; Frenk, S. 1984. Evaluacion biologica, en ratas y en humanos, de un producto lacteo sin lactosa, y una formula proteinica de soya para uso en la desnutricion proteinico-energetica [Biological evaluation, in rats and humans, of a milk product without lactose, and of a soy protein isolate for use in treating protein-energy malnutrition]. *Archivos Latinoamericanos de Nutricion* 34(2):333-42. June. [24 ref. Spa; eng]
• ***Summary:*** Tests on 16 infants with protein-energy malnutrition and lactose intolerance showed that formulas made with either lactose-free milk (LFM) or soy protein isolate (SPI) are good alternatives to dairy-based formulas. The PER for each protein source was as follows: Casein 2.71, LFM 2.28, and SPI 1.19. Nitrogen absorption of both LFM and SPI was 80%. Address: Instituto Mexicano del Suguro Social (IMSS), Mexico, D.F., Mexico.

4336. Watanabe, Tokuji; Kishi, Asako. 1984. The book of soybeans: Nature's miracle protein. New York, NY: Japan Publications. 191 p. June. Illust. General index. Recipe index. 26 cm. [21 ref]
• ***Summary:*** Contents: Introduction. Part 1. General information: 1. Characteristic traits: Agronomic and other biological characteristics, physical properties, chemical properties, soybean protein, properties of soybeans as

food material. 2. Current ways of using and processing soybeans: Throughout the world, traditional ways of using and processing, new soybean food products. 3. Tofu and other nonfermented soybean food products: Tofu (Cotton or regular tofu, silken tofu {*kinugoshi*} and soft tofu, packaged tofu, new equipment), deep-fried tofu, dried-frozen tofu (*Kôri-dôfu*), soy milk, yuba, roasted soy flour (*kinako*), soybean sprouts.

Note 1. This is the earliest English-language document seen (April 2013) that uses the term *Kôri-dôfu* to refer to dried-frozen tofu.

4. Miso and other fermented soybean products: Miso, natto, Hama-natto (tera-nattô), soy sauce, sufu, tempeh. 5. Other ways of eating soybeans–Simple traditional Japanese foods: Parched soybeans, boiled soybeans (*budo-mame; hitasahi mame*), beaten and mashed [or ground] soybeans (*go*, or (from edamamé) *zunda or jinda*), molded soybean mash (*jinta-dôfu*), molded mashed soybeans and rice flour (*shitogi*), soybean soybean-mash paste. 6. New soybean protein products.

Note 2. This is the earliest document seen (Nov. 2008) that mentions *zunda.* The text (p. 84) reads: "When fresh green soybeans (edamame) are used in cooking, they are boiled for from ten to twenty minutes; ground; and flavored with salt, sugar, and soy sauce. The resulting dish is called *zunda* or *jinda."*

Note 3. Zunda is a healthy and tasty snack or treat made from mashed edamamé. It is sweet, rich in protein, high in fiber and emerald green. It is said to have originated hundreds of years ago in Japan in Miyagi prefecture. In and around Sendai (capital of Miyagi prefecture) one can find many shops and booths that sell zunda cakes, zunda mochi treats, and zunda shakes, all made from edamamé (green vegetable soybeans). One well-known company in Japan that markets delicious zunda products is Zunda Saryo.

Part 2. Cooking with soybean food products: Tofu, yaki-dôfu (toasted tofu), kôri-dôfu (dried-frozen tofu), nama-agè, abura-agè, gammodoki, yuba (soy-milk film), nattô, miso, soy milk, soybeans, bean sprouts. Afterword. Bibliography.

In the chapter on tofu, pages 43-44 discuss okara or *unohana* (the residue remaining after soy milk production); a photo shows it in a glass bowl. "Though it formerly appeared on many Japanese tables seasoned and cooked with vegetables, today it is most often fed to animals. As the number of animals raised in urban and suburban areas decreases, however, tofu manufacturers are finding it harder to dispose of residue."

Page 99 notes of tofu: "At a certain temple in Kyoto is a plaque bearing the following inscription, which, while comparing this food to religious faith, clearly shows the esteem in which the Japanese people hold tofu. 'Religious faith should be like tofu: it is good under any circumstances. It is good boiled, grilled, or fried. Raw, chilled, served with soy sauce and other seasonings, it is good with steamed rice. Simmered in hot water and flavored, it is good with sake. Because it is soft, old people and sick people welcome it, but children and young people like it too. Men like it, women like it; poor and rich both like it. Though common, it has elegance enough to find a place in the upper class.

"'It cuts clean and well for use in clear broths. It is good in the meatless diets of religious training. It can be crushed for use in miso soup. It is used all the time and in all seasons. It is inexpensive yet numbered among the delicious treats. It is welcomed everywhere, in mountains as well as in big cities. It is well received at dinners for dignitaries and guests yet is convenient enough for college students who do their own cooking. Women especially should be like tofu. The mature and cultivated person should be tender, yet firm, like tofu. Though apparently tasteless, it is delicious. Though apparently ordinary, it is extraordinary.'"

Other ways of eating soybeans (p. 83-84): (1) Parched–"Parched gently in unglazed ceramic dishes made for the purpose," then tossed by people at Setsubun in February around their houses as they chant "'Demon out! Good luck in!' Then they pick up the beans and eat them. Parched soybeans are included in some varieties of *mochi* (glutinous rice cake) and in *okoshi* a confection made of puffed rice bound together with sugar syrup. In the past they were eaten with salt, miso, or soy sauce."

Note 4. In the USA, parched soybeans are called "dry roasted soynuts."

Tables show: (1) World production of soybeans (1977-1982). (2) Price trends in dollars per ton for wheat, soybeans, and corn (1970-1981). (3) Soybean yields in the USA and Japan (1974-1981). (4) Chemical composition of soyfoods: Tofu, abura-agè, kôri-dôfu, yuba, kinako, soybean sprouts, nattô, miso (dark yellow), soy sauce (common), soybean (Japanese). (5) Statistics on production of modern soybean products in Japan (1975-1981). (6) Annual production and prices of modern soy protein products in the USA (May 1983).

Japan once produced a million tonnes (metric tons) of soybeans annually. This figure decreased dramatically during World War II. After the war, as soybean imports from the United States steadily increased, Japan's domestic crop gradually fell to the level of no more than 100,000 tonnes. In 1977 it was 111,000 tonnes, yet by 1982 it had jumped to 226,000 tonnes as rice acreage was reduced.

All photos are black and white. Figures show: (2) Line drawing of soybean plant with flowers and leaves. (2) Cross section of soybean seed-coat and cotyledon. (3) Graph of protein solubility (NSI) of defatted soybean meal at different pH values. (4) Graph of protein solubility (NSI) of defatted soybean meal at different concentrations of calcium chloride. (5) Graph of relationship between time and temperature of soaking soybeans in water (colder water temperature requires longer soak time). (6) Flow sheet for making regular tofu. (7) Photo of regular (*momen*) "cotton tofu." (8) Line drawing of

grinder (horizontal type) used with soaked soybeans when making tofu. (9) Photo of continuous filter for soy-milk preparation. (10) Photo of small-scale soy-milk processing plant. (11) Line drawing of molding box [forming boxes with lids] for making regular tofu. (12) Photo of yaki-dofu [grilled tofu]. (13) Photo of okara in a glass cup. (14) Line drawing of molding box [forming box] for silken tofu. (15) Photo of silken tofu. (16) Flow sheet for packaged tofu production [GDL]. (17) Photo of packaged tofu in package. (18) Flow diagram of large-scale process for making tofu and abura-agè with 26 pieces of equipment labeled. (20) Flow diagram of continuous process for making packaged tofu [GDL]. (21) Photo of 2 pieces of abura-agè. (22) Photo of deep fryer for making abura-agè. (23) Photo of nama-agè [deep fried tofu cutlet]. (24) Photo of two types of ganmodoki. (25) Line drawing for tofu kneader for ganmodoki production. (26) Photo of kôri-dôfu [dried frozen tofu]. (27) Flow sheet for making dried-frozen tofu. (28) Flow diagram of process for making large-scale dried-frozen tofu. (29) Photo of aseptic carton and glass of soy milk. (30) Flow sheet for making aseptically packaged soy milk. (31) Photo of 5 different forms of dried yuba. (32) Photo of kinako in two clear glass bowls. (33) Photo of soybean sprouts in a woven bamboo basket. (34) Flow sheet for making miso. (35) Three different types and colors of miso on 3 bamboo rice paddles (*shamoji*). (36) Line drawing of cut-away view of traditional pressure cooker (*koshiki*) for rice cooking. (37) Diagram of continuous rice cooker with 7 parts labeled. (38) Line drawing of *Aspergillus oryzae* with conidia (spores), sterigmata, and mycelium labeled. (39) Photo of pieces of koji. (40) Diagram of modern fermentation room for making koji. (41) Cut-away view of miso fermenting in a wooden vat with stone weights above vinyl film on top. (42) Line drawing of a mashing machine for miso. (43) Photo of natto in rice straw wrapper and polystyrene tray. (44) Cross sectional view of pressure cooker for soybeans. (45) Line drawing of rotating mixer to combine cooked soybeans with pure-cultured *Bacillus natto*. (46) Photo of soy sauce table dispenser. (47) Flow sheet for making Japanese soy sauce (shoyu). (48) Transparent view of crusher (roller) for roasted wheat in making soy sauce. (49) Photo of modern stainless steel fermentation tanks / vats (indoors). (50) Photo of a jar and a cup of sufu [fermented tofu]. (51) Diagram showing relationships between modern soy protein foods.

Note 5. Surprisingly, edamamé, one of the most popular soyfoods in Japan, is mentioned only once, in passing (p. 84) in this book.

Photos on the rear cover show Tokuji Watanabe and Asako Kishi. A brief biography of each is given.

Tokuji Watanabe: Born in 1917 in Tokyo, he graduated from the Faculty of Agriculture of Tokyo University in 1941, with Doctor of Agriculture. In 1945 he entered the National Food Research Institute (NFRI), of which he became director in 1971. In 1977 he resigned that position and became a professor at the Kyoritsu Women's University, where he now teaches. Address: 1. D. Agr., Kyoritsu Women's Univ., Tokyo.

4337. Wilson, John C. 1984. The manufacture of soymilk which is not contaminated with undesirable "beany flavor," resulting from enzyme induced oxidation of fats. Paper presented at the Singapore Inst. of Food Science & Technology Symposium. 19 p. Held June 14-15 at the Hyatt Hotel, Singapore. [8 ref]

• ***Summary:*** Introduction: "This paper anticipates a series of questions and tries to inform the reason for things pertaining to our topic according to the perspective from which we see things in 1984." Who are the real giants? Shall we not give tribute?" 1. What is the interest in the world regions for a soymilk without the traditional 'beany flavour'? What need creates an interest, creates a demand of such proportions? China, South East Asia, North East Asia, North America, hippies, vegetarians, tofu, *The Book of Tofu,* by Shurtleff and Aoyagi.

2. What is the history behind the long delayed but sudden phenomenal development of this product? Dr. Harry W. Miller in Shanghai (1936), K.S. Lo (of Vitasoy) in Hong Kong [1941], in-bottle sterilizing by K.S. Lo, development of UHT processing and aseptic packaging by Yeo Hiap Seng in Kuala Lumpur, Malaysia (1967), the advent of the brick shaped aseptic carton. The traditional soymilk process: "Filtering off the fibrous material,... one is left with the basic soymilk extract or soybase to which some sugar is added" (p. 8). Improvements in soymilk flavor: Cornell hot-grind process. University of Illinois hot water blanch method "is the basis of most modern soymilk processing." Developments in Japan since the mid-1970s, which have grown "out of the Illinois process but overcoming the 'chalkiness' by a filtration step using a decanter or some form of continuous filtration." The quality is excellent but the yield of protein is unfortunately only about half compared to the almost 100% achieved by the original Illinois method."

3. What are the developments in the market areas? Soyfoods industry and market statistics published annually by Shurtleff. Trends in: Japan, South East Asia, Indian Subcontinent, Mid East [Middle East], Europe (Flavor is not as good as in Japan. "There is also a political impediment. It would be suicidal to set up a soymilk industry as a 'substitute cow's milk...' considering today's ailing European dairy industry and the militant stand of the European dairy farmer. But as surely as margarine has come and been accepted, a prime quality soymilk will come to Europe. It is a matter of time"). Africa (financing troubles, the good work of IITA in Ibadan, Nigeria). South America ("A market spoilt! Take Brazil–the world's 2nd largest producer and exporter [of soybeans]. People have had inferior quality product almost forced down their mouth"). North America.

4. What is the state of the art in the manufacturing

technique for a "bean free" tasting soymilk? (Contains a flow chart with 13 steps, of which No. 10 states: "Blend ingredients: Blend into the soybase the ingredients necessary to a particular formulation, e.g., sugar, vegetable fat, emulsifier–stabilizer, flavouring–aromas," p. 16)

This paper deals with the phenomenal growth of the soymilk industry in northeast Asia, and the likeliness that its influence will spread worldwide in the near future.

Note: This is the earliest English-language document seen (Aug. 2013) that uses the word "soybase" to refer to a concentrated form of soymilk. However, no definition of the degree of concentration or total solids content is given. Address: Soya Process Product Manager, Alfa-Laval, Box 1008, S-221 03, Lund, Sweden.

4338. Praskin, Laurie. 1984. Work with soyfoods on The Farm in Tennessee. Luci Morren working with soyfoods in Mexico (Interview). *SoyaScan Notes.* July 1. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The Farm Soy Dairy had a centrifuge for making soymilk and dewatering soypulp in 1975. Laurie started working in the soy dairy in late 1974 or early 1975. Alexander was still there. There was a centrifuge there before that. All the tempeh at that time was okara tempeh. She does not recall if they used the centrifuge to dewater whole soybeans for tempeh.

Suzie and Chris Jenkins. Utah. 801-532-4289. Suzie made tempeh before she went to Guatemala.

Luci Morren is a woman working in Mexico with refugees from Guatemala. She went to the World Soy Conference. To make tortillas, add soybeans with corn to boiling lime water (cauldron cuts cooking time a lot), soak over night, then rinse, grind, form and cook tortillas.

Also using soybeans with local black beans, 1:5. Soak over night to do away with some SBTI [soybean trypsin inhibitor]. Also cook with rice. People don't use enough wood to cook things longer. Suzi utilizes everything when she does her demos. The whey is drunk with sugar and limes; refreshing. The pulp [okara] used in *masa,* and fried. Luci is a Belgian woman, who got turned onto soy in Mexico. She went to Nicaragua right after the revolution and started a big soy program. Nicaragua has classified soy as one of its protein sources. For 3 years, she worked closely with women; she also has a program with 5 farmers growing soybeans.

Laurie will try to get me Luci's address. Its sickening to see the poor kids. Mexicans do not want to help too much. Foreigners aren't allowed into camps. Including Luci. She works out of San Cristobal in her office, training Mexican promoters, but not all are as dedicated as she. Another student of hers is making tofu in her house to sell to tourists. Laurie taught her to make tofu cheesecakes.

Plenty is funding Luci to do this soy project in Guatemala. Do they buy beans in Tapachala? Are any Chinese in Guatemala making soyfoods?

4339. McLeod, John. 1984. Re: Work with soyfoods in Honduras and statistics on soyfood products manufactured. Letter to William Shurtleff at Soyfoods Center, July 10. 1 + 1 + 6 p. Typed, with signature on letterhead.

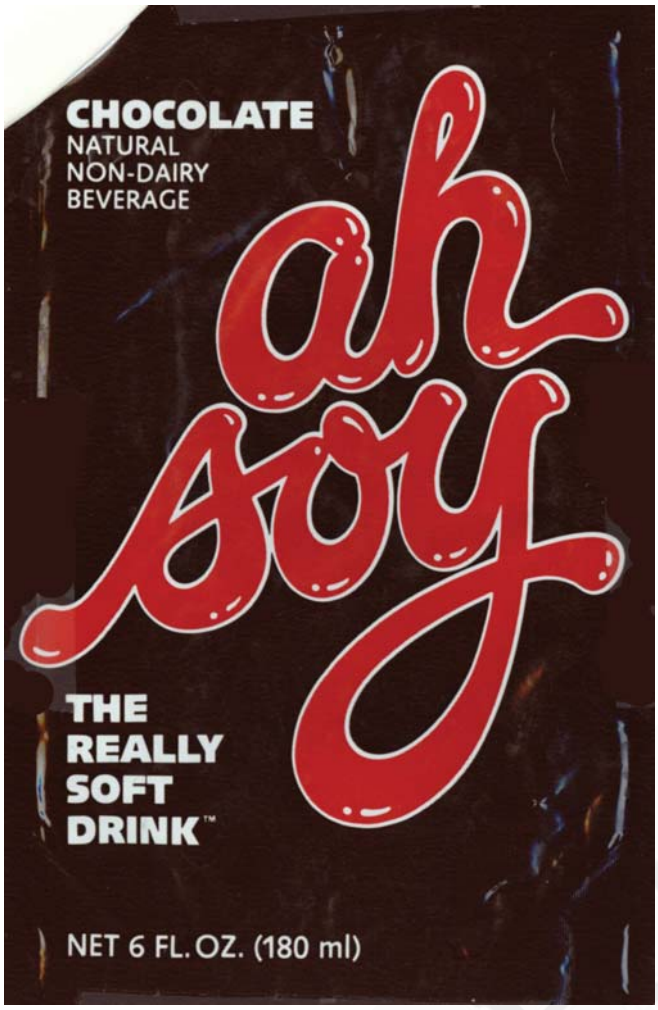
• ***Summary:*** "Since I've been in Honduras for the last year, managing an Emergency Food-For-Work Program, I've been somewhat disconnected with the Costa Rica Soy Program.

"If I'm ever in the Lafayette area, I would like very much to see your new Center. After working on Soybean Programs in Sri Lanka and Costa Rica for about seven years, it is obvious to me that people everywhere must soon begin eating greater quantities of soyfoods." In 197- CARE-Honduras introduced Nutrisoy, its first soy product in Honduras.

Attached are: (1) A form filled out by John giving dates and statistics on four commercial soyfood products in Honduras: Nutrisoy, Frescorchata, Masarina, Vitaleche. CARE now makes about 4,395 metric tons per year of these four soyfoods. (2) Four pages of edited manuscript about the history of soybeans and soyfoods in Costa Rica. Address: CARE-Honduras, 4a. Avenida Y 9a. Calle, No. 810, Colonia, Alameda, Apartado 729, Tegucigalpa, Honduras. Phone: 32-8601.

4340. **Product Name:** Ah Soy: Natural Non-Dairy Beverage (Soymilk) [Chocolate, Vanilla, or Original].
Manufacturer's Name: Great Eastern Sun (Importer). Made in Japan by San-iku Foods.
Manufacturer's Address: Asheville, NC 28806. Phone: 704-252-3090.
Date of Introduction: 1984. July.
Ingredients: Original: Water, organically grown soybeans*, barley malt, pearl barley malt, cold pressed safflower oil, sea salt. * = Organically grown and processed in accordance with Section 26569.11 of the California Health and Safety Code.

Vanilla: Vanilla extract. Chocolate: Natural cocoa, natural vanilla extract.
Wt/Vol., Packaging, Price: 6 fluid oz (180 ml) in stand-up foil retort pouch.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Original: Per 6 oz.: Calories 100, protein 4.5 gm, carbohydrate 9.4 gm, fat 5 gm. Vanilla: Calories 142, protein 4.3 gm, carbohydrate 21.2 gm, fat 4.4 gm. Chocolate: Calories 149, protein 3.9 gm, carbohydrate 25.5 gm, fat 3.5 gm.
New Product–Documentation: Labels. 1984. 4 by 6.25 inches. Plastic packs. Original: Red and white on blue. Vanilla: Red and white on tan. Chocolate: Red and white on dark brown. The words "ah soy" are written in script and look rounded, as if they were made from brightly colored round tubing. Text on front panel: "Made with organically



grown soybeans." "The really soft drink." On back panel: "It drinks like a shake and you can use it to bake. Ah Soy is the most versatile, delicious and nutritious natural non-dairy soft drink you can buy. Can something so smooth, so rich, so refreshing, really be good for you? Ah Soy is. Ah Soy is full of protein, free of cholesterol, low in calories and has no cane, fruit or milk sugars. And of course, there are no chemical additives and no preservatives. Use Ah Soy on breakfast cereal, as the secret to spectacular sauces, to make extra fluffy pancakes, and as a healthy, all natural thirst quencher."

Note: This is the earliest commercial soymilk product seen with an English-language label (June 1999) that has a flavor named "Original." In March 1982 a Japanese company named Nagoya Seiraku introduced a soymilk in Japan named *Sujaata no Gen Tônyû,* which means "Sujaata Original Soymilk."

Shurtleff & Aoyagi. 1984. Soymilk Industry and Market, Update (Based on interview with Bob Ballard, 21 March 1985). This product has been a "fantastic success." During the period from 1 Nov. 1984 to 25 Jan. 1985 (just under 1 fiscal quarter), 525,000 unit packs of 4 flavors were sold.

Shurtleff & Aoyagi. 1985. Soymilk Industry and Market, Update. By March 1985 sales of Ah Soy are growing rapidly, now accounting for 15-20% of Great Eastern Sun's total sales. The favorite flavor is vanilla, followed by original [plain], carob, and chocolate, in that order. By 1987 Ah Soy was being made in the USA in quarts. Shurtleff & Aoyagi. 1986. Soymilk Industry and Market, Update. By March 1987 Ah Soy is selling about 270,000 units (10,906 gallons) per month. Sales by flavor are vanilla (35% of the total), original/plain (30%), carob (17.5%), chocolate (17.5%). Sales have been flat for the past year.

Letter from Bruce Sturgeon, Vice President, Great Eastern Sun, Enka, North Carolina, to East West Journal. 1989. Jan. p. 6. Convincingly refutes EWJ's award to Ah Soy for the "Most Questionable Beverage Label Claim."

4341. **Product Name:** Firm Nigari Tofu, Soymilk, and Soysage.
Manufacturer's Name: Maritime Soycraft.
Manufacturer's Address: R.R. 4, Antigonish Harbor, NS, B2G 2L2, Canada. Phone: 902-863-2903.
Date of Introduction: 1984. July.
New Product–Documentation: Form filled out by Sian McLean (a woman), ca. 1984. They started on 1 July 1984 and now make firm nigari tofu, soymilk, and soysage. The business has no name yet. "Small word-of-mouth operation so far." They use 60 lb/week of soybeans.

Letter from Sam Weinreb. 1988. Jan. 14. He just talked with Hugh and Sian McLean. Talk with Sian McLean. 1988. Feb. 15. They started making tofu July 1984. His company is now named Maritime Soycraft, R.R. 2, Heatherton, NS, B0H 1R0, Canada. Phone: 902-386-2474. Says he started making soysage in 1986, but it is shown on his 1984 form. Call from Sian. 1991. Nov. 18. They make mostly tofu, plus some soymilk. They no longer make soysage. They make about 500 lb/week of tofu. There is a nice little steady market and people really like Maritime tofu. Her first name is Welsh.

Letter from Sian McLean. 1994. July 16. Maritime Soycraft is now located at Keppoch Mountain, R.R. #1, Antigonish, Nova Scotia B2G 2K8, Canada. Phone: 902-863-3978. This is a new tofu shop she built. She presently makes only fresh bulk tofu. She left her former marriage with Hugh and has a new partner who wants to do tofu production.

Talk with lady who works with Sian. 1995. May 15. Sian now has a vacuum packaging machine for her tofu, and she can get a shelf life of two weeks before the product turns yellow. This vacuum-packed tofu is not yet on the market.

Talk with Rick Turner of Maritime Soycraft. 1999. Dec. 2. They moved 1½ to 2 years ago to R.R. #4, Antigonish, NS B2G 2L2. Their phone number has not changed. They are now a partnership with 3 partners, Sian, Rick, and one other full-time person. They make about 1,000 lb/week of tofu, but have to expand to take on a new chain. So their business is

growing and they are looking for new equipment.

4342. Munyati, Nigel M. 1984. Re: Work with soymilk in Zimbabwe. Letter to William Shurtleff at Soyfoods Center, July. 1 p. Handwritten, with signature.
• ***Summary:*** "I have been out of soy for quite some time now. Since I left my former company I have been more involved in dairy milk. I still want to do some work on soy but at this stage I am up to my neck in the dairy business. The way I look at it is that my ultimate objective–of helping to feed the people–is still being achieved.

"I was quite dejected when I left my old company. I had joined them when they were on the wrong trail in the production of soy milk. I helped them to get on the right one but in the process I discovered that they were out to exploit my knowledge for their selfish gains. I had to leave then and what infuriates me is that they might succeed in marketing soy milk from my contributions. Anyway, such is life."

Nigel plans to visit the U.S. in about a month and hopes to visit Bill and Akiko in Lafayette, California.

Note: Chipinge (formerly known as Chipinga) is a town in southeastern Zimbabwe in the province of Manicaland near the Mozambique border. This aerogramme contains four glossy color photos of tall, modern buildings in Harare (before 1982 known as Salisbury), the capital of Zimbabwe. Address: DMB, Box 4, Chipinge [Zimbabwe].

4343. **Product Name:** Homestyle Tofu "No Egg" Salad.
Manufacturer's Name: Sonoma Specialty Foods.
Manufacturer's Address: 2317 Bluebell Dr., Santa Rosa, CA 95403. Phone: 707-525-8822.
Date of Introduction: 1984. July.
Ingredients: Tofu (organic soybeans*, water, nigari), soy oil, soy milk, celery, relish, tamari, mustard, vinegar, nutritional yeast, natural herbs and spices, sea salt, and honey. * Grown in accordance with CA H&S Code 26569.11.
Wt/Vol., Packaging, Price: 8 oz or 15 oz plastic tub.
How Stored: Refrigerated.
Nutrition: Per 2.66 oz.: Calories 105, protein 8.1 gm, carbohydrates 1 gm, fat 6.5 gm, fiber 1.3 gm, sodium 0.80 gm, cholesterol 0.
New Product–Documentation: Label. 1987. 4.5 inches diameter. Black, green and yellow on white plastic lid. 15 oz. "Improved! Non-Dairy. Cholesterol Free. Ready to Eat on Sandwiches, as a Dip & in Salads. Natural. No Preservatives. Nutritious. Delicious. Kosher." Illustration of a cottage in front of a picket fence.

4344. Tsuchiya, Kanji. 1984. Tônyû to sono hinshitsu hoji [The present status of the soymilk market and the preservation of soymilk quality at factories]. Tokyo: Published by the author. 31 p. July. [Jap; eng]
• ***Summary:*** Part I discusses the background of soymilk production in ASEAN countries and the industrial interest in soymilk worldwide. Part II analyzes quality control at every stage in the process from the viewpoint of production theory, based on modern soymilk plants. Also discusses microbiological control and colloidal research on the physical nature of soymilk. Address: Shokuhin Hinshitsu Hoji Gijutsu Kenkyu-kai (Society for the Study of Food Quality Preservation), Tokyo, Japan.

4345. *Vegetarian Times.* 1984. Japan's big-league vegetarian champs. July. p. 6.
• ***Summary:*** The manager of a Japanese baseball team, the Seibu Lions, which climbed from the cellar to first place, says he attributes the success of his team to the players' switch to a vegetarian, macrobiotic diet. In October 1981, when Tatsuro Hirooka took over as manager of the Lions, he prescribed a dietary change for his players, who had finished in last place the previous season. He limited their meat intake and banned polished rice and sugar. Instead he said his players would eat brown rice (unpolished), tofu, fish, and soymilk. The following spring he cut out the fish. They won the Pacific League championship and the Japan Series in 1983.

4346. Viavant, Suzy Jenkins. 1984. Re: Work with soyfoods Sri Lanka and Guatemala. Making tempe at The Farm in Tennessee. Letter to William Shurtleff at Soyfoods Center, Aug. 13–in reply to inquiry. 1 p. Typed, with signature.
• ***Summary:*** Suzy has been "extremely busy getting ready for a soy development tour in Sri Lanka due to happen on the 27th of August through the end of September. I am being sub-contracted by CIDA thru Plenty as a Soy Development Consultant. We will be investigating opportunities for an in-depth soy development project in Sri Lanka. Accompanying me will be the director of Plenty Canada, his wife and a member of the Sarvodaya movement."

"I started making tempe [tempeh, at The Farm in Summertown, Tennessee] in Sept. of 1976 at which time I took over production so Cynthia [Bates] could go full time into making spores [for tempeh]. At this time I was the first one to try using the centrifuge to dewater the soybeans after cooking, although I think it was originally Cynthia's idea. I made tempe until July 1977 when I went to Guatemala."

In Guatemala the "escalation of the political violence made it impossible for our extension workers to hold classes without being looked upon as subversives by the government. Because the dairy [soy dairy at Solola] was just a business it never really threatened the government so it was able to run for a few years. Now the dairy is closed for economic as well as political reasons. We hope to return if it [the political situation] cools down. Our latest report from Guatemala is that people in Itzapa are still growing soybeans and their wives are still making tofu and soymilk. I don't know if the people in Solola are still growing them because

we never quite isolated the best variety for their altitude." Address: Utah.

4347. Word of Nutrition. 1984. The most complete, unique and attractive: More than a health food store in the country (Ad). *Hartford Courant* (*Connecticut*)**.** Aug. 16. p. H13.
• ***Summary:*** This half-page ad appears on the page titled "Spotlighting: Newton." "Come in and let us 'show off' our wares from A-Z. Atmosphere (par excellence)... Herbs (bulk–enormous selection)... Kombu,... Macrobiotic selection (very extensive)... Peanut butter (made fresh by us)...Soy milk... Tofu (fresh)... Tofu entrees... Vegetarian foods..." Address: 194-200 Market Square, Newington, Hartford County, Connecticut.

4348. Pande, Nawin. 1984. Re: Plans to establish a solvent extraction plant and refinery. Letter to Richard Leviton, Soyfoods Association of North America, Sunrise Farm, Heath Rd., Colrain, MA, Aug. 28. 1 p. Typed, with signature on letterhead.
• ***Summary:*** The company is establishing a 300 MTPD [metric tons per day] Soybean Solvent Extraction Plant and a 55 MTPD Refinery in the heartland of India's soybean country. They also plan to process solvent extracted soymeal into various human food products for which India provides a vast market. "Our efforts are geared to establish Soybean in India firmly and to educate the masses about its nutritional value." They also want to establish facilities for extraction of other by-products such as Lecithin, Deodorizer distillates, Soap stocks and other minor chemicals. They also plan to go into production of dairylike soy products (such milk and cheese [tofu]) and industrial products.

"Since you are one of the leaders in Soyfoods and industrial products, we request you to kindly mail us per return the samples of all soya products being manufactured and marketed by you, different packagings used and other technical literature. Please also indicate what help you can extend to us in achieving the target set forth in para [the paragraph] above."

The company's two logos are shown in black at the left and right near the top of the brown and black letterhead. Address: United Soya Products Ltd. (A United Group Venture), E-1/177, Arera Colony, Bhopal, Madhya Pradesh, India. Phone: 62970.

4349. Bean Machines, Inc. 1984. Manufacturers and distributors of fine quality tofu & soymilk equipment (Ad). *Soyfoods.* Summer. p. 29.
• ***Summary:*** "Individual pieces or complete systems. Our own American-made equipment. Strong. Sanitary. Economical. Bean Machines disintegrators. The world's finest all stainless steel soybean grinders. BMI continuous pressurized slurry cooker.

Photos show: (1) BMI 300 Disintegrator. (2) An imported Takai W30C whole system, makes over 2,000 pounds of tofu per 8-hour shift. Costs under $20,000. Address: P.O. Box 1145, Sebastopol, California 95472.

4350. Bean Machines Inc. 1984. Bean Machines disintegrators: Stainless steel soybean grinders (Brochure). San Francisco, California. 4 p. Aug. 28 cm.
• ***Summary:*** On the front cover is the silhouette of a disintegrator in two shades of blue on a gray background. The text: Manufacturers and distributors of tofu and soymilk equipment. The world's finest soybean mills. Strong. Sanitary. Economical. Cable: BMITofu, San Francisco." On the inside left page is a black-and-white photo of the opened disintegrator, with all parts and functions labeled. A table gives specifications for the three models (300, 600, and 1000). The inside right page explains that the disintegrator has only one moving part; the rotor literally mashes the beans through as screen. Photos show options and extras: Hoppers (2), rolling stand, and pedestal.

On the rear cover is a photo on a light blue background of the company's new economy model–the BMI 150 disintegrator (or Mini Mite II). Capacity: 150 lb/hour of dry soybeans. At the bottom of the page is a warranty and a brief history of the company, which was founded in 1977 by William Shurtleff and Larry Needleman. Address: 390 Liberty St., #2, San Francisco, California 94114. Phone: 415-285-9411.

4351. Dagan, R.; Gorodischer, R.; Moses, S.W. 1984. Dietary treatment of acute diarrhea: Comparison between cow's milk and a soy formula without disaccharides. *J. of Tropical Pediatrics* 30(4):221-24. Aug. [21 ref]
• ***Summary:*** "It has been known for more than 65 years that acute diarrhea is associated with a disturbance in the absorption of carbohydrates. This phenomenon is mainly the result of a temporary deficiency of lactase in the mucosa of the small intestine."

The use of soy-based formula (compared with cow's milk) enabled hospitalized infants to recover significantly more quickly from diarrhea. There are two possible explanations: (1) The known transient deficiency in intestinal lactase during diarrhea; or (2) Differences in components other than carbohydrates (e.g., protein). Address: Div. of Pediatrics, Soroka Medical Center and Faculty of Health Services, Ben-Gurion Univ. of the Negev, Beer-Sheva, Israel.

4352. Del Valle, F.R.; Alba, E. de; Mariscal, G.; Jimenez, P.G.; Arellanes, J.A.; et al. 1984. Simultaneous curdling of soy/cow's milk blends with rennet and calcium or magnesium sulfate, utilizing soymilk prepared from soybeans or full-fat soy flour. *J. of Food Science* 49(4):1046-52. July/Aug. [11 ref]
• ***Summary:*** The method produced curds of similar characteristics (yield and compactness) regardless of whether

the soymilk was made from whole soybeans or full-fat soy flour. Address: 1. President, Fundacion de Estudios Alimentarios y Nutricionales, A.C., Apartado Postal 1545, Sucursal O, Chihuahua, Chihuahua, Mexico; and Prof. of Food Science, Facultad de Ciencias Quimicas, Univ. Autonoma de Chihuahua, Chihuahua.

4353. **Product Name:** Soy Milk.
Manufacturer's Name: Eastern Foods Corp.
Manufacturer's Address: 3225 E. Hennepin Ave., Minneapolis, MN 55413.
Date of Introduction: 1984. August.
New Product–Documentation: Regulatory Letter from FDA. 1984. Aug. 27. The term "Eastern Flavor" should be deleted from the label of the company's "Soy Milk."

4354. Eden Foods, Inc. 1984. Just the best [Edensoy, Eden tamari, brown-rice miso, barley miso] (Ad). *Soyfoods.* Summer. p. 37.
Address: Clinton, Michigan 49236.

4355. Hirotsuka, Motohiko; Taniguchi, H.; Narita, H.; Kito, M. 1984. Calcium fortification of soy milk with calcium-lecithin liposome system. *J. of Food Science* 49(4):1111-12, 1127. July/Aug. [15 ref]
• ***Summary:*** "Calcium ion was enveloped with a membrane system before addition of soy protein to prevent soy protein from being coagulated and precipitated by calcium ion. Soy lecithin was first sonicated in calcium salt solution to envelop the calcium ion with a liposomal structure composed of lecithin. Then, the calcium-lecithin liposomes were added to soy protein solution. Precipitation and coagulation were not observed in this soy protein lecithin-liposome system containing 60 mM Ca^{2+}. By this method it was possible to prepare calcium fortified soy milk containing more calcium (120 mg/100 gm) than in cow's milk. These results suggest that this calcium-lecithin liposome system is useful for calcium fortification of soy milk."

Note: *Webster's Dictionary* defines liposome (a term first used in 1968) as "an artificial vesicle composed of one or more concentric phospholipid bilayers." Address: 1-2. Fuji Oil Co., Osaka, Japan; 3-4. Research Inst. of Food Science, Kyoto Univ., Uji, Kyoto 611, Japan.

4356. House, S.L. 1984. Spotlight: Institutional foodservice. Alive Polarity, Murrieta, California. *Soyfoods.* Summer. p. 6.
• ***Summary:*** "Northeast of San Diego and southeast of Los Angeles lies a peaceful place where people can go for a day, a week, a month to experience spiritual renewal and better health practices. Among other diverse activities, Alive Polarity's Murrieta Hot Springs offers mudbaths, marriage counseling and superb vegetarian cooking."

"The lacto-vegetarian diet offered at Alive Polarity emphasizes purifying, health-building and gourmet dishes. Soyfoods make up a large part of the menu.

"'More than 50 percent of our meals contain soy products,' says Breese English, kitchen manager. Tofu is by far the soyfood used most often because it's so receptive; it adds little flavor of its own yet takes on the flavor of ingredients used with it. 'I'd say we consume at least 70 pounds a day."

"Alive Polarity's restaurant serves breakfast, lunch and dinner buffet style, totaling about 1000 meals daily."

"While tofu is a primary ingredient in many of the recipes, other soy products are used extensively as well. Bragg's Liquid Aminos and tempeh are two products that have found a place in Alive Polarity's kitchen.

"Bragg's is a liquid mineral soy bouillon often used instead of soy sauce or tamari. Its slightly less salty flavor had made it a popular item for the cooks as Mary Ann Beauchamp attests. 'I use it in almost everything, sauces, salad dressings, soups.' About 25 gallons of Bragg's Liquid Aminos are consumed weekly.

"Tempeh is the third most popular soy product used. Tempeh is a complete protein food with a texture that lends itself to hearty foods and entrees. Used in place of hamburger for summer barbecues, tempeh burgers are very popular. The kitchen staff estimates they use about 400 tempeh patties a week.

"Two soyfoods recently introduced at Alive Polarity include soymilk and Tofutti. Given that almost 20 gallons of soymilk are consumed weekly, it appears it's already gained acceptance among the clientele."

"Mary Ann Beauchamp, whose mother is Japanese explains, 'My mother is amazed with the things we do with tofu. The Japanese use tofu in traditional ways for specific purposes. I don't feel that they experiment or work with it as we do.' For example, Beauchamp explains a favorite recipe, Tofu Tidbits. 'You take cubes of tofu and bread them in a mixture of flour, nutritional yeast, herbs and spices. Then layer the cubes in a pan with a small amount of oil. Bake for an hour at 500º. Serve with tartar sauce and lemon wedges, it's fantastic. People just love it.'"

A photo shows the staff: Jane Buck, Breese English, Mary Ann Beauchanp, and Diane Luzzi. Contains a "favorite recipe" for Tofu french toast.

4357. Kawanishi Shoko Co. Ltd. 1984. An industry leader in tofu & soymilk processing and packaging equipment (Ad). *Soyfoods.* Summer. Rear cover.
• ***Summary:*** "Over 100 customers in the USA alone. Competitive prices, wide selection of equipment, unbeatable service." Address: Mike Haraguchi, 4713 Levelside Ave., Lakewood, California 90712.

4358. Leviton, Richard. 1984. Plant profile: Quong Hop. *Soyfoods.* Summer. p. 26-28.
• ***Summary:*** An excellent history of Quong Hop & Co.

plus an accurate account of their present activities. Photos show: (1) The company's heirloom, a board on which are written the characters "Quong Hop." (2) Jim Miller with Quong Hop's products. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

4359. Sato Co. Ltd. 1984. Jyuten is new tofu. Sato equipment since 1958 (Ad). *Soyfoods.* Summer. p. 5. [Eng]
• ***Summary:*** In this full-page ad, photos show three machines: Continuous soymilk cooker (Sany Ace Special). Okara squeezer (Big Boy II Model). Soymilk filling/packing machine (ST-4000). Note: In Japanese, *Juten* refers to packaged lactone silken tofu. Address: 33-9, Nakano 3-Chome, Nakano-ku, Tokyo 164, Japan. Phone: 03 (382) 0761.

4360. **Product Name:** Granola: Soya Cereal.
Manufacturer's Name: Soy City Foods.
Manufacturer's Address: 2847 Dundas St. West, Toronto, ONT, M6P 1Y6, Canada. Phone: 416-762-1257.
Date of Introduction: 1984. August.
Ingredients: Dried soy mash [okara], peanuts, honey, soy milk, sunflower seeds, raisins, spices, natural flavour, sea salt.
Wt/Vol., Packaging, Price: 500 gm plastic bag.
How Stored: Shelf stable.
New Product–Documentation: Label sent by Jon Cloud. 1989, May 5. He says the product was introduced in the summer of 1984.

4361. Vitasoy (USA) Inc. 1984. Vitasoy. It's what your customers are asking for. Taste the goodness (Ad). *Soyfoods.* Summer. p. 35. See also 28 x 22 cm. color poster with slogan "Taste the Goodness."
• ***Summary:*** "It's light, its natural, it tastes great! Completely free of cholesterol and low in fat. Vitasoy meets the needs of today's health-conscious consumer.

"We blend pure maple syrup and choice natural ingredients with soy goodness to create three delicious, preservative free drinks. Each a natural source of vegetable protein.

"Vitasoy comes in colorful, convenient Tetra-Brik packages. Easy to stack and store. Fresh for months, even without refrigeration. A natural sales leader.

"We've been producing soyfoods for over forty years. Today Vitasoy is number one in soy drink sales worldwide. That's more than 150 million units per year. Backed with this experience, we've created refreshing new drinks for American tastes.

"Original Vitasoy. Coconut Vitasoy. And now rich, creamy Chocolate Vitasoy. Three delicious, healthful drinks–just what your customers are asking for." Address: 435A Brannan St., San Francisco, California 94107.

4362. Vitasoy (USA) Inc. 1984. Vitasoy [Flamingo lady standing on one leg]. 435A Brannan St., San Francisco, CA 94107. 1 p. each. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.
• ***Summary:*** Poster (16 by 18 inches; see next page) and leaflet (8½ by 11 inches), both color. An attractive, young American blonde woman in an exercise outfit with headband standing on one leg in a sort of yoga position with her right arm resting on her back. She is sipping Vitasoy through a straw from a carton she holds in her left hand. The text reads: "Introducing Vitasoy. It's what your customers are asking for. It's light, it's natural, it's great. Completely free of cholesterol and low in fat, Vitasoy meets the needs to today's health and nutrition conscious customers." Address: San Francisco, California. Phone: (415) 974-1118.

4363. Vitasoy (USA) Inc. 1984. Good taste. Just for the health of it [Flamingo lady doing a pushup]. San Francisco, California. 1 p. Front and back. 15.7 x 11.5 cm.
• ***Summary:*** Glossy color. An attractive, young American blonde woman in an exercise outfit with headband is in pushup position but with one leg bent up over her head. She is sipping Vitasoy through a straw from a carton on the floor in front of her. The front text reads: "Discover new Vitasoy. The all new anytime, anywhere pick me up... Vitasoy has less calories than lowfat yogurt; contains no salt or preservatives and comes in three fun flavors: original, chocolate, and coconut... Look for Vitasoy in the produce section–where real natural foods belong. But, try it for the taste. Not *just* for the health of it."

The rear is titled "Try new Vitasoy." A photo shows a glass of soymilk with cartons of Vitasoy Chocolate and Vitasoy Coconut. Across the bottom: "The all natural soy drink with no cholesterol." Address: San Francisco, California.

4364. **Product Name:** WestSoy Natural (Soymilk).
Manufacturer's Name: Westbrae Natural Foods (Importer). Made in Japan by San-iku Foods.
Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: (415) 658-7521.
Date of Introduction: 1984. August.
Ingredients: Water, organic soybeans, malted barley, expeller pressed corn oil (less than 1%), sea salt.
Wt/Vol., Packaging, Price: 6 fluid oz (180 ml). Stand-up foil retort pouch.
How Stored: Shelf stable.
Nutrition: Per packet: Calories 140, protein 5 gm, carbohydrates 25 gm, fat 2 gm, sodium 124 mg.
New Product–Documentation: Label. 1984, dated. 4 by 6.25 inches, color. Retort pouch. Blue, brown, white and black on orange background. Milk bottle illustration. "Non dairy drink. Organic. Shake well. Serve chilled. Low sodium. Half the fat, all the protein of milk. No cholesterol.

Good taste. Just for the health of it.

Discover new Vitasoy. The all new anytime, anywhere pick me up. It's all natural. Has no cholesterol, a great source of vegetable protein and sweetened with maple syrup. Vitasoy has less calories than lowfat yogurt; contains no salt or preservatives and comes in three fun flavors: original, chocolate and coconut.

You can find Vitasoy at selected supermarkets and health food stores. Look for Vitasoy in the produce section — where real natural foods belong. But, try it for the taste. Not *just* for the health of it.

No refined sugar. No preservatives." Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. Shurtleff & Aoyagi. 1984. Soymilk Industry and Market, Update. This plain soymilk, similar to Ah Soy (launched 1 month earlier and also made by San-iku Foods in Japan), is Westbrae's first soymilk product.

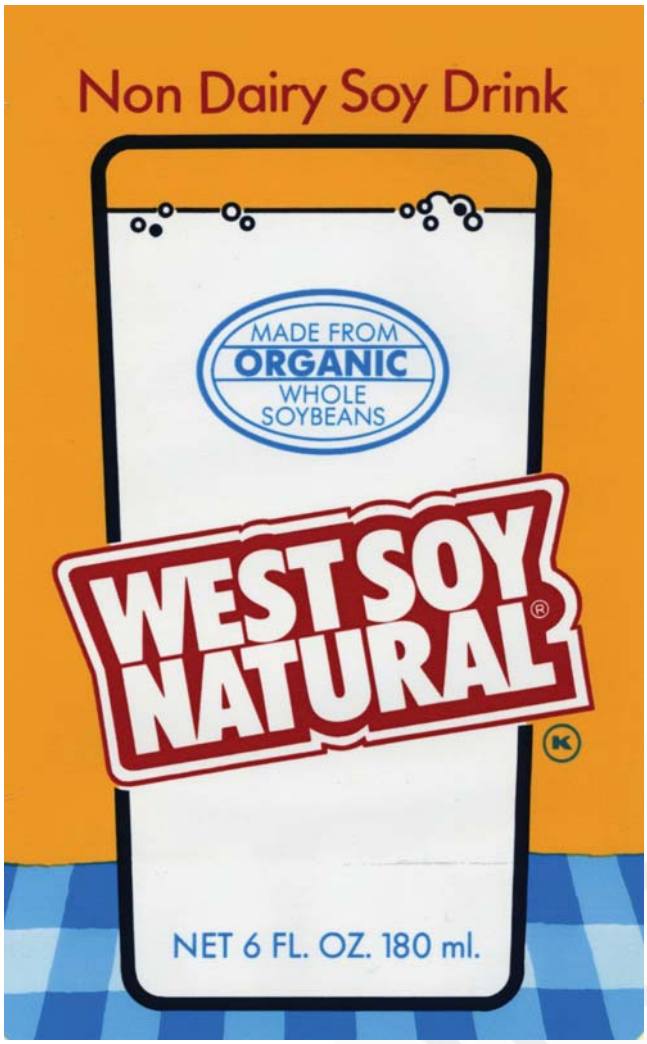
Talk with Marty Roth of Westbrae Natural. 1985. Jan. 3. Their Westsoy natural was a sort of me-too effort, so that Westbrae could have its plain counterpart to Edensoy, Ah-Soy, and Vitasoy. Westbrae didn't put a lot of effort into the product. Westsoy, introduced a little before the Malteds, was not eventually as successful as the Malteds but it quickly became one of the company's better products. Its features: 1. Organic. 2. The lowest price plain soymilk. It was made in the same plant (Saniku Foods in Japan) as Ah-Soy and had a similar flavor.

4365. *High Plains Journal* (*Dodge City, Kansas*). 1984. USSR grain imports approach all-time high. Sept. 10.
• ***Summary:*** Soviet grain imports for 1984-85 are now forecast at a near-record 43 million tons, well above the nearly 33 million tons for the past two seasons. The reason? Large feed requirements from a strong livestock sector and another reduced crop.

The Indian Agriculture Ministry has approved a Rs. 380 million (about U.S. $34.5 million) development project to raise oilseed production. Items such as seeds and fertilizers will be subsidized or supplied free to the project, to try to help reduce India's huge imports of edible oils. These are expected to rise to a record 1.3 million tons in 1983-84.

"The Ministry of Agriculture in Egypt announced informally the previously reported ban on imported soybean meal has been lifted, as the domestic surplus has abated. The local press has reported Egypt will begin to produce soymilk for infant feeding in conjunction with France. This soymilk plant will reportedly use 10% of Egypt's annual soybean crop. The 1984-85 soybean crop is forecast at 180,000 tons; the 1983-84 crop is estimated at 162,000 tons."

4366. *Toyo Shinpo* (*Soyfoods News*). 1984. Zennenhi 30% no daun ka. Yume no inryô tônyû ni kageri genshô [Dream drink soymilk sales in Japan down 30% from last year?]. Sept. 11. p. 1. [Jap]
• ***Summary:*** Soymilk sales in Japan reached their peak



during the first quarter of last year. This year's first quarter is down about 20% from that figure according to the Japan Soymilk Assoc. (Nihon Tonyu Kyokai). And they expect a drop of 60-70% in the second quarter compared to last year.

During the peak last summer, soymilk sales were 25,000 million yen wholesale and 32,000 million yen retail. At that time a continued rise in the market was expected. But since that time the demand has decreased, and total sales this year are expected to be about 30% below those of last year. The basic causes for the drop are: 1. The companies did not develop a good strategy for launching new products. 2. The initial costs for starting soymilk production are high. 3. Soymilk shelf life is short. But the biggest reason was that Kibun, Marusan Ai, Asahi Shokuhin, Mitsubishi, and other large manufacturers expanded their production, then large beer makers (Pokka, Toyô Seiraku, etc.) joined the market. Over-production resulted leading to price wars in the marketplace. Since then a number of smaller companies have dropped out of the market.

4367. American Soybean Assoc. ed. 1984. First European Soyfoods Workshop, Proceedings. Brussels, Belgium: ASA. 129 p. Held Sept. 27-28 at Amsterdam, Netherlands (Krasnapolski Hotel). No index. 30 cm. [38 ref]

• ***Summary:*** Contains 9 papers, mainly on soyfoods in Europe. A directory including company name, person's name, and address for the conference's 105 participants. Organizations represented include Caderas de Kerleau, Aarhus Oliefabrik (Aarhus C, Denmark), Aixagri, Alfa-Laval, Alfa-Laval Food (John Wilson), Alpro N.V. (Ph. Vandemoortele, Ch. Daems), Alpura Koreco Ltd., Aros Sojaprodukter (Ted Nordquist), BRT, Cargill (R. Sevink, Amsterdam, Netherlands), Cauldron Foods Ltd. (Mr. Marshall, Mr. Fagan), Centraalbureau Voor Schimmelstruct, Centro Studi Proteini Vegetali, CETIOM ONIDOL (Emmanuel Prudom, Toulouse, France), Chemex, Comite Eetbaar Plantaardig Eiwit (Hague, Netherlands), Consumers' Association, Condimenta, Cooperative Occitane, Danish Turnkey Dairies Ltd., Delisana Natuurvoeding, Deutsche Gesellschaft für Ernaehrung [2 different addresses], DE-VAU-GE Gesundkostwerk (Dr. W. Lubosch), Dragon & Phoenix Ltd. (Donald Lysen), E & R Chemicals, Edelsoja GMBH (K.O. Tielker), E.M. Chajuss Ltd. [Daniel Chajuss], Fa L.L. Frank (Missendorp de Bie), Fed. Nat. Syndicats De Dietetique, F.I.M. Houterman, Food Industries, Food Manufacture, F.M. Lin, Galactina Ltd. (P. Speck), Gebruder Bauermeister, Gemint, Giulini Chemie, Goorden Import Cy, Henselwerk GMBH (Rolf Berger), Heuschen (Mr. Heuschen, Deurne, Netherlands), Itona Products Ltd. (Mr. and Mrs. Hampson), Ivel, Keuringsdienst Voor Waren, Libelle, Lucas Meyer (Axel Schulte), Masterfoods, Melkunie Holland, Niticel B.V., ONIDOL (Guy Coudert), Paksoy TIC, Paul's Tofu (Paul Jones), PFW Nederland BV, Plumrose FDD, Premier Foods, Purina Protein Europe (A.G. van der Horn & Willy Naesens, Zaventem, Belgium), Royal Neth. Dairy Federation, Ruitenberg N.V., Sanico N.V., S.G.A. Flavours, SIO [Societe Industrielle des Oléagineux, Marie Gérard, Nanterre, France], Sopad Nestlé (Mr. Rolland, France), Sojadoc (A. Lacombe, P. Roger, Mr. Henras & Mr. Attié; St. Paul, 81140 Penne du Tarn, France), Sojaquelle (Wolfgang Furth-Kuby), Solnuts B.V. (J. Liebregts), Soy (De Preneuf, Cerny, France), Staley Intern[ational], Stern Chemie (Volkmar Wyviol, Hamburg), UNCAA, Union Deutsche Lebensmittelwerke [Hamburg], Univ. of Strathclyde [Glasgow, Scotland], Vamo Mills (B. Cleenewerck, Ghent, Belgium), Verstegen Specerijen, V.D.SP.V.B.A., Wenger International (I. Ben Gera, Antwerp, Belgium).

Registered on Sept. 27. Naarden Intl., Protevit, Wessanen, Mr. Karas & Mr. Drosihn [Soyastern–From Germany, not Turkey].

A note in the Nov. 1984 issue of *Soya Foods* (ASA, Europe) (p. 2) stated that the workshop was attended by 105 people from 14 countries, and was considered to have been very successful.

Note 1. This is the earliest published document seen

(April 2001) concerning Sojadoc of France.

Note 2. E.M. Chajuss is the name of Daniel Chajuss' father. He and his son founded Hayes Ashdod Ltd. "E.M. Chajuss Ltd." is a limited or incorporated company that was jointly owned by Daniel and his father. Daniel Chajuss attended this Soyfoods Workshop as a "delegate" of E.M. Chajuss Ltd. company.

Note 3. This is the earliest document seen (July 2006) that mentions Wessanen of the Netherlands. Address: Brussels, Belgium.

4368. Beversdorf, W.D. 1984. Development of new soybean varieties for soy foods [in Canada]. In: Ontario Ministry of Agriculture and Food, Market Development Branch. 1984. Workshop on Export Markets for Ontario Soybeans: Edited Proceedings. 45 p. See p. 18-20. Held 5 Sept. 1984 at Wheels Motor Inn, Chatham, ONT, Canada. 28 cm.

• ***Summary:*** "Historically, soybean breeding efforts in Canada have been directed toward improving yields, increasing the area of adaptation (to shorter season and cooler geographic areas) and improving pest tolerance. As soybean production has increased toward domestic self-sufficiency, the industry has placed more emphasis on development, production, and marketing of special quality beans for specific non-oil export markets...

"In Canada, yield of soybeans per unit land area has remained a primary consideration in soybean breeding (except for natto-type beans) because of licensing requirements for pedigreed seed production and marketing. Among high yielding breeding lines, large seed size, white or yellow hilum colour and high seed quality (resistance to discolouration and cracking) are common selection criteria associated with tofu and miso export potential."

Canadian soybean breeders are generally aware of the characteristics defined during the 1982 "Soybean Export Mission to South East Asia" for various soyfood uses. These desired soybean characteristics are shown in Table 1 for natto, miso, tofu, soymilk, and soy sprouts. Address: Assoc. Prof., Univ. of Guelph, Guelph, ONT, Canada.

4369. Chan, Fred. 1984. General uses of soybeans in Hong Kong and competition from Chinese soybeans. In: Ontario Ministry of Agriculture and Food, Market Development Branch. 1984. Workshop on Export Markets for Ontario Soybeans: Edited Proceedings. 45 p. See p. 15-17. Held 5 Sept. 1984 at Wheels Motor Inn, Chatham, ONT, Canada. 28 cm.

• ***Summary:*** Tofu: The two major types of tofu in Hong Kong are soft tofu (which is displayed in water to maintain its form) and mild tofu (which is firmer, is displayed on wooden planks, and is the most common type). Chinese soybeans are preferred to Canadian soybeans because after a maximum of 5 hours on display in the open market, water will start to weep from the tofu made from Canadian soybeans. In 1983, about 6,000 tonnes of imported soybeans were used to make tofu in Hong Kong; this was about 33% of the total soybeans imported.

Bean curd sheets and bean curd sticks [yuba] are very common snacks and dishes in Hong Kong. "Canadian soybeans have an advantage in this market because they produce whiter soymilk which in turn will produce whiter colour products. However, the bigger size of the Chinese soybean results in a higher yield... Manufacturers will normally mix 60% of Canadian soybeans with 40% of Chinese soybeans in order to achieve a higher output of whiter sheets... Total utilization was around 4,000 tonnes in 1983, with Canadian soybeans representing 78%.

Soy sauce and bean paste: The market is dominated by Chinese soybeans because bigger beans produce more sauce and paste. In 1983 approximately 6,000 tons of soybeans were used to make soy sauce and bean paste, with Chinese soybeans representing 75%, Vietnamese 14%, and Canadian 11%.

Soymilk: In 1983 about 1,800 tonnes of soybeans were used to make soymilk in Hong Kong, mostly by Vitasoy. Chinese and Canadian soybeans each share about 50% of the market.

Discusses various reasons that Chinese soybeans are very competitive in Hong Kong. The Chinese Oil, Cereal and Foodstuff Company in Hong Kong has an office in Hong Kong. Under this national organization are two agents specializing in Chinese soybeans. Transport time from China to Hong Kong is 7 days versus 32 days from Canada. Address: Director, Chung Hing Co., Hong Kong.

4370. Chen, Steve. 1984. Soyfoods in the Far East and USA: Products, markets, trends. In: American Soybean Assoc., ed. 1984. First European Soyfoods Workshop, Proceedings. Brussels, Belgium: ASA. 36 p. See p. C1-C38. Held Sept. 27-28 at Amsterdam, Netherlands. [11 ref]

• ***Summary:*** Contents: Summary. 1. Introduction: Ten reasons why soybeans will be a key protein source for the future. 1. Soyfood products. A. Non-fermented soyfoods: Fresh green soybeans, soybean sprouts, soynuts, soymilk, soy flour, yuba or soy protein film, tofu. B. Fermented soyfoods: Soy sauce, miso, tempeh, natto, fermented tofu, fermented black soybeans (tou-shih, hamanatto). 3. Soyfoods markets and trends in the Far East: Taiwan, China, Japan, South Korea, Indonesia, Malaysia, Singapore, Thailand, Philippines. 4. Soyfoods markets and trends in the U.S. 5. References. Plus 15 tables and 8 figures.

"It is our [American Soybean Association's] strong intention that marketing and consumption of soy protein should not in any way deter the expansion of the production and sale of as much animal protein as the world can be expected to produce in the years ahead. Soy protein foods are being intentionally brought to the market to complement and not necessarily to replace animal protein products."

"Taiwan imported 1.41 million tonnes (metric tons) of soybeans in 1983 and used about 250,000 tonnes as soyfoods for direct human consumption, which made Taiwan one of the highest in per capita consumption of soyfoods (13.2 kg or 29 lb) in the world. In the past 10 years (1974-1983), the consumption of traditional soyfoods showed an average increase of 3% per year as compared to 12% and 8.1% for poultry and soy oil, respectively. The market for packaged soymilk, soy pudding and tofu has also been expanding rapidly in recent years in Taiwan." Table 7 shows the production of soymilk in Taiwan, which grew from 103,600 tonnes in 1974 to 210,000 tonnes in 1983, for an average growth rate of 8.2% a year.

China produces about 9 million tones of soybeans a year, and about half of these are consumed as soyfoods, giving a per capita consumption of 4.5 kg of soyfoods. "An improvement in the general economy and soyfood technology and equipment will bring a sharp increase in soybean demand and more soyfoods consumption."

In South Korea soymilk consumption has increased more than seven-fold in the last 4 years. Currently about 10,000 tonnes of soybeans are used to make 70,000 tonnes of soymilk. "It is projected that soymilk production in Korea will double in 1984 as compared to the previous year."

Indonesia continues to be Southeast Asia's largest consumer of soybeans as food. In 1982/83 soybean consumption was 6.7 kg per capita. Indonesia consumes about 1 million tonnes of soybeans annually, 60-65% of them in the form of tofu and 35 to 40% as tempeh.

Malaysia consumes only about 30,000 tonnes of soybeans per year as food. In Singapore, more than 75% of the population of 2.5 million are Chinese. Therefore tofu, soysauce, and soymilk are the predominant traditional soyfoods consumed.

Thailand consumes about 40,000 tonnes of soybeans a year as food, mainly in the form of tofu. The Philippines uses only 5,000 tonnes of soybeans annually for food, mainly as tofu.

To summarize (Table 6), annual per capita consumption of soybeans in various East Asian countries, in descending order of the amount consumed, is as follows: Taiwan 13.2 kg (population 19 million); Japan 8.3 kg (population 120 million); South Korea 7.5 kg (population 40 million); Indonesia 6.7 kg (population 150 million); Singapore 6.25 kg (population 2.4 million); China 4.5 kg (population 1,000 million); Malaysia 2.1 kg (population 14 million); Thailand 0.8 kg (population 50 million); Philippines 0.3 kg (population 15 million). Address: Director, American Soybean Assoc., Room 603, Kwang-Wu Building, No. 386, Tun Hua South Road, Taipei, Taiwan.

4371. Gillooly, M.; Torrance, J.D.; Bothwell, T.H.; MacPhail, A.P.; Derman, D.; Mills, W.; Mayet, F. 1984. The relative effect of ascorbic acid on iron absorption from soy-based and milk-based infant formulas. *American J. of Clinical Nutrition* 40(3):522-27. Sept. [26 ref]
• ***Summary:*** Suggests that soy protein inhibits absorption of non-heme food iron. Address: MRD Iron and Red Cell Metabolism Unit, Dep. of Medicine, Univ. of the Witwatersrand, Johannesburg; Dep. of Medicine, Univ. of Natal, Durban. All: South Africa.

4372. Great Eastern Sun. 1984. Ah soy: Finally a really soft drink (Ad). *Natural Foods Merchandiser.* Sept. p. 39. [1 ref]
• ***Summary:*** A full-page color ad. This natural, non-dairy beverage comes in vanilla, chocolate, and original flavors. Photos show: (1) Ah Soy being poured into a clear glass. (2) The front of each of 3 foil cartons.

This ad also appeared in *East West Journal.* Sept. p. 56-61. Address: P.O. Box 327, Enka, North Carolina 28728. Phone: (704) 252-3090.

4373. Hall, Robert T.; Callenbach, J.C.; Sheehan, M.B.; et al. 1984. Comparison of calcium- and phosphorus-supplemented soy isolate formula with whey-predominant premature formula in very low birth weight infants. *J. of Pediatric Gastroenterology and Nutrition* 3(4):571-576. Sept. [10 ref]
• ***Summary:*** "Soy formula, even when supplemented [with vitamins and minerals], should be used only when specific indications exist." Address: Children's Mercy Hospital, Univ. of Missouri Kansas City School of Medicine, Kansas City, Missouri.

4374. Loh, Michael. 1984. An overview of export markets for edible soybeans. In: Ontario Ministry of Agriculture and Food, Market Development Branch. 1984. Workshop on Export Markets for Ontario Soybeans: Edited Proceedings. 45 p. See p. 1-9. Held 5 Sept. 1984 at Wheels Motor Inn, Chatham, ONT, Canada. 28 cm.
• ***Summary:*** "Ontario first exported edible soybeans in 1972 and over 12 years have built it into a $40 million business. 1981 was our best year when exports totalled $46 million... The bulk of Ontario's soybean exports are sold to the Far East [East Asia]–Japan ($8 million in 1983), Singapore ($6 million), Hong Kong ($3.5 million), Malaysia ($1 million), Indonesia, and Korea." In these countries soybeans are consumed in the daily diet of the people. In Japan, for example, they are made into miso, tofu, natto, soymilk and shoyu. Korea also makes soy sprouts, Indonesia makes tempeh, and Singapore, Malaysia, and Hong Kong make dried yuba. In addition, sales to the Netherlands, United Kingdom, and France are quite significant.

Concerning Ontario's market share of soybean imports for food use: Japan imports 877,300 tonnes, of which 27,000 tonnes or 3.1% is from Ontario. Singapore and Malaysia import 36,000 tonnes, of which 20,000 tonnes or 55.0% is from Ontario. Hong Kong imports 20,000 tonnes, of which

10,000 tonnes or 50.0% is from Ontario.

Japan's sources of its 877,300 tonnes of imported soybeans are as follows: USA 570,000 tonnes (65%), China 280,000 (32%), Canada 27,000, South America 300.

Japan uses its 877,300 tonnes of imported soybeans as follows: tofu 485,000 tonnes (55.3%), miso 180,000, natto 185,000, soymilk 25,000, cooked soybeans 10,000, shoyu 6,500, other 85,800. Within these figures, Ontario's soybeans are used as follows: Miso 20,000 tonnes (11.1% of the total), natto 5,000 tonnes (5.9%), and tofu 2,000 tonnes (0.4%). Address: Export Development Specialist, Ontario Ministry of Agriculture and Food, Toronto, Canada.

4375. Martin, Michael. 1984. World supply and demand for soybeans with special reference to soyfoods. In: American Soybean Assoc., ed. 1984. First European Soyfoods Workshop, Proceedings. Brussels, Belgium: ASA. 131 p. See p. B1-B32. Held Sept. 27-28 at Amsterdam, Netherlands.
• ***Summary:*** The author estimates that European soymilk consumption is about 9-10 million liters / year, which is very small compared to European cow's milk consumption of 22,000 million liters/year. European tofu consumption is estimated at 5-6 million kg/year, which is about one-fourth of U.S. tofu consumption. Other estimates for Europe consumption are: Miso 250,000 to 300,000 kg/year; Soy protein products (probably mostly isolates and concentrates) 40,000,000 kg/year; soy oil 1,700,000 tonnes/year. Europe has a fairly small ethnic population, about 1,000,000 people compared to 3,500,000 in the USA. Europe presently has some 20-25 tempeh companies producing an estimated 400,000 to 500,000 kg/year compared to 900,000 kg/year in the USA. Europe, and especially the Netherlands, are moving ahead quickly with tempeh.

The European food market is more fragmented, diverse, and conservative than its American counterpart. "The European consumer expects freshness and quality as a matter of course, and does not expect to pay a premium for these."

"It is well known that the European healthy foods market is booming. It is part of a much wider social trend which involves ecology and politics, real environmental concerns, alternative medicine and coping with unemployment, an aging population, and a minimum growth economy. It places emphasis on quality of life, individualism and cooperation. It does not exclude any age group.

"Soyfoods will increasingly find a place in our daily diets, but not without significant changes in the existing soyfoods industry, with above all greater attention to product quality and product marketing."

Appendix 1 (p. B-12) lists 9 U.S. "suppliers of food-grade soybeans in small quantities suitable for" tofu manufacturers.

Pages B15 to B32 contain numerous other tables, 8 of them reprinted without permission from *Soyfoods Industry and Market: Directory and Databook,* by Shurtleff & Aoyagi. Address: American Soybean Assoc., Centre International Rogier, Bte 521, 1000 Brussels, Belgium.

4376. Mwangi, -. 1984. The Jamaica nutrition project. *Yard Roots Reports* (*Oakland, California*). Sept. p. 4-5.
• ***Summary:*** The author is working to raise $100,000 to develop a soy dairy in Jamaica to make tofu, soy-burgers, tempeh, soy milk, ice cream, mayonnaise and other products from soy beans. The Afrobean Foundation in Kingston is also interested in this idea. Two groups in Jamaica will find soy products useful in their diet. First, the more than 100,000 Rastafarians, most of whom are attempting to pursue a vegetarian diet. Second, Jamaicans of Chinese descent who have traditionally used soy products. "Most of the imported soybeans today are mainly used for making oil and for poultry and pig feed." Readers are asked to send donations to Caribbean Media and Community Resources, Inc. in Oakland, California. Address: Caribbean Media and Community Resources, Inc., 314 17th Street #188, Oakland, California 94612. Phone: (415) 536-3031.

4377. Ramsey, Harold A. 1984. Protein and amino acid nutrition in calves. In: 45th Minnesota Nutrition Conference. St. Paul, Minnesota: Minnesota Agricultural Extension Service. See p. 7-12. Held 17-18 Sept. 1984. [9 ref]
• ***Summary:*** Contents: Non-milk protein in milk replacers. Amino acid requirements of preruminant calves. Amino acid supplementation of milk replacers.

"The first attempt to use non-milk protein in the diet of the preruminant calf was reported nearly 50 years ago. Since then, especially during the past two decades, a great variety of non-milk products have been tested experimentally (Table 1). Of these, only two are being used presently in substantial amounts by the milk replacer industry: soy flour and soy protein concentrate. Soy flour and soy protein concentrate, though used for many years as milk replacer ingredients, are not utilized as effectively by the preruminant calf as they are by other animals. These products usually contain anti-nutritional factors (antigens and trypsin inhibitor) to which the calf is uncommonly sensitive." Address: Dep. of Animal Science, North Carolina State Univ.

4378. Vandemoortele, Philippe. 1984. Soya milk and soya drink: The outlook for European and other markets. In: American Soybean Assoc., ed. 1984. First European Soyfoods Workshop, Proceedings. Brussels, Belgium: ASA. 131 p. See p. D1-D7. Held Sept. 27-28 at Amsterdam, Netherlands.
• ***Summary:*** Contents: 1. Introduction. 2. Traditional soya bean milk. 3. Isolate based soya milk. 4. Dairy-like soya milk. 5. Markets outside Europe: Third world, Far East market. 6. The European soya milk market: Product and costs, marketing and sales. 7. Alpro. 8. Conclusion.

"Alpro, a subsidiary of the Vandemoortele Group,

started 10 years ago with intensive research on soya milk products. Today, Alpro is the only major soya milk producer in Europe. Production started in 1978. Step by step, Alpro has covered different European markets. Alpro soya milk is not only sold in health food shops, but is also available in drugstores, chemist's shops and supermarkets. Different products and packages have been developed for each market. Alpro soya milk is based on a world exclusive process that provides the best flavor and eliminates the sugars which cause flatulence. It is also the only process that doesn't use any chemicals but just water and heat. Alpro is starting up a new soya milk plant in Ghent with a capacity of 40 million liters/year." Address: Alpro, Zuidkaai 33, B-8700 Izegem, Belgium.

4379. Westbrae Natural Foods. 1984. Westbrae Natural Malted's: Vanilla, Carob, Cocoa-Mint (Ad). *East West Journal.* Sept. Inside front cover.
• ***Summary:*** A full-page color ad (see next page). "Thick and rich non-dairy soy delights. 'Did you make this out of ice-cream?' Ryan Garvy, age 7. All the fun, half the fat of milk shakes. No refined sugar, no preservatives, no cholesterol."

This ad also appeared in *Natural Foods Merchandiser* (Oct. p. 19).

4380. *Yard Roots Reports* (*Oakland, California*). 1984. Plenty in Jamaica. Sept. p. 6-7.
• ***Summary:*** In the summer of 1982 the author (whose name is not given) went to Jamaica armed with a package of information on soy beans. "My dream then was to develop a soy-dairy in St. Ann's Bay, Jamaica, to produce tofu, soy milk, and ice bean [soymilk ice cream]." There was little interest among Jamaican Rastafarians (Rastas).

After returning to California, in March 1984 he met David and Joan Dixon of Oakland, California. They told him about Plenty, a relief organization run by The Farm in Tennessee, and their work with Plenty to introduce soyfoods to Jamaica. Plenty is now attempting to establish a soy dairy in the rural town of St. Ann's Bay. Plenty has tried to grow soybeans on the old Richmond Landowvery sugar estate but without much success. Joan has done soybean cookery demonstrations. Address: Caribbean Media and Community Resources, Inc., 314 17th Street #188, Oakland, California 94612. Phone: (415) 536-3031.

4381. *Nihon Keizai Shinbun* (*Japan Economic Newspaper*). 1984. "Nomu" kara "taberu" e. Tônyû-kei shokuhin [From drinks to foods. Japanese foods based on soymilk]. Oct. 21. p. 20. [Jap]
Address: Tokyo.

4382. *Toyo Shinpo* (*Soyfoods News*). 1984. Nomu kara taberu e. Tônyû-kei shokuhin [From beverage to soymilk-based foods. The once explosive soymilk boom has slowed but soymilk- or soy protein-based foods are rising. This new soymilk market is very active]. Oct. 21. p. 20. [Jap]

4383. Yoshimura, Sam. 1984. Re: Update on work with soyfoods. Letter to William Shurtleff at Soyfoods Center, Oct. 21–in reply to inquiry. 1 p.
• ***Summary:*** Shurtleff writes: "I just read a little blurb about you, written by your wife, that was in the *Madison Survey.* It indicated that you were now in Canada and again making soyfoods. Could I ask a few questions for use in the Adventist chapter of our history book?

1. What is your present address and postal code. Ans: See above.

2. When did you leave Worthington Foods? Ans: Sept. 30, 1981 (Retired).

3. Could you please tell me a little about your new business? When did you start selling products? Are you working alone or with another company? What products do you make? Can you send me some descriptive or promotional literature on your products?

Ans: "Name of company: MGM Brans. I am a technical consultant of the above company. We started selling products in January 1982.

"Our main product is meat analogs–franks, sausages, sandwich slices, chicken nuggets & burgers. Currently we are developing tofu-based meat alternates [alternatives] & other products."

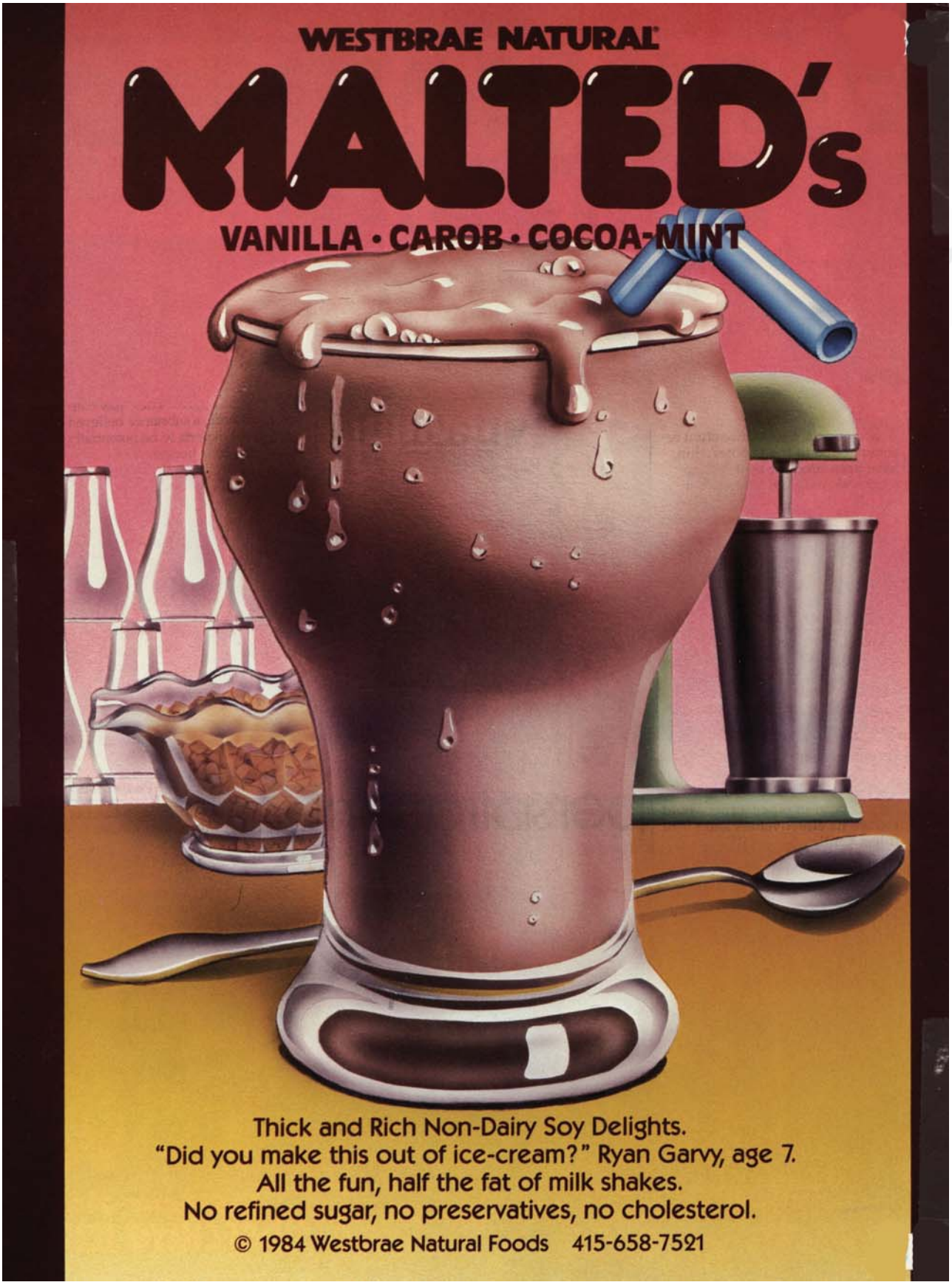
Note: Sam does not send any labels or descriptive literature. Address: Home: 19 Masedale Cres., Willowdale, ONT M2J 3A3 Canada; Plant: MGM Brans, 59-F Howden Rd., Scarborough, ONT M1R 3C7. Phone: 416-473-9254 or 416-752-6600.

4384. Barber, Linda; Lampert, Junko. 1984. The tofu gourmet. Tokyo: Shufunotomo Co. 129 p. Oct. Illust. Index. 27 cm. [Eng]
• ***Summary:*** A beautiful book, packed with superb color photos. Contents. Preface. Preparing, buying, and storing tofu. Recipes–1. Dips, sauces, main dishes. 2. Desserts. On the inside back dust jacket are biographies of Linda Lee Barber and Junko Lampert.

The color dust jacket of the first printing (1984) shows sculpted green kiwis atop a refrigerator tofu cheesecake, whereas that of the second printing (1989) shows a layered "Man's cake" topped with delicate alfalfa sprouts, thinly sliced red radishes, and slivered carrots.

The book was published in London, England in 1986 by Portland House/Windward. Address: Japan.

4385. *Food Engineering.* 1984. Marketplace: Soy drink offers a challenge to soft drinks. Oct. p. 38.
• ***Summary:*** Vitasoy, a soymilk product made by Hong Kong Soya Bean Products Co. in Hong Kong, has recently entered into California test markets. It is available in



natural, chocolate, and coconut, and is geared toward health-conscious Americans. The beverage contains no cholesterol, lactose, salt, preservatives, or refined sugars. Hilton Tsui, Vice president of marketing for Vitasoy, says the drink is a healthy alternative to other drinks.

In June 1984 distribution began to 200 retail stores in San Francisco. It is now being distributed in Southern California and will reach nationwide towards year end.

4386. *Trinidad and Tobago Review.* 1984. The "noble bean" in the Caribbean. Oct. p. 27.
• ***Summary:*** "On the main road about 1 mile south of the heart of Roseau between Dominica's western slopes and the shoreline is the Plenty Canada Soya Shop (a photo of which is shown). After only a week opening in Newtown, this unusual take-away outlet sells out of accras and [soy] ice-cream nearly every day." Each morning the staff prepares batches of soyamilk. which is "used to make ice-cream and Tofu (soyabean cheese) and some is reserved to be sold as milk while the presscake [okara] is combined with tofu, wholewheat flour and seasonings to prepare the delicious and popular fried accras. The shop opens at one o'clock and serves a steady stream of customers until eight, unless stocks run out."

Note. This is the earliest English-language document seen (June 2013) that uses the word "presscake" to refer to tofu.

Plenty Canada's representatives arrived on Dominica in response to requests from local people. "With the co-operation of the government they have demonstrated simple home-scale soyafoods preparation in local areas and conducted soyabean seed trials. The initial interest in soyafoods was enough to encourage them to set up shop in central Roseau, grinding the beans at first by hand in a cocoa mill. As the business grew they needed more production space and more contact with local people on a 'grass roots' level as the shop was intended primarily as a training situation. Since the move to Newtown a Dominican couple are planning to re-open the original premises as a second soya shop, Creole-style.

"Plenty's soya project is staffed by three volunteers from Canada and the USA, who receive only subsistence, and five wage-earning Dominicans who are learning to manage the shop. They have requests for soya shops in other parts of the island...

"Plenty brought in an initial supply of soyabeans from North America and are now supplying seed to two groups of local farmers who are keen to grow for the shop... The shop is beginning production of Tempeh, a cultured soya food from Indonesia."

Note: This is the earliest English-language document seen (Aug. 2002) that uses the term "Noble Bean" in the title to refer to the soybean.

4387. **Product Name:** Westbrae Natural Malted's [Carob Malted, Vanilla Malted, Cocoa-Mint Malted, Almond Malted, or Caffeine-free Java Malted].
Manufacturer's Name: Westbrae Natural Foods (Importer). Made in Japan by San-iku Foods.
Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: (415) 658-7521.
Date of Introduction: 1984. October.
Ingredients: Cocoa-Mint: Soybeans, malted barley, expeller-pressed corn oil (less than 5%), cocoa, sea salt, peppermint.
Wt/Vol., Packaging, Price: 6 fluid oz.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Cocoa-Mint: Per 6 oz.: Calories 250, protein 6 gm, carbohydrate 50 gm, fat 3 gm. Carob: Calories 230, carbohydrate 44 gm. Vanilla: Calories 250, carbohydrate 46, fat 5 gm.
New Product–Documentation: This is soymilk with a thick and rich milk shake-like consistency. Ad in East West Journal. 1984. Sept. Inside front cover. "Westbrae Natural Malted's. [Note spelling, with apostrophe]. Vanilla, Carob, Cocoa-Mint. Thick and rich non-dairy soy delights. 'Did you make this out of ice-cream?' Ryan Garvy, age 7. All the fun, half the fat of milk shakes. No refined sugar, no preservatives, no cholesterol."

Labels. 1984. 4 by 6.25 inches. Plastic retort pouches. Brown, yellow, white. Cocoa-Mint on mint green background. Carob on cherry background. Vanilla on orange background. All have soda fountain picture with glass of malted with straw. "Shake well. Serve chilled. No refined sugar or cholesterol. No preservatives." Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. Shurtleff & Aoyagi. 1984. Soymilk Industry and Market, Update. Thick soymilk from whole soybeans (no soy protein isolates) plus malt and 2.65% oil are used to give this product its thickness. Sales of Westsoy and Malteds for 1984 were roughly $700,000 or 1.67 million units at $0.42 each FOB.

Ad (8½ by 11 inches) in Natural Foods Merchandiser. 1985. May. p. 26. "Afternoon Delight." "15% off. On special now." "For a great afternoon treat for the kids (or even the young at heart) try New Morning Honey Grahams and Westbrae Natural Malteds!"

Natural Foods Merchandiser. 1985. May. p. 48-49. Gold medal in 6th annual merchandising contest. Poster. 1986. June. "The Cadillac of Soydrinks." Talk with Martin Roth. 1989. Aug. 17. "Gordon Bennett gave me the assignment to develop a soymilk product for Westbrae. He recognized that Westbrae had already missed the boat on soy drinks, with Edensoy, Vitasoy, Ah Soy, and Health Valley already on the market. I said 'Great. How can you make a soy drink that isn't a soy drink.' Then the Malteds idea flashed into my mind, and I said 'Maybe we can do a thicker, richer, creamy one and make it a dessert.' I designed the graphic idea and

developed the name and formula."

As of about Feb. 1995 this product was made by Cathay Industrial, owned by John Yamauchi, in Los Angeles. Prior to that, it was made by House Foods & Yamauchi in Los Angeles.

4388. Photograph of Kanji Tsuchiya at Soyfoods Center in Lafayette, California, 1984.

• ***Summary:*** Kanji Tsuchiya, soymilk expert and author, visited Soyfoods Center on 10 Nov. 1984 to talk about soymilk. A color photo shows him (left; see next page) standing in the upstairs office, in front of bookshelves, with William Shurtleff.

4389. *Egyptian Gazette.* 1984. Nutritive drinks from oil seeds. Nov. 20. p. 2.

• ***Summary:*** "Scientists of the National Research Centre have succeeded in preparing new drinks from oil seeds which are rich in nutritive value such as, soya bean and sunflower.

"The drinks which have been under experiment during the past three years are distinguished by their high nutritive value of proteins, said Dr Samih el-Noqrashi, researcher at the centre.

"The experiments have been conducted within the context of attempts to find new protein resources, as the per capita share of animal protein in Egypt does not exceed 12 per day, an amount which is insufficient [sic] for the body's needs.

"The drinks have natural and nutritive characteristics which surpass those found in similar drinks, said Dr el-Noqrashi."

4390. Chandler, Michele. 1984. Soybeans had an early friend in Henry Ford. *Detroit Free Press.* Nov. 22. p. 2A. Wayne Central.

• ***Summary:*** Four decades before Tofutti and other types of "soybean ice cream became the latest fashionable East Coast rage, auto magnate Henry Ford was dishing it up to his blue collar Rouge Plant workers. Ford, who rarely ate meat and had an interest in ways to promote more healthful foods, wasn't just a wizard when it came to designing cars.

"During his experiments with soybeans in the 1940s, when he was in his 70s, he devised whole meals made with the beans, which still grow on 350 acres of Ford property

on Dearborn, just north of the Ford Motor Co.'s World Headquarters. Lester Twork, a Dearborn resident who taught job skills to residents at Ford's apprentice school after World War II, well remembers Ford's soybean lunches. 'Mr. Ford would make a point of saying we were having a soybean meal that day. Everything would be made out of soybeans–soybean milk, soybean whipped cream, soybean ice cream, soybean biscuits, a soybean mixture fried like hamburger,' said Twork, now a volunteer at the Henry Ford Estate–Fair Lane.

"'I remember that once, Henry Ford was in line just ahead of me when people were being served cafeteria-style, with large, stainless steel trays with many compartments. He picked up some of the biscuits and turned around and told me they were quite good. I just nodded...'

"Soybeans were planted on 350 acres of Ford Motor Land Development Co.–owned land near the intersection of Ford Road and the Southfield Expressway... The current soybean farmer is none other than Mickey Redmond, the former Detroit Red Wings hockey player who now broadcasts hockey games for the Canadian Broadcasting Co."

4391. *New Chronicle. The Conscience of the Nation* (*Dominica, West Indies*). 1984. Soy foods available. Nov. 30.
• ***Summary:*** Today Nathalie Andrew is opening "Soy Kweyol," a take away health oriented catering service in the heart of Roseau, Dominica. All of her foods are made from soybeans, and are homemade. A photo shows Nathalie serving a beverage from her shop window. "Soy beans, it has been discovered, can now be grown locally. Farmers in areas like La Plaine have successfully produced their first crop of beans and have already begun preparations for planting a second crop. The seeds which take three months to grow can be obtained from the 'Plenty' Office in Victoria Street, New Town." Address: Dominica.

4392. **Product Name:** [Alpro Soya Dessert (Chocolate, or Vanilla)].
Foreign Name: Alpro Soya Dessert (Choco, Vanille).
Manufacturer's Name: Alpro N.V.
Manufacturer's Address: Zuidkaai 33, B-8700 Izegem, Belgium.
Date of Introduction: 1984. November.
Wt/Vol., Packaging, Price: 500 cc or 1000 cc Tetra Brik Aseptic cartons.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Chocolate. Per 100 gm.: Protein 3.0 gm, fat 1.7 gm, carbohydrates 15.5 gm, calories 89, calcium 20, cholesterol 0, lactose 0.
New Product–Documentation: Color photo on cover of *Journal of the American Oil Chemists' Society.* Dec. 1984, and on page 1785 of the same issue. On the front panel is an illustration (line drawing) of v-shaped glass of chocolate soya pudding in a silhouetted field of soybeans in front of an orange sun. A seal on the right side says, in Dutch, "Vegetal. 100% Plantaardig" (Non-dairy, 100% from plants). Soya Bluebook. 1987. p. 98.

Leaflet (8.5 by 11 inches, color, in French). 1989. Alpro: La force végétale du soja (Alpro: The plant power of soya). The front panel has a color photo of 4 varieties of Alpro Soya Drinks (plain, enriched with calcium, without added sugar or salt, chocolate) and 2 Alpro Soya Desserts (vanilla and chocolate). The text reads: 100% natural. 100% from plants (végétal). No cholesterol. No lactose. Rich in vegetable protein. The back gives packaging and shipping information and a nutritional analysis of the 6 products. Sold in France by Distriborg, Division Alpro France, Chemin du Grand Revoyet, F-69230 Saint-Génis-Laval. Phone: 72.39.94.25.

Form filled out by Alpro. 1990. May 30. Alpro began making this product (in chocolate and vanilla flavors) in Nov. 1984 in 500 ml cartons.

4393. Bates, Cynthia. 1984. Re: History of The Farm's work with tempeh. Letter to William Shurtleff at Soyfoods Center, undated. 3 p.
• ***Summary:*** "At long last, here are the last of the changes–none of them too radical."

Note: For our complete history of The Farm's pioneering work with tempeh please see: *History of Tempeh, a Fermented Soyfood from Indonesia,* by Shurtleff and Aoyagi (1985, p. 42-46). Address: The Tempeh Lab., P.O. Box 208, Summertown, Tennessee 38483. Phone: 615/964-2286.

4394. *Food Engineering.* 1984. 30 million people can now enjoy lactose-reduced foods. 56(11):80-81. Nov.
• ***Summary:*** Subtitle: "Whether for health, dietary, or religious reasons, there's a vast market in America for

lactose-reduced foods as well as substitute products."

Since the enzyme lactase became commercially available 7 years ago, "lactose hydrolysis has become the wave of the future in processing dairy products for the lactose-intolerant consumer."

In all its forms, lactose intolerance affects an estimated 30 million Americans. Soymilks include Vitasoy (color photo shown) and Health Valley Soy Moo (which has been on the market for over 6 years). Ice creams include Tofutti (which was discovered in 1981 by David Mintz). Entrees include Legume Cannelloni Florentine (color photo shown).

4395. **Product Name:** Grainwave Amasake (Creamy Pudding-like Dessert, not a Drink) [Natural, Strawberry, Blueberry, Hazelnut], and Seitan.
Manufacturer's Name: Grain Waves.
Manufacturer's Address: 6726 West Coast Rd., Sooke, BC, V0S 1N0, Canada. Phone: 604-642-4424.
Date of Introduction: 1984. November.
Wt/Vol., Packaging, Price: Originally in 175 gm yogurt cup. From 1987 in 1 lb stand-up vacuum pack pouch; Retails for $3.00 Canadian.
How Stored: Refrigerated.
New Product–Documentation: Letter from Frank Marrero/ Allen of Grainaissance. 1987. Dec. 21. Andy Cunningham started the amazake production in Vancouver, and is the key person now in Victoria. His primary influence was macrobiotic. He studied at the Kushi Institute/East West Center in London, England. He makes his own koji and makes a creamy pudding-like dessert, rather than a drink. For a long time he served amazake in yogurt cups (thick); now it is sold in aseptic pouches. He also makes mochi, seitan, and unyeasted bread.

Talk with Andy Cunningham. 1988. Feb. 26. He is British and wife Canadian. He knows of no one in Canada who made amazake before he did, nor anyone else who is making it now. He is in the process of selling the business, hopefully to Sooke Soy Foods in the same town of Sooke. His home is at 5654 Woodlands Rd., R.R. 1, Sooke, BC, V0S 1N0. Canada. He is burned out; hasn't made any money and worked long hours. Never had the money to invest to make the process efficient. His average sales are now 360 lb (43.6 gallons) a week. Good weeks are twice that.

4396. Hillyer, Gregg. 1984. Turkey: A new market arises [for soybeans]. *Soybean Digest.* Nov. p. 29-31.
• ***Summary:*** Turkey's poultry industry is growing rapidly. "Within 5 years it is estimated that Turkish broil numbers will increase from the present 60 million to about 150 to 200 million per year." There are now large, modern poultry farms. Turkey's poultry industry currently feeds 40,000 metric tons (mt) of soybean meal annually... but needs at least an additional 55,000 mt just to meet demand.

Dennis Blankenship "points out that the average fed conversion ratio in the Turkish poultry industry is about 3 to 1. That compares with 2 to 1 and better in the U.S.

Turkey's great ambition is to increase livestock production. "The groundwork has already started on the first link in a trade bridge between the U.S. and Turkey. (1) The U.S. has granted Turkey $85.5 million in GSM-5 direct credits for purchases of U.S. agricultural commodities, including $16.5 million for U.S. soybeans and/or meal." (2) The Turkish government has lifted a law that prohibited importing soybeans and soybean meal into the country, and reduced the grossly large $400 a ton import surcharge on soybean meal down to $10. The surcharge on whole soybeans was reduced to $4 per ton. However a Turkish law still prohibits Turkish crushers from exporting soybean meal (SBM).

Ozdemir Ali Yarar's company in Istanbul is known throughout Turkey for its powdered soft drink mix, Lezzo. Now he's test marketing soy-enriched yogurt, 100% soymilk, and soy-fortified Bulgur.

In 1982 Turkey produced about 40,000 tons of soybeans, about half of which grew in the fertile Cukarova Valley in southern Turkey as a double crop. Nine color photos show scenes in Turkey related to soy.

4397. Lonnerdal, Bo; Cederblad, A.; Davidsson, L.; Sandstrom, B. 1984. The effect of individual components of soy formula and cows' milk formula on zinc bioavailability. *American J. of Clinical Nutrition* 40(5):1064-70. Nov. [38 ref]
Address: 1. Dep. of Nutrition, Univ. of California, Davis, CA 95616; 2-3. Univ. of Gothenberg, Gothenberg, Sweden.

4398. Macrobiotic Wholesale Co. (The). 1984. Catalog and price list [Mail order]. 92 McIntosh Road, Asheville, NC 28806. 63 p. 28 cm.
• ***Summary:*** The catalog, effective 15 Oct. 1984, contains 450 new products from 15 new vendors, plus 73 new books. The president of the company is Don DeBona. Soy-related products include miso, shoyu, tamari, nigari, kinako, natto and koji spores, black soy beans, tekka, Ah Soy soy drink (soymilk), and amasake.

One of the many suppliers is The Mitoku Co. Ltd., which "was founded in Tokyo [Japan] in 1968 by Mr. Kazama at the express behest of Michio and Aveline Kushi. In fact, the company was named after MI-chio and TO-moko (Aveline's real name; Aveline was given her name by George Ohsawa) KU-shi." Address: Asheville, North Carolina. Phone: 800/438-4730 or 704/655-1056.

4399. Odendaal, W.A.; Smith, G.A.; Smith, N. 1984. Die sojaboon in die Republiek van Suid-Afrika: bron van protein in menslike en dierlike voeding [Soybeans in the Republic of South Africa: Source of protein in human and animal nutrition]. *Tegniese Mededeling DEpartement van Landbou*

en Water Voorsiening, Republiek van Suid-Afrika (*Technical Communication, South Africa Department of Agriculture, Pretoria*) No. 196. 19 p. Nov. [102 ref. Afr]
• ***Summary:*** This Afrikaans-language document includes a review of the literature. Address: Navoringsinstituut vir Vee-en Suiwelkunde, Privaatsak X2, Irene 1675, South Africa.

4400. *Soya Foods* (*ASA, Europe*). 1984. Egypt: Soymilk. Nov. p. 3.
• ***Summary:*** "Egypt will begin to produce soymilk for infant feeding in conjunction with France. This soymilk plant will reportedly use 10 percent of Egypt's annual soybean crop."

4401. STS–Soya Technology Systems. 1984. Project proposal for 400 liter/hour soymilk plant, Type A. 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 36 p. Booklet. Nov.
• ***Summary:*** Contents: Introduction. Investment estimate. Design data and technical aspects. Technical description. Cost/profit calculation. Drawings. Address: Singapore.

4402. Wiebe, Sandra L.; Bruce, V.M.; McDonald, B.E. 1984. A comparison of the effect of diets containing beef protein and plant proteins on blood lipids of healthy young men. *American J. of Clinical Nutrition* 40(5):982-89. Nov. [42 ref] Address: Dep. of Foods and Nutrition, Univ. of Manitoba, Winnipeg, Manitoba, Canada.

4403. Oswal Agro Mills Limited. 1984. Display ad: Address by Mr. Abhey Oswal, chairman at the Fifth Annual General Meeting of the company held on 13th December, 1984 at New Delhi. *Times of India* (*The*) (*Bombay*). Dec. 18. p. 15.
• ***Summary:*** He first expresses his deepest grief and agony over the shocking death of Mrs. Indira Gandhi, prime minister of India who was assassinated on 13 Oct. 1984.

Orders have been placed for establishing an Edible Soya flour plant. "The products from this plant will cater to industries covering biscuits, protein isolates and concentrates, soya milk, etc."

The company is now a major exporter of Soyabean Meal from Kandla port.

A portrait photo shows Mr. Abhey Oswal. The company's sideways leaf logo is in the lower right corner.

4404. Bisalski, Ed. 1984. Soy ice cream and soymilk at Madison College (Interview). Conducted by William Shurtleff of Soyfoods Center, Dec. 30. 1 p. transcript.
• ***Summary:*** He never made ice cream himself. Harold M. "Pop" Mathews (he was a staff worker, not a teacher, in charge of the cannery where they canned fruits and vegetables) made the first ice cream. He is quite sure of that. In the cannery they first made soymilk, introduced by Dr. P.A. Webber. But a Japanese boy (a student) named Sam Yoshimura and Dr. Perry A. Webber, then Philip S. Chen, a teacher and native of China, brought soymilk to Madison–he thinks, but is not sure. Pop Mathews' daughter still lives at Madison; Dorothy Mathews.

They never marketed the ice cream–never sold it off campus. Ed ate it often. They made 5-10 gallons at a time, from soymilk. Flavors: No chocolate was used since its a stimulant; most was vanilla. It was served scooped in the dining hall and one could also get it from the soy dairy; just bring own dish and eat it on the spot. It was very popular on campus. He first went to Madison in June 1931; they were not making it then. He took over management of the food factory in Sept. 1933. But a Madison article said Jan 1932 ice cream was made.

Milk was first made in cannery, then about 1934-35, brought over to the food factory; they homogenized it and sold it commercially. Address: 3123 E. Miller Rd., Bancroft, Michigan 48414. Phone: 517-634-5203.

4405. Yoshimura, Sam. 1984. Soy ice cream and soymilk at Madison College (Interview). *SoyaScan Notes.* Dec. 30. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Sam arrived at Madison College, Tennessee, in 1937. In about 1940 Mr. Shiro Kunihara, a student from Japan like Sam, made soymilk at Madison and Sam thinks he also made a soy ice cream, working with Harold M. "Pop" Mathews. Both the soymilk and the ice cream were served in the school dining hall when Sam was there. The ice cream was also served in the cafeteria. Mr. Kunihara is retired from Loma Linda University. Address: 8200 Colonial Meadows, Westerville, Ohio 43081. Phone: 614-882-0625.

4406. *SoyaScan Notes.* 1984. Chronology of soybeans, soyfoods and natural foods in the United States 1984 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jan. A highly influential 10-year, $150 million study released by the National Heart, Lung, and Blood Institute in Washington, D.C. proves for the first time a direct relationship between high blood cholesterol and the risk of heart attack, the nation's number one killer.

Jan. Legume, Inc. launches an all-natural line of cholesterol-free low-calorie Italian and international gourmet tofu-based frozen entrees in stylish full-color packages: Tofu Tetrazzini, Cannelloni Florentine, Vegetable Lasagna, Tofu Bourguignon, Sesame Ginger Stir-fry, Stuffed Shells Provencale, Tofu Manicotti, and Tofu Lasagna. Jan. Eden Foods becomes the sole import agent for Muso Shokuhin in the United States.

Feb. 25. *Soymilk Industry and Market: Worldwide and Country-By-Country Analysis,* by Shurtleff and Aoyagi published by Soyfoods Center. 177 pages, 640 references. $350.

Feb. Marusan-Ai, Japan's second largest soymilk maker and one of the five largest miso makers, starts to

market tempeh. They publish a 27-page tempeh booklet and by May are producing 30 tonnes (66,000 lb.) of tempeh a month, making them the largest tempeh manufacturer in the world. During 1984 at least five Japanese food companies are making tempeh, leading to a mini-boom of this soyfood which was first sold commercially in Japan in 1983.

March 2. Based on responses to his Oct. 1983 survey, Tom Timmins drafts preliminary 3-page tofu standards (2 pages of which are microbiological standards) that he circulates to the Soyfoods Standards Committee, inviting comments. On March 6 Wm. Shurtleff of Soyfoods Center expands these, keys them into the Center's word processor, and returns them to Timmins.

March 2. Problems start between Eden Foods and the U.S. Food and Drug Administration (FDA). FDA sends Eden a strongly worded letter citing eleven claims in Eden's brochures that the agency considers erroneous, including the company's apparent endorsement of Edensoy as an infant formula. FDA asks Eden to recall the brochure in which Edensoy is promoted as "Good for Babies." An infant became ill due to copper deficiency on an Edensoy diet.

March 8. Soyfoods Association of America members have 12 pages of impressive color advertisements and information about soyfoods and the Association in Natural Foods Merchandiser, in preparation for the NFM Anaheim Natural Foods Expo in March. Full-page color ads by Legume, Erewhon shoyu, Vitasoy, San-J, Tofutti, Edensoy, and Pure & Simple soy sauce.

March 11-13. At the Natural Foods Expo at Anaheim, the Soyfoods Association organizes the first Soyfoods Pavilion, a 16-booth cluster of soyfoods companies and products, which is the hit of the Expo and a show of strength for the industry. Lots of delicious free food draws throngs from the 9,000 Expo attendees.

March 11. At Anaheim, Vitasoy launches its first designed-for-America soymilk, in natural, coconut, and chocolate flavors, each sweetened with maple syrup, and imported from Hong Kong. Many subsequent eye-catching, health-oriented full-page color ads are run in national health magazines.

March. American Soybean Association's Belgium Office publishes the first issue of *Soya Foods,* a 6-page newsletter edited by Michael Martin, Protein Market Development Manager. It will be issued three times a year in English, French, Dutch, and Italian. This is a completely new direction for ASA in the Western world... but it doesn't last long.

March 29. First draft of the Tofu Standards, 15 pages double spaced, is compiled by Shurtleff. Timmins allocates $2,000 to retain two Washington, DC, attorneys who are specialists in foods and regulations to assist the committee in developing professional standards. The draft is circulated to 38 people who are asked to respond to a poll on 14 key issues.

March 29. The term "second generation" products is first applied to soyfoods by Wm. Shurtleff in the new tofu standards. A computer-related term indicating one step more advanced, it quickly replaces the term "secondary," which has a slightly negative connotation.

April 7. *Soyfoods Industry and Market: Directory and Databook 1984* (4th ed.) by Shurtleff and Aoyagi published by Soyfoods Center. 215 pages, $95.

April 13. Richard Leviton resigns as co-director of *Soyfoods* magazine and decides to discontinue his active involvement in the U.S. soyfoods movement. He plans to go to England to write a novel about King Arthur; he leaves in late April.

April 20. *Tofu, Tempeh, & Other Soy Delights,* by Camille Cusumano published by Rodale Press. It is widely and positively reviewed by national media.

April 27. The term "soymilk" is legalized for use in Canada, after a lengthy and expensive court battle by Victor Food Products. The court ruled that this is the "common and ordinary term" for the product, used since about 1918 in scientific articles and commerce. Thus it cannot be squelched by dairy interests.

April. New England Soy Dairy, America's largest Caucasian-run tofu manufacturer, changes its name to Tomsun Foods, Inc.

May. *Nutritional Cooking* with Tofu by Christine Liu published by Graphique Publishing in Michigan.

May. American Natural Foods (formed in Jan. 1984 by John Troy, creator of miso-containing Hot Stuff) has a private stock offering that raises $150,000. In October ANF debuts a line mainstream American sauces and seasonings, each featuring miso, that are delicious and beautifully marketed.

May. *Die Tofu Kueche* (The Tofu Kitchen), by Verena Krieger, Swiss soyfoods pioneer, published by Tanner + Staehelin Verlag in Zurich. 171 pages with many photos.

June 7. "Tofu" by Barbara Hansen and "Tofu: Americanization of a Soy Food" by Karen Gillingham published in the *Los Angeles Times.*

June. Landstrom Distributing Co. of San Francisco, files for Chapter XI bankruptcy. Keene Distributors of Texas, and Collegedale of Tennessee, both profitable, well-run companies, are also pulled under, innocent victims of the Landstrom collapse. All three units were owned by Nutritional Foods, Inc. and all were major natural / health foods distributors. These bankruptcies seriously hurt the natural foods industry as well as many individual companies; sales and confidence plummeted nationwide. In late 1984 Fillmore Foods purchased Landstrom, and Balanced Foods purchased Collegedale and Keene.

June. Migros, Switzerland's largest supermarket chain, launches Tofu Nature, its own brand of tofu, made at Conserves Estavayer S.A., with widespread publicity and excellent product information on both tofu and soybeans.

It is marketed together with dairy products and eggs. The launch was considered a great success; supply was not able to catch up with demand until late December.

June. *The Book of Soybeans,* by Tokuji Watanabe and Asako Kishi published by Japan Publications. 191 p.

July. Kikkoman completes its second major shoyu (Japanese-style soy sauce) plant outside Japan, in Singapore. The 18,000 square meter factory, with a capacity of 3,000 kl (792,500 gallons) a year and 40 employees, costs $14 million. It will make shoyu and teriyaki sauce. Official opening ceremony was Nov. 21.

July. The requirement in effect since 1965 that isolated soy protein used as an ingredient in meat and poultry products must contain titanium dioxide as a tracer, is removed from federal meat and poultry products inspection regulations, following a petition by ADM, Grain Processing Corp., and Ralston Purina.

July 9. "Its Trendy, Tasty and Tofutti" (2/3 page) by J.D. Reed published in *Time* magazine (U.S. circulation 4.3 million). Probably the biggest media coverage for tofu in U.S. history. Tofutti hits the big time!

July 17. *History of Tempeh,* by Shurtleff and Aoyagi published by Soyfoods Center. 102 pages, including 375 references. Continued.

4407. *SoyaScan Notes.* 1984. Chronology of soybeans, soyfoods and natural foods in the United States 1984 (Continued–Part II) (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued. July 26. At the NNFA (National Nutritional Foods Association) show in Atlanta, Great Eastern Sun rolls out Ah Soy, its new line of soymilk imported from Saniku Foods in Japan, in vanilla, chocolate, and plain flavors, in foil retort pouches. After the show, the Soyfoods Association board meets. Steve Snyder replaces Michael Austin as director of SAA. The next day, SAA directors Snyder, Burke, and Barat travel to St. Louis to meet with the staff of the American Soybean Association to discuss possible areas of mutual interest. ASA appears friendly and open minded, and offers to discuss specific future joint projects. A potential line of communication is opened.

July 30. *People* magazine (circulation 2.8 million) article on Tofutti titled (ineptly) "A Happy Zealot Turns Curd (Yuck!) into a Creamy Treat."

July. "The Soyfoods Industry: Growing Like a Beanstalk" by B. Bialick published in *Whole Life Times.*

Aug. 9. *Soyfoods* magazine No. 10 (color cover) published by Doug Fiske. 7,000 copies printed at a cost of $11,200. Magazine's focus has been changed from production to marketing of soyfoods. This is the last issue of this pioneering magazine.

Aug. 12-17. World Soybean Research Conference III held at Iowa State University. Heavy emphasis on soybean production and agronomy; relatively little new material on soyfoods. Soyfoods movement is not represented.

Aug. 20. Ralston Purina introduces Checkerboard Farms TenderLean, America's first branded ground beef product consisting of 75% ground lean beef and 25% textured soy protein isolate. Some meat journals are harshly critical and many meat departments refuse to carry it. Ralston withdraws the product.

Aug. 24. Westbrae Natural launches WestSoy Natural, a plain soymilk similar to Ah Soy but lower in price and made with organic ingredients. Imported in a foil pouch from Saniku Foods in Japan, it is the company's first soymilk.

Aug. 31. San-J International Inc. announces that it will construct a soy sauce plant (44,000 square foot, $5 million) in Virginia on a 27-acre site just north of Colonial Heights.

Sept. Chico-san, Inc. introduces unpasteurized miso in a revolutionary "Pressure Release Package," a plastic bag with a one-way valve that allows the escape of the carbon dioxide produced naturally during fermentation.

Sept. 9-14. Gloria Vanderbilt announces that she, in conjunction with Dolly Madison and Frusen Gladje, will launch a tofu ice cream.

Sept. 27-28. First European Soyfoods Workshop held in Amsterdam, The Netherlands, at the Grand Hotel Krasnapolski, organized by the American Soybean Association's Belgium office. ASA reports attendance as 105 people from 14 countries, but participants report a maximum of 50 participants. Talks on tofu, soymilk, tempeh, distribution, and microbiological standards, all later published in the Proceedings. There is a large Expo with soymilk equipment from Alfa-Laval and Soya Technology Systems prominently featured. A very successful event, and another ASA first!

Oct. *The Tofu Gourmet* by Linda Barber and Junko Lampert published by Kodansha in Menlo Park, CA. 129 p. Many color photos.

Oct. 15. "Here Tofutti, There Tofutti," a full-page, very positive article with 2 color photos published in *Newsweek* magazine (circulation 3 million).

Oct. 23. The joint managing directors of the International Food Information Service, owners of Food Science and Technology Abstracts (FSTA, the world's largest, oldest, and most widely used food-related computerized database) visit William Shurtleff at The Soyfoods Center to discuss putting the 6,500 bibliographic records in The Soyfoods Center Library into FSTA, thus making this information available worldwide. Both parties are very interested in the project but technical problems remain to be solved.

Oct. Westbrae Natural Foods launches Malted's, billed as "thick and rich non-dairy soy delights." Marketed like a milkshake and imported from Japan in a foil pouch, they come in three flavors: vanilla, carob, and cocoa-mint.

Oct. Three member team from PLENTY Canada

spends one month in Sri Lanka, funded by the Canadian International Development Agency, studying the country's soyfoods program. They learn, teach, and introduce tofu ice cream.

Nov. 13. A.E. Staley Manufacturing Company, America's oldest existing soybean crusher, announces that its soybean crushing operations are for sale.

Nov. 20. Tofu Time's first Tofutti Shop opens in uptown Manhattan, New York. A fast-food retail outlet with a slick, red-and-white plastic, almost gaudy, decor.

Nov. 16. Chico-san Inc. is purchased by H.J. Heinz Co., largely for its rice cake business.

Nov. 21. After years of searching, William Shurtleff, with help from Nancy Florida in Java, discovers an 1815 reference to tempeh in the *Serat Centini*, from the Court in Solo, Java. This pushes the earliest reference to tempeh back 60 years and has it originating in Indonesian rather than in Dutch culture.

Nov. 30. America's first Tofu Standards are issued by the Soyfoods Association's Tofu Standards Committee, in part to help stem the rising tide of products bearing the name "tofu" that contain little or no tofu.

Nov. Galactina, a Swiss manufacturer of soymilks since 1969 (they make Vita Drink / Enteroform, a soymilk sold to in vanilla, chocolate, and strawberry flavors to the dietetic and pharmaceutical markets for tube feeding), starts test marketing tofu in Swiss supermarkets. Attractive recipe booklet attached to each packet, which is pasteurized for a 6-week shelf life.

Dec. Excellent, 19-page cover story on "Soymilk and Soyfoods," published in the prestigious *Journal of the American Oil Chemists' Society.* 1984 is the Society's 75th anniversary.

Dec. Ralston Purina, in its 1984 annual report, notes: "The Company has entered into preliminary agreement with Cargill, Inc., to sell six of the Company's seven soybean [crushing] plants." It also reported strong, steady growth in sales of soy protein products, from about $98 million in 1980 to $152 million in 1984, for an 11.5% compound annual growth rate (but only 4.5% after adjusting for inflation).

Dec. Gloria Vanderbilt's Glace, a soy-based nondairy ice cream, starts being test marketed in Los Angeles, in nine flavors.

Dec. A poll of readers by *Vegetarian Times* magazine finds that 53.1% of readers used tofu one or more times during the past 7 days; 29.4% used it 3 or more times.

Dec. 31. Brightsong Light Foods in Petaluma, California, receives the first funds of a $500,000 equity investment from a Hong Kong investor, who had seen an article praising Brightsong in Venture magazine. Brightsong greatly expands its product development and promotion.

* American Soybean Assoc. phases out its Human Nutrition Dept., headed for years by Judy Trujillo.

* Chicago Board of Trade starts trading options contracts on soybean futures. Continued.

4408. *SoyaScan Notes.* 1984. Chronology of soybeans, soyfoods and natural foods in the United States 1984 (Continued–Part III) (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued. 1984 New Trends: Growing Awareness of Dangers of Excess Cholesterol and Fat Consumption. Since cholesterol became a public health issue in the mid-1950s, the medical profession has been uncertain about the degree of its dangers, largely due to lack of medical evidence from long-term human studies. Yet for years the American Heart Association, United States Dept. of Agriculture, and the Soyfoods Association have been urging Americans to lower their blood cholesterol levels by eating less of the foods rich in cholesterol and saturated fats. In Jan. 1984 the long-awaited medical evidence was finally released, dramatically and extremely visibly. There were repercussions throughout the entire food and health care industries. The public started to pay serious attention.

Then on March 26 *Time* magazine ran a landmark cover story on the dangers of cholesterol. On 13 December *The New York Times* ran a major front-page report titled "Panel Suggests Many in U.S. Need to Reduce Cholesterol" containing the "the most far-reaching health recommendations yet made on cholesterol and heart disease" by an expert panel, convened by the National Institutes of Health. Numerous prestigious groups lowered their recommended safe cholesterol intake levels. These developments made soyfoods (which, like all non-animal products are free of cholesterol) look better than ever nutritionally, and increased their consumption significantly.

It has been known for several decades that consumption of polyunsaturated fatty acids (such as those found abundantly in soybeans) reduces serum cholesterol. During the 1970s Americans were encouraged to reduce consumption of saturated fats and cholesterol and increase consumption of polyunsaturates. Now this advice is changing. The new message is to "Reduce the intake of dietary fat." All fat, including polyunsaturated. In fact, these very words now appear as the first of four dietary guidelines on the letterhead of the prestigious American Institute for Cancer Research.

Continued Drop in U.S. Beef and Red Meat Consumption. From a high of 94.4 lb per capita in 1976, beef consumption has steadily declined, falling to 77.3 lb in 1982, a drop of 18.1% in only 6 years. During the same period, total red meat consumption (including pork, lamb, mutton and veal) fell from 163.6 lb to 148.0 lb, a drop of 9.5%. Many consumers switched to lower priced, lower cholesterol chicken, which rose from 42.7 to 52.9 lb per capita. Still, total annual U.S. meat and poultry consumption increased by over 4 pounds during his period (Stucker and Parham 1984).

Rise and Decline of the Soyfoods Association. The

Soyfoods Association of America (SAA) got off to a promising start in 1984 with a successful fund raising drive. Then in March, soyfoods companies took 16 adjoining booths to form the Soyfoods Pavilion, capturing the spotlight at the Natural Foods Expo in Anaheim. It looked like the "soyfoods movement" was maturing into the "soyfoods industry." But for the rest of the year the Association was largely inactive. This was disappointment to many, since interest in soyfoods in America had never been higher.

Prior to the founding of SAA in 1983, its active forerunner SANA (Soyfoods Association of North America) had six major ongoing activities: (1) Publication of Soyfoods magazine, a quarterly that actually came out about twice a year; (2) Publication of the monthly Soyfoods Newsletter, a key source of communication within the industry between issues of the magazine; (3) An annual summer Soyfoods Conference and Expo, drawing participants from around the world; (4) Periodic press releases; (5) Writing a steady stream of excellent articles on soyfoods for publication in national magazines; (6) An association phone and mail service to respond to outside enquiries for information.

The person primarily responsible for initiating and carrying out all these activities was Richard Leviton. Though funding was hard to obtain, he worked hard, wasted nothing, and made many personal and financial sacrifices for a cause he believed in. Leviton's many and diverse talents, and especially his talents as a careful researcher and outstanding popular writer, were of tremendous aid to the incipient soyfoods movement. In late April, after 5 years of devoted effort and feeling a bit "burned out," he left the soyfoods movement and moved to England to pursue his long-cherished career as a novelist. Leviton, more than any other person, was responsible for the rapid rise and visibility of the soyfoods movement in America. His departure was a major loss to both the association and the magazine. He and his creative efforts will be sorely missed.

Only the last of the six major activities initiated by Leviton has been continued by the "new" Soyfoods Association. However it did initiate the excellent Soyfoods Pavilion at the annual Natural Foods Expo and it started subscribing to the valuable Luce Clipping Service. There were board meetings in June 1984 and Jan. 1985. By summer of 1984 the Association was looking for a replacement for Executive Director Michael Austin, who was also "burned out." In August he was temporarily replaced by Steve Snyder, former marketing director for Hinode Tofu, but shortly thereafter Snyder was hired as national sales manager by Vitasoy USA. After that there was no executive director. Despite relatively large initial pledges, the Association's balance was always low which meant that, lacking Leviton, activity largely came to a stop. The only significant new activity was the development of tofu standards by the Association's Standards Committee.

Unlike the original Soyfoods Association, the "new" one took little interest in small soyfoods companies, arguing that they had no money. The "new" association was therefore composed mainly of larger companies with regional or national distribution and not truly representative of the industry.

Rapid Rise in Soymilk Imports. The boom in soymilk imports, started during the past two years by Vitasoy and Edensoy, accelerated during 1984. New products included Vitasoy's new American flavors, Westbrae Natural's Malteds, and Great Eastern Sun's Ah Soy. All three were very widely advertised in eye-catching color ads. Most of the adult soymilk beverages sold in America are still imported from Japan. Strangely this dramatic development has gone largely unnoticed by the media, which has been focusing its attention on Tofutti.

Two new companies and products were mentioned only briefly by Shurtleff and Aoyagi in their two-volume book *Soymilk Industry and Market: Worldwide and Country-by-Country Analysis,* published in Feb. 1984. The first of these was Westbrae's Malteds and Westsoy. Although Westsoy was launched in August and Malteds in October, sales of both for 1984 were roughly $700,000 or 1.67 million units. They quickly became the best-selling products in the company's history.

From late July when Great Eastern Sun launched Ah Soy, the product was a "fantastic success." During the period from 1 Nov. 1984 to 25 Jan. 1985 (just under one fiscal quarter) 525,000 unit packs of four flavors were sold. By March 1985 Ah Soy accounted for 15-20% of GES's total sales.

Big Food Companies Increasingly Interested in Tofu. Those studying tofu for use in foods include Quaker Oats, CPC International, International Multifoods in Minneapolis, Pillsbury, and Campbell's Soup.

4409. Alfa-Laval. 1984. Alfa-Laval presents new soy processing technology (Ad). In: William Shurtleff and A. Aoyagi. 1984. Tofu & Soymilk Production. Lafayette, CA: Soyfoods Center. 344 p. See p. 339.
Address: Alfa-Laval Food & Dairy Engineering, Box 1008, S-221 03 Lund, Sweden.

4410. Cant, A.J. 1984. Diet and the prevention of childhood allergic disease. *Human Nutrition: Applied Nutrition* (*London*) 38A(6):455-68. Dec. [54* ref]
• ***Summary:*** Breast feeding may be protective against childhood allergic disease, but soya formula and nutritionally inadequate goat's milk are not. Note: AFRC stands for "Agriculture and Food Research Council." Address: AFRC/MRC Training Fellow in Clinical Nutrition, Dep. of Child Health, St. Georges Hospital Medical School, Cranmer Terrace, London SW17 ORE, UK.

4411. **Product Name:** Pureharvest Organic Soy Drink

[Natural, Vanilla, Barley Malt plus Other Flavors].
Manufacturer's Name: Ceres Natural Foods Pty. Ltd. (Importer & Distributor). Made in Japan.
Manufacturer's Address: East Bentleigh, Victoria, Australia.
Date of Introduction: 1984. December.
Wt/Vol., Packaging, Price: 500 ml Doypack stand-up retort pouch.
How Stored: Refrigerate after opening.
New Product–Documentation: Australian Dairy Foods. 1985. Feb. p. 51. "Soy report." Over the past year sales have increased greatly. Also distributing Morinaga Tofu. Don Lazzaro is director of this company.

STS. 1985. Containers for Soymilk. Shows color photo of package. Brown, yellow, and orange.

Australian Dairy Foods. 1986. Feb. p. 84. Shows two sizes of Tetra Brik cartons, each vanilla flavor.

Letter (fax) from Don Lazzaro of Ceres Natural Foods. 1995. June 15. In Dec. 1984 they introduced Pureharvest soymilk in vanilla and natural flavors, in 500 ml Tetra Brik cartons, made by and imported from Kibun in Japan.

Letter (fax) from Daniel Hannaford of Ceres Natural Foods Pty. Ltd. The company's brand is Pureharvest. They apparently import soymilk from Mitoku. The address is now 18 Ardena Court, P.O. Box 187, East Bentleigh, Victoria 3165, Australia. Phone: (03) 579 3422.

4412. *J. of the American Oil Chemists' Society.* 1984. Soymilk processing: How manufacturers try to reach Western market. 61(12):1794. Dec.
• ***Summary:*** Mainly about the work of Alfa-Laval and STS.

4413. *J. of the American Oil Chemists' Society.* 1984. Soymilk: New processing, packaging expand markets. 61(12):1784-93. Dec.

4414. *J. of the American Oil Chemists' Society.* 1984. Soymilk packaging: Aseptic packaging spurs increased sales. 61(12):1796. Dec.
• ***Summary:*** "The advent in 1969 of the brick shaped Tetra Brik Aseptic carton was a milestone for soymilk's commercialization. The effects were immediate, lasting, and are continuing... Since the late 1970s aseptic containers have dominated soymilk packaging."

4415. *J. of the American Oil Chemists' Society.* 1984. Soyfoods used in anti-hunger programs. 61(12):1807-08. Dec.
• ***Summary:*** Poor people want to eat what rich people eat. Focuses on the work of INTSOY, especially in Sri Lanka, Costa Rica, India, and Peru. Work in Mexico with Soyaven is also mentioned.

4416. *J. of the American Oil Chemists' Society.* 1984. Soymilk worldwide: Shurtleff, Aoyagi chronicle soymilk industry. 61(12):1798, 1800. Dec. [1 ref]
• ***Summary:*** A summary and review of *Soymilk Industry and Market: Worldwide and Country by Country Analysis* by Shurtleff and Aoyagi.

4417. *J. of the American Oil Chemists' Society.* 1984. Soyfoods entering mainstream U.S. diet. 61(12):1800-02, 1804. Dec. [1 ref]
• ***Summary:*** One relegated mainly to small natural foods outlets, soyfoods are now found in regular supermarket chains throughout the USA. The most widely available are soy sauce and tofu. Contains a discussion of the soyfoods market in the USA. One of the most popular new products is Tofutti, a non-dairy frozen dessert.

4418. Kotzsch, Ronald E. 1984. Made in Japan–naturally: Natural foods from the Muso Company are popular worldwide. *East West Journal.* Dec. p. 14-21.
• ***Summary:*** "Muso was founded in 1966 as a macrobiotic food company, aiming to provide the highest quality traditional Japanese foods. It is now the oldest and largest macrobiotic food concern in Japan. Within the natural foods movement in the country it is one of the top three firms. Also, since 1969, it has been a major exporter of macrobiotic foods. With its Tokyo-based competitors the Mitoku Company and Ohsawa Japan, it dominates the large and growing international trade in Japanese foods."

Shuzo Okada, one of George Ohsawa's earliest and most devoted disciples, was the son of a family of Osaka textile merchants. After Ohsawa's death in 1966, Okada invested $3,000 to establish Muso Shokuhin in Osaka, with his eldest son Teizo as director. Yuko Okada, the second eldest Okada son, was head of the export division; he had spent 6 years living in Boston, mostly working for Erewhon. Initially the company was located in Fukusenji, a dilapidated Buddhist temple.

Today "the company has gross annual sales of over $25 million and employs over 120 people. In addition to the Osaka headquarters, built at a cost of over $1 million, it has an 18,000-square-foot production and warehouse facility in Osaka, as well as branch offices in six other cities. It wholesales over 1,800 products in the domestic market... Muso has accounts with nearly half of Japan's 3,400 natural food outlets. In addition, it has developed a rapidly growing franchise chain of fifty-two stores, mostly in the Kansai area...

"About $5 million a year comes from international sales... Growth in the international sector has been steady despite the blow of the 1981 Erewhon bankruptcy. (Muso had credits of about $200,000 when its chief customer failed, and lost over $150,000 of that.) Muso, which is now owned by more than fifty investors, was able to survive the shock. Muso exports about 270 different products...

"At present a runaway best seller is a soybean drink made of soybeans, pearl barley, kombu sea vegetable, and malt sweetener. Marketed in North America as Edensoy it has proven an excellent dairy substitute."

There follows a description of the Nanki Umeboshi Co., Muso's principal supplier, and then of the Kanemitsu Miso Co. (in Fuchu City, Hiroshima prefecture) which has been in business for 300 years. "While it once made sake and soy sauce as well, it now produces only miso–1,300 tons a year." There are now some 2,000 miso makers in Japan and Kanemitsu is one of only 200 which produce more than 1,000 tons annually. It is one a of a very few which produce miso according to traditional methods... It is aged in natural temperatures for two years, run through a masher, then packed in either 40-pound wooden kegs or 1-pound plastic pouches. "All the miso going into the pouches is pasteurized by 84ºC heat. If it were not, gases produced by the continuing fermentation would burst the bags. Kegs may or may not be pasteurized."

Photos show Yuko Okada.

4419. Liebman, Bonnie. 1984. Tofu tales. *Nutrition Action* 11(10):11. Dec.
• ***Summary:*** Tofu is used in commercial frozen entrees and desserts. The nutritional value of tofu relative to cheddar and part-skim ricotta cheeses as a lower calorie substitute is illustrated.

4420. **Product Name:** Cake (Non-Dairy, No-Egg, Made with Soymilk and Tofu Frosting) [Blueberry, Banana, Black Forest, Carrot, German Carob, Poppyseed-Rice].
Manufacturer's Name: Michigan Soy Products Co., Inc.
Manufacturer's Address: 1213 N. Main St., Royal Oak, MI 48067. Phone: 313-544-7742.
Date of Introduction: 1984. December.
Ingredients: Whole wheat flour, walnut, carrots, cinnamon, nutmeg, clove, corn oil, soy margarine, honey, barley malt, soy milk, ginger, lemon juice, vanilla, baking powder, baking soda, and salt. With tofu almond butter frosting.
How Stored: Refrigerated.
New Product–Documentation: Talk with Dorothy Hwang. 1988. Feb. 18. Label. 1987. Dot matrix printed on white.

4421. Picciano, Mary F.; Weingartner, K.E.; Erdman, J.W., Jr. 1984. Relative bioavailability of dietary iron from three processed soy products. *J. of Food Science* 49(6):1558-1561. Nov/Dec. [32 ref]
• ***Summary:*** The relative bioavailability of iron from soy flour (SF), freeze-dried soy beverage (SB) and soy concentrate (SC) was determined utilizing a hemoglobin repletion bioassay. Weanling male rats were used. Slop ratio analysis revealed that the relative iron bioavailabilities from SC (92%) and SF (81%) were not different from the reference standard, ferrous sulfate added to a casein-based diet, whereas that from SB (66%) was significantly less ($P<0.01$) than the inorganic source of iron. Analysis of results at individual iron levels suggested an iron bioavailability of SC > SF > SB. Address: 1. Dep. of Food & Nutrition, 457 Bevier Hall, Univ. of Illinois, Urbana, IL 61801; 2-3. Dep. of Food Science, 567 Bevier Hall.

4422. **Product Name:** [Proti {Soymilk}. Later renamed Purana].
Foreign Name: Proti, Purana.
Manufacturer's Name: Ralston Purina España, S.A.
Manufacturer's Address: c/ Aribau, No. 125, 08021 Barcelona, Spain. Phone: (93) 202 21 25.
Date of Introduction: 1984. December.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Color photo on cover of Journal of the American Oil Chemists' Society. Dec. 1984, and on page 1784 of the same issue. Front panel shows stylized rolling hills planted to soybeans, with a blue sky overhead. Blue on yellow letters at top of package state: Bebida 100% vegetal (100% non-dairy beverage). At the bottom is written: "No colorings or preservatives."

Talk with European soymilk producer. 1990. April 19. This product is made and packaged in Spain. It is distributed by a company that is linked with Ralston Purina and that distributes Purina Protein products. This soymilk is based on isolated soy proteins and produced in a dairy. It has had some success because it was the first soymilk available in Spain at a reasonable price, in part because they have custom/tariff protection.

Letter (fax) from Hernadette Dechamps, American Soybean Assoc., Madrid. 1990. May 23. "The only company known to be manufacturing soymilk now in Spain is Ralston Purina España, S.A. (gives address and phone). The product, previously named Proti, is currently sold under the name of Purana."

4423. **Product Name:** Soy Supreme Spray-Dried Soymilk Powder.
Manufacturer's Name: St. Peter Creamery, Inc., Oberg Foods Div.
Manufacturer's Address: 119 W. Broadway, St. Peter, MN 56082. Phone: 507-931-3160.
Date of Introduction: 1984. December.
New Product–Documentation: LaBelle. 1987 Food Processing. May. "The company uses a patented 'hot break' process that produces a very bland soymilk." Soya Newsletter. 1987. 1(3):2. "St. Peter Creamery first began spray-drying soymilk powder in late 1984."

4424. Viaene, M. 1984. Joint FAO/WHO Food Standards Programme. Codex Committee on Vegetable Proteins. Working group on "Soy drinks." Questionnaire. Ministere

de la Sante Publique, Inspection des Denrees Alimentaires, Batiment Vesale, 1010 Bruxelles, Belgium. 6 p. Dec. Unpublished manuscript. [Eng]
Address: Bruxelles, Belgium.

4425. *AOK Magazin* (*Germany*). 1984. Soja: (2) ein Tausendsassa! [Soya: The bean of a thousand forms!]. 25(4):15. [Ger]
• ***Summary:*** A brief introduction to the many foods made from the soybean, including soy sauce, soymilk, tofu, and miso. Note: This is the major health insurance magazine in Germany, with a huge circulation.

4426. **Product Name:** Calco Tofu (Many Kinds), and Soymilk.
Manufacturer's Name: Calco of Houston.
Manufacturer's Address: 2400 Dallas St., Houston, TX 77003. Phone: 713-236-8668 or 713-699-4420.
Date of Introduction: 1984.
New Product–Documentation: List of Tofu and Sprout Manufacturers. 1989. Kent Wang, owner. Talk with Kent Wang. 1989. Nov. 13. He began to make tofu and soymilk at this address in 1984.

4427. **Product Name:** Soy Milk.
Manufacturer's Name: Country Cottage Foods.
Manufacturer's Address: R.R. 1, Ohaton, ALB, T0B 3P0, Canada.
Date of Introduction: 1984.
New Product–Documentation: Soya Bluebook. 1984. p. 62.

4428. **Product Name:** [Woorean {Soymilk} (Apple, or Choco)].
Manufacturer's Name: Dr. Chung's Foods Company, Ltd.
Manufacturer's Address: Insong Building 18A, 194-15, 1-Ka, Hoehyun-Dong, Choon-Ku, Seoul, South Korea.
Date of Introduction: 1984.
New Product–Documentation: Soya Bluebook. 1984. p. 79; 1985. p. 100; 1986. p. 103; Dr. Chung's Foods Co. Ltd. 1985. These products are a mixture of undiluted Vegemil soymilk and either apple juice or chocolate powder.

Photocopy of Label for chocolate. Sent by Anders Lindner. 1989. The front panel shows a glass with a wave leaping out of it, surrounded by pieces of chocolate.

4429. **Product Name:** [Soy Beverages].
Manufacturer's Name: Fuji Oil Co. Ltd.
Manufacturer's Address: Nissei Midosuji Hachiman-cho Building, 6-1 Hachiman-cho, Minami-ku, Osaka 542, Japan.
Date of Introduction: 1984.
New Product–Documentation: Soya Bluebook. 1984. p. 62.

4430. **Product Name:** Amazake Shake [Vanilla, or Carob].
Manufacturer's Name: Grain Country.
Manufacturer's Address: 787 Melrose Ave. (at Orange Ave.), Los Angeles, California.
Date of Introduction: 1984.
Ingredients: Frosty Amazake, Westbrae Malteds.
Wt/Vol., Packaging, Price: Sold fresh from soft serve machine.
How Stored: Frozen.
New Product–Documentation: Talk with Marijke Steevensz. 1988. Jan. 30. Phone: 213-851-2023. Pronounced Ma-REE-kuh. "A more recent product is our Amazake Shake, which we make by blending one package of Westbrae Malted with some of our plain Frosty Amazake in the blender on the side of the Taylor soft serve machine. We started in 1984. It was great, a real seller. We loved the Westbrae flavors, the vanilla and the carob."

4431. **Product Name:** Sojal Soya Milk.
Manufacturer's Name: Haldane Foods Ltd.
Manufacturer's Address: Hayhill Industrial Estate, Unit 25, Sileby Rd., Barrow Upon Soar, Leicestershire LE12 8LD, England.
Date of Introduction: 1984.
New Product–Documentation: Letter from Bernard Storup. 1984. March 22. "A new type of soymilk is Sojal, sold in France by Ste. Sapov, 10 Place Jean-Juares, 13410 Lambesc. It is made in a dairy with Brazilian powdered soymilk, with 0.3% sugar, and is the best soymilk I have ever tasted."

Soya Bluebook. 1987. p. 104. Product originally launched by The Regular Tofu Co. Simon Bailey. 1988. Natural Choice. Aug. 15. "Soya-based products." A photo shows the carton. "By Hera." CSP form filled out by Simon Bailey. 1988. Sept. 28. Gives date of introduction as 1984. Letter from Simon Bailey. 1988. Oct. 10. Haldane joined forces with British Arkady in Feb. 1988 as part of Arkady's Health Food Div. Brian Welsby and Peter Fitch are joint managing directors.

Talk with Philip Marshall. 1990. July 9. Brian Welsby started this company. He sold Sojal, which was made in France using powdered Brazilian soyamilk from OLVEBRA. He had it packaged and marketed in the UK as made with soybeans. Marshall thinks there was some argument between Welsby and Sojal, because he trademarked "Sojal," which was in fact their name, in the UK. There was apparently a falling out between Welsby and Sojal, so he probably had to get his soymilk produced in the UK by some other company. He would not have used Haldane's own soymilk, because the flavor would not have been acceptable. Haldane was big in dry mixes, which is why Arkady bought them. When Haldane was acquired by Peter Fitch, Welsby was "given the golden handshake." He no longer works with the Haldane Group.

4432. Hill, D.J.; Ford, R.P.K.; Shelton, M.J.; Hosking, C.S. 1984. A study of 100 infants and young children with cow's milk allergy. *Clinical Reviews in Allergy* 2:125-42. *
• ***Summary:*** Soy protein can cause allergenic disease with GIT symptoms as well as acute anaphylaxis and up to 40% of infants allergic to cow's milk also have soy protein allergy.

4433. **Product Name:** [Soymilk].
Foreign Name: Leche de Soya.
Manufacturer's Name: Instituto de Investigaciones Para la Industria Alimenticia (IIIA–Food Industry Research Institute (FIRI)).
Manufacturer's Address: Carretera al Guatao KM 3.5, La Lisa, Ciudad de Habana, Cuba.
Date of Introduction: 1984.
Ingredients: Water, soybeans, sugar.
New Product–Documentation: Garcia Uriarte, Alvaro; Ortega, Alberto. 1996. "Recent history of soyfoods in Cuba." Part I (Interview). *SoyaScan Notes.* Jan. 9. Conducted by William Shurtleff of Soyfoods Center. This phase of Cuba's work with soyfoods began in early 1984, when Fidel Castro obtained a Mechanical Cow from Brazil. It had been developed in Sao Paulo, Brazil, by Dr. Roberto H. Moretti of Vanguarda Mecanica. Fidel has long been interested in and concerned about food, nutrition, and malnutrition worldwide, and especially in developing countries. It was for this reason that he obtained a Mechanical Cow–which cost about $40,000. After 48 hours without sleeping, Alvaro and his collaborators finished installing the Cow at the Food Industry Research Institute (FIRI). They began using it with much enthusiasm. One month later when the Brazilians arrived, they were to surprised to see it in operation, making soymilk and various products. Ten copies of the Cow were soon made at Cuba's Ministry of Mechanization. But despite much research and attempts to flavor the soymilk with various fruits, it continued to have a strong beany flavor. Soymilk from the Cow was first sold in 1984 at 15 outlets in Havana at non-rationed dairy products stores in the "parallel market." It was not well accepted by the Cuban people, who ended up feeding it to their pets. The product was withdrawn after 1 to 2 years, but scientists at FIRI began a new project to study soyfoods and flavor problems in greater depth.

4434. Magdoub, M.N.I.; Shehata, A.E.; El-Samragy, Y.A.; Mohammad, N.H.; Hofi, A.A. 1984. Gross composition of some soybean varieties and the extracted milk. *Annals of Agricultural Science* (*Ain Shams University, Cairo*) 29(2):763-78. [26 ref. Eng; ara]*
• ***Summary:*** The nutritional composition of 6 varieties of soybeans (Harosoy, Clark, Clark 63, Green, Williams, Dare) was analyzed. Green had the highest protein content (42.85% whole and 50.04% dehulled) and the lowest oil content (16.13% and 15.50%) and carbohydrate content (14.19% and not given). Therefore Green was chosen for soymilk production. The following were studied further: Effects of various heat treatments on soybean trypsin inhibitor, soybean protein fractions, amino acid and oil profiles. Address: Food Science Dep., Ain Shams Univ., Cairo, Egypt.

4435. **Product Name:** Tofu, Tempeh, and Soya Milk.
Manufacturer's Name: Molly Turner Tofu & Tempeh.
Manufacturer's Address: Malahide, County Dublin, Ireland. Phone: 01-8453853.
Date of Introduction: 1984.
New Product–Documentation: Letter concerning an interview with Molly Turner and her mother and helper (Laura Turner) conducted by Anthony Marrese. 1993. March. Molly is the owner of this small company. She started selling commercially in 1984. She started because of her interest in diet and in supplying other interested people. She is macrobiotic. Although they have sold in various ways (through private sales, health shops, etc.) now they sell only through the local whole-food co-op once every 2 weeks. Presently tempeh sales are 3-5 kg every 2 weeks and tofu sales are 5-10 kg every two weeks. They also sell a small quantity of soya milk (3 liters every 2 weeks). They make their own tempeh starter. They also supply fresh herbs and plants, and books about macrobiotics and gardening at the co-op. They have no present plans for changes except to meet the growth in demand at the food co-op.

4436. **Product Name:** Tempeh, Soysage, and Soymilk.
Manufacturer's Name: Oryana Soy Shop.
Manufacturer's Address: 16591 Cherry Bend Rd., Traverse City, MI 49684. Phone: 616-941-0254.
Date of Introduction: 1984.
New Product–Documentation: Talk with Tom Slater (nicknamed Tom Tofu). 1988. Sept. 7. The company started making these three products in about 1984, as part of the Oryana Food Co-op, Inc. Today Oryana Soy Shop makes 35-50 lb/week of tempeh, and that is increasing. They make 2-3 gallons/week of soymilk, mostly by special request.

4437. **Product Name:** Soymilk, Tofu, Soy Ice Cream, Fried Accras, or Tempeh.
Manufacturer's Name: Plenty Canada Soya Shop. Renamed Soy Development Center by 1987.
Manufacturer's Address: Roseau, Dominica.
Date of Introduction: 1984.
How Stored: Frozen.
New Product–Documentation: Trinidad and Tobago Review. 1984. Oct. p. 27. "The 'noble bean' in the Caribbean. Accras (fritters), a traditional local food, are now made by mixing tofu and okara with wholewheat flour and seasonings, then frying.

Plenty Bulletin. 1987. Fall. p. 4. Note: This is the

earliest known commercial soy product made in Dominica.

4438. **Product Name:** [Tofu, Soymilk, and Soy Sprouts].
Manufacturer's Name: Próvida Lda.
Manufacturer's Address: Rua 28 de Setembro 12–Cortegaça, 2715 Sintra, Portugal. Phone: (1) 927.05.40.
Date of Introduction: 1984.
New Product–Documentation: Letter from Miguel Azguime, owner of Miso Producoes. 1989. Nov. 30. This company started making soyfoods in Portugal in 1984 and is currently in operation.

Article in SoyaFoods (ASA, Europe). 1991. 2(2):4-5. The executive director of Provida is now Mr. Alcino Rodrigues de Sousa. The company is now located at Quinta dos Linhais, Cortegaca, 2715 Pero Pinheiro. It is said to be the only tofu manufacturer in Portugal, and it makes 2,000 kg/month of tofu. "Provida also packs textured soya protein (meat extender) and would like to produce soya milk as well."

4439. **Product Name:** [Pure Harvest Soy Drink].
Manufacturer's Name: San-iku Foods.
Manufacturer's Address: Sodegaura-machi, Chiba-ken 299-02, Japan.
Date of Introduction: 1984.
Ingredients: Whole soybeans, barley malt, pearl barley malt, wheat germ, safflower oil, sea salt.
Wt/Vol., Packaging, Price: Retort pouch.
How Stored: Shelf stable.
New Product–Documentation: Shurtleff & Aoyagi. 1984. Soymilk Industry & Market. p. 47. "San-iku Foods has been exporting Pure Harvest Soy Drink to Australia for several years."

Letter from San-iku Foods. 1990. June. This product was introduced in 1984.

4440. **Product Name:** [Soymilk (Natural, or Flavored)].
Foreign Name: Lait de Soja (Nature, ou Aromatisé).
Manufacturer's Name: Sapov.
Manufacturer's Address: 13410 Lambesc, France. Phone: (42) 92 80 16.
Date of Introduction: 1984.
New Product–Documentation: Letter from Patrick Roger of Arts. 1985. June 12. Mr. Delamarge makes natural and flavored soymilk.

Talk with Bernard Storup. 1990. June 13. Société Soy is now making the soymilk for Sapov, which buys it in bulk in 25,000 liter tanks. About 7 years ago they began to make soymilk using soymilk powder imported from Brazil. The powder was mixed with sugar and water, etc., then packaged in Tetra Brik cartons. There is only one man in this company, Mr. Delamarge (pronounced dey-la-mar-JAY). About 1½ years ago he began to buy his soymilk from Société Soy. He is now buying about 50,000 liters/month, but it does not look like he will be in business much longer.

4441. **Product Name:** Nutrien (Mixture of Chinese Herbs and Soy Protein for Making Protein Drinks).
Manufacturer's Name: Sunrider (Distributor).
Manufacturer's Address: 3111 Lomita Blvd., Torrance, CA 90505. Phone: 213-534-4786.
Date of Introduction: 1984.
Nutrition: 28.8% protein, 47.8% carbohydrate, 11.5% fat.
New Product–Documentation: Talk with Larry Hutton. 1988. March 22. This product is sold in the form of a fine white powder, which is claimed to be fermented. Sunrider is a multi-level marketing (MLM) company in Torrance, formerly in Utah. Their main products are Chinese herbs, imported from Taiwan. The FDA has recently detained the product claiming possible Salmonella contamination. The name of the manufacturer in Taiwan is unknown.

Talk with Sunrider. 1988. Sept. 22. This product, sold in a dried form, has been discontinued. "They had problems with it." It was introduced about 4-5 years ago. It was a good selling product, imported from Taiwan. It was not fermented.

Sharon's Sunrider's Bulletin. 1988. March 1. The first batch of Nutrien, 4 tonnes (metric tons) has finally been shipped by air freight. When the recall was announced, Dr. Chen voluntarily destroyed 60 tonnes of Nutrien to satisfy the government agency responsible for the recall. Sunrider relocated its plant after the recall.

Talk with man who knows Sunrider well. 1988. March 6. In late 1987 the FDA came in, tested the product, and found Salmonella in it. But they did not test it properly. At the time FDA thought all imported soy was contaminated. So Sunrider removed the soy, concentrated it and made it better. The Utah Dep. of Agriculture finally issued a statement saying it was okay. The FDA retracted their objection. John Siliker Labs was Sunrider's main testing facility. He found nothing wrong with it.

Sharon Farnsworth. 1988. March. "The Doctors Chen: East Meets West. As a young child, Tei-Fu Chen was very sick. His grandfather nursed the boy back to health using the formulas found in herbal manuscripts that had been passed down through the Chen family. He regained his strength to such an extent that he went on to become the Taiwanese National Judo and Kung-Fu Champion... After years of tutorial with the manuscripts, Dr. Chen began his formal study in 1968 at Kaohsiung Medical College in Kaohsiung, Taiwan, where he was awarded a degree in pharmacy." There he served as a research assistant for more than 4 years, developing the groundwork for the Sunrider formulations. During the summer of 1970 he worked as a technician in the Drug Synthesis Dept. and Medicinal Chemistry Research Dept. at the Sin-Tng Pharmaceutical Co. in Taiwan. After completing his degree, from 1973 to 1974 Dr. Chen served as a pharmacist officer at the hospital of the General Airforce in Taipei, studying herbal medicines. Dr. Chen then came

to the USA and studied chemistry at Brigham Young Univ. For 2 years he worked as teaching assistant in the Chemistry Dept. Then he became Director of Product Development at Naturalife in Utah. Dr. Chen is licensed to practice medicine in Taiwan. He is not licensed and does not practice in the USA.

NuPlus. 1988. June. Nutrien has now been replaced by NuPlus, the "long-awaited Sunrider concentrate" that comes in bulk (1 lb. 6.18 oz.) or envelopes (42 x 0.53 oz). "NuPlus is the all new herbal concentrate without soy as the carrier for the herbs. With soy no longer as the herb carrier, a higher concentration of herbs was used for the formula." It comes in 5 "fantastic" flavors. Ingredients: Coix fruit [Job's tears?], Chinese yam, fox nut, lotus seed, lotus root, apple, water lily bulb, and imperate root. Mix 3 heaping teaspoons in 6-8 oz. of water.

Dear Sunrider Leader. 1988. Sept. 30. The company has survived the scrutiny of the Utah State Dep. of Agriculture and the State Dep. of Business Regulation. Sales now exceed $10/month worldwide. Dr. Chen has a bachelor's degree in pharmacy from Kaohsiung Medical College in Taiwan.

Sunpack I. 1989. Jan. NuPlus is the first product listed of the 9 products in Sunpack I, which sells for $135.00. "Do you need more energy and stamina throughout the day? If so, NuPlus is the answer!... It mixes best with a blender. It may be used as a partial meal replacement twice daily with a third light meal... to help lose excess fat and inches."

Talk with Don Smith, Sunrider Distributor. 1989. June 6. Nutrien was a cell energy food designed to give a person greater overall energy, stamina, and feeling of well being. It was discontinued in early 1988, and replaced by NuPlus, which was launched in June or July of 1988. NuPlus sells for $32 in bulk or $35.00 for the envelopes. Takes up to 1 month for results to show.

4442. **Product Name:** Promil Infant Food Powder & Soy Beverage.
Manufacturer's Name: Tata Oil Mills Co. Ltd.
Manufacturer's Address: Bombay House, Homi Mody Street, Bombay 400-023, India.
Date of Introduction: 1984.
New Product–Documentation: Soya Bluebook. 1984. p. 62.

4443. Tetra Pak International. 1984. Tetra Pak V.I.P. Brochure (or Visitors Guide). Lund, Sweden. 46 p. 20 x 5 cm.
• ***Summary:*** This narrow booklet, out of print by 1990, contains a chronology of main events connected with aseptic packaging. V.I.P. Guides published after 1984 did not include this time line.

1944. The first development work starts on creating a package for milk that requires a minimum of material and gives maximum hygiene. This results in the principal on which the tetrahedral carton is based. Development work continued from 1944-1951.

"1951. AB Tetra Pak is formed in Sweden. The new packaging system, presented to the press in May 1951.

"1952 the first Tetra Pak machine was placed for a commercial operation in Sweden.

"1959. Development works starts on Tetra Brik, the new rectangular carton.

"1961 Oct. The first machine for filling bacteria-free milk aseptically is exhibited at a press conference in Bern, Switzerland." Note: All the company's machines prior to this date had been non-aseptic! The features of the packaging were low cost and hygienic. Much of the milk in Europe at this time was still sold unpackaged, in bulk.

"1963. March. Tetra Brik, the rectangular carton [non-aseptic], comes into commercial use in Medallia?, then in Stockholm, Sweden, later in the year.

"1964. The first AT machine [making aseptic tetrahedron packages] to be installed outside Europe is placed in Lebanon.

"1965. Deliveries of machines for aseptic filling gather speed–the trend towards longlife milk as a supplement to pasteurized starts in Europe and in several of the developing countries.

1968. The ½-litre Tetra Brik is introduced in Bochum, West Germany. The first version of Tetra Brik Aseptic is set up for field trials at Thun in Switzerland.

"1969. The first series of Tetra Brik Aseptic machines is ready for delivery. A new type of machine, the AT-1000, is introduced and the first deliveries go to Spain. Completion of the two-year delivery plan comprising 7 complete conversion lines and 25 aseptic filling machines for the Soviet Union.

"1974. Tetra Brik Aseptic is introduced in North America by Laiterie Cité in Canada. Concentrated juice is packed in 200 ml Brik Aseptic cartons and becomes a major dairy product.

"1979. Tetra Pak delivers the first aseptic Tetra Brik machine to the People's Republic of China, for chrysanthemum tea and sugarcane juice.

"1980. On exhibition at the DLG Fair in Frankfurt, West Germany, is the first Tetra King machine for 500 ml packages. Also presented is the new generation of aseptic Tetra Brik machines, AB 8. This machine has a capacity of 5,000 cartons per hour, made possible by a new sterilization bath.

"The market for portion packs continues to grow and a special space-saving aseptic Tetra Brik machine, AB 9, is now available for small volumes."

The original tetrahedron package, developed by the founder, Dr. Rausing, was originally called the Tetra Pak. Then the brick-shaped package, developed later, was called the Tetra Brik, and the company was named Tetra Pak, and the tetrahedral pack was renamed the Tetra Standard.

Concerning the "aseptic process": It was developed

years before by Dole for a canning system. Then it lay dormant for a while. Address: Sweden.

4444. **Product Name:** Wysoy (Soy-Based Infant Formula).
Manufacturer's Name: Wyeth Laboratories.
Manufacturer's Address: England.
Date of Introduction: 1984.
New Product–Documentation: Arturo R. Hervada. 1984. "Alternatives to Cow's Milk: Soybean Formulas." p. 163. In: David L.J. Freed, ed. Health Hazards of Milk. London, Philadelphia, Toronto, etc.: Ballière Tindall. Nursoy (made by Wyeth Laboratories, Radnor, Pennsylvania) is known as Wysoy in the UK. It is an infant formula based on soy protein isolate.

Dorothy E.M. Francis. 1984. "Alternatives to Cow's Milk: Comparisons." p. 147-48. In: David L.J. Freed, ed. Health Hazards of Milk. London, Philadelphia, Toronto, etc.: Ballière Tindall. Wysoy, made by Wyeth, contains beef fat.

McGraw, M.; Bishop, N.; Jameson, R.; Robinson, M.J.; O'Hara, M.; Hewitt, C.D.; Day, J.P. 1986. *Lancet* i(8473):157. Jan. 18. "Aluminium content of milk formulae and intravenous fluids used in infants." Wysoy, an oral (locally reconstituted soy-based infant milk) contains 330 micrograms of aluminum per liter.

4445. ADM Co. 1984. Dairy products update. Decatur: Illinois: Archer Daniels Midland. 24 p.
• ***Summary:*** On the cover are two colorful scoops of ice cream on top of a cone which is an ear of corn. It's called an "Ice cream corn."

Contents (soy related): The use of corn sweeteners and soy protein in dairy products... The use of soy protein in fluid and frozen products. The use of soy protein in cheese substitutes and cheese-like products. Characteristics and use of Ardex brand isolated soy protein (90% protein)... Additional brochures available.

"Field performance of soft serve mixes is critical. The product must be dry and stiff to remain on cones." "Frozen yogurt is likened to something between ice milk and sherbet. Lactic fermentation provides tartness, which is highly compatible with fruit flavors."

Various types of yogurt include: Regular or unflavored, Swiss style, sundae style, and liquid yogurt.

Ardex F is dispersible isolated soy protein. TVP can be used to add protein and "crunch." "Ardex isolated soy proteins [F] can be used effectively to produce tofu-like products" (p. 19).

A table (p. 20) gives formulas for "Yogurt" soft curd. "Tofu" firm curd. "Tofu" from dry mix. Chocolate dessert.

Ardex F is dispersible; used for dairy foods. Ardex SP-6 is dispersible; used primarily for injected whole muscle meat products. Ardex R is used where special functionality is required, e.g. coffee whitener, liqueur, cheese, etc. Ardex D is an emulsion stabilizer for use in meat systems,... Ardex DHV is a water and fat binder and adhesive agent. Address: Illinois.

4446. Bhumiratana, Amara. 1984. ASEAN Protein Project, 1974-1984. Bangkok, Thailand: ASEAN Subcommittee on Protein. 111 p. Illust. 29 cm. [Eng]
• ***Summary:*** The ASEAN nations are Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Contents: 1. Malnutrition problems in ASEAN countries (incl. Soy-based products as a solution to malnutrition). 2. Administration of the ASEAN Protein Project. 3. Objectives. 4. Methodology. 5. Results of ASEAN member country research: Soy products developed (high-protein, low-cost foods for infants and children, soy milk and soy milk powder, full-fat soy flour), fermentation products developed (tempe: from shophouse business to modern factory, oncom chips and flour, soy sauce, the ASEAN culture collection), other related projects, exchange of information (incl. details on the 15 ASEAN protein workshops held between July 1975 and Oct. 1984, and the publications resulting from each). 6. New ASEAN projects. 7. Conclusion.

This book, which contains many color photos and focuses on soybeans, describes one of the most successful ASEAN programs, emphasizing cooperation among the ASEAN nations in an attempt to solve the problem of malnutrition common to the region. The project, conceived in Aug. 1971, receives major funding and technical assistance from the Australian government. In May 1978 the ASEAN Full-Fat Soy Flour (FFSF) Factory in Chiang Rai, Thailand, was completely installed and has been producing continuously since then. It has a capacity of 100 tons/month. Numerous photos of the facility are shown. A pilot plant has produced up to 50 tons/month of Kaset Infant Food, which has been well accepted in 573 health centers throughout Thailand and is being evaluated in other ASEAN countries. A photo of the package (plastic bag) is shown. Address: Bangkok, Thailand.

4447. Bloodroot Collective; Beaven, Betsey; Furie, Noel; Miriam, Selma. 1984. The second seasonal political palate: A feminist vegetarian cookbook. Bridgeport, Connecticut: Sanguinara Publishing. xli + 242 p. Illust. Index. 23 cm. [35 ref]
• ***Summary:*** An excellent book and cookbook with a crystal clear explanation of why feminists should also be ethical vegetarians. The "Prefatory material" includes sections on "Feminism in the eighties," "Ethical vegetarianism," "Soyfoods," and "On collectivity and work."

The glossary includes brown rice, hoisin, koji, queso blanco, shiro miso, shoyu (the correct name for tamari), tahini, and tofu.

The index contains 27 entries for tofu, 19 for miso, 10 for tempeh, 4 for soymilk, and 1 each for okara and soysage. Address: 85 Ferris St., Bridgeport, Connecticut 06605.

Phone: 203-576-9168.

4448. Brennan, Jennifer. 1984. The cuisines of Asia: nine great oriental cuisines by technique. New York, NY: St. Martin's Press. ix + 542 p. Illust. (line drawings). Index. 24 cm.

• ***Summary:*** The "Nine great Oriental cuisines" are those of "China, India, Indonesia, Japan, Korea, Malaysia, The Philippines, Thailand, Vietnam" (as stated on the book's cover). The book contains many recipes, yet it is largely organized into chapters by cooking techniques: barbecuing, steaming, stir-frying / using a wok, deep-frying, etc.

The chapter on "Japan" discusses soybeans, miso, tofu, and shoyu on pages 44-45. Soyfoods are said to be the 2nd largest source of protein in the Japanese diet.

The section on "Soybeans" (p. 97-104) includes a discussion of the names of various soyfoods in different Asian languages and countries. For example: "The basic bean curd is called *tau-fu* in Cantonese, *tau-hu* in Hokkien, and *tofu* in Japanese." Or consider this (p. 99): "During the basic process of making bean curd, at the stage where the bean and water mixture is boiled, a skin or residue forms on the top. This skin [yuba] is skimmed off and dried. It is commercially available in sheets... and in the form of sticks that bear the picturesque name of 'second bamboo' [dried yuba sticks] in Chinese, meaning that they are the second residue from the curd."

There follows a 3-page table titled "Soybean products" (p. 101-03) which has four columns: Description, Chinese name [Cantonese], Japanese name, comments.

Note: Before proceeding, we believe that the design of this table is fundamentally flawed. (1) Why are the names of the basic soyfoods not given in the other languages with which this book is concerned, including Mandarin Chinese, Korean, Indonesian, Vietnamese, Filipino, etc.? (3) Why is no English name given for each basic soyfood product? Sometimes the description is the English name, yet that name is rarely the name a person would use if they were selling the product in an English-speaking country. (3) Why are so many common "soybean products" omitted from this table, such as the various basic other types of Japanese miso and of Japanese shoyu (besides koikuchi shoyu), fermented black soybeans (douchi, dow see), soymilk, soy sprouts, roasted soy flour, whole soy flour, soybean oil, textured vegetable protein, etc. These problems are easily solved with alternate table designs. For example, have one table for each language, with the name of each soyfood product given first in English and then in the language of that country. Put the description and comments in a glossary to avoid repetition. Or, have a glossary entry for each soyfood, with the English name, description, comments.

The table is divided into four basic types of soybean products. After each, we will give the Cantonese name and then the Japanese name, and we will indicate disagreements using [sic]. NL = Not listed.

(1) Bean curd: Tau fu fu [sic] = kinugoshi tofu. Tau fu = momen tofu. NL = yaki tofu [sic, yaki-dofu]. NL = koya tofu or kori tofu [sic, koya-dofu or kori-dofu]. Tau fu pok = abura age. Fu chu = yuba [sic, fu chu is dried yuba sticks. Yuba in Mandarin is doufu pi]. fu joke [sic, fu jook] (bean curd sticks) = NL. Tim joke [sic, tiem jook] (sweet bean curd sticks) = NL. tau fu kon [Mandarin: doufu gan; pressed tofu].

(2) Soy sauce: Light = chan ch'an or sang chu = usu kuchi shoyu [sic, not the same]. Dark, medium = see yu chan yan = shoyu [sic, see yu is soy nugget sauce, not made in Japan. Japanese shoyu is not traditionally made in China]. Dark, heavy, sweet = chu yan = NL.

(3) Fermented bean pastes and cheeses. Black bean paste = dau see tau ch'ih = NL. Sweet, white bean paste = NL = shiro miso. White soy cheese [fermented tofu, should be classified under tofu] = pai doufu-ru or foo yee or foo yu = NL. Red soybean paste = NL = aka miso. Red soy cheese or spiced red bean curd = hung doufu-ru or nom yee or nam yu.

(3) Miscellaneous soybean productions. Soy jam = yun shi jeung = NL. Whole fermented soybeans = NL = nato [sic, natto]. Red bean sauce = saang see jeung = NL. Soybeans and malted rice = NL = moromi miso. Hoisin sauce = hoisin = NL.

In the "Basic recipes" section is a recipe for Indonesian dark sweet soy sauce (*ketjap manis*).

The Glossary (p. 499-515) contains the following soy-related entries: "Bean Curd (*tofu,* Japanese; *tao foo,* Chinese; *tahu,* Indonesian and Thai; *tokwa,* Philippines): A curdled, soft, cheeselike preparation made from soybean milk. Used as a source of protein in Asian cooking. Available loose or in packages."

Bean paste, red sweet [from azuki beans]. "Substitute Chinese sweet red bean paste, p. 132."

Bean paste, yellow (Chinese).

"Beans, black salted fermented. (Called dow see in Chinese) These are very salty soybeans, sold in cans in Chinese markets. Used with garlic as a flavoring for fish and pork dishes. substitute: Soybeans, cooked until soft and seasoned with plenty of soy sauce."

Bean sprouts: Usually refers to mung bean sprouts, "although alfalfa and soybean sprouts are also used."

Hoisin sauce: Soybeans are a major ingredient, along with garlic, chili peppers, and various other spices and ingredients.

Miso. Oyster sauce: "A Chinese sauce, made from oysters cooked in soy sauce and brine." Used as a seasoning with cooked foods and as a table sauce. See recipe p. 146.

Red bean sauce: "A strong table sauce made from mashed soybeans." Available in cans from Chinese stores.

Soy sauce

Also contains entries for: Kombu. Monosodium glutamate (MSG; "I do not use it nor do I recommend its use"). Mung beans.

The index contains 28 entries for soybean, 22 for soy sauce, 14 for miso, 6 for bean paste, oyster sauce, teriyaki, 4 for bean curd–deep fried, hoisin sauce, vegetarian dishes, 2 for ketjap, and 1 each for beans–black salted fermented, bean curd–fermented, jam–soy, jang (see miso), milk–soybean, ragi, shoyu (see soy sauce), soybean oil, sukiyaki, tahu, tau-fu or tau-hu (see bean curd), tempe [tempeh], textured vegetable protein (TVP), tofu (see bean curd), tou shih [fermented black soybeans],

About the author (from the rear cover): "Jennifer Brennan grew up in Pakistan and India and has spent many years in Southeast Asia. She is the author of *The Original Thai Cookbook."* She is "Winner of the IACP [International Association of Culinary Professionals] Award for the Best Literary Food Writing."

4449. Clergeaud, Chantal; Clergeaud, Lionel. 1984. Mystères et secrets du soja [Mysteries and secrets of soya]. Paris: Editions La Vie Claire. 134 p. Illust. 21 cm. [Fre]
• ***Summary:*** Contents: 1. A little history, the properties of soya, soybean culture, soya and animal feeding, recipes based on whole soybeans (*fèves de soja*). 2. Soy flour, soy proteins, recipes based on soy flour and soy proteins. 3. Soy sprouts, recipes based on soy sprouts. 4. Soy oil, recipes based on soy oil. 5. Soymilk, recipes based on soymilk. 6. Tofu, recipes based on tofu. 7. Fermented soy products: miso, recipes based on miso, tamari, tamari-shoyu, recipes based on tamari and tamari shoyu, tempeh, recipes based on tempeh. 8. Other [fermented] soy-based products consumed in the world: Chee fan (fermented tofu), Hamanatto, ketjap (Indonesian soy sauce), Meitauza (fermented okara tempeh), Sufu (fermented tofu). Address: Naturopathes–Ostéopathes, France.

4450. Francis, Dorothy E.M. 1984. Alternatives to cow's milk: Comparisons. In: David L.J. Freed, ed. 1984. Health Hazards of Milk. London, Philadelphia, Toronto, etc.: Baillière Tindall. xvii + 281 p. See p. 145-150. [8 ref]
• ***Summary:*** In the section on "Milk Substitutes," table 8.1 is titled "Milk substitutes suitable for different age groups." The following soya products are listed with their manufacturers and osmolality in mmol/kg (millimole/kilogram): Infants from birth: Formula S Food (Cow & Gate), Prosobee liquid and powder (Mead Johnson), Wysoy (Wyeth, contains beef fat). Infants from three months, in addition: Granolac Infant (Granose). School age children and adults requiring enteral feeds: Fortison Soya (Cow & Gate). Social replacements of milk: Granogen (Granose), Plamil (Plant Milk Ltd.), Soy Bean Milk (Itona), Soya Milk Liquid (Granose).

A discussion of "Soya formulas" is given on p. 148-49. Social replacements of milk "do not contribute significantly to the nutritional intake, particularly for calcium and riboflavin." Address: SRD, Group Chief Dietitian, The Hospital for Sick Children, Great Ormond St., London, WC1N 3JH, England.

4451. Freed, David L.J. ed. 1984. Health hazards of milk. London, Philadelphia, Toronto, etc.: Baillière Tindall. xvii + 281 p. Illust. Index. 24 cm.
• ***Summary:*** Contents: Introduction. Acknowledgments. Foreword. 1. Chemical contaminants of milk: Cow's milk, human milk. 2. Milkborne infectious disease in England and Wales, 1938-1982. 3. Breast is best–isn't it? 4. Human milk banking–Pros, cons and facts. 5. Lactation and feeding patterns in different species. 6. Milk allergy and intolerance: Clinical aspects, difficulties and values of breast milk for atopic babies, does breast feeding protect against atopic disease?, experimental studies on sensitization to cow's milk. 7. Dietary habits and urolithiasis. 8. Alternatives to cow's milk: Comparisons, goat's milk, soybean formulas. 9. Naturally occurring toxicants in plant foods and milk.

10. Milk and atheroma. I Pathology: Aetiology of atheroma, immunology of experimental atheroma, immunology of human atheroma. 11. Milk and atheroma. II Epidemiology and theoretical aspects: Milk oestrogens, lactose, xanthine oxidase. 12. Milk and atheroma. III Clinicians' approaches: A milk-free, egg-free diet in symptomatic coronary disease, dietary fats and coronaries. Afterword: Highlights on the hazards and some good points about cow's milk. Appendix.

Chapter 2, "Milkborne infectious disease in England and Wales, 1938-1982," indicates that such disease is decreasing. The most serious disease before the early 1950s was tuberculosis, of which there was one major outbreak and an estimated 33,000 cases resulting in an estimated 19,000 deaths. However there have been very few cases since the early 1950s and none since 1979. The two possibly increasing diseases are (1) Salmonellosis, of which there have been 179 outbreaks, 3,818 cases, and 7 deaths. Outbreaks increased from less than 1 per year in 1938-1950 to over 14 per year in 1981-1982; (2) Campylobacter enteritis, of which there have been 25 outbreaks, over 4,797 cases, but no deaths. It was first reported in 1978. Address: M.D., Lecturer in Immunology, Dep. of Bacteriology and Virology, Univ. of Manchester, England.

4452. Gerras, Charles. ed. 1984. Rodale's basic natural foods cookbook. Emmaus, Pennsylvania: Rodale Press. xi + 899 p. Illust. Index. 24 x 20 cm.
• ***Summary:*** This book, containing over 1,500 recipes, does not use salt or white sugar, but does use meats, poultry, and fish. It was also published by Simon & Schuster as "A Fireside Book." It contains extensive information on and many recipes for soyfoods, including whole dry soybeans, tofu, soy ice cream, soy flour and grits, miso, soymilk, soy oil, okara (soy pulp), soy sauce, tamari, and soy sprouts. Address: Pennsylvania.

4453. Greenwood, Sadja. 1984. Menopause, naturally: Preparing for the second half of life. San Francisco, and Volcano, California: Volcano Press. 201 p. Illust. by Marcia Quackenbush. 23 cm. [36 ref]
• ***Summary:*** This is a pioneering, wonderful book on menopause. Chapter 10, titled "Estrogen replacement therapy: The pros, cons, and unknowns" states (p. 89) that when estrogen was first isolated in the 1920s, it was used for women who had lost their ovaries through surgery and for women with severe problems after natural menopause. "However, its use was not widespread until the 1960s, when a book entitled *Feminine Forever,* by Robert Wilson, popularized estrogen use for all women who wanted to retard aging and retain their feminine allure. The use of 'estrogen replacement therapy,' or ERT, spread widely among middle- and upper-class women treated by private physicians."

Chapter 15, titled "Nutrition: All about eating and drinking" (p. 147-76) advocates a diet low in meat and high in whole grains, beans, vegetables, and fruits. Beans are excellent foods; they are high in protein, low in fat, and a good source of fiber. If gas is a problem, cook the beans well and serve small portions. "Fresh green beans and peas, bean sprouts, and soybean foods like tofu rarely give you gas." An illustration (line drawing) shows sacks and boxes of various types of beans (not including soybeans) and a cake of tofu. People who get much of their protein from beans and grains are also helping to make most efficient use of world food resources–an idea developed in *Diet for a Small Planet.* Sprouts are a delicious food, high in nutrients. Anyone can make bean sprouts in the kitchen from lentils, aduki beans, mung beans, etc. Sea vegetables are excellent; avoid canned veggies.

Concerning meat fish and poultry: Try to cut back, replacing them with a combination of whole grains and beans–which provides high-quality protein without added fat. "You can eliminate entirely and be healthy! Vegetarians have good health records, with lower rates of heart disease and cancer than meat-eaters." Nonfat or low-fat milk, yogurt, and cheese are good foods for mid-life women because of they are high in calcium. But some adults lack the ability to digest milk sugar (lactose), and experience cramping, gas, and diarrhea after consuming milk products. "Soy 'milk' can be used, especially in cooking, as a milk substitute." A table shows common foods that are high in calcium, including "tofu (soybean curd)." 4 oz. contains 150 mg of calcium.

Note: This is the earliest English-language document seen (Aug. 2013) that contains the term "Soy 'milk.'"

Cut down on fats, sugar, salt, alcohol, and caffeine. A table titled "Suggestions for healthy breakfast foods" (p. 171) includes "Tofu (bean curd): Eat steamed, scrambled, or grilled with onions, curry, soy sauce, or other flavorings." Tofu is high in calcium. Suggestions for a healthy lunch include mashed tofu as a filling in sandwiches made from whole grain bread. Suggestions for healthy snack foods include slices of raw vegetables with tofu or cottage-cheese dip. Suggestions for a healthy dinner (p. 173) include brown rice with stir-fried vegetables and tofu. On p. 175 are recipe suggestions for Stir-fried vegetable dishes with tofu, meat, or fish.

On the rear cover is a photo of Sadja Greenwood, M.D., M.P.H., and a biographical sketch. She is age 53, "mother of two grown sons, a vegetarian, a slow jogger, looking for the truths about life and the joy in every day." A general practitioner, she has long been associated with women's health programs. "She is Medical Director of Min An Health Center, which utilizes Eastern and Western medical treatments, and is Assistant Clinical Professor at the University of California Medical Center, San Francisco."

Note: In 1984 the phytochemicals in soybeans and their possible benefits for menopause were largely unknown.

Note: This is the earliest document seen (Sept. 1999) in which soy is mentioned in connection with relief of menopausal symptoms. Address: M.D., MPH, San Francisco, California.

4454. Hervada, Arturo R. 1984. Alternatives to cow's milk: Soybean formulas. In: David L.J. Freed, ed. 1984. Health Hazards of Milk. London, Philadelphia, Toronto, etc.: Baillière Tindall. xvii + 281 p. See p. 157-68. [39 ref]
• ***Summary:*** Contents: Historical background. Nutrient comparison of U.S. soy formulas based on 100 ml (Nursoy, Isomil, Prosobee, I-Soyalac, Soyalac). Soy protein isolate formulas. Clinical studies. Soy protein formulas and cow's milk allergy. Address: M.D., Dep. of Pediatrics, Jefferson Medical College, Thomas Jefferson Univ., Philadelphia, Pennsylvania 19107.

4455. Hung, Jerry Jer-San. 1984. Studies on processing, functional characteristics and nutritional quality of hydrothermal extracts of soybeans. PhD thesis, Kansas State University. 210 p. Page 1145 in volume 45/04-A of Dissertation Abstracts International. *
• ***Summary:*** Soymilk processed by a modified "rapid hydration hydrothermal cooking" (RHHTC) method had higher thiamin and protein concentration than traditionally extracted soymilk. Address: Kansas State Univ.

4456. Kagaku Gijutsu-cho, Shigen Chosa-kai (Science & Technology Bureau). 1984. Shitei shokuhin seibun hyô [Standard tables of food composition in Japan. 4th ed.]. Tokyo. 370 p. Introduction by R. Kagawa, Joshi Eiyo Daigaku. 28 cm. [Jap; Eng]
• ***Summary:*** Pages 76-80 gives a nutritional analysis of the following Japanese soyfoods: Soybeans: whole domestic (dry, or boiled), USA whole dry, Chinese whole dry. Green immature: raw, or boiled. Soybean sprouts: raw, or boiled. Defatted soybeans: whole, or dehulled. Kinako (roasted,

ground soybeans). Budô-mame. Tofu: regular (momen), silken (kinugoshi), soft, packed, Okinawa tofu, grilled (yaki-dofu), nama-agé (deep-fried tofu cutlets), abura-agé (deep-fried tofu pouches), ganmodoki, kori-dofu, Tofu chikuwa (steamed, or roasted). Natto: Itohiki natto, goto-natto, tera-natto (fermented black soybeans). Miso: Rice koji miso (ama miso, light yellow miso, dark yellow miso), barley koji miso, soybean koji miso, dried miso, kinzanji miso, hishio miso. Okara. Soymilk: regular, reconstituted, soft drinks. Yuba: Fresh, or dried.

Page 254 gives the amino acid composition of soybeans, tofu, dried frozen tofu, yuba, okara, natto, and 3 types of miso. Address: Japan.

4457. Kurz, Marey. 1984. Soja in der Vollwertkueche: Rat und Rezept-Ideen zum Kochen und Backen mit allen Soja-Varianten: Bohnen, Mehl, Milch, Sauce, Tofu und Miso. Das erste komplette Soja-Kochbuch [Soya in whole-foods cookery: Advice and recipe ideas for cooking and baking with all the varieties of soya: Beans, flour, milk, sauce, tofu and miso. The first complete soya cookbook]. Munich, West Germany: Gräfe und Unzer GmbH. 102 p. Illust. Index. 20 cm. [11 ref. Ger]

• ***Summary:*** Foreword. Everything about soy (*Soja*)**.** Basic soy recipes (How to make at home): Soy grits. soy sprouts, light soybean pulp (cooked ground soybeans), dark soybean pulp, cooked soybeans, sweet cooked soybeans, cooked azuki beans, soymilk, tofu–Soya quark or soya cheese (*Sojaquark oder Sojakäse*)**,** sokar.

Soups and one-pot dishes. Refines ragouts. Delicate meatballs or rissoles. Pies, pastries and spreads. Hearty vegetable dishes. Special salads. Side dishes, garnishes, and entrements. Fine sauces. Soya for those in a hurry. Desserts and confections. Drinks and energy-spenders. Delicious spreads for breads. Bread, cakes, pastries (*kuchen*) and baked goods. Appendix: Glossary, books and addresses: gomashio (sesame salt), graham flour, Indonesian soy sauce, margarine, miso, nigari, soy oil, tahini (*sessamus*)**,** defatted soy flour, whole (full-fat) soy flour, soy sauce, tofu mayonnaise, Worcestershire sauce. Address: West Germany.

4458. Leung, Albert Y. 1984. Chinese herbal remedies. New York, NY: Universe Books. 192 p. Illust. (drawings by Bing Fun Leung). Index. 21 cm. [48 ref]

• ***Summary:*** The book is arranged by plant- or food type. Each entry has all or most of the following subcategories: General information, effects on the body, traditional uses, modern uses, home remedies (and specific conditions it is used to treat), availability. Entries include:

Bean curd [tofu] (p. 33-35). Types include "dried bean cake" [pressed tofu], fried bean cake [fried tofu] and fermented bean cake [fermented tofu]–"all derived from bean curd." Bean curd is said to have cooling properties. Since it does not have much taste of its own, "it can be made to taste like anything–hence its popularity in vegetarian dishes." "Bean-cake residue" has traditionally been used therapeutically "mainly for skin conditions, such as ulcers and sores, for which both the uncooked and cooked (baked) forms are made into patties and applied directly onto the affected skin." A common use for bean curd in Canton is for treating the common cold. It was made into a soup with green onions; optional ingredients include mint leaves, ginger, and fermented black beans. The exact recipe used by the author's grandmother is given.

Garlic (p. 67-70). Ginger (p. 71-74). "To treat coughing, wheezing, and excessive phlegm due to colds, a popular Cantonese remedy combines the use of ginger and black beans" [fermented black soybeans].

"If one has accidentally ingested an unknown poison which cannot be treated with a specific antidote, a decoction of 31 gm. (1.1 oz.) each of licorice and black soybeans [fermented black soybeans] or mung beans can be used" (p. 94-95).

Mung bean (p. 105-07): Used as a home remedy to "prevent heat rash or prickly heat."

Soybean (soya) (p. 142-45). "Two varieties of soybean are used in Chinese medicine–black soybean and yellow soybean" (*hei da dou* and *huang da dou*)**.** Black soybean skin [hull, seedcoat], when used medicinally, is known as *hei da dou pi***.** Traditional food products derived from the soybean include "bean cake [tofu], soybean milk, soy sauce, soybean oil, and bean sprouts." Plus "fermented black beans."

"Traditional uses: The recorded use of black soybean in Chinese medicine preceded that of yellow soybean. The former dates back at least 2,000 years, being listed in the Shennong Herbal, while the latter dates back to only around A.D. 1330."

Black soybean skins are prepared as follows. Black soybeans are soaked in water until they germinate / sprout, or until the skins / hulls / seedcoats separate easily. The latter are then removed and sun-dried, then stored in a dry place. The earliest known medical use of black soybean skins dates from the middle of the 8th century [mid-700s] during the Tang Dynasty [618-906]. They are said "to nourish the blood, clear one's vision, and drive away disease-causing factors." They are also "used in treating excessive sweating, night sweat [night sweats], dizziness, headache, and rheumatoid arthritis." They are usually taken in the form of a decoction, with a typical daily dose of 9-16 gm (0.3 to 0.6 oz).

There are two types of fermented black soybeans (*dou chi* in Chinese)–unsalted and salted. "Although the only difference between the two is the added salt, the former is more commonly used in Chinese medicine." In making fermented black soybeans, black soybeans are soaked in a water extract of white mulberry leaves and a wormwood herb (such as *Artemesia annua*) followed by steam cooking and fermentation. Other herbs, such as licorice and *Ephedra*

sinica (*ma huang,* in which ephedrine [a stimulant] was first discovered) are also used.

The earliest known use of fermented black soybeans in Chinese medicine dates from the early 6th century (early 500s) during the Liang dynasty (502-557). It is said to have a bitter taste "and is said to be good for treating illnesses that affect the lungs and the digestive system. It is used in treating colds, fevers, typhoid, headache, and discomforts in the chest." For these illnesses it is consumed as a decoction, with a daily dose of 6-12 gm (0.2 to 0.4 oz). Many other medicinal uses are given.

"Availability: Yellow soybeans are available in health food stores, groceries, Chinese groceries, and some supermarkets. Black soybeans, fermented black beans, and yellow soybean sprouts are available in Chinese groceries."

4459. Liener, Irvin E. 1984. Naturally occurring toxicants in plant foods and milk. In: David L.J. Freed, ed. 1984. Health Hazards of Milk. London, Philadelphia, Toronto, etc.: Baillière Tindall. xvii + 281 p. See p. 169-87. [84 ref]
• ***Summary:*** The first section of this chapter, titled "Soybean Milk," discusses trypsin inhibitors, lectins, goitrogens, oestrogens (estrogens), phytate, flatulence factors, and allergens. The second section, titled "Cow's Milk as a Vector of Transmission of Plant Toxins," discusses goitrogens, alkaloids, lupin alkaloids, bracken fern, cycads, milk sickness, carotinaemia, cardiac glycoside, caffeine and theobromine. Also discusses mycotoxins.

Note: *Webster's Dictionary* defines theobromine (derived from the New Latin *Theobroma* = a genus of trees), a word first used in 1842, as "a bitter alkaloid $C_7H_8N_4O_2$ closely related to caffeine that occurs especially in cacao beans [used to make chocolate] and has stimulant and diuretic properties." Address: Prof., Dep. of Biochemistry, Univ. of Minnesota, St. Paul, MN 55108.

4460. Liu, Chiung-Pi; Shanmugasundaram, S. 1984. Frozen vegetable soybean industry in Taiwan. In: Proceedings of the Symposium on Vegetables and Ornamentals in the Tropics. See p. 199-212. Held 27-28 Oct. 1982 at Universiti Pertanian Malaysia, Malaysia. [Eng; mal]
• ***Summary:*** The term "vegetable soybean" refers to "immature green soybeans, either in pods or as shelled beans." Vegetable soybean varieties were introduced into Taiwan in about 1967 by Japanese trading companies. Frozen soybeans now constitute about 45% of all frozen vegetables exported from Japan, making them the most important and profitable frozen vegetable exported from Taiwan. Approximately 60% of Taiwan's frozen soybeans are exported through Japanese trading firms, especially C. Itoh Co. Ltd., Mitsui Bussan Co. Ltd., Mitsubishi Co. Ltd., Marubeni Co. Ltd., and Toshoku Co. Ltd. In 1981 Taiwan exported 25,000 tons of frozen vegetable soybean pods worth US$21 million to Japan. These frozen exports have been rising steadily since 1975, as shown in Fig. 1.

Although new varieties of vegetable soybeans are now being tested, 95% of the vegetable soybean area in Taiwan is planted with the variety Tsurunoko ("Child of the crane"), known to Taiwanese farmers as #205. In Taiwan an estimated 4,600 ha were planted to vegetable soybeans in 1980, increasing to 5,300 ha in 1981. Most of this area is concentrated in Pintung and Kaohsiung counties in southern Taiwan (just below the Tropic of Cancer), but significant amounts are also planted to the northwest in Changhwa and Taichung counties. The primary cropping season is autumn.

Table 6 shows expenditures (in US dollars per year) on selected foods in Taipei, Taiwan, from 1977 to 1981. The figures 1977–1981 for various soy-related foods are: Soybean curd (tofu) 7.9–7.1. Soybean curd cake (okara) 9.3–8.4. Soybean milk 3.0 (1978)–5.0. Vegetable soybean without pod 2.5–2.6. Soybean 0.5–0.6. Address: AVRDC, Tainan, Taiwan.

4461. Osman, I.A.; Wondimu, A. 1984. Home made soymilk. Addis Ababa, Ethiopia: Ethiopian Nutrition Institute. Unpublished report. *
Address: Ethiopian Nutrition Inst., Addis Ababa, Ethiopia.

4462. Robertson, Laurel; Flinders, Carol; Godfrey, Bronwen. 1984. The Laurel's Kitchen breadbook. A guide to whole-grain breadmaking. New York, NY: Random House. 448 p. *
Address: Ramagiri, Blue Mountain Center of Meditation, Petaluma, California.

4463. Sacharoff, Shanta Nimbark. 1984. The ethnic vegetarian kitchen. San Francisco, California: 101 Productions. 190 p. Illust. (by Richard Chiriani). Index. 21 x 20 cm. [22 ref]
• ***Summary:*** In the section titled "The vegetarian shelf" is a subsection on "Legumes and their products" (p. 37-40) which includes entries for soybeans, soy milk, tofu, miso, and tempeh.

The index contains 41 entries for tofu, 7 for tempeh, 5 for miso, and 4 for soymilk.

On the last page of the book is a nice biography of the author and the illustrator. Shanta is a lifelong vegetarian who spent much of her youth in her family's kitchen in Gujarat, India. In 1964 she came to the United States to attend college and graduated with a degree in psychology from Adelphi College in Long Island, New York. Later she traveled worldwide. Address: San Francisco, born in Gujarat, India.

4464. Saito, Akio. 1984. [Chronology of soybeans in Japan, 1970 to 1984] (Document part). In: Akio Saito. 1985. Daizu Geppo (Soybean Monthly News). Feb. p. 16-18. [Jap]
• ***Summary:*** 1970–Soybean cultivation area in Japan drops to 95,500 ha, falling below 100,000 ha for the first time. Soybean cultivation area in Japan is nearly 10% of total

cultivation area for all crops.

1970–Soybean imports rise to 3,243,790 tonnes, passing 3 million tonnes for the first time.

1972–Production of defatted soybean meal reaches 2,035,000 tonnes, topping 2 million tonnes for the first time. Production has risen 2.8 fold during the past decade.

1972–Production of deep-fried tofu pouches (*aburage*) reaches 200,000 tonnes.

1973–Soybean imports reach 3,635,000 tonnes, up 7% over last year despite U.S. export regulations.

1973–Some 2,740,000 tonnes of soybeans, representing about 80% of all soybeans in Japan, are crushed to make soy oil. 1973 Jan. 27–An extraordinary Cabinet meeting is held and the decision is made to import soybeans from the USA urgently. The price of soybeans in late 1972 was 3,000 yen per 60 kg sack but now it has become very difficult to get them even if you pay 15,000 yen per 60 kg. Soybeans are called "yellow diamonds."

1973 June 27–President Richard Nixon sets new regulations for U.S. soybean exports. These give the Japanese tofu, miso, and soy oil industries a big "shock."

1973 July 6–The Japanese government passes a new law that forbids soybean brokers or sellers in Japan from buying up and selling at inflated prices 16 important items–including soybeans.

1973 July 12–The Japanese Department of Commerce announces that it permits the export of soybeans for special food uses, such as tofu and high-quality misos, which were planted under previous contracts.

1973 Sept. 7–The U.S. Department of Agriculture removes all regulations that concern exports of agricultural products.

1973 Oct. 17–OPEC nations decide to regulate the production and supply of crude petroleum. This leads to huge price increases in petroleum products–known in Japan as the "oil shock." Japanese buy up toilet paper and wash detergents causing much confusion.

1974–Good quality miso now retails on average for 251 yen/kg, up 22.4% from last year. The average retail price of shoyu in Tokyo is 434 yen for 3 liters, up 33.5% from last year.

1974 Feb.–The Japanese Ministry of Agriculture and Forestry asks manufacturers of tofu, natto, deep-fried tofu pouches, and dried-frozen tofu to reduce the retail prices of their products to the levels they were at in November 1973.

1974 July 30–In order to get rid of AF2 (a preservative widely used in tofu), the City of Tokyo decides to make a public announcement of all foods which may contain AF2 and announces that food inspections will start immediately, on August 1.

1974 Aug.–The Japanese Ministry of Public Welfare forbids the usage of AF2.

1974 Oct.–The JAS food certification system, formerly applied to widely distributed foods, is applied to tofu, natto, konnyaku, etc., which are foods that are distributed over a small area.

1975–The typical price of Tofu in Tokyo is 60-70 yen per 300 gm. Yet in supermarkets it averages 50 yen, and some sell it for as little as 25 yen.

1976–Soybean production in Japan drops to 109,500 tonnes, the lowest level since 1878 when production statistics started to be recorded.

1978–The soybean cultivation area reaches 127,000 ha, topping 100,000 ha for the first time in 9 years.

1978–Soybean imports rise to 4,260,000 tonnes, topping 4 million tonnes for the first time. This is 4.5 times as much soybean imports as 20 years ago.

1978 Aug.–Unbranded generic foods, such as shoyu, miso, and salad oil, start to be sold. They retail for about 30% less than major branded products.

1979–Tofu production continues to rise, reaching 1,114,000 tonnes, an topping 1.1 million tonnes for the first time.

1980–Production of natto reaches 153,000 tonnes, up 33% compared with 10 years ago (when it was 115,000 tonnes).

1981–The area occupied by registered soybean varieties rises to more than 60% of total soybean area.

1981 Per capita consumption of miso drops below 6 kg/year to 5.9 kg/year, down 30% compared with 20 years ago (when it was 8.4 kg) This is a reflection of the health food movement in Japan.

1981 Sept.–Dr. Hirayama of the National Cancer Center announces that miso soup has some effect on lowering the death rate from stomach cancer, stroke, and sclerosis of the liver.

1981 Nov.–The Ministry of Agriculture and Forestry announces JAS (Japanese Agricultural Standards) for soymilk. The soymilk boom starts. The total yen value of the soymilk by all major Japanese manufacturers is 5,000 million yen.

1982–There are now 77 registered varieties of soybeans cultivated in Japan. Two of these (Norin 1-go and Norin 5-go) have a Norin [Ministry of Agriculture] number, and 25 have various place names.

1982–Production of soybeans in Japan this year is 226,300 tonnes, and soybean imports are 4,344,000 tonnes–which is only 5% self sufficiency.

1982–Per capita consumption of soy oil rises to 5.1 kg, topping 5 kg for the first time. It is 3 times higher than it was 3 years ago.

1982–Production of defatted soybean meal reaches 2,800,000 tonnes–up 38% over the last 10 years.

1983–Production of soymilk in Japan rises to 116,724 tonnes, topping 100,000 tonnes for the first time. It has risen 71% during the past year.

1983–Per capita consumption of soybeans in Japan is 5.8 kg, up 3.6% during the past year.

1984–The use of soymilk as a beverage is declining in Japan. The movement to use more soymilk as an ingredient in foods (such as noodles, breads, ice creams, and creamy soups) is becoming more active.

1984–Soybean yields in Japan reach 1,770 kg/ha, an all-time record. The old record was 1,540 kg/ha in 1982. Address: Norin Suisansho, Tokei Johobu, Norin Tokeika Kacho Hosa.

4465. Sharpe, Dennis B. 1984. Project 2002: Planning the future of soybeans. St. Louis, Missouri: American Soybean Assoc. iv + 78 p. 27 cm.

• ***Summary:*** This report is a joint project of the American Soybean Association and the Elanco Products Company. Contents: Preface. Introduction. Key issues identified. Synopsis of results and recommendations. Blue ribbon panel members (20 men). Advisory panel members (21 men). Demand, production & acreage projections. Project 2002 survey results: Economic survey, soybean yield survey, soil erosion policy survey, genetic engineering survey, soy protein market potential survey. Assessment of major competition. Appendix I–Project 2002 survey respondents: Economic survey, soybean yield survey, soil erosion policy, soy protein market potential survey (24 people), genetic engineering survey. Appendix II–Genetic engineering glossary of terms: Biotechnology, callus, cell fusion, chromosomes, cultivar, DNA (deoxyribonucleic acid), DNA vector, enzyme, gene, gene expression, genetic code, genetic engineering, gene mapping, genome, germ cell, hybrid, in vitro, meristem, mutants, mutation, phenotype, plasmid, protein, protoplast, protoplast fusion, recombinant DNA, RNA (ribonucleic acid), somatic cell, tissue culture, vector.

Pages 50-54 give a very interesting "Soy Protein Market Potential Survey." This survey polled leaders in the U.S. processing and research area. The results indicated "the market for U.S.-produced edible soy protein should rise to nearly 1,900 million pounds (50% flour equivalent) by the year 2002. This is nearly a three fold increase from the estimated 650 million pounds produced in 1982. While this represents a large increase, it is considerably more conservative than estimates made in the mid-1970s.

"The fastest growing segment of the edible soy protein market is soy isolate. Isolate production was projected to grow at a 7% compound annual rate versus 4.5% for soy flour and 5.4% for all products combined." Specifically, soy flour was projected to grow from an estimated 400 million lb in 1982 to 958 million lb in 2002, a compound annual growth rate of 4.5%. Soy protein concentrate was projected to grow from an estimated 80 million lb in 1982 to 251 million lb in 2002, a compound annual growth rate of 5.9%. Note: Three respondents estimated the 1982 concentrate figure to be 100 million lb and two others estimated 90 million lb.

Soy protein isolate was projected to grow from an estimated 80 million lb in 1982 to 308 million lb in 2002, a compound annual growth rate of 7.0%. Note: Two respondents estimated the 1982 isolate figure to be 100 million lb, and three others estimated 110 million, 75 million, and 50 million lb respectively. Pet foods and specialty feeds (such as calf milk replacers) were projected to grow from an estimated 1,500 million lb in 1982 to 2752 million lb in 2002, a compound annual growth rate of 3.1%. Note: Several respondents estimated the 1982 figure to be 500-700 million lb, and one respondent estimated it to be only 200 million lb.

"The pet food and specialty feeds market is the single largest market for soy protein other than bulk soybean meal for livestock and poultry. Some of the respondents took major exception to the 1982 estimate of 1,500 million pounds of soy protein utilized in pet foods and specialty feeds. In fact one respondent cut the estimate to only 200 million pounds. The 1,500 million pound estimate was derived from data based on the Selling Areas Market [Marketing], Inc. (SAMI) report of pet food tonnage that assumed an average protein content of 24% with 35% of the protein provided by soy ingredients. The SAMI figures were factored up 10% to allow for sales by rural feed stores and sales direct to kennels. The disparity in pet food estimates of actual sales highlights what seems to be a considerable amount of uncertainty about the actual size of the soy protein market, exclusive of bulk soybean meal.

"While growth rates for food and pet food use of soy protein are impressive, the total volume is expected to remain only a small fraction of projected U.S. soybean production–about 3% of the same as 1982. The greatest potential was seen for soy milk, imitation cheeses, ground meat blends and extenders, and commercial bakery or confectionery ingredients.

"Increased health consciousness in the general population, improved palatability of soy foods and higher meat prices were seen as the keys to increasing demand for meat, dairy and bakery uses of soy protein." Address: 2002 Project Manager, American Soybean Assoc., St. Louis, Missouri.

4466. Shurtleff, William; Aoyagi, Akiko. comps. 1984. Soyfoods labels, posters & other graphics: 4. Soymilk and soymilk products. Lafayette, California: Soyfoods Center. 148 p. 28 cm.

• ***Summary:*** This book is a collection of black-and-white photocopies of materials ranging in date from 1975 to 1984. The books in this series, each a unique collection of graphic materials, are designed for a number of purposes: (1) To serve as a source of ideas, ingredients, inspiration, legal specifications, and basic guidelines for companies in the process of designing graphics for their own soyfoods company. (2) To document the tremendous diversity of soyfoods products and ways of introducing them to the public. (3) To document, through this, the rise and history of

the soyfoods industry and market in the Western World.

Contents: Soymilk: Labels and packages, posters, recipes. Second generation soymilk products.

Note 1. All labels, posters, and other graphics relating to soymilk ice cream are in our book titled *Tofutti & Other Soy Ice Creams.* Most of these contain isolated soy proteins or tofu as the major ingredients.

Note 2. This book contains photocopies of Japanese soymilk packages (the most popular brands in Japan). Translations and analyses of the contents of each of these labels are given in Chapter 25 of Soymilk Industry and Market. Translation includes analysis of ingredients, nutritional composition, percent solids, package type, and shelf life. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4467. Silva, Aliomar Gabriel Da. 1984. Factors affecting utilization of soybean proteins included in milk replacers for young calves. PhD thesis, Michigan State University. 135 p. Page 363 in volume 46/02-B of Dissertation Abstracts International. *
Address: Michigan State Univ.

4468. Srihara, Priyadarshini. 1984. Processing to reduce the antigenicity of soybean products for preruminant calf diets. PhD thesis, University of Guelph, Canada. Page 3128 in volume 45/10-B of Dissertation Abstracts International. *
Address: Univ. of Guelph.

4469. State of California. 1984. Food and Agricultural Code. Chap. 6: Products resembling milk products. Sacramento, California. See p. 517-26.
Address: Sacramento, California.

4470. Vegetarijanska kuhinja [Vegetarian cooking]. 1984. Zagreb, Yugoslavia: SNL (Sveucilisna maklada Liber). 389 p. Photos by Luka Mjeda. 25 cm. [Scr]
• ***Summary:*** This attractive, hardcover book, printed on glossy paper and containing many excellent color photos of dishes, has a lengthy section on soya (Soja; p. 291-307). It gives descriptions of and recipes for using (or making) whole dry soybeans, soymilk, tofu, and miso. Address: Zagreb, Yugoslavia.

4471. Vitasoy (USA) Inc. 1984. The company–Vitasoy (USA) Inc. (Leaflet). San Francisco, California. 1 p. 28 cm.
• ***Summary:*** Contains a brief history of Vitasoy (USA), which is the U.S. affiliate of Hong Kong Soya Bean Products Co., Ltd.–which was founded in 1939 by Mr. K.S. Lo and began operation in 1940. Address: 435A Brannan St., San Francisco, California 94107.

4472. Yeh, Sing-Wood. 1984. Gelation characteristics of Illinois soybean beverage base. PhD thesis, Dep. of Food Science, University of Illinois, Champaign, Illinois. 131 p. Page 1985 in volume 45/07-B of Dissertation Abstracts International. 6 black and white pictures. No index. 28 cm. [130 ref]
• ***Summary:*** Contents of the "Literature Review" section: Soybeans: Historical, soybean protein, problems of utilization (lipoxygenase enzyme induced off-flavor, trypsin inhibitors, flatulence). Methods of soymilk manufacture: Traditional methods, modified methods (hot water extraction, acid extraction, alkaline extraction), defatted soymeal method, protein isolate method, lipid-protein concentrate, whole bean methods. Soybean curds: Historical, regular tofu manufacture in the traditional way, factors affecting the quality of soybean curds (variety of soybean, composition of soybean milk, heat treatment, coagulants, others). Texture profile analysis.

Describes the characteristics of tofu made from Illinois beverage base (soymilk made by the Illinois method). "There was no difference in the textural data between the Illinois curd and the Oriental tofu. The total solids and protein recoveries in the Illinois curd were 82.2 and 94.9% which were much higher than 57.2 and 69.4%, respectively, in the Oriental tofu. The best curd from Illinois soybean base was obtained by blanching cotyledons in tap water without bicarbonate, grinding with water to 10% total solids, homogenizing at 82º with 5000 psi pressure on the first stage, coagulating with 0.5% calcium sulfate at 75ºC and pressing as usual. This curd was somewhat grainy so the mouth-feel was not quite as good as that for tofu. However, it compared favorably with tofu in all other respects while showing a large advantage in protein recovery." Address: Urbana, Illinois.

4473. Yntema, Sharon K. 1984. Vegetarian baby: A sensible guide for parents. 2nd ed. Ithaca, New York: McBooks Press. 224 p. Illust. by Tom Parker. Index. 22 cm. [105 ref]
• ***Summary:*** Text on cover: "A complete and valuable source book for vegetarian parents. Gives you the confidence to bring up your child on a meatless diet." A good handbook for vegetarian as well as vegan parents. Contains nutrition facts as well as good tips for feeding babies, plus special recipes for babies. Covers babies up to two years of age. Contains extensive, positive information about soyfoods, especially tofu and soymilk, including the nutritional value, specific uses in infant nutrition, and how to make each food at home. Tofu may be introduced to an infant's diet at age 8-9 months. Appendix B contains brief reviews of baby food cookbooks, most published after 1970. The author was born in 1951. Address: Ithaca, New York.

4474. *Caribbean Contact.* 1984? Canadians experiment with soybean in Jamaica.
• ***Summary:*** In Jamaica, Plenty Canada is "conducting an integrated soy foods programme involving the growing

of soybeans and other food crops and the introduction of soyfoods such tofu, soy milk, and tempeh to householders. The project, which began in Sept. 1983, is currently assisting over 40 farmers in the growing of soybeans... and has produced soy foods at nearly 30 demonstrations to well over a thousand Jamaicans." Plenty has conducted variety trials for over 200 varieties of soybeans with the Hillside Farmers Association. "Plenty is working with six schools in St. Ann parish to supply materials and training for establishing school gardens. The produce from these gardens will be used in the school lunch programmes...

"Generally, two types of demonstrations are provided. First the people are shown how to cook with tofu and soy milk and are given samples of the foods prepared. In the second demonstration, the actual production of these products is shown, and instruction sheets provided...

"Plenty Canada is currently seeking funding from the Canadian International Development Agency for a three year extension of the project in Jamaica. During this time, a small production facility for soy foods will be set up, nutritional study and training undertaken, and further school lunch programmes developed...

"Plenty Canada is also conducting projects in Antigua, Dominica, St. Lucia, and St. Vincent in the Caribbean and Lesotho in Southern Africa."

4475. **Product Name:** Formula S Food (Soy-Based Infant Formula).
Manufacturer's Name: Cow & Gate.
Manufacturer's Address: England.
Date of Introduction: 1984?
New Product–Documentation: Dorothy E.M. Francis. 1984. "Alternatives to Cow's Milk: Comparisons." p. 147-48. In: David L.J. Freed, ed. Health Hazards of Milk. London, Philadelphia, Toronto, etc.: Ballière Tindall. "Formula S Soya Food is entirely of vegetable sources."

4476. **Product Name:** Fortison Soya (Soy-Based Enteral Formula).
Manufacturer's Name: Cow & Gate.
Manufacturer's Address: England.
Date of Introduction: 1984?
New Product–Documentation: Dorothy E.M. Francis. 1984. "Alternatives to Cow's Milk: Comparisons." p. 147-48. In: David L.J. Freed, ed. Health Hazards of Milk. London, Philadelphia, Toronto, etc.: Ballière Tindall. "Fortison Soya, from Cow & Gate, is for school age children and adults requiring enteral feeds."

4477. Grain Processing Corp. 1984? Pro-Fam: Isolated soy protein products (Catalog). 1600 Oregon St., Muscatine, IA 52761. 14 p. Undated. 28 cm.
• ***Summary:*** Contents: Pro-Fam isolated soy proteins. Viscosity. Water absorption test. Oil absorption test. Emulsification tests I and II. Gel strength. Wettability / dispersibility. Solubility. Density. Compressibility. Functional properties of Pro-Fam isolated soy proteins (table). Suggested applications for Pro-Fam isolated soy proteins (table)–Baked goods: Breads & rolls, cakes, cookies & crackers. Confections: Compound coatings, nougat & fillings. Egg replacement. Meats: Comminuted products, sausage, frankfurters, patties & loafs, canned meats. Non-dairy products: Imitation cheese spread, flavored drinks, liquid coffee whiteners, whipped toppings, milk replacers. Nutritional supplements: Powdered drinks, protein tablets. Pasta products. Pet foods: Canned, dry extruded. Sauces. Textured proteins: Meat analogs, cereal, snacks, breading.

Details are given on the company's following isolated soy protein products: High gel: G-902. High functionality: S-970, S-972, S-920. Medium functionality: S-640, S-646, S-648, S-636. Low functionality: S-950, S-955. Isoelectric: S-901. Low viscosity: S-972. Address: Muscatine, Iowa.

4478. Thomas, Patrick. 1984? Early work with soyfoods on The Farm in Summertown, Tennessee (Interview). *SoyaScan Notes.* Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Patrick founded the milling operations on The Farm in the spring of 1972. He made various types of flour, including soy flour, which was used to make soymilk and tofu. His mill was a large, commercial steel-roller corn mill driven by a 7.5–10 horsepower motor. In about 1977 The Farm started to sell its soy flour and split soybeans that could be used for making tempeh. Address: Historian, The Farm, Summertown, Tennessee.

4479. Nordquist, Ted. 1985. The ASA soyfoods conference in Amsterdam. New developments with soyfoods in Europe (Interview). *SoyaScan Notes.* Jan. 7. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** During the 3-day conference 30-50 people were actively involved, not 120. Alfa-Laval and STS had exhibits in the expo hall. Why did the American Soybean Assoc. (ASA) organize this conference? To sell more soybeans. They were very forthright about this. Big drop in sales of soybean meal in Europe due to strong dollar and more use of European oilseeds? The conference was very professional. Amsterdam is definitely the European center of soyfoods. Nutana buys 4 million liters a year of aseptic soymilk from Alpro and sells it through their 7th day Adventist distribution network generally under the brand GranoVita. Nutana claims that when they started soymilk they were responsible for half of Alpro's production. They started distributing it 3 years ago. Alpro was making 3-4,000 liters/hour of milk. A new factory just opened with a capacity of 40,000 liters/hour. Milk from the new plant tastes better. Reliable sources have told Ted that last year 10 million liters of soymilk were sold in Europe, and that 80% of that was made by Alpro.

At least half of the attendees were from big businesses

in either the dairy or soy technology areas. There were also about 12-13 soyfoods manufacturers. The smallest soymilk plant from Alfa-Laval or STS is 2,000 liters/hour. A full-scale plant is 20,000 to 40,000 liters/hour. Address: President, Aros Sojaprodukter, Bergsvagen 1, S-190 63 Orsundsbro, Sweden. Phone: 0171-604 56.

4480. *Times of India* (*The*) (*Bombay*). 1985. City notes: United Group. Jan. 10. p. 10.
• ***Summary:*** In the near future, the United group plans to further expand and diversify its operations in a big way.

As part of its diversification, the group plans to construct a large scale soyabean solvent extraction plant and refinery at Mandideep, near Bhopal, Madhya Pradesh; it hopes to use the latest West German technology. "The refinery will be commissioned [ordered] in April and the solvent extraction plant by November."

Negotiations will soon begin with foreign companies for collaboration in the manufacture of soya foods and soya milk.

4481. Sierra, Edward. 1985. Re: Plenty's work with soybeans in the Caribbean. Letter to William Shurtleff & Akiko Aoyagi at Soyfoods Center, Jan. 11. 2 p. Typed, without signature on Plenty letterhead.
• ***Summary:*** Thanks for joining Plenty with a kind donation. Plenty was founded in Oct. 1974. PAS stands for Plenty Ambulance Service.

On page 8 of the Tenth Anniversary Newsletter [about Oct. 1984] the top photo shows our soy tech and a rasta friend looking over *The Book of Tofu.* We have taken to heart your suggestion for spelling "soyfoods" as one word–an appropriate industry standard.

Plenty's work with soybeans and soyfoods in the Caribbean is going well. On Jamaica, Plenty Canada is funding some agricultural work with variety trials of soybeans and other vegetables.

"On St. Lucia, as a result of our work last year, there are 135 farmers now growing soybeans and plans call for setting up a "Soy Shop" [to sell soyfoods] there soon. The first Soy Shop is on the island of Dominica where Plenty volunteers Sara [sic, Sarah] & Norman Ayerst have launched an integrated soy program (agriculture, variety trials, soy demonstrations, etc.) which, last year, flowered into the Soy Shop. Sara, who did the soy demonstrations on Dominica, found that there was a popular and tasty food called "rootis" (pronounced 'roadie'), which are sauce & meat wrapped in dough and fried. She whipped together a tasty tofu recipe and popped that in, and they're a great success! I quote to you from Norman's most recent letter:

"'The soya shop is still doing quite well. We sell about 800 accras (fritters) per day (25 cents ea.). We're open Mon. thru Fri.–can't handle the weekends yet. Ice cream is also a big seller and when we get our own machine we have requests for wholesale lots of the ice cream. We recently put tempeh on the market and it sells slowly (but steadily), at this point–along with the tofu and bottled soymilk. We are planning for some promotion of these last three products–milkshakes, sandwiches, etc. Once the folks taste some appetizing dishes they're much more willing to take the product home in its raw form. There are a lot of vegetarians here and people interested in health, and everyone seems to have a great love of good food.

"'We're operating out of a big house in the Newton district of Roseau... A friend of ours has reopened our old shop under the name of "Soy Kweyole". The new shop is its own entity [self owned by the local folks, which was one of our original goals for the project... ed.] but we have provided backup in many ways and we supply the basic raw materials for the soyfoods they sell. They're going into baked goods–high protein breads, cakes, pies, etc. It looks like they are going to do very well.

"'We are just gearing up to go into soyflour production and sales–it's probably going to be a big seller, judging from our initial marketing survey. Soy fever has definitely hit these parts...It seems as though people are starting to see the economic benefits to soy (not to mention nutritional value) and our project has gotten its feet on the ground. People want to help move things in a positive direction.'

"One of the heart connections that has come of our work with soy in the Caribbean, is with the rastas. Many of them have long ago vowed to "not eat no flesh mon!" stick with "Ital"–godfood, pure stuff. Many were into soy but had none. One fellow, Ras Bongo on St. Vincent, had been given four soybean seeds by one on another island. Ras Bonga planted them, and carefully saved the seed each year, until he could afford to try some. Meanwhile, he asked around for soy, how to use it, recipes, ideas for growing them, but found little. When we showed up we were able to supply him with more seeds and show him how to cook soyfoods. This is one of the intangible rewards that come with the work." Address: Plenty USA, P.O. Box 90, Summertown, Tennessee 38483. Phone: (615) 964-3992.

4482. Mehra, A.V. 1985. Making soymilk in Pantnagar, India (Interview). Conducted by William Shurtleff of Soyfoods Center in Lafayette, Jan. 17. 1 p. transcript. [Eng]
• ***Summary:*** His company plans to market soymilk in a very big way in India. Now they do it on a small scale. They have a private company under franchise from Pantnagar university and the Univ. of Illinois.

The company is named Pantnagar Soymilk Products Pte. Ltd. The soymilk plant is located at: C-2, Sector 11, Noida, UP [Uttar Pradesh], India. (No phone).

He is one of the directors of the soymilk company. Production started about 6 years ago but it has not been doing very well. Previously they sold their soymilk in sterilized bottles. Now they plan change to poly pack (little

plastic bags without the UHT); shelf life of only 3-4 hours. They plan to distribute it refrigerated. They hope to sell 20,000 packets a day. Address: Office: Pantnagar Soymilk Products Pte. Ltd., B-68, Mayapuri Industrial Area, Phase 1, New Delhi 110064. Phone: 592782 or 590908.

4483. Boyer, Robert A. 1985. Henry Ford, soymilk, soy ice cream, Bob Smith, Rex Diamond, and Rich Products (Interview). *SoyaScan Notes.* Jan. 30. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Soymilk and soy ice cream: "We made soy ice creams in the early 1930s, as a sort of by-product of our work with soymilk. We actually built quite a nice little production unit for making soymilk. It was a natural evolution to make soymilk from ice cream; we didn't learn the idea or the process from anyone. To make the ice cream, we coagulated the soymilk to make a curd, like fresh tofu, which we then dispersed (without drying it) in a colloid mill. We found we got a better product from the curd than from the soymilk itself. So you could call the final product a sort of tofu ice cream. The ice creams were made in the laboratories at Greenfield Village in Dearborn. We had 2-3 labs there. Henry Ford used to call it the Engineering Laboratory. The ice creams were served to special visitors. Mr. Ford would put on special press luncheons for journalists, food editors, etc. and soy ice cream was always on the menu. It was also served in the VIP lounge. It remained an experimental item that we and Mr. Ford would serve to impress people with the good taste and versatility of soy. We served it in the basic favorite American flavors: Chocolate, strawberry, and vanilla. I don't recall whether or not it was served at the 1934 World's Fair in Chicago [probably not], or whether it was served after the start of World War II.

"Later at Ralston Purina we made soy ice cream prototypes from soy protein isolates in order to show the potential and versatility of isolates. We served the ice creams to potential customers. I started to work with Purina in 1960 and our team (headed by Ralph Hoer and soon joined by Frank Calvert) started building an isolate plant in St. Louis, Missouri, shortly after that, so the first ice creams at Purina were probably made in about 1962-63.

"When I joined Ralston Purina, the company already had a commercial isolate plant in Louisville, Kentucky, that made industrial isolates for paper coatings. It was only after I arrived that Purina became involved in edible food-grade soy protein isolates, and these isolates are now a major, rapidly growing product line–which trace their origin back to Henry Ford.

Rich Products Corp. in Buffalo, New York got interested in soy via Rex Diamond, who worked for Henry Ford as Bob Smith's assistant. "Rex Diamond was the original spark plug for Rich. I'm not sure who had the original idea for whip toppings, coffee creamers, etc. Rex finally became the research director for Rich Products Corp. and that company developed the first good whipped topping and coffee whitener.

"When Bob Smith went out on his own to put out his own soymilk [sic, Delsoy whip topping], Rex went with him [though several years later]. After that, Rex left Bob Smith and eventually went with Rich Products. Later there were some hard feelings between Rich Products and Rex, but I don't know what that was all about. I once visited Rex in Buffalo, New York." Address: 632 Edgewater Dr., Apt. 731, Dunedin, Florida 33528. Phone: 813-734-2415.

4484. **Product Name:** Tofu, Tofu Cheesecake, Tofu Burger, and Soymilk.
Manufacturer's Name: Dragonfly.
Manufacturer's Address: 9, Moorashes, Totnes, South Devon, England. Phone: 86-4724.
Date of Introduction: 1985. January.
Ingredients: Tofu (11/91): Organically grown soya beans, filtered water, nigari.
New Product–Documentation: Owner: Sue Harker. Note from Simon Bailey. 1988. Oct. 10. Not operating at present. Business for sale. Future uncertain. Talk with Philip Marshall. 1990. March 29. This company now makes a small amount of organic tofu.

Letter from I.J. Mohammed of Oasis Wholefoods. 1991. Oct. 13. He worked for a while in about 1986 at Dragonfly as a partner. Since 1986 Dragonfly has been sold four times.

Letter and Labels from Simon and Dawn Boreham of Dragonfly Foods. 1991. Nov. 1. They are now located at 19A Riverside Buildings, Staverton Bridge Mill, Totnes, Devon, TQ9 6AQ, UK. Phone: 0803 865667. They first wrote on 9 Feb. 1990 to order books on tofu. Then Simon and his wife "purchased in June 1990 a small tofu factory in Devon called Dragonfly Foods. Together we regularly produce each week up to 200 kg of handmade organic nigari tofu, and 2,000 x 100 gm tofu burgers, with 4 different recipes, distributed and sold throughout the southern part of England. We are certified organic by the Soil Association and our products are approved by the Vegetarian Society." They are now developing a "business plan with a view to move to a larger site with greater production capacity." Label for Handmade Dragonfly Organic Tofu. 4 by 3 inches. Self adhesive. Green on white. "Soya bean cholesterol-free protein. Store below 4ºC. Once opened, refrigerate in a bowl of fresh water." The company is listed as "Dragonfly Kitchen, Staverton Bridge Mill, Totnes, Devon TQ9 6AQ. Phone: Staverton 0803 865667."

Handwritten letter from Simon Boreham in reply to typed questions from William Shurtleff. 1991. Dec. 2. Hard to read. "Dragonfly first began making tofu in 1984, with the organic status of tofu certified by the Soil Association in 1991. Dragonfly was founded by Sue Harker and Sarah Budd. Simon is trying to persuade the Polytechnic South

West Plymouth Business School (Drake Circus, Plymouth, Devon PL4 8AA, UK) to conduct a market research project on tofu. He encloses a copy of a letter from this organization stating that they plan to conduct such a study to be completed by early December 1991.

Letter from I.J. Mohammed of Oasis Wholefoods in England. 1991. Dec. 16. Dragonfly (which was the company's official name) was probably founded at about the end of 1984 as a partnership by Sue Harker and Sarah Child. Their private home address was 9, Moorashes, Totnes, Devon, England. They started selling soyfoods (mainly tofu, tofu cheesecake, and tofu burgers) in early 1985. In Feb. 1985 Mr. Mohammed started to work with Dragonfly. Soon the business changed to a partnership between Sue Harker and himself. While he was there, the company made tofu (which he had learned how to make in Japan) and miso. He left the company in Oct. 1985. The company was then owned by Mark, and then by Linsey, who sold it to Simon and Dawn Boreham. Dragonfly Foods now makes tofu and tofu burgers.

Talk with Simon Boreham. 1999. Dec. 7. On 1 Jan. 1994 the company moved to its present address: 2A Mardle Way, Buckfastleigh, Devon TQ11 ONR, England. Phone: +44 1364 642700. When Simon and Dawn bought Dragonfly, the turnover (sales) was £25,000/year. Today it is £325,000/year. The company, which is growing nicely, now makes three types of tofu (natural, smoked, and deep-fried), and ten types of beanies (veggie burgers containing 45% okara). Simon has just registered to web domain names: beany.com (which will be a fun site) and tofu.co.uk (which will be a serious site).

4485. Hellerstein, Stanley; Duggan, E.; Merveille, O.; Scarth, L. 1985. Follow-up studies on children with severe dietary chloride deficiency during infancy. *Pediatrics* 75(1):1-7. Jan. [11 ref]
• ***Summary:*** "In 1980, we [Grossman et al.] described 12 infants with a syndrome characterized by anorexia, failure to thrive, and hypokalemic metabolic alkalosis due to ingestion of a diet consisting almost exclusively of chloride-deficient Neo-Mull-Soy...

"After 4 to 5 years, ten children who had severe dietary chloride deficiency during infancy appear to be growing and developing normally and to have normal intellectual abilities. Three of them show behavioral patterns that may interfere with normal performance. Although the origin of these disturbed behavioral patterns is unclear, the stress surrounding the severe illness during infancy was a likely contributing factor." Address: The Children's Mercy Hospital, 24th at Gillham Rd., Kansas City, Missouri 64108.

4486. Jayawardene, Ellen. 1985. Soyabean recipes and preparatory techniques developed for use in Sri Lanka. In: 1985. Sri Lanka Soybean Utilization Training Program and Workshop: Proceedings. See p. 422-52.
• ***Summary:*** Recipes use soy flour, whole or split soybeans, soymilk, tofu, tempeh, okara ("soya milk residue"), and soynuts. Address: Instructress, Soybean Foods Research Center.

4487. Kopstein, Ernest. 1985. Non-dairy not necessarily non-milk (Letter to the editor). *Vegetarian Times.* Jan. p. 4. [1 ref]
• ***Summary:*** "Your readers who avoid milk may be interested in the following: While excluding milk and its derivatives from my diet, I've noted that sodium caseinate, a milk derivative, is routinely included in various foods labeled 'non-dairy,' especially the so-called 'non-dairy creamers.' Trying to clarify this apparent contradiction, I wrote to one of the large supermarket chains, which in turn sent me a copy of a letter from one of the manufacturers. The following is a direct quote from this letter:

"'Inasmuch as milk is the chief raw material in the manufacture of sodium caseinate, it might be claimed that a synthetic beverage of which it is a component would not be called a non-dairy creamer. At present, however, sodium caseinate is not regulated by regulatory agencies as a dairy product or milk ingredient but as a chemical or food additive, generally regarded as safe (GRAS) for human consumption.'

"Perhaps others who, like myself, avoid animal products on both ethical and health grounds would agree that 'non-dairy' on these products is non-truthful advertising." Address: Baltimore, Maryland.

4488. Leviton, Richard. 1985. Soyfoods year in review 1984. Colrain, Massachusetts: Soyfoods Magazine. 3 p. Unpublished typescript.
• ***Summary:*** A month by month chronology of important events in the soyfoods industry from January to December 1983, followed by a summary of ten important trends and key events. Address: 100 Heath Road, Colrain, Massachusetts 01340.

4489. Mwale, J.M.; Luhgu, E.M.; Mutinta, M.; Mabusya, S. 1985. The state of soyabean utilization in Zambia: A brief summary. In: 1985. Sri Lanka Soybean Utilization Training Program and Workshop: Proceedings. See p. 458.
• ***Summary:*** "Soyabean Utilization in Zambia dates back to 1971 when a Netherlands team conducted seminars in various provinces in the country to demonstrate and popularise the various products that can be made from Soyabeans. Agriculture production started around 1975 when about 500 tons of soyabeans were grown." Since then soyabean "growing has increased steadily and at present 1984/85 projected yields are estimated at 15–20,000 tonnes."

In recent years soyabeans are "reported to be used in bread, and breakfast and cereal preparations. At the National Council for Scientific Research (NCSR), it is used in experimental formulations in preparation of weaning foods in which maize flour, full fat soya flour and other nutrients are

incorporated... It is also used in the preparation of biscuits by the country's Dairy Product Board (DPB)."

"Although traditional dishes do not normally incorporate soyabeans there is sufficient justification to believe... that dishes such as soyamilk, tofu, tempeh, etc., would find acceptability in the country..." Address: Zambia.

4490. Nelson, A.I.; Wei, L.S. 1985. Utilization of whole soybeans–INTSOY basic concepts. In: 1985. Sri Lanka Soybean Utilization Training Program and Workshop: Proceedings. See p. 205-23. [9 ref]
• ***Summary:*** The University of Illinois' involvement in commercial utilization of whole soybean foods was started in a very limited manner in 1969, when the Illinois group made a limited survey of food products containing soy components which were presently on sale on the U.S. market. That year only two other U.S. organizations were engaged in utilization research on foods made from whole soybeans: Cornell Univ. at Ithaca and Geneva, New York (liquid soy beverages), and the USDA Northern Regional Research Laboratory at Peoria, Illinois (dry/powdered soy beverage).

Research work was started at the University of Illinois in January 1970 by Wei, Steinberg, and Nelson of the Univ. of Illinois, Dept. of Food Science, Processing-Engineering Group. A second Processing-Engineering Group in the Dep. of Food Science began to publish their work on soybean utilization in 1977. Located in the Dairy Manufacturers Building, they included researchers Munir Cheryan and O. Omosaiye, who did pioneering work on ultrafiltration. A third group in the Department of Food Science, the Nutrition Group, began to publish its work on soybean utilization in 1977 also. This group included John W. Erdman, K.E. Weingartner, R.M. Forbes, etc. They did many studies on mineral bioavailability of soyfoods. Address: Univ. of Illinois, Urbana, Illinois.

4491. **Product Name:** Sunrise Soya Milk [Unsweetened, or Sweetened with Raw Cane Sugar].
Manufacturer's Name: Soya Health Foods, Ltd.
Manufacturer's Address: Unit 4, Guinness Rd., Trafford Park, Manchester M17 1UA, England.
Date of Introduction: 1985. January.
Wt/Vol., Packaging, Price: 500 ml or 1 liter Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: The Grocer (London, UK). 1985. April 6. p. 23. "Soya milk spearheads move into yogurt, ice cream." The Grocer (UK). 1985. July 27. p. 18 "Sunrise hopes soya yogurt will follow milk success." Note the use of the word "Milk" in the name of this product.

Natural Food Trader (UK). 1985. Sept. p. 25. "Soya yoghurt launched [by Soya Health Foods of Manchester, England]." Michael Cole is director of this company.

Shurtleff & Aoyagi. 1985. Soymilk Industry and Market, Update. "Michael Cole, a 39-year-old Londoner (who spent years in California) and a strict vegetarian for most of his life, forms Soya Health Foods Co. with a Sikh partner, Mr. Arora. The latter owns 51% equity and has all of the risk, while Cole has 30% and the finance company 19%. They open a soymilk plant at Trafford Park, Manchester, using relatively small Japanese equipment, including a continuous roller extractor. Sales grow rapidly as they challenge the near monopoly enjoyed by Alpro in the European soymilk market... By December 1985 sales of the sweetened and plain Sunrise Soya Milk in 500 ml Tetra Briks have reached 250,000 liters a week."

Leaflet (8½ by 11 inches. Color photo). 1986. Be good to yourself. Sunrise Soya Milk. A Choice. 100% vegetarian. Shows a tall 500 ml Tetra Brik of Sunrise Soya Milk sweetened with raw can sugar and a squat 500 ml Tetra Brik of the product that "contains no sugar." "A high quality soya milk ready to drink produced in the British Isles! Sunrise Soya Milk is made from the finest Canadian hulled soya bean combined with soft Welsh mountain water to create a pure, refreshing soya milk drink. Sunrise soya milks are: Free of animal produce, lactose, cholesterol, sugar (some varieties), and salt. It is a long life U.H.T. treated soya milk lasting 6 months unopened and up to 7 days in the fridge once opened. Available at your local health food store."

Michael Cole. 1986. Soya Health Foods Ltd. Production began in Jan. 1985 with a 500 ml no sugar added longlife pack.

Note: This is the earliest record seen (Feb. 2013) concerning Soya Health Foods, Ltd. (Manchester, England).

4492. Tetra Pak Inc. 1985. Stepped-up production characterizes past year at Tetra Pak Inc. (News release). P.O. Box 802605, Dallas, Texas 75380-2605. Undated.
• ***Summary:*** "Continuing to make inroads into the American packaging market, Tetra Pak Inc. experienced another impressive year. Corporate activities of 1984 were highlighted by the inauguration of the Denton, Texas packaging material plant. The 210,000-square-foot facility officially began production in June.

"In the United States, Tetra Pak Inc. reached the 1.2 billion mark in package sales. Since 1981, 450 pieces of equipment have been installed.

"Worldwide, The Tetra Pak Group maintained a dominance in the packaging industry by producing approximately 35 billion cartons during the past year. Of those, 64 percent were aseptic packages. The total number of installations throughout the world stood at 5,150 at the end of 1984. Over three thousand of those machines were aseptic. The Tetra Pak Inc. Denton, Texas plant was one of three inaugurated in 1984. The Tetra Pak Group also added production facilities in Kenya and Finland. The company now has 24 plants worldwide which produce packaging material for Tetra Pak filling machines.

"To produce the packaging material, Tetra Pak used 580,000 tons of raw paper, 150,000 tons of polyethylene, and 30,000 tons of aluminum foil.

"Each layer of the packaging material provides a specific purpose. The paper provides stiffness and a good surface for printing. Layers of plastic serve as barriers to liquid and bacteria, and they protect the aroma of the product. Aluminum foil acts as a barrier to light and oxygen, and it conducts heat to seal the carton during filling.

"About 75 percent of all raw paper processed by the group is purchased from Scandinavian mills. In addition, Tetra Pak imports paper from the U.S. for some markets. Paper is also produced locally in Mexico, Brazil, Japan, India, Italy and Pakistan.

"Contact: Rita J. Simpson, Vice President, Information, Tetra Pak Inc."

Note: An undated news release that arrived in Jan. 1985 was titled "Good-by Brik Pak. Hello Tetra Pak: We're changing our name but you can still reach us at the same locations." Six addresses and phone numbers are given, including 3 regional offices in: (1) Rancho Cucamonga, California 91730. (2) Arlington Heights, Illinois 60005. (3) Somerset, New Jersey 08873. A technical center is in Irving, Texas 75063. Address: Dallas, Texas.

4493. **Product Name:** Tofruzen (Non-Dairy Soft Serve Soy Ice Cream) [Multiberry, Strawberry, Dutch Chocolate, Orange Coconut Custard, Vanilla Almond, or Peach Melba, Mountain Berry, Tropical Sunshine, Chocolate Peanut Crunch].
Manufacturer's Name: Tofu Today (Marketer). Made in Boulder, Colorado, by White Wave, Inc.
Manufacturer's Address: 333 W. Hampden, Suite 1010, Denver, CO 80110.
Date of Introduction: 1985. January.
Ingredients: Incl. tofu.
Wt/Vol., Packaging, Price: Pints, soft serve, 3.5 oz cups, or bulk. Pint hard pack costs $2.49.
How Stored: Frozen.
Nutrition: 4 oz. has less than 130 calories.
New Product–Documentation: Shurtleff & Aoyagi. 1985. Feb. Tofutti & Other Soy Ice Creams. p. 81. Made with tofu and isolated soy proteins. Private labeled for Tofu Today in Denver; Spot in Product Alert. 1985. May 27. Vanilla, chocolate, and strawberry flavors available. Company is in Englewood, Colorado. Product Alert. 1985. Sept. 23. A new variety is Orange Coconut Custard, in pint cartons for $2.49. "Tofu Today, Inc., located in Denver, Colorado, is the manufacturer [sic].

Spot in Natural Foods Merchandiser. 1985. Oct. Six flavors. Spot in Food & Beverage Marketing. 1985. Nov. "Tofu Heads for Rockies." The product is being introduced into the Denver area. Jason Bois is president of Boulder-based Tofu Today.

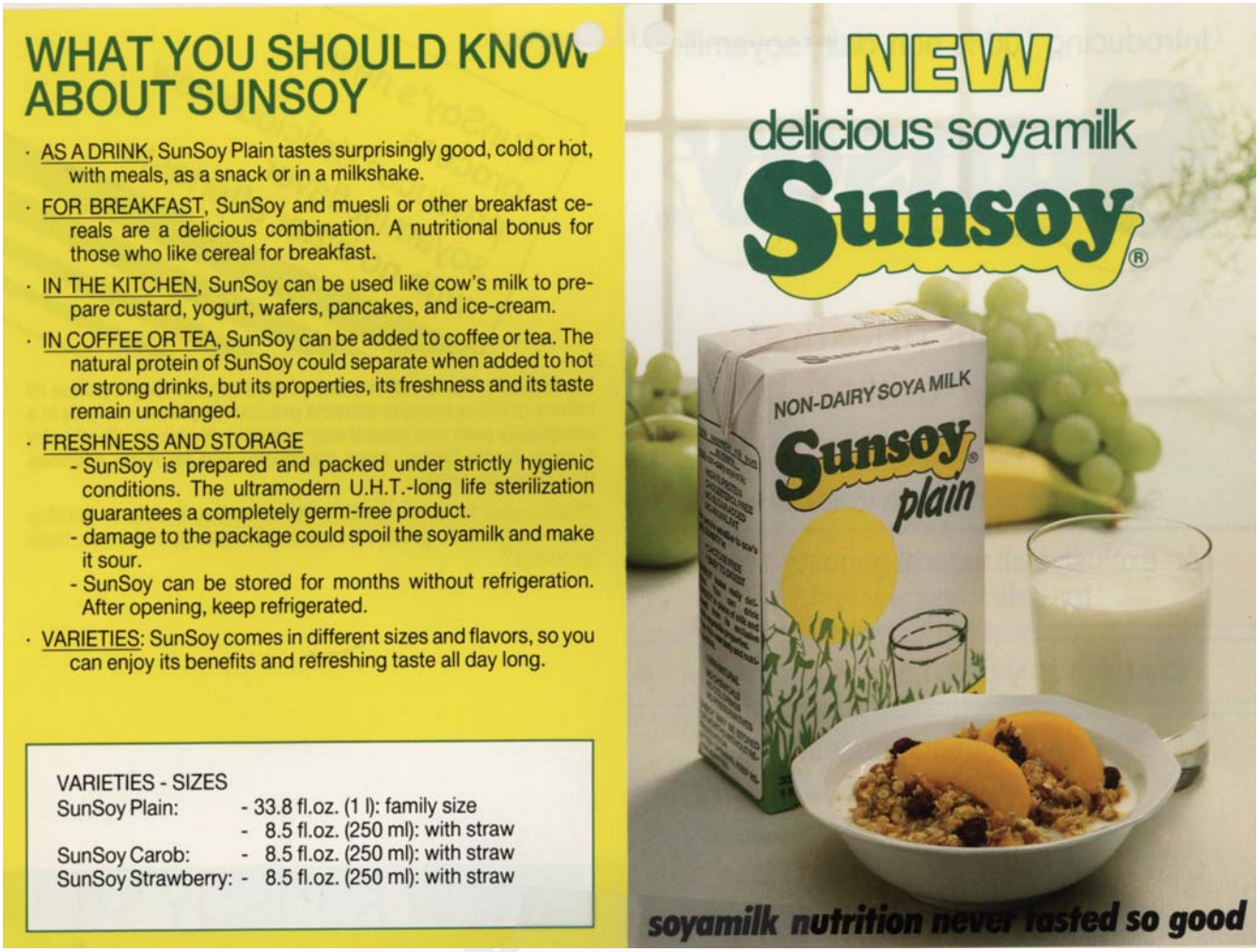
Sentinel (Lakewood, Colorado). 1986. Jan. 30. "Local Competition for Tofutti." It sells for a little over $2/pint at King Soopers. By Aug. 1986 Tofu Today Inc. was at 300 East Hampden, Suite 403, Englewood, CO 80110. Leaflet. 1987. March. 8½ by 11 inches, color. "Introducing the hottest new seller in frozen desserts... Tofruzen, Instead of Ice Cream. The frozen dessert with tofu that meets Soyfoods Association standards."

Talk with Steve Demos of White Wave. 1989. Nov. 1. Tofruzen is in very bad shape, largely from poor management. They want the fast buck. A market exists for their product. White Wave's sales to them were last year $800,000 last year but only $300,000 this year. Now they are starting to rise a bit. They greatly over-ordered last year and had huge inventories. Most of their sales are from hard pack. Sales of bars are small. Tofruzen Light, announced in Aug. 1987 (see Soya Newsletter. 1(3):11. Coming soon. To be made entirely without sugars), has not yet been launched.

4494. **Product Name:** Sunsoy (Soymilk) [Plain, or Carob].
Manufacturer's Name: Vamo Foods USA, Inc. (Importer). Made in Belgium by Alpro.
Manufacturer's Address: 20 Shawnee Dr., Watchung, NJ 07060. Phone: 201-769-0290.
Date of Introduction: 1985. January.
Ingredients: Plain: Filtered water, dehulled soybeans, honey, chicory syrup, barley malt, seaweed, natural vanilla.
Wt/Vol., Packaging, Price: 8.45 fluid oz, 1 liter and 250 ml Tetra Brik Aseptic cartons.
How Stored: Shelf stable.
Nutrition: Per 6 fl oz.: Plain: Calories 97, protein 6.5 gm, carbohydrate 8.0 gm, fat 4.4 gm. Carob: Calories 114, carbohydrates 12.5 gm.
New Product–Documentation: Label. 1985. 2.5 by 4.25 inches by 1.5 wide. Paper carton. Plain: Green, light green and yellow on white. Carob: Brown, light green and yellow on white. Glass of soy drink with sun in background illustration. "Non-dairy soy drink. New, delicious. High in protein. Cholesterol free. Easy to digest. 100% natural. No Chemicals. No preservatives. No sugar added. No animal fat. For people sensitive to cow's milk." Note: This is one of the few U.S. soymilk products with no added sweetener.

Leaflet (4 panels each side, each panel 15 x 10 cm, glossy color). "New delicious soyamilk: Sunsoy." Undated. A photo on the front panel shows an aseptic package of Sunsoy plain next to a glass of the milk and a bowl of cereal with milk. Printed in Belgium.

Shurtleff & Aoyagi. 1985. Soymilk Industry and Market, Update. Imports started in January 1985. Vamo is a sister company of Alpro in Belgium; both companies are owned by Belgium-based Safinco, a holding company which also owns Vandemoortele, one of Europe's largest oilseed (and soybean) crushers. Sunsoy is the first liter-sized soymilk to be sold in America. All of Vamo's soymilk was initially sold



to Balanced Foods, a large company that owns four natural/health foods distributors, as part of an exclusive distribution agreement which lasted until 1986, when Vamo wanted to pick up more distributors. Balanced Foods, however, was always free to distribute other brands of soymilk.

Talk with Vamo Foods (Watchung, NJ). 1986. Nov. 17. Mr. Hoefnagels (Pron. = HOF-nay-guls) is president. David Clark is Sunsoy sales rep. Hoefnagels works in Belgium and comes here once a month. Alpro makes their product. They are an importer, owned by Vandemoortele. In 1984 they started US operations; Sunsoy came later.

Form filled out by Alpro. 1990. May 30. Alpro began making this product in March 1985. Plain, carob, and strawberry flavors were sold in 250 ml Tetra Brik Aseptic cartons, and the plain flavor was also sold in 1 liter cartons.

4495. Doblin, Stuart. 1985. Plans to make soymilk ice cream, soy yogurt, and soymilk at Cream of the Bean (Interview). Conducted by William Shurtleff of Soyfoods Center, Feb. 11. 1 p. transcript.

• ***Summary:*** His company, Cream of the Bean, is building a new, fully-automatic plant, which will be ready in about a month. His first product will be a soy yogurt, his second a soymilk, and his third a soy ice cream. The soy ice cream probably won't be out, on a small scale, until Sept. 1985, in vanilla and carob flavors. The name of the ice cream has not yet been decided, but it may be "Cream of the Bean." The company will do its own distribution in the Chicago area. Eventually he also hopes to make a soy kefir.

He is using the Illinois method for making the soymilk and ice cream. He signed a licensing agreement with an independent firm appointed by the University of Illinois in Dec. 1984. This is the first University of Illinois license for ice cream or yogurt; it is valid until 1987. (Beatrice Foods licensed the rights to produce a soymilk). Most ice cream is made from "condensed skim," which is less expensive than nonfat dried milk. His ice cream will be made from condensed soymilk and will contain no tofu.

Update: Talk with Stuart Doblin. 1989. Aug. 14. He made the soy ice cream for one summer, the summer of 1987. He made the soymilk only for those who brought their own container to his plant, so it was not really a commercial product. Soymilk sales were never more than $100/month. Address: Cream of the Bean, 3973 Grove Ave., Gurnee,

Illinois 60031. Phone: 312-623-4114.

4496. Aldon, Don. 1985. Work with Swift & Co. and non-dairy frozen desserts (Interview). *SoyaScan Notes.* Feb. 26. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Don started with Swift & Co. in 1961 in the "Vegetable Protein Products Division," a brand new division of the oil mill department. The oil was their main product and the protein-rich meal was a by-product. The president of the oil mill department started this department to turn the meal into food. Research on vegetable proteins started in about 1957-58.

Their first product, launched in early 1961, was brand-named SFP (Swift's Protein Food), a water-extracted, granular soy protein concentrate, containing 70% protein. It was not an isoelectric concentrate, and it was not texturized. It was used mostly in ground beef products, but also in some breads. More was sold to other companies than used in Swift's meat products.

The next product was Texgran, a textured soy flour (somewhat like today's TVP), invented by Dean Wilding in about 1963-64. He invented a texturization process while trying to find a way to extrusion cook soy flour. He visited Wenger and saw a variety of products they made. He recognized their value and bought a machine. Don worked for about 18 months developing the process, doing research, and generating information to be used in the patent. Swift started selling the product before they applied for the patent. "As soon as our competitors saw this product, they recognized its value because they had been extruding dog food. Ralston Purina slammed things together and got a patent application in first. Two weeks later ADM had one in. Then 3-4 weeks later Swift applied." Swift started selling Texgran in 1964-65. The patent was finally issued in about 1971-72. Litigation went on for years and years between the three companies. Finally Ralston got the basic patent since they had applied first. ADM and Swift got a royalty-free license. They did that just to settle the litigation. Note: The final key U.S. patent (No. 3,940,495) was issued to Ronald Flier of Ralston Purina in Feb. 1976, based on an application field on 17 Jan. 1973, but based on an earlier application filed on 10 July 1964.

Texgran was used by Swift as a meat extender and sold to other companies as well. The first retail product in which Texgran was used was artificial bacon bits, the first such product on the market. Don developed this product, which was launched in about 1977-78. It was based on Texgran, with flavors added then smoked in a smokehouse. Right after that, General Mills introduced Bac*O's.

Swift, which had a combined dairy and ice cream department (the main plant was in Holland, Michigan) was also involved in making soy ice creams, using soy protein isolates purchased from Central Soya. For years, Swift also made an artificial nonfat dried milk (NFDM) called Provide, based on soy flour and cheese whey. They introduced it in about 1973-74. It was used by bakeries in place of NFDM. But Swift never really got into using isolates commercially. They were preparing to do so when they sold the business.

Dean's Dairy in Arizona was the first to start selling Swift's artificial milk, which contained vegetable fat, nonfat dry milk, and soy isolates. The product didn't last very long; it was used to sort of test the market. For details, ask Tony Scaletto, who was Mr. Dipper Dan–head of Swift's ice cream operations. "We had those ice cream parlors nationwide at one time. He developed all the ice creams and novelties. He may not remember all that went on with soy; we were compartmentalized." Note: Talk with Tony Scaletto (Feb. 26): He is certain that Swift never had a frozen dessert containing soy protein on the market. He tried using soy protein in a soft-serve product but it was unsuccessful.

Swift got out of the soy protein business because it was driven by the vegetable oil business. They sold the whole oil business (3 crushing plants) to A.E. Staley in about 1979. The one making soy products was in Champaign, Illinois. He is not sure exactly why, but probably because sales and earnings fluctuated too much and could not be controlled. Also, most of the old-timers who really knew the business had retired.

Staley kept Provide and had it custom made outside. Since Staley had its own textured soy protein product, it shut down the Swift protein plant; SFP lingered on, then died.

Concerning Swift's early history: They started as a meat packer. Then in the 1930s or 1940s they started making oil products from lard. In about 1938, to extend their business, they got into the oil extraction business and soybeans. Today their big products are processed meats and poultry. Swift bought Hunt-Wesson in late 1983 or 1984. Swift & Co. is now a division of Beatrice Meats, Inc. in Oak Brook, Illinois. All the old company records on soy have been discarded.

Dean Wilding is now in the Philippines building houses. He left Kraft several years ago. His son is a contractor. Address: Alberto Culver, 2525 Armitage, Melrose Park, Illinois. Phone: 312-450-3000.

4497. Pathiravitana, S. 1985. Re: The possible end of *Soyanews.* Letter to William Shurtleff at Soyfoods Center, Feb. 28. 2 p. Typed, with signature on aerogramme.
• ***Summary:*** February marks the end of *Soyanews* under CARE funding. The agreement is that the Dept. of Agriculture now takes it over. The CARE agreement was to go on until 1983; the extensions were given because the Dep. was not ready to take over. In 1985 they are still not ready–the main reason being lack of finance. At present they have the resources to produce an occasional issue. If John McLeod were there–the only one at CARE who was sincerely interested in soya–a way might have been found to keep the publication going. A team from Plenty Canada led by Larry McDermott was here to do a report for CIDA on the

grass roots development of the soya program in Sri Lanka. They seemed like the right people for making a contribution. But there has been no word from them for a long time.

There is a lot of competition now in Sri Lanka among multi-nationals to introduce soya milk as part of the school feeding program. Countries involved are Denmark and Sweden with the name Alfa-Laval figuring prominently. Address: 3 Jaya Rd., Colombo 4, Sri Lanka.

4498. *Australian Dairy Foods.* 1985. Soy report: Soy blends to overcome disadvantages? Frozen soybean desserts. Technology is here for soy beverages. Feb. p. 46.
• ***Summary:*** Blends of soymilk and dairy milk are being considered in Australia. Address: Australia.

4499. *Australian Dairy Foods.* 1985. Soy report: Six new soy drinks expected. Soy products will enter market. Feb. p. 48.
• ***Summary:*** The first Australian soy drink last year was "Golden Life," a "sport food" launched by Martin Pharmaceuticals in Tetra Brik cartons. Also concerns: Anders Linder of STS-Soya Technology Systems, Rajasoya, Vital, Soyvita, Granose. Address: Australia.

4500. *Australian Dairy Foods.* 1985. Soy report: Tofutti is tantalising U.S. tastebuds. Flavored soy drinks selling well. Feb. p. 51.
• ***Summary:*** "Americans are devouring 180,000 litres of Tofutti a week."

Ceres Natural Foods Pty. Ltd. in East Bentleigh, Victoria, Australia is currently distributing 7 varieties of soymilk plus a Tetra Pak tofu. Mr. Don Lazzaro is the company's director. Address: Australia.

4501. Boyer, Robert A. 1985. Reminiscences: Automotive design–Oral history project. Dearborn, Michigan: Henry Ford Museum and Greenfield Village. 130 p. Accession #1673.
• ***Summary:*** This is the transcript of an interviews conducted by Dave Crippen of the Henry Ford Museum on 7 Feb. 1985 at Mr. Boyer's home in Dunedin, Florida. It covers all aspects of Boyer's work with soybeans at the Ford Motor Co., including: Growing up in Royal Oak, Michigan; his father worked in the accounting department of the Ford Motor Co. at Highland Park, Michigan (p. 1). Boyer's first meeting with Frank Campsall (p. 2). Growing up at the Wayside Inn (the oldest hotel in America, in South Sudbury, Massachusetts, p. 1-6). Attending high school in Framingham, Massachusetts (p. 6). First meeting with Henry Ford when the two ice skated together on the mill pond behind the Wayside Inn (p. 7). Moving to Dearborn in Sept. 1927 to attend Ford's Trade School (p. 7-11). Early work at the chemical plant (quarter-size model of Iron Mountain plant) in Greenfield Village (p. 12-13). Ford's trip to Germany [Peace Ship to Europe, in 1915 during World War I?] crystallized a lot of his thinking. The Great Depression and the origins of his chemurgic thinking. In 1934 the first National Chemurgic Conference was held at Dearborn Inn; Boyer was in charge of the program. Mr. Irenee DuPont attended and Mr. Ford spent a lot of time with him. Before that, the DuPonts and the big banks did not trust Ford. (p. 14). Opening of Greenfield Village in late 1929 on the 50th anniversary of Edison's first successful light bulb (p. 15). Chemical experiments on truckloads of farm crops using a retort; Frank Calvert (p. 16-19).

Experiments starting in about 1933 using hexane as a solvent to extract the oil from soybeans; the Ford Extractor (p. 20-23). Boyer's group wanted to get pure protein from soybeans. So "in the lab we developed our own process for extracting the oil... We used hexane solvent, like dry cleaning. We'd flake the beans and run them through a pipe that was full of hexane on an angle with a screw in it." Hexane solvent is "distilled out of petroleum. It has a very narrow boiling point–66º centigrade. The Ford extractor... got quite a lot of attention. We built it across the street from the chemical plant. It was about 150 feet away. Mounted it all by itself because everybody was afraid of fire." A roof was built over it but no walls. It was probably built in about 1933.

In 1933 at the World's Fair [sic, the Ford Exposition of Progress] in New York City, Boyer's group had a glass model (on a table) of this extractor that used hexane solvent.

Note: Ford boycotted Chicago's A Century of Progress Exposition which opened in 1933, in part to call attention to the company's 30th anniversary; he held his own "industrial fair," first in Detroit and then in New York, in late 1933. *Business Week* described it as "the greatest industrial show ever held." Some 2.3 million people attended the two-week show in New York.

A working model of the Ford extractor, using hexane solvent, was at the Chicago World's Fair, starting in mid-1934, in the Ford Industrial Barn. "They would never let you do that today. Too dangerous."

Research on purified soy protein and soy plastics with formaldehyde; Bakelite (p. 24-25). Use of soy oil for foundry core binders for casting the Ford V-8 engine block; thus, the soy experiments are now commercialized. Building a 50 ton/day extractor (p. 26-27). Spinning soy protein fiber like rayon, based on spinning milk protein in Italy. Using the fibers to make wrinkle resistant synthetic wool, a suit of clothes for Henry Ford and others, overcoats, neckties, felt hats. "We also found that these fibers blended in very well with rabbit fur for making men's felt hats. So the Hat Corporation of America took all the fiber we could make. It wasn't very much and they would blend it in with rabbit fur. And they actually had them [the men's felt hats] on the market." Rabbit fur is very expensive (p. 29-36). Ford's suit of clothes contained 65% wool and 35% soy fiber. Boyer

leaves Ford Motor Co. in 1943. Problem with fiber was tensile strength, especially wet strength. Ford's interest in this fiber work, and his fitness at age 75 (p. 37-38). Ford "was not a true vegetarian but he was pretty close" (p. 38). Edsel Ruddiman's work with foods (p. 39-47). Boyer and Ruddiman attend American Soybean Assoc. soybean conference in Washington, DC [in Sept. 1932] where they saw "leather-like products that the Chinese make" [yuba]. Boyer tried unsuccessfully to use the idea to make "synthetic leather." USDA's experimental farm in Holgate, Ohio, where many soybeans sent back by W.J. Morse were tested (p. 40-42). Work with soybean milk (p. 43-46). The executive dining room in the Engineering Laboratory. Henry Ford invited Boyer to lunch there about 6 times (p. 45). Development of soy ice cream; lipoxidase enzyme inactivation (p. 45-46).

Visits to Battle Creek, Michigan and Dr. John Harvey Kellogg (p. 47). Boyer's work was with industrial products; the plastic car and structural plastics with hemp, flax, and phenol formaldehyde (soya protein Bakelite resin) (p. 47-64, 70). Making trunk lids using a hydraulic press (p. 50). Ford's famous axe demonstration on a trunk lid (p. 50-52). Lowell Overly and Joe Stewart (p. 53-56, 61, 78-79). Boyer drives the plastic car home (p. 63). Ford's aim with the plastic car: to provide industrial markets for farmers (p. 65). World War II stops plastic car development (p. 65-66). Contract to build an airplane wing of plastic (p. 66-70). The plastic lid and car contain little or no soy (p. 70). Fiberglass and the Chevrolet Corvette (p. 71). Plexiglas and the B-24 bomber made at Willow Run (p. 72). Edsel Ford's death of stomach cancer in the spring of 1943 and its effect on his father, Henry (p. 73-74). Ending work with soy fiber (p. 74).

Boyer leaves Ford in 1943 and goes to work for Drackett Co. in Cincinnati, Ohio. Wife needs to leave Detroit. After 1943 Boyer's career really takes off. Dr. Gangloff (p. 75-77). Use of soy fiber by Drackett in felt hats. "We sold them a lot of fiber and we decided to build a bigger plant." Building a protein plant and a fiber plant in Cincinnati big enough to supply the hat company's demands and larger "than we needed just to supply our fiber operation." They also had a big operation in Cincinnati for high-impact (not structural) plastic (p. 78-80). Drackett's marketing people knew how to market Windex and Drano "but they had no feeling for the soybean operation. So when Mr. Drackett died, they sold the whole soybean plant to Archer-Daniels-Midland (ADM, p. 81-83). Before Mr. Drackett died, Boyer's division had developed commercial soy products, and Drackett was making money on the plastic (phenol formaldehyde plus hemp) and the fiber (p. 81). Use of soy protein as a paper coating (p. 83). ADM finally closes the old Drackett protein plant and sells it to Central Soya, which used the million bushel elevator capacity for storage (p. 83-84).

Shortly after Mr. Drackett died, Boyer left Drackett to work on his edible soy fiber, where he owned patents. "If we can make a fiber from soy protein that resembles the outside of a sheep, why not make a fiber that will resemble the inside (p. 84-86). Idea of building an edible soy protein plant is in Cincinnati, with Mr. Drackett's approval (p. 87). Boyer tries to find companies to license rights to his landmark patent: Virginia Carolina Chemical (Taftville, Connecticut, p. 88); Swift & Co. (p. 89-92); Unilever, which was interested in peanut protein in Africa and at Port Sunlight near Liverpool (p. 92-94, 112-13); General Foods and Nabisco (Fairmont, New Jersey research lab) (p. 94, 99). Unilever and Swift pay licensing fees of $20,000 a year plus consulting fees. General Mills and Ralston Purina (p. 94-95). Why Swift dropped its interest (p. 95-96). General Mills and Bacos (p. 96). Patent expires in 1971 after 17 years (p. 96). Worthington Foods (p. 97). Ralston Purina was getting into protein. In about 1956-58 they "had bought Procter & Gamble's protein plant in Louisville [Kentucky], which was making industrial protein for paper coating" (p. 98). Worthington Foods was too small to make their own soy protein fibers, so Ralston Purina made it for them (p. 78-80). Ralston Purina's great success with edible soy protein and their small conflict: pet food vs. human food (p. 100-01). From 1961 to 1971 Boyer was receiving licensing fees / patent royalties from Ralston Purina, Worthington, and General Mills (p. 102). General Mills and Bacos (p. 103-04). Ralston Purina's patent lawsuit against Far-Mar-Co. Ralston won $8 million. Boyer testified as an expert witness (p. 104-05).

Boyer remarries and retires in 1971 (p. 102, 105, 107). Subsequent work with Miles and Worthington; the Morningstar Farms line (p. 105-08). Companies now spinning soy protein fiber (two in the Netherlands, one in Japan, one in Australia). Ford Foundation was not interested in his work with soy protein for Third World nations (p. 110). Central Soya bought the ADM plant that was located in Chicago (p. 113-14). Kellogg's Corn Soya breakfast cereal (p. 114-15). Worthington's Soyloin Steaks; all early Kellogg and Worthington vegetarian products based on wheat gluten (p. 119). When Worthington bought Battle Creek they got their lady research director; she worked at Worthington until she was quite elderly. Boyer visited her in her lab at Battle Creek several times (p. 119-20. Note: Josephine F. Williams was in charge of the lab and product development at Battle Creek, where she worked closely with Dr. John H. Kellogg. She kept similar positions at Worthington Foods, according to Ron McDermott). Henry Ford as a soybean pioneer and visionary. The soybean is now America's No. 2 cash crop and also our second largest earner of foreign exchange. "That really started from Ford. When we first started in 1931, hardly anybody ever heard of the soybean, and Henry Ford's penchant for publicity publicized the soybean... He certainly made it popular and made people become aware of it. Today it's darned important." He should be remembered as the "Father of the Soybean." "I always thought it would be nice if they would rebuild the [Soybean] laboratory [in Greenfield

Village] or restore it like it was when we were doing the soybean work and give it the real credit that it deserves..." (p. 120). After Henry Ford died in 1947 his family wanted no part of any of his pet projects. They completely eradicated the old Ford company (p. 121). Henry Ford was deeply interested in the welfare of American farmers. His tractors and Model T were of great use to them (p. 121). Origins of Ford's interest in chemurgy; William Hale and Dow Chemical Co. in Midland, Michigan; the first three chemurgic conferences in Dearborn, Michigan, in May 1935, 1936, and 1937 (p. 122-27). Ford and Ruddiman establish a complete canning line for good-tasting green soybeans on the outskirts of the Ford estate. The equipment was quite expensive. When World War II threatened, Ford gave it to Michigan State University to teach canning to students. (p. 129-30). Boyer's personal impressions of Henry Ford (p. 128-30). Address: 632 Edgewater Dr. #731, Dunedin, Florida 33528.

4502. **Product Name:** [Nigari Tofu, Tofu Spreads, Soymilk].
Manufacturer's Name: Fonte della Vita S.r.L. (La).
Manufacturer's Address: Via Matteoti, Fossano, Italy. Phone: (0172) 66 397.
Date of Introduction: 1985. February.
New Product–Documentation: Entry in SoyaScan Names database. 1987 Jan. 23. They are said to make tofu and soymilk.

Talk with Jean de Preneuf of Société Soy in France. 1990. July 13. He says this is the biggest tofu manufacturer in Italy. They are now located at Via Monviso 18, 12049 Trinita (CN), 50 miles south of Turin (Torino).

Talk with Michael Brenger, production manager at Fonte della Vita. 1990. July 18. This company started in Feb. 1985. Its first product was tofu. In April 1986 they moved to the following address: Via Circonvallazione 87, 12049 Trinita (Cuneo), Italy. They are now located in the same place but the address has changed: Via Monviso 18, 12049 Trinita.

4503. Honer, Clem. 1985. Keeping up with soy technology: Why soy protein isolates offer unique opportunities for dairies in fluid products and frozen desserts. *Dairy Record.* Feb. p. 62, 64.
• ***Summary:*** "recent research into the manufacture of all soy-based products using soy protein isolates has opened new opportunities for the small- to medium-volume dairy processor..." "Soy-based frozen desserts can be manufactured easily in any ice cream plant." The author explains how.

4504. Langley-Danysz, Pernette. 1985. L'entrée discrète du soja en Europe [The discreet / cautious entry of soya into Europe]. *Revue Laitiere Francaise* No. 438. p. 16-20. Feb. [Fre]
• ***Summary:*** An illustration on the cover shows an American cowboy-like man, wearing a cowboy hat and cowboy boots, smoking a cigarette, and carrying a briefcase on which is written ASA. He appears to be emerging from a garbage can labeled "soya" and from his briefcase are flying several cartons of soymilk. The article begins: "Two soy products, milk and tofu, were at the center of a conference organized in September 1984 at Amsterdam [Netherlands] by the American Soybean Association (ASA)."

Gives data on the chemical composition and nutritive value of soy beverages, soymilks, and tofu. Discusses the products recently introduced in Europe. Consumption of soy products in the E.E.C., principally as soy protein concentrates or isolates, has never exceeded 40,000 tonnes/ year. Consumption of traditional East Asian soyfoods such as tempeh, miso, sufu, and soy sauce, is still low in Europe, but consumption of tofu and soymilk is growing significantly. Nutritional composition of cow's milk and soymilk are compared, and various commercial soy products are discussed.

Soy ice creams (including Ice Bean and Tofutti) are discussed in detail on page 19, col. 1. The pioneer of these soy ice creams (*ces ice cream au soja*), named Ice Bean, was developed by Farm Foods in Tennessee. Today there are a dozen other brands of tofu ice cream (*glaces au tofu*). One of these ice creames (*ces crèmes glacées*), Tofutti, made by the company Tofu Time and presented at SIAL in 1984, took the first place last fall on the hit parade of dairy products from the United States." Note: This is the earliest French-language document seen (March 2007) that mentions soy ice cream which it calls *ice cream au soja,* or *glaces au tofu,* or *crèmes glacées.*

Photos show the following products, each in a Tetra Brik carton: Nestle Bonus Soya Bean Milk, Plamil Soya Milk Concentrated, Morinaga Ever-Fresh Silken Tofu, Yeo's Soya Bean Drink, Alpro Soya Drink. Address: France.

4505. Leonard, Tom. 1985. Soymilk, is it a natural? *East West Journal.* Feb. p. 36-42. [1 ref]

4506. Levitt, M.D.; Savaiano, D.A. 1985. Lactose intolerance and yogurt. I. Understanding the problem. *Practical Gastroenterology* 9(1):-. Jan/Feb. *
Address: 1. Dep. of Food Science & Nutrition, Univ. of Minnesota, 1334 Eckles Ave., St. Paul, MN 55108; Veterans Administration Medical Center, 54th Street and 48th Ave. South, Minneapolis, MN 55417.

4507. **Product Name:** Tofreezi (New Name for Frozen Buddha Soy Ice Cream) [Mocha Royalle, Berry Banana, Amaretto, Pineapple Coconut, Chocolate Mint, or Maple Walnut].
Manufacturer's Name: Metta Tofu Products Ltd.
Manufacturer's Address: Wren Rd., Denman Island, BC, V0R 1T0, Canada.

Date of Introduction: 1985. February.
Ingredients: Incl. soymilk, tofu, honey, fruits, nuts, natural flavorings.
Wt/Vol., Packaging, Price: Half liter and full liter cartons.
How Stored: Frozen.
New Product–Documentation: Label. 1985, undated. Red and blue with black letters on white. Shurtleff & Aoyagi. 1985. Tofutti & Other Soy Ice Creams. p. 78. Product Alert. 1986. March 3. Lists flavors. "Tofreezi is 75% soymilk and tofu by volume." Leviton. 1986. East West. June. p. 37. Rated the highest of all soy ice creams in America.

4508. Recker, Robert R.; Heaney, Robert P. 1985. The effect of milk supplements on calcium metabolism, bone metabolism and calcium balance. *American J. of Clinical Nutrition* 41(2):254-63. Feb. [47 ref]
• ***Summary:*** In a Dairy Council sponsored study, 13 healthy postmenopausal women who drank an extra three eight-ounce glasses of low fat milk every day for a year showed no significant increase in calcium balance. Even with all the extra milk-derived calcium, they were still in negative calcium balance after a full year of the regime. The scientists who conducted the test knew why. They said the women continued to have a negative calcium balance, and continued to develop osteoporosis, due to "the average 30% increase in protein intake during milk supplementation." The additional protein load from the milk tended to wash calcium and other minerals out of the subjects' bodies, and thus throw them into negative calcium balance. The researchers, instead of facing squarely the consequences of their discovery, concluded by recommending a reduction in protein intake from sources other than milk (such as chicken or fish) in order to improve calcium balance.

Note: This study seems to imply that the more milk a person drinks, the more calcium he or she will lose. In other words, the protein and fat in milk carries all of the calcium in the milk out of the human body, and also carries out some additional calcium, creating a negative calcium balance. Address: Creighton Univ. School of Medicine, Dep. of Medicine, Omaha, Nebraska.

4509. Rich, Robert. 1985. History of Rich Products Corporation's work with soy-based dairy analogs (Two interviews). Conducted by William Shurtleff of Soyfoods Center, Feb. 8 and March 20. Followed by 6-8 letters of questions and answers and Mr. Rich's reading of this manuscript. 12 p. transcript.
• ***Summary:*** Early Years to 1949. Bob Rich was born on 7 July 1913 in Buffalo, New York. He was one of five children of a local ice cream manufacturer, formerly a dairyman, who had switched to the ice cream business because he didn't like selling milk. During the summers Bob acquired a working knowledge of dairy plant operation at his father's ice cream plant. In 1935 he graduated from the University of Buffalo, where he was two-time captain of the football and wrestling teams. After graduation he used a $5,000 gift from his father to make a down payment on Wilber Farms Dairy, a small milk plant in Buffalo. He eventually developed it into one of the city's leading wholesale and retail operations. But he grew to dislike the dairy business just as his father had.

"In 1942 Bob Rich, having established a reputation as a milk plant operator, was called to Washington, DC, as a consultant in the dairy section of the War Production Board. A year later he was sent to Detroit by the War Food Administration (WFA) as milk order administrator for the state of Michigan.

"One day in 1943 the chief purchasing agent of Detroit's Ford Hospital came into Rich's office in search of additional butter ration points. Rich explained that his job was concerned solely with the diversion of non-essential civilian milk supplies into the production of dry and condensed milk for the U.S. armed forces and for Lend Lease. The purchasing agent replied that the Ford Hospital was not in need of milk. The entire supply of milk and cream was produced in Dearborn, Michigan, by Henry Ford's Carver Laboratory (named after Dr. George Washington Carver)–from soybeans!

"Those last words sparked what was to become a lifelong interest for Bob Rich. He had never heard of soymilk before, but during the war he had seen the potential for dairy-like foods. After Ford's purchasing agent had told Rich more about soymilk and soy cream, he invited Rich to visit the Carver Laboratories at Henry Ford's Greenfield Village in Dearborn, Michigan. (Note: Dearborn and Detroit are about 350 miles by road from Buffalo.) There Rich saw the continuous process, 3-vat system that Ford's researchers had developed from as early as 1940 for extracting protein from soybean flakes. The extraction equipment resembled a Rube Goldberg contraption. The protein was used as the basis for the soymilk they made for the Ford Hospital. During his visit, Bob Rich met Rex Diamond (chief chemist there), and Diamond told Rich that if Rich was interested in using soy protein to make a soy cream, he could license the rights to Ford's patented continuous protein extraction process for $1 a year.

"In a sense Henry Ford's career can be seen as a plot to eradicate large domestic animals. Having rendered the horse obsolete with his automobile, he now set out to eliminate the cow. Ford's unspoken antagonism toward cows struck a responsive chord in Bob Rich. Though neither the protein extraction nor the soymilk formulation operations were in operation during his visit, Rich was impressed by what he saw that day. Sales of whipping cream were forbidden during the war, so he began to dream of developing a 'soy cream' that would whip. For more than a year Rich kept thinking about his new idea."

After resigning from the WFA in Oct. 1944, Bob returned to Buffalo and engaged a leading chemists and

dairy engineer to help him transform his "soy whipping cream" idea into reality. The Ford Motor Co. had backed off on its original offer to license Bob the rights to their patented method of continuous protein extraction. So Bob and his advisors developed a batch process that extracted a significantly higher percentage of isolated soy protein from soy flakes–which he obtained from the Glidden Co. The flakes were first mixed with water in 300-gallon stainless steel tanks. The pH of the flakes was raised to 9.6 to extract the protein, then lowered to near the isoelectric point (pH 4.6) to precipitate the protein. After the supernatant liquid (soy whey) was removed, the isolate curd was neutralized to pH 6.9 then centrifuged with a dairy clarifier (with the discs removed) to lower the moisture content. The wet isolate was then run through cooling tubes into stainless steel settling tanks. The original "soy cream" formulation called for (in order of predominance): water, 27% soy oil shortening, corn syrup, 1.5% isolated soy protein (slurried with water), flavoring, coloring, salt, and the stabilizer they had developed (propylene glycol monostearate). In the all stainless steel processing room, the "soy cream" was pasteurized at 185 ºF, homogenized at 3,500 pounds pressure, then cooled to 35 ºF. When the product was satisfactory, Bob Rich decided to call it Whip Topping.

In November 1944, after he was satisfied he had a good protein extraction system and a good "soy cream" formulation, Bob Rich founded and incorporated Rich Products Corporation in Buffalo, New York, to manufacture his non-dairy whipped cream. He converted his dairy's 3-car garage into the production plant. Joe Robida was production manager. Whip topping hit the market in April 1945, shortly after Delsoy was introduced. It was sold as a thick liquid in a ½ pint container the shape of a truncated cone–the same shape as Delsoy's container. Both companies chose the same unique container because the machine needed to fill it was less expensive and Pure Pak refused to give a license for use of their carton to any competitor of dairy products.

Rich's Whip Topping had a number of advantages over whipped cream ÿ- aside from the fact that whipping cream was completely unavailable during the war: (1) It stood up longer after being whipped, retaining stiffness and overrun better without drooping or weeping; (2) it sold for about 25% less than heavy cream; (3) because it could be frozen (which heavy dairy cream could not, if it was to be later whipped), it stayed fresh longer; (4) it could be re-whipped even several days after it had been whipped initially; (5) one volume of the liquid whipped up to 3.0 volumes of topping in 45 seconds, versus only 1.86 volumes for regular dairy whipping cream. Thus Whip Topping gave 61% more yield by volume; (6) dairy cream could be easily over-whipped, resulting in a kind of buttery substance. This was not a problem with Whip Topping; (7) it was a kosher and pareve product from 1946 on; (8) it was advertised as being almost twice as nourishing as heavy cream and (believe it or not) non-fattening!

Whip topping was a war baby. Initially it was sold only as a retail product. Rich distributed it to the customers on his milk routes, billing it variously as "the Miracle Cream from the Soybean" and "Gold from the Soil." During the early months it was not a fabulous success. Its developers were not chemists and the soy proteins were made by a relatively primitive process, so the product's quality left much to be desired. Sales during the first year (9 months) were $28,000.

In the summer of 1945 an unexpected breakthrough occurred. Rich had been invited to make a sales presentation to the Henry Pape Co., a refrigerated foods distributor on Long Island, New York. He packed some samples in dry ice and newspaper and set out on the overnight train from Buffalo. The next morning, while facing the sales manager and 18 salesmen, Rich took out his samples then discovered to his horror that they had frozen solid. He had inadvertently packed them in too much dry ice. He began to perspire, for he knew well that cow's cream would not whip after freezing. He cracked a few jokes to stall as long as he could, then borrowed a knife and hacked nervously at his frozen "soy cream" until he could fit the pieces into a mixing bowl. Then he held his breath. It whipped to perfection!

No one was more surprised than Bob Rich. But he had the presence of mind to realize that he had done more than escape from a potentially embarrassing situation. He had invented the world's first frozen non-dairy whipped cream. This meant that his market was no longer confined to Buffalo. Now he could sell Whip Topping nationwide. Quite by accident Rich Products Corp. had entered the frozen food business. Three months later the company was freezing all its products. The modern frozen food industry, which often dates its origins from 1929 when Clarence Birdseye froze his epochal fish, was still quite young in 1945, and Rich Products later came to be regarded as one of its pioneers (Frozen Food Age 1977; Owen 1983). (Continued). Address: Chairman of the Board, Rich Products Corp., P.O. Box 245 (1150 Niagara St.), Buffalo, New York. Phone: 716-878-8000.

4510. Rich, Robert. 1985. History of Rich Products Corporation's work with soy-based dairy analogs (Continued–Document Part II). Conducted by William Shurtleff of Soyfoods Center, Feb. 8 and March 20. 12 p. transcript.

• ***Summary:*** Continued. In January 1946, to get national distribution for his frozen whip topping, Rich Products ran a quarter page ad in Quick Frozen Foods–the company's first ad for the product. From among the 134 frozen food distributors who responded, Rich Products appointed its first 100 distributors. America's housewives took to Whip Topping. Sales snowballed. The plant at 1149 Niagara St. began to operate 24 hours a day. Also in January 1946 Rich Products entered the foodservice business, when they sold

their first case of Whip Topping to Ohio State University. To use Whip Topping, a chef would chop the frozen product into pieces with a cleaver (one was provided free of charge with each case!), then whip it. Later, Rich Products added sugar to the formulation, which made the product thaw and pour.

Over the years institutional and bulk sales of Rich's Whip Topping increased. From 1945 on Rich had taken his whip topping to food trade shows and dietitian's shows, attending up to 30 a year. The pioneering product was well received. A good part of Rich's success from 1946 on was in the South; there the problem of dairy whipped cream's turning sour or rancid in the warmer climate restricted its usage, the people were more accustomed to the use and flavor of soy since soy margarine was widely used in frying, and southern frozen food distributors were very aggressive.

Then on 20 November 1946 disaster struck. With no advance notification, the U.S. government lifted all restrictions on the sale of cream and other dairy products, months before the earliest predicted date for such a move. With regular whipping cream now available, retailers and distributors canceled all orders for Whip Topping. For Rich Products, it was a nightmare, and for a while it looked like the young company might perish. But Bob Rich, his sales staff, and his advertising agency worked for days around the clock on a new marketing strategy to overcome the product's ersatz wartime image and to play up the its many unique attributes.

In December 1946 *Soybean Digest* ran a nice article on Rich Products and Whip Topping–written before the surprise notification. The firm had just spent $60,000 constructing a new, modern plant, which was working 24 hours a day, 7 days a week producing 1 million half pint containers of Whip Topping a month.

A huge national campaign was launched but recovery came only slowly; not until late 1948 had sales reached their first-year level. At that time Whip Topping was introduced in a pressurized all-metal container, which replaced its former heavy wax paper cartons–half pints for the retail trade and quarts for institutions and bakeries. Previously it had been necessary to partially thaw the product, then whip the topping by hand or in an electric mixer. Now the topping emerged from the container nicely whipped, under 90 pounds pressure from nitrous oxide and carbon dioxide.

As Whip Topping gained popularity, the dairy industry began to take notice. The first lawsuit against the non-dairy product was in 1949 in California. The charge was that Whip Topping was an imitation dairy product, and hence illegal. Rich Products' defense was that their product was not an imitation (which implies inferiority to the real product) but a replacement. Likewise the Model T Ford was clearly a replacement for the horse and buggy, not an imitation. As we have seen above, Whip Topping had many definite advantages over its dairy counterpart. Rich Products won the case. Then in 1951 the product was seized again. In the interim, the dairy industry had gotten the state food laws changed and, as Bob Rich recalled, "done everything but mention Rich Products' name." Rich Products won the 1952 trial, and judge Bernard Shawman notified the state's attorney general that if he should attack Rich Products at any time in the future, Mr. Rich would have an excellent chance for indemnity against the state. That was the last lawsuit ever brought against Whip Topping.

The 1950s. By the early 1950s, as Whip Topping began to become popular, other companies began to use Rich's brand name. Although it was a registered trademark, listed on the Supplemental Register, it sounded almost like a generic term. Rich's attorney's protected the term, suggesting that those with trademark infringements call their products something else, such as "whipped topping." But eventually Rich formally renamed his product "Rich's Whip Topping" to give it better trademark protection.

By 1946, Rich Products had obtained kosher and pareve certification for Whip Topping from the prestigious Union of Orthodox Jewish Congregations of America. By about 1946-47 kosher Jewish catering services in New York City (and soon thereafter housewives) had discovered that Rich's Whip Topping (which they purchased from Henry Pape Co.) was remarkably similar to real whipped cream in texture and flavor, and could be used to make a completely new type of non-dairy frozen desserts. These were America's first such desserts based on isolated soy proteins. Soon an estimated 5-10% of Rich's sales of whip topping to the foodservice market were being used by other companies to make non-dairy kosher ice creams.

Rich's followed this lead and in about 1951 unveiled Chil-Zert, the world's first isolate-based commercial non-dairy frozen dessert having a registered trademark. Although Chil-Zert was well made (with 2-3% soy protein, soy oil, and corn syrup) and tasted good, like many pioneering products it ran into problems. First, it was transported and stored by frozen food distributors who couldn't keep it cold enough. (Ice cream distributors, who operated at 20 degrees below zero, wouldn't touch Chil-Zert.) No emulsifying system could be found to prevent it from softening then becoming icy when refrozen. Second, the FDA impounded the product from Arrow Frozen Foods in New Orleans, claiming that it was an imitation ice cream and thus misbranded. The case was to be tried in federal court in Syracuse, New York. But Rich Products did not even go to the trial to contend the charge, for distribution problems had already forced them in 1952 to discontinue Chil-Zert. David Rich, son of the company's founder, enjoyed Chil-Zert as a boy. He recalled that when he first tasted vanilla Tofutti in the 1980s, it distinctly reminded him of Chil-Zert.

On 15 Nov. 1955 Rex Diamond (the Henry Ford researcher that Rich had met on his visit to the Carver Labs) went to work for Bob Rich in Buffalo. Rich hired Diamond after the American Maize Products Co., where Diamond was

formerly employed, dropped their plans to make a powdered non-dairy topping. Diamond was put in charge of the laboratory and development and research of Rich Products. From that time until at least 1959 he was the only chemist employed by the company. On 25 Nov. 1955, as part of a business agreement, Diamond sold, assigned, and transferred all rights, titles, and interests to all of his patents (3 issued and 1 applied for) to Bob Rich in return for $5,000.

In May 1956 Rich Products added a completely new formulation of Whip Topping to its line. Named "Rich's Whip Topping–The Diamond Process," it contained no protein and was made by a process developed and patented by Diamond. Diamond eventually became vice president of Rich Products. In the new formulation, soy oil was replaced by coconut oil, which had a better flavor. A key new ingredient in the non-protein whip topping was methyl ethyl cellulose, developed by Dow Chemical.

Rich's new non-protein Whip Topping came in two forms: a base (containing 46% fat) and a regular strength. It was initially sold only to foodservice institutions (which comprised about 20% of total sales); the original soy protein formulation continued to be sold (largely in a pressurized container) to the retail trade, which accounted for 80% of total sales. Rich Products continued to produce its own soy isolates. Good quality powdered isolates would not be available commercially in America until about 1959 (Continued). Address: Chairman of the Board, Rich Products Corp., P.O. Box 245 (1150 Niagara St.), Buffalo, New York. Phone: 716-878-8000.

4511. Rich, Robert. 1985. History of Rich Products Corporation's work with soy-based dairy analogs: Rich wins legal battles for non-dairy products. (Continued–Document Part III). Conducted by William Shurtleff of Soyfoods Center, Feb. 8 and March 20. 12 p. transcript.

• ***Summary:*** Continued. The new formulation had numerous advantages over its predecessor. Its flavor was better and its shelf life at 40ºF was extended to 6 months, from 3-4 weeks. It could be whipped to a stiffness never before attained by any cream or filled cream (containing added vegetable fat). It whipped up to 4 times its liquid volume, giving more than double the yield of dairy whipping cream. It retained overrun, freshness, flavor, and a "decorator's edge" for more than 48 hours at temperatures as high as 80ºF. The base had a unique advantage over dairy whipping cream. It could be reconstituted or extended with either the usual water or nonfat milk, or with fruit juices to give special effects such as an orange icing or filling. Now Rich began to introduce the new Whip Topping in various sizes. In 1952 came Sundi-whip in an 8-ounce pressurized can for soda fountains and over-the-counter trade. In about 1953 appeared Rich's Green Label Whip Topping, which was developed for bakery and institutional use. Prior to mid-1955 Whip Topping had been Rich's only product. At that time they launched Rich's Frozen Chocolate Eclairs, which had Whip Topping as the filling. The eclairs quickly became enormously successful, and were called "the hottest thing to hit the frozen food industry in the last five years." In February 1955 Quick Frozen Foods published an excellent 27-page, tenth anniversary story of Rich Products' first decade, upon which we have drawn heavily. The 1960s. In 1963 Rich Products introduced Coffee Rich, a frozen liquid coffee whitener. It was test marketed in Baltimore. Rich deliberately used the generic disclaimer "coffee whitener" rather than "non-dairy creamer" to avoid as much as possible stepping on the toes of dairy interests. Coffee Rich was the second such liquid product to be sold in America; Presto Food Products in Kansas City, Missouri, had introduced a non-dairy coffee creamer named Mocha Mix (containing soy protein) in 1950, although Rich was not aware of it. But Rich's product was the first frozen liquid non-dairy creamer. The original Coffee Rich used coconut oil and contained no protein, being based on the 1953 patent formulation. The lack of protein gave the product a long shelf life when sold refrigerated in dairy cases, as was planned. But the product started settling out, so the company switched to using sodium caseinate as a protein source, then in about 1963 began using soy protein (typically about 0.75% by weight) as the main protein source. In the mid-1970s soy oil replaced half of the coconut oil, then later in the 1970s all of it. The dairy industry spent a small fortune trying to keep Coffee Rich off the market. Its fight against Whip Topping had been short lived largely because heavy whipping cream (of which little was sold and lots spoiled) was not a big money maker for milk dealers and dairies. But cream was the "bread and butter" of the dairy industry, and it girded to fight in state after state to the bitter end. In some states dairy interests claimed Coffee Rich was an "imitation cream" and hence against the state law; in others they claimed it was mislabeled because the words "imitation cream" did not appear on the label. The first lawsuit was in Louisiana in 1961. Rich Products won in a one-day trial. The defense was exactly the same as it had been for Whip Topping. Coffee Rich was a replacement, not an imitation. Angered by this defeat and hoping to break Rich by exhausting his financial resources on court cases, dairy interests had Coffee Rich seized in Virginia, Michigan, and Washington. But the former college wrestling and football star wasn't easily downed. He parried by persuading the Carnation Company (which sold Coffee Mate, a powdered caseinate-based coffee whitener) to split all forthcoming legal fees. Two or three years later General Foods joined the non-dairy defense fund. Their Birdseye Division sold Dream Whip, a powdered whip topping, and later the famous non-dairy Cool Whip. Now all legal fees were split three ways. Dick Borne of RGB Labs says they were sharing expenses too before the association was formed, and the General Mills came in after. At about this time (in 1968) the group finally established the National Association for Advanced Foods, to

defend the rights of non-dairy products and to be sure that no small companies went off half-cocked and lost precedent setting lawsuits. Ellis Arnall was the Association's first director; they charged annual dues plus assessments and took in new members. The many trials continued to be fought in the name of Rich Products Corp., since it had prestige. In the 1960s a small company selling Instant Blend, a non-dairy creamer or topping, after deciding to defend itself, lost its lawsuit 7-0 in the Massachusetts supreme court. They were kindly permitted to continuing selling the product as long as it was distinctively colored–blue! The dairy industry gloated. A year later Rich Products deliberately sold Coffee Rich in Massachusetts so that it would be seized. Their case also went to the state supreme court, but this time Rich's team of seasoned attorneys won... 7-0! By 1966 some 15 consecutive court decisions had ruled in Rich's favor, though five of these went as far as the state supreme court. By 1974 the number of cases and victories for Coffee Rich had grown to 40. That year the Kansas Supreme Court declared Coffee Rich "a new and distinct food" and the milk lobby gave up. Rich Products' success in these suits led to the creation of a new food product category: Coffee whitener. Coffee Rich was the company's third product to contain a significant amount of soy protein. But Rich did not especially promote the fact that his products contained soy on the labels or in advertising, though he often discussed it with reporters. The company initially bought its isolated soy protein isolates for Coffee Rich from one or more of the big manufacturers (Central Soya, ADM, or Glidden) In the mid-1960s a powdered Coffee Rich was developed. In about 1965 Rich Products stopped using soy protein in its retail Whip Topping and switched over to the non-protein formulation adopted for institutional use in 1953. At about that time, company stopped making isolated soy proteins. By 1967 Bob Rich had built Wilber Farms Dairy into the largest solely owned, independent milk company in America. That year he decide to sell it and get out of the dairy business. Rich Products (whose plant was now 140,000 square feet) was doing well enough with non-dairy products to support him amply. In 1969 Bob Rich's oldest son, Robert Rich, Jr., started to work at the company's Buffalo headquarters as sales manager. After graduating from Williams College in 1963, he had run the Rich Products plant in Fort Erie, Ontario, Canada. After setting up the company's first marketing department in Buffalo, he embarked on a bold program of acquisitions, based on the observation the Rich Products then had more frozen food distributors than any other frozen food packer in the USA. Company sales in 1969 were $33 million. The first acquisition, that year, was the Elmtree Baking Co. in Appleton, Wisconsin. Sales began to rise by leaps and bounds. The 1970s. In 1975 food sales from Rich Products and affiliates had topped $100 million a year. That year the company was awarded the National Frozen Foods Convention's first Grand Award, for "achievement in developing the frozen food industry..." and for his "pioneering work in researching and popularizing simulated frozen dairy products" (*Quick Frozen Foods* 1975). In November 1978 Rich Products launched an exciting new product and a revolutionary new process. The product was Bettercreme, a non-dairy icing that whips and is used primarily on cakes. It contained an enzyme-modified isolated soy protein (made perhaps by A.E. Staley's Gunther Products) (Continued). Address: Chairman of the Board, Rich Products Corp., P.O. Box 245 (1150 Niagara St.), Buffalo, New York. Phone: 716-878-8000.

4512. Rich, Robert. 1985. History of Rich Products Corporation's work with soy-based dairy analogs: (Continued–Document Part IV). Conducted by William Shurtleff of Soyfoods Center, Feb. 8 and March 20. 12 p. transcript.

• ***Summary:*** Continued. The process was Freeze Flo, a dramatic processing breakthrough that was " first used to make Bettercreme. Freeze Flo makes it possible to use a frozen food without thawing it. By eliminating the need to thaw, Freeze Flo quickly began to change the very concept of frozen foods. The process, invented by Marvin L. Kahn (who worked with a company Rich acquired), replaces free water in a product with water bound to fructose or other natural sugars in the product. Binding water in a product (such as a fresh or dried fruit) it does two things: (1) It eliminates a medium for bacteria to grow, so that spoilage is greatly retarded, and (2) it makes it impossible for ice crystals to form. Rich Products soon had high hopes that Freeze Flo might become the most revolutionary development in this field since Clarence Birdseye froze his first fish in 1929.

In 1978 Bob Rich Jr. became president of Rich Products. His father retired but remained chairman of the board and chief executive officer, and his brother, David, was/ head of the public relations department.

The 1980s. By the early 1980s Freeze Flo had already become very popular in Europe, some exciting medical applications were being investigated. By 1983 Rich Products was using the Freeze Flo process to make many of its "Fresh 'n Ready No Thaw Desserts," including Grand America (a dairy ice cream), Fresh 'n Frosty (a mellorine, resembling ice cream but with the butterfat replaced by soy oil), the fillings for chocolate eclairs, Bavarian cream puffs, creme pies, cakes, and cheesecakes--as well as Bettercreme. It was billing this "gentle freezing process" as "the most significant breakthrough in Frozen Foods in 50 years." Because of Freeze Flo, the ice cream and mellorine, both introduced in 1983, could rise in temperature to 5º above zero without defrosting; typical ice creams defrost at 20º below zero. But Freeze Flo is not used to make some other of Rich's products, such as frozen fish and meat balls (Rich Products 1983; Owen 1983).

In the late 1970s Rich hired Mike Billoni, a local sports

reporter, to write a company history. It was to be titled 35 Years Below Zero and published in 1980 to commemorate the company's 35th anniversary. But so many exciting things began happening with Freeze Flo that Rich postponed publication and is now hoping that it will eventually be the first chapter in a longer work. The company also maintains a large scrapbook that goes back to the founding in 1944.

In 1985 Rich Products, still privately owned, was the world's largest maker of non-dairy products, with sales of $545 million a year. Roughly 75% of Rich Products' sales were to foodservice organizations, and 25% to retail consumers. Starting in 1972, I.D. magazine picked Rich Products for 12 out of 13 years as the outstanding frozen foodservice packer in America. The most popular retail products (in descending order of sales) were Coffee Rich, Rich's Frozen Chocolate Eclairs, and Rich's Donuts. A little of Rich's Whip Topping is sold retail in pressurized containers. Richwhip Topping, a beat-it-yourself liquid, sells well only in Milwaukee and Minneapolis.

From the 1970s on, the only two of Rich's products contained a significant amount of soy protein: Coffee Rich and Bettercreme. Of the two, Coffee Rich used the larger amount in total annual tonnage. The company bought its isolated soy proteins from Ralston Purina. But as of 1985 Rich Products was seriously considering at least one product that would get the company much more actively involved with soy protein. It is still on the drawing boards, so details are not yet available.

There are two basic types of coffee whiteners or coffee creamers: Powdered and non-powdered. Coffee Rich is the only non-powdered coffee whitener that is distributed nationally. It has an estimated 90% of the branded, non-powdered market.

In 1985 Robert E. Rich Sr. recalled: "In the frozen food business, my heart has always been in the non-dairy segment of it. I always figured that was my baby. That's what put our company on the map. . . Its always interesting to recall the early days of the soybean business. I foresee a steady growth in that area" (personal communication) (Continued). Address: Chairman of the Board, Rich Products Corp., P.O. Box 245 (1150 Niagara St.), Buffalo, New York. Phone: 716-878-8000.

4513. Shurtleff, William; Aoyagi, Akiko. 1985. Henry Ford's work with soy ice cream and other non-dairy products (Document part). In: Shurtleff and Aoyagi. 1985. Tofutti & Other Soy Ice Creams: The Non-Dairy Frozen Dessert Industry and Market. Vol. 1. 145 p. See p. 17, 20, 23-24.
• ***Summary:*** Henry "Ford's researchers did much of the important early work with non-dairy products in America, but there was no attempt to commercialize them. In the 1930s [Robert] Boyer [plus Bob Smith] and co-workers made America's first experimental whip toppings, coffee creamer, and most other dairy analogs from soymilk. The pioneering work with whip toppings played a key role in the future development of soy ice creams. By Aug. 1935 Henry Ford was serving soy ice cream for dessert at VIP and press luncheons held at the Ford Engineering Laboratory. Until the 1940s Ford's tofu ice cream remained an experimental food, meant to demonstrate the good taste and versatility of soy. When Ford's soybean researchers finally left the Ford Motor Co. in the early 1940s, when World War II forced Ford to abandon his soybean research, they took what they had learned to a number of pioneering companies that launched successful products. Thus Ford was the fountainhead of commercial soy ice creams in America (R. Boyer 1981, 1985; Dick Borne 1985; Bob Rich 1985, personal communications; Dahlinger 1978)."

"For a while during World War II, the Ford Motor Company, as a result of Henry Ford's interest in soybean products, sold soybean 'ice cream' in its cafeterias. All the usual milk ingredients of ice cream were replaced by soy ingredients" (M.L. Anson 1958, p. 281).

"Robert E. Rich had owned a milk retail and distribution company since 1935. During World War II he was a milk order administrator for the War Food Administration in Detroit, Michigan. One day in 1943 he heard that Henry Ford's researchers had developed a soymilk plant and were producing all the milk they needed for Henry Ford's hospital during this time of milk rationing. Rich visited the Carver Laboratory (named after Dr. George Washington Carver) at Henry Ford's Greenfield Village in Dearborn (Bob Smith and Rex Diamond were top researchers on the project), studied the soymilk process, and was impressed. Sales of whipping cream were forbidden during the war; Rich began to dream of developing a whipped cream made out of "soy cream" or soy proteins. In 1944 he founded a company named Rich Products Corporation in Buffalo, New York, to make non-dairy foods. The company's first product was Rich's Whip Topping, a non-dairy whipped cream, made from isolated soy proteins that were produced from soybean flakes at Rich's plant. It was introduced on 30 March 1945, a little more than one year after Delsoy [the first soy-based whipped topping] had been introduced... It has grown in popularity over the decades and was still a best-seller in 1985."

"In the early days, Rich's got O-U kosher certification. By about 1946-47 kosher Jewish catering services in New York City (and soon thereafter housewives) had discovered that Rich's Whip Topping, so similar to real whipped cream in texture and flavor, could be used to make a completely new type of non-dairy frozen dessert. These were America's first such desserts based on isolated soy proteins. Soon an estimated 5-10% of Rich's sales of whip topping to the foodservice market were being used by other companies to make non-dairy kosher ice creams. Rich's followed this lead and in about 1951 unveiled Chil-Zert, the world's first isolate-based commercial non-dairy frozen dessert having a registered trademark."

In short, Chil-Zert was the world's first commercial soy ice cream. Unfortunately, however, due to various problems, Chil-Zert was discontinued in 1952. But by the mid-1980s Rich Products was the world's largest manufacturer of non-dairy products, with sales of $500 million a year. (*Quick Frozen Foods* 1955, 1975; Rich Products Corp. 1983; Robert E. Rich and Robert Boyer 1985, personal communications).

4514. Kahn, E.J., Jr. 1985. Profiles (soybeans). The staffs of life. V. The future of the planet. *New Yorker* 61:50-56, 60-66, 68-85. March 11.
• ***Summary:*** This wide-ranging overview of the soybean, from earliest times to the present, is well written though a little patchy and scattered. Among the topics it discusses: Soybeans as a relief food. Ted Hymowitz, Benjamin Franklin, and tofu. The Shah of Iran switching to soybean oil. The attempt by the Hunt Brothers of Texas to corner the soybean market. The Nixon soybean shock. Soybeans in Brazil and Manchuria. The origin of the soybean in China and Japan. Soymilk and Dr. Harry Miller. The dissemination of the soybean to Europe and America. How the soybean became popular in America; William Morse and the USDA. Henry Ford's work with soybeans and William Atkinson. Dwayne Andreas and ADM. "There is no question in my mind but that the soybean is the fundamental future of the planet," Dwayne Andreas says.

Also discusses amaranth, the winged bean, IBPGR, loss of genetic diversity, and water shortages. The article closes with a quotation from Monkombu Sambasivan Swaminathan, the director general of the International Rice Research Institute in the Philippines: "We live in this world as guests of green plants."

4515. Tetra Pak Inc. 1985. Chief executive officer of The Tetra Pak retires (News release). P.O. Box 802605, Dallas, Texas 75380-2605. March 14.
• ***Summary:*** "After more than 30 years as chief executive officer of The Tetra Pak Group, Hans Rausing will retire on Sept. 1. Rausing will assume the role of non-executive chairman of the Board of Directors of the Tetra Pak Group.

"On the same date, Gad Rausing, senior vice president, will become vice chairman of the board.

"Bertil Hagman will become president of Tetra Pak Rausing, SA, Lausanne, and he will assume the role of chief executive officer of the Tetra Pak Group... Hagman will become a member of the Board of Directors of the Tetra Pak Group." Address: Dallas, Texas.

4516. Miller, Bryan. 1985. Diner's journal. *New York Times.* March 15. p. C16.
• ***Summary:*** Pig Heaven is a Chinese restaurant at 1540 Second Ave. (corner of 80th Street). They recently introduced a special Shanghai breakfast which consists of two types of soybean milk soup, one slightly sweet, the other somewhat sour. These soups are eaten with two types of traditional Shanghainese bread.

"One, called *yu tiao,* is a long piece of fried dough that is sometimes referred to by Westerners as a Chinese cruller. The other, *shao bing,* resembles pita bread covered with sesame seeds. The Chinese usually insert the cruller into the pocket bread, then dip both into the soups."

4517. Ballard, Bob. 1985. Ah-Soy! and Great Eastern Sun (Interview). *SoyaScan Notes.* March 21. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ah-Soy was launched at the NNFA show in Atlanta, Georgia, in the summer of 1984. Initial flavors were vanilla, chocolate, and original (plain). It was made by Saniku Foods in Japan and imported via Mitoku. Carob flavor was introduced in the fall of 1984. Vanilla is now the best seller because it is the most unique. The product is a "fantastic success." The four flavors account for 15-20% of Great Eastern Sun's total sales from 1,100 products. GES only sells to distributors [i.e. it is a master distributor].

Sales reports for the period 1 Nov. 1984 to 25 Feb. 1985 show the following number of units sold (there are 30 units/per case): Vanilla 210,000 units. Original/plain 110,000. Carob 105,000. Chocolate 100,000.

Other GES soyfoods that sell well: Mellow white miso (made by American Miso Co.), 35 lb tub, #9 best seller by dollar volume. Onozaki rice miso, 11 lb tub, #20 best. Mellow white miso, 15 lb tub, #20 best. Instant miso soup from Japan (ranking unknown). This month's sales are annualized. The company is now doing $4 million/year in sales. They used to import freeze-dried tofu; the FDA forced them to change the name to "dried tofu." Shurtleff notes that he prefers the term "dried-frozen tofu."

Another best seller (about #3-5) is their White Cloud Rice Syrup It is made from rice with sprouted barley for malt. Address: Great Eastern Sun, 92 Macintosh Rd., Asheville, North Carolina 28806. Phone: 808-438-4730 or 704 252-3090.

4518. Byrne, Maureen. 1985. The future for soyfoods. The first European Soyfoods Workshop was held in Amsterdam by the American Soybean Association, and papers covered subjects from marketing to microbiological standards. *Food Manufacture* (*London*) 60(3):49, 51, 53. March.
• ***Summary:*** This workshop was held on 27-28 Sept. 1984 at the Krasnapolski Hotel, Amsterdam, the Netherlands–organized by the American Soybean Association. Gives a brief summary of each paper presented.

Contains an interesting full-page table (p. 51) in which Oriental soyfoods are classified into two types: Non-fermented and fermented. For each non-fermented food is given the local names, description, and uses. The non-fermented soyfoods are: Fresh green soybeans, soybean sprouts (huang tou ya, Chinese), soynuts (hueh huang tou,

Chinese; iri-mame, Japanese), soymilk (tou chiang or tounai, Chinese; tonyu, Japanese; kongkuk, Korean), [roasted] soy flour (huang tou fen, Chinese), soy protein-lipid film (yuba, tou-fu-pi), soybean curd (tofu).

For each fermented soyfood is given the local names, organisms used, description, and uses.

The fermented soyfoods are: Soy sauce, miso, tempeh, natto, fermented tofu, and fermented black soybeans.

Soy sauce includes chiang-yu from China, shoyu from Japan, ketjap from Indonesia, kanjang from Korea, toyo and see-ieu from Southeast Asia.

Fermented black soybeans include tau-shih from China, tao-si from the Philippines, tau-cheo from Malaysia, tauco from Indonesia, and Hamanatto from Japan.

4519. Gupta, Rajendra P.; Gupta, Rashmi R. 1985. Process for making soymilk with no beany flavor. *Canadian Patent Application* 477,902. March. *
• ***Summary:*** Note: Rashmi, the co-inventor, is Rajendra's wife.

4520. Laidlaw, Maggie; Mercer, Nina J.H. 1985. Serum cholesterol, triglyceride and lipoprotein response in hypercholesterolemic males to replacement of cow's milk with a soy beverage (Abstract). *Federation Proceedings* (*FASEB*) 44(5):1498 (Abst. #6360). March.
• ***Summary:*** Isolated soy protein partially replaced animal protein in the diet of 19 subjects for 56 days. The total cholesterol of all subjects was lowered 4%, but that of the responders was lowered 8.5%. There was no significant change in LDL or VLDL cholesterol. Address: Dep. of Family & Consumer Studies, Univ. of Guelph, Guelph, Ontario N1G 2W1, Canada.

4521. Lee, Judith Fox. 1985. [Plenty Canada has been expanding its work...] (Brochure). Lanark, ONT, Canada: PLENTY Canada. 4 p. March. [Eng]
Address: Lanark, ONT, Canada.

4522. Leonard, Tom. 1985. How to make your own soymilk. Easy, economical, and delicious. *East West Journal.* March. p. 20-21.
Address: Massachusetts.

4523. **Product Name:** Soyarella (Imitation Soy-Based Cheese Containing Casein; Later also called Soy Mozzarella).
Manufacturer's Name: Nature's Best Co. (Marketer). Distributed by Neshaminy Valley Natural Foods of Huntingdon Valley, Pennsylvania.
Manufacturer's Address: Osseo, Michigan.
Date of Introduction: 1985. March.
New Product–Documentation: Talk with Richard Kane. 1985. May. Richard is a piano tuner and president of Richard Kane Co. of Mill Valley, California (phone 415-388-3310), a company he started to distribute Soy Mozzarella. He has no idea who makes the product or where it is made.

Medoff. 1985. Whole Life. June. p. 26-27. Soy Mozzarella sells for about $4.79 a pound, but little information is available about the manufacturer or ingredients. It may be a new name for Soyarella. Medoff. 1986. Whole Life. June. p. 82-84. "Will the Real Soy Mozzarella Please Stand Up."

Talk with John Moore of Healthy's Inc. in Hawaii. 1986. Aug. 4. Phil Margolis of Neshaminy Valley Natural Foods of Huntingdon Valley, Pennsylvania, sent 100 lb of Soyarella to Hawaii but would not send the name of the manufacturer or the list of ingredients. Soyarella was analyzed by Anderson Clayton, who said that it contains less than 10% soy protein. It has got to be bogus; he is appalled.

Medoff. 1986. Whole Life. Oct. p. 54-56. "Imitation Cheese Raises Suspicions. Independent Lab Tests Prove Soyarella Hoax; Large Quantities of Casein Found in So-Called 'Soy' Cheese. Note: This is the earliest known soy product which contained casein but also claimed to be non-dairy.

San Francisco Vegetarian Society Newsletter. 1986. Nov/Dec. "Richard Kane, distributor of Soy Mozzarella, still insists that the product contains no dairy or casein." Medoff. 1987. Whole Life. June/July. p. 49-50. Whole Frauds in the News. Soyarella Hunt Update." This imitation Mozzarella cheese claimed to be non-dairy, but was later found to contain 15% casein. Whole life obtained very reliable information that James Harper of Nature's Best company of Osseo, Michigan was the "source" of this product. They tried to get hold of Mr. Harper, but he wouldn't return calls.

Talk with Richard Kane. 1987. Sept. He never found out who made Soyarella. As far as he knows, it is no longer being made. He bought it from Mark Stroud in Cincinnati, Ohio, who runs a health food store & restaurant named Great American Health Foods (Phone: 513-541-8333 or 541-6782). It melts. The ingredients are said to be: Soymilk, water, organic soybeans, soy oil, vegetable gum, vegetable enzyme, lecithin, natural flavor, and salt. The Florida Dept. of Health has testified that it contains soymilk and nigari.

Talk with an expert on soy cheeses in America who wishes to remain anonymous. 1994. April 13. Nature's Best did not make Soyarella, though they may well have marketed it. He has talked with the owner of the company that made Soyarella who said: "Some guy started buying imitation mozzarella cheese from us. The product was regular mozzarella cheese in which soy oil replaced all of the butterfat. It contained no soy protein. This guy would come in the middle of the night with a pickup truck. He would pay cash and did not want an invoice because he did not want to leave a paper trail, then he would disappear. We never knew what he did with our imitation cheese. One day he just stopped calling in and ordering the product. We never heard

from him again and we could not reach him because he never gave us his phone number. We did not know about the name Sojarella or that it was being mislabeled–until later."

Talk with another expert on soy cheese in America. 1994. April 26. He thinks Soyarella was made by Savoldi Cheese Co. in New Jersey or Pennsylvania. They make cheese analogs.

4524. Public Sector Consultants, Inc. 1985. The potential for expanding the Michigan soyfoods industry. In: 1985. The Potential of Food Processing for Economic Development in Michigan. PCS, Knapp's Centre, 300 S. Washington Square #401, Lansing, MI 48933. See p. III-45 to III-67. 28 cm. [47 ref]

• ***Summary:*** Michigan soyfoods manufacturers include Michigan Soy Products (Royal Oak; Tofu, soymilk; 1,650 lb/week of tofu), Oryana Soy Shop (Traverse City; Cooperative. Tofu, tempeh, soysage; 275 lb/week of tofu), The Soyplant (Ann Arbor; Cooperative. Tofu, tempeh, tempeh burgers, soymilk, dofugan, soysage; 7,500 to 10,000 lb/week of tofu), INARI Ltd. (Mason; Soynuts), Michigan Farm (Bitely; Miso), Hercules, Inc. (Harbor Beach; HVP), Eden Foods (soymilk importer, which hopes to build a soymilk plant in Michigan), and Midwest Natural Foods (Ann Arbor).

"Hercules produces nonfermented soy sauce [HVP] and sells its product to large final producers, such as La Choy and Beatrice Foods, located outside Michigan for sale under their labels." This report was prepared for the Michigan Dept. of Agriculture. March 15. Address: Lansing, Michigan.

4525. Rosario, R.R. del; Maldo, O.M.; Macias, A.N. 1985. Development of improved vegetable milk formulation. *Philippine Agriculturist* 68(1):112-17. Jan/March. [11 ref]

• ***Summary:*** Soymilk was made from whole soybeans using coconut milk as a masking agent. Using the traditional hot-grind process, the optimum level of coconut milk to effect masking was 23 ml per 750 ml of soymilk. The bland tasting soy-coco-milk was then used to produce various flavors. Address: Inst. of Food Science & Technology, UP at Los Baños, College, Laguna 3720, Philippines.

4526. Russell, Nathan; Cassaday, K.; Keyser, Janet M. 1985. Institute workshop sparks interest in production of soybeans to fill demands of nutrition clinic. *IITA Research Briefs* 6(1):2-2. March.

• ***Summary:*** Describes how Nigerian mothers come to the Kersey Home in Ogbomosho, Nigeria, to make soymilk for their babies. "Fifteen months ago, Ruth Womack, a missionary nurse who has for 29 years operated a clinic in Ogbomosho, Nigeria, to combat the effects of protein deficiency in children, attended a soybean utilization workshop at IITA. Miss Womack came away from the workshop with a new solution to the children's health crisis at her clinic, where she was using imported canned soymilk supplemented by 'blood cheese' made from boiled animal blood to restore the vitality of the children. She learned how Nigerian women could make soymilk themselves and escape the difficulty of obtaining expensive imported supplies. 'We are certain that soybeans are the answer to the malnutrition problems of West Africa,' Miss Womack says."

The Kersey Home was founded in the early 1920s by a Southern Baptist Convention missionary nurse. The Home is now run by a staff of 19 on both an outpatient and inpatient basis. "Last year the clinic had more than 24,000 outpatient visits. At any given time the clinic is temporarily home to about 40 severely malnourished children who are placed on a diet consisting mainly of various traditional foods fortified with soybean. Meals are prepared by mothers or guardians, who attend weekly classes given by staff members on the use of soybeans in making soups, soymilk, and other foods... Many of the women who come to the home already are engaged in agriculture. The objective now is to make them just as capable in growing soybeans as they have been in using them." Address: IITA, Ibadan, Nigeria.

4527. Shurtleff, William; Aoyagi, Akiko. 1985. The book of tempeh: The delicious, cholesterol-free protein. 2nd ed., revised & updated. New York, NY: Harper & Row. 175 p. March. Illust. by Akiko Aoyagi Shurtleff. Index. 28 cm. [374 ref]

• ***Summary:*** Contains 130 Western-style and Indonesian recipes. Appendix A: "A brief history East and West," is extensively revised from the earlier Professional Edition, and discusses the world's earliest known reference to tempeh in the *Serat Centini* manuscript, which was probably written in about A.D. 1815. The history of tempeh in the Europe, Australasia, in the United States has also been updated and expanded.

Appendix B: "Tempeh makers in the West" has also been updated and expanded. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549 USA.

4528. *Grocer* (*The*) (*England*). 1985. Soya milk spearheads move into yogurt, ice cream. April 6. p. 23.

• ***Summary:*** Michael Cole, managing director of Soya Health Foods of Trafford Park, Manchester, reports that he is selling about £3 million worth of his new Sunrise soya milk each year, and producing 46,000 gallons a week in half-liter aseptic Tetra Pak cartons. Major grocery chains have shown great interest in the product. Most competing soya milks are imported to England. Cole imports only his soya beans–from Canada. His company's biggest competitor is Granose, which is selling through Safeway and other outlets.

Cole presently has to feed his okara, a by-product of soymilk production, to pigs. "But in the next few weeks we will be installing a vegetarian sausage and burger plant which will take care of that."

Cole is a former health food shop owner who has all

been involved in the marketing and manufacturing side of the trade, not only in England but also in India and America.

A large photo shows Cole standing next to stacked cartons of his Sunrise Soya Milk. The caption reads: "'Soya yogurt possible–Michael Cole."

Note: This was the article that led to the founding of Genice in Wales. Ray Pierce, who was with Classic Ices in Wales at the time read the article, learned that Michael Cole of Soya Health Foods Ltd. was planning to make a soy ice cream, then contacted Cole and offered to work with him in developing the product. It became Classic Ice's first non-dairy ice cream. Seeing its potential, Ray and Irene Barclay left Classic Ices and started Genice. Address: Manchester, England.

4529. Central Soya Co., Inc. 1985. Central Soya to acquire Remington protein plant [from Griffith Laboratories, U.S.A., Inc.] (News release). 1300 Fort Wayne National Bank Building, Fort Wayne, IN 46802. 2 p. April 11.
• ***Summary:*** The plant in Remington, Indiana, which employs 41 people, produces a line of functional soy protein concentrates which, when used in cooked meat products help retain juices and improve cooking yields. Primary customers are meat processors that produce cooked, portion-controlled meats. The product is also used in dietary beverages and protein drinks. Trademarks included in the acquisition are GL-301 and Promax. Central Soya currently is the leading marketer of refined soy lecithins in the U.S. and markets soy proteins that are produced at its nearby Gibson City, Illinois, soybean processing plant. "The Remington and Gibson City operations will complement each other well and offer some significant manufacturing efficiencies." Central Soya has annual net sales worldwide of $1,730 million. Address: Fort Wayne, Indiana. Phone: 219-425-5298.

4530. Praskin, Laurie Sythe. 1985. New developments at The Farm and with Plenty (Interview). Conducted by William Shurtleff of Soyfoods Center, April 15. 3 p. transcript.
• ***Summary:*** Laurie has just returned from a Plenty Board of Directors meeting at The Farm in Tennessee. Only 300 people are living there now–it has a deserted feeling. But the Plenty meeting was good. Plenty is doing some excellent work with soyfoods in the Caribbean (especially on Dominica), and in Lesotho. There were color slides shows of each program. Their soy dairies there are selling soyfoods.

The Farm Soy Dairy in Tennessee is now run by Ron Maxen and Michael Lee. They sell 100 lb/week of tofu, half of it off The Farm in 1-gallon plastic bags that hold 5 cakes each, or in tubs. On The Farm it sells for $0.90/lb. Off The Farm it sells for $0.75/lb in bulk or $0.85 in tubs. Their yield averages 2 lb of firm tofu from 1 lb of soybeans. They do all their own distributing. They also make 150 gallons/week of soymilk sold as such plus another 4,500 to 5,000 gallons/month for ice bean (2 runs a month). Twice a month they load it into a milk truck and ship to an ice cream company near Memphis. Also 15-20 gallons/week of soy yogurt and 80-90 lb/week of tempeh is sold on The Farm.

The soy dairy in Lesotho is beautiful, housed in a traditional stone hut with a thatched roof. Inside are white walls, a concrete floor, and drains. It is making a little soymilk and soymilk ice cream. It has a nice little Okita stainless steel mill that runs off a generator and also a bicycle-powered mill. They are also growing some soybeans now. Address: 17969 Oak Dr., Los Gatos, California 95030.

4531. Shurtleff, William; Aoyagi, Akiko. 1985. History of soya and the soybean development program in Sri Lanka. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 31 p. April 16. Unpublished typescript. Available online at www.soyinfocenter.com.
• ***Summary:*** www.soyinfocenter.com/HSS/ AsSoSriL1. A comprehensive history of the subject. Contents: Introduction. Demographic background. Early history of soya in Sri Lanka. Meals for Millions in Ceylon (1955-1972). Establishment of Sri Lanka soybean development program. A brief chronology of key events: 1973-. Activities of the soybean development program: summary. Soybean production project. Soyanews. The Soyabean Foods Research Center. Role of Sri Lankan government and Thriposha. Commercial production of soyfoods. Institutional use of soyfoods: hospitals, prisons. Ongoing training abroad. Future prospects for soybeans and soyfoods. Conclusion.

Note: By the year 2000 it was clear that the soybean programs that had been so active during the period from 1955 to 1990 had not succeeded in helping the soybean to take root permanently in Sri Lankan food culture and agriculture. We would suggest several reasons. (1) The Meals for Millions program ended up as basically a food giveaway program, which was unsustainable. (2) The program that involved the University of Illinois and INTSOY was conceived by the government with relatively little focus on starting new business in Sri Lanka. When the government lost interest or money, the program stalled and eventually fizzled out. (3) The Soyabean Foods Research Center used state of the art technology from the USA and Europe. But this technology was inappropriate in Sri Lanka except for potential large soyfood processing businesses. The Center would probably have been much more effective if it had been conceived as a center where people who wanted to start new businesses came to learn how to make soyfoods, such as tofu, soymilk, soy yogurt, roasted soy flour, etc. using relatively simple and inexpensive appropriate technology, then returned home with a small loan and with the necessary equipment, plus plenty of follow-up from the program. (4) The idea of making soyfoods at home has never worked anywhere in the world; it takes too much time. Making them on a village level will work if the village is large enough to support one person who makes the soyfoods or, equally

good, if a group of people in the village forms a cooperative, individuals or small teams can make one or more soyfoods on a rotating basis. That way each member would get fresh soyfoods each day free of charge. (5) The program gave little emphasis to edamame / green vegetable soybeans as a new garden vegetable. (6) From about 1983 until 2009 there was a terrible civil war in Sri Lanka between the militant Tamil Tigers in the north and the government of Sri Lanka in the south. The Tigers fought to create an independent Tamil state named Tamil Eelam in the north and the east of the island. After a 30 year long military campaign, the Sri Lankan military defeated the Tamil Tigers in May 2009. But this war took the government's attention and resources away from many other worthwhile projects–including soybeans and soyfoods. Address: Lafayette, California. Phone: 415-283-2991.

4532. Leung, Carolyn. 1985. Taxing time for Vita. *South China Morning Post.* Business section. April 21. p. 27. Sunday. [Eng]
• ***Summary:*** In Hong Kong, there is a dispute with the Financial Secretary, Sir John Bremridge, as to whether Vitasoy should be taxed as a soft drink or whether it is exempt because of its nutritional value and the fact that it is not carbonated. A tax on all soft drinks was announced Feb. 27. There is another dispute with the government of China as to whether the "Vita" in Vitasoy is a generic term and therefore unable to be registered. A factory in Fushan, China, is now making large quantities of a soy beverage using the Vitasoy name. Winston Lo, president of the Beverage Manufacturer's Association, says that 320 million liters of non-alcoholic beverages are sold annually in Hong Kong. Also discusses the Guang Ming Dairy Farm.

4533. Seiler, W.O.; Staehelin, H.B. 1985. Perfectionnement d'un régime standard utilisé par sonde gastrique en gériatrie [Perfecting a standard regimen used by a gastric probe in geriatric patients]. *Medecine et Hygiene* 43:1448-50, 1453-54, 1456-57, 1460. April 24. [39 ref. Fre]
• ***Summary:*** About the effectiveness of Galactina Diaetetica's Naga-Sonda soy protein drink used for enteral feeding of ten geriatric patients. Address: 1. Medecin-chef de la Clinique medicale geriatrique, Hopital cantonal de Bale, 4031 Bale.

4534. Chan, Gilbert. 1985. Business owner sings tofu's praises. *Marin Independent Journal* (*Novato, California*). April 27.
• ***Summary:*** Bill Bramblett, a former breakfast cook at the Sleeping Lady Cafe, a musician and owner of Wildwood Natural Foods in Fairfax, California, has written a song titled "Tofunction." The lyrics go: "White 'n' creamy / Hot 'n' steamy / Smooth 'n' dreamy / Soya beany. In less than 5 years, Wildwood has grown from about 12 workers and $52,000 in yearly sales to 47 employees and more than $1 million sales. Each day more than 1,300 people enjoy a Wildwood sandwich, and Wildwood is proud to be one of the first companies in America to make and sell a sandwich that contained tofu. The company distributes tofu, tofu sandwiches, and other healthy foods to about 100 stores in the Greater Bay Area from Mendocino in the north down to Santa Cruz in the south. Most of the stores are located in Marin County, San Francisco, the East Bay, and the Peninsula.

Bramblett, who sports a button reading "I've joined the tofu revolution," is a partner in the business with Paul Orbuch and Frank Rosenmayr. "Wildwood began in August 1980 in the kitchen of the Sleeping Lady Cafe [sic]. Brown rice and tofu sandwiches were prepared every morning for the Good Earth Natural Foods in Fairfax."

"The company later added salads, health snacks and soy milk to its line. Wildwood also distributes natural foods such as tacos and burritos for other health food companies."

Photos show: (1) Tofu maker Greg Whalen as he pours soaked soybeans into the hopper of a grinder. (2) Bill Bramblett, seated at a desk with hands folded, wearing his Wildwood T-shirt and tofu revolution button.

4535. *Food Processing* (*Chicago*). 1985. Tofu-based non-dairy frozen desserts: Reduced calories, no cholesterol, no lactose are health implications. 46(4):41-42. April.
• ***Summary:*** Discusses the introduction and composition of Barricini Tofulite. "The first introductions were made in New York during the early part of February." The company also plans to introduce soy-based "cheesecake, frozen novelties, lasagna, frozen tofu burgers, frozen tofu enchiladas, soy-based yogurt, and soy milk."

4536. Kass, Monica. 1985. High-tech soymilk pouch creates market success: Stand-up retortable pouches for soymilk boom in natural-food stores, break into supermarkets. *Packaging.* April. p. 36-37.
• ***Summary:*** On the cover of the magazine and the first page of the article is a large color photo of Westbrae Natural Cocoa-Mint Malted. On the second page is a color photo of ten brands of soymilk in stand-up gussetted retort pouches, the type of soymilk packaging now most popular in America. "Marusan Ai and San-iku Foods are two Japanese companies currently processing and retort packaging soymilk for export to the USA. Marusan forms the retort pouch from multilaminate rollstock supplied by Toyo Seikan Kaisha Co. (Toyo Seikan is licensed by Doy-n-pak [Doypack] to produce the material.) And San-iku Foods retorts soymilk in preformed pouches, also made from the Doy-n-pak patented lamination.

"Sources say the fact that Doy-n-pak's design patent on the stand-up, gusseted pouch runs out this fall has prompted some scrambling among American materials suppliers who

see the potential of the stand-up pouch and want to establish market position with the pouch.

"American companies importing soymilk in the preformed retort pouch include Westbrae Natural Foods and Great Eastern Sun. Eden Foods Inc. was the first company out with soymilk in the rollstock formed pouch. Structural differences between the two pouch varieties are minimal. The rollstock-formed square-cornered pouch must be opened with a scissors and is somewhat narrower in shape than the round-cornered preformed pouch which has an easy-open feature.

"Lamination for both pouch types consists of an outer layer of PET laminated to nylon, aluminum and an inner layer of polyolefin film that meets FDA food contact material requirements.

"Processing methods Marusan and San-iku use to adapt soymilk to American tastes differ, but both companies retort pouches up to 250ºF giving them an unlimited shelf life.

"Graphics reflect positioning: The real difference between the various retorted soymilks is in positioning. Eden Foods is strictly interested in promoting the product for its nutritional benefits. Great Eastern Sun's soymilk appeals to health-conscious consumers with an eye on trends. And Westbrae has two soymilk varieties. One is a plain soymilk, targeted for the health-conscious crowd. The other is a line of dessert-type malted drinks–'fun' products the company is targeting at younger consumers."

Note: This is the earliest document seen (Sept. 2011) with the term "high-tech" (or "high tech") in the title in connection with soyfoods–in this case soymilk, historically a low-tech product.

4537. Kueneman, E.A.; Russell, Nathan. 1985. Soybean utilization: Its relevance to Africa's food crisis. *Ceres: FAO Review on Agriculture and Development* 18(2):39-42. March/April.

• ***Summary:*** In sub-Saharan Africa, population growth is far outstripping food production. Protein deficiency exacts a greater toll on African children than anywhere else in the world–in part because starchy roots such as cassava and yams, are so widely consumed. There is a brisk demand for soybean products in Africa "In 1981, according to FAO figures, African countries imported about 259 000 metric tons of soybean cake and 440 000 of soybean oil." Research on soybeans at IITA in Nigeria and in various national soybean programs have largely removed traditional constraints to high soybean yields. "At a workshop held in December 1983 at Ibadan, Nigeria, 60 scientists from IITA, various Nigerian research institutes, agricultural agencies in other African countries, and two US soybean organizations, in addition to representatives from private industry, explored a range of soybean processing and utilization methods. The methods that show the most promise for Africa are village-level hydraulic extraction of oil and meal and soybean beverage production."

"There is also considerable scope in tropical Africa for direct use of whole soybeans in human food... A Belgian firm currently plans to establish a factory for producing flavoured soy milk in Benue State, Nigeria's major soybean growing area."

"In rural areas of Benin, for example, child health centres are buying full fat soybean flour as a nutritional supplement for malnourished children. The country also has a programme for training villagers in soybean production and utilization. 'Many farmers in Benin,' says P.C. Gnacadja of the National University of Benin, 'now understand how to produce soybeans and mix soybean flour with local cereals.'"

"Cameroonian researchers have developed a technique for using soybean flour to fortify 'fufu', a popular cassava preparation. By itself fufu has a protein content of only about two per cent. The addition of 10 per cent soybean flour raises the protein content to about seven per cent, without changing the product's taste. Protein-enriched fufu has been tested in two provinces of the country, according to food technologist Festus Numfor, with very promising results."

"This approach could have great impact if applied to wheat bread, which has become a kind of fast food for Africans, especially children. Combining some soybean flour with the wheat flour would not only increase the bread's protein content, but help reduce Africa's huge wheat imports, which in Nigeria alone reached 1.5 million tons in 1981. Use of such composite flours for bread is already being tried in Zambia.

"Zaire provides several striking examples of how soybeans can be incorporated into local diets and used to combat kwashiorkor or protein deficiency. G.H. Nguyen says that 300 malnourished children at the *Centre Nutritionel* in Lubumbashi receive soybean flour daily as part of their treatment. The soybeans come from local production and from church-run farms in other parts of the country. Nguyen also points out that in the area around Kananga experiments have been carried out for the past 20 years on soy food processing, use of soybeans in local diets, and related subjects. Their work has led to the establishment of a soy food factory, which increased its production from 80 tons per year in 1973 to 300 tons in 1981 and still was not able to keep up with local demand for its product. The factory's soy biscuits proved especially popular.

"In both Zaire and Rwanda, small soybean flour mills have been set up in villages. Local processing has created such a high demand for soybeans that their price in these areas now exceeds that of groundnuts and *Phaseolus* beans. These examples are modest and few, but if they can be repeated, soybeans might have a major role to play in improving the quantity and quality of African food production." Address: 1. Senior soybean breeder; 2. Editor and writer. Both: Staf, International Inst. of Tropical Agriculture, Nigeria.

4538. Levitt, M.D.; Savaiano, D.A. 1985. Lactose intolerance and yogurt. II. Diagnosis and treatment. *Practical Gastroenterology* 9(2):-. March/April. *
Address: 1. Dep. of Food Science & Nutrition, Univ. of Minnesota, 1334 Eckles Ave., St. Paul, MN 55108; Veterans Administration Medical Center, 54th Street and 48th Ave. South, Minneapolis, MN 55417.

4539. **Product Name:** [Soy Horchata (Local Fresh Beverage)].
Foreign Name: Horchata de Soya.
Manufacturer's Name: Productos Alimenticios Soyavyn.
Manufacturer's Address: Planta Soyavyn, 2a Calle Poniente No. 2-4, Lourdes, Colón, Depto. La Libertad, El Salvador. Phone: 51-0705 or 23-3554.
Date of Introduction: 1985. April.
Ingredients: Soya, morro seeds (*Semilla de morro; seeds of Crescentia alata,* a tropical tree. Traditional ingredient of horchata), peanuts, coriander, sesame, nutmeg (*nuezmoscada*), peanut butter (*pepitoria*).
Wt/Vol., Packaging, Price: 1 lb pre-printed plastic bag.
How Stored: Shelf stable.
Nutrition: Per 100 gm.: Carbohydrate 43.2 gm, protein 32.6 gm, fat 13.4 gm, ash 2.4 gm, moisture 1.6%.
New Product–Documentation: Letter and Label sent by Kris Duville of Productos Alimenticios Soyavyn. 1992. April 22. 4.5 by 11 inches. Pre-printed plastic bag. Blue and red on white. The back panel gives ingredients and simple instructions or recipes for using this product. "Soya, vida, y nutricion. Rico en proteinas, vitaminas y minerales."

Letter from Kris Duville. 1992. June 2. This product (along with 3 related products) were launched in April 1985. They are semi-soluble powders made by grinding roasted soybeans and other seeds. The powder is added to water (2 spoons per cupful) and the mixture filtered and sweetened before being consumed.

Letter from Chris Duville. 1992. Dec. 13. In 1985 PNS (formerly it was named PNNS) had soy products prepared on a 'kitchen' scale at several places in Sonsonate and Santa Ana. There was only one package for commercial products and the production and commercialization were minimal. In 1990 the "plant" in Lourdes started with soymilk and took over the production of meals from the small places. It now has about 20 persons working "full-time" and operates as a regular small business.

Note: This is the earliest known commercial soy product made in El Salvador (one of four products).

4540. **Product Name:** [Sahm Yook Soymilk (Plain)].
Foreign Name: Sahm Yook Dou Ru.
Manufacturer's Name: Sahm Yook Korean Foods.
Manufacturer's Address: 320 Panjeong-ri, Jiksan-myun, Chunwon-gun, Choongchungnam-do 333-810, South Korea.
Date of Introduction: 1985. April.
Ingredients: Soy milk, high fructose corn syrup, corn oil, rapeseed oil, salt.
Wt/Vol., Packaging, Price: 200 ml foil retort pouch (Doypack). Retails for 230 Won (6/90).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Eric C. Fehlberg. 1990. March 8. The Seventh-day Adventist food company in South Korea, Sahm Yook Foods, now makes soymilk (only plain, no flavors) packaged in Tetra Brik cartons and foil Doypack (Doynpack). The company was established in about 1978, and it began to make soymilk in May 1985. After launching soymilk, the company began to grow dramatically, as that product grew. Last year they built a very large, new soymilk plant (based on Adventist technology) and they are now about the 2nd or 3rd largest soymilk maker in Korea.

Label (Foil retort pouch). Sent by Eric Fehlberg. 1990. May 24. 4 by 6.75 inches Red, yellow, dark green, and light green on silver. Front panel says "Soy Milk" and an illustration shows 3 yellow soybeans in a green pod. The back panel shows the package being immersed in boiling water or heated in a microwave oven. So this package is probably sold during the cold months.

Form filled out and label sent by C.Y. Yoon, General Manager, Sahmyook Korean Foods. 1990. June 23. Note that on the envelope the company name is printed Sahmyook Korean Foods, but the brand name is typed 4 times on the form as Sahm Yook. The address on the envelope is 320 Panjung Jiksan Chunwon Choongnam, Korea. The soy milk in a foil retort pouch was introduced in April 1985. The same product with the same ingredients was launched in a Tetra Brik carton in July 1987. All four of the company's soymilk products contain no sugar (sucrose), chemical flavorings, or preservatives.

A brief company history. In 1981 they purchased a 31,313 square meter plant to make foods using wheat gluten. In 1984 they installed a soymilk processing plant, then began to sell soymilk starting in April 1985. Concerning prices, there are 720 Won to 1 U.S. dollar. Thus the Tetra Brik soymilk (200 ml) retails for the equivalent of US$0.31.

Leaflet for Sahm Yook soymilk products (7.5 by 10 inches, color photo). 1990. Shows 5 packages of soymilk and a glass of soymilk surrounded by fresh green vegetables and mikan oranges.

4541. Shurtleff, William; Aoyagi, Akiko. 1985. Soyfoods industry and market: Directory and databook 1985. 5th ed. Lafayette, California: Soyfoods Center. 220 p. Index. April. 28 cm. Updated every 1-3 years with a bibliographic supplement. [360 ref]
• ***Summary:*** Contents: 1. Introduction. 2. Directory of soyfoods manufacturers. 3. Directory of soyfoods support industry: Goods & services. 4. The many types of soyfoods. 5. Historical: Historically most important books and serials,

earliest references to individual soyfoods. 6. Year in review. 7. Soyfoods industry and market in the U.S. 8. Tofu industry and market in the U.S. and Canada. 9. Soymilk industry and market: Worldwide and in the U.S. 10. Tempeh industry and market in the U.S. 11. Soy sauce industry and market in the U.S. and Japan. 12. Miso industry and market in the U.S. and Japan. 13. Soynut industry and market in the U.S. 14. Natto industry and market in Japan. 15. Statistics on fermented soyfoods in East Asia. 16. Soyfoods in restaurants, delis & cafeterias. 17. Soybean crushing industry in the U.S. 18. Soy oil industry and market in the U.S. 19. Soy flour and cereal-soy blends industry and market worldwide. 20. Modern soy protein products industry and market in the U.S. 21. Soyfoods terminology and standards. 22. Names of soyfoods in major foreign languages (incl. Chinese / pinyin; Hoisin sauce = haixian jiang). 23. Soybean production worldwide and country-by-country. 24. Key institutions working with soyfoods worldwide. 25. Measures, weights, and equivalents. 26. About the Soyfoods Center & soyfoods consulting services. 27. Bibliography.

In February 1977 a Gallup poll in America showed a remarkable shift in the public's awareness of and attitudes toward soyfoods. The sampling of 1,543 adults across the nation found that: 33% believe that soybeans will be the most important source of protein in the future–ahead of fish at 24% and meat at 21%. 55% believe that "soy products have a nutritional value equal or superior to that of meat." 54% reported that they "had eaten foods containing soy protein as a prime ingredient within the past 12 months." Younger age groups living in large cities and those with college or university educations had the most favorable attitudes toward soy protein, indicating that support for soyfoods is likely to grow in the future. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4542. **Product Name:** [Sojella Soymilk].
Foreign Name: Sojella (Soja-Filtrat; Sojamilch).
Manufacturer's Name: Sojvita Produktions GmbH.
Manufacturer's Address: Hauptplatz 1, 2493 Lichtenwoerth, Austria. Phone: 02622/75494.
Date of Introduction: 1985. April.
Ingredients: Soybeans, oil, salt, soy lecithin, maple syrup or vanilla.
Wt/Vol., Packaging, Price: 500 ml glass bottle.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: 42 calories/100 gm.
New Product–Documentation: Label. 1985. 4 x 3 inches. Dark green, light green, black, and yellow-orange on white. "Sojella is suited for use as a drink, in coffee and tea, for cooking, baking, and delicious desserts. By mixing it with fruits, nuts, etc. you can make wonderful soymilk shakes. Protect from light and refrigerate. Shake before using."

Letters from Norbert Brunthaler. 1988. Jan. 4 and Feb. 2. "This soymilk was made from dehulled soybeans, alkali soak, preblanched, hot grind, open cooked, then formulated and homogenized with an ultra turax machine. Filled in bottles and sterilized. We had the same content of proteins and fats as dairy milk. We discontinued this product in March 1987 because our equipment was too small for economical production."

4543. **Product Name:** Tofu, Soymilk, Tempeh.
Manufacturer's Name: Soy Shop, Inc.
Manufacturer's Address: 210 Laredo Dr., Decatur, GA 30030. Phone: 404-377-8433.
Date of Introduction: 1985. April.
New Product–Documentation: Talk with Mr. Kich Lam. 1989. Nov. 8. He bought this business from Steve and Sarah Yurman in April 1985, and moved it to Decatur. He now makes tofu, soymilk, and tempeh. He is Chinese.

4544. Staehelin, Hannes B.; Seiler, Walter O. 1985. Kuenstliche Ernaehrung–wann und wie? [Synthetic nutrition–when and how?]. *Ernaehrungs-Umschau* 32(4):99-104. April. [19 ref. Ger]
• ***Summary:*** About Galactina Diätetica's Naga-Sonda soy protein drink. Address: Medizinisch-geriatrische Kliniken Kantonsspital and Felix Platter-Spital, CH-4031 Basel, Switzerland.

4545. *Toyo Shinpo* (*Soyfoods News*). 1985. Shin seihin rasshu-jidai [A rush of new products: Nestlé will start to sell lactic fermented soymilk in Japan this summer]. May 1. p. 7. [Jap; eng+]
• ***Summary:*** Nestle plans to sell a lactic fermented soy drink named Fandy, which is made from soybeans fermented with lactic acid. The product is sold as a concentrate, and must be diluted with water before you drink it. Their slogan is "A

14-year-old's on-the-rocks" (*mizuwari*). One 330 ml bottle will retail for 415 yen. Address: Kyoto.

4546. *Toyo Shinpo* (*Soyfoods News*). 1985. Tônyû o beesu ni–shin seihin [Tofu and soymilk dessert shop opens in Osaka]. May 1. p. 7. [Jap; eng+]
• ***Summary:*** A tofu and soymilk dessert specialty restaurant will open in April in the Kintetsu department store in eastern Osaka at Fuse city. It will be named Tofeez. It is connected with Furuichian Enterprises which owns the Tofu Kan restaurant. It will serve about 30 soyfoods including tofu ice cream, soymilk bread, tofu burgers, tofu pies, soy yogurt, etc.

On 1 April 1985 a popular Western-style tofu restaurant opened in Nagoya. Named Tcha-na-Time, it is located in the NBN Izumi Building, 1-23-36 Izumi, Higashi-ku, Nagoya, Japan, Phone: 052-951-1877. The owner is Ms. Ishiki. In addition to various soyfoods, they also serve meat and fish. Address: Kyoto.

4547. Siriwardena, T.D.W. 1985. Re: Requesting visit. Letter to William Shurtleff at Soyfoods Center, May 9. 1 p. Typed, with signature on letterhead.
• ***Summary:*** Mrs. F. Hwavitharana, a research worker attached to his center, expects to visit Canada in early July, 1985. She holds B.Sc. and M.Sc. degrees and is a research bio-chemist who has 3 years experience as a research worker at the Soybean Center.

He is writing to Shurtleff to expedite possibilities for her to visit Soyfoods Center to learn about making tempeh, tofu, and soy beverage. He proposes that she spend about 2 weeks at Soyfoods Center. A few visits to tofu and tempeh manufacturing centers in California would also be useful. Address: Sri Lanka Soybean Project, Dep. of Agriculture, Soybean Foods Research Centre, Gannoruwa, Peradeniya, Sri Lanka.

4548. Tetra Pak Inc. 1985. Tetra Pak moves U.S. headquarters to Shelton, Connecticut (News release). P.O. Box 802605, Dallas, Texas 75380-2605. May 10.
• ***Summary:*** "Tetra Pak Inc., the world's leader in aseptic packaging, has announced the relocation of its U.S. corporate headquarters to Shelton, Connecticut from Dallas, Texas.

"Tetra Pak is an international company which originated in Sweden but is now headquartered in Switzerland. The Tetra Pak Group's turnover in 1984 was approximately $1.5 billion. The company specializes in packaging systems for liquid foods. In 1984, 35 billion packages were sold in 90 countries.

"Venture Center, the new two-story office building, is situated on eight and one-half acres in southeast Fairfield County. The 55,000-square-foot building will house corporate management personnel and the regional office for the eastern U.S.

"A lease agreement with an option to purchase the property has been negotiated." "Approximately 100 people will be employed at the site by the end of 1985." Address: Dallas, Texas.

4549. Ayerst, Norman. 1985. Re: Work with Plenty in Dominica and Central America. Letter to William Shurtleff at Soyfoods Center, May 16. 3 p. Typed, with signature.
• ***Summary:*** "I received your message from Maya Shearer and am glad to hear of your interest in our Caribbean projects. Actually my wife [Sarah] and myself worked mostly on the island of Dominica. We spent 18 months there and returned to Canada on the 18th of Feb. '85.

"We worked on an integrated soybean project similar to the program that Laurie Praskin was involved in in Guatemala. My wife and I spent 6 months in Guatemala during 1980 with Laurie and all. At that time, I was responsible for the administration of the Solola Soy Dairy from the Canadian end.

"In Dominica we carried out the INTSOY variety trials and then went on spacing trails, companion planting trials and various other trials to test the long-range capacity of soybean growth in Dominica. Some of these trials were undertaken with the Government, some with the cooperative farming groups and some with individual farmers. We were somewhat overwhelmed with the response of farmers eager to try out soybeans–Dominica is a very agrarian society, by the way, and most people grow a portion of their own food. They are especially eager to find any new crops that can be sold on the local market–it is, overall, a very poor society. We have identified a few varieties that seem to be well suited for Dominica–one is R315. We obtained the original seed through the Intsoy programme and their seed originated in Cuba. It's a very fast growing variety (90 days to harvest) and seems to dry out well in the field even under damp conditions. There is definitely more work to do to identify the exact varieties suited for Dominica but I think we have made a good start and many Dominicans are now participating in the program.

"We opened our initial Soya Shop in downtown Roseau (the Capital pop. 12,000) in May of 1984. Originally, we produced soymilk and tofu which we incorporated into popular local recipes. A fritter that was tofu / okara / bean based became a very big hit in town and surpassed our expectations of immediate interest in soyfoods. A sandwich spread based on tofu / okara and 50% local vegetables was also very popular–and of course the soy based ice cream (especially peanut flavour) is very popular.

"From the original shop, we moved to the edge of town–the most densely populated area of Dominica–to larger premises on the main road south–down the coast. Here we were able to expand our production facility and go more into training programs and wholesaling products. (We do continue with the retail outlet using soyfoods in local recipes.)

"A second soy shop has opened in Roseau called Soy Kweyol. This was opened by a woman who had previously worked with our program. Her name is Natalie Andrews and she has had a history of experimentation with soybeans/soyfoods in Dominica. We are currently working with Natalie to produce flours from local produce (Natalie initiated this project 5 yrs. ago)–cassava, banana, pumpkin, breadfruit etc. With these flours we are adding toasted soyflour to bring up the protein content and experimenting with tastes and recipes to see what the potential of soyflour is in Dominica.

"Through the Ministry of Education we have been able to set up a series of soyfoods preparation courses–for the home and small business. These courses are part of their adult education program and summer school program. There is some talk of the schools incorporating the preparation of soyfoods into their home economics courses.

"The Soya Shop has been purchasing any soybeans that farmers are growing, with most being resold or given away as seed stock. This is the cycle that we are working towards being self perpetuating in the hands of Dominicans. We are working towards a number of small-scale farmers growing enough soybeans to supply the local market.

"I think that I have touched on the basic outline of the soy aspects of the Dominican project–we also have been working on community development projects such as building an addition onto a small rural school, supplying a school with lighting, building a breakwater with a fishermen's group etc. -

"Plenty Canada has also undertaken an integrated soybean project in St. Lucia, Jamaica, and Antigua.

"I have enclosed some articles and part of a report on the Dominican project and hope that this gives you an idea of what we have been doing. I would appreciate receiving any comments or further queries from you. I have a high regard for your tofu books and we have used them often.

"My wife, Sarah, has become somewhat of an expert on soy cookery and nutrition over the past 15 years. She is very good at making soyfoods taste extremely delicious. The initial success of our Soya Shop in Dominica can be attributed, to a great degree, to Sarah's soy experience and the participation of some very enthusiastic Dominican women.

"As far as the slides go, I am currently working on duplicating my originals. I am also making prints from negatives. When I have this completed I will let you know and then perhaps we could make an arrangement whereby you can see them.

"Thanks again for your interest, wishing you all the best, Norman Ayerst."

The letter ends with two handwritten addresses on page 3: (1) Noble Bean, c/o Allan & Susan Brown, R.R. 4, MacDonald's Corners, Ontario, Canada. Sarah [Ayerst] has been working with Allan & Susan since we returned from Dominica. (2) Norman's home address.

Letter (e-mail) from Norman Ayerst. 2008. Aug. 3. "At the times we were working in Guatemala and Dominica, we were working for Plenty Canada–and Plenty Canada was in pretty close partnership with Plenty International on planning and executing the programs." Address: 64 Oxford St., Toronto, Ontario M5T 1P1, Canada. Phone: 416-920-2668.

4550. *Dairy Industries International.* 1985. Soya Health Foods opens in Manchester. 50(5):43. May.
• ***Summary:*** "A factory to produce soya milk has been opened in Trafford Park, Manchester. UK supplies of this low fat, high protein drink have previously been imported from Belgium, France, and Germany.

"Sales [of soya milk] in the UK have increased five-fold in the last year to total £3.5 million; the company behind the new venture, Soya Health Foods, estimates that the market will reach £20 million within the next three years. They are already producing 46,000 litres a week, packed in cartons and sold under the brand name of Sunrise. Later in the year, they are hoping to launch a soya yogurt and soya milk ice cream. There are also plans for a soya milk by-product, presently sold as pig feed." Note: Taking the retail price at UK£0.64 per liter, these values correspond to 5,600 tonnes of soya milk for 1984 and 32,000 tonnes projected for 1988. Address: England.

4551. **Product Name:** Edensoy (Soymilk) [Cranberry].
Manufacturer's Name: Eden Foods, Inc. (Importer). Made in Japan by Marusan-Ai Co., Ltd.
Manufacturer's Address: 701 Tecumseh, Clinton, MI 49236.
Date of Introduction: 1985. May.
Ingredients: Plain: Water, soybeans, kombu seaweed, pearl barley. Carob: Water, soybeans, pearl barley, barley malt, carob, kombu.
Wt/Vol., Packaging, Price: 6 fluid oz (180 ml) free-standing retort pouch.
How Stored: Shelf stable.
Nutrition: Plain: 89.9% water, 1.9% protein, 1.5% fat, 7% carbohydrates, 48 calories/100 gm.
New Product–Documentation: Spot in Whole Foods. 1985. March. p. 65. "Berry added: Eden Foods has expanded its soy beverage line with Cranberry Edensoy... It is available in a 6 oz. retort pouch... Suggested retail price is 79¢ per package." A small photo shows the new packages.

Dairy Record. 1985. Sept. p. 86. Cranberry Edensoy was added in May 1985.

4552. *Natural Foods Merchandiser.* 1985. 6th Annual Natural Foods Merchandiser Merchandising Awards. May. p. 1, 48, 49.
• ***Summary:*** Three soy products won awards. A color photo shows each. Gold: Naturally Preferred Miso Mustard by

American Natural Foods, Malteds by Westbrae; Silver: Ah Soy by Great Eastern Sun. Color photos show all three products.

4553. **Product Name:** [Sojal Soya Milk (Natural, Banana, Strawberry, or Carob)].
Foreign Name: Sojal Soja Melk.
Manufacturer's Name: Pharma Food (Distributor). Made [actually marketed] in England by Haldane Foods.
Manufacturer's Address: Netherlands.
Date of Introduction: 1985. May.
Wt/Vol., Packaging, Price: Liter cartons. Natural is Hfl. 3.10 retail. Flavored is Hfl. 3.30.
New Product–Documentation: Food Report (Lehmann). 1985. May. 1986. June. Two varieties of Sojal soya milk are newly available: one contains 9% soya flour and honey, the other has no added sweetener. See also the Sojal soymilk imported to England by Haldane from a company in France; it is made from powdered Brazilian soybeans.

4554. *Soya Foods* (*ASA, Europe*)**.** 1985. The Soyafoods Interview. Lucas Meyer. May. p. 2-4.

4555. STS–Soya Technology Systems. 1985. Containers for soymilk (Leaflet). 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 2 panels each side. Each panel: 30 x 21 cm. Also published in Chinese. [Eng; Chi]
• ***Summary:*** Color photos (see next pages) show carton containers (Tetra Brik, Combibloc, Pure Pak), plastic bottles (incl. Remy/Serac Aseptic UHT), glass bottles, cans, and plastic bags (Prepac/UHT, Doypack/Toyo Seikan standing pouch/retort sterilized). Brands include Granose, Marigold, GranoVita, Soy Moo, Magnolia, No Cow, Vegemil, Vitamilk, Amofood, Milho Verde, PureHarvest, Yeo's.

Note 1. Milho Verde is made by Pennone–Produtos Alimenticios Ltda., Av. Adolfo Pinheiro 1247, Sao Paulo, Brazil. Their factory is at another address.

Prepac is at 62 Rue Pasteur, 94800 Villejuif (a commune in the southern suburbs of Paris), France. Address: Singapore.

4556. **Product Name:** [Tofu Salad Dressing].
Foreign Name: Tofu Salat-Creme.
Manufacturer's Name: Tofukost-Werk TKW GmbH.
Manufacturer's Address: Siemensweg 1, D-4724 Wadersloh-Diestedde, West Germany. Phone: 02520-1300.
Date of Introduction: 1985. May.
Ingredients: Tofu, soymilk, soy oil, mustard, cane sugar, fruit vinegar, sea salt, citric acid.
Wt/Vol., Packaging, Price: 150 gm or 10 kg plastic tub.
How Stored: Refrigerated, 6 week shelf life at 8ºC.
Nutrition: Protein 6.6%, water 62.8%, fat 20.0%, pH 4.4, ash 1.6%, carbohydrate 6.4%, energy 243 calories/100 gm.
New Product–Documentation: TKW color products catalog. 1988. April. Shows Labels. Red, light green, and orange on white. Label. 1988, received. 3.25 inch diameter.

4557. *Times of India* (*The*) (*Bombay*)**.** 1985. Classified ad: Required the following in bulk quantities. June 9. p. 13.
• ***Summary:*** (1) Malt extract. (2) Edible groundnut flour. (3) Pectin... (6) Soya milk. (7) Natural food colours.

"Manufacturers may contact Box F 592-, Times of India, Bombay 400 01 with detailed specification."

4558. Roger, Patrick. 1985. [Re: New developments with soyfoods in France, and the Association Rurale des Travailleurs sur Soja]. Letter to William Shurtleff at Soyfoods Center, June 12. 3 p. Typed, with signature. [1 ref. Fre; eng+]
• ***Summary:*** "Many of the farmers in my region have told me that they grew soybeans during World War II. It seems that this was a sort of culture (tax or duty on which the farmers were owing/in debt), for the German occupants considered the soybean to be a strategic commodity.

"More recently, in 1974, it is under the impetus of Mr. Jean Claude Sabin, sometimes called 'Mr. Soja,' that the culture of soya has taken off again in France, starting with the Department of Tarn. Mr. Sabin is presently president of various organizations actively involved with popularizing soybean culture in France. I'd like to point out the little newsletter edited by l'ONIDOL (Office of Oilseed Development) titled *L'Inoculum.* It contains extensive useful information on the culture of soya in France. Subscriptions are free. Write: L'Inoculum, 17 rue Fleurance, 31400 Toulouse, France.

"Finally a little history of l'ARTS. Our association was officially created in December 1983 by Olivier Attie, who is today its president, by Jacques Isnard and Alain Lacombe, who manage SOJADOC, which makes tofu and tofu products, and by myself who am now director. The base of the association is now widened to include other members. Those in charge of businesses such as Mrs. Sakaguchi, Colin, Wintzer, Garcia; people working in public organizations; soy researchers; wholesalers. Presently the three of us most actively involved are (1) Olivier, who is most particularly interested in the development projects in Africa. (2) Anne Caderas de Kerleau, who is collecting important documents and writing a book on soya, and (3) me, who keeps people connected by publishing *La Lettre de l'ARTS* and does investigations as on markets, adapted varieties of soybeans, etc.

"By the way, we have a project to launch in the near future the idea of a European Soyfoods Manufacturers Assoc. (but there is no good equivalent for the word 'Soyfoods' in French). We are in the process of working out the laws but the divisive political and linguistic context in Europe makes these things very delicate. In this body we will try to work together to establish standards for production and labeling, to

protect soyfoods from the attacks of the dairy lobbies, and to publish a 'Soyfoods Letter' in English and French...

"Here is a list of recent arrivals on the market in France: Sojadoc (fresh tofu and tofu cuisine), Sojagral Ouest (tofu), La Maison du Tofu (tofu), L'Athanor (tempeh), Sapov (soymilk, natural or deodorized)... It seems that 1986 will be the boom year for soy products in France...

"Our training session on tofu took place in November 1984 at Penne and Corbarieu. It has been followed by Mani Coulibali of Senegal, who has since been sent by AGROPOL [Association pour le Developpement International Agronomique et Industriel des Proteagineux et des Oléagineux] as a soya expert for Africa, and by Koffi Aquereburu, who is looking for partners/financiers for a tofu project in his country, Togo.

"I have previously set up a shorter session in the same way (at the same time) a dossier of study (in Spanish) for Hidegar Garcia of Venezuela in view of setting up an experimental shop in that country. I have had no news from him since then.

"The next stage, organized by Olivier Attie, will take place in July by a person from Burkina Faso (formerly Upper Volta) in view of implementing a low technology shop in his country." Address: Director: 1. La Guitarde, 82370 Corbarieu, France; or 2. ARTS (Association Rurale des Travailleurs sur Soja), Presbytere de Saint-Paul-de Mamiac, 81140 Penne du Tarn, France. Phone: 63/56 34 09.

4559. Torii, Yasuko. 1985. Re: New developments with soyfoods Japan. Letter to William Shurtleff at Soyfoods Center, June 13. 2 p. Handwritten.

• ***Summary:*** Discusses the Soybean Symposium in Tsukuba, The Book of Tempeh, History of Tempeh in Japan, Bruce Walker (who is doing soba research). Marusan's tempeh is not selling very well at Mitsukoshi or other department stores (more and more Japanese like instant foods). Article in Hikari. Two natural foods restaurants named Alicia and Healthy-Kan are doing lots with tempeh on their daily menus. She learned a new method for making homemade soymilk from Miyazaki Gakusha: Drop 200 gm clean whole soybeans into 400 cc boiling water. Allow to return

to the boil, then boil for 4 to 4½ minutes; this inactivates lipoxygenase. Turn off the heat and add 700 cc water. Soak for 5-6 hours. Blend until smooth in a blender. Bring to a boil and simmer for 8 minutes, Strain and serve. Address: Kamitsuchidana 324, Ayase-shi, Kanagawa-ken 252, Japan. Phone: 0467-76-0811.

4560. Wilson, Geoff. 1985. Drinks pinta soya day? *Age* (*The*) (*Melbourne, Australia*). June 15.

• ***Summary:*** "The Australian dairy industry may soon face the greatest challenge to its markets. Its rival will be a range of soy-bean products indistinguishable from dairy foods.

"The soy-bean industry can produce milk, yoghurt, ice cream and cheese that not only taste like dairy products, but are cheaper and are perceived in some quarters to have health advantages."

4561. Crump, Constance. 1985. FDA probing use of local soy beverage. *Ann Arbor News* (*Michigan*). June 19.

• ***Summary:*** "The inquiry concerns Edensoy, a soy drink made by Eden Foods of Tecumseh and manufactured in Japan by the Marusan Co. A recall of the product's explanatory pamphlet is expected, probably today. In Toronto, Ontario [Canada], a woman fed her infant Edensoy as the child's only food for five months after she developed difficulty in nursing, said Mike Potter, president of Eden Foods. At six months of age, the baby was hospitalized for malnutrition." The FDA investigation was confirmed by Alan Hoeting, FDA district director in Detroit.

The pamphlet was written by Potter in 1983 to explain the uses of Edensoy. About 9,000 copies were distributed in 1983 and 1984. It contains one sentence [actually one page] which could easily be misinterpreted to mean that Edensoy could be used as an infant formula.

"Eden's Store and Deli, 330 Maynard, was once part of Eden Foods, but there has been no connection in ownership or management for several years." Address: News Staff reporter.

4562. Food and Drug Administration. 1985. [Warning on use of Edensoy and similar soy drinks as an infant formula] (News release). Washington, DC. 1 p. June 19. Address: Washington, DC.

4563. *Import Alert* (*U.S. Food and Drug Administration*). 1985. Edensoy and other soy drinks that may serve as infant formulas. No. 40-01. June 26. 3 p. PAC Code 17R043. ADFS-DFRG (HFO-415). Field Compliance Branch.
• ***Summary:*** Also concerns Soy Moo (Belgium, Health Valley); Sun Soy (Belgium); Ah Soy (Japan, San-iku Foods, Great Eastern Sun); Westsoy (Japan, San-iku, Westbrae), Vitasoy (Hong Kong), Malteds (Westbrae), Marusan. Address: Washington, DC.

4564. Bray, Franco. 1985. Un gelato vegetale a base di soia [Vegetable ice cream based on soya]. *Industrie Alimentari* 24(228):513-15. June. [12 ref. Ita]
• ***Summary:*** Discusses methods and procedures for making a bland tasting tofu for use in Tofutti, a non-dairy ice cream made in the USA. Tables compare the chemical composition of cow's milk and soymilk, the dry okara (*residuo secco*) from Amsoy, Vinton, and Weber soybean varieties as a function of the extraction method, and the amino acid composition of soy protein and milk proteins.

Note 1. This is the earliest Italian-language document seen (March 2007) that mentions soy ice cream, which it calls *Une gelato vegetale a base di soia.*

Note 2. This is the earliest Italian-language document seen (June 2013) that mentions okara, which it calls *Il residuo secco* and *materiale insolubile.* Address: Via Crimea 21, 20147 Milan, Italy.

4565. Chiang, Wenchang; Shih, M.J.; Chen, S. 1985. [Effect of soaking and grinding conditions on quality of soymilk and physical properties of bean residue]. *Chung-Kuo Nung Yeh Hua Hsueh Hui Chih* (*J. of the Chinese Agricultural Chemical Society, Taiwan*) 26(2):165-72. June. [19 ref. Chi; eng]
• ***Summary:*** Soybeans were ground with water at 20ºC and at 80ºC with injected steam. The hot water grind gave soymilk with less volatile beany flavor and a lower yield of okara, with a yellower and greener color. Address: 1-2. Graduate Inst. of Food Science & Technology, National Taiwan Univ., Taipei, Taiwan; 3. American Soybean Assoc., Taiwan Office.

4566. *Food Processing* (*Chicago*). 1985. 101 new food plants: Tofu, soymilk–Mighty Soy, Inc. June. p. 46.
• ***Summary:*** A color photo shows the front of Mighty Soy's new 8,000 square foot facility in Los Angeles, California. It began operation in Nov. 1984 and cost $250,000.

4567. King, Victor A.E. 1985. [Studies on the production of banana juice powder (with soymilk) using spray drying]. *Chung-Kuo Nung Yeh Hua Hsueh Hui Chih* (*J. of the Chinese Agricultural Chemical Society, Taiwan*) 23(1/2):62-72. June. [20 ref. Chi; eng]
• ***Summary:*** Milk or soymilk was added to an equal volume of banana products diluted with various amounts of water and spray dried at different inlet temperatures. A 1:1 or 2:1 mixture of soymilk and banana gave good results. The product became more hygroscopic as more soymilk was added or the drying temperature was decreased. Address: Dep. of Food Science, National Chung-Hsing Univ., Taichung, Taiwan.

4568. Kushi, Aveline; Jack, Alex. 1985. Aveline Kushi's complete guide to macrobiotic cooking: For health, harmony, and peace. New York, NY: Warner Books. xvii + 414 p. June. Illust. Index. 23 cm. [36 ref]
• ***Summary:*** Index entries include: Miso 61, Tofu 50, Tamari 19, Tempeh 17, Whole dry soybeans 6, Natto 3, Soymilk 3, Yuba 1. This book calls ganmodoki "Tofu Croquettes" and further states that "*Gan* means 'crane' and *modoki* means 'looks like.'" Among the 31 chapters are ones titled Beans (incl. basic black soybeans, and brown rice with black soybeans); Tofu, Tempeh, and Natto (including yuba); Sea Vegetables; Condiments and Garnishes (incl. miso), and Fish and Seafood.

Under "Black Soybeans" (p. 257) we read: "These nice shiny beans are also called Japanese black beans. They have a strong, delicious taste. Their juice is said to make the voice clear and beautiful. Throughout Japan, mothers prepare their children for music tests and singing lessons with this dish. Black soybeans are also used medicinally to help discharge animal toxins from the body." Note: This is the earliest macrobiotic cookbook seen that uses the term "Black soybeans" in a recipe title. All previous macrobiotic cookbooks called them "Black beans."

Contains recipes for homemade tofu, tempeh, and natto. Address: Brookline, Massachusetts.

4569. *Natural Foods Merchandiser.* 1985. Refrigerated/frozen foods get a blast from the past. June. p. 1, 54-59.
• ***Summary:*** Includes excellent discussions of tempeh, soymilk, and non-dairy frozen desserts including Tofutti, Ice Bean, and Rice Dream. One retailer says: "We've never had a product line like Tofutti, where customers practically tell us they'll bomb our store if we don't carry it." Tofutti continues to show strong sales, but it is facing competition from other soy-based frozen desserts (such as Ice Bean), as well as ice cream facsimiles made from fruit (such as Yodolo) or rice (such as Rice Dream).

On the same pages as the article are color ads for Rice Dream and Legume "Enlightened Entrees with Tofu."

4570. Plenty Canada. 1985. Plenty Canada project highlights (Brochure). Lanark, ONT, Canada. 6 p. June.
• ***Summary:*** Includes discussions of Plenty Canada soy projects in Sri Lanka, the Caribbean (Dominica, St. Lucia, Jamaica), and Lesotho. On Dominica, within 6 months of Plenty Canada setting up a Soy shop, one other successful

Soy Shop (named Soy Kweyol) has been opened by a local Dominican who happened to be the first wholesale customer of the Plenty Soy Shop. On St. Lucia, a group of farmers at La Pelle succeeded in growing approximately 10 acres of soyabeans. Denn Farm, a commercial farm, grew 5 acres of soyabeans.

On Jamaica, over 1,000 people received actual training in soybean processing over a 1-year period.

Note: In 1985 Plenty Canada sent Soyfoods Center a 4 by 6 inch color photo (taken recently) of the Lesotho Soy Dairy, part of the Village Technology Training Centre (VTTC), with solar panels on the thatched roof and two Plenty volunteers seated on the thatched roof. Address: Lanark, ONT, Canada.

4571. **Product Name:** [Sahm Yook Soyalac (Plain Soymilk)].
Foreign Name: Sahm Yook Soyalac.
Manufacturer's Name: Sahm Yook Korean Foods.
Manufacturer's Address: 320 Panjeong-ri, Jiksan-myun, Chunwon-gun, Choongchungnam-do 333-810, South Korea.
Date of Introduction: 1985. June.
Ingredients: Soy milk, vegetable oil, glucose, high fructose corn syrup, salt.
Wt/Vol., Packaging, Price: 200 ml foil retort pouch (Doypack). Retails for 300 Won (6/90).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Form filled out and label sent by C.Y. Yoon, General Manager, Sahmyook Korean Foods. 1990. June 23. The product was introduced in June 1985. Ingredients are listed in English.

Label (Foil retort pouch). Sent by C.Y. Yoon. 1990. June 23. 4 by 6.75 inches Red, yellow, dark green, and light green on silver. Front panel says "Soyalac" and an illustration shows 3 yellow soybeans in a green pod. The back panel shows the package being immersed in boiling water or heated in a microwave oven. So this package is probably sold during the cold months.

4572. **Product Name:** Soymilk [Maple, Honey-Vanilla, or Plain].
Manufacturer's Name: Wildwood Natural Foods of Santa Cruz, Inc.
Manufacturer's Address: 1560 Mansfield Ave., Suite D, Santa Cruz, CA 95062. Phone: 408-476-4448.
Date of Introduction: 1985. June.
Wt/Vol., Packaging, Price: Pints and quarts.
New Product–Documentation: Talk with Jeremiah Ridenour. 1988. Aug. 26. The company started production in June 1985, making tofu and soymilk.

4573. *Food Chemical News.* 1985. FDA conducts undercover probe of soy drinks in health food stores. July 8. p. 17-18. [1 ref]

4574. Gupta, Rajendra ("Raj"). 1985. Work with soymilk and tofu (Interview). *SoyaScan Notes.* July 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** On 23 May 1985 a company that Raj helped to establish started production of tofu in India in Kanpur (a city in northern India in southern Uttar Pradesh, on the Ganges River, 250 miles southeast of Delhi; Population 1.2 million). Last year he bought and imported a Takai W30B tofu system–which can actually process 50 kg/hour of soybeans. There is a big demand for his tofu; he can't keep up with it. One month ago he was making 500 kg/day of tofu, but soon, when his packaging improves, he will be making 1,500 kg/day.

For packaging, he uses a heat-sealed pouch, which is sealed with a Takai K-1020 sealer. He makes his own plastic containers. His larger plan is to establish franchises, and to manufacture tofu equipment in India.

He has applied for a process patent (not a machine patent) on a cold grind process for making soymilk with no beany flavor. He wants to license the patent. The concept sounds like a breakthrough. He has patented it in India, the USA, and internationally. It is based on a special machine which can be made inexpensively, in small shops.

Another tofu company in India is Tofu India Ltd. One company that was located near Delhi is no longer in business.

Note 1. This is the earliest document seen (July 2013) concerning the work of Raj Gupta with soyfoods.

Note 2. Raj Gupta first met Bill and Akiko Shurtleff on 6 April 1984 when he visited Soyfoods Center in Lafayette, California. He was on his way to Japan, well before his Indian tofu company came into existence. Address: PhD, 627 Gaines Dr., Ottawa, ONT, K1J 7W7, Canada. Phone: 613-741-2558.

4575. *Toyo Shinpo* (*Soyfoods News*). 1985. Kyuto Bussan. Tôfu "Aisukuriimu." Seizô sôchi, "noohau" o kaihatsu. Shôwa Sangyo, Mitsubishi Jûkô ga kyôryoku [Kyuto Bussan Tofu Ice Cream. They have developed the equipment and know-how. Showa Sangyo and Mitsubishi Heavy Industries helped]. July 21. p. 9. [Jap; eng+]

• ***Summary:*** This ice cream is made using soymilk. Kyuto Bussan is inviting large tofu manufacturers to start producing it in Kyushu. Raw materials are provided by Showa Sangyo, equipment by Mitsubishi Juko, marketing by Kyuto Bussan.

4576. *Toyo Shinpo* (*Soyfoods News*). 1985. Tônyû dezaato shin meniyuu ni [Adding soymilk dessert to their new menu]. July 21. p. 53. [Jap; eng+]

• ***Summary:*** The famous Kyoto tofu restaurant Junsei added a soymilk dessert to their menu. There are four flavors (like a custard cup): peppermint, matcha (green tea), ao-ume (green plum), and aka-ume (red plum).

This is a sign of Junsei's internationalization.

4577. Harrison, Slater. 1985. Re: The state of soybean usage in Bangladesh. Letter to William Shurtleff at Soyfoods Center, July 25. 3 p. Handwritten, with signature on two aerogrammes. [1 ref]

• ***Summary:*** There are now four MCC people working with soybeans. George Horlings is an extensionist working almost exclusively with soybean at the farm level. He has been having lots of trouble getting the seed to last from one harvest to the next time of planting. Carl and Ilean Bergan are food technologists; they recently replaced Ron Martins. Their only soyfood project is supervising the pilot soymilk plant started by Ron Martins. Slater is the fourth person working with soybeans although that is not part of his job description. He is trying to entice the Bergans with tempeh; they have never tasted it.

Slater and his wife are active food gardeners. They have grown soybeans for "edamame"–so well known in Japan–and they really love them. They have gotten hold of the very tiny seed that farmers are being encouraged to plant. There is said to be a really spectacular variety named PB (Punjab) that has tested well in Bangladesh. Address: c/o Mennonite Central Committee, Box 785, Dhaka 2, Bangladesh.

4578. *Grocer* (*The*) (*England*). 1985. Sunrise hopes soya yogurt will follow milk success. July 27. p. 18.

• ***Summary:*** "Six months ago, Michael Cole, a strict vegetarian for most of his life, formed the Soya Health Foods company and opened the first soya milk factory of its kind in this country at Trafford Park, Manchester. In that time sales of his Sunrise no-added-sugar UHT soya milk have risen from 46,000 litres a week to 250,000.

"Recently he signed a two-year own-label contract for sweetened soya milk with Lancashire Dairies, and is now supplying Co-operative Retail Services, and supermarket chains.

Cole has now launched three more soya products under his brand: (1) Sunrise Soya yogurt in four flavors–strawberry, peach melba, black cherry and raspberry. Cole says there have never previously been any soya milk yogurts available in the UK or Ireland; (2) Sunrise Ice Dream (soya milk ice cream) in two flavors–hazelnut and vanilla. "This is a natural ice product, free from dairy produce, lactose and cholesterol and containing only sugar made from fruit."; and Sunrise Vegetarian Burgers, each weighing ¼ pound; they are high in proteins and fibres. A photo shows his company's four products, including 2 flavors of soy yogurt. Cole says there are three large markets for soya products in the UK: (1) The slimmers, dietary and allergy foods market; (2) the natural food market; and (3) the Kosher market. Address: Manchester, England.

4579. *Times of India* (*The*) (*Bombay*). 1985. Company news: Kalyan solvent. July 27. p. 13.

• ***Summary:*** The company, which is planning a debenture issue, "proposes to set up a project to manufacture lecithin with a capacity of 350 tonnes per annum, and also another

project to manufacture soya milk with a capacity of 4,000 litres per hour."

4580. Caderas de Kerleau, Anne. 1985. Le soja en Afrique [The soybean in Africa]. *Lettre de l'ARTS* No. 2. p. 1-2. Summer. [3 ref. Fre]
• ***Summary:*** Africa has had a long-term interest in the soybean. Most African countries have had or have–a soybean project. The early projects, generally oriented toward exporting the crop, were often not successful. Recent projects, aimed more at food self-sufficiency, and initiated by the governments concerned, seem to have a better chance of success.

Sources of information for article are cited, followed by a brief history of soya in Africa. Currently African countries can be divided into two types: Those that produce soybeans commercially and those that are experimenting with the crop. The main soybean producing countries are Zimbabwe (91,000 tonnes on 35,000 ha) and Nigeria (75,000 tonnes on 195,000 ha). Other producers are South Africa, Zaire, Uganda, Rwanda, Tanzania, Côte d'Ivoire, and Zambia.

Countries experimenting with soya include: Senegal: A project in the pre-popularization stage has an estimated potential of 1,000 tons. Cameroon: The soy project of 1980, costing 255 million francs CFA, has a goal of 30,000 tons. Cote d'Ivoire: The soy project of 1977, costing 7,000 million francs CFA, is conducted in collaboration with the Brazilian group COCAPEC. The Brazilians withdrew for various reasons, leaving the plan inactive. Togo: Soy project of 1981. Goal: 10,000 ha, but discontinued for lack of finances. Benin: Experiments of 1969 show possibilities of good yields. Ghana: A study is in progress. Prospects look very favorable because of outlets of oil for food uses (10,000 tonnes) and huge needs for soybean cake or meal due to a new level of livestock. Rwanda: Five-year plan of 1977-81. Goal: 20,000 tons of soybeans and an oil mill of 60 tonnes/day. Burkina Faso (Upper Volta): Project for a soymilk plant, with soybeans produced by farmers under contract. Experimentation with tofu. Gabon: A soy project which is doing very well and feeds an industrial livestock ranch, giving good prices to soybean producers.

Other feasibility studies are underway. For example, the Cameroon project. Soya was introduced to Cameroon in 1924, In 1974 IRA at Dschang intensified research on this crop. Since 1981 the UCCAO soy project has actively popularized soybean culture among farmers and organized an active campaign on the utilization of soybeans for human food and livestock feeding. Financing is assured by the governments of Cameroon and France.

Soy has taken root in Africa because of 3 main reasons: National, economic, and agronomic interest. The crop, which has been shown to give good yields under proper African conditions, can promote food self sufficiency and provide local jobs. But there are obstacles. The soybean is not a traditional African crop, so farmers need to learn how to grown, food companies how to process it, and consumers how to prepare and eat it. The price received by producers is relatively low. The sales price is not competitive on the world market: An American farmer can obtain yields of 1,700 kg/ha with 14 hours work, but a Senegalese farmer obtains only 850 kg/ha with 450 hours work. Thus the success of soy projects in Africa depends largely, at least initially, on the political interest and funding of governments. Production of the crop for export seems to have less potential for success than for local use. Address: ARTS, 108 rue St. Honore, Paris, France.

4581. Haumann, Barbara Fitch. 1985. Annual meeting report: Trends of processing, consumption around the world. *J. of the American Oil Chemists' Society* 62(7):1070-76. July.
• ***Summary:*** Based on an all-day session on trends in edible oil processing and consumption around the world held at the AOCS annual meeting. Contents: Supply and demand. Europe. Central America. Canada. Asia. South Asia. Southeast Asia. Far East [East Asia]. China.

Although soybeans are grown throughout China, they are grown most intensively in northeast China in the provinces of Liaoning, Jilin, and Heilongjiang. Dalian, an industrial city and seaport on the Yellow Sea, is reported to be China's main soybean crushing center.

Soybeans in China are consumed mostly as traditional foods such as tofu, soymilk, soy sprouts, soy sauce and soybean paste. "Only about 20% of the crop is crushed for oil and meal." Address: JAOCS.

4582. Plenty Canada. 1985. Sri Lanka Soy Utilization Project. R.R. #3, Lanark, ONT, K0G 1K0, Canada. 10 p. Unpublished manuscript.
• ***Summary:*** The 5-year project, aimed at increasing consumption of soyfoods in Sri Lanka, proposes to establish four soya nutrition centers in Kandy, Colombo, Vavuniya, and Tanamalwila. Each center will have equipment to make soymilk, tofu, soy ice cream, tempeh, and soy flour (to use to fortify wheat in rotti, pittu, etc.). Each center will conduct demonstrations and training classes to community groups. Address: Lanark, ONT, Canada. Phone: 613-278-2215.

4583. Datz, B. 1985. Augusta [Maine] woman's complaint gets [Edensoy] formula folders recalled. *Kennebec Journal* (*Augusta, Maine*). Aug. 3.
• ***Summary:*** Eden Foods has sold 8 million single serving packages of Edensoy in the last 2 years, according to company president Michael Potter in a phone interview. A six-month old Canadian infant was fed nothing but Edensoy for 5 months. Severely malnourished, the child developed rickets from a lack of vitamin D and vision problems from a lack of vitamin B. Edensoy was launched on the U.S. market in August 1983. Mary Owen, a dietitian from Augusta,

Maine, has been vocal about raising questions the suitability of Edensoy for infants. She obtained a brochure describing Edensoy then in late 1983 wrote Eden Foods several questions about Edensoy's level of calories, protein, fat, minerals, and vitamins compared with breast milk. Michael Potter said that, until about 9 months ago, he didn't know about the requirements of the Infant Formula Act of 1980.

In April 1985 the FDA recalled Eden's brochure describing Edensoy "in response to false advertising and nutritional deficiencies of two soy drinks produced by another firm. Their brand names are Nutra-Milk and Kama-Mil."

4584. Altaner, David. 1985. His passion flavors the blandest of foods. *Courier-News* (*Bridgewater, New Jersey*). Aug. 6. p. A8-A9.
• ***Summary:*** The company receptionist answers the phone "Tofutti-All-Rootie." "Thank God, I've been blessed with taste buds that like what the masses love." New products? "Next comes tofu jogger, an instant breakfast soy drink. In the future, consumers can expect to see soy-based chocolate and vanilla pudding, potato topping, onion dip, tofu cultured non-dairy yogurt, tofu whipped cream and pancakes... His personal Mount Everest is a tofu burger... To meet the competition Tofu Time is rolling out its first television commercial, which was unveiled last week. In it, the question, 'Has New York gone totally Tofutti?' causes a staid board of directors meeting to erupt into frenzied dancing to 'Tofutti-All-Rootie,' which sounds a lot like Little Richard's 1955 hit 'Tutti-Frutti.'"

4585. Steinkraus, Keith H. 1985. Re: Comments on your recent book, *Soymilk Industry and Market* (1984). Letter to William Shurtleff at Soyfoods Center, Aug. 8. 2 p. Typed, with signature on letterhead.
• ***Summary:*** "I do not think you are aware that the first 'boiling water grind' soymilk was made in my laboratory.

"In my opinion, you have neglected the importance of the 'Saridele' spray-dried soymilk plant that operated in Indonesia in the 1950s. UNICEF contributed $500,000 to the plant and the Government of Indonesia supplied the land and buildings. It was a very well engineered plant producing a very high quality spray dried soymilk available in several flavors that required the consumer only to stir a spoonful of the powder into a glass of water. The original factory could not satisfy the demand in Indonesia alone. The Saridele plant, by the way used a hot water (8O to 90ºC) grind sufficient to inactivate lipoxigenase. It is surprising that the spray dried soymilks have not been adopted by more recent soymilk producers as it gets around the need to use aseptic packaging and is cheaper to transport." Address: Prof. of Microbiology, Dep. of Food Science & Technology, New York State Agric. Exp. Station, P.O. Box 462, Geneva, NY 14456-0462.

4586. *Country Folks* (*Palantine Bridge, New York*). 1985. Consumer alert issued on "soy drinks" fed to infants. Aug. 12.
• ***Summary:*** "The Maine Department of Agriculture, Food and Rural Resources has issued a consumer alert warning parents that so-called 'soy drinks,' or soy 'milks,' should not be used as a sole source of nutrition for infants."

"The federal Food and Drug Administration recently issued several such warnings about specific brands of soy drinks often sold in health food stores. Earlier this year, a 6-month-old child in Canada developed rickets, vision problems and malnutrition after being fed a soy drink product called Edensoy as a sole source of nutrition for 5 months." Brands with serious nutritional deficiencies and false advertising included Nutra-Milk and Kama-Mil. Also published in The Journal (Lewiston-Auburn, Maine). Aug. 5.

Note: This is the earliest document seen in which the U.S. Food and Drug Administration uses the term "milk" to refer to soymilk. Address: Maine.

4587. *Food Chemical News*. 1985. FDA knew of Edensoy situation for 20 months prior to recall: Metzenbaum. 27(23):3-4. Aug. 12. [3 ref]

4588. Nichrome Metal Works. 1985. Display ad: Pack & preserve. *Times of India* (*The*) (*Bombay*). Aug. 13. p. 17.
• ***Summary:*** "Pack:... Edible oils, Vanaspati, Ghee, Soya milk, Milk, Buttermilk, Fruitjuices." Manufactured by Nichrome Metal Works. Sold and serviced by Voltas Limited, Ballard Estate, Bombay.

Photos show four packaging machines. Address: 46, Dr. Ambedkar road, Near R.T.O. Office, Sangam, Pune [Poona] 411 001.

4589. *Toyo Shinpo* (*Soyfoods News*). 1985. [Mitsubishi's new Mapuron straight]. Aug. 21. p. 1; Nov. 11, p. 1. [Jap; eng+]
• ***Summary:*** This plain ("straight type") soymilk contains no added oil, so it also contains 30% less calories (96 per 200 ml) and 25% more protein (8 gm per 200 ml) that Mitsubishi's former Mapuron product. And it is specially processed to remove the beany flavor.

4590. H&K (Holstein-Kappert S.A.). 1985. Mechanical Cow HK-200 (Brochure). Industria de Maquinas, Av. Franz Lizst, 200, Cx. P. 146, CEP 01051, Sao Paulo, Brazil. 4 p. 30 cm. [Por; Eng; Spa]
• ***Summary:*** A color photo on the cover of this glossy brochure shows the Mechanical Cow. The text is written equally in Portuguese, English, and Spanish. The equipment consists of the following: Soya peeler (dehuller). Double maceration (in a hot-water bath). Trituration (disintegrating / milling), Centrifugation. Formulation. Pasteurizing. Refrigeration. Packaging. Drying. On the rear panel is an

aerial view of the plant.

Accompanying this brochure is a letter (typed on letterhead) from the manufacturers, replying to 4 questions from Wm. Shurtleff: "(1) The cost of one machine is around US$47,000. (2) The machine capacity is 200 liters/hour. (3) The inventor of this machine is Dr. Marsaiolli, a colleague of Dr. Moretti. (4) We have sold around 200 machines and soy milk use in Brazil is a reality." Address: Sao Paulo, Brazil.

4591. Gupta, Rajendra ("Raj") P. 1985. Re: Visit to Soyfoods Center, work with soymilk. Letter to William Shurtleff at Soyfoods Center, Aug. 24. 1 p. Typed, with signature on letterhead.

• ***Summary:*** "It was indeed very nice meeting you last week. Your reaction to the soymilk samples I brought with me was very gratifying." Raj is enclosing a "proprietary submission agreement" and, after it is signed, will send a copy of the invention patent.

Note: This is the earliest document seen (Oct. 2010) that contains the word "ProSoya" or the company name "ProSoya Foods International." Address: VP Tech., ProSoya Foods International, 627 Gaines Drive, Ottawa, Canada K1J 7W7. Phone: 613-741-2558.

4592. Barrett, Clare. 1985. A practical guide to soyfoods. *Vegetarian Times.* Aug. p. 33-40. No. 96. [14 ref]

• ***Summary:*** An overview of fresh green soybeans, whole dry soybeans, soynuts, soy sprouts, soy flour & soy grits, soy oil, soy protein isolates, soymilk, okara, tofu, tempeh, soy sauces, miso, natto. Concludes with a list of 14 recommended books on soyfoods.

4593. **Product Name:** GranoVita Soya Drink [Unsweetened White, Sweetened White, Coconut, Strawberry, or Carob].
Foreign Name: GranoVita Soja Drink (Ungesuesst, -, Kokos, mit Erdbeer-Geschmack, Caroba).
Manufacturer's Name: DE-VAU-GE Gesundkostwerk GmbH.
Manufacturer's Address: Luener Rennbahn 18, Postfach 1660, D-2120 Lueneburg (near Hamburg), West Germany.
Date of Introduction: 1985. August.
Ingredients: Water, soybeans, cane sugar, sea salt, natural flavorings.
Wt/Vol., Packaging, Price: 500 ml and 1 liter Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 ml: Calories 50, protein 3.6 gm, fat 2.3 gm, usable carbohydrates 3.6 gm, linoleic acid 51%, sodium 58 mg.
New Product–Documentation: STS. 1985. Containers for Soymilk. Shows color photo of 500 ml Tetra Brik carton. Red and green on white. "Made purely from plants. Free of cholesterol. Rich in protein (Rein pflanzlich. Cholesterinfrei. Eiweissreich)." This product is marketed mainly in West Germany. Note the absence of a chocolate flavor in the German health market. Label. 1987. 500 ml Tetra Brik carton. In German, Dutch, and French. The unsweetened is orange and red on white. "Pure and from plants. Rich in protein. Cholesterol free." Neuform certification symbol. In Nov. 1989 the coconut retails for DM 1.69.

Manufacturer's brochure. 1989? "GranoVita Soja-Drinks und -Desserts... ein erfrischender Genuss [a refreshing enjoyment]." 6 pages, with many color photos. Describes the products (with a photo of each) and how they are made. All 5 are in 500 ml Tetra Brik cartons and 2 white are in liter cartons. A table compares the composition of cow's milk containing 3.5% fat with sweetened white. Note, per 100 gm: Cholesterol: 11 mg vs. 0 mg. Protein 3.3 gm vs. 3.6 gm. Calories 64 vs. 55. Fat 3.5 gm vs. 2.8 gm. Saturated fatty acids: 64% vs. 16%. Polyunsaturated fatty acids: 4% vs. 60%.

Form filled out and Labels sent by DE-VAU-GE. 1990. June 11. Labels for 500 ml Tetra Brik cartons in unsweetened, strawberry, plain (sweetened), and coconut, and for 1 liter cartons in unsweetened and plain (sweetened). All were apparently launched in 1985.

4594. **Product Name:** [GranoVita Soja Dessert {Pudding Gelled with Carrageenan} (Vanilla, Strawberry, or Chocolate)].
Foreign Name: GranoVita Soja Dessert (Vanille, Erdbeer, Schoko).
Manufacturer's Name: DE-VAU-GE Gesundkostwerk GmbH.
Manufacturer's Address: Luener Rennbahn 18, Postfach 1660, D-2120 Lueneburg (near Hamburg), West Germany.
Date of Introduction: 1985. August.
Ingredients: Vanilla: Water, soybeans, cane sugar, modified starch, fructose, vegetable gums, sea salt, natural aromas.
Wt/Vol., Packaging, Price: 500 gm Tetra Brik Aseptic carton. Retails for DM 2.45 (1/90).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Vanilla, Per 100 gm: Protein 3.1 gm, fat 2.9 gm, usable carbohydrates 10.0 gm, calories 79.
New Product–Documentation: Lindner. 1987. Interview. Color photo of 500 ml Tetra Brik carton. Three Labels (cartons). 1988. Each is one unique color plus red and green on white. The unique color for vanilla is yellow, for strawberry is pink, and for chocolate is brown. Front panel illustration of a dish of pudding. "Pure vegetable protein (Rein pflanzlicher Eiweissträger), cholesterol free." Ingredients and nutritional analysis are listed in German, Italian, French, and Dutch.

Manufacturer's brochure. 1989? "GranoVita Soja-Drinks und -Desserts... ein erfrischender Genuss [a refreshing enjoyment]." 6 pages, with many color photos. Describes the products (with a photo of each of the 3) and how they are made.

Form filled out and 3 Labels sent by DE-VAU-GE. 1990. June 11. They started making this product in 1985.

4595. Eckett, Alison. 1985. Beating the protein crunch: A growing number of people are discovering the range of soyfoods, both traditional and modern, that can be made from this bean. *Food Processing* (*UK*) 54(8):25-28. Aug.
• ***Summary:*** "The term 'soyfoods' is a recent generic expression that has been used to describe the complete range of soy products prepared for human consumption. It covers both high technology, modern products such as soy [protein] fibres, concentrates and isolates which are mainly used as ingredients by food manufacturers... and includes the traditional low technology products of soymilk, soy sauce, miso, natto, tofu, tempeh and soy sprouts that have formed part of the staple diet in East Asia for thousands of years."

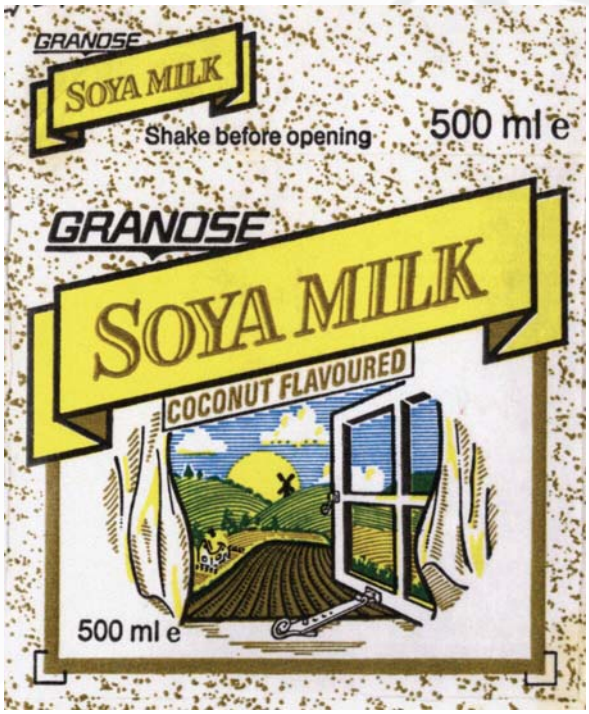
Soyfoods are divided into non-fermented and fermented. Photos show: (1) Miso Dip (front of two packages). (2) Cubes of tofu under water. (3) Nasoya Tofu Vegi-Dip. (4) Sliced cakes of tempeh. (5) The front of four tempeh packages, made by The Tempeh Works. (5) White Wave tempeh, a tempeh burger, and a promotional piece. (6) A box of Tofu Lasagna, made by Legume, Inc. (7) The front of a package of "6 All Natural Vanilla Ice Bean Sandwiches," made from Ice Bean by Farm Foods.

4596. Escueta, Elias E.; Bourne, Malcolm C.; Hood, Lamartine F. 1985. Effect of coconut cream addition on the composition, texture, and sensory properties of tofu. *J. of Food Science* 50(4):887-90. July/Aug. [13 ref]
• ***Summary:*** Coconut cream was added to soymilk at 0, 4.7, 9.0, 16.6, 33.3 and 50% levels before coagulation of the mixture with calcium sulfate. The acceptability at the different levels of added coconut milk was 4.6, 4.8, 4.9, 4.8, 4.8, and 4.6. Therefore the finished product was most acceptable when 9% coconut milk was added.

The coconut cream, which was purchased from a local "sari-sari" (variety) store, contained 77.2% moisture, 2.2% protein, and 17.3% fat.

With increasing levels of added coconut cream, the protein and moisture content of the tofu decreased while the fat content increased. "The percentage yield of tofu did not increase up to 4.7% added coconut cream, but increased significantly when 9.0% or more coconut cream was added to the soymilk." Address: 1&3. Cornell Univ., Ithaca, New York, NY, 14850; 2. Inst. of Food Science & Technology, Univ. of the Philippines at Los Baños, College, Laguna 3720, Philippines.

4597. **Product Name:** Granose Soya Milk [Sugar Free, Plain/Dairylike, Organic; Coconut, Chocolate, Strawberry, Banana, Carob].
Manufacturer's Name: Granose Foods Ltd. (Marketer). Made in West Germany by DE-VAU-GE Gesundkostwerk GmbH.
Manufacturer's Address: Stanborough Park, Watford, Herts., WD2 6JR, England.
Date of Introduction: 1985. August.
Ingredients: Coconut: Water, dehulled soya beans, raw cane-sugar, coconut powder, sea-salt.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 ml: 70 calories. Fat fractions: polyunsaturates 39%, saturates 15%.



New Product–Documentation: STS. 1985. Containers for Soymilk. Shows color photo of 500 ml Tetra Brik carton. Orange and green on white. "100% Vegetable. Rich in protein. High in polyunsaturates." Use by 7/84.

Spot in Food Trade Review. 1986. June. Granose Foods Ltd. (UK) launched new strawberry soya milk in 500 ml Tetra Paks. Ad in The Vegan. 1986. Summer. p. 17. "Why does Granose Soya Milk flow so smoothly? Well, its the natural choice." Shown in 500 ml and 1,000 ml. Sugar free or sweetened with raw cane sugar.

Photo and Spot in The Vegetarian (UK). 1986. Sept/Oct. "Granose strawberry flavoured soya milk. Absolutely delectable–pure strawberry essence, no artificial flavour or colour so its not bright pink!"

Label. 1987. Gold, yellow, brown, blue, and green. Illustration of sunrise seen through a farmhouse window.

Soyfoods (ESFA). Granose Foods Ltd. has launched a strawberry soya milk, made from soya beans, pure strawberry essence, raw cane sugar, sea salt, and natural vegetable flavoring. Presented in 500 ml "Tetra Paks," it has

a 6-month shelf life unopened.

Ad in The Vegan. 1988. Summer. p. 16. "Granose Soya Milk [Banana flavoured with no added sugar]."

4598. Leneman, Leah. 1985. Tomorrow's world [soyfoods]. *Vegetarian* (*The*) (*England*). July/Aug. p. 21-24.
• ***Summary:*** There are now 8-9 brands of soya milk sold in Britain. "It is a shame that most people's introduction to tofu is in the form of Morinaga silken tofu which... is now found in most health food stores. Silken tofu is pleasant and nutritious, but is much softer than regular tofu and is therefore much less versatile. Following recipes meant for firm tofu with it can be frustrating.

"*Granose* is the first big-name health food manufacturer to feature a line of tofu-based products (imported from Denmark). Two of the three tinned convenience meals seem to me less than ideal. The tofu adds nothing special to either the Tofu and Tomato Sauce nor to the Tofu in a Savoury Bean Sauce; they might just as well have used tvp. However, the Chinese-Style Tofu is really excellent, with a nice balance of tastes and textures, including the cubes of tofu– just about the nicest tinned convenience meal around.

"The first national distributor of tofu (to the best of my knowledge) was *The Regular Tofu Company...* Like all other national distributors, their tofu is vacuum-packed, which considerably lengthens its shelf-life... *Paul's Tofu* (The Old Brewery, Wheathampstead House, Wheathampstead, St. Albans, Herts.) produces another vacuum-packed firm tofu, which is available in London and South-East England...

"*Bean Machine* (Station Road, Crymych, Dyfed) produces not only tofu but also a range of 'soysage' foods made from okara... They also make 'Soyannaize,' a dairy-free dressing. *Duchesse* All-Natural Tofu Dressing and Dip (made by St. Giles Foods Ltd, St. Giles House, Sandhurst Road, Sidcup, Kent DA15 7HL) is another mayonnaise-type product..."

She is writing The International Tofu Cookery Book for Routledge & Kegan Paul. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

4599. *Natural Foods Merchandiser.* 1985. New products, changing diets propel soyfood sales. Aug. p. 1, 39-40, 42-44.
• ***Summary:*** "The soyfoods revolution is being fueled by several powerful trends... Many consumers are attracted to soyfoods because they are an excellent no-cholesterol 'replacement' for meat and dairy products. Soyfoods are also growing with the rising tide of macrobiotics, which promotes the use of various soy products. And there are now enough soyfoods on the market to create synergy within the category: consumers buying soymilk try tofu, and go from tofu to tempeh.

"Tofu is by far the best-selling product in the soyfoods category, according to figures provided by the Soyfoods Association [and Soyfoods Center]. An estimated $60 million worth of tofu is produced and sold in the U.S. annually, while frozen tofu desserts, entrees, and prepared products account for approximately $25 million. Soymilk sales have jumped from near zero a few years ago to $10 million today, while tempeh is an emerging growth category at 5 million in yearly sales." All of the retailers interviewed by NFM indicated that the soymilk category is experiencing major growth. Most of the growth has been in six-ounce aseptic individual serving packages supplied by such companies as Westbrae, Ah Soy, Vitasoy and Eden. Health Valley's Soy Moo has recently been repackaged in a 8.45-ounce package.

"Tempehworks produces approximately 7,000 pounds of tempeh a week during peak months, including that used in its processed tempeh products, such as Fakin' Bacon, New York Style Strami and Kansas City Barbecue."

Includes "A directory [sic, glossary] of soyfoods terminology" that defines tofu, tempeh, soybean, miso, soymilk, shoyu/tamari, TVP or TSP, soy protein isolate, defatted soy flour, and "secondary" soyfoods products.

4600. Santosham, M.; Foster, S.; Reid, R.; Bertrando, R.; Yolken, R.; Burns, B.; Sack, R.B. 1985. Role of soy-based, lactose-free formula during treatment of acute diarrhea. *Pediatrics* 76(2):292-98. Aug. [20 ref]
• ***Summary:*** A lactose-free formula containing isolated soy protein has been successful in treating infants with diarrhea during the gastroenteritis recovery phase. Address: Francis Scott Key Medical Center and Johns Hopkins Univ. School of Medicine, Baltimore, Maryland.

4601. Premier Extractions Limited. 1985. Display ad: When you believe in performance, you can let the figures do the talking. *Times of India* (*The*) (*Bombay*). Sept. 3. p. 10.
• ***Summary:*** A large illustration (graph), in the top two-thirds of the ad, shows the growth of turnover [sales] from 1976 (55.16 lacs [lakhs]) to 1984 (790.47 lacs), an average annual growth rate of 167%.

Smaller bar charts show the growth in gross block (220%), turnover (1333%), gross profit (16.9-fold), and reserves (732%) during the same period. Moreover, exports in 1984 were 309.82 lacs.

"A constant programme of modernisation and expansion has enabled the Company to keep abreast of the latest technological advances in the field. The company's plant at Dewas operates at well over 100% capacity!"

"The future holds even greater promise. The capacity of the Soyabean extraction plant is being increased to 45,000 tonnes per annum. Diversification into manufacture of edible soya flour and extruded soya products are also on the anvil. Negotiations to set up a Soya Milk plant are also in an advanced stage.

"So keep an eye on Premier Extractions. A Company with an excellent track record of growth, And tremendous

future potential." Address: Registered office: Chetak Centre, 1st Floor, 12/2 R N T Marg, Indore 452001, Madhya Pradesh, India.

4602. Shurtleff, William. 1985. Re: Your delicious soymilk. Letter to Raj Gupta, ProSoya Foods International Inc., 627 Gaines Dr., Ottawa, Canada K1J 7W7, Sept. 5. 1 p. Typed, on letterhead.
• ***Summary:*** "Dear Raj: I was so happy to see you again during your last visit. You have made some remarkable discoveries, and I will do whatever is possible to help you introduce them to the world. I am enclosing the signed agreement, and will be very discreet about not leaking your secrets. Please be sure to let me know when the patent is granted and the information becomes public.

"I honestly thought your soymilk was one of the best, if not THE best, I have ever tasted. When Akiko returned home, I asked her to sample each flavor. Her comment was that she wished you had brought an unflavored, plain sample so that we could really see how well you had succeeded in eliminating the beany flavor. I then realized that I felt exactly the same. Is there any way you could ship us such a sample, perhaps on ice. I know it is possible. I really wish you would send about 1-2 pints. That will allow us both to give you a better evaluation of your basic product.

"I still want to urge you to write an article for soyfoods magazine about your new soymilk. And I look forward to receiving the patent application.

"Sincerely,..."

Note: By Oct. 11 the company's new address was: 801-275 Slater St., Ottawa, Canada K1P 5H9. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4603. Freundlich, Michael; Zilleruelo, G.; Abitbol, C.; Strauss, J.; Faugere, M-C.; Malluche, H.H. 1985. Infant formula as a cause of aluminium toxicity in neonatal uraemia. *Lancet* ii(8454):527-29. Sept. 7. [27 ref]
• ***Summary:*** Though acute toxicity from consuming aluminum is rare, young children with kidney failure or impaired kidney function are "very susceptible to aluminum toxicity." The authors report 2 cases of aluminum toxicity in infants fed soy-based infant formulas. They developed encephalopathy, inflammation, and injury of the brain. Both infants died. They were found to have high aluminum levels in the brain, although bone aluminum levels were normal.

The authors tested several infant formulas and found them to contain "high concentrations of aluminum." They recommend the use of aluminum-free infant formula in infants with reduced kidney function. They indicate that it is "unclear" whether aluminum in infant formula represents a health hazard for normal infants.

Note 1. In response to this article, Fisher and co-workers in England wrote in *The Lancet* of 6 May 1989: "One study attributed encephalopathy and fatal illness in two infants with severe congenital renal [kidney] failure to aluminum from this source [infant formula], although the validity of that conclusion is doubtful.

Note 2. *Webster's Dictionary* defines encephalopathy (a term first used in 1866) as "a disease of the brain; especially one involving alterations of brain structure."

Note 3. This is the earliest document seen that discusses aluminum toxicity in any soyfood product. It prompted considerable subsequent research on the subject. Address: 1-4. Div. of Pediatric Nephrology, Dep. of Pediatrics, Univ. of Miami, Miami, Florida; 5-6. Div. of Nephrology, Bone and Mineral Metabolism, Univ. of Kentucky, Lexington, KY.

4604. Steinkraus, Keith H. 1985. Re: Thanks for Thesaurus on SOYA. Updated bibliography. Letter to William Shurtleff at Soyfoods Center, Sept. 10. 1 p. Typed, with signature on letterhead.
Address: Prof. of Microbiology, Dep. of Food Science & Technology, New York State Agric. Exp. Station, P.O. Box 462, Geneva, NY 14456-0462.

4605. Bonapace, A. Augusto. 1985. Re: The tragic or irreversible effects of hunger in the world are due above all to lack of proteins. Letter to William Shurtleff at Soyfoods Center, Sept. 13. 1 p. Typed, with signature on letterhead. [Ita]
• ***Summary:*** "For a modest initial investment, any country afflicted by malnutrition can undertake the local production of Pre-Digested vegetable proteins. Obtained from the by-products of Oil Mills (the oil-less flours of oily seeds), the protein is partially hydrolized to render it completely edible, tasteless, readily and fully assimilated. These vegetable proteins, high in Lysine and other essential amino acids, are suitable for

"Human and Animal Consumption"

"in powder as a hydrolized protein nucleus, for subsequent mixing

"as a 33% concentrated liquid vegetable milk (UHT long-life in Tetrabrik) digestible even by individuals who cannot tolerate cow's milk.

As a result, all the natural milk produced in the country can be devoted exclusively to human consumption, while Calves (males too, which are often killed at birth because of the lack of milk and the inconvenience of feeding them with imported Milk Replacer) and Lambs are fed entirely on vegetable milk produced locally as if by

"An Inexhaustible Vegetable Cow." Address: Dr., President, Dott. Bonapace & C., P.O. Box 1840, 20100 Milano, Italy.. Phone: 316251.

4606. *Times of India* (*The*) (*Bombay*). 1985. City notes: Tri-Star Soya Products. Sept. 21. p. 10.
• ***Summary:*** Tri-Star will soon be entering the capital market with a public offering to help finance the expansion of its

processing capacity to 400 tonnes [metric tons] per day from the present 200 tonnes, with a corresponding increase in its refining capacity.

"The company also plans to invest about Rs. 2.5 crores every year for the next three years to create facilities for the manufacture of value added products such as soya food and pharmaceutical grade lecythene [sic, lecithin] from waste and full fat and no fat soya flour and soya dal."

The company is considering a proposal to make soya food and soya milk with a well known American company.

Note: This article mentions the HDFC or Housing Development Finance Corporation Limited (of India).

4607. Shenon, Philip. 1985. Agencies split in baby-formula case [involving Syntex Laboratories]. *New York Times.* Sept. 24. p. 28.

• ***Summary:*** "The Food and Drug Administration strongly recommended criminal prosecution of a company that manufactured defective infant formula, but the Justice Department decided not to file charges last year on the ground that evidence was lacking, according to internal Government documents...

"The company, Syntex Laboratories of Palo Alto, California, has acknowledged that two of its baby formulas, which were withdrawn from the market in 1979, did not contain enough of the essential nutrient chloride. It has settled nearly 200 lawsuits brought by parents who fed their children the formulas, but it says there is no evidence of long-term health problems resulting from use of the products...

"Richard K. Willard, who heads the [Justice] department's civil division, noted that the F.D.A. had not previously called the company's attention to the problem with its formulas and that at the time, Federal law did not require a specific amount of chloride in infant formula...

"Documents regarding the Syntex case were provided by Senator Howard M. Metzenbaum, the Ohio Democrat who was a chief sponsor of a 1980 bill that broadened regulation of infant formula. He had urged prosecution of Syntex...

"According to a Justice Department fact sheet, Syntex removed salt from infant formulas in 1978, apparently in response to reports that the amount of sodium in infant diets should be reduced...

"In explaining its decision, the Justice Department has noted that the F.D.A. and other agencies agreed that Syntex acted promptly and responsibly in its recall of the formulas, Neo-Mull-Soy and Cho-Free...

"Mr. Willard said in a memorandum last year that at least 247 infants using the two soy-based formulas had documented health problems, ranging 'from very minor illness to death.' Preliminary results of a study by the National Institutes of Health found that more than 20,000 infants had been exposed to the chloride-deficient formulas, which were sold in 1978 and 1979. After studying 21 of the children, the researchers said there were indications that the formulas had caused long-term developmental problems.

"According to Syntex, eight lawsuits against the company have gone to trial and three were ended in the company's favor. Others ended with Syntex ordered to pay damages of between $9,000 and $27 million. Syntex said it would appeal the $27 million award."

4608. Archer Daniels Midland Co. 1985. Annual report 1985: We bring home America's harvest. P.O. Box 1470, Decatur, IL 62525. 16 p.

• ***Summary:*** Part I describes ADM's daily work. "ADM. Where the people who feed the world buy their groceries." Pages 8-9 note: "We unlock the protein inside the soybean." Contains color photos of many soy products including Protoveg Vegetable Goulash, and Betty Crocker Hamburger Helper (p. 1), Similac (p. 7), ProSobee, Rich's Coffee Rich, Betty Crocker Bac*O's, and Protoveg Sizzles (p. 9), Tofutti (p. 15).

Part II, an insert in the portfolio, is the annual report financial data (34 pages). Net sales and operating income: $4,738,767,000. Net earnings: 163,908,000. Total current assets: $1,367,826,000. Total current liabilities: $328,822,000. Address: Decatur, Illinois.

4609. *Cultivar.* 1985. Le soja en alimentation humaine [Soya in human nutrition]. No. 186. p. 77-78. Sept. [Fre]

• ***Summary:*** A brief introduction to tofu, soymilk, soy sauce, tempeh, miso, soy flour, soy protein isolates, and concentrates. Address: France.

4610. **Product Name:** [Aminolat (Soymilk with Pre-Digested Soya Protein from Defatted Soya Flour for Humans, or Animals)].
Manufacturer's Name: Dott. Bonapace & C.
Manufacturer's Address: P.O. Box 1840, 20100 Milano, Italy. Phone: 316251.
Date of Introduction: 1985. September.
New Product–Documentation: Milk replacers (Aminolat) and high-quality proteins from vegetable raw materials. 1985. 2 p. brochure. Aminolat liquid concentrate. 7 p. brochure. Soya Protein Hydrolysate (Patent: Prof. Orban). Animal food series and human food series. 4 p. brochure. In the human food series, Aminolat could be used for: 1. Vegetable milk powder with pre-digested soya protein. 2. Hyperproteic liquid vegetable milk in Tetra Brik 200-250 ml. 3. Instant hyperproteic vitamin vegetable milk powder (E.D.T. coated). 4. Milk and chocolate. 5. Nut flavored sweet cream spread (like Nutella). 6. Soya milk ice cream. 7. Soya protein yogurt. 8. High protein mozzarella cheese. 9. Hyperproteic smoked slices.

Note: The president of this company is Dr. A. Augusto Bonapace.

4611. Dott. Bonapace & C. 1985. Milk replacers (Aminolat) and high-quality proteins from vegetable raw materials (defatted flours of soya, cotton, sunflower, castor, etc.) (Leaflet). Milan, Italy. 1 p. [Eng]
• ***Summary:*** This company's process is based on hydrolysis of vegetable raw materials to create a milk for consumption by humans or calves. It is an instant milk powder with a higher protein content than cow's milk and good taste. "In most countries where milk production is insufficient, male calves of dairy cattle are usually killed after birth, while female calves are fed to a strict survival level, to save milk for human consumption.

"Just as an example, in Mexico we think about two million newborn male calves are killed every year; with a local production of Aminolat those animals could be fed up to a body weight of 500 kg, thus making available to the market something like 1 million tons/year of meat. In addition, Aminolat could represent a larger feed supply for female calves during their first very important months of life..."

A letter from the Secretary of Agriculture of the Central Government of Rio Grande do Sul, Brazil, describes results of a successful experiment in March-May 1979 (77 days) on the feeding of weaning calves on natural cow milk as well as on a soya -based milk substitute (Aminolat). Address: P.O. Box 1840, 20100 Milan, Italy.

4612. Dott. Bonapace & C. 1985. Soya protein hydrolysate (Patent: Professor Orban): Products that are ready* or under study in Italy and Brazil (Brochure). P.O. Box 1840, 20100 Milano, Italy. 4 p. [Eng]
• ***Summary:*** Animal food series: 1. Aminolat * Substitute milk for calves, lambs, piglets. In powder or 33% liquid concentrate. 2. Protein base * to be mixed with milk serum or milk powder for reconstitution, or with molasses, mineral salts, or mixed feeds. 3. Aminoplus (Protamina) * Protein derivatives mixture (soya and offal hydrolysates). 4. Race horses * Amino Complevit–Nutramix. 5. Dogs and fur animals * Puppy mix.

Human food series: 1. Aminolat–Vegetable milk powder with pre-digested soya protein. Refers also to Vegelact from Gallia; Nutrilact from Mellin, Milupa; Multilac from Dieterba. Aminolat could be used in the following applications: Hyperproteic liquid vegetable milk in Tetra Brik 200-250 ml. Instant hyperproteic vitamin vegetable milk powder (E.D.T. coated). Milk and chocolate, similar to Ovomaltina (cf. Diabetic Breakfast Chocolate Stella Lugano). Nut flavored sweet cream spread (like Nutella). Hyperproteic [high-protein] soya milk ice cream, soya protein yogurt, mozzarella cheese, and smoked slices. 2. Protein Base * Source of vegetable protein. 3. Hyperprotein emulsifier for sausages, meats, etc. (In Italy the law allows 30% soya protein, in Brazil, 50%). 4. Fabricated Foods (Fudex Plant), as for snacks, crackers, etc. 5. Textured products (Fudex plant). 6. Vegetable Protein Meat Substitutes. Incl. soy protein hydrolysate, soya protein plus beef blood, etc. Also: Tomato powder dressing. Broth cubes (like Soya Wurfel or Morga CH Soya Cubes). Instant broth powder in packets. Soups in packets. Powder meals–high protein diet. Individual meals in Tetrabrik (UHF). Address: Milan, Italy.

4613. Dott. Bonapace & C. 1985. Aminolat liquid concentrate. P.O. Box 1840, 20100 Milano, Italy. 8 p. [Eng]
• ***Summary:*** 1. Uses and benefits as a calf milk replacer. The product is 33% of dry matter; 3 kg = 1 kg of powdered milk. 2. Concentrated Aminolat Liquid (36% dry matter). For human consumption–Long-life UHT. Aminolat is made from defatted soya meal, which is then hydrolyzed (predigested). For this reason, "Aminolat is also superior to the current milk substitutes for pediatric use like Similac, Isomil, Prosobee, Mullsoy, Vegelact, etc. where the soya proteins are in the 'isolated and micronized' form, but still as whole proteins to be digested." Address: Milan, Italy.

4614. *FDA Consumer.* 1985. Warning on soy drinks. 19(7):34. Sept.
• ***Summary:*** "Edensoy and similar drinks should not be used as an infant formula or substitute for mother's milk or sole source of nutrition, FDA has warned. The warning came in June after the agency learned from a Canadian hospital physician of a 6-month-old infant who had rickets due to vitamin D deficiency, vision problems due to vitamin A deficiency, and general malnutrition. It was reported that the infant had been consuming Edensoy as the sole source of nourishment for five months after its mother experienced difficulty in breast feeding...

"A pamphlet and various advertisements and other promotional materials distributed by Eden Foods since 1983 have erroneously suggested that Edensoy may be used as a substitute for mother's milk or as a substitute for infant formula. The pamphlet also states that 'Edensoy compares very favorably with cow's milk.' This statement is false. Soy drink products such as Edensoy are nutritionally inferior to milk...

"FDA advised Eden Foods about the Canadian incident on June 14, and the firm has cooperated fully with the agency."

4615. Groom, Jon; Groom, Sarah. 1985. Bean Machine story. *Point Soja–Soyfoods.* Autumn. p. 8. [Eng; Fre]
• ***Summary:*** Jon and Zorah Groom started a business in 1982 making tofu, soysage, and Soyanaize (vegan mayonnaise) from their kitchen. They learned how to make tofu and soymilk while living in Eire [Ireland] with some people from Stephen Gaskin's Farm in Tennessee. With a co-op of 7 people (The Bean Machine Co-op Ltd.) they transformed an old car spares shop at Crymych into Wales' first soy dairy.

It began operation in January 1984. A new product was Tofu Pasties. They are now building a new plant in Cardigan. Address: Crymych, Wales.

4616. Mitz, Bea. 1985. The joy of soy. *Total Health* (*California*). Sept. p. 55-56.
• ***Summary:*** An overview that contains photos of products made by Legume (Tofu Stuffed Shells Provencale), Loma Linda (Ocean Fillets, Griddle Steaks), Worthington Foods (Tofu Topper), Eden Foods (Edensoy), plus Tofutti and Tofulite (made by Barricini).

4617. Patni, Manmath. 1985. Soybean–Present situation and future possibilities. *Poultry Guide* (*India*) 22(9):53-62, 85-90. Sept.
• ***Summary:*** This paper was presented at the Zonal Agricultural Research Station, College of Agriculture, Indore. Contents: Miraculous tiny seed. Source of vital goodness. World leader soybean. Processing of soybean. Effect of heat treatment on nutritive value / functionality. Basic protein food from soybean. Soya protein concentrate. Soy protein isolate. Texturized protein product. Whole soybean products: Soya milk, tofu, tempeh. Full fat soya flour. Miracle crop of many uses. Present situation and future possibilities.

"For over 5,000 years this tiny seed has been the staple food of certain parts of the East, including North China, Japan, Korea and some areas of India. The ancient Yogis, who were among the world's first vegetarians, placed great faith in the soya bean as a supplement to their meatless diet. In fact it became known as, and is still in the Far East referred to as, 'The Meat of the Soil.'"

Note: In a letter to William Shurtleff of Soyfoods Center dated 21 May 1997, M. Patni states that the source of his information about ancient yogis and soybeans was a book titled *About Soya Beans,* by G.J. Binding (1970, p. 10).

"Source of Vital Goodness: Soybean is not new to India. Black soybean has been cultivated for ages in the low hills of Kumaon and Garhwal regions of U.P. [Uttar Pradesh] as well as on the foot hills of the Himalayas and in some scattered pockets of central India. However, strangely enough the crop has not so far become popular in the Indian sub continent and other tropical countries."

The Soybean Processors' Association of India is opening a Research & Development cum-Training Center at Indore. Address: Product Development Manager, Prestige Group of Industries, Indore.

4618. Shurtleff, William; Aoyagi, Akiko. comps. 1985. Bibliography: Vitasoy. Lafayette, California: Soyfoods Center. 2 p. Unpublished. 28 cm. [34 ref]
• ***Summary:*** Consists of bibliographic records sorted alphabetically by author, printed on a dot-matrix printer. None of the records has a summary or abstract. Nor is there any index. Note: This was made as a gift for K.S. Lo of Vitasoy (Hong Kong). Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4619. Shurtleff, William; Aoyagi, Akiko. comps. 1985. Bibliography: [Soy in] India. Lafayette, California: Soyfoods Center. 8 p. Unpublished. 28 cm. [236 ref]
• ***Summary:*** Consists of bibliographic records sorted alphabetically by author, printed on a dot-matrix printer. None of the records has a summary or abstract. Nor is there any index. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

4620. Tani, Tadato; Katsuki, T.; Kubo, M.; Arichi, S.; Kitagawa, I. 1985. Histochemistry. V. Soyasaponins in soybean. *Chemical and Pharmaceutical Bulletin* 33(9):3829-33. Sept. [12 ref]
• ***Summary:*** Using high-performance liquid chromatography, the authors conducted histochemical analysis to clarify the distribution of "soyasaponins, which are the bioactive constituents of the seeds" of the soybean. Soyasaponin I [later named Saponin A] was found to reside mainly in the plumule, hypocotyl, and radicle of the soybean seed. Note: Saponins, especially soyasaponin I, are responsible for the bitter taste of soymilk. Address: 1-4. The Research Inst. of Oriental Medicine, Kinki Univ.

4621. *Daily Leader* (*Stuttgart, Arkansas*). 1985. Far Eastern food market offers outlet for food-type soybeans. Oct. 2. p. 16C. Insert.
• ***Summary:*** Chris Hartz is manager of the Food Beans section of the Hartz Seed Company. He sells food-type soybeans in the USA and Far Eastern markets for use in making food products such as natto, tofu, bean sprouts, and soymilk. Hartz Seed Company has made a commitment to expanding its position in the soybean food markets and to taking a position as a leader in this field. A photo shows Chris Hartz, who is also involved in real estate.

4622. Steinkraus, Keith H. 1985. Re: Thanks for book. Update on his work. Letter to William Shurtleff at Soyfoods Center, Oct. 4. 1 p. Typed, with signature on letterhead. Address: Prof. of Microbiology, Dep. of Food Science & Technology, New York State Agric. Exp. Station, P.O. Box 462, Geneva, NY 14456-0462.

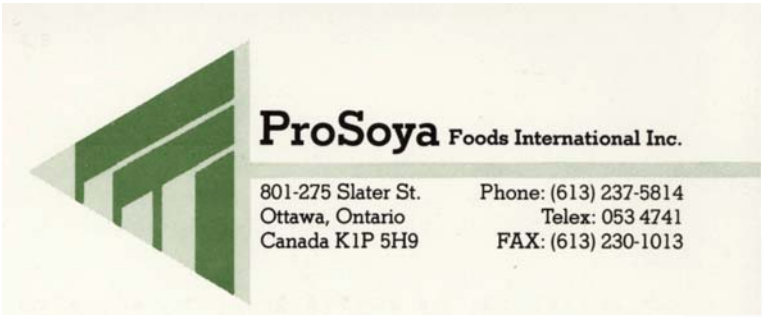
4623. Gupta, Rajendra ("Raj") P. 1985. Re: Plans to make small soymilk plants. Letter to William Shurtleff at Soyfoods Center, Oct. 7. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "Thank you for your letter of 29 Sept. 1985.

"The only reason I sent you the soymilk samples, which were not really good, was for you to see if these had any beany flavor."

"I am grateful to you for your suggestions for improving

my article for soyfoods magazine, and for giving me the latter's new address.

"Our present plan is to make batch type soymilk plants and lease them to the interested tofu shops based on the equipment rental and production rental. These will most likely be $200 per month and $0.05 to $0.10 per litre, respectively, with nominal security deposit at the time of leasing. We do not intend to sell any equipment outright, for one cannot make much money selling the inexpensive equipment costing less than $10,000. The idea is to make enough money to make it available for fast expansion of soyfoods, especially in developing countries."



Note: The company's letterhead has been redesigned and now has a color logo (a dark green and light green arrow pointing to the left) which could be seen as a stylistic rendering of the letters "PFI." Address: Ph.D., Vice President, ProSoya Foods International Inc., 801-275 Slater St., Ottawa, ONT, K1P 5H9, Canada. Phone: 613-237-5814.

4624. Tepper, Robert. 1985. Soy Supreme and Oberg's spray dried tofu (Interview). *SoyaScan Notes.* Oct. 10. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The process uses whole soybeans to make a full-fiber soymilk. This can be either spray dried directly or made into calcium sulfate tofu, which is spray dried using large cheddar cheese spray driers. Paul Taylor is the active man. Mr. Oberg is not involved. Lou Osterbur in Quincy, Illinois is the sales and production manager. Address: Barricini Foods, Oyster Bay, New York.

4625. Pathak, B.K. 1985. Glaxo's interests in soybean products (Interview). Conducted by William Shurtleff of Soyfoods Center, Oct. 11. 2 p. transcript.
Address: India.

4626. Gardiner, Doris Kloss. 1985. Jethro Kloss, his work with soyfoods (Interview). *SoyaScan Notes.* Oct. 21. Conducted by William Shurtleff of Soyfoods Center. Followed by letter of 17 Jan. 1986.
• ***Summary:*** Jethro Kloss definitely made commercial soy ice cream in chocolate and vanilla flavors. He made it himself and sold it in Washington, DC. "My aunt, Promise Kloss Moffett, recalls how he would put it in the ice chips and sawdust to keep it cold. They had a concession stand somewhere down on Pennsylvania Avenue near the White House. My uncle Eden recalls selling lunches there commercially to the public. They included soy ice cream, soy coffee, and sandwiches. He does not recall exactly when or for how long they sold these food products."

Jethro had so many interests that he didn't stick with one idea long enough to make it a real success. He was so creative and had so many ideas, but he was rather like a Gypsy.

"When I was about 9-12 years old I recall vividly that Jethro had a soybean bread baked commercially. It was his recipe. He used to send me to the bakery in Takoma Park, Maryland, to pick it up. The particular bread recipe is found on page 645 of *Back to Eden* and was made using soy bean milk instead of water. It is delicious!

"During the years 1939-1941, Jethro and his wife lived in the Butternut Apartments near Walter Reid Hospital, on the border between Washington, DC, and Takoma Park, Maryland. My grandmother (Jethro's wife) would sometimes go across the street to do 'special duty' nursing at Walter Reed. She died in 1944." Address: Back to Eden Books, P.O. Box 1439, Loma Linda, California 92354. Phone: (714) 796-9615.

4627. Veys, B. 1985. Tolérance et efficacité de l'alimentation entérale exclusive de longue durée chez des patients comateux [Tolerance and efficacy of long-term exclusive enteral feeding for comatose patients]. *Medecine et Hygiene* 43:3150, 3153-54, 3157-58. Oct. 23. [14 ref. Fre]
• ***Summary:*** Galactina Diaetetica's Naga-Sonda soy protein drink is effective in such cases. Address: Service de surveillance continue polyvalente-neurologie (Dr. Danze), Etablissements heliomarins, 62600 Berck-Plage, France.

4628. Grandjean, J.P. 1985. Re: Soya milk packaging into Doy-n-pak pouches. Letter to William Shurtleff at Soyfoods Center, Oct. 29. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "Our firm, owner of the Doy-n-pak patent, supplies the machines designed for making and filling pouches." Address: Thimonnier machines d'emballage, 79 rue de Bourgogne, 69338 Lyon cedex 09, France. Phone: (7) 883.55.55.

4629. **Product Name:** Provamel Soya Drink [Carob, or Honey & Malt].
Manufacturer's Name: Alpro.
Manufacturer's Address: Zuidkaai 33, B-8700 Izegem, Belgium.
Date of Introduction: 1985. October.
Wt/Vol., Packaging, Price: 250 ml, 500 ml, 1000 ml.
How Stored: Shelf stable; refrigerate after opening.

New Product–Documentation: CSP form filled out by Simon Bailey. 1988. Sept. 28. All made with organic soybeans. Adds honey & malt flavor. The importer in England is Vandemoortele (UK) Ltd., Ashley House, 86-94 High St., Hounslow, Middlesex TW3 1NH. Phone: 01-577 2727.

Form filled out by Philippe Vandemoortele of Alpro. 1991. Sept. 4. The carob and the honey & malt flavors were launched in Oct. 1985.

4630. Bayona, Luis. 1985. Cultura da soja [Cultivation of soya]. Maputo, Mozambique: Ministério da Agricultura. iv + 123 p. Illust. 21 cm. Divulgaçao Série–Agricultura No. 4. [18 ref. Por]
• ***Summary:*** Contents: Introduction. Overview: Origin and dissemination, taxonomy, morphology, phases in the development of soya. Cultural needs: Temperature, rain and its distribution, the effect of photoperiod, soils. The technology of soybean production. Diseases and pests. Harvest and storage. Production of soybean seeds. Importance of the soybean as a food for human consumption: How to resolve the problems of flavor, smell, and time of boiling or baking; soymilk, other forms of consuming soybeans (e.g. roasted or as flour). Address: Engenheiro Agrónomo, CEDASPE, INIA, Maputo, Mozambique.

4631. Coudert, Guy. 1985. Le soja dans l'alimentation [Soyfoods]. *Point Soja–Soyfoods.* Autumn. p. 7. [Fre; Eng]
• ***Summary:*** A brief introduction to soyfoods, traditional products (Asia), modern products (Occidental), markets. Concerning modern products: "Isolates are expanding the fastest. The pet food market would be the biggest market for vegetable proteins. This market will remain highly specialized, to the difference of the one for traditional products, because it will save the agribusiness industry in priority." Address: Director of Marketing, ONIDOL.

4632. *EMBRAPA-CNPSo Documentos* (*Centro Nacional de Pesquisa de Soja, Londrina, PR, Brazil*). 1985. A soja na alimentacao [The soybean as a food]. No. 14. 28 p. Oct. [Por]
• ***Summary:*** Contains 46 (mainly) Brazilian recipes including: Homemade soymilk. Homemade soy flour. Almondegas (meatballs / croquettes). Ambrosia with soymilk. Rice with soymilk. Soya beefsteak (2 types). Beefsteak hamburgers (*Bife Hamburgues*). Bolinho with soya meat. Fried soya bolinho. Bolinho for coffee. Address: [Brazil].

4633. **Product Name:** [Soymilk (Natural, and Vanilla)].
Foreign Name: Leche de Soya (Natural, Vanilla).
Manufacturer's Name: Empresas Soya-Soy.
Manufacturer's Address: Km. 4 Carretera Transpeninsular al Norte, La Paz, Baja California Sur, Mexico.
Date of Introduction: 1985. October.
Ingredients: Purified water, soybeans, sugar, vanilla.
Wt/Vol., Packaging, Price: 100 ml in pre-printed plastic bag.
How Stored: Refrigerated.
Nutrition: Per 100 ml: protein 3.6 gm, carbohydrates 13 gm, fat 1.81 gm, calcium 18.7 mg, total solids 5.83 gm, calories 83.
New Product–Documentation: Leaflet (2 panels each side, each panel: 22 x 13 cm, blue on white) sent by Fran Barnes. 1988. June. *Ya Esta Aqui. Leche de Soya. Soya-Soy, el alimento del futuro* [It's already here. Soymilk. Soya-Soy, the food of the future]. Drink it at your favorite store. With four recipes. On the front panel is a smiling young man wearing a sort of space helmet.

Letter from Fran. "Several year ago I wrote you that I was beginning a soymilk factory in Baja. There are many advantages to producing in Mexico and it was a good experience. Now we would like to sell ($8,000 for everything) or lease our tofu and soymilk factory. There is a good market in existence and a very potential future for soymilk here." Response from Fran to questions. 1988. Aug. 1. The soymilk was introduced in Oct. 1985 by Soya-Soy in

natural and vanilla flavors, and produced intermittently as a liquid. They made a maximum of 2,000 liters/month. They also made tofu but only about 15 kg/month, which they sold only to friends. "Ejo Takata has equipment at his acupuncture school but has not produced soymilk since the earthquake. A lot of information goes out now to the people from the Social Services Government Dept. on how to cook with soybeans and make foods."

Label. Received Aug. 1988. Green, blue and purple printed on 7 by 9 inch clear plastic bag. An illustration (line drawing) shows a soybean with a football helmet on throwing the world. "Keep refrigerated. Product of vegetable origin. Rich in protein, minerals and vitamins. Does not raise cholesterol."

4634. **Product Name:** Frostig (Non-Dairy Beverage) [Chocolate, Mountain Berry, Piña Colada, or Orange Juice].
Manufacturer's Name: Frostig Inc.
Manufacturer's Address: Incline Village, Nevada.
Date of Introduction: 1985. October.
Ingredients: Water, tofu, sucrose, corn sweetener, orange juice, pectin, natural flavors, citric acid, sodium citrate, annatto.
Wt/Vol., Packaging, Price: 32 fluid oz laminated milk-carton type container.
How Stored: Refrigerated.

4635. Latzke-Begemann, Ute; Walker, Judith. 1985. Soybean household utilization in South Western Nigeria. In: Proceedings of Tropical Soybean Workshop. 164 p. See p. 69-91. Held 30 Sept. to 4 Oct. 1985 at IITA, Ibadan, Nigeria. Unpublished manuscript. [1 ref]
• ***Summary:*** Contents: Introduction. Recipes: Preparation of soypaste. Ground soybean with ogi. Ground soybeans with rice. Tuwo with ground soybean paste. Sweet potato with ground soybeans. Pounded yam with ground soybeans. Vegetable soup with soybean paste. Soybeans with maize. Yam porridge. Soymilk. Akara. Moyin moyin. Iru or dadawa.

Contains many photos, especially of soyfoods preparation at the Kersey Children's Home at Ogbomosho. The recipes were developed at this Home, a situation which is recognisable to many low income African families, both rural and urban. The recipes use the simplest kitchen technologies.

Note: This is the earliest English-language document seen (Jan. 2012) that uses the word "dadawa" or the word "iru" to refer to dawa-dawa, a close relative of Japanese natto. Address: Socio-Economic Unit, Farming Systems Programs, IITA, Ibadan, Nigeria.

4636. *Point Soja–Soyfoods.* 1985. L'intérêt du Club de Dakar pour le soja [The Club of Dakar's interest in soybeans]. Autumn. p. 3. No. 3. [Fre; Eng]
• ***Summary:*** The Club of Dakar is a non-governmental organization, unique in the sense that it is composed of about 200 people from both inside and outside Africa. Their purpose is to develop efficient solutions in the fields of cooperation and development. Three years ago, when the Club got involved with the soybean and saw its real usefulness for African countries, it requested an overview of the situation. Two young Africans, M. Gomes and M. Toumbi, were asked to make the first survey of soybean cultivation in Africa and of information available regarding the development of soybeans in Africa. The main conclusions of the report are: Soya is not unknown in Africa, but it has undergone an uneven and discontinuous development. The only perspective that would allow the development and prosperity of Africa's soybean complex would be in cooperation with Europe. Also new soyfood products such as tofu, tempeh, and flavored soymilk must be tested in Africa. A great deal of work on soybean cultivation has been done by the IITA in Ibadan, Nigeria, and by various institutes in Senegal. For more information and to order publications on soy in Africa and on Biotechnics, contact The Club of Dakar, Administrative Secretary, 4 Avenue Hoche, 75008 Paris, France. Phone: 42-67-16-00.

4637. STS–Soya Technology Systems Ltd. 1985. STS–Soya Technology Systems Limited (Leaflet). 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 2 panels each side. Each panel: 30 x 21 cm. Oct. Manufacturer's catalog.
• ***Summary:*** A glossy color leaflet. The green, gold and white cover has the STS symbol on the cover. Contents: Who are STS? Who do STS do? Why a turnkey project? The DDS Group. STS Services. Soymilk Processing (steps in process). Merits of soymilk (Highly nutritious, inexpensive, can provide food self-sufficiency, lactose free and highly digestible, non-allergenic, healthful, versatile. "Add it all together–Soymilk makes sense!"). Shows model of plant. STS was incorporated in 1982. A Chinese-language edition of this was also published in Oct. 1985.

4638. Sugarman, Carole. 1985. Selling what comes naturally: From whole grains to tofu mayonnaise, health foods have hit the mainstream. *Washington Post.* Nov. 3. p. K1-K2.
• ***Summary:*** Mentions: Westbrae, Fantastic Foods, Second Generation Tofu Products. Address: Washington, DC.

4639. *Times* (*Carmi, Illinois*). 1985. Search for more soybean uses. Nov. 5.

4640. Golden Proteins Limited. 1985. Display ad: High yielding soya oil production and deep sea fishery. *Times of India* (*The*) (*Bombay*). Nov. 9. p. 17.
• ***Summary:*** "New project: Soya. And now, from strength to greater strength, Golden Proteins diversifies into the high profit Soya field–with 100 tonnes per day capacity soya solvent extraction plant at Sahibabad, Dist. Ghaziabad,

Uttar Pradesh. Besides producing refined soyabean oil, the Company plans to process soya milk, curd, cheese, soyameal into soya flour, protein concentrates and isolates, and texturised vegetable products.

A bar chart shows that the Company's sales grew from Rs. 21 lacs in 1982 to Rs. 136 lacs in 1984. Address: Registered office: C-2 Vasant Vihar, Main Market, New Delhi 110057, India.

4641. Kloss, Eden P. 1985. Re: Jethro and Eden Kloss selling soy products in Washington, D.C., in about 1930. Letter to William Shurtleff at Soyfoods Center, Nov. 15. 1 p. Typed, without signature.
• ***Summary:*** "I remember helping my father, Jethro Kloss, prepare quick lunches which we sold to passersby on Pennsylvania Avenue, near the White House. We had a space allotted to us where we parked our small trailer equipped to serve the people, and when the workers poured out of the government buildings at noon, many would stop and buy our lunches.

"Some things had to be prepared before, of course, like the ice cream, which was quite a process, for we made the soy cream directly from the raw soybeans. They were soaked (over night), then parboiled, cooked about two and a half hours, ground in a mill, put into sugar bags, and the cream squeezed out with water. This rich soy milk was then used to make the ice cream. I don't recall the exact recipe (any more), but I remember he used egg whites in those days (later he used agar-agar) with honey for sweetening, and made the ice cream in strawberry, chocolate and vanilla flavors. We froze it with a hand-powered freezer and put the ice cream in metal containers and packed them in ice with salt to take in the trailer.

"We made sandwiches with various nut meats, lettuce and sliced tomatoes. We also served soybean coffee kept hot with a gas hot plate we had in the trailer. Our soy cream for the coffee was kept sweet on ice." Address: c/o Promise Joy Kloss Moffett, Route 1–Box 194, Hagerstown, Maryland 21740. Phone: (301) 739-1546.

4642. *Times of India* (*The*) (*Bombay*). 1985. Company news: Golden Proteins for public issue. Nov. 25. p. 13.
• ***Summary:*** "Golden Proteins, an export-oriented dividend paying company, will enter the capital market on December 14, with a public issue of 7.50 lakh equity shares of Rs. 10 each at par." Since 1982 the company has been in the business of deep sea fishing and exporting the creatures it catches, freshly frozen, to South East Asia.

Future plans include the manufacture of texturised protein foods, plus soya milk, curds, and cheese.

4643. Golden Proteins Limited. 1985. Display ad: Extracting big profits from little soyabeans–netting high returns from deep sea fishery. *Times of India* (*The*) (*Bombay*). Nov. 26. p. 10.
• ***Summary:*** Note: This ad, which is quite similar (except in its title) to the one that appeared in this newspaper on Nov. 9 (p. 17), repeats a clearer version of a statement printed in the former ad: "Besides producing refined soyabean oil, the Company plans to process soyameal into soya flour, soya milk, curd [tofu], cheese flour, protein concentrates and isolates, and texturised vegetable products." Address: Registered office: C-2 Vasant Vihar, Main Market, New Delhi 110057, India.

4644. Wenzel, John S. 1985. Re: Work with soy at Griffith Laboratories Ltd. in Canada and developing countries. Letter to William Shurtleff at Soyfoods Center, Nov. 22–in reply to inquiry of Nov. 12. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "You ask about my work with soya in Canada. Most of the work before retirement in 1982 from the Griffith Laboratories Ltd concerned: (1) Manufacture of textured soy protein and allied texturized products using soy and other protein materials; e.g. peas, meat, etc. (2) Investigation and manufacture of other products; e.g. soya concentrate, soya milk, spray dried full fat soya flour.

"Since July 1982 I have had a variety of consulting jobs with the Canadian International Development Agency and the Canadian Executive Service Organization on: (1) utilization of soybeans in Sri Lanka to make T.S.P. [textured soy protein] and full fat soya flour. (2) development of a T.S.P. industry in Thailand. (3) manufacture of soya milk in Sri Lanka."

"Over the years I have been interested in the utilization of soya in developing countries more from the standpoint of industrial processing... but more on smaller scale processing which is where some of the countries must start.

"I do hope that our paths will cross in the future." Address: J. Wenzel Food Technology Associates Inc., 14 MacDonnell St., Kingston, Ontario K7L 4B6, Canada. Phone: (613) 546-6826.

4645. Ahmadu Bello University, Agricultural Extension and Research Liaison Services. 1985. Soyabeans in the Nigerian diet. *Ahmadu Bello University, Extension Bulletin.* No. 21. 74 p. Nov. Home Economics Series No. 1. [64 ref]
• ***Summary:*** See the original 1977 edition. Address: Agricultural Extension and Research Liaison Services, Ahmadu Bello Univ., P.M.B. 1044, Samaru-Zaria, North Nigeria.

4646. Bennett, Gordon; Snyder, Steve. 1985. Soymilk standards: First draft. Emeryville, California. 11 p. Nov. Unpublished manuscript. 28 cm.
• ***Summary:*** Contents: Purpose of standards. General definition of soymilk: History, terminology, types of soymilk. Plain soymilk (traditional and new type): Ingredients, manufacturing process, varieties and nomenclature according

to consistency, varieties and nomenclature according to method of growing soybeans (organic soymilk), varieties and nomenclature according to protein ingredients (soybeans, isolated soy proteins, etc.), varieties and nomenclature according to fat content, soymilk with (dietary) fiber, pasteurized soymilk.

Dairy-like soymilk (traditional and new type): Note: Each of the following have all or many of the same subcategory headings as for Plain Soymilk. Dairy-equivalent soymilk (traditional and new type). Infant formula soymilk. Blended soy beverages. Flavored soy beverage.

Labeling and advertising of soymilk: General, statement of identity, ingredient labeling, use date labeling, refrigeration information labeling, bulk products, substantiation of advertising claims. Microbiological guidelines for soymilk. Endorsement: "Seal of Soymilk Integrity." Soymilk Standards Committee: Adoption and amendment of standards.

Gordon Bennett took the lead in creating an Ad Hoc Soymilk Group and in compiling these standards, which were based on and modeled after the tofu standards developed during the previous year. Bill Shurtleff of Soyfoods Center, who compiled the tofu standards and served as a consultant for these standards, is listed on the front page as a "Source." Address: 1. Westbrae Natural Foods, Emeryville, California; 2. Vitasoy (USA) Inc., San Francisco, California: Both: Ad Hoc Soymilk Group.

4647. Horlings, George; Martens, Ron. 1985. Soybeans in Bangladesh: A background report. Dhaka [Dacca], Bangladesh: Mennonite Central Committee. 65 p. Nov. [36 ref]

• ***Summary:*** Contents: Introduction: Agronomic, nutrition, soybean in Bangladesh. Existing situation: Area and production, yields, soybean varieties, agronomic details, competing crop survey, soybean in India. Soybean utilization: Soybeans as a pulse, ramgati cooking demonstration evaluation, oil expelling, soymilk, soya biscuits, chanachur, suggestions from BCSIR, other soybean foods, soybean oil, soymeal. Marketing system and prices. Soybean programs: Bangladesh Coordinated Soybean Research Project (BCSRP), Bangladesh Agriculture University (BAU), Bangladesh Agriculture Research Institute (BARI), Bangladesh Agriculture Development Cooperation (BADC), Bangladesh Council of Scientific and Industrial Research (BCSIR), Directorate of Agricultural Extension (DAE), other organizations in Bangladesh, International Soybean Program (INTSOY), Asian Vegetable Research and Development Centre (AVRDC), International Institute of Tropical Agriculture (IITA), Food and Agriculture Organization (FAO). Seed production and storage: Seed multiplication, seed storage. Constraints: Market and demand, land competition, research & development, seed availability, inoculant availability and use, extension services. Conclusion. Appendices: Unreleased soybean varieties tested by MCC, soybean cultivation guide, cultivation guide for soybean in West Bengal, soybean recipes, objectives of the BCSIR, integrated oilseed research project (soybean breeding).

"Soybeans were first introduced into Bangladesh in 1942. In 1960-61 varietal screening resulted in the selection of S3, Pelican and Barmeli for the *kharif* season. These varieties were later found to be susceptible to yellow mosaic virus.

"In 1972-73 MCC began with research and extension work on soybeans, primarily as a *rabi* season crop. The Bangladesh Coordinated Soybean Research Project (BCSRP) was established in 1975. This project involved Bangladesh Agriculture Research Institute (BARI), Bangladesh Agricultural University (BAU), Bangladesh Council of Scientific and Industrial Research (BCSIR), several other government institutions, and Shilpee Food Products, as well as the Mennonite Central Committee (MCC). In 1981 the BCSRP was discontinued. The two main problems were felt to be: difficulty in producing high quality seed and the lack of a solvent oil extractor.

"MCC has continued with soybean research and extension work, believing these problems can be overcome or other solutions found. BAU is continuing with work on soybeans in its Integrated Oilseeds Research Project (IORP). BCSIR continues to work on soyfoods and the Bangladesh Sugar and Food Industries Corporation (BSFIC) produces some soybeans on its farms. Other institutions and organizations are still involved to varying degrees." Address: 1. Agronomist; 2. Food Technologist, Mennonite Central Committee, Dhaka, Bangladesh.

4648. **Product Name:** [PHAG Soya Dessert (Chocolate, Vanilla, Strawberry)].
Foreign Name: PHAG Soja Dessert (Choco, Vanille, Fraise).
Manufacturer's Name: PHAG Sàrl (Produits Hygièniques Alimentaires Gland) (Marketer-Distributor). Made in Belgium by Alpro.
Manufacturer's Address: La Ligniere, CH-1196 Gland, Switzerland. Phone: 022/64 11 18.
Date of Introduction: 1985. November.
Ingredients: Chocolate: Water, cane sugar, soybeans, defatted cocoa, modified starch, fructose, thickener, natural aroma (vanilla), sea salt.
Wt/Vol., Packaging, Price: 500 gm Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Chocolate: Per 100 gm.: Protein 3.5 gm, fat 1.7 gm, carbohydrate 13.0 gm, calories (kcal) 77 (325 kJoules).
New Product–Documentation: Letter from Remy Mayer of PHAG. 1990. Oct. 2. This product was introduced in Nov. 1985. His company distributes the product, which is made by

their sister company DE-VAU-GE in Lueneburg, Germany. The strawberry flavor is no longer sold.

Labels sent by Mayer. 1991. Jan. 24. 500 gm Tetra Brik Aseptic cartons. Chocolate: Dark brown, tan, red, and green on white. "Pure and made from plants. Ready to use. It can also be used as a pastry filling. 100% from plants. Contains no coloring agents."

4649. Saio, Kyoko. 1985. [Tofu processing characteristics of Japanese domestic soybeans: Technical report]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku* (*Report of the National Food Research Institute*) No. 47. p. 128-49. Nov. [6 ref. Jap; eng]
• ***Summary:*** This technical report is by "Kyoko Saio and the Research Group of Tofu." Japanese domestic soybeans were found to be superior for making both regular and packaged tofu due to the whitish color of the tofu and soymilk they produced, and to the quality of the finished tofu. Address: 1. National Food Research Inst. (Shokuhin Sogo Kenkyujo), Ministry of Agriculture, Forestry and Fisheries, Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan.

4650. Praskin, Laurie Sythe. 1985. The Farm soy history: An overview. Part I. Los Gatos, California. 10 p. Dec. 1. Unpublished manuscript. [Eng]
• ***Summary:*** "In 1971, a unique group of people settled in the Tennessee backwoods to live an alternative lifestyle, committed to living collectively off the land. The community of 200 people came to be known as The Farm and over the years grew to 1,500 residents, gaining international and domestic fame for its community ideals, lifestyle, alternative technologies, [midwifery], and vegetarian diet based on soybeans. Soy technologies practiced and developed on The Farm became the seed for many tofu and tempeh shops that sprang up around the world in the years that followed. Community members started the first [sic, sixth] commercial soy ice cream company, and the first soy 'deli.' Some went on to start several of the major tempeh shops across the United States and Canada and others helped start a network on international soy programs in underdeveloped countries. Innovative recipes developed by Farm members led to the publication of three cookbooks which have made a large contribution to the growing acceptance of soybeans and tofu in the American diet.

"When The Farm was first settled in 1971, most of the people were already vegetarians. There were a variety of reasons for their personal choices: (1) an unwillingness to kill in order to live (feelings which stemmed from religious beliefs similar to the Buddhist religion, as well as pacifist attitudes deepened during the Vietnam War); (2) a growing awareness that meat was too costly to produce and that if more people at lower on the food chain there would ultimately be more food to go around in the world; (3) evidence of the healthful benefits of a vegetarian diet; (4) a belief that the dairy industry practiced cruel and exploitive methods on animals and a reluctance to support that system.

After the community was established, the entire membership decided to adhere to a complete vegetarian [vegan] diet devoid of all animal products, including eggs and dairy. They wanted to create a self-sufficient community, eating primarily what they grew on the land. They also wanted to be an example of how people could eat foods lower on the food chain to help create a larger supply of food in the world. During the search for a nutritionally sound vegetarian diet, they settled on soybeans as the main form of vegetable protein, as soybeans have one of the highest and most complete protein contents and are more versatile than any other vegetable protein. Many of the members had already been eating tofu and other soy products before The Farm, but acquiring these foods in the middle of the Tennessee woods was not an easy job. Soybeans were readily available, as they were used as local cattle food, but the challenge was how to create healthy and appetizing foods from them. Besides the Asian population and some Seventh-day Adventists, there weren't many people in the U.S. at the time actually eating soybeans, let alone trying to use them as the main source of protein.

"There were not many physical resources available as the people arrived with few possessions, lived in buses and tents, and had little capital to work with (a typical Third World situation). Some people owned Corona hand mills and occasionally ground soybeans to make fresh milk or tofu, using the recipe in the Seventh Day Adventist's Ten Talents cookbook. Fearn Instant Soya Powder was purchased and used for making soymilk, tofu, yogurt, and 'soy butter.' Just a few families owned pressure cookers so people cooked large communal pots of soybeans, taking turns 'watching the pot,' since they boiled them for 16 to 20 hours, to be sure they were digestible.

"By 1972 the Farm had its own flour mill that ground soybeans into full-fat soy flour and soy grits. The community was then able to make fresher soymilk, and tofu, as well as add soy flour to baked goods for added protein. They developed a curded soy flour base that was spiced and used as a sandwich spread, and they also baked soy flour 'souffle.'

"During these early days while the diet was still being worked out, the young children were given eggs for their protein source. Margaret Nofziger, the Farm's dietician, wanted to provide the babies and young children with a soy formula as a weaning food. She asked Alexander Lyon, a Farm member with a Ph.D. in microbiology, to research how the community could make the formula. He began an extensive research both in libraries and through correspondence. Fortunately, there were studies available about the uses of soy for human food consumption. Alexander, (Dr. Lyon) contacted Dr. Hesseltine and Dr. Wang of the Northern Regional Research Center in Peoria, Illinois, and Dr. Steinkraus of Cornell University in New York. These researchers provided a treasure of information to Dr. Lyon

and to the soy technicians that followed. Other scientists who should be credited for their early and helpful research are Dr. Harry Miller with Loma Linda Foods and Malcolm Bourne with Cornell University.

"All of the information gathered by Dr. Lyon led to the start of the Farm Soy Dairy in 1972. After learning the basic processes involved in soy milk preparation, Alexander began collecting used equipment that could be adapted for the use of making soymilk. The original soy dairy was very small, with a production capacity of 20 gallons of soymilk a day, and expanded over the years as the soy technicians were able to find and add new equipment to their dairy. This dairy became a cross between a Japanese tofu shop and American ingenuity. The Farm Soy Dairy had no capital to start operations and no investors beside the Farm itself. Cash was hard to come by and as with all other commodities on the Farm, the products were distributed freely to community members. For these reasons, the soy technicians had to be creative and imaginative in how they obtained equipment and how they adapted such equipment to their needs. Over the years, they went to auctions, scrap metal yards and used restaurant equipment houses. They bought, bartered and traded for their equipment. They designed their own systems in their welding shop and then re-designed them to make improvements and to increase production. They became a school, learning as they went along. In 1975, Laurie Sythe Praskin, one of the early workers in soy dairy, succeeded Dr. Lyon in managing the operation. Over the next 4 years, with David Handel and Michael Halpin as equipment developers, weekly production increased to 800 gallons of soymilk, 600 lbs. of tofu, 80 gallons of soy yogurt, and a varied amount of soy ice cream." Continued. Address: 17969 Oak Dr., Los Gatos, California 95030.

4651. Praskin, Laurie Sythe. 1985. The Farm soy history: An overview. Document part II. Los Gatos, California. 10 p. Dec. 1. Unpublished manuscript. [Eng]

• ***Summary:*** Continued: In 1975, Farm members started a company to promote the use of soybean products in the America diet. The company, named simply Farm Foods [Farm Food Company], began sales on the East Coast with full-fat soy flour (ground fresh on The Farm), TVP (texturized vegetable protein), Good Tasting Nutritional Yeast, split soybeans, and Tempeh Starter Kits (developed by Cynthia Bates and Dr. Lyon). In 1976, under the management of Leticia Coate and Robert Tepper, Farm Foods began participating in national health food trade shows. At the time, they were one of the only companies representing soyfoods. Along with their packaged products, they sold cookbooks and served free samples of tempeh, TVP chili, and nutritional yeast crackers.

"The products and recipes developed over the years led to the publication of three cookbooks: *The Farm Vegetarian Cookbook* (1975) and *Tofu Cookery* (Oct. 1982), edited by Louise Hagler, and *Tempeh Cookery* (March 1984), edited by Colleen Pride. These books made a major contribution in westernizing recipes previously Oriental in origin. They were available in all natural food stores throughout the country.

"The work with soy products on The Farm also inspired members to start two vegetarian restaurants; the Farm Foods Cafe [opened Aug. 1976], in San Rafael, California, managed by Robert Dolgin, was the first "soy deli" in the United States. Everybody's, located in Nashville, Tennessee [opened July 1980], was managed by Judd and Diane Hoffman.

"The acceptance by the public of Farm Foods Cafe was overwhelming, and although it only operated from 1976 to 1977, it pioneered the path for many tofu delis that have followed since. The unique characteristic of this deli was the tofu and tempeh shop producing fresh products located in the rear of the store. The Farm Foods Cafe also became the first [sic] company to market a non-dairy ice cream made from soybeans. This frozen dessert, marketed under the name of 'Farm Foods Ice Bean,' is still being sold in health food stores nationwide.

"In 1977-78, The Farm Foods Cafe closed, and the soy processing equipment was moved to San Francisco. Farm Food Company began wholesaling soy products throughout California under the management of Robert Tepper. They continued marketing Farm Foods Ice Bean, and added tofu salad [like eggless egg salad], 'tofu cheesecake,' a frozen soy yogurt dessert, and the first firm-pressed tofu to hit the California market. In 1980 it was decided to drop the perishable tofu business and concentrate on the nationwide distribution of Farm Foods Ice Bean. The plant in San Francisco was closed, and large scale production began in a Memphis, Tennessee, dairy and ice cream factory. This new location gave the company easier access to East Coast distributors, and they soon established additional warehouses in Connecticut and California.

By 1984, under the management of Ron Maxin and Michael Lee, the weekly production of The Farm Soy Dairy [in Summertown, Tennessee] was 1,000 lb of tofu, 150 gallons of soymilk, 20 gallons of soy yogurt, 20 gallons of soy ice cream, 400 ice cream sandwiches, and 90 lb of tempeh. Today, the Soy Dairy produces an average of 5,000 gallons of soymilk a month for Farm Foods to use in Ice Bean production. The soymilk is shipped by tanker truck to the Ice Bean production plant [in Memphis], and the Farm Soy Dairy also markets its products in Nashville and Columbia, Tennessee.

"The Farm's uniquely controlled vegetarian diet led to two official studies of its effect on the children. In 1979, Dr. Jeffrey Hergenrather, et al., conducted a study on the pesticide levels in the breast milk of vegetarian nursing mothers on the Farm. He submitted a letter of his findings to the editor of the *New England Journal of Medicine,* March 26, 1981. His letter challenged a previous article written by

Rogan, et al, (New England Journal of Med. 1980) which stated that 'there are no obvious dietary predictors' of chemical pollutant in human milk. Rogan went on to say 'For certain fat-soluble chemicals, nursing infants can be regarded as living at the top of the food chain and are exposed to much more than background levels.' Dr. Hergenrather's study included 12 women whose breast milk was analyzed for 17 chemical substances. When compared to the seven contaminants studied by Rogan, in all but one of the contaminants, which showed no difference in contaminant levels, the milk of the vegetarian women had lower levels of contamination.

"The second study was conducted by Jean Roberts Fulton in 1980 and was published in the *Journal of the American Dietetic Association.* She studied a group of the Farm nursery school children and found their amino acid and iron intake to be adequate. (The diet was low on calories, however.)

"The innovative methods used by the Farm soy technologists inspired many groups and individuals to start all over the world to train in the Farm Soy Dairy, and many who couldn't come personally were encouraged through correspondence. In 1977, Plenty, the non profit relief organization founded by the Farm, established an international training program whereby people from other countries could come and train in soybean processes and other technologies that The Farm had to offer. The Farm Soy Dairy received its first trainees from Guatemala and Mozambique.

"From the beginning days of the Farm Soy Dairy, the technicians realized the value that soybeans could have in Third World countries. Eventually they were able to share their knowledge and training in the field of soybeans by starting a dairy in an impoverished country. In 1979, Plenty Canada and Plenty USA sent Farm Soy Dairy technicians Laurie Sythe Praskin, Suzy Viavant and Richard Decker to Guatemala to help establish Plenty's first international soy dairy/tofu shop. Other technicians who trained on the Farm have gone on to help start soy programs with Plenty Canada in Lesotho (in Southern Africa, 1979-present), Jamaica (1983-present), St. Lucia (1983-present), and Dominica (1984-present).

"Many of the people who lived on The Farm and trained in the Soy Dairy or with Farm Foods have started their own soy companies or are working in underdeveloped countries. The common goal felt by all has been to provide healthful, delicious foods for all people, rich and poor alike. Because soybean products can be presented as gourmet dishes, yet can also be prepared very simply, they continue to be accepted by all classes of people." Continued. Address: 17969 Oak Dr., Los Gatos, California 95030.

4652. Praskin, Laurie Sythe. 1985. The Farm soy history: An overview. Document part III. Los Gatos, California. 10 p. Dec. 1. Unpublished manuscript. [Eng]

• ***Summary:*** "The Farm soy dairy was started in 1972. The original equipment consisted of a 15 gallon electric coffee pot to cook the [soy] milk, a washing machine [whose spin cycle was used] to extract the milk from the okara, and a peanut grinder to grind the dry soybeans into fine grits. The dry soy grits were added to the boiling water, cooked, and then poured into a bag that was placed in the washing machine. As the washing machine spun, the milk was extracted by the bag by centrifugal force. The soymilk was distributed immediately in glass gallon jars, as there was no refrigeration system available. The capacity of this operation was around 20 gallons a day at this time, the soy dairy was located in the sorghum mill, a split-level, cement block building with concrete floors.

"In 1973, a Farm member's parents donated some used dairy equipment that they had used on their goat farm. The soy dairy made its first technological leap. Included in the equipment was a 45 gal. electric pasteurizer/cooker, a drip system plate cooler, and a 90 gal. refrigerated milk tank. The washing machine was too inefficient and unsanitary, and a simple hand-lever press was constructed, modeled after a Japanese-style press observed by Lesli Jordan in 1973. Lesli apprenticed for one week in a small Stockton Tofu company where she compiled information on procedures for making tofu and age pouches and also took photographs. When she returned to the Farm, her husband Darryl built the soy dairy's first tofu box. The new presses were made from two galvanized wash tubs with holes on the bottom. These were placed on a strong wooden stand and lined with a light cotton cloth bag. Wooden racks were placed on the bottom to keep the bag of the hole, allowing the milk to flow from the tubs freely. The milk was pumped into the bags from the cooker. The filtered milk flowed into buckets, which were then carried and poured into the small holding tank of the plate cooler. The slightly cooled milk was then carried by bucket to the refrigerated milk tank, where it was cooled to 30 degrees Fahrenheit and stored until delivery to the store. The milk was transported in 10 gal stainless steel milk cans to the store where it was distributed. The okara in the bags was pressed to extract all of the milk using a lever system come-along. At this time, the beans were being ground into dry grits at the Farm Flour mill. The capacity of the soy dairy was now 90 gallons of soymeal [not defatted] a day. Occasionally, large blocks of sour milk cheese were made, and 12 to 16 gallons of acidophilus yogurt were made daily. The yogurt was made in one gallon glass jars, incubated in an old refrigerator, and stored in a conventional refrigerator. Tempeh was also being experimented with, using the okara left over from soymilk production. Soy ice cream was being made on a very small scale, using two table top ice cream machines with one quart capacity. Alexander Lyon was still managing the soy dairy. By this time, the Farm was no longer producing sorghum, and the soy dairy had taken over

two levels of the three level building. Only cold water was available, so pots of water were carried to the second floor, where they were heated on a stove to be used for cleanup. During the cold winters, a pot belly stove was added to the array of equipment and centered right in the middle of the production room.

"Early in 1975, Alexander left the soy dairy and Laurie Sythe Praskin took over managing production. David Handel and Warren Jefferson stepped in as full-time equipment men to help improve the operation and increase production. Laurie began doing research on how to improve the flavor of the milk, which was very cereal-tasting because of the dry grits. She and David added an industrial Hobart meat grinder to the system and began soaking their beans and grinding them fresh each day. The beans were initially soaked in a bath tub and later in one of the copper lined sorghum tubs. The tub was placed on the second level, so the beans could gravity feed into the grinder. The flavor was greatly improved, but the grinding was very slow and the grind was not very fine.

"They began working on new ideas for a press that could omit the bag and muscle needed to press with the come-along. David devised a system using an upside-down bumper jack mounted over a stainless tank. Inside the tank was a stainless cylinder with holes drilled in the bottom and sides. The milk was pumped or bucketed into the inner cylinder and flowed out the holes when vibrated. The cylinder was vibrated with a rubber mallet. A stainless press plate was placed on top and jacked down to press out all the milk. This system was slow and the okara had to be shoveled out after each batch.

"In late 1975, it was decided to move the soy dairy to The Farm's cannery building so that it would be in a more central location to the Farm's growing population and to make use of the steam boiler that was located there. Even though it had a wooden floor, it was a great improvement for the dairies production. They immediately added some steam jacketed cooking kettles acquired from a scrap yard and production capacity doubled to 150 gallons of soymilk a day. The slow points of operation were now the grinding, separation of milk and okara and cooling of the milk. They began hot blanching the soy beans before grinding for improved flavor. A 150 gallon refrigerated milk tank was added to handle the increase in milk production. While looking for an improved separating system, one that could be continuous, David and Laurie started eyeing some equipment that had been scrapped by one of the Farm's crews. The equipment came from an old evaporated milk plant and included a vibrating separator and a tubular heat exchanger. The separator was converted for the use of the wet soymilk separation. A stainless frame was built to fit in the vibrator with a cloth secured around it. The milk was bucketed and later pumped over the screen while the vibrator was on. The milk flowed through the screen and out the end into a holding tank. The pulp was sprayed with a little water to wash out the milk and the pulp was deposited into buckets. The tubular heat exchanger was converted to be used as a pre-cooler. Cold tap water was run through jacket that surrounded inner stainless tubing that the milk was pumped through. A wet corn masa mill was made by Michael Halpin to be used to grind corn for tortillas and to grind the soybeans for the dairy. Now the grinding time was no problem and production increased to 200 gallons of milk a day. Tofu was still not being made on a community scale as the milk came out of the separator too cold to curd properly. Laurie was also making thirty to forty gallons of yogurt a week." Address: 17969 Oak Dr., Los Gatos, California 95030.

4653. Praskin, Laurie Sythe. 1985. The Farm soy history: An overview. Document part IV. Los Gatos, California. 10 p. Dec. 1. Unpublished manuscript. [Eng]
• ***Summary:*** Continued: "In 1977, Laurie visited her home town in California. She went to visit her favorite Japanese tofu shop and ran into Bill Shurtleff and Akiko Aoyagi outside the closed shop. They were delivering a copy of their *Book of Tofu* to the owner and tofu maker of the shop. Bill took Laurie to the tofu makers' home and helped arrange for Laurie to observe in his shop for one day. Upon returning to the Farm, Laurie immediately set up the Farm's first tofu shop in a small corner of the soy dairy. She set up a very simple shop using one of their cooking kettles and designating it for cooking milk only for tofu. A wash tub was mounted on a stand with a simple lever for pressing out the milk. The tub was lined with a coarsely-woven bag, and a sawed-off whiskey barrel was placed underneath to catch the milk. A finer nylon cloth was stretched over the top to strain out the finer pulp [okara]. Hot milk was bucketed into the press, the bag twisted shut, and a heavy wooden press plate placed on top. The original wooden tofu box was finally in use as well as two additional round stainless boxes made by Michael Lovett. The tofu was pressed with cement blocks or buckets of water. Tofu was made in the whiskey barrel and a 20 gal [gallon] aluminum Hobart bread bowl. The tofu shop's capacity was 200 lb of tofu on a production day. In total, about 600 lb/wk in addition to 800 to 1000 gal/wk of soymilk. Most of the tofu went to people with special dietary needs.

"It seemed very energy inefficient to run a separate tofu and soymilk operation, so technicians started designing a separator that could service both operations. Michael Halpin, one of the Farm's equipment technicians, designed a hydraulic press which cost less than $1500 to build. This was the first large amount of money spent by the dairy for equipment. The inspiration for the money came from the delicious tofu produced in the small shop. Once everyone realized how good it was, the decision to invest community money for improved nutrition followed. The idea of the press was good, but all of the bugs were never worked out.

It was supposed to require no bag. The milk was pumped into a stainless cylinder that was drilled with holes and set inside another stainless holding tank. Then with press plate and gasket, the hydraulic ram came down from above, squeezing out the milk. When pressed, there was a trap door at the bottom that was opened, and the pulp pressed right out into a container. The trap door shut, and the press was ready for another batch. The system was supposed to work easily and efficiently. It never did. Gasket failures were a problem, spewing hot soymilk and pulp all over the dairy. In addition, the trap door never worked easily. In an expedient measure to get the dairy back in operation, Laurie removed the cylinder and replaced it with a Japanese pressing sack. The hot soymilk and pulp pumped into the bag which was set down in the stainless holding tank. There was a stainless rack on the bottom to keep the bag off the hole and a stainless plate was set on top of the bag after it was filled. The hydraulic ram came down and pressed the bag. This worked all right, but the bag had to be lifted out by hand, and the position was very awkward and left many sore backs. The milk went directly into a curding barrel or was pumped through the tubular heat exchanger. The capacity jumped to 300 gal of milk and 250 lb of tofu approximately 4 days/wk. At this time, the dairy had concrete floors and was starting to get sheetrocked. Soy yogurt production became unsuccessful because of the close proximity of the cannery, and vegetable contamination was airborne. Tempeh was also in the cannery and experiencing the same difficulties. Ice cream was very popular and being produced in large commercial soft-serve machines. Production of ice cream was varied, but its popularity was unquestionable.

"While the Farm was piecing together its operation, a small settlement of Farm members began in Northern California. In 1976, they opened a small commercial soy deli in California under the management of Robert Dolgin. To supply the deli, a small soy dairy and tempeh shop was set up in the back room. This consisted of Japanese equipment specifically designed for the purpose of making soymilk and tofu. They had a Japanese grinder, 45-gallon pressure cooker, and a small, efficient hydraulic press. It was a nice small kit which they took out a loan to buy. The deli's business was excellent and lasted over one year before it closed and relocated to San Francisco (SF) in order to expand production and market products throughout the health food store industry in California. So with more investment and loans and a warehouse in SF, Farm Foods re-opened. The building was fixed up to meet all the strict California codes, and the equipment was improved for increased output. They continued cooking with the 45-gallon pressure cooker but went for a continuous separator. This was a Brown, an orange juice extractor, and a vibrating screen to remove the finer pulp. They got a plate heat exchanger to cool the milk and a state-of-the-art Mark 25 continuous ice cream maker. They were running an extremely sophisticated operation complete with walk-in coolers and freezers. The Farm management council sent many of the Farm's trained technicians, business managers, and distributors out to SF to operate the business. In total, 60 Farm residents moved to support the growing business, which was under the direction of Robert Tepper and Daniel Lloyd. They started the first commercial soy ice cream company that marketed Soy Ice Bean. Laurie Praskin and her husband were sent to help run the shop and perfect the ice cream recipe. In April 1979, they left to work on the Guatemala soy program and were replaced by Michael and Deborah Lovett and Bobby and Michael Bonnickson. Because of the high cost of operating a business in downtown SF and the increased interest of Ice Bean nationwide, Farm Foods decided to move the Ice Bean production to Tennessee. The Farm Soy Dairy purchased the continuous extractor from the SF Soy Dairy and once installed, it immediately increased the production to 1500 lb/day of tofu and 300 gal/day of soymilk–enough for everyone.

"The soy dairy is now under the management of Michael Lee and Ron Maxin and consists of a 400 gallon bean soak tank and a one-and-a-half horse-powered Japanese grinder. Beans are ground with hot water, and the resulting slurry is pumped into one of three 60 gallon stainless kettles. Direct steam injection cooks this milk. When done, it is pumped into the brown extractor. It flows over a second vibrating-screen filter and is gravity-fed to a 45 gal stainless holding tank where it is tapped off into curding barrels or pumped through the same heat exchanger which now has chilled water running through it for more efficient cooling. A chilled water system also provides cold water to cool and store our tofu. When cooled, the tofu is transferred to 40 gal plastic tubs and wheeled into a walk-in cooler where it awaits distribution. (For more information on the Farm Soy Dairy as it is today, contact Ron Maxin or Michael Lee.)" Address: 17969 Oak Dr., Los Gatos, California 95030.

4654. Nair, G.K. 1985. MP's leap forward in farm, industry. *Times of India* (*The*) (*Bombay*). Dec. 13. p. 23.
• ***Summary:*** MP stands for "Madhya Pradesh," India's largest state. The western part sits atop the vast Malwa plateau, an archaeologist's paradise. Despite the Bhopal poison gas disaster of 3 Dec. 1984, the worst industrial accident in world history, massive reconstruction and development work are in full swing across the state–sparked by both the private and public sectors. Over 80% of the population (60 million people) is in the farm sector.

"Oilfed, clumsily designated M.P. State Cooperative Oilseed Growers' Federation Limited, has introduced soyabean on a large scale as a cash crop in the fertile Malwa plateau and a few other districts.

Oilfed's main job is to organise the mostly illiterate cultivators into farmers; co-operatives and to develop a processing and marketing mechanism. There are now 513 such co-operatives with a total membership of 58,000

farmers.

Soybean cultivation has been introduced mainly in the wheat-producing areas; the soybeans are grown in the kharif season instead of jowar–which has long brought farmers a miserably low profit. Wheat is a rabi crop.

By contrast, soyabean earns the farmer good money, Rs. 2.75 through the co-operatives, to which he sells the new crop as soon as it has been harvested. Farmers seem genuinely excited about soyabean, in part because he never has to take it to market where middlemen have long fleeced them. The co-operatives now market the soybeans and are in a much better position to get the best possible prices.

Construction of a vanaspati plant with a capacity of 30,000 tonnes per annum has been completed at Churhat (in eastern Madhya Pradesh); it is expected to begin production in Jan. 1986.

Oilfed has started exporting soya meal to West Asian and North African countries at "remunerative" prices. New products such as soya paneer [tofu], soya milk, weaning food, vegetable protein, snacks, and margarine are among the new products it plans to introduce.

4655. Sokolov, Raymond. 1985. Soy, most useful bean: In disguised forms, its use grows in U.S. *Detroit News.* Dec. 13. p. A-1, A-20.

• ***Summary:*** First came soy-based margarine, then soybean oil–which now surpasses corn oil and peanut oil in sales. Then tofu, a soybean curd, began to show up in supermarkets. The latest soy-based product is Tofutti, a trendy alternative to ice cream.

Business Trends Analysts reports that retail sales of soy foods (including the familiar soy sauce) have jumped nearly fivefold since 1979. They exceeded $200 million last year. A body of "evangelical literature has sprung up to educate a carnivorous populace in the mysteries of tofu." *The Book of Tofu,* by William Shurtleff and Akiko Aoyagi, had sold 340,000 copies when Ten Speed Press in Berkeley published a 2nd edition in 1983.

Photos show two workers at The Soy Plant in Ann Arbor: (1) Mark Ducharme cutting tofu. (2) Geoffrey Beck stirring soy milk. Address: Michigan.

4656. Gupta, Rajendra ("Raj") P. 1985. Re: Interest in starting branches of Soyfoods Center in Canada and India. Letter to William Shurtleff at Soyfoods Center, Dec. 15. 1 p. Typed, with signature on letterhead.

• ***Summary:*** "I wonder if you have a branch of Soy Foods Center in Canada and India. If not, we would like to establish your branches in the two countries. Please let me know the procedure for doing so.

"There has been considerable interest in our new process shown by corporations at all levels. A small pilot plant has been built and debugged and a full size batch type is being built here. Also, we now have perfected a 3L per batch domestic/laboratory scale equipment for making soymilk with our process. This is expected to be very inexpensive to make and could retail as low as $39 when used with a food processor / blendor. However, we do not intend to go into its production until our patents are published and thereby the inventions become known to every one. I should reiterate that we want to make profit from the invention so that we can generate resources to help develop a healthy soyfoods industry worldwide, the industry which can deliver unsubsidized, affordable, quality soyfoods to those who need them most.

"Merry Christmas and a Happy New Year, also to Akiko. With personal regards, Sincerely yours..." Address: Ph.D., Vice President, ProSoya Foods International Inc., 801-275 Slater St., Ottawa, ONT, K1P 5H9, Canada. Phone: (613) 237-5814.

4657. Cole, Michael. 1985. Re: Introducing Soya Health Foods, Ltd. Letter to William Shurtleff at Soyfoods Center, Dec. 16. 1 p. Typed, with signature on letterhead.

• ***Summary:*** "Dear Bill, This is just a short line to introduce you to our Company, Soya Health Foods, Ltd.. In one year we have become the largest U.K. supplier of Soya Milk in 500 ml Tetra Bricks, and to increase our sales further we are introducing 200 ml Organic Soya Milk drinks with straw, in 3 flavours: i.e. Malted Barley, Malted Carob, and Coconut.

"Our Ice Dream is now the top selling Soya ice-cream in England and we hope to launch Ice Dream into the European Market in 1986, by selling licences [licenses] to ice cream manufacturers, who we will supply with our Ice Dream mix in powder form.

"There are a lot of ideas and possible questions that I am sure we both have and I would welcome the chance to meet and discuss them. In the meantime have a Great Xmas and a Meaningful New Year."

Note: Michael, age 39, comes from London and has been a strict vegetarian for most of his life. He launched Soya Foods Ltd. in about Aug. 1984. During the past year sales of his soymilk have risen from 46,000 liters/week to 250,000 liters/week by Aug. 1985. Address: Director, Soya Health Foods, Ltd., Unit 4, Guinness Rd., Trafford Park, Manchester M17 1UA, England.

4658. *Asahi Shinbun* (*Evening Ed., Japan*). 1985. Hiekomu tônyû ninki [Popularity of soymilk in Japan cools down]. Dec. 25. p. 10. [Jap]
• ***Summary:*** Soymilk gets no reward for all the efforts made to remove its beany flavor. and now it has fallen behind Japan's beverage industry competition. At one time there were more than 100 companies making soymilk in Japan; now there are about half that many.

Kibun: During the past year Kibun had soymilk sales of about 7,000 million yen. But at its peak in Sept. 1982 its sales were about 11,000 million yen.

4659. *China Daily.* 1985. Artificial milk. Dec. 31. p. 3. [Eng]
• ***Summary:*** "China has developed a kind of artificial milk, the newspaper 'health news. reports.

"The milk is processed from peanuts, soy beans, animal fat and eggs and is free from chemicals. It is similar to cow milk in properties, structure and taste, but without the smell. It can be preserved three to four times longer than dairy milk and is one-third cheaper, the report says."

Note that Chinese dislike the smell of cow milk.

4660. *SoyaScan Notes.* 1985. Chronology of soybeans, soyfoods and natural foods in the United States 1985 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jan. 2. The soybean crushing industry begins a year of major restructuring as the big get bigger and two pioneers drop out. Ralston Purina announces that it has sold six of its soybean crushing plants to Cargill, Inc. A seventh at Memphis was closed. This removed the company from the soybean commodity business. With this transaction Cargill passes ADM to become America's largest soybean crusher.

Jan. 3. "Myth or Miracle: Debunking the Tofutti Fad" by Mark Medoff published in *Whole Life Times.* The first exposé of Tofutti, which contains very little tofu. Jan. 13 Medoff appears on the Gary Null Show, Natural Living, to discuss his findings for 1 hour on prime time radio.

Jan. 12. A.E. Staley Manufacturing Co. announces that it is basically getting out of the soybean crushing business. It has sold five of its six soybean plants (having a combined crushing capacity of some 275,000 bushels daily) to Independent Soy Processors Co., which is closely affiliated with Archer Daniels Midland. Staley was unable to sell its Decatur facility, which ceased operations indefinitely in Jan. 1984. With this transaction ADM has probably regained a slight lead as America's largest soybean crusher.

Jan. 14-26. Soybean Utilization Workshop held at Soyafoods Research Center in Gannoruwa, Peradeniya, Sri Lanka, sponsored by the Sri Lanka Soybean Project and INTSOY. 24 representatives from 12 developing countries participate. The world's first event of its kind (*Soyanews,* Dec. 1985).

Jan. 25-27. Natural Foods Expo at Anaheim. Soy ice creams steal the show. Tofu standards are debated heatedly at Soyfoods Association board of directors meeting on Jan. 28, especially by Ralston Purina attorney. Board decides funds are too limited to try to hire an executive director for SAA. Jan. 31. Paul Obis, founder and editor of *Vegetarian Times,* is seriously considering buying *Soyfoods* magazine from Doug Fiske. He makes a firm offer in late March.

Feb. "Designer Beans," an excellent overview of the U.S. soyfoods movement and its gourmet connections by Sandy MacDonald, published in *New Age* magazine.

Jan. American Soybean Association introduces SIS (Soybean Information Service), a computerized database focusing on soybean production and marketing, and oil and meal. The earliest record is 1958.

Feb. 21. *Tofutti and Other Soy Ice Creams: Non-Dairy Frozen Dessert Industry and Market,* by Shurtleff and Aoyagi published by The Soyfoods Center. Two volumes, 352 pages. This is the first study of the rapidly emerging soy ice cream market, and of Tofutti.

Feb. 27. "Tofu Products May Be In, but Its Fans Wonder if There's Tofu in the Products" by Trish Hall published in *The Wall Street Journal.* Second major exposé on so-called "tofu ice creams" (such as Tofutti and Gloria Vanderbilt Glace), which contain only a token amount of tofu, as a marketing gimmick.

March 13-14. The theme of the Feb. 27 *Wall Street Journal* article picked up by the NBC evening news and the Today Show. Very positive coverage for tofu. Gary Barat of Legume, David Mintz of Tofu Time, and Gloria Vanderbilt each speak about tofu.

March 22. *The Book of Tempeh,* extensively revised second edition by Shurtleff and Aoyagi, published by Harper & Row. New bibliography (374 entries), history chapter, and list of tempeh producers.

March 26. Soyfoods Association's Tofu Standards (7th draft) presented to eight senior officials at the U.S. Food and Drug Administration's Center for Food Safety and Applied Nutrition, in Washington, DC, by Tom Timmins (Head of SAA Standards Committee), Gary Barat (President of SAA), Steve McNamara and Tom Donegan (SAA Food & Drug attorneys). The FDA group hears an hour long presentation on tofu, the standards, and the Soyfoods Association of America.

March. Soyarella (later renamed Soy Mozzarella), a tofu-based cheese, is introduced. It becomes an instant hit. Distributed by Neshaminy Valley Natural Foods of Huntingdon Valley, Pennsylvania, it is labeled as "non-dairy," yet it melts, and it tastes like cheese. Shrouded in secrecy, its manufacturer is unknown and the ingredients are questionable. It is sold in large blocks and labeled at individual stores.

March. American Soybean Assoc. launches a campaign among its members to write USAID and encourage them to cancel support for U.S. programs (such as INTSOY) aiding

soybean production in Third World nations. The campaign is successful.

April 1. INTSOY signs a new cooperative agreement with USAID. Their work will henceforth focus on soybean utilization. The shift toward utilization began in 1983 and all work on soybean production and varietal development stopped in Aug. 1986.

April. *Tempe: An Annotated Bibliography,* compiled by Siagian and Sofia in Indonesia. Containing 273 references, it is the first bibliography to introduce the extensive Indonesian-language research on tempeh, the majority of which has been published since 1980.

April 15-16. International Symposium on Tempeh held in Jakarta, sponsored by the Indonesian Ministry of Health. 113 people attend.

April. Central Soya buys Griffith Laboratories' line of protein products.

May 31. Barricini Foods acquires Farm Foods, which then becomes a trade name for Barricini's natural / health foods line of non-dairy frozen desserts, including the pioneering product, Ice Bean, and Barricini Tofulite.

May. Morinaga, one of Japan's largest dairy companies, establishes Morinaga Nutritional Foods, Inc., a subsidiary with offices in Los Angeles, to focus on promoting their long-life silken tofu in America.

May. At the 6th Annual Natural Foods Merchandiser Merchandising Awards, soyfoods do well. Miso Mustard by American Natural Foods and Malteds by Westbrae win gold medals. Ah Soy by Great Eastern Sun wins a silver.

May. Soft Tofu Cheese, a non-dairy cream cheese cultured in miso, launched by Simply Natural, Inc.

June. Tofu Topper launched by Worthington Foods.

June. Ralston Purina publishes its 1985 Consumer Attitudes Monitor. Soy Protein in Foods, based on a nationwide survey of 628 adults. Indicates positive attitudes toward soy protein and soyfoods.

July 19. Shamrock Capital, a private company headed by Roy Disney, buys Central Soya, a publicly owned corporation. Agreement to buy was announced April 2.

July. Soy Supreme, spray-dried tofu powder, launched by Oberg Foods Div. of St. Peter Creamery.

July. Asian Symposium on Non-Salted Soybean Fermentation held at Tsukuba, Japan.

July 31. Tofu Time's sales of Tofutti increased more than sevenfold last year to $17,114,886 as compared with $2,361,391 for the previous year. Net income increased nearly 100-fold to $2,006,451.

July. New Gallup survey on vegetarianism of 1,033 Americans shows that millions are eating less meat and tens of millions agree with the move away from meat. 72% disagree with what used to be the standard notion: "The vegetarian diet is just a fad that will pass." A majority (52%) believe that "no one really needs to eat meat more than once or twice a week."

Aug. The DE-VAU-GE soymilk plant in West Germany starts production. Built by STS, with 4,000 liters/hour of soymilk capacity, they make Granose and GranoVita brands of soymilk.

Aug. Lightlife Meatless Tofu Pups (hot dogs) introduced by Tempehworks / Lightlife Foods of Greenfield, Massachusetts. The product sold nearly $250,000 in the next 10 months.

Sept. Soyfoods Center introduces SOYA, a computerized bibliographic database on soybean utilization, history, nutrition, processing, marketing, and production. Contains 18,500 references from 1100 B.C. to the present.

Sept. 30. Fearn Natural Foods in Illinois sold by Louis Richard to Modern Products, Inc. in Milwaukee.

Sept. 30 to Oct. 4. Tropical Soybean Workshop held at the International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria. Proceedings are published in 1987 as Soybeans for the Tropics. Also this year IITA established a soybean utilization unit.

Sept. Tofulicious, a tofu-based non-dairy ice cream launched by Eastern Food products of Minneapolis. It was developed in conjunction with the University of Minnesota and funded by the Minnesota Soybean Research and Promotion Council. By 1986 it has become the first soyfood product in recent times to be actively promoted by state soybean associations, who sell it at many state and county fairs... where it is a big hit. Through Tofulicious many soybean growers begin to warm up to soyfoods.

Oct. 8th Draft of the Tofu Standards finished, incorporating extensive suggestions from FDA. Compiled by William Shurtleff.

Oct. Mori-Nu brand aseptically packaged tofu introduced by Morinaga Nutritional Foods.

Oct. Cream of the Bean Soygurt, a cultured soymilk yogurt, launched by Cream of the Bean, Inc.

Nov. Kikkoman introduces a long-life tofu in a foil retort pouch, imported from Japan. Poor quality causes the product to be withdrawn. It was re-introduced later.

Dec. Tofu Time starts exporting Tofutti to Japan. The first order by Daiei (a large retailer) of tubs for their parlors, is $350,000. This may be the first major export of a soyfood product (not including ingredients such as soy protein isolates) to Japan.

* The International Institute of Tropical Agriculture (IITA) in Ibadan, Nigeria, starts a program to promote processing and utilization of soybeans in Nigeria and throughout Africa. Continued.

4661. *SoyaScan Notes.* 1985. Chronology of soybeans, soyfoods and natural foods in the United States 1985 (Continued) (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued. 1985 New Trends:

Dramatic Rise of Tofutti and Other Soy Ice Creams.

1985 will go down in the soyfoods history books as the "Year of Tofutti." Never before in history of the United States has any soyfood product achieved such widespread and sudden popularity or notoriety.

During 1985 at least 50 brands of soy ice cream (many with "Tofu" on the label) were on the market worldwide, most in the USA. And many were made by America's biggest dairy companies. An estimated 2.5% of all frozen desserts except novelties (popsicles, bars, etc.) sold in supermarkets were soy-based nondairy. The result of all this was to introduce tofu and isolated soy proteins to millions of people in a very positive context.

But many of the companies that sold so-called "tofu ice creams," while emphasizing tofu in their product names and marketing programs, actually had surprisingly little (if any) tofu in their products. In fact they contain so little that this marketing gimmick might be misbranding and a deliberate deception of the consuming public.

Rise of Soyfoods in Europe. Thanks to the Belgian Office of the American Soybean Association (ASA), and specifically to the efforts of Michael Martin, Europe's growing soyfoods movement is starting to become organized and active. In March 1984 Martin launched Europe's earliest known soyfoods newsletter, *Soya Foods,* and in September organized the First European Soyfoods Workshop, for which bound proceedings were published. This is the first time in recent decades that ASA has promoted soyfoods (other than soy oil) in the Western World. The strong U.S. dollar has led to a recent dramatic decline in imports of soybeans and soybean meal to Europe for feed and oil use (European rapeseed and sunflowerseed are being substituted), so the ASA is exploring new outlets where soy is unique.

The launching of tofu production and marketing by Switzerland's biggest supermarket chain, Migros, and by Galactina, a large and respected maker of dietetic and pharmaceutical products (including soymilk) is a landmark for tofu in Europe. In early January, *Tages Anzeiger,* one of Switzerland's biggest newspapers, had a special report on tofu, followed on Jan. 9 by a 30-minute TV feature on tofu.

The total number of soyfoods companies in Europe continues to show a steady increase. Many of these are being founded by people interested in macrobiotics. By Jan. 1985 there were 1,113 names on The Soyfoods Center's computerized mailing list of people actively involved with soyfoods in Europe.

At the 1984 ASA soyfoods workshop, Martin reported the following estimates of annual European soyfoods consumption: A table with three columns shows: Soyfood name, consumption, percentage of U.S. consumption.

Soy oil–1.7 million metric tons–38%

Modern soy protein products–40 million kg–28%

Soymilk–9 to 10 million liters–7%*

Tofu–5 to 6 million kg–22%

Tempeh–400,000 to 500,000 kg–50%

Miso–250,000 to 300,000 kg–11%

* U.S. figure includes soy based infant formulas. European figure is not clear on this point.

Note that the population of the USA is about 234 million compared with 489 million for all of Europe (not including the USSR), but 237 million for Northern and Western Europe, where most of these products are consumed.

Rapid Growth of Second Generation Soyfoods. In the 1984 edition of this book, we stated that the three fastest growing soyfoods in the USA (in terms of production increases) were tempeh (33% a year compound annual growth rate), tofu (15%), and soy sauce (14%). But now the picture has changed. In 1984 the fastest growing category was second generation products, ready-to-eat, all-American preparations, especially those based on tofu. The leader in this group is clearly soy ice creams (led by Tofutti), with a production growth rate of roughly 600% a year for the past 1-2 years. Then comes convenience tofu-based entrees such as Legume's products, tofu burgers and tofu burger mixes, and the like. This is the number one way that soyfoods are now entering the mainstream American diet. And the biggest gains are being made by marketing companies, rather than manufacturers. The second fastest growing category may now be imported soymilks, growing at about 40-60% a year.

Major New Capital Influx. The following is a brief summary of new capital influx to the soyfoods industry: A table with four columns shows: Company name, date of offering, $ amount, equity or debt; use.

Legume–Oct. 1982–$100,000 net–Equity. For tofu frozen entrees

Legume–Oct. 1982–$100,000–Debt. For tofu frozen entrees

Legume–Nov. 1983–$400,000 net–*Equity. For tofu frozen entrees

Legume–Nov. 1983–$200,000–Debt. For tofu Frozen entrees

Hinode Tofu–Nov. 1983–$2,500,000–Equity For general expansion

Tofu Time–Dec. 1983 $2,760,000 net–Equity. For soy ice cream

Tempehworks–July 1984–$265,000–Debt. For tempeh expansion

Legume–Feb. 1984–$200,000–Debt. For tofu frozen entrees

Legume–Aug. 1984–$1,248,000 net–Equity. For tofu frozen entrees

Brightsong–Dec. 1984–$500,000–Equity. For tofu products

Legume–April 1985–Expecting lots more. For tofu frozen entrees

White Wave–Expecting.

Note: Equity = Sale of equity ownership in the company via stock in a public offering or in a private placement. Debt = Debt financing by taking out a private loan.

How have these companies fared? Tofu Time has done spectacularly well. The value of the company has increased more than five-fold since Dec. 1983, and profits are excellent. Legume, a marketer of low-calorie, cholesterol-free frozen entrees featuring tofu, has had the hardest sledding. A preliminary prospectus by Huberman Margaretten & Straus dated 5 June 1984 stated that from its inception through 31 March 1984, the company incurred aggregate losses of $709,773, including a loss of $18,465 in 1982, then $225,302 in 1983, increasing again to roughly $486,500 in 1984. Legume's common stock had a negative book value; 1984 sales were "a little less than $1 million." Yet the company has excellent products and in early 1985 landed some foods big chains, which could help its bottom line considerably.

Growing International Interest in Tempeh. During 1983-84 Japan became a major tempeh producer. By May 1984 the world's largest tempeh producing company was Marusan-Ai (of Japan), which made 15,150 lb. a week. New marketing and production techniques were pioneered. The full story was described by Shurtleff and Aoyagi in Tempeh Production (1984).

Three Major International Symposia Featuring Tempeh were held: 15-16 April 1984 in Jakarta, Indonesia; 15-17 July 1984 in Tsukuba, Japan; and May 1986 in Honolulu. A special 13-day group study tour on Japanese Food Fermentations, led by Dr. Keith H. Steinkraus, has been organized by the Japanese-run, New York-based Technology Transfer Institute. Tempeh continues to be one of the fastest-growing soyfoods in the USA.

Growing Interest in Spray-Dried Tofu. Eleven articles were published this year on a product that promises to revolutionize the tofu industry. The first and largest manufacturers (St. Peters Creamery and Clofine) are both dairy companies. Spray dried tofu should appeal to the food industry, since it is easy to ship, store, and process.

Dairy Magazines Publishing Many Positive Articles About Soy-Based Dairylike Products. Traditionally the dairy industry has seen dairy analogs as a threat and fought to oppose them. The decades-long struggle against margarine is a good example of this. But now, many small dairies, struggling to survive, are looking for new products. A number (such as St. Peter Creamery and Clofine) have gained a new lease on life by starting production of soyfoods.

Major Changes in the U.S. Soybean Crushing Industry. Narrow crushing margins, a depressed export market for U.S. soybean meal, and poor profitability have led two of America's biggest soybean crushers, the A.E. Staley Manufacturing Company and Ralston Purina, to decide to get out of the soybean crushing business in Jan. 1985. Clearly they view poor profitability as a long term problem, and plan to diversify away from unpredictable agricultural commodities toward the "value added," retail end of the nation's food supply. Staley, in effect, sold its plants to ADM and Ralston Purina sold its to Cargill. In Nov. 1984 Staley acquired CFS Continental, Inc., the nation's second largest supplier to the foodservice industry. Staley, previously the oldest existing soybean crusher in America (since 1922), now relinquishes that honor to ADM. ADM is now the largest soybean crusher in America, but Cargill (which has many overseas plants) is the biggest in the world. These changes have led to a concentration of control in the U.S. soybean crushing industry. Both Staley and Ralston Purina plan to keep their edible soy protein (isolates, concentrates, etc.) operations.

Biotechnology is Emerging as a Major, Promising Factor in future soybean breeding development. Some agricultural experts are predicting that it could usher in the latest agricultural revolution, following the agrichemical revolution of the 1940s and the Green Revolution of the 1960s and 1970s.

The "Calcium Craze" Starts in America, aiding sales of tofu (curded with calcium sulfate), which is one of the best non-dairy sources of calcium.

4662. Andres, C. 1985. Potential nutritional benefits of beverage with isolated soy protein. Isolated soy protein-based beverage may reduce cholesterol levels. *Food Processing* (*Chicago*) 46(13):40-41. Dec.

4663. Bhatnagar, P.S. 1985. Soybean in India: Problems and prospects. Special review article. *Indian J. of Agricultural Sciences* 55(12):709-22. Dec. [19 ref]
• ***Summary:*** Contents: Introduction. Production potential in the country. Place in cropping systems. Research in India. Breeding, genetics and seed production. Production technology. Microbiology. Plant protection. Production economics. Product development and utilization. Future strategies. Address: All-India Coordinated Research Project on Soybean (ICAR), Govind Ballabh Pant Krishi Evam Praudyogiky Vishwa Vidyalaya, Pantnagar, Uttar Pradesh 263 145 India.

4664. Geslewitz, Gina; Wittenberg, Margaret. 1985. Soyfoods: The age of soy literacy. *Health Foods Business* 31(12):33-34, 36, 38-44, 46-47. Dec. [15 ref]
• ***Summary:*** Contains a market study largely pirated from Shurtleff & Aoyagi's *Soyfoods Industry and Market.* Address: New York.

4665. Henkes, R. 1985. Those new soy drinks: A worry for dairymen? *Furrow* (*The*) (*John Deere Co., Moline, Illinois*). Nov/Dec. p. 4.

4666. Jacobs, Leonard. 1985. Menage: Why the Chinese don't drink milk: Mongol rule and other factors led to a dairy-free diet. *East West Journal.* Dec. p. 16.
• ***Summary:*** "A cheese from goat milk has been widely

consumed in many parts of China, particularly in Sinkiang [Xinjiang] and Chinghai [Qinghai], as well as in Tibet and Inner Mongolia. Yet dairy products in general have an unpopular history among the Chinese.

"One reason is that the Chinese were subjugated by the Mongols for long periods of time, and one of the terms of their subjugation was that all milk was the property of the Mongols. Hence consumption of dairy products became regarded as something only 'barbarians' do. If you couple this explanation with the fact that if you never consume milk before age five, you will likely exhibit lactose intolerance, we come up with an explanation of why milk left Chinese culture and never reappeared.

"In some parts of China, cheese cultured from soybeans, called 'Doufu-ru" [fermented tofu] is highly appreciated. In Guichou, and part of Sichuan, soy cheese cubes are eaten heated in a spicy sauce.

"A good source for further information on Chinese food is James D. McCawley's book, *The Eaters' Guide to Chinese Characters* published by The University of Chicago Press, 1984. This book explains the sub-language of Chinese food and gives you enough knowledge to translate the signs in food stores and restaurants written only in Chinese." Address: Publisher, East West Journal.

4667. Johnson, Kirk. 1985. The Edensoy-FDA saga: A misleading claim about Eden's top product led to a pamphlet recall. *East West Journal.* Dec. p. 30, 32-35.
• ***Summary:*** Chronology of events: 1984 March 2–The FDA (U.S. Food and Drug Administration) informs Eden Foods, in a strongly worded letter, that it considers eleven claims in a promotional pamphlet for Edensoy to be erroneous. The FDA advised that the "Good for Babies" section of the pamphlet be deleted. Indeed the agency was so worried about the possible impact of the pamphlet that it asked Eden to stop distributing it, a request to which Potter agreed.

Exactly what happened next is unclear. The FDA says it has invoices proving that Eden continued to distribute the pamphlet. Potter admits that "eight or nine" of the pamphlets did leak out.

1985 June 14–The FDA informs Michael Potter that a six-month-old child in Canada had become seriously ill after being fed the company's soymilk as an infant formula. The mother said her decision to forgo regular infant formula was inspired by Eden's own literature–the promotional pamphlet cited above which said that Edensoy was "Good for Babies." For Eden, a company with 40 employees, the news came at a bad time since the company was geared up to begin a national promotion of its soymilk starting June 15–the very next day. By this time the come had sold some 18 million foil pouches of Edensoy. Eden took the position: "There's a problem and were responsible for it."

1985 June 23–Eden Foods voluntarily mails 10,686 requests for a recall of the pamphlet to its distributors and to individual retail stores. The company also agrees to insert a statement on the Edensoy label warning that the product is not to be used as an infant formula or as a sole source of nutrition. Until new labels could be printed, Eden Foods would mail red on white warning placards to be placed on store shelves where Edensoy is sold.

1985 Sept. 1–Sales and Edensoy for the last 2 months (July and August) were 50% higher than normal, thanks to a summer discount promotion. A photo shows Eden's Michael Potter.

4668. Ransom, Ruth. 1985. Alternatives to four food groups: Meal plan. *Vegetarian Journal* (*Baltimore, Maryland*) 4(12):2. Dec.
• ***Summary:*** "A. Protein Foods: 1-2 servings per day. One serving equals: 1½ cups cooked dried beans or peas. 8 oz. tofu. 4 ounces tempeh. 2 cups fortified soy milk. ½ cup almonds, cashews, walnuts, pecans..."

Note: On page 1 we read: Editors: Debra Wasserman, Charles Stahler. Ruth Ransom, R.D. P.O. Box 1463, Baltimore, MD 21203. (301) 752-VEGV. Address: R.D. [Registered Dietitian].

4669. *SoyaScan Notes.* 1985. New Trend: U.S. dairy magazines publishing many positive articles about soy-based dairylike products (Overview). Dec. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Traditionally the U.S. dairy industry has seen dairy analogs as a threat and fought to oppose them. The decades-long struggle against margarine is a good example of this. But now many small dairies, struggling to survive, are looking for new products. A number have thrived by starting production of soyfoods. E.g. St. Peter Creamery, Clofine, etc.

4670. Tofu Shop Specialty Foods (The). 1985. Price increase Jan. 1 (Leaflet). Arcata, California. 1 p. Single sided.
• ***Summary:*** Due to rising operating costs, the prices of all Tofu Shop products will go up approximately 5% starting January 1, 1986.

"Traditional tofu? Did you know that The Tofu Shop in Arcata is one of only a few such traditional-style tofu companies operating successfully in the United States today." They do not make "mass-produced" tofu.

"About The Tofu Shop: Founded in 1980, The Tofu Shop employees eight trained soyfoods workers who produce monthly: 6,000 pounds of fresh, traditional-style tofu, 2,500 tofuburgers, 50 quarts of soymilk, and thousands of tofu cutlets, sausages, salads and desserts. Almost all of our products are distributed right here in Humboldt County!

The Tofu Shop also operates a retail delicatessen near Humboldt State University in Arcata (768 18th Street).

Illustrations show: The front of the deli. (2) The little house on stilts by the ocean, with an Oriental-style roof and

a wind-blown tree arching overhead. Address: 768 18th St., Arcata, California 95521. Phone: (707) 822 7409.

4671. **Product Name:** Tofutti Take Five (Non-Dairy Beverage).
Manufacturer's Name: Tofu Time, Inc.
Manufacturer's Address: Rahway, New Jersey.
Date of Introduction: 1985. December.
New Product–Documentation: News Release. 1985. Aug. 29. The company announced today that it has completed development and is preparing to launch a Tofutti brand beverage product named "Take Five" for the 1985 Christmas season. 8 ounces will provide 20% of the US RDA of all vitamins and minerals. Reprinted in Food Merchants Advocate. 1985. Oct. And in Product Alert. 1985. Dec.

4672. **Product Name:** [Sojafit (Slimming Drink)].
Foreign Name: Sojafit.
Manufacturer's Name: Unknown.
Manufacturer's Address: Switzerland.
Date of Introduction: 1985. December.
Wt/Vol., Packaging, Price: 3 size packs retail for 39.5, 69.5, or 99.5 Swiss francs.
New Product–Documentation: Food Report (Lehmann). 1985. Dec. "A highly active slimming medicine. An appetite suppressant."

4673. **Product Name:** Soybean Drink [Plain, or Cane Sugar Added].
Manufacturer's Name: Aloha Products.
Manufacturer's Address: 4515 Centinela Ave., Los Angeles, CA 90066. Phone: 213-822-2939.
Date of Introduction: 1985.
Ingredients: Sweetened: Soybeans, water, cane sugar.
Wt/Vol., Packaging, Price: 16 oz and 48 oz plastic jugs.
How Stored: Refrigerated.
New Product–Documentation: On sale at Yaohan Japanese supermarket in Los Angeles. 1988. Oct. 23. For 48 oz: Plain in $1.19 and sweetened is $1.29. Talk with Tom Uyehara. 1988. Oct. 24. These product were introduced in 1985.

4674. **Product Name:** Provamel Soya Dessert (Vanilla, Carob, or Strawberry).
Manufacturer's Name: Alpro.
Manufacturer's Address: Zuidkaai 33, B-8700 Izegem, Belgium.
Date of Introduction: 1985.
Wt/Vol., Packaging, Price: 525 gm aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Food Report (Lehmann). 1984. Aug. Described in leaflets issued to health food stores in the Netherlands. Labels. 1988. Simon Bailey. 1988. Natural Choice. Aug. 15. A photo shows the Label. "No added sugar. 100% natural. Free of animal fats. CSP form filled out by Simon Bailey. 1988. Sept. 28. Adds strawberry flavor. The importer in England is Vandemoortele (UK) Ltd., Ashley House, 86-94 High St., Hounslow, Middlesex TW3 1NH. Phone: 01-577 2727.

Spot in The Vegan. 1988. Summer. p. 16. "Note that the strawberry soya milk and dessert made by Provamel is coloured with the insect derivative cochineal."

4675. **Product Name:** Amofood Soya Bean Drink (Boisson au Soja).
Manufacturer's Name: Amoy Canning Corp.
Manufacturer's Address: 254 Bukit Timah Rd, 13 km, Singapore.
Date of Introduction: 1985.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: STS. 1985. Containers for Soymilk. Shows can, red and white on green.

Alfa-Laval. 1988, June. Soyfoods: Old traditions with new potentials. p. 9. Shows a color photo of the front of the can. Same colors as above.

4676. **Product Name:** Calco Soymilk.
Manufacturer's Name: Calco of Atlanta.
Manufacturer's Address: 2059 Manchester St., N.E., Atlanta, GA 30324. Phone: 404-874-3650.
Date of Introduction: 1985.
Wt/Vol., Packaging, Price: 16 oz packed in water in molded plastic tray with heat-sealed, peel-off plastic film lid.
How Stored: Refrigerated.
Nutrition: Per 4 oz.: Calories 70, protein 10 gm, carbohydrates 7 gm, fat 0.5 gm.
New Product–Documentation: Talk with Jimmy Wang. 1989. Nov. 9. This product was introduced in 1985.

4677. **Product Name:** Non-Dairy Soybean Drink (Soymilk) [Plain].
Manufacturer's Name: Eastern Foods Corporation.
Manufacturer's Address: 3235 E. Hennepin Ave., Minneapolis, MN 55413.
Date of Introduction: 1985.
Ingredients: Water, soybeans.
Wt/Vol., Packaging, Price: Quarts and half gallons.
How Stored: Refrigerated.
New Product–Documentation: Labels. 1985. 2.5 by 3.5 inches. Yellow and black on white. "Drink plain or flavor with vanilla, honey, or carob." Letter from Tom Menie. 1988. June. The product was introduced in 1985, in quarts and half gallons.

4678. **Product Name:** Fearn Natural Soya Powder.
Manufacturer's Name: Fearn Natural Foods. Div. of Modern Products, Inc.
Manufacturer's Address: P.O. Box 09398, Milwaukee, WI 53209.

Date of Introduction: 1985.
Ingredients: Soybeans.
Wt/Vol., Packaging, Price: 11 oz retails for $1.65 (8/88).
How Stored: Shelf stable.
Nutrition: Per ¼ cup (25 gm): Calories 100, protein 10 gm, carbohydrate 6 gm, fat 5 gm, sodium 2 mg (7 mg/100 gm). Contains 15% of the RDA for protein and 30% of the RDA for thiamine.
New Product–Documentation: Label. Copyright 1985. Box. 4 by 6.5 by 1 7/8 inches. Red, green, brown, yellow, and white. Leaf logo. "Low sodium. Contains all the natural oil of the soybean. Precooked, finely ground soybeans. For use in baking and for use in soya milk." Soybeans are washed in water, steamed at a maximum temperature of 215ºF, dehulled, and ground to a fine powder, finer than is typical for soy flour, hence the name. Instructions are given for using soy powder in cake or bread, pie dough, cookies, doughnuts, puddings, pancakes, or waffles, soya milk, or creamed soups.

4679. *Federal Register.* 1985. Rules and regulations. 50(210):45106.
• ***Summary:*** In the USA, soy-based infant formulae are supplemented with 5-75 micrograms of iodine per 100 kcal (418 kJ) formula, a level considered sufficient to avoid the problem of goiter. Address: FDA.

4680. **Product Name:** Nutrisoy (Soy Beverage).
Manufacturer's Name: Fraser & Neave (Singapore) Pte. Ltd.
Manufacturer's Address: 475 River Valley Rd. Singapore 1024, Singapore.
Date of Introduction: 1985.
New Product–Documentation: Soya Bluebook. 1985. p. 85; 1986. p. 104. Soya Bluebook Plus. This company (the name is unchanged) is now located at 457 Jalan Ahmad Ibrahim, Singapore 2263, Singapore. Phone: +65 861-7600. Fax: 861-2652. They make soymilk beverages, tofu and tofu products. Contact: Kalin S. Kwok, R&D Manager.

4681. Great Eastern Sun. 1985. All About AhSoy–The Really Soft Drink (Leaflet). Enka, North Carolina. 1 p. Front and rear. 28 cm.
• ***Summary:*** Questions and answers (see next page) about this soymilk. It is made by San-iku Foods in Japan. "It drinks like a shake–and you can use it to bake." Address: Enka, North Carolina.

4682. **Product Name:** Hera Soya Milk.
Manufacturer's Name: Haldane Foods Ltd.
Manufacturer's Address: Units 16 & 20, Long Furrow Trading Estate, East Goscote, Leicester LE4 8XJ England.
Date of Introduction: 1985.
New Product–Documentation: Product leaflet. 1985, undated. "Health, Hera, and You."

4683. **Product Name:** Soy "M" Non-Dairy Soy Milk [Carob, or Plain].
Manufacturer's Name: H.V. Natural Foods (Distributor).
Manufacturer's Address: Los Angeles, CA 90021.
Date of Introduction: 1985.
Ingredients: Plain: Pure filtered water, organic soybeans, soya oil, honey. Carob: Same plus carob and vanilla as last 2 ingredients.
Wt/Vol., Packaging, Price: 15 fluid oz (444 ml). Pure-Pack carton. $1.25 plain. $1.39 carob.
How Stored: Refrigerated.
Nutrition: Plain: per cup (8 fl. oz.): Calories 130, protein 2 gm, carbohydrates 17 gm, fat 5 gm, sodium 55 mg, potassium 120 mg. Carob: Calories 160, carbohydrates 12 gm.
New Product–Documentation: Labels. 1985, dated. 2.75 by 4 inches by 2.75 wide. Paper carton. Carob: White and tan on dark brown. Plain: White and light blue on dark blue. Glass of soy milk illustration. "From organically grown soybeans. Refreshing lite beverage. Drink it like milk. Use on cereal (plain) or in shakes (carob). Cholesterol free. No refined sugar added." H.V. stands for "Health Valley."
Talk with George Mateljan, founder of Health Valley. 1985. Oct. 20. Soy "M" is made in Los Angeles. Health Valley was founded in 1970. Hain was much earlier. Soyfoods Center product evaluation. One of the best soymilks we have ever tasted.

4684. Jain, J.D. 1985. Soybean: Its value of dietics, cultivation and uses. New Delhi, India: International Books and Periodicals Supply Service. *
• ***Summary:*** Available from International Books and Periodicals Supply Service, 24-b/5 Desh Bandu, Gupta Road, New Delhi -110005. Address: India.

4685. Johnson, L.A.; Deyoe, C.W.; Hoover, W.J. Assignors to Edlong Corp. 1985. Soymilk process. *PCT International Patent Application.* WO 85/00728. *
• ***Summary:*** Process uses direct infusion of steam into the slurry. The hulls are removed by filtration after cooking. Address: FSTA.

4686. **Product Name:** Local Soymilk.
Manufacturer's Name: Local Tofu.
Manufacturer's Address: 307 Route 59, West Nyack, NY 10994. Phone: 914-358-2309.
Date of Introduction: 1985.
New Product–Documentation: Talk with Sam Weinreb. 1987. Dec. 29.

4687. **Product Name:** [Won, Charm, and Young Soymilk].
Manufacturer's Name: Lotte Chilsung Beverage Co. Ltd.

Manufacturer's Address: Seorak Bokji Center, 5th Floor, 433 Shinsa-Dong, Kangnam-ku, Seoul, South Korea.
Date of Introduction: 1985.
New Product–Documentation: Soya Bluebook. 1985. p. 84; 1986. p. 103.

4688. **Product Name:** [Manna Banzai Soy Beverage].
Foreign Name: Manna Bonzoi Soybeverage.
Manufacturer's Name: Manna Natuurvoeding B.V.
Manufacturer's Address: Weerenweg 28, 1161AJ Zwanenburg, Netherlands.
Date of Introduction: 1985.
Ingredients: Water, soybeans, pearl barley, kombu, barley malt.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic Carton.
New Product–Documentation: Letter from Sjon Welters. 1989. Aug. 10.

4689. Masson, A. 1985. Le contrôle microbiologique des aliments dans la province de Québec: Compte-Rendu d'un stage effectué au Canada du 3 au 21 Juin 1985 [Microbiological control of food in the province of Quebec: Report of a study conducted in Canada from June 3-21, 1985]. *Swiss Food* 7(11):7-11. [Fre]*
• ***Summary:*** Contains results of microbiological analyses of soymilk, with or without magnesium chloride added, and of tofu. Identification of the pathogenic bacteria in the finished products and raw materials. Gives Canadian norms or standards on the microbiological quality of food products. Address: Univ. Lausanne, Lab. Cantonal, Controle Denrees Alimentaires, Epalinges, Switzerland.

4690. Nakayama, T.O.M. 1985. Co-precipitation of peanut and soybean milks to form tofu. *Proceedings of the American Peanut Research and Education Society* 17:56. *
• ***Summary:*** A mixture of 1/3 (weight/weight) peanuts and 2/3 soybeans was used to prepare tofu in a traditional manner, coagulated with calcium sulfate. The resulting curds were shown to reflect the increased contribution of oil from the peanuts. Composition of minerals and protein were similar. Address: Dep. of Food Science, Univ. of Georgia Agric. Exp. Station, Experiment, GA 30212.

4691. **Product Name:** [Soymilk].
Foreign Name: Muji Milho Verde. Bebida a base de extrato de soja.
Manufacturer's Name: Pennong Produtos Alimenticios Ltda.
Manufacturer's Address: Av. Brasil 130, CEP 18.130, Sao Roque, SP, Brazil. Phone: 246-0144.
Date of Introduction: 1985.
Ingredients: Extrato de Soja, acucar, e sal [Soymilk, sugar, and salt].
Wt/Vol., Packaging, Price: 200 ml Prepac UHT plastic bag.
How Stored: Shelf stable.
Nutrition: Protein 3%, fat 1.7%, carbohydrates 1.3%, minerals 0.9%.
New Product–Documentation: Label. 1985, undated. STS. 1985. Containers for Soymilk. Shows Prepac bag, green and yellow on white. Business card from company: Klaus Speelmanns is director.

4692. Shimazaki, K.; Tojo, H.; Sukegawa, K. 1985. [Differentiation of bovine milk proteins and soy proteins by 2-dimensional electrophoresis]. *Rakuno Kagaku Shokuhin no Kenkyu* (*Japanese J. of Dairy and Food Science*) 34(5):A123-28. [13 ref. Jap; eng]*
• ***Summary:*** The soy proteins included soymilk proteins. Address: Dep. of Animal Science, Obihiro Univ. of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan.

4693. Singapore Institute of Standards & Industrial Research. 1985. Specification for soya bean milk and soya bean drink. Singapore. 21 p. SS 302. [Eng]
• ***Summary:*** The drink contains less protein and fat than the milk. Both are made from either soybeans, full-fat soybean meal, or defatted soybean meal, and are sterilized. They may contain optional sugar, colorings, flavorings, emulsifiers, stabilizers, or added vitamins and minerals. Requirements for soy milk and soybean drink respectively include: minimum protein (N x 6.25), 2.0 and 1.0%; minimum total solids less added sugar, 4.0 and 2.0%; minimum fat 1.0 and 0.5%; and pH, 6.5 to 7.0 for both. Tests methods are described in appendixes. Address: Singapore.

4694. Sohn, J.W.; Kim, W.J. 1985. [Some quality changes in tofu on addition of dried okara]. *Hanguk Sikp'um Kwahakhoe Chi* (*Korean J. of Food Science and Technology*) 17(6):522-25. [14 ref. Kor; eng]*
• ***Summary:*** Dried okara (the residue from making soymilk) was added at up to 30% to the soybean water extract used to make tofu. As proportions of okara increased, volume and water holding capacity of the curd were reduced and penetration value increased. Sag value increased up to 20% residue, then decreased drastically to 30%. Overall physical and sensory attributes indicate that 10% residue inclusion would be acceptable. Address: Dep. of Food & Nutrition, Sook-Myung Women's Univ., Seoul, South Korea.

4695. **Product Name:** [Soyana Soya Drink (Natural, Chocolate, Strawberry, Raspberry, Lemon)].
Foreign Name: Soyana Soyadrink (Nature, Choco, Erdbeer, Himbeer, Citron).
Manufacturer's Name: Soyana.
Manufacturer's Address: Friedensgasse 3, Postfach 8039,

CH-8002 Zurich, Switzerland. Phone: 01-202-8997.
Date of Introduction: 1985.
Ingredients: Water, whole soybeans, flavorings.
Wt/Vol., Packaging, Price: All flavors are available in 250 ml and 500 ml Tetra Brik Aseptic cartons. Natural also sold in 1 liter carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: R. Leviton. 1983. Report on trip to Europe with American Soybean Assoc. Oct-Nov. p. 20. In April 1982 Walter Daenzer tested Tetra Pak soymilk using taste panels and got good reports. The milk was made using his Takai system and flavored with honey. The Swiss Milk Industry Assoc. protested, asking the Tetra Pak company to stop working with Soyana, and they did. 95% of all Swiss milk is in Tetra Pak cartons so if people see a soymilk in such a carton they assume it is dairy milk.

Letter from Michael Karlen. 1986. Feb. 16. They now sell soymilk. Brochure. 1986. Soyana. The Future has begun. 10 panels. Blue and white. In German.

Alfa-Laval. 1988, June. Soyfoods: Old traditions with new potentials. p. 9. Shows a color photo of the front of the package. 250 ml Tetra Brik carton. Against a blue background, at the top a bird is flying over some clouds and the Soyana logo; at the bottom are green soybean leaves.

Talk with European soymilk producer. 1990. April 27. He thinks that Soyana has its own soymilk plant. They have been selling a Tetra Brik soymilk for about 4 years. It does not sell very well.

Letter from Bernd Drosihn of Viana. 1990. May 10. Soyana seems be making their own soymilk, but it seems to be packed by another company.

Talk with Peter Speck, formerly of Galactina. 1990. May 23. He thinks Soyana makes its own soymilk. They bought a plant from Alfa-Laval about 4-5 years ago (in 1985-86). He has no idea what the capacity of the plant is. They definitely do not have their own aseptic packaging line, so they probably let another company pack it, probably a dairy near Zurich, and not at Thun. Soyana is the only company in Switzerland that makes soymilk for normal healthy adults. The other brands are all imported. The soymilk market in Switzerland is small. Soymilk products are only sold in Reform Houses and health food shops.

Talk with Walter Daenzer. 1990. May 30. In 1983 he had his first soymilk product sold in white Tetra Brik cartons that were not printed. The Swiss dairy industry prevented him from getting the packs filled with soymilk. Then in about 1985 or 1986 the president of the Tetra Pak company helped Walter to get the approval of the Swiss Association of dairy Products. He got the approval and a permit, and shortly after that time the product was introduced in printed Tetra Brik cartons in the above flavors.

Letter from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30. Alfa-Laval sold a complete soybase plant to Soyana in Switzerland. It had a capacity of 1,000 liters/hour and began operation in 1985.

4696. **Product Name:** [Soyaquell Soya-Drink (Natural, Fruit Flavored, or Chocolate)].
Foreign Name: Soyaquell Soya-Drink (Natur).
Manufacturer's Name: Soyaquell [Soyana].
Manufacturer's Address: Friedensgasse 3, CH-8039 Zurich, Switzerland.
Date of Introduction: 1985.
Ingredients: Natural: Water, soybeans, fruit sugar [fructose], malt, seasalt (0.1%), natural vanilla. In addition, for chocolate: chocolate powder, vegetable gelling agent.
Wt/Vol., Packaging, Price: ½ liter Tetra Brik Aseptic carton. Retails for DM 2.40.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Plain, per 100 gm.: Protein 4.3 gm, fat 2.1 gm, carbohydrates 3.0 gm, calories 49.
New Product–Documentation: Label sent by Anthony Marrese. 1990. March 22. 3.75 by 3.5 by 2.5 inch carton. Blue, white, green, and red. Illustration of a soybean plant with pods and red flowers. Logo of a small bird flying. "Non-dairy (rein pflanzlich). Soyaquell-Soyadrink is a new staple food of the finest quality. It is prepared carefully in Switzerland using Swiss water, selected soybeans and quality ingredients... Here is a delicious drink with its full-bodied taste, light and easily digestible–for breakfast, breaks, and also in cooking." Note: A sticker atop the Natural flavor states that the product is made with organically grown soybeans.

4697. Takai Tofu & Soymilk Equipment Co. 1985. Modern soymilk plant: Makes delicious dairylike soymilk with no beany flavor. 1-1 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan. 4 p. 30 cm. [Eng; Jap]
• ***Summary:*** Manufacturer's catalog. The front and rear covers are black letters on light blue. With 5 inserts including excellent fold-out layouts and floor plans, flow chart, and "Information sheet: Your soymilk production plans."

4698. **Product Name:** Soft Tofu, Firm Tofu, Fried Tofu, Baked Tofu, Tofu Strips (like noodles), Spiced Tofu (Wu Hsiang Doufu Gan), Soymilk.
Manufacturer's Name: Visoy.
Manufacturer's Address: 111 West Elmyra, Los Angeles, CA 90012. Phone: 213-221-4079.
Date of Introduction: 1985.
New Product–Documentation: Talk with Shoan Yamauchi. 1988. Oct. 23. This company is a small, Chinese-run company. Talk with David Ma. 1988. Oct. 24. The company started making all these products in 1985.

4699. **Product Name:** Doll (Soy Beverage).
Manufacturer's Name: Winner Food Products Ltd. Affiliate of Beatrice Companies, USA.

Manufacturer's Address: Room 1103, Hong Kong & Shanghai Bank Building, 673 Nathan Rd., Kowloon, Hong Kong.
Date of Introduction: 1985.
New Product–Documentation: Soya Bluebook. 1985. p. 84; 1986. p. 103. Talk with Hilton Tsui of Vitasoy. 1988. March 14. The product is no longer sold.

4700. **Product Name:** [Yakult Soymilk (Pineapple, Passion Fruit, Chocolate, and Apple)].
Foreign Name: Tohnyu (Abacaxi, Maracuja, Chocolate, Maca).
Manufacturer's Name: Yakult S/A Ind. e Com.
Manufacturer's Address: Via Anchieta, Km 31–Sao Bernardo do Campo, Sao Paulo, Brazil.
Date of Introduction: 1985.
Ingredients: Chocolate: Extract of soybeans, chocolate powder, corn oil, sugar.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Labels. 1988. May. Chocolate is Brown, yellow, orange, and black on white. Abstract illustration of two cocoa beans on front panel. "Natural. Vegetable protein. Tohnyu is a natural liquid food based on an extract of soybeans in various flavors. Contains all the riches of the soybean: Vegetable protein, vitamins, minerals, and linoleic acid. Tohnyu is free of cholesterol. Tohnyu is healthful and delicious. Keep refrigerated." By 1988, this was one of the most successful soyfoods in Brazil, with sales apparently growing rapidly. Total sales of Yakult beverages in Brazil (their fermented cow's milk and soymilk) grew from $13 million in 1984 to $46.2 million in 1987. Profits grew from a large loss in 1984 to 12% on sales net. Color brochure. 1988. Ta Com Tohnyu Ta Com Todo. "You get everything with soymilk."

4701. **Product Name:** [Soymilk {Sterilized in bottles}].
Foreign Name: Soja Milc. Renamed to Soja Trunk after 1-2 years.
Manufacturer's Name: Yamato Tofuhaus Sojaprodukte GmbH.
Manufacturer's Address: Moessingerstr. 41, D-7406 Moessingen 2-Belsen, West Germany. Phone: 07071-71094 or 95.
Date of Introduction: 1985.
Wt/Vol., Packaging, Price: Glass bottles.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Klaus Gaiser. 1990. March 12 and May 8. This soymilk product was launched in about 1985.

4702. **Product Name:** [Soya Milk].
Manufacturer's Name: Zuaitzo.
Manufacturer's Address: Calle Diputacion 5* Piso, Calle Correria 39 Bajo, 01001 Vitoria-Gasteiz, Spain. Phone: 945/28 86 30.
Date of Introduction: 1985.
New Product–Documentation: Soya Bluebook. 1985. p. 85; 1986. p. 104. Letter from Javier Arocena (on letterhead). 1986. Sept. 10.

4703. Ang, H.G.; Kwik, W.L.; Theng, C.Y. 1985. Development of soymilk–A review. *Food Chemistry* 17(4):235-50. [48 ref]
Address: 1-2. Chemistry Dep., National Univ. of Singapore, Kent Ridge, Singapore 0511.

4704. Batt, Eva. 1985. Eva Batt's vegan cookery. Leatherhead, Surrey, England: The Vegan Society. 144 p. Index. 22 cm.
• ***Summary:*** "A classic vegan cookbook recommended by the Vegan Society. Produced in co-operation with the Vegan Society, Ltd."

This edition is quite similar to the book with almost the same title published in 1985 by Thorsens. One major difference is: (1) The word "Plamil" is used instead of "vegetable milk." Chris Olivant, former head librarian at VSUK writes (e-mail of 24 March 2012): "Plamil was by far the most popular of the few soya milks available when the recipes were first written in 1973, and, of course, was a company with close links to the Vegan Society. Plamil, from 1965, always referred to their product as a 'plant milk' or 'vegetable milk', so it would appear that Thorsons decided that they didn't want to continue with the free advertising after the first edition of the book, and used the term 'vegetable milk' in a generic sense, even though by 1985 there were other products on the market specifically called 'soya milk.'

"The small amounts [3 tablespoons for a bowl of Muelsi, p. 28] must be because the use of the term Plamil specifically refers to their concentrated liquid milk product (if I remember correctly you had to add the same amount again of water to produce the correct strength), which they later dropped in favour of a fully made up product. Later readers may end up with disappointing dishes if they just use normal soya milks." Address: The Vegan Society, 47 Highlands Rd., UK.

4705. Batt, Eva. 1985. Eva Batt's vegan cooking. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 144 p. Illust. (55 line drawings) by Margaret Leaman. Index. 22 cm.
• ***Summary:*** Across the bottom of the front cover: "The classic vegan cookbook. Recommended by The Vegan Society."

Contents: Acknowledgements. Introduction. Mueslis. Soups and small savouries. Salads and Salad dressings. Ways

with vegetables. Main meals. Small savouries. Savoury sauces, stuffings and spreads. Desserts and ice cream. Bread, cakes and buns. Pastry, biscuits and cookies. Miscellaneous. Useful information.

Soy related: In the Introduction are sections on "Soya" (p. 13-14) and "Textured Vegetable Protein (TVP)" (p. 17; several brands are available. "Most come in flavoured and unflavoured varieties, in chunks and mince." This nutritious food is low in fat, "high in protein, economical, easily stored, requires very little cooking, and no waste {bone, skin, gristle or fat} is involved").

Recipes include: Beauty breakfast (with "3 tablespoons vegetable milk" [Plantmilk concentrated soymilk], p. 28). Fresh fruit muesli (with vegetable milk, p. 29). Cream of onion soup (with "2 teaspoons soya flour" and "¼ pint {140 ml} undiluted concentrated vegetable milk," p. 34). Salad cream (with "1 tablespoon undiluted concentrated vegetable milk," p. 41). Tofu mayonnaise (with "4 oz {120 gm} silken tofu," p. 41). Basic nutmeat mixture (with "2 level teaspoons soya flour," p. 54). Curried textured vegetable protein (with "1½ oz {45 gm} unflavoured textured vegetable protein, mince or chunks," p. 55). Mushroom pie (with soya flour, p. 62). Fricassee with mushrooms (with "2 oz {55 gm} tvp mince," p. 63). Savoury steak (with "tvp slices" and "soy sauce," p. 66). Bengal curry (with "1 teaspoon soya sauce," p. 68). Pizza (with "10 oz {285 gm} cooked tvp or tin of soya beans," p. 75). Onion tart (with "Soya sauce," p. 76). Soya fritters (with soya flour, p. 79). Soya burgers (with "2 oz. tvp mince," p. 81). Soya crispie (with soya flour, p. 92). Plamil and banana shake (with "½ pint Plamil vegetable milk"). Soya 'cheese' (cream style) (with "4 oz soya flour," p. 122). Soya 'cheese' (cheddar style) (with "3½ oz Soyolk or other heat-treated soya flour," p. 122). Soya compote (with "2 oz. soya flakes"). Soya milk and/or soya flour are used in many baked goods (breads, cakes, and buns, etc., see p. 99-137).

Note: Eva has basically not yet realized how tofu, tempeh, miso and good-tasting soymilk can transform a vegan diet.

Previous edition published as *Eva Batt's Vegan Cookery,* the first major vegan cookbook ever published, with over 300 recipes, plus practical advice and nutritional information. The "corporate author" is given on OCLC as the Vegan Society.

Plamil Foods put this at the top of its list of recommended vegan cookbooks. "This cookery book is most comprehensive and advises on preparing nutritious appetising meals without meat, fish, eggs or dairy products. Essential nutrients from vegetable sources, planning meals for best food value, savoury dishes, snacks, desserts, cakes, bread, biscuits, sauces, garnishes, etc." Address: Vegan Society, UK.

4706. Brody, Jane E. 1985. Jane Brody's good food book: Living the high-carbohydrate way. New York & London: W.W. Norton & Co. xxviii + 700 p. Foreword by Pierre Franey. Illust. (line drawings by Ray Skibinski). Index. 24 cm.

• ***Summary:*** Advocates a diet with more complex carbohydrates and starches–including whole grains and beans.

The section titled "Soy, the queen of beans" has the following contents: Soy protein, the meat of the East. Soy oil, a boon to blood vessels. A selection of super soy foods: Tofu–fast track to soy nutrition, tempeh–a treat from Indonesia, soybean sprouts–growing nutrients, soy flour–a protein boost, textured vegetable protein, for more recipes.

"Soy, the Queen of beans. The soybean may be the single most important food produced in the world today. It is certainly the most versatile." A praiseful introduction to soy protein, soy oil, soy grits, flakes and flour, soy powder (isolate), soy milk, soy nuts, tofu, tempeh, soy sprouts, and textured vegetable protein... by one of America's most widely read food writers.

Dr. C.R. Sirtori and collaborators at the University of Milan found that a diet rich in soy protein is considerably more effective in lowering cholesterol than is the traditional low-fat "prudent" diets. Even when 500 milligrams of cholesterol–the equivalent of two large egg yolks–were added to the soy diet, blood cholesterol levels did not rise, the study showed.

On the inside rear dust jacket is a portrait photo of Jane Brody and a brief biography. Born in New York City, she received her B.S. degree from Cornell University [Ithaca, New York] and her M.S. in Journalism from the University of Wisconsin School of Journalism. She lives with her family in Brooklyn, New York.

Note: This book is not vegetarian; meat, fish and poultry are used extensively, but not as extensively as in many cookbooks. Address: Food writer for The New York Times.

4707. Brown, James T. 1985. Harvest of the sun: An illustrated history of Riverside County. Northridge, California: Windsor Publications, Inc. 248 p. See Loma Linda Foods. p. 188-89.

• ***Summary:*** "In the early 1900s Southern and Northern California Seventh-day Adventists were actively working in the areas of diet and health. Some of their efforts resulted in the formation of the Loma Linda Sanitarium and Loma Linda College of Medical Evangelists.

"Loma Linda Foods began in 1906, supplying bakery goods for the sanitarium, the college, and the small community of Loma Linda. It made a variety of baked stone-ground, whole-wheat breads, health cookies, and fruit crackers.

"Demands from residents for the bakery goods grew quickly. They liked the life-style and diet and came to rely on the company for its products. By 1907 increased production

required the construction of a separate building, a small white-frame structure located on Anderson Street across from the railroad station in Loma Linda.

"Now there was room for the production of foods similar to Dr. Kellogg's original line of foods as well as experimentation with new lines. Breakfast cereals, meat analogs from soybean and wheat, soy milk, and canned tofu were added, and bakery items became less important over the years.

"In 1933 the name was officially changed to Loma Linda Foods and by 1935 delivery routes brought the firm's products to stores within a 125-mile radius. Since working space was cramped and Loma Linda Foods wanted to concentrate on production of the breakfast cereal, Ruskets, the decision was made to relocate. The company opted for a site next to La Sierra Junior College near Riverside, with the promise of student employment cinching the move. In Nov. 1938 the first section of the present plant began operation."

"Before the relocation sales had totaled $60,000 a year. Sales increased rapidly during World War II, almost doubling during the first 6 months of 1943. Annual sales now total several million dollars..."

"Loma Linda Foods' association with Dr. Harry Miller provided a major impact on its growth. In January 1951 the company took over his International Nutrition Laboratories, Inc., in Mt. Vernon, Ohio. Dr. Miller donated the sales profit to form the International Nutrition Research Foundation at the Arlington plant near Riverside. Under his direction the foundation did much to establish soy foods as a scientifically recognized source of superior vegetable protein for human needs.

"By 1966 the company was producing six types of soy milk, which now accounts for 70% of its market. In the late 1960s Loma Linda Foods adopted a further innovation in the vegetarian protein foods field–spun protein fiber, which it now manufactures."

"From humble beginnings Loma Linda Foods has now grown to employ 250 people in its two plants and to carry a line of 70 products."

Large photos show: (1) The original building and staff in 1925; over the doorway is written "Loma Linda Food Co. Bread and Health Foods. Wholesale Only." (2) The present facility at 11503 Pierce Street, Riverside. Address: California.

4708. Carter, O.G. 1985. Breeding soybeans for special uses. In: R. Shibles, ed. 1985. World Soybean Research Conference III: Proceedings. Boulder, Colorado: Westview Press. xxiii + 1262 p. See p. 374-79. [27 ref]
• ***Summary:*** Contents: Oil quality. Protein: Tofu, soymilk. Oligosaccharides. Cookability. Anti-nutritional factors. Conclusions. Address: Asst. Principal, Hawkesbury Agricultural College, Richmond, New South Wales, 2753, Australia.

4709. Dr. Chung's Foods Company, Ltd. 1985. Dr. Chung's Foods Company, Ltd. Seoul, South Korea. 8 p. [Eng; Kor]
• ***Summary:*** The title page reads: "Chung's Foods offers health: The nutrition of soymilk and the expertise to produce it. We developed the system for producing nutritious soymilk for the first time in Korea and patented the invention." The company's main soymilk product is Vegemil. Photos show: (1) Chai-Won Chung M.D., Chairman of Dr. Chung's Foods Co., Ltd. (2) Vegemil in 180 ml bottles and 200 ml Tetra Brik cartons. Choco Woorean is a newly developed type of health food made from a mixture of undiluted Vegemil soymilk and chocolate powder. Apple Woorean is a similar product made with apple juice instead of chocolate. The company has two soymilk plants, the first at Singal, and the second at Chung Joo. The latter is one of the largest and most modern in the world. The head office is in Seoul, Korea. Address: Seoul, South Korea.

4710. Findlater, Evelyn. 1985. Making your own home proteins: Tofu, tempeh, soft cheeses, yoghurt and sprouted seeds. London: Century Publishing. 151 p. Illust. Index. 20 cm.
• ***Summary:*** Contents: The soya dairy (The soya bean, products of the soya bean {soya flour, shoyu and tamari, miso, cooking with miso}, soya milk, how to make it at home, recipes, tofu, silken tofu, yuba, soya milk yoghurt, soya milk yoghurt cheese, tempeh). Gluten (wheat protein). Goat's milk dairy produce. Sprouting beans, grains and seeds (beans: aduki, alphatoco, chick peas, flageolet, lentils, mung beans, soya beans).

A portrait photo of the author appears on the front cover; a brief biography is found on the first page and in the introduction. Address: England.

4711. Harper, Judson M.; Jansen, G. Richard. 1985. Production of nutritious precooked foods in developing countries by low-cost extrusion technology. *Food Reviews International* 1(1):27-97. [53 ref]
• ***Summary:*** Contents: Introduction: Importance of weaning foods, centrally processed weaning foods, transition from imported to locally processed weaning foods. Manufacturing alternatives: Extrusion processing, roller drum drying process, spray drying process, baked products line, milling process, selection of alternative processes, production capacity range, capital costs, operating costs, type of weaning food product, type of packaging, local equipment, energy, skill requirements, sanitation requirements, summary. Capabilities and limitations of LECs: Characteristics of low-cost extrusion cookers, Brady extruder (M&N Distributors, Torrance, California; or CIATECH, Chihuahua, Mexico), Insta-Pro extruder (Div. of Triple "F" Feeds, Des Moines, Iowa), Anderson extruder (Cleveland, Ohio), summary of LEC characteristics. Cost associated with LEC plants:

Elements of a LEC plant, plant costs, manufacturing costs, project planning and implementation, preliminary study, project implementation. Cereal/legume blends: Specifications, energy, protein, dietary fiber, vitamins and minerals, ingredients, storage stability, calorie density, protein quality evaluation (corn/soy blends, corn/sorghum blends with cottonseed), metabolic studies in human infants and preschool children (extruded corn/soy blends, extruded sorghum). Full-fat soy flour: Storage studies, protein nutritional value, rat growth evaluation, baking study, potential utility of extrusion processed full-fat soy flour. Applications in developing countries: Sri Lanka (1976, Thriposha). Costa Rica (1976, 1979, Frescorchata). Tanzania (May 1978, Lisha). Guyana (1979, Cerex). Mexico (CIATECH 1978, many products), other commercial applications (Pro-Nutre in San Jose, Costa Rica; Maisoy in Santa Cruz, Bolivia), miscellaneous developments (INCAP in Guatemala, Meals for Millions in Korea, PINFST in the Philippines, Thailand, Leche Arroz in Ecuador {an extruded mixture of ground broken rice and whole soy}). Technology transfer (Colorado State University). Discussion. Summary. Sources of funding for this publication.

Figures: (1) Graph of infant mortality rate vs. duration of breast feeding for 19 countries (mostly developing countries). In general, the longer the breast feeding, the greater the infant mortality. (2) Extruder, showing rotating screw which forces product through a discharge die. (3) Typical extrusion process for food production (from storage bin to packaging). (4) Schematic of roller drum drying process for food production. (5) Typical spray drying process for weaning food production. (6) Systematic of baking line to make biscuits. (7) Systematic of simple missing process. (8) Cross sectional schematic of Brady extruder. (9) Photo of Insta-Pro 500 extruder. (10) Anderson extruder showing braker bolts, water / steam injectors, and face cutter. (11) Diagram of sequential processing operations of a LEC processing plant. (12) PERT chart showing key steps in feasibility study to establish essential process parameters. (13) PERT chart showing steps necessary to complete a central processing facility for weaning foods. (14) Viscosity of uncooked or cooked gruels made from raw dehulled corn or dehulled corn extruded from a Brady extruder at 149ºC. (15) Inside Thriposha LEC plant (in Sri Lanka; LEC started in 1976). (16) Four labels of packaged Thriposha products. (17) Outside front of Costa Rica LEC plant. (18) Four packages of Lisha baby food (Tanzania). (19) Four plastic laminated bags used to package Cerex in Guyana.

Also contains 18 tables–many related to soy.

Note 1. The LEC project in Korea (p. 91) uses a lower capacity extruder (less than 100 kg/hour) designed by the Meals for Millions Foundation (MFM) and constructed by the Korean Institute of Science and Technology (KIST). This extruder is made from parts that are easily available and consists of a screw 6.35 cm in diameter and 63.5 cm long driven by 22.3 kW (30 HP) electrical motor. A nutritious snack has been made for the Wonseong County Comprehensive Nutrition Program using the MFM LEC (see Cheigh 1984).

Note 2. This is the earliest and only document seen (Jan. 2011) that mentions "Leche Arroz." It appears to be a beverage resembling a mixture of rice milk and soymilk, made from rice that might otherwise go to waste. Good idea! Address: Colorado State Univ., Fort Collins, Colorado.

4712. Hieatt, Constance B.; Butler, Sharon. eds. 1985. Curye on Inglysch: English culinary manuscripts of the fourteenth century (including the *Forme of Cury*). London, New York, and Toronto: Published for the Early English Text Society by the Oxford University Press. vi + 224 p. Illust. Index. 23 cm. [61 ref]

• ***Summary:*** Contents: Table of manuscript sigla [signs, abbreviations, letters, or characters standing for words in ancient manuscripts]. Introduction: The fourteenth-century menu, fourteenth-century recipes: Historical development and characteristics, manuscript sources (Parts I-V), variants and editorial principles. Select bibliography. Fourteenth-century menus from MS Cosin v iii 11: Part I: Diuersa Cibaria (63 recipes). Part II: Dieursa Servisa (92 recipes). Part III: Utilis Coquinario (37 recipes). Part IV: The Forme of Cury (205 recipes). Part V: Goud Kokery (35 recipes). Appendix A: Manuscripts cited but not given sigla. Appendix B: Chart of recipes in *The Forme of Cury.* Index and glossary.

This is one of the best books on medieval English cooking. The editors do not translate from Middle English but they do have a detailed glossary and index at the end.

In Part III, Utilis Coquinaro (P. 81+) we read: "For to make crem & botere of almoundes" (p. 84). "Botere of almand melk" (p. 84).

In Part IV, The Forme of Cury (p. 93+) we find: "almaund melke" (p. 100). "with a lytell almaund mylke" (p. 102). "Draw an almaunde mylke: (p. 108). On page 117 are recipes for: "87 Creme of almaundes. 88 Grewel of almaundes. 89 Iowtes of almaund mylke [Iowtes are chopped herbs and greens]. 90 Cawdel of almaund mylk" [Cawdel is a smoothly thickened sauce or soup]. Also: "almaund mylke" (p. 123).

In the Index and glossary are entries for: Aftermelk. Alma(u)nd and almaund mylke. Blanc / blank, with several references to almond milk.

Note: Charles Perry (2001/05) says this is the earliest English-language book he has seen that mentions almond milk. This book contains a number of early recipe collections including an edition of the Middle-English text of *The Forme of Cury.* The word "Cury" means "cookery." Address: 1. Univ. of Western Ontario; 2. Univ. of Toronto. Both: Canada.

4713. Hume, D.J.; Shanmugasundaram, S.; Beversdorf,

W.D. 1985. Soyabean (*Glycine max* (L.) Merrill). In: R.J. Summerfield and E.H. Roberts, eds. 1985. Grain Legume Crops. London: Collins. xvi + 859 p. See p. 391-432. Illust. Index. 24 cm. [192 ref]

• ***Summary:*** Contents: Introduction: History, current status and future projections. Principal economic yield and uses of crop products. Principal farming systems. Botanical and agronomic features: Symbiotic nitrogen fixation potential. Principal limitations to production and yield: Developing countries, developed countries. Fertiliser requirements. Quality of seed constituents. Germplasm resources. Principal breeding strategies: Adaptation to new geographic areas, breeding methodology, breeding objectives, seed quality, pest and disease tolerances, current trends in soyabean breeding. Avenues of communication among researchers (INTSOY, AVDRC, IITA, FAO). Prospects for larger and more stable yields.

Tables: (1) Area (1000 ha), yield (kg per ha), and production (1000 tonnes) of soyabeans from 1969-71 to 1982. (2) Maturity durations and productivity potentials of soyabeans in selected countries. (3) *Glycine* species collections around the world. (4) Sources of resistance among soyabeans to selected insect pests. (5) Sources of resistance among soyabeans to selected diseases.

Table 9 shows that there are soybean germplasm collections in 15 countries. This table has 4 columns: Country, location (city), curator, and number of accessions. AVRDC in Taiwan has the largest germplasm collection in one location (10,400 accessions, Tainan), followed by USA (9,648, Illinois and Mississippi), India (4,000, Pantnagar; 1,800 Amravati), Japan (3,541, Tsukuba; 200, Morioka), USSR (3,000, Leningrad), China (3,000 Jilin; 3,000 Hubei; 2,930 Shadong [sic, Shandong {W.-G. Shantung}]; 2,500 Beijing; 960 Heilungjiang [Heilongjiang]). Also: Australia 400, France 500, Nigeria 1,300, Indonesia 600, South Korea 2,833, North Korea 300, South Africa 600, Sweden 1,200, and Thailand 1,686. Address: 1&3. Univ. of Guelph, Dep. of Crop Science, Guelph, Ontario N1G 2W1, Canada; 2. Asian Vegetable Research and Development Centre (AVRDC), PO Box 42, Shanhua, Tainan 741, Taiwan, Republic of China.

4714. *IITA Research Highlights.* 1985. On-farm performance of a new soybean and the use of soybeans in treatment of protein malnutrition in infants. p. 6-8. For the year 1984.

• ***Summary:*** A new soybean line–TGx 536-02D–has been developed by IITA to meet the increasing demands of farmers in the central and northern Guinea savannas of Nigeria, which are outside the traditional soybean growing areas. This new line, with a maturity of 105 to 110 days, is higher yielding and earlier maturing than the widely grown Malayan variety, which was introduced into Nigeria in the early 1900s and which matures in about 140 days.

"An expanding market for soybean is due largely to the popularity of soybeans to prepare 'dawadawa,' a fermented paste used as a flavoring. There is also a growing interest in using soybean milk and flour as an important source of protein for feeding babies and young children."

"An outstanding example of the promotion and use of soybeans to combat infant protein malnutrition (kwashiorkor) in a Nigerian rural area was recently brought to the attention of IITA scientists. A children's home near Ogbomosho specializes in treating infants with severe symptoms of malnutrition, e.g. swollen bellies and skeletal limbs... The infants are admitted to the children's home with their mother or guardians who prepare all the food for themselves and their babies under the supervision of the staff. Soybeans are prepared as a milk substitute by boiling, grinding, straining, and recooking this liquid. This "milk" contains about 35 gm of protein per serving. It is especially important because about 40% of the infant 'patients' are intolerant to cow's milk. Also, soybeans are prepared as a wet-milled full-fat flour added to a cereal pap. A normal ration for a one to two year-old child is the equivalent of about 200 gm of whole soybeans per day at a cost of approximately 20 cents (U.S.).

"Not only are staff members of the children's home concerned with the infants brought to them, but they visit villages near Ogbomosho to promote the cultivation and use of soybeans and teach women how to prepare them in local dishes. Several farmers–both men and women–in the area are now growing the crop and soybeans are being sold in local markets.

"Women in other African countries including Ghana, Cameroon, Uganda, Rwanda, and Zaire, are also using soybeans in local dishes. A village with small-scale equipment can provide soybean oil and meal for partially defatted soybean flour."

Photos show: Nigerian mothers preparing soybean milk for their babies at the children's home near Ogbomosho, Nigeria. A mother bottle-feeding soybean milk to her baby. A mother preparing soybean/cereal pap for her infant. Address: Ibadan, Nigeria.

4715. Johnson, Dale W. 1985. Nonfood uses of soy protein products. In: R. Shibles, ed. 1985. World Soybean Research Conference III: Proceedings. Boulder, Colorado: Westview Press. xxiii + 1262 p. See p. 175-81. [3 ref]

• ***Summary:*** "In the past, cracked, dehulled beans were processed to make a full fat soy flour, which was used mainly for human food, although some was used in calf milk replacers."

In the early 1960s "the industrial use of soy flour in the U.S. was in the range of 50 to 55 thousand tons per year in plywood. It is estimated that the current use is in the range of 7,000 tons annually.

"Industrial isolated soy protein was being produced at the rate of 18 to 20 thousand tons per year in the 1960s and increased to about 27 thousand tons per year in the early 1970s. Since that time, the largest producer of industrial soy

proteins shut down its operation, so at present, there is only one producer of industrial isolated soy protein. It is estimated that the current production of industrial isolated soy protein is in the range of 9,000 tons annually...

"It is estimated that the production of textured soy flour products could be in the range of 80 to 100 thousand tons per year... a substantial amount of the textured soy flour products are used in canned pet food, primarily dog food, but there are no accurate figures available as to the amounts going into pet foods." An estimated usage is around 0.8 to 1.0 million tons of 50% soybean meal.

A table of "Commercial applications for defatted soy flour" includes: Pet foods (dog, cat, fish, bird), calf and other milk replacers, feed pelleting, fermentation, bee feed, tanning, joint cements, wallboard, mortar cement, asphalt, sprays-insecticide, pesticide, pan grease, wall paper coating, plywood glues, putties and metal polishing. A table of "Commercial applications for industrial isolated soy protein" includes: Paper coating, joint cement, detergent products, water base paints, fire fighting foam, wall paper coating, shoe polish, fiber board, textiles, paper board laminating, foamed concrete, putties, printing inks and spun fibers.

"In fermentation, a significant amount of soy flour is used as one of the ingredients in the media for growing the organisms that produce the desired products. The major use of soy products is in the 'mycin' type fermentation... It is estimated that the use in fermentation is several thousand tons per year. At one time there was some soy flour used in producing beer, where the soy served as a nutrient for better yeast growth... Defatted flour is used for making a diet to feed bees for honey production...

"Industrial isolated soy proteins differ from edible isolated soy proteins in that industrial soy protein undergoes hydrolysis during processing. The degree of hydrolysis will determine the characteristics of the industrial soy protein. Usually, the criterion for determining the degree of hydrolysis is viscosity."

A wall washing detergent was the first commercial production of industrial isolated soy protein, more than 40 years ago. "The product is still on the market, but other compositions are now used rather than soy protein.

"At one time there was a considerable amount of soy protein used in water-based paints, but this use has also disappeared due to the developments of more useful polymers. During World War II most of the industrial isolated protein being produced was used for making fire fighting foam for the Armed Services.

"At one time a very high percentage of wall paper was coated using isolated soy protein, but again, other polymers have replaced soy protein to a considerable extent...

"The only significant nonfood use of soy protein concentrates is in milk replacer products for calves and other young animals. It is estimated that as much as 40% of the soy protein concentrate produced goes for this application. Total production of soy protein concentrate is estimated to be in the range of 40,000 to 50,000 tons per year... The type of product that is used is that produced by an aqueous alcohol extraction process... Combined nonfood and food use of soybean meal is about 10% of the total meal produced, with 90% being used in animal feed." Address: Food Ingredients (Minnesota), Inc., 2121 Toledo Ave. No., Golden Valley, MN 55422.

4716. Kahn, A.; Mozin, M.J.; Casimir, G.; Montauk, L.; Blum, D. 1985. Insomnia and cow's milk allergy in infants. *Pediatrics* 76:880-84. *

4717. Klein, Hermine. 1985. Die neuen Sojagerichte: Schnell und delikat–Natuerliche Rezept-sammlung No. 3 [The new soy recipes: Quick and delicate–Natural recipe collection No. 3]. Vienna, Austria: Fachverlag Gesundheit GmbH. 50 p. Illust. 24 x 15 cm. [Ger]
• ***Summary:*** An attractive cookbooklet. Contents: Introduction. Green seeded soybean recipes. Yellow soybean recipes. Making tofu at home. Tofu sweets. Soymilk recipes. Miso soups. Soy granule recipes. Soy granule sweets. TVP recipes. Soy burgers (*Sojastangerln*). Address: Vienna, Austria.

4718. Kolar, C.W.; Richert, S.H.; Decker, C.D.; Steinke, F.H.; Vander Zanden, R.J. 1985. Isolated soy protein. In: A.M. Altschul and H.L. Wilcke, eds. 1985. New Protein Foods. Vol. 5. Seed Storage Proteins. New York: Academic Press. xxi + 474 p. See p. 260-99. Chap. 8. [88 ref]
• ***Summary:*** Contents: Introduction. History. Manufacture of isolated soy proteins. Manufacture of structured isolated soy proteins. Research in soy protein isolation. Composition of isolated soy proteins. Physical and functional properties. Nutrition factors. Meat, poultry, and seafood applications. Infant formulas. Dairy-type applications. Bakery applications. The future of isolated soy protein. Address: Ralston Purina Co. St. Louis, Missouri.

4719. Kushi, Aveline; Kushi, Michio. 1985. Macrobiotic diet. Edited by Alex Jack. Tokyo and New York: Japan Publications. 288 p. Illust. Index. 26 cm. [74 ref]
• ***Summary:*** This is perhaps the best, most comprehensive book seen to date by Aveline and Michio Kushi about the macrobiotic diet. The rear cover states:

"Humanity has been continuously degenerating in spite of scientific and technological achievements. This degeneration is reflected in physical disorders, psychological disorders, and general distrust in human relations. Since diet affects our physical and psychological functions, macrobiotics strives to change our health and behavior through a proper diet in harmony with the environment in which we live.

"This book is a basic and readable presentation of

the principles behind the macrobiotic diet. It explains the foodstuffs that comprise the diet, appropriate cooking techniques, proper attitudes toward food and its preparation, and applications of the diet for weight loss, increased energy, relief from and prevention of sickness, and encouragement of psychological health, spiritual development and social stability. Dietary adjustments and modifications are given for men, women, and children, as well as differing climates, levels of activity, and ages."

Macrobiotics, which originated in Japan, has done much to introduce Westerners to soyfoods. This book is an excellent example: The chapter on "Soup" has a long section on miso soup (p. 99-101, 104-05) and the main varieties of miso: Barley miso, soybean miso (Hatcho miso), brown rice miso, light misos, and natto miso (a spicy condiment not usually used in soups).

In the chapter on "Vegetables," the section on "Pickling" has subsections (p. 118-19) on "Tamari soy sauce pickles" and "Miso pickles."

In the chapter on "Beans and bean products" is a long section on "Soybeans" (p. 141-49) which includes an introduction (discusses the "vegetable soybean" vs. "field soybean") and descriptions of miso, natto, okara, soy flour, soy grits, soy milk, soy oil, tamari soy sauce, tempeh, tofu (incl. nigari, oden, Yu-dofu, aburage, inari-zushi), viilia (somewhat like soy yogurt from Finland), and yuba.

The subsection on "Soybeans" (for example, p. 147) states: "Yellow soybeans are hard and require thorough cooking. They should be soaked overnight with a strip of kombu and then pressure-cooked for a short time prior to boiling. Properly cooked, yellow soybeans are very soft and delicious and give no problems with gas. A delicious dish called Colorful Soybean Casserole is made from yellow soybeans, kombu, shiitake mushroom, lotus root, dried tofu, daikon, carrot, burdock, and celery. The yellow variety also goes very well served with hijiki sea vegetables. Black soybeans, also known as Japanese black beans, have a strong, delicious taste. They may be prepared plain or cooked with rice. To sweeten black soybeans, a little barley malt, rice syrup, or mirin is often added. Black soybeans are usually cleaned by rubbing with a damp towel to prevent their skins from falling off under water. During cooking, some of the skins from these beans may float to the surface and should be skimmed off. Foam also arises and needs to be discarded. Yellow soybeans are nice seasoned during cooking with a little tamari soy sauce or miso. Black soybeans are usually seasoned with tamari soy sauce."

The chapter on "Snacks and desserts" has a good section on Amazaké (p. 190, 196) and also notes: "In the West, the introduction of tofu has resulted in the creation of many tofu-based desserts such as tofu cheesecake, tofu ice cream, and tofu whip topping. In the Far East, however, tofu is not traditionally combined with barley malt, rice syrup, or other sweetener. It is recognized that tofu's cooling qualities are naturally balanced by a salty taste, not a sweet one. As a result, tofu is customarily cooked and served warm, rather than prepared raw and eaten cold, except in special cases for cooling and refreshment, usually in the hot summer. The macrobiotic diet does not encourage the use of tofu in sweetened desserts except for those in transition from dishes made with dairy food and sugar."

The chapter on "Salt, oil, and other seasonings" includes sections on tamari soy sauce (p. 203-04, 209), miso (p. 204, 210-11), and soybean oil (p. 207).

The chapter on "Dressings, sauces, garnishes, and condiments" includes sections on "Dressings" (p. 215-16, with tamari soy sauce dressings, umeboshi dressings, miso dressings, tofu dressings, sesame dressings), "Condiments" (p. 216-17, with gomashio or sesame salt, sea vegetable powders, tekka, umeboshi plums, miso with scallions or onions, etc.).

The chapter on "Beverages" has sections on amazake and soy milk (if naturally processed, good for those in transition from cow's milk and other dairy foods).

This book also contains a wealth of information (see the index) on such varied foods as azuki beans, barley malt, brown rice, kuzu, sea vegetables (many species), sesame seeds and sesame oil, umeboshi, etc.

Note: The macrobiotic diet is not vegetarian; it allows the inclusion of fish and seafood (see index). Address: Brookline and Becket, Massachusetts.

4720. Matsuura, M. 1985. [Improvement of chalkiness present in soy milk]. In: Development of New Protein Foods. Yokohama: Tekunoai Press. See p. 315-24. [Jap]*

• ***Summary:*** A bell-shaped graph shows the effect of the pH during soaking on the activities of Beta-glucosidase. The activities are highest at pH 6, and lowest at the extreme pH values of 3.5 and 8.5.

There are two types of Beta-glucosidases in soybeans, and they tend to produce chalky flavors. Beta-glucosidase A is active in the pH range 4-7, has an optimum pH of 5.0, has an optimum temperature of 40-45ºC, and is inactivated by heating at pH 5.0 at 60ºC for 5 minutes.

Beta-glucosidase B is active in the pH range 4-7, has an optimum pH of 5.0, has an optimum temperature of 45-50ºC, and is inactivated by heating at pH 5.0 at 60ºC for 5 minutes.

4721. McDougall, John A. 1985. Osteoporosis, calcium, and protein (Document part). In: J. McDougall. 1985. McDougall's Medicine: A Challenging Second Opinion. New Century Publishers, Inc. 220 Old New Brunswick Road, Piscataway, NJ 08854. xi + 308 p. See p. 73-77. [107* ref]

• ***Summary:*** "Osteoporosis is a disorder related to aging, which is characterized by loss of enough bone minerals so that, even with little force, one or more bones can be broken. The more bone material that is lost, the greater is the risk of

breaking your bones. Such a break is known as a fracture. Fractures due to osteoporosis are most common in the wrists, the backbone, and the hips...” Osteoporosis is found most often in women after menopause, when the ovaries’ production of female hormones, estrogens, gradually ceases. Estrogens slow the rate of bone breakdown. In American women over age sixty-five, 35-40% have suffered one or more osteoporosis-related fractures. In men, osteoporosis is less severe and rarely begins to appear before age 75. There is a high incidence of osteoporosis in Caucasian American women and a low incidence in Asians and African blacks. Cultural factors affecting osteoporosis include smoking tobacco, drinking alcohol and caffeine, lack of exercise, and diet. Of the various dietary factors, calcium and protein are the most important. Worldwide, most people consume 200-500 mg/day of calcium. The WHO recommendation for minimum intake for adults in 400-500 mg/day. The Food and Nutrition Board recommendation for the USA is 800 mg. “In most published studies about calcium, the correlation between dietary calcium intake and bone density has been weak or nonexistent.” In other words, people who consume more calcium have not been found to develop stronger bones. “If we examine the worldwide distribution of cases of osteoporosis today [as measured by hip fractures], we are struck by the fact that this disease is most common in countries where dairy products and calcium supplements are consumed in the largest quantities: The USA, Sweden, Finland, and the UK. The occurrence of osteoporosis is rare in Asian and African countries, where milk is not consumed because it is not available or because of a very high incidence of lactose intolerance... Worldwide, the incidence of osteoporosis has a direct correlation to the total protein, and especially the animal protein, intake of a population of people. The more animal protein consumed by the people, the more the osteoporosis in the population. Plant foods are also good sources of calcium, though fiber, oxylates, and phytates may prevent some of this from being absorbed. Yet this is not much of a problem. All natural diets, including purely vegetarian diets, contain adequate calcium. Osteoporosis is not caused by a deficiency of calcium.

“Proteins in excess cause the body to lose large amounts of calcium and other minerals, which are excreted through the kidneys into the urine... This creates a condition called a negative calcium balance.” At most, an adult needs no more than 20 grams of proteins a day, or about two-thirds of an ounce. These proteins are needed to grow hair, replace skin, produce hormones, form tissue cells, and for many other uses. Most Americans consume 105 to 120 grams or more of proteins each day. What happens to the excess 100 grams of proteins? They cannot be stored in the form of body fats. Most of the proteins we eat are broken down into their component amino acids, which pass through the intestinal wall into the bloodstream. Once they enter the blood, some of the amino acids are used for the body’s various needs, and some of the excess is metabolized in the liver into urea, a powerful diuretic which promotes urination and loss of body water. When urea and amino acids enter the kidneys on the way to elimination in urine, they cause not only the loss of excess water but also the excretion of large amounts of minerals. One of the most important minerals lost in that way is calcium. The more proteins that are consumed, the greater is the loss of calcium. Researchers estimate that doubling the amount of proteins in the diet will increase by 50% the amount of calcium lost in the urine. “The calcium-losing effect of protein on the human body is not an area of controversy in scientific circles. The many studies performed during the past 55 years consistently show that the most important dietary change that we can make if we want to create a positive calcium balance that will keep our bones solid is to decrease the amount of proteins we eat each day.” Adding more calcium to the diet will not compensate for the loss caused by excess protein intake.

In addition to the diuretic effect, there are at least three other mechanisms that cause proteins to decrease calcium absorption: 1. Some amino acids prevent the tubules of the kidneys from reabsorbing calcium that enters the tubules from the bloodstream; that soluble calcium is lost in the urine; 2. Proteins and amino acids are weak acids. They must be neutralized to prevent them from harming the body. To accomplish this bone material must be dissolved to provide calcium and phosphates. The alkaline phosphate neutralizes the amino acids and the freed calcium ions are available to be excreted by the kidneys; 3. Of the 20 common amino acids, 3 contain sulfur, and these have a powerful calcium-losing effect on the kidneys. Animal proteins have an especially high content of sulfur-containing amino acids, such as methionine and cystine. In 1930 the first study was published that showed that in humans a diet with a high meat content caused the loss of large amounts of calcium and a negative calcium balance. Eskimos, for example, eat large amounts of animal proteins and have very weak bones.

Exercise is another very important factor in maintaining strong bones. Address: San Rafael, California (1/88).

4722. McKeown, Thomas. 1985. Food, infection, and population. In: R.I. Rotberg and T.K. Rabb, eds. 1985. Hunger and History: The Impact of Changing Food Production and Consumption Patterns on Society. New York and London: Cambridge Univ. Press. 336 p. See p. 29-49. [16 ref]

• ***Summary:*** “The rise in population was due to the decline in mortality which led to the increase of life expectancy. Mortality declined essentially because of a reduction in deaths from infectious diseases. With the possible exceptions of starvation and infanticide, a decline in non-communicable causes of death made no substantial contribution to the improvement in health before the twentieth century. The central problem in interpreting the modern changes in

health and population size is the explanation for the decline of deaths due to infectious disease. The earliest and most important reason for the decline in infectious diseases was an improvement in nutrition which resulted from advances in agriculture and transportation...

"Second only to nutritional influences over time, and probably in importance, were the improvements in hygiene introduced progressively from the second half of the nineteenth century. They were the main reasons for the decline in water- and food-borne diseases... In the nineteenth century there were no great improvements in working and living conditions, and the main advances were in the purification of water and in sewage disposal (which coincided with the decrease of deaths from intestinal infections). From about 1900 these measures were greatly extended by food hygiene, affecting most critically the quality of milk. Before that time it was not possible to protect milk from micro-organisms, and the rapid fall in the number of deaths from gastroenteritis, which contributed substantially to the decline in infant mortality, was due to the introduction of sterilization, bottling, and safe transportation of milk... The influence of immunization... contributed little to the reduction of deaths from infectious diseases before 1935...

"The other reason for the modern transformation in health was the change in reproductive behavior which led to a decline in the birth rate. The significance of this change can hardly be exaggerated... The reduction in the birth rate was the essential complement without which the advances, like those associated with the first agricultural revolution, would soon have been reversed.

"It would be unwise to estimate numerically the contribution that different influences have made to the decline in mortality and population growth. Nevertheless, it is possible to draw some general conclusions concerning the main influences during the past three centuries.

"First, an improvement in nutrition exerted the earliest and, over the whole period since about 1700, the most important influence. Second, hygienic measures were probably responsible for at least a fifth of the reduction in the death rate between the mid-nineteenth century and the present day. This is the proportion of the decline which was associated with water- and food-borne diseases. Third, with the exception of vaccination against smallpox, the contribution of which was small, the influence of immunization and therapy was delayed until the twentieth century and had little effect on national mortality trends before the introduction of the sulphonamides in 1935. Since that time immunization and therapy have not been the only nor even the most important influences. Fourth, the change in reproductive practices which led to a decline in the birth rate was very important, since it ensured that the improvement in health brought about by other means was not reversed by rising numbers." Address: Prof. Emeritus of Social Medicine at the Univ. of Birmingham.

4723. Mennonite Central Committee. 1985. Soybean recipes (Brochure). Box 785, Dhaka-2 [Dacca-2], Bangladesh. 4 p. [Eng; Hin]

• ***Summary:*** All recipes are homemade: Roasted soynuts. Soybean flour: Soya satu, Soya khichuri, soya dal, soya chatni [chutney], soya–sweet pumpkin curry, soya-potato curry, soya peaju, soya patora, soya mistano, soya milk, soya yogurt, soya halua, soya khir.

The printed version is in Hindi, the mimeographed one in English.

4724. Nabben, Alexander. 1985. Soja-Kueche: Vielseitig und gesund [Soya cookery: Versatile and healthful]. Schaafheim, West Germany: Pala Verlag. 144 p. Illust. Index. 21 cm. [Ger]

• ***Summary:*** Contents: Soya, the wonderbean (*die Wunderbohne*). A cultural history of the soybean. A little soybean botany. Soya is versatile. The world market and world hunger. Health through proper nutrition and diet. Product types and buying tips. Recipes. About the author (autobiographical, with photo; he was born in 1953 in Viersen. Since 1978 he has worked in a whole-grain bakery, a soya kitchen, and in a vegetarian restaurant in Munich).

This vegan cookbook contains a large number of tofu and tempeh recipes, as well as recipes for most of the other types of soyfoods. Note the following German terms: *Ganze Sojabohnen* (*getrocknete gelbe Sojabohnen*) = whole dry soybeans. *Vollsojamehl* = Whole soy flour. *Sojasauce* = soy sauce. *Miso* (*Sojapaste*) = miso. *Okara* (*Sojakleie*) = okara. *Tofu* (*Sojaquark oder Sojakäse*) = tofu. *Tempeh* (*Soja-"Brie"*) = Tempeh.

On the last page of the book (p. 144) is an advertisement for Morgenland Naturkost, located at: Auf dem Anger 2, 3410 Northeim 19, West Germany. Phone: 05551-64592. They offer tofu and tofu dishes, seitan and seitan products, and utensils for the production of tofu and tempeh.

Apparently a second edition or printing appeared in 1988 (ISBN 3-923176-35-x). Address: Morgenland Naturkost, Auf dem Anger 2, 3440 Northeim 19, West Germany.

4725. Ontario Soya-Bean Growers' Marketing Board. 1985. Soybeans: Nature's miracle–teaching unit. Chatham, Ontario, Canada: OSGMB. 33 p. Undated. 28 cm.

• ***Summary:*** This interesting portfolio of materials is designed to teach children in Ontario, Canada, about the growth development of a soybean from seed to mature plant, soybean cultivation, soybean processing and products, the importance of soybeans to Ontario's economy, and the Ontario Soya-Bean Growers' Marketing Board.

Contents: Introduction to teacher's unit. 1. From seed to pod: A brief history of soybeans in Canada, biology of the

soybean seed, its germination and seedling growth, soybean nodules and rhizobia bacteria, parts of a young soybean plant, reproductive stages from flowering to maturity, corn heat units, tillage, word scramble.

2. Soybeans–Nature's miracle: A brief history of soybean utilization, ways that soybeans are used, soy oil, meal and soyfoods, recipes, word search. 3. Imports and exports: Importance of soybeans to the economy of Canada and Ontario, how soybeans get to market, The Ontario Soya-Bean Growers' Marketing Board.

A table on page 20 shows "Soymeal consumption by Ontario's livestock and poultry." Hogs consume 45% of the total (the total is 503,000 tonnes), poultry 34%, dairy cattle 20%, and beef cattle 1%. Page 22 notes that the bulk of Ontario's soybean exports (77%) are sold to East Asia–especially Japan, Hong Kong, Singapore, Malaysia, Indonesia, and Korea. Soyfoods are listed and discussed in a positive way, with recipes for: Bran muffins (with soy flour and soy oil). Tofamole (tofu guacamole). Tofu fruit pudding. Tofu shake.

Note: This is the earliest English-language document seen (Dec. 2003) that contains the term "Tofu shake."

The three largest farm crops in Ontario in terms of total area are hay (1,050,000 ha), grain corn (902,000 ha), and soybeans (425,000 ha). Address: Chatham, ONT, Canada.

4726. Oski, F.A. 1985. Is bovine milk a health hazard? *Pediatrics* 75:182-86. *

4727. Predan, Neva; Jelicic, Katica. 1985. Recepti za jedi iz soje [Recipes for meals using soybeans]. Ljubljana, Yugoslavia: Zdravje. 64 p. 20 cm. Series: Zdrava Kuhinja. [Slv]
Address: 1. Ljubljana; 2. Zemuna.

4728. Salunkhe, D.K.; Kadam, S.S.; Chavan, J.K. 1985. Postharvest biotechnology of food legumes. Boca Raton, Florida: CRC Press. 160 p. Illust. Index. 26 cm. [25 soy ref]
• ***Summary:*** Contents. 1. Introduction. 2. Seed structure, production, and distribution (Soybean, p. 8-10, 17-18). 3. Chemical composition. 4. Nature and causes of losses. 5. Harvesting, threshing, and drying (Soybean, p. 69-70). 6. Storage. 7. Processing and utilization (Soyfoods, p. 121-36). 8. Food legumes in protein crisis.

Chapter 7, "Processing and utilization," discusses tofu, tempeh, soy flour, soymilk, miso, shoyu, natto, Hamanatto, and cereal-soy blends. Address: 1. Vice-Chancellor; 2. Prof. of Food Science & Technology; 3. Asst. Food Science & Technol. All: Mahatma Phule Agricultural Univ., Rahuri, Maharashtra State, India.

4729. Scott, David; Golding, Claire. 1985. The vegan diet: True vegetarian cookery. London, Sydney, Auckland, Johannesburg: Rider (Random Century). 141 p. Illust. by Steve Hardstaff. Index. 20 cm. [10 ref]
• ***Summary:*** This gourmet vegan cookbook, containing over 250 recipes, uses many soyfoods in its recipes: Tofu, soy sprouts, soymilk (Plamil), miso, soy flour (Soyolk), vegan cheese (nonfermented, made with Soyolk soy flour, margarine, and yeast extract), tofu ice cream, and whole dry soybeans. Address: England.

4730. Skinner, Sherlyn; Martens, Richard A. 1985. The milk sugar dilemma: Living with lactose intolerance. Medi-Ed Press, P.O. Box 957, East Lansing, MI 48823. 193 p. [13 ref]
• ***Summary:*** A continuation of high lactase activity to adulthood is limited to persons of northern and western European ancestry and some nomadic tribes of Africa. The approximate incidence of lactose intolerance in various ethnic groups is as follows: African blacks 97-100%, Dravidian Indians (India) 95-100%, Orientals 90-100%, North American Indians 80-90%, Central/South American Indians 70-90%, Mexican Americans 70-80%, North American blacks 70-75%, Mediterraneans 60-90%, Jews 60-80%, Central & Northern Indians (India), 25-65%, Middle Europeans 10-20%, North American Caucasians 7-15%, Northwestern Indians (India/Pakistan) 3-15%, Northern Europeans 1-5%.

Contents: About the authors (autobiographical). Foreword. Preface. 1. Lactose intolerance: A case history, the origin of lactose intolerance, congenital lactose intolerance, primary acquired lactose intolerance, incidence of lactose intolerance, secondary lactose intolerance, other case examples, why did lactose intolerance appear, symptoms of lactose intolerance, diagnosis of lactose intolerance, the trouble with tests, the do-it-yourself test (lactose challenge, lactose-free test), conclusion, counter-point, living with lactose intolerance. 2. Digestion. 3. Good nutrition without lactose. 4. The lactose-restricted diet. 5. Setting your lactose level. 6. Shopping for foods. 7. Dining away from home. 8. Lactose-free food products. 9. Recipes. 10. Appendices.

Soyfoods that are mentioned include Isomil, Nursoy, Prosobee, Soyagen and Soyamel (made by Worthington Foods), Tofutti, Tofree. Pages 90-91 discuss soymilk. Address: 1. Nutritional consultant, Gastroenterology Associates, East Lansing, Michigan; 2. Clinical gastroenterologist (M.D.), East Lansing, Michigan.

4731. Weber, Marlis. 1985. Vollwertkueche fuer 1 Person [Wholefoods cooking for one person]. Weil der Stadt, Germany: Walter Haedecke. 192 p. Illust. 21 cm. [Ger]*
• ***Summary:*** Published in 1987 by Thorsons in England as *The Single Vegetarian.*

4732. Wei, L.S.; Urbanski, G.E.; Steinberg, M.P.; Nelson, A.I. 1985. Feasibility of a shelf-stable soybean beverage. In: R. Shibles, ed. 1985. World Soybean Research Conference III: Proceedings. Boulder, Colorado: Westview Press. xxiii +

1262 p. See p. 191-98. [13 ref]
• ***Summary:*** Contents: Milling efficiency. Sorption isotherms of blanched cotyledons. Effect of sucrose addition. Homogenization pressure. Sugar blend. Sensory characteristics. Storage stability. References. Address: 1,3-4. INTSOY and Dep. of Food Science, Univ. of Illinois, Urbana, IL 61801; 2. Express Foods Co., Inc., Louisville, Kentucky 40222.

4733. World Health Organization (WHO). 1985. Control of nutritional anemia with special reference to iron deficiency. *WHO Technical Report Series* (*Geneva, Switzerland*). No. 580. *

4734. Yang, P.; Chen, Steve. 1985. Huang dou zhi pin pin guan shou ce [Quality control manual for soybean and products]. Taipei, Taiwan: American Soybean Assoc. 110 + 125 p. Illust. 26 cm. [40+ ref. Chi]
Address: American Soybean Assoc., Taiwan.

4735. Young, L. Steven. 1985. Soy protein products in processed meat and dairy foods. In: R. Shibles, ed. 1985. World Soybean Research Conference III: Proceedings. Boulder, Colorado: Westview Press. xxiii + 1262 p. See p. 182-90.
• ***Summary:*** Contents: Soy protein products: Textured vegetable proteins, soy protein concentrate, soy protein isolates, processed meat applications, vegetable protein entrees–low fat, no cholesterol, reduced calorie. Processed dairy foods: Beverages, all vegetable/high protein frozen desserts, imitation cheese and cheese-like products. Address: ADM, Food Research Div., Chicago, Illinois, 60639.

4736. Agrotechnic s.a.r.l. 1985? Agrolactor: Plateforme de transformation de fève de soja [Agrolactor: Platform for processing of soyabean]. 1, chemin de Sainte-Hélene, B.P. 237, 74206 Thonon-Les-Bains Cedex, France. 2 p. Manufacturer's catalog. Undated. [Fre; Eng]
• ***Summary:*** Describes in detail this compact, fully-automatic soymilk plant, 2.6 by 1.2 by 1.55 meters, capable of producing 250 liters/hour of fluid soymilk. A large black-and-white photo shows the stainless steel unit, with a conical hopper and contral panel on top. Electric power: 16 kilowatts. By August 1987 this plant sold for about US$135,000. Address: Thonon-Les-Bains Cedex, France. Phone: 50 26 23 32.

4737. **Product Name:** Light Foods Soymilk.
Manufacturer's Name: Light Foods.
Manufacturer's Address: 37 Richards St., Hindmarsh, SA 5007, Australia.
Date of Introduction: 1985?

4738. **Product Name:** [Nicky Sari Kedelai (Soymilk)].
Foreign Name: Nicky Sari Kedelai.
Manufacturer's Address: Indonesia.
Date of Introduction: 1985?
Wt/Vol., Packaging, Price: Bottle.
New Product–Documentation: Color photo sent by Anders Lindner of STS. 1987. Nov. 14. Bottle with red lettering on white oval. Cartoon of Mickey Mouse.

4739. **Product Name:** Mahewu (Beverage Made from Soybeans and Maize).
Manufacturer's Name: Nutresco Foods.
Manufacturer's Address: P.O. Box ST 61, Coventry Road, Harare, Zimbabwe.
Date of Introduction: 1985?
Ingredients: Soybeans, maize.
How Stored: Shelf stable.
New Product–Documentation: K.E. Weingartner et al. 1987. FAO Food and Nutrition 13(2):24. "Possibly the most popular soy food in sub-Saharan Africa is a beverage called Mahewu which is manufactured by Nutresco in Harare, Zimbabwe. It contains mostly maize and soy. When reconstituted with water, it forms an opaque, cereal-tasting beverage. The drink is consumed daily by thousands of Zimbabweans."

Weingartner. 1987. Processing, Nutrition and Utilization of Soybeans. p. 169.

4740. **Product Name:** Simply Better Soymilk.
Manufacturer's Name: Simply Better.
Manufacturer's Address: 24-B Braeside Dr., Braeside, VIC 3195, Australia.
Date of Introduction: 1985?

4741. **Product Name:** Sunrise Flavoured Soya Milk Drinks [Banana, Chocolate, or Strawberry].
Manufacturer's Name: Soya Health Foods, Ltd.
Manufacturer's Address: Unit 4, Guinness Rd., Trafford Park, Manchester M17 1UA, England.
Date of Introduction: 1985?
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable.
New Product–Documentation: Cole. 1986. Soya Health Foods Ltd.

The Grocer (London). 1987. Oct. 3. p. 41. Non-dairy 'choc ice.' Soya Health Foods has launched Sunrise Carob Ice, a non-dairy 'choc-ice' [vanilla soy ice cream bar coated with carob]. The company has also launched a range of Flavoured Soya Milks in ½ litre plastic bottles and three flavors (chocolate, strawberry, or banana). The rsp [recommended sales price] is 35 pence. A photo shows the three flavors in plastic bottles.

4742. **Product Name:** [Hong Kong Meal Vegetable Milk].

Manufacturer's Address: South Korea.
Date of Introduction: 1985?
Wt/Vol., Packaging, Price: Bottle.
New Product–Documentation: Color photo sent by Anders Lindner of STS. 1987. Nov. 14. 180 ml bottle with green lettering.

4743. **Product Name:** [Yuhanmil Vegetable Milk].
Manufacturer's Address: South Korea.
Date of Introduction: 1985?
Wt/Vol., Packaging, Price: Bottle.
New Product–Documentation: Color photo sent by Anders Lindner of STS. 1987. Nov. 14. 180 ml bottle with green lettering.

4744. *Times of India* (*The*) (*Bombay*). 1986. City notes: Prestige Foods. Jan. 2. p. 10.
• ***Summary:*** Prestige Foods, a leading soyabean processor in India, will enter the capital market on January 30, with an issue of nine lakh [900,000] equity shares of Rs. 10 each at a premium of Rs. 2 pence per share, to help finance its Rs. 1.70 crore [17 million rupees] expansion project.

"The company located in Dewas has a commendable track record. Between 1982 and 1985, its turnover [sales] rose from Rs. 4.24 crores to Rs. 12.69 crores [a 3-fold increase], exports from Rs. 1.80 crores to Rs. 4.10 and gross profit from Rs. 61 to Rs. 230 lakhs" [a 3.7-fold increase].

The company exports soyabean meal to the Middle East, Europe, Asia, and Africa.

Future plans include the manufacture of winterised soya oils for the first time in India and soya milk.

4745. Simas, Luiz; Joels, Bobbi. 1986. Re: Miso, tempeh, shoyu, and macrobiotics in Brazil. Letter to William Shurtleff at Soyfoods Center, Jan. 7. 2 p. Typed, with signature on letterhead. [Eng]
• ***Summary:*** "When we returned to Brazil from the USA in Nov. 1981, we decided to hold a series of classes on natural foods processing, including a class on making tempeh at home. (Tempeh was completely unknown around here at that time.) We also began to make tempeh for our own consumption, but ended up setting up a small shop in our apartment. Because of the limited space, our tempeh production never went beyond 50 pounds per month, in spite of the large demand. So after a year or so, as we had originally planned, we handed the business over to a couple of friends who, unfortunately, for many reasons, were not able to continue tempeh production.

"However there is now another group of people making and selling tempeh here in Rio: Jurema and Mariá Paulinho, Rua Raimundo Correia, 27, apt. 504, 22.040 Rio de Janeiro (RJ), Brazil. Phone: (021) 237-7897. We will always be available for providing any kind of information about or classes on tempeh. One of our dreams is to see tempeh introduced in Brazil's tropical northeast, where an incubator would not be necessary.

"At present we are involved in setting up miso and koji production in our house in the mountains of Minas Gerais for the coming year (1986). It's an old dream, but it looks like it will finally come true. At first it will be a small-scale farm-house style production.

"Miso and shoyu, as well as tofu, are soy products with a long history in Brazil, mainly due to the large number of Japanese immigrants in Sao Paulo. There are many shops there and some here in Rio which sell Oriental products, including miso, shoyu, tofu and natto. Nevertheless, they are usually semi-industrialized and include sugar, preservatives, etc. among the ingredients.

"Production and consumption of quality miso, shoyu, tofu and natto only began with the arrival of Tomio Kikuchi, a student of George Ohsawa's and one of the first people to introduce macrobiotics to Brazil. Until today the best known good quality miso and shoyu are the miso and shoyu distributed by Kikuchi's Instituto Princípio Unico. There are, however, other good misos as well.

"Instituto Princípio Unico, Sao Paulo (SP); Arma-Zen Produtos Naturais Ltda., Rio de Janeiro (RJ); Terrazul, Nova Friburgo (RJ).

"We're sure there are many, many small producers of quality miso and shoyu all over Brazil, but we don't know their addresses. There is also a large company which claims to devote part of its production to naturally-fermented miso and shoyu, with no sugar. The company's name is Tozan. Their factory address is: Bairro Carlos Gomes s/nº, Campinas (SP); phones: (011) 278-2495 or (011) 278-5826.

"There are also two individuals who have a lot of experience in making miso and koji at home. They are available to provide information as well. They are: Dr. Sakae Maki, Praia de Botafogo, 428, s/304, Rio de Janeiro (RJ), phone: (021) 266-0503; Edson Hiroshi Seó, Fazenda Escola, 45.260 Poçoes (BA), phone: (073) 431-1108.

"We will continue to give classes on making homemade miso here in Rio, and we plan on eventually turning our small miso shop in the mountains into a school. We will always be available for any type of assistance or information concerning soy products.

"Several years ago the Brazilian Government tried to introduce soybeans in the public's diet. It was a complete fiasco, mainly because of the lack of information on the part of the authorities. They simply tried to introduce soybeans as a substitute for the traditional black (turtle) beans, and soy milk as a substitute for cow's milk. It didn't work." Address: Rio de Janeiro, Brazil.

4746. Jain, Laxmi; Jain, Manoj. 1986. Re: Proposal for a book on "Indian Vegetarian Cooking with Soy Bean." Letter to William Shurtleff at Soyfoods Center, Jan. 8. 3 p. Typed, with signature.

• ***Summary:*** The authors have been working on this project for several years, creating and testing some 150 recipes. Now they are looking for a publisher. A proposed outline of the book and biography of both authors is included.

"Mrs. Laxmi Jain has lived in the United States for the past 18 years. She is interested in actively promoting the use of soybean in India and America and had developed many original recipes. She has lectured and gave demonstrations with OilSeed Federation at various colleges at Indore...

"Mr. Manoj Jain is a medical student at Boston University, USA and is also working on his Masters in Public Health. He has a B.S. in Biomedical Engineering. Some of his achievements have been, first place winner in Massachusetts State Science Fair for his experiment on 'Irradiation of Cellulose', winner of $1000 scholarship, tuition scholarship at Boston University ($30,000), travelling through several countries including Israel and China to study world religions on a full paid scholarship by International Religious Foundation and is a president of Indian Youth Association of Boston. Mr. Jain has held a Research Assistant position at Massachusetts Institute of Technology and has first authored a paper on 'Mathematical Modeling of Human Inner Ear.' As part of his interest in promoting health care and nutrition in Indian villages, Mr. Jain is studying the role of soybean in daily diet. Manoj Jain, age 22, is son of Mrs. Laxmi Jain."

In response, Shurtleff sent them a lengthy History of Soya in India, and Bibliography of Soya in India.

In return the Jains sent numerous recipes plus a chapter titled "Tofu (soy paneer) as a nutritious, economical and tasty substitute for paneer." Address: 83 Fullerbrook Rd., Wellesley, Massachusetts 02181.

4747. *Times of India* (*The*) (*Bombay*). 1986. Company news: Hindustan Proteins. Jan. 12. p. 13.
• ***Summary:*** The company proposes to start by making potato and banana chips at its plant to be located at Noida. The company also hopes to "enter into the manufacture of high protein soyabean meal, soya flour, soya oil, soya milk and soya extruded products including" soy protein isolates.

4748. Schneider, Keith. 1986. Drug study faults FDA: Residues in animals put humans at risk. *Contra Costa Times.* Jan. 13. p. 5A. [1 ref]
• ***Summary:*** "Washington–The Food and Drug Administration has inadequately monitored the use of toxic drugs and nutrition supplements in raising livestock, posing a grave threat to the health of consumers according to a congressional report. Residues of these substances, many of which have been identified as causing cancer and other illnesses, have been found in beef, pork, poultry, eggs, and milk, the report says.

"The study, 'Human Food Safety and the Regulation of Animal Drugs,' is to be made public today. It is the most detailed congressional evaluation in 15 years of the agency's ability to oversee and regulate the nation's $2 billion-a-year animal drug industry. The study was prepared by the House Government Operations subcommittee on inter-governmental relations and human resources." Address: New York Times.

4749. Hugelshofer, Alison. Assignor to Nestec S.A., Vevey, Switzerland. 1986. Process for the production of soya jelly and product resulting therefrom. *U.S. Patent* 4,564,530. Jan. 14. 1 p. Application filed 23 Aug. 1984. [4 ref]
• ***Summary:*** Made from whole or defatted soya solids, agar, and sucrose. Aseptically packaged. Address: Konolfingen, Switzerland.

4750. McGraw, M.; Bishop, N.; Jameson, R.; Robinson, M.J.; O'Hara, M.; Hewitt, C.D.; Day, J.P. 1986. Aluminium content of milk formulae and intravenous fluids used in infants. *Lancet* i(8473):157. Jan. 18. [4 ref]
• ***Summary:*** A table lists the aluminium content (in micrograms per liter) of infant milk formulae and intravenous fluids. It is not clear which of these compositions are made from soybeans. However, one brand named Wysoy, an oral (locally reconstituted soy-based infant milk) contains 330 micrograms of aluminum per liter.

Another problem is the North West England tap water aluminum concentrations range from 10 to 300 micrograms per liter and are occasionally much higher. Aluminum accumulation in the human body leads to anemia, bone disease, and encephalopathy. This aluminum can be potentially toxic to infants with increased gastrointestinal absorption or impaired renal function. Address: 1. Dep. of Child Health, Royal Manchester Children's Hospital, Manchester, M27 1HA; 2-4. Special Care Baby Unit, Hope Hospital, Salford; 5-7. Dep. of Chemistry, Univ. of Manchester. All: England.

4751. Tsuchiya, Kanji. 1986. Re: Address of the soymilk association in Japan. Change in his personal address. Letter to William Shurtleff at Soyfoods Center, Jan. 20. 1 p. Typed, with signature.
• ***Summary:*** "The Soymilk Association exists and its address has not changed for several years. When I checked the address in your letter with the one I have, there is one thing missing: the name of the building is Ogura Bldg. Following is the address.

"Mr. Okayama Tadashi Managing director
"Nihon Tonyu Kyokai
"Ogura Bldg. 2F 11-8 2-chome, Shinbashi Minato-ku, Tokyo

"Incidentally my address has changed since last February; would you change your record as follows:
"Kanji Tsuchiya
"1-1 3-chome Kamiogi
"Suginami-ku, Tokyo

"Please note that I can not receive any letter addressed to my old house from this February, as our post office stops transferring service one year after we moved." Address: Kamiogi 3-1-1, Suginami-ku, Tokyo, Japan.

4752. *Times of India* (*The*) (*Bombay*). 1986. City news: Kalyan Solvent. Jan. 22. p. 10.
• ***Summary:*** "Kalyan Solvent Extractions is offering on a rights basis to its existing shareholders. convertible debentures worth Rs. 2.85 crores [1 crore = 10 million] to meet the cost of further expansion and diversification plans."

As part of its expansion, the company plans to increase the capacity of its soya solvent extraction plant to 400 tonnes per day from its present 150 tonnes, and the capacity of its oil refinery to 50 tonnes per day from its present 25 tonnes. It also plans to make one tonne per day of soya lecithin and 50,000 litres per day of soya milk, which will be packed in Tetra Pak containers with different flavours and a shelf-life of six months.

As production of soyabean in India increases, the company foresees tremendous export possibilities and hopes to be exporting soyabean meal by 1987.

4753. *Asahi Shinbun* (*Asahi Daily News, Tokyo*). 1986. Tônyû to daizu tanpaku aisukuriimu [Soymilk and soy protein ice cream. Tofutti now sold in Dipper Dan Shop in Tokyo]. Jan. 23. [Jap]
• ***Summary:*** Daie (Captain Cook) and Tofu Time have joined forces to sell Tofutti in Japan. 1 pint costs 800 yen. Soft serve is 180 yen. There are three flavors including vanilla, chocolate. Address: Tokyo, Japan.

4754. **Product Name:** Tofu Loaf.
Manufacturer's Name: Ashland Soy Works.
Manufacturer's Address: 280 Helman St., Ashland, OR 97520.
Date of Introduction: 1986. January.
Ingredients: Tofu, okara (soyfiber), oats, soymilk, onion, carrot, tamari, soy oil, nutritional yeast, spice.
Wt/Vol., Packaging, Price: 14 oz.
New Product–Documentation: Label. 1986. 4 by 2.5 inches. Red on white. "Slice & eat or fry or heat. Sprinkle in soups & salads. Makes great sandwiches too."Talk with Diana Muhs. 1988. Feb. 10.

4755. Bhatnagar, P.S. 1986. Soybean–its food uses and modern food industry. Paper presented at International Seminar on "Modernization of Food Industry." 20 p. Jan. 31. Held Jan. 31 to Feb. 3 at New Delhi. Organized by Trade Fare Authority of India. [15 ref]
• ***Summary:*** Contents: Non-food uses of soya oil. Food uses of soybean. Tofu. Soya-beverage. High protein frozen desserts. Defatted soya flour. Food uses of soya oil. Includes 12 tables. Address: Coordinator, All-India Coordinated Research Project on Soyabean (ICAR), G.B. Pant Univ. of Agriculture & Technology, Pantnagar, UP, 263145, India.

4756. **Product Name:** Nutriline (Non-Dairy Soy Ice Cream) [Chocolate, Strawberry, Coconut].
Manufacturer's Name: Fraser & Neave (Singapore) Pte. Ltd.
Manufacturer's Address: 475 River Valley Rd., Singapore 1024.
Date of Introduction: 1986. January.
How Stored: Frozen.
New Product–Documentation: *Journal of the American Oil Chemists' Society.* 1986. 63(1):60. Jan. "Soy Dessert." Fraser & Neave plant to establish a plant to make a soy ice cream in Singapore. The firm estimates that about 45% of the Chinese residing in Singapore are lactose intolerant. The marketing will stress that the product does not contain lactose, cholesterol, or preservatives. Soya Bluebook. 1987. p. 92.

4757. Frentz, Jean-Claude. 1986. Le tofu [Tofu]. *Filiere Viande* [*The Meat Industry*] 9(85):49-50. Jan. [1 ref. Fre]
• ***Summary:*** This article, in a meat industry magazine, begins: This mysterious product, whose origin is lost in the mists of time, actually seems to be going through renewed interest. Already well known and appreciated in the United States, on the West coast in particular, it has appeared in Europe, and, more precisely, in France.

Discusses the composition of tofu and the processes used to make it. A table gives the nutritional composition of the following: Tofu, firm tofu, (*tofu ferme*), soft or silken tofu (or perhaps tofu cutlets *tofu "flanc"*–it's water content is higher than that of regular tofu), tofu burger (fried), soymilk, grilled tofu, dried-frozen tofu, okara, dried yuba, pressed tofu, whole dry soybeans.

Concerning the journal title *Filière Viande,* the word *filière* normally means the thread, the path that leads to discovery. However here it is being translated as 'meat industry.' When advancing anti-meat arguments, one can speak of *la filiere viande sur le gril* ("The meat industry on the grill")–a sort of play on words. Address: Directeur technique, Soussana SA, France.

4758. Plenty Canada. 1986. The Soya Centre (Calendar). Castries, St. Lucia.
• ***Summary:*** This is the head of a calendar, 8½ by 11 inches. On the top three-fourths of the page is a large black-and-white photo of the Soya Centre, looking from the outside in through two open doors–on each of which is written "Soya Beans" in large diagonal letters, above an illustration of a soya bean plant. Inside are about 10 local black people. On the back right is a food retail counter and snack bar, staffed by several women. On the back wall is a blackboard with a price list and menu written on it in chalk.

On the bottom quarter, in large black letters is written "The Soya Centre" in an arch. A laughing Santa Claus on the left is holding the word "The." Below the arch is written the Center's address: "19 Grass St., Castries, St. Lucia. Tel: 26421." To the right of the arch is a line drawing of a dove, and below it: "With the Compliments of Plenty Canada and the Staff of the Soya Centre." The calendar itself is missing.

Talk with Maya Clarke of Ontario, Canada. 1998. June 25. Maya worked for 7 years as a nutritionist and soyfoods instructor/technician for Plenty Canada at this Soya Centre in St. Lucia. She remembers this calendar well but does not have a copy. "There could possibly be one in the Plenty archives" at Lanark, but she is not too sure. Plenty made a calendar like this for two years, and this was the first of the two. It was designed by Plenty and printed in Castries (the capital city, by the person who prints *The Voice* newspaper) in December 1985 and presented on 1 Jan. 1986 as a New Year's gift to the Center's popular customers and friends. The calendar had a photograph as the head, then one page for each month below. The soya bean plants on the two big doors were painted by a Rastafarian man named Papa. Many of the people shown in the picture, the same as those who came to the Centre, were Rastafarians, who are vegetarians (very important) and consider themselves members of the lost tribe of Israel. They esteem Marcus Garvey, who they consider one of their forerunners. Note: *Webster's Dictionary* (1985) defines Rastafarian (derived from *Ras Tafari,* the precoronation name of Haile Selassie), a word first used in 1955, as "an adherent of Rastafarianism." The latter word, first used in 1968, is defined as "a religious cult among black Jamaicans that teaches the eventual redemption of blacks and their return to Africa, employs ritualistic use of marijuana, forbids the cutting of hair [it is worn in long braids called dreadlocks (first used in 1960)], and venerates Haile Selassie as a god."

The Soya Centre, which was constructed specifically for this purpose by the team just before Maya (John Baranni and Christine Kilgour from Plenty with local labor), was located in the middle of a black ghetto in Castries, and there were lots of social problems in the area. In the back of the Centre was a soyfoods factory. The factory was used to train all the people who subsequently opened up soyfoods businesses in St. Lucia. "What went on with soyfoods in St. Lucia was very significant–much more so than what happened in Jamaica, etc. At any given time, up to ten local people worked (for pay) at the Centre. The Centre was self-sufficient, so the money from the foods they sold went to pay the workers. Two guys would start very early in the morning (about 4:00 a.m.) to make soymilk and tofu. Then a crew of ladies would come in about 7:00 a.m. and use the tofu and soymilk to make second generation products from soymilk, tofu, and okara–such as "bakes" (like a little doughnut) and "accras" (like a fritter, in which the traditional salt cod was replaced by okara). The use of okara made the products more affordable. Tempeh was made at time, but it did not catch on as well as tofu and soymilk, and it was somewhat hard to get the spores. "Tofu caught on almost immediately "The local people just took it up; they just seemed to know what to do with it." Soymilk ice cream was one of the most popular products. Soymilk, imported soy flour, and okara were use to make little breads. Many people would bike or walk to the Centre to buy tofu in bulk over the counter–which was also a snack bar. The Centre was both a business and an education/training center. Many local Seventh-day Adventists came to cooking classes at the center, and Maya also taught classes in their churches, schools, and homes. Maya remembers that one day a 13-year-old kid named Sooner knocked on the door of the Center at 7 o'clock in the morning and said to her: "I want to know everything there is about soyfoods." She happily invited him in, and began to teach him. For a while there was a "Comments Book" at the Centre; in it people wrote soy poems and soy songs–some of which Maya still has.

At one time some 10-12 soyfoods businesses were started in St. Lucia by local people who had first trained at Plenty Canada's Soya Centre. About 6 of those businesses are still in operation. A good example is La Soyarie. The reasons the others did not survive had nothing to do with local acceptance of soyfoods; they failed largely for reasons related to money or business management skills.

St. Lucia is a very small (27 miles long) independent country; It was granted self-government by the British in 1967 and attained independence on 22 Feb. 1979. The population is about 160,000 (1998). About 90% of the population is of African descent, with a small minority of Europeans and a few Carib Indians. Bananas are the chief crop. The official language is English, but Creole is the language most widely spoken. It is largely an oral culture.

Note: This is the earliest calendar seen (Oct. 2001) that mentions soy. Address: 19 Grass St., Castries, St. Lucia. Phone: 26421.

4759. Sig, Marie. 1986. Soja: la protéine du futur [Soya: The protein of the future]. *Physic.* Jan. p. 32, 34-35, 110. [Fre] • ***Summary:*** A brief introduction to tempeh, miso, tamari, tofu, soymilk, and soy flour from a macrobiotic viewpoint. One recipe is given, from the forthcoming French-language book, *Mysteries and Secrets of Soya,* by C. and L. Clergeaud. Address: France.

4760. **Product Name:** Soya Kaas (Cheese Alternative Containing Casein) [Mozzarella Style].
Manufacturer's Name: Soya Kaas, Inc. A subsidiary of Swan Gardens, Inc. Distributed by American Natural Snacks.
Manufacturer's Address: Manufacturer: 218 Laredo Dr., Decatur, Georgia 30030. Distributor: P.O. Box 1067, St. Augustine, FL 32085.
Date of Introduction: 1986. January.

Ingredients: Soy milk, soy oil, calcium caseinate, tofu, salt, lecithin, citric acid, guar, annatto (natural color).
Wt/Vol., Packaging, Price: Seven-pound deli blocks and 12-ounce consumer sizes. 12 oz. retails for $3.89 (1986/06, at Real Foods, San Francisco, California).
How Stored: Refrigerated.
Nutrition: Per 1 oz.: Protein 6.7 gm, fat 5.6 gm, carbohydrates 1.8 gm, calories 78, sodium 168 mg.
New Product–Documentation: Ad in Natural Foods Merchandiser. 1986. April. p. 13 and Sept. p. 61. "Soya Kaas. The delicious, nutritious alternative to cheese. Available in consumer packages or deli blocks. Cholesterol free. Lactose free." A photo shows the product label. "Manufactured by Soya Kaas, Inc. for American Natural Snacks, St. Augustine, FL 32085."

Leaflet (2-sided, color, 8½ by 11 inches). 1986. "Soya Kaas. The Delicious, Nutritious Alternative to Cheese." On the front is a large block of the sliced cheese alternative on a cutting board atop a purple and black table cloth. To its upper left are red and green bell peppers and a pizza. To its lower left are cubes of the cheese with purple grapes and red apples on a gold plate. To its right is the grated cheese with a grater. On the back are three recipes using Soya Kaas: Chicken a la Kaas, Pita Pizza, and Eggplant Lasagna. The nutritional information per ounce is given but Soya Kaas' ingredients are not listed.

Marc Medoff. 1986. "Whole frauds in the news: Will the *real* soy Mozzarella please stand up (that is, if there is one)." *Whole Life* (New York City). June. p. 82-84. Contains a critical discussion of Soya Kaas for appearing to be a non-dairy product when it actually contains casein. The actual label for Soya Kaas: Mozzarella Style, taken from a wholesale block of Soya Kaas, is reproduced 4 inches square; the ingredient listing is shown.

Spot in Food Distributors Magazine. 1986. Oct. American Natural Snacks of St. Augustine, Florida, introduces Soya Kaas, billed as a natural alternative to mozzarella. Unlike the cheese, Soya Kaas contains no cholesterol and is lactose free. "Soya Kaas is available in seven-pound deli blocks and 12-ounce consumer sizes. Stickers and shelf talkers are available. American Natural Snacks also is known for its nationally distributed Carafection line, which consists of carob and date sweetened bars (Almond Crunch, Cashew Coconut Crunch, Plain, Mint and Crispy Crunch) as well as a variety of bulk candies.

"The firm also manufactures Rice Crisps and Original Honey and Mint Honey Grahams, an interesting desert and snack product."

Talk with Richard Rose. 1988. Jan. 7. He thinks this is the best soy-based cheese on the market, although it contains casein. Richard McIntyre probably makes the soymilk for this cheese himself and he probably uses fresh (rather than dry) tofu, which he also probably makes.

Talk with Richard McIntyre, founder and owner of Swan Gardens, Inc. 1988. Nov. 23. His company developed this product, then launched it in Dec. 1985 and Jan. 1986. See interview.

Dec. 1988. "Fresh soy milk" is listed as the first ingredient. The manufacturer is Swan Gardens.

Talk with Richard Rose. 1990. Nov. 26. Pacific Foods of Tualatin, Oregon, sells soymilk to Richard McIntyre for use in making Soya Kaas.

Note: At least one person has tried to visit this plant using the given street address and was unable to locate it. The local police knew of no such street name and it did not appear on any maps of the area.

Letter from Atlanta Kashruth Commission. 1993. Dec. 12. Soya Kaas products are produced under the Orthodox Rabbinical Supervision of the Atlanta Kashruth Commission. The plant in which these products are made is located at 6029 Lagrange Blvd., Atlanta, Georgia 30336.

Label for Soya Kaas Mozzarella Style. 1992 (Copyright). 4.5 by 3.5 inches. Green and red on white. "No cholesterol. Lactose free." The list of ingredients reads: "Tofu (organic* soy milk, calcium sulfate), casein (a milk protein), soy oil, sea salt, lactic acid, natural flavor, lecithin. * Organic ingredients are grown and processed in accordance with the California Organic Foods Act of 1990."

Note: This is the earliest commercial soy product seen (March 1998) made or marketed by Soya Kaas or American Natural Snacks.

4761. Wasserman, Debra; Stahler, Charles. 1986. No cholesterol Passover meals. Vegetarian Resource Group, P.O. Box 1463, Baltimore, MD 21203. ii + 49 p. Jan. Illust. Index. 22 cm. [9 ref]
• ***Summary:*** This vegan cookbook contains 100 vegetarian Passover recipes. No soyfoods are used. Address: VRG, Baltimore, Maryland. Phone: 301-366-8343.

4762. Ruchi Soya Industries Limited. 1986. Display ad: Far ahead and growing stronger. *Times of India* (*The*) (*Bombay*). Feb. 3. p. 6.
• ***Summary:*** A large, creative, and very important ad. "While others in the soya industry are still talking about making Soya Food, Ruchi has already achieved it 5 years back.

"The promoters: Ruchi Soya Industries Limited has been promoted by General Foods Private Limited and Ruchi Private Limited of the Shahara Group of Industries based in Indore have an annual turnover [sales] of Rs. 50 crores [500 million rupees].

"General Foods Private Limited, the flagship Company, recognised export house, is engaged in a wide spectrum of activity which includes a solvent extraction plant of 250 tonnes (metric tons) per day, Washing Soap Plant, Edible Soya Protein Plant of 50 tonnes per day and Soya Proteins etc. It has also established a Research and Development Centre...

"Ruchi Private Limited, the other Promoter, has been a pace setter in the soya protein industry. The Company is engaged in the manufacture and marketing of high protein soya food chunks and granules for the last several years under the brand name of Nutrela. This product is an undisputed market leader having a market share of over 60%."

"The project and profitability: Ruchi Soya Industries Limited is setting up a Rs. 2.25 crores (22.5 million rupees) project to manufacture 6,000 tonnes per annum of Soya Chunks and Granules at Noida, just outside Delhi. Ruchi Soya Industries Limited has taken over the existing business of Ruchi Private Limited... This unique arrangement will eliminate gestation period and the Company will earn a handsome profit from day one.

Bright future: Ruchi Soya looks to the future with confidence. On the anvil are major diversification plans in the field of snack foods, Soy Beverages, Soya Isolates, Soya Protein Concentrates, Edible Soya Proteins, high solubility defatted soya proteins, etc.

"Issue opens on: 20th February, 1986."

"Assured 15% dividend. A sumptuous success now for you to share."

A photo shows a package of Ruchi's Nutrela lying flat on a table with coins pouring out. Address: Registered Office: 214, Tulsiani Chambers, Nariman Point, Bombay 400 021.

4763. *SoyaScan Notes.* 1986. Tally and analysis of clips from Soyfoods Clipping Service (Overview). Feb. 6. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** The Soyfoods Center received from Luce Press Clippings a total of 311 clips on the subject of soyfoods during the ten weeks from 17 Oct. 1985 to 6 Feb. 1986. These clips were on the following subjects: Tofu 130 clips (41.8% of total), soy ice creams 83 (26.7%; including 49 clips on Tofutti), tofu second generation products 17 (5.5%), whole dry soybeans 17 (5.5%), modern soy protein products 10 (3.2%, incl. isolates and concentrates), soy oil 10 (3.2%), soymilk 9 (2.9%), miso 8 clips (2.8% of total).

4764. Chung, Mr. 1986. Dr. Chung, Dr. Chung's Foods Company, and Vegemil in Korea (Interview). *SoyaScan Notes.* Feb. 9. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The interviewee is Dr. Chung's nephew. Dr. Chung is a pediatrician (an M.D. in pediatrics) but he never went to high school or college. He originally developed soymilk for babies with allergy problems. Now he has 2 soymilk factories and about 1,000 employees. One plant is near Suwon (south of Seoul) and one is in Chongju (50 miles south of Seoul). He still teaches his employees, "You are the pioneers."

His Vegemil soymilk is by far the best selling brand in Korea. The flavors are plain, dairylike (lightly sweetened), with apple, and chocolate. Roughly 80% of his product is sold in soft drink bottles, 10% in Combibloc (which prints better than Tetra Brik cartons), and 10% in plastic pouches that have a shelf life of 2-3 days. Combibloc does not presently have FDA approval in the USA so these products cannot be exported to America. The second best selling soymilk in Korea is Sun-Dew, a distant second. Address: Seoul, South Korea.

4765. Karlen, Michael. 1986. Re: New developments at Soyana. Letter to William Shurtleff at Soyfoods Center, Feb. 16. 4 p. Handwritten. [Eng]
• ***Summary:*** The company recently moved to this new address with a lot more space and modern equipment. They have started to sell soymilk and soy yogurt, and also to make Tofu Ravioli and Spaetzli (pasta), in addition to their organic nigari tofu. "The general situation looks promising with Migros, Co-op, and Galactina making their own new products, like tofu ice cream, tofu bread (still in test market), and soy dessert. I believe that 1986 could become a year with another major step toward general acceptance of soy products in Switzerland... More and more of the 13 big milk processing cooperatives are getting involved in the soy business... The whole situation is really exciting." Address: Friedensgasse 3, Postfach 8039, Zurich, Switzerland. Phone: 01-202-8997.

4766. Associate Director, Import Operations Unit, (HFC-131). 1986. Revision to Import Alert #40-01–"Soy drinks, milk substitute drinks and other drinks that may serve as infant formulas." *Import Alert.* Feb. 21. 3 p. U.S. Food and Drug Administration, internal document.
• ***Summary:*** Concerns: Eden Foods' Edensoy, Soy Moo, Sun Soy, Ah Soy, Westsoy, Vitasoy, Westbrae Malteds. "All soy-type beverages, whose labeling do not recommend or imply use as infant formula and do not make claims as a substitute for milk, should be released with the comment: 'This product is not to be used as an infant formula or as the sole source of nutrition. If this product is subsequently found to be offered for those purposes, FDA will take legal or administrative action against this and/or future shipments.' The labeling of these products should also be reviewed for compliance with nutrition labeling requirements (21 CFR 101.9). If the product does not comply with nutrition labeling requirements, comment to that effect should be included in the release." Address: Washington, DC.

4767. *Times of India* (*The*) (*Bombay*). 1986. City notes: Noble Soya House. Feb. 27. p. 10.
• ***Summary:*** The company will enter the capital market on April 24 by issuing 23.53 lakh [2.353 million] equity shares at Rs. 10 each to partly finance its 18,000,000 litres per year soyamilk plant and its 2,000 tonnes per year extruded soya

products plant to be constructed at Mandideep in Madhya Pradesh.

Note: For a good history of the company Google: "Wadala Commodities" home stock. Select the URL: http://economictimes. indiatimes.com/ stocks.cms? companyid=13348. Click "Company info" then "History." On 1 Jan. 1991 Vegoils Ltd. (a profitable unit) was merged with the company. On 30 July 1991 the company name was changed from "Noble Soya House Limited" to "Godrej Foods Ltd." In 2008 the company name was changed from "Godrej Commodities Ltd." to "Wadala Commodities Ltd."

4768. *Australian Dairy Foods.* 1986. "Tofutti" takes off in Australia. Feb. p. 84.
• ***Summary:*** Distributor with sole Australian franchise for Tofutti is David Grossbaum of Shoyu Natural Foods in Melbourne. Photos show: (1) Dale Code and David Grossbaum making soft serve Tofutti. (2) "Some of the soy foods now being marketed in capital city health food shops:" Earth Angel Soyoghurt (tub), Pureharvest Soy Drink (two sizes, Vanilla, Tetra Brik), Soypreme natural soymilk in a Pure-Pak carton made near Melbourne, and Bonsoy soymilk (Barley Malt flavor in a Tetra Brik carton) imported from Japan.

Note: This is the earliest document seen (Sept. 2012) that uses the word "Soyoghurt" to refer to soy yogurt. Address: Australia.

4769. *Australian Dairy Foods.* 1986. Soymilk sales decline in Japan. Feb. p. 85.
Address: Australia.

4770. Bhatnagar, P.S. 1986. Current aspects of soybean in India. Paper presented at International Convention of "Prospects for Soybean Utilization." 25 p. Feb. Organized by Soyabean Processors Assoc. of India on 15-16 Feb. 1986 at Indore, MP, India. [11 ref]
• ***Summary:*** Contents: Introduction. Soybean in India. Production potential in India. Place in cropping system: Will not affect groundnut production since optimum soil and climatic requirements of the two crops are not the same. Progress of research. Utilization: Food uses of soybean, food uses of soya oil, potential food uses in India (defatted soya flour, tofu, soy beverages, frozen desserts). Major constraints (to development of soybean in India).

Oilseed production in India is about 12 million tonnes. In addition, India imports 1.5 million tons of edible oil at a cost of about 10,000 million rupees a year to provide only 11 mg per person per day, which is less than the recommended [by whom?] 18 gm per day. This the importance of the soybean in India become overwhelmingly apparent.

The soybean is also a good source of high-quality, low-cost protein, yielding 2-3 times as much per acre as traditional Indian pulses and at a much lower price per unit weight.

"Farmers have liked soybean because of its low input requirements for labour and nitrogenous fertilizers and wider adaptability. Due to its ability to fix atmospheric nitrogen in the soil, more than its own requirement, the fertility of the soil is improved and the crop following soybean yields better. About 30-40 kg of nitrogen per ha is saved for the succeeding crop."

"Although black soybean has been cultivated for ages in the low hills of the Kumaon and Garhwal regions of Uttar Pradesh as well as in the foothills of the Himalayas and in some scattered pockets of Central India, the crop, strangely enough, had not become popular in the sub-continent."

Tables show: (1) Average yield, oil and protein content of soybean and other pulse crops in similar conditions in India. The other crops are pigeon pea (*Cajanus cajan*), black gram (*Phaseolus mungo*), cowpea (*Vigna sinensis*), green gram [mung bean] (*Vigna radiata*). Soybean has by far the highest yield, oil, and protein content.

(2) Biological value of protein from selected commodities: The commodities are egg, soybean, corn, wheat flour, rice (milled [white]). The values are Biological Value, Protein Score, and Net Protein Utilization.

(3) Targeted and actual cultivation (ha) as well as production (tonnes) in India under the centrally sponsored scheme for soybean development (1978-1984, in 7 states).

(4) Estimated area potentially available for soybean in Madhya Pradesh and Uttar Pradesh. (5) Indigenously bread released varieties of soybean (19 varieties). Five columns show: (1) Name of variety. (2) Whether released by central or state variety release committee. (3) Area of adaptability. (4) Duration (days to maturity) (5) Yield potential (quintals per ha; 1 quintal = 100 kg). (6) Recommendations on package of practices for soybean cultivation in India. (6a) Important food uses of soybean. (7) Composition of defatted soya flour. (8) Protein and energy densities of some cooked foods and commercially available soya flours. (9) Chemical properties of wheat flour, animal protein (egg and milk) and soya flour. (9a) Protein per cent (by weight) in different food products (incl. may soy products). (10). Net protein utilization of different food commodities. (11) Composition of nutrients in 100 gm of different types of tofu. (12) Composition of whole cow milk and soya beverages. Address: Project Coordinator, All-India Coordinated Research Project on Soyabean (ICAR), G.B. Pant Univ. of Agriculture & Technology, Pantnagar, UP, 263145, India.

4771. Brady, Mary Sue; Rickard, K.A.; Fitzgerald, J.F.; Lemons, J.A. 1986. Specialized formulas and feedings for infants with malabsorption or formula intolerance. *J. of the American Dietetic Association* 86(2):191-201. Feb. [71 ref]
Address: Dep. of Pediatric Nutrition and Dietics, James Whitcomb Riley Hospital for Children, Indiana Univ. School of Medicine, Indianapolis.

4772. **Product Name:** Sustagen Gold (Dairy-soy Energy Drink) [Dutch Chocolate, or Honey Nut].
Manufacturer's Name: Bristol Meyers.
Manufacturer's Address: Australia.
Date of Introduction: 1986. February.
Ingredients: Milk, soy protein?
Wt/Vol., Packaging, Price: 250 ml Combibloc.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Australian Dairy Foods. 1986. Feb. p. 84. "Sustagen Gold uses dairy and soy foods. The increasingly popular Combibloc carton is now being used by Bristol Myers for Sustagen Gold, a high-protein, high-carbohydrate milk-based nutritional energy drink using dairy and soy foods." The new product has been under development for the past 2 years in Australia, with assistance from the CSIRO division of food research. The vitamin- and mineral-rich drink comes in the single-serve 250 ml pack in two flavors. The product is being contract packed by Murray Goulburn at its Leongatha UHT plant.

John Wilson. 1987. Jan. Soyfoods (ESFA). p. 27-28.

4773. Eden Foods, Inc. 1986. The bean comes true. Enjoy America's favorite. Edensoy (Ad). *Natural Foods Merchandiser.* Feb.
• ***Summary:*** Full page, color. "Since July, 1983, the New Food, Edensoy, has been America's #1 soymilk. Overnight it became and remains the best selling soy drink in the U.S.A." A photo shows packages of Edensoy plain and carob standing on a table. A second package of Edensoy plain is being poured into a tall glass. Address: Clinton, Michigan.

4774. Lecos, Chris. 1986. Of microbes and milk: Probing America's worst *Salmonella* outbreak. *FDA Consumer* 20(1):18-21. Feb.

4775. **Product Name:** Mamvy Kid U.H.T. Soy Milk, Mamvy Raw Soybean Milk Powder, and Soy-Beverage.
Manufacturer's Name: Odeiga and Company.
Manufacturer's Address: Umejei St., P.O. Box 100, Ibusa, Bendel/Delta State, Nigeria.
Date of Introduction: 1986. February.
Ingredients: Mamvy Kid UHT: Whole soy bean, water, sugar.
Wt/Vol., Packaging, Price: 1 liter UHT carton.
New Product–Documentation: Letter from J.A. Ogbugwo, Chairman/Proprietor. 1993. April 12. Their company has been researching and processing soybeans since 1985. "We have many local products/recipes from soyabeans at present."

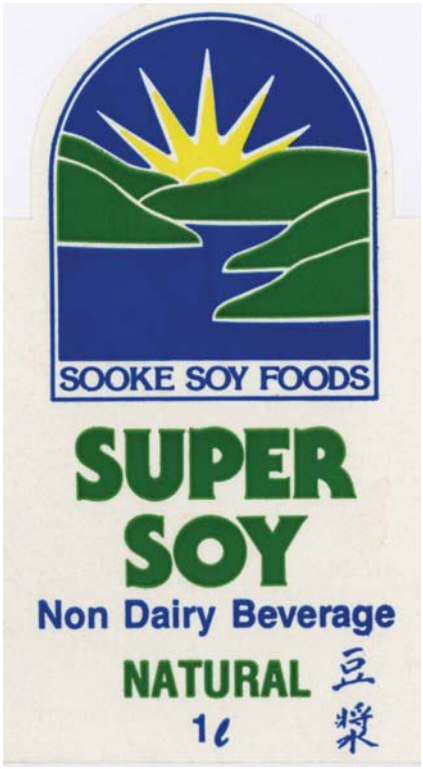
Letter and labels sent by Joseph O. Ogbugwo of Odegai & Company. 1993. May 24. These products were launched in Feb. 1986. The Soy-Milk is no longer on the market.

Label #1. "Mamvy Kid U.H.T. Soy Milk." 6 by 3 inches. Blue ink on white paper. Illustration of a glass with a bulge in the middle. "Supplementary food. Keep refrigerated. Unopened it will keep for weeks without refrigeration. Best served cold. Shake before opening." The company name is given as "Odeigai Foods, P.O. Box 100, Ibusa, Bendel State, Nigeria."

Label #2. Mamvy Raw Soybean Milk Powder. 4.5 inches square. Green ink on white paper. "To prepare: To every cup of Raw Milk Powder add five (5) cups of water. Stir briskly to dissolve. Allow to boil for 15-20 minutes. To collect your milk, filter using a clean muslin cloth / linen bag. Simmer (gentle heat) for another 5-10 minutes. Cool (fast cooling advisable) by allowing to stand in a cold water container or under a running tap. Bottle, and refrigerate." The company name is given as Odeigai Foods, P.O. Box 100, Ibusa, Delta State, Nigeria.

4776. Pherwani, S. 1986. Soya for human food. Paper presented at International Convention of "Prospects for Soybean Utilization." 7 p. Organized by Soyabean Processors Assoc. of India on 15-16 Feb. 1986 at Indore, MP, India.
Address: Noble Soya House Ltd.

4777. **Product Name:** Super Soy Drink (Organic Non Dairy Beverage).
Manufacturer's Name: Sooke Soy Foods Ltd.
Manufacturer's Address: 2625 Otter Point Rd., R.R. 2, Sooke, Vancouver Island, BC, V0S 1N0, Canada. Phone: 642-3263.



THE BEAN COMES TRUE
Enjoy America's Favorite

Since July, 1983, the New Food, Edensoy, has been America's #1 soymilk. Overnight it became and remains the best selling soy drink in the U.S.A. Here's why:

Everyone in the family, young or old, loves Edensoy hot or cold. Edensoy is the best tasting, creamiest, smoothest, most versatile soymilk available, not to mention refreshing and nutritious. Edensoy is a staple in countless healthy households. Use as an ingredient in baking, cooking, soups, sauces, desserts, and on your cereal.

- **No Cholesterol**
- **Low Sodium**
- **High Protein**

Far more than entertainment, Edensoy is a sincere food.

Insist on Edensoy at your favorite store.

Both Eden and Edensoy are registered trademarks of Eden Foods, Inc., Clinton, Michigan 49236
(517) 456-7424

Date of Introduction: 1986. February.
Ingredients: Filtered water, organic soy beans, barley. Malted: Natural ingredients, barley malt, natural vanilla, sea salt. Mocha: Roasted chicory, dandelion, and carob.
Wt/Vol., Packaging, Price: 1 liter.
How Stored: Refrigerated.
New Product–Documentation: The Healing Exchange News. 1988. Jan. p. 7. "The only organic tofu and soymilk available in Victoria." Address: Sooke Soy Foods Ltd., 2625 Otter Point Rd., R.R. 2, Sooke, BC, V0S 1N0. Phone: 642-3263. Label. 1988, received. "Super Soy Non Dairy Beverage." Flavors: Natural, Mocha, and Malted. 5.5 by 4 inches. Self adhesive. Blue, green, and yellow on white. "Organic. Refrigerate. Use within 4 days after opening for quality, freshness."

4778. Widhalm, K.; Sterz, G.; Strobl, W. 1986. Der Effekt von Sojaeiweiss vs klassische Typ-II-Diaet auf Serumlipide und -lipoproteine bei Kindern mit familiaerer Hypercholesterinaemie (FH) [The effect of soy protein versus a classical Type-II diet on serum lipids and lipoproteins in children with familial hypercholesterolemia]. *Infusionstherapie und klinische Ernaehrung* 13(1):12. Feb. [Ger]
• ***Summary:*** The soy-based formula resulted in significantly lower blood cholesterol levels. Address: Univ.-Kinderklinik, Wien (Vienna), Austria.

4779. Roller, Ron. 1986. New developments with Edensoy, and sales figures (Interview). *SoyaScan Notes.* March 1. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Eden Foods has a joint venture with Marusan (Japan), building a soymilk plant in Saline, Michigan. Some Marusan technicians are now working with them in Saline, building the plant. Its about half done and should be on stream by June or July 1986. They plan a big plant opening. The new Edensoy will be packed in Tetra Pak, which has a lower packaging cost.

In the last 2 months sales of Edensoy have been 40,000 cases of 30 packs per case. This is 600,000 packs/month. Each pack is 6.0 U.S. fluid ounces or 0.1875 quarts. So this is 28,125 gallons/month, or 337,500 gallons/year. Note: This is the first news of this exciting new venture. Edensoy soon became America's leading brand of soymilk and a very famous and profitable soy product. Address: Vice president, Eden Foods Inc., 701 Tecumseh Rd., Clinton, Michigan 49236. Phone: 800-248-0301 or 517-456-7424.

4780. Gupta, Rajendra P. 1986. Making soymilk in the absence of oxygen (Interview). Conducted by William Shurtleff of Soyfoods Center in Lafayette, March 4. 1 p. transcript. [Eng]
• ***Summary:*** Raj has applied for a patent on a process and equipment for making soymilk that eliminates oxygen from the processing environment. His unique grinder is the key piece of equipment. He does not expose the slurry to air until after it is cooked. He cooks and grinds in the same equipment. The use of alkali is not essential.

He does not want to discuss details until the patents are issued. He started by processing soymilk under a vacuum. Address: Ontario, Canada.

4781. Jones, Paul. 1986. On Michael Cole and his many soyfoods successes in England (Interview). *SoyaScan Notes.* March 4. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Cole started in late 1984. His partner, who has all the risk and 51% equity, is Mr. Arora, a Sikh from India. Cole has 30% equity and the finance company has 19%. Cole spent years in Los Angeles, and is a bit of a hype artist. He launched a soymilk ice cream for the Regular Tofu Co. He now has an inexpensive Japanese tofu plant with a continuous roller extractor. He tanks the milk to a spray drier or Tetra Pack machine. He has had big success with soymilk in the supermarkets. Before him all soymilk came from Vandemoortele/Alpro in Belgium. He produces private label Tetra Pak soymilks for 3-5 national supermarket chains. He is also doing an organic soymilk. His ice cream looks like it will be very successful. It is made under license for him by Bayvilles, a big company. He has made genuine inroads into the mainstream market. Last year his total sales were $525,000. He also has okara burgers. He tried a soy yogurt made from thin soymilk but it fell flat on its face. Address: Owner, Paul's Tofu, England.

4782. Noble Soya House Limited. 1986. Display ad: Soya. In Hong Kong, soya drinks outsell Coca-Cola. *Times of India* (*The*) (*Bombay*). March 23. p. 15.
• ***Summary:*** See next page. One of the most interesting, creative, well researched and well designed ads for soya foods ever seen in India. A full page ad interspersed with illustrations and logos. The text continues: "In the USA, they put soya into burgers. In the UK, soya foods earn millions every year.

"In Sri Lanka, soya flour has been added to bakery flour. And all over Europe, soya yogurt is already a rage.

"Enter Noble Soya House. A company that is getting into the exciting world of soya foods and beverages. With an investment of Rs. 11.8 crores [118 million rupees]. A company that is managed by some of the most experienced people in the foods industry. And is financially supported by two of the larger business houses in the country. Godrej. And Bhiwandiwalla, of Great Eastern Shipping fame. Both will participate in the equity and have Board representation.

"The other names: Beverage technology for the project is being supplied by Kibun of Japan, acknowledged international leaders in the field.

"Plant and equipment for beverages will be supplied by

Soya.

In Hong Kong, soya drinks outsell Coca-Cola.

In the USA, they put soya into burgers.

In the UK, soya foods earn millions every year.

In Sri Lanka, soya flour has to be added to bakery flour.

And all over Europe, soya yogurt is already a rage.

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Godrej.

And Bhiwandiwalla, of Great Eastern Shipping fame.

Both will participate in the equity, and have Board representation.

The other names.

Beverage technology for the project is being supplied by Kibun of Japan, acknowledged international leaders in the field.

Plant and equipment for beverages will be supplied by Alfa-Laval of Sweden, one of the world's largest suppliers of this equipment.

Equipment and know-how for extruded soya foods will be supplied by Simon Food Engineers of the UK, a major name in extruded foods.

Distribution of products will be handled by Godrej Soaps Pvt Ltd, who reach over 2,00,000 retail outlets countrywide. And by an established multinational firm that is a major force in specialised healthcare markets.

The engineered food.

The technology that Noble Soya House will be using is unlike anything presently available in India.

Technology that allows soya to be engineered to reproduce just about any food texture, flavour, shape and colour. And to produce ones not found in nature.

Technology that makes soya possibly the single most versatile food source known to man. A food source that can be engineered into soft drinks, health foods, infant formulations, bakery products, meat analogues, dairy product analogues and more. Much more.

And what makes all this particularly exciting is the fact that soya is actually a better food source than many of the foods it is replacing.

The richest vegetable protein source known.

Soya protein is the only known vegetable protein that comes close to animal protein in quality.

But that's not all. The soya bean has an exceptionally high protein content. As high as 40%.

Which means that, weight for weight, soya products can be a better protein source than cereals, most legumes, even milk.

And that's why, worldwide, governments and health organizations have backed the development of soya all the way.

The time has come.

Noble Soya House could not have been timed better.

Soya bean production in India has just crossed the 1 million tonne mark. By 1990, annual production of the crop is expected to have risen to 2½ million tonnes.

What's more, the processed foods industry in India has finally reached the take-off stage. The growing pace of urbanization, changes in social norms and changes in attitudes towards foods have all combined to create a truly large market for processed foods. As is evident from the number of food companies that have crossed the Rs.50 crore turnover mark in the last few years.

And Noble Soya House, with a wide, wide range of food and beverage products lined up, looks set to lead the take-off.

The idea is taking root.

Land for the project has already been acquired near Bhopal, the heart of soya country. Civil work has already begun.

Plant and equipment have already been ordered, and installation will start by the middle of the year.

Products specially formulated by Kibun using Indian raw materials have been tested with consumers in four cities, with a very favourable response.

Commercial production of the first products will begin before the end of the year. Other products will begin reaching shop shelves a few months later.

To change, for ever, the face of the processed foods industry.

NOBLE SOYA

Noble Soya House Limited. Administrative Building. Godrej Soaps Pvt. Ltd., Eastern Express Highway, Vikhroli East, Bombay-400 079

Alfa-Laval of Sweden, one of the world's largest suppliers of this equipment.

"Equipment and know-how for extruded soya foods will be supplied by Simon Food Engineers of the U.K., a major name in extruded foods.

"Distribution of products will be handled by Godrej Soaps Pvt. Ltd., who reach over 200,000 retail outlets countrywide. And by an established multinational firm that is a major force in specialised healthcare markets.

Engineered food: The technology that Noble House will be using is unlike anything presently available in India... Technology that makes soya possibly the single most versatile food source known to man. A food source that can be engineered into soft drinks, health foods, infant formulations, bakery products, meat analogues, dairy product analogues and more. Much more.

"And what makes all this particularly exciting is the fact that soya is actually a better food source than many of the foods that it is replacing.

"The richest vegetable protein source known: Soya protein is the only known vegetable protein that comes animal protein in quality. But that's not all. he soya bean has an exceptionally high protein content. As high as 40%... And that's why, worldwide, governments and health organizations have backed the development of soya all the way.

"The time has come: Noble Soya House could not have been timed better. Soya bean production in India has just crossed the 1 million tonne mark. By 1990, annual production of the crop is expected to have risen to 2½ million tonnes.

What's more, the processed foods industry of India has finally reached the take-off stage. The growing pace of urbanization, changes in social norms and changes in attitudes towards foods have all combined to create a truly large market for processed foods." "Ad Noble Soya House... looks set to lead the take-off.

"The idea is taking root: Land for the project has already been acquired near Bhopal, the heart of soya country. [Note: The Bhopal gas disaster was on 3 Dec. 1984–only about 15 months earlier]. Civil work has already begun. Plant and equipment have already been ordered, and installation will start by the middle of the year. Products specially formulated by Kibun using Indian raw materials have been tested with consumers in four cities, with a very favourable response.

"Commercial production of the first products will begin before the end of the year... To change forever the face of the processed foods industry." Address: Administrative building: Godrej Soaps Pvt. Ltd., Eastern Express Highway, Vikhroli East, Bombay 400 079.

4783. *Economic Times* (*India*). 1986. Noble Soya [Noble Soya House Ltd. setting up $11.8 million soyfoods plant in Madhya Pradesh, India]. March 29. p. 7.
• ***Summary:*** This will be India's first large-scale soymilk plant. Address: India.

4784. *East West.* 1986. The best & worst natural foods. East West's first annual awards. March. p. 83-86.
• ***Summary:*** "Frozen non-dairy desserts. Best hard-serve product: Rice Dream by Imagine Foods of Palo Alto, California. Leaves all the soy products with their squabbles about tofu content and soy isolate use in the dust." Address: Massachusetts.

4785. EEC Commission. 1986. EEC report on imitation milk and milk products. Brussels, Belgium. 26 p. March. [17 ref. Eng]
• ***Summary:*** Contents: Explanatory memorandum on the designations used in the marketing of milk and milk products: Issued by the EEC Commission on 20 May 1986. Introduction. General: Definitions (milk products [milk, milk products, composite products], imitation and substitute products), list of imitation products. Market for imitation milk and milk products: Factors influencing the market, market situation, commentary and forecasts. Labelling/ publicity. Conclusions.

Concerning the market situation: (a) "Cheese imitation: the UK market for these products was estimated at 2,000 tonnes/year or 0.8% of the 240,000 tonnes of UK natural cheese production in 1981. The substitute products were mainly used in formulated foods as a replacement for imported cheese.

"In the USA imitation cheese is presenting increased competition for natural cheese. In 1980 it accounted for–available reports differ–either 73,000 tonnes (4.2% of total cheese production) or 95,000 tonnes (5% of total cheese production) or up 150% from 1978.

"The major uses of imitation cheeses are in the production of frozen pizzas and school meals. Increased consumer acceptance of these products is explained in particular by their lower prices. A market forecast estimates the annual growth rate at 6.8% and sales for 1988 at 135,000 tonnes. Another market forecast for the USA suggests that by 1987 imitation cheese products could hold 15% of the total cheese market, with a growth rate of 26.4% per year. Projections for the year 2000 indicate a 50% market share for substitute cheese products.

"In Switzerland the Union Fromagere estimates that exports of Swiss cheese fell by 6.5% per year between 1982 and 1983 due to sales of imitation Emmentaler, Gruyere and Sbrinz on many major European markets.

"In Sweden it was reported in 1984 that imitation cheese products accounted for 2.5% of the cheese market.

"(b) Yellow fats: A report on the UK market for 1983 states that, in volume terms, butter accounted for 36% of the yellow fats market, compared with 64% for margarine and low-fat spreads...

"(c) Soya milk: In the United Kingdom, sales of soya

milk increased fivefold to total UK£3.5 million and estimates are that sales could reach UK£20 million by mid-1988. Taking the retail price at UK£0.64 per liter, these values correspond to 5,600 tonnes of soya milk for 1984 and 32,000 tonnes projected for 1988. (d) Coffee whiteners and artificial creams: A report dating from 1979 stated that these products accounted for less than 1% of condensed milk and cream consumption. In Denmark a report dating from 1979 stated that they account for 3% of the market in cream."

Note: This report is contained within an undated 1987 booklet titled "Soymilk Versus EEC Legislation," published by STS–Soya Technology Systems. It is also summarized in the April 1987 edition of Soyfoods (ESFA). 1(2):11-17. The full bibliography of 17 references is included. Address: Brussels, Belgium.

4786. **Product Name:** Firm Tofu (Doufu), Soft Tofu (Sui Doufu), Soymilk (Dou-nai), and Pressed Tofu (Doufu-gan).
Manufacturer's Name: Golden Gate Tofu.
Manufacturer's Address: 1265 Griffith St., San Francisco, CA 94124. Phone: 415-822-5613.
Date of Introduction: 1986. March.
How Stored: Refrigerated.
New Product–Documentation: 1987. Talk with Richard Rose. 1988. Aug. Bob Chen is the cousin of Maung Ming of Mighty Soy. The company is at Hunters' Point. Talk with Bob Chen. 1988. Aug. 16. He was born in Calcutta, India, of Chinese parents, and raised in Burma. Golden Gate is his first tofu company, and he started it from scratch in March 1986, with three products. He added pressed tofu in late 1986. Today he sells mostly to the Chinese market but some to health food stores.

Label for Soft Tofu purchased at a grocery store in Chinatown, Oakland, California. 1992. Oct. 28. 4.5 inches square. Red, blue, and white on clear plastic film. Illustration of a large red gate. Ingredients: Soy bean, water, 1/10 of 1% natural calcium sulphate. 16 oz water pack.

Form filled out and faxed by Robert Chen. 1998. July 2. The company is still in business; the address and phone number are unchanged.

4787. Mehta, M. 1986. Soya foods, such as soymilks, flour, and texturized soybean protein meat analogs, could have a big future in India. *Oils & Fats International* No. 3. p. 21. March. *

4788. Shon, Dong-Hwa; Lee, Hyong-Joo. 1986. [Stability of protein colloids in a mixture of cheese whey and soy milk]. *Han'guk Nonghwa Hakhoe Chi* (*J. of the Korean Agricultural Chemical Society*) 29(1):83-89. March. [23 ref. Kor; eng]
• ***Summary:*** Studies the parameters affecting the colloidal stability of whey and soybean proteins, characteristics of tofu-type gel formation, effects of heat treatment, and salt composition on colloidal stability, and effects of heat treatment on storage stability. In experimental types of tofu made from a mixture of whey and soymilk, calcium in the whey precipitated the soy proteins and disrupted gel formation, resulting in curds of poor texture. Numerous dialysis tests were conducted. Address: Dep. of Food Science & Technology, College of Agriculture, Seoul National Univ., Suwon, South Korea.

4789. STS–Soya Technology Systems Ltd. 1986. Turnkey Soymilk Plant. First in Europe (Leaflet). 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 3 panels each side. Each panel: 30 x 21 cm. March. Also published in Chinese in March 1986. [Eng; Chi]
• ***Summary:*** Contains 15 glossy color photos with descriptions of the process and showing key parts of the DE-VAU-GE soymilk plant in Germany.

4790. Sturgeon, Bruce. 1986. Great Eastern Sun, soymilk, and St. Peter Creamery (Interview). *SoyaScan Notes.* April 11. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** GES presently imports 3 containers a month of Ah-Soy. There are 3,000 cases/container and 30 packages/case. Each package is 180 ml. So this is 270,000 packages/month or 48,600 liters/month or 12,840 gallons/month or 154,081 gallons/year. Percentage of sales by flavor are vanilla 35%, original 30%, chocolate 18%, carob 17%. Sales have been flat for the last year due to increasing costs due to the poor exchange rate. They will soon make the product in the USA in Tetra Pak, but also continue to import some from Japan.

St. Peter Creamery in Minnesota has bought/licensed the Oberg patent. Their biggest customer is Ice Bean (soy ice cream). They are a dairy company that also makes cheese for Kraft. They have three plants and will soon move to or start a new one in South Dakota. Address: Director of Marketing, Great Eastern Sun, 92 Macintosh Rd., Asheville, North Carolina 28806. Phone: 808-438-4730.

4791. *Toyo Shinpo* (*Soyfoods News*). 1986. Imechen. Tônyû. Yori mairudoni. Kokusan daizu 100%. Dekamame hatsubai [Image change. Milder soymilk. Marusan introduces 1 liter "Dekamame" ("Big Bean") made from 100% Japanese soybeans]. April 11. p. 7. [Jap; eng+]
• ***Summary:*** Grinding the soybeans very finely gives a whiter color.

4792. Noble Soya House Limited. 1986. Display ad: Noble Soya brings together–Godrej, Bhiwandiwalla (Great Eastern Shipping), Kibun of Japan (World's largest producer of soya milk), Alfa Laval of Sweden, Tetra Pak of Switzerland, Simon Foods of U.K... *Times of India* (*The*) (*Bombay*). April 12. p. 10.
• ***Summary:*** "Another interesting and creative full page ad

NOBLE SOYA

brings together.....

Godrej

Bhiwandiwalla
(Great Eastern Shipping)

Kibun *of Japan*
(World's largest producer of Soya Milk)

Alfa Laval *of Sweden*

Tetra Pak *of Switzerland*

Simon Foods *of U.K.*

..... unmatched and versatile combination to tap the vast potential in processed food industry.

NOBLE SOYA HOUSE LIMITED has been promoted by Dr. A.S. Aiyar, a leading food technologist of international repute and is financially supported by the Godrej Group and the **Bhiwandiwalla(Great Eastern Shipping)** Group.

The Rs. 11.8 crore project, ideally located at Mandideep (M.P.) in the heart of the soyabean growing area, will manufacture Soya milk and texturised soya products.

Noble Soya has entered into technical collaboration with **Kibun Co., Ltd.,** Japan, the world's largest producer of soya milk and the complete soya milk plant is being custom-designed and supplied by **Alfa-Laval** of Sweden and **Vulcan Laval Limited** as per Kibun's specifications on a turn-key basis. Sophisticated aseptic packaging machinery is being supplied by **Tetra Pak Development Limited** of Switzerland.

The machinery and know how for the manufacture of extruded soya products is being supplied by **Simon Foods Engineers,** U.K., an international leader in the field of food extrusion technology.

Soya milk has already been widely accepted in countries like U.S.A., Japan, Korea, Singapore, Indonesia, Hongkong as well as in Europe. On account of its high nutritive value and varied uses, the market potential in India is tremendous.

Extruded soya food products also have tremendous market potential and is used as a high protein ingredient in the processed food industry as well as food products for direct consumption.

Noble Soya is entering the capital market with a **Public Issue of 26,40,000 Equity Shares of Rs. 10 each for cash at par.**

The issue will offer investors an opportunity to participate in a Company that is all set to savour big success in the processed soya food industry. An opportunity no investor can afford to miss.

NOBLE SOYA — AT A GLANCE

- Company financially supported by Godrej and **Bhiwandiwalla (Great Eastern Shipping) Groups.**
- Promoted by a leading technocrat in food and nutrition.
- Access to Godrej's vast distribution network of over **200,000** outlets.
- Technical collaboration with **Kibun Co. Ltd., Japan — World Leaders in the soya milk industry.**
- Main Plant and machinery imported from **Sweden & U.K.**
- Commercial production by last quarter 1988.
- Entry into the processed food industry which is the fastest growing sector.
- Professional management with extensive experience in food industry.
- 80 CC, 80 L and Wealth-tax benefits.
- Backward Area Concessions.
- Listing on Bombay, Indore and Ahmedabad Stock Exchanges.

Managers to the Issue

The Industrial Credit and Investment Corporation of India Limited, Merchant Banking Division, 163, Backbay Reclamation, Bombay 400 020

HongkongBank, Merchant Banking Division of The Hongkong and Shanghai Banking Corporation–Bombay

NOBLE SOYA HOUSE LIMITED

Regd. Office:
E-7/638 Shahpura, Near Campion School, Arera Colony, Bhopal, Madhya Pradesh.

Head Office:
Administrative Building, Godrej Soaps Pvt. Ltd., Eastern Express Highway, Pirojsha Nagar, Vikhroli (East), Bombay 400 079.

80CC Already approved

ISSUE OPENS ON 28TH APRIL, 1986

an investment opportunity par excellence!

from Noble Soya.

"Noble Soya House Limited has been promoted by Dr. A.S. Aiyar, a leading food technologist of international repute.

"Issue opens on 28th April, 1986."

Note: This ad also appeared in the April 16 (p. 12) and April 23 (p. 15) issues of this newspaper. Address: Registered office: E-7/638 Shahpura, Near Campion School, Arera Colony, Bhopal, Madhya Pradesh.

4793. Noble Soya House Limited. 1986. Display ad: Announcement regarding the public issue of 26,40,000 [2,640,00] equity shares of Rs. 10 each for cash at par. *Times of India* (*The*) (*Bombay*). April 23. p. 15.

• ***Summary:*** The most detailed explanation of the project and the public offering to date. "Noble Soya House Private Limited was incorporated on 9th March 1984 as a Private Limited Company and was subsequently converted into a Public Limited Company by a special resolution... on 17th September, 1985." Address: Registered office: E-7/638 Shahpura, Near Campion School, Arera Colony, Bhopal, Madhya Pradesh.

4794. Smith, Timothy K.; Landro, Laura. 1986. Coke's future–Profoundly changed Coca-Cola Co. strives to keep on bubbling: Foreign markets are a key; wider use of trademark is eyed by Goizueta team. Paradox at Columbia Pictures. *Wall Street Journal*. April 24. p. 1.

• ***Summary:*** Coca-Cola Co. now gets 53% of its operating profit from abroad. Its many beverage trademarks include Ambasa, based on soy milk.

The company's 1985 revenues were $7.9 billion, for which $5.5 billion came from soft drinks, $1.3 billion from foods, and $1.1 billion came from entertainment (mostly Columbia Pictures). Contains a brief chronology of the company, which is said to have started in 1886 in Atlanta, Georgia.

4795. Noble Soya House Limited. 1986. Display ad: Subscription list opens today. *Times of India* (*The*) (*Bombay*). April 28. p. 11.

• ***Summary:*** "Noble Soya–at a glance" is a summary of all the key points about the new company. Address: Registered office: E-7/638 Shahpura, Near Campion School, Arera Colony, Bhopal, Madhya Pradesh.

4796. Robertshaw, Nicky. 1986. Says bacterial contamination heads FDA concerns. *Supermarket News*. April 28. p. 4A.

• ***Summary:*** "Microbiological contamination is the Food and Drug Administration's top priority, said FDA's chief food-safety official, citing the outbreak of *Listeria monocytogenes* in cheese this year and of salmonella in Jewel Cos. milk last year."

Sanford Miller, director of FDA's center for food safety and applied nutrition said in an interview that "regarding food safety the pendulum is swinging away from concern about food additives, pesticides and chemicals in the food supply and toward bacterial contamination... He gave yogurt and tofu as examples of products particularly susceptible to contamination."

4797. Bhatnagar, P.S. 1986. All India Coordinated Research Project on Soybean (Indian Council of Agricultural Research). National seminar & seventeenth annual workshop: Proceedings & technical programme 1987-87. G.B. Pant University of Agriculture & Technology, Pantnagar-263145, India. iv + 247 p. Held 22-25 April 1986 at MACS (Maharashtra Assoc. for the Cultivation of Science) Research Institute, Pune, Maharashtra, India. No index. 27 cm.

• ***Summary:*** Recommendations concerning food uses of soybeans include: A domestic market for defatted soy flour should be created. The production and use of tofu, soy beverage, and full-fat flour in weaning (human and cattle calves) should be encouraged. Utilization research is taking place mostly at Sehore (oil, flour), Pantnagar (flour, milk, oil, isolate, tofu), and Bangalore (tempeh, soy yogurt, soy cheese). A directory of researchers is given at the back of the proceedings. Address: Coordinator, All-India Coordinated Research Project on Soyabean (ICAR), G.B. Pant Univ. of Agriculture & Technology, Pantnagar, UP, 263145, India.

4798. Bhatnagar, P.S. 1986. Soybean research and development in India–Diagnostic analysis of constraints and future strategies. In: P.S. Bhatnagar, comp. 1986. National Seminar & 17th Annual Workshop. Proceedings & Technical Programme: G.B. Pant Univ. of Agriculture & Technology. iv + 247 p. See p. 4-29. [11 ref]

• ***Summary:*** Today almost all of India's defatted soybean meal is being exported to affluent countries for use in livestock feeding. This amount increased from 140,420 tonnes in 1981-82 to 432,819 tonnes in 1984-85. In the latter period the meal, selling at 1,968 rupees/tonne earned India 851 million rupees of sorely needed foreign exchange. The author emphasizes the need for a program to utilize soy flour (especially defatted) in India. Address: Coordinator, All-India Coordinated Research Project on Soyabean (ICAR), G.B. Pant Univ. of Agriculture & Technology, Pantnagar, UP, 263145, India.

4799. Celnat. 1986. Une large gamme d'aliments de base [A large line of basic foods]. *Compas* (*Le*) (*France*) No. 26. p. 36. March/April. [Fre]

• ***Summary:*** A choice of proteins: A line of legumes. Shoyu, tamari, and miso made from soya. Soyo brand soymilk, 100% non dairy (végétal) without added sugar. Wheat gluten flour for making seitan. Whole grains. A large line of macrobiotic specialties. Futons.

Most of Celnat's cereal and legume products bear the CINAB logo meaning organically grown as certified by the Comité Interprofessionel National de l'Agriculture Biologique. Address: Z.I. Blavozy–St. Germain, 43700 Brives-Charensac, France. Phone: 71.03.04.14.

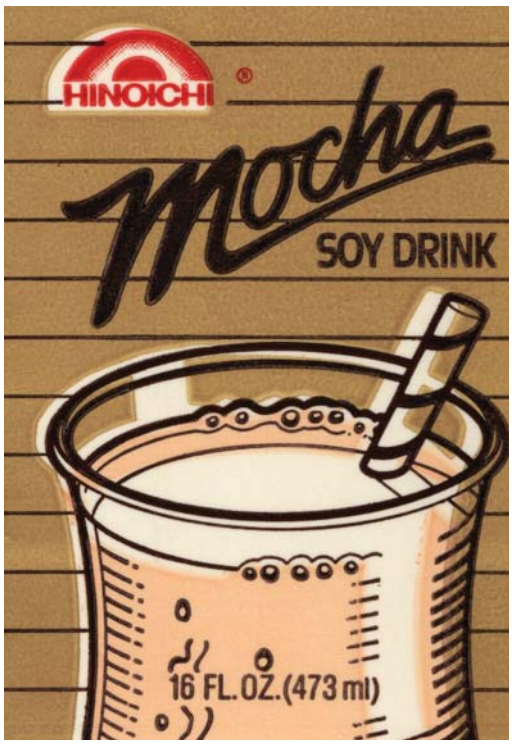
4800. Dietrich, Barbara. 1986. The Supreme Bean [Soy Supreme, St. Peter Creamery, and Oberg Foods]. *FarmFutures.* April. p. G.
• ***Summary:*** The process for making Soy Supreme (soymilk powder or spray-dried tofu powder) was developed by E.B. Oberg, founder of Oberg Foods Co. "The sole manufacturer, St. Peter Creamery Inc. of St. Peter, Minnesota, sold 500,000 pounds of the product in 1985, a spokesman says. And plans are to quadruple production this year."

4801. **Product Name:** Genice Ice Delight [Vanilla, Strawberry, Raspberry Ripple, Hazelnut, and Pistachio & Almond].
Manufacturer's Name: Genice Foods Ltd.
Manufacturer's Address: Pinfold Lane, Llay Industrial Estate, Wrexham, Clwyd LL12 0PX, Wales, UK. Phone: 0978-853-787.
Date of Introduction: 1986. April.
Ingredients: Vanilla: Soya milk [spray dried soymilk], raw cane sugar, corn syrup, vegetable oil, soya protein, vanilla bean extract, vegetable gums (guar, locust bean gum), lecithin, natural colour (annatto).
Wt/Vol., Packaging, Price: 1 litre tub.
How Stored: Frozen.
New Product–Documentation: Note: The Haldane Foods Group acquired Genice Foods Ltd. in March 1989. Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4 and 8. This non-dairy frozen dessert was Genice's first product, launched in April 1986 in five flavors. Initially the main soy ingredient was powdered soymilk obtained from Michael Cole of Soya Health Foods Ltd., which probably imported it. But soon Genice switched to using soy protein isolates because they were less expensive and seemed to give a better product. At that time Genice bought the isolates from Macauley-Edwards (in Peterborough, eastern England), which later somehow became Purina Protein. Genice developed this product largely because they needed an actual product to show potential customers, but they never put much effort into marketing the product because they had already decided that Genice wanted to be a product development and manufacturing company and leave sales and marketing to other companies. By Jan. 1993 the product was seen an extraneous and was even competing with other soy ice creams made by Genice, so it was discontinued as part of the company's "rationalization" program.

Labels sent by Genice Foods Ltd. 1994. Feb. 18. The labels (vanilla, or raspberry ripple) for 1 liter tubs are 6.75 by 4.25 inches. A color photo shows a dish of this soy ice cream next to fruits or flowers with a brown background photo of woven reeds. "Naturally delicious. Non-dairy frozen dessert. Contains no salt, lactose, artificial colourings, emulsifiers, or flavourings." With UPC indicia.

4802. Givant, Marlene. 1986. Soy foods come of age on Long Island: No reason to resist tempeh-tation at Appropriate Foods. *Whole Life.* April. p. 63-64.
• ***Summary:*** Robert Werz and Shelley Martin, the owners, make 2,500 lb/week of tempeh and 150 gallons/week of soymilk. They also distribute some 200 other purely vegetarian and kosher products.

4803. **Product Name:** Hinoichi Soy Drink [Plain, Original (Dairylike), Mocha, or Chocolate].
Manufacturer's Name: House Foods & Yamauchi, Inc.
Manufacturer's Address: 526 Stanford Ave., Los Angeles, CA 90013. Phone: 213-624-3615.
Date of Introduction: 1986. April.
Ingredients: Mocha: Water, whole soybeans, corn sweetener, corn oil, soy oil, coffee extract, cocoa, caramel color, mono and diglycerides (prevents oil separation), sodium citrate (emulsifying salt), calcium carbonate (calcium source), salt, dipotassium phosphate (regulates acidity), carrageenan (stabilizing salt [sic]), artificial and natural flavors.
Wt/Vol., Packaging, Price: 16 fl. oz. (473 ml) Pure-Pak cartons, with 3-week shelf life.
How Stored: Refrigerated.
Nutrition: Per 6 fl. oz Mocha: Calories 150, protein 4 gm,



carbohydrates 25 gm, fat 4 gm, sodium 95 mg, cholesterol 0. **New Product–Documentation:** Ad in Rafu Shimpo and/or Kashu Mainichi. 1986. In Japanese. "Hinoichi Soy Drink. New product. Healthful beverage fresh and delicious." Talk with Harry Tanikawa. 1986. Nov. 15. The product was launched in April 1986 in Pure Pak cartons. These four flavors, targeted only to the Asian-American market, are scheduled for nationwide distribution in a foil pouch sometime in 1987. Labels. 1987. Pure Pak pint cartons for each flavor. Three or four colors on white (Blue, red, and beige for Original; Dark and light brown, red and peach for mocha; Chocolate brown, red and beige for chocolate). On side panel: "Enjoy Hinoichi Soy Drink: a delicious non-dairy alternative." Note: In the Plain product, the only ingredients are water and soybeans. Per 6 fl. oz. serving it contains 85 calories, 6 gm protein, and 80 mg or Visit HFYI plant in Los Angeles. John Yamauchi is in charge of this product. On sale at Yaohan Japanese supermarket in Los Angeles. 1988. Oct. 23. For 32 oz. sizes: Plain retails for $1.19 and mocha for $1.29. For 16 oz.: Original retails for $0.59 and mocha for $0.69.

4804. **Product Name:** ["Big Bean" (Soymilk)].
Foreign Name: Dekamame.
Manufacturer's Name: Marusan-Ai Co., Ltd.
Manufacturer's Address: 1 Aza Arashita, Niki-cho, Okazaki-shi, Aichi-ken 444-21, Japan.
Date of Introduction: 1986. April.
Wt/Vol., Packaging, Price: 1 liter Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Shurtleff & Aoyagi. 1986. Soymilk Industry & Market. Update. "Marusan, Japan's second largest soymilk maker, as part of a diversification into health drinks to compensate for decreasing soymilk sales, introduces Dekamame ("big bean"), a soymilk in a liter Tetra Brik carton, made entirely from soybeans grown in Japan." Soya Bluebook. 1987. p. 90.

4805. Mittal, B.K. 1986. Food applications of defatted soy flour in the Indian diet. In: P.S. Bhatnagar, comp. 1986. National Seminar & 17th Annual Workshop. Proceedings & Technical Programme: G.B. Pant Univ. of Agriculture & Technology. iv + 247 p. See p. 97-119. [15 ref]
• ***Summary:*** A besan-like product with the brand name BES-Soy has been developed by Ganesh Research Foundation. Address: Dep. of Food Science & Technol., G.B. Pant Univ. of Agriculture & Technology, Nainital, UP, India.

4806. Pural. 1986. Le no. 1 de la protéine végétale vous propose une gamme complète de produits a base de soja [The number one in vegetable protein offers you a complete line of soy products (Ad)]. *Compas* (*Le*) (*France*) No. 26. Inside front cover. March/April. [Fre]
• ***Summary:*** Product types include vegetarian spreads for breads (*pâtes à tartiner végétales*), soya quenelles (forcemeat, *farce,* or fish balls), ready-to-serve dishes, and soymilk.

Individual soy-related products include: Granotose, Sojafleisch, Pasta Chuta, Koletts, Grano-San, Soja Mignon, Sojanelles Epicées, Soja gout fin, Frika Vita, Sojanelles, Sojavite. Address: 15 rue Léon Blum, 92113 Clichy cédex, France. Phone: 731.25.75.

4807. Robeznieks, Andis. 1986. What nutritional research is finding out about vegetarian diets. *Vegetarian Times.* April. p. 11-14. [5 ref]
• ***Summary:*** Contents: Introduction. Seventh Day Adventist studies. Gallstones. Ovarian cancer. High blood pressure. Pollutants in breast milk. Breast cancer. Diverticular disease. Kidney disease. High cholesterol. Vitamin B-12. Iron. Protein.

4808. *Times of India* (*The*) (*Bombay*). 1986. Duty exemptions for soya products. May 3. p. 10.
• ***Summary:*** Bombay–"Textured soya protein and soya milk have been exempted from excise duty."

4809. Gupta, Rajendra ("Raj") P. 1986. Re: Selling tofu in Kanpur, India, and soymilk equipment to developing countries. Letter to William Shurtleff at Soyfoods Center, May 9. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "It is not even one year since we started selling tofu to consumers in Kanpur [India] and suddenly every one seems to be interested in soyfoods in India.

"There is a great deal of interest here in our process, and it is likely that we would have a tie up with a few companies for the use of our process. APV Crepaco (USA), APV Texmaco (India) and Kurihara (Japan) have begun making soymilk equipment based on our process. Some companies here are also interested in no-beany soymeal. I am hopeful that my extended stay here (up to the end of Aug. 1986) will help move things at a reasonable pace.

"Godrej, a large business house here, is setting up a 4000 liter/hour soymilk plant with know-how from Kibun and equipment from Alfa-Laval. Kalyan Solvent Extraction Limited is expected to setup a similar size plant with process and know-how from us and equipment considering to go into large scale soymilk production. In addition, we have enquiries from 50 companies keenly interested in setting up small scale tofu and soymilk operations similar to ours in Kanpur. Several of them have made deposits with us of up to Rs. 5,000 for the purpose." Address: Ph.D., Vice President, ProSoya Foods International Inc., 801-275 Slater St., Ottawa, ONT, K1P 5H9, Canada. Phone: 613-237-5814.

4810. Business Trend Analysts, Inc. 1986. The health and natural food market. 2171 Jericho Turnpike, Commack, NY

11725.
• ***Summary:*** Section VII is titled "The Market for Soyfoods." It is a combination of material taken without permission from Shurtleff & Aoyagi's *Soymilk Industry and Market* (especially the overview on page 96) and little bits and pieces for various sources that fail to give an accurate picture of this market. The report repeatedly speaks of the "soyfoods market" without defining which product types it is including. Part of the information is said to be based on "A special survey of 5,000 households, providing up-to-date information on changing consumer attitudes and buying patterns with respect to soyfood products." The results of this survey include consumption levels by household income, type of retail outlet, geographic region, race, age and presence of children. They project manufacturers' sales of soyfoods to be $499.5 million in 1995, assuming a compound annual growth rate of 15.3% from 1985 to 1995. Generally a disappointing study, especially for the price. Address: Commack, New York.

4811. Byrne, Maureen. 1986. Cool and classic. *Food Manufacture* (*London*) 61(5):64, 67. May.
• ***Summary:*** Sunrise Soya Ice Dream, is a soymilk ice cream from Soya Health Foods Ltd. and Hillsdown Holdings Group's Classic Ices. Classic Ices, based in Clwyd, Wales, was founded in 1983 and privately owned until February, 1985, when the giant Hillsdown Holdings Group (£1,135 million) took over. Classic Ices now makes a soy-based frozen dessert called Ice Dream under license for Soya Health Foods, Ltd. The product is based on soya milk powder rather than isolates. This non-dairy product is targeted at the health food market and those allergic or intolerant to dairy products. The same equipment is used as for regular dairy ice cream but the product requires a longer aging period of greater than or equal to 12 hours. The product is available in 4 flavors: vanilla, hazelnut, carob, and wildberry. A photo shows four liter packs of the product.

The dairy ice cream market in the UK is currently worth over £430 million. and is dominated by Lyons Maid and Wall's. Address: UK.

4812. Escueta, Elias E.; Bourne, M.C.; Hood, L.F. 1986. Effect of boiling treatment of soymilk on the composition, yield, texture and sensory properties of tofu. *Canadian Institute of Food Science and Technology Journal* 19(2):53-56. May. [23 ref. Eng; fre]
• ***Summary:*** Soymilk was boiled for 0, 12, 30, and 60 minutes before coagulation with calcium sulfate to make tofu. A texture profile and analysis was performed on the product obtained. Hardness and gumminess increased slightly up to 12 minutes of boiling but decreased significantly after 30 and 60 minutes of boiling. Chewiness decreased significantly after 30 and 60 minutes of boiling. Springiness was not affected by boiling. Cohesiveness increased slightly after 12 minutes boiling and then decreased slightly but not significantly after 30 and 60 minutes of boiling. Composition and sensory qualities of tofu were not significantly affected by the length of time soymilk was boiled prior to coagulation. Address: Inst. of Food Science, Cornell Univ., Geneva, New York 14456.

4813. **Product Name:** [Tofu Stew].
Foreign Name: Tofu-Blanquette.
Manufacturer's Name: Jonathan P.V.B.A.
Manufacturer's Address: Antwerpsesteenweg 336, B-2080 Kapellen, Belgium. Phone: 03/664 58 48.
Date of Introduction: 1986. May.
Ingredients: Tofu (soya-proteins)*, peas*, onions*, carrots*, mushrooms, celery*, seaweed. Sauce: Soya milk*, water, wheat meal*, vegetable fats, soya sauce, seasoning spices. * = biological crop.
Wt/Vol., Packaging, Price: 300 gm.
Nutrition: Minerals 1.4%, vegetable proteins 6.3%, vegetable fats 3.52%, carbohydrates 5%. 76.9 calories (Kcal) per 100 gm.
New Product–Documentation: Label. Received 1988. 6.25 by 5.25 inches. Card stock. Color photo of tofu cubes stewing with various vegetables with item name in white on orange. "Vegetable product." Form filled out by Jos van de Ponseele. 1989. Jan. 11. This product was introduced in May 1986.

4814. **Product Name:** Tofu Mozzarella (Soy Cheese Containing Casein).
Manufacturer's Name: Kononia Foods (Distributor).
Manufacturer's Address: Fresh Meadows, New York. Phone: 718-969-2960.
Date of Introduction: 1986. May.
Ingredients: Tofu (51%), soybean oil, casein, sea salt, citric acid, soy lecithin, guar gum.
Wt/Vol., Packaging, Price: 5 lb loaves.
How Stored: Refrigerated.
Nutrition: Per ounce: Calories 80, Protein 8 gm, carbohydrates 1 gm, fat 4 gm, calcium 120 mg, sodium 170 mg.
New Product–Documentation: Medoff. 1986. Whole Life. June. p. 82-84. "Will the Real Soy Mozzarella Please Stand Up." "Several weeks after Soya Kaas came out, a third 'soy' cheese hit the market, distributed by Kononia Foods of Fresh Meadows, New York [phone: 718-969-2960], called *Tofu Mozzarella* (claiming to be 51% tofu). When *Tofu Mozzarella* first appeared in early May [1986] its labels said 'Non-dairy,' but their ingredient list read: tofu, soybean oil, casein, sea salt, citric acid, soy lecithin, guar gum." A black-and-white photo shows the product.

4815. **Product Name:** [Bonsoy Soymilk].
Foreign Name: Bonsoy Sojamelk.

Manufacturer's Name: Manna Natuurvoeding B.V. (Importer-Distributor). Made in Japan.
Manufacturer's Address: Weerenweg 28, 1161AJ Zwanenburg, Netherlands.
Date of Introduction: 1986. May.
Ingredients: Water, soybeans, pearl barley, kombu (sea vegetable), barley malt.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic Carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Calories 40, water 87.9 gm, protein 3.4 gm, fat 3.0 gm, carbohydrate 5.0 gm, fiber 0.1 gm, calcium 40 mg, iron 1.5 mg, ash 0.6 gm.
New Product–Documentation: Manna Bulletin. 1986. May. No. 12. p. 3. "100% natural. 100% from plants (plantaardig). Cholesterol free." A photo shows the package and lists ingredients.

4816. **Product Name:** Tofu Salad.
Manufacturer's Name: Michigan Soy Products Co., Inc.
Manufacturer's Address: 1213 N. Main St., Royal Oak, MI 48067. Phone: 313-544-7742.
Date of Introduction: 1986. May.
Ingredients: Tofu, almond soy milk, corn oil, honey, onion, celery, carrot, pickles, garlic, lemon juice, salt, paprika.
Wt/Vol., Packaging, Price: 8 oz.
How Stored: Refrigerated.
New Product–Documentation: Blair. 1987. Detroit News. Nov. 4. p. 1E, 2E. Tofu. Talk with Dorothy Hwang. 1988. Feb. 18. Label. 1987.

4817. **Product Name:** Natural Soymilk Products: Soy Milk.
Manufacturer's Name: Natural, Inc.
Manufacturer's Address: 6650 Santa Barbara Ct., Elkridge, MD 21227. Phone: 301-796-3211 (Balt.); 301-621-5388 (DC).
Date of Introduction: 1986. May.
Ingredients: Organic soybeans, water.
Wt/Vol., Packaging, Price: 32 fluid oz, 64 fluid oz, or 128 fluid oz plastic jugs.
How Stored: Refrigerated.
New Product–Documentation: Talk with Larry Betzler. 1988. April 1. This company opened in the spring of 1986. Their first two products were tofu and soymilk made for Betzler's American Soyfood Industries.

4818. **Product Name:** Nectar Soy (Sweet Soymilk).
Manufacturer's Name: Natural, Inc.
Manufacturer's Address: 6650 Santa Barbara Ct., Elkridge, MD 21227. Phone: 301-796-3211 (Balt.); 301-621-5388 (DC).
Date of Introduction: 1986. May.
Ingredients: Soy beans, water, sugar.
Wt/Vol., Packaging, Price: 64 fl oz. (2 quarts).
How Stored: Refrigerated.
New Product–Documentation: Talk with and Label sent by William Tsai. 1998. July 30. This soymilk product was introduced in 1986.

4819. Perez, Oswaldo. 1986. La soya en la alimentacion humana [Soya in human nutrition]. *La Era Agricola* (*Merida, Venezuela*) No. 0. May. p. 14-15. [1 ref. Spa]
• ***Summary:*** Shows how soya makes most efficient use of the earth's ability to produce protein. Address: Granja Tierra Nueva, Aldea San Luis, La Azulita, C.P. 5102, Estado Merida, Venezuela.

4820. **Product Name:** [Sahm Yook Soy Cool (Plain Soymilk)].
Foreign Name: Sahm Yook Soy Cool.
Manufacturer's Name: Sahm Yook Korean Foods.
Manufacturer's Address: 320 Panjeong-ri, Jiksan-myun, Chunwon-gun, Choongchungnam-do 333-810, South Korea.
Date of Introduction: 1986. May.
Ingredients: Soy milk, high fructose corn syrup, raw cream, salt, vitamin C.
Wt/Vol., Packaging, Price: 200 ml foil retort pouch (Doypack). Retails for 200 Won (6/90).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Form filled out and label sent by C.Y. Yoon, General Manager, Sahmyook Korean Foods. 1990. June 23. The product was introduced in May 1986. Ingredients are listed in English.
Label (Foil retort pouch). Sent by C.Y. Yoon. 1990. June 23. 4 by 6.75 inches Red, yellow, dark green, and light green on silver. Front panel says "Soyalac" and an illustration shows 3 yellow soybeans in a green pod. The back panel shows the package being heated in a microwave oven. So this package is probably sold during the cold months. Note that this product contains dairy cream.

4821. **Product Name:** White Waves (Soymilk). Soon renamed White Wave Soya Milk (Plain/Unsweetened, or Sweetened with Raw Cane Sugar).
Manufacturer's Name: Unisoy Milk 'n By-Products Ltd.
Manufacturer's Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire, England. Phone: 061-430 6329.
Date of Introduction: 1986. May.
Ingredients: Soya beans, purified water, raw cane sugar.
Wt/Vol., Packaging, Price: Both: 500 ml Tetra Brik Aseptic carton. 29 pence (10/86). Unsweetened also in 1 liter Tetra Brik carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Spot in The Vegetarian. 1986. Sept/Oct. "Making Waves." "There's a new, very economical soya milk on the market. White Waves is a completely natural product. A real bargain at only 29 pence

for 500 ml, 52 pence per litre."

Simon Bailey. 1988. *Natural Choice.* Aug. 15. "Soya-Based Products." A photo shows the label. "White Wave Soya Milk–Sugar Free." On the front (large) and top (small) of the brick-shaped 500 ml aseptic package is a square logo, with one corner at the top–so that it looks like two triangles, one facing up and one down. In the top triangle is an illustration of a breaking wave, and in the bottom half are the words "White Wave." Note: This combined brand name and logo is strikingly similar to that used for many years by White Wave in Boulder, Colorado, USA.

CSP form filled out by Simon Bailey. 1988. Sept. 28. Gives date of introduction as spring 1986 and product name as White Wave Soya Milk. The Vegan. 1989. Spring. p. 12. Mentions the product. Talk with Neil Rabheru of Unisoy. 1990. July 3. This soymilk, in 2 flavors, was the company's first product. Production began in May of 1986. Inorganic soya beans were used. The name has always been White Wave Soya Milk; it was never named "White Waves."

Talk with Neil Rabheru of Unisoy. 1991. Sept. 16. He exported some of this soyamilk to Crivellaro in Italy, packaged under their own brand/label.

4822. Westbrae Natural Foods. 1986. Q&A. Answers to most-asked questions about WestSoy (Poster). P.O. Box 8711., Emeryville, CA 94662. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.
• ***Summary:*** Questions and answers about this soymilk. The shelf life is 1-2 years. It is sweetened with barley malt made from sprouted barley. It contains less than 1% added oil. Other soydrinks seasoned with seaweed averaged 144 mg of sodium per serving vs. 125 mg for WestSoy. Address: Emeryville, California.

4823. Devasia, T.K. 1986. Soybean can bring revolution in nutrition. *Free Press Journal* (*Indore, India*). June 8. p. 7.
• ***Summary:*** In India, a large number of children die every day of malnutrition. But nutritious foods are too expensive for the poor "Health administrators and researchers are working overtime to find a solution to this problem. Soyabean as been found to be the single best answer as it is cheap and nutritious. Its nutritional merits have been established beyond doubt by researchers all over the world.

"Agricultural scientists and medical practitioners at Indore feel that soyabean can bring about a revolution in this field of nutrition." Although Madhya Pradesh produces about 85% of all soyabeans produced in India, "a large share of the production goes as cattle feed, for extracting milk and other industrial uses. The State Government... has not done anything to promote human consumption."

"The most simple form of soyafood is soya milk, which contains 4.4% protein compared with 2.9% in cow's milk and 1.4% in breast milk. Soyamilk can be easily prepared at home. Approximately 10 liters of soymilk can be prepared from one kilogram of dry soyabeans. It becomes much more acceptable if mixed in equal proportions with cow milk.

The soymilk can be used for making tofu by causing curds to form, then straining with a cheese cloth. There is a perennial shortage of cow milk in urban areas. Farmers can produce and market soymilk on a small scale to be consumed the day it is made.

A sidebar titled "Plan to popularise soya foods in rural areas" explains that "Manoj Soni, a resident of Mhow and student of Boston University Medical School, USA, has conceived a plan to popularise the use of soya foods in the rural areas of the state. Under the project he has selected and trained 15 village health workers from selected villages in Indore tehsil. These in turn will educate the masses about the soya products." "Soni, who was inspired by his mother in undertaking the project, feels that soyabean holds great promise for the rural and urban population."

"Soni, his mother, and Mrs. Pushpa Pandey have prepared 150 recipes of soys food, which will be published soon... Soni has been given funds under the Smith-Kline Packman medical scholarship."

Photos show: (1) Manoj Soni. (2) Mrs. Pushpa Pandya delivering a lecture on soyabean foods to the village health workers at Rau near Indore. Address: India.

4824. Khosla, Mukesh. 1986. Chinks in the bamboo curtain. *Times of India* (*The*) (*Bombay*). June 22. p. 1.
• ***Summary:*** Since 1949, when it went communist, China has been widely admired in India. Discusses China's one-child policy and the difficulty of seeing things as they are in China. At least 5 million Chinese were massacred in the 1950s–as an unfortunate necessity of the goal of the Great Cultural Revolution.

In China's larger cities, like Beijing, Shanghai, or Guangzhou (Canton), it is not unusual to see a woman bicycling to work with her only child perched in a one-wheeled outrigger-like attachment to her bike. "She has a choice of either putting her child in the office creche or admitting it to the subsidised neighbourhood child care centre at a nominal charge of two yuans a month where he gets two meals and a glass of soya milk daily."

4825. **Product Name:** [Cereal Mate (Soymilk for Use with Breakfast Cereal)].
Manufacturer's Name: Alpro. Div. of Vandemoortele NV.
Manufacturer's Address: Zuidkaai 33, B-8700 Izegem, Belgium.
Date of Introduction: 1986. June.
Wt/Vol., Packaging, Price: 500 ml in paper pack.
Nutrition: Claimed to have 2.1 gm/pint more protein than whole cow's milk.
New Product–Documentation: Food Report (Lehmann). 1986. June. This product is being introduced to the U.K. and aimed at the breakfast market.

Soyfoods (ESFA). 1987. April. p. 28. "Alpro, U.K., has introduced Cereal Mate soya milk for the breakfast market. The product has 2.1 g more protein per pint than whole milk and is also lower in saturated fat, higher in polyunsaturated fat and free of cholesterol, preservatives and coloring."

Talk with Philippe Vandemoortele, president of Alpro. 1990. April 17. This product was introduced to a test market about 4 years ago. It was discontinued after about 6 months.

4826. **Product Name:** Tofu, Soymilk, and Tofu Ice Cream.
Manufacturer's Name: Basics (The). Renamed Kootenay Soyfoods in May 1989. Renamed Kaslo Soyfoods in Feb. 1990. Renamed Silverking Soyafoods in Oct. 1990.
Manufacturer's Address: Box 933, Kaslo, BC, V0G 1M0, Canada. Phone: 604-353-7726.
Date of Introduction: 1986. June.
How Stored: Frozen.
New Product–Documentation: Talk with Greg Lundh, owner. 1988. Aug. 9. He started making tofu and soymilk in Sept. 1986, and introduced a tofu ice cream shortly thereafter. The latter was an instant hit. All of his tofu is made with nigari and delivered fresh to the homes of his 125 customers in his Volkswagen van. Most customers have standing orders. He features service and freshness. The business is very small but growing. Talk with Greg Lundh, owner. 1988. Aug. 24. The company started making tofu and soymilk in June 1986. They started making the ice cream in about August 1986. Greg delivers his own products door to door.

Talk with Greg Lundh, owner. 1989. April 28. He now makes 300 lb of tofu a week, one day a week, using a boiling water grind. Still delivers door to door. His company is still unregistered. His only competitor in the interior of British Columbia, Okanagon Soyfoods, went out of business 10 days ago. Now he wants expand from a large blender up to a grinder.

Talk with Greg Lundh. 1990. Oct. 20. His company has been renamed 3 times, as shown above.

4827. **Product Name:** Tofu (15 kinds, incl. Doufu-gan, Fried Tofu), and Soymilk.
Manufacturer's Name: Calco of Dallas.
Manufacturer's Address: 714 N. Justin Ave., Dallas, TX 75211. Phone: 214-331-6122.
Date of Introduction: 1986. June.
New Product–Documentation: List of Tofu and Sprout Manufacturers. 1989. Louis Wang, owner. Talk with Calco of Dallas. 1989. Nov. 13. They started business in 1983. Tofu types include fried tofu, deep-fried tofu balls, etc. They also make alfalfa sprouts, wonton skins, egg roll skins, noodles. Letter (fax) from then talk with Louis Wang. 1998. Sept. 28. His company is now named Dallas Calco; it changed from Calco of Dallas about 10 years ago. His first name may also be spelled Luis, which is the Spanish spelling. He started making soy sprouts in 1983, then tofu and soymilk on 19 Aug. 1986.

Talk with Louis Wang. 2001. March 15. On 1 Jan. 2001 he moved into a new facility at 2726 Barge Lane, Dallas, Texas 75212. His offices and factory are in the same place.

4828. Chatterjee, Julie. 1986. The Noble Soya story. *Technocrat* (*India*). June. p. 32-41. Cover story.
• ***Summary:*** A detailed story of the life of Dr. A.S. Aiyar, an ex-NRI technocrat and international food technologist, and his unique collaborative venture with the Houses of Godrej and Bhiwandiwalla (of Great Eastern Shipping). These three have embarked on a major business venture with three of the world's most respected corporations: Kibun Company of Japan, Alfa-Laval of Sweden, and Simon Foods Engineers, U.K. Estimated to produce 18,000,000 liters of soymilk and 2,000 tonnes of extruded soya food products annually, the plant is being set up at Bhopal.

Ayar, then 28, graduated in Food Technology from Bombay University in 1961. After getting his PhD he spent a year at the Central Food Technology Research Institute (CFTRI), India's top food research institute, run by the Council of Scientific and Industrial Research at Mysore. There he began to take an interest in vegetable proteins. Later, at the Univ. of Pittsburgh (Pennsylvania, USA) he got involved in research on nutrition and soyfoods for 4 years. In late 1965 he returned to India and worked on food irradiation at BARC, leaving in frustration in 1980. By this time soya was showing food promise in India. He joined the newly formed Protein Foods and Nutrition Development Association of India (PFNDAI) as executive director. Noble House was incorporated on 9 March 1984. An agreement was signed with Kibun on 12 Dec. 1985 to provide technical and process know-how. (Kibun began as a fish processor). Alfa-Laval will supply the soymilk plant and Simon Foods will supply the twin screw extruder. Noble Soya products will be mainly distributed by Godrej Soaps.

Three portrait photos show Dr. A.S. Aiyar. An interview with Dr. Aiyar (p. 32) is titled "Looking for the right technology." Another interview with Ghanshayam Sheth (p. 35-36) is titled "We can make a headstart." A portrait photo shows Sheth. A long sidebar (p. 38-39) is titled "Collaborating with the best: Noble Soya." Another long sidebar (p. 40) is titled "The forces join together: Noble Soya–Kibun." A photo shows Masahito Hoashi, President of Kibun. The last sidebar (p. 41) is titled "The processed food industry's potential." In India, this potential is constrained by the high cost and shortages of energy. Address: India.

4829. **Product Name:** Soymilk [Plain, or Sweetened].
Manufacturer's Name: China Express.
Manufacturer's Address: 1324 E. 8th St., Tempe, AZ 85281.
Date of Introduction: 1986. June.

New Product–Documentation: Talk with Richard Jennings. 1987. Dec. 28. Gave date of introduction. This company is run by a Chinese man Tony Lee. The company also makes bean sprouts and pasta, and has a produce line. Talk with Tony Lee. 1987. Dec. 28. Gave introduction date.

4830. **Product Name:** [Mamina Soya {Infant Formula/ Mother's Milk Substitute} (Plain)].
Foreign Name: Mamina Soja.
Manufacturer's Name: Galactina Ltd.
Manufacturer's Address: Belp, Switzerland.
Date of Introduction: 1986. June.
Wt/Vol., Packaging, Price: 300 gm aluminum bags in a paperboard box.
How Stored: Shelf stable.
New Product–Documentation: Soya Bluebook. 1986. p. 111; 1989. p. 131. Talk with Peter Speck. 1990. June 2. Soya Bluebook contains a misprint. Maurina Soja (Infant formula) is actually Mamina Soya. Talk with Conrad Seewer of Galactina. 1990. May 17. Mamina Soya (pronounced ma-MEE-nah ZO-yah) was Galactina's first infant formula after Bebe Nago. Since it is a better product, using new technology, it replaced Bebe Nago. It has a better taste and completely fulfills the baby's nutritional needs according to modern pediatric standards. It was launched 5-6 years ago. It is made from whole soybeans that are made into soymilk, which is then spray dried and formulated. It contains no isolates, and this is part of Galactina's philosophy and history. This allows better control of the product quality and the milk is less highly processed. The processing method has solved the problem of flatulence.

Talk with Peter Speck. 1990. May 23. The market for Galactina's new line of two baby products looks very promising. There is Mamina Soya and then 2-3 different types of gruels.

Letter (fax) from Conrad Seewer of Galactina. 1990. July 13. The three basic products in the line are mother's milk substitutes. Both these and the gruels for spoon feeding are in powder form, sealed in aluminum foil bags that are packed in paperboard boxes. The products contain no soy isolates; rather they are made with powdered soymilk made directly from soybeans. Flatulence is prevented by a special technical manufacturing process that is confidential and that eliminates trypsin inhibitor. The first Mamina Soya product was introduced in June 1986.

4831. **Product Name:** Genice Ice Delight Cone [Vanilla and Hazelnut with Carob Coating, Strawberry and Hazelnut with Carob Coating, Vanilla with Raspberry Ripple and Carob Coating].
Manufacturer's Name: Genice Foods Ltd.
Manufacturer's Address: Pinfold Lane, Llay Industrial Estate, Wrexham, Clwyd LL12 0PX, Wales, UK. Phone: 0978-853-787.
Date of Introduction: 1986. June.
Ingredients: Raspberry Ripple: Soya milk [spray dried soymilk], raw cane sugar, corn syrup, vegetable oil, vanilla bean extract, carob, raspberries, stabilisers (guar gum, locust bean gum), emulsifier (vegetable mono diglycerides), natural raspberry flavour, natural colours (annatto, beetroot red).
Wt/Vol., Packaging, Price: 100 ml cone.
How Stored: Frozen.
New Product–Documentation: Label and leaflet sent by Genice Foods Ltd. 1994. Feb. 18. The small round label reads "Genice Ice Delight Cone–Raspberry Ripple flavour. All natural non dairy vanilla with raspberry and carob." 2½ inch diameter. Black on pink. The 8½ by 11 inch color leaflet reads: "New from Genice. Ice Delight Cones: The non-dairy alternative to ice cream. Lactose free. All natural ingredients. Available in three delicious flavors." Three colorful cones, with gold foil as part of each design, are shown against a blue background.

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 23.

4832. **Product Name:** Tofu, Fried Tofu, Soymilk Curds, Soybean Sprouts, and Soymilk.
Manufacturer's Name: M.S.B. Food Enterprises, Inc.
Manufacturer's Address: 430 Casanova St., Bronx, NY 10474. Phone: (212) 617-6700.
Date of Introduction: 1986. June.
How Stored: Refrigerated.
New Product–Documentation: Order for tofu books from, then talk with Michael Lee, V.P. Gomé Tofu Inc. 1996. Nov. 14. His father, John Lee, a Korean-American, started M.S.B. Food Enterprises in 1986 in the Bronx to make different foods from soybeans using all natural processes. Their main products in 1986 were regular tofu, fried tofu, soymilk curds (*sun tubu*), soybean sprouts, mung bean sprouts, and a small amount of soymilk. In 1992 they introduced *doen jang* (pronounced TEN-jang, Korean Soybean Jang, like miso). MSB Food Enterprises is the parent company for a number of smaller companies, all of which make soyfoods. In 1995 they started a new division, Gomé Tofu Inc., to make tofu specially for the Caucasian American market. In December 1995 the company moved to a new address: 710 Longfellow Ave., Bronx, NY 10474. Phone: (718) 617-4105. The company's main market is still Korean-Americans in the tri-state area (New York, New Jersey, and Connecticut).

Form filled out and Label sent (faxed) by Mike Lee of M.S.B. Food Enterprises / Gômi Tofu. 1998. July 7. The address and phone number are unchanged from 1996. The company began making tofu in June 1986. One label is in Korean and the other in English. The text on the English label states: "Tofu–Original. Excellent meat substitute. More protein and calcium than meat or milk! New! Go natural... Its good for you! Gômi. Easily digestible. Cholesterol free. Low fat food. It blends in beautifully! Slice to fry or broil it. Dice

it raw for salad. Mash or whip it to make an inspiring dish! No preservatives. All natural. Keep refrigerated. Change water daily after opening." Note: Gômi means "garbage" in Japanese.

4833. **Product Name:** Tofait Creme Drink [Raspberry, Orange, Chocolate, or Piña Colada].
Manufacturer's Name: Tofoods, Inc.
Manufacturer's Address: 1827 Walden Office Square, Schaumburg, IL 60195.
Date of Introduction: 1986. June.
Ingredients: Incl. soymilk, fruit juice, calcium, vitamins.
Wt/Vol., Packaging, Price: 1 quart Pure-Pak carton. Retails for $1.49.
How Stored: Refrigerated.
Nutrition: Per 8 oz.: Orange: Calories 140, protein 3 gm, carbohydrate 30 gm, fat 1 gm, sodium 70 mg, calcium 100% of the U.S. RDA (vs. 30% of RDA for regular or 2% fat milk).
New Product–Documentation: Spot in Call-Chronicle (Allentown, Pennsylvania). July 13; Interview with Charles Chase. 1986. Aug. 1. See next page. Four leaflets (one for each flavor, glossy, full color, 1 p., 28 cm). 1986, undated. "100% daily calcium in one 8 oz glass." Front of carton reads "High in Calcium and Protein." Contain 10% raspberry or orange juice respectively. Lieb. 1987. Dairy Foods. March. p. 32. "Tofoods has been promoting its four-flavor Tofait Creme Drink line for the past 6 months. Tofoods' most innovative introduction to date is this line of vitamin- and calcium fortified drinks, which are slightly thicker than milk, although not as thick as a milkshake;" Call-Chronicle (Allentown, PA). 1986. July 13. "Tofu/Tofait Creme Drinks." Leaflet, full color. 8½ by 11 inches. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. "Tofait. Delicious Non-Dairy. 100% All Natural. 8 oz. Contains 100% of Daily Calcium Requirements."

4834. **Product Name:** Tofu Mozzarella (With Casein).
Manufacturer's Name: Tree Tavern Products.
Manufacturer's Address: 1133 Seagull Lane, Cherry Hill, NJ 08003.
Date of Introduction: 1986. June.
Ingredients: Tofu (51%), soybean oil, casein, sea salt, citric acid, soy lecithin, guar gum.
Wt/Vol., Packaging, Price: 5 lb loaves.
How Stored: Refrigerated.
Nutrition: Per ounce: Calories 80, Protein 8 gm, carbohydrates 1 gm, fat 4 gm, calcium 120 mg, sodium 170 mg.
New Product–Documentation: Medoff. 1986. Whole Life. June. p. 82-84. "Will the Real Soy Mozzarella Please Stand Up." "Several weeks after Soya Kaas came out, a third 'soy' cheese hit the market, distributed by Kononia Foods of Fresh Meadows, New York called *Tofu Mozzarella* (claiming to be 51% tofu). When *Tofu Mozzarella* first appeared in early May [1986] its labels said 'Non-dairy,' but their ingredient list read: tofu, soybean oil, casein, sea salt, citric acid, soy lecithin, guar gum." Kononia put Medoff in touch with an individual named Bob Savar in Cherry Hill, New Jersey, an independent broker who sells the Tofu Mozzarella to them as well as along the east coast. "We asked Savar who made the *Tofu Mozzarella,* and where he got it. He would only tell us that it was made by a company that was 'part of a large conglomerate in New York.' Savar would not tell us who or where this company was, only that they did not want any publicity."

4835. Welsh, C.J.R.; Hanglow, A.C.; Conn, P.; Coombs, R.R.A. 1986. Comparison of the arthritogenic properties of dietary cow's milk, egg albumin and soya milk in experimental animals. *International Archives of Allergy & Applied Immunology* 80(2):192-99. June. [16 ref]
• ***Summary:*** Cow's milk produced the highest rate of significant joint lesions of arthritis. The rabbits were 'tolerant' to dietary soya protein. Address: 1&3. Div. of Immunology, Dep. of Pathology, Univ. of Cambridge, UK.

4836. Westbrae Natural Foods. 1986. Westbrae Natural Malteds. "The Cadillac of Soydrinks" (Poster). P.O. Box 8711., Emeryville, CA 94662. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.
• ***Summary:*** Questions and answers about these rich and thick soymilk drinks. "What makes Malteds so thick? What makes Malted so sweet? Why do Malteds contain oil? Aren't Malteds high in Calories?" Address: Emeryville, California.

4837. *Times of India* (*The*) (*Bombay*). 1986. Classified ad: Consultant wanted for food industry (Soya-milk, fruit juice drinks and snacks). July 3. p. 1.
• ***Summary:*** "A large industrial group, interested in diversifying into Soya Milk, Fruit Juice Drinks and Snacks, wants to engage a Consultant for Technical know-how, Project Reports and Project Implementation.

"Those who have undertaken similar assignments earlier may please apply with details to Box M 533–S, Times of India, Bombay 400 001."

4838. Diamond Group. 1986. Display ad: Soyabean milk beverages paneer yoghurt plant. *Times of India* (*The*) (*Bombay*). July 16. p. 10.
• ***Summary:*** "Offers are invited from manufacturers and suppliers of machinery / technical consultants, by a public limited company of repute for setting up a 30 M.T. [metric tonne] per day (10,000 M.T. per year) capacity plant in Rajasthan for manufacture of soyabean milk, beverages, paneer, yogurt etc. Please write to:

"Technical director, Diamond Group." Address: B-27-A, Alaknanda, Pocket B & C, New Delhi-110 019.

4839. *Commercial-News* (*Danville, Illinois*). 1986. Value-added goods key to marketplace. July 17.
• ***Summary:*** "Illinois, which has a sizeable proportion of the world's richest agricultural land, enjoys a tremendous natural advantage in the production of agricultural products. This, however, has not prevented severe economic problems resulting from over-production and shrinking world market shares.

"But, according to John Campbell, dean of the College of Agriculture at the University of Illinois, an important key to returning the state to its natural position as leader in the world marketplace is to produce new value-added products that have a price and quality edge over competitors.

"'While the benefits from agricultural exports have been important,' Campbell said, 'a much greater potential exists for exporting value-added products, rather than raw, bulk materials.

"'In a highly competitive world, a nation cannot afford to fall behind on research into value-added technology. Our competitors understand this. The U.S.–and especially the state of Illinois–must be determined to meet this challenge.'

"Campbell said even a 1 percent increase in the use of cooking oil, shortening or an equivalent soybean-based product would mean an increase of more than $21 million in gross sales for Illinois.

"That translates into approximately $4 million in wages from new jobs and $500,000 in added state tax revenues." Campbell also mentions soy milk, soy yogurt, and soy ice cream developed at the University of Illinois.

"'Less developed countries, especially those suffering from deficiencies of edible oil and protein, are potentially a huge market for many low-cost soyfoods and soy-fortified cereals,' Campbell said." No industrial uses of farm crops are mentioned. A photo shows John Campbell.

4840. *Toyo Shinpo* (*Soyfoods News*). 1986. Tônyû ni karushiumu kyôka [Fortification of soymilk with calcium]. July 21. p. 15. [Jap; eng+]
• ***Summary:*** Discussion of Japanese Patent No. 154,778 (applied 1983) by Shuzo Shimoyama and Kazumi Akaike of Kawasaki Kasei Kogyo K.K.

4841. Hovelson, Jack. 1986. New soybean processing plant to be built in Iowa. *Des Moines Register* (*Iowa*). July 24.
• ***Summary:*** The plant, to be located in Iowa Falls, is a joint venture of Advanced Foods USA (a newly formed company based in Louisville, Kentucky; partners Lowery Stallings and Ralph Pettit Sr.) and Advanced Foods of Japan Inc. (Alan Konno of Tokyo). The product, in flour and liquid protein forms, is a tasteless substance, made by a new process, to be used as a food extender or substitute in Japan or other Asian countries. The plant is expected to employ 23-30 persons and process 300,000 bushels/year of soybeans.

4842. Hulm, Trevor. 1986. County gets big soy milk plant [American Soy Products, a $10 million joint venture of Eden Foods, Kawasho International (USA), Marusan Co. Ltd., Muso Co. Ltd., and Seikensha Co. Ltd.]. *Ann Arbor News* (*Michigan*). July 30. p. A1, A4.
• ***Summary:*** "A Clinton [Michigan]-based company has clinched a $10 million deal with four Japanese joint venturers to produce soy milk in Michigan for the North American market. The company, Eden Foods Inc., and its partners have almost completed construction of a manufacturing plant at Saline. Production is expected to start in September, with an initial staff of 35."

Eden Foods' president Michael Potter estimates that Eden presently has 38-40% of the $20 million a year soymilk retail consumer market in the USA.

"Potter, 36, will be chairman and chief executive officer of the new company, American Soy Products Inc. The four Japanese companies involved in the joint venture are Kawasho International (USA), Marusan Co. LTD., Muso Co. Ltd. and Seikensha Co. Ltd.

"Under terms of the agreement, Eden Foods will handle product marketing, sales and distribution; Kawasho will oversee administration and financing; Marusan will be responsible for product production; and Muso will coordinate international sales. Seikensha has patents on key pieces of the manufacturing equipment and is supplying the processing equipment for the plant.

"The joint venturers have already spent $2.3 million on the factory and land at Saline. Another $4.3 million has been invested in the latest equipment available in the industry, with a $700,000 outlay for start-up costs. The company has committed $1.8 million in marketing funds and $700,000 in working capital."

"The new plant is expected to consume 85,000 bushels of soybeans and 8,000 bushels of barley annually, almost all of which will be obtained in Michigan."

Note 1. This is the earliest document seen (July 2013) concerning American Soy Products or this new American soymilk plant. A photo shows the soymilk equipment.

4843. American Soybean Association. 1986. Soya Bluebook '86. St. Louis, Missouri: American Soybean Assoc. 278 p. July. Index (bold face type indicates advertiser). 22 cm.
• ***Summary:*** Contents: Index of advertisers (p. 4). Soybeans: Your profit opportunity, by Dr. Kenneth L. Bader, CEO, ASA (p. 5). Organizations (by country, within each country alphabetically): For each gives the name, address, contact person, year founded, number of members, objectives and activities, publications. Countries are: USA, Australia, Austria, Bangladesh, Belgium, Brazil, Canada, England, Germany (Federal Republic of), Finland, France, Hungary, India, Indonesia, Italy, Ivory Coast, Japan, Malaysia, Mexico, Netherlands, Norway, Philippines, Portugal,

Senegal, Spain, Sweden, Taiwan, Turkey, Yugoslavia, Zaire, Zimbabwe. U.S. agricultural education, research & extension (by state; mainly state agricultural / land-grant colleges), ASA international offices and world regions (colored world map and photo of each country director), government trading agencies.

Soy directory: Oil extraction plants / refineries (alphabetically by state in USA, then by country), soyfoods / edible soy products manufacturers (lecithin, soy flour, soy grits, soy protein concentrates & isolates, textured soy protein, binders, extenders, simulated meat products, soy oil products {margarine, shortening, cooking / salad oil, salad dressings}, soyfoods–beverages [soymilk], frozen desserts, soy sauce, tempeh, tofu, whole soybean snacks {soynuts}, other soy-based foods), within each product by country, producers of soy products for industrial manufacturers (by products, etc.): Industrial lecithin, industrial soy flour / soy protein, industrial soy oil, soy sterols and tocopherols, soybean fatty acids.

Soybean manufacturing support industries: Manufacturing equipment & supplies, soybean processing equipment & supplies, manufacturing services. Marketing and auxiliary services: Brokers, financial services, forwarding agents, marketing consultants, trading companies, transportation, warehousing–export / import.

Soy statistics (tables & graphs): Soya conversions [weights & measures], metric conversions, temperature conversions. U.S. soybean planting and harvesting dates (by state). U.S. soybean acreage, yield and production, 1925–1985 (by year). U.S. soybean planted acreage by state (1970–1985). U.S. soybean harvested acreage by state (1970–1985). U.S. soybean yield by state (1970–1985). U.S. soybean production by state (1970–1985). U.S. soybean production major crops (1920–1985): One graph each for soybeans, corn, wheat, and cotton. U.S. harvested acreage of major crops (1920–1985): One graph each for the big 4. U.S. yield per acre of major crops (1920–1985): One graph each for the big 4. Argentine soybean area, yield and production by province (1975-1986). Brazilian soybean area, yield and production by province (1975-1986). Canadian soybean production: Acreage, yield, production, farm price and value (1950-51–1984-85). Canadian soybean production and utilization (1950-1984, year beginning Aug. 1): Production, imports, supplies, exports of beans, processed for oil and meal, soy oil produced, soybean oilcake produced. World soybean production: Area and production in specified countries and the world total (1980/81–1985/86). Soybean production by major countries (one graph, 1925-1985): U.S., Brazil, PRC [China], Argentina. Share of world soybean production [percentage] by major countries (one graph, 1925-1985): Big 4. Soybean acreage by major countries (one graph, 1925-1985): Big 4. Share of world soybean acreage [percentage] by major countries (one graph, 1925-1985): Big 4. U.S. soybeans: Supply, disposition, acreage, yield and price (1970–1986). Soybean usage in the U.S. for crush and exports (one graph, 1925-1985, million bushels). U.S. soybean exports: Percent of total usage (one graph, 1925-1985). Argentine soybeans and products (oil and meal): Supply and disposition (1975/76–1986/87). Brazilian soybeans and products (oil and meal): Supply and disposition (1975/76–1986/87). Prices of U.S. soybeans, No. 1 yellow: Average price per bushel, Illinois country shipping points (by year and month, 1950–1984, dollars). Prices of U.S. soybeans received by farmers: Average price per bushel (by year and month, 1950–1984, dollars). U.S. soybean price support operations (1945-1985, incl. CCC). U.S. soybean crop value: U.S. and major producing states (1925-1985): Illinois, Iowa, Indiana, Ohio, Missouri, Minnesota, Arkansas. Fold-out color map of U.S. soybean acreage by county. U.S. farm marketings of soybeans: Percent of open market farm sales by month (1975/76–1984/85). Map of U.S. soybean processing plants. Value of U.S. soybean products per bushel and crush margin (1950-1984): Soy oil, soybean meal, soybean price (received by farmers, No. 1 yellow Illinois), margin (ditto). U.S. soybean meal: Prices paid by farmers–44% protein, dollars per 100 lbs, by year and month (1950-1984). U.S. soybean meal: Average wholesale price–44% protein, dollars per ton, bulk Decatur, Illinois, by year and month (1950–1984). U.S. soybean meal: Beginning stocks, production, exports and domestic disappearance, by year and month, thousand short tons (1978/79–1984/85). U.S. soybean cake and meals: Supply, disposition and price (1977-1985): Soybean, cottonseed, linseed, peanut. Major world protein meals: Supply and utilization (1981/82–1985/86; Production, exports, imports, consumption, ending stocks): Soybean, cottonseed, rapeseed, sunflowerseed, fish, peanut, copra, linseed, palm kernel. World major oilseeds: Supply and utilization (1981/82–1985/86). World major vegetable and marine oils: Supply and utilization (1981/82–1985/86). Prices of U.S. soybean oil: Soy oil, domestic crude, average cents per pound in tank cars at Midwestern mills, by year and month (1950/51–1984/85). U.S. soybean utilization, by year (1960-1984): Food–Shortening, margarine, cooking and salad oils, other edible, total. Nonfood–Paint and varnish, resins and plastics, fatty acids, other inedible (incl. soap), total. Total domestic utilization. U.S. soybean oil value as percent of total soybean value (1930–1985). Note: Peaked at about 55% in 1930, fell to about 32% in 1980-81. U.S. soybean oil: Supply, disposition and price (1960-1985). U.S. edible fats and oils: Supply and disappearance (1978-1985): Coconut, corn, cottonseed, lard, palm, peanut, soybean, sunflower, tallow (edible). U.S. exports of soybeans, by year and month (1953–1984). U.S. soybean exports by port and country of destination (Sept. 1984–Aug. 1985): Ports are–St. Lawrence Seaway, Lakes, Atlantic, Gulf (by far the largest), Pacific, Interior. U.S. exports: Soybeans–Volume of exports by country of destination (in metric tons) and total

value (1981–1985). U.S. exports: Soybean oil–Volume of exports by country of destination (in metric tons) and total value (1981–1985). U.S. exports: Soybean oilseed cake and meal–Volume of exports by country of destination (in metric tons) and total value (1981–1985). Map of U.S. soybean exports by port areas: Sept. 1984–Aug. 1985 (1,000 bushels). U.S. exports of soybean, cottonseed and sunflowerseed oils: U.S. commercial and P.L. 480 exports–Volume of exports by region and country of destination (in metric tons) and total value (1979/80–1984/85; year beginning in October). U.S. exports: Soybean oil–P.L. 480, Title I and III, volume (in metric tons) and value (in $1,000) by country of destination (FY 1981–1985). U.S. exports of soybean and cottonseed oils: U.S. commercial and P.L. 480 exports (1950–1984, million lbs; incl. P.L. 480 as a percentage of the whole). Brazilian exports of soybeans and products to major countries (1,000 metric tons; 1976-1984). Graph of soybean & product exports by major countries (U.S., Brazil, Argentina) (soybean equivalent; 1970-1985). Graph of world share of soybean & product exports by major countries (U.S., Brazil, Argentina) (1970-1985). Note: U.S. share has fallen from 95% in 1970 to about 50% in 1984.

Glossary: General terms, soy protein terms. Standards & specifications: NSPA, Association of American Feed Control Officials (AAFCO), USDA (definitions and grades). Index. Address: P.O. Box 27300, St. Louis, Missouri 63141.

4844. Bean Supreme Soyfoods. 1986. Price list. P.O. Box 78 084, 1 Wallingford St., Grey Lynn, Auckland, New Zealand.
• ***Summary:*** The company makes Tofu, Tempeh, Cottage Spread, Soymilk, Soysage, and Non-Dairy Frozen Dessert. Address: Grey Lynn, Auckland, New Zealand.

4845. **Product Name:** Bean Supreme Soymilk.
Manufacturer's Name: Bean Supreme Soyfoods.
Manufacturer's Address: P.O. Box 78 084, 1 Wallingford St., Grey Lynn, Auckland, New Zealand.
Date of Introduction: 1986. July.
New Product–Documentation: Manufacturer's price list. 1986. July. Sold in 0.5 and 2 liter sizes.

4846. **Product Name:** Aussie Soy [Natural, Vanilla, Carob, and Barley Malt {with Chocolate}].
Manufacturer's Name: Ceres Natural Foods Pty. Ltd. (Importer & Distributor). Made in Australia.
Manufacturer's Address: East Bentleigh, Victoria, Australia.
Date of Introduction: 1986. July.
Wt/Vol., Packaging, Price: 1 liter Tetra Brik carton.
How Stored: Shelf stable.
New Product–Documentation: Letter (fax) from Don Lazzaro of Ceres Natural Foods. 1995. June 15. In July 1986 they introduced their first Australian-made 1 liter soymilk product named Aussie Soy in four flavours in a Tetra Pak carton.

4847. Cox, Peter. 1986. Why you don't need meat. Wellingborough, England and New York: Thorson's Publishing Group. 237 p. July. Illust. 20 cm. Revised ed. 1992. [119* ref]
• ***Summary:*** A convincing, health oriented popularization of the case against meat. Well researched and well written, with many references.

Contents: Acknowledgements. Introduction. 1. Connections. 2. Meat-eaters vs. wheat-eaters. 3. Meat, you and cancer. 4. Breaking free! 5. Eating your heart out. 6. There's junk in your joint. 7. How not to wreck a marriage. 8. The deadly duo: Diabetes and hypertension. 9. How to get high on fibre [How to get adequate dietary fibre]. 10. A view into hell [the slaughterhouse]. 11. What every body needs [a nutritious, healthy, balanced diet]. 12. The baby that eats five people [Eating meat and other animal products causes world hunger, malnutrition, and starvation]. 13. Changes. Appendixes: 1. Using the nutrition checker. II. Resource directory.

Soya milk, soya beans, tofu, tempeh, tamari and miso are mentioned in the nutritional tables and resource directory (p. 208-09, 214, 226, 229).

Cox, who was the first chief executive of the Vegetarian Society of the United Kingdom, is very familiar with both the scientific and popular literature on the subject.

Thorsons states in an ad: "There is mounting scientific proof that the meat we eat today actually *causes* heart disease, cancer, obesity and other degenerative diseases. The author exposes the black market in animal growth hormones, looks at the unregulated use of antibiotics in animal feed, and shows why a meat-oriented diet can actually be nutritionally deficient." A portrait photo on the rear cover shows Peter Cox.

Note: According to Vegetarian Times (Sept. 1987, p. 35), this book "has become a best seller in the U.K. and was selected by the Booksellers' Association of Great Britain as 'best paperback non-fiction campaign.'" See this issue of VT for more on Cox, Chrissie Hynde, and Reprieve! Address: First Chief Executive of the Vegetarian Society of the UK, England.

4848. *Food Review* (*South Africa*). 1986. Soya 'milk' from Mechanical Cow. 13(3):29. June/July.
• ***Summary:*** The Mechanical Cow, a compact soymilk plant, was developed in Brazil some years ago when it won the Brazilian invention of the year award for its mechanical ability and contribution to society. It is now manufactured by Vanguarda Mecanica, which has already made over 100,000 units. Food Processing Engineering Services at Verulam in Natal is the agent for the machine in South Africa. It is seen as having potential for use in South Africa, since soymilk amino acids complement those of corn. The machine consists

of a water vessel, centrifugal crusher, ultra-pasteurization system, and control panel, complemented by a cooler, packaging unit, and dryer. Features of the equipment are simplicity, ease of use and maintenance, hygiene (all food contact surfaces are stainless steel), speed (200 liters/hour) and packaging versatility (soymilk packed in plastic sachets of 100 ml to 1 liter sizes).

4849. *J. of the American Oil Chemists' Society.* 1986. Soymilk focus of protein luncheon. 63(7):832, 834. July.
• ***Summary:*** More than 80 persons turned out at noon Friday, May 16, 1986, to attend the Protein and Co-Products Section luncheon and business meeting. The featured speaker was Darshan S. Bhatia, director of corporate research and development for The Coca-Cola Co., Atlanta, Georgia. He spoke on "Soy Beverages–Some Unresolved Problems". The total volume of soy beverage is perhaps on the order of 1% of the world's soft drink volume. According to Bhatia, marketing soy beverages as an alternative to dairy milk is a mistake. We should promote the product in its own right with its own flavor, and the promotion material should be consistent with the product's intrinsic attributes. Bhatia recalled that in 1967-68 when he first drew up a proposal that Coca-Cola produce soy beverages, "I predicted a time when soft drinks would be fortified with more and more nutrients." Address: Coca-Cola Co.

4850. *Toyo Shinpo* (*Soyfoods News*). 1986. Hatsu no Beikoku genchi seisan: Marusan-ai no tônyû. Gôben-gaisha Michigan seiritsu [The first American production of Marusan-Ai's soymilk. Joint stock company established in Michigan]. Aug. 1. p. 1. [Jap; eng+]
• ***Summary:*** Japan's second largest soymilk maker, after Kibun, is Marusan-ai K.K. (Head office: Araki 1 banchi, Nikimachi Aza, Okazaki-shi, Aichi-ken, Japan. President: Koji Sato). They have recently established a joint stock company to produce soymilk in Saline, Michigan. Production is scheduled to start at the end of August, 1986.

The new company's name is American Soy Products. The start-up capital is $200,000. There are 4 Japanese companies and one U.S. company involved. Their respective percentage ownerships are: Marusan-Ai (25%, soymilk and miso maker from Okazaki), Kawatetsu Shoji (25%, the New York based company that was previously in charge of exporting soymilk to Eden Foods from Japan), Eden Foods Inc. (25%, natural foods distributor and importer from Clinton, Michigan), Muso Shokuhin (15%, macrobiotic and natural foods exporter from Japan), and Seikensha (10%, soymilk equipment maker from Tokyo).

The chairman of the board is Mr. Michael Potter of Eden Foods Co. and the president is Mr. Hiroyasu Iwatsuki. As before, Eden Foods will continue to distribute the soymilk. The head plant is located in Saline, Michigan (50 km west from Detroit) on a site of 15,000 square meters. The main facilities are 1 Soymilk Line and 2 Tetra packaging lines. The initial run is scheduled to produce 100,000 packages of 250 ml equivalent. They are actually going to make both 250 ml and 1-liter packages. The company's first year sales goal is $5,000,000. Address: Kyoto, Japan.

4851. *Times of India* (*The*) (*Bombay*). 1986. Fresh decline in equities: Wednesday's traded scrips. Stock quote. Aug. 14. p. 13.
• ***Summary:*** In Group 'B," Noble Soya is selling at 22, 23.

Note: This is the first stock quote seen for Noble Soya.

By 9 Jan. 1987 the stock price had risen to 30, 31. But by 5 Jan. 1988 it had fallen to 15. By 6 Jan. 1989 it had risen to 18. It was still at 18 on 3 Jan. 1990. But on 12 Sept. 1990 it had risen to 25, 27, 23, 25. Address: Registered office: E-7/638 Shahpura, Near Campion School, Arera Colony, Bhopal, Madhya Pradesh.

4852. **Product Name:** [Soymilk, and Soja Drink (Regular, With Cane Sugar, or Chocolate)].
Foreign Name: Sojamilch, und Soja-Drink (mit Rohrzucker, Schoko).
Manufacturer's Name: Bio Quelle.
Manufacturer's Address: Austria.
Date of Introduction: 1986. August.
New Product–Documentation: Food Report (Lehmann). 1986. Aug.

4853. **Product Name:** [Soymilk Dessert (Vanilla, Chocolate)].
Foreign Name: Soja-Dessert.
Manufacturer's Name: Bio Quelle.
Manufacturer's Address: Austria.
Date of Introduction: 1986. August.
How Stored: Refrigerated.
New Product–Documentation: Food Report (Lehmann). 1986. Aug.

4854. deMan, J.M. 1986. Processing of protein-rich foods. In: V.H. Potty, et al. eds. 1986. Traditional Foods: Some Products and Technologies. 292 p. See p. 246-52. Aug. Presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies." Held June 1983 at CFTRI, Mysore, India. [17 ref]
• ***Summary:*** Under soybeans (the major crop discussed in this chapter), the author mentions tofu, soy milk, fried tofu and tofu puffs. Includes a proximate analysis of various Canadian soybean cultivars. Address: Dep. of Food Science, Univ. of Guelph, Guelph, ONT, N1G 2W1, Canada.

4855. Eden Foods, Inc. 1986. Sweet summer soy milk treats: While Life recipe corner. *Whole Life.* Aug. p. 71.
• ***Summary:*** Contains 5 soy milk recipes provided by Eden

Foods: Coconut creme pie. Banana bread. Mocha mousse (set with agar flakes; serve chilled). Carob creme pie. Edensoy fruit shake. Address: Clinton, Michigan.

4856. Fomon, S.J.; Ziegler, E.E.; Nelson, S.E.; Edwards, B.B. 1986. Requirement for sulfur-containing amino acids in infancy. *J. of Nutrition* 116(8):1405-22. Aug. [28 ref]
• ***Summary:*** For infant formulas containing 2.8 and 3.0 g/100 kcal of protein for isolated soy protein (levels found in commercial infant formulas), there was no benefit of methionine supplementation. At lower protein levels, nitrogen balance studies showed that methionine supplementation was of some benefit. Address: 1. Dep. of Pediatrics, College of Medicine, Univ. of Iowa, Iowa City, IA 52242; 2. Univ. of Iowa.

4857. *Iowa Soy News.* 1986. Let's hear it for soy product promotion. 5(9):3. Aug.
• ***Summary:*** Discusses Iowa soyfoods companies: Alex Green of American Pride Tofu Co. (Fairfield), makes 15,000 to 20,000 lb of tofu a month. Don Alger of Iowa Nuts Inc. (Spencer) says the company was founded in about June 1986. They grow the soybeans then buy them back in bulk as soynuts to package them in a 5 oz can and 1.5 oz foil packs, and distribute them. Plans are to market 400,000 lb the first year. The Iowa Chip is an extruded mixture of 90% corn and 10% soybeans developed at Iowa State Univ. using an Insta-Pro extruder. Grain Processing Corp. of Muscatine makes a soy ice cream. Miller Farms Food Co. of Cedar Falls has a portable soymilk plant built on two 45-foot trailers. It can produce up to 2,000 gallons of soymilk a day. INARI Ltd. in Michigan has made Super Soynuts since 1976. A new product is soynut butter with less calories per ounce (only 157) than peanut butter. Address: Iowa.

4858. **Product Name:** Natural Prepared Entrees: Tofu Burger.
Manufacturer's Name: Natural, Inc.
Manufacturer's Address: 6650 Santa Barbara Ct., Elkridge, MD 21227. Phone: 301-796-3211 (Balt.); 301-621-5388 (DC).
Date of Introduction: 1986. August.
Ingredients: Nigari tofu, carrots, cabbage, onions, celery, okara, soymilk, sesame seeds, sunflower seeds, soybean oil, sea salt, spices.
Wt/Vol., Packaging, Price: 7 oz vacuum pack.
How Stored: Refrigerated.
New Product–Documentation: Label. 1986, undated. "Completely vegetarian. All natural. No preservatives." Talk with Larry C. Betzler of American Soyfood Industries. 1988. April 1.

4859. Potty, V.H.; Shankar, J.V.; Ranganath, K.A.; et al. eds. 1986. Traditional foods: Some products and technologies. Mysore, India: Central Food Technological Research Inst. (CFTRI). 292 p. Aug. Papers presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies" held June 1983 at CFTRI, Mysore. 25 cm.
• ***Summary:*** This publication contains 27 papers presented by scientists from countries of Asia, Africa, Europe, and the Americas. Chapters related to soy are cited separately. The traditional foods of the following countries are discussed specifically: Ethiopia, Nigeria*, Sudan, Senegal, Pakistan*, India, Nepal*, Burma*, Thailand*, Malaysia*, Indonesia*, Philippines, Korea*, China*, Japan*, and Mexico*. Countries with foods related to soy are followed by an asterisk (*). Address: Central Food Technological Research Inst. (CFTRI), Mysore–570 013, India.

4860. Proceedings of the 4th International Lupin Conference: Organised by the International Lupin Association in collaboration with the Western Australian Department of Agriculture, August 15-22, 1986, Geraldton, Western Australia. 1986. South Perth, Australia: Western Australian Department of Agriculture. x + 350 p. Held at Geraldton, Western Australia.
• ***Summary:*** Many papers discuss food uses of lupins. For example: Fluid milk analogue prepared with sweet lupin (p. 296). Fermentation of a yoghurt simulate prepared with lupin milk (p. 296).

4861. Saio, Kyoko. 1986. Interactions among traditional and emerging processing technologies observed in Japanese food industries. In: V.H. Potty, et al. eds. 1986. Traditional Foods: Some Products and Technologies. 292 p. See p. 209-15. Aug. Presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies." Held June 1983 at CFTRI, Mysore, India.
• ***Summary:*** Contents: Soybean food technologies: Traditional but local products include Rokujo-dofu (made in a small mountainous region of Yamagata prefecture), Hoshi Abura-age or Kanso Abura-age (made in Matsuyama city, Ehime prefecture), Yuba (made fresh mostly in Kyoto), and Shimi-dofu (made in cold, mountainous regions of northern Japan). Emerging soybean food technologies related to traditional foods: Soymilk (tonyu), Daizu-no-Hana (developed by Asahimatsu Shokuhin; marketed with help from Takeda Yakuhin Kogyo; a flowchart is given). Traditional foods prepared from vegetable products: e.g. Tofu derivatives. Address: National Food Research Inst., 2-1-2 Kannondai Yatabe, Tsukuba, Ibaraki 305, Japan.

4862. Smith, Paul. 1986. General comments on F.G. Roberts, his philosophy and company, and the history of Soy Products of Australia Pty. Ltd. Bayswater, Victoria, Australia. 5 p. Unpublished manuscript. Handwritten.

• ***Summary:*** F.G. Roberts' philosophy of health: "F.G. Roberts was opposed to smoking and alcohol consumption. He believed in and prescribed mainly eating fresh fruit and vegetables, followed next by whole grains, with all concentrated foods like meat, nuts, eggs, cheese and dairy foods being eaten sparingly. Roberts was also strongly opposed to all highly refined and processed foods, particularly white flour and white sugar. He discouraged the use of tea and coffee due to their caffeine content and acid forming tendencies. He recommended that salt be used sparingly and that it should be cut out entirely where the kidneys may be overloaded as in the case of pregnant women.

"Roberts believed that a well-planned and balanced diet should provide the body with all necessary minerals, vitamins and nutritional elements without the need to resort to mineral and vitamin supplements. However such supplements may be necessary for people who live in flats in inner city areas and have no access to *fresh* fruit and vegetables. He also believed that by careful attention to diet and exercise the body would become self-cleansing and self-healing, and that many common health problems and diseases could be avoided. The latter usually stemmed from nervous disorders, emotional problems, poor blood circulation, poor food combinations, inadequate diet, faulty elimination of bodily waste products, or complex combinations of these factors.

"Roberts believed that simple prevention was better than a cure after your bad habits had caught up with you. He was opposed to the use of drugs since the side effects were often worse than the initial problem. In most cases he was opposed to surgery, regarding it as a last resort. He did not believe in any procedures which interfered with any of the body's immunity systems or normal functions. He believed in assisting the body to sort out its own problems and heal itself.

"All the products formulated and developed in the 1930s by F.G. Roberts were designed for their basic healthy and nutritional qualities and to address some of the deficiencies in conventional diets and foods. All were made form whole seeds, grains, etc. Most of the community suffers from constipation, acidity, mineral deficiency, or kidneys and livers overloaded with toxic waste products.

Roberts advocated the use of molasses for its high mineral content, its alkaline reaction, and its mildly laxative qualities. Alfalfa Tea was developed as a tea and coffee substitute, for its high natural mineral content and its gentle alkalising qualities. Malted and Vita Bran were designed to introduce additional dietary fiber or roughage into the diet in a pleasant way. Cleansing Herbs is a natural herbal laxative product with no addictive or side effects problems; it is particularly useful for the older person with sluggish bowel movements. Soy Compound was developed as a milk substitute and is particularly useful in cases where dairy milk cannot be tolerated. Vita Elm, with the healing properties of slippery elm, is a bland, nutritious cereal for the very young and the elderly.

F.G. Roberts believed in three good, satisfying meals a day. He disapproved of snacking, and thought that most people eat too much too often, overloading their digestive system, liver, and kidneys.

F.G. Roberts believed that the first step in healing any human complaint was to increase intake of fluids and to get the bowels moving regularly once or twice a day to eliminate the buildup of waste products. He also advocated exercise programs–the forerunner of the current aerobic exercise programs–to stimulate muscles, organs, and blood circulation. He would recommend a cleansing diet, followed by a gradual return to a balanced diet in which the quality, quantity and mixtures of foods would be carefully considered depending on the age, physical type and occupation of each person.

F.G. Roberts was an expert iradiagnostician. A favorite trick was calling unknown people from lecture audiences and tell them where and when bones had been broken, what operations they had had, what drugs and medication they were taking, and many other things not apparently obvious. His knowledge of and ability to read people healthwise and personality wise was almost uncanny. He was once arrested and jailed for fortune telling based his knowledge of iradiagnosis. Address: Director/General Manager, Soy Products of Australia Pty. Ltd., 69 Power Road, Bayswater, VIC 3153, Australia. Phone: (03) 729-1738 or 729-3611.

4863. **Product Name:** Original Pizsoy (Whole-Wheat Non-Dairy Pizza Made with Tofu Mozzarella [Which Contains Casein]).
Manufacturer's Name: Tree Tavern Products.
Manufacturer's Address: P.O. Box 1314, Cherry Hill, NJ 08034. Phone: 609-667-1763.
Date of Introduction: 1986. August.
New Product–Documentation: Ad in Whole Foods. 1986. Aug. p. 59. Oct. p. 80. Also in Natural Foods Merchandiser. 1986. Oct. p. 80 and Dec. p. 19. "The naturally delicious alternative to pizza." "Made with Tofu Mozzarella." A photo shows the product label.

Leaflet (color, 2-sided, 8½ by 11 inches). 1987. "The Naturally Delicious Alternative to Cheese Pizza–Without the lactose, cholesterol, butterfat, sugar and heavy doses of sodium and calories." The front shows a large color photo of the package. The back describes how the product is made, and gives ingredients and nutritional analysis. But nowhere is the consumer told that casein, a key ingredient in Tofu Mozzarella, is derived from cow's milk.

Talk with a reporter. 1990 Nov. Robert Savar says he developed the first soy cheese in America. First he developed a regular whole-wheat pizza with regular cheese. Then he wanted to developed Pizsoy with soy cheese. This led to his

work on soy cheese.

4864. **Product Name:** Vitasoy Natural Soy Drink [Creamy Original, Rich Chocolate (renamed Rich Cocoa by Jan. 1992), Carob Supreme, or Vanilla Delite].
Manufacturer's Name: Vitasoy (USA) Inc. (Importer). Made in Hong Kong.
Manufacturer's Address: 435A Brannan St., San Francisco, CA 94107.
Date of Introduction: 1986. August.
Wt/Vol., Packaging, Price: 250 ml (8.45 fluid oz) Tetra Brik Aseptic carton.
How Stored: Shelf stable.
New Product–Documentation: Ad in East West. 1987. March. Inside rear cover, full-page color. "Vitasoy brings you a new exciting flavor." Existing flavors are Creamy Original, Rich Chocolate, and Carob Supreme. Offers free Vitasoy Recipes brochure. Send coupon to Vitasoy Recipes, Box 77321, San Francisco, California 94107. Same ad in Vegetarian Times. 1987. March. Inside from cover. Introducing Vanilla Delite. These products, launched in July-August 1986, are reformulated and repackaged versions of those introduced in March 1984. They contain more solids and nutrients, and are sweetened with barley malt instead of maple syrup. In March 1987 the average retail price per 8.45 oz pack was $0.59 to $0.69.

Talk with Grace at Vitasoy. 1988. Sept. 7. The first small vanilla carton was launched in December 1986. The liter size original and vanilla were launched in July 1987.

Ad in Bestways (½ page color). 1989. Sept. "New to our organic family: Carob Supreme Vitasoy in liter size."

Label (250 ml aseptic carton) for Rich Cocoa sent by Anthony Marrese. 1994. May. He purchased this in Ireland in early 1993 for 49 pence.

4865. Watanabe, Tokuji. 1986. Traditional foods: Their values, problems and research and development. In: V.H. Potty, et al. eds. 1986. Traditional Foods: Some Products and Technologies. 292 p. See p. 201-08. Aug. Presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies." Held June 1983 at CFTRI, Mysore, India. [7 ref]
• ***Summary:*** Contents: Introduction (ways of classifying traditional foods). Structural characteristics of traditional food industries in Japan. Traditional food processing technologies. Problems and reevaluation of traditional foods. New food processing technologies applied to traditional

foods. Technologies applicable to traditional foods. Assessment in modernization of traditional food production. Some activities related to traditional foods. Conclusion.

Traditional foods can be classified as staple or non-staple, fresh or processed (processing technologies include fermentation [e.g. miso, soy sauce, natto], salting, acidifying, drying after freezing [kori-tofu], sun-drying, fractionation [tofu], fabrication [ganmodoki], simulation of animal foods [soy milk, ganmodoki, su-ho-tai made from yuba in China]), animal or vegetable origin, and region or national production.

In Japan, rice consumption is decreasing year after year. It is thus not surprising that consumption of traditional foods closely associated with rice production are also decreasing. The reevaluation of traditional foods and their advantages and disadvantages are discussed. New food processing and packaging technologies are being applied to traditional foods, including tofu, miso, natto, and koji. Recently a method has been found to extend the shelf life of natto beyond the traditional 1-2 day period. Miso has been freeze-dried.

"Another application of a new process for the traditional foods is the emulsion curd which is a semi-solid mixture with definite proportion of soybean protein, oil and water. It keeps its form without flow. Even the dried or frozen product recovers its original texture by hydration or thawing. Therefore, it is used as a substitute in dried or frozen *Tofu*. Regular *Tofu* cannot recover its texture once it is frozen or dried...

Miso can be enriched with vitamin B-2 and calcium, and its salt content lowered. Since 1980 the Laboratory of Food Science at Kyoritsu Women's University has been conducting a research survey on traditional foods and dishes in Japan in cooperation with the Cooking Research Laboratory. "This project consists of three components: (a) survey of the present status of traditional foods on local basis at respective regions by visiting prefectural research organisations–universities and colleges; (b) sending questionnaires to students for seeking information on the position of the traditional foods in the dietary patterns of individual homes and also to obtain their comments on the future prospects of the local traditional foods; (c) and documentation regarding local traditional foods, followed by classification according to preparation or cooking method for analysis. On the basis of the collected data, the relationship between each local traditional food and its natural, cultural and historical background has been studied and published in the university's journals. More efforts are being made to identify the reasons as to why and how some traditional foods have survived in certain regions, while the others have disappeared or reached the verge of extinction.

"Another related activity is the one carried out by Ajinomoto Company, a major food manufacturer in Japan, which has got the modern audio-visual media, video-tapes and 36 mm-films. Their team has been documenting the processing of some selected traditional foods like *Tofu, Yuba, Fu* and such other foods as demonstrated by professionals by using the old traditional methods and facilities. This would help in the documentation of traditional technologies before they disappear in the event of modernisation of such foods. Such tapes and films have been made available by the company...

"Traditional foods, especially those of plant origin, are prepared by such complex multi-step processes as to be called 'products of human wisdom.' Therefore there is so much to learn from such products if serious attention be paid. Indeed they have great potential for developing new food industries." Address: Kyoritsu Women's Univ., Tokyo, Japan.

4866. Yin, Zong Lun. 1986. Development and industrialization of traditional food production in China. In: V.H. Potty, et al. eds. 1986. Traditional Foods: Some Products and Technologies. 292 p. See p. 191-200. Aug. Presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies." Held June 1983 at CFTRI, Mysore, India.

• ***Summary:*** Under "Oilseeds, Soy products," the author discusses soymilk, soybean curds (tofu; soft tofu is popular in south China and hard tofu in North China), fried bean curd, smoked bean curd, "stink" flavoured bean curd, soymilk skin sheet [yuba], dried soymilk skin sticks [dried yuba sticks], fermented bean curd or soy cheese, and soybean powder.

Under "Condiments," soy sauce is discussed. Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "soymilk skin" or "soymilk skin sheet" to refer to yuba, or that uses the term "dried soymilk skin sticks" to refer to dried yuba sticks. "These products form an important part in a vegetarian's diet and are used in conjunction with other ingredients to prepare imitation meat and fish like products for vegetarian dishes" (p. 194).

"Soymilk is a very popular breakfast beverage. In order to supplement milk supplies and also meet the special needs of those who, for some reason cannot drink milk, processing factories have been set up with relatively large-scale production capacities for soymilk. With the same distribution pattern as milk, soymilk is supplied to various catering departments, schools, kindergartens, nurseries and families. The process employed for soymilk ensures destruction of trypsin inhibitor and effective deodorization to reduce the unpleasant bean-taste...

"Fermented bean curd or soy cheese can be produced by the fermentation of bean curd. The fermented bean curd may differ in shape (square bits, cubes), colour (white, red), flavor and smell; the products can also be steeped in seasoned rice wine or preserved with drags of rice wine. Sometimes they contain added pepper, rose leaves or

shrimp spawn. The traditional production procedure is very subtle. The aging process requires high levels of skill and experience. The product is liable to break down and careful handling is needed. Presently, a new type of fermented bean curd in the form of paste which is more amenable to handling and packaging, and consuming has appeared on the market. However, this product does not conform to Chinese traditional eating habit and is, therefore, now [not?] widely accepted, either for nutritional value or flavour. Soy cheese has a great potential for development...

"In several baby food recipes, soybean constitutes an important source of protein. The well known milk substitute 5410 formulated during the 1950s contained soybean powder as the main ingredient. Formula 5410 has proved to be a success in terms of its nutritional value. It has become the basic recipe for many milk substitutes. Some factories use spray drying process to produce instant blended milk powder consisting of soymilk, milk and other ingredients; they have gained some technological and financial benefits. In recent years, there has been a continuous flow of such products into the market.

"Based on previous research efforts, and in conformity with China's present situation, work is being done to develop an oil-containing concentrated soy protein. The techniques involved have certain positive characteristics. The end product can be a liquid for direct use as a food ingredient or a spray-dried powder for the formulation of dry-mixes." Address: Research Inst. of Light Industry, Beijing, People's Republic of China.

4867. Mitchel, Diana. 1986. Re: New developments with soymilk in Australia. Letter to William Shurtleff at Soyfoods Center, Sept. 1. 2 p. Handwritten.
• ***Summary:*** (1) Castle Trading (Ranwick, NSW) are now selling non-sweetened fresh soymilk in 2 litre containers at $3.00 Australian. (2) Biogenic (owned by Russels-Russels, which is owned by a New Zealand health chain) are selling 1 litre Tetra packs sweetened with honey at $3.40 each. (3) Sanitarium Health Food Company, a Seventh-day Adventist chain, are producing their own soya milk. It is apparently nice and cheap. (4) Soyfoods Australia P/L [Pty. Ltd.] at 14/2 Paton Place, Manly Vale (Phone: 02-949-7314) are producing soy milk "and have just spent $100,000 on equipment that is quite unsophisticated in comparison to the English equipment I was thinking of buying. Anyhow, they are contracting to sell fresh soya milk to all Coles supermarkets in NSW in plastic bottles." (5) Quite a few brands are selling in NSW, including: "Simply Better" (24-B Braeside Drive, Braeside, VIC 3195. Phone: 03-580-8505); Light Foods (37 Richards St., Hindmarsh, SA 5007); Earth Angel Soy Foods (Mt. Waverley, Victoria). Address: Squirrels on the Park, P.O. Box 4, Surry Hills 2010, NSW, Australia.

4868. Tsuchiya, Kanji. 1986. Plans to visit the USA to attend opening ceremony of American Soy Products soymilk plant in Saline, Michigan (Interview). Conducted by William Shurtleff of Soyfoods Center in Japan, Sept. 1. 1 p. transcript. [Eng]
• ***Summary:*** Mr. Tsuchiya called from Japan to say he plans to attend the opening ceremony Sept. 7-8 in Saline, Michigan. The president of the new company is Mr. Hiroyasu Iwatsuki. He will explain later about 12 soymilk plants he helped to open in China. Address: Tokyo [Technical consultant, Okazaki Marusan, Japan].

4869. Lee, Geok Boi. 1986. Soya bean milk packs more water than flavor. *Sunday Times* (*Singapore*)**.** Sept. 7. [Eng]
• ***Summary:*** A comparison of five soymilk varieties sold in Singapore: Drinho (made in Malaysia), Magnolia (Singapore), Marigold (Singapore), Vitasoy (Hong Kong), and Yeo's (Singapore). Magnolia was considered the best buy because "it was the only brand with a hint of soya bean flavour."

4870. Fracassa, Anne. 1986. Mo-o-o-ve over cows, new milk to hit market. *Tribune* (*Royal Oak, Michigan*)**.** Sept. 9.
• ***Summary:*** Wayne State University professor Leora Shelef and associate professor Michael Zemel have developed a new soymilk fortified with calcium to containing 60% more than cow's milk, and with less beany flavor. The university has applied for a patent on the new product and the process is being commercialized by Elef, Inc. in Lathrop Village, Royal Oak, Michigan. For information call Leonard Wanetik at Elef: 443-1776.

4871. Olson, Lise. 1986. Soymilk plant opens: State farmers to reap benefits of new facility [American Soy Products plant at Clinton, Michigan]. *Detroit News.* Sept. 10.
• ***Summary:*** The American Soy Products soymilk plant was dedicated on 9 September 1986. A small package (8.45 oz) of Edensoy sells for $0.59; the larger (33.8 oz) sells for $1.99. Edensoy comes in three flavors: plain (which has a wheat germ flavor), carob, and vanilla. In 1985 privately held Eden Foods had sales of about $12 million.

A large photo shows Yasuo Watanabe and Teizo Okada, two Japanese partners in American Soy Products, at the dedication of the new soymilk facility. Address: Michigan.

4872. Bennett, Gordon. 1986. Re: Soymilk standards and the Soymilk Standards Committee. Letter to Judy Walker, Soyfoods Association, 1101 Connecticut Ave., N.W. #700, Washington, DC 20036. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "Regarding the Soymilk Standards Committee: the self-appointed ad hoc committee consists of myself, and Steve Snyder and Yvonne Lo of Vitasoy. Since the standards are on my word processor, I guess that makes me the ad hoc

chairperson.

"The soymilk standards draft #1 was composed about two years ago entirely by myself, based on the format of the then-current draft of the tofu standards and incorporating information primarily from Bill Shurtleff's Tofu and Soymilk Publications. After comment from various people in the tofu standards group (especially Tom Timmins), I put together draft #2 in time for the Washington meeting last October.

"Draft #2 was offered at the general meeting to any members who had interest, and I suggested that comments be forwarded to my attention. To this date, I have received written comments from the technical people at Vitasoy (Hong Kong) and a copy of the Chinese National Standards for Soymilk from Mr. Chen of the Food Industry R&D Institute of the Republic of China (which unfortunately is in Chinese). Steve and Yvonne and I also met and discussed Draft #2. Most of their comments and some later ideas that I had have been incorporated into Draft #3 ("Third Draft Soymilk Standards"), which is enclosed and which I plan to hand out at the general meeting, again soliciting comment.

"At this general meeting, it might be wise to formalize this committee, and I would like to get a few other soymilk producers on the committee–Harry Tanikawa from House Foods would be good, for example, if he is willing. Peter Golbitz of Island Tofu Works may also be interested. I do hope, however, that we can avoid clogging the committee with people who may have good intentions but who are not knowledgeable in the field and who are not among the more important factors involved. One last point: all expenses to date have been borne by Westbrae, including some conferences with the same law firm that is advising on the Tofu Standards. I am happy to continue to do this, so long as these expenses stay "reasonable."

"Please advise if you want copies of Drafts #1 and #2 for your records."

Copies mailed to: Gary Barat, Tom Timmins, Bill Shurtleff, Steve Snyder, Yvonne Lo, and Harry Tanikawa.

Note: The Third Draft of the Soymilk Standards is 21 pages, typewritten, double spaced, with 12 sections. Address: Westbrae Natural Foods, 4240 Hollis St. (P.O. Box 8711), Emeryville, California 94608 (or 94662). Phone: (415) 658-7518.

4873. *Japan Economic Journal* (*Tokyo*). 1986. Mouthwash rides tide of new garglers after high and dry years on the shelf Sept. 13. [Eng]

• ***Summary:*** "Fall of soy bean milk: While there are markets that explode after years of dormancy, some commodities lose popularity just as quickly, in most cases because of faddish consumers and over-competition.

"Riding on a health food boom, soy bean milk suddenly became an 'in' drink in 1981, doubled sales in the following two years, and created a ¥25-billion market, This year, only half that many soy bean milk packages are likely to be sold.

"The business ballooned to an 80-company industry in a year or so, and the market was severely hurt by low-quality products supplied by me-too makers, says Mitsuru Onozawa, a planning manager at Kibun Health Foods Co., a pioneer in that field.

"'We and other forerunners removed the strong soy flavor from the milk, and thus gained the popularity. The latecomers entered the market without that technology, and many customers found the soy bean milk repelling because of the soy smell.'"

4874. Wygent, Debbie. 1986. Old farm produces a new protein [Warren Reynolds at Green Valley Farms]. *Local News* (*West Chester, Pennsylvania*). Sept. 14. p. C-2, C-6.

• ***Summary:*** Warren Reynolds, age 26 and a vegetarian for 6 years, now makes tofu. His Green Valley, once a dairy farm, no longer keeps any animals. Photos (by Bill Stonebeck) show four steps in the tofu-making process: (1) Warren Reynolds pours soaked soybeans into the hopper of a grinder, where they will be ground (with added water) to a smooth puree. (2) Liquid nigari being poured onto a stainless steel paddle above the surface of a vat of hot soy milk. The nigari makes the soymilk curdle–resulting in pure white curds floating in yellow whey. (3) Susie Macunga cuts a large block of tofu (on a table) into individual bricks / cakes. (4) A hand in a plastic-glove holding a brick of tofu; it can be refrigerated and wrapped for storage.

4875. Bhatnagar, P.S. 1986. Summary of the present situation with soya in India. Tape prepared for William Shurtleff at Soyfoods Center, Sept. 15–in reply to specific questions. 3 p. transcript. Unpublished manuscript.

• ***Summary:*** William Shurtleff was away (on the East Coast doing library research) during this team's visit to Soyfoods Center (Lafayette, California), so Akiko took care of them. William left questions about soy in India which he asked them to answer.

All visitors in his team were impressed with Soyfoods Center and its work–"overwhelmed."

Soybean has a bright future in India. The increase in acreage from 300 ha in the late 1960s to the present 1 million speaks for itself. Initially there were several obstacles. The most important opposition was from India's groundnut lobby. The groundnut is an important oilseed in India. When soybean was introduced, they feared it might replace groundnut. Various people expressed apprehension. They said: Soybean is not good for health, it has toxins and soybean trypsin inhibitors (which are very widely discussed), antinutritional factors, and cause flatulence. They will disturb the commodity balance, etc.

But with time and effort, it has been established that these were not valid criticisms. Soybean would not disturb the commodity balance, as the land required would not be suited for groundnuts. Since all food is well cooked, there is

no problem with trypsin inhibitors. Chickpeas, and green and black gram also cause flatulence, but no one bothers about it, They have been eaten since time immemorial.

With these facts: (1) The lobby against soy weakened. (2) At the same time the Indian government realized the importance of soy, especially in decreasing imports of edible oil.

Initially black seeded soybeans were cultivated in India from very early times. Then yellow soybeans were introduced in late 1960s to 1970s to use as a low cost source of protein. Farmers grew it but could not sell it so they stopped. For a while it looked as if soybean would never take off in India. However, then the edible oil industry saved the day. Expansion of acreage has been mainly a result of its use for oil. (3) An oil industry grew up and created a market. (4) The agricultural feasibility of growing soybean in different parts of the country was established, as was its economic viability and place in cropping system... through the All-India Coordinated Project on Soybeans.

Then more industry and new expanded cultivation.

Madhya Pradesh is the center of soybean cultivation and industry. New entrepreneurs are now also going there since the supplies are established. But now soybean acreage is saturated in Madhya Pradesh. However, a little is still available. Now his efforts are to expand areas that are not reaching their full potential.

A cause of worry now is that most of (95% of) the soybean protein (defatted soybean meal) is being exported as livestock feed. This situation is rather dangerous. The Indian oil industry is dependent on foreign countries. If the soybean meal were not sold abroad, the Indian industry would crumble. So the need is to develop products in India based on defatted flour and popularize these. To do this, there are two essentials: (1) The cost of the product should be low compared to other similar products. (2) The taste should not be drastically different from traditional products. Indian food habits are very conservative, orthodox, and rigid. Also, use of the whole soybean must be encouraged in soya dairylike products at the home, village, and cottage industry levels.

Among soya dairylike products, tofu is one product that will definitely become popular subject to (1) High quality. (2) The profit margin is so small that the price difference between tofu and milk panir is small. He prepared some panir for us. Panir is very popular, especially in North India. All who can afford it would like to buy it. It is used for many curries, snacks, and other dishes. All are considered to be luxury dishes. Only the rich can afford them. The cost of panir is about $3 per kilogram, or 36 rupees per kilogram. Average monthly income is 250-300 rupees per month in India. As a result, only a few in the upper middle class can afford it. Tofu must sell for 7-8 rupees per kilogram. He calculated tofu production cost to be 3-4 rupees per kilogram. He feels this will catch on rapidly in North India.

With this in mind, many entrepreneurs have shown interest in tofu and soymilk. One big plant, Noble Soya, is starting in Bhopal. Another is United Soya. Plants are also planned in Kanpur and Delhi. So tofu has a good future. But Dr. Bhatnagar's worry is that small producers are making a poor quality product, which turns off consumers forever. Already many people have developed a negative prejudice. He also noticed this prejudice about soy in the USA.

To summarize: Prospects to narrow the oil gap are bright. The future of soy as food is also bright.

Tempeh has not yet been tried in a sincere sense, but he feels it has a good future.

In India, isolates, concentrates, and lecithin are now being extracted on a very small and limited scale. In a few areas, soy is taking land way from rice cultivation. Due to a slump in the international market for soybean meal, farmers' prices dropped, which led to a decrease in acreage the next year. It seems temporary. Government has set a minimum support price. On the initiative of Rajeev Gandhi, a technical mission of oilseeds has been established. The main goal is to increase oilseed production in India. Imports are now huge. India should become self sufficient in oilseeds, as she has become self sufficient in food grains. Soybeans are included in the mandate of this technology mission. Increase of production is planned, in both horizontal (area) and vertical (yield, presently very low–0.7 metric tons per hectare) growth. There will be a new thrust with government support.

The main idea is to reduce, then cut, foreign dependence on soya as (1) imported oil, and (2) imported meal. Solution: use defatted soybean meal for foods in India, and use whole soybeans in dairylike soybean products.

Closes with thanks to Akiko. He will send Bill some of the papers Bill needs. He looked though his manuscript briefly and made some suggestions. Send it to him for a careful read after the next update. He will check with literature he has in India. Let him know of companies that make plants for soy oil and lecithin, etc. He wants Akiko to come to India too. Address: PhD, Coordinator, All-India Coordinated Research Project on Soyabean (ICAR), G.B. Pant Univ. of Agriculture & Technology, Pantnagar, UP, 263145, India.

4876. Abdul Rahman, Hussein. 1986. An update in the manufacturing of traditional fermented and non fermented soyfoods in Malaysia. In: F.G. Winarno, ed. 1986. International Soyfoods Symposium. xiv + 403 p. See p. 59-73. Held 16-18 Sept. 1986 in Jogyakarta, Indonesia. [38 ref]
• ***Summary:*** Contents: Abstracts. Introduction. Present status of soybean utilization in Malaysia. Manufacture of traditional fermented soyfood in Malaysia. Manufacture of traditional non-fermented soyfood in Malaysia. Research and development of soyfood in Malaysia. Conclusion. Address: Extension Services, Food Technology Div., Malaysian Agricultural R&D Inst., P.O. Box 202, Serdang, Selangor, Malaysia.

4877. Benk, Erich. 1986. Ueber die Sojabohne und aus ihr hergestellte Lebensmittel [Soybeans and soybean products]. *Industrielle Obst- und Gemueseverwertung* 71(9):390-91. Sept. [9 ref. Ger]
• ***Summary:*** Soybeans and their products are discussed briefly, including their composition, manufacture, and uses. Products mentioned are green vegetable soybeans (unreife Sojabohnen), whole dry soybeans, soy protein, soy oil, lecithin, defatted soy flour, soy protein concentrate, soy nuts, soy sprouts, soymilk (Sojamilch), tofu (Sojaquark), soy sauce (Sojasosse), and fermented tofu (Sojabohnen-Käse, sufu). The application of German dairy product laws to soyfoods is discussed. Address: Chemiedirektor a. D., Beratender Lebensmittelchemiker, Robert-Steiger-Str. 110, 8909 Krumbach, Germany.

4878. Brand, K.; Hebel, D. 1986. Uebersicht. Ernaehrungsphysiologische Evaluierung von Saeuglingsvollnahrungen auf Sojabasis [Evaluation of the nutritional quality of soybean-based infant diets]. *Zeitschrift fuer Ernaehrungswissenschaft* 25(3):129-45. Sept. [62 ref. Ger; eng]
• ***Summary:*** The purpose of this review is to evaluate the nutritional quality of soybean-based infant diets on the basis of results published in the scientific literature. Special consideration has been given to the use of soybean protein formulas for infants with reduced intestinal digestion and absorption capacity as well as in cases of cow's milk intolerance and allergic diseases. Address: Inst. fuer Physiologische Chemie der Universitaet-Nuernberg, Fahrstrasse 17, D-85230 Erlangen, West Germany.

4879. **Product Name:** Powdered Instant Soymilk Beverage (Vanilla, Chocolate, or Strawberry).
Manufacturer's Name: Brightsong Foods.
Manufacturer's Address: 100-A Poultry St. (P.O. Box 2536), Petaluma, CA 94953.
Date of Introduction: 1986. September.
New Product–Documentation: Letter from Richard Rose. 1987. Sept. 17.

4880. Fukushima, Danji. 1986. New development in the process of traditional soyfoods in Japan. In: F.G. Winarno, ed. 1986. International Soyfoods Symposium. xiv + 403 p. See p. 21-57. Held 16-18 Sept. 1986 in Jogyakarta, Indonesia. [22 ref]
• ***Summary:*** Contents: Abstract. Soy milk. Tofu. Soy sauce. Miso. Natto.

Table 1 (p. 28) shows changes in the size of the soymilk market in Japan from 1979 to 1985. For each year there are statistics for the amount of soymilk sold (in kiloliters), the ratio of that amount to the amount sold during the previous year, the total retail value in yen, the ratio of the retail value that year to the value the previous year, and the ratio of the retail value that year to the value in 1979. The amount of soymilk sold in million liters is as follows: 1979–6.5 million liters. 1980–12.0. 1981–25.2. 1982–54.3. 1983–111.5. 1984–84.013. 1986–55.354.

Also contains a detailed analyses of the off-flavors in soymilk. These off flavors are brought about through the hydrolysis of the glycosides by the Beta-glycosidase contained in soybeans. Contains 46 figures, including many photos, flowcharts, and equipment designs. Address: Food Research Inst., Kikkoman Co. Ltd., 339 Noda, Noda City, Chiba prefecture, Japan.

4881. Fukushima, Danji. 1986. Preservation of traditional soy products. In: F.G. Winarno, ed. 1986. International Soyfoods Symposium. xiv + 403 p. See p. 267-93. Held 16-18 Sept. 1986 in Jogyakarta, Indonesia. [25 ref]
• ***Summary:*** Contents: Abstracts. Soy sauce and miso. Soy milk, tofu, and their related products. References. Address: Food Research Inst., Kikkoman Co. Ltd., 339 Noda, Noda City, Chiba prefecture, Japan.

4882. Lee, L.S. 1986. Flavour development for soy products. In: F.G. Winarno, ed. 1986. International Soyfoods Symposium. xiv + 403 p. See p. 253-61. Held 16-18 Sept. 1986 in Jogyakarta, Indonesia.
• ***Summary:*** Contents: Introduction. Function of flavorings. Constraints on flavor development. Processing constraints on flavoring development. Soyproducts: Europe, USA and Asia. Flavoring problems associated with soy products. Flavoring problems in the application of soy milk. Flavoring problems in the application of soy protein meat products. The future for soy products. Acknowledgment. Appendixes.

Note: This is the earliest English-language document seen (Jan. 2004) that contains the word "soyproducts" (spelled as one word).

4883. Leufstedt, Goran. 1986. Continuous process for low beany taste soybean products. In: F.G. Winarno, ed. 1986. International Soyfoods Symposium. xiv + 403 p. See p. 79-93. Held 16-18 Sept. 1986 in Jogyakarta, Indonesia. [2 ref]
• ***Summary:*** Contents: Abstract. Introduction. Continuous process systems. Continuous soyfood processes. Soy extraction line: Soybean grinding, deactivation of lipoxygenase enzymes, fiber separation, trypsin inhibitor deactivation, deaeration/deodorization. Aseptic soy beverages. Ultrafiltration of soy extract. Soy-yogurt. Frozen desserts. Tofu. Prepared foods–forming, frying. Residue–okara. Conclusion.

In the dairy industry ultrafiltration (UF) of cow's milk has long been used for continuous concentration of protein. UF is also common in the cheese industry for continuous production of soft cheese. "As far as I know, no UF plant in commercial operation has been reported on soy, but two

applications are described in the literature: Concentration of the protein and diafiltration, i.e. washing out anti-nutritional compounds." Address: Alfa-Laval South East Asia Pte. Ltd., 11-Joo Koon Circle, Singapore 2262.

4884. McSweeney, Daniel. 1986. Consumer survey 1986. *Whole Foods.* Sept. p. 39-40, 43.
• ***Summary:*** This survey appeared as a readership survey in the July 1986 consumer-directed *EastWest* magazine. The sample size is not given. The percentage of respondents who purchased a type of product at a natural foods during the past 12 months, in descending order of popularity and by sex: Grains: women 91.1%, men 84.4%. Tofu: women 85.8%, men 82.2%. Miso: women 72.3%, men 66.6%. Sea vegetables: women 68.2%, men 60.0%. Yogurt (dairy): women 48.8%, men 44.4%. Nondairy frozen desserts: women 45.8%, men 40.0%. Soy milk: women 41.1%, men 37.7%. Natural meat: women 10.0%, men 11.1%.

The top 5 reasons for shopping at natural foods stores are: Food quality (32.6%), better selection (21.8%), brands preferred (15.5%), helpful clerks (9.1%), individual food dept. (6.9%).

4885. Oei Ban Liang; Soemitro, Soetijso; Tjahjadi, Carmencita. 1986. Functional properties of soy proteins. In: F.G. Winarno, ed. 1986. International Soyfoods Symposium. xiv + 403 p. See p. 219-32. Held 16-18 Sept. 1986 in Jogyakarta, Indonesia. [13 ref]
• ***Summary:*** Contents: Abstract. Introduction. Chemical and physical properties of soy proteins. Biological activity of soy protein components. Soy protein products as food ingredients: Soy flour and protein concentrate. Soy protein isolate. Soy proteins in human nutrition. A comparison of soybean milk with cow and human milk. Use of soybean products as protein supplement. References. Address: 2. Departmen of Chemistry, FMIPA, Universitas Pajajaran, Bandung, Indonesia; 3. Faculty of Agriculture, Padjadjaran Univ., Jl. Bukit Dago, Bandung 40135, Indonesia.

4886. Robertson, Laurel; Flinders, Carol; Ruppenthal, Brian. 1986. The new Laurel's kitchen: A handbook for vegetarian nutrition and cookery. Berkeley, California: Ten Speed Press. 512 p. Foreword by Sheldon Margen, M.D. Professor of Public Health Nutrition. University of California, Berkeley. Illust. Index. 23 cm. Original ed. published Sept. 1976. [234* ref]
• ***Summary:*** Contents: Preface (by Laurel). Introduction: The work at hand (Carol Flinders). Recipes and menus (includes 500 recipes): Bread, breakfast, lunch, dinner, salads, soups, vegetables, sauces & such, heartier dishes, grains & beans, desserts, menus. A handbook of nutrition: Introduction: The search for an optimal diet (Brian Ruppenthal), The New Laurel's Kitchen food guide. Special concerns: Pregnancy, infancy & early childhood, controlling your weight, nutrition in later years, sports (athletic activities), the vegan diet, diet against disease. The nutrients: The energy-yielding nutrients, vitamins & minerals, food processing, conserving nutrients in the kitchen, suggestions for further reading, recommended dietary allowances, nutrient composition of foods. Address: Blue Mountain Center of Meditation, Petaluma, California.

4887. Vanguarda Mecanica. 1986. Eating is one of the rights of man and a duty in the case of children. Industria, Comercio e Expotacao Ltda., Rua Mario Sampaio Ferraz, 111–Jardim Aurelia, CEP 13100, Campinas, SP, Brazil. 4 p. Sept. Manufacturer's catalog. Color. [Eng; por; spa; fre]
• ***Summary:*** By August 1987 this compact soymilk plant, made in Brazil, with a capacity of 200 liters/hour, sold for US$45,000. Address: Campinas, Sao Paulo, Brazil.

4888. *Toyo Shinpo* (*Soyfoods News*). 1986. Tônyû. Naze urenaku natta. Uriage mo meekaa mo gekigen [Soymilk. Why has it stopped selling? Drastic decrease in both sales and number of manufacturers]. Oct. 11. p. 8. [Jap; eng+]

4889. *Toyo Shinpo* (*Soyfoods News*). 1986. Kenko imeeji-do besuto 20. 6 i ni nattô, 11 i ni tôfu [The 20 Japanese foods with the healthiest image. Natto is 6th and tofu is 11th]. Oct. 21. p. 1-2. [Jap; eng+]
• ***Summary:*** The healthy image ranking, based on a survey of 1,000 households in October 1985. Conducted by Shokuhin Sangyo Center in Tokyo (Toranomon. Tel. 03-591-7451) and titled "Health and Food." 1. Sardines (340 points out of a possible 1,000), 2. Shirasu (the young of sardines, 298), 3. Process cheese (259), 4. Real fruit juice (241), 5. Umeboshi salt plums (227), 6. Natto (227), 7. Natural cheese (225), 8. Brown rice (218), 9. Honey (210), 10. Tofu (204), 11. Wakame (sea vegetable, 197), 12. Soymilk (196), 13. Yogurt (193), 14. Sesame oil (181), 15. Konnyaku (180), 16. Cow's milk (180), etc.

4890. Vandemoortele, Philippe. 1986. Re: History of Vandemoortele N.V. Letter to William Shurtleff at Soyfoods Center, Oct. 23. 3 p. Typed, on plain paper without signature. [Eng]
• ***Summary:*** 1899–Foundation. The first factory was established in Izegem, Belgium, by Constant Vandemoortele in conjunction with his sons, Adhemar and Edgard. Adhemar was Philippe Vandemoortele's grandfather. The original company name was written in French, Huilerie Vandemoortele. The company started with the crushing of linseed and rapeseed.

1921–Foundation of N.V. Oil Factories Vandemoortele. The company was officially renamed (from its original French name to a Flemish Dutch name) and started with a capital of 1 million Belgian francs.

1934–First production of oils for consumers. Before this the company produced mainly linseed oil for industrial use.

In 1934 Adhemar Vandemoortele first imported soybeans from Manchuria. Besides soya, other raw materials such as coconuts, groundnuts, corn, oil palm kernels, and sunflower seeds were processed.

1936–An oil refinery was established. The company continued to expand and in the late 1930s an installation for oil hydrogenation and an oil extraction plant were constructed.

1939-1945–World War II forced the original plant to stop its activities, and the rest of production was slowed down considerably. Soon after the war, the original factory was partially destroyed and most of the equipment was out of date. In 1945 Vandemoortele resumed its activities. Adhemar Vandemoortele decided to build a new and modern installation for the processing of oilseeds. The extraction department doubled its capacity.

1951. -Takeover of the Albers company. Albers was the most important Belgian producer of margarine. Taking over this business led to a significant increase of production and sales.

1957–Construction of an extraction plant in Merksem. The plant is located very close to the Antwerp seaport. It currently crushes 1,600 tons soybeans per day.

1966–Construction of a new extraction plant in Izegem. A new, modern installation was built and is known to be one of the most important in Europe. It has a capacity of 750,000 kg soybeans per day.

1968–Foundation of "N.V. Vandemoortele". This is still the official name.

1969–Construction of a new extraction plant for soybeans in Merksem. To allow the processing of larger quantities, a new extraction unit was built. The capacity increased to 1,500 tons per day.

1971–Construction of a new ultra-modern factory in Izegem for the production of sauces and mayonnaises.

1974–In Izegem, a new department for purifying soaps (which were obtained from the neutralization of oils) was built. Its capacity amounts to 300,000 liters/day. A storage yard is located next to this department. In 1975 the capacity of the tank park was increased significantly to 50,000,000 liters.

1976–Foundation of "N.V. Metro." This subsidiary organizes the transport when distributing the Vandemoortele products.

1978–Foundation of "N.V. Vamix." Through N.V. Vamix, Vandemoortele delivers raw materials and partially-finished products to catering and bakery industry.

1978–Foundation of "N.V. Edo." After the partial take-over of "Oleofina", a new company called "Edo" was created and consists of an oil refinery and packing unit.

1980–Foundation of "N.V. Alpro." This company is involved in the production and distribution of high-quality soyfoods.

"N.V. Vandemoortele is operating in foreign countries through several sister companies (England, the Netherlands, France, Germany, the United States). A holding company located in Belgium, N.C. Safinco Cc, controls the financial interests and coordinates the activities of the different subsidiaries.

"The sophisticated and ultra-modern installations allow Vandemoortele to produce a variety of products which are sold at home and abroad at competitive prices. Thanks to the continuous evolution and innovation of the equipment, Vandemoortele N.V. has grown to one of the most important agro-industrial concerns in the world." Address: General Manager, Alpro, Zuidkaai 33, B-8700 Izegem, Belgium.

4891. Vandemoortele, Philippe. 1986. Re: Soymilk in Europe. Letter to William Shurtleff at Soyfoods Center, Oct. 23. 2 p. Typed, with signature on letterhead (photocopy).
• ***Summary:*** Concerning Gary Null's allegations of radiated soymilk: "The sole European company exporting soymilk (with long life) to the USA is Alpro, distributing Sunsoy soymilk throughout the country. Sunsoy is exclusively produced from America soybeans which are–to my knowledge–not submitted to radiation. (I don't think Chernobyl reached that far)." There is no use of radiation during the aseptic Tetra Brik packaging.

"Some months ago, quite a serious problem as to irradiated cow's milk arose in Europe since cows were eating irradiated grass. All this trouble started right after the Chernobyl disaster through which many consumers of cow's milk switched over to the consumption of soymilk. Especially in Germany, this phenomenon was very impressive." Address: General Manager, Alpro, Zuidkaai 33, B-8700 Izegem, Belgium. Phone: (051) 30.96.01.

4892. *Times of India* (*The*) (*Bombay*). 1986. City notes: Universal Solvex. Oct. 25. p. 10.
• ***Summary:*** Universal Solvex, incorporated in 1982, will enter the capital market on May 26 with a public issue of 6.1 lakh [610,000] equity shares of Rs. 10 each. The company is presently implementing a project in Piliphit, Uttar Pardesh, for the manufacture of vegetable oils using solvent extraction; the plant has an annual capacity of 36,600 tonnes in terms of rice bran, soyabean, salseeds, oilcakes. Trial runs are expected to start in December, with commercial production shortly thereafter.

In the north, this is the first soya plant with state of the art double rotary extraction technology from Extractions Technik, West Germany, the world leader in designing plants for vegetable oil extraction.

The company plans to add a refinery and then to diversify into winterised edible soya oil, soya milk, curd [tofu] cheese, and lecithin.

4893. Asociación Americana de Soya. 1986. Preparaciones culinarias con soya para instituciones Latinoamericanas

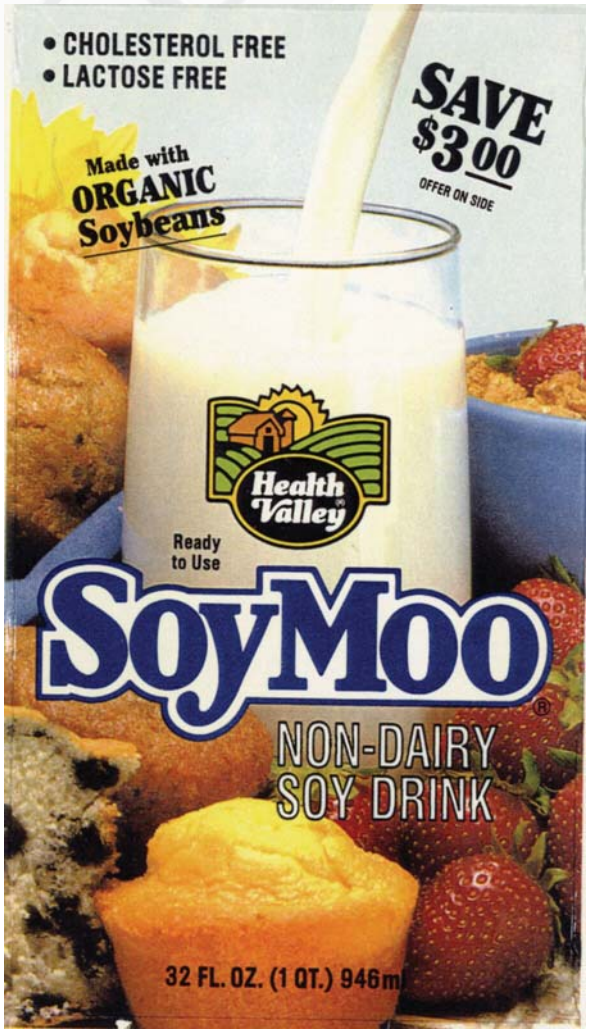
[Culinary preparations with soya: For Latin American institutions]. Caracas, Venezuela: American Soybean Assoc. 120 p. Oct. 17. Recipe index. 22 cm. [Spa]
• ***Summary:*** The development of these 85 recipes was supervised by José Félix Chávez, director of the American Soybean Assoc. office in Caracas. Nutritionists and dietitians in Venezuela developed and tested the recipes. Most recipes contain soy flour or textured soy flour.

Contents: 1. Introduction. 2. Pre-treatment and recommendations for the use of soy flour and texturized soy proteins. 3. Preparations for institutions (by recipe type): Beverages, contornos, entrees, main dishes, desserts, sauces, soups. 4. Latin American preparations, by country: Bolivia (5 recipes), Colombia (4), Chile (7), Ecuador (5), Peru (4). 5. Preparations from whole soybeans: Croquettes, salad with soy sprouts, soy sprouts (brotes de soya), soymilk, soya cream soup, Soyannaise. Address: Caracas, Venezuela.

4894. Fangauf, K.W. 1986. Bedeutung der Sojabohne und Sojaprodukte fuer die Welternaehrung [Significance of the soybean and soya products for world nutrition]. *Schriftenreihe aus de Fachgebiet Getreidetechnologie* No. 8. p. 9-23. Sojaprodukte: Herstellung und Verwendung. [15 ref. Ger]
• ***Summary:*** Discusses history of the soybean, cultivation and composition, the world industry for soybean production, consumption, and products, world production of soy oil and competing oils, trends in the use of soy products (incl. soymilk and soymilk products, soy sauce, tofu, miso, and tempeh; table based on Shurtleff & Aoyagi 1983), results of Hamburg poll (American Soybean Assoc. 1982) on attitudes of German consumers toward qualities and use of soya (e.g., price, nutritional value, good protein source, versatile, healthful, recommended by a doctor, good for young people), conclusion. Address: American Soybean Assoc., Hamburg, West Germany.

4895. Fort, P.; Fach, R.L.; Dahlem, S.; et al. 1986. Breast feeding and insulin-dependent diabetes mellitus in children. *J. of the American College of Nutrition* 5(5):439-441. [5 ref]
• ***Summary:*** This paper evaluates the hypothesis of a protective effect of human milk and breast feeding on the development of insulin dependent diabetes mellitus (IDDM). 95 children with IDDM were studied; their mean age was 14, the mean age of onset of IDDM was 8½ years, and 18% had been breast-fed for various lengths of time (average 4.6 months). The authors were "unable to document any relationship between the history of breast feeding and subsequent development of IDDM in children." However children were twice as likely to develop diabetes mellitus if they were fed soy formula in infancy. "However, these differences were not statistically significant." The majority of formula-fed children were given either Enfamil or Similac soy-based formulas. Address: Dep. of Pediatrics, North Shore Univ. Hospital, Manhasset; and Dep. of Pediatrics, Cornell Univ. Medical College, New York.

4896. **Product Name:** Health Valley Soy Moo: Non-Dairy Soy Drink.
Manufacturer's Name: Health Valley Natural Foods (Marketer-Distributor). Contract packaged in the Western USA.
Manufacturer's Address: 700 Union St., Montebello, CA 90640.
Date of Introduction: 1986. October.
Ingredients: Pure water, organically grown soybeans*, concentrated grape juice, malted barley, vanilla, dulse (sea vegetable) (2/91). * = Organically grown and processed in accordance with Section 26569.11 of the California Health and Safety Code.
Wt/Vol., Packaging, Price: 250 ml and 1 liter Tetra Brik Aseptic cartons.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 6 fl oz.: Calories 90, protein 6 gm, carbohydrate 9 gm, fat 3.5 gm, cholesterol 0 mg, sodium 85 mg, potassium 25 mg. RDA of calcium = 2%.



New Product–Documentation: Shurtleff & Aoyagi. 1985. Soymilk Industry and Market, Update. "During early 1985 Alpro continued to make a private-label soymilk, brand-named Soy Moo, for Health Valley in Los Angeles. Then in mid-1985 Health Valley switched to having their product made in America, probably from powdered soymilk, packaged in 250 ml and 1 liter Tetra Brik cartons by a contract packer in the western USA."

Golbitz. 1987. Soya Newsletter. March/April. p. 8. After severing ties with Vandemoortele in 1985, Health Valley worked for nearly a year on a new Soy Moo soymilk and re-launched the produced in the fall of 1986. Talk with Gordon Bennett of Westbrae. 1988. April 2. Health Valley uses a soymilk powder from some source (perhaps Clofine) and trucks it to a Tetra Brik company, that reconstitutes and packages it.

Product with Label purchased at Open Sesame in Lafayette. 1991. Feb. 16. 3.75 by 6.5 by 2.5 inches. Tetra Brik Aseptic carton. Front: Color photo of milk being poured into a glass that is surrounded by muffins, strawberries, and a blue bowl of cereal against a sky-blue background. The Health Valley Logo is in the center of the glass. "Cholesterol free. Lactose free. Made with organic soybeans. Ready to use." The company address now given as 16100 Foothill Blvd., Irwindale, California 91706-7811. "Product of U.S.A." Soyfoods Center product evaluation. Flavor: So-so, with a somewhat unpleasant and unnatural aftertaste. Package design: Excellent.

4897. Hertrampf, Eva; Cayazzo, Marisol; Pizarro, F.; Stekel, A. 1986. Bioavailability of iron in soy-based formula and its effect on iron nutriture in infancy. *Pediatrics* 78(4):640-45. Oct. [14 ref]
• ***Summary:*** The effect of a commercial soy based formula on iron nutrition was examined in 16 adult women and 47 healthy term infants. The prevalence of anemia (27.2%) in breast-fed infants was markedly reduced in infants fed the soy formula (4.3%) and the cow's milk formula (2.2%). The study showed that despite the low iron absorption in adults (1.7%), the soy formula was as effective as an iron-fortified cow's milk formula in preventing iron deficiency in infants, and was superior to breast milk in preventing anemia. Address: Hematology Unit, Div. if Human Nutrition and Medical Sciences, Inst. of Nutrition and Food Technology, Universidad de Chile, Santiago.

4898. Jain, Manoj. 1986. Proposal for an integrated soy nutrition educational program in Madhya Pradesh, India. Boston, Massachusetts: Plenty International. 10 p. [10 ref]
• ***Summary:*** Recently, Jain (the author) conducted a 3 month soy nutrition program in 15 villages in Indore District (M.P.), India. Jain developed a 40-page training manual for a two day training program. The project will be done in conjunction with Bharti Gramin Mahila Sang, (BGMS) a non-profit voluntary organization funded in part by the government.

4899. Lehnert, Dick. 1986. Eden Foods' new product: Milk from soybeans. *Michigan Farmer* (*Duluth, Minnesota*). Oct.
• ***Summary:*** The new $10 million soymilk plant at Saline in Washtenaw County will use 85,000 bushels/year of Michigan-grown soybeans. These beans will be grown under contract with Michigan farmers to be processed in the 22,000 square foot stainless steel plant. One such farmer, Fred Schettenhelm, from Milan, has worked with Eden Foods for 10 years. He and a few other farmers will provide Beeson soybeans to the new plant. Fred works with Ron Roller who is in charge of procurement for Eden Foods. The soybeans will not be organic initially, but they must be of premium quality and guaranteed Beeson variety.

"Eden began in 1967 as a student-run cooperative in Ann Arbor. Now it is privately held by six stockholders. Headquarters are near Clinton in northern Lenawee County." The U.S. market for soymilk is now about $50 million a year. Edensoy, which has captured 38% of it in the last 3 years, is now Eden Foods' most successful product. "The taste is nutty, not beany, reminiscent of sunflower seeds."

While the plant is not big by world standards, it is the first low-acid food producing and aseptic processing plant in the USA. As the author left the plant on Sept. 9, six weeks of FDA inspection was to begin before the plant would begin operation. Photos show: Michigan Department of Agriculture Director Paul Kindinger, Michael Potter, and a Japanese investor. A view of the outside of the plant with a silo. Address: Minnesota.

4900. **Product Name:** Supersoy [Original, Vanilla, Carob, Cocoa, Lemon, or Coffee].
Manufacturer's Name: Mitoku USA (Importer). Made in Japan by Kibun Health Foods Co., Ltd.
Manufacturer's Address: 292 Washington Ave. Ext., Albany, NY 12203. Phone: 518-456-8006.
Date of Introduction: 1986. October.
Ingredients: Original: Water, whole soybeans, brown rice malt, brown rice, kombu (seaweed).
Wt/Vol., Packaging, Price: 6 oz retort pouch or 6.7 oz Tetra Brik Aseptic carton with straw.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 6 fl oz.: Original: Calories 110, protein 7 gm, carbohydrate 10 gm, fat 4 gm. Vanilla: Calories 180, protein 6 g, carbohydrate 32 g, fat 3 gm. Carob: Calories 180, protein 6 gm, carbohydrate 33 gm, fat 3 gm.
New Product–Documentation: Labels. 1986. 3.75 by 6 inches. Plastic pouch. Yellow, black and white. Original: on blue background. Carob: On cherry background. Vanilla: on tan background. All have glass of soy drink with straw illustration. "Rich, refreshing flavor! No added oil. Low sodium." Ad, full-page color, in East West. 1986. Oct. p.

105. "All Natural Supersoy. Original Soy Drink. Made from whole soybeans with brown rice. No added oil, salt, refined sugar, or preservatives." Three packages: 6 fl oz pack; 6.7 fl oz box with straw; 16.8 oz family size.

Ad in East West. 1987. March. Inside front cover. "New! 6.7 fl oz box w/ straw." Golbitz. 1987. Soya Newsletter. March/April. p. 8. In Oct. 1986 Mitoku USA began to import Supersoy from Japan, where it was made by Kibun. This late entry product was originally available in 6 oz retort pouches but is now packaged in 6.7 oz Tetra Paks in original, vanilla, carob, and cocoa flavors according to Mitoku's Joel Wollner. Lemon and coffee flavors were just unveiled. Retail prices are $0.49 to $0.69 per unit. Talk with Martin Roth. 1989. Aug. 17. He played a key role in developing the concept and graphics for this product.

Letter from Joel Wollner, Executive Dir., Mitoku USA, Albany, New York to East West Journal. 1989. Jan. p. 6. Like Edensoy, Supersoy contains no added oil in any of its 4 flavors and never has since its introduction in 1986.

Talk with John Belleme. 1991. March 7. The company that imported this product and a cola drink, Mitoku (USA), went bankrupt about 18 months ago. Talk with Sherry Kelly of a marketing company. 2001 Sept. 14. Walmart sold Supersoy until several weeks ago, a 3-pack totaling 18.2 oz. in vanilla flavor.

4901. **Product Name:** Plamil Soya Milk (Non-Dairy in Mini Pots).
Manufacturer's Name: Plamil Foods Ltd.
Manufacturer's Address: Plamil House, Bowles Well Gardens, Folkestone, Kent CT19 6PQ, England.
Date of Introduction: 1986. October.
Ingredients: Soya protein [isolate], sunflower oil, raw sugar, calcium phosphate, sea salt, soya lecithin, carrageen extract [carrageenan].
Wt/Vol., Packaging, Price: 14 ml Mini Pot plastic cup with

peel-off foil lid.
How Stored: Refrigerated.
New Product–Documentation: Ad in The Vegetarian. 1986. Sept/Oct. "New 14 ml size mini pot sugar free soya milk."

Letter from Arthur Ling, Managing Director of Plamil Foods. 1990. July 24. The Mini Pots have been discontinued "We had a loan of expensive, specialised machinery and the form loaning it required it for its own use."

4902. **Product Name:** Plamil Plain Chocolate with Soya (Non-Dairy).
Manufacturer's Name: Plamil Foods Ltd.
Manufacturer's Address: Plamil House, Bowles Well Gardens, Folkestone, Kent CT19 6PQ, England.
Date of Introduction: 1986. October.
Ingredients: Incl. chocolate, soy protein isolate, sugar.
Wt/Vol., Packaging, Price: 100 gm candy bar.
How Stored: Shelf stable.
New Product–Documentation: Ad in The Vegetarian. 1986. Sept/Oct. Label reads: "100% non dairy. 100 g."

4903. S.D. 1986. Duel lait/soja, où en est-on? [The duel between milk and soya: Where are we?]. *RIA–Technicien de Lait.* Sept/Oct. p. 12-15. [3 ref. Fre]
• ***Summary:*** On page 1 is a large cartoon showing a startled dairy cow, standing beside a pail of milk, watching the invasion of an army of upright snake-like or sprout-like creatures, each with slanted eyes and wearing a conical Chinese-type hat, and bearing a banner "Yellow Peril." The large text reads: At this time of milk quotas, imitation milk products and their derivatives make French dairy producers afraid. France has adopted a very restrictive policy toward them, while the European Commission insists that they be allowed to be sold freely."

An estimated 60,000 tonnes of imitation products are consumed today in the EEC. A French law of 24 June 1934 prohibits in France the production, sale, import, or export of all products that imitate cream, cheese, powdered milk, condensed milk, ice cream, etc. The French Ministry of Agriculture still supports this law and demands strict regulation of imitation dairy products. The European Commission's position advocating free trade and freedom of choice for consumers was first set forth in the spring of 1984 and upheld in April 1986. The regulation of imitation products within the EEC varies widely. Belgium is the most liberal. The UK and Ireland allow these products but place emphasis on labeling. Denmark, Germany (RFA) and the Netherlands are opposed to imitation products but make allowances for things like coffee whiteners. Italy and France are not much concerned. France and Luxembourg prohibit them firmly.

But it is difficult to define exactly what products are imitations. The problems started in 1869 when the Frenchman Hyppolitte Mauries [sic, Hippolyte Mège] was issued a patent for margarine. Soymilk ("lait de soja," a term which is clearly a misnomer) is one of the clearest imitation products; 9-10 million liters were consumed in the EEC in 1983. This is not much compared with 30,000 million liters of cow's milk. Tofu can be used as a substitute for meat and fish. An estimated 5,000 tonnes are consumed yearly in the EEC, not much, but the market seems to have a promising future in part due to tofu's excellent nutritional properties. Yet it can also be used in place of milk and cheese. The main tofu makers in France are Sojadoc and Soy (in Cerny). Soy uses soybeans grown organically in southwest France. Labels of 3 of Soy's products (Croque Tofou in Leek/Ginger, Mushroom, and Emmenthal flavors) are shown. In the USA the tofu market is making rapid progress, growing at 15-20% a year and having 181 producers.

Coffee whiteners are also a problem. In the USA 100,000 tonnes are made. In the UK, Carnation has 80% of the market and is the sole producer in Belgium. In the UK production has grown 20% a year, from 2,850 tonnes in 1978 to 6,700 tonnes in 1984. Still another problem is imitation cheeses. In the USA in 1984 they represented more than 5% of the total cheese market, estimated to grow to 12.5% by 1990.

Little by little soy-based imitation products are gaining ground. Recently soyfoods producers have organized the European Soyfoods Association to defend their interests against unfriendly regulators. They held a conference at Dravail on 13-14 March 1986. The association is headquartered in Paris and Philippe Vandemoortele of Alpro is its head. Its secretary general is Guy Coudert, director of communication and marketing at ONIDOL, the French national interprofessional oilseeds organization (Organisation Nationale Interprofessionelle Oléagineux). Address: France.

4904. Shurtleff, William. 1986. Eden Foods, Edensoy, and American Soy Products: Bold and innovative venture–marketing soymilk in America. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 5 p. [1 ref]
• ***Summary:*** A brief history of Eden Foods and an analysis of the development of American Soy Products, based on interviews and other publications. Address: Lafayette, California.

4905. *Vegan Views* (*England*). 1986. The milk of human kindness. An interview with Arthur Ling [chairman of Plamil Foods Ltd.]. Autumn. p. 6-8.
• ***Summary:*** The company, originally named Plantmilk Ltd. and based on the vegan philosophy, began making its product (originally named Plantmilk) in 1965 in a small factory in Iver, Buckinghamshire, England. At that time there were no other soymilks being made or sold in England. In 1972 the company bought a factory in Folkestone and coined the trademark Plamil (plant + milk). It was fortified with calcium

and vitamins B-2, B-12, and D-2 to meet vegan needs. In the early days they were not allowed to use the term "soya milk" to describe the product. They supported the milk by producing a non-dairy soy-based chocolate.

An illustration (line drawing) shows Arthur Ling.

4906. *Vegetarian Times.* 1986. Imitation cheese raises suspicions in natural foods world. Nondairy labeling scrutinized. Oct. p. 6-7. [1 ref]
• ***Summary:*** Soyarella, an early soy cheese, claimed to be dairy-free but it was not. Now two other imitation mozzarella soy products, Soya Kaas and Tofu Mozzarella, have joined Soyarella on store shelves, but both contain products derived from milk. Casey Van Rysdam of American Natural Snacks, the distributor of Soya Kaas, does not believe an imitation mozzarella product can be made without calcium caseinate to hold it together. Bob Savar, the distributor for Tofu Mozzarella, says it is possible to make his product without caseinate but it doesn't melt. Note: This is the second earliest publication that mentions Soya Kaas. *Kaas* is the Dutch word for cheese.

Part II of this article examines some labeling problems and improprieties related to casein and caseinates. "Nondairy" is not an FDA term. A number of states with large dairy lobbies came up with the term, according to Judith Riggins of the U.S. Food and Drug Administration. These states required products made with added casein to be differentiated from dairy products. The FDA decided not to oppose these state laws if the ingredient statement bears the term "milk derivative" in parentheses after the word casein. However vegans who choose not to consume dairy products for ethical reasons have been left feeling deceived.

4907. Vitasoy (USA) Inc. 1986. Vitasoy. You've been looking for a soymilk that is healthful, great-tasting and reasonably priced. And we got just the right product for you (Ad). *Vegetarian Times.* Oct. p. 41.
• ***Summary:*** This full-page color ad also appears in Natural Foods Merchandiser. Oct. p. 39. Address: San Francisco, California.

4908. *SoyaScan Notes.* 1986. What are barley, pearl barley, and Job's tears? (Overview). Nov. 1. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Note: Barley was one of the first grains cultivated to provide food for both humans and animals. Because it has two hard, inedible husks, most barley is milled to some degree to make it more edible. The word "pearling" is used to describe the refining of barley down to the grain's endosperm (starch) layer. After the husks, bran and germ are removed, the remaining grain resembles a pearl. For the highest protein, fiber, vitamins, and mineral content, look for barley kernels that have been pearled enough only to remove the tough outer layers.

Barley comes in many forms and degrees of refinement. Hulled (also called whole) barley, has only the tough outer husks removed; it still contains the nutrient-rich germ and bran. Scotch or pot barley is husked and coarsely ground. Barley grits are husked and ground into medium-coarse pieces. Pearled barley has the husk and bran removed and has been steamed and polished; it comes in coarse, medium (the most commonly packaged), and fine sizes.

A new barley hybrid, high beta-glucan hulless, does not require pearling, contains more soluble fiber, and contains starch that is more stable during freezing and thawing.

Job's tears (*Coix lachryma-jobi*), used as an ingredient in some varieties of soymilk (such as Edensoy) and known as *Hato Mugi* in Japan, are the seed kernels of an annual grass long prized in the Orient for its health giving and nutritional properties. The term *Hato Mugi* is translated in some Japanese dictionaries as "pearl barley," but this is not correct; *hato* means "dove or pigeon" and *mugi* means "barley."

4909. *Toyo Shinpo* (*Soyfoods News*). 1986. Tettai-gumi ga zokushutsu no tônyû [Many major companies withdrawing from soymilk market in Japan]. Nov. 11. p. 6. [Jap; eng+]

4910. Potter, Michael. 1986. History of Eden Foods and development of American Soy Products joint venture and Edensoy–1971 to 1986 (Interview). *SoyaScan Notes.* Nov. 14. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Michael Potter joined Eden Foods in Oct. 1971, and by Aug. 1973 he and Tim Redmond each owned 50% of the shares. Under their leadership the company grew steadily until 26 Nov. 1979, when a fire destroyed the Eden warehouse and $800,000 inventory. The firm with 100 employees and 2,400 products struggled for its life. After the fire, Redmond sold his stock back to the corporation and resigned. Thereafter the company moved to rural Clinton, Michigan, decreased its size and number of products, while switching its emphasis to manufacturing and marketing carefully selected imports.

A major reason for Eden's recovery after the fire can be traced to support from Muso, Eden's export partner in Japan. In the mid-1970s Muso had about 12 importers in America but by 1979 many of these had gone out of business. Each bankruptcy dealt Muso a painful blow, as had the fact that many of the natural food products that Muso had pioneered in Japan were now being imitated and launched by other, bigger companies in mainstream Japanese markets. Muso was hurting.

In July 1983 Eden Foods surprised the American natural foods industry by launching two designed-for-America long-life soymilks named Edensoy in plain and carob flavors. Made in Okazaki, Japan by Marusan Ai, packaged in stand-up retort pouches, and exported by Muso, the product was the result of a 15-month process involving trips to Japan to visit Marusan and consultations with the U.S. Food and

Drug Administration in Washington, DC. [Note: Individual 6-ounce pouches retail for $0.69-79, making Edensoy the most expensive soymilk on the U.S. market, selling for 12.3 cents per ounce, or more than 5 times the price of cow's milk.]

Eden was the first Caucasian-American company to import soymilk, and their gamble paid off; sales skyrocketed sparked by extensive magazine advertising. Between September and December over 1 million 6-ounce packs had been sold. Now a host of competitors rushed to follow Eden's lead, and many of them went to Muso to ask for a similar product made by Marusan. Eden strongly objected. The result was that in January 1984 Eden became Muso's exclusive import agent in the United States, not only for soymilk but for all products. Both companies considered the agreement beneficial.

Just as Edensoy was getting into high gear, the product had its first serious encounter with the U.S. Food and Drug Administration, which on 2 March 1984 sent Eden Foods a strongly worded letter citing eleven claims in Eden's pamphlets that the agency considered erroneous. FDA expressed concern about the company's apparent endorsement of Edensoy as an infant formula; FDA asked Eden Foods to stop distributing the pamphlet in which Edensoy was promoted as "Good for Babies." Despite the hassle that followed, Edensoy performed much better that year than Eden had dared to hope: 1984 sales were 11 million units (individual pouches), 70% above target, and Potter began to dream about a Marusan soymilk plant in America.

By 1985 privately owned Eden Foods had about 50 employees and annual national sales of about $12 million. Sales that year were 10.25 million units, down 7% compared with 1984. By 1986 Potter estimated that Eden Foods had 38-40% of the $50 million a year of the soymilk retail consumer market in the US. Edensoy accounted for 20% of Eden Foods' sales, and Edensoy plain was selling better than any other brand in a small-sized carton. But the market was getting crowded. Yuppies were buying Edensoy. The macrobiotic market was only a small segment for Edensoy.

See also interview with Potter (Nov. 1986) on "History of Eden Foods: Building a soymilk plant in America." Address: President, Eden Foods Inc., 701 Tecumseh Rd., Clinton, Michigan 49236. Phone: 800-248-0301 or 517-456-7424.

4911. Snyder, Steve. 1986. New developments at Vitasoy and with soymilk worldwide (Interview). Conducted by William Shurtleff of Soyfoods Center, Nov. 14. 2 p. transcript.
• ***Summary:*** A good overview. "Sunsoy is a force, but when Edensoy and Ah Soy come out in liter sizes they will tear hell out of Sunsoy's sales. The US products are better tasting and with better packaging. Sunsoy does not taste that good." Address: San Francisco, California 94107.

4912. Tanikawa, Harry. 1986. Recent developments at House Foods and Yamauchi Inc. (Interview). *SoyaScan Notes.* Nov. 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Their soymilk was launched in April 1986 in Pure Pak, named Hinoichi Soy Drink, in 4 flavors: Plain, original (with fructose and oil added), mocha, and chocolate. It is sold only in the Los Angeles area in Asian-American food stores. It will never be sold in natural food stores. Pure Pak limits geographical distribution.

House Foods and Mr. Yamauchi now each own 50% of the company. It seems like a happy marriage. Mr. Yamauchi is still very involved in the daily operation of the business. They dropped the parfait before the partnership. Address: Los Angeles, California.

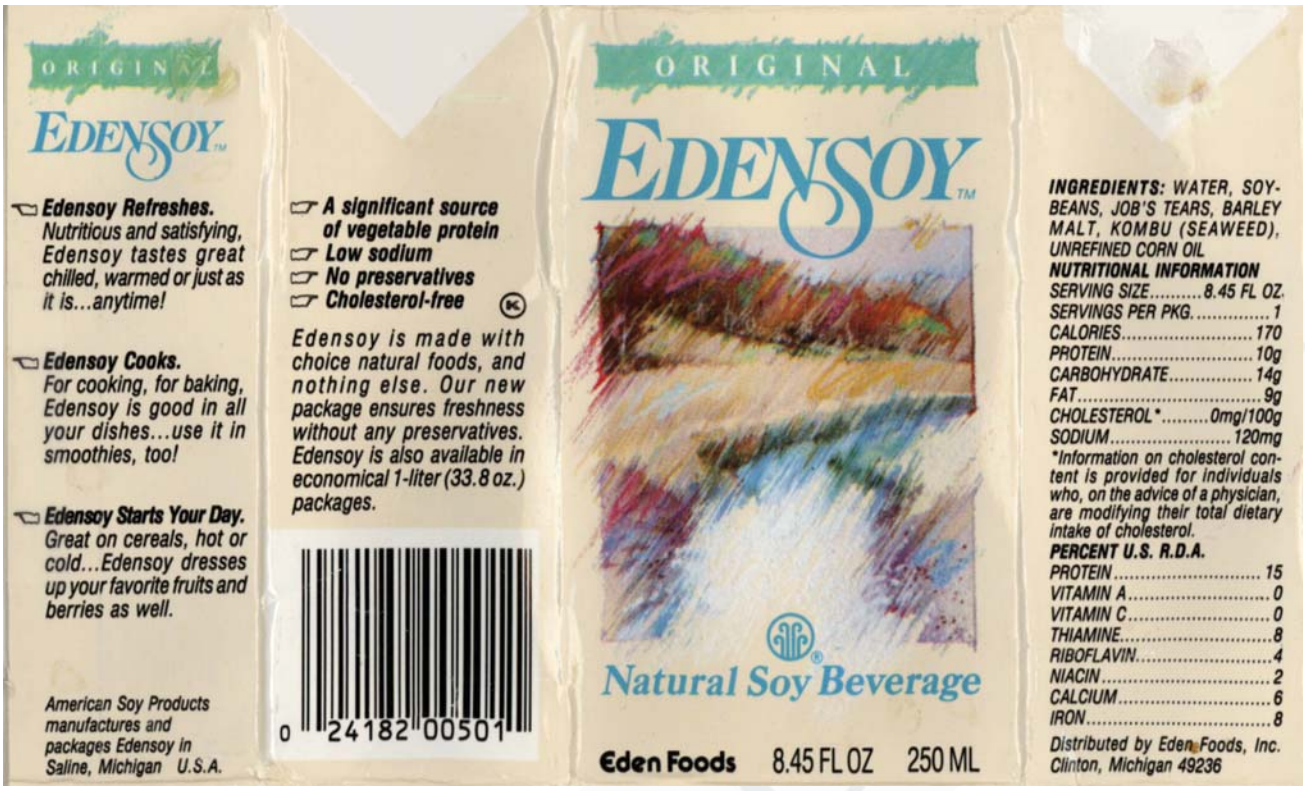
4913. Burum, Linda. 1986. Breakfast in Chinatown and other Asian spots. *Los Angeles Times.* Nov. 16. p. S106.
• ***Summary:*** The section titled "Japanese" begins: "Amid the jangle of downtown traffic, A Thousand Cranes is an oasis of flagging civility." This lovely, calm restaurant, with its own stylized Japanese garden, is in the New Otani Hotel, at 120 S. Los Angeles St., Los Angeles. Dressed in a classical kimono, the waitress brings breakfast on a lacquered tray. On it is a covered bowl of miso soup, plus rice and other delicacies. "One may select from several other *okazu* (the things to eat with rice) such as squares of delectably garnished and very fresh *tofu* or *natto,* a little mound of flavorful fermented bean" [sic, beans].

"A jar of *umeboshi,* the mouth puckering tiny sour plums known as nature's own mouthwash, is placed on each table; one of these cleanses the palate."

The section titled "Chinese" begins with a visit to Yi Mei, a very good traditional Chinese bakery in Monterey Park (near downtown Los Angeles), known for its "Northern-style breakfasts centering on large bowls of soy milk that may be ordered slightly sweetened or seasoned with a dash of sesame oil and salt. Look around and watch everyone dipping *yu t'iao,* long, airy fried buns that resemble unsweetened crullers, into their soy milk." The crullers soak up the soy milk, then everyone noisily (its impossible to do this quietly) eats the crullers.

4914. Hoefnagels, Herman. 1986. History of Vamo Foods, Vandemoortele, and work with soymilk (Interview). Conducted by William Shurtleff of Soyfoods Center, Nov. 17. 2 p. transcript.
• ***Summary:*** This import company is owned by Vandemoortele and Alpro makes their product, Sunsoy. They began U.S. operations on 1 Jan. 1984. Their first product was a frozen dough, which they distributed to the foodservice market. They started importing Sunsoy on 1 Jan. 1985, in both the small and liter sizes.

Initially Balanced Foods was their sole distributor, but



that exclusive relationship was ended this year because Vamo wanted to pick up additional distributors. Balanced was always free to distribute other soymilks if they wished.

Both the liter and the small package are selling well.

Future: New dessert product, is a soymilk pudding brand-named "Sunsoy Chocolate Dessert." Packaged in both 1 liter and 250 ml Tetra Briks. Already on market in USA. When introduced? Nothing else new.

He will not disclose sales figures.

Vamo Foods imports two lines, the Banquet d'Or line, which is a frozen dough unbaked puff pastry, produced by Vamic. Vamo Foods distribute them via Incotra, which is their mother company. "All products are sold via our export company, of which I am president in Belgium. We export many other products besides this one.

"We (Vandemoortele) are Europe's biggest soybean crusher. All exports of soybeans and products etc. go via Incotra. It is owned by Safinco, which is the largest company (holding company?).

"Vandemoortele, Alpro, Vamic, and Incotra are all daughter companies of Safinco. Safinco is the largest entity, not Vandemoortele." Address: President, Vamo Foods USA Inc., 20 Shawnee Dr., Watchung, New Jersey 07060. Phone: 201-769-0290.

4915. Null, Gary. 1986. Soymilk irradiation in Europe (Interview). Conducted by William Shurtleff of Soyfoods Center, Nov. 19. 2 p. transcript.
• ***Summary:*** An unknown German soymilk distributor was suspected of irradiating soymilk, but no firm evidence was ever obtained. The product was never sold in America, and Null never said that it was. Address: New York City.

4916. Cohen, Mitchell L.; Tauxe, Robert V. 1986. Drug-resistant *Salmonella* in the United States: An epidemiologic perspective. *Science* 234(4779):964-69. Nov. 21. [36 ref] Address: 1. Asst. Director; 2. Asst. Chief. Both: Enteric Diseases Branch, Div. of Bacterial Diseases, Center for Infectious Diseases, Centers for Disease Control, Atlanta, Georgia 30333.

4917. *Toyo Shinpo* (*Soyfoods News*). 1986. Hyôban no yoi tônyû pan. Mitsubishi Kasei Shokuhin ga hatsubai [Good response to soymilk bread. Mitsubishi Kasei Foods has started to sell it]. Nov. 21. p. 1. [Jap; eng+]
• ***Summary:*** Soymilk has replaced egg, nonfat dry milk, and water in the bread formula.

4918. *Beachcomber* (*Vashon, Washington*). 1986. Versatility is what sells tofu. Nov. 26.
• ***Summary:*** A large photo shows all Island Spring products, including soymilk, firm and extra firm tofu, Tofu Ranch House Dressing, Tofu Dessert (ice cream), Tofu Burgers, and Tofu Frozen Dessert Mix. Address: Vashon, Washington.

4919. **Product Name:** Edensoy: Natural Soy Beverage [Original, Vanilla, or Carob].
Manufacturer's Name: American Soy Products, Inc.

Manufacturer's Address: 1474 N. Woodland Dr., Saline, MI 48176. Phone: 800-248-0301.
Date of Introduction: 1986. November.
Ingredients: Original: Water, soybeans, job's tears, barley malt, kombu (seaweed), unrefined corn oil. Carob: Same but carob listed after barley malt. Vanilla: Water, soybeans, barley malt, vanilla flavor, kombu, unrefined corn oil.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic cartons. 250 ml (8.45 fluid oz) retails for $0.59, or 1 liter (33.8 oz, 1.06 quart) retails for $1.99.
How Stored: Shelf stable.
Nutrition: Per 250 ml Original: Calories 170, protein 10 gm, carbohydrate 14 gm, fat 9 gm, sodium 120 mg.
New Product–Documentation: Labels (the packages). 1986, dated. 2.5 by 4 inches by 1.5 wide. Paper package. Original: Light blue and pastels on beige. Vanilla: Blue and pastels on light blue. Carob: Blue and pastels on pink. Country scene illustration. On back: "Edensoy Refreshes. Edensoy Cooks. Edensoy Starts Your Day."

Ad (full page, color) in Natural Foods Merchandiser. 1986. Nov. p. 37. "Our research shows you expect big things from Edensoy." Product distributed by Eden Foods, Inc. of Clinton, Michigan 49236. Production started November 1986. Note: Job's tears (*Coix lachryma-jobi*) is a tan grain about the size of a mung bean. Soya Bluebook. 1987. p. 88. Leaflet. 1987, dated. Updated 1988. 4 p. "Enrich Your Life with Quality Foods: Edensoy." Gives detailed nutritional analysis of all 3 flavors, calculated diabetic exchanges, description of ingredients, and 6 recipes. Ad in Whole Foods. 1988. April. p. 95. "Looking for a new food? A solution is amazingly delicious Edensoy." Shows a huge liter carton in a pastoral landscape surrounded by angels with a hand reaching down from heaven. Ad in Whole Foods. 1988. Oct. p. 38. Nov. p. 48. "Edensoy pours... Pours... Pours it on." Ad (full-page, black and white) in Vegetarian Times. 1988. Sept. p. 29. Nov. p. 13. "Edensoy... A lot of pluses. Nutritious. Delicious. Dairy free. Quality. Satisfying. Convenient. Fresh. Versatile." Shows 8 black-and-white photos of Edensoy ads. "Only one bean in 20,000 makes it into Edensoy." "Next time you draw straws, choose Edensoy." "What most soymilks forget as a main ingredient... Flavor." "One more thing you can do for your family." "Draw on our experience." "The closer you look... the better we look." "Edensoy pours it on." "The competition has arrived!" (Shows a cow with football helmet standing behind cartons of Edensoy). This ad also appeared in Whole Foods (Jan. 1989, p. 18).

Ad in Natural Foods Merchandiser. 1989. Feb. 14. "Edensoy Original and Vanilla flavors have been reformulated to contain no oil." New 1989 label for liter carton. The top of the front panel states: "Organically grown. Double certified (Eden/OCIA). Organic soybeans and barley." The OCIA (Organic Crop Improvement Association) "Certified Organic" logo is shown. Product with Label (liter carton) purchased from Berkeley Natural Grocery Co., California. 1990. Dec. 28. Price: $1.69/liter.

Talk with Ron Roller of Eden Foods. 1991. Nov. 26. The first year that Edensoy was made in America there were not enough organic soybeans available to call any of the products "organic," so the company just mixed the organically grown soybeans with the non-organic. In about Aug. 1990 Edensoy Original flavor started to be made with only organically grown soybeans. In about April 1991 Eden Foods was finally able to get enough certified organically grown soybeans to supply the entire plant, so vanilla and carob started to be labeled as made with organically grown soybeans. Today the two best-selling flavors are vanilla and original.

4920. Barrett, Mariclare. 1986. The cook's glossary of soyfoods. *Vegetarian Times.* Nov. p. 28-35. [10 ref]
• ***Summary:*** Gives good definitions, with a full-page color illustration by Emily Soltanoff, of: Soybeans, soynuts, soy flour and grits, soy oil, textured vegetable protein, soymilk, okara ("the pulp that remains after the soymilk has been strained"), soy yogurt and soy cheese, tofu, fermented soyfoods, tempeh, miso, natto, soy sauce.

The article begins: "For 60 seconds on a national television commercial, a small, round soybean rolls past a lineup of infant formula, bread, pizza, chili, salad dressing, ice cream [Tofutti], soymilk and cubes of tofu; meanwhile the narrator intones, 'The newest development in nutrition is actually one of the oldest foods known to man.' Through advertising, the concept of soyfoods is brought home to millions of Americans by the soy giant, Archer-Daniels-Midland Company." Address: Staff.

4921. **Product Name:** [Bioforme Soymilk (Natural Chocolate, Vanilla). Renamed Formoja in early 1989].
Foreign Name: Bioforme Soja à Boire (Nature, Chocolat, Vanille); Formoja.
Manufacturer's Name: Cacoja. Affiliate of Coopérative Agricole de Colmar (CAC).
Manufacturer's Address: 8 rue Merxheim, 68500 Issenheim, France. Phone: 68.74.17.07.
Date of Introduction: 1986. November.
Wt/Vol., Packaging, Price: 500 ml and 1,000 ml Tetra Brik Aseptic cartons.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: *Journal of the American Oil Chemists' Society.* 1987. Oct. p. 1602. Talk with American Soybean Assoc. 1988. Feb. This French co-op is a partner in a cooperative venture with Alfa-Laval. Talk with Richard Rose. 1988. March 12. They visited him and he has their brochure. The company was founded about 40 years ago. About a year ago they entered a joint venture with Alfa-Laval to build a fully automated soymilk plant at Issenheim, France. The plant took less than a year to build. They make UHT soymilk and puddings. The facility uses Alfa-Laval

equipment to produce vanilla, plain and chocolate-flavored soy drinks and vanilla and chocolate-flavored desserts under the brand name "Bioforme". Coopérative Agricole des Colmar / Céréales, a cooperative of 3,000 French farmers, joined forces with Alfa-Laval to build the facility.

Alfa-Laval. 1988, June. Soyfoods: Old traditions with new potentials. p. 9. Shows a color photo of the front of the package. This and the closely related dessert package designs are among the least interesting, creative, and appetizing seen to date for any major soy product. Poor!

Letter from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30. Alfa-Laval sold a complete soybase plant to Cacoja in France. It had a capacity of 1,500 liters/hour and began operation in 1986. Food Focus. 1987. No. 3. Shows a color photo of the cartons.

Cacoja brochure. 1990. April. Formoja "Plain Soy Milk" is sold in 500 ml and 1 liter long-life packages. "Chocolate Drink" and "Vanilla Drink" are sold in 500 ml packages.

Note: This is the earliest record seen (Feb. 2003) concerning Cacoja (later Sojinal) of Issenheim, France.

4922. Eden Foods, Inc. 1986. Edensoy recipes (Ad). *East West.* Nov. p. 53-56. Also published in 1986 as a 12-page booklet (15 x 9 cm) titled "Original Edensoy Natural Soy Recipes."

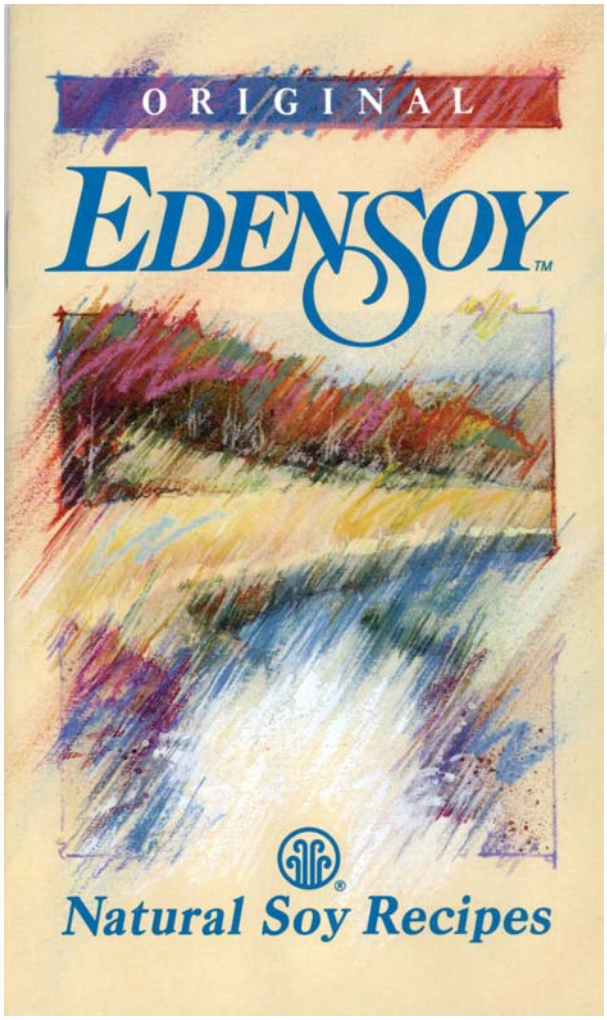
• ***Summary:*** One of these four pages of color ads bears the headline: "Edensoy–America's first soymilk!" Another states "Delicious, nutritious & versatile: Low sodium, high protein, cholesterol free, lactose free, non-dairy." The recipes include: Creamy Edensoy "cheese" topping for pizza. Lasagne. Edensoy salad dressings: Thousand island, poppy seed. Mocha mousse. Edensoy hollandaise sauce–No eggs! Corn chowder. Vegetable pot pie. Edensoy yogurt. Custard filled applesauce cake (with amasake). Creamy white sauce. Edensoy Italian style fettucini. Seafood Newburg. Banana bread or muffins. Eden easy pie crust. Edensoy coconut creme pie. Address: Clinton, Michigan 49236.

4923. *Food Processing* (*Chicago*). 1986. New company builds $10 million soymilk plant. 47(12):36. Nov.

• ***Summary:*** American Soy Products is building the plant in Saline, Michigan, to produce Edensoy. It is expected to use 85,000 bushels of soybeans and 8,000 bushels of barley, all grown in America. Address: Associate Editorial Director.

4924. *Food Technology.* 1986. U.S. & Japanese firms form American Soy Products. 40(11):54, 58. Nov.

• ***Summary:*** Concerns Eden Foods' soymilk plant in Michigan. "Eden Foods will handle product marketing, sales, and distribution, while the Japanese forms of Kawasho International, Marusan, Muso, and Seikensha will supply manufacturing equipment, oversee administration and financing, and be responsible for product production, as well as coordinate international sales of Edensoy." A small photo



shows the plant.

4925. **Product Name:** Granose Soya Dessert [Vanilla, Chocolate, or Strawberry].
Manufacturer's Name: Granose Foods Ltd. (Marketer). Made in West Germany by DE-VAU-GE Gesundkostwerk GmbH in West Germany.
Manufacturer's Address: Stanborough Park, Watford, Herts., WD2 6JR, England.
Date of Introduction: 1986. November.
Ingredients: Water, dehulled soya beans, raw cane sugar, maize starch, seaweed, sea salt, natural vanilla flavourings.
Wt/Vol., Packaging, Price: 525 gm Tetra Brik Aseptic carton retails for £0.45.
How Stored: Shelf stable.
Nutrition: Per 100 gm: 72 calories. Fat fractions: polyunsaturates 58%, saturates 15%.
New Product–Documentation: Labels (see next page) and color photo sent by STS. 1987. Blue, yellow, black, and green. Illustration of a bench in the park with glass of dessert on nearby table. Lindner. 1987. The World Soymilk Market.

4926. Great Eastern Sun. 1986. Ah Soy: The milk alternative. Coming soon. Quart size. Made in the USA. Popularly priced (Ad). *East West.* Nov. p. 2.
• ***Summary:*** A full-page black-and-white ad. Note: This is the earliest English-language document seen (Aug. 2013) that uses the term "milk alternative" to refer to soymilk.

Note 2. Ah Soy soymilk has been sold commercially since July 1984. It is the quart size that is coming soon. Address: Asheville, North Carolina.

4927. Honer, Clem. 1986. Minnesota's soy-blend specialist: St. Peter's transition from country creamery to specialty-ingredient supplier. *Dairy Foods.* Nov. p. 49-51.
• ***Summary:*** Stanley Davis, president of St. Peter Creamery in St. Peter, Minnesota, had the foresight to guide his company away from the declining market in butter and skim milk powder (they stopped producing these items in 1977), and into the expanding market for soy-based ingredients. Dried soy milk and dried tofu now make up about 80% of this company's soy product sales, with each accounting for an equal share. The remaining 20% of St. Peter's soy product sales consist of wet blends. The company recently had to build a new specialty, computerized drying and blending plant at Lake Norden, South Dakota, to keep up with sales growth.

The company processes soybeans like a milk product rather than a grain product. start with whole soybeans, which are extracted, homogenized, and dried in 7 minutes. The soy oil is encapsulated to prevent further oxidation.

4928. *J. of the American Oil Chemists' Society.* 1986. Soymilk facility. 63(11):1406. Nov.
• ***Summary:*** About American Soy Products and the new Edensoy plant in Michigan.

4929. Mitoku USA. 1986. Supersoy: Original soy drink. All natural (Ad). *East West.* Nov. Inside rear cover.
• ***Summary:*** This full-page glossy color ad shows two red straws in a class of soymilk. "Made from whole soybeans with brown rice. Non dairy. Lactose free. No cholesterol. No added oil. 40% less fat. No added salt. 80% less sodium. No refined sugar. No preservatives. 6 fl oz pouch pack. 6.7 fl oz box with straw. Convenient 16.8 oz family size." Address: 292 Washington Ave. Ext., Albany, New York 12203. Phone: 518-456-8006.

4930. **Product Name:** [Soymilk Bread].
Foreign Name: Tônyû pan.
Manufacturer's Name: Mitsubishi Chemical (Kasei) Foods Co.
Manufacturer's Address: 5-13-12 Ginza, Chuo-ku, Tokyo 104, Japan.
Date of Introduction: 1986. November.
Ingredients: Incl. flour and soymilk.
New Product–Documentation: Toyo Shinpo (Soyfoods News). 1986. Nov. 21. p. 1. "Hyoban no yoi tonyu pan. Mitsubishi Kasei Shokuhin ga hatsubai [Good response to soymilk bread. Mitsubishi Kasei Foods has started to sell it]." Soymilk has replaced egg, nonfat dry milk, and water in the bread formula.

4931. Nanba, Kazuyoshi; Nagasawa, Taro. 1986. Tônyû no __ jôteki anteisei ni oyobosu Ca^{2+} tenka no eikyô ni tsuite [Effects of the addition of calcium ion on the colloidal stability of soymilk]. *Nippon Shokuhin Kogyo Gakkaishi* (*J. of the Japanese Society for Food Science and Technology*) 33(11):745-51. Nov. [16 ref. Jap; eng]
• ***Summary:*** In order to prepare soymilk with a high calcium content equivalent to cow's milk (25mM), the effects of the addition of calcium salts on the colloidal stability of solutions containing 7S or 11S globulins and commercial soymilk were investigated by determining relative viscosity, soluble nitrogen (protein), and pH. When various calcium salts, such as calcium chloride ($CaCl_2$), calcium sulfate ($CaSo_4$), calcium citrate, and calcium phosphate were added to a solution containing 0.1% of 7S or 15S globulins, or to soymilk, calcium chloride affected the stability more than calcium sulfate, calcium citrate, and calcium phosphate, in decreasing order of sensitivity. Colloidal stability of the solutions was increased with an increase in pH in the buffer solution. Soymilk containing disodium hydrogen phosphate (20mM) or sodium citrate (20mM) did not show any precipitation, even when 19mM of calcium chloride was added to the soymilk. Stability of soymilk in the presence of calcium salts increased with increasing chain length of the phosphates. Calcium fortified soymilk

(19mM Calcium chloride added) containing sodium citrate (20mM), disodium hydrogen phosphate (20mM), sodium pyrophosphate (15mM), or sodium tripolyphosphate (10mM) were highly stable without any signs of precipitation and coagulation at 4ºC for 7 days. Address: Dep. of Agricultural Chemistry, Faculty of Agriculture, Tamagawa Univ., 6-1-1, Tamagawagakuen, Machida-shi, Tokyo 194, Japan.

4932. **Product Name:** Natural Prepared Entrees: Vegi Burger.
Manufacturer's Name: Natural, Inc.
Manufacturer's Address: 6650 Santa Barbara Ct., Elkridge, MD 21227. Phone: 301-796-3211 (Balt.); 301-621-5388 (DC).
Date of Introduction: 1986. November.
Ingredients: Nigari tofu, carrots, cabbage, onion, celery, potato, yam, okara, soymilk, sesame seeds, sunflower seeds, soybean oil, sea salt, spices.
Wt/Vol., Packaging, Price: 7 oz vacuum pack.
How Stored: Refrigerated.
New Product–Documentation: Talk with Larry C. Betzler of American Soyfood Industries. 1988. April 1. Eddie Tsai, the Taiwanese manager, makes Tofu Burgers and Veggie Burgers for Larry.

4933. Swientek, Robert J. 1986. Merging of two technologies produces aseptic soy milk: East meets West. *Food Processing* (*Chicago*) 47(12):128-29. Nov.
• ***Summary:*** In July 1983, Eden Foods introduced Edensoy soymilk into the U.S. market. Made by Marusan Co., Ltd. in Japan, the product is packed in retortable pouches. Today the product is distributed nationwide and sold in about 20 supermarket chains, including Kroger in the Detroit area and Tops in Buffalo. "According to Michael Potter, President of Eden Foods and C.E.O. of American Soy Products, Edensoy holds a 38-40% market share of the $20 million/year soy milk retail consumer market."

Construction of the Edensoy plant began in October 1985 and was completed in August 1986. It was officially dedicated on September 9. Address: Associate Editorial Director.

4934. Tanaka, Yoshikazu; Azuma, Keiko; Hirata, Takashi. 1986. [Studies on quality index of aseptic soymilk on preservation]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku* (*Report of the National Food Research Institute*) No. 49. p. 135-40. Nov. [20 ref. Jap; eng]
• ***Summary:*** Reprinted from *Nihon Shokuhin Kogyo Gakkai Shi* (*J. of Food Science and Technology*) 32(7):457-62 (1985). Soymilk prepared commercially using an aseptic packaging system was stored at 5, 25, or 37ºC for 2 months. The quality of this soymilk was then evaluated by determining the microbial count, oxidation-reduction potential (ORP), chemiluminescence, and free amino acid contents. The soymilk was also subjected the a Color Test and organoleptic evaluation.

No microorganisms were detected in the stored soymilk at any temperature, indicating the effectiveness of the process. Organoleptically, however, the soymilk deteriorated during storage, at 25ºC for 2 months or at 37ºC for half a month. The color also changed from yellowish to whitish or faded. The pH of the soymilk decreased [it became more acidic] almost immediately after storage. The ORP decreased and the chemiluminescence increased during storage. No change was observed in the composition or content of free amino acids. However the ammonia content increased during storage and was found to be closely correlated with storage period and temperature. Therefore, ammonia content can be used as a good index of the quality of aseptically packed soymilk. Address: National Food Research Inst., 2-1-2 Kannondai, Yatabe, Ibaraki, Japan.

4935. *Vegetarian Times.* 1986. Top entries in the Vegetarian Times soyfoods recipe contest: The winners! Nov. p. 36-39.
• ***Summary:*** Some 125 recipes were submitted to the contest. The full recipe for each of the winners is given. For main dishes, the first prize went to Messilla Valley Tempitas (with tempeh), the second prize to Tofu Slices with Mushrooms, and the third prize was a tie between Kid's Favorite Tofu Loaf, and Tofu Manicotti with Sesame-Miso Sauce.

For desserts, the first prize went to Tofu Cheesecake, the second prize to Cranberry-Walnut Baked Apples with Maple-Custard Sauce (with soymilk), and the third prize to Creamy Peach Rice Pudding (with tofu).

In the "Other" category, first place winner was Smoked Tofu with Dipping, 2nd place was Bombay Chowder, and 3rd place was Tofu-Shallot Dip.

A color photo by Katherine Phelps shows the dish that won first place in each category.

4936. Potter, Michael. 1986. Re: History of Eden Foods. Letter to William Shurtleff at Soyfoods Center, Dec. 2–in reply to inquiry. 1 p. Typed, with signature on letterhead.
• ***Summary:*** In July 1967 the name "Eden Organic Foods, Inc." started to be used as the name of this company. This was changed to "Eden Foods, Inc." in November of 1969.

In Feb. 1972 Eden Foods began to import foods from Japan, and in June 1972 Muso Shokuhin in Japan became their supplier.

"In Oct. 1971, after providing effective services to Eden Foods, Inc., 13.5% of the common stock of Eden Foods, Inc. was given to Michael Potter by the corporation. At this point the common stock ownership of Eden was: Between William and Judith Bolduc 43.25%, Timothy Redmond 43.25% and Michael Potter 13.5%.

In Feb. 1972 Eden began to import foods from Japan, and in June 1972 Eden began to import foods from Muso Shokuhin.

"In August of 1973 the Bolducs offered to sell their stock in Eden to Michael Potter. Michael Potter accepted this offer and purchased their stock. Because of Tim Redmond's dedication to Eden, Mr. Potter gave enough of this common stock to Mr. Redmond so that the common stock ownership of Eden Foods, Inc. became 50% M. Potter and 50% T. Redmond.

"This situation remained the same until January 1980 when, after a fire destroyed our offices and warehouse, Mr. Redmond sold his stock back to the corporation and resigned, the corporation awarded common stock to its management and Mr. Clifford Adler purchased a significant block of this common stock."

In Jan. 1984 Eden Foods became Muso Shokuhin's exclusive American import agent. In June 1985 American Soy Products was founded. Presently the suggested retail price of Edensoy is $0.59 per 250 ml pack and $1.99 per liter pack. They are selling for less in some places, i.e. $0.49 and $1.65, respectively.

11,000,000 individual units (6 fl. oz. = 180 ml retort pouches) of Edensoy were sold in 1984 (Jan.–Dec.) and 10,250,000 were sold in 1985 (Jan.–Dec.). This is equivalent to 515,633 gallons or 1,980,190 liters in 1984, and 480,476 gallons or 1,845,018 liters in 1985. Address: President, Eden Foods Inc., 701 Tecumseh Rd., Clinton, Michigan 49236. Phone: (517) 456-7424 or (313) 973-9400.

4937. Potter, Michael. 1986. History of Eden Foods: Building a soymilk plant in America (Interview). *SoyaScan Notes.* Dec. 12. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** On 1 August 1986 it was announced that a major new joint stock company, named American Soy Products, had been established to produce Edensoy soymilk in Saline, Michigan, 30 miles west of Detroit, at a new state-of-the-art manufacturing and packaging facility. Michael Potter played a major role in conceiving and pulling together this innovative, exciting, and promising new venture. In July 1983 Eden Foods launched their first Edensoy soymilk, made by Marusan Ai in Okazaki, Japan. It soon proved to be a great success. When Potter began to talk with Marusan Ai about building a soymilk plant in the USA, he found that they were wary. In 1982-83 Marusan had had extensive discussions with Hinode Tofu Co. in Los Angeles, California, about a soymilk joint venture, but the talks eventually broke down over small points; Marusan felt they had wasted a lot of time and money to no avail. So Potter focused on Muso. With competition eating into their domestic Japanese health food market, a venture in America looked promising. Yet neither Eden nor Muso had the capital to build a soymilk plant in America. Enter Kawatetsu Shoji, better known as Kawasho International. A big New York based firm with money, influence, power, and experience in international business and joint ventures, they were looking to diversify out of coal, steel, and other commodities, into branded foods. They already knew Eden Foods (they had been financing their growing Edensoy imports and inventories from Japan) and they liked the fact that Eden knew Japan and seemed to have a solid, growing product. Kawasho's endorsement of the project was enough to overcome Marusan's reluctance. And with Marusan came Seikensha, the Tokyo based company that had built Marusan's state-of-the-art soymilk equipment. The historic joint venture package, called American Soy Products, was officially founded in June 1985.

Gross investment in the new company was $10 million. Percentage ownership was Marusan Ai 25%, Kawatetsu Shoji (Kawasho Intl.) 25%, Muso 15%, Seikensha 10%, and Eden Foods Inc. 25%. The chairman of the board was Michael Potter of Eden Foods and the president was Mr. Hiroyasu Iwatsuki, Marusan's soymilk manager, who soon moved to Michigan to go to work.

Each partner had a unique and valuable set of skills to offer. As before, Eden Foods would continue to be responsible for marketing, selling, and distributing all soymilk made by the new company. Kawasho would oversee administration and financing. Marusan would take care of soymilk production. And Muso would coordinate international sales. Seikensha, which has patents on key pieces of soymilk manufacturing equipment, would supply the plant equipment.

Open houses in mid-September were attended by the media and a host of state dignitaries, including the Director of Michigan's Department of Agriculture, who called the new plant "a perfect marriage of high technology and the area's farming." These events, and additional promotion done by a newly-hired, local marketing and advertising firm named Group 243, gave the project extensive, very positive publicity. Widespread color print media advertising, focusing on Edensoy's new larger size package, was also started.

In late October 1986 the sparkling new 22,000 square foot stainless steel plant at Saline (12 miles northeast of Clinton and just south of Ann Arbor, in the southeast corner of Michigan) started test runs, which were carefully monitored by the FDA for 6 weeks. Both the Japanese soymilk equipment and the Swedish low-acid Tetra Brik packaging lines were said to be the most modern of their kind in the world. The company had spared no expense to "do it right." Japanese technicians now living in Saline were training American counterparts.

The factory and land had cost $2.3 million and equipment cost $4.3 million. The company committed $700,000 for startup costs, $1.8 million for marketing funds, and $700,000 for working capital. By November 1986 most of this money had been spent.

The new Edensoy was packaged in both regular (250 ml or 8.45 fl. oz. for $0.59) and large (1 liter for $1.99) Tetra Brik cartons, in plain, carob, and vanilla flavors. The new prices were significantly lower than before. For example, in

1984 (when it was historically least expensive) Edensoy in a 6-ounce retort pouch had retailed for $0.69 to $0.79, or an average of 12.3 cents per ounce. The new 250 ml (8.45 fl. oz.) pack retailed for only 7.0 cents per ounce (down 43%), while the liter size (33.8 fl. oz.) retailed for only 5.9 cents per ounce (less than half the retort pouch, and 16% less than the 250 ml pack). Yet compared with cow's milk at 54 cents per quart (32 fl. oz.) or 1.7 cents per ounce, the Edensoy products are still 3.5 to 4.1 times as expensive per ounce; a much lower ratio than in 1984 but still quite high.

A cornerstone of Eden's food procurement policy since 1973 was the support of local farmers. And Saline was in the heart of Michigan's soybean country. The estimated 85,000 bushels a year of soybeans used to make Edensoy will all be grown on contract with individual Michigan farmers located within a 10-mile radius of the plant. Beeson variety soybeans will be used; though low yielding for farmers, they have a low-oil, high-solids composition and give excellent soymilk. Numerous standard grade parameters will also be specified. Growers will typically receive premiums of 15-30% over conventional markets. By mid-1987 American Soy Products (ASP) hopes to start using organically grown soybeans.

One nice by-product of the new ASP plant was the fact that it was the only plant and Tetra Brik line located in that part of the USA especially designed to package low-acid foods; there were only two others in the entire country, both on the West Coast, and used mostly to pack milk. Thus a host of other companies, wishing to have their own low-acid products packed on Tetra Brik machines, started to line up to use ASP's equipment. This sort of contract packing would serve as an important source of income and keep the packaging operation running 24 hours a day.

ASP's initial run is scheduled to produce 100,000 packages of 250 ml equivalent. The company's first year sales goal is $5,000,000 produced on 2 shifts. But the first problem is to fill the 20 truckloads that were back ordered.

In November Eden Foods decided that on 1 Jan. 1987 they will stop serving as a wholesale distributor to retail stores in the Midwest (10% of their total business), drop 150 products, and serve as a master distributor, selling only through other distributors. This will allow additional attention to be paid to American Soy Products. Still big marketing and distribution questions remain: Will ASP use brokers? Go direct? Go through grocery distributors? Who does ASP see as their stiffest soymilk competition? Vitasoy and Sunsoy?

What about future plans? A French label for the Canadian market. Organic soybeans. The use of a grain (such as brown rice, barley, etc.) in the Edensoy formula. A cautious attempt to break into the mass market via super markets, but only after careful test marketing in specific areas. Eventually other similar plants in other parts of the United States.

American Soy Products and the new Edensoy are the most exciting soymilk ventures of 1986, and ones that the industry will be watching closely. Address: President, Eden Foods Inc., Clinton, Michigan.

4938. Fischer, R.W. 1986. Miller Farms, Dr. Harry Miller, and work with soymilk (Interview). Conducted by William Shurtleff of Soyfoods Center, Dec. 22. 2 p. transcript.
• ***Summary:*** Fischer has been involved with soy since 1960. He formed Soypro International in 1963. Before that he was with the Soybean Council of America. Address: Iowa.

4939. Miller, Clarence. 1986. Harry Miller, Willis Miller, and their work with soymilk (Interview). Conducted by William Shurtleff of Soyfoods Center, Dec. 24. 2 p. transcript.
• ***Summary:*** Clarence Miller, M.D., Dr. Harry Miller's eldest son, lives on the grounds of the St. Helena Hospital and Health Center.

The main purpose of this visit is for Shurtleff to pick up a copy of a manuscript on the life of Dr. Harry W. Miller written by Mr. Herbert T. Ford, 531 Sunset Dr., Pacific Union College, Angwin, California 94508. Phone: 707-965-2047.

Ford is in PR and a good writer. He interviewed Dr. Harry Miller in 1958. Raymond Moore later plagiarized this work. Ford does not have a copy of this manuscript. Clarence has the best original, which is a carbon copy.

The BIG picture in China. High level contacts are the key to getting somewhere in that country.

Harry's full name was Harry Willis Miller. His son Willis was named Harry Willis Miller, Jr.; he was generally called "Willis."

In Feb. 1948 Dr. Miller went to China for a few weeks and stayed in Shanghai with Clarence who, who had been there since 1946. Then back to states. When other Adventists had to vacate to Hong Kong the church asked Harry to go back to Shanghai. He stayed about 6 months after Dec. 1940 to early 1950. The Communists took over 14 Adventists hospitals in China.

Dr. Miller and his wife and group established the FIRST Adventist presence in China, in 1903. There were 4 physicians and 2 nurses. Maude was a physician. So they were of great historical significance.

The quality of medical care in Adventist hospitals in Asia is slipping dramatically, according to Clarence. He says: "My interest is in improving our medical activities."

Willis Miller started working with Bob Fischer about 3 years ago. They developed a mobile unit. Can ship these units to foreign countries. There are Now there are three other principals.

Dr. Thrasher is interested in having a soymilk plant as a student industry at an Adventist college in Thailand. This is the strongest interest Clarence found in Asia.

Miller Memorial Foundation. Clarence wants to set this up in Miller Farms contracts. The money would be used to advance Adventist health care activities.

Bob Fisher has traveled a lot outside the US in past years. Willis is a very competent soymilk engineer. Bob runs the business.

Their future has promise. Fisher went to China at the invitation of a corporation or group of entrepreneurs in Peking. Maybe interest in Shanghai via Dr. Yeung (spell?). Now at Kettering.

Clarence wants to reestablish Harry's original plant 50 years later. He wrote Mr. Milne, who is 90 some years of age and colleague of Harry, now in Hong Kong doing medical work. Has names of 5 people in Shanghai, settled on a few promising investors. One is a SDA businessman, in the cotton business. President of Rawcot International. Owns lots of cotton land.

In the early 1960s Dr. Miller went to Hong Kong, had a home there at the SDA college at Clearwater Bay, and was working with Longway and Milne to raise money to build the 2 hospitals. He had many old friends from Hong Kong. He wanted to have a little soy dairy at the college. It was established but did not take off. Chinese students see themselves as scholars, not domestic workers.

While Harry was in Hong Kong, Sally Awe, who lives in Hong Kong and is the heiress of the Tiger Balm Fortune, suggesting that she build a soymilk plant in Hong Kong for the use of the Chinese people. Dr. Miller encouraged her but his main interest was in the 2 hospitals. It never happened.

Dr. Miller's last surgery was in 1973, when he was 94 years old. From 1961-62 to 1973 he did only goiter operations–his specialty.

Dr. Miller's first West Coast distributor, in early 1940s, was Joseph Lessin & Co. which later became Kahan & Lessin. It wasn't until 1941 that the plant in Mt. Vernon, Ohio, actually started to make any soyfoods. Harry basically didn't have a dime to his name when he returned to US in 1939 because he had been a missionary all the time. His brother Clarence, who lived in Chiff? City, Ohio, loaned him $5,000 to pay for the 150 acre farm that Harry bought in Mt. Vernon, Ohio. Harry then flew back on the Clipper to the Philippines and did thyroid surgery. He left half the money there for the Church and brought home $20,000.

Adventists developed Miller Memorial Sanitarium and Hospital in Cebu City, Philippines. He made only 2 trips to the Philippines to do thyroid surgery and each time came back with $20,000. He was only there a few weeks but would do 10-l2 operations a day. They were all lined up and ready to go.

This manuscript by Herbert Ford did not come from Mr. Ford but from Mr. Milne in Hong Kong, out of a pile of papers that he said Dr. Miller left with him. Address: P.O. Box 97, Deer Park, California 94576. Phone: 707-963-7446.

4940. Tsuchiya, Kanji. 1986. Re: Soymilk and new soymilk plants in China. The soymilk market in Japan. Letter to William Shurtleff at Soyfoods Center, Dec. 25.–in reply to inquiry. 6 p. Typed, with signature.

• ***Summary:*** All soymilk plants in China are run by provincial governments. Private companies are not allowed to start them. All soymilk made in China is for domestic consumption; none is exported. During the past three years, 14 soymilk plants have been constructed in China under the leadership of Seikensha, with cooperation from Marusan. Seikensha built the plants and Marusan taught the Chinese how to use them to make quality soymilk. Mr. Tsuchiya supervised all aspects. There are no additional orders at present, probably because of the high yen exchange rate, but perhaps because (according to rumors) the Chinese are trying to develop their own soymilk plants.

In terms of the management of Chinese soymilk plants, one person is in charge of construction, one is in charge of running the plant, and then there is always a third person from the Communist party. It is difficult to know who is really responsible, and there is frequent personnel turnover. The Chinese use a lot more sugar in their soymilk than Japanese (often twice as much) and they prefer not to add oil. The soybean solids content is about 6%. Pure/plain soymilk, with nothing added, has a good reputation in China.

I am enclosing the names and addresses of the 13 Chinese soymilk plants that I supervised. They started operation from Aug. 1984 to Aug. 1986. Nine have a capacity of 350 liters/hour, and four have a capacity of 2,000 liters/hour in Beijing, Qingdao (Shandong), Liuzhou (Guangxi), and Jamusi (Heilongjiang). In Feb. 1986 Hong Kong Soya Bean Products Co. Ltd., makers of Vitasoy, bought a dehulling machine, lipoxidase inactivator, and micro-pulverizer from Seikensha. Capacity: 2 tons/hour.

Soymilk production in Japan peaked in 1983, then dropped sharply. Production in tonnes was 17,280 in 1981, 68,245 in 1982, 116,724 in 1983, 84,013 in 1984, 55,356 in 1985, and 44,400 in 1986 (est.). Thus the 1986 level is only 38% of the 1983 peak. As I see it, the main reasons for this drop are: 1. The image of poor flavor (Japanese did not traditionally drink soymilk), or actual poor flavor. 2. The three major manufacturers (Kibun, Marusan, Mitsubishi) all position soymilk as a health food or specialty food for the old and sick, keeping it away from mass market soft drinks. 3. Soymilk is a sideline for each of the three major manufacturers. Kibun focuses on seafood products, Marusan on miso, and Mitsubishi Kasei on chemical products. 4. Product managers have taken a short-run profit-oriented approach, rather than building for the future. Address: Kamiogi 3-1-1, Suginami-ku, Tokyo 167, Japan. Phone: 03-312-0775.

4941. Morohoshi, Yozo. Assignor to Hidekatsu Kuroyanagi (Kanagawa, Japan). 1986. Process for manufacturing soymilk products with wheat germs. *U.S. Patent* 4,632,839. Dec. 30. 4 p. Application filed 5 Aug. 1985. See also Japanese Patent 84-239,688 (FSTA 84-11-14). Application

also filed in Japan on 3 Sept. 1984. [7 ref]
• ***Summary:*** Nigari or magnesium chloride, a natural coagulant used in the preparation of tofu, gives very rapid coagulation. Other coagulants such as calcium sulfate and glucono-delta lactone give less rapid coagulation, easier mixing, and a softer curd, but have inferior flavor. If soymilk is mixed with a wheat germ dispersion (which has been prepared from fresh wheat germ homogenized at 95ºC) before addition of the nigari or magnesium chloride, the wheat germ slows the speed of the coagulation and allows sufficient time for the curd to mature into a delicious product of even texture. Variations in the ratio of soybean to wheat germ in the suspensions allow different products to be made, e.g., tofu or bean curd, "a dessert pudding" or a "dressing or yogurt substitute." Address: Hiratsuka, Japan.

4942. *SoyaScan Notes.* 1986. Chronology of soybeans, soyfoods and natural foods in the United States 1986 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jan. Ron Ishida, an attorney with no previous knowledge of tofu, working for Azumaya Inc. (South San Francisco, California), rewrites the Tofu Standards without authorization. They have already gone through 8 drafts. This creates a crisis.

Jan. Soymage, the first casein-free soy cheese, is introduced by Soyco Foods.

Jan. *Soyfoods: The Journal of the European Soyfoods Association* (*ESFA*) begins publication from Paris. Philippe Vandemoortele of Alpro is president of the association and Guy Coudert is editor of the periodical. The association plans to organize a soyfoods conference every 2 years. But the journal is discontinued after 3 issues.

Jan. Tomsun Foods is reorganized, changing its name (for the fourth time) to Tomsun Foods International. The firm's new chairman is Juan Metzger, founder of Dannon Yogurt. The company produces nearly 3 million lb. of tofu a year.

Jan. First Tofutti Shop opened in Japan by Daiei Co. Inc, Japan's largest retailer. Shop sells non-dairy soy-based ice cream and related snacks.

Feb. 7. Fire destroys Island Spring tofu plant in Vashon, Washington, with an estimated $1 million loss.

Feb. Soya Kaas, an imitation cheese containing soymilk and casein, launched by American Natural Snacks, a marketer. The manufacturer is Swan Gardens of Georgia.

Feb. Jofu, a tofu-based, non-dairy, nonfermented, yogurt-like product, sweetened with fruits, launched by Tomsun Foods International of Greenfield, Massachusetts. The product is a hit, grossing nearly $400,000 in its first 32 weeks on the market.

Feb. Barricini Foods has its first public stock offering. Raises $1.5 million, gross to use in marketing Tofulite and Ice Bean soy ice creams.

Feb. Central Soya purchases Staley's protein line, including Mira-Tex, Procon [soy protein concentrate], and Textured Procon brands.

Feb. ASA hires Jim Guinn as technical director of soybean quality programs. Soybean quality is an area of growing interest, with two parts: 1. The traditional area of soybean condition, concerning grades, damage, foreign material, etc. 2. The newly emerging area of soybean composition and its relation to grades. New measurement technologies make it likely that soybeans may soon be sold based on their composition of oil and protein. Both effect exports and price.

March 5. Pesticide control now tops the Environmental Protection Agency's list of most pressing problems, announces *The New York Times* (and *Soybean Digest,* June/July). Stricter pesticide laws are enacted.

March 7. Richard E. Lyng of California becomes U.S. Secretary of Agriculture, replacing John R. Block. Policies remain unchanged.

April 18. Wm. Shurtleff, in charge of compiling the original tofu standards, submits a strong criticism of the illegitimate Ishida draft in the form of a detailed chronology of the development of the tofu standards.

April. Tofu cheesecake revolution in New York City profiled by *Whole Life.* Thirteen restaurants now offer them.

May. Tofutti Love Drops (chocolate covered graham cookie drops) launched by Tofutti Brands with much fanfare.

May. Nasoya's new million-dollar automatic tofu-making system, imported from Sato Shoji in Japan, begins operation.

June. Increasing consumer deception by "soy cheese" manufacturers. Whole Life publishes "Whole Frauds in the News: Will the Real Soy Mozzarella Please Stand Up (That is, If There is One)," an exposé of mislabeling involving Soyarella, Tofu Mozzarella, and Soya Kaas (though the latter brand is not at fault). Argues that it is deceptive for health food stores to call a product "non-dairy" if it contains casein (milk protein), even though FDA rules allows such a designation. In Oct. Whole Life shows that "Independent lab tests prove Soyarella hoax; Large quantities of casein [19.6%] found in so-called soy cheese." Soyarella had previously been marketed as casein free.

July. Ralston Purina Co. starts publication of Nutrition Overview, a newsletter focusing on soy protein and fiber.

July. Soyfoods win big in 7th Annual Natural Foods Merchandiser merchandising awards: Gold: San-J tamari and shoyu. Silver: Fantastic Foods' Tofu Scrambler and Tofu Burger, Westbrae Natural miso soups. Honorable mention: Walker & Wilks frozen entrees, White Wave boxed tofu.

July. Vitasoy reintroduces its line of reformulated and repackaged soymilk products, originally launched in 1984. They contain more solids and nutrients, and are sweetened with barley malt instead of maple syrup.

July. A Roper poll in the U.S. finds that tofu is the "most

hated" food. 35% of a sample of 2,000 adults checked it on a list of foods said to be disliked, ahead of liver (34%), yogurt (29%), Brussels sprouts (28%), and prunes (24%). Results do not vary significantly by age, but tofu dislike is somewhat less among those with higher incomes. The poll results are very widely publicized, and are even the subject of a question on the TV program Jeopardy (in early 1988)–and its rerun! These findings suggest both a widespread awareness of tofu and a split image: Some like it and others don't.

Aug. Kikkoman's new shoyu plant starts operation in Chitose, Hokkaido, in northern Japan. The first product was shipped on 30 Jan. 1987.

Sept. 9. American Soy Products Inc. plant dedicated in Clinton, Michigan. A $10 million joint venture between Eden Foods and four Japanese companies (Kawasho, Marusan, Muso, Seikensha), construction on the plant began in Oct. 1985. It will make Edensoy soymilk in Tetra Brik cartons. The first products are shipped in November.

Sept. 19. Tofu standards passed by Tofu Standards Committee in San Francisco, after all committee members except Shurtleff agree to start with a blank slate in drafting new standards–thus erasing years of work by hundreds of people. Shurtleff resigns in protest, arguing that this is a violation due process. Shortly thereafter Barricini and Ralston Purina also refuse to give final approval. Tofu standards are stalled indefinitely after many years of hard work.

Sept. 24. First International Tofu Products Expo, Seminar, and Soyfoods Buffet, held in Munich, West Germany. Sponsored by Bernd Lehmann International Consultants. 100 people attend.

Oct. Supersoy brand soymilk introduced to America by Mitoku USA. It is made by Kibun Health Foods Co. in Japan.

Oct. Ralston Purina sells its domestic agricultural products business, Purina Mills. Total sales for 1986 were $5.5 billion.

Nov. Island Spring announces $6.5 million investment from Edward Lynch Co. to finance an expansion plan. Construction of a new 30,000 square foot factory is now underway on Vashon Island.

Dec. 1. White Wave of Boulder, Colorado, acquires Soyfoods Unlimited, a tempeh manufacturer of San Leandro, California. This makes White Wave America's largest tempeh manufacturer.

Dec. 8. Central Soya purchases 7 of 9 Bunge processing plants. ADM is now estimated to control 30% of U.S. crushing capacity followed by Cargill (25%), Central Soya (20%), and other (25%).

Dec. Tomsun Foods International nets about $3.45 million in its first public stock offering. Most of the funds will be used for sales and marketing of Jofu, and to repay $800,000 in debts. Total Tomsun sales in 1986 were about $3.1 million.

Dec. Haagen-Dazs will drop Tofutti and start distributing Barricini Tofulite, a non-dairy frozen dessert.

Dec. Brightsong Foods is named as one of the top ten food innovators for 1986 by Food & Beverage Marketing magazine. In fact, Brightsong is listed first!

Dec. Tofruzen Inc., a soy ice cream marketer from Englewood, Colorado, raises $1.6 million in a public stock offering. Sales of Tofruzen in fiscal 1986 were $91,000, rising to $158,000 in 1987, and $213,000 in the first quarter of 1988.

Dec. Edible Soy Products in Hudson Iowa is sold to Solnuts of Tilburg, The Netherlands, and renamed Solnuts, Inc. The Hudson and Tilburg plants are the only ones in the world that dry roast soybeans to make soynuts.

Dec. More than 60,000 Italian farmers harvested nearly 25,000 hectares (61,700 acres) of soybeans this year. Italy is now Europe's largest soybean producing country, followed by France. Five years ago, Italy produced virtually no soybeans. The Ferruzzi Group is the leading promoter, helped by hefty subsidies from the EEC.

1986 New Trends:

So Called Tofu Cheeses. Eight new soy cheeses were launched during 1986, many with the term "Tofu" in the product name. Many have been shrouded in mystery, with the names of the manufacturer and ingredients often not disclosed. There has been much consumer deception, mislabeling, and several attempts to conceal the fact that they usually contain casein, the protein in cow's milk.

Soy Yogurts and Yogurt-Style Products. The leader in this exciting new category is Jofu from Tomsun Foods. The two basic types are fermented soymilk products (e.g. Cream of the Bean, Soy-O), and non-fermented tofu-fruit blends (e.g. Jofu).

Move to Manufacturing Soymilk in America. The rising cost of soymilk imports is making them unprofitable. Domestic production, which obviates shipping U.S. soybeans to Japan, then shipping the beans and water back, will have major, beneficial long-term Edensoy, Ah Soy, and Westbrae Malteds. Still imported are Vitasoy (from Hong Kong, whose exchange rate is tied to the dollar) and Sunsoy (from Belgium).

The declining value of the dollar against the yen starting in late 1985 led to a steady rise in soymilk prices. But the combination of domestic production and larger size packages (see below) has led to a drop in soymilk prices during 1986. For example, Edensoy, selling for 6 times the price of dairy milk per unit volume in early 1984, was selling for only 3.5 to 4.1 times as much in late 1986, a drop of about 37%.

Soymilk Switches to Tetra Brik Cartons and Liters or Quarts. Edensoy, Westsoy, and Ah Soy have all switched to Tetra Brik cartons this year. Lower total manufacturing and shipping cost is the main reason. The liter/quart size was pioneered in the U.S. by Alpro/Vamo Foods/Sunsoy, and followed by Edensoy, Ah Soy, and Vitasoy. These

counterparts of dairy milk in quarts suit the needs of regular soymilk users by offering a more economical price per unit volume plus greater convenience. Soymilk may be the first liter-size Tetra Brik product to succeed in America.

INTSOY is doing outstanding, pioneering work with soyfoods and soybean utilization in the Third World and America. Research is focusing on extrusion cooking, extruder-expeller processing for small-scale oil expression, and fresh green soybeans. Since April 1987 the INTSOY Newsletter has become one of the best soy-related publications available.

Morinaga Long-life Silken Tofu becomes a major force in the U.S. tofu market. Traditional manufacturers consider the product a major threat to their markets. Azumaya has hired an attorney who spends considerable time causing troubles for Morinaga.

4943. American Committee on Nutrition. 1986. Aluminum toxicity in infants and children. *Pediatrics* 78(6):1150-54. Dec. [36 ref]

4944. **Product Name:** [Soymilk].
Manufacturer's Name: Dansk Sojakagefabrik ApS.
Manufacturer's Address: 24, Islands Brygge, DK-2300 Copenhagen S, Denmark.
Date of Introduction: 1986. December.
New Product–Documentation: Soyfoods Center Computerized Mailing List. 1982. July 23. Note: This company is a large soybean crusher. They make soy oil and soy lecithin for food and industrial uses, plus soybean meal for livestock feed. Their last listing in a Soya Bluebook is in 1986.

Talk with Thomas Andersen. 1990. May 24. There was a company in Copenhagen named Dansk Sojakagefabrik ApS that processed soybeans to make oil, lecithin, and meal plus soy products, especially for pets, sausage ingredients, and industrial use. The plant blew up in a big explosion 2-3 years ago–probably caused by chemicals in the plant. This gave all soyfoods in Denmark, including tofu, a bad reputation for a long time.

4945. Ferreira, V.L.P.; et al. 1986. Estabilidade e aceitabilidade do leite de soja formulado [Stability and acceptability of a soymilk formula]. *Boletim do Instituto de Tecnologia de Alimentos* (*Campinas, Sao Paulo, Brazil*) 23(4):425-36. Oct/Dec. [Por]*

4946. Haytowitz, David B.; Matthews, Ruth H. 1986. Composition of foods: Legumes and legume products. Raw, processed, prepared. *USDA Human Nutrition Information Service, Agriculture Handbook* No. 8-16. 156 p. Dec. See p. 126-152. By Nutrition Monitoring Division. [29 ref]
• ***Summary:*** Data are presented for 133 legumes and legume products. Of these, only 53 were included in *USDA Agriculture Handbook* No. 8, published in 1963. The following soy-based foods are included: Simulated meat products (bacon, meat extender, and sausage), raw soybeans, cooked boiled soybeans, roasted soybeans, dry-roasted soybeans, soybean products: miso, natto, tempeh, full-fat soy flour (raw, and roasted), defatted soy flour, low-fat soy flour, defatted raw soy meal, fluid soy milk, soy protein concentrate, soy protein isolate, soy sauce (shoyu, tamari, and HVP), raw tofu (firm {p. 147}, regular, dried-frozen/koyadofu, and fried) [Note 1. Tofu is called "tofu" and at "Soybean curd" it says, see "tofu." Note 2. Footnote 2 states that the calcium content of tofu curded with calcium sulfate is 683 mg/100 gm, compared with 205 mg/100 gm for tofu curded with nigari. As of May 1997 Soyfoods Center believes that both these values are far too high; the two figures should be about 159 mg/100 gm (range 128-168) and 45 mg/100 gm respectively], okara, salted and fermented tofu (fuyu).

For each food the following information and number of values are given: Vertically: Proximate (7 values), Minerals (9), Vitamins (9), Lipids (Fatty Acids [Saturated (9), Monounsaturated (5), Polyunsaturated (7)], Cholesterol, Phytosterols), Amino acids (18). Horizontally: Amount in 100 gm edible portion (mean, standard error, number of samples), amount in edible portion of common measures of food (e.g. ½ cup or 1 cup), amount in edible portion of 1 lb of food as purchased.

Minerals include calcium, iron, magnesium, phosphorous, potassium, sodium, zinc, copper, and manganese (not aluminum).

Vitamins include ascorbic acid, thiamin, riboflavin, niacin, pantothenic acid, vitamin B-6, folacin, vitamin B-12, vitamin A.

Amino acids include tryptophan, threonine, isoleucine, leucine, lysine, methionine, cystine, phenylalanine, tyrosine, valine, arginine, histidine, alanine, aspartic acid, glutamic acid, glycine, proline, and serine.

For Adzuki beans (raw, cooked boiled, canned sweetened, and Yokan {yôkan–sugar-sweetened confection}) see p. 24-27.

For peanuts (all types raw, cooked boiled, oil-roasted, dry-roasted, Spanish raw, Spanish oil-roasted, Valencia raw, Valencia oil-roasted, Virginia raw, Valencia oil-roasted) see p. 109-18. For peanut butter (chunk style, smooth style), defatted peanut, and low-fat peanut flour, see p. 119-22. Address: USDA Human Nutrition Information Service.

4947. *Natural Foods Merchandiser.* 1986. A soymilk first: Made in the U.S.A. Dec. p. 4.
• ***Summary:*** A new soymilk plant in Saline, Michigan is a joint venture of 4 companies in Japan plus Eden Foods. It will make Edensoy soymilk.

4948. *San Francisco Vegetarian Newsletter.* 1986. Attention

vegans! [Advertising for soy cheeses is misleading]. Nov/Dec. p. 1.
• ***Summary:*** "Joyce Thornton, a Vegan Member of the SF Society, has researched the soy cheeses and discovered their advertising to be misleading. The following is an excerpt from a letter to her from Brightsong Foods, P.O. Box 2536, Petaluma, California 94953-2536, (707) 778-8638.

"Casein, referred-to on the label as a 'milk-free protein,' is indeed derived from milk. However, it is free of all other constituents normally found in milk (such as cholesterol and lactose), besides the protein. Calling it a 'milk-free protein' was our way of explaining that fact as succinctly as possible. In fact, the FDA considers it to be a non-dairy ingredient, meaning that, say, Tofu-Rella or Tofutti could contain casein and still be labelled as 'non-dairy'... All soy cheeses currently on the market contain casein... Sincerely, Richard Rose, President.

"Richard Kane, (415) 388-3310 distributor of Soy Mozzarella which was served as vegan by the Vegetarian Society, still insists that his company used no dairy or casein."

Note: This is the earliest English-language document seen (March 2007) that uses the registered trademark "Tofu-Rella" to refer to a Western-style soy cheese.

4949. *SoyaScan Notes.* 1986. New Trend: Soy yogurts and yogurt-style products (Overview). Dec. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** At least 7 new soy yogurt products have been introduced this year, worldwide. The leader in this exciting new category is Jofu from Tomsun Foods. The two basic product types are non-fermented tofu-fruit blends (e.g. Jofu), and fermented soymilk products (e.g. Cream of the Bean, Soy-O).

4950. **Product Name:** Noelnog (Soymilk Eggnog, without Eggs or Dairy Products).
Manufacturer's Name: Sunrise Market Ltd.
Manufacturer's Address: 729 Powell St., Vancouver, BC, V6A 1H5, Canada.
Date of Introduction: 1986. December.
How Stored: Refrigerated.
New Product–Documentation: Talk with Michael Weiner. 1987. Dec. 16. The major market is Los Angeles.

4951. *Tetra Pak Age.* 1986. Edensoy: Born of American and Japanese ideas. 4(4/4):12-13. Fall/Winter.
• ***Summary:*** Six color photos show Edensoy packages. Describes how the new plant in Michigan was built.

4952. **Product Name:** Tripple Delight (Soy Protein Based Chocolate Drink).
Manufacturer's Name: Tripple Products Inc.
Manufacturer's Address: Victoria, BC, Canada.
Date of Introduction: 1986. December.
New Product–Documentation: Food in Canada (Toronto). 1986. Dec. Tripple Delight, incorporated in February 1985 and headed by Don and Deedrie Ballard, has launched a soy protein-based ice cream and a soy protein-based chocolate drink. These have been developed in concert with Dr. William Powrie of the University of British Columbia Food Sciences Department.

4953. Vitasoy (USA) Inc. 1986. Vitasoy recipes (Leaflet). San Francisco, California. 3 panels each side. Each panel: 22 x 10 cm. Dec.
• ***Summary:*** Contains 14 recipes for using Vitasoy soymilk in such things as whole wheat pancakes, blue corn muffins, cold avocado soup, and creamy basil dressing. Address: P.O. Box 77321, San Francisco, California 94107.

4954. Long, J.F. 1986-1988. Dietary induced aluminum encephalopathy, animal models. *CRIS Database.* Project No. OHOV-RF-71977. Agency: CSVM OHOV.
• ***Summary:*** "Objectives: To attempt to identify environmental factors and physiologic states in animals (of relevance to humans) whereby toxic levels of aluminum are able to breach the normal barriers of the body (gut-epithelial barrier, blood-brain-barrier, renal excretion) and gain entrance to the nervous system." The project starts on 30 Sept. 1986 and ends on 29 Feb. 1988. Address: Veterinary Pathobiology, Ohio State Univ., Columbus, Ohio 43210.

4955. Halas, E.S.; Penland, J. 1986-1991. Role of trace elements in brain development, brain function, and adaptive behavior. *CRIS Database.* Project No. 5450-51000-004-00D. Agency: ARS 5450. Sponsor: USDA-ARS.
• ***Summary:*** "Objectives: To study the effects of trace element deficiencies and toxicities on brain development, brain function, and adaptive behavior of animals. These studies will help define dietary requirements for optimal mental function and performance in humans. The main emphasis will be on zinc, copper and boron deficiencies and aluminum toxicity." The project starts on 1 March 1986 and ends on 28 Feb. 1991. Address: ARS, Grand Forks, North Dakota 58201.

4956. **Product Name:** Soypreme: Non Dairy Soy Drink [Regular, or Vanilla].
Manufacturer's Name: Berrivale Orchards.
Manufacturer's Address: McKay Road, Berri, SA 5343, Australia.
Date of Introduction: 1986.
Ingredients: Natural soy bean extract, maltodextrin, malt, flavor [vanilla only], and water added.
Wt/Vol., Packaging, Price: 1 liter PurePak milk-type carton.
How Stored: Shelf stable; refrigerate after opening.

New Product–Documentation: Australian Dairy Foods. 1986. Feb. p. 84. A photo shows "Soypreme Natural Soymilk" in a Pure-Pak carton. It is said to be made near Melbourne.

Form filled out by Margot Sloan, Hawkesbury Agric. College, Private Bag. No. 3., Richmond 2573, NSW, Australia.

Letter from C.H. Lee of Blissquik Food Products. 1992. Feb. 17. This company currently makes Soypreme brand soymilk. Address is the same as shown above.

Note: By 1995 this product had apparently been renamed Good Life: Non Dairy Soy Drink, still sold in a 1 litre PurePak Carton.

4957. *Brauindustrie.* 1986. Soja-Getraenke [Soy beverages]. 5:218. [Ger]*

4958. **Product Name:** Spray-Dried Soymilk Powder.
Manufacturer's Name: Clofine Dairy Products, Inc.
Manufacturer's Address: P.O. Box 335 (1407 New Rd.), Linwood, NJ 08221. Phone: 800-441-1001.
Date of Introduction: 1986.
New Product–Documentation: Soya Bluebook. 1986. p. 102. Kingma. 1987. Soya Newsletter. March/April. p. 3.

4959. Cole, Michael. 1986. Soya Health Foods Ltd. Company profile. Unit 4, Guinness Road, Trafford Park, Manchester M17 1AU, England. 4 p.
• ***Summary:*** Michael Cole is an entrepreneur, born in Manchester, England. The company was formed in 1984 in Manchester. The factory is sited in Trafford Park Industrial Estate and was the first to be built for the sole purpose of Soya Milk manufacture. The company is headed by Mr. M.S. Arora (Chairman), Mr. M.P. Cole (Managing Director), and Burns Anderson p.l.c. (Financial Controllers). Production of Soya Milk began in January 1985. The Sunrise brand is currently being sold throughout the 2,500 independent health food shops and in many supermarkets. The company has 5 products. Their soymilk is private labeled for 5 other companies. Soya Health Foods Ltd. has also been established in Australia and New Zealand, with its own private labels (milk in New Zealand and Burgers, Ice Cream, and Dessert in Australia). Address: Manchester, England.

4960. **Product Name:** Soy Juice (Soymilk).
Manufacturer's Name: Fresno Tofu Co.
Manufacturer's Address: 943 E Street, Fresno, CA 93706. Phone: 209-268-1717.
Date of Introduction: 1986.
New Product–Documentation: Talk with Brad Kubota, owner. 1990. Nov. 28. He got serious about making and selling this product in 1986.

4961. Fujiwara, S.; Inoue, K.; Hirota, T.; Kawanishi, G. 1986. [Studies on hydrolysis of soybean phytate by phytase from *Rhizopus sp.* EF-78]. *Reports of Research Laboratory, Snow Brand Milk Products Co.* No. 83. p. 31-41. [25 ref. Jap; eng]*
• ***Summary:*** Optimal conditions for the operation of phytase, isolated from *Rhizopus* species, on phytate from soybeans were determined. The improvement in digestibility of soymilk exposed to this phytase was also quantified. Address: Technical Research Inst., Snow Brank Milk Products Co. Ltd., 1-1-2 Minami-dai, Kawagoe, Saitama 350, Japan.

4962. **Product Name:** [Baole Soyabean Milk (Regular, Cocoa, or Orange)].
Manufacturer's Name: Guangdong Cannery. Later renamed Guangzhou Cannery.
Manufacturer's Address: Guangzhou, China.
Date of Introduction: 1986.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Color photo sent by Anders Lindner of STS. 1987. Nov. 14. Tetra Brik carton. Red, black, pea green, and white. Product name written on carton in English is "Baole Soyabean Milk. Made by Guangdong Cannery, Guangzhou, China."

Alfa-Laval. 1988, June. Soyfoods: Old traditions with new potentials. p. 9. Shows a color photo of the front of the package. Red, black, white, and yellow on pea green. The product name is above a coffee cup on a saucer.

Letter from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30. Alfa-Laval sold a complete soymilk plant to Guangdong Cannery in China. It began operation in 1986 with a capacity of 2,500 liters/hour.

4963. Gupta, M.P.; Gupta, R.P.; Gupta, R.R. 1986. Food processing in oxygen-free environment [Soymilk]. *PCT International Patent Application* WO 86/05659. *
• ***Summary:*** Legumes are disintegrated and heated under vacuum in an oxygen free environment to inactivate lipoxygenase. The resulting soymilk is claimed to be bland and free from off-flavors or beany flavors. It also has no throat catching sensation or chalky mouthfeel. Address: Raj Gupta, ProSoya Foods International Inc., 801-275 Slater Ave., Ottawa, ONT, K1P 5H9, Canada. Phone: OF 613-237-5814. HM 613-741-2558.

4964. Gupta, S.K.; Patel, A.A.; Patil, G.R. 1986. Soyfoods to combat malnutrition in developed countries. Paper presented at APO Seminar in Hong Kong. 11 p. *
Address: Div. of Dairy Technology, National Dairy Research Inst., Karnal 132 001, India.

4965. **Product Name:** Tofu, Tofu-Fa (Curds), Soymilk, Egg Tofu (with Soy), Tofu Pau (Fried Tofu Puffs), Tofu Noodles,

Dofu-Gan.
Manufacturer's Name: Kong Kee Food Corp.
Manufacturer's Address: 108 Charlton St., 3rd Floor, New York, NY 10014-3643. Phone: 212-234-5261 or 212-645-3780.
Date of Introduction: 1986.
New Product–Documentation: Talk with George Lin, company representative. 1995. Oct. 23. The company was started in 1986 as a new company by Mr. Ip-Wing Kong. All of the above products were introduced in about 1986.

Form filled out by Ying Kwong. 2010. Nov. 18. The company (the name is the same) is now located at 48-31 Van Dam Street, Long Island City, New York 10191. Phone: 718-937-2746. Person in charge: Ying Kwong. The company still sells soy drinks, tofu (silken, soft, and firm), tofu puffs, and egg tofu.

4966. **Product Name:** Soysage. A Spicy Vegetarian Soy Pate.
Manufacturer's Name: Local Tofu.
Manufacturer's Address: 307 Route 59, West Nyack, NY 10994. Phone: 914-358-2309.
Date of Introduction: 1986.
Ingredients: Soy pulp and soymilk from farm verified organically grown soybeans, whole cornmeal, whole wheat flour, nutritional yeast, wheat germ, safflower oil, tamari sauce, herbs and spices.
Wt/Vol., Packaging, Price: 16 oz.
How Stored: Refrigerated.
New Product–Documentation: Talk with Sam Weinreb. 1987. Dec. 29. Label. 1987. 3.25 inch diameter. Orange or red and blue. "Mold into non-meat balls, scramble with eggs, slice-heat-eat, pre-cooked, refrigerate or freeze, spread on bread, use in lasagna, sprinkle on pizza." Sam learned this from a Scotch tofu maker, Sian McLean, in Nova Scotia, Canada.

4967. Ministry of Agriculture, Forestry & Fisheries (Japan). 1986. [Japanese agricultural standard for soymilks]. Tokyo. 38 p. [Jap]
• ***Summary:*** This sets standards for soymilk, prepared soymilk, soymilk beverage, and soy protein beverage. It specifies requirements for quality (properties, soy protein content, ingredients, additives, etc.) and labeling for the four products. Address: Tokyo, Japan.

4968. Nakagawa, A.; Murasawa, H. Assignors to Asahi Foods Company Ltd. 1986. Process of manufacturing bean curd and bean milk. *European Patent Application* 170,507 A2. [Eng]*
• ***Summary:*** For soymilk, the soybeans are dried at room temperature, crushed and dehulled. The resulting particles are soaked, ground, then boiled with steam in a closed container. Foam is removed by application of a jet of steam to the surface. The okara is separated from the soymilk. To make tofu, a coagulant (such as glucono lactone, nigari/bittern, or calcium sulfate) is added to the soymilk.

4969. **Product Name:** [Soya Drink (Soymilk)].
Foreign Name: Sojadrink.
Manufacturer's Name: Natuerliche Lebensmittel. Zacharowicz–Pollmann.
Manufacturer's Address: Staudgasse 70, A-1180 Vienna, Austria. Phone: 0222/48 50 03.
Date of Introduction: 1986.
Ingredients: Soymilk (Sojafiltrat), vanilla, cane sugar, vegetable oil.
How Stored: Refrigerated.
New Product–Documentation: Label. 1986. 4 by 2.75 inches. Maroon and green on white, self adhesive. "Erzeugung von rein pflanzlichen Lebensmitteln" (Production of pure plant foods). Letter from Paul: The product was only sold for 6 months.

4970. Nguyen, Dinh Mao. 1986. [Food products based on soy milk and process for preparing them]. *French Patent Application* 2,578,396 A1. [Fre]*

4971. **Product Name:** Noble Bean Swedish Tempeh Balls.
Manufacturer's Name: North Coast Tempeh Co.
Manufacturer's Address: 18320 Euclid Ave., Cleveland, OH 44112.
Date of Introduction: 1986.
Ingredients: Tempeh, whole wheat flour, vegetable soup stock, soymilk, corn oil, onion, tamari, parsley, spices.
Wt/Vol., Packaging, Price: 16 oz.
New Product–Documentation: Label. 1987. Ink stamp. Jeff Narten. 1987. "History of North Coast Tempeh and its Products." 4 p. Dec. 7.

4972. Ohara, T.; Sakai, T.; Ohinata, H.; Muramatsu, N.; Matsuhashi, T. 1986. [Studies of tofu and dried-frozen tofu (kori-dofu). VIII. Monitoring coagulation of soymilk via electrical conductivity]. *Research Report of the Nagano State Laboratory of Food and Technology* No. 14. p. 91-98. [6 ref. Jap]*
Address: Nagano State Lab. of Food Technology, Kurita, Nagano-shi, Japan.

4973. **Product Name:** [Soialat {Bottled Soymilk}].
Foreign Name: Soialat: Alimento de Soia.
Manufacturer's Name: Parmalat S.p.A.
Manufacturer's Address: Collecchio di Parma, Parma, Italy.
Date of Introduction: 1986.
Wt/Vol., Packaging, Price: Bottle.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Alfa-Laval. 1988, June.

Soyfoods: Old traditions with new potentials. p. 9. Shows a color photo of the front of the bottle and label, which contains an illustration of a red-roofed farmhouse on a hill. Below it is written "La Fonte della Vita" (The source/fountain of life).

Letter (fax) from Xavier Karis in Italy. 1990. June 14. "About the name Soialat, I have asked several people but nobody has heard of the name or seen the product. However I did find out that Soialat is a registered trademark of a company named Parmalat S.p.A. It was registered on 15 July 1986 and paid for 10 years. Parmalat is located in Collecchio di Parma in the province of Parma. It is a rather big company with a large line of dairy products.

"There is however another problem with the name Soialat. Italian law forbids use of the terms 'soia' and 'latte' together. A company cannot promote its product as 'Latte di Soia.' Therefore the name Soialat probably cannot be used legally. A short time ago a lawsuit concluded that it was legal to call a soymilk product 'Soia Milk,' but there is still big chaos in Italy over the naming of soymilk products."

Note: This is the earliest document seen (May 1999) showing Parmalat as a manufacturer of soymilk.

4974. **Product Name:** Soy Beverages.
Manufacturer's Name: Prestige Foods Ltd.
Manufacturer's Address: Main Office: 30, Jaora Compound, M.Y.H. Rd., Indore 450021, MP, India.
Date of Introduction: 1986.
New Product–Documentation: Soya Bluebook. 1986. p. 103. Note: In Soya Bluebook. 1982. p. 78. Prestige Foods Private Ltd. is listed as a "Soy Dairy." Address: 32, 11-C, New Palasia, Indore 452 001, MP, India. Other location: Dewas, MP.

4975. **Product Name:** Yeo's (Soy Beverage).
Manufacturer's Name: PT Salim Graha Food & Beverage Industry. Affiliate of Yeo Hiap Seng, Singapore.
Manufacturer's Address: Jalan Raya Bekasi, Jawa Barat (West Java), Indonesia.
Date of Introduction: 1986.
New Product–Documentation: Soya Bluebook. 1986. p. 103. Soya Bluebook Plus. 1997. p. 150. PT Salim Graha, a maker of soy beverages, is located at Jalan Raya Bekasi, Km. 27, Pondok Ungu, P.O. Box 140 Bekasi, Bekasi 17132, West Java, Indonesia. Phone: +62 21 511258. Fax: 21 971929. Contact: Ario Mahendra, Marketing Director.

4976. Shinoda, S.; Yoshida, T. 1986. [Phytic acid content of soy-milks and fermented soybean]. *Tachikawa Tandai Kiyo* 19:71-73. (Chem. Abst. 105:151795). [Jap]*

4977. **Product Name:** Soymilk.
Manufacturer's Name: Soy Foods Australia P/L.
Manufacturer's Address: Australia.
Date of Introduction: 1986.
Wt/Vol., Packaging, Price: Plastic bottle.
New Product–Documentation: Shurtleff & Aoyagi. 1986. Soymilk Industry and Market, Update. This company has just spent $100,000 on basic soymilk equipment. They plan to sell fresh soymilk to all Coles supermarkets in New South Wales in plastic bottles.

4978. **Product Name:** Soya Drink [Honey Sweetened Chocolate, Honey Sweetened Vanilla/Almond, Sweetened

Plain, Unsweetened Plain].
Foreign Name: Boisson de Soya (Sucré au Miel Chocolat, Sucré au Miel Vanille/Amande, Sucré, Non Secré).
Manufacturer's Name: Sunrise Market Ltd.
Manufacturer's Address: 729 Powell St., Vancouver, BC, V6A 1H5, Canada. Phone: 604-254-0701.
Date of Introduction: 1986.
Ingredients: Vanilla/Almond: Soy milk (water, organically grown soya beans), honey, barley malt, natural flavours, locust bean gum, carrageenan, sea salt.
Wt/Vol., Packaging, Price: 1 litre carton.
How Stored: Refrigerated.
New Product–Documentation: Talk with Michael Weiner. 1987. Dec. 16. Peter Joe of Sunrise now makes soymilk for the Chinese market and flavored soymilks for the supermarkets. 4 Labels. 1987. Vanilla/Almond: Brown, light green, and red on white. Illustration of a sun rising over the fields plus flower motif. "A good source of protein." Note the use of the term "soy milk" or "lait de soja" in the bi-lingual ingredient listing! Form filled out by Peter Joe. 1988. May 20. Gives date as 1986.

4979. **Product Name:** Promo (Infant Food Based on Soy Protein Isolate).
Manufacturer's Name: Tata Oil Mills Co. Ltd.
Manufacturer's Address: Bombay House, Homi Mody Street, Bombay 400-023, India.
Date of Introduction: 1986.
New Product–Documentation: Soya Bluebook. 1986. p. 111.

4980. **Product Name:** [Soymilk].
Foreign Name: Soja–Getraenk.
Manufacturer's Name: Tofuhaus Tiefenthal.
Manufacturer's Address: Hauptstrasse, D-6719 Tiefenthal, West Germany. Phone: 06351-43718.
Date of Introduction: 1986.
Ingredients: Soybeans, water.
Wt/Vol., Packaging, Price: 380 ml glass.
How Stored: Refrigerated.
New Product–Documentation: Form filled out by Albert Hess. 1988. Jan. 25. Leaflet. 1988. Sterilized for long shelf like. They make 300 liters/month. Form filled out by Albert Hess. 1988. Dec. 1. This product was introduced in April 1984. Label. 1988, received. 2.5 by 3.5 inches. Black on white.

4981. Toho Bussan Kaisha, Ltd. 1986. Company profile. Nihonseimei Shimbashi Building 3 floor, Shimbashi 1-18-16, Minato-ku, Tokyo 105, Japan. 13 p. Manufacturer's catalog. [Eng]
• ***Summary:*** Established in 1947, this trading company employed 147 people in Jan. 1986. One affiliate was Tokyo Tofu Co. Ltd., Chiba, Japan. The soybean and oilseeds dept. trades soybeans and sells a tofu manufacturing plant and its related materials (dried tofu powder). Note: The latter is probably spray-dried soymilk for making tofu. Address: Tokyo, Japan.

4982. **Product Name:** Chocolate Sunsoy Dessert (Soymilk Pudding).
Manufacturer's Name: Vamo Foods USA, Inc. (Importer). Made in Belgium by Alpro.
Manufacturer's Address: 20 Shawnee Dr., Watchung, NJ 07060.
Date of Introduction: 1986.
Ingredients: Incl. soymilk, chocolate.
Wt/Vol., Packaging, Price: 1 liter Tetra Brik Aseptic carton.
How Stored: Shelf stable.
New Product–Documentation: Golbitz. 1987. Soya Newsletter. March/April. p. 8. Sales of Sunsoy were strong during 1986. At $1.79 to $1.99 a liter, the product is still the least costly product per ounce of all the imports. Friedman, Martin. 1987. April 6. Spot in Adweek East. Label reads: "Non-dairy soy dessert. Ready to serve. Europe's best-selling non-dairy chocolate dessert." Available in Europe since 1982.

4983. **Product Name:** Yeo's Soy Beverage.
Manufacturer's Name: Yeo Hiap Seng (Malaysia) Bhd. Affiliate of Yeo Hiap Seng, Petaling Jaya.
Manufacturer's Address: Pandan, Johor Bahru, P.O. Box 115, Johor Bahru, Malaysia.
Date of Introduction: 1986.
New Product–Documentation: Soya Bluebook. 1986. p. 103.

4984. **Product Name:** Yeo's Soy Beverage.
Manufacturer's Name: Yeo Hiap Seng (Sarawak) Sdn. Bhd. Affiliate of Yeo Hiap Seng, Petaling Jaya.
Manufacturer's Address: P.O. Box 238, Kuching, Sarawak, Malaysia.
Date of Introduction: 1986.
New Product–Documentation: Soya Bluebook. 1986. p. 103.

4985. Zemel, M.B.; Shelef, L.A. 1986. Calcium fortified soy milk. *European Patent Application* 195,167 A2. *
• ***Summary:*** The soymilk is calcium fortified by adding a polyphosphate and a bioavailable calcium source. The polyphosphate acts as a chelating agent for the calcium source, while promoting microbial stability of the soymilk. The polyphosphate enables the calcium to be added in amounts such that the resulting products has calcium levels equal to or greater than those found in cow's milk. Address: Wayne State Univ.

4986. Ang, H.G.; Kwik, W.L.; Lee, C.K.; Theng, C.Y. 1986. Ultrafiltration studies of foods. I. The removal of undesirable components in soymilk and the effects on the quality of the spray-dried powder. *Food Chemistry* 20(3):183-99. [25 ref]
• ***Summary:*** "Reverse osmosis (RO) and ultrafiltration (UF) are relatively new hydraulic pressure-operated membrane techniques in the food industry, particularly in soymilk processing. Their use as a concentration step in industrial unit operations is fast becoming an attractive alternative to conventional evaporation processes as it is a non-thermal treatment, as well as one with mild operating conditions."

Ultrafiltration (UF) can be used to remove low molecular weight antinutritional factors, especially the oligosaccharides, raffinose and stachyose (which cause flatulence), and phytic acid. Using a membrane with a 20,000 molecular weight cut-off, at 60% water removal, greater than 80% of each oligosaccharide was removed, but only 50% of the phytic acid (perhaps because phytic acid exists as phytates or is associated with native protein, and thus complete or near complete removal would be difficult to achieve even using multiple stage UF). 50% of the acid was detected in the soybean soak water. Thus the actual amount of phytic acid present in the soymilk was about 1/3 that originally present in the soybean.

In spray drying the UF soymilk concentrates, the nitrogen solubility index (NSI) of the spray dried powder improved with the percentage of water removed during UF, and also with the addition of sucrose to the concentrate before spray drying. There was hardly any detectable difference in taste and flavor. Address: Chemistry Dep., National Univ. of Singapore, Kent Ridge, Singapore 0511.

4987. Annand, J.C. 1986. Denatured bovine immunoglobulin pathogenic in atherosclerosis. *Atherosclerosis* 59:34-351. *

4988. Chang, Wonona W.; Chang, Irving B.; Kutscher, Austin H.; Kutscher, Lillian G. 1986. Chinese dessert, dim sum & snack cookbook. New York, NY: Sterling Publishing Co., Inc. 160 p. Illust. (color photos). Index. 26 cm.
• ***Summary:*** "Many of the dessert recipes in this book have been prized as family treasures for generations and are authentic; others have been adapted to the Chinese cuisine by the addition of oriental ingredients..." (p. 7).

The "Guide to ingredients" has interesting entries for "Bean curd or tofu (*dow foo*)" and "Bean filling, sweet (*Cantonese: dow sa*) (*Mandarin: do sa*)" ("Color: red {kidney beans [azuki]}, green {mung beans}. Available form: canned. When available: most commonly at Chinese New Year. Where purchased: Chinese bakery or grocery," p. 13), and for "Hoisin sauce (Red seasoning sauce) (*hoy sin joing*) (*hai hsien jiang*)" (p. 16).

Desserts: Doughnut slices with Chinese flavors (with "sweet bean paste" [probably *an*], made with azuki beans, p. 33). Glutinous (sweet) rice cake (with "1 lb. black bean paste (dow sa)," p. 33). Fried bean paste pancake (with "4 oz. bean paste," p. 40). Lychee peach tofu cooler (with "8 oz. tofu," p. 56). Soybean milk (homemade recipe with "1 cup soybeans," p. 58). Red bean paste ice cream (with "1 cup sweetened red bean paste" [azuki], p. 64). Lychee tofu custard (with "8 oz. tofu," p. 91). Strawberry tofu pudding (with "6 oz. chilled tofu," p. 91). Peach tofu custard (with "8 oz. tofu," p. 93). Mandarin oranges with tofu (with "6 oz. Chinese-style tofu," p. 93). Ginger sweet red bean dessert / spread (with "½ cup sweet bean paste" [azuki], p. 106). Orange tofu icing (with "12 oz. tofu," p. 107). Sweet red bean dessert sauce (with "½ cup sweetened red bean paste" [azuki], p. 110).

Dim sum and snacks: New Year dumplings with sweet black bean paste (with "½ cup sweet black bean paste (*dow sa*)," p. 113). Bean paste sesame balls (with "sweet black bean paste," p. 118). Dow sa won ton ("Prepare the same as Fried Won Tons {p. 139} except use *dow sa* (black bean paste) as a filling... Dow sa is available at Chinese bakery shops, p. 140).

About the authors (p. 146). Address: 1-2. Morristown, New Jersey; 3-4. Scarsdale, New York.

4989. Claudel, Paul. 1986. Oeuvres complétes de Paul Claudel. Tome 29. Proses et poésies diverses [Complete works of Paul Claudel. Vol. 29. Various writings in prose and poetry]. Paris: Gallimard. 720 p. [1 ref. Fre]
• ***Summary:*** An article titled *La plante qui donne du lait* [The plant that gives milk] appears in the section on *Proses Diverses* [Various writings in prose] on pages 443-47. At the end is written "16 décembre 1945."

An article titled "Le Soya" [The soybean] appears in the same section on pages 447-451. At the end is written "[P. 24 janvier 1946] meaning that it appeared in the French magazine *Le Figaro* on 24 Jan. 1946.

Note: Paul Claudel lived 1868-1955. Address: Académie française, France.

4990. Committee for Soybean (The). 1986. The Philippines recommends for soybeans. Los Baños, Laguna, Philippines: Philippine Council for Agriculture and Resources Research and Development. 111 p. Technical Bulletin Series No. 14A. Revision of 1976 edition. [51 ref. Eng]
• ***Summary:*** Written by The Soybean Committee (Dr. Florendo C. Quebral, a plant pathologist at UPLB, chairman), this work focuses on recent technologies for soybean production. A foreword by Ramon V. Valmayor, Executive Director of PCARRD, notes: "The importance of soybean has been stressed continuously. To encourage its widespread production, the Ministry of Agriculture and Food (MAF) launched the Soybean Production Program in Mindanao. Likewise, PCARRD initiated and coordinated the implementation of Soybean Pilot Production Project in 1983 to demonstrate the feasibility of growing soybean profitably in Luzon."

Contents: Foreword. Acknowledgments. The Soybean Committee. Introduction. Production management. Marketing. Soybean cropping system. Crop protection. Seed production. Processing and utilization: Raw materials for industry, soybean as food. References. Appendixes. List of tables. Lists of figures.

Table 1 shows soybean production in the Philippines from 1974 to 1985. Area in hectares grew from 2,780 ha in 1974 to a peak of 11,250 ha in 1976 and was 8,479 ha in 1985. Production grew from 2,214 tonnes in 1974 to a peak of 11,466 tonnes in 1982 and was 8,430 tonnes in 1985. Yield grew from 0.80 tonnes/ha in 1974 to a peak of 1.05 in 1982 and was 0.99 in 1985. Local production does not begin to supply local demand. In 1984 380,691 tonnes of soybeans and products were imported. Most of the imports were soybean meal.

Table 2 shows imports and exports of tausi (salted, fermented soybeans), oil cake (huge imports), soy sauce (large exports), soy oil (refined; large imports), soybean paste, taho (soymilk curds, often sold topped with a little brown sugar), bean cheese (tokwa [tofu]), hypoallergenic soy food, crude soy oil. Page 50 shows all current uses of soybeans in the Philippines, and p. 51 gives the nutritional composition of Philippine soyfoods. Note the terms Geerligs cheese (Tahu; 92.7% moisture and 2.9% protein), Soybean curd (Tahuri; 61.3% moisture and 11.4% protein), Fermented soybean cheese (Tausi; 51.5% moisture and 13.8% protein), and Soybean cheese (Tokwa; 77.0% moisture and 12.9% protein).

Recipes are given for preparing soy sauce (p. 53), miso, tahu (soymilk curds, p. 59), tokwa (soybean cheese, or firm tofu), tao-si (salted, fermented soybeans [fermented black soybeans]), soybean milk (p. 61), and soybean coffee. Descriptions are given for sufu (p. 62), tempeh, soy flour and grits, soy protein concentrates and isolates.

Note: In the section on nutritional composition, two words are incorrectly defined. The term "Tahuri" actually refers to tofu in brine, and "tausi" refers to salted, fermented soybeans.

Appendix E (p. 90+) contains recipes for green vegetable soybeans, whole dry soybeans, soy sprouts Address: PCARR.

4991. Elliot, Rose. 1986. The vegetarian mother and baby book. New York, NY: Pantheon Books. vii + 261 p. Index. 24 cm.

• ***Summary:*** A complete guide to nutrition, health, and diet during pregnancy and after–with easy recipes for mother and baby to enjoy together. The author "is one of England's most popular cookbook writers, a radio and TV commentator, and a columnist. A vegetarian since the age of three, she is also the author of *Vegetarian Dishes from Around the World* and *The Festive Vegetarian.*" She has also raised three children according to the principles described in this book. Contents: Part I: A vegetarian diet for healthy mothers and babies. Part II: Recipes. Appendix. A. Summary of Nutrients: Where they are and what they do. B. How it all adds up: Analysis of one day's vegetarian menus. C. Recommended daily dietary allowances for women.

In Part I, the author recommends that if soy milk is used, it should be fortified with riboflavin (vitamin B-2), and calcium. Regular soymilk provides a little (0.5 mg/cup) of zinc. In Part II, soy-related recipes include: Miso pick-me-up (p. 99; with watercress). Tofu dressing (p. 110). Soybean salad (p. 127). Curried soybean and apple spread (p. 137). Soy sausages (p. 159; made with cooked whole soybeans). Soy and walnut loaf (p. 160; made with cooked whole soybeans). Mushroom and tofu quiche (p. 175). Tofu fritters with lemon (p. 186). Creamy tofu and almond topping (p. 203; for use like heavy cream with desserts). Whipped tofu topping (p. 204). Tofu ice cream (p. 218). Vegan yogurt (p. 219; made with soy milk; fermented).

In the Sept/Oct. 1994 issue of *Vegetarian Journal,* Reed Mangels, PhD, RD, an expert on vegetarian nutrition, says that this is her favorite book on pregnancy for vegetarian women. Address: England.

4992. Goddard, Susan. 1986. Focus on soya. Hove, E. Sussex, England: Wayland (Publishers) Ltd. 48 p. Illust. Index. 21 x 22 cm. Series: Focus on Resources. [3 ref]

• ***Summary:*** This is a brief introduction to the subject with many color photos. Contents: 1. The importance of soya. 2. The beginnings of soya. 3. Where soya beans are grown. 4. The beginnings of soya processing. 5. The soya plant. 6. Planting. 7. Harvesting. 8. Threshing and storage. 9. At the processing plant. 10. Extracting and refining the oil. 11. Making margarine. 12. Animal feed. 13. Soya protein products. 14. Textured vegetable protein. 15. Other soya products. 16. The nutritional importance of soya. 18. Soya as a world commodity. 19. The future. Facts and figures. Glossary. Books to read. Sources of further information.

Numerous large color photos show commercial soya products. Page 23: Granny Ann High Fibre Cooked Soya-Bran, Bilsons Fibrefit, Nature's Way Soya Flour. Page 24: Waitrose Soya Soft Margarine, Prewetts Pure Soya Bean Oil. Page 27: Life All Natural Salad Cream Style Dressing (egg free) [with soya oil].

Page 30: Mapletons Body Bulk (Malt flavoured milk & soya protein drink mix. Make with milk), Healthcrafts Soya Protein Powder (84% protein). Page 31: Cauldron Foods Vegetable Pâté (mushroom flavour), Cauldron Foods Tofu Burgers (nut style, chilli, or vegetable), Direct Foods Protoveg Menu 5 Grain Burgamix, Direct Foods Protoveg Menu Minced Soya & ___ Mix, Direct Foods Bean __ st (Oriental Style), Direct Foods Protoveg Menu Sizzles, Direct Foods Protoveg Menu Sausmix, Direct Foods Protoveg Menu Burgamix, Sunrise 4 Vegetarian Quarterpound Burgers.

Page 33: Direct Foods Mr. Fritzi Fry's Soy Sausage Mix, Granose Vegetarian Goulash, Direct Foods Protoveg (textured soya protein food) Beef Flavour Chunks. Page 34: Duchesse All-Natural Tofu Dressing & Dip, Amoy Light Soya Sauce, Witte Wonder Organic Tofu Spread (with paprika), Morinaga Ever-Fresh Silken Tofu. Page 35: Plamil Soya Milk Rice Pudding, Provamel Soya Dessert (vanilla [made by Alpro in Belgium]), Sunrise Soya Milk (500 ml, sugar-free, or sweetened with raw cane sugar).

4993. Hesseltine, C.W. 1986. Future of fermented foods. *Mycologia Memoir* No. 11. p. 303-16. Chap. 17. (C.W. Hesseltine and Hwa L. Wang, eds. Indigenous Fermented Food of Non-Western Origin. Berlin & Stuttgart: J. Cramer.) Previously published in 1981 in USDA Miscellaneous Publication FL-MS-333. [11 ref]
• ***Summary:*** Contents: Introduction. Positive factors for increased use of fermented foods. Trends in production of fermented foods. Factors that may effect the wider use of fermented foods in the West. Literature cited. Address: USDA/NRRC, 1815 N. University St., Peoria, Illinois 61604.

4994. Hoshijo, Kathy. 1986. The art of dieting without dieting! Recipe and guidebook. The Self-Sufficiency Association, 2525 South King St., Honolulu, Hawaii 96826. Or: P.O. Box 1122, Glendale, California 91209. xiv + 729 p. Illust. Index. 24 cm.
• ***Summary:*** A whopper of a cookbook, with 300 easy-to-prepare lacto-vegetarian recipes (no eggs) from the star of the PBS television series "Kathy's Kitchen." Kathy has 6 healthy children (see color photo on rear cover) and 5 years of experience on television teaching Americans how to eat healthy foods. Each recipe contains a detailed (full-page!) nutritional analysis.

This book contains a wealth of recipes using soyfoods. For example, the index lists 57 recipes for tofu and tofu mayonnaise, 13 recipes for tempeh, 9 recipes for yuba, 6 recipes for miso, and 4 recipes for soybeans (including soymilk). One section titled "Soyfriends" (p. 63) explains: "In eliminating meat from my diet, one food that has become a real friend in the kitchen is soybeans and by-products made from soybeans. From a nutritional standpoint, soybeans are a good nutritional replacement for meat as they are the only legume which contains all essential amino acids... Soybeans by themselves have a Net Protein Utilization about equal to that of beef and chicken." Address: Honolulu, Hawaii; and Glendale, California.

4995. Hunt, Janet. 1986. The compassionate gourmet: The best of international vegan cuisine. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 160 p. Illust. Index. 22 cm.
• ***Summary:*** An excellent vegan cookbook, written for animal lovers. Soy-related recipes include: Avocado tofu pâté (p. 31). Celery miso pâté (p. 36). French bean salad with tofu dressing (p. 66). Tofu curry (Thailand; p. 74). Tofu and vegetable pakora (p. 86). Tofu layered casserole (p. 96). Tomato flan with tofu (p. 104). Tofu Lemon flan (p. 137). Yogurt dessert (made with cultured soya milk, p. 140). Rhubarb fool (dessert in soya milk, p. 141). Maple pancakes (with soya flour, p. 149). Walnut tofu balls (p. 156).

At least one recipe uses Holbrook's Worcester Sauce–a Worcestershire-type sauce without animal products. Many recipes call for soy sauce or soya milk, and some for canned soy or nut "sausage." Page 9 lists a number of special ingredients including Direct Foods Protoveg (soya "meat"), Infinity Foods (distributors [in Brighton, at Sussex University]) Soya mayonnaise, Lotus Foods TVP (soya "meats" in a varieties of forms and flavors), Plamil concentrated soya milk (use diluted as a milk, undiluted as a cream), and Tomor Margarine (the author's favorite of the many vegan margarines now available in the UK). In all recipes, each ingredient is listed twice in side-by-side columns: once in its Imperial (metric) form and once in its American form, e.g. 385 ml soya milk, 1 1/3 cup soya milk. A number of recipes call for the use of alcohol (whiskey, brandy, etc.). The author has written at least 14 other books on vegetarian or wholefood cookery. Address: England.

4996. Island Tofu Works. 1986. Market Research & Product Development Specialists for the Soyfoods and Health Foods Industry (Leaflet). Bar Harbor, Maine. 1 p. Front and back. 28 cm.
• ***Summary:*** "Island Tofu Works was originally founded in 1980 as a manufacturer of tofu and other related soyfoods products. Its success in product development and production, and the rapidly growing and changing soyfoods market, led to the company's decision to take its hands-on experience, and combine it with in-depth and ongoing market and product research to become *a market research and food product development company that specializes in soyfoods.*

"Our company's product development experience includes soymilks, spray-dried soymilk powders, tofu or soy-based desserts, yogurts, ice creams, meat and cheese analogs, flavored tofu products, tofu dips and dressings." Address: 318 Main St., Bar Harbor, Maine 04609. Phone: (207) 288-4969.

4997. Kim, Kil-Hwan. 1986. [Soymilk]. Seoul, South Korea: American Soybean Assoc. 67 p. [15 ref. Kor]
• ***Summary:*** The full-color cover of this book shows the labels of more than 20 soymilk cartons sold in Korea. Address: Head, Food Science & Technology Lab., Korea Food Research Inst., P.O. Box 131, Cheongryang, Seoul, South Korea.

4998. Leneman, Leah. 1986. The international tofu cookery

book. London and New York: Routledge & Kegan Paul. 122 p. Illust. by Megan Dickinson. Index. 20 cm.
• ***Summary:*** Contents: Introduction. Types of tofu readily available: Morinaga silken tofu, Japanese instant silken tofu ("House" brand, soya milk powder and a coagulant), medium tofu, Chinese tofu, converted Japanese tofu, firm tofu (and address of 4 makers of vacuum-packed firm tofu in UK–Cauldron Foods, The Regular Tofu Co., Paul's Tofu {organic}, and Bean Machine). More unusual forms of tofu: Fermented tofu, dried-frozen tofu, deep-fried tofu, bean curd sticks or sheets [yuba]. General notes: Quantities, tofu mayonnaise, soya yogurt, American measurements. Making tofu at home. Table of metric equivalents. British- and American-style dishes (More than 100 recipes). Mexican-style dishes. The Mediterranean. Asia. Desserts.

A discussion of the author and her works appears on the half-title page at the front of the book. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

4999. Ludlow, Rose Budd. 1986. Total health and food power: Principles of healthful living and outstanding vegetarian recipes from Glendale Adventist Medical Center. Santa Barbara, California: Woodbridge Press. 239 p. Illust. Recipe index. 23 cm.
• ***Summary:*** Section 1 of this book consists of 18 chapters on Seventh-day Adventist principles of healthful living. Part 2 contains more than 200 vegetarian recipes from the Glendale Adventist Health and Medical Center. Soy-related recipes include: Soybean waffles (p. 118). Corn chowder with imitation Baco-Bits (p. 127). Lemon juice-soy mayonnaise (with soy milk powder, p. 149). Gado-gado salad (with fried tofu, p. 165). Tofu salad deluxe (p. 171). Chinese-style sautéed tofu (p. 185). Fried tofu patties with eggs and vegetables (p. 192). Leafy Chinese tofu (p. 196). Soy-cheese patties (with tofu, p. 206). Soy-cheese scallops (p. 207). Tofu balls or cutlets (p. 210). Tofu balls with tartar sauce (p. 210). Tofu with mushroom sauce (p. 211). Tofu and brown rice casserole (p. 212).

Many recipes also use meatlike products made by Seventh-day Adventist food companies; a list is given on p. 174. These include Soyameat (p. 162), Meatless Chicken (p. 167), Nuteena (p. 200, 213), Vege-Burger (p. 211, 214). Address: Consulting Dietitian, Formerly, Director of Dietary Service, Glendale Adventist Medical Center, Glendale, California.

5000. Madison College Alumni Association. 1986. A pictorial history of Madison College, a school of divine origin 1904-1964. Madison, Tennessee. viii + 269 p. Illust. 28 cm.
• ***Summary:*** Several articles about Madison from other publications (e.g. Hastings 1938; Holman 1941) are reprinted in this book. Pages 42 gives a history of "The Madison Food Factory." There are photos of the outside and inside of the building on pages 43 and 46. "In a letter dated March 10, 1907, directed to the directors of the Nashville Sanitarium and Southern Union Conference Committee, Ellen G. White wrote: 'It would be a great advantage to the school in Madison if a food factory were put into operation in connection with the work of the school.'

"About this same year a large flakefood factory was built at Edgefield, near what is now known as Edenwold. The people of the South had not yet become conditioned to the eating of health foods; so the factory became a white elephant on the hands of the owners. It passed from hand to hand without success. [One of the operators was Jethro Kloss.] After much discussion on the part of the school faculty a decision was made to purchase the plant, dismantle it and bring it to Madison. It was opened in 1918. The plan was to begin in a small way and to educate the workers, step by step, in the new industry. Mr. and Mrs. Andrew Wheeler were in charge of the work, under the direction of Mrs. Druillard, who had had years of experience in other institutions.

"The purpose of the Food Factory was to produce foods that would be suitable substitutes for meat in the dietary of the vegetarian and others whose health required the elimination of animal products. Consequently most of the foods manufactured were rich in protein. The foods were made from such products as soy beans, peanuts, and gluten. Some of the trade names developed were Zoyburger, Yum, Mock Chicken, Nu-Steak, Not-Meat, Vigoroast, and Ches-O-Soy. A cereal substitute for coffee was Zoy-Koff.

"Some of the men who played an important part in the later growth and development of the food factory were Joe Hansen, C.H. Dye, T.A. McFarland, Captain Calvin Bush, Edwin Bisalski, George Norris, Leslie Brooks, John Brownlee, H.M. Mathews and Frank Holland. Of this group, H.M. Mathews and John Brownlee played a very important part in experimentation and development of the foods. Dr. P.A. Webber and Ulma Doyle Register did outstanding work in research to develop better texture, more palatability, and greater nutritional value. Mr. E.M. Bisalski was outstanding in the experimentation and development of the foods. During his term as manager of the Factory, great expansion took place. A practically new plant, with one section four stories in height was constructed in 1941. Car loads of products were shipped to jobbers in Chicago, Boston, New York, and other large distributing centers until Madison products were found in all states and Canada.

"In August of 1964 Madison Foods was sold to Worthington Foods, Inc. Worthington, Ohio. The same products that had been produced in the past were continued to be available under the Madison label and brand names used in the past. Mr. K.P. Stepanske was appointed manager. The food factory was operated on the Madison Campus until 1972 when it was moved to Worthington, Ohio (p. 42).

Elder Julius Gilbert White, a nationally-known health

lecturer, came to Madison and delivered a 10-day series of lectures on health, with the use of illustrated slides. This led to the development of many health institutes and short courses at Madison from 1932-1940 (p. 44).

"Vegetarian Cafeterias: Another type of health work carried on by the Madison school was the operation of a treatment room and vegetarian cafeteria in Nashville. Workers drove back and forth each day from the school to Nashville. It was started in rented quarters in 1917. In 1922, because of advancing rents, a new building was constructed on a permanent location at 151 Sixth Ave. North. A successful work continued for over a decade. Advancing trend of business in the center of the city made the location undesirable and the business closed out and the building was sold. The Birmingham [Alabama] cafeteria was started in 1920. An eighty-seven acre farm purchased as a rural base supplied vegetables and farm produce.

"In 1920 the Louisville treatment rooms were making good progress and opened a cafeteria.

"In December of 1920 a group of workers opened a city cafeteria in the cities of Knoxville, Memphis, and Chattanooga. These were among the early beginnings of this type of work in our denomination." A photo shows the Vegetarian Cafeteria and Treatment Rooms, 151 6th Ave., Nashville, Tennessee (p. 45).

There are photos of each graduating class. Pages 126-173 are biographical sketches, usually with a photo, of Madison "Personalities," including E.A. Sutherland, Bessie DeGraw Sutherland, Percy Magan, Nellie Druillard, Frances L. Dittes (1891-1979) and her sister Florence, Dr. Ulma Doyle Register, Dorothy Mathews, William Cruzen Sandborn, and Mable H. Towery.

A sample student menu is given (p. 265). Breakfast includes "Fried Soyburger," and dinner includes "Soyburger Patties." "At the noon and evening meals toasted Soyburger sandwiches, chocolate soy milk, and soy buttermilk are always available." Cow's milk is also available at all 3 meals. Address: Madison, Tennessee.

5001. McCarty, Meredith. 1986. American macrobiotic cuisine. Turning Point Publications, 1122 M Street, Eureka, CA 95501-2442. 110 p. Illust. Index. 28 cm. [6 ref]
• ***Summary:*** Page 7 and Chapter 7, titled "Beans and Soyfoods," give basic descriptions of tempeh, miso, soy sauce, soymilk, and tofu. Recipes include Summer's Mixed Vegetable Quiche (with tofu), Tofu Egg Foo Young, and Baked Tempeh with Lemon-Mustard Sauce. Tofu recipes elsewhere in the book include Green Goddess Dressing, Nutty Noodle Bake, Pasta Patricio, and Sour Cream. Also contains information on sea vegetables. Address: Eureka, California. Phone: 707-445-2290.

5002. Ory, Robert L. 1986. Plant proteins: applications, biological effects, and chemistry. Washington, DC: American Chemical Society (ACS). ix + 285 p. Held 8-13 Sept. at Chicago, Illinois. Illust. Index. 24 cm. [300+* ref]
• ***Summary:*** "Developed from a symposium sponsored by the Division of Agricultural and Food Chemistry at the 190th Meeting of the American Chemical Society, Chicago, Illinois, September 8-13, 1985."

Robert L. Lory was born in 1925. Address: Southern Regional Research Center, Agricultural Research Service, U.S. Dep. of Agriculture, New Orleans, Louisiana.

5003. Pedersen, Hans Christian Elbeck. 1986. Studies of soyabean protein intolerance in the preruminant calf. PhD thesis, University of Reading, England. *
Address: Univ. of Reading, Reading, Berkshire, England.

5004. Picasso, Christian. 1986. Soybean in Burkina Faso–Agronomic studies and development prospects. In: S. Shanmugasundaram and E.W. Sulzberger, eds. 1986. Soybean in Tropical and Subtropical Cropping Systems. Shanhua, Taiwan: Asian Vegetable Research and Development Center. xv + 471 p. See p. 421-25.
• ***Summary:*** This country was formerly called Upper Volta. Soybeans were introduced for experimental studies in 1958 by IRHO in an attempt to diversify traditional cropping patterns. Experiments were established at two research stations–one in the central part of the country (Saria, rainfall 800 mm) and one in the southwest (Niangoloko, rainfall 1,200 mm). In the 1970s, after suitable varieties had been identified, and following the successful extension of improved groundnut cultivars to small farmers in the vicinity of research stations, a similar attempt was made to popularize soybean.

"The crop was gradually accepted by small landholders. 'Nere' seeds (*Parkia biglobosa*) are used for making a fermented condiment known as 'soumbala.' The soybean cultivars that were distributed (black seed coats) looked much like nere, and could be prepared in the same way. This culinary use has become widespread, and some families prefer soybean to nere. The black seed coat is no longer a reason for preference; cream-colored seeds are equally acceptable."

Note: This is the earliest English-language document seen (Jan. 2012) that mentions "soumbala" (also called soumbara or dawadawa), a condiment made from soybeans resembling natto.

Constraints: "In 1975, the Regional Development Organization (RDO) in the eastern part of the country attempted to promote soybean. The RDO's intention was to train the farmers and then purchase their crops.

"A total of 4.5 tonnes of seed were distributed in 1976 and 25 tonnes in 1977. The RDO, however, did not concern itself with the sale of the product, and in 1977 found that the farmers had produced about 200 tonnes, most of which RDO could not purchase. The experiment was, of course, a

disaster, and the following year soybean production dropped dramatically.

"Farmers have no particular objections to soybean, since it presents no basic agronomic problems, but marketing is a major problem."

Future Development: "Recent events provide some hope for soybean production. A pilot soybean milk manufacturing unit with a capacity of 200 liters/hour should be operational by 1984. A factory with much greater capacity will be built if the first plant is successful.

"In addition, a hydroponic center is now operational. From 1984 onwards it will require 250 tonnes of soybean for use as fish food." Address: Institut de Recherche pour les Huiles et Oleagineux (IRHO), BP 1345 Ouagadougou, Burkina Faso.

5005. Rachim, Abdul. 1986. Indonesia: Notes on the soybean food industry under producers' co-operatives in Indonesia. *CGPRT* No. 4. p. 244-54. Includes 7 tables and figures.
• ***Summary:*** Contents: Background. Indonesian soybean foods. Fermented products: Tempe, oncom, tauco, kecap. Non-fermented products: Tofu, soymilk. Function and role of Kopti (and BULOG). Traditional processing industry: Current situation of small-scale home industry, further studies on the food industry / marketing system.

The Food Balance Sheets of the Central Bureau of Statistics show that 90% of Indonesia's soybeans are used for food. Most of the human consumption is in the form of a variety of popular processed foods: tempe, tahu (tofu), tauco, and a number of other less popular foods: soybean sprouts (tauge), sere in Bali, yuba, soybean milk, fried soybeans (eaten as a snack), beans boiled in the pod (also a snack), and the beans cooked as a vegetable or as an ingredient in soups. Only one factory (Sari Hasuda, in Yogyakarta) produces soybean milk. It is enriched with nonfat dried milk, vitamins, and minerals.

To coordinate and improve the economic viability of the small tofu and tempeh producers, a cooperative system, called Kopti (*Koperasi Produsen Tempe dan Tahu Indonesia;* Indonesian Tempe / Tofu Processors' Co-operative) was founded in 1979. The main function of Kopti is to procure and distribute soybeans to its members, the number of which has increased from 25 in 1980 to 286 in May 1985. It handles about 407,160 tons/year. The purchase price of soybeans is as follows (Rupiah/kg): From USA 415, from China 425, from Indonesian farmers 475-80. Certificate [certified] seeds cost 550-75.

Tofu, tempe, kecap, tauco and oncom processing is primarily done in small factories. 3 studies have been made on the size of these factories and the quantities they process: as part of the 1974 Industrial Census of the Central Bureau of Statistics (CBS); by Winarno, et al., in 1976; and by the study team on Soybean Commodity System (SCS) in the Garut area of West Java in 1984. The findings of these 3 studies are presented in Table 2.

"We should be cautious in comparing their results, however, because of biases in the collection of the information. The CBS study, for instance, was part of an industrial census, which divided processors into two categories: small-scale industries (5-19 labourers), and home factories (1-4 labourers, some of whom may be family members). However, there may also be wide variations in the industry in different parts of the country.

"Despite these limitations, it seems that the volume of soybean processed by each unit has increased appreciably, probably reflecting a favorable growth of the industry. Yet the number of labourers per unit has remained small, and is probably diminishing. This may be because of the use of mechanical crushers or dehullers for both tempe and tofu productions." Address: Research Asst., ESCAP CGPRT Centre, Bogor, Indonesia.

5006. Reddy, N.R.; Pierson, Merle D.; Salunkhe, D.K. eds. 1986. Legume-based fermented foods. Boca Raton, Florida: CRC Press. viii + 254 p. Illust. Index. 26 cm. [585 ref]
• ***Summary:*** An overview with information on nutrition and processing of fermented soyfoods. Contents: 1. Introduction. 2. Soy sauce. 3. Miso. 4. Sufu. 5. Natto. 6. Tempe. 7. Fermented soybean milk and other fermented legume milk products. 8. Oncom (fermented peanut press cake). 9. Idli. 10. Dhokla and Khaman. 11. Dawadawa. 12. Papads. 13. Other legume-based fermented foods (Inyu, kecap, kenima, meitauza, Philippine tao-si). 14. Future of legume-based fermented foods. Address: 1-2. Dep. of Food Science & Technol., Virginia Polytechnic Inst. and State Univ., Blacksburg, VA; 3. Vice-Chancellor, Mahatma Phule Agricultural Univ., Rahuri, Maharashtra State, India.

5007. Reisner, Marc. 1986. Cadillac desert: The American west and its disappearing water. New York, NY: Viking. 582 p. 24 cm. [543* ref]
• ***Summary:*** This carefully researched and superbly written history of water in the American West focuses on the U.S. Bureau of Reclamation, the Army Corps of Engineers, and the remarkable but illusory success they had in building the largest dams in the world, reclaiming the western deserts, and transforming them into gardens for the benefit of large landholders who received publicly subsidized low-cost water. The pioneer was John Wesley Powell, the most illustrious early reclamationist in America who got things moving in the 1860s. Western irrigation began in Colorado in the 1870s, sponsored by the publisher of the New York *Herald Tribune,* Horace Greeley whose motto was "Go West, young man." In 1902 congress passed the Reclamation Act, which created the Reclamation Service, whose name was changed in 1923 to the Bureau of Reclamation. The Bureau's era of great growth was during the 1930s and the Great Depression, with Franklin D. Roosevelt as its strongest

supporter. Projects included the Central Valley project in California ("the most mind-boggling public works project on five continents"), great dams such as Hoover, Shasta, Grand Coulee, Bonneville, and Teton.

Yet the West's water shortage has only worsened. "Cadillac Desert offers a bleak portrait of the future the West faces: over the next 50 years, millions of acres of America's most productive farmland will be abandoned due to the exhaustion of groundwater reserves; within centuries, perhaps within decades, hundreds of reservoirs will silt up, turning to mud and renewing the danger of floods; more and more soil and irrigated water is being contaminated by salt– the downfall of nearly every previous desert civilization. The natural resources of the West, sparse to begin with, have been stretched, exploited, and depleted. How much longer can the gold-plated civilization we have be sustained?" As writer Wallace Stegner stated: In the pages of this book "is visible the shape of a future we have stubbornly refused to foresee."

California agriculture was transformed with the invention, shortly after World War I, of the centrifugal pump. Now they could draw hundreds of gallons of water a minute out of the valley's shallow aquifer. The water table dropped precipitously and the industry was rescued from certain self destruction in 1933 by the Central Valley Project Act. Subsidized water was offered to any farmer and wife owning up to 320 acres of land. In the San Joaquin Valley of California pumping now exceeds natural replenishment by more than 500 billion gallons per year and there are no regulations to limit the amount pumped. In California agriculture uses 85% of all the water in this most populous and industrialized of states.

A section at the end titled notes and bibliography (p. 519-64) contains a chapter-by-chapter personal evaluation of the author's key sources, followed by a listing of the major books, then articles consulted, and the most important people interviewed.

This book was nominated for the National Book Critics Circle Award in 1986. The former staff writer for the National Resources Defense Council lives in San Francisco. An article based on this book and on a speech presented at the Aquavision Conference in Las Vegas was published as "The Next Water Wars: Cities Versus Agriculture" in *Issues in Science and Technology.* The book and article both note: "In California, growing grass and hay for cows and sheep uses as much water as that consumed by all 27 million in the state." "One seventh of the water in California goes to irrigated pasture, which in turn provides about $100 million of income, which is less than one 5,000th of the total state revenues." Thus we are using a lot of water to create relatively little revenue. A portrait photo shows Marc Reisner.

Note: Cadillac Desert applies only that part of California south of San Francisco. North of San Francisco there is much more water and much less agriculture. Address: San Francisco, California.

5008. Schaefer, Mary Jane. 1986. The phytic acid and trace mineral content of soybeans and their effects on tofu texture. PhD thesis, Iowa State University. 145 p. Page 4366 in volume 47/11-B of Dissertation Abstracts International. [187 ref]

• ***Summary:*** Dissertation supervisor was J.A. Love. Only 39% of the iron in soybeans was recovered in soymilk. Of the copper in soymilk, 37% was lost in the whey during tofu making. The components of soybeans that were found to be the best indicators of tofu texture were iron and phytic acid, which were related to tofu fracturability (r=0.73) and elasticity (r=0.82), respectively. In finished tofu, lipid was best related to tofu cohesiveness (r=0.92). Thus a low-fat tofu would expect to break easily. Address: Iowa State Univ., Ames, Iowa. Presently: Dep. of Human Nutrition, Univ. of Missouri, 217 Gwynn Hall, Columbia, MO 65211. Phone: 314-882-4288.

5009. Spivack, Ellen Sue. 1986. The Johnny Alfalfa Sprout handbook. Johnny Alfalfa Sprout, P.O. Box 294, Lewisburg, PA 17837. 94 p. Illust. No index. 22 cm. [17 ref]

• ***Summary:*** The section titled "Super soy sprouts" (p. 21-22) describes several methods for sprouting soybeans at home. Chapter 2 describes many different seeds that can be sprouted, including lentils, alfalfa, sunflower seeds, wheat berries, fenugreek, radish, buckwheat, millet, common legumes (incl. peas, soybeans, aduki), amaranth, and quinoa.

Chapter 3, titled "Recipes for simple meals with sprouts" contains vegetarian recipes that call for the use of soymilk (p. 44, 46-47), tofu (p. 51-52, 55, 59), miso (p. 51, 59), sesame tahini or ground sesame seeds (p. 53, 72), non-dairy soy cheese (p. 60). A photo on the inside rear cover shows the author and her husband (a professional sprouter) gathering sprouts. Address: Lewisburg, Pennsylvania.

5010. Stidham, Martin. 1986. The fragrant vegetable: Simple vegetarian delicacies from the Chinese. Los Angeles, California: Jeremy P. Tarcher, Inc. x + 224 p. Illust. Index. 24 cm.

• ***Summary:*** Chapter 3 (p. 57-84), titled "'Meat without bones'–Tofu," contains 3 preparatory techniques and 16 recipes. Chapter 4 (p. 85-98), titled "More 'meat without bones'–Pressed tofu," contains two basic recipes for pressed and spiced pressed tofu plus 9 additional recipes. "The highly odiferous 'stinking' tofu (*chou doufu*) is made by fermenting tofu or pressed tofu, or allowing it to grow moldly, then deep-frying it. Usually eaten with a hot sauce, this is available at movable carts..." (p. 58).

"The dense cakes are fermented to become tofu 'cheese' (see Chapter 1) as well as 'stinking' tofu..."

Chapter 5 (p. 99-126) titled "'Duck,' 'chicken,' and other specialties," first discusses the basic ingredients in

making these traditional meatlike products (Bean curd sheet [pressed tofu sheets], bean curd skin [yuba], and bean curd sheet noodles), then gives numerous recipes, many containing soy. Chapters on fried gluten, soups, and fruit and nut desserts follow. Soy sauce, "green soybeans" [green vegetable soybeans], soymilk, soy sprouts, and soy-pickled cucumbers are also mentioned.

The author, a graduate of Northwestern University, lived in East Asia for over 10 years, first as a student at National Taiwan Univ. in the Graduate Inst. of Chinese Literature, and later as a translator of short stories, poetry, and novels. "A long-standing interest in the cuisines of the region, especially vegetarian, has taken him into home, restaurant, and temple kitchens. He has studied privately with instructors from the area's well-known cooking schools, including Wei-Chuan and Pei Mei's, besides being tutored in special techniques by tofu makers and manufacturers of other Chinese specialty food items."

5011. Tofu Shop (The). 1986. Soyfood specialties: Fresh–natural–nutritious–delicious (Leaflet). Arcata, California. 1 p. Single sided. 28 cm.
• ***Summary:*** This marketing flyer is printed with black ink on light brown paper. Each of the following is described in one of six equal-sized rectangular boxes (2 rows of three each), each with a Japanese crest: (1) Handmade tofu & soymilk. (2) Baked tofu cold-cuts. (3) Light tofu salads. (4) Delicious tofu desserts. (5) Tempeh (new!). (6) About our products. Address: 768 18th St., Arcata, California 95521. Phone: (707) 822 7409.

5012. Tofu Shop Specialty Foods Company (The). 1986. Price list. Arcata, California. 1 p. Single sided.
• ***Summary:*** At the top left is an illustration of a dragon in a circle. At the top right is an illustration of a tofu shop on stilts on a cliff by the ocean, with a tree arching over the top–all in a diamond. "Fresh prepared natural foods since 1977."

The Tofu Shop now makes 39 products in seven categories: (1) Tofu, organic nigari: 14 oz water-pac, bulk pounds, bucket deposit. (2) Soymilk, organic: Natural unflavored (pint, quart, half gallon, or gallon), vanilla-maple (1/3 quart or quart), carob-barley (1/3 quart or quart). (3) Cold cuts, pre-baked: Tofu-vegie patty tray (3), 10 oz, tofu-vegie patty bulk (12 minimum). Marinated tofu cutlet tray (5), 8 oz, marinated tofu cutlet bulk (12 min). Tofu sausage patty tray (6), 8 oz tofu sausage patty bulk (12 min). (4) Combo's: Tofu-cutlets 'n rice, 8 oz. Tofu-sausage 'n pasta, 8 oz.

(5) Deli salads: Eggless-tofu (5 oz or 2 quart). Potato-tofu (5 oz or 2 quart). Tahini-tofu (5 oz or 2 quart). Corn pasta primavera (4 oz or 2 quart). Brown rice 'n vegies (4 oz or 2 quart). Sea palm & bean sprout (4 oz or 2 quart). Tabouli (4 oz or 2 qt).

(6) Desserts: Cocoa-carob mousse, 5 oz. Maple-almond charlotte, 5 oz. Pina colada pie (6 oz or 9 inch). Pumpkin pie (6 oz or 9 inch). Address: 768 18th St., Arcata, California 95521. Phone: (707) 822 7409.

5013. Wakeman, Alan; Baskerville, Gordon. 1986. The vegan cookbook: Over 200 recipes all completely free from animal produce. London and Boston: Faber & Faber. 298 p. Index. 22 cm. [28 ref]
• ***Summary:*** The 200 recipes in this cookbook demonstrate that a vegan diet can be rich and varied and reach the highest culinary standards. Within each chapter (e.g. main dishes, or soups) the recipe are listed with the quicker, cheaper, or simpler ones first and the slower, more expensive, or more elaborate ones last. A nutritional analysis per serving is given with each recipe.

Soy-related recipes include: Tofu stir-fry (p. 63). Tofu chips with walnuts and olives (p. 105). Vanilla dessert (with soya milk, p. 147). Caramel Cream Pudding (with tofu, p. 153). Orange and Chocolate Mousse (with soya milk, p. 154). Banana tart (with soya milk, p. 157). Chocolate tart (with soya milk, p. 158). Banana curd cake (with tofu and soya milk, p. 160). Lemon cheesecake (with tofu and soya milk). Rum and chocolate cheesecake (with tofu and soya milk, p. 162). Basic plain sauce (with soya milk, p. 166). Lemon curry sauce (with soya milk). Custard (with soya milk, p. 175). Hot chocolate sauce (with soya milk, p. 176). Tofu dressing (p. 181). Yoghurt salad dressing (with cultured soymilk yogurt, p. 182). Mayonnaise with soya milk (p. 185). Tahini spread with miso (p. 192). Scrambled tofu and herbs on toast (p. 254). Lassi (Traditional Indian sweet or salty yoghurt drink, p. 256). Soy sprouts (p. 262).

Many recipes call for the use of soy sauce or soya milk (especially desserts, dairylike products, or cream sauces), and tofu is used as an ingredient in many recipes in which it does not appear in the recipe name (e.g. Bulgur bake, p. 59; Mushroom pie, p. 88). In all recipes, each ingredient is listed twice in side-by-side columns: once in its Imperial (Metric) form and once in its American form, e.g. 385 ml Vegan Yoghurt, ½ cup.

One excellent chapter titled "The Alternative Dairy" (p. 231-50) is designed to tempt even the most determined cream addict. It contains descriptive sections on soya milk, margarine, tofu, vegan yoghurt, and vegan ice-cream, followed by recipes for: Vegan single cream. Vegan double cream. Vegan sour cream. Vegan piping cream. Cashew cream. Coconut cream. Vegan yoghurt (2 methods). Plain ice cream. Banana ice-cream. Pineapple ice-cream. Chocolate ice-cream. and Peach sorbet.

Appendixes include: 1. Notes on vegan nutrition. 2. Seven reasons to be a vegan (health, economic, ecological, altruistic {world hunger}, compassionate (to animals), ethical {what right do we have to kill animals?}, spiritual). 3. Useful addresses. 4. Selected bibliography. 5. Abbreviations and measures. 6. Glossary of unusual ingredients: Incl.

demerara sugar (dark brown, often used raw), miso, soya flour, soya milk, soya sauce, tofu. Address: England.

5014. Young, Robert. 1986. [The manufacture of soy milk products with the inclusion of egg white]. MSc thesis, University of Pretoria, South Africa. Page 266 in volume 25/03 of Masters Abstracts. [Afr]*
Address: Univ. of Pretoria, South Africa.

5015. **Product Name:** Isocal (Soy-Based Infant Formula).
Manufacturer's Name: Bristol Meyers.
Manufacturer's Address: -
Date of Introduction: 1986?
New Product–Documentation: Chatterjee. 1986. p. 40.

5016. **Product Name:** Soymilk (Fresh & Unsweetened).
Manufacturer's Name: Castle Trading–Ranwick.
Manufacturer's Address: New South Wales.
Date of Introduction: 1986?
Wt/Vol., Packaging, Price: 2 liter container. Retails for $3.00 Australian.
New Product–Documentation: Shurtleff & Aoyagi. 1986. Soymilk Industry and Market, Update.

5017. **Product Name:** Chin-Tao Strong Soybean Milk.
Manufacturer's Address: Taiwan.
Date of Introduction: 1986?
Wt/Vol., Packaging, Price: Plastic bottle.
New Product–Documentation: Color photo sent by Anders Lindner of STS. 1987. Nov. 14. Plastic bottle. Red and brown graphics.

5018. **Product Name:** [Norsul].
Foreign Name: Norsul.
Manufacturer's Name: Companhia de Exp. Comercial e Industrial "Norsul."
Manufacturer's Address: Av. Edouard Six, 540, 12300 Jacarei, Sao Paulo, Brazil.
Date of Introduction: 1986?

5019. **Product Name:** [Lactovit].
Manufacturer's Name: Companhia de Exp. Comercial e Industrial "Norsul."
Manufacturer's Address: Av. Edouard Six, 540, 12300 Jacarei, Sao Paulo, Brazil.
Date of Introduction: 1986?

5020. Crivellaro S.p.A. 1986? Soia e salute [Soya and health (Leaflet)]. Via Mazzini 30, 35030 Sarmeola di Rubano, Padova, Italy. 2 panels each side. Each panel: 30 x 21 cm. Undated. [Ita]
• ***Summary:*** In this full-color, glossy leaflet, large photos show Tetra Brik cartons of Crivellaro's soy oil and soya milk, plus their canned lecithin granules. The American Soybean Association's soy mark (copyright 1982) is also prominently displayed.

Photos show: (1) On front panel, a large photo of the aseptic package, with the top of the package dated June 1986 and Dec. 1987. (2) Inside, another view of the aseptic soy oil package. (3) A round metal can of Crivellaro lecithin. (4) A 1-liter aseptic package of "soya milk." (5) On the rear panel, an illustration shows an aerial view of the factory. (6) A map of Crivellaro's location in Europe, with yellow arrows pointing to the many directions to which its products could be shipped. (7) A 20 liter bag of oil in a box with a spigot. Address: Padova, Italy. Phone: 049/63.14.55.

5021. **Product Name:** [UU (Soymilk)].
Manufacturer's Name: Food & Nutrition Foundation.
Manufacturer's Address: Thailand.
Date of Introduction: 1986?
Wt/Vol., Packaging, Price: Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Color photo sent by Anders Lindner of STS. 1987. Nov. 14. Tetra Brik carton. Brown, red, yellow, and blue on white. Shows a cartoon of a cow riding a bicycle carrying a yellow soybean character on the back.

5022. **Product Name:** Fruit Gold Mineral Water Soya Bean Drink.
Manufacturer's Address: Taiwan.
Date of Introduction: 1986?
Wt/Vol., Packaging, Price: Plastic bottle.
New Product–Documentation: Color photo sent by Anders Lindner of STS. 1987. Nov. 14. Tall plastic bottle with screw-on lid. Red letters. yellow soybeans.

5023. **Product Name:** [Soymilk].
Manufacturer's Name: Gaspar Soy Products.
Manufacturer's Address: P.O. Box 1039, Krobiastraat 20, Paramaribo, Suriname.
Date of Introduction: 1986?
New Product–Documentation: Letter from M. Gaspar. 1988. Sept. 12. "For some time already we have been making soymilk on a small scale (something like a cottage industry), however the price is more expensive than milk."

Note: This is the earliest known commercial soy product made in Suriname.

5024. **Product Name:** Tofu Carob Drink Mix (Dry Mix).
Manufacturer's Name: Magic Mill. A Div. of CI. Made in the USA by Great American Foods.
Manufacturer's Address: 1911 South 3850 East, Salt Lake City, Utah. Phone: 801-972-0707.
Date of Introduction: 1986?
Ingredients: 100% organic cane juice, partially hydrogenated soy oil, cereal solids (from corn), carob

powder, calcium carbonate, tofu, sodium caseinate, sea salt, natural color, natural flavors, carrageenan, soy lecithin.
Wt/Vol., Packaging, Price: 27.6 oz (784 gm) can. Retails for $7.95 (7/90, California).
How Stored: Shelf stable.
Nutrition: Per 8 oz (28.1 gm): Calories 130, protein 2 gm, carbohydrate 20 gm, fat 5 gm, cholesterol 0 mg, sodium 150 mg.
New Product–Documentation: Product with Label purchased at Adventist Book Center, Pleasant Hill, California. 1990. July 8.

Talk with Magic Mill. 1990. July 11. These products were introduced in about 1986. They are selling well. Magic Mill was founded in about 1986. The company's best-selling products are the Magic Mill Grain Grinders/Mills. Steve Storey was with the company but he no longer is. Jim Harrison was the founder and present president. Great American Foods makes the product, and Magic Mill markets it. The parent company is named Constellation Incorporated. It was started before 1986 by Jim Harrison. Its divisions are Magic Mill International and Great American Foods. All three companies are located in the same building.

5025. **Product Name:** Biogenic Soymilk (Honey Sweetened).
Manufacturer's Name: Russels-Russels.
Manufacturer's Address: Australia.
Date of Introduction: 1986?
Wt/Vol., Packaging, Price: 1 liter Tetra Brik Aseptic carton. Retails for $3.40 Australian.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Shurtleff & Aoyagi. 1986. Soymilk Industry and Market, Update. This company is owned by a New Zealand Health Chain.

5026. **Product Name:** Sunny Soya Bean Drink.
Manufacturer's Address: Brunei.
Date of Introduction: 1986?
New Product–Documentation: Color photo sent by Anders Lindner of STS. 1987. Nov. 14. Can. Red, white and light green on dark green.

Note: This is the earliest known commercial soy product made in Brunei.

5027. Pratt, Dan. 1987. Ice Bean, Tofulite, and Tofutti (Interview). *SoyaScan Notes.* Jan. 1. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** "Tofulite is preferred to Tofutti in every taste test that I have ever seen results on." Tofutti is too sticky and for some people too sweet. The name Ice Bean, coined in a moment of jest, is now a liability, but it's hard to switch. The main ingredient differences between Ice Bean and Tofulite are: Ice Bean is sweetened with honey and made with fresh soymilk. The "Tofu Flavors" of Ice Bean contain tofu and are sweetened with fructose. Tofulite is made with 15% real tofu plus some isolates, and sweetened with sugar. Address: Barricini, Oyster Bay, New York.

5028. Hahn, Barbara. 1987. A soybean success story. Tofu factory finds market right at home [Ashland Soy Works]. *Courier* (*Grants Pass, Oregon*). Jan. 12.
• ***Summary:*** Ashland Soy Works, owned by Diana Muhs, was started 5 years ago. They make about 1,800 lb of tofu a week, plus soy milk, Tophoria (tofu ice cream), baked tofu, and tofu loaf.

5029. Frick, Elaine E. 1987. Soybeans: South Carolina's ugly duckling gets exciting when it changes. *Record* (*Columbia, South Carolina*). Jan. 14. p. 1B, 2B.
• ***Summary:*** In 1969 the South Carolina Soybean Board was created. In 1984 soybeans were the state's top income-producing crop.

5030. **Product Name:** Provamel Organic Soya Milk.
Manufacturer's Name: Alpro.
Manufacturer's Address: Alpro N.V., Vlamingstraat 28, B-8610 Wevelgem, Belgium.
Date of Introduction: 1987. January.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 ml: Energy 46 kcal (calories; 196 kJ), protein 3.6 gm, carbohydrates 3.3 gm, total fat 2.1 gm (of which polyunsaturated fatty acids: 60%), cholesterol 0 gm.
New Product–Documentation: Form filled out by Philippe Vandemoortele of Alpro. 1991. Sept. 4. In Jan. 1987 Alpro launched Provamel Organic Soya Milk, the first soymilk containing organically grown soybeans that was made by Alpro and launched under one of the company's own brands. In Aug. 1983 Alpro had first used organically grown soybeans to make soymilk, but that product had been sold by Lima Foods.

5031. **Product Name:** Soy Milk.
Manufacturer's Name: Ashland Soy Works.
Manufacturer's Address: 280 Helman St., Ashland, OR 97520. Phone: 503-482-1865.
Date of Introduction: 1987. January.
Ingredients: Water, organically grown soybeans, honey, vanilla extract.
How Stored: Refrigerated.
New Product–Documentation: Label. 1987. Jan. 1.5 by 3 inches. Brown on yellow. "Non-Dairy Product. High protein. No cholesterol. No artificial ingredients. Keep refrigerated." Talk with Diana Muhs. 1988. Feb. 10. The company started making soyfoods in October 1981. Their first product was tofu, followed by soymilk about a year later.

5032. **Product Name:** [Bioforme Soy Dessert {Pudding/Dessert} (Vanilla, or Chocolate). Renamed Formoja in early

1989].
Foreign Name: Bioforme Soja en Dessert (Vanille, Chocolat).
Manufacturer's Name: Cacoja. Affiliate of Coopérative Agricole de Colmar (CAC).
Manufacturer's Address: 8 rue Merxheim, 68500 Issenheim, France. Phone: 68.74.17.07.
Date of Introduction: 1987. January.
Ingredients: Water, soybeans (7%), cane sugar, corn starch, natural vanilla extract, carrageenan (extract of marine algae), sea salt.
Wt/Vol., Packaging, Price: 510 gm Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Vanilla, Per 100 gm: Protein 3.2 gm, lipids 1.7 gm, carbohydrates 15.4 gm, lecithin 20 mg, calories 90, sodium 30 mg, calcium 30 mg, phosphorus 50 mg, magnesium 30 mg, phosphorus 160 mg, iron 0.5 mg.
New Product–Documentation: Article in Toyo Shimpo. 1987. Dec. 1. Cacoja makes soymilk in Europe. Label. 1988. Red, yellow, green, and white. "Food preparation of soya. 100% Vegetarian. Without cholesterol. Rich in protein. Soya is rich in protein, lecithin, polyunsaturated fatty acids, and is very balanced in amino acids. A group of farmers in Alsace deliver to us rigorously selected soybeans. They undergo more than 10 controls before processing to guarantee that the Soja Bioforme line is of irreproachable quality. Enjoy Soja Bioforme throughout the day. At home, a delicious light dessert. For parties, a stimulating taste, on picnics it is practical." This plant was established in a joint venture with Alfa-Laval.

Alfa-Laval. 1988, June. Soyfoods: Old traditions with new potentials. p. 9. Shows a color photo of the front of the package. "100% vegetarian (vegetal). No cholesterol. Rich in protein."

Technique Laitiere & Marketing. 1988. Nov. p. 65. Cacoja was introduced by the cooperative of Colmar.

Food Focus. 1987. No. 3. Shows a color photo of the cartons.

Formoja brochure. 1990. April. The Formoja dessert line consists of chocolate and vanilla soybean desserts, each in 510 gm Tetra Brik cartons. "These two non-dairy products are light smooth custards. They can be eaten as a dessert or used to make cakes."

Letter from Sylvain Stievenard of Sojinal (named Cacoja prior to Aug. 1990). 1990. Sept. 24. Only these two flavors were produced. The date is correct.

5033. Haren, Chuck. 1987. The Plenty Canada Soy Project in Dominica. *Plenty Bulletin* (*Summertown, Tennessee*) 3(1):4. Jan.
• ***Summary:*** A group of Dominicans, who have been working with Plenty Canada on a student/employee basis for 30 months, are organizing the Kari Soy Cooperative to produce soyfoods. Address: Plenty's soy processing education center, Roseau, Dominica, West Indies, Caribbean.

5034. Jain, Manoj. 1987. Educating health workers and villagers in India on the dietary use of soybean. Boston, Massachusetts. 14 p. Jan. Unpublished manuscript. [10 ref]
• ***Summary:*** The soybean today has become one of the prominent crops in Madhya Pradesh (M.P.), India. The soybean is economical and easily available in Madhya Pradesh. One kilogram of soybeans, which makes ten liters of soy milk, costs Rs. 4.00 (U.S. $0.40) in the retail market. Hence, soy milk costs Rs. 0.40/liter while cow milk costs Rs. 4/liter. Similarly, the price of tofu is one tenth that of curdled cow milk. Cow milk is often in shortage, especially during the summer months, while soybeans can be available all year.

The study had three objectives. 1. Developing an educational and training program for rural workers on the uses of soy products especially soymilk. 2. Conducting a training program for rural workers. 3. Having health workers do demonstrations in 15 villages. The educational and training program was developed at the Mahatma Gandhi Memorial Medical College, Indore, M.P. The sessions were held at Bharatiya Grameen Mahila Sangh (BGMS), a non-profit voluntary agency. Villagers response to each food was different. They tried the following: Roasted and fried soybeans, soy halwa [halva] (sweet cake), soy chutney, soy milk, okara, tofu, and soy yogurt. This field study conclusively reveals that soybeans have a tremendous potential in India. Address: Boston, Massachusetts: Boston Univ. School of Public Health.

5035. Kjellker, Monica. 1987. Continuous soyfoods production from whole soybeans. *Soyfoods* (*ESFA*) 1(1):21-24. Jan.
• ***Summary:*** A description of the Alfa-Laval process for making tofu and soymilk. Contents: 1. Towards continuous processing: General food industry, soy processing. 2. Continuous production of soyfood: Soybean/water extraction, final products from soybean/water extract (soy beverage, tofu). 3. Automation in food industry: Development in automation, why automation?, automation levels, continuous soy processing.

Note: The author has an MSc in Chemical Engineering. Address: Product Manager, Soy Processing Dep., Alfa-Laval, Lund, Sweden.

5036. *Natural Foods Merchandiser.* 1987. Let's all give a warm round of applause for: Legume, Westbrae, Vitasoy (Ad) Jan. p. 35.
• ***Summary:*** "For sponsoring a great evening of entertainment and a delicious 'soyabration' at the Halloween Rock 'n Roll Masquerade Party."

5037. Pasilac-Danish Turnkey dairies Ltd. 1987. Our company. 2, Europaplads, DK-8000 Aarhus C, Denmark. 32 p. Jan.
• ***Summary:*** Contains a 1-page description of Soya Technology Systems (which was established in 1982); a color photo shows its managing director, Anders B. Lindner. A consolidated balance sheet shows total assets in 1 May 1986 of DKr 1,747,598,000. Address: Aarhus, Denmark.

5038. Setchell, K.D.R.; Welsh, Mary Beth; Lim, C.K. 1987. High-performance liquid chromatographic analysis of phytoestrogens in soy protein preparations with ultraviolet, electrochemical and thermospray mass spectrometric detection. *J. of Chromatography* 386:315-23. Jan. [30 ref]
• ***Summary:*** Concerns the phytoestrogens (plant estrogens, which are hormones) daidzein, genistein, coumestrol, formononetin, and biochanin. Only daidzein and genistein were detected in the soy protein preparations analyzed, and were found in high concentrations respectively: textured soy protein 568 and 568 micrograms/gm, soy flakes 221 and 280 micrograms/gm, soymilk formula No. 1, 17.1 and 21.8 micrograms/gm, and soymilk formula No. 2, 19.1 and 22.6 micrograms/gm. Address: 1-2. Dep. of Pediatric Gastroenterology, Children's Hospital Medical Center, Cincinnati, Ohio 45229; 3. Div. of Clinical Cell Biology, Clinical Research Center, Watford Road, Harrow, Middlesex HA1 3UJ, England.

5039. **Product Name:** [Tonyu {Soymilk}].
Foreign Name: Tônyû.
Manufacturer's Name: Sojadoc. Affiliate of Cooperative Occitane.
Manufacturer's Address: Zone Industrielle La Viscose, 81000 Albi, France. Phone: 6345-4645.
Date of Introduction: 1987. January.
Ingredients: Water, soybeans.
Wt/Vol., Packaging, Price: 20 liter polyethylene goat skin bottle.
How Stored: Refrigerated.
Nutrition: Per 100 gm: Total solids 7.1 gm, protein 2.8 gm, lipids 1.3 gm (which which linoleic acid is 60%), total soluble carbohydrates 0.8 gm, ash/minerals 0.83 gm, calcium 14.4 mg, sodium 1.2 mg, phosphorus 58.4 mg, potasium 204 mg, magnesium 9.9 mg.
New Product–Documentation: Soyfoods (ESFA). 1987. Jan. Soya Bluebook. 1987. p. 90. Note: This company's original address was apparently: Alain Lacombe & Jacques Isnard, Sojadoc, Par Castelnau, Presb. de St. Paul d'Mammiac, 81140 Penne du Tarn, France. Phone: 3-393-1015.

Manufacturer's brochure. 1987. In French. "Sojadoc tofu: New source of vegetable protein. The products of French soybeans. Soymilk (Tonyu) and Tofu." A single insert sheet describing the company's soymilk gives a flowchart of the production, 8 general dietetic and nutritional characteristics, 8 technical characteristics, it composition (92.5% water, 7.5% soja), detailed composition (see above), and its uses: charcuterie (pates, terrines, sausages), plats cuisinés and plats surgelés (quiches, pizzas, etc.), sauces (bechamel, mayonnaise, salad dressings), and pastries and desserts (bavarois, desserts glacés, biscuits).

5040. *Soyfoods* (*ESFA*). 1987. Seen at the SIAL food show. 1(1):30. Jan.
• ***Summary:*** This show was held in Oct. 1986 at Paris. Sojadoc presents Tofu and Tonyu (soymilk). At SIAL Société Soy of France launched Soyeux (a new dessert in vanilla and chocolate flavors), and Tof'in (tofu cakes precooked without oil in 3 flavors: Garlic & Herbs, Provençale, and with Mushrooms). Cygne d'Or confectionery launched Tofu Kiss (a tofu based non-dairy frozen dessert, distributed by Maho Distribution). Galactina introduced four ready-to-eat tofu salads (Tofu Nature, Tofu Gourmet, Tofu Jardinière, and Tofu Provençale). Address: Paris, France.

5041. *Soyfoods* (*ESFA*). 1987. ESFA objectives. 1(1):31. Jan.
• ***Summary:*** 1. To prevent consumer deception, ESFA encourages soyfoods producers to establish voluntary standards for the various soyfoods. 2. To work with regulatory agencies in laying out the basis of requirements for the soyfoods on labeling, marketing, and health issues. 3. To provide reliable information to dietitians, press people (the media), and generally speaking to all people looking for information on soyfoods. 4. To promote utilization of soyfoods for their food value. "By soyfoods, we refer among others to the oriental traditional products directly derived from the soybeans, such as soybean milk, tofu, tempeh, soya sauce, and soybean sprouts."

Those interested in joining the European Soy Foods Association should contact Guy Coudert, ESFA, 12 Avenue George V, 75008, Paris, France. Subscriptions to *Soyfoods* magazine (published by ESFA), 4 issues per year, are 300 French francs. Address: Paris.

5042. **Product Name:** Living Foods Organic Soy Drink.
Manufacturer's Name: Unisoy Milk 'n' By-Products Ltd.
Manufacturer's Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430-6329.
Date of Introduction: 1987. January.
Ingredients: Incl. barley malt.
New Product–Documentation: Talk with Neil Rabheru of Unisoy. 1990. July 2. This product was launched by Living Foods in early 1986. It is exported to the Netherlands. It contains barley malt. It was made as a private label brand for a company named Living Foods, but after that company went into liquidation (bankruptcy), Unisoy decided to continue making the product and marketing it themselves. It is not

selling very well because the product concept is wrong. But it has potential.

Talk with Neil Rabheru of Unisoy. 1991. Sept. 16. This product was introduced after White Wave Soya Milk. It contained a little organic barley malt and pearl barley. The product originally belonged to a company named Living Foods (in Brighton, England), founded by David White. Living Foods was an importer-marketer, not a manufacturer. They imported products (such as tofu from the Netherlands) and sold it under the Living Foods brand. They were an agent for Lima Foods, and imported Lima rice cakes. This soyamilk was originally made by Soya Health Foods (Sunrise), but Living Foods was not happy with the price and quality, so they asked Unisoy to make the product, starting in late 1986 or Jan. 1987. In the process, Living Foods went bankrupt, so Unisoy bought the Living Foods brand to use for soyamilk.

5043. Vandemoortele, Philippe. 1987. Editorial. *Soyfoods* (*ESFA*) 1(1):2. Jan.
• ***Summary:*** Contents: What are soyfoods? Why was the Association founded? What will the Association do to achieve its goals. What can a member expect from the Association?

"Soyfoods cover all products deriving from the whole soybean produced according to a traditional process and manufactured into soya milk, tofu, tempeh, miso, soya sauce, soya sprouts and other products. Why was the European Soyfoods Assoc. founded? Until only a few years ago, only industrial soya protein such as defatted and fullfat flour, concentrates, isolates, and textured protein were used in the food industry. They are mainly used for their functional properties rather than for their nutritional characteristics." Now there is a growing interest in soyfoods. The ESFA will organize a Soyfoods Conference every 2 years. Address: President of the ESFA (European Soyfoods Assoc.).

5044. Wang, H.L. 1987. Tofu and soybean milk production. *Soyfoods* (*ESFA*) 1(1):9-17. Jan.
• ***Summary:*** Discusses all the major processing variables including soaking, soybean to water ratio, extraction, heat treatment, separation of soymilk from insoluble residues, coagulation temperature and mode of mixing, soybean variety, proximate composition, and microbiological quality.

Dr. Wang was born in China and came to this country after graduation from the National Central University, Nanking. She received her PhD in Biochemistry from the University of Wisconsin, Madison, in 1952. She worked intermittently for 10 years in the field of nutrition and at the Marquette University Medical School, Milwaukee, and at the Univ. of Wisconsin Medical School. In 1963 she joined the NRRC as a research chemist. Address: USDA NRRC, Peoria, Illinois.

5045. **Product Name:** Westbrae Natural Malteds [Carob Malted, Vanilla Malted, Cocoa-Mint Malted, Almond Malted, or Caffeine-free Java Malted].
Manufacturer's Name: Westbrae Natural Foods (Marketer). Made in Los Angeles by House Foods & Yamauchi, Inc.
Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: (415) 658-7521.
Date of Introduction: 1987. January.
New Product–Documentation: Ad in Vegetarian Times. 1987. April. p. 1. "Malteds... thicker and richer than ever–half the fat of a shake! A non-dairy delight. Five delicious flavors. Organic soybeans. Grain sweetened [rice syrup]." No gums or carrageenan are used to enhance thickness. Spot in Soya Newsletter. 1987. 1(3):6. Note: Introduced in 1984 and imported from Japan. In Jan. 1987 the product started being made, packaged, and retorted for Westbrae by House Foods & Yamauchi Inc. in Los Angeles.

5046. Wilson, Geoff. 1987. Special report from Australia [on soyfoods]. *Soyfoods* (*ESFA*) 1(1):25-29. Jan.
• ***Summary:*** Much of this material appeared in the National Farmer (1984), Australia. John Wilson, in charge of soymilk for Alfa-Laval and Owen Price, managing director of the Dairy Farm group of companies in Hong Kong (he has made a soy ice cream) are both expatriate Australians. Contents: New markets beckon soybeans (especially soymilk in Australia and Southeast Asia). Expatriate Australians boosting soy (John Wilson of Alfa-Laval in Sweden, and Owen Price, managing Director of the Dairy Farm group of companies in Hong Kong). Soybeans poised for big growth (in Australia, especially as soymilk). Tofutti takes off in Australia (David Grossbaum of Shoyu Natural Products in Melbourne has the sole Australian franchise for this popular soy-based product). Tofutti is tantalising U.S. tastebuds. Sustagen Gold uses dairy and soy foods (The increasingly popular Combibloc carton is now being used by Bristol Meters to package this product). Soy-dairy blends to overcome disadvantages. Six new soy drinks expected (following Golden Life, the first Australian soy drink launch late last year by Martin Pharmaceuticals). Soy products will enter the market (in Australia, believes Anders Lindner of STS–Soya Technology Systems). Flavored Soy Drinks selling well (according to Don Lazzaro of Ceres Natural Foods Pty Ltd. in East Bentleigh, Victoria). Address: Freelance journalist, Australia.

5047. Elmer, Vickie. 1987. Loma Linda Foods Inc. consolidates for growth. *Daily Commerce* (*Los Angeles, California*). Feb. 2. Also in Press-Enterprise (Riverside, CA). Jan. 26.
• ***Summary:*** Loma Linda Foods was founded in October 1906. Company sales now top $20 million a year, growing at 7% annually. Worthington sales top $30 million, and grew

last year by 13%. Loma Linda Foods plans to shut down its plant in Mount Vernon, Ohio, and move it to Riverside in late 1987. Mr. Alejo Pizzaro is now company president. Address: Riverside, California.

5048. **Product Name:** Noble House Great Shake (Soymilk) [Chocolate, Strawberry, Mango, American Ice Cream, or Rich Coffee].
Manufacturer's Name: Noble Soya House Ltd.
Manufacturer's Address: Arera Colony, Bhopal 462 016, India.
Date of Introduction: 1987. February.
Ingredients: Mango: Soymilk, sugar, mango pulp, edible vegetable oil, minerals, citric acid and vitamin C. Contains permitted colours and added flavour.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Color photo of four Tetra Brik cartons. 1987. This is India's first major soymilk venture. The partners are Noble House Ltd., Great Eastern Shipping Co. and Godrej. The plant was supplied by Alfa-Laval and the technical know-how by Kibun. The product got off to a slow start. See Lindner 1987. Labels. 1988, Oct. received. Black-and-white photocopies. Front panel shows the top of a glass filled with the beverage, with a striped straw in it. At the bottom is written "Soymilk Beverage" or "Soymilk."

Deccan Herald. 1988. March 11. The company started production on 12 Feb. 1987.

Alfa-Laval. 1988, June. Soyfoods: Old traditions with new potentials. p. 9. Shows a color photo of the front of the package. Shows the top of a glass with a straw in it against a pink and reddish purple background.

Letter from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30. Alfa-Laval sold a complete soymilk plant to Noble Soya in India. It had a capacity of 4,000 liters/hour and began operation in 1987.

Letter (e-mail) from Ratan Sharma, PhD, of India. 2010. Oct. 9. This was a joint venture of Godrej and Noble Soy House (plus Great Eastern Shipping Company) with a share of 24% each, in the chairmanship of Godrej. The rest of the shares were issued to the general public. They brought the soymilk plant from Japan [Kibun] after the Indian Government gave them a reduction in import duty. They launched their brand Great Shake in Tetra Pak at the beginning of 1987 and closed down the business in 1989. This is a 4,000 L per hour plant from Kibun. Godrej had four Tetra Pak lines at that time for this product only.

5049. B.P.; C.R. 1987. L'irrésistible poussée des produits de substitution: Dossier produits laitiers [The irresistible push of substitute products: Dossier on dairy products]. *Marches Agricoles.* Feb. 16. p. 14. [Fre]

• ***Summary:*** Part 1 by B.P. is titled "The debate is launched concerning substitute dairy products." A table lists the following countries: Austria, Belgium, Canada, Denmark, UK, Finland, Japan, Netherlands, Switzerland, and the USA. Column 2 lists substitute products (such as cheese, cream, milk, melorine). Column 3 lists the market share of these products in 1983. And column 4 compares the price of the substitute with the real dairy product. For example, in the USA: imitation cream (non-dairy creamer) has 50% of the market and is less expensive. Imitation cheese has 5% of the market and is 30% less expensive. Flavored milklike drinks have 15% of the market and are 25% less expensive. No imitation products are shown to have a significant market share in Europe.

Part II by C.R. is about CAC in Colmar, its Cacoja subsidiary founded in Jan. 1987, and its Bioforme line of soymilks and soymilk desserts. Address: France.

5050. Kahn, E.J., Jr. 1987. Profiles: The absolute beginning [Dwayne Orville Andreas and ADM]. *New Yorker* 62:41-68. Feb. 16.
• ***Summary:*** The best biography seen of Dwayne Andreas, with emphasis on his work with soy. On the first page is a long discussion of Nutri-Bev, a soy-based milk substitute.

Contains a nice portrait (illustration, line drawing) of Andreas on the first page. Address: New York.

5051. Lytel, Laurie. 1987. Soy Plant bankruptcy: collectivism gone haywire. *Crain's Detroit Business.* Feb. 16. p. 1, 6.
• ***Summary:*** The collective, established in 1976, filed for Chapter 7 bankruptcy in early January. The company has lost money for at least 4 years, the result of disorganized management. Last year's revenues were $168,000 and expenses $180,000. The company makes 8,500 lb/week of fresh tofu, plus tempeh and soymilk.

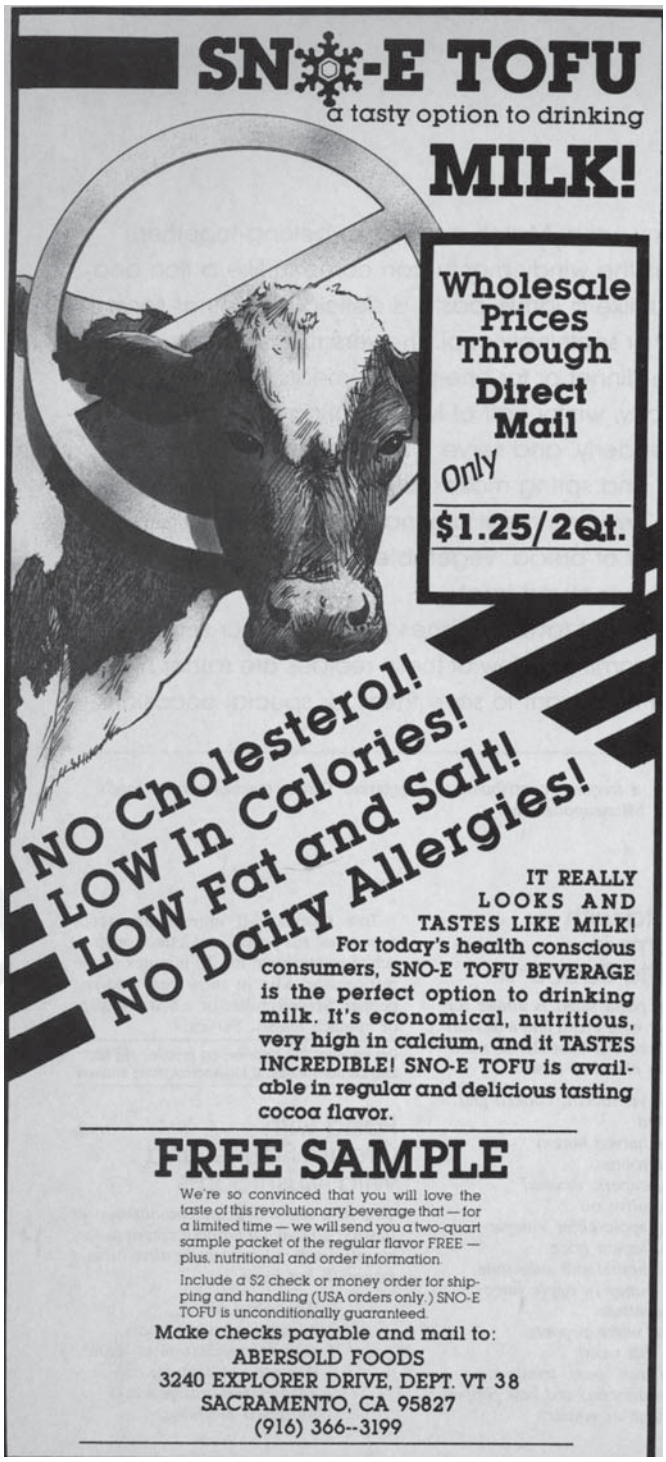
5052. *Irish Times* (*Dublin*). 1987. Plenty of products on the boil. Feb. 17. p. 17.
• ***Summary:*** "The Food Technology Business Unit in the Food Centre at Raheen is a place where people can come and try out their food ideas, while at the same time receiving basic business training." About 20 people are presently working on projects.

Lin Thakker, who trained as a nurse in England before coming to Limerick with her husband six years ago, is supplying the public in Limerick with foods she ate growing up in Japan. "Her first product was tofu, a fermented bean curd [sic], which has a mild flavor and which can be used instead of cheese." She first had the idea when she saw the high price of imported tofu. Now she also makes fresh soya milk, vegetarian pizzas and vegetarian burgers." She sells all of these to hotels and fastfood outlets as well as to wholefood shops.

Note: Tofu is also occasionally called "soybean curd." It is not fermented, and is very different from "fermented tofu," which is rarely found in Japan.

5053. **Product Name:** Sno-e Tofu Non-Dairy Beverage Mix (With Sodium Caseinate) [Plain, or Cocoa].
Manufacturer's Name: Abersold Foods.
Manufacturer's Address: 3240 Explorer Dr., Sacramento, CA 95827. Phone: 916-366-3199.
Date of Introduction: 1987. February.
Ingredients: Cereal solids (from corn), soy oil, dehydrated tofu, soy protein isolate, calcium fortifications (calcium carbonate, tri-calcium phosphate, calcium chloride, calcium sulfate), sodium caseinate, sea salt, carrageenan, natural flavors.
Wt/Vol., Packaging, Price: Dry powder in 5.2 oz foil packet, makes 2-quarts. Retails for $1.25. 2 lb economy size makes 4.9 gallons for $9.00. Only sold by mail order. Add $3.00 per order for processing and UPS postage.
How Stored: Shelf stable.
Nutrition: Per 8 oz. serving: Calories 90, protein 2 gm, carbohydrates 10 gm, fat 5 gm, sodium 120 mg. Percent of RDA: Calcium 30%.
New Product–Documentation: Ad in Vegetarian Times. 1987. June. p. 16 "A tasty option to drinking milk. NO Dairy Allergies! NO Cholesterol! LOW fat and salt! LOW in Calories! It really looks and tastes like milk! Free sample." Similar ad in New Age Journal. 1987. Sept/Oct. p. 92. Spot in Soya Newsletter. 1987. 1(4):6. Talk with Vance Abersold. 1988. March 10. The product was launched in Feb. 1987. See separate interview with him. The calcium fortifiers settle when the milk stands. He used the sodium caseinate because it is a standard ingredient in the food industry, and this ingredient makes the product taste much better. Ad in East West. 1988. Feb. p. 17, and in Vegetarian Times. 1988. March p. 24 and May p. 21. 2/3 page. Picture of a cow with its head through a "No" sign. "Wholesale prices through direct mail. Only $1.25 for 2 quarts... It really looks and tastes like milk." For a "free sample" send $2 to cover shipping and handling. This company gets our "Questionable Product of the Year Award." A product aggressively marketed as non-dairy that contains sodium caseinate made from cow's milk. An incorrect ingredient listing "cereal solids (from corn)" and refusal by the company on two occasions to return phone calls enquiring about this. A "free sample" offer that requires you to send $2. A product that sells for $1.25 per 2 quart package but which requires that you pay an additional $3.00 "processing" fee not included in the company's price comparisons with other products. How deceptive can you get?

5054. Appropriate Foods, Inc. 1987. Eat Appropriately! [Catalog and price list]. 292 Liberty Ave., Brooklyn, NY 11207.



• ***Summary:*** The following lines are carried and distributed: Appropriate Foods, New York Soy Deli, The Soy Source, Emperor's Best, Cedar's Mediterranean Foods, Grainaissance (amazake and mochi), Infinity Foods (amazake puddings), Integrity Baking Co., Jofu, Maine Coast Sea Vegetables, Malka's Foods (Blueberry Tofu Pie), Miso Master, Nasoya Foods, New England Country Dairy, Ray's Seitan Wheat Meat, Soya Kaas, Stonyfield Farms (Yogurt),

Sunshine Burgers. Address: Brooklyn, New York.

5055. *Monthly New Food Products in Japan.* 1987. Puddings: "Tonyu Pudding" from Taishi Shokuhin Kogyo in Japan is a soymilk based pudding. 12(2):15. Feb. *
• ***Summary:*** Free from soybean odors. Address: Japan.

5056. Murata, K.; Kusakabe, I.; Kobayashi, H.; Akaike, M.; Park, Y.W.; Murakami, K. 1987. Studies on the coagulation of soymilk-protein by commercial proteinases. *Agricultural and Biological Chemistry* 51(2):385-89. Feb. [5 ref. Eng]
• ***Summary:*** 17 proteinases from microorganisms, plants, and animals were tested as coagulants for soymilk. Those which did coagulate soymilk were bromelain, papain, trypsin and proteinases from *Bacillus amyloliquefaciens, B. subtilis, B. polymyxa, Streptomyces griseus, S. caespitosus, Aspergillus oryzae, A. sojae, Endothia parasitica, Rhizopus* species, and *Mucor miehei.* Ineffective were rennin, pepsin, and proteinases from *Aspergillus saitoi.* Soymilk clotting activity fell as the pH rose from 5.9 to 6.7. Temperature optima for the enzymes varied from about 50ºC for *Rhizopus sp.* to 85ºC for *Bacillus subtilis* and *B. thermoproteolyticus* and as high as 95ºC for papain. Address: Research Development Sect., Kibun Food Chemifa Co. Ltd., Takinogawa 7-38-15, Kita-ku, Tokyo 114, Japan.

5057. **Product Name:** Calci-Fu Non-Dairy Tofu Milk Drink.
Manufacturer's Name: Nature's Plus. Div. of Natural Organics, Inc.
Manufacturer's Address: 10 Daniel St., Farmingdale, NY 11735. Or Long Beach, California. Phone: 213-494-2500 or 516-293-0030.
Date of Introduction: 1987. February.
Ingredients: Incl. calcium.
Wt/Vol., Packaging, Price: 19 gm individual serving packet retails for $0.95, or 22-serving can retails for $8.95.
How Stored: Shelf stable.
New Product–Documentation: Product Alert. 1987. April. Soya Newsletter. 1987. March/April. p. 7. A dry mix, fortified with 1200 mg of calcium per serving. Talk with company. 1988. Feb. 17. Product is still being sold.

5058. **Product Name:** Calci-Fu Non-Dairy Tofu Chocolate Shake.
Manufacturer's Name: Nature's Plus. Div. of Natural Organics, Inc.
Manufacturer's Address: 10 Daniel St., Farmingdale, NY 11735. Or Long Beach, California. Phone: 213-494-2500 or 516-293-0030.
Date of Introduction: 1987. February.
Wt/Vol., Packaging, Price: 25 gm individual serving packet retails for $0.95, or 22 serving can retails for $9.95.
How Stored: Shelf stable.
New Product–Documentation: Product Alert. 1987. April. Soya Newsletter. 1987. March/April. p. 7. A dry mix, fortified with 1200 mg of calcium per serving. Talk with company. 1988. Feb. 17. Product is still being sold.

5059. Sakai, K.; Tachiki, T.; Kumagai, H.; Tochikura, T. 1987. Hydrolysis of α-D-galactosyl oligosaccharides in soymilk by α-D-galactosidase of *Bifidobacterium breve* 203. *Agricultural and Biological Chemistry* 51(2):315-22. Feb. [41 ref]
• ***Summary:*** The bacterium *Bifidobacterium breve,* isolated from human feces, grew well on soymilk, assimilating the oligosaccharides stachyose and raffinose in preference to sucrose, and causing the pH to fall to 4.0 resulting in solidification of the soymilk medium. Alpha-D-galactosidase was isolated from *B. breve,* which had pH and temperature optima at 5.5 and 50ºC, respectively and was capable of hydrolyzing all the galactosyl compounds present in soymilk. Address: Dep. of Food Science & Technology, Kyoto Univ., Kyoto 606, Japan.

5060. **Product Name:** [Soymilk Pudding].
Foreign Name: Tônyû Pudingu.
Manufacturer's Name: Taishi Shokuhin Kogyo K.K.
Manufacturer's Address: Kawamorita, Aza Okinaka 68, Santo-machi, Santo-gun, Aomori-ken 039-01, Japan.
Date of Introduction: 1987. February.
New Product–Documentation: Monthly New Food Products from Japan. 1987. 12(2):15. Feb. "Puddings: 'Tonyu Pudding' from Taishi Shokuhin Kogyo in Japan is a soymilk based pudding." The product is free from soybean odors.

5061. Atkinson, Harold. 1987. Re: Plamil Foods firsts. Letter to William Shurtleff at Soyfoods Center, March 12. 1 p. Typed, with signature on letterhead.
• ***Summary:*** Plamil Foods Limited was the first: (1) Vegan company in the U.K. (2) To introduce soya milk in concentrated form in the U.K. (3) To sell soya milk concentrate commercially anywhere to our knowledge. (4) To market soya milk in personal portions (mini pots) anywhere. (5) To produce a dessert chocolate confection with soya. (6) To produce an organic rice pudding in the U.K.

Note: The letterhead reads: Plamil–Pioneers of British made soya milk since 1965. An independent company specializing in non-animal health foods. The word "Plamil" is green, and the rest of the words on the letterhead are chocolate brown. Address: Secretary, Plamil Foods Ltd., Plamil House, Bowles Well Gardens, Dover Rd., Folkestone, Kent CT19 6PQ. Phone: 0303 58588.

5062. Brown, Judy. 1987. Suiting America's tastebuds: The new American soyfoods. *Whole Foods.* March. p. 37-40, 42-43. [1 ref]

• ***Summary:*** An overview, drawing heavily (with acknowledgment) on Shurtleff & Aoyagi's *Soyfoods Industry and Market* for statistics. Address: Alban & Associates, San Francisco, California.

5063. **Product Name:** Chocolate Fiber Float.
Manufacturer's Name: Energy Factors, Inc.
Manufacturer's Address: 8300 Ulmerton Road #A-2, Largo, FL 34641. Phone: 800-654-2347.
Date of Introduction: 1987. March.
Ingredients: Calcium caseinate, tofu, soy protein, cellulose (insoluble fiber), fructose, lecithin, bee pollen, papaya, carob, natural flavors, vitamins, minerals.
Wt/Vol., Packaging, Price: 12 oz.
How Stored: Shelf stable.
Nutrition: Per serving (2 heaping teaspoons): Calories 55, fiber 1.6 gm, carbohydrates 6.4 gm, protein 3.0 gm, fat 2.4 gm.
New Product–Documentation: Label. 1987. Brown on white. "Protein and fiber in its most delicious and satisfying form. Calcium enriched nutritional fiber drink with tofu & guar." Interview with Susan VerHage of EFI. 1987. Sept. 14.

5064. Jacobs, Leonard. 1987. All-American soymilk. This popular Oriental import is now being made in the U.S. *East West.* March. p. 22-23.
• ***Summary:*** Discusses U.S. ventures of American Soy Products (Edensoy), Great Eastern Sun (Ah Soy), Health Valley, and Westbrae. Great Eastern Sun found a manufacturer of soymilk in Minnesota that uses a patented process to eliminate the beany flavor. They aseptically package in quart containers. Health Valley purports to make their soymilk in California.

5065. Marty, Denise. 1987. Les dérivés de soja, un marché pour les Pme [Products derived from soya, a market for the small- and medium-sized companies]. *Agro Industries* No. 26. p. 40-41. March. [Fre]
• ***Summary:*** "At SIAL this year, 5 soyfoods companies will present their products. For a sector this small, this is important, and it indicates that the sector is in full growth." Four companies are Soy, Sojadoc, Daizou, and Lima N.V. Daizou was created in 1985 by the Japanese restaurant Le Bol en Bois, one of the first to sell tofu in France. Daizou makes only 50-100 tonnes/year of specifically Japanese products. The Société Soy, founded in 1980 [sic, actually 1982], is busy transforming tofu into new foods. This year it launched the new tofu yogurt-like dessert Soyeux. Its new plant at St. Chamond (Loire) has a capacity of 7 tonnes/day of tofu, or 1,500 tonnes/year. In June 1986 the society Sojadoc in Albi took the same step, changing from an artisans production of 10 tons/year of tofu to large scale (1,500 tonnes/year) production of tofu and soymilk over the next 3 years from an investment of 12.5 million French francs. Lima-France, affiliate of a Belgian company, is at Lot-et-Garonne. Jan Kerremans is their miso master, making about 70 tonnes a year.

In 1983 about 10 million liters of soymilk were consumed in Europe, compared with 30,000 million liters of dairy milk. Guy Coudert of the European Soyfoods Association estimates that by the year 2000 some 25,000 tonnes/year will be consumed in France. Address: France.

5066. **Product Name:** Instant Tofu Mix (Makes GDL Silken Tofu).
Manufacturer's Name: Mikado Foods Inc.
Manufacturer's Address: 4710 41st St. N.W., Washington, DC 20016.
Date of Introduction: 1987. March.
Ingredients: Soymilk powder, glucono delta-lactone coagulant.
Wt/Vol., Packaging, Price: 2.29 oz foil packet in a paperboard box. Makes 600-700 gm tofu.
How Stored: Shelf stable.
New Product–Documentation: News (Beloit, Wisconsin). 1987. March 10. "Make Fresh Tofu at Home." Add water, cook for 5 minutes, add coagulant, let stand for 30 minutes in any shaped container. Sold mail order.

5067. *Prepared Foods* (*Chicago*). 1987. Non-dairy tofu products [from Rose International]. March.
• ***Summary:*** Rose International's tofu ingredients used in a range of "dairy" applications: dry tofu soft-serve mix powders (just add water), frozen tofu dessert concentrate, soy yogurt, tofu imitation cheeses and soymilk. "Soy-O" yogurts have been marketed under license from Rose.

5068. Shurtleff, William; Aoyagi, Akiko. 1987. The Vitasoy success story. *Vitasoy Vitabrations* 1(1):3-6. March.
• ***Summary:*** A condensed history of Hong Kong Soya Bean Products Co., Ltd. and Vitasoy, adapted (without permission) from Shurtleff and Aoyagi. 1984. Soymilk Industry and Market. p. 130-153.

Photos show: (1) Portrait of K.S. Lo, the founder of Vitasoy. (2) Aerial view of the Vitasoy plant in Aberdeen, Hong Kong. (3) Three Hong Kong children sipping Vitasoy from glass bottles (shaped like soft-drink bottles) with straws. (4) State of the art Vitasoy packaging equipment at work. (5) A carton of Vitasoy Creamy Original Natural Soy Drink (250 ml). Address: Soyfoods Center, Lafayette, California.

5069. Soyatech. 1987. Soyatech launches Soya Newsletter (News release). 318 Main St., P.O. Box 84, Bar Harbor, ME 04609. 3 p. March.
• ***Summary:*** "'Retail sales in the soyfoods industry have risen from $20 million in 1978 to nearly $150 million in 1986,' said Soyatech President Peter Golbitz, 'yet no one

was covering the industry in a way that could provide professionals in the marketplace with concise, accurate and timely information. During 1986 alone, over $30 million was invested in the soyfoods industry in the U.S. and at least 60 new products were introduced into the marketplace. Based on our own work and research, I believe that retail sales of soyfood products will hit $500 million by 1990 and will easily top $1,000 million within a decade.'"

"Peter Golbitz and Sharyn Kingma, principals of Soyatech, founded Island Tofu Works in 1979. A regional manufacturer and distributor of tofu and tofu products, within 3 years, the company had become the largest producer and distributor of tofu and tofu-related products in northern New England. 'We stopped producing tofu in 1984,' said Kingma, 'because ITW's growth required that we move our operations out of Maine'... Over the past years, Soyatech has developed a number of new tofu products including non-dairy frozen desserts, puddings and milk drinks, and tofu-based salad dressings, cheese and meat substitutes."

Note 1. Concerning the date that Island Tofu Works was founded: In a 1986 leaflet titled "Market Research and Product Development Specialists for the Soyfoods and Health Foods Industry," Island Tofu Works gave its founding date as 1980.

Note 2. The term "northern New England" apparently refers to Maine, New Hampshire, and Vermont. It must exclude Massachusetts, where two much larger tofu manufacturers (Tomsun and Nasoya) are located.

Note 3. According to *Soyfoods Industry and Market* (4th ed., 1984) retail sales of soyfoods in the USA were valued at $465.2 million in 1983 and growing at about 10% a year. Thus the prediction that they will reach $500 million by 1990 is puzzling. Address: Bar Harbor, Maine. Phone: 207-288-4969.

5070. **Product Name:** SoYummy (Soy Ice Cream) [Pineapple, Lychee, Passion Orange, Hauupia (Coconut), Chocolate Macadamia Nut, or Guava].
Manufacturer's Name: Soyworld, Inc.
Manufacturer's Address: 819 Cedar St., Honolulu, Oahu, HI 96814. Phone: 808-537-9988.
Date of Introduction: 1987. March.
How Stored: Frozen.
New Product–Documentation: Berglund. 1987. Star-Bulletin (Honolulu, HI). March 1. "Hawaii's first homegrown, non-dairy, premium frozen dessert." They use distinctly Hawaiian flavors.

5071. STS–Soya Technology Systems Ltd. 1987. Soymilk in brief: A case that makes sense. 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 53 p. March. Illust. 21 cm. [9 ref]
• ***Summary:*** A revised edition of their "Soymilk" (1982). A Chinese edition was published at the same time. Contains some material reprinted from other sources without permission.

Contents: The soybean–a few facts. History of the soybean. Uses of soybean. History of soymilk. Varieties of soymilk. Flavor of soymilk. Basic soymilk production methods. Principles of soymilk production. Nutritional aspects of soymilk. Flowchart of soymilk plant. Soymilk today. Soymilk tomorrow. Food for thought. Soymilk glossary. Structure of soybean. Conversion table. Major foods from soybean. References. Address: Singapore.

5072. STS–Soya Technology Systems Ltd. 1987. Membrane filtration for soymilk products. 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 8 p. March.
• ***Summary:*** Contents: Membrane filtration. Ultrafiltration. Reverse osmosis. Membrane structure/membrane material. Membrane filtration in the food industry. Application of ultrafiltration to soymilk base. Why use ultrafiltration? Products. Concentration of soymilk. Concentration of acidified and coagulated soymilk. Yields. Spreads. Processed tofu/soy paneer. Soy cheese. Production processes for soy spreads, processed tofu, and soy cheese. Processing plant for UF processed tofu. Example of material balance for processed tofu. Address: Singapore.

5073. Vitasoy (USA) Inc. 1987. Vitasoy brings you a new exciting flavor (Ad). *Vegetarian Times.* March. Inside front cover. No. 115.
• ***Summary:*** This full-page color ad shows a large carton of Vanilla Delite–the new flavor. Existing flavors are Creamy Original, Rich Chocolate, and Carob Supreme. Address: San Francisco, California 94107.

5074. *Vitasoy Vitabrations.* 1987. Vitasoy celebrates 50 years of soymilk pioneering. 1(1):1. March.
• ***Summary:*** "From its conception in 1937, Vitasoy became the world's pioneer in soymilk manufacturing and marketing... To celebrate its 50th anniversary of soymilk pioneering in March 1987, Vitasoy is proud to inaugurate its fifth manufacturing facility in Hong Kong's New Territories. The $20 million plant, occupying 370,000 square feet and equipped with state of the art soymilk processing equipment, has a daily capacity of 1.2 million Tetra Pak units." An illustration (line drawing) shows the new plant.

Note: This article is inaccurate and misleading. First, Vitasoy was not the "world's first pioneer in soymilk manufacturing and marketing." Dr. Harry W. Miller, for example, had a thriving and very innovative soy dairy in Shanghai in 1936, and in Mt. Vernon, Ohio, in 1939. Second, Vitasoy was not founded until 1939, and production began in 1940. The 50th anniversary should be celebrated in 1989 or 1990. Third, less than half of the 1.2 million units capacity of the new plant is used for soymilk. Address: P.O. Box 77321, San Francisco, California 94005.

5075. *Vitasoy Vitabrations.* 1987--. Serial/Periodical. San Francisco, California: Vitasoy (U.S.A.) Inc. Vol. 1, No. 1. March 1987. Frequency: Quarterly.
• ***Summary:*** A three-color newsletter (red, black, and blue). The first issue is 8 pages. The third (and last?) issue (fall 1988) is 4 pages. Address: 435 Brannan St., San Francisco, California 94107.

5076. Sugimoto, Naotsugu; Torii, K.; Tanahashi, Y.; Morita, H.; Watanabe, Y.; Yamamoto, K.; Kainuma, T. Assignors to Takara Shuzo Company, Ltd. (Kyoto, Japan). 1987. Soybean milk-containing alcoholic beverages. *U.S. Patent* 4,656,044. April 7. 4 p. Application filed 1 Aug. 1985. See also Japanese Patent 84-165741 (FSTA 84-08-09). [7 ref]
• ***Summary:*** These alcoholic beverages may contain fermented soymilk, acid soymilk, or a mixture of the two, plus alcohol and high methoxylpectin. This beverage does not result in the formation of precipitates. Address: 1&7. Kyoto; 2-4. Ootsu; 5. Muko; 6. Osaka. All: Japan.

5077. *Soybean Update.* 1987. ASA's Human Nutrition Center in Mexico reports that Nutrimex is increasing its use of full-fat soy flour in foods and beverages. April 27.
• ***Summary:*** It introduced "nutrillas"–wheat tortillas made with 10% full-fat soy flour. "Other Nutrimex products made with full-fat soy flour include baby food, rice cereal, beans and beverages." They are available in 16,000 government-managed CONASUPO grocery stores. CONASUPO is the Mexican government's purchasing agent.

5078. Alfa-Laval South-East-Asia Pte. Ltd. 1987. Food Processing Research & Development Centre (Leaflet). Singapore. 2 panels each side. Each panel: 30 x 21 cm. April.
• ***Summary:*** A glossy color leaflet. Within the centre is a complete Soy Pilot Plant which includes grinding, fiber separation, deaeration and deodorization. "Starting from dry or soaked [soy] beans a soybase product can be produced. The base can then be further processed to soymilk, soy yoghurt, tofu, etc. Also other types of raw materials than soybeans can be used." A moderate fee is charged to use the 600 square meter centre. Contains many color photos of the equipment, soymilk, and several packages.

Note 1. Letter from Monica Kjellker Gimre, R&D manager, Alfa-Laval, Singapore. 1990. Sept. 3. This undated leaflet was first published in April 1987.

Note 2. This is the earliest English-language document seen (Aug. 2013) that uses the word "soybase" to refer to a concentrated form of soymilk, containing 9-12% total solids / dry matter, from which regular soymilk or soymilk products can be made by adding water, flavors, sweetener, etc. Prior to this time, Alfa-Laval used the term "soybean extract" instead of soy base. Address: R&D manager, Alfa-Laval South East Asia Pte. Ltd., 11 Joo Koon Circle, Singapore 2262. Phone: 86 22 711.

5079. Australian College of Paediatrics. 1987. Policy statement: Soy protein formula. *Australian Paediatric Journal* 23(2):83-84. April. [6 ref]
• ***Summary:*** "There are some well characterized disorders caused by cow's milk protein intolerance (CMPI), but there is also a range of vague signs and symptoms... The rationale for the use of soy formulae is the assumption that soy protein is less antigenic than cow's milk protein and thus should be used in the treatment of CMPI or prophylactically in patients at high-risk for developing CMPI... It seems that soy formula is inappropriate even in cases of proven CMPI because of its ability to cause allergic reactions. In cases of true gastro-intestinal CMPI, use of protein which has been hydrolysed to the point that it is no longer antigenic, is preferred. When all the clinical manifestations of CMPI have resolved, a soy formula may be introduced to test the child's sensitivity to it. If tolerated, it could replace the protein hydrolysate.

"It should not be assumed that all soy formulae are similar. The carbohydrate content differs in each of the 3 commonly available preparations (Isomil: sucrose 44%, corn syrup solids 56%; Prosobee: corn syrup solids 100%; Infasoy: sucrose 25%, corn syrup solids 75%). Sucrose is not the preferred carbohydrate in infancy because of its effect on teeth, development of eating habits and the fact that sucrose malabsorption can occur after gastroenteritis. Thus, if soy formulae are used, preference should be given to those low in sucrose." Address: Australia.

5080. Business Communications Co., Inc. 1987. Mass merchandised "healthy" foods. 25 Van Zant St., Norwalk, CT 06855-1781. 162 p. April. Price: $1,500.
• ***Summary:*** In this expensive ($1,500) market study, there is a chapter titled "The Soyfoods Market," which has the following segments: Summary of market segment. The tofu market. Soy-based frozen desserts. Soy-based beverages. Soy-based yogurt-like products. Other soy-based prepared foods. Fermented soy products. "A move toward the consumption of convenient, good-tasting foods with a healthful image is the food trend of the eighties. There is a strong relationship between healthful foods and the consumer's need for convenience. In the future, food manufacturers can expect the growth of 'healthy' foods to outpace that of the total food market, as more consumers pursue a healthful lifestyle...

"BCC defines the 'healthy' food market as those segments of food categories that are generally accepted by the consumer as having a healthful image. Total retail sales of all product segments included in this analysis were estimated to have reached $88 billion in 1986." Address: Norwalk, Connecticut. Phone: 203-853-4266.

5081. Golbitz, Peter. 1987. Aseptic and retort soymilk

enters new era. Sales flat in '86. Forecast up for '87. *Soya Newsletter* (*Bar Harbor, Maine*). March/April. p. 1, 8-9.
• ***Summary:*** An important update on the U.S. soymilk industry and market. Estimated U.S. aseptic and retort soymilk sales for 1983-87 (in gallons) are 1983 250,000; 1984 600,000; 1985 750,000; 1986 650,000; 1987 1,800,000 (projected). Average retail prices per gallon rose steadily from $12.50 in 1983 to $18.00 in 1986, but are projected to have dropped to $8.00 in 1987. The jump in production combined with the drop in prices may lead to little or no increase in income. Companies and brands discussed are Eden Foods' Edensoy, Vitasoy, Great Eastern Sun's Ah-Soy, Westbrae Natural Foods' Malteds and West Soy, Health Valley's Soy Moo, Mitoku's Supersoy. No sales or production figures are given for individual companies. Address: Soyatech, Bar Harbor, Maine.

5082. *INTSOY Newsletter* (*Urbana, Illinois*). 1987. INTSOY to focus on processing and utilization. No. 35. p. 2. April.
• ***Summary:*** INTSOY has recently begun working under a new 5-year collaborative agreement with USAID to continue improving human nutrition around the world through increased use of soybeans. [Pressure from the American Soybean Association (ASA) has forced INTSOY to discontinue its soybean variety development (ISVEX) work.] "The new program will have three phases. The first is research on new methods to process whole soybeans and make new products. The second phase will be to develop simple how-to manuals and equipment lists for entrepreneurs wanting to invest in the production of soy products. The third phase will include limited on-site technical assistance for governments and private firms in less developed countries.

"INTSOY's current research efforts are concentrated on extrusion cooking, low-cost oil extraction by combining extrusion cooking with mechanical expellers, new soy milk processing techniques, development of immature green soybeans as a commercial product, improved home-level procedures for preparing soybean foods, and new processes for converting soybean residues into animal feed.

"The research program is under the overall direction of emeritus food science professor Alvin I. Nelson. Individual project coordinators are Wilmot Wijeratne for extrusion and oil expelling, Sing-Wood Yeh for soy milk processing... The state of Illinois has recently provided the university with almost $500,000 to completely remodel the current pilot plant and laboratories. When the remodeling is finished in 1988, INTSOY and the University of Illinois will undoubtedly have the best facilities in the world for conducting research on the processing of whole soybeans."

5083. *INTSOY Newsletter* (*Urbana, Illinois*). 1987. Visit prompts commercial Caribbean soyfoods venture [Hope Lopez of Nature Treats in Kingston, Jamaica]. No. 35. p. 3. April.
• ***Summary:*** Actual marketing of soyfood products is scheduled to begin by the spring of 1987. Ms. Lopez, who runs a food store, is especially interested in soy milk and in ways to increase the use of soy flour obtained from extrusion cooking.

5084. *Missions Impact* (*Huntington, Indiana*). 1987. Dr. Y.T. Chiu reaches 97th birthday. April. p. 1.
• ***Summary:*** A concise biography of Y.T. Chiu, whose birthday is April 14, and who now lives at 510 N. Sunset Canyon Dr., Burbank, California 91501. He received his doctorate at Cornell University [Ithaca, New York] "for his work associated with finding a process for making milk substitute from soybeans." A photo shows him in 1960. Address: United Brethren Dep. of Missions, 302 Lake St.

5085. Rahman, Majeedah. 1987. Belize nutrition education project. Project Coordinator, 526 44th St., Oakland, CA 94609. 5 p. April. Unpublished manuscript.
• ***Summary:*** The most complete report on this proposed project and its origins. Dr. B.K. Rai of the Caribbean Agricultural Research and Development Institute (CARDI, a non-profit, non-governmental organization working to promote agriculture in the Caribbean), has done research on soybeans and is enthusiastic about the nutritional benefits of soyfoods. He is based in Belmopan. Address: Project Coordinator, Oakland, California.

5086. Robeznieks, Andis. 1987. The perfect food? Not everyone agrees. *Vegetarian Times*. April. p. 37-39, 44, 54. [5 ref]
• ***Summary:*** Overview of the problems with animal milks. Calcium absorption is impaired by "excessive dietary fat" and large amounts of animal protein. 49% of whole milk's and 31% of low-fat milk's calories come from fat. The best ratio of calcium to phosphorus is 2:1 but milk's is 1:1. Pasteurization destroys 25% of the vitamin B and makes calcium difficult to absorb. 1987's milk surplus cost $6,400 million.

5087. **Product Name:** Sanitarium Health Foods So Good: The Non-Dairy Soy Drink (Soymilk).
Manufacturer's Name: Sanitarium Health Food Co.
Manufacturer's Address: 148 Fox Valley Rd., Wahroonga, N.S.W. 2076, Australia.
Date of Introduction: 1987. April.
Ingredients: Soya isolate, vegetable oil, maltodextrin, sugar, mineral salts [incl. calcium] (332, 229, 340, 504, 509), vitamins (101, 301), water added.
Wt/Vol., Packaging, Price: 250, 500, or 1,000 ml in Combibloc Aseptic carton.
How Stored: Shelf stable.
Nutrition: Water 86.4%, soya extracts 4.1%, vegetable oil 3.5%, maltodextrine 3.3%, sugar syrup 1.7%, mineral

salts and vitamins. Percentage of RDA per 600 ml: Calcium 700 mg/100%, vitamin B-12 1.8 mcg/90%, riboflavin 1.0 mg/65%, iron 3 mg/30%.

New Product–Documentation: Shurtleff & Aoyagi. 1986. Soymilk Industry and Market, Update. This company makes its own brand, which is economically priced. Label (photocopy). 1987, undated. "The non-dairy soy drink. Cholesterol free. Lactose free. Long lasting." Manufacturer's catalog. 1989. "Juices and Drinks: The newest introduction into this drink category is So Good, a soy-based drink which is designed as an alternative to milk. This is particularly popular with those who have a lactose sensitivity and a need to reduce the cholesterol intake. It is made to a Sanitarium-inspired formula from soy isolate (the protein component in the soya bean) and has the distinct advantage of having a calcium level equivalent to that of cow's milk."

The Supermarket Circle. 1988. "So Good was awarded a 'Golden Sial' award or 'Food Oscar' at the AIDA-SIAL '88 International Oscars, judged in Paris on June 10. The Oscars is a bi-annual competition between 16 nations, including Canada, Great Britain, Italy and the USA. Each country presents products in 7 food and beverage categories: Grocery, alcoholic drinks, non-alcoholic drinks, dairy, deep-frozen, meat/poultry and delicatessen.

"The retail trade in each country nominates the representative products. With outstanding sales success since its launch by Sanitarium in 1987, Australia's retailers nominated So Good to represent the country in the 'non-alcoholic drinks' category."

Alfa-Laval. 1988, June. Soyfoods: Old traditions with new potentials. p. 9. A color illustration on the front of the package shows a glass of soymilk by a bowl or cereal on a table in front of a window facing a stylized rural landscape with the sun rising behind rolling hills. Green. blue, brown, and white. Subtitle: "The non-dairy soy drink. Cholesterol-free. Lactose-free. Long lasting."

Technique Laitiere & Marketing. 1988. No. 1034. Nov. p. 61. Gives nutritional composition. p. 65 So Good is an Australian soymilk product which won the 1988 SIAL gold medal (SIAL d'Or 88). SIAL is the International Food and Dairy Exhibition in Paris.

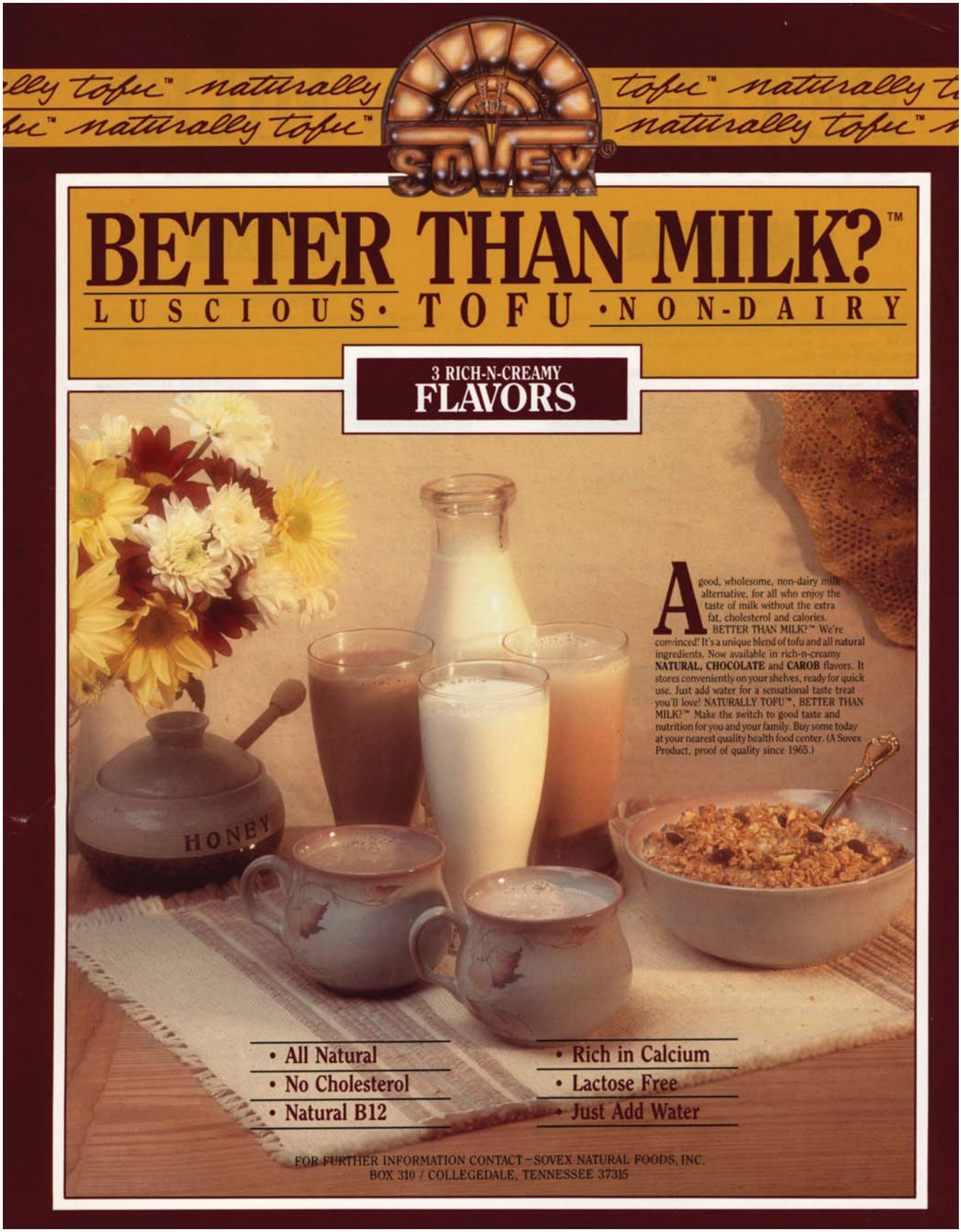
Sanco News. 1988. Dec. "Now the world thinks we're as good as gold: The Gold Food Oscar for So Good."

Talk with Eric C. Fehlberg, director International Health Food Assoc. 1990. March 7. So Good has had remarkable success in the past few years. Sanitarium Food Co. was the first to make soymilk in Australia. It caught on rapidly, and soon prompted 4-5 competing brands to be launched, but none of them have sales nearly as large as So Good. The main problem has been the company's inability to produce enough to keep up with demand. It was launched in April 1987. In Oct. 1989 they sold 1,738 long tons (2,240 lb/ton). The equipment used to produce the soymilk is Adventist technology, not that purchased from Alfa-Laval, STS, etc. Originally the product was packed under contract by a nearby dairy company in Combibloc cartons. After a year or so they purchased their own Combibloc packaging machine. Sanitarium Foods has a very strong research lab.

Sanitarium Nutrition Education Service. 1990. April. "So Good." This 4-page leaflet gives a clear explanation of each ingredient used, plus nutritional and other information.

According to competitors, in 1991 Sanitarium's So Good was Australia's leading soymilk product. But the fact that it is made from soy protein isolates rather than whole soybeans is considered a drawback by the natural foods market. Sun Gold is another major soymilk product.

5088. **Product Name:** Better Than Milk? (Powdered Tofu-Soymilk Blend) [Natural, Chocolate, or Carob].
Manufacturer's Name: Sovex Natural Foods, Inc. (Marketer-Distributor).
Manufacturer's Address: 9104 Apison Pike, Box 310, Collegedale, TN 37315. Phone: 800-227-2320.
Date of Introduction: 1987. April.
Ingredients: Natural: Maltodextrin, soy oil, calcium carbonate, dehydrated tofu, sodium caseinate [from cow's milk], sea salt, natural flavor, cyanocobalamin (vitamin B-12).
Wt/Vol., Packaging, Price: 27 or 21 oz can with reusable plastic lid.
How Stored: Shelf stable.
Nutrition: Per 8 fl. oz (liquid): Calories 90, protein 2 gm, carbohydrates 10 gm, fat 5 gm, cholesterol 0 mg, sodium 120 mg, lactose 0 mg.
New Product–Documentation: Ad in Natural Foods Merchandiser. 1987. June. p. 20. "Better than milk?" Ad in Bestways. 1987. July. p. 9; Sept. p. 12. 8½ by 11 inches. Color. "Tofu naturally. Luscious tofu non-dairy. 3 rich-n-creamy flavors. Rich in calcium. Just add water."



Ad in Natural Foods Merchandiser. 1989. Sept. p. 50. "Better than milk?"

Label sent by Maryann Brkich of Walnut Creek, California. 1992. Oct. 14. 6.75 by 13 inches. Brown, yellow, white, and black. Photo of a glass of milk and a small bottle of milk on a breakfast table next to a bowl of cereal. "Naturally Tofu. Delicious Tofu Non-Dairy. Rich-n-Creamy Natural. Makes 8 quarts. All natural. No cholesterol. Natural B-12. Rich in calcium. Lactose free. Just add water. Scoop inside." The 21 oz can now retails for $8.95. Sovex is now at Box 2178, Collegedale, Tennessee 37315.

5089. *Soya Newsletter* (*Bar Harbor, Maine*). 1987. Vitasoy Vitabrations debuts. March/April. p. 4.
• ***Summary:*** The company published the first edition of its quarterly newsletter in March 1987.

5090. **Product Name:** [Soyastern Soya Drink].
Foreign Name: Soyastern Soya Drink.
Manufacturer's Name: Soyastern Naturkost GmbH.
Manufacturer's Address: Osteratherstr. 26, 5000 Koeln 60, West Germany.
Date of Introduction: 1987. April.
Ingredients: Wasser, Sojabohnen aus kontrolliert biologischem Anbau.
Wt/Vol., Packaging, Price: 500 ml.
New Product–Documentation: Label. 1987, undated. 7 by 3 inches. Black on white and blue. "A natural soy protein drink, cholesterol-free, unsweetened. Produced traditionally, not deodorized or sterilized, no artificial flavors. As with all high-quality natural foods, this fresh product must be refrigerated." Letter from Thomas Karas. 1989. April 21. "We started to produce this Soy Drink in April 1987 as a fresh product, but stopped soon because of sanitation problems. Nevertheless we will try again soon, because now we have a new production plant on a higher standard."

5091. *Soyfoods* (*ESFA*). 1987. News from the world: Australia. 1(2):26. April. [Eng]
• ***Summary:*** "The word 'milk' associated with soya proteins is not in accordance with the rules of the Codex Alimentarius according to which milk is from bovine origin. Arguing from it, The Australian Dairy Farmers Federation has won its case with the Australian authorities for banning the word 'soybean milk' on packages and advertising. The only concession (?) made to the soyfood producers consists in the utilisation of the expression 'milk imitation'."

5092. *Tetra Pak Age*. 1987. Ah Soy quenches thirst for American soy beverage drinkers. 5(1):4. Spring.
• ***Summary:*** In Feb. 1987, after 16 months of product development and packaging research, the new Ah Soy in a Tetra Brik carton hit the shelves. There are 3 new flavors: American Original, French Vanilla, and Dutch Cocoa. The quart size retails for just under $2 each and the 8 oz size for about $0.69. Advantages over foil pouches: the latter can't be stacked on the shelf. Freestanding retail displays are all but impossible. Once opened, the pouches tend to slump and spill.

5093. Vandemoortele, Philippe. 1987. Editorial. *Soyfoods* (*ESFA*) 1(2):2. April. [Eng]
• ***Summary:*** "Since Alpro Belgium pioneered a new soymilk six years ago, many things have changed. The new soya milk with a nice taste and a high nutritional value of 3.6% protein attracted a lot of consumers. In a few years, the total European market increased from 500,000 litres to the today's estimation of 15 million litres. But also the number of producers grew and companies such as Celnat (France), Sapov (France), Soya Health Food (England), Soyana (Switzerland), DE-VAU-GE (Germany) and recently Cacoja (France) started to produce soya milk. The total capacity of the 4 largest producers amounts to 60 million litres which is 4 times more than the market volume...

"We are on the verge of a boom for soyfoods. Manufacturers will need the technology to make quality soymilk, tofu and other soyfoods... But this will not be enough; marketing is essential to make sure that our products fill a need and please the consumer."

5094. Chaware, Dilip. 1987. The soya substitute [Great Shake from Noble Soya House]. *Evening News* (*Bombay*). May 1.
• ***Summary:*** "The flavoured soya milk introduced by the Noble Soya House in the city this week will be followed by various soya products in due course, according to company chairman Adi Godrej." Great Shake has been marketed in Delhi, Hyderabad, Pune, Bhopal, and Indore. Noble House is a private limited company; Godrej and the Great Eastern Group each own 25%, the rest is publicly owned. Address: India.

5095. Lo, K.S. 1987. Re: Congratulations on birth of your first child. Yixing teapot. Letter to William Shurtleff at Soyfoods Center, May 1. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "I am in receipt of your card announcing the birth of your first child in February this year. Elizabeth and I would like to extend to you and Akiko our heartiest congratulations! With a birth weight of 8 lbs., it is certainly a big and husky baby which proves that a mother of vegetarian diet is at least equal if not superior to the average American diet of meat and vegetables. I presume he will be brought up on a vegetarian diet as well.

"I am interested to know how your Soya Bean Data Base Centre is progressing. Recently I have been receiving a Newsletter called *Soya* which is entirely devoted to reporting new related to soya products now marketed in the States. I

find it to be very informative...

"Yvonne is right now in Hong Kong. She came here for our annual meeting and discussion concerning our marketing activities in the States... I have asked her to bring you a Yixing teapot as a gift for the baby, as I hope he will grow up to be a tea drinker..."

"With best wishes to you and Akiko!

"Sincerely yours, K.S. Lo." Address: HKSBPC Ltd., 41 Heung Yip Rd. Aberdeen, Hong Kong.

5096. **Product Name:** [Bio Mets Athanor Vegetable Blanquette (Tempeh Stewed in White Sauce)].
Foreign Name: Bio Mets Athanor Blanquete Végétal.
Manufacturer's Name: Athanor SARL.
Manufacturer's Address: ZAE La Biste "Atelier 9," 34670 Baillargues, France. Phone: 67 87 0608.
Date of Introduction: 1987. May.
Ingredients: Tempeh, carrots, onions or leeks, mushrooms, soymilk, apple cider, arrowroot, sunflowerseed oil, aromas, unrefined seasalt.
Wt/Vol., Packaging, Price: 250 gm plastic tray in a paperboard box. FOB price 12.95 FF.
How Stored: Refrigerated.
Nutrition: Per 100 gm: Calories 171, lipids 15.9 gm, protein 4.2 gm, carbohydrates 2.7 gm.
New Product–Documentation: Label. Received 1988. May. Paper box, 5.5 by 4 by 1 inches. Multi-colored illustration of blanquette on front panel with sun logo. "100% Plant Protein. Preparation based on tempeh and vegetables. Ready in several minutes."

5097. Chan, G.M.; Leeper, Linda; Book, L.S. 1987. Effects of soy formulas on mineral metabolism in term infants. *American J. of Diseases of Children* 141(5):527-30. May. [19 ref]
Address: Div. of Neonatology, Univ. of Utah, Salt Lake City.

5098. Chikaarashi, Shigeru. 1987. Tônyû seizô ni kôteki na shokuhin no seihô to seizô sôchi [The process and equipment used for making an ideal foodstuff for use in producing tofu]. *Japanese Patent* 61-48900. 1,378,742. 3 p. [Jap]
• ***Summary:*** A patent for making whole (non-defatted) soy flakes, which can then be used in making soymilk or tofu. The last page contains a detailed diagram of the equipment. Address: Shin-Kotoni 6-jô, 2-6-17, Kita-ku, Sapporo, Japan.

5099. Derman, D.P.; Ballot, D.; Bothwell, T.H.; MacFarlane, B.J.; Baynes, R.D.; MacPhail, A.P.; et al. 1987. Factors influencing the absorption of iron from soya-bean protein products. *British J. of Nutrition* 57(3):345-53. May. [32 ref]
• ***Summary:*** Iron absorption was significantly greater from a milk formula (1.5 gm protein) that it was from a soy-based formula made with isolated soy protein (2.3 gm protein), with geometric mean values of 0.083 and 0.044 respectively. When ascorbic was added at a level such that the ascorbic acid to iron ration was 20 to 1, the absorption of iron from the soy-based formula was increased 2-3 fold. Address: Joint Univ./South African MRC Iron and Red Cell Metabolism Unit, Dep. of Medicine, Univ. of Witwatersrand Medical School, 7 York Rd., Parktown, Johannesburg 2193, South Africa.

5100. *Florida Restauranteur* (*Hollywood, Florida*). 1987. David Mintz. The Prince of Tofu. May.
• ***Summary:*** "In 1972, while searching for a milk substitute for kosher desserts, pastries, pies, and sauces, David Mintz discovered this soy bean product... For nine years, Mintz worked in the back kitchen of his store creating tofu recipes. After developing a cookbook full of dishes using tofu... Mintz invented Tofutti, which he introduced to the public in 1981."

5101. Fuerst, Judith. 1987. Bernie and the beanstalk. From a simple start in soybeans, Bernie Souphanavong's Northland Soy has grown into a multi-product manufacturer and distributor. *Alaska Business Monthly.* May. p. 16-17.
• ***Summary:*** Bernie began producing tofu in 1980. Now he also makes soy sprouts and soymilk. Born in Laos, he was named the 1986 Alaskan Minority Small Business Person of the Year. Address: Alaska.

5102. Gupta, S.K.; Patil, G.R.; Patel, A.A. 1987. Fabricated dairy products. *Indian Dairyman* 39(5):199-208. May. Paper presented at the IDA (North Zone) Seminar, Varanasi, Aug. 23-24, 1986. [23 ref]
• ***Summary:*** Contents: Introduction. Ingredients. Margarine. Spreads (a flowchart for a spread using a soy protein-lipid concentrate is given). Imitation cheese. Coffee/tea whiteners. Coffee complete and tea complete. Milk-like products: Filled milk, imitation or artificial milks, protein concentrate beverages (Miltone, developed by CFTRI and made at Bangalore based on whole buffalo milk extended or "toned" with groundnut (peanut) protein isolate, and Sipso, marketed in northern India, are both sold commercially. A soy-whey beverage with 4% protein has been developed by the National Dairy Research Inst. at Karnal). Soya yoghurt and lassi. Baby foods. Weaning foods. Ice cream analogues. Miscellaneous: Mango milk powder, banana milk powder, simulated sour cream and whipped toppings. The main advantage of these products is low cost due to the use of inexpensive ingredients, such as vegetable proteins and oils, emulsifiers and stabilizers. Dried milk and caseinates are also commonly used in these products.

Concerning weaning foods: "Recently, two low-cost nutritious weaning food formulations were developed at NDRI [National Dairy Research Inst.] Karnal, using soybean, dairy byproducts and cereal combinations. A spray dried soy-whey weaning food (SWWF) has been made (Fig.

6) from cheddar cheese whey (65 parts, on solid basis) and blanched soybean cotyledons (35 parts). A jowar-soybean-skim milk (JSM) weaning food includes 60 parts jowar (sorghum) flour, 30 parts soybean solids and 10 parts skim milk solids (Fig. 7). This has been specifically formulated to meet the need of jowar-growing areas where, incidentally, the problem of malnourishment is more prevalent than in the other areas of the country. The SWWF and JSM conform to the guidelines laid down by the Protein Advisory Group of the United Nations. Their respective protein efficiency ratios (PER) are 3.2 and 2.6 as compared to 2.5 for casein. Both these formulations are commendably low-cost ones (approximately Rs. 8.00 per kg, exclusive of packaging). Thus these products show great promise of becoming instrumental in combating malnutrition among children...

"An acceptable soft serve ice cream based on soybean and buttermilk (6.8 parts soy SNF [solids nonfat]–5.2 parts buttermilk SNF) has been developed at National Dairy Research Institute, Karnal. This product contains 9% fat, 12% SNF and 15% sugar. Its manufacture does not require the use of a stabilizer, thus saving on the cost of stabilizer." Address: National Dairy Research Inst., Karnal 132001, India.

5103. **Product Name:** Soy Moo (Soymilk) [Fat Free].
Manufacturer's Name: Health Valley Natural Foods.
Manufacturer's Address: 700 Union St., Montebello, CA 90640.
Date of Introduction: 1987. May.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Pat Carey, marketing manager for Pacific Foods of Oregon. 1997. May 5. To the best of Pat's knowledge, the first fat-free or nonfat soymilk in America was Health Valley's Soy Moo. It was introduced about 5 years ago, at about the time that Health Valley was converting their entire line to non-fat.

5104. Jacobs, Barbara; Jacobs, Leonard. 1987. Cooking with seitan: Delicious natural foods from whole grains. New York, NY: Japan Publications. 256 p. Foreword by Aveline Kushi. Index. 26 cm. [16 ref]
• ***Summary:*** "Seitan is cooked and flavored gluten that has been extracted from [high-gluten] wheat flour. It is very rich in protein, while being extremely low in fat and calories... The traditional Japanese way of seasoning seitan is to cook it in a broth using kombu sea vegetable, natural soy sauce, and fresh ginger root. This... is the one taken for granted as the 'standard seitan flavor' by commercial seitan makers and most people who are familiar with seitan. Many other mixtures of seasonings can be added to the basic seitan broth. Several earlier books on wheat gluten have been written, generally by Mormons.

This book offers you the history, nutritional information, a variety of preparation techniques, and hundreds of recipes that will allow you to convert wheat into a delicious and nutritious food. Especially suited for vegetarians who are interested in high-protein substitutes for animal foods.

Contents: Acknowledgments. Introduction: About wheat gluten, gluten, commonly asked questions about seitan. Getting started. Creating seitan from wheat flour (at home in 30-40 minutes). Using the seasonings. Additional methods of cooking. Appetizers. Soups. Main dishes and casseroles. Side dishes. Salads. Sauces, dressings and marinades. Condiments. Sandwiches. Desserts. From the pantry. Sample lunch and dinner menus. Appendix: 1. All about saving and using wheat starch. 2. Storing uncooked seitan. Storing cooked seitan. 4. Commonly encountered problems and some solutions. Nutritional information. Questionnaire for readers. About our ingredients (discusses natural soy sauce, and soymilk). Glossary (includes fu [dried gluten], miso, natural soy sauce or shoyu, soymilk, tamari, tofu). Bibliography.

Recipes containing soyfoods include: Miso soup with fu and wakame (p. 79). Miso-lemon dressing (p. 171). Tangy miso-tahini sauce (p. 180). Tofu spread with variations (p. 181). Seitan-tofu paté (p. 181-82). Tofu "feta cheese" (p. 192-93). Miso-tahini sauce or spread (p. 209).

When Michio and Aveline Kushi started the Seventh Inn Restaurant in Boston in 1971, they introduced seitan, a food that George Ohsawa had popularized in Japan, especially among macrobiotic people. Yumie Kono taught the chefs, one of whom was Lenny Jacobs, how to make seitan (p. 5).

The Introduction (p. 17-18) states: "Seitan is a food with a long history. Although not widely known in the West, it was traditionally eaten in China, Korea, Japan, Russia, the Middle East, and probably many other countries that grew wheat. In America, the Mormons and the Seventh Day Adventists made gluten and used it on a regular basis... The name *seitan* comes to us from the Japanese, who have prepared cooked wheat gluten for hundreds of years... Some natural foods industry insiders think seitan will become the 'tofu of the '80s.'

"Seitan was introduced to the U.S. natural foods industry about sixteen years ago [1970] when a Japanese variety, shrink-wrapped and quite dry and salty, was first imported. There had been several other varieties available from vegetarian groups, primarily the Seventh Day Adventists and the Mormons. Chinese restaurants have also been preparing wheat gluten for many years. The Chinese call it *mien ching,* or *yu mien ching.* Chinese restaurants often refer to it as 'Buddha Food,' claiming that it was developed by Buddhist monks as a meat substitute. There is also a dried wheat gluten available in Oriental food markets called *fu* by the Japanese and *k'ao fu* or *kofu* by the Chinese."

In the USA, about 130,000 pounds of seitan are made each year. The market is growing rapidly. Current U.S. seitan manufacturers are: 1. Upcountry Seitan in Lenox, Massachusetts, the largest known producer in America, which makes about 600 lb/week and distributes it in 6

states. The company, started about 3½ years ago (counting from Jan. 1987, i.e. founded in about mid-1983) by Win Donovan, is now owned and operated by Wendy Rowe and Sandy Chianfoni. They get a yield of 1.33 (i.e. 90 pounds of flour result in 120 pounds of seitan). 2. Rising Tide Natural Market in Long Island, New York. Michael Vitti has been making seitan for 6 years. About 1/3 of his production is bought by another company for use in making sandwiches. 3. Grain Dance in San Francisco, California. Ron Harris has been making seitan for 8 years and is currently selling 250 lb/week in 8 oz. packages. 4. Creative Kitchens in Miami, Florida. Yaron Yemini has been making seitan for 3 years. and has seen a 5-fold increase during this time. He now makes 120 lb/week. His yield is 0.7. 5. The Bridge in Middletown, Massachusetts. The company was founded in March 1981 by Roberto Marrocchesi and Bill Spear. They were making seitan by Oct. 1982. Steve Lepenta now makes 400 lb of cooked seitan each week and claims that sales have doubled in the past two years. 6. Maritime Foods in Portland, Maine. Rosemary Whittaker makes 50 lb/week of seitan. 7. Real Foods of Towson, Maryland. Sharon Warren has been making seitan for 6 years and now makes 150 lb/week.

Reviewed by Linda Elliot in East West. June 1987, p. 94. Note: Talk with Lenny Jacobs. 1990. Sept. 10. There has been little growth in the U.S. seitan industry since the book was published in May 1987. Problems with price and quality. If seitan is frozen, after defrosting it can become spongy and soggy. Address: Massachusetts. Phone: 617-232-1000.

5105. Leinhas, Judith L.; McCaskill, C.C.; Sampson, H.A. 1987. Food allergy challenges: Guidelines and implications. *J. of the American Dietetic Association* 87(5):604-08. May. [16 ref]

• ***Summary:*** "Double-blind placebo-controlled food challenges were used to determine the presence or absence of food hypersensitivity in 120 children with atopic dermatitis. The foods most likely to elicit positive challenges were egg (64 of the 133 positive challenges), peanuts (31/133), milk (11/133), wheat (10/133), fish (10/133), and soy (6/133)." Note that all are protein foods. Address: Clinical Research Unit, Dep. of Pediatrics, Duke Univ. Medical Center, Durham, North Carolina.

5106. **Product Name:** [SoftShakes. Natural Non-Dairy Soy Beverage (Vanilla, or Light Chocolate)].
Foreign Name: Boisson Naturelle au Soya.
Manufacturer's Name: Les Aliments Tarasoy Ltée (Tarasoy Foods Ltd.).
Manufacturer's Address: 3455 Local D rue Isabelle, Brossard, QUE J4Y 2R2, Canada. Phone: 514-659-6586.
Date of Introduction: 1987. May.
Ingredients: Incl. soymilk, corn syrup solids instead of cane or beet sugar.
Wt/Vol., Packaging, Price: 250 ml Pure-Pak carton. Retails for $1.19.
How Stored: Refrigerated.
New Product–Documentation: Spot in Food in Canada (Toronto, ONT). 1987. May.

Talk with Ian Walker of Canada. 1995. May 15. The name of this company is now Les Aliments Tarasoy, run by Helen Wan, who speaks good English and broken French. Address: 3455 Local D rue Isabelle, Brossard, QUE J4Y 2R2, Canada. Phone: 514-659-6586. Fax: 514-659-6578. They now make soymilk, tofu, and soy cheese.

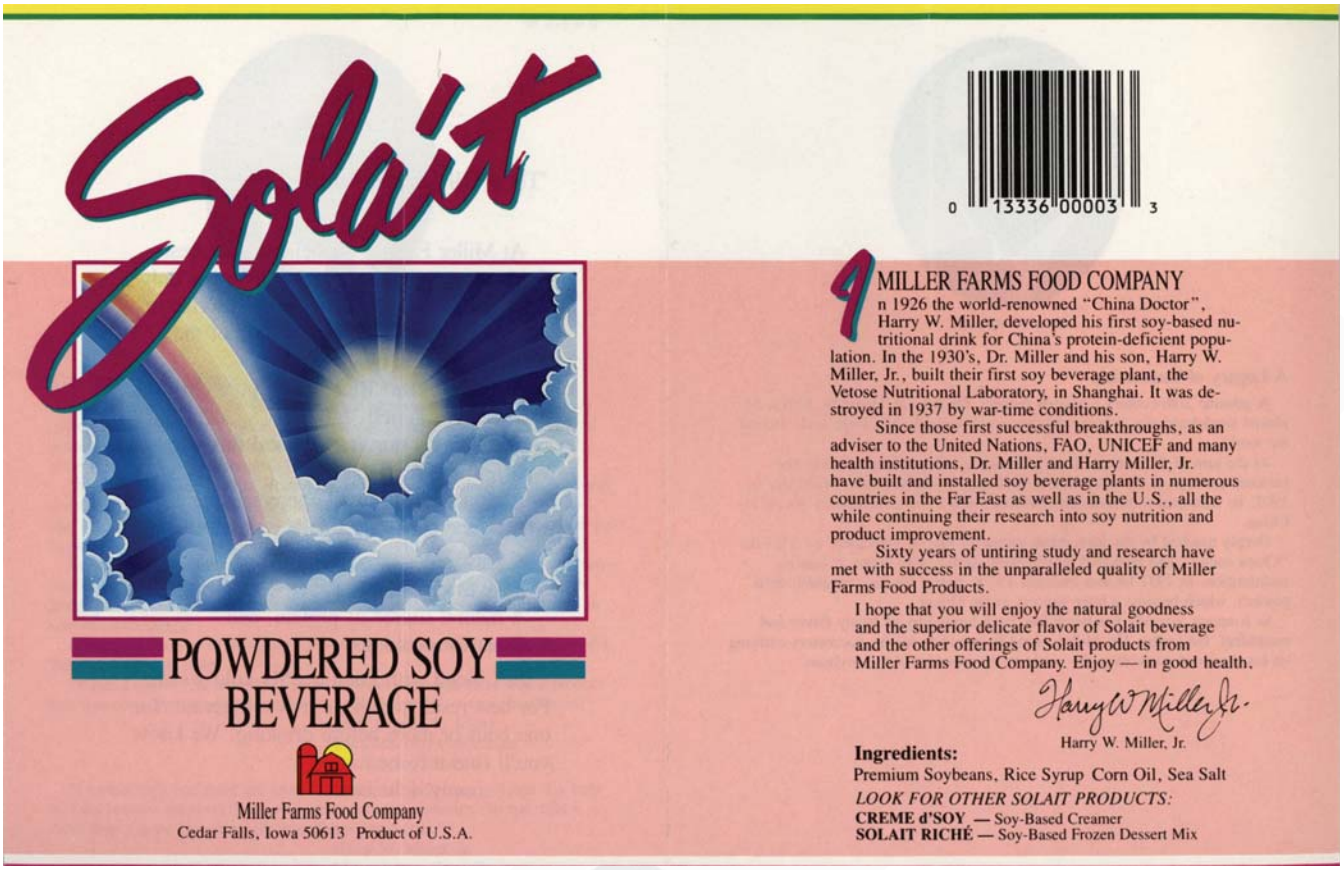
Talk with Helen Wan, sales manager. 1995. May 26. This company was founded in Dec. 1986 by a number of Chinese-Canadians, who own shares. Her brother, Billy Chin, is the president and one of the main founders. Softshake was one of their first products, introduced in the spring of 1987.

5107. *Marine Colloids Application Bulletin* (*FMC Corp., Philadelphia*). 1987. Fresh prepared soy dessert (using SeaGel Carrageenan). No. D-48. May. Summarized in Soya Newsletter. 1987. March/April. p. 11.

• ***Summary:*** Soymilk is gelled to prepare lactose-free desserts. Use SeaGel GP 713 for a sliceable flan-type dessert, or SeaGel FL 644L or FL 610 for a creamy pudding type dessert. Address: FMC Corp., Marine Colloids Div., Crockets Point, P.O. Box 308, Rockland, Maine 04841. Phone: 215-299-6000.

5108. **Product Name:** Solait (Powdered Soy Beverage). Renamed Soylait Soy Beverage by Dec. 1988.
Manufacturer's Name: Miller Farms Food Co., Inc.
Manufacturer's Address: 314 Main St., Cedar Falls, IA 50613. Phone: 319-277-8600.
Date of Introduction: 1987. May.
Ingredients: Soybeans, rice syrup, corn oil, sea salt.
Wt/Vol., Packaging, Price: 26 oz can makes 6 quarts. Or 60 lb nitrogen flush bag.
How Stored: Shelf stable.
Nutrition: Per 1 oz. powder or 8 oz. liquid: Calories 135, protein 6 gm, carbohydrates 13 gm, fat 7 gm, sodium 145 mg, calcium 50 mg.
New Product–Documentation: Talk with Harry W. Miller, Jr. 1987. Oct. 21. Label and leaflet (Printed on back of label). 1987. "Solait. Powdered Soy Beverage." Miller Farms Food Co. 1987. Sumptuous Solait Recipes from Miller Farms. Letter from R.W. Fischer. 1987. Oct. 30. "We started selling the product in May. Market response is outstanding." Soya Bluebook. 1987. p. 89. New Product News. 1988. Dec. 9. This powdered soy beverage is now named Soylait. The same ingredients are still used. Product Alert. 1989. Jan. 23. The product is now called Soylait. It comes in a 24 oz can. Ad in Vegetarian Times. 1989. May. p. 20.

Talk with Miller Farms. 1991. Dec. 3. Solait and Creme d'Soy are still on the market.



Leaflet (8.5 x 11 inches, full color) from the Natural Foods Expo at Anaheim, California. 1992. April. "Solait: Powdered Soy Beverage." The company name is now given as Solait International Ltd., P.O. Box 885, Carroll, Iowa 51401. "Solait is made from only four ingredients–Premium grade soybeans, rice syrup, corn oil, and sea salt. No chemicals or additives." Solait is high in fiber. A nutritional analysis is given. The product is sold in 24-oz reusable containers or 60-lb bulk packs.

Leaflet (8 panels). 1992. April. "Cooking with Solait–Helpful hints and delicious recipes."

Soya Bluebook. 1993. Sept. The company name is now given as Devansoy, Inc. located at 202 West 7th St., P.O. Box 885, Carroll, Iowa 51401. Phone: 1-800-747-8605. Elmer Suttler is president. Talk with Bev Tierney of Devansoy. The company changed its name from Solait International Inc. to Devansoy, Inc. in Jan. 1993. It makes only one product–Solait Powdered Soy Beverage–however in mid-1993 it started selling soy flour, tofu powder, and textured soy flour made by other companies.

5109. Mounts, T.L.; Wolf, W.J.; Martinez, W.H. 1987. Processing and utilization. In: J.R. Wilcox, ed. 1987. Soybeans: Improvement, Production, and Uses. 2nd ed. Madison, Wisconsin: American Society of Agronomy. xxii + 888 p. See p. 819-66. Chap. 21. [154 ref]
• ***Summary:*** Contents. 1. Soybean oil. 2. Soybean protein. 3. Soybean processing. 4. Soybean oil processing. 5. Food uses of soybean oil. 6. Nonfood uses of soybean oil. 7. Defatted soybean protein processing. 8. Utilization of defatted soybean protein products. 9. Full-fat soybean products. Address: 1-2. NRRC, Peoria, Illinois; 3. USDA-ARS, Beltsville, Maryland.

5110. **Product Name:** Soymilk.
Manufacturer's Name: Northland Soy Products.
Manufacturer's Address: Alaska. Phone: 907-276-4272.
Date of Introduction: 1987. May.
New Product–Documentation: Fuerst. 1987. Alaska Business Monthly. p. 16-17. "Bernie and the Beanstalk."

5111. Plamil Foods Ltd. 1987. The Plamil range provides vegan nutritional requirements (Ad). *Vegan* (*The*) (*England*). Spring. p. 6.
• ***Summary:*** Half-page, black and white. "... with the essential calcium and vitamins B2, B12 and D2. Born of a vision when this vegan company pioneered the first British-made soya milk in 1965.

"For literature (SAE please) write to Plamil Vegetarian Foods,..."

Illustrations show: (1) Plamil Soya Milk (concentrated). Plamil Soya Milk (ready to use). (3) Plamil soya milk (small round cups with peel-off lids). Address: Plamil House, Bowles Well Gardens, Folkestone, Kent, England.

5112. Rahman, Majeedah. 1987. Belize nutrition education project. *Plenty Bulletin* (*Summertown, Tennessee*) 3(1):3. May.
• ***Summary:*** Named British Honduras until about 1975, Belize was granted full independence in 1981 but is still a member of the British Commonwealth. To combat malnutrition among children, soyfoods preparation and nutrition will be taught in workshops. Soymilk and soy ice cream will be provided to primary school students in selected areas. The project, with a budget of $14,700, will run from June 1987 to June 1988. The Univ. of California has agreed to provide educational and training materials. Address: Project Director (nutritionist), 526 44th St., Oakland, California 94609.

5113. Schatz, Betty. 1987. Los Companeros [Soyfoods nutrition program in Mexicali, Mexico]. *Plenty Bulletin* (*Summertown, Tennessee*) 3(1):3-4. May.
• ***Summary:*** The program is trying to reduce hunger, malnutrition, and sickness in the suburban barrio of Lazaro Cardenas, Mexicali. The program has two parts: (1) School Nutrition: 30 school children are being served an 8 oz glass of soymilk and a package of soynuts each day, at a cost of $0.10/child. (2) Community Education. Mothers are taught how to make soymilk, tofu, and soy nuts. Each family attending a demo is given a soyfoods starter kit consisting of a 50 lb bag of soybeans ($10), a hand food grinder ($10), a book of Spanish soy recipes and a few necessary ingredients. Betty is a retired Hayward school teacher. Address: Project Director, 2800 Sparks Way, Hayward, California 94541. Phone: 415-537-3713.

5114. Steichen, Jean J.; Tsang, Reginald C. 1987. Bone mineralization and growth in term infants fed soy-based or cow milk-based formula. *J. of Pediatrics* 110(5):687-92. May. [30 ref]
Address: Div. of Neonatology, Depts, of Pediatrics and Obstetrics, Univ. of Cincinnati College of Medicine, and The Children's Hospital Research Foundation, Cincinnati, Ohio.

5115. STS–Soya Technology Systems. 1987. Soymilk versus EEC legislation. Singapore. 34 p. [4 ref]
• ***Summary:*** This book is a compilation of four documents: 1. "Explanatory Memorandum on the Designations Used in the Marketing of Milk and Milk Products," issued by the EEC Commission, 20 May 1988 (4 p.). 2. "EEC Report on Imitation Milk and Milk Products (Commission Report to

the Council).” (March 1986. 22 p.). Defines imitation and substitute products. 3. “Proposal for a Council Regulation (EEC) on the Designations Used in the Marketing of Milk and Milk Products” 29 March 1984, including the proposed amendments of 1986 (4 p.). 4. Annexes. Designations and definitions of dairy-related products (4 p.).

Anders Lindner of STS notes in a memo sent out with the booklet on 4 March 1987 that “Although soymilk and soymilk products are currently no real threat to the dairy industry in the EEC, there are forces in motion in Brussels to give soymilk a hard time. The assumption is, that what margarine did to butter–soymilk can do to milk.”

5116. *Technocrat* (*India*). 1987. Great Shake: Soya milk success. May. *
• ***Summary:*** “On the 27th of April, Noble Soya, a company promoted by Godrej, launched its premium Milk Shake–Great Shake, in Bombay. After promising feedback from both Delhi and Pune markets, Dr. A.S. Alyar, the brain behind the concept, is very hopeful that it will be a hit in this market, too.” Great Shake is soya milk that is flavoured. The soyamilk is processed using Kibun’s special deodorizing process. Soymilk can be used whenever dairy milk is used and has a wide range of applications. It can also be processed into products such as tofu, a soft cheese. Tofu provides a base for a variety of snack foods such as tofu burger, tofu scramble, tofu ice-cream and others. Soyamilk can be used to make desserts and puddings.

5117. Grande, Judy. 1987. Formula handicaps youths. Study confirms what moms have claimed for 8 years [about Neo Mull Soy and Syntex]. *Plain Dealer* (*Cleveland, Ohio*). June 4.
• ***Summary:*** Thousands of babies fed Neo Mull Soy or Cho-Free, made by Syntex of Palo Alto, California, and lacking chloride face an uncertain future of developmental problems. The longer children used these products, which were pulled off the market in 1979, the lower they scored on intelligence scores. A poll by parents of 800 other parents showed (with 55% of the returns in) that 15% of the respondents children had already repeated a grade, 25% have been diagnosed as learning disabled, 35% have been enrolled in special education classes, and 31% have been in speech or language therapy. Chloride was listed as an ingredient on the formula cans though none was present. For more information write FORMULA, P.O. Box 39051, Washington, DC 20016.

5118. Muir, A.; Kalnins, D. 1987. False advertising resulting in infant malnutrition. *Canadian Medical Association Journal* 136:1274. June 15. [5 ref]
• ***Summary:*** Documents the case of an infant who, at 6 weeks of age, was put on a soybean-based product called Eden-soy. “The health food retailer had supplied the parents with a ‘professional looking’, colorful monograph that advertised the drink as ‘good for babies’ and a ‘quality substitute’ for breast milk. Their family physician had endorsed the product after a cursory inspection of the brochure, and the infant was exclusively fed Eden-Soy, without vitamin supplementation.” Four months later he had become wasted because the formula did not contain enough calories. He also had developed night blindness and rickets because the supplement did not contain sufficient quantities of vitamins A and D. Address: Div. of General Pediatrics, Dep. of Pediatrics, and Dep. of Food Services, Hospital for Sick Children, Toronto, ONT, Canada.

5119. *Hindu* (*The*) (*India*). 1987. Biggest soyamilk plant in Ghaziabad [for Amrit Soya]. June 18. [Eng]
• ***Summary:*** India’s second, and largest to date, soyamilk plant will be located at Ghaziabad in Uttar Pradesh. It is being installed by Larsen & Toubro Ltd. (Bombay) in collaboration with Soya Technology Systems (STS). The Rs 16 crore project, with a capacity of 6,000 liters/hour of soyamilk is being set up by Amrit Soya and Protein Foods Ltd. Address: India.

5120. Kennedy, Shawn G. 1987. A soy-based business flourishes in Brooklyn [Appropriate Foods]. *New York Times.* June 24. p. C6.
• ***Summary:*** Robert Werz, a carpenter, started making tempeh patties in a corner of the kitchen of a friend’s catering business. After 6 months he set up in Nassau County. Today, with 6 employees, he produces about 10,000 lb/month of tempeh. Half is sold to health food distributors and half delivered to 100 stores in Metro New York. The company also makes soymilk and tofu products (quiches, tortellini, and salads). In March the company moved from Franklin Square, Long Island, to an East Brooklyn Industrial Park; there was more space at lower rent.

When Mr. Wertz became a vegetarian more than 14 years ago [i.e., before 1970], the only place he could buy tofu was in Chinatown. Appropriate Foods is owned by Robert Werz and Shelley Martin.

5121. Associate Director, Import Operations Unit, (HFC-131). 1987. Revision to Import Alert #40-01–”Soy drinks, milk substitute drinks and other drinks that may serve as infant formulas.” *Import Alert.* June 30.
• ***Summary:*** Discusses: Eden Foods’ Edensoy, Soy Moo, Sun Soy, Ah Soy, Westsoy, Vitasoy, Westbrae Malteds. Summarized in Soya Newsletter. 1987. 1(4):7. Recommends continued surveillance. Address: Washington, DC.

5122. **Product Name:** SweetSoy (Soymilk) [Absolutely Plain, Honey-Vanilla, Simply Carob, Cha-Cha Cherry, or Oriental Almond].
Manufacturer’s Name: Ambrosia Soy Co.
Manufacturer’s Address: 199 Saltonstall Parkway, East

Haven, CT 06512. Phone: 203-467-8821.
Date of Introduction: 1987. June.
Ingredients: Water, organic soybeans, soy lecithin, flavor.
Wt/Vol., Packaging, Price: 1 pint plastic bottle with cap retails for $0.89, or 1 quart retails for $1.59.
How Stored: Refrigerated, 19 day shelf life.
New Product–Documentation: Olivero. 1987. New York Times (Connecticut Ed.). Aug. 9. Interview with Liz Appel. 1987. Oct. 7. She started June 1987. Uses a Takai pressure cooker system bought through Bean Machines. Uses hot grind to reduce beany flavor, hot fill to extend shelf life. Distributed by Country Barn to health food stores in New England.

Ad (2¼ by 5 inches, black and white) in Natural Foods Merchandiser. 1989. Feb. p. 12. "People say, ours is better! Soymilk, pies, puddings, dips, and yogurt. The Ambrosia Soy Company of East Haven, Connecticut. Fresh, organic, and pure. We're the new kid on the block." An illustration (line drawing) shows a bottle of soymilk against a bed of soybeans.

Soya Newsletter. 1989. Jan/April. p. 12. "Ambrosia Soy's fresh soymilk in supermarket dairy case." At Waldbaum's Foodmart.

Talk with Liz Appel. 1989. Nov. 9. Fresh soymilk is a hard product to sell in America. Soy yogurt is much easier.

5123. Bennett, Gordon. 1987. What people drink [Westbrae Malteds]. *East West.* June. p. 8-9.
• ***Summary:*** Starting in January 1987, Malteds were made from the first time in America, in California. Malteds' prices dropped about 20%, calories dropped 15%, and they now contain organic soybeans and brown rice syrup. "We have an exclusive manufacturing agreement with a U.S. soymilk producer that has access to the most sophisticated equipment and know-how available in Japan today." Address: President, Westbrae Natural Foods, Emeryville, California.

5124. Bhatnagar, P.S. 1987. All India Coordinated Research Project on Soybean (Indian Council of Agricultural Research). Project coordinator's report & summary tables of experiments 1986-87. National Research Centre for Soybean, Khandwa Rd., Indore 452 001, India. xxii + 336 p. 27 cm.
• ***Summary:*** Contents: Project coordinator's report: Desired production of soybean is within our reach, by Dr. P.S. Bhatnagar (p. i-xxii). Summary tables of varietal trials (breeding and genetics, p. 1-144). Station trials. Agronomy. Seed physiology. Soil microbiology. Plant pathology. Entomology. Agricultural economics. Quality aspects and utilization. Appendixes. Summary reports. Breeding trials: Northern hill zone, northern plain zone, central zone, southern zone. Agronomy trials: Northern hill zone, northern plain zone, southern zone. Soil microbiology. Plant pathology. Entomology. Preliminary performance of some germplasm lines. Pest complex of soybean crop at Indore. Uniform method of disease rating. Statement showing staff position in the project. Budget allotment, expenditure and percent utilization in the project.

The National Research Centre for Soybean, Indore, has under it five main centers: 1. G.B. Pant University of Agriculture and Technology, Pantnagar, UP. 2. J.N. Krishi Vishwa Vidyalaya-Regional Research Station, Sehore, MP. 3. University of Agricultural Sciences, Bangalore, Karnataka. 4. Indian Agricultural Research Institute, New Delhi. 5. Marathwada Agricultural University, Parbhani, Maharashtra. In addition, there are 10 Sub Centres and 5 Voluntary Centres.

This report is largely about soybean breeding, variety development, and agronomy, with almost nothing about utilization. The utilization chapter contains 3 reports, only the last of which has any conclusions! (1) "Studies on feeding of tempeh to determine its effect on growth and blood picture of pre-school children." The tempeh was made with 55 parts sunflower seeds and 45 parts soybeans. It was most acceptable to children when coated with sugar syrup. (2) "Studies on the partial substitution of ground meat preparations with edible grade defatted soybean meal." (3) "Studies on the acceptability of soymilk blended dahi." 60 parts soymilk were blended with 40 parts cow's milk and made into yogurt using various pure cultures. Address: Indore, India.

5125. Elliott, James G. 1987. Lactose intolerance. *Nutrition Overview* 2(2):1-3. June. [23 ref]
• ***Summary:*** A good overview of the subject. "Lactose intolerance is a partial to complete inability of the body's enzymes to digest milk sugar often resulting in diarrhea and possibly accompanied by abdominal bloating, vomiting and cramps. Human milk contains 7.5 gm of lactose per 100 ml whereas cow's milk contains only 4.5 gm. The activity of lactase in the intestine reaches a maximum immediately after birth and begins to decline thereafter until adulthood. There are three types of lactose intolerance: Congenital, primary acquired, and secondary." Address: Manager, Nutritional Science Dep., R&D Group, Protein Technologies International (Ralston Purina).

5126. Gleason, Jane. 1987. Ceylon Oils and Fats Corporation. Rajasoya soy flour. Marketing soyfoods in Sri Lanka. *Soybean Marketing in Sri Lanka, Monthly Report.* June. p. 1-8.
• ***Summary:*** Note: This is the first monthly report.

I. Interview with Mr. Amaratunge, Marketing Manager, Ceylon Oils and Fats Corporation (COFC). Mr. Amaratunge says his organization imports soybeans and meal from India. They would purchase it domestically if it were available. A table shows COFC's imports (increasing) and domestic procurements (decreasing) of soybeans (in metric tons) from 1984 to 1987.

COFC presently imports from India approximately 12,000 metric tons / year of soybean meal at a price below the official Rs. 7/kg floor price paid to Sri Lankan farmers.

II. Interview with Mr. Lalith de Silva, Plant Manager, and Mr. Upali Madawala, Marketing Manager, Rajasoya. Rajasoya makes full fat soy flour for use as a coconut milk substitute in curries. The processing equipment, most of which was imported, was fairly sophisticated. Organizations within the Government of Sri Lanka own 53% of Rajasoya's stock. Discusses: Procurement of soybeans (through the Paddy Marketing Board at Rs. 8.75 per kilo), production details (monthly production of Rajasoya has been erratic, averaging 14-19 metric tons per month. Questions about plant capacity). A table shows monthly production of Rajasoya soy flour, which averages about 200 tonnes a year for 1984-86. "When Rajasoya began operation in September 1983, soy flour was heavily promoted in television, newspaper and radio as a coconut milk substitute. At that time, coconut prices were high and sales of soy flour were therefore fairly good. When coconut prices decreased to a more normal level, sales of soy flour dropped substantially [from 67.50 tonnes in Jan. 1984 to 3.18 tonnes in May 1984], which led to a shift in promotion strategy. This shift highlighted the nutritional aspects of the product. Mr. Madawala emphasized that the decrease in sales was not entirely due to normalization of coconut prices. Rather, he feels that many consumers who tried Rajasoya's product did not like it." All of the product is sold to the State Tea Plantations. Bakeries and biscuit companies are interested in fortifying their products with soy flour, but Rajasoya's flour at Rs. 40/kg is too expensive.

Discusses: Future plans for Rajasoya. Comment on discussion with Mr. Madawala. Comment on discussion with Mr. de Silva ("SFRC produces soy flour at less than one-half Rajasoya's cost using an extruder and mill").

III. Market activities in Kandy and Colombo. IV. Interviews with 3 commission agents and 1 wholesale trader who deal in soybean. V. Development of consumer and farmer surveys. VI. Bread making and discussion with Dhanasiri Supermarket in Kandy. VII. Soy snacks in Cornel's Supermarket in Colombo. VIII. Peradeniya Pola Market (For this market experiment, products made by SFRC will be sold at a profit. SFRC's production manager, Mrs. Ariyaratne, agreed willingly to provide products for this market. This experiment will continue for several months). Address: Sri Lanka.

5127. *Industries Agro-Alimentaires* (*IAA*). 1987. Soja + Coopérative agricole de céréales de Colmar + Alfa Laval = Jus de Soja [Soya + Agricultural Cereals Cooperative of Colmar (CAC) + Alfa Laval = Soymilk]. June. p. 555-57. [Fre]

• ***Summary:*** Discusses the new automated soymilk plant built by CAC and Alfa Laval Industries at Issenheim near Colmar in France. A photo shows 5 products in the Bioforme line, plus the new soymilk production system. The concept was born when CAC met Alfa Laval specialists at the Third National Soya Congress at Albi in Sept. 1985. In 1970 Alfa Laval developed a soymilk process based on the Cornell method for making soymilk. In 1982 Alfa Laval introduced a greatly improved process for making soymilk incorporating all scientific discoveries to date. They installed their first modern soymilk plant in China in 1984 at the Guangdong Cannery. It now produces some 20,000 liters/day of high quality soymilk. The CAC plant is Alfa Laval's 10th completely automated soymilk plant. Support funding for the project (600,000 French francs) came from the Ministry of Industry through its Directionale de l'Industrie et de la Rec- d'Alsace. The process for making soymilk is described, together with a schematic diagram of the Alfa Laval plant. Address: France.

5128. Johnson, Kirk. 1987. Hidden fats in whole foods diets. *East West.* June. p. 62-68.

• ***Summary:*** A full-page table (p. 65) titled "How the substitutes stack up" shows total fat and serving size for the following categories: Dairy products. Substitute dairy products. Meat. Substitute meat products. Frozen dinners. Miscellaneous. The substitute dairy products include: Tofu Cream Chie (21st Century). Soya Kaas (soy cheese from American Natural Snacks). Tofutti (Tofu Time). Le Tofu (Brightsong Foods). Ice Bean (Farm Foods). Tofu, silken (Nasoya). Tofu, soft (Nasoya). Tofu, firm (Nasoya). Soybean margarine (Willow Run). Soymilk (Edensoy). Soymilk (Health Valley). Soymilk (Vitasoy).

Substitute meat products include: Fakin' Bacon (Tempehworks). Tofu Wieners (Yves). Tofu Pups (Tempehworks). Vegie Burger (Bud, Inc.). Tofu Burger (Bud, Inc.). Gardenburger (Wholesome & Hearty). Tofu Sausage (Vegetable Protein Co.). Tempeh, 3-grain (Tempehworks). Seitan ("wheat meat").

Meatless frozen dinners include: Tofu Lasagna (Legume). Meatless Pepper Steak with Kofu & Noodles (Legume). Sweet and Sour Tofu (Legume).

Miscellaneous products include: Nasoyannaise (Nasoya Foods). Salad dressing, Creamy Tofu (Nasoya). Miso.

5129. Lindner, Anders. 1987. An introduction to soybean uses. *North European Food and Dairy Journal* No. 6/87. p. 210-15. June. [Eng; Ger; Dan]

• ***Summary:*** Of the 95 million tons of soybeans produced worldwide in 1986, an estimated 75 million tons were crushed, 15 million tons were stock, and 5 million tons were processed without crushing to make human foods. Of the soybeans crushed, 54 million tons became meal and flour, while 13 million tons became oil. Oriental soyfoods can be divided into those originating from traditional soymilk (tofu, yuba, soybean drinks, okara) and fermented

products (soysauce, tempeh, miso). Modern soymilk can be formulated to make dairylike products or concentrated by ultrafiltration to make a host of new products. Lists German and Danish names for all basic soyfoods. Each is described briefly. Advantages of using soybeans as a basis for products are discussed with emphasis on biotechnological advances. Address: Soya Technology Systems (STS), Ltd., Singapore.

5130. **Product Name:** Solait Riche (Powdered Soy-Based Frozen Dessert Mix).
Manufacturer's Name: Miller Farms Food Co., Inc.
Manufacturer's Address: 314 Main St., Cedar Falls, IA 50613. Phone: 319-277-8600.
Date of Introduction: 1987. June.
Ingredients: Premium soybeans, sugar, corn oil, coconut oil, corn syrup, sea salt, microcrystalline cellulose (cellulose gel), cellulose gum, mono- and diglycerides, carrageenan, standardized with dextrose and salt.
Wt/Vol., Packaging, Price: 28 oz (794 gm).
How Stored: Shelf stable.
Nutrition: Per 0.75 oz. powder or 3 oz. frozen dessert: Calories 120, protein 3 gm, carbohydrates 9 gm, fat 8 gm, sodium 65 mg.
New Product–Documentation: Talk with Harry W. Miller, Jr. 1987. Oct. 21. Leaflet. 1987. "Solait. Powdered Soy Beverage." Product is not yet available. Label. 1987. Oct. 14.5 by 6.5 inches. Purple, green, red, yellow, and blue on white. Illustration of sun and rainbow above clouds. "No cholesterol. No lactose. No animal fat." Talk with Bob Fischer. 1987. Nov. Says product was introduced in June.

5131. Miller Farms Food Co., Inc. 1987. Solait. Powdered Soy Beverage (Leaflet). Cedar Falls, Iowa. 1 p.
• ***Summary:*** "In 1926 the world-renowned 'China Doctor,' Harry W. Miller, developed his first soy-based nutritional drink for China's protein-deficient population. In the 1930s, Dr. Miller and his son, Harry W. Miller, Jr., built their first soy beverage plant, the Vetose Nutritional Laboratory, in Shanghai. It was destroyed in 1937 by war-time conditions." Address: 314 Main St., Cedar Falls, Iowa 50613.

5132. **Product Name:** Spray Dried Soymilk (Sold to Food Processors).
Manufacturer's Name: Nasoya Foods, Inc.
Manufacturer's Address: 23 Jytek Park (P.O. Box 841), Leominster, MA 01453.
Date of Introduction: 1987. June.
Wt/Vol., Packaging, Price: 50 lb bags.
New Product–Documentation: Soya Bluebook. 1987. p. 98. Talk with John Paino. 1988. Feb. 15. This is a different product from their two types of spray-dried tofu. It is sold in 50-lb bags.

5133. **Product Name:** [Neo-Soya Powder {Finely Pulverized Whole Soy Flour from Dehulled Soybeans for Making Tofu}].
Manufacturer's Name: Nihon Soya Bean Powder Co. Ltd.
Manufacturer's Address: Kyoto, Japan.
Date of Introduction: 1987. June.
New Product–Documentation: Soya Newsletter. 1987. 1(3):6-7. This powder is used in the Showa Boeki Mini Tofu Plant.

5134. **Product Name:** Neo-Soya Powder (for making tofu) and Mini Tofu Plant.
Manufacturer's Name: Showa Boeki Co. Ltd.
Manufacturer's Address: 18-27, Edobori 1-chome, Nishi-ku, Osaka 550, Japan.
Date of Introduction: 1987. June.
New Product–Documentation: Manufacturer's Catalog. 1987. 4 p. With 3 p. of inserts. This small, automatic plant uses a patented soya powder that avoids production of okara. The 15-20 minute cycle consists of mixing, boiling, coagulating, cutting the tofu, and cooling. Capacity: 1408 cakes (300 gm each) every 8 hours.

5135. *Soya Newsletter* (*Bar Harbor, Maine*). 1987. [Who made America's first spray-dried tofu?]. May/June. p. 2. Letters to the Editor.
• ***Summary:*** "Clofine Dairy & Food Products, Linwood, New Jersey, began their first production run of tofu powder in October, 1983, and shipped their product soon thereafter. St. Peter Creamery first began spray-drying soymilk powder in late 1984, and began producing their spray-dried tofu powder during the summer of 1985. It appears that Clofine was first with the tofu powder by almost two years."

5136. STS–Soya Technology Systems Ltd. 1987. Storage, cleaning, screening & dehulling of soybeans. The quality of a soymilk depends on the quality of the raw material used (Leaflet). 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 2 panels each side. Each panel: 30 x 21 cm. Also published in Chinese. [Eng; Chi]
• ***Summary:*** Contains 11 color photos with descriptions showing soybeans during the cleaning process. STS is a member of the DTD group.

5137. Méhu, Jean. 1987. Soja: une réalité française [Soja: A French reality]. *RIA–Revue des Industries Agro-Alimentaires* No. 388. p. 12-14. June 15–July 6. [Fre]
• ***Summary:*** About the new Bioforme line of aseptically packaged soymilks from CAC (*Coopérative Agricole de céréales de Colmar*). Photos (p. 1) show: (1) Five aseptically packed products in this new Bioforme soymilk line. (2) M. Rochet, director of CAC. "Tofu and soymilk (*lait de soja*) are still essentially typical products of the network of dietary stores (*magasins diététiques*). However, here and there, in large-scale classic distribution, soy beverages and desserts

are now appearing. And this is not the end, would seem to say the directors of CAC, which is going to invest in an ultramodern unit for producing "soy juice" (*jus de soja*).

Note. This is the earliest French-language document seen (Aug. 2013) that uses the term *jus de soja* to refer to soymilk.

Despite the appearance of the Bioforme line, it is more than industrial clients that the cooperative is eyeing. And they are not alone. Alfa-Laval now makes soymilk plants, and has already installed a dozen worldwide. One at the Guangdong Cannery, Canton province, China, now produces about 20,000 liters/day of natural, bland high-quality soymilk. A similar unit is installed in Alsace by CAC, which had a total turnover of 750 million French francs in 1986 with its various operations, is basically in cereal grains. As part of a diversification campaign they have become involved with soya. Several factors led to this choice. Soybeans are grown in Alsace and production has expanded from only a dozen ha in 1985 to 250 ha in 1986 and an expected 3,000 ha in 1987. The plant is important in crop rotations, enriching the soil with nitrogen. It is a major crop worldwide, and though extensively researched is not well known by most. Finally, for marketing, its nutritional characteristics make it "the new food for the year 2000."

The new Alfa-Laval plant is completely automated from grinding the grains to cleaning the line; one person can operate it. It cost 11 million francs. The Bioforme line includes aseptically packaged soymilk (in chocolate and natural flavors) and desserts (in vanilla and chocolate flavors). In Jan. 1987 the unit was capable of producing 1,500 liters/hour of soymilk containing 4% protein. In the last 4 months the plant has produced some 200,000 liters of finished products, which may be about 10% of the French market.

A sidebar discusses tofu and Société Soy which makes Croq-tofou, Cacoja, and Sojadoc S.A. The shares of Sojadoc are owned as follows: Cooperative Occitane 51%, Sanofi 15%, Sofiproteol (Sofiprotéol) 15%, les Charbonages de France, the two founders, and some private investors 29%. A photo (p. 14) shows the soymilk equipment used at Issenheim. The products are sold in Tetra Briks (packed by a neighboring dairy), and in Doypack (the company is going to acquire a Thimmonier machine). "Well, is soya the new food for the year 2,000?" Address: France.

5138. Shrikhande, Fiona. 1987. Soya milk. Only tentative sips [Noble Soya in India]. *BusinessIndia.* June 29/July 12. p. 32.

• ***Summary:*** When Noble Soya had its first public stock offering in 1986, it was over-subscribed 20 times, largely because of the backing of the powerful and respected Godrej (pronounced go-DRAY) and Bhiwandiwalla groups, but also because of the bullish market sentiment and the great success of Frooti, a new beverage sold in Tetra Pak cartons. Noble Soya's product called Great Shake, was test marketed in Hyderabad in Feb. 1987 and launched there and in Pune in March. Initial sales were slow, behind other beverages in Tetra Pak cartons such as Frooti (3,000 crates/day in Bombay), Amul milk (2,000), Volfruit (600), and Great Shake (570 or less). Factors that hurt the product's launch were late entry into the market (initially scheduled for late 1986), lack of public awareness of soya (those who know it perceive it as "a low food value and a source of poor quality oil"), the product's initial slightly chalky taste (now said to be rectified), and the poor image of Sipso, an earlier soymilk launch.

Noble Soya also has plans to introduce other soyfood products by year end: tofu and several extruded foods such as soups and breakfast cereals. The company is taking a long-term perspective and it is strong financially. "Considering that a number of other companies like Britannia, Amrit Soya, Kalyan Solvents, and Kothari General Foods have plans to enter the soya-based processed food market, it looks like soya does have a future." Address: India.

5139. Indo Prosoya Foods Ltd. 1987. Display ad: Soya paneer (tofu) & milk. *Times of India* (*The*) (*Bombay*). July 14. p. 12.

• ***Summary:*** "Technology, training & plants available–for small entrepreneurs. Project cost: Ranging from 5 to 30 lacs [lakhs].

"Profitability: 30%–50% of the project cost P.A. [Per Annum].

Apply giving full particulars to: Indo ProSoya Foods Ltd."

Note 1. "Agrawal" (also spelled "Agarwal") refers to a large and influential community in India. Traditionally, the Agrawals have been a trading community in northern India, although in modern times they follow other professions as well. People from the Agrawal community are very successful entrepreneurs and said to control a large portion of India's private sector and have a major influence on India's economy. Being a trader community traditionally, the Agrawals have produced many of the most successful entrepreneurs in India.

Note 2. The word "milk" here refers to soyamilk.

Note 3. Letter (e-mail) from Raj Gupta of ProSoya Inc., Ottawa, Ontario, Canada. 2010. Aug. 29. Raj has never seen or heard of this ad, and neither he nor ProSoya in Canada designed or paid for it; it might have been placed to sell the Takai plant that the company owned. That Takai plant was located at Panki, Kanpur. The equipment was later liquidated and sold to a company in south India who has been using it for tofu production. Raj does not know which company used it and where. Indo ProSoya Foods went out of business in 1987. Address: Net House, Uptron Estate, Panki, Kanpur [Uttar Pradesh] 288-822 (Agrawal).

5140. Ferrara, Patricia. 1987. Fancy foods turn light. *Home News* (*New Brunswick, New Jersey*). July 19. p. G1-G2.
• ***Summary:*** The trend that yuppies of the world have been spearheading, lighter foods, expensive top quality takeout items, is on the move to mainstream America. Legume of New Jersey has introduced four selections of their world class Tofu Chocolate. Tofu replaces the milk in the milk chocolate. Quinoa is the most nutritious of all grains, containing 16.2% protein.

5141. *Toyo Shinpo* (*Soyfoods News*). 1987. Pari de mitsuketa honmono no tôfu. Munôyaku daizu tsukai parikko ni apiiru [Real tofu made in Paris with organically-grown soybeans and it appeals to the Parisians]. July 31. p. 13. [Jap; eng+]
• ***Summary:*** Mr. Noboru Sakaguchi, age 59, has a tofu shop located in Champaigny–only 20 minutes away from Paris. The shop opened 3 years ago and is called Daizou. The majority of the employees are French. Sakaguchi employs a Japanese plant manager, Mr. Takatashi Hiroyama, age 39. Mr. Sakaguchi also has a health foods store and restaurant, Le Bal en Bois. This is the parent company of Daizou. They produce about 1,000 cakes of tofu (1 cake = 380 gm) a day. Of these, 200 are made with organically grown soybeans and are vacuum packed. The company also uses regular soybeans from Canada and organically grown ones from the U.S. They use nigari in their tofu manufacturing process. They have been experimenting with silken tofu (kinugoshi) and have done market studies with some newly developed soymilk mayonnaise. Their tofu sells for 7 French francs per cake wholesale, and 9-12 francs retail. They sell their organic tofu for the same price as the regular cakes as a method of introducing it into the market. Right now, their big enemy is water that is too alkaline.

5142. *APV Baker News* (*UK*). 1987. APV Baker to acquire Danish company for £15.8 million. July.
• ***Summary:*** APV Baker will buy Pasilac-Danish Turnkey Dairies from the Danish Sugar Corporation. This company is principally engaged in the design, manufacture, and sale of specialized process plants to the dairy, brewing, and animal feed industries. Sales for 1986 were about 130 million pounds; profits were 2.7 million pounds. DTD was formed in 1969 by Jorn B. Jensen. Note: An ad in *Food Engineering International* (March 1988. p. 5) states that "APV is now the undisputed leader in supplying production line machinery and equipment to the food and drink industries–worldwide."

Note: This is the first edition of APV Baker News, a company newsletter published 6 times a year. Address: APV Baker, Westfield Rd., Peterborough, PE3 6TA, England. Phone: 0733-26-2000.

5143. Del Valle, Amado. 1987. Update on the Plenty Soy Project in Guatemala. San Bartolo, Solola, Guatemala. 2 p. Unpublished manuscript. [Eng]
• ***Summary:*** Thanks to the interest of the executive director of Plenty, Canada, the project reinitiated its activities in the middle of 1985. The three objectives are: 1. Agricultural, to develop and teach Guatemalan farmers to grow suitable soybean varieties. 2. Educational, to teach families and organizations soyfoods nutrition and recipe preparation. 3. Industrial, running the soy dairy in the community of San Bartolo, and making soymilk, tofu, soy ice cream, soy flour and soy coffee. From Jan. 1 to July 22, 1987 the soy dairy has produced 3,777 gallons of soymilk, 3,308 pounds of tofu, 865 gallons of soy ice cream, and 5,600 paletas (ice cream sticks), that have been sold in 4 areas of Guatemala. Address: Solola, San Bartolo, Guatemala.

5144. Fomon, S.J. 1987. Reflections on infant feeding in the 1970s and 1980s. *American J. of Clinical Nutrition* 46(1):171-82. July. [108 ref]
• ***Summary:*** Summarizes the many changes in infant feeding practices during this period. The Infant Formula Act passed in 1980 imposed new quality control and labeling requirements for infant formulas. The most popular milk-free formulas are based on isolated soy proteins. At typical protein concentrations (1.8-2.0g/67 kcal) the author believes that methionine fortification is unnecessary. Soy-based infant formulas were initially marketed for the management of milk protein allergy and/or lactose intolerance. In addition to this they are now also used to a greater extent due to the belief of some physicians that they are less commonly associated with fussiness and regurgitation. Most infants now consume iron-fortified formulas, but there is doubt about the bioavailability of electrolytic iron used to fortify most dry infant cereals. In 1985 35% of U.S. infants were breast fed until at least age 4 months, whereas in 1971 the corresponding figure was only 10%. Breast feeding is more common among higher income groups. Beikost is foods other than milk or formula fed to infants. Address: Dep. of Pediatrics, Univ. of Iowa, Iowa City, IA 52242.

5145. Gleason, Jane. 1987. Survey of consumers and extension personnel who have been trained in home-level soy processing. *Soybean Marketing in Sri Lanka, Monthly Report.* July. p. 1.
• ***Summary:*** Soyfoods are desired by many vegetarians and because they are less expensive than fish, eggs, and meat, for which they are seen as an alternative. They are not seen as a substitute for other legumes. Every person interviewed purchases TVP (or Soya Meat) on a regular basis. Those with low incomes purchase it for its economy and taste, and even those with more money who can afford fish and meat buy it for its taste. "This product has become very well integrated into Sri Lankan diets." The soyfoods taught at the SFRC training program are not as often consumed on a regular basis. The soyfoods most often prepared at home by extension workers are pittu, roti, and the soy mixture; tofu,

tempeh, and soymilk are less likely to be prepared. Regular consumers are less likely to prepare soyfoods at home. For rural people the major constraint on soyfood preparation is inaccessibility of ingredients. Soy flour and soy splits are not available anywhere outside of Gannoruwa. Products in which there is the most interest if they were available are soy-fortified kola kanda (an indigenous drink made of rice flour, green leaves, and coconut), soy dhal, and snack foods. Soy flour is liked in roti and string hoppers.

5146. *INTSOY Newsletter* (*Urbana, Illinois*). 1987. INTSOY develops new techniques for commercial soymilk processing. No. 36. July. p. 1-2.
• ***Summary:*** Program leader is Alvin I. Nelson. Research associate is Sing-Wood Yeh. The technique is basically the Illinois Process with the okara filtered out using a continuous roller extractor, and no homogenization step. Whole dry soybeans are cleaned, sized, dried in a forced air oven and split while still hot in a dehuller roller. The hulls are removed using an air blower. The cotyledons are then blanched in boiling water containing a little sodium bicarbonate, drained, ground in a mill with boiling water. The slurry is filtered in the roller extractor and cooked. Problems with the original Illinois Process were "chalky mouth feel," "throat drying effect" (from the okara), and expensive homogenizers. The resulting soymilk can be used to make a cultured soy yogurt, soy ice cream, and other dairy analogs. Address: Illinois.

5147. *INTSOY Newsletter* (*Urbana, Illinois*). 1987. INTSOY hosts visiting Chinese scientists. No. 36. July. p. 4.
• ***Summary:*** Engineer Jai-Kun Dai and asst. engineer Yuhong Wu from the Inst. of Food and Fermentation Industries, Ministry of Light Industry, Beijing, are spending 1 year at the Univ. of Illinois. They are especially interested in introducing new soymilk technology to China.

5148. Mann, Ernest J. 1987. Ice cream: Part 2. *Dairy Industries International* 52(7):19-20. July. [38 ref]
• ***Summary:*** This continuation of the review of the literature on ice cream includes a summary of 3 reports from India on ice creams made from soymilk. Address: Lane End House, Shinfield, Reading, RG2 9BB, Berkshire, UK.

5149. Moore, Waveney Ann. 1987. Tofu, the food people love to hate. Plain tofu is now being dressed for success, making appearances in hot dogs, sausages, lasagne and frozen desserts. *Food Distributors Magazine.* July. p. 52, 54, 56, 58. [1 ref]
• ***Summary:*** Largely an interview with Peter Golbitz, based on information published in *Soya Newsletter.* Sales of tofu prepared foods totalled about $4-5 million retail. Soymilk retail sales grew from $3 million in 1983 to $12 million in 1985. "From 1983 to 1986 about 80% of the soymilk was imported from Japan. The other 20% came from Belgium and Hong Kong." The price was about $18 a gallon, expected to fall to $3 a gallon.

5150. *Natural Foods Merchandiser.* 1987. 8th Annual Natural Foods Merchandiser merchandising awards [Gold: Eden Foods' Edensoy, and Fantastic Foods' Fantastic Noodles (Miso Vegetable)]. July. p. 28-29.
• ***Summary:*** The Edensoy package design was developed by Group 243 in Ann Arbor. "The look is inviting yet sophisticated, with both sizes of Tetra-pak boxes bearing loosely impressionistic illustrations of landscapes in tranquil colors. Design criteria included warm, energetic food that was natural, refreshing, and healthful."

5151. **Product Name:** [PHAG Soya Drink (Without Sugar, Strawberry, Sweetened)].
Foreign Name: PHAG Soja-Drink (Sans Sucre, Fraise, Avec Sucre).
Manufacturer's Name: PHAG Sàrl (Produits Hygièniques Alimentaires Gland) (Marketer-Distributor). Made in Belgium by Alpro.
Manufacturer's Address: La Ligniere, CH-1196 Gland, Switzerland. Phone: 022/64 11 18.
Date of Introduction: 1987. July.
Ingredients: Without sugar: Water, soybeans, lecithin (as emulsifier).
Wt/Vol., Packaging, Price: 0.5 liter and 1.0 liter Tetra Brik Aseptic cartons.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Protein 3.6 gm, fat 2.8 gm, carbohydrate 1.7 gm, calories (kcal) 46 (196 kJoules).
New Product–Documentation: Letter from Remy Mayer of PHAG. 1990. Oct. 2. The 2 sugarless products were introduced in July 1987 in 0.5 liter and 1.0 liter cartons. The strawberry soymilk was introduced in Sept. 1987 in a 0.5 liter carton. It is no longer on the market. The sweetened soymilk was introduced in Dec. 1987 in a 0.5 liter carton. His company distributes the product, which is made by their sister company DE-VAU-GE in Lueneburg, Germany.

Labels sent by Mayer. 1991. Jan. 24. Unsweetened 0.5 liter and 1 liter Tetra Brik cartons. Red and orange on white. "Pure and made from plants (Purement végétal–Rein pflanzlich). Contains magnesium. Rich in vitamin E. Linoleic acid 51% (of lipids), linolenic acid 7%." All text is in French and German. These labels are similar in design to the DE-VAU-GE labels.

Leaflet (6 by 8.25 inches, color) sent by Mayer. 1991. Jan. 24. "The vegetarian alternative" (l'alternative végétale; die pflanzliche Alternative). PHAG soya-drink. The front shows 3 milk shake-like glasses with fresh fruits and yogurt. The back shows 7 of the company's soy drinks and desserts.

Pamphlet (6 by 8.25 inches, green and red on white, 4 pages) sent by Mayer. 1991. Jan. 24. "PHAG Soja Drink." 2 pages are in French and 2 in German. Describes the product

by answering questions: Who uses it? Is it pure and natural? Is it a fresh product? Can it be used in cooking? Why is it packaged like it is? The ingredients for the sweetened (incl. 3% non-refined cane sugar) product are listed, then the nutritional composition.

5152. **Product Name:** [Soya Drink {For Adults, Calcium Fortified} (Natural/Neutral, or Chocolate)].
Foreign Name: Soja Dryck (Naturell, Choklad).
Manufacturer's Name: Semper AB.
Manufacturer's Address: Sektor Industri, Sveavagen 166, Box 231 42, 104 35 Stockholm, Sweden. Phone: 08-7299700.
Date of Introduction: 1987. July.
Ingredients: Natural: Soy protein isolate (3.5 gm/100 ml), hydrolyzed corn starch, sugar, soy oil, mineral salts (calcium, potassium), lecithin, ascorbic acid, vitamins A, D, B-12, and riboflavin.
Wt/Vol., Packaging, Price: 225 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Natural, Per 100 ml: Calories 45, protein 3 gm, fat 1.5 gm (polyunsaturated 0.9 gm, saturated 0.3 gm), carbohydrate 5 gm, calcium 75 mg, phosphorus 50 mg, sodium 40 mg, vitamin A, retinol 0.045 mg, vitamin D 0.38 mcg, riboflavin 0.20 mg, vitamin B-12 0.50 mcg.
New Product–Documentation: Labels. 1988, dated. Tetra Brik cartons. Natural is chocolate brown letters on white. Chocolate is the reverse. Both have two prominent soybean pods on front panel. "Use like milk." Note: This was the first ready-to-drink soymilk made in Europe for adults that was fortified with calcium. Talk with Lief Christensen. 1990. July 6. Followed by letter (fax) of July 10. These are adult drinks, not infant formulas, that were introduced in June 1987. Based on soy isolate, in neutral and chocolate flavors, they were UHT-sterilized in 225 ml Tetra Brik cartons. The products were withdrawn in 1988. They never sold well.

5153. STS–Soya Technology Systems Ltd. 1987. Soymilk makes sense (Ad). 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 1 p.
• ***Summary:*** Shows two milk bottles, one filled with soymilk, one filled with soybeans, set atop soybeans, with a green field of soybeans in the background. Address: Singapore.

5154. STS–Soya Technology Systems. 1987. Soymilk processes/products (Leaflet). Singapore. 1 p. Single sided. 28 cm.
• ***Summary:*** Roughly half of the products are made using ultrafiltration (UF), which can be used to remove water or selectively remove food components (such as oligosaccharides). A "cast tofu or paneer" is made using a 2-stage UF concentration. Address: 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922.

5155. *Technocrate Magazine*. 1987. Collaboration: New soymilk plant at Ghaziabad. July.
• ***Summary:*** India's second and largest to date soymilk plant is being set up at Ghaziabad, Uttar Pradesh, India. It is being supplied by Soya Technology Systems Ltd. (Singapore), in collaboration with the Indian firm Larsen & Toubro Limited (L&T). The 160-million-rupee project, with a capacity of 6,000 liters/hour of soymilk based drinks, is being set up by Amrit Soya and Protein Foods Ltd. Address: India.

5156. **Product Name:** Vitasoy Natural Soy Drink (Liter Size Organic) [Creamy Original, and Vanilla].
Manufacturer's Name: Vitasoy (USA) Inc. (Importer). Made in Hong Kong.
Manufacturer's Address: San Francisco, CA 94107.
Date of Introduction: 1987. July.
Ingredients: Creamy Original: Filtered water, organic soybeans, barley malt, pearl barley, sunflower oil, seaweed (Japanese kelp), sea salt.
Wt/Vol., Packaging, Price: 8.4 fluid oz (250 ml), 1 liter Tetra Brik Aseptic carton. $1.89 retail.
How Stored: Shelf stable.
Nutrition: Per 6 fl oz.: Original: Calories 110, protein 7 gm, carbohydrate 10 gm, fat 5 gm. Carob: Calories 150, protein 6 gm, carbohydrate 22 gm, fat 4 gm. Chocolate: Calories 160, protein 6 gm, carbohydrate 24 gm, fat, 4 gm.
New Product–Documentation: Labels. 1986. 8.4 fl oz: 2.5 by 4.25 inches by 1.5 wide. Paper carton. Original: Orange, green, white on tan with blue band and little soy beans. Chocolate: Dark brown band with chocolate pieces. Carob: Orange band with carob pieces. All illustrated with glass of soy drink with straw. "Natural soy drink. Truly a non-dairy delight!"

Ad in East West. 1987. Aug. Inside front cover. Full-page color. "Introducing New Liter Size Vitasoy. Great-tasting soymilk made with organic soybeans. Vitasoy also comes in 4 flavors of individual serving size... Creamy Original, Rich Chocolate, Carob Supreme and Vanilla Delite." Also in Vegetarian Times. 1987. Aug. p. 47, Nov. inside front cover. Ad in East West. 1987. Oct. Inside rear cover. Full page color. "Our family size is here. Good news for Vitasoy fans. Great-tasting soymilk made with organic soybeans." Same ad in New Age. 1987. Sept/Oct. inside from cover, and 1988. March/April. p. 8. Talk with Grace at Vitasoy. 1988. Sept. 7. The liter size original and vanilla were launched in July 1987.

Ad in Vegetarian Times. 1988. Nov. Rear cover. "Soymilk users love Vitasoy. Here's why..." Four quotes from satisfied users. Also in April 1989. p. 3. Leaflet. 1988. April. "We've got what you've been looking for... Great tasting. Wholesome ingredients. High in protein, rich in vitamins. Low sodium, low fat and fewer calories. 100% cholesterol free. Totally no-dairy. Long shelf life. Versatile in

usage. Great value for the price."

5157. Lo, K.S. 1987. Re: Moving into new soymilk plant in New Territories. Updated sales statistics, 1985-1987. Letter to William Shurtleff at Soyfoods Center, Aug. 4. 2 p. Typed, with signature on letterhead.
• ***Summary:*** Hong Kong Soya Bean Products Company's move from Kwun Ton to Tuen Men in the New Territories started in December 1986 and was completed by 31 March 1987. The new building is 15 stories high with 500,000 square feet. In 1987 the company had paid up capital of HK$47.7 million. Projected sales were 126 million packs/bottles of Vitasoy and 199.3 million bottles/packs of other Vita products, worth a total of HK$482.2 million.

Corresponding figures for 1985 were: Paid up capital: same. Sales: 114.1 million packs/bottles of Vitasoy and 162.2 million bottles/packs of other Vita products, worth a total of HK$391.4 million.

Corresponding figures for 1980 were: Paid up capital: HK$26.5 million. Sales: 111.6 million packs/bottles of Vitasoy and 113.8 million bottles/packs of other Vita products, worth a total of HK$210 million.

Corresponding figures for 1970 were: Paid up capital: HK$5.3 million. Sales: 100.8 million packs/bottles of Vitasoy, worth a total of HK$25 million.

Corresponding figures for 1960 were: Paid up capital: HK$2.65 million. Sales: 42 million packs/bottles of Vitasoy, worth a total of HK$5.8 million.

Production of Vitasoy grew slowly from 1940 to 1953, then rapidly until 1972. They fell each year in 1973-75 because of the Arab oil embargo, the U.S. soybean embargo, sky-high sugar prices, and a general economic recession. From 1976 to 1982 production grew at its fastest historical rates. Address: HKSBPC Ltd., 41 Heung Yip Rd. Aberdeen, Hong Kong.

5158. Olivero, Magaly. 1987. Milking the soybean for Cha-Cha Cherry [Elizabeth Appel and Ambrosia Soy Co. of East Haven, CT]. *New York Times.* Aug. 9. p. CN23. (Connecticut ed.).
• ***Summary:*** In June the company began production of a new soymilk named SweetSoy. Plans for the future include soy pudding and vegetarian entrees later this year.

Note: Liz Appel and Ambrosia Soy went out of business in about Feb. 1991.

5159. Richard, Lou. 1987. Solait from Miller Farms, and Sale of Fearn Natural Foods to Modern Products, Inc. (Interview). *SoyaScan Notes.* Aug. 12. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Solait, a dry soymilk powder from Miller Farms Food Co., is on the market in a few areas. It is bulk packed in a nitrogen flush 26 oz can that makes 6 quarts, or in a 60 lb nitrogen flush bag. On 30 September 1985 Lou sold Fearn Natural Foods to Modern Products, Inc., whose headquarters are in Milwaukee. Fearn is now a division of that company. Lou is now working with Miller Farms.

5160. Haren, Chuck. 1987. Small, village-scale equipment for making soyfoods (Interview). *SoyaScan Notes.* Aug. 13. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** A company originally named Laredo sells a very nice, compact, table-sized unit. He thinks they have sold some of their machines in Costa Rica and in perhaps Cuba. He has no idea how many machines they have sold in total; he hasn't been in touch with them for about 18 months.

Note: Roberto H. Moretti, the man who invented the first Mechanical Cow, is a rather famous food science professor in Brazil.

Shurtleff: What have been some of your and Plenty's most successful soyfoods projects in the Caribbean?

Haren: Plenty's emphasis is on small, village-type systems. Transferring technology that will work for individuals or small groups in a kitchen or slightly larger scale. They have projects on St. Lucia, Dominica, and Jamaica. Dominica, which has the 2nd to lowest per capita income in the region after Haiti, has an excellent project. Chuck has been able to stay there for 3 years, which provides continuity, and many other expatriates have also worked there. The program is an education program, a "soyfoods training center." The local people develop products and some of these products are sold to support the program and also to test the marketability of each product. They are working in the public education system, teaching in an adult education program, and some in the primary schools. They do field demonstrations for groups of farmers who are starting to grow soybeans. Four years ago they started an agriculture program by doing the INTSOY variety tests. The chose several varieties that worked well and are working to maintain seed strains of those. They started in Roseau, the capital city in Dominica, then after several years farmers took over the program and formed a cooperative as a business. It is a marginal business but it is providing all of them with income. They work with people who have relatively little education and come from a low socioeconomic class. Most of the foods are sold directly from a kitchen rather than being distributed. One good product is called an Akra, which simulates a product made with imported, dried codfish. It is a mixture of flour and "tokara"–which is tofu and okara curded together. It uses all the pulp when making tofu; no okara is separated out or unused. It is whole bean tofu without the okara removed. The finished product is somewhat like a fried croquette but it is in the form of balls. They have also developed smoked tempeh, which simulates smoked fish. They do a fish spread with tokara. Its amazing to see the different products these people come up with and like.

In Guyana, when people were experimenting with

soyfoods in the 1960s and 1970s, they developed tokara. Many talented people left during the rough political period and became part of CARDI, Caribbean Agriculture Research & Development, which is on each of the islands. Plenty is presently working with 5 groups in Dominica. Plenty calls them "food processing kitchens" and they operate on a small commercial basis with about 2-5 people each; they provide paying jobs and good food for people.

The biggest commercial success has been on St. Lucia, where they are selling 800 EC a day in Castries.

Plenty started out in 1983/04 and was receiving only a year of funding at a time–mainly from CIDA (Canadian International Development Agency). Plenty has to find 1 dollar of matching funding for every 3 dollars they get from CIDA. It has been geared toward education, agriculture, and food processing on Dominica, Jamaica, and St. Lucia. Its about helping people to become more independent in many ways. Plenty's programs are, of course, all vegetarian. We need to develop more small-scale technology that is geared to the needs of developing countries. Big projects often knock hundreds of people out of work.

Plenty has an "education center" (called Plenty Soya Center) with a tofu and soymilk plant on Dominica. They have a small stone grinder obtained from Okita. Stainless-steel pots and tile bathrooms. Its in a bigger building, 40 x 60 feet. They teach home processing (for classes), village-level processing (the most popular), and small industrial processing. Programs can range from a few days to 3 months in length. About 150 people have participated in programs at the Plenty Soya Center on Dominica over the past 3 years. In the government adult education program, 200-300 people have taken an 8 week course (1 day a week for 2 hours). People learn how to make soymilk, tofu, and tempeh at home. They Plenty develops recipes with them, and finally they develop recipes on their own. All the classes have 15-20 people in them, and a lot of them have to pay. Finances is the major problem that prevents people from going on to start a business. They are dealing with a lot of very low income people. But interest in small commercial companies owned by Caribbean people is growing. The programs are still in the infant stage, but Chuck can see the day that soyfoods will become important in the Caribbean. Plenty's work in Dominica began in the spring of 1983–say April or May. On each island, it started with the INTSOY's soybean variety tests. In the fall of 1983, about October, Plenty did INTSOY soybean trials on Jamaica, St. Lucia, and Dominica. At the same time they were planting their soybean trials, they began to do village soymilk classes in making foods. They would hand out ½-lb or 1-lb packets of soybeans and instructions to people who showed interest and came forward to talk about it–which was considerable. A lot of people have tried growing soybeans on a small scale. The challenge is to make soybean cultivation more commercially viable for the farmers. Making the soybeans into soyfoods for sale helps to make the soybean cultivation more viable. In the Caribbean, agricultural laborers are paid $1.00 to $1.25 an hour. Plenty usually pays a little bit above the going rate.

Chuck was in Lesotho at the end of 1984. He received a letter from a person at Ibadan inviting him to come to Nigeria to teach soyfoods. In Zambia, the government is publishing a soy agriculture newsletter is being published monthly. One of Plenty's best agriculturists, Darryl Jordan, is now in Ethiopia, where he has been for 3 years; he formerly worked in Guatemala with Alan Praskin. Darryl got a job with the Catholic Relief Services–the official international humanitarian agency of the Catholic community in the United States–coordinating their big agricultural program in Ethiopia.

The marriage of Farm Foods with Barricini seems to have worked out very well. It was a great idea to put those two companies together. Farm Foods knows how to make the foods and Barricini's got the money and knows how to market them. They haven't compromised their quality. Robert Tepper is doing an excellent job–taking soy ice cream mainstream in America. Like Tofutti. Chuck is going to Canada after he spots at several other places in the USA. Norman Ayerst and group in Toronto is developing a tofu wiener and they have go the price down almost to the price of meat wieners.

INTSOY will be holding a conference next summer on soybean processing for developing countries. INTSOY has been forced to discontinue their program of teaching farmers overseas how to grow soybeans–which end up competing with American soybeans.

There is a lot of politics in the Caribbean too. Jamaica had this whole program set up to grow their own soybeans because they had a soybean crushing plant which used soybeans imported from Mexico and the United States. The new prime Minister of Jamaica, Edward Seaga (in office from Nov. 1970 to Feb. 1989) has basically shut down the agricultural part of the program. "Once you can show people a way to support themselves and their families making soyfoods or growing soybeans, the idea will spread like wildfire." That is the crying need in developing countries.

5161. Blix, Glen. 1987. Re: Shutting down the soymilk plant in Mt. Vernon, Ohio (Interview). Conducted by William Shurtleff of Soyfoods Center, Aug. 18. 1 p. transcript.
• ***Summary:*** In mid-July 1987 the old brick soymilk plant in Mount Vernon, Ohio, which had been built by Dr. Harry Miller with his own hands, was finally shut down. It has not yet been sold. Earlier in the year the soymilk that had been made in Mt. Vernon started to be made at the Loma Linda Foods plant in Riverside, California. Address: Loma Linda Foods, 11503 Pierce St., Riverside, California 92515.

5162. Schauff, M. 1987. Imitationsprodukte fuer Milcherzeugnisse–Gefahr fuer Landwirtschaft und

Verbraucher [Imitation milk products–The danger for agriculture and the consumer]. *Deutsche Milchwirtschaft* 38(34):1169-73. Aug. 19. [Ger]
• ***Summary:*** Discusses the effects of imitation dairy products on the consumption of milk and milk products, and the response of the dairy industry in the USA, UK, and France–against the background of continuing resistance in West Germany to the introduction of such products. During the past 12 years, imitation milk products have come on the market, especially in Sweden and the USA. In recent years they have had booming sales in the UK. In Germany, margarine has stolen half of the market from butter.

Imitation milk products have made the greatest gains in the United States. Their potential in Europe is described in a report titled "Project 2002" by the American Soybean Association. Address: VDM, Bonn, Germany.

5163. Kavanagh, John. 1987. ANF [Australian Natural Foods] hopes for a soy cash-cow. *Business Review Weekly* (*Sydney, Australia*). Aug. 21.
• ***Summary:*** This publicly owned biotechnology company was launched two years ago. "Now it appears to be turning back on its high tech potential to enter the cut-throat beverage market... This week ANF launches Excel, Australia's first fresh soymilk product. ANF will produce 100,000 liters/week at its Sydney factory during the initial phase and hopes to take production up to 500,000 liters a week." United Dairies will handle distribution. David Glasheen is working on a number of new soy products including tofu, yogurt, and custard. Most of the soymilk products now available are imported. Sanitarium's So Good, aimed at the mass market, is doing well.

5164. Cole, Michael. 1987. Sordi, major Italian manufacturer of dairy equipment, to start making soymilk equipment (Interview). *SoyaScan Notes.* Aug. 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Sordi plans to do what Alfa-Laval and DTD/STS have already done. Michael Cole has signed a 5-year contract to work with them, and has started his own company, Soya International Ltd., a consulting firm. Cole formerly made soy ice cream, soy yogurt, and soymilk with Soya Health Foods Ltd. in England. Address: England.

5165. *Australian Dairy Foods.* 1987. Soy competition begins in earnest. Aug. p. 56-57.
• ***Summary:*** "Long expected direct competition to the liquid milk market from liquid soy foods has begun in earnest in Sydney. Australia Natural Foods Holdings Ltd., launched the 'Excel' brand of fresh, non-dairy soy drink on August 19. It is being distributed in New South Wales by United Dairies Ltd., via its 500 milk vendors and 8,000 retail outlets serviced by the company... The recommended retail price is much higher than fresh cow's milk. Both natural and flavoured 'Excel' are $2.99 for a 2-litre plastic bottle that looks like fresh cow's milk, and $1.15 for 500 ml and 66 cents for 300 ml... ANF has a soy bean processing plant at a new factory at Taren Point. It is capable of producing 20 million litres a year of liquid soy food, on a three-shift, five day a week basis. The initial sales target is 100,000 litres a week." The three men who are the prime movers behind ANF are Larry Case (Chairman), David Glasheen, and Peter Lancaster. A photo shows 5 of the products. Excel is available in natural, chocolate, and strawberry flavors. Address: P.O. Box 283, Caulfield South 3162, VIC, Australia.

5166. **Product Name:** Excel (Fresh Soymilk) [Natural, Chocolate, or Strawberry].
Manufacturer's Name: Australian Natural Foods Holdings Ltd. (ANF).
Manufacturer's Address: 80 Box Rd., Taren Point, NSW 2229, Australia. Phone: 2-526-2555 or 525-5406.
Date of Introduction: 1987. August.
Wt/Vol., Packaging, Price: 500 ml or 2 liter bottle.
How Stored: Refrigerated.
New Product–Documentation: Kavanagh. 1987. Business Review Weekly. Aug. 21. "ANF hopes for a soy cash-cow." Geoff Wilson. 1987. Australian Dairy Foods. Aug. p. 56-57. The product was launched on Aug. 19. It is being distributed in New South Wales by United Dairies Ltd. via its 500 milk vendors and 8,000 retail outlets serviced by the company. Both natural and flavored Excel are much more expensive than cow's milk, $2.99 for a 2-liter bottle, and $1.15 for 500 ml. ANF has a soybean processing plant at a new factory at Taren Point. It is capable of producing 20 million liters a year. The initial sales target is 100,000 liters/week. The company claims that its soymilk production technology was developed exclusively by ANF. The moving forces behind the company are Mr. Larry Case (Chairman), David Glasheen, and Peter Lancester. The product is promoted as being fresh, not being in Tetra Pak cartons. Taren Point is a suburb of Sydney.

5167. Bowles, Willa Vae. 1987. The soy revolution! *Total Health.* Aug. p. 24-29. See followup in Oct. issue, p. 55. [1 ref]
• ***Summary:*** Soybean exports during the last fiscal year amounted to $11,000 million. They help keep the U.S. trade deficit, almost $170,000 million in 1986, from rising even higher. Tofu mixed 50/50 with any nut butter makes a fluffy spread for added protein and reduced fat and calories.

5168. **Product Name:** Ah Soy (Soymilk) [Original, Chocolate, or Vanilla].
Manufacturer's Name: Great Eastern Sun (Marketer-Distributor). Made in Minnesota by St. Peter Creamery.
Manufacturer's Address: 92 McIntosh Rd., Asheville, NC

28806. Phone: 704-252-3090.
Date of Introduction: 1987. August.
Ingredients: Incl. Soybeans, water, cold-pressed safflower oil, carrageenan, pure Bourbon vanilla, dried cane juice.
Wt/Vol., Packaging, Price: Quart Tetra Brik Aseptic carton. Packed 12 to a case. Wholesales for $12/case.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Ad (full page, color) in East West Journal. 1985. Sept. p. 28. "Ah soy: Finally a really soft drink." Note: The flavors were later elaborated to American Original, Dutch Chocolate, and French Vanilla. Leaflet. 1987, undated. "Ah Soy. New Improved Flavor. Quart Size. Made in America. Popularly Priced. Sweetened with Organic Unrefined Cane Juice. The Ah Soy Story–Totally New Formula!!!" Tetra Pak Age. 1987. Summer. p. 12-13. Color photo of three quart Tetra Brik cartons. Red, blue, and yellow on white background.

5169. **Product Name:** Homestyle Tempeh "No-Chicken" Salad.
Manufacturer's Name: Homestyle Foods (Formerly Sonoma Specialty Foods).
Manufacturer's Address: 2317 Bluebell Dr., Santa Rosa, CA 95403.
Date of Introduction: 1987. August.
Ingredients: Tempeh (organic soybeans, culture), celery, soy oil, soy milk, relish, soy sauce, mustard, vinegar, garlic, parsley, spices, and honey; Improved recipe (1988). Tempeh (organic soybeans*, culture), celery, soy oil, soy milk, mustard, tamari, vinegar, sesame, relish, garlic, parsley, natural spices and honey. * Grown in accordance with CA H&S Code 26569.11.
Wt/Vol., Packaging, Price: 8 oz plastic tub.
How Stored: Refrigerated.
Nutrition: Per 2.66 oz.: Calories 155, protein 7.5 gm, carbohydrates 7.4 gm, fat 10.7 gm, fiber 2.0 gm, sodium 0.25 gm, cholesterol 0.
New Product–Documentation: Label. 1987. 4.5 inches diameter. Red and blue on white plastic lid. "Natural. Non-Dairy. Cholesterol Free. No Preservatives. Use on sandwiches, in Dips and Salads." Interview with Benjamin Hills. 1987. Sept. 7. In 8 oz plastic tubs. Label. 1988. In both 8 and 15 oz tubs. Red, black, and yellow on white. "New! Non-Dairy. Cholesterol-Free. Ready to Eat. Natural. No Preservatives. Nutritious." Spot in Health Foods Business. 1988. April.

5170. McSweeney, Daniel. 1987. Consumer survey 1987. *Whole Foods.* Aug. p. 25-29.
• ***Summary:*** Percentage of 600 natural foods consumers surveyed who purchased a certain type of soyfood product during the years 1985, 1986, 1987. NA = Not Available. Tofu: NA, 85.1%, 83.4%. Miso: 50.0%, 71.1%, 69.7%. Soymilk: NA, 40.4%, 54.4%. Nondairy Frozen Desserts: 37.6%, 44.6%, 46.0%.

5171. **Product Name:** Plamil Soyamilk Rice Pudding with Sultanas.
Manufacturer's Name: Plamil Foods Ltd.
Manufacturer's Address: Plamil House, Bowles Well Gardens, Folkestone, Kent CT19 6PQ, England.
Date of Introduction: 1987. August.
Ingredients: Water, unpolished rice, soya protein isolate, sunflower oil, raw sugar, sultanas [seedless raisins], natural vanilla essence, sea salt, soya lecithin (emulsifier), carrageen extract [carrageenan] (stabiliser).
Wt/Vol., Packaging, Price: 439 gm (15.5 oz) can.
How Stored: Shelf stable.
New Product–Documentation: Label for a can. 1987, undated. 4 by 9.5 inches. Yellow, white and green on brown. "Organically grown unpolished rice."

5172. **Product Name:** Plamil Sugar Free Soya Milk Rice Pudding with Sultanas.
Manufacturer's Name: Plamil Foods Ltd.
Manufacturer's Address: Plamil House, Bowles Well Gardens, Folkestone, Kent CT19 6PQ, England. Phone: (0303) 850588.
Date of Introduction: 1987. August.
Ingredients: Water, soya protein [isolate], sunflower oil, unpolished rice, sultanas, flavouring: natural vanilla essence, sea salt, emulsifier: soya lecithin, stabilizer: carrageen [carrageenan].
Wt/Vol., Packaging, Price: 439 gm (15.5 oz) can.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Plamil brochure. 1990. Gives name as Plamil Soya Milk Rice Pudding. Sugar-free is in a blue, yellow, and white can. With sugar is in a Brown,

yellow, and white can.

Letter and Label sent by Arthur Ling, Managing Director of Plamil Foods. 1990. July 24. "The sugar-free version of our soya milk Rice Pudding was introduced in August 1987." Label. 9.5 by 4.25 inches. Blue, yellow, white, and brown. Color photo of a blue bowl containing the pudding and sultanas (raisins). "100% non dairy. Organically grown unpolished rice. Gluten free. Suitable for those allergic to dairy milk. Contains no animal fats or other animal ingredient. Protein is from soya protein isolate which has far higher protein content pro rata than soya flour."

Leaflet. 1989. 8½ by 11.5 inches. "Britain's No. 1. Soya Milk Rice Pudding." "Superb taste in the creamiest of soya milks. Perfect wholefood full of nourishment. Organic long grain rice. Ready meal hot or cold." With Vegan certification symbol.

5173. **Product Name:** Chocolate Milk (Soymilk).
Manufacturer's Name: Plenty Canada Soya Utilization Project.
Manufacturer's Address: 88A Kotugodella Vidiya (Postal Box 95), Kandy, Sri Lanka.
Date of Introduction: 1987. August.
Ingredients: Soya milk, chocolate powder, sugar, salt.
Wt/Vol., Packaging, Price: Sold fresh over the counter in a small cup at Plenty Canada Soya Food Centre for Rs. 2/-.
How Stored: Unrefrigerated and perishable.
Nutrition: 3.2–3.4% protein.
New Product–Documentation: Form filled out by Jane Gleason. On 23 March 1988 she visited the Plenty Canada Soya Food Centre and talked with Mr. H.G. Jayatissa, project manager, and Miss Geethanjali Jayasena, soya technician.

The eleven products sold at this location were developed either by Plenty Canada or the Soya Foods Research Centre (SFRC) at Gannoruwa. In addition to these products, Plenty also sells products made by the SFRC, by Kundasale Cereal Factory, by Jane Soya Products, by C. Siriwardene, and by Kusuma Godalidde, plus soya beans (whole and split).

Since opening officially in September 1987, sales have increased by 30% a month. Commercial dried tempeh production is scheduled for May 1988 by a producer in collaboration with Plenty. Plans are underway for a Colombo Soya Food Centre and production facility as well as island-wide promotion of soya foods, and various activities to support small and medium scale soya food entrepreneurs. The soya promotion project will continue for a minimum of 4 years. Enquiries should be made to Ian Taylor, project director, Plenty, Box 95, Kandy, or the Plenty Canada head office at RR#3, Lanark, Ontario, K0G 1K0, Canada.

The company uses about 500 kg/month of soybeans (purchased from sellers / boutiques in Kandy for Rs. 9-9/50 per kg), 375 kg/month of soy flour (purchased from SFRC at Gannoruwa for Rs. 12/kg or from Kundasale for Rs. 18/kg), and 108 kg/month of soy flakes (purchased from Kundasale Cereal Factory for Rs. 22/kg). Consumers buy the products above all for their nutritional value, but also for good taste and economy.

5174. *Soya Newsletter* (*Bar Harbor, Maine*). 1987. Soyatech readies first soyfoods industry report. July/Aug. p. 5.
• ***Summary:*** Soymilk and Tofu Products: 1986-1987 Market Report is scheduled for publication in the fall of 1987. It will cost $795, or $695 if ordered before 30 Sept. 1987. Note: This report was never published. Only one prepaid order was received and the Golbitz family was about to have a baby.

5175. STS–Soya Technology Systems Ltd. 1987. Different types of soymilk plants. 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 8 p. Aug. 24.
• ***Summary:*** "Only a large capacity soymilk plant is economically viable for making non beany-tasting soymilk with a long shelf life. Non-bean tasting technology is a substantial investment." Photos show various small, medium, and large soymilk systems, each with the country of origin, capacity in liters/hour, and price range. Address: Singapore.

5176. *Tetra Pak Age.* 1987. Edensoy in a class by itself. 5(2):14. Summer.
• ***Summary:*** "From an international line for the 1986 Tetra Pak Design Competition, Edensoy Natural Soy Beverage by the U.S.-based Eden Foods, Inc. took the top prize in its class. According to the judge–Mr. Carlos Rolando, a Spanish designer–Edensoy's design makes good use of typography and color. It creates a mood. 'To be healthy is to be happy. Jogging or lying under a tree along a stream of pure water creates a feeling of happiness. This design conveys all this and more. The illustration conveys a feeling of tranquility. A highly suggestive, blurred landscape. Nobody knows where it is but everybody would like to be there.' Indeed the package speaks for the product," which contains no added fat.

5177. Vitasoy (USA) Inc. 1987. Introducing new liter size (Ad). *Vegetarian Times.* Aug. p. 19.
• ***Summary:*** This full-page color ad shows a large liter carton of Creamy Original. "Vitasoy also comes in 4 flavors of individual serving size... Creamy Original, Rich Chocolate, Carob Supreme, and Vanilla Delite... Ideal for the great outdoors and your kids' lunch boxes." A small inset photo shows smaller cartons of these four flavors. Address: San Francisco, California 94107.

5178. *Vitasoy Vitabrations.* 1987. Lo's second generation... Succession of charismatic management. 1(2):1. Summer. [2 ref]
• ***Summary:*** "Winston Lo, 46 years old, became Managing Director of Hong Kong Soya Bean Products Co. Ltd, the manufacturer of Vitasoy, in 1976, when his father, K.S. Lo–

current chairman and founder of the company–retired from that position. In 1967 he received his masters degree in food science and technology from Cornell University." In 1975 he led in installing the first Tetra Pak packaging line in Hong Kong, and has directed the company's diversification into fruit juices, teas, carbonated soft drinks, and in 1979 fresh cow's milk. In 1986 Vitasoy's total sales reached over $100 million, with annual volume of 300 million units. A portrait photo shows Winston Lo. Address: 99 Park Lane, Brisbane, California 94005.

5179. *Vitasoy Vitabrations.* 1987. The making of Vitasoy. 1(2):3-6. Summer.
• ***Summary:*** A fairly detailed description of the manufacturing process used at the new $20 million plant in Hong Kong's New Territories. It has a daily capacity of 1.2 million non-carbonated Tetra Pak units. The process uses organically grown soybeans, certified through a farm verification program by independent third party agronomy professionals. Concludes with six questions about Vitasoy soymilk.

Photos show: (1) A carton of Vitasoy Creamy Original. (2-6) Soymilk processing equipment inside the factory, incl. Winston Lo standing by a filling machine. Address: 99 Park Lane, Brisbane, California 94005.

5180. *Vitasoy Vitabrations.* 1987. How does Vitasoy compare to other soymilks? Vitasoy ranks Number 1 in calcium and vitamins B-1 and B-2. Vitasoy scores as one of the highest in protein content. 1(2):7. Summer.
• ***Summary:*** Nutritional comparison with Edensoy, Ah Soy, and Supersoy, per 6 ounce serving: 7 gm protein, 5 gm fat, 115 mg sodium. Address: 99 Park Lane, Brisbane, California 94005.

5181. Roller, Ron. 1987. Job's tears, San-J plant, Edensoy (Interview). *SoyaScan Notes.* Sept. 1. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Edensoy contains Job's tears, the hard, pearly-white to tan seeds of an Asian grass (*Coix lacryma-jobi*), also known as "pearl barley" (easily confused with pearled barley), and called *hatomugi* in Japanese. Note: The large Kenkyusha dictionary (1954) translates *hatomugi* as "pearl barley." A Muso Shokuhin soymilk label gives the scientific name of hatomugi as *Semen coicis.* The grains are about the size of a mung bean but slightly oblong, and with a very prominent sunken tan line running from end to end, as with barley. Eden Foods has tested the growing of Job's tears in the southern USA, and now sells the grain in a 1-lb bag. San-J will be the first company to make natural shoyu in the USA. Eden has been negotiating with them for 4-5 years. Startup costs were $10-15 million. They will make both tamari and shoyu from both defatted soybean meal and whole soybeans. It is an institutional factory, no wooden vats, all stainless steel. Offices will move to the plant site. Edensoy sales are on target. Estimates are that 25-30% of people who go into health food stores have never tasted soymilk. Address: Eden Foods, Clinton, Michigan.

5182. Shurtleff, William. 1987. History of Appropriate Foods Inc. and The Soy Source. Lafayette, California: Soyfoods Center. 3 p. Unpublished manuscript, based on a interviews with Robert Werz, Sept. 9.
• ***Summary:*** "Appropriate Foods was founded by Robert Werz in the fall of 1980 as a tempeh manufacturer. Born on 29 Dec. 1952, he had been a vegetarian since about 1970. Quite early he developed an affinity for soyfoods. He had been enjoying tofu since the early 1970s, when it was only available from Chinatown. He first heard about tempeh in 1975 from a friend in California, then first tasted it in about 1977. In 1979 he began to make tempeh part time at home in Sea Cliff, New York, for himself and a few friends while working as a carpenter and a boat builder. He also sold some of this tempeh to one store, Rising Tide, as a test market.

"In 1980 Werz decided to try making tempeh as a part time business. So in October 1980 he founded Appropriate Foods, Inc. He rented a small kitchen (down 2 long flights of stairs in the Bayside Jewish Center) from a friend who was a kosher caterer in Bayside, New York. Commercial production of Tempeh Brothers Tempeh started there in Nov. 1980. When Werz first made tempeh at home and at the temple, he had a partner, David Sibek; friends called them "tempeh brothers." Hence the product name. The only other tempeh sold in the area was that made by The Tempeh Works in Greenfield, Massachusetts.

"In the spring of 1981 Werz and Sibek decided to make tempeh a full-time business. They were distributing their products to about 10 health food stores and making about 20 pounds of tempeh each batch, 200 pounds a week. So they rented an old meal packing plant, complete with tile walls and floor drains, at 137 New Hyde Park Rd., Franklin Square, Long Island, New York.

In Feb. 1982 tempeh production started at the new location, and soon the company had two small distributors in New York. But now there were 12 tempeh brands on the market. In about June the distributors dropped 'Appropriate Foods' products. So they built an insulated box in the back of a pickup truck and began to deliver their own products. From this painful experience Werz learned a key lesson: "In the food business, distribution is everything." If a company does not have control over the distribution of its products, it is extremely vulnerable.

Werz and Sibek quickly realized that they had to expand their product line, so in June 1982 they started making three new products: (1) Tempeh Brothers brand Soyfurters, a cake of tempeh sliced lengthwise into 4 sticks, marinated, and seasoned with liquid smoke, to sort of resemble hot dogs; (2) No Cow brand Soymilk (the soybeans were ground in

a motor-driven Corona mill) in plain, cinnamon-honey, and carob-honey flavors; and (3) Tempeh Brothers brand Tempehburgers.

In the summer of 1982 the company added Tempeh Brothers brand Super Tempeh and Soy-Rice-Sesame Tempeh, and dropped the Soyfurters. Dave Sibek left in early 1983."

"In Feb. 1984 Werz and a partner, Shelley Martin, started a second business, The Soy Source, to allow Appropriate Foods to start selling their products, under The Soy Source Brand, to supermarkets. Their first products were shoyu (Japanese-style soy sauce) and tamari (wheat-free soy sauce). The first new tofu product in the new line (launched in Feb. 1985) was Perfect Pasta brand Tofu Tortellini (frozen). The tofu was purchased from Nasoya and the product made by the pasta maker. In Sept. 1985 Vegetarian Gourmet Traditional Pot Pie with Tempeh and Tofu Quiche, both frozen, were added to the new line."

"On 1 Dec. 1986 Appropriate Foods completed its move to a larger building in the East Brooklyn Industrial Park at 292 Liberty Ave., Brooklyn, New York. Production began there in March 1987. In mid-March four new tempehs were launched as gourmet items, with silver and gold labels, under the Emperor's Best Brand: Garbanzo Tempeh (with no soy), Soy & Amaranth Tempeh, Rye-Caraway-Soy Tempeh, and Brown Rice Tempeh (with no soy). A nice article in the *New York Times* (24 June 1987) noted: "Today, with six employees, the company produces about 10,000 pounds of tempeh a month. About half is sold to health food distributors and the rest is delivered to about a hundred stores and restaurants in the metropolitan area.

"As of September 1987 products made under the Appropriate Foods brand include Soy Tempeh, Super Tempeh, Soy-Rice-Sesame Tempeh, Tempeh Burgers, Soymilk, and Tofu Salads. Garbanzo Tempeh and Amaranth Tempeh are sold under the Soy Source gourmet brand. Soy Source is still an independent company with its own books. The distribution arm of the company, called Appropriate Foods Distributing, is trying to broaden its line. The future seems to lie in 'crossover products,' sold in supermarkets."

The company is now one of America's largest tempeh manufacturers. They have developed many innovative tempeh and tofu second generation products. Address: Lafayette, California.

5183. Rahman, Majeedah. 1987. The Belize soyfoods and nutrition education project (Interview). *SoyaScan Notes.* Sept. 13. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Majeedah got interested in nutrition in about 1969, when she started working with the Breakfast for Children Program run by the Black Panthers in Oakland. She then went to work for a community program called Akbar that fed breakfast, lunch, and dinner to 350 children.

Majeedah, who started the project, was first introduced to soyfoods in about 1970 by two black American twins, who had become Rastafarians. They were making and selling tofu burgers and tofu enchiladas in the San Francisco Bay area, mainly at flea markets. They went to Belize and made a little soymilk and soynuts for children at one of the primary schools. To start their program, they received a little financial help from REACH, an organization in Stancreek, south of Belmopan, Belize.

During the 1970s Majeedah became a Black Muslim. Elijah Muhammad believed that his followers should not eat soybeans because they were fit only for animals. That has changed recently. "Your Black Muslim Bakery" on San Pablo Ave. in Oakland now makes tofu burgers at its restaurant and bakery. In 1980 Majeedah transferred to U.C. Berkeley from College of Alameda and studied health and law, focusing on how law affected health. She got an undergraduate degree in social science and law. In 1981 she started an MPH program and also started to work at the U.C. Cooperative Extension, Expanded Food and Nutrition, Education Program.

In 1985 Majeedah attended the Women's Conference in Kenya. Right after that, in December 1985, she went to Belize (formerly British Honduras) to show some films. While there, because she was interested in nutrition, she noticed deficiencies of protein and vitamin A. She returned in January 1986, paying her own way, to study the nutritional situation further. She fell in love with the country, the blend of ethnic groups, the lovely scenery. She had been a vegetarian for about 15 years (partly because she is Islamic and doesn't eat pork) and began using soyfoods about 8 years ago. So she noticed that a few farmers were growing soybeans for animal feed. She met with the minister of health, the nutritionist, and got permission to do some further studies at the hospital. In February 1987, after 8 trips to Belize, the project mentioned above was finally approved by the Belize government.

The project, which will run from June 1986 to June 1987, has 3 components: 1. Nutrition education, the most important, directed at the general public and health centers. Will train 1 person from each of 7 districts to be a nutrition education assistant. They will train others. 2. Get young farmers to form a cooperative and grow soybeans on the 25 acres of land. There is a trend away from farming in Belize. Presently (she thinks) all of Belize's soybeans are grown domestically; none are imported. The Mennonites in Belize grow most of the soybeans. They came from the U.S. (during the Civil War) and from Germany, and they own a lot of farm land. 3. A breakfast and lunch program from some schools in Belmopan, the capital. They are renting a 3-bedroom house in Belmopan and they have turned it into a nutrition education center plus a soy dairy to make soymilk for two schools, 2 times a week. They hope the Minister of Education will expand the program. The soymilk will be

served to kids at school as a snack. Address: Project Director (nutritionist), 526 44th St., Oakland, California 94609.

5184. Bishnoi, A. 1987. Frooti: Great shake-up in Hyderabad [Noble Soya House in India]. *BusinessIndia.* Sept. 7-20. p. 111.
• ***Summary:*** The runaway success of the tetrapacked fruit-based beverage Frooti, launched by Parle Beverages in Bombay in late 1985, is already a legend. But as the company prepared to launch the brand in Hyderabad/ Secunderabad, Great Shake (a soymilk in Tetra Pak cartons in mango, strawberry, and chocolate flavors) was launched on the market in March by Noble Soya House Ltd., a venture in which the Bhiwandiwalla family of Great Eastern Shipping and Godrej Soaps have an equity stake of 20% each. Great Shakes was the first drink of its kind to hit the south-eastern state. Its goal was to capture at least 10% of the soft drink market.

Godrej Soaps, the marketing agents, displayed their marketing might, and within 2 weeks 1,800 retail outlets were stocking the product. But sales soon slowed. "The beany taste of soya milk met a wall of consumer resistance." Godrej used every trick in the book to keep the product alive, including large discounts and unprecedented sales on consignment or credit. Competitors (Frooti) felt that these tactics spoiled the market. Address: India.

5185. Karas, Thomas. 1987. Tofu in Germany, Soyastern, and Heuschen (Interview). *SoyaScan Notes.* Sept. 21. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Soyastern started making tofu in about December 1983, and is now the largest tofu manufacturer in West Germany. They now make 4,000 kg/week and sell it for DM 5/kg. Their other tofu products include Tofu & Herbs, Smoked Tofu, Paprika Spiced Tofu, Tofu Burgers. A Tofu Mayonnaise will be launched soon. Company is growing at 40% a year. Second largest in Germany is Yamato Tofuhaus GmbH. Heuschen in the Netherlands in the largest in Europe. They use Sermi, a new coagulant, which may be lactic acid, for their tofu is sour but inexpensive, DM2/kg. All other Dutch tofu companies except Morgenstond have quit; they can't compete with Heuschen's prices. DE-VAU-GE now makes their own soymilk. They used to buy from Alpro. But they buy tofu from Heuschen. Address: Soyastern Naturkost GmbH, Osterather Str. 26, 5000 Cologne/Koeln 60, West Germany.

5186. Ascrizzi, Lynn. 1987. The little soybean miracle [at the Kersey Children's Home in Nigeria]. *55-Plus* (*Waterville, Maine*). Sept. 30. p. 5.
• ***Summary:*** For several years the staff of the International Institute of Tropical Agriculture has worked with the Kersey Home in Ogbomosho (northeast of Ibadan) in western Nigeria, teaching women how to plant, grow, and prepare soybeans in many practical ways. Children who come to the Kersey clinic suffer from kwashiorkor and marasmus, due to protein and calorie deficiencies. They are started on soymilk and within 12-21 days show remarkable improvement. Mothers and guardians attend weekly classes on the use of soybeans in making soups, soymilk, and other dishes. According to an article in IITA research briefs, "...mothers learn to add soy flour or paste to boiling water before adding yam flour... When the women leave the clinic and return to their villages, they continue with the soy program and also teach it to other women in the villages." IITA was started by the Ford Foundation, The Rockefeller Foundation, and the Kellogg Foundation. In recent years it has been taken over by a New York organization called the International Institute of Education.

5187. Cavazzoni, V.; Adami, A.; Craveri, R. 1987. Alpha-galactosidase from the yeast *Candida javanica. Applied Microbiology and Biotechnology* 26(6):555-59. Sept. [29 ref. Eng]
• ***Summary:*** One potential application of this enzyme is for the removal of the flatulence-causing sugars raffinose and stachyose from soymilk and soy whey. Address: Dipartimento di Scienze e Tecnologie Alimentari e Microbiologia, Univ. degli Studi, I-20133 Milan, Italy.

5188. Dabaji, Michel. 1987. Une cooperative invente le soja a boire [A cooperative invents soya to drink]. *Tertiel* No. 29. p. 20-21. Sept. [Fre]
• ***Summary:*** Soya is rich in nutrients and the agricultural cooperative of cereals at Colmar (la coopérative agricole de céréales de Colmar, CAC) has made a "milk" and even a cheese from it. A photo shows Eugène Stahl, president of the cooperative, and Claude Portal. In Sept. 1985 Maurice Rochet, assistant director of CAC, assisted at a conference at Albi dedicated to soya, a crop being strongly developed in the south of France. There he met Julian Foot, an engineer from Alfa-Laval. At Albi, Rochet realized the many nutritional advantages of soymilk (*jus de soja*). In May 1986 the cooperative launched the Bioforme brand. One year later, the production unit, which had cost 11 million French francs, was making a line of soymilk and desserts. Around the factory, 3,000 ha of soybeans has been planted (the members of the cooperative are growing these but it took effort to convince them to do so). And in several months a tofu production line will begin operation. Address: France.

5189. Easter, Robert A.; Picciano, Mary Frances. 1987. Soybeans in human and animal nutrition. *Illinois Research* 29(2/3):18. Summer/Fall.
• ***Summary:*** Currently infant formulas using soy isolates as the source of protein represent 15% of the infant formula market. 7% of the total polyunsaturated fat contained in soy oil is omega-3 acids. Address: 1. Prof. of animal sciences; 2.

Prof. of nutrition. Both: Univ. of Illinois, Urbana, IL 61801.

5190. *Inoculum* (*L'*)**.** 1987. La société Sojadoc: une démarche originale et innovante [Sojadoc: An original and innovate step]. July/Sept. p. 31. [Fre]
• ***Summary:*** Sojadoc, now an affiliate of the Coopérative Occitane, has started a factory at Albi, France, for making tofu and soymilk (tonyu). Discusses the characteristics and uses of these two soyfood products. Tofu contains 12 to 16% protein, and soymilk 2.8 to 3.6%. Address: ONIDOL, France.

5191. *J. of the American Oil Chemists' Society.* 1987. Soy drinks not infant formulas. 64(9):1282, 1287. Sept.
• ***Summary:*** "The Food and Drug Administration (FDA) has extended its import alert on soy drinks and other beverages touted as infant formula substitutes.

"FDA's alert says it will automatically detain all soy-based drinks that are not registered as infant formulas if their labeling either directly or indirectly implies the product can be used as an infant formula. It also said that soy-type beverage labeling should include the statement: 'This product is not to be used as an infant formula or as the sole source of nutrition.'"

For details see: *Federal Register,* July 8, 1987, pp. 25636-37, and *Food Chemical News,* July 13, 1987, pp. 42-43.

5192. Jain, Laxmi; Jain, Manoj. 1987. Indian soy cuisine: A delicious and nutritious innovation. American Soybean Assoc., 541, Orchard Road #11-03 Liat Towers, Singapore 0923. 48 p. 21 cm.
• ***Summary:*** Contents: Introduction. Basic soy preparations (soy flour, milk, soy paste, soy yogurt, tofu). Soy appetizers. Soy vegetables and pulses (many tofu recipes). Soy breads and rice. Soy raitas, chutneys and salads. Soy desserts. Soy drinks and ice cream.

Biography–"Mrs. Laxmi Jain, a native of India, has lived in the Boston area for the past 18 years. She has been actively promoting the use of soybean in the diet in India and America. She has developed original recipes, and has lectured and given demonstrations with the Oil Seed Federation in India. Her recipes have been published in local newspapers in both the U.S. and India. Note that this book was published by the American Soybean Association.

"Mr. Manoj Jain is a medical student at Boston University, and is also working on his Masters in Public Health. He has a B.S. in Biomedical Engineering. Mr. Jain also received a Smithkline Beckman Fellowship to research the possible uses of soy foods in the Indian diet. With his mother, Mrs. Laxmi Jain, Mr. Jain has developed numerous recipes and analyzed them for their nutritional content and delicious taste." Address: Boston, Massachusetts.

5193. Miyamoto, Taku; Hirata, N.; Nakae, T. 1987. Isolation from soy milk of a growth-stimulating substance for lactic acid bacteria. *Nippon Chikusan Gakkaiho* (*Japanese J. of Zootechnical Science*) 58(9):754-63. Sept. [21 ref. Eng]
• ***Summary:*** The substance, considered to be a peptide with a molecular weight of 1150 daltons, stimulated the growth of *Lactobacillus casei* and *L. acidophilus.* Address: Lab. of Animal Products Technology, Faculty of Agriculture, Okayama Univ., Okayama-shi 700, Japan.

5194. Nelson, Alvin I.; Wei, Lun Shin. 1987. Utilization of whole soybeans as human food. *Illinois Research* 29(2/3):20-21. Summer/Fall.
• ***Summary:*** In 1969, only two organizations were actively engaged in utilization research on whole soybean foods. Work at Cornell Univ. concentrated on developing liquid soy beverages, while the U.S. Dep. of Agriculture, Northern Regional Laboratory at Peoria was developing a powdered soy beverage and also working on a dry corn-soy-milk product for the Food For Peace (PL 480) program. Research on soy-based foods at the Univ. of Illinois was started in January 1970 by Lun Shin Wei, Marvin P. Steinberg, and Alvin I. Nelson in the Dep. of Food Science. The current utilization project involving the International Soybean Program (INTSOY) and the Dep. of Food Science is under the leadership of Nelson and has been in operation for about three years. Funded mainly by the U.S. Agency for International Development, this project encompasses both value-added studies and processing and product research. The work on these two complementary program areas includes: extrusion processing, extrusion and expelling of oil and cake, soymilk and analog processing, utilization in the home and village, and development of immature green soybeans as a commercial product. Address: 1. Prof. emeritus, food science, leader, INTSOY Utilization Program; 2. Prof. of food science. Both: Univ. of Illinois, Urbana, IL 61801.

5195. *Plenty Bulletin* (*Summertown, Tennessee*)**.** 1987. Business school grads help build soy dairy in the Caribbean. 3(3):1-4. Sept.
• ***Summary:*** A food processing kitchen and soy cafe was constructed on the northeast coast of Dominica on the Carib Indian Reserve by locals with help from 8 MBA volunteers from the Wharton School of Business [at the Univ. of Pennsylvania in Philadelphia]. Carib farmers are now selling soybeans to the Plenty Soy Center in Roseau, Dominica's capital. Each week the Center produces 100 lb of tofu, 25 lb of soysage, 20 lb of tempeh, 30-50 gallons of soy ice cream, and 30-40 gallons of soymilk. Most of these soyfoods are sold through two co-ops that are managed by Plenty-trained Dominican staffs: the Ebeneezer Women's Co-op in Marigot and the Kairi Soy Co-op on the outskirts of Roseau.

At the Soy Development Center in Roseau, Plenty

Canada offers 2 six-week classes each year in home, village, or small industrial scale soyfoods processing. The staff also conducts two 16-hour training courses on other parts of the island mainly for home preparation of soyfoods. Fifteen farmers are growing ¼ acre each of soybeans. In Jamaica, Country Farmhouse Lifeline, a soyfoods production center in Kingston, makes 150 lb/week of tofu.

5196. **Product Name:** Wattalappan (Soymilk Pudding).
Manufacturer's Name: Plenty Canada Soya Utilization Project.
Manufacturer's Address: 88A Kotugodella Vidiya (Postal Box 95), Kandy, Sri Lanka.
Date of Introduction: 1987. September.
Ingredients: Soya milk, jaggeri (unrefined sugar), vanilla, eggs, salt, spices.
Wt/Vol., Packaging, Price: Served in a small cup. Retails for Rs. 4/-.
New Product–Documentation: Form filled out by Jane Gleason. On 23 March 1988 she visited the Plenty Canada Soya Food Centre. For details see Chocolate Milk (Aug. 1987). Adapted from a local recipe.

5197. Saegusa, Kyoko. 1987. Tônyû to amazake de tsukuru hyôka roisu kuriimu [Royce Cream frozen dessert made with soymilk and amazake]. *Gendai Nogyo* (*Modern Agriculture*). Sept. p. 106-10. [Jap]
• ***Summary:*** Kyoko and her American husband, who live in Tempe, Arizona, use soymilk, amazake (which they make from Cold Mountain koji), tofu, and various flavorings to make what they call Royce (Rice + Soy + Ice) Cream frozen dessert for use at home. She also makes yuba. One of the longest articles seen up to this time on amazake. Contains three pages with 11 color photos showing how to make amazake and soymilk. Letter from Kyoko Saegusa. 1988. March 21. Her current address: 2040 S. Forest Ave., Tempe, AZ 85282. Phone shown above. Address: 2025 S. Forest Ave. #3, Tempe, Arizona 85282. Phone: 602-966-8397.

5198. Snyder, Harry E.; Kwon, T.W. 1987. Soybean utilization. New York, NY: Van Nostrand Reinhold Co. xii + 346 p. Illust. Index. 23 cm. An AVI Book. [381 ref]
• ***Summary:*** Contents. Preface. 1. Production, marketing, and sources of information: Introduction, agricultural production, marketing, sources of information. 2. Morphology and composition: Morphology, chemical composition. 3. Processing of soybeans: Preparation, flaking, expellers, solvent extraction, oil refining, protein products. 4. Quality criteria for soy products: Protein and oil products. 5. Functional properties of soy proteins: Interactions of soy proteins with water, interactions of soy proteins with lipid, foaming, commentary on functionality. 6. Nutritional attributes of soybeans and soybean products: Inherent attributes of soybeans, changes due to processing. 7. Oriental soy food products: Traditional nonfermented soybean food products, traditional fermented soybean food products. 8. Soybean-supplemented cereal grain mixtures: Protein-rich food mixtures containing soy flours, composite flours containing soy flour, cereal blends containing soybeans. 9. Soy protein food products: Baked goods, meat products, dairy products, other foods containing soy protein. 10. Soybean oil food products: Salad and cooking oils, mayonnaise, and prepared salad dressings, shortenings, margarines and related products, soybean lecithin products. 11. Grades, standards, and specifications for soybeans and their primary products: Grades of soybeans, specifications for soybean meals and flours, trading specifications for soybean oils, specifications for lecithins, standards for the use of soy protein products in other foods. References in each chapter. Glossary.

This book is well written (though largely a repetition of previous works) in the area of modern soy protein products. It is weak and poorly researched in the area of "Oriental Soy Food Products," which comprises only 1 chapter (22 pages) of the total, making the book unbalanced. The author of this chapter seems to be almost completely unaware of the many major developments in the Western world during the past 10 years.

Note the following Korean soyfood terms: Fresh soybean = Put Kong. Toasted soy powder = Kong Ka Ru. Soy sprouts = Kong Na Moal. Soymilk = Kong Kook or Doo Yoo. Yuba (Soymilk film) = no name. Tofu (Soy curd) = Doo Bu. Tempeh (Fermented Whole Soybeans) = no name. Natto = Chung Kook Jang. Soy sauce = Kan Jang. Miso (Soy Paste) = Doen Jang. Fermented tofu (Fermented Soy Curd) = no name. Fermented okara (fermented soy pulp) = no name.

Note the following Chinese soyfood terms: Fresh soybean = Mao-Tou. Toasted soy powder = Tou-Fen. Soy sprouts = Huang-Tou-Ya. Soymilk = Tou-Chiang. Yuba (Soymilk film) = Tou-Fu-Pi. Tofu (Soy curd) = Tou-Fu. Tempeh (Fermented Whole Soybeans) = no name. Natto = no name. Soy sauce = Chiang-Yu. Miso (Soy Paste) = Chiang. Fermented tofu (Fermented Soy Curd) = Su-Fu. Fermented okara (fermented soy pulp) = no name.

Note: This is the earliest English-language document seen (Nov. 2012) that uses the term "Toasted soy powder" to refer to roasted soy flour. Address: 1. Prof., Food Science Dep., Univ. of Arkansas, Fayetteville, AR; 2. Principal Research Scientist, Div. of Biological Science & Engineering, Korea Advanced Inst. of Science and Technology, Seoul, South Korea.

5199. *Soybean Digest.* 1987. Koreans consume more soymilk. Aug/Sept. p. 40.
• ***Summary:*** "Koreans are drinking more soymilk, in part because of the American Soybean Association's programs to promote soyfoods. In 1986, 10 soymilk makers produced 7.8 million liters (2.028 million gallons) of soymilk, a $60

million (U.S.) value and a 23% volume increase compared to 3 years ago."

5200. Noble Soya House Limited. 1987. Display ad: Here are 7 startling facts about soya and soyamilk that will amaze you. Great Shake. The food drink with the goodness of soya. Now available in selected towns. *Times of India* (*The*) (*Bombay*). Oct. 4. p. 16.
• ***Summary:*** Another creative and interesting full page ad from Noble Soya. "1. Soya. The richest source of natural protein in the world. 2. The complete protein. 3. Vitamins minus pills or frills. 4. Goodbye allergies! 5. The healthy alternative. 6. Front-line food processing technology. 7. The taste grows on you."

"Manufactured by Noble Soya House Limited. Distributed by Godrej."

Accompanying each of the 7 facts is an illustration and a creative block of text.

5201. Kelly, Gerald R. 1987. Island dining: Fast needn't mean junk. *Martha's Vineyard Times* (*Vineyard Haven, Massachusetts*). Oct. 8.
• ***Summary:*** Mark Ripa is the proprietor of Vineyard Natural Foods, where over 50 different sandwiches are made every day for sale to regular customers or passers by. The standard soup is miso soup. Lynn Burkhart, who creates the gourmet part of the store, plans to serve Tofu Vegetable Pies, a kind of quiche made without eggs, and a light bean and spinach soup made with tempeh–a soybean product. The menu features Indonesian curried tofu. Ripa says "that soy milk is the natural food store's bestseller because of the number of people who cannot–or will not–tolerate milk from cows."

Photos show: (1) The Smoothie bar inside the store. (2) The menu, showing the ingredients in Indonesian curried tofu.

5202. Kline, Nancy. 1987. Lot variance sought in Columbus Grove [Ohio] for possible soybean milk plant [by SRM Seeds]. *Putnam County Sentinel* (*Ottawa, Ohio*). Oct. 14.
• ***Summary:*** SRM Seeds (manager Tim Mershman) is proposing to build a 40 by 60 foot building to make soymilk in Columbus Grove, Ohio. The milk would be trucked to Columbus for further processing and packaging. The company will be working with Ohio State University. Opposition was voiced to the proposal.

5203. Miller, Harry, Jr. 1987. Early work with soyfoods in China. Current work with Miller Farms Food Co. and Solait (Interview). Conducted by William Shurtleff of Soyfoods Center, Oct. 15. 2 p. transcript. [1 ref]
• ***Summary:*** He is now writing a book on his lifelong work with soyfoods around the world. Note: Unfortunately (as of Aug. 2013), that book was never published and apparently even the location of the manuscript is unknown.

"The Shanghai company was named Vetose Nutritional Laboratories. Its main products were soymilk, called 'Vetose Soya Milk.' On the bottle the name was printed only on the tops. Glass blowers blew the milk bottles in Shanghai. The tops were a wide mouth Crown closure that went on a milk bottle. The only flavor we had was the 'Acidophilus Vetose.'

"The soymilk ice cream was only made for the staff and patients at our institutions, the Shanghai Sanitarium and Hospital, and the Shanghai Sanitarium Clinic down town. It wasn't for sale, and wasn't advertised; we just called it 'Soy Ice Cream.' We just had it for parties etc. at the hospital. The Henningsen Produce Co. in Shanghai had a big ice cream plant; they used to make it for us at that time. Now they are in White Plains, New York (Phone 914-694-1000). They have an R&D plant in Omaha, Nebraska. Their biggest business was frozen egg whites and dried eggs. Now they are affiliated with a Chinese company in Shanghai.

"At first we made some meat analogs for our missionaries all over China. We went down to the Buddhist restaurant (I spent an awful lot of time down there) and we made gluten steaks that also contained tofu. Product name was 'Min-Jing.' My mother came back to the US for a vacation. While she was at the Washington Sanitarium and Hospital, the business manager asked her if she could help them make a new meat analog. They served it at the hospital. They had a little food processing plant there, and they started to make them there and can them. She showed them how to make the tofu. This happened in 1934-35. Ed Meisler or Misler (pron. MAI-zler) came out and specialized in making meat analogs. We also had a pure gluten analog with no tofu. By adding tofu we got a better grain and elasticity and it was a better vehicle for certain flavors.

"Also we took yuba, rolled it, added flavoring (duck, chicken, 2 or 3 flavors), cooked it in HVP. We were not selling these as products. They were mostly for Sanitarium use. Diet is the biggest problem that any hospital had in East Asia. My father brought out two top chefs to develop a dietary for our hospitals. We finally had 16 hospitals in China.

"We also made Nut-Mete (Dark or Light) from peanuts and starch, adopted from Battle Creek. That's about it for Shanghai meat analogs.

"I used to know Jethro Kloss. I used to play with his boys. I am not sure whether or not he ever had a company making commercial soy products. But I think in Pennsylvania some place he did have. Not on a big scale. Maybe kitchen type. I think his products were not commercial. I know he did not have a food processing plant in Takoma. He had a couple of kids in Washington Missionary College.

"I don't like the name Willis. The kids at school used to pronounce it like 'Will Ass.' Now everybody calls me 'Harry Junior.' My son is Harry III." Willis always calls his father Dr. Miller. I promise to do it this way.

Here are 7 startling facts about soya and soyamilk that will amaze you.

1. Soya. The richest source of natural protein in the world.

That's right.
Soya is the world's richest source of natural protein. Not meat. Not fish. Not eggs. Not dal.
Every 100 gms of soya gives you 40 gms of protein. That's a lot more than any other natural food or drink can give you.

2. The complete protein.

Soya is not just packed with proteins, it's packed with proteins of the quality that your body needs for growth and muscle development. In fact, of the 22 amino acids (components of protein) found in nature, soya is one of the few foods that has 20 of these. Further, it has all the essential amino acids in good proportion. The presence of Lysine in soya helps the assimilation of proteins into the body and stimulates growth and development.

3. Vitamins minus pills or frills.

Some diets are deficient in vitamins. Soya is rich in the B Complex vitamins including Thiamin, Niacin, Riboflavin and Nicotinic Acid. These are necessary for the utilisation of nutrients by the body and for the steady release of energy from food.

Moreover, soya contains Vitamin A which is good for the eyes; and Vitamin E which retards the ageing process in body cells.

Soya is also rich in minerals such as calcium, phosphorus and magnesium. One of the most common mineral deficiencies is that of iron, leading to anemia. Soya can help correct this deficiency because it is especially rich in iron.

4. Goodbye allergies!

Research shows that many allergies are caused by the most ordinary of foods: dairy milk, eggs and wheat. That's why doctors recommend soyamilk for those who are allergic to dairy milk.

Apart from its regular formulation with fruit base, chocolate, etc., it can also be specially formulated to suit the systems of those who cannot tolerate lactose, a sugar present in all animal milk.

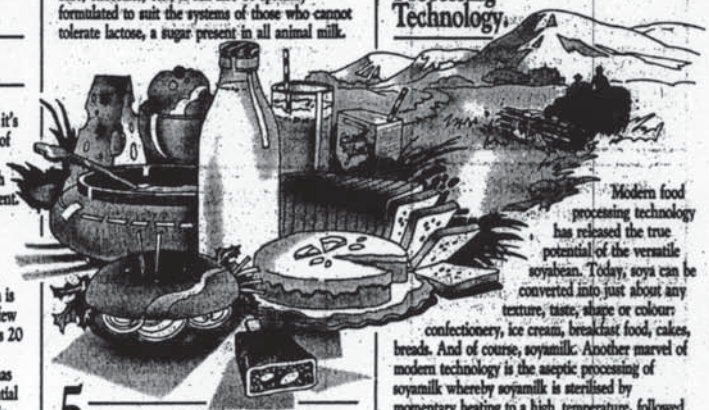
5. The healthy alternative.

Although most of us grew up on dairy milk, recent medical research has shown that soyamilk could be a healthier alternative.

To start with, dairy milk contains cholesterol. And cholesterol, we all know, has been linked to hypertension and hardening of the arteries.

On the other hand, soyamilk has absolutely no cholesterol and even the low fat content in soyamilk is almost entirely made up of polyunsaturates. The beneficial effects of polyunsaturated fatty acids in protecting against heart disease is medically recognised.

6. Front-line Food Processing Technology.



Modern food processing technology has released the true potential of the versatile soyabean. Today, soya can be converted into just about any texture, taste, shape or colour: confectionery, ice cream, breakfast food, cakes, breads. And of course, soyamilk. Another marvel of modern technology is the aseptic processing of soyamilk whereby soyamilk is sterilised by momentary heating to a high temperature, followed by rapid cooling. This ensures the retention of all the nutritional, taste and flavour characteristics of the product while ensuring total hygiene. It gives a long shelf life without the need for expensive refrigeration.

7. The taste that grows on you.

Soya has been the major source of food protein in the diets of Chinese and Japanese for over 3000 years. Today, people all over the world are discovering the goodness of soya.

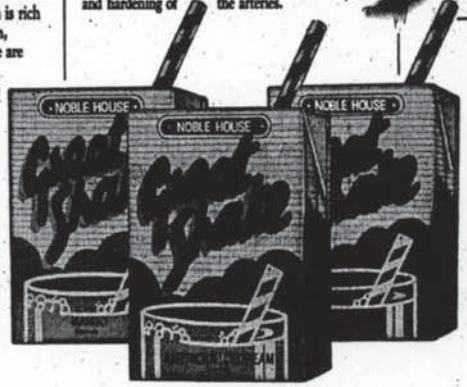
In Hong Kong soya drinks are as popular as Coca Cola.

In the U.S., they put soya into burgers.

In Britain, they spend millions of pounds on soya foods every year.

In Sri Lanka, soya flour is added to bakery flour.

All over Europe, soya yogurt is already a rage. And very soon, you will come face to face with this amazing food drink.



Great Shake.
The food drink with the goodness of soya.
Now available in selected towns.

Manufactured by Noble Soya House Limited. Distributed by Godrej

"I'm working with a woman writer. We're going to bring out a book like China Doctor. I've started to work on it. Dad and the older folks would go to restaurants, but the chefs were guarded and would not reveal their recipes. The next day I'd go down, a kid of just l2 years old. They called me *Hsiao Mi Lai* meaning 'small rice.' My father's name in Chinese meant 'Rice.'" Willis is dictating it. He has now got stuff down on paper. Ivan is doing the work. "It will probably be out early summer next year. Its mainly about my work with soy."

"You see what happened, Bill. Most of Dad's time was spent with his medical work. But he was so interested in this that when I finished my pre-medical work he said, `Son, I think you better stay on foods.` That's what I followed. I was at SDA colleges: EMC = Andrews Univ. for l year then Washington Missionary College for 1 year then La Sierra College. I finished at Atlantic Union College. All undergraduate. Did some mechanical drawing and engineering too. Dad would tell me what he wanted. I worked out the formulas, made the machinery to do it, and his work was primarily gathering information in the field. I followed up and did the detailed work.

"I have a 4-foot long box of papers of our correspondence, on all these little plants he put in. He would ask me to design it. I would, and send him the designs.

"I'm now living in Cedar Falls." Note: In an apartment? Where is the 4-foot file?

"We've had a marvelous reception for Solait. It is powdered only. Just the natural flavor. We demoed it to Worthington and Loma Linda. Sold lots at Adventist Camp Meetings. We're working on an ice cream dry mix, but it's not perfect yet. We make Solait from soybean, corn oil, rice syrup, and a touch of sea salt. No stabilizers or artificial flavors.

Willis will send Soyfoods Center Solait and a label. "Its been on the market now for about 4 months. It's a Miller Farm Foods product."

Follow-up: Call Bob Fisher. Encourage the book. Please send a label. What was the introduction date of Solait. Ask him: Where is the 4 foot file of papers? Address: c/o Miller Farms Food Co., Cedar Falls, Iowa.

5204. Shurtleff, William. 1987. The transformation of soymilk (Overview). *SoyaScan Notes.* Oct. 20.
• ***Summary:*** Soymilk is a traditional Asian low-tech soyfood / soy beverage that was transformed during the period 1966-86 into a modern high-tech dairy alternative.

The key scientific breakthroughs were made in the USA at Cornell University, but applied in Japan. The key packaging breakthrough was made by Tetra Pak. Address: Soyfoods Center, Lafayette, California 94549.

5205. Lindner, Anders. 1987. The world soymilk market and Soya Technology Systems (STS) (Interview). Conducted by William Shurtleff of Soyfoods Center, Oct. 21. 7 p. transcript.
• ***Summary:*** This far-ranging and very interesting interview discusses new soymilk developments in India with Noble House Great Shake, Godrej, and Amrit, and in Germany with DE-VAU-GE's big plant. Ultrafiltration offers an innovative new way to automate tofu production, already being tested by Island Spring. Major competitors for soymilk equipment (especially Alfa-Laval) are discussed, and details on the four plants that STS has sold in Germany, India, France and USA (Island Spring). A step by step description of the STS soymilk process is given. STS and Danish Turnkey Dairies were recently purchased by APV Baker, a big British baking equipment company.

Concerning the four plants that STS has sold: "Our biggest and most successful plant was sold to DE-VAU-GE, a Seventh-day Adventist food company in Lueneburg (near Hamburg), Germany. They started production in August 1985 and make Granose and GranoVita brands soymilk, sold mainly in the UK and West Germany, but also in Scandinavia and France. The plant is running at full capacity, which is 3,000 liters per hour of finished soymilk (3.5% protein), or 50,000 liters a day. They currently only make two products. Labels for the UK market read Granose Soya Milk (4 flavors) and Granose Soya Dessert (3 flavors of custard puddings gelled with natural carrageenan, a seaweed extract). Both products are packed in half liter or liter aseptic Tetra Brik cartons. The plant is doing very well, selling all it can make. This is the only one of the four that has started operation.

"We have also sold a plant to Island Spring (Vashon, Washington), which may be the next to start production. The capacity is also 3,000 liters/hour of soymilk base.

"Amrit in India should be in production by mid-1988. Their plant has the same basic capacity as the plant in Germany, but since their soymilk will contain only 2.25% protein, the actual output will be 6,000 liters per hour, which is larger than Germany. They will make both beverages and foods, mainly a paneer type cheese. The beverages will contain Indian flavorings.

"Our fourth plant is in France, but I am not allowed to divulge the name of the company until the product is on the market. They plan to make only liquid soymilk.

"Alfa-Laval installed their first European plant (a small one) in France this year, billing it as the "soymilk development center of Europe, the first plant on the continent" as if our large DE-VAU-GE plant did not exist."

Note: By 1987 STS had still sold only four soymilk plants. Address: STS, Singapore.

5206. Lindner, Anders. 1987. The world soymilk market and Soya Technology Systems (STS) (Interview). Conducted by William Shurtleff of Soyfoods Center, Oct. 21. 7 p. transcript.

• ***Summary:*** "On 21 Oct. l987 Anders Lindner, on a trip of the USA, visited the Soyfoods Center (SC). The following interview was conducted by William Shurtleff.

"SC: STS started five years ago, and in that time you have traveled the world, visiting every potential customer, and sold four soymilk plants. What major changes or trends have you seen in the world soymilk market during that time?

"STS: You must look at one region at a time. In the United States there is definitely an increased interest in and awareness of soymilk. Soyfoods are relatively well known. In Europe there has been a big increase in the number of enquiries about soymilk from all countries. The number of larger companies that have contacted us has also increased.

"Africa is still a dark continent as far as soymilk goes, with the possible exception of Nigeria, where we have a number of quotations pending, awaiting approval for foreign currency. This could take time.

"Looking at Asia, in India there was almost a frenzy of interest several years ago and we still get enquiries every week. The government gave permission to build many new soybean crushing plants. Soybean production is now over a million tons, and it is still not enough. So the price of soybeans is rising, which raises soymilk prices. But I'm not as optimistic about the future of soymilk in India today as I was 6 months ago. India's first major soymilk plant, established by the Noble Soya House group in Bhopal, has not been as successful as everyone had hoped it would be. Two of India's best known companies, the Great Eastern Shipping Company (also called the Bhiwandiwalla Group) and Godrej, backed the new company, which greatly bolstered public confidence in the project. Each owned 24% of the private limited company and the rest was publicly owned. Great Eastern provided financing and put a number of their very best people in the top management positions. Godrej, which is *the* marketing company in India par excellence, provided distribution and marketing. They specialize in soaps. Alfa-Laval supplied the plant and Kibun sold their technology know how. Production began in January 1987 and it had all the signs of being a very, very good project. Their soymilk, named Noble House Great Shake, comes in four flavors (chocolate, strawberry, mango, and American ice cream flavor, basically a vanilla) in 200 ml Tetra Brik cartons. I have heard it said that the products were not well formulated, the timing was poor, the prices were too high, and the products were marketed as a clearly Western-style of foreign product. The project got lots of big media publicity, but much of it was not favorable, we are sorry to say. Today the plant runs only about 2 hours a day.

"We have sold a plant to Amrit Soya and Protein Foods Ltd., owned by the Amrit Company, an old company. They are in Ghaziabad, Uttar Pradesh, on the outskirts of New Delhi and are expected to start production in mid-l988. This will be India's largest soymilk plant with a capacity of 6,000 liters/hour.

"Back to Asia, when we established STS we located ourselves in Southeast Asia, thinking that with the large consumption of soybean drinks there it would be quite simple to sell plants to make soybean milk as well. But that has not been the case. I find the food processing companies there extremely conservative. Our strategy now is to show the companies in East Asia that our concept works in the USA and Europe.

"China has been a disappointment. They seemed to be more interested in soymilk plants a few years ago.

"So generally speaking, the climate has gotten better, especially in Europe and the United States.

"SC: Has your strategy or basic approach for selling STS soymilk plants changed during this period?

"STS: Yes, it is changing now. We are expanding our product range by offering processes for other soymilk-based foods. Formerly we thought of ourselves as selling primarily liquid soymilk. Now we are offering process lines for tofu, ice cream, dressings, dips, spreads and other dairy analogs, plus what we call 'semi-products.' These are non-consumer, industrial food type products such as concentrated soymilk or curds for use as ingredients by food processors. We are investing in R&D on these. I think we will find new uses for our soymilk base, including new ways of making traditional products, dairy analogs, powdered products, and truly new products.

"SC: Have you made any major technological developments?

"STS: Yes. we are now offering an ultrafiltration system as part of our soymilk system. This is an important technological innovation. It allows you to concentrate soymilk by removing water without adding heat (thus preserving the good flavor of the product) or to remove certain components from the soymilk, such as oligosaccharides or perhaps trypsin inhibitors or lipoxygenase enzymes, using membranes. More important, it can help in automating tofu production. The soymilk base goes into the ultrafiltration plant, where it is concentrated. Coagulant is injected into the line and mixed. Rectangular cakes of tofu are chopped off as they come out the exit end. Luke Lukoskie at Island Spring has been a pioneer in developing these processes using a pilot plant, with an ultrafiltration unit, that we loaned him. This technology seems to have a very promising future for processing soymilk in the West, and for making soya panir (fresh curds) in India. There is not enough cow's milk in India to go around, and most of it is sold in the cities. I think soya panir will undersell dairy panir in India.

"SC: Which company do you feel is your strongest competitor?

"STS: Our main competitor everywhere is Alfa-Laval. After that, but much less, some of the Japanese companies such as Marusan-Seikensha and Mitsubishi. Given that we had just installed the largest soymilk plant in the Western

world for De-Vau-Ge in Germany, I was surprised to note that Eden Foods in America chose Marusan-Seikensha without ever contacting us at all. Marusan seems to have only one English speaking person in the entire company, Mr. Tominaga. Mitsubishi competed with us selling systems in India and Nepal. Takai never seems to be in competition with us. Vandemoortele is no longer supplying systems, though the huge plant they built in Ambatolampy, Madagascar (35 million liters/year capacity) is still in operation. The company, Lalasoa SA (Societe Anonym) is run by a woman named Regina.

"SC: Could you tell us a little about the four plants that you have sold?

"STS: Our biggest and most successful plant was sold to De-Vau-Ge, a Seventh-day Adventist food company in Lueneburg (near Hamburg), Germany. They started production in August 1985 and make Granose and Granovita brands soymilk, sold mainly in the UK and West Germany, but also in Scandinavia and France. The plant is running at full capacity, which is 3,000 liters per hour of soymilk base (4.7% protein). This is 4,000 liters per hour of finished soymilk (3.5% protein), or 50,000 liters a day. They currently only make two products. Labels for the UK market read Granose Soya Milk (4 flavors) and Granose Soya Dessert (3 flavors of custard puddings gelled with natural carrageenan, a seaweed extract). Both products are packed in half liter or liter aseptic Tetra Brik cartons. The plant is doing very well, selling all it can make. This is the only one of the four that has started operation. we have also sold a plant to Island Spring (Vashon, WA), which may be the next to start production. The capacity is also 3,000 liters/hour of soymilk base. Amrit in India should be in production by mid-1988. Their plant has the same basic capacity as the plant in Germany, but since their soymilk will contain only 2.25% protein, the actual output will be 6,000 liters per hour which is larger than Germany. They will make both beverages and foods, mainly a panir type cheese. The beverages will contain Indian flavorings." (Continued). Address: STS, Singapore.

5207. Lindner, Anders. 1987. The world soymilk market and Soya Technology Systems (STS) (Interview). Conducted by William Shurtleff of Soyfoods Center, Oct. 21. 7 p. transcript.

• ***Summary:*** Continued: Our fourth plant is in France, but I am not allowed to divulge the name of the company until the product is on the market. They plan to make only liquid soymilk.

"Alfa-Laval installed their first European plant (a small one) in France this year, billing it as the "soymilk development center of Europe, the first plant on the continent" as if our large De-Vau-Ge plant did not exist.

"SC: Do you see any innovative or low-cost packaging for soymilk on the horizon.

"STS: All of our plants use or will use aseptic Tetra Brik cartons. The Indian plant has also purchased a Prepac aseptic plastic bag machine, like that used to package Sipso soymilk, but aseptic. Thus it needs no refrigeration. (Prepac is a French firm; Sipso was India's first commercial soymilk, made by Pantnagar Soymilk Products (P) Ltd.). The big advantage of aseptic bags is that they cost about half as much as Tetra Brik cartons. Disadvantages are consumer handling, transportation, outer wrapping cost, leakage problems, and the shelf life is not as long (which is not really a problem).

"SC: What basic soymilk systems do you sell and how much does each cost? With and without building. With and without packaging.

"STS: Our basic plant is 3,000 liters/hour of soymilk base (4.7% protein content). There are many variables that each customer can choose to have or not have, which affect the price. On average this plant costs about $1.5 million (US) including the building and silos but without packaging machines. Three aseptic Tetra Brik machines to package this dairylike soymilk in 250 ml cartons will add another $1.5 million to the cost, for a total of roughly $3 million. The most expensive components are the aseptic packaging machines, the UHT plant, and the decanter/centrifuge.

"SC: Does STS have any plans to get into smaller, less expensive systems?

"STS: Not at the moment. No.

"SC: In the USA soymilk is 3.4 to 5 times as expensive as cow's milk per unit volume. How can people in Third World countries afford this?

"STS: Cow's milk is relatively much less expensive in the USA than in most other countries, and especially Third World and Asian countries. In many countries, cow's milk is simply not widely available. In Nigeria several dairy plants are now being rebuilt for making soymilk. In India, packaged soymilk and cow's milk sell for about the same price. The soymilk is less expensive to produce but the packaging raises the cost a lot. Thus there is a big interest in selling soymilk unpackaged (as from a kiosk cooler dispenser) or packaged in bulk, as in the aseptic 1-20 gallon bag-in-the box, for institutions. A school could order one or two 20-gallon packs a day at very low cost. The equipment is made in California (by Scholle) and Australia. For developed countries, aseptic packaging looks like the wave of the future.

"SC: What is the biggest problem in selling soymilk to Third World countries, acceptability or lack of capital?

"STS: The latter. For example, in Sri Lanka we did acceptability tests among 5,000 primary school children and 95% either liked it or liked it very much. In addition to lack of government funds to build the plant, there was in-fighting among several government departments as to which would be in charge of the project. The government urged us to find a private party to build the plant, and they could sell the soymilk to the government. But that is a slow process.

"SC: Could you outline the main steps in the STS

soymilk process?

"STS: Let me show you our color slide show of the De-Vau-Ge plant. This process is a continuous one with computerized monitors at all key points. Soybeans from the silos are screen, cleaned, steamed, dried, cooled, and dehulled. The hulls are removed by aspiration, and the cotyledons are destoned. In the continuous-process enzyme inactivation unit, the cotyledons are blanched for several minutes at atmospheric pressure in boiling water containing a little sodium bicarbonate. The blanch water is drained off and beans are then ground with hot water and a fresh dose of sodium bicarbonate in two sequential colloid mills (made by the Swiss firm Fryma Maschinen AG). A decanter / centrifuge (made by Siebtechnik GmbH) is used to separate the soymilk base (4.7% protein) from the okara fiber. The base is then run though the first deodorizer, which strips away volatile off-flavors using a vacuum, then thru a plate heater to inactivate trypsin inhibitor, and finally into batch formulation tanks. Premixed flavors and/or oil and nutrients are added, and the mixture is run through an homogenizer into storage tanks. Then comes the UHT (Ultra High Temperature) plant, followed by a second deodorizer, aseptic homogenization, and into an aseptic buffer tank before the final aseptic packaging.

"SC: What are the features of the STS system that you feel make it preferable to other competing systems?

"STS: First, the quality of our product. Second, the turnkey concept: we offer the whole system, from storage of soybeans to packaging of soymilk, from one source company. We are the only company that does that. Our prices seem to be about the same as our competitors.

"In terms of the process, the Alfa Laval system does not dehull the soybeans. we think dehulling makes a better quality product, but it takes additional equipment, which costs more money. For liquid soymilk, Alfa uses indirect UHT treatment with plate heat exchangers, whereas we prefer direct UHT using steam injection, which we feel gives longer production hours, less protein precipitation and scaling, and better flavor. Alfa talks of its oxygen-free, vacuum grinding; our process is similar, but we don't feature it.

"SC: What was of interest on your recent world trip?

"STS: Many things. At the World Congress on Food and Nutrition in Singapore I was amazed to see how many presentations were on soyfoods. And roughly a third of the booths at the Expo were soy-related.

"SC: Anything else?

"STS: Yes. Ownership of our company recently changed hands. As you know, Danish Turnkey Dairies, our parent, was owned by the Danish Sugar Corporation, which also owned Pasilac, a dairy equipment manufacturer. In March 1986 DTD and Pasilac were merged.

"Now APV is a huge British food engineering company, active worldwide. In February they bought Baker, a big British baking equipment company, to form APV-Baker. There is also APV-Crepaco. In May l987 Pasilac-DTD and its subsidiaries (including STS) were taken over by APV-Baker. The new firm may be called APV-Pasilac. A major purpose of this trip to the U.S. is to meet APV people involved with soy." Address: STS, Singapore.

5208. *SoyaScan Notes.* 1987. Soymilk and dairy milk prices in California, October 1987 (Overview). Oct. 23. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** In Lafayette, California, whole milk sells for $0.55/quart. Soymilk sells for $1.99/liter, which is the equivalent of $1.88/quart. Thus soymilk in a liter pack is 3.42 times as expensive as dairy milk per unit volume. In Dec. 1983 a comparison with pint quantities was made. Cow's milk cost $0.39. The least expensive fluid soymilk was Vitasoy, sold to the Asian market in 8.4 oz pack for $0.35; it was 1.72 times as expensive as cow's milk per pint. The average price of all 6 brands surveyed was 3.53 times as expensive as cow's milk per unit volume. Thus, soymilk prices have dropped only 3.2% in relation to cow's milk prices since Dec. 1983. The main reason that the drop has not been larger lies in the decline in the value of the U.S. dollar from late 1985 on; this led to a steady rise in the price of imported soymilks.

During 1986 two major changes took place in soymilk packaging in the USA. Both helped to reduce costs. (1) Edensoy, Westsoy, and Ah Soy switched to Tetra Brik cartons; Vitasoy had always been in Tetra Brik. (2) Liter and quart Tetra Brik cartons were introduced. This larger size was pioneered by the Alpro/Vamo Foods Sunsoy brand, followed by Edensoy, Ah Soy, Westsoy, and Vitasoy. Soymilk became the first liter-sized Tetra Brik product to succeed in the USA.

5209. Schecter, Andy. 1987. Early history of Northern Soy (Interview). *SoyaScan Notes.* Oct. 26. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The Zen Center kitchen at Rochester, New York used to import tofu from Toronto [in Ontario, Canada]. Then in about 1975 Jay Thompson, who worked in the kitchen, saw an article by William Shurtleff in *Mother Earth News* offering a free chapter from a book in progress describing how to make tofu. When the chapter arrived, the kitchen crew started making tofu in the Zen Center kitchen. The tofu makers were Jay Thompson, Martha (last name unknown), Greg Weaver, Greg Mello, and Andy Schecter. They would make about 20 pounds of tofu once or twice a week.

After 3-4 months they moved the operation in the basement of the Zen Center, where it was more efficient. Again they made about 20 pounds of tofu a batch, at least once a week and during sesshins [sic] as often as 2-3 times a week. All of the tofu was consumed within Zen Center. None was sold commercially.

Then in late 1976 Greg Mello and Greg Weaver started

talking about starting a commercial business independent of Zen Center and outside of it. They took their tofu to Oriental food stores and the owners showed interest. So they bought a large stainless steel cooking pot and other utensils. But in late 1976 there were some arguments, so Greg Weaver suggested that Greg Mello do it alone. So they parted.

At that point Andy Schecter was planning on leaving the Zen Center staff. He got together with Greg Mello and they found a 900 square foot space at 277 North Goodman Street in Rochester. In January 1977 they established the company called The Tofu Shop and began construction of the plant. They bought an oil-fired boiler, built a platform for the cooking pot, built presses, curding barrels, etc. In May 1977 production began. Their first product was tofu, followed shortly by a generic (unbranded, unlabeled) soymilk in plain and carob-honey flavors, put up in quart canning jars.

In late 1977 Greg Mello decided to leave. So in January 1978 Andy brought in Greg Weaver. In mid-1978 Weaver and Schecter realized that tofu sales were slow since most people did not know what it was or what to do with it. So they decided to open a soy deli to introduce prepared tofu dishes to the public. Weaver took charge of the deli, which opened in November 1978 under the name "The Tofu Shop" at 686 Monroe Ave. The startup costs were about $20,000. Since the manufacturing branch of the partnership was now without a name, they decided to call it Northern Soy. And since Schecter felt that he would need more managerial help in running Northern Soy, he brought a third partner, Norman Holland, in around November 1978.

The three partners all owning two businesses didn't get along very well, so they decided to separate the two businesses. Weaver would own the deli as an independent business, while Schecter and Holland would own Northern Soy. Since the name The Tofu Shop legally belonged to Northern Soy, Weaver was asked to find another name. After briefly trying "The Tofu Gardens," he settled on "The Lotus Cafe." This deli, the fifth soy deli to open in America, was a pioneer in developing delicious tofu and tempeh recipes and marketing them in an attractive way. Featured in a cover story in the first issue of Soycraft (later Soyfoods) magazine (summer 1979), it offered both sit-down (20 seats) and take-out service, featuring hot vegetarian lunches and dinners. By 1982 it was the largest soy deli in America in terms of average weekly sales ($4,800) and maximum weekly sales ($6,500). Names of 30 of its most popular tofu and tempeh recipes are given in the books *Tofu & Soymilk Production* (1979) and *Report on Soyfoods Delis, Cafes & Restaurants,* both by Shurtleff and Aoyagi.

Tempeh production was started [in about Nov. 1977] by Earl Lepper in his home. Then at some point in 1979 or 1980 he moved the operation into a corner of The Tofu Shop. Eventually he decided to sell his tiny business to The Tofu Shop so he could move to California.

The Lotus Cafe closed in August of 1984 or 1985, in debt and after Weaver's unsuccessful attempt to sell it. Weaver went to work for a computer literacy firm. All 3 are still bachelors. Address: 30 Somerton St., Rochester, New York.

5210. Rose, Richard. 1987. Re: Personal observations on soyfoods at Natural Foods Expo in Philadelphia. Letter to William Shurtleff at Soyfoods Center, Oct. 28. 1 p. Typed, with signature on letterhead.
• ***Summary:*** Show trends: Many new companies introducing many new soyfoods, some very high quality in concept and execution. Established soy companies now entering such as Miller Farms and Witte / White Wonder. The Soyfoods Pavilion seemed to have less both space and be more spread out. The only Legume product at the show was the tofu chocolate bar (will the Barat Bar save Legume?). Tomsun Foods did not have a booth. Ice Bean was the only soy frozen dessert there. A proliferation of soy cheeses, aseptic soymilks, glass-packed spreads, meat analogs. Nasoya will be making Simply Natural's tofu/miso spread for them; it has just been patented. Simply Natural's tofu cheese is now called Soyalite, and their pasta is Pasta Lite. Little-seen regional companies were there, including Michele's and Northern Soy. Paul Obis adds: Many at the show were lamenting the apparent failure of Jofu. They have spent all their money.

The Rose International letterhead states: EasyLink Mailbox 62978515. Telex 990027 (Rose Intl UQ). Address: President, Rose International, P.O. Box 2687, Petaluma, California 94953-2687. Phone: 707-778-7721.

5211. Bradner, Norman. 1987. Soybeans for the food market. *Seed World* (*Des Plaines, Illinois*). Oct. p. 44.
• ***Summary:*** Thailand imports nearly 100,000 tonnes/year of soybeans for food use. Japan imports 65,000 to 70,000 tonnes of small beans to make natto. Natto beans can be less than 5 mm in diameter and have a yellow cotyledon and hilum. For tofu, soymilk and miso, importers want high protein, low oil, maximum water soluble proteins, low phytate, high 11S protein fraction, large seed size and high sugar content. But a variety judged good one year can be deemed unsuitable the next. Environmental conditions during seed development play a significant role in determining the final chemical composition. Address: Pulse Breeder, King Agro, Inc., Chatham, Ontario, Canada.

5212. Cole, Michael. 1987. Soya International Limited (News release). Downs Court, 29 The Downs, Altrincham, Cheshire WA14 2QD, England. 2 p. Oct.
• ***Summary:*** Cole was the founder (in 1984) and previously managing director of Soya Health Foods Ltd. Soya International Ltd. is an international soya marketing company, with an international database containing information related to soya products. Stephen Burgess is the

company's computer consultant. "This information centre fully computerized and the first of its kind serves to support the main activities of the company whose sub-heading is "Research, Development, Marketing, and Management Consultants." S.I. Ltd. has already joined with the large Italian company Sordi S.p.A. (a supplier of dairy and juice equipment) to complete a feasibility study for the Argentine government, as well as working with both the Brazilian and New Zealand governments on far reaching long term soya projects. Cole, age 42 and born in London, is a vegetarian. He managed to bring Soya Health Foods Ltd.'s Sunrise brand products to the position of market leaders in just 2 years.

Note: In Feb. 1989 a letter sent to this company was returned. His phone was no longer in service, and the directory assistance operator in England could find no new listing in Altrincham or in the Cheshire County or Manchester areas. Address: Cheshire, England. Phone: 061-926-8019.

5213. Davies, C.S.; Nielsen, S.S.; Nielsen, N.C. 1987. Flavor improvement of soybean preparations by genetic removal of lipoxygenase-2. *J. of the American Oil Chemists' Society* 64(10):1428-33. Oct. [24 ref]

• ***Summary:*** Oxidation of fatty acids mediated by lipoxygenase has long been implicated in the production of off-flavors by soy products. This assumption was tested by the use of preparations form soybean lines nearly isogenic to the cultivar Century that lack the lipoxygenase isozyme or various isozymic combinations: L_1, L_2, L_3, L_1+L_3, or L_2+L_3. Such lines were used to ensure that any effects observed were due to elimination of lipoxygenase isozymes, and not to other unrecognized genetic differences between lines. Full-fat soy flour and unblanched soymilk preparations from the lines were evaluated by a 6-member taste panel for 8 flavor and/or aroma attributes common to soybeans. By comparison to near-isogenic controls, removal of the L_2 isozyme from soymilk preparations produced significantly lower scores for beany, rancid and oily flavor and aroma attributes, as well as higher scores for dairy and cereal flavor and aroma attributes. Similar trends were noted for soy flour flavor attributes. Thiobarbituric acid (TBA) numbers were lower in homogenized soy flour suspensions from lines lacking L_2. Removal of the L_1 and L_3 isozymes did not improve flavor scores or reduce TBA numbers. Total oil content and fatty acid profile of the near isolines did not vary appreciably. Results indicate that genetic removal of the L_2 isozyme may reduce off flavors in soy products. Address: Dep. of Agronomy, Purdue Univ., W. Lafayette, Indiana 47906.

5214. Donovan, G. Kevin; Torres-Pinedo, R. 1987. Chronic diarrhea and soy formulas. Inhibition of diarrhea by lactose. *American J. of Diseases of Children* 141(10):1069-71. Oct. [8 ref]

• ***Summary:*** "Soy protein formulas are often poorly tolerated by infants with nonspecific and postinfectious diarrhea syndrome. We found that these adverse responses may be prevented by using lactose, instead of sucrose or dextrimaltose, in soy formula. We studied 40 infants diagnosed [clinically] as soy intolerant... In the absence of lactose intolerance, a soy-lactose formula could be useful in treating chronic diarrhea and secondary protein intolerance." Address: 1. Div. of Pediatric Gastroenterology, Dep. of Pediatrics, Univ. of Oklahoma Tulsa Medical College; 2. Univ. of Oklahoma Health Sciences Center, Oklahoma City, OK.

5215. *East West.* 1987. Natural Foods: The best and worst. 2nd annual awards. Oct. p. 32-36.

• ***Summary:*** Only packaged natural foods with nationwide distribution are judged. Best soymilk: Edensoy, but the Tetra Brik package doesn't biodegrade, burn, or recycle. Best sandwich spread: Nasoyanaise by Nasoya Foods. Worst shoyu: Natural shoyu from Erewhon. So heavy it is best dispensed with an eye dropper. Best Tamari: San-J. Worst line of fake meat products: Worthington Foods. Worst beans: Honey Baked Style Vegetarian Beans with Miso from Health Valley. Best Miso: Miso Master Mellow White Miso by American Miso Co. for Great Eastern Sun.

5216. Eden Foods, Inc. 1987. Looking for a new food? The solution is amazingly delicious Edensoy (Ad). *East West.* Oct. Rear cover.

• ***Summary:*** This ad (see next page) emphasizes the product as a food rather than a beverage and stresses ingredient quality. A hand descends from heaven and angels fill the sky around a huge carton of Edensoy. "Job's tears, known as *Hato Mugi* in Japan, are the seed kernels of an annual grass long prized in the Orient for its health giving and nutritional properties." Note: The scientific name of Job's tears is (*Coix lachryma-jobi*). Address: Clinton, Michigan.

5217. *Food Manufacture* (*London*). 1987. The French soya revolution. 62(10):59-60. Oct.

• ***Summary:*** Co-opérative Agricole de Céréales, a co-operative of 3,000 French farmers has joined forces with Alfa-Laval to build what is claimed to be the world's first fully automated and continuous liquid soymilk processing plant at Colmar, France. They produce Bioforme brand non-beany flavor soy drinks in vanilla, plain, and chocolate flavors, and 2 desserts in vanilla and chocolate. The process eliminates the strong beany taste and smell associated with some similar soy products.

A photo shows 5 packages of Bioforme Soja, apparently each in a different flavor.

5218. Golbitz, Peter. 1987. Soya interview: Gordon Bennett, Westbrae Natural Foods: Soyfoods past, present and future. *Soya Newsletter* (*Bar Harbor, Maine*). Sept/Oct. p. 3, 10-11.

• ***Summary:*** Founded in 1970, Westbrae was built on the premise that healthy food makes a healthy planet. Bennett has been president since 1975. The company now has over 200 products. Soyfoods account for about 35% of sales, down from 50% 1-2 years ago. The company is reducing imports, focusing on American-made foods, and importing Westsoy soymilk from Southeast Asia [actually Vitasoy in Hong Kong] rather than Japan, including a new liter size. Address: Bar Harbor, Maine.

5219. Haumann, Barbara. 1987. Expanding soybean markets, uses. *J. of the American Oil Chemists' Society* 64(10):1369, 1372-79. Oct.
• ***Summary:*** Value-added products and soybean varieties tailored to produce specific end products are among the promising developments envisioned to expand markets for U.S. soybeans. Keith Smith, staff vice president of research for the American Soybean Association (ASA) said, "Aquaculture–raising fish such as shrimp, catfish and trout–is a growing industry in the U.S. and abroad." Smith went on to say that the switch from mainly production research to more utilization research occurred eight to nine years ago, and that 60% of ASA's total research money in the past 6 years has gone for utilization research.

Genetic research is working to improve the fatty acid content of soybean oil. Work is also under way to develop a quick, low-cost method to determine oil and protein content. Other work includes trying to lower levels of linolenic acid in the oil. At Purdue Univ. in Indiana, research geneticist Niels Nielsen of the USDA's Agricultural Research Service (ARS) is trying to develop soybean lines free of lipoxygenase enzymes. Soymilk and flours produced from the new seeds are rated significantly better in flavor and aroma. Professor Nielsen and his research group are trying to "improve the nutritional quality of the major soy storage proteins by increasing sulfur amino acid content." He noted that the methodology has resulted in doubling and tripling the methionine content. At the University of Kentucky, David Hildebrand is also working on genetic engineering of soybeans.

Brazil, the second largest producer of soybeans, has evolved as the largest exporter of soybean meal and oil. The other top producers are China, in third place; Argentina, in fourth; and India, which recently made the top five. Indonesia is in 6th. Italy's production has grown substantially in recent years to make it the most important soybean-producing area in Europe. Other European producers include France and Spain. According to Oil World Annual published by ISTA Mielke, West Germany, the top 10 soybean oil producers for 1986/87 (in tonnes) were the following: U.S. 5,430,000; Brazil 2,538,000; Argentina 780,000; Japan 715,000; China 679,000; West Germany 521,000; The Netherlands 488,000; Spain 421,000; Italy 350,000; and Mexico 336,000.

ANPA (American Newspaper Publisher's Association) began seeking alternative sources to petroleum for ink seven years ago due to problems with petroleum supplies. Four years ago, with fluctuations in supplies and price, ANPA began considering the use of soybean oil ink. ANPA has filed a soy ink patent application and has begun licensing major ink manufacturers to make it. The first ink manufacturer to produce the ink, colored and black, is General Printing Ink, a division of Sun Chemical Corp., located in Carlstadt, New Jersey. One advantage of soy oil ink is that it is environmentally nonhazardous, which could reduce waste disposal problems. It also eliminates dependence on petroleum. There is less "ruboff" and the same amount of ink will print more pages. One drawback is that black ink made from soybean oil costs more than traditional black ink. Oil content in newspaper ink averages about 70%.

In the March 4, 1987 *Federal Register,* the U.S. Federal Grain Inspection Service (FGIS) ruled that soybean and other edible oils may be used to control grain dust in elevators. A U.S. Patent, licensed to Industrial Fumigant Co., is held jointly by Harold N. Barham and Harold N. Barham Jr. of Seed Technology of Texas. The patent was filed in 1978. Kinsella, director of the Institute of Food Science at Cornell Univ. said that another research interest was in the area of omega-3 fatty acids. It may desirable to develop soybean cultivars with high omega-3 fatty acid levels. John W. Erdman Jr. of the Univ. of Illinois' Dep. of Food Science and co-worker Angela Poneros want to nail down the factors that lower zinc bioavailability. He said, "We want to find out why this happens and if we can increase it."

Meanwhile, at INTSOY, team member Sing-Wood Yeh and others are working in the field of soybean dairy analogs. Tofulicious, a non-dairy frozen dessert, was developed through research coordinated by University of Minnesota food scientist William Breene and funded by the Minnesota Soybean Research and Promotion Council. Abroad, ASA has been promoting soy-fortified foods. For instance, in Venezuela three years ago, ASA launched an education program for consumer groups and government agencies on the benefits of soy protein. As a result, soy-fortified foods are available in Venezuela's major supermarkets, and demand for soy protein has increased to more than 48,000 pounds per month.

Soybean researchers are also working on standardization of NIR (near-infrared spectroscopy) as a measure of protein and oil content in soybeans. NIR already is successfully used to measure grain and forage composition. If NIR were adopted as a standard by the industry, soybeans eventually could be purchased based on protein and oil content.

5220. *INTSOY Newsletter* (*Urbana, Illinois*). 1987. Cooperative efforts in Nigeria aim to increase soybean use across Africa. No. 37. Oct. p. 3-4.
• ***Summary:*** In Nigeria soybean production has more than

doubled in the past 5 years in response to the growing demand and the shortage of foreign exchange needed to import soybean meal. The 1987 crop is estimated to be at least 125,000 tonnes, in part because of the current high cash price. In Nigeria, much of the soybean production is concentrated in the northern states of Benue and Kaduna.

The most widely consumed soyfood in the country is soybean dawa-dawa, a fermented and dried product that is sold as a wafer. Also known as iru in Yoruba-speaking areas, it is traditionally made from the seed of the locust bean tree. According to a 1984 survey by IITA, about 60% of the dawa-dawa producers use soybeans and another 20% use a combination of soya and locust beans. Dawa-dawa is used to flavor soups, stews, and sauces.

INTSOY is working with IITA on ways to expand soybean use and processing throughout Africa. Another method of using the dawa-dawa wafer is to pound the dry wafer and add it to dishes as a powder. In the soybean marketing center of Kafanchan in southern Kaduna, soybean dawa-dawa is purchased by traders who sell it throughout Nigeria and as far away as Cameroon, Chad, and Niger.

IITA staff last year held utilization training sessions that attracted more than 180 participants in Ondo state. Other training sessions at 34 villages in Oyo state and at the Kersey Children's Home near Ogbomosho also drew strong attendance. The children's clinic at the Kersey Home started using soymilk and soy-fortified weaning foods to combat the childhood malnutrition known as kwashiorkor. The clinic now uses almost two tons of soybeans a month. By 1986, more than 3,000 farmers in Oyo State were growing soybeans on small plots totaling 1,000 hectares.

Note: This is the earliest English-language document seen (Jan. 2012) that contains the term "dawa-dawa" (hyphenated) in connection with soybeans (one of two documents); it is a close relative of natto.

Soy meal for the rapidly growing poultry industry is now the most important commercial soy product. Some companies, however, are moving into the production of soymilk, high-protein soyfoods, and edible oil. Both Food Specialties Limited and Smalltree Nigeria Limited are increasing the use of soybeans in infant and breakfast cereals. More than 30 businesses and individuals contacted IITA for technical advice on opening or expanding soybean processing operations. Extrusion cooking in particular has recently had an increased impact in Nigeria. At least four INSTA PRO extruders have allowed expanded production of poultry feed and full-fat soy flour for human consumption. The new local processing capacity has been especially important because of government restrictions on importing soy products.

Expansion of soybean use in Nigeria will require the introduction of new products, processes, and equipment adaptable to African village-level operations.

5221. Nelson, A.I.; Wei, L.S.; Weingartner, Karl E. 1987. Home and village preparation of soy products. In: S.R. Singh, K.O. Rachie, and K.E. Dashiell. eds. 1987. Soybeans for the Tropics. New York: John Wiley & Sons. xx + 230 p. See p. 179-84.

• ***Summary:*** During the early 1970s, when these techniques were developed, the focus was commercial rather than home and village use of soybeans. The principles developed were applied in Sri Lanka where INTSOY cooperated with the Farm Women's Extension Group to promote soybean use. The object is to develop a core of people who like the products, understand how to prepare them, and believe in their worth. Includes formulas for basic soy milk, weaning foods, soy nuts, and soybean dhal curry. Address: 1-2. Univ. of Illinois, Urbana-Champaign, IL 61801; 3. IITA (International Inst. of Tropical Agriculture), Ibadan, Nigeria.

5222. Ontario Ministry of Agriculture and Food. 1987. Soybean buyers mission from Japan, Hong Kong, Malaysia, Singapore, October 10-20, 1987. Toronto, Ontario, Canada: Ontario Ministry of Agriculture and Food. 23 p. 30 cm. Saddle stitched. [Eng]

• ***Summary:*** Contents: Mission members (with a photo of each). Itinerary. Japanese market for edible soybeans. General uses of edible soybeans in Hong Kong, Malaysia and Singapore. List of major importers in Asia (by country). Ontario soybean suppliers. Role of the Ontario Soya-Bean Growers Marketing Board (Chatham, Ontario).

This conference, which took place in Toronto, Chatham, and Harrow, Ontario, Canada, was sponsored by OMAF in Toronto. On the mission were 6 buyers from Japan (Takeya Miso Co., Asahi Industries [tofu maker], Takano Foods Co. [natto maker], Dah Cong Hong, Wako Shokuryo Co., and Gomei Shoji Co. [the last 3 is each an importer and wholesaler]), 2 from Hong Kong (Amoy Industries Ltd., and Chung Hing Co.), 3 from Malaysia (Sin Yong Huat Enterprises Sdn. Ltd, Yeo Hiap Seng (Malaysia) Ltd., and Chop Lee Kit Heng), and 2 buyers from Singapore (Eng Huat (S) Ltd. and Chop Hin Leong). Mike Hojo of OMAF/ Tokyo was the mission leader.

The Japanese soybean market is about 5 million tons a year. Of this: Oil crushing 4,036,000 tons. Food 849,000 tons (17% of total), and feed (not crushed) 70,000 tons. From 1982 to 1986 domestic Japanese soybean production has decreased from 168,000 tons to 147,000 tons, while imports have increased from 4,344,000 tons to 4,857,000 tons. Demand for food soybeans has increased from 803,000 tons to 849,000 tons. Tofu, miso, and natto account for more than 94% of the total utilization of edible soybeans, roughly as follows: Tofu 500,000 tons, miso 200,000 tons, natto 100,000 tons.

In 1986 some 89.9% of Japan's soybean imports came from the USA, followed by China (6.7%), and Brazil (2.65%). That year the least expensive soybeans came

from Brazil (US$219.86/ton), followed by USA ($221.36), China ($236.06), and Canada ($277.50). Note that Canadian soybeans are 25.3% more expensive than those from the USA. Chinese and Canadian soybeans are most widely used to make foods. Large Chinese soybeans are used to make tofu, medium sized for miso, and small for natto. Of the soybeans imported from the USA, 80-85% are imported from oil crushing because of their high oil content. The remaining 10-15%, or approximately 700,000 tons are food soybeans from Iowa, Ohio, or Michigan. Called "IOM" soybeans, they are used mainly to make tofu. Brazilian soybeans have a high oil content and are used for oil crushing only. The ocean freight cost for a 20-foot container shipped to Tokyo is as follows: USA west coast $1,000. Toronto, Canada $1,800. USA East Coast $2,000. Brazil $2,100. Argentina $2,500. But a large percentage of regular soybeans are loaded directly into ships, and travel at lower freight rates. Exports of food soybeans from Canada to Japan rose from 10,000 tons in 1979 to 26,000 tons in 1986, while those from China rose from 267,000 tons in 1979 to 323,000 tons in 1986.

Very detailed preferred characteristics are given for soybeans to make miso (6 characteristics), natto (5), and tofu (5). Canadian soybeans are recognized as superior to Chinese and American soybeans for food use. This is one reason they command a relatively higher price.

Hong Kong imports 28,100 tons/year of soybeans, and 63% of these come from Canada, followed by China (35%), and the USA (1.8%). Malaysia and Singapore import 124,800 tons/year, and 53% of these come from the USA, followed by Canada (31.7%), and China (8.2%). Most of the food soybeans in Malaysia and Singapore are used to make soymilk and tofu.

Soymilk: Vitasoy dominates the market in Hong Kong, whereas in Malaysia and Singapore the leading manufacturers are Yeo Hiap Seng, Cold Storage, Lam Soon, and Nestle. Soymilk consumption is increasing in these 3 countries, and in neighboring countries. Soymilk makers believe there are four requirements for their products' success: It must taste good, must be priced competitively with soft drinks, must be perceived as a health food, and must be marketed properly.

Bean curd sheets and sticks [yuba] are very common snacks and dishes in Hong Kong, Malaysia, and Singapore. Manufacturers consider only Chinese and Canadian soybeans for these products. Canadian soybeans produce whiter soymilk and thus whiter yuba. However the larger size of Chinese soybeans results in a larger yield. Manufacturers normally blend 60% of Canadian soybeans with 40% of Chinese soybeans to obtain a higher output of whiter sheets.

Major Japanese soybean importers include: Da Chong Hong (Japan) Ltd., Gomei Shoji Co. Ltd., C. Itoh & Co. Ltd., Mitsubishi Corp., Kanematsu-Gosho Ltd., Nichimen Corp., Marubeni Corp., Mitsui & Co. Ltd., Nissho Iwai Corp., Okura & Co. Ltd., Toyo Menka Kaisha Ltd., Wako Shokuryo Co. Ltd. Address: Ontario, Canada.

5223. Shurtleff, William. 1987. History of White Wave, Inc. Lafayette, California: Soyfoods Center. 11 p. Oct. Unpublished manuscript, based on interviews with Steve Demos from June 3 to Oct.

• ***Summary:*** A detailed history of this pioneering, very creative, and rapidly growing company. Contains production and sales statistics at each major phase of growth. Early days: White Wave was founded and started making tofu in September 1977 by Steve Demos in Boulder, Colorado.

Born on 24 April 1949 in Philadelphia, Pennsylvania, Demos attended Bowling Green State University in Bowling Green, Ohio, majoring in political science and philosophy and graduating in the fall of 1970. He was introduced to tofu in the summer of 1970, when he was traveling in a van in northern California with a friend, who bought some at an Oriental food store. Demos found it to be a good source of protein, and liked the flavor.

Right after graduation Demos took two trips to India. During the first in 1971, with Pat Calhoun, he became a vegetarian after witnessing the meat bazaar in Afghanistan. In early 1972 he took a longer trip to India, again with Pat Calhoun. It included 10-day Buddhist meditation course with a teacher from Burma, Goenka, who became his spiritual teacher. He also lived for 1-3 months in a cave near Rishikesh (in the foothills of the Himalayas in northern India), doing Hatha Yoga and meditation. There were monkeys in the forest trees, tame peacocks, a stream 10 yards in front of the cave that dropped into a bathing pool, and many sadhus (Indian holy men) practicing in other caves nearby. Then in 1974 he started a health food store [named Touch the Earth] in La Haska, Pennsylvania, where he grew acquainted with many new foods such as miso, sea vegetables, and *gomashio* (sesame salt). After 9 months he sold the store and returned to India again. He was now actively involved in meditation.

After that trip, Demos started living on the East Coast in New Hampshire. By 1974 he began buying tofu in Boston, Massachusetts, then made it a few times in the kitchen and used it in cooking for a yoga studies group, which had purchased a farm. He was in charge of food and he had learned how to make tofu from the *Ten Talents* cookbook. In March 1976, after a trip to India, he was in Santa Barbara, California, at a 76-day meditation retreat with teacher Robert Hover. He made tofu, starting at 4:00 each morning in a commercial kitchen, for 100-150 people, using *The Book of Tofu.* During this retreat Demos conceived of and developed the idea of starting a tofu company, including the name and logo. Three months later he found himself, a hippie with long hair, in Boulder, Colorado. He had an idea but no capital, and was living on food stamps. By good fortune he met a man named Anton Rogers (a talented architect and builder), who loaned him $2,000 startup capital, after having known

him less than a month. So in the summer of 1977 Steve began buying equipment for making tofu. His new company was not yet officially established or registered–though he probably opened a checking account at a local bank.

Demos started making tofu at White Wave on 27 September 1977. "At 11:30 a.m. I sold my first block. I'm staring at the astrological chart which sits next to my desk. That was when I translated the effort to a dollar." The company began as a sole proprietorship, located in very small (300 square foot) rented quarters at 1738 Pearl Street in Boulder, Colorado. The front one-third of the shop was used for a retail deli and the back two-thirds for food production. From day one, the tofu was made from organically-grown soybeans. Each 14-ounce block of tofu was sold, floating in water, in Chinese food take-out cartons. For details on White Wave's early use of organically grown soybeans, see SoyaScan interview with Steve Demos (Aug. 1998). The first batch of tofu was used to feed the participants in a ten-day meditation retreat in Boulder.

One direct competitor was the Spinning Kitchen, which had started 9 months earlier, in about January 1977. They had the Boulder market locked up when White Wave started.

White Wave had three products from the opening day: Nigari Tofu, Black Walnut Mushroom tofu, and Lemon Herb tofu. The latter two innovative flavored tofus were made by mixing the natural flavorings into curds at a specific point before pressing. Shortly White Wave expanded into making sandwiches, which led to salads, drinks, pies, cakes, and muffins. One of the first stores in Boulder to sell Steve's tofu was Green Mountain Grainery, owned and run by Bruce Macdonald. Pat Calhoun (formerly Demo's wife), arrived in December from the Pacific Coast Bakery in California, bringing all their recipes. Recipes for baked goods (such as cinnamon rolls and cookies) were adapted.

By early 1978 soymilk (plain, honey-sweetened, or carob-maple) was introduced, sold out of a jet spray juice cooler or in quarts, and also used to make Coconut Cream Pie and Tofu-Agar Pies filled with various fruits (apples or whole strawberries, peaches, or blueberries). At about the same time the okara from the tofu started to be used to make one of America's earliest brands of Soysage. This spicy Vegetarian Soysage (shaped like a sausage) was distributed with the tofu. Before long White Wave was making a host of delicious and innovative tofu deli products which were sold only at the Pearl Street deli. These included Macro Pizza with Tofu, Mexican Entrees, Okara Granola, and Tofu Dogs and Sauerkraut (very firm tofu cut into long rectangles and marinated broth). Soy Sannies (Miso-tahini Sandwiches) were also sold at nearby health food stores.

To help attract customers, the deli also sold an assortment of then largely unknown food products: 10-15 varieties of Japanese and American miso, many sea vegetables, shoyu, kudzu, umeboshi plums, and the like, many of the same products Demos had sold 4 years earlier at his health food store in Pennsylvania. Most of these were of great interest to macrobiotic devotees, though Steve had little personal interest in that subject.

Tofu was quickly recognized as a tremendously versatile, all-American ingredient. Now new people started coming into the company. Some were cooks and they helped to develop new products. In 1978 White Wave began to distribute a number of its most popular deli-type products to other retailers. These were among America's earliest commercial second generation tofu products: Missing Egg Salad (America's first, named by Trudy Stuart), Tofuna Salad (Vegetarian Tuna Salad), and Tofu Turnovers (with spinach and feta cheese filling). Other innovative second generation products sold or used only at the Pearl Street deli included Tofu Treats or Creamies (in banana-coconut, peanut-carob, or carob mint flavors), Miso Salad Dressings (hearty or mellow), and Tofu Mayo (eggless mayonnaise used in the Missing Egg Salad). Address: Lafayette, California.

5224. Shurtleff, William. 1987. History of White Wave, Inc. (Continued–Document part II). Lafayette, California: Soyfoods Center. 11 p. Oct. Unpublished manuscript, based on interviews with Steve Demos from June 3 to Oct.
• ***Summary:*** Continued: At the same time White Wave started making nut and seed products in the same little shop, starting with gomashio (sesame salt), tamari-coated sunflower seeds and almonds, and nut butters.

Just a year after opening, White Wave was forced to expand out of the tiny Pearl Street shop by the demand for its deli products from outside retailers, such as Arati and other natural food stores in Boulder. Demos recalls:

"We acted with very little foresight. It was more like 'What do you want to do today? Let's make something new.' Finally we couldn't get out the front door. We had to step over the top of buckets of tofu, presses, and boxes used to deliver our little Chinese fish cartons of tofu, stacked up so high we couldn't see out the window. It was chaotic. We were making money and business was booming, but we were only paying ourselves $1.42 and hour."

On 28-30 July 1978 a meeting of tofu manufacturers from across the USA was held in Ann Arbor, Michigan. The meeting was organized by Steve Fiering, Jerry MacKinnon (plus coworkers at The Soy Plant) and Bill Shurtleff, and hosted by The Soy Plant. Steve attended this historic meeting, and ended up rooming with Tom Timmins, head of the New England Soy Dairy. "I thought I was rooming with one of the idols of the industry. Just by virtue of association, I was going to do well." At this meeting the Soycrafters Association of North America (SANA) was established, with Larry Needleman as executive director of the new trade association. Steve was elected to be one of six members of SANA's steering committee. Various photos of the meeting show Steve, with long hair and mustache, leading and participating in the discussions. A yellow lined sheet titled

"Tofu Sales" was circulated to all attendees; Steve wrote that White Wave was making medium-firm bulk and packaged tofu, which wholesaled for $0.65 and $0.74 per pound, f.o.b. plant. Several days after the Ann Arbor meeting, William Shurtleff and Wataru Takai visited Demos, and saw how he made tofu at his tiny shop on Pearl St. in Boulder. They sampled and enjoyed the various creative offerings in the deli, and Shurtleff took home a label from each product.

At Walnut Street: In September 1978, after just a year at Pearl Street, the tofu company had long since outgrown its minuscule 'back room' space. So manufacturing operations were moved to a 3,000 square feet converted warehouse at 3869 Walnut Street. It felt like they had moved into a castle, with ten times as much space. Now there was great pressure to expand the business to use up the extra space. The company began to make new products (such as tempeh, ice cream, and new deli foods) and look for new markets.

The deli remained at Pearl Street, and was given a new name, The Cow of China (a term from *The Book of Tofu*). The name "White Wave" was reserved for the tofu manufacturing company. But there was only one set of books, under White Wave. The company now changed to a partnership, with seven equal partners, all active. Demos was president and Pat Calhoun did the bookkeeping, and only these two were interested in meditation.

Right after the move, to announce The Cow of China as a retail outlet and its vegetarian deli products, Demos did his first real advertising, using three charming posters. The first read: "White Wave Through the Cow of China Offers Food from The Kingdom of Plants. We make it all here in Boulder. 100% Dairyless." It then listed 14 soyfoods plus some non-soy desserts, almond-, cashew-, and peanut butters, and tahini. A second poster showed a soybean, with head, tail, and legs like a cow and dotted lines to delineate the choice butcher cuts. But instead of rump roasts and flank steaks were Soysage, Miso Dressings and the like. A third showed Jack, standing under a giant beanstalk, about to trade in his cow for the magical beans at which he is gazing in wonder. The caption: "We've got an alternative. White Wave Soy Dairy." The latter two posters were used as catalog advertisements with a growing number of natural food distributors.

The tofu plant now consisted of an open kettle, VCM grinder, and hand press for the curds on the end of a swinging levered bar. White Wave started to deliver product to some Denver health food stores and in late 1978, not long after the move to Walnut Street, they landed their first supermarket chain, King Soopers supermarket chains, which began to order 100 cases. As business expanded, so did the need to improve packaging and marketing, and to control costs.

New packaging: White Wave couldn't get its tofu into supermarkets unless it was sold in water-packed film-sealed plastic tubs (trays); the Chinese carry-out food/fish cartons were not acceptable. So Demos bought a little hand-packing machine that allowed one person to pack one block of tofu at a time in water in a plastic tray, then seal the tray with a film lid. Steve remembers first using this machine at the Walnut St. plant. Initially, he would seal the tofu tray with clear, unprinted film, then run one of their oval labels (the one with a hint of green color in it, used previously on the Chinese cartons) through a gluing machine (which was less expensive than buying pre-glued labels), and slap the label on the clear plastic film. This was White Wave's "first true commercial mass market package." The new marketable package led to many new accounts. After King Soopers the company got into the City Markets chain, then about a year later into Safeway, followed by a host of other chains in outlying areas. As business expanded, White Wave could afford pre-printed film labels for its tofu in plastic trays. The label design, though rectangular, was basically the same as the old oval. The ingredients new read: "High protein soybean cake contains: Soybeans grown without the use of herbicides or pesticides, filtered water, and nigari (salt bitterns). No more no less!" Soon a variety of textures were available: Extra firm press, firm organic, extra firm, and sift.

New sources of soybeans: White Wave had made its tofu from organic soybeans from day one. When the company first moved into Walnut Street, they were still buying these soybeans from Green Mountain Grainery in Boulder. But in the fall of 1978 Steve drove to a meeting of the Organic Growers Association in Iowa. He spoke about the demand for organic soybeans and met Marvin Kurpkeweight, who was already growing soybeans organically in eastern Nebraska. Steve visited Marvin's farm and contracted with him to buy organic soybeans direct from the farmer. Address: Lafayette, California.

5225. Shurtleff, William; Aoyagi, Akiko. comps. 1987. Bibliography of soymilk, 1578 to the 1980s. 1584 references. Partially annotated with index. Lafayette, California: Soyfoods Center. 164 p. Oct. Index. 28 cm. [1584 ref]
• ***Summary:*** The most comprehensive bibliography ever published on this subject. 636 of the references contain abstracts. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

5226. Shurtleff, William. 1987. History of White Wave, Inc. (Continued–Document part III). Lafayette, California: Soyfoods Center. 11 p. Oct. Unpublished manuscript, based on interviews with Steve Demos from June 3 to Oct.
• ***Summary:*** Continued: White Wave's tofu production was growing nicely. It rose from 120,000 lb. in 1978 (2,308 lb/week), to 179,000 lb. in 1979 (3,442 lb/week, up 49%), to 279,000 lb. in 1980 (5,365 lb/week, up 56% over 1979).

In February 1979 a major new product line was started: tempeh. Chip McIntosh was the first tempeh maker, followed by Chris O'Riley. An old kitchen refrigerator, warmed by

light bulbs, was used as the incubator. The first two products were Soy Tempeh and Soya Rice Tempeh, the latter being America's first multi-ingredient, soy-and-grain tempeh.

At about the same time, a third new product was launched: Polar Bean. It was a soymilk based non-dairy frozen dessert, made in a soft serve machine but sold in hard-pack pints. The first flavor was Banana-carob. Later strawberry, chocolate, carob mint, and orange flavors were added. In about 1984 a soft serve version called Polar Softie was introduced but did not prove successful.

Also in 1979 Richard Leviton visited White wave and the Cow of China, and did an in-depth study of their operations and products, published in the 1979 issue of *Soycraft* magazine. Soyfoods sold both at "The Cow" and for wholesale distribution to other retailers included: Organic Nigari Tofu, Soymilk (Honey-Vanilla or Carob-Maple), Soysage, Tempeh, Missing Egg Salad, Tofu Mayo, Baked Savory Tofu Cutlets, Sweet Bean Tofu Pie, Miso Salad Dressings (Mellow or Hearty), and Tofu Treats or Creamies (Banana-Coconut, Peanut Carob, or Carob-Mint; squares of creamy baked tofu blend on a healthful oats-coconut-flour crust).

Other ready-to-eat items sold only at "The Cow" included Soysage Pate, "Macro" Pizza (with tofu), Tofu Spinach Dill Turnovers, Tofu Cinnamon Rolls, Hot Tofu Meatballs and Meatball Sandwiches, Sloppy Joe Sandwich (made with TVP), Tofu Cream Cheese & Black Olive Sandwich, Tofuna Sandwich (like tunafish), Strawberry Tofu Pie, Soy Sesame Bars, and Tofu Butternut Squash Pie. In mid-1979 bulk recipes for about ten of these products were published, with permission, in *Tofu & Soymilk Production* by Shurtleff and Aoyagi.

Leviton noted: "The Cow of China is surely one of the nation's most ambitious and energetic soyfoods companies." It was just about breaking even with weekly gross retail sales of $1,000, three-fourths of which came from soyfoods. Concerning the growth of the still totally unmechanized little company Demos, now the self-styled "beneficent dictator," always frank and candid, added:

"It was a hell of a struggle, especially for an undercapitalized small business. But I certainly wouldn't discourage anybody because we started with nothing, and we've been going since then, and we've been able to make it all meet. We've just rigged, we've improvised, we've done everything imaginable, as I'm sure many other people in this industry have. We cut our salaries back, we did without a lot, but its own momentum kicked in. I suppose we consider ourselves alchemists in turning sweat into money. So, let me express my gratitude to everybody and everything, seen and unseen, who have helped us pull this together."

In August 1979 Gary and Chandri Barat arrived in Boulder and spent several days studying the Cow of China. They had met Demos at the Second Annual Soyfoods Conference in Amherst, Massachusetts (July 26-29, 1979). They were driving around the country, studying tofu and developing a business plan in preparation for starting a soyfoods company, which later became Nature's Inn, then Legume. As they studied The Cow of China and Demos invited them for dinner several times. He and his wife, Ginny, served a tofu spinach feta pie and mushroom caps stuffed with tofu. Later Barat told Demos more than once how much this visit has influenced him in starting a company based on tofu entrees. The lineage of Legume's early products (Tofu Cream Pies, Tofu Spinach Pies) can be traced back to The Cow of China.

Barat encouraged White Wave to do a feasibility study on converting The Cow of China into a fast food restaurant named The Family Diner and moving into a vacated A & W root beer stand three blocks from The Cow in a very attractive location. The study was done, a potential menu was developed, bu financial backing did not come through.

A White Wave catalog published in December 1979 included several new products: Doufu (extra firm Chinese style tofu), Savory Baked Tofu, and Tamaried Nuts and Seeds (Almonds, Cashews, Spanish Peanuts, Sunflower Seeds, Nut Mix).

The Cow of China deli was doing well. By February 1980 sales were $1,700 to $2,000 a week and there were often lines out the door. By the summer of 1980, according to *Soyfoods* magazine, the Cow of China had been renamed the Good Belly Deli, with the slogan "Real Food, Real Fast" and White Wave was producing 7,500 pounds of tofu and tofu products a week. The new deli, an expanded and Americanized version of "The Cow," continued to serve as an excellent showcase for the White Wave's innovative ready-to-eat soyfood products. Working with a friend who was an advertising agent, Demos had dropped the line of assorted health foods (miso, sea vegetables, etc.), expanded the deli items, and installed a stand-up counter bar to eat at and a few tables and chairs. Formerly it had been all takeout. Hot and cold fast food was served. The deli attracted lots of business (there was still usually a line out the door), the products were very innovative and they were praised by the natural foods community in Boulder. Address: Lafayette, California.

5227. Shurtleff, William. 1987. History of White Wave, Inc. (Continued–Document part IV). Lafayette, California: Soyfoods Center. 11 p. Oct. Unpublished manuscript, based on interviews with Steve Demos from June 3 to Oct.

• ***Summary:*** Continued: But White Wave was growing by leaps and bounds, as were sales of tempeh and Polar Bean soy ice cream. White Wave was doing all its own delivery in its own trucks to Boulder and Denver. And the business had not been capitalized, except for one new $3,000 loan that brought in a silent partner. A loan of $4-5,000 was outstanding from the IRS, in unpaid taxes

The Good Belly Deli lasted only 5-6 months. Though

it was doing well and was probably making money (though the financial records were poor), it increasingly became a thorn in Demos' side, for it was getting out of control. It was a drain on his time and energy, more than he could handle, and it seemed to be less important than the manufacturing end of things. So one day in the spring of 1981 he walked in and announced that he was closing a business that had lines around the corner. He wanted to focus on his main goal: to become the largest tofu manufacturer in his region. In retrospect it was a good decision, but he adds, "We were operating on a lot of idealism in those days, and not much practical business sense." In October 1980 White Wave changed from a partnership to a corporation, with 5 active and one silent stockholders.

After closing the deli, the first real money came into the company. With a bank loan, they paid off the IRS, then soon paid back that loan. Then in the fall of 1981 Demos landed a $69,900 SBA loan (SBA approved a bank loan) to buy new equipment and $100,000 worth of equipment from Mountain High, a public company which made ice cream and yogurt, and needed to get out of their Boulder ice cream plant at North 57th Court.

At North 57th Court: In September 1981 White Wave moved again, this time to Mountain High's former ice cream plant in an industrial park at 1990 North 57th Court. *Soyfoods* magazine reported that Demos threw a huge "factory-warming" party for several hundred friends and customers, serving Polar Bean and many favorite tofu and tempeh recipes. This represented a huge, key expansion. The square footage increased six to seven-fold, initially to 6,000 square feet including 22,000 cubic feet of walk-in cold storage space. Big new equipment was purchased with the SBA Loan. The number of stockholders was now reduced to three: Demos, Pat Calhoun, and Chip McIntosh. The business was able to survive because of loans. Demos cut his hair.

The percentage of sales generated by the various product lines was tofu 50% or more, ice cream 10-15%, tempeh 20-25%, and nut butters 10-15%.

For several years Demos had been urging King Soopers to move his product out of the produce section into the dairy section. In mid-1982, after studying a report on "The Tofu Market: Overview of a High-Potential Industry," published in May 1981, King Soopers made the move, in part due to customer demand. Initially sales were unchanged, since customers couldn't find the product. But there was a big advantage to King Soopers: no shrinkage from spoilage because of the lower temperature. The margin initially went down to 15%, the same as for dairy products. This brought the price down. Later they got smart and raised the margins for tofu. Not it's higher than milk but still less than produce. "I'm glad to see them making lots of money on our products," noted Demos.

In May 1983 White Wave made a major decision: to vacuum package their firm tofu. They bought a used Tiromat vacuum packager from a beef-jerky company in Los Angeles. Thereafter everything went wrong, so much that that one machine "almost broke the company's back." Demos later called it "the curse of the devil," and his production manager would often ask only half in jest, "Do you think we are sitting in vacuum packaging hell?" They found that tofu is a very difficult product to vacuum pack, though firm tofu is easier than soft. They concluded that 30% of the problems were caused by the machine, 30% by the product, and 30% by the operator, "and the rest was absolute karma." The process was very unforgiving, as was the machine's maker, which gave White Wave almost no support. They tried to disown the fact that Demos got stuck with a lemon. So White Wave had to solve all the problems by themselves.

Tempeh was now doing very well. In about 1982 White Wave began to make its own starter culture in order to get better quality control and save money: Alexander Lyon, who happened to be in town, spent a week teaching them the intricate process for $100. They also began to sell all tempeh frozen, after steaming. The product line was steadily expanded. By 1983 the company had introduced a Tempeh Burger and 5 Grain Tempeh (with soybeans, millet, wheat, oats, and barley). By 1984 the burgers were the company's best-selling tempeh product (48% of tempeh sales), followed by frozen soy tempeh (28%), soy & rice tempeh, then 5-grain tempeh. Accounting for one-fourth of White Wave's sales in 1984, tempeh was now the company's most profitable line of products. Making 5,850 pounds a week, White Wave had become America's second largest tempeh producer (after Quong Hop & Co.) and distribution had reached California. In fact, tempeh had now passed tofu as White Wave's most important product.

Polar Bean was also doing well. In 1984 it won a silver award in the annual Natural Foods Merchandiser contest, and that summer a Polar Pal ice cream sandwich was introduced.

"By 1983-84 White Wave broke the 10,000 pounds-of-tofu a week barrier and became a regional company, shipping tofu via many distributors throughout the midwest: Chicago [Illinois], Detroit [Michigan], Dallas [Texas], Salt Lake City [Utah], and Phoenix [Arizona].

Financial Crisis and Recovery: For most of its history, White Wave had been profitable, with plenty of cash and good financial records. Though the move to North 57th Court quadrupled their overhead, the company continued to make money for the first 2 years there, running a very tight ship. Then they started to encounter major equipment problems: a compressor breakdown and major non-stop vacuum packager nightmares. A maintenance team had to be hired. White Wave was growing into a company that needed management, but the sales volume could not support that. Sales were good, profits were small, and overhead was skyrocketing. This led to a slow tailspin, losing $1,000 a month during 1983-84.

These were not considered major losses but the upward trend had been reversed.

By August 1984 White Wave was $40,000 in debt and people were burned out. Decisive action was needed. In September Demos hired Lester Karplus to take charge of daily operations while he started to do a business plan to raise equity. But in the following months losses increased dramatically, to $10-$15,000 a month. White Wave lost a total of $60,000 during the next 6 months. Finally in February 1985, amidst his first real crisis, Demos fired Karplus and McIntosh, and took over the whole company himself. His four-part strategy was cut overhead to the bone, bring in new cash quickly, hold creditors at bay as long as possible, and implement a system of data collection (which Karplus had helped develop) to generate better production and financial reports. Address: Lafayette, California.

5228. Shurtleff, William. 1987. History of White Wave, Inc. (Continued–Document part V). Lafayette, California: Soyfoods Center. 11 p. Oct. Unpublished manuscript, based on interviews with Steve Demos from June 3 to Oct.
• ***Summary:*** Continued: First, he laid off all managers (who were not producing day-to-day results). Future plans were put on hold.

In October 1984 Jason Bois, who had been around the health food business for many years, approached White Wave to discuss having White Wave make him a soft serve soy ice cream. Demos advised against soft serve, but when Bois persisted, Demos developed a new soft serve formula for him, containing tofu and spray dried soymilk. Launched in January 1985 and marketed under the name Tofruzen, they failed within four months, for lack of a market. Bois quickly returned to Demos and beseeched him to develop Tofruzen in hard pack pints so that Bois could use these products to raise equity capital in a public stock offering. Demos had all the hard-pack formulas for Tofruzen developed in 30 days, using an improved version of his Polar Bean as the base mix but with totally new flavors (chocolate, strawberry, vanilla-almond). After Tofruzen launched the new products mid-1985, they realized that they didn't really own anything. So Demos, with some unexpected luck and seeing a way to bring in new cash quickly, proposed Tofruzen buy the title to the formulas for $25,000 cash, plus $25,000 in 6 months, plus interest. And White Wave would have an extensive supply contract. Tofruzen agreed.

In December 1985 Tofruzen, Inc. raised $1.6 million net in a public stock offering, and at that time paid White Wave its first cash. Tofruzen Bars followed in May 1987 and low-calorie Tofruzen Light in August. Once Demos saw that Tofruzen would be a successful product, he downplayed marketing of his Polar Bean. Tofruzen sales rose from $91,000 in fiscal 1986 to $158,000 in 1987.

Shortly after Karplus left, White Wave started selling its tofu in a colorful box. Karplus served as an agent to negotiate with advertisers and designers. The new package helped sales.

In mid-1985, to consolidate its business focus and bring in more cash, Demos sold White Wave's nut butter business to an employee for $35,000. White Wave retained 5% interest in the company, which is now called Naturally Nuts.

To turn the tide of losing money and get some badly needed breathing space, Pat Calhoun came up with a plan where she and Demos would call all the creditors and say, "Either we file bankruptcy or you allow us to pay off our debts to you over a one year period." All creditors agreed to this plan.

In July 1985, the moment of truth, the turning point, arrived. The company was $100,000 overextended (60 days behind in payments) and could not borrow money. Everyone was disheartened. Demos and Calhoun started regular sitting meditation again, recommitting himself to spiritual practice as central and profitability as essential. He recalls, "Once I got my priorities straight, things started to go well." Within 90 days White Wave had started to generate a positive cash flow. By mid-1986 the $100,000 debt had been paid off, and White Wave was once again accumulating cash and savings.

Demos decided to try his approach on another company, Soyfoods Unlimited Inc., a major tempeh manufacturer, which he had been offered an opportunity to buy. Having started tempeh production in February 1981 in San Leandro, California, Soyfoods Unlimited had grown to be America's third largest tempeh manufacturer by 1984, Soyfoods Unlimited was now heavily in debt. White Wave didn't have any extra money, but the offer made sense as a way to get distribution for White Wave products in California and the West Coast, and to increase production volume. So on 1 December 1986 White Wave made its first acquisition. The buyout took place over a period of time, with some cash down. By mid-1987 Soyfoods Unlimited had been turned around and was a profitable, wholly owned subsidiary. White Wave owned all the stock and had signed a supply agreement with Soyfoods Unlimited to supply them with everything. This acquisition, with all tempeh production for both brands done at White Wave in Boulder, helped boost weekly output to 17,000 lbs. a week by the fall of 1987, making White Wave the biggest tempeh manufacturer in the USA. Growth of tempeh was strong and its future looked very promising.

White Wave has long been one of America's most innovative tempeh companies, in part because of its faith in the potential and future of tempeh. Tempeh continued to be the company's most profitable product. During 1985-88 the tempeh line was expanded with a number of original and delicious varieties: Quinoa (6/85), Lemon Broil (10/86), Amaranth and Sea Veggie (both 3/87), Peanut Sesame (3/88), and Teriyaki Burger (8/88). These also gave his product line more shelf space, a key consideration.

At King Soopers and Safeway, White Wave now had three shelves with tofu and tempeh right in the middle of the

dairy section.

Tofu production was also strong, averaging 15,000 lbs. a week in mid-1987. A future high priority was the plan to pasteurize their tofu to give longer shelf life. After several years of selling tofu vacuum packed in a box, White Wave introduced a water pack without the box for the Asian-American market and some Caucasians since they are not used to the vacuum pack, and they prefer softer tofu, which cannot be vacuum packed.

By mid-1987 White Wave was back into high gear and growing nicely. Their space grew from 6,000 to 20,000 square feet. White Wave was one of the few Caucasian-run soyfoods companies that has been able to grow without selling most of the company. Demos' family has supported him to a large degree. He had borrowed roughly $25,000 from friends and family. The company still owed one-third on its SBA and Mountain High loans, and some to family. Assets were now about $300,000 and liabilities are $200,000. Since May 1987 White Wave had money in the bank and a growth rate above 30%. The 1987 sales projection was $2 million, of which 8-14% was expected to be profit.

In December, projected revenues for 1988 were $3 million. The company was in the midst of a private placement offering for $500,000 and the banks had approved equipment loans for $600,000. They have put in a bid to purchase an old (built in 1978) meat processing house on 2.4 acres in Boulder.

The Future: New products to be launched in 1989 include several meat analogs (tofu hot dogs/franks, due in March, aimed at the mainstream market concerned with cholesterol) and a soy yogurt.

Demos has set a number of goals for White Wave. First, to become the major primary soyfoods ingredient manufacturer in the region, and to maintain a profit margin of at least 10%.

Second, to make the concept of a clearly delineated and identified "Soyfoods Section" in the dairy case, succeed at King Soopers and Safeway. Set off with plastic dividers between yogurt and milk products, the section would be filled out with second generation soy products. This new concept would allow him to compete with larger tofu manufacturers (such as Azumaya and Hinode) who are lower priced but sold in the produce section. Address: Lafayette, California.

5229. Shurtleff, William. 1987. History of White Wave, Inc. (Continued–Document part VI). Lafayette, California: Soyfoods Center. 11 p. Oct. Unpublished manuscript, based on interviews with Steve Demos from June 3 to Oct.
• ***Summary:*** Continued: Third, after (and only after) the Soyfoods Section concept does succeed, to approach other chains with the same idea and ultimately to get into the whole Kroger chain of 400 stores in the Midwest.

Fourth, to develop new tofu-dairy blends to reach the mainstream. For example, a vacuum packed tofu sold next to cheese, that tastes like cheese (it doesn't have to melt); it could be mixed with cheese or flavored like cheese. Or a tofu cheesecake made of half tofu (or tofu cream cheese) and half cream cheese, that was virtually identical in flavor and texture to all-dairy cheesecake but was lower in cholesterol, saturated fats, and calories.

Fifth, to give major attention to tempeh product development. Demos thinks that tempeh represents a vast future potential because Americans like it better than tofu (though it is largely unknown), it offers good profitability, and the competition is not as severe as with tofu. Address: Lafayette, California.

5230. Shurtleff, William; Aoyagi, Akiko. comps. 1987. Bibliography on Vitasoy. Chronological. Lafayette, California: Soyfoods Center. 13 p. Unpublished. 28 cm. [34 ref]
• ***Summary:*** Consists of bibliographic records printed on a dot-matrix printer. Some of the records have a summary or abstract. There is a comprehensive index. Note: This was probably made as a gift for K.S. Lo of Vitasoy (Hong Kong). Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

5231. Singh, B.B. 1987. Soybean research and development in India. In: S.R. Singh, K.O. Rachie, and K.E. Dashiell. eds. 1987. Soybeans for the Tropics. New York: John Wiley & Sons. xx + 230 p. See p. 111-118. Chap. 11.
• ***Summary:*** Dr. Singh formerly coordinated the All India Co-ordinated Soybean Research Project at Pantnagar Univ., India. This is one of the best summaries seen of the history of the soybean and the early days of its utilization in India. The history is divided into pre-1965 and "from 1965 to 1985."

Developing a market: "More than 85 solvent extraction plants existed in India in 1970, and most were running well below their planned capacity. Four scientists from Pantnagar University including myself went to M/S Prag Oil and Ice Mills, Aligarh" and convinced the owner to try solvent extraction of soybeans. "At the same time we at Pantnagar University collaborated with the missionaries running Knave Technical Institute to establish an extruder cooking plant at Bereilly. The plant was to use the defatted soybean meal from Aligarh and convert it into textured soybean protein (TSP), a substitute for meat, that would have a vast market for the vegetarians in India. The two products–soybean oil and TSP named 'Nutri Nugget'–immediately became popular. Thus almost the entire soybean was being used as human food.

"This marked the beginning of soy-based industries in India. In the first year, both operations were so successful that the managers came to Pantnagar and hired four agricultural graduates each to promote soybean cultivation on contract around Aligarh and Bareilly... Working in

collaboration with University of Illinois, we also developed a factory to produce soybean milk...

Present production and future potential: Among the states the most significant development in soybean production has occurred in Madhya Pradesh because of the state government's active interest. Soybean cultivation, utilization and marketing are being promoted by the M.P. State Co-operative Oil Seed Growers' Federation. This federation provides incentives, including on-farm demonstrations, arranging availability of improved seeds, *Rhizobium* culture, insecticides, fungicides, fertilizers, etc. and assisting in the marketing of the produce by liaising with the processors.

In Madhya Pradesh, solvent-extraction capacity is 830,000 tonnes/year of soybean but is expected to soon reach 1.29 million tonnes. Considering the rapid growth in soybean production and utilization, Madhya Pradesh is often called the "soybean state" of India.

Tables show: (1) Performance of three varieties (Hardee, Bragg, and Semmes) at Pantnagar, 1967-1971. (2) Soybeans lines resistant to yellow mosaic and rust. (3) List of improved soybean varieties released in India. For each is given the variety name, area of adaptation, maturation time (days), and yield potential (tonnes/ha). The varieties are: Ankur, Alankar, Shilajeet, PK-262, PK-327, PK-308, PK-416. (4) Soybean area and production of six different states of India, 1983-83. The states, in descending order of production (in million metric tons) are: Madhya Pradesh (600), Uttar Pradesh (105), Rajasthan (10), Himchal Pradesh (5), Bihar (5), Gujarat (5). Address: International Inst. of Tropical Agriculture, Ibadan, Nigeria.

5232. *SoyaScan Notes.* 1987. New Trend: Many of the new soyfoods are being developed and marketed as all-American and fun: Tofu and tempeh burgers, tofu hot dogs, soymilk shakes, soy ice creams, tofu chocolate bars (Overview). Oct. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** This is part of the larger trend of the Americanization of soyfoods.

5233. Vitasoy. 1987. Our family size is here! Good news for Vitasoy fans (Ad). *Natural Foods Merchandiser.* Oct. p. 49.
• ***Summary:*** This full-page color ad shows a 1-liter carton of Vitasoy Creamy Original, made from Organic whole soybeans. As inset shows all four flavors.

5234. Weingartner, Karl E. 1987. Processing, nutrition and utilization of soybeans. In: S.R. Singh, K.O. Rachie, and K.E. Dashiell. eds. 1987. Soybeans for the Tropics. New York: John Wiley & Sons. xx + 230 p. See p. 149-78.
• ***Summary:*** An excellent, easy-to-understand condensation of the basics. Contents: Introduction. Oil extraction, Processing (and refining) the oil. Soy flours and grits. Soy protein concentrate and isolate. Nutritional components. Antinutritional components. Soybean use in Africa: Zimbabwe, Zambia, Nigeria, IITA's strategy.

Currently more than 10 countries are involved in manufacturing or processing soybean foods in Africa. In 1985-86 the major producers of soybeans in subsaharan Africa were Zimbabwe (80,000 tonnes), Nigeria (65,000 tonnes), and Zambia (36,000 tonnes), and these three countries are at the forefront in processing and utilization. In Zimbabwe, a company named Nutresco makes Mahewu, a bestselling beverage made from soybeans and maize, and a breakfast cereal named Nutri-Plus containing soybeans. In Nigeria, Nestlé makes Nutrend, an infant cereal, and another company makes Nutrimax-10, an instant cereal for the whole family. In Zaire, Cerevap, an instant cereal is sold.

In 1985 IITA in Nigeria began a program to promote processing and utilization of soybeans, in collaboration with INTSOY. One focus has been the use of expellers for small-scale expression of soy oil. Research is also being done on soymilk and extrusion cooking.

Tables: (1) Composition (% dry weight) of soybeans and the seed parts (from Kawamura and Tada, 1967). Includes whole soybeans, cotyledon, hull, and hypocotyl.

(2) Soybean grades, according to U.S. standards (from USDA, 1970). Grades are 1 to 4. (3) Composition of crude and refined soybean oil (from Pryde, 1980). (4) Specifications for crude, degummed and once-refined soybean oil to be traded. (from Brekke, 1980). (5) Conditions for degumming (from Wiedermann, 1981). (6) Comparison of some activated bleaching clays (from Wiedermann, 1981). (7) Selective hydrogenation of soybean oil (from Hastert, 1981). (8) Composition (% dry weight) of soybean flour, soy protein concentrate and isolate (from Bressani, 1981).

(9) Comparison (% dry weight) of three flours made from soybeans (from Smith and Circle, 1972).

(10) Composition (% dry weight) of soybean concentrates (Meyer, 1967). Made by alcohol leach, acid leach, or moist heat (water).

(11) Estimate (mg/kg body weight) of humans' daily requirements of amino acids (FAO / WHO, 1983).

(12) Essential amino acids contained in whole soybeans (FAO, 1971), soybean flour, soy protein concentrate (Central Soya, 1979) and soy protein isolate (Ralston Purina, 1978). "Worldwide, lysine is the amino acid that is limiting in most low-cost diets." Tryptophan is limiting in some diets, while threonine is often present in less than recommended amounts. The sulphur amino acids are slightly low in relatively few diets. "Since soy protein is a good source of lysine, tryptophan and threonine, its addition to a mixed diet greatly improves quality of the diet's protein."

(13) WHO suggested requirements (gm of amino acid per 100 gm of protein) of four critical amino acids (lysine, tryptophan, threonine, sulphur amino acids {methionine and cystine}) for preschool- and school-aged children, and adults (Anonymous 1986).

(14) Effect of soybean flour as a protein supplement to cereal grains (Bressani, 1981).

(15) Fatty acids (%) in soybean oil–divided into saturated and unsaturated (Nwar, 1985).

(16) Mineral content of whole soybeans (FAO, 1971), defatted flour, concentrate (Central Soya, 1979) and isolate (Ralston Purina, 1978).

(17) Sugar analysis (%) of hydrolyzed carbohydrates from soybean products (Eldridge et al., 1979).

(18) Effect of raffinose plus stachyose in the diet of humans; production of flatus (van Stratum and Rudrum, 1979).

(19) Evaluation of soybean line PI157440, which lacks the Kunitz trypsin inhibitor, compared with regular soybeans, raw or heated, in terms of trypsin inhibitor activity, rat PER, and chick gain per unit of feed. It was found to be better than regular raw soybeans but poorer than heated regular soybeans.

(20) Nutrient content of 1 cup (237 ml) soy milk, cow's milk and human milk (Pennington and Church, 1985). Address: IITA (International Inst. of Tropical Agriculture), Ibadan, Nigeria.

5235. **Product Name:** WestSoy Natural (Soymilk).
Manufacturer's Name: Westbrae Natural Foods (Importer). Made in East or Southeast Asia.
Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: (415) 658-7521.
Date of Introduction: 1987. October.
Ingredients: Incl. soybeans, rice, and barley malt (made from sprouted barley), oil, salt.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic cartons. 250 ml retails for $0.69; 1 liter retails for $1.99.
How Stored: Shelf stable.
New Product–Documentation: Ad in Natural Foods Merchandiser. 1987. Oct. p. 62. "A Great Tasting Source of Nourishment. Made from Organic Soybeans and Rice." This product has a new package (yellow, white, blue, and brown), new ingredient (rice), new size (liter), and new maker (somewhere in Southeast Asia; Bob Gerner 1/88 says Hong Kong).

Talk with Gordon Bennett of Westbrae. 1986. Nov. 15. Even after the end of the year, he will not disclose where and by which company his soymilk is made.

Bennett. 1987. Soya Newsletter. Sept/Oct. p. 10. Ad in Vegetarian Times. 1987. Nov. Rear cover. Leaflet. 1987. WestSoy. What is the shelf life of WestSoy? How can WestSoy be used? Why don't local soydrinks taste as good as WestSoy? Ad in Vegetarian Times. 1988. April. p. 14. "A Great Tasting Source of Nourishment." Price change. Effective Nov. 14. Case of 27 x 8.45 oz is $8.60 FOB West Coast.

5236. Thompson, Keith. 1987. Jacob Hartz Seed Co. (Interview). *SoyaScan Notes.* Nov. 4. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Hartz was purchased by Monsanto in April 1983. They have been doing research on soybeans suited for soyfoods for 10 years. The director of research Curtis Williams (formerly at Louisiana State Univ. for 6 years) began in the mid-1970s to develop a very popular natto variety, that was released in 1980. Proprietary varieties for seed were first released in 1984. Univ. of Illinois and Iowa State are also doing food bean research. Soybean production in the South has shrunk 46% in the last 6 years, to 12 million acres from 22 million. A soybean containing no trypsin inhibitor was developed 2-3 years ago but there has not been much interest in it.

There are three lipoxygenase enzymes: L1, L2, and L3. There is a Japanese patented process for removing both L2 and L3, using backcrossing. Hartz has lines that are free of L1 or L2 or L3 or L1 + L3. Lipoxygenase removal seems to offer big promise for improved soymilk and tofu beans. Hartz is the only commercial seed breeder in the U.S. doing work on maturity group IX and X, now that Hinson has closed down his tropical variety development in Florida. Hartz has a global outlook. He is sorry that INTSOY is no longer doing varietal development; they were a great source of information. Daylight insensitive is also called "juvenile characteristic." It takes 1 bushel of seed to plant an acre of soybeans. Address: Food and Export Manager, P.O. Box 946, Stuttgart, Arkansas 72160.

5237. LeBailly, Cecile. 1987. Lait: Attention, voila l'ersatz. L'invasion des matières grasses végétales menace les produits laitiers européens [Milk: Watch out for substitutes. The invasion of vegetable oils threatens European dairy products]. *Nouvel Economiste* (*Le*) No. 616. p. 100. Nov. 6. [Fre]
• ***Summary:*** There are 3 major soymilk producers in Europe: (1) In Belgium, Alpro, an affiliate of the Vandemoortele Group, has a plant that produces 10,000 tonnes/year of "soy juice" (*jus de soja*). Alpro's head, Philippe Vandemoortele, is head of the European Soyfoods Association. (2) In France, Cacoja, affiliate of the agricultural cooperative of Colmar, has recently had an ultramodern plant constructed at Issenheim in Bas-Rhin. A good photo shows the soymilk production system. (3) In West Germany, DE-VAU-GE is expected to soon produce as much soymilk as Alpro.

Also discusses the Edensoy venture in the USA. Most of these companies are run by young men, average age 35. Address: France.

5238. *El Nuevo Diario.* 1987. Proyecto industrial para leche de soya [Industrial soymilk project]. Nov. 7. [Spa]*
• ***Summary:*** A group of students in their fourth year of Industrial Administration at the University of Central America recently won first prize for their soymilk project at

the University Conference on Scientific Development. The project seeks to increase the production and consumption of soymilk in Nicaragua. Plutarco Gonzalez, head of the student investigative collective, said that one principle objective of the project would be to popularize the use of soy. The project consists of installing a grain processing machine to make soymilk, with a subproject being the production of soy flour. The machine will be located in Ciudad Sandino (barrio of 60,000 residents outside of Managua). The "Mechanical Cow" (Vaca Mecanica), as the processing machine is called, would be able to make 9,000 liters of soymilk daily, using only 1,000 kilos of soybeans. The machine will cost $60,000. Presently there is firm commitment for funding from private groups in West Germany and Belgium. Marlene Salguera discussed the increasing use of soy in Nicaragua since 1980, at which time a national program was initiated to popularize the small-scale production of soymilk as a nutritional supplement. Use of soy has grown steadily since that time. Nubia Alvarez added that once completed, the project would also serve as a laboratory for students in the Industrial Administration program.

5239. *Toyo Shinpo* (*Soyfoods News*). 1987. Tônyû inryô nado hanbai. Marusan Herusu Saabisu eiyô hojo shokuhin 5 shu o [Selling soymilk etc. Marusan Health Service sells 5 nutritional aids]. Nov. 11. p. 2. [Jap; eng+]
• ***Summary:*** Marusan Herusu Sabisu (health service), the daughter company of the large miso and soymilk producer, Marusan Ai, has started to market 5 nutritional aids collectively called the "Doctor Series". One of these 5 foods is the "Soymilk Doctor Big Beans" (500 ml of soymilk for 200 yen). The other 4 aids are not soyfoods.

5240. Praskin, Laurie. 1987. Recent developments with soyfoods in Guatemala (Interview). *SoyaScan Notes.* Nov. 30. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** El Centro de Soya, the soy dairy at Solola, is up and running as a commercial enterprise. They are making tofu, most of which is sold to Seventh-day Adventist vegetarian restaurants that cater to tourists in Panajachel, Guatemala City and Antigua (a big tourist center and the former capital of Guatemala). In the community of Solola, they spend a lot of time teaching people how to cook with the products, which they offer at a discount to community members. This has spurred a big increase in sales of tofu and soymilk to the community. A new product in 1987 is Paletas de Soya (Soy Sticks or soymilk popsicles) made with their own popsicle machine. The only flavor is chocolate. Two employees and one independent broker with carts sell them. Agostine Xoquic is manager of the dairy. Amado Del Valle is project coordinator of the whole program, including the agricultural parts, the demos, and the dairy. They make soymilk but only for those who bring a container to the dairy.

Amado and his partner Felipe are making tempeh, which is sold to restaurants. The business is still subsidized; Plenty pays the salaries of Amado and Augustine, and also buys new equipment. But profit from the sale of soy products pays dairy employees' salaries and operating expenses. And they do make a little "profit." They are also now running a soyfoods training center/demo program. In Quiche they have a home demo program, and women grow soybeans and make soymilk and tofu at home. The main thing is adding ground soybeans to corn to make tortillas.

After Plenty had to leave Guatemala in 1980, the Soy Dairy continued making tofu and soy ice cream, without outside funding, until 1983. Larry McDermott visited in April 1985 and production started again in mid-1985. Address: 17969 Oak Dr., Los Gatos, California 95030. Phone: 408-353-2649.

5241. Akiyama, Yoshinobu; Saio, Kyoko; Iwamoto, Matsuo. 1987. Rapid method of analysis of commercial soy milk using near infrared spectroscopy. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku* (*Report of the National Food Research Institute*) No. 51. p. 76-78. Nov. [3 ref. Eng; jap]
• ***Summary:*** "Near infrared reflectance spectroscopy (NIRS) is a technique which is a technique which is being increasingly used for rapid compositional analysis of foods. The method was developed to replace slow, tedious, conventional methods such as the Kjeldahl method for protein analysis." Address: National Food Research Inst., 2-1-2 Kannondai, Yatabe, Tsukuba, Ibaraki, Japan 305.

5242. Barrett, Mariclare. 1987. Soyfoods almanac. *Vegetarian Times.* Nov. p. 35-38, 40. [3 ref]
• ***Summary:*** An overview and introduction to tofu, tempeh, miso, soy sauce, etc. with summary of some new developments. Photos show Betsey Shipley & Gunter Pfaff, Jan Belleme, Henry Ford wielding axe against trunk of car made of soybeans.

5243. Eden Foods, Inc. 1987. Product description: Eden Foods quality natural foods. 701 Tecumseh Rd., Clinton, MI 49236. 21 p. Plus 6 pages of inserts. Catalog.
• ***Summary:*** The catalog lists the following soyfoods: Edensoy (Original, Vanilla, Carob; shown on page 1. "Edensoy is the best tasting, best selling, best made natural soymilk on the market"), black soybeans (they "have a hearty yet sweet taste. In Japan, black soybeans are always prepared for the New Year's celebration as they are a symbol of health."), organically grown soybeans (usually Corsoy or Amsoy), Eden tekka ("a hearty, nutritious condiment made from hacho miso, carrots, burdock, ginger root, and unrefined sesame oil; 2.8 oz), dried tofu (actually dried-frozen; 5.8 oz), barley (mugi) miso, brown rice (genmai) miso, buckwheat (soba) miso, light (shiro) miso, rice (kome) miso, hacho (100% soybean) miso, natto miso "Kinzanji," shoyu, organic shoyu, low-sodium shoyu, wheat-free tamari,

tamari-roasted nuts and seeds wheat free (pumpkin seeds, sunnies [sunflower seeds], almonds, cashews, mixed nuts), and Lima Tempeh.

Some interesting non-soy foods listed in the catalog include quinoa (16.2% protein), kudzu-kiri, kudzu root starch, adzuki beans, mochi (100% brown rice, with mugwort, or with millet), sea vegetables, organic amazake, barley malt syrup, and Lima seitan.

In the spring of 1986, Eden Foods became General Agent for North America for the Lima Company of Belgium. Lima soyfood products include Lima Tempeh. Note: This catalog was still in use in Jan. 1989. Address: Clinton, Michigan. Phone: 517/456-7424 or 800/248-0301.

5244. Gleason, Jane; Weliwita, S.M.A. 1987. Home and village level soyabean utilization training in Sri Lanka: Accomplishments, constraints and potential. INTSOY/DARP/SFRC, Sri Lanka. 14 p. Unpublished manuscript.
• ***Summary:*** A detailed analysis with many summary statistics. This paper argues that because of the large amount of time and fuel required, and general difficulties of making foods at home from whole soybeans, they will not be widely made there. From 1978 to Nov. 1987 SFRC trainers have directly trained over 30,000 people in soya utilization. Of these, almost 27,000 were trained at outstation demonstrations, while over 4,000 were trained at SFRC.

However, because of processing difficulties and time requirements, it questions the premise that widespread home level utilization of whole soyabean will occur.

The instructors were asked what types of soyafoods are most likely to be integrated into Sri Lankan diets. Soya-fortified kola kenda, a traditional drink made from coconut, rice flour, and leaves of a variety of herbs was most often mentioned as 21 of 48 respondents placed kola kenda in their top three choices. After kenda, the instructors ranked soya-fortified pittu (18), roti (13), snacks (13), waddhi (12), and curry (11) as foods most apt to be part of Sri Lankan diets. Ten respondents stated that soymilk could easily become popular.

The responses of the instructors show that soya will most likely be integrated into local diets through fortification of already popular foods. Many commented that soya flour should be made available for this purpose. Traditional soyafoods from other parts of Asia, for example, tofu in East Asia and tempeh in Indonesia, were not highly ranked as foods easily accepted by Sri Lankans. Only four respondents thought that tofu and none of the respondents thought that tempeh could become important in Sri Lanka.

Table 6 indicates "What characteristic makes soya appropriate for villagers'–Nutrition, 42 respondents; Low cost, 20 respondents; Taste, 5 respondents. Table 7 indicates "Price per unit protein of common foods in Sri Lanka"–Soyabean, 0.04; Chicken, 0.21; Dried fish (fat poor), 0.11; TVP, 0.16. Table 7 also indicates "What constrains soya consumption"–Unreliable supply of soya, 23 respondents; Odd flavour, 22 respondents; Lack of preparation knowledge, 18 respondents; Difficult to prepare, 14 respondents.

Interpretation of the evidence–Three important points can be gleaned from the information provided by the extension workers and the villagers: 1. Thousands of Sri Lankans are aware of the benefits of soya. For the average consumer, the most important consideration when purchasing food is taste, not nutrition. 2. Therefore, soya will most likely be consumed in a form that is already familiar to villagers. 3. It is significant that more instructors consumed TVP than all other types of soya products. Conclusion–The best method of making soya products available to consumers is to work towards greater commercial application of soya utilization technologies.

Training should, therefore, emphasize extension to entrepreneurs. Address: Sri Lanka.

5245. Goldbeck, Nikki; Goldbeck, David. 1987. The Goldbeck's guide to good food. New York, NY: New American Library. xi + 563 p. Illust. Index. 24 cm.
• ***Summary:*** The all-new version of their *Supermarket Handbook,* which originally sold 850,000 copies. Chapter 12 (p. 143-51), titled "Soyfoods: World Class Protein," discusses tofu, frozen tofu, tempeh, soy flour and grits, high-tech soy (soy concentrates and isolates), textured soy protein products. There is also considerable information on soyfoods in other chapters throughout the book: Soy flour (p. 79). Soy nuts (p. 159, 163). Soy milk (p. 184-85). Soy yogurt (p. 190-91, 195). Soy cheese (212, 217-18). Soy protein concentrates or isolates (p. 233, 451, 483, 527). Soy oil (p. 144, 264, 288, 292-93). Meatless burgers and soy sausages (p. 394). Soy ice cream (p. 452-53, 455). Soy sauce (510-11, 515). Miso (p. 511-12, 515). Worcestershire sauce (p. 512).

The section titled "Soy Yogurt" gives a nutritional analysis of cultured Soygurt, made by Cream of the Bean; per 8 oz. it contains 255 calories, 6.7 gm protein, 45.2 gm carbohydrates, 5.3 gm fat, no cholesterol, 20 mg sodium, and 7% of the US RDA for calcium. The text reads: "Those who must avoid milk will be interested in nondairy soy yogurt. A new arrival in natural food stores, this yogurt is made from soymilk and bacterial cultures. Gelatin is added to some brands to maintain the typical yogurt consistency. There is no need, however, for the quality to be compromised by the addition of high fructose corn syrup, isolated soy protein, salt, and several thickening agents, as has been done in at least one brand we have encountered."

The section titled "Soy Cheese" states: "Cheese based on soy milk has recently added a new category of cheese products to the market. In terms of calories, protein, and overall fat content soy cheese competes quite favorably with animal cheeses... It is both lactose- and cholesterol-free and the sodium content is about average for cheese. Note, however, that soy cheese is held together with vegetable

gums and will contain either the milk derivative calcium caseinate (in which case it is not dairy free) or isolated soy protein." Page 218 gives a nutritional analysis of Soya Kaas (soy cheese). Per 1 oz. it contains 78 calories, 6.7 gm protein, 5.6 gm fat, no cholesterol, and 168 mg sodium. Address: R.D. 1, Box 495, Woodstock, New York 12498 914-679-8561.

5246. Hasegawa, Kiyozo; Mukai, K.; Gotoh, M.; Honjo, S.; Matoba, T. 1987. Determination of the lysinoalanine content in commercial foods by gas chromatography-selected ion monitoring. *Agricultural and Biological Chemistry* 51(11):2889-94. Nov. [21 ref]

• ***Summary:*** Table 1 (p. 2892), titled "Lysinoalanine content in foods," includes values for various soybean products: The lysinoalanine (LAL) content (in mg per 16 gm of nitrogen) was measured by two methods: GC-SIM (gas chromatography–selected ion monitoring) and HPLC (high performance liquid chromatography). The two values for the soy products are: Soy milk A (0/0), soy milk B (6/14), soy milk C (6/18), wet soybean film (fresh / nama yuba) A (0/0), fresh yuba B (13/16), dry yuba (18/11), fried soybean curd (abura-age = tofu pouches) A (8/6), fried soybean curd B (9/trace).

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "soybean film" or the term "wet soybean film" to refer to yuba.

Of the samples analyzed, the lysinoalanine content was highest in pidan (fermented egg). Wheat flour-based products (Chinese noodles, pretzels and crackers) and milk products (condensed milk and lactic acid beverages) also contained a significant amount of LAL. Cow's milk, soy milk, soy protein isolate and meat products (ham and Hamburg steak) contained a low amount of LAL. Results confirmed that the low-level LAL formation was possible in foods cooked at home without any alkaline treatment.

Note: The three types of soymilk were purchased from retail stores in Nara, Japan. Address: Dep. of Food Science & Nutrition, Nara Women's Univ., Nara 630, Japan.

5247. Johnson, Fred. 1987. Aseptic potentials: A number of products aseptically packaged in other countries could offer sound Canadian opportunities. *Food in Canada* 46(10):24-25. Nov.

• ***Summary:*** Morinaga Nutritional Foods Inc. of Los Angeles, California, reports skyrocketing sales of its tofu products in Tetra Brik cartons. From October 1984 to September 1985 it sold 1.9 million packages. From October 1985 to September 1986, sales almost tripled. Aseptic packaging of soups, sauces, puddings, vegetable oils and dressings, soybean milk, and tofu is detailed. Address: Toronto.

5248. **Product Name:** Solait Creme d'Soy (Powdered Soy-Based Creamer).
Manufacturer's Name: Miller Farms Food Co.
Manufacturer's Address: 314 Main St., Cedar Falls, IA 50613. Phone: 319-277-8600.
Date of Introduction: 1987. November.
Ingredients: Premium soybeans, corn oil, rice syrup, sea salt.
Wt/Vol., Packaging, Price: 24 oz (680 gm).
How Stored: Shelf stable.
Nutrition: Per 1 oz. powder or 4 oz. liquid: Calories 220, protein 4 gm, carbohydrates 8 gm, fat 15 gm, sodium 70 mg, calcium 25 mg.
New Product–Documentation: Talk with Harry W. Miller, Jr. 1987. Oct. 21. Leaflet. 1987. "Solait. Powdered Soy Beverage." Product is not yet available. Label. 1987. Oct. 14.5 by 6.5 inches. Purple, green, red, yellow, and blue on white. Illustration of sun and rainbow above clouds. "No cholesterol. No lactose. No animal fat." New Product News. 1988. Dec. 9. A shelf-stable creamer.

Talk with Miller Farms. 1991. Dec. 3. Solait and Creme d'Soy are still on the market.

5249. *Plenty Bulletin* (*Summertown, Tennessee*). 1987. Belize nutrition education. 3(4):3. Nov.

• ***Summary:*** Over the summer Majeedah Rahman, project director, trained representatives from every district of the country in basic nutrition and techniques for preparing tasty, high-protein soyfoods, including tofu and soymilk.

5250. Protein Technologies International. 1987. PP-series proteins and beverages: Products designed to meet the needs of a changing market. St. Louis, Missouri. 8 p. + 5 inserts. Manufacturer's catalog.

• ***Summary:*** PP-series isolated soy proteins (PP660, PP670, and PP710) contain over 90% protein. They offer a high quality source of protein for beverage formulations. Major markets include: 1. Sports nutrition market. 2. Calorie-conscious market. Today an estimated 44.4 million Americans are on a diet; 62% are women. 3. Health-conscious market, concerned with saturated fat and cholesterol. 4. The mature market. Today 27 million Americans (16% of the population) are age 65 or older. That figure was 12.3 million in 1950 and is projected to be 35 million by the year 2000. Individuals in this market segment are more likely than the population as a whole to be adhering to a low fat, low cholesterol diet. They are also more likely to be among the 13 million Americans who are lactose intolerant.

Inserts give a formulation and nutritional analysis for Nutritional Weight Loss Beverage, Protein Supplement Beverage, Low Calorie Nutritional Shake, Weight Gain, and Adult Nutritional Beverage. Address: St. Louis, Missouri.

5251. **Product Name:** Tofreezi (New Name for Frozen

Buddha Soy Ice Cream) [Mocha Royalle, Berry Banana, Amaretto, Pineapple Coconut, Chocolate Mint, or Maple Walnut].
Manufacturer's Name: Sunrise Market Ltd.
Manufacturer's Address: 729 Powell St., Vancouver, BC, V6A 1H5, Canada.
Date of Introduction: 1987. November.
How Stored: Frozen.
New Product–Documentation: Talk with Michael Weiner. 1987. Dec. 16. Sunrise bought this line of soy ice creams in November 1987 from Ray Lipovsky of Metta Tofu Products Ltd. on Denman Island. Ray is now consulting for Sunrise.

5252. *Vegetarian Times.* 1987. Brother Ron's friendly foods. Nov. p. 42-44, 46, 48-50, 52. [1 ref]
• ***Summary:*** Brother Ron Pickarski, a Franciscan friar and a world class vegetarian chef, won bronze medals in both the 1980 and 1984 Culinary Olympics. Now he is testing recipes to enter in the 1988 Olympics, and writing his first cookbook titled "Brother Ron's Friendly Foods." Brother Ron is believed to be the only vegan who is also a certified executive chef, a title shared by 1,400 other American chefs. Most of his favorite recipes included in this article feature soyfoods: Alsatian onion pie (with soymilk and tofu). Primavera of vegetables (with tofu). Tofu bonne femme (with soymilk). Sweet & sour tempeh. Color photos show Brother Ron and several of his preparations.

5253. *Vitasoy Vitabrations.* 1987. The key to Vitasoy's success... Teamwork. 1(3):1. Fall.
• ***Summary:*** Gives brief biographies of each of the company's officers. A photo shows them all seated around a table (left to right): Grace Gose, Steve Snyder, Yvonne Lo, Hilton Tsui, Christine Chen. Address: 99 Park Lane, Brisbane, California 94005.

5254. *Vitasoy Vitabrations.* 1987. The Vitasoy broker/distributor network. 1(3):2. Fall.
• ***Summary:*** The brokers and distributors are divided into 9 regions. The name, address, and phone number of each is given. Address: 99 Park Lane, Brisbane, California 94005.

5255. *Whole Foods.* 1987. Sensational soyfoods. Nov. p. 62. [5 ref]
• ***Summary:*** This basic introduction is designed to be photocopied by natural food retailers for distribution to their customers.

5256. *Toyo Shinpo* (*Soyfoods News*). 1987. Seidai ni Pari de kenkô shokuhin ten. Oshu de nobiru tônyû [Successful health food exposition in Paris helps to introduce Europe to soymilk]. Dec. 1. p. 1. [Jap; eng+]
• ***Summary:*** Soymilk, tempeh, and tofu are becoming more popular in Europe thanks to a recent soyfoods exposition in Paris. There were soymilk desserts, vanilla and chocolate, and Cacoja's soymilk, Soja, received a lot of attention at the event.

5257. *Toyo Shinpo* (*Soyfoods News*). 1987. Ooshû demo tôfu buumu. Pari no kenkô shokuhin ten o mite [After a health foods exposition in Paris, will there be a tofu boom in Europe?]. Dec. 1. p. 5. [Jap; eng+]
• ***Summary:*** The expo was held in Paris from Nov. 7-9. Tofu and second generation tofu products were creating a lot of interest among people who came to the expo. Two French companies producing soymilk are Cacoja and Lima Foods. Their products are labelled Soja and Soya, respectively. Both companies plan to start marketing soymilk ice creams before summer, 1988. Lima Foods is making an effort to produce other soyfoods besides their soymilk such as soy hamburgers, desserts, salads, paté, and terine.

5258. UNI. 1987. Cheap soya is protein-rich. *Times of India* (*The*) (*Bombay*). Dec. 2. p. 19.
• ***Summary:*** For centuries soyabean has been used as an important source of protein in China and Japan. Many noted agronomists now agree that India, and other third world countries, can help to solve their food problems by taking up production of soyabeans in a big way.

Mr. Singhal, technical director of the American Soybean Association in New Delhi says that because of heavy population pressure, India cannot expect to get more than a small fraction of its total requirements from animal sources, such as fish, meat, eggs, or milk. He believes that the only answer is the soyabean, which is the best, least expensive source of proteins and fats, with a huge array of uses.

The soyabean, first domesticated in China about 3,000 years ago, "can be indigenously transformed into many protein-rich foods such as soya milk, soya paneer or 'tofu,' soya flour, soya snacks, soya dal analogues, soya meat analogues and soya sauce." Not to mention soy "ice cream."

5259. Fong, Tillie. 1987. National peace group [Beyond War] honors Colorado Peace Corps alums. *Rocky Mountain News* (*Denver, Colorado*). Dec. 7.
• ***Summary:*** Sue Spaulding, 38, of Denver, worked as a nutritionist in Honduras from 1975 to 1978. She helped mothers there to feed their children proper foods and convinced ten villages to grow soybeans as a protein supplement. "My greatest accomplishment was seeing a child drink soybean milk from a bottle instead of Coca-Cola." Since her return she has worked with the U.S. Dept. of Health and Human Services.

5260. Tsuchiya, Kanji. 1987. [Re: Lectures on soymilk in China]. Letter to William Shurtleff at Soyfoods Center, Dec. 17. 1 p. [Jap; eng+]
• ***Summary:*** Mr. Tsuchiya went to China at the invitation

of the Chinese government for 20 days to give lectures on soymilk production and technology at a convention held by the Chinese Food Industry Assoc. Forty people attended, and they were considered the top people in the field in China, but Mr. Tsuchiya felt that their knowledge of the subject was 20-30 years behind the times. Address: Kamiogi 3-1-1, Suginami-ku, Tokyo 167, Japan. Phone: 03-312-0775.

5261. Rose, Richard. 1987. The U.S. soyfoods industry and market: Where we are and where we're going (Interview). Conducted by William Shurtleff of Soyfoods Center, Dec. 29. 4 p. transcript.

• ***Summary:*** Major developments: The growth and marketing of Jofu, inability of soy yogurts to take hold, continued domestic growth in production of soymilk, decline of Tofutti, increase and proliferation of soy cheeses, increased legitimization of soyfoods in the mass market. The future: Growth in use of aseptic tofu like Morinaga's, increased use and recommendation of soyfoods in special diets, use of tofu in new products such as baked goods, Big Foods getting into soyfoods, more use of tofu in foodservice. Then discussion of what he would do if he was hired by a major American food company and given a $50 million budget and a research staff. Address: President, Rose International, P.O. Box 2687, Petaluma, California 94953-2687. Phone: 707-778-7721.

5262. *SoyaScan Notes.* 1987. Chronology of soybeans, soyfoods and natural foods in the United States 1987 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Jan. Westbrae moves the production of Malteds to California from Japan.

Jan. The Soy Plant, a tofu cooperative in Ann Arbor, Michigan, files for Chapter 7 bankruptcy. It is soon purchased by Bruce Rose of Rosewood Products, Inc.

Feb. *Soya Newsletter,* a 12-page, bimonthly publication costing $96/year, is launched by Soyatech of Bar Harbor, Maine. Publishers are Peter Golbitz and Sharyn Kingma, former owners of Island Tofu Works. The publication quickly proves itself to be the world's best English-language publication on soyfoods. By October, paid circulation tops 900 in 20 countries.

Feb. American Soybean Association petitions the U.S. Food and Drug Administration to require food manufacturers to be more specific in labeling food products that contain highly saturated imported tropical fats (palm, palm kernel, and coconut oils). The petition includes results of a supermarket survey of 1,555 foods containing vegetable oils. 43% of the labels list multiple choice or generic vegetable oil ingredients which hides from the consumer the fact that the products contain highly saturated tropical fats. Imported tropical fats displace the equivalent of oil derived from 171 million bushels of soybeans. Herewith begin the great "Fat Wars" of 1987-88.

Feb. Lite Lite Tofutti introduced by Tofutti Brands, Inc. This non-dairy frozen dessert contains only 90 calories per 4-ounce serving. It soon becomes a big hit.

Feb. Ah Soy in Tetra Brik cartons launched by great Eastern Sun.

Feb. Options trading on futures for soybean oil and meal opened on Chicago Board of Trade.

March 4. The Federal Grain Inspection Service rules that soybean oil may be used to control grain dust in elevators. This voids the Barnham patent and opens up a large potential new market for soy oil, which is in surplus.

March. Great Shake soymilk launched by Noble Soya in India. Sold in Tetra Brik cartons in mango, strawberry, and chocolate favors, it is the country's most heavily promoted soymilk to date, but gets off to a slow start.

March 16-18. First International Congress on Vegetarian Nutrition held in Washington, D.C., sponsored by eight Seventh-day Adventist universities and health care organizations, and three SDA food companies, plus S.E. Rykoff/Sexton.

March. *Vitasoy Vitabrations,* a newsletter, starts being published by Vitasoy USA.

March 31. Hong Kong Soya Bean Products Co. Ltd., makers of Vitasoy, move into a large new plant (370,000 square feet costing $20 million) in the New Territories. Sales of Vitasoy in 1987 is projected to be 126 million packs.

April 1. Tempehworks, Inc., America's first major tempeh producer from Greenfield, Massachusetts, changes its name to Lightlife Foods, Inc. In recent years, Tofu Pups have become the company's bestselling product.

April. Stir Fruity, a non-dairy, nonfermented, soy-based yogurt, is introduced by Azumaya Inc. of San Francisco. Shelf life problems cause the product to be withdrawn, causing Azumaya to set aside plans for an $800,000 radio ad campaign in northern California. The product is soon back on the market, but in limited distribution and with little promotion. Yet during this year, Azumaya probably passed House Foods & Yamauchi to become America's largest tofu producer.

April. *Healthy Times,* a bimonthly newsletter, starts being published by Morinaga Nutritional Foods of Los Angeles, makers of Mori-Nu long-life silken tofu, for members of the Mori-Nu Health for Life Club. By Aug. 1988 circulation is up to 10,000; A subscription costs $3 a year.

May 26. Tofutti Brands Inc. and Coca-Cola launch Cheater's Delite, a major joint promotion featuring a 90-calorie scoop of Lite Lite Tofutti and a 1-calorie glass of Diet Coke, special labeling and couponing on 3 million bottles of Diet Coke, 5 weeks of heavy advertising in New York, New Jersey and Connecticut, and a Caribbean cruise sweepstakes.

June. Dr. Jane Gleason of the University of Illinois goes to Sri Lanka to spend a year studying its soybean and soyfoods industries.

July 1. Ralston Purina Co. of St. Louis, Missouri, establishes Protein Technologies International as a wholly-owned subsidiary to focus on sales of soy protein for food uses. The company's sales of soy protein products were $139.8 million in 1986.

July. Victor Food Products in Toronto, Canada's largest tofu manufacturer, declares bankruptcy. The main cause: Overexpansion, trying to grow too fast.

Aug. The Barat Bar, an upscale chocolate bar containing spray-dried tofu instead of dairy products, is launched by Legume Inc. and extensively promoted. It soon becomes a big hit.

Aug. Brightsong Foods of Petaluma, California, ceases operations. Richard and Sharon Rose resign to found a new company, Rose International, which will be a tofu development, marketing, and consulting company, rather than a manufacturer.

Sept. 24. San-J International of Richmond, Virginia, dedicates the first tamari brewery ever built outside of Japan. The 40,000 square foot facility with a capacity of 1 million gallons a year is located in Varina, Virginia. San-J tamari was first imported to America in 1979.

Sept. 28. Plenty Soya Centre, run by Plenty Canada, opens in Kandy, Sri Lanka. They will sell as many soyfood products as possible at a reasonable cost.

Oct. 6. Anti-cholesterol campaign starts. The U.S. Federal Government and more than 20 health organizations issue the nation's first detailed guidelines for identifying and treating people whose blood cholesterol levels are more than 200 mg per deciliter. The guidelines signal the beginning of a nationwide health promotion campaign designed to reduce blood cholesterol to safer levels. This signals exciting new opportunities to market cholesterol-free soy-based alternatives to meat.

Nov. *Kikkoman Taste,* a stylish full-color "quarterly intercultural forum for the exchange of ideas on food," published by Kikkoman Corp. in Tokyo. Its focus is on shoyu in international cuisine.

* During this year of the great vegetable oil wars, the ASA launched an all-out no-holds-barred campaign to educate Americans of the health dangers of tropical fats (palm and coconut oil; which succeeded) and to require such products to be clearly labeled (which failed).

* This year the world's population passed 5 billion. It is increasing by a record 80 million people a year, so that every 3 years the equivalent of one United States' full of people is added to the population of planet Earth. Continued.

5263. *SoyaScan Notes.* 1987. Chronology of soybeans, soyfoods and natural foods in the United States 1987 (Continued) (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued. 1987 New Trends:

Rapid Rise in the Number of New Products in America. During 1987 more than 735 new soyfood products were launched worldwide, including at least 380 in the USA. Many of the most successful products are all-American and fun to eat: Ice creams, burgers, hot dogs, salad dressings, chocolate bars. This is part of the larger trend of the Americanization of soyfoods. Most of the growth has been in the traditional low-tech sector, including tofu, tempeh, soymilk, miso, soy sauce, soynuts, plus modern dairylike products such as soy ice creams, yogurts, and cheeses, all developed by the soyfoods movement. A growing percentage of these products are second generation products, which could also be called convenience prepared or value added products.

Growth of Consumer Awareness of Soyfoods in America. Ten years ago, perhaps 1% of Americans had heard of tofu, soymilk, tempeh, or miso. Today, probably 50% of Americans are aware of these foods. In 1987, for example, the Soyfoods Assoc. clipping service received a total of 1,587 clips on soyfoods. That is 132 articles a month, way up from 5 years ago.

Increasingly Positive Image of Soyfoods in the Western World. Generally speaking, from about 1945 through the 1960s, soy had a negative image in foods. The became neutral during the early 1970s. During the late 1970s and early 1980s, with the rise of the soyfoods movement and the growing sophistication of modern soy protein products (isolates, concentrates) soyfoods gradually developed a positive image. The Gallup Poll of 1977 was an early indicator of this. By the mid-1980s tofu had become a "hot ingredient." Companies deliberately added it to a product (or at least to the label) to help sell the product. Yet the Roper poll of late 1986, which found tofu to be America's most hated food, may indicate a tarnishing of this image.

Growing Interest of Larger Food Companies in Soyfoods. One indication of this trend is that *Soya Newsletter,* targeted at these companies and selling for $96/year, has over 900 paid subscribers.

Continued Decline of Red Meat. This year consumption of poultry in America passed that of beef for the first time in history. Beef had been king for 3 decades. Before that, pork was king. A pound of chicken has one-fourth as much saturated fat as beef and takes much less grain, water, and energy to produce.

INTSOY Becomes a Major Force Worldwide Developing and Promoting Soyfoods. Working with other international (IITA, AVRDC) and national soybean programs, and doing pioneering research on fresh green soybeans, extrusion cooking, and use of expellers for small-scale oil expression etc., INTSOY has become as effective in its new role (since 1985) of focusing on soybean utilization as it was before that when its major emphasis was on variety development and production.

The Competitive Position of the U.S. Soybean Industry is Slipping. Farmers in Brazil and Argentina can now

produce soybeans at much lower cost than their American counterparts. This plus extensive subsidies have led to a dramatic drop in U.S. exports of soybeans and products since their peak in 1981. A major part of the problem is linked to the Latin American debt crisis, which surfaced in the early 1980s and forced debtor nations to export at all costs. This debt crisis (especially by Brazil, Argentina, Mexico, and Venezuela) is now being called the most serious problem facing U.S. agriculture.

Soybean Research Increasingly Shifts from Production to Utilization. Traditionally research focused on increasing production and yields. New efforts are designed to develop new markets instead of larger surpluses.

Big Increase in Breeding Soybeans for Food Uses. This is part of a larger trend toward value added products and toward finding new market niches for American soybeans, especially for foods in Japan.

Revival of Interest in Industrial Uses of Soybeans. The main interest is in new ways to use soy oil, of which there is a large surplus that depresses soybean prices. Promising applications include soy oil for printing inks, dust suppressants, and diesel fuels. The largest interest in industrial uses occurred during 1932-42, when the Chemurgic movement and Henry Ford sought to find industrial uses for all farm crops. Hence, there is a rebirth of interest in Henry Ford's work with soy.

Major Growth of Interest in Soybeans and Soyfoods in Africa. Excellent work by IITA in Nigeria and various national soybean programs (as in Egypt, Zimbabwe, and Zambia) have allowed this relatively new crop to reach the takeoff stage. Decreasing per capita food supplies and growing understanding of the nutritional benefits of soyfoods are sparking new interest.

Continued Rise of Soybean Production in Europe. The largest producer, Italy, which produced almost no soybeans as recently as 1983, harvested a record 1.3 million tons in 1987. France is second largest. All production is heavily subsidized.

Omega-3 Fatty Acids Hit the Headlines. Soy oil is a rich vegetable source of these fatty acids which are thought to have a beneficial effect on the cardiovascular system.

Nutritional Spotlight Increasingly Shifted onto Fats, Away from Proteins. During the past few years fats (and especially cholesterol and saturated fats) have come to be seen as the leading problem nutrient, the bad guy, in the American diet. There is a new respect for complex carbohydrates (especially whole grains), which used to be called "starches" and were considered fattening.

New, More Complex View of Oils and Fats Becomes Popular. High cholesterol levels are considered more dangerous than ever, but equally important are the various cholesterol-carrying proteins in the blood. Two kinds (low and very low density lipoproteins) promote cholesterol deposits in the blood, while high density lipoproteins (HDLs) cleanse the blood vessels of fatty deposits. Moreover, saturated fats are considered at least as much of a problem as cholesterol.

So-Called Antinutritional Factors in Soybeans are Increasingly Seen as Having Benefits as Well. Trypsin has been shown to help prevent cancer. Saponins help reduce serum cholesterol. Isoflavones have antioxidant activity that may suppress breast cancer. This indicates that we may need a new term to categorize these substances that offer both benefits and disadvantages.

The Link Between Diet and Health Continues to Grow Stronger, among both scientists and the general public.

Interest in Exercise and Health Still Strong. Several years ago some experts saw this trend waning, but it now seems to be rebounding. For example, there were 21,244 finishers in the New York Marathon (including 3,689 women). Compare this with 12,512 finishers (1,621 women) in 1980 and 55 finishers (no women) in 1970.

Books on Tofu. Since 1974, at least 60 books on tofu (having the term "tofu" in the title) have been published in North America and Europe. Peak publication years were 1981 and 1982. By language, 46 of the books were in English, 7 in French, 4 in German, and 1 each in Italian, Portuguese, and Swedish.

Inactivity of the Soyfoods Association of America now becoming a major constraint on growth of soyfoods in the USA, at a time when interest is at an all-time high. Leadership is needed.

Rise of Canola (Rapeseed) Oil. It looks as if soy oil may have another serious competitor (in addition to palm oil) in future years. Canola contains less saturated fat than any other popular vegetable oil. Only 6%, versus 9% for safflower oil and 15% for soy oil. Lard has 41%, palm oil 51%, and butterfat 66%.

5264. Annunziato, M.E.; Mahoney, R.R. 1987. Partial purification and characterization of alpha-galactosidase from *Aspergillus oryzae*. *J. of Food Biochemistry* 11(4):263-77. Dec. [26 ref]

• ***Summary:*** A crude extract of alpha-galactosidase was obtained by fermenting *Aspergillus oryzae* on wheat bran. It was purified 35 times by ethanol precipitation, gel filtration, and ion-exchange chromatography. The final preparation was free of protease activity but contained invertase activity. The pH and temperature optima were 4.0 and 60ºC respectively. Using this enzyme, more than 80% of the oligosaccharides in soymilk were hydrolyzed after 3 hours at 50ºC using 0.113 PNPG (p-nitrophenyl alpha-D-galactopyranoside) units per milliliter of soymilk. Address: Dep. of Food Science & Nutrition, Massachusetts Agric. Exp. Station, Univ. of Massachusetts, Amherst, MA 01003.

5265. *Dairy Foods.* 1987. Something new from the soybean: Tofu maker [Azumaya] hopes Stir Fruity will be the 'yogurt

of the future.' 88(13):27. Dec.
• ***Summary:*** Stir Fruity, a "tofu-based yogurt-like product," is made from a soymilk base in a proprietary process that Azumaya spent 4 years and $500,000 perfecting, explained marketing director Jill Mizono. Azumaya introduced Stir Fruity in February 1987 and quickly gained distribution in Safeway and Lucky supermarkets in northern California. Soon after introduction, however, shelflife problems forced Azumaya to pull the product from both chains. The problem was traced to Azumaya's recently installed clean room, and fixed. The product now is back to a 40-day shelflife. Production was never completely discontinued.

Azumaya is now selling Stir Fruity to foodservice operators in and outside of California and test marketing it at grocery stores throughout the USA. Customers give Stir Fruity high marks for its custard-like texture and non-beany taste; 75% of San Francisco area consumers who sampled Stir Fruity said they would buy it. Most soy-based yogurts, except Stir Fruity and Jofu, are targeted to the health-food market. Photos show Stir Fruity in packages (cups) and a parfait glass, surrounded by fruits. Address: Chicago, Illinois.

5266. deMan, L.; deMan, J.M.; Buzzell, R.I. 1987. Composition and properties of soymilk and tofu made from Ontario light hilum soybeans. *Canadian Institute of Food Science and Technology Journal* 20(5):363-67. Dec. [16 ref. Eng; fre]
• ***Summary:*** Soymilks made from 17 soybean cultivars grown in Ontario were analyzed for protein, oil, fiber, sugars and mineral content. Bean curd (tofu) was made from the soymilk using calcium sulfate as a coagulant. Hardness of the beans, soaked beans and tofu was measured by use of an Instron Universal Testing machine. All soybeans produced tofu of good texture. Address: 1. DeMan Food Technology Services Inc., Guelph, ONT, N1H 6B5, Canada; 2. Dep. of Food Science, Univ. of Guelph, Guelph, ONT, N1G 2W1; 3. Agriculture Canada, Research Station, Harrow, ONT, N0R 1G0, Canada.

5267. Golbitz, Peter. 1987. 1987 new product count: At least 217 new soyfood products for retail sale. *Soya Newsletter* (*Bar Harbor, Maine*). Nov/Dec. p. 3.
• ***Summary:*** Of the 217 new products, the leaders in the 8 product categories were Nondairy Frozen Desserts (50), Entrees (44), Beverages (35), Snacks/Desserts (35), Cheese Alternatives (19), Frozen Entrees (17), and Condiments (16). The leaders among the 8 primary soy ingredients were tofu (133), soymilk (32), textured soy protein (19), isolated soy protein (12), soynuts (10), tempeh (6) and miso (1). Tofu was the only primary soy ingredient used to make at least one product in all categories. A complete listing of these products broken down by primary soy ingredient and by category, and which also lists flavors, company name, city, and state, is available from Soya Newsletter for $25 (or $35 in Canada). Address: Soyatech, Bar Harbor, Maine.

5268. Hill, D. 1987. Australian College of Paediatrics policy statement on soy protein formula (letter). *Australian Paediatric Journal* 23(6):367-68. Dec. [4 ref]
• ***Summary:*** Contrary to the general impression conveyed by the Policy Statement, there is good evidence that casein hydrolysate preparations are also antigenic and allergenic. "Indeed data quoted from this laboratory by the Committee showed that 20% of the children with cow's milk allergy who were tried on casein hydrolysate preparations were intolerant to them, compared with nearly 50% of the children tried on soy formula with cow's milk allergy who became intolerant of the soy products." Address: Head, Allergy-Clinical Immunology Unit, Royal Children's Hospital, Parkville, Victoria 3052, Australia.

5269. Miskovsky, Anna; Stone, Martha B. 1987. Effects of processing on curd yield and nutrient composition of rapid hydration hydrothermal cooking and traditionally processed soymilk and soybean curd. *J. of Food Science* 52(6):1542-44. Nov/Dec. [20 ref]
• ***Summary:*** Soymilk processed by a modified "rapid hydration hydrothermal cooking" (RHHTC) method (developed by J.J. Hung, 1984) had higher thiamin and protein concentration than traditionally extracted soymilk. Traditional tofu had higher protein and fat and lower carbohydrate and ash concentration than RHHTC curd. Variation in amino acid composition occurred in soymilk and tofu varieties. RHHTC tofu had lower yields than traditional tofu. Address: 1. Henningsen Foods Inc., Omaha, Nebraska 68144; 2. Dep. of Foods & Nutrition, Kansas State Univ., Manhattan, Kansas 66506.

5270. Ralston Purina Company. 1987. Annual report to shareholders. St. Louis, Missouri. 32 p. 28 cm.
• ***Summary:*** Ralston Purina Company, founded in 1894, is the world's largest producer of dry dog and soft-moist cat foods. The company is the largest wholesale baker of fresh bakery products in the U.S. Sales for the year ended Sept. 30, 1987, totaled $5,868,000,000 compared to 1986 sales of $5,514,600,000. Net earnings for the year were $523,100,000 compared to 1986 earnings of $388,700,000. The sale of Purina Mills, Inc. in October 1986 resulting in an after-tax gain of $209.3 million. At Continental Baking Company, both bread and snack cake volume improved in fiscal 1987. Protein Technologies International achieved record volume sales in the U.S. and in most of its foreign markets.

Paul H. Hatfield, Corporate Vice President [Ralston Purina] and President, Protein Technologies International (PTI), reports that PTI achieved record sales and earnings in fiscal 1987 on solid volume gains in both U.S. and most foreign markets. Protein Technologies continued its

emphasis on the testing and development of new isolated soy protein product applications during the year, focusing primarily on new products for key food industry segments. The new Market Development Unit located in Memphis was fully utilized during the year. Capitalizing on the increased interest in reduced-calorie and high fiber products, Fibrim's use in bakery goods and packaged foods is expanding. One successful example of Fibrim's use is by Ralston's Continental Baking Company in its new Wonder Light reduced-calorie bread.

Divisions of the company include: Grocery Products, Branded Foods, Continental Baking Company, Eveready Battery Company, and Protein Technologies International. PTI is further divided into Dietary Protein Food Ingredients (PP-Series Isolated Soy Proteins, Dari-Pro Milk Replacers), Dietary Fiber Food Ingredients (Fibrim Soy Fiber), Dairy Food Systems Products (Specialty Animal Ingredients), Paper and Paperboard Coating Ingredients (Pro-Cote and Sp-Series Soy Polymers).

In October 1986, the company sold its domestic agricultural products business (Purina Mills). In Jan. 1985, the company sold its low-margin soybean processing operations. In October 1984, the company acquired Continental Baking Company for $475.0 million in cash. Sales of soy protein products in 1987 were $157.1 million, in 1986, $139.8 million, and in 1985, $126.4 million. Sales of soybean meal and oil in 1986 were $2.4 million and in 1985, $101.1 million.

Incorporation occurred on January 8, 1894 in Missouri. The current number of shareholders is 33,458, the number of employees in the U.S. is 37,366, and the number outside the U.S. is 20,932. Address: St. Louis, Missouri.

5271. *SoyaScan Notes.* 1987. New Trend: Growing legitimate concern over contaminated cow's milk and chicken. Salmonella and Listeria bacteria have caused food poisoning and many deaths (Overview). Dec. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** A database search conducted by Richard Rose on the contamination of milk and milk products reveals how widespread this problem is, and suggests how it could potentially have a major effect on the storage of fresh and pasteurized tofu. The following abbreviated bibliographies, first for Salmonella then for Listeria, lists title or title paraphrase, serial name, date, and pages for major publications

Salmonellosis caused by Salmonella bacteria. Science. 1984. Aug. 24. p. 833.

Animal to man transmission of antimicrobial-resistant Salmonella: investigations of U.S. outbreaks, 1971-1983. Time. 1984. Sept. 24. p. 77.

Linking drugs to the dinner table. Farm animals fed antibiotics may effect human meat consumers. Supermarket News. 1985. April 22. p. 12.

First death is tied directly to milk case (Salmonella in Jewel Food Stores dairy operation). American Medical News. 1985. June 7.

Families file suit over Salmonella outbreak; class action suit against Jewel Food Stores (Hillfarm Dairy) milk a possibility. Food Processing. 1985. June. p. 22.

The salmonella puzzle; largest food processing episode in U.S. history attributed to milk. Includes related articles on the salmonella bacterium and a proposed solution to contamination. FDA Consumer. 1986. Feb. p. 18.

Of microbes and milk; Probing America's worst salmonella outbreak. Science. 1986. Nov. 21. p. 964.

Drug resistant Salmonella in the United States: an epidemiologic perspective. U.S. News & World Report. 1987. March 9. p. 60.

Serving up Salmonella for dinner (increase of food poisoning). Wall Street Journal. 1987. July 20. p. 23 (West).

Chicken growers face leaner earnings as salmonella publicity takes its toll. Wall Street Journal. 1987. Sept. 17. p. 33 (West).

Stubborn bug: bid to rid chicken of salmonella proves daunting. FDA Consumer. 1987. Nov. p. 2.

Raw milk banned (for transmitting disease-causing bacteria such as Salmonella).

Listeriosis caused by the *Listeria monocytogenes* bacterium. Newsweek. 1985. June 24. p. 37.

California: a case of deadly cheese. Listeria contamination. Food Processing. 1985. Aug. p. 2. Food poisoning outbreak kills over 40 persons from listeriosis; listeria cases spotlight new hazards in dairy, deli and other refrigerated foods.

5272. **Product Name:** Fresh Soymilk [Natural, and Sweetened].
Manufacturer's Name: St. Ivel.
Manufacturer's Address: Britain.
Date of Introduction: 1987. December.
New Product–Documentation: *Journal of the American Oil Chemists' Society.* 1987. Dec. p. 1602.

5273. **Product Name:** [Soymilk with Okara Mixed In, Tofu with Okara Mixed In].
Foreign Name: Okara o mazete tônyû, Maiyuki.
Manufacturer's Name: World Foods. Affiliate of Chujitsu-ya.
Manufacturer's Address: Kabuki-cho 2-1-11, Shinjuku-ku, Tokyo, Japan. Phone: 03-209-2121.
Date of Introduction: 1987. December.
New Product–Documentation: Toyo Shinpo (Soyfoods News). Nov. 1. p. 1. Okara o mazeta tonyu [Soymilk with okara mixed in. World Foods, the affiliate company of Chujitsuya, received a patent for their production method in making health foods from raw materials]. Mr. Kichitomo Tagaki is president of Chujitsuya, and Mr. Hatsuo Suki is

president of World Foods, Hamura-cho, Tokyo, Japan. The patent is called "Shokubutsu seni shoka tonyu no seizo-ho" (Vegetable fiber enriched soymilk production method). The process works by creating high pressure (400-1000 kg per square cm) to break the soybeans into 50 micron diameter granules. They boil the soybean granules (karyu) to make soymilk. Then 100,000 volts of electricity is used force the protein in the soybeans to coagulate and to whiten the soymilk. Using this process, the manufacturer can get a milder tasting and more stable soymilk. This company already has a product, Maiyuki, which has okara in the tofu.

5274. **Product Name:** [IWA? Soy Flour (Plain, or Sweetened)].
Manufacturer's Name: Alpro Alimentos Proteinicos, S.A.
Manufacturer's Address: 16 de Septiembre #33 San Fco., Culhuacan, Coyoacan, D.F. 0420. Phone: 544-96-71.
Date of Introduction: 1987.
Ingredients: Azucar, harina de soya, cocoa.
How Stored: Shelf stable.
New Product–Documentation: Label transcriptions from Nicole Black. 198. Jan. 14. She found the products in a store in San Miguel de Allende, Guanajuato, Mexico. Label reads "Mixture of sugar, soy flour, and cocoa with flavor of chocolate."

5275. **Product Name:** [Sunsoy Soymilk Desserts].
Manufacturer's Name: Alpro N.V.
Manufacturer's Address: Zuidkaai 33, B-8700 Izegem, Belgium.
Date of Introduction: 1987.
Wt/Vol., Packaging, Price: 500 cc or 1000 cc Tetra Brik Aseptic cartons.
How Stored: Shelf stable.
New Product–Documentation: Soya Bluebook. 1987. p. 98.

5276. **Product Name:** Soy Milk.
Manufacturer's Name: Associated Dairies International Ltd. Affiliate of The Dairy Farm Co., Ltd., Hong Kong.
Manufacturer's Address: 223 Wai Yip St., Kwun Tong, Kowloon, Hong Kong.
Date of Introduction: 1987.
New Product–Documentation: Soya Bluebook. 1987. p. 90.

5277. **Product Name:** Sweetened Soy Jelly Dessert.
Manufacturer's Name: Associated Dairies International Ltd. Affiliate of The Dairy Farm Co., Ltd., Hong Kong.
Manufacturer's Address: 223 Wai Yip St., Kwun Tong, Kowloon, Hong Kong.
Date of Introduction: 1987.
New Product–Documentation: Soya Bluebook. 1987. p. 100.

5278. **Product Name:** [Chocolate Soya Milk].
Manufacturer's Name: Biotrophes Ltd. (Renamed Biotrek S.A. by Dec. 1987).
Manufacturer's Address: 45 Alopekis St., Athens 10676, Greece. Phone: 301-724-9525.
Date of Introduction: 1987.
New Product–Documentation: Soya Bluebook. 1987. p. 90. Letter from John Lewis. 1987. Dec. He calls this chocolate milk with soya protein isolate. He began producing soyfoods in 1987. Soya Bluebook. 1991. p. 68. Biotrek S.A. company is now located at: 52 Pondou St., Athens 11527. Phone: 30/1/770-8625. John Lewis is president.

5279. **Product Name:** Tofu Carob Delite, and Tofu Chocolate Delite (Blended Puddings).
Manufacturer's Name: Bountiful Bean Plant.
Manufacturer's Address: 2049 1/2 Atwood Ave., Madison, WI 53704. Phone: 608-241-8700.
Date of Introduction: 1987.
Ingredients: Tofu, honey, soymilk, carob, water, vanilla, oil, lecithin, agar.
Wt/Vol., Packaging, Price: 5 oz.
How Stored: Refrigerated.
New Product–Documentation: Label. 1985. 2.75 by 1.5 inches. Self adhesive. Blue on white. "Low calorie. Non-Dairy."

Letter from Deborah Bachmann. 1991. Dec. 17. This product, a blended pudding, was made by Bountiful Bean and introduced in about 1986-87.

5280. Carter, Thomas E., Jr. 1987. Genetic alteration of seed size: Breeding strategies and market potential. In: Dolores Wilkinson, ed. 1987. Proceedings of the 17th Soybean Seed Research Conference 1987. See p. 33-45. [21 ref]
• ***Summary:*** Contents: Introduction. Soyfood market size. Soyfood market trends–short and long range. Premiums and acreage, the breeder's perspective. Breeding special varieties. Future breeding goals. Conclusions.

"The expanding soyfood markets in Japan and the U.S. have generated considerable interest among American soybean producers in recent years. More than 60% of the soybeans used in these markets are grown in the U.S."

"In survey results, 39 of 43 public breeders and 44 or 67 private breeders responded to questions regarding the breeding of specialty varieties. Twenty-four breeders reported that they are maintaining 36 separate projects for large- and small-seeded varieties (Table 3). Public and private breeders are represented equally in this effort with the majority of these projects underway in the Midwest. Eight public and eight private programs are developing varieties specifically for tofu while 13 public and 7 private programs are developing varieties for natto. One public breeder was interested in soy milk varieties but considered varieties for

tofu and soymilk as the same. One private and two public breeders are interested in large-seeded garden types for the fresh market in urban areas with large oriental populations. One public and one private breeder expressed interest in small-seeded varieties for sprouts. Soybean sprouts are primarily a Korean soyfood; and, Koreans buy U.S. soybeans for making sprouts in some years." Address: Research Geneticist, USDA-ARS, North Carolina State Univ., Raleigh, NC. Phone: 919-737-2734.

5281. **Product Name:** Western Isles Soy Milk.
Manufacturer's Name: Community Foods Ltd. (Importer). Made in Japan.
Manufacturer's Address: Micross, Brent Terrace, London NW2 1LT, England. Phone: 01-450-9411.
Date of Introduction: 1987.
Wt/Vol., Packaging, Price: 500 ml aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Simon Bailey. 1988. Natural Choice. Aug. 15. "Soya-Based Products." A photo shows the Label. Front panel contains a stylized illustration of a soybean plant. CSP form filled out by Simon Bailey. 1988. Sept. 28. Present label 20.11.87. Formerly sold under the Edensoy label.

5282. **Product Name:** [Therbal Soya (Powdered)].
Foreign Name: Therbal Soya (en polvo).
Manufacturer's Name: Empacadora Therbal.
Manufacturer's Address: Sona #70., Mexico. Phone: 530-65-89.
Date of Introduction: 1987.
Ingredients: Sugar, soy flour.
How Stored: Shelf stable.
New Product–Documentation: Label transcriptions from Nicole Black. 198. Jan. 14. She found the products in a store in San Miguel de Allende, Guanajuato, Mexico. Label reads "For preparing a drink with chocolate flavor."

5283. **Product Name:** [Soitex-E, Soitex-P, and Soitex IN60 {Soy Flour for Bakery and Meat Industries}; PTS {Textured Soy Flour}; Soitex-2095 and Soitex-2145 {Full-Fat Soy Flour for Replacing Milk and Eggs}].
Manufacturer's Name: Energe S.A. Affiliate of Nutrimental S.A.
Manufacturer's Address: BR 280, Km. 58, Guaramirim, Santa Catarina, 89258, Brazil.
Date of Introduction: 1987.
New Product–Documentation: Soya Bluebook. 1987. p. 75.

5284. **Product Name:** Tofu (Japanese Style), Firm Tofu (Chinese-Style), Atsu-Agé (Tofu Cutlets), Agé (Tofu Puffs), Soymilk, Tofu Pudding (Sweet).
Manufacturer's Name: Fuji Fresh Tofu Co.
Manufacturer's Address: 248 Jackson St., San Jose, CA 95112. Phone: 408-297-1666.
Date of Introduction: 1987.
How Stored: Refrigerated.
New Product–Documentation: Talk with Linda Lam, owner of Fuji Fresh Tofu. 1994. April 8. She purchased this company in about Oct. 1987. From the outset, she and her husband made the products shown above.

5285. **Product Name:** [Biodelis Plus {Soy Beverage}].
Foreign Name: Biodelis Plus.
Manufacturer's Name: Galactina Ltd.
Manufacturer's Address: Birkenwej 1-6, CH-3123 Belp, Switzerland.
Date of Introduction: 1987.
Ingredients: Soymilk (from whole soybeans), plus soy protein isolate.
New Product–Documentation: Letter from Peter Speck. 1988. March 11. "In 1983 we developed, in addition to the products for enteral tube feeding, flavored drinks, called Vita Drink, with a very similar composition. In 1987 this line was completed with a product line enriched with isolated soy protein: Biodelis Plus and Vita Drink Plus. In France our products are sold under the brand names Naga Sonda, Biodelis, and Biodelis Plus. The corresponding products in Switzerland are Naga Sonda, Vita Drink, and Vita Drink Plus. According to legal requirements, the vitamin and mineral composition of the French products differ slightly from those of the Swiss products."

5286. **Product Name:** [Vita Drink Plus {Soy Beverage}].
Foreign Name: Vita Drink Plus.
Manufacturer's Name: Galactina Ltd.
Manufacturer's Address: Birkenwej 1-6, CH-3123 Belp, Switzerland.
Date of Introduction: 1987.
New Product–Documentation: Letter from Peter Speck. 1988. March 11. "In 1983 we developed, in addition to the products for enteral tube feeding, flavored drinks, called Vita Drink, with a very similar composition. In 1987 this line was completed with a product line enriched with isolated soy protein: Biodelis Plus and Vita Drink Plus. In France our products are sold under the brand names Naga Sonda, Biodelis, and Biodelis Plus. The corresponding products in Switzerland are Naga Sonda, Vita Drink, and Vita Drink Plus. According to legal requirements, the vitamin and mineral composition of the French products differ slightly from those of the Swiss products."

5287. **Product Name:** Hinoichi Soy Drink [Natural (Dairylike), Mocha, or Chocolate].
Manufacturer's Name: House Foods & Yamauchi, Inc.
Manufacturer's Address: 526 Stanford Ave., Los Angeles, CA 90013. Phone: 213-624-3615.

Date of Introduction: 1987.
Ingredients: Water, whole soybeans, barley malt, pearl barley, kombu (seaweed), sea salt.
Wt/Vol., Packaging, Price: 6 fluid oz (180 ml) foil retort pouch.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 6 fl. oz. Natural: Calories 120, protein 6 gm, carbohydrates 10 gm, fat 6 gm, sodium 100 mg, cholesterol 0. Percentages of U.S. RDA: Protein 10%, calcium 6%, iron 6%.
New Product–Documentation: Label. 1988. 4 inches by 6.25 inches. Foil pouch. Natural is blue, red, green, and white. Mocha and chocolate are brown, red, green, and white. Front panel shows a glass full of the product with a straw in it set in a bed of ice with a few green leaves behind.

5288. **Product Name:** [Soymilk].
Manufacturer's Name: Jin Jiang.
Manufacturer's Address: China.
Date of Introduction: 1987.
New Product–Documentation: Letter from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30. Alfa-Laval sold a complete soymilk plant to Jin Jiang in China. It had a capacity of 2,500 liters/hour and began operation in 1987.

Letter from American Soybean Assoc., China. 1990. Sept. 13. Jin Jiang Foodstuff Factory has the third largest soymilk production capacity in China, 2,000 liters/hour.

5289. **Product Name:** [Emul {Soymilk Ice Cream} (Vanilla, Black currant [Cassis], Pineapple, Orange, Coffee, Chocolate, Kiwi Fruit, Green Tea {Matcha}, Apple, Rum Raisin, Passion Fruit, Coconut)].
Foreign Name: Emuuru.
Manufacturer's Name: K. Biological Science Laboratory Co., Ltd. (KBL).
Manufacturer's Address: 14 Sanno-cho, Shogo-in, Sakyo-ku, Kyoto, Japan. Phone: 075-751-0138.
Date of Introduction: 1987.
Ingredients: Incl. soymilk, safflower oil.
How Stored: Frozen.
Nutrition: Moisture 66.7%, non-fibrous carbohydrate 23.0%, fat 7.0%, protein 3.0%, Ash 0.3%. 160 calories per 100 gm.
New Product–Documentation: Brochure. 1987. EMUL rises from the Land of the Rising Sun. 4 p. Full color. "Not an Ice cream, Not a Sherbet. From Kyoto, the Ancient Capital of Japan, The Land of the Rising Sun, EMUL, A healthy dessert made from soya, attracts worldwide attention." The product is made using Takai soymilk equipment. This company also made Daizuetto soy ice cream announced in July 1985.

Soyfoods (ESFA). 1987. April. p. 28. The company was founded by Kyoto restaurateur, Kichizo Kaneda, who has applied for patents in Japan, the USA, and 5 other countries.

5290. **Product Name:** [Kibun Soy Milk].
Foreign Name: Kibun Tônyû.
Manufacturer's Name: Kibun Food Chemifa Co., Ltd.
Manufacturer's Address: 3-2-5 Shinbashi, Minato-ku, Tokyo 105, Japan.
Date of Introduction: 1987.
New Product–Documentation: Soya Bluebook. 1987. p. 90.

5291. Lanzani, A.; Bondioli, P.; Meago, L.; Fedeli, E.; Ponzetti, A.; Pieralisi, G. 1987. [Production technologies of soymilk. I.]. *Rivista Italiana delle Sostanze Grasse* 64(2):43-48. [7 ref. Ita; eng]*
• ***Summary:*** Centrifugation procedures for olive oil production were modified to prepare soymilk and are described in detail. The dried (atomized) product contained 5% moisture, 40.9% protein and 25.4% fat. Address: Stazione Sperimentale per le Industria degli Oli e dei Grassi, Milan, Italy.

5292. Nanba, M.; Komaki, M.; Ichikawa, R.; Matsuda, N. 1987. [Growth of heat resistant sporeforming bacteria in soy milk]. *Kanzume Jiho* (*Canners' Journal*) 66(5):88-94. [14 ref. Jap]*
• ***Summary:*** These bacteria included *Bacillus* species and *Clostridium sporogenes*. Address: Japan.

5293. **Product Name:** [Nutana Soja Drink].
Foreign Name: Nutana Soja Drik.
Manufacturer's Name: Nutana (Distributor). Made in West Germany by DE-VAU-GE.
Manufacturer's Address: Ringstedvej 531, DK-4632 Bjaeverskov, Denmark.
Date of Introduction: 1987.
Ingredients: Water, soybeans, cane sugar (3%), salt (0.1%), natural aromas.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm: 53 calories, protein 3.6 gm, fat 2.1 gm, carbohydrate 4.9 gm.
New Product–Documentation: Label. 1987. Red and green on white. "Pure vegetarian."

5294. **Product Name:** [Baby Food, Rice Cereal, and Beverages with Full-Fat Soy Flour].
Manufacturer's Name: Nutrimex.
Manufacturer's Address: Mexico.
Date of Introduction: 1987.
Ingredients: Incl. wheat, soybeans.
New Product–Documentation: Soybean Update. 1987. April 27.

5295. **Product Name:** [Nuxo Soymilk (Honey & Malt, Cocoa, Unsweetened for Diabetics, Lightly Sweetened with Raw Cane Sugar)].
Foreign Name: Nuxo SojaDrink (Honig und Malz, Kakao, ungesuesst fuer Diabetiker, leicht gesuesst mit rohem Rohrzucker).
Manufacturer's Name: Nuxo-Werke Rothfritz + Co. KG. (Marketer). Made in Belgium by Alpro.
Manufacturer's Address: D-2000 Hamburg 54, West Germany.
Date of Introduction: 1987.
Ingredients: Honey & malt: Water, dehulled soybeans, honey, chicory syrup, malt, kombu (sea vegetable), sea salt, natural vanilla extract.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic cartons. Retails for DM 1.70 (1/90).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 ml.: Protein 3.4-3.8 gm, fat 1.9-2.3 gm (60% polyunsaturated, 14% saturated), usable carbohydrates 3.2-3.8 gm, calories 47, 50 mg sodium, 60 mg potassium, 15 mg calcium, 17 mg magnesium, 40 mg phosphorus, 0.4 mg iron.
New Product–Documentation: Color photos. Orange or blue, red, and green on white. Leaflet. 1988. Color. Nuxo SojaDrink.

Leaflet. 1989? Vitaquell Nuxo SojaDrink and SojaCrème. Green, red, and dark blue on white. In German.

Label sent by Anthony Marrese. 1990. Jan. Honey & Malt. 3.75 by 3.5 by 2.5 inches. Tetra Brik carton. Red and blue on green and white. "A protein source made purely from plants. Low in sodium. Free of cholesterol. Shake before using." Back panel states: "Nuxo SojaDrink is cholesterol free. Free of animal protein. Free of milk sugar (lactose). Low in purines." Neuform certification symbol.

Talk with Thomas Karas of Soyastern. 1990. March 14. Alpro makes this soymilk.

Letter from Bernd Drosihn. 1990. May 10. This company just markets tofu and soymilk products, they do not make any.

5296. **Product Name:** [Nuxo Soymilk Dessert (Vanilla, or Chocolate)].
Foreign Name: Nuxo SojaDessert (Vanille, or Schoko).
Manufacturer's Name: Nuxo-Werke Rothfritz + Co. KG. (Marketer).
Manufacturer's Address: D-2000 Hamburg 54, West Germany.
Date of Introduction: 1987.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic cartons.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet. 1988. Color. Nuxo SojaDrink.

Letter from Bernd Drosihn. 1990. May 10. This company just markets tofu and soymilk products, they do not make any.

5297. Rausing, H. Assignor to Tetra Pak International AB. 1987. A method and apparatus for the heat treatment of liquid. *UK Patent Application* GB 2,181,938 A. *
• ***Summary:*** Describes cost-effective UHT treatment equipment for use with soymilk, cow's milk, fruit juices, or mineral water. Address: Tetra Pak International, Sweden.

5298. **Product Name:** [Soy Drink].
Foreign Name: Soja-Getraenk.
Manufacturer's Name: Schwartzbrot (Importer). Made in Japan. Exported by Muso.
Manufacturer's Address: Klaus Griesbach, 2000 Hamburg 50, West Germany. Phone: 040–39 31 34.
Date of Introduction: 1987.
Ingredients: Water, soybeans*, dehulled job's tears or pearl barley (hatomugi, Semen coicis), kombu (Laminaria sp., a sea vegetable), barley malt extract. Organically grown.
Wt/Vol., Packaging, Price: 1 liter.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Label. Send by Anthony Marrese. 1989. Jan. Black, green, and red on white. "Natural foods from Japan (Naturkost aus Japan). Pasteurized. Can be stored without refrigeration. A refreshing, nutritious drink of mild sweetness. Purely of plant origin. Easily digestible. Also well suited for use in soups, sauces, and desserts of all types. Write the importer or Muso for a free booklet containing recipes and a description of all our products." Marrese adds: This is Bonsoy imported to Germany.

Talk with Yuko Okada of Muso. 1992. July 16. Muso started exporting Bonsoy soymilk to this company in about 1987.

5299. **Product Name:** [Soymilk].
Foreign Name: Le Soja-Milk.
Manufacturer's Name: Sojalpe.
Manufacturer's Address: Saint Quentin sur Isère, 38210 Tullins, France. Phone: 76.93.60.21.
Date of Introduction: 1987.
Ingredients: Soybeans, water.
Wt/Vol., Packaging, Price: 500 ml sachet.
How Stored: Refrigerated. At 4ºC.
New Product–Documentation: Manufacturer's brochure. 1987? In French. "Le Soja-Milk: Un milk végétal léger, léger, léger..." Soymilk: A vegetable milk that is light, light, light. The joy of eating... without putting on the kilos. The company logo is a steepled building with 5 soy-shaped leaves growing out of the steeple, set in front of towering mountains. A photo on the front shows this soymilk served over a bowl of cereal for breakfast–not in a glass to drink. It is suggested that it can be used as is, or mixed with cow's milk. At the top is an illustration (line drawing) of a laughing

male chef in a white top hat.

5300. **Product Name:** Thick Soya Milk, Soybean Residue [Okara], Soya Cutlets (Made from Residue), Soya Curry.
Manufacturer's Name: Soya House (U.N. Gunesekara and Co.).
Manufacturer's Address: 128, Kitulwatte Road, Off Elvitigala Mawatham Colombo 8, Sri Lanka. Phone: 597759.
Date of Introduction: 1987.
Ingredients: See below.
New Product–Documentation: Form filled out by Jane Gleason. 1988. She visited the shop in Colombo on 14 March 1988. These products are sold only on by special order. Thick Soy Milk retails for Rs. 15/kg to Colombo hospital. Residue (okara) for Rs. 5/kg. Soya Cutlets (made from okara) for Rs. 2/50 each. Soya Curry for Rs. 50/- per package contains 500 gm tofu, vegetables, oil, and spices.

5301. **Product Name:** [Spraylac {Powdered Soymilk, or Okara Full-Fat Soy Flour}].
Manufacturer's Name: Spraylac S.R.L.
Manufacturer's Address: Main Office: Av. Aristobulo del Valle 7090, 3000 Santa Fe, Argentina. Plant at San Jeronimo del Sauce.
Date of Introduction: 1987.
New Product–Documentation: Soya Bluebook. 1987. p. 74, 89. This seems to be dried okara, which has been finely ground and sold as a high-fiber soy flour or beverage powder.

5302. STS–Soya Technology Systems Ltd. 1987. [Questionnaire]. 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 8 p. [Chi]
• ***Summary:*** Asks potential clients many questions to aid in developing a turnkey soymilk plant to suit their needs. Address: Singapore.

5303. Sun Youth Machinery Co., Ltd. 1987. Equipments for soymilk, bean curd, and dried bean curd. Factory: No. 6, Lane 229, Hwa Chen Rd., Hsin Juang Taipei Hsien, Taiwan. 15 p. Manufacturer's catalog. Undated. [Eng; Chi]
• ***Summary:*** The many pieces of modern equipment look quite similar to those made by Takai in Japan. This "dried bean curd" is probably the Chinese "doufugan," a very firm tofu which is not dried. Address: Taipei, Taiwan. Phone: 02-9931-1826-8.

5304. Takao, S.; Nakashima, H.S.; Tokumoto, M.; Saitoh, M.; Watanabe, M. Assignors to Terumo Corp. 1987. Treated soybean with reduced phosphorus and potassium levels, process for preparing the same, and processed soybean foods obtained therewith. *European Patent Application* 0,234,998 A1. Corresponds to Japanese Patent 86-13681. [Eng]*
• ***Summary:*** Soybean products with reduced levels of phosphorus and potassium. Suitable for use in the treatment of renal disease are described. They include soymilk, puffed foods, tofu and cake mix. The phosphorus and potassium components of the soybeans are reduced by soaking the beans in a solution at pH 3.0-6.5, and then washing them at pH 5.0-9.0. Address: Terumo, Tokyo 151, Japan.

5305. **Product Name:** [Tofu in Sauces (Bolognese Sauce, Curry Sauce, Paprika-Cream Sauce)].
Foreign Name: Tofu in Bolognese-Sosse, in Curry Sosse, in Paprika-Rahmsosse (im Becher).
Manufacturer's Name: Tofukost-Werk TKW GmbH.
Manufacturer's Address: Siemensweg 1, D-4724 Wadersloh-Diestedde, West Germany. Phone: 02520-1300.
Date of Introduction: 1987.
Ingredients: Paprika-Cream: Tofu, water, flour, soymilk, onions, vegetable oil, seasonings, corn, cucumbers.
Wt/Vol., Packaging, Price: 250 gm transparent plastic tubs with aluminum foil lid (about 150 gm tofu and 100 gm sauce). 12 tubs per 3 kg case.
How Stored: Refrigerated, 42 day shelf life at 8ºC.
Nutrition: Paprika-Cream: Protein 6.9%, water 82.8%, fat 4.8%, pH 5.4, ash 1.9%, carbohydrate 2.6%, energy 81.8 calories/100 gm.
New Product–Documentation: TKW color catalog. 1988. April. Color photo of products shows each Label. Red, black, yellow, and white.

5306. **Product Name:** [Cerevap].
Foreign Name: Cerevap.
Manufacturer's Name: Victoria Associated Products.
Manufacturer's Address: P.O. Box 472, Kinshasha 1, Zaire.
Date of Introduction: 1987.
Ingredients: Incl. wheat flour, white corn, soybeans.
Wt/Vol., Packaging, Price: Aluminum foil pouch.
How Stored: Shelf stable.
New Product–Documentation: K.E. Weingartner et al. 1987. FAO Food and Nutrition 13(2):24. Cerevap, made by Victoria Associated Products or VAP (Kinshasa, Zaire), is one of the two largest selling soy-based infant baby foods in sub-Saharan Africa. It contains an indigenous soy/maize blend to which minerals and vitamins have been added. It is well-packaged, in a foil pouch. The price is not low, because of the high cost of the container. This product is marketed as a food for middle-income Africans rather than as a second-class food suitable only for the very poor.

Weingartner. 1987. Processing, Nutrition and Utilization of Soybeans. p. 171. A photo shows the product Label, with an African mother and baby. "Baby health. Food for baby."

LEC Newsletter. 1988. July. p. 2. Victoria Associated Products in Kinshasha, Zaire, currently manufactures a weaning food named CEREVAP for young children that consists of a formula of corn, wheat, soybean plus other

minor ingredients. The cereal ingredients are mixed, forming a cookie that is baked, followed by grinding. More information can be obtained from Mr. Robert Gillyns, Director of R&D, Victoria Associated Products, BP 472, Kinshasha 1, Zaire.

5307. **Product Name:** Yaupon Soymilk.
Manufacturer's Name: Yaupon Soyfoods.
Manufacturer's Address: 226 East Austin St., Elgin, TX 78621. Phone: 512-285-3810.
Date of Introduction: 1987.
Ingredients: Water, organically grown soybeans.
Wt/Vol., Packaging, Price: 16 fluid oz.
How Stored: Refrigerated.
New Product–Documentation: Label sent by Chico Wagner. 1989. June 20. 2 by 3.25 inches. Green, blue, and white on brown. Self adhesive. The product was launched in about 1987.

5308. Ali Sheikh, I.; Aslam, M.; Arshad, M.; Fehmida Jalil, -. 1987. Preparation of a post diarrhoeal food for infants and its biological and clinical evaluation. *Pakistan J. of Scientific and Industrial Research* 30(6):457-60. June. [11 ref. Eng]*
• ***Summary:*** A post-diarrheal food formulation based on a blend of rice, soymilk and moong pulse and fortified with essential vitamins and potassium salt was prepared. Chemical and biological evaluation showed that it is of high nutritive value. It is a good source of proteins (19.5%). Net Protein Utilization, Protein Efficiency Ratio, net dietary protein calorie % and digestibility were 57, 2.4, 11.6 and 92% respectively. Clinical evaluation showed that it is a satisfactory product for feeding babies during and after diarrhea. All babies fed on the formulation showed great improvement and recovered from diarrhea within a few days. Address: PCSIR Lab., Lahore-16, Pakistan.

5309. Dinshah, Freya. 1987. The vegan kitchen. 11th ed. Malaga, New Jersey: The American Vegan Society. 64 p. Illust. Recipe index. 28 cm. Spiral bound.
• ***Summary:*** The rear cover notes of this 11th edition: "Greatly enlarged and newly illustrated: Over 200 delightful recipes... all animal free! No flesh, fish, fowl, animal milk or dairy products, eggs, honey, gelatin, or other food of animal origin; no sugar or white flour." With this edition, an out-of-print cookbook by Freya titled *More Vegan Recipes* was inserted as an appendix in the back. This increased the size of the book by about one-third. The books advocates a raw food diet and food combining (following natural hygiene and Dr. Shelton). Contains many black and white photos.

In part I of this 11th edition, soy-related recipes are the same and on the same pages as in the 9th edition. Address: The American Vegan Society, 501 Old Harding Highway, Malaga, New Jersey. Phone: 609-694-2887.

5310. Downes, John. 1987. Soy source: A practical guide to cooking with soy foods. Chatswood, NSW, Australia: Nature and Health Books. Co-published in 1987 by Prism Press, 2 South Street, Bridport, Dorset DT6 3NQ, England. Distributed in the USA by Avery Publishing Group. 127 p. No index. 22 cm. [21 ref]
• ***Summary:*** Contents: Introduction, Nutrition & Soyfoods, Ingredients & Techniques, Glossary, Appetizers & Dips, Marinades & Accompaniments, Soups, Soup Noodles, Main Courses, Salads & Dressings, Desserts, Bibliography. A cookbook containing very little information about soyfoods in Australia. The author was born in 1949. Address: Australia.

5311. *Food Focus* (*Alfa-Laval, Sweden*). 1987. CAC purchases Alfa-Laval soymilk plant. No. 3. p. 10-11.
• ***Summary:*** "For the first time a European cereal growers' association has ventured into soy processing and invested in its own soy plant. Cooperatives Agricoles de Céréales (CAC), a French cooperative of 3,000 farmers, has pioneered in this field by building the first automated factory for the industrial production of liquid soy base in France. For several months now, the plant, situated in Issenheim near Colmar in Eastern France, has been producing the soy base used for high-quality flavoured soy drinks and desserts. Alfa-Laval has supplied the complete processing line."

In the process, the "beans are cleaned without using water, ground with hot water, separated in a centrifugal separator to remove fibre residue, and treated for deactivation of the trypsin inhibitor.

"The capacity of the processing line is 1,500 liters/hour. The complete line, which includes cleaning-in-place, is regulated by a control system based on a microprocessor. This makes the installation the first fully automated soy production plant in the world.

"The plant produces three flavours of soy drinks, natural, vanilla and chocolate and two desserts in vanilla and chocolate flavours. The brand name of the products is 'Bioforme'."

Color photos show the soymilk equipment in the plant, and a line of 5 Bioforme Tetra Brik Aseptic products. The three drinks are called Bioforme Soja à Boire, and the two desserts are called Bioforme Soja en Dessert.

5312. Gentle World, Inc. 1987. The cookbook for people who love animals. 4th ed. P.O. Box 1418, Umatilla, FL 32784. 192 p. Introduction by Michael A. Klaper, M.D. Index. 26 cm. The first edition was copyrighted in 1981. The fifth edition (192 p.) was copyrighted in 1989.
• ***Summary:*** A good collection of over 300 vegan recipes, which are straightforward, appetizing, and nutritious. Special section includes recipes for cat and dog food. Contains 15 tofu recipes (including a non-fermented tofu yogurt, p. 13), plus several each using miso, soymilk, whole dry soybeans,

and okara. The book contains many nice quotes about vegetarianism and veganism.

The cover of the 1986 ed. and of the fifth edition (copyrighted 1989) is red, orange, and green on yellow. The top of the cover states: "Over 300 totally vegetarian recipes, from beginner to gourmet. No meat–No eggs–No dairy–No sugar or honey–No cholesterol." At the bottom is a field of red and yellow flowers.

Page 12 contains a recipe for Nut Milk using ¼ cup nut butter (peanut butter, cashew butter, almond butter, sesame tahini butter, or sunflower seed butter) and 1 cup water. Address: Umatilla, Florida.

5313. Harland, Barbara F.; Oberleas, Donald. 1987. Phytate in foods. *World Review of Nutrition and Dietetics* 52:235-59. [62* ref]
• ***Summary:*** Mature soybean seeds contain up to 2.58% wt/wt of phytic acid, whereas various soy-based compounds contain much smaller amounts. For example various meat analogs contain from 0.12% to 1.63% wt/wt, soy-based infant formula contains 0.062%, soy flour (Ralston Purina) contains 1.52%, soy protein isolate (Ralston Purina) contains 1.34%, and textured soy protein concentrate (Patti Pro, made by General Mills) contains 1.50% wt/wt of phytic acid. Address: 1. Div. of Nutrition, Food, and Drug Administration, Washington, DC; 2. Dep. of Nutrition and Food Science, Univ. of Kentucky, Lexington, KY.

5314. INTSOY. 1987. Home and village soyfood preparation (Leaflet). Champaign, Illinois. 3 panels each side. Each panel: 22 x 9 cm.
• ***Summary:*** Contents: Overcoming protein deficiencies. INTSOY basic processing concepts. A practical approach. Products and processes: Soy flour, tofu, tempeh, soy milk, roasted and fried soybeans [soynuts], curries, sweets. Record of achievement (in Sri Lanka, incl. training more than 20,000 people). Address: International Soybean Program, Univ. of Illinois at Urbana, 113 Mumford Hall, 1301 W. Gregory Dr., Urbana, Illinois 61801. Phone: 217-333-6422.

5315. Khadka, Bed B. 1987. Coarse grains and pulses in Nepal: Role and prospects. *CGPRT* No. 6. 35 p. [47 ref]
• ***Summary:*** Production and yield of major grain legumes in Nepal in 1983 was: Grasspea (18,700 tonnes; 380 kg/ha), lentil (17,000; 382), chickpea (13,100; 381); soybean (10,100; 548), horsegram (7,900; 381). Note that soybean is by far the highest yielding.

"Soybean cultivation, formerly limited to the mid-hills, is now extending to inner and outer tarai. In the hills and valleys soybean is cultivated in association with or intercropped with maize. Mono-cropped soybean is grown only in small areas, and sometimes it is grown on paddy bunds. Soybean is a popular leguminous food in the hills, where roasted soybean is taken along with puffed maize as a morning or midday snack. Green pods are boiled and the seeds are eaten as such, or fried or made into curry. Some soybean is used for its oil, and the cakes are then used in feeds. In recent years, small industries have been set up to convert soybean into soymilk, soybean curd [tofu], and other products." Research has been carried out in collaboration with INTSOY, IITA, AVRDC and other agencies. Address: Nepal.

5316. Khokan, K.I.; Horlings, George. 1987. Soybean production and utilization in Bangladesh. Dhaka [Dacca], Bangladesh: Mennonite Central Committee. 55 p. No index. 28 cm. [36 ref]
• ***Summary:*** Contents: Part I: Production. Introduction: History, Soybeans in Bangladesh. Soybean plant parts and growth. Climatic requirements. Selecting land and soil types. Cropping pattern: Rabi season, kharif season. Cultivation procedures: Varieties (Bragg, Pb-1), planting date, land preparation, fertilizer, inoculant preparation, planting method, weed control, irrigation, harvesting, threshing and drying, storage for food purposes. Diseases. Insects. Seed production. Seed storage. Seed testing.

Part II: Utilization. Nutritional quality: Protein, oil, undesirable factors, rules for soyfood preparation. Oil expelling. Traditional foods from soybeans. Appendix I: Recipes with soybeans (Soyflour, roasted soybeans, soy satu {with rice and sugar}, soya khichuri {with rice, vegetables, and spices}, soya sweet pumpkin curry, soya potato curry, soya shak {any green leafy vegetable}, soya chatni, soya dhal, soya tok {sour} dhal, peaju, soya patora, soya halua, soya bapa pita, soya milk, soya yogurt). Appendix II: Soybean troubleshooting. Planting to emergence. Emergence to flowering. Flowering to maturity.

"Soybeans were first introduced into Bangladesh in 1942. In 1960 three varieties were selected for kharif season production. These varieties were later found to be susceptible to yellow mosaic virus In 1972-73 MCC began research and extension work on soybeans, primarily as a rabi season crop. In 1975 the Bangladesh Coordinated Soybean Research Project (BCSRP) began research on soybeans. This project involved the Bangladesh Agriculture Research Institute (BARI), Bangladesh Agricultural University (BAU), Bangladesh Council of Scientific and Industrial Research (BCSIR), several other governmental institutions, Shilpee Food Products and the Mennonite Central Committee (MCC). In 1981 the BCSRP was discontinued. The two main problems were felt to be: difficulty in producing high quality seed and the lack of oil extracting equipment. Much research has been done throughout Bangladesh which resulted in the release of Bragg and Davis varieties for extension." Address: Mennonite Central Committee, Dhaka, Bangladesh.

5317. Lundblad, Birgitta. 1987. Soy–The world's biggest protein reserve. *Food Focus* (*Alfa-Laval, Sweden*) No. 2. p.

14-15.

• ***Summary:*** Color photos show: (1) Several Tetra Brik cartons of soymilk made in China. (2) The soymilk plant in the Guangdong Cannery in Canton. Up until the 1960s there the major problem with soymilk was its unpleasant "beany" smell and taste. During the 1960s researchers at Cornell University "managed to control the enzyme activation by hot grinding of the beans. Alfa-Laval came up with a commercial solution on the basis of these findings in the 1970s. But it was found that the primary soaking stage was the cause of tangible loss of flavour.

"The next achievement in this field was made at the University of Illinois where they eliminated the presoaking of the beans and instead boiled them directly to kill the enzyme [lipoxygenase].

"The bean flavour was gone alright, but since the fibre residue was not removed, the product resembled porridge in consistency, which the market would never swallow. On the other hand this fibre problem was solved by the Japanese, who included a decanter centrifuge in the process. This was an important step forward which resulted in increased sales of soy milk in Japan by 85% a year for seven years.

"The drawback of this production method was that half of the protein was lost in the process. Evidently, it was not a solution that most of the world could afford.

"Combined the advantages: In 1982 Alfa-Laval introduced a soy milk production process that combined all the advantages of earlier achievements. The process has a simple technology and is very economical because of a high extraction efficiency.

"In the process, soybeans are cleaned without the use of water and then ground with hot water to make a slurry. After centrifugal separation of the slurry to remove fibre residue, the clarified soy base that has been extracted is passed on to deactivation of residual enzymes and trypsin inhibitor, followed by deodorization.

"Now the soy base is ready for processing into different kinds of soy products. In the blending section, sugar, fat, flavouring, colouring, etc. can be added to give the product its character and final composition. After UHT treatment, which includes homogenization, the product is finally packaged, ready for distribution. To date Alfa-Laval has signed contracts for more than ten soy base lines in Asia, Europe, Africa and South America. Most of these plants are already in operation or under construction.

"Back where it started–in China: Guangdong Cannery in Guangzhou (Canton) in the Peoples' Republic of China is a big production plant for different kinds of beverages. Their output includes ready-to-drink juices of kiwi, guava, orange and sugar cane concentrate and a chrysanthemum tea...

"Today this plant also produces approx. 20,000 liters per day of high quality, plain and flavoured soy milk. In fact, Guangdong Cannery was the first in the world to install Alfa-Laval's new soy milk line... The soy plant is now working at full speed in two shifts, normally 6 days a week."

5318. Nichterlein, Karin. 1987. Huelsenfruechte [Legumes]. Bonn, Germany: AID (Auswertungs- und Informationsdienst fuer Ernaehrung, Landwirtschaft und Forsten). 20 p. Illust. 21 cm. [10 ref. Ger]

• ***Summary:*** The section on soybeans (p. 14-16) discusses soya oil, lecithin, soybean meal, soy protein concentrates, soya bread, low-fat soy flour, Sojamark (Soya meat), TVP, soya milk, tofu, soy sauce (shoyu, tamari), miso, tempeh, sufu (fermented tofu), natto, and soy sprouts. Address: Institut fuer Pflanzenbau und Pflanzenzuechtung I, Giessen, Germany.

5319. Passmore, Jacki. 1987. Asia: The beautiful cookbook. Los Angeles, California: Knapp Press. 256 p. Illust. (color). Index. 37 cm.

• ***Summary:*** This is a stunningly beautiful, oversized book–a feast for the eyes, filled with elegant color photos (many full page), authentic recipes and many insights about Asian cookery. Each recipe is accompanied by one or more photos, Contents: Japan: Simplicity and elegance. Korea: Warm and sustaining. China: From the beginning of time. Philippines: East meets West. Thailand: Titillating, tantalizing. Laos and Kampuchea: Unforgettable foods. Vietnam: Herbaceous overtones. Singapore and Malaysia: A blending of cultures. India: Southern fire, northern serenity. Burma: Exotic offerings. Indonesia: Symphony of flavors. Sri Lanka: Gems from an enchanted isle. Glossary. Acknowledgments.

Japan: Yudofu (Simmered bean curd, with 3 cakes tofu {bean curd}, p. 31). Tofu dengaku (Grilled bean curd on skewers, with 2 lb {1 kg} momen tofu and white miso, p. 31). Ton-negu no teriyaki (Teriyaki pork rolls, p. 38). Miso-shiru (Miso-flavored soup with bean curd).

Singapore and Malaysia: Popiah (with ¼ cup (about 2 oz / 60 gm) compressed bean curd cake, shredded, p. 155, 148-49). Tempe lemak (Tempe in coconut milk, p. 166). Hokkien mie (Hokkien style noodles, with 2 cakes compressed bean curd, p. 168). Laksa ayam (Chicken with laksa noodles in coconut sauce, with 2 squares / cakes compressed bean curd, p. 169).

Indonesia: Kecap manis is a sweetish soy and chili sauce (p. 218). Babi kecap (Pork in sweet soy sauce, p. 227).

Glossary (p. 252-54) includes short definitions of: Azuki beans. Bean curd. Bean pastes and sauces. Kecap manis ("based on dark soy sauce, sugar and spices"). Kombu. Nori. Paneer (India). Sesam. Wakame.

5320. Popham, Peter. 1987. The insider's guide to [south] Korea. Edison, New Jersey: Hunter Publishing. 199 p. See p. 60. Illust. (color photos by Alain Evrard). Maps. Index. 23 cm. [9* ref]

• ***Summary:*** The 1988 Summer Olympics in Seoul introduced Korea to the modern world in a big, new way.

This book was written for that event.

The chapter titled "Korean cuisine" (p. 58+) explains that it is the least known of the culinary traditions of Asia, and offers strong evidence of the nation's distinctiveness, which shows clear Mongol influence. Like the Chinese and Japanese, the Koreans also eat "soy beans and bean curd" [tofu], and bean sprouts [soy sprouts are more popular than mung bean sprouts]. The undisputed mark of Korean cuisine is kimch'i [kimchi], most of which is still made by fermentation at home of a vegetable (such as cabbage), always with chili and garlic; there are many different types of kimch'i, the most popular of which are cabbage stuffed with oysters, sliced cucumbers with radish and ginger, diced daikon radish with scallions, and white radish sticks floating in brine. Other favorite Korean seasonings, besides garlic and chili, are scallions, ginger, sesame oil, sesame seeds, and soy sauce.

Pages 60-62: "There is also a whole range of fermented pastes and sauces for dipping, called *chang.* Every home and restaurant has its own recipe for *chang,* and each batch comes out differently. Based on a fermented mash of soybeans, the three most common varieties are *"kan chang,* a dark liquid, like soy sauce, *daen chang,* a thick, pungent paste, and *kochu chang,* a fiery version laced with chilies."

Note: This is the earliest English-language document seen (April 2012) that uses the term *kan jang* to refer to Korean soy sauce.

Side dishes, known as *panch'an,* accompany the main dish, rice, and add variety to the basic Korean meal. They include: *Tubu:* Soybean curd, tofu. *Manul changah-chee:* Green garlic pickled in soy sauce. *Don chun:* Beef and bean curd patties spiced with ginger.

Koreas love to make rich, thick stews, especially in winter. *"Chigae* is a special thick stew simmered in heavy clay crocks." Favorite Korean soups (*tang*) and stews include: *Maeun tang:* Rich soup of meat, fish, bean curd, zucchini and scallions. *Ten chang chigae:* Thick stew of meat, fish, bean curd, squash and chilies.

Simple "one-bowl" meals, especially popular as summer lunches, include: *Kong kookso:* Wheat noodles in fresh soy milk. *Udong* [Jap. udon]: Broad wheat noodles with onions, bean curd, egg and chili. *Kongnamul pap:* [Soy] bean sprouts, beef and cabbage served over rice.

A photo (p. 63) shows a man grinding food using a hand-turned stone mill (quern).

5321. Portrait photograph of K.S. Lo, founder of Vitasoy (Hong Kong). 1987.
• ***Summary:*** A great man and a visionary entrepreneur (see next page). Photo by Anthony Buckley and Constantine Limited, 81, Grosvenor Street, London W1X 9DE.

5322. Shurtleff, William; Aoyagi, Akiko. 1987. Soymilk industry and market: Updates from 1984 to 1987. Lafayette, California: Soyfoods Center. 17 + 59 p. Index. 28 cm. [165 ref]
• ***Summary:*** This 1987 update to the Soyfood Center's two-volume 1984 *Soymilk Industry and Market* has two parts: (1) Year in Reviewing, describing key events and trends each year from 1984 to 1986. (2) A bibliography of soymilk from January 1987 to late 1987, based on records in the SoyaScan database; at the end is a 10-page index. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

5323. Sonntag, Linda. 1987. The little tofu book. London: Judy Piatkus (Publishers) Ltd. 60 p. Illust. by Trevor Newton and Hanife Hassan. No index. 16 cm.
• ***Summary:*** Contents: What is tofu? Storing tofu. What to do with tofu. Tofu recipes. Dips and spreads. Tofu, the wonder health food. The food for the future. Tofu slimmers. Making your own tofu. The bonuses of making tofu: Go, okara, soya bean milk, yuba, whey. Tofu in Japan. Tofu in Indonesia. Tofu in China. Miso. Other titles in the series. Note: This book draws heavily on *The Book of Tofu* by Shurtleff and Aoyagi. Address: England.

5324. Toyo Plant. 1987. Tôfurui jidô seizô sôchi [Automatic production system of tofu (bean curd) products]. Toyo Plant Co. Ltd., 4-27-6 Matsue, Edogawa-ku, Tokyo 132, Japan. 4 p. English. 6 p. Japanese. Manufacturer's catalog. [Jap; Eng]
• ***Summary:*** The company was founded in 1967. This manufacturer's catalog describes the production systems for soy milk, momen tofu, abura age, filled silken tofu, silken cut tofu, and egg tofu. Address: Tokyo, Japan. Phone: 03-655-0111.

5325. Wang, Lianzheng. 1987. Soybeans–The miracle bean of China. In: Sylvan Wittwer, Yu Youtai, Sun Han, and Wang Lianzheng, eds. 1987. Feeding a Billion: Frontiers of Chinese Agriculture. East Lansing, Michigan: Michigan State University Press. 462 p. See p. 183-99. Chap. 14. [13 ref]
• ***Summary:*** A good overview of soybeans in Chinese agriculture today, and of early history in China. "World soybean acreage has doubled during the past twenty years. This represents a greater expansion than for any other major crop. Wang Jinling of the Northeastern Agricultural College at Harbin and others have studied the photoperiodic responses of wild soybeans from the northern part of the Heilongjiang Province to the southern part of Hunan Province. They found that, among the wild soybeans of the Yangzi River valley, there are typical short-day types of primitive characteristics. It was concluded that the Yangzi River valley of South China was the site of origin for the cultivated soybean. Soybeans with moderate short-day behavior, when moved from that region, were found suitable for North China. But the Yellow River valley also has a large number of wild and semi-wild soybeans of many types and

cultivars. Here the cultivated soybeans may have originated from the wild soybeans through selection. Lui Shilin has suggested that the cultivated soybean may have originated from many different places in China.

Soybeans were first called "shu," a word which appears repeatedly in the Shijing [The Book of Songs], which is one of the five Chinese classics dating from 1,100-771 B.C. The Chinese name for the soybean, dadou, first appeared in the book of Shen Nong from the third to fifth centuries B.C. In the "Xiao Ya" section of the Book of Songs it is mentioned that "... in Central China there was the soybean and farmers collected it." Another song, "Guofen" (1,000 B.C.) states that "in October, rice and soybeans are collected." A book by Zuo Zhuan (351 B.C.) reports that "the King of Zhou has a brother who was unable to tell soybeans from wheat." In the Mo Zi (400 B.C.) it is stated that, "relating to farming and forestry, if soybeans and millet were plentiful, the people had enough to eat."

Archaeological findings: In 1959, in Houma County, Shanxi Province, archaeologists unearthed soybean grains now found in the Natural Museum in Beijing. According to carbon-14 determinations, they are 2,300 years old [c.a. 300 B.C.]. The seed coats have a yellow color, and the weight of a hundred grains is about 20 gm. These are the earliest and oldest of archaeological soybean seed relics in the world.

Distribution of the cultivated soybean: During the Zhou Dynasty, the soybean was grown mainly in the Yellow River valley as a main food staple. It was reported that "people eat soybean grain and soybean leaf soup." During the Han Dynasty, in Central China, the people suffered one calamity after another. It was then that large numbers of peasants migrated to the northeast and carried soybeans with them, (see Book of Fan Senzhi, 100 B.C.). At that time, the area for soybean culture was 40% of all crops.

In Shandong, Henan and Hebei provinces, soybeans are used primarily as a staple food. Soybean flour (10-20%) is added to wheat flour and the flour of miscellaneous other crops for noodles, steamed bread and buns. In North China and the Liaoning Province, soybean flour is added to milk to produce a milk powder substitute. Heilongjiang and Jilin provinces are taking the initiative in transforming soybeans into a variety of meat analogs. In northeast and northern China, soybean oil is the most important cooking oil.

Soybeans for industrial uses: The soybean has many industrial uses in China. One of the most important is in the production of high grade industrial enamels. It is also used extensively in the manufacture of varnishes and alkyl resin paints, and in inks and stains, pharmaceuticals, oilcloth, linoleum, and synthetic rubber. Soybean protein is used in adhesives, paper coatings, water-thinned paints, plastics, printing inks, and textile fibers. The soybean is widely used in the production of lecithin, hormones, vitamins, furfural, bakelite, and monosodium glutamate.

Historically, soybeans, tea, and silk have been China's three largest agricultural exports. A moderate percentage (10-20%) of the soybeans produced in China are used directly as human food in the form of sprouts or immature beans in the pod and as many products derived directly from the beans. There has been a surplus of soybeans in recent years in China, and exports to the USSR and Japan have been increasing. Utilization of soybeans in China will vary with the province. In Heilongjiang, the leading producer with 30% of China's soybeans for 1984, 40% were exported to the USSR and Japan, 35% went for human consumption, 10% went for seed purposes, and 15% were exported to other provinces in China. In Jiangsu Province, 80% of the soybeans produced go directly for human consumption.

Note: This document contains the earliest date seen for an archaeological dating of soybeans in China or East Asia or the world.

5326. Weber, Marlis. 1987. The single vegetarian: Healthy recipes for one. Translated from the German by Linda Sonntag. Hammersmith, London, England: Thorsons–An imprint of HarperCollins Publishers. 144 p. Illust. by Juliet Breese. Index. 21 cm.

• ***Summary:*** This attractively illustrated and designed lacto-ovo-vegetarian wholefoods cookbook (first published in Germany in 1985 as *Vollwertkueche für 1 Person*) opens with a nice section on soya beans and tofu (p. 17). Contains more than 50 line drawings, used mostly to fill spaces that would otherwise be empty. Soy-related recipes include: Chicory and beansprouts in curried cream (with soya bean sprouts, p. 56). Soya bean hotpot (with cooked soya beans, p. 76). In the chapter titled "Milk, Quark and Tofu" (p. 121-24) we find recipes for: Tofu dessert. Savoury Tofu. and Tofu Burgers.

5327. Weingartner, Karl E.; Dashiell, K.E.; Nelson, A.I. 1987. Soybean utilization in Africa: making place for a new food. *Food and Nutrition* (*FAO*) 13(2):21-28.

• ***Summary:*** Contents: Introduction. Research into utilization. African governmental support. Commercial soy foods. Utilization in village homes. Soybean oil and animal feed.

"For the most part, the lack of attention to possible uses for soybeans has stemmed success of promotional efforts on the production side... Two international institutions are involved with soybean utilization in sub-Saharan Africa: the International Institute of Tropical Agriculture (IITA) at Ibadan, Nigeria, and the International Soybean Program (INTSOY) of the University of Illinois, Urbana, Illinois, USA. Research has focused particularly on problems at the small-holder and community level... In 1985, IITA started a programme to promote processing and utilization of soybeans. It has collaborated with INTSOY in the development of intermediate and home-level technology in the areas of oil technology, soy milk production and extrusion cooking." IITA has installed a dry extruder made

by Insta-Pro International (Des Moines, Iowa) and is testing it.

The major soybean producers in sub-Saharan Africa are Zimbabwe (80,000 tonnes/year in 1986/87), Nigeria (75,000), Zambia (35,000), and Zaire (30,000). "In Zaire, soybeans are mostly used at the home level. In Zambia and Zimbabwe, soybeans are processed into oil and animal feed. In Nigeria, they are used in home consumption and to a lesser extent as animal feed."

Some governments are actively supporting soybeans. Burkina Faso encourages soybean growing by buying them directly from farmers. Zimbabwe sets a preplanting price. Nigeria has developed a nationally coordinated approach to soybean research and production involving farm research institutions. The planning section in the Kenya Department of Agriculture has recommended that 128,000 hectares in Kenya are suitable for growing soybean as a second crop after maize.

"There are still very few networks on soybean utilization in sub-saharan Africa. In 1987, the Nigerian Soybean Association was founded. In 1986 the National Oilseed Development Company (Zambia) Ltd. was formed to assist small-scale production of soybean. The Commercial Oil Seed Producers Association is promoting utilization in Zimbabwe. The Catholic community in Zaire has set up a loose network of cottage industries.

In Africa, soymilk has great potential as a consumer product, although there are presently only a few soymilk factories in Africa: Vitalait is made in Burkina Faso and Soyapro in Kinshasa, Zaire. "Possibly the most popular soy food in sub-Saharan Africa is a beverage called Mahewu which is manufactured by Nutresco in Harare, Zimbabwe." It is made from soy and maize. Popular soy-based infant baby foods are Nutrend (made by Nestlé in Lagos, Nigeria) and Cerevap (made by Victoria Associated Products [VAP] in Kinshasa, Zaire). "There are several soy/maize breakfast cereals available but they are less popular than the soy-based infant food. They include Nutri-Plus Soy made by Nutresco, Nutrima-10 [Nutrimax-10] by Smallette Foods (Ilorin, Nigeria), and Country Morning by Nestlé (Lagos, Nigeria).

"Soy flour, biscuits and cookies are also popular. In Zaire, several cottage industries including the Bisoka Company (Kananga, Kasai Occidental) use different proportions of soy, wheat and sorghum flour to produce sweet cookies which are especially popular with school children. Soy flour also is a popular commercial item in Zaire. The Centre de Développement Intégral grows soybeans in Bwamanda and processes them in Kinshasa. In 1986 it produced about 450 tonnes of soybeans. Of this, about 50 per cent was made into full-fat soy flour. In Benin, the Centre Horticole et Nutritionnel makes Farine Bébé."

"The most widely consumed soy-based food at the rural level in West Africa is made using fermented whole soybean and is called 'dadawa' (in Hausa [northern Nigeria]), 'iru' (in Yoruba [southwest Nigeria]) or "soumbala' (in Dioula [also spelled Jula, Dyula and Joola, a Mande / Manding language spoken in Burkina Faso, Cote d'Ivoire & Mali]). Dadawa was traditionally made from locust bean seeds, which are becoming scarce and are being replaced by soybeans. Kafanchan, in Kaduna State of Nigeria, is the processing and marketing centre for dadawa. From there, it is transported by traders throughout Nigeria and to Cameroon, Chad, Niger, Benin and Togo. Millions of West Africans use a small amount of dadawa each day to add flavour to their stews (similar in taste to a beef concentrate or seasoning cube). Dadawa may also be prepared at home. People in remote areas of northern Ghana have been observed growing soybeans in their compound gardens specifically for dadawa production.

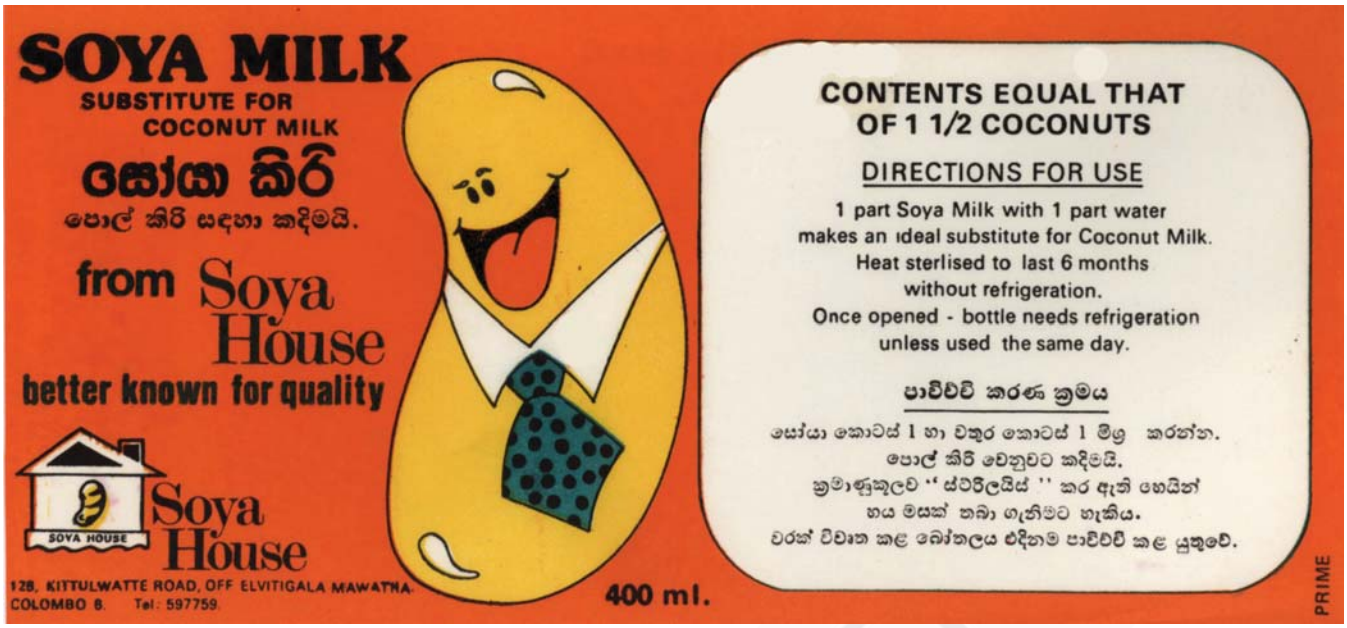
"Soybeans have been used as an aid to medicine in missionary hospitals since early in the 1960s. In Zaire, the Catholic community encourages production and utilization of soybeans. A doctor with the Presbyterian community near Kananga (Kasai Occidental, Zaire) asks mothers of malnourished children to buy soybean flour as a condition for medical treatment."

In Ghana, roasted soybeans are used in the home preparation of tuubani; they are ground, mixed with water to form a paste, then steamed inside a folded leaf. In Nigeria, dawadawa and soybean paste are added to egusi (vegetable soup), and ground soybeans are added to ogi. In Zaire, people make roasted soy flour, then add it to bouille or bidia (a thick porridge). In Zambia, soy flour is mixed with mealie meal to make *nsima*, or added to cooked green vegetables to make a relish.

"Approximately 40% of the edible oil consumed in Zimbabwe is from locally grown soybeans. The LINT Company of Zambia (LINTCO), a quasi-government group, is helping farmers with production and marketing of soybeans... A new soybean crushing plant in Makurdi, Nigeria, with a capacity of 72,000 tonnes/year is scheduled to open in early 1988." It should lead to increased demand for Nigerian-grown soybeans. Address: 1-2. IITA (International Inst. of Tropical Agriculture), PMP 5320, Ibadan, Nigeria; 3. Soybean Utilization Program Leader, INTSOY, Univ. of Illinois, Urbana, IL 61801.

5328. Weingartner, Karl E.; Dashiell, K.E.; Singh, S.R. 1987. Soybean utilization in Africa. *Tropical Grain Legume Bulletin* No. 34. p. 2-6. [5 ref]
• ***Summary:*** The content of this article is very similar to that of: Weingartner, Karl E.; Dashiell, K.E.; Nelson, A.I. 1987. "Soybean utilization in Africa: making place for a new food." *Food and Nutrition* (FAO) 13(2):21-28. Address: International Inst. of Tropical Agriculture (IITA), PMB 5320, Ibadan, Nigeria.

5329. Wynne, Dave; Javaheri, Fereidoon. comp. and ed.



1987. Soyabean cooking in Zambia. Republic of Zambia, Dept. of Agriculture. 48 p. 22 cm. 1st ed. 1985.
• ***Summary:*** Contents: Acknowledgements. Foreword. Nutritional information. 1. Basic recipes. 2. General use. 3. Urban use. 4. Specialty recipes. Publication of this book was fully by the Lint Company of Zambia (LINTCO). The Mennonite Central Committee and ZAMARE gave support. Many recipes were developed by Mrs. Barbara Wynne, Mr. Lee Holland, or Miss Mabuya; most of the rest came from the *More-with-Less Cookbook,* by Doris Janzen Longacre, and Favorite Recipes by the American Women's Club in Lusaka. Surveys carried out by the National Food and Nutrition Commission (NFNC) and published in Dec. 1980 found a high incidence of malnutrition in Zambia, particularly in children aged 0-4 years. Soybeans can help greatly to alleviate this problem.

Talk with Hea-Ran Lee Ashraf. Dave Wynne was a Mennonite Missionary, and Fred Javaheri was also a missionary but working for the Zambian government. Fred, an Iranian with Canadian citizenship, has a deep, long-term dedication to soybeans with great energy, enthusiasm, and a sound knowledge of his resources. Hea-Ran believes that without these two men, the soybean program in Zambia would not exist today. Their group now also publishes a quarterly periodical titled *Soybean Newsletter.* Address: 2. Soyabean Coordinator, Mt. Makulu Central Research Station, Chilanga, Zambia.

5330. Ace Canning Corporation Sdn. Bhd. 1987? Product brochure. Selangor, Malaysia. 6 looseleaf pages in a portfolio. Undated. 27 cm. Catalog. [Eng]
• ***Summary:*** Among the company's many products, the only soy product is Drinho Soya Bean Drink (soymilk), sold in a 250 ml aseptic carton. The company is a member of the Lam Soon Group. Address: P.O. Box 8, Jalan 205, 46050 Petaling Jaya, Selangor, Malaysia. Phone: 03-757-2755.

5331. Lam Soon. 1987? Lam Soon in Malaysia. Petaling Jaya, Malaysia. 31 p. Undated. 26 x 23 cm. Catalog. [Eng]
• ***Summary:*** This attractive color catalog presents Lam Soon, which has its headquarters and a huge factory complex in Petaling Jaya, just north of Kuala Lumpur, Malaysia. Lam Soon began in 1958 as Lam Soon Oil & Soap Manufacturing (M) Sdn. Bhd. with about 100 people, processing and selling vegetable oils for use in the local market. Today Lam Soon is a household name in consumer items, with advanced technology for making oil-based products plus Drinho Soya Bean Drink (*Minuman Kacang Soya*). The main oil processed is palm oil, but corn and soybeans oils are also used. Address: Petaling Jaya, Selangor, Malaysia.

5332. **Product Name:** Soya Milk.
Manufacturer's Name: Soya House (U.N. Gunesekara and Co.).
Manufacturer's Address: 128, Kitulwatte Road, Off Elvitigala Mawatham Colombo 8, Sri Lanka. Phone: 597759.
Date of Introduction: 1987?
Ingredients: Soybeans, water.
Wt/Vol., Packaging, Price: 400 ml bottle.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Label. 1988. 7.5 by 3.5 inches. Orange, yellow, black, green, and white. Cartoon of a big soybean with a necktie on looking at a soybean in a house. "Substitute for coconut milk. From Soya House better known for quality. Contents equals that of 1½ coconuts. Directions for use. 1 part Soy Milk with 1 part water makes an ideal substitute for coconut milk. Heat sterilised to last

6 months without refrigeration. Once opened–bottle needs refrigeration unless used same day." Letter from Jane Gleason who visited the shop on 14 March 1988: Production was stopped due to loss of access to bottle washing machine.

5333. **Product Name:** Vitalait (Soymilk).
Manufacturer's Name: Unknown.
Manufacturer's Address: Burkina Faso.
Date of Introduction: 1987?
Wt/Vol., Packaging, Price: Plastic bag.
How Stored: Refrigerated.
New Product–Documentation: K.E. Weingartner et al. 1987. FAO Food and Nutrition 13(2):24. "Vitalait, produced in Burkina Faso, is pasteurized, packed in a flexible plastic bag and requires refrigeration."

Note: This is the earliest known commercial soy product made in Burkina Faso.

5334. **Product Name:** Soyapro (Soymilk).
Manufacturer's Name: Unknown.
Manufacturer's Address: Kinshasa, Zaire.
Date of Introduction: 1987?
Wt/Vol., Packaging, Price: Glass bottle.
How Stored: Refrigerated.
New Product–Documentation: K.E. Weingartner et al. 1987. FAO Food and Nutrition 13(2):24. "Soyapro in Kinshasa, Zaire, makes a sterilized soy milk which is packaged in a glass bottle and sold by street-vendors and in the city's main department store. Market response has been favorable and the company is installing new equipment which will increase its product capacity to 2,000 liters/day by 1988."

5335. *World Neighbors in Action* (*Oklahoma City*). 1987?. Soybeans–The meat that grows on plants. 9(3E):1-8. Undated.
• ***Summary:*** This is a "Newsletter for Overseas Project Personnel." The topic of this entire newsletter is "Growing and cooking soybeans." Contents: Growing and cooking soybeans at home: Soybeans can provide protein for family, 1. Preparing the soil and planting seed (soil, seed inoculation, planting, alternate method of seed inoculation), 2. Cultivation (flowering and setting of pods, planting soybeans and maize together). 3. Harvesting and drying soybeans (threshing, preparing beans for storage). Cooking with soybeans: Making soy flour, making unleavened bread, preparing nutritious snacks. Corn or wheat porridge. Making soybean sprouts. Simple soy milk. Cooked dry beans. Address: 5116 North Portland Ave., Oklahoma City, OK 73112-2098.

5336. Brunthaler, Norbert. 1988. Re: Soyfoods made and sold by Sojvita. Letter to William Shurtleff at Soyfoods Center, Jan. 4. 1 p. Typed, with signature on letterhead. [Eng]
• ***Summary:*** "Thank you for your letter of Dec. 10." He gives the year and month that his company started to make and sell the following products: Tofu, Tofu marinated and baked, Tempeh, Sojanaise, Tofuburger, Tempeh vacuum packed and stable, Tofu spread (4 kinds), Sojella (enriched soymilk), Soyoghurt with fruits, Natto.

"These are only our soy-products which we sell by ourselves or through distributors in Austria. (Furthermore we produce rice-wafers, seitan, gomasio {sic, gomashio, sesame salt}, mochi.) We cannot say, which company is the largest in Austria, but we have the most different kinds of soyproducts. Our next competitor is: Sojarei in Baden and a smaller one is Tofurei in Wels. Furthermore there is only one Tempeh-producer in Vienna who sells tempeh and different cookies. These are all soy-producers in Austria. We hope we could help you with this information. With best regards. N.S.: Red miso and barley miso is in development since 1984." Address: Sojvita Produktions GmbH, Hauptplatz 1, Lichtenwoerth, Austria. Phone: 02622 / 75494.

5337. Rose, Richard. 1988. The U.S. soyfoods industry and market today and tomorrow (Interview). Conducted by William Shurtleff of Soyfoods Center, Jan. 6. 4 p.
• ***Summary:*** "President of Rose International in Petaluma, California (and formerly of Brightsong Light Foods), Richard Rose began making tofu and soymilk products in 1978. His forte is product development and marketing, which is the focus of his present company. He has been responsible for the development of over 75 commercial soyfood products.

"Shurtleff: What do you see a the most important events and trends in the soyfoods market during 1987?

"Rose: First, the growth and marketing of Jofu, then the subsequent apparent leveling off or decline of sales or profits, although I am not sure of that. One source says that they have more demand for the product than they can handle. My understanding is that they were going to do a natural food Jofu and introduce it at the Natural Foods Expo at Philadelphia in October. Apparently it never happened; Tomsun didn't even have a booth at the Expo.

"That ties into the inability that I see of soy yogurts to take hold in both the mass market and the natural foods market. I think there are good reasons for that. The difference between ice creams and non-dairy frozen desserts is substantial. There's a large benefit for the consumer of non-dairy products. But that same range of difference does not exist between dairy and non-dairy yogurts. In fact, dairy yogurt is seen as a healthful food, low in cholesterol, fat, and often calories. So there is not as much benefit from eating the non-dairy product.

"Second, the continued domestication of production of aseptic soymilks by Westbrae, Great Eastern Sun, and Vitasoy.

"Third, the decline of sales and fortunes of Tofutti,

linked to the decline in sales of non-dairy soy frozen desserts in general. I think Bob Tepper leaving Farm Foods was important. He'd been with them for a long time and has had a lot to do with the great progress they have made over the past eight years. That is quite a story. Farm Foods did things right and they had good luck as well. I'm really happy for them.

"Fourth, the increase and proliferation of soy cheeses. Last year Cemac and Galaxy got into the market in a big way. Soymage was the first truly non-dairy soy-based cheese containing no casein. I think what is more significant is large companies that have no other interest in soyfoods or natural foods are entering the industry. Galaxy went public in about August of 1987. I think their stock started at 5 and last I saw it was 1O.25. They are very good at hype. They are to cheeses what Tofutti is to ice cream. I was watching some late night show on TV and their spokesperson Don King came out and began hyping Galaxy products (he had samples with him) against the insistence of the host! These larger companies see a new market and they go after it. But they really have no interest in or history with natural food or soyfoods. Its a problem for the industry and a potentially dangerous trend. If people are going to make money in this industry we need to make sure they do it fairly, without consumer deception, etc.

"Fifth, the increased legitimization of soyfoods in the mass market and in general. There is definitely growing interest. A few years tofu was snickered upon whereas now it's more likely to stimulate enquiry and interest. That probably has a lot to do with Tofutti and tofu being recognized for special diets. Likewise, a similar growth of interest in soyfoods internationally, especially in Europe and Australia.

"Shurtleff: What do you think when you read that in a poll of the most hated foods in the USA, tofu was at the top of the list.

"Rose: I suspect they are right. I think that 95% of the Caucasian population does not buy tofu even occasionally.

"Shurtleff: Which products launched during 1987 did you feel were the best quality?

"Rose: The Barat Bar is very good. In fact, I buy those, even though they are so darned expensive. You don't get a sugar rush, there is no dairy, and they taste good.

"The ToChip, those corn chips, were good but I don't think much has happened with it.

"There are more salad dressings out and they are getting better, and have better shelf life and packaging. Golden Soy and Nasoya come to mind first.

"Of the soy cheeses, I think they are all about the same in quality. I frankly consider them all a wash. I think the Soyco and the Cemac product are slightly better than the Soya Kaas. They all have casein. Our product FREE has no casein.

"Shurtleff: What major changes have taken place in our industry and market during the past ten years?

"Rose: I think we have begun to develop our own individual identity, separate from the earlier Asian influence. That includes American equipment, American products, supplies, and suppliers. Instead of silken tofu, doufu-gan, and age, we have developed non-dairy frozen desserts, puddings, and salads. There is a great breadth of uniquely American products. In fact, an Americanization of all aspects of the industry.

"Development of domestic processing equipment, such as Bean Machines has done, is an important trend.

"Shurtleff: What predictions would you make for the future.

"Rose: Growth in the use of aseptic tofu by consumers. Morinaga has a U.S. patent on the process of making tofu aseptically.

"More and better U.S. equipment, and the development of better processing methods.

"The use and recommendation of soyfoods in special diets by traditional groups like the AMA, dietitians, and perhaps even the government. I think eventually soyfoods (other than TVP) will be able to be used in government programs, such as school lunch programs. But that may take a while.

"I still see a breadth and depth of new products. In breadth, I think we'll see it in baked goods (brownies, cookies, muffins, breads) and confections (candies). Also refinement of current products. Many of the products that have been out for a while aren't that great; they still need more improvement. But because they have been around for a while, people are less likely to improve them. But I think we will see, because of competition, improvement in current products. New products will tend to be more fully developed.

"Big Food will be getting into soyfoods more, probably to use tofu's functionality. For example, replacing ricotta with tofu for nutrition and cost reasons. But up until now, I think its been too weird for them, and they are not sure how it relates to them and their mission. They are conservative and slow by nature. The market for tofu (not including second generation products) in 1987 is probably only $70-90 million, which is still pretty small. They would probably want to see it 4-6 times that size before they make a big move. They are reluctant to do 'missionary marketing.' Then there is the perishability aspect of the product. I think Big Food will enter the industry with a product where perishability is less of a problem.

"At some point I think it will make a lot of sense to give tofu a national marketing identity, with regional manufacturers getting together and marketing the same brand and jointly funding national marketing efforts. The dairy companies do that with co-ops and with regional licensing, such as for making Popsicles or bottling soft drinks.

"I also think we'll see an influx of new types of people into the industry, bringing with them sharp new ideas.

Technical people and marketing people. Perhaps some great new processes or patents. Marketing ideas and product development.

"I think we'll see a lot more use of soyfoods, such as tofu, in foodservice applications. That is really a great, untapped, fertile ground for soyfoods. The problem is, most of the people just don't know what to do with it.

"Shurtleff: Imagine that you have just been hired by a major American food company and given a $50 million budget and a research staff. They ask you to develop and market a line of at least three products. What would you do?

"Rose; I would probably do a line of salad dressings, a line of creamy soups, and a line of frozen entrees (such as lasagna), each using tofu and having no cholesterol. The tofu curds would replace ricotta or cheese. I might also do a line of baked goods (such as brownies and muffins), using tofu to replace eggs and milk. I'd also look seriously at a line of cholesterol-free foodservice items, something they could pop into a steam table or microwave and serve without any other preparations. Perhaps some nouvelle cuisine, or an Italian or Mexican dish, or a tofu-based imitation cheese or tofu sour cream or cream cheese. Anything that could replace a product that is currently high in fats and cholesterol so that the tofu product provided a clear alternative." Address: President, Rose International, P.O. Box 2687, Petaluma, California 94953-2687. Phone: 707-778-7721.

5338. Shurtleff, William. 1988. New soyfood product introductions skyrocket during 1980s. Tofu, tempeh, soymilk, soy ice creams are most popular (News release). Soyfoods Center, P.O. Box 234. Lafayette, CA 94549. 4 p. Jan. 11.

• ***Summary:*** "The 'lighter eating' revolution has catapulted soyfoods into one of America's fastest growing food categories. A record number 330 new soyfood products were introduced in the United States during 1987, an increase of over 635% since 1977... These latest figures, part of a 30-year-long food industry trend, are tracked by SoyaScan, the Center's computerized database. It lists more than 4,630 soyfood products from 1546 A.D. to the present.

"During the 1950s, an average of 11 new soyfood products were launched each year in the U.S. This number increased to 16 during the 1960s, and 26 during the period 1970-75. Most of these new introductions were based on modern, high-tech soy protein products, such as soy protein isolates and concentrates, or textured soy flour.

"Then in the late 1970s the number of new products began to rise rapidly with the advent of the soyfoods movement. It reached 78 in 1976, 162 in 1979, 224 in 1982, 296 in 1985, and an all-time high of 330 in 1987." A graph shows "Number of New Soyfood Products Introduced, 1950-1987."

This release was carried by the Associated Press Financial Wire (Jan. 12 as "Soy-Based Foods Gain from Lighter Eating" and widely syndicated*), World Food & Drink Report (Jan. 21), Investor's Daily (Los Angeles, Jan. 12), San Francisco Examiner (Jan. 12), Oakland Tribune (Feb. 1), Natural Foods Merchandiser (Feb.). Food & Drink, Oil Mill Gazetteer (Feb.), *Journal of the American Oil Chemists' Society* (JAOCS, March, p. 319), Vegetarian Times (April, p. 9), Food Distributors Magazine (April), Dairy and Food Sanitation (April, p. 204), Whole Foods (April, p. 9), Health Foods Business (April), Adweek's Marketing Week (April. p. 6, 49), Restaurants & Institutions (April 29), East West (May, p. 10), Food Merchants Advocate (May with graph), Soyanews (Sri Lanka, July-Sept. p. 5). Address: Lafayette, California.

5339. Simonds, Nina. 1988. A scholar guides China's food policy. *New York Times.* Jan. 13. p. 15-16.

• ***Summary:*** Wang Qing is the 37-year old director of the Beijing Food Research Institute, China's principal food-policy organization. In 1967, after her family was arrested during the Cultural Revolution, she was sent to a farm in Shandong Province. Just a high school graduate, she was given the job of making soy sauce and tofu. She was taught a method of making soy sauce that originated at the time of the building of the Great Wall [220 B.C.?] All the utensils were made of wood and the process was ancient, but it was very sophisticated. After 6 years she returned to her family in Beijing, worked briefly assisting writers at the Beijing Food Research Inst., then went to Hunter College in New York City, where she completed undergraduate and master's degrees in 3½ years. Then she went to Columbia University for a doctorate in nutrition education; she expects to receive her PhD this year. At age 37 she returned to Beijing to become director of the institute, which publishes China's first food magazine, China Food. It has a paid circulation of over 400,000 and claims a readership of millions.

"Miss Wang has already begun to influence China's food policy. Last year she successfully redirected the Chinese from developing their dairy industry and toward the rebuilding of the soybean-milk industry." In 1984 the United Nations had given money to China to develop cow's milk. But 90% of the Chinese population is lactose intolerant and "it is simply too costly for us to raise cattle. They would have to compete with humans for the land." As part of her work on her dissertation, Miss Wang found that there had been a huge decline in China in soybean culture and the manufacture of its by-products. She is now working to recover what was lost. Accordingly, her Institute has developed liquid soymilk in plastic pouches to be test marketed for mass consumption starting next month. 160,000 pouches/day are to be distributed in Beijing.

5340. Barrett, Mariclare. 1988. Substitutes: Cooking without dairy products and eggs. *Vegetarian Times.* Jan. p. 40.

• ***Summary:*** Topics include: Replacing milk, yogurt, cheese,

butter, sour cream, and eggs.

5341. *International Agriculture Newsletter* (*Univ. of Illinois*). 1988. Wilmot Wijeratne and Tsao-Ming Wei, INTSOY, will organize and lecture at the INTSOY short course, "Processing Soybeans for Food Uses," in Peradeniya, Sri Lanka. Jan.
• ***Summary:*** "Dr. Wijeratne will participate from Jan. 31 to Feb. 21 and Dr. Wei will participate from Jan. 9 to Feb. 6. L.S. Wei, Food Science, will also conduct part of the INTSOY short course from Jan. 16 to Feb. 12. Prior to the short course, Dr. Wijeratne will spend a couple days visiting a manufacturer of soymilk in Singapore."

5342. Niola, Immacolata. 1988. Il latte di soia nell'alimentazione della prima infanzia [Soy-based formulas in infant feeding]. *Industrie Alimentari* 27(256):1-5. Jan. [10 ref. Ita; eng]
• ***Summary:*** This review on the nutritional properties and clinical effects of soy-based infant foods includes tabulated data on the contents of various vitamins in soy milk, amino acids in soy flour and protein isolate, chemical composition of 2 commercial formulas, and vitamins and minerals in soy-oat formulas. Address: Istituto di Merceologia–Università, Via Partenope, 36–80121, Naples, Italy.

5343. Shurtleff, William; Aoyagi, Akiko. comps. 1988. Marketing soyfoods–Labels, ads, posters, and other graphics: Soymilk and soymilk products. Lafayette, California: Soyfoods Center. 174 leaves. Illust. No index. 28 cm. Series: Marketing soyfoods.
• ***Summary:*** This book is a collection of black-and-white photocopies of materials ranging in date from 1976 to 1987. The books in this series, each a unique collection of graphic materials, are designed for a number of purposes: (1) To serve as a source of ideas, ingredients, inspiration, legal specifications, and basic guidelines for companies in the process of developing their own products, designing their own graphic materials, and conceiving their own marketing strategies. (2) To document the tremendous diversity of soyfoods products and the way that each is presented and marketed. (3) By arranging the materials in chronological sequence, to help document the development and history of new product categories and soyfood types, and with them the rise of the soyfoods industry and market in the Western World. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

5344. Wormsley, K.G. 1988. Trypsin inhibitors: Potential concerns for humans? (Letter to the editor). *J. of Nutrition* 118(1):134-36. Jan. [12 ref]
• ***Summary:*** This letter, in reply to comments by Dr. B.D. Roebuck (in this journal, July 15, p. 398-400), expresses concern that some soy milk preparations contain quantities of residual heat-stable trypsin inhibitory activity that are sufficient to inhibit most of the trypsin secreted by normal infants in response to a meal.

There follows a "Reply to the Letter of Dr. Wormsley" by Dr. Roebuck (with 6 references). Address: Ninewells Hospital, Dundee DD2 1UB, Scotland.

5345. *Soybean Update.* 1988. Mexico explores soy milk production. Feb. 1. Also in Soybean Digest, April. p. 68.
• ***Summary:*** LICONSA, Mexico's largest government milk plant, announced it is exploring the production and distribution of soy milk to supplement the country's milk supply. The manufacturing of soy milk, aimed at Mexico's low-income population, represents a potential market for 200,000 tonnes of soybeans a year. 60 professionals from Mexico's dairy industry, government food programs and nutrition programs attended a 10-hour seminar in Mexico City on the uses of soy in dairy-like products recently.

5346. Sturgeon, Bruce. 1988. Great Eastern Sun and the U.S. soymilk industry (Interview). *SoyaScan Notes.* Feb. 4. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** "Both Great Eastern Sun and Mitoku still import soymilk from Japan. Barry Evans (president) okayed my releasing our sales in terms of gallons of soymilk. Each of the following is our fiscal year from September 1 to August 31 the next year."

Year Gallons sold Percent Increase
1985-86 100,000 -
1986-87 106,000 6% New quart introduced
1987-88 148,000 40% Based on 5 months, annualized

The big increase in the current year is due almost entirely to the American soymilk. In the first 5 months of this year we've sold as much American-made soymilk as we sold in all of last year. We only make quarts in America. In New England, the low-price area, it retails for $1.59/quart average. A lot is sold in truckload quantities. During some sales, it goes for as little as $1.29/qt. On the West Coast it is typically $1.99 to $2.19. By comparison, the imported 6 oz product retails for $1.09 to $1.19, which is 3.8 times as much per fluid ounce, and this is not even a full margin. The product is made in Minnesota at St. Peter Creamery (which also makes spray-dried soymilk) then shipped in a stainless steel dairy tanker to Borden's in Pennsylvania. If that freight could be eliminated, it would allow significant reduction of the retail price. They are actively talking with St. Peter about getting a Tetra Pak machine there and sharing it. Edensoy's price is also high because of depreciation, and Sunsoy's because of exchange rate. There is considerable pressure on Vitasoy to float their currency. It will be interesting to see what happens to Vitasoy prices if that happens. Vitasoy has low overhead and plenty of excess capacity. Tetra Pak's sales of all products are way below their expectations; the main activity is in juices. Soymilk is doing well for them.

Milk has not gotten off the ground, but it could with *Lysteria* scares and deaths. GES holds 1% of their product run for quality control. There are three routes of possible bacterial contamination in Tetra Pak cartons. 1. The spores that are not killed by the temperature/time combination. 2. Bacteria entering through a poorly sealed seam. 3. Bacteria entering through a failed steam seal in the 40-foot pipe from the UHT unit and the packaging machine. The packages explode. Address: Director of Marketing, Great Eastern Sun, 92 Macintosh Rd., Asheville, North Carolina 28806. Phone: 808-438-4730.

5347. *Times of India* (*The*) (*Bombay*). 1988. Company news: Noble Soya. Feb. 7. p. 11.
• ***Summary:*** The chairman of Noble Soya, Mr. Adi Godrej, told his shareholders that the company's soya milk is rising in popularity among health-conscious Indian consumers; a new coffee flavour was recently introduced.

In Jan. 1988 and extruder plant with an installed capacity of 900 tonnes per year was commissioned [started], and the company plans to set up another one with a capacity of 2,300 tonnes per year later. Noble Soya has already started test marketing inexpensive protein-rich extruded foods in Bhopal. The company has plans to make spray dried soya milk powder, as well as dietetic and weaning foods.

The company plans to makes a rights issue of Rs. 1.75 crores [17,500,000 rupees] to existing shareholders in the ratio of 35 new shares for every 100 shares held. The proceeds of the issue will be used for additional finance requirements to strengthen overall operations.

Note: Only 280,363 shares were taken up. The remaining 82,400 shares (29.4% of the total) were allowed to lapse.

5348. Schecter, Andy. 1988. New developments at Northern Soy (Interview). *SoyaScan Notes.* Feb. 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** This spring the company will be buying and moving into a 16,000 square foot building at 545 West Ave. in Rochester. They now have 3,000 square feet and are very crowded. The payments will be considerably larger than their present rent payments. They decided to drop the idea of making soymilk on a large scale that they were investigating last year. Four years ago they introduced a new line of packaged tofu under the Harvest Light brand. Before that they sold only fresh unpackaged tofu in bulk. Address: 30 Somerton St., Rochester, New York.

5349. Mitchell, Cheryl; Mitchell, Pat. 1988. California Natural Products and the outlook for amazake and amazake products (Interview). *SoyaScan Notes.* Feb. 22. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** CNP manufactures the rice base for Robert Nissenbaum's Rice Dream, non-dairy frozen dessert. Dr. Cheryl Mitchell is a food chemist, head of the company's R&D, and an expert in the use of enzymes on whole grains. Pat is head of marketing. Both have a strong personal and business interest in and commitment to natural foods.

Pat: "This fall two major natural foods companies are coming out with amazake that will be made by CNP. One of these will be packaged in Tetra Brik cartons and one will be fresh. Neither of these companies is presently involved with amazake. The whole challenge is to make a product that is superior in taste to analogous soy products. If you accomplish that, you have a good market potential."

It is very difficult to get a good amazake flavor in Tetra Pak; it's got a lot to do with technique. It is presently difficult and expensive to develop low-acid Tetra Brik products. The tests cost about $8,000 for 2 hours. Another problem is the loss of the fresh taste that many prefer for a cooked taste. Many people don't like the beany taste in soymilk and some have soy allergies. These are good amazake customers. Rice syrup is used as a sweetener in 2-3 U.S. soymilks. He thinks the market potential depends on how good a job each companies does in developing quality products. "We did not want to come out with another Grainaissance type product. We wanted a really fine tasting product. Grainaissance has what we consider a lot of negative characteristics, such as a glucose bight. Apparently he [Tony Plotkin] is using some type of glucose enzyme. Some people like things very sweet."

Cheryl: "Amazake has a tremendous potential in the United States. Dairy products are not the only way to get protein. The nutritional composition of rice is very good and the hypoallergenic nature offers a lot of new potential products and alternatives to dairy products. Adding enzymes to milk does solve the problem for the many people who are allergic to milk." Many of America's biggest food companies are now quietly focusing their research efforts on rice. They feel that rice is where the future is. Everyone is keeping this under their hats.

CNP definitely does not add hydrochloric acid to lower the pH. It wouldn't work. The natural buffers in the whole grain would neutralize the hydrochloric acid. Use of acid would also cause off flavors and souring from random hydrolysis. Miles knows refined corn starch hydrolysis but doesn't know anything about using commercial enzymes with whole grains, which is where CNP has its patents: enzymatic hydrolysis of whole grains. The pH of CNP's amazake stays right around 6.7 throughout the process. They do not adjust the natural pH at all. Calcium ions from any source are needed as a co-factor for the alpha amylase. They inactivate the enzymes with heat, not with pH adjustment. Robert Nissenbaum knew what he wanted and he trained us as to how to get it. It was a whole new area for us. They now have a spray dried rice sweetener. The koji mold is a good producer of alpha amylase but it is heat sensitive. Enzymes will not work on raw starch; moist heat has to be applied

to gelatinize the starch. Malted barley (commonly called "malt") is still the best known producer of beta amylase. Each source produces enzymes that give subtly different end flavors. *Aspergillus niger* is a widely used source of alpha amylase.

Concerning sweeteners, she was shocked to find that very few feeding studies have been run on fructose, since it is a natural product found it fruits, but in small quantities, balanced with glucose. There are now toxicity studies on fructose. The sweeteners in rice syrups are glucose and maltose balanced and buffered by complex carbohydrates. She thinks NutraSweet [made by Monsanto] should never have been allowed on the market. Many food chemists are appalled at it. The worst thing is that it is educating our children's tastes to a very sweet taste. One problem with rice syrup is that it imparts a distinct rice flavor. They are seeing to what extent it can be reduced naturally. They now have 22 different rice syrups, each custom tailored to an application. Address: California Natural Products, P.O. Box 139, Manteca, CA 95336 (Near Stockton). Plant: 1250 E. Lathrop, Lathrop, CA 95330. Phone: 209-239-3966.

5350. Belleme, John. 1988. Update on miso in America. How about amazake as a soymilk sweetener? (Interview). *SoyaScan Notes.* Feb. 23. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Mitoku (Mr. Kazama and Chris Dawson) is considering a joint venture with Sendai Miso Shoyu of a miso plant on the West Coast of the USA. This is still very tentative. They are also considering making amazake. But about 2 years ago Miyako Oriental Foods increased their miso production capacity. They can probably make over 1 million pounds a year now. It was about 600,000 lb/year. Fujiwara Brewing Co. in Okayama, which makes equipment for miso and soy sauce companies, supplied the equipment to Miyako. The company San-J finally used to build their tamari plant and supply the equipment was Fujiwara's competitor, Nagata. Steve Earle said this was the same company that had just helped expand the Miyako plant. According to the people at Ohsawa-America, Mr. Kitani, the Japanese man who makes Yamaki Shoyu, and Bob Kennedy, formerly of Chico-San are planning a miso plant in the USA, probably with automatic koji equipment.

John feels that sales of miso in America have slowed down and that if new companies enter the market, it will be oversupplied. At American Miso Co. his maximum capacity was about 400,000 lb/year. The volume hasn't changed much in the past few years. Christian Elwell at South River Miso Co. has a capacity for about 60,000 lb/year, which he hasn't reached. Both these are more expensive than Miyako ($4.49 for American Miso white miso, Christian's is more, and Miyako's is about $2.85/lb, or only 63% as much). He suggests: How about amazake as a sweetener for soymilk? It would replace barley malt and give the soymilk more body, kind of like a shake. Then you can put rice on the label. Great idea! Address: Route 5, Box 258, Rutherfordton, North Carolina 28139. Phone: 704-749-9537.

5351. Milbury, Peter. 1988. Chico-San, amazake, and rice syrup (Interview). *SoyaScan Notes.* Feb. 23. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Peter believes that the earliest recipe for amazake in a U.S. cookbook was in Cornellia Aihara's *The Chico-San Cookbook.* This was later reprinted as *The Macrobiotic Kitchen* by Japan Publications. The original book was a labor of love by Cornellia for Chico-San, edited by Peter Milbury and Dave Schleiger. Cornellia has always taught using amazake as a sweetener, and she prefers it to rice syrup. She has a wonderful cake, sweetened with amazake and with an amazake frosting. She was a pioneer in introducing amazake to America.

Junsei Yamazaki is now selling his own miso. He is at Route 1, Box 1333, Orland, CA 95963. Phone: 916-865-5979. The product name is Junsei Amazake Miso.

Concerning the future of amazake: "I think it's hot. It's just got nowhere to go but explode. It's such a wonderful product, with so many variations. All the beverages are now dessert drinks. Someone should make an amazake counterpart to soymilk, sold in larger quantities, with a smoother consistency, less solids, and less sweetness. Chico-San is now working on an amazake powder with California Natural Products (CNP); mix with warm water and serve as a drink. Rice syrup also has great potential as a sweetener. Chico San's Yinnies, a malted sweetener, were the first product of their type in America. Sjon Welters of Nasoya is at least thinking about using amazake as a sweetener for soymilk. Sjon spent a week in the Chico-San rice syrup operation before it was shut down and moved to CNP. The amazake used for Rice Dream is much sweeter than a typical amazake. "I think Rice Dream is one of the most fantastic products I've ever tasted. Originally Chico-San was going to make the product for him. Then we shifted down to CNP. One company that might have interest in amazake is JGR Resources, Inc. Dr. Adam Lambert is Technical Director. P.O. Box 97, Haskell, New Jersey 07420. Phone: 201-835-7644. Their product is Koji-Converted Rice-O-Sweet Brown Rice Syrup. They are a wholly owned minority corporation, that took over a brewery.

The first attempt Peter ever heard of to package amazake in Tetra Pak was in Jan. 1985, just after Heinz took over Chico-San. Bob Kennedy and he set up a run with Real Fresh in Visalia. Real Fresh botched the homogenization. By this time Chico-San had a lock-tight exclusive contract with CNP to make rice syrup and amazake just for them, using their rice. Chico-San set up CNP in the rice syrup and amazake business and spent enormous amounts of time showing them how to do it. Before that, starting in 1972, Chico-San made its own rice syrup in Chico using not koji but a combination

of malted brewer's barley and commercial enzymes from Miles Laboratories. At that time CNP would make the amazake for Robert Nissenbaum, but Chico-San would do the billing. This changed after Heinz took over and couldn't meet their commitment to the contract with CNP. So CNP got out of the contract and dealt directly with Nissenbaum.

Milbury and Belleme say Macromuse (Peggy Rosoff; 301-656-4313, Bethesda, Maryland Circ. 12,000) is much better for long in-depth articles than East West. Address: Lundberg Farm, Box 369, Richvale, California 95974. Phone: 916-882-4551.

5352. Roller, Ron. 1988. Edensoy and the U.S. soymilk market (Interview). *SoyaScan Notes.* Feb. 23. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Ron estimates the size of the U.S. soymilk market to be about 2.1 million gallons a year (not including infant formulas, or small fresh local manufacturers). The largest companies, in descending order of size, are: American Soy Products (Eden Foods; 55-65% market share), Vitasoy, Sunsoy, Westbrae, and Great Eastern Sun. The trend is definitely up. Vitasoy's aggressiveness in the marketplace from early 1987 slowed down Edensoy's progress. Then Vitasoy had big programs and in the last 4 months they seem to have cooled out quite a bit. A Dun & Bradstreet report shows that they lost $700,000 last year selling soymilk.

All is going very well in the joint venture with the various Japanese companies. The relationships are generally harmonious, and they are on target in terms of their volume goals and expectations. They hope to increase volume to cut down overhead expenses. The plant can make 65-70,000 cases/month. During the last 2 months there have been 15 enquiries for export, some of which will soon be signed agreements with France, New Zealand, Australia, etc. They have approval for 190 Kroger stores and are cautiously optimistic on this. Mr. Iwazuki from Marusan runs the ASP plant. They now have 6 soymilk products which are Eden Foods' top six best-sellers: three flavors (carob, vanilla, original) in two sizes (liter and 250 ml). By volume, the liter outsells the 250 ml by more than 3 to 1. Next: an organic soymilk (They now use non-organic Beeson soybeans. The organic market now seems to be growing rapidly), some new flavors, and some totally new soy products, such as tofu. Eden no longer imports soymilk. Soymilk is pretty price sensitive; whenever they put it on sale, it moves. They just started a case-stack program that Sunsoy has had for years. When they started the plant they stopped wholesaling, and dropped over $1 million of wholesale business. But they made that up this past year, plus some.

Concerning oil in soymilk: The label on their Japanese imported product was not correct. Oil was added in Japan but Eden was not told. It was not listed on the label. When their U.S. product was launched, it contained less than 1% added oil. Eden got so many complaints about this small amount that they now no longer add oil, except to the carob, and that will be discontinued as soon as their present labels are reprinted.

Concerning other grains, they are importing Job's tears, which is now recommended by macro teachers for cancer patients. They brought the price from $8.50 down to $2.00/lb and sell lots. Also involved with quinoa, they used to be the master distributor for Quinoa Corp. but are now importing lots from Andean countries; expect to reduce the retail price by 40%. They are thinking of using quinoa in soymilk. Their present sweetener is "malted cereal sweetener" which is made by mixing sprouted barley with corn grits, the adjunct. Rice is too expensive. You can get a higher sugar content with corn than with barley. Rice is still higher in sugar. Corn converts the fastest; rice is slow. It is specially made by a malting house, and they use almost a tanker load every 10 days. They helped develop the product and intend to come out with a line of malted grain sweeteners using malted barley plus different grains. "There is a lot of funny business in the malting arena." They did not like the use of commercial enzymes by California Natural Products. He thinks most people do not realize how their rice syrup is made. Address: Director of Purchasing, Eden Foods, Clinton, Michigan.

5353. Brandon, David L.; Bates, Anne H.; Friedman, Mendel. 1988. Enzyme-linked immunoassay of soybean Kunitz trypsin inhibitor using monoclonal antibodies. *J. of Food Science* 53(1):102-06. Jan/Feb. [37 ref]

• ***Summary:*** An enzyme-linked immunoassay (ELISA) for the Kunitz trypsin inhibitor (KTI) of soybeans was developed using monoclonal antibodies derived from mice. The new immunoassay should have widespread utility in monitoring residual levels of KTI in processed soy products such as infant formulas and in plant breeding studies. Soybeans contain two major classes of protease inhibitors, Kunitz trypsin inhibitor (KTI) and the double-headed Bowman-Birk trypsin and chymotrypsin inhibitor (BBI), and both KTI and BBI exist as several isoforms, which are derived from different genes or are produced by proteolysis. Address: USDA-ARS, Western Regional Research Center, 800 Buchanan St., Albanay, California 94710.

5354. Chung, Je-Bong; Lee, K.H.; Sohn, H.S.; Kim, S.M. 1988. Studies on thermophilic flat-sour bacteria in soymilk: Isolation, identification and determination of heat resistance. *Hanguk Sikp'um Kwahakhoe Chi* (*Korean J. of Food Science and Technology*) 20(2):218-24. [16 ref. Eng; kor]

• ***Summary:*** To optimize thermal processing of soymilk, 4 strains of thermoresistant flat-sour bacteria were isolated from soymilk. The isolates were aerobic spore-forming rods and grew at 65ºC. Based on morphological and physiological properties, all isolated strains were identified as *Bacillus stearothermophilus.* The average D values for the 4 strains

were 77.27, 20.20, and 2.76 and 1.39 minutes at 110, 115, 121 and 125ºC, respectively, and the average Z value was 8.36ºC. Address: Central Research Inst., Dr. Chung's Foods Co. Ltd., 1-25 Songjung-dong, Chungju, Choongbuk-do 360-290, South Korea.

5355. Dashiell, Gregory L. 1988. Characterization and use of soybean lecithin. In: L. McCann, ed. 1988. Soybean Utilization Alternatives. St. Paul, MN: Univ. of Minnesota Center for Alternative Crops and Products. vi + 429 p. See p. 355-66. [21 ref]
• ***Summary:*** Discusses: Composition of commercial lecithin. Heterogeneous nature of soy lecithin. Physical properties of lecithin. Techniques to modify lecithin functionality. General functionality of soy lecithin. Emulsification. Pigment dispersion. Release. Mixing and Blending. Instantizing. Future uses of lecithin and derivatives: Baking. Animal health and nutrition: Human health and nutrition. Aquaculture. By far, the largest use of lecithin is as a fat emulsifier in milk replacers.

The nutritional and therapeutic effects of phospholipids are being extensively studied. Beyond being a rich source of essential fatty acids, phospholipids from soy lecithin have been identified as being active in the stimulation of the immune system. The use of phospholipid analogs is being extensively investigated for their effects against cancerous cells. The status of this research is the subject of a research conference the proceedings of which have been published. Address: Central Soya Company, Inc.

5356. Elliott, James G. 1988. Consumer attitudes regarding soy products. In: L. McCann, ed. 1988. Soybean Utilization Alternatives. St. Paul, MN: Univ. of Minnesota Center for Alternative Crops and Products. vi + 429 p. See p. 381-91. [3 ref]
• ***Summary:*** Discusses: Consumer awareness of soy foods. Consumers' awareness of manufacturers' use of soy protein. Consumer willingness to purchase meat products containing soy protein. People were asked, when you think of foods which are made from soybeans, what products come to mind? Unaided awareness of soyfoods among consumers was low, only 4 in 10 were able to name a specific soyfood on a top-of-the-mind basis. However, aided awareness was significantly higher. Soy sauce and soybean oil had the highest levels of aided awareness among consumers at 94% and 77% respectively. Tofu, soymilk, margarine, and soy nuts registered moderate levels of aided awareness at 45%, 38%, 38%, and 31% respectively. Tofutti came in next at 21% and miso came in last at 10%.

When asked if they had "ever tried" these products, of the eight soyfoods mentioned, soy sauce demonstrated the highest trial level at 75%. All other products "ever tried" were 20% or less. Respondents who had not tried a particular food product made from soybeans were asked if they would be willing to do so. Expressed willingness to try was in the 60% to 70% range. It was the highest for soybean oil, soy nuts, margarine, tofu and Tofutti.

65% of those surveyed responded positively when asked, "have you heard of soy protein being included in certain food products?" 35% were unaware. Among consumers who were aware that manufacturers use soy protein, 60% said that they were definitely using foods that contain soy protein, or believed that they were; 29% said they were not using them; and 11% didn't know. When asked, "Does the fact that a food manufacturer uses soy protein in its products change your feeling about the company?," 80% stated no difference; 8% stated that they felt better; and 12% said that they felt worse. Address: Manager of scientific communications, Protein Technologies International, St. Louis, Missouri.

5357. Golbitz, Peter. 1988. Whole bean soy products. In: L. McCann, ed. 1988. Soybean Utilization Alternatives. St. Paul, MN: Univ. of Minnesota Center for Alternative Crops and Products. vi + 429 p. See p. 325-31.
• ***Summary:*** Discusses: Tofu. Soymilk. Yuba or soymilk film. Fresh green soybeans. Whole dry soybeans. Soynuts. Soy sprouts. Tempeh. Soy sauce. Miso. Address: Soyatech, Bar Harbor, Maine.

5358. Henry Ford Estate. 1988. Menu of dinner served at Ford Exhibit, Century of Progress. August 17, 1934. Dearborn, Michigan. 1 p.
• ***Summary:*** This meal was served again by chef Jan Willemse on 29 Feb. 1988.–Tomato Juice Seasoned with Soy Bean Sauce–Salted Soy Beans–Celery Stuffed with Soy Bean Cheese–Puree of Soy Bean–Soy Bean Cracker–Soy Bean Croquettes with Tomato Sauce–Buttered Green Soy Beans–Pineapple Ring with Soy Bean Cheese and Soy Bean Dressing–Soy Bean Bread with Soy Bean Relish–Soy Bean Macaroons–Apple Pie (Soy Bean Crust)–Cocoa with Soy Bean Milk–Soy Bean Coffee–Assorted Soy Bean Cookies–Soy Bean Cakes–Assorted Soy Bean Candy–Chef Jan Willemse, food items and preparation, courtesy of the Miesel/Sysco Food Service Company of Canton, Michigan.

Note: This menu seems to differ slightly from the original 1934 menu in that it omits one dish (Soy Bean Biscuit with Soy Bean Butter) and replaces it with another (Soy Bean Macaroons). Address: Dearborn, Michigan.

5359. **Product Name:** Homestyle Cottage Tofu Salad: A Cottage Cheese Substitute.
Manufacturer's Name: Homestyle Foods (Formerly Sonoma Specialty Foods).
Manufacturer's Address: 2317 Bluebell Dr., Santa Rosa, CA 95403. Phone: 707-525-8822.
Date of Introduction: 1988. February.
Ingredients: Tofu (organic soybeans*, water, nigari), soy

oil, soy milk, vinegar, chives, dill, parsley, scallions, natural spices, sea salt, and honey. * Grown in accordance with CA H&S Code 26569.11.
Wt/Vol., Packaging, Price: 8 oz or 15 oz plastic tub.
How Stored: Refrigerated.
Nutrition: Per 2.66 oz.: Calories 137, protein 7.5 gm, carbohydrates 4.4 gm, fat 10 gm, fiber 1.5 gm, sodium 0.21 gm, cholesterol 0.
New Product–Documentation: Label. 1987 and 1988. 4.5 inches diameter. Black, green and blue on white plastic lid. "Improved! Non-Dairy. Cholesterol Free. Ready to Eat on Sandwiches, as a Dip & in Salads. Natural. No Preservatives. Nutritious. Delicious. Kosher."

5360. **Product Name:** [Moca Soy (Soymilk with Yannoh)].
Foreign Name: Moca Soy.
Manufacturer's Name: Lima Foods (Belgium. Distributor).
Manufacturer's Address: Edgar Gevaertdreef 10, B-9830 Sint-Martens-Latem, Belgium.
Date of Introduction: 1988. February.
Ingredients: Water, soya*, barley malt*, whole dried cane juice, barley*, rye*, malted barley*, chicory, acorns. * = Organically grown.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Label. 1988. 3.75 inches wide by 3.5 inches high by 2.75 inches from front to back. Brown and white on yellow. An illustration (line drawing) shows soymilk being poured into a glass. "Filtrate of organically grown soya with mocha flavor" written in 9 languages. Ingredients also written in 9 languages.

Lima catalogue, price list, and color product brochure. 1989. Shows the Tetra Brik Carton. "Moca soy, a mixture of Lima Soy and Yannoh, is equivalent to barley malt as a sweetener or in desserts. This drink pleases both adults and infants."

Label sent by Anthony Marrese of Bremen, Germany. 1991. Oct. 7. The ½-liter product now retails for DM 3.40 in Bremen. Nature et Progres organic certification symbol. "Biogarantie."

5361. Linder, Anders B.J. 1988. STS moves head office from Singapore to Denmark (News release). Soya Technology Systems, Ltd., 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 1 p. Feb.
• ***Summary:*** From the day STS was established by Danish Turnkey Dairies Ltd. in 1982, soymilk activities have been headed from offices in Singapore. In June, 1987, STS' parent company, Danish Turnkey Dairies Ltd. was purchased by APV, a leading multinational maker of processing machinery for the food and beverage industries. From an organization with over 200 companies, the APV group last month was restructured into nine primary subsidiaries of which APV Pasilac A/S is the one to which Danish Turnkey Dairies Ltd. and STS now belong. As a consequence of this large organizational restructuring, STS (Singapore) will move offices to its parent company's, Danish Turnkey Dairies Ltd. premises in Aarhus, Denmark with effect from April 1, 1988. Address: Singapore.

5362. Matthiesen, Livia C. 1988. Soja? So ja! Das grosse Soja-Kochbuch fuer Feinschmecker [Soya? Well yes! The big soy cookbook for epicures]. Bern, Switzerland: Humata Verlag Harold S. Blume. 128 p. Illust. Recipe index. 24 cm. [Ger]
• ***Summary:*** At the top of the cover: "Wholefoods recipes with soya, the giver of super protein. 132 recipes with tofu, okara, tempeh, soybeans, and soybean grits." Plus 16 color photos of prepared dishes. Tofu is used in many of these German-style recipes. Contains instructions for making tofu, okara, and tempeh at home.

5363. McGowan, Christina. 1988. An analysis of the market for soya-based products. Dublin, Ireland: Centre for Marketing Studies, University College Dublin. 37 p. Feb. 28. Unpublished typescript. 30 cm.
• ***Summary:*** This is the earliest survey seen of the soyfoods market in Ireland. It is full of interesting statistics. The summary states that the market for soya-based products in the Dublin area is miniscule [minuscule]. These products account for only 1-5% of total health food sales. Annual sales of such products are roughly £200,000–£240,000 according to Kelkin, Ireland's leading wholesaler. However if general trends in the health food industry can be relied on, there will be a steady increase in demand for soya products. The two main types of consumers are those suffering from lactose intolerance, and vegetarians. The most popular product is soya milk due to increased publicity and frequent references by doctors. Possible new products would be soy cheese, ice cream, or yogurt. A total of 23 retailers were interviewed and only 23 stock soya products.

A survey was conducted on 103 respondents outside health food stores. Of those who had tasted soya-based products (only 15% of the total): 71% buy for health reasons. 81% buy in health stores. 94% buy for themselves.

51% of the respondents became aware of soya products through word of mouth, 23% through in-store displays, and 23% through magazines/print. The most popular product quoted by respondents was soya milk (62.5% indicated they purchased it). Approximately 50% said they bought soy-based desserts, 20.2% bought tofu, 11.5% purchased soy cheese, 5.4% purchased tempeh, and 2.7% bought soy yogurts.

Companies involved with soya are Sunrise (under license here), Spiral Foods of Cork (Tempeh), and Irish Sea Greens (Tempeh). Some people are making tofu in the Swords area and an Asian man was making tofu

locally. Wholesalers that handle soya foods are Wholefood Wholesale (import 20 tonnes a year of soya milk worth £15,000 [Irish pounds] wholesale value), LifeForce (import £30,000 to £40,000 of soya milk), Paragon Distributors (imports 3-4 tons of soya foods worth £10,000), Perrans (sells £12,000 worth of soya milk per year), and Kelkin Naturproducts (sells £150,000/year of soya milk and £50,000 desserts/year). Address: Dublin, Ireland.

5364. Muth, Linda. 1988. Corporate donations being sought for Kersey Children's Home. Maine artist paints Nigerian soy project–Donates work to raise money. *Soya Newsletter* (*Bar Harbor, Maine*). Jan/Feb. p. 11.
• ***Summary:*** Maine artist Dorothy B. Hayes has done a series of 18 beautiful paintings of women and children at the Kersey Children's Home in Ogbomoso, Nigeria, which were then used to print posters and cards. The International Institute of Tropical Agriculture contributed the other half of the printing costs. Later, UNICEF contributed the money for postcards to be printed. At the Kersey home, the most malnourished cases are put on a diet containing soymilk, and within a few weeks, the swelling caused by malnutrition and other diseases goes down. They once again become healthy and regain their energy.

At Kersey, the women, who are, for the most part, the farmers in Nigeria–learn how to use soybeans in their traditional foods as well as in new recipes. After learning how to plant and harvest soybeans, they learn how to make a kind of hardtack out of the boiled-down beans and how to pasteurize soymilk. Every part of the soybean is used. Recently, the British High Commission donated a van which will be used to go out into the further regions of Nigeria with the purpose of staying for a week or two to teach women, who cannot reach Kersey, how to grow and use soybeans for their families and villages. To date, Dorothy's efforts have raised about $5000 in the U.S. Address: (Kersey): The Last Word, P.O. Box 178, Blue Hill, ME 04614. Phone: 207-374-9913.

5365. *Natural Foods Merchandiser.* 1988. Soyfoods import costs rise as dollar declines. Feb. p. 32.
• ***Summary:*** Discusses techniques used by Westbrae, Edward and Sons Trading Co., Eden Foods, and San-J International to try to deal with the falling value of the dollar against the yen. The dollar began its fall in September 1985. In the past 18 months, the dollar has been devalued almost 40% against the yen, making Japanese imports about 40% more expensive. To try to keep consumer prices as low as possible, some companies try to absorb the cost increases themselves, some ask Japanese manufacturers to help, and some (such as Eden Foods, Westbrae, and San-J) start to make products in the USA.

5366. Nomura, Yukihiro; Sugisawa, K.; Adachi, O.; Ameyama, M. 1988. Kotei-ka sakusan-kin o riyô shita ekijô no fukai-shû no teigen hôhô [Reduction of off-flavor in liquid foods using immobilized acetic acid bacteria]. *Nippon Nogeikagaku Kaishi* (*J. of the Agricultural Chemical Society of Japan*) 62(2):143-48. Feb. [6 ref. Jap; eng]
• ***Summary:*** Off-flavors caused by aliphatic aldehydes (e.g. hexanal) in defatted soy milk were reduced by acetic acid bacteria immobilized onto KAPPA–carrageenan. Optimum pH and temperature were 5 and 50ºC, respectively. Address: 1-2. The Research Inst., House Food Industrial Co., Higashi-Osaka 577, Japan; 3-4. Dep. of Agricultural Chemistry, Yamaguchi Univ., Yamaguchi 753, Japan.

5367. **Product Name:** PP670 Isolated Soy Protein (for Beverage Powders).
Manufacturer's Name: Protein Technologies International.
Manufacturer's Address: Checkerboard Square, St. Louis, MO 63164. Phone: 800-325-7108.
Date of Introduction: 1988. February.
Wt/Vol., Packaging, Price: Bulk.
How Stored: Shelf stable.
Nutrition: 90% + soy protein.
New Product–Documentation: Soya Newsletter. 1988. Jan/Feb. p. 8. Designed for beverage powders and other products that require superior flavor/odor and mouthfeel characteristics, PP670 comes in powdered form and has excellent suspension and dispersibility properties. It can be used for partial or complete replacement of caseinate in new or existing product formulations.

5368. Shurtleff, William; Aoyagi, Akiko. 1988. Amazake and amazake frozen desserts: Industry and market in North America. 1st ed. Lafayette, California: Soyfoods Center. 10 + 28 + 17 + 17 p. Feb. 21. 28 cm. [82 ref]
• ***Summary:*** Contents: 1. Amazake industry and market analysis: Introduction and overview. History. Market size and growth rate. Comparison with the soymilk market. Largest manufacturers of amazake and amazake products in North America. Market segments (who buys, outlets where sold, geographical). Product types. Prices. Packaging. Imports. Market outlook and forecast. 2. Forty-three commercial amazake products and product/company histories, with index. 3. Bibliography on amazake and amazake frozen desserts (17 references with index). 4. Early documents and labels. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

5369. Sipos, Endre F. 1988. Edible uses of soybean protein. In: L. McCann, ed. 1988. Soybean Utilization Alternatives. St. Paul, MN: Univ. of Minnesota Center for Alternative Crops and Products. vi + 429 p. See p. 57-93. [107 ref]
• ***Summary:*** Discusses: Definitions and methods of preparation. Nutritional and health aspects of soy proteins: Nutritional value of soy protein ingredients, amino acid

profile, digestibility, amino acid requirements, nutritional value of soy proteins in food systems, meat, poultry, and fish, dairy products, cereal grains, health and soy protein products. Functionality: General properties, functionality of soy protein ingredients, soy flours/grits (untextured), soy protein concentrates (untextured), soy protein isolates, soy albumens, textured/structured soy protein products, flavor and texture. Uses in food systems: Meat food products, emulsified meats, coarsely-chopped meats, canned meats, whole muscle meats, poultry products, seafood products, analogs, pet foods, dairy-type products, bakery products–cereals–pastas, bread and rolls, specialty breads, cakes and cake mixes, doughnuts, breakfast cereals, pasta products, misc. baking applications, misc. foods. Consumption trends. Future considerations. Summary.

Soy protein concentrates are preferred in milk replacers for baby animals such as calves, lambs, and pigs because of their low soluble carbohydrate content (i.e. less gastrointestinal disturbance problems) and lower immunogenicity. The industry producing edible soy protein products for human consumption has grown enormously since the late 1950's. Yearly world production is estimated to be approximately 1,500,000 tonnes (metric tons or 3,300 million lb; Note: Text figure of 1,500 tonnes is an error) of soy flour, 90,000 tonnes (200 million lb) of soy protein concentrate, and 70,000 tonnes (170 million lb) of soy protein isolate, which amounts to about 3,700 million pounds/year of edible protein for human consumption. Since soy flour is used in many developing countries where statistical records are incomplete, the figure for this ingredient could be higher than given here. The demand for soy protein concentrates appears to be growing at the fastest rate.

Note: Dr. Dale Johnson, in a personal communication to Dr. Walter Wolf at the USDA Northern Regional Research Center in Peoria, Illinois, estimated the 1985 production of isolated soy proteins in the USA to be 70,000 tonnes. Sipos here gives that same figure as the world total. Yet isolate production has increased worldwide since 1985 and it is produced outside the USA in Japan, in Belgium (by Ralston Purina), and in China. Address: Sipos & Associates, Inc. Fort Wayne, Indiana.

5370. *Soya Newsletter* (*Bar Harbor, Maine*). 1988. New process and equipment for making non-beany soymilk unveiled. Cold-grind method suitable for small and large plant applications. Jan/Feb. p. 13.

• ***Summary:*** The key to the process is grinding the beans in unheated water under a vacuum to eliminate oxygen. ProSoya Foods International Inc., Ottawa, Canada recently announced that patents for a new process and equipment are pending in several countries and that a patent has recently been allowed in the U.S. for equipment to produce a non-beany tasting soymilk. To reduce oxygen to a few parts per million, a special air/water tight vessel was designed with a small hammermill grinder built into the bottom. The new cold-grind method produces soymilk and tofu as wholesome as the traditional cold-grind method, but without the beany flavor. Crown Iron Works Corp. of Minneapolis, Minnesota, in association with ProSoya, is developing equipment which will use the new process to produce non-beany tasting soy flakes.

For more information contact Raj Gupta, ProSoya Foods International Inc., 627 Gaines Dr., Ottawa, ONT, K1J 7W7, Canada. Phone: 612-745-9115.

5371. *Soybean Digest.* 1988. Soy milk solves dairy shortage. Feb. p. 44.

• ***Summary:*** Professionals from Mexico's dairy industry and government food and nutrition programs attended a 10-hour seminar in Mexico City on how soy can help alleviate Mexico's shortage of dairy products. Two U.S. technicians, Emil Huang of Land O'Lakes and Allan Routh of St. Peter's Creamery, were among the seminar speakers. A program highlight was Huang's demonstration on tofu and soy milk manufacturing.

Note: This is the earliest document seen (Jan. 2010) concerning Allan Routh–later of SunRich.

5372. Weisenthal, Debra Blake. 1988. Diabetes: Out of the medicine closet... and into the kitchen cabinet. *Vegetarian Times.* Feb. p. 16-18, 20-23, 53. [9 ref]

• ***Summary:*** Diabetes is the third leading cause of death by disease in the United States. About 5.8 million Americans have been diagnosed as having the disease and 4-5 million more may have it without knowing it. A new theory states that a low-fat, high-carbohydrate diet is best. Soymilk is used in the milk exchange. Diabetes mellitus is a chronic disease characterized by the inability to utilize carbohydrates, and by excess sugar in the blood and urine. Dr. Julian Whitaker, author of *Reversing Diabetes,* loathes his colleagues' continued reliance on drugs. His program at the Whitaker Wellness Institute in Huntington Beach, California, relies on a strictly vegetarian diet for diabetic management. His book details the diet and its success.

People with diabetes cannot effectively utilize glucose, the body's basic fuel. The disorder can occur when there is either an insufficient amount of insulin or insulin is not properly used. Insulin, made in the pancreas, is a hormone that regulates the amount of glucose in the bloodstream by helping it pass through cell membranes. When the process goes awry, the glucose remains in the blood, and the body's cells consequently become starved for energy. There are 2 types of diabetes. Type I occurs when the body does not produce sufficient insulin. About 5% of diabetics are type I. Type II diabetics have bodies which are insensitive to insulin and it goes unused, even though they produce enough of it.

Most professionals in the field now believe that

Carbohydrates are a good thing for diabetics, and fats exacerbate an already bad situation. Before insulin was discovered in 1921, diabetics were told to cut out carbohydrates entirely because there was no way to move the sugar out of the blood. Once insulin was discovered, doctors still told patients to avoid carbohydrates, although there was no evidence that approach was effective. In the 1930s, researchers began to find that the typical diet eaten by diabetics–14% carbohydrate calories, 7% protein calories and 79% fat calories–actually brought on diabetes, even in people with normal metabolism. At the Whitaker Institute, the diet for diabetic patients contains a minimum of 65% complex carbohydrates.

Not everyone agrees with the low-fat, high-carbohydrate theory. Anne Coulston, research dietician at Stanford University, believes that any success researcher find with a low-fat diet is a result of their patients losing weight on the diet, nothing more. Coulston agrees with most diabetes professionals that weight loss overrides any dietary manipulation or composition. Address: Staff.

5373. **Product Name:** Winco Soya Milk.
Manufacturer's Name: Windmill Food Co.
Manufacturer's Address: Ettukala, Negombo, Sri Lanka. Phone: 031-2572.
Date of Introduction: 1988. February.
Ingredients: Soya, powdered milk, sugar.
Wt/Vol., Packaging, Price: 190 ml glass bottle retails for Rs. 4/-.
How Stored: Shelf stable, 6 month shelf life.
New Product–Documentation: Label. 1988. 3.25 by 3.5 inches. Brown, yellow, and white. Drawing of a happy face drinking soymilk through a straw from a tall glass. "A quality Winco product." Form filled out by Jane Gleason. She visited the shop in Colombo on 14 March 1988. Discussion with Mr. J.P.D. Pieris, Managing Director, Windmill Enterprises. The company began producing soyfood products in 1984, as a business and to help promote soy in Sri Lanka. Initial products included tofu, soymilk beverages, snacks, and soy wuddies (a type of burger). This production was scaled back to the current soymilk because a grinder, on loan from SFRC, was taken back, and because of marketing difficulties. The feasibility of expansion is currently being assessed. The key to this will be an advertising campaign. Marketing, through sales reps in Colombo, is about 1,000 bottles/month. The company presently uses 50 kg/month of soybeans which they buy for 10 Rs/kg at Colombo line markets (Ja Ella area). Production is increasing although the product has only been out for 6 weeks. Most consumers buy the product for its good taste, only about 5% because of nutritional value.

5374. Herry, Yvon. 1988. Coopérative agricole de Colmar: Le soja sous toutes ses formes [The agricultural cooperative of Colmar: Soya in all its forms]. *France Agricole* (*La*) No. 2227. p. 42. March 4. [Fre]
• ***Summary:*** About Maurice Rochet (whose photo is shown) and his work with soyfoods, Cacoja, and C.A.C.

5375. Westbrae Natural Foods. 1988. Westbrae Soy-O, Vestro Foods (new owner), and Eastern Gates Native Soy Products in Hong Kong (Interview). *SoyaScan Notes.* March 4. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Soy-O was a soymilk with "no oils added" that was sort of debuted in Nov. 1986 in 20 white unprinted Tetra Brik cartons in 3 flavors, with a flyer, but was never really launched. That was just when they decided to switch their manufacturing out of Japan and wanted to focus on WestSoy and malted. Also things did not go well with the manufacturer. Lehmann wrote in Nov. 1986: "Westbrae O-Soy. The Honorable Soy Drink. Pliable foil packs. 6 oz. Organic soybeans, no oil added. Plain, carob, and vanilla flavors."

In February 1988 Westbrae merged with Vestro Foods, a company in southern California which is not in the natural foods industry. A publicly held company traded over the counter (NASDAQ symbol: VEST), Vestro is bigger than Westbrae; though they do not have a lot of employees they do have a lot of money and marketing experience. The company that never sold out just sold out. Gordon is still president. They have specialized in finding niche food companies and helping them develop in their marketing. Westbrae will be looking for more growth by acquiring other natural foods companies or products that meet their quality standards, and by launching some new products of their own. Everyone is very pleased.

Their WestSoy soymilk in Tetra Brik cartons is made in Hong Kong [by Hong Kong Soya Bean Products Co. Ltd., makers of Vitasoy] and selling very well. Sales of liters especially are up. Westbrae gets their soymilk through Eastern Gates Native Soy Products; Westbrae is not sure if they are the manufacturer or distributor. The Malteds are made domestically. The source is a secret. Sales are picking up after a recent price drop. Address: Emeryville, California.

5376. Abersold, Vance. 1988. New developments in soymilk, Stephen Story, and Great American Foods in Salt Lake City (Interview). *SoyaScan Notes.* March 10. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** His soymilk was launched in Feb. 1987. It is selling very well to the people who are allergic to dairy products and to vegetarians. Its features are the best taste (because of a new process, and the lowest price, since it is sold dry primarily by direct mail). He got interested in 1981 when he was involved with Roy Brogue at the company Meadowfresh Farms (no longer in existence) in Salt Lake City, Utah, developing whey-based milks. The company was Mormon and the products used in food storage programs because they last far longer than powdered milk. But he

grew interested in soymilks because whey-based milks are high in lactose and because of a big breakthrough in tofu and soymilk development made by Steven Story, a student of Dr. Clayton Huber at Brigham Young University, Dept. of Food Science and Nutrition. Huber was the head food nutritionist on the NASA Space Program. Huber fought the dairy industry when Meadowfresh was launched, and prevailed in every suit in every state. Story also made breakthroughs on whey-based milks. He is a genius at food development, and is now a consultant in Salt Lake City (Tel. 801-298-0188) doing developmental work for food companies. Vance got into this because of long-time undiagnosed serious allergies to milk products.

Story was a one-third owner of Great American Foods which started in about 1986 in Salt Lake City, as a division of Magic Mill (which makes stone mills), which is in turn a part of the SSI corporation. They produce the product (plus many other products, such as whey-based diet drinks/liquid meals), and presently sell it to Abersold and to Sovex. Sovex retails it for about twice as much as Abersold under the brand "Better than Milk." Magic Mill also sells its own Magic Mill Soy Milk. Steve is presently dissolving his partnership. He does not know of anything that Story has published. His product Sno-e contains a small amount (about 1%) of sodium caseinate, but in the extraction process all of the allergens are removed so it can be called "non-dairy." One of his goals is to develop a second product that does not contain any sodium caseinate. Yet the sodium caseinate in the present product is a key to the flavor. Address: 2730 Morley Way, Sacramento, California 95864.

5377. Ballard, Bob. 1988. History of Great Eastern Sun (Interview). *SoyaScan Notes.* March 10. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The company was founded in March 1982 by Barry Evans (who is now the sole owner and lives in Los Angeles). He may have been joined by Martin Roth and John Belleme. The original purpose was to be a distributor for the miso made by American Miso Company. But it soon decided to import Japanese macrobiotic products from Mitoku (the first order was placed in Jan. 1982) and later became a manufacturer. Address: 92 Macintosh Rd., Asheville, North Carolina 28806. Phone: 808-438-4730 or 704 252-3090.

5378. Kerrigan, Stuart. 1988. "Modern amazake," Price Rice, and future plans to make seitan (Interview). *SoyaScan Notes.* March 10. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Stuart uses the term "modern amazake" to refer to that made with purified commercial enzymes. After the sale of Price Rice, which was a financial disaster, Mary Lee worked with a dessert company in Florida making pies with modern amazake out of her home. Then she moved to California. Stuart has just signed a contract to work with Daniel's of Boston, Massachusetts, making seitan and amazake.

Note 1. In Sept. 1979 Stewart Kerrigan (1850 South Lake Lotela Dr., Avon Park, Florida 33825) ordered the books *Tofu and Soymilk Production,* and *The Book of Tempeh,* by Shurtleff and Aoyagi from New-Age Foods Study Center in California.

Note 2. According to Lenny Jacobs (3 July 1992) Daniel's of Boston is not yet open and may never open. The owners of the restaurant building in Brookline have been paying rent on it for years. Brother Ron Pickarski helped to develop the menu. Address: Florida.

5379. *Deccan Herald* (*India*). 1988. Company notes: Noble Soya. March 11.
• ***Summary:*** "Noble Soya House achieved net sales of Rs. 136.47 lakh during the first 6 months ended December 1987, against Rs. 83.69 lakh in the previous period. [Note: Monthly sales were up about 22% during the second period.] Due to the company starting production only on Feb. 12, 1987, there are no corresponding figures available.

The company suffered a gross loss of Rs. 72.55 lakh (Rs. 47.08 lakh). After depreciation of Rs. 16.62 lakh (Rs. 41.79 lakh) net loss stands at Rs. 89.17 lakh (Rs. 88.87 lakh).

5380. Speck, Peter. 1988. Re: History of soymilk and tofu products at Galactina Ltd. Letter to William Shurtleff at Soyfoods Center, March 11. 1 p. Typed, with initials on letterhead.
• ***Summary:*** Galactina S.A. makes dietetical and pharmaceutical products. Their first soy product, Naga Sonda, was launched in 1969 [actually in 1964 by Nago, Naehrmittel AG] in dry form. In 1981 the same product was introduced in liquid form in Tetra Pak. These were followed by Biodelis, Biodelis Plus, Vita Drink, and Vita Drink Plus.

The company introduced 4 tofu varieties in early 1985. Others followed. Address: Galactina Ltd., CH-3123, Belp, Switzerland. Phone: (031) 81 11 11.

5381. Tsui, Hilton. 1988. Soymilk in Hong Kong. New developments with Vitasoy (Interview). *SoyaScan Notes.* March 14. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Soymilk manufacturers in Hong Kong include: 1. Hong Kong Soya Bean Products Co. Ltd., makers of Vitasoy; they had 92% of the soymilk market in 1987, down from 94% in 1986. 2. Coca Cola Co., makers of Hi-C; 8% of the market, up from 5.5% in 1986. When Hi-C was first launched in 1981 it was a total flop. But the new Hi-C is much improved, with very good taste. The five flavors include Honey-Dew Melon and Peanut. This is now Vitasoy's biggest competitor. 3. President Enterprises Corp. of Taiwan has a branch in Hong Kong. 4. Winner, which was purchased by Beatrice in about 1985. They used to make

Doll brand soymilk, which was also sold in 1987 New York and San Francisco Chinatowns. But Doll is no longer found in the U.S. or Hong Kong. 5. Dairy Lane, Hong Kong's biggest producer of cow's milk, launched Delite soy ice cream in 1987, in 3 flavors (wildberry, rocky road, mocha chip). The packaging and flavor are almost identical to Tofutti; it could be licensed. They could be making soymilk. Hilton has never heard of Eastern Gates Native Soy Products in Hong Kong.

Vitasoy USA did NOT (as a competitor alleged) loose $700,000 on soymilk in 1987. They do cooperate with Dun & Bradstreet but do not break out financial information by product line. Last year Vitasoy USA was profitable as a company.

The company's goal for 1987 is to pass Westbrae to become number 2 in the U.S. soymilk market, by penetrating the areas where distribution is now nonexistent or weak: Texas, the Pacific Northwest, the Sun Belt, and the Midwest. But they may be number 1 in northern California, and number 2 in California as a whole, the northeast and perhaps the southeast. Nationwide he thinks they are now number three. Address: Vitasoy USA, Brisbane, California.

5382. Little, Sybil. 1988. Soybeans: A food for our times. *Oakland Press* (*Pontiac, Michigan*). March 16. See also p. D-3. "Soybeans bring variety and good health to the table."
• ***Summary:*** Recently, a soybean buffet was held, re-creating the soybean menu served at the Ford Exhibit of the Century of Progress on Aug. 17, 1934. It was part of a celebration of the 125th anniversary of Henry Ford's birth. Included on the menu were soybean products–cheese, crackers, croquettes, buttered green soybeans, pineapple ring with soybean cheese and dressing; bread, biscuits, soybean butter, soybean crust on an apple pie, soybean milk, soybean coffee, assorted cookies and cakes and candy. Ford's personal baker, Jan Willemse, now in his 80s, supervised the affair.

Ford had an intense interest in agriculture; some say he did more for agriculture than he did for the automobile business. his roots were in farming and his unwritten mission was to ease the burden of the farmer's life. His Fordson tractor revolutionized agriculture as the Model T had done for transportation. In 1932, Ford issued orders to concentrate on soybean research. George Washington Carver began studying the soybean in 1904 at the Tuskegee Institute in Tuskegee, Alabama.

5383. *Oakland Press* (*Pontiac, Michigan*). 1988. Soybeans bring variety and good health to the table: Bean pops up in everything from soup to nuts. March 16. p. D-3.
• ***Summary:*** Contains 5 recipes from INARI and 2 from Eden Foods (using Edensoy soymilk): Pea and soynut salad. Dandy soynut salad. Super Soy energy bar. Soynut butter. Soynut butter soup. Banana bread. Basic creamy white sauce.

5384. Nordquist, Ted. 1988. New developments with tofu and soymilk in Sweden (Interview). *SoyaScan Notes.* March 26. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ted is working with three of Sweden's largest food companies: (1) Semper AB, the country's largest milk company, used to be an independent milk research company. Semper now makes an infant formula, and two flavors of soy drink for adults, both from soy protein isolates. The later is poor tasting. Semper is now wholly owned by Arla, the Swedish milk company. (2) Karlshamn Oliefabrik, Sweden's largest oils and fats company, that is also the largest manufacturer of ice cream and margarine. They used to be a soybean crusher, but now they import their oil. Karlshamn has the Swedish franchise for Ralston Purina. They have a newsletter The Soybean Magazine that they use to market Ralston's products. They import isolates, which Semper buys for use in their infant formula (Soja Semp) and adult soymilks. (3) Trensums Musteri, a juice company owned by Mark Jungstrum, who owns the only 3 Combibloc machines in Sweden. He packages Knorr soups in them. The resources are unlimited. The present focus is on developing a natural soy base free of beany flavor and evaluation the economics of the product. From this base they will make a line of products, including dairylike products and non-beany tofu. Ted has a contract with Trensums to receive a 2% commission on all soy products made in the new plant, since he basically developed the plant, which is inside the Trensums Musteri juice factory located in the south of Sweden, near Karlshamn. He also has a contract with Semper. Semper supplies Karlshamn with all their milk products. Roughly 12 million crowns ($2-3 million) has already been invested in soy equipment and R&D at this plant in Tingsryd, which produces about 4,000 liters/hour of soymilk.

This project began in 1983, when Luke Lukoskie came to Ted with a proposal to cooperate with Alfa-Laval, since Ted was the only tofu maker in Sweden, where Alfa-Laval is located (in Lund). Luke had a contract with Alfa-Laval to develop tofu and other soy products. He wanted a continuous tofu making process. Alfa-Laval had a plant installed in his former factory, which burned down. At one point Lukoskie was considering a lawsuit against Alfa-Laval. In 1984 Alfa-Laval began moving the soy development operations from Lund to Singapore. At the time they had sold one plant to China, with plans to sell 2 more if the first proved successful.

Ted met with the people from Talmo Gordon, who were planning to build a soymilk plant in Ludvika, funded with government money, but dropped the idea after Semper and Ted showed them that their concept was not feasible. The owner of the plant in Tingsryd is an expert at product development, including foods such as mushroom soups in German Combibloc that cannot be done in Tetra Pak. So Ted left his cooperation with Alfa-Laval and started developing with him in Tingsryd. They signed a contract. Ted goes there

for 3 days a week. The sales of Aros grew 70% last year, in part because of new labels. All products are doing well. He makes an average of 2,000 kg (4,400 lb) of tofu per week. By vacuum packing his tofu then pasteurizing it at 95ºC for 45 minutes, then quick cooling it in water at 4-6ºC, he gets a shelf life of 85 days at 4ºC under ideal conditions vs. 30 days shelf life if it is not vacuum packed. None of Sweden's three big supermarket distributors carry his tofu, so he distributes to supers himself. The three distributors that serve the country's 65 health food stores do not have refrigeration. There are no tofu companies yet in Norway, Denmark, or Finland. Of all of Aros sales, 55% is regular tofu, followed by marinated tofu (*Tofu Marinerad*) 15%, then three other products. Nutana makes a canned tofu (made entirely from isolates) in cubes in a sauce. Lima Foods sells a bottled tofu. There are 8 million people in Sweden.

Tomsun is trying to register the trademark Jofu (their nonfermented soy yogurt) in Sweden. This may upstage Ted's attempt to trademark Sofu for soymilk and wipe out his trademark on the term "Tofu."

Semper is interested in having the new soy base be low in oligosaccharides so that their infant formula does not cause flatulence. The following oligosaccharide levels have been found in European soymilks: Alfa-Laval's plant in Colmar, France, that uses ultrafiltration 0.02 gm/liter; Alpro in Belgium 0.28 gm/liter; Alfa-Laval's pilot plant in Sweden 0.43 gm/liter; the STS plant built for DE-VAU-GE in Germany 0.58 gm/liter. By using ultrafiltration to make tofu you can both remove the oligosaccharides and reduce the water content. Address: President, Aros Sojaprodukter, Bergsvagen 1, S-190 63 Orsundsbro, Sweden. Phone: 0171-604 56.

5385. Nordquist, Ted. 1988. New developments with tofu and soymilk in Sweden. Alfa-Laval in China (Interview). *SoyaScan Notes.* March 26. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** One of Ted's next major projects is a Tetra Pak tofu; Morinaga does not have a patent in Europe. Also, Ted skips two of steps in Morinaga's patent. He intends to flood Europe with an aseptic tofu. His firm tofu will use ultrafiltration instead of isolates to get the firm texture. No that isolates can also be made using ultrafiltration, without hexane solvent. He has used calcium sulfate, which gives a better flavor, but it is difficult because it is not water soluble. This is where the Combibloc carton comes in. He can made Jofu-style soy yogurt with whole berries in it in an aseptic Combibloc carton.

Alfa-Laval is talking with the Chinese about selling them a plant to make continuous process tofu using ultrafiltration. A man who works for Alfa-Laval and works with Ted at Trensums has told him this, in confidence. He was in China for 6 months setting up Alfa-Laval's first plant there. The idea was that when this plant was proved successful, two additional plants would be installed. Ted does not think the latter two have been installed yet. He told Ted about all of the problems that Alfa-Laval has been having there in scaling up pilot plants. This is very confidential. If it is true, it could be grounds for a lawsuit.

Ted's idea for using ultrafiltration to make an aseptic tofu is partially Luke's idea. But it also an idea that is tied in with using a bland soy base. For the last 5 years 90% of Ted's research energy has gone into getting a bland soy base. When that is ready he will make an aseptic tofu. Ted could possibly have an aseptic tofu packaged in Combibloc on the market by mid-1989 that would use a combination of GDL and calcium sulfate coagulants, and use ultrafiltration to concentrate it. Address: President, Aros Sojaprodukter, Bergsvagen 1, S-190 63 Orsundsbro, Sweden. Phone: 0171-604 56.

5386. Cilensek, Cynthia. 1988. Soybeans and soldiers. Davis' Souter working in war-torn Nicaragua. *Daily Democrat* (*Chico, California*). March 27.

• ***Summary:*** To help alleviate malnutrition, Souter initiated a soybean project. "We bought $800 worth of soybeans, an economical source of protein. We then taught the students how to plant them and how to cook them." The students were mostly men who generally didn't know how to cook. They learned how to prepare soybean milk, soybean enchiladas, and soybean burgers. Campesinos for the month already trained in the use of soybeans were scheduled to train other campesinos in the war zone. To update the training of the graduates, Souter and others in her project gathered at a cooperative near Matagalpa. They practice cooking soybean burgers on a traditional Nicaraguan wood burning rock stove.

5387. Nordquist, Ted. 1988. Comparing Tetra Pak and Combibloc as aseptic packaging systems. The Morinaga aseptic tofu patent (Interview). *SoyaScan Notes.* March 27. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In the Tetra Pak system, the laminated packaging film that comes on a roll, is run through hydrogen peroxide to sterilize the surface then folded into the shape of a tube around a stainless steel tube filled with UHT sterilized soymilk, inside a sterile chamber. The packaging material is seamed longitudinally. The packaging tube, which is always filled with soymilk, is crimped, sealed and cut below the soymilk level, so that they contain no air.

In the Combibloc system, the laminated packaging material comes in the form of individual flattened sections of a tube. These are fed into an chamber made aseptic by either nitrogen or steam, containing no air. The flat sheets are fed in two at a time and the bottom of each is sealed to form a box. These are then filled with food material, which may contain particles or chunks, such as diced vegetables; Tetra Pak cannot handle such pieces which interfere with sealing of the tube. Finally the top is sealed; some nitrogen gas remains

atop the food. A Combibloc machine can be 4 times the size of a Tetra Pak machine, but it can handle various length cartons having the same bottom size (200-500 ml, or 1 liter), whereas Tetra Pak needs one machine for each package size. The Combibloc unit can seal at a much higher temperature than Tetra Pak.

A sterile/aseptic filter, which is very expensive, is used to feed in things (such as volatile flavors) which are heat sensitive and thus should not be run through the UHT unit. The filter eliminates bacteria. Morinaga's 4-step process (1) sterilizes the soymilk with a UHT unit, (2) cools it to 20-25ºC, (3) introduces GDL and calcium chloride coagulants through an aseptic filter, then runs the mixture into Tetra Pak cartons, which are sealed and (4) reheated by immersion in a hot water bath to cause coagulation, which is finally cooled. Morinaga does not have a patent on their Tetra Pak tofu process in Europe. Address: President, Aros Sojaprodukter, Bergsvagen 1, S-190 63 Orsundsbro, Sweden. Phone: 0171-604 56.

5388. **Product Name:** [Tofu with Cheese-Sauce].
Foreign Name: Tofulette met Kaassaus; Sauce Fromage; Kaesesosse.
Manufacturer's Name: Jonathan P.V.B.A.
Manufacturer's Address: Antwerpsesteenweg 336, B-2080 Kapellen, Belgium. Phone: 03/664 58 48.
Date of Introduction: 1988. March.
Ingredients: Tofu (soy-proteins)*, peppers, onions*, sesame seeds, sea-salt, vegetable extract, herbs. Sauce: Cheese*, soymilk*, sunflower oil*, wheat flour*, sea-salt, vegetable extract, spices. * = Organically grown.
Wt/Vol., Packaging, Price: 300 gm.
Nutrition: Minerals 1.97%, protein 13.4%, fat 13.9%, carbohydrates 7.13%. 207 calories (Kcal) per 100 gm.
New Product–Documentation: Label. Received 1988. 6.25 by 5.25 inches. Card stock. Color photo of two tofu patties in sauce with item name in white on orange. "Vegetable product." Form filled out by Jos van de Ponseele. 1989. Jan. 11. This product was introduced in March 1988.

5389. **Product Name:** [Oriental Rice].
Foreign Name: Oriental Rice.
Manufacturer's Name: Jonathan P.V.B.A.
Manufacturer's Address: Antwerpsesteenweg 336, B-2080 Kapellen, Belgium. Phone: 03/664 58 48.
Date of Introduction: 1988. March.
Ingredients: Brown rice*, soy sprouts*, onions*, carrots*, mushrooms*, sunflower oil*, wheat flour*, soymilk*, vegetable extract, curry, sea-salt, spices. * = Organically grown.
Wt/Vol., Packaging, Price: 300 gm.
Nutrition: Minerals 0.69%, protein 2.1%, fat 0.48%, carbohydrates 13.2%. 65.5 calories (Kcal) per 100 gm.
New Product–Documentation: Label. Received 1988. 6.25 by 5.25 inches. Card stock. Color photo of rice with various vegetables with item name in white on orange. "Vegetable product." Form filled out by Jos van de Ponseele. 1989. Jan. 11. This product was introduced in March 1988.

In the list of ingredients in four languages, soy sprouts are called *sojascheuten* in Belgian-Dutch, *pousses de soya* in French, *Sojakeime* in German, and "soy sprouts" in English.

5390. Kakiwara, Kenjiro. 1988. Tônyû gyôkai no genjô [Present status of the soymilk industry in Japan]. *Daizu Geppo* (*Soybean Monthly News*). March. p. 18-24. [Jap]
• ***Summary:*** In Japan, 1977 was the first year that a significant amount of soymilk was produced, according to statistics from the Nosuisho Shokuhin Yushi-ka. Production then rose steadily and rapidly each year to a peak of 116,724 tonnes in 1983. Thereafter it fell for the next three years, dropping to 84,103 tonnes in 1984, 55,354 tonnes in 1985 and 43,392 tonnes in 1986 (only 37% of the peak 1983 figure). About 99% of the products are packed in paper cartons and most are long-life (aseptic).

During the peak years of 1983 about 50 companies made soymilk in Japan; that number has now shrunk to ten. The top three manufacturers (Kibun, Mitsubishi, and Marusan-Ai) had 71% of the market in 1983 and 76% in 1987. The top five companies (including Meiji Nyugyo and Nisshin Seiyu) now have 85% of the market. Production (in 1,000 tonnes) and market shares (in parentheses), estimated by the author, for the top 5 manufacturers in 1983/1987 are as follows: Kibun 41/14 (35%/37%); Mitsubishi Kasei 20/10 (17%/26%); Marusan-Ai 20/5 (17%/13%); Meiji Nyugyo 10/2 (9%/5%); Nisshin Seiyu 7/1 (6%/3%); Other 19/5 (16%/16%).

According to the Japanese Agricultural Standards (JAS) there are 4 types of soymilk. (1) "Soymilk" (*Tonyu*), must be made from whole soybeans, and contain 8% or more solids and 3.8% soy protein; It has a 3% market share. (2) "Adjusted soymilk (*chosei tonyu*), made from whole or defatted soybeans plus added vegetable oil and sweeteners, with 6%+ solids and 3%+ soy protein has a 52% market share. (3) "Soymilk drinks" (*tonyu inryo*), similar to (2) but with 4-6% solids and 1.8%+ soy protein, have a 44% market share. (4) "Soy protein drinks" (*daizu tanpaku inryo*), made with isolated soy proteins, must have 1.8% protein. It has only a 1% market share.

The author then gives three reasons for the boom and bust, shows graphs of who is buying, how often, and at what age. Those over age 40 buy more soymilk that those in their teens. Still, many Japanese have never tried soymilk. Education is necessary to re-popularize it. Address: Mitsubishi Kasei Shokuhin K.K., Tonyu Hanbai Honbu.

5391. Lubbe, James. comp. 1988. Abbreviated history of the Bountiful Bean Plant, Madison, Wisconsin. Bountiful Bean, 2049½ Atwood Ave., Madison, WI 53704. 23 p. Unpublished

manuscript. [4 ref]
• ***Summary:*** The company was founded in 1978. 1. History table by year showing accounts, products, equipment, number of people, wages, other. 2. Newsletter and newspaper ads and articles. 3. Brochures, product announcements & job application descriptions. 4. Product labels.

Ad. circa 1983-84. Bountiful Bean Soyfood Deli. Macrobiotic dietary principles. Offers: fresh tofu, tofu pies, tabooli, toasted tofu, nori rolls, 4 soymilk flavors, 4 varieties of bulk miso, millet / tofu pudding, nutburger sandwiches, tempeh books, mini-tours of plant, spicy tofu, more! And: lowest soyfood prices in town, free samples and recipe sheets, managed by the workers. low-cost carry-out foods. 903 Williamson St. 251-0595. from: 7-6 Sun-Fri.; 7-4 Mon.; 10-4 Sat.

Update talk with Deborah Bachmann and Elizabeth Hanson. 1991. Nov. 1 and 11. In March 1990 Bountiful Bean Soyfoods moved from Madison, Wisconsin, to 620 Main St., Ridgeway, Wisconsin. Richard Kraemer and Elizabeth Hanson began to produce soyfoods during the last week in June, renting from the cooperative, then they purchased the business on 21 Aug. 1991. Richard and Elizabeth are married with a son, are in their late 40s, and come from Oseola, Wisconsin; he is a carpenter (and was a pastor) and she a nutritionist. They are both very enthusiastic about tofu and the business. The co-op has now been changed to a private business. They work full time and they have three employees–1 full time and 2 part time. They are thinking of re-launching tempeh and soy yogurt. The cooperative got what they felt was a good price for the business. People who worked more than 6,000 hours (Chris Burant [8 years], Deborah [almost 10 years], and a woman named Solie) each got a large chunk. Another 11 people who had worked in the past were also given part of the money. The smallest amount of money distributed was $250.00. Deborah and James Lubbe are no longer with the company. Bountiful Bean Soyfoods now makes tofu, Herb Tofu, plain or vanilla soy milk, Tasty Tofu, Hummus with Tofu (and garbanzo beans), and Taboolie with Tofu (salad, which also contains bulgar). They have discontinued tempeh and soy yogurt.

Update: Talk with Roger Bindl. 1993. April 15. Richard Kraemer would like to sell Bountiful Bean in Ridgeway and Roger is considering buying it. 85% of the company's sales are in Madison, Wisconsin. Address: Madison, Wisconsin.

5392. Wood, Rebecca. 1988. Savor scrumptious soymilk. *Bestways.* March. p. 12, 15.
• ***Summary:*** There are two types of ready-made soymilk available. The most common comes in aseptic packaging which, unopened, has a shelf-life of one year. It costs around $2.50 a quart. The second type is fresh soymilk at $1.30 a quart. Homemade soymilk is the most economical. It costs around $.22 per quart and takes about 30 minutes to make from scratch. A major problem with homemade soymilk is its bean-like flavor. At this time, there are seven nationally marketed soymilks. Address: Carson City, Nevada.

5393. Nordquist, Ted. 1988. Island Spring, Alfa-Laval, and continuous tofu production using ultrafiltration (Interview). *SoyaScan Notes.* April 2. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** In 1983-84 Alfa-Laval lost huge amounts of money as the dairy industry in Europe continued its steady downhill slide. They had to cut back on expenses and increase income. So they dropped many long-term research projects and required that those which were not dropped become profitable. They have always charged high prices for equipment and high labor rates for repair and maintenance. They had a little soymilk plant in Lund which they used to show to anyone who was interested. Now they started to charge for tours and demos. At that point Ted discontinued his work with Alfa-Laval and went to work with a juice company. Within a year Alfa-Laval had turned things around. A little later they moved John Wilson and their soymilk operations to Singapore.

Island Spring's work with Alfa-Laval started out well. They installed an ultrafiltration unit at Luke's plant so that he could do R&D work on continuous processing of tofu, and they sent many high-level people over to work with him. But when the crunch came, they dropped him. The ultrafiltration unit may have burned in his fire. Then Luke began to work with STS.

Luke has a contract with Alfa-Laval stating that continuous process production of tofu using ultrafiltration is his idea. He has a right to 6% of the sale value of all equipment that Alfa-Laval sells using ultrafiltration to make tofu. Ted is not aware that Alfa has sold any such equipment so far, but for some reason Luke is not happy with his relationship with Alfa and may be considering a lawsuit. Address: President, Aros Sojaprodukter, Bergsvagen 1, S-190 63 Orsundsbro, Sweden. Phone: 0171-604 56.

5394. Vansickle, Janice. 1988. Soys take root in organic market. *Windsor Star* (*Essex County, Ontario, Canada*). April 9.
• ***Summary:*** Jon Cloud is a transplanted "dirt farmer" from mountainous Vermont and now the production manager for Soy City Foods. Their products include soymilk, tofu, tempeh, falafels, burgers, and granola. Cloud became a [Vietnam] war protestor while in college, and opted into being a 60's back-to-the-land disciple after burning out in the urban jungle. The Organic Crop Improvement Association in Ontario has attracted 300 members during its five years of existence and 50 now have their farms certified as organic. A photo shows Jon Cloud with company products such as Soyettes, Grain Tempeh, and Falafels. Address: Star Agricultural Reporter, Ontario, Canada.

5395. Rose, Richard. 1988. Re: Personal observations on soyfoods at Natural Foods Expo West in Anaheim. Letter to William Shurtleff at Soyfoods Center, April 12. 1 p. Typed, with signature on letterhead.

• ***Summary:*** "Enclosed is all the information on soyfoods and amazake I could find at the 1988 Expo West natural foods show.

"Notable trends:

"(1) Only 1 soy frozen dessert present, Ice Bean.

"(2) Rice Dream has expanded into frozen, coated bananas.

"(3) The Soyfoods Pavilion was not delineated in any way. The banner was not present, nor were signs. No sufficient answer as to why this was so was available.

"(4) Only 2 tempehs present, Tempehworks and White Wave.

"(5) Only 1 tofu present, White Wave.

"(6) Kawanishi and Airtight had a double-wide booth to show tofu making equipment and supplies.

"(7) Only 2 soymilks present, Vitasoy and Westbrae.

"(8) Soya Kaas was not displayed in the Tree of Life booth.

"(9) As many soyfoods companies were out of the Pavilion as in it. It looks like they did not sell out all the space in the Pavilion.

"(11) Gary Barat has gone off the deep end. Ask me how on the phone.

"(12) Mori-Nu had a disorganized booth that was obviously conceived by someone who thought this would be what natural fooders would want to see. It was dumb... a walking Mori-Nu Tofu box?

"Depending on who you talk to, the S.A. [Soyfoods Association] meetings were either incredibly wonderful or absolutely disgusting. I was not present at them.

"Notable events: Gary Barat is only a board member, Gordon Bennett is Pres., Yvonne is Treasurer, and Peter Golbitz is VP. Danielle [of Morinaga] and Jack Mizono [of Azumaya] were elected to the board. The single big program for the S.A. is Soyfoods Month in April 1989. Budget is $200/month to keep the lights on. Gary was talking about stiffing Smith Bucklin and Steve McNamara. There was no discussion with me or at the meetings about my proposal. Danielle threw a snit to get on the board, as did Yvonne.– Richard."

The Rose International letterhead states: EasyLink Mailbox 62978515. Telex 990027 (Rose Intl UQ). Address: President, Rose International, P.O. Box 2687, Petaluma, California 94953-2687. Phone: 707-778-7721.

5396. Astin, Paul. 1988. Soy Nicaragua. *Plenty Bulletin* (*Davis, California*) 4(1):1-2. April.

• ***Summary:*** "I spent a total of ten days in Nicaragua. I went to the University of Central America to see if I could find any students. I found myself in the offices of the Department of Agricultural Administration. We went to visit Ciudad Sandino. We saw two soy posts there, both of which unfortunately had already sold all of the day's soy milk. They were very excited about the possibility of establishing a successful, cooperatively-run soy bean growing and soy milk producing operation."

Note: For many years, Plenty had two offices: One in Summertown and one in Oakland, then Davis California. In 1987 the offices were consolidated in California, and in the spring of 1988 publication of the Bulletin started in Davis. Address: Tennessee.

5397. Golbitz, Peter. 1988. Soya interview: Reformulations + staying power = success for Vitasoy USA [Yvonne Lo]. *Soya Newsletter* (*Bar Harbor, Maine*). March/April. p. 4-5.

• ***Summary:*** Vitasoy USA distributed nearly 1,25 million gallons of soymilk to the Oriental and health food markets in 1987. It is producing 20.8 million gallons annually, with total exports to 20 countries exceeding 2.7 million gallons. Vitasoy now employs over 1,000 people and sales have reached over $105 million. Their maple-sweetened soymilk drink missed its mark in 1984. In August of 198, the company released its new Creamy Original, Rich Chocolate and Carob Supreme soymilks. In early 1987, Vanilla Delite was added to the line. Vitasoy USA reports that the new products are doing very well, with sales growing 50-60% a year, and that they now represent 25% of the company's total soymilk sales.

Vitasoy USA's Yvonne Lo discusses success for Vitasoy USA. "Our bread and butter comes from the Asian-American marketplace. Our traditional line has a more pronounced beany flavor, and we do that intentionally because it's how most Asian palates prefer the taste of soymilk. It tastes a lot sweeter than our health food line. Back in '82 the company in Hong Kong was faced with a decision because of the unstable political situation. At first, we decided to build a plant here in the U.S., but then a year later the situation in Hong Kong stabilized. We did our numbers again, and in '84, we decided that building a plant in the U.S. at that time would be like putting the cart in front of the horse. If we increase our soymilk sales by another 50%, we would be in a position to sustain a new plant."

Q: What will it take to move soymilk beyond specialty markets and into the mainstream? Lo: "I think if I were to rank them in order of priorities, I would rank consumer education as number one. Number two would be positioning soymilk in the dairy case. And, number three would be a lot of advertising dollars."

Q: Where does taste fit in? Lo: "I think most manufacturers have come very close to producing a fairly good tasting soy-milk."

Q: What happened with the first health food line in 1984? Lo: "Well, I think the first time around we missed the mark on taste and formulation. We've always believed

there is a fine line between success and failure." Address: Soyatech, Bar Harbor, Maine.

5398. *INTSOY Newsletter* (*Urbana, Illinois*). 1988. Processing short course in Sri Lanka draws participants from nine countries. No. 39. p. 1-2. April.
• ***Summary:*** A total of 21 people from nine countries attended the course. The course, which covered all major aspects of soybean processing for food uses, was held from Jan. 11 to Feb. 11, 1988, at the Soyabean Foods Research Centre in Peradeniya. INTSOY Research Associate Wilmot B. Wijeratne acted as course coordinator. Cecil Dharmasena, the Sri Lankan national soybean coordinator, handled local arrangements for the course. Ellen Jayawardena and Fauzia Hewavitharana served as the principal instructors from the staff of the research center.

Epafuladito M. Kiwanuka operates Ken-Soya Foods Limited in Nairobi, Kenya. The company makes full-fat soy flour by milling dry-roasted soybeans. The FAFFA Foods Plant in Addis-Ababa, Ethiopia, was represented by Yehualashe T. Demissies and Kassech Abegaz Mersha. The food plant is an independent company sponsored by the Ethiopian government and the Swedish International Development Authority. In collaboration with the Ethiopian Nutrition Institute, it produces a low-cost, protein-rich supplementary food product that is used primarily for infants and young children. The product contains 18% defatted soy flour. Sales have recently reached 2,000 tonnes/year.

Somendra Thapa from Indreni Soyabean Industries in Kathmandu, Nepal, came to the course with a special interest in the manufacture of soymilk and dairy analogs. His company is establishing a large-scale soymilk facility based on technology developed by Alfa-Laval. The Institute of Agricultural Research and Training (IART) in Nigeria was represented by Siddi (Sidi) Osho, a food technologist, and Margaret Ogundipe, a home economist. IART has developed a collaborative program with the International Institute of Tropical Agriculture to promote increased home and community use of soybeans as food. Judith Edmister, a food scientist from the Mennonite Central Committee (MCC) in Dhaka, Bangladesh, also attended the conference. MCC has worked on promoting home consumption of soybeans as a means to overcome the steady decrease in protein consumption in Bangladesh. Address: Univ. of Illinois, Urbana-Champaign, 113 Mumford Hall, 1301 W. Gregory Dr., Urbana, Illinois 61801. Phone: 217-333-6422.

5399. Koo, Winston W.K.; Kaplan, L.A.; Krug-Wispe, S.K. 1988. Aluminum contamination of infant formulas. *J. of Parenteral & Enteral Nutrition* 12(2):170-73. April. [17 ref]
• ***Summary:*** Aluminum concentration was measured in 175 samples of infant formulas. Among these, 5 brands of liquid soy formulas were tested. The aluminum content in micrograms per liter was as follows, first the range then the median: Isomil 603-1084 (756), Isomil SF 910-1460 (1286), Prosobee 684-2346 (1427), Nursoy 557-1840 (709), and Soyalac 455 (1 sample). Thus the soy-based liquid infant formulas were found to have 455 to 2,346 micrograms/liter of aluminum; the average value was 964 micrograms per liter of aluminum.

Three powdered soy formulas were tested. The aluminum content is given in micrograms per gram: Prosobee 5.3-10.2 (6.6), Nursoy 4.19-4.24 (4.22), and Soyalac 3.5 (1 sample).

"Aluminum content was lowest in human milk (less than 50 micrograms/liter), whole cow milk,... skim milk, and cow milk with 2% fat... We speculate that raw materials such as soybean, additives such as calcium and phosphorus, manufacturing processes and storage containers are potential sources of contamination of infant formulas.

"Aluminum is the third most abundant naturally occurring element, and the most common metallic element, comprising approximately 8.8% of the earth's crust. It is therefore not surprising that aluminum is ubiquitous in nature... Plants may accumulate different amounts of aluminum depending on the aluminum content and acid-base status of the soil. It is conceivable that soybeans could be a potential source of aluminum contamination for soy-based formulas. However, the extremely high aluminum concentration of milk formulas with highly modified protein, carbohydrate or fat contents and multiple additives would support the contention that manufacturing process and the additives such as calcium and phosphorus compounds are other potential sources of aluminum contamination...

"The renal excretion of aluminum is incomplete even in infants with normal renal function. Thus, it would seem reasonable to minimize the aluminum contamination of all nutrient sources, including infant formulas." Address: Dep. of Pediatrics, Univ. of Alberta, Edmonton, ALB, Canada, and Dep. of Pathology and Lab. Medicine, Univ. of Cincinnati, Ohio.

5400. Lang, Kerri-Sue. 1988. A growth market for organic foods. *Country Guide* (*Winnipeg*). April. p. 20-22.
• ***Summary:*** In 1980, the USDA defined organic farming as "a production system that avoids, or largely excludes, the use of synthetically compounded fertilizers, pesticides, growth regulators and livestock feed additives to the maximum extent feasible. Organic farming systems rely upon crop rotations, animal manures, legumes, green manures, off-farm organic wastes, mechanical cultivation, mineral bearing rocks, and aspects of biological pest control to maintain soil productivity and tilth, to supply plant nutrients, and to control insects, weeds and other pests. The Organic Foods Production Association of North America (OFPANA) was founded in 1985. About 25 farmers contract organically-grown soybeans with Toronto-based Soy City Foods.

Organic food producers feel strongly that organic foods

are healthier and more nutritious than conventionally grown foods, but scientific data does not yet support this claim. Ontario farmers requesting organic certification must have abstained from using prohibited fertilizers for at least one year and pesticides for 3 years. Prohibited fertilizers include anhydrous ammonia, ammonium nitrate, diammonium phosphate, most sewage sludge, triple superphosphate, muriate of potash, and potassium chloride. Prohibited soil additives include quick lime and slaked or hydrated lime.

Certified organic growers are inspected annually at their own expense ($150). They also sign a licensing agreement and pay a fee to use the Ontario association's logo. The logo fee is based on gross sales. Organic soybean yields last year were about 20% below the normal provincial average. Jon Cloud, part-owner of Soy City Foods in Toronto, says most of his contract growers experience a 25% yield reduction in their first 3 years of organic production. But a premium for the beans, along with reduced input costs, brings net returns to at least the level that could be expected under conventional crop management.

Last year, about 25 farmers grew organic soybeans on about 320 acres under contract with Soy City Foods. Highest yield was 45 bushels per acre; average was 32 bushels. Right now, says Cloud, the company could use 2,000 acres of organically-grown soybeans. Premium prices for organic beans are $8.50 a bushel. The firm produces several soy-based foods for human consumption. These include soy burgers, falafel (spicy patties traditional in some parts of the Middle East), a base for soy pate, tempeh, tofu, and soy milk. Contract growers are supplied with seed because Soy City wants beans with high protein and low oil content. Organic farmers don't spend $40 an acre on herbicides. Nor do they put tonnes of commercial fertilizer on their fields. And they sell their crops at a 15% to 20% premium. Weeds, he adds, are controlled by non-chemical procedures such as crop rotation and cultivation, which cost little.

Hugh Martin, a soils and crops specialist with the Ontario Ministry of Agriculture and Food says organic farming will be a significant part of agriculture in the future. Most organic growers he works with have an ingrained stewardship ethic and are concerned about soil conservation. He says, "After about 5 years of organic farming, the organic matter content of soil increases. Improved porosity allows water to penetrate quickly. There's less runoff."

Color photos show the storefront of Soy City Foods "Soy Food Information Centre" and 3 of the company's products: Soyettes, Tempeh, and Falafels. Address: Winnipeg, Manitoba, Canada.

5401. Matsuda, Norihiko; Komaki, Masaru; Ichikawa, Ryohko. 1988. [Heat resistance of spores of *Clostridium botulinum* types A and B in soy milk]. *Shokuhin Eiseigaku Zasshi* (*J. of the Food Hygienic Society of Japan*) 29(2):151-55. April. [9 ref. Jap]

Address: Research Lab., Japan Canners Assoc., 460 Karibacho, Hodogaya-ku, Yokohama, Japan.

5402. *Parents* (*Bergenfield, New Jersey*). 1988. Anemia and soy-based formula. April.

• ***Summary:*** "Almost 15% of formula-fed American infants consume soy-based formula. Studies of adults have proven that soy products can inhibit iron absorption, possibly leading to anemia. These findings have been applied to infants as well.

"It has been found, however, that since infants absorb iron differently than adults do, they do get enough iron from soy-based formulas. So there's no need to worry about anemia." Summarized from Pediatrics.

5403. Pecjak, Marinka. 1988. Soja v kulinariki [Soybeans in the kitchen]. Ljubljana, Yugoslavia: Feniks. 138 p. Illust. Plus 16 pages of color plates showing recipes. 21 x 30 cm. [Slv]

• ***Summary:*** Features 300 recipes that use soybeans and soyfoods. Contents: Introduction: In the beginning there was the soybean, almost anything can be made from soya (a diagram shows many food and non-food products), soya is concentrated, soybeans in cuisine, how to use these recipes. Whole soybeans (p. 17): Recipes for coffee, different kinds of spreads, salads, soups, green soybeans with rice, dips with whole soybeans, soybeans with mushrooms, patties, soybean roast, sausages made of whole soybeans, stuffed duck, stuffed trout.

Soybean flakes and textured proteins (p. 40): Spread, party balls, filled bread, soups, pancakes, Australian pie, Buckwheat with flakes, flakes in mushroomy sauce, baked potatoes, stuffed cabbage leaves, chilled stuffed tomatoes, stuffed roasted peppers, stuffed eggplant.

Soymilk and dairylike products (p. 74): Various spreads, soups and salads with herbs, pancakes, baked potatoes, baked noodles, soy pudding, soymilk ice cream, avocado milk. Soy flour and semolina (p. 111): Soy noodles, pasta, pancakes, fish balls, soy bread.

Soy sprouts (p. 122): Soups, salads, sprouts with potatoes, chicken with sprouts and wine, pork with sprouts. Soy sauce and other forms of fermented soybeans (p. 128): Chart showing fermented soy products (incl. miso, tempeh, sufu, natto), salads, soups, chicken with sprouts and soy sauce, meat with fermented black soybeans, roast cutlets, Hoisin dip.

5404. Phillippy, B.Q.; Johnston, M.R.; Tsao, S.-H.; Fox, M.R.S. 1988. Inositol phosphates in processed foods. *J. of Food Science* 53(2):496-99. March/April. [35 ref]

• ***Summary:*** Myo-inositol bis-, tris-, tetrakis-, pentakis- and hexakisphosphates (IP2-6) were quantified in 9 thermally processed or fermented food products (including bran, canned [mung] bean sprouts, canned kidney beans, fried soy

burger, infant formula concentrate and powder, soy isolate, tofu and white bread). Total inositol phosphate content (millimoles/kg dry weight) ranged from 1.35 in white bread to 23.26 in tofu and 26.05 in soy isolate. In all foods analyzed, inositol hexakisphosphate (phytic acid) accounted for greater than 40% of the total inositol phosphates on a molar basis.

Note: Supro 610K soy isolate was obtained from Ralston Purina Co. (St. Louis, Missouri). Address: 1-2. Div. of Food Chemistry and Technology; 3-4. Div. of Nutrition. All: Food and Drug Administration (FDA), Washington, DC 20204. Phillippy's present address: Southern Regional Research Center, USDA, New Orleans, Louisiana 70124.

5405. Quong Hop & Co. 1988. The Soy Deli. Quality & support (Ad). *Whole Foods.* April. p. 86.
• ***Summary:*** "We educate your customers about tofu! Soy Deli has the largest variety, and best dealer support of any tofu company in America." Also in Whole Foods. 1989. Feb. p. 62. Address: South San Francisco, California. Phone: 415-761-2022.

5406. *Soya Newsletter* (*Bar Harbor, Maine*). 1988. Westbrae Natural becomes wholly-owned subsidiary of Vestro Foods. March/April. p. 10. Also in Whole Foods. May. p. 19.
• ***Summary:*** Vestro is a publicly held company traded over-the-counter (NASDAQ symbol: VEST). Westbrae will be looking for more growth through acquisition of other lines that meet their quality standards.

Note: As of Nov. 1990, Vestro Foods is located at 5701 S. Eastern Ave., Suite 330 (P.O. Box 91-1181), Commerce, California 90091. Phone: 213-772-1692.

5407. *Tetra Pak Age.* 1988. Ban the A-word [aseptic]. What's in a name? Too much and not enough. Spring. p. 13.
• ***Summary:*** The term "aseptic" is too clinical, too strange, and too unwieldy to be readily accepted by consumers. The National Food Processors Association, based in Washington, DC, announced a contest for a new generic term that will more attractively reflect the attributes and advantages of aseptic processing and packaging. February 1, 1988 was the contest's deadline. The prize for the contest winner is a $500 savings bond. A recent consumer survey found that while close to 80% of the respondents claimed they had never heard of "aseptic packaging," most had tried a boxed juice product. Address: Tetra Pak Inc., 889 Bridgeport Ave., Shelton, Connecticut 06484. Phone: 203-929-3200.

5408. Huang, Tim. 1988. The Continuous Cooker sold by Bean Machines, Inc. (Interview). *SoyaScan Notes.* May 3. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Starting 2 years ago Tim helped develop and ran the smaller prototype of this cooker at the University of California at Davis. He had it at Grainaissance while he worked there briefly. Tomsun Foods in Massachusetts ordered the first full-scale model. They never hooked it up and never paid for it. So Bean Machines got it back and Soyfoods of America got it from BMI. It is basically a very simple machine; just a pump and steam injection. It cooks at 250-275ºF. Soyfoods of America makes a private label soymilk for Mrs. Gooch's. Hopes to introduce a non-beany soymilk kefir and yogurt. Address: Soyfoods of America, Duarte, California.

5409. Eden Foods, Inc. 1988. Eden Foods reformulates two flavors of Edensoy (News release). 701 Tecumseh Rd., Clinton, MI 49236. 2 p. May 5.
• ***Summary:*** Edensoy Original and Vanilla flavors now contain no added oil. Thus an 8.45 fluid ounce serving of Edensoy Original now contains 5 gm of fat compared with 2 gm in the vanilla. Carob still has 4.5 gm of fat. The new formulation makes the products compatible with the Diabetic Food Exchanges suggested by the American Diabetic Association. An 8.45 fl. oz serving of Original Edensoy equals 1 milk exchange plus 1.5 fat exchanges.

In May the Edensoy package design won first place in the offset printing category in an international package design competition sponsored by Tetra Pak, Inc. American Soy Products is located only 30 miles from Dearborn, Michigan, where Henry Ford started his soybean research in 1932. Address: Clinton, Michigan.

5410. Rego, Norbert. 1988. Make soya a way of life. *Times of India* (*The*) (*Bombay*). May 9. p. 4.
• ***Summary:*** The key to good health is a nutritionally adequate diet. The Chinese have been consuming the soyabean (Glycine max) for 4,000 years but in India it is a recent discovery; soyabeans are grown mainly in Madhya Pradesh, Uttar Pradesh, Haryana, and Punjab.

The soyabean and the many foods made from it "have now become very popular. We have soya flour, soyaoil, soya milk, and many other products in the market under different brand names like Nutrela, Meal Maker, etc."

Discusses the nutritional benefits of the soyabean.

5411. *American-News* (*Montevideo, Minnesota*). 1988. Plant to bring in jobs. May 12.
• ***Summary:*** The plant, owned by Miller Farm Food Co., Inc., is looking for a place to relocate after losing their lease in Cedar Falls. The Iowa based company uses Pietrus Foods of Sleepy Eye, Minnesota to dry their product. The Miller Farm plant requires approximately 10,000 square feet to operate. Address: Minnesota.

5412. Lyen, Donald. 1988. Brief history of Dragon & Phoenix Ltd. (Interview). *SoyaScan Notes.* May 13. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Donald came to England from Hong Kong

during the 1950s to study electronics. He founded Dragon & Phoenix Ltd. in London about 22 years ago (in about 1965-66), in order to make tofu, because he liked it and yearned for it. The original location was at [?] Balse Street, Kings Cross, London N1. Later (when?) it was moved to 172 Pentonville Rd., London N1. He also made mung bean sprouts. In both cases, he developed equipment to mechanize the process. He used a liquidizer/blender instead of the traditional stone mill, and a centrifuge to separate the soymilk. He was a pioneer in this area, before Japanese companies did the same thing. At the time there were no other commercial tofu makers in England. However during the mid- to late 1950s there was a small Chinese-run operation in Liverpool (it had no name, and wasn't really a company) that made and sold very small amounts of very hard tofu, probably coagulated with a nigari-type coagulant, not calcium sulfate. It was very expensive, more than 2 shillings sixpence, so it didn't take off. In about 1978 Dragon & Phoenix began making soymilk and selling it mostly to Chinese restaurants. He notes that there is still not much of a market for it, perhaps because the weather in England is not warm enough for it to be served as a refreshing soft drink.

Today, he is sure that Dragon & Phoenix is still the largest tofu manufacturer in England. Yet the market is very small, and he does not advertise or promote his products. He sells only to Chinese restaurants and food stores, not to the health food trade. One reason for the small demand, he feels, is that tofu has so little flavor of its own; you have to know how to cook it to make it tasty. Dragon & Phoenix is only one of Donald Lyen's many businesses. He is still involved with electronics and is the sole agent for a Chinese word processor in the U.K. He is working to convert his tofu plant from a mechanized to an automated one. He was a founder and is presently a member of the European Soyfoods Association. He feels strongly that tofu should not be promoted as a health food but as a basic food for everyone. "Once you classify it as a health food, then you limit your market." Address: 15-18 White Lyon St., London N1 9PD, London, England. Phone: 01-837-0146.

5413. Miller, John; Ledur Brito, Luiz A. 1988. Soyfoods, Soymilk, and the Mechanical Cow in Brazil (Interview). *SoyaScan Notes.* May 13. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In the early 1980s soy came to be seen as a solution to some of Brazil's food, nutrition, and protein problems. The government tried to encourage production and consumption of soyfoods using various organizations such as ITAL and state and local governments. It was almost social and political mission. Soymilk was one of the major products to be introduced, starting in about 1984. But the quality was poor (beany flavor) so people rejected it and it is no longer available, except for Yakult.

Vanguarda Mecanica is making about 50 of their Mechanical Cows each month. They are selling like hotcakes. "I think they are going to many of the small towns in northeast Brazil (the most impoverished part of the country, where the basic staple is cassava/manioc flour) and the municipalities are into these giveaway programs, either to get votes or to help the nutrition of the people in the dry periods. So they are buying the Mechanical Cow and using it to make soymilk locally. The soymilk made by the Mechanical Cow does not taste very good. Yet it is widely used by many small towns in giveaway programs and school lunch programs. A major function of schools in Brazil is to feed the children.

ITAL's soymilk was sold in a can but is not seen much any more. Also, the government tried to get the people to use soybeans in place of black beans, but that didn't work because the soybeans take much more time and fuel to cook, and the people didn't like the flavor as well. Today, soyfood products have a negative image in Brazil, with the exception of soy sauce, which is widely available and well accepted. Unlike in the USA and Europe, you cannot sell soyfoods on their health benefits. Cholesterol is not of much concern.

There are now 300 health and vegetarian restaurants in Sao Paulo.

The Plano Crusado, which started in 1986, was a major event in modern Brazilian history. This unorthodox economic plan by the new democratic and socialist government was intended to curb inflation. It didn't work. Today Brazil's parallel economy -comprised of people who do not pay a tax on sales and whose economic activity is not recorded–is estimated to be 50% of the total economy, and thriving. The statistics (which omit the parallel economy) indicate that the economy is declining, but actually it is booming. Address: SANBRA, Centro Empresario de Sao Paulo, Av. Maria Coelho Aguiar, 215 Bloco D, 5* Andar, Sao Paulo–CEP 05804–CP60.541. Phone: 545-5459.

5414. Smith, Robert Archer. 1988. Work with Henry Ford, soymilk, and soy ice cream (Interview). *SoyaScan Notes.* May 15. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In 1931 Bob Smith began his work with Henry Ford when he was placed in charge of the Greenfield Village Experimental Greenhouse, trying to find out how waste materials from farms could be used as plant fertilizers. He grew soybeans at that time. Smith's boss was Robert Boyer, who was in charge of the Chemical Plant, later better known as the Soybean Lab. One night in about late 1931 or 1932, Henry Ford went into the library at the Chemical plant all by himself and read a book titled *The Soybean*, by Piper and Morse. The next day he met Bob Smith at the greenhouse, "Clean out everything, get rid of all the tests. I'll be back this afternoon. I want everything out of here. Serious research on the soybean started at this time.

Later William Morse of the USDA, one of the authors

of the above-mentioned book, sent Bob Smith about 500 varieties of soybeans, which Smith grew out and tested on a 25 acre experimental farm.

In early 1937 Henry Ford drove Smith over to Moir House (pronounced like "More House") and on the way told Smith about how he would like to get rid of cows. Ford asked Smith to work at Moir House to develop a milk that made no use of cows. In July 1937 Bob Smith and his wife had moved into the Square House at Henry Ford's invitation. In 1938 Bob began his work on soymilk at Moir House in Dearborn. Henry Ford had lived in Moir House when he built his honeymoon house named the Square House in 1888. Ford's father had given him 40 acres of land that had timber on it. He set up a sawmill near where Moir House and lived there while he was building the Square House. Ford had the Moir House made into a laboratory in 1937.

Bob knew Dr. Edsel Ruddiman and was aware of his work with soyfoods and soymilk; several other people were working on soymilk too. Dr. Ruddiman had a modern lab with fancy equipment and electricity. But the problem at Moir House was that there was no electricity (except for a little generated by a windmill), and therefore no grinder to grind the soybeans. So Bob decided that instead of using a mill, he would extract the protein from defatted soybean meal that had been produced using a low-temperature extraction unit at Ford's Chemical Plant in Greenfield Village. He immersed the meal in a weak solution of sodium hydroxide to extract the protein, then precipitated the protein with a mixture of hydrochloric and citric acids to make a soy protein isolate. Finally he let the solution settle and decanted off the liquid leaving the isolate solution containing about 4% protein. [Note: The soy fiber must have been removed, probably by filtration.] He neutralized the protein solution with sodium potassium phosphate (which also added key minerals found in milk), bringing the pH up to about 6.7. Then he homogenized in lightly hydrogenated soybean oil (purchased from A.E. Staley Mfg. Co. and others), plus some cane and corn sugars, and vitamins. Within several months in 1938 or 1939, using this new technique based on soy protein isolate, Smith had a soymilk that Henry Ford thought was pretty good. One day after tasting a satisfactory batch, Ford got out the little notebook he carried with him and wrote: "First good milk. No cow." He showed the note to Smith. The Ford Hospital ran nutrition tests on this soymilk using white rats.

For the next 4 years, Bob Smith made soymilk at Moir House using a small-scale batch process that produced only about 1-3 quarts (in 1-quart batches) at a time. He made a small scale soybean dryer (the size of an oil drum) at Moir House. It took a half a day to make several ounces. It was never done on a large scale.

Bob worked in the Moir House until 1942 when Henry Ford asked him to move into the new Carver Laboratory, which was formerly the Dearborn Waterworks, and to set up a continuous-process soymilk plant. It could produce about 150 gallons a day. This soymilk was served mostly at the Ford Motor Co. cafeterias and at the Henry Ford Hospital in Detroit. Most of it was served in the form of ice cream, which was called something like "Frozen Soy Custard" since they were not allowed to call it ice cream.

This ice cream was first produced after the Carver Lab was in operation. They used a typical ice cream formula except that soy cream, made at the Carver Lab by homogenizing about 15% soy oil into the soymilk, replaced the typical dairy cream. So it was a completely non-dairy product. This chilled soy cream was shipped in 10 gallon cans to an outside facility, not a commercial ice cream plant, that made the soy ice cream in batches of about 10 gallons at a time. They made various flavors of soy ice cream, including strawberry, chocolate, and vanilla. It was very popular at the Ford cafeterias and the Henry Ford Hospital.

Smith remembers: "I thought the ice cream was very good. One night in about 1944 or 1945 Henry Ford II had a dinner at the old rotunda and had the press over. Everything was made from soybeans. It was sort of a recreation of the original 1934 World's Fair meal. We had soybean ice cream, soybean coffee, soybean croquettes. Mr. Ford's chef, Paul Foster, used to prepare all these dishes. He worked at our Laboratory when he wasn't traveling with Mr. Ford. Henry Ford II was interested in the soybean. He surprised me by the depth of his knowledge on the subject."

Some soymilk was also used in cooking, as to make soy bread. Virtually none was served as a beverage. Smith recalls, "As far as I know, the only ones who drank it were Henry Ford and his friends. Ford drank it almost every day. We either delivered it to his house, or he stopped by Moir House of the Carver Lab and picked it up. Every day we also baked him two loaves of soybean bread, which contained about 75% wheat flour and 25% soybean flour, plus some soymilk."

Ford also liked soybean sandwiches, which were made using soybean bread and locally picked weeds, such as curly dock. Clem Glotzhober, a botanist who graduated from Michigan State College, collected the weeds for Mr. Ford. He is still in Dearborn and would remember the details of soybean sandwiches.

The production of soymilk and soy ice cream stopped after Mr. Ford had a stroke. Bob Smith left the company in August 1945. Clem Glotzhober took over the soymilk production from Bob Smith and may have continued it for 6-12 months until the Carver Lab closed at the end of 1945. Address: 26351 Hollywood Ave., Roseville, Michigan 48066. Phone: 313-777-5394.

5415. Smith, Robert Archer. 1988. Work with Delsoy Products (Interview). *SoyaScan Notes.* May 15. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In 1943 Bob had co-founded Delsoy Products,

Inc. (with Henry Ford's complete approval) to develop, produce, and market soy-related foods. Bob ended his career with the Ford Motor Co. in Aug. 1945, when it became apparent to him that Henry Ford would soon retire. At that time, he went to work at Delsoy Products, whose main product was Delsoy, a non-dairy whipped topping made from the soymilk that Bob Smith had developed at the Ford Motor Co. One competing product was a whipping cream made with filled milk by a company in Chicago, Illinois, on Telegraph Road and Harvard, by Michigan Ave.

Originally Delsoy Topping was sold in paper cartons. In about 1946, Delsoy Products became the first to sell a non-dairy whipped topping in pressurized cans–major innovation. The new product, named Presto Whip, was a non-dairy soy-based whipped topping very similar to Delsoy Topping except that it had a lower fat content to allow it to be used in a pressurized can. The pressure can was developed by Crown Cork and Seal to contain DDT for U.S. troops in the Pacific. Then some company developed a valve that was suitable for cream purposes. Delsoy was the first company to use the can with the valve for any food product. They couldn't put cream in the can since there was a pro-dairy law prohibiting putting anything in a can less than 3 gallons in size. So they put their soybean topping in it. Sales of the new product increased rapidly.

Presto Whip is still sold by a company in Lowell, Michigan. [Note: Whitehouse Products was purchased in 1983 by C.J. Christoff & Sons of Lowell, Michigan. The company is now called Chadalee Farms, Inc.] After Presto Whip became available, Delsoy continued to be sold to bakers who made whipped cream products, mostly in 5- and 10-gallon cans. As long as Smith was with the company, they sold both products.

Bob is not sure how much Delsoy Topping was sold. Their company would buy 500,000 pressurized cans at a time. Sometimes they produced 25,000 cans/day. Twenty people were employed in the little plant. After World War II, sales grew steadily year after year. They kept expanding their territory. The company's first real competitor was Redi-Whip, but Presto Whip had the highest sales per store. At one point Delsoy Products was negotiating with Lever Brothers, who wanted to buy the company, but the deal never worked out. At one point, Bob Rich of Rich Products Corp. in Buffalo, New York tried to hire Bob Smith.

In 1958 Harvey Whitehouse, Bob Smith's partner, bought out Bob Smith's interest in the company, and changed its name from Delsoy Products to Whitehouse Products. Later Harvey Whitehouse sold his company to the dairy in Lowell, Michigan.

Bob retired from Delsoy Products in 1963. The company was sold to the dairy in Lowell, Michigan (as described above). Delsoy is still being made as a whipped topping in a pressurized can. It still has the same label it had in 1963. Address: 26351 Hollywood Ave., Roseville, Michigan 48066. Phone: 313-777-5394.

5416. Gupta, Rajendra P.; Gupta, Rashmi R. Assignors to Prosoya Corp. (Maryland Heights, Missouri). 1988. Equipment for making no-beany flavor soymilk. *U.S. Patent* 4,744,524. May 17. 7 p. Application filed 1 April 1987. 3 drawings. [6 ref]

• ***Summary:*** "The equipment grinds soybeans totally in an aqueous medium at room temperature without trapping any air [but not in a vacuum], cooking the resulting slurry, and separating the undissolved solids to extract soymilk. The fact that no heat needs to be given to soybeans prior to or during the grinding operation yields very high percentage of solids in soybeans as dissolved solids in soymilk without rendering chalkiness found in the soymilks made employing the hot ground and blanching methods.

Talk with Raj Gupta. 1988. The bean-to-water ratio is critical to the success of the process. Aug. 10. APV-Crepaco is making the equipment for them, and selling it for about $25,000 for a 90 liter/hour system. Address: [Raj Gupta, ProSoya Foods International Inc., 801-275 Slater Ave.], Ottawa, ONT, K1P 5H9, Canada. Phone: 613-745-9115 or 613-744-4401.

5417. Mitchell, Cheryl R.; Mitchell, Pat R.; Nissenbaum, Robert. 1988. Nutritional rice milk production. *U.S. Patent* 4,744,992. May 17. 8 p. Application filed 24 April 1986. [4 ref]

• ***Summary:*** Describes an enzymatic method for producing a milk-like rice liquid for use either as a beverage (like amazake) or in a variety of food products. "The method of the invention comprises selection of whole grain rice, either white or brown rice, which is liquefied, preferably with alpha-amylase enzymes, and then treated with relatively high levels of a glucosidase enzyme and/or a beta-amylase enzyme in a saccharifying step. The total enzymatic reaction time in both the liquefaction and saccharification step is limited to prevent development of undesirable off-flavors to yield a non-allergenic rice milk product having surprising milk-like texture and functionality, the rice milk product being characterized by the absence of rice-like flavor and having a preferred composition..."

Throughout the patent the product is referred to as either "rice milk" ("because of its surprising milk-like texture and functionality") or "modified amazake." In the section titled "Background of the invention," the preparation of Japanese amazake by the traditional method using koji is discussed in some detail. Soy beverages are also sold as a milk substitute. "Disadvantages associated with these soy-based milk substitutes arise primarily because of the allergenic response which many people have toward soy products, the bean-like flavor of the products and their common need for the addition of a sweetener."

Note: Presently more than 50 different enzymes have

been found in koji. Most or all of the enzymes mentioned in this patent are inherently present in koji. Address: 1-2. 466 N. Powers, Manteca, California 95336; 3. 750 Homer Ave., Palo Alto, CA 94301.

5418. *Monitor* (*Manning, Iowa*). 1988. Development Corp. announces new industry for Manning: Summer start-up expected. May 19.
• ***Summary:*** A new industry will be coming to Manning, Iowa, following the Monday, May 16 approval of a $63,700 loan from the Iowa Lottery Funds to the Miller Farms Food Company of Cedar Falls, Iowa. Miller Farms Food Company, which produces a powdered soybean beverage, will locate in Manning in a building owned by the Manning Industrial Development Corporation. The building is currently a maintenance garage. Miller plans to employ six people initially. Projected annual sales are $1,951,397 the first year, increasing to $8,343,000 the second.

5419. *Spectator* (*Carmi, Illinois*). 1988. Californian would like to buy local soybeans. May 28.
• ***Summary:*** Jerry Ridenour, a Californian who wants White County to think about producing soybeans without chemical fertilizers or pesticides so that he can purchase the organically-grown beans for his natural foods business. While visiting Crossville, Illinois, he intends to talk with some farmers about the proposal. Ridenour's company, "Wildwood Natural Foods," makes meat-like products from tofu, soymilk, and wheat gluten, such as tofuburgers, meatless meatballs, and lactose-free soymilk. Other items made from tofu include tofu hot dogs, tofu jerky, soymilk yogurt, lactose-free tofu chocolate, etc. The business currently uses about 48-50,000 pounds of soybeans per month.

5420. Alfa-Laval Food & Dairy Engineering. 1988. Soya–The nutritious plant. Lund, Sweden. 8 p. [4 ref. Eng]
• ***Summary:*** Contents: General nutrition. Positive nutritional factors. Negative nutritional factors. Studies on Alfa-Laval soybase. "The deactivation of trypsin inhibitor in the Soyal standard process has been studied, and it is found that 80-85% of the TI is deactivated in the soy base, and about 30% in the okara...

"Ultrafiltration is an efficient method to reduce oligosaccharides. In tests with batchwise diafiltration 60% water removal decreased the oligosaccharides by 75-80% and the phytic acid by 30%. After addition of the same amount of water and re-ultrafiltration a total of 90% of the oligosaccharides and 35% of the phytic acid was removed. Continuous diafiltration gives similar results.

"Soy base composition: 9-11% dry matter, 4-5% protein, 2-2.5% fat, 1.5-2% soluble sugar, 1-1.5% others."

Note: This is information for customers based on research conducted by Alfa-Laval. The undated booklet was published in about May 1988. Address: Lund, Sweden.

5421. Dawson, D.P.; Morrill, J.L.; Reddy, P.G.; Minocha, H.C.; Ramsey, H.A. 1988. Soy protein concentrate and heated soy flours as protein sources in milk replacer for preruminant calves. *J. of Dairy Science* 71(5):1301-09. May. [19 ref]
• ***Summary:*** Growth, protein and dry matter digestibility, nitrogen retention, and morphology of the intestinal mucosa of calves on the all milk-protein die were superior to those of calves on diets containing a soy product. All soy-fed groups had a humoral but no cell-mediated immune reaction to soy proteins. Concentrate and the experimental heated soy flour were superior to the commercial heated soy flour as protein sources for milk replacer. Address: 1-4. Depts. of Animal Sciences and Industry, and Lab. Medicine, Kansas State Univ., Manhattan, Kansas 66506; 5. Dep. of Animal Science, North Carolina State Univ., Raleigh, North Carolina 27695.

5422. Keville, Kathi. 1988. Back to Eden's Jethro Kloss. *Vegetarian Times.* May. p. 67-69.
• ***Summary:*** Soyfoods are an integral part of Kloss' dietary philosophy. He was born in 1863 on a farm (called the Garden of Eden, by the way) near Manitowac, Wisconsin, one of 11 children. A typhoid epidemic spawned Kloss' career as a natural healer. He was firm in his belief that substituting soy products for dairy products is essential to good health.

Back to Eden was published when Kloss was 76 years old.

Move Over, Tofutti–Kloss "began what might have been the first natural foods fast-food stand, based largely on soyfoods. That was in the 1930s when the Kloss family was living in Washington, D.C. To reach influential Washingtonians, Kloss parked a small trailer on Pennsylvania Avenue, by the White House and Capitol buildings. There he sold vegetarian quick lunches to government employees. Soy bread sandwiches were filled with nutmeats, lettuce and sliced tomatoes. Favorite snacks were strawberry, chocolate and vanilla ice creams made directly from raw soybeans. (The beans were soaked and ground, then milk was pressed out of them.) Hot soybean coffee, with soybean cream, was served...

"Jim Taft, vice president of research for Farm Foods, an offshoot of The Farm community in Tennessee and producers of soy-based 'Ice Bean,' said he made his first batch of soy-milk 20 years ago, using the *Back to Eden* recipe. Taft said he was extremely influenced by Jethro Kloss. 'He was very popular among my friends. I read his book from cover to cover. I can't remember where I got my first soy ice cream recipe, but I think it was a combination of *Back to Eden* and *Ten Talents* (by Frank J. and Rosalie Hurd, whose recipes are also based on Seventh-day Adventist principles).'" The recipe for Soy Ice Cream that Taft remembers using is given.

It calls for 1 tablespoon agar-agar, cold water for soaking, 2 quarts soymilk, 2 lbs. barley malt sweetener (powdered form), ½ pint soy margarine, and crushed fruit, fruit juice, or vanilla (optional).

5423. Kotzsch, Ronald E. 1988. Soyfoods; A growing industry is revolutionizing the way Americans eat (Special Advertising Supplement). *East West.* May. p. 1A-11A. Also in Vegetarian Times. May. p. 49-59.
• ***Summary:*** A well-done "advertorial" as part of America's first Soyfoods Month. Sponsored by Nasoya, Morinaga, Legume, Simply Natural, Vitasoy USA, Westbrae Natural, and Farm Foods. Each company also ran an ad in this section. Henry Ford played a key role in introducing Americans to soyfoods as with his 16-course meal at the 1934 World's Fair. Interest remained strong through World War II, then dissipated quickly. By the time Ford died in 1947, soyfoods were all but forgotten. Interest was revived and advanced from the mid-1970s on by Shurtleff and Aoyagi of the Soyfoods Center in California. Today through the efforts of many growing companies, the industry is booming.

5424. Ontario Soya-bean Growers' Marketing Board. 1988. Report on export market development mission of the Ontario soybean industry, March 19th–April 3rd, 1988. Chatham, Ontario, Canada. 23 p. May. 28 cm. Spiral bound. [Eng]
• ***Summary:*** This report was prepared by Owen Dobbyn, John Cunningham, Maurice Waddick, and Fred Brandenburg of OSGMB. Contents: Japan. The Japanese soybean market. Visits: Japan Miso Co-operative Industrial Assoc. (M. Iida, chairman), Japan Packaged Tofu Assoc. (H. Kijima, Exec. Secy.), Federation of Japan Natto Manufacturers Cooperative Society (Mr. Ohse), Takano Foods Co. Ltd. (E. Takano, president, uses 7,000 to 8,000 tonnes of soybeans annually to make natto), Home Foods Co. Ltd (Home Shokuhin, Y. Murai. managing director, has 160 employees and 3 tofu factories that use 300 tonnes of soybeans/month; owned by Wako Shokuryo, the #1 wholesaler of soybeans in Japan), Japan Oilseed Processors Assoc. (JOPA; H. Higashimori, managing director). Japan Oil and Fat Importers & Exporters Assoc. (JOFIEA; I. Shimizu, exec. director), Canadian Embassy, Tokyo.

Hong Kong. Soybean imports. Visits: The Hong Kong Soya-Bean Products Co. Ltd. (makers of Vitasoy soymilk), Amoy Industries (International) Ltd.

Malaysia. Soybean imports 1984, 1985, 1986. Visits: Ace Canning (owned by Lam Soon). Yeo Hiap Seng (Malaysia) Berhad (soymilk), Cheong Chuan (Hup Kee) Sdn. Bhd. (traditional fermented soysauce), Sin Yong Huat Enterprises Sdn. Bhd. (soybean importers), Syarikat Perniagaan Cheon Fatt (tofu manufacturer).

Singapore. Soybean imports (1983-1986). Visits: Sin Seng Lee Trading Co. (Pte.) Ltd. (claims to import 60% of soybeans to Singapore). Conclusions for each country. Recommendations for future action. Future export development missions. Accomplishments. Competition.

In Japan, 842,000 tonnes soybeans are used to make foods, as follows (in tonnes, p. 1): Tofu 456,000, miso 180,000, natto 90,000, dried-frozen tofu 30,000, boiled soybeans 23,000, soybean powder [probably kinako] 10,000, soymilk, 7,000, soysauce 5,000, other 41,000. The suppliers of these edible soybeans are (in tonnes): USA 400,000, China 280,000, Japanese domestic 280,000, Canada 24,000. Total Japanese soybean imports: 5,000,000 tonnes. Of this 4,036,000 tonnes (81%) are used for crushing, 842,000 tonnes for food, and 70,000 tonnes for feed (not crushed). The Japanese market for soybeans is very large for both crushing and food use, but is not growing. The beans for crushing come mostly from the USA and South America.

Preferred characteristics of soybeans for each type of soyfood are given. For example, for miso: Low oil, high protein, high sugar, white hilum. For tofu: High sugars (glucose, sucrose), moisture content 10-12.5%, new crop preferred to old, protein 40%, oil 19-20%, hilum color is not very important but white is preferred, varietal consistency; preferred varieties are Beeson, Amsoy, Corsoy. Natto: Most important is small size, 5.5 mm or less, clean beans free of foreign material, high sugar content (saccharose, stachyose, which bacillus needs to work), less oil, must absorb water well. Soymilk: Good flavor, low moisture (10%), low percentage of splits (too high can cause rancidity), low oil, high protein.

In Japan, vegetable oil consumption has increased 2.5 times in the past 20 years to 45.17 gm/capita/day in 1986. Soyoil and canola oil together account for 85% of production. Canola is replacing soybean oil. If the oil market is strong, the 30 Japanese crushers crush more canola, but if protein is strong they crush more soybeans. U.S. soybeans have too much foreign material; new contracts have a penalty for > 2% FM.

In Hong Kong, 6,000,000 cases of Vitasoy brand soymilk are produced annually. The company uses 2,500 tonnes/year of soybeans, 80% of which are grown in Canada. It uses 100 to 200 tonnes of organic soybeans for Vitasoy exported to U.S. health food stores. Using 15 Tetra Pak machines, production takes place 24 hours/day (3 shifts), 6 days a week. Contacts: Patrick Cheung (marketing manager), and Raymond Yuen (commercial manager).

Amoy Industries, the largest maker of soy sauce in this part of the world, produces 6,000 tonnes/year. The company was established 80 years ago in Amoy, eastern China, moved to Hong Kong in 1949; 50% was purchased by Pillsbury in 1983. Uses 2 containers of soybeans/week, 100% from Ontario for the past 5 years.

Malaysia soybean imports rose from 174,400 tonnes in 1984 to 255,200 tonnes in 1986. The main suppliers in 1986 were China (56.2% of total), Vietnam (15.8%), and

Argentina (14.3%). Ace Canning uses ton tonnes/month of soybeans (presently all from China) to make soymilk. They have 7 Tetra Pak machines. Yeo Hiap Seng (Malaysia) is the largest soymilk producer in Malaysia, making 25,000 liters/year using 9 Tetra Pak machines. They use 1,250 tonnes of soybeans (80 containers) per year, all Canadian.

In Singapore, soybean imports rose from 28,287 tonnes in 1983 to 41,571 tonnes in 1986. In 1986, some 66% came from Canada, 16.6% from China, and the rest from others.

The major competition for food quality soybeans in these four countries at present comes from China. The Chinese have improved their soybean quality and appear to be actively seeking to increase their market share. In the long run, however, China may choose to reduce its soybean exports in order to increase meat consumption in China. This could lead to new market opportunities for Canada in these four countries. Address: P.O. Box 1199, Chatham, ONT N7M 5L8, Canada. Phone: 519-352-7730.

5425. *Pediatric News* (*New York, NY*). 1988. Effects of reformulated soy-formula vs. breast milk. May.
• ***Summary:*** "A reformulated soy-based formula was as effective as breast milk in promoting growth and bone mineralization in healthy term infants, Dr. Gary M. Chan said at the Western clinical research meetings.

"This reassuring result runs counter to several reports since 1981 by investigators who reported inadequate bone mineralization rates in term infants and a high incidence of rickets in premature infants fed soy formula, said Dr. Chan, of the University of Utah School of Medicine, Salt Lake City.

"The poor bone mineralization documented in earlier studies may have been the result of reduced bioavailability of major and trace minerals of older soy formulas, Dr. Chan said. Another contributing factor might be the absence in soy formula of lactose, a carbohydrate that stimulates absorption of calcium and phosphate, he noted.

"Compared with breast milk, the reformulated soy product is slightly higher in carbohydrate and protein and lower in fat. It is also higher in calcium, phosphorus, zinc, magnesium, and aluminum."

5426. Quong Hop & Co. 1988. The Soy Deli. Nutrition, value, and variety make soy deli a great buy (Ad). *Vegetarian Times.* May. p. 73.
• ***Summary:*** Includes a photo of products.

This ad also appeared in the July issue (p. 18) and in the October issue (p. 36). Address: 161 Beacon St., South San Francisco, California 94080. Phone: 415-761-2022.

5427. Shurtleff, William; Aoyagi, Akiko. comps. 1988. Bibliography of soymilk, from 1500 to 1988: With 2195+ references. Lafayette, California: Soyfoods Center. 209 p. Subject and country index. Partially annotated. Printed May. 28 cm. [2199 ref]
• ***Summary:*** The most comprehensive bibliography on this subject. Includes all known commercial soymilk products. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

5428. Lukoskie, Luke. 1988. Recent developments at Island Spring, Inc (Interview). Conducted by William Shurtleff of Soyfoods Center, June 2. 3 p. transcript.
• ***Summary:*** In Nov. 1986 Edward Lynch Co. (ELCO) had contracted to invest $7 million in Island Spring. They had seen how french fries took off and they felt that tofu could follow the same pattern, so they wanted to be in on the ground floor. They actually paid in $4 million. Then in 1987 the relationship broke up. An agreement was reached whereby ELCO obtained possession of the STS soymilk plant. It went to their subsidiary Pacific Foods of Oregon, located in Tualatin near Portland. ELCO also owns Pacific Foods, formerly Sunny Jim, which is an established manufacturer of fruit preserves, juices, peanut butter, etc., and Crescent Foods. Pacific Foods plans to make soymilk but no one in the company knows how nor do they know the natural foods market, which is already extremely competitive. Moreover they have a 2-year non-compete agreement with Island Spring. Luke thinks it will cost them $10 million to put a soymilk product on the market.

Luke went to Sweden to buy a soymilk system from Alfa-Laval the summer after ELCO came in but the plant was too expensive. So he ended up buying a similar system from STS (Soya Technology Systems), the one that Pacific Foods now has. Luke has a lot of confidence in the future of ultrafiltration for making tofu. He was the first to develop a process for metering calcium sulfate into an aseptic tofu. Today the company's sales are up 50% over 1987. The best sellers are Traditional Firm Tofu (water pack), Delicious Steamed Tofu, Tofu Dressings, Tofu Burgers, and Extra Firm Tofu (vacuum packed). In the works are a yogurt and a tofu to be added to sausages by Oscar Meyer. Jerry Long, sales manager, has been a boon to the company. Address: P.O. Box 747, Vashon, Washington 98070. Phone: 206-622-6448.

5429. Reynaud, A. 1988. Re: Brief history of Innoval / Sojalpe, an affiliate of Coopérative Agricole Silos de Valence. Letter to William Shurtleff at Soyfoods Center, June 6–in reply to letter of March 1988. 1 p. Typed, with signature on letterhead. [Eng]
• ***Summary:*** "Dear Sir, Sorry not to have answered sooner your letter of March 1988 sent to Sojalpe.

"At this time Sojalpe has been bought by Silos de Valence (cooperative enterprise). We are working to raise up production and sales. Sojalpe's new address is: les Auréats, 26014 Valence cédex.

"Now Sojalpe is specializing in organic and diet soyfoods which are selling in natural food stores.

"In November 1987, we made a new enterprise, Innoval, whose aim is to sell soyfoods not nature but diet in supermarkets.

"Answers to your questions:

"1. Soja started in December 1986.

"2. One label for each of our products is enclosed in this letter. "3. New soyfoods will first sell commercially this summer [of 1988] (drinks, desserts, etc.).

Ten leaflets (very attractive and professional) are enclosed. Each is glossy color, printed on both sides, 29.5 x 21 cm. Six of the leaflets were created by Sojalpe, have the attractive Sojalpe logo at the bottom of the front panel over a green stripe, and have an illustration of a laughing chef in a tall white chef's hat (toque) against a broad green stripe (8 cm tall). Centered against this strip (but behind the chef's hat) is written: "Les plaisirs de la table–Sans les kilos! [The pleasures of the table–without the kilos of weight gain!] in bold red capital letters against a horizontal yellow band, 1 cm tall. Below that is the name of the product in bold black letters against a whit stripe and below that a large photo of a prepared dish, ready to eat. On every photo is the word "Bio" written in bold red letters against a yellow background. On the back of each sheet (in black ink on glossy white paper) are descriptions of soya, of tofu, and of the specific product. At the bottom of the page is the Sojalpe logo and address. The address has been crossed out with blank ink (it is illegible) and its place is written: "Les Auréats 26014 Valence. None of the leaflets is dated. The various products are: (1) Les Royales: le savoir-faire des grandes chefs. (2) Les Sorbets: la gourmandise–sans la péché! [Sorbet–without the sin]. (3) Le Soja-Milk: un milk végétal léger, léger, léger [Soya Milk: A vegetal milk that is light, light, light]. The photo shows the milk in a bowl of cereal. (4) Le Tofu Nature: tous les goûts sont dans la nature [Natural Tofu: all the taste is in nature]. The photo shows many thin squares of tofu in hors d'oeuvres or in a salad. (5) Les Palets au Tofu: des plats (finement) cuisines. [Thin sheets of deep-fried tofu]. (6) Le Tofu Burger: le steak de soja–gastronomique. The photo shows two tofu burgers on a plate with a sauce.

The other four leaflets are the same size, glossy color, but have a somewhat different format. Across the top is a light blue and light green band, the two colors separated by thin wave of white. To the left is standing an all-white lovely French woman in a scanty bathing suit. Across the blue band is written (in this red letters): Cuisine saveur Cuisine minceur [Tasty slimming cuisine]. Across the green band is written the name of the product in bold red letters, above a sub-title in black. The color photos are the same size and quality as before, but in place of the word "Bio" is the word "Soja." The "logo" at the bottom, written in black on a yellow oval is: Four stars. Degustation. Basses calories (God taste but low in calories). The products are: (1) Tofu cube: menu a la carte. (2) Royales au tofu: pour varier les plaisirs. (3) Palets au Tofu: gastronomie et dietetique. (4) Tofu Burger: Pour les

connaisseurs.

One more Sojalpe leaflet is enclosed (green and red on white, 3 panels each side, each panel 21 x 10 cm). On the front panel is the same chef with his tall hat described above. The word "Tofu" is written 5 times in little clouds. On the inner three panels are descriptions of the benefits of tofu and recipe suggestions. On the back panel is the word "Sojalpe" and the address: "Saint Quentin sur Isère, 38210 Tullins. Tél. 76.93.60.21." Address: Allée Joule, ZI des Auréats, BP 1418, 26014 Valence Cedex, France.

5430. Shotts, D'Anna. 1988. A letter from Nigeria. *Reporter* (*Casey, Illinois*). June 9.

• ***Summary:*** Sharron Hawk, a fellow missionary and Director of Kersey Children's Home [at Ogbomosho], is a registered nurse. She deals with malnourished babies and their mothers, teaching the mothers to prepare soya milk to feed their babies. It's amazing to see a little feeble skeleton come in, and then a few weeks later, a healthy baby goes out. At the Nigerian Baptist Convention exhibit, we prepared many foods with soybeans and sold them at low costs to conventioneers. We sold hundreds of recipe books.

5431. Fiering, Steve. 1988. Early history of The Soy Plant and The Soy Deli in Ann Arbor, Michigan (Interview). *SoyaScan Notes.* June 10. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** "I was a coordinator at the 4th Avenue Food Co-op in Ann Arbor. Three of us from the Co-op began making tofu next door in the Wildflour Community Bakery (which is still there), starting in about April or May of 1977, but perhaps as early as January. Sue Kalen, Christopher Coon, and myself (plus a few others from time to time) would get up very early on Sunday mornings and make our tofu. Soon we also started making soymilk. Whatever we could make was sold immediately in the 4th Avenue Co-op next door. We had no real business name at that time. They called us "The Tofu Co-op." There was a guy named Al Dynak who worked

as a baker at a deli and restaurant called Eden's in Ann Arbor. Eden's was owned by or associated with Eden Foods, the natural foods/macrobiotic distributing company. He was also interested in developing a tofu company. We had a meeting. He was much more experienced than we were, especially in baking, food processing, and the restaurant business. He pretty well pushed us for the first 6 months.

"He got us a little room in the basement of Eden's at 330 Maynard St.; in August 1977 we turned it into a tofu shop. At that point we registered our business as The Soy Plant. We were there for about 4 months. When he saw that we were interested in running the business as a co-op rather than to make money, he bailed out. He was interested in making money. Yet without Al, we might never have made the jump out of the original co-op location. No new products were introduced while we were at Eden's.

"Then, in about January 1978, we moved to 211 East Ann St., Ann Arbor. At that time, Tim Huang of Yellow Bean began to distribute our products. Our deli opened on 1 May 1978.

"In July of 1978 we hosted the first national Soycrafters Conference, at which the Soycrafters Association of North America was founded. Seventy people from across America attended. Sue Kalen, Christopher Coon and myself generated the idea for the conference together. We were co-opers and, as such, we were interested in conferences, networking as they say. We knew there were other people out there doing what we were doing and we felt that everyone would benefit it we could all get together and share experience. We knew about New England Soy Dairy (in Greenfield, Massachusetts), The Farm (Summertown, Tennessee), and maybe Northern Soy (Rochester, New York) and Pat Aylward's Joy of Soy (Minneapolis, Minnesota). We compiled a list [Shurtleff sent in many names from Japan] and sent out letters to see how much interest there was. People were interested, so we decided to host it and set a date.

"In 1980, the production part of the business moved to 771 Airport Blvd., Suite 1 in Ann Arbor. They had lots of problems with waste water disposal and may not have started production until 1981. That was when I left, feeling completely frustrated with the co-op structure.

"Most of the workers still liked the co-op. My own personal analysis of the situation is that co-ops work well when there are about 6 people or less and everyone can make decisions, or when there are more than 25-30 people so that you set up a management structure to make decisions. We got caught in the middle with 12-15 people and everyone trying to make decisions. It didn't work. For years I was working to put a manager in the Soy Plant." Address: 30 Newell Rd., Apt. 19, Palo Alto, California 94303. Phone: 415-326-7123.

5432. *Toyo Shinpo* (*Soyfoods News*). 1988. Tôfu ga eizu ni kiku! Eizu nimo kôka ga aru tônyû no naka no saponin, Okubo Ichiro hakase ga happyô [Tofu works against AIDS! Dr. Ichiro Okubo's publication shows saponin in soymilk is even effective in treating AIDS]. June 11. p. 11. [1 ref. Jap; eng+]

• ***Summary:*** Dr. Okubo, assistant professor at Tohoku University in Japan, published an article in *Asahi Graph* (3 June 1988) stating that tofu and soymilk work against AIDS. This created a sensation in Japan. There are many types of saponins, but they can be divided into 2 types, A and B. Group, B can control growth of the HIV virus, which is also a cause of leukemia and breast cancer. Group A, which only exists in the soybean hypocotyl (sprout/germ, *haijuku*), is a cause of the soybean's bitter flavor. Thus, removing the hulls and germ from soybeans gives better tasting soymilk and tofu. Address: Asst. Prof., Tohoku Univ., Japan.

5433. Central Soya Co., Inc. 1988. Central Soya will build soy protein [concentrate] plant in Europe (News release). Fort Wayne, Indiana. 2 p. June 14.

• ***Summary:*** The plant will produce soy protein concentrates, used primarily in food systems and as milk replacers for young animals. The site selection process has begun. The plant will be similar in design to the recently announced Bellevue, Ohio plant, now under construction. The Bellevue plant contains modular extraction, solvent recovery, drying and packaging units. Address: Barry G. Collinsworth, Fort Wayne, Indiana. Phone: (219) 425-5591.

5434. Owen, Mary. 1988. Souter gets funds for a year's worth of beans. Soybeans–the difference between life and death [in Nicaragua]. *Davis Enterprise* (*Davis, California*). June 24. p. B-6.

• ***Summary:*** Ann Souter, formerly a registered nurse in the Department of Community Health at Cal, Davis, is teaching the people of Nicaragua to grow and use soybeans. She trains brigidistas, or community health workers. She has been working there three years, coming back to the U.S. from time to time. She started a soybean project last spring, getting soybeans from the lowlands where they are fairly widely planted, distributing them to her health care workers to distribute in their cooperatives for planting them in the north. That crop will be harvested this fall. She has also held workshops in how to use soybeans. Malnutrition is becoming a problem once again, especially with children. The Contras have killed a lot of the dairy cattle.

With an $8,000 grant from the Unitarian Service Committee last year, Souter purchased over $1,000 worth of soybeans and other seeds for her workshops. She says each brigidista receives five pounds of soybean seeds to take back to his or her village. These seeds will yield a 500 pound crop to supplement the diets of those suffering from malnutrition. Souter received a $5,000 grant from the Presbyterian Hunger Fund of the Social Justice and Peacemaking Committee of

the Presbyterian Church USA to further her work.

Souter will be honored as the recipient of the Davis City Council's Peace and Justice Award at a Peace and Justice Dinner sponsored by the Citizens for Inter-American Cooperation.

She can be reached c/o UNAG, Matagalpa, Nicaragua. UNAG is the national union of farmers and cattlemen. Address: Enterprise Religion Editor, California.

5435. Jaccard, Michel; Dillier, Alexandre. 1988. Re: History of production and marketing of tofu by Conserves Estavayer S.A. (a Migros company in Switzerland). Letter to William Shurtleff at Soyfoods Center, June 27. 3 p. Typed, with signature on letterhead.

• ***Summary:*** Conserves Estavayer, one of Migros' firms, also makes dairy products and canned goods. They began in November 1982 to do tests on production of soymilk and tofu, based on the results of Japanese research. By June 1983 they were making good progress in technical details. They built their own machines initially. The first commercial tofu products were launched in mid-1984. These included regular tofu products (Tofu Nature, Tofu Mix) and seasoned products (Tofu a la Provencale in a tube, Tofu Bolognaise, Tofu Snack, and Tofu Emince). The latter 3 products were canned. Of the three fresh products Conserves Estavayer has introduced to date, all three are still on the market. But of the ten seasoned products, only one (Tofu a la Provencale) is still available. Sold in a 190 gm tube, it is suitable for canapes, hors d'oeuvres, etc. Address: Sales Dep., Conserves Estavayer, Case Postal 29, CH-1470 Estavayer-le-Lac, Switzerland. Phone: 037-63 91 11.

5436. Freudenheim, Milt. 1988. A safer infant formula promised [by Carnation Co.]. *New York Times.* June 28. p. D1.

• ***Summary:*** The Carnation Company, a division of Nestlé S.A., the Swiss food giant, announced yesterday that it would introduce an infant formula that relieves symptoms of milk allergy in babies; these include intestinal disorders, skin rashes, insomnia, etc. The new product, to be called Good Start H.A. (for "hypoallergenic) will be the first infant formula sold by Carnation and the first sold by Nestlé in the USA. Last year Nestlé had overall sales of $24 billion.

In Europe (West Germany, France, Belgium, and Switzerland), Nestlé is already selling the Carnation product, which is based on whey from cow's milk; the whey has been treated with enzymes, or "predigested" as the company says. Two similar hypoallergenic products, but made from casein (the other type of milk protein) are already available: Nutramigen and Pregestimil, both made by Mead Johnson, a division of the Bristol-Myers Co.

The percentage of U.S.-born infants is unclear; authorities estimate the figure at 0.5 to 7%. One professor pediatrics says that milk allergy is probably the most overdiagnosed condition. Last year, infant formula sales in the USA amounted to $1.4 billion: Abbott Laboratories has about 56% of the market, Bristol-Myers 39%, and American Home Products 4%.

The best defense against allergic reactions in infants remains breast feeding. About 60% of American mothers now breast-feed, but the percentage is lower among lower-class and poorer mothers.

The protein in mother's milk, cow's milk, and soybean milk can cause allergic reactions in some infants. Infants who are allergic to cow's milk are often fed soybean milk [formula].

5437. Alfa-Laval Food Engineering AB. Soy Application Group. 1988. Soyfoods: Old traditions with new potentials. P.O. Box 64, S-221 00 Lund, Sweden. 12 p. [Eng]

• ***Summary:*** Contents: Soy–The miracle plant. Soy–The nutritious plant. Soy products yesterday and today. Soy processing yesterday and today: Traditional, hot grinding, blanching, the Soyal process. Soy processing with Soyal: Gives a diagram of the equipment and describes the 7 main steps in the process, starting with bean cleaning and ending with soybase, from which can be made the products described in the next section. Soy products today and tomorrow: Soy beverage, tofu, soy yoghurt, frozen desserts (ice cream)–Imagination sets the limit. On the facing right-hand page is a superb color photo showing 32 modern commercial soyfood products in colorful packages, most based on soymilk and tofu. Alfa-Laval R&D Centres at your service. Alfa-Laval in soy processing: Discusses the Guangdong Cannery in Guangzhou (Canton), China, the first company to install a complete soy beverage plant based on Soyal technology (it now runs 2 shifts to produce 20,000 liters/day of plain and flavored soy beverage), and the CAC Soyal plant in France which makes the Bioforme line. "Founded more than a century ago, Alfa-Laval has a current workforce of 16,000 and is represented in 130 countries through subsidiaries and agents. The group comprises 160 companies worldwide with 45 manufacturing plants."

Processing: Traditionally soybeans were soaked in cold water then ground in cold water, filtered, and cooked to make soymilk with a beany flavor. "Hot grinding: The undesirable taste and smell stem from ketones and aldehydes produced by the enzyme lipoxygenase which is activated by the traditional process and acts as a catalyst to oxidize fatty acids. Modern research showed that grinding in hot water instead of cold water eliminates the enzyme activation and improves the taste considerably.

"Blanching: It was subsequently found that blanching instead of pre-soaking improves the taste even further. The beans, often dehulled, are blanched and ground together with an alkali solution.

"Unfortunately, this process can affect the protein yield. Due to the harsh treatment, the protein tends to agglomerate

instead of remaining in solution. In the separation stage these protein bodies will disappear with the fibrous residue [okara], reducing the protein content of the extract.

"The SOYAL process: All of these findings are advantageously combined in Alfa-Laval's processing line SOYAL. The process has been optimized to produce a soybase with a high protein content and a high nutritional value. The soybase produced has a widely acceptable flavour and mouthfeel with no trace whatsoever of the original unpleasant taste and smell." Address: Lund, Sweden.

5438. Elliott, J.G.; Wagner, T.J.; Geurin, H.B. 1988. Performance of calf milk replacers based on milk protein, isolated soy protein/milk proteins or soy protein concentrate/milk proteins. *J. of Dairy Science* 71(Supplement 1):125 (Abst. #P20). June. American Dairy Science Association 83rd Annual Meeting.
Address: Protein Technologies International, Dairy Food Systems Div., St. Louis, Missouri 63164.

5439. Hillman, Laura S.; Chow, W.; Salmons, S.S.; Weaver, E.; Erickson, M.; Hansen, J. 1988. Vitamin D metabolism, mineral homeostasis, and bone mineralization in term infants fed human milk, cow milk-based formula, or soy-based formula. *J. of Pediatrics* 112(6):864-74. June. [45 ref]
Address: Dep. of Child Health, Univ. of Missouri School of Medicine, Columbia, MO 65212; Dep. of Food and Nutrition Research, Mead Johnson, Evansville, Indiana.

5440. Kay, Theodore; Kimura, M.; Nishing, K.; Itokawa, Y. 1988. Soyabean, goitre, and prevention. *J. of Tropical Pediatrics* 34(3):110-113. June. [Eng]
• ***Summary:*** Contents: Introduction. Nutritional value of soya bean Nigerian foods prepared with soya bean paste: Soya bean paste (soaked, ground soybeans without the "husk" removed), kosei (akara ball), panke (puff-puff). Nigerian foods prepared with soya bean milk: how to make the basic milk, wara (milk curd), and alele (moin-moin, made with soya milk residue [okara]). Note: "The above five recipes have been fully accepted in many parts of Nigeria. The taste and the preparation procedure of these traditional Nigerian foods made from soya beans worked out to be almost the same or very similar to the foods traditionally made from cow peas (white beans) for kosei and alele, wheat flour only for panke, and cow milk for wara."

Nigerian foods made with soya bean flour (pre-cooked): How to make the basic flour, protein enriched pap (with akamu), and protein-enriched fu-fu (with gari or cassava flour). Discussion.

"Soya bean is being successfully established in Nigeria, but it has been very difficult to cook in a traditional West African way so it has never become popular in this country. Most soya bean produced in Nigeria has been exported as cash crop except a little for animal consumption."

Kosai, alele, panke, and awara are traditional foods in Northern Nigeria, while akara ball, moin-moin and puff-puff are traditional foods in Southern Nigeria. Discussion: "Why do we need soya bean in Nigeria?" Five reasons are given. The first two are: "(1) It has higher protein content and net protein utilisation (NPU) than cowpeas, groundnut and other legumes. Moreover, soya bean is much cheaper than other legumes in Nigeria. (2) Soya bean flour and soya bean milk have little taste and can therefore be incorporated into traditional foods such as pap and fu-fu without changing the appearance, taste and texture." Address: Dep. of Hygiene, Faculty of Medicine, Kyoto Univ., Kyoto 606, Japan.

5441. Kelly, F.M.; Ramsey, H.A. 1988. Effect of alkali treatment on the value of soy flour for preruminant calves. *J. of Dairy Science* 71(Supplement 1):125 (Abst. #P19). June. American Dairy Science Association 83rd Annual Meeting.
Address: North Carolina State Univ., Raleigh, North Carolina.

5442. Kingma, Sharyn. 1988. New study released on consumer attitudes about soy proteins. *Soya Newsletter* (*Bar Harbor, Maine*). May/June. p. 3, 14-15.
• ***Summary:*** Protein Technologies International, a subsidiary of Ralston Purina, St. Louis, Missouri, has recently released the results of a new study which evaluates current consumer attitudes related to soy protein, nutrition, dietary habits, and knowledge of dietary fiber. The 1988 Consumer Attitudes Monitor was undertaken to determine if there had been any significant changes in consumer attitudes since their first study was done in 1985.

One of the major differences between the earlier study (see Ralston Purina 1985 and Elliott 1988) and the current one is that the 1985 study contained specific questions related to soyfoods. But the 1988 survey also probed some interesting areas. For details, see the study itself.

Copies of the 1988 Consumer Attitudes Monitor are available through Jean Kuster, Protein Technologies International, Checkerboard Square, St. Louis, Missouri, 63164 or call 800-325-7108.

5443. Peluso, Michael R. 1988. The nutritional value of soy. *Health World* (*Burlingame, California*) 2(4):26-28. May/June.
• ***Summary:*** This introductory article discusses whole soybeans, soy flour, soy protein products (isolates, spun fibers, TVP), soy milk, soy cheese (tofu), tempeh, miso, and soy sauce. Table I shows the composition of most of these is given. The author is especially interested in soy oil as a good source of vitamin E and of the essential fatty acids, linoleic and alpha linolenic acids. He is critical of the hydrogenation process. Table II gives a nutritive comparison of soy oil and selected food fats. Table III gives a nutritive comparison of soy foods and selected animal foods. Address: P.O. Box 606,

Occidental, California 95465.

5444. Shurtleff, William; Aoyagi, Akiko. 1988. Das Tofu-Buch: Herstellung, Verwendung, Ernaehrungswert, Rezepte [The book of tofu: Preparation, uses, nutritional value, recipes]. Munich, West Germany: Goldmann Verlag. 384 p. Illust. by Akiko Aoyagi Shurtleff. Index. 18 cm. [Ger]
• ***Summary:*** A pocket book edition of the original 1980 German edition of *The Book of Tofu.* Contains 300 recipes. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

5445. Soya House. 1988. Recipes from Soya House. Products of soya. *Soyanews* (*Sri Lanka*). April/June. p. 5.
• ***Summary:*** Recipes: Bean Curd (Frozen) Curry, Soya Mash Cutlets [okara], Soya Mash Pittu, and Soya Mash Rotti. The ad is for soya bean curd, soya paste (substitute for coconut milk), and soya mash (okara). Soya House is a private company that manufactures tofu and soymilk. Address: Kitulwatte Gardens, 128 Kitulwatte Rd., Off Elwitigala, Mawatha, Colombo 8, Sri Lanka. Phone: 597759.

5446. *Soya Newsletter* (*Bar Harbor, Maine*). 1988. Tofu acceptability among college students. May/June. p. 3.
• ***Summary:*** A study on the acceptability of tofu among college students was done in 1986 by the department of Animal Science/Food and Nutrition, Southern Illinois University, Carbondale, Illinois, under the direction of Helen L. Ashraf, Ph.D. and D. Luczycki, M.S. Seventy-five college students, with an average age of 23, were randomly selected to participate twice a week for six weeks and evaluate on a scale of one to seven, sixteen recipes prepared with tofu in different food categories. They determined what factors influenced the acceptability of tofu, such as: (a) food category, (b) appearance, (c) methods of preparation used, (d) serving style, (e) amount of tofu in the dish, and, (f) students previous experience with eating tofu.

The most important factor in determining the acceptance of tofu in a food product was the familiarity of the recipe. The recipes which received the highest scores were those that people were familiar with, such as coconut cream pie and carob pudding. The amount of tofu in the recipe did not influence the acceptance. Dr. Helen Ashraf plans to do studies with tofu and preschoolers and the elderly in the near future. For more detailed information contact: Dr. Helen Ashraf, Southern University of Illinois, Carbondale, IL 62901 or call 618-536-2157.

5447. SunShine Tofu House. 1988. June. New soyfoods restaurant or deli. 5091-C Buford Highway, Atlanta, GA 30340.
• ***Summary:*** Atlanta Daily World. 1988. June 21. "New Tofu Restaurant Opens." Mayor Andrew Young joined other dignitaries (incl. Japanese Consul General Takayuki Kimura) and supporters at the formal opening in northeast Atlanta. The proprietor is Seiho Tajiri, a prominent local Japanese businessman. "The restaurant, the first of its kind in the Southeast, will not only provide a full menu of tofu dishes, but also manufactures the tofu and soymilk in the restaurant." Address: Atlanta, Georgia. Phone: 404-451-2054.

5448. **Product Name:** Tofu, and Soymilk.
Manufacturer's Name: SunShine Tofu House.
Manufacturer's Address: 5091-C Buford Highway, Atlanta, GA 30340. Phone: 404-451-2054.
Date of Introduction: 1988. June.
New Product–Documentation: Atlanta Daily World. 1988. June 21. "New Tofu Restaurant Opens." The restaurant will produce its own tofu and soymilk.

5449. Wagner, T.J.; Elliott, J.G.; Geurin, H.B. 1988. Effect of isolated soy protein and whey on partial or complete replacement of dried skim milk in a milk replacer for veal calves. *J. of Dairy Science* 71(Supplement 1):126 (Abst. #P21). June. American Dairy Science Association 83rd Annual Meeting.
Address: Protein Technologies International, Dairy Food Systems Div., St. Louis, Missouri 63164.

5450. *Toyo Shinpo* (*Soyfoods News*). 1988. Shinseihin to tônyû no dezain o kairyô, Mausan-Ai [Marusan-Ai comes out with a new product and they are also changing their soymilk packaging]. July 1. p. 3. [Jap; eng+]
• ***Summary:*** The new product is not soymilk, but green tea. However, Marusan-Ai has redesigned parts of their soymilk package so that nutritional information can be clearly read.

5451. *Toyo Shinpo* (*Soyfoods News*). 1988. Kibu, tezukuri tôfu setto. "Kangaeru Kai" to teikei, hatsubai [The Kibun company is producing a kit to make tofu at home in conjunction with Kangaeru Kai ("Thinking Society")]. July 1. p. 3. [Jap; eng+]
• ***Summary:*** The Kibun company, which makes the soymilk for the kit, is located at Ginza 7-14-13, Chuo-ku, Tokyo-to, Japan. The soymilk comes in special long-life, 1 liter bottles that has a 60-day shelf life at room temperature. They use special, domestic Hokkaido beans and water to make this soymilk. They also put natural nigari in the kit. One liter of the soymilk can produce 3 regular size kinugoshi (silken) tofu cakes. The kit, Tofu No Moto, contains 6 liters of the soymilk and costs 8100 yen.

5452. Cottingham, Mark A. 1988. Product promotion vital to Bean Boosters. *Illinois Agri-News* (*La Salle, Illinois*). July 8.
• ***Summary:*** Promoting soybeans is the major goal of the Illinois Bean Boosters, an auxiliary group to the Illinois Soybean Program Operating Board. More than 60 soybean

farmers and farm wives gathered in Decatur last week for the Bean Booster's third training session. During the session, participants were instructed on public speaking techniques, nutrition and soybean uses. As adults grow older, they sometimes become lactose-intolerant.

5453. Souter, Ann. 1988. Re: Funding for work with soybeans in Nicaragua. Letter to friends and donors, July 8. 2 p. Typed, with signature on letterhead.
• ***Summary:*** Citizens for Inter-American Cooperation (CIAC) has distributed 2,000 pounds of soybeans for planting from funds sent by the Unitarian Service Committee. In addition the CIAC medical project has distributed 2,000 pounds of soybeans for planing from funds sent by the Unitarian Service Committee. Each brigadista receives 5 pounds of soybean seeds to take back to his/her village, seeds that hopefully will yield a 3 to 400 pound crop to supplement the diets of those suffering from malnutrition, especially the children. The brigadistas show the other members of their communities how to plant and to cook with the soybeans. They learn how to make foods such as soy milk, tortillas, and soy meat supplements. Contras have consistently targeted dairy projects so there has been a tremendous shortage of dairy products throughout Nicaragua.

"In June I was notified by the Presbyterian Hunger Fund that our grant requesting $5,000.00 for the soybean project was accepted. This will ensure sufficient funds for the 400 more brigadistas we hope to train throughout 1988 and '89." Address: Registered Nurse, CIAC Volunteer, Citizens for Inter-American Cooperation, P.O. Box 2231, Davis, California 95617-2231. Phone: 916-758-6777 or 753-7298.

5454. Bulkley, Kate. 1988. Soy products' new flavor spices Denver Tofu. *Denver Business Journal***.** July 11.
• ***Summary:*** Denver Tofu Inc. started business in 1925, and by 1973, they were making 150 pieces (one-pound each) a day. "Now," says Denver Tofu Inc. owner and president, Haru Yamamoto, "we make 2,000 to 3,000 pieces a day." In fact, the company's sales doubled annually from 1982 to 1987. The King Soopers grocery store reports that in the 1970s they had tofu in the produce section, but nobody knew what it was. In the early 1980s, they moved it into the dairy case and they "sold an awful lot of it". Denver Tofu makes five different kinds, ranging from extra hard to kinugoshi, or soft, silken tofu. The company also deep-fries some tofu into something called age (pronounced ah-gay). The softer tofu has always been the best seller at the Asian markets. The harder tofu has generally been a better seller in the supermarkets.

Denver Tofu employs 11 people. In the summer, the plant churns out an average of 2,000 pounds of tofu a day. In the winter, production increases to an average 3,000 pounds a day to meet demand. The company also produces 70 gallons of soy milk for sale, as well as many pounds of agé. The production room is filled with about $300,000 worth of big, steel tofu-making machines, all of which are manufactured in Japan. Yamamoto, 49, came to Denver in 1970 from Japan where he had worked in the sales and accounting branch of Dainippon Food Co. He purchased Denver Tofu Inc. in 1973 from its previous owners for an undisclosed amount. In April, 1988, the company doubled its production space to 8,500 square feet when it moved to 3825 Blake St. form its former site on Federal Boulevard. The firm had sales of about $500,000 last year, and Yamamoto projected sales to rise to $750,000 this year. Address: Colorado. Phone: 303-295-6848.

5455. Stepanek, Marcia. 1988. Agency charges soy baby formula maker. *Detroit Free Press***.** July 15. p. 4B. Business section.
• ***Summary:*** "The U.S. Department of Justice Thursday charged a Clinton company and its president with 32 counts of falsely claiming that its soy-milk infant formula was of comparable nutritional value to mother's milk." The FDA charged Eden Foods with misbranding at least 53,682 cartons of Edensoy between July 1953 and 1985. Address: Free Press Washington DC staff.

5456. Wiernik, Julie. 1988. Firm faces criminal charges [Eden Foods]. *Ann Arbor News* (*Michigan*)**.** July 15. p. A3, A7.
• ***Summary:*** "The federal government has brought criminal charges against Clinton-based Eden Foods Inc., alleging that the company misrepresented its soy milk [Edensoy] when it described the product as a substitute for mother's milk.

"Eden and its president face possible fines of $1,000 for each incident occurring prior to 1985. Due to a change in the federal statute, the maximum fine would increase to $100,000 for incidents occurring during 1985."

"Between 1983 and 1985, the Justice Department said, Eden's literature described the product as a preferred milk substitute for children 'who cannot tolerate dairy milk or liquid or powdered formulas.' The pamphlet also said it was a 'quality substitute' for mothers' milk... Company president Michael Potter said the charges amount to a technical violation in labeling, and said the company never tried to market its soy milk as an infant formula." Jeffrey Gibbs, a Washington, DC, attorney, represented Eden Foods in the Case. "Gibbs said the advertising pamphlet in question was pulled from distribution in late 1983, and that only 'extremely small quantities' of the pamphlet were distributed after that." A large photo shows Tetra Brik packages of Edensoy.

5457. Fay, Jocelyn. 1988. Loma Linda Foods completes consolidation. *Gleaner* (*Portland, Oregon*)**.** July 18. p. 12.
• ***Summary:*** "With the expansion of its factory in Riverside, California, almost complete, Loma Linda Foods, Inc.,

plans soon to have all of its employees working under one roof. Infant formula production will move in July or August from Mount Vernon, Ohio, to the Riverside factory, which produces meat analogs. The company has enlarged its Riverside plant, leased additional warehouse space, and made a major investment in new equipment during the past 3 years in preparation for the Mount Vernon closing. 'We are using company profits to finance a good portion of the approximately $5 million our consolidation is going to cost us,' says Alejo Pizarro, Loma Linda Foods president... Most of Loma Linda Foods' $5 million investment has been for equipment."

"Pizarro ways the 82-year-old company is 'actively working on the expansion of current product lines and the introduction of new products.'... The Board may eventually decide to lease the Ohio factory but has no plans to sell it."

5458. *Times of India* (*The*) (*Bombay*). 1988. Company news: Noble Soya. July 18. p. 10.
• ***Summary:*** Noble Soya House reported encouraging financial results for the year ended June, 1988. The turnover [sales] increased sevenfold from Rs. 85 lakhs [85 million rupees] in 1986-87 to 587 lakhs [587 million rupees] in the first six months of 1988. Gross profit increased to 56.07 lakhs compared with a loss of Rs. 7.08 lakhs during the same period last year.

"During the last two months of this period, the company achieved over 90 per cent capacity utilisation and its turnover is expected to rise to Rs. 18 crores by the end of the 15-month period ending March, 1989."

5459. Bainbridge, Ronald R.; Mimouni, F.; Tsang, R.C. 1988. Bone mineral content of infants fed soy-based formula. *J. of Pediatrics* 113(1 Part 2):205-07. July. [14 ref]
• ***Summary:*** "The use of a soybean-based milk substitute was first reported in 1928. Since then, concerns have arisen about the adequacy of soy-based formulas in relation to bone growth and mineralization. These concerns were based in part on reports of a high rate of rickets in preterm infants fed SBF [soy-based-formula]. In addition, several studies in full-term infants reported a reduced growth rate in infants fed SBF, although adequate growth was documented in other studies.

"Factors that may theoretically impair growth or bone mineralization in SBF-fed infants are (1) low methionine content; (2) poor retention of calcium, phosphate, or both because of the presence of phytates acting as chelators; and (3) absence of lactose, which is a known stimulator of intestinal calcium absorption. These reports prompted manufacturers to produce an 'improved' SBF, fortified with methionine, calcium, and phosphate. The adequacy of these 'improved' SBF's for promoting normal growth and bone mineralization was not systematically studied until recently." Address: Dep. of Pediatrics, Div. of Neonatology, Perinatal Research Inst., Univ. of Cincinnati College of Medicine, Ohio.

5460. Bubny, Paul. 1988. Venerable soybean sprouts new uses. *Health Foods Business* 34(7):72, 74, 76, 108. July.
• ***Summary:*** Lonnie Stromnes, national sales manager of White Wave Soyfoods in Boulder, Colorado, reports that White Wave recently "upscaled" the packaging on its tempeh products; the new graphics depict tempeh in use, so that customers do not have to bring a thorough knowledge of the food into the store with them. Mitoku-USA, based in Albany, New York, imports some 20 varieties of miso. At least one manufacturer, the Asheville, North Carolina-based Great Eastern Sun, saw its miso sales increase by 20% last year. Bruce Sturgeon, the company's vice president, said Great Eastern Sun's volume on miso alone was $400,000 in 1987. Shoyu and tamari are frequently aimed at the gourmet market as well as the natural foods / specialty foods market. Owner Dale Kamibayshi of Alfalfa's Market in Boulder, Colorado said, "I think many people are still intimidated by (soyfood's) preparation." To help overcome the intimidation factor, Alfalfa's has scheduled a soyfood tasting fair for July 16; the first such fair which the store has devoted to soy.

Gary Barat, chairman of Legume, Inc. said, "I see the natural foods and gourmet markets coming together," said Barat. "And the smart marketers are realizing that." People who shop specialty stores have both eyes turned toward quality. Soy companies are increasingly making use of organically grown soybeans. There is also a trend toward using specific soybeans for specific products, a sign of a maturing industry. The trend is more prevalent in the U.S. than in Far East Asia. Westbrae, for example, uses Vinton beans for its Westsoy soy beverage. As the currency in Japan remains strong against the dollar, you're going to see more and more (soy) products produced in America. Also there will be greater growth in so-called "second-generation" soy products–dairy analogs with soymilk, soy cheese, soy ice cream and soy yogurt. Address: Associate Editor.

5461. **Product Name:** Pureharvest Soy Drink [Natural, or Vanilla].
Manufacturer's Name: Ceres Natural Foods Pty. Ltd. (Importer & Distributor). Made in Japan.
Manufacturer's Address: East Bentleigh, Victoria, Australia.
Date of Introduction: 1988. July.
Wt/Vol., Packaging, Price: 1 liter Tetra Brik carton.
How Stored: Shelf stable.
New Product–Documentation: Letter (fax) from Don Lazzaro of Ceres Natural Foods. 1995. June 15. In July 1988 they introduced their first soymilk in a 1 liter Tetra Pak carton, made by and imported from Kibun in Japan, in natural and vanilla flavours.

5462. Desikachar, H.S.R. 1988. Utilization of soybean for food uses in India. In: Nawab Ali, A.P. Gandhi, and T.P. Ojha, eds. 1988. Soybean Processing & Utilization in India. Bhopal, India: Central Institute of Agricultural Engineering (CIAE). v + 431 p. See p. 289-98. Held 22-23 Nov. 1986 at CIAE, Bhopal, India.

• ***Summary:*** Discusses the development in India of soybean foods such as soymilk, soyflour, soypaneer [tofu] and soyoil–and the possibility of replacing other pulses by soybean in common Indian foods. The need for simple, low cost processing techniques with a minimum of sophistication is emphasized.

Recently texturised soy products, paneer [tofu] made from soy milk and weaning foods made using soyflour have been on the market. Solvent extracted soybean oil and imported soy oil are used in making Vanaspathi [Vanaspati]. Almost all extracted meal is being exported.

Table 1 compares the proximate composition of black soybean (Kalitur) and pigeonpea (on a dry basis). The soybean contains 44.00% protein compared with 25.2% for the pigeonpea. The soybean contains 21.5% fat [vegetable oil] compared with 1.8% for the pigeonpea.

Table 2 compares the "Sugar content of black soybean (Kalitur) and pigeonpea (percentage)."

Another point that needs to be emphasized is that soybean or soybean meal will be most widely accepted when used for making indigenous food preparations used by most Indians in their daily diet instead of soya milk, tofu, meat analogs, etc. in which for it is likely to be used by relatively few people. With this end in view, work was initiated at CFTRI, Mysore, a few years ago to process soybean for use in making common Indian foods. "Soybean was first made into dal by removing the husk. In fact, it is much easier to make dal from soybeans than from other Indian pulses. A method and machine for making dal by a dry process was standardized at CFTRI.

"The bitterish beany taste of soybean was also found to be modified by fermentation as normally practiced for *idli* and *dosa.* In fact, soybean batter was found to ferment faster and more easily than the blackgram, because of its higher sugar content (Fig. 1). It could replace blackgram by 50% in *idlis* and fully in *dosa"* (p. 291).

Table 3, "Comparative flatus [intestinal gas] production with raw, cooked and germinated pulses" (p. 293) gives values for seven raw, cooked, germinated, and cooked & germinated Indian pulses. Black soybean produced the most flatus (5.20) followed by bengalgram [chickpeas, garbanzo beans, *Cicer arietinum*] (5.18), blackgram (4.76), cowpea (4.03), pigeonpea (3.81), horsegram (2.66) and greengram (2.26).

Because of its flatus production when used in whole or split form, soybean is more difficult to digest. "The flatus effects could be minimised by addition of clove and/or cinnamon (Fig. 2) which are normally used in preparation of North Indian type dals. Germination and fermentation as normally practiced for *idli* considerably reduce galacto oligosaccharides and reduce the flatus producing properties of soybean and other pulses as well (p. 293; See Tables 4 and 5, Figs. 3, 4 and 5).

Table 4, "In vivo gas production on isolated carbohydrate fractions from black soybeans and pigeonpeas," shows that per 10 gm coming from soybeans in the diet, oligosaccharides produce the most intestinal gas (4.80), followed by hemicelluloses (1.58) and pectin (0.70).

Fig. 3 shows that germination of 7 common Indian legumes reduces the content of the raffinose family of sugars, and reduces intestinal gas. Address: Deputy Director (Retired), Central Food Technological Research Institute, Mysore. Currently Consultant, Paddy Processing Research Centre (Tamil Nadu) Society, Tiruvarur [Southeast India].

5463. Fertilia. 1988. Prijlist. 1 Juli 1988. Milieu vriendelijke levensmiddelen [Price list. 1 July 1988. Environmentally friendly foods]. Koolhaaspark, 3864 PW Nijkerkerveen, Netherlands. 49 p. 30 cm. [Dut]

• ***Summary:*** Contains products from: Dr. Vogel (p. 20). Huegli (mostly bouillon, p. 20). Japanese soy products (shoyu, tamari, may types of miso, nigari, kuzu, wheat gluten, mochi, p. 30-33). Fertilia soy products (p. 34). Yakso (tofu, tempeh, soy sauce, p. 34). Witte Wonder (tofu, seitan, p. 35). Orido (amesake, p. 35). Liza (rice drink, p. 36). Living Foods (soya drink, p. 36). Provamel (9 soy drinks and 6 soy desserts [puddings], p. 36). Jonathan (1 bottled soy drink, p. 36), Lima (shoyu, tamari, soymilk), Eden (no soy, p. 37). Address: Nijkerkerveen, Netherlands. Phone: 03495-72844.

5464. Gupta, S.K.; Patel, A.A. 1988. New dairy-based formulated foods to combat malnutrition in developing countries. In: Nawab Ali, A.P. Gandhi, and T.P. Ojha, eds. 1988. Soybean Processing & Utilization in India. Bhopal, India: Central Institute of Agricultural Engineering (CIAE). v + 431 p. See p. 355-63. Held 22-23 Nov. 1986 at CIAE, Bhopal, India.

• ***Summary:*** This paper presents the results of research conducted to develop low-cost, highly nutritive soy products in combination with the byproducts of the dairy industry–such as butter milk and whey. The food products developed include three weaning food formulations, a high-protein beverage, soft serve ice cream and a table spread. The nutritive value of the products, their cost and shelf life is discussed.

Tables show: (1) Composition of the new food formulations.

Flow sheets are given for manufacture of: (1) Soy-whey weaning food (starting with whole soybeans). (2) Sorghum-soy milk weaning food (starting with whole soybeans). (3) Soy-whey beverage (starting with whole soybeans). (4)

Soy-butter milk soft-serve ice cream (starting with whole soybeans). (5) Table spread (starting with whole soybeans).

"While formulating all these products, cost has been the prime concern." All "have been observed to have good storage stability." Address: 1. PhD. All: National Dairy Research Institute, Karnal, India.

5465. *Health Foods Business.* 1988. Soymilk makes inroads into the cow pasture. 34(7):79, 109-10. July.
• ***Summary:*** "Westbrae President Gordon Bennett guesstimated the current soymilk market at $25 million."

5466. Hillman, Laura S. 1988. Bone mineral content in term infants fed human milk, cow milk-based formula, or soy-based formula. *J. of Pediatrics* 113(1 Pt 2):208-12. July. [8 ref]
Address: Dep. of Child Health, Univ. of Missouri Health Science Center, Columbia, MO.

5467. Mukherjee, R.K. 1988. Soybean as food. In: Nawab Ali, A.P. Gandhi, and T.P. Ojha, eds. 1988. Soybean Processing & Utilization in India. Bhopal, India: Central Institute of Agricultural Engineering (CIAE). v + 431 p. See p. 299-309. Held 22-23 Nov. 1986 at CIAE, Bhopal, India. [8 ref]
• ***Summary:*** Soybean foods sold commercially in India include paneer, meat analogues (Nutrinugget, Nutrella, etc.), cereal-based items (biscuits, breads, chapatis, kinako), weaning foods (Protein Plus, Paustic Ahar, Nutri Ahar), and Others (Soy nuts, Protesnac, candies, shortenings, margarines, oil) (p. 300).

It would appear that protein fortification of cereals would result in better and more nutritious foods at relatively less cost. Traditional Indian foods such as *chapatis, parathas, puris, dosa, bada, idli* etc. can be made into highly nutritious foods by the incorporation of soy flour.

Studies conducted by Mishra and Mukherjee (1986) at the Post Harvest Technology Centre of the Indian Institute of Technology at Kharagpur have shown that wheat flour can be successfully fortified with full fat soy flour up to a level of 25% for chapati making without affecting adversely the flavour or overall acceptability of the chapatis. Bread, biscuits and other bakery products fortified with soy flour were found to have good consumer acceptance. Another important use of soybean would be soy dal which is a traditional" food in India. Yet it is not yet widely used because of the long cooking time (about 130-140 minutes) and the residual beany flavour. This small problem can be overcome by appropriate heat processing. 'Several other products such as soy milk, curd [tofu], 'srikhand' [sweet flavoured yogurt dessert] etc. may also be made using soybean."

Soy protein concentrates and isolates are also commercially available. "The evolution of soybean and soybean products is very timely in that more and more people are now turning to nonanimal protein" (p. 308). Address: PhD, Post Harvest Technology Centre, Indian Inst. of Technology (IIT), Kharagpur 721 302, India.

5468. Perez, Oswaldo. 1988. Leche de soya [Soymilk]. *La Era Agricola* (*Merida, Venezuela*). July. No. 5. p. 11-12. [Spa]
• ***Summary:*** Describes how to make soymilk on a home scale, and how to use this soymilk in various recipes: Sesame Orgeat (*Horchata de Ajonjoli;* Note: Orgeat, which derives from *orge,* the French word for barley, is a sweet almond-flavored non-alcoholic syrup used as a cocktail ingredient or food flavoring; ajonjoli = sesame seed), Cream of Celery (*Crema de Apio*), White Sauce or Bechamel, Soymilk Mayonnaise, and Cold Rum Punch. Address: Granja Tierra Nueva, Aldea San Luis, La Azulita, C.P. 5102, Estado Merida, Venezuela.

5469. Rajor, R.B.; Cheryan, Munir. 1988. Khoa like product from soybean and milk solids. In: Nawab Ali, A.P. Gandhi, and T.P. Ojha, eds. 1988. Soybean Processing & Utilization in India. Bhopal, India: Central Institute of Agricultural Engineering (CIAE). v + 431 p. See p. 364-66. Held 22-23 Nov. 1986 at CIAE, Bhopal, India.
• ***Summary:*** A simple technology for making a product resembling khoa from soybean and milk solids was developed. The product contains 13.37% protein and 14.3% fat. Sugar was added to the soybean and milk solids and water in a steam kettle to make burfi [barfi, burfee, borfee]. These products were very much liked by the consumers.

A flow sheet shows the process for making a khoa like product and a barfi like product from soybean. Table 1 gives the composition of the khoa like product.

Note: Khoa (also khoo-wah) is a milk food widely used in the Indian cuisine, made of either dried whole milk or milk thickened by heating in an open iron pan.

"It is similar to ricotta cheese, but lower in moisture and made from whole milk instead of whey.

"There are three types of khoya [khoa]–batti, chickna, and daanedaar. Batti, meaning 'rock,' has 50% moisture by weight and is the hardest of the three types; it can be grated like cheese. It can be aged for up to a year, during which it develops a unique aroma and a mouldy outer surface. Chickna ('slippery' or 'squishy') khoya has 80% moisture. For daanedaar, the milk is coagulated with an acid during the simmering; it has a moderate moisture content. Different types of khoya are used for different preparations.

"Khoa is used as the base for a wide variety of Indian sweets. About 600,000 metric tons are produced annually in India. Khoa is made from both cow and water buffalo milk" (Source: Wikipedia, at Khoa, Oct. 2012). Address: 1. PhD, Div. of Dairy Technology, National Dairy Research Institute, Karnal, India; 2. Dep. of Food Science, Univ. of Illinois,

Urbana, Illinois 61801.

5470. **Product Name:** [Sahm Yook Soymilk (Plain)].
Foreign Name: Sahm Yook Dou Ru.
Manufacturer's Name: Sahm Yook Korean Foods.
Manufacturer's Address: 320 Panjeong-ri, Jiksan-myun, Chunwon-gun, Choongchungnam-do 333-810, South Korea.
Date of Introduction: 1988. July.
Ingredients: Soy milk, high fructose corn syrup, corn oil, rapeseed oil, salt.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton. Retails for 220 Won (6/90).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Eric C. Fehlberg. 1990. March 8. The Seventh-day Adventist food company in South Korea, Sahm Yook Foods, now makes soymilk (only plain, no flavors) packaged in Tetra Brik cartons and foil Doypack/Doynpack. The company was established in about 1978, and it began to make soymilk in May 1985. After launching soymilk, the company began to grow dramatically, as that product grew. Last year they built a very large, new soymilk plant (based on Adventist technology) and they are now about the 2nd or 3rd largest soymilk maker in Korea.

Label (Tetra Brik carton). Sent by Eric Fehlberg. 1990. March 12. 2.5 by 3.25 by 1.5 inches carton. Red, yellow, dark green, and light green on white. Front panel says "Soy Milk" and an illustration shows 3 yellow soybeans in a green pod.

Form filled out by C.Y. Yoon, General Manager, Sahmyook Korean Foods. 1990. June 23. Note that on the envelope the company name is printed Sahmyook Korean Foods, but the brand name is typed 4 times on the form as Sahm Yook. The address on the envelope is 320 Panjung Jiksan Chunwon Choongnam, Korea. The soy milk in a foil retort pouch was introduced in April 1985. The same product with the same ingredients was launched in a Tetra Brik carton in July 1987.

5471. Vaidehi, M.P. 1988. Home level processing and utilization of soy based food products for rural and urban people. In: Nawab Ali, A.P. Gandhi, and T.P. Ojha, eds. 1988. Soybean Processing & Utilization in India. Bhopal, India: Central Institute of Agricultural Engineering (CIAE). v + 431 p. See p. 336-54. Held 22-23 Nov. 1986 at CIAE, Bhopal, India.

• ***Summary:*** "This paper presents some of the research work in soybean processing and utilization carried out at University of Agricultural Sciences, Bangalore."

Contents: Abstract. Introduction. Physico-chemical characteristics. Varietal effects and processing application of soy products: Green soybean variety Hardee is a nutritious palatable vegetable, Davis variety of soybean is superior to Hill variety in its nutritive components, cooking and sensory quality of soybean varieties, physical characteristics (10 varieties), cooking quality of soybeans (9 varieties), fat and protein contents of soybean varieties (10 varieties), cooking quality of soydal, acceptability of soy products, varietal effect on soymilk yield and organoleptic characteristics (19 varieties), use of black soybean (LBS-11) in comparison with Hardee and pigeonpea.

Use of soy in traditional foods: Nutritional value of Indian tandoori naans, rotis and bread blended with pulses and oilseeds, home and hosteliers use of soybean products. Use of soy in fermented foods: Preparation of tempeh culture for commercialization, nutritional and sensory evaluation of tempeh products made with soybean, groundnut and sunflowerseed combinations (with flow sheet), acceptability of soybean incorporated rice *idlis.* Use of soy in baked products: High protein biscuits made with ragi flour and oilseed flour blends (16 types of flour were prepared with all purpose flour {maida}), cookies from malted cereals and oilseed flours.

Use of soy in beverage production for milk products and weaning foods: Protein and energy content of acceptable beverages prepared with blends of soy, skim milk, sesame, coconut and malts from wheat, ragi and green gram (blended malt beverages, chemical analysis), evaluation of tofu and its products prepared from soymilk in combination with sunflower seed milk and skim milk (with flow sheet for tofu). Consumer reactions to soy products: Consumer evaluation of tofu, tempeh, curd and Meal Maker in rural and urban areas, consumer evaluation of soy products in rural areas, consumer choice of fast foods from soybeans, supplementary foods (soy nuts for snacking), short term training program (3-day) for soy use in daily diet, community participation.

Table 4 "Ranking of different soy products by a panel of judges" shows (p. 341) which soybean varieties produce the highest quality recipes in which soy products are used to make dishes common to South India. For each food we will give only the top-ranking soybean variety, even though the table gives the top four. Cooked dal (KHSB-3). Mashed dal (PK-7392). Vadai (PK-7392). Idli (DS-7427). Dosai (Hardee).

Page 344: Costly chickpea or blackgram dal flour is replaced by hosteliers in part by soy flour–with good acceptance–in traditional Indian preparations like *dosa, pakodas, vade, bajjie,* and *bondas.* "The same could go to home level use by way of ready mixes with 30% soyflour incorporation." In outer coatings and batter preparations the substitution of soyflours is easily accepted by all. "Meatless meats (TVPs) and blends of soyflours in defatted form can be used in the preparation of mutton soup, cutlets, koftas, and meat loaves at 15% level substitution without any change in acceptability by consumers."

There follows a long discussion of tempeh.

Page 351: "Consumer evaluation of soy products in rural areas. One hundred rural housewives were served with several soy incorporated beverages and snacks for their

evaluation. It was found that 80% of the rural people were unaware of soy bean and its uses."

Table 10 shows the pooled percentage of rural families who scored very good or good for soy dishes (in descending order of overall acceptability, which is shown in parentheses): Soy kheer (100). Soy idli (98). Tofu burfi [barfi, burfee, borfee; a sweet confection] (97). Soy butter milk (94). Soy sambar (87). Soy pakoda (76). Tofu curry (75). Tofu pakoda (67). Soymilk curds (66). Oriental flavoured milk (59). Flavoured soymilk (57). Soy chutney (52). Soymilk (41).

Conclusion: "For home level soybean use, easy availability of soy processed products is very important. Low prices, accessibility and proper education to bring awareness and importance of soy in daily diet would undoubtedly boost the use of soy products at home level." Address: PhD, Assoc. Prof. and Head, Univ. of Agricultural Sciences, Hebbal, Bangalore–560 024, India.

5472. Vercesi, Patrick. 1988. Rhône-Alpes: Mise en service d'une nouvelle usine de traitement du soja à Valence [Rhône-Alpes: A new factory for treatment of soya to start operation at Valence]. *Les Echos.* Aug. 2. [Fre]

• ***Summary:*** The Innoval company, an affiliate of the Silos of Valence (a cooperative for the collection and commercialization of cereals, containing 5,000 producers), is going to have constructed a 2,500 square meter factory specializing in the transformation of soya for human foods. Installed in the industrial zone of Valence, this unit, which will be totally operational in September, represents an investment of nearly 20 million French francs. Lion Expansion PME, the SDR du Sud-Est, and Idianova have decided to participate in this project in the form of convertible actions and obligations. The company should have 25 salaried employees, compared with 90 salaried employees from the Silos of Valence Group and a turnover of 222 million francs. The primary raw material, soybeans, is readily available, with 100,000 ha cultivated in l'Hexagone and 18,400 in Rhône Alpes, mainly in l'Ain, as well as in Drôme, where production is expected to grow to 2,000 ha in 1988 from 1,000 ha in 1987.

5473. Bailey, Simon. 1988. Soya-based products. *Natural Choice.* Aug. 15.

• ***Summary:*** "The food of the future. The soya bean is a protein-packed food which is increasingly used as a dairy or food substitute in today's search for a healthier diet." Discusses soya milk, dairy free desserts, tofu, tofu-based foods, soya flour, soya sprouts, tempeh, soya sauce, miso, and high-tech soya foods including TVP and soya protein isolates. Address: 138 Randolph Ave., London W9 1PG, England. Phone: 01-289-7364.

5474. Keith, Hogetsu. 1988. Re: Making soymilk and tempeh at Shasta Abbey. Letter to William Shurtleff at Soyfoods Center, Aug. 16. 2 p.

• ***Summary:*** In this Soto Zen Buddhist monastery (Rev. Roshi Jiyu-Kennett, abbess), having about 50 year-round residents, they make 9-14 gallons/week of soymilk and 20-24 lb/week of tempeh. They would like to make tofu but don't have the time or labor, so they buy it from Ashland Soy Works in Oregon. They have been making soymilk for nearly 2 years. Address: Shasta Abbey, P.O. Box 199, 3612 Summit Dr., Mt. Shasta, California 96067. Phone: 916-926-4208.

5475. Erb, Gene. 1988. World's hungry may suffer from U.S. drought, policies. *Des Moines Register* (*Iowa*). Aug. 21. p. 1, 2J.

• ***Summary:*** Some relief officials said severe shortages of key commodities such as powdered milk and soy-based milk substitutes already are appearing.

Fourteen million of the estimated 18 million to 20 million people who die of hunger each year are children under 5, according to the United Nations.

5476. Lee, Ken. 1988. New developments with yuba, soymilk, and tofu at Soyfoods of America (Interview). *SoyaScan Notes.* Aug. 29. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Soyfoods of America started production in Nov. 1981, making yuba, soymilk, and tofu. Of the yuba, 90% is fresh frozen sheets and 10% is dry sticks. This company is the only maker of fresh yuba in America and he ships it nationwide, to Houston, Dallas, Seattle, Chicago, etc. It is sold mostly to the Oriental market but also to a few health foods restaurants such as Healthys in Hawaii, and Orean. All imported yuba is dried. It takes 3 months to get here and usually contains preservatives, bleach, and dyes. His prices is 4 times the imported product but he still can't keep up with demand. He now has 4 workers, working 2 shifts. They make 240 cases/week with 200 sheets/case = 48,000 sheets/week. It is all hand-made now but he may automate. Of the company's total sales, 50% is soymilk, 30% is tofu, and 20% is yuba. The soymilk is sold mostly to Chinese, Vietnamese and other Asian-Americans. They are going to make a soymilk without beany flavor. They sell 150 cases/week of half-gallon bottles of soymilk to Price Club. Spicy Tofu and Tofu Noodles were introduced in Jan. 1984. The brand "Furama" means "fortune" as in "good fortune." Address: 1091 E. Hamilton Rd., Duarte, California 91010. Phone: 213-681-5393.

5477. Golbitz, Peter. 1988. Soymilk processing–New technologies support growing market. Modern systems remove beany flavor. *Soya Newsletter* (*Bar Harbor, Maine*). July/Aug. p. 3, 6-7.

• ***Summary:*** Discusses soymilk systems made by: 1. Alfa-Laval. A continuous system named SOYAL produced 500 to

3,000 liters/hour and costs $450,000 to $750,000 without the bean cleaning, storage tanks, UHT processing, or packaging components. The beans are not dehulled. 2. Soya Technology Systems (STS/DTD). 3. Takai Tofu & Soymilk Equipment Co. 4. Kawanishi Shoko. 5. Bean Machines, Inc. Similar information on capacity, equipment and cost is given for each company, plus an address. Address: Soyatech, Bar Harbor, Maine.

5478. Golbitz, Peter. 1988. U.S. soymilk sales reach new heights: Larger package sizes and domestic production spur on demand. Market update. *Soya Newsletter* (*Bar Harbor, Maine*). July/Aug. p. 1, 14-15. [1 ref]
• ***Summary:*** Estimates that in 1988 some 4.6 million gallons of soymilk will be sold in the USA, with a retail value of $36.1 million. This is up 40% over 1987 (3.3 million gallons worth $25.6 million). The U.S. market is composed of several distinct segments: the health food segment (whose products are formulated to resemble cow's milk) and the Asian-American market (whose products contain slightly more water and sugar). In 1988 for the first time in recent years, the health food segment (2.7 million gallons) passed the Asian-American segment (1.7 million gallons), and now appears to be growing at a much more rapid rate.

Another way of classifying market segments is by fresh soymilk (less than 8% by volume in 1988) and aseptically packaged soymilks. "The move to larger liter and quart packages has helped sales tremendously by bringing the per ounce cost of soymilk down. These larger sized packages will account for 76% of the volume in the health food market this year, as compared with 73% in 1987. Smaller sized packages make up the majority of sales in the Asian-American market." Address: Soyatech, Bar Harbor, Maine.

5479. Klaper, Michael. 1988. Vegan nutrition: Pure and simple. 2nd ed. P.O. Box 959, Felton, CA 95018-0959. Or 8563 Empire Grade, Santa Cruz, CA 95060. iii + 72 p. Illust. 27 cm. [137* ref]
• ***Summary:*** An excellent, highly readable introduction to the subject by a physician. The Acknowledgments page (p. 69) reads like a "Who's Who" of vegetarianism in the USA in 1988. Dr. Klaper gives special thanks to "Cynthia Pararo Klaper, for her indispensable editing suggestions, tireless efforts, and loving support." Soyfoods (especially tofu, soymilk, and tempeh) are mentioned and discussed throughout this book. Soy-related recipes include: Tofu yogurt. Bran muffins (with soymilk). Tofu omelette. Tofu tahini dressing. Blond miso dressing. Tofu eggless salad. Miso soup. Hot miso dressing. Tofu cutlets. Tofu loaf.

Note: Dr. Klaper is a graduate of the Univ. of Illinois College of Medicine, with post-graduate training and experience in surgery, anesthesia, obstetrics, and general practice. Since 1972 his emphasis has been on applied nutrition. Until recently his practice was in central Florida. Address: Felton, California. Phone: 408-423-6643.

5480. McSweeney, Daniel. 1988. Consumer survey 1988. *Whole Foods.* Aug. p. 27-28, 30, 32, 34.
• ***Summary:*** Natural/organic food purchases. Percentage of respondents who purchased a type of product during the past year: 1988 all/1987 all (1988 women / 1988 men). NA means "Not Available." The following are ranked in descending order of the percentage of consumers buying the product in 1988: Tofu: 63.5/83.4% (55.6/63.5%); Tamari 55.6% / NA (57.8/50.0%); Soy sauce 47.6%/NA (46.7%/50%); Miso 41.8/69.7% (42.2/38.9%); Tempeh 30.2/NA (35.6/16.7%); Soymilk 28.6%/54.5% (31.1/22.2%). Note the sharp declines between 1987 and 1988 for soymilk -47.6%, miso -40%, tofu -24%. All soyfood products for which there are statistics for both years declined, a serious trend.

Note: The "1986 and 1987 surveys statistics were generated through a reader questionnaire in East West magazine. The 1988 Consumer Survey was handed out to shoppers at 13 different retail stores throughout the country. Due to this variance in the survey base, some statistical discrepancies may have resulted."

5481. *Nutrition News* (*Riverside, California*). 1988. Soy: King of the mountain. 11(8):1-4. Aug. [1 ref]
• ***Summary:*** An overview and introduction to soyfoods nutrition, tofu, tempeh, miso, shoyu and tamari, and soymilk. Note: This magazine was formerly located in Pomona, California.

5482. **Product Name:** Plamil Carob-Coated Fruit & Nut Bar [Apricot, or Pear].
Manufacturer's Name: Plamil Foods Ltd.
Manufacturer's Address: Plamil House, Bowles Well Gardens, Folkestone, Kent CT19 6PQ, England.
Date of Introduction: 1988. August.
Wt/Vol., Packaging, Price: 40 gm bar in foil wrapper.
How Stored: Shelf stable.
New Product–Documentation: Simon Bailey. 1988. Natural Choice. Aug. 15. "Soya-Based Products." A photo shows the Label. CSP form filled out by Simon Bailey. 1988. Sept. 28. Introduction date is okay.

Leaflet (Color, 6 by 8.25 inches). 1990. April. Plamil delectable tasting confections. Describes and shows illustrations of the 100 gm carob bars and the 40 gm carob coated fruit & nut bars.

5483. Schnell, Hannelore. 1988. Kleine Bohne, ganz gross [Small bean, very big]. *Natur* (*Munich, West Germany*). Aug. p. 75-83. [3 ref. Ger]
• ***Summary:*** Discusses soymilk, tofu, soy sauce, miso, tempeh, Soyastern, Svadesha Tofurei, Alpro, and DE-VAU-GE. Concludes with a detailed discussion of newly recognized potential dangers with HVP products. Vegetable

seasonings made by companies such as Maggi may contain carcinogenic chloropropanols, such as dichloro propanol. Maximum limits on these are now being established.

5484. *Soya Newsletter* (*Bar Harbor, Maine*). 1988. U.S. soyfoods production to use 62 million pounds of soybeans in 1988. July/Aug. p. 10.
• ***Summary:*** This figure was the result of a recently soyfoods industry survey conducted by Soyatech, Inc. The soyfoods included in this projection are tofu, soymilk, tempeh, soy sauce, miso, and soynuts. When asked how they expected their demand for soybeans to grow over the next 5 years, 4.8% of soyfoods manufacturers surveyed expected it to remain the same, 52.4% expected it to grow slowly, 42.9% expected it to grow considerably, and none expected it to decrease.

5485. **Product Name:** Unisoy Carob & Banana Organic Drink.
Manufacturer's Name: Unisoy Milk 'n' By-Products Ltd.
Manufacturer's Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430-6329.
Date of Introduction: 1988. August.
New Product–Documentation: Talk with Neil Rabheru of Unisoy. 1990. July 2. Followed by letter (fax) of July 9. This product was launched in Aug. 1988. "It was and probably still is the only organic soya drink to contain pure carob syrup; the other products on the market still use carob powder."

5486. Sturgeon, Bruce. 1988. Early history of Great Eastern Sun, Oak Feed Miso, Inc., and American Miso Co. (Interview). *SoyaScan Notes.* Sept. 2. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Bruce is looking at documents from the company archives. Great Eastern Sun was founded in March 1982 by Barry Evans. He was the only principal/owner at the time. American Miso Co. was founded in March 1979 as the Oak Feed Miso, Inc. The principals were Sandy Pukel, John Belleme, and Barry Evans, but it is not clear who owned how much stock. It started doing business in 1981 as the American Miso Co. and officially became The American Miso Co. by law in May 1982. The principals of the American Miso Co. were John Belleme and Barry Evans. Sandy Pukel was somehow bought out and left and joined Oak Feed Co.; It seems to have become his. Barry Evans may have been the original president of Oak Feed Co. It was a store, probably a restaurant, and an import and distribution company. Barry and John went on to do the miso company. Great Eastern Sun was founded as a way to market and distribute the miso. They also became an importer and distributor of Mitoku products at about that same time. Don DeBona was the first or second company president, after Marty Roth. Today Barry owns all the stock of both American Miso and GES. Barry treasures his privacy. Bob Ballard and Bruce run GES. Even they do not know Barry's address or phone number. He checks in about once a quarter to see how things are going.

Ah Soy now has about 5% of the U.S. soymilk market, and is trying desperately to hang onto that. The competition is fierce, but they have many loyal consumers. Their 6 oz size is still their best seller, even after introduction of the quart, and even with a price increase last Feb. to above $1.00. Sales are up compared with last year.

In 1984 Bruce was in Boulder, Colorado as a buyer for Pearl Street Market. They had been buying from GES at that time for about a year. Oak Feed came to Pearl Street Market with imports to sell. Address: 92 Macintosh Rd., Asheville, North Carolina 28806. Phone: 808-438-4730 or 704 252-3090.

5487. Cross, Kevin. 1988. Brief history of Soy Power Company, Inc. of Santa Monica (Interview). *SoyaScan Notes.* Sept. 22. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The company started business in Santa Monica, California, in April 1981, with Tom Binder and Kevin Cross as partners. They distributed tofu and soymilk made by Wy Ky in Los Angeles. They first started distributing other people's products in about July 1982, starting with Vegetable Jerky from Maple Meadows. When Edensoy was launched in 1983, it started to hurt their sales so they decided to get in on the action. They soon became America's leading seller of Edensoy. In April 1986 they moved the company to Marina del Rey, then in September 1988 back to Santa Monica. Today they market and distribute about 11 soyfoods products under their own brand (all made by other companies), and they distribute another 350 products from other companies. Address: 1602 Stanford St., Santa Monica, California 90404. Phone: 213-829-2331.

5488. *Jewish Press* (*Brooklyn, New York*). 1988. New foods products for the health conscious [Edensoy from Eden Foods, Inc.]. Sept. 22.
• ***Summary:*** Edensoy Original and Vanilla flavors now contain no added oil. The American Soy Products facility opened in October, 1986. It is the first U.S. facility to introduce an enzyme invalidation process in the commercial manufacture of soy-milk. In May, 1987, the Edensoy package design won first place in the offset printing category in an international package design competition sponsored by Tetra Pak, Inc. American Soy Products is only 30 miles from the Dearborn, Michigan site where Henry Ford set up research facilities in 1932 to develop products from soybeans. Note: this soy product has a tan color and does not attempt to be a dairy/milk.

5489. **Product Name:** [Formoja Chocolates (With Soya Kernels, or With Soja Milk)].
Manufacturer's Name: Cacoja. Affiliate of Coopérative Agricole de Colmar (CAC).
Manufacturer's Address: 8 rue Merxheim, 68500 Issenheim, France.
Date of Introduction: 1988. September.
New Product–Documentation: SoyaFoods (ASA, Europe). 1990. 1(1):3. These products are made with soybeans grown in Alsace. Cacoja Leaflet. 1990. April. Chocolate Tablets: Formoja is innovating by realizing a range of chocolate specialties with soja beans. The composition of the chocolate with soja kernels per 100 gm: protein 12.5 gm, fat 26.9 gm, carbohydrate 57.9 gm, calories 524. The composition of the chocolate with soja kernels per 100 gm: protein 10.3 gm, fat 34.3 gm, carbohydrate 51.4 gm, calories 556. "These new products are richer in protein as the ordinary chocolate, cholesterol free, rich in lecithin and in unsaturated fatty acids. This range of chocolate specialties will allow the consumers to treat themselves as well as profiting at the same time by the nutritional qualities of soja."

Talk with Gary Barat of Legume. 1990. June 22. He was not aware of these products and is not involved in them in any way.

Letter from Sylvain Stievenard of Sojinal (named Cacoja prior to Aug. 1990). 1990. Sept. 24. This product was launched in Sept. 1988.

5490. CDS, PAN, MINSA (Ministry of Health, and Ministry of Agriculture). 1988. Cuaderno de nuestra olla [Soya cookbook]. Managua, Nicaragua. 24 p. 28 x 19 cm. [Spa]
• ***Summary:*** This Spanish-language health comic booklet, whose title means literally "Notebook of our stewpot," is the first book on soya in Nicaragua. From a talk with Annie Souter we learn that: CDS is the Comité de Defense Salud, a health education group from the Ministry of Health found on many barrios. PAN (which also means "bread") is a department within the Ministry of Agriculture. And MINSA is the Ministry of Health (Salud). Before this edition, the book existed as small photocopied leaflets provided by the Ministry of Health. Annie Souter had 1,000 copies printed by Ross Newport in Santa Cruz, California, and sent down to Nicaragua for use on her soy project.

This is an introduction to cooking with soya in Nicaragua, filled with cartoons and the message often in comic-book style captions. The little soybean is, itself, a cartoon character. The introduction explains that, in these times of hardship during the Contra war and after the great hurricane, soy is an excellent supplement to corn and rice (used in the ratio of 1:4 soy to corn), and a good replacement for eggs, meat, and milk. Illustrated instructions show and tell how to make basic soyfoods: Soymilk, soya-meat or payana (okara), tofu (cuajada y queso de soya) coagulated with lemon juice and often seasoned with garlic, soy-fortified tortillas, whole soybeans cooked with regular beans, and soy flour. The recipe section contains 38 Nicaraguan-style recipes including soy mayonnaise, tofu guacamole, and tofu with tomatoes. The book concludes with 1 page each on kitchen sanitation, growing soybeans in Nicaragua, their potential uses as oil and fodder, and a reminder: "Combining soybeans with other popular foods will give better nutrition for all the people. And our children will grow healthy and strong. Remember that they are the future of our country. 'Let's eat better without spending any more!'" Address: Managua, Nicaragua.

5491. Eden Foods, Inc. 1988. Edensoy... A lot of pluses (Ad). *Vegetarian Times.* Sept. p. 29.
• ***Summary:*** This full-page, black-and-white ad contains 8 black-and-white photos showing Edensoy ads. "Only one bean in 20,000 makes it into Edensoy." "Next time you draw straws, choose Edensoy." "What most soymilks forget as a main ingredient... Flavor." "One more thing you can do for your family." "Draw on our experience." "The closer you look... the better we look." "Edensoy pours it on." "The competition has arrived!" (Shows a cow with football helmet standing behind cartons of Edensoy). The other text reads: "Nutritious. Delicious. Dairy free. Quality. Satisfying. Convenient. Fresh. Versatile."

This ad also appeared in Vegetarian Times (Nov. 1988, p. 13; May 1989, p. 45), Whole Foods (Jan. 1989, p. 18), Natural Foods Merchandiser (Feb. 1989, p. 14), and Solstice (March/April 1989, p. 3). Address: 701 Tecumseh Rd. Clinton, Michigan 49236.

5492. Elliot, Rose. 1988. The complete vegetarian cuisine. New York, NY: Pantheon Books. 352 p. First American edition. With many lovely full-page color photos. Index. 28 cm.
• ***Summary:*** Visually, this is a beautiful book. The author makes minimal use of soybeans or soyfoods in her vegetarian cookbooks. She has apparently not learned that very few cultures that use soya as a traditional part of their diet use either soybeans as such or soy flour. In "Learning to love the soybean" (p. 16) she notes: "Soybeans and soy flour are rich sources of nutrients, but, in my opinion, so difficult to make palatable! However sprouted soybeans are delicious and make an excellent crunchy addition to salads, stir-fries, and sandwiches... Creamy soy milk (p. 106) and tofu (p. 108), which can both be made at home, are other palatable ways to eat soy."

Pages 38-39 contain a marvelous 2-page spread color photo of 30 different leguminous seeds (including soybean and soy flour), each with a brief description, followed by a longer description on pages 40-41. The section titled "Soybean *Glycine max"* states: "Soybeans have a strong flavor and need powerful condiments, such as curry, tomato and garlic, to make them taste good. I think they're nicest

when sprouted (p. 207) and added to salads and stir-fries.

"Many products, such as miso, soy sauce, tempeh, soy milk and tofu, are made from soybeans and are described in other sections of this book.

"Soy flour is high in protein and low in starch, so it cannot be used to make a normal white sauce, although it can be stirred into savory sauces and gravies to add bulk and nutrients and is sometimes added to flour as a dough improver, in the proportion 8 parts flour to 1 part soy flour."

Pages 104-05 contain another 2-page spread color photo of dairy and nondairy ingredients, with a brief description of each, including tempeh, seitan, dried deep-fried tofu, aromatic dried tofu [probably five-spice pressed tofu = *wu-hsiang toufukan*], smoked tofu, firm tofu, soft tofu, textured vegetable protein (chunks or chopped), soy milk, and soy cream. A longer explanation is given on pages 106-06. The author does not like the strong soybean flavor or stodgy texture of tempeh. Page 108 gives a brief description of how to make tofu, and has a sidebar titled "Ideas for using tofu and vegetarian protein foods." A good but brief description of soy sauce is given on p. 184, and a poor description of "How to make soy milk" (with added vanilla, honey, and oil) is given on page 280.

Soy-related recipes include: Miso soup with bean curd (p. 133; a variation includes wakame). Vegan ice cream (uses soy milk instead of dairy milk, p. 280). Thus, only 1 recipe in the 352-page book uses tofu and none use tempeh.

Originally published in Great Britain as *Rose Elliot's Vegetarian Cookery* by William Collins Sons & Co. Ltd., London and Glasgow. "Rose Elliot, a vegetarian since the age of three, is one of England's most popular cookbook authors. Her many best-selling books include *Vegetarian Cooking from Around the World, The Festive Vegetarian,* and *The Vegetarian Mother and Baby.* An active food consultant, she has appeared often on television and radio in Britain. She lives in Hampshire, England." She was born and educated in England. Address: Hampshire, England.

5493. Hong Kong Soya Bean Products Co. Ltd. 1988. The Vitasoy story. 41 Heung Yip Rd., Aberdeen, Hong Kong. 12 p. Sept. 22 x 28 cm. [Eng; Chi]
• ***Summary:*** Contents: The beginning. Early days. Growth and expansion. A giant step forward. Diversification. Vita fresh milk products. Vita products around the world. Today. The future.

Early history: The Vitasoy story began in 1940, when K.S. Lo began to produce milk from the soybean. The drink he created was not an immediate success. On the first day of business, only nine bottles were sold at six cents each. The product was delivered fresh to the door by boys on bicycles, and it had to be sold at once or it would spoil. When World War II ended production in 1941 sales were only about 1,000 bottles a day.

Photos show: One of the original glass bottles of Wi-ta-nai. The front of the Aberdeen plant. Aseptic packages of Vitasoy (regular and malt). The line of products today. The Tuen Mun plant, with its warehouse, R&D center, sales department, production line, and raining centre. Address: Hong Kong.

5494. Krizmanic, Judy. 1988. Creaming the crop [comparison of U.S. soymilk varieties]. *Vegetarian Times.* Sept. p. 68.
• ***Summary:*** Compares the following brands: Ah Soy (Great Eastern Sun), Edensoy (Eden Foods), Sno-E Tofu (Abersold Foods), Solait (Miller Farms), Sunsoy (Vamo Foods), Supersoy (Mitoku), Vitasoy (Vitasoy U.S.A.), Westsoy and Malteds (Westbrae). Lists the available flavors for each, what type of oil is added (if any; Edensoy, Sunsoy, and Supersoy have none added), percentage of calories from fat (15-60%), and comments. Sno-E Tofu is the only product fortified with vitamins and calcium. Sunsoy strawberry gets its pink color from cochineal, the red die made from a dried insect.

5495. Lordez, Marie-Française. 1988. Du soja dans notre assiette? [Some soya in our plate?]. *Revue Laitiere Francaise* No. 477. p. 52-53. Sept. [Fre]
• ***Summary:*** Soyfoods discussed include tofu, soymilk, and miso. Manufacturers include Cacoja, Société Soy (Soyeux brand), Lima Foods, Sojadoc, Innoval (Sojalpe brand), Maho (Tofu Kiss), Celia group, Triballat (Sojasun brand). A photo shows many soymilk products, the majority bearing the Provamel brand, made by Alpro in Belgium. Address: Ingénieur en Agriculture, IGIA, France.

5496. Mutch, Patricia B. 1988. Food guides for the vegetarian. *American J. of Clinical Nutrition* 48(3S):913-19. Supplement. Sept. Proceedings of the First International Congress on Vegetarian Nutrition. Held 16-18 March 1987 at Washington, DC. [24 ref]
Address: PhD, RD, Dep. of Home Economics, Andrews Univ., Berrien Springs, Michigan 49104.

5497. Obafemi Awolowo University, Institute of Agricultural Research and Training. 1988. Soyabean recipes: Integrated farming systems programme. Ibadan, Nigeria: Obafemi Awolowo University. ii + 30 leaves. Sept. 25 cm.
• ***Summary:*** Contents: Processing of soyabean for recipes utilization. Pre-preparation of soyabean (wet base for soyabean paste, or soya milk and residue [okara], or dry base for full-fat flour). Soya milk (homemade). Soyabean vegetable soup (with whole ground soybeans). Soya ewedu soup (with soyabean flour or okara). Soya gbegiri soup. Soya iru [dawa-dawa]. Soya ogi. Soya eko. Soya akara. Soya moinmoin. Soya pudding (with okara or soya flour). Soya ikokore (with soyabean paste). Soya amala (with soya flour). Pounded yam with soyabean paste. Soyabean meat bytes (with soyabean flour). Soya burgers (with soyabean paste).

Soya meat (with soyabean paste). Soya snack (with whole dry soybeans). Plantain soya pancake (with soya flour). Soya banana fritters (with soyabean flour). Soyabean candies (with dehulled whole soybeans). Soyabean flour Queen cakes. High protein soyabean flour biscuits. Soyabean bread. Soya pancake. Soya puff-puff. Soya ojojo. Soya aadun. Guidelines for growing soyabean. Address: Inst. of Agricultural Research and Training, Obafemi Awolowo Univ., P.M.B. 5029, Moor-Plantation, Ibadan, Nigeria.

5498. Osho, Sidi M. 1988. Small scale and home processing of soybeans. Paper presented at UNICEF sponsored Soybean Utilization Workshop. 3 p. Held 19-22 Sept. 1988 in Enugu. [3 ref]*
Address: Inst. for Agricultural Research and Training (IAR&T), Ibadan, Nigeria.

5499. Shurtleff, William; Aoyagi, Akiko. 1988. Das Tempeh-Buch: Nahrung fuer alle Band 3 [The book of tempeh: Food for mankind. Vol. 3]. Ahorn Verlag, Irmingardweg 10, D-8210 Prien, West Germany. 256 p. Illust. by Akiko Aoyagi Shurtleff. Index. Sept. 23 cm. Translated by Christiane and Dr. Peter Heningsen, and by Flora Yap. [292 ref. Ger]
• ***Summary:*** Contents: What is tempeh? Preface. Acknowledgments. How to use this book. Part I. Tempeh: Food for all. 1. Soybeans: Protein source of the future. 2. The nutritional value of tempeh.

Part II. Cooking with Tempeh (162 recipes). 3. Getting started–Preparation, principles, and basic recipes. Favorite tempeh recipes. 4. Western-style tempeh recipes. 5. Indonesian tempeh recipes.

Part III. Making tempeh. Making tempeh at home, in a community, or on a commercial scale. 7. Other types of tempeh and onchom. 8. Making tempeh starter. 9. The Indonesian tempeh shop.

Part IV. Tempeh history and research. 10. The history of tempeh East and West. 11. The microbiology and chemistry of tempeh fermentation. Part V. Appendixes: Tempeh contacts throughout the world. Bibliography. Glossary. List of illustrations. About the authors and their work (autobiographical).

Published in a hardcover edition only–6 years after the project started. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

5500. *Tetra Pak Age.* 1988. Aseptic growth remains strong. 6(2):14. Summer.
• ***Summary:*** With volume passing 562.2 million during 1987, growth of aseptically packaged beverage and food products jumped 17% in the USA last year. More than 1,700 million aseptic packages were sold in U.S. food stores in 1987 (not including institutional, wholesale, and vending).

5501. Zemel, Michael B. 1988. Calcium utilization: Effect of varying level and source of dietary protein. *American J. of Clinical Nutrition* 48(3S):880-83. Supplement. Sept. Proceedings of the First International Congress on Vegetarian Nutrition. Held 16-18 March 1987 at Washington, DC. [26 ref]
• ***Summary:*** "Dietary protein exerts a significant calciuretic effect. A twofold increase in protein at constant levels of calcium and phosphorus intakes causes a 50% increase in urinary calcium. The protein-induced hypercalciuria results primarily from decreased fractional renal tubular reabsorption of calcium..." Dietary phosphorus increases renal tubular reabsorption of calcium and thereby exerts a hypocalciuric effect. "Consequently a soy-based diet was able to maintain calcium balance at a calcium intake of 457 mg/day in spite of a protein intake of 90 gm, presumably due to the lower level of sulfur amino acids in the soy diet and to the 1,450 mg of phosphorus which accompanied the soy protein." In other words, when soyfoods (soymilk or tofu) were the primary sources of protein in the diet, calcium equilibrium was maintained, even when calcium intake was low and protein intake relatively high. Address: Dep. of Nutrition and Food Science, and the Div. of Endocrinology and Hypertension, Wayne State Univ., Detroit, Michigan 48202.

5502. *Toyo Shinpo* (*Soyfoods News*). 1988. Kankoku tônyû saisei choki e. Nihon no tônyû gyôkai wa teimei [Korean soymilk market starts to grow again. Japanese soymilk industry is in a low state]. Oct. 1. p. 14. [Jap; eng+]
• ***Summary:*** The Korean soymilk market, which rose and then fell like the Japanese soymilk market, is now re-entering a period of growth. According to a recent Korean newspaper, domestic soymilk sales from January to August, 1988 were 42,000 million won, up 20% over last year's figure. Sales are expected to increase during the winter at the end of this year, so total sales for the year are expected to reach 72,000 million won. The won is the Korean unit of currency.

5503. *SoyaScan Notes.* 1988. Microbiological specifications for tofu, powdered soymilk, and soy protein isolates (Overview). Oct. 10. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** According to the 8th draft of the tofu standards (Oct. 1985): None of the following should be present in fresh tofu: *Staphylococcus aureus, Salmonella, enteropathogenic Escherichia coli, Vibrio parahemolyticus, Yersinia enterocolitica.* At the plant on the day of production: Coliforms < 5/gm, Standard Plate Count (SPC) < 100, pH < 7.0. At the time the tofu is sold: Coliforms < 500, SPC < 1 million, pH 6.0 to 7.0

For St. Peter Creamery spray dried soymilk: Coliforms < 10, E. coli negative, Salmonella negative, Standard Plate Count 30,000 units/gram (Most Probable Number). For Ralston Purina isolated soy protein, ditto except that

Standard Plate Count is < 10,000 units/gram.

5504. Bolduc, Bill. 1988. The founding of Eden Food Co. (Interview). *SoyaScan Notes.* Oct. 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Bill founded Eden Foods Inc. as a macrobiotic/natural foods retail store in Ann Arbor, Michigan, in Nov. 1969. He was the original incorporator. About 8 months later, a proposal was made to Bolduc by a woman to expand Eden in a new location at 211 South State Street. After that, Bolduc invited Tim Redmond to join him, which he did. Redmond became a 50% owner in 1970, about 9 months after the company was founded. Tim was in Boston at the time, studying with Michio Kushi and working at Sanae. He was interested in the restaurant business. Bill and Tim had been in college together at the Univ. of Michigan. Both later became interested in macrobiotics. Bill wishes now he had not sold his stock.

About 18 months ago, Tim and his wife, Patty, and Bill sat down and talked through the history for the first 2-3 years month by month. They should have tape recorded it. They will try to do it again. His older cousin is David Bolduc.

Tim Redmond is thinking of doing a consumer study on soymilk. He uses Dialog a lot, doing mostly food research now. Address: ELI Research Corp., 660 Northland Blvd., Suite 28, Cincinnati, Ohio 45240. Phone: 513-851-0330 or 751-9090.

5505. Eveno, Régine. 1988. La poussée du soja; SIAL [The soy push: SIAL]. *Usine Nouvelle* (*L'*) No. 42. p. 44. Oct. 20. [Fre]
• ***Summary:*** "Products derived from soya, rich in protein and low in fats, are seducing consumers more and more. The big dairy companies are taking an interest and starting to occupy the terrain in a face-off with the cereal grain companies." Triballat, a well known 1,200 million French franc cheese company, now markets Sojasun, which is quite similar to yogurt. To tell the truth, soyfoods (especially tofu and soymilk) are all in vogue at SIAL this year. Cacoja (under the direction of Maurice Rochet), the subsidiary of a cereal company in Alsace, is also marketing soyfoods. With its new plant constructed at Noyal-sur-Vilaine (for an undisclosed amount), Triballat can produce in its first year 4,000 tonnes of finished products. Cacoja, with a plant at Issenheim (Bas-Rhin), constructed a year ago, will be able to produce 3.5 million liters of "soy juice" (*jus de soja*) in 1988-89, at a cost of 11 millions francs. Another plant is being constructed on the same site to make soy flour for use in biscuits, sausages, etc.

5506. Black, Nicole. 1988. Re: Developments with soyfoods in Mexico. Letter to William Shurtleff at Soyfoods Center, Oct. 24. 2 p. Typed, with signature on letterhead.
• ***Summary:*** The only other producer of tofu which we know of in the country currently is a Japanese man in Mexico City who is selling to a few places in Mexico City. The DIF (Desarrollo Integral de la Familia, or Family Development Institute) is an arm of the government which teaches people about nutrition, etc. The D.I.F. has introduced soybeans to the people in several cities. "I have discovered that only about two forms of soy products exist here currently–one is the dehydrated soy milk in different flavors and the other is the dehydrated chunks of soya which also comes in several flavors imitating meat or chicken or pork, etc... It is not an easy task to introduce tofu here. But with my free recipe brochures... and lots of determination, I plan to make a go of it." Quite a few of the hospitals around seem interested in incorporating tofu into their menus. "The next time I go to Mexico City, I will hunt down a health food store and see if they really do have any other soy products than the ones I have mentioned. Frankly, I doubt it. I called several of them, whose names are SoyaMundo, SuperSoya etc. and they have almost no soy products at all. What a joke!" Address: Huertas 17, Apdo 185, San Miguel de Allende, Gto., Mexico 37700. Phone: 465-20255.

5507. Westbrae Natural Foods. 1988. Westbrae and Vestro Foods (Interview). *SoyaScan Notes.* Oct. 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Westbrae will move to City of Commerce at the end of October. None of Westbrae's employees are going, not even Gordon Bennett, the president, for two reasons: They don't want to live in Los Angeles, and many are not interested in the new direction that Vestro plans to take Westbrae. Paul Repetto (formerly with Sunfield, which had the Lite-Chef tofu dry mixes) is the president of Vestro, and many of the vice presidents are from Hain. Vestro plans to "grow the company." Address: Emeryville, California.

5508. Ashraf, Hea-Ran Lee; Bwembya, P.A. 1988. Supplementation of the traditional Zambian diet with soybean products. *Nutrition Reports International* 38(4):719-27. Oct. [12 ref]
• ***Summary:*** Two traditional Zambian corn based cereal dishes, porridge and Nshima (an indigenous name for cooked corn meal), were supplemented with dried soybean curd (DSC), in order to improve the quality and quantity of proteins. In porridge products, the protein content increased 3.5 fold when DSC was added at 50% of the dry ingredients. In Nshima products, formulations were accepted only at 10% supplementation. Neither soymilk nor soymilk-papaya blend were accepted by the sensory panel.

Soybean has been recognized in Zambia as an important alternative protein source since the National Council for Scientific Research in conjunction with Zambia University Teaching Hospital and the National Food and Nutrition Commission formulated Nutrifex, a mixture of corn, soy flour and skim milk, in 1980. The product was tested on

malnourished children in the University Teaching Hospital. Its satisfactory results encouraged the National Council for Scientific Research to develop a weaning food based on this formula. Bread and cookies using soy flour are also available on the market and a soybean cookbook has been recently published.

Note 1. The cookbook is titled *Soyabean cooking in Zambia,* by Dave Wynne and Fereidoon Javaheri (1987; 48 p.). Note 2. None of these products was commercialized. Address: Dep. of Animal Science, Food & Nutrition, Southern Illinois Univ., Carbondale, IL 62901.

5509. *East West.* 1988. East West presents: Best & worst awards. 3rd annual. 100% natural. Oct. p. 65-72.
• ***Summary:*** Best Natural Soy Sauce: Lima Nama Shoyu from Ohsawa-Japan, imported by Ohsawa America of Chico, California. Twice brewed, lower in salt, and aged four years. "It is unique among shoyus, with exceptional smoothness and flavor."

Better Than It Sounds Award:" Tofu chocolate? Yes, Barat Bars by Legume Inc. of Montville, New Jersey, use tofu instead of dairy and no hydrogenated or fractionated palm kernel oil. Carob candies move over!"

Best Tasting Flavored Soy Drinks: "The Westbrae Malteds won this contest going away. Creamy, thick, and delicious, they are more of a dessert than a drink. Some devotees eat them frozen."

Least Healthful Line of Soy Drinks: "The Westbrae Malteds. The flip side of their great taste is their almost 400 calories and 15 grams of fat per 8 ounces."

Most Healthful Line of Soy Drinks: Edensoy. They are the only producers making a totally oil-free drink.

Worst Tasting Flavored Soy Drinks: "Vitasoys from San Francisco, Calif., seem to have few fans and finished last in our blind taste test."

Most Questionable Beverage Label Claim: "3 grams of fat per 6 ounces of Carob and Chocolate Ah Soy, by Great Eastern Sun of Enka, North Carolina. These soymilks are rich and creamy, yet 3 grams is a lower fat content than even Edensoys, made without oil. How is that possible guys?"

That's Progress? Award: "Mori-Nu Tofu by Morinaga Nutritional Foods of Los Angeles. Aseptic Tetrapacked tofu that has indefinite shelf life and can be shipped anywhere. Good for backpackers maybe but can't compare to fresh and local."

Best Fake Hot Dog: SoyBoy Tofu Not Dogs by Northern Soy of Rochester, N.Y. "Nice smoky flavor and smooth texture, almost as good as the real thing."

Worst Fake Hot Dog: Tofu Pups of Lightlife Foods of Greenfield, Massachusetts. "Dry and crumbly on the inside, with a lack of distinctive flavor. Won't fool anybody at the neighborhood cookout."

Best Tamari: San-J Traditionally Brewed Tamari from San-J International of Colonial Heights, Virginia. "No one else even came close. Question: Will they be able to retain their appeal when the first U.S.-brewed batch hits the shelves?"

5510. **Product Name:** [Mamina Soya Instant Baby Food Gruels {With Powdered Soymilk} (With Fruit, Vegetables, or Cereals)].
Foreign Name: Mamina Soja (Fruechte, Gemuese, Getreide).
Manufacturer's Name: Galactina Ltd.
Manufacturer's Address: Belp, Switzerland.
Date of Introduction: 1988. October.
Ingredients: Incl. spray dried soymilk.
Wt/Vol., Packaging, Price: 300 gm aluminum bags in a paperboard box.
How Stored: Shelf stable.
New Product–Documentation: Soya Bluebook. 1986. p. 111; 1989. p. 131. Talk with Peter Speck. 1990. June 2. Soya Bluebook contains a misprint. Maurina Soja (Infant formula) is actually Mamina Soya. Talk with Conrad Seewer of Galactina. 1990. May 17. Mamina Soya (pronounced ma-MEE-nah ZO-yah) was Galactina's first infant formula after Bebe Nago. product, using new technology, it replaced Bebe Nago. It has a better taste and completely fulfills the baby's nutritional needs according to modern pediatric standards. It was launched 5-6 years ago. It is made from whole soybeans that are made into soymilk, which is then spray dried and formulated. It contains no isolates, and this is part of Galactina's philosophy and history. This allows better control of the product quality and the milk is less highly processed. The processing method has solved the problem of flatulence.

Talk with Peter Speck. 1990. May 23. The market for Galactina's new line of two baby products looks very promising. There is Mamina Soya and then 2-3 different types of gruels.

Letter (fax) from Conrad Seewer of Galactina. 1990. July 13. These are instant baby foods for spoon feeding. The powder is diluted with water. Both these and the infant formulas are in powder form, sealed in aluminum foil bags that are packed in paperboard boxes. The products contain no soy isolates; rather they are made with powdered soymilk made directly from soybeans. Flatulence is prevented by a special technical manufacturing process that is confidential and that eliminates trypsin inhibitor. The first Mamina Soya product was introduced in June 1986.

5511. Hong Kong Soya Bean Products Co. Ltd. 1988. The Vitasoy story (Color videotape). 41 Heung Yip Rd., Aberdeen, Hong Kong. 14 minutes. Oct. [Eng]
• ***Summary:*** The company has produced this video for its 50th anniversary. Part of the company sales kit, it is available in two versions, one narrated in English and one in Chinese. The film portion of the two is identical. Address: Hong Kong.

5512. *INTSOY Newsletter* (*Urbana, Illinois*). 1988. India returning to focus on soybeans as human food. No. 40. p. 3. Oct.

• ***Summary:*** "Today India spends the equivalent of almost $1,000 million per year to import edible oils. At the same time, oilseed production in India has been stagnating at about 13 million tonnes per year. Local production of edible oil is about 3.5 million tonnes per year. Annual imports amount to about 1.2 million to 1.4 million tonnes...

"The bulk of the edible oil comes from major oilseed crops, such as peanut, mustard, linseed, and coconut...

"Today approximately 98% of the soybean crop, amounting to about one million tonnes yearly, is used for oil extraction. This yields about 160,000 to 180,000 tonnes of oil and 700,000 to 800,000 tonnes of soybean meal.

"Virtually all the oil is sold locally as edible oil, whereas almost all the meal is exported... Recently, however, India has faced increasing problems in disposing of the meal because of competition from other countries...

"As a result, new efforts currently are under way to develop processes for manufacturing a wide variety of soy-based foods that fit Indian dietary patterns.

"Although there is an emphasis on using defatted soybean meal, work is also moving ahead on whole soybean utilization for such products as soymilk, dairy analogs, and soy paneer...

"M/S Pantnagar Soy Products in New Delhi is currently producing about 100,000 packets of soymilk per day. Each packet contains about 200 milliliters of soymilk...

"Recently Brittania (India) has started marketing edible-grade defatted soy flour to be used as a supplement in chapati, puri, paratha, and other traditional foods...

"According to the Indian scientists, soybean utilization for food is now on a firm basis in India."

5513. *INTSOY Newsletter* (*Urbana, Illinois*). 1988. Soybean markets in Bangladesh prime for future expansion. No. 40. p. 2. Oct.

• ***Summary:*** "The market for soybeans in Bangladesh is now at a critical stage where implementation of small- and medium-scale processing technologies could have a major impact, according to Jane Gleason, INTSOY agricultural economist. Gleason recently spent 12 days in Bangladesh visiting soybean processing facilities and meeting with officials from the government, private volunteer organizations, and local businesses.

"She reports that the Mennonite Central Committee (MCC) has been especially active in promoting increased soybean utilization. Working with local biscuit manufacturers, MCC has helped introduce the concept of fortifying wheat flour with full-fat soy flour. Two biscuit makers are already using soy flour, and at least three others are testing the product. Most of the biscuits are made from raw soybean flour. The trypsin inhibitor is largely destroyed by heat during baking.

"Initially, MCC produced the flour at its processing laboratory in Maijdi. The flour was then sold to the manufacturers through MCC's wholesale outlet. More recently, the biscuit companies have been directly purchasing whole soybeans for processing in their own facilities. One of these companies already produces more than one metric ton of soy-fortified biscuits per day.

"Other organizations, such as Biman and a Baptist Church group, are experimenting with soybeans as animal feed, especially for poultry. In addition, at least two entrepreneurs are interested in producing a soymilk that would be marketed in competition with soft drinks. The two companies are expected to require at least 550 metric tons of soybeans per year."

"The Source, which is MCC's local outlet, also sells processed soy flour at retail and about 400 to 500 kilograms of soybeans per month on the wholesale market. Most of these soybeans are purchased by the local Chinese community to manufacture tofu.

"Promoting rural development with soybeans: Another important component of the soybean program in Bangladesh is the Food Products Development Centre (FFDC). The major objectives of FFDC are to develop low-cost food processing technologies that are accessable to the rural unemployed and to increase use of soybeans and other crops that can improve nutrition in the rural areas. As part of its effort to create new jobs, FPDC plans to promote small-scale commercial processing of soybeans for manufacture of the local snack food, chanachur.

"During 1987, Ellen Jayawardena, training coordinator for the Soybean Foods Research Centre in Sri Lanka, conducted several classes for FPDC personnel on home and village soybean preparation. These people, in turn, are to serve as local trainers. MCC also has several soybean cooking demonstrators in the Moakhali and Chuadanga districts and the Dhaka area. In addition, MCC personnel have sold soybeans door-to-door in a number of villages where that commodity is in short supply.

"Gleason reports that both extrusion cooking and soymilk processing have significant potential for expanding soybean markets in Bangladesh. She further concludes that the extrusion / expelling process developed by INTSOY could play an important role in providing a new source of high-quality soy oil for Bangladesh."

5514. Karta, Susani K. 1988. Market trends in the development of traditional soyfood. Paper presented at the ASEAN Food Conference '88: Food Science and Technology in Industrial Development. 18 p. Held 24-26 Oct. 1988 at Bangkok, Thailand.

• ***Summary:*** Contents: Introduction. Traditional soyfood. Market situation and trends. Indonesia. Singapore. Malaysia.

Thailand. Constraints in the market development of soyfood (in each of the above 4 nations). Major trends in the development of traditional soyfoods. Marketing strategy of soyfood. Tables: 1. Traditional non-fermented soyfood products. 2. Nutritional composition of traditional non-fermented soyfoods. 3. Description and uses of traditional fermented soyfood products. 4. Nutritional composition of traditional fermented soyfoods.

5. 1987 estimated consumption of soybeans as foods in the Far East [total and per capita in East Asia]. China, 1,062 million population, 7,325,000 tonnes, 6.9 kg/capita. Japan, 122 million population, 1,141,000 tonnes, 9.3 kg/capita. South Korea, 42.1 million population, 330,000 tonnes, 7.8 kg/capita. Taiwan, 19.6 million population, 260,000 tonnes, 13.3 kg/capita.

6. Southeast Asia soybean consumption for food. From 1983 to 1989 the increase in 1,000 metric tons was: Indonesia 927 to 1,600. Singapore 14 to 26. Malaysia 32 to 70. Thailand 40 to 150. Philippines 9 to 24. Total 1,022 to 1,870 (increase of 82.9% in 7 years).

7. Per capita soybean consumption for food in Southeast Asia. From 1983 to 1989 the increase in kg/person was: Indonesia 6.0 to 8.8. Singapore 5.6 to 10.5. Malaysia 2.1 to 3.7. Thailand 0.8 to 2.6. Philippines 0.2 to 0.5. Average total: 3.8 to 5.9 (increase of 55.3% in 7 years).

8. 1987 estimated consumption of soybeans as foods in Southeast Asia [total and per capita]. Indonesia, 175 million population, 1,575,000 tonnes, 9.0 kg/capita. Thailand, 53.6 million population, 118,000 tonnes, 2.2 kg/capita. Malaysia, 16.1 million population, 55,000 tonnes, 3.4 kg/capita. Singapore, 2.6 million population, 20,000 tonnes, 7.7 kg/capita. Philippines, 61.5 million population, 18,000 tonnes, 0.3 kg/capita.

9. Indonesian soybean production, imports, and consumption as food (in tonnes). From 1983 to 1989, production rose from 536,000 to 1,250,000, imports decreased from 391,000 to 350,000, and the amount consumed as food increased from 927,000 to 1,600,000. About 50% of the soybeans used for foods in Indonesia go to make tempeh, and 40% are used to make tofu.

10. Singapore soybean consumption as food. From 1983 to 1989 the amount increased from 14,000 tonnes to 26,000 tonnes. Most of these soybeans are used to make tofu and soymilk. 11. Malaysia soybean imports and consumption as food (in tonnes). From 1983 to 1989, production rose from 182,000 to 440,000, and the amount consumed as food increased from 32,000 to 70,000. 12. Thailand soybean production, and consumption as food (in tonnes). From 1983 to 1989, production rose from 113,000 to 490,000, and the amount consumed as food increased from 40,000 to 150,000. Only in 1988 were soybeans imported–40,000 tonnes. This growth of soyfood consumption is due partially to the Government of Thailand's interest in promoting the awareness and utilization of soyfood products. The Thailand Agricultural Extension Service program and other institutions have been actively advocating of soyfoods into the food industry and the human diet, especially in rural areas. The government controls soybean imports by issuing licenses.

In summary: The soybeans with the highest per capita soybean consumption for soyfoods are: Taiwan 13.3 kg, Japan 9.3 kg, Indonesia 9.0 kg, Singapore 7.7 kg, South Korea 7.3 kg, and China 6.9 kg. The greatest potential for growth lies in China, where it is very common to find markets running out of soyfoods early in the morning. There is also great potential for growth in Malaysia, Thailand, and the Philippines. Address: American Soybean Assoc., 541 Orchard Rd., #11-03 Liat Towers, Singapore 0923, Republic of Singapore.

5515. **Product Name:** Back to Nature Soy-Oat Beverage (Powder).
Manufacturer's Name: Organic Milling Co.
Manufacturer's Address: 505 W. Allen Ave., San Dimas, CA 91773. Phone: 714-599-0961.
Date of Introduction: 1988. October.
Ingredients: Soy protein isolate, oat flour, fructose, corn syrup solids, soy oil, plus vitamins and minerals.
Wt/Vol., Packaging, Price: 20 oz can makes 30 servings.
How Stored: Shelf stable.
Nutrition: Per 1 cup (8 fl. oz.) liquid: Calories 80, protein 5 gm, fat 2 gm, carbohydrate 12 gm. Contains 25% of the U.S. RDA for vitamins A, D, E, C, B-1, B-2, B-6, B-12, niacin, folic ccid, pantothenic acid, and biotin; 30% of the RDA for calcium, and 15% for phosphorus.
New Product–Documentation: Ad in Whole Foods. 1988. Oct. p. 79. Fortified with 14 vitamins and minerals, including as much calcium as milk. Label. 1988. 3 by 4.5 inches. Self adhesive. Blue and red on white. Logo at top of horse pulling a plow and man. Soyfoods Center product evaluation. 1988. Oct. Poor. Ad (full color, 8.5 by 11 inches) in Natural Foods Merchandiser. 1989. April. p. 110. "Back to Nature presents a great group of sales builders!" Shows the company's full line of products in their packages. The beverage label appears blue, white, and gold.

5516. *SoyaScan Notes.* 1988. Products containing little or no soya or seitan made by Jonathan in Belgium for which Soyfoods Center has labels (Overview). Oct. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** These labels were sent by Jonathan in 1988, along with many labels for soyfood products. Most labels have the product name given in English, German, French, and Dutch. Only the English is given below. Many of the products contain organically grown ingredients, with the Cinab logo.

Spiced biscuits [with fructose], Bran biscuits [soy flour is the 7th ingredient], Fruit biscuits (without addition of

sugar), Almond biscuits (without addition of sugar), Sesame biscuits (without addition of sugar), Fructose biscuits, Four-cereal biscuits (with cane sugar), Spiced butter biscuits (with cane sugar)

Mochi, Lasagna (vegetarian, with soy sauce), Pilav rice (Pilaf), Risotto and lentils (with soy sauce). This line of products (each 300 gm) has elegant labels with a color photo on the front panel.

Wheat wafers (with soy flour), Muesli wafers without sugar, Coconut cake with fructose, Wheat biscuits, Hasselt spices biscuits (with soy flour; Speculoos, Spekulatius), Baby-food. All self-adhesive labels, 4.5 by 2.25 inches.

Mushrooms in tomato sauce (vegetarian), Lentils (with soy sauce), Lasagna, Whole wheat pasta.

Vegetarian entrees, each 500 gm: Brown rice casserole with lentils + vegetables, Brown rice casserole with lentils + seitan, Pumpkin creme, Pumpkin soup with brown rice, Mushroom soup, Millet-onion soup, Azuki bean soup, Lentil soup, Seitan–Ratatouille (Wheat protein and vegetables), Seitan-Goulash, Seitan, Nutmix spread, Hazelnut spread with almonds.

Each 250 gm: Prepared azuki beans, Prepared lentils, Seitan Bolognaise, Lentil spread, Seitan spread, Mushroom spread, Mushrooms in tomato sauce, Apricot spread, Carob spread, Fig spread, Date spread, Raisin spread, Peanut butter, nutmix spread, hazelnut spread with almonds.

5517. Dervin, Marie-Anne. 1988. Innovations agro-alimentaire: 2,500 t/an de produits à base de soja [Agro-food innovations: 2,500 tonnes/year of soy products]. *Industries et Techniques.* Nov. 1. p. 94. [Fre]

• ***Summary:*** At Valence, Innoval has established an industrial unit for the transformation of soya into drinks, main dishes (*plats cuisinés*), desserts, etc. The Silos of Valence, an agricultural cooperative in Drôme, is looking to diversify in the agro-food sector. It has joined forces with Sojalpe to create Innoval S.A. This September the company launched the above-mentioned products into large-scale distribution supermarkets.

The project, which has cost 20 million French francs, has benefited from the financial support of several banks. In 1989 Innoval SA is planning to come out with a complete line of long-lasting fresh products. The company also hopes to reach collectives and to export to other European countries that consume large amounts of tofu (UK, West Germany, or Switzerland). Address: France.

5518. Bolduc, Bill. 1988. Re: Early history of Eden Foods, Inc. to 1973. Part I. Letter to William Shurtleff at Soyfoods Center, Nov. 5. 2 p. Typed, with signature on letterhead (photocopy).

• ***Summary:*** The following account is based on hours of discussion between Bill Bolduc, the Redmonds, and the Silvers between 1988 and 1991. Bill is not familiar with the details of the history of the food co-op in Ann Arbor prior to 1969. But Ronnie Teeguarden says that in about July 1967 he and Gloria Dunn started a loosely-organized food buying co-op–which had no name–in Ann Arbor, Michigan. Within a few weeks, a number of their friends and acquaintances (a group of eclectic pathfinders, students, graduates, macrobiotics, dropouts, musicians) informally joined the group. These included Tim Redmond, Mark and Nancy Retzloff, Linda Succop, Iona Teeguarden, and Bob Thorson. From time to time, they collectively ordered macrobiotic staples from Erewhon in Boston using the Erewhon catalog. When the foods arrived, the food co-op members got together and divided them up at the Teeguarden-Leabu General Store, located a half flight below street level at 209 South State Street, below the Herb David Guitar Studio in Ann Arbor. Run by Ronnie Teeguarden, with help from Gloria, this store's main business was selling local art, second hand clothes and records, etc.

Bill Bolduc and Judy Succop [Linda Succop's sister], were married in June 1969 in Ann Arbor. They were not yet members of the co-op at that time. A few days later, they went to Berkeley for the summer. When they returned to Ann Arbor at the end of that summer, they lived in Saline, Michigan, 12 miles outside of town with Mark & Nancy Retzloff, Linda Succop, and Tim Redmond. Bill, who wasn't working or going to college, was trying to figure out what to do next. By September 1969, Bill and Judy Bolduc joined the food co-op. They also joined the Zen Macrobiotic Supper Club; all of its members were also members of the food co-op.

In the fall of 1969 the Teeguarden-Leabu second-hand store looked like it was about to close, which would leave the food co-op without a home. The group (especially Ronnie) convinced Bill Bolduc to take charge of the food co-op and find it a permanent home, which he did.

On 4 Nov. 1969 Bill Bolduc incorporated Eden Organic Foods, Inc. as a non-profit corporation in the state of Michigan. The name "Eden," which stood for Environmental Defense Energy Network, was coined at this time by Bob Thorson during a discussion between, Bill Bolduc, and Gloria Dunn at a coffee shop. Thus, the term "Eden" was first used in connection with this co-op or business in Nov. 1969.

Eden was born under a good star. The date Nov. 4 was carefully chosen to be astrologically propitious. At the time, Bill was an intense student of astrology with Michael Erlewine–who is now world famous in the field, and the owner of Circle Books, an astrological publishing company. In 1970 Michael also designed the Eden logo of the 4 sprouts in a circle. Eventually Michael became one of Bill Bolduc's students in macrobiotics.

Bill was president of Eden Organic Foods and his wife Judy (who was working as a secretary at the University of Michigan School of Music) was secretary. Bolduc used $200

of his own money to rent a converted apartment above the bicycle store at 514 East William St. in Ann Arbor, near campus. People from the community loaned $1,500 to help stock the co-op store and buy an 8-inch Meadows stone mill to grind flour.

The question arises: When was Eden Foods established? Bill Bolduc and Tim Redmond believe that the founding should be dated from Nov. 1969, when the company was first named; before Nov. 1969 the food co-op was not even a business. It was dead and had disappeared for about a month until Bill resurrected it by placing an order to Erewhon using his own money.

Eden Organic Foods first began selling soyfoods commercially in November 1969, starting with their first order from Erewhon in Boston. They would buy "tamari" (actually shoyu) and miso (kome = rice, mugi = barley, and Hacho varieties) in bulk from Erewhon (which imported them from Japan). At their store, Linda Succop (Bill's wife's sister) would repackage the products, putting the shoyu into bottles and the miso into plastic bags. They were labeled using plain white pressure-sensitive gummed labels with a rubber stamp. One stamp contained the name and ingredients for each product, and another, that was stamped below it, gave the company name and address. They wrote in the weight or volume by hand. Also at William St. a tiny Meadows Mill was used to grind grains and seeds into flour. Continued. Address: ELI Research Corp., 660 Northland Blvd., Suite 28, Cincinnati, Ohio 45240. Phone: 513-851-0330 or 513-751-9090.

5519. Bolduc, Bill. 1988. Re: Early history of Eden Foods, Inc. to 1973. Part II. Letter to William Shurtleff at Soyfoods Center, Nov. 5. 2 p. Revised 4 Dec. 1991 by Bill Bolduc, Ron Teeguarden, and James Silver.

• ***Summary:*** In Sept. 1970 the fledgling company had an offer to move into a newly-redecorated mini-mall [at 211 South State St.] on the main street of campus. New personnel and financing would be needed. Bolduc called Tim Redmond, who had been studying and working at the Sanae macrobiotic restaurant in Boston, to ask for help. Tim returned to Ann Arbor and joined Bolduc in the expansion effort. To raise money for the move, the two approached Tim Redmond's father, who said he would help finance the expansion only if the business was reorganized as a for-profit corporation with Tim having equal ownership. They agreed and in about Oct. 1970 Eden was reorganized as a for-profit corporation with Bolduc and Redmond each owning 50%. At that time the partners shortened the company name to Eden Foods Inc. Bolduc and Redmond then borrowed a 4-figure sum from Tim's dad, had the new store remodeled, and entered the big time. After the new store was opened and running, Redmond returned to Boston and the Sanae restaurant, where he completed his studies. But with this move they fell from the graces of the political co-opers. In November 1970 they did a "Brown rice, seaweed, and dirty hot dog" Bob Dylan commercial on a local radio station; it was a big hit. They bought a 15-inch Meadows Mill and a rotary-drum roaster, then milled flour and baked granola in the back of the store.

In 1970 Bill had located Tom Vreeland, an organic farmer in Ypsilanti, Michigan. An Eden Foods Wholesale Pricelist dated 26 July 1971 shows that the Eden store at 211 South State St. was wholesaling soybeans, soft wheat, corn, and rye, all grown organically in Michigan. Eden was also selling organic flours that they ground from these grains.

In the spring of 1971, after realizing they were the only "natural food" store in the area, and having some other "health food" store owners in Detroit express an interest in carrying more food, they decided to wholesale foods out of the back of their retail store at 211 South State Street. Bill flew to Boston to meet Tim Redmond. They visited Erewhon (they wanted to convince Erewhon to let Eden be their distributor at lower prices), then Bill flew to Arrowhead Mills in Deaf Smith County, Texas, to make arrangements buying in bulk at wholesale prices. In the summer of 1971 they ordered their first 20-foot trailer load of organic foods from Arrowhead Mills, and ran an ad in *East West Journal*. Soon they started to distribute their foods to 4-5 accounts in Detroit. They bought a 1964 16-foot green Dodge van and a dry weight weigher/dumper machine. Their two main brands were Arrowhead Mills and Erewhon, but soon they developed the Eden brand with printed labels, onto which they would rubber-stamp the product name (such as bottled tamari and packaged miso). Soon they added other brands: Celestial Seasonings, After the Fall, Timbercrest, etc.

The wholesale operation quickly outgrew the back of the retail store, so they borrowed more money and rented a 5,000 square foot Quonset hut (resembling an airplane hanger) down on Main Street by the Huron River. Tim Redmond, Mark Retzloff, and Bill Bolduc ran the wholesale operation. Retzloff later co-founded Alfalfa's, a natural foods supermarket chain based in Boulder, Colorado.

In October 1971 Bolduc hired Michael Potter, who was living in Detroit, to run the store. Just before this, Potter had managed a natural foods store named Joyous Revival in nearby Birmingham, Michigan. Prior to this time, the company had been owned by Bill and Judy Bolduc (50%) and by Timothy Redmond (50%). Potter was given 13.5% of the stock and the other principals' share reduced proportionally.

In the late summer or fall of 1973 the Bolducs sold their shares back to the corporation, which then gave a portion of these to Tim Redmond and Michael Potter so that these two men now owned 51% and 49% respectively.

The Bolducs then left Ann Arbor, moving to Cincinnati, then to Illinois, then back to Ann Arbor. Bill is certain that when he left Eden Foods, the company was not importing any products from Japan. He would guess that it was not

until about 1975 that Eden started to import a line of foods from Japan. Their first supplier in Japan was Muso Shokuhin, a leading macrobiotic and natural foods exporter in Osaka. Initially, all of their imported products were required to bear the Erewhon brand. Imported soyfoods included miso and shoyu. Sales hit $175,000 in 1973.

Note: Eden was the first of the many macrobiotic distributors based on the Erewhon model to open in America. Others that soon followed included Food for Life in Chicago (1970), Janus in Seattle, Washington (1972 Jan.), Essene in Philadelphia (by 1971 Feb.), Laurelbrook in Maryland (1971 Aug. 23), Ceres in Colorado Springs (by 1973), and The Well in San Jose, California (1973). Address: ELI Research Corp., 660 Northland Blvd., Suite 28, Cincinnati, Ohio 45240. Phone: 513-851-0330 or 513-751-9090.

5520. Roller, Ron. 1988. Justice Department lawsuit against Eden Foods (Interview). *SoyaScan Notes.* Nov. 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The FDA filed the original charges then (since they do not prosecute cases), they turned the case over to the Justice Department, which in May 1988 filed 32 counts of criminal charges against Eden Foods. The problem relates to two things: (1) The original pamphlet which claimed that Edensoy is good for babies. The FDA case is that the product was promoted as an infant formula, in violation of the Infant Formula Act. An infant formula may be promoted only as a sole source of nutrition for infants. It is not a dual use product. Eden did a voluntary recall at a cost of about $45,000. (2) After the FDA told Edensoy to stop distributing the pamphlet, Eden Foods subsequently, probably accidentally, sent out (sold) some 20-50 more. That apparent willful flaunting of authority was what made the FDA pursue the case vigorously. They only prosecute 5-7 cases a year. The original counts were worth over $1 million in fines. The prosecutor is the same person who did the Gerber case. It is serious. Eden's attorneys advised that they plead to lesser charges and try for a plea bargain. Ten counts are worth $100,000 and about 22 are worth $1,000 each. Now it looks like the charge may be $150,000. Also Mike Potter is being charged personally, and faces potential but unlikely jail time.

There is only one known case where an infant was adversely affected by Edensoy. This infant lived in Toronto, Canada, and its physician said the child has completely recovered. There was no permanent damage. Address: Eden Foods, Clinton, Michigan.

5521. Amrit Protein Foods Ltd. 1988. Display ad: An investment in Amrit–an investment in prosperity. *Times of India* (*The*) (*Bombay*). Nov. 21. p. 11.
• ***Summary:*** Amrit Protein Foods Limited, "An exciting new venture," is promoted by Amrit Banaspati Co. Ltd. Amrit Protein equity issue opens 12 Dec. 1988.

"A complete line of fitness foods: Health and fitness are making big headlines these days. And to meet the growing demand for a new generation of fitness foods, Amrit Protein will manufacture a wide range of products–Soya Milk, Soya Milk Beverages, Soya Dessert, and High Quality Soya Paneer."

"Proven technology from world leaders:" Amrit has purchased its soymilk making system from STS–Soya Technology Systems–a division of the world renowned Danish Turnkey Dairies.

"Big success in the West! Products based on this technology have been a phenomenal success in the West. In fact, a plant set up as recently as 1985 near Hamburg has substantially increased its capacity [DE-VAU-GU, Lueneburg, West Germany].

"Products backed by extensive research:" The products are a result of extensive market research; they have been thoroughly tested in consumer taste trials.

"The market is ready and waiting:... Amrit Protein will open up a whole new dimension in the Indian consumer market.

"And you have an opportunity to share our bright future: To meet a part of the finance required for the project, Amrit Protein is making a public issue of 24,70,000 Equity Shares of Rs. 10 each for cash at par." The names and logos of the three Indian companies managing the issue are given.

The bottom half of this horizontal ad is a cartoon illustration with many stylized adults and children admiring the various uses of soy protein products such as tofu cubes on a dish and a dessert in a tall-stemmed glass. Address: Amrit Nagar, G.T. Road, Ghaziabad 201 009 (U.P.) [Uttar Pradesh].

5522. *Times of India* (*The*) (*Bombay*). 1988. City notes: Amrit Protein. Nov. 22. p. 11.
• ***Summary:*** "Amrit Protein Foods, a company promoted by Amrit Banaspati, will enter the capital market on December 12, with a public issue of 24.70 lakh [2,470,000] equity shares of Rs 10 each at par to finance its Rs 14.50 crores project being set up at Ghaziabad, Uttar Pradesh to manufacture soyamilk,..."

The company will make 19,800 kilolitres of soyamilk, soyamilk beverages, soya dessert, and high quality soya paneer per annum.

The project is expected to start commercial production by April 1989 according to Mr. N.K. Bajaj, chairman.

5523. Eaton, Eleanor. 1988. He cooked for Henry Ford. *Dearborn Times–Herald* (*Michigan*). Nov. 23.
• ***Summary:*** A large photo shows Jan Willemse, who knew Henry and Clara Ford well when he was head chef at Dearborn Inn, then from 1937, at Ford's private dining room at Lovett Hall in Greenfield Village. "Ford had an obsession with soybeans said Willemse. He wanted them in everything he ate whether it be cookies, cakes, or pies. He drank

soybean milk and ate soybean ice cream. And yes, he insisted soybean bread was the main ingredient for the Thanksgiving turkey stuffing. 'Mr. Ford was ahead of his time in learning the value of the soybean,' said Willemse."

Willemse arrived in the USA 69 years ago from his native Holland. In 1931 in Florida he met Edsel Ford, while taking food to sailors on Edsel's yacht. Edsel told his father, Henry, about the excellent chef in Florida, and Henry wrote Willemse asking him to come to Dearborn to be head chef at the Inn. But he didn't go, because his friend told him that Dearborn was a small town away from the rest of the world. However in 1934 Willemse received a letter from Henry Ford that made him an offer he couldn't refuse. Willemse liked the Fords very much. They were both strict but nice. "Mr. Ford was a wonderful man who didn't mince words. He'd come right out and say what he thought. He was good to me." Willemse liked to smoke now and then but Ford was dead set against cigarettes.

After retiring from his work with the Fords in 1964, Willemse became bored and accepted a job with Miesel Sysco, the largest grocery company in the nation which sells more than 30,000 items to restaurants and hotels. Willemse, who lost his wife in 1987 after 54 years of marriage, is a young 88 and lives with his cat Muffy in the comfortable home in Dearborn. He still works 5 days a week at Miesel Sysco and he likes his job.

5524. **Product Name:** Holiday Nog (Soymilk Based Eggless Eggnog).
Manufacturer's Name: Ambrosia Soy Co.
Manufacturer's Address: 199 Saltonstall Parkway, East Haven, CT 06512. Phone: 203-467-8821.
Date of Introduction: 1988. November.
Ingredients: Incl. soymilk, pearl barley, honey.
Wt/Vol., Packaging, Price: Plastic quarts.
New Product–Documentation: Leaflet (8½ by 11 inch, glossy color, back and front) sent by Richard Rose from Natural Products Expo East. 1989. Sept. On the front is a color photo showing all the company's products. One the rear is a brief description of each of these products: SweetSoy soymilk. Sweet Tofu Pies (like cheesecakes). Holiday Nog. Puddings (Carob or Butterscotch, made from tofu). Frozen Fully Cooked Organic Soybeans. Tofu. Soy Lecithin.

Talk with Liz Appel. 1989. Nov. 9. This was introduced before Christmas 1988. Pearl barley gives it a smooth, thick consistency. Honey is the sweetener now, but she may use Sucanat in the future.

5525. **Product Name:** [Soja Biostar {Soymilk} (Natural, Enriched, Breakfast-Style)].
Foreign Name: Soja Biostar (Nature, Enrichi, Petit Déjeuner).
Manufacturer's Name: Celia Group.
Manufacturer's Address: B.P. 10, 45550 St.-Denis-de-l'Hôtel, France. Phone: 38 59 02 03.
Date of Introduction: 1988. November.
Ingredients: Nature: Water, extracts of soya [soy protein isolates], fructose. Calcium fortified: Water, extracts of soya [soy protein isolates], sugar (from red sugar cane), calcium.
Wt/Vol., Packaging, Price: 100 cl (1 liter) Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Calories per 100 gm: Natural 44.2. Enriched 50.9. Breakfast-style 93.5.
New Product–Documentation: Technique Laitiere & Marketing. 1988. Nov. p. 65. Soja Biostar is a line of soy products made by the Celia group, a dairy co-op. Manufacturer's brochure. 1988? Received March 1989. "Soja Biostar." 16 p.

Call from son of owner in France. 1988. Nov. 14. Celia, a private dairy company with $200 million annual sales, is planning to make soymilk in France.

Manufacturer's leaflet. Received 1990. March 26. "Boire du soja. L'idée vient de germer." ("Soymilk. The idea has just sprouted.") A color photo shows all 3 labels. "The Breakfast-Style, composed of soya, chocolate, vanilla, and cereals, is a breakfast complete and ready, with a tasty flavor which is a real treat for infants and also for parents because of its qualities of lightness and digestibility."

Talk with European soymilk producer. 1990. June 6. Biostar is made from soy protein isolates. He thinks they add oil and do not list it on the label.

Letter (fax) from Bernard Storup. 1990. June 6. This soymilk is made from isolates, not whole soybeans. It is not widely available and we have no figures on its sales. It is sold mainly at supermarkets in the west of France. Celia is the brand name of a group of 3 dairies (industry, not cooperative) mainly in the west of France that make and sell butter, milk, soymilk, and soy desserts in common under the Celia label. The names of these dairies are Laiterie de Craon (Craon, Mayenne, France), Fromagerie L. Gallais (Montfaucon, Maine-et-Loire), and Laiterie du Parc (Saint-Florent-le-Veil, Maine-et-Loire).

Leaflet sent by Heather Paine of SoyaFoods in London. 1991. April 23. "Gamme Traditionelle." Shows three soymilk products in Tetra Brik Aseptic cartons. The flavors: Nature (Natural), Enrichi en Calcium (Calcium Fortified), and Petit Déjeneur (Breakfast). Lists the ingredients and gives a detailed nutritional analysis of each. The calcium fortified brand contains (per 100 gm): Protein 4 gm, lipids 2.3 gm, carbohydrates 3 gm, no lactose or cholesterol, 50.9 calories, calcium 50 mg, phosphorus 40 mg, sodium 30 mg, potassium 160 mg, iron 0.4 mg. By comparison, the natural brand contains: Protein 3.8 gm, lipids 2.3 gm, calories 39.9, calcium 20 mg, potassium 160 mg.

5526. **Product Name:** [Soja Biostar {Soymilk} (Raspberry-

Violet, Peach-Jasmine, Coffee, Mint-Chocolate, Pear-Orange Blossom.)].
Foreign Name: Soja Biostar (Framboise-Violette, Peche-Jasmin, Café, Menthe-Chocolat, Poire-Fleur d'Oranger).
Manufacturer's Name: Celia Group.
Manufacturer's Address: B.P. 10, 45550 St.-Denis-de-l'Hôtel, France. Phone: 38 59 02 03.
Date of Introduction: 1988. November.
Ingredients: Incl. soy protein isolates.
Wt/Vol., Packaging, Price: 100 cl (1 liter) Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Protein 3.8 gm, fat 2.3 gm, carbohydrates 8 gm, calories 71.9, cholesterol 0, lactose 0, calcium 20 mg, phosphorus 40 mg, sodium 30 mg, potassium 160 mg, iron 0.4 mg.
New Product–Documentation: Technique Laitiere & Marketing. 1988. Nov. p. 65. Soja Biostar is a line of soy products made by the Celia group, a dairy co-op. Manufacturer's brochure. 1988? Received March 1989. "Soja Biostar." 16 p.

Talk with (call from) son of owner in France. 1988. Nov. 14. Celia, a private dairy company with $200 million annual sales, is planning to make soymilk in France.

Manufacturer's leaflet. Received 1990. March 26. "Boire du soja. L'idée vient de germer." ("Soymilk. The idea has just sprouted.") A color photo shows all 5 labels. One-page color flyer. "Santé Plaisir" (Healthy Pleasure). Shows both large and small packages.

Letter (fax) from Bernard Storup. 1990. June 6. This soymilk is made from isolates, not whole soybeans.

5527. Celia Group. 1988. Soja Biostar [Soja Biostar]. B.P. 10, 45550 St.-Denis-de-l'Hôtel, France. 16 p. Catalog. [Fre]
• ***Summary:*** On the beige cover, a tall illustration (line drawing) shows a soybean stalk with dry brown pods hanging. The inside front cover gives a chronology of 9 major events in the history of soya. Contents: The soybean: Its composition, its uses. Soymilk (*filtrat alimentaire de soja*)*:* Principles of production, its constituents. Nutritional aspects of soymilk. Proteins, lipids, carbohydrates, vitamins, energy/calories. Soymilk: Product of a great technology: Elimination of lipoxygenase, trypsin inhibitors, and oligosaccharides. The Biostar products: Technical specifications for 3 products: Natural, Enriched with calcium, and Breakfast-style. Note: This soymilk is made with soy protein isolates. Address: St.-Denis-de-l'Hôtel, France. Phone: 38 59 02 03.

5528. Hagler, Louise; Bates, Dorothy R. eds. 1988. The new Farm vegetarian cookbook. Summertown, Tennessee: The Book Publishing Co. 223 p. Illust. Index. 23 cm.
• ***Summary:*** A slightly revised edition of the 1978 Farm Vegetarian Cookbook, this vegan cookbook contains a wealth of soyfoods recipes, and no recipes calling for eggs or dairy products. Address: Summertown, Tennessee.

5529. Krizmanic, Judy. 1988. Natural foods forecast. *Vegetarian Times.* Nov. p. 32-33, 36-39.
• ***Summary:*** Organics: Organic products will soon become the fastest growing category in natural foods. Even progressive mainstream supermarkets will add organic produce to their inventory or, if they can afford it, will test for pesticide levels on produce that may not be organic. The California and Nevada-based Raley's Superstore chain already has done both.

Legume's Gary Barat has plans to expand his selection of tofu chocolate with a chocolate-covered rice cake (made with Lundberg Farms rice cakes). "Plans are brewing for tofu chocolate chips, fudge sauce, and just about any chocolate product imaginable... Dairy-Free Replacements of Dairy Classics... Expect egg replacers, tofu cheesecake and tofu cream cheese," and, hopefully, tofu sour cream.

"Soymilk. Within this next year, look for soymilk in your supermarket's dairy case... Imagine a soymilk creation: a creamy, malty drink–made from a mixture of soymilk and amasake."

5530. **Product Name:** Naturally Northwest Soy Beverage [Plain].
Manufacturer's Name: Pacific Foods of Oregon.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1988. November.
Ingredients: Pure water, soybeans.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton. Retails for $2.07 avg. (2/89).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet. 1989. April. Gives detailed product specifications. Soya Newsletter. 1988. Sept/Dec. p. 11. Talk with Pat Carey. 1989. Feb. 28. The above address is still correct. This plain soymilk was launched in Nov/Dec. 1988. It is sold to food stores. The product is noted for its very bland flavor. He heard that Eden Foods may be coming out with a plain soymilk. The company's primary focus is to become an ingredient supplier of soymilk concentrates made by ultrafiltration. He can get a solids content about the same as tofu. It makes an excellent ingredient for other foods. The acceptance so far has been very good. He will package this bland perishable product in an aseptic package, up to rail car size using bag-in-a-box aseptic technology. You can make the bag as large as you want. The technology comes from Sholi and Combibloc; its not new technology. He would ship the products refrigerated. Apple juice is now sold retail in 3-liter bag-in-a-box. He also plans to sell other flavors of soymilk (e.g., chocolate, strawberry, etc.) in retail size aseptic packs to help pay the overhead on his equipment and keep it running 3 shifts a day.

He is the only domestic West Coast supplier of soymilk.

Talk with Richard Rose. 1989. April 21. Naturally Northwest appears to be the brand name of Pacific Foods' entire line of natural food products. The company appears very secretive and will not send him information, even though he is a potential customer.

Talk with Luke Lukoskie of Island Spring. 1990. Feb. 17. See SoyaScan Notes interview.

Talk with John Bates. 1990. April 26. Chuck Gray of Pacific Foods says the company uses 3.5 to 4 million lb/year of soybeans to make soymilk.

Talk with Peter Lesser of Northwest Natural Foods. 1991. Feb. 8. "The 'Naturally Northwest' brand was actually under Sunny Jim; Sunny Jim sold it. It was a big venture capital thing."

Note: This is the earliest record seen (Feb. 2003) concerning Pacific Foods, when they are actually in business.

5531. **Product Name:** [Sunsoya].
Foreign Name: Sunsoya.
Manufacturer's Name: Prolait Co.
Manufacturer's Address: Southwest France.
Date of Introduction: 1988. November.
New Product–Documentation: Technique Laitiere & Marketing. 1988. Nov. p. 65. Sunsoya has been launched by Prolait.

5532. Shurtleff, William; Aoyagi, Akiko. 1988. Amazake and amazake frozen desserts: Industry and market in North America. 2nd ed. Lafayette, California: Soyfoods Center. 79 + [52] p. 28 cm. 1st ed. Feb. 21, 1988. [82 ref]
• ***Summary:*** Contents: 1. Amazake industry and market analysis: What is amazake? The amazake production process, microbiology, and biochemistry. History of amazake in Japan. History of amazake in North America and Europe. Market size and growth rate. Comparison with the soymilk market. Largest manufacturers in North America. Ranking by size and annual production. Market segments (buyers, retail outlets, geographical). Product types. Prices. Packaging. Imports. Market outlook and forecast. Several related forecasts. 2. Commercial amazake products and product/company histories: Subject and country index. Company index. 3. Annotated bibliography (1597-1988): Subject and country index. Author index. 4. Directory. 5. Documents, labels & graphics. About the Soyfoods Center. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

5533. *Technique Laitiere & Marketing.* 1988. Les laitiers s'intéressent au soja [The dairies take an interest in soyfoods]. No. 1034. Nov. p. 65. [Fre]
• ***Summary:*** Discusses and pictures several products: Sojasun, a dessert made by Triballat, in part from soya, closely resembles a fermented dairy product, but does not quite resemble a yogurt. It contains bits of fruits and has a very fruity flavor. Soja Biostar is a line of soy products made by the Celia group. Sunsoya has been launched by Prolait. So Good is an Australian soymilk product which won the 1988 SIAL gold medal (SIAL d'Or 88). SIAL is the International Food and Dairy Exhibition in Paris. Cacoja was introduced by the cooperative of Colmar.

5534. Vitasoy (USA) Inc. 1988. Vitasoy healthy heart recipes (Leaflet). Brisbane, California. 3 panels each side. Each panel: 22 x 9 cm.
• ***Summary:*** Contains 14 recipes using different flavors of Vitasoy. Address: 99 Park Lane, Brisbane, California 94005.

5535. *Vitasoy Vitabrations.* 1988. Welcome. 2(2):1. Fall.
• ***Summary:*** Jerome K. Maynard was appointed to the position of National Sales Manager in July 1988. Gives a brief biography. A photo shows Maynard. Address: 99 Park Lane, Brisbane, California 94005.

5536. *Vitasoy Vitabrations.* 1988. Vitasoy's broker/distributor network continues to expand. 2(2):4. Fall.
• ***Summary:*** Since the Fall 1987 Newsletter appeared, Vitasoy has appointed 4 new brokers and 15 new distributors. The name, address, and phone number of each is given. Address: 99 Park Lane, Brisbane, California 94005.

5537. *SoyaScan Notes.* 1988. Soymilk and dairy milk prices in California, December 1988 (Overview). Dec. 10. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** At Living Foods, a large natural food store at 1581 University Ave. in Berkeley, California, unflavored (plain or original) soymilk retails for the following prices: Vitasoy liter $1.69 (which is the equivalent of $1.60/qt), Westsoy quart $1.79, Edensoy liter $1.89 ($1.79/qt), Soy Moo quart $1.89. The average of these 4 quart equivalent prices is $1.77 a quart. This is 6% lower than in October of 1987.

Whole cow's milk sells for $0.58 a quart at Safeway supermarkets. Thus soymilk in a liter pack is 3.05 times as expensive as dairy milk per unit volume. In Dec. 1983 soymilk was 3.53 times as expensive as cow's milk, and Oct. 1987 soymilk was 3.42 times as expensive as cow's milk. Thus the price of soymilk relative to cow's milk has dropped 11% since Oct. 1987 and 13.6% since Dec. 1983.

Most small soymilk packs are now sold 3 together wrapped in plastic. Vitasoy 3 x 8.4 fl. oz. retails for $1.55 or $0.517 each. This is the equivalent of $1.97 a quart (which contains 32 fl. oz). Three Edensoy 8.4 fl. oz. packs retail for $1.65.

5538. Skaria, George. 1988. So ya' keep trying: Undeterred by unhappy examples, Amrit Protein Foods wants to shake up the soya-based foods market. *BusinessWorld* (*India*). Dec.

7-20. p. 17.
• ***Summary:*** Amrit Protein Foods, owned by Ghaziabad-based Amrit Banaspati Co. (ABC for short), is scheduled to start soymilk production in April 1989. "The new venture is just a logical extension of our existing activities and we should do well," says N.K. Bajaj, Chairman of the Amrit group (1987-88 annualised turnover: Rs 200 crores). The flagship company ABC's range of successful consumer products includes Gagan vanaspati, Ginni refined oil and Alfa washing soap. The group also claims to have successfully launched potato chips under the brand name Uncle Chipps.

The new outfit, Amrit Proteins, plans to introduce soya beverages and paneer. Soya beverages have not been popular in India. At least one earlier attempt (Noble Soya's Great Shake soya milk beverage) did not do well. The Indian consumer is not enamoured of soya's after-taste. Amrit Soya's beverages will have a neutral taste to make them more appealing to the Indian palate. Bajaj admits "All of us have apprehensions about soya products. They have not found acceptance so far." One strategy for success is to position soya milk as a health product. It is felt Noble Soya's Great Shake was a failure because it was advertised as a fun drink although the taste wasn't fun.

Test marketing of sample products in selected areas seems to have yielded positive results with consumers findings the taste acceptable. Additionally, the company can push for success by relying on the proven marketing strengths of the group–which has a network of 800 dealers and over 1 lakh retail outlets. Amrit's Rs 14.5 crore plant, coming up in Ghaziabad on the outskirts of Delhi, is expected to reach 55% capacity utilisation in its first full year of operations, using up 3,500 tonnes of soyabean. The company expects a turnover of Rs 15 crores.

5539. **Product Name:** [Alpro Soya Drink {Soymilk} (Strawberry)].
Manufacturer's Name: Alpro.
Manufacturer's Address: Zuidkaai 33, B-8700 Izegem, Belgium.
Date of Introduction: 1988. December.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (full color, 6 by 8.25 inches, in French). 1989. "Alpro Soya Drink. Enrichi au calcium, ça vous fait un homme" (Enriched with calcium, that will make you a man). A photo shows a boy pulling on the reins of a rocking horse. Below the photo is a package and a glass full of Alpro Soya Drink. On the front panel of the package is written, "Enriched with calcium. The non-dairy power of soya" (*Enrichi au calcium. La Force Vegetale du Soja*). The inside 2-page spread shows a contented child with a bowl of breakfast cereal and Alpro Soya Drink. Per 100 gm, this product contains 140 mg of calcium but no cholesterol or lactose, whereas whole cow's milk contains 125 mg, cholesterol 10 mg, lactose 4.6 mg. The back panel shows plain, sugar-free, chocolate, and strawberry flavors.

Form filled out by Philippe Vandemoortele of Alpro. 1991. Sept. 4. Alpro soya drink was first launched in strawberry flavor in Dec. 1988.

5540. Brown, Judy. 1988. The joy of soy: Nutrition for the '80s. *Body, Mind & Spirit.* Nov/Dec. p. 30-32.
• ***Summary:*** Contents (Soyfoods, nutrition, and a healthy diet). Tofu. Tempeh. Miso. Natto. Okara. Soy cheese & soy yogurt. Soy flour & grits. Soymilk. Soy sauce. Resources: Eden Foods, Fantastic Foods, Inc., Lumen Foods Corp., San-J International. Vitasoy (U.S.A.) Inc., Westbrae Natural Foods (Downey, California). Address: President, In Good Taste, 5923 John Adams Dr., Camp Springs, Maryland 20748.

5541. Chow, Edward T.S.; Wei, L.S.; DeVor, R.E.; Steinberg, M.P. 1988. Performance of ingredients in a soybean whipped topping: A response surface analysis. *J. of Food Science* 53(6):1761-65. Nov/Dec. [26 ref]
• ***Summary:*** Most commercial non-dairy whipped toppings use sodium caseinate as the major protein source; they come in various forms, such as liquid, liquid concentrate, aerosol, powdered, and frozen pre-whipped. The authors discuss the performance of "Illinois Soybean Beverage" in various whipped topping systems. The systems contained 1.5-3.5% soybean solids, Hydrol 91 (partially hydrogenated coconut oil), Span 60 (sorbitan monostearate), Tween 60 (polyoxyethylene sorbitan monostearate), sucrose, and water. Desired foam characteristics were obtained with numerous ingredient combinations. Foaming characteristics were improved by partial removal of cell wall particles and decrease in particle size. Address: 1. Yung Wah Industrial Co. (PTE) Ltd., 121 Neythal Road, Jurong, Singapore 2262; 2&4. Dep. of Food Science; 3. Dep. of Mechanical & Industrial Engineering. Last 3: Univ. of Illinois, 382D Agricultural Engineering Science Bldg., 1304 W. Pennsylvania Ave., Urbana, Illinois 61801.

5542. DeBoer, H.; Hacker, R.R.; Leeson, S.; Wagemans, V. 1988. Fish protein concentrate (Conmar 80) or refined soy flour as substitutes for skim milk powder in calf milk replacers. *Canadian J. of Animal Science* 68(4):1155-61. Dec. [22 ref]
Address: Dep. of Animal and Poultry Science, Univ. of Guelph, Guelph, Ontario, Canada N1G 2W1.

5543. Golbitz, Peter. 1988. Soyfoods sales projected to reach $750 million by 1990. *Soya Newsletter* (*Bar Harbor, Maine*). Sept/Dec. p. 1, 6.
• ***Summary:*** The estimated retail value of soyfoods in the USA in 1988 was $682 million. The various soyfoods had the following market shares: soy sauce 67.3% (est. $460

million retail store valuation), tofu 11.3% (est. $77 million), second generation products 9.5%, soymilk 5.3%, miso 4.1%, soynuts 1.7%, tempeh 0.8%.

All of the 1980 figures used in this study for comparisons and growth rates were taken, without permission, from *Soyfoods Industry & Market: Directory and Databook* by Shurtleff & Aoyagi. Address: Soyatech, Bar Harbor, Maine.

5544. Kloss, Jethro. 1988. Back to Eden: A human interest story of health and restoration to be found in herb, root, and bark. Revised and expanded second edition. Back to Eden Publishing Co., P.O. Box 1439, Loma Linda, CA 92354. xxviii + 1007 + 20 p. Illust. Index. 21 cm. Kloss Family Heirloom Edition. Index.

• ***Summary:*** One of the most creative and original sources of early soyfoods recipes, which include "Soybean Cream" and "Soybean Ice Cream." This revised edition contains all essential material from the original text of this classic work on healing herbs, home remedies, diet, and health, but it has been reorganized, re-typeset and re-indexed to make it easier to use and more contemporary. Three hundred pages of natural health information have been added. Old terms have been explained and updated. There are also 16 pages of photographs and 16 pages of new of family recollections by Jethro Kloss' daughter, son, and granddaughter. One interesting illustration in the photo section that has not appeared in earlier editions of this work shows an aerial view of the Nashville Sanitarium-Food Factory with a train and 3 sets of train tracks in front. The book has been published continuously by the Kloss family since 1946.

Contents: Section I: Natural health. 1. Personal experiences. 2. Soil preparation and farming. Section II: Herbs for healthful living. 1. History of herbal medicine. 2. Herbs. 3. General directions for preparation and use of herbs. 4. Tonic herbs. 5. Herbs used to treat disease. 6. Medicinal trees. 7. Specific herbs for various medical problems. Section III: Treating diseases with herbs. Treating diseases with herbs. Special notice. Section IV: Your body and its needs. The digestive section. 1. The importance of good nutrition. 2. Carbohydrates. 3. Fats. 4. Protein. 5. Mineral elements in the body. 6. Vitamins. 7. Water. 8. Fresh air, exercise, and sleep. Section V: Your foods. 1. Fruits. 2. Vegetables. 3. Fiber (to "help keep you regular"). 4. Oatmeal. 5. Nuts. 6. Breads and refined flour. 7. Meat and vegetarianism. 8. Milk. 9. Salt. 10. Garlic. 11. Healthful diets. 12. Obesity. 13. Fasting and healthful eating. Section VI: Food preparation. 1. Useful hints to preserve vitamins. 2. Kloss's favorite health recipes. 3. Cooking under steam pressure. 4. Aluminum cooking utensils. 5. Baking and breads. 6. Preparing wholesome desserts and beverages. Section VII: Effects of polluted and adulterated foods on the body. 1. Adulteration of food. 2. Health-destroying foods. 3. Dangers from disease in animals. Section VIII: Water and good health. 1. History of water cure. 2. Using water to preserve health. 3. Water's effects and use in treatment. 4. Water's effects on sickness. 5. Baths and water treatments. 6. Compresses and fomentations. Section IX: Skills in caring for the sick. 1. Nursing. 2. Massage. 3. High enemas. 4. The value of charcoal. Appendix: Glossary of old-fashioned medical terms. Glossary of medical properties of herbs. General tables.

A press release accompanying the new revised, 2nd edition notes: Back to Eden was written by Jethro Kloss during the 1920s and 1930s, with help from Promise and Eden, his daughter and son. It was first published in 1939, when the author was 76 years old. It has since sold more than 3 million copies. Kloss died in 1946 after retiring to Tennessee. Message Press, a small business in a rural community not far from Chattanooga, continued to publish Back to Eden for more than 25 years after his death, under the direction of Promise, his daughter. Unfortunately in 1967 the copyright expired during the confusion attendant to the illness and death of the book's country publisher. Promise's attempt to renew the copyright in Jan. 1968 was too late. In 1971 other publishers pirated Back to Eden. Address: Loma Linda, California.

5545. Lamont, Heather. 1988. The gourmet vegan. London: Victor Gollancz Ltd. 153 p. Index. 20 cm.

• ***Summary:*** This unillustrated vegan cookbook makes relatively little use of soyfoods, although it does use tofu (4 recipes), miso (3), and soya milk (in Soya Pudding). The author, a nurse by profession, has won three recipe competitions. Address: Quorn, Leicestershire, England.

5546. Langley, Gill. 1988. Vegan nutrition: A survey of research. The Vegan Society Ltd., 33-35 George St., Oxford 0X1 2AY, England. x + 121 p. Dec. Index. 21 cm. [255* ref]

• ***Summary:*** Contents: Foreword by Dr. Barrie M. Margetts. Introduction. Guidelines on vegan diets. Symbols & abbreviations. Tables. Vegan nutrition: 1. Protein and energy. 2. Carbohydrates. 3. Fats. 4. Vitamins: Vitamin A (retinol and beta-carotene), the B Group vitamins–Vitamin B-1 (thiamin), vitamin B-2 (riboflavin), niacin (nicotinic acid and nicotinamide), vitamin B-6 (pyridoxine), folic acid (folate, known as folacin in the USA), pantothenic acid and biotin, vitamin B-12 (cobalamins), daily requirement of B-12–a controversy, vegan sources of B-12, vitamin B-12–the vegan experience, occasional B-12 deficiency, vitamin C (ascorbic acid), vitamin D (ergocalciferol D-2, cholecalciferol D-3), vitamin D deficiency, vitamin E (tocopherols), vitamin K, summary of vitamins.

5. Minerals: The major minerals–Calcium (meat, protein, and calcium balance, calcium balance and other nutrients, calcium and vegan diets, osteoporosis), iron (iron balance and other nutrients, iron and vegan diets), magnesium, phosphorus, sodium and chloride, potassium, sulphur. The trace elements–Zinc, selenium, iodine, copper,

cobalt, chromium, manganese, fluorine, summary of minerals. 6. Milk and health. 7. The general health of vegans. 8. Vegan diets as therapy. 9. Conclusions. Further reading.

This book brings together in a concise, carefully researched, and well documented manner all that is currently known about vegan nutrition. It is the "most comprehensive survey ever undertaken of scientific research on vegan diets. *Vegan Nutrition* shows that a vegan diet can provide all the essential nutrients for health and fitness at any age, without the need to take supplements, as long as a few elementary rules are observed. This proviso is particularly relevant to infants and young children."

Table 12 shows portions of selected vegan foods that provide 100 mg of calcium: Spinach 17 gm, tofu 20 gm (4 times as much calcium as in the same weight of whole cow's milk), molasses 20 gm, parsley 30 gm, figs (dried) 36 gm, almonds 40 gm, soy flour 44 gm, and watercress 45 gm. Calcium is the most abundant mineral in the body. About 99% of it is in the bones and teeth in the form of calcium phosphates. The 5-10 gm of calcium not in the bones and teeth are required for muscle contraction, for the functioning of the nerves, for the activity of several enzymes, and for blood clotting. The British RDAs for calcium are 600-700 mg a day for children and teenagers, and 500 mg for adults (vs. 800 mg in the USA)–rising to 1,200 mg in pregnancy and during lactation. "There have been no reports of calcium deficiency in vegans; the exclusion of meat and the slightly lower amounts of protein in their diets may protect against this."

Concerning vitamin K: This vitamin is fat soluble, and is widespread in plant foods such as spinach, cabbage, cauliflower, peas, and grains. It is provided in roughly equal proportions by diet and from bacterial activity in the gut. Vitamin K is needed for normal clotting of the blood. Vegans are unlikely to suffer a dietary deficiency. Note: The author, whose first name is pronounced Jill, is a woman. Address: Hitchin, Hertfordshire, England.

5547. *SanCo News* (*Sanitarium Health Foods Co., Australia*). 1988. Now the world thinks we're as good as gold: The Gold Food Oscar for So Good. Dec.
• ***Summary:*** "So Good was honoured at the 1988 AIDA-SIAL International Food Oscars held recently in Paris. As one of only 5 products representing Australia, So Good won a Gold Oscar by winning its category for the world.

"A total of 16 countries participated in the competition. An international panel of judges evaluated hundreds of products based on their uniqueness, appeal and sales performance. So Good won the 'non-alcoholic beverages' category thereby establishing itself as the best new product, in its category, in the world for 1988."

"The international award has created many enquiries about So Good from interested parties around the world." Address: Wahroonga, Australia.

5548. *Soya Newsletter* (*Bar Harbor, Maine*). 1988. Pacific Foods opens modern soymilk plant in Oregon: First integrated facility in U.S. for producing soymilk, concentrated soymilk, and tofu. Sept/Dec. p. 17.
• ***Summary:*** In Oct. 1988 Pacific Foods of Oregon commissioned this $8 million plant located at Tualatin, Oregon, just a few miles south of Portland. The 23,000 square foot facility is currently designed to produce 3,000 liters per hour of soymilk base. The plant was designed to make soymilk and tofu for food processors (rather than retail customers) who wanted to use these products as ingredients in other foods. The plant's storage silos can hold up to 200,000 pounds of soybeans. Soymilk can be packaged in bulk or concentrated using ultrafiltration. The company plans to install an aseptic packaging system in the near future.

Pacific Foods is currently making and selling only one product, Naturally Northwest Soy Beverage in a 1-quart Tetra Brik Aseptic carton, packaged at another facility. It is America's first aseptically packaged soymilk that contains only soybeans and water. The company may add flavored soymilk products to its line in the near future. For more information contact Pacific Foods, 19480 S.W. 97th Ave., Tualatin, Oregon. Phone: 503-692-9666. Attn: Pat Carey, Vice President of Sales.

5549. **Product Name:** Rikemal Super.
Manufacturer's Name: Takeda U.S.A. (Importer). Made in Japan.
Manufacturer's Address: Orangeburg, New York.
Date of Introduction: 1988. December.
New Product–Documentation: Food Engineering. 1988. Dec. This is a "new emulsifier, designed as a defoaming agent and quality improver for tofu. It should be added to soaked soybeans during or just prior to grinding, and has a suggested usage level of 0.5 to 0.8% of total dry soybean weight.

"Rikemal Super is a highly concentrated, blended monoglyceride in a free-flowing powder form." Other benefits are listed as: improves protein extraction efficiency, making it easier to separate soymilk from waste materials, and increasing the yield of soymilk. Because it disperses the coagulant homogeneously, loss of soluble protein is minimized and tofu yield increases by 6 to 20%.

"Rikemal Super also aids in increasing shelf life by preventing pore formation on the tofu surface (even when steamed) which prohibits development of bacteria."

5550. **Product Name:** AdeS (Soymilk) [Natural, Chocolate, Orange, or Apple].
Foreign Name: AdeS {Alimento de Soya Liquido Sabor Natural}.
Manufacturer's Name: Alimentos de Soja S.A. (A de S).
Manufacturer's Address: Plant: La Cocha, Tucuman,

Argentina; Offices: Avenida Vélez Sarsfield 1744 (1285), Buenos Aires, Argentina. Phone: 760-0307 or (541) 21-8228 (8964). Fax: (541) 21-9632.
Date of Introduction: 1988.
Ingredients: Spring water, whole selected soybeans, sugar, authorized flavors, pectin (as an emulsifier), and added vitamins A and D.
Wt/Vol., Packaging, Price: 200 ml and 1 liter Tetra Brik Aseptic cartons.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Letter from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30. Alfa-Laval sold a complete soymilk plant to Alimentos de Soja in Argentina. It had a capacity of 4,500 liters/hour and began operation in 1988. Plant: Ruta Prov. 344 Km 7.5, Dto. La Cocha, 4162 Pola. Tucuman, Argentina. Office: Suipacha 570, 3rd floor "B", Buenos Aires 1008, Argentina. Address:

Note: This company is owned by Lic. Alejandro Gutiérrez Herrera, a wealthy landowner who negotiated to buy the Alfa-Laval plant with Italian aid money. When the money never came, he purchased the plant out of his own pocket. Business is said to be good and a second plant is being considered. The sales manager in 1989 was Ricardo Shaw.

SoyaFoods. 1991. Spring. p. 6-7. "AdeS Alimentos de Soja–Soya beverages from Argentina." See in-depth story on the product and company. The earliest product seen containing soymilk and fruit juice.

Product with Label (Natural) brought by Marina Li, from Oaxaca, Mexico. 2004. April 2. Aseptic Tetra Brik carton. Blue, green, white, yellow, red, and black on white. Ingredients: Water, selected soybean seeds, sugar, salt, natural flavors, thickener, soy lecithin, vitamins A & D. The product is now made by Unilever de Mexico, S.A. de CV., Tepalcapa No. 2 Col. Rancho Sto., Domingo, Tutitlán, Edo de México, C.P. 54900. Made in Mexico. Logo: Seal of approval, American Soybean Association.

Color photo brought by Marina Li from Ipanema, Rio de Janeiro, Brazil. 2006. April. Shows many Tetra Brik cartons of AdeS on the shelves of The Natural "a quilo" with lots of vegetarian options–Rua Barao de Torre, next door to Hostel Ipanema. On the same shelves are many cans of Soymix. AdeS flavors include uva (grape, berry), maça (apple), chocolate, laraja (orange), and pêssego (peach).

Visit with Carlos Planes (of Buenos Aires, Argentina) at Soyinfo Center in Lafayette, California. 2012. Feb. 23. He brought this colorful sell sheet in a scrapbook. 5 x 6 inches. Written across the bottom: The drink that is full of Energy. A photo shows 10 cartons of Ades–Two sizes with 5 flavors each: Natural, mandarin orange / tangerine, pineapple, apple, and orange.

5551. Ameyama, M.; Adachi, O.; Yasuda, A.; Nomura, Y. 1988. Method of reducing off-flavor in food materials with acetic acid bacteria. *European Patent Application* 255,588 A2. [Eng]*
• ***Summary:*** Medium chain length aldehydes (e.g. n-hexanal, n-heptanal, n-octanal, n-nonanal and n-decanal) can be responsible for causing off-flavors in soy milk. A considerable reduction in these undesirable aldehydes can be achieved using various *Acetobacter* or *Gluconobacter* spp. For liquid foods, bacteria immobilized on alginates or carrageenan can be used. Address: House Food Industrial Co., Higashi-Osaka 577, Japan.

5552. Beddows, C.G. 1988. The old fashioned way with soya. *Food Science & Technology Today* 2(1):12-15. [6 ref]*
• ***Summary:*** The following soybean products are described briefly: soymilk, bean curd, tofu, tempeh, natto, sufu, miso, shoyu, and yuba. Protein yields are given for a range of plant crops versus milk and beef, e.g. soybeans 3500 kg/ha/annum versus 75 kg/ha/annum for beef. Recipes are included for miso cream cheese dip and deep fried tofu and miso soup. The marked rise in consumption of soybean products in the USA in recent years is noted. Address: Dep. of Applied Sciences, Leeds Polytechnic, Leeds LS1 3HE, England.

5553. **Product Name:** [Bonneterre Sojade: Soymilk (Plain/Natural)].
Foreign Name: Bonneterre Sojade: Boisson Nature à Base de Soja.
Manufacturer's Name: Bonneterre. Affiliate of Laiteries Triballat (Marketer). Made in France by Triballat.
Manufacturer's Address: 1, Place des Planteurs, 94538 Rungis Cedex, France. Phone: 46.87.26.34.
Date of Introduction: 1988.
Ingredients: Water, and soybeans (organically grown).
Wt/Vol., Packaging, Price: 1 liter Tetra Brik Aseptic carton, Retails for 9.80 French francs (10/89 France).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm: Protein 3.7 gm, lipids 2.0 gm, carbohydrates (glucides) 1.7 gm, calories 39, unsaturated fatty acids 61%, saturated fatty acids 14%, cholesterol 0 gm, phosphorus 21 mg, sodium 27 mg, calcium 30 mg, magnesium 21 mg.
New Product–Documentation: Form filled out by Anthony Marrese. 1989. Nov. This product was launched in 1988. It is made by some other company (probably Triballat) and sold under the Bonneterre label. Bonneterre is a large distributor to the natural/health foods trade.

Bonneterre color leaflet. 1989. In French. "Soya in drinks and desserts. A line 100% vegetarian." A color photo shows a glass of soymilk, two cups and two plates of soy yogurt, surrounded by whole and sliced fruits on a bed of soybeans. An illustration (line drawing) on the back shows this product in a Tetra Brik carton. A nutritional analysis is given.

Bonneterre Catalog. 1989. Oct. There is only 1 flavor of

this product, natural.

Letter (fax) from Bernard Storup. 1990. March 10. Laiteries Triballat makes two brands of soymilk. One, under the Bonneterre trademark, is sold in health food stores. The other, under the Triballat trademark, is sold in supermarkets.

5554. Gebrueder Buehler AG. 1988. Verfahren zum Herstellen eines Prodktes aus Soja [Process for the preparation of a product from soybeans]. *Swiss Patent* 655,090 A5. [Ger; Fre]*

• ***Summary:*** Soybeans are dry-milled by a pressure/abrasion milling process, using a series of 3 pairs of mill rolls: in each pair, the 2 rolls rotate at different speeds. Finally, the resulting powder is dispersed in a fluid, preferably water, to give a soy milk which may be further processed to a range of products. Address: Uzwil, Switzerland.

5555. **Product Name:** [Soya Milk].
Foreign Name: Soya Milk.
Manufacturer's Name: Gerblé. Div. of Diététique & Santé.
Manufacturer's Address: B.P. 106, 31250, Revel, France.
Date of Introduction: 1988.
New Product–Documentation: Form filled out by Anthony Marrese. 1989. Nov. This product was launched in 1988. The contact person is Mr. Villac in International Marketing. Gerblé, the division that supplies the health food stores, started using soya in 1988. Diététique & Santé has a wider market and at present all soya use is through the Gerblé division. A lot of their market is just opening up and forming. This company's products are very professionally packed and produced. They taste very good. No label was sent, nor does a 4-page color brochure showing many of the company's products show any soymilk.

5556. **Product Name:** Granose Soyagen: Soya Milk Powder (For Adults).
Manufacturer's Name: Granose Foods Ltd. (Importer-Marketer). Made in West Germany by DE-VAU-GE.
Manufacturer's Address: Stanborough Park, Watford, Herts., WD2 6JR, England. Phone: 0923-672281/2.
Date of Introduction: 1988.
Ingredients: (1990): Soya proteins (instant), corn oil, malt, starch, calcium carbonate, vegetable emulsifier: lecithin, sea salt, natural flavourings, vitamins E, B-1, B-2, B-12.
Wt/Vol., Packaging, Price: 350 gm box.
How Stored: Shelf stable.
Nutrition: Per 100 gm.: Protein 21 gm, fat 26 gm, carbohydrate 45 gm, calcium 420 mg, phosphorous 200 mg, iron 3.5 mg.
New Product–Documentation: Form filled out and Label sent by Granose Foods Ltd. 1990. June 13. States that product was introduced in 1967. Made by DE-VAU-GE. Address on label is Stanborough Park. Label. 1990. 5.5 by 8 by 1.75 inches. Paperboard box. Black, red, yellow, and dark green on white and light green background."Contains no animal produce. Lactose free. Gluten Free. The vegetable Lactose-free composition of Granose 'Soyagen' Soya Milk Powder makes it easy to digest and suitable for people with an allergy to cows' milk." Illustration on front panel shows a glass of milk in front of green soybean leaves and pods. Side panel: "Preparation: Granose Soya Milk Powder dissolves instantly in hot or cold water. Standard Mix 1 part powder to 6 parts water (40 gm powder to ¼ litre water). Suitable for use in: Puddings, Custard, Yogurts, Soups, Sauces, etc." Note: This was the earliest known soymilk made in Europe for adults that was fortified with calcium.

5557. **Product Name:** [Hong Bao Soya Bean Milk].
Manufacturer's Name: Guangzhou Cannery.
Manufacturer's Address: Huang-pu Da Dao, Yuan Cun, Guangzhou, China.
Date of Introduction: 1988.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Alfa-Laval. 1988, June. Soyfoods: Old traditions with new potentials. p. 9. Shows a color photo of the front of the package. Red, white, yellow, and pea green. Note: Hong Bao is the red envelope containing money that Chinese give as gifts during Chinese New Year.

Letter from ASA, China. 1990. Sept. 13. Guangzhou Cannery has the third largest soymilk production capacity in China, 2,000 liters/hour.

5558. **Product Name:** Indreni Soymilk [Chocolate].
Manufacturer's Name: Indreni Soybean Industries Ltd.
Manufacturer's Address: Saibu, Lalitpur, P.O. Box 4556, Kathmandu, Nepal. Phone: 226783 or 227813.
Date of Introduction: 1988.
Ingredients: Soymilk base, cocoa, sugar, flavor.
Wt/Vol., Packaging, Price: 250 ml Prepac pouch.
New Product–Documentation: Letter from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30. Alfa-Laval sold a complete soymilk plant to Indreni in Nepal. It had a capacity of 2,500 liters/hour and began operation in 1988.

Letter from Dr. A.S. David of Indreni. 1990. June 20. He received the address of Soyfoods Center during a visit to Eric Fehlberg at the Seventh-day Adventist General Headquarters in Silver Spring, Maryland. Indreni is looking for a U.S. partner to develop soy-based products using simple technologies. They are looking at baby cereal or extruded soy products utilizing their okara.

Photocopy of Label. 1990. Says the plant/company is located at Sainbu, Lalitpur, Nepal.

Letters from T.B. Gubhaju, owner of Nepal Tofu Factory. 1991. April 22. Indreni Soybean Industries Ltd. was established as a joint venture with Nepalese and American entrepreneurs in 1988. The total capital investment is about

2 million U.S. dollars. They have imported equipment from Alfa-Laval. This company does not seem to have made good progress during the past 3 years for two main reasons: (1) The retail price of their soymilk is near the price of dairy milk, and (2) The company has not done enough effective advertising "to attract the Nepalese people to the wonders of soya-based food."

5559. Jain, Manoj. 1988. Educating health workers and villagers on the dietary uses of soy foods in Madhya Pradesh, India. *Food and Nutrition Bulletin* (*United Nations Univ.*) 10(4):41-44. [9 ref]

• ***Summary:*** "Research has shown soy foods to be easily preparable, highly nutritious, and inexpensive. Common soy foods are soy milk, tofu, soy flour, soy yogurt, and miso, which can easily be prepared at home with conventional utensils." A brief description is given of how to make soy milk and tofu at home.

"The training program was developed in conjunction with the Mahatma Gandhi Memorial College in Indore, Madhya Pradesh, and a non-profit voluntary agency, Bharatiya Grahmeen Mahila Sangh (BGMS).

"In a two-day training programme, health workers were taught soy-foods preparation, soy nutrition, and how to conduct demonstrations in villages. Health workers and BGMS workers in groups of four prepared soy milk, tofu (soy paneer), soy yogurt, and other indigenous recipes such as soy bugiya (soaked blended soybeans mixed with gram flour and spices) and halwa (a sweet).

"After completing the training, the workers conducted demonstrations in eleven selected villages."

"Results: Thirty-five extension workers from BGMS and 15 government health workers from Indore District were trained for two days on the uses of soybeans. Over a two-month period, each worker gave an average of nine demonstrations. Each demonstration as attended on average by 23 women.

"The initial response of the villagers to soy foods was one of surprise. A typical comment was: 'We grow the crop and store it in our homes, yet did not know that it could be used for food.' They were amazed to see the many foods that could be prepared from soybeans."

"The most readily acceptable items were those that resembled indigenous foods and were easy to prepare, such as roasted and fried soybean, soy halwa, soy chutney, and vegetables stuffed with okra and tofu. Soy milk was not well accepted because of its beany flavour. When a mixture of 50% soy milk and 50% cow's milk was made and fennel seeds were added, it was more acceptable. The taste of soy yogurt (with 50% or 100% soy milk) was much more acceptable than that of soy milk. In making soy milk, tofu, and soy yogurt, a major problem was grinding the soaked soybeans on a grinding stone; the soybeans are slippery and grinding is time-consuming."

There are 4 tables. Table 3 shows "Nutritional content and cost of various indigenous foods prepared with and without soybeans." The seven foods are: Chappati [chapati], salad, cutlets, weaning food, chikki (sweet), papad, and badi. Address: Medical student, Boston Univ. School of Medicine, Boston, Massachusetts; Also work on his master's degree at the Univ.'s School of Public Health.

5560. **Product Name:** [Soymilk].
Manufacturer's Name: Jiangmen Foodstuff Factory.
Manufacturer's Address: Jiangmen, China.
Date of Introduction: 1988.
New Product–Documentation: Letter from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30. Alfa-Laval sold a complete soymilk plant to Jiangmen in China. It had a capacity of 2,500 liters/hour and began operation in 1988.

Letter from ASA, China. 1990. Sept. 13. Jiangmen Foodstuff Factory has the third largest soymilk production capacity in China, 2,000 liters/hour.

5561. **Product Name:** [Risotto with Seitan].
Foreign Name: Risotto mit Seitan.
Manufacturer's Name: Jonathan P.V.B.A.
Manufacturer's Address: Antwerpsesteenweg 336, B-2080 Kapellen, Belgium.
Date of Introduction: 1988.
Ingredients: Water, whole rice*, lentils*, seitan (wheat proteins)*, leek*, onions*, mushrooms, soya milk*, vegetable extract, sea-weed, sea salt. * = Organically grown.
Wt/Vol., Packaging, Price: 300 gm.
How Stored: Frozen.
Nutrition: Minerals 1.37%, vegetable proteins 7.74%, vegetable fats 0.41%, carbohydrates 19.3%. 111 calories (Kcal) per 100 gm.
New Product–Documentation: Label sent by Jos van de Ponseele. 1988. 6.25 by 10.5 inches. This card-stock sleeve fits over the product. Color photo of a slice of seitan on a white dish partly covered by brown rice and a white sauce containing green vegetables. The product name is written in English and German, in white on a reddish-orange band. "Vegetable product." Code CINAB.

5562. Khorasani, G.R.; Sauer, W.C.; Ozimek, L.; Kennelly, J.J. 1988. The utilization of soybean protein concentrate by the preruminant calf. In: University of Alberta 67th Annual Feeders Day Report. See p. 19. *

5563. Kui-xiong, S.; Zhi, T.; Xin-yao, Q.; Gui-se, J. 1988. Epidemiology of gastric cancer in China. In: First Shanghai International Symposium on Gastrointestinal Cancers. See p. 34-44. Held in Shanghai, China. *

• ***Summary:*** Consumption of soy products, including soymilk, were associated with a decreased risk from stomach cancer, but *P* values were not given.

5564. **Product Name:** [Triballat Sojade, and Sojasun: Soymilks].
Foreign Name: Triballat Sojade, Triballat Sojasun: Boisson Nature à Base de Soja.
Manufacturer's Name: Laiteries Triballat.
Manufacturer's Address: Rue Julien Neveu, B.P. 21, 35530 Noyal-sur-Vilaine, Brittany, France. Phone: 99.00.51.01.
Date of Introduction: 1988.
Ingredients: Water, and soybeans (organically grown).
Wt/Vol., Packaging, Price: 1 liter Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm: Protein 3.7 gm, lipids 2.0 gm, carbohydrates (glucides) 1.7 gm, calories 39, unsaturated fatty acids 61%, saturated fatty acids 14%, cholesterol 0 gm, phosphorus 21 mg, sodium 27 mg, calcium 30 mg, magnesium 21 mg.
New Product–Documentation: Letter (fax) from Bernard Storup. 1990. March 10. Laiteries Triballat makes two brands of soymilk. One, under the Bonneterre trademark, is sold in health food stores. The other, under the Triballat trademark, is sold in supermarkets.

Letter from Bernard Storup of Société Soy in France. 1990. June 6. Triballat does not make any flavors of soymilk under their own brand. They have only plain soymilk sold under 2 labels: Sojasun in supermarkets, and Sojade in the health food market.

Note: These products may be made under license from PLL: Produits Laiteries Lausanne SA. Soyfoods Center has a document showing that in about 1991 Laiterie Triballat acquired the Sojasun trademark (work and picture) from Produits Laitiers Lausanne.

Leaflet sent by Heather Paine. 1990. Nov. Shows the 1-liter Tetra Brik carton of Boisson à base de Soja. Red, green, yellow, and light blue. Illustration of a golden sun against a light blue sky, over a green and a golden hill. "100% végétal. Without added sugar."

5565. **Product Name:** [Soyolait (Natural Soy Drink)].
Foreign Name: Soyolait.
Manufacturer's Name: Les Aliments Tarasoy Ltée (Tarasoy Foods Ltd.).
Manufacturer's Address: 3455 Local D rue Isabelle, Brossard, QUE J4Y 2R2, Canada. Phone: 514-659-6586.
Date of Introduction: 1988.
Wt/Vol., Packaging, Price: 1 liter Pure-Pak carton.
How Stored: Refrigerated, 21 day shelf life at 3ºC.
New Product–Documentation: Talk with Helen Wan, sales manager. 1995. May 26. In 1988 they introduced *Soyolait,* a 1-liter soya drink that is presently the company's best-selling product and also the best-selling fresh soymilk in Quebec. It is sold fresh in Pure-Pak cartons, and has a remarkable 21-day shelf life at 3ºC. The product is made and packaged entirely at their plant. It is sweetened with barley malt extract and sold only in Quebec, and mostly at natural food stores. It is consumed by Caucasian-Canadians rather than by Chinese-Canadians (who prefer a sugar-sweetened product). Soyolait is less expensive than Edensoy, since the packaging is less expensive.

5566. Otomo, T. 1988. [An investigation of the possibilities of and developments in extraction of functional compounds: Separation, extraction, and concentration by membrane techniques]. *Shokuhin Kaihatsu* (*Up-to-Date Food Processing*) 23(3):37-42. [8 ref. Jap]*
• ***Summary:*** The membrane techniques or processes of reverse osmosis, ultrafiltration, and microfiltration are applied to soymilk, fruit juice, and saké.

5567. **Product Name:** Soy Beverages.
Manufacturer's Name: Premier Extractions Ltd.
Manufacturer's Address: Main Office: 107 Chetak Centre, 12/2 R.N.T. Marg, Indore 452001, MP, India.
Date of Introduction: 1988.
New Product–Documentation: Soya Bluebook. 1986. p. 103. Letter from Mr. S. Menon (person in charge). 1987. Nov. Says that "Soya Milk" has not yet been introduced. It will be launched in February 1988. Capacity will be 2,000 liters/hour. Address is now 45/47 Industrial Area, A B Road, Dewas, MP, India. Phone: 2854/2133.

5568. **Product Name:** Tuffy Hi-Protein Soymilk [Malt, Orange, Banana, Mango, Strawberry, or Chocolate].
Manufacturer's Name: Premier Industries (India) Ltd.
Manufacturer's Address: Chetak Centre, R.N.T. Marg, Indore, Madhya Pradesh, India.
Date of Introduction: 1988.
Ingredients: Malt: Soymilk, sugar, malt extract, minerals, edible vegetable oil, vitamin C. Contains permitted colours and flavors.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Mahesh Khaitan. 1989. Aug. 6. This soymilk was introduced in Indore in 1988 in a Tetra Brik carton. Photocopy of Labels for Malt, Orange, and Banana. Sent by Anders Lindner. 1989. "The taste is a knockout. Drink ice cold. In collaboration with Mitsubishi, Japan." An illustration (line drawing) on the front panel shows a Superman-like character with cape flexing his biceps.

Letter from A.K. Bajaj, Managing Director of Amrit Protein Foods Ltd. 1991. June 26. This company has discontinued the production and marketing of its Tuffy brand soyamilk.

5569. **Product Name:** Soymilk.
Manufacturer's Name: Sona Dairies Ltd. / Parmalat.
Manufacturer's Address: Plot 3-4, No. 21, Abebe Village Road, Iganmu Industrial Estate, P.O. Box 4610, Lagos, Nigeria.
Date of Introduction: 1988.
New Product–Documentation: K.E. Weingartner et al. 1987. FAO Food and Nutrition 13(2):24. "A dairy company in Lagos, Nigeria, is in the process of installing ultra high temperature (UHT) equipment supplied by Alfa-Laval (Lund, Sweden), using aseptic packaging which will allow the milk to be stored without refrigeration."

Letters from Eva Akesson, International Marketing Services, Tetra Pak International AB, Lund, Sweden. 1984. Sept. 13 and 28. "Our company in Nigeria is planning a soymilk project." The managing director, Mr. Jerome Bayle, believes that soymilk is the only possible milk for Nigeria.

Letter from Dr. V. Bhandari, Quality Control Manager, Sona Dairies Limited. 1986. Oct. 14. "We are actively engaged in a project on the utilization of soya bean for the commercial production of soymilk. To meet our production requirements, we have to procure 500 to 1,000 tons of soya beans per year from different states of Nigeria." Requests information about drying, packaging, and storing soybeans. Letter is typed with signature on letterhead. Address is that given above in Lagos, Nigeria. Three attached pages show the temperature (maximum and minimum) and average relative humidity each month of the year in five Nigerian cities: Ikeja, Jos, Makurdi, Dadinkowa, and Kaduna.

Letters from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30 and Aug. 24. Alfa-Laval sold a complete soymilk plant to Sona Dairies in Nigeria. It had a capacity of 4,500 liters/hour and began operation in 1988. They installed the plant, had everything started, then it was "frozen" due to political reasons and the cost of the paper for packaging. It is not producing anything today.

Talk with Nigerian Embassy, Commercial Office in Washington, DC. 1990. June 8. They know of no company named Sona Dairies in Nigeria. However they have a Sona Breweries, Plot 3/4 No. 21, Abebe Village Rd., Iganmu Industrial Estate, P.O. Box 4610, Lagos, Nigeria. Phone: 011 + 2341 83-55-75.

Business Card from Amil K. Ahluwualia, Managing Director gives the company name and address as shown in the basic record above. Cable: SonaDairy Lagos. Note: This soy dairy was a joint venture between Parmalat, the Italian dairy giant, and a group of Nigerian businessmen. The dairy went bankrupt when import of milk powder and Tetra Pak packaging material became too hard to get due to falling oil revenues in Nigeria. Sona negotiated with STS (Soya Technology Systems) but Alfa-Laval bought out Parmalat and went in as a new partner. A Swedish dairy engineer went to Sona for a year. The plant is not yet in operation and the product name is not known (June 1990).

5570. **Product Name:** [Bonsoy (Soymilk)].
Manufacturer's Name: Urtekram (Importer). Made in Japan by Marusan. Imported via Muso Shokuhin.
Manufacturer's Address: Denmark.
Date of Introduction: 1988.
Ingredients: Water, soybeans, pearl barley, kombu (sea vegetable), barley malt.
New Product–Documentation: Talk with Yuko Okada. 1992. July 16. Muso first exported Bonsoy soymilk to Urtekram in about 1988. This soymilk was packaged in a foil retort pouch.

5571. **Product Name:** [Soymilk].
Manufacturer's Name: Wuhan Guan Sheng Yuan Foodstuff Factory.
Manufacturer's Address: Wuhan, China.
Date of Introduction: 1988.
New Product–Documentation: Letter from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30. Alfa-Laval sold a complete soymilk plant to Wuhan in China. It had a capacity of 4,500 liters/hour and began operation in 1988. Note: Wu-han or Wuhan is a tri-city conurbation in southeastern Hupeh province (eastern central China) at the junction of the Han with the Yangtze River. It was formed in 1950 by the consolidation under a single administration of the three so-called Han Cities of Hankow, Han-yang, and Wu-ch'ang. The population in 1970 was estimated at 4.25 million.

Letter from ASA, China. 1990. Sept. 13. Wuhan Guan Sheng Yuan Foodstuff Factory has the largest soymilk production capacity in China, 20,000 liters/hour.

5572. Anderson, Eugene N. 1988. The food of China. New Haven, Connecticut: Yale University Press. xvi + 313 p. Index. 24 cm. [380 ref]
• ***Summary:*** Contents: Preface. Acknowledgments. Chronology of food and agriculture in China. 1. The natural environment. 2. Prehistory and the dawn of civilization. 3. The crucial millennium: Chou through Han. 4. Food from the West: Medieval China. 5. Definitive shaping of the food system: Sung and the conquest dynasties. 6. Involution: Late imperial China. 7. The climax of traditional agriculture. 8. Chinese foodstuffs today. 9. Some basic cooking strategies. 10. Regions and locales. 11. Traditional medicinal values of food. 12. Food in Society. Appendix: Dinner at the Ngs.

Soybeans and soyfoods are mentioned as follows: North China is the native home of the soybean (p. 3). Soybeans seem to have been introduced to China in about 1000 B.C., but they were not popularized until the early Eastern Chou period (Ho 1975). Called, *shu,* they "seem to have come from the Jung people, northern and northeastern neighbors of the Chinese, who may have been Tungusic or Altaic, and were perhaps related to or descended from the Hungshan."

Domesticated soybeans are descended from wild soybeans (p. 29).

Fan Sheng-chih wrote an agricultural manual in the first century B.C.; it survives in extensive fragments quoted in later agricultural works. This manual mentions the "Nine Staples": wheat, barley, millet, glutinous millet, spiked millet, soybeans, rice, hemp, and small beans (*Vigna* spp.) (p. 50).

The art of fermenting soybeans was perfected sometime in the late Chou period, or perhaps even as late as the very early Han. Thereafter, Han texts devote much space to salt-preserved soybeans [fermented black soybeans], called *tou shih* (*or shih*), the *tausi* of modern Cantonese cooking. *Chiang,* fermented sauce, was made from beans, but also from meat and elm products (p. 51).

During the late Southern Sung, Wu Tzu-mu coined the famous phrase: "the things that people cannot do without every day are firewood, rice, oil, salt, soybean sauce, vinegar, and tea" (Freeman 1977, p. 151). By the Sung, *chiang* had come to refer unequivocally to soy sauce; as late as the T'ang, it would probably have been understood, at least in literary contexts, to refer to a variety of fermented foods (p. 82).

Bean curd or *tou fu* (Japanese tofu) was first mentioned in the early Sung; its invention was attributed to Liu An of the Han Dynasty, "but this is preposterous." In fact, tofu "was invented in the late T'ang or early Sung–possibly by Taoists and/or people from the Huainan region, who then ascribed it, out of a sort of respect, to Liu An, the Taoist prince of Huainan (B.W.-C. Young, pers comm). Buddhists quickly took over the food as a good substitute for meat and for dairy foods..."

Soybean curd is also fermented; the firm tofu cubes are packed in brine and sold. "They constitute the Chinese equivalent of a cheese and are apt to be overpowering, reminiscent of strong German hand cheese [*Handkäse,* a German regional sour milk cheese]. They are graphically known as *ch'ou tou fu* (stinking bean curd). Only the very stoutest of heart eat them and then only in small quantities."

Also discusses: Vegetarian cooking (p. 66, 86, 118, 150, 196, 204, 249). Vegetarianism came to China with Buddhism during the T'ang dynasty. Fish farming (p. 103, 129). Note: Eugene Newton Anderson was born in 1941. Address: Dep. of Anthropology, Univ. of California, Riverside, CA 92521.

5573. APV Crepaco, Inc. 1988. Soybean grinder/cooker. New technology for processing soybeans into soymilk (Leaflet). Lake Mills, Wisconsin. 1 p. Single sided. Section 3. Bulletin B-1-280. [1 ref]

• ***Summary:*** Developed by APV Crepaco in association with ProSoya Foods International Inc. and covered by U.S. Patent 4,744,524. The standard unit has a capacity of 24 gallons (91 liters), outside diameter of 24 in. (610 mm), overall height of 83 in. (2,108 mm), and maximum working pressure of 60 lb per square inch (4.2 kg/sq. cm). Features: All stainless steel construction. High speed grinder, direct coupled to a 10 horsepower motor. Pressure cooking chamber with direct steam injection heating (includes sight glass and discharge valve). A photo shows the standard unit. Address: 100 S. CP Ave., Lake Mills, Wisconsin 53551. Phone: (414) 648-8311.

5574. Cost, Bruce. 1988. Asian ingredients: Buying and cooking the staple foods of China, Japan and Southwest Asia. New York, NY: William Morrow & Co. 333 p. Illust. Index. 27 cm. [39 ref]

• ***Summary:*** Soy related: Soybean sprouts and recipe (p. 86). Beans, incl. soybeans (p. 146-50). Asian "dairy" (p. 186-87): The soybean and the coconut (incl. bean curd, doufu-nao, fermented bean curd / fu-ru, molded bean curd / chou dou-fu, dried bean curd / dou-fu gan, and bean curd skin [yuba]. Soybean milk.

Soybean sauces, condiments and pastes (p. 195-211): Salted and fermented black beans with recipes for "Roast chicken with black beans stuffed under the skin," and "Soft-shell crabs with ginger, lemon, and black beans" ("Fermented black beans, often flavored with bits of ginger and sometimes orange peel, are usually sold in 8-ounce plastic bags." Acceptable brands: Mee Chun or Koon Chun Sauce Factory. "Earthier and probably more classic are the Yang Jiang Preserved Beans (with ginger) from Kwangtung, China), bean sauce (other names: Yellow bean sauce, brown beans sauce, bean paste, jiang; two types are with the beans whole or ground), hot bean sauce / paste with recipe, hoisin sauce, sweet bean sauce (made with soybeans [probably tian mian jiang, p. 202], Taiwan), soy sauce (Chinese, Japanese, tamari; Highly recommended light soy sauce: Pearl River Bridge. Highly recommended dark: Pearl River Bridge Mushroom Soy, flavored with straw mushrooms), Java's ketjap and other soy sauces miso with recipe, yellow miso (*Shinshu miso*), white miso (*shiro miso, Kyoto shiro miso,* sweet white miso), red miso (*aka miso*), Hatcho miso [soybean miso], barley miso (*mugi miso*), fermented bean curd (white or red; also called preserved bean curd, wet bean curd, bean cheese, dou-fu ru or fu-ru {Mandarin}, fu yu {Cantonese}) with two recipes).

"Red fermented bean curd" is described on pages 210 (also called "red bean cheese"), 211, and 283 (together with "red rice").

Concerning ketjap (p. 206): Tomato ketchup, although it may seem to be of Asian origin, may or may not come from a family of Asian pickled products. But the word "ketchup" is clearly of Asian origin. [Note: The modern Indonesian word for soy sauce is *kecap / ketjap / kechap.*] "It comes from the Malay *kechap,* which apparently derives from the *kôe-chiap* of a southern Chinese dialect (Amoy); both of these refer to the kind of briny liquid preserves that include fish and soy sauces." Throughout most of Southeast Asia, fish sauces are the standard condiment, in Indonesia (incl. Java) soy sauce

is more widely used. Sweet Indonesian soy sauce (*ketjap manis*), which is very widely used, is traditionally sweetened with palm syrup and seasoned with garlic, star anise, salam leaves, and galangal.

Also discusses: Seaweed (p. 165-70): Kelp (Laminaria), laver (Porphyra), wakame, dashi, hair vegetable / black moss / hairlike vegetable (China; Gracilaria verrucosa), agar-agar. Monosodium glutamate (p. 247)

Bruce Cost was born in 1945. A photo and brief biography appears on the inside rear dust jacket. Address: [San Francisco, California].

5575. Gruettner, R. 1988. Eiweissbedarfsdeckung durch Sojamilch [Covering you protein needs through the use of soymilk]. In: F. Haschke, ed. 1988. Protein in der Sauglingernahrung [Protein in Infant Feeding]. Stuttgart: Ferdinand Enke. xi + 141 p. See p. 22. [Ger]*

5576. Kaysing, Bill. 1988. Bill Kaysing's freedom encyclopedia. Instant Improvement Inc., 1160 Park Ave., New York, NY 10128. 295 p. See p. 87-94. [1 soy ref]
• ***Summary:*** The dust jacket of this book states, under the title: "Freedom from junk food. Freedom from supermarket rip-offs. Freedom from slavery to doctors and landlords. Freedom from food-induced sickness and premature aging." The book has sold very well. In the chapter titled "Eating better for less," there is a section on soybeans (p. 87-94). It discusses cooked soybeans, soy grits, soy flour, soy protein (isolate), soy sprouts, soy coffee, miso, Tofutti, soy milk, and tofu, with the greatest praise reserved for tofu. A number of recipes are included. On page 94, two panels from the Soyfoods Center (Lafayette, California) catalog of publications are reproduced. They describe the center and the many virtues of soyfoods. Below is a caption: "This organization is bringing a new era in good food to the United States. Write for their handsome brochure, listing books and other data."

5577. Kurz, Marey. 1988. Soja in der Vollwertkueche: Rat und Rezept-Ideen zum Kochen und Backen mit allen Soja-Varianten: Bohnen, Mehl, Milch, Sauce, Tofu und Miso. Das erste komplette Soja-Kochbuch [Soya in whole-foods cookery: Advice and recipe ideas for cooking and baking with all the varieties of soya: Beans, flour, milk, sauce, tofu and miso. The first complete soya cookbook]. Munich, West Germany: Gräfe und Unzer GmbH. 102 p. Illust. Index. 20 cm. [11 ref. Ger]
• ***Summary:*** The copyright (but not the title page) page says that this is a 3rd edition, however the ISBN is unchanged from the 1984 edition. Address: West Germany.

5578. Larcher, Jacques; Volper, S.; Aubin, J.P. 1988. Le soja en régions tropicales: une synthèse des recherches de l'IRAT [The soybean in tropical regions: A summary of research conducted by IRAT]. *Memoires & Travaux de l'IRAT* (*France*) No. 15. 185 p. [91 ref. Fre]
• ***Summary:*** IRAT stands for *Institut de Recherches Agronomiques Tropicales* (Tropical Institute of Agronomic Research). Contents: Varietal improvement: Introduction of varieties, screening varieties, creating new varieties. Cultural practices: Preparing the soil, water needs of the soybean, planting, harvest, production and storage of seeds. Cultural systems: Crop rotations, companion crops, times of working. Fertilizers: Mobilization minerals, diagnosis based on foliage, nitrogen fertilizers, phosphate fertilizers, potassium fertilizers, organic manure, preformulated manure. Inoculation: Effects of inoculation on the nodulation and the yield of soybeans, methods of inoculation, selection of stocks of *Rhizobium japonicum,* determination of the dose of inoculum suited to the field, production of inoculum, survival of *Rhizobium japonicum* in tropical soils. Crop protection: Bacterial diseases, fungal diseases, viral diseases, nematodes, insects, chemical defoliation, herbicides. Technology: Senegal, Cameroon.

Appendixes: 1. List of varieties. 2. List of the main soybean varieties introduced to Benin, Burkina Faso, Cameroon, Comoro Islands, Côte d'Ivoire, Ethiopia, French Guiana, Madagascar, Mali, Niger, Polynesia, Central African Republic, Reunion and Martinique, Senegal, Togo. 3. Norms of observation and methods employed by IRAT. 4. Improvement of the components of soybean yield. Technical guide for growing soybeans in Senegal, Côte d'Ivoire, and French Guyana.

The section titled "Introduction of Varieties" (p. 9) notes that between the first and second world wars, the French peasantry introduced the soybean to Madagascar and cultivated it in the regions of Ambatolampy, Antsirabé, and Ankazomiriotra. It is interesting to note that it was in the latter locality that the first attempts were made to transform soybeans into milk and cheese [soymilk and tofu] in Madagascar. In Cameroon, eleven varieties, which originated in the USA and East Asia, were introduced between 1924 and 1945.

In 1965 IRAT introduced the soybean into its research programs and began, as a first step, by establishing soybean varietal collections in the different countries where IRAT was working: 1966 in Senegal, Madagascar, and Cameroon. 1967 in the Central African Republic and Mali. 1968 in the Côte d'Ivoire. 1969 in Benin. 1971 in the Comoro Islands. 1972 in Ethiopia. 1974 in Togo and Niger. 1975 in Burkina Faso, Réunion, French Guiana, Martinique, and Polynesia. The first collections, established in 1966 from soybean varieties originating in Rwanda, the USA, Rhodesia, and Tanzania, were progressively disseminated to the other countries.

Subsequent participation of IRAT researchers in the international variety trials conducted by INTSOY (USA) and by IITA (Ibadan, Nigeria) enabled IRAT to diversify its genetic resources and to test, mainly through the INTSOY

trials, the varieties that it had developed.

Varietal selection (p. 10-22): Senegal: From 1966 to 1970, 120 soybean varieties received were tested by CNRA Centre National de Recherche Agronomique (French) of Bambey (Baol), then at Nioro du Rip (Sine-Saloum), where the best yields, of about 1,500 to 2,000 kg/ha were obtained with the variety Geduld. Starting in 1970 Bambey was abandoned and trials were continued at Séfa (Sefa, Casamance) and Synthiou Malème (in eastern Senegal), where the ecology was more favorable for soybean cultivation. Breeding of new varieties started in about 1972 in Senegal (see p. 22-33)

Central African Republic: In 1967, at the request of the Ministry of Rural Development, via FAO, 80 soybean varieties of very diverse origins were introduced and tested at the Grimari station. The variety Avoyelles yielded 1,218 kg/ha.

Mali: The varieties G15 and G115 (Jupiter) from Burkina were introduced to Mali in 1967. Then in 1969 IRAT introduced 26 new varieties, of which 11 originated in the Central African Republic and 15 in Senegal.

Côte d'Ivoire: From 1968 to 1977 IRAT introduced 171 soybean varieties to the Côte d'Ivoire.

Togo and Benin: These two contiguous countries have comparable ecologies. IRAT's with soybeans in Benin began in 1969. In 1970 IRAT introduced to Niaouli, Benin, 45 varieties originating in Taiwan, Central African Republic, Madagascar, and Senegal. This collection was continued from 1970 to 1974, because two crops a year were possible, at the stations of Niaouli and Ina in Benin, and 3 stations in Togo. In 1975 IRAT-Togo cooperated with INTSOY in the first soybean trials in Togo. The first seeds were planted at Davié in southern Togo on May 2, at Amoutchou in central Togo on May 7, and in Kitangbao in northern Togo on July 8. Togo. Table 12 shows the average yields from 1970 to 1974 from the varieties Columbia, Mandarin, Clark 63, and E 73. These yields were low due to the absence of any use of fertilizers or inoculants, and the poor germination of the seeds. [Note: From Whigham and Judy (1975) and Dumont (1981) we have learned the exact dates that soybeans were planted in Benin and Togo]. Comoro Islands: 63 soybean varieties from the Madagascar collection were introduced in 1971 and tested on Grand Comoro (*Comore*) and at Anjouan (800 meters altitude). At Anjouan the best variety was Biloxi, which had an average yield of 2,000 kg/ha. On Grand Comoro the yields were lower, about 1,500 kg/ha. Having little future, soybean research was stopped in 1976. Note: This document contains the earliest date seen for soybeans in the Comoro Islands, or the cultivation of soybeans in the Comoro Islands (1971) (one of two documents). The source of these soybeans was Madagascar.

Niger: In 1974 IRAT introduced from Senegal 17 varieties of various origins; the results were mediocre (in part from absence of inoculation): ICA Toroa 662 kg/ha, ICA Lili 312 kg/ha, Improved Pelican 335 kg/ha, Mandarin 300 kg/ha. Two INTSOY trials took place in 1975 at Maradi and Gaya. This time the yields were very encouraging; at Maradi the variety Forrest yielded 3,500 kg/ha.

Note: This document contains the earliest date seen for soybeans in Niger, or the cultivation of soybeans in Niger (1974). The first 17 varieties introduced originated in various countries.

Burkina Faso: The soybean was introduced to this remote country in 1960. At that time IRHO (*Institut de Recherches pour les Huiles et Oléagineux*) was in charge of experiments on this plant. In 1975 IRAT participated in an INTSOY trial at Farako-Ba; Jupiter gave the best yield, 2,405 kg/ha.

Réunion: Four varieties from the USA were tested in 1974, at the station of Mon Caprice, during two seasons. The best yield during the cool season was from Chippewa (1,780 kg/ha), and during the warm season it was from Amsoy (2,070 kg/ha).

Martinique: IRAT-Martinique participated in the 1975 INTSOY trials. Only one variety, Improved Pelican, with a yield of 2,150 kg/ha [sic, 2,154 kg/ha, planted 10 April 1975] seemed interesting, but since soybean cultivation was believed to have no future in the agriculture of the island, the experimentation was abandoned.

French Guiana: The first soybean trials began in 1975 with the introduction of 4 varieties: Jupiter, Acadian, and Improved Pelican from the USA, and Vada, which originated in Java [Indonesia]. From 1976 to 1983 IRAT-Guyane participated in INTSOY trials. In 1976 Jupiter gave the top yield of 3,440 kg/ha.

French Polynesia: From 1976 to 1979 the INTSOY trials continued during the two rainy seasons. The variety Davis gave the best overall average yields (4,260 kg/ha over 5 seasons), with a top yield of 5,286 kg/ha in 1976-77. Address: France.

5579. Leneman, Leah. 1988. Soya foods cookery. London and New York: Routledge & Kegan Paul. ix + 145 p. Illust. Index. 20 cm.

• ***Summary:*** Contents: Introduction. Recipes–1. Soya milk: Soya milk, soya yogurt, soft cheese [made from soya yogurt], and mayonnaise, soya milk skin (yuba). 2. Tofu: Tofu, frozen and dried-frozen tofu, smoked tofu. 3. Tempeh. 4. Miso. 5. Combi-dishes: Tofu and miso, tempeh and tofu.

An introduction to the subject, with more than 100 recipes. Almost half the book is devoted to tofu and tofu recipes. The author, born in the USA, has lived in Britain for more than 20 years. She was once assistant editor of *The Vegetarian,* and also worked at Cranks Restaurant (on Marshall St. in London W1). Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

5580. Mayhew, Susan; Penny, Anne. 1988. Macmillan

tropical and sub-tropical foods. London and Basingstoke (Hampshire, UK): Macmillan Publishers Ltd. [304] p. *

5581. Montero R., Rafael A.; Mata M., Eduardo J. 1988. La soya: Guia para sul cultivo y consumo en Costa Rica [The soybean: A guide for its cultivation and consumption in Costa Rica]. San Jose, Costa Rica: Editorial de la Universidad de Costa Rica. 112 p. Illust. 21 cm. [11 ref. Spa]
• ***Summary:*** Contains 23 tables and 8 figures plus some color photos. Contents: Introduction. The plant. Climate. Photoperiod. The variety. The soil. Preparation of the land. Times of planting. Inoculation. Fertilization and nutrition. The analysis of the soil. Visual symptoms of mineral deficiencies. Density of planting seeds. Considerations concerning planting more or less seeds. Diseases. Soybean diseases common in Costa Rica. Weed control. Calibration of sprinklers. Control of insects. Management of the harvest. Mechanical harvesting of soybeans. Aspects which must be considered for a good harvest of the crop. Economic considerations. Feeding and nutrition based on soy: The soybean compared with other protein sources, percentage of protein in various protein sources, diagram showing the many products derived from soya. Preparation of meals with soya: preparation of basic soyfoods at home (preparation of whole soybeans, preparation of soymilk, preparation of soy flour, vegetable stew with soybeans, salad, Oriental minced meat, rice with soybeans, spaghetti in white sauce with soybeans, soybeans in escabeche, cream of soybeans and greens, oil roasted soynuts, soy pudding, homemade tofu, mixed bread with soya flour, quick bread with soy flour). Table of conversion: Measures, weights & equivalents.

Tables show: (1) Description of the vegetative and reproductive states of the soybean plant (Source: Fehr & Caviness 1977). (2) Origin and characteristics of the varieties Jupiter, SIATSA 194-A, and IAC-8. (3) Dates recommended for the harvest of soybeans in Costa Rica. (4) Extraction of nutrients from each 1000 kg of yield of soybean seeds. (5) General reference values for interpreting the analytical results of the laboratory of soils of the Ministry of Agriculture and Livestock, Costa Rica.

(6) Critical foliar levels of nutrients at the end of flowering (*Niveles críticos foliares de nutrimentos*). (7) Summary of generalizations about the essential nutrients for the soybean. (8) Summary of the principal soybean diseases in Costa Rica. (9) Recommended herbicides in the cultivation of the soybean and the different doses for different soil textures in pre-emergent herbicide application. (10) Primary weeds that infect soybean fields and effective herbicides for weed control. (11) Mix of pre-emergent herbicides (*herbicidas preemergentes*) for the control of weeds in soybean cultivation. (12) Recommended nozzle-type for weed control. (13) Levels of economic damage of the soybean from various soybean enemies in Costa Rica. (14) Chemicals used for the control of insects in the cultivation of the soybean.

(15) Marketing volume, consumption and grain reserve for soybean cake / meal (*torta*) and soybean oil in the United States and the world in the years 1984-1986. (16) Cultivated area, average yield and price of the soybean in Costa Rica during the period 1979-1987. (17) Monthly price of grain (grano), oil and meal (*torta*) protein in dollars FOB Chicago, United States, from 1987 and the months January to May of 1988. (18) Price of a metric ton of yellow soybeans (*soya amarilla*) in Caldera, Costa Rica. (19) Projection of the apparent demand of cakes (*tortas*) and oleaginous flours (*harinas oleaginosas*) 1984-1989.

(20) Budget for the production of soybeans in Costa Rica, harvest of 1988. (21) Total cost of soybean production, harvest of 1988. (22) Chemical composition of soybean milk, breast milk, and cow milk. (23) Essential amino acid content in soybean milk and cow's milk.

Figures show: (1) Description of the principal parts of the soybean plant. (2) Needs of the soybean (variety Jupiter) for the various stages of growth. (3) Parts of different types of nozzles for the application of agrochemicals. (4) Various degrees of defoliation of the soybean estimated as percentages of foliar tissue loss. (5) Method for measuring the level of insects infesting soybeans. (6) Principal insects in the cultivation of soybeans. (7) Location of sampled areas concerning loss in the mechanical harvesting of soybeans. (8) Utilization of soybeans (derived from soy flour, soybean cake or meal, isolated soy protein, soy sprouts, whole dry soybeans, tofu, infant formulas, soy sauce, refined soy oil, lecithin). Address: Costa Rica.

5582. Narayan, Ranjana; Chauhan, G.S.; Verma, N.S. 1988. Changes in the quality of soybean during storage. II. Effect of soybean storage on the sensory qualities of the products made therefrom. *Food Chemistry* 30(3):181-90. [7 ref]
• ***Summary:*** Three soy products–soymilk, tofu (soy paneer), and soynuts–were prepared from soybeans that had been stored for different lengths of time, and were evaluated for their sensory properties and some chemical qualities. "Total solids and protein in soymilk, as well as in tofu, decreased with the storage time, whereas colour, crispness and taste of soynuts were lost with increase in storage time of beans. Overall organoleptic score of all the products was found to decrease with increase in storage time of beans." Address: Dep. of Food Science & Technology, G.B. Pant Univ. of Agriculture and Technology, Pantnagar–263 145, India.

5583. Pacific Foods of Oregon, Inc. 1988. Pacific Foods: This unique soy processing plant combines advanced technology with food processing expertise to produce improved soy products at significant savings over traditional methods (Leaflet). 19480 S.W. 97th Ave., Tualatin, OR 97062. 2 p. Front and back. 28 cm.
• ***Summary:*** Printed black and blue on white. Dated 1988.

A photo on the cover shows the outside of the plant. On the inside 2 panels, 10 photos show various views inside and outside the plant. A flow chart shows the soy processing sequence.

On the rear panel is a map showing the location of the plant. And a diagram showing eight typical uses of Pacific Foods' Soy Products. Address: Tualatin, Oregon.

5584. Pacific Foods of Oregon. 1988. Pacific Foods (Brochure). Tualatin, Oregon. 4 p. 28 cm.
• ***Summary:*** This glossy, black, white, and blue brochure, introduces Pacific Foods' new soy processing plant in Tualatin, Oregon. On the front cover is a photo of the plant in what looks like an industrial park. The caption: "This unique soy processing plant combines advanced technology with food processing expertise to produce improved soy products at significant savings over traditional methods."

On the inside left page are six black-and-white photos of various sizes: (1) "State of the art computer-controlled processing equipment." (2) "Revolutionary multi-stage soy bean grinding machine." (3) "Special deodorizer removes undesirable flavors and odors from soymilk." (4) "Sophisticated computerized system controls operations." (5) "Soy bean storage silo." (6) "Our modern laboratory is staffed by trained technicians."

On the inside right page is a flow chart of the soymilk process and four more photos: (1) "This high-volume machine separates okara from soymilk." (2) "Sanitation equipment automatically cleans ducts and processing systems." (3) "Pacific Foods' soy processing plant is operated by experienced professionals." (4) "Bean cleaning and sorting equipment."

Text across the top of the two pages: Introducing Pacific Foods. Unique processes improve product characteristics. Plant features.

The rear cover shows (1) A chart of ten uses of Pacific Foods' soy products. (2) An area map showing how to get to the company. (3) The company phone and fax number.

Attached to the brochure is a business card of John R. Olson, Marketing Division. Address: 19480 S.W. 97th Ave., Tualatin, Oregon 97062.

5585. Perry, Rick. 1988. Hurricane kitchen: how to cook healthy foods for large groups and institutions, Augusta, Maine: Lance Tapley. 172 p. Illust. (by Douglas Alvord). 29 cm. [10 ref]
• ***Summary:*** "Dedication: to those cooks who have realized the need to change the American diet." This is largely a vegetarian cookbook–but not completely (see p. 117).

From April to October Rick is found on Hurricane Island, off the coast of Rockland, Maine, where he has been the food service director for the Hurricane Island Outward Bound School since 1975.

Chapter 3, "Real foods" (p. 32-45) includes whole grains (incl. whole wheat, brown rice, corn, millet, quinoa). The section on "The amazing soybean" begins: "The versatile soybean is truly the food of the future." It discusses miso, tamari, tempeh, and tofu. The section on "Oil" mentions soy oil. The section on "seaweeds" begins: "I prefer to call them sea vegetables..."

Chapter 5, "Ordering staples and setting up a grain room" has a large table for various foods showing the quantity in pounds and barrel size in gallons. Foods include: Aduki beans (azuki). Brown rice, shortgrain. Brown rice, sweet. Sesame seeds. Soybeans.

Soy related recipes: Tofu dill bread (p. 83). Basic miso soup. Miso soup for 30 (p. 106). Cooking legumes (cook 4 parts water with 1 part whole soybeans for 9 hours, p. 111). Pressure cooked beans (cook 3 parts water with 1 part whole soybeans for 2 hours, after coming to pressure, at 15 psi, p. 112). Seitan (p. 113, 122). Seaweeds (p. 115). How to make tofu (and okara) in an institutional kitchen–makes 8 lbs (p. 125). Tofu–Baked, sautéed, or fried (p. 124). Soysage burgers (p. 124). Tofu salad or mock egg salad. Tempeh–Baked or sautéed (p. 125). Tofu salad dressing (p. 138). Soy mayonnaise (with 2 cups soy milk, p. 140). Soy milk (homemade, from 10 cups soybeans, p. 153). Hot carob drink (with milk or soy milk, p. 153). Soy frosting for desserts (p. 155). Address: Portland and Rockland, Maine.

5586. Philippine Council for Agriculture, Forestry and Natural Resources Research and Development. 1988. Mga Gamit ng UTAW Bilang Pagkain [The uses of soybeans as food]. Diliman, Quezon City, Philippines. 46 p. Illust. DA/ATI-PCARRD Farm Primer No. 3. Series of 1988. AC-R4-P-S-V-2-88. [3 ref. Tag]
• ***Summary:*** Part 1 (p. 1-20) of this Tagalog-language booklet, which contains many illustrations (line drawings), is titled "Soybean Products." It describes how to make basic soyfoods, such as soybean ketchup (*Ketsup na utaw*), soy coffee (*Kapeng utaw*), pastillas, soymilk curds (taho), tokwa (tofu), polboron (a confection usually made with powdered milk, but in this case using soybean powder), soymilk, soy flour (harinang utaw; note that utaw is word for soybean in Tagalog), tao-si (fermented black soybeans), soy sauce (toyo), and miso.

Part 2 (p. 25-45) titled "Soybean Recipes," includes chicken with miso, tofu with miso, tofu with mushroom soup, soymilk custard, fried meat (pork; Baboy), fried meat with miso, bamboo shoots with miso, baguio beans with miso, fried tofu with sweet & sour soy sauce, miso with noodle soup, chicken soup with tofu, and fried tofu with vegetable sauce. Address: Philippines.

5587. **Product Name:** Rich's Farm Rich (Non-Dairy Creamer) [Original, Lite, Fat Free].
Manufacturer's Name: Rich Products Corporation.
Manufacturer's Address: Buffalo, New York. Phone:

1-800-356-7094.
Date of Introduction: 1988. January.
Ingredients: Original: Water, corn syrup, partially hydrogenated soybean oil, contains 2% or less of the following: soy protein isolate, dipotassium phosphate, emulsifiers (mono and diglycerides, sodium stearoyl lactylate, polysorbate 60), salt, sodium acid pyrophosphate, artificial flavor, beta carotene (for color).
Wt/Vol., Packaging, Price: Quart Pure Pak (gable top) carton. Retails for $1.39 (Fat Free) or $1.45 (Original) (10/95, Michigan).
How Stored: Refrigerated.
Nutrition: Per 1 tablespoon (15 ml): Calories 20, calories from fat 15, total fat 1.5 gm (2% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 5 mg (0%), total carbohydrate 1 gm, protein 0 gm. Not a significant source of dietary fiber, sugars, vitamin A, vitamin C, calcium and iron. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Talk with Irene Stuttman of Sycamore Creek. 1995. Oct. 23. She buys this product in the dairy case next to milk. It is packaged in Pure Pak quarts, just like cow's milk. It is her and Len's favorite soymilk. It is promoted as a non-dairy product, not as soymilk. Gable-top quart carton with Label sent by Irene Stuttman of Michigan. Blue, green, and white on tan. Illustration of a barn and silo behind a green hill in front of hilly cultivated fields, with stylized rays of a rising sun. "Rich creamy flavor. Cholesterol free. Lactose free. See side panel for nutrition information." Recipe on the side for Blueberry Cake.

Talk with the toll-free customer service line at Rich Products Corp. 1995. Nov. 1. This product was launched in 1988. It is sold in original, lite, and fat free flavors. It is distributed throughout the East Coast but only as far west as Chicago, Illinois. It can be used as a coffee creamer or as an alternative milk; an 8 oz glass (1 cup) of Fat-free Farm Rich contains less than 4 gm of fat in the form of partially hydrogenated soybean oil. Note: Though technically legal, we feel it is deceptive to say that this product can be used as an alternative to milk, then claim it is fat free. By comparison with cow's milk: Low-fat milk contains (per 1 cup): total fat 2.5 gm (incl. saturated fat 1.5 gm), calories 130, and calories from fat 20. And 2% fat + fortified milk contains (per cup) total fat 5 gm (incl. saturated fat 3 gm), calories 140, and calories from fat 45. Thus Farm Rich contains about 60% more fat than low-fat milk, but only about 80% as much as 2% fat milk. Whole milk (about 3.5% fat) is no longer sold at Safeway supermarket in Lafayette.

5588. Wood, Rebecca T. 1988. The whole foods encyclopedia: A shopper's guide. New York, NY: Prentice Hall Press (Simon & Schuster). xv + 218 p. Foreword by Michio Kushi. Illust. 28 cm. [200* ref]
• ***Summary:*** This book is mistitled. It should be titled "Rebecca Wood's Macrobiotic Views on Natural Foods." The parts on quinoa, teff, amaranth, and many "macrobiotic foods" provide good information. There is extensive information on soyfoods, all from a macrobiotic viewpoint, but with many errors or undocumented controversial assertions never seen before in the literature, such as the following: "Cold Tofu. Foods that are cooling, like tofu, tend to reduce the fire in the lower organs. This explains why tofu was eaten by Buddhist monks to abate their sexual desires. This is not a prescription against tofu. Well-cooked tofu is less cooling. For optimum health, we need a balance of warming as well as cooling foods. However, if you are feeling cold, or if it is a cold day, or if you have strenuous activities planned, then you may opt for salmon over tofu."

Foods discussed are: Cheese (imitation soy), ice cream and frozen desserts (soy or tofu ice cream), miso, natto, nigari, soybeans (black, yellow, and "just harvested green soy"), soy flour, soy protein isolate, soy milk, soy nut ("Those oversalted, beggarly little crunches found in everything from trail mix to salads are soynuts,..."), soy oil, soy sauce ("Also known as *Shoyu* and *Tamari*), and soy yogurt, tempeh, tofu, and TVP (texturized vegetable protein {textured soy flour}).

Note: This is the earliest English-language document seen (Feb. 2005) that contains the term "cooling food." Address: P.O. Box 30, Crestone, Colorado 81131. Phone: 303 (or 719) -256-4939.

5589. Wynstra, Robert J. 1988. INTSOY agenda: Expanding the use of soybeans. International Soybean Program, University of Illinois at Urbana-Champaign, 113 Mumford Hall, 1301 W. Gregory Dr., Urbana, IL 61801. 20 p.
• ***Summary:*** Contents: Fulfilling the soybean's promise. The unique versatility of soybeans. Spreading the benefits. Meeting the challenge. Dry extrusion cooking. Catalyst for developing countries. Combination extrusion cooking and oil expelling. Soymilk and dairy analogs. Immature green soybeans. Home soyfood preparation. Address: Urbana-Champaign, Illinois. Phone: 217-333-6422.

5590. **Product Name:** [Thick soymilk].
Foreign Name: Nong Dou Jiang.
Manufacturer's Name: Beijing Shi Lian He Dou Jiang Chang (Beijing United Soymilk Factory) and Beijing Shi Shi Pin Yan Jiu Suo (Beijing Food Research Institute).
Manufacturer's Address: Chao Yang Qu, Outside 10 Li? Phone: 500.5396.
Date of Introduction: 1988?
Wt/Vol., Packaging, Price: 250 gm plastic bag.
New Product–Documentation: Product with Label purchased in Beijing, China, in 1988 by Irene Yen. Blue letters on polyethylene bag.

5591. **Product Name:** Ener-G Pure SoyQuick. A Soy Based Imitation Milk Mix.

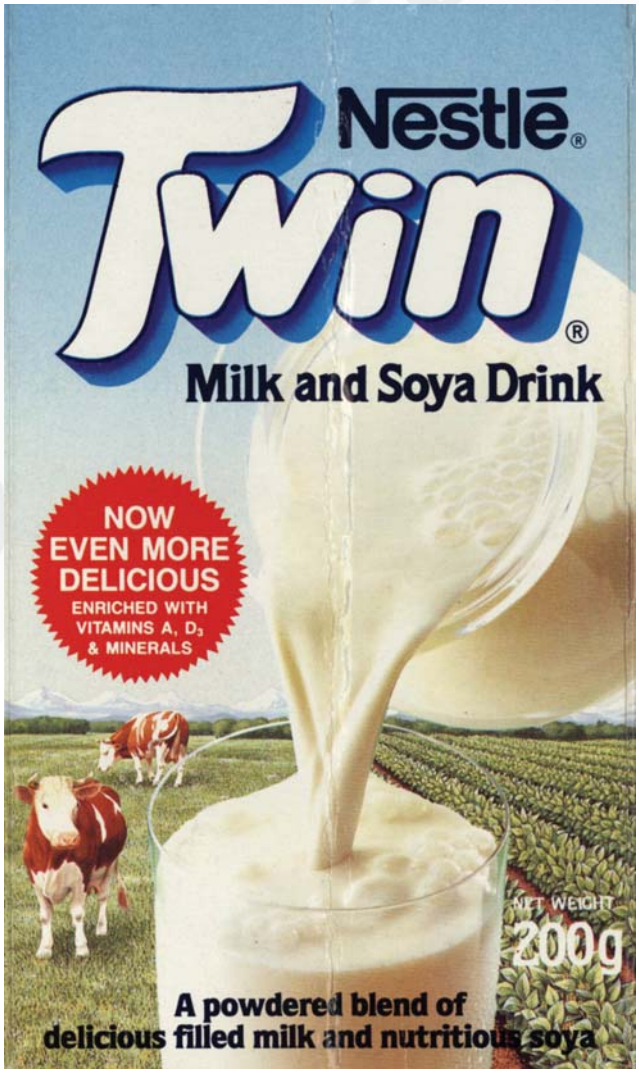
Manufacturer's Name: Ener-G Foods Inc.
Manufacturer's Address: 6901 Fox Avenue South, P.O. Box 84487, Seattle, WA 98124-5787.
Date of Introduction: 1988?
Ingredients: Toasted soy flour (soy flour, soy lecithin, soy oil), guar gum (an emulsifier).
Wt/Vol., Packaging, Price: 14 oz (397 gm) box. Retails for $5.31 (8/88, Calif.).
How Stored: Shelf stable.
Nutrition: Per 2 tablespoons (½ oz): Calories 60, Protein 6 gm, carbohydrates 4 gm, fat 2 gm, sodium 0 mg, potassium 300 mg.
New Product–Documentation: Product with Label (box) purchased in Berkeley, California. 1988. Aug. 30. 5.25 by 8.25 by 1.75 inches. Blue, black, orange, yellow, green, tan, and white. "No preservatives, artificial flavoring, or color added. Contains no cow's milk. Is suitable for dairy milk allergies. Makes 7 quarts. Contains recipes for SoyQuick Beverage (add ½ cup soy quick to 1 cup water. Stir, refrigerate, and serve. No cooking required), Puddings, Biscuits, Salmon Loaf, and Quick Bread." Note: This company also makes Ener-G Egg Replacer and Low Electrolyte Baking Powder.

5592. **Product Name:** [Soymilk].
Manufacturer's Name: Fuoshan Foodstuff Factory.
Manufacturer's Address: China.
Date of Introduction: 1988?
New Product–Documentation: Letter from ASA, China. 1990. Sept. 13. Wuhan Guan Sheng Yuan Foodstuff Factory has the second largest soymilk production capacity in China, 12,000 liters/hour.

5593. Hughes, L. 1988? Soybean food products for West Africa. Ibadan, Nigeria: International Institute of Tropical Agriculture. v + 10 p. Undated. *
• ***Summary:*** The preparation of the following soyfoods, using techniques suited for rural and urban West African households, is described: soy flour, soybean paste, soymilk, soybean meat, scrambled soybean meat, soy ogi, soybean snacks, soybean candies, soy moin moin, soy gbegiri soup, soybean vegetable soup, basic cake mix, soybean bread, soybean biscuits, and fermented soybean iru (dawadawa).

5594. **Product Name:** [Soy Drink, Soya Granules].
Manufacturer's Name: Natur Produkte.
Manufacturer's Address: A-6300 Itter 300, Tirol, Austria.
Date of Introduction: 1988?
New Product–Documentation: Talk with Jack Goethel of Natural Products in Salt Lake City, Utah. 1989. May 5. These products have been out for about 1-5 years. The man in charge is Erwin or Engelbert Perlinger.

5595. **Product Name:** Nestlé Twin (Powdered Milk and Soya Drink).
Manufacturer's Name: Nestlé Philippines Inc.
Manufacturer's Address: Cabuyao, Laguna.
Date of Introduction: 1988?
Ingredients: Milk solids non-fat, soya solids, butter fat, vegetable fat, maltodextrine, sugar, calcium carbonate, salt, zinc sulfate, potassium iodide, vitamins, flavor.
Wt/Vol., Packaging, Price: 350 gm can.
How Stored: Shelf stable.
Nutrition: Per 100 gm powder/per serving of powder: Energy 499/162.2 kcal, protein 25.6/8.3 gm (24% of RDA for children), Carbohydrates 37.9/12.3 gm, total fat 28.0/9.1 gm, Ash (minerals) 5.5/1.8 gm, water 3.0/1.0 gm).



New Product–Documentation: Talk with Rachel Cabato. 1989. May 28. Nestlé has a plant in Luzon for making powdered soybean milk. This is mixed with cow's milk to make at least 3 products, which are sold in cans, both in the Philippines and overseas. Label sent by Rachel Cabato. 1989. Nov. 12 by 4 inches. Goes around a can. Full color illustration of a large pitcher of this soy-dairy blend being

poured into a glass in the foreground. In the background are cows grazing in a grassy field on the left and rows of soybeans on the right. Snow-capped mountains are in the background. Front panel text: "A powdered blend of delicious filled milk and nutritious soya. Now even more delicious. Enriched with vitamins A, D-3 & minerals." Side panel: "Easy to prepare! Add 3 heaped tablespoons of Nestlé Twin to a glass of warm water and stir well." A table shows the amounts of each major vitamin and mineral: For adults ages 20-49. Calcium 56% of the RDA, vitamin D 42%, iodine 28%, vitamin B-2 (riboflavin) 24%, phosphorus 24%. Second label sent by Rachel Cabato. 1990. Jan. 11. 200 gm box with same content and graphics as can label.

5596. **Product Name:** Plamil Soya Milk (Sugar Free and Ready to Use in 1 Liter Tetra Brik Carton).
Manufacturer's Name: Plamil Foods Ltd.
Manufacturer's Address: Plamil House, Bowles Well Gardens, Folkestone, Kent CT19 6PQ, England.
Date of Introduction: 1988?
Ingredients: Incl. soy protein isolate.
Wt/Vol., Packaging, Price: 1 liter Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet. 1990. Plamil. Pioneers of British Soya Milk 1965-1990. Silver anniversary. Shows color illustration of the package. Blue, green, red, and yellow on white. "Provides calcium and vitamins B-2, B-12, and D-2."

5597. **Product Name:** Plamil Soya Milk (Concentrated in 500 ml Liter Tetra Brik Cartons) [Sweetened (Green Label), or Sugar Free (Blue Label)].
Manufacturer's Name: Plamil Foods Ltd.
Manufacturer's Address: Plamil House, Bowles Well Gardens, Folkestone, Kent CT19 6PQ, England.
Date of Introduction: 1988?
Ingredients: Incl. soy protein isolate.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet. 1990. Plamil. Pioneers of British Soya Milk 1965-1990. Silver anniversary. Shows color illustration of the package. Blue, green, red, and yellow on white. "Provides calcium and vitamins B-2, B-12, and D-2."

5598. Tofu Shop Deli and Specialty Foods Co. (The). 1988? Its like having a natural foods deli right in your own store (Leaflet). Arcata, California. 1 p. Front and back. 28 cm. Undated.
• ***Summary:*** This marketing flyer, printed with greenish-blue ink on off-white, was created primarily for customers of "Wholefood Express," a natural foods distributor owned by North Coast Co-op (Arcata and Eureka; since 1973), servicing northern California and Oregon.

Side 1: An illustration of the Tofu Shop Specialty Grocery and Deli at top of sheet. Contents: Fresh, refrigerated deli salads, delicious desserts, cold cuts, and handcrafted tofu and soymilk. All cholesterol and lactose free and made with ingredients you can trust. Deli news. Ordering tips. Selling guide: Refrigerate, reduce (price of items whose sell-by date is about to expire), rotate, display ("Use our shelf talkers to create a colorful deli corner in your own cooler...").

Side 2: "Product ingredients." A list of all products with the ingredients in each. "Makers of freshly-prepared natural foods since 1977." Address: 768 18th St., Arcata, California 95521. Phone: (707) 822 7409.

5599. Tofu Shop Specialty Foods Co. (The). 1988? Traditional tofu by the sea (Leaflet). Arcata, California. 1 p. Single sided. 19 x 12 cm. Undated.
• ***Summary:*** This marketing flyer is printed with black ink on white paper. A photo shows two people making tofu by the sea, one cooking in an iron cauldron, the other pouring nigari into a wooden barrel.

The text below the photo: "Traditional tofu by the sea. Distributed exclusively on the North Coast [of California]. The following is written in one of four equal-sized rectangular boxes (2 rows of two each): (1) Handmade tofu & soymilk. Traditional method–sweet, delicate taste. Tofu: Firm nigari, 14 oz tub or 20 lb bucket. Joy of Soy soymilk. Original, unflavored, pint, quart, ½ gallon. (2) Baked tofu cold-cuts: Ready to eat or reheat. Veggie patty tray. Marinated cutlet tray. Tofu sausage tray. (3) Delicious tofu desserts: Pumpkin pie with whole wheat crust. Cocoa carob mousse. Maple almond charlotte. (4) Light tofu salads: Old fashioned potato salad, eggless salad, tahini.

Since 1980. Address: 768 18th St., Arcata, California 95521. Phone: (707) 822 7409.

5600. Voggenreiter, Brigitte; Kuby, Clemens. 1988? Tofu: Essen mit Zukunft [Tofu: Eating with the future]. Reiner Schmid, Leostrasse 14, D-8000 Munich 70, West Germany. Or: B. Voggenreiter, Breisacherstr. 12, Munich, West Germany. 35 p. Undated. Illust. No index. 21 cm. [6 ref. Ger]
• ***Summary:*** Contents: The protein content is the measure for nutrition. Can soybeans also be grown in West Germany? The alternative: Tofu (describes briefly how it is made). What are tofu's benefits? Comparing tofu with meat. Summary, bibliography, and sources of information (Sojaquelle). 15 Tofu Recipes (each accompanied by a half-page color photo). How to make tofu at home. How to use okara and soymilk. Address: Munich, West Germany. Phone: 089 / 448 30 98.

5601. **Product Name:** Dairyless Rice Pudding (With

Soymilk).
Manufacturer's Name: Wildwood Natural Foods.
Manufacturer's Address: 31 Bolinas Rd., Fairfax, CA 94930. Phone: 415-459-3919.
Date of Introduction: 1988?
New Product–Documentation: On sale in Berkeley. 1988. Aug. 30.

5602. Dupuy. Pierre. 1989. Un phénomène récent: l'emploi du soja comme matière première des industries de l'alimentation humaine [Soya bean: A new product for the food industry in Europe]. *Comptes Rendus de l'Academie d'Agriculture de France* 75(4):51-58. [7 ref. Fre]
• ***Summary:*** In the EEC (mostly in Italy and France), production of soybeans has reached 1,300,000 metric tons. In addition to the traditional uses as vegetable oil and animal feed, there is a new interest in using soybeans to make human foods, such as soymilk and tofu. Even the dairy industry has started to process soybeans to make dairy alternatives.

Note: Hervé Berbille of France observes the following: "If you read between the lines, this document shows how the French government is trying to stop soyfoods from catching on at a very early date (in the 1980s, while these foods were still not widely known and still in their infancy) by trying to change their regulatory framework in E.U.

"So, for me, I believe this document is very important because it indicates clearly the almost official hostility of the French governmental authorities against soyfoods."

5603. Theses on soybeans and soyfoods: Dissertation Abstracts (Database search report). 1989. 234 p. Jan. 20. 28 cm. Unpublished manuscript. [1106 ref]
• ***Summary:*** The Dissertation Abstracts database contains virtually every American PhD dissertation accepted at an accredited institution since 1861. A search yielded 1,106 theses on soybeans and soyfoods not including records with the terms pathogen*, Disease*, weeds, or insect* in the title or abstract. * = truncated term.

It contained the following number of theses on soyfoods: Soymilk 9-14, tofu 6, tempeh 6, miso 4, soy sauce 3, and natto 2.

The most valuable records for us are in the subject categories Food Science & Technology; Health Sciences, Nutrition; and Economics, Agricultural. Other subject categories include: Agriculture (Agronomy, Animal Culture & Nutrition, General, Plant Culture, Plant Physiology); Biochemistry; Botany; Chemistry (Agricultural and Biological, Analytical); Engineering, Chemical; Entomology.

A count of the records in which we were interested by state where the thesis was written shows the following: Illinois 128, Iowa 68, Indiana 37, New York 30, Missouri 28, Michigan 26, Minnesota 25, and Ohio 17.

5604. Gupta, Rajendra ("Raj") P. 1989. Noble House's Great Shake soymilk is no longer on the market in India (Interview). *SoyaScan Notes.* Jan. 26. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** This soymilk product was made in a famous joint venture involving Alfa-Laval and Kibun. Now Noble House only packs juices. Raj tasted the soymilk product and thought the flavor was poor. He likes the soymilk made by Kibun in Japan and thinks the bad flavor may have been caused by bad soybeans in India. The new soymilk company using STS soymilk equipment is expected to launch their product later this year. Address: ProSoya, 627 Gaines Dr., Ottawa, ONT, K1J 7W7, Canada. Phone: 613-744-4401.

5605. Labib, M.; Gama, R.; Wright, J.; Marks, V.; Robins, D. 1989. Dietary maladvice as a cause of hypothyroidism and short stature. *British Medical Journal* 298(6668):232-33. Jan. 28. [5 ref]
• ***Summary:*** A four year old boy was investigated for short stature. When he was 2 years old, his mother sought advice because of his poor appetite and constipation. A dietitian advised his mother to withdraw cow's milk and give him soya milk. During the next 6 months he developed diarrhea. Address: 1. MRCPATH, senior registrar; 2. MRCP, registrar; 3. MRCPATH, Consultant; 4. FRCPATH, Prof.; 5. FRCP, consultant paediatrician. All: Departments of Clinical Biochemistry and Clinical Nutrition and Paediatrics, St. Luke's Hospital, Guildford, Surrey GU1 3NT.

5606. Alpro N.V. 1989. La force du soja n'est pas une légende [The power of soya is not a legend (Brochure)]. Zuidkaai 33, B-8700 Izegem, Belgium. 12 p. 30 cm. [Fre]
• ***Summary:*** On the front cover, against a background of aged brown silk, is an illustration (line drawing) of a hand. On the hand are 15 real, colored soybeans. Contents (each a 2-page spread with a large color photo across the top 40%): The power of soya does not date from yesterday (Photo of the great wall of China and a brief history of soy in ancient China). The soybean is all the power of nature in a simple bean (haricot) (Photo of soybeans sprouting from the earth, table comparing the nutritional composition of soya with meat, milk, and eggs). The power of soya is recognized worldwide (Illustration of map of the world on parchment with major soybean growing areas highlighted in green. Large illustration of a soybean plant). The power of soya makes it a perfect food (Photo of a single soybean held between the tips of two decorated black chopsticks against a black background. Text discusses nutritional benefits). Alpro, one can make a whole meal out of it (Photos of 5 Alpro Soya Drinks, Alpro Soya Minarine [low-calorie margarine], and 5 Alpro Soya Desserts [two in Tetra Briks, 3 in aseptic cups, introduced in about early 1989]. Eight recipes are given in a sidebar). The rear cover is plain brown silk cloth.

This strikingly attractive, creative brochure was

designed by M. Gheysens of Alpro.

Talk with Philippe Vandemoortele. 1990. June 4. Followed by a letter of 1991 Sept. 4. In March 1987 the company began using the subtitle "Alpro Natural Soyfoods" instead of its earlier "Alpro Protein Products." The former name made Alpro sound like a soy protein isolate company. In July 1986 Alpro began using the slogan in French "La Force Végétale du Soja," then in March 1989 they shortened this to "La Force du Soja." Address: Izegem, Belgium.

5607. **Product Name:** [Alpro Soya Dessert {in Aseptic Cups} (Caramel, Chocolate, or Vanilla)].
Foreign Name: Alpro Soya Dessert (Caramel, Choco, Vanille).
Manufacturer's Name: Alpro N.V.
Manufacturer's Address: Zuidkaai 33, B-8700 Izegem, Belgium.
Date of Introduction: 1989. January.
Wt/Vol., Packaging, Price: Aseptic cup.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Alpro. 1989. Jan. "La Force du Soja n'est pas une Légende." p. 11. A color photo shows cups of the three flavors.

5608. Business Communications Co., Inc. 1989. Engineered foods: New directions, trends. 25 Van Zant St., Norwalk, CT 06855-1781. Jan. 2 figures. 66 tables. $2,250.00.
• ***Summary:*** Currently sales of engineered foods covered in this market analysis are expected to total almost $6.5 billion in 1988. This market is expected to grow at 9.6% a year. Product segments include surimi (capacity in the U.S. reached an estimated 77 million lb in 1988) and surimi-based seafoods, soy protein products, engineered dairy products and substitutes, infant formulas and nutritional beverages, engineered fats, high-intensity sweeteners, and fabricated/restructured meat and poultry products.

The chapter titled Soy Protein Products includes: Summary and market outlook for engineered soy protein ingredients. The soy protein market: Market outlook for soy protein ingredients. Suppliers of soy protein ingredients. Consumer attitudes toward foods containing soy protein. The retail market for meat analogs, meat extenders, nondairy frozen desserts, and other foods containing soy ingredients. Patent review. Address: Norwalk, Connecticut. Phone: 203-853-4266.

5609. Dornblaser, Lynn. 1989. Out of the dairy case, onto the shelf: Aseptic processing may not appeal to the masses, but it can be marketed to the niches. *Dairy Foods* 90(1):47-48, 50, 52. Jan.
• ***Summary:*** Dairy foods and refrigeration go hand in hand in the minds of most Americans. Only 34% of Americans are familiar with shelf-stable milk and only 29% are interested in purchasing it. But shelf-stable soymilk is being well received. Health-food firms such as Great Eastern Sun, Vamo Foods, and Eden Foods are successfully marketing soymilk to a specific, health-conscious audience. "All are promoting the product not only as being healthful and nutritious (and offering an alternative to their dairy counterparts), but also as being convenient to use and store." Address: General Mgr., Gorman Publishing Company's New Product News, Chicago, Illinois.

5610. **Product Name:** Soymilk [Plain, or Sweetened].
Manufacturer's Name: Dynasty Foods (Marketer-Distributor).
Manufacturer's Address: 343 Airport Rd., Oceanside, CA 92054. Phone: 619-722-8727.
Date of Introduction: 1989. January.
New Product–Documentation: Talk with Sam Ong of Dynasty Foods. 1992. Sept. 11. He buys these soymilk products, which he introduced in Jan. 1989, private labeled from Wy Ky Food Products in Los Angeles. Born in the Philippines, he is an American citizen; his father was Chinese and his surname is the Fukien [Fujian] pronunciation of the Chinese Mandarin name Wang. His company's main products are noodles.

5611. **Product Name:** Tofu, Tempeh, and Soymilk.
Manufacturer's Name: Gabriella Benjis Soyfoods.
Manufacturer's Address: Johannesburg, South Africa.
Date of Introduction: 1989. January.
New Product–Documentation: Talk with Paul Cohen, her friend. 1989. Oct. 27. Gabriella has been making these 3 products at home since about Jan. 1989. She also works at a natural food store, where she sells them, and distributes them through the Organic Soil Association. There is a Chinese tofu manufacturer in South Africa, but Paul does not known the company name, address, or year started.

5612. Sojarei Ebner-Prosl. 1989. Preisliste [Price list]. Augasse 2, A-2500 Baden bei Wien, Austria. 10 p. Manufacturer's catalog. [Ger]
• ***Summary:*** The company has two catalog/price lists: one (green) for food processors and one (yellow) for retail stores. Products made by the company have been marked by the author with an "S." In the front of each catalog is an organic certificate. The retail catalog contains 20 fresh products, 3 books, and 30 non-fresh products. Fresh products made by the company include Tofu Natur, Tofu Mariniert, Tofu Geräuchert, Tofu Pastete Siddhartha, Tofu Pastete Toscana, Tofu-Burger, Soja-Getreide-Laibchen, Gruenkern Laibchen, Dinkel Laibchen, Reis-Laibchen, Weizengluten Laibchen, Weizengluten, Badener Bratwuerstchen, Badener Grillwuerstchen, Brotaufstrich "Rusticana", Brotaufstrich "Holzknecht." Fresh products sold but not made by the company include soy tempeh, marinated tempeh, and soy sprouts. The company sells 3 recipe books: (1) Their own

recipe book *Wichtig für Ernährungsbewusste* (Important for understanding of nutrition); (2) *Tofu: Essen mit Zukunft* (Tofu: Eating with the future) by Brigitte Vogenreiter and Clemens Kuby, and (3) *Schlank mit Tofu* (Slim with tofu; 117 recipes) by A.W. Dänzer.

The company also sells many non-fresh products including yellow soybeans (organically grown), soya flakes (*Sojaflocken,* not defatted), whole soy flour, tamari, shoyu, barley miso, Hatcho miso, brown rice miso, soba (buckwheat) miso, nigari, Bonsoy soyadrink (natural and cacao), Pinoccio Soybean coffee, and soynuts.

In the catalog for food processors, for example, the regular tofu, marinated tofu, and smoked tofu are each sold in 1 kg, 30 kg, 60 kg, 100 kg, and 200 kg amounts. Address: Baden (near Vienna), Austria.

5613. Rosenthal, Larry. 1989. Soy milk producer squeezes product into supermarket chain's dairy cases. *Associated Press Financial Wire.* Feb. 2.
• ***Summary:*** Liz Appel of Ambrosia Soy Co. has pulled off a major coup by convincing Waldbaum's Foodmart, a major supermarket chain, to carry her SweetSoy soymilk (in chocolate, vanilla, and plain flavors), next to cow's milk in the dairy section. Appel. age 25, was a senior consultant for a Big Eight accounting firm before opening her soybean product business in 1987. Waldbaum's will begin carrying the product on a trial basis this month in several stores in Connecticut. "Waldbaum's is believed to be the first major supermarket chain on the East Coast to carry fresh soy milk in its dairy section."

This article was also run in the Courant (Hartford, Connecticut) on Feb. 3, with a photo of Ms. Appel.

5614. Boeddeker, Ralph. 1989. Mit Tofu 100 Millionen Mark Umsatz: Das Reinheitsgebot fuer Deutsche Wurst ist gefallen–Naturkost-Hersteller rechnen mit Zuwachs [With tofu, sales of 100 million German marks: The standard of purity for German sausage has fallen–Natural-foods producers count on growth]. *Welt am Sontag* No. 7. p. 33. Feb. 12. Sunday. [Ger]
• ***Summary:*** Describes the very successful soymilk plant sold by Soya Technology Systems (DTD) to DE-VAU-GE in Lueneburg, West Germany. Michael Makowski, healthy looking, in his 50s, and managing director of the company, introduces a meatless banquet and explains that he has been a vegetarian for 30 years. The future for this producer of vegetarian foods looks very bright. Meatless sausages or those extended with soy are seen as becoming increasingly popular. The company is now approaching the 100 million mark sales level and employs 350 men and women. It is in the top 10 of the 70 manufacturers of natural foods in Germany, with a market share of about 10%. Each year it ships about 15,000 tons of natural foods from Lueneburg to the country's roughly 2,700 Reformhaeuser (natural/health food retail stores). The company makes an assortment of 300 vegetarian food products, mostly from cereal grains and soybeans. The latter, grown in the USA, Brazil, and China, offer many possibilities. They can be fashioned into spread for bread, milk, or tofu.

Makowski sees the market for tofu, which resembles Quark, as especially promising. It can be nicely seasoned with spices such as paprika, curry, soy sauce, and/or herbs, and made into meatless sausages. The Reformhaeuser pioneered in introducing non-dairy margarine, whole-grain bread, and Muesli to Europe. Makowski sees the next wave as being tofu boom products. A photo shows the company's 3-level soymilk plant that produces 20 million liters a year in 500 ml and 1 liter containers.

Note added by Anders Lindner, head of STS: Up to now the plant has produced soymilk and desserts. Soon they will also start to produce tofu sausages, yogurt, and pâtés.

Mr. Makowski, eyeing the big potential market for tofu products, is a bit worried that the big food heavyweights such as Unilever, Nestlé, Kraft, etc. might enter this market. When the sale of tofu products begins, DVG's sales are expected to exceed DM 100 million. Address: Lueneburg, West Germany.

5615. Stanton, Russ. 1989. Loma Linda Foods sold to Dutch firm but plans to return to health products. *Press-Enterprise* (*Riverside, California*). Feb. 22. p. F-1, F-3.
• ***Summary:*** "The company employed about 140 workers at its plant across from Loma Linda University's La Sierra Campus in southern Riverside [California], and had annual sales of about $20 million. The acquisition by N.V. Verenigde Bedrijven Nutricia (United Nutrition Cos.) of Amsterdam was completed earlier this month, but not announced until yesterday." A photo shows the Loma Linda Foods building in the La Sierra area of Riverside.

5616. Loma Linda Foods, Inc. 1989. [Loma Linda Foods acquired by Nutricia N.V. of the Netherlands] (News release). 11503 Pierce St., Riverside, CA 92505. 1 p. Feb. 23.
• ***Summary:*** "As of February 9, 1989, Loma Linda Foods, Inc., manufacturer of Soyalac products was acquired by Nutricia N.V. Verenigde Bedrijven. Nutricia is an international company specialized in medical nutrition and Infant Formulae. Presently they are marketing leader in clinical nutrition in Europe and are the second largest manufacturer of Infant Formula in Europe.

"Loma Linda Foods, Inc., expects that the affiliation with Nutricia will benefit the present line of Soyalac products." Address: Riverside, California. Phone: 714-687-7800.

5617. Goldstein, Eddie. 1989. Dairene, Pureblend, and non-dairy products (Interview). *SoyaScan Notes.* Feb. 27. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Eddie, now age 63, comes from California. In the late 1940s he was making a product in Chicago and St. Louis called Sta-Wip. It was sold to bakeries for blending with whipped cream in cake and pie toppings. He knew Bob Rich and Mel Morris in California when they entered the field.

His company Dairene started making soymilk in 1966 in Miami, Florida. Called Dairene: Imitation Vitamin D Milk, it sold for about 60-70% the price of cow's milk. Pureblend was the stabilizer in Dairene. Pureblend was shipped to plants, which used it to make Dairene. His soymilk has no soy or beany flavor or aroma. It tastes the same as cow's milk. He believed that in the future there would be a tremendous shortage of milk. The U.S. has been importing milk since 1972. At the same time he launched the products Dairene TAC (Top-a-Cake), Dairene Sour Cream (widely used for years by Howard Johnson in their cheesecakes), and Dairene Coffee Cream (sold for $0.32/qt vs. $0.80 for the dairy-based product). In 1968 he added Dairene Cream Cheese, and in 1972 Dairene Ice Cream. They used to "smear" the labels to pass labeling laws. The products were initially sold only to the institutional market, to approximately 8,000 hotels, bakeries, restaurants, coffee shops, cruise ships, etc. They were promoted primarily on the basis of their low price. He was not after the kosher market, and in fact some of his products were not kosher because of the high fees required by rabbis for certification.

Dairene was never bothered as long as its products were only sold to institutions. But when they decided to go after the retail market in the early 1970s? they ran into a host of problems from the dairy industry.

The subtitle "Imitation" was removed from the label in the early 1970s after Dec. 1972 when a Circuit Court judge ruled that Dairene was a food producer, not subject to the state of Florida's dairy regulations. He could also sell his products to retail outlets. This victory came only after 7½ years of legal battles in Florida against the dairy lobby and the dairy division of the state department of agriculture. In 1983, after another favorable court ruling, the non-daily milk name was changed to Dairene Vegetable Vitamin D Milk. Likewise with Dairene Vegetable Ice Cream, Dairene Vegetable Muzarel (or Cheddar) Cheese, sour cream, yogurt, or soft-serve frozen yogurt (95% overrun). As of 1989 the company made 27 non-dairy soy-based products, and was involved with aseptic packaging. A half gallon of his soymilk now retails for $1.39 in Florida, and he gives both the wholesaler and the storekeeper a 20% margin (The "five necessities" in grocery stores, milk, bread, butter/margarine, coffee, sugar are sold for a 12% markup, in part because the high volume.) Ingredients included isolated soy protein, defatted soybean meal, vegetable oil; he blends and compounds to make both dry and liquid products. All of his products are non-dairy. He has spent a small fortune on lawyer's fees over the years. Now his products are the only non-dairy ones, including filled milk, that can be sold in the dairy case in Florida. He can manufacture in any state and ship across state lines. He does not have a company history other than a collection of past articles and other documents. He wanted to feed the masses nationwide. The hardest product to develop was the milk; it can compete head to head with dairy milk. "Our milk is a delicious product." He uses no dairy flavoring and unlike Bob Rich, no coconut fats. Yet Rich Products' products are used in hospital diets. Dairene went public in March 1988 but has not yet sold stock or otherwise raised funds. The parent company is Dairene International. He is CEO. Dairene Inc. is its fully owned subsidiary. Farm Maid Inc. (formerly at 1624 N.W. 82nd Ave., Miami, FL 33126) licenses rights to produce the products under the Dairene name overseas. They are active in Spain, Ecuador, Mexico, Argentina and products are made in some of these places. They don't have a lot of money, so things are moving slowly. Their main work in the USA is senior citizen feeding programs and America aseptic packaging in 8 oz. containers shipped UPS as Dairene: Vegetable Vitamin D Milk (soy is not mentioned). The packaging is made by International Paper, the makers of Pure-Pak cartons; he thinks the cartons and machine are much better that Tetra Pak. The price is about the same. He has shut down his plant 2 years ago in Florida, so all Dairene is now made only in Indiana. His Miami market is basically a half gallon market. His pull date is 30 days from the date of manufacture in a half-gallon Pure-Pak. The product goes rancid before it goes sour. Address: 801 41st St. #210, Miami Beach, Florida 33140. Phone: 305-534-5630.

5618. Archer Daniels Midland Co. 1989. Second quarter report to shareholders. 8 p.

• ***Summary:*** The section titled "ADM expands soy protein operations" (p. 3, 6) notes: "ADM's new soy protein concentrate plant at Decatur East became operational in the December, 1988 Quarter. This facility is producing powdered and granular concentrate products for the food industry and for specialty foods.

"Already the market leader in the production and sale of textured soy protein products, ADM now has a full line of textured soy protein concentrates being marketed under the Company's TVP brand. The addition of these concentrate products makes ADM the only full line soy protein supplier... An expansion of the concentrate plant is already underway and the edible isolated soy protein is also being expanded. A new isolated soy protein plant for industrial products is under construction at Decatur East and is scheduled for completion by the end of 1989.

"The growing demand for soy protein products has been aided by the reduction in dried milk supplies resulting from reduced government support programs for milk in the U.S. and in the European Community." Address: Decatur, Illinois.

5619. Dalodom, A.; Chainuvati, C.; Charnnarongkul, S. 1989. Rapid expansion of soybean production in Thailand. In: A.J. Pascale, ed. 1989. World Soybean Research Conference IV. Buenos Aires: Continuing Committee. xxviii + 2152 p. See p. 650-57. [9 ref]
• ***Summary:*** Soybean is an important field crop in Thailand. Production has increased from about 100,000 tonnes in 1980 to 366,400 tonnes in 1986, the peak year. Yields in the same period rose from 793 to 1,238 kg/ha. There are three seasons for soybean cultivation: early rainy season, late rainy season, and dry season.

Soybeans produced in Thailand are used in food products in two ways: First, the medium scale food industry produces soy milk and soy starch for local food mixtures. The other is family-scale food industry that produces fermented soybean chip for food ingredients, bean sprout, custard, curd [tofu], local soymilk and Tao si, etc. The main industries for soybean grain are oil and meal. Soybean oil annually produces about 40,000–45,000 tonnes. It can be categorized into 2 groups: 1. Sea food product canning that demands 15,000 tonnes of soybean oil a year. 2. Cooking oil, resin for light color paint and other canning uses which demand about 25,000–30,000 tonnes a year. Address: Dep. of Agricultural Extension, Bangkhen, Bangkok, Thailand.

5620. **Product Name:** Super Soy Soymilk (Plain, Vanilla, or Chocolate), and Tofu.
Manufacturer's Name: IndoVita Soya Ltd.
Manufacturer's Address: Ghaziabad, India.
Date of Introduction: 1989. February.
Wt/Vol., Packaging, Price: 200 ml pillow pack plastic pouch.
How Stored: Shelf stable, 10-14 day shelf life. Refrigerate after opening.
New Product–Documentation: Talk with Mahesh Khaitan. 1989. Aug. 6. This soymilk was introduced in Ghaziabad in Feb. 1989. The company is a very small one; they bought a small plant from Japan. They also make a little tofu, sold in a 200 gm plastic pouch surrounded by water.

Letter from A.K. Bajaj, Managing Director of Amrit Protein Foods Ltd. 1991. June 26. This company is no longer in business. Formerly they were marketing their soyamilk and tofu under the brand name of Super Soy.

5621. Medoff, Marc. 1989. Rockland tofu lover making mark on local soy scene. *Whole Life.* Jan/Feb. p. 85.
• ***Summary:*** Ex-Brooklynite the loveable and feisty former graphic artist "Soy Man" Sam Weinreb is the 62 years young founder of Local Tofu of West Nyack, New York. Nearly 8 years ago he started making tofu commercially in Haverstraw, and about 4 years ago he moved to 307 Route 59, West Nyack. The company now makes more than 1,500 lb/week of bulk tofu as well as hundreds of pounds of fresh soymilk, tofu salad, and soysage, distributed to health foods stores over a 50 mile radius. Organic soybeans are used in all products.

A large photo shows Sam, wearing a baseball cap and holding a paddle in his left hand, as he finishes making a fresh batch of tofu at Local Tofu in West Nyack, New York.

5622. *Natural Foods Merchandiser.* 1989. Soy inspirations: With plenty of new products on the horizon, retailers should begin to plan now for a sizzling Soyfoods Month in April. Feb. p. 12-13.
• ***Summary:*** Sales of soyfoods (tofu, soymilk, soy sauce, miso, other such as entrees, cheese, ice creams, meat analogs, etc.) are estimated to be $638 million for 1987 and $682 million for 1988, and projected at $754 million for 1990. Discusses Corporate Culinary Carnival soyfoods promotions by Judy Brown, and a soyfoods cooking contest by Mike Shields of Food For Thought in Long Island, New York. Winners received their weight in tofu. The unique idea made it into the pages of *USA Today.* Among the 30 entrants, winners were selected in 3 categories: entree, dessert, and beverage.

5623. Ogundipe, H.O.; Osho, Sidi M. 1989. Soybean in Nigerian diets–Past, present and future. Paper presented at the Soybean Production and Utilization Workshop. 3 p. Held 13-15 Feb. 1989 at Lagos, Nigeria. [3 ref]
• ***Summary:*** "Soybean is reported to have been introduced into Nigeria in about 1908. It was mainly restricted to that part of Nigeria now referred to as Benue State and the Zonkwa-Abuja ecological zones." The earliest known use of soybean in the Nigerian diet was in the form of dawadawa, a fermented soup condiment traditionally made from the locust bean. Presently most of the dawadawa produced in Nigeria uses soybean as its raw material. Production has spread to various parts of the country and there has been a marked improvement in processing techniques. Soy ogi and soymilk have also been used as foods in Nigeria. Since 1984 the Kersey Children's Home in Ogbomosho has run a clinic to treat malnourished children. About 24,000 out patients were teated in 1984 while at any given time about 40 severely malnourished children are admitted and placed on a diet consisting mainly of soymilk and traditional foods fortified with soybeans.

In Nigeria, the lack of recognition of the potential of the soybean is now a problem of the past. The greatest potential is expected to lie in the preparation of Nigerian foods. A book titled "Soybean Recipes" has been published. People in rural households in Nigeria are now learning to use soybeans. "The extension work with soybean utilization commenced at 3 project sites in Oyo State, i.e. Igangan, Ikoyi, Ijaye. Training and demonstrations take place at these sites, in which the villagers participate. The program has since expanded to 27 other villages.

"As a result of these training programs over 25,000

people have been trained and now soybean is found in local markets. The demand for utilization is increasing.

"Also, within the past few years, there are in the markets several soy fortified products like Nutrend, Golden morn, Nutrimax, etc. There are also whole soy products like soy nuts, soybean oil and liquid soy maggi [HVP soy sauce]. It is expected that several others will still enter the market this year.

"The future: While emphasis is presently being placed on the preparation and utilization of soybean at home, there is likely going to be a shift to commercial control processing of soybean... With the reduction in the availability of groundnut coupled with its soaring prices, soybean will play a more vigorous role in the formulation of livestock feed, with the possibility of reduction in feed cost and consequently of livestock produce." Address: 1. International Inst. of Tropical Agriculture (IITA), PMB 5320, Oyo Rd., Ibadan, Nigeria; 2. Inst. for Agricultural Research and Training (IAR&T), Ibadan, Nigeria.

5624. Rhee, Khee Choon. 1989. Production of soy protein ingredients and products. In: A.J. Pascale, ed. 1989. World Soybean Research Conference IV. Buenos Aires: Continuing Committee. xxviii + 2152 p. See p. 2142-51. [9 ref]
• ***Summary:*** Contents: Use of expanders in soy processing: Background, the new expander technology. Industrial ultrafiltration membrane technology: Background, preparation of soy protein isolates, preparation of bland soy milk and wet-curd type food products, preparation of low-salt soy protein hydrolyzates. Address: Food Protein R&D Center, Texas A&M Univ., College Station, TX 77843.

5625. Shurtleff, William; Aoyagi, Akiko. comps. 1989. Bibliography of soymilk and soymilk products: 2,612 references from A.D. 1500 to 1989. Lafayette, California: Soyfoods Center. 323 p. Subject/geographical index. Author/company index. Extensively annotated. Printed Feb. 6. 28 cm. [2612 ref]
• ***Summary:*** This is the most comprehensive bibliography ever published on soymilk. It is also the single most current and useful source of information on this subject available today, since 64% of all references (and most of the current ones) contain a summary/abstract averaging 80 words in length.

One of more than 40 bibliographies on soybeans and soyfoods being published by the Soyfoods Center, it is based on historical principles, listing all known documents and commercial products in chronological order. Containing 37 different document types (both published and unpublished, including many original interviews and partial translations of Japanese and European works), it is a powerful tool for understanding the development of this subject and related products from its earliest beginnings to the present, worldwide.

Compiled one record at a time over a period of 15 years, each reference in this bibliography features (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation, month and issue of publication, and the first author's first name (if given).

It also includes details on 577 commercial soymilk products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to use the bibliography, a complete subject and geographical index, an author/company index, and a bibliometric analysis of the composition of the book (by language, document type, year, leading countries, states, and related subjects) are also included. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

5626. **Product Name:** [Soymilk (Bulk)].
Foreign Name: Lait de Soja "en vrac".
Manufacturer's Name: SOY (Société Soy).
Manufacturer's Address: 1 rue du Crêt de la Perdrix, 42400 Saint-Chamond, France. Phone: 77.31.24.42.
Date of Introduction: 1989. February.
New Product–Documentation: Form filled out for Anthony Marrese by Bernard Storup. 1989. Nov. The product was launched in 1989. It is all private labeled, i.e., sold only under other companies' labels. Production is 30,000 liters/day, using equipment supplied by APV and Alfa-Laval.

Letter (fax) from Bernard Storup. 1990. March 10. The company started selling soymilk in bulk in Feb. 1989. Letter from Bernard Storup. 1990. Dec. 26. This product never had a Label, as it was sold in bulk, in complete tanks (citernes) of 25,000 liters each. The only buyer presently is Sapov.

5627. Turatti, J.M.; Canto, W.L. 1989. Uses for soy protein products in Brazil. In: A.J. Pascale, ed. 1989. World Soybean Research Conference IV. Buenos Aires: Continuing Committee. xxviii + 2152 p. See p. 1774-78. [3 ref. Eng]
• ***Summary:*** "Products such as defatted and full fat flour, textured protein, concentrate, isolate, soy milk powder and hydrolyzed proteins are being produced by four main industries [companies], and its use has been generalized in the infant feeding industry and in meat products. On a similar scale it has also been used in the pharmaceutical and bakery industries, as well as in chocolates, ice cream and candies. The total annual production is around 80,000 tons, and 75% of this amount is textured soy protein. The main reasons for their use are low price, functional and nutritional properties

and also difficulties with the supply of meat. Although small amounts of soy milk powder have been exported, most of the production is consumed on the internal market."

Producers of soybean intermediate products are: Sanbra S.A.–Sociedade Algodoeira do Nordeste Brasileiro S.A. (Sao Paulo–S.P.); Noval–Produtos Alimenticios Ltda. (Guaiba–RS); Olvebra S.A.–Ind. e Com. de Oleos Vegetais (Porto Alegre–R.S.); Nutrimental S.A.–Ind. e Com. [Industria e Comercio] de Alimentos (Sao Jose dos Pinhais–PR); Pink (Belo Horizonte–MG); Fiss (Nestlé, Sao Paulo–SP) and Laboratorios Griffith do Brasil.

Utilizers of soybean intermediate products in infant feeding products: Bhering–Prod. Alimenticios S.A. (Rio de Janeiro–RJ); Nutricia S.A. Industria e Comercio de Produtos Dieteticos e Nutricionais (Rio de Janeiro–RJ); Nutrimental S.A. Industria e Comercio de Alimentos (Sao Jose dos Pinhais–PR.) e Pratica Industrial (Taquara–RS.).

Meat processors: Swift–Armour S.A. Ind. e Com. (Santo Andre–SP.); Frigorifico Herme (Sao Paulo–SP); Frigobras (Sadia–Sao Paulo–SP); Comabra (Wilson–Sao Paulo–SP).

Producers of bakery products: Pao Americano–Industria e Comercio S.A. an Lua Nova–Industria e Comercio de Prod. Alimenticios Ltda.

Pharmaceutical industry: Laborateropica Bristol–Quimica e Farmaceutica Ltda. (Sao Paulo–SP).

"It has been estimated that, in 1985, the total soybean proteic products production was around 80,000 ton, produced in decreasing order, by: Olvebra, Nutrimental–(Filial Energe) and Noval. The most important products, in quantitative terms, were: texturized protein, accounting for 75% of the total production, followed by the powdered soymilk flours, concentrates, isolates, etc.

"The major buyers of soybean proteic products are those industries producing to infant feeding programs coordinated by FAE (Fudacao de Assistencia ao Estudante) and other institutional organizations such as PCA (Programa de Complementacao Alimentar) and LBA (Legiao Brasileira de Assistencia) and the meat processors and on a smaller scale the pharmaceutical, chocolate and baking industries...

"Soybean protein products have been used in vegetarian and macrobiotic products, due to their vegetable origin, high protein content and low price." Address: Instituto de Technologia de Alimentos, Avenida Brasil, 2880–C.P. 139, 13.073–Campinas–SP, Brazil.

5628. **Product Name:** Ah Soy (Soymilk) [American Original, Dutch Cocoa, and French Vanilla in 32 oz sizes; Original, Chocolate, Vanilla, and Carob in 6 oz sizes].
Manufacturer's Name: Westbrae Natural Foods.
Manufacturer's Address: P.O. Box 91-1181, Commerce, CA 90091. Phone: 213-722-1692.
Date of Introduction: 1989. February.
Wt/Vol., Packaging, Price: 6 oz or 32 oz sizes.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: News release from Westbrae. 1989. Feb. 2. "Westbrae acquires Ah Soy. Effective Jan. 31, 1989 Westbrae acquired the Ah Soy line of soymilks from Great Eastern Sun. All Ah Soy products will be available Feb. 1 for pickups and shipping from Westbrae warehouses in Commerce, California, and No. Brunswick, New Jersey."

Soya Newsletter. 1989. Jan/April. p. 12. "Ah Soy is available in quarts, in three flavors, and in six ounce retort packs in four flavors."

5629. Wilson, J.C. 1989. The commercial utilization of soybeans, soymilk and soymilk derivatives. In: A.J. Pascale, ed. 1989. World Soybean Research Conference IV. Buenos Aires: Continuing Committee. xxviii + 2152 p. See p. 1750-61.
• ***Summary:*** Abstract. Introduction. Philosophy of preparing soybase: The enzyme lipoxygenase acts as a catalyst, inducing the oxidation of fats to create aldehydes and ketones–"beany" flavour and aroma. The enzyme lipoxygenase can be inactivated in hot water by exposure to temperatures exceeding 80ºC and destroyed by a temperature of 85ºC for two minutes. Excessive heat causes protein insolubility. Ancient method for processing of soymilk.

Dehulling. Cornell hot grind method to control bean flavor: this is the "landmark development of the modern soymilk industry." Blanching (University of Illinois method; steaming dehulled cotyledons before grinding, with no removal of fibre / okara). Problem of "chalky mouth feel [and throat-drying effect]. Removal of fiber (The "Japanese soymilk industry has followed the Illinois method but solved the chalkiness problem by a fibre removal step"). But 2 new problems: protein insolubility and protein instability in aseptically filled UHT soymilk. From 1978 to 1983 the Japanese soymilk market grew at about 85% a year, however the price of soymilk exceeded that of cow's milk.

Alfa-Laval's soybase extraction line Soyal. Alfa-Laval does no dehulling and double grinding in hot water in an air-free environment. One goal is to inactivate 85% of the trypsin inhibitor (see Fig. 5). Market trends. Future expectations: Soybeans without lipoxygenase, growing acceptance of soymilk and products made from soymilk, strong growth of tofu (especially of aseptically packed tofu with spices), realisation of the importance of quality soy foods in school lunch programs. Address: Alfa-Laval Food & Dairy International AB, Postbox 72, 221 00 Lund, Sweden.

5630. Pedrick, Ed. 1989. Clofine spray dried tofu (Interview). *SoyaScan Notes.* March 2. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ed has been with Clofine since 1982. He is age 36, a vegetarian, and has *The Book of Tofu.* In 1983 he heard that Tofutti was having trouble making their soy ice cream. He began to work with them to develop a spray dried tofu.

Clofine's specialty is drying dairy milk and whey powder; they move 50-60 million pounds of these a year. By late 1983 Clofine was having made and selling a spray dried tofu to Tofu Time, Inc. Tofutti wanted to keep the arrangement secret, but this is no longer a problem for them. Growth of sales was very rapid at the beginning, then it slowed and now it is again rapid, more than doubling each year. In the past 5 months Clofine has sold more product than they sold in the previous year.

Clofine has soybeans dehulled and ground to a fine flour, which is taken to the Armour Foods plant in Springfield, Kentucky. Under license from Clofine, they use the flour to make soymilk, coagulate the milk with calcium sulfate, then slurry the curds and spray dry the slurry for as little as $0.18 to $0.20/lb. The maximum solids content in the slurry is 26%. They could (but do not) add a small amount of polysorbates to lower the viscosity. They keep costs down by running large batches. Pareve (pronounced par-VAY) products require the plant to be shut down for 24 hours before a run, then a rabbi must come, inspect, and stay during the run. Cleanup afterward takes 4 hours. Clofine's spray dried tofu sells for about $1.50/lb. and their spray dried soymilk for $0.70 to $0.85.

Clofine has been working for the past 2 years with Raj Gupta and his ProSoya process, which seems to give better flavor and functionality than their current process. Address: Clofine Dairy & Food Products, Technical Director, P.O. Box 335, Linwood, New Jersey 08221. Phone: 800-441-1001.

5631. Widmer, Myron. 1989. GC sells LLF [Loma Linda Foods] infant formula division for $21 million. *Adventist Review* (*Hagerstown, Maryland*). March 2. p. 6-7 (p. 214-15).

• ***Summary:*** "In a move that radically alters the shape of Loma Linda Foods of Riverside, California, the General Conference Corporation has sold LLF's Infant Formula Division for $21.5 million to the Holland-based company of N.V. Verenigde Bedrijven Nutricia, a diverse food company with annual sales of $350 million and Europe's second-largest producer of milk-based infant formula.

"The sale, effective February 10, 1989, culminated months of negotiations and gave Nutricia ownership of the Soylac [Soyalac] and I-soylac [i-Soyalac] patents, all production facilities in both Mount Vernon, Ohio, and Riverside, and the name 'Loma Linda Foods.'

"The church continues to own patent rights, on-hand inventories, and the equipment for all other LLF products, from meat analogs to its soymilk and gravy mixes."

"The church already has formed a new company–LaLoma Foods, Inc.–that will concentrate solely on producing vegetarian health foods."

"The new LaLoma Foods is renting office space (about 2 miles from its former headquarters) where the staff operates under the continuing leadership of Alejo Pizarro, former president of Loma Linda Foods... The sale contract includes a provision requiring Nutricia-owned Loma Linda Foods to return the name Loma Linda back to the church without charge if LLF chooses a new company name.

"The sale of the Soyalac division brings to a close 38 years of infant formula production by the Adventist Church at the Mount Vernon site. Nutricia's plans for the Mount Vernon plant are not clear at the present, as the newly constructed $5 million infant formula plant at the Riverside site will begin production soon.

Why sell? 1. Competition: LLF's market share has been declining for several years and now stands at less than 1%. 2. Product Liability": LLF has been unable to purchase the $100 million product liability policy recommended by legal consultants. LLF recently has carried a $20 million policy. 3. Stringent (Government) Regulations. 4. Retirement Plan: LLF began to turn the corner on profits in the past 4 years (with a cumulative gain of approximately $4 million), and thus was being forced to create a new retirement plan for its employees. 5. Technical Personnel: LLF has had difficulty in attracting technically and scientifically qualified personnel in both its Research and Development and Marketing departments because of the denominational wage scale. 6. Unique Contribution Gone.

"Of the $21.5 million realized from the sale,... $5 million will be used to pay off LLF's indebtedness (primarily accrued from the construction of the new infant formula plant at Riverside), and the remainder will be available to fund the cost of the new production facility for LaLoma Foods." LaLoma's new address is 12155 (9B) Magnolia Ave., Riverside, CA 92505; phone 714-351-4300.

Photos show: (1) The tall Loma Linda Foods plant in Riverside, California. (2) William Murrill (of the Adventist General Conference, and former LLF board chairman), and Alejo Pizarro.

5632. Storup, Bernard. 1989. Re: History of Société Soy–France's largest tofu manufacturer. Letter to William Shurtleff at Soyfoods Center, March 3. 3 p. See p. 1-3. [Eng]

• ***Summary:*** Soy (also called Société Soy or Soy S.A.R.L.) was founded in Feb. 1982 by Bernard Storup and Jean de Preneuf. (Note that "Société" means simply "company" and S.A.R.L. means "Société a Responsabilite Limitée," like GmbH in German). S.A.R.L. is the legal type of company, and it is compulsory to have this term on all official papers in France. Bernard came from a family of dairy product manufacturers. In the minds of customers and other companies this company's name is "Soy," a term which in French has no particular connection with soybeans.

Bernard and his wife Françoise came to America in Nov. 1980 to study tofu and soymilk around the country; they stayed until July 1981, attending the Soycrafters' Conference at Colorado State University. Jean de Preneuf did the same thing from Sept. 1980 to July 1981. Most U.S. tofu

companies were still small and inexperienced at the time, but those which Bernard and Jean found most interesting were Island Spring, Nasoya, New England Soy Dairy, White Wave, and Swan Gardens (Miami, Florida). Jean and Françoise also visited with William and Akiko Shurtleff in California.

Upon returning to France, Bernard and Jean set up a soy dairy (600 square meters) in Cerny, a small village located (35 km or 22 miles) due south of Paris, near places named La-Ferté-Alais and Torfu. They started to make tofu commercially in June 1982. By 1983-84 they were making 2,500 kg/week (5,500 lb/week) of tofu.

In December 1986 the company stopped production at Cerny and moved to a larger (1,400 square meters) and more rationally designed plant located 500 km (310 miles) south of Paris in the foothills (elevation 600 meters) in St.-Chamond, near St.-Etienne, a little southwest of Lyon. Situated on the border of the Pilat Natural Regional Park (Parc Naturel Regional du Pilat, 65,000 ha or 161,000 acres) they had a nice view of the mountains. They moved to this location for two main reasons: (1) Because it has some of the best French water (of the same phreatic groundwater origin as most French mineral water such as Badoit, Evian, Vittel, etc.); (2) Because of the geographic location, being at the center of France, only 2 hours by road from Switzerland and Italy, 4 hours from Germany, less than 4 hours from Paris, and 5 hours from Spain. Production at Saint-Chamond began in Jan. 1987.

"Throughout the years we have developed our own technology and equipment, and have now a rather good quality soymilk and tofu. At present, we carry different families of products on 3 different markets.

"(1) The health-food market. Up to now it has been our main market, and we are now distributing to nearly all health-food stores equipped with a cooler (about 1,500 out of a total of 2,500 in France). The distribution itself is all done through specialized distributors in this field in France (about 20). We are the leader in this market (being practically alone), but this field is nearly saturated for our products. We should see a maximum increase of 20–30% in the next 3 years, as these traditional health-food stores are getting more and more competition from supermarkets. We are presently in the same type of market in Switzerland through a distributor, and directly in Germany and Belgium.

"(2) The food industry. They are looking for a 'soy-base' to lower fats in cooked pork meats (sausages, pâtés, etc.), or to use in prepared cooked foods ('plats cuisinés', or to fill pastas, etc.). We sell them bulk vacuum-packed tofu pieces of 3–4 kg each. In terms of volume, this market should be the more important in the future, but not in terms of sales, as prices are of course rather low. We began (January 1989) to sell soymilk in bulk (by 25,000 liters tank) to distributors interested in having their own brand-names, and dealing with supermarkets or the health-food market. This soymilk is packaged in Tetra-Brick cartons by another company. Up to now we haven't carried our own brand. There will be such competition (in price) with soymilk in Europe in the forthcoming months that it may be better to stay as a simple supplier. Anyway our position can change rapidly. We should produce about 2 million liters of soymilk this year, having contracts already for more than 1 million, on a market estimated at 7 to 10 million liters in France in 1988. The soymilk market is estimated to increase at 20 to 30% a year for the coming years, and most supermarkets are now considering having their own brands. Prices to final consumers have been rather high up to now (9 to 12 French francs [FF] per liter), and should drop clearly in the future. The leader in Europe, Vandemoortele (with Provamel, etc., brands), lowered his prices twice last year in France. Anyway, these figures are and will remain extremely weak compared to the traditional milk market (plus the dairy lobby takes a strong position against these substitutes in the E.C.C.).

"(3) The super and hypermarkets. These represent actually 54-55% of total food sales in France (1.5% for health-food stores, 5% for co-ops and direct from factory sales, the rest for traditional grocery stores). We will introduce 4 complete lines of products with complete new packaging in April 1989, on a new brand, 'Jean de Preneuf' (remember 'pre' means field, and 'neuf' new), 'SOY' being our brand-name for health-food markets. We do actually 2 or 3% of our total sales in this market, and hope to be at 35% at the end of 1989.

"Last year we sold about 550 tonnes of tofu, most of it under a prepared form (burgers, sausages, desserts, etc); sales of plain tofu represent about 23% in tonnage, but only 10% in turnover. We had a total sales in 1988 of about 13,000,000 FF, and nearly no profit (35,000 FF). This can be explained by the fact that we had very heavy investments, mainly to automate the production, and because we have a policy of very reasonable prices (all those who tried to enter the health-food market became aware of this). For 1989, we should have total sales of 18 to 19,000,000 FF (introduction in supermarkets, soymilk sales, sales development in Germany, etc.). This should represent 750-800 tonnes of tofu plus about 2,000 tonnes = 2,000,000 liters of soymilk. We actually use only organic French soybeans, and have the 'Nature et Progres' organic certification symbol/slogan for all of our products, which is the best one you can have for organic products.

"There are 27 people working in the company, half of them being technicians with a strong professional background (from the dairy industry, agricultural engineers, automaticians, etc). Jean and I have 90% of the shares, 10% belonging to people working in the company."

The company presently has about $2 million (12 million francs) annual sales. Bernard is the owner and head; Jean is in PR and sales. Their main products are: 1. Tofu Burgers

(Croque Tofu) sold in 4 flavors and eaten in France with a sauce, not between buns like a typical U.S. burger. 2. Tofu Sausages (Roulades de Tofu, Tofinelle) with Sauce and mushrooms or smoked salmon. These sausages, larger than a U.S. hot dog, are sold 2 in a package with the sauce. 3. Soy yogurt-like or parfait-like dessert (Soyeux), sold in 6 flavors. They now market these products plus Tofast Soya Paste, Tofumé smoked tofu, and Granioc (wholegrain & tofu meatless burgers) in England, and have a nice brochure to advertise them.

In April 1989 the company changed its legal status from Soy S.A.R.L. to Soy S.A. (Société Anonyme), and added 400 square meters of extra cooler and storage space.

In a form filled out for Anthony Marrese in Nov. 1989, Bernard noted the following production figures: Tofu & Tofu Fumé 3 tonnes/week. Tofu Burgers (Croque Tofou) 2 tonnes/week. Soy dessert (Soyeux [pudding]) 2 tonnes/week. Tofinelle sausage 2 tonnes/week. Soymilk 30,000 liters/day (Maximum capacity 3,000 liters/hour). Société Soy is under a confidentiality agreement with APV of England and Alfa-Laval of Sweden, both of whom are supplying equipment to them. Anthony notes that all Société Soy products are professionally done and very good.

Update 1990 March 10. In Oct. 1989 a new syndicate of 7 large French soyfoods manufacturers was formed. Société Soy is one of the members. In Nov. 1989 a new partner and investor came into the company. He now owns 20% of the stock. He is the brother-in-law of the leader of the most powerful food group in France. Société Soy now employs about 30 people, an excellent team. Address: Founder and Owner, Société Soy, 1 rue du Crêt de la Perdrix, 42400 Saint-Chamond, France. Phone: 77.31.23.66.

5633. Storup, Bernard. 1989. Re: The soyfoods and tofu markets in Europe and France. Letter to William Shurtleff at Soyfoods Center, March 3. 2 p. Typed, with signature on letterhead. [Eng]

• ***Summary:*** "The coming competition in the soyfoods market in Europe will be quite different from what happened in the U.S. There will soon be no room for small companies. The competition in the complex market with its high population density leads most food industry companies to have a necessary minimum critical size, and this will be more true than ever starting in 1992 with the complete opening of national boundaries within the EEC. From now on we should not see the opening of small-scale tofu manufacturers in Europe–at least not viable ones that are larger than community scale.

In France, the soyfoods market should evolve rapidly in two main directions in terms of products. In nearly all cases, tofu will be used as an ingredient, and not presented as plain tofu or soya. One major new area is dairylike products ("produits apparentés laitiers" in French). Most big dairy companies are now working on soy-based yogurts. The first major company to put such a product (Sojasun, major launch in Oct. 1988) in supermarkets is Laiterie Triballat (rue Julien Neveu, 35530 Noyal-sur-Vilaine, France. Phone: 99.00.51.01). They are mainly cheese makers and have nationwide distribution. They also own Bonneterre S.A., the leader in France for fresh products on the health food market. Triballat plans to sell about 40 million x 100 gm yogurt cups (4,000 tonnes) the first year, for a total sales of about 70 million French francs (FF). The product is relatively good but rather sugary. Last October, Triballat had a national TV ad campaign to launch its products for 2 weeks on our 5 networks, costing about 10 million FF; another will appear in the spring. Within a year, 1 or 2 other major dairy companies should be on the market with similar products.

But actually the market will be much bigger for "mixed cheeses" (made from a mixture of cow's milk and soymilk). Most major cheese makers are working on such products, but nothing should be launched before at least 1 year. We already tasted "mixed cheeses"; its hard to tell any difference from regular cheese. The interest for dairy companies lies in a different set of facts. It will be increasingly difficult and expensive in the coming years to find cow's milk in Europe, especially after the EEC programs cutting milk production to reduce milk and butter surpluses. The only growing cheese market is for low-fat cheese (growing at least 20% a year). There is also the difference in price between cow's milk and soymilk. And there is such competition for cheese that a good part of the production does not generate adequate profit. So everybody is looking for a market niche, and they know there is money to be made by the first new products on the market in each new niche.

Major players in the soyfoods industry in France are Sojadoc in Albi (Started Dec. 1981; Make tofu and soymilk), Cacoja in Issenheim (an affiliate of Coopérative Agricole de Colmar, or CAC; Started April 1986; Make soymilk and soy desserts), Sojalpe (Started 1986 or 1987, but bought out in early 1988 by a large agricultural cooperative, Coopérative Agricole Silos de Valence; This co-op created a company named Innoval at the end of 1987; Make tofu and yoghurt-like Innovy). Address: Founder and Owner, Société Soy, 1 rue du Crêt de la Perdrix, 42400 Saint-Chamond, France. Phone: 77.31.23.66.

5634. Storup, Bernard. 1989. Re: Brief history of Sojadoc. Letter to William Shurtleff at Soyfoods Center, March 3. 1 p. See p. 5. [Eng]

• ***Summary:*** In Dec. 1981 Olivier Attié began to make tofu on his farm in a small village named Penne-d'Agenais, 47140 in southwest France. With 3 friends, he decided to start a small company to sell tofu in shops and market places, so they founded Sojadoc S.A.R.L. The group split up rapidly, and only 2 of them, Alain Lacombe and Jacques Isnard, went on with the business, which began operation at the end of 1983. In 1985 they had financial problems–they

were making only plain tofu and distributing it locally. The company started again at the end of 1985 with three new partners: (1) Coopérative Agricole de Lavaur, one of the biggest agricultural cooperatives in France, with about 5,000 ha (12,350 acres) of soybeans cultivated under contracts with farmers in southwest France; (2) Charbonnages de France, a coal mining company that paid for part of the new factory in a region where they had to close coal mines; and (3) Sanofi, an affiliate of the oil group Elf-Aquitaine, which is very interested in biotechnology.

Sojadoc S.A. built a new factory (1,350 square meters) at Zone Industrielle de la Viscose, 81000 Albi, France (Phone: 63.45.46.45). They intended to sell a "soy-base" (tofu, and a thick soymilk they called "tonyu") mainly to the food industry, and for 2 years they had a rather efficient program for promoting soyfoods among industrialists. They began to get some contracts with the industry for what we call "plats cuisinés" (things like quenelles, quiches, and pizzas), and for ice cream making, but these didn't last since the quality was very irregular, with major bacteriological problems. In 1987 they began to sell soymilk packed using the Doypack system. Sold mainly to Spain, it was very poor in quality with a strong beany taste. They had so much sales, that they were obliged to go out of business in mid-1988. At the end of 1988 the company was purchased by a big dairy cooperative group named Coopérative Laitière de Riches Monts (65 Boulevard Berthelot, 63000 Clermond-Ferrand, France) located in the center of France. Production had stopped completely by the autumn of 1988, and all equipment is going to be transferred to the new location. The aim of the new operation is to make and sell soymilk in the near future. Address: Founder and Owner, Société Soy, 1 rue du Crêt de la Perdrix, 42400 St.-Chamond, France. Phone: 77.31.23.66.

5635. Storup, Bernard. 1989. Re: Brief history of Cacoja, an affiliate of Coopérative Agricole de Céréales, Colmar (CAC). Letter to William Shurtleff at Soyfoods Center, March 3. 1 p. See p. 6. [Eng]

• ***Summary:*** In April 1986 CAC decided to create an affiliate to produce value-added products from the soybean cultivation they were promoting in Alsace (in southeastern France). They bought an Alfa-Laval soymilk system (5 million French francs plus 6 million francs for the building and grounds). In Jan. 1987 they produced their first soymilk and soy desserts, using very good quality soymilk, under the brand name Bioforme, and packed in Tetra Brik cartons by a neighboring dairy, La Calas. They have also prepared a line of products made by other companies, from "soy-nuts" (made by Benenuts) to tofu sauces and "plats cuisinés." These products are targeted mainly to supermarkets and the food industry, to whom they market the concept of a soy-base obtained by ultrafiltration.

In Sept. 1988 they launched their own tofu (coagulated ultrafiltered soymilk), marketed as a fresh product, but they are blocked by two facts: (1) they cannot distribute it in the health food market, since Société Soy is there; (2) the large scale distribution supermarkets are not ready for such a product. They intend to market their product line to supermarkets this coming spring, as well as a line of low-fat pork meat products. They have been obliged to change their brand name from Bioforme/Bioforce to Formoja by the end of 1988, having been prosecuted by another company named Bioforce.

This is an intelligent team, with good financial backing from CAC, efficiently run by Mr. Rochet, but they may be lacking a real marketing policy.

It is hard to say how much they produced last year. They planned to produce 1 million liters in 1987 and 2.5 million in 1988, but it seems unlikely that they have been able to produce such large amounts. They will never reveal their actual production figures.

Note: A form filled out for Anthony Marrese in Nov. 1989 stated that they make Mayonnaises, Sauce Vinaigrette, Chocolat, Desserts, and Aperitifs. They suggested that Anthony phone Dr. Cuatron at 89.74.17.07.

Update by Bernard Storup. 1990. March 26. This company has had constant problems with having to change its name. In Sept. or Oct. 1989 that had to change from Cacoja to Biosoja, and now they will have to change the latter again. They are presently the largest soymilk maker in France. They also had to change their original brand, Bioforme, to Cacoja, and now that will have to be changed again to Formoja.

Update by Bernard Storup. 1990. June 13. The company is presently named Cacoja (pronounced KA-ko-jah), but the name Cacoja belongs to another group–a health food group named Aida, which distributes health food products in France. So only the brand name has changed. Address: Founder and Owner, Société Soy, 1 rue du Crêt de la Perdrix, 42400 St.-Chamond, France.

5636. Storup, Bernard. 1989. Re: Brief history of Innoval / Sojalpe, an affiliate of Coopérative Agricole Silos de Valence. Letter to William Shurtleff at Soyfoods Center, March 3. 1 p. See p. 6. [Eng]

• ***Summary:*** Sojalpe was started as a traditional tofu shop by a very dynamic and inventive guy named Martial Gonin in about 1986 or 1987 [sic, Dec. 1986]. He was definitely in business by late 1987 and located at Saint Quentin sur Isere, 38210 Tullins (near Valence), France. This is in southeast France. he first made and sold plain tofu, then his "Royales au Tofu," which were kind of quenelles (specialties of that part of France, between a sausage and a souffle, usually prepared with a sauce, and made from wheat flour and animal fat). In these he used tofu instead of the fat, and packed the product in cans with a shelf life of at least 1 year. He also made and sold "Palets au Tofu," which were kind of

tofuburgers.

In early 1988 he made a big deal with an agricultural cooperative named Coopérative Agricole Silos de Valence (441 bis Avenue Victor Hugo, 26000 Valence, France. Phone: 75.44.01.61). This co-op created a company named Innoval at the end of 1987. Innoval purchased 50% of the Sojalpe shares of stock, then dismissed Martial Gonin from the company by the end of 1988. Innoval had a brand new factory built, and equipped with an Alfa-Laval system (to be installed in early 1989), plus a 5 million French franc Buhler-Miag cleaning and dehulling system; all this for an total investment of nearly 20 million French francs. Sojalpe was the only way that they could enter the health food market, so they kept that as their brand for this market. Sojalpe presently sells their products directly to shops and co-ops in France, as no distributors want to work with them (the distributors are already distributing Société Soy products). As Sojalpe has low prices and large transportation expenses, with low sales, it is quite certain that they are losing money. They make an estimated 300 to 400 kg/week of tofu. Innoval also carries a line of yogurt-like products named Innovy.

In fact it is to early to know exactly what this company intends to do, and it seems that they themselves don't known exactly–which is not so rare among co-ops.

Update from Bernard: 1990 March 10. "Innoval does not seem to be doing very well, but I don't have details. They seem to sell only some soymilk in health food stores. It is very expensive but one of the best I've ever tasted. I have never seen even 1 pack of their Innoval tofu." Address: Founder and Owner, Société Soy, 1 rue du Crêt de la Perdrix, 42400 St.-Chamond, France.

5637. Bishop, N.; McGraw, M.; Ward, N. 1989. Aluminium in infant formulas. *Lancet* i(8636):490. March 4. [11 ref]
• ***Summary:*** "Compared with carefully collected breast milk (5-20 micrograms/liter), aluminium concentrations are 10-20 fold greater in most cow's milk derived formulas and 100-fold greater in soy-based formulas... The current European Community directive specifies that the aluminium content of drinking water must not exceed 200 mcg/liter so the aluminium concentration in infant formulas may increase considerably during preparation.

"Aluminium absorption may be increased in the neonatal period. The permeability of the gastrointestinal tract is greatest in the first days after birth, enhancing the potential for absorption of substances normally excluded... Aluminium is excreted through the kidney, and immature or reduced renal function can result in accumulation... Preterm infants are at increased risk of retaining absorbed aluminium... Aluminium is deposited in bone and brain where, if in sufficient quantities, it exerts toxic effects...

"There is no evidence that cow's milk formulas pose a particular risk to most full-term infants. The American Committee on Nutrition suggested that it would be prudent to avoid soy-based formulas in low birthweight infants and those with impaired renal function, including preterm infants... Soy-based formulas have the highest aluminium and phytate contents of any available for newborn infants and may represent an avoidable hazard when gastrointestinal and renal function are immature; these formulas should be available on medical advice only." Address: 1. MRC [Medical Research Council] Dunn Nutrition Unit, Cambridge CB4 1XJ; 2. Dep. of Pediatrics, Southmead Hospital, Bristol; 3. Trace Element Analysis Lab., Dep. of Chemistry, Univ. of Surrey, Guildford, Surrey. All: England.

5638. Bishop, N.; McGraw, M.; Ward, B. 1989. Aluminium in infant formulas. *Lancet* i(8637):565. March 11. [3 ref]
• ***Summary:*** Infants at particular risk from aluminium in infant milk formulas are those born prematurely or those with impaired renal function. "For infants born full term, there is evidence to suggest that larger amounts of aluminium are absorbed during the first month after birth, and it would seem prudent to suggest that formulas with higher aluminium content should be used at this time only for specific medical indications. There is, however, no evidence to suggest that the use of soy-based formulas in older infants and children is likely to result in aluminium toxicity." Address: 1. MRC Dunn Nutrition Unit, Cambridge CB4 1XJ; 2. Dep. of Pediatrics, Southmead Hospital, Bristol; 3. Trace Element Analysis Lab., Dep. of Chemistry, Univ. of Surrey, Guildford, Surrey. All: England.

5639. Stanton, Russ. 1989. Dutch firm to expand Loma Linda Foods. *Press-Enterprise* (*Riverside, California*). March 11. p. H-1, H-3.
• ***Summary:*** "The Dutch company that acquired Riverside-based Loma Linda Foods last month plans to greatly expand the size of the health-food maker beginning next year, the company's new president [43-year-old Cornelis Rumpff] said yesterday... Nutricia acquired Loma Linda Foods for its soybean-based infant formula operations, which accounted for about 60% of the company's $20 million in sales last year. Loma Linda Foods' liquid and powder formula are sold under the Soyalac and I-Soyalac labels... The Dutch company's first order of business, Rumpff said, is to complete a $5 million infant formula processing line that the company's previous owner, the General Conference of the Seventh-day Adventist, started in 1987 but didn't complete."

"In Europe, Nutricia sells infant formula, baby foods and cereals, Chocomel, a chocolate milk drink popular among teenagers, and clinical nutrition products to hospitals for patients with special dietary needs. In 1988, Nutricia earned $24 million (U.S.) on sales of $430 million (U.S.)"

5640. Lechevestrier, Yvon. 1989. Triballat lance le dessert au soja: L'industrie peut aider l'agriculture [Triballat launches soya dessert: Industry can aid agriculture]. *Tribune de*

l'Ouest (*La*). March 17. [Fre]
• ***Summary:*** The new product, Sojasun, is sold in a small pot like yogurt or fresh cheese (*fromage frais*) under the Rians brand. A photo shows Jean Clanchin and co-workers at Nyal tasting the dessert. "Amidst 550,000 tonnes of yogurts and other desserts in small pots consumed by the French in 1987, a new product is trying to conquer a place: Soja Sun." Local soybean farmers near Rennes are also happy. Clanchin, age 50, and the man behind this product, has been director of this dairy company since 1964. He hopes to sell 40 million little pots a year. "Its a big challenge for Jean Clanchin and his 450 employees. He keeps smiling. In 1964 he started with 37 people/employees. If we had not moved ahead, we wouldn't be here any longer.

"The Triballat dairies are two sister companies, which are named after Hubert Triballat, who directs the unit at Rians in the department (like a county) of Cher, while his brother-in-law, Jean Clanchin, is at the head of the dairy at Noyal-sur-Vilaine. The combination employs 1,400 people (including those employed by affiliates) and has an annual turnover of about 1,200 million French francs."

Note: This private company is actually run by both Mr. and Mrs. Clanchin. She is a smart, aggressive, cost-conscious businesswoman who has played a key role in the company's success. Address: France.

5641. Lawson, Margaret; Milla, P.J.; Harper, J.I. 1989. Aluminium and infant formulae. *Lancet* i(8638):614-15. March 18. [4 ref]
• ***Summary:*** The aluminum content of soya formulas seems higher than that regular infant formulas based on cow's milk, and infant formulas containing a protein hydrolysate may be equally high. Address: Dep. of Dietetics, Gastroenterology Unit, and Dep. of Dermatology, Hospitals for Sick Children, London WC1N 3JH, England.

5642. *Pacific Union Recorder* (*Westlake Village, California*). 1989. Loma Linda Foods sells infant formula division. Continued availability of meat analogs assured while company seeks new manufacturing site. March 20. p. 5. [1 ref]
• ***Summary:*** "The company was turned over to N.V. Verenigde Bedrijven Nutricia (United Nutrition Cos.) of Amsterdam in early February. Most of the 100 workers who served at the plant will continue working under an agreement which allows for conditions similar to that they already had. The company will not operate on Saturdays. Including sales representatives and staff at Mr. Vernon, Loma Linda Foods had employed about 170 people."

"Loma Linda Foods was one of Riverside's largest private companies, according to the Riverside *Press-Enterprise.* It was established in 1906 in Loma Linda and moved to Riverside in 1938."

5643. Akwarius Almere. 1989. Akwarius prijs en bestelboek: Natuurvoedingsprodukten, Januari-Februari-Maart [Catalog and price list: Natural food products, January-March]. P.O. Box 50070, 1305 AL Almere, The Netherlands. 77 p. [Dut]
• ***Summary:*** For details, see entry for the April-June 1989 catalog. Address: Almere, Netherlands. Phone: 03240-20800.

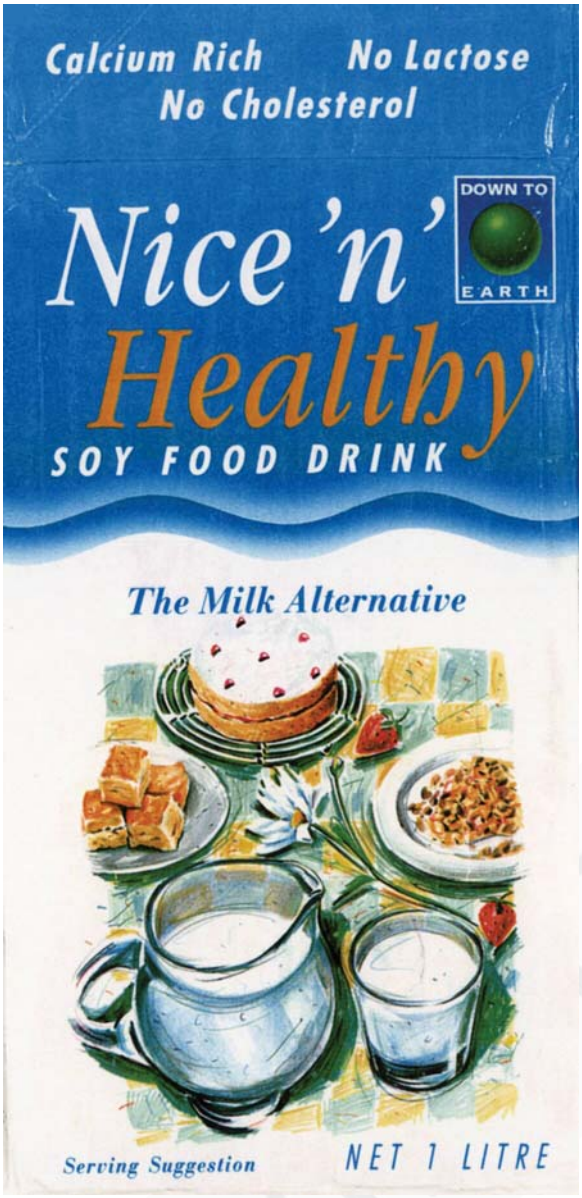
5644. Danish Turnkey Dairies, Soya Technology Div. 1989. Brief description of some of the projects established or being establish. 2 Europaplads (P.O. Box 146), DK-8100 Aarhus C, Denmark. 2 p. Unpublished manuscript. [Eng]
• ***Summary:*** 1985. DE-VAU-GE, Lueneburg, West Germany. 4,000 liters/hour soymilk plant. Products: Long life beverages and desserts.

1988. Pacific Foods, Tualatin, Oregon, USA. 3,000 liters/hour soymilk base plant with ultrafiltration unit. Products: Concentrated soymilk for the processed food industry.

1989. Amrit Protein Foods Ltd., Ghaziabad, India. 6,000 liters/hour soymilk plant. Products: Fresh and long life beverages, soy ice cream mix, soy-lassi.

1989. Gitic, Guangzhou, China. 3,000 liters/hour soymilk base plant. Products: Vacuum dried soymilk/cane sugar crystals. Address: Aarhus, Denmark. Phone: (06) 12 4155.

5645. **Product Name:** Nice 'n' Healthy: Soy Food Drink.
Manufacturer's Name: Down to Earth Natural Products Ltd.
Manufacturer's Address: Box 12082, Penrose, Auckland, New Zealand. Phone: (09) 590 592.
Date of Introduction: 1989. March.
Ingredients: Soya protein [isolate], vegetable oil, maltose syrup, maltodextrin, fructose, vegetable emulsifier and stabiliser (471, 401, 412), mineral salts [incl. calcium] (341c, 170, 332, 340, zinc gluconate), vitamins (B-1, B-2, B-12, A, D), water added (pure south island artesian water).
Wt/Vol., Packaging, Price: 1 liter Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 ml.: Energy 260 kj, protein 3.4 gm, fat 3.4 gm, carbohydrate 4.7 gm, calcium 116 mg, phosphorus 58 mg, sodium 44 mg, potassium 140 mg, zinc 0.34 mg, vitamin B-1 0.04 mg, vitamin B-2 0.17 mg, vitamin B-12 0.50 mcg, vitamin A 40 mcg, vitamin D 0.33 mcg.
New Product–Documentation: Label (carton with product) sent by Bean Supreme (Box 12082, Penrose, NZ). 1990. Feb. 19. 3.75 by 6.5 by 2.5 inches. Tetra Brik carton. Blue, tan, green, and yellow on white. Down to Earth logo is a green sphere. "The milk alternative." An illustration on the front panel shows a table setting with a pitcher and glass of milk, stack of pancakes, a daisy, strawberries, and fried tofu. Back panel reads: "Nice 'n' Healthy contains 8.5 gm of quality protein for every 250 ml serving. Calcium rich, Nice 'n'



Healthy contains as much calcium as milk [290 mg per 250 ml serving], and other vitamins and minerals important to people who may be restricting their intake of meat or dairy products." Top of carton reads: "Best before 11 Jul 1990. Serve chilled. Refrigerate once open. Shake well. Calcium rich. No lactose. No cholesterol. Distributed in Australia by Spiral Foods, 13 Cubitt St., Richmond, Victoria. Phone: 03-429-8425.

In about Feb. 1990 the company changed its name from "Bean Supreme" to "Down to Earth Natural Products Ltd." Bean Supreme will remain as a brand name for their existing and expanding range of traditional soy products. This is the first product launched under the new name.

Letter from Trevor Johnston, Managing Director of Bean Supreme Ltd. 1994. July 8. This isolate-based soymilk was launched in March 1989. It is sold in an aseptic carton, a color photo of which is shown.

5646. Hamm, Ulrich; Mueller, Andreas. 1989. Nachfrage nach imitationsprodukten fuer Milch und Milcherzeugnisse in der EG-9: Analyse und Prognose unter besonderer Beruecksichtigung der Aufhebung von Imitationsverboten [Demand for imitation products for milk and milk products in the EG-9: Analysis and prognosis with special consideration for the suspension/cancellation of forbidden imitation products]. *Agrarwirtschaft* 38(3):74-83. [35 ref. Ger]

• ***Summary:*** This study, originally published as a report in 1987, indicates that use of tofu in West Germany was only 800 tonnes in 1986 but is expected to reach 4,000 tonnes/year by 1992. In the entire EG (European community), the use of tofu in 1986 was about 5,000 tonnes/year, expected to climb to 12,500 tonnes by 1992.

Soymilk (Sojamilch) consumption in the EG-9 in 1986 was about 16,000 tonnes, expected to grow to 28,500 tonnes by 1992.

See also Boeckenhoff et al. 1989. Address: Institut fuer Agrarpolitik und landwirtschaftliche Marktlehre der Universitaet Stuttgart-Hohenheim, Schloss/Postfach 70 05 62, D-7000 Stuttgart 70, West Germany.

5647. **Product Name:** Better Than Milk? (Liquid Soymilk Made with Spray Dried Tofu and Casein) [Natural, Chocolate, Carob, Natural Light].
Manufacturer's Name: Sovex Natural Foods, Inc.
Manufacturer's Address: 9104 Apison Pike, Box 310, Collegedale, TN 37315. Phone: 800-227-2320.
Date of Introduction: 1989. March.
Ingredients: Spring water, soy oil, cereal solids (from corn), spray dried tofu, calcium carbonate, sodium caseinate, sea salt, carrageenan, vitamin B-12 (cyanocobalamin), natural flavor.
Wt/Vol., Packaging, Price: 8 oz or quart Tetra Brik Aseptic cartons, 27 or 12 to a case.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Sovex. 1989. Feb. 28. The company plans to launch this product in late March 1989.

Letter to *Veggie Life* by Genevieve Gowman. 1993. Nov. p. 6. "Unfortunately I didn't realize how deceitful the term 'non-dairy could be. This drink contains casein, which is a milk protein... Please inform your readers of this." The magazine answers: "According to FDA guidelines, a product can contain up to 2 percent casein and still be labeled 'non-dairy.'" The Natural flavor contains only 0.37% casein; the Chocolate, Carob, and Natural Light flavors do not contain casein.

Note: In response to this concern about caseinate, by March 1995 Sovex had removed caseinate from their product.

5648. **Product Name:** Unisoy Gold Soya Milk (Enriched with Calcium and Vitamins. Made with Organic Soya Beans).
Manufacturer's Name: Unisoy Milk 'n' By-Products Ltd.
Manufacturer's Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430-6329.
Date of Introduction: 1989. March.
Ingredients: Water, whole organic soya beans, pure apple juice (Alar free), calcium, magnesium, emulsifier, lecithin, vitamins B-12, A, and D-2.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton. Retails for 0.42p (5/91, London).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 ml: Energy 45 kcal (calories), protein 3.3 gm, carbohydrate 4.1 gm, total fat 1.9 gm, saturated fat 0.25 gm, cholesterol 0.0 gm, calcium 95 mg, magnesium 20 mg, vitamin 53 mcg, vitamin D-2 0.03 mcg, vitamin B-12 0.6 mcg.
New Product–Documentation: Talk with Neil Rabheru of Unisoy. 1990. July 2. Followed by letter (fax) of July 9. This product was launched in March 1989. It is a liquid (ready to use, not concentrated) soyamilk enriched with minerals (calcium, magnesium), and vitamins (A, D, B-12), made with organic soya beans. It was developed to bridge the nutritional gap between cow's milk and soyamilk, and try to bring the taste closer to cow's milk. "This product is the closest match to cow's milk in terms of nutrition in the ready-to-use form on the European market." The level of vitamin B-12 was deliberately made higher than that of cow's milk since it can be difficult for people on non-dairy diets to obtain a sufficient amount of this vitamin.

This new product, which led to the gradual phasing out of the White Wave sweetened soya milk, has been a phenomenal success for Unisoy. It was developed in response to the hundreds of letters they used to get every month asking about the calcium and vitamin content of White Waves Soya Milk. Unisoy was the first company in Europe to launch a ready-to-use, calcium-fortified soyamilk for adults (not including infant formulas). [Note: Earlier calcium fortified soymilks made in Europe for adults included: Granose Soyagen (Powdered, 1967), Plamil Soya Plantmilk (Concentrated, 1981), Semper Soja Dryck (Ready to drink in plain and chocolate flavors, Jan. 1988)]. Alpro's calcium-fortified soymilk, which appeared on the UK market in Jan. 1990, was developed in response to the success of Unisoy Gold.

Label sent by Heather Paine of SoyaFoods in London. 1991. May. 3.75 by 3.5 by 1.25 inches. Tetra Brik carton. Gold, black, red, and blue on light yellow. "Gold must be shaken well before use. Non-dairy. Tea and coffee: Enjoy the excellent taste of Gold in tea & coffee, by putting milk in the cup first and allowing the beverage to cool slightly before pouring. Refrigerate after opening. Use within 3 days of opening."

Talk with Neil Rabheru of Unisoy. 1991. Sept. 16. The type(s) of calcium used to fortify this product is very critical; Neil figured it out by himself. He uses a combination of calcium types, and this is a trade secret, but neither is calcium sulfate (which would cause coagulation) nor calcium lactate (which would make the product non-vegan).

5649. Chikaarashi, Shigeru. Assignor to Nichii Company, Ltd., Osaka, Japan. 1989. Apparatus for manufacturing a foodstuff suitable for soybean milk production. *U.S. Patent* 4,817,516. April 4. 4 p. Application filed 9 Oct. 1987. [5 ref. Eng]
• ***Summary:*** "The apparatus includes a brushing machine for removing earth matter and earth-born germs deposited on soybean material, a band dryer for adjusting the water content of the soybean material so as to facilitate separation of the material into skin and flesh portions, a skin remover for separating the skin portion from the flesh portion and for dividing the flesh portion of each piece of soybean into four to eight parts, and flat pressing rollers for converting the resulting powdery masses into uniformly distributed flaky masses."

Note: The resulting soy flakes are used by Nichii to make tofu in Japan. The compact tofu plants are located in supermarkets or department stores. Address: Sapporo, Japan.

5650. Beamonte, Ignacio. 1989. Proteinas de Noroeste plans for soymilk and tofu in northern Mexico (Interview). *SoyaScan Notes.* April. 10. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ignacio presently runs two businesses (Si Products harvests and sells sea vegetables; Alimacro sells macrobiotic foods) and plans to start a third, Proteinas de Noroeste, in Ensenada, Mexico just south of the California border. He recently purchased a soymilk system from Gary Stein of San Diego Soy Dairy. He plans to sell his soymilk mostly in Mexico (half gallon containers, with seaweed and barley, get a 15-day shelf life) and also to import Tetra Pak soymilk from the USA. He also plans to make tofu and tofu products.

We talk again on 1 May 1990. He hopes to have his first soyfood products on the market by the end of this year. Soymilk will be his main product, followed by tofu and some okara products. Address: Apdo Postal 1073, Ensenada, Baja California Norte, Mexico. Or P.O. Box 1740, San Ysidro, CA 92073.

5651. Thompson, Martha Gifford. 1989. Early work with tofu at Rochester Zen Center (Interview). *SoyaScan Notes.* April 11. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The staff of 30-50 people in the Zen Center

kitchen prepared strictly vegetarian meals. Kapleau roshi at that point had a dairy allergy, so very few dairy products were used in the meals. The diet was almost a vegan one. The Toronto Zen Center, was an affiliate group nearby in Canada. In Toronto, which has a large Asian population, were at least three tofu shops: one very small family-run Korean shop on Baldwin Street (which is no longer there), one on Avenue Road (perhaps Chinese run), and a third on Dundas Road. A member of the kitchen staff would make the 2½ hour trip to Toronto, go the shop on Baldwin Street (which had no name) to buy tofu. "The first room was stacked to the ceiling with soybeans. Down in the basement were many people slogging around making tofu. It was quite a scene, and nobody spoke any English. At that point we realized that we could make tofu ourselves. The trip to Toronto was always a hassle. You always got stopped at the border; they always thought you were smuggling something. Jay Thompson took the lead in setting up tofu making facilities. Kapleau roshi was very excited about and supportive of the project, in part because he had practiced for so long in Japan, and in part because he likes projects, right livelihood, and soyfoods. Once the shop was set up in the basement, we also made a lot of soymilk, yuba, and soy yogurt, and served spicy curds; we tried everything! The tofu shop of course never received any financial support from Zen Center." Address: Rochester, New York. Phone: 716-461-5388 Home.

5652. Amrit Protein Foods Ltd. 1989. Today a nation-builder's vision takes shape (Poster). Ghaziabad, Uttar Pradesh, India. 1 p. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.
• ***Summary:*** "Mr. Jagdish Tytler, Minister of State for Food Processing Industries, Government of India, will be inaugurating the plant of Amrit Protein Foods Limited on Thursday the 18th of May, 1989 at 10:00 a.m."

"Fifty years ago, Mahatma Gandhi [the nation-builder] had the vision to foresee the potential of soya... Amrit Protein Foods Limited is a new venture of a quiet giant–Amrit Banaspati Company Limited, a Rs. 200 crore group, with winners like Gagan Vanaspati, Uncle Chipps potato wafers and Ginni Refined Oil to its credit. Amrit Protein Foods Limited has acquired its technology and equipment from the world-famous Danish Turnkey Dairies Limited, Denmark. Its aseptic packaging system has been imported from Prepac, France."

Note: This poster contains a quotation from Gandhi and its source. Examination of the source (which is cited incorrectly) indicates that the quotation and citation are only partially authentic. Address: Ghaziabad, Uttar Pradesh, India.

5653. Asano, Mitsuo; Okubo, K.; Yamauchi, F. 1989. Tônyû no hinshitsu ni oyobosu nama shibori ondo no eikyô [Effects of squeezing temperature on the quality of soymilk]. *Nippon Shokuhin Kogyo Gakkaishi* (*J. of the Japanese Society of Food Science and Technology*) 36(4):318-24. April. [16 ref. Jap; eng]
• ***Summary:*** Traditionally soymilk was pressed from the ground soybean slurry at a low temperature, but today this step is usually eliminated when making tofu. Yet tofu prepared in this traditional way was thought to be preferable to that made in the modern way. "In order to make optimum temperature clear, the effects of squeezing temperature on yield, viscosity, glycoside content, lipoxygenase activity and n-hexanal level of soymilk from the cotyledon and the whole bean were examined. A yield as solid was maximum in soymilk squeezed over 30ºC from the cotyledon and at 60ºC from the whole bean. Viscosity of soymilk significantly decreased with increasing temperature and showed a minimum value at 60ºC. A glycoside content as solid increased in soymilk squeezed above 50ºC and was approximately 2.6 times higher in soymilk at 95ºC than at 20ºC. The lipoxygenase activity, which is the major cause of undesirable flavor of soymilk, decreased in soymilk squeezed over 70ºC. n-Hexanal, which was produced by lipoxygenase, was about half in soymilk squeezed at 60ºC as compared with 20ºC. Accordingly, optimum squeezing temperature on soymilk and tofu processing was recommended in range of 50-60ºC." Address: Faculty of Agriculture, Tohoku Univ., Amamiya-machi, Tsutsumi-dori, Sendai-shi, Miyagi 980, Japan.

5654. Brown, Judy; Bates, Dorothy R. 1989. Judy Brown's guide to natural foods cooking. Summertown, Tennessee: The Book Publishing Co. 160 p. Index. With 8 pages of color photos. 23 cm.
• ***Summary:*** This natural foods, vegan cookbook, which does not require the use of dairy products or eggs, includes more than 200 recipes, many of which contain soyfoods. In the chapter titled "The Natural Foods Pantry" is a sub-chapter titled "Soy Foods," which gives brief introductions to tofu, tempeh, miso, soy milk, soy cheeses, soy yogurt, soy flour, and soy pulp or okara. There are also sub-chapters on sea vegetables, sprouts (including soy sprouts), organic foods, macrobiotics (which is "heavily emphasized in this book"), more natural foods ingredients (which, under soy sauce, discusses the differences between shoyu and tamari).

The number of recipes featuring various soyfoods are: Tofu (15), tempeh (5), miso (4), soymilk (1), shoyu (1), and okara (1; soysage).

The author, a specialist in consumer education, presently organizes culinary carnivals and natural foods tasting fairs. She has written extensively on natural foods and holds a Master's degree in Consumer Economics from the Univ. of Maryland. She is president of Judy Brown Enterprises, a public relations company for natural foods products. Address: 9 Dovetree Court, Indian Head, Maryland 20640. Phone: 301-753-6548.

5655. **Product Name:** [Formoja Sauc'annaise {Soymilk Mayonnaise}, Mexican Sauce, and Salad Sauce {Dressing}].
Foreign Name: Formoja Sauc'anaise, Sauce Mexicaine, Sauce Salade.
Manufacturer's Name: Cacoja. Affiliate of Coopérative Agricole de Colmar (CAC).
Manufacturer's Address: 8 rue Merxheim, 68500 Issenheim, France.
Date of Introduction: 1989. April.
Wt/Vol., Packaging, Price: 1-2. 130 gm jar. 3. 350 gm bottle.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Photo in Amanthe. 1990. Revue Technique des Hotels et Restaurants. P&B. April. p. 8. A photo shows these 3 products. Each has "No Cholesterol" written prominently below the product name. These products are promoted as being cholesterol free and very low in fat.

SoyaFoods (ASA, Europe). 1990. 1(1):3. Cacoja Leaflet. 1990. April. "The soybean sauce line: Super Light. A complete new line of 100% vegetal sauces with soja milk, cholesterol free, and with a very low fat content. These state-of-the-art products are really satisfying the needs of modern, well-balanced nutrition.

"Sauc'annaise (210 ml/190 gm jars): A smooth sauce resembling mayonnaise, containing only 13.5% fat, and cholesterol free. Excellent accompaniment for raw vegetables, eggs, fish, and cold meat. Nutritional value per 100 gm: Protein 5.9 gm, fat 13.5 gm, carbohydrate 3.3 gm, calories 160.

"Mexican Sauce (210 ml/190 gm jars): A fine and very exotic sauce, containing only 14% fat and cholesterol free. Excellent accompaniment for meat, skewers, fondues and fish. Nutritional value per 100 gm: Protein 6 gm, fat 14 gm, carbohydrate 3.4 gm, calories 165.

"Salad Sauce (320 ml/300 gm bottles): Seasoning sauce, cholesterol free and exceptionally low in fat: less than 10% (against about 75% for a classical salad dressing). Excellent accompaniment for salads and crudities. Nutritional value per 100 gm: Protein 5.1 gm, fat 9.7 gm, carbohydrate 1.1 gm, calories 115."

SoyaFoods. 1993. Winter. p. 7. "A profile of Sojinal." See Table 2. "Biosoja retail food products." "Sauces based on tonyu. Sauc'annaise."

5656. DeSilver, Drew. 1989. Eden Foods pleads guilty to infant formula violations: Paradise lost. *Vegetarian Times.* April. p. 9-10. [1 ref]
• ***Summary:*** "Eden Foods was fined $110,000 in January after pleading guilty to 11 counts of violating the federal Infant Formula Act, which sets nutritional standards for products sold as infant formula. Company president Michael J. Potter, who pleaded guilty to one charge of violating the act, was sentenced to 30 days in jail, two years' probation and a $25,000 fine. Both Eden's and Potter's penalties were the maximum allowable.

"The 12 misdemeanor charges, filed last year in the U.S. District Court in Detroit, involved a promotional pamphlet that Potter wrote in 1983 for Edensoy brand soymilk. The Food and Drug Administration and the Justice Department charged that a pamphlet paragraph headed 'Good for Babies' said Edensoy was a 'quality substitute' for mother's milk, when in fact it lacks adequate amounts of several nutrients, including vitamins A, B-12, C, D and E, thiamin, pantothenic acid, calcium and iodine...

"The pamphlet attracted the attention of the FDA, which in October 19893 notified Eden that it was in violation of the Infant Formula Act. Eden immediately agreed to stop distributing the pamphlets and told a few of its large distributors to stop using them.

"There the matter stood until 1985, when a child suffering from malnutrition and failure to thrive was admitted to a Toronto hospital. The mother said she had seen a copy of the pamphlet at a natural food store and had been feeding the infant nothing but Edensoy. When the FDA learned about the infant (who eventually recovered with no ill effects), it ordered Eden to recall all the pamphlets. The FDA also called in the Justice Department, which filed charged against Eden and Potter in July 1988... Potter doesn't deny that he and Eden broke the law, but he says it was unintentional...

"In 1978, the Syntex Corp. promoted a product called Neosoy as an infant formula. Neosoy was deficient in chloride and was blamed for causing neurological damage to at least 80 children. The FDA wanted to prosecute Syntex, Gibbs said, but in 1984 the Justice Department decided not to. In another case, which occurred in 1985, the department filed 12 misdemeanor counts against Wyeth Laboratories for marketing a formula that lacked vitamin B-6. Wyeth pleaded guilty and received what was then the maximum fine, $1,000 per count. The total fine was only $12,000...

"Last year Eden made a $142,000 profit–slightly more than Eden's and Potter's combined fines."

5657. Gibbs, Jeff. 1989. The Edensoy case: Lessons for the industry. *Soya Newsletter* (*Bar Harbor, Maine*). Jan/April. p. 4-5, 19.
• ***Summary:*** On 20 Jan. 1989, nearly 6 years after Eden Foods had published its ill-fated Edensoy pamphlet, the company was fined $110,000 and its president, Michael Potter, was fined $25,000 and sentenced to 30 days imprisonment. Jeff Gibbs represented Eden Foods of Michigan in its case against the Justice Dept. and the FDA. He is a specialist in federal regulatory law, especially Food and Drug Administration issues, such as product liability, labeling, clinical research, and compliance matters. "Long time court observers were shocked by the severity of the penalties. The fines were about ten times greater than the

average for the court; jail time is unusual for people who plead guilty to one non-violent misdemeanor, especially when the government does not recommend prison." The judge was a woman. Neither the court nor the government articulated the lessons it wished to teach. But the following were implicit: 1. Companies must be careful what they say when promoting products. The FDA, which administers the Federal Food, Drug, and Cosmetic Act (FDCA) prohibits making false and misleading statements about food. 2. Ignorance is no defense. The burden is on companies to understand a complex and ever changing law. The government charged CEO Michael Potter with 32 separate violations. 3. Do not expect to be treated similarly to other companies. "For example, in the late 1970s, Syntex of Palo Alto, California sold an infant formula that lacked sodium chloride. The product permanently injured some children. Yet, the government decided not to prosecute Syntex. Wyeth Laboratories of Philadelphia, Pennsylvania, another large pharmaceutical company, sold infant formula that was deficient in a critical nutrient. Wyeth was fined $12,000; no individual was prosecuted." 4. Cooperation has its limits. Eden Foods and Michael Potter were models of cooperation. It is not clear whether or not this helped them. Address: Attorney, Mackler, Cooper and Gibbs, P.C., Washington, DC.

5658. Golbitz, Peter. 1989. Eden Foods' CEO gets thirty days in jail: Edensoy pamphlet wording in violation of law. *Soya Newsletter* (*Bar Harbor, Maine*). Jan/April. p. 1, 6-7. [1 ref]
• ***Summary:*** The story of Eden Foods' encounter with the FDA and the U.S. Justice Department. On 20 Jan. 1989 a federal judge in Detroit, Michigan, levied fines and a sentence on Eden Foods and Michael Potter. Potter, who pleaded guilty of one misdemeanor count of adulteration, was personally fined $25,000 and sentenced to 30 days in the county jail in Bay City, Michigan. He began to serve out his jail sentence on Feb. 24. Eden Foods, which pleaded guilty of an additional 12 counts of misbranding and adulteration, was fined $111,000. Address: Soyatech, Bar Harbor, Maine.

5659. **Product Name:** Soy-Rice Amazake.
Manufacturer's Name: Grainaissance, Inc.
Manufacturer's Address: 1580 62nd St., Emeryville, CA 94608. Phone: 415-547-7256 (1/88).
Date of Introduction: 1989. April.
Ingredients: Incl. Dry soy powder from Clofine.
New Product–Documentation: Ad in Whole Foods. 1989. April. p. 105. "Grainaissance Soy-Rice Amazake nectar." "New. High protein!" This ad also appeared in Natural Foods Merchandiser. 1989. April. p. 104. Ad (¼ page, black and white) in Whole Foods. 1989. Sept. p. 128.

Spot in Vegetarian Times. 1990. Feb. p. 68. Soy rice is a little thinner and less sweet than the other types of Grainaissance amazake.

Talk with Janet Crolius of Grainaissance. 1990. Jan. 23. This is basically plain amazake with flavors and dry soy [milk] powder (which you can't taste) to give better protein complementarity. The labels arrived in March 1989 and it was definitely being sold by July.

Talk with Tony Plotkin of Grainaissance. 1993. Oct. 17. This product has been discontinued. The soy it contained was a powder he bought from Minnesota or Kentucky–and the quality of the soy component was not that good. Yet he liked the product. He did not market it that heavily. He feels that fresh soymilk is always better than dry–which is chalky.

5660. *INTSOY Newsletter* (*Urbana, Illinois*). 1989. Remodeled facility bolsters INTSOY's research and development efforts. No. 41. p. 1-2. April.
• ***Summary:*** After more than a year of dislocations due to construction, INTSOY has moved into the newly remodeled Agricultural Bioprocess Laboratory (ABL) on the University of Illinois campus. "Nearly $1.4 million in remodeling costs were provided by the State of Illinois through the 'Build Illinois' program and a special legislative appropriation for value-added research."

The INTSOY facility centers on a 2,600-square-foot pilot plant in the basement of the building. The main pilot plant is divided into dry and wet processing areas. The dry process area will house two INSTA-PRO extruders (a 2000 and a 600 Jr.) plus several continuous oil expellers. The adjacent wet procession area is designed for work on soymilk, dairy analogs, and immature green soybeans. A photo shows the dry processing area and Wilmot Wijeratne.

5661. *INTSOY Newsletter* (*Urbana, Illinois*). 1989. Interest in soybeans continues to grow across much of Africa. No. 41. p. 2-3. April.
• ***Summary:*** "Recent developments in Africa point toward an increased demand by agricultural leaders for expanded soybean utilization efforts, according to Karl Weingartner, INTSOY senior food technologist. Weingartner recently completed a six-week trip to Uganda, Kenya, Zambia, Zimbabwe, the Ivory Coast, Ghana, Togo, Benin, and Nigeria. The purpose of the visit was to collect information on current soybean marketing, utilization, and research efforts.

"According to his report, officials in Uganda have a strong interest in expanding the use of soybeans. Help is needed, however, to train home economists and extension workers how to prepare soybeans in the home. The introduction of commercial processing equipment is needed for extracting oil from soybeans, and better ways must be found for using high-protein meal in both food and feed.

"In Kenya, officials from the Ministry of Agriculture are reported to be working on a detailed plan for increased use of soybeans. Ken-Soya Company in Nairobi is attempting to obtain improved equipment for producing new food products, including full-fat soy flour, soy ugali, and soy

snack foods. Plans were also discussed with USAID officials for a possible utilization workshop in 1990.

"In Zambia, the Lee Yeast and Soy Nutrients companies continue to manufacture full-fat soy flour. Most of the flour is currently used by Zambian feed mills as a protein source for feed. Soy Nutrients is especially interested in expanding its product line to include more human food products.

"A new program, the Zambia Agriculture Business and Marketing Service Project (ZAMS), is planning a major study on the feasibility of small-scale oil processing. Fred Javaheri, the national soybean coordinator, is working with a home utilization project in Luanshya that teaches poor urban women how to use traditional cooking equipment to prepare soyfoods.

"In Zimbabwe, the Nutresco company is developing soy products for human consumption. Nutresco has recently solved some major technical problems and is moving ahead with plans to introduce new product lines by mid-1989. Lion's Den, another company, is especially interested in using the new extrusion-expelling technology to produce a partially defatted meal suitable for human consumption. In addition, food technologists from the International Crop Research Institute for Semi-Arid Tropics (ICRISAT) Program in Bulawayo have discussed the possibility of producing a high-protein, soybean-sorghum food.

"Focusing on West Africa: A major soybean project is scheduled to begin in the Ivory Coast during 1989. The office of the president and the Direction et Controlle des Grands Travaux are providing important support. Researchers are enthusiastic about developing commercial food products by extrusion cooking of soybeans. They are planning to locally market inexpensive, protein-rich foods in both urban and rural areas.

"Soybeans have also generated a strong interest in Ghana, where there is a great need for an inexpensive source of edible protein in the central zone and the northern savanna. One focal point for this interest is the Food Research Institute in Accra, which has a well-trained and enthusiastic staff. The Secretary of Agriculture and other government officials have also expressed support for increased soybean use.

"In Togo, the Food Research Center is using roasted soybeans mixed with cereals to prepare baby food. Outside the center, distribution of the baby food is limited. Staff members are interested in setting up a small-scale process for producing soymilk in sterilized containers. The well-trained and knowledgeable staff at the center has been involved with soyfood production for about four years.

"In Benin, work on soybeans is conducted by the Catholic Relief Service (CRS). In 1983, CRS began demonstrations of a soyflour preparation used to enrich the local potage and installed mills in 20 villages. A soy-maize baby food is available in a local supermarket. Soybeans are also used to make stock cubes, which are added to stews."

5662. *Soya Newsletter* (*Bar Harbor, Maine*). 1989. Ambrosia Soy's fresh soymilk in supermarket dairy case. Jan/April. p. 12.

• ***Summary:*** Waldbaums supermarkets [actually Waldbaum's Foodmart] will carry SweetSoy soymilk made by Ambrosia Soy Co. of East Haven, Connecticut. It will be sold in the dairy section of stores in Massachusetts and Connecticut. "Waldbaums is the first major supermarket chain in the Eastern United States to feature fresh soymilk in their dairy section... The product is available in Plain, Chocolate, Vanilla and Almond flavors and comes in pints and quarts, with a 28-day shelf life."

5663. Vitasoy (USA) Inc. 1989. Soymilk users love Vitasoy. Here's why... (Ad). *Vegetarian Times.* April. p. 3.

• ***Summary:*** This full-page color ad shows a large carton of Creamy Original, plus excerpts of letters from satisfied users.

This ad also appeared in Bestways, July/Aug. 1987, p. 43. Address: San Francisco, California 94107.

5664. Wood, Rebecca. 1989. Quinoa the supergrain: Ancient food for today. New York, NY: Japan Publications Inc. Distributed by Kodansha International USA/Ltd. 202 p. April. Illust. Index. 26 cm. [51 ref]

• ***Summary:*** Quinoa (pronounced KEEN-wa; scientific name *Chenopodium quinoa* Willd.) originated in the *altiplano,* the high plains of the Andes in Peru and Bolivia. It was called the "mother grain" by the ancient Incas. The protein content of quinoa seeds ranges from 7.5% to 22.1%. The two men most responsible for creating a quinoa market in the USA are Stephen Gorad and Don McKinley of the Quinoa Corporation in Boulder, Colorado.

Note: *Webster's Dictionary* defines quinoa (derived from Spanish, via the Quechua *quinua;* the term was first used in 1625) as "a pigweed (*Chenopodium quinoa*) of the high Andes whose seeds are ground and widely used as food in Peru."

Chapter 8, "All about cooking quinoa," contains many recipes. A number of these use soyfoods, including natural soy sauce or tamari (p. 65): Star canapés with tofu-caper topping (p. 88-89). Noodle salad with fresh soy mayonnaise (with soymilk, p. 110). Tofu, quinoa, and dulse salad (p. 114-15). Sweet and sour quinoa tempeh (p. 129-30). Address: Crestone, Colorado.

5665. Fisher, C.E.; Knowles, M.E.; Massey, R.C.; McWeeny, D.J. 1989. Levels of aluminum in infant formulae. *Lancet* i(8645):1024. May 6.

• ***Summary:*** "... it has been suggested that a greater proportion of ingested aluminum is absorbed and retained in infants, whose gastrointestinal tract and kidneys are not fully developed... We have surveyed the aluminum content of a range of retail infant formulae... Samples of cow's milk-

based and soya-based infant formulae were purchased at retail outlets in Norwich [England] during 1987 and 1988...

"The aluminum content of made-up cow's milk-based infant formulae is in the range 0.03-0.20 mg/l (mean 0.11 mg/l): for soya-based formulae the contents are in the range of 0.64-1.34 mg/l with a mean of 0.98 mg/l. The figures for cow's milk-based formulae are similar to the aluminum contents found in cow's milk, indicating that there is unlikely to be much, if any, contamination during processing. The figures for soya-based formulae are higher, but this would be expected given the higher levels naturally present in vegetable materials such as soya...

"The potential aluminum intake can be estimated as 0.28-0.55 mg per week from cow's milk-based formulae and 2.5-4.9 mg per week from soya-based formulae...

"The Department of Health's Committee on the Toxicity of Chemicals in Food, Consumer Products and the Environment, considering the results of the survey, commented that the levels of exposure to aluminum from infant formulae were well below the provisional tolerable weekly intake of 7 mg/kg body-weight set in March, 1988, by the Joint FAO/WHO Expert Committee on Food Additives and Contaminants, and that in relation to body-weight aluminum intakes for infants were no greater than for adults. The committee concluded that no immediate regulatory action was warranted. However, the committee also commented that, since the neonatal kidney is not fully developed, aluminum elimination in infants could be less efficient than it is in adults, and that there was a lack of information on the gastrointestinal absorption of aluminum in infants. The committee also recommended that the source of aluminum in soya-based infant formulae should be established.

"Aluminum is not deliberately added to infant formulae during manufacture. However, it can find its way into the formulae through being present, in small amounts, in the salts added to make the mineral content of formula as close to mother's milk as possible. Manufacturers estimate that this may add about 10% to the total aluminum content of cow's milk-based formula and about 25% in soya-based formula. It would be difficult to exclude all the 'extra' aluminum since it is present in so many mineral preparations. There is no clear evidence that the additional aluminum is harmful." Address: 1-2. Food Science Div. I, Ministry of Agriculture, Fisheries and Food, London SW1P 3HX, England; 3-4. Food Science Lab., Food Science Div. I, MAFF, Norwich, England.

5666. Cabato, Rachel M. 1989. Nestlé's work with soybeans and soyfoods in The Philippines (Interview). *SoyaScan Notes.* May 28. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Nestlé has a large soybean farm in Cotabato, Mindanoa, where they are doing extensive research to breed soybeans having a low beany flavor. Nestlé is also working with IRRI. Some 300 farmers each plant 4-10 hectares of soybeans; Nestlé gives them the seeds and fertilizers, then buys back the beans. The price is based on Nestlé's quality standards.

Nestlé has a plant in Luzon for making powdered soybean milk. This is mixed with cow's milk to make at least 3 products, which are sold in cans, both in the Philippines and overseas. Nestlé has contributed a great deal toward development of soya in the Philippines. Follow-up letter from Rachel Cabato. 1989. Nov. 14. The only Nestlé soya product currently on the market is Nestlé Twin, a powdered blend of filled milk and soya solids. It can be used for both adults and children. Address: Senior Director, The Livelihood Corp., Hanston Building, Emerald Ave., Pasig 1600 Metro Manila, Philippines. Phone: 673-21-06.

5667. **Product Name:** Big Sipp Soyamilk [Mango Shake, Banana Shake, Rose, or Pinakool (Pineapple)].
Manufacturer's Name: Amrit Protein Foods Ltd.
Manufacturer's Address: Amrit Nagar, G.T. Road, Ghaziabad, Uttar Pradesh, 201 009, India. Phone: 91-118-714215 or 714216.
Date of Introduction: 1989. May.
Ingredients: Mango Shake: Soyamilk, mango pulp, sugar, added flavour, and permitted colour.
Wt/Vol., Packaging, Price: 200 ml aseptic, multi-layered, metalized Prepac Standi-Pak pouches.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: *The Hindu.* 1987. June 18. "Biggest soyamilk plant in Ghaziabad." Note: Ghaziabad is a large city about 7 miles to the east of Deli and New Delhi. Letter from Anders Lindner. 1988. Sept. 22. "Our Indian client, Amrit Protein Foods Ltd. in Ghaziabad, is now aiming for a market launch in Feb. 1989." Booklet. 1989. "Soyamilk Makes Sense." A photo shows the plant and products. Ad. 1989. "Today a nation-builder's vision takes shape." The plant will be inaugurated on 18 May 1989. Letter from Anders Lindner. 1989. July 13. "This product was launched on 29 May 1989. Amrit said on July 2 that sales were good, but we have no details yet."

Talk with Mahesh Khaitan, technical advisor to Amrit and nephew of Mr. N.K. Bajaj, the head of Amrit. 1989. July 31 and Aug. 6. Big Sipp has been well accepted and has much better flavor (less beany flavor) than Noble Soya. Noble Soya had to add a lot of vegetable oil to try to mask their beany flavor. But Big Sipp has recently had a serious sealing problem with their packages. The product is presently off the market, but they hope to have it back on by September 1989. Big Sipp is packed in a Standi Pack pouch, a multi-layered metalized plastic pouch made by Prepac in France. Each package costs about half as much as a Tetra Brik carton of the same volume. Mr. Bajaj is the man behind the soymilk project.

The product was introduced in May and June in

two flavors: Mango and banana. The rose and pinacool (pineapple) flavors will be introduced in about August when packaging problems have been solved. All flavors except rose contain 1.1% protein. The mango and banana are naturally thick because of their fruit pulp. Carrageenan is added to Pinakool to give thickness. Rose contains 3.1% protein to give thickness. All products have a 3-4 month shelf life without refrigeration. All Amrit products are made from the DTD soymilk base; none contain soy protein isolates. The discovery of adding calcium lactate (see Vigo) was made after the Big Sipp packaging material had been printed in France, but it may be added later. The slogan for this product is "Soyamilk makes sense."

APV Soymilk Technology. 1990. Contains a color photo of all 4 packages.

Labels sent from India by Anthony Marrese. 1990. Nov. 29. Flavors: Banana Shake, Mango Shake, Rose, Pinakool. 4.75 by 5.25 inches. Silver foil Standi Pak pouch. Pinakool: Yellow, light green, dark green, red, and white on silver. Illustration of waves. Inset in these are three boxes. One shows the silhouette of a man with a briefcase climbing stairs, one a schoolboy with a backpack running, one a woman carrying a shopping basket walking briskly. The two Shake flavors have color photo of two milkshake glasses with straws.

Letter from A.K. Bajaj. 1991. June 26. Big Sipp

flavoured soyamilk is packed in a laminated film on Prepac's AS-2 Aseptic Packing Machine. The pack which comes out of the machine can stand by itself and hence is given the name Standi Pack. The address of Prepac is 62 rue Pasteur, 94807 Villejuif Cedex, France. Big Sipp is now marketed in three flavours: Mango, Rose, and Pinakool. All of them have 3.1% protein, are artificially flavoured, and contain no fruit pulp.

5668. Lucking, Evelyn. 1989. Tetra Pak moves its headquarters and main library to Lausanne, Switzerland, from Lund, Sweden (Interview). *SoyaScan Notes.* May 31. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The new address is Tetra Pak Rausing S.A., Case Postale 181, 1009 Pully/Lausanne, Switzerland. The move took place in about 1987. There is no one person in the company specifically in charge of soymilk.

Note: According to David Wiesenfeld in Connecticut, the packs should be called "Tetra Brik Aseptic cartons" and never Tetra Packs, etc. By 1990 the company had started to use the term "Ever-Fresh" instead of "aseptic" for marketing. Address: Marketing Services Mgr., Tetra Pak Inc., 200 Van Dorf Rd., Aurora, ONT, L4G 3G8, Canada. Phone: 416-727-0171.

5669. Amrit Protein Foods Ltd. 1989. Soyamilk makes sense. Ghaziabad, India. 14 p. 21 x 14 cm. [Eng]
• ***Summary:*** This promotional booklet, extolling the many virtues of soybeans and soymilk, is preparing the way for Amrit's launch of their new line of soymilk products named Big Sipp. The three flavors are Mango Shake, Banana Shake, and Rose. Contains color photos of the outside of the new Amrit Protein plant at Ghaziabad, STS soymilk equipment inside the plant, and (on the inside rear cover) of 6 foil packages of the three products.

Note: the product was launched on 29 May 1989.

5670. Amrit Protein Foods Ltd. 1989. Golden Glow soyamilk cookbook. Ghaziabad, India. 16 p. 21 cm. [Eng]
• ***Summary:*** Golden Glow is a brand of unflavored soymilk launched in 1989 in Ghaziabad, India, by Amrit Protein Foods Ltd. This attractive cookbooklet, apparently written by a person named Tarla Dalal and packed with color photos, contains numerous recipes describing how to use that brand of soymilk in both Indian-style and Western-style dishes. A photo (p. 2) shows a close-up of the Golden Glow package, a paperboard box which contains 500 ml of natural soymilk in a Prepac Pillow-Pack aseptic package.

Contents: Introduction. Dietary importance of soyamilk, by Dr. P.L. Wahi, Cardiologist, Director (retired) of the Post Graduate Inst. of Medical Sciences, Chandigarh. Drinks. Soups. Snacks: Waffles and pancakes. Rotis (baked round flatbreads, like chapatis). Vegetables. Rice dishes. Desserts. Salad dressing. Basic recipes: White sauce, soya curd (fermented soy yogurt), basic brown stock. Address: Amrit Nagar, G.T. Road, Ghaziabad, Uttar Pradesh, 201 009, India. Phone: 91-118-714215 or 714216.

5671. Bajaj, Naresh Kumar. 1989. Welcome address. Paper presented at opening of Amrit Protein Foods soymilk plant in Ghaziabad, 18 May 1989. 8 p. 21 x 14 cm. [Eng]
• ***Summary:*** Shri Jagdish Tytler, the Honorable Minister of Food Processing Industries, was present at the opening, along with many invited guests. "Protein energy malnutrition is wide-spread amongst almost all segments of the population in India... The abnormal infant mortality rate in our country is 100 per 1,000 births... This problem cannot be tackled by conventional means and therefore there is a need to find non-conventional sources. Since in our country a large number of population is accustomed to a vegetarian diet, one of the means to solve malnutrition problem is in a simple little protein packed wonder i.e. soyabean... The daily requirement of the essential amino acids (the tissue building materials) of a 5 year old child can be covered by consumption of ½ liter of soyamilk alone."

"With so much goodness of soyamilk I am tempted to say (and this I do with due apologies to our friends in the medical profession who are present here)–'Drink a pint of soyamilk a day & keep your doctor friend away.'"

"There are some areas–Sir–where the Government policy needs to be liberalized so as to promote nutritional benefits of soyamilk. A few to mention are: (a) Extension of dairy milk by addition of 25% of soya milk. (b) All weaning foods for babies to be based, as far as possible, on soya milk, because of its obvious advantages. (c) Encourage & promote the use of soya milk in products like ice cream, kulfi, paneer, khoya, etc., which are basically non-essential and where the usage of milk is rather high–up to 50%. Such a step will certainly help to improve the availability of dairy milk to children for drinking. In short, wherever possible, normal milk should be extended by soya milk."

"The main soya milk plant has been supplied to us by Danish Turnkey Dairies of Denmark. The packaging machinery have been supplied by Prepac of France." Address: G.T. Road, Ghaziabad, Uttar Pradesh, India.

5672. *FDA Consumer.* 1989. Not like mother made. 23(4):30-31. May.
• ***Summary:*** Describes the alleged illegal sale of Edensoy soymilk as "quality substitute" for mother's milk by Eden Foods of Michigan. "By 1985, the new soy drink accounted for one-third of Eden Foods' $5.5 million annual sales, and 35 percent of sales of all similar products in the nation's health food market, according to industry reports."

"Because of the illness in Canada–the sole report of injury from Edensoy–Eden Foods voluntarily issued a nationwide Class I recall..."

5673. Langley, Gill. 1989. Aluminium and soya milks. *Vegan* (*The*) (*England*). Spring. p. 12. [3 ref]
• ***Summary:*** Dr. Langley cites articles in *The Sunday Times* (Nov. 20), *The Manchester Guardian* (Jan. 4) and *New Scientist* (Jan. 21) that reported on the presence of aluminum in food and its effect on health. "Scientists presently believe that there may be a link between the gradual build-up of aluminum in the bones, brain and blood, and conditions ranging from a softening of the bones, senile dementia (or Alzheimer's disease), and anaemia. Higher levels of aluminum in soya-based infant formula feeds were reported in some of these articles...

"There is no legal requirement for manufacturers of baby milk powders or soya milks to state the level of aluminium in their products, nor is there an established maximum for these products. Normally, we would not absorb very much of the aluminium that finds its way into our digestive systems–between 75 and 95% of the average 4-8 milligrams of aluminium a day most people eat goes straight through their bodies undigested.

"However, patients with kidney disease are less able to excrete aluminium. In newborn infants during the first week of life (and longer for premature babies) the gut is more permeable, and the likelihood of aluminium being absorbed into the bloodstream is higher; such infants, and particularly underweight babies, have less effective kidneys and may also be deficient in zinc, which puts them at higher risk. These two groups, and possibly old people whose kidneys are not too efficient, are most at risk from aluminium poisoning."

"Plamil Foods Ltd. estimate that Plamil soya milk in the ready-to-use form contains not more than 780 micrograms of aluminum per litre... Vandemoortele reported that Provamel milk contains 'less than 5,000 micrograms' of aluminum per litre... "Unisoy's soya milk has 50 micrograms per litre... Farley is currently reformulating its OsterSoy powdered infant feed so that it is acceptable to vegans (by replacing animal derived vitamin D-3 with vitamin D-2). This will be available some time later this year. [Ed. See News, 'Ostersoy Update'.] The amount of aluminum in OsterSoy powder is 2,000 micrograms per kg, but when made up with water the level is about 400 micrograms per litre...

"Those who are concerned to minimize their consumption of aluminum could avoid the use of aluminum pans and antacid medicines." Address: England.

5674. Library of Congress, Subject Cataloging Div., Processing Services. 1989. Library of Congress subject headings. 12th edition. Washington, DC: Cataloging Distribution Service, Library of Congress. 3 volumes.
• ***Summary:*** This 12th edition (LCSH 12) contains approximately 173,000 headings established by the Library through Sept. 1988. The book was available on 3 May 1989. Approximately 10,000 headings were added since the 11th edition in 1988. Among these headings are 139,000 topical subject headings, 22,000 geographic subject headings, 10,000 personal names (incl. 9,000 family names), 2,600 corporate headings. This book should be used with the Subject Cataloging Manual (1989. 3rd ed.).

These subject headings have been accumulated by LC since 1898 and the first edition of LCSH was printed between 1909 and 1914. Subject headings are listed in boldface type. Approximately 40% of headings are followed by LC class numbers, which are added only when there is a close correspondence between the subject heading and the provisions of the LC classification schedules.

References show the relationship between terms: (1) The equivalence relationship: Use of UF (Use for) references. (2) The hierarchical relationship: Broader terms (BT) and narrower terms (NT). BT and NT function as reciprocals. A term appearing as a BT must be matched by the reversed relationship as an NT (e.g., Motor Vehicles. BT Vehicles. NT Trucks). (3) The associative relationship: Related terms (RT. Ornithology. RT Birds). May Subd Geog (MSG) = May subdivide geographically. Soy related subject headings, listed alphabetically, are:

Fermented soyfoods (MSG). BT Food, Fermented. Soyfoods. NT Fermented soymilk. Miso. Natto. Soy sauce. Tempeh.

Fermented soyfoods industry (MSG). BT Soyfoods industry. NT Miso industry. Nattô industry. Soy sauce industry. Fermented soymilk (MSG). BT Fermented soyfoods. Soymilk.

Hydrogenation [QD281.H8]

Information storage and retrieval systems–Soyfoods.

Lecithin [QP752.L4 (Physiology), or RM666.L4 (Therapeutics)]. UF Phosphatidylcholine. BT Phospholipids. NT Lysolecithin. Also: Lecithinase.

Margarine (MSG) [TP684.M3 (Manufacture)]. UF Butter, artificial, Margarin, Oleomargarine. BT Oils and fats, edible. NT Vanaspati. Margarine industry (MSG) [HD9330. M37-374] BT Oil industries. NT Vanaspati industry.

Meat substitutes [TX838]. BT Food substitutes. Vegetarianism.

Miso (MSG) [TP438.S6 (Manufacture)]. UF Paste, Soybean. Soybean paste. BT Fermented soyfoods. NT Cookery (Miso).

Miso industry (MSG). BT Fermented soyfoods industry.

Nattô (MSG) [TP438.S36 (Manufacture)] [TX558.S6 (Nutrition)]. BT Fermented soyfoods.

Nattô industry (MSG). BT Fermented soyfoods industry.

Natural food restaurants (MSG). UF Restaurants, Natural food. BT Restaurants, lunch rooms, etc. RT Food, Natural.

Natural foods industry (MSG) [HD9000-HD9019]. UF Health foods industry. BT Food, Natural. Note: Natural food (Use Food, Natural). Natural food cookery (Use Cookery (Natural foods)).

Nonfermented soyfoods.

Nonfermented soyfoods industry.

Shortenings–Use Oils and fats, edible.

Soy ice cream (MSG). Here are entered works on no-dairy frozen desserts in which soy protein largely or completely replaces the dairy proteins. UF Ice cream, Soy. Soymilk ice cream. Tofu ice cream. BT Non-dairy frozen desserts. Nonfermented soyfoods.

Soy ice cream industry (MSG) [HD9330.S63-HD9330.S633]. BT Nonfermented soyfoods industry.

Soy sauce (MSG) [TP438.S6 (Manufacture)]. [TX407.S69 (Nutrition)]. UF Sauce, Soy. Soy. Soya Sauce. BT Fermented soyfoods. NT Cookery (Soy sauce).

Soy sauce industry (MSG) [HD9330.S65-HD9330.S653]. BT Fermented soyfoods industry. NT Strikes and lockouts–Soy sauce industry.

SOYA (Information retrieval system [SoyaScan from Soyfoods Center]) [Z695.1.S68]. BT Information storage and retrieval systems–Soyfoods.

Soybean (MSG) [QK495.L52 (Botany)]. [SB205.S7 (Culture)]. UF Glycine max. Soja bean. Soja max. Soy-bean. Soya. Soya bean. BT Beans. Forage plants. Oilseed plants.

Soybean–Diseases and pests (MSG). NT Diaporthe phaseolorum. Heterodera glycines [Nematodes]. Soybean mosaic disease. Soybean rust disease.

Soybean as feed [SF99.S]. NT Soybean meal as feed.

Soybean flour. UF soya flour. BT Flour. Soybean products.

Soybean glue. BT Glue. Soybean products.

Soybean industry (MSG) [HD9235.S6-HD9235.S62]. BT Vegetable trade. NT Soybean oil industry.

Soybean meal (MSG). UF Soybean oil meal. Soybean oilmeal. BT Meal. Soybean products

Soybean meal as feed [SF99.S]. BT Soybean as feed.

Soybean mosaic disease (MSG) [SB608.S7]. UF Soybean chlorosis. Soybean leaf curl. BT Soybean–Diseases and pests. RT Soybean mosaic virus.

Soybean mosaic virus. BT Plant viruses. RT Soybean mosaic disease.

Soybean oil (MSG) [TP684.S]. UF Bean oil. Chinese bean oil. Soy oil. BT Drying oils. Soybean products.

Soybean oil industry (MSG) [HD9490]. BT Soybean industry.

Soybean oil mills (MSG). BT Oil mills. Soybean processing plants.

Soybean processing plants (MSG). BT Factories. Food processing plants. NT Soybean oil mills.

Soybean products (MSG). NT Soybean flour. Soybean glue. Soybean meal. Soybean oil. Soyfoods.

Soybean rust disease (MSG) [SB608.S7]. UF Rust disease of soybean. BT Fungal diseases of plants. Soybean–Diseases and pests. RT Phakopsora pachyrhizi.

Soyfoods (MSG). [TX401.2.S69 (Nutrition)]. [TX558.S7 (Composition)]. UF Soybean as food. BT Food. Soybean products. RT Cookery (Soybeans). NT Fermented soyfoods. Nonfermented soyfoods.

Soyfoods industry (MSG) [HD9235.S6-HD9235.S62]. BT Food industry and trade. NT Fermented soyfoods industry. Nonfermented soyfoods industry. Soymilk industry.

Soymilk. UF Beverages, Soy. Milk, Soy. Milk, Soybean. Soy beverages. Soy milk. Soybean milk. BT Nonfermented soyfoods. NT Fermented soymilk.

Soymilk industry (MSG) [HD9235.S6-HD9235.S62]. UF Soy milk industry. Soybean milk industry. BT Soyfoods industry.

Tempeh (MSG) [TX558.T39]. UF Bongkrek. Tempe. BT Fermented Soyfoods. RT Cookery (Tempeh).

Tofu (MSG).

Note: Changes in this edition from the 11th edition. Changed: Soybean as food to Soyfoods. Changed: Soybean milk to Soymilk. Changed: Soybean milk industry to Soymilk industry. Added: Soyfoods industry. Added: Fermented soyfoods. Added: Fermented soyfoods industry. Added: Nonfermented soyfoods. Added: Nonfermented soyfoods industry. Added: Fermented soymilk. Address: Washington, DC.

5675. McDougall, John A. 1989. Questions and answers about children's diets: The hazards of dairy products. *Vegetarian Times.* May. p. 64. [1 ref]

• ***Summary:*** "Question: Please explain why you don't recommend cow's milk for children. Aren't dairy products the best sources of calcium? Answer: The dairy industry has brainwashed most people into believing that cow's milk is essential for children. But let's take a look at some of the hazards of feeding your children dairy products. First, dairy products are the No. 1 cause of food allergy, resulting in problems ranging from runny noses to asthma to bed-wetting. Second, dairy products are loaded with cholesterol and fat. The fat contributes to obesity and increases a child's risk for cancer and heart disease later is life. Third, the lactose in milk is difficult for many people to digest, resulting in gas, stomach cramps and diarrhea. Fourth, there's no fiber in dairy products–one of the reasons milk and cheese can make children constipated. Fifth, some dairy products contain infectious agents like salmonella and tuberculosis; toxic pesticides are also concentrated in milk products.

"Besides these reasons, I tell parents about the leukemia viruses found in 20% of the dairy cows in this country. These leukemia viruses can cross species of animals and have caused leukemia in other animals under laboratory conditions. Not surprisingly, leukemia is most common in parts of the world where dairy products are most heavily consumed. (Ferrer, J., *Science* 213:1014, 1981)

"But now to calcium. The dairy industry mistakenly insists that cow's milk is the only source for calcium. But the fact is, plants are loaded with it–enough to grow the skeletons of elephants, cows, horses and people. Although Asian and African children usually don't drink any milk after

weaning, they have normal-sized bones and greater bone strength throughout life than milk-drinking Americans." Address: Santa Rosa, California.

5676. Schmutz, W.G. 1989. Soybean proteins in the diets of preruminant calves. In: L.A. Johnson, ed. 1989. New Technologies for Value-Added Products from Protein and Co-Products: Symposium Proceedings. Ames, Iowa: Center for Crops Utilization Research. 312 p. See p. 223-47. Unnumbered. [81 ref]

• ***Summary:*** Contents: The preruminant calf. The clotting of milk. Enzyme activity. Nutrient requirements of the preruminant calf. Soy proteins in calf milk replacers. Soy protein concentrates. Isolated soy proteins. Changes in digestive events. Passage rates. Gastrointestinal hypersensitive reactions. "Reduced feed costs and the demand for milk products for human consumption have stimulated this area of research...

"The use of non-milk proteins in calf milk replacers have been studied for the past 50 to 60 years... Of these protein sources, soybean flours and soybean protein concentrate have received the greatest research attention and are used in the greatest amounts in the milk replacer industry...

"Isolated soy proteins have not been evaluated as protein sources for calf milk replacers to the extent of soy flours and soy protein concentrates. Cost of the isolated soy proteins is a major consideration...

"Currently, due either to the inability of the young calf to adequately digest soy proteins and/or the creation of an allergic response to poorly digested proteins, the present usage level of soy protein remains at less than 50% of the protein." Address: Central Soya Co., Decatur, Indiana.

5677. **Product Name:** [Soy Ice Cream Bars {Made with Soymilk} (Sour-Cherry, or Coconut)].
Foreign Name: Soja Frucht-Riegel (Sanddorn, Kokonuss).
Manufacturer's Name: Schoeller Lebensmittel GmbH & Co. KG.
Manufacturer's Address: Bucherstrasse 137, D-8500 Nuremberg 90, West Germany. Phone: 911-34-000.
Date of Introduction: 1989. May.
Ingredients: Incl. soymilk, fruit juices, vitamins.
How Stored: Frozen.
New Product–Documentation: Letters from Anders Lindner. 1990. April 4 and 26. Schoeller, in West Germany makes soymilk that is used in ice cream production. Capacity is not known.

Talk with Thomas Karas of Soyastern in West Germany. Schoeller, a very big manufacturer of ice cream and frozen foods in Nuremberg, makes Soja Stangen, soy ice cream bars. It is a very new product. Thomas has an article about the product in a dairy journal. The product manager from Schoeller, who now works for Huegli, told Thomas that there is a very small amount of soy in this ice cream. Thomas also heard that Schoeller tried to sell the "Soy Bars" in the company's line of soy ice cream shops.

Talk with Ted Nordquist of Aros Sojaprodukter in Sweden. 1990. May 18. One soymilk ice cream is made by Schoeller, which is one of Europe's largest ice cream producers. They bought an Alfa-Laval system that transforms whole soybeans (using the Illinois method, without separation of okara) into soymilk, which they then spray dry and use to make a soy ice cream. "The samples of the ice cream and powder that they sent to Semper in Sweden were a total catastrophe."

Talk with Harry Whitford of Germany. 1990. May 19. Schoeller, a big dairy ice cream manufacturer, makes a cholesterol-free frozen bar with soymilk, fruit juices, and a mixture of vitamins. In Europe, especially Germany, there are a lot of popular non-soy fruit drinks containing 10-12 different fruit juices plus many vitamins and minerals. Schoeller sells the product at the Moewin-Pick, a big chain of restaurants & inns owned by some American hotel chain like Holiday Inn, which resemble Howard Johnson's in America. Moewin-Pick also makes their own brands of ice cream based on American classics. Schoeller makes these and they market them together under the brand Schoeller-Moewin-Pick. He bought one of these bars at a little shop/stand at Starnbergersee south of Munich and thought it tasted very good.

Letter (fax) from Harry Whitford. 1990. May 30. "I found the product yesterday and devoured two within 10 minutes while driving. Very good quality! I could only find one of the two flavors, sanddorn/sour-cherry, the other being coconut." He did an interview with Mrs. Manuela Pilz, head of marketing and distribution at Schoeller. Schoeller has been experimenting with soymilk as an ingredient for 4 years, conducting ongoing product research. They bought and installed an Alfa-Laval soymilk system in 1986. The product development for the Soja Frucht-Riegel lasted 1 year. They conducted a regional test market from May-Sept. 1989. Full distribution and marketing began on 1 March 1990.

Letter from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30. Alfa-Laval sold a complete soybase plant to this ice cream manufacturer in West Germany. It had a capacity of 3,000 liters/hour and began operation in 1985.

5678. Soyamilk Information Centre. 1989. Soyamilk makes sense. New Delhi, India: Soyamilk Information Centre. 17 p. 21 cm. [15 ref]

• ***Summary:*** This is a promotional booklet for Amrit Foods Ltd. printed with help from APV. Contents: Soyamilk makes sense. Soya bean–So nutritious, so versatile. Soya–The wonder bean. Dietary importance of soya milk. Nutritive and therapeutic values of soyamilk. Soya milk–The cholesterol lowering factor. References. Soya based products are taking the world by storm. APV supply largest soyamilk plant in

India. Contains color photos of the Amrit soyamilk plant, and packages of Golden Glow natural soyamilk in a paper box and in a can, Big Sipp soyamilk in foil pouches, and Soyum, a canned special infant food based on soyamilk.

A similar 32-page booklet, written in Hindi, with different photos, was published by Amrit Protein Foods at about the same time. Address: G-7, 9th Floor Himalaya House, 23, Kasturba Gandhi Marg, New Delhi–110001, India. Phone: 3711963.

5679. Tetra Pak Rausing S.A. 1989. Time series data on soymilk consumption in Europe and the USA: 1985-1988, fragments. Case Postale 181, CH-1009 Pully/Lusanne, Switzerland. Unpublished manuscript.

• ***Summary:*** The figures for each year given below are in millions of liters of soymilk consumed. The 1986 report has been lost. Each Year Tetra Pak International in Sweden sends out a questionnaire to each of its country offices. The above statistics are the responses to that questionnaire. Imports and exports and included. Figures based on orders to print packages are not released by Tetra Pak.

France: 1985 = NA. 1987 = 3. 1988 = 4
United Kingdom: 1985 = 6. 1987 = 30
USA: 1985 = 0.011721. 1987 = NA. 1988 = NA
West Germany: 1985 = NA. 1987 = 9. 1988 = 13.

5680. Mann, Oscar. 1989. Re: Problems in trying to introduce tofu to Kenya. Letter to William Shurtleff at Soyfoods Center, June 7. 2 p. Typed, with signature on letterhead.

• ***Summary:*** "I was making my own tofu for a while, then supplying friends and now a main deli/grocery in town. It's little known here but sales are steadily growing and are now at around 20 kg/week. I'm also producing soysage and have just begun okara Tempeh."

The main problems are: 1. Very strict government health regulations; all products must undergo strict government testing. 2. Poor quality soybeans and concern with aflatoxins on soybeans. "I have one person whose job it is to sit and sort soaked beans–particularly any that look moldy or infected in any way. We actually discard 20-30% of our raw stock... For some reason Kenya is having a hard time producing soy beans. The market has been low but their main problem is that the beans rot as soon as they are ready, necessitating 2 or even 3 pickings per day! Beans on the market currently come from Uganda or Tanzania and are old. I buy what I can (at around $0.50/lb) and there are never two loads the same which makes control and scientific methodology difficult." 3. Local coagulants are expensive. Lab grade calcium sulfate, the least expensive, costs $1.66/lb. So the cost of producing tofu is about $0.95/lb (with labor costing only $0.50/hour); it wholesales for $1.25 and retails for $1.66/lb. 4. Tofu and other soyfoods are not well known.

"I am holding a tofu-making class this coming week end and will have samples of tempeh and soysage to try. Next is a tofu cooking class, a small recipe book and a soya festival with one of the largest restaurants."

"My analysis of the situation soy-wise here is that probably the most accepted products will be flavored soy milk in tetra bricks, burgers, soysage, and dried frozen tofu for the various hunger and famine-relief projects. (I actually thought I had invented this stuff before finding it in your books. I use it as my main staple on safari and have given samples to trekking companies.) I would like to see a full-scale soy dairy in operation." Address: Kenya Natural Products Development Co., P.O. Box 20360, Nairobi, Kenya. Phone: 60099.

5681. Earthsave. 1989. How to win an argument with a meat eater (Ad). *New York Times.* June 18. p. B-39. National ed. Business section. Sunday.

• ***Summary:*** "The hunger argument: Number of people worldwide who will die as a result of malnutrition this year: 20 million. Number of people who could be adequately fed using the land freed if Americans reduced their intake of meat by 10%: 60 million. Percentage of corn grown in the U.S. eaten by people: 20. Percentage of corn grown in the U.S. eaten by livestock: 80. Percentage of oats grown in the U.S. eaten by livestock: 95. Percentage of protein wasted by cycling grain through livestock: 90. How frequently a child dies as a result of malnutrition: every 2.3 seconds. Pounds of potatoes that can be grown on an acre: 20,000. Pounds of beef produced on an acre: 165. Percentage of U.S. farmland devoted to beef production: 56. Pounds of grain and soybeans needed to produce a pound of edible flesh from feedlot beef: 16.

"The environmental argument: Cause of global warming: greenhouse effect. Primary cause of greenhouse effect: carbon dioxide emissions from fossil fuels. Fossil fuels needed to produce a meat-centered diet vs. a meat-free diet: 3 times more. Percentage of U.S. topsoil lost to date: 75. Percentage of U.S. topsoil loss directly related to livestock raising: 85. Number of acres of U.S. forest cleared for cropland to produce meat-centered diet: 260 million. Amount of meat imported to U.S. annually from Central and South America: 300,000,000 pounds. Percentage of Central American children under the age of five who are undernourished: 75. Area of tropical rainforest consumed in every quarter-pound of rainforest beef: 55 sq. ft. Current rate of species extinction due to destruction of tropical rainforests for meat grazing and other uses: 1,000 per year.

"The cancer argument: Increased risk of breast cancer for women who eat meat daily compared to less than once a week: 3.8 times. For women who eat eggs daily compared to once a week: 2.8 times. For women who eat butter and cheese 2-4 times a week: 3.25 times. Increased risk of fatal ovarian cancer for women who eat eggs 3 or more times a week vs. less than once a week: 3 times. Increased risk of

fatal prostate cancer for men who consume meat, cheese, eggs and milk daily vs. sparingly or not at all: 3.6 times.

"The cholesterol argument: Number of U.S. medical schools: 125. Number requiring a course in nutrition: 30. Nutrition training received by average U.S. physician during four years in medical school: 2.5 hours. Most common cause of death in the U.S.: heart attack. How frequently a heart attack kills in the U.S.: every 45 seconds. Average U.S. man's risk of death from heart attack: 50 percent. Risk of average U.S. man who eats no meat: 15 percent. Risk of average U.S. man who eats no meat, dairy or eggs: 4 percent. Amount you reduce risk of heart attack if you reduce consumption of meat, dairy and eggs by 10 percent: 9 percent. Amount you reduce risk if you reduce consumption by 50 percent: 45 percent. Amount you reduce risk if you eliminate meat, dairy and eggs from your diet: 90 percent. Average cholesterol level of people eating a meat-centered diet: 210 mg/dl. Chance of dying from heart disease if you are male and your blood cholesterol is 210 mg/dl: greater than 50 percent.

"The natural resources argument: User of more than half of all water used for all purposes in the U.S.: livestock production. Amount of water used in production of the average cow: sufficient to float a destroyer. Gallons to produce a pound of wheat: 25. Gallons to produce a pound of meat: 2,500. Years the world's known oil reserves would last if every human ate a meat-centered diet: 13. Years they would last if human beings no longer ate meat: 260. Calories of fossil fuel expended to get 1 calorie of protein from beef: 78. To get 1 calorie of protein from soybeans: 2. Percentage of all raw materials (base products of farming, forestry and mining, including fossil fuels) consumed by the U.S. that is devoted to the production of livestock: 33. Percentage of all raw materials consumed by the U.S. needed to produce a complete vegetarian diet: 2.

"The antibiotic argument: Percentage of U.S. antibiotics fed to livestock: 55. Percentage of staphylococci infections resistant to penicillin in 1960: 13. Percentage resistant in 1988: 91. Response of European Economic Community to routine feeding of antibiotics to livestock: ban. Response of U.S. meat and pharmaceutical industries to routine feeding of antibiotics to livestock: full and complete support.

"The pesticide argument: Common belief: U.S. Department of Agriculture protects our health through meat inspection. Reality: fewer than 1 out of every 250,000 slaughtered animals is tested for toxic chemical residues. Percentage of U.S. mother's milk containing significant levels of DDT: 99. Percentage of U.S. vegetarian mother's milk containing significant levels of DDT: 8. Contamination of breast milk, due to chlorinated hydrocarbon pesticides in animal products, found in meat-eating mothers vs. non-meat eating mothers: 35 times higher. Amount of Dieldrin ingested by the average breast-fed American infant: 9 times the permissible level.

"The ethical argument: Number of animals killed for meat per hour in the U.S.: 660,000. Occupation with highest turnover rate in U.S.: slaughterhouse worker. Occupation with highest rate of on-the-job injury in U.S.: slaughterhouse worker.

"The survival argument: Athlete to win Ironman Triathlon more than twice: Dave Scott (6 time winner). Food choices of Dave Scott: vegetarian. Largest meat eater that ever lived: Tyrannosaurus Rex." Address: Box 949, Felton, California 95018-0949.

5682. Bhat, Nirmala. 1989. Catch 'em young: Children are emerging as the single most promising buyer segment in the country. And advertisers have been quick to cash in on the trend. There has been a virtual deluge of advertisements aimed at children–on TV, on radio and in the print media. *Times of India* (*The*) (*Bombay*). June 24. p. A2.
• ***Summary:*** "But children can be very fastidious, and several 'me-too' products such as Favy noodles, Noble Soya's Great Shake tetrapack drinks [made of soya milk] and the Voltas soft drink concentrate Ju-C failed to catch their fancy."

5683. *SoyaScan Notes.* 1989. What are soybean saponins? Can they reduce human blood cholesterol levels? (Overview). June 28. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** *Webster's Dictionary* (1983) defines saponin (derived from the French *saponine,* which is from the Latin *sapon-, sapo* = soap, and first used in 1831) as "any of various mostly toxic glucosides that occur in plants (as soapwort or soapbark) and are characterized by the property of producing a soapy lather; esp: a hygroscopic amorphous saponin mixture used esp. as a foaming and emulsifying agent and detergent."

Thus it may be the saponins (carbohydrates, water soluble sugars) in the whey which is a by-product of the tofu-making process that causes that whey to foam.

Webster's Dictionary defines glucoside (a term first used in 1857) as a glycoside that yields glucose on hydrolysis. A glycoside (first used in 1930) is defined as "any of numerous sugar derivatives that contain a nonsugar group attached through an oxygen or nitrogen bond and that on hydrolysis yield a sugar (as glucose)."

Birk and Peri (1980, p. 161) state: "The saponins are glycosides that occur in a wide variety of plants. They are generally characterized by their bitter taste, foaming in aqueous solutions, and their ability to hemolyze [break down] red blood cells."

The earliest document seen (Jan. 2005) that mentions soybean saponins was published in 1931 by E. Walz in German. In early 1979 a team of Australian researchers (led by Potter, Topping, and Oakenfull) at the CSIRO Division of Human Nutrition in Adelaide found that the cholesterol-lowering effect of soybean products was attributable to the

presence of saponins rather than proteins or amino acids. Subsequent research by this group and others seemed to verify this hypothesis. Note that saponins impart an unpleasant, bitter taste to most soyfoods (e.g. tofu or soymilk) in which they are present.

In 1990 Japanese scientists from the Department of Food Chemistry at Tohoku University found that soybean saponins could control reproduction of the HIV virus which is associated with Acquired Immune Deficiency Syndrome or AIDS. These saponins showed inhibitory effects against HIV infection in vitro.

5684. Akwarius Almere. 1989. Akwarius prijs en bestelboek: Natuurvoedingsprodukten [Catalog and price list. April-June]. P.O. Box 50070, 1305 AL Almere, The Netherlands. 77 p. [Dut]

• ***Summary:*** Akwarius is a larger importer and distributor of natural food products. They have worked in this field since 1971, and have a strong interest in macrobiotic and anthroposophical foods. Contents (p. 2). Philosophy and function (p. 3). Beverages (p. 7): Sojamelk naturel and Bonsoy, Provamel Sojadrink (4 flavors in 500 ml and 4 flavors in 1 liter sizes), Provamel Soja dessert (puddings; 5 flavors in 125 gm and 1 flavor in 1050 gm).

Manna sweeteners (p. 12): Amasake drink in 350 and 700 gm sizes, and rice koji. Note that Akwarius imports and distributes large line of Manna-brand macrobiotic products from Muso in Japan. Manna vegetable protein products (p. 21): Dried tofu (non-organic). Bonsoy soymilk, Seitan, and three types of dried wheat gluten (fu). Manna Soy Sauces (Sojasausen, p. 21): shoyu (B = biological or organically grown, and NB = not biological, i.e. non-organic), and tamari (non-organic).

Witte Wonder (p. 22): Seitan, Tofu Spread (in paprika, garlic, celery, dill, mushroom, and pepper flavors, 220 gm sizes, all organic), Tofu in Sauces (peanut, curry-pineapple, and tomato flavors, 340 gm, organic), Tofunaise (plain and lemon flavors), Tofu Dressing (Italian, garden herbs, Mexican, and plain flavors).

Yakso (p. 23): Seitan, Tempeh Spreads (in Indonesian poesta and doeloe flavors), Temmo (round tempeh burger, deep fried then marinated, ¼ inch thick, sold 5 in a glass jar), Soyaroma (tempeh spread like butter), Sweet Indonesian-style soy sauce (Ketjap manis), Tofu Spreads (cream cheese consistency, in salsa, dill, green, shallot, and pommodore [apple?] flavors), Tofu Mayonnaise (Sojanaise), Smoked tofu (paprika, mushroom, and celery flavors in 170 gm wide mouth glass jars).

Akwarius soybeans and soybean meal/flour (p. 27-28, 35, organic). Manna Pasta (p. 28): Soya macaroni. Manna black soybeans from Hokkaido (p. 35; 350 gm, non-organic). Manna Tekka Condiment (p. 44), Manna soynuts (*Sojanootjes*, p. 45, 3 flavors). Lima soyadrink (p. 47).

Manna Miso (Sojapasta; p. 48): Brown rice miso (organic and non-organic), young rice miso (non-organic), barley miso (organic and non-organic), natto miso (non-organic), soybean miso (non-organic), instant miso soup (with and without fish, non-organic), instant miso soup with tofu. Manna sea vegetables (p. 49).

Note: This is the earliest Dutch-language document seen that mentions soynuts, which it calls *Sojanootjes*. Address: Almere, Netherlands. Phone: 03240-20800.

5685. **Product Name:** Soyum: Special Infant Food Based on Soyamilk (Spray Dried Powder).
Manufacturer's Name: Amrit Protein Foods Ltd.
Manufacturer's Address: Amrit Nagar, G.T. Road, Ghaziabad, Uttar Pradesh, 201 009, India. Phone: 91-118-714215 or 714216.
Date of Introduction: 1989. June.
Wt/Vol., Packaging, Price: Can.
How Stored: Shelf stable.
New Product–Documentation: Soyamilk Information Centre. 1989. Soyamilk makes sense. p. 17. Color photo of this product in its can. "Lactose free."

5686. **Product Name:** Vigo (Soymilk) [Cardamom, or Strawberry].
Manufacturer's Name: Amrit Protein Foods Ltd.
Manufacturer's Address: Amrit Nagar, G.T. Road, Ghaziabad, Uttar Pradesh, 201 009, India. Phone: 91-118-714215 or 714216.
Date of Introduction: 1989. June.
Wt/Vol., Packaging, Price: 200 ml aseptic 2-layer plastic Prepac Standi-Pack pouch.
Nutrition: 3.1% protein.
New Product–Documentation: Talk with Mahesh Khaitan, technical advisor to Amrit and nephew of Mr. N.K. Bajaj, the head of Amrit. 1989. July 31 and Aug. 6. This line of soft drink-type products was launched by Amrit in July. They have been a great success, especially the cardamom. The plant capacity is 6,000 liters/day and the company is now producing 4,000 liters/day of these 2 flavors. They plan to introduce a chocolate flavor soon. They decided to distinguish this brand from Big Sipp largely because of the packaging. Vigo is sold in a Standi Pack pouch made from a two-layered plastic film. A 10-day unrefrigerated shelf life is stated on the label, but it actually stays good for 4 weeks. It is sold only locally, within a radius of 200 km of the plant, which means mostly New Delhi. Moreover, Vigo contains 3.1% protein, versus 1.1% for the two existing Big Sipp flavors. Most stores sell the product unrefrigerated, but some sell it refrigerated so it is ready to drink. The company suggests that it be refrigerated before consumption.

Letter from A.K. Bajaj. 1991. June 26. Vigo flavoured soyamilk has been discontinued.

5687. **Product Name:** Golden Glow Natural Soyamilk

[Plain].
Manufacturer's Name: Amrit Protein Foods Ltd.
Manufacturer's Address: Amrit Nagar, G.T. Road, Ghaziabad, Uttar Pradesh, 201 009, India. Phone: 91-118-714215 or 714216.
Date of Introduction: 1989. June.
Ingredients: Water, soybeans, calcium lactate, sugar, vanilla [no salt].
Wt/Vol., Packaging, Price: 500 and 1,000 ml aseptic 2-layer laminated plastic Prepac Pillow-Pack.
How Stored: Shelf stable, 10-14 day shelf life. Refrigerate after opening.
Nutrition: Per 250 gm.: Proteins 7.5 gm, fats 4.25 gm (of which more than 60% are polyunsaturated fats), carbohydrates 7.85 gm, fibre 0.575 gm, calcium 128 mg, iron 4.6 mg, calories 100 Kcal (calories).
New Product–Documentation: Talk with Mahesh Khaitan, technical advisor to Amrit and nephew of Mr. N.K. Bajaj, the head of Amrit. 1989. July 31 and Aug. 6. They plan to introduce this product in Aug. 1989. Khaitan accidentally discovered that calcium lactate, added at a level of less than 0.2% by weight, masks any beany flavor, adds a nice milklike flavor, and of course adds calcium. Even if the product is boiled, no coagulation takes place. They also add 1 ppm of vanilla. They also add the calcium lactate to Vigo but the vanilla (20 ppm) only to Golden Glow.

Note: This is the earliest English-language document seen (Aug. 2013) that uses the term "milklike flavor" in connection with soyamilk.

In a blind, head-to-head taste test against Edensoy among managers of the company, Golden Glow won by a big margin. Most of the dairy milk in India is water buffaloe's milk, which is less expensive than cow's milk. In north India about 90% of all milk comes from water buffaloes and the remaining 10% from cows. In south and west India the proportions are about 55% and 45% respectively. Water buffaloe's milk contains 5.2% protein, 8.7% fat, and 210 mg of calcium, versus 3.1%, 3.5%, and 114 mg respectively for typical cow's milk (which contains 3.5% fat). In India, there are few large dairies which own many head of cattle. Most dairy cows are raised on small farms; they are not confined and are milked by hand. Golden Glow sells for about 80% the price of water buffaloe's milk. This is a plain, unflavored soymilk, made with the DTD soymilk base, not with soy protein isolates. The Pillow Pouch is not a stand-pack type. It is made of two layers of low-density polyethylene film. The product is targeted for use not mainly as a beverage but as a household food. Though the shelf-life at room temperature is given on the package as 10 days, tests show that it is still good after 30 days.

Golden Glow Soyamilk Cookbook. 1989. 16 p. A large color photo (p. 2) shows the product in its package.

Letter from A.K. Bajaj. 1991. June 26. Golden Glow natural soya milk is being marketed in the local markets with the help of the medical profession. In its formulation, the addition of vanilla has been discontinued. Note: Golden Glow is now also sold as a canned spray-dried powder. With his letter Mr. Bajaj also sent 4 leaflets promoting Golden Glow, 2 of them alone, 2 of them together with Big Sipp.

5688. Belleme, John. 1989. The soymilk face-off: Top brands differ widely in ingredients, nutrients, fat, and sugar. *East West*. June. p. 53-55, 58-59.
• ***Summary:*** Four brands of soymilk are now available in the USA: Edensoy (3 flavors), Vitasoy (4 flavors), Westsoy (6 flavors), and Sunsoy (2 flavors). Contains a nutritional analysis, ingredients, and other basic information about each product. Address: P.O. Box 457, Saluda, North Carolina 28773. Phone: 704-749-9537.

5689. Benard, Marc. 1989. Celnat: La longue marche d'un entrepreneur Celnat: The long march of an entrepreneur [Robert Celle]. *Compas* (*Le*) (*France*) No. 46. p. 8-12. June. [Fre]
• ***Summary:*** This is an interview with the founder of Celnat, a company in Blavozy, France, that processes soybeans and sells soymilk and soymilk desserts. He became interested in macrobiotics in 1976. His family business, Les Moulins Celle, had existed on the banks of the Loire since 1834. His own business name comes from that of his family. It began operation in 1979. In 1988 it had a turnover of 22 million French francs, using only organically grown grains and oilseeds, including soybeans. Contains a detailed discussion of the company's equipment.

Organic certification organizations include (1) Unitrab = Union Nationale Interprofessionnelle de l'Agriculture Biologique. (2) Cinab = Comité Interprofessionnel National de l'Agriculture Biologique. (3) Nature et Progres.

5690. Brown, Peter J. 1989. Organic soybeans: Filling a farmer's need and a market demand. *Soya Newsletter* (*Bar Harbor, Maine*). May/June. p. 1, 3-6.
• ***Summary:*** A Soyatech survey indicates that nearly 11,000 acres of organic soybeans were planted last year, yielding 415,200 bu (24.9 million lb), or 38 bu/acre, and worth nearly $4 million. Some organic farmers feel these figures are too low. They estimate 30,000 acres, with yields averaging 50 bu/acre and a total value of $10-$15 million a year. No official statistics are available from USDA's Low Input/Sustainable Agriculture (LISA) research and education program, according to director Neill Schaller, largely because the market is so small. A summary of LISA's work and results is given. The states producing the largest amounts of organic soybeans are Iowa, Nebraska, Illinois, Indiana, and Minnesota. Most of these beans end up in tofu or soymilk. Soyatech estimates that 17.5% of the 74.8 million lb of soybeans used to make popular low-tech soyfoods for consumption in the USA in 1989 were organically grown,

and that 53% of this organic crop will end up in soyfoods. Many brokers could sell more if they had more. Dan Burke of Pacific Soybean and Grain in San Francisco notes that in the mid-1980s interest in organic soybeans began to decline, but it has risen during the past 18 months, and especially during the past 6 months. Minnesota has led the way in setting organic standards, which include a 3-year chemical-free requirement.

5691. Ishak, Soleha; Abdullah, Aminah. 1989. The use of soy milk in the preparation of corn starch pudding. *Malaysian Applied Biology* 18(1):53-58. June. [16 ref. Eng; mal]
• ***Summary:*** Tofu is the most widely consumed food in Malaysia. The four "most popular types of tofu in Malaysia are hard tofu (*tow kwa*), soft tofu (*tow foo*), fried tofu (*tow foo pok*), and sweet tofu (*tow foo fah*). Of these, only sweet tofu is served as a dessert. Calcium sulphate is traditionally used as a gelling agent [curding agent] in tofu." Yuba is known as *fucuk.* Address: Jabatan Sains Makanan dan Pemakanan, Fakulti Sains Hayat, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia.

5692. La Russo, Carol E. 1989. Almond ventures. Cortona, Italy: Grafiche Calosci. 75 p. No index. 28 cm. [104* ref]
• ***Summary:*** This book contains an excellent and well-documented history of the almond. The almond originated in the Middle-East, in the area around today's Turkey and Israel. The Persians grew to appreciate the almond's virtues and "passed onto the Arabs the particular value of almond meal–how, when soaked in water, the resulting liquid became a nutritious fluid when needed for mixing with other ingredients, but more importantly it was a very refreshing milk drink" (p. 14).

Almonds were grown in the Nile Valley in ancient times; they have been found in excavations of Egyptian Dynasty tombs, dating back to approximately 1450-1341 B.C. King Tutankhamun [Tutankhamen or Tutankhaten] reigned briefly in Egypt from 1361-1352 B.C. In his burial chamber, with his mummy, were found some thirty almonds, prized for their nutritional value even at this early date, and intended to help sustain this royal figure on his journey to join the Gods [see the book *Wonderful Things: The Discovery of Tutankhamun's Tomb,* by the Metropolitan Museum of Art].

The almond tree was widely grown in Egypt at the time that Moses was there [ca. 1500 B.C.]. When he received instructions to build a tabernacle in the desert and furnish it with holy vessels, it is written in *The Torah* that one of the items was to be a lampstand of beaten gold, ornamented with cups in the shape of almond blossoms.

The almond is mentioned frequently in the Old Testament Bible: Genesis (43:11), Exodus (25:31-40, 37:19), Numbers (17:8), Ecclesiastes (12:5), Jeremiah (1:11). Perhaps the best known of these is Numbers (17:8) which states (King James' Version): "And it came to pass, that on the morrow Moses went into the Tabernacle of witness; and behold, the rod of Aaron for the house of Levi was budded, and brought buds, and bloomed blossoms, and yielded almonds."

A Roman orator, politician, and philosopher, Marcus Cato (234-149 B.C.) advised: "... as for nuts, see that they are planted; the chestnut, filberts... and the almond" (E. Brehaut 1933).

The people of Renaissance England extracted milk from ground almonds and water. It was used as a thickener and a flavoring ingredient for other dishes, as well as a milklike beverage. A long quote from Boorde (1542) is given, with the source cited as Lorna Sass (1975, p. 116) (p. 16-17).

Page 61 notes that the almond is considered by botanists as not a true nut tree but a member of the stone-fruit tree family of plums, apricots, peaches, and cherries. Yet the almond's seed, or pit, is most often listed with nut crops.

Marzipan (p. 64) is the ultimate savory confection. Note: *Webster's Dictionary* (1998) states that the word marzipan (which was first used in English in 1542) comes to us through Greek, from the Italian *marzapane.* This confection made of crushed almonds or almond paste, sugar, and egg whites, is often shaped into various forms. However La Russo (based on Tannahill) believes that "marzipan" comes from the Arabic word *mawthaban.* Italians were familiar with marzipan by the 1570s when a banquet containing it was prepared for Pope Pius V. The five courses began with pieces of Marzipan and Marzipan balls. Address: Eugene, Oregon.

5693. Matsuura, M.; Obata, A.; Fukushima, D. 1989. Objectionable flavor of soy milk developed during the soaking of soybeans and its control. *J. of Food Science* 54(3):602-05. May/June. [23 ref]
• ***Summary:*** Beta-glucosidases, enzymes in soybeans, were found to be responsible for the production of daidzein and genistein from the isoflavone glucosides, daidzine and genistin, respectively, during the process of making soymilk. Address: Research & Development Div. of Kikkoman Corp., 399 Noda, Noda City, Chiba prefecture 278, Japan.

5694. **Product Name:** [Nestlé Bonus (Powdered 50:30 Blend of Cow's Milk and Soymilk)].
Foreign Name: Nestlé Bonus.
Manufacturer's Name: Nestlé (Mexico) Ltd.
Manufacturer's Address: Veracruz, Mexico.
Date of Introduction: 1989. June.
Ingredients: Cow's milk, soymilk.
How Stored: Shelf stable.
New Product–Documentation: Peter Golbitz. Trip report to Mexico City, Mexico, September 18-24, 1990 [for American Soybean Assoc. conference on soymilk and soy-based cheese products]. 1990. Oct. 8. "Nestlé is currently marketing a powdered milk drink called Bonus, which is a blend of

about 50:30, cow's milk to soymilk. The balance of the ingredients are sugars and added vegetable oil. The product is being priced just slightly lower than cow's milk but is being promoted as offering the best of both worlds. It has an upscale image with its bright and attractive packaging." Their soymilk plant in Veracruz currently operates only 5 days a month.

Soyafoods. 1992. 3(1):4. "Nestlé–a Bonus for Mexico." Nestlé is promoting the soya component of Bonus as a benefit and specifically as soya. A photo shows the can. Bonus was launched in June 1989 and originally sold for 5% less than the leading brand of powdered cow's milk; now it sells for 15% less. It is sold in 3 different sizes: 195 gm, 350 gm, and 1,000 gm. In 1990 sales of Bonus totalled 692 tonnes and 1991 sales are projected to be 1,500 tonnes.

5695. Thomas, R.; deMan, J.M.; deMan, L. 1989. Soymilk and tofu properties as influenced by soybean storage conditions. *J. of the American Oil Chemists' Society* 66(6):777-82. June. [14 ref]

• ***Summary:*** After soybeans have been stored for 8 months, the amount of protein extracted into soymilk decreases by about 14% compared with the initial extractability, whether the soybeans are stored at 20º or 30ºC, at relative humidities of 65% or 85%. Tofu made from soybean that were stored at 85% relative humidity became less uniform in microstructure near the end of the storage period. The volume of whey resulting as a by-product of the tofu increased with soybean storage time. Address: Dep. of Food Science, Univ. of Guelph, Guelph, ONT, Canada N1G 2W1.

5696. Kessler, Helga. 1989. (K)ein Markt fuer die Milchimitate aus Soja? Im Ausland laufen die pflanzlichen Milkprodukte gut [Is there a market for imitation milks made from soya? Overseas, plant-based milk products are selling well]. *Badisches Zeitung* (*Germany*). July 10. p. 12. No. 155. Monday. [Ger]

• ***Summary:*** For about two months, imitation milk products have been sold in West Germany, but the officials are generally not aware of this. The EG laws say that such products (usually made from soya) can be sold legally in Europe. One of their main selling points is that they are free of cholesterol.

But they are not yet widely available, and are found mostly at natural food stores (*Bioladen*) and Reform Houses (*Reformhaeuser*). One is called "Sojamilch." Dairy people call it "Kunstmilch" (artificial milk), and say that it tastes pretty poor.

Since the middle of July a Soya Cocktail with Raspberries or Apricots (*Sojacocktail mit Himbeeren oder Aprikosen*) has been sold by Gottlieb-Filialen; the price is 4.29 German marks for a four-pack. It is an imitation yogurt made in France.

The leader in dairy alternatives is England. They have long spread margarine on their bread. In Sweden, for 20 years, "mixed fats" such as margarine has been sold, and in France since 1980.

No doubt, the foreign manufacturers will try to sell their products on the German market.

A photo shows two girls looking at the dairy case: One says, Look at this! Soyamilk (*Sojamilch*)*!*

5697. Perez Baez, Oswaldo. 1989. Re: New developments with soyfoods in Venezuela. Letter to William Shurtleff at Soyfoods Center, July 10. 3 p. Typed, with signature on letterhead. [Eng]

• ***Summary:*** "In my last visit to Caracas I contacted: Prof. Makie Kodaira and Prof. Amaury Martinez of the 'Instituto de Ciencia y Tecnología de Alimentos, Facultad de Ciencias, U.C.V.' (Universidad Central de Venezuela) who are very interested in offering a theoretical and practical course about soyfoods, using their pilot plant (the second of importance in Venezuela). Prof. Kodaira studied in Hiroshima, Japan in 1977 and she is a specialist on seafoods. They would like the 'Centro de Alimentos de soya de Venezuela' to organize this course.

"I think this is the time to offer in Venezuela a complete course about soyfoods and I have thought to invite you to come to Venezuela. I am thinking about 2 courses:

"(a) One oriented to Institutional level (Instituto Nacional de Nutrición, Fundación Polar, CIEPE, Universidades, Industry, etc.) for professional people. This course could be in Caracas, Instituto de Ciencia y Tecnología de Alimentos, U.C.V.

"(b) Another one oriented to the general public (not necessarily professional level). This course could be here in La Azulita which is a rural and beautiful place, epicenter of the Venezuelan movement for alternative lifestyles.

"I have thought of the following content for these courses: (1) Soymilk. (2) Tofu. (3) Tofu and soy milk ice cream. (4) Miso. (5) Tempeh. (6) Shoyu.

"I am working on a book about soyfoods, and am enclosing an outline of the contents: I. Introduction. II. Agronomic aspects. III. Soya and food security. IV. The most important soyfoods. V. Industrial potential of the soybean. VI. Bibliography. VII. Index." Address: Ing., Centro de Alimentos de Soya de Venezuela, Granja Tierra Nueva, Aldea San Luis, La Azulita, Estado Merida, C.P. 5102, Venezuela.

5698. Zodiac Consultants. 1989. Display ad: Project reports: Newly prepared, computer processed. *Times of India* (*The*) (*Bombay*). July 15. p. 18.

• ***Summary:*** "... based on the latest data with the help of In-House Computers." In this tall, 2-column ad, the reports, which are listed alphabetically, include: "Solar Cells.

"Soya Milk & Paneer."

5699. Rumpff, Barbara; Rivera, Esther. 1989. Loma Linda Foods' infant formula line sold to N.V. Nutricia of the Netherlands. New company, La Loma Foods, soon to be sold (Interview). *SoyaScan Notes.* July 19. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Loma Linda Foods wanted to start marketing a cow's milk based infant formula, and they were discussing marketing a product made by Nutricia, a Dutch company, which already made Nutri-Soja and Nutri-Soja Plus, two soy-based infant formulas. Nutricia is the second largest infant formula company in Europe behind Nestlé and one of the world's largest companies in clinical nutrition.

In Feb. 1989 the tables were turned and Nutricia ended up buying Loma Linda's infant formula line (Soyalac) as well as both the Riverside and Mt. Vernon, Ohio food factories. Loma Linda decided to sell because of liabilities and stiff competition. Cornelius Rumpff came to head the Nutricia operation in Riverside. The General Conference (GC) of Seventh-day Adventists (the Church, which owns and operates Loma Linda Foods), spun off a new company named La Loma Foods, to market Loma Linda's food line (mostly meat analogs), which was to be made by Nutricia for 18 months until La Loma could build a new plant. But by July 1989 the GC had decided that instead of building a new plant (an expensive project), it would sell La Loma Foods and its food line. Bids would be open during the month of July. It was hoped that another Adventist company would buy the company; both Worthington Foods and Australia's Sanitarium Foods (which had managed Loma Linda Foods for 4-5 years and saved the company from going under) were expected to bid. The infant formula business had been roughly 75% of Loma Linda's total business. The takeover has been low key, not widely publicized. All the formulas and liquids had been made in Ohio. But at one time Loma Linda had made a decision to consolidate the two plants. The Mt. Vernon, Ohio, plant was shut down then reopened because the Riverside plant was not finished in time. Address: 1. Loma Linda Foods, Div. of Nutricia N.V., Riverside, California; 2. La Loma Foods, 12155 Magnolia Ave., Suite 9-B, Riverside, CA 92503. Phone: 714-351-4300 (LLF).

5700. *Adventist Review* (*Hagerstown, Maryland*). 1989. GC seeks buyer for La Loma Foods. July 20. p. 6 (p. 758).
• ***Summary:*** "Less than 5 months after the General Conference (GC) sold Loma Linda Foods' (LLF) Infant Formula Division, the GC is now receiving purchase offers for the newly formed meat analogues and soy milk producer–La Loma Foods."

"In May, Worthington Foods, Inc., of Worthington, Ohio, an independent meat analogues producer owned by Adventist businessmen, proposed to purchase La Loma Foods. The multimillion-dollar offer calls for an up-front payment for the assets and an annual royalty payment based on a percentage of sales to Adventist customers over 10 years. If La Loma is sold to Worthington, the La Loma name would be discontinued and all production would be consolidated at Worthington's new plants, currently under construction in Zanesville, OH.

"On June 30 the GC Executive Committee, after a lengthy discussion, decided by a 28 to 19 vote that La Loma Foods should be offered for sale... 'At least 3 other groups are interested in making proposals,' says William Murrill, GC undertreasurer and La Loma Foods board chairman."

"The former meat analogues and soy milk division generated between $8 and $9 million in sales for 1988, or approximately 40% of combined sales."

5701. May, Lucy. 1989. The truth about tofu: Cooking with it is just becoming a matter of taste. *Times* (*St. Petersburg, Florida*). July 27. p. 1D, 3D.
• ***Summary:*** John and Marcia Miller, self-described former hippies, started Marjon Specialty Foods in 1972. John, 49 is president, and Marcia, 46, is vice president of the company (located in Plant City, Florida), which produces [mung] bean sprouts, alfalfa sprouts, ginger root, all-natural salad dressing, and tofu. The tofu is sold in water-packed and vacuum-packed blocks. They have also developed Tofu Crumbles–which resembles ground beef or hamburger.

Don Young is owner of the 11-year-old Lecanto Tofu Shop in Lake Butler, Florida. He sells tofu and soymilk.

Color photos show: (1) John and Marcia Miller. (2) Don Young feeding his goats with okara. (3) Don Young standing beside his Lecanto Tofu delivery truck.

5702. Belleme, John. 1989. Soymilk's bum rap? The FDA comes down hard on Eden Foods. *East West.* July. p. 42, 44-45.
• ***Summary:*** The story from 1983 to the present of serious problems caused by a pamphlet stating that Edensoy is "Good for babies." Edensoy is expected to have 1989 retail sales of $12,000,000. Address: P.O. Box 457, Saluda, North Carolina 28773. Phone: 704-749-9537.

5703. Blix, Glen. 1989. Preparation and use of dry soy products and nutritional beverages. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 234-36.
• ***Summary:*** "In modern times, the dairy industry has pioneered the techniques of beverage drying. First with drum driers and more recently with spray drying technology." A pioneer in the production of commercial soymilk was Dr. Harry Miller. In the mid-1930s his soy dairy delivered soymilk to customers in Shanghai, China. World War II necessitated his return to the USA, where he set up a soymilk plant in Ohio. "Spray drying equipment was added to the

plant in the late 1940's. This produced a product definitely superior to those other experimenters had obtained using soy flour. In the United States, both liquid and powdered soy milks still are being produced using methods which differ little from those originated by Miller...

"In the United States approximately 25% of the 1.1 billion dollar infant formula market is comprised of soy-based products. Of this amount over 17% is in the powdered form. These numbers indicate that soy milk is being utilized by many infants who do not require it to combat allergy since only 7% to 10% of all infants fall into this category... Infants raised on soy milk formulas often find it difficult to make a later transition to cow milk, and thus either refuse to use milk (placing them at nutritional risk) or demand an adult soy beverage substitute. This fact, coupled with a multitude of other factors, has contributed to a proliferation of soy beverages in recent years...

"The market for an adult soy beverage in the United States is difficult to determine but best estimates indicate that it approached 8 million liters in 1987. The bulk of this amount was made up of aseptically packaged ready to drink milk (7.2 million liters) with the balance comprised of reconstitutable powder."

The high fat content of powdered soymilk can lead to problems with oxidation and the resulting off-flavors. Vitamins C, E, and A can be added as antioxidants. Vitamin A should be used with a nitrogen flush to greatly reduce its decline over time.

The most familiar soy powder product is soy isolate. In 1983 the American Soybean Assoc. estimated that 80 million lb of isolate were produced in the USA, and projected that by 1987 usage of isolates would reach 100 million lb. Those projections have proven to be too optimistic. Address: School of Public Health, Loma Linda Univ., Loma Linda, California.

5704. Business Trend Analysts, Inc. 1989. The health and natural food market: A product-by-product marketing analysis and competitor profile. 2171 Jericho Turnpike #342, Commack, NY 11725. 280 p. Price $950.00. *

• ***Summary:*** Section 6 of this report is titled "The Market for Soyfoods" (24 pages). It projects 6.2% growth for the soyfoods industry, and contains the following (much of it provided by Soyatech, Inc. and Soyfoods Center): Analysis and summary. Manufacturers' sales of soyfoods. Manufacturers' sales of soyfoods to major outlets. Manufacturers' sales of soyfoods, by type of outlet. The top six soymilk producers in the U.S. U.S. per capita consumption of soymilk. Retail sales of soyfoods. Retail sales of soyfoods at major outlets. Retail sales of soyfoods, by type of outlet. Graph: Product mix of U.S. soyfood sales. Estimated mix of distribution channels used to market various soyfoods. U.S. soybean production. Characteristics of women's use of soy sauce. Quick Tamari tips. Selected 1988/89 new product introductions: Soyfoods.

Under "Report Highlights and Special Features" we read: "Soyfoods continue to gain popularity with mainstream consumers, as sales are expected to top the $380 million mark, at the wholesale level, by year-end. At the retail level, sales of tofu alone are currently pegged at $77 million, with supermarkets capturing close to 60% of dollar volume."

Overall report Contents: 1. Executive summary. 2. The overall market for health and natural foods (including Soyfoods 1979-1988, with forecast to 1998). 3. The market for health and natural dairy foods. 4. The market for health and natural grocery products. 5. The market for health and natural snack food products. 6. The market for soyfoods. 7. The market for health and natural grains and cereals. 8. The market for health and natural frozen foods. 9. The market for herbal products. 10. Distribution channels. 11. Factors affecting demand. 12. Trends in organic farming. 13. Competitor profiles: Alta-Dena Certified Dairy, Arrowhead Mills, Barbara's Bakery, Celestial Seasonings, Golden Temple, San-J International, Thompson Kitchens. Tivall U.S.A./Garden Gourmet, U.S. Mills (partial list). 14. Directory of more than 200 health and natural food producers. Address: Commack, New York. Phone: 516-462-2410.

5705. Canto, Wilson L.; Turatti, J.M. 1989. Production and markets for soy protein industrial ingredients in Brazil. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 560-63. [3 ref]

• ***Summary:*** Contents: Abstract. Introduction. Results: Producers, industrial users. Discussion. Acknowledgments.

"There are four soy protein derivatives (SPD) producers in Brazil: Samrig S.A., factory located in Esteio-RS; Olvebra, factory in Guaíba-RS; Noval, factory in Guaíba-RS; and Nutrimental, through its filial Energe, located in Guaramirim-SC.

"Samring produces defatted soy flour, 30 types of textured flours of different colours and granulation, and five types of isolates and concentrates with distinct functional properties. Samrig is the only industrial producer of isolates in Brazil and its products are marketed under the brand Maxten, Escol, Proteinmax, Alipro and Samprosoy.

"Olvebra produces defatted soy flour, powdered soy milk and its residue, textured flour and others. They are sold under the brand names Provesol and Novomilk. The products of Noval are: pre-cooked full fat soy flour, powdered soy milk and its residue, whole soy flakes, and others. Nutrimental produces defatted soy flour, the base of its textured products, sold under the brand name Energe."

Brazilian production of SPD was 80,000 tons in 1985; 75% of this amount (60,000 tons) was textured soy flour, followed by powdered soy milk. The largest producer was

Samrig, followed by Olvebra.

There are also 3 manufacturers of HVP in Brazil: Nestlé (50% of total), Laboratórios Griffith do Brasil (40%), and Indústrias Reunidas Jaraguá do Sul (branch Duas Rodas) (10%). The HVP is made from mixture of defatted, protein-rich meals obtained from soy, groundnut, cottonseed, wheat germ, corn gluten, etc.

The most important users of SPD in Brazil are the makers of enriched foods for institutional markets, and the meat industry. The main institutional market is the school feeding program, coordinated by FAE (Student Assistance Foundation), which operates under the Brazilian Ministry of Education and Culture. This program is large and increasing, including 32.5 million children who consumed approximately 5,800 million meals in 1987.

A photo shows one of the authors. Address: Instituto de Tecnologia de Alimentos, Av. Brasil, 2880, 13073, Campinas-SP, Brasil.

5706. Chen, Steve. 1989. Preparation of fluid soymilk. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 341-52. Contains 8 tables and 9 diagrams. [41 ref]

• ***Summary:*** Contents: Development & history of soymilk (based on *Soymilk Industry and Market* by Shurtleff & Aoyagi). Problems of soymilk production: beany flavor, trypsin inhibitors, flatulence factors. Basic steps in soymilk production. Methods of soymilk production. Yields of soymilk: Typically 70-80% of the protein and 55-60% of the solids from soybeans are recovered in the soymilk. Soymilk standards and quality control. Cost and price of soymilk production. Soymilk utilization and types. Nutrition of soymilk. A photo shows Steve Chen. Address: American Soybean Assoc., P.O. Box 3512, Taipei, Taiwan ROC 10099.

5707. Eriksen, Svend. 1989. Enzyme use in the food industry with potential applications to vegetable protein utilization in human foods. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 503-06. [22 ref]

• ***Summary:*** Contents: Abstract. Introduction. Enzyme technology. Nutritional ingredients: Protein hydrolyzates for general nutrition, protein hydrolyzates for clinical use, protein allergenicity. Functional ingredients. Discussion.

"In the vegetable protein industry the use of proteolytic enzymes for protein modification serves mainly two purposes: (a) in the production of functional ingredients, e.g. whipping agents, and (b) as nutritional ingredients for application in certain medical foods. In the area of enteral nutrition, where elemental diets are required for medical reasons, the use of enzymatic protein hydrolyzates from soy is a real possibility that is economically attractive to the current practice of using amino acid mixtures... As processing aids, enzymes have potential in the vegetable protein industry, for example, in the soy milk industry as a yield improver or in the manufacture of acidified or cultured milk-like drinks from soy...

"In the protein industry to date, hydrolyzates are the only enzyme derived products of commercial interest. Protein hydrolyzates have been used as food ingredients for over 70 years and since the 1940's the production of soy-based whipping agents has been an established technology." A photo shows Svend Eriksen. Address: Food Ingredients Team, Novo Industri A/S, DK 2880 Bagsværd, Denmark.

5708. Karta, Susani K. 1989. Traditional Chinese soyfood. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 382-87. [18 ref]

• ***Summary:*** Contents: Abstract. Introduction. Variables in manufacturing tofu: Soybean variable, processing variable, maceration and extraction (soaking and grinding) stages, filtration and heating stages, coagulation stages, types and concentration of coagulants used in tofu manufacturing. Tofu products.

Tables: (1) Chinese nonfermented soy food products. Five columns show: Food items, Chinese names, organisms used, description, uses. The soy foods are: Fresh green soybeans (*mao-tou*). Toasted soy powder (*tou-fen*) (Description: "Ground toasted dry soybeans, nutty flavor"). Soy sprouts (*huang-tou-ya*). Soy milk (*tou-chiang*). Soy milk film / yuba (*tou-fu-pi*). Soybean curd (*tou-fu*).

(2) Chinese fermented soy food products. Five columns (same as table 1) The soy foods are: Fermented whole soybeans (*tou-shih*). Soy sauce (*chiang-yu*). Soy paste (*chiang*). Fermented tofu (*so-fu* [*sic*]). Actinomucor or Mucor molds are used. Description: Creamy cheese, mild flavor, salty. Uses: Relish, also cooked with meat or vegetable.

(3) 1987 consumption of soybeans as foods in Asian countries. The results are presented here in descending order of per capita consumption: Per capita soybean consumption, country (population), total soybean consumption in 1,000 tonnes. 13.3 kg/capita, Taiwan (19.6 million), 260,000 tonnes. 9.3 kg/capita, Japan (122.2 million), 1,141,000 tonnes. 9.0 kg/capita, Indonesia (175 million), 1,575,000 tonnes. 7.8 kg/capita, South Korea (42.1 million), 330,000 tonnes. 7.7 kg/capita, Singapore (2.6 million), 20,000 tonnes. 6.9 kg/capita, China (1,062 million), 7,325,000 tonnes. 3.4 kg/capita, Malaysia (55 million), 55,000 tonnes. 2.2 kg/capita, Thailand (53.6 million), 118,000 tonnes. 0.3 kg/capita, Philippines (61.5 million), 18,000 tonnes. (4) Nutritional composition of traditional nonfermented

foods: Fresh green soybeans, toasted soy powder, soy sprouts–raw, soy milk, soy milk film / yuba, tofu (Source: *Food Composition Table for Use in East Asia,* 1978). (5) Nutritional composition of traditional fermented foods: Fermented soybeans [tou-shih], soy sauce, soy paste [doujiang], fermented tofu (Source *Food Composition Table for Use in East Asia,* 1978).

In China, fried tofu is called Tou-Pok. Address: American Soybean Assoc., 541 Orchard Rd., #11-03 Liat Towers, Singapore 0923, Republic of Singapore.

5709. Kim, Seung Ho; Kwon, Tai-Wan. 1989. Vegetable protein foods in Korea. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 439-42.

• ***Summary:*** Contents: Abstract. Introduction. Situation of traditional protein foods. Situation of vegetable proteins. Traditional protein foods in Korea: Soy sauce (*kan jang*), hot soy paste (*ko chu jang*), *chung kuk jang* (a kind of soy paste made by mixing natto [*naap doo*] with seasonings [salt, red pepper, and garlic], and grinding then aging the mixture), soybean sprouts (*kong na mool*).

Note: This is the earliest English-language document seen (March 2009) that uses the term "ko chu jang" to refer to Korean-style red pepper and soybean paste (miso).

Note 2. This is the earliest English-language document seen (Jan. 2012) that uses the term "chung kuk jang" to refer to Korean-style natto.

Tables: (1) Domestic Korean production and import of soybeans from 1982 to 1987. Domestic production rose to 250,000 tonnes from 233,000 tonnes. Imports for food uses rose to 144,000 tonnes from 104,000 tonnes. Imports for feed uses rose to 936,000 tonnes from 479,000 tonnes. Total supply rose to 1,330 tonnes from 816 tonnes, up 63% in 5 years.

(2) Consumption of soybeans in traditional Korean foods, in 1,000 metric tons, from 1982 to 1987 (1982/1987). Figures in parentheses are for home production. Soy sauce (*kan jang*) 69(50)/70(51). Soy paste (*doen jang* [Korean soybean miso]) 51(41)/50(40). Hot soy paste (*ko chu jang*) 5(4)/5(4). Soybean curd (*doo bu*) 60/114. Soy milk (*doo yoo*) 7/14. Others: Homemade soybean curd and soy milk, *chung kuk jang, choon jang* (kinds of soy paste), soybean sprouts (*kong na mool*), and whole soybeans 145/141. Total 337/394, or an increase of 19.9% in 5 years.

Note: This is the earliest English-language document seen (March 2009) that uses the term "choon jang" to refer to Korean-style soybean paste (miso).

(3) Domestic production and import of soybeans in Korea (Estimated for 1987, in metric tons): Soy protein–Textured vegetable protein (domestically made) 4,500. Soy protein isolate (import) 1,800. Soy protein concentrate (import) 150. Wheat protein–Textured vegetable protein (domestic) 900. Vital gluten (domestic) 150. Gluten (wet & dry) (import) 409. Total 7,909.

(4) Nutritional composition of soybeans and soybeans sprouts (per 100 gm).

Figures show: (1) Manufacturing method for rice hot soy paste (*ko chu jang*) (flow sheet). Numbers represent typical ratio of ingredients in volume. (2) Manufacturing method for chunk kuk jang (a type of soy paste) (flow sheet). Numbers represent typical ratio of ingredients in volume.

A photo shows one of the authors. Address: Korea Food Research Inst., P.O. Box 131, Chongryang, Seoul, South Korea.

5710. Natufood B.V. 1989. Prijs-bestelboek [Natufood price list and catalog, July-Sept. 1989]. Fahrenheitstraat 18, 3840 BN Harderwijk, Netherlands. 73+ p. [Dut]

• ***Summary:*** This catalog of a Dutch natural foods distributor lists the farming method (organic or not), wholesale and retail prices for each product: Page 8: Witte Wonder tofu spreads (mushroom, chili, green peppercorn, garlic, paprika, celery), Lima Limapast contains sunflower seeds, miso, and soy flour. Page 30. Joannusmolen roasted soy flour.

\ Note. This is the earliest English-language document seen (Nov. 2012) that contains the term "roasted soy flour."

Page 31. Natufood defatted soy flour (sifted). Ad for the Vetara line of ready-to-eat foods, many of which contain TVP. Page 33. Avita soybeans (Avita Natufood's organic food line). Natufood soybeans. Ad from Nutricia for canned powdered infant foods. Nutri-Soja complete infant food based on soy. Nutri-Soja Plus based on soy for infants that have been weaned. Page 34. Nutricia infant formulas: Nutrisoja in 400 gm or 1000 gm and Nutrisoja-Plus in 900 gm. Page 35. Avita little soybeans (regular and large, organic).

Page 36. Witte Wonder soybeans in tomato sauce. Ad for Vetara organic tofu, which is produced by Heuschen-Schrouff B.V. in a completely new facility under extremely sanitary conditions. It is made with organic soybeans with a natural coagulant (Serempi) in the traditional way. "Best quality, lowest price." The product label (250 gm) is shown. Page 37. Refrigerated miso products made in Europe. Lima barley miso and rice miso, both unpasteurized. Page 38. Meat replacers. Seitan is sold by Vetara, Witte Wonder, Yakso, and Manna. Vetara herb tofu, Napolitan tofu, rice tofu, bali tofu, rames tofu, rames tempeh, Tjap Tjoy. Witte Wonder tofu in curry/pineapple sauce, and in peanut sauce. Ad for Vetara vegetarian burgers, frankfurters, and schnitzels.

Page 39. Soya meat replacers and vegetarian mixes: Lists 11 Vetara products based on or containing TVP (textured soy flour) or HVP (hydrolyzed vegetable protein). Nutana meat replacers (9 products). Jonathan natural tofu. Cenovis and Huegli bouillon tablets (14 types, probably

contain miso). [Sjon Welters adds that Huegli, a multi-million dollar Swiss food company, owns a major part of Natufood B.V.]. Western bouillons (Miso): Lima barley and rice misos. Heiwa Hatcho miso and instant miso soup. Huegli ad.

Page 42. Vegetarian refrigerated products: Vetara smoked tofu, natural tofu (EKO mark), saté tofu, vetaburgers with pineapple, with cheese & onion, natuburgers. Soyadrinks and desserts: Provamel (8 drinks and 6 desserts [puddings]). Lima (3 drinks).

Page 43. Seasonings: Vetara sweet soy sauce (Ketjap zoet). Yakso sweet soy sauce (Ketjap manis). Soy sauce. Lima shoyu (orange label) and tamari (blue label). Heiwa shoyu and tamari. Vetara shoyu. Page 44. Witte Wonder organic tofu dressings (Italian, Mexican, Garden herbs, or Natural). Mayonnaise and Tofunaise: Witte Wonder organic tofunaise (regular or with lemon).

Page 52. A. Vogel products: Vogel Sojaforce. Page 67. Natufood non-organic soynuts (natural, paprika, curry, or onion). A photo of the soynuts is given at the bottom of the page. Page 69. Non-organic soynuts in bulk (same 4 flavors as page 67). Page 73. Bulk defatted soy four, and soybeans (organic or non-organic). Ad for Vetara Vegetable Bouillon, which probably contains soy. Address: Harderwijk, Netherlands. Phone: 03410-23240.

5711. Pedersen, Hans Elbek. 1989. Allergenicity of soy proteins. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 204-12. Contains 5 tables, 1 graph, and 2 pictures. [105 ref]

• ***Summary:*** Contents: Abstract. Introduction. Soy proteins as antigens. *In vitro* studies of soy antigenicity. Soy intolerance in the pre-ruminant calf. Post-weaning diarrhea in the piglet. Soy protein allergy in humans. Antigen activity of soy-containing foods. Effect of processing. Acknowledgements.

The way that soybeans are processed can affect allergenicity. Therefore the use of different soy products among studies may contribute to conflicting results. Even different brands of the same product, such as soymilk, can produce markedly different results. Address: Aarhus Oliefabrik A/S, P.O. Box 50 DK-8100 Aarhus C, Denmark.

5712. Taniguchi, Hitoshi. 1989. Novel traditional and manufactured soy foods in Japan. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 444-48.

• ***Summary:*** Contents: Abstract. Introduction. New soy processed materials in soy bean consumption. Contemporary soy food products. Classification of new soy protein products in Japan. Utilization and popularization of new soy protein products: Soy protein isolate, textured soy protein.

"In Japan, the classification of new soy protein products is based on the form of the products; the new soy protein products are classified into three groups, namely, powdered soy protein, granular soy protein and fibrous protein, and it is required that labeling of each product shall bear a protein content statement in 5% steps." Address: Fuji Oil Co. Ltd., 1-sumiyoshi-cho, Izumissano-shi, Osaka FU 590, Japan.

5713. Vitasoy (USA) Inc. 1989. Soymilk users love Vitasoy. Here's why... (Ad). *Vegetarian Times.* July. p. 16.

• ***Summary:*** This half-page color ad shows 4 cartons of Vitasoy soymilk (Creamy Original, Rich Chocolate, Carob Supreme, Vanilla Delite) plus excerpts of letters from satisfied users. Address: San Francisco, California 94107.

5714. Stanton, Russ. 1989. Adventists seek buyer for La Loma Foods. *Press-Enterprise* (*Riverside, California*). Aug. 1, Tuesday. [1 ref]

• ***Summary:*** "The owner of La Loma Foods Inc. [The General Conference of Seventh-day Adventist] has decided to sell the Riverside [California]-based maker of meat substitutes and other health food products after receiving an unsolicited offer for the company from its largest competitor... The move comes about 2 months after Ohio-based Worthington Foods Inc. made an undisclosed offer for La Loma. Worthington, which sells its products under the Morningstar Farms and Worthington labels, is the nation's largest maker of meat substitutes and other health food products."

"La Loma, which has about 70 employees, has seen sales improve 15 to 20% this year, [company president Alejo] Pizarro said. The non-meat business had 1988 revenue of about $9 million. Pizarro said the church was hoping La Loma will fetch around $10 million."

"The church sold La Loma's parent, Loma Linda Foods Inc., to a Dutch company last Feb. In the interim, N.V. Verenigde Bedrijven Nutricia (United Nutrition Cos.) has allowed La Loma to continue making its more than 70 non-meat products at the La Sierra area plant. Nutricia purchased Loma Linda Foods for its soybean-based infant formula operations."

5715. Khaitan, Mahesh. 1989. Introduction to Amrit Banaspati Co., Ltd. (Interview). *SoyaScan Notes.* Aug. 6.

• ***Summary:*** Ghaziabad-based Amrit Banaspati Co. Ltd. (ABC for short) was founded in 1940 Mr. G.L. Bajaj (N.K. Bajaj's father) and Mr. D.P. Khaitan as a manufacturer of vanaspati. Production began in 1941. Mr. T.P. Khaitan joined the firm in 1941 and was the key man thereafter until he died in 1988.

The company is publicly owned and issues annual reports. Naresh Kumar Bajaj, who is Mahesh's uncle, is Chairman of the Amrit group (1987-88 annualised turnover:

Rs 2,000 million), and the key man behind the decision to launch soymilk. The flagship company ABC's range of successful consumer products includes Gagan vanaspati, Ginni refined oil (the company refines mostly peanut and cottonseed oil), Uncle Chipps' chips, and Alfa washing soap. An estimated 90% of all soy oil used in India (both domestically produced and imported) goes into vanaspati. 2-3% is used in paints, and the rest is refined and sold as vegetable oil. Amrit does not presently refine soy oil. Address: Technical Advisor, Amrit Banaspati Co., G.T. Road, Ghaziabad, India.

5716. Nordquist, Ted. 1989. Recent developments with soyfoods in Sweden (Interview). *SoyaScan Notes.* Aug. 13. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ted's basic work has been to determine the usefulness of and find applications for a soy base (condensed or concentrated soymilk) as a substitute for dairy products. Recently he has been working mostly on a vanilla soy ice cream with a man named Bo Funeteg, head of the ice cream and margarine division of Karlshamn, which makes ice cream for Konsum. There are two major food outlets and distributors in Sweden: (1) Konsum is like Safeway, but it is a co-op (owned partially by all its members) and the largest distributor in Sweden. (2) ICA is 99% owned by each of its individual stores, and 1% is owned centrally. No soy products are yet on the market but the ice cream would be produced by Vinner (in the town of Karlshamn), a division of Karlshamn Oliefabrik (a private company with yearly gross sales of 3,000 to 4,000 million Swedish crowns), and private labeled for Konsum. The name of the ice cream has not yet been decided, nor is the launch date. A 40-person taste panel test gave the vanilla soy ice cream a score of 7.5 on a scale of 1-10.

"We are basically involved in the question 'Can soya be used as a substitute for milk products, and if so, in what way and what are the economics of it.' No one is questioning soya as a future product. Even if the soy ice cream got a grade of 10, Arla (Sweden's largest milk company, owned by Swedish farmers) would have to decide what to do with it. Karlshamn buys all of its dairy products from Arla and Arla buys all of its oils and fats from Karlshamn. Let's say that we could produce a substitute for dairy milk at one-third of the cost. It could become a political question. Arla might ask the Swedish government to put an extra tariff on the import of whole soybeans. It also relates to the larger question of Sweden joining the Common Market." Address: Aros Sojaprodukter, Orsundsbro, Sweden. Phone: 0171-604 56.

5717. Laboyrie, David. 1989. The Australian soymilk market and Australian Natural Foods Holdings Ltd. (Interview). *SoyaScan Notes.* Aug. 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Approximately 8 million liters/year of soymilk are presently sold in Australia. His company, Australian Natural Foods, has 3 basic soymilk products. The first, sold to the health food market, is Aussie Soy, which was launched in June 1987 and now has about 60% of the health food market, around 2 million liters a year. It is in a Tetra Pack container. The other two (Excel and VitaFresh) are designed as milk alternatives, and are fortified with vitamins and calcium. But after about 3 months, calcium fortification (with calcium phosphate and calcium chloride) has an definite undesirable thinning effect on most of the soymilk with the formation of a thick layer of sediment settling to the bottom. They sell through supermarkets, and have a much smaller market share. Sanitarium Foods dominates that market, producing about 100,000 liters/week, or 5.2 million liters/year. David's company makes their soymilk from whole soybeans rather than isolates, and promotes it as such.

Excel was originally launched in Aug. 1987 as a fresh product but it was discontinued in June 1988 due to distribution problems and short shelf life. It is now sold in supermarkets in a UHT pack in plain flavor only. They also make another product (similar to Excel) under another brand for another company. It is called VitaFresh. It has the same settling problem. The existing formula does not contain tri-polyphosphate. They think there is still a big market for fresh soymilk in Australia, but they need either a dairy distributor or a 28-day shelf life. Address: Australian Natural Foods Holdings Ltd., 80 Box Rd., Taren Point, NSW 2229 Australia. Phone: 02-526-2555.

5718. Roth, Martin. 1989. Early history of Great Eastern Sun and subsequent work with soyfoods (Interview). *SoyaScan Notes.* Aug. 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Other records describe in detail Martin's pioneering work with commercial production of Brown Rice & Tofu Sandwiches, Sweet White Miso, Amasake, Amasake Shakes, and America's first Amasake Ice Cream. In 1982 he and his very close friend Barbara Svenning Garvey (they were never officially married) moved from Boulder, Colorado, to Miami, Florida, then to North Carolina. Martin met Barry Evens in Florida and Barry commissioned Martin to go to North Carolina and set up a macrobiotic distribution and import company near the American Miso Co., of which Barry was then the principal owner. "The beginning of that company was a wonderful experience. Everybody was thrilled. We were the first ones to actually take a full line of Japanese foods and present it to the health food stores in a big way. At that time Erewhon still had a much more limited selection of Japanese imports, such as miso, tamari, soba, etc. We had only imports, 200 to 300 esoteric items that many people never heard. We put together a nationwide sales force and went store to store, introducing the concept of a macrobiotic section. We put that on the map. We had great success, opening hundreds of accounts. I left in about

1984 because I got an opportunity to work for Westbrae as sales and marketing manager, and North Carolina was not my favorite place to live." Martin developed the concept, the name, and the graphics for the Westbrae Malteds and for Mitoku's Supersoy. Address: Berkeley, California. Phone: 415-527-7066.

5719. Chandra, Ranjit Kumar; Singh, G.; Shridhara, B. 1989. Effect of feeding whey hydrolysate, soy and conventional cow milk formulas on incidence of atopic disease in high risk infants. *Annals of Allergy* 63(2):102-06. Aug. [26 ref]
• ***Summary:*** Some of the infants were fed Similac or Isomil infant formulas. "It is concluded that exclusive breast feeding for more than 4 months is partially protective against the development of atopic disease among high risk infants. Among those not breast-fed, feeding a milk/whey hydrolysate formula to infants at high risk because of history of atopy among first-degree relatives reduces the incidence of atopic disease and this approach is significantly beneficial compared with breast feeding without maternal dietary restriction or feeding a soy-based formula." Address: Dep. of Pediatrics, Memorial Univ. of Newfoundland, and the Immunology Lab., Janeway Child Health Centre, St. John's Newfoundland, Canada.

5720. Golbitz, Peter. 1989. State of Maine bans aseptic packaging: Law will prohibit sales of aseptic soymilk. *Soya Newsletter* (*Bar Harbor, Maine*). July/Aug. p. 1-3. [1 ref]
• ***Summary:*** Maine's new landmark solid waste bill, L.D. 1431, which goes into effect on 1 Sept. 1990, prohibits the sale of all aseptically packaged beverages and of any other beverage container that cannot be recycled. In section 8. MRSA 1868 titled "Prohibition on certain types of containers and holders, the bill states, 'No beverage may be sold or offered for sale to consumers in this State... In a container composed of aseptic packaging composed of aluminum, paper, and plastic in combination, where those materials are for practical reasons inseparable and commonly referred to as a 'brick-pack.'" Exempted from this legislation are "milk and dairy-derived products," whose containers need not be recyclable nor carry a deposit. The bill hopes to reduce Maine's solid waste by 50% by 1994. Many health food stores in Maine reported that aseptically packaged soymilk is one of their ten best-selling products. The only soymilk presently available in the state is aseptically packaged. It is estimated that far less than 1% of all Tetra Pak cartons sold in Maine contain soymilk. Many other states are now in the process of drafting similar bills for reducing solid wastes. If they follow Maine's policies on aseptic packaging, it could be a major blow for soymilk (and Mori-Nu Tofu) in America. "As Maine goes, so goes the nation." Address: Soyatech, Bar Harbor, Maine.

5721. Soyfoods Association of America. 1989. Complimentary buyers guide to Soyfoods Pavilion: Natural Foods Expo '89 East, Philadelphia, Pennsylvania, September 22-24, 1989 (Portfolio). Bar Harbor, Maine. 10 p. 28 cm.
• ***Summary:*** The Soyfoods Pavilion was organized by Gary Barat. The 1st page of this stapled portfolio is a leaflet (8½ by 11 inches, single sided, printed blue and red on white) announces the Pavilion. It states: Expo '89 East Pavilion Members: Book Publishing Co., Farm Foods, Great Eastern Sun, Lee Seed Company, Inc. [soynuts], Legume / Richter Bros., Lightlife Foods, Inc., Morinaga Nutritional Foods, Nasoya Foods, Ltd., Vitasoy (U.S.A.) Inc. Leaflets from most of these companies are stapled to the top Pavilion leaflet. Address: 318 Maine St., Bar Harbor, Maine 04609. Phone: 207-288-9419.

5722. Rose, Richard. 1989. Re: Impressions of Natural Products Expo East at Philadelphia. Letter to William Shurtleff at Soyfoods Center, Sept. 27. 1 p. Typed, with signature.
• ***Summary:*** "Dear Bill: Enclosed are the things I got from the [Natural Products] Expo East show in Philadelphia [held 23-24 Sept. 1989]. Finally the industry is awakening to soyfoods, more so than at previous shows. There were many more soyfoods there, and many more soyfoods companies, including some smaller ones (Ithaca, Spring Creek, SoyBoy). Jofu had a booth, but Galaxy Cheese and Tofutti did not.

"There were several interesting new soy products, and from talking to manufacturers I believe there will be many more in the next year.

"The Soyfoods Pavilion was at the rear of the hall, on one small part of a row in the corner, and sold only about 8 or 10 booths. K.S. Lo was at Vitasoy's booth on Sunday. I did not go to the SAA meeting (which was open to the public) or the Standards seminar. Apparently there were only about 25 people attending the seminar, and there is some disagreement within the SAA about the standards.

"I met and talked with Joel Schumann and his partner Lynn at the show.

"Peter Golbitz, his wife, Leslie Harlow, the Pirellos, John Paino, Dan Burke, Joel, Lynn, and I went to dinner Saturday night, then (except Dan) to a classic neighborhood bar / restaurant that had a trio with a mean age of 70 playing rock and roll and standards. It was very funny.

"Harlow is the Executive Director of SAA. She seems fairly competent, but has no industry experience. Her last business was a restaurant that ended in bankruptcy. She asked me to go to the SAA meeting and to 'not alienate [myself] from the SAA.'

"Mori-Nu introduced an 'extra firm' tofu, actually about 8% protein, I think. Pacific Soyfoods' soymilk tasted beany and not very pleasant. A small Chinese company (Sun Foods Inc, 87 Pelham Avenue, Toronto ONT M6N lA5 Canada, phone 416-658-6668, Harry H.K. Ha is President) displayed a very interesting product. It had the texture and consistency

of an egg product, such as fritatta, but was free of eggs, and is mung bean-based. It also contains soybeans and is called SunPatty (Mung Bean Patties), just sold as pancakes about 7 inches diameter. I am excited about this development. Lee Soynuts had a booth. Tony [Plotkin of Grainaissance] had his aseptic amasake there and I feel it is better tasting than the fresh product.

Sincerely, Richard. Address: Rose International, P.O. Box 5020, Santa Rosa, CA 95402-5020.

5723. *Adventist Review* (*Hagerstown, Maryland*). 1989. Granose Foods opens new factory: Growth from bakery to Britain's major health food manufacturer. Sept. 28. p. 20-21 (p. 1036-37).

• ***Summary:*** The brand new factory is at Newport Pagnell, Buckinghamshire, England–30 miles away from its former location at Stanborough Park, on the outskirts of London, near Watford, Hertfordshire. The founder is said to be J. Heide, who, a hundred years ago, came to London from Germany to start a new life. With help from his uncle, he became a master baker. He soon joined the small group of members of the Seventh-day Adventist Church. "In 1899 John Hyde (as he soon became known) was living over his bakery at 332 Portbellow Road in east London with his wife" and four children. He worked hard to make bread that tasted better and was fresher than anyone else. He and his brother delivered their loaves late at night or early in the morning.

"John soon learned about health foods and the church's teaching that God is honored in a healthy body as well as in a healthy mind and spirit. Samples from the Sanitarium Health Food Company in Battle Creek, Michigan, found their way to Britain, and in 1899, with the blessing of the church, John went to the United States to learn how to make the foods. He spent six months with Dr. John Harvey Kellogg, who was president of the medical college in Battle Creek, superintendent of the Battle Creek Sanitarium (with its health food company) and member of more than a dozen medical societies and associations,..."

"Kellogg created the formula for a gluten biscuit. The Battle Creek Sanitarium Health Food Company also produced Granola, a cooked preparation of wheat and oats to be used as a breakfast food. Granose flakes, Granose biscuits, Protose, and Bromose were among their strangely named products.

"Imported know-how: John Hyde took the production know-how back to Britain, where he put it into operation. Adventists purchased a flour mill at Salford, near Redhill, Surrey, and formed the International Health Association Ltd. Hyde imported used plant equipment from Battle Creek and purchased other items locally.

"But the road to success was not to be easy. Before the advent of electricity, candles were used for lighting. This practice led to a fire that burned down the factory in 1900.

"In 1907 the association moved to Stanborough Park, an idyllic 75-acre estate on the outskirts of London, near Watford, Hertfordshire. In 1926 it became Granose Foods Ltd."

John Hyde, the baker, worked many years for Granose Foods. He eventually had 13 children–a baker's dozen. The name of each is given. "Almost all his children became employees of the Adventist Church."

Why did the factory move? Over the years, the SDA church leadership sold off portions of the valuable estate surrounding the Granose food factory; as new houses were built, the factory became a "noncoforming user" in a residential zone. Income from a recent sale of 10 more acres at Stanborough Park helped to pay for the new plant and the 3 acres of land on which it was built.

A photo shows the ribbon-cutting ceremony on July 9. Present were: (1) "Eric Fehlburg, who coordinates the activities of 52 Adventist health food companies worldwide, with $300 million in receipts, from church headquarters in Washington, D.C." He believes that Granose has a bright future but believes that, since the 3 acres is already too small, Granose should purchase 20 acres somewhere else. Note: Why did they not buy more land on which to build the new factory? Apparently for lack of money. (2) Peter J. Archer, age 50, who left school at age 16 and got a job sweeping the yard for Granose. He has been the manager of Granose since 1984, and he and his team have turned the company around (after years of indifferent sales) and appear to be on a path of continuing growth. "Granose is my life," says Archer. A small photo shows Archer and Fehlberg shaking hands.

Granose products include "Ravioli, Nuttolene, Vegecuts, Mock Duck, Burger Mix, Sausfry, Soya Wieners, a variety of soymilks, and more than 100 other products. The latest, Sweet Sensation, is a soy ice cream. With the assistance of De-Vau-Ge in Germany, Granose supplies a tremendous demand for nondairy products. The company sells 656,000 gallons (2.5 million liters) of soymilk a year. From the Nutana factory in Denmark, Granose imports and distributes five different packs of nondairy margarine containing oils, but no whey. Tue Westing and marketing manager Inge Kjeldal of Nutana were present at the opening."

5724. Abbey, B.W.; Phillips, R.D.; McWatters, K.H. 1989. Preparation and uses of legumes and oilseeds in Africa. In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. Food Uses of Whole Oil and Protein Seeds. Champaign-Urbana, IL: American Oil Chemists' Society. vii + 401 p. See p. 281-304. Chap. 18. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. [20 ref]

• ***Summary:*** Discusses general methods of processing and using the following: Cowpeas (*Vigna unguiculata;* also known as beans, black-eyed peas). Pigeon peas (*Cajanus cajan* Druce; also known as red grain, Congo pea, non-eye pea). The oilpalm (*Elaeis quineensis* Jacq.). Groundnut

(*Arachis hypogea;* also known as peanut, monkey nut). Water melon seed (*Citrullus vulgaris* Schrad; used to make egusi soup in Nigeria).

African locust bean (*Parkia filicoides;* known as Dawadawa [Hausa], Irugba [Yoruba], Ogiri-Igala [Ibo/Igbo]). African oil bean seed (*Pentaclethra macrophylla;* also known in Igbo/Ibo as Uba, Ogiri). Bambara groundnuts (*Voandzeia subterranea* Thouan).

Table 18.2, titled "Utilization of traditional food legumes," includes the soybean. It is most frequently used as a source of vegetable oil or vegetable milk, frequently utilized in composite flour, and least frequently utilized as follows: boiled as a main meal or snack; boiled and eaten with starchy root, yam, or plantain; in soup/stew as a meat/fish supplement; in gruel or porridge, spiced or sweetened; cooked with cereal grains such as rice, millet, or maize; roasted as a snack; in a paste as a spread; or fermented as a food condiment. Also discusses the limitations and advantages of traditional food processing, upgrading traditional food processing techniques, and summary. Address: 1. Dep. of Biochemistry, Univ. of Port Harcourt, Port Harcourt, Nigeria; 2-3. Dep. of Food Science, Univ. of Georgia Agric. Exp. Station, Griffin, GA 30223-1797. Phone: 2&3: 404-228-7284.

5725. **Product Name:** [Alpro Soya Drink {Soymilk} (Enriched with Calcium, or Without Added Sugar or Salt)].
Foreign Name: Alpro Soya Drink (Enrici en Calcium, Sans Sucre ni Sel Ajoutés).
Manufacturer's Name: Alpro.
Manufacturer's Address: Zuidkaai 33, B-8700 Izegem, Belgium.
Date of Introduction: 1989. September.
Wt/Vol., Packaging, Price: 1 liter Tetra Brik Aseptic carton (both).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Without sugar or salt added. Per 100 gm.: Protein 3.6 gm, fat 2.1 gm, carbohydrates 0.9 gm, calories 37, calcium 20, cholesterol 0, lactose 0.
New Product–Documentation: Leaflet (6 by 8.25 inches, color, in French). 1989. "Alpro Soya Drink. Enrichi au calcium, ça vous fait un homme" (Enriched with calcium, that will make you a man). A photo shows a boy pulling on the reins of a rocking horse. Below the photo is a package and a glass full of Alpro Soya Drink. On the front panel of the package is written, "Enriched with calcium. The non-dairy power of soya" (Enrichi au calcium. La Force Vegetale du Soja). The inside 2-page spread shows a contented child with a bowl of breakfast cereal and Alpro Soya Drink. Per 100 gm, this product contains 140 mg of calcium but no cholesterol or lactose, whereas whole cow's milk contains 125 mg, cholesterol 10 mg, lactose 4.6 mg. The back panel shows plain, sugar-free, chocolate, and strawberry flavors.

Leaflet (full-color, 8.5 by 11 inches, in French). 1989. Alpro: La force végétale du soja (Alpro: The plant power of soya). The front panel has a color photo of 4 varieties of Alpro Soya Drinks (plain, enriched with calcium, without added sugar or salt, chocolate) and 2 Alpro Soya Desserts (vanilla and chocolate). The text reads: 100% natural. 100% from plants (végétal). No cholesterol. No lactose. Rich in vegetable protein. The back gives packaging and shipping information and a nutritional analysis of the 6 products. Sold in France by Distriborg, Division Alpro France, Chemin du Grand Revoyet, F-69230 Saint-Génis-Laval. Phone: 72.39.94.25.

Form filled out by Philippe Vandemoortele of Alpro. 1991. Sept. 4. Alpro Soya Drink enriched with calcium was introduced in Sept. 1989. This was the first soy drink fortified with calcium made by Alpro for any company. Three months later, in Dec. 1989, Alpro launched Provamel Soya Drink enriched with calcium.

5726. Bates, Dorothy R. 1989. The tempeh cookbook. Summertown, Tennessee: The Book Publishing Co. 96 p. Contains 11 color photos and some line drawings. Index. Sept. 26 cm.
• ***Summary:*** This is a vegetarian (but not a vegan) cookbook. Contents: Introduction to tempeh: Nutritive values, how tempeh is made, storing tempeh, cooking tempeh. Ingredients and suggestions: Discusses soymilk, soy oil, and tamari. Making tempeh at home. Appetizers. Salads. Soups. Sandwiches. Main dishes: Oriental, Italian, Mexican, American, International. Dessert. Contains 100+ recipes. Address: Summertown, Tennessee.

5727. Chen, Steve. 1989. Principles of soymilk production. In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. Food Uses of Whole Oil and Protein Seeds. Champaign-Urbana, IL: American Oil Chemists' Society. vii + 401 p. See p. 40-86. Chap. 3. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. [49 ref]
• ***Summary:*** Contents: Historical development of soymilk. Principles of soymilk production. Problems of soymilk production. Basic steps of soymilk production. Methods of soymilk production (Traditional, Cornell, Illinois, RHHC [Rapid Hydration Hydrothermal Cooking]). Yields of soymilk. Soymilk nutrition. Soymilk standards and quality control. Soymilk utilization. Address: American Soybean Assoc., P.O. Box 3512, Taipei, Taiwan ROC 10099.

5728. Griffis, Gil; Wiedermann, Lars. 1989. Marketing food-quality soybeans in Japan. American Soybean Association. Sept. *
• ***Summary:*** This report was published in Jan. 1989, mainly for the American Soybean Association's Tokyo office. Address: 1. American Soybean Assoc., Division Manager; 2. Japan Country Director, American Soybean Assoc.

5729. **Product Name:** [Innofun Soymilk (Vanilla, Strawberry, or Chocolate)].
Foreign Name: Innofun: Boisson Végétale (Au Soja {Vanille}, Soja-Fraise, Soja Chocolat).
Manufacturer's Name: Innoval S.A. Affiliate of Coopérative Agricole Silos de Valence.
Manufacturer's Address: Allée Joule, Zone Industrial (Z.I.) des Auréats, B.P. 1418, 26014 Valence Cédex, France. Phone: 75.41.41.50.
Date of Introduction: 1989. September.
Ingredients: Chocolate: Water, soya beans 12%, raw cane sugar, chocolate 5%, fat reduced cocoa, plant extracts, seaweed extracts, sea salt.
Wt/Vol., Packaging, Price: 500 ml Combibloc aseptic package.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Calories 62, protein 3.8 gm, carbohydrate 9.8 gm, fat 0.8 gm, cholesterol 0 mg, lactose 0 gm, lecithin 25 mg, magnesium 132 mg, sodium 39 mg, potassium 208 mg.
New Product–Documentation: Form filled out by Gilles Charriere of Innoval. 1989. Nov. This product was launched by Innoval in Sept. 1989. Labels. 1989. 3 by 5.5 by 2 inch Combibloc carton. Cartoon motif, with red, white, yellow, black, and brown on blue and white. The front panel of the chocolate carton shows a glass of cold chocolate soymilk with a straw in it, and a cup of hot chocolate soymilk with a spoon in it, with 2 cubes of milk chocolate nearby and 3 soybean leaves at one side. Rear panel text and ingredients are in French, English, and German. "Liquid food preparation from soya. The taste of balance/equilibrium. 100% vegetable and natural soydrink. Prepared with selected soybeans. Rich in proteins and polyunsaturated fatty acids. At home, at the office, in the country."

Color leaflet. 1989. In French. "Innofun Soya Drink. The taste of equilibrium." A color photo shows the 3 cartons and a cartoon like illustration (line drawing) shows a glass of soymilk with a straw. Description of the products is given on the back.

Letter from Monica Kjellker Gimre of Alfa-Laval. 1990. May 30. Alfa-Laval sold a complete soybase plant to Innoval in France. It had a capacity of 1,500 liters/hour and began operation in 1988.

5730. Johnson, Dale W. 1989. General uses of whole soybeans. In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. Food Uses of Whole Oil and Protein Seeds. Champaign-Urbana, IL: American Oil Chemists' Society. vii + 401 p. See p. 12-29. Chap. 2. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. [35 ref]
• ***Summary:*** Contents: Introduction: Introduction. Oriental nonfermented products: Yuba, kinako Thai desserts (tofu guan, med khanoon), Thai foods (protein crisp, cooked baby food, canned evaporated soybean milk, taow-huey, kanom ping kaset). Fermented foods: Natto, hama-natto, tao tjo (a miso-type product made in Indonesia and Thailand), ontjom (made from peanuts, coconut press cake, or okara), kochu chang, ketjap, sufu, yogurt-type products, tauco, soy sauce, miso, tempeh. Western world type products. Full fat soy flour (enzyme active, heat treated). Soybean hulls. Whole soybeans in animal feed. Chapatty [chapati]. Full fat soy grits. Heat treatment of soybeans. Heat treatment and texturizing. Low-fat products. Snacks (soynuts–dry roasted or oil roasted, plain or seasoned). Soybean sprouts. Soy butter [soynut butter]. Combinations of soybeans and cereals. Soybeans as vegetables (mao-tou, edamame, or fresh green soybean). Defatted products. Nutrition. Soybean handling and equipment considerations. Solvent plant considerations. Address: Food Ingredients (Minnesota) Inc., 2121 Toledo Ave. North, Golden Valley, Minnesota 55422.

5731. Jones, Amanda E.; Price, K.R.; Fenwick, G.R. 1989. Development and application of a high-performance liquid chromatographic method for the analysis of phytoestrogens. *J. of the Science of Food and Agriculture* (*London*) 46(3):357-64. [22 ref]
• ***Summary:*** Discusses: Soya milk, soya dessert, soya flakes, daidzein, genistein. Note: AFRC stands for "Agriculture and Food Research Council." Address: AFRC Inst. of Food Research, Norwich Lab., Colney Lane, Norwich NR4 7UA, UK.

5732. Kjellker, Monica. 1989. Change and growth in the soymilk industry. In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. Food Uses of Whole Oil and Protein Seeds. Champaign-Urbana, IL: American Oil Chemists' Society. vii + 401 p. See p. 87-90. Chap. 4. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986.
Address: Alfa-Laval Food Engineering AB, Soy Processing, P.O. Box 64, S-221 00 Lund, Sweden.

5733. Lindner, Anders B.J. 1989. A modern soymilk plant. In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. Food Uses of Whole Oil and Protein Seeds. Champaign-Urbana, IL: American Oil Chemists' Society. vii + 401 p. See p. 91-97. Chap. 5. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986.
Address: Soya Technology Systems Ltd., #11-06 Cathay Building, 11 Dhoby Ghaut, Singapore 0922.

5734. Liu, Fu-Kuang. 1989. Food uses of soybeans [in China]. In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. Food Uses of Whole Oil and Protein Seeds. Champaign-Urbana, IL: American Oil Chemists' Society. vii

+ 401 p. See p. 148-58. Chap. 10. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. [7 ref]
• ***Summary:*** Contents: Introduction. Processing of tofu and soybean products: Manufacture of tofu and soybean products (tofu, bei ye {pressed tofu sheets}, su ji {vegetarian chicken, made from bai ye}, you-tofu {fried tofu}, tofu pi {yuba}, soybean sprouts {dou ya}).

Fermented soybean products: Soybean jiang (dou jiang in China or miso in Japan), fermented soybeans (touchi), tofu lu (fermented tofu). Discussion.

Tables show: (2) Comparison of the essential amino acid composition of soybean milk with cow and human milk. (3) Amino acid composition and nutritive value of various soybean fractions: Meal, hulls, milk, residue [okara], curd, whey protein. (4) Composition of soybean pressed tofu sheet and residue. The pressed tofu sheets contain 70.4% moisture, 17.55% protein (59.29% moisture on a dry weight basis), and 7.10% fat (24.32% fat on a dry weight basis). (5) Amino acid composition of defatted soybean, pressed tofu sheet and residue.

(6) Composition of tofu and tofu pi [yuba] (based on Watanabe 1969). (7) Vitamin content of soybean products: Immature bean [green vegetable soybean], mature bean [whole dry soybeans], sprouts, meal, flour, curd (tofu), milk, miso.

Figures show: (1) Flow sheet for manufacturing soybean curd [tofu]. Address: Wuxi Light Industry Inst., Wuxi, Jiangsu 214036, The Peoples' Republic of China.

5735. Lusas, Edmund W.; Erickson, D.R.; Nip, Wai-Kit. eds. 1989. Food uses of whole oil and protein seeds. Champaign-Urbana, Illinois: American Oil Chemists' Society. v + 401 p. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. No index. 24 cm. [300+ ref]
• ***Summary:*** Of the 24 chapters, the first 10 are entirely about soybeans and soyfoods, and 5 of the remaining 14 chapters are partly about soya. Many individual chapters are cited separately. Address: 1. Protein R&D Center, Texas Engineering Experiment Station, The Texas A&M.

5736. Shurtleff, William; Aoyagi, Akiko. comps. 1989. Bibliography of soya in the Indian Subcontinent (South Asia): 1,118 references from 1679 to 1989, partially annotated. Lafayette, California: Soyfoods Center. 180 p. Subject/geographical index. Author/company index. Printed Sept. 2. 28 cm. [1118 ref]
• ***Summary:*** The soybean has a surprisingly long history in South Asia. The earliest known reference dates from the year 1679 when the Englishman John Locke noted that soy sauce (saio) was imported to England from the East Indies (probably India). There were 3 references to soybeans or soyfoods prior to 1700, 12 during the 1700s, and 53 during the 1800s. Many of these references were to soy sauce or to soybean plants (by botanists) grown in the northern hills. In the period 1908-12 the British tried to grow soybeans in India without much success. During the 1930s Mahatma Gandhi took a serious interest in growing soybeans and using them as a food.

The earliest known commercial soy product on the Subcontinent was Golden Label Soya Bean Sauce, introduced in 1949 by Yung Hwa & Co. in Sri Lanka. The earliest such product in India was Nutri Nugget, a textured soy flour meatlike product, introduced in 1970 by the Soya Production and Research Association in Bareilly.

The rise of the soybean as a commercial crop in India can be dated from the mid-1960s, when University of Illinois soybean specialists, working with Indian counterparts, showed that high soybean yields could be obtained using proper varieties and a package of practices. In 1967 the All-India Coordinated Program on Soybeans was founded at Pantnagar in the state of Madhya Pradesh, where the great majority of India's soybean came to be grown. In April 1968 the first Workshop on Soybean was held in New Delhi by the Indian Council of Agricultural Research, and in 1971 India's first soyfoods development project started at G.B. Pant University. But when the U.S. sided with Pakistan during a small war between India and Pakistan, the government of India asked that most U.S. technical assistance programs be discontinued by Sept. 1972. In 1973, out of the success of this work, INTSOY (the International Soybean Program) was founded at the University of Illinois.

Total soybean production in India increased from a mere 18,000 tonnes in 1971 (production was negligible in 1970) to 450,000 tonnes in 1980, an astonishing 25-fold increase in ten years, and a growth rate greater than that of Latin America.

This is the most comprehensive bibliography ever published on soya in the Indian Subcontinent (South Asia). It is also the single most current and useful source of information on this subject available today, since 48% of all references (and most of the current ones) contain a summary/abstract averaging 102 words in length.

One of more than 40 bibliographies on soybeans and soyfoods being published by the Soyfoods Center, it is based on historical principles, listing all known documents and commercial products in chronological order. Containing 37 different document types (both published and unpublished, including many original interviews and partial translations of Japanese and European works), it is a powerful tool for understanding the development of this subject and related products from its earliest beginnings to the present, worldwide.

Compiled one record at a time over a period of 15 years, each reference in this bibliography features (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original

title of all non-English publications together with an English translation, month and issue of publication, and the first author's first name (if given).

It also includes details on 109 commercial soy products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to use the bibliography, a complete subject and geographical index, an author/company index, and a bibliometric analysis of the composition of the book (by language, document type, year, leading countries, states, and related subjects) are also included. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

5737. Shurtleff, William; Aoyagi, Akiko. comps. 1989. Bibliography of soya in Latin America: 1,520 references from 1880 to 1989, partially annotated. Lafayette, California: Soyfoods Center. 215 p. Subject/geographical index. Author/company index. Printed Sept. 5. 28 cm. [1520 ref]
• ***Summary:*** This is the most comprehensive bibliography ever published on soya in Latin America. It is also the single most current and useful source of information on this subject available today, since 44% of all references (and most of the current ones) contain a summary/abstract averaging 89 words in length.

One of more than 40 bibliographies on soybeans and soyfoods being published by the Soyfoods Center, it is based on historical principles, listing all known documents and commercial products in chronological order. Containing 37 different document types (both published and unpublished, including many original interviews and partial translations of Japanese and European works), it is a powerful tool for understanding the development of this subject and related products from its earliest beginnings to the present, worldwide.

Compiled one record at a time over a period of 15 years, each reference in this bibliography features (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation, month and issue of publication, and the first author's first name (if given).

It also includes details on 205 commercial soy products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to use the bibliography, a complete subject and geographical index, an author/company index, and a bibliometric analysis of the composition of the book (by language, document type, year, leading countries, states, and related subjects) are also included. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

5738. Sizer, Charles E. 1989. Aseptic packaging of soymilk. In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. Food Uses of Whole Oil and Protein Seeds. Champaign-Urbana, IL: American Oil Chemists' Society. vii + 401 p. See p. 98-101. Chap. 6. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. [2 ref]
Address: Tetra Pak Technical Center, 2901 Kinwest Parkway, Irving, Texas 75063-3134.

5739. Smith, Keith J. 1989. World production, availability and variety differences of soybeans. In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. Food Uses of Whole Oil and Protein Seeds. Champaign-Urbana, IL: American Oil Chemists' Society. vii + 401 p. See p. 1-11. Chap. 1. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. [11 ref]
• ***Summary:*** Contents: Introduction. Composition. Required characteristics: For soy milk, tofu, miso, natto, soy sprouts. Conclusions.

The most desired characteristics of soybeans for food processing include: Large seed size, high protein content, high quality, reasonable price. The characteristics desired for each of the soyfoods mentioned above are given.

Table 1.1 shows world production of the eight major oilseeds in million metric tons from 1981-82 to 1985-86. Over this 5-year period, total production of the eight oilseeds has grown by 14.6%, from 169.4 to 194.2. In descending order of production, the eight are: Soybean 96.0. Cottonseed 34.1. Peanut 19.7. Sunflowerseed 18.6. Rapeseed 18.6. Copra (dried coconut meat, 5.0). Flaxseed 2.6. Palm kernel 2.3. Source: Foreign Agricultural Service, USDA. Address: American Soybean Assoc., P.O. Box 27300, St. Louis, Missouri 63141.

5740. **Product Name:** Spring Creek Whole Soy (Soymilk) [Plain, Original].
Manufacturer's Name: Spring Creek Natural Foods.
Manufacturer's Address: 212-C East Main St., Spencer, WV 25726. Phone: 304-927-1815.
Date of Introduction: 1989. September.
How Stored: Refrigerated.
New Product–Documentation: Leaflet sent by Richard Rose from Natural Products Expo East at Philadelphia. 1989.

Sept. Single sided, blue on beige.

5741. **Product Name:** Soy Drink.
Manufacturer's Name: Wa Heng Dou-Fu.
Manufacturer's Address: 5063 24th St., Sacramento, CA 95822. Phone: 916-737-0545.
Date of Introduction: 1989. September.
Ingredients: Soy bean, water, sugar.
New Product–Documentation: Talk with Mr. Peng-Xiang (Martin) Lin, Owner. 1990. Jan. 19. He started this company in Sept. 1989. Before that, he made soyfoods out of his home.

Label sent by Martin Lin. 1991. Nov. 20. 2 by 3 inches. Green on chartreuse yellow. Most of the label text is written in Chinese. It states that no preservatives are added.

5742. Liveoak, Val. 1989. Current developments with soya in El Salvador (Interview). *SoyaScan Notes.* Oct. 2. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Val is a registered nurse, living in El Salvador and working with health promoters in the countryside. She has a budget of about $12,000 to set up a soy processing program, and is thinking of making either powdered soymilk or soya meat. There is now a national soya program (Program Nacional de Soya) in El Salvador; they publish a book on soybean production. Related to them is CESTA (Centro de Estudios de Tecnologia Appropriada) in San Salvador. CESTA publishes and distributes a soy recipe book, which also contains information on soybean production. And their workers go to villages to show the people how to make home-level soymilk and use the okara. In a few areas they have planted some soybeans.

A priest named Walter Guerra in Sonsonate is national head of Caritas (Catholic Charities) and so is quite influential. He has worked with the program for a long time, promoting both soybean cultivation and home-level soyfood processing, especially making soymilk then using the okara in patties with wheat or masa, plus egg and sliced vegetables.

Another group working with soya is APROCSAL (Association de Promotores Comunitarianos del Salvador). They mainly work with health promotion. In some areas they have planted ¼-½ acre of soybeans and taught how to make soymilk at home. Val does not think that these home-level programs continue for long after the novelty of the idea wears off. Address: Friends Meeting of Austin, 3014 Washington Square, Austin, TX 78705, Or Convento, Parr. San Antonio, Estanzuelas Usulutan, El Salvador.

5743. *SoyaScan Notes.* 1989. Occurrences of the terms "tofu," "bean curd," and "soybean curd" in current American dictionaries (Overview). Oct. 4. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** At a large bookstore in California, all American dictionaries copyrighted since 1980 were examined. Each is listed here in descending order of copyright year, which is the first number on the line preceding the dictionary title. Thus, the most recent editions are listed first.

Note that the word "tofu" is the main entry in all four of the most recently copyrighted dictionaries, and in 6 of the 9 dictionaries copyrighted since 1980. Every dictionary examined listed the term "tofu" as either the main or secondary entry. Not one single dictionary listed the term "soybean curd." Only 5 of the 9 dictionaries listed the term "bean curd."

1988. *The Random House College Dictionary,* revised ed. (New York, NY; 173,000 entries, hardcover). Main entry: "tofu–a soft, bland, white cheese-like food made from curdled soybean milk, high in protein content, used originally in Oriental cookery but now in a wide variety of soups and main dishes." Secondary entry: "bean curd–tofu."

1988. *Thorndike Barnhart Student Dictionary* (Glenview, Illinois; hardcover). Main entry: "tofu–a cheeselike food consisting of curds coagulated from milk made from powdered soybeans, often pressed into squares." Secondary entry: bean curd is not listed.

1987. *Random House Dictionary of the English Language,* 2nd ed. (New York, NY; over 315,000 entries in 2,500 pages, hardcover). Main entry: "tofu–a soft, bland, white cheese-like food made from curdled soybean milk, high in protein content, used originally in Oriental cookery but now in a wide variety of soups and main dishes. Also called 'bean curd' (1875-80; Japan tôfu < Mod Chinese equiv to Chinese dófu (dou = bean + fu = turn sour, ferment))." Secondary entry: "bean curd–tofu."

1981. *Webster's Handy College Dictionary* (New American Library, div. of Penguin Books, USA, New York, NY). Main entry: "tofu–bean curd." Secondary entry: bean curd is not listed.

1985. *Webster's Ninth New Collegiate Dictionary* (Merriam-Webster Inc., Springfield, Massachusetts). Main entry: "bean curd (ca. 1909)–a soft vegetable cheese prepared by treating soybean milk with coagulants (as magnesium chloride or dilute acids)–also called tofu." Secondary entry: "tofu [Jap. tôfu] (1880)–bean curd."

1984. *Webster's New World Dictionary* (Publ. in different formats by Simon & Schuster and Warner Books, New York, NY; over 59,000 entries) Main entry: "tofu–a Japanese custard-like food made from soybeans." Secondary entry: bean curd is not listed.

1983. *The American Heritage Dictionary* Based on the New Second College Ed., (Dell Publ., The Bantam, Doubleday, Dell Publ. Group, New York, NY). Main entry: "bean curd–a soft cheeselike food made from pureed soybeans." Secondary entry: "tofu–bean curd."

1980. *Oxford American Dictionary* (Avon Books. Div. of The Hearst Corporation, New York, NY). Main entry: "tofu–bean curd." Secondary entry: bean curd is not listed.

1980. *The Random House Dictionary,* concise ed.

(New York, NY). Main entry: "bean curd–a creamy, white cake made from soybean flour, used in Oriental cooking." Secondary entry: "tofu–see bean curd."

5744. Lo, K.S. 1989. New developments with Vitasoy and Hong Kong Soya Bean Products Co. Ltd. (Interview). *SoyaScan Notes.* Oct. 6. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The main new development is the company's launch of what it calls the "American Version" of Vitasoy, a new formulation. It is sold throughout the United States.

The company has exported quite a lot of soymilk to China, but it was all made and packaged in Hong Kong. Earlier in 1989 they signed a joint venture project with the Guangming Overseas Chinese Farm, a dairy cooperative with whom they have been doing dairy farming, to build a factory right across the border to serve southeast China. They bought the land, had the ground leveled, and were about to put up the building when the Tiananmen Square massacre took place on 4 June 1989. So they put the project on hold and are waiting to see what happens now in China. If the political and financial environment improves, Lo hopes to have the project back on track within the next 1-2 years.

Also, they have been talking with one party in Beijing that is very interested. A letter of intent has been signed. Lo has visited 2 of the soymilk plants that the Chinese have imported from Japan. Both were sitting idle. Apparently the Chinese have never been taught how to use the equipment to make a proper soybean milk. Address: HKSBPC Ltd., 41 Heung Yip Rd. Aberdeen, Hong Kong. Phone: 5-528211.

5745. Kraft, Raymond C. 1989. Remembrances of Dr. Harry Miller and his work with soyfoods (Interview). *SoyaScan Notes.* Oct. 24. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** On 22 April 1990 the Mount Vernon Academy, the Seventh-day Adventist high school that both he and Dr. Miller attended at different times, will celebrate the 50th anniversary of Dr. Miller's return to Mt. Vernon, Ohio, in the fall of 1939, to start the International Nutrition Laboratory, his soymilk plant, with a memorial to Dr. Miller. It may be a bust and/or a plaque, with exhibits. In the fall of 1939 Dr. Kraft was a senior at that school; now a physician who will be age 67 in April (2 generations behind Dr. Miller), he worked for Harry Miller at his Mt. Vernon soyfoods plant from January to September 1941. Dr. Miller bought 140 acres on which to build his plant and house, and to grow soybeans. He grew his own soybeans there from the first spring. In 1940 Dr. Miller's son, Clarence, had just finished college. He went to Mt. Vernon from Takoma Park to get the bookkeeping records for Dr. Miller's business in order.

Dr. Kraft has several strong recollections. "First, when he fired me on the first of September, I asked him if there was anything wrong with my work. He said 'No, not a thing. It's time for you to go back to school.' Second, he was a man who never knew the meaning of the word 'menial.' He would come out to the factory at 3:30 or 4:00 in the morning to do whatever needed to be done; sweeping the floor, grinding beans, cleaning out the spray drier, shoveling coal into the boiler, digging ditches. Then he worked at his medical profession (surgery and hospital) during the day and at 7:00 or 8:00 P.M. he'd be back in the factory again until 10:00 or even midnight. He had an inexhaustible supply of energy. He was a quiet, self-effacing man. He was not a public speaker, and didn't relish publicity–quite like General George C. Marshall."

The 4 main soy products that Dr. Kraft remembers the company selling when he began work there were Soyalac (the principal one, sold mostly for allergenic babies), probably Soyagen for general usage, (both liquid and spray dried; but he is not positive that they were making Soyagen), Soybean Sandwich Spread (made from the mash left over after making soymilk; he does not remember if the product contained additional soybeans), and Canned Green Soybeans.

All this was only 2 years after Dr. Miller started the farm in Mt. Vernon. "He was the first to produce soybeans in Knox County, Ohio, for food use. He had to go out and almost brow-beat the farmers into growing the soybeans for him. They would do it only on the condition that he contracted the entire crop." Address: 500 Cohasset Square, Suite 23, Chico, California 95926. Phone: 916-345-9500.

5746. Marrese, Anthony. 1989. Re: Soyfoods in France. Letter to William Shurtleff at Soyfoods Center, Oct. 28. 2 p. Handwritten. [Eng]

• ***Summary:*** The author conducted a soyfoods market study in France for William Shurtleff of Soyfoods Center, sending out forms which were filled out by 12 companies, visiting or interviewing 9 companies, and visiting 5 companies at the Diet Expo '89 held 21-23 Oct. 1989 in Paris. It seems like there are four types of companies working with soya in France:

1. Independents, both large and small, mainly in primary soymilk, tofu, or tempeh production, or in second generation burgers, smoked products, or desserts production, with either organic (biological) or non-organically grown products. Examples: Le Ferme du Jas, Innoval/Sojalpe, Société Soy, Le Bol en Bois / Tama / Daizou, La Maison du Tofu, Les 7 Marches, Boulangerie Artisinale des Maures, Odile Corbel & Dan Ludington [named Gaia Enterprises by Feb. 1992], Communauté de la Lix (United Macrobiotic Company), Tofu Kuehn.
2. Non-Independents owned by large companies or agricultural co-ops: Gerblé, Bonneterre / Triballat, Sojadoc, Cacoja (C.A.C.), Renaitre.
3. Bean or cereal (agricultural) companies: Celnat.
4. Specialty manufacturers for the Asian-European

(Japanese, Chinese, Korean, etc.) markets: Yamato.

"I had some very good talks with Bernard Storup of Société Soy, the Bol en Bois people, Celnat, Bonneterre, Gerblé and others. In general the market and usage seem to be going nowhere but up and it is still in the very early stages of 'real consumer' type foods, not just health store specialties. Some French soybeans are used but a lot are imported... Real quantity information is not available since it is changing so fast (mainly in an upward direction and mostly with secondary processed products which use tofu or soya in them)." Address: c/o Terre Nouvelle, Eourres, 26560 Séderon, France. Phone: 92.65.10.95.

5747. Pierce, Michael. 1989. Re: Early work with tofu: Wildwood in America and Auenland in West Germany. Letter to William Shurtleff at Soyfoods Center, Oct. 30. 4 p. Typed, with signature.

• ***Summary:*** Pierce got involved with tofu while he was in Georgia. He learned to make tofu from a guy in Macon named Pat Powell, who had just gone up to The Farm in Tennessee and learned from Lewis Headrick, who now lives in Northern California. In about Sept. 1980 Pierce went to California and the day he arrived he met Paul Duchesne, who told him his dream of starting a tofu shop. Pierce explained that he already knew how to make tofu, so Duchesne asked Pierce to be the first tofu maker. Pierce moved into the building that is now occupied by Wildwood; it was his apartment. For about the next year, Pierce made tofu sandwiches with Duchesne, until the Wildwood Natural Foods tofu kitchen opened in Sept. 1980, at which time he became Wildwood's first tofu maker. David Patton came down and showed them how to use larger scale equipment than their original 60 quart pot.

"I met Peter and Elgard Wiegand in the summer of 1981 in California. They expressed great interest in returning to Europe and starting a small tofu shop like Wildwood. Peter started working with us at Wildwood, then a few months later, they left for Germany to piece things together.

Around Nov. 1981, Elgard wrote saying they needed me to come soon. A purchased a Mini Might disintegrator from Bean Machines Inc., took two old pressing bags from Wildwood, some recipes and *The Book of Tofu,* and landed in Germany on 1 Feb. 1982. It was snowing a cold. This was the most exciting time of my life. I was the Ambassador of Goodwill and Tofu. Instantly, the Bean King from San Francisco. I was treated with great respect."

There follows a description of the original equipment. "The water came from very deep in the ground. It was cold year round and made the best tofu. The first batch of tofu was magical. We had 40-50 people from all over Germany one night for dinner and a slide show by Wolfgang Furth-Kuby. This batch of tofu was probably the best I ever made. It radiated. That was the fun time. Everyone was charged and everyone wanted tofu. We started selling in bulk... but soon Peter purchased a vacuum pack machine. Then we had a good clean product. It was easier to deal with, people liked it more, and it lasted longer. We made soya milk, but more as a special order. We also made tofu cakes, pizzas, sandwiches, and salads... Peter, myself, and usually some lady with good taste and a talent for cooking would do demonstrations at restaurants, yoga centers, and once at a private sanitarium. We had a lot of fun."

But then things got harder for Peter. There were many expenses but not as much income. Pierce went to India in Feb. 1983 and made some tofu there. When he returned in June Peter had begun building his new kitchen. He had 3-4 large cookers, a new grinder, and a big vacuum packager. But still the financial picture was bad and eventually the company went under. Pierce taught two guys how to make tofu and both bought bits and pieces of Peter's equipment and started their own small tofu operations. "Rolf put together something in Trostberg, West Germany. Herbert, the other guy, went north.

"I know that Peter became very unstable. He lost everything, including his wife and kids. He is now working odd jobs painting houses, trying to keep his head up and pay off his debts. He really worked hard but he lost his spirit. Peter had a very hard life. Pleas give Peter and Elgard a lot of credit for helping tofu get started in Europe. They worked so hard and got nothing to show for it. They are truly beautiful, caring people. I love them both dearly. Their vision was pure. We just didn't have much on the business end."

Peter's address is presently Kampenwandstr. 25, 8213 Aschau, W. Germany. Phone: 08052-2967. Note: In Nov. 1989 Peter Wiegand reviewed all information on his work and stated, in a touching letter, that it was all correctly reported. "The whiteness and pureness of tofu brought out one of my darkest sides that I really didn't know before."

Update: Talk with Michael Pierce. 1993. Dec. 8. Rolf Barthof's (Prabuddha) tofu company in Breitbrunn is doing very well. Peter Wiegand is a rock musician in Germany. Address: Graphic designer, 408 2nd St., Macon, Georgia 31201. Phone: 912-752-8083.

5748. AFISA (Association Française des Industriels du Soja Aliment). 1989. Membres de l'Association, présentation de l'action et programme [Members of the Association, plan of action, and program]. AFISA, 5 Boulevard de la Méditerranée, 31400 Toulouse, France. 2 p. Unpublished manuscript. [Fre]

• ***Summary:*** The seven members of the association are Celia (located in the city of St. Denis l'Hotel; Mr. Vasseneix), Cacoja (Issenheim; Mr. Rochet), Innoval (Valence; Mr. Balitrand), Prolait (Niort; Mr. Helie), Société Soy (St. Chamond; Mr. de Preneuf), Sojadoc (Clermond Ferrand; Mr. Monraisse), Triballat (Noyal-sur-Vilaine; Mr. Clanchin). The consultant is Pierre Maitre (of Aix en Provence; General Manager of Maho, an affiliate of Aixagri in 1987). In charge

of promotion is E. Prudon at ONIDOL, in Toulouse.

These member companies are all large soyfoods manufacturers. Their program includes: 1. Studies: A. Scientific, medical, and nutritional. B. On raw materials and the definition of products (norms, standards, legislation). C. Genetics, specific varietal selection. 2. Promotion. A. Documentation. B. Promotion animation and generic promotion of soyfoods. 3. ONIDOL will send periodic "flashes" to members. 4. Coordinated actions during the next 5 years. A. What are we talking about; definition of products. B. What are our trump cards? Nutritional, economic, and technical arguments. C. What dissemination and publicity. The part played by promotion will be more important during the 2nd year, when we have established a base from our studies.

Note that this association is composed entirely of large manufacturers of tofu and soymilk; modern soy protein products (such as isolates and concentrates) are not included. Address: Toulouse, France. Phone: 61.53.81.80.

5749. Alpro N.V. 1989. Tous le bienfaits du soja dans un drink. Provamel: l'alternative naturelle [All the benefits of soya in a drink. Provamel: The natural alternative (Leaflet)]. Izegem, Belgium. 2 panels each side. Each panel: 21 x 15 cm. [Fre]

• ***Summary:*** On the cover of this full-color leaflet, distributed with the DietExpo '89 catalog in Paris (Oct. 1989), is a drawing of Provamel Soya Drink being poured into a glass in front of a window showing an idyllic green mountain landscape and sunrise. Inside are 5 questions and 5 responses. The company name is listed in the DietExpo guide as Provamel (rather than as Alpro N.V.). The Provamel line now contains the following products: Provamel Soya Drink: Without sugar (½ liter and 1 liter), with sugar (½ liter and 1 liter), chocolate, strawberry, or carob (each ½ liter). Provamel Soya Dessert (like a tofu pudding): Vanilla (½ liter and 1 liter), chocolate, strawberry, or carob (each ½ liter). Address: Zuidkaai 33, B-8700 Izegem, Belgium. Phone: 32 / 51 30 96 01.

5750. Alpro N.V. 1989. Die Gesundheit von Soja in einem Drink. Provamel. Die gesunde Alternative [The wholesomeness of soya in a drink. Provamel: The healthy alternative (Leaflet)]. Izegem, Belgium. 2 panels each side. Each panel: 21 x 15 cm. [Ger]

• ***Summary:*** On the cover of this full-color leaflet (of which a French-language edition also exists) is a drawing of Provamel Soya Drink being poured into a glass in front of a window showing an idyllic green mountain landscape and sunrise. On the inside two panels are 5 questions and 5 responses. The company name and address are not listed in the leaflet. The Provamel line now contains the following 12 products: Provamel Soya Drink: Without sugar (½ liter and 1 liter), with sugar (½ liter and 1 liter), chocolate, strawberry, or carob (each ½ liter). Provamel Soya Dessert (like a tofu pudding): Vanilla (½ liter and 1 liter), chocolate, strawberry, or carob (each ½ liter).

General distributor in Switzerland: Biorex AG, Kappler Strasse 53, CH-9642 Ebnat-Kappel. Phone: 07432175. General distributor in Austria: Bio-Quelle Klaus Loesch GmbH + Co KG, Haagerstrasse 44a, A-4400 Steyr. Phone: 0725262388. General distributor in West Germany: Landsieg, D-6670 St.-Ingbert. Phone: (06894) 7077. Address: Zuidkaai 33, B-8700 Izegem, Belgium. Phone: 32 / 51 30 96 01.

5751. Bonneterre. 1989. Bonneterre c'est tout naturel: Tarif détaillant 20/10/89 [Bonneterre is all natural: Distributor's catalog and price list. (Includes Lima catalog)]. 1 place des Planteurs, 94538 Rungis cedex, France. 28 p. 30 cm. Includes a catalog for Lima Foods. [Fre]

• ***Summary:*** This catalog, in an outside folder accompanied by various leaflets, lists all products distributed by Bonneterre, with their prices. On pages 19-20 is a section on soyfoods (Produits a base de soja), with two subcategories: Milks and desserts (brands from Bonneterre and Société Soy), and Soy preparations (only from Société Soy).

Bound into the back of the catalog is a 9-page catalog for Lima in Sint-Martens-Latem, Belgium. Address: Rungis cedex, France. Phone: 46.87.26.34.

5752. Fédération Nationale des Syndicats de la Diététique. 1989. DietExpo '89: 10e salon international des produits de diététique, de nutrition et d'hygiène [DietExpo '89: 10th international exhibition of dietetic, nutritional, and hygienic products]. Paris, France. 138 p. Held 21-23 Oct. 1989 at Paris, France (Parc des Expositions, Porte de Versailles). Illust. Index. 21 cm. [Fre]

• ***Summary:*** This book contains ads, an index then alphabetical listing of exhibitors, and a list of brands. The following soy-related companies are listed: Bonneterre (distributor, full-page color ad, inside front cover), Lima France (via Bonneterre; full-page color ad, p. 8), Laboratoires Heuprophax (full-page ad, p. 18; Sojacithine), Alré (full-page ad, p. 21; Soja Cao, Soja Fruits, Sojacao Gluten, Soja-Vita. This company, in business since 1934, is a division of Heuprophax Laboratories in Nanterre, France), Aliments de Regime & Alre (p. 30), Bioforce (p. 34-35), Bonneterre (p. 36), Celnat (full-page ad, p. 41-42), Creation (p. 44, Soyalet and Soyavit brands of soyfoods), Diététique et Santé (p. 50, Gerblé), Heuprophax Laboratoires (p. 64), Innoval (p. 68), Jonathan-France (p. 72), Naturavit (p. 73), Laboratoires Marins (p. 76, Soyal soy lecithin), Lima-France (p. 80), Nature et Progres (p. 88, organic certifiers, their logo looks like a round yin-yang (*t'ai chi*) symbol with one white circle in it), Provamel (p. 98, Izegem, Belgium; 4-page color insert shows products), Société Soy (half-page ad, p. 99; tofu specialists), Pur Aliment (p. 100, Pural brand; Seventh-day

Adventist broker of many soyfood products), Soy (Société Soy, p. 112). Address: Paris, France.

5753. Lima N.V. 1989. Lima: Tarif détaillant [Lima Foods catalog and price list]. Edgar Gevaertdreef 10, B-9830 Sint-Martens-Latem, Belgium. 9 p. [Fre]
• ***Summary:*** This macrobiotic food catalog was bound into the back of the Bonneterre catalog at a 1989 food expo in Paris. Lima sells the following soyfoods, each proceeded by its product category: Fresh products: Skewered seitan/tofu, Presto natural tofu, Presto tofu legumes/vegetables, Presto tofu cheese. Legumes: Yellow soybeans. Sprouts: Green soy/mung (500 gm or 5 kg). Flours: Roasted soy flour. Vegetarian preparations: Lima soy sauce (500 ml or 1 liter), tofu, natural tempeh, tempeh with shoyu. Dressings: Salad dressing with soy and tomato, Salad dressing with soya herb. Specialties: Organic miso (1 month), Hatcho miso, Barley miso (organic or regular), Rice miso (organic or regular), Heiwa brand Instant miso soup (regular or red, From Japan), Tamari (250 ml, 1 liter, 18 liters), Mansan Tamari from Japan, Shoyu (250 ml, 1 liter, 18 liters), Sakai shoyu from Japan. They also carry one book titled "Tofu dans le Cuisine Macrobiotique" (Eddie Hara, 1982).

Accompanying the catalog is a packet of individual full-color sheets with of photos of products in a folder titled Lima: Quality is our passion." There are sheets titled "Vegetable products rich in protein," "Tamari and shoyu," "Japanese specialties (incl. Heiwa brand shoyu and tamari), and a brochure titled "Lima: 30 years as a producer of organically grown (biological) foods." It describes the life and work of Edgar Gevaert (poet, artist-painter, ecologist, and a leader of the European peace movement). Address: Sint-Martens-Latem, Belgium.

5754. Stefanak, M.A.; Jarjoura, D. 1989. Weight gain in supervised take-home feeding programmes in Chad. *J. of Tropical Pediatrics* 35(5):214-17. Oct. [11 ref. Eng]
• ***Summary:*** During the Sahelian drought and food shortages of 1984-1986, many children in areas too remote to be reached by child feeding programs experienced hunger and malnutrition. A total of 641 malnourished children in Chad from 2 nomadic camps were enrolled in a supervised feeding program. In a third camp, 133 children were enrolled in a take-home feeding program. Each child was allowed 821 kcal/day of a supplement consisting of corn-soya-milk (CSM) mix, nonfat dried milk, vegetable oil, and sugar, prepared in the feeding centers and served as porridge. The children stayed in the programs for a mean length of 59 days. The supervised group had an average weight gain 60 days after enrollment of 1,013 gm, whereas the take-home group had a gain of 951 gm (6.2% less). The difference was not statistically significant.

Note: The CSM used in this study was sent from the United States as part of its PL 480 Food for Peace program. Address: 1. MPH, Mahoning General Health District, 2801 Market St., Youngstown, Ohio 44507.

5755. Wang, H.L.; Cavins, J.F. 1989. Yield and amino acid composition of fractions obtained during tofu production. *Cereal Chemistry* 66(5):359-61. Sept/Oct. [18 ref]
• ***Summary:*** Five fractions were isolated during processing of whole soybeans into tofu: soak water, water-insoluble residue [okara], soymilk, tofu, and whey. Into the soak water or whey went 14% of the soybean solids, 4.7% of the soybean protein, and a small amount of oil. Into the okara went 30, 20, and 11%, and into the soymilk went 63, 79, and 82% respectively. Finally, 52% of the soybean solids, 71% of the protein, and 82% of the oil were recovered in the finished tofu. Address: NRRC, Agricultural Research Service, USDA, 1815 N. Univ. Street, Peoria, Illinois 61604.

5756. Demos, Steve. 1989. White Wave's strategy for marketing soyfoods in America as cholesterol-free protein foods (Interview). *SoyaScan Notes.* Nov. 1. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** "White Wave welcomes the movement of tofu, a potentially hazardous food, out of the produce case. I think we are positioned and prepared as well as we possibly could be for this kind of change. This is what we've been waiting for! Years ago, White Wave designed its boxed, vacuum-packed tofu with a 60 day shelf life to sell in the dairy case. The disruption of an existing habit pattern opens up to opportunities for innovative companies." Demos does not see, even in the short term, any major loss of sales. At least 2/3 of White Wave's tofu is already out of the produce case and into either the dairy case or temperature controlled cases. He feels the best place to sell tofu is next to yogurt, ideally between yogurt and the deli meats in the dairy/deli case. White Wave conceives of itself as selling a new category of foods, "cholesterol free protein foods." This category should be well defined unto itself. Eventually Demos would like to see this heart/smart concept evolve into the "soyfoods section." Since signs identifying sections are generally not allowed in supermarket cases, the section/category might be partitioned off with plastic dividers at each end, like the Pillsbury Doughboy category. King Soopers has already pioneered this idea, starting in about 1983, putting tofu between the yogurt and the milk (with no plastic dividers), on the basis of the demographics, then building the concept by adding other soyfoods and soymilk. But tempeh, a slow mover, is now in the frozen foods case, and the meatlike products (such as hot dogs) are next to Armour in the deli meats.

Safeway seems to have made a top level decision to aggressively promote soyfoods. This year they called White Wave and said, "We don't know what you make, but give us everything. Then in August, in their two largest new classy "Safeway Marketplaces" in Boulder (and maybe in a few

newer or college-oriented stores in Denver), entirely on their own initiative, they installed temperature controlled end-aisle cases at the end of the produce section facing the cash registers. The location is very prominent–an impulse location. Each case has the word "Tofu" in large letters on it. Many different types of soyfoods (and nothing but soyfoods) are sold in these cases–tofu, tofu dressings, tofu hot dogs, soy cheeses, Stir Fruity (soy-based yogurt), etc. All White Wave soyfood products in these 2 stores are sold in the Tofu case. Demos feels that "Tofu" this is the best title for the case. Also the "Approved by Healthmark" with the Healthmark logo on each display case identifies these as healthy foods. Only foods that are low in cholesterol, fat, and sodium get the Healthmark. Each case, constructed like an open dairy case, 5 feet wide by 6 feet high, has a temperature range of about 35-40º. Demos would definitely prefer to have his products sold in these cases rather than any other location in the store. White Wave's main strategy is to "identify a category," and to group foods in that category together. Again, the current category definition is cholesterol-free protein foods, but the long term goal is to have the category defined as "soyfoods." It is too early to say how the new isolated cases are affecting sales, but preliminary signs all look very positive.

White Wave started pasteurizing its tofu in Dec. 1988. Since then they have not had a single complaint of spoilage or sourness. Pasteurization does effect the tofu texture, making it firmer, but it also makes tofu much more profitable. White Wave makes both a 16 ounce vacuum packed and a 10-ounce single serve water-pack tofu. He prefers the vacuum pack and has worked the bugs out of his Tiromat so that it is no longer a significant source of problems. Tree of Life on the East Coast sells un-boxed vacuum-packed White Wave tofu very successfully, but Demos strongly prefers to box it. He has a whole new tofu plant at his new facility with automatic cooking and curding, conveyorized press tables and pasteurization.

Concerning the competition: Demos compliments Morinaga on a brilliant strategy. The net result is to help in the Americanization of tofu by identifying it clearly as a protein food and therefore forcing it out of the produce case. The irony is that when the dust settles, Mori-Nu Tofu may be the only brand left in what becomes an outdated, foreign location–with the oriental vegetables instead of with the protein foods. Azumaya and Hinode are rooted in the produce distribution network. Getting kicked out of the produce section will be very hard on them and their reaction will probably be to fight it rather than use it to their advantage. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301. Phone: 303-443-3485.

5757. Lo, K.S. 1989. Re: Vitamilk, Sunspot, and Vitasoy. Letter to William Shurtleff at Soyfoods Center, Nov. 3. 2 p. Typed, with signature on letterhead.

• ***Summary:*** "According to our written record, the Urban Council objected to our use of the term 'milk' in English 3 months after the factory was opened in 1940. The reason was that the soyamilk was not of animal origin, and, therefore, it contravened the definition of milk in the Ordinance. I was hard pressed to come out with a substitute name and thought of the word 'Sunspot.' This was approved by my partners and the name was changed from Vitamilk to Sunspot in English. The Sunspot trademark was used from 1940 until 1953, when we changed from a wide-mouth bottle to the present narrow-neck soft drink bottle. The change of bottle was simultaneous with the change from pasteurization to sterilization... The trademark 'Vitasoy' was not registered until 1955, whereas Wai-ta-nai, written in Chinese characters, was registered in 1940 and 'Sunspot' was registered in 1952.

"In my various papers, I continued to use the word 'Vitamilk' despite the fact that the trademark had been changed to 'Sunspot.' I did so subconsciously, because Vitamilk had always remained in my subconscious mind, and I disliked the trademark 'Sunspot' right from the start."

In about 1958, for a second time, Mr. Lo's competitors lobbied the Urban Council, this time to try to prevent him from using the Chinese character "nai," which means milk. On this occasion, his company successfully defended its use of that Chinese term because it formed part of the company's registered trademark.

"In my article 'The story of soybean milk' in the *Far Eastern Economic Review* (1953) I was mistaken in writing Dr. Webb instead of Julian Arnold. I probably read an article by Dr. Webb about Arnold's speech." Address: Chairman, The Hong Kong Soya Bean Products Co., Ltd., 41 Heung Yip Rd., Aberdeen, Hong Kong. Phone: 5-528211.

5758. Agriculture Canada Research Station, Harrow. 1989. Description of variety: Harovinton. Harrow, Ontario, Canada. 2 p. Nov. 9. Unpublished typescript.

• ***Summary:*** Harovinton is a "Large-seeded tofu-type soybean. Registration date: May 24, 1989. Registration No.: 3118... Harovinton, tested as OX733, was developed by the Agriculture Canada Research Station, Harrow. This variety was derived from the cross Vinton x Vinton 81, made in 1982." Vinton is susceptible to Phytophthora (a fungus) and tolerant of metribuzin (an herbicide) applied at recommended rates. Growth habit: indeterminate.

"Seed characteristics: Shape: spherical flattened. Size: large; 23 grams per 100 seeds. Seed coat: dull yellow. Hilum colour: yellow. Oil content: lower than Corsoy (18.6% vs. 20.1%). Protein content: higher than Corsoy 79 (44.9% vs. 40.9%). Seed coat peroxidase activity: high.

Maturity: 3100 heat units (Ontario). Performance and adaptation: In yield trials conducted in 1986, 1987 and 1988 at Harrow, Malden and Woodslee, Harovinton yielded about 6% less than Corsoy 79. Harovinton is shorter, more

lodging tolerant, and earlier maturing than Corsoy 79... The yield of soymilk and tofu per kilogram of Harovinton beans was 4% and 11% greater, respectively, than for Corsoy 79." Maintenance of breeder seed: Agriculture Canada, Research Station, Harrow, Ontario. Canadian distributor: Canada Packers.

Note 1. This is the earliest document seen (June 2013) that mentions the soybean variety Harovinton.

Note 2. The letterhead reads: "Agriculture Canada, Food Production and Inspection Branch, Seed Division." No address is given. Address: Harrow, Ontario, Canada.

5759. Harovinton: New Canadian domestic soybean variety. Large-seeded and/or vegetable-type soybean. 1989. Seed color: Yellow (dull), hilum yellow.

• ***Summary:*** Sources: Agriculture Canada Research Station, Harrow. 1989. "Description of variety: Harovinton." Harrow, Ontario, Canada. 2 p. Unpublished typescript. Nov. 9. Harovinton is a "Large-seeded tofu-type soybean. Registration date: May 24, 1989. Registration No.: 3118."

Ontario Ministry of Agriculture and Food. 1990. *Soybean Buyers Mission from New Markets, July 1-7, 1990.* Tokyo, Japan: Ontario Ministry of Agriculture and Food. 61 p. See p. 40. Appendix 5, titled "Development of soybean varieties," states: "Researchers at the Agriculture Canada Research Station in Harrow have focused on the development of varieties for the manufacture of tofu. With help from the OSGMB, a new variety named Harovinton, was recently released from this breeding program. This variety was higher than average protein content, white hilum and large seed size to better suit the needs of the tofu and soymilk manufacturers.

"To secure the best marketing and promotion of this variety to overseas buyers, exclusive marketing rights were given to the International Trade Division of Canada Packers Inc. and Wheatley Elevators Ltd. Both companies have extensive soybean export trading experience."

Bernard, Richard L. 1999. "Historical list of publicly developed North American specialty soybean cultivars to 1989: Large seeded." Year released: 1989. Developed by: Ontario, Harrow. Cultivar: Harovinton. Maturity group: I. Parentage: *Hm Rpsl-c* from Vinton x Vinton 81.

Note: Harovinton was the first food-grade soybean variety developed in Canada for the Japanese tofu industry, and helped pave the way in establishing Canadian food-grade soybeans as a premium quality product in Asia. Address: USA.

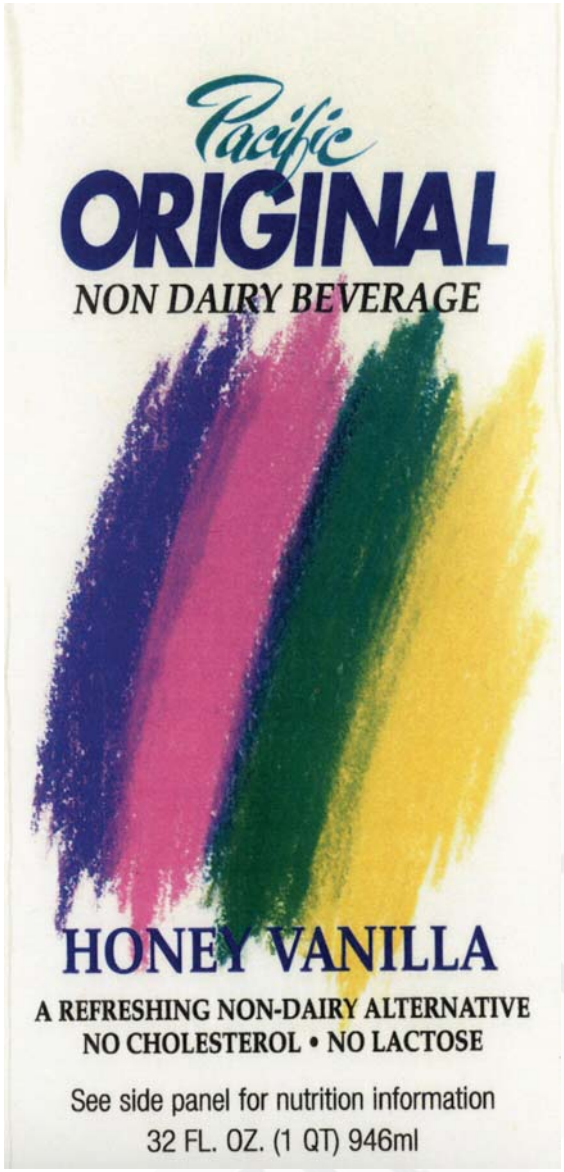
5760. McCarty, Meredith. 1989. Fresh from a vegetarian kitchen. Turning Point Publications, 1122 M Street, Eureka, CA 95501-2442. ii + 263 p. Illust. by Bernice Kagan. Index. 28 cm.

• ***Summary:*** A macrobiotic cookbook containing over 450 recipes, many using tofu (at least 20, including many innovative sauces and dressings), tempeh, miso, amazake, soy sauce, soymilk, and amazake. A section titled "Soyfoods: Tofu and tempeh" (p. 151-55) contains 6 recipes and several variations. On page 202 is a recipe titled "Amazake-Soymilk" in which 3/4 cup soymilk is mixes with ¼ cup plain amazake. The author has co-directed this natural health center in northern California since 1977. Address: Eureka, California.

5761. **Product Name:** [Amisoya Fresh Soy Beverages (Natural with Sugar, Natural Without Sugar, With Carrot Juice, Bilberry, With Yeast, Almond)].
Foreign Name: Amisoya Bevande (Naturale Con Zucchero, Naturale Senza Zucchero, Alla Carota, Al Mirtillo, Al Lievito, Alle Mandorle).
Manufacturer's Name: Medical Soy S.p.A.
Manufacturer's Address: Via Matteotti 55, 20068 Peschiera Borromeo (Milan), Italy. Phone: 02.547.54.56.
Date of Introduction: 1989. November.
Wt/Vol., Packaging, Price: Plastic bottles, probably 1 liter.
How Stored: Refrigerated.
New Product–Documentation: Medical Soy leaflet. 1990. *"Linea Amisoya: L'alt(r)a Gastronomia. Prodotti a base di soya del tutto privi grassi animali. Prodotti di Soya freschi. Nutrirsi meglio per rimanere giovani"* [The Amisoya Line: The high/alternative gastronomy. Soyfoods containing no animal fats. Fresh soy products. Eat better to stay young]. Lists six flavors. "Use as a thirst quencher or like milk." Individual labels are in the form "Lievito Soy" or "Mirtil Soy."

5762. **Product Name:** Pacific Foods Organic Soy Beverage [Original, Honey-Vanilla, Cocoa].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1989. November.
Ingredients: Original: Water, organic whole soybeans*. * = Organically grown and processed in accordance with Section 26569.11 of the California Health and Safety Code.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton. Retails for $1.77 (12/90, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 8 fl. oz.: Calories 100, protein 10 gm, carbohydrate 4 gm, fat 6 gm, cholesterol 0 mg, sodium 0 mg.
New Product–Documentation: Product with Label purchased from Berkeley Natural Grocery Co., California. 1990. Dec. 28. 4 by 2.5 by 6.5 inches. White and black on brownish red. "A flavorful and refreshing non-dairy drink that offers a delicious change-of-pace. Try it: The great taste will surprise you. Cholesterol free. Lactose free. Organic. No preservatives. A significant source of protein. Sodium free. No animal fats. No sweetener added. Great tasting."

Talk with Pat Carey of Pacific Foods. 1991. Jan. 23.



This product was launched in about Nov. 1989. The contents is basically the same as that of the previous Naturally Northwest line, which has been discontinued and replaced by this line. A new version of the label with graphics was introduced in Jan. 1991. All three flavors, in liter cartons, were introduced at the same time. Soyfoods Center product evaluation for Cocoa: WRS. Delicious. AA. Good, but slightly bitter aftertaste.

Product (Honey Vanilla) with Label purchased at Berkeley Natural Grocery Co. 1994. Aug. 20. New package design. Dark blue on purple. On the front panel is a black-and-white lake surrounded by snow, with a snow-capped peak and a cloud banner from its top in the background. "Made from organic soybeans and pure mountain water." Product (Honey Vanilla) with reclosable spout and Label purchased at Berkeley Natural Grocery Co. 1994. Dec. 7. New package design. Four strokes of pastel colors, almost vertical going from lower left to upper right: Purple, pink, green, and yellow. Product is now named: Pacific Original Non Dairy Beverage–Honey Vanilla. It is made with organic whole soybeans.

5763. Vitasoy (U.S.A.) Inc. 1989. Vitasoy: America's first.... soymilk from 100% organic soybeans." (Ad). *Natural Foods Merchandiser.* Nov. p. 40.

• ***Summary:*** On the front of this glossy color insert (8½ by 11 inches) is a large color photo that shows 4 cartons of soymilk (each 8.45 oz or 250 ml) standing in a field of soybeans: The flavors are Creamy Original, Vanilla Delite, Carob Supreme, and Rich Cocoa.

On the rear: "In support of the wave for organic foods, Vitasoy was the first to use organically grown soybeans to produce a premium soymilk."

"Since 1984, Vitasoy has been using organically grown soybeans in our delicious soymilk. Unlike other soymilk brands that only use organic beans in one or two flavors, all flavors of Vitasoy are made with certified organic soybeans. Our soybean supplier, Pacific Soybean and Grain, Inc., has set high organic standards. It [sic] requires that our soybeans come from fields which are organically farmed for a minimum continuous period of thirty-six months prior to harvest. These stringent requirement meet and exceed existing state organic standards." Address: P.O. Box 552, Brisbane, California 94005. Phone: (415) 467-8888 or 1-800-Vitasoy.

5764. **Product Name:** WestSoy Unsweetened (Soymilk).
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor).
Manufacturer's Address: 5701 South Eastern Ave. Suite 330, Commerce, CA 90040. Phone: 213-722-9817.
Date of Introduction: 1989. November.
Ingredients: Water, organic soybeans*. * = Organically grown and processed in accordance with Section 26569.11 of the California Health and Safety Code.
Wt/Vol., Packaging, Price: 33.8 fluid oz (1.06 quart; 1 liter) Tetra Brik Aseptic carton. Retails for $2.04 (12/90, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 8 fl. oz.: Calories 100, protein 7 gm, carbohydrate 5 gm, fat 5 gm (percent calories from fat 45, polyunsaturated fat 3 gm, saturated fat 1 gm), cholesterol 0 mg, sodium 40 mg, potassium 330 mg.
New Product–Documentation: Product with Label purchased from Berkeley Natural Grocery Co., California. 1990. Dec. 28. 4 by 2.5 by 6.5 inches. Red, blue, and white on tan. Pale white illustration of a glass of white soymilk with a straw in it. The front panel states: "All natural. New. 100% organic ingredients. Great tasting non dairy beverage. No oil added. No cholesterol." Side panel: "Not for use as an infant formula." Back panel: "Lactose free. Very low sodium.

Serve chilled. Pour over cereal. Cooking and baking."

Talk with Julie Heiman, purchasing agent, Vestro Foods. 1991. Jan. 23. This product was introduced in Nov. 1990. It is made in America, not imported but the source is confidential. It comes in one flavor and size only (unsweetened liter).

5765. O'Bannon, Kathleen. 1989. The last years of Victor Food Products in Canada (Interview). *SoyaScan Notes.* Dec. 7, and 6 March 1990. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The problems started in three areas. First was the growing competition from small Chinese tofu companies. There were 6-10 little Asian-Canadian tofu makers, some making tofu in a bathtub in their basements, and selling it for cut-rate prices. One even attempted to get into Stephen's plant, disguised as a food inspector, to spy on/study his equipment. Stephen wanted to get out of the "Chinese tofu wars." The second cause was the two gay followers of the Indian guru Rajneesh. One day they came seeking employment, saying that they had made tofu in Poona for years. George Harris (Bodhi-dharma) was the good guy; Kathleen hired him after a careful background check. But when he left to live on the Rajneesh commune in Oregon (where he ended up staying for nearly a year), his partner, Kirti (Joe Lewis) took his place. Joe Lewis turned out to be a malicious character–at times pure evil. The Rajneesh commune in Oregon would not let him live there, which angered him. He became the bookkeeper and office manager. He made life so difficult for Kathleen and ruined the good friendship that she had had with Stephen Yu (he deliberately connived to turn each against the other), that she finally felt compelled to leave the company in 1984. Joe Lewis falsified the company books, making it look like the company had more accounts receivable that was the case; this led local banks to refuse key loans to the company and to distrust Stephen. Joe Lewis charged the company for more time than he was working, messed up the office, then finally got into a big fight with Stephen. The Rajneesh guys were talking about suing Stephen. Finally Stephen fired them both.

The third cause was Bing, who was one of Stephen's long-time key production employees. He was very chummy with the Rajneesh guys. Bing left and told everything he knew to somebody else down-town, found somebody with money, set up a business in Chinatown and competed fiercely with Stephen.

After Kathleen left the first time but before Joe Lewis was fired, someone approached Stephen Yu about a joint venture making soymilk ice cream with a company named Tofu Parlor (formally Tofu Restaurant and Ice Cream Parlors, 304 Victoria Ave. East, Regina, SASK, S4N 0N7, Canada [near Saskatoon]. Owner: Wayne Knipple), which was already making soymilk ice cream. Stephen found one or two investors. One was John van Kessel, a 55-year-old chain-smoking accountant and computer expert, who was part of Tofu Parlor, invested money in Victor Food Products (VFP), liked to tell dirty jokes. The other was Larry Ginsberg. Stephen did a great deal of original research, using custom-designed equipment, to develop a new process for making excellent quality soymilk and ice cream from that soymilk. He worked with Guelph University researchers (such as Dr. Leni DeMann, a woman) to eliminate the gas and chalky flavor from soymilk. Kathleen and others thought this ice cream tasted better than Haagen-Dazs, and many people felt that the soymilk and the ice cream had great potential. But the Chinese on the Board of Directors VFP wanted Stephen to behave like a Chinese and just make tofu. They were opposed to the ice cream venture and they tied his hands.

In order to get around this limitation, in late 1985 or early 1986 Stephen decided to start a new corporation (at the same address as VFP–102 Hymus Road, Scarborough, Ontario, Canada M1L 2C9) named Tofu Master Inc. Van Kessel and Ginsberg owned part of it. The Chinese on the board of VFP had nothing to do with the new company. VFP would focus its marketing on the Asian-Canadian market and Tofu Master would aim for the Caucasian market. Stephen could now do more R&D. Stephen then brought in some new people to do the soymilk production. Tofu Master launched a firm and a soft tofu Tofu Master brand, and Entice (the soy ice cream) under the Tofu Parlor brand. The ice cream was made in a small, independent dairy in Toronto, and certified kosher. It came in individual small (100 ml) cups in chocolate, strawberry, and vanilla flavors. Stephen had the rights to sell to foodservice institutions and hospitals; Tofu Parlor in Saskatchewan had rights to the retail market. Saskatchewan also made a Tofu Parlor Bar (ice cream on a stick). Stephen also developed a remarkable vacuum packed Tofu Master Gourmet Tofu (in Barbecue, Herb & Green Onion, Cheese, and Bacon flavors). When he vacuum packed this tofu (either sliced or in whole cakes) in a remarkable machine he had, the process sucked the flavors into the tofu. But the banks wouldn't loan him the money to market the products because of what Joe Lewis had done, so it never was launched. By this time Stephen had lost so much face with the Chinese that they didn't want him to do anything that was not Chinese. He had to fight this attitude the whole way. Tofu Master was apparently the cause of the company's bankruptcy, for the project was never completed.

After Stephen fired Joe Lewis, Kathleen came in for 7 months. She ran the plant, did the recipes and promotion and marketing, and straightened up the office after Joe Lewis had messed things up. She helped promote the new ice cream. After that she got in an accident when she tripped on something and fell. She injured her neck, her lungs collapsed, and her back and neck were out for a year. She was very ill and had to have surgery. She left in Sept. 1987 and moved to Santa Fe, New Mexico, where she is now

living. The company was still very much alive at that time. The company sold the equipment from the bankruptcy in April 1988. When she returned in November 1988 to do a health foods trade show in Toronto she was very surprised to hear that Victor Food Products had gone under. She can only assume that the people who were calling the shots had made big mistakes. Kathleen was very close to Stephen and felt very badly about what happened to him. Apparently after the bankruptcy he went to work with his brother-in-law who ran a Gold Chin fast food Chinese restaurant franchise.

Kathleen first made tofu in the early 1970s in her barn. She has followed the Sikh philosophy, was a yoga teacher for 8 years. He company in Toronto was named Natural Light Publications. She wrote a cookbook titled "Tofu: How to do it book," which was scheduled to be published in the winter of 1983 and to be sold with a stainless steel tofu kit that Stephen Yu was developing, to be produced in China. The kit turned out to be too expensive to make, so neither the kit nor the book was ever sold. Kathleen is now writing a book on "Nutrition and the Bible" and doing 6 home videos on cooking with natural foods. She wants to lecture on health and nutrition. Udo Erasmus has written a good book titled *Fats and Oils* published by Alive Press. It argues that butter is a safer product than margarine. Heating oils causes the free radicals to break off. They circulate in the body, causing many diseases and problems. Address: 227 Ojo de la Vaca, Santa Fe, New Mexico 87505. Phone: 505-983-5961.

5766. *SoyaScan Notes.* 1989. Influence of Japanese and Japan on soyfoods in America (Overview). Dec. 7. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** The Soyfood Center's SoyaScan database presently contains 30,790 publications and commercial products related to soya. Of these, 876 (2.9%) concern the influence of Asian-Americans (Japanese, Chinese, Koreans, or Indonesians) or their home countries on soyfoods. Of these 876 records, 638 (73%) concern Japanese influence, compared with 178 (20%) that concern Chinese influence–including Chinese from Taiwan, Hong Kong, Singapore, etc. Thus Japanese influence on soyfoods in America is much greater than that of any other Asian cultural group. We can identify at least seven major areas of influence:

1. Soyfoods Terminology. It is interesting to note that many of the most popular soyfoods in America are most widely known by their Japanese names. We say tofu (not doufu or bean curd), miso (not jiang or soybean paste), natto, okara (not soy pulp), yuba (not doufu-p'i or soybean skin). Even "soy" (as in soy sauce) is derived from the Japanese word "shoyu." Increasingly Americans interested in natural foods also use the terms shoyu and tamari to distinguish them from HVP soy sauce.

2. Kikkoman. By far the most influential Japanese soyfoods company in America today is Kikkoman, just as soy sauce is by far the most important soyfood product. Kikkoman was also the first Japanese company to introduce soyfoods to America. In 1868 the first Japanese immigrants to Hawaii took kegs of Kikkoman brand shoyu with them. In 1879 Kikkoman brand shoyu was registered in California, where it was exported to Japanese immigrants. Exports rose steadily, until between 1949 and 1954 exports of Kikkoman shoyu to the U.S. ranged from 213,000 to 305,000 gallons a year. Kikkoman's first real attempt to reach any foreign market dates from 1956 when, during the U.S. presidential elections, Kikkoman ran television ads to promote its product to mainstream American audiences as a seasoning for meat, fish, and poultry. In 1957 Kikkoman International Inc., a new sales company was established in San Francisco. Sales skyrocketed. In 1973 Kikkoman opened a huge modern shoyu plant at Walworth, Wisconsin. In 1976 Kikkoman passed La Choy to become America's best-selling soy sauce.

3. Introducing Soyfoods to Hawaii. The first Japanese who arrived in Hawaii in 1868 brought shoyu and miso with them. The earliest known soyfoods company there was a shoyu brewery started in 1891 in Honolulu by Jihachi Shimada. This was also the earliest known soyfoods company started by a Japanese anywhere in the Western world. Hawaii became part of the USA in 1898 by annexation. Hawaii and California were the first two areas in the U.S. where soyfoods became widely available. During the 20th century, Japanese started roughly 183 companies in Hawaii making shoyu, miso, and tofu–far more than Chinese (6) or Koreans (2). They developed innovative new products–such as sweet Hawaiian-style shoyu and miso. These products profoundly influenced the food life of Hawaii.

4. Soyfood Manufacturers in the USA. The earliest known soyfoods manufacturer in the Continental USA was a company (the name is unknown) run by the wife of Chieko Hirata that started making tofu in Sacramento in about 1895. The second earliest was Yamamori Jozo-sho, which started making shoyu in San Jose, California, in 1897. Many of the earliest soyfoods companies in America were run by Japanese Americans. By 1942 at least 158 soyfoods manufacturing companies had been started in America by Asian Americans; of these, 143 (91%) were run by Japanese Americans. When *The Book of Tofu* was published in 1975, it listed 55 tofu companies in America, all run by Asian-Americans; 39 were Japanese- and 16 were Chinese-run. Today America's two largest tofu companies are both run by Japanese Americans: Azumaya Co. in San Francisco, and House Foods & Yamauchi Inc. in Los Angeles. Hawaii's three largest tofu companies are also run by Japanese Americans: Aloha Tofu Co., Kanai Tofu Factory, and Hawaii Tofu. Morinaga Nutritional Foods in Los Angeles and Kikkoman Foods in San Francisco both import large amounts of aseptically packaged long-life silken tofu from Japan.

Another major manufacturer is San-Jirushi Corp. of

Kuwana, Mie-ken. In the late 1970s San Jirushi started exporting tamari and soybean miso to America. They set up an office in the early 1980s and began to promote their product as "real" tamari to industrial food processors and the natural foods market. In Sept. 1987 the company opened a state-of-the art tamari plant in Richmond, Virginia, with a capacity of 1 million gallons a year. The company now has 75% of the industrial soy sauce market in America.

In Oct. 1986 a major new joint stock company named American Soy Products began producing Edensoy soymilk in Clinton, Michigan. It was a joint venture between Eden Foods and 4 Japanese companies: Marusan Ai, Kawatetsu Shoji, Muso Shokuhin, and Seikensha. Edensoy has since become America's best-selling soymilk. Prior to 1986 much of the soymilk sold in America was made in Japan.

Finally, three of America's 4 largest miso manufacturers are run by Japanese-Americans. The largest is Miyako Oriental Foods in Los Angeles. The other two are located in Hawaii.

5. Soyfoods Imports from Japan. The first importers of shoyu and miso were Japanese distributors such as Japan Foods Corp., Mutual Trading Co. and Nishimoto. But starting in 1962 American macrobiotic and natural foods companies started to import large amounts of shoyu and miso. Pioneers were Chico-San, Erewhon, Eden Foods, Westbrae, Edward & Sons, Tree of Life, and Great Eastern Sun. U.S. imports of soy sauce from Japan jumped from 1.7 million lb (174,400 gallons, worth $317,000) in 1949, to 18.6 million lb (1,897,000 gallons, worth $3,116,000) in 1972, an 11-fold increase in quantity during only 23 years.

6. Teachers and Information. Many Americans first learned about soyfoods from Japanese teachers, especially macrobiotic teachers, such as George and Lima Ohsawa, Michio and Aveline Kushi, Herman and Cornellia Aihara, and Noboru Muramoto. All have written many influential books and lectured and taught extensively since the 1960s. In addition, many young Americans learned how to *make* soyfoods from these macrobiotic teachers. Moreover, Japan is Asia's best source of information about soyfoods. For example, the Soyfoods Center's SoyaScan database contains 5,095 publications and products about soya and Japan, compared with 1,867 on soya and China or Taiwan.

7. Tofu Equipment Manufacturers. Hundreds of tofu companies have started in America since the mid-1970s. The majority of these are run by Caucasian Americans and most use specialized tofu equipment made in Japan by Takai Tofu & Soymilk Equipment Co., or by Sato Shoji.

5767. J.-P.V. 1989. Innoval croit au soja [Innoval believes in soya]. *Le Figaro–Lyon* (*France*). Dec. 11. [Fre]
• ***Summary:*** Innoval presently has a soymilk capacity of 2,000 liters/hour and a piece of [ultrafiltration] equipment that can produce 500 kg/hour of liquid soy concentrate. The total represents an investment of 20 million French francs. Expected turnover in 1990 is 25 million francs. "Our objectives are to capture 25-30% of the French market, and to gain a significant part of the European market," explains Jean-Marie Gorce, president of the cooperative and general counsel for Innoval.

Innoval now has a line consisting of four products: Innofun soy beverages (vanilla, strawberry, or chocolate); Royales (a type of tofu quenelles); Creamy Concentrate, and Soymilk (*jus de soja;* natural, non-sweetened). And, Innoval has announced that it will introduce sorbets, sauces, desserts, and a pâté à tartiner.

5768. Rogers, Wally. 1989. The Continuous Cooking System sold by Bean Machines, Inc. (Interview). *SoyaScan Notes.* Dec. 11. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Larry Needleman began to develop this cooker in about 1983. It is a continuous, pressurized system. The first one was purchased by Silver Sprout in San Francisco in 1984 for about $17,000. They were never able to make it work, and eventually they junked it. On 1 Aug. 1984 Wally Rogers moved to California and soon he and Steve Fiering bought Bean Machines from Larry Needleman. Wally and Tim Huang did a lot of work on the cooker at the University of California at Davis. The second one was ordered by Tomsun Foods, but they never installed or paid for it. That one is now used by China Rose (formerly Rosewood Foods and The Soy Plant) in Ann Arbor, Michigan. Purchased by them in Dec. 1988, it has a capacity of 300 gallons/hour. Two other systems have been sold: One in Sept. 1989 to Unisoya in Montreal, Canada (600 gallons/hour), and one in Nov. 1989 to Soyfoods of America (800 gallons/hour; Tim Huang now works there). Mr. Eng Lim of Mandarin Enterprises in Richmond (near Vancouver), BC, Canada, is also thinking of buying one. The current price of a 300 gallon/hour system with a cooking time of 2 minutes is $28,500 FOB Hayward, California. The corresponding price of a 600 gallons/hour system is $34,500. The system's modular design allows for simple and inexpensive expansion. The system meets all dairy standards, operates at 230ºF and is CIP.

Note: After the interview, Rogers sent two product description sheets and a color photo of the system.

Update: Talk with Wally Rogers. 1991. Nov. 4. Wally has now installed 6 continuous cookers. The latest showcase system, installed at cost, is at Wildwood Natural Foods in Santa Cruz. It reduced the number of workers by two and saved 2 cents/pound on the cost of making tofu. Wally sold a system to a dairy in Peru. They plant to blend soymilk with cow's milk to reduce the cost; the soymilk will cost 18 cents/liter. They will also sell soymilk in plastic bags. Wally now offers a soymilk system that can produce soymilk whose flavor is as good as that from an Alfa-Laval or an APV/DTD system but whose equipment cost is only 10-15% as much– with a continuous cooker. Tim Huang has left Soyfoods of America for a new career in medicine in Chicago, Illinois.

Wally likes the Nichii Microsoy flakes.

Update: Talk with Wally Rogers. 1994. Aug. 22. Other companies that have purchased his Continuous Cooking System are: Wildwood Natural Foods (California; 300 gallons/hour capacity), Les Aliments Alfa (Bolivia, South America; 600 gallons/hour), Northern Soy (Rochester, New York; 500 gallons/hour), Mandarin Enterprises (Vancouver, BC, Canada; 300 gallons/hour). White Wave (Boulder, Colorado).

He now also sells a centrifuge for soymilk extraction, priced at $19,500 FOB San Francisco. It is made in China and has no expensive screens to replace. The capacity is approximately 150 to 200 kg of dry soybeans per hour, with a 3 horsepower motor.

Talk with an owner of a Bean Machines cooker. 1998. Aug. 25. The slurry is cooked in a long tube, under pressure, at various temperatures starting at 212ºF, reaching a peak of 230ºF, and falling to 200ºF at the exit end. Address: President, Bean Machines Inc., 390 Liberty St. #2, San Francisco, California 94114. Phone: 415-285-9411.

5769. Krieger, Verena. 1989. Soja als Nahrungsmittel: genutzt oder missbraucht? [Soya as a food: Used or misused?]. *Zum Beispiel* (*Switzerland*) No. 12. p. 15-17. Dec. 21. [Ger]

• ***Summary:*** Soybeans can be fermented to make miso, soy sauce, tempeh, or natto. Or the protein can be extracted in traditional ways to make soymilk, tofu, or yuba. One can also make soy sprouts. In the Western world, soybeans are mostly misused to make high-protein meal for livestock fodder, and vegetable oil. Address: Lucerne, Switzerland.

5770. Kirkpatrick, Dan. 1989. Soybeans help Mexico to feed its people. *South Benton Star-Press* (*Blairstown, Iowa*)**.** Dec. 27.

• ***Summary:*** The Mexican government has a national policy to ensure that people have enough food. "Desarrollo Integral de la Familia (DIF or Family Development Institute) is an example of one of Mexico's most impressive poverty relief organizations. DIF is a federal program with 32 offices throughout the nation... Susana Dehesa, director of technical assistance in the American Soybean Association's Mexico City office, began working with Monterrey DIF personnel four years ago. She introduced them to texturized soy protein and showed them how its use as an extender would allow the facility to provide economical quality nourishment, not just cheap sustenance... Soy protein's benefits are clearly evident in DIF's efforts with ground beef. A pound of the meat normally costing 11,000 pesos (roughly $4.25) drops to 4,500 pesos ($1.75) with a 30% extension using texturized soy protein...

"Fluid milk is a very precious commodity in Mexico. So precious, in fact, dairy producers for years have slaughtered bull calves to market the milk rather than use it to grow the calves... ASA animal nutrition experts Benjamin Ruiz and Hector Navarro have been working with the U.S. Feed Grains Council to show dairy producers there's a viable alternative to the calf slaughter. 'We've been conducting trials with soy-based milk replacer,' Ruiz notes. 'Saving the bull calves adds to the animal protein supply, creating another market for U.S. soybeans.'"

5771. Ingersoll, Bruce. 1989. Dairy dilemma–Milk is found tainted with a range of drugs farmers give cattle: Federal tests don't catch all of the perils; how far can testing go? Residues in 38% of samples. *Wall Street Journal.* Dec. 29. p. A1, col. 6; p. A2, col. 4.

• ***Summary:*** Though milk has the image of being thoroughly inspected, regulators and processors customarily test for only a narrow category of contaminants. They rarely check for a variety of drugs widely used to treat sick cattle; some of these are potentially harmful to humans. This week two surveys of low-fat and nonfat milk detected some of the drugs that regulators routinely miss. The first, conducted by the Center for Science in the Public Interest (a consumer advocacy group in Washington, DC) found that in 20 off-the-shelf samples, 20% were tainted by sulfa drugs, including sulfamethazine, a suspected carcinogen. The second, by the *Wall Street Journal,* involved 50 retail samples collected in 10 major cities; 38% were found to be contaminated with sulfamethazine, other sulfa drugs (erythromycin, streptomycin), or antibiotics (penicillin). In both surveys, the screening for drug residues was conducted by scientists at Rutgers University.

Also discusses similar damaging surveys conducted in 1987 and 1988. Address: Staff reporter.

5772. Friedrich, Corrine. 1989. Cacoja recentre son activité: Filière soja [Cacoja refocuses its activity]. *Process* (*France*) No. 1046. p. 26-29. [Fre]

• ***Summary:*** "In the heart of Alsace, the soy adventure continues. At Issenheim, 20 km from Colmar, Cacoja, an affiliate of the CAC (Coopérative Agricole de Colmar), has worked for several years to master the transformation of soybeans into human foods, using its automated plant. The company's dynamism allowed it to obtain at the last SIAL the prize for development by an affiliate for its entire line of products. Today Cacoja is refocusing its activities on the production of products, both basic/unrefined, and semi-processed (soy milk and soy concentrate, tofu, powder, flour), leaving to industrial food processors the cares of producing finished products."

Recall that in 1985 CAC began to reflect on the possibilities of diversification. They asked: "What will be the foods of the year 2000?" The response from M. Rochet (present director of Cacoja) was that healthfulness would be the key concept. In 1986 they did a market study, then built a factory (investing 16 million French francs and buying a

completely automated Alfa-Laval soymilk system), which began operation at the end of 1986.

The semi-continental climate of Haut-Rhin is favorable to the culture of soybeans; 3,500 ha are now grown on the plains of Colmar and Mulhouse. Studies are now underway to reach a compromise between high yield and high protein content. The latter can vary from 32 to 44%. In this region, soybeans are gradually taking the place of cereal grains. 15% of the harvest is processed by Cacoja. A third of the soybeans bear the valued CINAB organic mark.

M. Rochet estimates that the soyfoods market is growing at 40% a year. In 1985 it was the equivalent of 1-2 million liters of soymilk; in 1989 it was 5-7 million liters. Each year Cacoja produces several million liters (figures are confidential) giving it a turnover of 18 million French francs for 1988-89 (July to July). So far, the products have been sold to specialty stores. Since Jan. 1989 Cacoja has exported to Germany, Italy, and the Netherlands the equivalent of 15% of its annual sales. The company plans to increase exports and double production. Cacoja is at the head of the French market and second in Europe.

Since 1987 Cacoja has sold basic materials to food processors under the Formoja brand, but this has led to Cacoja competing with itself. Starting in Jan. 1990 will begin to phase out its finished products and focus on making products for its industrial clients, and supporting these with R&D. A sidebar discusses the Cacoja/Alfa-Laval soymilk and tofu processes. Ultrafiltration is used, and Cacoja also makes powdered tofu and soy flour.

In the journal IESIEL, Mr. Rochet recently emphasized the complementarity between vegetable and animal proteins; they should not be seen as competitors. He predicted that mixed products (soy-dairy, or soy-flesh blends) would soon become popular. The finished products will be commercialized by the affiliate Bio-Soja, which started last July.

There are regulations for all food products, but nothing specifically concerning soy. Thus, in Oct. 1989 AFISA (l'Association française des industriels du soja alimentaire), the French Soyfoods Manufacturer's Association, was created. There are 7 member companies. It goals: To establish product standards with respect to regulation and fraud. To better study the soybean as a new food (nutritional and organoleptic) and technology. To propose studies on this subject. To promote soyfoods. To help interest the public in soyfoods by means of the press.

5773. Golbitz, Peter. 1989. Soyfoods under attack: Editorial. *Soya Newsletter* (*Bar Harbor, Maine*). Sept/Dec. p. 2.
• ***Summary:*** The FDA has written "'regulatory' letters to a number of tofu companies asking them to change their labels, and call tofu 'soybean curd.' It is their opinion that American consumers aren't familiar with the word 'tofu,' but are with the term 'soybean curd.'" They are also asking retail stores to refrigerate their tofu at 45ºF or below. Address: Soyatech, Bar Harbor, Maine.

5774. Litov, R.E.; Sickles, V.S.; Chan, G.M.; Springer, M.A.; Cordano, A. 1989. Plasma aluminum measurements in term infants fed human milk or a soy-based infant formula. *Pediatrics* 84(6):1105-07. Dec. [18 ref]
• ***Summary:*** "Aluminum is the most abundant metal in the earth's crust. There is a constant environmental exposure to this element because it is ubiquitous. Under usual conditions, dietary aluminum has not been shown to have any deleterious effects because aluminum is poorly absorbed and readily excreted in the urine. However, aluminum may be a health concern in patients with compromised kidney function and those receiving total parenteral nutrition. Aluminum, if retained, results in an increase in the concentration of body aluminum...

"Human milk has low levels of aluminum, reported to be less than 5 to 45 micrograms/liter. Because aluminum is poorly absorbed by mammals, their biologic fluids such as milk have a low aluminum content. Koo found cow's milk-based infant formulas to have aluminum contents ranging from 14 to 565 micrograms/liter... Soy-based infant formulas were found to have 455 to 2346 micrograms/liter of aluminum. This is due to incidental aluminum from the various added ingredients, including the soy protein source. Plant proteins, such as soy, naturally contain more aluminum than milk proteins. Plants obtain their nutrients from the soil which generally contains more than 10% aluminum. Plants lack an excretory mechanism for aluminum and thus accumulate aluminum to a greater extent than animals...

"In conclusion, healthy term infants from birth to 3 months of age fed soy-based infant formulas containing amounts of aluminum severalfold greater than that found in human milk had plasma aluminum levels similar to breast-fed infants." Address: Mead Johnson Research Center, Bristol-Meyers United States Pharmaceutical and Nutritional Group, Evansville, Indiana; and Univ. of Utah Medical Center, Salt Lake City.

5775. Perez, Oswaldo. 1989. Talleres populares de producción de leche de soya: Un proyecto técnicamente factible y econónomicamente viable [Popular workshops for the production of soymilk: A project that is technically feasible and economically viable]. *La Era Agricola* (*Merida, Venezuela*). Oct/Dec. No. 9. p. 28-29. [1 ref. Spa]
• ***Summary:*** An idea for neighborhood / community organizations / businesses. Illustrations show: (1) A hand-turned screw press. (2) Two soymilk cookers, each with a gas burner underneath. (3) A small had-mill powered by an electric motor. (4) A lady making soymilk and selling it from her window. Address: Granja Tierra Nueva, Aldea San Luis, La Azulita, C.P. 5102, Estado Merida, Venezuela.

5776. **Product Name:** Solcon, Solcaf 70 (both soy protein concentrates), Solpro (functional soy protein), Soybar (defatted non-toasted soy flour), and Sobit (refined soybean fiber).
Manufacturer's Name: Solbar Hatzor Ltd.
Manufacturer's Address: P.O. Box 2230, Ashdod 77121, Israel. Phone: 08-561414.
Date of Introduction: 1989. December.
New Product–Documentation: Spot in *Soya Newsletter.* 1989. Sept/Dec. p. 13. "Solbar Hatzor now offering products under its own name." "Solbar Hatzor Ltd. [formerly Hayes Ashdod Ltd.], Ashdod, Israel, manufacturers of soy protein products, previously under contract to a major factory in the soy protein industry, has fulfilled its contractual obligations and now enters the market directly. Under its own name and identification, they are offering" the products shown above. "Textured soy protein and textured soy protein concentrates are also available." Note: This is the earliest document seen (Dec. 2007) that mentions Solbar Hatzor Ltd.

Brochures issued by Solbar Hatzor Ltd. 1990. Oct. Sent 1992. Jan. Individual sheets describe Solcon, Solcaf, Soybar, and Sobit. Solcon and Solpro are non-texturized soy proteins used in food products. Founded in 1963, Solbar Hatzor Ltd. was formerly named Hayes Ashdod Ltd. "Sobit is processed from refined and desugared soybean hulls and cotyledons–all derived from high quality defatted soybeans."

5777. *Soya Newsletter* (*Bar Harbor, Maine*). 1989. Soy powder plant to be built in Minnesota. Sept/Dec. p. 8.
• ***Summary:*** "The Upper Minnesota Valley Regional Development Commission (UMVRDC) along with PdT, a Minnesota-based specialty soybean supplier, has announced that they will soon be signing an agreement that will result in the building of a soy powder plant sometime in the Spring of 1990. The plant, being built in conjunction with Showa Boeki of Osaka, Japan, will produce Neo Soya Powder (NSP), made through a proprietary dry process. The Minnesota group plans to buy, dismantle and install Showa Boeki's soy powder system in Madison, Minnesota. Showa Boeki will have a five year agreement with the group to buy their NSP. The powder will be shipped to Japan and used in producing tofu and other products."

5778. *Soya Newsletter* (*Bar Harbor, Maine*). 1989. Ambrosia Soy to expand production. Sept/Dec. p. 12.
• ***Summary:*** "Ambrosia Soy Company, East Haven, Connecticut, has announced they have contracted with a Connecticut pizza company to private label, whole wheat soy cheese pizzas. Production began July 20 with two varieties of Sicilian style pizza in *regular* and *deluxe.* A vegan style is also planned... A chain of six New York City croissant stores are being provided with Ambrosia's cookie dough for instore bake-up... Appel also reported that *SweetSoy* (Ambrosia's soymilk) is now available in 23 Waldbaums supermarkets, up from the initial 6 stores, and several other independent stores in the New York City area. Look for a new package design soon."

5779. *SoyaScan Notes.* 1989. Major soy-related company acquisitions and mergers worldwide 1970-1989 (Overview). Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1970 March–Miles Laboratories of Elkhart, Indiana (most famous as the maker of Alka-Seltzer) acquires Worthington Foods of Worthington, Ohio (most famous for its Morningstar Farms line of meat alternatives), making it a wholly owned subsidiary.

1973 Jan. 15–ADM acquires 50% of British Arkady Holdings Ltd. and its subsidiary British Arkady Co. Ltd. of Old Trafford, Manchester, England.

1977 (late)–Bayer A.G. of Germany (makers of Aspirin) acquires Miles Laboratories of Elkhart, Indiana; as part of the deal they Worthington Foods, a subsidiary of Miles.

1979–Bunge Corp. acquires Lauhoff Grain Co. of Danville, Illinois.

1982 Oct. 15–Worthington Foods is repurchased from Miles Laboratories by a group of three Seventh-day Adventist investors in a leveraged buyout. During the 12 years under Miles, sales increased five-fold. Sales volume in 1983 was an all-time high. The company employed 250 people.

1983 April 21–Hybritech Seed International, Inc., a wholly-owned subsidiary of Monsanto Company, purchases the Jacob Hartz Seed Co. of Stuttgart, Arkansas.

1983–House Food Industrial Co., Ltd. of Japan purchases 50% ownership in Yamauchi Enterprises (formerly Hinode Tofu Co., owned by Mr. Shoan Yamauchi) in Los Angeles. The company is renamed House Foods & Yamauchi, Inc.

1985 May 31–Barricini Foods Inc. acquires Farm Foods (makers of Ice Bean soy ice cream) of Summertown, Tennessee.

1985 March–British Arkady acquires Direct Foods Ltd.

1986 Feb.–British Arkady acquires Vegetarian Feasts Ltd.

1986 Dec. 1–White Wave acquires Soyfoods Unlimited, Inc. of San Leandro, California. It is White Wave's first acquisition.

1987 Aug.–British Arkady acquires Haldane Foods Ltd. and Regular Tofu Co. Ltd. It also acquires Vegetarian Cuisine Ltd. in 1987.

1987 Oct.–The Ferruzzi Group in Ravenna, Italy, acquires Central Soya Co. in Ft. Wayne, Indiana.

1987 Dec. 31–ADM acquires the rest of British Arkady Holdings Ltd. so that it now owned 100%.

1988 Jan.–The British Arkady Group acquires Haldane Foods.

1988 Feb.–Westbrae Natural Foods (of Berkeley, California, maker of soymilk) is merged with and becomes a

wholly-owned subsidiary of Vestro Foods, a publicly traded company in City of Commerce, Southern California. Most of Westbrae's top management decides not to stay with the company.

1988 Sept.–Haldane Foods Group acquires Realeat Foods Ltd.

1989 Feb.–Haldane Foods Group acquires Saucemasters Ltd. It also acquires Genice Foods Ltd. in March 1989.

1989 Feb. 16–Edward Lowe of Michigan, the inventor of Kitty Litter, purchases the majority of shares in INARI Ltd. from Len and Irene Stuttman; but they. kept a minority ownership in the company.

1989 April–Huegli Naehrmittel A.G. acquires Yamato Tofuhaus Sojaprodukte of Tuebingen, Hirschau, West Germany. Note: This is the earliest record seen (Feb. 2013) that mentions Huegli in connection with soy.

1989 April 22–Lima Foods of Belgium acquires Jonathan P.V.B.A. of Belgium.

1989 Sept.–Lima Foods of Belgium is purchased from Vibec by Euronature (pronounced as in French, YU-ro na-TYUR), a large international food company headquartered in Paris, France.

5780. **Product Name:** [Soialat: Soy protein beverage].
Foreign Name: Soialat: Bevanda proteica di Soia.
Manufacturer's Name: Amisoya (Marketer-Distributor). Made at Centro Latte Cremora S.r.l.
Manufacturer's Address: Amisoya: Pescheria Boromeo (Milan), Italy; Centro Latte Cremora, Via Ostiano, 4–Gadesco Cremona.
Date of Introduction: 1989.
Ingredients: Water, partially defatted soybeans, sugar, natural aromas.
Wt/Vol., Packaging, Price: 1000 ml.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Protein 3.2 gm, carbohydrates 4.0%, lipids 2.3 gm, calories 49.5.
New Product–Documentation: Letter (fax) from Xavier Karis in Italy. 1990. June 14. "About the name Soialat, I have asked several people but nobody has heard of the name or seen the product. However I did find out that Soialat is a registered trademark of a company named Parmalat S.p.A. It was registered on 15 July 1986 and paid for 10 years. Parmalat is located in Collecchio di Parma in the province of Parma. It is a rather big company with a large line of dairy products.

"There is however another problem with the name Soialat. Italian law forbids use of the terms 'soia' and 'latte' together. A company cannot promote its product as 'Latte di Soia.' Therefore the name Soialat probably cannot be used legally. A short time ago a lawsuit concluded that it was legal to call a soymilk product 'Soia Milk,' but there is still big chaos in Italy over the naming of soymilk products."

Label sent by Xavier Karis. 1990. June 27. 2.5 by 4.5 inches. Orange, blue, white, brown, yellow, and black on light orange. "Soya and life. No cholesterol. With sugar. A beverage rich in all the high-quality protein of soya."

Letter from Xavier Karis. 1990. June 27. "Medical Soy's Soialat has only been in the shops for about a week. I am sure the name Soialat is patented by Parmalat, so either these two companies are connected or Medical Soy will get into trouble."

5781. Combemale, Isabelle. 1989. Un nouvel outil de production du tofu en continu: Reportage soja [A new tool for the continuous production of tofu: Reporting on soya]. *Technique Laitiere* [*Process, Rennes*] No. 1038. p. 51-54. [Fre]

• ***Summary:*** A description of the installations at the cooperative "The Silos de Valence" used for automated, continuous tofu production. Describes processing conditions and the principal outlets for the products obtained: Miso, soymilk (flavored desserts), and by-products (okara).

Les Silos de Valance, a cooperative that produces soybeans in the south of France, first considered processing soybeans for human consumption while looking for new markets and more profitable high value-added products. In 1988, after market surveys and feasibility studies had confirmed the choice, they established a new company named Innoval. The new production plant in Valence is similar to the one built by Alfa-Laval for Cacoja at Issenheim in 1987. Soymilk base is continually processed up to the point where it is coagulated into tofu.

The new and innovative part of the plant is the concentration of the soymilk base using ultrafiltration (developed by Tech-Sep) [also a DTD patent!] and continuous dosing of the calcium sulfate coagulum, developed and patented by S.E.R.E.A. and equipment built by Steachma.

Simultaneously with coagulation, spices, herbs, vegetables, etc. are added. The total production is sold to the diary industry, which markets and distributes the products.

The article ends by noting that large companies like Alfa-Laval and Nestle are interested in soybean utilization and many soymilk products are currently marketed by Celia, Triballat, and Est Lait dairy groups in France.

Black-and-white photos show: (1-4) Equipment inside the Innoval plant. (5) Several Innoval products, incl. Inno Fun. (6) An exterior view of the Innoval plant, with details about two companies: (1) Innoval–Address: Allée Joule, Les Auréats, 26014 Valence cedex. Director: M. Pastonnier. Asst. Director: Mr. Reynaud. Capital: 4.8 million francs, of which 70% is Silos de Valence and 28% is financial establishments. Personnel: 10. Expected transformation in 1989: 700 tonnes of grains. (2) Les Silos de Valence–Cooperative of cereal grain producers with capital in 1987 of more than 100 million francs. *Remise d'adherents:* 5,300. *Producteurs outils:* 1,130. Personnel: 21. (7) Messrs. Tocart, Steachma,

and Toulouse. (8) The front gate. Address: Ingénieur agro-alimentaire [France].

5782. Doborjan, Karolyne; Goenczi, Ildiko. comps. 1989. Eteleink szojaval. Masodik kiadas [Our soya foods. 2nd ed.]. Budapest, Hungary: Feherjetechnologiai Tudomanyos Termelesi Egyesules (Association for Protein Research Technology and Production). 48 p. [Hun]
• ***Summary:*** This is a soyfoods cookbook, compiled by two Hungarian women, with recipes using tofu, soymilk, and TVP.

Contents: Introduction. I have prepared it and enjoyed it: List of products and first courses. Soups. Main courses. Desserts, candies and cakes. Beverages. The introduction gives a short account of the aim of the booklet: to serve as a guide for the reader to the use of different soy products. Address: Budapest XII., Goldmark K. u. 3. Budapest Pf: 340 1536, Hungary. Phone: 155-52-02.

5783. **Product Name:** So Good Soya Milk [Regular, or Sugar-Free Organic].
Manufacturer's Name: Haldane Foods Ltd. (Importer-Distributor). Made in Australia by Sanitarium Foods.
Manufacturer's Address: 25 Hayhill, Sileby Road, Barrow upon Soar, Leicestershire LE12 8LD, England. Phone: 050981-6611.
Date of Introduction: 1989.
Wt/Vol., Packaging, Price: 1 liter Tetra Brik Aseptic carton. Retails for £0.69.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Haldane Foods Group catalog and price list. 1989. Oct. 2. This product is listed in both documents under the Haldane Foods Ltd. product line. A color photo in the catalog shows the label (1 liter carton). It has black lettering and vertical stripes on a white background. On the front panel is am impressionistic sketch of a snow-capped mountain in the distance with several soybean plants growing in the immediate foreground.

Talk with Philip Marshall of Cauldron Foods. 1990. July 9. Haldane's soymilk used to be called Sojal. They may have lost the fight over the name. It is very likely that the Haldane group has this product made by some company outside of the group. They do not have the equipment needed to make a quality soymilk. There is no connection with Sanitarium Foods in Australia.

5784. **Product Name:** Tofu, Soy Milk, Tempeh, Soy Ice Cream, Soy Punch.
Manufacturer's Name: Natural Cafe. Expanded to include La Soyarie by June 1994.
Manufacturer's Address: Mailing address: 73 Chaussee Rd., Castries, St. Lucia, West Indies. Plant: Union Hilltop Choc, Castries. Phone: 809-452-6421.
Date of Introduction: 1989.
New Product–Documentation: Plenty International. 1994. Jan. A Guide to Growing and Using Soybeans for Food. p. 30. This company makes fresh soyfoods.

Form filled out by Johnson Clarke, Manager. 1994. May 25. The plant is now located at Union Hilltop Choc, Castries, and the phone number is 809-450-2570. The company was founded in 1989. The founders were Johnson Clarke, Maya Clarke, and Ignatius Longville. The original purpose was to work as a group to produce high-quality foods at an affordable price and to educate the populace about soybeans. There have been no changes in the company address or ownership. Milestones: (1) When Johnson built a proper structure of concrete for processing; and (2) When CIDA (Canadian International Development Agency) gave the group a grant to purchase some equipment in 1991. Reasons for success: "I am the only person on the island that is processing [soybeans] on a commercial scale, and I take pride and joy in what I'm doing." The company makes tofu, soy milk, and tempeh, and it buys and markets Vitasoy soymilk, miso, soy oil, Mori-Nu tofu, and soy powder. They make about 100 lb/week of tofu, and they use about 7 gallons of soy milk to make soy ice cream and soy punch. The company's three best-selling products (in descending order of dollar value) are tofu, soy punch, and soy ice cream. The company now employs 6 people. Their factory is 14 x 30 feet. Offices are in a separate building. Net sales last year were "not much" and the net worth of the business is "not much." "We are a small group of six and just making ends meet. We still have a long way to go in making the population of St. Lucia realize the true potential of soybeans. I don't know if we can continue since were are poorly equipped for processing the beans and packaging the products to sell at supermarkets and shops. We are presently selling only at one small outlet we own. We could sell at hotels, supermarkets, and shops if we had proper packaging equipment such as a vacuum packer." Note: This is the earliest known commercial soy product made in St. Lucia.

5785. **Product Name:** Sanitarium So Good: Flavoured Non-Dairy Soy Drink [Strawberry, Jaffa {Chocolate & Orange}, Honeycomb, or Caramel].
Manufacturer's Name: Sanitarium Health Food Co.
Manufacturer's Address: 148 Fox Valley Rd., Wahroonga, N.S.W. 2076, Australia.
Date of Introduction: 1989.
Ingredients: Jaffa: Water (80.0%), soya isolate (3.7%), sugar (3.7%), vegetable oil 3.2%, maltodextrin 2.8%, fructose (1.7%), mineral salts, vitamins, flavours, food acid, colour.
Wt/Vol., Packaging, Price: 250 ml Combibloc Aseptic carton. Retails for $0.75 (10/93, Walnut Creek, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 250 ml.: Calories 178 (or 750 kJ), protein 8.0 gm, fat 8.0 gm, carbohydrate (total 19.7 gm, sugars 13.7 gm,

lactose 0 gm), cholesterol 0 gm, sodium 137 mg, potassium 350 mg. Provides 40% of the Daily Allowance of calcium and 35% of vitamin B-12.

New Product–Documentation: Letter and Labels sent by Sanitarium Health Food Co. 1990. June 25. Gives product introduction date as 1989.

Sanitarium Nutrition Education Service. 1990. April. "So Good." This 4-page leaflet gives a clear explanation of each ingredient used, plus nutritional and other information.

Product with Label (Jaffa and Strawberry flavors) purchased at Diablo Oriental Foods in Walnut Creek, California. 1993. Oct. 11. Each retails for $0.75. 3 inches by 3 inches by 1.87 inches thick. Jaffa: Brown, reddish brown, orange, pink, blue, and red on white. Illustration of a large glass of pink soymilk with a straw in it. Beside it is an orange and two squares of chocolate. Behind it is the morning sun rising over purple mountains and green fields. Front panel: "Long lasting. No cholesterol. No lactose." Back panel: "So Good is an excellent source of protein. A 250 ml serve of So Good supplies 8g of vegetable protein. Another quality product from the Sanitarium Health Food Company–the people who believe that food should not only taste good, it should be good for you." Side panel: "So Good has no cholesterol, no lactose, and as much calcium as milk. Quality Guarantee: If you are not satisfied with this product, please send the top of the pack with your complaint to SRL Consumer Services... or to the nearest Sanitarium State office." Soyfoods Center taste test. Excellent. No beany flavor at all.

5786. Selck, K.W. 1989. Ein Beitrag zum Thema Imitationsprodukte. I. [A contribution on the theme of imitation products. I.]. *Deutsche Milchwirtschaft* 40(21):682-84. 4 tables. [Ger]*

• ***Summary:*** General discussion of the composition and nutritive value of the soybean, used in substitutes for milk and milk products. Focuses on the technical capabilities of soy proteins and soymilk.

5787. Selck, K.W. 1989. Ein Beitrag zum Thema Imitationsprodukte. II. [A contribution on the theme of imitation products. II.]. *Deutsche Milchwirtschaft* 40(22):710-12. 1 table. [15 ref. Ger]*

• ***Summary:*** Discusses the composition, consistency and nutritive value of soymilk and of okara.

5788. AB Tetra Pak. 1989. Tetra Pak. Lund, Sweden. 20 p. [Eng]

• ***Summary:*** "Contents: Tetra Pak–a uniquely specialized group of companies. Variations on a theme. The packaging material. The packaging machines. Complete packaging lines. Extended product life. Distribution. Research and development. Products of the future.

"Tetra Pak is the creation of Dr. Ruben Rausing: In 1951, when he started the family company in Lund, Sweden, he founded an enterprise which specialized solely in one-way beverage packaging systems... despite enormous growth, Tetra Pak remains family-owned with headquarters in Lausanne, Switzerland.

"Still widely used today, the Tetra Classic was introduced in 1952, the Tetra Classic Aseptic in 1961... the modular Tetra Brik, brick-shaped as its name implies, was launched in 1963; the Tetra Brik Aseptic followed in 1969 and is the world's most popular package for long-life liquid foods.

"The packaging material... is a laminate of paper, polyethylene and, for aseptic packages, aluminum foil. The material is printed by flexography, rotogravure or offset lithography, often in a magazine-style four-colour process with even the option of a fifth special colour. Paper makes the packages stiff. Plastic renders them liquid-tight, and aluminum foil blocks light and oxygen and permits induction sealing from the inside out... There are more than 5,000 Tetra Pak machines that are now forming, filling and sealing Tetra Pak packages.

"Of all the packages produced by Tetra Pak machines, two-thirds are used for aseptic filling. Milk products account for a large part of Tetra Pak's total aseptic package volume. The remainder contains a wide variety of products, including juice, still drinks, mineral water, table wine, soya products, coffee, tea, cooking oil, sauces and soups.

"Ultra-high temperature (UHT) treatment consists of a brief thermal shock 140-150ºC (284-302ºF) for 2-4 seconds. The product is then cooled quickly to room temperature and packaged aseptically." Address: Lund, Sweden.

5789. Blackman, Jackson F. 1989. Working chef's cookbook for natural whole foods. Morrisville, Vermont: Central Vermont Publishers. vi + 344 p. Illust. Recipe index by category. Alphabetical recipe index. 28 cm. [20 ref]

• ***Summary:*** This large-format book fills a gap in the world of natural foods. Contents: Foreword. Introduction. Part I: Information, philosophy, technique. 1. Healthy and unhealthy foods. 2. Getting started. 3. Meal design. 4. Directed diets for special occasions. 5. Philosophy, practice and tradition. 6. Charts and lists. 7. Ingredients description. At the end of Part I (p. 95) is a "Suggested reading" list of 20 references.

Part II: Recipes (each on 4x6 inch cards, with 2 cards per page).

The section on "Miscellaneous food description" includes brief descriptions of barley malt, Chinese white cheese (fermented tofu), daikon, gomashio, kuzu, mirin, miso, rice syrup, seitan, shoyu, soy milk (American style vs. Oriental style), soy cheese (American), tahini or tahinah (sesame butter), tamari, tempeh, and tofu. This section, and the book shows the influence of macrobiotics.

Page 74: "Chinese white cheese: (Chin.) Tofu marinated and fermented in rice wine; taste and texture of Camembert

cheese. Used as flavoring for noodles or vegetables, or served as a condiment."

The word "tamari" appears on 100 pages in this book, tofu on 92 pages, miso on 57 pages, brown rice on 48 pages, "sea vegetables" on 16 pages, nori on 13 pages, tempeh on 7 pages, kombu on 6 pages, shoyu and soybean on 5 pages each, adzuki beans and wakame on 4 pages each, and soybeans, soy cheese, and soy milk on 2 pages each.

About the author: "Jackson F. Blackman has lived and traveled extensively in Mexico, Belize, Guatemala, Europe, China, Egypt, Saudi Arabia, Libya, Lebanon, Jordan, and Syria. During his travels he studied local eating habits and their relationship to social customs, and the methodology of preparing natural whole foods. He was a sous-chef in a Houston [Texas] restaurant, and operated his own coffee shop in Houston. He then moved to Vermont, where he made and sold health food products to health food stores and co-ops. He is now a food service consultant and lecturer" (Rear cover).

He favors plant foods over animal foods, but does include fish in his recipes. Address: Vermont.

5790. Boeckenhoff, E.; Hamm, U.; Mueller, A.; Tschmarke, A. 1989. Nachfrageveraenderungen bei Milch durch Imitationsprodukte [Changes in the demand for milk caused by imitation products]. *Schriftenreihe des Bundesministers fuer Enaehrung, Landwirtschaft und Forsten "Angewandte Wissenschaft"* No. 317. 173 p. (Muenster-Hiltrup). [Ger]*
• ***Summary:*** This is the publication of a 1987 report on this subject.

5791. Bryan, Ford R. 1989. The Fords of Dearborn. Revised ed. Detroit, Michigan: Harlo Press. 301 p. 1st ed. 1987. [23 ref]
• ***Summary:*** Chapter 19, titled "Henry Ford's friend–Dr. Carver," discusses Ford's work with farming and soybeans and the Carver Laboratory at Dearborn.

"Henry Ford was intensely interested in agriculture, although he seems to have been somewhat at odds with the horse and the cow. As soon as Mr. Ford began to realize a significant profit from the manufacture of automobiles (1909), he began to buy land and operate farms in the Dearborn area. With money to spend, he immediately accelerated his experiments with a farm tractor designed to replace the horse, and with a large ultra-modern dairy farm, started experiments with milk and milk products."

"When the Dearborn Water Works ceased pumping water in the early 1930s, Mr. Ford was concentrating on Greenfield Village. Within the Village grounds a chemical laboratory and a greenhouse were built... Robert Boyer was put in charge of the Chemical Plant. Mr. Ford's stated objective was to 'find industrial uses for farm products... In a separate building near the Engineering Laboratory in Dearborn, Dr. Edsel Ruddiman, Henry's boyhood schoolmate, was working with wheat, soybeans, carrots and tomatoes to 'make milk without a cow.'

"In 1932 [sic, Dec. 1931], Mr. Ford issued orders to concentrate on the soybean. His tractors began to plant and harvest thousands of acres. In a 25-acre field on Greenfield Village property some 500 experimental varieties of soybeans were grown. In September, 1932, Dr. Ruddiman and Mr. Boyer attended the American Soy Bean Association Convention in Washington, D.C. That year the Village Chemical Plant was extracting six tons per day of soybean oil. The Rouge started with twenty-four tons a day, followed by Milan and Saline Plants. These industries utilized the oil in making paints and plastics. The small Village Plant led the parade, however, with soybean milk, bread, ice cream and an experimental plastic car (chassis excluded). The soybean foods became standard fare at the Ford plant cafeterias and at Ford Hospital. The ice cream–most delicious–was for years sold as Del(icious) Soy(bean) Topping.

"In May, 1935, Mr. Ford hosted the First Dearborn Conference of the National Farm Chemurgic Council. This was the charter meeting of some 300 agricultural chemists who, in Mr. Ford's replica of Independence Hall, signed a 'Declaration of Dependence Upon the Soil.' Again, in 1936, the same group met in Dearborn and Dr. Carver, then the Director of Research at Tuskegee Institute, was invited to attend. Mr. Ford visited with him in his suite at the Dearborn Inn. This is perhaps the first time the two had met in person. Dr. Carver now had a very competent research assistant, Mr. Austin W. Curtis, Jr...

"Mr. Curtis spent a summer (ca. 1940) in Dearborn working with Robert Boyer in The Soybean Laboratory. During these years, reports of research being conducted in Dearborn by R.H. McCarroll, Robert Smith and Robert Boyer were being forwarded to Dr. Carver...

"The Fords traveled to Tuskegee in March, 1941, where Henry and Clara dedicated the Carver Museum, inscribing their names in the cement and donating soybeans and a variety of soybean plastic car parts to be placed in the cornerstone."

In July 1941 Carver visited Ford in Dearborn. A log cabin replica of Carver's birthplace was dedicated. On 21 July 1942 a laboratory building on 8.3 acres on Michigan Ave. was dedicated by Dr. Carver. Initially named the "Nutritional Laboratory" of the Ford Motor Co., it later became better known as the Carver Laboratory. Outside the building a greenhouse was added and the land beside the building was planted to corn, soybeans and potatoes. "Both Dr. Carver and Mr. Ford were firm believers in natural foods." The Laboratory, which eventually housed a staff of 25 under Mr. Robert A. Smith, went into volume production of soybean milk and ice cream. On 5 Jan. 1943 Dr. Carver died in Tuskegee.

The Carver Laboratory operated for at least a while after 1945 when Robert Smith left to go into business for himself,

and Clem Glotzhober took charge. After Mr. Ford died in 1947 the building was essentially abandoned. Address: Dearborn, Michigan.

5792. Cituk, Kathy; Finnegan, John. 1989. Natural foods and good cooking. Elysian Arts, 20 Sunnyside Ave. Suite A161, Mill Valley, CA 94941. 122 p. No index. 22 cm. [64 ref]
• ***Summary:*** This non-vegetarian cookbook contains considerable introductory information about and recipes using amazake (p. 16, 41, 56, 91, 98-99, 103), miso (p. 43), soymilk (p. 43), mochi (p. 44, 54), tamari soy sauce (p. 46), tofu (p. 46, 51, 80, 88, 96), tempeh (p. 46). Numerous references are made to a book by John Finnegan (1989) titled "Amazake Rice Nectar." Address: Mill Valley, California.

5793. Clergeaud, Chantal; Clergeaud, Lionel. 1989. La cuisine au tofu et lait de soja [Tofu and soymilk cuisine]. Paris: Equilibre aujord'hui. 95 p. Illust. 20 cm. Series: Cuisine et santé. [Fre]*
Address: Naturopathes–Ostéopathes, France.

5794. Dominguez de Diez Gutiérrez, Blanca. 1989. Datos biograficos de Blanca Domingues de Diez Gutierrez [Biographical sketch of Blanca Dominguez de Diez Gutierrez]. Mexico. 6 p. Unpublished manuscript. [Spa; Eng]
• ***Summary:*** Blanca was born on 8 Nov. 1919 in Comitan, Chiapas, Mexico. She was reared in California and Texas, and began undergraduate studies in biology and chemistry at Texas A&I University, Kingsville, Texas, before returning to Mexico to study philosophy and history at the National University of Mexico in Mexico City. She later studied art and art history at the Universidad Ibero Americana, Mexico City, and her interest in art led her to become a professional painter and art teacher for 16 years.

In 1972? Blanca became a disciple of Swami Pranavananda Saraswati, who has been twice decorated by the Mexican Legion of Honor for his humanitarian work and worldwide efforts for peace. Senora Dominguez has served as a lecturer and yoga instructor, and a President of the Yoga Center of Tapasthana at Tepoztlán, Morelos, Mexico (directly south of Mexico City). Since 1976 she has been incorporating yoga in the field of nutrition.

In 1976 she learned about the direct use of soya after reading *The Book of Tofu* by William Shurtleff and Akiko Aoyagi, founders of the Soyfoods Center in Lafayette (near San Francisco), California. Starting at the Yoga Center at Tepoztlán, Morelos, she introduced the soybean and its use in the state of Morelos, traveling from village to village, conducting workshops in schools and private homes. Her main goal was to introduce soymilk to children in rural schools. During 1977 Blanca was extremely active in her work with soya. In 1977 her first publication on soya appeared as a booklet titled "Los Mil Usos de la Soya" (*The Thousand Uses of Soya*) occupying an entire issue of the popular health magazine *Quadernos de Natura* by Editorial Posada. Shortly thereafter the magazine published 2 articles about Blanca's work, "The woman who is taking soya to the countryside" (April 1978) and "The Soy Cooperative" (1980). Then in Feb. 1979 her first major book was published. Featuring soyfoods and her system of nutrition based on soyfoods and whole grains, it was titled *Alimentacion Integral Para Una Vida Plena: Los Mil Usos de la Soya* ("Integral food for a fuller life: The thousand uses of soya"). This was followed by other books in Spanish: "Know your Feminine Potential" (1979?), "Sprouts and a balanced diet" (1983), "The art of eating," and a biography of Belisario Dominguez, Mexico's greatest civil hero.

In 1981 Blanca attended the Soyfoods Association of North American conference in Fort Collins, Colorado. In 1981-82, financed by the DIF (Desarrollo Integral de la Familia, or Family Integral Development) of Jalapa, Veracruz.

Between 1972 and 1978 Blanca made 3 extended visits to India to learn more about its culture and further her studies in Yoga. She enhanced her knowledge of grains and proper food combinations, and was invited by the Rotary Club of Erode, Tamil Nadu, India, to share her knowledge of the soybean.

Note: This biography consists of a Spanish-language version written in 1984 and an English-language translation of it, plus update, written in 1989. Address: Fundacion Mariposa A.C., Apartado Postal #21140, Mexico 04000 D.F., Mexico. Phone: 554-43-56.

5795. Eastham, Edmund J. 1989. Soy protein allergy. In: Robert N. Hamburger, ed. 1989. Food Intolerance in Infancy: Allergology, Immunology, and Gastroenterology. Carnation Nutrition Series, Vol. 1. *
• ***Summary:*** In healthy, non-allergic children, soy is generally less allergenic than cow's milk. Address: Dep. of Pediatrics, Harvard Medical School; Pediatric Gastrointestinal Unit, Massachusetts General Hospital; and Pediatric Dep., Cambridge City Hospital, Boston, MA.

5796. Food & Agriculture Organization (FAO). 1989. Utilization of tropical foods: Tropical oil-seeds. Rome, Italy: Food & Agriculture Organization of the United Nations (FAO). xiv + 82 p. 21 cm. Series: FAO Food and Nutrition Paper 47/5. *
• ***Summary:*** The 1st chapter, titled "Leguminous oil-seed crops, has these contents: Soybean (p. 1-35): The golden bean from China, varieties and production, soybeans in the tropics. Hydrolysis of soybeans using microbial enzymes. Nutritional and acceptability aspects of soybeans: Cooking characteristics, soybean flavour, digestibility of soybeans. Soybean processing in eastern Asia: Fermentation of soybeans. Fermentation inoculants: Koji and ragi, angkak and masam [a green fermentation starter from Nepal,

made from wheat and selected moulds], preparation of koji. Preparation of soy sauce: Traditional Japanese shoyu, other types of soy sauce. Fermented soybean pastes: Types of miso, preparation of miso koji, preparation of mame miso, preparation of hamanatto. Other fermented soybean products: Natto and thua nao. Indonesian tempe: Preparation of tempe ragi, production of tempe kedele, other types of tempe, domestic use and nutritional content of tempe. Foods fermented by molds: Role of moulds in food processing, food safety aspects. Non-fermented soybean products: Production of soy milk, improving soymilk flavour. Soybean protein products: Preparation of tofu, preparation of yuba. Soybean cheese products: Preparation of sufu ("The Chinese prepare a fermented soy curd called *sufu,* which resembles a moulded, soft-texture cheese." Red sufu is made using "red rice koji" (angkak)). Use of soy milk and tofu residues: Preparation of oncom tahu, preparation of meitauza. Use of soybean sprouts. Soybeans as a cash crop. Soybean as an oil-seed: Problems of small-scale extraction. Solvent extraction of soybean oil: Economic aspects, extraction process, refining operations. Nutritional and organoleptic aspects of soybean oil. Commercial production of vegetable fats and oils: Solid shortenings, effects of hydrogenation, hardness of fats. Margarine production: Composition of margarine, manufacture of margarine. Production of soybean grits and flour. Commercial production of soybean protein products: Protein concentrates, protein isolates, economic aspects. Introduction of soyfoods at the village level: Snack foods, vegetable relish, pastes and flour. Preparation of soybeans at the village level: Reducing bitter flavours, preparation of soybean flour. Prospects for soybean products in the tropics.

Concerning the preparation of sufu (p. 21): "... the cubes [of tofu] are drained and heated for about 15 minutes at 100ºC to sterilize them. The sterilized cubes are cooled, placed on trays, and inoculated with one of the following fungi: *Actinomucor elegans, Mucor lienialis,* or *Rhizopus chinensis* var. *chungyen,* depending on the type of 'cheese' to be produced. They are then incubated at 12-20ºC for three to seven days. At that stage, the cubes become covered with a white mycelium and are known as *pehtzu* [*pehtze*].

"In the final stages, the cubes of *pehtzu* are transferred to ageing tanks, where they are immersed in a mixture of rice wine and salt, 2-5% sodium chloride, for forty to sixty days. The alcohol content of this 'dip' (approximately 10 percent) is much higher than that normally obtained by anaerobic fermentation using osmophyllic [osmophilic] yeasts. The final product, after completing the ageing period, is soft and pale yellow, with a pleasant taste and aroma. It is often served with sesame oil. More pungent cheeses are prepared by related processes, by adding other components to the final brine solution. These may include red rice koji, fermented rice mash, anise or pepper. An outline of a preparation from Thailand, using red rice koji to give a red sufu is shown in Figure 3" (a flow sheet, p. 22; Source: Narudom Boon-Long. 1983. "Traditional fermented food products." United Nations University (UNU) Workshop Paper, CFTRI, Mysore, India).

The peanut from Peru (p. 36+).

5797. Hoshijo, Kathy. 1989. Kathy cooks: Vegetarian, low cholesterol. New York, NY: Simon & Schuster (A Fireside Book). 728 p. Illust. Index. 24 cm.

• ***Summary:*** Previously published as *The Art of Dieting Without Dieting* (1986). A whopper of a cookbook, with 350 easy-to-prepare vegetarian recipes from the star of the PBS television series "Kathy's Kitchen"–which airs in 180 cities nationwide. Each recipe contains a detailed (full-page!) nutritional analysis.

This book contains a wealth recipes using tofu, tempeh, soymilk, miso, and whole soybeans.

5798. ISCAH (Instituto Superior de Ciencias Agropecuarias de la Havana) Video. 1989. La soya–Mito o realidad en la agricultura Cubana [The soybean–Myth or reality in Cuban agriculture (Color videotape)]. Agricultural College of Havana, Cuba: ISCAH. 17 minutes. [Spa]*

• ***Summary:*** This film was shown at agricultural cooperatives, schools, and ministries; it was not shown on television. Some 200,000 tons of soybeans are now being imported to Cuba. The rhizobium bacteria on soybean roots fix nitrogen in the soil, thus creating biofertilizer and reducing imports of commercial fertilizer. This biofertilizer works for both crop rotation and intercropping. Research on soybeans is being conducted at INCA (*Instituto de Ciencia Agricola*), the research center for agriculture in Havana, under the Ministry of Higher Education.

In 1986 some 138 co-operatives planted soybeans. These were mainly vegetable, dairy, or citrus enterprises located in 34 principalities in 6 provinces. Some of the soybeans were mixed with bagasse from sugar cane for use as animal feeds. In Cuba, one *quintale* (pronounced keen-TAL-ay) = 100 pounds weight. Sacharina is a type of bagasse which may include soya. Soya is called "green gold," because it requires low agricultural inputs, brings much profit, and is the world's least expensive source of protein. Photos show commercial soy products: (1) Taoro, a type of soy sauce (*salsa de soya*) presently made in Cuba. (2) Three flavors of bottled soymilk, which is good for infants allergic to cow's milk. (3) Soy yogurt in 1 liter bottles.

Some very interesting archival film footage shows Fidel Castro speaking on 3 April 1959 at the opening of a vegetable oil plant in Cuba. This was the first industrial enterprise in Cuba built after the Revolution. After cutting the ribbon, Fidel says: "We are going to start preparing the way for the planting of soybeans, so that we don't have to import any more from abroad." The video narrator then adds: "After 30 years of this, we think that there are no technical limitations to the development of this crop which can today prevent us from turning Fidel's words into reality." Address:

Havana, Cuba.

5799. Kadam, S.S.; Adsule, R.N.; Salunkhe, D.K. 1989. Utilization. In: D.K. Salunkhe and S.S. Kadam, eds. 1989. CRC Handbook of World Food Legumes: Nutritional Chemistry, Processing Technology, and Utilization. Vol. III. Boca Raton, Florida: CRC Press, Inc. 323 p. See p. 271-310. [188 ref]

• ***Summary:*** Contents: Introduction. Whole beans: Whole beans as a food, milk and milk products (incl. soymilk, tofu, kori-tofu, soyogurt, tairu [fermented soymilk in Malaysia], fermented soy cheese), microorganisms, nutritive value, fermented soy cheese, beverage, yogurt, other products, fermented foods, microorganisms, physicochemical changes, nutritional composition and quality, toxicological aspects, preparation, microorganisms, chemical composition, nutritional value. Cotyledons: Traditional products, soups, fermented foods, confectionery products. Flours: Composite flours (incl. soy flour), papad, pasta, traditional products.

Note: According to the author's definition: "A papad is a thin, wafer-like product, usually circular in shape, rolled from a legume-based dough and other farinaceous materials, with added salt, spices, and condiments. In India it is either toasted or deep-fat fried to a crispness which produces a crackle when *papad* is eaten. Papads are also known as "appalam" in south India... Black gram flour is the most indispensable constituent of *papad* dough because of the mucilaginous substance it contains." Address: 1-2. Dep. of Biochemistry, Mahatma Phule Agricultural Univ., Rahuri, Maharashtra, India; 3. Dep. of Nutrition and Food Sciences, Utah State Univ., Logan, Utah.

5800. Leneman, Leah. 1989. The single vegan: Simple, convenient and appetizing meals for one. Wellingborough, Northamptonshire, England: Thorsons Publishing Group. 127 p. Illust. Index. 21 cm.

• ***Summary:*** Vegan recipes for one, grouped seasonally, and within each season by day of the week, with weekly shopping lists and staples to be kept on hand. Soy-related recipes include: Smoked tofu à la king (with smoked tofu and soymilk, p. 21). Strawberry cheese (with plain soy yogurt, p. 29). Spaghetti stir-fry (with tofu, p. 34). Mediterranean-style potato salad with yogurt dressing (with soy yogurt, p. 37). Savoury mushroom bake (with tofu, soy yogurt, and miso, p. 38). Tofu and green pepper savoury (p. 44). Bean and potato salad (with soy yogurt and vegan mayonnaise, p. 47). Courgette (zucchini) and tomato flan (with tofu, p. 48). Tofu and vegetable stew (p. 51). Tofu pot pie (p. 53). Scalloped tofu au gratin (incl. soymilk, p. 58). Nasi goreng (with tofu, p. 63). Chilled cream of tomato soup (with soy yogurt, p. 65). Cream of cauliflower soup (with soymilk, p. 69). Scrambled tofu and leek (p. 79). Irish stew with frozen tofu (p. 84). Tempeh and sweetcorn roast with tahini/mushroom sauce (p. 92-93). Tempeh and mushroom stew on a mashed potato base (p. 98). Sweet tofu 'omelette' (incl. soymilk, p. 105). Curried tofu (p. 107). Mushroom miso gravy (p. 115; shows a pack of Sunwheel brown-rice miso). Tropical blancmange (with soymilk, p 116).

Note: Soymilk and soy sauce are used in small amounts in many other recipes. This book is distributed in the USA by Sterling Publishing Co. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

5801. Leneman, Leah. 1989. Slimming the vegetarian way. Revised and reset ed. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 144 p. Index. 20 cm. 1st. ed. 1980.

• ***Summary:*** The menus in this natural-foods, vegan cookbook are designed for 1 person and the daily calories intake is kept at about 1,000 calories. The book takes a positive attitude toward dieting by focusing on those foods you can eat, rather than those you should avoid. Each "menu" consists of breakfast, lunch, and dinner for 1 day. For each meal there is one column for Imperial (Metric) measurements, one for American measurements, and one for calories, with a calories for each meal and for the day. There are menus for each of the four seasons plus chapters on crash diets, desserts, and a vegetarian wholefood calorie chart.

The preface to the new edition notes: "The greatest change which has occurred since the first edition of this book appeared has been the phenomenal proliferation of soya foods (soyfoods in American parlance). Tofu is arguably the best friend a slimmer ever had, for no other food so low in calories and high in protein is as versatile as tofu. Tempeh is another fine soya food for slimmers, though as it is not as readily available as tofu, I have confined its use to only one recipe. Since soya milk and yogurt are now so easy to obtain, I have given them as alternatives to the dairy versions, so that vegans, and others trying to cut down on dairy produce, will be able to use the book in the same way as lacto-vegetarians."

Soy-related recipes include: Pineapple tofu salad (p. 36). Tofu celery loaf (p. 39). Tofu-stuffed aubergine (eggplant, p. 66). Scrambled egg or tofu, sausalata and tomato (p. 89, 118). Tofu slices on toast with creamy gravy (p. 98). Miso soup with tofu (p. 102). Spaghetti with tempeh and mushroom sauce (p. 127). Vegetable charlotte with smoked tofu (p. 129). Soya milk and soya yogurt are always listed as alternatives to skim milk or yogurt from cows. TVP is used as an ingredient in many recipes, and "Tamari (soy sauce)" is widely used as a seasoning. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

5802. Massey, Robert C.; Taylor, David. eds. 1989. Aluminum in food and the environment. Royal Society of Chemistry, Distribution Centre, Blackhorse Road, Letchworth, Herts., SG 1HN, England. 108 p. Proceedings of a conference held 17 May 1988 in London. Subject index.

21 cm.
• ***Summary:*** This 1-day conference was organized by the Environment and Food Chemistry Groups of the Industrial Division of the Royal Society of Chemistry. A review by SoyaFoods (Dec. 1990) notes: "Current interest in the possible health risks from human exposure to aluminium, particularly in the UK and U.S., has led to a continuing debate on the subject of aluminium in the diet. This publication looks at the possible adverse health effects associated with aluminium and reviews the evidence for aluminium's involvement in dialysis dementia and Alzheimer's disease. It also discusses the biochemical mechanisms by which aluminium may effect the brain tissue and describes the dietary sources of exposure to aluminium. Leaching of aluminium from cookware and the use of aluminium in packaging is also covered.

Contents: Aluminium in food and the environment, by J.R. Duffield and D.R. Williams. Aluminium toxicity in individuals with chronic renal disease, by W.K. Stewart. Aluminium and the pathogenesis of neurodegenerative disorders, by J.A. Edwardson, et al. An epidemiological approach to aluminium and Alzheimer's disease, by C.N. Martyn. The chemistry of aluminium and silicon within the biological environment, by J.D. Birchall and J.S. Chappell. The determination of aluminium in foods and biological materials, by H.T. Helves, et al. Aluminium in foods and the diet, by J.C. Sherlock. Aluminium in infant formulae and tea and leaching during cooking, by M.J. Baxter et al. The use of aluminium–especially as packaging material–in the food industry, by H. Severus. Address: 1. Ministry of Agriculture, Fisheries and Food, Norwich, England; 2. Imperial Chemical Industries PLC, Brixham, England.

5803. Meetings with remarkable men and women: Interviews with leading thinkers on health, medicine, ecology, culture, society, and spirit. 1989. Brookline, Massachusetts: East West Health Books. xiv + 296 p. Illust. No index. 26 cm. Introduction by Tom Monte.
• ***Summary:*** This book consists of excerpts of 87 interviews previously published in *East West Journal.* One of these is an interview (published Jan. 1977) with Bill Shurtleff about soybeans and soyfoods, including soymilk, Vitasoy, and tofu (p. 58-60). Address: Brookline, Massachusetts.

5804. Ogundipe, H.O.; Dashiell, K.E.; Osho, Sidi M. 1989. Soymilk yield and quality as affected by soybean varieties and processing techniques. *Tropical Grain Legume Bulletin* No. 36. p. 12-14. [6 ref]
• ***Summary:*** Seeds of nine soybean varieties were made into soybean milk; the milk yield and protein content (%) were determined, then sensory evaluations were conducted. A significant difference was found among the varieties for soymilk yield and acceptability, but no significant difference for protein content.

In a 2nd experiment seeds of five different soybean varieties were made into soymilk using five different processing techniques: (1) Hot extraction (Intsoy method). (2) Cold extraction. (3) Use of sodium bicarbonate. (4) Delayed filtration. (5) Use of Kanun (a local tenderizer). No one technique gave the best acceptability using all varieties of soymilk. For all varieties, cold soaking for 24 hours have the highest soymilk yield, whereas delaying filtration for 2 hours gave the lowest soymilk yield. Address: 1-2. International Inst. of Tropical Agriculture (IITA), Ibadan, Nigeria; 3. Inst. of Agricultural Research and Training (IAR&T), Ibadan, Nigeria.

5805. Pearce, Anna. 1989. Simply living: the story of Compassion and the wonderbox. Saffron Walden, Essex, England: Box Publications in association with the Self Publishing Association. 239 p. Illust. 23 cm.
• ***Summary:*** This is a remarkable book about small things, real people, ideas, successes and failures. It is about the Kingdom of Heaven–and a case study of community development in South Africa.

Compassion is an organization through which people help those in need. A Wonderbox is a box out of which come wonderful things, somewhat like a hat produces wonderful things for a magician or conjurer.

Chapter 12, "Soya beans," begins: "It was appropriate that our most creative period could be traced back to a visit to Cape Town by Peter and Eileen Caddy in April 1977. They were the two people who had founded Findhorn in Scotland in 1962. They had been led to the Findhorn Caravan Park by guidance that Eileen received while meditating." The Caddys talk about the guiding light within that will guide anyone who is able to quiet their thoughts sufficiently to hear what it has to say. He had hardly finished speaking when a soft-spoken women came up to the author and said, shyly, "'I hope you don't mind but I feel there is something I have to pass on to you.'

"We introduced ourselves. She was Dorothy Beaumont, who had been living in Rhodesia. Her husband, who had recently died, had been a farmer. Five years ago they had started growing soya beans on their farm. Two years ago, Dorothy told me, she had been in a wheel chair, crippled with arthritis. A naturopath had advised her to give up all animal products and to get her protein from beans and pulses instead. A friend taught her how to make soya milk, not only for herself but for their African laborers as well. She felt she had to pass on the way of making soya milk and using the residue [okara], which she did–in the kitchen of St. Margaret's Church at Fish Hoek. "I did not realize at that stage how extraordinary it was that she picked me out of several hundred other people that she might have approached." Various members of Compassion also attended. The process is described. As Dorothy was making the soya milk she explained how the Chinese also make tofu

out of soya milk, and how they can slice and fry it for use instead of meat. She said that soyabeans had been exported from Rhodesia to China and to Holland. Then Holland had exported dried soya milk to South Africa. Yet "when the Chinese were building the Tanzanian railway line went through Southern Africa, barrels of Tofu were off-loaded at the docks for the Chinese to eat. Dorothy explained that soya milk was "very suitable for giving to babies with 'runny tummies,' as these were often caused by a shortage of protein. In addition it contained no lactose which, for some people, was difficult to digest." After making the soymilk, Dorothy used the residue [okara] "to make delicious soya pancakes that won us all over to soya–as it was with people to whom we demonstrated in the following years."

Jill Fletcher, who worked for a radio station outside South Africa, interviewed Dorothy on her programme, "The Voice of the Gospel."

Jill and her husband Tony Fletcher, who was first class puppeteers, used a tape recording of this program to introduce people to soya and to show them how to make soya milk.

"One of the big advantages of soya beans was their incredible cheapness, once we had found somewhere to buy them." Soon the author and co-workers were experimenting with soya recipes; they made "cakes and puddings, milk shakes, yoghurt, cream-cheese and coffee. The first time she managed to fool her husband "was when he drank a mid-morning cup of coffee without realizing it was soya." She fooled him again with soya rissoles, but he was pleased and said she could give them to him every day of she wished. "It was quite comforting to find that nearly all husbands were like mine as far as soya beans were concerned."

But South African women were not so willing to try soya recipes. A large photo (p. 61) shows Mrs. Mbatani making soya milk for one of her grandsons.

The term "soya coffee" appears on pages 70 and 77. On page 70 we read: "We were amazed to hear that soya coffee was being given to babies in Illingi instead of what we had considered other near-perfect baby food or 'milk' that could be made from the beans." A Quaker doctor, who was always able to get expert opinions, said that it should be all right."

Chapter 16 is titled "Kay Simmons." Page 77 states: "The last to come out [of the Wonderbox], and perhaps the most impressive course, was Christmas pudding with soya custard. This was followed by coffee with soya milk for those prepared to try it. We thought we would be taking things too far if we offered them soya coffee with soya milk!

"The Christmas pudding, made with soya beans, was our own original recipe and it became a lasting favorite for demonstrations."

The ten appendixes include (p. 225-36): 1. Advantages of a Wonderbox. 2. Cooking with a Wonderbox. 3. Making a Wonderbox. 4. Cooking soya beans. 5. Making soya milk. 6. Soya for babies.

5806. Rakosky, Joseph, Jr. 1989. Protein additives in foodservice preparations. New York, NY: Van Nostrand Reinhold. An AVI Book. xiv + 258 p. Illust. Index. 24 cm. [187 ref]

• ***Summary:*** Contents: 1. Protein additives: Use and regulations. 2. Proteins, amino acids, and derivatives. 3. Nutritional considerations. 4. Functional properties and economics. 5. Bakery products. 6. Pasta products. 7. Processed meats. 8. Dairy-type applications: Introduction, regulatory aspects (filled milk, casein and caseinates), dairy products: modified and/or simulated, beverages (filled milk, soymilk, soymilk preparations), coffee whiteners, whipped toppings, frozen desserts, cheese analogs, tofu. 9. Dietary and miscellaneous uses. This book discusses both animal and vegetable proteins. Among the vegetable proteins, it focuses mostly on modern soy protein products–soy flour, soy protein isolates, concentrates, textured soy protein products–and gluten, however information is also given on tofu (p. 187, 211, 225-27) and soymilk (p. 187, 192-95), especially in chapter 8, "Dairy-type applications."

Concerning regulation of casein and caseinates, p. 190 notes: "Almost all casein produced until the later 1940s was for industrial application, such as glue and paper coating (Reed 1974). Most persons accepted casein as an industrial product rather than an edible dairy product; it was generally considered a chemical derivative. Later, as Reed (1974) pointed out, improved processing and developments changed this. Today, an estimated 60 to 70 percent of the casein produced is for edible use in the form of casein or caseinates.

"Since caseinates were designated chemical products, formulations using caseinates were considered nondairy-hence, the appearance of 'non-dairy creamers' and 'non-dairy toppings.' Many feel that this is misleading because many people want to know whether a milk protein is present for religious and/or medical reasons. Present FDA policy still allows the use of caseinate in nondairy creamers, but they recommend that the ingredient statement show, in parentheses, that the caseinate is derived from milk (Sheeler/Sheeles 1985, personal communication)."

Concerning whipped toppings (p. 200-203): "Whipped toppings are formulated to simulate whipped dairy cream. Their widespread use in foodservice began when certain benefits were realized: convenience, eye appeal, stable structure, good shelf life, wide acceptance, and low cost. There is also an appeal for those people who prefer nondairy products for one reason or another.

"The typical topping formulation is composed of fat, protein, sugar, sweetener, stabilizer, emulsifier, buffering salts, and, in some cases, artificial color and flavor. The formulation is very much like the formulation for a coffee whitener except that toppings have more fat. There are also minor differences in proportions of the other ingredients. As with coffee whiteners, each ingredient has a specific

requirement placed on it." The requirements for each ingredient are then discussed in detail. Concerning protein: "Protein serves two emulsification functions in toppings: as an emulsifier of fat and as an emulsifier of air. As with coffee whiteners, protein also contributes to body and taste. Any number of protein products can be used. In the early days of development, the two most used protein products were caseinates and nonfat dry milk (NFDM)." NFDM was generally found to give the best results. However since soy processors "learned how to obtain more desirable products for this use, they are now more competitive with dairy-derived additives. This is especially so as the price of dairy products rises. or this reason, more functional nondairy protein products are being produced and utilized in dairy simulated products." Address: Food Industry Consultant, J. Rakosky Services, Morton Grove, Illinois.

5807. Sahm Yook Korean Foods. 1989. [Sahm Yook Soymilk Products (Leaflet)]. Chunwon-gun, Choongchungnam-do, South Korea. 1 p. One sided. 19 x 25 cm. Color photo. [Kor]
• ***Summary:*** A photo on the front shows 5 packages of soymilk and a glass of soymilk surrounded by fresh green vegetables and mikan oranges. The back shows a young lady with a Western-style hairdo holding a Tetra-Brik carton of Sahm Yook Soy Milk. The three foil pouches are displayed nearby. Ways of using the product are described with cartoons below. Other photos show two cans of gluten products, Vegeburger, and Vegemeat. Address: 320 Panjeong-ri, Jiksan-myun, Chunwon-gun, Choongchungnam-do 333-810, South Korea.

5808. Sherlock, J.C. 1989. Aluminum in foods and the diet. In: R. Massey and D. Taylor, eds. 1989. Aluminum in Food and the Environment. Royal Society of Chemistry, Distribution Centre, Blackhorse Road, Letchworth, Herts., SG 1HN, England. 108 p. See p. 68-76. Proceedings of a conference held 17 May 1988 in London. [26 ref]
• ***Summary:*** Contents: Introduction. Aluminium in foods: Aluminium in milk and infant formulas. Normal dietary intake of aluminium: Factors affecting intake (aluminium from cookware, additives, antacids, soil contamination, bioavailability). Conclusions.

Concerning aluminium in milk and infant formula: In Japan, soybeans were found to contain about 12 mg/kg which is at the upper end of the concentration range reported for aluminium in vegetables. Infant formula containing soya has high concentrations of aluminium, up to nearly 1 mg/kg on a fresh weight basis. "Conclusions: Aluminium concentrations in commonly consumed foods are generally less than 10 mg/kg and average intakes of aluminium in 5 countries are about 5 mg/day. Aluminium concentrations in cows' milk, breast milk and infant formula are similar and are generally less than 0.1 mg/kg. The presence in food of aluminium from cookware is most unlikely to have a major effect on dietary intakes of aluminium. There is a need for information about aluminium absorption by man and the factors which affect it." Address: Ministry of Agriculture, Fisheries and Food, Great Westminster House, Horseferry Road, London, SWIP 2AE, England.

5809. Simpson, J.A.; Weiner, E.S.C. 1989. The Oxford English dictionary. 2nd ed.: Almond milk. Oxford, England: Clarendon Press. *
• ***Summary:*** (1) "1430–Recipes in Babees Book. Take Almaunde Milke & yolkys of Eyroun." Notes–In modern English: "Take almond milk and egg yolks." *Babees Book: Medieval Manners for the Young,* was edited by Frederick James Furnivall. The first character of the word *yolkys* (pronounced YO-kus) is not actually a *y* but an ancient orthographic character called a "yogh," that looked liked somewhat like the number 3 and was sounded like a guttural *y. Eyroun* means "eggs" in a dialect of English.

(2) "1598–Hakluyt–Voy. I. 97. It leaueth behind it a taste like the taste of almond milke." Notes–*Hakluyt's Collection of the Early Voyages, Travels, and Discoveries of the English Nation.* Volume 1, p. 97.

(3) "1678–Andrew Marvell–To Dr. Witty. The doctor doth stint [confine] them to cordials, almond-milk and broth."

Note: In the USA, almonds typically ripen and mature at the end of summer. But Lent is in March or April. So the almonds would have to be stored for 8-9 months if they were to be used in Lenten dishes. Address: England.

5810. Simpson, J.A.; Weiner, E.S.C. 1989. The Oxford English dictionary. 2nd ed.: Soya. Oxford, England: Clarendon Press. [10 ref]
• ***Summary:*** The earliest entry is in 1679 from John Locke's *Journal* in Lord King's *The life of John Locke,...* (1830). There are also attributive definitions and examples for soya flour (1930, 1951), soya meal (1968), soya milk (1977), soya oil (1917), soyaoil (1982), soyaburger (1953, 1974), soya link (1965), soya sausage (1971). Address: England.

5811. *SoyaScan Notes.* 1989. Terms related to soyfoods, soybeans, and the soybean industry: Library of Congress subject headings and call numbers (Overview). Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Two different types of call numbers are used by American libraries for cataloging their books. Most larger libraries use the Library of Congress call numbers (LC numbers, which start with two letters) and many smaller libraries use the Dewey Decimal System (Dewey numbers, which contain only numbers).

The following are from the Library of Congress Subject Headings (12th ed. 1989) and the Library of Congress Classification Schedules. The first edition of Class S (Agriculture), for example, was published in 1911, and the

4th edition in 1982. BT = Broader terms. NT = Narrower terms. UF = Use for. May Subd Geog = May subdivide geographically, e.g., Soy sauce industry-Japan.

Class H is Social sciences and economics. Class Q is science. Class S is agriculture (SB is plant culture. SB205 is field crops, legumes). Class T is technology (TX includes nutrition). Class Z is bibliography and library science.

HD9000-HD9019 Natural foods industry
Shortenings–Use oils and fats, edible.
HD9235.S6-.S62 Soybean industry
HD9235.S6-.S62 Soyfoods industry
HD9235.S6-.S62 Soymilk industry
HD9330.S63-.S633 Soy ice cream industry
HD9330.S65-.S653 Soy sauce industry
HD9330.T68-.T683 Tofu industry
HD9490 Soybean oil industry
QK495.L52 Soybean botany
SB205.S7 Soybean culture (Incl. *Soybean Digest* and Soya Bluebook)
SB608.S7 Soybean–Diseases and pests
SF99.S Soybean as feed
SF99.S Soybean meal as feed
TP438.S36 Nattô manufacture
TP438.S6 Soy sauce manufacture
TP438.S6 Miso manufacture. BT Soybean as food. NT Cookery (Soy sauce or miso)
TP684.S Soybean oil
TX401.2.S69 Soyfoods nutrition.
TX558.S6 Nattô nutrition. BT Fermentation, Soybean as food, Soybean products.
TX558.S7 Soyfoods composition. UF Soybean as food. NT Miso, Natto, Tempeh
TX558.T39 Tempeh
TX558.T57 Tofu
Z5074.S73S5 Bibliographies related to soybeans, or all soya in various countries
Z5776.S63S5 Bibliographies on soyfoods
Z696.1.S68 SOYA (Information retrieval system)

The following soy-related terms have a subject heading but no LC call number: Miso industry, Natto industry, Soy sauce, Soybean flour, Soybean glue, Soybean meal, Soybean milk, Soybean products.

5812. Vaidehi, M.P.; Kadam, S.S. 1989. Soybean. In: D.K. Salunkhe and S.S. Kadam, eds. 1989. CRC Handbook of World Food Legumes: Nutritional Chemistry, Processing Technology, and Utilization. Vol. III. Boca Raton, Florida: CRC Press, Inc. 323 p. See p. 1-31. [208 ref]
• ***Summary:*** Contents: Introduction. Seed structure. Chemical composition: Proximate composition, carbohydrates, proteins, lipids, vitamins, minerals. Antinutritional factors: Protease inhibitors, hemagglutinins, saponins, goitrogens, estrogens, allergens, oligosaccharides, phytic acid. Storage. Processing: Cooking, processing for oil, processing into protein products, germination. Utilization: Bakery products, snack foods, macaroni products, milk and milk products, comminuted meat products and meat analogs. Other uses of protein products. Nonfermented foods. Fermented foods. Traditional products. Address: 1. Dep. of Rural Home Science, Univ. of Agricultural Sciences, Bangalore, India; 2. Dep. of Biochemistry, Mahatma Phule Agricultural Univ., Rahuri, Maharashtra, India.

5813. *Good Food News* (*Nutrition Education Service, Sanitarium Health Food Company, Australia*). 1989--. Serial/periodical. New South Wales, Australia: Sanitarium Health Food Co. Frequency: Quarterly.
• ***Summary:*** Contains information about healthy (largely vegetarian) eating, with recipes that use products made by Sanitarium Health Food Co. The format changed in Sept. 1997 (vol. 9, no. 3) by adding 2 more pages and including a "New Products" section.

Some new soy products and the dates mentioned: Sept. 1997–Crispy Nuggets, Country Burgers, Seafarers Patties, Potato Pockets. Dec. 1997–So Good Now (chilled soy beverage in gable-top cartons, regular and low-fat), Weet-Bix Hi Bran with Soy & Linseed. March 1998–So Good Smoothie (Mango, or Banana). June 1998–Soyaccino (cappuccino-style So Good soy drink), Up & Go (Liquid Breakfast). Sept. 1998–Today's Gourmet: Cacciatore Kiev. Dec. 1998–Fat Free So Good. March 1999–So Good Plus (calcium + linseed oil). SoyHealthy: Eight chilled (incl. Original Soy Slices) and five frozen (incl. Tender Soy Schnitzels, Country-Spiced Burgers). Sept. 1999–So Good Ab+ (Soy Yoghurt with Acidophilus and Bifidus, in Strawberry, Apricot & Mango, and Passionfruit flavors). Address: 146 Fox Valley Road, Wahroonga, NSW 2076, Australia. Phone: (02) 487-1711.

5814. Alpro N.V. 1989? Alpro: La force végétale du soja [Alpro: The plant power of soya (Leaflet)]. Izegem, Belgium. 1 p. Front and back. 30 x 21 cm. Undated. [Fre]
• ***Summary:*** The front panel of this full-color, 8.5 by 11 inch leaflet has a photo of 4 varieties of Alpro Soya Drinks (plain, enriched with calcium, without added sugar or salt, chocolate) and 2 Alpro Soya Desserts (vanilla and chocolate). The text reads: 100% natural. 100% from plants (végétal). No cholesterol. No lactose. Rich in vegetable protein. The back gives packaging and shipping information and a nutritional analysis of the 6 products. Sold in France by Distriborg, Division Alpro France, Chemin du Grand Revoyet, F-69230 Saint-Génis-Laval. Phone: 72.39.94.25. Address: Zuidkaai 33, B-8700 Izegem, Belgium.

5815. **Product Name:** [Soyo Soymilk Dessert (Chocolate, or Vanilla)].
Foreign Name: Soyo Dessert (Chocolat, Vanille).
Manufacturer's Name: Celnat.

Manufacturer's Address: Z.I. de Blavozy-Saint-Germain, 43700 Blavozy, France. Phone: 71.03.04.14.
Date of Introduction: 1989?
Ingredients: Vanilla: Water, concentrated apple juice, dehulled organic soybeans (6%), corn starch, natural vanilla aroma, sea salt. Thickeners: Guar flour and carob flour, plant extracts.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Vanilla: Per 100 gm.: protein 3.0 gm, lipids 1.9 gm, carbohydrates 14.0 gm, calories 85.
New Product–Documentation: DietExpo '89 catalog. 1989. Oct. p. 42. The company is a manufacturer, broker, and importer.

Leaflet. 1989. "Soyo: Soymilk from organically grown soybeans. Soya: Food of health." This 6-panel, black and blue-green leaflet describes Soyo soymilk and desserts, shows how to use the soymilk to make tofu at home, and gives 4 recipes.

5816. **Product Name:** [GranoVita Sojagen Plus Instant {Powdered Soymilk}].
Foreign Name: GranoVita Sojagen Instant.
Manufacturer's Name: DE-VAU-GE Gesundkostwerk GmbH.
Manufacturer's Address: Luener Rennbahn 18, Postfach 1660, D-2120 Lueneburg (near Hamburg), West Germany.
Date of Introduction: 1989?
Ingredients: Soybeans.
Wt/Vol., Packaging, Price: 350 gm. Retails for DM 9.80.
How Stored: Shelf stable.
Nutrition: Per 100 gm.: Protein 14.2 gm, fat 29.2 gm, usable carbohydrates 53.7 gm, calories 535.
New Product–Documentation: Label sent by Anthony Marrese. 1989. Nov. 5.5 by 8 by 1.5 inches. Paperboard box. Red, light green, dark green, pink, and black on white. "Sojagen Plus. Milk free, Gluten free. Lactose free. For the bottle. Contains a measuring spoon. Infant food." A photo on the front and back panels shows a young mother holding a baby that she is feeding this soymilk to in a bottle.

Manufacturer's brochure. Dr. Anemueller. 1989? Richtige Ernährung für Mutter und Kind [Right nutrition for mother and child]. 24 p. See p. 18-19. Though said to be published by the Deutscher Verein für Gesundheitspflege [DE-VAU-GE] e.V., this looks like a GranoVita promotional and information brochure, describing their full line of infant and baby foods. Sojagen Plus is one of only 2 foods that can be introduced from birth.

Manufacturer's brochure. 1989? "GranoVita Soja-Drinks und -Desserts... ein erfrischender Genuss [a refreshing enjoyment]." 6 pages, with many color photos. Contains a brief description of Sojagen and Sojagen Plus, with a color photo of both packages/boxes.

5817. **Product Name:** [GranoVita Organic Soya Drink (Unsweetened/Sugar Free)].
Foreign Name: GranoVita Bio Soja Drink (Ungesuesst).
Manufacturer's Name: DE-VAU-GE Gesundkostwerk GmbH.
Manufacturer's Address: Luener Rennbahn 18, Postfach 1660, D-2120 Lueneburg (near Hamburg), West Germany.
Date of Introduction: 1989?
Ingredients: Water, soyabeans (grown in a biologically controlled area), emulsifier: lecithin (of plant origin).
Wt/Vol., Packaging, Price: 1 liter Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 ml: Protein 3.6 gm, fat 2.8 gm, carbohydrates 1.7 gm, calories (kcl) 46 (197 kJoules).
New Product–Documentation: Label sent by DE-VAU-GE. 1990. June 11. 12.75 by 9.5 inches. Red, orange, blue, and green on white. Illustration of a blue glass of soymilk with 6 green soybean leaves below it on the front panel. "A pure plant protein source. Cholesterol-free (Rein pflanzlicher Eiweisstraeger. Cholesterinfrei. Sugarfree)." The back panel states: "Organic Soya Drink is made with 100% natural ingredients. Easily digested. The fat and total sugar content

of Organic Soya Drink is less than that of cow's milk. It's lactose free too, so it's suitable for people with an allergy to dairy products. Contains no animal produce. 100% non dairy.

"Totally free of artificial colouring or flavouring. A blend of water and organic soya beans. A tasty and refreshing drink, delicious served hot or cold. suitable for use in tea or coffee (pour milk first), mashed potato, pudding, custards, sauces and yogurt, etc."

Label sent by Anthony Marrese of Hamburg. 1991. June. ½-liter Tetra Brik carton. The product name in German is now written Bio-Soja-Drink. Green, black, yellow, and red on white. Illustration of a large yellow sun rising behind a red-roofed farmhouse. Retails for DM 1.69. Use by 26 Nov. 1991. Exclusive Neuform certification symbol.

5818. **Product Name:** [Fit & Active Vitalkost Soya Drink (Strawberry, or Unsweetened)].
Foreign Name: Fit & Aktiv Vitalkost Soja-Drink (Erdbeer, Ungesuesst).
Manufacturer's Name: Dr. Fischer GmbH.
Manufacturer's Address: Postfach 13 20 43, D-2000 Hamburg 13, West Germany.
Date of Introduction: 1989?
Ingredients: Water, soybeans*, cane sugar, sea salt, natural- and identical to natural aromas, plant emulsifier, plant stabilizer. * = Organically grown.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton. Retails for DM 2.59.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Protein 3.4 gm, fat 2.1 gm (linoleic acid is 56% and linolenic acid is 7% of the total fatty acids), usable carbohydrates 6.6 gm, calories 59, sodium 83 mg, potassium 150 mg, calcium 20 mg, phosphorus 67 mg, magnesium 24 mg, iron 0.6 mg.
New Product–Documentation: Label for strawberry sent by Anthony Marrese. 1989. Nov. 3.5 by 3.5 by 2.5 inch Tetra Brik carton. Red, green, and pink on white. "Made 100% from plants (100% pflanzlich). Cholesterol free. An active drink–the plant alternative. Lactose free. Rich in several unsaturated fatty acids. Soya Drink is made from whole soybeans. Contains no added colorings. Shake before using." An illustration of a soybean plant with leaves and pods is on the front panel.

Label for unsweetened sent by Anthony Marrese. 1990. Dec. 12. Same size. Orange, red, light green, and dark green on white. Retails for DM 1.29.

5819. **Product Name:** [Martin Evers Naturkost Soya Drink (Unsweetened, With Honey, With Carob & Honey)].
Foreign Name: Martin Evers Naturkost Sojatrunk (Mit Carob-Honiggesuesst).
Manufacturer's Name: Evers Naturkost GmbH.
Manufacturer's Address: D-5418 Marienrachdorf, West Germany.
Date of Introduction: 1989?
Ingredients: With honey: Water, soybeans*, carob, honey, sea salt, vanilla. * = Organically grown.
Wt/Vol., Packaging, Price: 200 ml Tetra Brik Aseptic carton. Unsweetened is also sold in 1 liter Tetra Brik Aseptic carton. Carob-Honey retails for DM 2.10. Unsweetened liter retails for DM 3.45.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Protein 2.4 gm, fat 1.7 gm (unsaturated fatty acids are 63% of total fatty acids), carbohydrates 5.5 gm, calories 47, sodium 28 mg, potassium 140 mg, calcium 17 mg, phosphorus 45 mg, magnesium 17 mg, iron 0.4 mg.
New Product–Documentation: Labels for Honey and Unsweetened sent by Anthony Marrese. 1989. Nov. 3.5 by 3.5 by 2.5 inch Tetra Brik carton. Red, brown, and green on white. "Made purely from plants. With organically grown soybeans. Shake before using. Refrigerate after opening." On one side is a brief description of how this soymilk is made. An illustration of a soybean plant with flowers is on the front panel.

5820. **Product Name:** OsterSoy (Powdered Nondairy Soy-based Infant Formula).
Manufacturer's Name: Farley or Farley's.
Manufacturer's Address: England.
Date of Introduction: 1989?
New Product–Documentation: The Vegan. 1989. Spring. p. 4, 12.

5821. **Product Name:** [Formoja {Soymilk}].
Foreign Name: Formoja.
Manufacturer's Name: Granero (Importer-Distributor). Made in Issenheim, France, by Cacoja.
Manufacturer's Address: Carretera de Petres, s/n. Sagunto (Valencia), Spain. Phone: (96) 315 71 36.
Date of Introduction: 1989?
New Product–Documentation: Letter (fax) from Hernadette Dechamps, American Soybean Assoc., Madrid. 1990. May 23. Granero (gives address and phone number) distributes a soymilk called GranoVita imported from Germany.

5822. **Product Name:** [Hensel Soya Malt (Sweetened, or Unsweetened)].
Foreign Name: Hensel Soja Malt (ungezuckert).
Manufacturer's Name: Henselwerk GmbH. Div. of Walther Schoenenberger.
Manufacturer's Address: Muehlstrasse 5-7, Postfach 1120, D-7037 Magstadt, West Germany. Phone: 07159/4906.
Date of Introduction: 1989?
New Product–Documentation: Manufacturer's leaflet. Sent 1990. March 30. Color photo shows label of box, which is red, yellow, and white. Neuform certification symbol. A

second leaflet states that there are regular and unsweetened varieties. The regular is "The high-quality strengthening drink for young and old." The unsweetened is "The strength and body-building food for everyone."

5823. **Product Name:** [Creamy Concentrate {Concentrated Soymilk}].
Foreign Name: Concentré Crémeux.
Manufacturer's Name: Innoval S.A. Affiliate of Coopérative Agricole Silos de Valence.
Manufacturer's Address: Allée Joule, Zone Industrial (Z.I.) des Auréats, B.P. 1418, 26014 Valence Cédex, France. Phone: 75.41.41.50.
Date of Introduction: 1989?
New Product–Documentation: J.-P.V. 1989. Le Figaro–Lyon (France). "Innoval believes in Soya."

5824. **Product Name:** [Lima Soymilk Based Salad Dressings (Tomato, Mountain Herbs, or Natural)].
Foreign Name: Salad'Soy (à la Tomate, aux Herbes de Montagne, Nature).
Manufacturer's Name: Lima Foods.
Manufacturer's Address: Edgar Gevaertdreef 10, B-9830 Sint-Martens-Latem, Belgium.
Date of Introduction: 1989?
Ingredients: Soymilk, sunflowerseed oil, vegetables and herbs.
Wt/Vol., Packaging, Price: 185-195 gm glass jar.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Lima catalogue, price list, and color product brochure. 1989. Shows two glass jars with labels. A pastel illustration on the label shows a salad with tomatoes and the dressing. The dressing contains less than 25% oils, and the added oil is Lima unrefined, cold-pressed sunflowerseed oil. Three flavors are described but only 2 are listed on the back of the page and in the catalog (tomato, and herb).

5825. Loma Linda Foods, Inc. 1989? Soyagen delights: Easy to prepare recipes. Riverside, California. Five panels each side. Each panel 21.6 x 8.8 cm. Back to back. Undated.
• ***Summary:*** A glossy color leaflet. On the cover panel are various meatless foods against a background that fades from light blue up to dark blue. These recipes show how to use Soyagen (powdered soymilk) in: Entrees. Soups. Breads. Beverages. Puddings. Desserts, etc. On the rear panel are color photos of three different cans of Soyagen (one is carob). Address: 11503 Pierce St., Riverside, California 92515.

5826. **Product Name:** [Nuxo Soymilk Dessert (Caramel)].
Foreign Name: Nuxo SojaDessert (Karamel).
Manufacturer's Name: Nuxo-Werke Rothfritz + Co. KG. (Marketer).
Manufacturer's Address: D-2000 Hamburg 54, West Germany.
Date of Introduction: 1989?
Ingredients: Water, unrefined cane sugar (roher Rohrzucker), dehulled soybeans, native cornstarch, caramel, plant extracts, sea salt, thickeners (carob bean meal, guar seed flour).
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton. Retails for DM 2.45.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Protein 2.8–3.2 gm, fat 1.7–2.1 gm (of which 60% are unsaturated, 14% are saturated), usable carbohydrates 14.0–14.6 gm, calories 85, sodium 95 mg, potassium 60 mg, calcium 15 mg, magnesium 17 mg, phosphorus 40 mg, iron 0.4 mg.
New Product–Documentation: Label sent by Anthony Marrese. 1989. Nov. 3.5 by 3.5 by 2.5 inch Tetra Brik carton. Caramel-brown, green, and white on beige. "A pure source of vegetable protein. Low in sodium. Cholesterol free. Made purely from plants. Nuxo Soya Dessert is: Cholesterol free. Free of animal protein. Free of lactose (milk sugar). Low in purines (purinarm)." An illustration of an ear of wheat and of green leaves is on the front panel. Neuform certification symbol.

Letter from Bernd Drosihn. 1990. May 10. This company just markets tofu and soymilk products, they do not make any.

5827. **Product Name:** [Nuxo Soya Cream (Neutral)].
Foreign Name: Nuxo SojaCrème (Neutral).
Manufacturer's Name: Nuxo-Werke Rothfritz + Co. KG. (Marketer).
Manufacturer's Address: D-2000 Hamburg 54, West Germany.
Date of Introduction: 1989?
Ingredients: Water, dehulled soybeans, native corn starch, guar seed meal, carob bean meal.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton. Retails for DM 2.45.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Protein 3.4–3.8 gm, fat 1.8–2.1 gm (of which 60% is multiple unsaturated fatty acids, linoleic and α-linoleic, and 14% is saturated fatty acids), usable carbohydrates 4.4–4.8 gm, calories 51. 0.39 BE (Broteinheit, or diabetic exchange) (1 BE (Broteinheit, or diabetic exchange) = 260 gm), 40 mg sodium, 75 mg potassium, 25 mg calcium, 40 mg magnesium, 50 mg phosphorus, 0.4 mg iron.
New Product–Documentation: Label sent by Anthony Marrese. 1989? 3.75 by 3.75 by 2.25 inches. Tetra Brik carton. Blue, red, and green on white. "A pure plant source of protein. Low in sodium. Free of cholesterol. No sugar or salt added. Nuxo Soya Cream is neutral in taste and therefore suited for preparation of many sweet and piquant/spicy,

cold or hot dishes, such as desserts, salad dressings, sauces, vegetables gratin, and egg dishes. It is free of colorings aroma agents or preservatives." Marrese adds: "It tastes like and has the same consistency as their Soya Dessert but with no flavoring or sweetener. I do not see any varieties other than Neutral."

Leaflet. 1989? Vitaquell recipes with Nuxo SojaDrink and SojaCrème. Green, red, and dark blue on white. In German.

Letter from Bernd Drosihn. 1990. May 10. This company just markets tofu and soymilk products, they do not make any.

5828. **Product Name:** Sipso Cold Coffee.
Manufacturer's Name: Pantnagar Soymilk Products Pvt. Ltd.
Manufacturer's Address: New Delhi, 110 055, India.
Date of Introduction: 1989?
Ingredients: Soymilk, fresh ground coffee, sugar, permitted flavours and colours.
Wt/Vol., Packaging, Price: 200 ml.
How Stored: Refrigerated.
New Product–Documentation: Photocopy of Label sent by Anders Lindner. 1989. "Pasteurized. Nutritious. Rich in protein. Sweetened. Serve chilled." This is apparently a coffee-flavored soymilk.

5829. Sanitarium Health Food Co. 1989? Sanitarium: The people who believe food should not only taste good, it should be good for you! 148 Fox Valley Rd., Wahroonga, NSW 2076, Australia. 8 p. Undated. Manufacturer's catalog.
• ***Summary:*** Contents: Background. Manufacture. Retail. Export. Products.

In the late 1800s a group of immigrants from the USA, all of whom were members of the Seventh-day Adventist Church, decided to make their living by distributing health foods. At first they imported a selection of products from Battle Creek, Michigan, then famous for its sanitarium. The first products arrived in Melbourne in 1897. They included Granola, Caramel Cereal, and gluten products. But when demand outstripped supply, in late 1897 a baker, E.C. Halsey, was persuaded to migrate to Australia to start up a manufacturing plant similar to the one he had operated in Battle Creek. On Nov. 8 he arrived in Sydney en route to Melbourne, totally unaware of what he was starting. The records show that the St. George's Bakery was rented in Melbourne in 1898. The production of Caramel Cereal and Granola commenced immediately.

In 1898 the group moved to larger premises in Cooranbong, a rural area south of Newcastle in New South Wales, and adopted the name Sanitarium Health Food Company. With Halsey in charge, production commenced in a large defunct sawmill in 1899. After a period of uncertainty, the Company grew and expanded until today, it has manufacturing plants in all states of Australia, in both islands of New Zealand, and in Papua New Guinea. In about 1906 the company's first retail shop opened in the Royal Arcade, Sydney. Many of the early shops included a vegetarian restaurant. Today the company operates some 70 retail shops. It also has an export division in Sydney. In 1935 the Australasian Food Research Laboratories were started. Located on the spacious grounds of the Cooranbong plant, they new employ a staff of nearly 40 people. Photos show the original Cooranbong factory, early products (incl. Nut Meat, Protose, Weet-Bix, Corn Flakes, and Marmite yeast extract), and today's food factories at Cooranbong, Victoria, and Palmerston, North New Zealand.

Product lines include Cereals (The company's leading product is Weet-Bix, the most popular breakfast cereal in Australia and New Zealand. It was first manufactured under the Sanitarium name in the mid-1920s, and comes in the shape of little biscuits. Other well known brands are Granose, Bran-Bix, and Sanitarium Skippy Cornflakes), Juices and Drinks (So Good, a non-dairy soy drink, is the newest introduction), Spreads (such as peanut butter and Marmite), Muesli Bars, Specialty Lines (such as dried fruits), Canned Protein Foods (all vegetarian, such as B-B-Q Links, Tender Bits, Vegetarian Rediburger, and Nut Meat), and Sundried (incl. TVP products, and Caffex coffee substitute); a color photo shows all of these.

The name and address of the company's head office, export division, and various food factories and retail outlets is given. Address: Wahroonga, NSW, Australia.

5830. **Product Name:** Soy Beverage.
Manufacturer's Name: Teruya Tofu Factory.
Manufacturer's Address: 1830 Mill St., Wailuku, Maui 96793. Phone: 808-244-5313.
Date of Introduction: 1989?
New Product–Documentation: Talk with Roger Krehl of Paradise Fruit Maui. 1990. July 4. This company makes a soy beverage.

5831. **Product Name:** [Nulife / Nülife Malted Soybean Drink].
Manufacturer's Address: Korea.
Date of Introduction: 1989?
Ingredients: Incl. malt.
Wt/Vol., Packaging, Price: 250 ml.
New Product–Documentation: Photocopy of Label sent by Anders Lindner. 1989. Illustration on the front panel shows a house with two trees to its left.

5832. Mitchell, Cheryl R.; Mitchell, Pat R.; Nissenbaum, Robert. 1990. Nutritional rice milk product. *U.S. Patent* 4,894,242. Jan. 16. 8 p. Application filed 29 March 1988. [4 ref]
• ***Summary:*** This patent is quite similar to the May 1988

patent (No. 4,744,992) by the same inventors. Address: 1-2. 466 N. Powers, Manteca, California 95336; 3. 750 Homer Ave., Palo Alto, CA 94301.

5833. Broom, Maria. 1990. Serulada Spiritual Foundation in Uganda, and soybeans (Interview). *SoyaScan Notes.* Jan. 21. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** This foundation is a spiritual, vegetarian community of about 200+ people who live on the land at Sseesamirimbe, near Masaka, Uganda. They grow a lot of soybeans and eat them as such; they do not do any processing, but are interested in making tofu, soymilk, and tempeh. Maria gave them three Soyfoods Center books on these subjects. She has visited the community twice, for 1 month each time. They have been together for about 15 years, have an African spiritual master named Bambi Baaba, but their spiritual practice resembles East Asian practices. They have a city address too: P.O. Box 5374, Kampala, Uganda.

Maria visited Dr. D. Warren Harrison of Africa Basic Foods. He hopes to contact the community and teach them more about soyfoods. Address: 1728 Linden Ave., Baltimore, Maryland 21217. Phone: 301-462-5370.

5834. Chikaarashi, Shigeru. Assignor to Nichii Company, Ltd., Osaka, Japan. 1990. Method for manufacturing a foodstuff suitable for soybean milk production. *U.S. Patent* 4,895,730. Jan. 23. 4 p. Application filed 28 Oct. 1988. [2 ref]
• ***Summary:*** "The apparatus includes a brushing machine for removing earth matter and earth-born germs deposited on soybean material, a band dryer for adjusting the water content of the soybean material so as to facilitate separation of the material into skin and flesh portions, a skin remover for separating the skin portion from the flesh portion and for dividing the flesh portion of each piece of soybean into four to eight parts, and flat pressing rollers for converting the resulting powdery masses into uniformly distributed flaky masses."

Note: The resulting soy flakes are used by Nichii to make tofu in Japan. The compact tofu plants are located in supermarkets or department stores. Address: Sapporo, Japan.

5835. *Journal of Commerce & Commercial* (*New York, NY*). 1990. Japan's Nichii plans to build U.S. soy plant. Jan. 23.
• ***Summary:*** "Nichii Co., a major supermarket chain operator, plans to build a 500-million-yen soybean-processing plant in the U.S. to produce flaked soybean, starting in October, company officials said Monday. The project is designed to ensure a stable supply of the flakes, the raw materials for 'tofu' and soybean milk, they said. Nichii is now considering a site for the plant, possibly somewhere in Iowa. The company plans to import [to Japan] half the plant's product for the production of tofu and for direct sale at its stores, the officials said."

5836. **Product Name:** Provamel Soya Milk (Calcium Enriched. Naturally Sweetened with Apple Juice. Made from Organic Soya Beans).
Manufacturer's Name: Alpro.
Manufacturer's Address: Alpro N.V., Vlamingstraat 28, B-8610 Wevelgem, Belgium.
Date of Introduction: 1990. January.
Ingredients: Filtered water, dehulled whole organic soya beans, apple juice concentrate, barley malt, calcium, seasalt.
Wt/Vol., Packaging, Price: 500 ml and 1 liter Tetra Pak cartons. Retails for 49p and 92p respectively (1/90, England).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 ml: Energy 46 kcal (calories; 196 kJ), protein 3.6 gm, carbohydrates 3.3 gm, total fat 2.1 gm (of which polyunsaturated fatty acids: 60%), cholesterol 0 gm.
New Product–Documentation: Provamel news release/ leaflet. 1990. Jan. "New healthy alternative to cow's milk." This new soya milk contains more calcium and less sugar than cow's milk. The calcium content is 140 mg/100 gm compared to 120 mg/100 gm found in cow's milk, according to Nigel Meadows, marketing manager for Vandemoortele (UK) Ltd. The milk is naturally sweetened with apple juice and made from organically grown whole soya beans. "A major breakthrough in food technology at our new plant in Belgium has achieved a close and unrivalled parallel to cow's milk."

SoyaFoods (ASA, Europe). 1990. 1(1): 3. Provamel has launched this new product "with the help of Dolly the cat. The promotion includes free in-store demonstrations and customer taste kits. Containing 20 mg/kg more calcium than cow's milk, Provamel is sweetened with apple juice and made from organically grown whole soya beans."

Talk with Alpro. 1990. June 4. The promotion for this product in England is handled by Alpro's sister company, Vandemoortele (UK) Ltd., which has its own distribution. The cat has nothing to do with the product. It's just the British way of advertising. The name in French is "Provamel Soya Drink (Enrici en Calcium)."

Label sent by Heather Paine of SoyaFoods in London. 1991. May. 3.75 by 3.5 by 1.25 inches. Tetra Brik carton. Blue, green, yellow, and red on white. Illustration of green leaves on front panel. "100% natural ingredients. Calcium enriched. Naturally sweetened with apple juice. Made from organic soya beans. Best served chilled. Shake before using. When opened, Provamel will keep fresh for up to three days when refrigerated... The soya beans have been grown on soils which have been treated in accordance with the organic standards for a continuous period of at least 36 months... New Provamel Calcium Enriched Soya Milk contains 140 mg of calcium/100 gm compared with 120 mg of calcium/100 gm of cow's milk. The delicious taste of Provamel makes it an ideal alternative to cow's milk that

the whole family can enjoy. Use Provamel on cereals and in recipes where it is just as versatile as cow's milk. In tea and coffee pour the Soya Milk first. It is also a refreshing drink by itself when served chilled." Circled V vegetarian logo. Retails for 52p.

Form filled out by Philippe Vandemoortele of Alpro. 1991. Sept. 4. Provamel Soya Drink fortified with calcium was introduced in Dec. 1989. It was sold in the UK (Distributed by Vandemoortele (UK) Ltd.), Belgium, France, the Netherlands, Spain, and Germany.

5837. **Product Name:** [Mamina Soya {Infant Formula/ Mother's Milk Substitute} (Legumes, Junior)].
Foreign Name: Mamina Soja (Legumes, Junior).
Manufacturer's Name: Galactina Ltd.
Manufacturer's Address: Belp, Switzerland.
Date of Introduction: 1990. January.
Wt/Vol., Packaging, Price: 300 gm aluminum bags in a paperboard box.
How Stored: Shelf stable.
New Product–Documentation: Talk with Conrad Seewer of Galactina. 1990. May 17. Mamina Soya (pronounced ma-MEE-nah ZO-yah) was Galactina's first infant formula after Bebe Nago. Since it is a better product, using new technology, it replaced Bebe Nago. It has a better taste and completely fulfills the baby's nutritional needs according to modern pediatric standards. It was launched 5-6 years ago. It is made from whole soybeans that are made into soymilk, which is then spray dried and formulated. It contains no isolates, and this is part of Galactina's philosophy and history. This allows better control of the product quality and the milk is less highly processed. The processing method has solved the problem of flatulence.

Talk with Peter Speck. 1990. May 23. The market for Galactina's new line of two baby products looks very promising. There is Mamina Soya and then 2-3 different types of gruels.

Letter (fax) from Conrad Seewer of Galactina. 1990. July 13. The three basic products in the line are mother's milk substitutes. Both these and the gruels for spoon feeding are in powder form, sealed in aluminum foil bags that are packed in paperboard boxes. The products contain no soy isolates; rather they are made with powdered soymilk made directly from soybeans. Flatulence is prevented by a special technical manufacturing process that is confidential and that eliminates trypsin inhibitor. The first Mamina Soya product was introduced in June 1986.

5838. LeMaire, William H. 1990. Aseptic packaging USA. West Chester, Pennsylvania: Packaging Strategies. 121 p. 3-ring binder.
• ***Summary:*** The Executive Summary (p. 1) begins: "Aseptic processing and packaging was invented in the 1930s when the first commercial system for aseptically heating and cooling food products was developed by Dr. C. Olin Ball. In the late 1940s and early 1950s this technology was improved upon by Dr. William McKinley Martin. His early work is still the basis for the Dole Aseptic Canning System.

"But the site of a technology's birth and its 'home' are not always to be found in the same place. Applying the benefits of aseptic technology in the marketplace had essentially eluded the American food industry... largely until the 1980s when we rediscovered aseptic technology. In the intervening 50 years, between its American birth and its triumphant commercial return, aseptic packaging grew up in Europe and was, in fact, implanted in the U.S. by a Swedish company, Tetra Pak.

"Aseptic packaging had, so to speak, left the U.S. as a canning process but returned in the 1980s as a process available in a far broader rage of packaging materials and containers: Paper/foil/plastic cartons, multilayer plastic cups, glass, barrier bottles, etc.

"Most importantly, however, aseptic packaging returned to find an American food industry caught up in a frenzy of new product development, throwing 3,000 or more new products a year at the American consumer. New ideas in packaging and product distribution were in great demand."

Contents: Executive summary: What is aseptic packaging?, benefits/advantages, caveats, products for which aseptic is suited, market for aseptic filing equipment, current market for aseptic packages, the road ahead in aseptic. Markets for aseptically packaged products. Aseptic fillers installed in the U.S... Summary (lists 400). Profiles of aseptic packaging equipment for low acid foods: Form-fill-seal equipment, pre-formed container equipment (Combibloc, Dole, Hamba, Metal box). Profiles of aseptic equipment for high-acid foods. Food processors aseptically filling high/low acid foods (includes names of food and beverage companies, locations of installations, number of packaging machines, type of filler, size of container, etc.). Aseptic filler installations in the U.S. for low acid foods. Tetra Pak installations. Combibloc installations. Aseptic bag-in-box installations. Aseptic drum installations. Other aseptic filler installations, acid foods. Address: Editor, Packaging Strategies, 122 South Church St., West Chester, Pennsylvania 19382. Phone: 215-436-4220.

5839. *Natural Foods Merchandiser.* 1990. Soyfoods industry faces changes. Jan. p. 6, 10.
• ***Summary:*** Lawmakers in Maine are being asked by the Soyfoods Assoc. of America (SAA) to exempt soymilk from a ban on non-recyclable aseptic packaging scheduled to take effect on 1 Sept. 1990. SAA feels that soymilk should have the same exemption provided to "milk and dairy-derived products." Less than 1% of all aseptic packages sold in Maine are for soymilk. But some lawmakers reportedly prefer an extension to an exemption in order to encourage manufacturers to create alternative packaging.

Also discusses briefly FDA's classification of tofu as a potentially hazardous food.

5840. Wang, Guangjian; Kuan, S.S.; Francis, O.J.; Ware, G.M.; Carman, A.S. 1990. A simplified HPLC method for the determination of phytoestrogens in soybean and its processed products. *J. of Agricultural and Food Chemistry* 38(1):185-90. Jan. [14 ref]
• ***Summary:*** Discusses the phytoestrogen content of soybeans, defatted soy meal, hard tofu, soft tofu, dry spiced tofu, soy milk skin (p. 189) / soy milk film (p. 188) [yuba], soy milk, soy sauce, hot soy paste, sweet soy paste [miso?], fermented tofu, soy sprouts (homemade), soy sprouts (grocery), daidzein, genistein, formononetin, coumestrol. Address: Natural Toxins Research Center, Food and Drug Administration, 4298 Elysian Fields Ave., New Orleans, Louisiana 70122.

5841. Whiteman-Jones, Michael. 1990. Soyfoods in the 1990s: Potential may be realized. Expanding market fuels sales growth. *Natural Foods Merchandiser.* Jan. p. 24-25.
• ***Summary:*** Views and forecasts on the U.S. soyfoods industry by Peter Golbitz (vice president of the 40-member Soyfoods Association of America), William Shurtleff (author of *The Book of Tofu* and director of the Soyfoods Center), Sjon Welters (industry analyst and president of Craft International Consultants in Acton, Massachusetts), and Richard Rose (Marketing consultant and president of Rose International in Santa Rosa, California). Photos show: Peter Golbitz, William Shurtleff, and his wife Akiko Aoyagi are shown. All agree that the future looks bright. Sales of soymilk have been rising by 100% a year in natural foods stores. April is Soyfoods Month.

5842. Nielsen, Niels C. 1990. The Tofu Center at Purdue University and research on food uses of soybeans (Interview). *SoyaScan Notes.* Feb. 8. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Dr. Nielsen, a member of the USDA Agricultural Research Service, is more a molecular biologist than a soybean breeder. He did post-doctoral research and taught in the biochemistry department at the University of California at Davis. The Tofu Center, established in about Feb. 1989, is a corner of the pilot plant in the Food Science Department at Purdue. They have accumulated the equipment they need to make tofu, and they have had people from Taishi Foods (Taishi Shokuhin Kogyo K.K.) a large tofu manufacturer in Aomori prefecture, Japan come to help them make tofu that meets Japanese quality standards. Funding for the Tofu Center and his closely related Soybean Protein Improvement Project comes from Central Soya, Taishi Foods, Mitsubishi, and state grants to support value added research (about $15,000)–plus his USDA/ARS funds. Total funding is still small.

The purpose of the Center is to ask 2 kinds of questions: (1) What is the effect of the way soybeans are stored while being shipped to Japan on the quality for the final tofu? (2) What kind of very small scale tofu preparation techniques can be used in conjunction with soybean breeding programs designed to incorporate into American soybeans traits that will make them more suited for food uses in the USA and abroad. Nothing has been published by the Tofu Center about its goals and activities except for 1-2 news releases from the Purdue Information Office, plus a little video on that was shown at halftime during a recent Purdue basketball game. Suzanne Nielsen (no relation), a food chemist, is also active in the program. The lipoxygenase program is only a very small part of his lab. The major thrust of the whole program is to try to convert the soybean into an edible food, and to make it more acceptable. This will open a whole new market in the West. Most of the effort is aimed at changing the quality characteristics of soy protein by genetic engineering. The major problems they are looking at now are flavor, protein quality, sedimentation value ratios, and flatulence. Concerning flavor, they have made major advances by removing lipoxygenase. Nielsen believes that this is their most important advance to date and that it may have a major effect in improving the acceptability of soybeans for food use. They used backcrossing into Century soybeans (a good-yielding, maturity group 2, field type soybean) to get near isogenic lines. Soybeans missing the L-2 and L-3 lipoxygenase isozymes make a very bland tofu and soymilk, which is much more acceptable to American taste panels. The absence of L-2 alone gives somewhat less bland products. L-1, which has a high pH optimum, plays little role in generating off flavors. Last year about 4,500 acres of soybeans missing the L-2 isozyme were grown in Indiana. The lines lacking lipoxygenase yield the same as Century, but Century no longer yields nearly as well as the best-yielding varieties today. A lot of private and public soybean breeders are now using this germplasm. Concerning protein quality, they have learned how to change the sulfur amino acid content (to increase methionine) and now they are working to get it into a soybean variety.

Being able to change the ratio of 7S to 11S protein sedimentation values (the S stands for Svedberg, who was an early Swedish researcher on the subject) will be important in adjusting the hardness or softness of tofu. But Japanese tofu makers have no clear idea of what ratio they want. Concerning elimination of flatulence factors, that work is just starting.

The Japanese have learned to like soyfoods made from large-seeded vegetable-type (LSVT) soybeans, but American's have not yet learned that. Tofu makers are most concerned about taste and tofu yield, and they prefer LSVT soybeans for their flavor. But they prefer American soybeans for their swelling characteristics during soaking, and this gives a more uniform product. Many Japanese tofu

makers plan to have LSVT soybeans grown in America under special contract, but they cannot do that economically due to (1) their poor yield due to problems of shattering during mechanical harvesting, and (2) their thin seedcoat, which leads to more damage during mechanical harvesting. The way the Japanese have traditionally harvested their soybeans, cutting the plants early by hand and hanging them upside down on racks, shattering is an advantage, allowing the beans to be manually threshed from the pods with a minimum of effort. The thin seedcoat, which does not effect shattering, does aid uniform swelling during soaking. Yet he has heard that new-crop LSVT soybeans do not swell as well as year-old ones. Nielsen feels it may not be necessary to start with a vegetable-type soybean to produce the characteristics that they want.

Nielsen believes that the program on food uses of soybeans at Purdue will expand in the coming years. Soybean breeders will be working much more closely than ever before with food scientists. Other key people are Phil Nelson (the department head in the food science department) and Marv Phillips (the department head in agronomy). There have already been 9-10 PhD theses in his soybean protein improvement program. A few of his graduates now doing important work in the area are Nilgen Tumer (from Turkey) at Monsanto (working with cross protection by putting the proteins of a virus into a plant to immunize it against infection) and Paul Staswick at Univ. of Nebraska (working with vegetative storage proteins).

Keith Smith of the American Soybean Assoc. has been very supportive of Nielsen's work. The early work on preparing the low-lipoxygenase lines and modifying the nutritional quality of the soy protein was all funded by ASA. In Dec. 1989, at a meeting at ASA in St. Louis, he first heard expressed concern with the quantity of protein in soybeans, for the crushing industry. This seems like a major change of attitude. They are not yet very concerned with the various components of the seed and how those effect quality. At the ASA board meeting, he pointed out that in the coming years, especially because of the development of biotechnology, we will be seeing the developing of niche markets. That will fragment the soybean industry as a commodity crop. A value-added market will emerge, and this will be a major change in the market. So ASA needs to establish better quality standards. He is already working with Central Soya toward component pricing. Indiana has a value-added program with grants to specific projects; it does not have a Center as exists in Iowa and Illinois.

Nielsen's father was a plant breeder at the Univ. of Wisconsin. He was personally more interested in biochemistry and chemistry. So it was very apparent to him due to the environment in which he was raised that there was not enough of a connection between the basic sciences and the applied sciences. The problem was to learn how to establish those bridges. He, who does cutting and splicing of DNA, now has developed close ties with the food science department. The real question will turn out to be whether or not we can find new places to put the improved soy proteins, for example as extenders. Central Soya thinks that these new soybeans will increase the use of isolates and concentrates in foods. Gary Felger (Phone: 219-425-5403) is Nielsen's contact at Central Soya. David Swanson, the CEO, is also very interested in this work. Address: Purdue Univ., West Lafayette, Indiana 47907. Phone: 317-494-8057.

5843. Down to Earth Natural Products Ltd. 1990. Some companies start out really small and then... they grow! (Leaflet). Penrose, Auckland, New Zealand. 1 p. Front and back. 30 cm.

• ***Summary:*** "Which is why we've changed our name from Bean Supreme to Down to Earth–to make room for things to come.

Bean Supreme will remain as the brand name for our existing and expanding range of traditional soy products–Tofu and Tempeh.

"Our new company name Down to Earth Natural Products Ltd reflects our intended diversification into new areas of product development and marketing. We believe the name will speak directly to our core group of consumers, those with increasingly convergent interests in health and the environment.

"Our first product launch [soymilk] under our new name is imminent. In fact we'll send you some in the post! Until then–goodbye from Bean Supreme. More to follow from Down to Earth.

"From the directors–Paul and Trevor Johnston and all of the team, best wishes for 1990."

Brands: Bean Supreme, Nice 'n' Healthy, Lite Licks, Bio Farm, Spiral Foods. Address: Box 12082, 140 Hugo Johnson Dr., Penrose, Auckland, New Zealand. Phone: (09) 590 592.

5844. Klaper, Michael. 1990. Diet and the environment (Interview). *VegeScan Notes.* Feb. 12. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Large-scale animal agriculture is among the main eco-destructive forces at work on the planet today. It is destroying virtually every ecosystem on which all lifeforms depend: topsoil, forests, water, atmosphere including the ozone layer, flora, fauna. It also unleashes toxic and radioactive wastes. Rebalancing our biosphere depends upon reforestation and stabilization of these other ecosystems. To do this we must change our national diet, away from a meat-centered diet, toward a more vegetarian diet. The general lack of awareness of the diet-environment link, especially among the environmental, scientific, and governmental organizations, is surprising and must now be remedied if major eco-catastrophe is to be avoided. Diet must now become a major plank in the environmental platform.

Since time immemorial, cutting the forests and replacing

them with cattle grazing or fodder growing land has been the standard practice for food production. Previously, when people were few and forests seemed vast, it didn't make much difference. But today most of American agriculture is devoted to growing animal flesh, either through the animals themselves or their feed. Due to the inherent inefficiency of cycling plant foods through animals, massive amounts of feed grains must be grown to support a meat-centered diet, thus consuming the majority of fossil fuels, water, land, and energy used by American agriculture. Today, after 5,000 years of deforestation and 5,000 million people on the planet, we have now cut half the world's trees and are suffering the inevitable consequences:

1. Global warming: Cutting and burning forests, as well as the huge amounts of methane from animal manure and belching, adds carbon dioxide to the air, contributing to global warming.

2. Erosion: Exposing the topsoil to sun, wind, and water while growing row crops leads to massive erosion.

3. Water usage: More than half the total amount of water consumed in the USA goes to irrigate land growing feed and fodder for livestock–more than is used by all the cities and industries in America. The falling water levels in rivers leads to silting, killing of wildlife, and decreased hydroelectric power generation. Falling groundwater levels lead to dry wells, encroachment of salt water into coastal water supplies, and depletion of aquifers.

4. Water pollution. Every 24 hours, the animals destined for America's dinner tables produce 20,000 million lb of waste. That is 250,000 pounds of excrement a second and twenty times as much as all humans in this country. The pesticides used in growing feedcrops and the eroded soil from those fields also adds organic pollutants to our water supplies.

5. Energy. Every day the USA imports 8,300,000 barrels of petroleum. About 12% of this, or 1,000,000 barrels goes into production of meat, poultry, and dairy products, including running irrigation pumps, farm machinery, heating and cooling factory farm buildings, running slaughterhouses and refrigeration units, and transporting animals and their products.

6. Ozone layer depletion. Chlorofluorocarbons from refrigerants and Styrofoam containers (widely used by fast food chains) are major causes of this problem. Address: 8843 Pennfield Ave., Northridge, California 91324. Phone: 818-341-0652.

5845. Hokanson, J.D. 1990. Inventions with soymilk and tofu (Interview). *SoyaScan Notes.* Feb. 15. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** This 60-year-old man applied for three patents in Nov. 1989; they should be issued by July 1990. 1. For soymilk which has a better taste and takes less time to prepare. The key lies in adding 2-3 tablespoons of Gold Label Brewer's Malt Extract (sold in a 3-4 lb can at many food stores and used by home beer brewers) per cup of dry soybeans to the soymilk at the start of cooking. 2. For an extra firm tofu product named Solein, that is sold with any of five American-style herb-based sauces, and which tastes like steak. 3. For a tofu box, built on the principles of a botanical press, to press the extra firm tofu. Address: 1950 East Cairo, Springfield, Missouri 65802. Phone: 417-864-6074 (8/90) or 800-526-3309 (2/90).

5846. Lukoskie, Luke. 1990. Recent developments at Island Spring, Inc. (Interview). *SoyaScan Notes.* Feb. 17. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Following the split-up with ELCO, Island Spring endured severe financial hardships. "We'd been bleeding profusely from October 1987 until June 1988, at which time we had been able to turn things around. From that time until now we have been in a holding pattern, because we were in such serious debt to ELCO that we had no opportunity for expansion. At the time of the separation (when ELCO unexpectedly demand total control of Island Spring, and Luke refused them), ELCO had demanded that they get all the assets and then Island Spring lease or rent them back. Island Spring had no choice but to accept their terms. To do battle with them would have required Island Spring to declare immediate bankruptcy. So in Oct. 1987 Island Spring began to make $11,000/month payments to ELCO for rent/lease of equipment and as repayment of loans that they had made to Island Spring. Each month the amount of the payment decreases and they will essentially be finished at the end of 1990. Island Spring has retrenched, let go of all of its marketing and sales people (some of whom earned $60,000/year), and is running on a skeleton crew. Luke is doing the tofu curding. "Frankly, I'm having the best time in this business that I've had for 15 years. I'm thoroughly enjoying being in the plant, working with the crew. There's a lot of spirit in there. I'm having fun with the struggle that historically tofu makers have faced to make a good batch every time. We have been able to make enough profit to pay off ELCO because of two things: (1) The employees have agreed to forego wage increases; (2). Yvonne, Suni, and I have worked without wages for 15-16 months."

Island Spring has been able to keep all its major distributors in the Pacific Northwest. Rock Island in California dropped Island Spring and took on White Wave. That did not hurt much because it was a very, very small percentage of Island Spring's business, but it did hurt expansion into the Bay Area. Some Island Spring products are sold in Los Angeles, an even more important market that looks secure. Island Spring has lost its ability to spend money for marketing. But the company has always consciously set its prices above the competition. This has not hurt sales and has helped profits. Some people prefer to buy the high priced product, assuming it is the best quality. They

are the premier tofu brand in the Pacific Northwest. Island Spring sales for 1989 were about the same as 1988. One new product is on the drawing boards: A natural foods TV dinner (ready to eat, frozen entree, microwaveable), somewhat like what Legume Inc. did but better tasting. "That is the single category that distributors say they can move all the product we can make. We'd start in the natural foods industry and, as funds are available, expand into supermarkets. This one entree (not a line), which has been ready for years, may be on the market by early fall of 1990. The yogurt, and the tofu in Oscar Meyer sausages are not being actively pursued, though Luke would like eventually to make tofu in Eastern Europe for use in sausages there. He has done some exploratory work in this area. He wonders how much interest there is in Eastern Europe in natural and vegetarian foods. Luke no longer has the drive to be a huge company with $50-100 million a year sales. He is much happier to be a smaller company with a good life now.

As of Nov. 1989 the law changed making it now possible to trademark a name before the product is on the market. This brings U.S. patent and trademark law in accord with most such foreign laws. However the product must be launched within a year or two or the trademark is lost.

Luke has heard that a Japanese trading company [Kyoto Food Corp. USA] is building a $4.5 million tofu plant in Indiana [Terre Haute].

Luke has a video "of extruding tofu out of a 6-inch tube–and its just keeps coming. We could feed soybeans in one end and extrude soybeans out the other. You could obviously put knives on it and cut it into any shapes you want. We could sell tofu in a slightly less solid form in large bulk quantities, even in tank car quantities. But it only makes sense with large scale production, since it is capital intensive and requires a highly trained person to run it."

Update: Dec. 1991. Luke and Suni now have 3 children. He manages Island Spring, sells real estate for Keywest Realty part-time, keeps his five rentals running and rented, services the Island Spring Water Co. customers, keeps his two cars and an old pick-up truck running, tends the vegetable garden, sits on the Community Council and two Island-wide water study committees, spends time with his family, coaches his daughter Sulu's 8th grade basketball team, and spends plenty of time alone in the woods. He is "addicted to Compuserve." Address: P.O. Box 747, Vashon, Washington 98070. Phone: 206-622-6448.

5847. Lukoskie, Luke. 1990. Thoughts on Pacific Foods of Oregon and their soymilk (Interview). *SoyaScan Notes.* Feb. 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** One of ELCO's companies is called Pacific Foods of Oregon, which owns the soyfoods plant and warehouse in Tualatin, Oregon. The equipment in that company came from the Island Spring breakup. Naturally Northwest was a label that was owned by a company named Sunny Jim in Seattle, which was purchased by ELCO. It has folded. The "Naturally Northwest" brand was going to be on the label of the Sunny Jim line for the natural foods industry. I was then absorbed as the label for the natural foods industry by Pacific Foods of Oregon. They recently have tended to blend the name and call it Pacific Foods / Naturally Northwest. He has heard that there is a soymilk with a Pacific Foods brand. They do have a 1-quart plain soymilk that is sold in the Pacific Northwest, distributed by NutriSource. It is sold in most natural food stores, and it tastes good. But they "practically gave it away to get distribution. And it appeared that sales quickly leveled off."

Luke has reports indicating that they are trying to sell their concentrated soybase to small tofu makers. The tofu made from the base was found to have a poor flavor. They have tried to sell their soybase to various friends of Luke's who make second generation soyfoods around the USA. Their sales people talk as if they are just an arm of Island Spring with 15 years of history. Not only do they misrepresent themselves, they are not being successful in selling to small companies. "There aren't really many big people to approach who are interested." Luke has heard that Pacific Foods has a soy cheese product (with casein) out but he hasn't seen it. They have also announced (at least to a tofu maker in Takoma) that they are planning to launch an organic tofu product in 6 months. It will probably not be aseptically packaged.

Earlier joint efforts to sell tofu to 20 major food corporations (including to Gerber for use in baby foods) were not successful. There was little interest and the demand was too small. These companies would rather talk to ADM or Ralston Purina. Alfa-Laval has an "Achilles" aseptic packaging system that allows packaging in pallet-size containers.

There was a rented ultrafiltration unit at Pacific Foods of Oregon, but Luke does not know if they have ever hooked it up.

Luke does not think Pacific Foods could be selling enough soyfoods to pay their bills and interest. Luke's debt payments may be their biggest source of income! He thinks there is a very strong likelihood that Pacific Foods soyfoods venture will fail and they will then sell their STS/DTD system on the open market at a low price. Luke would be interested in buying back his equipment at $0.10 on the dollar. Address: P.O. Box 747, Vashon, Washington 98070.

5848. Achter-Theiss, Elke. 1990. Speise statt Futter [Food instead fodder]. *Oeko-Test Magazin* (*Frankfurt, West Germany*). Feb. p. 57-59. [Ger]
• ***Summary:*** Discusses whole dry soybeans, soybean meal, soy sauce, soymilk, tofu and silken tofu, tempeh, and miso.

5849. Baxter, M.J.; Burrell, J.A.; Massey, R.C. 1990. The aluminum content of infant formula and tea. *Food Additives*

and Contaminants: Analysis, Surveillance, Evaluation, Control (*London*) 7(1):101-07. Jan/Feb. [25 ref]
• ***Summary:*** Tea and infant formulas were examined for the presence of aluminum. Concentrations in 13 different tea infusions ranged from 2.2 mg/liter to 4.5 mg/liter. In cow's milk-based infant formulae as made up for consumption, aluminum levels of between 0.03 mg/liter and 0.20 mg/liter were detected. Higher amounts were present in soya-based formulae with concentrations ranging from 0.64 mg/liter to 1.34 mg/liter. Address: Ministry of Agriculture, Fisheries and Food, Food Science Div., Queen St., Norwich NR2 4SX, UK.

5850. Harzig, J. 1990. Les silos de Valence au lait de soja [The Silos of Valence cooperative and its soymilk]. *Agro Fourniture* 4:14. Feb. [Fre]*

5851. Karty, Cheryl. 1990. Soy drink sales rise fast [in Australia]. *Retail World* (*Australia*). Feb. *
• ***Summary:*** Australia's 16 million inhabitants consumed about 25 million liters of soymilk, and the market is growing at 20-25% a year. There are now at least 8 companies making soymilk in Australia; three of these are dairy companies. There are roughly 100 different flavors, packaging types, and sizes. All supermarkets now carry soymilk.

5852. **Product Name:** [Viana Rice Pudding: Amazake].
Foreign Name: Viana Reispudding (Amazake).
Manufacturer's Name: Viana Naturkost GmbH.
Manufacturer's Address: Schmittenstr. 106, D-5030 Huerth 6, West Germany. Phone: (02233) 41323.
Date of Introduction: 1990. February.
Ingredients: Brown rice*, koji ferment. * Organically grown.
Wt/Vol., Packaging, Price: 350 gm.
How Stored: Refrigerated.
New Product–Documentation: Label sent by Bernd Drosihn. 1990. May 10. 3.5 by 3 inches. Self adhesive. Reddish-purple, black, brownish gold, and pea green. Dot matrix printed. "Without sugar! And without honey! A product of natural rice fermentation." The company also makes a product named Sweet Rice Cream with Lemon (*Suesse Reiscreme mit Zitronen*). It does not containing any amazake. The ingredients are rice, raisins, lemon, barley malt, and sea salt.

5853. Lo, K.S. 1990. Re: Preparing for 50th anniversary celebration. Letter to William Shurtleff at Soyfoods Center, March 1. 1 p. Typed, with signature on letterhead.
• ***Summary:*** Mr. Lo is "in the midst of preparation for the celebration of the 50th Anniversary of the founding of our Company which is going to take place on March 23, 1990.

"I wish to express my thanks and appreciation for the copy of Bibliography of Vitasoy which you sent me. It is a very painstaking and carefully compiled record of Vitasoy for which I am most grateful.

"With reference to the translation of *Dou-Lei* [by C.N. Li, 1958] into English, I feel that this will be more of an academic interest and should be funded by research institutions. We, as a business firm, would be more interested in marketing and development of soya bean products." Address: HKSBPC Ltd. Office & factory: 41 Heung Yip Rd. Aberdeen, Hong Kong.

5854. Coker, Curtis E., Jr. 1990. Soy Moo used incorrectly as an infant formula. The child is now malnourished (Interview). *SoyaScan Notes.* March 5. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The hospital report to the FDA says: "On Feb. 22, 1990 a 5½-month-old female infant was transferred to this hospital. Secondary to a severe metabolic acidosis accompanied by severe deficiencies of calcium, potassium, phosphorus, thiamine, and vitamin D. She is severely malnourished and an x-ray is compatible with rickets. By parental history, the patient received Soy Moo obtained from a health food store since 3 days of life [as the sole source of nutrition]."

FDA is keeping the name of the hospital and child confidential. The parents were college-educated. The child was in critical condition and could have died. The FDA is now doing an open investigation on this problem. FDA is planning to do a mailing to all U.S. soymilk manufacturers and importers requesting that they include a statement on their packages that says, "This product should not be used as an infant formula."

Note: The FDA Center for Food Safety and Applied Nutrition used to be named the Bureau of Foods; the name was changed 7-8 years ago. Address: Asst. to the Director, Div. of Regulatory Guidance, Center for Food Safety and Applied Nutrition, Food and Drug Administration HFF-314, 200 C Street S.W., Washington, DC 20204. Phone: 202-485-0024.

5855. Fehlberg, Eric C. 1990. Seventh-day Adventist health food companies in Europe (Interview). *SoyaScan Notes.* March 7. Conducted by William Shurtleff of Soyfoods Center. Followed by a letter dated 24 May 1990 clarifying details.
• ***Summary:*** There are three major Seventh-day Adventist (SDA) food factories in Europe, each owned by the church: DE-VAU-GE in West Germany, Nutana in Denmark, and Granose in England. There are smaller factories in Spain, and Switzerland. All these companies are owned by the SDA church. The leading Adventist food companies, ranked in descending order of annual sales, are: 1. DE-VAU-GE, established 1899 in West Germany. They are by far the biggest in Europe. They manufacture a total of 257 products. DE-VAU-GE began making its own tofu in Jan. 1986; before

that it purchased tofu from a Belgian soymilk company [Note: actually from Heuschen-Schrouff in the Netherlands]. When Michael Makowski took over as managing director in about 1972-73, company sales were about US$3-4 million. By 1983 sales were about $18 million. Since then growth has been fantastic. 1989 turnover was DM 84 million (US$49 million). This is due to both excellent management and the German interest in natural, health, and vegetarian foods. 2. Nutana, est. 1898 in Denmark. They are about half the size of DE-VAU-GE. Under the management of Bent Nielsen, who was there until 3 years ago, the company grew rapidly. Since 1987 growth has flattened, but there is great potential for future growth. 3. Nutana in Norway (Nutana Norge), formerly Dagens Kost, est. 1970. They were established as a marketing company for Nutana, Denmark, and they sell all the soyfoods made by Nutana, Denmark. They also manufacture 55 products, but they import and wholesale 321 products. All of the imports come from European Adventist companies. 4. Granose Foods, est. 1899 in England. They manufacture 39 products and distribute 98 more (mostly from Nutana or DE-VAU-GE). They have been a manufacturer since 1899, and they built a new food plant in 1989. Their business is now growing rapidly. 5. Nutana in Sweden (AB Svenska Nutana) was renamed in 1987. It was formerly named Edakost Food Company, Sweden, est. 1970. 6. Nutana in Finland, formerly Finn-Nutana, est. 1979. 7. Pur-Aliment, est. 1928 in France. They are not a food manufacturer; purely marketing. 8. PHAG Food Factory (Fabrique de Produits Dietetiques), est. 1895 in Switzerland. The small factory produces 40-50 tons of food a month. 9. Granovita Spain, was founded and began manufacturing in about Aug. 1985 in Valencia, Spain. They do not produce any soyfoods at all, but they market soy products made by DE-VAU-GE in West Germany and by Nutana in Denmark. 10. Nutana in the Netherlands, founded in 1986. They are presently selling all the products produced by Nutana of Denmark as well as 5 other products: Vitanex (Sandwich cream), Rondolettes (Chickenlike or beeflike flavor), Snackers (Soy sausages), Boulettes (Dinner balls).

The Austrian Food Company, founded in 1976, was a restaurant rather than a food manufacturer; it was closed in 1987.

Granose and DE-VAU-GE were both importing foods from Loma Linda in the USA. But now that Loma Linda has been sold to Worthington Foods, it is not clear what will happen to these imports. Today, the various Nutana companies are independent, but there is much talk of bringing Nutana in Norway and Holland together with Denmark. Nutana has always been behind the expansion of SDA food work in the Scandinavian countries. Using the common name Nutana greatly facilitates marketing.

The European food companies have grown at different rates, largely dependent on the effectiveness of each company's management. The trend has been generally up. The highest growth rates in the past 5 years have been shown by Granose in England (though it started from a smaller base), followed by DE-VAU-GE in West Germany. Pur-Aliment and Nutana have had a bit of a struggle.

All of these companies pay a portion of their profits back to the church. They are encouraged to pay about 20% of profits back to the church, but some pay almost 50%. This is similar to the dividends paid by secular companies. Fehlberg believes that tofu will be the growth food of the future; it has great growth potential that has not yet begun to be realized. Address: Director, International Health Food Assoc., Seventh-day Adventist General Conference, 12501 Old Columbia Pike, Silver Spring, Maryland 20904. Phone: 301-680-6674.

5856. Fehlberg, Eric C. 1990. Recent Seventh-day Adventist work with soymilk (Interview). *SoyaScan Notes.* March 7. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** So Good soymilk from Australia has had remarkable success since it was launched in April 1987. Sanitarium Health Food Co. was the first to make soymilk in Australia. It caught on rapidly, and soon prompted 4-5 competing brands to be launched, but none of them have sales nearly as large as So Good. The main problem has been the company's inability to produce enough to keep up with demand. It was launched in about April 1987. In Oct. 1989 they sold 1,738 long tons (2,240 lb/ton, thus 3,893,120 lb). The equipment used to produce the soymilk is Adventist technology, not that purchased from Alfa-Laval, STS, etc. although in the last 6 months Sanitarium Foods purchased a pilot plant from Alfa-Laval which they plan to use in their laboratory. Originally So Good was packed under contract by a nearby dairy company in Combibloc cartons. After a year or so they purchased their own Combibloc packaging machine. Australia started to make soymilk after DE-VAU-GE in West Germany. The latter is very happy with their STS system, and Fehlberg is now seriously considering ordering one or two more turnkey soymilk plants for other countries in the near future. Sanitarium Foods has a very strong research lab.

The Seventh-day Adventist food company in South Korea, Sahm Yook Foods, now makes a Tetra Pak soymilk. The company was established in 1978, but did not begin food production until Sept. 1981. It began to make Sahm Yook Soy Milk in May 1985. Only a plain soymilk is produced–no flavors. After launching soymilk, the company began to grow dramatically, as that product grew. Last year they built a very large, now soymilk plant (based on Adventist technology) and they are now about the 2nd or 3rd largest soymilk maker in Korea. Address: Director, International Health Food Assoc., Seventh-day Adventist General Conference, 12501 Old Columbia Pike, Silver Spring, Maryland 20904. Phone: 301-680-6674.

5857. Fehlberg, Eric C. 1990. Thoughts on Loma Linda Foods, its acquisition by Worthington Foods, and the health foods industry in America (Interview). *SoyaScan Notes.* March 7. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Worthington Foods purchased Loma Linda Foods (LLF) from the Seventh-day Adventist Church in Jan. 1990. Loma Linda Foods, unlike most other Seventh-day Adventist companies worldwide, tended historically to target its products to Seventh-day Adventists. Within North America there are very, very few respectable SDA businessmen. That is the problem. "Loma Linda has been working since 1906 with their eyes blindfolded. Too often, instead of using a businessman to head the program, the men in their wisdom have elected to install a broken down minister, and expected him to make a roaring success of it."

A very good businessman, George T. Chapman from Australia, ran LLF from 1938 to 1963. The company did very well financially under his leadership. Since 1963 the company has had a series of managers who lacked business experience; the result was ongoing financial problems. In June 1984 Mr. Fehlberg went from his position at the General Conference to Loma Linda where he turned the company around. Fehlberg ran LLF for about 2 years, during which time it went from a substantial loss to a very profitable company. Mr. Pizzaro was brought in Nov. 1984 and has kept it profitable. He is a very conservative man with a background in banking. He was able to hold LLF together but was not inclined to take the risks to make it really take off.

The church first wanted to sell off the infant formula part of the company because of the high cost of liability insurance. The FDA are really down on infant formula foods. If anything goes wrong, there is no end to the strife. LLF had one small recall due to a small shortage of vitamin A–from dissipation. It was very expensive. Fehlberg understands that but does not understand at all and strongly disagreed with the sale of LLF. "I talked myself hoarse on the committee opposing the sale but I didn't win. I am not happy that it ended up in the hands of Worthington Foods. Their financial report over the past 5 years is not that strong. The last year has not been a healthy year. I hope they can survive. Loma Linda will definitely help them survive by giving them a lot of extra new sales with no extra administration or marketing costs. Now that they have a monopoly, they may relax their standards. I believe that once the 5-year non-compete term expires, you'll get an influx of products into the United States from Adventist companies overseas that will make it very difficult for Worthington to operate–unless they can improve things. Fehlberg prefers the flavor the Australian meat analogs, which are less highly flavored and easier to digest.

Fehlberg feels that the USA is 20 years behind many other countries (Australia, West Germany, Japan) in food processing and storage techniques, largely because of Food and Drug Administration (FDA) restrictions. One area where the USA lags behind is in retorting of food products in plastic film containers. We tend to retort foods too long, and do not have foods retorted in sausage-type pouches (e.g., tofu sausages), which require no refrigeration. The FDA is afraid of botulism in such protein foods, so they require that the foods be frozen. In Australia, West Germany, and Japan these foods are refrigerated, but Adventist tests show they can be stored at room temperature for 6-12 months, or more. If Worthington's frozen meatlike products could put in plastic containers made of this special film (which is available in America) there would be major cost savings in factory storage, transportation, and retail storage. Address: Director, International Health Food Assoc., Seventh-day Adventist General Conference, 12501 Old Columbia Pike, Silver Spring, Maryland 20904. Phone: 301-680-6674.

5858. Gaiser, Klaus. 1990. Huegli acquires majority ownership in Yamato Tofuhaus GmbH and in Heirler (Interview). *SoyaScan Notes.* March 12. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Huegli Naehrmittel A.G. is a Swiss company, but they have a German branch. The head of the German branch approached Gaiser and asked him if Yamato would like to work together with Huegli. Until the spring of 1989 Klaus had a business partner (Wolfgang Haberger, who had joined the company in early 1984) but he was not very happy with him, so he bought him out. At the time of the buyout, Huegli approached Gaiser, who was now suffering from undercapitalization. Gaiser found Huegli to be fair, trustworthy, and competent. Huegli bought more than 50% of Yamato in April 1989. Before that, Thomas Karas had tried to sell his company to Huegli.

In Jan. or Feb. 1990, Huegli purchased Horst Heirler, the biggest distributor of fresh health foods in West Germany. Heirler's packaging is very attractive. To the best of Klaus' knowledge, there is definitely no relationship between Huegli and Nestlé. Yamato has not yet announced its relationship with Huegli to the general public, so nothing has been published. Tofu production has not yet expanded enough to fill the needs of potential Huegli customers. Yamato is now selling tofu on one of Huegli's tracks–to hospitals and factories (institutions; Grossverpflegung); other tracks are (2) Reform Houses, and (3) industry and supermarket chains. Presently Klaus is working most on track 1. To reach tracks 2 and 3 Yamato would have to develop new packaging and products suited to their very special needs. "At the moment Yamato and Huegli are not yet working so closely or effectively. Their new capital comes one step at a time for specific goals/projects.

Yamato presently makes 8 tofu products: Tofu (250 gm and 400 gm), Tofu Enriched with Mung Bean Sprouts, Smoked Tofu, (the best in Germany), three types of

deep-fried tofu (Sour Marinated Tofu, *Hirschauer Laible* [Hirschau is a small village near Tuebingen]; *Laible* = little loaf or loaflet; the tofu is first marinated in soy sauce and spices, then deep fried), and Tofu Burgers with Sprouts (*Sprossen Tofuletten;* made with mung bean, sunflower, radish, alfalfa, and mustard seed sprouts {no soy sprouts}, these burgers were deep fried), 2 tofu pâtés in glasses (a little like sausages), and soymilk sterilized in bottles. He presently developing some new products.

Note: Huegli Naehrmittel A.G. (P.O. Box, CH-9323 Steinach-Arbon, Switzerland. Phone: 71.46.92.92) was founded in 1935. They currently have about 600 employees and capital of 100,000 Swiss francs. They are a well-known company in Switzerland. Address: President, Yamato Tofuhaus GmbH, Rittweg 11/1, D-7400 Tuebingen–Hirschau, West Germany. Phone: 7071-71094 or 95.

5859. *SoyaScan Notes.* 1990. Trends in the soyfoods market in Western Europe, and comparison with the USA (Overview). March 13. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** 1. Since 1988, many more large food companies have become soyfoods manufacturers in Europe than is the case in the USA. A great deal of new money is pouring into the soyfoods industry, especially from dairy and agricultural co-ops, and from large food companies. There have been many acquisitions and mergers involving dynamic small companies with large established companies. Products receiving the greatest attention are soymilk, dairylike soymilk products (such as non-dairy yogurts), tofu, and second-generation tofu products. Many industry leaders feel that the latter type of products have the greatest potential for the future.

2. There is much more use of and interest in organically grown soybeans and other ingredients in Europe. Organic certification marks (such as Nature et Progres, or CINAB) appear on the front panel of many products.

3. There is no U.S. equivalent of the huge and powerful Reformhaus health food chain, found in German-speaking countries. This chain helps to market soyfoods and set standards. It requires that all manufacturers put its Neuform certification symbol on all products sold by the chain.

4. Restrictive anti-soy labeling laws are more prevalent in Europe than in the USA. This is because of the very powerful dairy lobbies in most European countries. However these will be weakened after 1992.

5. Laws governing the way soy ingredients are listed on the label generally allow a more vague listing in Europe. In Germany, for example, a company can say simply "soy protein preparation," without specifying whether they are using a soy protein isolate, concentrate, textured isolate, textured soy flour, etc.

6. There are no good publications or information centers that focus on soyfoods in Europe, either for individual countries or for the continent as a whole.

7. The European market is much more fragmented and diverse. Much of the fragmentation comes from the fact that each country has its own food culture, language, and labeling laws. Exporting products, in an attempt to expand one's market, often requires duplicate or complex labeling, plus dealing with tariffs, etc. This will become less of a problem after 1992.

8. In most countries soyfoods are marketed primarily to the health foods trade, but in France there is much more focus on the mainstream mass market.

5860. *SoyaScan Notes.* 1990. Low-acid Tetra Brik aseptic packagers in the USA (Overview). March 14. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** There are three such packagers west of the Rocky Mountains: (1) Real Fresh in Visalia, California (near Fresno) is the oldest. The Graves family started the company and its pioneering work with UHT and aseptic packaging in the 1950s. A talk with Real Fresh reveals that: In June 1988, Real Fresh was bought by a French company named Bongrain, which basically threw out the whole Graves family. In recent years the family had been losing money. (2) Pacific Foods in Tualatin, Oregon, which started in 1989 to package soymilk. (3) Gossner in Utah.

In the eastern USA, American Soy Products in Saline, Michigan, makes and packs Edensoy.

5861. *SoyaScan Notes.* 1990. Use of *Bifidobacterium* species in dairylike soymilk products (Overview). March 15. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** A growing number of soy yogurts, dairy milks, and cultured milks (such as Yakult) in Europe, Japan, and Canada are being promoted as containing species "Bifido" (pronounced BIF-uh-doe) or "Bifidus" bacteria. Keum et al. (1984) used *Bifidobacterium bifidum* as a starter for soymilk yogurt with good results. Sakai et al. (1987) showed that *Bifidobacterium breve* grown on soymilk assimilates the flatulence-causing oligosaccharides stachyose and raffinose in preference to sucrose, and hydrolyzes galactosyl compounds.

Talk with Brian Quigley of Canada. 1990. March 15. These bacteria are found in the large/lower intestine of newborn infants, but they gradually disappear a few months after birth. If these bacteria are ingested by adults, they supposedly go into the digestive tract, where they survive and kill bad bacteria. By eating a food containing these bacteria, an adult is replenishing his/her digestive tract with a bacteria found there at birth but lost. Some studies ascribe amazing benefits (anti-carcinogen, etc.) to this organism. Chris Hansen's Lab. in Milwaukee, Wisconsin, has done extensive work on this organism in Europe and the USA. They have worked with Yoplait in France and other companies to develop good strains. Products now containing

the bacterium are often labeled "BA" or "Bifido Active." In Japan, the bacteria are sold in pill form. Researchers at Laval University in Quebec, Canada, have also done considerable research on these bacteria.

Bergey's Manual of Systematic Bacteriology (1984) lists 32 species of *Bifidobacterium,* including the species *bifidum* and *breve* (p. 1424). "Distinction of two serovars have been made. Serovar A predominates in the feces of human adults, while B predominates in that of neonates (Reuter 1963)."

A search for the term "Bifidobacterium" the MEDLINE database from 1986 to the present lists 78 publications.

5862. Sellars, Bob. 1990. The health benefits *Bifidobacterium* species in dairy products (Interview). *SoyaScan Notes.* March 16. Conducted by William Shurtleff of Soyfoods Center. [1 ref]

• ***Summary:*** Chris Hansen's Lab was founded in Denmark in 1874. Mr. Sellars has been interested in *Lactobacillus acidophilus* and *Bifidobacterium* since 1964, and has done many experiments on himself. His lab has supplied acidophilus to the health food industry since 1962. The single best source of information on *Bifidobacterium* (pronounced BIF-uh-doe-, and called "Bifido" for short) is a 1983 book by Rasic and Kurmann titled *Bifidobacteria and Their Role.* It cites most of the important studies.

The main benefit of Bifido is that it produces some very beneficial enzymes that help to inhibit the formation of pro-carcinogens. But acidophilus also produces an enzyme/compound which reduces or inhibits the azo-reductase and nitro-reductase enzymes in the human body. Those enzymes can produce carcinogens, such nitrosamines (pronounced nai-TROE-suh-meens).

The species of *Bifidobacterium* used by most people are *bifidum, longum, adolscenpis,* and *infantis.* His Lab. makes a mixed culture product named Nu-Trish a/B which contains the longum and the bifidum. The "a" stands for acidophilus, which resides primarily in the small intestine; the B stands for Bifido, which resides primarily in the large intestine. This culture is not used for making yogurt. In the USA the standard for yogurt requires it to contain live *Streptococcus thermophilus* (pronounced ther-MOPH-uh-lus) and *Lactobacillus bulgaricus* organisms. So Nu-Trish a/B (which contains whole cells) is usually added to sweetened pasteurized fluid milk, which is not fermented, but is sold in many supermarkets. In a fermented yogurt, the 3 organisms in Nu-Trish would be antagonistic to the 2 yogurt organisms, so it wouldn't work well. The acidophilus and the bifidum found in newborn infants come primarily from the colostrum in mother's milk, but some may be found in the fetus at birth. Both organisms are found in both intestines of the infant, but (as noted above) acidophilus predominates in the small intestine and *Bifidobacterium infantis* in the large. Infants gradually loose these bacteria as they mature. The Japanese are very interested in these organisms for health reasons because of the Yakult company, and Japanese consume more of these bacteria per capita than any other nation. In Japan, it is legal to promote the health benefits of these organisms, and say that they help cure cancer, that they are good for lactose intolerance (the bacteria produce an enzyme that breaks down lactose in both the milk and in the stomach and small intestine), or that they cure gastroenteritis infections; in the USA, this is illegal. In Europe and Japan extensive clinical research shows the benefits to humans, but in this country the American Medical Assoc. and the Food and Drug Administration have refused to recognize the research done here because the sample size was too small to make it statistically valid. Now Dairy Research Incorporated, the National Dairy Council in Chicago, the National Dairy Research and Promotion Board, the Wisconsin Milk Marketing Board, and the North Carolina Dairy Foundation, Chris Hansen's Lab., and Miles Lab. are all supporting one large scale study in 3 locations. The results, expected in June 1990, if promising will be published in *New England Journal of Medicine* or *Lancet.*

The key to the rapid growth of interest in Bifido was the discovery in Japan a few years ago of the "Bifido factor," i.e. that Bifido need the sugar lactulose for rapid sustained growth. Dairy milk contains small, irregular amounts of this sugar. Hansen's Lab. is interested in dairy milk, and NOT in soymilk.

Al Huggins, president of Huggins International in Chicago has a database on dairy cultures such as acidophilus (Phone: 312-477-0014). Address: Senior V.P. of technology, Chris Hansen's Laboratory, 9015 W. Maple St., Milwaukee, WI 52315. Phone: 414-476-3630.

5863. Storup, Bernard. 1990. The soymilk market in France (Interview). *SoyaScan Notes.* March 26. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** By far the biggest seller of soymilk in France in Alpro/Vandemoortele, whose plant is in Belgium. They sell an estimated 7-9 million liters/year of soymilk in France.

The biggest soymilk manufacturer in France is Cacoja (pronounced KA-ko-jah). They make an estimated 2.5 to 3 million liters/year. Cacoja's original brand name was Bioforme. They changed their brand name to BioSoja in the fall (Sept. or Oct.) of 1989. Unfortunately BioSoja is a brand owned by another soyfoods company (which notified Cacoja of the problem, and Cacoja chose to ignore it), so they will almost certainly be obliged to change the brand name once again! [to Formoja]. Cacoja was actually not their own name; it had been sold to a distributor, and they got into legal problems with that distributor, bu they are still using the name as their company name. Their plant is still in Issenheim. This company is making so many mistakes that it is hard to imagine how they can survive. In part, this is because they are a cooperative and in part because they have so much money that they can afford not to be careful. For

them, every day is a jackpot!

Société Soy presently makes 70,000 to 100,000 liters/month. In 1990 they expect to produce 1.5 million liters, because they will soon introduce their own Tetra Pack line under the brand Biosoy.

The third and fourth largest soymilk manufacturers in France are probably Triballat and Innoval. Both make about the same amount, an estimated 500,000 liters a year. But this is a rough guess since they do not give out figures. Innoval's soymilk is very good quality.

Cacoja, Triballat, and Innoval all have big financial problems. They have large, expensive, automated, computerized factories and very low production. They have too much invested for the size of the market. They may produce only 1 day a week. They have no real leaders in the companies so the people are not really motivated by what they do. Its a pity, because they have two of the most interesting factories in Europe. They hope to private label soymilks for supermarkets.

It appears that Sojadoc sells their soymilk only in Spain (none in France), so it is very difficult to tell how much they are making or what they are doing. They were supposed to move their complete factory in Clermond-Ferrand, and now we do not know where they are.

DE-VAU-GE started to sell their soymilk in France, but they stopped. They now sell their soymilk mainly in West Germany, Belgium, and the Netherlands.

Thus soymilk consumption in France is presently estimated to be about 11 million liters/year, whereas production is about 3 million liters/year. Both figures are very small compared to the 2,000 million liters of cow's milk.

Bernard would estimate that soymilk consumption in France is presently growing at 25% a year. Address: Founder and Owner, Société Soy, 1 rue du Crêt de la Perdrix, 42400 St.-Chamond, France. Phone: 77.31.23.66.

5864. Friend, Tim. 1990. Soybeans may help fight cancer. *USA Today.* March 27. [1 ref]

• ***Summary:*** "Daytona Beach, Florida–New research presented here Monday at an American Cancer Society meeting shows rats fed a soybean-rich diet, then injected with a carcinogen, have 50% fewer breast cancers than rats given another source of protein.

"The link is not proven in people yet, but the findings may explain why Asian countries, which rely heavily on soybeans in the diet, have breast cancer rates that are five times lower than rates in the USA, says Stephen Barnes, University of Alabama.

"When Asians move to the USA, their daughters have the same breast cancer risk as U.S. women, he says.

"Barnes also showed soybeans and the drug Tamoxifen, which stops recurrences of hormone-dependent breast cancer, are chemically similar. That means a lifelong diet of soybeans may block estrogen from breast cells that use it to grow tumors.

"Dr. Samuel Broder, National Cancer Institute, finds the study 'fascinating, but you must keep it in perspective.' He says many factors could be involved, such as lower-fat diets in Asian countries and the higher breast cancer risk among U.S. women due to bearing children at later ages.

"Barnes says processed soybeans added to food do not contain anti-estrogen compounds that may prevent cancer. Foods that do, include tofu, soy milk and unprocessed soy flour."

This story was also broadcast on national radio news (incl. KCBS in San Francisco) the same day.

5865. Hansen, Asger Somer. 1990. The soymilk market in Europe (Interview). *SoyaScan Notes.* March 27. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** There are no statistics published on soymilk in Europe. The soymilk that is made can be used in either of two ways: (1) Aseptically packaged (typically in Tetra Brik cartons) for consumer use as a beverage or pudding-like dessert; (2) Soymilk base is used as an ingredient in other foods or to make "processed tofu," which is made by ultrafiltration rather than by coagulation. Alpro is definitely the largest manufacturer with output estimated at 18-24 million liters/year. DE-VAU-GE is second biggest with about 12 million liters/year in the form of long-life packs (beverages and desserts). DE-VAU-GE will soon start to make tofu, which will be used mostly as an ingredient in their foods (sausages, etc.). In Asger's opinion these are very good products. Finally there is Cacoja, Triballat, and some smaller companies making a total of about 5 million liters/year. This gives a rough estimate of 35-40 million liters/year of soymilk made in Europe.

The growth rate of this market during the past 2 years has been slow, maybe 5-10%. "The real growth area has been in processed foods with tofu as a main ingredient. That's where I see the growth happening, in foods like dressings, egg-free mayonnaise, sausages, etc."

Cacoja sells "soymilk base," which is sold from the factory in tankers. Last time he talked with customers, they were not satisfied with the quality of the product. The capacity is only 1,500 liters/hour. The Adventists are considering a soymilk plant in the USSR.

Anders Linder left DTD on 1 Nov. 1989. He was asked to leave because the company was not making enough money, and because the company has new management under APV. He is now living at Domsten, Helsingborg, in Sweden. DTD's name is now APV-DTD, part of APV-Pasilac. Asger is in charge of the Soya Technology Div. Two other people are employed by this division with him (Elizabeth Gibson). John Davies is in Hong Kong. Address: Technical Manager, Danish Turnkey Dairies Ltd., Soya Technology Div., 2 Europaplads (P.O. Box 146), DK-8100

Aarhus C, Denmark. Phone: (86) 12 4155.

5866. Bundesfachverband Deutscher Reformhaeuser. 1990. [Re: Overview of the Reform House (Reformhaus, including Neuform) movement in Europe]. Questions answered on Soyfoods Center letterhead (dated 22 March 1990) and returned to SC on 30 March 1990. 5 p. [Ger]
• ***Summary:*** The first Reformhaus was started in Berlin, Germany, in 1877 by Karl Braun as a health center (*Gesundheitszentrale*)**.** Today there are 2,800 Reform Houses in West Germany, 400 in Switzerland, and 50 in East Germany. Each house is owned by an independent merchant who is a member of the cooperative.

Concerning the Neuform part of the Reform Houses (as of 31 Dec. 1988), there are 1,325 members, a total of 2,804 sales places of which 1,902 are Reform Houses. There are 902 storehouses / warehouses (Depots). Annual sales (Umsatz, EVP) are 1,050,000 million.

A breakdown by type of goods sold is: Foods 56.1%, natural medicines / pharmaceuticals 19.6%, body care products & cosmetics 13.3%, dietetic foods 9.6%, diverse minor products 1.4%.

There are about 4,500 Neuform products made by 73 contractors / producers. Employees: About 10,000.

Sales by Neuform-Reform Houses and Depots has grown from DM 700 million in 1988 to 1,050 million 1988. In 1988 of the 2,804 Neuform locations, 67.8% were Reform Houses and 32.2% were Depots. In 1980 of the 2,638 Neuform locations, 64.2% were Reform Houses and 35.8% were Depots. Address: Waldstrasse 6, Postfach 4110, D-6370 Oberursel 4, West Germany.

5867. Carantino, Sabine. 1990. Le soja perd son amertume [Soya loses his bitterness]. *Management et Technologies Alimentaires* No. 2. March. p. 65-66. [Fre]
• ***Summary:*** Last Oct. 7 companies that process soybeans joined to create AFISA (Association Francaise des Industriel du Soja), the French soyfoods association (5 Blvd. de la Mediterranée, 31400, Toulouse, France). This article uses the term "soyfoods" and discusses soymilk, tofu, tofu products (desserts, prepared foods). ONIDOL is involved, as is GEPV (*Groupement d'Études sur les Protéines Végétales,* 10-A rue de la Paix, 75002, Paris, France; founded in 1975). It has been decided to finance a market study (which will be completed this year) of 4 European countries: Belgium, France, Great Britain, and West Germany. They may develop a "French Soya" logo. At the same time, ONIDOL is organizing an Interprofessional Committee for Soy Proteins Destined for Human Consumption. It will coordinate scientific studies, communication, and information on vegetable proteins and "soyfoods."

In Europe, the degree of advancement of use of soy protein in human foods differs considerably from one country to the next. The UK and Germany started earlier than France. In Germany, soyfoods are positioned on the "battlements of the dietetic market" whereas in France they are more oriented toward the mass market. In France, the high consumption of dairy products has not favored soymilk. 3-5 million liters of soymilk were produced in 1988, and the amount had roughly doubled by 1989. The new technologies allow production of soymilk with almost no bitter (beany) flavor, and it can be used to make good yogurts and desserts.

The first soy beverages and flavored desserts were launched only 5 years ago by Alpro (a division of Vandemoortele). The movement was then expanded with the creation of new brands, Celia (Laiterie Saint-Hubert-de-l'Hôtel) and Cacoja (Coopérative agricole de Colmar). Triballat created Soja Sun, a line of soy desserts. In 1988 the cooperative of Valence launched the Innoval line. Others include [Société] Soy, Sojadoc (Richemont) and Sojal. Many of the leaders are dairy companies, but they position their products very differently from dairy milk. Also in the French market are Lima from Belgium (with tempeh and tamari). Tonidoc makes soynuts sold as an aperitif. The French company Bunge, a third party, and Sofiproteol (Sofiprotéol) have created Sogip, which produces soy protein concentrates for use as both calf milk replacers and in human foods.

Concerning regulations, the definitions and uses of soy protein are set forth in a circular of 27 Aug. 1975, which related to another document of 12 Oct. 1972 for terminology. Finally a new circular of 1986 replaced the earlier ones. The Codex Alimentarius will finish its work on these areas in 1991.

A sidebar describes Innoval and its goals. Address: France.

5868. **Product Name:** Promoveal (Soy Protein Concentrate Milk Replacer).
Manufacturer's Name: Central Soya Co.
Manufacturer's Address: Bellevue, Ohio.
Date of Introduction: 1990. March.
New Product–Documentation: Central Soya Co. 1991. 1990 Annual Report. p. 10. "The Company's Chemurgy Division, which produced record sales and earnings again in 1990, successfully launched production in March at its new soy protein concentrate plant, the largest expansion project in the Company's history, at the Bellevue, Ohio multipurpose facility... New technology was used to produce a new soy concentrate product named Promoveal, designed as a nutritionally improved high protein milk replacer for use in specialty animal feed formulations..."

5869. Choi, Po-King. 1990. Hou sheng yü ch'uang yeh: Wei t'a nai 50 nien (1940 chih 1990) [Enriching life and creating business: Fifty years of Vitasoy (1940-1990)]. Hong Kong Soya Bean Products Co. Ltd., 1 Kin Wong Street, Tuen Mun, New Territories, Hong Kong. 103 p. Illust. 26 cm. [Chi]
• ***Summary:*** This excellent, detailed Chinese-language

history of the Hong Kong Soya Bean Products Company Ltd. is packed with interesting photos, both old and new, and contains a 2-page chronology of key events at the end. Photos of K.S. Lo include: At graduation in 1934 (p. 12). In 1935 with three other men (p. 15). In the 1980s with Winston and one other son (p. 16). At the company's grand opening in 1941 (p. 21) and re-opening in 1949 (p. 31). Inauguration day of the Green Spot plant in Hong Kong, 10 June 1950 (p. 36). With two daughters (p. 37). At the back of a Pepsi Cola van, p. 44. Toasting Richard Nixon in 1964 (p. 47). Standing next to a Vitasoy truck (p. 49). With a huge stone mill and two of his sons (p. 51). With two other men (p. 52). In the Hong Kong plant (p. 71-73). Painted color portrait (p. 96). Photos include: The original Vitasoy plant (frontispiece, facing the title page). The grand opening of the Hong Kong Soya Bean Products Co. with management and employees (p. 21). Making and bottling soymilk inside the plant (p. 22-23).

Note: Talk with Yvonne Lo. 1990. Sept. 10. She thinks the company will do an English-language version of this book. The author spent 2 years doing the research. Address: Hong Kong.

5870. Diamond, Marilyn. 1990. The American vegetarian cookbook: From the Fit for Life kitchen. New York, NY: Warner Books. xx + 422 p. Index. 29 x 22 cm. [74* ref]
• ***Summary:*** This is a beautifully presented vegan cookbook, with many creative and delicious recipes. Soy-related recipes and entries include: Description of unpasteurized misos (p. 42). Soy products (p. 43; see also How to replace animal products, p. 93). Red miso tea (p. 71).

Chapter 6, titled "How to replace animal products" (p. 93-119), is devoted largely to soyfoods, especially tofu. At one time the Diamonds were not fans of tofu, but now Marilyn hails it as an "extraordinarily healthful" food. She uses it in what she calls "'stedda" foods–such as tofu salad "instead of" chicken salad. In this chapter you will find: Nondairy milk and cream: Soymilk (p. 94-95; the author finds nut and seed milks, almond and sesame, to be more flavorful). Enriched almonnaise (non-dairy mayonnaise with almonds and soymilk, p. 98). Instead of meat (p. 100): Exactly what is tofu? Culinary utopia: A dream come true. Buying and storing tofu. Wrapping tofu. Freezing tofu. Marinating tofu. Mixing tofu with other foods. How to proceed. "Stedda" sour cream. "Stedda" sour cream and onion dip. Cottage tofu or "stedda" feta. "Stedda" ricotta. Tofu "cheese" and olive spread. "Stedda" eggs: Rancheros (with tofu, p. 107). Scramblers (with tofu). Scrambled tofu (another way). Scramblers with fresh shiitake mushrooms. "Stedda Matzo brie (with soymilk and tofu). Burgers and other sandwiches (p. 110): "Stedda" egg salad (with tofu). Happy "chicken" burgers (with tofu). "Stedda" fish fillets (with tofu). "Stedda" meat marinades (* = with low-sodium soy sauce): All-purpose marinade I*. "Chicken" flavoring*. "Beefy" marinade*. Sweet and sour*. "Stedda" chicken fillets (with tofu). Mixed grill platter (with tofu). Kebobs! (with tofu). Tofu meunière. Lemon "stedda" chicken (with tofu). "Stedda" Chinese chicken salad.

"Sour cream" garlic dressing (with tofu, p. 128). "Cheesy" dijon dressing (with tofu, p. 130). French green salad with cottage tofu (p. 141). "Stedda" beef salad (with tofu, p. 155). "Stedda" mozzarella salad (with tofu, p. 159). Tofu salad (p. 169). "I used to love a fried egg" sandwich (with tofu, p. 181). Spicy tofu tacos (p. 186). Seasonings for soups (miso, p. 189). Basic cream soup (with light miso, p. 191). Miso soup with ginger and green vegetables (p. 193). Easy miso soup with vegetables and tofu (p. 194). Asparagus with tofu (p. 222-23). Vegetable lasagna with tofu ricotta (p. 278). Meatless bolognese spaghetti sauce (with frozen tofu, p. 280). Dairy-free "cheese" sauce for any pasta (with soymilk and light miso, p. 282). Tamale pie (with tofu, p. 311). Mushroom-leek crepes (with miso, p. 316). Winter squash blintzes (with tofu, p. 317). Spinach quiche (with tofu and light miso, p. 317). Asparagus quiche (with tofu and light miso, p. 318). Country pot pie (with tofu). Spanokopita with "stedda" ricotta (with tofu, p. 320). Superb vegetable sushi (with tofu, p. 322). Baking ingredients (soy flour, p. 331, and soymilk, p. 333-34). Carrot-cake cookies (with soy flour, p. 346). "Cheesecake" bars (with tofu, p. 346). Easy banana bread (with tofu, p. 348). "Cheese" strudel (with tofu, p. 349). Mocha parfait (with tofu, p. 350). Baked Indian pudding (with soymilk, p. 350). Applesauce cake (with tofu, p. 352). "Chocolate" carrot cake (with tofu, p. 353). Holiday pumpkin pie (with tofu, p. 355).

Talk with Marilyn Diamond. 1991. Sept. 18. The book is in its 9th printing now and the publisher just allowed her to do a revision, correcting typos and improving recipes. The publisher is not even planning the paperback edition yet because the hardcover edition is selling so well. They now have a 10-year contract with Doubleday (with a 10-year option to renew), and she and Harvey are working on a book together titled "How to Save Your Husband's Life While Saving Your Own." It stresses the need to re-affirm the female energies, which are the earth energies. The Diamonds have established a foundation to support the environment and ecological projects. This last year they contributed funds from it to support tree planting through the National Arbor Day Foundation. Address: Bradenton, Florida 34209.

5871. DTD Soya Technology Div. 1990. APV soymilk technology (Leaflet). Europaplads 2, P.O. Box 146, DK-8100 Aarhus C, Denmark. 3 panels each side. Each panel: 30 x 21 cm. March.
• ***Summary:*** This glossy, full-color leaflet, Anders Lindner's last project before leaving DTD/STS, describes: "Our products and services: Hardware, software, turnkey plus, some products made from soymilk base (yogurts, ice creams, tofu products, etc.). Our business is soymilk plants: About

ourselves (APV DTD belongs to the APV-Pasilac Group), about soymilk." A color photo shows 4 flavors of Big Sipp soymilk. Soymilk processes and products. Progress of a typical project (2 flowcharts). On the back panel, 9 small color photos show commercial products made from soymilk, including Nasoya creamy tofu dressings, Nayonaise, GranoVita Bio-Tofu-Pastete (spread), and Tofuletten (liked sliced luncheon meats). Address: Aarhus, Denmark. Phone: +45 86 12 41 55.

5872. Golbitz, Peter. 1990. Is aseptic packaging the problem or solution for soymilk? *Soya International* (*Bar Harbor, Maine*). Jan/March. p. 2, 9.
• ***Summary:*** The author sat through eight hours of testimony before the Maine legislature's Energy and Natural Resources Committee concerning the merits and demerits of three proposed amendments to Maine's new solid waste/bottle bill. Presents both sides of the issue.

5873. **Product Name:** [Mam Soylet Soymilk (Liquid, or Powdered; With, or Without Added Salt and Sugar)].
Foreign Name: Mam Soylet (In Polvere; Bevanda Proteica di Soya).
Manufacturer's Name: Medical Soy S.p.A.
Manufacturer's Address: Via Matteotti 55, 20068 Peschiera Borromeo (Milan), Italy. Phone: 02.547.54.56.
Date of Introduction: 1990. March.
Ingredients: Water, partially defatted soybeans, natural aromas.
Wt/Vol., Packaging, Price: Powdered: 350 gm bag. Liquid: Square plastic bottle.
How Stored: Liquid: UHT treated so probably shelf stable.
Nutrition: Per 100 gm.: Protein 3.2 gm, carbohydrates 1.0 gm, lipids 2.3 gm, calories 37.5.
New Product–Documentation: Talk with then letter (fax) from Xavier Karis in Italy. 1990. June 13 and 18. Medical Soy makes a line of products including a soymilk, which he found to taste excellent, and which he thinks they make themselves. Mr. Bolleti is the contact person. Their fax number is 02-553-00-754. The company that distributes Medical Soy dry products is named La Moderna Distribuzione in Bergamo, Italy. Fax: 035-231-876.

He first tasted their soymilk at a fair (CIBUS in Parma) where they told him it was the version without added salt and sugar. That was the one he liked. "Last Saturday I bought one of their horribly designed plastic bottles without added salt and sugar. The taste sure wasn't as good as I remembered from the fair. I think at the fair they gave me the one with added salt and sugar."

Medical Soy leaflet. 1990. A photo shows 13 soy products.

Label sent by Xavier Karis. 1990. July 22. 2.5 by 3.75 inches. Self adhesive. Blue, yellow, and black on white. Design of 4 concentric boxes against a background of yellow-orange soybeans. "Contains soya protein (*Contiene le proteine della soia*). UHT treatment. Without sugar. Produced at the establishment of Gadesco Pieve Delmona (CR) of/for Medical Soy." UPC indicia. Recycle bottle symbol/roundel. Note that the Italian term "mam" has its roots in the words "mother" or "breast" (mamma, mammario, mammella).

5874. *Natural Food Trader* (*England*). 1990. Company news: Plamil Foods. March.
• ***Summary:*** "Plamil Foods is involving retailers and consumers in its silver jubilee [25th anniversary] celebrations. A competition is being held for children to draw a picture of their favourite / local health food store, and the stores featured in the winning pictures will be awarded £100 worth of Plamil goods at trade prices."

Note: Plamil Foods was apparently founded in about 1965.

5875. Ontario Soybean Growers' Marketing Board. 1990. A profile of the Canadian soyfoods market–Characteristics and potential. Box 1199, Chatham, ONT N7M 5L8, Canada. vi + 40 p. March. 28 cm. Spiral bound.
• ***Summary:*** Contents: 1. Introduction: Background, study objectives. 2. Research procedures: Data limitations, data collection (data sources). 3. The soyfood market: Soyfood production and utilization, domestic production, imports and exports (introduction, whole soybeans, soy flours and meals, soy oil, soy sauce, protein substances, cream and other substances, bran & soy hulls, soy meal oil cake), balance, conclusions regarding opportunities.

4. Soybeans for food purposes: Natto beans (background, market characteristics, market potential), whole bean soyfoods (introduction, soynuts, full fatted soy flours, soymilk, tofu, soy sprouts, tempeh, miso, natto, soy sauce), foods from soy ingredients (introduction, defatted soy flakes, soy protein concentrate, soy protein isolates, textured soy protein, consumption and imports). 5. Organic soyfoods: Introduction, organizations (major players, labelling requirements, certification), organic soybeans, organic soyfoods, market opportunities, recommendations.

6. Market estimates: Introduction, conversion rates, market characteristics (introduction, ethnic characteristics, immigration trends, implications), soyfood consumption (production). 7. Soyfood products: Introduction, new products (whole bean products, products from soy components), existing products (products with potential for growth). 8. Marketing strategy: Introduction, respondent requests (background), market opportunities (traditional soyfoods, new products), systems development (system information needs, human resources, production research), institutional needs.

This study was commissioned by the Ontario Soybean Growers' Marketing Board to provide a description of the

Ontario soyfood industry. "Production and utilization: In the 1988 crop year, approximately 1.12 million tonnes of soybeans were produced on 1.28 million acres in Ontario. Approximately 86% of the soybeans were sold through the Board, with the remainder being fed or retained on the farms where they were grown. In 1988, 860 thousand tonnes of soybeans were crushed in Canada to produce soybean meal and soy oil, and 272 thousand tonnes were exported.

"Imports and Exports: Canada had a negative balance, a deficit, of almost $190 million in the value of soybeans and soy products traded. This is just over half a million dollars per day. Our largest single area of exports is whole soybeans for human foods. The percentage of these beans going to the major markets in 1988 were: USA, 37%; Pacific Rim Countries, 34%; and Europe and other 29%. Our greatest imbalance in exports and imports is in soybean meal or oil cake. Canadian crushers are unable to maximize their sales of oil cake because of difficulties in selling surplus soybean oil in the US. Soy oil being sold into the US presently faces a tariff of 18% which is decreasing at the rate of 2.25% per year as per the Canada United States Trade Agreement...

"Institutional development: We suggest the Board initiate the establishment of a Soyfood Development Association similar in structure and function to the Canola Council of Canada... There is a need to begin to bring all industry stakeholders together to systematically identify problems, information and research needs; develop data bases; and cooperatively promote the soyfood industry."

Soybeans for food purposes: The total volume of soybeans consumed as soyfoods in Vancouver (BC), Toronto (Ontario), and Montreal (Quebec) was estimated at about 6,000 tonnes, and imports were estimated to be equivalent to 8,000 tonnes of soyfoods.

Miso: One large Vancouver producer and one Toronto producer estimated that the volume of soybeans used to make miso in Canada is only about 35 tonnes/year.

Modern Soy Protein Products: Soy flour, concentrates, isolates, and textured soy protein products. Roughly 2,400 tonnes of soybeans are used in Canada for the production of these products, and 5,600 tonnes of soybeans are used to make the imported products (only bakery flour and extruded flour are made in Canada). Almost 1,000 tonnes of soy protein concentrates and isolates, and 400 texture soy proteins were imported, 83% from the USA. Total exports were 800 tonnes, of which 578 tonnes went to the USA. Soy flour (full-fat): The term "flour" generally signifies that the material has been ground finely enough to pass through a 100-mesh screen. Only relatively small volumes of full-fat soy flours are used directly as human foods. Some are used in bread, crackers, and pastry products. 5 companies in Canada make 1,538 tonnes of soy flour worth $495,000.

Natto: Canadians sell roughly 8 to 10 thousand tonnes of natto beans in Japan each year. Natto-type beans are "created by screening out the small beans from among regular food grade soybeans which have white hilums" (p. 15). In Japan about 100,000 tons/year of soybeans are used to make natto. Recently, Canada (via 3 companies–First Line Seeds, W.G. Thompson, and King Grain) has supplied about 10% of this market. Ontario produces about 8,000 to 10,000 tonnes of natto beans. Competition is expected to increase from U.S. seed breeders.

Soymilk: There are presently no large Canadian soymilk manufacturers. A plant is being built by an international trading company near Vancouver (YHS Pacific Fruit Concentrates Ltd., owned by Yeo Hiap Seng). It will supply both the local market and the Western U.S. market when it goes on stream later this year. A high proportion of imported soymilk is organic. Two brands account for 3/4 of all imports: Edensoy and Vitasoy. A high proportion of all soymilk imports are certified organic. This emphasis makes it difficult for Canadian producers to compete because of the shortage of organic soybeans in Canada. Consumption of soymilk is increasing at about 10% a year. Prices range from $1.50 to $2.75 per liter, with the organic product commanding the higher prices. Just under 100 tonnes of soybeans are used to produce soymilk in Canada: Vancouver 42 tonnes, Toronto 30 tonnes, Montreal 25 tonnes, plus imports 240 tonnes. 1 kg of soybeans produces 16.5 kg of soymilk.

Soynuts: The volume of soynuts made in Canada is quite small. One Toronto company [Grove Country Foods Canada, Inc.; they were in business 1-2 years, but were out of business by Jan. 1991], which began operation in Nov. 1988, sells a line of roasted nuts, which are roasted in the USA and chocolate-dipped in Ontario. Production was only a few tonnes in 1989 and is estimated to be about 10 tonnes in 1990.

Soy sauce: In 1986, according to Statistics Canada data, 2,503 tonnes of soy sauce were produced by 6 firms. The value was $2,161 per tonne for a total of $5,411,000. In 1988 Canada imported 5,680 tonnes of soy sauce valued at $4 million, primarily from China, the United States, Hong Kong, and Japan. Exports were 58 tonnes valued at $65,000. The major Canadian producers are China Lily and Sun Fresh in Toronto, Wong Wing and VH in Montreal, and Golden Dragon in Vancouver. The value of Toronto production is currently estimated to be about $5 million.

Soy sprouts: One Toronto manufacturer uses 20-25 tonnes of soybeans per year.

Tofu: About 3,300 tonnes of soybeans are used to produce tofu in Canada, more than any other soyfood. The volume of soybeans used is estimated at 1,400 tonnes in Toronto, 1,200 tonnes in Quebec (when a relatively large operation in Hull [La Soyarie, Inc.], near Ottawa, which exports to Ontario is included), 625-700 tonnes in Vancouver, and 125 tonnes for imported tofu. 1 kg of soybeans produces 2.4 kg of tofu.

Tempeh: Only about 33 tonnes of soybeans are used

to make tempeh in Canada, and an estimated 15-20 tonnes in Ontario. Imports are relatively small. 1 kg of soybeans produces 1.6 kg of tempeh. Very few firms produce tempeh in Canada. One producer claims to have over half the Ontario market. A major distributor suggested they sold 4-5 times as much tofu as tempeh.

Soybean crushing: Since 1986 the number of firms crushing soybeans and producing soy oil has decreased from 3 to 2 [Central Soya owns two plants; in 1990 they bought the Canadian Vegetable Oil Processing (CVOP) plant in Hamilton, Ontario, formerly owned by Canada Packers Inc. They purchased Victory Soya Mills in Toronto in early 1985. So now 2 firms own 3 plants]. In 1986 the three plants made 95,108 tonnes of crude soy oil worth $57,271,000. Two firms made deodorized soy oil, but the volume and value were confidential. Less than $2 million of any type of soy oil is imported.

Consumption of soyfoods in Canada is strongly linked to Asian-Canadians. A table (p. 32) shows that according to the 1986 census, there were about 444,000 people of East- and Southeast Asian origin living in three major Canadian cities: Vancouver (155,105 people comprised 11.2% of the city's population), Toronto (234,325 people comprised 6.8%), and Montreal (55,585 people comprised 2.4%). Thus Toronto was by far the largest market, but Vancouver had the highest density of Asian-Canadians. A similar table (p. 33) updates the previous table to 1988. Immigration has increased sharply since then.

Note: This is the earliest document seen (Feb. 2002) that uses the term "food grade" (or "food-grade") in connection with Canadian soybeans (see p. 15). Address: Chatham, ONT, Canada.

5876. **Product Name:** Plamil Carob [Easter] Egg Raw Sugar Confection (100% Non-Dairy).
Manufacturer's Name: Plamil Foods Ltd.
Manufacturer's Address: Plamil House, Bowles Well Gardens, Folkestone, Kent CT19 6PQ, England.
Date of Introduction: 1990. March.
Ingredients: Vegetable fat, raw sugar, defatted soya flour, carob flour, emulsifier–soya lecithin, flavouring–natural vanilla. Note: Carob flour 12% minimum is produced by milling beans from the carob tree.
Wt/Vol., Packaging, Price: Two solid halves weigh 65 gm, in a recyclable box or paper bag.
How Stored: Shelf stable.
New Product–Documentation: SoyaFoods (ASA, Europe). 1990. 1(1):3. The product is made with "soya" instead of cow's milk. Leaflet (Color, 6 by 8.25 inches). 1990. April. Plamil delectable tasting confections. A photo shows the bag containing the eggs.

Letter and Label sent Arthur Ling, Managing Director of Plamil Foods. 1990. July 24. The product was launched on 13 March 1990. Label. 2 by 4.25 by 2 inch box. White, chocolate brown, green, and gold. Vegan certification symbol. "Two solid halves. With organic carob."

5877. Price, Caroline. 1990. Food for thought: Natural food is more than nuts and berries. It also makes dollars and cents for state firms. *Michigan Business* 7(3):24. March. Section 1.
• ***Summary:*** Apple Valley Market, a natural foods and vegetarian supermarket in Berrien Springs, Michigan, is operated by Andrews University and employs about 100 people. They sell no meat or meat products in the store and offer more than 500 bulk food items. The store makes its own bread, which it distributes widely.

Wysong Medical Corp., a 10-year-old company based in Midland, Michigan, makes foods and supplements for animals and people.

The last section is about Eden Foods and American Soy Products. Soymilk is Eden's best-selling product. Ron Roller, vice president and general manager of Eden Foods, says the company sells about 100 truckloads of soymilk each month, has 83 employees, and does over $20 million in sales annually–from all products.

5878. Shurtleff, William; Aoyagi, Akiko. comps. 1990. The European soyfoods market for tofu, soymilk, dairylike products, and meatlike products in the UK, France, West Germany, Belgium, and The Netherlands: From 1980 to March 1990. Lafayette, California: Soyfoods Center. 54 + 24 + 104 + 52 p. Unpublished manuscript. Subject/geographical index. Author/company index. 28 cm. [827 ref]
• ***Summary:*** This is a photocopy copy of a market study and bibliography conducted for a customer. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

5879. *Soya International* (*Bar Harbor, Maine*). 1990. Soymilk suffers legislative setback. Jan/March. p. 7, 9, 28.
• ***Summary:*** Aseptic packaging is rejected in Maine.

5880. *Soyanews* (*Sri Lanka*). 1990. Soya workshop. 12(1):1, 3. Jan/March.
• ***Summary:*** "A workshop was held by 'Plenty Canada' at Rochdale Hall, Multi-Purpose Cooperative Society Building in Kandy on March 19th 1990 for Soya entrepreneurs in the Soya field. 115 Soya processing entrepreneurs participated.

"The opening ceremony was graced by the Field Director, Plenty Canada Mr. P. Dudding. The inaugural speech was made by Dr. M. Sikurajapathy, Co-ordinator Soyabean Foods Research Centre, Gannoruwa... The entrepreneurs displayed their varieties of soya food preparations and dishes... Participants were very happy to have gathered informations, that are useful in their small scale business and self employments.

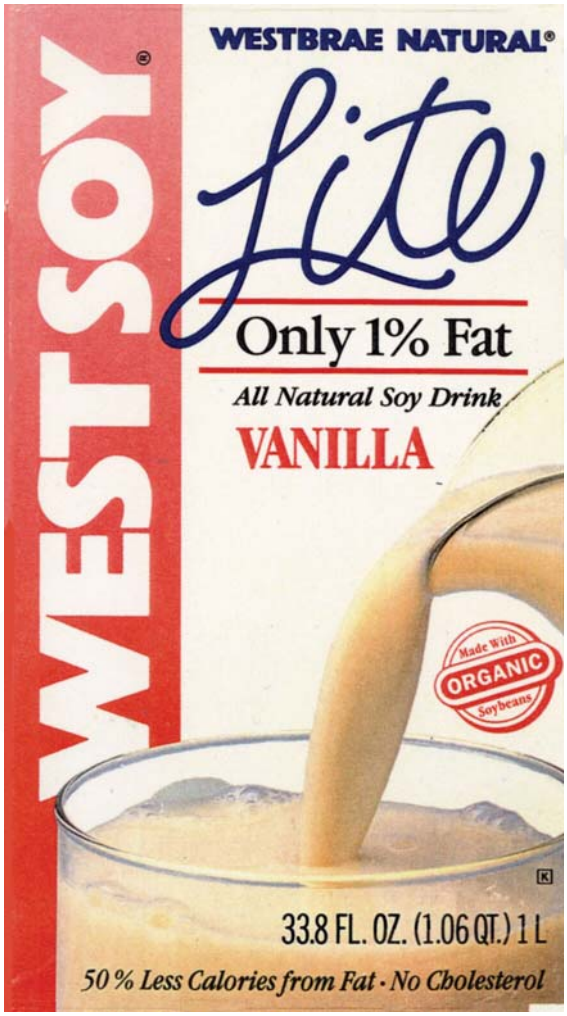
"All participants were treated generously by Plenty Canada with varieties of Soya delicacies, Soya milk and a

sumptuous lunch finished with delicious soy ice cream."

A photo shows (p. 1): "A group of participants who attended the workshop on soya held by Plenty Canada on 19th March in Kandy."

5881. Vitasoy (USA) Inc. 1990. Vitasoy: America's first... (Ad). *Vegetarian Times.* March. p. 22.
• ***Summary:*** This 2/3-page, color ad shows four different cartons of four flavors of Vitasoy against a field of soybeans. A large, red and white circular seal says "Certified organic whole soybeans." The text reads: "Soymilk from 100% organic soybeans." Address: P.O. Box 552, Brisbane, California 94005. Phone: 415-467-8888 or 1-800-VITASOY.

5882. **Product Name:** WestSoy Lite: Non Dairy Soy Beverage [Plain, Vanilla, or Cocoa].
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor). Subsidiary of Vestro Natural Foods.
Manufacturer's Address: 5701 South Eastern Ave. Suite 330, Commerce, CA 90040. Phone: 213-722-9817.
Date of Introduction: 1990. March.
Ingredients: Vanilla: Water, whole organic soybeans*, brown rice syrup (brown rice, water), natural vanilla flavor with other natural flavors, xanthan gum (vegetable gum), sea salt. * = Organically grown and processed in accordance with Section 26569.11 of the California Health and Safety Code.
Wt/Vol., Packaging, Price: 33.8 fluid oz (1.06 quart) 1 liter. Combibloc Aseptic carton. Use by 25 Oct. 1991.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Three products with Labels purchased in Lafayette, California. 1990. Vanilla and Plain. "Only 1% fat."



Note: This is the earliest commercial soymilk product seen (July 2013) with the word "Lite" on the front panel (one of two products). It is also the earliest low-fat soymilk seen. Such products are typically made by mixing 1 part regular soymilk with about 1 part water–a practice known as "watering" that might be illegal with most other beverages. So far as we know, no one has ever found a way of removing the fat from soymilk.

5883. Bodis, Laszlo. 1990. Re: The work of FTTE with tofu, soymilk, and soy protein products in Hungary. Letter to William Shurtleff at Soyfoods Center, April 2–in reply to inquiry of Jan. 25. 2 p. Typed, with signature on letterhead. [Eng]
• ***Summary:*** "FTTE is an engineering, research, and development enterprise rather than a manufacturing one. Technologies worked out by our technicians for producing feed and food products are then tried and used by companies producing food or feeds. Thus in the introduction and spread of tofu, we did all the initial work (conceiving the idea, drawing up the technology, sizing up demand, 'digging out' consumption, etc.) except for direct manufacturing... At present the manufacturer of the tofu developed by FTTE is Pest-Budai Vendeglato-Ipari Vallalat. We are talking with other companies about scaling up production.

Besides tofu, we cooperate in the production of a soymilk and sour cherry beverage mixture, soybean flakes, soy-cubes, TVP, soy-meal, lecithin, and UNIPRO–a feed made from whole (non-defatted) soybeans.

An undated 4-page color leaflet accompanying this letter, titled "FTTE–a bridge between research and application," notes that FTTE stands for "The Association for Protein Research Technology and Production." It was founded by OMFB (the National Technical Development Board) in 1983.

Also accompanying the letter are photocopies of pages from a publication: Unipro–a high-energy feed made from whole cooked soybean. Vetomag–a new variety of soybean. OMFB advisory service for growing pulses. Feherje (Protein) a quarterly magazine published in Budapest by 3 organizations. The chief editor is Kralovansky U. Pal. Dr. Laszlo Bodis is on the editorial board. It covers all aspects of proteins. Pronutti, soy-based products for food

from Proteinvest. Szoja feldolgozas soybean processing. Takarmanygyar feed mixing plant. Szolnok Megyei (a company that produces and distributes soybean meal). KEKI (Kozponti Elelmiszeripari Kutato Intezet; the Central Institute for Food Research in Budapest) provides expertise for developing soybean applications. Address: Director, Feherjetechnologiai Tudomanyos Termelesi Egyesules, Budapest XII., Goldmark K. u. 3. Budapest Pf: 340 1536, Hungary. Phone: 155-5202.

5884. Storup, Bernard. 1990. Re: Update on Sojadoc. Questions answered on Soyfoods Center letterhead (dated 30 March 1990) and returned to SC, April 2. 1 p. Handwritten. [Eng]

• ***Summary:*** Sojadoc has moved from Clermond-Ferrand. The new address is: 2 rue du Parc, 81000 Carmaux, France. Phone: 63.36.89.92. They have almost no production. They are working on a "pharmaceutical" soymilk, sold only at pharmacies.

Alain Lacombe and Jacques Isnard, the early owners of the company, are now no longer with it. Lacombe is at St. Paul de Mamiac, 81140 Penne, France. Phone: 63.56.01.04. Fax: 63.56.36.11. Isnard is working in Burkina Faso (Africa) on a governmental soymilk project. None of his neighbors has heard from Olivier Attié (the company's founder) for 2 years. Address: Founder and Owner, Société Soy, 1 rue du Crêt de la Perdrix, 42400 St.-Chamond, France. Phone: 77.31.23.66.

5885. Lindner, Anders. 1990. Re: The soymilk market in Europe. Letter (fax) to William Shurtleff at Soyfoods Center, April 4 and April 26. 3 p. [Eng]

• ***Summary:*** The following figures contain many guesstimates. The only countries in western and eastern Europe where significant amounts of soymilk are produced are Belgium, West Germany, France, England, and Switzerland. The following are the seven largest soymilk manufacturers in Europe, ranked in descending order of size:

1. Alpro/Vandemoortele, Belgium. Capacity: 35 million liters/year. Present output: 25 million liters/year. Growth: Believe so, but don't know how much.

2. DE-VAU-GE (DVG), West Germany. Capacity: 20 million liters/year. They are running their plant at full capacity, but as Adventists I think they don't work on Friday afternoon or Saturday, they close down during the summer, and they send one road tanker of soymilk each week to Granose in England, where it is made into soy yogurt. So they probably end up making about 12 million liters a year of soymilk in long life packs. Soon some of their soymilk will be made into tofu. Growth: Would if they could, but they can't with the line they have, which they bought from DTD/STS for DM 4 million. DVG is making an excellent profit on their soymilk products, that's for sure. This is in part because they have the Neuform chain at their disposal.

3. Cacoja, France. Capacity: 11 million liters/year. Believed to be running at full capacity. Growth: Planning a new line but no decision yet as far as I know. I think that Cacoja produces more than 1 million liters/year. They visited DTD/STS a year ago to discuss a second line. The first one had a capacity of 2,000 liters/hour or approximately 5 million liters/year.

4. Soya Health Foods Ltd., Manchester, England (Sunrise Soya Milk). Capacity estimated at 8 million liters/year. Actual production not known.

5. Soyana, Switzerland. Capacity and production not known. Soyana has consistently refused to allow us to visit them. Even our Indian client who wanted to discuss purchase of their Dahi dessert recipe was given the cold shoulder. I think that they have their own soymilk plant, but I'm not sure. Why shouldn't they, when they have plenty of products in Swiss shops.

6. Galactina, Switzerland. Capacity estimated at 6 million liters/year. Most is used for products other than liquid soymilk. They sell limited amounts of soymilk, definitely less than 1 million liters/year packed in Tetra Brik Aseptic at the Thun Dairy in Switzerland.

7. Schoeller in Nuremberg, West Germany. Capacity not known. Soymilk used in ice cream production. There are also soymilk producers in Italy [Crivellaro], and Spain [Proti].

"Total size of European soymilk market in 1989 estimated at 50 million liters. Some is in the form of dairy analog products. Alpro and DE-VAU-GE have about 70% of the market, including bulk distributed product. Growth rate over the past few years 10–15%.

"General observations of the European soymilk industry and market: The dairy industry in France was the first to go into soymilk to offer alternatives to consumers who prefer 'non-dairy dairy type products'. The soymilk-based ice cream of West Germany's Schoeller may start a trend for the rest of the European ice cream industry. There has been no equivalent to the U.S. Tofutti boom in Europe so far. Major liquid food companies do not at present see soymilk as a significant product for Europe but follow the trends and do some development, just in case.

"The future? It is necessary to make a distinction between Eastern and Western Europe. Western Europe has a surplus food production in general and surplus dairy milk production in particular. The health aspect alone, i.e. soymilk without improved palatability, will not significantly increase soymilk sales in Western Europe. The removal of dairy production subsidies in the EEC in the years to come, especially after 1992, may give an incentive to the big names in the food industry to develop soymilk into mainstream market products. There is EEC legislation on imitation dairy products and soymilk is mentioned as an example, but currently different member countries use their own laws.

"Many Eastern European countries have food shortages but lack money and entrepreneurship to venture into an

unknown product like soymilk on their own. Furthermore, in these difficult markets, western companies with soymilk technology do not seem to find it worth the effort to first educate on the advantages and uses of soymilk and then to promote and arrange financing before they can hope to sell a soymilk processing plant. The new Eastern Europe with market economies now evolving gives hope for the future in general, but I couldn't make any guesses about soymilk.

"It is the aim of EEC to dismantle the agricultural subsidies. This will effect dairy production and new cheaper protein sources will be sought by the food industry. Soymilk definitely has a chance of 'growing up' when this happens.

"STS-Soya Technology Systems Limited no longer exists. It was the decision of APV's CEO to close it down as an independent company when the big APV reorganization took place. When we moved to Denmark we became DTD-Soya Technology Division. Now Danish Turnkey Dairies has itself become a division of the APV Pasilac Ltd and the official name is DTD-APV Pasilac Ltd (the result of mergers and takeovers!). Asger Somer Hansen now handles soymilk activities within the APV group and works in DTD-APV Pasilac Ltd.

"John Wilson still works at Alfa-Laval in Lund as far as I know–at least he did 2 years ago. Alfa-Laval also has another soymilk person, a young woman.

Note: Lindner, the managing director of Soya Technology Systems from May 1982 until Nov. 1989, has a good grasp of the world soymilk market. Address: P.O. Box 19002, S-250 09 Helsingborg, Sweden. Phone: 42-92776.

5886. Krohn, Joni. 1990. Standard Industrial Classification (SIC) Codes: SIC classification ended in about 1984; SITC (Standard International Trade Classification) is now in use (Interview). *SoyaScan Notes.* April 5. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** *The Standard Industrial Classification Manual* is published by the Office of Management and Budget (OMB), which also publishes the SIC codes. Another related publication is *The Numerical List of Manufactured and Mineral Products,* and its *Alphabetic Index,* both published by the Census Bureau (within the Department of Commerce); these documents expand the basic 4-digit SIC codes to 7-digits to give more detail: Our industry is most aptly characterized by 2075A = Soybean products.

0116 = Soybean farms. Any industry that starts with zero is agricultural.

2024-071 = Mellorine and similar frozen desserts, incl. those made with tofu.

2026-717 = Products which substitute for fluid milk products [probably includes soymilk].

2026-718 = Other perishable dairy product substitutes [probably includes soy yogurts & cheeses].

2035 = Pickled fruits and vegetables.

2035-234 = Other finished pickles and pickled products [incl. mixes, relishes, peppers, onions, and mushrooms; probably includes miso].

2035-351 = Other sauces, incl. Worcestershire, soy sauce, horseradish, meat, vegetable, etc.

2075 = Soybean flour, grits, meal, cake, and soy oil (unrefined).

2079 = Soybean cooking and salad oil.

2084 = Soybean fibers.

2099-955 = Tofu (Bean curd).

2099-998 = Other perishable prepared foods, sold in bulk or packages, not frozen [probably includes tempeh].

Note: in May 1984 the "Primary SIC" code assigned to tofu manufacturers by Dun & Bradstreet was either 2075 (Soybean Oil Mills), or 2099 (Food Preparation Nec.).

Examples of SITC numbers: Soya bean flour and other protein substances, textured 098.09. Soya bean flour, defatted (excl. protein concentrates) 081.31. Soya bean flour, non-defatted 223.9. Bean curd 098.09... Soya sauce 098.04. Soybean–see soya bean 098.04. Address: Dep. of Commerce, Bureau of the Census, Economic Surveys Div., Industry & Commodity Classification Branch, FOB-3, Room 2744, Washington, DC 20233;. Phone: 301-763-1935.

5887. Gupta, Rajendra P.; Gupta, Rashmi R. Assignors to Prosoya Corp. (Maryland Heights, Missouri). 1990. Food processing in oxygen-free environment. *U.S. Patent* 4,915,972. April 10. 5 p. Application filed 29 March 1989. [3 ref]

Address: [Raj Gupta, ProSoya Foods International Inc., 801-275 Slater Ave.], Ottawa, ONT, K1P 5H9, Canada. Phone: 613-745-9115 or 613-744-4401.

5888. Marshall, Philip. 1990. The soymilk industry and market in the UK (Interview). *SoyaScan Notes.* April 17. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The two brands of soymilk with the largest shares of the UK soymilk market are both imported: Provamel, the best-seller, is imported from Alpro in Belgium. Granose Soya Milk is imported from DE-VAU-GE in West Germany.

There are four soymilk manufacturers in the UK. The largest is probably Unisoy Milk 'n' By-Products Co. in Stockport (Cheshire County near Manchester). Their quality is excellent, almost as good as Alpro's. The people who founded Unisoy were formerly involved with Soya Health Foods Ltd. The founder, who had the money, died before production started. [Note: Neil Rabheru (see interview, 1990 July 2), founder of Unisoy, says the previous 2 statements are not true.] Unisoy started making soymilk about 4 years ago, and today their biggest product is own-label soymilk, packed in Tetra Brik by a contract packer, and sold to Sainsbury, a large chain/multiple retailer in the UK. Unisoy does not and will not make tofu. The company is not very strong. The person in charge is Neil Rabheru, of Indian extraction, a

very nice man. He recently sold the company for a relatively small sum.

Second largest soymilk manufacturer is Soya Health Foods in Trafford (Sunrise brand, founded by Michael Cole and Mr. Arora, a Sikh / Indian). It was the Indian connection that resulted in the formation of Unisoy some years ago. Third may be the Regular Tofu Co., a division of Haldane Foods (Arkady/ADM), which produces Sojal Soya Milk. The Sojal brand was the property of another company in France, which originally produced the product for them using a soymilk powder made in Sao Paulo, Brazil (by Norsul, Agro-Nippo Productos, or ITAL?). Haldane no longer has the product produced in France but they still use the Sojal brand, and still has the product produced by another company (in what country is not known) and it is probably now made from whole soybeans rather than soymilk powder. [Note: The only soymilk listed in Haldane's Oct. 1989 catalog is So Good Soya Milk (organic or non-organic); Sanitarium Foods in Australia makes a product by the same name].

Fourth is Plamil, which contracts with some other company to have its soymilk made from soy protein isolates. They are quite a small company, ethically based, into vegan foods and marketing strategies from the 1960s and 1970s. Fifth is Itona (pronounced ai-TOW-nuh), which makes a soya milk of some description, but they are not really in the mainstream of the soymilk market. They probably make their soymilk from soy protein isolates and it is sold in cans–every other brand is in Tetra Pak or Combibloc. Address: Owner, Cauldron Foods Ltd., 149 South Liberty Lane, Ashton Vale Trading Estate, Bedminster, Bristol BS3 2TL, England. Phone: (0272) 632835.

5889. Vandemoortele, Philippe. 1990. The soymilk industry and market in Europe (Interview). *SoyaScan Notes.* April 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Philippe estimates that Alpro has about 70% of the fluid soymilk market (not including infant formulas) in Europe. In 1984 in Brussels Michael Martin of the American Soybean Association estimated the size of the European soymilk market to be 9-10 million liters/year. Philippe thinks that figure was too high; it was probably about 6 million liters. Now it is about 30 million liters/year in all of western Europe. The growth rate for soymilk production over the past 2 years has been about 20% a year.

The second largest soymilk manufacturer in Europe is DE-VAU-GE, with roughly 15-20% of the market. The rest are very small, with a combined percentage of only 10-15%. Third may be Triballat and fourth may be Cacoja. Together these two may be producing 1 million liters per year, but that is just a very rough guess. Innoval just started so they have not had time to do anything. Unisoy in England is very small. Soya Health Foods Ltd. (Sunrise brand) is almost out of business in soymilk. Galactina is limited to Switzerland, and they produce mainly tofu, not soymilk.

Looking at Cacoja and Triballat, they are completely different types of companies. Cacoja is a classical cooperative that has no experience in or organization for commercializing consumer products. So they have to co-pack, i.e. make products for other companies. Triballat is a small but very active dairy company, with a good sales and marketing organization in France. They are used to making and selling their own consumer products. Their Sojasun soy yogurt is a good-tasting, fresh product. It has been quite successful for a soya food, although compared with dairy products it is nothing.

There are have always been may negative things about soymilk in Europe. 1. The retail price of soymilk is very high compared to basic cow's milk, usually 2-3 times as high. In the USA the price of both cow's milk and soymilk are higher, but the ratio is similar. 2. The taste of soymilk is a big problem, although it is steadily getting better. 3. Cow's milk is a very traditional, widely accepted product in Europe. 4. The dairy lobby and its employees are very powerful in Europe and recently they have been attacking soymilk on issues such as its calcium content being lower than that of cow's milk. Doctors have been taught and teach their patients that cow's milk is a perfect product. Only a minority, but a growing minority, are opposed to the use of cow's milk. 5. The many European government regulations hurt soymilk. There are many taxes, such as a Value Added Tax (VAT) on soymilk that are not imposed on cow's milk since soymilk is considered in some countries to be a juice. Every country has a VAT system. The Netherlands, Belgium, and France had an 18% VAT on soymilk versus 6% on milk, but that changed 1 year ago so it is no longer a basic problem. In Belgium there is now a 6% VAT on both soymilk and cow's milk.

The two things needed to make the soymilk market grow are better taste and a better image of soymilk (compared to cow's milk) as a food that is good for one's health, and dissemination of the information showing the health benefits of soymilk over cow's milk. The quality of soymilk products is steadily improving and should continue to do so, not through discovery of any new basic principles but through many small adjustments.

The opening of Europe in 1992 will have little or no effect on soymilk. Competition is already international. The need for a multitude of packages in the various languages will not change; Alpro presently packs soymilk in more than 100 different Tetra Brik cartons! This includes both their own brands and those of companies for which Alpro private labels. This is both complicated and expensive. One possible change may be that governments will work faster to establish soymilk terminology. Now soymilk has no name! It can be called "soya juice, soya drink, soya beverage," but it cannot be called "soymilk." As long as it has no name, no regulations or standards can be made that effect it. Philippe would like to see the term "soya drink" or "soya milk" adopted. The latter was tolerated in the UK but it will

probably be forbidden.

Philippe sums up the overall situation as follows: "I always repeat, there is more enthusiasm about soyafoods than turnover and certainly no profit. Alpro has lost money every year that it has been in business." He thinks DE-VAU-GE must also be losing money on its soymilk operation. "How can you make money when you invest $3-4 million in a factory that is making only a few million liters of soymilk a year? DE-VAU-GE is a very large company and they do well largely because they have a sort of monopoly in the German Neuform (Reform House) organization. An organization controls all of the Neuform stores, and it is linked with both the producers and the sales people. They all together pay money for this organization to help each other. If you want to make soymilk in Germany and deliver it to these stores, you cannot, because everything is protected. The competition now comes from the independent *Biolaeden."* Address: Managing Director, Alpro N.V., Vlamingstraat 28, B-8610 Wevelgem, Belgium. Phone: (056) 43 22 11.

5890. Vandemoortele, Philippe. 1990. Early history and recent developments at Alpro N.V. in Belgium (Interview). *SoyaScan Notes.* April 17. Conducted by William Shurtleff of Soyfoods Center. Followed by a letter (fax) on 30 May. 1990.

• ***Summary:*** N.V. Vandemoortele (the N.V. is written first in Flemish, but often last in English) began research on new soy products (mostly soy protein isolates and concentrates) in 1973. The goal was to find a way to bring soya beans to the consumer. They bought and sold soy protein products but never manufactured any. In May 1975 research on soymilk began. From 1975 to 1979 they were basically doing pioneer research. In Dec. 1979 they began production of soymilk, but they did not pack or sell it; it was just to get their new plant running. Famalac was a potential/fictitious product name that was described in a brochure, but the product was never sold commercially. This soymilk was produced at a plant located at Zuidkaai 33 in Izegem on a piece of land located next door to the main N.V. Vandemoortele facilities (whose official address was Prins Albertlaan 12). In Jan. 1980 Vandemoortele began to make its first commercial soymilk product (GranoVita Soja Drink in plain and carob flavors, packed in 500 ml Tetra Brik cartons) which was private labeled (co-packed) for DE-VAU-GE, a large Seventh-day Adventist health food manufacturer in West Germany. This was Alpro's first customer.

N.V. Alpro (named simply Alpro in English), was founded in June 1980. Alpro then purchased the land on which it was located from N.V. Vandemoortele. During 1980 Alpro became a truly independent producer, now also doing their own sterilization and packaging. It was Philippe Vandemoortele's idea to start Alpro.

His grandfather began to import soybeans in 1934 from Manchuria, and he started a small crushing plant. Philippe has always been interested in soya (he read a lot) and he wanted to go back to the use of soybeans for human consumption in the form of soyfoods rather than as isolates, concentrates, etc. While researching new developments in soymilk processing, he learned that new methods for making soymilk had been developed in other countries such as the USA [at Cornell University and University of Illinois], Brazil, etc. His company, which had many engineers and R&D staff, was the first soymilk manufacturer in the western world to invest in a pilot plant and then in a factory to make soymilk using the new technique. In the beginning, Alpro designed and built its own soymilk equipment.

At that time it looked like Alpro's main business would be selling this equipment to Third World countries to provide a practical solution to their nutritional and protein problems, especially for infants. In 1982 Alpro signed a contract to sell a soymilk plant to Lalasoa SA in Madagascar. The plant, which cost US$11 million, began operation in Jan. 1984 and it is still in operation. This was the only plant Alpro ever sold to a Third World country.

[Note: Alfa-Laval, which developed soymilk equipment, sold its first major piece of soymilk equipment (a VTIS sterilizer) to Yeo Hiap Seng in 1967, and its first complete soymilk line to Lam Soon (Ace Canning) in Kuala Lumpur, Malaysia. The latter began making soymilk in Dec. 1979, exactly the same year and month that Alpro began.]

The reason for the lack of sales of soymilk plants to Third World countries was mostly politics and lack of organization in those countries. It was not a problem of the resulting soymilk being too expensive. Another problem was that Alpro had only a single product to promote (the turnkey plant). So in Aug. 1984 the company decided to return to its basic business, producing foods, rather than idealistically trying to sell technology (soymilk plants) to the Third World. "In the beginning, we at Alpro had never imagined that there would be a market for soymilk in Europe. Almost nobody wanted the product. There was no interest, except among motivated health-food people. Everybody else in Europe thought the product tasted lousy."

In the early 1980s, while focusing on its Third World plants, Alpro also made soymilk for the European market. The main reason for making this soymilk was to demonstrate what the Alpro equipment could do. In Jan. 1981 Alpro began making and private-labeling Granose Soya Drink in plain and carob flavors for Granose, a Seventh-day Adventist food manufacturer and distributor in England. In March 1981 Alpro launched Soyamel (plain with vitamins), the first of its own soymilk brands, sold only in drug stores and pharmacies (chemie stores). It was followed in Dec. 1982 by Provamel plain and chocolate drinks, and the company's first pudding-like dessert (in chocolate flavor); the Provamel line was sold in health food stores. Next, in March 1984, came Alpro Soya Drink in plain and chocolate flavors, sold only in supermarkets (multiples). All the above were sold

in 500 ml Tetra Brik cartons. Then in Nov. 1984 Alpro launched Sunsoy for the export market. It was sold in both 250 ml (plain, carob, or strawberry) and 1 liter (plain) Tetra Brik cartons. All four brands still exist, although Soyamel sales are small. Statistics on the sales of each brand are confidential. Alpro launched its first pudding-like soymilk dessert under the Provamel brand in about 1984, in chocolate and vanilla flavors. The concept, though based on a similar dairy product, was a first for soymilk.

Alpro continues to private label soymilk for anyone who can pay for it. The company's philosophy on this point has not changed over the years. "We are a producer, and as such we try to produce as much as possible, otherwise we could not pay for our research and fixed costs. We would like to sell as much of our own brands as possible, but if we do not private label for other companies, our competitors will do so instead."

In 1984 Alpro had planned to build a new soymilk plant in Ghent with a capacity of 40 million liters/year, but this plan was delayed. Instead they ended up building a new soybean cleaning and dehulling system. Finally Alpro did build a new plant at Vlamingstraat 28, in Wevelgem, near the French border. They started construction in June 1988 and they plan to be moved in completely by June 1990. The plant cost about US$15 million and its capacity is about 45 million liters/year, which is more than the present total European and American soymilk markets. It is a complete plant with packaging, sterilizing, and several lines. It is the biggest soymilk plant in the western world. Address: Managing Director, Alpro N.V., Vlamingstraat 28, B-8610 Wevelgem, Belgium. Phone: (056) 43 22 11.

5891. Karis, Xavier. 1990. Buton, Crivellaro, and soyfoods in Italy (Interview). *SoyaScan Notes.* April 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Gio. Buton, founded in 1820 and now the biggest liquor company in Italy, owns 60% of Crivellaro. Crivellaro in Padova makes soy oil, organic soymilk, and lecithin, but they do not have an outstanding name in Italy. Buton's main interest is selling soyfoods in supermarkets. Address: Export/Marketing Dep., Gio. Buton & Co. S.p.a., Viale Angelo Masini, 24, 40126 Bologna, Italy. Phone: 051-506368.

5892. Amante, Agathe. 1990. La petite graine qui monte [The little grain that is rising]. *Revue Techniques des Hotels et Restaurants.* April. p. P&B 6-9. [Fre]
• ***Summary:*** Discusses soy flour, soy protein concentrates and isolates, soymilk, and tofu, plus their nutritional benefits. To develop new products, Cacoja is working with the hotel school of Strasbourg–creams, desserts, sauces, and entrees, not to mention tofu raviolis, quenelles, sauces and dressings without cholesterol, etc. Triballat makes a type of yogurt that contains no milk or cholesterol. Soyfoods fit perfectly with the now fashionable "slender cuisine" (cuisine minceur). 2% of soy proteins can be added to meats without changing the labeling. A photo shows 3 jars of Cacoja's Formoja-brand soymilk dressings: Sauce salad, Sauce Mexicaine, and Sauc'annaise. Each has "No Cholesterol" written prominently below the product name. Soyfoods can help attract people to restaurants, they are an excellent ingredient for the restaurateur, and they can play a major role in the emerging light new French "Nouvelle Cuisine." Gives a recipe for Tofu Red & Green Mousse. Address: France.

5893. Bates, Jonathan. 1990. West Coast tofu industry: Soybean market outlook for Malheur County, Oregon. Oregon State University, Corvallis, Oregon. 33 p. [12 ref]
• ***Summary:*** Contents: Introduction. Soybean market: World and domestic. The low technology soyfoods industry. Processor requirements. Assessment of producing soybeans in Malheur County. Conclusion. West Coast tofu and soyfood processors: California, Oregon, Washington. Bean warehouses and cleaners. Selected soybean brokerages and growers. Other information. Literature.

"There is interest in Malheur County, Oregon in introducing soybeans as an alternative rotation crop in place of wheat." Research is being done at the Malheur Experiment Station. These would be food grade soybeans destined for the West Coast soyfood processing industry. "The purpose of this report is to investigate the west coast food grade soybean market. Particular emphasis is placed on the tofu market in Portland and western Oregon, Seattle (Washington), and San Francisco (California). The main objectives of the study are: 1. To determine the requirements and/or preferences of soyfoods processors in regards to soybean quality, bean variety, growing regimes (organic or regular), packaging and delivery, and method of purchase. 2. To determine the economic feasibility of using soybeans as a rotational crop in the county in place of wheat. 3. To consider the competitive advantages, if any, of growing soybeans in Malheur county as opposed to the more traditional growing areas of the Midwestern and Southeastern United States.

Information on soybean consumption is given for the following tofu and soyfoods manufacturers, ranked here in descending order of soybean usage. All produce tofu and/or soymilk unless otherwise noted.:

Pacific Foods Inc., Tualatin, Oregon (57,700–77,000 lb/week [expressed as 3-4 million lb/year] of nonorganic and organic soybeans from midwest brokers, bulk and bagged, for soymilk. "Growth is expected to slow unless soymilk can be marketed to the general public").

Azumaya Inc., San Francisco, CA (48,000–60,000 lb/week of Vinton and Corsoy purchased from broker. Market growing at 3-4% annually).

House Foods & Yamauchi, Los Angeles, CA (54,000 lb/week of nonorganic Corsoy and Vinton purchased from broker-grower association. Steady growth. Expanded

capacity in 1987).

Mighty Soy, Los Angeles, CA (11,000–12,400 lb/week of mainly Corsoy and Vinton, half organic and half not, purchased from brokers or growers associations).

Wy Ky, Los Angeles, CA (7,800–9,000 lb/week of nonorganic Corsoy, purchased from growers. 5% annual growth).

Island Spring and Soy Resources Inc., Vashon, WA (5,400–6,000 lb/week of organic Corsoy, purchased broker. 3-5% annual growth).

Surata Soyfoods, Eugene, Oregon (3,000–4,200 lb/week of organic Vinton and Corsoy purchased from broker-grower).

Silver Sprout, San Francisco, CA (3,000–3,600 lb/week of nonorganic Corsoy and Vinton purchased from broker, bagged or bulk).

Dae Han & Co., Portland, Oregon (2,400–3,000 lb/week of organic Vinton purchased from Midwest grower association. Steady growth).

Turtle Island Soy Dairy, Husum, WA (2,100–2,400 lb/week of organic Corsoy and Vinton purchased from Iowa broker for tempeh. 5% annual growth).

Arcata Soyfoods, Arcata, CA (1,200 lb/week of organic Corsoy purchased from grower).

Fuji Tofu Co., San Jose, CA (1,200 lb/week of organic varieties purchased from broker).

Ashland Soy Works, Ashland, Oregon (1,800 lb/week of organic Vinton and Corsoy, purchased from growers. Steady growth).

Hoven Foods Co., Seattle, WA (1,655 lb/week of Lee 74 purchased from Jacob Hartz Seed Co. 5% annual growth).

Tacoma Soyfoods, Tacoma, WA (1,200 lb/week of Vinton, Corsoy, Davis, Lee, and Holland, organic and inorganic, purchased from Midwest Soy International [grower assoc.]. 5% growth last year).

Kobayashi's Soybean Products, Ontario, Oregon (420–540 lb/week of Corsoy purchased from Midwest growers). Address: Graduate research asst., Oregon State Univ., Corvallis, Oregon.

5894. Cacoja. Affiliate of Coopérative Agricole de Colmar (CAC) (Marketer). 1990. [Soy products made by Cacoja]. 8 rue Merxheim, 68500 Issenheim, France. 5 p. Catalog. [Eng; Ger]

• ***Summary:*** This photocopied black-on-white brochure, with pages stapled together, written in only English and German, attempts to describes the Cacoja/Formoja lines of soy products: The Soj'aperitif line (soynuts), the soybean sauce line (a soy mayonnaise, a sauce, and a salad dressing), chocolate tablets (2 types of soy chocolates), Formoja beverage and dessert line, and soybean delight and tofu ravioli line. Lacking a title, and filled with errors and poorly chosen words, this document is very poorly done–almost comical. Address: Issenheim, France.

5895. **Product Name:** Holland & Barrett Soya Milk [Sweetened].
Manufacturer's Name: Holland & Barrett (Marketer-Distributor). Made in Belgium by Alpro.
Manufacturer's Address: Healthways House, West Byfleet, Surrey, KT14 6NE, England.
Date of Introduction: 1990. April.
Ingredients: Water, dehulled soya beans, raw cane sugar, sea salt.
Wt/Vol., Packaging, Price: 500 ml or 1 liter Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 ml.: Fat 2.3 gm (saturates 0.3 gm, polyunsaturates 1.4 gm), protein 3.6 gm, carbohydrate 3.4 gm, calcium 20.0 mg, energy 49 kcal.
New Product–Documentation: SoyaFoods. 1990 1(1):1. Black-and-white photo of a 1-liter carton. Photocopy of Label sent by Heather Paine of SoyaFoods in London. 1990. June 18. The 500 ml carton is 3.5 by 3.5 by 1.75 inches. An illustration of soybean pods and leaves is on the front panel. "A 100% natural product made from the best grade of American Soya Beans. Holland & Barrett: The natural choice for a healthier way of life." Good for people with allergies, in the kitchen, as a drink, or with tea or coffee. Heather adds: "Holland and Barrett is one of the largest health food chains in the UK. The product is made in Belgium so I suspect the manufacturer is Alpro."

5896. Inforesults Ltd. 1990. Canadian soyfood directory. Brampton, Ontario, Canada. 22 p. April 6. 28 cm.

• ***Summary:*** This directory, prepared for the Ontario Soybean Growers' Marketing Board (P.O. Box 1199, Chatham, Ontario, Canada N7M 5L8), lists individuals and organizations involved in the production of soybeans and soyfoods in Canada. The majority of listings are for commercial firms. The directory includes the name of the firm or individual, address, postal code, phone number, contact person, activities (any of 10 types, such as manufacturer, exporter, importer), products (any of 18 types, including soymilk, tofu, soybeans, or services), and whether or not the products are claimed to be organic. The various listings are sorted by province, and within province by company name. Address: Information Research Consultants, Suite 204, The Mill, 60 Queen St., East Brampton, ONT L6V 1A9 Canada. Phone: (416) 453-1174.

5897. **Product Name:** Itona Decaf (Non-Dairy, Caffeine-Free Chocolate Bar).
Manufacturer's Name: Itona Products Ltd.
Manufacturer's Address: Itona Works, Leyland Mill Lane, Wigan, Lancashire, WN1 2SB, England.
Date of Introduction: 1990. April.
New Product–Documentation: SoyaFoods (ASA, Europe).

1990. 1(1):3. Suitable for vegans.

Itona News. 1990. Spring. "Decaf–It's better than chocolate!" "Decaf, the bar with all the rich flavour of real chocolate with none of the caffeine!" Contains no animal products.

5898. Lefferts, Lisa Y. 1990. Cows on drugs? *Nutrition Action Healthletter* 17(3):8-9. April. [6 ref]

5899. Leigh, Roberta. 1990. Soyfoods: Why their popularity is growing. Special advertising section. *New Age Journal* (*Boston, Massachusetts*) 7(2):100-. March/April.
• ***Summary:*** Since the 1920s, Americans have been taught that they need at least two servings of meat and two glasses of milk each day to get enough protein. Many people switching to vegetarian diets or reducing their meat consumption feel most comfortable if they continue to plan at least some of their meals around a high-protein food.

"Consequently, the popularity of soyfoods has boomed during the past two decades... They can also be prepared in a number of ways, such as tofu and tempeh, that mimic 'meatiness' in terms of eating satisfaction.

"Shoyu and tamari, both fermented soy sauces, and miso, a fermented soy paste, are often used as bases for soups, gravies, and sauces; many people feel they impart a rich flavor to meat stock. Soy milk and soy cheese are popular with people who want to minimize or eliminate dairy products from their diets. There are even smokey-flavored imitation bacon products made from soy.

"Tofu is a cheese-like product containing the protein, oil, and soluble carbohydrates from whole soybeans that have been crushed and cooked...–Roberta Leigh."

5900. Muso Co. Ltd. 1990. Muso product manual: Foods from Japan. Tanimachi 2-5-5, Chuo-ku, Osaka 540, Japan. 62 p. Catalog. April. 30 cm. [Eng]
• ***Summary:*** This English-language catalog describes Muso's natural-food macrobiotic products that are exported to the West. There are 8 pages of color photos at the front, and many flowcharts and recipes in the body of the catalog. Interesting color photos include: Shoyu fermentation room. Spreading moromi before pressing to make shoyu. Hatcho miso aging room. Drying kombu and cultivating nori on nets. Umeboshi and brown-rice vinegar. Shiitake mushrooms growing on logs and huge kudzu roots.

Contents: Shoyu (organic, low salt), tamari (wheat-free soy sauce), miso (Hatcho, barley, rice, white miso, brown-rice miso, awase miso [mixed miso], buckwheat miso, unpasteurized miso [nama miso]), seaweeds, Japanese pasta, wheat free pasta (incl. kudzu noodles), Japanese tea, other beverages, soymilk, amazake, ume/plum products (incl. umeboshi), Japanese pickles, dried foods (incl. kudzu root starch, shiitake mushrooms, koya tofu, fu [gluten cake]), condiments (incl. tekka miso, *nori no tsukudani,* natto miso [miso condiment]), seasonings, instant foods (incl. brown rice mochi, yomogi mochi, kibi mochi, yaki mochi, abekawa mochi with kinako, cooked brown rice, ramen [Chinese style noodles], instant miso soup), crackers and chips, barley malt syrup and rice malt syrup, food supplements (plum balls, kombu balls), adzuki beans, black soybeans, nigari. Address: Osaka, Japan. Phone: 06-942-0343.

5901. **Product Name:** [Soilat Soymilk (Plain)].
Foreign Name: Bevanda Alla Soia Vegetale.
Manufacturer's Name: Parma Soia (Marketer-Distributor). Made in Belgium [by Alpro].
Manufacturer's Address: Strada Logheretto 2, 43010 Corcagnano (Parma), Italy. Phone: 0521-639-148.
Date of Introduction: 1990. April.
Ingredients: Organically grown soybeans, water, cane sugar, sea salt.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.

New Product–Documentation: Talk with Xavier Karis in Italy. 1990. June 13. About 2 months ago this company, located in Parma, started a line of soya products: Soya milk (Soilat) in plain and chocolate flavors, Soy Pasta, and Soy Sauce (which they probably do not make themselves). It is not known whether or not they make their own soymilk. Because this is a small company, nobody has made any trouble yet over the Italian name of their soymilk, but if they

get bigger, they are bound to get in trouble because Italian law forbids use of the terms "soia" and "latte" together. Their phone is 0521-639-148.

Parma Soia brochure. 1990. Photo shows aseptic package.

Letter from Xavier Karis. 1990. June 15. On the Soilat brik from Parma Soia is written: "Produced in Belgium." So it is probably made by Alpro.

Label sent by Xavier Karis. 1990. June 27. 3.3 by 3.5 by 2.5 inches. Tetra Brik carton. Orange-red, green, yellow, and tan on white. The large, semicircular logo on the package shows a large field with long rows of soybeans. Across the top in large letters is written: "Campi di Soia" (Fields of Soya), while across the bottom, in the same letters is written Parma Soia. There are three groups of soybean leaves at the bottom two corners and the bottom middle of the logo. On the back is a brief description of 5 other products made by the company. A second logo shows two green leaves upholding an orange sphere.

5902. **Product Name:** [Parma Soia Soy Drink (Chocolate, Strawberry, and 1 Other Flavor)].
Foreign Name: Parma Soia Soidrink (Al Cioccolata, Alla Fragola).
Manufacturer's Name: Parma Soia (Marketer-Distributor). Made in England by Unisoy.
Manufacturer's Address: Strada Logheretto 2, 43010 Corcagnano (Parma), Italy. Phone: 0521-639-148.
Date of Introduction: 1990. April.
Ingredients: Water, soya, cane sugar, strawberry puree.
Wt/Vol., Packaging, Price: 500 ml plastic bottles with foil lid.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Xavier Karis in Italy. 1990. June 13. About 2 months ago this company, located in Parma, started a line of soya products, including soya milk (Soilat) in plain and chocolate flavors (which they probably do not make themselves). Because this is a small company, nobody has made any trouble yet over the Italian name of their soymilk, but if they get bigger, they are bound to get in trouble because Italian law forbids use of the terms "soia" and "latte" together. Their phone is 0521-639-148.

Parma Soia brochure. 1990. Photo shows aseptic package.

Letter from Xavier Karis. 1990. June 15. On the plastic Soidrink bottle is written: "Produced in England." Talk with Neil Rabheru of Unisoy. 1990. July 2. Unisoy makes this soymilk.

Label (for strawberry) sent by Xavier Karis. 1990. June 27. 9 by 2.5 inches. Red, gold, green, black, and orange on white. The semicircular logo on the front panel shows a large field with long rows of soybeans. Across the top in large letters is written: "Campi di Soia" (Fields of Soya), while across the bottom, in the same letters is written Parma Soia. There are three groups of soybean leaves at the bottom two corners and the bottom middle of the logo. And below that, an illustration of many ripe strawberries. "An energy beverage ideal for those who like sports, who study, and who live an active life. A Natural product, without preservatives or colorings. Shelf stable; Refrigerate after opening and consume within 3-6 days."

5903. **Product Name:** [Soymilk (Fresh)].
Foreign Name: Leche de Soya.
Manufacturer's Name: Productos Alimenticios Soyavyn.
Manufacturer's Address: Planta Soyavyn, 2a Calle Poniente No. 2-4, Lourdes, Colón, Depto. La Libertad, El Salvador. Phone: 51-0705 or 23-3554.
Date of Introduction: 1990. April.
Ingredients: Water, soybeans, sugar, flavorings (*saborizantes*), minerals, vitamin A.
Wt/Vol., Packaging, Price: ¼, ½, or 1 liter pre-printed plastic bag.
How Stored: Refrigerated.
New Product–Documentation: Label and letter sent by

Kris Duville of Productos Alimenticios Soyavyn. 1992. April 22. 5.5 by 9.75 inches. Pre-printed plastic bag. Blue and red on white. "This is a product rich in protein, oil, vitamins and minerals. It is recommended for good health because it contains no cholesterol or lactose. You can consume it with honey or sugar to taste. Serve hot with cinnamon, chocolate, vanilla or coffee. Serve cold blended with fruits. Use as a substitute for cow's milk in cooking and pastry recipes. Keep refrigerated." This is a fresh (not a dried) soymilk product.

Letter sent by Kris Duville of Productos Alimenticios Soyavyn. 1992. June 2. This products was introduced in April 1990. They make it using an improved version of the traditional process, grinding hot and working with batches of about 500 liters. The equipment is made out of stainless steel and made by Packo Inox Belgium; It was donated by the European Community.

5904. **Product Name:** [Soy Cream, Soy Cottage Cheese].
Foreign Name: Crema de Soya, Requesón.
Manufacturer's Name: Productos Alimenticios Soyavyn.
Manufacturer's Address: Planta Soyavyn, 2a Calle Poniente No. 2-4, Lourdes, Colón, Depto. La Libertad, El Salvador. Phone: 51-0705 or 23-3554.
Date of Introduction: 1990. April.
Nutrition: Per 100 gm.: Protein 9.7 gm, fat 5.6 gm, minerals 0.4 gm, carbohydrate 3.1 gm.
New Product–Documentation: Letter and Label sent by Kris Duville of Productos Alimenticios Soyavyn. 1992. June 2. These two products were introduced in May 1990. These fresh dairy analogs are prepared from soymilk coagulated with calcium chloride. They are prepared from soymilk curds mixed with milk, vegetable oil, and other ingredients.

Letter from Chris Duville. 1992. Dec. 13. Crema de Soya and Requesón are sold in white blank pouches, only identified by a small label giving the name and maker (Soyavyn). The volume is too small to order specially printed labels.

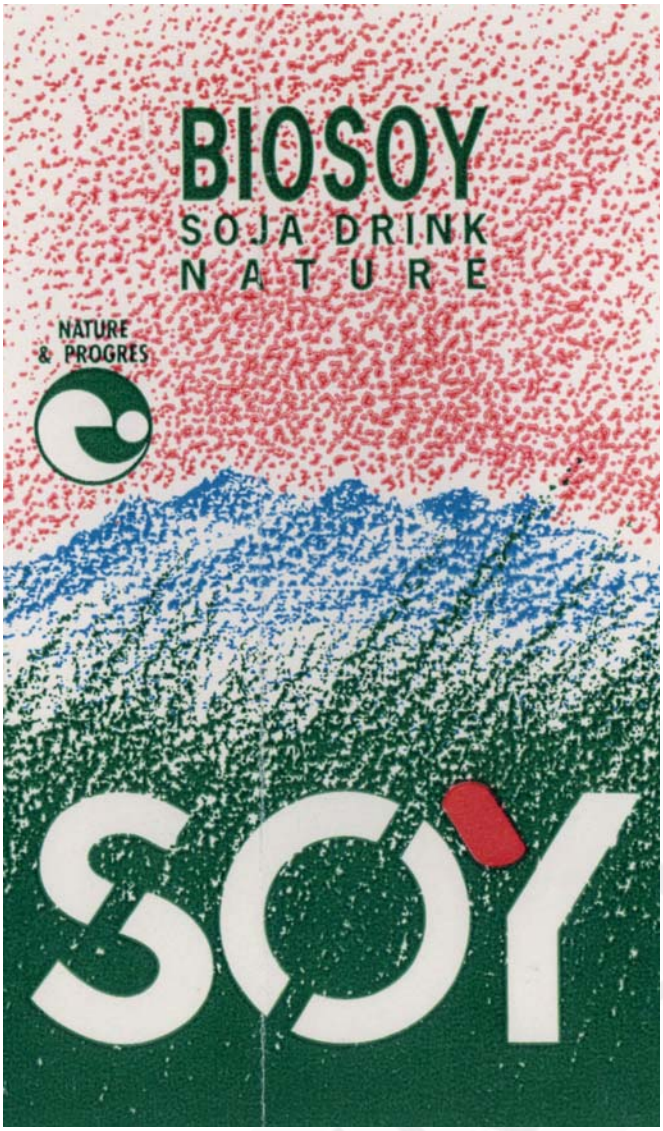
5905. Sanitarium Nutrition Education Service. 1990. Information for health professionals. Sanitarium So Good Non-dairy Soy Drink. Sanitarium Health Food Co., P.O. Box 249, Wahroonga, NSW, 2076, Australia. 8 p. April. 30 cm. [3 ref]
• ***Summary:*** Contents: Introduction. Ingredient description. Nutritional analysis. Suitability for special diets. Directions for use. So Good for babies. Typical nutritional profiles. Nutritional aspects of So Good. Address: Wahroonga, Australia. Phone: (02) 487 1711.

5906. Sanitarium Nutrition Education Service. 1990. So Good (Brochure). Sanitarium Health Food Co., P.O. Box 249, Wahroonga, NSW, 2076, Australia. 4 p. April. 30 cm.
• ***Summary:*** Contents: The amazing soya bean. The So Good story. Package size. Nutritional information. Ingredient description: Soya isolate ("extracted by sequential treatments of soya flour with alkali and acid solutions"), maltodextrin (derived from wheat or corn starch which is partially hydrolyzed with enzymes and/or acid; it contributes dextrose), corn syrup solids, sugar (sucrose; white / unflavored contains 1.6%, flavored 3.6%, lite 0%), vegetable oil (sunflower oil; it accounts for 3.4% of the fat level in So Good (white), 3.2% in the flavored varieties, and 0.7% in So Good Lite. All So Good products are free of cholesterol and lactose), vitamins and minerals ("The addition of vitamins and minerals is aimed at providing an equivalent level to that of full cream dairy milk.") Note that a major problem in fortifying soymilk with calcium is how to keep it from coagulating; So Good uses calcium chloride [509] and calcium oxide [(529]), flavors and colors (Flavored products use a combination of natural and artificial flavors. For example, Jaffa flavor uses natural orange and artificial chocolate flavors, plus Sunset Yellow color).

Nutritional analysis. Suitability for special diets. Directions for use. So Good for babies (So Good white is not recommended for babies under the age of 12 months; So Good Lite is not recommended for babies under the age of 2 years because of the low fat content). Gives five recipes. Address: Wahroonga, Australia. Phone: (02) 487 1711.

5907. Société Triballat. 1990. Nutrition: Équilibre du système cardio-vasculaire–Sojasun [Nutrition: Balance of the cardiovascular system–Sojasun (Brochure)]. B.P. 21, 35530 Noyal/Vilaine, France. 4 p. 21 cm x 21 cm. [8 ref. Fre]
• ***Summary:*** This impressive color brochure presents Sojasun, a non-dairy yogurt-like product, as a tasty way to treat high cholesterol levels. Two pages of graphs and nutritional data are given. The two products are Natural with Bifidus, and With Fruits. A color photo shows the package. A bibliography of 8 references providing supporting scientific data is given on the last page. Address: Noyal/Vilaine, France. Phone: 99 00 51 01.

5908. **Product Name:** [Biosoy {Soymilk in Tetra Brik cartons} (Natural/Plain)].
Foreign Name: Biosoy: Soja drink (Nature).
Manufacturer's Name: SOY (Société Soy).
Manufacturer's Address: 1 rue du Crêt de la Perdrix, 42400 Saint-Chamond, France. Phone: 77.31.24.42.
Date of Introduction: 1990. April.
Ingredients: Water from the natural park of Mont Pilat, soya* (9%). * = Organically grown. 100% vegetable without added sugar.
Wt/Vol., Packaging, Price: 1 liter (33.8 fluid oz) Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Protein 3.8 gm, carbohydrates 2.5 gm, carbohydrates 2.5 gm, minerals 0.4 gm.
New Product–Documentation: Letter (fax) from then talk



with Bernard Storup. 1990. March 10. The company will start selling soymilk in Tetra Brik cartons for retail stores in April 1990. The name will be Biosoy.

Label sent by Bernard Storup. 1990. June 6. Red, green, and blue on white. Pointillist red sky over blue mountains, behind green foreground. The word "Soy" is written in medium and large letters around the base of the carton. Nature et Progres organic certification symbol.

5909. *SoyaScan Notes.* 1990. New Trend: Large European food companies, and agricultural- and dairy cooperatives now launching and actively promoting innovative new tofu and soymilk products: Mostly dairylike and meatlike products (Overview). May 8. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** In Jan. 1980 Vandemoortele N.V., one of Europe's largest oilseed crushers, located at Izegem, Belgium, began to make its first commercial soymilk product (GranoVita Soja Drink in plain and carob flavors, packed in 500 ml Tetra Brik cartons) which was private labeled (co-packed) for DE-VAU-GE, a large Seventh-day Adventist health food manufacturer in West Germany. This was Alpro's first customer. In June 1980 Vandemoortele created Alpro N.V. to take over this production. The company quickly became Europe's leading soymilk producer and by 1990 had about 70% of the European soymilk market. Their new soymilk plant, costing about US$15 million and having a capacity of 45 million liters a year, opened in Wevelgem in June 1990.

In June 1984 Migros, Switzerland's leading retail food chain, launched 5 tofu products: Natural Tofu, Tofu Snack with Spices, Spicy Tofu Spread, Diced Tofu with Cream, and Tofu Bolognaise. In 1985 they introduced Tofu with Mushrooms and Gravy, followed in 1986 by Canned Tofu Kashmir (with Curry and Fruits), Tofu Spread with Cheese (in a Tube), Tofu Chocolate Crème, and Tofunaise (in a Tube), then in 1987 by Seasoned Tofu. In 1986 Migros, a 61 year old cooperative with 1.4 million members, had net sales of 3,166 million Swiss francs. The tofu was made by a Migros company named Conserves Estavayer in Estavayer-le-Lac, near Zurich.

Galactina is a well established Swiss company (located in Belp) that has made a soymilk named Naga Sonda for enteral tube feeding since 1980. In 1981 they launched the product in liquid Tetra Pack. They entered the tofu market in 1984 with Galactina Tofu, then in 1985 added three types of Seasoned Tofu (Gourmet Diced with Soy Sauce & Spices, Provencale with Herbs, and Jardiniere with Vegetables), followed in 1987 with Tofu Spread and 1988 with Tofu Burger and Tofu Salads. All were marketed very attractively.

In Aug. 1985 DE-VAU-GE, one of Europe's oldest and largest producers of vegetarian health foods, began operation of its new soymilk plant (purchased from STS/DTD) in Lueneburg, West Germany. By 1990 they were Europe's second largest soymilk manufacturer, with 15-20% of the market. They also sold many tofu products and were planning to produce tofu in the near future.

In 1985 Laiteries Triballat, a large French dairy products company (mostly cheese, located at Noyal-sur-Vilaine, Brittany) introduced Sojasun, an innovative cultured soymilk yogurt in 4 flavors, two with bits of fruit and two with fruit puree. In Oct. 1988 and early 1989 they promoted the product extensively on French television and in German print media. Sales in several western European countries were said to be good.

In 1986 Parmalat, the Italian dairy giant, introduced a soymilk named Soialat. By 1989 they had created a subsidiary named Parma Soia, which sold three lines of more than 20 soy products. The Campi di Soia line (containing soymilk, soy pasta, sauce, and sprouts) was sold at supermarkets. The Nature Soy line was imported, and the Erboristeria line was for the health food market.

In Jan. 1987 Cacoja, a newly-formed affiliate of the Coopérative Agricole de Colmar (CAC), began production of soymilk and soy desserts at its new, fully-automated plant (with an ultrafiltration system) at Issenheim, France. Purchased from Alfa-Laval, the plant cost 11 million French francs and had a capacity of 1,500 liters/hour of soymilk containing 4% protein. By 1990 Cacoja was Europe's third largest soymilk producer.

In Sept. 1987 Rayner Burgess Ltd., a large British Food company that specializes in an array of unique condiments, purchased Cauldron Foods Ltd., Britain's second largest tofu manufacturer, and the largest marketing its products to the Caucasian and health-food trades.

In Jan. 1988 British Arkady, a large British food conglomerate owned by Archer Daniels Midland Co. (Decatur, Illinois) acquired the Haldane Foods Group, and made it part of British Arkady's Health Foods Div. The Haldane Foods Group was put together by acquisition of Direct Foods Ltd. (founded 1980, acquired by the Group in 1985), Vegetarian Feasts Ltd. (founded 1984, acquired 1986), Haldane Foods Ltd. (founded 1983, acquired Aug. 1987), Vegetarian Cuisine Ltd. (founded 1985, acquired 1987), Regular Tofu Co. Ltd. (founded 1983, acquired Aug. 1987), Realeat Foods Ltd. (founded 1984, acquired Sept. 1988), Saucemasters Ltd. (founded 1988, acquired Feb. 1989), and Genice Foods Ltd. (founded 1988, acquired March 1989). Self-proclaimed as "Europe's leading healthier food group, most of these companies make tofu or soyfood products.

In April 1989 Huegli AG, a leading Swiss food company, purchased 75% ownership in Yamato Tofuhaus GmbH, one of West Germany's leading tofu manufacturers. At about the same time, Huegli purchased Horst Heirler, the country's leading distributor of fresh products.

Also in April 1989 Lima N.V. of Belgium, one of Europe's earliest natural foods companies, purchased Jonathan PVBA, Belgium's leading tofu manufacturer.

In Sept. 1989 Innoval (formerly Sojalpe), an acquired affiliate of Les Silos de Valence (a large 5,000-member cereal cooperative in Rhone Alpes, France), began to produce tofu, soymilk, and liquid soy concentrate (with an ultrafiltration unit) at a modern new plant, with a capacity of 2,000 liters/hour, purchased from Alfa-Laval at a cost of 20-21 million French francs.

In Feb. 1990 Euro-Nature, a French investment fund, purchased 97% Lima N.V. of Belgium.

In early 1990 Avo Feinkost GmbH, a large West German spice from Osnabrueck, launched the Sofit line of soy products, including various meatlike products, dressings, and salads.

5910. Boodram, Ramlakhan. 1990. Supplying small-scale screw presses and extrusion/expelling systems to Third World countries (Interview). *SoyaScan Notes.* May 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Mr. Boodram, a native of Trinidad who started BAR Export/Import Inc. in 1980, makes small-scale screw presses and sells systems containing them to developing countries. His presses are those that have been used by INTSOY. At IITA in Ibadan, Nigeria, he has an extruder/expeller system. The extruder is made by Insta-Pro, for which he is an agent. For any seed other than soy, the screw press would be adequate, but with soy, in order to get a high-quality oil that requires no further processing (such as caustic refining, deodorization, etc.) you must first run the soybeans through an extruder, then press the hot extrudate. The resulting crude oil is of high quality and has the same chemical characteristics as once-deodorized soy oil. BAR Exports also supplied IITA with a soymilk and tofu plant containing a Bean Machines 150 mill, a Kawanishi hydraulic press, and a small tofu press. No commercial products are produced.

A system at Ken Soya in Nairobi, Kenya, is used to make low-cost extruded soy products, including flour and oil. The company, which to extrude animal feeds, is doing well. Tests started in Dec. 1989 and the soy flour is just now entering the market.

He is now shipping an extrusion/expelling pilot plant system to Sokoine (pronounced so-ku-AY-ne) Univ. of Agriculture in Morogoro, Tanzania. It will be used as a training system to disseminate the technology throughout the country. Using a scale and mixer, the low-fat flour will be mixed with a carbohydrate source, then run back through the extruder to make a cereal-soy blend that can be used for anything from a weaning food to animal feeds. The full system, which requires no boiler or compressor, fits in a space 20 by 50 feet and costs about $110,000, not including the building.

BAR also has an extruder-expeller system at Grove Country Foods in Ohio. He and Carl Hastings, who runs the company, are long-time personal friends. BAR has another system at B and B International in Trinidad. They sell the oil for food and use the meal/flour in animal feeds. BAR tries to reduce marketing costs by placing their systems in international or regional centers, then let them disseminate the technology. They have also been working with CARIRI (the Caribbean Industrial Research Inst.) at the Univ. of the West Indies, with CARDI in Belize, with Eat Soy in Dominique, and Nature Treats in Jamaica. The woman who owns Nature Treats also makes tofu. Address: BAR Export Inc., P.O. Box 190, Seymour, Illinois 61875. Phone: 217-687-4810.

5911. Seewer, Conrad. 1990. The soymilk market in Switzerland (Interview). *SoyaScan Notes.* May 17 and 21. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The two main manufacturers of soymilk in Switzerland are Galactina and Soyana, but only Soyana makes their own soymilk (from whole soybeans, packed

in Tetra Brik) for regular, healthy adults. Soyana is more a regional than a national company, being more active in the area of Zurich. Seewer has no idea how much soymilk Soyana makes. Galactina's soymilks, all made from whole soybeans, are used only for clinical or infant feeding. He is not aware of any other smaller manufacturers of fresh soymilk. The main imported soymilk is from Alpro.

The market for adult soymilk in Switzerland is quite small and a segment of the health food market. Galactina does not know this market well since they are not part of it and no statistics are available. Adult soymilk is rarely sold in supermarkets, and in only a few department stores. They are sold mostly in Reform Houses. Address: Marketing Manager, Galactina Ltd., Birkenweg 1-6, CH-3123 Belp, Switzerland. Phone: +41 31 811 111.

5912. Seewer, Conrad. 1990. Recent developments at Galactina Ltd. in Switzerland (Interview). *SoyaScan Notes.* May 17 and 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Galactina bought the Naga line of products from Lindt & Spruengli in 1979 and started selling the products in 1980. At that time the line consisted of clinical beverages for oral and enteral feeding (Naga-di and Naga Sonda), and a baby food (Bebe Nago). In Nov. 1984 the company introduced its first tofu product.

Seewer joined Galactina Ltd. 20 years ago. Dr. Peter Speck left Galactina about 2 months ago. He went to work at a nearby company. Ulrich Bringold left several years ago to work with a yeast company. Neither Speck nor Bringold is involved with soya any longer.

Galactina now makes three types of soy products: (1) Beverages/liquids for clinical use, both for oral and enteral and tube feeding; (2) The tofu line; and (3) The Mamina Soya baby food line. They have both a milk and ready-to-feed meals. The meals, which contain soy [powdered soymilk] plus fruit or vegetables, were introduced recently. Galactina does not make any soymilk for regular, healthy adults. Address: Marketing Manager, Galactina Ltd., Birkenweg 1-6, CH-3123 Belp, Switzerland. Phone: +41 31 811 111.

5913. Nordquist, Ted. 1990. Soy ice cream in Sweden and Europe (Interview). *SoyaScan Notes.* May 18. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** This week Ted introduced the "absolutely best-tasting soymilk-based ice cream in the world. Called Tofu Line Glass in vanilla and chocolate flavors, it tastes like old fashioned ice cream made from cream. The vanilla is better than its dairy counterpart." Four-color brochures and labels have been printed. Ted makes the soymilk at the rate of 4,000 liters/hour at Trensums Musteri, a juice company located in Tingsryd, located 20 or 30 minutes miles to the north of the southern seaside city of Karlshamn. Both Tingsryd and Karlshamn are located in Blekinge County. Its a very high-tech soymilk. This is the first product to come out of Ted's years of collaboration with Trensums. Ted buys the soy base from Trensums and ships it by tank truck to Winner (pronounced Vinner), one of Sweden's largest ice cream producers; it is a division of Karlshamn in Karlshamn. He sells the soy base to Winner. Winner makes the ice cream, and sells it back to Ted. It is hard-packed in 3/4 liter octagonal cartons (each has 8 sides with the top and bottom flat). Ted then sells the ice cream to AB Svenska Nutana, a Seventh-day Adventist distributor and marketer in Rimbo, Sweden. Nutana has exclusive sales rights in Sweden. Ted is now working on exports to Finland and Japan.

Ted and his coworkers are only interested in high-volume products. He hopes to sell in Sweden at least 400,000 liters/year of the new ice cream, made from 200,000 liters of the liquid mix. This is 9,000 liters/week, or 30 pallets/week. In addition, he hopes to export the product to other Scandinavian countries and to Japan and perhaps the continent.

It is quite surprising that, whereas there are many soy ice creams in America, there are only 2 others in Europe. One is made by Schoeller, which is one of Europe's largest ice cream producers. They bought an Alfa-Laval system that transforms whole soybeans (using the Illinois method, without separation of okara) into soymilk which they then spray dry and use to make a soy ice cream. "The samples of the ice cream and powder that they sent to Semper in Sweden were a total catastrophe."

Unisoy in England, run by Neil Rabheru, an Indian man, also makes a soymilk named Unisoy Gold and a soymilk ice cream named Maranellis Ice Supreme. They have been out since about mid-1989. It is fortified with calcium and vitamins to be as close as possible to dairy milk. Ted thinks it tastes fantastic, but the ice cream doesn't come close to Ted's. The owner of the company came to Sweden and tried to sell Ted his ice cream and aseptically packed soy base. Address: Aros Sojaprodukter, Bergsvagen 1, S-19063 Orsundsbro, Sweden. Phone: 0171-604 56.

5914. Nordquist, Ted. 1990. The soymilk market in Scandinavia (Interview). *SoyaScan Notes.* May 18. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The most popular soymilk in Scandinavia is that imported under the Nutana brand and made by DE-VAU-GE in West Germany. It is sold in an aseptic package. Nutana, located in Rimbo, Sweden, and owned by the Seventh-day Adventists, is a wholesaler and distributor for vegetarian products. Some Alpro soymilk is imported to Sweden but there seems to be less and less of it because Nutana has a very active marketing organization in Scandinavia. Within Scandinavia, Sweden is by far the biggest market for soyfoods. The population sizes are Sweden 8.3 million, Denmark 5.07 million, Finland 5.0 million, Norway 4.2

million, and Iceland 251,000. Alpro's soymilk dessert, in vanilla and chocolate flavors, is selling well.

The soymilk market in Scandinavia is, at most, 150,000 liters/year. It is growing slowly. This is still too small to be interesting or to pay for printing aseptic packages for a soymilk product. The minimum order for a Tetra Brik carton is 200,000 units, and the normal economical order for one single package is about 350,000 to 400,000 units. The labels are so expensive that he would not want to buy more than a 2-year supply. So he would not start until he can sell at least 200,000 liters/year. The cost of aseptic cartons is a major problem for soymilk makers in Europe. All are struggling. Aros will be interested in the next 2-3 years. His first product will probably be a "cooking milk" rather than a milk for drinking. He may work with the milk company Semper to produce a children's "Välling" (pronounced VEL-ling). This is a very popular breakfast product for both children and adults, usually made from powdered milk plus oats or wheat. It is sold as powder which is mixed with water and heated on the stove to make a sort of thick milk. They have developed a soy-based counterpart that tastes better than its dairy counterpart.

Ted's long term goal is to have his fresh soymilk beat powdered cow's milk on the market. His soy-base is so neutral or bland in taste that it can be used in place of powdered milk in ice creams, margarines, etc. That is his basic marketing strategy. As 1992 approaches and subsidies are eliminated over the next 2 years, 8,000 Swedish farmers are projected to loose their jobs from competition from the Continent. In Sweden there is a tremendous surplus production of milk and dairy products, as well as meat, wheat, barley, and oats. In Sweden, the dairy farmer presently gets almost 2 crowns/liter for his milk. That milk is retailed for 5.90 Swedish crowns/liter, but it would cost 6-8 crowns/per liter if it were not subsidized by the Swedish government. What is not sold as a liquid is spray dried, and sold at a low price to companies like Karlshamn to make ice cream and margarine. The price will go up as the subsidies are eliminated–all over Europe. Ted can produce liquid soymilk at 1.10 crowns/liter without subsidies. So Ted wants the farmers which would otherwise go out of business to start growing a new soybean that grows well in Sweden. Ted would buy those soybeans, make soymilk, and use it in Sweden in place of powdered milk, and export it as a premium product at a higher price.

Ted's soymilk system started with some ideas that he got from Alfa-Laval in Lund–the concept of starting with unsoaked, whole soybeans. They exchanged this for Ted's information on tofu. They have never been successful in making a bland soymilk like the one Ted makes today. Ted left Alfa-Laval in 1983-84 and went to Trensums. He has worked with Mark Ljungström (pronounced YUNG-strum) at Trensums for 6 years. Mark has built the machinery (using mostly Alfa-Laval equipment but with pieces from other suppliers) and Ted has the processing concepts. This has been repeatedly tested, changed, re-run, etc. until now it is a unique, excellent system. During the past 2 years, Arla (the Swedish milk company, and Semper, their development subsidiary) and Karlshamn (the Swedish fat company, that uses 90% vegetable oils) have entered the project. In the fall of 1989 Arla decided the leave the project because the new director of Semper new nothing about soya. So now Ted/Aros, Trensums, and Karlshamn are working together. Address: Aros Sojaprodukter, Bergsvagen 1, S-19063 Orsundsbro, Sweden. Phone: 0171-604 56.

5915. Speck, Peter. 1990. How Galactina got involved with tofu in Switzerland (Interview). *SoyaScan Notes.* May 23. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Galactina bought the Naga product line from Lindt & Spruengli in 1979 and began selling the products in 1980. When Speck arrived at Galactina, the only soy products made by the company were Naga-di and Naga Sonda, both sold only in dried form. Then in 1981 they started to produce them in a liquid form in Tetra Pak. Speck's first job at Galactina was to develop the liquid form of Naga Sonda in Tetra Pak. Then they began to look for ways to use their extra soymilk production capacity. So he read the literature and learned about tofu, a product widely made in East Asia. He made tofu once and found it promising. The company decided they wanted to be a pioneer in introducing tofu to Switzerland. So they began to develop a regular tofu. During the development, Speck met Verena Krieger and asked her if she could show him how her company produced tofu. In 1984 Verena came to Galactina and made an excellent presentation, for which she was paid. She explained what tofu was and what could be done with it. Initially Galactina decided to buy their tofu from Sojalade (the company of which Krieger was one owner), since they had no idea whether or not the product would be successful. At first Sojalade agreed to supply the tofu to Galactina, then two months before the test market they changed their mind saying that they did not want to supply an industrial producer. So Galactina had to develop their own whole process in 2 months.

In Nov. 1984 Galactina launched their regular tofu in test market in Bern at Co-op supermarkets. The launch was successful and Co-op became the leading outlet for Galactina tofu. Co-op kept Galactina tofu even after they launched their own brand of tofu in Aug. 1985, made and private labeled for them by PLL. But they kicked out Galactina in 1988 when they took on Baer's Yasoya, because Baer, which has an excellent cheese distribution system, was able to deliver its own product to each individual Co-op supermarket and service the product, removing any that were not fresh. Galactina could not provide such a service. Address: Home: Muenzingen, Switzerland. Work: Haco Co. in Gumlingen. Formerly with Galactina, Ltd. Phone: 031-52-1631.

5916. *SoyaScan Notes.* 1990. What are celiac disease, celiac sprue, and Duhring's disease / dermatitis herpetiformis (Overview). May 29. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** People with these diseases must avoid consumption of gluten, even in minute amounts. This gluten can be found in wheat, oats, barley, or rye, and thus these people cannot enjoy any soy sauce except wheat-free tamari. *Webster's Dictionary* defines celiac disease (pronounced SEE-lee-ak; the term was first used in 1936 and is also spelled coeliac in the UK) as "a chronic nutritional disturbance in young children characterized by defective digestion and utilization of fats and by abdominal distention, diarrhea, and fatty stools." Wikipedia (Aug. 2011) defines it as "an autoimmune disease of the small intestine that occurs genetically predisposed people of all ages from middle infancy onward." The term celiac by itself (first used in 1662) is defined as "of or relating to the abdominal cavity."

But celiac sprue refers to a tremendous intolerance (much stronger than an allergy) to wheat or gluten in any food. Many people suffering from celiac sprue are also intolerant to milk and milk products. Thus they often consume soymilk instead of milk and wheat-free tamari instead of shoyu.

Duhring's disease, named after U.S. dermatologist Louis A. Duhring (1845-1913), is much less common and therefore less well known that celiac or celiac sprue diseases. Also known as dermatitis herpetiformis or dermatitis multiformis, it is caused by an inability of the small intestine to digest gluten. When a person who has Duhring's disease consumes even a minute amount of gluten, they will experience severe, extensive itching, and their skin will generally break out with a terrible rash and eruption of blisters (vesicules and papules, which occur in groups), often over much of the body, that last for weeks. But if they are scratched, they burn, causing intense pain. Spontaneous healing rarely occurs, except in children, and relapses are common. Many people with Duhring's disease are also dairy intolerant and 70% of them have some form of thyroid disease. Most people with Duhring's disease are Caucasian; few are African- or Asian-American. The disease is often misdiagnosed by dermatologists. A society has been formed at a university in Ohio to help those who suffer from Duhring's disease.

5917. Daenzer, Walter. 1990. The tofu and soymilk markets in Switzerland (Interview). *SoyaScan Notes.* May 30. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Soyana introduced its Soyaquell brand in about 1985 for the mainstream market. The Soyana brand is reserved for the Reform market. Many (but not all) Soyana products are now sold under the Soyaquell brand–such as tofu, soymilk, etc. New products include Tofu Pastete (cake-shaped hors d'oeuvres, 1989) and some new Tofu Burgers.

Competition in the soyfoods market is terrible in Switzerland–its the most competitive market in Europe. The market is small and people have very high quality expectations. Galactina is trying to get into all the Reform stores. They are doing everything they can to market their products there. Some years ago the regular food industry got interested in soya, but their standards allowed them to make tofu and related products using soy protein isolates. Baer Weichkaeserei had a big campaign which resulted in Galactina tofu products being kicked out of all Co-op supermarkets. Also Galactina products had many problems selling in the supermarkets. So Galactina has decided to sell their products in the Reform stores. And now Soyana has lots of competition from Galactina. The Swiss Biona Association used to sell only Swiss soyfoods. Nothing else was imported until about 2 years ago. At that time, they got offers to sell soymilk made in France and Germany. "Then Biona did something terrible; they gave the Biona sign to all foreign suppliers. So now Société Soy is coming in from France, Heirler with a big range of products from Germany, etc. Products from all over Europe are now being imported to Switzerland and sold at Reform stores."

Soyana invested a great deal of money as a pioneer in the Swiss soyfoods market. Just when it looked like they were about to recover their losses, the terrible new competition began. And the competitors are using every trick in the book, including unfair means and deceptive advertising. They have no sense of purity of product; for example they say they are using nigari but they use calcium sulfate with 10% nigari. Soyana does not pasteurize its tofu but the competition does. So now Soyana has to educate its former customers about the advantages of not pasteurizing. Now Soyana has to become a quality pioneer and an advertising pioneer. Reaching and convincing all these people costs lots of money, but Soyana is doing it. Soyfoods have changed from being an alternative food to being a big money maker, so the big food companies jump in with the goal of making more money by selling lower priced, lower quality foods. Their advertising is often dishonest.

"The whole soy thing has proved to be an alternative for people who really need it. And that is a stable market, but it is not booming. In America it seems that the big food producers have slept while the soyfoods market has grown, but in Switzerland the situation is different. Many big Swiss companies jumped in when they got the idea that soya is healthy, but many of them didn't know anything about the products. So now Soyana is looking for alternate things to do to avoid this terrible situation."

If Soyana tries to export its products from Switzerland, it has to pay 20% customs duty, and Swiss wages are high. But companies that import foods to Switzerland have to pay a much smaller tax, and the process is easier. This will not change with the opening of trade in 1992 because Switzerland is not part of the EEC! Swiss has always

cherished its separateness, independence, and neutrality.

Concerning the term Broteinheit ("Bread Unit," it is not Broteinhalt) relating to diabetic exchanges, the term is not well defined or agreed upon by professionals, so it is a big problem.

Soyana used to be the only soymilk manufacturer in Switzerland. Then a Swiss-French company with a French name started making soymilk. Their prices were low, but they couldn't reach the big consumer chains. Address: Soyana, Postfach 8039, Zurich, Switzerland. Phone: 01/202 89 97.

5918. Kjellker Gimre, Monica. 1990. Re: Complete soymilk or soybase plants installed by Alfa-Laval worldwide from 1979–1989. Letters to William Shurtleff at Soyfoods Center, May 30 and Aug. 24–in reply to inquiry. 2 p. Typed, with signature on letterhead.

• ***Summary:*** The following plants are listed chronologically by year of start-up, and within each year, alphabetically by country. Start-up–Country–Company–Product–Capacity (liters/hour)

1979–Malaysia–Lam Soon–soymilk–5,000

1980–Thailand–Kickapoo–soymilk–4,000

All plants made from 1984 on use Alfa-Laval's new Soyal design.

1985–West Germany–Ice cream maker [Schoeller]–soybase–3,000

1985–Switzerland–Soyana–soybase–1,000

1986–China–Guangzhou Cannery [Guangdong]–soymilk–2,500, 2 dec.*

1986–France–Cacoja–soybase–1,500

1987–China–Jin Jiang Foodstuffs Factory–soymilk–2,500

1987–India- Noble Soya–soymilk–4,000, 2 dec.*

1988–Argentina–Alimentos de soja–soymilk–4,500

1988–China–Jiangmen Foodstuff Factory–soymilk–2,500, 2 dec.*

1988–China–Wuhan Guan Sheng Yuan Foodstuff Factory–soymilk–2,500, 2 dec.*

1988–France–Innoval–soybase–1,500

1988–Nepal–Indreni–soymilk–2,500

1988–Nigeria–Sona Dairies–soymilk–4,500

1989–Australia–Sanitarium Foods–soybase–500

1990–France–Dairy Co-op**–soybase–500

* = 2 decanter centrifuges per system to boost the protein yield. The systems made before 1984 were for more traditional soymilk. Those made afterwards no longer require that the soybeans be soaked, and the "new" soyabase line in designed primarily for producing a non-beany soymilk, but it can be easily adjusted to give a traditional soymilk. "Soybase" is the product that comes out of the Soyal soyabase line after grinding, separation in one or more decanters, and deactivation of enzymes like trypsin inhibitors. This base is more concentrated than soymilk (9-12% solids/dry matter) and is what is used as the raw material for any soy-based product. "Soymilk" is a blended drink, often containing sugar, and standardized to a protein level required by the market. Soybase would only be run through an ultrafiltration unit to (1) remove phytic acid and oligosaccharides, or (2) to remove moisture and increase the percentage solids, as to make tofu. ** The plant owned by the Dairy Co-op in France is secret, but the base it produces will be used mostly for research on calf milk replacers and on replacing cow's milk in certain dairy products. This dairy does not have any products on the market. Address: R&D manager, Alfa-Laval East Asia Pte. Ltd., 11 Joo Koon Circle, Singapore 2262. Phone: 86 22 711.

5919. Kjellker Gimre, Monica. 1990. Re: Current developments at Alfa-Laval. Letter to William Shurtleff at Soyfoods Center, May 30. 1 p. Typed, with signature on letterhead. Plus 2 brochures.

• ***Summary:*** John Wilson is presently working a special projects in Jamaica. The former agreement with Kibun is no longer active nor in effect.

"Right now Alfa-Laval's soya application group is concentrating on technological support and development work. The general knowledge of soya is now so well spread throughout our organization that it is taken care of by our normal sales organization channels in market companies and Lund. The support and development work here is taken care of by our R&D Centre in Singapore where we have pilot plant facilities for all types of soya products. I have been head of this R&D Centre since June 1989." Address: R&D manager, Alfa-Laval East Asia Pte. Ltd., 11 Joo Koon Circle, Singapore 2262. Phone: 86 22 711.

5920. Pringle, William. 1990. Re: History and present activities of The British Arkady Company Ltd. Letter to William Shurtleff at Soyfoods Center, May 30. 2 p. Typed, with signature on letterhead.

• ***Summary:*** This company, founded in Sept. 1921, is now a member of the Arkady ADM Group. "The British Arkady (pronounced AR-kuh-day) was originally a joint company between The Ward Baking Co. in the U.S.A. and Baker Perkins of Willesden, London, a bakery machine company. The original purpose of the company was to sell the Arkady product... The original address was Willesden, London, England."

"Arkady Soya mills is not a separate entity. It is simply a name we have used in advertising and promotion. The mills making full fat soya flour belong to British Arkady and are on our premises here.

"British Arkady began to sell T.V.P. in 1965, but we did not produce on this site until 1973. The product we sold was ADM's, and we were their agent in the UK.

In 1974 ADM acquired British Arkady.

Concerning soymilk: "Our company had a joint venture

for the production of soya milk dating back to the early 70's. We were the providers of technology and our partners made and sold the product. It was based on the use of full fat soya flour (dehulled ground soya beans) which was extracted with water. The milk was sold in cans. We no longer have a commercial interest in this product, but I believe it is still on sale. We have never sold soya milk based on isolated soya protein, but we have given other companies the technology and some of these products are still for sale.

"Haldane Food Group and S.I.O. are fully owned subsidiaries of The British Arkady Co. Ltd.

"British Arkady's three best-selling products that contain soy as a major ingredient, ranked in descending order of annual sales, are Full-fat Soya Flour, Textured Vegetable Protein, and Bakery ingredients.

Information on number of employees and annual sales is confidential. Address: Director-General Manager, The British Arkady Co. Ltd., Skerton Rd., Old Trafford, Manchester M16 0NJ, England. Phone: 061-872-7161.

5921. Krieger, Verena. 1990. Re: The soymilk market in Switzerland. Letter (fax) to William Shurtleff at Soyfoods Center, May 31. 5 p.
• ***Summary:*** Soyana in Geneva is the only soymilk maker in Switzerland; their production figures are confidential. Galactina Ltd. in Belp makes soymilk powder, but it is used only in Galactina baby foods. PHAG Sarl in Gland is Switzerland's oldest distributor of soymilk and soymilk products; they sell 2,800 liters/week of DE-VAU-GE soymilk. Biorex AG distributes soymilk imported from Alpro in Belgium. Address: Bruchmattstr. 24, CH-6003 Lucerne, Switzerland. Phone: 041-22 50 34.

5922. Gardner, R.W.; Shupe, M.G.; Brimhall, W.; Weber, D.J. 1990. Causes of adverse responses to soybean milk replacers in young calves. *J. of Dairy Science* 73(5):1312-17. May. [21 ref]
• ***Summary:*** Six Holstein bull calves were randomly divided into three treatment groups. They were fed either whole cow's milk, or ethanol-extracted or hexane-extracted soy flour in milk replacers to 6 weeks of age. Average weight gains were 13.8, 7.3, and 2.9 kg respectively. mortality was 0/20, 4/20, and 9/20 respectively. Heart rates (beats per minute) were 87.6, 99.1, and 116.3 respectively. Respiratory rates (breaths per minute) were 41.6, 67.6, and 61.1 respectively. Intradermal wheal growths showed allergic sensitivity to the soybean products. Phenolic compounds in the soybean flour were implicated as possible causative factors in the adverse responses to the soybean milk replacers. Ethanol extraction of the soy flour was more effective than hexane extraction in removing phenolic compounds (2.19 vs. 1.00% phenolics). Address: 1-3. Dep. of Animal Science, Brigham Young Univ., Provo, Utah 84602.

5923. *Health Food Business* (*England*). 1990. Plamil–pioneers of soya milk. May.
• ***Summary:*** "Twenty-five years ago in 1965 the first British-made soya milk crept quietly on to the scene via HSW. Before this, it was not available anywhere. Plamil Foods, the firm who pioneered this soya milk, now celebrates its 25th trading anniversary. Plamil justifiably claims to have influenced enough health food and wholefood shop-owners and their customers to have created a market for soya milk and soya milk products...

"It is Plamil's proud boast that throughout its 25 years it has marketed exclusively through the health food trade and has turned down all requests from supermarkets."

A photo shows C.A. Ling.

5924. *SoyaFoods* (*ASA, Europe*). 1990. Misleading use of dairy names. 1(1):2. Spring/Summer.
• ***Summary:*** "New UK regulations banning the misleading use of dairy names have been introduced in the UK. The Milk and Milk Products (Protection and Designations) Regulations 1990 implement EC Council Regulation 1898/87/EEC which protects dairy names by prohibiting the use of terms such as 'soyamilk' on labels...

"It will also be an offence to claim or suggest that a product is a dairy product by using dairy imagery in the labelling or advertising of non-dairy products. In countries, like France, where there are even difficulties in using the term 'Soyadrink', alternatives such as the Japanese term 'tonyu' are being considered."

5925. *SoyaFoods* (*ASA, Europe*). 1990. More soya protein production. 1(1):2. Spring/Summer.
• ***Summary:*** "Loders Croklaan, Wormerveer, Netherlands, a Unilever subsidiary is to expand its capacity of its soya protein concentrate plant by 50% at its sister company, Unimills in Germany [sic, actually UniMills in the Netherlands, according to Aat Visser of Loders Croklaan (Aug. 1990)]. The extension will be ready by late 1990 and will allow the company to meet the increasing demand for its antigen-free Soycomil soya concentrate."

5926. *SoyaFoods* (*ASA, Europe*). 1990. Soyafoods gain in Italy. 1(1):2. Spring/Summer.
• ***Summary:*** "Buton S.p.A. of Bologna, leading manufacturers of brandy and spirits, have recently gained a controlling interest in the Paduan-based company Crivellaro S.r.l. Plans to develop the growing market for soyafoods in Italy and abroad will continue under the Buton group, not only with Crivellaro's present range of soya products, oil, lecithin and milk but also through new product lines."

5927. *SoyaFoods* (*ASA, Europe*). 1990. Report of an interview with John Wilson, United Nations International

Development Organisation: Soya–the original golden egg? 1(1):6. Spring/Summer.
• ***Summary:*** Wilson, formerly Manager, Business Development for Soy Process Technology, with Alfa-Laval in Sweden, now works for UNIDO (United Nations Industrial Development Organization) in Jamaica. He addresses the question: "How difficult is it to set up a soya processing plant in developing countries and can soyafoods really match up to expectations?" Table 1 lists 11 questions that Wilson feels should be asked by developing countries when planning food policy. "In the past year the 'mountains' of surplus milk products in both Europe and North America have diminished to non existence and countries which have received free milk supplies have seen this reduced or cancelled. The cost of milk on the world market has increased nearly 2½ times." Address: Food Processing Expert, International Projects Coordinator for UNIDO, Jamaica.

5928. *SoyaFoods* (*ASA, Europe*). 1990. Soya milk information [in the UK]. 1(1):7. Spring/Summer.
• ***Summary:*** "The Soya Milk Information Bureau was launched in April/May last year with the support of Vandemoortele (UK) Ltd. and since then has handled over 2,000 enquiries from all over the world. Most queries come from consumers concerned about milk allergies but interest is also coming from schools. The Bureau produces an information pack on soyamilk including literature on calcium, diets and packaging. For further information please contact: The Soya Milk Information Bureau, The Chestnuts, Fosse Way, Moreton Morrell, Warwickshire CV35 9DE.

"The British Soya Milk Advisory Service was set up by Plamil Foods Ltd. also to answer consumer requests for information about soyamilk. Their information pack includes the history of soyamilk, composition, medical and nutritional information and 'green' aspects. Their address is British Soya Milk Advisory Service, Bowles Well Gardens, Dover Rd., Folkestone, Kent CT19 6PQ."

5929. *University of California, Berkeley Wellness Letter.* 1990. Comparing milks. May. p. 8.
• ***Summary:*** Cow's milk is 89% water. The following are the average values for 8 ounces:

Whole milk (3.3% fat), 150 calories, 8.5 gm fat, 51% of the calories come from fat.

Low-fat milk (2% fat), 120 calories, 4.7 gm fat, 35% of calories from fat.

Low-fat milk (1% fat), 100 calories, 2.5 gm fat, 22% of calories from fat.

Skim milk (0.4% fat), 85 calories, 0.4 gm fat, 4% of calories from fat. Address: Univ. of California, Berkeley. Phone: 415-642-8061.

5930. Vandemoortele, Philippe. 1990. N.V. Vandemoortele and Alpro N.V. in Belgium (Interview). *SoyaScan Notes.* June 4. Conducted by William Shurtleff of Soyfoods Center. Followed by a letter (fax) on 30 May. 1990.
• ***Summary:*** There is no written history of Vandemoortele. The starting point and center of operations has always been Izegem in Belgium. The company name is pronounced van-duh-MOOR-tuh-luh in Flemish and van-duh-moor-TELL in French. The protein division of N.V. Vandemoortele started the company's soy protein and soymilk research. As long as it was only doing research and losing money there was no need to start a new company. Alpro started when it was clear that there would be income from the sale of the first turnkey soymilk plant. At that time, the protein division of N.V. Vandemoortele turned into Alpro, and the former then ceased to exist. About 5 years ago, Vandemoortele was re-structured. Vandemoortele International is the new holding company for the group (replacing Safinco) and under it are four product groups: N.V. Vandemoortele works with oils and fats. N.V. Vamo Mills is an oilseed crusher and maker of flours (including full-fat and defatted soy flours). Vamix is a bakery. And Alpro works with natural soyfoods, especially soymilk. One top manager is in charge of each of the four subsidiaries and he is responsible for everything in that company from research to consumer. Philippe is the top man at Alpro. Vandemoortele is no longer 100% owned by the Vandemoortele family.

In March 1987 the company began using the subtitle "Alpro Natural Soyfoods" instead of its earlier "Alpro Protein Products." The former name made Alpro sound like a soy protein isolate company. In July 1986 Alpro began using the slogan in French "La Force Végétale du Soja," then in March 1989 they shortened this to "La Force du Soja."

Concerning Tetra Brik labels, there are three different printing techniques available; some are more economical and some give higher quality. If you use the flexographic (flexo) technique, which uses rubber plates to print, you can co-print, i.e. print several packages in one print run. Every time you print, they make new rubber plates. There is less flexibility in design. Alpro uses only flexographic because it has more than 100 different packages (It co-packs for Lima, Celnat, Perlinger [a health food company in Austria], and most U.K. supermarkets under their own brand), but the resulting package often looks very simple in color and design. Offset uses fixed plates, which cannot be changed; this technique is used for most package printing in the USA. Roto (Rotogravure) uses a copper cylinder and is the highest cost and highest quality.

In June 1990 Alpro moved from Izegem into its new factory at Vlamingstraat 28, B-8610 Wevelgem, Belgium. Phone: 056/43.22.11. Address: Managing Director, Alpro N.V., Vlamingstraat 28, B-8610 Wevelgem, Belgium. Phone: (056) 43 22 11.

5931. Wilson, John. 1990. Re: Changes in the food

department at Alfa-Laval. Letter to William Shurtleff at Soyfoods Center, June 15. 1 p. Typed, with signature on letterhead.

• ***Summary:*** "I am here on a two year assignment from UNIDO (United Nations Industrial Development Organization) to assist the food processing industry in Jamaica. During those two years, I am on leave of absence from Alfa-Laval in Sweden.

"The food department of Alfa-Laval in general and the soya application in particular has undergone and is undergoing considerable restructuring, part of the reason for which is to match the tremendous market changes in Eastern Europe.

"Goeran Leufstadt, who was the original chief of the soya research laboratory from 1982 to 1985 and subsequently chief of the Singapore food lab from 1985 to 1989 is now chief of the food department F. F. which has the product responsibility for soya foods." Address: Food Processing Expert, International Projects Coordinator for UNIDO, Jamaica, c/o JAMPRO Ltd., Jamaica's Economic Development Agency, 35 Trafalgar Rd., Kingston 10, Jamaica. Phone: (809) 929-7190.

5932. Lindner, Anders. 1990. Re: Dairylike products made from soymilk in Europe. Retail outlets for soymilk in Europe, country by country. Letter (fax) to William Shurtleff at Soyfoods Center, June 19. 1 p. Handwritten. [Eng]

• ***Summary:*** The following figures are my guesstimates:

I would estimate that no more than 15% of the soymilk made in Europe is then made into dairylike products, not including tofu. Of the soymilk made into dairylike products, roughly 60% is made into ice creams, 20% into non-frozen desserts (incl. puddings, and custards), 15% into yogurts, and 5% into non-dairy cheeses.

Of all the soymilk soy in Europe as a beverage, I would estimate that 50% is sold at health food stores, 40% at supermarket chains, multiples, and general food stores, and 10% at Asian retail stores.

A wild guess as to the percentage of soymilk sold at Supermarkets–Health food stores–Asian stores in each country would look something like this: United Kingdom, West Germany, France, Belgium, the Netherlands, and Switzerland would all be 40%–50%–10%.

Italy, Scandinavia, Spain, and Others would all be 10%–80%–10%.

Austria would be 30%–60%–10%. Address: P.O. Box 19002, S-250 09 Helsingborg, Sweden. Phone: 42-92776.

5933. Lindner, Anders. 1990. Re: Consumption of soymilk in Europe, by country and per capita. Letter (fax) to William Shurtleff at Soyfoods Center, June 19. 1 p.

• ***Summary:*** The following figures are my guesstimates for the amount of soymilk consumed in major European countries. Most of the soymilk produced in Belgium [by Alpro] and Germany [by DE-VAU-GE] is consumed in other countries. Note: The large consumption in the U.K. is due to both its large total population and its large population of vegetarians and vegans. The latter do not consume milk or other animal products.

Country (Population)–Soymilk consumption in million liters–% of total–liters per capita per year

United Kingdom (56.7 million)–20 million liters*–40% of total–0.35

West Germany (60.2 million)–10 million liters–20% of total–0.17

France (55.8 million)–6 million liters**–12% of total–0.11

Belgium (9.9 million)–3 million liters–6% of total–0.30

Netherlands (14.7 million)–2 million liters–4% of total–0.14

Switzerland (6.5 million)–2 million liters–4% of total–0.31

Scandinavia*** (22.8 million)–2 million liters–4% of total–0.088

Italy (57.4 million)–1 million liters–2% of total–0.017

Austria (7.6 million)–1 million liters–2% of total–0.13

Spain (39.8 million)–1 million liters–2% of total–0.025

Others**** (24.3 million)–2 million liters–4% of total–0.082

Total (355.7 million)–50 million liters–100%–0.14

* Neil Rabheru, founder and director of Unisoy, the largest soymilk manufacturer in the UK, estimates that 18-20 million liters/year of soymilk are consumed in the UK. ** Bernard Storup of Société Soy, a large soymilk maker in France, estimates consumption of soymilk in France to be much higher, about 11 million liters. Storup's estimate is probably more accurate. *** Scandinavia = Sweden (8.3 million), Denmark (5.0 million), Finland (5.0 million), Norway (4.2 million), Iceland (0.25 million).

**** Others = Portugal (10.2 million), Greece (10.0 million), Ireland (3.7 million), Luxembourg (0.369 million), Malta (0.358 million).

Highest per capita consumption: United Kingdom 0.35, Switzerland 0.31, Belgium 0.30, West Germany 0.17, Netherlands 0.14, Austria 0.13, France 0.11. Lowest per capita consumption: Italy 0.017, Spain 0.025. Address: P.O. Box 19002, S-250 09 Helsingborg, Sweden. Phone: 42-92776.

5934. Menzies, John. 1990. Re: Harry Miller's work with soymilk in East Asia. Plans by the South China Island Union Mission of Seventh-day Adventists to set up a health food company in Hong Kong and Taiwan. Letter to William Shurtleff at Soyfoods Center, June 20. 2 p. Typed, with signature on letterhead.

• ***Summary:*** After his soyfoods plant in China was destroyed, Dr. "Harry Miller retreated to Taiwan along with the Nationalists and later set up a soya milk plant associated

with the Taiwan Adventist Hospital which has long since gone. I am not even sure when the soya milk operation was discontinued. Unfortunately the only industries set up in Hong Kong were hospitals.

"Recently I was asked by the South China Island Union Mission of SDA's to set up a health food industry in Hong Kong and Taiwan... My background is food technology and I have worked for Sanitarium in Australia and New Zealand for a number of years.

"Initially we will import various products from our sister institutions around the world and where possible re-pack under our own label. This will allow us to get a feel for the market so in the near future we will know what sort of a manufacturing plant to set-up (i.e. soyamilk, vegetarian, or cereal). It looks like we might even have an opportunity to set up a manufacturing base in one of the specially administered regions in communist China." Address: General Manager, Food Div., South China Island Union Mission of Seventh-day Adventists, 40 Stubbs Rd., 2nd floor, Hong Kong. Phone: 838-3991.

5935. *SoyaScan Notes.* 1990. Co-packing and private labeling (Overview). June 20. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** From the point of view of a company who wants another to co-pack/private label products for them. Examples Tofutti Brands has a ice cream maker make its soy ice cream. White Wave has a sausage company make its Healthy Links. Advantages: No need to buy new equipment, space, insurance, or hire new workers, which saves money and time. The co-packer has the experience and equipment needed to produce the products. Product development time is usually reduced. Disadvantages: Logistics may be more complicated, especially if the company is not located nearby. A big company may not be very interested in giving you the specialized help and service you need at the beginning or in emergencies. Watch out: Be sure to get a non-compete clause so that company can't steal your product, drop you, and start to compete with you. Get a contract with a long duration, and lots of specifics.

From the point of a company who has a product that other soyfoods companies want to have packed and sold under their label. Examples: Hinoichi Tofu, and Alpro soymilk and soy desserts. Advantages: Co-packing greatly expands your sales. It allows you to use your plant at higher percentage capacity, which lowers per-unit costs. Disadvantages: The co-packed products usually end up competing with yours, thus lowering sales and profit margins of the in-house brand.

5936. Trevor Johnston. 1990. Some companies start out really small and then they grow. Sometimes they change their name. Very rarely they change it back again (Leaflet). Penrose, Auckland, New Zealand. 1 p. Front and back. 30 cm. June 23.
• ***Summary:*** "Yes Bean Supreme is back. We've changed to avoid ongoing confusion between our company and the Reckitt and Coleman 'Down to Earth' brand of household cleansers. No legal conflict exists between our two companies, however for marketing purposes we don't want this name association to continue."

"Bean Supreme–we think you'll like it."

In the upper left corner is the Bean Supreme logo + "Brings happiness." Address: Marketing Director, Bean Supreme Ltd., Box 12082, 140 Hugo Johnson Dr., Penrose, Auckland, New Zealand. Phone: (09) 590 592.

5937. Karis, Xavier. 1990. Medical Soy, Parma Soia, and Soyfoods in Italy (Interview). *SoyaScan Notes.* June 25. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Of the two companies, Karis thinks that Medical Soy was founded about 3-4 years ago, before Parma Soia. For details ask Medical Soy introduced their line of soy products first, but only lately have they put much effort into promoting the line, especially after the introduction of their Fresh Amisoya line. They apparently make all or most of these products themselves, since on the products is written "Product of Italy," and he is not aware of any other company that could make these products for them. Parma Soia apparently does not make any of their own products. They have a large and very impressive brochure describing their Amisoya line and attempting to find stores to sell the line. These products are now fairly widely sold in big supermarkets, including in Bologna, Milano, Torino, etc. It is surprising that they do not package their soymilk in Tetra Brik cartons.

Karis hasn't seen any Parma Soia products in stores. Parma Soia (a subsidiary of Parmalat, the giant Italian dairy company) has 3 lines of products. The "Campi di Soya" line is probably meant to be sold through supermarkets. They also have an "Erboristeria" line for health food stores and places resembling Reform Houses. The root of the word is "erborista" = botanist or herbalist. The products in the first and second lines seem the same except for the packaging. The Nature Soy line is imported tofu, soy curd, and soymilk. "Parma Soia" does not appear prominently on the label and the product was not on display at the fair where he obtained the brochures. Address: Export/Marketing Dep., Gio. Buton & Co. S.p.a., Viale Angelo Masini, 24, 40126 Bologna, Italy. Phone: 051-506368.

5938. Rosa, Bianca. 1990. Medical Soy S.p.A. in Milan, Italy (Interview). *SoyaScan Notes.* June 26. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Bianca has been with the company for 1 year and will get a history from the founders, especially her boss Mr. Migliavacca, the commercial director. His son is the president. The line of dry products has been transferred to a

sister company, Moderna Distribuzione, which will start to sell the products in 1-2 months. Mr. Polletti ran the Medical Soy booth at the fair in Italy. They are an independent company, not owned by a larger company. They started a couple of years ago. In May 1989 their company sponsored a conference in Milan on the medical benefits of soyfoods. Prof. Sirtori, Descovich, and many other scientists from the USA, Japan, etc. presented papers at the conference on the medical benefits of soy. The abstracts of the conference were published in English. The company is called Medical Soy because their products all contain soy proteins, which are very good for one's health. The founder of the company was a PhD but not an M.D. Address: Medical Soy S.p.A., Via Matteotti 55, 20068 Peschiera Borromeo (Milan), Italy. Phone: 02/547-5456.

5939. *SoyaScan Notes.* 1990. Unisoy Milk 'n' By-Products Ltd. (Interview). June 29. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The company, which is basically a soymilk company, now makes 6 products: White Wave Soya Milk (in sugar free and sweetened varieties), Unisoy Gold (a soymilk reinforced with calcium and vitamins), Soya Yogart, Maranellis (Organic soya ice cream, sweetened with fruit juice; it is delicious), Carob and Banana Drink (organic). They plan to soon launch some organic pancakes called Crêpolettes. Neil Rabheru founded the company, but the idea came from John Patel. Jan Freeman was also involved. Mr. Arora, who Neil knows, has never been involved in this company. Address: Stockport, Cheshire SK6 2RF, England. Phone: 061-430-6329.

5940. Cardenas, Danilo C. 1990. Status of the Philippine soyfood industry. Paper presented at the International Conference on Soybean Processing and Utilization. Held 25-29 June 1990 at the Jilin Academy of Agricultural Sciences, Gongzhuling, China. *
Address: Supervising Science Research Specialist, Philippine Council for Agriculture, Forestry, and Natural Resources Research and Development (PCARRD), Los Baños, Laguna 3720, Philippines.

5941. *FDA Consumer.* 1990. Soy drinks not infant formulas. 24:2. June.
• ***Summary:*** "Soy-based beverages should not be fed to infants as a sole source of nutrition, FDA has warned. The warning does not apply to soy-based infant formulas."

"There are soy-based infant formulas that are complete and appropriate for infants. However, other soy beverages are grossly lacking in the nutrients infants need, FDA said. The agency issued the warning after receiving a report of a severely malnourished 5-month-old baby girl, in critical condition at the Arkansas Children's Hospital in Little Rock, who had been fed a soy drink since right after birth."

"In a nationwide investigation after a similar incident in 1985, FDA found instances in which employees of retail stores (primarily health food stores) advised undercover investigators that soy drinks were suitable for use as infant formulas. FDA warned each store that such misrepresentations are violations of federal law and could cause serious damage to infants."

5942. Golbitz, Peter. 1990. Lite soyfoods making their way to market: Shape of things to come? *Soya International* (*Bar Harbor, Maine*). April/June. p. 16-17.
• ***Summary:*** New low-fat soyfood products include Westsoy Lite (made by Westbrae Natural Foods, and containing only 1% fat and 18% of calories from fat), fat-free versions of Soyco cheese (made by Galaxy Cheese Co. in Cheddar Chunk and Mozzarella Chunk styles), Lean Links (made by Lightlife Foods and containing only 12% of calories from fat). Address: Soyatech, Bar Harbor, Maine.

5943. Golbitz, Peter. 1990. FDA asks for warning on soymilk packages. *Soya International* (*Bar Harbor, Maine*). April/June. p. 7.
Address: Soyatech, Bar Harbor, Maine.

5944. **Product Name:** Rice Dream Low Fat Non-Dairy Beverage (in a Tetra Brik Carton) [Chocolate, Almond, Carob].
Manufacturer's Name: Imagine Foods, Inc. (Marketer-Distributor). Rice Beverage made by California Natural Products, Manteca, Calif.
Manufacturer's Address: 299 California Ave. #305, Palo Alto, CA 94306. Phone: 415-327-1444.
Date of Introduction: 1990. June.
Ingredients: Filtered water, certified organic brown rice (partially milled), almonds, vanilla, sea salt (carob or vanilla if indicated).
Wt/Vol., Packaging, Price: 250 ml but 8 oz liquid Tetra Brik Aseptic carton. Retails for $0.89-$0.95.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Robert Nissenbaum, president of Imagine Foods. 1990. March 14. This is their new amazake-like beverage in Tetra Pak. It is made using commercial enzymes, not koji. It has more of a milky consistency than Grainaissance's Tetra-Pack amazake, though it actually has a higher solids content, but less starch. A little bit of starch gives a lot of thickness but not much solids. It is presently packaged at Real Fresh, Inc. in Visalia and Pacific Foods in Oregon. There is one other company in Utah called Grossner.

The product is made with organically grown rice, and will probably be a bit more expensive than soymilk products. He wants it to be a high-volume item. The 245 ml package contains only 8 oz. of product with nitrogen in the headspace, so you can shake before drinking. It looks like he

will have the product packaged by Pacific Foods as soon as they add the nitrogen. Talk with Robert Nissenbaum. 1990. June 21. The product was in the stores in June.

Ad in Vegetarian Times. 1990. July. p. 35. "When choosing a non-dairy beverage, start dreaming. Made from certified organic California brown rice. Non-dairy. Rich in complex carbohydrates. Less than 12% of calories from fat. No cholesterol. Certified Kosher (OU). Rice Dream low fat non-dairy beverage is a great tasting alternative to dairy and soy drinks. Light and refreshing, it has a mildly sweet, clean flavor. It is delicious served chilled or hot, delightful with fresh fruit or berries, and great on breakfast cereal. Rich in complex carbohydrates, yet low in fat, Rich Dream beverage provides a balanced energy source for your active life." Note that the term "Amazake" does not appear on the package or in the ad.

Labels and many samples of each flavor sent by Robert Nissenbaum. 1990. July.

Talk with Robert Nissenbaum. 1993. Oct. 19. Trader Joe's is now selling this product for $1.49 a quart. As the volume of this product sold has grown the cost to produce each unit has dropped. Imagine Foods has kept its price constant but offered bigger and bigger discounts to large-volume buyers.

Product with Label purchased at Trader Joe's in Concord, California. 1993. Nov. 4. It retails for $1.59. Excellent flavor and color.

5945. **Product Name:** Beano.
Manufacturer's Name: Lactaid Inc.
Manufacturer's Address: P.O. Box 111, Pleasantville, NJ 08232. Phone: 1-800-257-8650 or 609-645-5100.
Date of Introduction: 1990. June.
Ingredients: Alpha-galactosidase enzyme from *Aspergillus niger* in a glycerol and water carrier. By May 1996 the carrier was corn starch, sorbitol, mannitol, and hydrogenated cottonseed oil.
Wt/Vol., Packaging, Price: 12 serving bottle (0.9 fluid oz) or 75 serving bottle (0.55 fluid oz). They retail doe $1.95 and $8.95 respectively.
How Stored: Shelf stable.
New Product–Documentation: Letter from Nancy Hamren of Springfield Creamery in Oregon. 1990. Dec. 11. Lactaid in Pleasantville, New Jersey, has recently launched Beano, an enzyme product that eliminates gas from beans. Talk with Luanne Hughes, nutritionist at Lactaid Inc. 1990. Dec. 19. This is sold only as a consumer retail product that was introduced in mid-June 1990 but was not available in most supermarkets, health food stores, or drug stores until October. To use, add 3-8 drops to the first bite of your food at the table. Then the enzyme, alpha-galactosidase works in the stomach to break down the indigestible oligosaccharides in beans that cause gas, into simpler sugars that the body can digest. The product is brown, looks like soy sauce, and has a slightly salty flavor. To use it with soymilk, do not disperse it a glass of the milk. Rather put the drops on a cracker and eat that first or put the drops into a spoon and consume or directly on your tongue or dissolve them in several tablespoons of soymilk and drink this before drinking the rest. That way the enzymes will be in the stomach when the rest of the milk arrives there. Do not cook with Beano; it is not heat stable. Heat inactivates the enzymes.

Samples, leaflets, news releases, and Labels sent by Luanne Hughes. 1990. Dec. 19. Label. Bottle is shrink packed into white paperboard. 4.25 by 5.25 inches. Green, black, and red on white. "Beano drops. Prevents the gas from beans*... and cabbage, peas, broccoli, eggplant, soy, and many others. A social and scientific breakthrough. Beano drops. The gas preventer." Other "gassy" foods include cauliflower and oats.

Ad in Vegetarian Times. 1991. Feb. Full-page, color. "An important dietary announcement for all... Gassy foods without the gas... Beano is sold at your pharmacy."

Counter-ad (full page, color) by Quad Laboratories (Wyckoff, New Jersey) in NFM's New Product Review. 1996. Summer (May). Inside rear cover. "What's the difference? Why pay more?" Compares Quad's product named "Beans, Beans" with Beano tablets.

Call from Beano sales lady. 1996. Oct. 15. A published 1994 scientific study shows that Beano is effective. Alan Kligerman invented Beano and the enzyme that hydrolyzes lactose (milk sugar), used to make Lactaid. Shortly after it was introduced, he renamed his company, Lactaid Inc. to Akpharma Inc. because he was licensing the Lactaid brand to Johnson & Johnson. He sold the brand to them in 1996. Akpharma recently introduced a new product, Prelief, a dietary supplement that neutralizes acidy/acidic foods, the main ones being coffee, orange juice, and tomatoes. Prelief contains calcium.

5946. Lark, Susan M. 1990. The menopause self help book: A woman's guide to feeling wonderful for the second half of her life. Berkeley, California: Celestial Arts. 239 p. 22 x 22 cm. [228* ref]
• ***Summary:*** The title page states: "The first completely practical all-natural master plan to relieve and prevent every symptom of menopause."

Soy is mentioned as follows: Dairy products: There are many negative health aspects of using dairy products. Soybeans are a good source of calcium. Soy milks and nut milks can be used as alternatives to dairy milk (p. 46). Breakfast–beverages: Stop using coffee, which contain caffeine. Grain-based coffee substitutes such as Postum, Pero, or Caffix are both nutritious and satisfying. Other good breakfast beverages include nondairy milk, such as soy, nut, or grain milks. Soy milk is now easy to find in health food stores (p. 52-53). Spreads: Peanut butter (without added salt), sesame butter (which is rich in calcium), and soy spreads

are good (p. 55). Soups: For women who can't eat soup unseasoned with salt, try adding one teaspoon of miso per cup of soup. Miso, a fermented soy product from Japan, is widely available at Oriental markets and health food stores. It contains less salt than regular table salt. How to substitute for dairy products: Tofu can be used in some recipes to replace cheese. Use soy milk, nut milks, or grain milks in place of dairy milks (p. 70). Substitutes for common high-stress ingredients: In place of 1 cup milk, use 1 cup soy milk, nut milks, or grain milks. In place of ½ teaspoon salt, use 1 tablespoon miso or ½ teaspoon Bragg's liquid amino acids, or ½ teaspoon sea vegetables–dulse, kelp (p. 72-73).

Chapter 8, titled "Menopause self help cookbook," contains many recipes: A "Fruit smoothie" (p. 75) contains only fruits, no dairy products or soy. For recipes for sesame milk and almond milk, see p. 76. Tofu and sesame-butter spread (p. 79). One dish meals: Almond tofu (Tofu with almonds), and Tofu with snow peas (p. 94). Tofu-wild rice salad (p. 95). Tofu & brown rice (p. 96). Apple-tofu custard (p. 97).

In chapter 10, titled "Herbs for menopause," is a section on "Herbs for your menopausal symptoms." The subsection titled "Heavy irregular menstrual bleeding" notes that bioflavonoids, flavonoids from plants, help to strengthen capillaries and prevent heavy bleeding. The section titled "Hot flashes" states: "Many plants are good sources of estrogen, the hormone that helps to control hot flashes. Besides controlling heavy menstrual bleeding, bioflavonoids also have weak estrogenic activity (1/50,000 the strength of estrogen). They are very effective in controlling such common menopause symptoms as hot flashes, anxiety, and irritability... Plants also form the basis for the production of medical hormones. Many common plants such as soy beans and yams contain a preformed steroidal nucleus. Estrogen and progesterone can be synthesized from plants in relatively few steps and have allowed sex hormones to become available commercially at a reasonable cost" (p. 127-28).

Susan M. Lark, M.D., born in 1945, "is a noted authority on women's health care and preventive medicine. She is the Director of the PMS and Menopause Self Help Center in Los Altos, California. She also sees women patients in her private practice. Dr. Lark has been on the clinical faculty of Stanford University Medical School, Department of Family and Preventive Medicine. She is also an associate member of the Department of Family Medicine, El Camino Hospital in Mountain View, California. Dr. Lark lectures widely on women's health care issues and is a sought-after speaker."

On the inside rear cover is a mail order form for Dr. Lark's Menopause Self Help Book, plus 3-month supplies of Menopause Vitaminerals, Herbal Formula, and Essential Oil, to be sent to Self Help Options for Women, Carson City, Nevada. On the rear cover is a portrait photo of Dr. Lark. Address: Director, The PMS and Menopause Self Help Center, 101 First St., Suite 441, Los Altos, California 94022. Phone: (415) 964-7268.

5947. Loma Linda Foods. 1990. For sale: Soy milk plant located in Ohio (Ad). *Soya International* (*Bar Harbor, Maine*). April/June. p. 27.
• ***Summary:*** The plant, being sold by Loma Linda Foods of Riverside, California, includes 122 acres of land, 26,000 square feet of plant and warehouse building, 14,400 sq. feet of office building and laboratory, 3,600 sq. feet of raw material storage building, equipment including a retort line, three residential properties, and a large storage area and garage building. "The plant is a cost efficient operation under local management."

Note: This plant was built and started by Dr. Harry Miller in 1939. Loma Linda is consolidating their soymilk production operations in Riverside, California. Address: Riverside, California.

5948. *Soya International* (*Bar Harbor, Maine*). 1990. SAA loses battle for aseptic soymilk exemption in Maine. April/June. p. 7.
• ***Summary:*** The Maine legislature recently defeated a request by the Soyfoods Association of America for a soymilk exemption to the ban on aseptic packaging. The strict new solid waste bill takes effect in Maine on 1 Sept. 1990.

5949. **Product Name:** Yeo's Soy Bean Drink.
Manufacturer's Name: YHS Pacific Fruit Concentrates Ltd. (Yeo Hiap Seng).
Manufacturer's Address: 11880 Machrina Way, Richmond (near Vancouver), BC, V7A 4V1, Canada. Phone: 604-277-7707.
Date of Introduction: 1990. June.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: Ontario Soybean Growers' Marketing Board (OSGMB). 1990. "A profile of the Canadian soyfood market–Characteristics and potential." March. p. ii, 19. "A [soymilk] plant is being established near Vancouver, BC, which will supply both that and the Western U.S. market." The plant "is being built by an international trading company."

Talk with Fred Brandenburg of the OSGMB. 1991. Jan. 23. This plant is run by Yeo Hiap Seng. It opened in March 1990, and he attended the gala opening; they had the press there, a print packet, news releases, and the whole works. The plant is quite impressive and definitely state-of-the-art. They only have one line right now, making soymilk in cans. They bought a bankrupt co-op that was already making fruit juices. In early Oct. 1990 the *Vancouver Sun* and *The Province* (from Vancouver) both ran stories on the company.

Talk with Wimsey Lam of YHS. 1991. Jan. 29. The company started producing canned soy bean milk in June 1990. They presently have only one soy product.

5950. Muso Shokuhin. 1990. [Pure heart: Muso general catalogue]. Otedori 2-2-7, Chuo-ku, Osaka 540, Japan. 88 p. Printed 1 July 1990. 30 cm. [Jap]
• ***Summary:*** This strikingly beautiful, full-color catalog, pictures and describes Muso's natural-food macrobiotic products in Japanese for the Japanese market–although the title is written only in English. Includes many kinds of miso, shoyu (incl. Marushima Shoyu), black soybeans, yellow soybeans, kinako [roasted soy flour], seitan (in a jar from Marushima, p. 41; the product name is written as "Seitan" in large roman letters, then in smaller letters in katakana), San-Iku Foods canned products (Gluten Burger, Gluten Meat, Linketts, Soyees, Snack Joe; p. 41), yuba, gomoku nimame (cooked whole soybeans), many kinds of sea vegetables and related products, San-Iku Soyalac (8 different products), Marusan soymilk (5 different products; 3 are named mineral tou-jyan; the latter is the Chinese term for soymilk), macrobiotic books. Address: Osaka, Japan. Phone: 06-942-0343.

5951. Rabheru, Neil. 1990. Brief history of Unisoy Milk 'n' By-Products Ltd. (Interview). *SoyaScan Notes.* July 2. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Neil, who founded this company, was born in Tanzania. One of his parents was of Indian origin (born in India). He arrived in the UK in 1972 and went to work for a very large electronics company. By the mid-1980s he had cornered himself into a very specialized field of environmental testing and performance of defence equipment. The next step up in the organization was a long way away, so having run out of excitement in life, he began to look for more rewarding work. While doing a little import/export work he met an Indian named Mr. John Patel [pronounced puh-TEL] who suggested to him that they start a company to make soymilk, soy ice cream, and burgers. Mr. Patel did not have any money. The company was founded in June 1985. Before anything else happened, Neil became very concerned over irregularities in Mr. Patel's financial activities, and decided to discontinue his involvement with Mr. Patel. A few days later Mr. Patel died unexpectedly on 5 Nov. 1985. On Nov. 10-12 Neil selected the location for his new plant, then he raised the necessary startup capital from five venture capitalists in high tax brackets, but he was the company's only executive. Neil was never in any way involved with Michael Cole or with Soya Health Foods Ltd. (which is still owned by Mr. Arora, a Sikh) despite what others have said. Jan Freeman is presently involved with Unisoy.

In May 1986 Unisoy began to make its first product, White Wave Soya Milk (plain/unsweetened, or sweetened with raw cane sugar) at their present address. Before this time, the soymilk market in the UK was "very stagnant and boring, with limited growth. There was a very high price differential between dairy milk and soya milk. Soymilk packaging was poor. The ratio of the volume of business to the number of brands on the market was too high. Too many brands were fighting for too small a market. There was tremendous brand loyalty, promoted in part by the wide range of product tastes. That was Unisoy's biggest problem. So Unisoy decided to crash the price barrier, and develop some nice packaging and a better tasting, much creamier product." To learn how to make soymilk, Rabheru did an extensive study of the literature. He found many conflicting opinions but agreement on some basic points. To help resolve these, he consulted with Dr. H.L. Wang at the USDA Northern Regional Research Center in Peoria, Illinois. He developed a unique process, purchased a soymilk plant from Taiwan, modified it with steam injection and instrumentation to suit his application (he has an engineering background), developed soymilk products, ran taste tests, and continued improving his process. Unisoy's main competitors in the soymilk market at that time (and still today) were Alpro/Vandemoortele and Granose. Unisoy has taken over virtually all of the market share of Soya Health Foods Ltd., mostly because of better quality and lower price.

In May 1987 Unisoy introduced White Wave Soya Yogart, a line of products were yogurt-like desserts in fruit flavors with a shelf-life of 10-11 weeks with aseptic packaging. This was followed by Unisoy Carob & Banana Organic Drink (Aug. 1988), Unisoy Gold soymilk (March 1989), Maranellis Ice Supreme (soy ice cream, May 1989), and Unisoy Soy Yogart (Aug. 1989). All the previous soy ice creams and yogurts in the UK had contained soy protein isolates, since the manufacturers did not know how to make soymilk with a high protein levels. Even today, all the soy ice creams in the UK are made from soya isolates. Unisoy makes a special rich soymilk used specially for making their ice cream.

Over the years Unisoy steadily improved its soymilk process with numerous innovations. They now make excellent quality soymilk without dehulling the soybeans, without adding any oil or lecithin, and using only 1-2 people to operate the largely automated plant.

In Dec. 1988 Neil sold the company to Daisy Dairies Ltd. This cooperative group of companies has their head office in Hyde, Cheshire, and they also have fresh milk, UHT, catering, and ice cream manufacturing divisions, plus now Unisoy. He would prefer not to comment on the effects/results of the sale. Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430 6329.

5952. Rabheru, Neil. 1990. The soymilk industry and market in the United Kingdom (Interview). *SoyaScan Notes.* July 2. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** There are only two significant manufacturers of soymilk from soyabeans in the U.K.; Unisoy and Soya

Health Foods Ltd. Plamil Foods Ltd. buys soy protein isolates from Protein Technologies International, then subcontracts with a dairy to have these mixed with water and other ingredients, according to Plamil's formula, to make a soymilk. As far as he knows, Plamil has never purchased soybeans to make soymilk and has never had their own plant. Haldane used to import its soymilk from France. This soymilk was made, not from soybeans but from some kind of a spray-dried formulation. Then Unisoy started supplying Haldane, but that contract came to an end when Haldane was acquired by another company. Neil thinks they are now importing again, probably from France, not from Australia. Haldane's imports are very small. Neil has never heard of Itona Products Ltd. in Wigan, Lancashire [although they are still in business in 1990].

Of the soymilk made in the Unisoy produces well over 50%. Approximately 18-20 million liters of soymilk are sold and consumed in the UK each year. It is the biggest soymilk market in Europe, and it is growing at the rate of roughly 15-26% a year. "The growth has been phenomenal, and the bulk of the growth in the European soymilk market seems to have been in the UK." But he doubts very much that it is growing faster than 26% a year. The estimated market shares by company are: Alpro/Vandemoortele 51%, Granose 15-17%, Unisoy 15-17%, and others (Plamil, Soya Health Foods, Haldane, etc.) 15-19%.

In terms of outlets, Granose is sold only in health food outlets. Unisoy's best-selling and most profitable line is its four soyamilk products. White Waves sugar free has long been the best selling single product, but it is rapidly being overtaken by Unisoy Gold (fortified with vitamins and minerals), which has been a phenomenal success. The bulk of Unisoy's soyamilk sales is in national multiples/grocery chains. Of all Unisoy's products, about 65% of sales is in multiples and 35% in health food stores. Plamil has its own clientele; its products are very popular among vegans. Soya Health Foods Ltd. has been able to survive largely because of their soy ice cream, which was one of the first ones on the market in the UK [after Sojal and SoyBoy Soymilk Ices from the Regular Tofu Co.] and the most widely available brand for a long time. Soyamilk is a very small product for Soya Health Foods Ltd. now.

Alpro/Vandemoortele did the pioneering work in getting soymilk into British multiples (supermarkets). In about 1982 Safeway (which has its origins in America), became the first multiple (supermarket chain) to sell soymilk in the UK. They sold the Alpro/Vandemoortele line but they sold only a small quantity. Safeway has always purchased its soyamilk from Vandemoortele. Michael Cole of Soya Health Foods Ltd. also deserves a good deal of credit for the growth of soymilk in the UK. He did the early work in getting British-based supermarkets, large chain stores, and normal grocery stores interested in carrying soyamilk. By late 1985 Cole was selling large amounts of his aseptically packed Sunrise Soya Milk to multiples, including Tesco. "Cole did the solid job of marketing and bringing soyamilk into the perspective it is in now. Then he left Soya Health Foods in mid- to late-1987." He started his own consulting company. Today every multiple in the country, including the large chemist chains (drug stores) are now offering soyamilk to the consumer.

Unisoy exports their soymilk to the Netherlands, Italy (to Parma Soia), and Ireland. It is also sold in Portugal. It used to be sold in Belgium. Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430 6329.

5953. Tabuchi, Ichiro. 1990. [Re: History of Soyalac soymilk production by San-iku Foods in Japan]. Letter to William Shurtleff at Soyfoods Center, July 4. 1 p. Handwritten, with signature on letterhead. [Jap; eng+]

• ***Summary:*** In 1948 Mr. Tabuchi visited Dr. Harry W. Miller and studied at his soymilk plant in Mt. Vernon, Ohio. During this period, Dr. Miller visited Nihon San-iku Gakuin (a Seventh-day Adventist school located at Chiba prefecture, Sodegaura-cho) almost every year and earnestly advised the people there to make soymilk. In about 1957-58 they started to make soymilk at a tofu plant that was owned by Mr. Ueda. They bottled it in 180 ml dairy milk bottles, which they sold with their tofu. It was a small scale operation and it didn't last long.

In 1959 at the Food Department of Nihon San-iku Gakuin, they set up a tofu manufacturing plant and started to make soymilk in 180 ml milk bottles for the school's lunch program. Several years later they started to make canned soymilk for general consumers. In order to help introduce the soymilk to the school, Dr. Miller lived on the school campus for 2 months. He taught and gave orientation to the students.

In 1970 San-iku Foods became independent from the San-iku Gakuin Food Department and started to make and sell infant formula. Address: San-iku Foods, Japan.

5954. Michael, Brenger. 1990. History of La Fonte della Vita S.r.L., Italy's largest manufacturer of tofu and seitan (Interview). *SoyaScan Notes*. July 18. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** This company was founded in Feb. 1985 by Mr. Demontis and his wife, Ms. Borello, on Via Matteotti?, in Fossano, about 35 miles south of Torino (Turin). He joined the company in the fall of 1985 and became a partial owner. He learned to make tofu from *The Book of Tofu* by Shurtleff & Aoyagi. Today the company is owned by 5 people, with the DeMontis owning the largest share; Mr. Mario Cozio joined later. Originally the company made only nigari tofu, but by autumn they had introduced 4 tofu spreads (tofu pâté), and soymilk. In April 1986 the company moved about 15 miles further south to Via Circonvallazione 87, 12049 Trinita (Cuneo), Italy. They are still at the same location but the street was renamed in about 1987? so that their present

address is Via Monviso 18, 12049 Trinita (Cuneo). After the move, they introduced two types of seitan (plain and fried), fried tofu, tofu with herbs, then two tofu burgers (one with sea vegetables, and one with seitan). They used to make soymilk but after it grew to a certain level they stopped making it and began buying it from a company in Belgium [probably Alpro], so that they could focus on expanding tofu production. In June 1990 they began making tempeh.

Today they are the largest among 5 tofu manufacturer in Italy. They make about 2,500 kg/week of tofu and have 23 employees. The company's best-selling product is fried seitan, followed by natural seitan and regular tofu (about equal), tofu burgers, and tofu spreads. During the last year sales have grown about 30%, due in part to an aggressive program to introduce 2-3 new products a year. New products are tempeh and seitan burgers. Address: Via Monviso 18, 12049 Trinita (Cuneo), Italy. Phone: (0172) 66 397.

5955. Michael, Brenger. 1990. The tofu market in Italy (Interview). *SoyaScan Notes.* July 18. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Mr. Demontis, head of Fonte della Vita, knows the Italian tofu market better than Michael Brenger, since Brenger is tofu production manager. But Brenger speaks English better than Mr. Demontis. There are five tofu manufacturers in Italy. The largest is La Fonte della Vita (in Trinita, near Cuneo, about 50 miles south of Turin), which makes about 2,500 kg/week of tofu. Second largest is probably Terra e Pane (Chinzena? near Ravenna [actually S. Arcangelo di Romagna near Forlì]; they also make soymilk, tofu spreads, and seitan), followed by Soyalab near Firenze (Florence; they are about ¼ to 1/5 the size of Fonte Della Vita), Arc-en-Ciel srl (a cooperative at Loc. Molino 4, 10070 Ceres, 20 km from Torino/Turin; they make more seitan than tofu), and Sunsoy Food (Bologna; very local and small). Total production of the five is estimated at 5,000 kg/week of tofu, or about 250,000 kg/year. All these companies make tofu from whole soybeans and sell the tofu at natural and health food stores. Recently Parma Soia and Medical Soy started selling soy products, including some tofu products, but they sell to the mainstream market through supermarkets rather than to the alternative market. Their tofu products use tofu only as an ingredient; they do not sell tofu as such. They make a vegetable cheese and add about 20% tofu. He does not know from whom they buy their tofu. The first tofu maker in Italy was Gilberto Bianchini of Centro Macrobiotico Tofu (Via Cuoco 9, 47037 Rimini, Italy), but he stopped in about 1986 and moved to Belgium. Ferro Ledvinka at Fondazione Est-Ouest only makes tofu for their own macrobiotic restaurant; they buy some of their tofu from Fonte della Vita and Soyalab, and they also do health counseling. Address: Production Manager, La Fonte Della Vita, Via Monviso 18, 12049 Trinita (Cuneo), Italy. Phone: (0172) 66 397.

5956. Nissenbaum, Robert. 1990. The early work of Imagine Foods with Chico-San, California Natural Products, and enzymes in making Rice Dream (Interview). *SoyaScan Notes.* July 18. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The term "Rice Dream" was first used to refer to a nondairy frozen dessert. Address: President Imagine Foods, 299 California Ave., #305, Palo Alto, California 94306. Phone: 415-327-1444.

5957. *SoyaScan Notes.* 1990. The meaning of the symbol "e" appearing on European food labels (Overview). July 19. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** This is a European Economic Community mark, usually written just to the right of a product's weight (e.g. 250 g e), signifying that the product has been packaged under the average weight system as covered by the United Kingdom's weights and measures act of 1985.

5958. Svejgard, Torben. 1990. Soy protein concentrates in Europe (Interview). *SoyaScan Notes.* July 20. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Central Soya is building a soy protein concentrate plant in Italy, south of Venice. They also have a joint venture with a Yugoslavian company named Preduzcce Sojaprotein Becej, which is building a functional concentrate plant in Yugoslavia. The plant in Italy will provide the raw material for the plant in Yugoslavia. He is quite sure that ADM will soon start to build a concentrate plant in Rotterdam. He feels that these two U.S. companies are overestimating the potential demand for concentrates in Europe. They probably made their market studies in 1989 when there was an enormous demand for concentrates to be used in calf milk replacers, due to a lack of nonfat dry milk. But now the situation is more normal and the demand for and production of calf milk replacers has fallen off sharply. The American companies think that when it becomes legal in Germany to use soya proteins with meat, there will be an explosion in demand, but Torben thinks that this will grow only very slowly because German consumers do not presently want soy in their meats. Europeans are much less concerned than Americans about cholesterol intake; calorie intake is a bigger issue in Europe.

Loders Croklaan (pronounced krok-LAAN) and Aarhus are the two biggest European manufacturers of soy protein concentrates. They are about the same size [Loders says that Loders is bigger]. Loders started making concentrates in the mid-1970s [1976], at about the same time as Aarhus. Loders is a subsidiary of Unilever, in the same division as the oil and fats specialty division. In the USA the division is called Van den Berg. They make Soycomil K and P (calf milk replacer and piglet milk replacer). They also sell a concentrate for food use (Unico) but they are much bigger in the feed area.

They do not make textured concentrates. They also have Unisoy, a regular defatted soy flour sold in small amounts. In addition, they are a soybean crusher.

Note: Aat Visser, sales and marketing manager for Loders notes in a letter of 6 Aug. 1990: "Loders Croklaan is substantially larger than Aarhus and continues to be the largest European manufacturer of soya protein concentrate. Loders Croklaan (at that time Unimills) started to produce concentrates on a pilot plant scale in 1973. In Jan. 1976 the full-size plant was completed. Although the main sales of Soycomil K and P are to the specialty feed industry, the sales of Unico for food use are becoming more and more important. A textured soy protein concentrate is produced on the basis of Unico and marketed under the name Unibit. Unisoy is sold mainly in flour, grit, and flake form. The grit is used as a raw material for extrusion, and the flakes for solvent extraction processes." Address: Marketing Manager, Aarhus Oliefabrik A/S, 27 M.P. Bruunsgade, P.O. Box 50, DH-8100 Aarhus C, Denmark. Phone: 45 86 19 62 52.

5959. Gerner, Bob. 1990. Best-selling soyfoods at Berkeley Natural Grocery Co. in Berkeley, California (Interview). *SoyaScan Notes.* July 28. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** By far the best selling soyfood product type at Bob's store is soymilk, accounting for 50-65% of total soyfoods sales. The best selling brands, in descending order of sales volume, are Vitasoy (about 40% of soymilk sales, and rising; his store promotes it more in part because he sees sales reps longer and in part because the Vanilla Vitasoy is his favorite soymilk product), Edensoy (30-35% and falling; it used to be the best seller), Westsoy and Westbrae Malteds (20% and rising), Pacific Soy (from Tree of Life), and Other (Wildwood Yosoy, Quong Hop, Soy Moo, AhSoy, 5%).

The next best selling soyfood type is tofu (accounting for about 20% of total soyfoods sales, and rising), followed by soy sauce & tamari (10%, stable), soy cheeses (4%, rising), tempeh (2%, falling), soy ice cream (1%, stable or falling), and miso (1%, falling).

Total per capita purchases of soyfoods have risen steadily since the mid-1970s. There have been no plateaus or declines.

Bob dislikes (but understands) the way soymilk manufacturers discount their products, basically forcing him to buy very large quantities–typically 60 cases at a time. This policy favors large retailers, ties up a lot of his capital up-front, and takes up a lot of space in his warehouse. So 95% of the time he buys Vitasoy and Edensoy soymilk when they are on sale at discount prices, then he sells these at discount/sale prices–a practice that he does not like since it seems to contradict the idea of a "sale." Customers won't buy soymilk any more at "regular" prices. Bob would rather buy what he needs from week to week, then sell all products at a regular price most of the time, then have promotions once in a while. Vitasoy has played a lot of games with distributors to try to get them to buy more at one time, and Bob has heard that this is hurting the distributors and that they don't like it. They can't make money selling at an 8% margin, which they often must do. Edensoy's discount is constant whereas Vitasoy has on and off discounts–which makes buying harder for Bob. Westbrae/Vestro has a more typical discount policy and Bob sells Westbrae products at a regular price most of the time. Address: Owner, Berkeley Natural Grocery Co., 1336 Gilman St., Berkeley, California 94706. Phone: 415-526-2456.

5960. Fleming, Diana J. ed. 1990. Country Life vegetarian cookbook: Delicious recipes from the kitchen of the Country Life vegetarian restaurants. Family Health Publications, 13062 Musgrove Highway, Sunfield, MI 48890. 190 p. Index. 23 cm.

• ***Summary:*** This book contains the most popular vegan recipes from Country Life vegetarian restaurants. In 1966 the first Country Life Restaurant opened its doors in Grand Rapids, Michigan. Today the 15 Country Life Restaurants, though all independently owned and staffed by Seventh-day Adventists, "share a common commitment to serve delicious, wholesome, 100 percent vegetarian food. They are also dedicated to furnishing educational programs, to ministering to the needs of the community, and to providing a relaxed, Christian atmosphere as a refuge for customers from the stresses of the work-a-day world." A list of the addresses and phone numbers of the 15 County Life restaurants (10 in the USA, 3 in Europe, and 2 in East Asia) is given on page 4.

"Soy or nut milk" is called for in many recipes throughout this book. Soy-related recipes include: Soy-oat waffles or pancakes (p. 20). Carob-banana tofu topping (p. 25). Tofu-pineapple "cottage cheese" (p. 28). Soy raisin puffs (with cooked whole soybeans, p. 35). Fluffy soy-corn muffins (p. 36). Scrambled tofu (p. 38). Chipped tofu (p. 39). Tofu cheese rarebit (p. 40). Tofu potato latkes (p. 41). Soy whipped cream (#1-#3, p. 60-61). Tofu whipped cream (p. 61). Tofu orange whipped cream. Tofu cheesecake (p. 66). Carob tofu cheesecake. Tofu loaf (p. 73). Kidney bean and tofu pie (p. 83). Pasty (filled with frozen tofu, p. 84). Soybean creole (p. 88). Tofu balls (p. 93). Lasagne (with crumbled tofu, p. 94). Stuffed shells (with tofu, and soy mayonnaise or soy sour cream). Eggplant Parmesan (with tofu). Tofu cacciatore (p. 96).

Stir fry vegetables (with tofu, p. 103). Tofu foo young (p. 105). Oriental medley (with tofu, p. 106). Walnut cheese spread (with tofu, p. 108). Gluten and broth. Teriyaki sauce (with soy sauce, p. 111). BBQ sauce (p. 112). Tofu "egg" salad (p. 118). Thousand island dressing (with soy mayonnaise, p. 120). Olive dressing (with soy base, or Soyagen, p. 121). Soy mayonnaise (#1 with soy milk, #2 with soy base, #3 with Soyagen, p. 123-24). Tofu mayonnaise (p. 125). Aioli or garlic mayonnaise #1 (with soy

milk). Soy sour cream (p. 126). Soy margarine (#1 and #2). Tofu cottage cheese. Tofu tomato stars (p. 135). Sour cream potatoes (with soy sour cream or mayonnaise, p. 139). Tofu gumbo soup (p. 146).

Soy milk (#1 from soy beans, #2 from soy base, p. 149). Soy base (from soy flour, p. 150). Basic nut milk (with cashews, walnuts, filberts, or Brazil nuts, and honey or dates, p. 151). Cashew-pear milk (p. 152). Half and half (with cashews and almonds). Almond milk supreme... plus many other nut and fruit milks.

One innovative ingredient in many recipes is "Lecithin-oil slicker: This is a replacement for products such as Pam, a food release spray. Pour 6 parts oil, not olive, peanut or sunflower, into a jar with 1 part liquid lecithin. Cover tightly and shake well. Keep at room temperature. Do not use lecithin granules. Measure oil first then use the same utensil to measure lecithin to help prevent sticking of lecithin on utensil."

At the end of the book are several very interesting chapters: "The protein myth: When too much of a good thing is a bad thing," by M.G. Hardinge and W.C. Andress. One very interesting table (taken largely from G. Bunge 1902) shows that the longer it takes for a baby animal to double its birth weight, the lower the protein content of the mother's milk. Humans, with 1.4% protein in the milk, take 180 days (the longest). Cats, with 9.5% protein in the milk, take only 7 days (the shortest). A second chapter is titled "Dietary fat–good or bad?," by Bernell E. Baldwin. Address: Michigan.

5961. *Health Now* (*England*). 1990. Plamil's 25th silver anniversary. July.
• ***Summary:*** From the beginning, Plamil has had "vegan nutritional requirements uppermost in mind with the provision of the necessary calcium and vitamins B-2, B-12, and D-2–this in contrast to some other brands of imported soya milk which are devoid of these nutrients."

5962. Hsiao, Laurence. 1990. Role of Taiwan soybean importers. In: Ontario Ministry of Agriculture and Food, ed. 1990. Soybean Buyers Mission from New Markets, July 1-7, 1990. Tokyo, Japan: Ontario Ministry of Agriculture and Food. 61 p. July. See p. 13-15. [Eng]
• ***Summary:*** In Taiwan, soybeans are imported primarily from the USA. During the days of the Soybean Importers Joint Committee (SIJC) other countries producing soybeans complained that the Taiwanese market was, in effect, closed. However since soybean import liberalization on 1 July 1988, the SIJC was abandoned, yet almost all soybeans are still imported from the USA.

While SIJC was active, each importer declared his requirement based on import volume the preceding year plus or minus 10%. Then the Committee reported to the Government Authority, which invited tenders from suppliers. Because soyfood manufacturers had to rely on soybean oil millers for their supply, the quality was greatly restricted. Hence Taiwanese consumers did not enjoy the high quality of tofu and soymilk found in other countries.

Although soybean imports are bound by the "Sino-America Grains Agreement," which requires that Taiwan purchase at least 1.2 million tonnes/year of soybeans from the USA, the importers now have more flexibility in dealing with the suppliers. Thus the market is now more price-oriented. But food soybeans are still imported in the same way. Hence, soyfood manufacturers still complain about their poor quality.

Preliminary research has shown that the yield of tofu from Ontario special quality white hilum soybeans is 15% higher than from U.S. #2 soybeans. In Taiwan, most food soybeans are sold in 50 kg bags in small lots of 10-25 tonnes/lot. The author advises Ontario suppliers to promote their soybeans on the basis of yield and quality, and to try to build these factors into their price structure. In conclusion, in Taiwan the market for food soybeans is undeveloped. The time is ripe for Canadian soybean exporters to penetrate this market. "Initially you may find that price is a major factor. Do not be discouraged."

Addendum: The following documents are available from the Ontario Soybean Growers' Marketing Board: 1. Sino-America Grains Procurement Agreement. 2. Bulk Carrier Charter Agreement. 3. Soybean Importers Joint Committee Tender Invitation. 4. Chronology of 1988 Soybean Shipments to Taiwan. 5. Sales Agreement of Paraguayan Soybeans. Address: Vice President, Sun Ford Conglomerate Corp., 21 Lin 1 Street, Taipei, Taiwan. Phone: (02) 321-1005.

5963. Loh, Michael. 1990. An overview of export opportunities in the new markets. In: Ontario Ministry of Agriculture and Food, ed. 1990. Soybean Buyers Mission from New Markets, July 1-7, 1990. Tokyo, Japan: Ontario Ministry of Agriculture and Food. 61 p. July. See p. 10-12. [Eng]
• ***Summary:*** It has been almost 20 years since the first container load of soybeans grown in Ontario was shipped to Japan. By the end of 1989, Ontario was exporting more than $25 million worth of soybeans to Japan, Hong Kong, Malaysia, and Singapore. Now the new markets for Ontario soybeans are Korea, Taiwan, the Philippines, and Indonesia.

In Korea, trade restrictions have eased on soybeans and other agricultural products. With hefty trade surpluses, Korea is under pressure to balance trade. Korea soybean imports jumped from only 428,000 tons in 1979 to 1,100,000 tons in 1989. About 120,000 tons of the imported soybeans are for food use, as follows: Tofu 100,000 tons (83% of the total), soymilk 17,000 tons, and soy sprouts 2,000 tons. Nearly all of Korea's soybean imports come from the USA.

Taiwan ranks second, after Japan, in terms of best prospects for agricultural exports. The strong Taiwanese currency has made exports less expensive. Burgeoning trade

surpluses have led to increasing pressures from trading partners, like the USA, to balance trade. So Taiwan has liberalized imports by lowering tariffs and eliminating non-tariff barriers. "U.S. soybean exporters took advantage of their dominant market position in Taiwan to expand sales. Backed by aggressive trade negotiators, the American soybean industry has enhanced its competitive position by securing a 5-year supply agreement contract with the Government of Taiwan. The agreement calls for the purchase of 5.7 million tons of U.S. soybeans over a five-year period from July 1, 1986 to June 30, 1991. As a result the United States has over 75% of the market share. Taiwan's annual requirements of food soybeans are estimated at 250,000–300,000 tons. With recent market opening measures announced by the Taiwanese government, direct sales of food soybeans to end-users are now permitted."

Philippines: In Feb. 1987 Michael led a mission to the Philippines, and contacted a buyer. Ontario soybeans were first shipped to that country later in 1987. The Philippines import about 10,000 to 15,000 tons/year of soybeans for food use, and this is expected to increase in the near future. Filipro, Inc., which is the Philippines' licensee for Nestle S.A., reported increasing market acceptance of its re-launched powdered soya milk product Vita (chocolate flavor), and a soy-based baby cereal named Ceresoy.

Indonesia: Ontario soybeans (worth $4.2 million) were first sold to Indonesia in 1980 after Canada's first mission there that year. 90% of the 1.7 to 2.0 million tons of soybeans required by Indonesia are used for food. Tempeh is a delicious Indonesian food and Indonesia requires over 750,000 tons/year of soybeans to make tempeh. Address: Senior Representative, Asia/Pacific Region, Ontario Ministry of Agriculture and Food (OMAF), Tokyo, Japan.

5964. MacNeil/Lehrer Newshour. 1990. Osteoporosis. Television broadcast. PBS. July 11. *

• ***Summary:*** It is estimated that some 15-20 million Americans, the majority of them women, suffer from osteoporosis. It is a painfully debilitating disease, marked by the progressive loss of bone tissue. The bones become thinner and more brittle. It causes 1.3 million spine, wrist, and hip fractures each year among the elderly. The victims of osteoporosis are mostly post-menopausal women, those whose bodies produce less estrogen and absorb less calcium. Their bones loose density, becoming more fragile as the years go by. Fair-skinned women, thin women, women who smoke, and those who don't exercise are at the greatest risk. Today machines that measure bone density have allowed experts to spot osteoporosis in its early stages. Calcium supplements for women over the age of 35 have no effect. Estrogen treatments increase heart disease, and uterus cancer 300-500%. Unlike estrogen, a new drug, etidrinate (uh-TID-ruh-nate) does not appear to have harmful side effects. It stopped the loss of bone in the spine and reduced by 50% the loss of new spinal fractures. The drug is now awaiting FDA approval for treatment of osteoporosis. Dr. Watts in Atlanta, Georgia, has done a study to published in tomorrow's *New England Journal of Medicine.* 429 women with osteoporosis (all had at least one vertebral [ver-TEE-brul] compression fracture, the most common complication) were studied at 7 centers for 2 years; it will continue for a total of 5 years. The women receiving the drug gained 4-5% bone mass and had a 50% lower rate of new fractures. A earlier but shorter Danish study got the same results.

"Bone remodeling" is a natural process constantly taking place. Old bone is taken away and new bone is put in its place. The bone in the spine is spongy or trabecular bone. It has a very high rate of bone remodeling. The bone in the hip contains both trabecular and cortical (or compact) bone, which is remodeled more slowly. Osteoporosis effects spongy bone more. Etidrinate seems to inhibit the amount of bone being removed in the remodeling process, this changing the balance. Estrogen is a very valuable drug for preventing bone loss. Calcium supplements cannot reverse osteoporosis.

5965. Shurtleff, William; Aoyagi, Akiko. 1990. Soymilk in Europe: The industry and market, commercial products, publications, and history. Lafayette, California: Soyfoods Center. 261 p. July 17. Indexes. 28 cm. [763 ref]

• ***Summary:*** Since the mid-1980s, the soymilk industry and market in Western Europe has been booming, and the future looks very bright. Many large companies with plenty of capital and marketing expertise are entering the market, product quality and diversity is steadily improving, and consumers are showing and increased interest in nutritional protein beverages that are free of cholesterol and lactose, and low in saturated fats.

Soymilk production and growth rate: Production of soymilk in western Europe as a whole is estimated to have grown to 30–42.5 million liters/year (7.9–11.2 million gallons/year) in 1990, up from only 6-10 million liters/year (1.59–2.64 million gallons/year) in 1984, a roughly fivefold increase in 6 years. This represents an average compound growth rate of about 30% a year.

Estimates of total market size (not including infant formulas): Philippe Vandemoortele, managing director of Alpro, Europe's largest soymilk manufacturer, estimates the adult soymilk market in Europe to be 30 million liters/year. Asger Somer Hansen, managing director of DTD/STS, one of Europe's two largest suppliers of soymilk plants, estimates 35-40 million liters/year. Anders Lindner, managing director of DTD/STS until late 1989, estimates 42.5 million liters/year, plus an additional 7.5 million liters/year that are made into dairylike products such as soy puddings, yogurts, ice creams, and cheeses.

Leading countries: The largest soymilk market in Europe is clearly in the UK, because of its large population of vegetarians and vegans (vegans do not consume milk

or any other animal products), its large total population, its large number of soymilk manufacturers and marketers, the fact that soymilk is now sold in many UK multiples/supermarkets, its relatively long history of soymilk production, and the fact that many soymilk products bear the generic name "Soya Milk" on the front panel. The first commercial soymilk in England was Solac, launched in 1912 with great fanfare and publicity by the Solac Company/Synthetic Milk Syndicate. Roughly 40% of all soymilk consumed in Europe is consumed in the UK, and per capita consumption is also highest there. The second largest market is probably France, with West Germany a very close third.

Leading manufacturers: Two companies (Alpro in Belgium and DE-VAU-GE in West Germany) dominate the market with an estimated 70% market share, and that percentage is not likely to decrease. Competition is fierce and increasing. Alpro, which began making soymilk in 1979 and now produces about 21 million liters/year, is building a new plant at Wevelgem, Belgium, which is scheduled to begin operation in June 1990. Costing about US$15 million, it will have a capacity of 45 million liters/year. DE-VAU-GE's plant, which was built by DTD/STS and began operation in August 1985, now produces about 12 million liters/year but has a capacity of 3,000 to 4,000 liters/hour of finished soymilk. Other manufactures with the year they started making soymilk and their current estimated annual production in liters/year: Unisoy (UK, 1986) 3 million; Cacoja (France, 1987) 3 million; Soyana (Switzerland, 1985) 2.5 million; Société Soy (France, 1975) 1.2 million; Soya Health Foods (UK, 1985) 1 million; Galactina (Switzerland, 1969) 1 million; Triballat (France, 1989) 0.5 million; Innoval (France, 1987) 0.5 million; Crivellaro (Italy, 1989) 0.5 million. Other smaller producers include Plamil (UK, 1965), Haldane (UK, 1984), Itona (UK, 1964), and Ralston Purina España (Spain 1984).

Price: The retail price of soymilk is 2-3 times as high as that of cow's milk.

Packaging: Virtually all European soymilk and soymilk-based products are now sold in Tetra Brik Aseptic cartons. But with the growing concern about and legislation concerning disposal of solid wastes, one very big potential danger lies on the horizon for soymilk–that aseptic packaging will be increasingly banned, as it already has been in the state of Maine in the USA after Sept. 1990. If the manufacturers of aseptic packaging do not find a truly recyclable package or establish a workable system to recycle their current packages, soymilk could be in for hard times.

Soymilk trends in Europe: Though soymilk production has increased fivefold since 1984, it is still minuscule compared to cow's milk. The flavor of soymilk continues to be a major problem for most Europeans. Features/benefits attracting Europeans to soymilk are its freedom from cholesterol and lactose, and the fact that its production places less of a burden on the environment and on factory-farmed dairy cows. Most of the soymilk in Europe is sold to the natural/health food trades via health food stores and (in German speaking countries) Reform House chains. Only in France and the UK (plus a little in Belgium) is it also marketed as a mainstream product through supermarkets. A small amount is consumed by Asian-Europeans and Seventh-day Adventists. Organically grown soybeans are used in a large and increasing percentage of European soymilk. In the UK, innovative natural sweeteners (such as apple juice) have also started to be used. Private labeling: Many large European natural/health food manufacturers and/or distributors now sell soymilk under their own brand. Alpro produces many private-label brands. This practice is much more common in Europe than in the USA. Medical Soy and Parma Soia in Italy are two recent additions to this growing list. Soymilk is widely exported across national boundaries within Europe. This will probably not change much after 1992. Many large companies have entered the market since 1985 with large automated plants, but many of these are running at a small percentage of their capacity–and thus are losing money. Because of the surpluses of cow's milk in Europe, there are many regulations (including value added taxes and labeling restrictions) against "imitation dairy products." These differ from country to country and will probably become less severe after 1992. These practices are much more restrictive in Europe than in the USA, although also in the USA soymilk is not allowed to be labeled "soymilk." European dairy magazines (unlike their counterparts in America) continue to view soymilk with fear and criticism, even ridicule, at the same time that many large European dairy companies are jumping into this new market that shows future promise–which the European cow's milk market seems not to. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

5966. **Product Name:** Spring Creek Tofu Taco Dip.
Manufacturer's Name: Spring Creek Natural Foods.
Manufacturer's Address: 212-C East Main St., Spencer, WV 25726. Phone: 304-927-1815.
Date of Introduction: 1990. July.
Ingredients: Organic tofu, organic soy drink, safflower oil, onion flakes, parsley, hot sauce (cayenne peppers, vinegar, salt), sea salt, red chilies, garlic, onion, paprika, cumin, oregano, celery seed, dried red and green bell peppers, cayenne, bay.
Wt/Vol., Packaging, Price: 7 oz or 10 oz. The latter retails for $1.30–$1.70.
How Stored: Refrigerated.
New Product–Documentation: Label sent by Tenley Weaver. 1990. Aug. 20. 3 inch diameter. Red, brown, green, yellow, blue, and tan on white. The Mexican Taco Dip was introduced in July 1990.

5967. Fehlberg, Eric C. 1990. Re: Seventh-day Adventist

health food companies worldwide. Letter to William Shurtleff at Soyfoods Center, Aug. 17. 4 p. Typed, with signature on letterhead.
• ***Summary:*** Discusses Nutana in Holland and Denmark. Nutana of Norway, formerly known as Dagens Kost, was renamed Nutana Norge in 1982. Sahm Yook Foods is the official name of the Korean Food Factory. Alimentos Colpac is the official name of the food factory in Navojoa, Sonora, Mexico; it was established in 1969. The Montemorelos Branch is known as Alimentos Integronaturales y Panificadora la Carlota; it was established in 1981.

Granose Foods Ltd. of England moved from Stanborough Park, Watford, Herts, to Howard Way, Newport Pagnell, Bucks., in Jan. 1989. The official opening date was 9 July 1989.

PHAG (of Switzerland) is written in all upper-case letters; it is not an abbreviation of anything. Glaxo Ltd. India has nothing to do with the Seventh-day Adventist church.

DE-VAU-GE was primarily responsible for setting up the Adventist food industry in Spain and the Kolett's brand is packed specifically for the Spanish market. DVG has two brand names which are manufactured for the reform or natural foods market in Europe: Granovita and Bosen. The products under the Bosen label were originally made in their bakery.

Pan American Health Service in Honduras still produces soymilk. Mountain View College in the Philippines is still making meat analogues and perhaps soya milk–but only for their own use. Bandung College (now called Bandung Academy) in Indonesia is still in operation and they may be making soya products. Two years ago they wanted very much to start a food factory, but it did not happen. The Hong Kong Hospital is still operating and they still manufacture small amounts of food, basically for their own use. South China College has a long history. It was established in 1903 as Bethel Girls' School, but underwent several name changes and changes of location due to political turmoil and the Sino-Japanese war of 1937, followed by the violence of the Second World War.

"Eventually it was re-established at Clear Water Bay in Kowloon, in 1958 and a college curriculum introduced in 1962. Its name was changed to South China Union College in 1964. In 1981 they officially adopted its name and has been called Hong Kong Adventist College since then. It still operates today, and possibly manufactures small quantities of food, basically for their own use." Address: Director, International Health Food Assoc., Seventh-day Adventist General Conference, 12501 Old Columbia Pike, Silver Spring, Maryland 20904.

5968. Fehlberg, Eric C. 1990. Re: Dr. Steven Youngberg and the Pan American Health Service. Letter to William Shurtleff at Soyfoods Center, Aug. 17. ½ p. Typed, with signature on letterhead.

• ***Summary:*** "Pan American Health Service was established by Dr. Steven Youngberg. He is over 70 today, and still operates the health service and still produces soyamilk. His brother indicates that he is quite an authority on soyamilk and protein. At present they are caring for more than seventy orphans in Honduras, where their daughter continues the program while they are in America. This is run by an Adventist, but not owned by the church. His U.S.A. address is: P.O. Box 888, Keene, Texas 76059. Telephone: 817-611-2646.

"The Honduras address is: Apartado 191, San Pedro Sula, Honduras." Address: Director, International Health Food Assoc., Seventh-day Adventist General Conference, 12501 Old Columbia Pike, Silver Spring, Maryland 20904.

5969. *Times of India* (*The*) (*Bombay*). 1990. Investment review: BSE [Bombay Stock Exchange] shrugs off possible oil shock. Aug. 20. p. 13.
• ***Summary:*** Three soya companies reported corporate financial results last week. Noble Soya turned a net loss of Rs. 72 lakh [7.2 million rupees] into a net profit of Rs. 5 lakh [500,000 rupees] this year.

Vegepro Food came up with a first-year net loss of Rs. 2 crore [200,000 rupees].

Alpine Solvex reported a 44% jump in net profits to Rs. 72 lakhs [7.2 million rupees]. Alpine plans to make a 1:2 rights issue at par.

5970. Nordquist, Ted. 1990. Changes in ownership at Aros Sojaprodukter in Sweden. Development of soy yogurt. Soybean production in Scandinavia (Interview). *SoyaScan Notes.* Aug. 23. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** On 1 Aug. 1990 Ted changed Aros into a corporation and took in a partner, Eric Kennhed. The official company name changed from Aros Sojaprodukter KB to Aros Sojaprodukter AB. KB (*kommanditbolag*) means "limited partnership" whereas AB (*aktiebolag*) means "incorporated." Ted now owns 51% of the stock and Eric owns 49%. Eric was the former head of Volvo Penta, Volvo's marine division in London. He has excellent business experience and the ability to understand large contracts and international deals. Aros now has a process and equipment for making the best tasting soymilk and soy ice cream in the world. They want to establish this in countries worldwide. It has the potential to revolutionize the world of dairylike soyfoods. Ted will contact Anders Lindner and explore ways of working together.

Aros is now developing a fermented soy yogurt which it hopes to introduce in about Sept/Oct. 1991, starting in Sweden and Finland. The flavor is excellent, but wheying off is still a problem. In Sweden, Arla, Sweden's largest milk company, makes dairy yogurt. In Finland, Hemholmen-Ingmen OY (OY is like AB in Swedish, meaning

"Incorporated") makes 20 million liters/year of dairy yogurt. They have a huge, new automated dairy plant that has the capacity to process 32 million liters/year of raw milk. They are interested in Aros' new yogurt in part to help them use more of their plant's capacity. Ted feels that Alpro's soy yogurt has an unappealing beany flavor.

Soybeans are not grown in Norway or Finland, but they are grown in Sweden, in 5 different areas from Uppland to Skåne, by Sweden's agricultural university at Ultuna, Uppsala. However a total of only several tons a year are produced. Address: Aros Sojaprodukter, Bergsvagen 1, S-19063 Orsundsbro, Sweden. Phone: 0171-604 56.

5971. Vitasoy (USA) Inc. 1990. Vitasoy acquires Nasoya Foods Ltd. (News release). 99 Park Lane, Brisbane, CA 94005. 2 p. Aug. 31.
• ***Summary:*** A 12-year-old-company owned by John Paino and Bob Bergwall, Nasoya has annual sales of $7.0 million and is one of America's leading tofu manufacturers. "Nasoya brand tofu products command over 90% market share on the East Coast... Recently Nasoya has introduced a line of non-dairy frozen pasta products... The company produces over 6 million lbs. of tofu per year and packages pasteurized fresh tofu with an extended shelf life." Paino and Bergwall will continue in their present roles as President and Vice President of Production at Nasoya. Vitasoy was founded by K.S. Lo 50 years ago. The company is now the second largest beverage manufacturer in Hong Kong. Its daily production registers over 1.5 million packs of soy and non-soy beverages with annual gross sales in excess of US$100 million. Address: Brisbane, California. Phone: 415-467-8888.

5972. Lim, B.T.; deMan, J.M.; deMan, L.; Buzzell, R.I. 1990. Yield and quality of tofu as affected by soybean and soymilk characteristics. Calcium sulfate coagulant. *J. of Food Science* 55(4):1088-92, 1111. July/Aug. 4 tables. [31 ref]
• ***Summary:*** New varieties of soybeans are compared. Variations in the coagulation of tofu and the quality of soymilk are studied as a function of the soybean composition. Two models are proposed for predicting the tofu yield. Address: 1-2. Dep. of Food Science, Univ. of Guelph, Guelph, Ontario N1G 2W1; 3. DeMan Food Technology Services Inc., Guelph, Ontario N1H 6B5; 4. Agriculture Canada Research Station, Harrow, Ontario N0R 1G0. All: Canada.

5973. **Product Name:** Soymilk.
Manufacturer's Name: Surata Soyfoods.
Manufacturer's Address: 302 Blair Blvd., Eugene, OR 97402.
Date of Introduction: 1990. August.
New Product–Documentation: Talk with Shevah Lambert. 1990. Oct. 31. This product was launched in Aug. 1990. The company is planning to buy an homogenizer to aid in its production. It is currently sold only out of the shop, and is not distributed.

5974. Takai Seisaku-sho. 1990. [Takai 1991 systems catalog]. 1-1 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan. 62 p. 30 cm. [Jap]
• ***Summary:*** Photos show the company's many pieces of equipment and systems for manufacturing tofu and soymilk. The catalog is divided into 6 sections: 1. Transportation and soaking systems. 2. Soymilk production systems. 3. Curding and forming systems; Poached tofu systems. 4. Cooling systems; Hot-pack systems. 5. Curding & forming systems. 6. Deep-frying systems.

Letter (fax) from Wataru Takai. 1990. Sept. 29. Two years ago the company rebuilt its factory and installed CAD (Computer Assisted Design) systems. This year they acquired two computer networks: IBM AS/4000 and IBM 5550. Address: Ishikawa-ken, Japan. Phone: 0762-48-1355.

5975. *Tetra Pak Age.* 1990. Rice drinks sweeten the non-dairy beverage market. 8(2):12-13. Summer.
• ***Summary:*** Describes 2 flavors of Amazake from Grainaissance and 3 flavors of Rice Dream from Imagine Foods, both from California, both in 8 fl. oz Tetra Brik cartons. Address: Shelton, Connecticut.

5976. Paino, John. 1990. The acquisition of Nasoya Foods by Vitasoy (USA) Ltd. Reflections and new developments (Interview). *SoyaScan Notes.* Sept. 9. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Vitasoy's acquisition of Nasoya Foods, Ltd. was finalized on 3 Aug. 1990 in Boston, Massachusetts. Nasoya is now a wholly owned subsidiary of Vitasoy (USA) Inc. and has become a corporation (Nasoya Foods, Inc.) of Massachusetts. Yvonne Lo and John have been on the board of directors of the Soyfoods Association of America for 4 years, and they have often discussed possible cooperation. John first met K.S. Lo in late January 1985 at the Natural Foods Expo, and soyfoods association meeting in Anaheim, California. He was impressed by his presence and recalls thinking that he and Yvonne had strong constitutions and good energy. John knew that Vitasoy was looking for a U.S. soymilk manufacturing facility. Vitasoy wants to start making soymilk in America one of these days. Now they are shipping organic soybeans from America to Hong Kong, then shipping back the soymilk. In June 1989 Winston Lo (Managing director of Hong Kong Soya Bean Products Co. Ltd. in Hong Kong) was in Boston visiting his daughters who went to Choate and Phillips Andover. He visited Nasoya and got very excited about the company. That evening at dinner serious talks began about the two companies doing something together. In Oct. 1989, when Bob Bergwall was

going to Japan to look at the Sato automatic tofu cutting-packing system (which they just purchased), John suggested that he visit the Vitasoy in Hong Kong. John wanted to be sure that the two companies had the same philosophies–which he feels is the most important thing. Bob went and came back very excited and impressed, convinced that the two companies should work together in the emerging world economy. Both companies were built on a philosophy, and the same philosophy of making good foods/soyfoods available to people for health reasons. Both are family-run businesses. He was very impressed with Vitasoy's management style. Bob brought back a fantastic English-language video titled "The Vitasoy Story," similar to the book, and telling the Vitasoy story. While Bob was in Hong Kong, John met K.S. Lo in Philadelphia at the NNFA health food show. Mr. Lo came by the Nasoya booth. John was very impressed with what a wonderful, cultured gentleman and K.S. Lo was and the class with which he and his daughter, Yvonne, conducted their lives and their businesses. At dinner, for 3 hours they discussed the mechanics of the joint venture. In March 1990 John and his wife Sarah went to Hong Kong for Vitasoy's 50th Anniversary celebration. They visited K.S. Lo's home. The details of the deal were worked out by Winston and Yvonne. A letter of intent was written in April 1990.

John feels that the main benefits to Nasoya of the new relationship will be financial backing, technical, management, and marketing expertise, but most important the synergy between the two companies.

The main benefits to Vitasoy will be Nasoya's expertise in manufacturing and marketing soyfoods, the ability to eventually run and manage Vitasoy's USA soymilk plant, and Nasoya's capabilities for getting Vitasoy into East Coast supermarkets. Only 30-35% of Nasoya's business is in the natural/health food market; the rest is in supermarkets–which Vitasoy has had difficulty penetrating. Vitasoy looked at many other U.S. companies but chose Nasoya as a company with good management in place, one that could take it to the next level, with the most growth potential and market share in their area, one that was marketing driven, diversified, and innovative. In Nasoya they have a company that can be the base for their future expansions in America. If and when Vitasoy does build a plant in America, it will probably be under the same roof as Nasoya but in a new and larger nearby location. The Midwest would not be a good location because it is a poor marketing area for a perishable product. There are no specific plans to try to develop an aseptic tofu.

The acquisition was made by Vitasoy (USA) Inc. purchasing Nasoya for cash. The amount of the transaction is confidential. No stock was transferred. The Paino family has been very successful over the years in real estate. Nasoya was established with the spinoff as some of that income. There were certain tax advantages to Paino Associates, and certain financial advantages to Nasoya Foods, Ltd. They were the limited partner, and Nasoya Foods Inc. was the general partner of the limited partnership. It was very complicated but for tax reasons it worked out very well. In effect, John, his father, and Bob Bergwall each owned a certain percentage of Nasoya, and when it was sold, they divided the cash income according to the percentage ownership. All were very pleased. John's wife, Sarah, an acupuncturist, got pregnant after 10 years of marriage just 4-5 days after John sold the business. "You can see how much of my energy went into Nasoya."

Nasoya now sells their soy mayonnaise (Nayonaise) and dressings nationwide. Their new line of frozen tofu-filled pasta products will also go nationwide.

Nasoya still uses well water. They have two wells on their property. The first one discovered gives 20 gallons/minute. The second one, which John and Bob discovered by dousing after they bought their large Sato tofu making system, gives 100 gallons/minute from 400-foot deep aquifer.

Concerning competition on the East Coast, Azumaya and Morinaga both have some distribution and are about equal as competitors; Hinoichi does not compete. Nasoya fresh tofu sells much faster than Mori-Nu Brik-Pak. Azumaya sits side by side in the produce case with Nasoya but is not serious competition. Northern Soy is the main competitor in natural/health hood stores. Sam Sung is strong to the south but they sell mostly to the Asian-American market.

Basic tofu still accounts for roughly 70% of Nasoya's sales. Second-generation tofu products account for most of the rest, with egg-roll wrappers and wonton skins being a very small percentage. Address: President, Nasoya Foods Inc., Leominster, Massachusetts. Phone: 508-537-0713.

5977. Sand, Avraham. 1990. Pioneering soyfoods and natural foods in Israel (Interview). *SoyaScan Notes.* Sept. 9. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Avraham first went to Israel in 1975 and stayed for about a year. During this time he and Avraham Leider and one other person founded Israel's first natural foods company, named Amud Ha Shachar (Pillar of Dawn) and located in Jerusalem. The first product they made was granola, followed by whole wheat flour, bulgur wheat, brown rice (which they packaged), and date bars. With this company established, a number of Americans and other westerners who had recently immigrated to Israel and were connected with the company approached the Sachnut, the Jewish government agency which helps finance Jewish cooperative settlements. They asked to be given a moshav. A moshav is like a kibbutz (a cooperative agrarian, rural settlement) except that the families have their own homes and land, and the children live at home. In 1976 the Sachnut gave the group a piece of land, infested with scorpions, upon which nine other groups had tried and failed since 1948 to

establish a successful community. The Sachnut also financed a small natural foods factory and bakery on the moshav, complete with an oven and a packaging machine. The moshav was named Moshav Me'or Modi'im, located at Doar Na Hamercaz, in the Judean Hills between Jerusalem an Tel Aviv, Israel.

Avraham returned to North America for several years. While living in a community of 5-6 people in Nova Scotia, Canada, he was introduced to tofu by people who made tofu for the community, but he did not make tofu there himself.

Between 1975 and 1990 Avraham has spent a total of 8 years in Israel. The rest of the time he was in the USA or Canada or travelling. Avraham returned to the moshav in 1978 and that year he established Israel's earliest known tofu shop as part of Pillar of Dawn. The tofu was made in the same bakery room as the granola, especially in the evenings when the granola wasn't being made. Originally the community scale shop was established solely to make tofu for the 25 or so families living on the Moshav. Tofu production was small, averaging 50 lb/day of tofu one day a week, using a Corona mill grinder powered by a washing machine motor. The tofu was curded using bittern (nigari) from a salt factory on the Dead Sea. The Moshav owned the tofu company collectively and financed it. Avraham was the motivating force that got the operation started with temporary help initially from Yaacov Sack and Moshe Reuben. About 3-6 months after tofu production began, they started to make tempeh. Then Ben Zion Solomon joined Avraham 6-12 months after the company started and they worked together like equal partners for several years as the tofu and tempeh makers. Solomon was also making quite a bit of miso on the moshav (with a little help from Sand). They also introduced soymilk. At some point, they began to sell their tofu and miso at a few health food stores in Jerusalem. As far as Avraham knows, his was the first company to make tofu, tempeh, miso, or soymilk in Israel. They developed a 1-page informational pamphlet, written in Hebrew on one side and English on the other, explaining what tofu was and how it was made, plus some recipes. At that time Israelis, other than recent immigrants from America, didn't know what tofu was.

They reached the point where they decided to buy large scale equipment (from Takai) and set up a real commercial shop on the moshav that could produce 500 to 1,000 lb/day of tofu. The Sachnut indicated that they would be willing to help set up this new business. So in about 1979 or 1980 Avraham traveled to the USA and did a lot of study to learn about tofu equipment, products, and processes in small to medium sized shops. He visited about 20 tofu shops nationwide (most were very open and helpful) and collected information in a notebook. He worked at the Soy Plant in Ann Arbor, Michigan, for approximately a year in about 1980. From time to time he shared information with his father, Ralph Sand, who was doing research on non-dairy cheese and tofu at Anderson Clayton at the time. At the last minute the Sachnut pulled out and decided not to finance the project, so the expansion never took place. They continued to make tofu on a small scale. But the moshav was suffering economically so in about 1981 Avraham and his wife, unable to make a living there, left and returned to the USA. The little soyfoods plant dissolved but shortly thereafter a commercial operation (probably Golden Jerusalem Tofu) started in Jerusalem and the people on the moshav bought their tofu from Jerusalem.

During the time that Avraham made soyfoods in Israel (1978-81) there was a lot happening with soya. There was a man called the "Soya King" ("Hamelech Soya," probably Eliahu Navot) who was famous in Israel as the country's soybean pioneer. Avraham thinks he lived in Herzlia/Herzliyya, just north of Tel Aviv, but he died in about 1979 or 1980 several months before Avraham was able to meet him. Avraham went to his home town and met his widow, who told him a little about her husband's work with soya.

The most popular food use of soybeans in the late 1970s was in textured soy flour (like TVP). These products were made in Israel by 1 or 2 big companies and sold in supermarkets in very stylish packages indicating that the manufacturers were well established. There were several flavors and large amounts were sold. He does not know the name or address of the manufacturer, but he got the feeling that Eliahu Navot had at least helped inspire these products; he may have helped to develop them.

In America, Avraham set up a soy deli named Sand-Munches in Madison, Wisconsin. They bought tofu from Bountiful Bean in Madison and made and sold tofu sandwiches, nori rolls, tofu salad, tempeh salad, various tofu spreads. They sold to health food stores and had a sandwich cart on the campus.

Avraham was in on the soyfoods wave at the very beginning, but after it became more established and mainstream he felt that his work had been done in that area, so he moved into the field of aroma therapy, inhaling aromatic essential oils from herbs, where he has been working for the last 8-9 years. It is a very powerful form of herbal medicine. He has developed several product lines under the Tiferet brand (a term taken from the Tree of Life in the Cabala) which he markets in health food stores in the USA and overseas. Address: 210 Crest Dr., Eugene, Oregon 97405. Phone: 503-344-7019.

5978. Lo, Yvonne. 1990. Recent developments with Vitasoy in Hong Kong and America (Interview). *SoyaScan Notes.* Sept. 10. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Nasoya Foods, Inc. is now a subsidiary (not a division) of Vitasoy (USA) Ltd. Note that Nasoya has changed from a limited partnership to a corporation. The parent company in Hong Kong will soon change its name

from Hong Kong Soya Bean Products Co. Ltd. to Vitasoy International Holdings Ltd. They had a hard time choosing between "Vitasoy International" and "Vita International." Choice of the former name may indicate that "there will be a whole new look at the company philosophy." Presently the company produces many non-soy beverages. The labels of all of the company's products made in Hong Kong will have to be reprinted.

Building a soymilk manufacturing plant in America may soon make sense for Vitasoy (USA) Ltd. "It was something we had in mind when we decided to acquire Nasoya."

The parent company has produced a 14-minute color video, The Vitasoy Story, for its 50th anniversary. Part of the company sales kit, it is available in two versions, one narrated in English and one in Chinese. The film portion of the two is identical.

K.S. Lo's collection of Yixing Chinese teapots is now touring the USA, and he will soon be lecturing on the subject in San Francisco on Sept. 22 at the Chinese Culture Center.

Note: Concerning ownership of Vitasoy (USA) Ltd., This company was originally established by Yvonne and Irene Lo, daughters of K.S. Lo, in San Francisco in Jan. 1989 as The Soya Bean Products Co., N.A. Inc. They immediately began to import Vitasoy from Hong Kong, and to distribute it first in Canada, then after Feb. 1981 to the USA. By mid-1982 they were selling some 3.2 million cartons of Vitasoy in the USA. The venture was so successful that in April 1982, to raise capital and facilitate long-term operations with Hong Kong Soya Bean Products Co. Ltd., Yvonne and Irene sold their company to HKSBPC, which renamed the affiliate Vitasoy USA, Inc. The parent company now began to take a serious interest in the U.S. market. In 1983 U.S. sales of Vitasoy rose 60% to 5 million cartons (328,125 gallons). Address: President, Vitasoy (USA) Ltd., 99 Park Lane, Brisbane, California 94005. Phone: 415-467-8888.

5979. American Soybean Assoc., China. 1990. Re: The soymilk industry and market in China. Letter to William Shurtleff at Soyfoods Center, Sept. 13. 3 p. [Eng]
• ***Summary:*** There are more than 100 soymilk processing lines in China, of which 34 have been imported from Sweden, Japan, etc. Each year China produces about 100,000 tonnes of soymilk. (Processing capacity is even larger.) Of this total, 60,000 tonnes are produced in the provinces of Guangdong (Kwangtung), Fujian (Fukien), and Guangxi (Kwangsi), all in southern China.

The five largest soymilk manufacturers in China, in descending order of capacity, are: 1. Wuhan Guan Sheng Yuan Foodstuff Factory (20,000 liters/hour capacity); 2. Fuoshan Foodstuff Factory (12,000 liters/hour; Product name: Vita Milk); 3. Guangzhou Cannery (2,000 liters/hour; Product name: Hong Bao; Equipment from Alfa-Laval); 4. Jiangmen Foodstuff Factory (2,000 liters/hour); 5. Jin Jiang Foodstuff Factory (2,000 liters/hour).

All of the soymilk made by large companies in China is sold in bottles; none is sold in aseptic packages, plastic bags, or by street vendors. Most of this soymilk is consumed in China, but 5,000 to 10,000 tonnes (5-10%) is exported to Japan and Southeast Asia each year. A new trend is to develop instant soybean powder [probably powdered soymilk] for the people of northern China, who do not like soymilk. Address: Citic International Building, 25th Floor, Room 4, 19 Jianguomenwai Street, Beijing 100004, China. Phone: 512-7125.

5980. Mulraj, J. 1990. The stock market reacts. *Times of India* (*The*) (*Bombay*). Sept. 17. p. 15.
• ***Summary:*** Noble Soya is [on 1 Jan. 1991] to be merged with Vegoils, a profitable unit. Shareholders of Vegoils will be given four shares of Noble Soya for each of theirs. "Noble Soya's equity will nearly double to Rs. 12.29 crores."

5981. *Times of India* (*The*) (*Bombay*). 1990. Friday's traded scrips. Stock quote. Sept. 22. p. 16.
• ***Summary:*** On the Bombay Stock Exchange (BSE), "Other securities" are listed alphabetically by ticker symbol. Soya companies include: Noble Soya 25, 27, 23, 25.
Ruchi Soya 21.25, 23.75.
Sagar Soya 10, 12.
Sakthi Soya 19, 21.

5982. Stievenard, Sylvain. 1990. Re: Cacoja changes its name to Sojinal. Letter to William Shurtleff at Soyfoods Center, Sept. 24. 2 p. Typed, with signature on letterhead. [Eng]
• ***Summary:*** On 8 Aug. 1990 Soyfoods Center received a letter (fax) from A. Kirschner of Sojinal, located at the same address as Cacoja in Issenheim, France. A letter from Soyfoods Center asking what had happened to Cacoja was answered on Sept. 24 by Sylvain Stievenard, who reported that the company name was changed from Cacoja to Sojinal on 1 Aug. 1990. No answer was given to the question as to why the company name was changed. The phone number was changed on 15 Dec. 1989 to 89.74.53.53 from 89.74.17.07. Mr. Maurice Rochet is still director. Three labels, each bearing the Formoja brand, were enclosed, implying that these products are made currently: Delicacy with basmati rice and curry sauce, Lasagna with Tofu, and Ravioli with tofu. The address on each label is Cacoja, 10, rue Lavoisier, 68000 Colmar, France. Address: Factory: 8, route de Merxheim, Issenheim 68500 Guebwiller, France. Phone: 89.74.53.53.

5983. McReynolds, Thomas. 1990. Morinaga decides to introduce private labeling and a Fresh Fruit Shakemate (Interview). *SoyaScan Notes*. Sept. 25. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Morinaga will aggressively offer to provide

their aseptic tofu, on a private label basis, to other companies in the soy and natural foods industries. To print the package directly, the buyer must commit to ordering at least 500,000 cartons/year, but with affixed pressure-sensitive labels, they can get the minimum down to 25,000 to 50,000 pieces. They will make all three textures available (red = soft, blue = firm, yellow = extra firm). Projected price is about $10/case. Some potential clients are Vitasoy/Nasoya, Frieda's, Eden Foods, Tree of Life.

Next summer, Morinaga will be introducing their first second generation product, called (and trademarked) Fresh Fruit Shakemate. It will be like their soft tofu but with a lower bean profile and perhaps with vanilla added. They will sell/position it in the fruit section of food stores. It will be packaged in a 3-pack, with no printing on individual packages in order to (1) get a bigger face, (2) Put brochures in the back. The theme: Shake up your day 8 days a week. Tom wants to do more second generation products.

There are rumors that Nasoya has secured aseptic packaging equipment from Tetra-Pak (an AB-3 machine for the purpose of manufacturing a 250 ml aseptic tofu) and that Vitasoy in Hong Kong is, or in the near future will be producing an aseptic pack tofu. They may be using a 3-layer laminate to get around the Morinaga 5-layer process with the polyurethane lining. Tom held some kind of an aseptic tofu package in Hong Kong about 18 months ago, but he is not sure who made it. When he talked with Yvonne Lo recently, she hinted that they were developing such a product. But Morinaga has no solid evidence.

Update: Nov. 5. Morinaga will initially offer the private label to only 1 company in each of 3 market categories: Eden in the natural foods market, Vitasoy in the ethnic market, and Frieda's Finest in the national produce market. Address: Marketing Consultant, Morinaga Nutritional Foods, Los Angeles, California 90040. Phone: 213-728-4325.

5984. Archer Daniels Midland Co. 1990. Annual report. P.O. Box 1470, Decatur, IL 62525. 33 p.
• ***Summary:*** Net sales for 1990 were $7,751 million, down 2.3% from 1989. Earnings for 1990 were $483.5 million, up 13.9% from 1989. Shareholders' equity (net worth) is $3,573 million, up 17.8% from 1989. "This fifth straight year of record earnings showed good contributions from the Company's core businesses of oilseed, corn, and wheat processing and was aided by initial contributions from some of the new value-added operations... The company operates 121 processing plants in the U.S. and owns, or has an ownership interest in, 25 foreign plants...

"The protein specialties division expanded both in terms of output and facilities this year. The production of edible soy protein isolates more than doubled this year due to greater market penetration in both domestic and export markets. The production of soy protein concentrates also increased as this product demonstrated its adaptability in food and animal feed products.

"A new facility for the production of industrial soy protein isolates was brought on line in February. These products are used in a variety of markets worldwide, including the paper coating industry. ADM is the only company which produces a complete line of value-added soy proteins.

"ADM has introduced its veggie burger, an all-vegetable protein food product based on soy protein concentrate. This innovative, cholesterol-free, reduced calorie product also contains dietary fiber and appeals to the vegetarian market. Early indications of good acceptance in the U.S. and U.S.S.R. suggest that this product has global potential...

"ADM Ross & Rowe expanded its facilities this year with the completion of a new lecithin production plant in Decatur, Illinois. The division is now capable of producing modified, enzyme hydrolized, complexed and microbiologically pure lecithins" (p. 4-5).

From page 8 to page 15 are four 2-page color photo spreads, each concerning ADM's new Vege Burgers. The text of each reads: London: "Due to the trend toward healthier eating, many restaurants in Great Britain, including the Hard Rock Cafe in London, offer Vege Burgers as a popular menu choice." Moscow: "Cafe Vege Burger opened in Moscow in early spring and sales have far exceeded expectations." Great Britain: "Vege Burgers are sold in a variety of flavors in many retail grocery and health food stores throughout Great Britain." Decatur, Illinois: "In the Decatur area, several grocery stores and employee cafeterias are now selling veggie burgers to the growing number of health-conscious consumers looking for nutritious, good-tasting food."

"Haldane Food Group has benefitted from the ongoing trend toward a healthier and more varied diet. A recent Gallup poll which indicates a 150% increase in vegetarians since 1984 helps to explain the emergence of Vege Burger and other TVP products as market leaders. Over 60 million servings of Vege Burgers were sold by Arkady Group companies last year. Production capacity at the Coventry frozen food factory has been supplemented with off-site storage and additional burger manufacturing machinery. Kwality Foods, now renamed Saucemasters Ltd., has enjoyed increased sales in a potential growth market, especially with private label businesses. The company's manufacturing capacity has been expanded with the addition of bottle and jar fillers, labellers, and more off-site storage. Genice Ltd. has introduced an extended range of non-dairy ice creams based on soya isolate, soya milk, or tofu. Yogurt-based ice creams are now being marketed." Address: Decatur, Illinois.

5985. Golbitz, Peter. 1990. Soymilk: Expanding opportunities in Mexico? *Soya International* (*Bar Harbor, Maine*). July/Sept. p. 1-2.
Address: Soyatech, Bar Harbor, Maine.

5986. Maitre, Pierre. 1990. Current European markets for soyafoods. Lecture presented at Eurosoya Conference. Held 5-7 Sept. 1990 at Strasbourg, France. *

• ***Summary:*** The following is summarised from a report by SoyaFoods (1990. 1(2):6-7). France: A study in April 1990 on 2,052 men and women showed that for 33% of respondents the word 'soya' was associated with oil. Indeed 66% had not heard of any soyafoods. Of the remaining 34%, only 19% had heard of soyamilk and 19% of soya-based desserts. Tofu and other products were less well known. Some 57% thought soya was a modern product, 66% thought soya was nutritious, and 61% thought soya was good for slimming. The reasons for not consuming soyafoods were given as follows: Never thought about it 45%. Prefer to buy my usual brands 14%. Do not like the taste 14%. Not found in shops 6%. Too expensive 5%.

For those who had tasted soyamilk or desserts, the taste was rated as follows: Soyamilk and other soy drinks: Rather good taste 58%, neither good nor bad 29%, rather bad taste 8%. Desserts: Rather good taste 61%, neither good nor bad 26%, rather bad taste 11%. As a result of this survey in France, SOJAXA is targeting its activities to address the problem of educating the consumer about soyafoods, in particular tofu which is less well known in France than soyamilk and desserts.

The UK: Most large supermarkets carry soyafoods, except Marks and Spencer. The strong interest in vegetarianism has played a major role in the development of the soyafoods market. Vegetarians represent about 8.6% of the population and the vegetarian market is estimated at about £5 billion.

Benelux: The Benelux markets are similar to France. In Belgium there are at least 11 suppliers of soyamilks. The most popular products are drinks and desserts. Higher income groups tend to consume soyafoods.

Germany: Soyafoods are more widely carried in natural food stores (*Biolaeden*) and Reform Houses (*Reformhaeuser*) than in supermarkets. Young German consumers accept soyafoods more readily than French consumers but price is an important factor. German consumers seem to be well informed about products and the best selling items (in descending order of importance) are tofu, sauces, sausages and delicatessen products, milks, and desserts. The following percentages of shoppers in *Biolaeden* and Reform Houses have positive opinions about soyafoods: 70% in the age 20-30 group, 55% in the age 30-40 group, and 65% in the over 40 age group.

"Spain: Soyafoods development is fairly constant in Mediterranean countries such as Spain. All soyafoods are imported and are found in specialist shops, generally associated with dietetic products, e.g. calorie controlled products. Only recently have soyafoods been sold in large supermarkets. The influence of tourism has led to a changed image for soyabeans which are perceived as good for health and a modern lifestyle. Current interest is producing new products which are geared to local tastes. The most common products at present are soya drinks, desserts, sauces and soya sausages. Sales in non-specialist shops are likely to become more important.

"Italy: Soya foods and products containing soya are sold mainly for dietetic reasons.

"In summary Mr. Maitre felt that progress had been made over the years in terms of product quality, marketing, product information and international recognition, but there should be no complacency. More will need to be done to stimulate demand in Europe." Address: 18 Square les Oliviers, 13111 Coudoux–Aix en Provence, France. Phone: 33/43.52.09.44 (fax).

5987. Muller, Mr. 1990. The process of producing powdered soyamilk. Lecture presented at Eurosoya Conference. Held 5-7 Sept. 1990 at Strasbourg, France. *

• ***Summary:*** Powdered soymilk is produced by spray drying, a simple, natural process that uses no chemical additives. Applications include desserts, yogurt, ice cream, drinks, purees, soups, sauces, baked goods, meat products, etc. including low calorie and cholesterol-free products. It can also be used as an alternative to sodium caseinate. Powdered soymilk has functional properties which are similar to soy protein concentrates and isolates but with the added advantage of being totally natural. Like them, it contains no lactose or cholesterol. A typical spray-dried soymilk has the following composition: Protein 45%, lipids 20%, carbohydrate 20%, and minerals 5%. Address: B.P. 37, 14 rue Inkermann, 79001 Niort, France. Phone: 49.24.09.42.

5988. Ornish, Dean. 1990. Dr. Dean Ornish's program for reversing heart disease: The only system scientifically proven to reverse heart disease without drugs or surgery. New York, NY: Random House. xxxi + 638 p. Sept. Index and recipe index. 17 cm. [288* ref]

• ***Summary:*** This is a landmark, pioneering book–indeed a classic. In addition to carefully documented information on how to reverse heart disease, it offers 100 pages of vegan recipes, including a 21-day menu. It focuses on a low-fat, low-cholesterol diet, regular moderate exercise, stopping smoking, stress management through meditation and yoga, and (ideally) a support group.

Contents: Author's note. Foreword. Introduction–Heart and soul. Part one: Opening your heart. Part two: The opening your heart program. Part three: Opening your heart recipes. Introduction to the recipes by Shirley Elizabeth Brown, M.D., and Martha Rose Shulman. Twenty-one days of menus. The recipes. Epilogue. Appendix: Nutrient analysis of common foods. Selected references.

In the chapter titled "Introduction to the recipes" a long section on "Soybean products" gives basic information about

the following: Whole soybeans, soy flour, soy milk ("It is much higher in fat, lower in vitamin B-12, and lower in calcium than nonfat cow's milk."), soy sauce, tamari, miso, soy cheeses, tempeh, textured vegetable protein (TVP), isolated soy protein, and tofu ("Tofu is a miracle food; it is very easy to digest, very high in protein, low in calories and fat, economical, and extremely versatile").

In the chapter titled "Recipes" is a long section on "Tofu Dishes," which begins with a good introduction: "Tofu is one of the most versatile foods." "Tofu is very high in protein and the perfect substitute for cheese and eggs." Eleven recipes follow: Tofu cheese with fresh herbs. Marinated tofu. Scrambled tofu and vegetables. Lydia's Mexican casserole. Tofu stew with miso. Sweet and sour wok-cooked vegetables with tofu. Chinese eggplant and tofu. Steamed fresh vegetables and tofu with soba noodles (and Misoyaki sauce). Stuffed manicotti (with Marinara sauce).

At the start of each chapter are great quotations. The 288 selected references, listed chapter by chapter at the back, are a valuable addition. As early as 1972 Dr. Ornish was learning meditation and yoga techniques from Swami Satchidananda; these evolved into the stress management program described in chapters 7-9. In 1975 he first became interested in conducting research on heart disease, when he was a medical student at Baylor College of Medicine in Houston, Texas. In 1977 he had the privilege of studying with Dr. Michael DeBakey, assisting in the operating room when he performed bypass surgery. Though his surgical skill was amazing, Ornish began to see the "limitations of technological approaches that literally and figuratively *bypassed* the underlying causes of the problem. It was the difference between temporizing and healing." Most bypass patients "would go home and continue to do the same things that led to the problem in the first place. They would smoke, eat a high-fat, high-cholesterol diet, manage stress poorly, and lead sedentary lives."

For details on this book and its significance, see MacNeil/Lehrer Newshour. 1990. Dec. Address: M.D., Preventive Medicine Research Inst., Sausalito, California 33658. Phone: 415-332-2525.

5989. Reddy, M.; Flynn, A. 1990. Bioavailability of iron and zinc from cow's milk and soya milks in suckling rats. *Irish J. of Food Science and Technology* 14(2):121. Sept. [1 ref]
• ***Summary:*** This is the abstract of a paper presented at the 20th Annual Food Science and Research Conference, held 12-13 Sept. 1990 at Cork, Ireland. "Recently, soy milks have become widely available as substitutes for cow's milk. Soy products contain phytic acid which has been shown to reduce the nutritional bioavailability of trace elements. This study was carried out to compare the bioavailability of iron and zinc in cow's milk and soy milks." The results show that soy milks are slightly better sources of bioavailable iron but much poorer sources of bioavailable zinc than cow's milk. Address: Dep. of Nutrition, University College, Cork, Republic of Ireland.

5990. *Soya International* (*Bar Harbor, Maine*). 1990. Bean Machines installs three new systems in North America. July/Sept. p. 3.
• ***Summary:*** San-Francisco based Bean Machines Inc. has recently installed their new continuous tubular cooking systems, used for making tofu and soymilk, in plants at Ann Arbor, Michigan, Duarte, California, and Quebec, Canada. Capacities range from 300 to 900 gallons/hour. Contact Bean Machines at P.O. Box 2122, Mill Valley, CA 94242. Phone: 415-285-9411.

5991. *Soya International* (*Bar Harbor, Maine*). 1990. Medical center says nondairy products may not be milk free. July/Sept. p. 3.
• ***Summary:*** "Foods that do not list milk as an ingredient may not be completely milk-free. Johns Hopkins Children's Center reported that three children with cow's milk hypersensitivity developed acute allergic reactions after eating tofu and rice based frozen desserts. The desserts were manufactured in dairy processing plants, but despite standardized cleaning procedures, the nondairy products were contaminated with milk sufficient to cause allergic reactions (half a teaspoon or less per serving.) In one case, a child reacted to a hot dog which contained hydrolyzed sodium caseinate, a milk derivative. This ingredient was not listed on the label, because it fell into the category of 'natural flavoring.' The hot dog contained an amount of sodium caseinate equivalent to a third of a milliliter of milk. The USDA is changing the regulations so that milk-derived ingredients can no longer be designated 'natural flavorings' and must be labeled by their common or usual name."

5992. Stehlin, Dori. 1990. Soy beverages not complete formulas. *FDA Consumer* 24:29. Sept.
• ***Summary:*** "A severely malnourished 5-month-old infant was admitted to Arkansas Children's Hospital, Little Rock, Arkansas, last February with symptoms including heart failure, rickets, vasculitis (blood vessel inflammation), and possible neurological damage. According to the hospital, the baby girl had been fed nothing but Soy Moo since she was 3 days old. Soy Moo is a soy beverage sold in health food stores.

"This kind of soy beverage, sometimes improperly called 'soy milk,' should not be confused with soy-based infant formulas. Unlike true infant formulas, which are nutritionally complete and appropriate for infants, soy beverages are lacking some of the nutrients infants need. Analysis of Soy Moo by the Arkansas Children's Hospital revealed deficiencies in calcium, niacin, and vitamins D, E and C.

"Labels on Soy Moo cartons and literature about the

drink do not suggest that Soy Moo be used as an infant formula. In addition, an FDA investigation found no evidence that the infant's parents were explicitly told that Soy Moo could be used as a baby's sole nourishment. Nevertheless, Soy Moo's distributor, Health Valley Foods, Irwindale, California, has voluntarily stopped distribution until new labels stating 'Do Not Use As Infant Formula' can be printed.

"FDA learned of a similar incident that occurred last April when a California couple questioned a physician about their 2-month-old daughter's failure to gain weight. The physician discovered that the baby had been exclusively fed Edensoy, another brand of soy beverage. A midwife had recommended Edensoy to the parents, according to the FDA investigator assigned to the case."

Photos show cartons of Sunsoy Original, and Edensoy Original, and cans of Loma Linda Soyalac, Isomil, Nursoy, and ProSobee.

5993. Stehlin, Dori. 1990. Feeding baby: nature and nurture. *FDA Consumer* 24:27. Sept. *
Address: Rockville, Maryland.

5994. Stievenard, Mr. 1990. Concentrating soya milk by ultrafiltration. Lecture presented at Eurosoya Conference. Held 5-7 Sept. 1990 at Strasbourg, France. *
• ***Summary:*** The initial soymilk contains 4% solids at 80ºC. Ultrafiltration is conducted using a carbon / zirconium membrane with a process control factor of 3.5 at 80ºC. The resulting concentrated milk, which now contains 12% protein, is cooled in a chamber. It is then heated to 55-80ºC, conditioned, and chilled. The concentrated contains 12% solids and at 4ºC its texture is that of a gel. The typical composition of the final product is: dry matter 22.8%, protein 12.7%, lipids 7.4%, and carbohydrate 1.2%. Compared with normal soyamilk, concentrated soyamilk has higher levels of phosphorus, calcium, and magnesium, and lower levels of the flatulence-causing oligosaccharides saccharose, stachyose, and raffinose. Applications of concentrated soyamilk include soya ice creams, pâtés, sausages, salad dressings, mayonnaise, and ready meals. Address: Cacoja, France.

5995. Vandemoortele, Philippe. 1990. Soymilk, a traditional milk substitute. Paper presented at the Eurosoya Conference. 5 p. Held 5-7 Sept. 1990 at Strasbourg, France.
• ***Summary:*** Contents: Tradition. Milk imitation or substitute? (It is a substitute). New process for making soymilk (giving improved taste and nutritional value). New products (such as dairylike products). Standards (a protein content of at least 3.6% should be guaranteed). Terminology (The terms "soya milk" and "soy-bean milk" have been used in published materials since 1897. Because of the protection of the word "milk," most soymilks in Europe are labeled "soya drink," except in the UK where the term "soymilk" has been legalized). Soymilk imitation (Soymilk made from soy protein isolates, fats, sugar, etc. is neither a natural nor a traditional product). The market. Producers. Future of soya milk. Negative perspectives. Conclusion.

"It is difficult to determine the amount of soymilk produced and consumed in Europe. In 1986-87 a number of enthusiastic reports drastically overestimated the European soymilk market. Some publications, for example, estimated that the market in the UK totalled about 30,000 metric tons (tonnes; i.e. about 30 million liters). The latest reports (1989) however seem to provide more reliable and realistic information. *Agrarwirtschaft* has recently [March 1989, 38(3):74-83] published figures stating that the market grew from 16,000 tonnes in 1986 to a projected 28,500 tonnes in 1992. There is no question however that soymilk consumption has risen substantially in the last 5 years. Yet soymilk remains a marginal market and accounts for less than 0.1% of the total dairy market. The U.S. market on the other hand is estimated at 16,000 tonnes for 1989.

"Today there are more than 14 commercial soymilk producers in Europe, producing and packaging soymilk in more than 200 different packages. Their total capacity is estimated at approximately 60,000 tonnes a year..."

Presently the two main disadvantages with soymilk are its taste, and its high price compared with cow's milk.
Address: Managing Director, Alpro N.V., Vlamingstraat 28, B-8560 Wevelgem, Belgium. Phone: (056) 43 22 11.

5996. Ford, Ashley. 1990. Milking the soybean: Asian firm opens drink plant. *Province* (*The*) (*or The Vancouver Sun*) (*Canada*). Oct. 3.
• ***Summary:*** "Yeo Hiap Seng Ltd. of Singapore has been turning Ontario's soybeans into high-protein drinks for over two decades... This week, the company will open a $13-million soybean-juice plant adjoining its juice-concentrate plant in Chilliwack... Chalk the investment up to a victory for the U.S.-Canadian free-trade agreement. Yeo says the agreement, plus the availability of high-quality soybeans, persuaded it to put in a plant at Chilliwack...

"In 1988, the company purchased the adjoining Pacific Fruit & Concentrates Ltd. from the East Chilliwack Co-operative for about $3 million. It is now known as YHS Pacific Fruit Concentrates Ltd. Last year, it also purchased Chun King, the oriental food division of RJR Nabisco, based in Windsor [Ontario, Canada]. The new plant will produce 300 cans a minute of a variety of soybean drinks for the Canadian and U.S. markets. The state-of-the art-factory will create 32 new jobs...

"At the beginning of the century [in 1900], family patriarch Yeo Keng Lian began fermenting and selling soya sauce in Fujian province... Initially, soya sauce provided Yeo's business success. In 1955, the company started producing soybean drinks, and has since gone on to produce

other foods."

A photo shows Bill Chia showing off the canning line at Yeo's new soymilk plant. Note: This factory is a major Canadian consumer of soybeans for food/beverage use, but about 90% of the finished soymilk is exported to Asia–especially Singapore. Address: Business Reporter, Canada.

5997. Lo, K.S. 1990. New developments at Vitasoy (Interview). *SoyaScan Notes.* Oct. 4. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The Vitasoy factory opened in Hong Kong on 9 March 1990. The 50th anniversary was celebrated on about 22-23 March 1990 because the Trade Development Exhibition Hall in Hong Kong was booked up so far in advance. Concerning the 50th anniversary history of Vitasoy, the woman author, Choi Po-King, has a PhD from Oxford and is now teaching history in the School of Education at the Chinese University of Hong Kong. She originally approached K.S. Lo with the proposal to do a history of his company in English. She speaks good English, but it is her second language. They decided to do the first edition in Chinese since most of the company's customers are Chinese. Now he thinks he will go back to her and ask her if she would like to do an English-language edition. He has no idea when the English edition will be available.

His company has just finished changing its name. The new name, effective 24 Sept. 1990, is Vitasoy International Holdings Ltd.; the name expresses Mr. Lo's hope that soyfoods "will at all times remain the core of our business."

Mr. Lo has attended the Natural Foods Expo at Anaheim several times. That is probably where he first met John Paino many years ago.

Vitasoy in Hong Kong is doing development work on an aseptic Tetra Pak tofu, but the product is not yet on the market. Mr. Lo has seen the Tetra Pak tofu make by Yeo Hiap Seng in Singapore, but he would not say that it is a top quality product. Yeo tried to sell it in Hong Kong but without much success. It is a hard product to sell to people with a long tradition of consuming tofu. He was not aware that the product was sold in Italy. One of the reasons Vitasoy purchased Nasoya was so that Nasoya could eventually help Vitasoy to make and market an aseptic tofu in America. Address: Chairman, The Hong Kong Soya Bean Products Co., Ltd., 41 Heung Yip Rd., Aberdeen, Hong Kong. Phone: 5-528211.

5998. Diamond, Harvey. 1990. Saving the planet with your knife and fork. Lecture presented at World Vegetarian Day. Held Oct. 6 at San Francisco State College.

• ***Summary:*** Cardiovascular disease kills 2,500 Americans per day, more than all other diseases combined. The main concern of meat eaters considering a switch to a vegetarian diet is "Where will I get my protein?" But where does a cow get its protein? And how about the strongest animals: the elephant, silverback gorilla, rhinoceros, oxen? All eat from the plant kingdom. None eat meat. A lion is strong and it eats meat, but it sleeps 20 hours a day. Americans have been conditioned by billions of dollars of advertising to think that protein equals meat. Conditioning works. Michael Jackson was paid $15 million to do Pepsi commercials but he doesn't drink Pepsi.

The recently released China-Cornell-Oxford diet study, which started in 1983, is one of the most important large scale studies to date. It was overseen by Dr. T. Colin Campbell. He said "We humans must recognize that we are a vegetarian species." He also showed that dairy products cause osteoporosis. A calf that is weaned will not drink cow's milk. Where does the cow get its calcium? Chinese get 7% of their protein from animal products; American's get 70%.

Americans eat 16 million animals a day, 6 billion a year. The system that raises these animals is tearing the environment apart. It uses huge amounts of fuel, water, and land. It takes 25 times as much fuel to get 1 lb of protein from beef as from the plant kingdom. The animal products industry uses more water than all other uses combined, then it pollutes the water. Hay is the No. 2 farm crop in America. It is subsidized, costing $10 to get $1 worth of hay. America is the world's No. 2 food producing country behind China. 95% of our land is used to grow crops that are fed to animals. 100 million acres of rain forests have been cut down in Brazil, 75% to clear land for raising animals.

The U.S. school lunch program requires meat and milk to be on every plate or the money will be withdrawn. Meat and dairy products are exempt from the new food labeling laws. There are 30 meat and dairy Political Action Committees. Diamond does book signing after his lecture. Address: Bradenton, Florida 34209.

5999. Wildwood Natural Foods. 1990. Re: Labels of all current Wildwood products. Letter to William Shurtleff at Soyfoods Center, Oct. 11. 6 p. On letterhead.

• ***Summary:*** On 11 Oct. 1990 someone at Wildwood in Fairfax sent Soyfoods Center all of Wildwood's current labels affixed to 6 pages of Wildwood letterhead. There is no cover letter but the postmark on the envelope shows the date and origin. Most of the colorful labels are for Wildwood's ready-to-eat tofu products. There are also labels for Yo Soy! [organic soymilk] in Rich, Cocoa, Maple, and Honey Vanilla flavors, Rice Pudding (dairyless, with organic soymilk), Curried rice salad with tempeh, Wildwood seitan (made the "Say-Tahn" Ron way). Address: Wildwood Natural Foods, 135 Bolinas Rd., Fairfax, California 94930. Phone: 415-459-3919.

6000. Vandemoortele, Philippe. 1990. Vandemoortele to stop exporting soymilk (especially Sunsoy) to the USA (Interview). *SoyaScan Notes.* Oct. 12. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Alpro is growing so fast and has so many priorities in Europe that he has decided to discontinue exporting his products (such as Sunsoy soymilk) to the USA. Alpro is doing very well in Europe, but the manufacturing and marketing efforts require a great deal of attention, time, and other resources. Because there is so much competition in the USA, he felt he should either make bigger efforts and spend much more time there, be much more aggressive, or stop. Basically, he does not know the American market. The problem is doubly difficult when exporting to the USA since the dollar is falling so low. Since Hong Kong is linked to the U.S. dollar, changing exchange rates are not problem for Vitasoy–a major competitor. FVO (Farm Verified Organic) is an American organic certification organization well known in Europe. Address: Managing Director, Alpro N.V., Vlamingstraat 28, B-8560 Wevelgem, Belgium. Phone: (056) 43 22 11.

6001. Gupta, Rajendra ("Raj") P. 1990. ProSoya is introducing SoyaCow, a small, low-cost soymilk system for Indian villages (Interview). *SoyaScan Notes.* Oct. 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The new SoyaCow unit, which now sells for $2,000 and will eventually (hopefully) sell for $1,000 makes one 20-liter batch of low-beany-flavor soymilk every 30 minutes. The machine grinds the beans, cooks the slurry, and presses out the soymilk. It does not require the use of steam: any fuel can be used. The beans are cooked immersed in water with no air in the vessel, but they are not under a vacuum, since that is too high-tech for villages and developing countries, leading to maintenance problems.

By comparison the Mechanical Cow from Brazil makes 70 liters per batch, but requires the use of steam and costs $10,000 to $15,000. Address: 627 Gaines Dr., Ottawa, ONT, K1J 7W7, Canada. Phone: 613-744-4401.

6002. Starr, Sara M. 1990. Soyfoods: Are they a hit at last? More meat eaters switching to soy sometimes, says study. *Food Business.* Oct. 22. p. 37.
• ***Summary:*** "According to data from a new nationwide study by HealthFocus, a consulting firm specializing in the healthful foods market, about one in 10 food shoppers said they eat soyfoods once every two weeks or more... Twice as many people eat soyfoods regularly as are vegetarians... Sales of aseptically packed soymilk are expected to reach $75 million in 1991, up from $46 million in 1989, according to Soyatech Inc., publisher of a soy industry source book."

A photo shows 6 tempeh products made by Lightlife Foods. The company's sales are growing at a rate of about 30% annually. Address: Vice president, HealthFocus Inc., Emmaus, Pennsylvania. Phone: (215) 967-2233.

6003. Demos, Steve. 1990. Consultant report on training in the production and marketing of soy paneer / tofu at the cottage level. White Wave, Inc., Boulder, Colorado. 31 p. 28 cm.
• ***Summary:*** Submitted to Winrock International, Inst. for Agricultural Development (Contractor USAID). Date: Aug. 16–Sept. 15, 1990. New Delhi and Bhopal–India. Contents: Introduction. Background. Consultancy objectives. Soy paneer marketing: Observations, conclusions, recommendations, test market, experiment. Summary conclusion–Privatization. Appendix. Making sequence and standards. Preventive maintenance recommendations. Safety recommendations. Equipment recommendations. Sanitation recommendations. Further test recommendations. Opening procedure checklist. Closing procedure checklist. Economic analysis soy paneer production. Daily activities summary. Acknowledgements.

In India, 40% of the citizens fall below the poverty level. One serious consequence is a protein shortage. "During the past 15 years, the population of India has increased approximately 50%. Harvested tonnage of India's primary protein source, (legumes), has during this same period remained relatively constant at 12 mm tons per year. Thus the per capita availability of protein in India has actually decreased 50% within the past 15 years...

"The Soybean Processing and Utilization Project, (SPU) is a jointly funded US-Indo Project whose goal is to facilitate the processing of soy protein in cottage and small plant industries which effectively produce soy protein foods for human consumption.

"The SPU Project has been in effect for approximately 5 years...

"Currently the Central Institute of Agricultural Engineering (CIAE) in Bhopal has been the focal point of the SPU's work on soy paneer. The institute in 1990 purchased and installed a semi-automatic soy paneer making system in its pilot plant facility.

Sensory evaluations from SPU research show that a firm textured tofu–75% moisture–closely resembles dairy paneer texture and is acceptable to the Indian taste. However, there were objectionable 'beany' flavors found in soy paneer. Dairy paneer is considered a luxury item in India with only 2% of the population consuming the product. The primary reason for the limited usage was price. Current dairy paneer is produced almost exclusively in small cottage shops. All product made is sold within 48 hours, as the use of refrigerated storage in India is very limited. There is no retail or wholesale distribution network for dairy paneer. Indian staple protein is legumes (dahl). Soymilk sold in tetra pak cartons has failed. When the product was packaged in only polyethylene bags the price was reduced substantially and the product recognized greater consumer acceptance. Note: Noble Soya tried selling their soymilk in poly bags after their Tetra Brik venture failed. Lots of dairy milk in India is sold in poly bags. Most panir is curded with soured dairy milk whey. Address: President, White Wave Inc., 1990 North 57th

Court, Boulder, Colorado 80301. Phone: 303-443-3470.

6004. Golbitz, Peter. 1990. Trip report to Mexico City, Mexico, September 18-24, 1990 [for American Soybean Assoc. conference on soymilk and soy-based cheese products]. Soyatech, Inc., P.O. Box 84, Bar Harbor, ME 04609. 9 p. Oct. 8.
• ***Summary:*** Mr. Golbitz presented a paper titled "Soya and its Utilization in Cheese and Cheese-like Products" at the symposium in Mexico City. Interested people and companies include: Carlos Tejeda of Alimentos S.A. in Guatemala (which now makes textured soy flour, and a cereal-soy blend resembling Incaparina), Elena Dominguez of the Dominican Republic, Miguel Ruiz Puente of PROLESA in Mexico, Nestlé (which is now successfully marketing Bonus, a powdered 50:50 cow's milk:soymilk blend; their soymilk plant is in Veracruz). Dairy interests perceive soy products as potential competition and a threat to their industry, but there is no longer enough cow's milk to go around and the price of nonfat dry milk is rapidly increasing. Politicians are afraid of gradually adding soymilk to cow's milk and other dairy products for fear of accusations of adulteration. Address: Bar Harbor, Maine. Phone: 207-288-4969.

6005. Leatherhead Food Research Assoc. 1990. Vegetarian foods in the UK. Randalls Road, Leatherhead, Surrey, England. Report No. 40. Conducted June 1990. Price: £55 for non-members. *
• ***Summary:*** "The development of the vegetarian market was a significant factor influencing UK food sales in the late 1980s. The market has grown from a small largely specialist base into a more mainstream food sector. Not only do consumers tend to perceive vegetarianism as more healthy than a mixed diet, but publicity over inhumane treatment of animals has increased awareness of slaughtering processes. Also growth of some good vegetarian restaurants has shown that a vegetarian diet need not be dull or boring. The total vegetarian market for 1989 is estimated at £500m [million]. Soya products have not gained mass appeal as yet but have become an established part of the specialist health food market with soya milk sales valued at £20m and other soya products at £4m." Address: Leatherhead, Surrey, England.

6006. **Product Name:** Soya Burgers, Soy Milk [Chocolate, Cardamom, Vanilla, or Plain].
Manufacturer's Name: Lisa Camps.
Manufacturer's Address: 1694 Ouneachem Baht, Anjuna Bardez, Goa, India 403-507. Phone: 0091-0832-2273648.
Date of Introduction: 1990. October.
Ingredients: Soya Burgers: Okara, potato to bind, onion, garlic, capsicum; breaded with bread crumbs then deep fried in olive oil. Served with Cole Slaw and Hummus.
Wt/Vol., Packaging, Price: Burgers: Served on a plate to eat on site or take away in waxed paper. Price: 50/- rupees. Soya milk: Packed in 250 ml milk grade biodegradable bags, sealed with a machine, served with a straw–poked a hole in the bag. Price: 10/- rupees.
New Product–Documentation: Letter (e-mail) from Lisa Camps of Goa. 2005. May 15-17. These products were introduced in about 1990. In 1989-90. Lisa decided to settle in Goa. She ran a lingerie business and also sold soya burgers, hummus brown bread, and 4 flavors of soy milk every Wednesday in the Anjuna Flea Market, where she had a food stall; she made these in her home kitchen at 1694 Ouneachem Baht, Anjuna Bardez, Goa, India 403-507.

Letter (e-mail) from Lisa Camps. 2005. July 16. Lisa is not aware of anyone who sold soya burgers or soy milk in Goa before she did. These products were introduced in Oct. 1990; the season in Goa starts in October and ends in April. The business had no name at that time; it was just a nameless stall in the local market.
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6007. Malloy, Michael H.; Willoughby, A.; Graubard, B.; et al. 1990. Exposure to a chloride-deficient formula during infancy: Outcome at ages 9 and 10 years. *Pediatrics* 86(4):601-10. Oct. [24 ref]
• ***Summary:*** A follow-up study on children who consumed chloride -deficient Neo-Mull-Soy during infancy. "171 of the exposed children and 261 soy control children were given a battery of psychologic tests in their homes to determine whether there had been any effect on intellectual development as a result of exposure to the chloride-deficient formulas. There were no differences in scores between the groups..." Address: National Inst. of Child Health and Human Development and the National Cancer Inst., Bethesda, Maryland.

6008. McDougall, John A. 1990. Tempest in a baby bottle? *Vegetarian Times.* Oct. p. 10-11. [2 ref]
• ***Summary:*** "Research has found high levels of aluminum, a potentially toxic mineral, in soy-based infant formulas." The author cites several medical studies which confirm this (Koo et al. 1988; Freundlich et al. 1985).

"The top source of aluminum in soy-based infant formulas is the soybean itself. Soybeans, and other plants as well, absorb aluminum from the soil. (Found naturally in soil, air, water and food, aluminum is the third most abundant element on earth.) Additional aluminum gets into soy-based infant formulas during manufacturing processes, such as the addition of calcium and phosphorus compounds (which also contain aluminum), and from storage containers, particularly glass. Aluminum can leach from these containers into the formula." Address: Medical Director, Lifestyle and Nutrition Program, St. Helena Hospital, Deer Park, California.

6009. ProSoya Foods International Inc. 1990. An affordable

soya milk technology: High quality soya milk production equipment for any budget (Leaflet). Ottawa, Ontario, Canada. 1 p. PSF-SC20. Oct.
• ***Summary:*** "ProSoya recently completed the development of equipment capable of making non-beany tasting soya milk in 20 litre batches every 30 minutes. The table top size equipment costing under $3,000 can use almost any source of electricity and heat. It is ideally suited for schools, hospitals, and other institutions, cottage industry, and second generation soymilk and tofu product manufacturers.

"The equipment, dubbed SoyaCow-20, has three components: an air-less grinder, a scraped surface pressure cooker, and a filter press. Steeped soya beans are put in the grinder through a hopper and the machine filled with water. The grinder motor is run for a few minutes and the ground bean slurry is transferred to the cooker by opening a valve. The slurry is cooked at 15 lb per square inch pressure by direct heat from a natural gas, kerosene, coal, or wood stove. The cooked slurry is expelled to the filter press to extract soya milk."

A table compares 4 processes for making soymilk: Cold grind, hot grind, hot blanch, and airless grind. Ten variables are compared, such as processing chemicals, grind (hot/cold), soya milk solids (dissolved/suspended), odour & taste, flavoring. etc. Concerning odour and taste: The cold grind is rancid and cereal, the hot grind is less rancid & cereal, the hot blanch is roasted nut & cereal, and the airless grind is cereal & cereal. Concerning mouth feel: The cold grind is smooth, the hot grind is chalky, the hot blanch is very chalky, and the airless grind is smooth. Concerning protein yield: The cold grind is 70-90%, the hot grind is 60-80%, the hot blanch is up to 98%, and the airless grind is 70-90%. Concerning basic plant cost: The cold grind is low, the hot grind is medium to very high, the hot blanch is high, and the airless grind is low.

"For more information, contact ProSoya Foods International, Inc. 627 Gaines Drive, Ottawa, Canada K1J 7W7, Telephone 613/745-9115, Fax 613/744-3548, or Raylons Metal Works, Ramkrishna Mandir Marg, J.B. Nagar, Andheri (East), Bombay, India 400 059, Telephone 022/632-3288."

Note: PSF stands for ProSoya Foods. SC20 stands for SoyaCow–20 liters/batch. Address: 627 Gaines Dr., Ottawa, ONT, Canada K1J 7W7.

6010. Winthrop, Anne. 1990. Soy drinks and infants. *American Baby* 52:108. Oct. *

6011. YHS Pacific Fruit Concentrates. 1990. YHS Pacific Fruit Concentrates in Chilliwack descendant of 90-year-old family company headquartered in Singapore (News release). Chilliwack, BC, Canada. 2 p. Oct.
• ***Summary:*** Contains a good history of the company. The history up to 1962 is basically the same as that given by Shurtleff & Aoyagi in Feb. 1984. Then it continues: "Throughout the next two decades, Yeo's continued to expand and innovate: this was the first company in the world to pack soya bean drinks in paper tetra-paks using the ultra high temperature process. In addition, the company acquired the franchises for international brands such as Pepsi and 7-Up, Mirinda and Schweppes.

"In 1989, Yeo's purchased Chun King, the oriental division of RJR Nabisco based in Windsor, Ontario, and bought Pacific Fruit & Concentrates Limited located in Chilliwack, B.C.

"Today with associated companies, plants and 4,000 staff members around the globe, and with its products exported to 35 countries, Yeo Hiap Seng Ltd. is still guided by the Yeo family and still adheres to the original formula for success: provide quality products and unite to succeed."

Note: The company's offices and headquarters are in Richmond, B.C. The soymilk plant is located in Chilliwack (population 9,000) about 55 miles to the east, on the south bank of the Fraser River, only about 10 miles north of the U.S.-Canada Border. Address: Chilliwack, BC, Canada. Phone: 604-277-7707.

6012. YHS Pacific Fruit Concentrates. 1990. Fact sheet: YHS Pacific Fruit Concentrates Ltd.: New soya bean drink plant opens (News release). Chilliwack, BC, Canada. 1 p. Plus 2 pages of flow charts. Oct.
• ***Summary:*** "The plant: 80,000 square foot plant on 4.5 acres. Construction and equipment cost: $13 million... Production capacity: 300 cans of soya bean drinks per minute. Employees: 32 full-time. Market: output will go to Canada and the U.S.A. At present, the parent company in Singapore exports the soya bean drink to its North American markets...

"The company: YHS Pacific Fruit Concentrates Ltd. bought from the East Chilliwack Cooperative in 1988 by Yeo Hiap Seng Ltd. of Singapore.

"Yeo Hiap Seng Ltd.: YHS began in 1900 in China manufacturing soya sauce. Canned food production added in the 50s, and in the 70s YHS acquired franchises from Pepsi-Cola International to pack and distribute products. Company now also into prawn farming and Budweiser beer distribution." Address: Chilliwack, BC, Canada. Phone: 604-277-7707.

6013. Greger, Janet L. 1990. Aluminum in infant formulas and foods (Interview). *SoyaScan Notes.* Nov. 1. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** In infant formulas, the main source of the aluminum is not the soybean but the calcium added for fortification. It is very difficult to precipitate calcium without getting aluminum contamination. Aluminum is toxic to most plants, so they have developed barriers and mechanisms for excreting it for detoxification; the exceptions are mostly

plants that are used to being grown on tropical soils, such as tea and herbs, and aluminum builds up in their leaves, not seeds. Researchers at Ross Laboratories have done extensive work on this subject, and about a year ago they invited in many researchers and regulators to prove their point.

Aluminum is only a problem for premature infants (preemies), all of whom have reduced kidney function which prevents them from eliminating aluminum properly. Pediatricians usually feed preemies a high-protein, high-calcium formula to make them grow as fast as possible to get them out of the high-risk area. They would usually only use a soy-based formula if it could help solve an infant's allergy problems. Soy-based infant formulas used for preemies have traditionally had a higher calcium content (to accelerate growth) than that used for regular infants, and thus a higher aluminum content. Since preemies and infants or children with kidney failure will almost always be under the close supervision of a pediatrician, who will now be aware of problems with aluminum toxicity, they would usually not feed these infants soy formula unless there was no other choice–due to allergy problems.

For all other human beings, except preemies and people with kidney problems, there is no need to be concerned about the aluminum content of any of their foods. If a person wants to do something, the first step is to stop taking antacids or buffered analgesics that contain aluminum. Janet personally has not stopped using aluminum pots or baking powder (the doses are too small to worry about), but she would not take an antacid that contains aluminum. The latter concern would be more with possible bone degeneration than with Alzheimer's disease.

Concerning the aluminum content of basic foods, probably the best source of data is Jean Pennington of the FDA Total Diet Study; she is in the Food and Nutrition Branch of FDA (Phone: 202-245-1064). Address: Prof., Dep. of Nutritional Sciences, Univ. of Wisconsin, 1415 Linden Dr., Madison, WI 53706. Phone: 608-262-9972.

6014. Boismenue, Clyde. 1990. The market for soy protein isolates, concentrates, textured soy protein products, and soy flour in America today (Interview). *SoyaScan Notes.* Nov. 13. With follow-up on 22 Jan. 1992. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Soy protein isolates have been the big unfulfilled promise in the U.S. food industry during the last 2 decades. Since 1975 Clyde has been a wholesale distributor for ADM. Today only 2 companies in America make regular isolates: ADM and Protein Technologies International. ADM was weakest in isolates until they purchased the Central Soya line. ADM also bought Grain Processing Corporation's Pro-Fam line and closed it down to get rid of excess industry capacity. Then ADM hired Roger Kilburn away from Ralston Purina to improve the flavor of ADM's isolates. This upset Ralston greatly. Ralston Purina spun off Protein Technologies International primarily to make it available for sale; everyone in the industry knows this.

In recent years there has been a little resurgence in isolates for several reasons largely related to the rise in casein prices: (1) With the rise of free enterprise and economic flux in Eastern European countries, they are being used increasingly to extend meats; the problem for western suppliers is getting paid. (2) The Chernobyl nuclear disaster, which took place on 26 April 1986 in the Ukranian SSR, wiped out the Polish dairy industry. Casein prices rose and isolates filled part of the void. (3) Worldwide, the price of nonfat dry milk (NFDM) and casein has been very high since about 1986 due to short supplies. Casein has traditionally been more expensive than isolated soy protein, in part because it is more functional (it melts and binds water well) and most people like the taste better. Within a period of several years, the price of casein rose from $0.90/lb to $2.50/lb. Egg protein costs $4 to $5 per pound. All of these things helped the U.S. isolate industry. In the U.S. the main problem is the obnoxious meat labelling requirements. For example, if isolates are injected into ham, it must be sold as "Smoked pork ham with soy protein isolate product." The labeling problems are caused in part by the fact that USDA is staffed largely by veterinarians.

The main applications for soy protein isolates in America are in infant formulas (roughly 50% of the total), muscle powders (35%), diet beverages that are supposed to suppress appetite, and other (health food candy bars, etc., 15%). The use of isolates in meat products is very small.

Most isolates are not very bland and not very functional. PTI's are more bland than ADM's. The bulk of Clyde's isolate sales are for muscle powders, which are used to make shakes. The only isolate thick enough to work in a shake is the one with the most sodium proteinates, which has the poorest flavor.

Even textured soy flour (TSF/TVP) has not been very successful in food uses; Clyde sells several million pounds a year of it, but the industry is very sleepy. It is used mostly in spicy Mexican foods (mainly burritos, to add chunky texture), and pizza toppings (since labeling is not a problem). It is used in school lunch programs and by the military in meatloaf and braised beef. Seventh-day Adventist food companies buy quite a bit and repackage it. By far the biggest use of TSF is in pet foods. In California, what is commonly called the "Brigg's Amendment" (Food, Drug and Cosmetic Law, California code, Article 7, Section 26595-26599, "Hamburger and imitation hamburger," became effective in July 1974), effectively prevents the use of TSP in hamburger, even in restaurants. Ground beef or hamburger containing any extenders (such as TSP), binders, or added water must be called "imitation hamburger." If imitation hamburger is sold or served in a restaurant, a list of its ingredients must appear on the menu. Mr. Briggs, a state legislator from Orange County, had a friend with some

hamburger stands. This law is enforced, in practice, only with respect to hamburger patties, and especially when the price of hamburger rises; 80-85% of all ground beef is sold in the form of patties. It is not enforced when the ground beef is "cooked in a recipe" as in spaghetti sauce, taco filling, meat loaf, and sloppy joe mix. In these cases regulators do not enforce the law that requires the product to be called "imitation hamburger" if bread crumbs, rolled oats, or a soy protein product are added.

Concerning ADM's Veggie Burger, there are 4 kinds that come in dry form: Herbs & Spices Style, Curry, Meat-Style, and Gyros-Style. They were introduced about 4 years ago. ADM also makes pre-cooked, frozen patties.

Soy flour has two main applications: (1) As a replacer for non-fat dry milk (NFDM), usually sold mixed with whey and used in baked goods. Kraft makes one popular brand. (2) In calf milk replacers (CMR). Calva in Modesto makes lots of CMR using soy flour; not much soy protein concentrate is used in CMR. The key consideration is the "per pound protein basis." Meat protein costs $6/lb and soy flour protein costs $0.35/lb. Labeling regulations are the main barrier to more widespread use. Not much NFDM is used in breads today in America. Soy flour is more expensive than wheat flour, but it holds more water, and slows staling–two major sales points. Address: Basic Foods Co., 1211 E. Olympic Blvd. #204, Los Angeles, California 90021. Phone: 213-623-6686.

6015. Yu, Angie Elinon Yu. 1990. Re: Cherry Food Industry, APY Food Processing, and promoting tofu in the Philippines. Letter to William and Akiko Shurtleff at Soyfoods Center, Nov. 14. 2 p.

• ***Summary:*** "Sometime in the late 70's, you visited my parents-in-laws Tofu factory, then known as Cherry Food Industry here in the Philippines. I am married to their second, Jerry Joseph.

"The tofu business of my parents-in-law is still active but now registered under a new name, APY Food Processing, but located in the same address (74 Speaker Perez St., Santa Mesa Heights, Metro Manila). The plastic container of the Nippon Tofu (silken tofu), however, still carries the old name."

She and her husband operate a computer services firm. One of their business clients is Shoemart, a big chain of supermarkets, which is selling Nippon Tofu and other tofu products made by APT Food Processing. Shoemart has asked Angie and her husband to operate a portion of their Gourmet Shop (which presently has a salad bar and a Japanese sushi bar) located in the middle of their newest supermarket. They have agreed to do this

"I personally feel that the level of market awareness of what tofu really is, is relatively low. I have always suggested to my in-laws to invest in educating the market about it since five years ago. However not much has been done. By presenting our products in this Gourmet Shop we have found a vehicle to do exactly this."

She asks Shurtleff for ideas on promoting the use of tofu, and for updated materials. And she invites him to visit them any time.

"Our store will start operating on November 28 of this year. All information materials that I release to the public will be based on your Book of Tofu (1979). I bought a copy of it when I was in your country (New York) in 1988. I learned from my husband that you gave his parents an autographed original copy of the same book." Address: Elinon Yu EDP Services, International Corporation, 61 West Capitol Drive Bo, Kapitolyo, Pasig, Metro Manila, Philippines. Phone: 631-9451.

6016. *SoyaScan Notes.* 1990. How many bushels of soybeans per month are used by various American West Coast tofu and soymilk manufacturers (Overview). Nov. 28. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** The following are ranked in descending order of bushels of soybeans used per month: House Foods & Yamauchi Inc. 12,000 (Los Angeles. This includes soybeans used to make soymilk for Westbrae's Ah Soy in 225 ml foil pouches), Azumaya 3,567 (San Francisco; buys from Minnesota in 60 lb bags. Uses 300 tons/month), Pacific Foods 2,250 (Tualatin, Oregon. This includes soymilk used to make Westbrae Aseptic WestSoy Lite), Quong Hop & Co. 2,000 (South San Francisco), Wy Ky 1,563 (Los Angeles), Wo Chong Co. 1,167 (San Francisco), Mighty Soy 1,117 (Los Angeles), American Foods 733 (Alhambra, California), San Diego Soy Dairy 467 (El Cajon, CA), Clearway Soy Foods 67 (Corralitos, CA), Fuji Fresh Tofu 50 (San Jose, CA), San Jose Tofu 50, Fresno Tofu 33 (Fresno, CA).

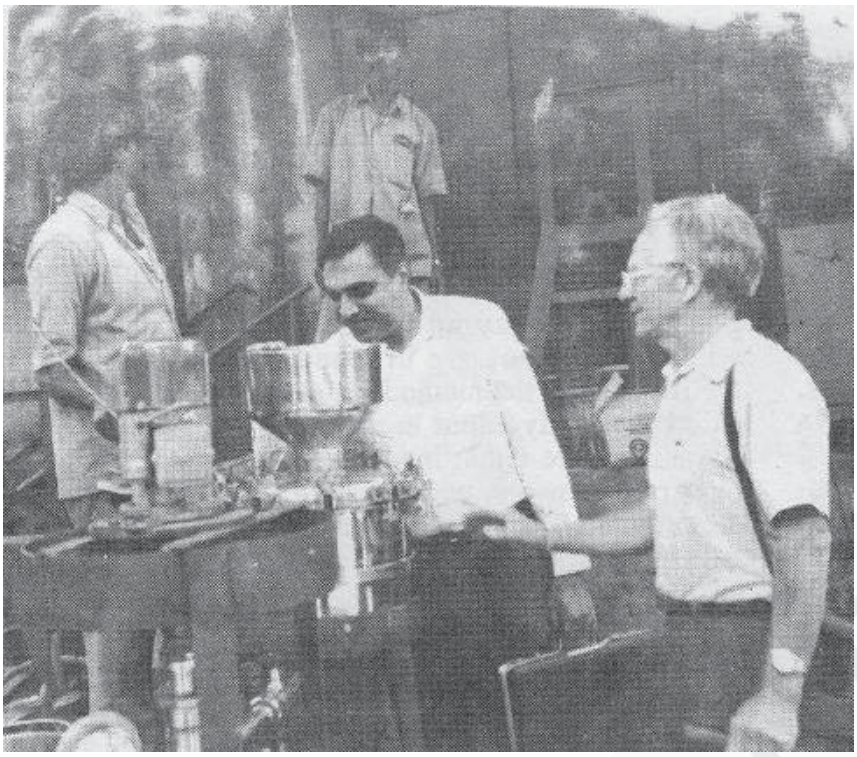
6017. *Child Haven International* (*Newsletter, Maxville, Ontario, Canada*). 1990. CIDA grant for soya milk. Fall. p. 3.

• ***Summary:*** "CIDA (Canadian International Development Agency) has approved in principle a matching grant to Child Haven for our Soya Milk Program. While waiting for the CIDA decision, we thought the program was so important we should go ahead regardless, and our first soya milk machine is ready. A Bombay factory manufactured one, which is being installed at our Hyderabad Home by a factory technician who will stay a week to make sure it is working well.

"Bouquets to the Ottawa Committee that worked hard on the CIDA presentation: Hart Jansson, Arjun Patil, Jaya Subramaniam, Hema Raman, Raj Gupta.

"Groups of women are keenly interested to form soya milk co-operatives. The process was invented by Ottawa scientist Raj Gupta, of Pro Soya Foods (see next page)."

Photos show: (1) "Raj Gupta and Volunteer Ted Draper of Toronto inspect 'soya cow' at Bombay factory."



(2) "Finished soya milk going through filter into pail." A complete SoyaCow machine is visible in each photo.

Note 1. This is the earliest document seen (July 2013) that mentions "Child Haven International" in connection with soy, with soymilk, or with Raj Gupta. The SoyaCow is not mentioned.

Note 2. In the upper right corner of the front page of each issue of this newsletter is a prominent round illustration of Mahatma Gandhi. Fred Cappuccino wrote this newsletter. The name of the organization from the very beginning was "Child Haven International." Address: RR 1, Maxville, ON K0C 1T0 Canada. Phone: 613-527-2829.

6018. *Child Haven International* (*Newsletter, Maxville, Ontario, Canada*). 1990. An affordable soya milk technology: High quality soya milk production equipment for any budget. Fall. p. 4.

• ***Summary:*** Note: This appears to be a reprint of a leaflet (8½ by 11 inches) from "PSF-SC20-C / November 1990"–probably written by Raj Gupta and first published by ProSoya Foods International.

"ProSoya recently completed the development of equipment capable of making non-beany tasting soya-milk in 20 L [litre] batches every 30 minutes. The table top size equipment, developed for *Child Haven* for their operation in India, can use almost any source of electricity and heat. It is ideally suited for schools, hospitals, and other institutions, cottage industry, and second generation soymilk and tofu product manufacturers. *Child Haven* plans to buy several such units under a CIDA project.

"The equipment, dubbed SoyaCow-20, has three components: an airless grinder, a scraped surface pressure cooker [15 psi pressure], and a filter press." The process is described.

A table in the middle of the publication compares the four methods for making soya milk: Traditional cold grind, hot grind (Cornell Univ.), hot blanch (Univ. of Illinois), and Canadian airless cold grind (patented by ProSoya). They are compared on the following variables: (1) Soya beans (whole or dehulled). (2) Processing chemicals (none, sodium bicarbonate, or hydrochloric acid). (3) Steeping (soaking) of soybeans (yes, no, or blanch). (4) Grind (hot, cold, or airless). (5) Cook then filter vs. filter then cook. (6) Soya milk solids (mostly dissolved or suspended). (7) Colour & taste. (8) Flavouring (Very difficult to easy). (9) Mouthfeel (smooth vs. chalky). (10) Protein yield (%). (11) Basic plant cost (low to high).

The Canadian system is shown to have several advantages, incl. low cost, good flavour, high protein yield, high level of dissolved solids, smooth mouthfeel, etc.

An illustration (line drawing) shows an Indian woman operating the "Soya-Cow-20."

"For more information, contact ProSoya Foods International, Inc., 627 Gaines Drive [the home of Raj and Rashmi Gupta], Ottawa, Canada K1J 7W7. Telephone 613 / 745-9115. Fax 613 / 744-3548. Or Raylons Metal Works, Ramkrishna Mandir Marg, J.B. Nagar, Andheri (East), Bombay, India 400 059. Telephone 022 / 632-3288."

Note 1. This is the earliest document seen (Oct. 2010) that mentions the "SoyaCow" or the "SoyaCow-20."

Note 2. The leaflet is apparently referring to the first SoyaCow (an SC-20) which was made in Bombay, India, according to designs by and supervision from Raj Gupta and ProSoya Foods International.

6019. Kalemi, Petraq T. 1990. Soja [Soya]. Albania: Shtëpia Botuese–8 Nentori. 139 p. Nov. Illust. 18 cm. [2 ref. Alb]

• ***Summary:*** Contents: Introduction (p. 3). 1. Significance of soya for Albania's economy (p. 5). 2. A brief history of soya (p. 8). 3. The use of soya in industry and other sectors of the economy (p. 10). 4. Special botanical features of the soybean (p. 25). 5. Biological features of the soybean (p. 42). 6. Soybean physiology (p. 49). 7. The growth process and metabolism (p. 62). 8. Soybean selection (p. 80). 9. Soybean cultivation technology (p. 98). 10. Soybean diseases and pests (p. 113). 11. The most significant soybean cultivars presently grown in Albania (p. 129).

Chapter 2, "A brief history of soya," does not say when the soybean first arrived in Albania or when it was first cultivated there. It notes that "it has been about 15 years that great scientific work [on soybeans] has been done in our country" (i.e., since about 1975). In 1987 soy milk was first produced in Albania to feed cattle (calves?).

Chapter 11 states that the most important cultivars presently grown in Albania are: Weber, Giada, Uells (Wells), Evans, Azurra, Hodson, Hark, UxF-90, Vnimk, Violet, Rampazh, Florida, Vatvorth (Wattworth), Depimore, Rendodora-627, Azurra nos. 2 and 3, Por, Inota, Adagg, Fiska-47A, Oka, Ada-66, BR-66, etc. Address: Albania.

6020. **Product Name:** Chocoya (Chocolate Soymilk), and Natura (Natural Soymilk) [Original, Strawberry, or Vanilla].
Manufacturer's Name: Nutrisoya, Inc.
Manufacturer's Address: 4050 Pinard, St.-Hyacinthe, QUE, J2S 8K4, Canada. Phone: 514-796-4261.
Date of Introduction: 1990. November.
Wt/Vol., Packaging, Price: Natura: 250 ml and 1 liter Tetra Brik Aseptic cartons; Chocoya: 250 ml Tetra Brik Aseptic cartons.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet from Quebec Government House in New York City. 1990. Oct. 15. This new line of natural soy beverages will be displayed at Booth #1346 at the Natural Foods Expo East in Philadelphia, Nov. 2-4. Contact: Mr. Giles Goulet.

Talk with Giles Goulet of Nutrisoya. 1990. Oct. 19. This company started making soyfoods in Oct. 1988, when they introduced tofu. Their next products will be the two soymilk products listed above, which will be launched in Canada in early November. The company has a large, modern plant. Chocoya, to be sold to the mass market, tastes as good as dairy milk. Natur-A, which comes in 3 flavors, is a purely natural soymilk, to be sold in natural stores. They use some (but not all) organic soybeans for the Natur-A. They grow their own soybeans on their own land. He is NOT a co-author (with main author J. Delisle) of the 1985 article titled "Nutritive value of soybean, rapeseed, and wheat proteins,..."

Ad in Natural Foods Merchandiser. 1990. Nov. "Rediscover a healthy drinking pleasure." Shows color photos of Chocoya and Natura (note spelling). Both are in French.

Talk with Johnathan Shore of Outremont, Quebec. 1994. Aug. 9. Natura is a Canadian soymilk product made in a government complex in St. Hyacinthe. It is made with added oil and honey, and sold in a Tetra Pak carton. It is marketed as a low-end (less expensive) product.

Update: 1995. May 15. Nick Feldman is president of the company (see 1995 interview). They are dependent to a significant degree on a government grant for their financial survival.

Update: As of Jan. 1998 their strawberry soymilk is still sold in New York City.

6021. **Product Name:** Surata Soy [Organic Original, or Honey-Vanilla].
Manufacturer's Name: Surata Soyfoods.
Manufacturer's Address: 302 Blair Blvd., Eugene, OR 97402. Phone: 503-343-8434.
Date of Introduction: 1990. November.
Ingredients: Honey-Vanilla: Organic soybeans, water, honey, vanilla. Original: Organic soybeans, water.
Wt/Vol., Packaging, Price: Bulk, or 1 pint retail plastic bottles.
How Stored: Refrigerated.

New Product–Documentation: Talk with Shevah Lambert. 1991. Jan. 15. This soymilk product was launched in Nov. 1990 in both bulk and retail bottles. The retail packs were temporarily discontinued, but will be back on the market in about April 1991. Labels sent by Shevah Lambert. 1991. Jan. 16. 1.5 by 4 inches. Magenta or dark blue on beige. Self adhesive. One label goes on the front of each bottle. The front label reads: "An Oregon cooperative." The back label reads: "Shake well. Keep refrigerated. Please recycle this container. Do not use as baby formula." UPC indicia.

6022. Takai Seisaku-sho. 1990. Modern soymilk plant: Makes delicious dairylike soymilk with no beany flavor. 1-1 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan. 4 pages. Nov. Catalog. With 1-page color insert. 30 cm. [Eng]
• ***Summary:*** Page 2 is a flow chart of the modern soymilk

production process. Page 3 shows modern soymilk plant layouts, floor plans, and specifications. The color insert, which is titled "Modern soymilk plant: Makes delicious dairylike soymilk with off-beany flavor," is printed on both sides. The front shows 3 packaged soymilk products: Ah Soy, Hai-Meeru Soyalac (Made by San-iku Foods in Japan), and Soya Bean Milk (made by Guilin Sweets and Food Factory, Guangxi, China). Companies that make soymilk using Takai equipment include: Chung's Foods and Nam Yang Industries in Korea. Jinan Huifeng Bean Milk Product Factory in China. "One of our plants makes 1,000 liters of 5,000 x 200 ml packs of soymilk; another makes 10,000 or 20,000 packs of soymilk per hour. EMUL is a healthy soy-based frozen dessert. Contact Takai for an EMUL production plant." On the back is a plant layout. Address: Kanazawa, Ishikawa-ken, Japan. Phone: 0762-48-1355.

6023. Wicki, Maja. 1990. Sie hat das Soja in die Molkerei gebracht: Portraet der Biologin, Erfinderin und Geschaeftsfrau Suzanne Baroï de Stoutz [She has brought soya into the dairies: Portrait of biologist, inventor, and businesswoman Suzanne Baroï de Stoutz]. *Tages Anzeiger* (*Zurich, Switzerland*). Dec. 15. [Ger]
• ***Summary:*** A photo shows this 52-year-old woman from Geneva who won the Branco-Weiss prize for her achievements. In one of the suburbs of Lagos, the capital of Nigeria, stands the soymilk factory Farina. It was officially opened in the summer of 1990, but it has been in operation since the beginning of the year. Address: Switzerland.

6024. *SoyaScan Notes.* 1990. Europe's 20 largest tofu and soymilk companies (Overview). Dec. 23. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** The following summary is a combination of information from two sources: First, numerous interviews conducted by William Shurtleff of Soyfoods Center during 1990. And second, informed estimates by one of Europe's most knowledgeable soyfoods industry insiders. We give the ranking, company name, country, products (Tofu, Milk = Soymilk, Other), and number of metric tons of soybeans used per month.

1. Alpro. Belgium. Milk. Unknown.
2. Sojinal. France, Milk & Other. 417.
3. Heuschen-Schrouff. Netherlands. Tofu. 200.
4. DE-VAU-GE. Germany. Milk & Tofu. 100.
5. Aros Sojaprodukter. Sweden. Tofu, Milk & Other. 92.2.
6. Unisoy. England. Milk. 47.0.
7. Soya Health Foods. England, Milk. 45.0.
8. Soyana. Switzerland. Tofu & Milk. 32.0.
9. Société Soy. France. Tofu & Milk. 30.0.
10. Cauldron Foods. England. Tofu. 20.0.
11. Haldane Foods/Regular Tofu Co. England. Tofu & Milk. 10.9.
12. Galactina. Switzerland. Tofu, Milk & Other. 10.0.
13. Soyastern / Dorstener Tofu. Germany. Tofu. 9.3.
14. Dragon & Phoenix. England. Tofu. 8.0.
15. Jonathan P.V.B.A. / Lima Foods. Belgium. Tofu. 6.0.
16. Triballat. France. Milk & Other. 5.6.
17. Innoval. France. Milk. 5.6.

Crivellaro. Italy. Milk. 5.6.
Plamil. England. Milk. 5.6.
Paul's Tofu. England. Tofu. 4.7.

6025. Kubota, Brad. 1990. A history of tofu in Fresno and surrounding towns (Interview). *SoyaScan Notes.* Nov. 28 and Dec. 4. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The following information is based on Brad's personal recollections and interviews he conducted with various Japanese-American old-timers in Fresno. Brad now owns and runs Fresno Tofu Co. The lineage of his company is as follows:

He has heard from many people that there were two tofu shops in Fresno before World War II, but one went out of business. Also before World War II there was a company in Fresno named Tokubo Tofu, run by a Mr. Tokubo. Mr. Tokubo is said to have brought his company to Fresno from the countryside (from Fowler?) and it is not clear if he was part of the Fresno Tofu Company lineage or to whom he sold the company.

Mr. Sasaki may have owned a tofu company that was an early member of the Fresno Tofu Co. lineage. He sold it to Mr. Fukamoto, who renamed it Fukamoto Tofu.

Mr. Fukamoto sold his shop to Mr. Joe Hashimoto (a nisei or second generation Japanese American, who still lives in Fresno), who renamed the company Hashimoto Tofu in about 1947.

Joe Hashimoto sold his company to a Dr. Wilkinson, a Caucasian/American, who moved it away from Fresno, out into the country. He discontinued production of tofu, but started to make a type of soy cheese and soymilk. Dr. Wilkinson is no longer living.

It was probably Mr. Hashimoto who sold his company in about 1970 to Mr. Tokubo or David Goto, who renamed it Star Tofu Shop. David asked his younger brother, Nagaki, to come to America from Japan to help him make tofu. After a while, Nagaki took over the company. David left the business and started farming. Nagaki Goto renamed the company Goto Bean Factory in 1975.

Nagaki Goto sold his company to Brad Kubota, who renamed it Fresno Tofu Co. in Nov. 1982. Brad started by making the same two tofu products that Mr. Goto had made, medium-firm Japanese-style momen tofu, and agé (deep-fried tofu pouches).

After World War II there were at least two other tofu companies in Fresno: Nagahama Tofu, and Yokota Tofu-ya (which was in business in 1922). Before World War II there were at least two tofu companies in Fowler, California

(located about 10 miles southeast of Fresno): Soga Tofu and Harada Tofu. Mr. Hashimoto says that after the war, Mr. Tokubo also used have his tofu shop there in Fowler, whence he moved it to Fresno. In Dinuba (pronounced dai-NU-bah, and located about 30 miles southeast of Fresno) a tofu shop named Nii-Tofu was in business after World War II. Address: Fresno Tofu Co., Fresno, California.

6026. *SoyaScan Notes.* 1990. Soymilk and dairy milk prices in California, December 1990 (Overview). Dec. 28. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** At Berkeley Natural Grocery Co., a large natural food store at 1336 Gilman St. in Berkeley, California, unflavored (plain or original) soymilk made from organically grown soybeans retails for the following prices: Edensoy liter $1.69 (which is the equivalent of $1.60/quart), Vitasoy liter $1.79 ($1.69/qt), Pacific Soy Beverage quart $1.77, Westsoy liter $2.04 ($1.93/qt), Westsoy Lite liter $2.09 ($1.98/qt). Bob Gerner, the owner of Berkeley Natural Grocery Co., says that the last two products are more expensive because he buys them in small quantities. The average price of the quart equivalents of the first 3 products is $1.69 a quart. This is 4.6% lower than in Dec. 1988.

A quart of cow's milk (fortified with vitamins A and D) sells for the following prices at Safeway supermarkets: whole $0.67, low-fat (2% fat; protein fortified) $0.66, extra light (1% fat; protein fortified) $0.65, nonfat $0.62. The best-seller among these is extra light, which was introduced this year; low-fat was the best-seller last year. Thus soymilk in a liter or quart pack is 2.6 times as expensive as extra light dairy milk per unit volume. In Oct. 1987, after most soymilk brands were available in liter or quart sizes, soymilk was 3.42 times as expensive as dairy milk. This is a 24% drop in the price of soymilk relative to that of cow's milk over a period of about 3 years.

6027. Cederquist, Natalie; Levin, James. 1990. A vegetarians ecstasy: A healthy gourmet celebration of over 250 no cholesterol, no dairy, lowfat recipes devoted to long life and good taste. Glo, Inc., 2406 Fifth Ave., San Diego, CA 92101. 332 p. Dec. Illust. by Natalie Cederquist. Index. 28 cm. [13 ref]
• ***Summary:*** In this is innovative vegan cookbook, each recipe occupies 1 page and is accompanied by an illustration (line drawing). The glossary of ingredients mentions liquid aminos, miso, seitan, seaweeds, tamari, tempeh, and tofu. Page 28 is devoted to singing the praises of soy products. "Dairyless and eggless: With optimum health in mind, I have chosen to use soy products and egg replacer rather than dairy and eggs. Dairy is mucus forming, it contains cholesterol, fat and hormones, in addition to the pesticides and antibiotics used in the farming and dairy industry.

"Soy and seed cheeses, soy yogurts, soy cream cheese, soy sour cream, soy and rice based ice creams are delicious non-dairy products in the natural markets for you to try which are cholesterol free and low in fat."

The book contains 28 recipes for tofu, and 12 for tempeh. Other interesting recipes are: Sprouted soy salad (with 3 cups soy sprouts steamed for 3 minutes, p. 76). Orange miso dressing (p. 99). Miso soup (p. 162). Miso sesame rice (p. 206). Aduki bean and brown rice pot (p. 212). Féjoada (with soy sausages, p. 213). Mushroom seitan in wine sauce with wild rice (p. 241). Seitan sauté (p. 267). Amazake carob pudding (p. 290). Address: 2. M.D., San Diego, California. Phone: 1-800-854-2587.

6028. Dacosta, Yves. 1990. Lait de soja et tofu [Soymilk and tofu]. APRIA/CDIUPA, 1 avenue des Olympiades, 91300 Massy, France. 102 p. Dec. No index. 30 cm. Series: Actualités Scientifiques et Techniques en Industries Agro-Alimentaires. No. 45. [85 ref. Fre]
• ***Summary:*** Contents: Preliminary remarks. 1. Production of soymilk and tofu: Principles of production, the soybeans, cleaning/washing, soaking, grinding, cooking the slurry (*bouillie*), extraction of the soymilk, coagulation, separation of curds and whey, pressing the curds, removal of the tofu from the mold, cutting and packing the tofu, the need for water in a tofu ship, variations in production, storage and preservation of soymilk and tofu after their production, yuba, production of tofu from seeds other than soybeans.

2. Applications/uses of soymilk and tofu: Products: Soymilk and soymilk products (soymilk, sweetened soy beverages, dairylike soymilks, soy-based infant formulas, powdered soymilk, concentrated soymilks, soymilk mixed with other animal or vegetable milks, soy ice creams and frozen desserts, fermented soymilk products such as soy yogurt, various soymilk desserts [such as custards], sauces, dressings, and mayonnaises made from soymilk), tofu and tofu products (smoked tofu, fried tofu [*tofu frit*], marinated tofu, fermented tofu, breaded tofu, tofu mayonnaise and sauces, tofu spreads for bread, tofu sausages, pâtés, or biscuits/pancakes [galettes], tofu quenelles, quiches, fritters, raviolis, pizzas, mixed salads, prepared dishes (*plats cuisinés*), or sandwiches, tofu cakes, cheesecakes, or tarts, tofu desserts, ice creams, or chocolate bars), preparations based on okara (sausages, pâtés, croquettes, burgers, special breads or biscuits), the nutritional arguments for soymilk and tofu (rich in proteins, lipids, absence of cholesterol and lactose, low in sodium, an excellent ingredient in "light foods" [aliments allegés]).

3. A quick look at the major enterprises making and or selling soymilk, tofu, or their products in selected countries: France (Cacoja, Innoval, Soy [Société Soy], Sojadoc, Triballat, Celia, Celnat, Lima-Andiran, Maho Distribution, France-Proteines-Services), Great Britain (Plamil Foods Ltd., Itona Products Ltd., Soya Health Foods Ltd., British Arkady Co. Ltd. [subsidiary of ADM; incl. Haldane Foods Ltd., Regular Tofu Co., Tofeata Tofu], Granose Foods Ltd.,

Cauldron Foods, Dragon and Phoenix, Paul Jones (Tofu Shop), Full of Beans Soyfoods, Birchwood Health Products, White Waves, The Bean Machine Co-op Ltd., St. Ivel, St. Giles Foods Ltd., Yu's Tofu Shop, Tousoy Ltd., Allied Foods Ice Cream Co., Nexus Foods, Vegetarian Feasts, Unisoy Milk and By-Products Ltd.), Germany (DE-VAU-GE Gesundkostwerk GmbH, Soyastern Naturkost GmbH, Nuxo-Werke Rothfritz), Netherlands (Heuschen-Schrouff, Linn Oriental Products, Solnuts B.V., Manna Natuurvoeding), Belgium (Alpro, Jonathan P.V.B.A., Lima Foods, De Hobbit, Seven Arrows), Switzerland (Conserves Estavayer S.A., Soyana, Galactina), Sweden (Trensums Musteri, Aros Sojaprodukter), Italy (Crivellaro), Spain (Zuaitzo), USA, Japan, Hong Kong, Taiwan, Singapore. Bibliography.

Note: A great deal of the information in this report is taken, without permission or adequate citation, from books published by the Soyfoods Center in California. The statistics and dates given for the European, American, and Asian markets are taken almost completely from Soyfoods Center books. In some cases where the author relied on these books published more than 2 years ago, the information is presented as if it were current, whereas it is actually out of date and no longer correct. Dacosta's book, which might be called a "review of the literature," contains little or no new information. However his bibliography, based largely on a search of the CDIUPA database, with some original references, is quite good.

APRIA stands for Association pour la Promotion Industrie Agricole. APRIA administers CDIUPA. Address: Conseiller d'Entreprises, France: 47, rue Guersant–7015 Paris, France.

6029. Kawanishi Shoko Co., Ltd. 1990. Kenkô ichiban. Yappari tôfu [1991 calendar. Health first. Of course, tofu]. Yokohama, Japan. 6 p. 58 x 39 cm. [Jap]
• ***Summary:*** The top half of the cover and of each page shows a color photo of prepared tofu dishes. On the bottom half is two months of the year. Across the bottom is the company name. Below that: "Tofu & soymilk equipment." And below that the address of the Japanese headquarters and USA branch office, with phone and fax numbers for each. Address: 1. Japan: 340 Kuden-cho, Sakae-ku, Yokohama. 2. USA: 3499 E. Pico Blvd., Los Angeles, California 90023. Phone: (045) 892-5547 (Jap); (213) 780-8166 (USA).

6030. Loison, Marianne. 1990. Le débarquement des soyfoods [The invasion of soyfoods]. *Management et Technologies Alimentaires* No. 9. Dec. [Fre]

6031. Sangster, Dorothy. 1990. The little family that grew and grew. *Chatelaine magazine* (*Canada*). Dec.
• ***Summary:*** This full, touching story, with color photos, is on the Child Haven International website (Nov. 2010) at http:// www.childhaven.ca/ capps.htm.

6032. Shurtleff, William; Aoyagi, Akiko. 1990. Tofu & soymilk production. 2nd ed. Lafayette, California: Soyfoods Center. 336 p. Illust. by Akiko Aoyagi Shurtleff. Index. Dec. 11. 28 cm. [223 ref]
• ***Summary:*** Contains many new advertisements, plus changes on the copyright page, on page 14 (Soyfoods Association in now located at Bar Harbor, Maine), and rear cover of both paperback and hardcover editions (new ISBN for each). Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

6033. *SoyaFoods* (*ASA, Europe*). 1990. New easy opening for Tetrapak. 1(2):3. Autumn/Winter.
• ***Summary:*** "A new easy opening pull-tab for the Tetra Brik Aseptic one litre carton is being test marketed in the UK. The carton makes use of two openings to ensure easy pouring and opening. The one for pouring features a plastic lip and the other as an air vent. To ensure the integrity of the aseptic seal, the pull-tab is in the form of a plastic and aluminium tear-strip. This type of pull-tab follows on from a similar device developed for portion packs but which only have one hole. Two holes are required for larger packs because of spillage problems when opening."

6034. Syntex Corp. 1990. Press backgrounder: Infant formula. 3401 Hillview Ave., P.O. Box 10850, Palo Alto, CA 94303. 2 p. Dec. Unpublished manuscript. [1 ref]
• ***Summary:*** "In 1967 The Borden Company developed Neo-Mull-Soy and Cho-Free, highly specialized infant feeding formulas designed for children who were allergic to milk products, or in the case of Cho-Free, to carbohydrates.

"In 1971 Syntex acquired the Neo-Mull-Soy and Cho-Free infant formula products [from Borden]. The acquisition included a primary manufacturing facility at Elgin, Illinois.

"In March-April 1978 Syntex ceased adding salt (sodium chloride) to the products out of concern that the sodium levels were too high and in the belief that adequate levels of essential nutrients were provided through other ingredients contained in the formulas. The company was mistaken.

"In July-August 1979 Syntex learned of an illness alleged to be related to the use of Neo-Mull-Soy and Cho-Free. Within days we notified pediatricians nationwide. The company determined that the products were low in chloride and promptly convened a panel of outstanding independent experts to review the reports and recommend corrective action.

"Within one week of discovering the chloride deficiency, Syntex initiated a voluntary recall of all Neo-Mull-Soy and Cho-Free products. The recall was a major effort involving first-class mailings to more than 100,000 physicians and pediatric nurses, mailgrams, nationally released media statements, and personal visits by Syntex representatives to

more than 26,000 stores. In total, nearly 8.5 million cans of the formulas were recalled and destroyed by Syntex.

"In Dec. 1979 the formulas were reformulated to assure adequate chloride levels and approved for marketing by the U.S. Food and Drug Administration.

"In Jan. 1980 the reformulated products were returned to market.

"In Dec. 1980 Syntex ceased production of infant formulas due to lack of demand. The company no longer manufactures any infant formula products.

"Syntex is very concerned with the health of children who used infant formulas which the company manufactured and marketed between April 1978 and August 1979. We deeply regret that for 16 months these formulas were made and sold with low levels of chloride, an essential nutrient. We are fully prepared to compensate children who suffered ill health because of insufficient chloride levels in these formulas.

"We intend, however, to defend ourselves vigorously against claims for alleged injuries or damages which were not caused by low chloride levels in the formulas, which we voluntarily recalled in 1979.

"We are pleased that we have not seen any substantial evidence that infants who used these formulas suffered long-term developmental problems. This was confirmed for children who used the chloride deficient formula but who did not develop metabolic alkalosis in a National Institutes of Health (NIH) study published in *Pediatrics* (October 1990). The NIH study of children using the chloride deficient formula and developing metabolic alkalosis has not been published.

"There is no doubt that many children who suffered metabolic alkalosis in 1978 or 1979 recovered quickly and suffered no permanent harm. This was documented by Dr. Stanley Hellerstein in an article published in *Pediatrics* (January 1985)." Address: Palo Alto, California. Phone: 415-855-5050.

6035. Taira, Harue. 1990. Quality of soybeans for processed foods in Japan. *JARQ* (*Japan Agricultural Research Quarterly*) 24(3):224-30. Dec. [7 ref. Eng]
• ***Summary:*** Contents: Abstract. Introduction. Quality for food processing: Tofu, miso, natto. Variation of bean quality and suitability for processing. Factors inducing variations in the chemical composition and suitabilities for processing.

Figures show: (1) Consumption of soybeans in Japan in 1988 (1,000 tonnes): Total: 4,663 tonnes. Oil and meal 77%. Food 19%. Other 4%. Food products: 886 tonnes. Tofu and abura-age 57%. Kori-tofu 3%. Miso 20%. Natto: 11%. Other 9%. Individual food products (* An additional 69,000 tonnes are consumed in the form of cooked whole soybeans, yuba, kinako, moyashi {sprouts}, and others). Tofu and abura-age 505 tonnes. IOM and other USA 83%. Japan 11%. China 6%. Kori-tofu 29 tonnes. IOM and other USA 72%. China 28%. Natto 100 tonnes. China 50%. USA and Canada 30%. Japan 20%. Miso 179 tonnes. China 86%. Japan 11%. IOM 3%. Soy sauce: Defatted soybean flakes 183 tonnes (97%) and whole soybeans 5 tonnes (3%).

(2) Frequency distribution of solid matter extractability in soybean milk (105 samples; 60 cultivars and 7 lines)–for varieties Enrei, Fukuyutaka, Akishirome, Akiyoshi, Tamahomare, Fujimijiro, Hyuuga, Shirosenari. Average value of U.S. soybeans. Mode: 79%. Range 70-82%.

(3) Correlation between protein and sucrose content in soybeans. Inversely correlated. The more protein, the less sucrose. (4) Correlation between hardness of steamed seeds and ammonia nitrogen content in natto. Directly correlated. The harder the steamed seeds, the more ammonia nitrogen in the finished natto.

(5) Variation in chemical composition and suitabilities of soybeans for processing: Raw soybeans for processing, soybean milk for tofu, steamed seeds for miso, natto, cooked soybeans.

Tables: (1) Relationship between soybeans and processed foods in raw soybeans, soybean milk, and steamed seeds. (2) Chemical composition and suitability of soybeans from USA, China, and Japan for processing into tofu, miso, natto, cooked soybeans. Varieties: Enrei, Fukuyutaka, IOM (USA; low protein, high oil), Tamahomare, Kitamusume, Miyagishirome (large seeded), Nattoshoryu (small seeded), Chinese (low protein, high carbohydrate). Address: Dep. of Utilization, National Food Research Inst., Ministry of Agriculture & Forestry, Koto-ku, Tokyo.

6036. Vitasoy (USA) Inc. 1990. Vitasoy... Celebrating 50 years of healthy growth (Ad). *Vegetarian Times.* Dec. p. 83.
• ***Summary:*** "Since 1979, Vitasoy, packaged in convenient Tetra Pak cartons, has achieved international distribution to over 20 countries.

"Going into its 50th year, Vitasoy has moved into a new $20 million plant in Hong Kong equipped with state-of-the-art processing and packaging equipment for a daily capacity of 1.2 million units. Vitasoy now employs over 1,000 people. It has total annual sales of 300 million units with total sales revenue of over $100 million.

"Vitasoy (U.S.A.) Inc. was formed in 1979 to serve as the marketing arm of the Hong Kong headquarters. The full line of Vitasoy Tetra Pak products was brought into North America in 1980. A new formulation, made with organic soybeans and other wholesome ingredients, was introduced in 1984.

"For 50 years Vitasoy has been the world's favorite soymilk–because great ideas just naturally last a long time." Address: Brisbane, California.

6037. **Product Name:** [Soja Harmoniques: Soja Delights with Basmati Rice in Curry Sauce].
Foreign Name: Soja Harmoniques: Delice au Soja au Riz

Basmati Sauce Curry.
Manufacturer's Name: Biosoja.
Manufacturer's Address: 10 rue Lavoisier, F 68 000 Colmar, France. Phone: 89 74 53 74.
Date of Introduction: 1990.
Ingredients: Basmati rice (33%). Soya Delight (23%): Concentrated soymilk (50%), egg white, non-hydrogenated palm oil, flour, salt, seasonings. Sauce: Water, modified starch, soymilk, salt, seasonings, sugar, curry (0.5%). The soybeans are organically grown.
Wt/Vol., Packaging, Price: 280 gm can.
New Product–Documentation: Spot in SoyaFoods. 1991. Spring. p. 5. "Ready meals from Biosoja." The company's existing range of Soyabean Delights includes Financière Sauce, Basmati Rice and Curry Sauce, and Tofu Ravioli.

SoyaFoods. 1992. Autumn. p. 7. "A profile of Sojinal." See Table 2. "Biosoja retail food products." Canned ready meals with less than 300 calories.

Label sent by Heather Paine of SoyaFoods in London. 1993. Nov. 3.

6038. Cantani, A.; Ferrara, M.; et al. 1990. Efficacy and safety of a soy-protein formula for feeding babies with atopic dermatitis and cow's milk hypersensitivity. *European Review for Medical & Pharmaceutical Science* 12:311-18. *
• ***Summary:*** Soy-based formulas are an effective substitute for cow's milk in infants with atopic dermatitis. Although soy allergies do exist, they may be less common than previously believed, partly because heat processing greatly reduces soy antigenicity.

6039. Dashiell, K.E.; Singh, S.R.; Nakayama, O.; Ogundipe, H.O.; Akem, C.N. 1990. Soybean research at IITA. Ibadan, Nigeria: International Institute of Tropical Agriculture. 19 p. *
• ***Summary:*** Note: One poorly cited publication from IITA this same year is: Nakayama, O.; Ogundipe, H.O.; Jegede, O.; Singh, S.R. 1990. Appropriate method to coagulate soybean milk using a commonly grown plant in West Africa *Calotropis procera*. Address: IITA, Ibadan, Nigeria.

6040. **Product Name:** [Tofu, and Soymilk].
Manufacturer's Name: Die Tofukueche Muenster.
Manufacturer's Address: Rinkerodeweg 6, D-4400 Muenster, West Germany. Phone: 0251-785902.
Date of Introduction: 1990.
New Product–Documentation: Letter from Bernd Drosihn of Viana Naturkost. 1990. April 8. This new soyfoods company, run by Heinz-Gerd Bruns, distributes only fresh tofu in water and fresh soymilk. A brochure is enclosed.

Brochure. 8.5 by 11 inches. 6 panels. Photocopied black on gray-green. The fresh tofu is made from organically grown soybeans grown in France. The company describes its work as "Production, distribution, direct sale (Herstellung, Vertrieb und Direktverkauf)." The tofu is made with nigari. Contains 8 tofu recipes.

6041. **Product Name:** [Fit & Active Vitalkost Soya Dessert (Vanilla)].
Foreign Name: Fit & Aktiv Vitalkost Soja-Dessert (Vanille).
Manufacturer's Name: Dr. Fischer GmbH.
Manufacturer's Address: Postfach 13 20 43, D-2000 Hamburg 13, West Germany.
Date of Introduction: 1990.
Ingredients: Water, soybeans, cane sugar, modified starch, fructose, thickener, natural- and identical to natural aromas, salt.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic carton. Capacity not given. Retails for DM 2.49.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Protein 3 gm, fat 3 gm, usable carbohydrates 13 gm, calories (kcal) 79 (335 kJoules).
New Product–Documentation: Label sent by Anthony Marrese. 1990. Dec. 12. 3.63 by 3.5 by 2.5 inches. Light green, dark green, yellow, and red on white. Illustration of a bowl of pudding next to green soybean leaves with 4 pods below them. "The alternative from plants. Made 100% from plants. Cholesterol free (Die pflanzliche Alternative. 100% pflanzlich. Cholesterinfrei)."

6042. Engel, G. 1990. Vergleich von Quark mit Sojaprodukten: Herstellung, Mikroflora, Zusammensetzung, Sensork [Comparison of quark with soy products: Production, microflora, composition, and organoleptic properties]. *Deutsche Milchwirtschaft* 41(38):1272-75. 7 tables. Also published in Kieler Milchtage, 1990. [24 ref. Ger]*
• ***Summary:*** Compares the quality and nutritive value of cow's milk and soymilk, and discusses criteria for evaluating the chemical, microbiological, and organoleptic quality of tofu, okara, miso, tempeh, sufu, and other soyfoods. Address: Bundesanstalt Milchforschung, Inst. Mikrobiologie, Kiel, Germany.

6043. **Product Name:** Uncle Soyo Soydrinks, Soy Yogurt, Soy Ice Cream.
Manufacturer's Name: Farina Ltd.
Manufacturer's Address: Lagos, Nigeria.
Date of Introduction: 1990.
Ingredients: Soybeans, water, flavor, sugar.
Wt/Vol., Packaging, Price: Soymilk: 60 ml PE pouch; Yogurt & ice cream: Cup.
How Stored: Soymilk and Soy yogurt: Refrigerated. Soy ice cream: Frozen.
New Product–Documentation: J.L. Voisin. 1995, Oct. 3-5. Dairy like soyfoods in Africa: Evolution & perspectives. Paper presented at the Third Bi-Annual SoyAfrica

Conference. 5 p. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by Aproma. Actimonde of Archamps, France, installed an Agrolactor (soymilk processing plant) at this company in 1990. This was the first commercial Agrolactor installed worldwide. Owned by a private Indian investor. After 3 extensions and an aggressive marketing policy, this company was selling more than 300,000 units per day of soydrinks (pouches), soy yogurt, and ice cream. After very good results and profitability, the plant has now been moved to India.

6044. **Product Name:** So Good Soycreem: Non-Dairy Cream Alternative.
Manufacturer's Name: Haldane Foods Ltd. (Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.
Manufacturer's Address: 25 Hayhill, Sileby Road, Barrow upon Soar, Leicestershire LE12 8LD, England.
Date of Introduction: 1990.
Ingredients: Organic soya milk, vegetable oils, corn syrup, emulsifier (vegetable mono-diglycerides), stabilisers (xanthan gum, locust bean gum, guar gum), natural colour (beta-carotene).
Wt/Vol., Packaging, Price: 120 gm plastic cup.
How Stored: Refrigerated.
Nutrition: Per 100 gm.: Energy 1827 Kjoules / 437 Kcal (calories), protein 3 gm, carbohydrate 12 gm, fat 36 gm (of which polyunsaturates 47%, and saturates 23%), sodium 0.1%.
New Product–Documentation: Label sent by Leah Leneman of Scotland. 1992. Jan. 2. 2.75 inch diameter foil cup lid and 2.5 inch high cup. Yellow, white, gold and light green on green. Illustrations of yellow daffodils and a butterfly on foil lid. Lid: "High in polyunsaturates. Low in saturates. Cholesterol free." Cup: "Soycreem is a new, cholesterol-free alternative to cream, made without animal fats or milk derivatives. Pour over desserts in the same way as fresh cream. (Not recommended for use in coffee.) Suitable for vegetarians and vegans."

Talk with Ray Pierce of Genice. 1994. Feb. 10. In 1990 chilled So Good Soycreem was launched as a non-dairy alternative to dairy double cream, but low in cholesterol, high in polyunsaturates, and low in saturates. It was made for Haldane in a little beige plastic pot with a green foil lid, packed at the Genice plant. It contains a trace of cholesterol because law requires that it contain 36% oil, including some palm oil. In 1991 a shelf-stable UHT version (completely sterilized, with a 9-month shelf life), now named Granose Soya Creem, was launched in a 225 ml Combibloc pack, made for Genice by a large dairy in Ireland which had Combibloc packaging equipment. The chilled So Good Soycreem was discontinued.

6045. **Product Name:** [Milksoy].
Foreign Name: Milksoy.
Manufacturer's Name: Indulac and Protein Technologies International.
Manufacturer's Address: Venezuela.
Date of Introduction: 1990.
Ingredients: Milk powder, Supro isolated soy protein.
New Product–Documentation: Ralston Purina Company. 1991. First Quarter Report to Shareholders: Three months ended Dec. 31, 1990. Feb. p. 9. The company has recently developed "a significant new food product in Venezuela–Milksoy. Milksoy combines high quality milk powder with our *Supro* brand isolated soy protein. The launch of Milksoy has successfully established a new alternative food product for the Venezuelan consumer, a product which delivers the taste and nutrition of milk, but at a more affordable price. Consumer satisfaction with Milksoy is reflected in the brand capturing a 20% market share of all milk consumed."

SoyaFoods. 1991. 2(2):7. "New milk for Venezuela." Milksoy has recently been launched by Indulac (Venezuela) with technical support from PTI. It is composed of 90% cow's milk. Though it has a taste and texture similar to that of cow's milk, it contains only two-thirds as much fat and costs 20% less than conventional powdered milk.

6046. **Product Name:** [Innosty Soya Dessert].
Foreign Name: Innosty.
Manufacturer's Name: Innoval S.A. Affiliate of Coopérative Agricole Silos de Valence.
Manufacturer's Address: Allée Joule, Zone Industrial (Z.I.) des Auréats, B.P. 1418, 26014 Valence Cédex, France. Phone: 75.41.41.50.
Date of Introduction: 1990.
New Product–Documentation: Form filled out by Gilles Charriere of Innoval. 1989. Nov. This product will be launched by Innoval during 1990.

6047. Klatzmann, R.; Laurent, B. 1990. Riches en protéines, pauvres en calcium [Rich in protein–low in calcium]. *Que Choisir* No. 257. p. 33-36. [Fre]*

6048. **Product Name:** [Bonsoy (Soymilk)].
Manufacturer's Name: Mimasa (Importer). Made in Japan by Marusan. Imported via Muso Shokuhin.
Manufacturer's Address: Mimasa, Spain.
Date of Introduction: 1990.
Ingredients: Water, soybeans, pearl barley, kombu (sea vegetable), barley malt.
New Product–Documentation: Talk with Yuko Okada. 1992. July 16. Muso first exported Bonsoy soymilk to Mimasa in Spain in about 1990.

6049. **Product Name:** Nature Soy Tofu (Soybean Curd), Tofa (Sweetened Soy Bean Curd Dessert), and Soya Bean Drink.
Manufacturer's Name: Parma Soia (Marketer-Distributor).

Made in Singapore by Yeo Hiap Seng Ltd.
Manufacturer's Address: Strada Logheretto 2, 43010 Corcagnano (Parma), Italy. Phone: 0521-639-148.
Date of Introduction: 1990.
Wt/Vol., Packaging, Price: 250 ml Tetra Brik Aseptic cartons.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Parma Soia brochure. 1990. Photo shows aseptic package. Talk with Xavier Karis in Italy. 1990. June 25. On the side of the drink is written: "Made in Singapore by Yeo Hiap Seng Ltd." The brand "Nature Soy" is written in large bold letters across the top of all three packages. The tofu package design is very similar to that used by Morinaga. On the front of the tofu and curd packages the product name and volume are written in Chinese characters. The front panel of the tofu package shows an entire cake of tofu in a cylindrical bowl. The curd package shows a Chinese-style bowl filled with curds. On the front of the drink package is an abstract pointillist design in the shape of 2 overlapping soybeans. The ingredients are listed in both French and English.

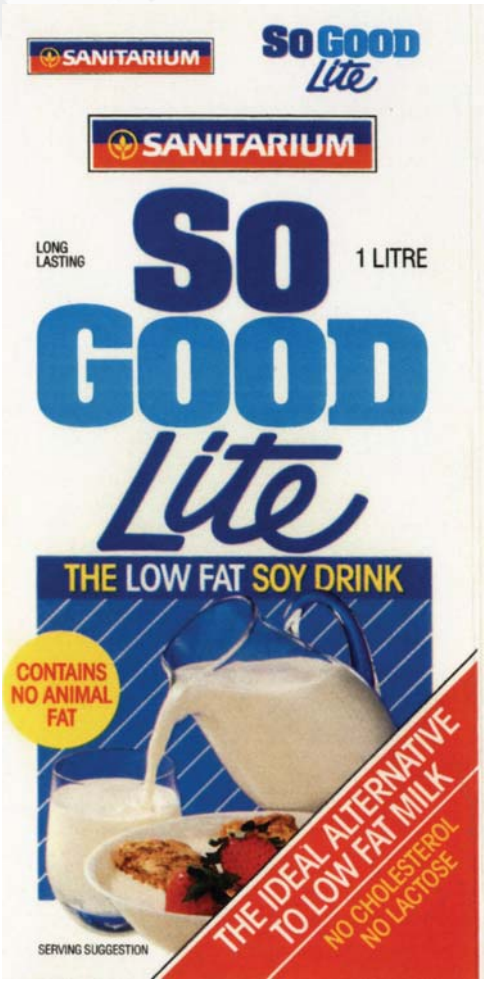
Note: Since Singapore is not a signatory to the International Patent Convention, companies based there are not obliged to respect international patents such as that held by Morinaga on the packaging of tofu in Tetra Brik Aseptic cartons.

6050. Parma Soia. 1990. La Soia dà sempre ottimi fruitti [The soybean always gives the best fruits (Catalog)]. Strada Logheretto 2, 43010 Corcagnano (Parma), Italy. 8 p. 29 x 84 cm. Color. [Ita]
• ***Summary:*** This handsome color catalog has 4 connected panels on each side. One side displays the company's new line of 21 soy products. Most of the products are in the line titled "Campi di Soia" (Fields of Soya), but several imported products (including tofu) are in the Nature Soy line. The other gives information about the company (a subsidiary of the Italian dairy giant, Parmalat) and its plans to promote the line. The Campi di Soya line is thought to be sold through supermarkets. This brochure was distributed at CIBUS, the biggest food fair in Italy, held annually in Parma, on 6-9 May 1990. Address: Corcagnano (Parma), Italy. Phone: 0521.639148.

6051. **Product Name:** [Soymilk].
Manufacturer's Name: Perlinger GmbH. Made in Belgium by Alpro.
Manufacturer's Address: A-6300 Itter 300, Austria. Phone: 5332-52440.
Date of Introduction: 1990.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Pierre Vandemoortele. 1990. June 4. Alpro makes and private labels soymilk for Perlinger, a health food company in Austria.

6052. Plamil Foods Ltd. 1990. Appetizing dishes–with Sandra. Plamil House, Bowles Well Gardens, Dover Rd., Folkestone, Kent CT19 6PQ, England. 8 p.
• ***Summary:*** "Sandra Hood has originated these inexpensive recipes for your enjoyment... She compiled the *Vegan Shopper's Guide* for some 2 years." With each recipe is given the number of servings, preparation time, and cooking time (overall time, often longer than preparation time). The recipes call for either Plamil Concentrated Soya Milk or the Ready-to-Use version. This in an updated version of these very popular recipes–20,000 having already been printed. Contents: Savouries (p. 2-5), and desserts (p. 5-7). On the last page is a list of the 20 vegan, non-dairy products in the current Plamil range, which consists of three lines: Soya milks, spreads and desserts, and confections. Address: Folkestone, Kent, England.

6053. **Product Name:** Sanitarium So Good Lite: The Low Fat Soy Drink.
Manufacturer's Name: Sanitarium Health Food Co.
Manufacturer's Address: 148 Fox Valley Rd., Wahroonga, N.S.W. 2076, Australia.



Date of Introduction: 1990.
Ingredients: Water (88.0%), soya isolate (4.0%), maltodextrin (3.3%), corn syrup solids (3.1%).
Wt/Vol., Packaging, Price: 1 liter Combibloc Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Letter and Label sent by Sanitarium Health Food Co. 1990. June 25. Gives product introduction date as 1990.

Sanitarium Nutrition Education Service. 1990. April. "So Good." This 4-page leaflet gives a clear explanation of each ingredient used, plus nutritional and other information.

Note: This is the earliest commercial soymilk product seen (July 2013) with the word "Lite" on the front panel (one of two products).

6054. **Product Name:** Selvi Soyas Soyalix (Soy Beverage).
Manufacturer's Name: Selvi Soyas (Marketer). Made by Arasi Food Processing.
Manufacturer's Address: Marketer: 16 West Canal Bank Rd., Kottur, Madras–85, India. Mfgr: Kottur, Madras–85, India.
Date of Introduction: 1990.
Ingredients: Soya, wheat, g.g. dal, barley, skimmed milk powder, sugar, sodium chloride, sodium bicarbonate, cardamom, badam.
Wt/Vol., Packaging, Price: 200 gm plastic bag.
How Stored: Shelf stable.
New Product–Documentation: Label sent from India by Anthony Marrese. 1990. Nov. 29. 6 by 3.5 inches. Plastic bag. Orange on white. Illustrations of two cups of steaming hot beverage, each with a handle on a saucer, like a coffee cup. Between them is a drawing of a ceremonial gong. "The natural energy food. For growing children and adults. Replace Soyalix to a bottle. Directions: Add a little hot water/milk to one teaspoonful of Soyalix in a cup. Stirring briskly, add hot water/milk."

6055. **Product Name:** Tofu, Soymilk, Fried Tofu, Soft Tofu, and Tofu Pudding.
Manufacturer's Name: Tan Tan Tofu.
Manufacturer's Address: 15084 Weststate St., Westminster, CA 92683. Phone: 714-895-3565.
Date of Introduction: 1990.
New Product–Documentation: Talk with Dana Jacobi of New York City. 1998. April 14. Tan Tan Tofu in southern California makes various types of tofu, including a delicious silken tofu, which she bought at Ranch 99, a Chinese supermarket chain in the Los Angeles area. The tofu pudding came curded in a one-quart plastic container (it filled the container like yogurt) with a caramel-colored ginger-flavored syrup on top in a little ½-pint Styrofoam cup with a plastic lid. To serve: Spoon the silken tofu into a bowl, pour the syrup over the top, and enjoy.

Talk with Kim Lai, manager of Tan Tan Tofu. 1998. April 15. This tofu company, run by Vietnamese-Americans, started making tofu in 1984 in San Diego, California. In 1990 they moved to their present location in Westminster, California. In Vietnamese soft tofu is called *Dau-hu wien* and tofu pudding is called *Dau-hu duong.*

6056. **Product Name:** [Tofu, Tofu Spreads, Soymilk].
Manufacturer's Name: Terra e Pane.
Manufacturer's Address: Via Canonica, 1009, 47038 S. Argangelo di Romagna (Forli), Italy. Phone: 0541/627-276.
Date of Introduction: 1990.
New Product–Documentation: Talk with Michael Brenger of La Fonte Della Vita. 1990. July 18. This company makes seitan, tofu, tofu spreads, and soymilk in Italy. Letter (fax) from Italian Trade Commission. 1990. Aug. 6. Gives address and phone number.

6057. **Product Name:** [Nature & Soya Drink (Dairylike, or Cocoa)].
Foreign Name: Natura & Soia Drink (Plain, or Al Cacao).
Manufacturer's Name: Wander SpA (Distributor). Made in Belgium (probably by Alpro).
Manufacturer's Address: Via Meucci 39, 20128 Milan, Italy.
Date of Introduction: 1990.
Ingredients: Plain: Water, dehulled soybeans, raw cane sugar, sea salt.
Wt/Vol., Packaging, Price: Plain: 1 liter Tetra Brik Aseptic carton. Chocolate: 500 ml.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Protein (N x 6.25) 3.6 gm, vegetable oil 2.1 gm, carbohydrates 3.4 gm, minerals (ash) 0.4 gm, calories 47.
New Product–Documentation: Label sent by Xavier Karis. 1990. June 27. 3.3 by 3.5 by 2.5 inches. Tetra Brik carton. Plain: Blue, yellow, red, and green on white. Chocolate uses brown instead of blue Illustration of a red-roofed farmhouse with green trees nearby surrounded by rolling fields. A glass full of blue (or brown) soymilk with a red striped straw in it is in the foreground. "Soy food (Soia Alimento). 100% vegetarian (vegetale)." Karis notes: "I know that "Natura e Soia" is a registered tradename of Lucas Meyer SrL."

6058. Alpro N.V. 1990. Ils sont nature grâce au soja [They are natural, thanks to soya (Leaflet)]. Wevelgem, Belgium. 2 panels each side. Each panel: 14 x 18 cm. [Fre]
• ***Summary:*** On the front panel of this full-color glossy leaflet, a color photo shows a little boy and girl, both laughing. To their right is a carton and glass of calcium-enriched Alpro Soya Drink. Below: "Alpro drinks and desserts. The power of soya."

Page 2 reads: "Soya is their natural side. Alpro soya drinks: The healthy drinks." Six packages are shown. Page 3

reads: Alpro soya desserts. 0% cholesterol. 0% lactose, 100% for you. A table compares the nutritional composition and the fatty acid composition of Alpro Soya Drink with whole and low-fat cow's milk. On the back: "Alpro is a complete line of delicacies based on soya." A photo shows the Alpro line. A clip-off form invites the reader to send for a Alpro brochure on soya. Address: Vlamingstraat 28, B-8610 Wevelgem, Belgium.

6059. Amrit Banaspati Company Ltd. 1990. 50th annual report. Ghaziabad, UP: India. 64 p. 24 cm.
• ***Summary:*** Pages 3-4 contain an overview of the company's 50-year history by N.K. Bajaj, the chairman. The company was registered and established in 1940 by Laxmi Narainji Bajaj, Rai Bahadur Girdharilal Bajaj, and Tulsi Prasad Khaitan. Activity began to set up a vanaspati factory of 25 tonnes per day capacity at Ghaziabad, India. The factory began commercial operations on 1 May 1941. "The Company enjoyed the fruits of the efforts and leadership of late Shri T.P. Khaitan who guided the destiny of the Company for nearly five decades through an unwavering pursuit of excellence. Amrit Banaspati is today one of the largest manufacturers of edible oils in the country with a capacity of 360 tons per day to manufacture vanaspati and refined oils at its two Units at Ghaziabad and Rajpura. Your Company's successful brands, like Gagan, Ginni and Bansari are virtually household names in many parts of the country. Amrit Paper is another example of success... Your Company achieved an all-time record turnover of Rs. 260 crores during the year 1989-1990 and highest-ever gross profit of Rs. 8.84 crores."

Note: 1 crore = 10 million.

Page 64 contains a chronology of the main events in the company's history. Address: G.T. Road, Ghaziabad 201 009, India.

6060. Cole, Candia Lea. 1990. Not milk... Nutmilks! 40 of the most original dairy-free milk recipes ever! Santa Barbara, California: Woodbridge Press. 124 p. Illust. 23 cm.
• ***Summary:*** Tells how to make 40 smooth-sipping and dairy-free beverages in only 3-5 minutes each, from almonds, cashews, pecans, pine nuts, walnuts, pumpkin seeds, sesame seeds, and sunflower seeds. 45 million people in the U.S. alone suffer from milk-related allergies. Address: Mahtomedi, Minnesota.

6061. Dunne, Lavon J. 1990. Nutrition almanac. 3rd ed. New York, NY: McGraw-Hill. vi + 340 p. Illust. Index. 26 cm. 1st ed. 1973. [185* ref]
• ***Summary:*** This book is divided into 8 sections; at the end of several of these is a glossary and bibliography. In Section VI, "Foods, beverages, supplementary foods, and eating to feel right," soy is mentioned In the subsection on "Legumes" (p. 243), which has its own subsection titled "Soybeans" (p. 243), which discusses the nutritional value of soybean products in a meatless diet. "Soy flour, oil and milk are used in a variety of home-cooked and commercial products." "Sprouted soybeans contain increased amounts of vitamin C." The subsection on "Milk and milk products" (p. 244) notes that people who are allergic to milk may substitute soy milk, although it lacks much of the nutritional value of cow's milk because it is low in calcium and phosphorus. The subsection on "Lecithin" (p. 249) begins: "Lecithin is a natural constituent of every cell of the body and helps to emulsify cholesterol in the body." The world's leading source of commercial lecithin is the soybean.

In the subsection titled "Some rich sources of nutrients" (p. 263-64) soybeans (or legumes) are listed as rich sources of protein, choline, pantothenic acid, vitamin E (cold-pressed oils), vitamin K, copper, and zinc.

Section VII, "Table of food composition" (p. 265) includes soy flour (p. 276), soybean oil (p. 283), soy sauce (p. 296), soybeans (cooked), soybean curd (tofu), soybean milk, and soybean sprouts (p. 306). Address: Nutrition Search, Inc., John D. Kirschmann, Director.

6062. Facciola, Stephen. 1990. Cornucopia: A source book of edible plants. Vista, California: Kampong Publications. ix + 678 p. Indexes (six!). 28 cm. [522* ref]
• ***Summary:*** "In your hands is one of the most remarkable efforts to come out of the struggle to preserve the genetic diversity of our planet... Steve Facciola has put together an easy-to-understand, easy-to-use compendium of the diversity of food plants available to consumer, gardener and scientist" (from the Preface). The largest and most comprehensive work of its kind, this book gives details on 3,000 edible plant species and 7,000 varieties.

Contents: Preface, by Noel Vietmeyer. Introduction. Acknowledgements. Botanical listings: Alphabetical listings of plant families (*Glycine max* and *Glycine tabacina* are listed in the family Fabaceae, pronounced fuh-BAY-see), fungi families, algae families, bacteria families. Cultivar listings (by common name for the most important and popular crops, e.g., shiitake, soybean, spinach, sprouting seeds). Sources (names, addresses and phone numbers of firms that sell seeds, plants, etc.: Domestic commercial, domestic non-commercial, overseas commercial, overseas non-commercial). Bibliography. Indices and appendixes: Index of principal vernacular names. Index of vernacular and other names occurring elsewhere in the text. Index of usage and edible parts. Index of species native to or naturalized in North America. Index of species not listed in Kunkel [Gunther Kunkel. 1984. Plants for human consumption. Koeltz Scientific Books, Germany]. Index of families and genera. Appendix A: Abbreviations used–For type of product offered, for annotated bibliographical citations, in descriptions for sources. Appendix B: Endnotes used in the cultivar listings.

As of Aug. 1994 an electronic version of this book is now available. It runs on Microsoft Windows and uses more than 25,000 hypertext links to cross reference information.

The main information on soybeans is found on pages 91 (Botanical listings for *Glycine max* and *Glycine tabacina*), p. 219 (*Aspergillus oryzae* culture), p. 221 (*Actinomucor elegans* culture for fermented tofu or sufu, and *Rhizopus* cultures for tempeh), p. 224 (*Bacillus subtilis* culture for natto), p. 482-83 (for "field soybeans," lists 5 black-skinned cultivars, and 7 yellow-skinned cultivars; plus 11 "vegetable soybeans"–Agate, Butterbeans, Envy, Extra Early, Fiskeby V, Hahto, Hakucho Early, Kanrich, Okuhara Early Green, Prize, and White Lion), p. 485-87 (sprouting seeds including soybean sprouts with directions for sprouting), and p. 500 (Soyfood cultures).

Additional information on food uses of soybeans is found throughout the book. Tofu: p. 9 (In Indonesia, a salt derived from the fruit of *Rhus javanica* (*Nurude, Muyen*) is used to coagulate tofu), p. 61 (In Japan the seeds of *Cannabis sativa,* called *asanomi,* are used in deep-fried tofu burgers (*ganmodoki*)), p. 76 (A vegetable curd similar to soybean tofu can be made from the seeds of the bottle gourd or calabash (*Lagenaria siceraria*)), p. 92 (The seeds of the Bonavista bean or hyacinth bean (*Lablab purpureus*) can be prepared as tofu), p. 127 (The seeds of okra, gumbo, or lady's finger (*Abelmoschus esculentus*) can be made into tofu or tempeh). Kecap (Indonesian soy sauce): p. 9 (In Indonesia, the plant tuberose (*Polianthes tuberosa*) is added to the substrate in making kecap), p. 191 (In Indonesia, fresh leaves of kaffir lime, also called ichang lime, makrut, or djeruk purut (*Citrus hystrx*) are used to flavor kecap). Miso: The following can be used as a substrate for miso–p. 88 (Peanuts), p. 94 (seeds of the velvet bean, also called cowitch, cowhage, benguk (*Mucuna pruriens*)), p. 155 (barley (*Hordeum vulgare*)), p. 156 (proso millet (*Panicum miliaceum*)). Address: 1870 Sunrise Dr., Vista, California 92084. Phone: (619) 726-0990.

6063. Finnegan, John; Cituk, Kathy. 1990. Amazake rice beverage. Celestial Arts, P.O. Box 7327, Berkeley, CA 94707. 80 p. No index. 21 cm. [80 ref]
• ***Summary:*** Contents: History and development. Making amazake. Complementary foods, spices and herbs. Why use amazake? Rice. Koji. Almond amazake. Nutritional analysis. Makers of amazake. Amazake kefir-yogurt. Amazake as a baby food (with Bifidus and *Streptococcus faecium*). Milk substitutes. The future of amazake. Recipes (29 recipes, including variations). About the ingredients (incl. miso) Appendixes: I. About aseptic packaging. II. Sources of amazake and koji. Bibliography. Glossary.

Note 1. This book contains extensive information from the book *Amazake and Amazake Frozen Desserts: Industry and Market in North America,* by Shurtleff and Aoyagi (Soyfoods Center, 1988), used without acknowledgment or permission. Except for the chapters on "Recipes," and "Amazake as a baby food," it contains almost no new research or information.

Talk with Benjamin Hills. 1991. Sept. 18. This book reads like an advertisement for amazake. Grainaissance was originally thinking of hiring John Finnegan to write a book on amazake, but they decided to withdraw from the deal, so he went ahead and did it on his own.

Talk with Celestial Arts. 1991. Sept. 27. John Finnegan used to be the head of Elysian Arts, 20 Sunnyside Ave. Suite A161, Mill Valley, CA 94941. He now resides in Santa Monica, California. The book has sold about 800 copies to date.

Note 2. This is the earliest English-language document seen (Aug. 2013) that uses the term "rice beverage" to refer to amazake and related products. Address: Santa Monica, California. Phone: 415-389-8925.

6064. Heiser, Charles B., Jr. 1990. Seed to civilization: The story of food. New ed. Cambridge, Massachusetts: Harvard University Press. vi + 228 p. Illust. Index. 24 cm. [83* ref]
• ***Summary:*** An outstanding work, written for the general reader. "This is a classic book about the origins of agriculture and the influence of its discovery on the development of civilization"–Ghillean T. Prance, Director of the Royal Botanic Gardens [England; on rear cover].

The Preface notes that this is a book about the plants (and animals) that stand between humans and starvation. The main subjects are ethnobiology, the study of plants and animals in relation to humans, and ecology, the study of organisms in relation to their environment. We humans "get all of our carbohydrates and nearly three-fourths of our protein from plant sources. Moreover, nearly all of the food we get from animals is in turn derived from plants. After all, life depends on photosynthesis; chlorophyll has been referred to as the green blood of the earth."

Table 5-1, "Estimated production of world's 32 major food crops" (p. 63) lists the top ten as (* = member of grass family; units in million metric tons): Sugar cane* 932. Wheat* 536. Corn* 481. Rice* 476. Potato 309. Sugar beet 286. Barley* 180. Manioc 137. Sweet potato 110. Soybean 95. Source: *FAO Production Yearbook,* 1986.

Chapter 7, "Legumes: The meat of the poor," contains a section on "Soybeans" (p. 129-33). It notes that there are no archaeological records of the soybean to help us determine when it was first cultivated, but it was mentioned in Chinese literature before 1000 B.C. Unlike most legumes, the beans are seldom eaten directly, but are used to make many different foods including bean sprouts, miso, tofu, soymilk (such as Vitasoy), tempeh, and soy sauce.

"The widespread cultivation and utilization of soybeans in the United States in the space of a few decades must be one of the most spectacular success stories in the recent history of agriculture."

Photos show: (1) A field of soybeans in the USA planted in rows, free of weeds. (2) Soybean plants ready for harvesting. (3) Soybean seeds. (4) A John Deere combine harvesting soybeans.

Note: Previous editions of this book were copyrighted in 1973 and 1981. Also discusses: Peanuts (p. 126-29). Potatoes and their remarkable history (p. 134-39). Tomatoes and their unusual history (p. 181, 206). Address: Distinguished Prof. Emeritus of Botany, Indiana Univ.

6065. Kolster, Uwe. 1990. Die gesunde Sojakueche: Koestlich und abwechslungsreich essen [Healthy soya cooking: Delicious and varied food]. Falken Verlag GmbH, 6272 Neidenhausen/Ts, Germany. 112 p. Illust. Recipe index. 21 cm. [Ger]

• ***Summary:*** This recipe book calls for the use of many DE-VAU-GE (GranoVita) products. Address: Germany.

6066. Medical Soy S.p.A. 1990. Medical Soy: l'alta gastronomia senza colesterolo [Medical Soy: The high gastronomy without cholesterol (Poster)]. Via Matteotti 55, 20068 Peschiera Borromeo (Milan), Italy. 1 p. 24 x 33 cm. [Ita]

• ***Summary:*** On the front of the poster, two subtitles read: "A revolution in gastronomy which will leave a sign to future generations is presented at a fair in Milan. More than 100 foods in all, and all resembling traditional foods such as yogurt, cheeses, and salami, yet all free of animal fats." All will be available from 15 Nov. 1989. Photos show: (1) a cylindrical head of cheese on a cheese board with a wedge cut out to show the inside. A knife, glass of wine, and bouquet of flowers are nearby; (2) A large cooler case, about 7 feet long and 4 feet high is packed with nothing but Amisoya fresh products, including milks, cheeses, yogurts, and soy protein-meat blends. At the top two identical signs, shaped like cartoon captions, read: "Amisoya, a new large line of foods"; (3) A woman standing in front of a portion of the case selecting and buying some of the items.

On the back of the poster is a large color close-up photo of each of the fresh soy products (Prodotti di Soya freschi). Above it is the caption: The Amisoya line: The alternate/high gastronomy. Products based on soya and all free of animal fats. Below it are listed 4 product lines and the individual flavors in each line: Tondelle firm non-dairy cheeses (7 flavors), Filante soft cheeses (7 flavors), Soy beverages (6 flavors), and Soy yogurts (7 flavors). The caption at the bottom in big bold letters reads: "Better nutrition for staying young."

Talk with Xavier Karis in Italy. 1990. June 25. This poster was published by Medical Soy to try to attract retailers and wholesalers for their products. It was distributed at CIBUS, the biggest food fair in Italy, held annually in Parma, on 6-9 May 1990. Address: Peschiera Borromeo (Milan), Italy. Phone: 02/547-5456.

6067. Morningstar, Amadea; Desai, Urmila. 1990. The ayurvedic cookbook: A personalized guide to good nutrition and health. Santa Fe, New Mexico: Lotus Press. 351 p. Foreword by Yogi Amrit Desai. Introduction by Dr. David Frawley. Illust. by Amadea Morningstar. Index. 23 cm. [40 ref]

• ***Summary:*** This is a lacto-ovo vegetarian cookbook based on Ayurvedic principles. Contents: Part I: General Information. History of Ayurveda. Nutrition from an Ayurvedic perspective. Discovering your constitution. Attributes and nutritional needs of each constitution. How to imbalance your constitution. Understanding Ayurvedic nutrition: Taste. Digestion. Food combining and preparation. Balancing *Agni.* The digestive organs. The *chakras* and dietary change. Eating with the seasons. Getting ready to cook. Planning balanced meals easily. Menus: *Tridoshic, Vata, Pitta, Kapha.* Part II: Recipes. Part III: Appendices. 1. Most frequently asked questions and answers. 2. Enlarged food guidelines for basic constitutional types (many soyfoods are included). 3. Some basic information about nutrients. 4. Glossary of English and Sanskrit terms. 5. Food name equivalents in Latin, Sanskrit, Hindi. 6. Bibliography. About the authors (autobiographical).

The three Vatas (tridosha, three doshas, constitutional or body types) are Vata (pure air, head/wisdom), Pitta (pure fire, action), and Kapha (pure water, love/heart). Tridoshic foods or herbs are suited to all 3 constitutions; these include ghee, basmati rice, and asparagus. Concerning soya: "Many *Vatas* handle certain well-spiced soy products well, like tofu or liquid soy milk. Some do not. Let your gut be your guide. Dairy is very calming to Vata, especially when it is warm" (p. 14).

"*Pittas* are often attracted to high-protein foods, and do seem to need a little more protein than other constitutions. Goat milk, cow milk, egg white souffles, tofu, tempeh, and the aforementioned cottage cheese are all effective in balancing Pitta. Most beans–with the exception of heating lentils–are excellent" (p. 16).

Anything which stimulates elimination tends to relieve *Kapha* (barley and beans being classic examples). Aduki beans are especially good, as are black turtle beans, though the latter are more difficult to digest. Soy beans and soy products are recommended less frequently. Over half of tofu's calories come from fat, surprisingly, while only 4% of black beans' do. Still, soy products like soy milk tend to be less Kapha-enhancing than dairy products" (p. 19).

"Examples of oily food include ghee, vegetable oils, animal fats, soybeans, many vegetables and citrus. Dry foods include corn, buckwheat, rye, millet, most beans and dark leafy greens, to list a few. These latter foods will need moistening of some sort to be more easily digested by most people" (p. 28).

In the menu section, under each constitutional type

(dosha, such as Vata), recommended menus are given by season for each meal. For example, soy-related foods included in Vata menus are: Summer: None. Fall: Dinner–Miso tofu, Amasake. Winter: None. Quick day: Breakfast–soymilk. Beverage–Amasake. Weekend day: Nothing. On the road (when travelling): Dinner' Chinese vegetables and rice (with tofu, if well tolerated).

Each recipe in the recipe section tells which constitution type it suits, how long it takes to prepare, in what seasons it is most healing, and how many it serves. For example,–Vata means that it calms Vata, + Vata means that it aggravates or increases Vata, and 0 Vata means that it is neutral for Vata. For brevity, we will give only Vata examples in the following. Soy-related recipes: About tofu (p. 102): Tofu and liquid soy milk tend to be cool and heavy, yet oilier than most other bean products. This oily lubricating quality helps their digestion, as does the pre-processing they have undergone as legumes... Eaten in excess, they will increase *Kapha.* Warming preparation, in the form of heat or warming spices such as ginger, tamari, cumin, turmeric, cinnamon or mustard seeds, aid their healthy breakdown in the system. Beans can be idiosyncratic in effect though; if your experience doesn't match the descriptions given here, trust your direct experience first. Some people have a hard time digesting tofu in almost any form; an allergy to soy may be present. It was popular in the sixties and seventies to serve tofu cold, cubed and plain at health food-type salad bars. This is about the most difficult way to try to consume an already chilling food. Try tofu marinated, spiced and cooked, then make up your mind about its digestibility for you."

Miso tofu (p. 102,–Vata). Tofu mushrooms (p. 104,–Vata). Tofu pesto (p. 104,–Vata). Sauteed tofu and vegetables (p. 105,–Vata, but mildly + Vata with frozen tofu). East Indian lima beans (with tofu, p. 114). Spicy rice and yogurt (with soy milk, p. 131,–Vata; "Made with soy milk, which is lighter and cooler than yogurt, it is suitable for Pitta and Kapha as well"). Vegetable barley soup (with tofu, p. 188, 0 Vata).

About oils (p. 202-03): "Ghee is the highly preferred fat in Ayurveda, being light, easy to digest and potentiating to many of the foods with which it is served." Sunflower oil is the next best choice, being agreeable to all doshas. "Sesame oil is specifically recommended when a warming effect is needed. It grounds Vata... The vast majority of oils are warming and heavy in quality, including..." soy oil. "Margarine is cold and difficult to digest and not often recommended by Ayurvedic physicians."

About condiments: Salt, tamari, miso, and pickled ginger all heat up a meal and stimulate agni (fire). A detailed discussion is given of the medicinal function of sea vegetables in Ayurveda (p. 216-17).

About soy milk: Liquid soy milk can be a good alternative to cow's milk, if you are sensitive to the latter. It is also less *Kaphagenic* (imbalancing to *Kapha*) than cow's milk, when properly prepared. Lighter than cow's milk in its effect on the body, it cooks up easily in recipes. Like most high protein foods it promotes building, not cleansing. It is best used in restorative and maintenance programs. It can be warmed with cinnamon, cardamom, nutmeg or ginger and black pepper. Some *Vatas* do not tolerate it well. Dried soy milk powder and soy protein powder are much more difficult to digest than the whole liquid soy milks. Only the most stalwart *Pitta* is likely to be able to consume them without gas, as they are cold, heavy and dry. Whole soybeans and tempeh are often gas-producing as well. For adequate digestion they require much cooking and spicing, good *agni,* and a *Pitta* constitution. Hot soy milk (p. 264).

Scrambled tofu (p. 281,–Vata).

In appendix II (p. 293). The following legumes, in moderation, calm Vata: Aduki beans, soy cheese, soy milk (liquid), tofu, black lentils, mung beans, red lentils, and tepery beans. But these aggravate Vata: Soy beans, soy flour, soy powder, tempeh, garbanzos and most other beans. Among beverages, icy cold drinks and many others aggravate Vata. Beverages that calm Vata are soy milk (well spiced and hot), miso broth, many herb teas. Tofu is calming to Pitta and mildly aggravating to Kapha. Cool in action, some Vatas tolerate it well, others do not.

Aduki beans are mentioned on p. 19, 106, 109, 116, 124, 293, 306. Address: 1. Faculty member, The Ayurvedic Inst., Albuquerque, New Mexico; 2. Wife of Yogi Amrit Desai, member of Kirpalu Center for Yoga and Health, Lenox, Massachusetts.

6068. Perché la soia [Why soya?]. 1990. Strada Logheretto 2, 43010 Corcagnano (Parma), Italy. 6 panels. Catalog. 29 x 21 cm. [Ita]

• ***Summary:*** In this brochure, a color photo shows the entire *Campi di Soia* and *Erboristeria* lines. The two are almost identical in terms of product names and packaging except that the word "Erboristeria" replaces the word "Campi di Soia" for products sold to the health food trade. The Erboristeria line has a bottled cooked soybeans (*Semi di Soia*), and a different shaped soy fortified pasta (*Soipast*). Both lines now have a soy lecithin (*Lecitina di Soia*). In both lines, the bottled soymilk is named Soidrink (3 flavors) and the soymilk in a Tetra Brik Aseptic carton is named Soilat (1 flavor). Address: Corcagnano (Parma), Italy. Phone: 0521.639148.

6069. Plamil Foods Ltd. 1990. Plamil nutritional information (Leaflet). Folkestone, Kent, England. 1 p. Single sided. 30 cm.

• ***Summary:*** Printed with green ink on white paper. A detailed nutritional analysis is given of Plamil concentrated soya milk (sugar free / blue label, and with sugar / green label), undiluted per 100 ml. The products are fortified with calcium, and vitamins D-2, and B-12. There is a section on

the disadvantages of the high calcium level of cow's milk. A color photo on the front panel shows the concentrated soya milk in both cans and 500 ml Tetra Brik Aseptic cartons, and sugar-free Plamil Soya Milk in 1 liter Tetra Brik cartons.

Side 2 gives nutritional information on Plamil Rice Pudding (sugar free, and with sugar), and confections: Chocolate or mint, carob or orange, carob with hazelnuts, carob with no added sugar, carob coated fruit and nut bar (apple, pear, or apricot). Note that no mention is made of the fact that Plamil is made with isolated soy proteins. Address: Plamil House, Bowles Well Gardens, Dover Rd., Folkestone, Kent CT19 6PQ, England.

6070. Plamil Foods Ltd. 1990. Plamil: Pioneers of British soya milk. Silver anniversary, 1965-1990 (Leaflet). Folkestone, Kent, England. 1 p. Front and back. 21 x 14 cm.
• ***Summary:*** Printed with green, purple, red, yellow, black and grey in on white paper. On the front, color illustrations of Plamil Soya Milk in five kinds of packages. The current Plamil range: Soya milks. Sugar free (Blue label; these contain no sweetener of any kind). Concentrated carton, 500 ml. Ready to use carton, 1 litre. Concentrated can, 420 ml. Sweetened (Green label). Concentrated carton, 500 ml. Concentrated can, 420 ml.

Provides essential calcium, vitamins B2, B12, and D2. The independent company specialising in non-animal quality foods.

On the rear, color illustrations of Plamil Soya Milk Rice Pudding (sweetened or sugar free) and Plamil Pease Pudding.

The Rice Pudding is made from Organically grown unpolished brown rice, with Sultanas; it is based on soya protein isolate, and includes sunflower oil. Information about the Pease Pudding (15½ oz can). Address: Plamil House, Bowles Well Gardens, Dover Rd., Folkestone, Kent CT19 6PQ, England.

6071. Seventh-day Adventist Dietetic Assoc. 1990. Diet manual, including a vegetarian meal plan. 7th ed. (Three-ring binder with dividers). Seventh-day Adventist Dietetic Assoc., P.O. Box 75, Loma Linda, California 92354. xv + 644 p. Index. 29 cm. In a 3-ring binder with tabbed dividers. Index. 30 x 29 cm.
• ***Summary:*** This comprehensive guide to planning, selection, and coordination of vegetarian diets, in the form of a three-ring binder with dividers, was edited by Georgia Hodgkin, M.S., R.D.; Susan Maloney, M.S., R.D., was the managing editor. Previous editions were published in 1960, 1965, 1970, 1975, 1978, and 1982. Each chapter has an author and a reviewer. References are found at the end of each chapter.

Contents: Introduction. Normal nutrient needs. Nutrition for pregnancy and lactation. Pediatric diets. Gastrointestinal diets. Renal diets. Cardiac diets. Diabetic and related diets. Mineral modified diets. Diet for acute care. Nutrition and immunity. Nutritional support and enteric feedings. Geriatric and rehabilitation diets. Test diets. Nutrition and drugs. Nutrition for exercise and weight control. Appendixes (11) including: Ingredients of selected vegetable protein foods. Nutrient composition of selected vegetable protein foods. Addresses of selected Seventh-day Adventist hospitals (16 hospitals). Selected vegetarian cookbooks (15 citations). Selected books concerning a vegetarian diet (7 citations). Tables (79 tables). List of figures (10 figures). Address: Loma Linda, California.

6072. Sunrise Markets Inc. 1990. Tofu cookbook: 60 quick & easy recipes. Vancouver, BC, Canada: Sunrise Markets Inc. 80 p. No index. 22 cm.
• ***Summary:*** Contents: Sunrise Markets Inc. What is tofu? Sunrise tofu (Extra Firm {green label}, moderately firm {yellow/red label}, soft {blue label}, tofu dessert {pink label}). Cooking hints. Recipes–Soups. Salads. Dressings and dips. Entrees. Desserts. Nutritional breakdown of Sunrise Tofu. Other Sunrise products (Sunrise soya drinks {non-dairy in sweetened, unsweetened, vanilla/almond, and chocolate flavors}, Tofu-Rella {Tofu-based cheese in 5 flavors}, Mori-Nu Tofu, Sunrise Tofu Puffs {deep fried} and Dried Flavour Tofu, Tofreezi {non-dairy tofu-based frozen dessert in seven flavors}, Casa Del Norte Chili and Canadian Chef Beans & Tofu Wieners). Glossary. Substitutions and equivalents. Feedback.

A color photo on the front cover shows 8 different tofu dishes. On the rear cover are color photos of Sunrise's four tofu products. Address: 729 Powell St., Vancouver, BC V6A 1H5. Phone: 253-2326.

6073. The mission of Friar William of Rubruck: His journey to the court of the Great Khan Möngke 1253-1255. Translated by Peter Jackson. Introduction, notes and appendices by Peter Jackson and David Morgan. 1990. London: The Hakluyt Society. xvi + 312 p. Illust. Maps. Index. 23 cm. [268 + 300+ endnotes]
• ***Summary:*** Contents: Editorial note. Abbreviations. Chronology of Rubruck's mission (incl. Quraqorum / Karakorum / Har Horin in today's Mongolia). The Mongol imperial family: genealogical table (at the head is Temüchin / Temuchin = Chinggis Khan = Genghis Khan). Introduction: The Franciscans and the mission to the infidel, East and west before the advent of the Mongols, the rise of the Mongol empire (Tatars = Tartars; Qaghan = Kaghan = Great Khan), Religion and the Mongols, the first diplomatic contacts, map of the Mongol empire at the time of Rubruck's visit, the Mongols and Louis IX, Friar William of Rubruck and his mission, the report (in Latin to King Louis IX of France) and its value, manuscripts, editions and translations. Rubruck's report to King Louis IX of France. Appendices (I-IX).

William was sent by Louis IX of France to the khan.

He left France in 1253 and arrived in the Mongol capital of Karakorum in 1254. He was a keen observer. Although he never reached China, he was the first European to describe the Chinese script, the postal system, the Southern Song empire, and the Kingdom of Korea. He also described divination using the thigh bone of a sheep (a form of pyromancy) at the Mongol court. While there, he encountered a French goldsmith (Guillaume Boucher) working for the khan.

Note 1. Soy is not mentioned. However almond milk and comos = kumys, kumis, kumiss, koumiss, kymys, kimiz (a fermented drink traditionally made from the milk of horses {mares}) are mentioned on p. 81-83, and almonds on p. 207.

Note 2. This book replaces the older study, *The Journey of William of Rubruck to the Eastern Parts of the World, 1253-55,* translated by William W. Rockhill (London: Haklyut Society, 1900).

6074. Wagner, Lindsay; Spade, Ariane. 1990. The high road to health: A vegetarian cookbook. New York, NY: Simon & Schuster / Prentice Hall Press. xv + 288 p. Foreword by E. Lee Rice. Index. 24 cm. [54 ref]
• ***Summary:*** Lindsay Wagner, whose lovely color photo appears on the cover, first achieved widespread television in the early 1970s as "The Bionic Woman." Recently she starred in the Academy-Award winning film *The Paper Chase.* This vegan cookbook uses no meat, dairy products, or eggs. A section titled "Raising the Dairy Question" (p. 13) discusses problems with milk and concludes: "A terrific substitute for milk products comes from that little marvel, the soy bean. Soy milk has the look and consistency of milk, and some brands even taste like it. Try some on your breakfast cereal, top your pies with our creamless Whipped Cream, spread your sandwiches with eggless Mayo Spread and enjoy Huevos-less Rancheros for brunch. You'll never look at another carton of milk."

Chapter 4, "About the ingredients," includes discussions of Braggs Aminos, cold-pressed oil, kuzu, lecithin, miso, mochi, nori, soy milk, soy sauce, tempeh, tofu. Soy-related recipes include: Huevo-less rancheros (with tofu and soy milk, p. 65). Vegetarian "salami" (with firm tofu, p. 82-83). Mayo spread II (with soy milk, p. 88). Ginger tamari dressing (p. 131). Creamy oil substitute (with soy milk, p. 134). Tofu sour cream (p. 134). Eden cheesy sauce (with soy milk, p. 136).

Chapter 10 (p. 141-59) is titled "Entrées for the meat lover"; most of the recipes are based on soyfoods: Marinated tempeh (p. 141). Marinated tofu. Barbecued tofu or tempeh. Tempeh marinade. Teriyaki tofu. Polynesian tofu. Tofu piquant. Tofu ribs. Grilled tofu with summer vegetables. Japanese eggplant and tofu Romano. Pecan herb loaf (with tofu and soy flour). Easy tofu burgers. Easy easy burgers (with Marinated tempeh or tofu). New Age Italian sausage I (with Marinated tempeh and Marinated tofu). New Age Italian sausage II (with Marinated tofu). Spicy tempeh stir fry. Tofu cacciatore.

Lasagna with zucchini and mushrooms (in Light sauce with soy milk, p. 166). Manicotti stuffed with zucchini and tofu cheese (p. 175). Tacos (with Marinated tofu and tempeh, p. 187). Eggplant al forno (with tofu, p. 213). Banana-strawberry tofu pudding (p. 231). Italian cheesecake (with tofu, p. 243). Coconut-mocha cream frosting (with soy milk, p. 260). Tofu fruit sauce (p. 261). Mock whipped cream (with soy milk, p. 262).

An interesting last chapter titled "Afterword: Meat–We can live without it! Here's why" discusses the role of an "animal-based diet" on destruction of the environment. Address: 1. California; 2. Woodland Hills, California.

6075. Wasserman, Debra; Stahler, Charles. eds. 1990. *Vegetarian Journal* reports. Baltimore, Maryland: Vegetarian Resource Group. 110 p. Illust. No index. 28 cm. [10 ref]
• ***Summary:*** This is a compilation of articles by various authors that originally appeared in *Vegetarian Journal.* Soyfoods are mentioned or included in recipes throughout. For example: "What is osteoporosis" (p. 48-57), mentions tofu as a good source of calcium. "Tips for changing your diet" (p. 70-71), mentions tofu and soy milk. "Eggless Recipes" (p. 81), includes tofu. Address: Baltimore, Maryland.

6076. Laiteries Triballat. 1990? Plaisir et vitalite [Pleasure and vitality (Leaflet)]. Noyal-sur-Vilaine, France. 2 p. Front and back. Undated. [Fre]
• ***Summary:*** A photo (see next page) on side 1 of this handsome full-color leaflet (8.5 by 11.75 inches) shows six 4-pack Sojasun yogurt-style desserts, one Sojasun with cereals and fruits, and two Tetra Brik cartons of Sojasun soymilk (*Boisson à base de Soja*). Side 2 gives nutritional analyses of each product and packaging specifications. Address: B.P. 21, 35530 Noyal-sur-Vilaine, Prov. Brittany, France. Phone: 99 00 51 01.

6077. **Product Name:** Sweet Soy Drink.
Manufacturer's Name: Sacramento Tofu Co.
Manufacturer's Address: 1915 Sixth St., Sacramento, CA 95814. Phone: 916-447-2682.
Date of Introduction: 1990?
Ingredients: Water, organically grown soy bean, sugar.
Wt/Vol., Packaging, Price: ½-gallon plastic jug.
How Stored: Refrigerated.
New Product–Documentation: Talk with Martin Lin of Wa Heng Tofu Co. in Sacramento, California. 1991. Nov. 19. Sacramento Tofu sells soymilk in a ½-gallon plastic jug (like milk is sold in). It has a 20-day shelf life. Martin is unable to get a shelf life of more than 10 days without preservatives. Does Sacramento Tofu use preservatives in their soymilk?

Photocopy of Label sent by Martin Lin. 1991. Nov. 1.5 by 2.5 inches. "Fresh. Perishable. Keep refrigerated." Contains the Chinese characters for "Tou Chiang." Note that preservatives are not listed on the label.

6078. Sanitarium Health Food Co. 1990? Our story (Leaflet). 148 Fox Valley Rd., Wahroonga, N.S.W. 2076, Australia. 2 panels on each side. Each panel 30 x 21 cm. Undated.
• ***Summary:*** This glossy, color leaflet gives a brief history of the company, interspersed with many color photos. The company's export division is at Hudson Ave., Castle Hill, NSW 2154, Australia.

"The fascinating history of the Sanitarium Health Food Company started in the late 19th century when a group of highly motivated immigrants from the United States decided to make their living by distributing health foods that they had imported from Battle Creek, in Michigan, USA. Battle Creek was famous then for its Sanitarium, the health retreat based on a Swiss model, where the rich and famous from all parts of the United States and Europe came for a relaxing health holiday. One of the draw cards of this place was a breakfast cereal and health food manufacturing plant, the purpose of which was to supply food to the institution as well as to the neighbouring districts.

"A selection of these products was sent to Melbourne, Australia, in 1897, but before too long the demand for these unique foods outstripped the availability. Local production was inevitable...

"The name, Sanitarium Health Food Company, was adopted in 1898."

Photos show: (1-4 on front panel) Weet-Bix in a white bowl. A man on a bicycle pedaling a wheeled cart in front of him; on it is written Sanitarium Health Food Co. A modern factory with a company flag flying over it. Veggies in a wrap on a plate. (5) The old Battle Creek Sanitarium. (6) A hand pouring a pack of So Good Soymilk. (7) A very old photo showing an early food factory along the banks for a river. (8) An aerial view of a modern food factory. (9) A bottling line. (10) A breakfast table on which Sanitarium breakfast food products are served. (11) A Sanitarium food delivery truck. (12) Packages of the leading Sanitarium food products: Weet-Bix. Corn Flakes. Weet Bix Hi-Bran. Puffed Wheat. Weeta Puffs. Good Start. Ricies (rice cereal). Honey. Peanut Butter (Smooth or Crunchy). Crunchy Granola. Caffex. Golden Toasted Meusli. So Good (soymilk). Vegetarian Sausages (canned). Vegetarian Bologna (canned). Address: Wahroonga, Australia. Phone: (02) 487 1711.

6079. Sanitarium Health Food Co. 1990? Product range. 148 Fox Valley Rd., Wahroonga, N.S.W. 2076, Australia. 6 p. Catalog. Undated. 30 cm.
• ***Summary:*** Product lines include: Flake biscuit range (incl. Weet-Bix ["Australia's favourite whole wheat malted breakfast biscuits"], Corn Flakes, and Muesli). Loose cereal range. Sundry cereal range. Drinks and beverages (incl. So Good soymilk). Spreads (peanut butter and marmite). Legumes, grains, seeds (incl. soya beans in 500 gm bag). Dried fruits. Nuts. Mixes (such as nuts & raisins). Canned vegetarian meals (24 meatlike products, 3 of which are dry TVP in boxes). Misc. foods (incl. natural lecithin and lecithin granules).

The company also has an export division at Hudson Ave., Castle Hill, NSW 2154. Address: Wahroonga, Australia. Phone: (02) 487 1711.

6080. Tofu Shop Deli and Specialty Foods Co. (The). 1990? Fine tofu: Hand crafted in small batches for a sweet, delicate flavor and texture (Ad). Arcata, California. ½ p. Undated.
• ***Summary:*** This ad occupies the top half of an unknown page in the "Wholefood Express" distributor catalog in about 1990. The text reads: "Here in the far reaches of California's misty North Coast is produced a special tofu in the tradition of the great tofus of the East.

"For it's in the small, traditional shops of China and Japan where the magic of tofu as a world-class food has slowly developed over the ages, where generations of tofu makers have mastered the subtle arts and skills of tofu making, and where countless connoisseurs of fine foods have savored the sweet, delicate flavors and textures of truly fresh tofu–an experience few in the West know.

"Honoring this lineage in our own shop, we work to keep the tofu making as simple, handmade, and traditional as possible. A single trained tofu-maker carefully guides each batch through the entire tofu-making process.

"Small batches, open-cauldron cooking, sanitary conditions, and the finest organic ingredients are all magically combined to produce our unique tofu, one we describe as sweet and delicate. According to a elderly Japanese grandmother who recently visited our shop, it's like the tofu of her childhood.

"We hope you will try this fine tofu and also our full line of soy milk, tofu cold-cuts, salads, and desserts, all prepared with the same attention to authenticity, quality, and freshness."

"Makers of freshly-prepared natural foods since 1977."

An illustration across the bottom of the ad shows a small tofu shop on stilts on a cliff by the ocean, with an Oriental-style roof and a wind-blown tree arching overhead.

On the bottom half of this page is an ad from Turtle Island Soy Dairy. Address: 768 18th St., Arcata, California 95521.

6081. Lo, K.S. 1991. Re: Cultivation of soybeans in Hong Kong. Letter to William Shurtleff at Soyfoods Center, Jan. 9–in reply to inquiry. 2 p. Typed, with signature on personal letterhead.
• ***Summary:*** Mr. Lo has been making soymilk in Hong Kong on an increasingly large scale since 1940, but the soybeans

he has used have always been imported. 1. As far as I am aware, "soya bean has never been grown on a commercial scale in Hong Kong. Some of the New Territories farmers might have grown some in small patches on and off, but, to my knowledge, nobody has ever grown sufficient quantity to harvest it for sale in cash.

"2. I have not come across any document, either in Chinese or English, stating that soya beans were grown in Hong Kong at any time. There is a book by the former professor of Botany, the late Dr. Herclotts, called *The Local Plants and Flowers.* In it, there was no mention about soya bean.

"3. I have not seen any document stating that soya beans were in Hong Kong before 1872. However, Hong Kong has been handling the re-export of soya beans, soya bean cakes and oil which were imported from China. This trade had been going on before the war and probably from the last quarter of the 19th century." Address: Chairman, The Hong Kong Soya Bean Products Co., Ltd., 41 Heung Yip Rd., Aberdeen, Hong Kong. Phone: 5-528211.

6082. *Times of India* (*The*) (*Bombay*). 1991. Friday's traded scrips. Stock quote. Jan. 12. p. 18.
• ***Summary:*** On the Bombay Stock Exchange (BSE), "Other securities" are listed alphabetically by ticker symbol. Soya companies include: Noble Soya 14, 16 (dropped after merger with Vegepro).
Ruchi Soya 20.0, 21.00, 19.00.
Sagar Soya 8.00, 10.00.
Sakthi Soya 15.00, 16.00.

6083. Noble Soya House. 1991. Notices: In the high court of judicature of Madhya Pradesh at Jabalpur. *Times of India* (*The*) (*Bombay*). Jan. 19. p. 20.
• ***Summary:*** "Ordinary original civil jurisdiction. Company petition No. 7 of 1990. In the matter of the Companies Act 1956 and in the matter of a scheme of amalgamation of Vegoils Limited with Noble Soya House Limited. Noble Soya House Limited–Petitioner.

"A petition under Section 391 and 394 of the Companies Act, 1956, for sanctioning the scheme of amalgamation of Vegoils Limited and Noble Soya House Limited was presented by Shri Ashutosh Singh Gaharwar, Advocate, on the 30th day of November, 1990 (Filed 8-10-1990) and the said petition is fixed for hearing before the Company judge on 8-2-1991 [8 Feb. 1991]. Any person desirous of supporting or opposing the said petition should send to the petitioner's advocate, notice of his intention, signed by him, or his advocate, with his name and address so as to reach the petitioner's advocate not later than two days before the date fixed for the hearing of the petition. Where he seeks to oppose the petition, the grounds of opposition... Signed, Ashutosh Singh Gaharwar, Advocate for Petitioner. Address: A-24 Rattan Nagar, Opposite L.I.C. Building, Madan Mahal, Jabalpur, Madhya Pradesh." Dated: 17-12-1990 [17 Dec. 1990]. Address: Jabalpur, Madhya Pradesh.

6084. Moore, Stephen D. 1991. Tetra Pak proposes friendly takeover of Alfa-Laval valued at $2.91 billion. *Wall Street Journal.* Jan. 29. p. A13.
• ***Summary:*** "If successful, the union would spawn one of the world's biggest producers of food packaging and processing equipment." Alfa-Laval's board unanimously endorsed the Tetra Pak Group's offer. "The surprise bid also promised further financial relief for Sweden's Wallenberg group, Alfa-Laval's biggest owner, which has struggled in recent months to digest a spate of expensive takeovers. Alfa-Laval is a venerable, Stockholm-based industrial concern and well-known maker of farm equipment. But in recent years, Alfa-Laval's fastest growth has come in its industrial division which produces complete dairy and food processing factories.

"Tetra Pak is a private company, founded in southern Sweden but now head-quartered in Lausanne, Switzerland, and owned by a Liechtenstein-based family foundation. It claims to be one of the world's biggest manufacturers of paper beverage cartons. The proposed takeover would open a spate of potential synergies.

"Tetra Pak's Mr. Hagman said that average annual sales growth of 18% during the 1980s had opened possibilities for aggressive expansion... Tetra Pak will concentrate its resources toward the goal of being world leader in food packaging and distribution.

"But Mr. Hagman ruled out any interest in packing or distributing non-foods. That policy led Tetra Pak to spurn an approach from Procter & Gamble Co. of the U.S. about using Tetra Pak's cartons to package detergents or shampoos."

Tetra Pak's CEO, Bertil Hagman, said Tetra Pak's sales last year exceeded $4,835 million and industry analysts estimate that before tax profit will probably approach $717 million. Alfa-Laval expects 1990 sales of $3,136 million with pretax profits of $292 million.

In a display of its financial clout, Tetra Pak said it would finance the Alfa-Laval acquisition from internal funds.

6085. **Product Name:** [Soya Based Drink (Natural)].
Foreign Name: Soja Drink (Natur).
Manufacturer's Name: Bruno Fischer GmbH (Importer-Distributor). Made in France.
Manufacturer's Address: Im Auel 88, 53783 Aetorf, Germany. Phone: 49-2243-4021.
Date of Introduction: 1991. January.
Ingredients: Water, soybeans* (9%). * = Organically grown.
Wt/Vol., Packaging, Price: 1 liter glass bottle.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Letter/Order for the book *Tofu & Soymilk Production* from "Bruno Fischer jun [Jr.]."

1979. Oct. 7. He is located at Taunusstrasse 13, 5000 Köln [Cologne] 91, West Germany. Phone: 02 21 / 83 26 51.

Talk with Bruno Fischer, who calls from Germany. 1993. Nov. 25. He sells soymilk, which he introduced in Jan. 1991, in glass bottles in Germany. In the unique sterile-filling process, developed by Alfa-Laval and Bosch, the soymilk is first UHT sterilized, then packed and sealed in sterile bottles. It is sold non-refrigerated with a 9-month shelf life. He does not make this soymilk; he imports it from a soymilk maker in France.

He is a Seventh-day Adventist who is the fifth generation of a family of butchers. His family quickly stopped making pork products and closed their shop on Saturday, the Sabbath–which was formerly their busiest day. Now he is gradually switching the company from meat products to alternatives. On 7-8 Oct. 1979 he visited Shurtleff and Aoyagi in Lafayette, California.

Labels sent by Bruno Fischer GmbH. 1994. Jan. 6. On each bottle are two labels, each 6 by 3.75 inches. The front label has white letters with dark blue borders on a pastel blue and green background. Four small square drawings show that this soymilk can be used like milk, drunk from a glass, poured on Muesli, or used in cooking. "Made purely from plants. No added sugar. Versatile–use like milk." The back panel gives the product name and ingredients in six languages. By each name is the flag of that country.

Product with Label sent by Bruno Fischer. 1998. April 15. Soja Drink–Natur. No added sugar. Ingredients and nutritional value are given in five languages, each with the flag of that country by the product name: German, English, Italian, French, and Dutch. Talk with Bruno Fischer. 1998. May 14. This product was named Soja Drink from the beginning; The name Tônyû was used only in-house. The current milk is made from organic soybeans grown mostly in southern France. The resulting soymilk is the highest in mono- and di-saccharides, and in lactones of any European soymilk. Bruno thinks that his is the only soymilk in the Western world today that is sold in a glass bottle. This is the kind of environmentally-friendly container that his customers at natural food stores in Germany want; Tetra-Pack is a symbol of an environmentally unfriendly container. The bottle and cap are steam sterilized, then filled with UHT-treated soymilk in a sterile environment. The filling plant is at Rugensburg; the bottles are then shipped to a storehouse at Saarbruecken, on the Saar River near the French-German border. Sold in a brown 1-liter glass bottle, this soymilk has a shelf life of 1½ years. It is made from soybeans that are dry-dehulled. Bruno has been in the plant where it is made and seen the whole process.

6086. Fowler Brothers. 1991. Catalog: January 1991. P.O. Box 2324, San Rafael, CA 94912. 79 p. 28 cm.
• ***Summary:*** The company is a "distributor of natural foods." The following makers, distributors, and brands of soyfood products are listed: I. Bulk Products: Miso (American Miso, 8 products), Soy foods (Turtle Island tempeh and Soy Deli tofu burger). Soy Sauce & tamari (San-J domestic shoyu and tamari, Westbrae Johsen shoyu), Tofu (Quong Hop, 6 products).

II. Packaged products: Ah Soy (Westbrae, 7 soy drinks), Eden Foods (Edensoy, 6 soy drinks), Pacific Soyfoods (6 types of soysage), Pacific Tempeh (4 products), Quong Hop (11 soymilk and 4 tofu products), San-J (tamari crackers, 14 soy sauce & tamari products), Soy Deli (Quong Hop, 5 soy foods, 8 vacuum pack tofu), Sweet Earth (3 vegeburgers), Turtle Island (10 tempeh products), Vitasoy (7 soy drinks), Westbrae (2 instant miso soups, 14 soy drinks, 14 types of soy sauce and tamari). Address: San Rafael, California. Phone: 415-459-3406.

6087. Nichii Company of America, Inc. Mycal Group. 1991. Are you tired of soaking overnight? (Ad). *Natural Foods Merchandiser.* Jan. p. 64.
• ***Summary:*** This is an ad for "revolutionary new MicroSoy flakes," an alternative to whole soybeans in making tofu or soymilk. They eliminate all washing and rinsing, all soaking water and time, waste water disposal, grinding, and save considerable floor space. You can save up to 2,400 lb of water per ton of soybeans. Call or fax for a free sample.

6088. Norumu, Wayne W.; Baqar, M.R.; Board, P. 1991. Acceptability of soymilk to young Papua New Guineans. *ASEAN Food Journal* (*Malaysia*) 6(1):24-27. Jan. [14 ref]
• ***Summary:*** Plain and flavored soymilks were made from soybeans grown in Papua New Guinea and from a commercial soy protein isolate (Ardex F, made by ADM). Soymilk favored with cacao was accepted by these youth. These products are a good source of energy and protein. Their nutritive value is given. Address: Dep. of Chemical Technology, Papua New Guinea Univ. of Technology, Lae, PNG.

6089. Reisner, Marc. 1991. The real cause of water shortages in California is irrigated forage crops and the dairy cows that eat them (Interview). *VegeScan Notes.* Feb. 2. Conducted by William Shurtleff of Soyfoods Center. [1 ref]
• ***Summary:*** The California agricultural industry uses 80 to 85% of California's stored water. In the Jan/Feb. 1991 issue of *Western Water,* published by the Water Education Foundation (Phone 916-444-6240) is a long interview with Marc titled "Agricultural Water Use." It is followed by a rebuttal from the agricultural industry, in which they argue basically that if they cannot grow alfalfa within 200 miles of Los Angeles, none of the babies there will have any milk to drink.

The article contains two tables of statistics from the California Department of Water Resources (DWR). One table shows the number of acres of irrigated land used to

grow major crops in California in 1988, and the other shows the average evapotranspiration rate for each crop. Cotton is grown on 1,382,700 acres and each acre uses 2.7 feet of water per year. Alfalfa is grown on 1,086,900 acres and each acre uses 4.1 feet of water per year. Pasture (mainly grass and clover) is grown on 939,400 acres and each acre uses 4.1 feet of water per year. And rice is grown on 468,200 acres and each acre uses 3.3 feet of water per year. "These four low-value crops use 14 million acre-feet of water each year. That is enough water to support 70 million people, or 2.5 times California's present population of 28.3 million people. The state of California uses 36-37 million acre feet of water in a normal year. A single forage crop (irrigated pasture) uses more water than all Californians use in and around their homes. Then you have another forage crop (alfalfa) that does exactly the same again. These two forage crops alone, alfalfa and pasture, use about 8 million acre feet, or 22% of all stored water used in California. It offends me that we give three times more water to cows than we give to people in California. Livestock is the largest consumer of water in California."

When you add up the amount of livestock grown in the 11 western states and compare it to the amount of livestock grown nationwide, it is not that much. "We've built all these dams, messed up so many wonderful rivers and valleys, decimated so many salmon runs, caused so much erosion and siltation for the benefit of 15-18% of the national meat and dairy consumption–which is already too high.

In California, rice is grown in standing water. But in Louisiana, Arkansas, and Mississippi, rice is grown without standing water. We use standing water in California because the water is so cheap and it is a convenient way to kill the weeds. The PureHarvest method, if universally adopted, could cut the rice crop consumption of water by about 500,000 acre feet a year; that is enough to take care of Los Angeles. But California rice farmers hate the weeds. The only people who dispute Marc's figures are the rice farmers; they say that a lot of the water that they apply to their fields runs back into the Sacramento River whence it is available for reuse. But reuse by whom? It enters the river full of herbicides and pesticides, and is probably a major factor in the decline of the striped bass because it is killing a lot of the subaquatic vegetation in the Delta.

Los Angeles uses only 5-6% of the water in California for all purposes–only 2 million acre feet per year. Yet in the Central Valley, which is 400 miles long and 40-60 miles wide, virtually every acre of land gets 2-7 feet of water put on it each year.

The Bureau of Reclamation is one of the most stubborn bureaucracies. There is the unholy Trinity of engineering companies that want to build dams, farmers who like cheap water, and the Bureau of Reclamation that sells cheap water so it gets to build more dams. The Bureau sets the water rates to farmers, and sets them far below the cost to deliver the water. So citizens subsidize farm water and farmers have little incentive to conserve water. There are no more rivers (that are not wild and scenic) to dam. We've already built 1,400 dams. The only answer is to use our water more efficiently. One-seventh of the water used in California goes to irrigated pasture, which produces about $100 million worth of income; this is less than 1/5,000th of the total state revenues. So a lot of water is used to produce relatively little revenue.

Marc is not a vegetarian, but he feels that "cows are the worst thing that ever happened to the American west. They have become a mythic creature; people can't imagine the west without cattle. Mark feels we should get rid of all cattle in the western states, bring back the wild ungulates and raise oranges, peaches, fresh vegetables, etc." Marc feels that milk should be produced in other parts of the U.S. and shipped to California. That is his real agenda. Note: In California, the main agencies governing water are the state Water Resources Control Board. David Kennedy is the State Water Resources Director. Most of the homes in the Stockton, Sacramento, and Fresno area have no water meters; there is a flat water fee of $5/month and each household can use as much water as it likes.

Marc is doing a new edition of *Cadillac Desert* that is due to be published later this year. Address: 738 Arkansas St., San Francisco, California 94107. Phone: 415-981-2609.

6090. Richardson, Al A. 1991. Trip report and market analysis–Europe. Torrance, California: Nichii Company of America. Feb. 4. Unpublished typescript.
• ***Summary:*** This trip report describes visits to various companies. Contents: Unisoy Company, Manchester, England. Dragon & Phoenix, London, England. Cauldron Foods, Manchester, England. Sojinal, Issenheim, France. Alpro, Wevelgem, Belgium. Heuschen-Schrouff, Landgraff, Netherlands. Galactina AG, Belp, Switzerland. Trip and European market summary. Top soyfoods manufacturers in Europe. Address: Director, Marketing & Sales, Nichii Company of America, Inc., 23440 Hawthorne Blvd., Skypark 2, Suite 140, Torrance, California 90505. Phone: (213) 791-0010.

6091. Tetra Pak Inc. 1991. Use of UHT/Aseptic white dairy milk in Europe and other countries, 1989. 889 Bridgeport Ave., Shelton, CT 06489. 2 p. Feb. 5. Unpublished manuscript.
• ***Summary:*** The following statistics are from Tetra Pak Statistics in Lausanne, Switzerland. In western Europe, 27,896 million liters of milk are consumed in total. Of this, 24,108 million liters are consumed in the eleven EEC countries. Countries not in the EEC are Austria, Cyprus, Finland, Iceland, Norway, Sweden, Switzerland, and Turkey. The four countries with the largest total milk consumption are the UK (6,687 million liters), France (3,735), Spain

(3,624), and Germany (3,470). Of the all the milk consumed in Europe, 9,660 million liters (35% of the total) is packaged in UHT/Aseptic cartons. Of the all the milk consumed in the EEC, 9,376 million liters (39% of the EEC total) is packaged in UHT/Aseptic cartons. The four countries in which UHT/Aseptic packaging is most widely used are France (3,000 million liters; 80% of all milk in France), Spain (2,125; 59%), Germany (1,578; 45%), and Italy (1,497; 52%).

Outside of Europe, the world's biggest dairy milk consumers are: USA (24,429 million liters; 0.2% UHT/Aseptic), India (5,001; 0.4%), Japan (4,803; 4%), Mexico (2,895; 8%), and Canada (2,504; 0%). Countries with the highest percentage of UHT packaging are Yemen (39 million liters of milk consumed; 95% in UHT), Pakistan (97; 92%), Saudi Arabia (158; 82%), Thailand (34; 70%), Singapore (28; 64%), and Chile (151; 61%). Address: Shelton, Connecticut.

6092. *Toyo Shinpo* (*Soyfoods News*). 1991. Beikoku de daizu origo-to. Karupisu, Mitsubishi Shôji to kyôdô [Soybean oligosaccharides in the USA. Calpis and Mitsubishi joint venture with Central Soya]. Feb. 21. p. 13. [Jap]
• ***Summary:*** It has been announced that Calpis Food Co. (Shokuhin Kogyo; maker of a very popular Japanese non-alcoholic beverage) and Mitsubishi Shoji are going to establish a jointly owned company with Central Soya (Indiana) to produce and sell soybean oligosaccharides in 3 of Central Soya's plants in America. Oligosaccharides, which have the ability to condition the intestines, have been produced by several food companies in Japan. But Calpis got safety approval from the U.S. Food and Drug Administration as the first company in Japan. They are planning to sell the product aggressively overseas, to Unilever in Europe, and also in Korea. They are trying to capture the growing awareness of health. They are hoping to reach 5,000 million yen [about $39.3 million] sales during the first three years, selling mainly to confectionery manufacturers as a sweetener. They hope to begin shipping to Unilever this year for use in boosting the nutrition of infant formulas.

In Korea, they plan to supply the largest tofu maker and food manufacturer, Purumuwon in Seoul, with a powdered soy oligosaccharide sweetener, private labeled.

Oligosaccharides promote the growth of Bifidus (Bifidobacterium; beneficial bacteria) in the intestinal tract. In Japan, the market for products that include oligosaccharides is estimated at 150,000 million yen ($1,195 million), growing at about 20% a year due to consumer health awareness. But this concept and the resulting products are not yet popular overseas. There are several types of oligosaccharides. The one Calpis developed from soybeans is widely available in these beans and is getting the most attention. Their product has about 20% of the Japanese market. Calpis established a company named Soya Oligo Japan (president, Mr. Kôkichi Sato) with Mitsubishi in 1989 and has been preparing for overseas expansion.

A shorter, similar, follow-up article was published in *Toyo Shinpo* on 21 March 1991, p. 3. Address: Japan.

6093. McDermott, Ron. 1991. New developments at Worthington Foods (Interview). *SoyaScan Notes.* Feb. 25. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ron was at Loma Linda Foods for 4 years, and before that at Ross Laboratories for 9 years. When Worthington Foods acquired Loma Linda Foods, it got all the meat analogs and the Soyagen soymilk, which is sold only in dry form to adults. Now Worthington has Soyagen and Soyamel brand soymilks. The last production of Loma Linda brand products in Riverside was completed under contract by Nutricia at the end of August, 1990. Then the unique and necessary equipment was taken to Worthington, Ohio, in the fall and set up there. Since December, Worthington has been working to bring the formulas back into production. A number of similar products were discontinued. Even after these were eliminated, Worthington still has a line of 180 products! This includes all Worthington products! The Morningstar Farms line accounts for the great majority of sales. The canned meat analogs account for about 20% of total Worthington sales. The rest is sales of frozen Worthington products, the Natural Touch line, beverages, etc. The best-selling product in the Natural Touch line has been the okara patties.

Nutricia had decided to consolidate their soymilk production in Riverside and to sell their old soymilk plant in Mount Vernon, Ohio. In fact, they set up a soymilk production line in Riverside, but they had problems with the aseptic part of it. But within the last 2 months they have decided to consolidate soymilk production at Mt. Vernon instead.

Jim Hagle, chairman of the board of Worthington Foods, died on 18 Oct. 1990 at age 78 at his home. Alan Buller has taken his place as chairman of the board. Dale Twomley is now president and CEO of Worthington Foods. Bob Clark (who came from Haagen-Dazs-Pillsbury) is the new vice president for marketing and Steve Dunson is vice president for corporate strategy & planning. Address: Worthington Foods, 900 Proprietors Rd., Worthington, Ohio 43085-3194. Phone: 614-885-9511.

6094. Nordquist, Ted. 1991. Changes in structure and ownership at Aros Sojaprodukter in Sweden (Interview). *SoyaScan Notes.* Feb. 25. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** On 31 Dec. 1990 Ted sold Aros. He now owns one-third of the new corporation named Aros Sojaprodukter AB. Eric Kennhed owns one-third and Blekinge Invest (which owns 100% of Trensums Musteri, a juice company) owns the other one-third. There is a five-person board of directors, and Ted is CEO.

He is trying to find companies to license his new technology and process for making soybase. He has a contract that offers a commission of 3% of the sales of each product for the first year after production starts, plus reimbursement for all travel if it leads to the signing of a licensing contract.

Anders Lindner is now part of Ted's group. William Shurtleff introduced and recommended Ted to him. Anders recently did a soymilk market study for Vitasoy in Australia.

Danish Nutana is in bad shape. Address: CEO, Aros Sojaprodukter, Bergsvagen 1, S-19063 Orsundsbro, Sweden. Phone: 0171-604 56.

6095. Damerow, Gail. 1991. Ice cream! The whole scoop. Macomb, Illinois: Glenbridge Publishing Ltd. xix + 384 p. See p. 133-53, 362-63. Illust. Index. 26 cm. [10 ref]
• ***Summary:*** Chapter 9, titled "Dairy alternatives," has a recipe for "Soy 'n' Rice Cream" (made with soymilk), discusses "Amasaki" [sic, amazake] and Rice Dream, and has a recipe for "Amasaki Sherbet."

Note: This is the earliest English-language document seen (March 2007) that uses the term "Dairy alternatives" (or "Dairy alternative") to refer to soy ice cream.

Chapter 10, titled "Soy Ice Cream," discusses Tofutti, soy protein, soy milk, milking the bean, soy ice cream, and flavors. Eight recipes (mostly made with soymilk) follow. Part II of this chapter is about soy yogurt (cultured; p. 145-47), with 2 recipes for frozen soy yogurt. Part III is on tofu and tofu ice cream, with 6 recipes, including a tofu sherbet. Part IV is soy sundaes; one topping includes soynuts. There is also a recipe for "Whipped Tofu Cream." The appendix on supplies gives two sources of powdered soymilk.

The hardcover book features 8 full-color photos, 24 black-and-white photos, 50 illustrations (line drawings), 200 home recipes, and a glossary of ice cream lover's jargon. Address: Tennessee Technological Univ., Cookeville, TN.

6096. Eden Foods, Inc. 1991. Eden Foods product overview (Leaflet). Clinton, Michigan. 6 panels each side. Each panel: 23 x 10 cm. Feb.
• ***Summary:*** Two panels of this color leaflet contain a brief history of Eden Foods, plus a chronology of key events in the history of Eden Foods: 1967–The first checking account was opened for Eden Foods, a source of macrobiotic and organic foods in Ann Arbor, Michigan. 1968–Eden Foods, Incorporated became a registered business, with food service, retailing and food processing operations. 1970–Eden Organic Certification Standards were implemented. Eden products were distributed in Michigan and Ohio. 1972–Trade relationship began with Muso Company, Ltd. of Osaka, Japan. 1979–Fire at warehouse reduced records, equipment and inventory to rubble. Two weeks later Eden Foods reopened. 1982–Schmidt Noodle Company, maker of Eden organic pasta since 1976, was acquired by Eden Foods. 1983–Edensoy soy beverage introduced; historic new item in natural foods market. 1985–San Francisco, California sales office and warehouse opened to service the West Coast. 1986–American Soy Products opened to produce Edensoy in Michigan; first aseptic soy beverage plant in the United States. 1988–Eden Foods joined OCIA, Organic Crop Improvement Association, for independent certification of crops. 1989–Eden and OCIA established standards for food processing as well as growing crops.

Six panels inside the leaflet describe the company's main product lines and give color photos of leading products from each line: Edensoy soy beverage. Organic durum pasta. Organic tomatoes. Organic grain sweetener (100% barley malt). Oils & vinegars. Beans & grains. Fruit products. Seasonings (Sesame Shake = gomashio). Traditional Japanese pasta. Traditional Japanese miso. Japanese soy sauces. Japanese sea vegetables. Japanese oils & vinegars. Japanese chips & crackers. Japanese pickles. Japanese concentrated foods (plum, garlic, kombu). Japanese teas. Japanese specialty foods (macrobiotic).

The company's trademark is now "Making a tradition of good health." Address: 701 Tecumseh Rd., Clinton, Michigan 49236.

6097. Rasyid, F.; Hansen, P.M.T. 1991. Stabilization of soy milk fortified with calcium gluconate. *Food Hydrocolloids* 4(5):415-22. Feb. [15 ref]
Address: Dep. of Food Science and Technology, The Ohio State Univ., Columbus, Ohio.

6098. **Product Name:** Tofu, Soymilk, Deep-fried Tofu, Five-Spice Flavored Tofu.
Manufacturer's Name: Sun Kee.
Manufacturer's Address: 448-452 North 12th St., Philadelphia, PA 19123. Phone: 215-625-3818.
Date of Introduction: 1991. February.
New Product–Documentation: Talk with Yatsun Wen. 1990. March 22. He now lives in Philadelphia and plans to start a tofu shop there. Talk with Yatsun Wen. 1991. Feb. 8. He hopes to open his shop in several weeks. His native language is Cantonese. He plans to make tofu, soymilk, deep-fried tofu, and flavored tofu. He has moved his residence into his business location. He is looking for nigari to use in making fried tofu.

6099. *Guardian* (*England*). 1991. Beans mean tofu: Most of us are familiar with baked beans. But you can also use beans to discover the secrets of seeds, and the growth of plants and the food we eat. March 5. p. A6.
• ***Summary:*** An excellent article for children about learning from beans about plants. Learn how to make a sprouting chamber and to sprout beans. Note: So specific types of beans are mentioned or suggested for sprouting.

Learn how to make a tofu press, then make tofu at home

(detailed instructions are given)–using lemon juice to curd packaged soya milk.

Illustrations show: Cross section of a bean, labeled. (2) A sprouting chamber. (3) Utensils (including a "tofu press") and ingredients needed to make tofu at home.

Photos show: (1) A soya bean plant. (2) A bean curd factory in China. (3) Many different tofu products–plus soya milk in an aseptic carton.

6100. **Product Name:** Pureharvest Soy Drink [Natural, or Vanilla].
Manufacturer's Name: Ceres Natural Foods Pty. Ltd. (Importer & Distributor).
Manufacturer's Address: East Bentleigh, Victoria, Australia.
Date of Introduction: 1991. March.
Wt/Vol., Packaging, Price: 1 liter Tetra Brik carton.
How Stored: Shelf stable.
New Product–Documentation: Letter (fax) from Don Lazzaro of Ceres Natural Foods. 1995. June 15. In March 19891 they introduced a 1 liter Lite Soy Milk in Tetra Pak. It is not clear where it was made or in what flavors.

6101. Ferreira, Sila Mary R.; Serpe, Eliane Rose. 1991. Obtençao de leite condensado a partir de uma mistura com extrato hidrossoluvel de soja em po e leite de vaca [Condensed milk obtained from a mixture of powdered soymilk and cow's milk]. *Archivos Latinoamericanos de Nutricion* 41(1):92-101. March. [25 ref. Por; eng]
• ***Summary:*** The mixture is concentrated until it contains 31-33.65% dry matter, in an evaporator under a pressure of 540 m of mercury at 45 and 50ºC respectively. The resulting product has organoleptic characteristics similar to those of condensed cow's milk. Address: Univ. Federal Parana, Parana, Brazil.

6102. Heaney, Robert P.; Weaver, C.M.; Fitzsimmons, M.L. 1991. Soybean phytate content: effect on calcium absorption. *American J. of Clinical Nutrition* 53(3):745-47. March. [21 ref]
• ***Summary:*** Phytate, the storage form of phosphorus in plants, reduces the bioavailability of calcium, but to a much lesser degree than oxalate. Using hydroponic growth media, soybeans were cultivated in solutions containing radioactive calcium in the for of 45Ca along with different levels of phosphorus to produce seeds that varied significantly in phytate content. Calcium absorption from high-phytate seeds was significantly lower at 31.0% ± 7% compared with low-phytate soybeans and milk for which absorptions averaged 41.4% ± 7.4% and 37.7% ± 5.6% respectively. Address: 1. Creighton Univ., Omaha, Nebraska 68178; 2. Dep. of Foods and Nutrition, Purdue Univ., West Lafayette, Indiana; 3. The Center for Hard Tissue Research, Creighton Univ., Omaha, Nebraska 68178.

6103. **Product Name:** Rice Dream 1% Fat Non-Dairy Beverage (in Quart Tetra Brik Carton) [Original, Vanilla, Carob (Carob reformulated)].
Manufacturer's Name: Imagine Foods, Inc. (Marketer-Distributor). Rice Beverage made by California Natural Products, Manteca, Calif.
Manufacturer's Address: 299 California Ave. #305, Palo Alto, CA 94306. Phone: 415-327-1444.
Date of Introduction: 1991. March.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Letter from Robert Nissenbaum, president of Imagine Foods. 1993. Dec. 8. This product was launched in March 1991.

6104. **Product Name:** [Cerelac Soymilk].
Foreign Name: Cerelac.
Manufacturer's Name: Instituto de Investigaciones Para la Industria Alimenticia (IIIA–Food Industry Research Institute (FIRI)).
Manufacturer's Address: Carretera al Guatao KM 3.5, La Lisa, Ciudad de Habana, Cuba.
Date of Introduction: 1991. March.
Ingredients: Defatted soy flour (40%, all imported), whole milk powder (15%), sugar, calcium, vitamins, vanilla flavor.
New Product–Documentation: Garcia Uriarte, Alvaro; Ortega, Alberto. 1996. "Recent history of soyfoods in Cuba." Part II (Interview). *SoyaScan Notes.* Jan. 9. Conducted by William Shurtleff of Soyfoods Center. After the dissolution of the Socialist/Soviet Bloc in late 1989 and 1990, Cuba's milk supply dropped dramatically. Between 1989 and 1995, consumption of dairy milk in Cuba fell by 70%. Alvaro and his co-workers worked to solve this immense problem. The first product they developed was named Cerelac. Introduced in March 1991, it contained 15% whole milk powder, 40% defatted soy flour (all imported), plus sugar, calcium, vitamins, and vanilla flavor. It was sold at subsidized prices to kids ages 7-13 and seniors over age 65. These people found the product acceptable. Soon 7,000 to 8,000 tonnes per year of Cerelac were being mixed in plants inside of ten of Cuba's dairy processing factories.

6105. Kerntke, Ulrich. 1991. Soya: Not just for eccentrics. *Dragoco Report* No. 3. p. 83-97. [5 ref. Eng]
• ***Summary:*** An interesting overview of soybean production worldwide and the markets for tofu and soymilk in Europe. Figure 1 is a bar chart ranking countries that produce more than 1 million tonnes of soybeans by their yields in tonnes per hectare. The country with the highest yield by far is Italy (approx. 3.1 tonnes/ha), followed by Canada (2.3), USA (2.2), Argentina (2.1), Paraguay (1.8), Brazil (1.7), China (1.3), Indonesia (1.1), and India (0.8 tonnes/ha).

Figure 2 is a graph of soybean production in 4 major countries and others from 1935 to 1990.

Figure 3 shows world market share of soybean production among 4 major countries and others from 1935 to 1990. The U.S. market share grew steadily until about 1965, but has fallen ever since. Brazil's market share showed significant growth after 1965, and Argentina's after 1975.

Figure 4 shows the number of countries producing more than 100,000 tonnes of soybeans from 1935 to 1990. This number stayed steady at about 6-7 from 1935 to 1965, then rapidly increased to 15 in 1975 and 27 in 1990. Figures 6 and 7 are bar charts showing consumption of tofu in 1986, with projections to 1992 in France, Great Britain, Germany, Netherlands, and the rest of the EC (especially Switzerland). In 1992 for tofu, Germany is expected to be the leader followed by Great Britain and France. For soymilk, Great Britain is expected to be by far the leader, followed by Germany and France. The source of the tofu and soymilk information is Institut für Agrarpolitik, Stuttgart. Address: Product Manager, Flavor Div., Dragoco, Gerberding & Co. GmbH, D-3450 Holzminden, Germany. Phone: (05531) 704 327.

6106. Wasserman, Debra; Mangels, Reed. 1991. Simply vegan: Quick vegetarian meals. Vegetarian Resource Group, P.O. Box 1463, Baltimore, MD 21203. 224 p. March. Illust. General index. Index of tables. 23 cm. [117 ref]
• ***Summary:*** A vegan cookbook. Contents: Foreword. Time-saving cooking suggestions: Microwave cooking. Sample menus: Menu analysis. Top recipes for calcium and vitamin C. Top recipes for iron. Recipes (one section is titled Soy Products: Tempeh Dishes, Tofu Dishes). Food definitions and origins. Herbs and spices. Vegan nutrition (written by Reed Mangels, PhD, RD. Each of the 18 topics is followed by a bibliography; includes a section on each major nutrient, pregnancy, lactation, feeding vegan kids, nutrition glossary, recommended reading list). Cruelty-free shopping by mail.

The Vegetarian Resource Group. The group also publishes a bimonthly magazine, *Vegetarian Journal,* and is considered by dietitians to be a good source of nutrition information for vegans.

This book contains more than 20 tofu recipes and 6 tempeh recipes.

Note from VRG: As of Dec. 2012 this pioneering book has 100,000 copies in print and a 5th edition has recently been sent to the printer. Address: VRG, Baltimore, Maryland. Phone: 301-366-8343.

6107. *SoyaScan Notes.* 1991. Global Harvest (Overview). April 4. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Global Harvest (located at 1420 Sams Ave., Jefferson [a suburb of New Orleans], Louisiana) was started in Jan. 1991 by Tom Futch, a brilliant PhD and food scientist, who formerly worked with many large food companies and just before this with a soyfoods company in Louisiana that is now in bankruptcy [probably Manna International]. The former company was founded in 1983, but there were management problems so Tom left in early 1991 and started his own new company. Tom buys soy protein products [textured concentrates] from ADM and blends them with other ingredients to make meatless meals. Global Harvest's biggest market is to prison systems (correctional institutions); their budgets are being cut and they want more nutrition for their dollar. The company has 10-12 soy products on the market, plus some other products (mainly beverages) that do not contain soy. They also have a soymilk product at the R&D stage. Tom has a strong personal interest in soyfoods. The company is now trying to raise new capital.

In an interview with Greg Caton of Lumen Food Corp. in Louisiana on 1 Nov. 1988, he noted: Contact Dr. Tom Futch of Manna International in New Orleans, Louisiana, for info on TVP. He is a born-again Christian of the best type. A PhD in food science, he worked with Staley in extrusion of soy protein concentrates. Phone: 504-254-3333.

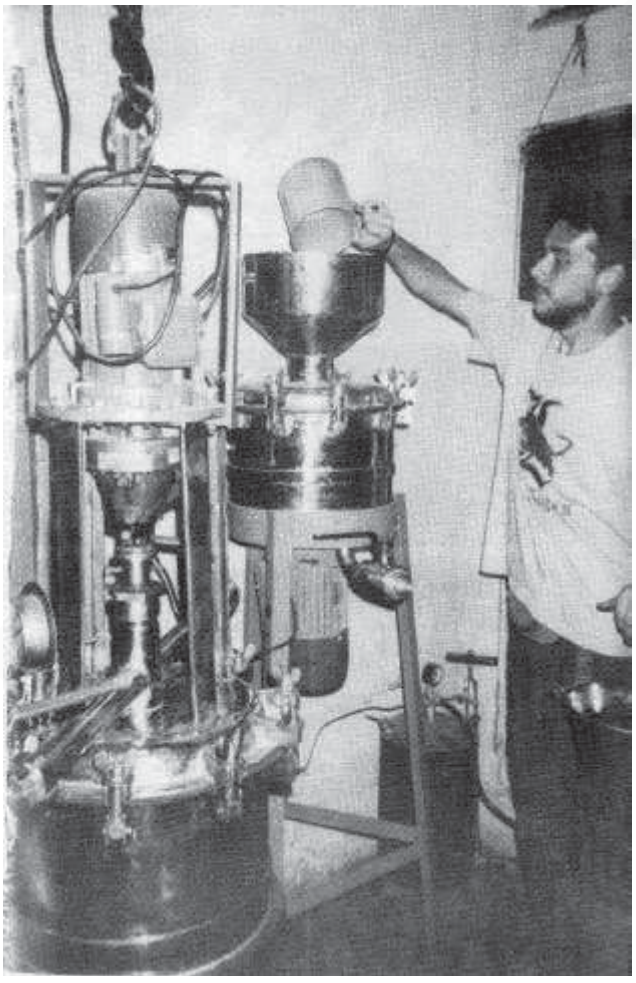
6108. **Product Name:** [Soja Cracoja].
Foreign Name: Soja Cracoja.
Manufacturer's Name: Biosoja [Sojinal].
Manufacturer's Address: 10 rue Lavoisier, F 68000 Colmar, France.
Date of Introduction: 1991. April.
Ingredients: Sugar, cocoa butter, powdered soymilk (jus de soja déshydraté e poudre; 20%), cocoa powder strongly defatted (8%), pure vanilla extract, emulsifier: soy lecithin. Cocoa: 37%.
Wt/Vol., Packaging, Price: 100 gm bar wrapped in foil.
How Stored: Refrigerated preferably.
Nutrition: Per 100 gm.: Protein 10.3 gm, fats (lipids) 34.3 gm, carbohydrates (glucides) 51.4 gm, calories (Kcal) 556 (2322 kJoules).
New Product–Documentation: Photocopy of Label sent by Heather Paine of SoyaFoods in London. 1991. April 23. 8 by 8.5 inches (foil opened out). "Confisirie Cacaotee au Soja. Ligne 'S' Nutrition Plaisir." UPC indicia.

6109. **Product Name:** [Forme Soja: Chocolate with Gianduja Hazelnuts and Soya].
Foreign Name: Chocolat aux Noisettes Gianduja et au Soja.
Manufacturer's Name: Cemoi.
Manufacturer's Address: B.P. 2006–66011 Perpignan Cedex, France.
Date of Introduction: 1991. April.
Ingredients: Cocoa (32% minimum), sugar, roasted and ground hazelnuts (20%), cocoa butter, cocoa paste, spray-dried soymilk (flocons de jus de soja; 10%), vegetable fiber, emulsifier (soy lecithin), natural aroma: vanilla pods.
Wt/Vol., Packaging, Price: 100 gm bar wrapped in foil.
How Stored: Refrigerated preferably.

New Product–Documentation: Photocopy of Label sent by Heather Paine of SoyaFoods in London. 1991. April 23. 7.5 by 8.5 inches (foil opened out). Illustration of two small elflike men carrying a huge bar of chocolate. Above them is written "The pleasure of good chocolate." Below is written, "Very low in cholesterol." UPC indicia. A photo shows a man tossing something into a garbage can. "Let's protect nature."

6110. *Child Haven International* (*Newsletter, Maxville, Ontario, Canada*). 1991. The Ottawa dinner. Spring.
• ***Summary:*** "The Ottawa Dinner is on Saturday, 20 April, 1991 at Tudor Hall. Special Guest is His Excellency, Mr. Girish Narain Mahra, High Commissioner of India to Canada. Speaker will be Tom Schatzky, of CIDA, who visited our Hyderabad project and helped us in our successful effort to receive CIDA funding for our soya milk program. Rashmi Gupta will also speak. Master of Ceremonies is Judy Darling of CBC TV. Our soya milk machine will be at the dinner for the official Canada unveiling. For reservations call Daniella [wife of Hart Jansson] at 837-2235.

A photo (nearby in this issue of the newsletter) shows a Canadian volunteer at the Child Haven home in Hyderabad pouring soybeans into the hopper of the first ("big Monster"), or one of the first, SoyaCows.



6111. Child Haven International. 1991. Soya milk cottage industry: A request for funding to the NGO division of CIDA. Maxville, Ontario, Canada. 36 p. April.
• ***Summary:*** The Project originally requested a grant from CIDA for $120,000 over two years. The first phase of CIDA approved funding was $13,025 in Nov. 1990.

Page 17: "Implementation schedule: Project milestone chart. Period: 0-5 months (* Phase I, just finished). Milestone: First 2 Soya-Cows fully operational near Hyderabad. Accomplishments: 100 children and 1,000 other persons receive improved diet. 10 persons employed; most technical problems resolved. Total: $30,300.

Period: 6-16 months. Milestone: 6 other Soya-Cows installed and operating at additional sites; very strong demand for additional machines. Accomplishments: Good-tasting soya milk available locally at 1/3 the price of cow's milk. Dozens of persons gainfully employed. Proof of self-sufficiency established. Total: $83,000.

Continues for two more periods: 17-28 months (Total of 14 Soya-Cows operating. Total: $95,000) and 29-40 months (Introduction of Soya-Cow to additional third world countries. Total: To be determined). Address: SoyaCow Committee, Child Haven International, Maxville, Ontario.

6112. **Product Name:** [Céréal Natura Soja: Natural Soya Drink].
Foreign Name: Céréal Natura Soja.
Manufacturer's Name: Céréal Wander Nutrition SA.
Manufacturer's Address: Z1 La Lombardière, 07100 Annonay, France. Phone: 75 33 22 31.
Date of Introduction: 1991. April.
Wt/Vol., Packaging, Price: 1 liter carton.
New Product–Documentation: Spot in SoyaFoods. 1991. Spring. p. 4. "Natura Soja." Products include a natural soya drink in 1 liter cartons.

6113. **Product Name:** [Céréal Natura Soja: Soya Dessert (Chocolate, or Vanilla)].
Foreign Name: Céréal Natura Soja.
Manufacturer's Name: Céréal Wander Nutrition SA.
Manufacturer's Address: Z1 La Lombardière, 07100 Annonay, France. Phone: 75 33 22 31.
Date of Introduction: 1991. April.
Wt/Vol., Packaging, Price: 0.5 liter packs.
New Product–Documentation: Spot in SoyaFoods. 1991. Spring. p. 4. "Natura Soja." Products include a soya dessert in 2 flavors.

6114. Eden Foods, Inc. 1991. Edensoy organic soy beverage: Delicious, dairy-free, nutritious (Leaflet). Clinton, Michigan. 4 panels each side. Each panel: 23 x 10 cm. April.

• ***Summary:*** A color leaflet. Contents: Edensoy, a wholesome new food. Recipes (3). What goes into Edensoy (ingredients)? What can you do with Edensoy? The right choice for health-conscious consumers. What does certified organic mean? Produced in the U.S.A. with pride, skill, and care. Environmentally responsible, inside and out.

The company's trademark is now "Making a tradition of good health." Address: 701 Tecumseh Rd., Clinton, Michigan 49236.

6115. Paine, Heather. 1991. Soya and SIAL '90: Editorial. *SoyaFoods* (*ASA, Europe*) 2(1):1. Spring.
• ***Summary:*** "Last year's SIAL (Salon International de L'Alimentaire) was certainly impressive and all the more so because soyafoods and products containing soya had a remarkably good presence... French soyafoods companies were well represented with many new products... In the 'new products' section a soya-oil based margarine from Denmark (Margarines AMA-Dragsbaek Margarine Fabrik S A) won a SIAL D'Or award and a soyamilk from Argentina (AdeS) was highly commended." Address: editor, SoyaFoods, 27a Santos Rd., London SW18 1NT, UK. Phone: 081-874-5059.

6116. *Plenty Bulletin* (*Davis, California*). 1991. A visit to the soy dairy in Guatemala. 7(1):3. Spring.
• ***Summary:*** "In 1979, at the peak of Plenty's integrated village development program in Guatemala, we bought 3,200 sq. meters of land (0.8 acre) in the village of San Bartolo in the central highlands. With the help of local Mayan volunteers a soy dairy was built on that land. In February of 1980, the dairy was open and running. Eleven years later it is still going and producing tempeh, tofu, soy flour, soy milk and soy ice-cream which are sold in nearby markets and in Guatemala City."

Alan Praskin, at the invitation of the village, returned to Guatemala and on 7 March 1991 signed title to the land over to the community and "Alimentos de San Bartolo," which is now the name of the soyfoods enterprise. The community of San Bartolo and the managers and staff of the soy dairy are Cakchiquel Mayas.

Three photos shown: Alan surrounded by San Bartolo elementary students, some of San Bartolo's soy-fed children, and a Guatemala highland family enjoying soy ice cream cones.

6117. *SoyaFoods* (*ASA, Europe*). 1991. AdeS Alimentos de Soja–Soya beverages from Argentina. 2(1):6-7. Spring.
• ***Summary:*** A new soy beverage named AdeS was launched in October 1990 at the SIAL exhibition in Paris. Made in Argentina by AdeS Alimentos de Soja SA, it was officially commended at the show. This is a new company organized by a leading soybean production firm, Establecimientos Agropecuarios Patricia María SA, located in northwest Argentina. The plant is based at La Cocha in the province of Tucuman [Tucumán], with a head office in Buenos Aires. The soymilk is made using Alfa-Laval equipment with a capacity of 6,000 liters/hour, and it contains more protein than whole cow's milk (3.2% vs. 2.9%), less fat (2.3% vs. 3.3%), and less calories (47.5 vs. 59.0). The UHT treated product is aseptically packaged using the Tetra Brik aseptic system in 200 ml and 1 liter packages. Aseptic bag-in-box and drum filling systems of 200, 300, and 500 liters are also used. Flavors currently in the market include natural, chocolate, orange, and apple. Ingredients include spring water, whole selected soybeans, sugar, authorized flavors, pectin (as an emulsifier), and added vitamins A and D. The product is now sold in Argentina, Uruguay, Paraguay, Chile, and Mexico, with plans to market in Brazil in the near future. The company is located at Avenida Vélez Sarsfield 1744 (1285), Buenos Aires, Argentina. Phone: (541) 21-8228 (8964). Fax: (541) 21-9632.

6118. Osho, S.M. 1991. Soybean recipes. Nigeria: Canada Fund, and Better Life Programme for Rural Women. 26 p. Illust. 24 cm.
• ***Summary:*** On front cover: "For a National Workshop on Soybean Processing and Utilization for Women Groups in Nigeria (20-24 May 1991)."

Contents: (1) Whole soybean recipes: Soy iru or soybean dawadawa. Soy milk. Soy nuts. Soy cheese (Tofu). Scrambled tofu (wara). Fried tofu (wara) in Vegetable soup. Ikokore with tofu (wara). Fried plantain with tofu (wara) stew. Tofu plantain pottage.

(2) Soybean cereal recipes: Soy steamed fresh maize. Soy ogi. Soy Jollof rice. Soy tuwo. Soy corn snack.

(3) Soybean / legumes: Soy moinmoin (with "½ cup soybean paste"). Soy akara.

(4) Soybean in roots and tubers. Soy ikokore. Soy ebe. Sweet cassava soy balls. Soy cassava flow cookies. (5) Snacks: Soybean / wheat puff puff. Soybean cakes. Soybean eba.

(6) Soybean milk residue [okara] recipes: Soybean bits. Soybean balls.

Note: On the white cover are the logos of the Canada Fund and Better Life Programme for Rural Women. Address: 1. Food Technologist and Coordinator, IDRC/IITA Soybean Utilization Project, International Institute of Tropical Agriculture, Oyo Road, PMB 5320, Ibadan, Nigeria.

6119. **Product Name:** Vegelicious (Non-dairy Milk Made Mainly from Potatoes).
Manufacturer's Name: Abersold Foods.
Manufacturer's Address: 2730 Morley Way, Sacramento, CA 95864. Phone: 1-800-275-1437.
Date of Introduction: 1991. May.
Ingredients: Incl. potatoes, isolated soy protein.
New Product–Documentation: Ad in Health Foods Business. 1991. May. p. 11. "Its more than delicious, it's

Vegelicious. Creamy taste similar to milk. $200.00 per month–with 6 inches of shelf space?" Free sample offer to retailers.

Ad (half page, color) in Vegetarian Times. 1992. May. p. 9. "Vegelicious: New milk option made from potatoes for superior taste and health." Neither the company name nor address are given. The phone number is 1-916-972-9142. A table compares Vegelicious in terms of 6 variables with the following products: Better than Milk?, Tofu White, Soyagen, Vitasoy, Edensoy, Westsoy, Rice Dream. 1. Dairy free–without potassium or sodium caseinate (as found in Better than Milk? and Tofu White). 2. Free of tropical hydrogenated oils and partially hydrogenated oils (as found in Better than Milk?, Tofu White, and Soyagen). 3. Convenience of premeasured 2 quart packets in a cold water dry mix. 4. As rich in calcium as milk (only Better than Milk? and Tofu White are also as rich in calcium as milk). 5. Fat grams per 8 oz (2, versus 3-7 for the others; Rice Dream is 3 and Vitasoy in 7). Calories per 8 oz (100, versus 90 to 150 for the others).

6120. Carper, Jean. 1991. The food pharmacy guide to good eating: More than 200 totally healthy recipes. New York, NY: Bantam Books. xxiv + 422 p. Index. 24 cm.
• ***Summary:*** This is a book about the medicinal and therapeutic properties of food. Part I has a long section (p. 9-13) titled "The vegetarian advantage," extolling the many health benefits of a vegetarian diet–based on many different scientific studies. However the book also contains an even longer section (p. 265-326) titled "Seafood, poultry, and meat main dishes"–with sidebars about how eating fish is good for your health.

The index contains 9 entries for tofu, 6 for soy sauce and for whole soybeans, 5 for miso, 2 for soy oil and its omega-3 fatty acids, and 1 for soy milk.

6121. INTSOY. 1991. Highlights of International Conference on Soybean Processing and Utilization. Plus closing statements and recommendations, and a directory of participants. Urbana, Illinois. 3 p. Unpublished manuscript. 28 cm.
• ***Summary:*** Organizers: Jilin Academy of Agricultural Sciences (JAAS), China–host; Chinese Academy of Agricultural Sciences (CAAS), China–co-host; International Soybean Program (INTSOY) at the University of Illinois; Ministry of Agriculture, Forestry, and Fisheries (MAFF), Japan; International Institute of Tropical Agriculture (IITA), Nigeria; Scientific Research Institute of Foods and Fermentation Industries (SRIFFI), China"

Participants: 100 foreign participants from 25 different countries and 150 participants from throughout China. 58 people from developing countries and 40 people from developed countries. Regional distribution of foreign participants: Southeast Asia–25 people from 4 countries. East Asia–23 from 3 countries. North America–17 from 1 country. Africa–13 from 5 countries. South Asia–12 from 5 countries. Europe–5 from 3 countries. Central America–2 from 1 country. Middle East–1 from 1 country.

Program: 80 research/development/policy papers presented. Topics: Research (processing/products): Breeding/germplasm 10, extrusion 9, tofu 8, fermented products 4, nutrition 4, soymilk & ice cream 3, edamame (vegetable) 2, soy protein isolates and concentrates 2, lecithin 2, other 3. Development: Country reports 21 project reports 6. Policy/economic 3.

Demonstrations and exhibitions by 37 companies from throughout China (including soy milk and ice cream).

Local visits: Modern tofu plant. Modern solvent extraction plant. Farms. Local markets/stores. Soybean research institute of Jilin Academy of Agricultural Sciences. Headquarters of the Gene Bank of Chinese Academy of Agricultural Sciences. Labs and pilot plant of Scientific Research Institute of Foods and Fermentation Industries. Address: INTSOY, 113 Mumford Hall, Urbana, Illinois 61801. Phone: 217-333-6422.

6122. Starr, Sara. 1991. Soyfoods: Pleasing to the palate, easy on the planet. *Health Foods Business.* May. p. 34-39. [1 ref]
• ***Summary:*** "Based on data from the nation-wide study, 1990 HealthFocus on U.S. Consumers, about one in ten health active food shoppers say they eat soyfoods once every two weeks or more." Address: Vice President, Health Focus Inc., Emmaus, Pennsylvania.

6123. Vandemoortele, Ph. 1991. Il latte di soia: dalla tradizione asiatica al supermarket europeo [Soymilk: From the Asiatic tradition to the European supermarket]. *Giornale della Soia* (*Il*) (*Italy*) 7(3):16-17. May. [Ita]
• ***Summary:*** From a speech presented at the Euro Soja conference in Strasbourg, France. Discusses: The tradition. Imitation or substitute for milk? New production techniques. New products. Quality standards. Terminology. The market. Soymilk production. The future. Conclusion.

Agrarwirtschaft recently published figures estimating that soymilk production in the EEC grew from 16,000 tonnes in 1986 to an estimated 28,000 tons in 1992. A color photo shows the following products: Soja Styl' (French), Drink Soja Chocolat (Formoja, France), Soyeux (Dessert in yogurt cup), Inno Fun (Innoval, France), Soja Dessert (in Yogurt cup, France), Drink Bar (Ligne S, France), Soja Biostar (Nectar Framboise, France). Address: Alpro, Belgium.

6124. Kane, Marion. 1991. Nifty Canadian invention a boon to the Third World. *Toronto Star* (*Ontario, Canada*). June 19. p. D2.
• ***Summary:*** In Maxville, eastern Ontario, the Cappuccinos are known as Reverend Fred and Bionic Bonnie. But the fame of this warm-hearted, dynamic couple, who have been

helping underprivileged children from around the world for the past 35 years, does not stop there. Over the years they have adopted 20 children from 11 different countries–an addition to having two children of their own. Now their fame has spread to India, where their relief organization, Child Haven International operates three homes for poor children.

Their latest project is the Soya Cow [SoyaCow], invented by Raj Gupta, a machine that makes palatable, low-cost, high-protein soymilk. One is in operation in Hyderabad, India, at one of the homes for poor children run by Child Haven.

The machine is a breakthrough in technology; no oxygen enters during the grinding of the soybeans, and this eliminates the "beany" flavor found in most soymilks. A photo shows two workers near the compact machine. Note: This article was reprinted in the Child Haven Newsletter (Summer 1991).

6125. *Contact* (*Plenty Canada*). 1991. A hopeful effort: San Bartolo soy products [in Guatemala]. 1(3):4-5.
• ***Summary:*** A photo shows 5 Guatemalans, 3 in traditional Mayan dress, standing behind an ice cream and popsicle truck labeled Ricos Helados de Soya. "After ten years of operation, Plenty's Soy Centre in [Solola], Guatemala, is approaching self-sufficiency... the centre is now an established micro-enterprise with a proven product line." It is administered by ADEEC (Guatemalan Association of Economic, Cultural and Educational Development), a native-based non-governmental organization (NGO) directed by Roderico Teni, with Sebastian Sub Xol as Asst. Director. "As in Sri Lanka, the introduction of soy products to the general population is much faster when sold as ready-to-eat items or when easily incorporated into a traditional dish." Soy ice cream and popsicles are extremely popular, but "the most accepted product has been the soy cheese, tofu, which is cooked with tomatoes and other vegetables instead of or as a supplement to eggs.

"The major success, however, has been in the approach to other Guatemalan institutions. 'Now we are beginning to see much larger orders, particularly the soy milk and the tofu,' Sub Xol said. 'Even commercial ice-cream makers, who use a lot of dairy milk, are starting to use our soy milk, which is about half the price of dairy milk.' Teni emphasized that by selling soy products to the larger institutions, particularly schools, orphanages and hospitals, the protein-rich supplement gets to the people who need it most."

Note: Plenty International (Jan. 1994) notes that this company is now named Alimentos San Bartolo, located at Apartado Postal 118, Solola, San Bartolo, Guatemala. Phone: 502-514896. Address: R.R. #3, Lanark, ONT, K0G 9Z9, Canada. Phone: (613) 278-2215.

6126. Durning, Alan B. 1991. Fat of the land. *World Watch* 4(3):11-17. May/June. [2 ref]
• ***Summary:*** "The American meat-centered diet fouls the air and depletes and contaminates groundwater. For the sake of the environment, we may have to eat lower on the food chain... While beef consumption per person has declined slowly since 1976 and per-capita egg consumption peaked decades ago, poultry has more than taken up the slack... Annual consumption of red meat and poultry together is at an all-time high of 178 pounds per person, up from about 137 pounds in 1955. Last year, Americans each ate about 65 pounds of beef and veal, 63 pounds of poultry, and 49 pounds of pork, plus 139 eggs and dairy products made from 70 gallons of milk... Of all farm animals in industrial countries, only cattle spend most of their lives in daylight... Taken as a whole, livestock rearing is the most ecologically damaging part of American agriculture.

"Animal farms use mountains of grain. Nearly 40 percent of the world's total, and more than 70 percent of U.S. production, is fed to livestock... No other country in the world can afford to feed so much grain to animals. Were all of that grain consumed directly by humans, it would nourish five times as many people as it does after being converted into meat, milk, and eggs... Such calculations don't mean that if Americans ate less meat, hungry people would be fed. Worldwide, 630 million people are hungry today–because they're too poor to buy food, not because food is in short supply...

"Almost half of the energy used in American agriculture goes into livestock production, the majority of it for meat... Feed grain guzzles water, too. In California, now the nation's leading dairy producer, livestock agriculture takes nearly a third–the largest share–of irrigation water.

"Jim Oltjen, professor of animal science at the University of California, Davis, estimates that half of the grain and hay fed to American livestock grows on irrigated land. He calculates that it takes about 430 gallons of water to produce a pound of pork, 390 gallons for a pound of beef, and 375 gallons per pound of chicken. Thus the water used to supply Americans with meat comes to about 190 gallons per person per day, or twice what typical Americans use at home for all purposes.

"The livestock industry uses half the territory of the continental United States for feed crops, pasture, and range... In Central America, beef exports to the United States have played a part in the tragedy of forest destruction...

"Cattle and other ruminants such as goats and sheep emit methane, a potent greenhouse gas, as they digest grass and other fibrous plants... Every pound of steak has the same greenhouse-warming effect as a 25-mile drive in a typical American car.

"The federal government also takes the blame for some waste of irrigation water through what Congress estimates is a $2.2-billion annual subsidy to western water projects. Between $500 million and $1 billion of that amount goes to feed and fodder growers... Supporting just the world's

current population of 5.3 billion people on an American-style diet would require as much energy as the world now uses for all purposes, along with two-and-a-half times as much grain as all the world's farmers produce...

"If the global food system is not to destroy its ecological base, the onus will be on rich nations to shift from consumption of resource-intensive foodstuffs toward modest fare." Address: Senior Research, Worldwatch Inst., Washington, DC.

6127. Eden Foods, Inc. 1991. Eden Foods: Healthy recipes (Brochure). Clinton, Michigan. 28 p. Each page: 23 x 10 cm. June.
• ***Summary:*** Reprinted with permission from five macrobiotic cookbooks, which are acknowledged on the last page. Address: 701 Tecumseh Rd., Clinton, Michigan 49236.

6128. **Product Name:** [Soj Alim {Soymilk}].
Foreign Name: Soj Alim (Alimento di Soja).
Manufacturer's Name: Fiorentini srl. (Importer-distributor). Made in France.
Manufacturer's Address: Strada del Francese 156, 10156 Torino, Italy.
Date of Introduction: 1991. June.
Ingredients: Water, soybeans.
Wt/Vol., Packaging, Price: 1 liter polyethylene bottles.
How Stored: Refrigerated, 4-5 day shelf life.
Nutrition: Per 100 gm.: Protein 3.8 gm, carbohydrates 1.3 gm, lipids 2.3 gm, calories 41 (kJoules 171).
New Product–Documentation: Spot in SoyaFoods. 1993. Winter. p. 5. "New packaging for Soj Alim." This soya milk has been available since June 1991, however the manufacturers have recently changed the packaging. It is sold in supermarkets.

Label sent by Heather Paine of SoyaFoods in London. 1993. Nov. 11 by 2.75 inches. Red, yellow, black, and green on white. Illustration of soymilk being poured from a plastic bottle into a glass, with a soybean plant, rolling hills, and blue sky in the background.

6129. Rani, Sandiya (Ms.). 1991. Soya milk cottage industry, Hyderabad, India. Phase 2. Andhra Pradesh, India: CHI. 1 p. June 24.
• ***Summary:*** Summary of achievements and results expected: "This project is intended to generate employment and income for women in the lower economic strata in the third world initially in India. The women who will thus benefit require little or no education and only a few days of specific training. The project will also produce a low-cost, culturally acceptable protein diet supplement for children and others in poor urban and rural communities, in the form of neutral-tasting soyamilk and soyamilk products (tofu, yogurt, etc.). The individual soyamilk cottage industry sites will be self sustaining within one year of operation..."

Projected starting date: 1 June 1991. Expected completion date: 31 March 1992.

For Canadian NGO: Cost of project: $18,569. Cost of administration: $5,933. Total: $24,502.

Requested from CIDA: Cost of project: $55,706. Cost of administration: $5,932. Total: $61,638.

Sub-total: Cost of project: $74,275. Cost of administration: $11,865. Total: $86,134.

Schedule of payments.

Note: This woman was the first head of Child Haven's SoyaCow Project in India. But she was unable to travel to visit other SoyaCow centers–a major problem. Address: Child Haven (India), 5-2–658 Chintal Basti, Khairatabad, Hyderabad 500004, Andhra Pradesh, India.

6130. *Times of India* (*The*) (*Bombay*). 1991. Dataline: Gainers and losers of the week (on the Bombay Stock Exchange). July 21. p. 14.
• ***Summary:*** Gainers includes: Noble Soya. Closed at 27.00. Up 22.73%.

6131. Bindl, Ulrike. 1991. Bedeutung von Sojaprotein fuer die Herstellung spezieller Kindernahrungsmittel [Significance of soy protein for the production of special foods for children]. In: F. Meuser and P. Suckow, eds. 1991. Soja in Lebensmitteln: Vortraege 2. Hamburger Soja-Tagung. Berlin: Technische Universitaet Berlin, Institut fuer Lebensmitteltechnologie und Gaerungstechnologie–Getreidetechnologie. 171 p. See p. 83-92. [20 ref. Ger] Address: Milupa AG, Friedrichsdorf/Ts., Germany.

6132. Brighton, W.D. 1991. Food allergy and intolerance reactions with particular regard to the protein content of vegetable food: A review of the present knowledge. In: F. Meuser and P. Suckow, eds. 1991. Soja in Lebensmitteln: Vortraege 2. Hamburger Soja-Tagung. Berlin: Technische Universitaet Berlin, Institut fuer Lebensmitteltechnologie und Gaerungstechnologie–Getreidetechnologie. 171 p. See p. 93-106. [15 ref]
• ***Summary:*** Contents: Introduction. The mechanisms of allergy. The reactions to foods: Intolerances and idiosyncrasies. Diagnosis and its difficulties. The frequency of food allergy reactions (Among plant foods, soy beans [32.0%] and soybean meal [22.0%] have relatively high rates). Presence of IgE antibodies to flours, legumes, and nuts. Benefits obtained from soy protein preparations in children. Treatment of food allergy. Summary. Address: Immunologische Laboratorien Prof. K.P. Ringel, Aachen, Germany.

6133. Central Soya Co. 1991. 1990 annual report. Ft. Wayne, Indiana. 28 p. 28 cm.
• ***Summary:*** "The Company's 1990 financial performance reflects a significant increase over 1989. Net earnings

increased 54% to $23.3 million in 1990 from $15.1 million the previous year." Net sales however decreased to $1,950.2 million in 1990 from $2,318.5 million in 1989.

"The Company's Chemurgy Division, which produced record sales and earnings again in 1990, successfully launched production in March at its new soy protein concentrate plant, the largest expansion project in the Company's history, at the Bellevue, Ohio multipurpose facility... New technology was used to produce a new soy concentrate product named Promoveal, designed as a nutritionally improved high protein milk replacer for use in specialty animal feed formulations... At Chattanooga, Tennessee, the soybean and canola processing plant and the vegetable oil refinery were scheduled to discontinue operations... At Toronto, Ontario, location problems and a lack of accessibility to vegetable oil markets prohibited profitable operation, and production was discontinued in March, 1991...

"Restructuring: The Processing and Refined Soya Products Groups were consolidated into the Oilseed Products Group which, along with the Animal Feed Group, now comprise the two major operating groups of Central Soya. Even more significantly, during 1990 the foundation was put in place for a reorganization of the Company's assets into a holding company–CSY Agri-Processing, Inc... CSY Agri-Processing, Inc. will be the parent company for three primary units, each of which will enjoy greater autonomy. The units include Central Soya Company, Inc.; Provimi Holding B.V... and Innovative Pork Concepts, Inc...

"Effective January 1, 1990, the Ferruzzi-owned European crushing operations were reorganized into a new company, Cereol. The Central Soya Utrecht [Netherlands] facility was sold to this group in early 1990... In May, an agreement was signed with Sojaprotein in Becej, Yugoslavia to manufacture and market soy protein concentrates under the name Central Protein, D.O.O."

Note: This is the earliest document seen (May 2005) that mentions Cereol. Address: P.O. Box 1400, Fort Wayne, Indiana 46801-1400.

6134. Folkers, Doerte. 1991. Verbraucherwissen ueber Soja als Naehrstoffquelle und Lebensmittel [Consumer knowledge of soya as a source of nutrients and a food]. In: F. Meuser and P. Suckow, eds. 1991. Soja in Lebensmitteln: Vortraege 2. Hamburger Soja-Tagung. Berlin: Technische Universitaet Berlin, Institut fuer Lebensmitteltechnologie und Gaerungstechnologie–Getreidetechnologie. 171 p. See p. 9-21. [10 ref. Ger]

• ***Summary:*** Discusses German consumer attitudes toward soya and plant proteins based on surveys using 8 questions with 2,000 people in 1989. When asked which of 9 foods on a list were important sources of protein, those foods receiving the highest percentage of responses were fish (85.3%), meat (72.4%), soybeans (50.3%, up from 39.0% in 1978), and butter (41.0; even though it is mostly fat and contains almost no protein). When asked if people need more or less protein, 39.3% said "about the same as before," 33.6% said "more," and 25.5% said "less."

When asked if people should consumer more plant protein or animal protein, 61.3% said more plant protein and therefore less animal protein, 19.5% said "same as before," 12.9% said that it makes no difference since "protein is protein," and 5.4% said more animal protein and therefore less plant protein.

"One source of plant protein is the soybean. Do you know if the soybean is used as a food or in foods?" 48.3% said they did not know. 37.2% said yes, as a food. 28.0% said yes, in foods.

"Which foods are you aware of in which soya is used?" Soya oil 34.1%, in breads and baking 26.3%, soy sprouts 17.8%, soy sauce 14.6%, in convenience prepared foods (*Fertiggerichten*) 9.7%, in sausages and cold cuts 8.9%, in meat substitutes 7.7%, as soybeans 7.6%, in noodles and pasta 7.0%, tofu and tofu products 6.9%, soybean flour 5.9%, vegetables 5.8%, salads and raw foods 5.4%, soyburgers or patties (Soja-Bratlinge) 4.1%, soymilk 4.0%, other 15.0%.

"I will read you a list of foods in which soya is used. Please tell me if you have heard of it, tried it, or purchased it." (percentage responses): Soy oil 70.5%/24.2%/17.7%. Raw soy sprouts 55.5/24.0/14.4. Soy sauce 54.5/28.1/17.6. In bread 39.5/19.6/14.2. In convenience prepared foods 28.5/10.0/6.5. Soyburgers or patties 21.3/7.3/3.5. Soymilk 19.4/4.0/1.8. Tofu and tofu products 18.6/7.6/4.6. In noodles or pasta 17.6/5.9/3.4. Address: Inst. fuer Ernaehrungsoekonomie und -soziologie der Bundesforschungsanstalt fuer Ernaehrung, Stuttgart, Germany.

6135. Gavin, M.; Wettstein, A. 1991. Verfahrenstechnische Fortschritte in der Entwicklung von Sojaprodukten [Progress in processing techniques in the development of soy products]. In: F. Meuser and P. Suckow, eds. 1991. Soja in Lebensmitteln: Vortraege 2. Hamburger Soja-Tagung. Berlin: Technische Universitaet Berlin, Institut fuer Lebensmitteltechnologie und Gaerungstechnologie–Getreidetechnologie. 171 p. See p. 23-38. [Ger]

• ***Summary:*** A fine-grained soy flour or powder has been developed. It can be used to make salted products (such as soyanaise {*Sojanaise*}, soynut butter {*Sojabutter*}, soy meat {*Sojafleisch*}), sweetened products (soy chocolate{*Sojachokolade*}, soy caramel {*Sojakaramellen*}), ready-to-use mixtures for the production of sweets, pasta or doughs, soymilk or tofu. Note 2. This is the earliest German-language document seen (April 2005) that mentions soynut butter, which it calls *Sojabutter.* Address: Buehler SG, Uzwil, Switzerland.

6136. *INTSOY Newsletter* (*Urbana, Illinois*). 1991. Nelson

receives major award for utilization research. No. 43. p. 2. July.

• ***Summary:*** "Alvin I. Nelson, professor emeritus in the Department of Food Science and senior research adviser for INTSOY, has been selected to receive the 1991 Meritorious Service Award for Utilization Research from the American Soybean Association. The award will be presented on July 29 at the Soybean EXPO 91 convention in Nashville, Tennessee. The award cited Nelson for his dedication in developing new food and feed uses for soybeans...

"In the late 1960s, Nelson began research on the processing of whole soybeans into food. He developed basic concepts and initiated practical processing methods that have set the industry standard. During the 1970s, he applied these processing methods in India and Sri Lanka, where he helped establish innovative new pilot processing facilities.

"In 1983, he was called out of retirement to develop a new soybean processing and utilization program for INTSOY and the Department of Food Science at the University of Illinois. His research team developed numerous innovative soy products from low-cost extrusion cooking.

"More recently, Nelson and his team developed the processing method that combines the extruder with a mechanical expeller to produce partially defatted meal and natural oil. This technique is expected to be widely adopted around the world in the next few years." Address: Univ. of Illinois, Urbana-Champaign, 113 Mumford Hall, 1301 W. Gregory Dr., Urbana, Illinois 61801.

6137. Laurin, Danielle; Jacques, H.; Moorjani, S.; Steinke, F.H.; Gagné, C.; Brun, D.; Lupien, P-J. 1991. Effects of a soy-protein beverage on plasma lipoproteins in children with familial hypercholesterolemia. *American J. of Clinical Nutrition* 54(1):98-103. July. [43 ref]
Address: 2. Département de nutrition humaine et de consommation, Pavillon Paul-Comtois, Université Laval, Québec, Canada.

6138. Lindner, A. 1991. Qualitative and nutritive aspects of different production methods of soymilk. In: F. Meuser and P. Suckow, eds. 1991. Soja in Lebensmitteln: Vortraege 2. Hamburger Soja-Tagung. Berlin: Technische Universitaet Berlin, Institut fuer Lebensmitteltechnologie und Gaerungstechnologie–Getreidetechnologie. 171 p. See p. 39-44. [Eng]

• ***Summary:*** "The processes available for making soymilk cannot simply be categorized as methods A, B, and C, although some such labels exist: Traditional Chinese Method, Cornell Method, Illinois Method, and so on. In reality most processes are a combination of methods for each step of soymilk production, making comparisons very difficult. This paper compares the differences at each step, and discusses their effect on soymilk quality.

Contents: Introduction. Production of soymilk: choice of raw material, screening, cleaning and dehulling, pretreatment and enzyme inactivation, grinding, fibre [okara] separation, deodorisation/deaeration. Standardisation and formulation of soymilk. After-treatment of soymilk (pasteurization or UHT-treatment). Packing. Conclusion. Address: Danish Turnkey Dairies Ltd., Soya Technology Div., Arhus, Denmark.

6139. Messina, Mark; Messina, Virginia. 1991. Increasing use of soyfoods and their potential role in cancer prevention. *J. of the American Dietetic Association* 91(7):836-40. July. [56 ref]

• ***Summary:*** Contents: Abstract. Introduction. Historical perspective. Soybeans and the US food supply: Soy protein products, retail soyfoods sales. Nutrient contribution of soyfoods. Soybeans and cancer risk: Experimental studies (isoflavones, protease inhibitors, epidemiology, breast cancer, colorectal cancer). Conclusions. Implications.

"Soybeans contain, in relatively high concentrations, several compounds with demonstrated anticarcinogenic activity. Two of these compounds–protease inhibitors and phytic acid–have traditionally been viewed as antinutrients... It may not be appropriate to evaluate soybeans on nutrient content alone; dietitians need to know about the nonnutritive dietary compounds, called phytochemicals, which may have anticarcinogenic effects... Overall, the epidemiologic data suggest that soy consumption may lower colorectal cancer risk, whereas there is only moderate support for the role of soy in reducing breast cancer..."

Table 1 (p. 838) gives the "Proximate composition and selected nutrient content of various soyfoods in common serving sizes and in 100-gm edible portions" (based on Haytowitz 1986). The soyfoods are: Miso, natto, okara, roasted soybeans (dry- or oil roasted), soy sauce (tamari), tempeh, firm tofu (raw), regular tofu (raw). Address: 1. Diet and Cancer Branch, Div. of Cancer Prevention and Control, National Cancer Inst., Bethesda, Maryland 20892; 2. Registered Dietitian, private practitioner, Washington, DC.

6140. Meuser, Friedrich; Suckow, Peter. eds. 1991. Soja in Lebensmitteln: Vortraege 2. Hamburger Soja-Tagung [Soya in foods: Proceedings of the Second Hamburg Soy Protein Conference]. Berlin: Technische Universitaet Berlin, Institut fuer Lebensmitteltechnologie und Gaerungstechnologie–Getreidetechnologie. 171 p. Held Oct. 1989 in Hamburg, Germany. No index. 24 cm. Series: Schriftreihe aus dem Fachgebiet Getreidetechnologie No. 9. [Ger]

• ***Summary:*** The first conference was held 4 years earlier. Contains a foreword plus 14 papers by various authors, each cited separately. This conference was sponsored by Edelsoja GmbH (Hamburg, Germany), the American Soybean Association (Hamburg), and Cargill B.V. (Netherlands). Address: Berlin.

6141. Mor, Y. 1991. Application of dried soybean powders as

replacements to dairy products. In: F. Meuser and P. Suckow, eds. 1991. Soja in Lebensmitteln: Vortraege 2. Hamburger Soja-Tagung. Berlin: Technische Universitaet Berlin, Institut fuer Lebensmitteltechnologie und Gaerungstechnologie–Getreidetechnologie. 171 p. See p. 63-70. [4 ref. Eng]
• ***Summary:*** Discusses Nurulat soy flour, made by Edelsoja GmbH, and a dairy-free chocolate spread developed from it. Contents: Introduction. Soy protein (cost relative to whole milk, efficiency of land use for protein production). Analytical data (comparing the nutritional composition of Nurulat and whole dried milk). Soy flour utilization. Product development.

The author's R&D team at the Osem company in Israel was given the assignment to develop chocolate spreads without any milk solids. This was done for religious reasons since orthodox Jews are not allowed to mix meat and dairy products. "Kosher products can be Kosher-Meat (to be eaten without any milk or other dairy products), Kosher-Milk (to be eaten without any meat products) or Kosher parve (to be eaten with dairy or meat products). Ideally the food processor wants to develop, as much as possible, foods which fall in the third category so that the consumer can consume the food at any meal, be it meat or dairy based meals." Address: Osem, Tel-Aviv, Israel.

6142. *Natural Foods Merchandiser.* 1991. Maine legislature grants soymilk exemption. July. p. 4.
• ***Summary:*** "In early June, the Maine Legislature passed and enacted LD #1256, an act to grant an exemption to the Maine Comprehensive Solid Waste Bill for aseptically packaged soymilk. The passage of this bill is a breakthrough for the soymilk industry, as Maine has the most stringent solid waste bill in the nation. Aseptically packaged soymilk will be available for sale in Maine by the end of September 1991."

6143. **Product Name:** Scotty's Sweet Rice Pudding.
Manufacturer's Name: Scotty's Wholesome Foods.
Manufacturer's Address: 666 22nd St. #21, Boulder, CO 80302. Phone: 303-443-3359.
Date of Introduction: 1991. July.
Wt/Vol., Packaging, Price: Plastic deli tub.
How Stored: Refrigerated.
New Product–Documentation: Talk with Scott Silverman. 1994. May 5. He arrived in Colorado on 15 May 1991 and during that summer he did extensive amazake product development in his kitchen. His first product was an amazake pudding, which he introduced in late July 1991. It was sold in a plastic deli tub. Amazake made up just the creamy part of the pudding.

6144. Spaid, Elizabeth Levitan. 1991. Give me a burger–Hold the meat: A widening variety of dishes enliven the plant-based diets of today's vegetarians. *Christian Science Monitor.* Aug. 1. p. 14.
• ***Summary:*** Vegetarian diets are no longer bland or uninteresting (if they ever were). Today's vegetarians enjoy a rich variety of flavors, and sound nutrition. A new generation of vegetarian adults are raising their kids on healthy vegetarian or vegan diets. They also know more about nutrition. And a much wider variety of vegetarian foods and cookbooks are easily available. Almost every supermarket now carries tofu, frozen meat alternatives, all kinds of fruits and vegetables, breakfast cereals, etc. There are now alternatives to almost every meat, dairy, or egg product–from tofu dogs to soy cheese, from eggless mayonnaise to fake bacon made of tempeh–not to mention soy milk and soy ice cream. In short, there are a great many more things to eat in the plant kingdom than in the animal kingdom.

"Many people wince when they hear the word 'vegetarian,' thinking tofu (a cheese-like food made from soybeans) and salad are the staples of such a diet." But vegetarians know this is a myth.

For many people discovering the rich, varied, and delicious flavors is a big discovery, a real and happy surprise. When many people decide to "go green" they also decide to give up meat, which is so destructive to the environment. Others believe it is ethically wrong to kill and eat animals. Still others believe that a vegetarian diet is more healthful.

Tofu can be used in a remarkable number of ways, and made to blend in so one doesn't even know its tofu. Delicious sauces can be made out of "silken tofu and miso," and people think they are eating some type of rich cream sauce.

6145. Chan, Becky. 1991. Re: Chinese people believe that soymilk is too cold for them. Letter (fax) to William Shurtleff at Soyfoods Center, Aug. 5. 1 p.
• ***Summary:*** Becky sells soybean milk in her own shop in Hong Kong. She would like to get some scientific information about soy milk because "Hong Kong people believe that soy milk is too cold for them." Address: Flat B, 1/F., 9C Yung Shue Long, Old Village, North Lamma Island, Hong Kong. Phone: 857-982-0390.

6146. Ashraf, Hea-Ran Lee. 1991. Work with soyfoods in Zambia and Illinois (Interview). *SoyaScan Notes.* Aug. 14. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Hea-Ran is Korean. After 2 years studying groundnut flour in India at CFTRI on an FAO scholarship, she came to the USA in 1976. At Iowa State Univ., working under Dr. Harry Snyder, she wrote her PhD degree thesis on the flavor of soymilk.

While in Zambia, she worked with home economics extension people, teaching them how to fortify Nshima (pronounced "SHEE-muh; a popular thick non-fermented cornmeal mush that is often eaten with the fingers) with either roasted soy flour, or with okara from soymilk. She

and Ellen Jayawardene from Sri Lanka also taught the local people to make and use soymilk. They did not teach about tofu, since no coagulant was readily available. The Lee Yeast Co., a bread company or bakery owned by Mr. Limbada, uses soy flour in their breads. Several other companies were in the process of buying Wenger- or low-cost extrusion cookers for processing soybeans. People from the University of Illinois were helping them to set up this equipment.

The key man working with soyfoods in Zambia is Fred Javaheri. He has worked in Zambia for about 20 years, initially with the USDA. An Iranian by birth, he and his family have permanent Canadian residence (but not citizenship) status but they live in Zambia. Because his religion is Baha'i, he fled from Iran after the Iranian revolution, when many of his non-Moslem faith were persecuted or killed. The Baha'i faith originated in Iran (Persia) in the 19th century and emphasized the spiritual unity of all human beings.

In 1979 she went to the Univ. of Illinois at Carbondale, where she now does mainly teaching; there is not much time or funds for research. Many of her students have do research on tofu. Address: Asst. Prof., Animal Science, Food & Nutrition, Southern Illinois Univ., Carbondale.

6147. Nordquist, Ted. 1991. New developments with Aros Sojaprodukter AB in Sweden (Interview). *SoyaScan Notes.* Aug. 23. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The Aros plant has been moved from Örsundsbro (just southwest of Uppsala) to Tingsryd in the south of Sweden. Aros is working with Trensums Musteri, a juice company located in Tingsryd, located 20 or 30 minutes miles to the north of the southern seaside city of Karlshamn. Both Tingsryd and Karlshamn are located in Blekinge County. Ted and his family will continue to live in Örsundsbro, but his office and the company administration will be moved to Enköping, about 15 minutes from his home. He will continue to commute to Tingsryd when necessary. The company is now getting ready to sell soymilk equipment to interested buyers.

Nutana in northern Europe is now being sold and Ted's company is trying to buy it. Ted first learned (in Copenhagen, Denmark) that Nutana was going to be sold from Jon? Olsen, the marketing director for Danska Nutana. Only recently did he learn that it could be sold to a company other than Hundedogs? Adventista. Address: CEO, Aros Sojaprodukter, Bergsvagen 1, S-19063 Orsundsbro, Sweden. Phone: 0171-604 56.

6148. **Product Name:** [Tofu, Plain Soymilk, Okara].
Manufacturer's Name: Alfa Bio spol. s r.o.
Manufacturer's Address: Horná 37, Banská Bystrica, Slovakia. Phone: 088/242 35.
Date of Introduction: 1991. August.
New Product–Documentation: Letter from Anna Kubová and Ján Vavrac. 1993. Oct. This company makes tofu in Slovakia. An enclosed 2-page leaflet says: "Tofu = Zdravie, silna, línia" which means "Health, strength, and silhouette [literally "line"]." It describes what tofu is, how it is made, what ingredients it contains, how it can help promote good health, and general ways of using tofu plus six recipes.

Letter and labels (for tofu and okara) sent, and form filled out by Jan Lunter of Alfa Bio. 1994 Jan. 10. This company was founded in early 1991 by Jan Lunter, a devoted vegetarian, with the goal of manufacturing, exporting, importing, distributing, and selling healthy foods. Alfa Bio company is presently owned by Jan Lunter and Radko Petrovic. They were the first company to make tofu or soymilk in Slovakia, and also in the former Czechoslovakia. After the "velvet revolution" in 1989 an opening was created for private enterprises, and the Czech population finally began to realize the negative health effects of the high-cholesterol, high-protein diet to which it had been exposed. Today Alfa Bio makes 15 tons/month of tofu and 2 tons/month of okara. They learned how to make tofu initially from books, including *The Book of Tofu* by Shurtleff and Aoyagi. Additional information came from some Austrian tofu makers as well as some Japanese one (Tokyo Tofu, etc.) during their trip to Japan in the summer of 1993.

Label for tofu. 6.5 by 6 inches. Plastic pouch. Red, black, green, and yellow on clear plastic. 100 gm. 87 calories.

6149. *Child Haven International* (*Newsletter, Maxville, Ontario, Canada*). 1991. SoyaCow update. Summer.

• ***Summary:*** "Child Haven was awarded a second grant from CIDA, this time for $62,000, to be matched by $24,000 [37.5% of CIDA's amount] from Child Haven (Any idea where we can get that kind of money?).

"Tom Schatsky, of CIDA, said the submission was very well written. Orchids to Soya Program Coordinator Hart Jansson, and his helper, Subhash Jumeja, both of whom spent long hours writing. Other SoyaCow committee members include Raj and Rashmi Gupta, and accountants Arjun Patil and Ishting Khan.

"This second phase will enable us to build and deliver six more SoyaCows and get a soya-milk program going in India.

"We very much appreciate the kind help of the India High Commission in Ottawa. His Excellency Mr. Girish Narain Mehra, has not only spoken at our dinner, but has also helped Child Haven in cutting through red tape in dealing with the various levels of Indian officialdom."

A large photo bears this caption: "The SoyaCow unveiled at the Ottawa Dinner on 20 April. Seen here [left to right, rear]: Rashmi Gupta, Co-Inventor, Arjun Patil, Tom Schatzky of CIDA, Bonnie Cappuccino, His Excellency Mr. Girish Narain Mehra. [Front]: Hart Jansson, Soya Project

Coordinator, and Fred Cappuccino. The dinner made over $4,000. Photo by Graham Iddan."

6150. **Product Name:** Indonesian Style Tempeh.
Manufacturer's Name: Culture Foods Ltd.
Manufacturer's Address: 4 All Saints Workspaces, 75 Raleigh St., Nottingham NG7 4DL, England. Phone: (0602) 788963.
Date of Introduction: 1991. August.
Wt/Vol., Packaging, Price: 12 oz (340 gm) aluminum foil container with paperboard sleeve. Retails for £1.89.
How Stored: Frozen.
New Product–Documentation: Label sent by Alison J. Clark of Culture Foods Ltd. 1991. Aug. 23. 5.76 by 4.5 inches. Orange and turquoise blue on white. Heavy paper sleeve. Logo resembling the Vegetarian Society's "V" but with a sunflower growing out of it. "No animal ingredients. Tempeh and vegetables in a coconut milk and fresh coriander sauce. No artificial additives of any kind. Tempeh is a versatile high protein soya product." A letter adds that the company, a worker's co-operative, sold its first order on 8 Aug. 1991.

6151. McSweeney, Daniel. 1991. Consumer survey 1991. *Whole Foods.* Aug. p. 34-36, 39, 41.
• ***Summary:*** This survey was conducted at 18 natural foods stores throughout the USA. Product purchases. Percentage of respondents who purchased a type of product at a natural foods during the past 12 months: Cheese substitute 28%, meat 34%, miso 34%, sea vegetables 33%, soy milk 51%, soy sauce 36%, tamari 52%, tempeh 33%, tofu 57%, yogurt (dairy) 64%.

6152. Pickarski, Ron. 1991. Friendly foods: Gourmet vegetarian cuisine. Berkeley, California: Ten Speed Press. 277 p. Illust. Index. 23 cm. [23 ref]
• ***Summary:*** This is a stylish vegan cookbook, with a wealth of sophisticated and delectable soyfoods recipes. The author recommends only high-quality ingredients. Brother Ron grew up in Michigan and during high school spent time in the restaurant business flipping hamburgers. Later he became a Franciscan monk (OFM). A look at his

own health revealed the need to change his diet. So Brother Ron changed to a natural vegetarian diet and experienced weight loss and renewed energy. Now he considers himself a food missionary–helping people transform their lives through food. Friendly foods are "foods that are friendly to our bodies, our pocket books, our busy schedules, and our environment."

In the section on dairy-like products, the author recommends soy milk and some "tofu ice creams." He recommends use of soy cheeses sparingly since they are high in fats (especially the softer types). He considers nondairy creamers to be a less healthful than their dairy counterparts, since they are high in saturated fats and artificial additives. "Typically, nondairy creamers contain corn syrup solids, partially hydrogenated vegetable oil (including coconut oil, cottonseed oil, palm oil, or palm kernel oil), sodium caseinate, sodium phosphates, mono- and diglycerides, sodium silico aluminate, and artificial color. I do not consider this type of product to be an example of a high-quality food."

Soy-related recipes include: Marinated vegetables with marinated tofu (p. 41). Shish kebabs (with marinated tofu, p. 42). Marinated tofu with scallions (p. 43). Gefilte tofu with horseradish and charoset sauce (p. 49-50). Zucchini bisque (with tofu, p. 66). Tofu wakame salad (p. 82). Tofu cottage cheese (p. 89). Vegan sour cream (with soy milk, p. 90). Soy mayonnaise (with tofu, p. 90). Silken tofu mayonnaise (p. 91). Lemon cream dressing (with tofu, p. 92). Oil-less miso dressing (with soy milk and white miso, p. 96).

In the chapter on entrees, there are detailed descriptions of tofu, tempeh, and seitan. Soysage (with cooked soybeans and soymilk, p. 105). "Meatballs" (with cooked soybeans, p. 107). American loaf (with silken tofu, p. 112-13). Tofu spinach pie (p. 120). Auberge Hanfield pie (with silken tofu, p. 121). Russian vegetable pie (with silken tofu and tofu cottage or ricotta cheese, p. 122). Greek moussaka (with tofu topping, p. 128-9). Sweet and sour tempeh (p. 133). Southern fried tofu (p. 134). Tofu Swiss steak (p. 135). Tempeh stew (p. 136). Thanksgiving day tofu (p. 137). Tofu Jamaican run down stew (p. 138). Tofu paneer (p. 139). Seitan (p. 140-43). Seitan à la Normandie (p. 144). New England boiled dinner (with tofu or seitan, p. 145). Seitan Parmesan (with vegan cheese made with tofu, p. 147-48). San Francisco stir-fry (with seitan or tofu, p. 151). Berner platte (with protein accompaniments made with tofu and Soysage, p. 155-56). Vegan Béarnaise sauce (with silken tofu, p. 161). Miso sauce (p. 164-65). Tahini lemon sauce (with silken tofu, p. 165). Steamed kale with lemon miso sauce (p. 176).

In the dessert section, there is mention to tofu chocolate as an alternative to chocolate. Carob cake (with tofu chocolate, p. 217). Chocolate cream couscous cake (with filling made with silken tofu, p. 220). Silken tofu chocolate "cheesecake" (p. 221). Key lime shamrock torte (with silken tofu, p. 222). Raspberry sabayon sauce (with silken tofu, p. 232). Tofu chocolate "buttercream" icing (p. 234). Tofu chocolate ganache (p. 234-35). Mocha grain coffee (with any grain coffee substitute, cocoa, brown rice syrup, and soy milk, p. 238). Christmas soy nog (with soy milk and lecithin granules, p. 238).

The last section of the book, titled "The Culinary Olympics," gives recipes that Brother Ron prepared while competing in these Olympics, starting in 1978. These Olympics are held every four years at Frankfurt, Germany, by the International Cooks Society. The American Culinary Federation is the U.S. organization that promotes the competition. "In 1978 I won a gold medal in the national competition, which qualified me to compete in the 1980 Culinary Olympics. In 1980 I founded the American natural foods team and, with this team, international competition to gain widespread competition for vegetarian cuisine. In that year, I became the first professional vegetarian chef to compete in the Olympics and win a medal for totally vegetarian foods. I also competed in 1984 and 1988... My team won bronze and silver medals in all three years that we entered the competition." Soy-related recipes dominate this section, and include: Baked tofu pâtés (spinach, tarragon, or carrot, p. 241-42; won a bronze medal in 1984). Tofu and sea vegetable quenelles (beet, spinach, or carrot, p. 243-45; won a silver medal in 1988). New York cima roll (with tofu, p. 248-49; won a silver medal in 1988). Tofu seitan Wellington (p. 250-51; won a bronze medal in 1984). Vegan London broil (with seitan, miso, and tamari, p. 251-52; won a bronze medal in 1984). Southern blackened tempeh with tomato-apricot-ginger coulis (p. 253-54; won a silver medal in 1988). Carrot cream in squash shell (with soy milk and tofu, p. 255-56; won a silver medal in 1988). Chocolate squash confection (with Tofu Chocolate Ganache, p. 259-60; won a silver medal in 1988). Address: O.F.M., St. Anthony's Shrine.

6153. Stepaniak, Joanne; Hecker, Kathy. 1991. Ecological cooking: Recipes to save the planet. Mobilization for Animals, Pennsylvania, Inc., P.O. Box 99762, Pittsburg, PA 15233. 228 p. Index. 23 cm.

• ***Summary:*** This vegan cookbook contains 500 recipes, including many using tofu, tempeh, miso, and soymilk. Almost all the recipes are uncomplicated, and the directions are short and simple to follow. Many can be prepared quickly. Sales and proceeds benefit Mobilization for Animals. Reviewed by Debra Wasserman in *Vegetarian Times* (May 1992, p. 97).

Note: The author self-published this book for a while, then the Book Publishing Co. in Summertown, Tennessee, became the publisher. Address: Pittsburg, Pennsylvania. Phone: 412-232-5106.

6154. **Product Name:** Vitasoy Light (Non-dairy Soy Drink; Liter Size) [Original, Vanilla, and Cocoa].
Manufacturer's Name: Vitasoy (USA) Inc. (Importer).

Made in Hong Kong.
Manufacturer's Address: 99 Park Lane, Brisbane, CA 94005. Phone: (415) 467-8888.
Date of Introduction: 1991. August.
Ingredients: Creamy Original: Filtered water, organic soybeans, barley malt, pearl barley, sunflower oil, seaweed (Japanese kelp), sea salt.
Wt/Vol., Packaging, Price: 8.4 fluid oz (250 ml), 1 liter Tetra Brik Aseptic carton. $1.89 retail.
How Stored: Shelf stable.
Nutrition: Per 6 fl oz.: Original: Calories 110, protein 7 gm, carbohydrate 10 gm, fat 5 gm. Carob: Calories 150, protein 6 gm, carbohydrate 22 gm, fat 4 gm. Chocolate: Calories 160, protein 6 gm, carbohydrate 24 gm, fat, 4 gm.
New Product–Documentation: Ad (full page, color) in Natural Foods Merchandiser. 1991. Sept. p. 40. "100% satisfaction... with only 1% fat." The three flavors are made with organically grown soybeans and sold in liter Tetra Brik cartons. A color photo shows the Original package. All products contain only 1% fat. Note: Vitasoy still adds oil to this product.

Talk with Hilton Tsui of Vitasoy. These products were first retailed in late Aug. 1991.

Note: This is the earliest commercial soymilk product seen (July 2013) with the word "Light" on the front panel.

6155. Godrej Foods Ltd. 1991. Display ad: Fixed deposit scheme. *Times of India* (*The*) (*Bombay*). Sept. 10. p. 9.
• ***Summary:*** Section F, "Profits and dividends," gives financial figures for three years. For the accounting year ending 31 March 1990 there was a profit before tax of Rs. 86.94 lakhs.

A footnote for this year states: "Combined figures of the operations of Noble Soya House Limited for 12 months and of the erstwhile Vegoils Limited for 3 months."

Note 1. This is the most recent article, ad or stock quote seen (Sept. 2010) in *The Times of India* that contains the term "Noble Soya."

Note 2. Noble Soya and Vegoils were not merged / amalgamated until 8 Feb. 1991, or thereafter. Address: Registered Office: E-7/697, Shahpura, Arera Colony, Bhopal 462 016, Madhya Pradesh.

6156. *SoyaScan Notes.* 1991. The need for a low-fat, low-calorie tofu (Overview). Sept. 11. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Fat and calorie content of this tofu should be at least 30% lower than that made from whole soybeans. Perhaps the easiest way to make this product would be to run soymilk made from whole soybeans through a dairy separator (such as a plate separator or decanting centrifuge, as is used by the dairy industry to make cream or non-fat milk) to remove the desired amount of fat, just like the dairy industry does to make low-fat or non-fat milk. There is a big potential market for such a product since 1% fat milk has now passed low-fat milk (2%) as the best-seller in American supermarkets.

Talk with Ron Roller of American Soy Products. 1992. Feb. 7. In late 1991 American Soy Products began to work with several separator companies (Westphalia and Alfa-Laval) and the dairy department of Michigan State University to try to use dairy separators to reduce the fat content of soymilk. In short, the traditional equipment and processes don't work, apparently because the fat molecules in soymilk are much smaller than those in dairy milk. The separators, which consist of a series of plates to separate heavy from light molecules, end up separating the solids from the liquids, rather than the fat from the non-fat constituents. Alfa-Laval is still trying to solve the problem, at no charge to American Soy Products.

6157. Kessler, Jon. 1991. Twin Oaks Industries buys Virginia Soyworks (Interview). *SoyaScan Notes.* Sept. 13. Conducted by William Shurtleff of Soyfoods Center. Plus a 1-page letter of Sept. 11.
• ***Summary:*** On 1 March 1991 Twin Oaks, a community, bought Virginia Soyworks from Ken Scotton, who used to live at Twin Oaks Community. About two years ago he proposed that the community buy the business from its former owner, but the community decided not to. So Ken left the community and bought the business himself. He ran it for about 1½ years then decided to sell it back to the community. He made good money (about $10/hour) but was working 60-hour weeks, largely by himself. Jon Kessler, a member of the community, re-presented the idea to the community, which decided this time to buy it. The community paid $5,000 for the business plus $10,000 for inventory of soybeans, coagulant, and packaging materials.

Scotton is not presently involved with the Soyworks, but he may re-join the community, at which time he may get involved again. The community owns the business and a crew runs and manages it cooperatively. Jon is actively involved and is a good contact person. Twin Oaks Industries' main source of income is making hammocks. The company has three general managers and their main account is Pier 1 Imports. One reason the community decided to buy the tofu business was to diversify their sources of income. Virginia Soyworks now makes about 1,000 lb/month of tofu, 40 gallons/month of soymilk, and 50 lb/month of tofu spread. The community may change the name of the Virginia Soyworks to Twin Oaks Soyworks in 1992. Address: Route 4, Box 169, Louisa, Virginia 23093. Phone: 703-894-4112.

6158. Rabheru, Neil. 1991. New developments with Unisoy, soymilk, and Haldane Foods in England (Interview). *SoyaScan Notes.* Sept. 16. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Unisoy was acquired by the Haldane Foods

Group on 21 Dec. 1990. This has proved to be a very positive development for Unisoy. It is a great honor and very satisfying for Neil to be part of the same team with Dwayne Andreas and Peter Fitch, because both are very forward looking, energetic, and supportive men. The company now makes only soymilk. Other companies in the Haldane Foods Group now make the other soy products that Unisoy used to make–which is more efficient. For example, Genice Foods Ltd. makes soy margarine, yogurts, and ice creams. Unisoy plans to expand into a larger plant, probably at a new location. That phase, which will begin within 12 months, will involve an investment of £3 to £4 million. He is presently meeting with APV in connection with a new soymilk plant. Unisoy has not launched any new products since mid-1990. Neil has been too busy absorbing the Granose line into his production. Unisoy is now making all the soymilk that Granose used to buy from DE-VAU-GE, to use in continuing the Granose line of products that contain soymilk. Thus the Unisoy/Haldane now makes the profit that DE-VAU-GE used to make.

The acquisition of Granose by the Haldane Foods group was the most brilliant move one can imagine. 90% of the products that Granose was buying from other companies can be manufactured within the Haldane Foods Group. Granose's best products included their margarine, soymilk, ice cream, and yogurt. Peter Fitch deserves the credit for this stroke of genius.

The Haldane Foods Group now sells 4 soymilk brands, all now made by Unisoy: So Good (which used to be purchased from DE-VAU-GE; Sanitarium Foods in Australia only registered their brand in Australia and New Zealand), Granose, Unisoy, and White Wave. Neil believes that Unisoy makes the best-tasting soymilk in Europe today. Recently there was an independent magazine survey of all soymilks on the market and the Granose brand made by Unisoy won first, second, sixth, and ninth places. The UK soymilk market is extremely competitive and the prices are much lower relative to cow's milk than they are in the USA. On average at all retail outlets, cow's milk retails for about £0.50 per liter versus £0.59 to £0.79 per liter for soymilk. Thus soymilk in the UK retails for about 38% more than cow's milk.

Note: In the USA, cow's milk retails for about $0.72/liter and soymilk retails for about $1.86/liter or about 2.6 *times* as much as cow's milk. The current exchange rate is 1.79 U.S. dollars = 1 British pound. Thus U.S. cow's milk would sell for £0.40/liter (20% less than British cow's milk) and soymilk would sell for £1.04/liter (about 45% more than British soymilk).

In the UK most of the soymilk is sold in the multiples (supermarkets) in half liters (500 ml) cartons, and that is where the greatest growth is. There, soymilk is only about 20% more expensive than cow's milk. (Note: In the USA very little soymilk is sold in supermarkets.)

In the UK, Provamel (made by Alpro in Belgium) has about 42% of the total soymilk market. The four brands made by Unisoy have about 35-37%. The remaining 21-23% is divided among Sunrise, Plamil, and a few others. There is very strong soymilk brand loyalty in the UK.

Unisoy increasingly refers to itself as "the soyamilk division of Haldane Foods Group." The "Milk 'n' By-Products Ltd." part of the name will be dropped very shortly.

The last part of the soyfoods market that the Haldane Foods Group will attempt to capture is tofu, since Cauldron Foods has a very big lead on Haldane in this market. The Granose line of dry mixes used to compete directly with the Haldane Food Group's Hera line. Now all these products are made at one location.

The relationship between ADM, British Arkady, and the Haldane Foods Group has changed. The Haldane Foods Group is no longer part of British Arkady; both are now on the same level on the organization chart, and both report directly to ADM's European headquarters (ADM International Ltd. in England; John R. Mahlich, managing director). Peter Fitch used to work for British Arkady before the Haldane Foods Group was formed. Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430 6329.

6159. Rabheru, Neil. 1991. The early days of the soymilk market in England, Soya Health Foods and Michael Cole (Interview). *SoyaScan Notes*. Sept. 16. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Michael Cole deserves full credit for getting soyamilk into supermarkets (multiples) in the UK. Vandemoortele was smart in capitalizing on his work to put themselves in their present strong position. It is sad that Soya Health Foods did not support Michael by investing in better technology to give a better quality product. In the early days, Soya Health Foods had everything in their grasp. If they had played their cards right, Unisoy would not be here today, and Vandemoortele might not even be in the UK. The principal(s) of Soya Health Foods were either too hesitant or not smart enough to take the necessary risks. He was content making money milking the cow (so to speak), never mind when the cow drops dead. Michael left the company out of frustration. Michael is an outstanding salesman.

Neil is absolutely certain that Michael Cole has never been involved with John Holt. Neil thinks that Michael Cole's first involvement with soyfoods in the UK was with Soya Health Foods (Sunrise). Neil spoke with Michael Cole 3 weeks ago; he is back in the UK trying to market some spray-dried organic tofu and soymilk. Neil does not know the source. Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430 6329.

6160. Cohen, Michael. 1991. Early work with soyfoods, The

Farm, Laughing Grasshopper, New England Soy Dairy, and The Tempeh Works (Interview). *SoyaScan Notes.* Sept. 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Michael's interest in soyfoods began in about 1971-72 when he became a vegetarian, while living communally with friends in Boston. He was interested in Eastern religions and philosophies, Ram Dass, Be Here Now, Hatha Yoga, etc. He probably tasted a little tofu at this time.

In early 1972, Michael took a trip to California, first met Stephen Gaskin, and got introduced to Stephen's Monday Night Class–a week before Stephen's community left (on 10 Feb. 1971) for Tennessee to buy the land that in Sept. 1971 would become The Farm. Michael returned to Boston and worked for the next 9 months to save money. In 1973 he left the USA for a year to travel on an undirected personal spiritual adventure to India, Israel, and the Middle East. While he was in India, various people in Boston with whom he was living communally got more closely involved with The Farm in Tennessee.

In the summer of 1974 Michael moved from Boston to Amherst, Massachusetts, where he got involved in a vegetarian, natural foods restaurant named Equinox. It was a 4-person partnership founded by Judy Roberts (who later married Tom Timmins); Michael was their first employee. Eventually he became a partner. The main dishes in this small natural foods luncheonette were soups, sandwiches, and salads. They occasionally prepared a soy burger from soybeans or a stir-fry tofu dinner entree. Michael worked there for about a year until there were 6-7 partners, then he and his girlfriend (Shelley Moore, who was also working there and was to become his first wife) decided (as did Judy Roberts) to leave. The restaurant soon moved into very large quarters, took on large debts, and eventually went bankrupt.

Michael and Shelley (who was from Memphis, Tennessee) left for a short tour of the southeastern United States. For most of the next 2 years he lived on The Farm in three different locations. Starting in late 1974 he and Shelley lived for 7 months on the 40-acre Virginia Farm, a satellite of the Tennessee Farm in Louisa, Virginia. During that time Michael and Shelley were married. Soybeans were grown along with vegetables and corn on this farm, and the women made soymilk in the kitchen at least twice a week and (as a treat) tofu and/or soyburgers (from mashed soybeans) every week or two. All meals were strictly vegetarian, with no dairy products or eggs. Soymilk was a staple in the diet.

Then they moved to Brattleboro, Vermont, and lived for 1-2 months with Tom and Judy Timmins in their home. Tom was working for Llama, Toucan & Crow, a worker-owned natural foods distributor. Michael then got a job working for Llama. About 6 months later, Llama (which was not making it financially) sold out to their current owner, Barclay McFadden of Stow Mills. At the time of the sale, Tom left Llama and went into partnership with Ira Leviton and Kathy Whelan in the Laughing Grasshopper Tofu Shop.

By this time Michael and Shelley had become much more interested in tofu; they were eating it frequently, had gotten a copy of *The Book of Tofu* by Shurtleff and Aoyagi, and were thinking / dreaming about starting their own small tofu plant in Brattleboro–40 miles from Laughing Grasshopper in Millers Falls. Tom Timmins convinced Michael to become a partner in Laughing Grasshopper rather than becoming a nearby competitor. So Tom left Llama, made a couple of runs into Boston driving the Laughing Grasshopper van to distribute the tofu and feel out the company, and in Feb. 1977 paid $2,000 to $2,500 to became a partner in Laughing Grasshopper. He did mostly production, but also delivered tofu to Boston and went to stores to try to pick up new accounts. Tom was more the "numbers person" and Ira fancied himself to be "the tofu master." It all worked pretty well. The company had only one product–nigari tofu. Michael does not recall them making or distributing any tofu pies or cheesecakes.

During this period, from early spring until June, Michael and his family lived on a local satellite of The Farm in Montague, Massachusetts, next to Millers Falls.

In Nov. 1977 Laughing Grasshopper moved to Greenfield and changed its name to New England Soy Dairy. At that time Steve Hassell was brought in as a controlling partner; he invested $40,000 in the company–money which the company needed and did not feel it could obtain from a bank. On 20 November 1976 Michael and Shelley had their first child. Ira told Michael, "I just hope you have your child on a Saturday so that it doesn't interfere with work."

Shortly after the move to Greenfield, before the company got back into tofu production, Michael decided to take a temporary leave of absence from the company, in part because he and Shelley decided they wanted to have their second child (soon to be born) on The Farm in Summertown, Tennessee. Michael left in June 1978 and Joshua was born in September. They stayed on The Farm until Nov. 1978. After living in Summertown for several weeks Michael and Shelley (as was the custom) donated all of their savings (about $5,000) to The Farm–permanently.

On The Farm, because of his experience at Laughing Grasshopper, Michael was considered to be a fairly knowledgeable soy person, so he went to work in the soy dairy, where the main product was soymilk (fortified with vitamin B-12 and usually sweetened with sugar); a little tofu was made occasionally. After Michael arrived, the soy dairy started making much more tofu for the 1,850 Farm residents. Typically they now made tofu twice a week, and 500 pounds each time. The people loved it. No single person in the Soy Dairy was particularly knowledgeable in making soyfoods; it was run by a rotating crew. Tempeh was made in a separate building, the Lab, by Cynthia Bates and Alexander Lyon. Michael had first learned of tempeh when he, Ira, and Tom had visited Dr. Keith Steinkraus at Cornell Univ. But at The Farm he first had a chance to taste it ("It knocked my socks

off"); unfortunately, he never had a chance to make tempeh on The Farm. Michael found the experience at The Farm, with its many equipment breakdowns, extreme poverty, and wasted time to be very frustrating; he was used to running a business efficiently.

After 5-6 months, in Nov. 1978, Michael and his family left The Farm–penniless. Returning to live briefly at the Montague Farm and work at New England Soy Dairy, he found that there was no solid position for him, so he was put in a temporary R&D position. But after a month or two, the Soy Dairy no longer felt like the place he wanted to live and work. Fortunately in Jan. 1979, Michael's father offered to lend him $30,000 to start his own business. A year earlier, Bernie Cohen at the Montague Farm had invited Michael to join in starting a tempeh business, but Michael declined saying, "It will never fly." But this time, within a few weeks, Michael decided to establish The Tempeh Works. The Soy Dairy partners were supportive of Michael's leaving, especially since they planned to focus on dairylike products and no longer planned to make tempeh. In March of 1979 Michael rented a space for the business in Greenfield and he made his first batch of tempeh there in July. It was served at the annual Soycrafters Convention in Amherst. The company began regular production in September 1979. The Tempeh Works was America's first Caucasian-run company to make only tempeh in a commercial building. Address: President, Lightlife Foods Inc., P.O. Box 870, Greenfield, Massachusetts 01302. Phone: 413-774-6001.

6161. *SoyaScan Notes.* 1991. The concepts of alkaline (*arukari-sei*) and acidic (*sansei*) foods in Japan (Overview). Sept. 20. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** It is common knowledge among most typical Japanese that foods can generally be classified along a continuum that ranges from alkaline at one end to neutral (*chusei*) in the middle, to acidic at the other end. Alkaline foods (those with an alkaline ash) are generally considered to promote and protect health. It is widely believed that one should try to keep one's blood a little on the alkaline side of neutral. According to E.C. Grey's *The Food of Japan* (League of Nations, 1928) and *Inshoku Jiten* (*Encyclopedia of food and drink;* Motoyama 1958; see arukari) and to discussions with numerous Japanese, well-known alkaline foods are as follows. Each food is followed by an "alkaline value" in parentheses taken from Grey (1928, p. 56-111; the "alkalinity is due to lime and magnesia"): sea vegetables including kombu (88.9), wakame (55.8), nori (35.3); black soybeans (40.2), yellow soybeans (38.1), soyfoods (and Soyfoods Center) including yuba (25.6), kinako roasted soy flour (25.2), Hamana natto (Hamanatto 24.8), natto (19.3), green soybeans (ao-daizu, dry; 17.8), Misozuke (vegetables preserved in miso, 16.3), shoyu (14.3); red miso (11.5), okara (9.0), white miso (8.1), edamamé (green vegetable soybeans, 5.8), aburage deep-fried tofu pouched (6.7), soymilk (3.8), tofu (1.1), shiitake mushrooms (41.0), azuki beans (27.0), umeboshi salt plums (3.1), dried fruits including dried fig (46.8), dried persimmon (21.3), raisins (15.3), cheese (18.0), most fresh fruits including yuzu (citron, 11.7), buckwheat (7.0), fig (6.3), lemon (5.9), banana (4.6), mikan (mandarin orange, 4.0); root vegetables including potatoes (13.9), tororo imo (11.5), daikon radish (5.0); most green vegetables such as komatsuna cabbage (11.3), or daikon leaves (10.9), pickled vegetables such as takuan (14.6). Alkaline beverages or liquids include tea, coffee, dairy milk (2.6), condensed milk (8.0), powdered milk (26.6), grape wines, and vinegar.

Acidic foods, which the Japanese believe should be used in moderation, include: white sugar (0), mizuame [rice syrup] (0), chocolate (3.0) and other sweet foods, eggs (2.8), flesh foods including chicken (5.2), pork (5.2), beef (5.1), fresh fish (avg. 5.3), alcoholic beverages including amazake (0), beer (0), sake (0); animal fats including butter (1.6), margarine (0.9).

Many Japanese find that acidic foods, when consumed in excess, give them acid indigestion. Neutral foods include rice (0.5-2.9), wheat (3.5-6.6), barley (2.7-4.6), and wheat gluten (1.0).

Note that this classification system is unrelated to the yin-yang continuum used by macrobiotics; most Japanese are unaware of macrobiotics. The latter, for example, considers meat to be yang (alkaline), whereas wines, fruits, and milk are yin (acidic).

6162. Archer Daniels Midland Co. 1991. Annual report. P.O. Box 1470, Decatur, IL 62525. 33 p. Sept.
• ***Summary:*** Net sales and other operating income for 1991 (year ended June 30) were $8,468 million, up 9.2% from 1990. Net earnings for 1991 were $466.7 million, down 3.5% from 1990. Shareholders' equity (net worth) is $3,922 million, up 9.8% from 1990.

"Foreign oilseeds operations were strengthened with the acquisition of a major softseed plant in Erith, U.K., and several plants in Canada. Soy protein facilities currently being added to the Europoort plant in The Netherlands should be in operation by year's end and a marketing arrangement to supply Loders Croklaan, B.V., with soy protein concentrate gives the plant a good production base to begin operations."

"ADM now operates 136 U.S. processing plants and owns, or has an ownership interest in, 34 foreign plants in seven countries. The Company 149 terminal, country, and river grain elevators." A 2-page color photo (p. 2-3) shows "ADM's Europoort plant, near Rotterdam, the world's largest soybean processing facility. Construction is underway for the addition of a vegetable oil refinery, soy protein plants and a second cogeneration unit." ADM's "oilseed processing operations operated at lower profit levels. Export margins were reduced due to heavily subsidized South American and European oilseed product sales."

"The protein specialties division expanded its position as the world's largest supplier of value-added soy proteins this year. Construction began on a facility at Europoort to produce soy protein concentrates, isolated soy proteins and the specialized raw material from which these products are formulated. The facility will serve the growing demand in Europe and the USSR for food and animal feed ingredients.

"ADM will produce a line of soy protein concentrates which Loders Croklaan will market to the animal feed industry in Western Europe. The combination of ADM's production technology and Loders Croklaan's leadership position in the animal feed ingredient market will provide a major improvement in efficiency. Products will be supplied from the Europoort facility.

"Consumer acceptance of the all-vegetable protein food item, Midland Harvest's Harvest Burger, has been encouraging and exceeds expectations. This low-fat, cholesterol-free, reduced calorie product is being sold in selected U.S. markets and in several international markets, notably England and other European Community countries, the USSR, Czechoslovakia, Finland, Mexico and Canada.

"Haldane Food Groups acquired two additional companies: Granose Foods Ltd., a pioneer in the health food industry, and Unisoya [on 21 Dec. 1990], a soya milk production company. Additional bottling capacity was installed at Saucemasters Limited when the company moved operations to a larger facility shared with Snackmasters Limited, a newly formed company manufacturing snack meals. These TVP-based products are used with either noodles or rice and are sold through supermarkets and health food stores. Genice Limited added more yogurts and non-dairy ice creams to its product range. Frozen meals from both Vegetarian Cuisine Limited and Vegetarian Feasts Limited increased their market share. Production at the leased Coventry factory was transferred to the Granose factory at Newport Pagnell, where additional land is available for further expansion."

Page 32 lists the many ADM divisions worldwide. In Europe, key soyfoods-related divisions are: The British Arkady Co. Ltd. (William Pringle, Division Director), and ADM International Ltd. (John R. Mahlich, Managing Director). Both are located in the UK. Note: The Haldane Foods Group (Peter Fitch, Managing Director), which is currently under British Arkady, will soon become an independent division. Since 1985 Peter Fitch and John Mahlich have skillfully acquired 11 of England's most important natural-, vegetarian-, and soyfood manufacturing companies to make the Haldane Foods Group unique in the world as a professional, efficient, and innovative group with a very promising future in a rapidly growing market.

Note: In Dec. 1990, ADM started making soy protein concentrates at its plant in Europoort, Netherlands. Address: Decatur, Illinois.

6163. **Product Name:** Grainaissance Amazake Pudding [Almond].
Manufacturer's Name: Grainaissance, Inc.
Manufacturer's Address: 1580 62nd St., Emeryville, CA 94608. Phone: 415-547-7256.
Date of Introduction: 1991. September.
Ingredients: Filtered water, brown rice, almonds, rice koji, modified corn starch, vanilla.
Wt/Vol., Packaging, Price: 7 oz plastic tub.
How Stored: Refrigerated.
New Product–Documentation: Label obtained at World Vegetarian Day, Berkeley, California. 1991. Oct. 6. 3 by 1.25 inches. Self adhesive. Red and green on white. New Label sent by Tony Plotkin of Grainaissance. 1993. Nov. 2. Same size and type. Red and white on blue. The ingredients are now: Filtered water, brown rice, almonds, rice koji, tapioca starch-modified, xanthan gum, vanilla.

6164. Nishimoto, Miyoko. 1991. The now and Zen epicure: Gourmet cuisine for the enlightened palate. Summertown, Tennessee: The Book Publishing Co. 250 p. Color photos. Index. 24 x 21 cm.
• ***Summary:*** This is a gorgeous, delightful vegan cookbook (though it uses honey), loaded with color photos. Most recipes, designed for entertaining, embody an atmosphere of elegance with a sense of fun, capturing the best of traditional European cuisine, offering gourmet recipes with an element of Japanese style, simplicity, and flavor. Each recipe is accompanied by a nutritional analysis, and most are remarkably low in fat.

The author is founder and owner of the Now & Zen Bakery (1838 Golden Gate Ave., San Francisco, CA 94115) which is well known for its tofu cheesecakes and other delights, and which sells dried okara. She is also a jazz vocalist and vegetarian chef. Born in Japan to a Japanese mother and an American father, she moved to Mill Valley, California, with her parents when she was age 7 and became a vegetarian at age 12. A photo on the rear cover shows Miyoko Nishimoto. She shows great virtuosity in the use of soyfoods–and wheat gluten. The section on ingredients contains excellent, detailed information on miso, nut milks and creams (almond milk and cashew milk, which the author prefers for some uses to soymilk), agar, okara, soy milk and soy cream, soy sauce, soy sour cream, soy yogurt, tamari, tempeh, tofu, frozen tofu, and pressed tofu.

Soy-related recipes include: Tofu "cheese" (p. 32). Tofu "boursin" or herb-garlic cheese ball (p. 33). Tofu "feta" cheese (p. 35). Tofu cream cheese spread with herbs (p. 36). Eggplant and tofu pâté (p. 51). Smoked tofu, mushroom, and garlic canapés (p. 53). Tofu "mornay" sauce (p. 65). Tofu aïoli (p. 82). An introduction to quick and tasty tofu cream soups is given on p. 108. Each of the following cream soups contain tofu. Cream of pumpkin soup (p. 109). Cream of corn soup (p. 110). Cream of green pea soup (p. 111).

Mediterranean eggplant and tofu gratin (p. 115). Tofu burgers suprême (p. 118). Creamy tempeh curry (p. 119). Tempeh mexicali (p. 121). Sweet and sour tofu (p. 122-23). Whole cabbage with hearty tempeh stuffing (p. 124-25). Herbed soybean casserole or stew (p. 132). Savory tempeh and vegetable stew (p. 134-35). Tofu bourguignon (p. 138-39). Homemade tofu pasta (p. 142-43). Ginger tempeh with green peppers (p. 145). Homemade gluten, Tempeh and gluten burgers, and the Great gluten turkey with dressing (p. 150-160). Tempura tofu (p. 163). Marinated tofu (p. 164). Smoky marinated tofu (p. 165). Believable bacon (with tofu, p. 166). Beans and "bacon" casserole (with tofu, p. 167). Orange-soy dressing (p. 177). Tofu sour cream (p. 179). Tofu mayonnaise (p. 180). Tofu thousand island dressing (p. 182). Tropical coconut banana ice cream or sauce (with tofu, p. 212). A different pumpkin ice cream (with tofu, p. 213). Italian cheese-less cake (with tofu, p. 216). Cashew cheesecake (with tofu, p. 217). Tofu crème (p. 218).

For a lengthy and very positive review of this book by Carol Flinders, see *Vegetarian Times* Nov. 1991, p. 86-87. Address: San Francisco, California.

6165. Ono, Tomotada; Choi, Myoeng Rak; Ikeda, Ako; Odagiri, Satoshi. 1991. Changes in the composition and size of soymilk protein particles by heating. *Agricultural and Biological Chemistry* 55(9):2291-97. Sept. [11 ref]* Address: Gifu Woman's Univ., 80 Taromaru, Gifu 501-25, Japan.

6166. *Whole Foods.* 1991. Maine exempts aseptic packaging. Sept. p. 32.
• ***Summary:*** "Bar Harbor, Maine–Aseptic juice and soy drink boxes are now allowed to be sold in the state after legislators recently voted to exempt it from the state's stringent solid waste laws... The bill does not, however, include the sale of flavored dairy and soy beverages because the legislature considers them 'pleasure foods' and therefore not considered an important dietary food source."

6167. Leneman, Leah. 1991. Re: Observations on the soyfoods market in Britain and the United States. Letter to William Shurtleff at Soyfoods Center, Oct. 7. 1 p. Typed, with signature.
• ***Summary:*** On a recent trip to the USA, Leah was "greatly puzzled by the seemingly complete absence of Tofutti. Two years ago I was able to get it wherever we went, while this time I saw it nowhere. The only completely non-dairy 'ice cream' in supermarkets was Mocha Mix, a greatly inferior product. Health food stores still had the Farm's non-dairy products and Rice Dream but no Tofutti... I certainly did miss the pleasure of eating one of my all-time favourite products!

"It certainly seems as though Britain–and even the Continent–has forged way ahead of America when it comes to soyfoods, something I would never have believed possible even a couple of years ago. We have a good range of 'ice creams', an ever-increasing range of tofu-based convenience meals etc. etc. Even Safeways has an own-brand soya milk. And in the yogurt field we are even importing divine soya milk yogurts [Sojasun] from France. (There are British ones as well but not nearly as good.)"

The Vegetarian Society of the UK has sold off its magazine, *The Vegetarian.* Note: The magazine was sold to a publisher with no connections to vegetarianism; they which re-issued it under the title *Vegetarian Living.* They went bankrupt and sold the magazine to HHL Publishing Group Ltd. in London. As of late 1993 it was still being published being published by HHL under the title *Vegetarian Living.* Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

6168. **Product Name:** [Soja Biostar Nectar (Raspberry, Exotic Fruit, Passion Fruit)].
Manufacturer's Name: Celia Group.
Manufacturer's Address: B.P. 10, 45550 St.-Denis-de-l'Hôtel, France. Phone: 38 59 02 03.
Date of Introduction: 1991. October.
Wt/Vol., Packaging, Price: 3 x 250 ml Aseptic cartons. Retails for 13.50 French francs (4/91).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Spot in SoyaFoods. 1991. Spring. p. 5. "A first in soya fruit nectars."

6169. DE-VAU-GE Gesundkostwerk GmbH. 1991. Soja-Drinks und -Desserts [Soya drinks and desserts (Leaflet)]. Luener Rennbahn 18, Postfach 1660, D-2120 Lueneburg (near Hamburg), West Germany. 2 panels each side. Each panel: 20 x 20 cm. Undated. [Ger]
• ***Summary:*** Page 1 of this color leaflet shows three milkshakes surrounded by fruits. "The alternative. Non-dairy. Cholesterol-free. GranoVita–in Harmony with nature." Exclusive Neuform certification symbol. Page 2 describes how GranoVita soya drinks and desserts are made, and lists their benefits. Color photos show a field of soybean plants and a handful of yellow soybeans. Page 3 is titled "Exactly right for high-quality nutrition." Photos show Labels of 8 GranoVita products: Bio-Soja-Drink (unsweetened, or sweetened with apple extract without added sugar), Caroba Drink, Soja-Drink (strawberry flavored), Soja-Dessert (vanilla, or chocolate). Six of these products are different; four bear the Exclusive Neuform certification symbol. Two pairs are the same product, but one bears the Exclusive Neuform certification symbol. Page 4 compares the nutritional value of sweetened GranoVita Soja-Drink with whole cow's milk (3.5% fat), including the fatty acid composition. Recipes are given for Salad marinade, Strawberry muesli, and Cauliflower in sauce. Address: Lueneburg, West Germany.

6170. Kitamura, Keisuke. 1991. Breeding high quality soybeans for food processing in Japan. In: K. Okubo, ed. 1991. Japan part of Proceedings of the International Conference on Soybean Processing and Utilization. 130 p. See p. 81-84. [18 ref]
• ***Summary:*** All soybeans grown in Japan are used to make soybean-based foods in Japan. Progress has been made in breeding soybeans to increase the content of sulfur-containing amino acids, as well as improving the food-processing quality by using mutants lacking or with lowered subunits of 7S and 11S globulins, and eliminating the lipoxygenases which are responsible for the for the generation of objectionable beany flavors using 3 types of mutants lacking the isozymes L-1, L-2, and L-3 respectively.

7S and 11S globulins are the two major proteins which amount to about 70% of the total seed proteins... 11S globulin contains 3 to 4 times more methionine and cysteine per unit protein than that of 7S globulin. Furthermore, it was reported that the two globulins have very different functional properties in soy protein foods: the isolated 11S globulin fraction formed a much harder Tofu-gel. These reports suggest that the genetic reduction of the 7S globulin content in the seeds may improve the nutritional and food-processing qualities of soybean."

"Matsuura *et al.* (1989) reported that Beta-glucosidases in soybeans are responsible for the production of daidzein and genistein from the isoflavone glucosides, daidzine and genistin, respectively during the processing of soy milk manufacturing. Because the isoflavone aglucones have more intense astringent and bitter taste than the isoflavone glucosides (Okubo *et al.* 1983), the increase of daidzein and genistein in soy milk by the action of the Beta-glucosidases causes the objectionable aftertaste of soybean products...

"So, if we could develop a new type of soybeans lacking or lowering the Beta-glucosidases in addition to the complete lack of the seed lipoxygenase isozymes, it would be an ideal soybean type for the manufacture of soy milk and related new soybean foods." Address: National Agricultural Research Center, 3-1 Kannondai, Tsukuba, Ibaraki 305, Japan.

6171. Omura, Yoshimasa; Takechi, Hironori; Hayashi, Katsuo. 1991. Improvement of soymilk flavor for new soymilk products. In: K. Okubo, ed. 1991. Japan part of Proceedings of the International Conference on Soybean Processing and Utilization. 130 p. See p. 41-46. [7 ref]
• ***Summary:*** "The method developed consists of the soaking of soybeans in water (15ºC, 18 hours) and the immersion of the soaked soybeans in hot water (70ºC, 5 minutes) before grinding. The treatment with hot water reduced the n-hexanal content in soymilk to about 1% of that in untreated one. It was shown that the reduction of n-hexanal was due to the inactivation of hydroperoxide lyase, not of lipoxygenase."

New products made from this bland tofu are: Tofu coagulated with citrus juice (*sudachi, yuzu*), tofu noodles containing dietary fiber, and fried fish cake containing tofu. Address: Tokushima Prefectural Food Research Inst., 2-41 Akui-cho, Tokushima 770, Japan.

6172. **Product Name:** Plamil Roasted Hazelnut Chocolate Bar (100% Non-Dairy).
Manufacturer's Name: Plamil Foods Ltd.
Manufacturer's Address: Plamil House, Bowles Well Gardens, Folkestone, Kent CT19 6PQ, England.
Date of Introduction: 1991. October.
Ingredients: Incl. soyamilk.
How Stored: Shelf stable.
New Product–Documentation: Spot in SoyaFoods (ASA, Europe). 1991. 2(2):7. "Non-dairy chocolate bar." This product, recently introduced, is made with the same recipe as the company's Plain Chocolate Bar. Cow's milk is replaced with soyamilk.

6173. *Plenty Bulletin* (*Davis, California*). 1991. Soy to the world. 7(3):1-2. Fall.
• ***Summary:*** "Plenty has just been awarded $29,600 by the Public Welfare Foundation of Washington, DC to help groups who have requested Plenty's assistance in starting up or expanding projects involving the production of foods made from soybeans over the next two years... Plenty representatives have pioneered the introduction and adaptation of soybean foods into the diets of people in developing countries from Central America to Africa over the past thirteen years. During Plenty's first and largest soy project to date, undertaken in Guatemala in 1979 and 1980, more than 1,000 men and women from a total of 74 different villages were taught how to make soy milk and tofu at home...

"The Corozal South Soya Producers Cooperative in Belize is a group of 25 sugar cane farming families who have been growing soybeans on the side over the past five years. Soybeans grown by the Corozal farmers are currently sold to Mennonite poultry growers who process and use the soybeans for poultry feed. The Corozal farmers have requested program design and technical assistance in establishing a soybean processing business that would make soybean foods for human consumption and use the residue for animal feeds.

"Imani House was founded by an African-American couple who have been living in Liberia for the last six years. Imani House is a child-care center and orphanage which is committed to nurturing and feeding abandoned and hungry children in war-torn Liberia. The organization has asked for Plenty's assistance to develop soybean agriculture and small-scale soy foods processing technologies at Imani House and in other parts of Liberia in an effort to create more locally-produced sources of nutritious food." Plenty has agreed to help Imani house with a community agriculture and soy

utilization project.

Plenty has also been asked to provide program design and technical assistance by organizations in Madhya Pradesh (India), Jamaica, Dominica, Barbados, St. Vincent in the Caribbean, and Guyana, as well as by American Indian communities from Pine Ridge, South Dakota, and Round Valley, California.

6174. *SoyaFoods* (*ASA, Europe*). 1991. Soya concentrate plant opened. 2(2):3. Autumn.
• ***Summary:*** The new Sogip plant for making soy protein concentrate was officially opened this summer in Bordeaux (in southwest France). Sogip is a joint venture between ONIDOL (the French oilseeds association) and Societe Francaise Bunge. 20% of the concentrate will be used for human food and 80% for calf milk replacer. The site of the new plant is Avenue Bellerive des Moines, 33530 Bassens, France. Phone: 56 31 62 10.

Note: The company makes 4 products: Provitel for veal calves, Sogipro for pigs, Sogipro P. for fish, and Sogipro T. (texturized) for dogs. The major markets for these products are in France and Italy. For more information contact SOGIP, 73-77 rue de Sèvresm BP 72, 92105 Boulogne Billancourt, France. Phone: 1/46.04.59.59.

6175. *SoyaFoods* (*ASA, Europe*). 1991. Soyafoods in Portugal. 2(2):4-5. Autumn.
• ***Summary:*** Portugal's 10 million people have an average annual income of $US4,000, the second lowest in Europe. A revolutionary coup in 1974 ended a 48-year dictatorship and led to a stable democracy. In 1986 Portugal entered the European Community (EC). The population wishes to consume more and better foods. Portugal imports approximately 800,000 tonnes of soya beans per year, of which 200,000 are used as full fat soya flour. The remaining 600,000 are crushed to produce approximately 405,000 tonnes of soya bean meal used in animal feed and 105,000 tonnes of soya bean oil used in animal feed (30,000) and edible oils (75,000). There are roughly 12 soya bean oil refiners, 3 of which are also crushers.

The country has a Mediterranean-style diet with olive oil and fish. Soyfoods are sold mostly at the small number of small 'dietetic' food stores; they include soymilk (called "vegetable milk"), soya desserts, tofu, meat extenders, and soy protein concentrates. The market is still very small. Portugal has only one tofu manufacturer, Provida (located at Quinta dos Linhais, Cortegaca, 2715 Pero Pinheiro), whose production is 2,000 kg/month. The company, whose executive director is Mr. Alcino de Sousa, also packs textured soy flour (meat extender) and estimates that the market for meat extenders in Portugal is 24 tonnes/year. Mr. Sousa is interested in a joint venture with a European or U.S. producer of tofu or soymilk. All remaining soya products available in Portugal are imported. The largest importer and distributor, Dietimport, "has 5 stores and imports and sells approximately 25 tonnes per year of textured soya protein and 20,000 litres per year of soya milk, soya desserts, and soya yogurts; it also sells 100 kg per day of tofu produced locally."

6176. *SoyaFoods* (*ASA, Europe*). 1991. Profile on Amrit Protein Foods. 2(2):5. Autumn.
• ***Summary:*** A brief description of the company, its history, and present activities. A photo shows a package of Golden Glow natural soymilk. "The company also has plans to introduce other soya milk-based products, such as soya milk powder, tofu, soya cheese, soya yogurt and desserts, into the Indian market."

6177. *SoyaFoods* (*ASA, Europe*). 1991. 'Tonyu' launched in France. 2(2):2. Autumn.
• ***Summary:*** The French soyfoods association, SOJAXA, has decided to use the Japanese term, 'tonyu,' which means soymilk, as their official name for products formerly called soyamilk or soyadrink–because of labeling difficulties in France. SOJAXA held a press conference in Paris to launch the name and promote soyfoods in general.

The group also presented the results of the second half of their consumer survey. In 1991 some 41% of those polled reported a knowledge of at least one soya product, up 6% over 1990. Some 21% of respondents had consumed at least one soya product, but only 6% consumed soya products regularly. Soya drinks and desserts (in a variety of flavors) were the most popular, followed by tofu and other products. SOJAXA is located in Toulouse, France.

6178. *SoyaFoods* (*ASA, Europe*). 1991. Changes for Haldane Foods. 2(2):2. Autumn.
• ***Summary:*** The Haldane Foods Group has acquired Unisoy Milk 'n By Products Ltd. of Stockport, UK, the manufacturers of soymilk, soy yogurts, and Maranellis soy ice cream. Following the Group's other recent acquisition of Granose Foods, the Haldane Group's headquarters have been moved to Granose Foods' premises at Howard Way, Newport Pagnell, Bucks, UK. Phone: 0908 211311. The move integrates the administration, sales, and accounts functions. Production at the Haldane factory is unaffected. Note: The Haldane Foods Group had formerly been located at Barrow Upon Soar, in Leicestershire.

6179. Takai Seisaku-sho. 1991. [Takai corporate guide]. 1-1 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan. 8 panels. Nov. 1. 30 cm. [Jap; eng]
• ***Summary:*** This color brochure, containing 5 color photos, is written in both Japanese and English. It notes that (as of 1 Nov. 1991) Takai has exported its tofu and soymilk equipment to 140 cities of 30 countries, including Bhutan, Bolivia, Brunei, Burkina Faso, Egypt, Finland, India, North

Korea, Mexico, Nepal, Philippines, Spain, Sri Lanka, Sweden, Switzerland, and Thailand.

A chronology of the company states that in July 1917 Kamejiro Takai, a former president, founded Takai & Brothers Co. It was renamed Takai Sesakusho in Jan. 1946. Address: Kanazawa, Ishikawa-ken, Japan. Phone: 0762-48-1355.

6180. *Ottawa Citizen* (*Ontario, Canada*). 1991. Milking a soya cow in order to feed the hungry. Nov. 24. p. E3.
• ***Summary:*** The SoyaCow, invented by Raj Gupta, is a machine that makes palatable, low-cost, high-protein soymilk. One machine is already helping to feed more than 100 poor children at a home run by Child Haven International in Hyderabad, India. "Child Haven, which began the project about two years ago, is now in the midst of building the first dozen machines. A machine costs about $3,000 but the price will fall as greater volumes are produced." A photo shows the compact SoyaCow machine.

Note: This article was reprinted in the *Child Haven International* newsletter of Fall / Winter 1991.

6181. Bloyd-Peshkin, Sharon. 1991. Just soy moo. *Vegetarian Times.* Nov. p. 20.
• ***Summary:*** Every Canadian province has a law prohibiting the manufacture and sale of imitation dairy products, such as soy cheeses, ice creams, milk, etc. "The only exceptions to these laws are margarine, nondairy coffee whiteners, nondairy dessert toppings and infant formula, all of which may be sold."

"Two rationales are behind these laws, which have been on the books as long as 50 years. First, imitation dairy products are considered nutritionally inferior to their dairy counterparts, and fool consumers into thinking they are getting the nutritional benefits of dairy products when they are not... And second, imitation dairy products compete with real dairy products, harming the financial well-being of dairy farmers and processors."

6182. Johnson, Lawrence A. 1991. New uses for crops: Opportunities or hype. Paper presented at Developing Alternative Uses for Crops Meeting. 23 p. Held 13 Nov. 1991 at Highlander Inn, Iowa City, Iowa.
• ***Summary:*** In this narration to a slide show containing 60 slides, the author discusses grain amaranth, crambe, soybeans, corn, soymilk, tofu, the Nichii Company, use of agricultural products to replace petroleum-derived products (such as ethanol, citric acid, lactic acid, lysine, and detergents), degradable plastics, Henry Ford and his plastic automobile parts ("Unfortunately, cheap petroleum caused his effort to be abandoned in the 1950's. Times have changed and many are reexamining this opportunity using modern technologies. Soy plastics may be more environmentally friendly."), biotechnology and soybeans, breeding soybeans with soil similar to canola oil. Address: Professor-in-Charge, Center for Crops Utilization Research, Iowa State Univ., Ames, IA 50011.

6183. PNS (Programa de Nutrición y Soya). 1991. Manual de nutrición y soya: La soya el alimento de hoy y de mañana [Manual of nutrition and soya: Soya, the food of today and of tomorrow]. San Salvador, El Salvador: PNS. 146 p. 23 cm. [8 ref. Spa]
• ***Summary:*** Contents: Introduction. Undernutrition: A sign of ecological deterioration. Our health, diet: What we eat, consequences of malnutrition, causes of malnutrition, what we should eat, soya in our diet, health and diet, the diet of mothers and children, soya in the human diet (how to prepare soymilk and soy cheese [tofu], recipes for soymilk and soy cheese, recipes for soya soup, soya masa, roasted soynuts, roasted soy flour, whole soybeans, soya desserts, soya pastries and cakes, soy sprouts [*retoños de soya*] and how to grow them).

Note. This is the earliest Spanish-language document seen (Jan. 2013) that uses the term *retoños de soya* to refer to soy sprouts.

Appendixes: Biblical passages relating to diet, chemical composition of some daily foods. Cultivation of soybeans (p. 128-45).

The book begins: "This little *Manual of Nutrition and Soya* is the fruit of the effort of a group of Christians, members of parochial [church-related] communities, and of other institutions of Christian inspiration, who are working to seek a solution to the most outstanding problems of our country. One of these is general undernutrition of our population, especially in rural and marginal sub-urban areas. Approximately 73% of Salvadorean children suffer the consequences of undernutrition."

"Six years ago the Program of Nutrition and Soya (*Programa de Nutrición y Soya,* PNS) was founded, made up at that time of the Christians of the Dioceses of Santa Ana, San Salvador and Santiago de María. Actually many institutions of the church, private and governmental, collaborate actively with this program. From the first year we have relied on the financial support of the Catholic Relief Service, which has permitted us to strengthen our activities. Subsequently the Interamerican Foundation (FIA) has offered us its financial support...

"The board of directors of PNS offers this new edition with the aim of joining efforts with those people interested in working for the eradication of undernutrition in our country." Contact PNS, Apartado Postal 2115, San Salvador, El Salvador.

Note: Letter from Kris Duville. 1992. Dec. 13. This is an informal publication, mainly directed at the courses and demonstrations, where they are sold to participants at a low cost. This is the 3rd edition, published in Nov. 1991; 8,000 copies were printed by the editing serves of the Jesuit-run

UCA (University of Central America) in San Salvador. It is sold in a few bookshops, naturist's stores, and in the PNS office. It was written by several volunteers, of whom he knows only Teresa Taris. Address: El Salvador.

6184. **Product Name:** White Almond Beverage.
Manufacturer's Name: Wholesome & Hearty Foods (Product Developer-Marketer).
Manufacturer's Address: 1416 S.E. 8th St., Portland, OR 97214. Phone: 503-238-0109.
Date of Introduction: 1991. November.
Ingredients: Water, almonds.
New Product–Documentation: Ad in *E Magazine.* 1992. Jan/Feb. p. 63. "Take a taste of our Milky Way." "Dairyless. Only 1% fat. No cholesterol. Lecithin enriched. Use like 1% milk. Developed and marketed by Wholesome & Hearty Foods, Inc."

Talk with industry watcher. 1993. April. Wholesome and Hearty terminated their agreement with Earthsave in mid-1992 for $10,000. Before (and after) that they were doing "Green Marketing" by saying that they donated a portion of their earnings to Earthsave.

6185. Bolduc, Bill. 1991. Current work with organic foods and soyfoods (Interview). *SoyaScan Notes.* Dec. 8. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** His company is in the process of developing an organic TVP. It is presently produced in Illinois under contract (on a test basis) and he hopes to have the product ready for sale by early 1992. He is in serious discussion with a major player in the grain industry, who he hopes will become his partner. Bill's company will do the R&D and marketing, not the manufacturing. No name for the product has yet been determined, but he generally refers to it as "Organic TSP" or "Organic Textured Soya Protein." He doesn't like the letters "TSP," which remind many people in the food industry of trisodium phosphate (a crystalline compound used especially in cleaning compositions). (Shurtleff suggests that Bolduc consider licensing the rights to call it "Organic TVP" from ADM via Richard Burket.) He is talking with Health Valley about the product and has a major player in England that will be ready by early 1992. The texture is similar to ADM's mince (granules).

His company is limiting itself to basic processing of the four major grain commodities grown organically in Ohio and neighboring states: soybeans, soft wheat, corn, and oats. OPC which was just incorporated on 19 Sept. 1991, is already active and has products on the market. Before that, Bill was a broker. In Dec. 1990 OPC shipped its first truckload of organic wheat flour to Barbara's bakery–under the Organic Marketing label. He is now supplying Health Valley with all of the flour that is going into their fat-free products. He does not yet have any soy products on the market. But he is also looking at doing something with soymilk in Ohio.

Update: 1992 March 14. The development of organic TVP is coming along nicely. Bill has visited ADM in Decatur, and talked by phone with Roger Kilburn (who is head of Protein Specialties at ADM; a very nice man with a background similar to Bill's). He hopes to license TVP under the name "Organic TVP." They invited him to introduce the Midland Harvest line to the natural foods industry. Bill declined because of problems with ingredients but offered to help ADM improve their ingredients for the natural food market. Address: President, Organic Processing Corp., 3307 Clifton Ave., Cincinnati, Ohio 45220. Phone: 800-647-2326.

6186. Silver, Jimmy. 1991. History of work with natural foods, Erewhon, Pure & Simple, and Pure Sales. Part I (Interview). *SoyaScan Notes.* Dec. 9 and 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jimmy was born on 21 March 1942 in Philadelphia, Pennsylvania. His father was an officer in the Army Medical Corps. After a brief stay in Baltimore, when Jimmy was in 4th grade, the family moved to Manhasset, Long Island, New York. He grew up there and graduated from high school. He graduated from Oberlin College in Ohio, then did graduate work at the University of Illinois in the Inst. of Labor and Industrial Relations. He finished his course work after 18 months, but did not write his thesis, then went to New York as a labor organizer. After receiving a draft notice during the Vietnam War, he enrolled in the University of Michigan at Ann Arbor studying Medical Care Organization. Again he completed his course work for the doctoral program, but facing the doctoral thesis, he dropped out in 1967 or 1968.

He was briefly introduced to natural foods and macrobiotics in 1967 in Ann Arbor by a friend named Earl Rosner. One day, in the midst of the psychedelic counterculture he had a deep inner realization that Americans were destroying their ecosystem, both within and without. He quit using psychedelics and began to eat only natural foods. He read *You are All Sanpaku* and *The Book of Judgment,* early macrobiotic works. He bought the books and "health foods" at an old-line health food store named Zerbo's, run by Harry Zerbo in nearby Livonia, Michigan. At the Kuwahara trading post in downtown Detroit he bought real Japanese food–such as various sea vegetables, soba, and noodles–and Koda Brothers Kokuho Rose brown rice.

At about this time (1967-68) Jimmy got into the music business, and was sort of in business with a poet named John Sinclair, who was a great bear of a man, who the media regarded as the Pharaoh of the Hippies, and who managed a band named the MC-5. Jimmy and John were partners in a production company named Trans-Love Productions–Gets You There on Time. Jimmy managed a rock group named Iggy Pop and the Stooges. After a few months John introduced Jimmy and Susan (his girlfriend of several years

and wife to be) to Jim Semark, another poet who was into macrobiotics, Baha'i, and meditation. In mid-1968 Semark invited Jimmy and Susan to a macrobiotic cooking class taught by Michio Kushi at Semark's home in Detroit; then they soon met Michel Abehsera–who they thought was wonderful and very down to earth.

Jimmy and his wife, Susan, were married on 23 Oct. 1968 in Ann Arbor. He and Susan were in Ann Arbor at the time the food co-op changed into Eden Foods but they were never members of the co-op or the Zen Macrobiotic Supper Club–for reasons that he cannot now recall. He and Susan were loners and membership in such groups wasn't their style. Jimmy's parents still lived on Long Island in New York so when he and Susan visited them, they used to go into the city and buy foods from Arnie Greenberg (who owned Greenberg's, a Jewish deli-grocery store at 125 1st Ave., near Ratner's vegetarian delicatessen, in New York City). Arnie carried foods in bulk and packaged natural foods from suppliers such as Infinity. Infinity Foods was a small food warehouse on the 2nd or 3rd floor run by a bunch of Scientologists (including Howard Rower and Jason Hammond [son of John Hammond Sr. of Columbia Records and brother of the white blues guitarist John Hammond Jr. of John Hammond and the Nighthawks]) who were into macrobiotics and natural foods. Jimmy had their catalog and visited their warehouse. Located in downtown New York at 171 Duane St. on the west side near the commercial produce and meat area, Infinity started in the mid-1960s and was the first company to import macrobiotic foods from Japan–before Erewhon. The Erewhon retail store used to carry Infinity's products. Then Infinity fell on hard times and disappeared. Arnie would also ship him macrobiotic staples by Greyhound bus. He recalls Gloria Dunn, who looked like a gypsy, and he recalls Eden Organic Foods which was on the second floor of a building near downtown Ann Arbor. Shortly after Bill Bolduc started Eden, Jimmy and his wife left for Los Angeles with Iggy Pop.

Their first daughter, Rachel was born on 23 Jan. 1969 in Ann Arbor. He went to Los Angeles with his band in the spring of 1970. He played music at night then during the day would hang out at the Erewhon retail store on Beverly Blvd. in Los Angeles with Bruce Macdonald and Paul Hawken. He thinks that Michio Kushi had sent either Bill Tara, Bruce Macdonald, or Paul Hawken from Boston to open a branch of Erewhon in Los Angeles in about the summer of 1969. Years later when the store became a wholesale company, it was given the name Erewhon West, since it had different ownership from Erewhon in Boston. At the end of the summer of 1970, he and his wife moved to Los Angeles to live with Aveline Kushi, who had a house on Franklin Ave. in Hollywood. He wanted to work with Erewhon, not in the retail store on Beverly Blvd., but in the little warehouse that they were just acquiring kitty-corner to across the street from the retail store. In about 1970 it began wholesaling and distribution business. But when Jimmy returned in the fall, Hawken was gone; he had moved to San Francisco and gone to work with Fred Rohe. Hawken had apparently had a falling out with Michio and Aveline Kushi. So Jimmy worked with Bruce Macdonald ("a wild man then, as ever").

Jimmy and his family then moved to Boston, where they lived and worked from Dec. 1970 to 1976. Jimmy had been asked by Michio Kushi to take over the failing restaurants (Sanae and The Seventh Inn) in Boston. Both were owned by Sanae Corporation. Richard Sandler and Warren Durbin had grandiose plans to expand Sanae, so they opened The Seventh Inn on Boylston St. in Boston. It was an immediate failure and they struggled with it for years afterwards–then they just up and left. Paul Hawken at Erewhon had promised to help Jimmy with Sanae.

Then Jimmy worked in Los Angeles with Erewhon West (owned by John Fountain–John Deming was the financial backer) from 1976 to 1980. John Deming's family controls the Murphy Oil Co. in Louisiana and they are extremely wealthy. Erewhon West had financial troubles trying to compete with Nature's Best and K&L–big, established distributors. In 1980 Deming fired Fountain and was going to liquidate the company–just shut it down. So Jimmy and Jeff Hilgert bought the assets from Deming and in June 1980 they transformed Erewhon West into Pure Sales. The company has done various things over the years. Initially it sold natural food consumer products. John Fogg developed the excellent marketing concept for So Tamari in about 1981. When Erewhon went bankrupt in 1981, they voided their contract with Pure Sales to permit the use of their name for a royalty–so within 90 days Pure Sales eliminated the Erewhon name from all of their products; all of the Japanese products became "So'" products (So' Tamari, So' Ramen, etc.), a name Jimmy coined, which meant nothing but sounded Japanese. Continued. Address: President, Pure Sales, P.O. Box 5116, Irvine, California 92716-5116. Phone: 714-540-5455.

6187. Silver, Jimmy. 1991. History of work with natural foods, Erewhon, Pure & Simple, and Pure Sales. Part II (Interview). *SoyaScan Notes.* Dec. 9 and 15. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In 1982 Jimmy and Jeff Hilgert sold their business (which was growing very fast), except for the name (Pure Sales), to Fillmore Foods, a supplement company that wanted to expand into natural foods. Fillmore Foods named the new company Pure & Simple–its rebirth. Bruce Macdonald, always one to see an opportunity, started Pure & Simple making natural tortilla chips in San Diego. The chips were reasonably successful. "It's not clear to me whether Bruce coined the name Pure & Simple or whether he found it on the back of a Corn Nuts package."

When Phil Parente / Parenti got involved in raising money to take over New-Age Natural Foods (Fred Rohe's

company), somehow Pure & Simple became part of the package. Bruce Macdonald took the name Pure & Simple, which he controlled, to Parente, offered to trade the name for shares in the company if Parente would continue producing his chips. He also suggested many other product ideas to expand the line. Parente agreed. Then in the early 1970s Parente was sued by the company that makes Corn Nuts because they wanted to use the Pure & Simple name. The two companies fought a legal battle over this name for several years. Parente won. Then Parente began to expand Pure & Simple. An ex-disc jockey named A.J. Celeri got Parente involved in some carrot packing operation that his family had been involved in. Then they got into organic chickens and eggs, and finally opened a big New Age natural foods supermarket in Palo Alto. A good idea that had arrived too early, it was not successful. Soon the whole thing was completely out of hand. In the end, Phil Parente ran the original Pure & Simple into the ground. He had the mafioso from the produce market chasing him, and all the people who had invested money in the company were also after him. Pure & Simple never filed formal bankruptcy papers; it just went down the drain. During this period Pure & Simple and The Well were both located in the same warehouse [at 795 West Hedding St.] in San Jose. Jimmy thinks that Pure & Simple was the name of the whole company, which owned the line of Pure & Simple branded grocery products, such as jams and juices. The Well was simply the fresh produce distribution arm of Pure & Simple.

The Lundberg brothers, producers of organically grown rice in Richvale, California, had a brother-in-law or a cousin named Dick who worked as a salesman for Shade Foods, a maker of yogurt toppings in Belmont, California. Dick went to Bill Shade and recommended that Shade acquire the Pure & Simple name and run the company. So Shade Foods bought Pure & Simple, which at that time was only producing a line of jams and a few other minor products. They were grossing about $4,000 a month and they had about $9,000 a month in expenses. Shade Foods ran Pure & Simple for about a year–into the ground. Roger Hillyard knows this whole story. Roger had a brokerage named Omega and he took Jeffrey Hilgert (who was employed by John Deming at Erewhon–Los Angeles) to Shade Foods in hopes that Jeffrey would take over the marketing of the Pure & Simple products. Jeffrey convinced Shade Foods to sell the company to Deming. Shade agreed to sell. Jimmy later bought Pure & Simple (along with Erewhon–Los Angeles) from Deming. When Jimmy sold his business (Pure Sales) to Fillmore, most of his 100 products or SKUs [SKU = stock keeping unit] were under the Pure & Simple brand. These products went off the market in about 1985-86 when the whole thing, with $5 million in sales, fell apart. Pure Sales is now primarily a supplier of organically grown ingredients to natural food manufacturers.

Of all the original natural food companies based on the Erewhon format, Eden Foods is the only one that has survived and thrived in its original format. But Eden might not be in existence if it hadn't been for soymilk.

Note: Jimmy Silver and his wife and family have long lived in Irvine, California. The physical office of Pure Sales has been in Costa Mesa since 1985. Address: President, Pure Sales, P.O. Box 5116, Irvine, California 92716-5116. Phone: 714-540-5455.

6188. Redmond, Tim. 1991. Early work with Eden Foods and macrobiotics. Part II. 1971 to 1979 (Interview). *SoyaScan Notes.* Dec. 11 and 23. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In the summer of 1971 Tim and Bill Bolduc first met Mike Potter, who had been managing a macrobiotic natural foods store named Joyous Revival in Birmingham, Michigan. Mike was born in about December 1949. There used to be free concerts on Sundays in the park in Ann Arbor. Mike would buy a 50-lb bag of rice from Eden plus a few odds and ends, take it out to the park, cook the rice, and sell it by the bowl to people in the audience.

The growing wholesale business made such large demands on Tim's time that he and Bill began to look for someone to manage the retail store. In the fall of 1971, they hired Mike Potter as manager. For a while Mike worked for little or no wages. In 1972 Bill and Tim offered Mike an ownership position, and gave him about 13% of the total stock in lieu of his service. Bill and Tim now each owned 43.5% of the company's stock. This ownership structure lasted for about one year. In about Nov. 1972 the retail store was moved from 211 State Street into a much larger location at 330 Maynard St. Potter continued to manage the retail store until about 1974.

When Bill Bolduc left the company in the late summer or fall of 1973, he and his wife Judy sold their shares back to the company. Bill left for a variety of reasons, in part because of a little friction that existed at the time. Tim now ended up owning 51% of the company stock and Michael Potter owned 49%. Tim was the president. This arrangement continued for about a year until about the winter of 1974, when Potter convinced Redmond to give up 1% of his stock for a certain amount of money he knew the company needed at the time. Tim and Mike Potter were now 50-50 partners. Potter became the president shortly thereafter.

In 1974 Tim Redmond made initial contacts with Muso, a leading macrobiotic supplier. Mike Potter now traveled to Japan and developed Eden's contacts with Muso. Eden began importing directly from Japan, but Erewhon had an arrangement with Muso which stated that Muso could only sell products to American natural foods companies under the Erewhon brand. Eventually the growing number of natural foods importers, including Eden, protested this policy. There were meetings in Florida and California. Yuko Okada of Muso and Mr. Kazama of Mitoku came to a meeting that was

held in Florida, and in about 1975 or 1976 Eden began to do business with Mr. Kazama of Mitoku, importing under the Eden brand. This move by Mitoku broke the Erewhon-Muso monopoly. Today Eden again imports all of its Japanese products from Muso.

In 1973, after about 1½ years of operating out of the rudimentary Quonset hut, Eden was ready for a bigger warehouse. So they found an old building near the middle of Ann Arbor, several streets west of Main Street, down by the railroad tracks. They shared this building and their trucking with Midwest Natural Foods which was run by Hank Bednarz and David Rock. During this period of 1½ to 2, Eden and Midwest became competitors. Eden sold only dry bulk and packaged natural foods; Midwest sold packaged health food lines, vitamins, and frozen or refrigerated goods. Though the two companies proved to be philosophically incompatible, they were the first to act as a full-line "super distributor."

Still growing, Eden moved to larger location on Platt Road in the spring of 1974. The previous 50/50 ownership structure continued until the summer 1979, when they took in Cliff Adler as a junior partner. Cliff purchased 10% of the company stock at a favorable price, leaving Mike and Tim with 45% each. Shortly after the disastrous fire occurred in Nov. 1979 at the warehouse on Platt Road, several key employees were encouraged to stay with the company by awarding them shares of stock. Also one outside person purchased some stock from the company; this provided money that the company greatly needed. The retail store and restaurant were made into an independent company (named The Maynard Street Connection, Inc.) from the Eden Foods wholesale operation.

In May 1980 Tim resigned his position with the company, sold most of his stock back to the corporation (he kept only a few shares), and took over management of the retail store and restaurant, which had been the beginning of the company. There were many personal reasons that Tim left. Since the company's future looked uncertain, he received a relatively low price for his stock. He still owns the stock he did not sell at that time. Tim and a friend operated the retail store and restaurant for about 3 years, then they sold it at the end of 1983. In mid-1984 Tim and Mike Potter had lunch and Mike invited Tim to come into the new soymilk venture, American Soy Products (ASP). Tim worked as a consultant for the first 9 months until mid-1985, at which time he became an employee of ASP. Tim is still one of a few people who own shares of stock in Eden Foods; others include Mike Potter and three other people.

Tim is interested in the question: When was Eden Foods founded? He once asked Michael Potter where Michael got that July 1967 date. He recalls that Michael said he had asked the National Bank of Detroit (NBD) in Ann Arbor, which carried Eden's first bank account. It is Tim's guess that the July 1967 date was when Ronnie Teeguarden opened the account for his used clothing store (Teeguarden-Leabu General Store). Tim feels that "Eden Foods did not start in July 1967 by any stretch of the imagination. To say [as a 1991 Eden publication does] that in 1967 'The first checking account was opened for Eden Foods' seems blatantly incorrect." The concept may have started as early as 1967 but the entity and the name did not start until Nov. 1969.

Some people have stated their opinion that the 1979 fire was caused by arson in order to collect insurance money. Tim is sure that these opinions are incorrect. During 1977 and 1978 Eden had been expanding rapidly and had gotten into a tight financial position. Cliff Adler helped the company in this situation. In 1979 they were having the most profitable months they ever had. The business was not in bad financial shape. Moreover the fire cost Eden hundreds of thousands dollars more than they ever recovered from the insurance company. Address: Vice President of Marketing and Sales, American Soy Products, Inc., 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

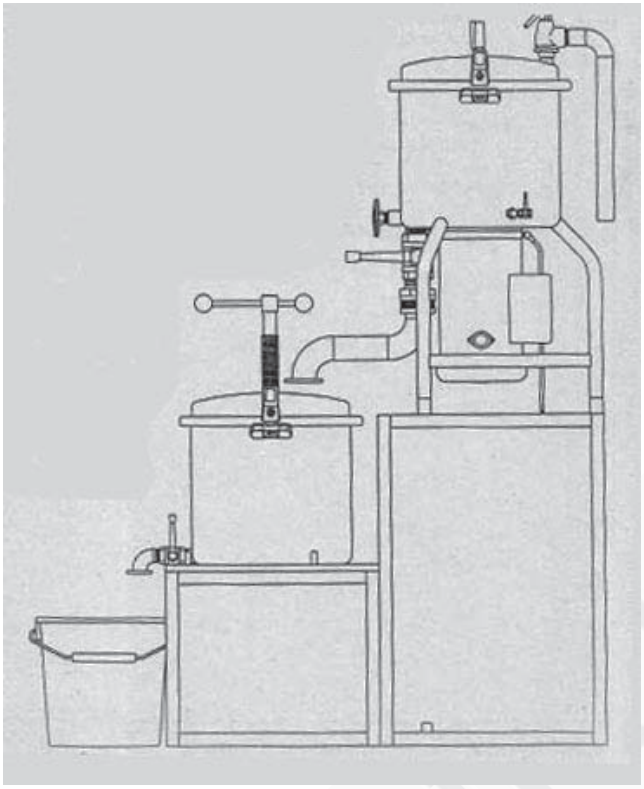
6189. Bolling, David. 1991. A water supply 'recipe' for California. *Headwaters* (*San Francisco, California*) 15(3):2. Oct/Dec.
• ***Summary:*** The main ways to get additional supplies of water in California are: (1) Cotton irrigation water: Install subsurface drip irrigation = 2 million acre feet (MAF) per year. (2) Reclaimed wastewater: More than 2 MAF of treated sewage wastewater washes out to sea each year. More than 860,000 acre feet–more than Los Angeles uses annually–could be reclaimed every year by the turn of the century. (3) Low flush toilets: Installation of ultra-low flush toilets in every home could produce 500,000 acre feet each year. (4) Less alfalfa: "Crops for cows consume more water than people do. The metropolitan Water District is exploring the possibility of buying 300,000 acre feet of water from alfalfa farmers who would then let their fields go dormant."

In addition, water marketing and price reforms could free up huge new supplies. Note: This man seems to have accepted and to be trying to work within the confines of an irrational, indeed insane and destructive, California water system. Address: Executive Director, Friends of the River, 909 12th St., Sacramento, California 95814. Phone: 916-442-3155.

6190. *Child Haven International* (*Newsletter, Maxville, Ontario, Canada*). 1991. SoyaCow. Fall/Winter. p. 3.
• ***Summary:*** On the left half of this page is reprinted an article from the *Ottawa Citizen* (24 Nov. 1991) titled "Milking a Soya Cow in order to feed the hungry."

This article, which is on the right half of the page, states: "The article at left went out on Canadian Press and appeared in many Canadian newspapers (thanks to Frank Daller). The reason the soya milk doesn't need refrigeration is that you make it as you need it. The $3,000 cost is a

projected goal after the machines are being mass-produced. At present they are $5,000. The Soya Committee is having ten machines made, 6 to be sent to India and four for sale. Call us if interested. The SoyaCow pictured below is a later improvement on the one at left in the picture (e.g. top of funnel eliminated). Child Haven is in the midst of its second CIDA program ($62,000 from CICA, $24,000 from Child Haven).



An illustration (line drawing) shows the three main components of the SoyaCow, two on platforms of different heights.

6191. Kamata, Yoshiro; Ohta, Kazutaka; Tamauchi, Fumio; Yamada, Minoru. 1991. Cheese analogs from soybeans or soymilk-curd by limited proteolysis. *Nippon Shokuhin Kogyo Gakkaishi* (*J. of the Japanese Society of Food Science and Technology*) 38(12):1143-48. *
• ***Summary:*** Using bromelain, cheese analogs can be prepared from soybean curd.

Note: Bromelain is a proteolytic enzyme extracted from the pineapple plant or from other plants of the family, *Bromeliaceae.*

6192. Kreith, Marcia. 1991. Water inputs in California food production. Water Education Foundation, 717 K Street, Suite 517, Sacramento, CA 95814. 162 p. *
• ***Summary:*** This report states that a typical 8-ounce boneless beef steak requires over 1,200 gallons of water before it reaches the table, and a 4-ounce hamburger requires over 600 gallons. An 8-ounce portion of chicken requires 165 gallons, while ½ cup of tofu (made from soybeans) needs just 60 gallons. One cup of plain yogurt takes 87.8 gallons, a 2.1-ounce chicken egg takes 62.7 gallons, and 8 fluid ounces of whole milk takes 48.3 gallons. The study, commissioned by the Water Education Foundation, sought to update numbers that originally were calculated by the University of California Cooperative Extension in 1978. The study, conducted with the assistance of an advisory committee, that included members of the California Farm Bureau Federation, takes into account water naturally available and/or applied as irrigation water to grow and process food products. The water inputs were analyzed from the beginning of the planting or growth cycle up to the time of cooking. The study assumes all crops were raised according to average California water, nutrient, and pest management practices, and irrigation efficiency of 70 percent is assumed to be average.

"While a beef steak was determined by the study to be the most water-consumptive, the most water efficient was a cup of lettuce using just under 3 gallons. Other assorted food items and their water usage were: a slice of white bread at 10.6 gallons, a slice of wheat bread at 7.3 gallons, a 2-ounce serving of pasta at 35.9 gallons..." The report costs $40 from the Water Education Foundation. Address: Sacramento, California. Phone: 916-444-6240.

6193. **Product Name:** Soymilk, and Cloth-Wrapped Tofu (Bou Bow Daufu).
Manufacturer's Name: Pak Fok Food Products Inc.
Manufacturer's Address: 2370 Midland Ave., Unit A-26 Winco Business Park, Scarborough, ONT, M1S 5C6, Canada. Phone: 416-299-7952.
Date of Introduction: 1991. December.
New Product–Documentation: Talk with Simon Kwan, owner. 1992. Oct. 8. Followed by a letter dated Oct. 9. He began making these two products in Dec. 1991, first the soymilk and then the tofu–which was the first tofu of its kind in Toronto. The texture of Bou Bow Tofu is very smooth and delicate, but it is very labor intensive to make. Mr. Kwan bought this company (the name has not changed) on 9 Oct. 1990 from Tony Lam, who was the second owner. The company was founded on 1 Jan. 1989 by Mr. Hok Chung Sung at the present address, probably under the name Dragon & Dragon Food Products. Pak Fok distributes its own products in the Toronto area.

6194. *Plenty Bulletin* (*Davis, California*). 1991. Report from Belize. 7(4):4. Winter.
• ***Summary:*** Program Director Chuck Haren has been in Belize since Sept. 6. He is "spending much of his time working with farmers and their families who are expressing boundless enthusiasm for growing and using soybeans for food. He held six soyfood demonstrations attended by a total

of 250 people in six different communities." A photo shows a soy demonstration in the Corozal District, Belize. Four women are squeezing soymilk from a bag into a pot.

6195. **Product Name:** WestSoy Plus (Non Dairy Beverage with Calcium and Vitamins A & D Added) [Plain, Vanilla, or Carob].
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor).
Manufacturer's Address: 1065 East Walnut St., Carson, CA 90746. Phone: 310-886-8200.
Date of Introduction: 1991. December.
Ingredients: Filtered water, whole organic soybeans*, brown rice syrup (brown rice, water), tricalcium phosphate, expeller pressed organic canola oil*, sea salt, vitamin A palmitate, vitamin D-2, riboflavin (vitamin B-2). * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 1 liter (1.06 quart) Tetra Brik Aseptic carton. Retails for $1.89 (7/92, Maryland).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 8 fl. oz.: Calories 150, protein 6 gm, carbohydrate 18 gm, fat 5 gm (percent calories from fat 33, polyunsaturated fat 3 gm, saturated fat 1 gm), cholesterol 0 mg, sodium 140 mg, potassium 265 mg.
New Product–Documentation: Leaflet (glossy color, front and back, 28 cm) inserted into Natural Foods Merchandiser. 1991. Dec. After p. 42. "Westsoy Plus: Calcium rich with vitamins A, D & riboflavin added." "The first soy drink to bring your customers a balance of the important nutrients found in dairy milk!" Main benefits and a list of key nutrients is given.

Product with Label purchased at Fresh Fields, Rockville Pike, Maryland. 1992. July 20. 3.75 by 6.5 by 2.5 inches. Orange, black, and yellow on white. Color photo of soymilk being poured from a pitcher into a glass. "Lactose free. Great tasting. Only 2% fat. No cholesterol." Each glass of Westsoy Plus provides the following percentages of the U.S. Recommended Daily Allowances: Calcium 30%*, vitamin D 25%*, riboflavin (vitamin B-2) 25%*, vitamin A 10%*, protein 10%. * = As much as whole cow's milk.

Ad in Natural Foods Merchandiser. 1993. Sept. p. 23. "Another important first for Westbrae was WestSoy Plus, with calcium, vitamins A, D and riboflavin added. WestSoy Plus was the first soy drink to bring your customers a balance of the important nutrients found in dairy milk. Calcium is added in the form of tricalcium phosphate, naturally occurring in phosphate rock and lime. This is the same calcium that is found in dairy milk... Vitamin A palmitate is used as a vegetarian source of vitamin A." Vitamin D is derived from torula yeast. Riboflavin is formed through a biofermentation process of ribose, which is a simple sugar. WestSoy Plus has only 2% fat.

Westsoy Plus in ½ gallon Combibloc Aseptic carton purchased on 30 April 1999 at Trader Joe's in Concord, California. Retails for $2.19. The front panel states: "Delicious non dairy soy beverage. 7 times more calcium, 10 times more vitamin A, 25 times more vitamin D, 4 times more riboflavin, than Original WestSoy. Contains 33 mg of isoflavones. Made with Organic soy beverage. Lactose free. Plain. A cholesterol-free food." A table on the back compares the amount of the following nutrients in WestSoy Plus, Original WestSoy, and Whole Milk: Calcium, Vitamin A, Vitamin D, and riboflavin (B-2). The levels for WestSoy Plus and Whole Milk are identical for each.

Half gallon vanilla purchased in April 2000 at Trader Joe's in Lafayette, California, for $2.19. Carton copy 1988. Each serving (1 cup) contains 31 mg of isoflavones. By Aug. 2002 the price has increased to $2.39 per half gallon organic vanilla.

6196. **Product Name:** Wonder-Vite Soy Coola.
Manufacturer's Name: Blissquik (Natural) Food Products.
Manufacturer's Address: 37 Hammett St., Townsville, QLD 4812, Australia. Phone: (077) 75 7109.
Date of Introduction: 1991.
Ingredients: Soybeans, carob powder, honey, water added.
Wt/Vol., Packaging, Price: 250 ml.
How Stored: Refrigerated.
New Product–Documentation: Label and letter sent by C.H. Lee. 1992. Jan. 20. 3 by 1.57 inches. Self adhesive. Dark blue and orange on pea green. "No preservative. No artificial colouring, Shake well before use." Note 1. This is apparently a carob soymilk. Note 2. The address shown above is printed on the label and letterhead but typed onto the letterhead is: Reply to: P.O. Box 197, Garbutt 4814. Phone: (077) 253947.

6197. **Product Name:** Vitamite: 2% Fat Non-Dairy Beverage.
Manufacturer's Name: Diehl Specialties International (DSI).
Manufacturer's Address: Defiance, Ohio.
Date of Introduction: 1991.
Ingredients: 1995: Water, corn syrup solids, partially hydrogenated canola oil, potassium caseinate (a milk derivative), isolated soy protein, tricalcium phosphate, dipotassium phosphate, carrageenan, salt, mono- and diglycerides, sodium stearoyl lactylate, guar gum, calcium d-pantothenate, vitamin A palmitate, vitamin D-3, riboflavin, pyridoxine hydrochloride, thiamine mononitrate, annatto (color), vitamin B-12.
Wt/Vol., Packaging, Price: 1 quart gable-top Pure Pak carton.
How Stored: Refrigerated.
New Product–Documentation: Talk with Tom Mekus, Vice President of Sales and Marketing, at DSI toll-free number (1-800-643-3930). 1995. Nov. 13. Vitamite liquid in the quart

size was introduced in 1991.

6198. Eden Foods, Inc. 1991. Eden Foods: Organic quality (Leaflet). Clinton, Michigan. 3 panels each side. Each panel: 21.5 x 9.3 cm. Undated.
• ***Summary:*** Contents: Organic pioneers. Organic integrity from soil to shelf. CropExcel, growers helping each other. What is organic farming? Why is organic farming important to you? ("Organic crowers are the ultimate environmentalists"). What does organic certification mean? Eden organic quality. Quotations from Eden's organic growers. Address: 701 Tecumseh Rd., Clinton, Michigan 49236.

6199. Lambrecht, Hillary S. 1991. Soybean storage and its effect on tofu and soymilk production. MSc thesis, Purdue University, West Lafayette, Indiana. xviii + 224 p. *

6200. **Product Name:** [Natural Soymilk].
Foreign Name: Le Soja Nature.
Manufacturer's Name: Sojalpe.
Manufacturer's Address: Allée Joule, Les Auréats, 26014 Valence, France.
Date of Introduction: 1991.
New Product–Documentation: Manufacturer's brochure sent by Heather Paine from London. 1991. April 23. In French. "Le Soja Nature par Sojalpe. Naturellement." The company logo is a steepled building with 5 soy-shaped leaves growing out of the steeple, set in front of towering mountains. A photo on the front shows a glass of this soymilk next to a muffin and a wooden spoon, all on a wooden table with some small soybeans nearby. "Soya: Free of cholesterol, supplying vegetable proteins, low in calories, rich in vitamins B-1 and minerals. Soy products contain essential fatty acids and lecithin* (*which contributes to the prevention of cardiovascular ailments), benefits the entire bodily balance and allows a light cuisine of quality. Le Soja Nature soymilk: Made from organic soybeans, it bears the Nature et Progres organic certification symbol. Can be consumed with breakfast, cold or hot, with cereals or chocolate. Ideal for use in making flans, creams, sauces, and crepes. At home, at the office, in the countryside, and at all hours of the day."

6201. **Product Name:** Soymilk (in Glass Milk Bottle).
Manufacturer's Name: Soy City Foods.
Manufacturer's Address: 2849 Dundas St. W., Toronto, ONT, M6P 1Y6, Canada.
Date of Introduction: 1991.
Wt/Vol., Packaging, Price: Bottle.
New Product–Documentation: Interview with Jon Cloud of Soy City Foods. 1991. Jan. 28. His company will soon be launching a soymilk sold in recyclable milk bottles. He never went with Tetra Pak because he didn't like their cartons. He will send a label when it comes out.

He is now working closely with the government to develop soybeans that are free of trypsin. He wants to develop better testing procedures. He found that the better the soybean nodulation, the lower the trypsin inhibitor content of the beans.

6202. **Product Name:** Tofu, Fried Soy Protein [Fried Yuba], Soy Milk.
Manufacturer's Name: Wen's Food Inc.
Manufacturer's Address: 9179-Red Branch Road, Columbia, MD 21045. Phone: 410-730-6699.
Date of Introduction: 1991.
New Product–Documentation: U.S. Soyfoods Directory. 1999. p. 45. Talk with Mr. Ting-yi Wen. 1999. May 6. The parent company of this company was started in 1987 in Taiwan. Then Mr. Wen came to Maryland and in 1991 began making the products shown above. Today he makes a host of innovative products. Tofu: Regular Tofu, Soft Tofu, Tofu Curds (*Doufu-Hwa*), Extra Firm Tofu (*Doufu-Gan*), two types of Tofu Noodles (Plain, and Spicy with Soy Sauce), Five-Spice Pressed Tofu Sheets (*Wu-hsiang pai-yeh*), and Seasoned, Rolled, Pressed Tofu Sheets (ssu-chi or suji, made from pai-yeh; season the sheets, then roll and steam).

Yuba: Crispy Soy Chicken (new name for fried yuba), plain fresh yuba (*bai dou-pi*). But he stopped making the yuba last year because: (1) It was too labor intensive; (2) Working in the hot, steam-filled room was so uncomfortable that at the end of each day he felt like a steamed dumpling. Soymilk (plain or sweetened with sugar) in ½ gallons.

Products to be introduced soon: (1) Soymilk in small single-serving cups similar to those in which yogurt is now sold (a unique packaging idea). (2) A line of soy yogurts. (3) A line of Chinese frozen entrees, such as Crispy yuba chicken with black bean sauce.

Business card sent by Ting-Yi Wen. 2001. Wen's Food Inc. makes tofu products and sauces, with Mao Pao, Kung Pao, and BlackBean flavors, plus Soy Chicken, Soy Pudding, Soy Milk, Soygurt, etc. They are still at the address above.

6203. Ali, Nawab. 1991. Final report of Indo-US sub-project on soybean processing and utilization. Bhopal, India: Soybean Processing & Utilization Project, Central Institute of Agricultural Engineering (CIAE). xxiv + 241 p. Illust. 25 cm. No. CIAE / SPU-7 (85-91) /91/140). *
• ***Summary:*** "Under the Soybean Processing and Utilization Project sponsored by the United States Agency for International Development and the Indian Council of Agricultural Research, laboratory scale processes for making fullfat [full-fat] soyflour, soypaneer, soydal, soyflakes, soysnack, soybadi and partially defatted soyflour have been adapted / developed." Address: Soybean Processing and Utilization Project, Central Inst. of Agricultural Engineering, T.T. Nagar, Bhopal–462 003, India.

6204. American Soybean Assoc., Taiwan. 1991. The tofu and soymilk industry in Taiwan. Taipei, Taiwan. 1 p. Unpublished manuscript. [Eng]
• ***Summary:*** There are 1,430 tofu manufacturers in Taiwan. They use a total of 186,072 tonnes of soybeans to make 93,036 tonnes of tofu each year. 500 companies make less than 150 kg of tofu daily; they use a total of 25,200 tonnes/year of soybeans.

490 companies make 151-200 kg of tofu daily; they use a total of 32,928 tonnes/year of soybeans.

200 companies make 201-300 kg of tofu daily; they use a total of 20,160 tonnes/year of soybeans.

143 companies make 301-600 kg of tofu daily; they use a total of 28,848 tonnes/year of soybeans.

50 companies make 601-1,800 kg of tofu daily; they use a total of 30,240 tonnes/year of soybeans.

30 companies make 1,801-2,400 kg of tofu daily; they use a total of 24,192 tonnes/year of soybeans.

12 companies make 2,401-3,600 kg of tofu daily; they use a total of 14,520 tonnes/year of soybeans.

5 companies make 3,601-6,000 kg of tofu daily; they use a total of 10,008 tonnes/year of soybeans.

There are 4,650 soymilk manufacturers in Taiwan who make an average of 30 kg/day of soymilk. They use 139.5 tonnes of soybeans each day or 5,022 tonnes of soybeans each year. Address: Taipei, Taiwan.

6205. Brandon, David L.; Bates, A.H.; Friedman, M. 1991. ELISA analysis of soybean trypsin inhibitors in processed foods. In: M. Friedman, ed. 1991. Nutritional and Toxicological Consequences of Food Processing. New York: Plenum Press. 541 p. See p. 321-37. [44 ref]
• ***Summary:*** "New monoclonal antibody-based immunoassays can measure low levels of the soybean Kunitz trypsin inhibitor (SKI) and the Bowman-Birk trypsin and chymotrypsin inhibitor (BBI) in processed foods. The enzyme-linked immunosorbent assay (ELISA) was used to measure the inhibitor content of soy concentrates, isolates, and flours, both heated and unheated..." Some residual trypsin inhibitor was found to remain after processing the in production of a soy-based infant formula. Address: Food Safety Research Unit, USDA Agricultural Research Service, Western Regional Research Center, 800 Buchanan St., Albanay, California 94710.

6206. Combibloc, Inc. 1991. Shaping your future (Manufacturer's catalog). Columbus, Ohio. 8 p. 30 cm.
• ***Summary:*** Describes the company's packages and filling equipment. "Combibloc, Inc. was launched in 1983 to meet the expanding market for aseptically packaged juices in North America." Address: 4800 Roberts Rd., Columbus, Ohio 43228. Phone: 614-876-3700.

6207. Dieudonne, Marie-Paul; Dieudonne, Pascal; Saulnier, Alain; Ferrenbach, J.P. 1991. Les nouveaux aliments: Soja–algues [The new foods: Soya and sea vegetables]. Editions S.A.E.P., Ingersheim 68000, Colmar, France. 95 p. Color photos. Index of recipes. 22 cm. Series: Delta 2000. [Fre]
• ***Summary:*** Contents: Part I of the book (p. 4-53) is about sea vegetables, by Marie-Paul and Pascal Dieudonne; Part II (p. 54-91) is about soya, by Alain Saulnier and J.P. Ferrenbach. Introduction. Economic aspects: Soybean production (worldwide, USA, France), world production of protein from various sources in million tonnes (FAO 1976; wheat 51, soya 24.9, rice 23.5, corn 23.4, meat 21.9, fish 11.8, cow's milk 6.7), protein yield, nutritional composition of various protein sources. Main nutritional characteristics of soya. Products made from soybeans: Tofu, tempeh, soymilk (*le jus de soja*), soy sprouts, shoyu or soy sauce. The causes of this explosion [of interest in soya]. Recipes: Of the 35 recipes, 33 feature tofu, 1 features tofu and soymilk, and 1 features soy sprouts. A number of the recipes include fish.

At the end is a glossary (p. 92-93) and a recipe index (p. 94-95). This book, which contains many beautiful color photos, is probably published by or in cooperation with Sojinal (formerly Cacoja) of Colmar and Issenheim. Address: Colmar, France.

6208. Fukushima, Danji. 1991. Recent progress of soybean protein foods: Chemistry, technology, and nutrition. *Food Reviews International* 7(3):323-51. [29 ref]
• ***Summary:*** Contents: Abstract. Introduction. Chemistry: Chemical composition of soybeans (Soybean globulins composed of four major components–2S, 7S, 11S, 15S), importance of three-dimensional structures of soybean protein molecules in food processing, influence of biologically active substances in soybeans on food processing. Technology: Traditional soybean protein foods and recent progress in their technology (soy milk {remove the hypocotyl and hull to remove off flavors; Soyasaponin A has the strongest off flavor}, tofu, kori-tofu, yuba), fermented soybean protein foods: Application of bioreactor for soy sauce production, nontraditional soybean protein foods and recent progress on their technology, recent progress on new soybean protein foods in which soybean proteins are the key material (modified abura-age, modified ganmodoki, deep fried texturized soy protein nuggets). Nutrition: Recent progress on nutritive values of soybean proteins (Soybean proteins have an amino acid score of 100 for persons more than 2 years old), physiological function of soybean proteins (they lower cholesterol levels when used to replace animal proteins). Future of soybean protein foods (Kikkoman fermented soy sauce is well on its way to becoming a universal seasoning. Tofu and tempeh also seem to have a bright future).

"The most important chemical reactions during the process of soybean protein foods are the intermolecular

reactions among the residues exposed on the surface of the protein molecules through the denaturation process. In native soybean protein molecules, most amino acid residues responsible for the reactions-such as cysteine (-SH), cystine (S-S), and hydrophobic amino acid residues-are buried in the inside region of the molecule, inaccessible to water. These residues become reactable with each other through the exposure from the inside by heat denaturation during processing. The unique textures of soybean protein foods, such as tofu, kori-tofu, yuba, and texturized products produced by extruder, etc., are the results of both the intermolecular interchange reaction between the exposed -SH and S-S groups and the intermolecular hydrophobic reaction among the exposed hydrophobic amino acid residues. The exposure of amino acid residues is also important for the hydrolysis of soybean proteins by enzymes, through which soy sauce is produced, because the cleavage of the peptide bonds is carried out after binding between the active sites of the enzymes and the enzyme-specific amino acid residues exposed through denaturation." Address: Kikkoman Corp., 1-25 Kanda Nishiki-cho, Chiyoda-ku, Tokyo 101, Japan.

6209. Imagine Foods. 1991. Rice Dream: Non-dairy beverage–Natural recipes. Palo Alto, California: Imagine Foods. 16 p. 22 cm.

• ***Summary:*** A vegan cookbook that uses Rice Dream (rice milk) in every recipe. Contents: Breakfast ideas. Savory soups. Sauces and gravies. Salad dressings. Hearty vegetarian entrees. Dreamy desserts. Dream drinks. Other fine products from Imagine Foods (Rice Dream non-dairy frozen dessert, and Ken & Robert's Veggie Pockets). Address: 350 Cambridge Ave., Suite 350, Palo Alto, California 94306. Phone: 415-327-1444.

6210. Kwan, Choi Wah (Guan, Caihua); et al. 1991. Ying Yue zi dian English-Cantonese dictionary: Cantonese in Yale romanization. Hong Kong: The Chinese University Press. 22 + 579 p. 18 cm. [Eng; Chi]

• ***Summary:*** The Preface begins: "The impetus for compiling this Dictionary came from the interaction of teachers and students at the New Asia–Yale-in-China Chinese Language Center of The Chinese University of Hong Kong." The book is quite compact, portable (almost a pocket book in size) and relatively inexpensive, making it very useful.

"Brief introduction to Cantonese pronunciation (p. 5): In pronouncing a syllable in Cantonese three elements must be taken into account, namely, an initial, a final, and a tone... An initial is the starting-off sound of a word." There are 19 initials in Cantonese; some are aspirated and some are not. Symbols for aspirated (5) and non-aspirated (5) stops are given. "A final is the concluding sound of a word. There are fifty of these" and they can be classified by the starting letter–A, E, I, O, U, or Y. In Cantonese, tones are very important in conveying meaning. "There are seven tones which, in the Yale system are represented by the use of diacritics and by the insertion of H for the three low tones. These seven are: 1. High falling. 2. High rising. 3. Mid level. 4. High level. 5. Low falling. 6. Low rising. 7. Low level. A chart shows the relative differences between the seven tones.

There are four different romanization systems for Cantonese (p. 8-11): Yale, IPA, Sidney Lau, and Mayer Wempe. Each has its own way of dealing with initials, finals, and tones. This helps to explain why the same word or term is written in so many different ways by Cantonese speakers. No Chinese characters appear in this book. However there is a long section of grammatical notes (p. 12-21) which contains many basic concepts not found in English–such as attributives, boundforms, functive verbs, measures, movable adverbs, etc. On page 22 is a list of abbreviations. Now for soy-related words:

Bean (noun) dau, dauh. Bean curd (dauhfuh). Bean sprouts (ngahchoi).

Ketchup: kejap.

Soy (noun). baahkdau; wohngdau * soy sauce (noun). sihyauh (M: jeun; di).

Soybean (noun). baahkdau; wohngdau * soybean milk (noun). dauhjeung (M: wun).

Words not listed include: catsup

6211. Passmore, Jacki. 1991. The encyclopedia of East Asian food and cooking (Document part II). New York, NY: William Morrow. 320 p. [44 ref]

• ***Summary:*** Continued from p. 153: Korean bean paste: See Dhwen jang. Koshi-an (Japan): See Azuki beans (an). Koya tofu (Japan): See Bean curd, freeze-dried [sic].

Kuzu (Japan): See Flours and thickeners. Lentil (*Lens esculenta*)*:* Red lentil, Red mung beans.

Light soy sauce: See Soy sauce.

Lu soy (lo shui, China): See soy sauce.

Maltose: Made by fermenting germinated grains of barley. When used to glaze foods, may have soy sauce and red food coloring added. Also known as: Malt sugar, [barley malt syrup].

"Ma-po" dofu [Mabo-dofu]: See beef.

Mean see jiang [mian shi jiang] (min see jiang, China): See Bean pastes and sauces.

Mein jin pau [mien jin pau] (China): See Gluten.

Mianjin (China): Gluten.

Mien see (mien-si [mian shi], China): See Bean pastes and sauces.

Miso (Japan): (1) Hatcho-miso. (2) Inaka miso or Sendai miso. Also known as Red miso. (3) Shinshu miso. (4) Shiro miso.

Mochi. Monosodium glutamate. Also known as: Mei jing (China); aji-no-moto (Japan); servuk perasa (Malaysia); ve tsin (Vietnam), M.S.G., taste essence, taste powder.

Moyashi (Japan): See Bean sprout.

Mung bean. Also known as moong ke dal (India);

kacang djong, kacang eedjo [hijau, katjang idjo] (Indonesia); kacang hiau (Malaysia); tau ngok (Thailand); dau xanh (Vietnam); green gram.

Nama-age (nah-mah ah-geh, Japan): See Bean curd, deep fried.

Nama fu (Japan): Raw / uncooked wheat gluten.

Natto (Japan). See soybean.

Noodles: (1) Bean curd noodles (China). Also known as Soy noodles, soy vermicelli.

Oils and fats: Soybean oil. (2) Bean curd skin noodles (China) [yuba noodles].

Peanut (with many foreign names and recipes).

Preserved black beans: See Fermented black beans.

Pressed bean curd: See Bean curd (pressed).

Red bean paste, sweet: "An important ingredient in Chinese and Japanese cooking, sweet red bean paste is made by boiling the red azuki bean and mashing it to a paste with lard or oil, then cooking it until it is fairly dry or thick. In Japan, red bean paste is made in two textures: the smooth purée is koshi-an and the chunky version, with the beans only partly crushed, is tsubushi-an. It is a filling for cakes and sweet buns, and is used in several desserts." Also known as hong dow sar (China), an (Japan). Contains a recipe for Sweet red bean paste.

Red rice: See Fermented red rice.

Rice: Many type of glutinous and non-glutinous.

Rolled bean curd: See Bean curd sticks [dried yuba].

Seaweed: Many different types. Seaweed gelatin or Seaweed jelly: See agar agar.

Sendai miso (Japan): See miso.

Sesame seed: Black sesame seed, sesame oil, sesame paste, white sesame seed.

Shinshu miso (Japan). Shui doufu (China): See bean curd (silk). Silk bean curd: See Bean curd (silk).

Soybean (*Glycine max*)*:* (1) Black soybeans. (2) Fresh soybeans [edamame]. (3) Yellow soybeans. Soybean cheese: See Bean curd, fermented [fermented tofu]. Soybean condiment: See Bean pastes and sauces. Soybean milk. Also known as tau cheing, tau ni (China). With homemade soymilk recipe. Soybean noodle: See Noodles, bean curd. Soybean oil: See fats and oils. Soybean paste: See Bean pastes and sauces. Soybean sprout: See bean sprout. Soy flour: See Flours and thickeners.

Soy sauce: "An ancient seasoning, first used in China more than 3,000 years ago. Known in its original form as *shih,* it was a thin salty liquid in which floated fragments of fermented soybeans." "Soy sauce is to Chinese and Japanese cooking what the pungent, salty fish sauce known as nam pla or nuoc mam is to Thailand and Vietnam respectively." (1) Dark soy sauce. Also known as jang yau, see yau (China); koikuchi shoyu, tamari (Japan), kecap pekat (Malaysia); mushroom soy. (2) Light soy sauce: Thinner, saltier, and lighter in color and flavor. It is used in cooking where its light color will not spoil the color of the ingredients. Also known as sang chau, see yau (China), shoyu, usukuchi shoyu (Japan), kecap cair (Malaysia), toyo (Philippines), nam siew (Thailand), xi dau (Vietnam), thin soy sauce. (3) "Lu soy (China) is a 'master sauce' based on soy sauce with sugar, ginger, and five-spice, It is used for simmering poultry and other meats to give a rich flavor and to color the food a deep brown. Also known as lu shui (China)."

Soy sauce, sweet and salty: (1) "Kecap asin (Indonesia) is a thick, salty, dark soy-based sauce used to impart a strong color and flavor. Its sweet counterpart is *kecap manis.* It is similar to, but thicker than, several dark soy sauces used in Chinese cooking." (2) Kecap hitam (Malaysia) is a sweet dark soy sauce. Slightly less spicy than kecap manis. (3) Kecap manis (Indonesia) is a sweet, dark, thick, aromatic soy sauce, especially widely used with satay. "It is similar to, though finer in flavor than, Chinese sweet soy sauce" [tian mian jiang]. Also known as kecap bentang manis (Indonesia); sweet soy sauce. (4) "Sweet soy sauce (China) is a dark, sweet sauce combining soy sauce, sugar, and malt sugar. Its distinctive malt-like taste goes well as a dip for fried snacks, poultry, and seafood." It appears frequently on the table in homes and restaurants in Fukien province, opposite Taiwan on the coast of south-eastern China. For a recipe, see Sweet soy sauce pork (p. 230). Note: This is not generally a commercial product. (5) Tim cheong (Malaysia) is a thick, sweet, black soy sauce, similar to that used in China. In Malaysia it is served with poh pia. Its flavor is closer to that of kecap hitam than to kecap manis.

Sprouts, soybean. See Bean sprout, soybean. Sushi (describes many types, with recipes). Sweet bean paste or Sweet bean sauce: See Bean pastes and sauces.

Taho (Philippine bean curd brains). Tahoe (Indonesia or Malaysia, fermented bean curd). Tahu (Malaysia bean curd). Ta hua (Malaysia bean curd). Tahure (Philippine bean curd).

Tamari (Japan): See soy sauce. Taucheo (Malaysia or Singapore, bean pastes and sauces). Tauge (Indonesia bean sprout). Tauhu kao (Thailand bean curd). Tauhu kuning (Indonesia and Malaysia bean curd pressed). Tauhu leong (Thailand bean curd, pressed). Tauhu tod (Thailand bean curd, fried). Taukwa (Indonesia and Malaysia bean curd pressed). Tau sa (Malaysia bean paste and sauces). Tausi (Philippines, bean curd products [sic, fermented black soybeans], fermented).

Tempe (Indonesia, Malaysia): Fermented soybean cake [tempeh]. Oncom [Ontjom]. Tokwa (Philippine bean curd pressed).

Tosa soy sauce (Japan): The classic sashimi accompaniment. Recipe given.

Tsukemono: Takuan, umeboshi.

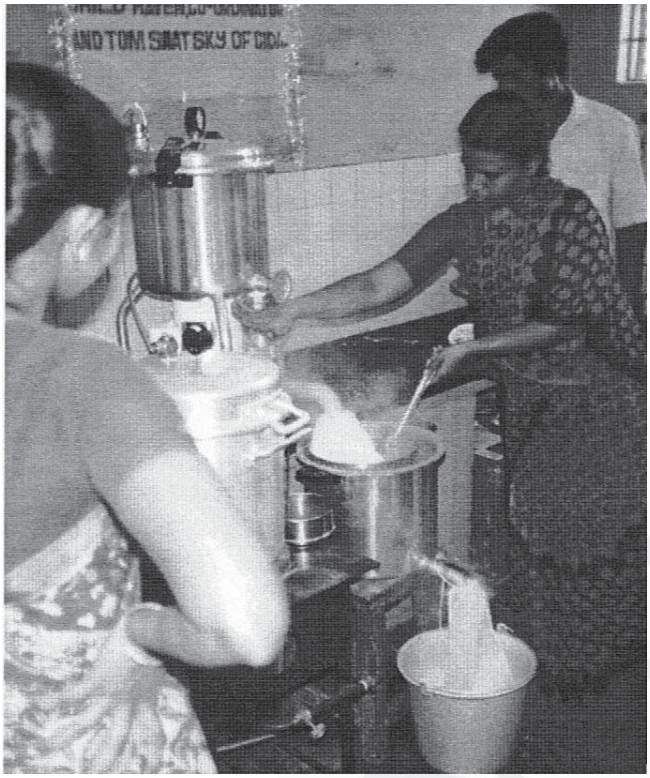
Usu-age (Japan): See Bean curd (fried) purses.

Winged bean. Yuba (Japan).

Brief biography: "For more than twenty years she has been professionally involved with Asian food as a writer, teacher, publicist, researcher, consultant, and, of course,

cook. She has traveled extensively in Asia and lived in Hong Kong for more than ten years, working as a food writer on a number of newspapers and magazines, which led to a career as a food consultant. Her most recent book, *Asia the Beautiful Cookbook* was listed by *Publishers Weekly* as one of the best books of 1987." Address: Author of several books on Asian cuisine.

6212. Photographs of two SoyaCows in operation in India. 1991.



• ***Summary:*** Photos (undated) show: (1) Soyamilk being produced at St.-Thomas Hospital, Madras. A sign, barely visible on the wall, reads: "Thanks to Child Haven and Tom Schatzky of CIDA." Hart Jansson recalls: "I remember being at St. Thomas Hospital; it was the most wonderful reception I've ever received. They were just amazingly friendly. Dr. Sister Mary Rexline was running the hospital and raising funds. They had a SoyaCow in the hospital and they were giving the soymilk to all their patients. They loved it." We could be doing the same thing at hospitals all over the third world.

(2) Soyamilk being made at Ankur Services in Hyderabad.

Note: These two photos were scanned and sent to Soyinfo Center by Hart Jansson of Malnutrition Matters (Ontario, Canada) on 20 Oct. 2010. Hart estimated the date.

6213. Rucker, Chris; Hoffman, Jan. 1991. The Seventh-day diet: How the "healthiest people in America" live better, longer, slimmer–and how you can too. New York, NY: Random House. 232 p. Foreword by John Scharffenberg, M.D. Index. 24 cm. [46 ref]

• ***Summary:*** This book introduces the Seventh-day Adventist low-fat vegetarian diet and health principles without their religious underpinnings but with many quotations to the writings of Ellen G. White, an Adventist pioneer. For example, concerning what is now called atherosclerosis, she wrote in 1896: "Both the blood and the fat of animals are consumed as a luxury. But... these should not be eaten. Why? Because their use would make a diseased current of blood in the human system.

Adventists, whether vegetarian or not, are less likely to get cancers of the breast, ovaries, bladder, prostate and pancreas than the rest of the U.S. population. Male Adventists live an average of 8.9 years longer than non-Adventists, and women 7.5 years longer. And the differences between vegetarian and nonvegetarian Adventists provide some of the best evidence of the health advantages of a vegetarian diet. For example, studies show that whereas nonvegetarian male Adventists get only 56% as much heart disease as the U.S. average, vegetarian Adventists who eat eggs and dairy products get only 39%; and those who avoid all animal products 12%.

Page 105 notes that a major study involving more than 25,000 Adventist adults over a period of 20 years indicated

that an Adventist woman aged 25 will, on average, live to age 88, which 9 years longer than her non-Adventist counterpart, and an Adventist man aged 25 will, on average, live to age 84, which is 12 years longer than his non-Adventist counterpart. Moreover, "It appears that the earlier one embraces the complete Adventist life-style, the greater quality of life and longevity once can expect."

In a section titled "Guide to creating your own meatless roast" (p. 116-17), tofu, shredded soy cheese, and soy flour are listed as protein sources. Soy-related recipes include: Pesto tofu manicotti (p. 121). In the "Natural Foods Shopping Guide" (p. 207) descriptions are given of Soyagen, soy cheese, soy milk, and tofu.

6214. Société Soy. 1991. 100 recettes au tofu & lait de soja [100 recipes for tofu & soymilk]. Saint-Chamond, France. [Fre]*
Address: 1 rue du Crêt de la Perdrix, 42-400 Saint-Chamond, France. Phone: 77 31 23 66.

6215. The Mail Order Catalog. Fall–winter 1991-2. Quality books. Vegetarian food products. 1991. P.O. Box 180, Summertown, TN 38483. Catalog.
• ***Summary:*** The book section of this mail order catalog contains listings for an excellent selection of vegetarian cookbooks, and books on animal rights, diet and nutrition, ecology, and native American cultures.

The vegetarian food products section offers TVP granules and chunks, Response textured soy protein concentrates (misleadingly called "Response TVP flakes"), soy powder (powdered soymilk), tempeh starter, nutritional yeast, and instant gluten flour. Address: Summertown, Tennessee. Phone: 800-695-2241.

6216. Tremblay, Yvon. 1991. La santé de la terre: le petit guide santé des anées 1990: le soya et ses dérivés (lait de soya, tempeh, miso, etc.) ansi que le sarrasin et le seitan [The health of the earth: the little health guide for 1990: soybeans and soyfoods (soymilk, tempeh, miso, etc.) as well as buckwheat and seitan]. Rosemère, Quebec, Canada: Presses Libre-choix. 157 p. Illust. by Mario Gailloux. 21 cm. [Fre]*
Address: Que.

6217. Vakirtzoglou, Euphrosini. 1991. Nea mayriki-sintayes me soya [Recipes for soya]. Thessaloniki, Greece: Published by the author. 127 p. Illust. Index. 29 cm. [Gre]
• ***Summary:*** This attractive book, the first of its kind ever published in Greek, contains large color photos of its soy-based dishes on almost every page. It features recipes using soy oil, soy sauce, soy margarine, textured soy flour (mince and chunks), soya-based pasta, soymilk, and tofu–but no tempeh. The last 2 pages of the book are full-page color photos of various soya products that are imported to Greece, largely by Mr. George Tselepidis (Andreou Dimitriou 47, Sikies 56625, Thessalonika, Greece. Phone: 625741) who is very interested in new soya products (and perhaps making them), and is the exclusive agent for the soya products used by the author. These products include Provamel Soya Milk, Sunwheel soya sauce and tamari, Meridian soya margarine, soy oil, and ten shelf-stable soy products with Greek labels. Published with technical and material support from Biotrek S.A., Greece's primary dealer in soya products.

The book contains many recipes and ideas for using soyfoods in place of meat and milk during Lent and other religious holidays of the Greek Orthodox Church. The attractive 4-page brochure promoting the book contains colorful photos of many soy-based preparations on a table in front of Greek Orthodox icon paintings.

The author notes in a letter that she hopes to translate the book into English and is now preparing another book on Soya Sweets, Pastry, and Confectionery. Unfortunately, there are presently no companies in Greece making tofu, soymilk, or tempeh, nor are these products available in Greece.

In addition to writing, the author has owned a private kindergarten for the last 3 years, and for more than 1 year she has given cooking and housekeeping lessons in an organization named "Faros Tiflon Elathos," which educates the blind. Address: Lahana 35, GR-546 38 Thessaloniki, Greece. Phone: 031 824 311.

6218. Yamuna Devi. 1991. The best of Lord Krishna's cuisine: Favorite recipes from *The Art of Indian Vegetarian Cooking.* New York, NY: Bala Books. xiv + 242 p. Illust. Index. 24 cm. A Plume Book. Also published in 1992 by New American Library (New York).
• ***Summary:*** Less intimidating than the massive (800 page) *Lord Krishna's cuisine: The art of Indian vegetarian cooking,* from which it is derived, this book offers a good introduction to Indian vegetarian dishes for newcomers. Contains a recipe for Scented Almond Milk Cooler (non-dairy). The book is dedicated Srila Prabhupada (His Divine Grace A.C. Bhaktivedanta Swami, 1896-1977), the Indian spiritual teacher who arrived in America in 1965 at age 70 and the next year founded the International Society of Krishna Consciousness. Pages 227-28 are about his life.
Address: Washington, DC.

6219. **Product Name:** Sungold (Soymilk).
Manufacturer's Name: Dairy Farmers Co-Operative Ltd.
Manufacturer's Address: 433 Victoria St., Wetherill Park, NSW 2164, Australia.
Date of Introduction: 1991?
New Product–Documentation: Letter from C.H. Lee of Blissquik Food Products. 1992. Feb. 17. This company currently makes Sungold brand soymilk. Gives name and address.

6220. **Product Name:** Tofu (Plain), Savoury Baked Tofu,

Soya Milk, Soy Ice Cream, and Soysage.
Manufacturer's Name: Nature Island Foods.
Manufacturer's Address: P.O. Box 501, Roseau, Dominica, West Indies. Phone: 809-448-3602.
Date of Introduction: 1991?
New Product–Documentation: Letter from Yolanda Bryan. 1992. Jan. 8. Lists the soyfoods they presently make.

6221. **Product Name:** Soymilk.
Manufacturer's Name: Queensland Soybean Food Products Pty. Ltd.
Manufacturer's Address: 20 Cronulla Court, Slacks Creek, Brisbane, QLD 4127, Australia.
Date of Introduction: 1991?
New Product–Documentation: Letter from C.H. Lee of Blissquik Food Products. 1992. Feb. 17. This company currently makes soymilk. Gives name and address. The brand name is unknown.

6222. **Product Name:** Soybev, and Soykink (Soymilk).
Manufacturer's Name: Tixana Pty. Ltd.
Manufacturer's Address: 17 Elizabeth St., Campsie, NSW 2194, Australia.
Date of Introduction: 1991?
New Product–Documentation: Letter from Wataru Takai. 1987. Oct. 3. This company, run by John Tan, is located at 53 Sydenham Rd., Marrickville, NSW 2204, Australia. They plan to make tofu, and perhaps soymilk, shortly.

Letter from C.H. Lee of Blissquik Food Products. 1992. Feb. 17. This company currently makes Soybev and Soykink brands of soymilk. Gives name and address.

6223. **Product Name:** Plum Flower Brand Soy Milk.
Manufacturer's Name: Tong's Co.
Manufacturer's Address: 14060 Hempstead Road, Houston, TX 77040.
Date of Introduction: 1991?
Ingredients: Soybeans, water.
Wt/Vol., Packaging, Price: Plastic 1-gallon container.
How Stored: Refrigerated.
New Product–Documentation: Label sent by Walter Lin from Houston, Texas. 1991. Sept. 12. 4 by 2½ inches. Self adhesive. Brown on white. "No preservatives. Date [use by]: Sept. 20. Refrigerated at 35ºF."

6224. Dinh, Daniel. 1992. Present status of soyfoods in Vietnam (Interview). *SoyaScan Notes.* Jan. 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Tofu and soymilk are the only two soyfoods that are widely known and used in Vietnam. Daniel's relatives made fish sauce (*nuoc-mam*) in Vietnam. Before 1975 there was a trade association of fish sauce manufacturers in Vietnam and their company was one of only 12 major manufacturers in the association Then in 1975 when the Communists took over, he had to flee the country, and his family decided to destroy their fish sauce factory, lest they face death or prison as capitalists. Now the situation is ripe for his return to Vietnam, and he is interested in learning to make miso and soy sauce, and perhaps starting production in Vietnam. Address: 22821 Sherman Way, West Hills, California 91307. Phone: 818-704-6432.

6225. *SoyaScan Notes.* 1992. Vitasoy soymilk is now sold on a special display stand at Safeway supermarket in Lafayette, California (Overview). Jan. 25. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Four flavors of Vitasoy soymilk (Vanilla Delite, Rich Cocoa, Carob Supreme, and Creamy Original) in two sizes (liter or 250 ml) are now sold at the Safeway supermarket in Lafayette. They are sold on a surprisingly large stand, located about 6 feet from the tofu section of the produce case. The stand, constructed of 4 white plastic shelves (with "Vitasoy" written on the second and top shelves) and 4 vertical red plastic tubes as posts (2-inch diameter), is about 32 inches on a side, and 5 feet high. The Vitasoy Tetra Brik cartons occupy the bottom two shelves on the stand. On the top two shelves is Michelle's Natural Pasta (dry). The price of the liters is $2.29 each, regardless of the flavor. The packs of 3 x 250 ml each retail for $2.19.

A quart of cow's milk (fortified with vitamins A and D) sells for the following prices at Safeway supermarkets: whole $0.67, low-fat (2% fat; protein fortified) $0.66, extra light (1% fat; protein fortified) $0.65, nonfat $0.62.

Note that the price of Vitasoy soymilk at Safeway is about 21% more expensive than it is at a typical large natural food store.

6226. *Health Food Business* (*London*). 1992. GranoVita launches 34 products and signs exclusive six-month deal with Brewhurst. Jan. p. 5.
• ***Summary:*** GranoVita UK will be launching 34 products in its first wave in Dec. 1991. In Jan. or Feb. 1992 they plan to add another dozen or so products to their line. Nigel Phillips, the company's managing director, is putting soya milk products at the forefront of GranoVita's launch. "The majority of the business Granose used to do with Germany was soya milk based. Once this was switched to the UK (after Haldane purchased Unisoy), then GranoVita felt they must compete in the UK." GranoVita has given sole distribution rights to the independent health food trade to Brewhurst for 6 months.

6227. *Health Food Business* (*London*). 1992. Haldane Foods–the giant at the heart of the soya beanstalk. Jan. p. 12.
• ***Summary:*** "The Haldane Foods Group owes its existence to the invention of textured soya protein, which was first extruded in the United States back in the 60's.

"The patent was owned by ADM, and Haldane's present

general manager Peter Fitch was their man in the UK, selling soya protein to British companies.

"'Our biggest customer in those days was Direct Foods, down in Petersfield in Hampshire,' says Peter Fitch. 'When Direct Foods came up for sale in the early '80's, we bought it to develop beyond being just a supplier. We wanted to be part of not just growing the bean, but also developing healthy consumer products with it.'

"This initial purchase led to the acquisition of another company–Vegetable Feasts, who were making ready-made frozen vegetarian convenience foods.

"And then a bigger fish arrived on the market, with Haldane Foods of Loughborough. This had been set up by Brian Welsby to produce concentrated dried ready meals, again soya based.

"In Coventry, Vegetarian Cuisine were bedevilled with low sales but a skilled labour force, so this too was acquired and Vegetarian Feasts incorporated in it, as both companies were producing similar lines.

"Thus was born the Haldane Foods Group, which now had two sites, Coventry supplying frozen foods and Loughborough dry goods.

"When Greg Sams sold Realeat to Haldane, there was still surplus manufacturing capacity, but this quickly became less so, particularly at Coventry.

"With the acquisitions of Genice in North Wales, (producing non-dairy ices) and Kwality Foods in South Wales (producing Sauce and Snack Masters dishes such as pot noodles), Haldane moved into 'wet' food production.

"Shortly after this, Granose Foods, who had moved into a large new factory at Newport Pagnell, were finding trading difficult from their own premises, and so searched for one of their suppliers to acquire the business. Another, even larger, mouthful for Haldane to swallow.

"'Over three-quarters of the Granose products were being made by outside suppliers, much of this abroad. By purchasing Unisoy at the same time as Granose, with a capacity of 5 million litres of soya milk a year, we were able to see that we could manufacture virtually everything ourselves,' said Peter Fitch.

"' We closed Coventry and put it into Granose, and we still bus twelve staff back and forth from there each day. We now were able to concentrate all wet production at Newport Pagnell, and all dry at Loughborough, with 13,000 square feet there and 42,000 square feet at Granose.'"

"Peter Fitch admits taking on Granose caused Haldane's supply problems. 'We reeled for six months, but we are now out of our troubles. Our staff has settled in and our supply problems have been solved.'"

6228. **Product Name:** Tempeh-Lettuce-Tomato Sandwich, Tempeh Burger, Bar-B-Q Tempeh, Tempeh Curry with Coconut Milk (and Rice), Dolphin Safe Tempeh Salad (Mock Tuna Salad).
Manufacturer's Name: Leo Risin' Foods.
Manufacturer's Address: 1525 Rhode Island, Lawrence, KS 66044. Phone: 913-832-1521.
Date of Introduction: 1992. January.
How Stored: Refrigerated.
New Product–Documentation: Letter and Labels sent by Clayton McHenry, founder and owner of Leo Risin' Foods. 1994. Feb. 22. In January 1992 Clayton named his business Leo Risin' Foods and set up a certified and inspected kitchen in his home at 1525 Rhode Island, Lawrence, Kansas 66044. Starting in January 1992 he produced five deli foods with tempeh for the Community Mercantile, and Clearly Nature's Own, a natural food store in Kansas City, Missouri. The weights of and ingredients in these products are as follows (* = organically grown): Tempeh-Lettuce-Tomato Sandwich (6 oz): Wheat bread, tempeh*, lettuce*, tomato, tofu mayo, sesame oil, spices. Tempeh Burger (7 oz): Wheat bun, handmade tempeh*, lettuce*, onion*, tofu mayo, spicy pickle*, mustard, hot sesame oil. Bar-B-Q Tempeh (6 oz): Wheat bun, handmade tempeh*, rice malt sweetened barbecue sauce, red onion*. Tempeh Curry with Coconut Milk (and Rice, 8 oz): Basmati rice, handmade tempeh*, coconut milk, red chili, onion, cashew, green chili, spices, salt. Dolphin Safe Tempeh Salad (Mock Tuna Salad, 8 oz): Tempeh*, Nayonaise, green onion, parsley*, sunflower seeds, spices.

6229. Whitehouse, David; Whitehouse, Harvey. 1992. Delsoy Products, Whitehouse Products, C.J. Christoff & Sons, Chadalee Farms, and Rex Diamond (Interview). *SoyaScan Notes.* Feb. 4. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Dave's father, Harvey Whitehouse, and Bob Smith were partners in Delsoy Products. Since Bob Smith was connected with Henry Ford, he was the one to attract the media attention and get the interviews. Neither Dave nor Bob know where the company's early files are now kept. The *Detroit News Times* and *Detroit Free Press* may have run articles on the company. The dairy industry disliked Delsoy, so dairy magazines probably didn't run any articles. Eric R. Swanson brought in Bob Smith (who was working for Henry Ford) for his chemical knowledge. Then in Nov. 1944 Swanson brought in Harvey Whitehouse (who had been production manager at two large dairies in Detroit–Belrose Creamery then Rosebud Creamery) as production manager for the soy milk. David entered the company in about 1961.

They have heard that at one point, when Herbert Marshall Taylor was still with Delsoy Products, Bob Rich wanted to get a franchise to manufacture Delsoy Topping. He never got it, but he was able to get a very similar formula from Rex Diamond who was working at Ford's Carver Laboratory. Rich Products was the first to freeze a soy-based whipped topping. In about 1960, when Bob Smith began to talk about retiring, Harvey went to freezing Presto Whip,

then Delsoy Topping so that he could store these products frozen and ship them nationwide–but they were never advertised as frozen. Most of the sales of Delsoy Topping were to bakers and restaurants–not to consumers.

At some point prior to 1961 the name of their frozen product, Delsoy Topping, was changed to Delwhip Topping, and a new product named Delwhip Topping Base was introduced; it was a concentrate to which one had to add water to reconstitute it. The name of Presto Whip remained unchanged.

Harvey brought out Bob Smith in 1963, and a month or so thereafter David became president of the company. Shortly after the buyout, the company name was changed from Delsoy Products to Whitehouse Products. The brand and logo then became Whitehouse and product names were changed. Delwhip Topping became Whitehouse Whipped Topping, Delwhip Topping Base became Whitehouse Whipped Topping Base, and Presto Whip became Whitehouse Presto Whip. All continued to be made with soy protein.

At about the same time, the company began to private label their products for other companies under other brands. They continued to sell the products under their own brands as well. The company continued to make the two soy-based whipped toppings then in the late 1960s they developed an imitation sour cream; it contained no soy protein but it did contain vegetable oil. They bought the formulation from another company. About the same time they also developed a soy-based non-dairy creamer named Whitehouse Coffee Fresh.

Christoff/Chadalee Farms purchased Whitehouse Products in about 1983. At that time David was president of the company and Harvey was in the process of retiring. Again the product names were changed to Chadalee Farms Whipped Topping and Chadalee Farms Whipped Topping Base. They are now finishing a phaseout of those products, largely because they do not have any other frozen products. David is now the national accounts manager for Chadalee Farms, Inc.

Rex Diamond was never employed full time for Delsoy Products. In the early days he worked at the company for a day or two now and then in the plant doing soybean extraction–not as a consultant, but as a friend of Bob Smith's. Then Rex pulled a fast one. He left, set up his own company named Vegetable Products Corp. in Saline, Michigan (located inside Henry Fords' old soybean extraction plant there), and began to make a soy-based whipped topping named Wonder Whip (non-pressurized in a cone-shaped container), which was designed to be whipped with an egg beater. But he did not know how to run a food plant. One day Bob Smith was visiting one of his chain store accounts when the buyer told Bob that Rex Diamond was telling all the distributors that Delsoy Products had quit making their topping–so that Rex could take over the accounts. Diamond had so many problems with the quality of his product that his company never got off the ground, and in less than a year went out of business. He tried to sell his used equipment to Delsoy.

In the late 1940s and early 1950s Diamond worked for American Maize Co. in Chicago. The company wanted him to develop a dried dairy-free whipped topping. He was granted several patents, then American Maize dropped the project. So Diamond approached Delsoy, asking if they would like to go in with him on a joint venture; after past bad experiences, they declined.

Then in Nov. 1952 Bob Rich of Rich Products hired Rex Diamond and there Diamond was successful in developing a product named Coffee Rich. Bob Rich and Rex Diamond set up a separate corporation named Coffee Rich Inc. just to manufacture and sell the Coffee Rich; it did very well financially. Diamond was in the process of building a large home in Buffalo, New York, but then he was unexpectedly fired by Bob Rich. One of the contingencies of the stock agreement between Rich and Diamond was that if either person was terminated or left the company, he had to sell his stock back to the corporation. Diamond felt he had been fired because the company (and Diamond) had made so much money; Rich had to fire Diamond to get control of the stock. Diamond, who had signed a bad contract, was very upset. The same thing happened to the sales manager for Coffee Rich. Again Diamond approached Delsoy Products, asking if he could manufacture toppings in their plant, but again they declined. Meanwhile Diamond returned to his home town in Detroit, and went to an attorney. The attorney settled with Rich Products for a much smaller sum than Diamond hoped to get. Within a year or two of his termination from Rich Products, Diamond committed suicide in Detroit.

Concerning Mitchell Foods: An East-Coast chemist named Frank S. Mitchell had worked for Rich Products. He left and started his own whipped topping company. Rich Products filed a lawsuit against Mitchell, and Mitchell lost in Sept. 1964 in New York [Civil Action No. 9597 in U.S. District Court for the Western District of New York. Trial 14-18 Dec. 1964.] The company was small and the product never became important. Address: 1100 Hillcrest Dr., Dearborn, Michigan 48124. Phone: 313-562-0242.

6230. Lee, C.H. 1992. Re: Companies presently making soymilk in Australia. Letter to William Shurtleff at Soyfoods Center, Feb. 17–in reply to inquiry. 1 p. Typed, with signature.

• ***Summary:*** Sanitarium Health Food Co. (Wahroonga, NSW) makes So Good. Berrivale Orchards Ltd. in Berri, SA, makes Soypreme. Dairy Farmers Co-OPerative Ltd. in Wetherhill Park, NSW, makes Sungold. Tixana Pty Ltd. in Campsie, NSW, makes Soybev and Soy Kink. Queensland Soybean Food Products Pty. Ltd. in Brisbane, QLD, makes an unknown brand, and Blissquik Food Products in

Townsville, QLD, makes Wonder-Vite Soymilk Drinks (plain or flavoured). Address: Owner, Blissquik Food Products, P.O. Box 197, Garbutt [37 Hammett St.], Townsville, QLD, Australia.

6231. Roller, Ron. 1992. Work with and history of Eden Foods and American Soy Products in Michigan. Part II. After 1980 (Interview). *SoyaScan Notes.* Feb. 25-26. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In Feb. 1982 (27 months after the fire) the settlement from the insurance company was paid. Shortly after that, in 1982, Eden bought Schmidt Noodle Co., a supplier to Eden.

In Sept. 1982 Ron went to Japan, where he picked up 25 new items for the Eden import line from the Muso Co. One of these was Edensoy soymilk. He visited the Marusan soymilk plant. Ron recalls how they took him into the room overlooking the aseptic packaging room, where 16 huge machines were busily filling and sealing Tetra Brik Aseptic cartons (most of which were sold in Japan): "It just blew me away. It was like a personal revelation. Here was a unique, non-dairy product, being made on a huge scale, and there was a big need for it in the American market." When he visited the Muso office, Ron noticed very large shipments of this same soymilk being shipped to Spiral Foods (run by James Wilson) a macrobiotic distributor in Melbourne, Australia. This also impressed and surprised him.

Back in America, Eden coined the name Edensoy and developed the artwork for a stand-up foil retort pouch–since the Tetra Brik Aseptic packages had not yet become legal in this country. The product was introduced to America in 1983 at a natural foods trade show in Denver, Colorado. The response was "phenomenal." No previous Eden product had ever attracted as much attention. At the show, they picked up 30 distributors for the soymilk. Edensoy soon became by far the company's most successful product to date. Eventually imported Edensoy accounted for about 40% of Eden Foods' total sales! "It turned into a bigger thing than any of us had anticipated."

Also starting in about 1982 there was a big growth of interest in macrobiotic foods. Because of its large line of macrobiotic foods, Eden was now uniquely well positioned to take advantage of this growth.

Edensoy soymilk opened a lot of doors to new distributors. Inevitably these distributors came to Eden for the soymilk and then almost always ended up carrying the rest of the Eden line. The combined sales growth of Edensoy and the macrobiotic foods led to a big increase in Eden's sales to other distributors. Shortly after that, Eden began to import Edensoy to a public warehouse in Los Angeles to service the West Coast market. Eventually that led to Eden sharing a warehouse with Sierra Natural Foods in San Francisco, and soon the rest of Eden's products were stocked there too.

During the mid-1980s, in large part because of Edensoy, Eden's sales to distributors began to overtake wholesale sales to natural/health food stores. The latter were beginning to drop because of competition from full-line super-distributors. Eventually the latter comprised only 10% of Eden's total sales. At that point, in about 1986 or 1987, Eden stopped wholesaling directly to retail stores and started to sell only to distributors. Eden delivered its products on its own trucks to these distributors, and this extra service also gave them a competitive edge. Discontinuing wholesale distribution to retail stores had a very positive effect on Eden's growth. All the energy that was formerly required to attend to that 10% of the business was now free to be focused on developing new products and the Eden brand.

The period from March 1984 to June 1985 was a difficult one for Edensoy. The problems with the FDA, the Edensoy promotional pamphlet, and the Edensoy recall were described in detail in the *East West Journal* (Dec. 1985).

On 13 April 1988 Cliff Adler and Michael Potter were in a serious car accident. Cliff was killed and Michael was seriously injured. Cliff was a very outgoing person with lots of charisma, and his death had a profound emotional impact on the company; his many close friends felt deep loss. Ron, who was purchasing director and a director of the company, took charge of running the company in this time of confusion. He organized a management team, started daily management meetings, put budgets in place, and severely curtailed spending to start accumulating money for the FDA fine. Within a month, Ron became vice president; Mike was president and CEO.

In about Nov. 1989 Ron became president of Eden Foods and president of Schmidt Noodle Co. Mike remained CEO. Yet despite these problems, in the two years from 1989 to 1991 sales at Eden Foods almost doubled–making them two of the most profitable years in the company's history.

Right after Cliff died, Ron took his place as a director of American Soy Products, Inc. (ASP). In Feb. 1991 he became CEO of ASP. Ron was president of Eden Foods. In mid-June 1991 he was asked to resign from his position at Eden Foods. He chose to leave and go to ASP to work full time. Michael is now chairman of Eden Foods and his sister is president. Ron is now president of ASP, a joint venture company. Ron works for ASP above all because he believes in the company and its products. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6232. Roller, Ron. 1992. The U.S. soymilk market (Interview). *SoyaScan Notes.* Feb. 26. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** During the past 3-4 years, the U.S. soymilk market seems to be growing at about 10% a year. Sales slowed during and after the Gulf War, but overall the current recession has had little effect on Edensoy, soymilk and on

the natural foods industry as a whole. There has been a proliferation of new products and package sizes. Most of Edensoy's volume is sold in liters. The ASP plant is now nearing capacity. Many people who used to have no interest in soymilk are now showing a strong interest. Concerning the size of the market, American Soy Products does not try to keep statistics, but he doubts that it is any larger than Soyatech says it is.

In terms of market share by volume of soymilk sold, Ron thinks that Edensoy has the largest share, Vitasoy is second (including their sales to the Asian-American market), Westbrae is third, and Pacific Soy is a distant fourth. No other companies have significant sales.

One interesting product is a soy & azuki milk, which Marusan launched in about 1982; Ron is not sure if it is still on the market.

Ron has heard from a fairly reliable source that a company has purchased soymilk equipment (he does not know from whom) to build a soymilk plant somewhere in the United States. It might be Vitasoy. Someone from Dr. Chung's in Korea (makers of Vegemil and Woorean) is planning to come to the USA to look for companies to market their Korean soymilk or for potential co-packers. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6233. O'Connell, Michael. 1992. History of Ploughshares Foods Ltd. in Glastonbury, England (Interview). *SoyaScan Notes.* Feb. 27. Conducted by Anthony Marrese in England.
• ***Summary:*** This company was founded in 1984 in the Essex countryside by Michael O'Connell and Fiona Bruce under the name "The Emperor Liu An's Tofu Palace." Liu An was the legendary inventor of tofu in China. The business was an 8-tonne mobile catering truck and kitchen on wheels which went to open-air shows and festivals; its purpose was to serve vegan organic food (including tofu), demonstrate tofu-making, and promote veganism. They started operating the truck in Aug. 1984. Recipes prepared in the mobile restaurant in 1984/85 included tofu blueberry mock cheesecake, tofu mayo, tofu sweet cream, tofu lasagna, tofu pudding, tofu ice cream, tofu burgers, tofu gulash, and tofu pizza. In 1985/86 they launched okara steam pudding with dates, okara shepherd's pie, and okara burgers.

In Aug. 1986 the company moved to Glastonbury, started a non-mobile restaurant, and changed the company name to Ploughshares Foods Ltd. (after the Old Testament Biblical expression from The Book of the Prophet Isaiah 2:4 "They shall beat their swords into plowshares, and their spears into pruninghooks: nation shall not lift up sword against nation, neither shall they learn/study war any more").

In 1988 the restaurant introduced tofu quiche (onion and mushroom), okara veggie roll, okara tempeh, okara tempeh Bolognese/moussaka, and braised tofu in miso sauce. In 1989 they launched soya cream cheese with chives, and in 1991 okara tempeh with leaf protein added.

In 1991 the company structure changed from a partnership to a cooperative. Other current members of the co-op are Miranda Bruce, Sophie Pullinger, and Lalita Gordon Milverton.

The company was a pioneer in introducing tofu and new ways of using it to vegan restaurants. Uses included burgers, pies, dressings, creams, main dishes, salads, soups, etc. They introduced foods that were free of dairy products, wheat/gluten, and/or sugar, and developed a leaf protein product named Leafu (i.e. tofu from leaves). Their vegan cooking school was the first such school to receive the "City and Guild" qualification to those who graduate from their residential diploma course teaching vegetarian, organic, and special diet foods. The company provides a friendly working environment, as for single working parents, and is involved in the wider issues of improving society.

The main reasons for the company success are a commitment to delicious, aesthetic, nutritious food, customer loyalty, and a commitment to research, development, and innovation.

Anthony Marrese adds: "All of their products are good, and their people are especially nice. I spent about 18 months helping with the tofu production and restaurant in 1987/88." Address: 54 Roman Way, Glastonbury, Somerset, BA6 8AD, England. Phone: 0458-831182 or 835233.

6234. DeBona, Don. 1992. Work with tofu and soymilk in America (Interview). *SoyaScan Notes.* Feb. 29. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Don has owned a part of Bean Mountain Soyfoods in North Carolina since 2-3 years ago; their biggest competition in the tofu market is Nasoya. Don was on the board of the Soyfoods Association of America, but he dropped it when he saw it was basically a tofu and soymilk association; he was "the token miso maker." Address: General Manager, American Miso Co., Route 3, Box 541, Rutherfordton, North Carolina 28139. Phone: 704-287-2940.

6235. **Product Name:** [Soymilk].
Foreign Name: Sojalat–Alimento Derivato dalla Soja.
Manufacturer's Name: Biolab.
Manufacturer's Address: Via dei Grabizio 11, 34170 Gorizia, Italy. Phone: +39 481 533522.
Date of Introduction: 1992. February.
Ingredients: Liquid extract from soybeans (*soja*), sea salt, water.
Wt/Vol., Packaging, Price: 700 ml transparent glass bottle (short neck with with tin cap).
How Stored: Refrigerated.
New Product–Documentation: Talk with Maura Ghiraldini of Biolab. 1998. Nov. 9. Biolab, which started in June 1992, is now the third largest tofu maker in Italy. The founder and

owner is Massimo Santinelli, now age 34; they also make soymilk and various types of tofu.

Label and letter sent by Maura Ghiraldini and Massimo Santinelli. 1998. Dec. 5. This new (Dec. 1998) label (3½ by 6 inches) has many pink spirals on a light pink background. At the upper left and right corners are cartoons of bears. The border is many little boxes, each with a symbol inside. At the bottom center is a cartoon bear holding a spoon and bowl of soymilk and saying: "The soy beverage (*La Bevanda di Soja*). Free of added sugar (saccharose)! (*Senza Zucchero* (*saccarosio*) *Aggiunto!)"* "Organically grown (*prodotti dalla agricoltura biologica*)." Refrigerate at 4ºC. A small symbol shows a person recycling the container.

6236. Fuhrman, Joel. 1992. Osteoporosis: How to get it and how to avoid it. The facts surrounding this disease are shockingly different from what we have been told. *Health Science*. Jan/Feb. p. 8-11.
• ***Summary:*** Osteoporosis shows up as a decrease in the mineral content of the bone caused by a negative calcium balance. It is 7 times more likely that women (rather than men) will develop clinically evident osteoporosis, yet it is not an inevitable development; it is caused by improper diet and lifestyle.

Though it is logical to think that insufficient calcium intake could cause a negative calcium balance, population studies in various countries suggest otherwise. "Countries whose population have extremely high calcium intakes have the highest rates of osteoporosis in the world and countries with low calcium intake often have low rates of osteoporosis." Actually a high protein diet is a major cause of osteoporosis. Other dietary factors include the consumption of large amounts of salt (sodium) and caffeine, phosphoric acid (prevalent in soft drinks), alcohol, and cigarette smoking.

"Older women in high meat eating countries have the highest rates of osteoporosis in the world. Vegetarian populations, even those with low calcium intake, have much lower rates.

"Millions of women have been falsely led to believe through the mass media that there is a correlation between osteoporosis and the inadequate intake of dairy foods." Address: M.D., Hillsborough, New Jersey.

6237. **Product Name:** Grainaissance Amazake Pudding [Lemon, or Cocoa]. The Cocoa was renamed Chocolate in Nov. 1993.
Manufacturer's Name: Grainaissance, Inc.
Manufacturer's Address: 1580 62nd St., Emeryville, CA 94608. Phone: 415-547-7256.
Date of Introduction: 1992. February.
Wt/Vol., Packaging, Price: 6 oz plastic tub.
How Stored: Refrigerated.
New Product–Documentation: Talk with Tony Plotkin, owner of Grainaissance. 1993. Oct. 17. The lemon pudding was launched in about Feb. 1992 and the cocoa in about May or June 1992. He misunderstood the laws about labeling chocolate, believing that a product could not be labeled "chocolate" unless it contained milk. But an attorney corrected him. They will be renaming the product flavor to "chocolate" in about 2 weeks.

New Label for Chocolate sent by Tony Plotkin of Grainaissance. 1993. Nov. 2. Blue and red on white. The subtitle reads: "Naturally Sweet, Low Fat, Non-Dairy." The ingredients are now: Filtered water, organic brown rice*, almonds, rice koji, tapioca starch-modified, unsweetened cocoa, natural flavors, xanthan gum.

6238. Productos Alimenticios Soyavyn. 1992. Productos alimenticios naturales a base de soya: Soyavyn [Natural food products based on soya: Soyavyn (Leaflet)]. Lourdes, Colón, Depto. La Libertad, El Salvador. 1 p. Feb. 19 x 13 cm. [Spa]
• ***Summary:*** The company makes the following products: (1) Fluid flavored soymilk (½ or ¼ liters): Vanilla, strawberry (*fresa*), banana, chocolate, natural (in liter size). (2) Meatless sausages and meats: Sausage (*Salchicha*), Seasoned Sausage (*Chorizo*), Soy burgers (*Tortitas; Hamburguesa*), Soy steak (*Bistek*). (3) Dry products (1 lb packs): Instant soy coffee, Chocolate, Horchata (Local fresh beverage), Whole soy flour, soybeans. (4) Dairylike products: Soy cheese [a cheese alternative], soy cream, soy curds or cottage cheese (*Requesón*). (5) Other products: Galletas de Soya (Soy cookies), Bath soap (*Jabón de Baño*), Recipe booklet (*Manual de Recetas*), Pitcher (*Pichel*), Shirt (*Camisa*), Peaches in syrup (*Duraznos en Almíbar*). "Detail and wholesale, home delivery without re-charge."

Letter from Kris Duville of Productos Alimenticios Soyavyn. 1992. June 2. This leaflet was first printed in Feb. 1992 on the occasion of a village feast at which the company had a stand at the fair. Address: Planta Soyavyn, 2a Calle Poniente No. 2-4, Lourdes, Colón, Depto. La Libertad, El Salvador. Phone: 51-0705 or 23-3554.

6239. *SoyaFoods* (*ASA, Europe*). 1992. French standards for tonyu [soymilk]. 3(1):2. Winter.
• ***Summary:*** Recently the French soyfoods association, SOJAXA, adopted the term 'tonyu' (the Japanese word for "soymilk") because of labeling restrictions in France and Europe. Now, in cooperation with SOJAXA, The French Standards Institute (AFNOR) has decided to develop standards for soymilk in France.

6240. *SoyaFoods* (*ASA, Europe*). 1992. Interest in soyamilk grows. 3(1):3. Winter.
• ***Summary:*** A survey was conducted by the Soya Milk Information Bureau (P.O. Box 169, Banbury, Oxon OX16 9XE, England). A questionnaire was mailed to 1,500 known consumers of soya milk; 35% responded. "The profile of the

soya milk consumer is quite evenly spread across age groups but there is a strong female bias, with 81% of the survey's respondents being female; 29% were married women in the 35-55 age group.

"The reasons given for buying soya milk were: 49% for health reasons, 37% because they were vegetarian or vegan, 31% for milk allergy reasons, 14% because they preferred it to cow's milk. Most respondents (73%) bought their soya milk from health food stores and 51% from supermarkets."

6241. *SoyaFoods* (*ASA, Europe*). 1992. Nestlé–a Bonus for Mexico. 3(1):4. Winter.
• ***Summary:*** In June 1989 Nestlé, the world's largest multi-national food company, launched Bonus is Mexico. Containing 70% nonfat dry milk and 30% powdered soymilk, the final product derives 50% of its protein from the cow's milk and 50% from the soymilk. The soymilk is made by Nestle from whole soybeans. This is an important product because milk is scarce in Mexico and imported milk is expansive. Nestle has chosen to promote the soya component specifically as a benefit instead of using vague slogans like "with added protein" or "with vegetable protein." Nestle developed a generic campaign to educate the Mexican public about the many virtues of soya. In addition, Nestle conducted a massive advertising campaign, which is estimated to have cost $15 million so far. The product, which originally sold for 5% less than the leading brand of powdered cow's milk, now sells for 15% less. In 1990 sales of Bonus totalled 692 tonnes and 1991 sales are projected to be 1,500 tonnes. Nestlé's current goal is to obtain 1 5% share of Mexico's powdered milk market.

"Over the next five years Nestlé will continue its generic soya education campaign and BONUS, itself, will continue to receive the support of a large marketing budget with part of the advertising campaign focusing on promoting the benefits of soya and milk."

6242. **Product Name:** Crêpolette (Organic Pancakes) [Vegetable, Madras Curry, Leek, and Cheese].
Manufacturer's Name: Unisoy Milk 'n' By-Products Ltd. (Distributor).
Manufacturer's Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire, England. Phone: 061-430 6329.
Date of Introduction: 1992. February.
How Stored: Refrigerated.
New Product–Documentation: SoyaFoods (ASA, Europe). 1990. 1(1):3. These products are scheduled to be launched in May 1990. Talk with Neil Rabheru of Unisoy. 1990. July 2. This product has not yet been launched. It is made by another company located in continental Europe. Unisoy has been appointed sole distributors in the U.K. It contains no Unisoy products and is not really a soya-based product, containing only 2-3% of soyamilk.

Talk with Neil Rabheru of Unisoy. 1991. Sept. 16. This product is scheduled to be launched in Feb. 1992 by the Haldane Foods Group; it is not yet ready and it is not known which brand it will bear. The artwork is ready.

6243. Whiteman-Jones, Michael. 1992. Soyfoods poised for growth: New mass-market interest, product development and consumer interest are driving sales higher than ever. *Natural Foods Merchandiser.* Feb. p. 18-19.
• ***Summary:*** Last year soyfoods were introduced to mass-market consumers by two of America's corporate giants. (1) Archer Daniels Midland Co. (ADM of Decatur, Illinois) introduced the vegeburger to show that a delicious food product could be made from soy. ADM marketing specialist Lee Lensch says the soy burger is doing very well in test markets in Indiana, Illinois, and Minnesota. Versions of the product are being advertised nationally in corporate TV spots and on local TV in test markets. Buyers who gave the products shelf space at chains such as Kroger, SuperValue and Cub Foods now report brisk sales. (2) Protein Technologies International in St. Louis, Missouri, a subsidiary of Ralston Purina, is test marketing a soy-based beverage named First Alternative in Phoenix, Arizona.

Peter Golbitz, president of Soyatech Inc., a consulting company in Bar Harbor, Maine, notes that since the 1980s, Japanese companies (such as Nichii Co.) have invested at least $50 million in soyfoods manufacturing plants in the U.S.

"Retail sales of soyfoods are growing in America by about 5 to 7 percent a year, increasing to about $657 million in 1990, Golbitz says. The most rapid expansion is for soy milk, which is growing at a rate of about 20% a year, and second-generation soyfoods which are growing at a rate of about 15%... Soy milk consumption in Australia, where it is sold in grocery stores like milk, is about 10 times what it is in this country."

Worldwide, consumption of soyfoods now averages about 1.7 kg/person/year, and is expected to rise to 2 kg or more by the year 2000. Taiwan is the world leader with 15.5 kg/capita/year of soy, followed by Japan at 11.1 kg. A world map and table (largely compiled from FAO Food Balance Sheets) shows "Soyfood consumption: Yearly average per capita (Amount of change from 1979 to 1988)." The following countries are listed in descending order of consumption in kg/capita: Korea 17.1 kg (2.4%). Taiwan 13.0 (37.0%). Japan 10.8 (6.7%). Indonesia 6.3 (57.4%). Hong Kong 3.8 (-22.0%). Saudi Arabia 3.6 (342.9%). China 3.4 (-5.6%). Paraguay 2.8 (50.0%). Malaysia 2.3 (102.2%). Thailand 1.6 (162.5%). Zimbabwe 1.6 (22.2%). United States 1.4 (33.3%).

6244. Deck, Cecelia. 1992. '60s roots bear fruit: Ann Arbor's Eden Foods takes checkered path to become an industry leader. *Detroit Free Press.* March 2. p. 10F-11F. Cover story.

• ***Summary:*** One of the few food cooperatives and natural food stores that has survived from the 1960s, Eden Foods "has made it through the wacky '70s and the excessive '80s to the health-conscious '90s when, in a surge of reborn interest in natural foods, it has emerged as a for-profit, $20-million-a-year leader among organic food processors.

"Founded by idealists who cared more about getting their message of healthy eating to the public than about bottom lines... the company has never strayed from its mission: to bring organically grown food to the public." Tim Redmond recalls the early days when Eden operated out of an apartment on East William Street upstairs from Campus Bike and Toy. "During the summer, when all of the co-op members had left town or taken jobs elsewhere, former U-M [University of Michigan] football player Bill Bolduc bought out the company. 'No one really seemed to mind,' Redmond says... By 1970 Eden was running the biggest natural food store in the Midwest."

A competitor for 20 years has been the Cooperative People's Warehouse, which has been losing money for the past few years. After the retail store moved to Maynard Street, the company "opened a restaurant which gained fame for its chapati vegetarian sandwiches on Indian flat bread. A colorful mural painted on the alley wall near the store's entrance is still vibrant, though the store and restaurant had closed by the mid-1980s."

Soon the company "started licensing outside manufacturers to pack Eden-brand products such as canned beans, and began importing packaged food from China and Japan. Eden also started doing its own manufacturing–bottling oils, roasting and grinding sesame seeds."

After a fire in 1979 that caused about $800,000 in damage, Eden regrouped and opened its warehouse and manufacturing in an old factory in Clinton. "In 1982, Eden bought Schmidt Noodle Co., a vintage 1923 noodle maker in Detroit, that had been making Eden's organic pasta for about six years under license.

"The next year Eden began exporting organic soybeans to Japan and then importing Japanese-made Edensoy, a milk-like soy beverage that found an immediate market." Tim Redmond recalls that "Eden had never had a success like this in one product." According to Peter Golbitz, soymilk industry sales "zoomed through the 1980s to reach $52 million at retail last year. Edensoy had about a 40 percent share of the market."

"But importing Japanese soy milk and living at the mercy of the yen wasn't good enough, and Potter believed that the burgeoning soy milk market could justify a U.S. plant. So in 1987, Eden opened a soy milk processing plant in Saline in a joint venture with four Japanese companies. With redesigned aseptic packaging, Edensoy sales grew to 4,500 supermarkets nationwide as well as hundreds of natural food stores."

"Eden has had certification programs for its organically grown products since the early 1970s, but in 1988 the company joined the Organic Crop Improvement Association [OCIA], which strictly monitors crops to show that they are grown in soil that is pesticide free for three years and grown to organic standards. An audit trail can trace a can of beans to the field where the beans were grown."

Color photos show: Timothy Redmond, vice president of marketing at Eden's soy milk processing plant in Saline, standing on the plant floor surrounded by stainless steel equipment. Nancy Potter, on the cover of the tabloid, beside a painting of a huge Eden Foods delivery truck. Address: Free Press business writer.

6245. Bolduc, Bill. 1992. Plans for introducing soymilk and dairylike soy products in the Midwest (Interview). *SoyaScan Notes.* March 14. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Bill's company is gearing up to make a major assault on the East Coast soymilk market. They plan to make the product in Ohio at a cow's milk dairy. Bill is putting together the equipment for the front end of the process using fruit processing equipment, including a Rietz Disintegrator for grinding and a Rietz S-Press. Rietz has its equipment in tofu plants in California. They hope to launch the product in July. The shelf life is 21 days, and the product will be sold in recyclable plastic quarts and half-gallons. His company will also be distributing organic cow's milk. They will deliver it themselves, directly to stores in Boston, New York City, and the Washington, DC / Baltimore area–without using distributors. A major player is really interested in this product now–so he may sell both under his own brand (Ohio Soy) and a private label. Or he may just private label, as for Bread & Circus. They will also be launching a frozen soy yogurt, and a fresh soy yogurt. They key is to have a line of products (both soy and dairy) so the person in charge of the dairy case can place a sizeable order. The organic cow's milk may be under the Hertzler Family Farm label. Other dairy products may include organic dairy yogurt, butter, and cheese. Address: Organic Processing Corp., 1430 Clifton Rd., Xenia, Ohio 45385. Phone: 513-767-9266 or 1-800-647-2326.

6246. *SoyaCow Newsletter.* 1992--1996. Serial/periodical. Ottawa, Canada. The SoyaCow Centre. Vol. 1, No. 1. Jan/March 1992. Editors: Raj Gupta and Grant Wood.
• ***Summary:*** The SoyaCow, invented by Indian scientist Rajendra "Raj" Gupta and his wife, makes high-quality soymilk for low cost. Vol. 1, No. 1 was actually published in April 1992. See next page.

Talk with Brian Harrigan of ProSoya in Ottawa. 1999. May 11. The SoyaCow Newsletter was discontinued about 18 months ago, due to lack of time. Address: 9 Veery Lane, Ottawa K1J 8X4, Canada. Phone: 613-745-9115.

6247. Bounds, Sarah. 1992. The subject of soya. *BBC*

AN ADVANCED SOYA FOODS TECHNOLOGY

The SoyaCow Newsletter

January-March, 1992 Vol. 1 No. 1 Ottawa, Canada

Child Haven Sends Six SoyaCows to India with CIDA's Help

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SoyaCows to Malawi and Guatemala

Ekwendeni Hospital in Malawi (Africa) has ordered a SoyaCow system with electric boiler. Another SoyaCow system has been purchased by ADEEC in Guatemala through Plenty Canada. The machine will be used in a project to establish the feasibility of the SoyaCow concept and to train people in the operation of the machine.

Two Stage Grinder Improves Yield of Alexandria SoyaCow

The SoyaCow system operational for over six months at the Candlestick restaurant in Alexandria, Ontario, has been upgraded to use the same two stage grinder as used in the latest SoyaCow systems. This has resulted in a dramatic increase in the soya milk yield and reduced the soya bean grinding time.

Child Haven's directors, Fred and Bonnie Cappuccino, take delivery of six SoyaCows from ProSoya's president Rashmi Gupta (right).

Natural Products Expo West

Anaheim, 11-13 April

The largest natural products trade show ever is to be held in Anaheim, California, on April 11 to 13, 1992. The Natural Products Expo West will feature natural foods products and services presented in more than 900 booths, including special exhibit pavilions - Organic and Soyafoods. Contact Kay Gazaway, Exhibitor Coordinator (303-939-8440) for further information.

SoyaCow Workshop

ProSoya is offering hands-on training on a SoyaCow system in Ottawa. The workshop will be of interest to those wishing to know about soya foods in general and the SoyaCow concept in particular. The participants will learn to make soya milk, tofu, and many delicious soya foods, drinks, and desserts. The SoyaCow Manual is included in the workshop fee of US$495. SoyaCow training is also provided by Ankur Services in Hyderabad, India.

SoyaCow Displays

The complete SoyaCow-20 system will be on display in several charity and trade events, including:

April 11, 1992: Child Haven Sixth Annual Dinner at Tudor Hall, 3750 Bowesville Rd., Ottawa.

September 10-13, 1992: Natural Foods Expo East at the Convention Center, Baltimore, Md.

October 19-22, 1992: The American Dietetic Association Meeting Exhibition, Washington, DC.

Vegetarian Good Food (*England*). Spring. p. 28-29, 31-32.
• ***Summary:*** An introduction, with many color photos, to soyfoods, including TVP, tofu, soya milk, soya flour, soya oil, soy sauce, miso, tempeh, fresh soya [green vegetable soybeans; "soya beans can be eaten fresh straight from the pod, served green and tender..."], and whole dry soybeans. Contains considerable incorrect information.

6248. Earthsave Foundation. 1992. Our food, our world: The realities of an animal-based diet. 706 Frederick St., Santa Cruz, CA 95062-2205. 24 p. 27 cm. [170 ref]
• ***Summary:*** This outstanding, compact publication is an expanded and improved version of Earthsave's booklet titled Realities. Contents: Resource utilization: Land utilization, grain consumption, energy consumption, water consumption, government subsidies, population issues, distribution of food resources & world hunger. Environment: Soil erosion, desertification, rainforests, global warming, water pollution, pesticides. Health: Physician's training, heart disease, cancer, protein requirements, animal protein and calcium loss (a word on milk), official nutritional guidelines, food contamination (pesticides, food inspection), health of people observing vegetarian diets. The future of the farmers (number of farms in the United States by farm size, roughly each decade from 1900 to 1987). Address: Santa Cruz, California. Phone: 408-423-4069.

6249. Ferrell, John. 1992. Mechanical cows and industrial soybeans: Henry Ford's vision of a sustainable future. 6 p. Unpublished manuscript. [24 footnotes]
• ***Summary:*** Contents: Introduction. Making the cow obsolete. Agricultural alchemy. War on waste. A new generation of prophets. Farms and factories in a sustainable future. "Ford was a contradictory personality. Although he was not a vegetarian, he maintained that meat and milk were unnecessary. He owned a choice herd of dairy cattle, but considered dairy farming inefficient."

Later published in somewhat condensed form under the title "Forgotten legacy: Henry Ford's vision of a sustainable future–An original environmentalist." in EarthSave. 1992. Spring & Summer. p. 15-17. Address: P.O. Box 66336, Washington, DC 20035. Phone: 202-632-1178.

6250. **Product Name:** Rice Dream (Rice Milk in a Tetra Brik Carton) [Original Lite].
Manufacturer's Name: Imagine Foods, Inc. (Marketer-Distributor). Rice milk made by California Natural Products, Manteca, Calif.
Manufacturer's Address: 299 California Ave. #305, Palo Alto, CA 94306. Phone: 415-327-1444.
Date of Introduction: 1992. March.
Ingredients: Filtered water, certified organic brown rice (partially milled)*, expeller pressed high oleic safflower oil, sea salt. * = Organically grown and processed in accordance with Section 26569.11 of the California Health and Safety Code.
Wt/Vol., Packaging, Price: 23 fl oz (946 ml) Tetra Brik Aseptic carton. Retails for $1.59 (11/93 at Trader Joe's, Concord, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Robert Nissenbaum. 1993. Oct. 19. Trader Joe's is now selling this product for $1.49 a quart. As the volume of this product sold has grown the cost to produce each unit has dropped. Imagine Foods has kept its price constant but offered bigger and bigger discounts to large-volume buyers.

Product with Label purchased at Trader Joe's in Concord, California. 1993. Nov. 4. 3.75 by 6.5 by 2.5 inches (1 quart Tetra Brik carton). White and black on sky blue and pink. The lovely package graphics show a blue sky with white clouds here and there, deep blue at the top becoming pink at the bottom. Front panel: "1% fat non dairy beverage. Made from organic brown rice." Back panel: "No cholesterol. 99% fat free. Low in sodium. Rich in complex carbohydrates. Lactose free. Made from certified organic California brown rice. Delicious! Rice Dream is a light, refreshing alternative to soy drinks. Our patented recipe transforms nutritious brown rice into a satisfying beverage. Rich in complex carbohydrates and natural sugars, Rice Dream provides a balanced energy source for your active life." It retails for $1.59. Excellent flavor and color. Feb. 1994. Still retails for $1.59/quart at Trader Joe's.

Talk with Robert Nissenbaum of Imagine Foods. 1994. Nov. 23. This product was introduced in March, 1992. It was probably packed by Real Fresh.

6251. Johnson, Lawrence A.; Myers, D.J.; Burden, D.J. 1992. Early uses of soy protein in the Far East, U.S. *INFORM* (*AOCS*) 3(3):282-88, 290. March. [54 ref]
• ***Summary:*** A nice history of the subject based on a review of the literature. Contents: Early history in East Asia (industrial uses, chiang and miso, natto, tempeh, soymilk, tofu, shoyu). Emergence of U.S. soybeans (early soybean mills, ADM, Glidden). Chemical understanding of soybean protein (major components/fractions). First industrial applications (oil and meal). Soy protein-based plastics (Henry Ford). Chemurgic movement (U.S. Regional Soybean Industrial Products Laboratory, Northern Regional Research Center, Glidden). Soy protein adhesives (I.F. Laucks). Paper coatings and sizings (Glidden). Soy fiber spinning (Ford, Azlon, Drackett). Other industrial uses. Address: Center for Crops Utilization Research, Iowa State Univ., Ames, Iowa 50111.

6252. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. Child Haven sends six SoyaCows to India with CIDA's help. 1(1):1. Jan/March.
• ***Summary:*** "Child Haven International of Maxville,

Ontario, has purchased six SoyaCow systems for their Soya Milk Cottage Industry Project in India. The project is supported by the Canadian International Development Agency and charitable donations from the public. The machines are reported to be running well without problem. Unskilled women with minimum training are able to operate the machines and make soya milk, tofu, soya yogurt, okara, etc., and many delicious and nutritious products."

A photo shows Child Haven's directors, Fred and Bonnie Cappuccino, as they take delivery of six SoyaCows from ProSoya's president, Rashmi Gupta [Raj Gupta's wife]. The SoyaCows are arranged on two handsome stands. Below each is a stainless steel tofu forming box.

Note 1. The order of these six SoyaCows from Child Haven was a defining moment for CIDA; it showed that Raj's original idea was working and that this order would be the first of many.

Note 2. This is the earliest issue of *The Soya Newsletter* that contains the word "ProSoya." The word is used in many articles in this issue to refer to the company that makes the SoyaCow.

Note 3. As of May 1999 Child Haven is located at: R.R. #1, Maxville, Ontario, K0C 1T0, Canada. Phone: 613-527-2829. Attn: Bonnie and Fred Cappuccino.

6253. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. SoyaCows to Malawi and Guatemala. 1(1):1. Jan/March.
• ***Summary:*** "Ekwendeni Hospital in Malawi (Africa) has ordered a SoyaCow with electric boiler. Another SoyaCow system has been purchased by ADEEC in Guatemala through Plenty Canada. The machine will be used in a project to establish the feasibility of the SoyaCow concept and to train people in the operation of the machine."

6254. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. Two stage grinder improves yield of Alexandria SoyaCow. 1(1):1. Jan/March.
• ***Summary:*** "The SoyaCow system operational for over six months at the Candlestick restaurant in Alexandria, Ontario, has been upgraded to use the same two stage grinder as used in the latest SoyaCow systems. This has resulted in a dramatic increase in the soya milk yield and reduced the soya bean grinding time."

6255. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. SoyaCow workshop. 1(1):1. Jan/March.
• ***Summary:*** "ProSoya is offering hands-on training on a SoyaCow system in Ottawa... The participants will learn how to make soya milk, tofu, and many delicious soya foods, drinks, and desserts. The SoyaCow Manual is included in the workshop fee of US$495. SoyaCow training is also provided by Ankur Services in Hyderabad, India."

6256. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. SoyaCow displays. 1(1):1. Jan/March.
• ***Summary:*** "The complete SoyaCow-20 system will be on display in several charity and trade events, including:

"April 11, 1992: Child Haven Sixth Annual Dinner at Tudor Hall, 3750 Bowesville Rd., Ottawa.

"September 10-13, 1992: Natural Foods Expo East at the Convention Center, Baltimore, Maryland.

"October 19-22, 1992: American Dietetic Association Meeting Exhibition, Washington, DC."

6257. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. SoyaCow-100 introduced. 1(1):2. Jan/March.
• ***Summary:*** "ProSoya has designed a soya milk plant for those needing systems larger than the SoyaCow-20. Whereas the SoyaSow-20 uses a 20 L [litre] vessel to make soya milk at the rate of 15 L/batch, 3 batches/h [hour], the SoyaCow-100 L pressure vessel with a capacity to make up to 75L/batch. Depending on the capacity of the boiler for steam generation, SoyaCow-100 can process up to 6 batches/h. The price for the basic grinder / cooker unit for a SoyaCow-100 is US$9995. A mechanical press, a steam generator, and tofu forming boxes are also available to complement the grinder / cooker."

6258. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. Technology transfer to India. 1(1):2. Jan/March.
• ***Summary:*** "ProSoya has assigned the task of developing a SoyaCow prototype for India to Ankur Services Pvt. Ltd. of Hyderabad, India. The intent is to eventually manufacture SoyaCow machines for India and the neighbouring countries."

6259. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. SoyaCow manual. 1(1):2. Jan/March.
• ***Summary:*** "Child Haven International, Maxville, Ontario, has published a manual on the SoyaCow. The 100-page manual introduces the reader to soya milk, tofu, okara, soya yogurt, etc. Most everything one needs to know to start and profitably run a small soya dairy operation, especially the SoyaCow-20 is given."

6260. DeBona, Don; Callebert, Mark. 1992. Update on Lima Foods and Euronature (Interview). *SoyaScan Notes*. April 19 and 23. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The following is based on a talk that Don had in North Carolina with Mark Callebert, general manager of Lima Foods in Belgium, then a direct interview with Mark in Belgium on April 23, followed by a letter from Mark on June 16 with exact dates. Mark has worked with Lima for about 16 years (since 1 Sept. 1975).

The Gevaert family sold Lima in May 1988 to a company named Vibec in Quebec, Canada. Vibec was a construction company (they were not involved with foods) and the owners spoke French. The contact with Vibec was

made via Henry Lucy, a Frenchman who was on the Lima board of directors (and also a shareholder), who was a friend of Michio Kushi (Michio had healed Henry's wife), who had quite a lot of money, and who also had a construction company in Africa. Michio was also on the Lima board for a while. Vibec purchased Lima as a way of getting involved in the new European market without borders which will begin at the end of 1993. However Pierre Gevaert and his son, Daniel (who was production manager at Lima, France), kept their property and mill in the south of France where Lima used to make miso. At that time Lima had a lot of financial problems. Pierre Gevaert owned the majority of the stock in Lima, and his relatives (mostly his brothers and sisters) owned the rest. Mark and Frank Stevens (Pierre Gevaert's son-in-law) played key roles in negotiating the deal, then stayed on to run the company. On 22 April 1989 Lima purchased Jonathan P.V.B.A., which is still a fully owned subsidiary (daughter company) of Lima. But the marriage of Lima (a Belgian natural foods company) and Vibec (a Canadian construction company) was a strange one, and for that reason it didn't last long.

Then in September 1989 Lima was purchased from Vibec by Euronature (pronounced as in French, YU-ro na-TYUR), a large international food company headquartered in Paris, France. Euronature is a holding company that was founded in June 1989; the president of Euronature was able to raise a lot of money from banks and insurance companies to create the holding company. Frank Stevens was killed in an automobile accident in Nov. 1989.

Lima is presently doing well, is financially very solid, and the future looks bright. Lima has sales of about $15 million a year, but the company is not yet profitable. Mark feels that they will become profitable when sales reach about $17 million/year. Their traditional high standards of food quality are completely supported by Euronature. Pierre Gevaert (born 21 July 1928 now in his mid-60s) no longer owns any part of Lima and neither he nor his son have been active with the company since it was purchased by Euronature. Pierre lives in the south of France and works on his organic farm there. Lima is still headquartered at Sint-Martens-Latem in Belgium.

Euronature has 4 major divisions: (1) Natural foods division, including Lima Foods, Lima's bakery and muesli factory, and several natural foods distribution companies; (2) Gourmet division; (3) Seafoods division (Euronature's largest), with branches scattered throughout Europe; (4) French specialty foods division.

Lima's largest product lines are their muesli products (which they make at their own plant), their bakery (located 6 km from Sint-Martens-Latem in Belgium), their sesame division (they make tahini and gomashio, and were one of the first to grow sesame seeds organically), and their tomato canning division (located in the south of France, it makes tomato sauces and ratatouille). Lima's leading soyfood products are tamari, shoyu, organic miso, their soymilk products (including regular and Mocha-Soy soymilk, and Soy Desserts, all made by Alpro in Belgium), fresh tofu salads, and tofu in cans and jars. Imports from Japan are now quite small, representing only about 10% of Lima's total sales. Although Lima no longer makes its own miso, it still sells quite a lot of miso–much of it from past batches made by Jan Kerremans in the south of France. Lima is now looking for other sources, including American Miso Co. in North Carolina. Jan now works part time as a consultant for Alpro in Belgium.

Jonathan's main products are now seitan and tofu (both fresh [pasteurized] and in jars), plus many second-generation products made from seitan and tofu, such as fresh tofu spreads, tofu pates, seitan brochettes, etc. Jonathan makes all of the seitan, tofu, and related products sold by Lima. Address: General Manager, American Miso Co., Route 3, Box 541, Rutherfordton, North Carolina 28139. Phone: 704-287-2940.

6261. Duville, Kris. 1992. Re: Work with soyfoods at Productos Alimenticios Soyavyn in El Salvador. Letter to William Shurtleff at Soyfoods Center, April 22. 3 p. Typed, with signature on letterhead. [Eng]

• ***Summary:*** Kris graduated in 1988 as an agricultural Engineer at the Catholic University (KU) of Leuven, Belgium. A scholarship took him to Silsoe, England where he studied for an MSc in tropical crop storage and processing. He was then given a 3-year volunteer contract with a Belgian non-governmental aid organization named ACT to help start a small enterprise for PNS, the Programa de Nutricion y Soya, in El Salvador. PNS is a Salvadorean foundation whose objective is to promote the use of soybeans and soyfoods in the diet of the people of El Salvador. PNS started 7 years ago with courses on the cultivation and processing of soya on the village and home levels. A considerable part of the population has attended the talks and demonstrations, and many cooperative and individual farmers have started growing soybeans for consumption by their families, selling the surplus to PNS, which founded small distribution and processing centers. As soybean production and the demand for soyfoods grew, ACT decided to set up a small processing plant, named Productos Alimenticios Soyavyn, which went into operation about 2 years ago. The period of financial support has now ended, so the company is working hard to make ends meet. The future looks promising. The company's fresh products are flavored soymilk, soy cheese [a fresh cheese analog; queso de soya–perhaps tofu] and soy cream, and meat substitutes. Dry products include roasted soy flour, which serves as the base of several flour-type products. Kris' contract ends in September 1992 but he may continue working in El Salvador. The company is planning new projects for the production of soymilk and for toasted and extruded soy products; it is requesting financial support from

the Belgian and European government, with hopes of starting next year. They also want to organize a seminar on soy processing and consumption for the many interested people in El Salvador. Also the government has shown interest in soyfoods for their health and nutrition programs. Note: This letter is also signed by Nelson Vasquez, Soyavyn plant manager.

Chris encloses a 4-page typed, undated proposal on ACT letterhead titled "Improving the food situation in El Salvador by the processing, promotion and marketing of soybeans in accessible commercial products in Santa Ana and San Miguel–El Salvador. Contents: Summary of the project. NGO data sheet. Information on the action. The proposal was submitted to: Commission of the European Communities, 200 Wetstraat, 1049 Brussels, Belgium.

Follow-up letter from Kris Duville. 1992. Oct. 9. He is now in Santa Ana. "We are going to start a new soyplant for soymeals, cereal-soy blends, and other dry products. It looks like it will be a nice project, again working with PNS." Address: Productos Alimenticios Soyavyn, Planta Soyavyn, 2a Calle Poniente No. 2-4, Lourdes, Colón, Depto. La Libertad, El Salvador. Phone: 51-0705 or 23-3554.

6262. Gabriel, John. 1992. Current work with soya in Nicaragua (Interview). *SoyaScan Notes.* April 28. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** John (age 55) and his wife Charlotte (who is now a well-known maker of psychedelic tie-dye clothing) used to make tempeh in Houma, Louisiana, in about 1977. Recently John was in Nicaragua and he plans to do work there, starting in several years, with soyfoods such as tempeh, tofu, and soymilk. He is now working with Chuck Haren of Plenty USA, to put together a grant proposal for a project and funding.

The two best known people involved with soya in Nicaragua are Luci Morren and Anne Souter. Luci is a Danish nun who has founded an organization named Asociatión Soya de Nicaragua (popularly known as Soynica, located at Apartado Postal 4451, C-164 Managua, Nicaragua). Now in her 50s, Luci has been involved with soyfoods for at least 8 years, working with a women's collective of about 5 women and promoting their use (especially as a source of nutrients for poor and malnourished children) in the barrios of Managua. The group now makes tofu using rudimentary equipment; they don't even have a press, so they must squeeze out the soymilk by hand. Luci would now like to start a commercial soy processing operation to make soymilk, tofu, and tempeh. She would like to sell these to restaurants, hospitals, schools, small retail outlets, etc., but she needs both technical and financial help. John is in communication with Luci on a regular basis. Luci is known by most development people in Nicaragua. John describes her as a very dedicated, indeed holy woman–like Mother Teresa of India. According to the SoyaScan database, in the mid-1980s, Luci was working in Mexico, teaching the people about Soya; she was with Cargua at San Cristobal Las Casas, 75 Real de Guadelupe, 29230 Chiapas, Mexico.

Anne Souter is now back in Nicaragua working full time with soya in the area of Matagalpa. She has yet to produce a successful crop of soybeans in Nicaragua.

A development group working with soyfoods in Nicaragua is Alianza Para Comunidades en Acción. Based in the USA (contact Richard Schopfer, director, P.O. Box 30154, Bethesda, Maryland 20814. Phone: 301-229-1742), they have an office in Managua run by Richard's son, Don Schopfer (Aptdo. Postal C-144, Managua. Phone: 72022), and a soy project in Rivas, located 2 hours drive south of Managua near the border with Costa Rica. There Sal Piazza is in charge of a soybean utilization project. He works with several women's groups that have community kitchens. Most of Alianza's major projects are in the fields of health, food production, water, and housing.

Shurtleff & Aoyagi first met John and Charlotte Gabriel on 4 Jan. 1977 in Houma, Louisiana. They had constructed a tempeh trailer and were making tempeh for their own use. At that time they planned to start commercial tempeh production, but they never actually did. Rather they took the tempeh trailer back to The Farm in Summertown, Tennessee, and it was used there to make tempeh for members of The Farm.

Update: Talk with John Gabriel. 1993. Oct. 6. John and Charlotte are in the process of moving permanently to Nicaragua where they hope to arrive in about Feb. 1994 to work with the people to make soymilk, tofu, and tempeh. They plan to learn Spanish first in Guatemala. Chuck Haren says that quite a lot of soybeans are grown in the department of León, Nicaragua, but the yields are not very high; the rainy season requires that short-season varieties be cultivated. Leaf protein concentrate (made from cowpea leaves) is now being added successfully to lemonade in Nicaragua. Chuck Haren has married a Nicaraguan lady named Casta Calderon, who managed Luci Morren's office.

Note: Plenty International (Jan. 1994) notes that Soynica (a non-governmental organization or NGO) is now located at: Apartado #RP-05, Managua, Nicaragua. Address: 11668 Blackberry Place, Nevada City, California 95959. Phone: 916-265-5100.

6263. Boysen, Hans-Juergen. 1992. Soja [Soya]. *Schrot & Korn* (*Germany*). April. p. 16-20. [Ger]

• ***Summary:*** An introduction to soybeans and soyfoods, including whole dry soybeans, soy oil, soymilk, soya meat (Sojafleisch, TVP), Whole soy flour, tempeh, and soy sprouts.

Note: This magazine is sold in German natural food stores (Naturkost-Laden).

6264. Child Haven International. 1992. Income [for 3rd phase of SoyaCow project]. Hyderabad, India: CHI. 1 p. April.
• ***Summary:*** Expenses: 277 hours @ $15/hour = $4,155. Child Haven Director (Supervision in India, planning and reporting) 264 hours @ $15/hour = $3,900. Sub-total. $11,215. Total: $115,615.

Income: Canadian NGO: $22,975. Other cash contributions (CIDA): $68,925. Provincial government: $0. Local contributors: $12,500 (local organizations will pay salaries for equipment operators ($3,500) and site managers ($3,000), as well as purchase soya beans, cooking fuel, etc. ($6,000) for 5 of the 8 sites).

Administration: $11,125.

Total: 115,615.

Note: The conversion rate for Indian Rupees is Rs. 21 = $1 Canadian (April 1, 1992). Address: Hyderabad, India.

6265. **Product Name:** Granose Soya Creem: Non-Dairy Cream Alternative.
Manufacturer's Name: Granose Foods Ltd. Div. of Haldane Foods Ltd.
Manufacturer's Address: Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England.
Date of Introduction: 1992. April.
Ingredients: Soya milk, vegetable oils, corn syrup, emulsifiers (vegetable mono-diglycerides), stabilisers (xanthan gum, locust bean gum, guar gum), natural color (beta-carotene).
Wt/Vol., Packaging, Price: 225 gm Combibloc Aseptic carton. Retails for 69 pence (7/92).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Energy 1827 Kjoules / 437 Kcal (calories), protein 3 gm, carbohydrate 12 gm (of which sugar 5 gm), fat 36 gm (of which polyunsaturates 47%, and saturates 23%), sodium 0.1%.

New Product–Documentation: Spot in SoyaFoods. 1992. Spring. p. 4, 5. Ad in Health Food Business (England). 1992. July. p. 5. "Put Creem on top of Granose soya milk sales." A color photo shows the carton and label. The Granose logo now reads: "Granose: A history of good health."

Label (carton) sent by Leah Leneman of Scotland, purchased at Real Foods. 1992. July. 3 by 3 by 1.9 inches. Combibloc carton. Red, dark blue, and light blue on white. Front panel: "High in polyunsaturates. Low in saturates. Cholesterol free." Other panels: V logo. "Suitable for vegetarians and vegans. Enjoy Soya Creem poured over your favorite fruits or desserts... Made without animal fats and milk derivatives. (Not recommended for use in coffee.)" Note: This product is basically identical to So Good Soycreem (1991).

Label sent by Genice Foods Ltd. 1994. Feb. 18. Same product name but in a 225 Tetra Brik Aseptic pack, and the first ingredient is now Organic soya milk.

6266. **Product Name:** Granose Light Soya Milk (Less than 1% Fat).
Manufacturer's Name: Granose Foods Ltd. Div. of Haldane Foods Ltd.
Manufacturer's Address: Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England.
Date of Introduction: 1992. April.
Wt/Vol., Packaging, Price: 1 liter. Retails for 91 pence (5/92).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Spot in SoyaFoods. 1992. Spring. p. 4, 5. "New Low Fat Soya Milk." "With less than half the fat of ordinary soya milk, it has a lower fat content than any other low-fat soya milk. In the UK it is estimated that 48% of all dairy milk sales are low-fat (skimmed or semi-skimmed)." A photo shows the package and label.

6267. **Product Name:** Tofu [Firm, or Regular], Tofu Pudding, Soymilk [Plain, or Sweetened], and Fried Tofu.
Manufacturer's Name: Happy Tofu.
Manufacturer's Address: 5231 S.E. Powell Blvd., Portland, OR 97206. Phone: 503-771-2802.
Date of Introduction: 1992. April.
How Stored: Refrigerated.
New Product–Documentation: Talk with (call from) Ann Uong of Happy Tofu in Portland, Oregon. 1994. Feb. She hopes to start making tofu in April 1992. John Rumler. 1994. This Week (Portland, Oregon). Aug. 17, "Tofu Fo' You." Ann Uong started this tofu company and now has four employees. In 1980 she escaped from Vietnam in a crowded riverboat and was almost killed twice by pirates. Then she and her 6-year-old sister had to spend 18 months in a refugee camp in Thailand; there she met Hoang, an engineer from Saigon, and now her husband. Uong came to the USA in 1982, and Hoang followed a year later. In 1985 they were married.

In 1991 they considered buying a chicken farm. But the unnatural factory-farming methods, with chicken kept in cages so cramped they were unable to walk, being force-fed chemicals to make them grow faster, made the couple so sad they decided to give up the idea–and to become vegetarians. Instead they decided to open a business in southeast Portland (at Southeast 53rd Ave. and Powell Blvd.) making and selling tofu and other soybean staples. At first their products were sold only to Asians, but gradually they found customers of all kinds. Now the company is distributing soybean products across Portland, and as far north as Seattle, and selling to such major accounts as Safeway and Food-4-Less.

Talk with Tom Nguyen. 1994. Nov. 17. Tom is Ann Uong's partner and brother-in-law, married to her sister. He is also Vietnamese. In April 1992 Happy Tofu started making firm and regular tofu, tofu pudding, and soymilk in plain and sweetened flavors. In Oct. 1992 they introduced Fried Tofu (in cubes).

6268. Haren, Chuck. 1992. Further adventures in Belize. *Plenty Bulletin* (*Davis, California*) 8(1):1-4. Spring.
• ***Summary:*** Describes the ongoing work of Plenty, Inc. to introduce soybeans to Belize. A photo shows the Southern Corozal Soy Producers Association, with about 13 members present. The author made tofu and soymilk for 50-60 men and women in the village of San Antonio (Toledo). Locally grow limes were used to coagulate the tofu. Address: Program Director.

6269. Imagine Foods, Inc. 1992. Three out of four would rather be dreaming (Ad). *Natural Health.* March/April. p. 17. Also ran in the May/June issue, p. 49.
• ***Summary:*** This creative full-page color ad for Rice Dream rice beverage shows, across the top third of the page, the backs of three people's heads. Above each head is a "thought bubble" (like those found in comic strips). The three people on the left are regular-looking people and in each of their thought bubbles is white clouds against a blue sky. The person on the right, named Flash, has yellow and purple hair, an unusual haircut, and some jewelry (including a peace symbol) dangling from his left ear. His thought bubble is gray and shaped like a jagged question mark.

Below the ad slogan to the left is a glass and a carton of Rice Dream (non-dairy rice beverage) next to a bowl containing cereal, sliced strawberries, and Rice Dream. To the right are 4 cartons of different types of Rice Dream.

The text states: "In a blind taste test, 300 natural food store shoppers were asked to compare Organic Original Lite Rice Dream with the two best selling soy beverages* (Footnote: * Based on a poll of leading natural food distributors...). The exciting results were 227 out of 300 chose Rice Dream as the best tasting non-dairy beverage.

"Many, like Harold (left), will also be pleased Rice Dream rice dream is 99% fat free with no cholesterol. Janet will like the fact that it's organic and a rich source of carbohydrates. Liz? Well' she's allergic to the others. But they all agree on one thing–good taste. Except Flash, but his friends say he's always been full of beans.

"Rice Dream is available in four scrumptious flavors, and economical quart sizes. It is delicious served hot or cold, great on cereal, delightful in tea or coffee, and a creative addition to puddings, pancakes or muffins. The light refreshing taste comes from our patented recipe which transforms nutritious brown rice into a delicious beverage. Try your own taste test and find out why more and more health conscious people have their heads in the clouds." Address: 299 California Ave. #305, Palo Alto, California 94306. Phone: 415-327-1444.

6270. Johnson, Lawrence A.; Meyers, D.J.; Burden, D.J. 1992. Soy protein's history, prospects in food, feed. *INFORM* (*AOCS*) 3(4):429-30, 432, 434, 437, 438, 440, 442-44. April. [54 ref]
• ***Summary:*** "This is the second part of a review that chronicles the individuals and the historical and economic factors noteworthy in the development of soy protein as food and feed ingredients." Contents: Introduction. Early Western food uses (whole and defatted soy flour, enzyme-modified isolated soy proteins as whipping agents, whipped toppings, cereal-soy blends). Soy flour and grits. Protein concentrates and isolates (Griffith Laboratories, Central Soya Co., Mead Johnson and Co., Central Soya). Dairy analogs (Dr. Harry W. Miller, Loma Linda Foods, Mull-Soy and Borden, Vitasoy, Edensoy, Worthington Foods and Soyamel, Prosobee and Mead Johnson, Rich Products and Chill-Zert, Tofutti). Spun fibers (Robert Boyer and the Ford Motor Co., Temptein, Worthington Foods, Bontrae, Bac*O's, Bac-O-Bits, Miles Laboratories, Morningstar Farms). Textured soy protein and meat analogs (W. Atkinson, ADM and TVP, General Mills and frozen Bontrae, the U.S. School Lunch Program). Nutritional advances in soy products. Today's world soybean and soy protein production (consolidation among manufacturers of modern soy protein ingredients: ADM, Cargill, Central Soya Co., Protein Technologies International, A.E. Staley Mfg. Co.). Future of soy protein products.

Tables show: (1) Soy meal consumption in the USA by type of animal: Poultry 41.1% of total 18.9 million metric tons, swine 27.4%, beef cattle 9.0%, dairy cattle 9.0%, other livestock 9.5%, human food 3.2%, industrial 0.5%. Thus, industrial (nonfood, nonfeed) uses for soybeans presently comprise no more than 0.5% of the protein produced from soybeans grown in the United States. (3) U.S. companies supplying protein in 1948-50 versus 1990 (industrial and edible flours, concentrates, and isolates). 23 companies then vs. 5 in 1990.

Note: Talk with Ed Milligan of EMI by phone. 1992. May 5. This article contains some misleading information.

Three out of four would rather be dreaming.

In a blind taste test, 300 natural food store shoppers were asked to compare Organic Original Lite Rice Dream with the two best selling soy beverages.* The exciting results were 227 out of 300 chose Rice Dream as the best tasting non-dairy beverage.

*Based on a poll of leading natural foods distributors. Write for our free recipe booklet. Imagine Foods, 299 California Ave., Suite 305, Palo Alto, CA 94306. © 1991 Imagine Foods, Inc.

Many, like Harold (left), will also be pleased Rice Dream is 99% fat free, with no cholesterol. Janis will like the fact that it's organic and a rich source of complex carbohydrates. Liz? Well, she's allergic to the others. But they all agree on one thing – good taste. Except Flash, but his friends say he's always been full of beans.

Rice Dream is available in four scrumptious flavors, and economical quart sizes. It is delicious served hot or cold, great on cereal, delightful in tea or coffee, and a creative addition to puddings, pancakes or muffins. The light refreshing flavor comes from our patented recipe which transforms nutritious brown rice into a delicious beverage. Try your own taste test and find out why more and more health conscious people have their heads in the clouds.

Imagine
FOODS

It refers to an article by Ken Becker written in 1971. In 1958-59 USDA developed a laboratory prototype of flash desolventizing. In 1959 they contacted EMI corporation in Des Plaines to commercialize the flash desolventizing system for production of light-colored, edible soybean flakes, for soy flour and grits, with a maximum PDI (protein dispersibility index). At that time Ed Milligan was just a newly hired member EMI, which undertook the project. Ed designed and installed the world's first commercial flash desolventizing system for Honeymead Products Corp. in Mankato, Minnesota, in 1960. Note that this system was used to make food, rather than feed. All but 2 systems have been used exclusively to make foods. All such systems produce a flake with a very light color and controlled PDI, whereas a DT (desolventizer-toaster) produces a golden colored flake. He is leaving for India in a few weeks to commission EMI's 22nd such unit. He has designed, installed, and started every one of the 22. Address: Center for Crops Utilization Research, Iowa State Univ., Ames, Iowa 50111.

6271. Wilson, Lester A.; Murphy, Patricia A.; Gallagher, Paul. 1992. Soyfood product markets in Japan: U.S. Export opportunities. Ames, Iowa: MATRIC (Midwest Agribusiness Trade Research and Information Center). x + 64 p. April.
• ***Summary:*** Contents: Figures. Tables. Acknowledgments. Introduction. I. Soybean processing (by Wilson and Murphy). Food from soybeans: Soybean chemical composition, environmental influences on soybean composition. Soyfood manufacture: Soymilk, tofu, momen tofu, kinugoshi tofu, packed tofu, aseptically-packaged tofu, deep-fried tofu, kori tofu. Tofu-related research: Recent studies at Iowa State University, summary, future research. Other nonfermented soyfoods: Yuba, kinako, texturized soy protein foods. Fermented soyfoods: Miso, shoyu, natto, tempeh. Japanese Agricultural Standards (JAS). Identity preservation and transportation. U.S. soybean quality and the Japanese market: Grain quality, judging quality, potential new markets.

II. Japanese soyfood markets (by Gallagher). Demand and growth prospects: Consumption patterns, demand analysis, forecasts. The U.S. share of the food soybean market: Sources and uses, market share analysis, determinants of relative prices, prospects. Trade and trade barriers: Soybeans, processed products. Summary and recommendations.

Appendixes: A. Excerpts from specifications and standards of food additives, etc.–Manufacturing and storage of tofu. B. Excerpts from standards and certification systems in Japan. C. Additional agricultural standards for soybeans. References.

Table 2.1 shows soybean use for soyfood production in Japan; actual (1986) and projected (2000). Soybeans for tofu are expected to increase from 524,000 to 609,700 tonnes. Soybeans for miso are expected to decrease from 156,000 to 101,600 tonnes. Soybeans for natto are expected to increase from 92,000 to 118,600 tonnes. Figures 2.1 to 2.4 show Japanese per capita consumption of tofu, natto, miso, and soy sauce from 1965 to 1988. Tofu: Japanese annual per capita consumption of tofu has risen since 1965, except that it fell during 1973-1977. In 1965 about 3.6 kg/capita of soybeans were used to make tofu, increasing to 4.4 kg/capita in 1988. If 1 kg of soybeans yields 2.8 kg of tofu, then per capita tofu consumption in 1988 was 12.32 kg or 27.1 lb.

Natto: Japanese annual per capita consumption of natto has risen steadily, from a little less than 0.4 kg in 1965 to 0.6 kg in about 1968, to 0.8 kg in 1988.

Miso: Japanese annual per capita consumption of miso fell from 8 kg in 1965 to about 5.4 kg in 1985, then it began to rise to about 5.7 kg in 1986.

Soy sauce: Japanese annual per capita consumption was about 12 liters in 1965. It fell to 11 liters in 1967, rose to 13 liters in 1973, then fell to 9.8 liters in 1985, after which it rose for 1 year. Address: 1-2. Prof. of Food Science and Human Nutrition; 3. Assoc. Prof. of Economics. All: Iowa State Univ. Phone: 515-294-0160.

6272. Fowler, Veronica. 1992. Studies: Soybeans may fight cancer. *Argus Leader* (*Sioux Falls, South Dakota*). May 5.
• ***Summary:*** Summarizes 4 studies suggesting that soybeans may contain substances (such as isoflavones and protease inhibitors) that prevent cancer. Iowa State University "recently was awarded $416,000 from the National Cancer Institute to investigate what effect isoflavones, a component of soybeans tied up with soy protein, might have in preventing cancer. Iowa State researchers are monitoring blood, urine and fecal samples of 12 student volunteers who drink a breakfast drink made each day with soy milk. This phase of their research will help them determine how readily isoflavones are absorbed into the body."

6273. Demos, Steve. 1992. New developments with the Soyfoods Association of America (Interview). *SoyaScan Notes.* May 6. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Big changes are taking place in the Soyfoods Association of America (SAA). Steve, who is now president, plans to launch a new membership drive. There will be two categories of membership: Full members and associate members. Two months ago, SAA started again to subscribe to the clipping service, and it now comes free of charge as one of the benefits of membership. The clips will be mailed every 60 days with a newsletter coming in between. SAA is in the process of installing a new executive director. Steve hopes that Virginia Messina will accept their offer for the position, on a part-time basis along with her current work for PCRM (Physicians Committee for Responsible Medicine). The SAA office would be at her present location near Washington, DC. Her husband, Dr. Mark Messina, will probably be leaving the

National Cancer Institute (NCI) soon, and SAA has asked him to work together as a spokesperson concerning cancer-preventing substances in soyfoods. Steve is optimistic that arrangements with the Messinas will work out. It will be excellent to have credentialed and creditable people speaking for the soyfoods industry.

Steve is now developing "products" to attract members. He wants SAA to produce informational pieces on soyfoods to mail to the medical and nutritional communities, to develop school wall posters and weekly meal planners for homemakers, and to work with state soybean programs which have benefited from the SPARC [national soybean checkoff] program. SAA would sell the information pieces to members to generate income. Leslie Harlow will soon no longer be with the organization, and Peter Golbitz will have a more limited role, although he may still be on the board of directors; he is very busy doing the Soya Bluebook.

Mark Messina is leaving NCI largely (Steve thinks) because "he is not being allocated the time and resources to devote to soy the way he wants to. He is very committed to soy, but his supervisors are limiting him to spending 10% of his time on soy-related research, whereas he would like to spend 50%. Also, being at NCI puts constrains on what he can say and do. Leaving NCI will probably cut back on his scientific research. He plans to go into consulting related to diet, cancer, and soya.

Steve feels that rushed 1-hour SAA board meetings at natural food trade shows are not very effective. The board needs more time and a better atmosphere in which to meet. He has called a strategic planning meeting in Boulder about the third week in July. 20% of the people put in 80% of the energy.

Steve is very interested in reviving and finalizing the tofu standards, then getting them accepted/ratified by the board and the industry; new soymilk standards are now being developed. The natural foods industry has established a Natural Foods Quality Council to respond to new FDA regulations. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301. Phone: 303-443-3470.

6274. Okada, Yuko. 1992. Re: Muso's soymilk factory in the USA. Importing organic soybeans to Japan. Letter (fax) to William Shurtleff at Soyfoods Center, May 21. 1 p. [Eng]
• ***Summary:*** "Did you know that I have a soymilk factory in the U.S.? It has been operating for almost 7 years. It was the first soymilk company in the United States and is growing every year. The company is located in Michigan, where most of the organic soybeans are grown." Note: The author is probably referring to Muso's 15% ownership in American Soy Products, Inc., whose plant at Saline, Michigan, began commercial operation in Nov. 1986.

Muso is also importing organic soybeans into Japan, and has already imported about 300 metric tons this year. The use of organic soybeans in Japan is growing on the part of companies making shoyu, miso, tamari, tofu, etc. for Muso. Address: Muso Co., Ltd., Kosei Bldg. 2nd Floor, Tanimachi 2-5-5, Chuo-ku, Osaka 540, Japan. Phone: 06-942-0341.

6275. Sandler, Matthew; Sandler, Helen. 1992. Early work with natural foods in Boston. Plans to launch a soymilk product named Luppy (Interview). *SoyaScan Notes.* May 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Matthew's brother, Richard Sandler, arrived in the Boston area on 1 Jan. 1968. Matt drove him to 29 University Ave. knowing nothing about macrobiotics except that he ate with Richard once at the Paradox restaurant in New York City. Those were the early days. Nahum Stiskin and Richard Sandler, were already in Boston when Matt arrived in about late 1968. Matt moved to Japan in about 1969; Nahum Stiskin was living in Kyoto, Japan (where he arrived in May 1969), when Matt arrived. Steve Helfer (a student of macrobiotics) had arrived in Japan before Matt. After a while, Matt brought Helen to Japan so they could get married–which they did in about 1971, at the Jewish Community Center. Matt had known Helen when they were in Boston; they lived together a macrobiotic study house.

Helen and a lot of other Americans studying macrobiotics in Japan took cooking classes, taught in Japanese, from Lima Ohsawa in Tokyo at Tokyo C.I. (Centre Ignoramus). Matt and Helen left Japan in about 1971-72, returning first to New York, and then to Boston in about 1973. He finally left Boston in 1984.

While in Boston, Matt started a bakery named Matthew's All Natural, located in Woburn, just outside of Boston. It's first products were sweets such as carrot cakes. The discovery of barley malt, a complex carbohydrate sweetener, was a major breakthrough for the company. Helen Sandler developed a line of English Muffins sweetened with barley malt, and then a line of whole-grain breads which were introduced in 1979. The company soon became quite large and successful, and it is still in operation. The bakery did not use soy in any form in its products.

Evan Root started the original Sanae. Matt's brother, Richard Sandler, who arrived in Boston before Matt, started The Seventh Inn (also called Big Sanae). He rented the space and made it into a restaurant with his own hands; his partner was Warren Durbin (originally a film editor from California who came to Boston to study macrobiotics and who now lives in Vermont). Richard is now a photographer living in Greenwich Village (Phone: 212-777-7138).

Barry Creighton invested a lot of money in his Cable Springs Bakery; it was a good idea, but ahead of its time, so it wasn't that successful. When it went bankrupt, Kathy Bellicchi took it over. Helen Sandler (who had her own company) then shared the bakery with Kathy, and baked cakes there starting in about 1975. Helen does not remember any commercial soy products in Boston, except the Tofu

Cheesecake sold at Sanae (it was a Sanae special) and 1 or 2 other restaurants in the late 1970s. Matt liked the Tofu Cheesecake; Helen didn't. Matt recalls that the Tofu Cheesecake was sold, pre-sliced, at a number of retail stores, including Erewhon. He thinks it was sold in the first tier of products that Erewhon sold out of the cooler. He thinks it was made by an underground business that made only this product. Helen experimented with "Tofu Cream," made by mixing tofu, vanilla, and maple syrup–but it was never commercialized since it had such a short shelf life and the retail stores had no refrigeration.

Another excellent product in Boston was Tan Pups, made by Nik Amartseff and his wife. It was a natural meatless hot dog made of seitan, deep-fried on a stick. Nik was one of the most creative food product developers in Boston at the time. He also developed the formulations for most or all of the Erewhon cereals, granolas, and snacks, as well as their labels and packaging. "He was a real fertile mind."

Matt is planning to launch a soy dessert named Luppy (in 2 flavors), within the next 6 months. The product will be aseptically packaged in tubs. His company is named Luppy Foods. He remembers Luppy soymilk from Japan as a soymilk sweetened with brown sugar and sold in little bottles.

When Yuko Okada first brought soymilk to the USA, he started by trying to make a deal with Knudsen. That didn't work out and for some reason he had a problem with Eden Foods in Michigan at the beginning. So Yuko called Matt, who at that time was still owner of Matthew's All Natural bakery, and asked Matt if he wanted to distribute the soymilk product over his route which extended from Maine to Philadelphia. Matt also distributed foods frozen and refrigerated as far west as Denver. The product Yuko was offering was quite similar to the Luppy soymilk Matt had enjoyed in Japan. Before Matt could say yes, Yuko had made a deal with Eden Foods to import.

Update on Matt's soymilk dessert. 1992. July 15. It will be a pudding-type product, the soymilk will be supplied by American Soy Products in Michigan, and it should be on the market by about Nov. 1992. Address: P.O. Box 10277, Aspen, Colorado 81612. Phone: 802-869-2010.

6276. Tierney, Bev. 1992. Re: Miller Farms Food Company has been reorganized into Solait International, Ltd. Letter to William Shurtleff at Soyfoods Center, May 28. 1 p. Typed, with signature on letterhead.
• ***Summary:*** Included is: (1) A new color leaflet (back to back, 8½ by 11 inches; see next page). (2) A 6-color label (blue, red, orange, yellow, white and black), (2) Business cards for Beverly Tierney and for Elmer Schettler (president). Address: Sales and Distribution, Solait International Ltd.. P.O. Box 885, Carroll, Iowa 51401. Phone: 712-792-9225.

6277. Boysen, Hans-Juergen. 1992. Ist die Lupine die Nahrungs-Entdeckung des Jahrhunderts? [Is the lupine the nutritional discovery of the century?]. *Schrot & Korn* (*Germany*). May. p. 27-30. [Ger]
• ***Summary:*** A comparison of lupins (*Lupinus albus*) and soybeans, and foods made from them. Paul Bremer and Volker Bruhn, who run a company named "Lupino" in Bremerhaven, say that good-tasting and nutritious milk, yogurt, a spread for bread, and quark (like tofu) can be made from lupin seeds. They sell such lupin products.

6278. **Product Name:** [Soja Biostar Crepes Bretonnes, or American Crepes {Soya Crepes & Pancakes}].
Foreign Name: Soja Biostar (Crêpes Bretonnes, Crêpes Americaines).
Manufacturer's Name: Celia Group.
Manufacturer's Address: B.P. 10, 45550 St.-Denis-de-l'Hôtel, France. Phone: 38 599 01 03.
Date of Introduction: 1992. May.
Ingredients: Incl. soymilk.
Wt/Vol., Packaging, Price: 1 liter Tetra Brik Aseptic carton. Retails for 14-16 francs (Bretonnes) or 17-19 francs (Americaines).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Spot in SoyaFoods. 1992. Spring. p. 5. "Soya Pancakes from France." These ready-to-prepare liquid pancake mixes are 100% vegetable origin. They can be prepared in 30 minutes.

6279. **Product Name:** [Soja Biostar Blinis Pancake Mixes].
Foreign Name: Soja Biostar Blinis.
Manufacturer's Name: Celia SA.
Manufacturer's Address: B.P. 10, 45550 St.-Denis-de-l'Hôtel, France. Phone: 38 599 01 03.
Date of Introduction: 1992. May.
Ingredients: Soymilk, wheat flour, corn oil, soy protein, wheat protein, soy lecithin, baking powder.
Wt/Vol., Packaging, Price: 750 gm and 900 gm.
How Stored: Shelf stable, 8 month shelf life.
New Product–Documentation: Spot in SoyaFoods. 1993. Winter. p. 5. "Biostar Blinis now available." Blinis are a new addition to the Soja Biostar line of ready to prepare pancake mixes. Just add liquid to the dry mix.

6280. *Child Haven International* (*Newsletter, Maxville, Ontario, Canada*). 1992. SoyaCows. Spring. p. 5.
• ***Summary:*** "Seen here [a photo shows] in India with one of our 6 SoyaCows recently taken to India, is Alok Gupta of Ankur Services, the company we have engaged to manage our SoyaCow program in India. The topmost unit is the grinder-cooker with motor underneath, which makes the unit a big blender. Nearby is the steam unit, heated by gas from the container at the right edge of the photo. The lower

chamber is the filter press. The rectangular perforated metal boxes are for making tofu. The basic unit sells for $3,000 U.S., while the whole 20 liter system is available for $5,000 U.S. (photo by Grant Wood).

"Child Haven has published a 100 page SoyaCow manual, presently in English, to provide comprehensive information on soya nutrition and SoyaCow enterprise and operation. We are looking for volunteers interested in translating the manual into other languages within a reasonable time frame (about six months)."

6281. Paine, Heather. 1992. Conference report. *SoyaFoods* (*ASA, Europe*) 3(2):7-8. Spring.

• ***Summary:*** "The French organisation, CPCIA (Centre de Perfectionnement des Cadres des Industries Agricoles et Alimentaires) held a seminar on 14 and 15 March 1992, in Paris, on the subject of 'Applications of soya foods in the food industry'. The Seminar was attended by over 30 people (including speakers) and was Chaired by Mr. Y. Dacosta, a consultant.

"General aspects of soya were first on the agenda. Mr. Prudon (SOJAXA) stressed the economic aspects and environmental advantages of soya cultivation. World production of soya is about 100 million tonnes and about 30% goes into food production but only 12% into soya foods; the remaining 18% goes to oil production. In Europe, production is about 2 million tonnes, of which nearly 300,000 tonnes is produced in France...

"The second session of the Seminar concentrated on the applications of 'intermediate soya products'...

"The third session covered uses of soya foods in the food industry. Mr. Rizzotti (Sanofi Bio Industrie) gave an excellent presentation of his own company's use of soya milk (or tonyu) in desserts and drinks... Mr. Millot (Gastronomic Valley) gave details of applications in frozen desserts and ices... Reasons for using soya in cooked ready meals and sauces were explained by Mlle. Bagot (Sojinal)... Mr. Preneuf (SOY) gave an interesting slide presentation about tofu and traditional processing methods...

"Last but not least, Mr. Maitre, a consultant for SOJAXA, highlighted the legislative problems on the horizon for soya foods, in particular the claims that may or may not be made. This proved an interesting and lively conference. Most of the papers were surprisingly detailed and the speakers were very open...

"Further information may be obtained from CPCIA, 14-16 rue Claude Bernard, 75005, Paris, France, tel: 47 07 39 00." Address: Editor, SoyaFoods.

6282. **Product Name:** [Biosoja Soja Equilibre, Tonyu Saveur, Vanilla Drink Bar, Coffee Drink Bar {Calcium Enriched Soymilk–Aseptically Packaged}].
Foreign Name: Biosoja Soja Equilibre, Tônyû Saveur, Drink Bar (Boisson Vanille), Drink Bar (Boisson Café) (Enrichi en Calcium).
Manufacturer's Name: Sojinal. Affiliate of Coopérative Agricole de Colmar (CAC) (Marketer).
Manufacturer's Address: 8 rue Merxheim, 68500 Issenheim, France. Phone: 89 74 53 53.
Date of Introduction: 1992. May.
Wt/Vol., Packaging, Price: Tetra Pak Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: SoyaFoods. 1992. Spring. p. 1. "A taste of soyamilk to come: Editorial." A photo shows many different soyfood products in packages, including Tonyu Saveur, Soja Equilibre, Vanilla Drink Bar, and Coffee Drink Bar.

SoyaFoods. 1992. Autumn. p. 7. "A profile of Sojinal." See Table 2. "Biosoja retail food products."

6283. *SoyaFoods* (*ASA, Europe*). 1992. A taste of soyamilk to come: Editorial. 3(2):1. Spring.

• ***Summary:*** Sojinal of Issenheim, France, claims to have invented and perfected a unique physical process to improve the flavor of soymilk by removing at least 60% of the flavor components responsible for the product's strong "beany" taste.

"Sojinal itself is focusing equal attention on soya milk and tofu processing and the company is making changes to more than 50 products. For example Tonyu Saveur is a UHT drink manufactured from de-aromatised soya milk."

A photo shows many different soyfood products in packages, including Tonyu Saveur, Soja Equilibre, Soja Harmoniques (Lasagne au Tofu, Knacks Tofu), etc.

6284. *SoyaFoods* (*ASA, Europe*). 1992. Helfex '92. 3(2):4. Spring.

• ***Summary:*** "The International Health Food Exhibition, Helfex '92, was held at Wembley, London on 26 and 27 April. Over 160 companies concerned with health, diet, fitness and nutrition exhibited and several new soya products were launched.

"The Haldane Foods Group displayed their new range including a new Light Soya Milk, a new Soya Creem, a vegetarian cheese spread, burger and sausage mixes, and 6 new varieties of tinned products. JRJ Trading (The Redwood Company) had an interesting and tasty range of tempeh-based products including dips, spreads, patés and vegetarian rashers. Soya milks and desserts from Granovita, Haldane, Sojasun (Triballat), Vitasoy were also on display. Berrydales' No Cream Ices, made from fresh organic tofu and soya milk, introduced their new 4-pack which will allow consumers to purchase four different ices in one pack. Plamil Foods launched a new non-dairy chocolate bar, *Martello* and Marigold Health Food, manufacturers of canned braised tofu and other delicacies, also had a stand."

6285. *SoyaFoods* (*ASA, Europe*). 1992. Soya desserts gain ground. 3(2):3. Spring.

• ***Summary:*** "Last year over 10 million litres of soya milk were consumed in the UK" and this is helping sales of soya based desserts–according to the UK Soya Milk Information Bureau, which surveyed 2,000 soymilk consumers in 1991, as a follow-up to their 1990 survey reported in *SoyaFoods* 3(1) 1992.

Soya milk trends: 41% said they purchased more soya milk now than a year ago. The main reason for buying soya milk is healthy eating; 78% compared to 49% in 1990 said they try to eat healthy foods. 21% said they like to try new foods. The most popular use of soya milk is on cereals (81%), followed by in tea and coffee (55%) and 55% of those questioned use soya milk in desserts.

"Soya-based desserts: More than 50% of respondents regularly eat soya-based desserts. 77% ate long-life soya dessert, 46% soya yogurt and 39% soya ice cream. The main reason for buying soya-based desserts is as part of a healthy diet. 49% buy because they taste good.

"Although 72% of respondents are still buying their soya milk from health food stores, a growing number are moving towards supermarkets. The majority (86%) buy unsweetened soya milk."

6286. **Product Name:** WestSoy Lite Non Dairy Creamer.
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor).
Manufacturer's Address: 1065 East Walnut St., Carson, CA 90746. Phone: 310-886-8200.
Date of Introduction: 1992. May.
Ingredients: Filtered water, whole organic soybeans*, brown rice syrup (brown rice, water), expeller pressed corn oil, natural flavor, tricalcium phosphate, sea salt. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 6 fl. oz. foil retort pouch. Retails for $0.98 in California.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per tablespoon: Calories 10, protein less than 1 gm, carbohydrate 2 gm, fat less than 1 gm, cholesterol 0 mg, sodium 10 mg, potassium 20 mg.
New Product–Documentation: Talk with Lynne Minsky, Marketing Manager of Westbrae. 1992. April 28. This innovative product, Westbrae's most recent soy product, was introduced at the Anaheim trade show in April 1992, will be shipped in late April, and should be in stores by May 1992. The product is sold as a liquid, packaged like the Malteds in a foil retort pouch. They would have preferred to put it in a Tetra Pak but the process would not allow them to do it. Vestro is a holding company, and they consider Westbrae to be an independent company. Westbrae moved to this address in Jan. 1992 from Commerce, California. Little Bear (which makes natural food tortilla chips, Bearitos, etc.), also owned by Vestro, moved into the same offices and warehouse with Westbrae. Westbrae's soy beverage line is a major growth category and the company is putting a lot of energy into developing and promoting it.

Product with Label, plus 2 new product leaflets, sent by Lynne Minsky. 1992. April 28. 3.5 by 6 inches. Foil pouch. Red, yellow, white, black, and brown on blue. Illustration of a pitcher pouring the non-dairy creamer into a cup of coffee. "All natural. Half the calories–Half the fat (of half & half). Lactose free. Great taste. No cholesterol. No tropical oils. Made with organic soybeans. For coffee, fruits, cereal, and baking." UPC indicia.

One leaflet claims that the product won't separate in coffee or tea. Soyfoods Center product evaluation. Label design: Excellent. Product quality: Excellent flavor (tastes like cream or condensed soymilk) and consistency. Does not separate in hot coffee.

Note: This is the earliest known commercial nondairy coffee creamer based on soymilk.

6287. *Whole Foods.* 1992. Source book 1992. 15(5):33-294. May. Illust. Index. 28 cm.
• ***Summary:*** Contents: How to use this book (p. 8). Wholesalers/distributors alphabetical listing. Wholesalers/distributors geographical listing. Brokers. Publishers. Associations. Consultants/service companies.

Product directories: A listing of manufacturers/importers/growers by products: Foods (p. 77-111–soy-related categories include: Beans/bean products, cheese substitutes, coffee substitutes, cultures, miso, soy products, soy sauce, soymilk, tamari, tempeh, tofu, tofu entrees), vitamins and supplements, herbs, cosmetics/personal care, miscellaneous products. Brand names. Product index. Manufacturers/importers/growers alphabetical listing.

Note: The listings related to soy products are full of errors. Address: South Plainfield, New Jersey.

6288. Duville, Kris. 1992. Re: Answers to questions about soyfood products produced by Soyavynn. Letter to William Shurtleff at Soyfoods Center, June 2. 4 p. Typed, with signature on letterhead. [Eng]
• ***Summary:*** "I am very pleased with your interest in our products and the activities of Planta Soyavyn. It is very important for us to be in touch with other people working with soyfoods, to exchange ideas, knowledge and experience and also to stimulate and encourage each other. I find my job very challenging and satisfying, but it is not always easy to introduce new foods, even [no matter] how healthy, delicious and economic they might be, so some support from time to time is very welcome."

Most of the letter gives detailed answers to Shurtleff's questions about the company's commercial soy products. Address: Productos Alimenticios Soyavyn, Planta Soyavyn, 2a Calle Poniente No. 2-4, Lourdes, Colón, Depto. La Libertad, El Salvador. Phone: 51-0705 or 23-3554.

6289. Ponseele, Jos van de; Verfaillie, Magda. 1992. Re: History of Jonathan P.V.B.A. in Belgium. Letter (fax) to William Shurtleff at Soyfoods Center, June 6–in reply to inquiry. 2 p.
• ***Summary:*** Jonathan was the first company in Europe to make seitan for sale commercially. Jos van de Ponseele, the founder of Jonathan, first learned about seitan during a 9-month stay [with his wife and family] at the Kushi Institute in Boston, Massachusetts, from March to December 1976. There he tasted the seitan prepared by Aveline Kushi. He thought it would be a good meat substitute for the growing group of vegetarians in Europe. [Note: Jos was a butcher with a large meat processing operation before he became a macrobiotic vegetarian]. In Boston, he learned how to make seitan on a home scale from Tamara Uprichard. Then, at the very end of his stay in Boston, he started up medium-scale production of seitan with two Americans; he no longer remembers the name of the company or the names of his American partners. They sold seitan to macrobiotic study houses in Boston and to the Erewhon retail store.

Returning to Belgium, he founded Jonathan. The name "Jonathan" came from a famous book titled *Jonathan Livingston Seagull* [by Richard Bach, 1970. This is a parable about a seagull who loves to fly and practice flight, high and alone, for the joy of flying, while his fellow gulls are busy eating. He is eventually banished from the flock for daring to violate the earth-bound traditions of gull society. Eventually he is taken to a higher world where other gulls, like him, seek perfection and liberation from all limitations. Finally he returns to earth to tutor other outcast gulls in the art of advanced flight.]

Jos hired a man named Ludo Peeters as his first employee and they set up the business in a garage at Holleweg 53, 2180 Ekeren, near Antwerp, Belgium. The company's first product, made entirely by hand, was plain fresh seitan. It was introduced some time in 1977. The product name on the label was simply Seitan, written in 4 languages (Dutch, French, German, and English). It was packaged in 250, 500, and 1000 gm carton dishes with a transparent plastic film lid. With seitan, the big challenge for Jos was to introduce an entirely new and valuable product to the market. Two months after introducing seitan, Jonathan started making tofu and soymilk. Ludo continued to work at Jonathan for many years, eventually becoming managing director.

On 2 Feb. 1979 Jonathan was officially registered as Jonathan P.V.B.A. (the latter abbreviation means something like "Ltd." i.e. a company in which the owner has limited responsibility). Also that year Jonathan introduced a fresh seitan burger, then in Jan. 1980 the company moved to its present location at Antwerpsesteenweg 336, B-2080 Kapellen, Belgium. At the new location they introduced a number of new seitan products: Seitan Paté (Feb. 1980, sterilized), Seitan Goulash (late 1980, sterilized), and Seitan Schnitzel (1981, fresh). From 1985 on, Jonathan introduced a series of different ready-to-eat meals in which seitan was a major ingredient. Jos sold Jonathan and left on 1 April 1989. Magda started Mycelia P.V.B.A. in 1984 and kept the company small until Jos had sold Jonathan. After that they expanded Mycelia to its present size, producing 5,000 liters of mycelium daily. They are both shareholders in Mycelia. Address: Jean Bethunestraat 9, B-9040 Gent, Belgium. Phone: 91-28-7090.

6290. Chajuss, Daniel. 1992. Re: History of Hayes Ashdod Ltd., Israel. Letter to Drs. L.A. Johnson, D.J. Myers and Daniel J. Burden, Center for Crops Utilization Research, Iowa State University, Ames, Iowa, June 23. 1 p. Typed, with signature on letterhead.
• ***Summary:*** Daniel read with interest the article on titled "Soy protein's history, prospects in food, feed," by Johnson,

Myers and Burden, published in INFORM 3(4):429 (1992). Since the article focused mainly on the production of soy protein concentrates, Chajuss would like to add some information.

In 1963 Chajuss established and owned the first soy protein concentrate factory (Hayes Ashdod Ltd., Ashdod, Israel) which was using a counter current aqueous alcohol extraction system. A system of aqueous alcohol immersion extraction was already in use commercially by Central Soya Company (and is still used by Central Soya in the USA).

In 1966 Hayes Ashdod Ltd. introduced texturized soya protein concentrates under the brand names Hayprotex and Contex.

In 1968 Hayes started producing a special soy protein concentrate, free of trypsin inhibition and free of antigenicity, for use in calf milk replacers as a substitute of milk proteins.

In 1969 Hayes started to produce more functional and soluble soy protein concentrates, by further treatment of the aqueous alcohol extracted soy protein concentrate, for use as substitutes for soy protein isolates and for sodium caseinates in various food systems, especially in the meat processing industries.

In 1973 Chajuss sold know-how and complete engineering designs to Aarhus Oliefabrik A/S, Aarhus, Denmark, to make powdered and textured soy protein concentrates for human consumption, pet foods and calves milk replacers.

All the soy protein concentrate facilities worldwide, which were established since 1973 and which are still in operation today (including ADM {USA}, Bunge-SOGIP {France}, etc., with the exception of Central Soya's USA plants) employ Chajuss' technology and engineering designs, and are mainly based on the know-how and technology developed by Chajuss.

About 90% of the total world production of soy protein concentrates today is made by aqueous alcohol extraction. Most of the protein concentrates are used in the form of powder or grits, some are further texturized, and some are further treated to provide various "functionalities."

"A few years ago we sold Hayes Ashdod Ltd., which was renamed 'Solbar Hatzor Ltd.,' being a joint venture of the German Soya Mainz Company and Kibutz Hatzor of Israel."–Best Regards, Daniel Chajuss. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

6291. *Countryside & Small Stock Journal.* 1992. How to milk a soybean. 76:12. May/June. *
• ***Summary:*** Discusses how to prepare soy substitute for milk.

6292. Jain, Laxmi; Jain, Manoj. 1992. Melody of India cuisine: Tasteful new vegetarian recipes celebrating soy and tofu in traditional Indian foods. Santa Barbara, California: Woodbridge Press. 221p. Illust. 26 cm.
• ***Summary:*** The authors (mother and son) have taken over 100 vegetarian recipes from all over India and prepared them with soymilk, tofu, and soy yogurt in place of all or part of the dairy products. They begin the book with chapters on the dietary benefits of soyfoods and methods of preparing them. All recipes include nutritional breakdowns.

Contents: Introduction. Why tofu and soybeans? Nutritional value of tofu and other soy foods. Preparation of tofu and other soy foods. Soy appetizers (incl. roasted soybeans). Soy with vegetables. Soy breads. Soy salads. Soy raitas & chutney. Soy with rice & lentils. Soy drinks. Soy desserts. Soy ice cream, cookies and cakes. Appendixes: A. Suggested menus. B. Weights, measures, temperatures and times. C. Glossary of Hindi terms. D. Sources of Indian foods. Biographical notes.

"Laxmi Jain, a native of India, has lived in the Boston area for the past 18 years. She works actively to promote the use of soybeans in the American and Indian diet... Her first book on soybean, 'Indian Soy Cuisine,' was published by the American Soybean Association.

"Dr. Manoj Jain is a physician in Internal Medicine at Boston City Hospital and is specializing in International Health and Infectious Diseases at the New England Medical Center. Dr. Jain is a graduate of Boston University School of Engineering, School of Medicine and School of Public Health. He received a Medical Perspectives fellowship to research the uses of soy foods in the Indian diet, and has published his results in the medical literature. Dr. Jain has conducted talk shows and soy demonstrations on national television and radio in India. Currently, Dr. Jain is also a consultant in a five-year rural health and soybean promotion project in India."

On the rear cover, a color photo shows Laxmi and Manoj Jain. Address: 1. Wellesley, Massachusetts; 2. M.D., physician in internal medicine at New England Medical Center (Boston).

6293. McGlasson, Linda. 1992. Soyfoods in the next century: Feeding the world one bean at a time. *Health Foods Business* 38(6):30-34, 36. June. [1 ref]
• ***Summary:*** A table gives estimated retail sales of soyfoods in the USA in 1990, in descending order of sales (million dollars): soy sauce $395.5, tofu $94.1, second generation products (such as dips, dressings, entrees, non-dairy desserts, cheeses, yogurts, and imitation meat products) $81.6, soymilk (not including infant formulas made with isolated soy proteins) $60.0, miso $44.5, soynuts $9.7, tempeh $7.5. Total $657 million. Source: Soyatech in Bar Harbor, Maine. The two fastest growing segments are soymilk (increasing at 20% a year) and second generation products (15-20% a year). "Soyfood sales are expected to grow steadily through

the next decade as health and environmental concerns become increasingly important factors in food purchasing decisions... an estimated 33 to 50% of all adults are reducing their intake of meat, yet they still have the craving.

Protein Technologies International of St. Louis, Missouri, is developing a line of structured proteins, which are look-alike meat components. There are versions that look and feel like ground beef, crab meat, and chicken.

Angelo Morini, founder of Galaxy Foods, began trying substitutes for the real cheese he was using in his pizza business. He left the pizza business in 1968 and began making soy cheese full-time. The company began slowly by selling to food service customers, then they started marketing the cheese nationally in 1984. In 1985 Galaxy started in the health food industry with a new line, Soyco. Following a fire, the company has relocated in a new 55,000 square foot state-of-the-art manufacturing facility in Orlando, Florida. They are now producing soy cheese products and are scheduled to launch 30 new items this year.

One sidebar, titled "Quickie Dictionary of Soyfoods," defines tofu, miso, tempeh, soymilk, and shoyu. Another says "Soyfoods Take Spotlight in New Infomercial." The infomercial is based on Dr. Michael Klaper's education seminars for doctors and other health professionals titled "Let Food Be Your Medicine." Klaper (a noted physician, author, environmentalist and nutritionist [and vegan]) is co-founder and director of the Institute for the Advancement of Nutrition Education and Research. The tentative title for the new infomercial is "The Nutrition for the 90s, a Transition to Health." It will begin airing in July on cable TV. Radio's Top 40's Countdown host Casey Kasem will emcee the show with Dr. Klaper. The show will feature top scientists and doctors, plus testimonial interviews with many celebrities and famous athletes. Address: Managing editor.

6294. **Product Name:** [Solini {Soymilk} (Natural, or Forest Fruits)].
Foreign Name: Solini.
Manufacturer's Name: Nutricia N.V.
Manufacturer's Address: Eerste Stationstraat 186, 2700 Ma Zoetermeer, Netherlands. Phone: 31/79 539 935.
Date of Introduction: 1992. June.
Wt/Vol., Packaging, Price: Natural in 1 liter boxes or Forest Fruits in 200 ml boxes.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Spot in SoyaFoods. 1992. Autumn. p. 5. "New soya drink from Nutricia." The product was launched in early June, 1992 as an alternative to cow's milk containing as much vitamins and minerals and semi (half)- skimmed milk.

6295. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. CIDA funds Child Haven to buy seven more SoyaCows. 1(2):1. April/June.
• ***Summary:*** "Child Haven of Maxville, Ontario, has received funding from the Canadian International Development Agency in support of the IIIrd phase of their soymilk cottage industry project in India.

"... Child Haven have ordered seven complete SoyaCow WS-20S systems to add to their 9 systems purchased earlier. Each system is capable of producing about 15 litres of soymilk every half an hour using 1.5 kg soybeans."

Child Haven's project director for India is Hart Jansson. Phone: (613) 837-2235.

Note: The company name and address on the envelope in which this newsletter was sent is: "ProSoya Foods International Inc., 9 Veery Lane, Ottawa, Canada K1J 8X4."

A handsome brochure, two Bulletins dated March 1992, and several large photos showing the SoyaCow WS-20S system accompany this issue of the newsletter. This system now sells for $6,980.

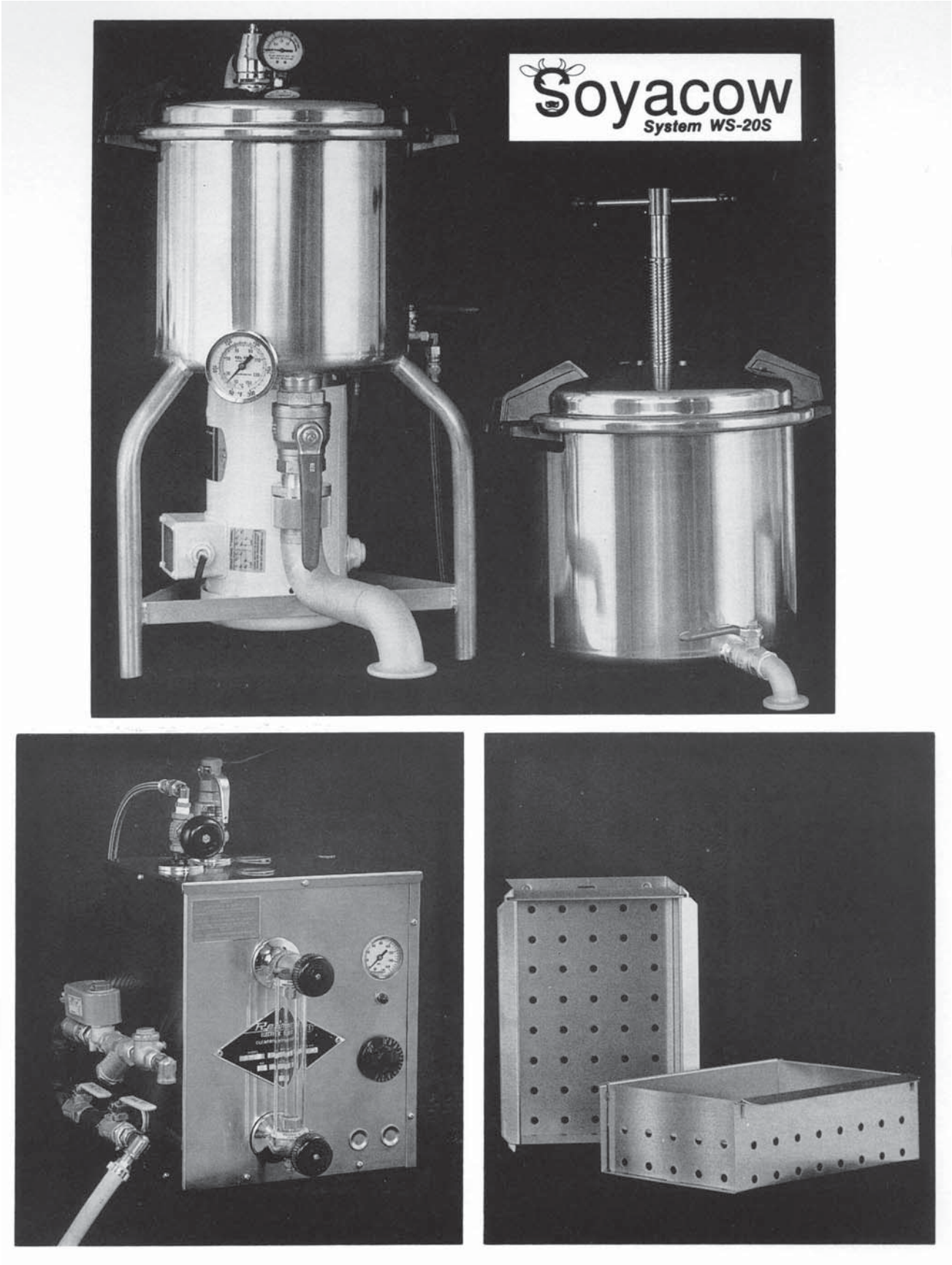
The first 1-page bulletin, "Bulletin: PSF-WS-20S / March, 1992" is titled: "System WS-20S–SoyaCow: A low cost soya foods concept." An illustration (line drawing) shows the three main components of the SoyaCow, two on platforms of different heights.

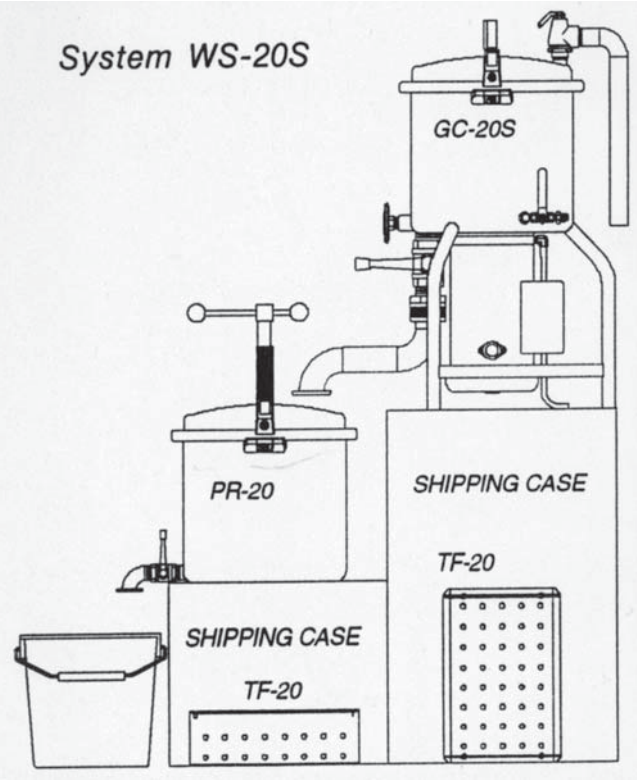
The 2nd 1-page bulletin, "Bulletin: PSF-GC-20S / March, 1992" is titled: "System GC-20S–SoyaCow: Makes quality soya milk at low cost" An illustration (line drawing) shows only the cold grinding and pressure cooking unit. Specifications: Pressure vessel: 20.8 litres Aluminum. Cooked slurry: 18 litres per batch. Soya milk base: 15 litres per batch. Maximum working pressure: 1.5 kg per square cm. Electric power: 1 HP [horsepower], 1 Ph, 50/60 hertz [cycles per second], 208-230/110 Volts, 5/10 Amps. Culinary steam: 10 kg/hour minimum at 2 kg per square cm pressure. Batches per hour: 3.

6296. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. Plenty Canada buys a SoyaCow. 1(2):1. April/June.
• ***Summary:*** "Plenty Canada has ordered a SoyaCow WS-20S system with electric steam generator for installation at their head office in Lanark, Ontario. According to Nancy McDermott, the machine will be used to give demonstrations and provide training to the people visiting Plenty from their projects around the world. The machine will also be accessible to local people for producing soyfoods for consumption and sale."

A black and white photo shows a "SoyaCow System WS20S: Manual Boiler, Grinder / Cooker, and Mechanical Press."

6297. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. Soya deli and fast food pilot project. 1(2):1. April/June.
• ***Summary:*** "Frank Daller is moving from the Toronto area to Ottawa to take the SoyaCow's products to Ottawans. He plans to operate a SoyaCow from a busy market location to produce and sell freshly made tofu, soymilk, soy-yogurt,



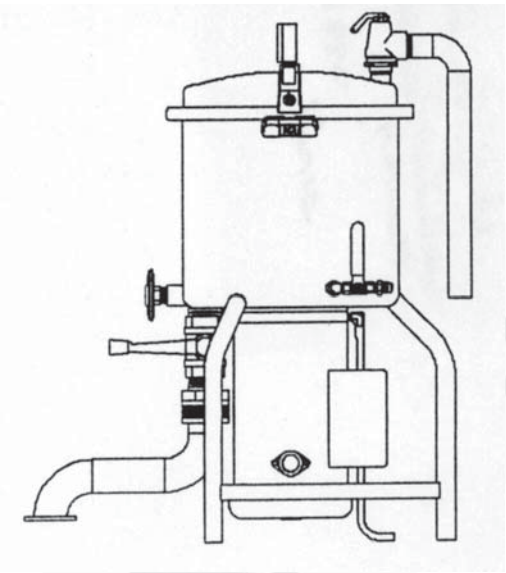


okara, and various value added products made from them. The business will also sell health fast foods including tofu-burgers, pita pocket sandwiches, frozen desserts, and soydrinks and shakes.

"The idea is to prove the concept in Ottawa with the intent of developing it into a franchise."

6298. Starr, Sara M. 1992. Don't have a cow! Milking other alternatives. *Health Foods Business* 38(6):37-38, 69. June.
• ***Summary:*** "Soy milk is the biggest seller in the non-dairy beverage category within the health food industry. About 95% of all soy milk is sold through natural food stores. Several supermarkets are beginning to carry this beverage." In 1983 when Eden Foods introduced its Edensoy, about 283,000 gallons of aseptically packaged soy milk were sold in the natural foods industry [in the USA]. According to Peter Golbitz of Soyatech Inc. in Bar Harbor, Maine, by 1991 that figure had jumped to 6.5 million gallons. Golbitz estimates the market for aseptic soymilk in the USA to be $52 million in retail sales (in natural food stores only) and growing at 15-20% annually. The top 3 soymilk manufacturers in America are American Soy Products [Edensoy], Westbrae, and Vitasoy; together they produce over 95% of the aseptically-packaged soymilk in the U.S. according to Golbitz.

New soymilk products: WestSoy Plus is fortified with vitamins A and D, and calcium to make it nutritionally equivalent to dairy milk. Westbrae also has a new non-dairy creamer. Westbrae uses only rice syrup to sweeten its



soymilks and is looking closely at producing a fresh (non-aseptically packaged) soymilk. Vitasoy has teamed up with The Yogi Tea Company to produce a cappuccino alternative. This delicious blend of soymilk and herb tea can be made in an espresso machine. Protein Technologies International in St. Louis, Missouri, has developed a new technology–stabilized calcium phosphate and soy protein isolates. When added to soymilk it gives a product comparable in protein and calcium content to dairy milk.

Also discusses amazake and White Almond Beverage. A photo shows Sara Starr. Address: President of Starr Track, a business consulting firm for the natural foods and products industries.

6299. Peeters, Ludo. 1992. Early history of Jonathan P.V.B.A. in Belgium (Interview). *SoyaScan Notes.* July 9. Conducted by William Shurtleff of Soyfoods Center. Followed by a letter of July 29. [1 ref]
• ***Summary:*** Ludo started working with Jos van de Ponseele at Jonathan on 28 Aug. 1978. He made seitan with Jos from the very first day; they were Jonathan's only workers at the beginning and they worked in a garage at the company's first location–Holleweg 89, 2070 Ekeren (near Antwerp), Belgium. Ludo thinks Jonathan's first product was seitan, followed by tofu and soymilk. Ludo thinks that the seitan was introduced before Nov. 1978. The original ingredients were water, wheat, soy sauce, soy flour or meal, salt, kombu, and ginger. The soy flour improved the flavor and nutritional value.

In 1978 Mr. Van de Ponseele moved to Holleweg 113, 2070 Ekeren. In January or February of 1980 he moved to the actual plant.

In his letter of 29 July 1992, Ludo encloses several early documents: (1) A letter written in Oct. 1977 (Jonathan was at Holleweg 89) showing that that company was selling

Seitan (a vegetarian steak), Goulash (made with seitan), Tofu (*Sojakaas*), Mochi (made of sweet rice), sea vegetables, vegetable pickles, and peanut butter. (2) A price list for 1978-79 (the company is now at Holleweg 113). (3) An English-language translation of the text of a press conference held in about 1987 when the company started to make prepared meals based on seitan and tofu. Address: Goorbosstraat 20, B-2990 Wuustwezel, Belgium. Phone: +32 3-663-4532.

6300. *SoyaScan Notes.* 1992. The remarkable food-related creativity that took place in Boston from the late 1960s until the late 1970s, especially within the macrobiotic community (Overview). July 13. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** A flowering of original food product development took place in Boston during this period. There were a number of reasons for this (1) The meeting of two food cultures, Japanese and American, together with new ideas related to diet and health, as embodied in the macrobiotic teachings of Michio and Aveline Kushi. Just as the meeting of two ocean currents leads to a region at the boundary of great biological activity and development, so does the meeting of two cultures. Young Americans were introduced to a host of new basic foods which they quickly began to use and process in new ways. These included miso, tofu, seitan, amazake, umeboshi salt plums, sea vegetables, rice syrup, rice cakes, azuki beans, mochi, and many more.

To cite but four examples: (A) Seitan: Japanese had used seitan as a salty condiment or seasoning. By late 1972 Americans had transformed it into a succulent meat substitute. (B) Tofu: It had never occurred to Japanese to put tofu in a blender. By the mid-1970s Americans in Boston were combining it with a sweetener to make delectable dairyless tofu cheesecakes and cream pies, or to make low-fat, cholesterol-free salad dressings, dips, and spreads. (C) Amazake: Japanese serve this as a hot beverage like tea, most in teahouses; The only flavoring used is gingerroot. Americans transformed it into delectable ice creams (free of dairy products and sugar), or thick, sweet drinks resembling milk shakes sold refrigerated in plastic bottles. Americans also used amazake as an all-purpose natural sweetener in place of sugar, honey, or maple syrup. They also learned to make a rice milk resembling amazake using commercial purified enzymes instead of koji; at this point, the line separating amazake and rice syrup became somewhat blurred. (D) Rice Syrup: Japanese use *amé* or *mizuamé,* made from koji, as the basis for taffy-like candies or, in very limited ways, as a sweetener. Americans soon began to make rice syrup using commercial enzymes instead of koji and to use it as an all-purpose natural sweetener in place of sugar, honey, or maple syrup.

(2) The closely-knit, almost communal nature of the macrobiotic community in Boston, was one in which many people, mostly young people (including many women), were working closely together with a common vision. New ideas were shared more than guarded or patented. Joel Wollner notes that it was almost like the art community in Paris during the impressionist era of the late 1800s.

(3) The Erewhon retail store (opened in April 1966) provided a ready testing ground for new local products. Many got their start in one or more of these stores. The Erewhon Trading Co. (which started importing Japanese natural and macrobiotic foods in Aug. 1968), and which began wholesaling and distributing in the spring of 1969, greatly helped to expand the market for good products.

(4) The community was fortunate to have a number of exceptionally talented entrepreneurs in the food business, including Paul Hawken, Bruce Macdonald, Roger Hillyard, Bill Tara, and many others. Many of these individuals later left the area to start their own food companies.

(5) It was during this period that the natural foods, macrobiotic foods, organic foods, and vegetarian movements (all closely related, and often based on similar philosophical, ethical, and spiritual values) began to grow in the United States, in part in reaction to the overly-processed, overly chemicalized, unhealthful foods produced by big food companies, and the highly-chemicalized food growing techniques used by American farmers–and in part because of the leadership and inspiration of the community in Boston.

6301. Okada, Yuko. 1992. How Muso Shokuhin brought soymilk to America (Interview). *SoyaScan Notes.* July 15. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Muso wanted to introduce Marusan's soymilk in the foil retort pouch to the USA. They began looking for a major American distributor. First they offered the product to Mike Potter of Eden Foods when Mike was in Japan, but he was not interested because he did not think the product would sell in America. Then they offered the product to Jimmy Silver of Pure Sales; he thought it was a weird product. Then they offered it to Knudson, but Knudson was not interested. Then they offered it to Matt Sandler, who also turned it down.

The first place this soymilk really sold outside Japan was in Australia; Jim Wilson, owner of Spiral Foods in Australia started importing this soymilk (which was named Bonsoy) from Muso in about 1979, packaged in a foil retort pouch. Mike Potter met Jim Wilson at a natural foods convention in Anaheim, California; Muso brought Jim Wilson to the convention and arranged this meeting. Wilson told Potter that Bonsoy sold very well in Australia. Potter told Ron Roller to go to Japan to check out this product–which Ron did. Finally the product was launched at the NNFA show in Denver, Colorado, under the name Edensoy by Eden Foods.

The product named Bonsoy was first sold (exported) by Muso to Spiral Foods in Australia in about 1979. Then it was sold to Bean Supreme in New Zealand in about 1981; Bean Supreme had also promoted the Spiral Foods label. Then

it was exported by Muso to Urtekram in Denmark in about 1988, and the it was exported to Mimasa in Spain in about 1990. Address: Muso Co., Ltd., Kosei Bldg., 2nd Floor, Tanimachi 2-5-5, Chuo-ku, Osaka 540, Japan. Phone: 1. 06-942-0341.

6302. Okada, Yuko. 1992. How American Soy Products in Michigan came into being (Interview). *SoyaScan Notes.* July 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Yuko says that he, not Michael Potter, brought together the five companies that formed American Soy Products (ASP), the maker of Edensoy in Michigan. Potter did not speak Japanese and he did not have the connections to pull together this sort of complex joint venture. The idea for the joint was developed jointly from Mike Potter and Yuko Okada as Muso found itself shipping more and more soymilk from Japan to the USA. This soymilk was made from American soybeans and it contained mostly water. After the concept was firm but before the final papers were signed by the five partners, Bruce Macdonald played a role in the process. An employee at a company with which Bruce was involved was a Filipino, who worked for Kawasho in New York. Through this person, Bruce helped bring Kawasho into the deal, and without Kawasho, who was the source of financing, the deal probably would not have happened.

Kawasho was the last of the five partners to enter into the agreement. Marusan and Kawasho would only enter the agreement if Muso did. Kawasho knew nothing about soyfoods or the soyfoods market. They were the company that was least connected with the soyfoods industry and market, but they were also by far the biggest company involved in the venture, with roughly $2,000 million in annual revenues. In short, Muso became the key link in putting the ASP deal together. Address: Muso Co., Ltd., Kosei Bldg., 2nd Floor, Tanimachi 2-5-5, Chuo-ku, Osaka 540, Japan. Phone: 1. 06-942-0341.

6303. Karjalainen, Jukka; Martin, J.M.; Knip, M.; et al. 1992. A bovine albumin peptide as a possible trigger of insulin-dependent diabetes mellitus. *New England J. of Medicine* 327(5):302-07. July 30. [36 ref]
• ***Summary:*** "Background: Cow's milk has been implicated as a possible trigger of the autoimmune response that destroys pancreatic beta cells in genetically susceptible hosts, thus causing diabetes mellitus. Studies in animals have suggested that bovine serum albumin (BSA) is the milk protein responsible, and an albumin peptide containing 17 amino acids (ABBOS) may be the reactive epitope...

"Conclusions: Patients with insulin-dependent diabetes mellitus have immunity to cow's-milk albumin, with antibodies to an albumin peptide that are capable of reacting with a beta-cell-specific surface protein. Such antibodies could participate in the development of islet dysfunction."

An article about this study in *Vegetarian Times* (Dec. 1992, p. 16) notes: "The researchers studied 142 children ages 4 to 12 who had just been diagnosed with Type I diabetes. 'The thing that astounded us was that we found evidence for a link to this [milk] protein in 100 percent of the children,' says Hans-Michael Dosch, M.D., senior researcher for the study." Address: Hospital for Sick Children, Dep. of Pediatrics and Immunology, Univ. of Toronto, Toronto, ONT, Canada.

6304. **Product Name:** Soyess (Soy Beverage) [Honey Vanilla].
Manufacturer's Name: Spring Creek Natural Foods.
Manufacturer's Address: 212-C East Main St., Spencer, WV 25726. Phone: 304-927-1815.
Date of Introduction: 1992. July.
Ingredients: Filtered water, certified organic soybeans, corn/barley malt syrup, orange blossom honey, pure vanilla extract, sea salt.
Wt/Vol., Packaging, Price: 1 pint plastic bottle.
How Stored: Refrigerated.
Nutrition: Per 1 oz.: Calories 24, protein 14 gm, carbohydrates 28 gm, fat 5 gm, sodium 6 mg.
New Product–Documentation: Product with Label purchased at Fresh Fields, Rockville Pike, Maryland. 1992. July. Label is 3 inches square. Orange and green on white. "A fresh natural soy beverage. Not intended for use as an infant formula. For recipes and product information, write us."

6305. **Product Name:** Fried Tofu, Dofu-Gan (Savory Baked Tofu, 2 types), Tofu Chicken, Fresh Soymilk (Plain Unsweetened Traditional Style).
Manufacturer's Name: Tofu International Ltd.
Manufacturer's Address: 738 Airport Blvd., Suite 6, Ann Arbor, MI 48108. Phone: 313-665-2222.
Date of Introduction: 1992. July.
New Product–Documentation: Talk with Tim Redmond of American Soy Products. 1992. May. Bruce Rose has a joint venture with a large Chinese tofu company to make tofu in Michigan.

Talk with Bruce Rose, of Tofu International Ltd. 1992. Sept. 25. All of these products were introduced in July 1992 by Tofu International Ltd., which was formerly named Rosewood Products Inc. Dofu-Gan is extra firm tofu, pressed under hydraulic presses, not water packed. Note: The Soy Plant, the ancestor of Tofu International Ltd. introduced Dofu-Gan in March 1978.

Tofu Chicken is made by cutting a cake of Dofu-Gan into a net or accordion like french fries linked together side by side. After cutting, the net is fried then simmered in a broth. It tastes great in a meatless chicken sandwich and is now sold in some local grocery stores.

6306. Nordquist, Ted A. 1992. Re: Overview and details

on new developments with AB Winner and with Aros in Sweden. Letter to William Shurtleff at Soyfoods Center, Aug. 26–in reply to inquiry. 2 p. Typed, with signature on letterhead.

• ***Summary:*** "I formed Aros Sojaprodukter AB in August of 1990 with Erik Kennhed, a business man from Eskilstuna, Sweden. I was VD or President with 51% to his 49%. Aros AB bought soybase from Trensums Musteri AB and sold it to Winner AB. Winner made Tofuline ice-cream and sold it to Aros AB. Aros AB in turn sold Tofuline to Ingman Foods, Finland, Nutana in Sweden, Nutana in Denmark and Nutana in Norway. Since I designed the soybase plant for Trensums, I had an exclusive contract with them on soybase. I worked with Winner to develop soy-based products, the ice-cream was the first.

"I did not have time for tofu. I sold Aros Sojaprodukter KB to Trensums and moved the Tofu plant to Trensums in July of 1991. Trensums Musteri AB is owned by Blekinge Invest and is situated in Tingsryd, about 30 minutes by car from Karlshamn where Winner is located.

"Then in August of 1991 Nutana in Denmark and Norway went bankrupt. Winner had about 100,000 dollars of ice-cream in stock. Trensums and Winner did not like my powerful position while I, according to the contracts, had no financial liability. I just took the profits. So they started talking to each other about me, or more specifically about Aros Sojaprodukter AB. Blekinge Invest forced Erik to sell his 49% to Blekinge Invest for a song, threatening him with possible losses if both Winner and Trensums decided to drop soya altogether. Once they bought out Erik I was next.

"I reached an agreement with Winner and Blekinge Invest in April of 1992. I sold my shares to Blekinge Invest who now owns 100% of Aros Sojaprodukter AB and KB. I work as a consultant for Winner until the end of this year.

"Aros AB (Trensums) delivers soybase only to Winner. Winner sells Tofuline ice-cream directly to Nutana Sweden and Ingman Foods in Finland. They sell via their own Winner name to England.

"AB Winner, 374 82 Karlshamn, Sweden. Tel: 46-454-82000. Fax: 46-454-11375. International sales contact is Leif Andersson. President is Håkan Johnsson.

"Aros Sojaprodukter AB, Box 112, 36201 Tingsryd, Sweden. Tel: 46-477-11920. Fax: 46-477-18034.

"Aros (Trensums) does not want to actively sell soybase. They are happy to sell only to Winner AB. There is no President, but Jan Hallberg, vice-president of Trensums handles the paper work. Aros Tofu is off the market. Dansk Tofu is now sold in Sweden and Norway.

"Winner is in the process of being sold. The plot thickens!

"Anders Lindner, Erik Kennhed and I look on in interest as all this unfolds."

Note: Attached are photocopies of three Tofuline soy ice cream labels, sold by Nutana in Sweden. Address: President, TAN AB, Eningbölevägen 54, S-740 82 Örsundsbro, Sweden. Phone: +46 171 605 68. Fax: +46 171 604 56.

6307. Solait International Ltd. 1992. Re: Donation/sale of powdered soy beverage for famine relief in Africa (News release). 202 West 7th St., Box 885, Carroll, Iowa 51401. 3 p. Aug. 26.

• ***Summary:*** "Solait International Ltd. announced the donation/sale of 27,000 pounds of powdered soy beverage for distribution for famine relief in northern Kenya and Somalia. 27,000 pounds equates to over 40,000 gallons of reconstituted soymilk. Americares, a private non-profit international relief organization, and the Iowa Soybean Association have arranged for the distribution."

Solait was founded in 1985 in Cedar Falls, Iowa, as Miller Farms Food. The company has a regional office in Statesboro, Georgia. Solait is made from soybeans (raised in Iowa and developed by the Iowa State University specialty soybean project team), rice syrup, corn oil and sea salt. Address: Carroll, Iowa. Phone: 712-792-9225.

6308. Ali, Nawab. 1992. Soybean food potential and its exploitation for Indian situation. *Agricultural Situation in India.* Aug. p. 395-402. *

• ***Summary:*** Commercially available soybean foods in India are: Soymilk, soypaneer [tofu], soysuji / soy-suji (a snack in Central India), soy fortified biscuit (using soyflour). Address: Project Director, Soybean Processing & Utilization, CIAE, Bhopal, India.

6309. Bourne, Malcolm C.; Trecartin, Viginia. 1992. A better way of making soy milk. *Countryside & Small Stock Journal* 76:19. July/Aug. *

6310. Eden Foods, Inc. 1992. A few trade secrets about light soy drinks (Ad). *Whole Foods.* Aug. p. 80.

• ***Summary:*** This full-page, color ad explains that any consumer can make a "light" soy drink by just diluting Edensoy with 33% water. Edensoy prefers not to sell such a product since that would involve shipping 33% more water, using extra packaging, energy, etc.

The ad claims that Edensoy tastes better because it is made from a special soybean variety that has a lower yield than other varieties.

This ad contains one completely incorrect statement: "In 1986, Eden Foods became the first American company to manufacture soy beverages in the U.S." According to the SoyaScan database, at least 184 commercial soymilk products were made in the USA before Edensoy; several of these are still on the market (Soyagen, Soyamel) and are sold nationwide.

Another surprise: By 2002 Eden was making and selling "Edensoy Light."

This ad also appeared in *Health Foods Business* (Aug.

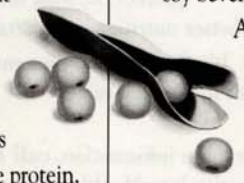
A Few Trade Secrets About Light Soy Drinks

1 *It's So Easy You Can Do it Yourself*

Making a soy beverage is too complicated to do yourself, but making a "light" soy drink couldn't be easier. The secret? Just add water. Why doesn't Edensoy come in a watered down "light" version? Well, even though we want Edensoy to meet your needs, we really don't want to ship water all over the country. It doesn't fit with our commitment to ecological responsibility. Making and shipping watered down soy drinks (33% more water!) would cost ***everybody*** in the form of additional natural resources; water, fuel, power, and paper.

2 *How to do "Light" Edensoy Yourself*

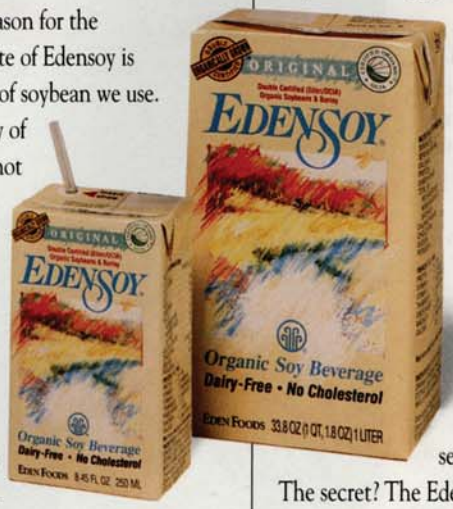
Edensoy is less than 2% fat. But if you want it to be less than 1% fat, just dilute it with 33% water, shake or stir, and you have it: Light Edensoy at no extra cost, no extra impact on our environment. (A point to consider: when a soy drink is diluted to reduce the fat, the protein, vitamins and minerals are diluted too.) 33% water means you add between 11 and 12 ounces to a large Edensoy, about 3 ounces to a small Edensoy.



Don't forget to use filtered or bottled water, you don't want to spoil the world's best-tasting soy beverage with chlorine. (And if you don't believe it makes a difference, taste it both ways.)

3 *The Edensoy Taste*

A major reason for the superior taste of Edensoy is the variety of soybean we use. This variety of soybean is not grown widely because it tends to yield fewer beans per acre than the popular varieties. Even so, we continue to use these soybeans because we've tried them all and ours simply yields a better-tasting soy beverage.



Another reason for Edensoy's superior taste is that we start with ***whole*** soybeans, instead of the flakes used by other producers. (Flakes quickly lose their freshness.) There are a few other reasons why Edensoy is widely acknowledged to be the best-tasting soy beverage, trade secrets we've learned from years of experience. (You don't expect us to tell ***everything***, do you?)

4 *Why Edensoy is Still First, Still the Best*

Eden Foods introduced a soy beverage imported from Japan to the U.S. in 1983. In 1986, Eden Foods became the first American company to manufacture soy beverages in the U.S. Others have followed in our footsteps, but Edensoy is still America's best-selling soy beverage. The secret? The Edensoy commitment to quality:

- OCIA Certified Organically Grown Soybeans
- Sweetened with Malted Grains
- Made with Purified Water But **No** Extra Water

Edensoy - not "light", but still number one... because our quality is no secret!

EDEN FOODS ORGANIC QUALITY™

EDEN®

Eden Foods, Inc. 701 Tecumseh Road
Clinton, Michigan 49236 (517) 456-7424
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MAKING A TRADITION OF GOOD HEALTH

Circle No. 47 Reader Service Card

p. 12), *Whole Foods* (Sept. 1992, p. 22), and *Natural Foods Merchandiser* (Sept. 1992, p. 63). Address: 701 Tecumseh Rd. Clinton, Michigan 49236.

6311. Krizmanic, Judy. 1992. Savvy new soyfoods. *Vegetarian Times.* Aug. p. 82-83.
• ***Summary:*** Highlights, with color photos, Living Lightly non-dairy soy ice cream from Turtle Mountain, Toffle (eggless tofu waffle) from Dae Han, Tofutti Better than Cream Cheese, Westsoy Lite Non Dairy Creamer, Pita Melts from Health in Wealth, Meatless Tofu Steaks from White Wave, Ken & Robert's Veggie Pockets.

"Soy much to learn. Want to learn more about soy? Send a self-addressed, stamped, business envelope to the Soyfoods Center..."

6312. McSweeney, Daniel. 1992. 10th Annual Whole Foods Consumer Survey: Getting to know your customers. A profile of an aging and affluent consumer emerges from the survey. *Whole Foods.* Aug. p. 32-34, 36, 38, 43-44.
• ***Summary:*** A table titled "Food purchases" (p. 43) shows the percentage of respondents who purchased a type of product at a natural foods during the past 12 months, in descending order of popularity (also shows percentages for 1991 and 1990): Tofu 52%. Soy milk 42%. Tamari 38%. Soy sauce 29%. Miso 28%. Tempeh 25%. Cheese substitute 19%. Sea vegetables 17%. Note: The sample size is not given.

6313. Takai Seisaku-sho. 1992. [Takai systems catalog '93]. 1-1 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan. 56 p. 30 cm. [Jap]
• ***Summary:*** Black-and-white photos show the company's many pieces of equipment and systems for manufacturing tofu and soymilk. The catalog is divided into 5 sections: 1. Transporting and soaking systems. 2. Soymilk production systems. 3. Curding and forming systems; Poached tofu systems. 4. Cooling systems; Hot-pack systems. 5. Deep frying systems. Address: Kanazawa, Ishikawa-ken, Japan. Phone: 0762-48-1355.

6314. **Product Name:** Soymilk.
Manufacturer's Name: Yau Da Gobe (Nigeria) Enterprises.
Manufacturer's Address: No. 4 Old Motor Park, Commercial Area, P.O. Box 43, Zaria, Nigeria. Phone: 32615.
Date of Introduction: 1992. August.
New Product–Documentation: Letter from A. Magaji A. Ashafura. 1992. Aug. 5. "We are small scale entrepreneur engaged in many branches of small-scale venture. We are now making soymilk in small scale by traditional method which is getting people acceptance although with some reaction for its beans-taste. We want to increase our production but the main obstacle is lack of knowledge on how to improve the product to stay long by means of preservatives and to make it taste good."

6315. Stewart, Penelope. 1992. Re: Planning to start a tofu shop in Pamplona, Spain. Letter to William Shurtleff at Soyfoods Center, Sept. 7. 1 p. Handwritten. [Eng]
• ***Summary:*** Growing up in California her entire life, she took tofu and soy products for granted. She has just finished reading *The Book of Tofu,* by Shurtleff and Aoyagi. She would like to order a copy of *Tofu and Soymilk Production.* Address: Colite 23, bajo [or c/o Lite 23, bajo], Pamplona, Navarra, Spain.

6316. Petka, Tom. 1992. The casein industry and market (Interview). *SoyaScan Notes.* Sept. 14. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Casein became classified as a chemical and a non-dairy product in about 1948-49 by the Federal Trade Commission, at about the same time that price supports for dairy products began. At that time it was used almost exclusively for industrial applications (such as adhesives and sizings) rather than in foods. Today about 80% of the casein in America is used for foods–mainly imitation cheeses, whip toppings, and other imitation dairy products, plus medical and nutritional products prescribed by doctors. The remaining 20% is used for industrial purposes–mainly adhesives and sizings.

There are presently no companies in America that make casein; government price supports for milk price it out of the world market. The last U.S. manufacturer, Land O'Lakes, stopped in the 1970s. All casein used today in America is imported, mainly from New Zealand, Ireland, France and the Netherlands.

Note: If this outdated and misleading classification of casein as a non-dairy product could be changed, it would open up a huge market for soy protein products (isolates, soymilk, tofu), primarily in foods and beverages. Address: American Casein Co., 109 Elbow Lane, Burlington, New Jersey 08016. Phone: 609-387-3130.

6317. Roller, Ron. 1992. Why is the price of soymilk higher than that of cow's milk (Interview). *SoyaScan Notes.* Sept. 18. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The main factor for the higher cost of soymilk is that vastly larger amount of dairy milk produced; soymilk is not yet able to benefit from these economies of scale.

Second is the distribution network. Cow's milk is a local or regional product. Many dairies deliver milk in their own trucks direct to supermarkets and other retail stores. This means both that distribution costs are relatively low and that there are few if any middleman distributors. By contrast, soymilk is often shipped several thousand miles at the cost of about $0.10 per liter. As the soymilk market grows and soymilk comes to be produced on a more regional basis, distribution costs will drop, making soymilk more

competitive with cow's milk.

The third factor is the aseptic carton used for soymilk, which is much more expensive than the typical Pure Pak carton or plastic jug used for cow's milk. Yet because soymilk must be shipped nationwide, this carton is the least expensive available form of packaging–all things considered. Included in the price of the carton is the cost of the film (the per package price decreases as the number of packs ordered increases, with breaks at 250,000 to 500,000 to 1 million), the cost of the outer case carton, waste cartons, rental on the packaging machines, and the investment in the building in which the filling and packaging takes place. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6318. Rose, Bruce. 1992. The Soy Plant was renamed Tofu International Ltd. in Feb. 1992. Joint venture with Zhenjiang Bean Factory, a Chinese tofu company near Shanghai (Interview). *SoyaScan Notes.* Sept. 25. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In Nov. 1990 (after 2½ years of negotiations) Bruce Rose (not his company, Rosewood Products Inc.) signed a joint venture agreement with a big Chinese tofu manufacturer named Zhenjiang Bean Factory, located in Zhenjiang, China, about 130 miles west-northwest of Shanghai. The purpose of the company produced by the joint venture was to manufacture fresh (unpasteurized), traditional Chinese-style tofu and tofu products in Ann Arbor, Michigan, to be sold locally. Operating out of the plant at 738 Airport Blvd. in Ann Arbor, formerly owned by The Soy Plant, they started producing small amounts of tofu in February 1992 and at that time they renamed the company Tofu International Ltd. (TIL; It was formerly Rosewood Products Inc.). They formally started tofu production in July 1992. New products, all introduced in July 1992, include fried tofu, dofu-gan (2 types, very firm, not water packed), tofu chicken, and fresh soymilk.

The new company is operating out of the same factory as that formally occupied by The Soy Plant and Rosewood Products Inc., but with different equipment; and the tofu is made in a different way. In 1987 Rosewood Products Inc., a natural foods distributor (founded in 1980 by Bruce Rose, the president) purchased the Soy Plant's assets in bankruptcy court and invested a lot of money in new equipment. Rosewood had been distributing the Soy Plant's tofu for 6 years. For the next 5 years Rosewood was also a tofu manufacturer, making typically 5,000 lb/week (sometimes as much as 6,000 lb/week) of tofu, then production began to decrease as the competition grew more intense and as Bruce found he had too much to do trying to run both a distributing and a tofu manufacturing company. So he began to look for outside help in managing the tofu production operation. Rosewood Products Inc. still exists as the distributor of the tofu manufactured by TIL.

The Chinese are providing a team of skilled tofu production and management and production experts, equipment, and technology for making unique traditional Chinese tofu products. Presently, everyone in the plant is Chinese–they speak little or no English. Bruce does not want to compete with the "Big Boys" that sell aseptic or pasteurized tofu (Morinaga, etc.). Tofu production (especially in second generation products) has increased since the joint venture started and is now at about 3,000 lb/week–but most of this tofu is made into second generation products. Bruce has been to Zhenjiang once and visited their big factory which makes several hundred thousand kg/month of tofu.

In the near future, they plan to start making pressed tofu sheets, and Buddha's Chicken or Duck, which no other company in America is presently making. Address: Founder and President, Rosewood Products, Inc., 738 Airport Blvd., Suite 6, Ann Arbor, Michigan 48108. Phone: 734-665-2222.

6319. Burros, Marian. 1992. Cow's milk and children: A new no-no? *New York Times.* Sept. 30. p. C1, C6.

• ***Summary:*** "The Physicians Committee on Responsible Medicine, whose interests include both preventive medicine and alternatives to animal research, has declared war on that great American icon milk. 'Parents,' the committee said in a statement released in Boston yesterday, 'should be alerted to the potential risks to their children from cow's-milk products.' It added, 'Milk should not be required or recommended in Government guidelines.'

"The committee asserted yesterday that milk is an unhealthful food because it has too much fat, produces iron deficiency in infants, causes diabetes in children with the genetic predisposition to the disease and is responsible for colic, allergies and digestive problems."

"Suzanne Havala, a registered dietician from North Carolina, who was a co-author of the American Dietetic Association's position paper on vegetarian diets, supports the recommendations. 'After weaning, there is no need for milk of any sort in the diet in any species,' she said. Vegetarians get all the calcium they need from leafy vegetables, broccoli, tahini and tofu made with calcium sulfate." Address: Staff writer.

6320. Stiff, David. 1992. Dr. Spock adds clout to warnings about cow's milk: Appearance of the baby expert at infant-diet conference sparks some controversy. *Wall Street Journal.* Sept. 30. p. B2. [1 ref]

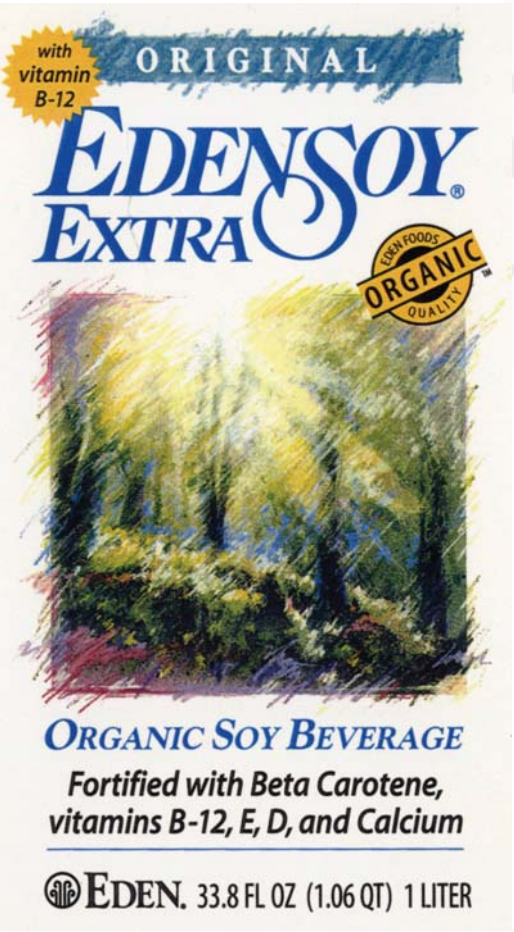
• ***Summary:*** "Benjamin Spock added his voice to a growing chorus of physicians warning of the possible dangers of feeding cow's milk to very young infants."

"Citing evidence that cow's milk can cause iron-deficiency anemia in some infants, the doctors here cautioned against giving milk to babies under a year old and that it may also cause health problems after infancy." The group

that sponsored the news conference, Physicians Committee for Responsible Medicine (based in Washington, DC), also urged that cow's milk not be recommended in government nutritional guidelines.

"Some doctors associated with the group went further, claiming milk and other dairy products pose risk of immune-system malfunction and health hazards to children and adults. They also cited recent studies suggesting milk may trigger severe diabetes in some children with a genetic predisposition to the disease. 'We should all stop drinking milk today,' declared Frank A. Oski, director of pediatrics at Johns Hopkins University School of Medicine. 'It was designed for calves, not humans.'" Address: Staff reporter.

6321. **Product Name:** Edensoy Extra: Dairy-Free Soy Beverage [Original, Vanilla].
Manufacturer's Name: American Soy Products, Inc.
Manufacturer's Address: 1474 N. Woodland Dr., Saline, MI 48176. Phone: 800-248-0301.
Date of Introduction: 1992. September.
Ingredients: Original: Purified water, organic soybeans, malted cereal extract, calcium [calcium carbonate], kombu (seaweed), job's tears, organic barley, sea salt, vitamin E, beta carotene, vitamin D-2. Vanilla: Same but vanilla extract listed before calcium.



Wt/Vol., Packaging, Price: Tetra Brik Aseptic cartons. 250 ml (8.45 fluid oz), or 1 liter (33.8 oz, 1.06 quart).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: This product is marketed by Eden Foods, Inc., 701 Tecumseh Rd., Clinton, Michigan 49236.

Ad in Whole Foods. 1992. Oct. p. 11. "Edensoy Extra. Read all about it." "New. Fortified with beta carotene, vitamins E &D and calcium. A significant source of vitamins, minerals and protein. Ideal for people who are lactose intolerant. Made with OCIA certified organically grown whole soybeans. Low in saturated fats and sodium; no cholesterol... Sea vegetables provide a natural source of beta carotene (for vitamin A) and soybeans provide the base for vitamin E. Both are powerful antioxidants that protect the body from free radical damage. We've also added calcium carbonate from limestone..." A color photo shows the product package. Yellow sunlight drifts down through a forest.

6322. Archer Daniels Midland Co. 1992. Annual report. P.O. Box 1470, Decatur, IL 62525. 41 p. Sept.
• ***Summary:*** Net sales and other operating income for 1992 (year ended June 30) were $9,232 million, up 9.0% from 1991. Net earnings for 1992 were $503.8 million, up 7.9% from 1991. Shareholders' equity (net worth) is $4,492 million, up 14.5% from 1991. Net earnings per common share: $1.54. Number of shareholders: 32,377.

"The last two fiscal year have been years of rapid growth and a broadening of the Company's profit base. During this period investment in plant and equipment amounted to $1.5 billion, consisting of $1 billion of capital expenditures for new plants and equipment, using mostly new technology, and acquisitions of $500 million...

"ADM takes seriously its commitment as the 'supermarket to the world.' With millions of starving people in Asia and Africa, the Company has the technology, through soy milk, Harvest Burger and wheat gluten, to provide an individual with a proper level of healthy protein for as little as 12.5¢ per day."

A 2-page foldout between pages 4 and 5 shows ADM's international corporate structure. In Europe, under ADM International Holdings, are British Arkady Company UK, Haldane Granose Food Group UK, and Arkady Feeds Ireland. Under British Arkady Company UK are S.I.O. France, InaNahrmittel Germany, and Happidog Petfoods UK. Under Haldane Granose Food Group UK are Genice UK, Vegetarian Feasts & Cuisine UK, Snackmasters UK, Direct Foods UK, and Saucemasters UK.

British Arkady Company–England: Manufactures, markets and distributes full fat soya flours, TVP, bakery ingredients, frozen dough products. S.I.O.–France: Manufactures and markets specialty oils and fats for food and pharmaceutical use. Soya flour millers.

Haldane Granose Food Group–England: Factories at

Barrow and Newport Pagnell, manufacture and marketing health foods, dry mixers, TVP mixers, burger mixes, dry mix and frozen vegeburgers, canned vegetarian products, spreads, soya milk. Genice Ltd.–Wales: Manufactures non-dairy ice cream, soya yogurt, yogice soya cream and specialty margarines. Direct Foods Ltd.–England: Protoveg range of TVP mixers, including Sosmix and Burgamix, marketed and distributed by Haldane/Granose. Snackmasters Ltd.–Wales: Manufactures and markets a range of snackmeals. Saucemasters Ltd.–Wales: Manufactures and markets sauces, dips, spreads and relishes packed in glass jars or sachets. Vegetarian Feasts & Vegetarian Cuisine–England: Manufactures and markets frozen vegetarian meals, retailed through food shops and supermarkets.

"Haldane Foods Group is now well established as the leading supplier to the U.K. health food industry. Nineteen products were added to an already extensive sales list. Snackmasters, Ltd. experienced rapid growth in snackmeals and increased efficiency by installing fully automatic process equipment. Two products that capitalized on the growing trend toward good health were the low-fat Granose 'Light' soya milk and the high-polyunsaturate cholesterol-free Granose Soya Cream.

"Vegeburgers remain a market leader and three new relishes were introduced under that brand name. Granose Foods is rapidly building market share with both vegetable and TVP-based vegetarian sausages. Genice Ltd. continued to innovate with the introduction of low-fat yogice." Address: Decatur, Illinois.

6323. **Product Name:** [Albios Lactosan {Soymilk}].
Foreign Name: Albios Lactosan: Bevanda a base di soia buona e delicata.
Manufacturer's Name: Giulianai S.p.A. (Distributor).
Manufacturer's Address: Via P. Palagi 2, 20129 Milan, Italy.
Date of Introduction: 1992. September.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Spot in SoyaFoods. 1993. Winter. p. 5. "New calcium enriched soya milk." This slightly sweetened soya milk, enriched with calcium (140 mg of calcium per 100 gm of product), is distributed to both supermarkets and pharmacies.

Label sent by Heather Paine of SoyaFoods in London. 1993. Nov. 3.

6324. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. Major health food store to open SoyaCow department. 1(3):1. July/Sept.
• ***Summary:*** "Rainbow Foods, the largest health food store in the Ottawa area, is committed to the SoyaCow retail concept. After fifteen years in business, they will move to larger premises in January, reopening with a department devoted to SoyaCow and its related fresh soyfoods.

"The ability to make fresh soymilk and other soyfoods on location will appeal to their existing clients and will also attract new ones. Besides the take-home foods, a small line of take-out products will be featured, including shakes, yogurts, soyburgers, and fresh juice. As the first store anywhere to do this, Rainbow will help promote this as a pilot location in a franchising concept. Other retailers will be invited for demonstrations.

"Rainbow owner Mike Kaplan became a SoyaCow believer after his first taste of its soya milk. He deemed it superior to all other products he sells in Tetra Paks [Tetra Pak cartons]. He also appreciated the freshness and the environmental benefits."

A photo shows a "New SoyaCow Model SC20A."

6325. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. Better tofu using SoyaCow. 1(3):1. July/Sept.
• ***Summary:*** "Indovita Proteins (P) Ltd., Ghaziabad, India, recently received a SoyaCow for testing and installed it in the Delhi area to explore its economic viability for a soya milk cottage industry. They reported that the tofu make using the soya milk from the SoyaCow is superior in flavour and texture to that which they are producing on their Taiwanese equipment.

"Indovita is now in the process of upgrading their existing equipment with SoyaCow technology. This confirms the belief that better quality soya milk makes better quality products–tofu, yogurt, drinks, frozen desserts, etc."

6326. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. New SoyaCow model. 1(3):2. July/Sept.
• ***Summary:*** "The new SoyaCow Model SC20A grinder / cooker, pictured on page 1, has been upgraded with a hopper and butterfly valve to permit charging of the machine without having to open the lid."

6327. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. System installed in school. 1(3):2. July/Sept.
• ***Summary:*** "Children in several schools in Hyderabad (India) are enjoying with their snacks at the mid-school breaks. SoyaCows provided by Child Haven of Maxville, Ontario, make the soya milk, which is sweetened, flavoured with mango flavour, and chilled for serving the next day. The children pay about 5 cents (Rs. 1.00) for 100 ml of soya drink. Both children and staff like the taste. One school, Bharatiya Vidya Bhawan, now runs the machine in its kitchen. Other schools are supplied by Ankur Services. Schools are interested in having their own machines once they become available in India."

6328. Shannon, Dennis A. 1992. Work with soybeans in Zaire (Interview). *SoyaScan Notes.* Oct. 9. Conducted by

William Shurtleff of Soyfoods Center.
• ***Summary:*** Dennis was born in Zaire, the child of missionaries, and speaks French. After working with IITA in Nigeria, he spent 5 years with IITA in Zaire from Sept. 1985, then left 2 years ago. For 4 of those years he was an agronomist and principal advisor to the Zaire government's national Grain Legume Program (Programme National Legumineuse, formed with USAID financing and headquartered in Gandajika), working mostly with soybeans. His first program was to introduce superior soybean varieties developed by IITA in Nigeria. The soybean varieties grown at the time in Zaire had been brought in by INERA (Institut National pour l'Etude et la Recherche Agronomiques) and yielded poorly, shattered badly, had small seeds or various colors, and had weak stems. (INERA, located only in Zaire, inherited the old Belgian agricultural research infrastructure of INEAC, but the name was changed to INERA between 1968 and 1973). Dennis felt that the best way to establish the credibility of the Grain Legume Program was by introducing improved soybean varieties, developed at IITA in Nigeria at the same distance from the equator and under similar agronomic conditions as existed in Gandajika. In on-farm trials in Gandajika, the IITA soybean varieties yielded 30% better than the old Zaire varieties for 5 seasons from 1987-89. Some farmers would save seeds from the trials and grow large plots. But one major problem was that the traditional practice in Zaire was to eat or sell all grain legume seeds at harvest to pay off debts and get food after the dry food-shortage months. Maize and cassava are the staple foods, with legumes being only a minor crop. At planting time, farmers by seeds from the market. Another problem was that farmers like early varieties to get food fast after the lean months, but to get earliness a breeder must (tragically) sacrifice yield. Soon the Grain Legume Program released 2 new soybean varieties with Chiluba names. Dennis left Gandajika in Oct. 1989, then worked in Lubumbashi on maize until Aug. 1990, when he left Zaire to work for Auburn University in a agro-forestry project in Haiti (not related to soybeans).

Father G. Vanneste is a Belgian Catholic priest and agronomist with an Ingineur Agronome degree from Belgium. He set up and was in charge of ETSA (Ecole Technique Secondaire Supérieure d'Agriculture, de Tshibashi), an agricultural technical school. Working in Kananga for many years, he played the key role in promoting cultivation and food use of soybeans. He was named by the president of Zaire as director of the national research institute. Then he got sick and left the country. Now a fairly old man, he has retired and is no longer in Zaire.

Since Zaire is a Catholic country, many Catholic priests and brothers work there. They have set up many fine soybean production and utilization programs all over the country. The work started in Kananga, then spread from there to places like Bukavu or Kivu in eastern Zaire. At a typical flour mill, the Catholics will provide the soybean seeds, buy the soybeans back from local farmers, roast and grind them to make roasted soy flour, then sell this back to the people (as flour or cookies in the local market) at little or no profit. In 1985 there was a big project to supply Kinshasa, the capital, with roasted soy flour and soymilk; he does not know the present status of the project. The Bwamanda Project, run by an activist Catholic priest in the Equator region of northern Zaire, is primarily a project to grow soybeans on a fairly large scale (about 20 ha) using tractors. The soybeans were shipped by barge down to Kinshasa, where the Catholics had a big factory that made them into soy flour. The whole project was very well organized.

Dennis's brother now works in Kananga, Zaire as a medical missionary doctor. Johnny Miller was a Protestant doctor who was treating malnourished children. He strongly encouraged mothers of malnourished children to use soy flour in the family diet.

The system set up by the Catholic fathers was somewhat paternalistic, but in the Gandajika area, where there are not many missionaries, the people grind their soybeans (which they roast in a pot over a home fire) using pre-existing small village mills that had long been used to grind cassava and corn (maize).

Ms. d'Heer (pronounced "deer") worked in Zaire for WHO, the World Health Organization, then later stayed on as a lay sister working with the Catholic mission in Kananga. She played a key role in expanding food uses of soybeans in Kananga. Also a food scientist named Karl Weingartner, working for INTSOY at IITA at the time, visited Zaire. Dennis drove him to Kananga, where they met and interviewed Ms. d'Heer. Weingartner wrote a trip report (not very detailed) that was published in about 1987. The peak year of the soy cookie factory was in about 1979.

In Oct. 1989 soybean utilization was on the increase in Zaire. It is hard to say what is happening now given the current political upheavals in Zaire; in Sept. 1991 all foreigners had to be evacuated–his brother returned in June 1992. But since small farmers grow soybeans locally, they would tend to be relatively unaffected by national problems. Address: Asst. Prof., Dep. of Agronomy and Soils, 202 Funchess Hall, Auburn Univ., Auburn, Alabama 36849-5412. Phone: 205-844-4100.

6329. Haren, Chuck. 1992. Nicaragua. *Plenty Bulletin* (*Davis, California*) 8(3):1-2. Fall.
• ***Summary:*** "Nicaragua is one of several Central American countries from which Plenty has received letters requesting support for people learning how to use soybeans. In August Plenty provided technical support to Soynica, a group of women who are conducting an education, training and feeding program in Managua, the capital. Soynica is a non-profit development organization which was formed by a group of women who have voluntarily been promoting the

use of soybean foods among low-income rural and urban families since 1980.

"Soynica became an officially registered organization in 1990. Women within the barrios of Managua have sought out support from Soynica in helping them to feed their children. Soynica responds by first helping the women organize themselves into working groups which support each other. A staff of 22 educators provide training for 450 pregnant and nursing mothers in the poorest barrios of Managua... Soynica, with the help of 145 volunteers, provides food for 24 'ollas communales' (community pots) which serve one meal five days each week to 450 pregnant and nursing mothers and 2,500 malnourished children. Soybeans are used in 80% of these meals (see photos below). Specifically, Soynica requested Plenty to help improve the processing methods they were using at the ollas communales, and to work with them in designing a funding proposal for a small soybean processing and marketing facility within Managua. From this facility Soynica intends to process and market a variety of soybean foods, then use the profits to help cover the costs of the social assistance programs they are carrying out in the barrios of Managua. While in Nicaragua I was able to demonstrate methods of processing soybeans which improved the milk and tofu yields the women could achieve when preparing meals at the ollas communales. I also worked with the administrators of Soynica programs, Luci Morren and Casta Calderon, in writing a proposal for a Soybean Processing, Marketing and Training Center.

"I wish to thank John and Carlotte Gabriel of Nevada City, California for bringing the commendable work of Soynica to our attention, and for their vital assistance."

A photo shows many people watching as Soynica volunteers prepare soymilk or tofu.

6330. Nsofor, Leslie M.; Maduako, Okwudiri. 1992. Stabilized soymilk for ambient tropical storage: a preliminary report. *International J. of Food Science and Technology* 27(5):573-76. Oct. [16 ref]
• ***Summary:*** Soymilk was made from sprouted-blanched, sprouted-unblanched, and blanched whole soybeans (control). It was sterilized at 121ºC for 15 minutes and its shelf stability was evaluated. Samples were compared for coagulation, pH and loss of starch. The extract from sprouted-blanched soybeans remained uncoagulated for 6 weeks in ambient tropical storage, showed the greatest loss of starch, and had the least total solids content (10%). The sprouted-unblanched soybeans produced an extract which coagulated instantly after sterilization at a pH of 5.6, the lowest pH value of the three. The control contained the highest total solids (25%), showed the least loss of starch, and coagulated after 2 days in ambient tropical storage. Address: School of Food Science & Technology, Imo State Univ., PMB 2000, Okigwe, Nigeria.

6331. Shestakov, Vladimir. 1992. The Ecoville Project in Russia: Interest in ecology, humane sustainable culture, vegetarianism, and soyfoods in St. Petersburg (Interview). *SoyaScan Notes.* Nov. 9. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Vladimir (nickname "Vlodia"), a Russian biologist who speaks excellent English, phoned during a visit with John Robbins at EarthSave. He is working to start rural based ecological village/community, an education and resource center in St. Petersburg including a vegetarian restaurant and a soy dairy (to make tofu and soymilk) for the first 2 businesses of the project.

Vladimir visited The Farm in Tennessee and was impressed with their soy dairy. While in San Francisco, he is staying at the Center for Citizen Initiatives, run by Sharon Tennison (3268 Sacramento St., San Francisco, California 94115. Phone: 415-346-1875). One of their three main programs is titled "Feed Yourself."

A 1-page leaflet titled "Ecoville Russia: Project Description" sent by the Context Institute (a non-profit, founded in 1979, near Seattle) in Washington state adds: "The Ecoville Project began in Sept. 1991 at an international gathering of specialists in sustainable community development hosted by Gaia Trust, Denmark, and Context Institute, USA. The group decided to support the proposal of the Russian delegate, Vladimir Shestakov, for the creation of an ecological village near St. Petersburg. Such a model could show how Russia and the other republics of the Soviet Union might rebuild their societies in a way that is sustainable and sensitive to the environment...

"Gaia Trust has provided start up funding to assist the project. A western team traveled to St. Petersburg in April 1992 to do a seminar on the above areas and to help the Russians develop team-building skills...

"Diane Gilman, is coordinating the Project from the West...

"Please contact Diane Gilman, the Western Coordinator at Context Institute for more information. Mail: PO Box 11470, Bainbridge Island, WA 98110 USA. Tel: (206) 842-0216."

Follow-up talk with Diane Gilman. 1992. Dec. 6. A new vegetarian society has been active in St. Petersburg since Jan. 1992. She and her husband, Robert, an architect, know Cynthia and Albert Bates at The Farm in Tennessee. Address: Russian Ecoville International Coordinator, P.O. Box 644, St. Petersburg 191180, Russia. Phone: +7 812-113-5896 (Phone and fax).

6332. Willemse, Jan. 1992. Recollections of work with soyfoods and Henry Ford (Interview). *SoyaScan Notes.* Nov. 25. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jan, now age 92, has been cooking with soybeans since 1933. His latest project is a book (partially a recipe book) he is writing about Henry Ford and soybeans.

Elinor Eaton is editing it, but he has not yet found a publisher. He hopes it will be published in 1993.

In the early days, when he was developing soybean recipes for Henry Ford and for the 1934 World's Fair in Chicago, Illinois, there were no soybeans recipes available as far as he knew. So he just used his basic skills as a chef. Of the various people involved with soya, Jan worked the most closely with Dr. Edsel Ruddiman, who was quite interested in soymilk. Every recipe that Jan developed was first checked and analyzed by Dr. Ruddiman before it was served to Henry Ford. Jan knew Robert Boyer; he last saw him about a year ago at the Ford residence. Jan liked to use soybeans most in baked goods and soups, and as a low-cost extender for tuna fish. Henry Ford liked his soybean recipes very much, but rarely gave Jan his personal comments on the recipes. Mr. Ford had a display case in his dining room where he kept Jan's latest soybean creations, such as baked goods, and he liked to show these to his friends. Henry Ford ate very little meat, though he often ate modest amounts of chicken.

"The Ford family was very, very good to me." Jan had 3 boys who were basically raised by Henry Ford. The two oldest boys are now retired. Jan says that over the years, hundreds of articles were published about his work with soy, but he has not kept a single one of them. Today Jan says: "I eat soybeans all the time, and I give them credit for my long life." Address: 130 Nightingale, Dearborn, Michigan 48128. Phone: 313-561-4088.

6333. **Product Name:** [Soy Mayo (Plain, with Herbs, Garlic, or Curry)].
Foreign Name: Majo–nach Mayonnaisenart (Feine Sauce, Kraeuter Sauce, Knoblauch Sauce, Curry Sauce).
Manufacturer's Name: Bruno Fischer GmbH.
Manufacturer's Address: Im Auel 88, 53783 Aetorf, Germany. Phone: 49-2243-4021.
Date of Introduction: 1992. November.
Ingredients: Plain [Feine Sauce]: Water, sunflower oil*, mustard*, spray-dried soymilk*, honey*, vinegar from spirits*, sea salt, starch, spices, guar seed meal as a thickener.
Wt/Vol., Packaging, Price: 250 ml.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Bruno Fischer, who calls from Germany. 1993. Nov. 25. He makes his Soy Mayo using powdered soymilk that he buys from Sojinal in France. In Nov. 1992 he launched two flavors, Plain and Herbs, but because he used mechanically-pressed oil, the products had a short shelf life due to rancidity. His company will re-launch these two products in Jan/Feb. 1994, and at the same time introduce two new flavors that are now under development–Curry and Garlic.

He also uses soybeans in spreads, but they constitute less than 5% of the total ingredients.

Labels sent by Bruno Fischer GmbH. 1994. Jan. 6. 8 by 2.28 inches. One unique color plus black, white, and red on green and yellow. "50% less fat than in mayonnaise." Talk with Bruno Fischer. 1998. May 13. He now makes this product in plain and herb (a recipe like remoulade, with pickles, etc.) flavors, still using soymilk powder. They have discontinued the garlic and curry.

6334. Diaz Carrasco, Humberto; Busto Garcia, I.; Velazquez Diaz, O.; Fernandez Diaz-Silveira, M.; Gonzalez Mauri, J.; Ortega Herrera, J. 1992. El cultivo de la soya para granos y forrajes [The cultivation of the soybean for its seeds and as a forage]. Havana, Cuba: Ministerio de la Agricultura, Instituto de Investigaciones Fundamentales en Agricultura Tropical [INIFAT]. 16 p. Nov. [37 ref. Spa]
• ***Summary:*** Contents: Origin and distribution of the soybean. Importance worldwide. Soya in Cuba. Morphology. Physiological aspects. Favorable attributes of the soybean. Main issues to consider in planting, management, harvest, and benefitting/profiting from the soybean. Rotations with soya.

The section titled "Soya in Cuba" (p. 4-7) states: "The first annual report of the Agricultural Experiment Station at Santiago de las Vegas (*Estación Experimental Agronómica de Santiago de las Vegas*), mentioned the acclimatization of 50 varieties of soya. Today this station is INIFAT (*Instituto de Investigaciones Fundamentales en Agricultura Tropical*) of the Cuban Ministry of Agriculture (MINAG). Note 1. Santiago de las Vegas is a town located 10 miles south of Havana in Habana Province. Note 2. This report, published in June 1906, covers work done during the period 1 April 1904 to 30 June 1905. It contains the earliest date seen for soybeans in Cuba, or the cultivation of soybeans in Cuba (1905; one of three documents).

"During the period 1917 to 1920 Calvino issued information on the study of soybeans in Cuba; he indicated that the variety Biloxi did well in Cuba. At the end of the 1920s, Francisco B. Cruz studied 8 varieties of soybeans. In 1937 the forage characteristics of the variety Otootan were evaluated. In 1952 Calzadilla Cabrales delivered seeds of the variety Improved Pelican to the Agricultural Experiment Station at Santiago de las Vegas; this unique commercial variety was used in Cuba until 1978. In 1955 a pamphlet titled *The cultivation of soybeans* (*El cultivo del frijol soya*) was published by this same station (Muller 1955).

"In 1958 the Cuban Bank for Agricultural and Industrial Promotion (*Banco de Fomento Agrícola e Industrial de Cuba–BANFAIC*), in cooperation with the Agricultural Experiment Station at Santiago de las Vegas, published a bulletin titled *The cultivation of soybeans* (*El cultivo del frijol soya*) (Gonzalez et al. 1958). This bulletin described the areas of soybean extension located in the savannah areas of Santo Domingo (province of Villa Clara), in the estate 'Pablo' (*Ciego de Avila*), and in the rice-growing area of southern Pinar del Rio. Other key documents published from

1968 to 1989 are cited and summarized.

"In 1978 at San Nicolás de Bari, in Havana province, the first Cuban soy sauce (*salsa soya*) factory was started at an investment cost of more than 4 million pesos and with an annual production capacity of 2,000 tonnes/year.

"At the Food Research Institute of the Ministry of Food Industry (*Instituto de investigaciones para la Industria Alimentaria del Ministerio de la Industria Alimenticia* (*MINAL*)), situated in El Guatao, there was installed [in 1984] the so-called "Mechanical Cow" (*vaca mecánica*). This piece of equipment was acquired in Brazil for extracting soymilk; it had a capacity of 200 liters/hour. The Food Research Institute made soymilk (*leche de soya*) in vanilla, chocolate, and strawberry flavors.

"As part of a continuation of previous investigations, during the period 1981-1991, at INIFAT and at the "El Tomeguín" Seed Station (*Estación de Granos*), both part of the Cuban Ministry of Agriculture (MINAG), work was undertaken on genetic improvement and introduction, with the objective of obtaining soybean varieties that could be planted at different seasons of the year to produce seed, forage, or both, that were easy to harvest mechanically, and were less susceptible to the principal diseases and pests which attack this crop.

"As a result of this work, the following varieties are now available for spring planting: Cubasoy-23, 42, Williams, and Duocrop. The varieties IGH-24, R-315, INIFAT-112, INIFAT-V9, Cubasoy-120, and 96 can be planted during the months of July and August, and the varieties INIFAT-382, INIFAT-V9, and Cubasoy-120 can be planted during the months of December and January.

"In parallel to the work described above, within the "Principal State Problem of Beans and Soybeans" (*Problema Principal Estatal de Frijol y Soya*), in various Cuban institutions (National Institute of Agricultural Science {*Instituto Nacional de Ciencia Agrícola, INCA*}, Institute of Animal Science {*Instituto de Ciencia Animal, ICA*}, INIFAT, and others), investigations were conducted that made it possible to maximize the utilization of the new crops. Among these were rotation and intercropping with sugar cane, citrus crops, tobacco, potatoes, and rice, rhizobium biology, mineral nutrition, irrigation, mechanization, incidence and control of pests, diseases, and weeds, uses and storage of the seed, production of elite seed varieties, etc. which permit integral crop management of the soybean under Cuban conditions." Address: Havana, Cuba.

6335. **Product Name:** Soymilk Powder (Regular, or Reduced Fat), Tofu Powder (Regular, or Reduced Fat), Soy/Whey Blend, Textured Soy Flour, Soy Flour (9% fat).
Manufacturer's Name: DMV USA. Div. of DMV, Inc.
Manufacturer's Address: 2340 Enterprise Ave., P.O. Box 1628, La Crosse, WI 54602-1628. Phone: 1-800-359-2345.
Date of Introduction: 1992. November.
Ingredients: Soy flour.
New Product–Documentation: Ad in '92 Soya Bluebook, p. 52. "Quality ingredients from soya. Chemical-free process. Kosher / Parve & organic available." Talk with Craig Albrecht, Technical Sales Manager at DMV USA. 1993. March 19. This company buys soy flour and makes all the above products from it. The line was introduced in the fall of 1992, before Craig arrived at the DMV. DMV is a Dutch-owned dairy cooperative with $4,000 to $5,000 million in sales worldwide. They have had a presence in the USA for about 3 years. DMV USA imports various caseinates and whip toppings, and also makes various dairy products such as nonfat dry milk, buttermilk, whole milk, whey, whey protein concentrate, cheese, imitation cheese, etc. They sell these products to foodservice organizations and the food industry. The soy products are still a minor part of their total business, but growing. Ed Pedrick came from Clofine to work for DMV.

Ad (full-page, black-and-white) in Soya Bluebook. 1993. Oct. "Soymilk Powder & Tofu Powder."

6336. Griffis, Gil; Wiedermann, Lars. 1992. Marketing food-quality soybeans in Japan: A manual on how to profit from the niche market in Japan for value-added soybeans. 5th ed. St. Louis, Missouri: United Soybean Board. 25 p. Nov. 28 cm.
• ***Summary:*** Contents: Introduction. Japan: Desired soybean characteristics, tofu (procedure for making tofu, desired soybean characteristics, color of hilum, seed size {the larger the better, preferably more than 20 grams/100 beans}, color of cotyledons, hull, composition, special notes, American interpretation), miso (same categories of information as tofu), natto (ditto; seed size: The smaller the better, with a maximum of 5.5 mm diameter. Round shape is preferred to oval in order to limit swelling during the soaking and boiling processes), food quality soybean varieties (name or code-name of 42 varieties, maturity zone, release year, used to make what soyfoods), distribution channels, marketing channels, protocol, pricing, organically-grown soybeans.

Taiwan: Introduction, list of 4 major buyers, users, and trade associations. Korea. Southeast Asia. United States.

Appendix I. Distribution systems for soybeans used for food in Japan: Tofu (23,000 tofu shops of which 13,000 are members of the Tofu Association), natto, miso.

Appendix II. Food soybean imports by country of origin, 1984-1991. USA is the largest supplier (845,000 tonnes in 1991), followed by China (279,000), then Canada (28,000). Total imports, which have stayed about constant during this period, were 1,152,000 tonnes in 1991.

Appendix III. Distribution by usage of soybeans used for food–1991, direct use only in tonnes (metric tons). Tofu: 607,000 tonnes total, of which 562,000 come from the USA and Canada, 25,000 from China, and 40,000 from Japan. Up 2% from 1989.

Miso: 171,000 tonnes total, of which 38,000 come from the USA and Canada, 121,000 from China, and 12,000 from Japan. Up 0.5% from 1989.

Natto: 147,000 tonnes total, of which 87,000 come from the USA and Canada, 50,000 from China, and 10,000 from Japan. Up 9% from 1989.

Other: 39,000 tonnes total, of which 20,000 come from the USA and Canada, none from China, and 19,000 from Japan. Total food use of 964,000 tons is up 2% from 1989. Source: Japanese trade newspapers and trade associations. These figures do not include a estimated 492,000 tonnes of soybeans used indirectly (in the form of defatted soybean meal) for soy sauce, 222,000 tonnes used for soy protein, and 20,000 tonnes for other indirect uses.

Appendix IV. Directory of direct importers of food-quality soybeans for each is given: Home office in Japan. Representative office in the U.S.

Appendix V. Traders of food-quality soybeans (3 companies).

Appendix VI. Soy food organizations in Japan (tofu, miso, soymilk, packaged tofu, natto). Appendix VII. Helpful contacts.

Food quality soybean varieties (with maturity group / zone, and year released; table, p. 5): Chico (00, 1983), Grande (0, 1976), Proto (0, 1989), Minnatto (0, 1989), NattoKing [Nattoking] (I, 1988), Disoy (I, 1967), Vinton (I, 1978), Vinton 81 (I, 1981), King Natto (I, 1985), Kato (I, 1989), Magna (II, 1967), Prize (II, 1967), Marion (II, 1976), LS201 (II, 1989), Provar (II, 1969), Beeson (II, 1969), Kanrich (III, 1956), Kim (III, 1956), LS301 (III, 1989), Verde (III, 1967), IL2 (III, 1989; from Illinois), Hawk (III, ?), Emerald (IV, 1975), Vance (V, 1986), Camp (V, 1989), Hartz 936X (VI, 1981), Hartz 914 (VI, 1989), Hartz 922 (VI 1989), Merrimax (?, 1986).

Note: This report was originally published in Sept. 1989, mainly for use by the American Soybean Association office in Tokyo. Address: 1. Division Director for Asia; 2. Country Director for Japan. Both: American Soybean Assoc.

6337. **Product Name:** Skinny Dippers (Spreads and Dips) [Spring Garden, Bretonne, Hawaiian, Aztec, Spicy Greek, or Chinese].
Manufacturer's Name: Redwood Company (The). Div. of JRJ Trading (Marketer-Distributor). Made in America.
Manufacturer's Address: P.O. Box 1298, London, N20 0YT, England. Phone: 81 / 368 2638.
Date of Introduction: 1992. November.
Ingredients: Incl. tempeh, soymilk, miso.
Wt/Vol., Packaging, Price: 120 gm pack retails for £1.20.
How Stored: Refrigerated.
New Product–Documentation: Spot in SoyaFoods. 1992. Autumn. p. 5. "Skinny Dippers spreads and dips." Four flavors are based on tempeh: Spring Garden, Bretonne, Hawaiian, and Aztec. Two are based on soymilk: Spicy Greek, and Chinese. Other soya ingredients used, depending on the flavor, include soya bean sprouts and miso.

6338. **Product Name:** [Vegetable Soja Patés (Plain, with Boletus Mushrooms, or Garlic & Fine Herbs)].
Foreign Name: Pâté Végétal–Harmoniques (Nature pâtés: Nature, aux Cepes, Ail et Fines Herbes).
Manufacturer's Name: Sojinal. Affiliate of Coopérative Agricole de Colmar (CAC) (Marketer).
Manufacturer's Address: 8 rue Merxheim, 68500 Issenheim, France. Phone: 89 74 53 53.
Date of Introduction: 1992. November.
Wt/Vol., Packaging, Price: 3 x 40 gm tubs.
How Stored: Refrigerated.
New Product–Documentation: SoyaFoods. 1992. Autumn. p. 7. "A profile of Sojinal." See Table 2. "Biosoja retail food products." "Vegetable soja patés. Low fat (less than 19%) and cholesterol free."

Label sent by Heather Paine of SoyaFoods in London. 1995. Aug. 8. This is an outer paperboard sleeve for 3 x 40-gm tubs of pâté; no ingredients are listed on the sleeve. *"Specialite a tartiner au soja de l'agriculture biologique."* Under the Harmoniques brand you will find a complete line of delicious vegetable pâtés: Nature, ail et fines herbes, aux cepes [with edible boletus mushrooms]. Made in France by Biosoja, 10 rue Lavoisier, F 68000 Colmar.

6339. *SoyaFoods* (*ASA, Europe*). 1992. Packaging and environment: Editorial. 3(3):1. Autumn.
• ***Summary:*** "Last month the EC announced their packaging and packaging waste proposals... The directive sets targets to be achieved in the next 10 years by which time the EC is to make 90% of all its packaging recoverable and 60% recyclable."

Tetra Pak, suppliers of soya milk and dessert cartons, has recently published a leaflet titled "Tetra Pak and the Environment," which outlines the company's policy of minimizing the effects of food packaging on the environment. The contents is summarized.

6340. *SoyaFoods* (*ASA, Europe*). 1992. Milk and tofu from sunflower seed. 3(3):3. Autumn.
• ***Summary:*** Researchers at the Department of Cereal Science and Food Technology of North Dakota State University have used sunflower seed meal to produce a milk similar to soya milk, from which tofu can be made. They have also developed a sunflower seed protein isolate.

6341. *SoyaFoods* (*ASA, Europe*). 1992. A profile of Sojinal. 3(3):6-7. Autumn.
• ***Summary:*** The author visited the Sojinal factory where she talked with Mr. Rochet (Director General) and Eric Dubs (Export Manager). "Sojinal is based at Issenheim in Alsace (in eastern France near the German border), where much of

France's soyabean crop is grown. Employing just over 20 people (only 6 on the production side) the office, factory and laboratories, which overlook beautiful Alsatian countryside, cover some 5 hectares. Ownership is split between a farming cooperative (65%) and 3 companies (18% Sofiproteol, 9% Unigrain and 8% Lavaur)...

"A recent survey of French consumers showed that 18% know about tonyu but only 1% regularly drink it at least once a week...

"Sojinal processes about 4,000 tonnes of soyabeans per year... Sojinal's product range falls into two areas: ingredients for the food industry and final retail products. Ingredients for the food sector are manufactured at Issenheim, but most of the retail products are produced elsewhere for Sojinal using Sojinal ingredients and recipes.

"Ingredients for the food industry include: hulled soya beans, fibre, tofu, soya pulp (okara), concentrated tofu, tonyu, soyapaste, and spray-dried soya powder [dried soymilk]. Applications are summarized in Table 1.

"A wide variety of products are produced for supermarkets (Ligne S) and health food outlets (Formoja). Sojinal retail food products are sold under the Biosoja name and include soya drinks and desserts, ready meals made from tofu, chocolate bars, vegetable soya patés and sauces and dressings (Table 2)...

"Sojinal's soyamilk is already No. 1 in Spain."

A photo shows the company's plant and offices.

6342. Venkataraman, Pankaja S.; Luhar, H.; Neylan, M.J. 1992. Bone mineral metabolism in full-term infants fed human milk, cow milk-based, and soy-based formulas. *American J. of Diseases of Children* 146(11):1302-05. Nov. [15 ref]

• ***Summary:*** Improving the mineral suspension system in a soy-based infant formula results in bone mineralization in infants fed the formula similar to that in infants fed human milk and cow milk-based formula. Address: Dep. of Pediatrics, Univ. of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, OK 73190.

6343. McReynolds, Thomas. 1992. Low-fat and defatted tofu, and other new developments at Morinaga (Interview). *SoyaScan Notes.* Dec. 2. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Dr. Kenji Mizoguchi (Manager, Product Development Section, Food R&D Lab.) at Morinaga's central research laboratory in Tokyo, Japan, has been able to remove the fat from soymilk in order to make a 1% tofu (it contains 1% fat by weight) or a non-fat tofu. Tom has recently tasted the 1% fat tofu and thought it was excellent. Morinaga is planning to introduce this product in 1993 and Tom feels it will soon become the company's best-selling product.

Currently Mori-Nu firm silken tofu is the company's best-seller, followed by the extra-firm, with the soft in last place.

Tom is just putting the finishing touches on a new book to be titled *Tofu and You.* It was written by a lady who had a long-term weight problem until she married a Chinese man and started eating tofu. It is not a vegetarian book. It comes with a 28-day diet plan, and the book will accompany cases of Mori-Nu tofu. Morinaga hopes to launch the book together with their new low-fat tofu.

The company will also be publishing a newsletter to be sent to dietitians; Mark Messina is working with Tom on this project. The first edition should be out in Jan. 1993 and will be about 4 pages in length. A tentative title is *Soya Nutrition Update.* Tom would like it to be a professional rather than a commercial publication.

Update. Dec. 10. Morinaga's lab in Tokyo can remove the fat from soymilk using a mechanical process, but the process now involves the addition of isolated soy protein. The plant for doing this must remain in Japan. Address: Marketing Consultant, Morinaga Nutritional Foods, 2050 W. 190th St., Suite 110, Torrance, California 90504. Phone: 213-728-4325.

6344. Bryan, Ford R. 1992. Personal recollections of soyfoods served at Ford Motor Co. cafeterias and dining rooms, and of Dr. Edsel Ruddiman (Interview). *SoyaScan Notes.* Dec. 3 and 10. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Mr. Bryan began to work for the Ford Motor Co. in June 1941. He had a roommate who worked for Ford in engineering and Bryan would sometimes have lunch with him in Engineering cafeteria, located in west Dearborn about 5 miles from the Rouge plant. This cafeteria, and the adjoining private dining room where Henry Ford ate, were probably the first to introduce soybean foods. There, in 1941, he recalls eating soybean bread and biscuits, and drinking soybean milk. In the cafeteria, the soymilk was lined up in glasses, and in the dining room it was served at each table. "It had a distinctly different taste–not too bad. And we drank it without question. It was the drink of the day. There was no choice." Mr. Bryan is not sure whether or not he ever tasted soy ice cream in the Ford cafeteria.

Mr. Bryan has recently been talking with a woman who is Edsel Ruddiman's niece. She is age 90, has a good memory, and now resides in Dearborn; she just moved there from Florida. She used to taste-test some of the soy products her uncle was making. She was not paid for this work. Dr. Ruddiman was in charge of the food work for Henry Ford. Ruddiman began his research in what was really Henry Ford's private dining room beside the tractor plant. It was a cute, little bungalow which Henry used to entertain guests. The dining room that later appeared in many photos with executives seated at a round table was in the Engineering Building, which was built in 1923.

Dr. Ruddiman was around Dearborn until at least 1942, at which time Mr. Bryan knew him. "I think the following story is true. Henry Ford had his way of disposing with people. He thought that Edsel Ruddiman was not making good headway on his work with soy. He had Ruddiman and Boyer and even R.H. McCarroll competing with one another to some extent. The man who told me this story, who worked in the village, was told to get rid of Ruddiman's laboratory. He was told 'I want to see sod there the next day.' So Ruddiman's laboratory was wiped out. I don't know what Dr. Ruddiman did after that."

Mr. Bryan is a distant relative of Henry Ford. His grandmother was named Emma Ford and his first name is Ford because of that relationship. His great-great-grandfather and Henry Ford's grandfather were brothers, and they both married women who were sisters. Address: 21800 Morley, Apt. 1203, Dearborn, Michigan 48124.

6345. Diamond, Florence Barbier. 1992. The life and work of Holton W. "Rex" Diamond. Part I. Early life and work to 1942 (Interview). *SoyaScan Notes.* Dec. 3. Conducted by William Shurtleff of Soyfoods Center. Followed by confirmation from a brief chronology of his life and 20 pounds of documents sent by Mrs. Diamond.
• ***Summary:*** Florence is the widow of Rex Diamond. Holton Whittier "Rex" Diamond was born on 15 June 1915 in Lucasville, Scioto county, Ohio, the son of Walter V. Diamond and Ethel Pigg. He was a very bright boy, chosen valedictorian of his Valley High School class and, as valedictorian, he presented "The Seniors' Farewell Message" at the graduation ceremony on 10 May 1932. After entering Wilmington College in Wilmington, Ohio, on a scholarship, the school newspaper noted that he added "to a brilliant scholastic record" by "being the first freshman to make a perfect grade in the state-wide English examination. Diamond also holds national, state, and county scholarship awards in Latin, French, chemistry and English." Another article reported that he was the first entering freshman in the 60 year history of the college to score 100% on the timed entrance exam. Upon graduation from Wilmington in 1936, he was awarded the Chi Beta Pi national honorary fraternity "annual Grand Chapter award [a gold key] for outstanding scholarship, research ability, and service to the school and chapter." While in college, he was president of the college YMCA, and a member of the varsity tennis team, college band, and yearbook staff. After graduating from Wilmington in 1936 (with a BSc and a BSc in Education degree, and a major in chemistry), he worked briefly as a surveyor in Scioto county, then for several years as a chemist for Mead Paper Co. in Chillicothe, Ohio until entering Drew Seminary Graduate School of Theology for the fall 1938–Spring 1939 school year. (This was a term in the Methodist ministry; he had been interested in YMCA and Gospel Team Work in college.) Then he moved to Detroit, lived at the YMCA in 1940, and worked as a chemist in the lab of a steel mill, then as a "soda jerk" in a soda fountain. He also attended the downtown Methodist church and often wrote poetry.

During 1942, while working in Detroit, he enrolled in night school at Wayne State University in Detroit, taking courses in advanced organic and high polymers, dyes, biochemistry, and chemical literature–but obtained no graduate degrees. He pursued these graduate studies until 1945. Continued. Address: 1112 Pawnee Trail #2, Georgetown, Kentucky 40324. Phone: 502-863-5055.

6346. Diamond, Florence Barbier. 1992. The life and work of Holton W. "Rex" Diamond. Part II. Work at Ford Motor Co. and Delsoy Products Inc., 1942-1946 (Interview). *SoyaScan Notes.* Dec. 3. Conducted by William Shurtleff of Soyfoods Center. Followed by confirmation from a brief chronology of his life and 20 pounds of documents sent by Mrs. Diamond.
• ***Summary:*** Continued: In about 1942, through Wayne State University, Rex Diamond obtained a position in the research department of the Ford Motor Company, in the synthetic rubber development department, supervising a project group on butadiene synthesis. More specifically, his work was at Greenfield Village on "dum-dum," a silencing material for cars. When the entire synthetic rubber research program at Ford was abandoned, in about June 1943, he was transferred to the George Washington Carver Laboratory.

He worked under Robert A. "Bob" Smith (the chief chemist and his boss) on soybean milk, cheese, ice cream and tofu, and developed a whipped topping (his first) based on soymilk. Of these products, the found the whipped topping (which was later commercialized by 3 different companies) to be by far the most interesting.

Rex continued to work at the Carver Laboratory throughout World War II–his first research concerned chlorophyll. On 9 May 1945 Diamond and Smith applied (as assignors to the Ford Motor Co.) for a U.S. patent (No. 2,476,358) titled "Soluble compound of chlorophyll and synthesis thereof." The patent was issued on 19 July 1949.

One day in 1945 a man named Herbert Marshall Taylor came into the Carver Laboratory with a soybean product that would whip–but it wasn't very good and you could not rely upon it to whip every time or to whip the same way. Florence is not sure where Mr. Taylor got this product. [Note: Compare this version of events concerning Mr. Taylor and soy-based whip topping with that told by Robert A. Smith in May 1979.] Several days later, Rex analyzed the product and went to work on developing an improved and reliable whipped topping. He recorded the results of his work [starting on 24 March 1945] in his notebooks, which are now at the Henry Ford Museum at Dearborn. Prior to this time, nobody at the Carver Lab. had done research on a whipped topping. Rex discovered at some point, while working at the Carver Lab., that mono- and diglycerides played a critical role in whip toppings. Taylor was using a typical "bakery

shortening" as a key ingredient in his whipped topping. It contained mono- and diglycerides, but their amounts were not carefully controlled, since these levels were not critical in typical baking applications. Later (on 12 June 1955) in a paper titled "Vegetable Fat Whips for Bakery and Household Use," presented to the Institute for Food Technologists, he stated: "The use of special vegetable shortening, which contain not only hydrogenated vegetable oil but also one or more surface active materials quite common in the topping business. It is well to remember in this connection that most of these shortenings are made for some other use, they may introduce variations in the properties of the topping emulsions. A shortening containing mono- and diglycerides may be controlled within tolerances which are adequate for its use in baked goods but not for its use in toppings." Rex felt he had solved Taylor's problem and made an important discovery related to non-dairy whipped toppings.

Florence has the impression that Mr. Taylor was a very outgoing person who inadvertently sometimes got into trouble; he did not have bad intentions, but was sometimes misguided. He was a big spender when he had the money; later he felt he had been cheated by Delsoy Products and the owners of Delsoy felt they had been cheated by him. Florence also recalls that Rex, not Bob Smith, did most of the research and development work on the soy-based whipped topping at the Carver Lab.

A photo shows the 12-member staff of the Carver Laboratory in 1945, including Rex Diamond, Clem Glotzhober, and Florence Barbier. Bob Smith was absent. A caption notes that here "Diamond did the [sic, his] first work in developing a whipped topping."

A W-2 form shows that during 1945 Holton W. Diamond (who lived at 1648 May Ave., Dearborn, Michigan) was employed by "Russell-Taylor Inc., 1951 E. Ferry Ave., Detroit 11, Michigan." [Note: Diamond was working on their whip topping]. His wages totaled $552.13 in 1945. A 1946 form shows he was paid wages $68.25 by Russell-Taylor in the first quarter of 1946.

At about the time World War II was over (Aug. 1945), Florence Barbier, a graduate of Stephens College (Columbia, Missouri) was transferred from the Rouge Chemical Laboratory (where she had worked during the war) to the Carver Laboratory. There she first met Rex–who interviewed her for the job. She ran analyses on the soymilk that they made there frequently, worked on the development of a fermented soymilk cheese (which was never very good), and made some tofu. Soymilk was made at the Carver Lab. in 100 gallon batches approximately 2 to 3 times a week. Alberta Hardy (who now lives in Lansing, Michigan) was one of the people who helped make the soymilk. Some of this soymilk was given to any woman in the Dearborn area (not just Ford employees) who could not tolerate cow's milk and who wanted to stop by and pick some up free of charge. It was also sent to the Henry Ford Hospital and to Henry Ford's Greenfield Village Schools where it was served free of charge at recess each morning and afternoon. It was also served to the students for their noon meal at the Clinton Inn in Greenfield Village. Florence recalls soymilk being served in this way when she was a high school student there in the mid-1930s. The soymilk was poured from a large metal container into glasses, which were placed in the hallways at recess times for anyone who wanted it. "Henry Ford wanted all the experimental work done at the Carver Lab. to be of benefit to the public. Even the inventions were to be made available to anyone who wanted them." Florence's father, A. Roy Barbier, had worked for Henry Ford as advertising manager for the Ford Motor Co. from 1924 to the autumn of 1941. Barbier worked closely with Edsel Ford and considered him an intelligent and very competent person–in fact one of the finest people he ever met. But Edsel was overshadowed by his famous father, Henry Ford. Barbier thought Edsel never received the credit he so richly deserved.

On 21 Feb. 1946 Rex Diamond applied (alone, and not as an assignor to the Ford Motor Co.) for a U.S. patent (No. 2,487,698) titled "Topping for salads, desserts, and similar products." The patent was issued on 8 Nov. 1949. The all-vegetable topping called for the use of about 1.5% soy bean protein, 25-35% hydrogenated soybean oil, etc.

Prior to the formation of Vegetable Products Corporation, Rex made many trips to try to procure a source of shortening (still in short supply after the war) to be used in the manufacture of the whipped topping he planned to make. On 28 Feb. 1946, on a flight to New York City, he wrote to Florence that on the plane he enjoyed "an apricot cobbler topped with what I am almost sure was Delsoy Topping"–a non-dairy whipped topping introduced in late 1943 and made by Bob Smith. (Note: Bob Smith left the Ford Motor Co. in Aug. 1945 to work full time with Delsoy Products.) While Rex was still employed at the Carver Laboratory, he did some part time evening and weekend work as a consultant for Delsoy Products, conducting experiments to try to improve Delsoy. On 13 June 1946, before he left Ford, he obtained a written release from Mr. E.C. McRae, of the Ford Motor Co. patent dept. stating: "Inasmuch as the Ford Motor Company is not in any way interested in the manufacture of soybean food products, we have no objection to your patenting any ideas you may have along this line." Again, Diamond was planning for his whipped topping.

In Aug. 1946 Rex started thinking seriously about and developing a business plan and finding sources of raw materials for starting a "soy bean dairy" to make whip topping, soy ice cream, soy cheese, and chocolate malted. With the help of attorney Arthur M. Smith, he wrote Mr. Adrian Joyce [of The Glidden Co.] on 16 Aug. 1946 to see if Joyce had any interest in his ideas and inventions. Continued. Address: 1112 Pawnee Trail #2, Georgetown, Kentucky 40324. Phone: 502-863-5055.

6347. Diamond, Florence Barbier. 1992. The life and work of Holton W. "Rex" Diamond. Part III. Work at Vegetable Protein Corporation, and American Maize Products Co., 1947-1955 (Interview). *SoyaScan Notes.* Dec. 3. Conducted by William Shurtleff of Soyfoods Center. Followed by confirmation from a brief chronology of his life and 8 pounds of documents sent by Mrs. Diamond.

• ***Summary:*** Continued: Rex left the Ford Motor Co. in about Nov. 1946, shortly before the Carver Laboratory was closed; his wages for 1946 were $3,313.20. On 14 Nov. 1946 he applied to the state of Michigan for unemployment compensation. Note: It appears from the above that the Carver Laboratory closed in late 1946.

After leaving the Ford Motor Co., Rex may have done a little more part-time work with Bob Smith at Delsoy Products. On 6 July 1945 Herbert Marshall Taylor, President of Delsoy Products, Inc., at the suggestion of Mr. Bob Smith, had given Rex 12 shares of their stock and invited him to work for them on a full-time basis. But both Rex and his father-in-law, A. Roy Barbier, felt terms offered by Delsoy for Rex's services were unacceptable. Mr. Barbier felt that Rex would never get a good deal from Bob Smith, and that influenced Rex's decision. Moreover, Rex's dream was to start his own company making the whipped topping that he had pioneered at Ford. So after a short time, he stopped working with Delsoy and began work on starting a company named Vegetable Products Corporation (VPC) to produce a whipped topping named Wonder Whip, which was similar to Delsoy. There were no hard feelings after this parting and Rex remained friends over the years with both Bob Smith and Herbert Marshall Taylor–though Taylor long remained bitter over his own split with Delsoy. Florence and Rex were married on 9 Aug. 1947 in Dearborn, and they lived in Dearborn for the next year.

Rex had plenty of good ideas but no money. With considerable help from Arthur M. Smith, his patent attorney, Rex found investors and on 26 Aug. 1947 he signed an agreement that established Vegetable Products Corporation to raise money in order to get his non-dairy whipped topping on the market. There were about 5 investors, who probably contributed equal amounts of capital, totaling about $10,000 to $20,000–a relatively small amount, leaving the business underfinanced. The investors were John J. Hamel Jr. (a friend of Arthur M. Smith), A. Roy Barbier (Florence's father), Robert Walker, Elmer Hitt, and Joe Higgason. Rex did not invest any capital. The corporation was headquartered in Birmingham, Michigan, which was where John Hamel, the president, had his office and lived. However Hamel didn't participate much in VPC. Rex was formally the corporation's treasurer, though he did almost all of the day-to-day work. It was about 2 months after this agreement was signed that VPC began to manufacture Wonder Whip at Bodker's Dairy in Detroit. [For another view of the events related to Delsoy, see interview with David and Harvey Whitehouse, Feb. 1992.]

VPC started in the fall of 1947 inside of Chris Bodker's Dairy at 25440 Five Mile Road in Detroit, Michigan. The local dairy association did not know that Bodker was allowing a non-dairy product to be made inside his dairy. Florence's father, who was head of the advertising department for the Ford Motor Co., chose the name Wonder Whip and also designed the logo, which contained the words "Wonder Whip" inside a diamond. Chris Bodker wanted to distribute Wonder Whip (using his trucks) to his customers, but he was told by the local dairy association that if he distributed a non-dairy product, he would be "out of business." Shortly after their marriage, and after only 2-3 months of developmental work, VPC began producing Wonder Whip at Bodker's Dairy. It was distributed by Tabor Meat Distributing Co. VPC operated out of Bodker's for only 1-2 months, then Rex moved the business out to Saline, Michigan, and into the second floor of the old Henry Ford soybean extraction plant that had been purchased by the Hamel family's Valley Chemical Company in Oct. 1947 after Henry Ford's death and still had a solvent extraction plant that produced soybean meal and soy oil. As part of a written agreement, John Hamel let VPC use the second floor of the Saline building rent free. That included use of a little laboratory and of some stainless steel equipment that Henry Ford had previously used to make white soy paints using soy protein. Rex and Florence continued to live in Dearborn, driving to work each day in Saline; after several months, they moved to Saline, thus eliminating the long drive. By late 1947 or early 1948 VPC began to make (on the second floor) and continued to sell Wonder Whip, a liquid soy-based whipped topping, packaged in a small ½-pint cardboard container shaped like a truncated cone [the same shape as the containers for Delsoy and Rich's Whipped Topping, which were similar competing products]. They first distributed their product in a jeep and small trailer to the meat distributor in Detroit (owned by Mr. Tabor, a friend of Florence's father) who continued to distribute the product. In 1948 VPC had a booth at the Michigan State Fair, where 55,000 people tasted Wonder Whip. But Rex's company was undercapitalized, had weak distribution, and local competition from 2 other non-dairy whipped toppings which were improved by technical innovations.

One major competing product was Delsoy Super Whip (apparently launched in about 1947, perhaps the first such product in a pressurized can; it was later renamed Presto Whip). The second competing product was frozen Whip Topping, introduced in late 1945 by Bob Rich of Rich Products Corp. in Buffalo, New York. This was the first frozen whip topping. As its distribution expanded into Michigan, it severely hurt sales of Wonder Whip. In April 1949 Rex tried to expand into new non-dairy products with a soy ice cream, made from basically the same ingredients as his Wonder Whip, but VPC didn't have the funds to develop

and launch such a new product, so the it was never sold. Delsoy in the pressurized can was a more serious competitor in the local area, but Rich's frozen Whip Topping was more of a threat in more distant markets and as it expanded into Michigan. VPC could not survive this competition from its weak position. Moreover Rex was not an experienced businessman. So the company was forced to cease operations on 26 March 1949, after less than 2 years in business.

In early April 1949 Bob Smith of Delsoy Products offered Rex a job any time he wanted it. Smith also expressed interest in acquiring Diamond's pending patent applications as well as the name of his company, which he thought was better than his own "Delsoy Products Inc."

In March 1949 Rex wrote several food corporations to see if they might be interested in manufacturing Wonder Whip and paying him a royalty. General Food Corp. in New York said they were not interested. Sadly, Rex was ahead of the market, for about 8 years later General Mills launched Dream Whip, and about 15 years later Whip 'n Chill, both similar products.

American Maize Products Co. in Whiting, Indiana, responded favorably, so Rex went to work as a chemist for them from the fall of 1949 to Nov. 1955, working closely with B.R. Taylor, Manager of Planning and Development. However they wanted a spray-dried product with a long shelf-life since they had no facilities for handling a refrigerated product. For the next 7 years, Rex worked closely with Nichols Engineering Company, but they were unable to successfully spray dry a high-fat vegetable cream in their very small Niro spray dryer. The same type of formulas could be easily spray dried in the next larger Niro unit. After sitting on the shelf for a while, the fat would seep out from each particle in the high-fat product causing the particles to clump together. During the summer of 1951 he studied food technology at Massachusetts Institute of Technology. On 30 March 1950 Rex applied for a patent titled "Powdered Topping and Method of Making Same" (No. 2,619,423) which was issued on 25 Nov. 1952. Then he changed the formula radically, abandoning the use of soy (and of all protein), and made a much better product whose key ingredient was methyl ethyl cellulose, used as a stabilizer. He and Eugene L. Powell applied for a patent (No. 2,863,653) on this product, titled "Salad and Dessert Topping" on 3 Dec. 1954. It was issued on 13 Jan. 1959, after Rex had assigned the rights to Rich Products Corp. upon his employment with that company in the fall of 1955. Rex did no further work with soy. When American Maize decided they were not in a position to exploit the new methyl ethyl cellulose process of making topping, Rex wanted to move on so he could be actively engaged in the commercial exploitation of this new process. Even though American Maize wanted him to sell the patent to a manufacturer and stay on with them, they parted on friendly terms, and American Maize transferred the rights to the patent to Rex before he left. Florence thinks that Rex, at his own suggestion, paid American Maize a small sum to cover the expenses of applying for the patent.

On 12 June 1955 Rex presented a 9-page paper with 9 slides on "Vegetable fats for bakery and household use" at the annual meeting of the Institute of Food Technologists. He noted that in the USA, either soy protein or non-fat milk solids was generally used as the protein dispersant. Continued. Address: 1112 Pawnee Trail #2, Georgetown, Kentucky 40324. Phone: 502-863-5055.

6348. *SoyaScan Notes.* 1992. Soymilk and dairy milk prices in California, December 1992 (Overview). Dec. 10. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** At Berkeley Natural Grocery Co., a large natural food store at 1336 Gilman St. in Berkeley, California, unflavored (plain or original) soymilk made from organically grown soybeans retails for the following prices: Pacific Soy Beverage liter $1.49 (the equivalent of $1.41/quart), Vitasoy liter $1.89 ($1.79/qt), Vitasoy Lite liter $1.99 ($1.88/qt), Edensoy liter $1.99 ($1.88/quart), Westsoy liter (regular or unsweetened) $2.19 ($2.07/qt), Westsoy Lite liter $2.29 ($2.17/qt), Westsoy Plus liter $2.29 ($2.17/qt). By comparison, Rice Dream Low Fat Non-Dairy Beverage (a non-soy rice beverage) retails for $1.99/liter. The average price of the quart equivalents of the 6 soy beverages is $1.92 a quart. This is $0.23 per quart or 13.3% higher than the $1.69 in Dec. 1990.

Cow's milk (fortified with vitamins A and D) sells for the following prices at Safeway supermarkets: (1) Nonfat: $0.69/quart or $1.20/half gallon or $2.22/gallon; (2) Extra light (1% fat; protein fortified): $0.71/quart or $1.25 per half gallon or $2.37 per gallon; (3) Low-fat (2% fat; protein fortified): $0.74/quart or $1.27/half gallon; (4) Whole: $0.93/quart or $1.60/half gallon. The best-seller among these is non-fat in half gallons. Thus in Dec. 1992 soymilk in liter cartons is, on average, 2.78 times as expensive per unit volume as nonfat dairy milk purchased in quarts, 3.2 times as expensive as in half gallons, and 3.46 times as expensive as in gallons. In Dec. 1990 a quart of soymilk was 2.6 times as expensive as a quart of the best-selling cow's milk. So in the last 2 years the price of soymilk has risen relative to that of cow's milk.

In Oct. 1987, after most soymilk brands were available in liter or quart sizes, soymilk was 3.42 times as expensive per unit volume as dairy milk purchased in quarts. So there has been an 18.8% drop in the price of soymilk relative to that of cow's milk in quarts over the last 5 years.

Bob Gerner, the owner of Berkeley Natural Grocery Co., says that most soymilk prices rose significantly last month. The price of Pacific Soy Beverage is artificially low due to a deep discount, and even then it does not sell well. Customers who buy a case of any brand of soymilk at his store receive a 10% discount, even if that brand is on sale. For Gerner,

the 4 best-selling products are Vitasoy regular, Vitasoy Lite, Edensoy regular, and Westsoy plain. Gerner does not carry the new Edensoy Extra because he has too many similar products. He sells 75-90 cases per month of soymilk at this store. Soymilk is one of his best-selling product categories, along with prepared dinners and teas.

6349. Ruddiman, Catherine. 1992. Recollections of work with soyfoods in Dearborn, Michigan (Interview). *SoyaScan Notes.* Dec. 12. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Catherine is Dr. Edsel Ruddiman's niece. She is age 90, has a good memory, and has never married. Her clearest recollection is that in the 1930s (probably after 1934) Dr. Ruddiman would make soy flour by grinding whole soybeans. He would take samples to her home near Dearborn and she would use the flour to bake cookies, muffins, bread, etc. She lived between Dearborn and Detroit; she was not paid for this work. Her "Uncle Ed" would taste the samples she had baked, then take the rest over to the laboratory to work on them further. After several months, when they had more or less perfected the flour and its uses, her involvement stopped. She does not recall whether or not she ever visited his lab. She is quite sure that Dr. Ruddiman worked on soymilk, and probably ice cream. She is sure that bread made with soy flour was served in one or more Ford Motor Co. restaurants or cafeterias.

She does not have any newspaper or magazine articles about her uncle's work with soya. She does not remember when or why Dr. Ruddiman stopped working on this soy project.

She remembers a man named Jan Willemse, who worked with Dr. Ruddiman. She did not know him (though she may have met him at one time), but his name is familiar. Address: 16351 Rotunda #351, Dearborn, Michigan 48120. Phone: 313-441-9148.

6350. *SoyaScan Notes.* 1992. Dr. Edsel Ruddiman's work with soyfoods at the Ford Motor Co. (Overview). Dec. 13. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** The following is compiled mostly from interviews with Robert Boyer, but also from other published sources, as cited.

Henry Ford's three top soybean researchers during the late 1920s and the 1930s were Dr. Edsel Ruddiman (who started his soyfoods research with Ford in about 1928), Robert Allen Boyer (head of the laboratory studying industrial applications, who started his soybean research in 1931), and Bob Smith (who began work under Boyer in about 1931, then headed his own lab at Moir House from 1938-1942).

Dr. Edsel Ruddiman, a close boyhood pal and seat mate of Ford's at Scotch Settlement School, was also Ford's brother-in-law because he married Ford's sister. In 1893 Ford gave Ruddiman's first name, Edsel, to his only child (a son). Formerly dean of the School of Pharmacy at Vanderbilt University and an excellent scientist, he had started working at the Ford Motor Company in 1926. He had one lab in a building not far from Boyer's and another little lab in a building that had formerly been his home, in a beautiful, tranquil setting on one of the Twin Lakes. His primary job was to develop a milk to replace cow's milk. Ruddiman was the man who got Henry Ford interested in soyfoods. Ford soon became deeply interested in the fact that soyfoods had been used for thousands of years as a key source of high-quality, low-cost protein by millions of people in East Asia.

Henry Ford's interest in soyfoods began in the early 1930s and stemmed from the interest and work of Dr. Ruddiman. The two men's earliest soyfoods extravaganzas were the press luncheons and dinners that they developed to publicize the experimentation with soy. The first meatless menu, developed largely by Dr. Ruddiman, was served to 30 wary reporters at the Chicago Century of Progress Fair in Aug. 1934; two others were served prior to 1943. Each of the 15 courses consisted partially or wholly of soy. The following 15 dishes were served: Tomato juice seasoned with soybean sauce. Salted soybeans. Celery stuffed with soybean cheese. Purée of soybean. Soybean crackers. Soybean croquettes with tomato sauce. Buttered green soybeans. Pineapple ring with soybean cheese [tofu] and soybean dressing. Soybean bread with soybean butter. Apple pie (soybean crust). Cocoa with soybean milk. Soybean coffee. Assorted soybean cookies. Soybean cakes. Assorted soybean candy (Simonds 1938, p. 235; *Chicago Herald and Examiner* 1934. Aug. 24. p. 11). At similar luncheons served between Aug. 1934 and July 1935, soy ice cream was also served for dessert (Strother 1961).

Dr. Ruddiman also developed a soybean biscuit, which both Henry Ford and white rats apparently liked, yet one of Ford's secretaries described it with unabashed candor as "the vilest thing ever put into human mouths" (Lewis 1972).

During the 1930s in Greenfield Village, Dr. Ruddiman developed canned green soybeans (Bansei variety) and produced 590 cans in 1935 and 1,000 in 1936 (Simonds 1938).

Out of their work in developing soyfoods banquets during the mid-1930s, Ford and Dr. Ruddiman developed a 19-page soup-to-nuts booklet titled *Recipes for Soy Bean Foods,* one of the first of its kind in America. Published by the Edison Institute, it contained 58 soyfoods recipes including ones for breads, biscuits, cakes, cookies, salads, meat substitutes, soy bean milk, soy bean cheese [tofu], roasted soy beans [oil roasted soynuts], soy bean nut butter [soynut butter], and soy bean butter (made by mixing hydrogenated soy oil with salt, coloring matter and diacetyl to color and taste). Unfortunately this book was not widely distributed.

In August 1940 Ford hosted the annual ASA

convention at Dearborn. Dr. Ruddiman presented a paper on "Possibilities of Soybean Milk." Dr. Ruddiman discontinued his work for the Ford Motor Co. in 1942.

In about 1941, when Dr. Ruddiman was almost 80 years old, his wife wanted him to retire. She spoke with Henry Ford about her wish and Ford responded quickly in a way that seemed to many who knew him to be quite out of character; he essentially destroyed Dr. Ruddiman's laboratory. Ruddiman was very bitter at Ford and at times he even cried. After a short time he quit. The Twin Lakes lab was closed in 1941 (R.A. Smith 1979, p. 25).

6351. Soyfoods Assoc. of America. 1992. Soyfoods 2000: Merchandising soy products into the next century (Ad). *Natural Foods Merchandiser.* Dec. 16-page color special supplement, 8½ by 11 inches, inserted after p. 28.
• ***Summary:*** Contains full color ads by Morinaga Nutritional Foods, Inc. (Mori-Nu Tofu, Firm and Extra Firm), Lightlife Foods, Inc. (5 types of tempeh, Tempeh Burgers [Lemon Grill, American Grill, Barbecue Grill], Tofu Pups, Vegetarian Chili, Sloppy J, Foney Baloney, Fakin Bacon, Lean Links), Worthington Foods, Inc. (Natural Touch Okara Pattie, Garden Pattie, Dinner Entrée, Lentil Rice Loaf), Sovex Natural Foods, Inc. (Better Than Milk, Tofu Ice Cream [Vanilla or Strawberry], Good Shepherd Spelt, Millet-Rice Flakes, For Goodness Flakes!), Vitasoy (U.S.A.) Inc. (Light Vanilla, Original, and Cocoa soy drinks).

Contains black-and-white ads by White Wave, Inc. (Five Grain Tempeh, Meatless Tofu Steaks, Soya A Melt Soy Cheeses [Regular or Fat Free] and Singles, Lemon Broil Tempeh, Amaranth Tempeh, Teriyaki Burgers, Organic Tofu, Dairyless Non-Dairy Yogurts, Tempeh Burgers, Sea Veggie Tempeh, Meatless Healthy Franks, Snack'n Savory Tofu), Cemac Foods Corp. (Unbelievable brand Cheesecake; based on nonfat baker's cheese; contains no soy, no fat, no cholesterol), Solait International Ltd. (Solait Powdered Soy Beverage), Tofutti Brands, Inc. (Lite Lite Tofutti, Tofutti Cuties, Land of the Free [Non-dairy frozen desserts, free of fat and sugar, sweetened with fruit juice], Tofutti Egg Watchers, Better than Cream Cheese, Sour Supreme [Non-dairy sour cream], Premium Tofutti, Tofutti Soft Serve Mix), Sharon's Finest (TofuRella), American Natural Snacks (Soya Kaas), Great Eastern Sun (Miso Master brand misos), The Macrobiotic Wholesale Company, Turtle Island Foods, Inc. (Keep It Simple Stirfry–Diced Marinated Tempeh), Betsy's Tempeh (Tempeh), Quong Hop & Co. (The Soy Deli–9 Tofu Burgers, 3 Savory Baked Tofu, Pacific Tempeh, 3 Tempeh Burgers, 7 fresh water packed and vacuum packed tofu), MYCAL Group (natural dehulled soybean flakes).

Articles and sidebars include: "Welcome to the future: Soyfoods 2000." "Soyfoods Association names new executive director" (Virginia Messina, whose photo is shown). "Soyfoods Association mission statement." "The modern evolution of soyfoods," by Michael Whiteman-Jones and William Shurtleff (Shurtleff's photo is shown). "Unraveling the soyfoods merchandising mystery," by Michael Whiteman-Jones. "Research shows soyfoods may help prevent cancer," by Mark Messina, PhD (whose photo is shown). "Key reasons to buy soy: Environmental, nutritional, economic."

This attractive insert was coordinated by Franke Lampe and edited by Lisa Turner, both of NFM.

6352. Curtis, Austin W., Jr. 1992. His work, his father's work, and George Washington Carver's work with soybeans (Interview). *SoyaScan Notes.* Dec. 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Dr. Curtis, a close associate of Dr. George Washington Carver, has an honorary doctorate degree. He is now age 81. His father, Austin W. Curtis, became Director of Agriculture at West Virginia State College, a black college, in about the early 1920s. At that time he took a strong interest in soybeans as a way of enriching the soil. Dr. Curtis does not know how his father became interested in soybeans, and he does not think his father ever published anything about soybeans. Much of what his father was trying to teach farmers about soybeans wasn't understood at the time. Gradually that part of West Virginia changed from a farming to an industrial area based on gas and coal. The students gave his father the nickname "Soy Bean Curtis," but they never used it in his presence. Likewise, the students sometimes called him "Little Soy"–in his presence. His father retired from the university in about 1944. A relative of his is now preparing a biography of his father, but it may not be ready for several years.

Dr. Curtis did research twice at the Ford Motor Company in Dearborn, Michigan. In the summer of 1940, when Dr. Carver was still alive, his focus was on soy protein for use as food and spun soy protein fiber. He worked with Robert Boyer. He did not do much work with paints based on soy oil since that research had already been completed by Ford. He did not apply what he learned about soybeans after his return to Tuskegee, but he did apply the principles he learned to peanuts–which was an extension of work they had already done on peanuts. He did not do much work with soy in Alabama because at that time not many varieties of soybeans were well adapted to the climatic conditions of the south; they were primarily a midwestern crop. In 1944 the focus of his research at Dearborn was still on foods, not only with soybeans but also wild plants. His work with soy focused on making soymilk more palatable.

Dr. Carver was most interested in the soybean for its nutritional value and possible use to make low-cost foods. Neither Dr. Curtis nor Dr. Carver did any soybean breeding.

Dr. Curtis' laboratories have focused on products made from peanut oil; they have never made any soy products. Their best selling product is Curtis Rubbing Oil, made from peanut oil, for the relief of pains from arthritis and

rheumatism. It is very effective. Skin care and hair care products also sell well. In the late 1950s the company employed about 40 people including sales people; now they employ less because they use brokers. The company has not grown as much as Dr. Curtis had hoped it would. Address: A.W. Curtis Laboratories, 46 Selden, Detroit, Michigan 48201. Phone: 313-833-6979.

6353. Vaidya, Achutananda. 1992. Re: Pioneering and making tofu and other soyfoods in Nepal. Letter to William Shurtleff at Soyfoods Center, Dec. 26. 9 p.
• ***Summary:*** "I started making tofu in 1974. I did not have any connection with my uncle in starting my tofu company, however I did have a chance to see him make tofu at his residence in Kathmandu, and from that time I got the idea in my mind to make tofu myself. I learned the details of the process in Nepal from Mr. Akifumi Nakamura of Kobe, Japan, a member of the Japan Overseas Cooperation Volunteers (JOCV), who worked at the Central Food Research Laboratory in Kathmandu, which was also my office in 1974. I worked together with him as a counterpart for two years learning how to make tofu. During his stay there I learned wholeheartedly the process of making tofu. I learned from him that this food product called "Bhatmas-ko-paneer" in Nepali is known as "tofu" in Japan. Vita-Tofu is the brand-name of my tofu. This tofu is not packaged. It is sold in the form of rectangular cakes out of water-filled cans or bowls because most of the local vegetable shops do not have refrigerators. Even to this day sale of tofu is difficult during the hot summer months because of lack of refrigeration in food retail stores. At the start, for the first 4-5 years, I delivered my tofu from door to door because even at that time the people of Kathmandu did not know about tofu. They did not want to buy it because they did not know how to cook it.

"From July 1979 to March 1980 I was invited to Japan for 9 months training at the Akita Prefecture Brewing Laboratory. During that time I also learned in detail the processes for making soy sauce, miso, and soyamilk. During that period I also got a chance to read *The Book of Tofu, The Book of Miso, Miso Production,* and *The Book of Tempeh* all of which helped me very much. I still have all those books. In 1985 I was invited by the Rotarians of Akita-Aomori to return to Japan for 1 month (Jan/Feb. 1985) to receive further technical training in making tofu, miso, soy sauce, soyamilk, moyashi (sprouts), koji, fruit fermentations for wine, etc. Today I produce tofu, soy sauce, and miso in my small factory in Kathmandu. I currently have an electric wet grinder imported from Kyoto, Japan, in 1976. My other equipment (a basket pressing machine and tofu presses) were all made in Nepal by Nepalese mechanics."

Accompanying this letter are 27 color photos showing the following: Vita Tofu in Nepal. Making koji with his wife in Nepal. Studying and making tofu, miso, and shoyu in Japan in 1980 and 1985. His business card notes: "Food Technology in Brewing from Japan. Products & Suppliers: Tofu (Vita), Soyamilk (Vitabean milk), Soya Curd, Soya Sauce, & Miso."

His Curriculum Vitae notes that he was born on 28 Dec. 1947, resides at 9/374 Bhedasingh, Kathmandu, and is married. Address: Founder and owner, Nepal Soya Industries, 9/374 Bhedashing, Jamaguthi, Kathmandu, Nepal.

6354. **Product Name:** 'Nnaise: A Soya Based Dressing [Garlic, or Plain].
Manufacturer's Name: Bute Island Foods Ltd.
Manufacturer's Address: 15 Columshill Street, Rothesay, Isle of Bute PA20 0DU, Scotland, UK. Phone: 0700 505117.
Date of Introduction: 1992. December.
Ingredients: Garlic: Soya milk, sunflower oil, cider vinegar, apple juice concentrate, garlic, sea salt, lemon juice, stabiliser (guar & xanthan gums). Note: The Plain flavor contains mustard flour in place of garlic.
Wt/Vol., Packaging, Price: 325 gm glass jar.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Letter from Haydn Jones. 1995. Sept. 5. "Potted history of Green Dragon Animal Free Foods and Bute Island Foods Ltd." Which see. Soyannaise was first sold in 1987 in several local shops in Wales. Cauldron Foods objected to the name Soyannaise, so in late 1988 or early 1989 the product was renamed 'Nnaise.

Label sent by Haydn Jones. 1995. Sept. 15. 6½ by 2½ inches. Green, black, and yellow on white. The Bute Island logo of a rayed sun rising appears at top center of label. "Free from animal products. No added sugar. Refrigerate after opening. Plain: Bute Island Foods 'Nnaise is a light and creamy dressing that will compliment many foods. It is very versatile and will mix well with other ingredients to make a variety of sauces and dressings, e.g. Seafood Sauce, Tartar Sauce, Coleslaw, Curry, etc. Mixed with mashed fish or Bute Island Foods Scheese, 'Nnaise makes a tasty toast topper."

6355. **Product Name:** Tofu, Soft Tofu, Fried Tofu, Marinated Pressed Tofu, Soybean Milk.
Manufacturer's Name: China Tofu.
Manufacturer's Address: 3222 Whipple Rd., Union City, CA 94587. Phone: 510-489-7288.
Date of Introduction: 1992. December.
How Stored: Refrigerated.
New Product–Documentation: Talk with Helen Raymundo. 1996. May 28. She is a registered nurse who was born and raised in the Philippines, now who lives in Fremont, and saw a television program about this tofu company recently.

Talk with Diana Lin, wife of Bo Ming Lin, one of the two owners of the company. This company started making tofu and the other four products shown above in December 1992. The two owners are brothers, Po Hsiang Lin and

Bo Ming Lin. Their products are sold at supermarkets throughout the San Francisco Bay Area, especially in San Jose, Oakland, and San Francisco. Letter (fax) from Dana Jacobi. 2000. March 13. "The best tofu I discovered on this trip comes from China Tofu in Hayward. It had texture and taste to die for." Talk with Steven Li of China Tofu. 2000. March 13. In Dec. 1999 the company moved to Hayward. The new address is: 1781 Addison Way, Hayward, California 94544. Phone: 510-782-9728.

6356. Cole, Candia Lea. 1992. Not milk... Nutmilks! Savor these creamy drinks that keep you deliciously slim and healthy. *Vegetarian Gourmet* (*Montrose, Pennsylvania*) No. 4. Winter. p. 50-54.
• ***Summary:*** The following nuts and seeds make good non-dairy milks: Nuts: Almonds (the favorite), Brazil nuts, cashews, filberts, peanuts, pecans, pine nuts, pistachio nuts, walnuts. Seeds: Flaxseed, pumpkin seeds, sesame seeds. Contains 10 recipes.

6357. *INTSOY Newsletter* (*Urbana, Illinois*). 1992. Processing course highlights opportunities for entrepreneurs. No. 44. p. 1-2. Dec.
• ***Summary:*** "A total of 15 people from 11 countries attended the recent INTSOY-sponsored processing short course... Major topics were extrusion technology, soy beverage processing, mechanical oil pressing, and soybean protein technology." For the first time, the majority of the participants were from private businesses. "All the participants had experience in established businesses, universities, or government soybean programs." They came from the following countries: Venezuela, USA, South Africa (3), Cameroon, Zimbabwe, Kenya, Uganda, Mozambique, Egypt, Sri Lanka (2), China (2). Address: Univ. of Illinois, Urbana-Champaign, 113 Mumford Hall, 1301 W. Gregory Dr., Urbana, Illinois 61801.

6358. *INTSOY Newsletter* (*Urbana, Illinois*). 1992. INTSOY launches major soybean processing project in Egypt. No. 44. p. 2-3. Dec.
• ***Summary:*** "INTSOY and Egyptian officials have launched a $1.9 million project to boost soybean utilization in North Africa and the Middle East. The objective of this two year program is to introduce Egyptian entrepreneurs to new soybean processing techniques.

"This effort, designated as the Soybean Utilization Technical Assistance Program, concentrates on the development of private sector enterprises by strengthening the new food processing technologies in the country. INTSOY's chief collaborator in the project is the Egyptian Ministry of Agriculture through the Food Technology Research Institute (FTRI) of the Agriculture Research Center, Giza, Egypt. Funding is provided by the National Agriculture Research Project through the U.S. Agency for International Development (USAID) in Cairo.

"Ahmed M. Khorshed and Nabih Ibrahim, who serve as director and deputy director respectively of FTRI, are the lead project directors in Egypt. Karl Weingartner serves as project leader...

"The project will result in the establishment of two model commercial pilot plants, one for the production of soymilk and another for high-protein, low-fat soy meal. FTRI will also establish a test kitchen, taste panel rooms and a classroom for instruction... As part of the project, at least 45 Egyptians will receive training at the University of Illinois...

"Egypt currently produces about 100,000 MT [metric tons] soybeans. Soybeans are grown in the area along the Nile River valley. The land devoted to growing soybeans is unlikely to increase because of the competition from cotton, which is essential to the country's export market. Egypt imports soybeans, soy oil, and soy meal from the United States."

6359. **Product Name:** [Alitey, and Monsoy (Soymilks)].
Foreign Name: Alitey, Monsoy.
Manufacturer's Name: Liquats Vegetals, S.A.
Manufacturer's Address: Ctra. de Vic, Km. 1,230, E-08553 Viladrau (Girona), Spain. Phone: +34-3 884 80 69.
Date of Introduction: 1992. December.
New Product–Documentation: Talk with Michael Makowski of DE-VAU-GE in Germany. 1993. Dec. 8. Active soymilk manufacturers include Liquats Vegetals S.A. in Viladrau (near Girona), Spain. They started about 1 year ago, make their soymilk from whole soybeans, and are a private company. Letter (fax) from Michael Makowski. 1993. Dec. 10. Gives the company address and phone number.

Letter (fax) from Xavier Vilacis of Liquats Vegetals, S.A. 1994. Jan. 27. The company's first two products, both types of soymilk, were introduced in December 1992; Alitey was sold to the general public and Monsoy was sold only to specialty shops that sell vegetarian- and health-food products.

6360. MYCAL Group (Nichii Company of America, Inc.). 1992. If anyone tells you to add water to your soy drink tell them they're all wet (Ad). *Whole Foods.* Dec. p. 13.
• ***Summary:*** "Can you believe it? There are reputable manufacturers going around saying that the best way to make light soy drink is to add water. We don't even want to think about what diluting soy drink with extra water would do to the taste.

"Obviously, they haven't heard about natural dehulled soybean flakes–the most natural way to make light soy drink (and tofu) there is. Without adding any chemicals, preservatives, or anything unnatural, natural dehulled soybean flakes are:

"Made fresh daily. Lower in fats (lipids). Lower in

calories. Lower in percentage of calories derived from fat. Higher in protein. Longer-lasting on your shelf. Better for the environment. Ecologically sound." Address: 23440 Hawthorne Blvd., Suite 140, Torrance, California 90505. Phone: 213-791-0010.

6361. *Natural Foods Merchandiser.* 1992. Key reasons to buy soy: Environmental, nutritional, economic. Dec. Soyfoods 2000 special supplement insert. p. 14.
• ***Summary:*** Economic: "Soy products are the fastest growing protein category in the natural products stores... The number-two selling health food standard keeping unit (SKU) in natural products stores is a soy product–soy milk. More new products in the soy category are introduced each year in natural product stores than in any other category. Many of these new products are convenience oriented–a bonus for customers on the go."

6362. Schaefer, Mary J.; Holdt, Candace S. 1992. Comparison of pudding, soup and custard prepared from soymilk or lowfat milk. *J. of Food Quality* 15(6):409-21. Dec. [25 ref]
Address: Dep. of Food Science & Human Nutrition, Univ. of Missouri, 318 Clark Hall, Columbia, Missouri 65211.

6363. *SoyaCow Newsletter* (*Ottawa, Canada*). 1992. Child Haven ships more SC-20's to India. 1(4):1. Oct/Dec.
• ***Summary:*** "Six SoyaCows of the latest model were shipped to India by air on November 30, 1992. Child Haven, Maxville, Ontario, a registered charity in Canada, USA and India, is in the third year of CIDA funding for its Soymilk Cottage Industry project in India.

"The machines will be installed at six selected sites by Ankur Services of Hyderabad. They have already installed six Soya-Cow machines sent earlier."

6364. Tu-Bich-Thuy. 1992. The current status of soybean production in South Viet Nam. *Palawija News* (*Bogor, Indonesia*) 9(4):1-7. Dec.
• ***Summary:*** Contents: Soybean producing areas in South Viet Nam: Dong Nai Province (this area in eastern South Viet Nam supplies 25% of the nation's soybeans), Mekong River delta. Technical aspects of soybean production (in each of the two regions mentioned above): Land preparation, fertilizer use, varieties, weeds, pests and diseases, cropping patterns, mixed cropping with maize, soybean before tobacco, economic efficiency. Soybean utilization in Viet Nam: Utilization as food (80% of the crop is used to produce soybean curd, fermented soybean curd, soybean milk, soybean meal and small quantities of soybean oil), utilization for soybean glue, utilization as stock feed, utilization as fertilizer. Policies necessary for the development of soybean production in South Viet Nam: Government's role in soybean production. Production constraints. Research activities conducted to date by U.A.F. Concluding remarks. Future research activities of the U.A.F.

6365. Whiteman-Jones, Michael. 1992. Unraveling the soyfoods merchandising mystery: Selling techniques ultimately depend on store size, location and customer demographics. *Natural Foods Merchandiser.* Dec. Soyfoods 2000 special supplement insert. p. 8-11.
• ***Summary:*** The views of three industry experts–Steve Demos of White Wave, John Paino of Nasoya Foods, and Peter Golbitz of Soyatech–on the best approaches to marketing soyfoods in America.

White Wave boasts gross annual sales of about $5 million, roughly 80% of which come from natural products stores and 20% in conventional supermarkets. Demos wants to position soyfoods as a category. "Rather than integrate soyfoods with similar products–putting tofu dogs with hot dogs, for instance–he believes they should get their own section. Call it a protein case, or a healthy alternatives section, or even tack on a sign that says 'Phony foods sold here.'" Safeway, a mainstream supermarket giant, is experimenting with separate soyfoods sections in some of its stores, but most supermarkets practice integration. Natural products stores often merchandise soyfoods together in a separate section, and one such large store "can easily sell 30 to 50 times as much soyfoods as a supermarket."

Paino, who declined to reveal Nasoya's sales figures, sells soyfoods nationwide in natural products stores, supermarkets, and Asian markets. He favors integration rather than a separate protein section. He focuses on eye-catching labels, point-of-sale merchandising tolls such as shelf talkers, tear-away recipe cards, and in-store demonstrations. "Nasoya built its market by merchandising tofu in the produce section and has enjoyed solid sales and growth as a result."

Golbitz, a leading industry consultant, "has surveyed stores across the country about soyfoods merchandising. His conclusion: Integration works best for some stores, separate sections better for others. The major determining factors are store size, traffic, and demographics." The answer "has to be regionalized, localized, and individualized. Supermarkets and large-format natural products stores, for instance, generally have better luck with integration." Integration helps transitional customers. "Soy milk just doesn't seem as strange when its standing next to a carton of cow's milk, he says, and the marketing power of familiarity can't be underestimated... One thing Golbitz is certain of, however, is that soyfoods sales are going to increase whether the products are merchandised in a separate section or integrated."

6366. **Product Name:** Almond Cheeze (Cheeselike Product with Casein) [Cheddar Style, Mozzarella Style, or Garlic and Herb].

Manufacturer's Name: Wholesome & Hearty Foods (Product Developer-Marketer).
Manufacturer's Address: 1416 S.E. 8th St., Portland, OR 97214. Phone: 503-238-0109.
Date of Introduction: 1992. December.
Ingredients: Garlic & Herb: White Almond Beverage (water, brown rice syrup, almonds, lecithin, barley malt, natural vanilla flavor, sodium citrate, sea salt, carrageenan), casein [a milk protein], canola oil, salt, sodium and calcium phosphates, citric acid, natural flavoring, garlic & herb, carrageenan, vitamin A.
How Stored: Refrigerated.
Nutrition: Per 1 oz.: Calories 45, protein 7 gm, carbohydrates 2 gm, fat (monounsaturated) 1 gm, cholesterol 0 mg, sodium 230 mg potassium 20 mg. 23% calories from fat.
New Product–Documentation: *Statesman Journal* (Salem, Oregon). 1992. Nov. 11. "Almonds are used in non-dairy cheese." The product, which also contains casein and carrageenan, "is a boon for dieters and people who can't eat dairy products. Unlike tofu cheese, it melts [sic], and the Cheddar-flavor cheese actually tastes a lot like American-style cheese. The garlic and herb cheese is nowhere near as convincing.

Product Alert. 1992. Dec. 21. Almond Cheeze is a low-fat cheese that comes in 3 flavors.

Talk with industry observer. 1993. Jan. 28. This product and AlmondRella (marketed by Sharon's Finest in California) were both debuted at the same time, at the Natural Products Expo East in Baltimore, Maryland, in the fall of 1992, but they were developed independently. This product was first shipped in about Dec. 1992. There are many irregularities in the label, which implies the product is completely dairy free, the term "Cheeze" is illegal, the label says "soy free" but the product contains soy lecithin. The garlic and herb flavor contains 2 sweeteners and vanilla flavor. The product contains a very small amount of almonds.

Photocopy of Label. 1992. Feb. 12. 4.25 inches square. "Soy free. Lactose free. No cholesterol. Made with Non Dairy White Almond Beverage." RDI (Reference Daily Intake) figures are given.

6367. **Product Name:** Soya Milk (Made from Soy Protein Isolates) [Liquid, or Powdered].
Manufacturer's Name: Winer Industries.
Manufacturer's Address: P.O. Box 65480, Benmore 2010, Sandton, South Africa. Phone: (011) 802-8585.
Date of Introduction: 1992. December.
New Product–Documentation: Letter (fax) from B. Allan Winer. 1992. Dec. 21. "I have developed a soya milk manufactured from isolated soya protein and vegetable fat. This product tastes identical to cow's milk and has been very well accepted in the South African market... I also produce a powdered soya milk that has been well received in the ice cream industry and for hunger relief." Detailed product specifications are given for a "Liquid Soya Milk."

6368. **Product Name:** Fruit juices & Soja Drink.
Manufacturer's Name: Cebon.
Manufacturer's Address: Abidjan, Ivory Coast.
Date of Introduction: 1992.
Ingredients: Soybeans, water, flavor, sugar.
Wt/Vol., Packaging, Price: 1 liter carton box or 100 & 200 ml PE pouch.
How Stored: Refrigerated.
New Product–Documentation: J.L. Voisin. 1995, Oct. 3-5. Dairy like soyfoods in Africa: Evolution & perspectives. Paper presented at the Third Bi-Annual SoyAfrica Conference. 5 p. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by Aproma. Actimonde of Archamps, France, installed an Agrolactor (soymilk processing plant) at this company in 1992. This was the second commercial Agrolactor installed worldwide. This plant had planned to process pineapple juice and soy drinks, but in the end only pineapple juice was commercially successful.

Note: This is the earliest known commercial soy product made in Cote d'Ivoire (Ivory Coast).

6369. Mapendo, Bulangi. 1992. [Conditions for establishing a soymilk factory in Zaire]. Thesis at Bukavu High Institute of Management, Zaire. [Fre]*

6370. **Product Name:** Soy Supreme Spray Dried Soymilk, Premium Fiber Reduced Soymilk, Reduced-Fat Soymilk, 25 Soyamilk.
Manufacturer's Name: Minnesota Waxy (Marketer-Distributor). Made in Minnesota.
Manufacturer's Address: Div. of MWCG Export Co., P.O. Box 128, Hope, MN 56046. Phone: 1-800-342-6976 or 507-451-3316.
Date of Introduction: 1992.
Wt/Vol., Packaging, Price: 50 lb multi-wall kraft paper bag with poly liner.
New Product–Documentation: Ad in Soya Bluebook. 1992, p. 53. A table shows that each of these is a dry product containing 4% moisture.

Talk with Minnesota Waxy. 1993. Jan. 14. The company's main business is exporting waxy corn and soybeans (both regular and organic). Soy Supreme is made in Alexandria, Minnesota.

6371. Peace, R.W.; Sarwar, Ghulam; Touchburn, S.P. 1992. Trypsin inhibitor levels in soy-based infant formulas and commercial soy protein isolates and concentrates. *Food Research International* (*Ottawa, Ontario, Canada*) 25:137-41.
• ***Summary:*** Soy protein concentrates had levels of trypsin inhibitors intermediate to those in the raw soybeans and

soy protein isolates tested. "Infant formulas also varied with ready-to-feed forms generally having higher, and concentrates and powders lower levels of activity. Residual trypsin inhibitor contents of the infant formulas tested ranged from 3 to 28% of the highest levels measured in raw soy samples." Note: This 28% figure is surprisingly high! Address: 1-2. Health and Welfare Canada, Bureau of Nutritional Sciences, Food Directorate, Health Protection Branch, Tunney's Pasture, Ottawa, Ontario, Canada K1A 0L2.

6372. **Product Name:** Energy Balance (Powdered Drink Mix for Athletes) [French Vanilla, or Dutch Chocolate].
Manufacturer's Name: Pharma Chemie.
Manufacturer's Address: Syracuse, Nebraska.
Date of Introduction: 1992.
Ingredients: Incl. soy protein isolate, vitamins, minerals, fructose.
Wt/Vol., Packaging, Price: 45 oz cannister.
How Stored: Shelf stable.
New Product–Documentation: Soybean Quarterly (Lincoln, Nebraska). Vol. 1, No. 1. p. 3. "Home-grown power fuels strength beverage." Pharma Chemie is run by Miak Pieloch. This powdered drink mix contains soy protein isolate (about 36% by weight), vitamins, minerals, and carbohydrates in the form of fructose. The soy protein isolate was purchased from ADM. Pharma Chemie manufactures about 60 different products for human and animal health applications.

6373. **Product Name:** First Alternative (Soy-Based Beverage).
Manufacturer's Name: Protein Technologies International.
Manufacturer's Address: St. Louis, Missouri.
Date of Introduction: 1992.
New Product–Documentation: Michael Whiteman-Jones. 1992. Natural Foods Merchandiser. Feb. p. 19. This product is now being test marketed in Phoenix, Arizona.

6374. **Product Name:** [La Colina {Soymilk}].
Foreign Name: La Colina.
Manufacturer's Name: Protein Technologies International.
Manufacturer's Address: Venezuela.
Date of Introduction: 1992.
New Product–Documentation: Saundra Bottger. 1992. Republican (Wakefield, Nebraska). Sept. 3. "Soy Bits." A new soy milk has been introduced in Venezuela (the country's first) by "Protein Technologies International (PTI) and one of Venezuela's leading edible oil processors." "The goal was to supply a low-cost product for school lunch programs. Each 100 pounds of soy milk produced contains 25 pounds of vegetable fat from soyoil and 25 pounds of soy protein isolate."

6375. **Product Name:** Snow White brand Soymilk.
Manufacturer's Name: Pure Land Co.
Manufacturer's Address: 3456 Depot Rd., Hayward, CA 94545. Phone: 510-670-8621.
Date of Introduction: 1992.
How Stored: Refrigerated.
New Product–Documentation: Talk with Jim Pong, owner of Pure Land Co. 1998. Oct. 21. He delivers this soymilk to Safeway in the Bay Area.

6376. Atlas, Nava. 1992. Soups for all seasons: Bountiful vegetarian soups. New Paltz, NY: Adam Enterprises. 128 p. Illust. by Nava Atlas. Index. 21 x 18 cm.
• ***Summary:*** The witty literary aphorisms, quotations (with sources), and marvelous whimsical drawings that have become the author's trademark appear throughout this vegetarian cookbook. The recipes are arranged by season. The last chapter, accompaniments (p. 107-24) includes bread, muffins, biscuits, scones, croutons, and dumplings.

Soy related: Soymilk is given as an alternative in every recipe that calls for milk or low-fat milk (see p. 20, 28, 31, 34, 92, 123). Likewise, soy cheese is given as an alternative that calls for dairy cheese (see p. 16, 32, 114). "Natural soy sauce" is used to season many recipes (see p. 14, 80, 82, 119). Simple miso broth (with kombu and diced tofu {bean curd}, p. 13). Dashi with miso and vegetables (p. 13). Miso soup with winter vegetables (with wakame {Japanese sea vegetable}, shiitake mushrooms, etc., p. 62). Chinese cabbage and bean curd soup (with "½ pound tofu {bean curd}, cut into ½-inch dice," p. 80). Miso spinach soup with baby corn (with "¼ pound block tofu, cut into ½-inch dice," p. 81). Address: Author and illustrator, New Paltz, New York.

6377. Berk, Zeki. 1992. Technology of production of edible flours and protein products from soybeans. *FAO Agricultural Services Bulletin* No. 97. 178 p. [173 ref]
• ***Summary:*** Contents: Foreword. 1. The soybean: Background, production, marketing, agricultural characteristics, physical characteristics and morphology of the soybean, chemical composition (moisture, proteins, lipids, carbohydrates, minerals). 2. Utilization of soybeans: Utilization options for soybeans, whole bean utilization, the oil mill route (utilization of the oil fraction, utilization of the meal fraction). 3. Oil-mill operations: The expeller (operation principles, advantages and disadvantages of the expeller process, equipment), the solvent extraction process (operation principles, receiving and storage of soybeans, preparation for extraction, solvent extraction, post-extraction operations). 4. Edible soybean flours and grits: Introduction, definitions, composition and quality parameters (definition and classification of edible soy flours and grits, composition, quality standards), full fat soy flour and grits (production processes, utilization), defatted soy flours and grits (production processes, utilization). 5. Soybean protein

concentrates (SPC): Introduction, definition, composition, types, production processes (the aqueous alcohol wash process, the acid-wash process, heat denaturation/water extraction process), utilization (basic considerations, use in bakery products, meat products, other uses). 6. Isolated soybean protein (ISP): Introduction, definition, composition, types, production processes (conventional process, problems in conventional processing, alternative processes), utilization (meat products, seafood products, cereal products, dairy-type products, infant formulas, other uses). 7. Textured soy protein products: Introduction, spun-fibre based texturization, extrusion texturization, steam texturization, utilization (meat extenders, meat analogs, other applications). 8. Soymilk and related products: Introduction, composition and classification, production processes (the traditional process, the Soya Technology System (STS) Process, the INTSOY (Illinois) process, the Buhler Process for soy micro-powder), soymilk related products. 9. Tofu, tempeh, soysauce and miso: Introduction, soy sauce, miso, tempeh, tofu (Introduction, regular and silken tofu, kori-tofu, deep-fried tofu, fermented tofu). Appendixes: I. Standards and specifications. II. Organizations and government agencies. III. Manufacturers and suppliers of soybean processing plants and equipment. IV. Sample budget quotations for complete soy processing or soybean related food manufacturing plants. Address: Technion–Israel Inst. of Technology, Haifa, Israel.

6378. Cardenas, Danilo C.; Legaspi, Benjamin M. 1992. The status of soybean production and utilization in the Philippines. In: Increasing Soybean Production in Asia: Proceedings of a Workshop. 1992. Bogor, Indonesia: CGPRT Centre. 187 p. See p. 119-35. Held 21-24 Aug. 1990 at Phitsanulok, Thailand. [8 ref]

• ***Summary:*** Contents: Introduction. Production situation: Production trends, economics of soybean production, price trends, marketing of soybean. Philippine foreign trade situation: Soybean imports, soybean exports. Soybean utilization. Government policies/programs affecting the industry: Policies, programs. Major problems besetting the local soybean industry. Conclusions.

The soybean, also know locally as "utao," has become an increasingly important economic crop in the Philippines. Yet in 1987 (the latest year for which figures are given) only 5,698 tonnes (metric tons) were harvested from 6,490 hectares, having a value of 45,169,000 pesos. This represented only 0.02% of the total Philippine quantity of agricultural production, and only 0.05% of total farm area and value. Philippine soybean production peaked at 11,466 tonnes in 1982. Most of the country's soybeans are grown in the southern Mindanao region (72.1%), followed by northern Mindanao (10.0%) and central Mindanao (9.4%). Imports of soybeans and products have steadily increased since Philippine farmers do not produce enough soybeans to meet local demands; the value (FOB US$) rising from $61,989,000 in 1980 to $127,981,000 in 1988. The main imports are soybean meal (accounting for 86.87% of total import value), refined soybean oil (5.19%), soybeans (4.18%), and crude soybean oil (223%). Before March 1986 the National Food Authority (NFA) had the sole authority to import soybeans, but with the introduction of the trade liberalization program, importation has reverted to private firms. In 1989 the country's major sources of imported soybeans were China (which supplied 42% of total imports), Brazil (34%), and the USA (15%). Exports, which are negligible, have grown from $136,000 to 1,123,000 during the same period. The main exports are soy sauce (accounting for 91.03% of total value), salted and fermented soybeans [fermented black soybeans] (tausi, 3.34%), and soybeans (2.65%).

Table 7 lists and describes "Soybean-based food products popularly used in the Philippines." Fermented products include soy sauce, salted and fermented soybean (*tausi*), tempe (tempeh), soybean paste (miso), and soybean curd (fermented tofu cubes; a soft cheese-type product with a salty but mild flavor, eaten as a relish or cooked with meat and vegetables). Non-fermented products include soybean sprouts (*toge*), soybean cheese (*tokwa* [tofu]), Geerlings cheese (taho, soymilk curds; a sweet dessert or snack food for children), soybean milk, and roasted soybean (soy coffee).

"In terms of food usage, Filipinos, unlike other Asians, have not developed a taste for soya-based products... Most of the soy products available in the market are either made at home or in family-operated shops.

"It is interesting to note from the report of Co (1987) that small scale food processors engaged in manufacture of taho and tokwa preferred locally grown beans to imported ones. They claimed that local soybeans have a distinctive 'fresh' quality which imparts a finer and smoother texture to their finished products providing a longer shelf life than that produced from imported beans.

"Recently, several developments in the local economy have signaled a revival of interest in the use of soybean as food. In 1980 Nestle Philippines Incorporated began commercial production of powdered soymilk products and later a baby soya-cereal food formulation and a soya-based meat extender which is produced primarily for export to other Asian countries. Today Nestle Philippines, in co-operation with the Land Bank of the Philippines, the Regional Offices of the Department of Agriculture and PCARRD is encouraging local production of soybean and had adopted a no importation policy.

"Some years ago, the use of TVP also gained a permanent foothold in the local processing industry. It is used in the manufacture of ground meat products and as a meat extender. Almost all TVP used in the country is imported except for the locally manufactured full-fat TVP

which is being produced by the Vitarich Corporation, one of the biggest feed millers in the country. The company has built a full-fat soya processing plant capable of utilizing 900 MT [metric tons] of soybean per month. Unfortunately, all its raw soybean requirements are imported from the U.S. and China.

"Soybean flour, protein concentrate and protein isolates are the newest soya-based products and are now used extensively in the country for the formulation of meat emulsion products. All raw materials are imported and there is no local manufacturing capability at present."

"Programmes: As early as the 1970s, the government tried to involve itself to some degree in boosting national soybean output, despite the low priority it accorded to soybean in general. It was an involvement borne out of an urgent need to meet the growing requirements of the local feed milling and livestock industry, rather than of a need to address the high incidence of malnutrition among Filipinos. Accordingly, the government launched a number of programmes to improve soybean production, most of which failed to achieve their goals. At present, only the PCARRD-coordinated Soybean Pilot Production Programme continues to function. This programme was initiated in late 1983." Address: 1. Supervising Science Research Specialist, Philippine Council for Agriculture, Forestry, and Natural Resources Research and Development (PCARRD); 2. Dep. of Agriculture Bureau of Plant Industry, Los Baños National Crop Research and Development Centre. Both: The Philippines.

6379. Chainuvati, Chavalvut. 1992. Soybean production and utilization in Thailand. In: Increasing Soybean Production in Asia: Proceedings of a Workshop. 1992. Bogor, Indonesia: CGPRT Centre. 187 p. See p. 1-15. Held 21-24 Aug. 1990 at Phitsanulok, Thailand. [6 ref]

• ***Summary:*** Contents: Introduction: Importance of agriculture, establishment of the Department of Agricultural Extension, DOAE's functions & responsibilities, soybean production, soybean production area, crop seasons, cultivation practices, harvesting, vegetable soybean. Soybean production and consumption campaign: Previous activities, 1990 activities, new creative work. Conclusion.

Thailand produces about 650,000 tons of soybeans each year. Of this, the first-grade seed is used for either home food industries (150,000 tons) or for next season's seed and other grain use. The remaining 500,000 tons are second grade seed, which are crushed to yield soy oil and soybean meal. The 20% of production used for food is used as follows: Fresh soybeans (*toa rae*) sold in open markets. Home industries: Soymilk, curd (tofu), soy sauce, fermented soybeans (*tao chiew*), soybean sprouts, starch or protein isolate for hot dogs or other sausages, and crisps (*Tao Nao*). Soy milk industries: Instant powdered milk mixed with dairy milk, fresh soymilk in packages, fresh soymilk in open market restaurants. "No soy grain [soybean seeds] is exported, except for a small amount of first-grade soybean to Singapore and Malaysia for making the above mentioned food."

"Vegetable soybean: Vegetable soybean is becoming more popular in agri-business, as many frozen-product companies are showing interest in this new crop. Seed is imported from Japan and Taiwan. Production yield has been impressive in several regions of the country such as Chiangmai, Chachoengsao, Petchburi, etc. Two companies which are close to the extension offices, are Chiangmai Frozen Food Co. and Okada Corporation Ltd.

"The Department of Agricultural Extension plays the role of middleman between private companies and the farmer. Extension officers also transfer new information to the local farmers. Additionally, a national plan on vegetable soybean has been submitted to the policymakers and a future plan includes the promotion of domestic consumption."

"Previous activities: In 1972 the idea of a soybean campaign was first thought of by scientists in the Institute of Food Research and Product Development, Kasetsart University and the Department of Agricultural Extension. The major sponsor and co-creator, was the American Soybean Association. The co-institutes organized a grand dinner to open the campaign. Afterwards, the Department of Agricultural Extension encouraged Bangkok and provincial headquarters to organize exhibitions, field days and local broadcasting or publications on soybean production and processing. The home-economists from various provinces and organizations met for training and a seminar. The Food Institutes of Kasetsart University played a major role through publications, technology transfer, demonstrations and seminars."

"Since the opening of the soybean campaign, we assume that about 50 percent of the total population has received information about soybean. At least 10 percent of the population has started or increased soybean consumption, both industrial and home made products. This evaluation was carried out by the working group using stratified random sampling with a well-designed questionnaire.

"From general observation, soybean has become more popular than in the past. Urban people are now aware of soybean products and do not object to consuming soybean in their regular diet. Rural people, however, have very definite ideas about food and it is difficult to change their traditional food habits. The main target of our campaign was therefore to introduce soybean products into the daily food pattern of rural villagers." Address: Div. of Crops Promotion, Dep. of Agriculture Extension, Bangkok, Thailand.

6380. Cox, Peter. 1992. Why you don't need meat. Revised ed. London: Bloomsbury Publishing Ltd. [ix] + 278 p. Foreword by Linda McCartney. Illust. Index. 24 cm. [373* ref]

• ***Summary:*** A convincing argument against meat after the

advent of Mad Cow Disease in the UK.

Contents: Acknowledgements. Foreword by Linda McCartney. 1. Everything you're not supposed to know. 2. Apocalypse cow! 3. Pigtales. 4. The A to Z of good health. 5. Greener cuisine. 6. Everything you really need to know. 7. The composition of vegetarian foods.

Table of food groups for a vegan diet (p. 171), designed by Dr. Michael Klaper; the section on Legumes in this table mentions "Soy products (milk, tofu, tempeh, Textured Vegetable Protein, etc.). Recipes include: Scrambled tofu (with "1 x 297 gm {10½ oz} carton tofu, drained," p. 189). Tempeh marinade (p. 190). Tofu marinade (p. 191-92).

In Chapter 6, the subsection on beans states that they "are a marvelous source of protein, fibre, iron, the B vitamins and, when sprouted, vitamin C... beans can either look like beans or they can be transformed into one of the many delicious and nutritious bean products which supply the food value but not the same beany experience. Among these are soya milk, tofu, TVP (textured vegetable protein), tempeh, soya yogurt and ice cream, marinated tofu and soya cheeses of every description.

"Second, beans can be a musical vegetable if you don't follow the three golden rules of cooking them:" (1) Let them soak overnight in water. (2) "Don't cook beans in the soaking water, and never cook them without rinsing them." (3) Don't under-cook beans. They should be soft enough to squash against the roof of your mouth using normal pressure from your tongue. Address: First Chief Executive of the Vegetarian Society of the UK, England.

6381. Danjou, Jean-Luc. 1992. Les nouvelles recettes du soja: tonyu, tofu [New soya recipes: Soymilk, tofu]. Ingersheim 68000, Colmar, France: Sojaxa, Editions S.A.E.P. 64 p. Illust. (photos by Philippe Ducos). 22 cm. [Fre]*
• ***Summary:*** This very attractive cookbook contains 50 delicious-looking recipes using soymilk and tofu, developed by the author who is widely regarded as France's top chef. A photo accompanies each recipe. Address: France.

6382. Gregorson, Jon. 1992. The good earth. Vancouver, Toronto, Canada: Whitecap Books. viii + 211 p. Index. 23 cm. [30 ref]
• ***Summary:*** The entry for "Chinese green bean (*Vigna sesquipedalis*) (p. 50-51) states: "Chinese green beans are excellent very lightly steamed and served with oil and chopped garlic. They are also very good in a black bean sauce with rice or millet." The entry for "Soybean (*Glycine max*) (p. 166-67) states: The "importance of soybean products for vegetarians can scarcely be overemphasized. Such products include tofu or bean curd, tempeh, soy "milk," soy flour, and the various soybean sauces and pastes..." Tofu is perhaps the most important soybean product. Address: Eugene, Oregon.

6383. Jacques, Hélène; Laurin, D.; Moorjani, S.; et al. 1992. Influence of diets containing cow's milk or soy protein beverage on plasma lipids in children with familial hypercholesterolemia. *J. of the American College of Nutrition* 11(S):69S-73S. [23 ref]
• ***Summary:*** Soy protein seems to have anti-atherogenic properties. There is also the possibility that reliance on soy-based beverages may be beneficial in preventing coronary heart disease in children with familial hypercholesterolemia. Address: Dep. of Human Nutrition and Consumer Studies, Laval Univ., Lipid Research Unit, Quebec, Canada, and Protein Technologies International, St. Louis, Missouri.

6384. Lark, Susan M. 1992. The menopause self help book: A woman's guide to feeling wonderful for the second half of her life. Berkeley, California: Celestial Arts. 239 p. Illust. Index. 22 x 22 cm. [228* ref]
• ***Summary:*** This is a revised edition (but revised only in very small ways) of the 1990 edition, also published by Celestial Arts. The cover of both books is the same except that the words "Revised & Updated" appear near the top of the cover in the 1992 edition–but not on the title page. The title page and the total number of pages in both editions are the same. Page 234, the index, and the following page about the author are all slightly expanded. The page facing the inside rear cover, advertising various books published by Celestial Arts, has been completely revised. The rear cover has a more recent portrait photo of the author. The text related to soy is identical and on the same pages.

Susan M. Lark, M.D., born in 1945, "is a noted authority on women's health care and preventive medicine. Dr. Lark has been on the clinical faculty of Stanford University Medical School, Division of Family and Community Medicine, where she continues to teach. She has been the director of a number of clinical programs for women and worked with thousands of patients in her nearly twenty years of private practice... Dr. Lark is available for phone consultation at (415) 964-7268." Address: M.D., 101 First St., Suite 441, Los Altos, California 94022. Phone: 415-964-7268.

6385. Leneman, Leah. 1992. The tofu cookbook. Hammersmith, London, England: Thorsons–An imprint of HarperCollins Publishers. 127 p. Illust. Index. 24 cm.
• ***Summary:*** "These no-meat, no-dairy, cruelty-free recipes foster health and a healthy environment by replacing meat and dairy products in traditional recipes with tofu... and soy milk. From bouillabaisse and guacamole to lasagna, curries, and ice cream, here are delicious new takes on your favorite international recipes." The copyright page notes: "Many of these recipes previously appeared in *The International Tofu Cookery Book* and *Soya Foods Cookery.*

Contents: Introduction. Types of tofu. Other soya (soy) foods: Soya milk, soya yogurt, soya mayonnaise, bean

curd sticks or sheets, tempeh, soy sauce, miso, soya cheese (such as Veeze). Notes on recipes. Making tofu at home. 1. Soups and dips. Note: Ingredients for every recipe are given in both Imperial/Metric and American units. 2. Salads. 3. British- and American-style dishes. 4. Mexican-style dishes. 5. Mediterranean-style dishes. 6. Indian-style dishes. 7. Chinese- and other Far Eastern-style dishes. 8. Desserts. Recipe reference chart (for quick and easy recipes, recipes suitable for a single portion, and recipes for a dinner party).

Note: *Webster's Dictionary* defines bouillabaisse (pronounced bu-yuh-BAYZ, a term derived from the French and first used in 1855) as a highly seasoned fish stew made with at least two kinds of fish. See also: Potpourri. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

6386. Margen, Sheldon. 1992. The wellness encyclopedia of food and nutrition: How to buy, store, and prepare every variety of fresh food. New Nork, NY: Rebus. 512 p. Illust. Index. 26 x 21 cm.

• ***Summary:*** Soy-related information appears on the following pages: Soybeans, illustrated and described (p. 60). Sprouts, including soybean and adzuki bean sprouts (p. 158-60). "Soybean sprouts contain small quantities of toxins that can be harmful, if eaten in large quantities" [uncooked, see p. 356]. Legumes (p. 348-58), incl. soybeans, "soy nuts," soy milk. Legumes are "by far the best plant source of protein..." Per half 3½ ounces (½ cup cooked) soybeans contain more calories, fat, protein, iron, and calcium than any other of the 15 legumes listed (p. 351). How to avoid the gas problem. Tofu, miso, and tempeh (p. 357, sidebar). Non-dairy frozen desserts (made from tofu, p. 461). Soy cheese (p. 469). Soybean oil and margarine (p. 497-98).

Concerning vitamin K, see p. 16, 27, 30. The RDA for adults is 45-80 mcg. The body stores this fat-soluble vitamin for a relatively long time. Without this vitamin, blood would fail to clot. Preliminary studies suggest it also plays a role in maintaining strong bones in the elderly. Bacteria in the body's intestines manufacture about 80% of the vitamin K we need, and the rest comes from the diet. Deficiencies are almost unknown, and they are usually caused by an inability to absorb the vitamin, rather than an inadequate intake. Sources: Cabbage, cauliflower, spinach and other leafy vegetables, cereals, soybean oil and other vegetable oils. Address: School of Public Health, Berkeley, California.

6387. PKL–A company of the SIG Group. 1992. Innovations for the world of packaging. Linnich, Germany. 16 p. 30 cm. Manufacturer's catalog. [Eng]

• ***Summary:*** SIG is the Swiss Industrial Group (*Schweizerische Industrie-Gesellschaft* in Neuhausen, Switzerland), which acquired 75.1% of PKL In 1989, and the rest in 1991. PKL owns Combibloc, which makes aseptic packaging. Contents: PKL–an international group of companies. An idea grew into an industry–The combibloc aseptic carton. Combibloc aseptic gains new markets–bit by bit. PKL has a long tradition of concepts that work. PKL offers more than just packaging. PKL products create brand awareness and help rationalisation. PKL products that deliver what they promise. Directory of PKL overseas factories and offices. Address: PKL Verpackungssysteme GmbH, Rurstrasse 58, D-5172 Linnich, Germany. Phone: (24 62) 202-0.

6388. Shurtleff, William; Aoyagi, Akiko. comps. 1992. Marketing soymilk and soymilk products: Labels, ads, posters & other graphics. Lafayette, California: Soyfoods Center. 316 leaves. Illust. No index. 28 cm. Series: Marketing soyfoods.

• ***Summary:*** This book is a collection of black-and-white photocopies of materials ranging in date from 1976 to 1987. The books in this series, each a unique collection of graphic materials, are designed for a number of purposes: (1) To serve as a source of ideas, ingredients, inspiration, legal specifications, and basic guidelines for companies in the process of developing their own products, designing their own graphic materials, and conceiving their own marketing strategies. (2) To document the tremendous diversity of soyfoods products and the way that each is presented and marketed. (3) By arranging the materials in chronological sequence, to help document the development and history of new product categories and soyfood types, and with them the rise of the soyfoods industry and market in the Western World. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

6389. So, Yan-kit. 1992. Classic food of China (Continued–Document part II). London: Macmillan. xii + 387 p. [55 ref]

• ***Summary:*** Continued. The chapter on "Important cookery books" continues where the previous two chapters left off–with a fascinating, in-depth discussion of the history of Chinese cookery, but with more focus on books, including: (1) *Shi Jing* or *The Book of Food,* by Cui Yao who was executed for treason in AD 450. All but the preface has been lost. (2) *Qimin Yaoshu* or *Essential Skills for the Daily Life of the People,* by Jia Xie, written between AD 533 and 544. (3) *Shi Jing* or *Book of Food* by Xie Feng, written around 600 AD. (4) *Shi Pu* or *Book of Recipes* by Wei Juyan, written during the early 8th century. (5) *Zhonggui Lu* or *Records of Home Cooking* by Mrs. Wu, written during the Song dynasty (AD 960-1279). (6) *Shanjia Gongqing* or *The Simple Offerings of a Mountain Hermit* by Lin Hong, written in the 13th century. He is acknowledged as the first person who used the modern term jiangyou for soy sauce. (7) *Yinshan Zhengyao* or *The Principles of Correct Diet* by Hoshoi (or Hu Sihui in Chinese), written in about 1314-1321 (Yuan dynasty). (8) *Yunlin Tang Yinshi Zhidu Ji* or *The Food System of the Yunlin House* by Ni Zan (lived 1301-1374; Yuan dynasty). (9) *Suiyuan Shidan* or *The Cookery Lists of*

Suiyuan by Yuan Mei, published in 1792, five years before his death. A superb biography of Yuan Mei is given, together with a discussion of his influence on Chinese cookery.

The chapter on "Chinese festivals begins: "In 1912, the Republic of China officially adopted the Gregorian calendar used in the West, but the old lunar calendar, calculated more than four thousand years ago, has persisted, and it is according to this system that all the traditional Chinese festivals are celebrated to this day." The food served at each festival and the symbolism are described. The main festivals are: Chinese New Year, Double Fifth Festival (5th day of the 5th lunar month), Mid-Autumn Festival (15th day of the 8th lunar month).

Peking food stalls and hawkers offer "deep-fried bean curd triangles or squares... For breakfast they serve freshly made warm soybean milk, which is naturally sweet, to go with 'youtiao,' the deep-fried twin-strip dough that is mildly savoury, and not unlike an elongated doughnut, only more crispy to the bite and soft inside. Unless you are an early riser, you run the risk of having them been sold out before you get to the street corners where they are sold. Youtiao are arguably the most sought after and adored breakfast street food sold in China, though it is only in the north that they are twinned with soybean milk" (p. 80).

Many of the recipes in this book are based on those of classical Chinese cooks such as Yuan Mei and Su Dongpo. Soy-related recipes: Bean curd salad (p. 124). Bean curd skin rolls [yuba] (p. 140-42). Butterfly prawns in red bean curd cheese [red fermented tofu] (p. 147).

The chapter titled "Vegetarian dishes" (p. 170-90) begins with a history of vegetarianism in China. In the *Qimin Yaoshu* the chapter titled "Vegetarian food" contains China's first vegetarian dishes. Steamed wheat gluten or kaofu is a favorite in Shanghai (p. 176-77). Red-braised bean curd (p. 188-89). Sour and spicy bean curd cubes (p. 190).

The chapter on "Bean curd dishes" (p. 208-22) has recipes for: Homemade soy bean milk. Bean curd with scrambled egg. "Bless the old and the young." Braised bean curd puffs. Sautéed bean curd with spinach. Braised bean curd with bean sauces. Stir-fried bean curd with minced dried shrimp. Mapo doufu. Guotie bean curd. Green egg bean curd. Iced bean curd casserole [with frozen tofu].

Mussels in black bean sauce (p. 257). Steamed grey mullet with puréed black bean sauce (p. 274).

The glossary (p. 364-80) has entries for: Bean curd. Bean curd 'cheese,' red fermented [red fermented tofu]. Bean curd 'cheese,' white fermented. Bean curd puffs [deep-fried tofu puffs]. Bean curd skin [yuba]. Black beans, fermented [fermented black soybeans]. Broadbean paste or soy bean paste, spicy hot. Ground (crushed) yellow bean sauce. Hoisin sauce. Soy bean paste, hot. Soy sauce.

About the author (inside rear dust jacket): Born in her ancestral village of Zhongshan, Guangdong province, she grew up and was educated in Hong Kong, where she graduated from the University with a starred first degree in history. She went on to acquire a DPhil [PhD] at the University of London. She was married twice, first to a Chinese surgeon whom she divorced, and then (in 1962) to the American historian Briton ("Brit") Martin Jr., who was the great love of her life. Their son Hugo (to whom this book is dedicated) was born in 1965, when they were at Syracuse University, New York. The family later went to Poona in India, where Brit was taking up an academic post, but, tragically, he died of a brain tumour in 1967, while still only in his 30s.

Brit's death was a watershed in Yan-kit's life and, for several years, her efforts to pull herself out of the consequent slough of grief had only limited success. Indeed, in 1976 she suffered a breakdown. Her subsequent salvation lay in taking up food studies and cookery, of which she proved to be a brilliant teacher. / Address: England.

6390. Toussaint-Samat, Maguelonne. 1992. A history of food. Translated from the French by Anthea Bell. Malden, Massachusetts, and Oxford, England: Blackwell Publishers Inc. xix + 801 p. Illust. Index. 23 cm. [200* ref]
• ***Summary:*** A fascinating book of vast scope. The author's principal interest is in the medieval and Renaissance culture of Europe, in particular the domestic economy, food, and clothing. Thus the focus of the book is on Europe (especially France) and the Middle East. It also emphasizes the symbolism of foods.

Chapter 2, "The history of gathering," contains a section titled "Soya: the most widely eaten plant in the world" (p. 51-56), which is long on myth and symbol, and short on historical accuracy. It briefly discusses the following: Soya milk, soya flour, miso, jiang, soya sauce, soya oil and meal, bean-sprouts, tofu, dried soya beans.

Interesting chapters include: The history of meat (p. 93+). The history of cereals (p. 125+). The history of oil (p. 205+). The history of bread and cakes (p. 223+). An essential food: The history of salt (p. 457+). Spice at any price (p. 480+, including The great trading companies). The lure of sugar (p. 552). The potato revolution (p. 711+). The assurance of dietetics (p. 755, including an excellent "Chronology of dietary progress" from 2 million B.C. to the present, with detailed information on food developments during the paleolithic, mesolithic, and neolithic periods of the Stone Age). Address: Historian, journalist, writer, France.

6391. Tu, Bich-Thuy. 1992. The current status of soybean production in South Viet Nam. In: Increasing Soybean Production in Asia: Proceedings of a Workshop. 1992. Bogor, Indonesia: CGPRT Centre. 187 p. See p. 151-65. Held 21-24 Aug. 1990 at Phitsanulok, Thailand. [3 ref]
• ***Summary:*** Contents: Soybean producing areas in South Viet Nam. Technical aspects of soybean production. Soybean utilization in Viet Nam. Policies necessary for the

development of soybean production in South Viet Nam. Production constraints. Research activities conducted to date by U.A.F. Concluding remarks. Future research activities of U.A.F. Suggestions for future research.

"Utilization as food: In Viet Nam 80% of the soybean crop is used to produce soybean curd, fermented soybean curd, soybean milk, soybean meal and small quantities of soybean oil. Although many factories in Ho Chi Minh City produce sesame, groundnut and coconut oils, soybean oil remains uncommon." Address: Univ. of Agricultural Forestry of South Viet Nam (UAF), Ho Chi Minh Coty, South Viet Nam.

6392. **Product Name:** [Snack–Crisp Cannoli with Hazelnut Cream Filling].
Foreign Name: Snack–Cuor di Nocciola.
Manufacturer's Name: Valsoia S.p.A.
Manufacturer's Address: Via Iacopo Barozzi 4, 40126 Bologna, Italy. Phone: +39 051-659-9900.
Date of Introduction: 1992. January.
Wt/Vol., Packaging, Price: Two 15 gm snacks in a foil packet.
How Stored: Shelf stable, 9 month shelf life. Refrigerate after opening.
New Product–Documentation: Talk with Dr. Piero Bontempi and Laura of Valsoia. 1995. June 6. This product was introduced in 1992. Color leaflet and product specifications showing labels. 1995. "Valsoia–Bonta' e Salute. Lo Snack 100% Vegetale. Ricco in Fibra di Soia. No al colesterolo." The company uses the word "Soyamilk" as a registered trademark. The leaflet describes the product as "I croccanti cannoli ripiendi di morbida crema."

6393. **Product Name:** [Soymilk with Almonds].
Foreign Name: Soyamilk & Mandorla.
Manufacturer's Name: Valsoia S.p.A.
Manufacturer's Address: Via Iacopo Barozzi 4, 40126 Bologna, Italy. Phone: +39 051-659-9900.
Date of Introduction: 1992. January.
Ingredients: Water, soybeans (18%), raw cane sugar, whole sea salt.
Wt/Vol., Packaging, Price: 3 x 200 ml Tetra Brik cartons.
How Stored: Shelf stable, 9 month shelf life. Refrigerate after opening.
New Product–Documentation: Talk with Dr. Piero Bontempi and Laura of Valsoia. 1995. June 6. This product was introduced in 1992. Color leaflet and product specifications showing labels. 1995. "Valsoia–Bonta' e Salute. Soyamilk & Mandorla. La bevanda 100% vegetale. No al colesterolo." The company uses the word "Soyamilk" as a registered trademark. The leaflet describes the product as "Il latte di soia."

6394. **Product Name:** [Soymilk Pudding (Cocoa, Caramel, Plum Topping)].
Foreign Name: I Budini (Caramello, Ricoperto Prugna, Cacao).
Manufacturer's Name: Valsoia S.p.A.
Manufacturer's Address: Via Iacopo Barozzi 4, 40126 Bologna, Italy. Phone: +39 051-659-9900.
Date of Introduction: 1992. January.
Ingredients: Common to all: Soyamilk, sugar, starch, dextrose, sea salt. Individual: Caramelized sugar, pureed plums, cocoa, spices (*aromi*).
Wt/Vol., Packaging, Price: 2 x 115 gm tubs.
How Stored: Shelf stable, 6 month shelf life. Refrigerate after opening.
New Product–Documentation: Talk with Dr. Piero Bontempi and Laura of Valsoia. 1995. June 6. These products were introduced in 1992. Color leaflet and product specifications showing labels. 1995. "Valsoia–Bonta' e Salute. Il Budino. 100% vegetale. No al colesterolo." The company uses the word "Soyamilk" as a registered trademark. The leaflet describes the product as "I golosi dessert a base di Soyamilk."

6395. Weed, Susun S. 1992. Menopausal years: The wise woman way. Woodstock, New York: Ash Tree Publishing. xxiii + 204 p. Illust. Index. 22 cm. [soy ref]
• ***Summary:*** This book includes a discussion of the ways that tofu (p. 22, 102, 189) and soy milk (p. 24, 29) can be helpful for a woman passing through menopause. All information about soy is presented in a positive way. Address: Laughing Rock Farm.

6396. Yamuna Devi. 1992. Yamuna's table: Healthy vegetarian cuisine inspired by the flavors of India. New York, NY: E.P. Dutton / Penguin Books USA Inc. xv + 335 p. Index. 25 cm.
• ***Summary:*** This book won the 1993 James Beard Award for the best international cookbook. In the "Entrees" chapter, the author uses tofu as an alternative to cheese in a number of recipes. She notes (p. 187): "In recent years, creative restaurant and spa chefs have been redesigning the parameters for tofu use. Inspired by their work, I tried tofu for the first time last year. Today I have devised scores of recipes for it." The recipes include: Cheese cutlets with pineapple-ginger glaze and basmati rice (p. 190). Almond-crusted cheese sticks with lime-horseradish mayonnaise (p. 192-93). Cheese fricadelle with two chutneys (p. 193-95). Vegetable and cheese ramekins with yellow pepper-tomato sauce (p. 196-97). Tex-Mex cheese tostadas with ancho chili-tomato salsa (p. 197-98). Herb cheese galette with cashew crust and papaya-cilantro chutney (and optional soya milk, p. 199-200). Cauliflower and cheese croquettes with horseradish potatoes (p. 200-02). Four-vegetable tart with two pepper sauces (p. 202-05). White cheese-vegetable pipérade (p. 204-05). On page 295 is a recipe for Maple

Cream in which silken tofu can be used in place of low-fat cottage cheese. Address: Washington, DC.

6397. Bean Supreme Ltd. 1992? Soy revolution brings happiness (Leaflet). Penrose, Auckland, New Zealand. 2 p. Undated. 28 cm.
• ***Summary:*** The front of this color, 1-page, 2-sided leaflet shows the company's vacuum packed firm tofu [launched 1984], Nine 'n' Healthy Soy Milk [launched March 1989], Tofu Luncheon [new, launched Nov. 1991], and Lite Licks frozen dessert [launched Oct. 1986]. The company describes itself as "New Zealand's own soy innovator"–a very apt description.

The back side discusses Tofu Luncheon, and gives a nutritional analysis and 2 recipes. Address: P.O. Box 12082, 140 Hugo Johnson Dr., Penrose, Auckland, New Zealand. Phone: 09 579 0592.

6398. Imagine Foods. 1992? Rice Dream: Non-Dairy Beverage (Leaflet). Palo Alto, California. 3 panels each side. Each panel: 22 x 9 cm.
Address: 350 Cambridge Ave., Suite 350, Palo Alto, California 94306. Phone: 415-327-1444.

6399. Roller, Ron. 1993. Low-fat soymilk (Interview). *SoyaScan Notes.* Jan. 6. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Two companies in the USA are making or selling a low-fat spray-dried soymilk: Clofine (Linwood, New Jersey), and Minnesota Waxy (Hope, Minnesota). They run whole soybeans through an extruder to press out the oil, dry and grind the cake, reconstitute the meal with water, make soymilk, then spray dry it. Ron has found that the flavor of these products is not very good, but that could be a result of their being spray dried. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6400. Roller, Ron. 1993. American Soy Products' research on amazake and its use with soymilk (Interview). *SoyaScan Notes.* Jan. 6. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ron is actively working on making amazake. He ordered an updated copy of Soyfoods Center's book on Amazake. He is getting fresh koji from Takara Sake USA Inc. in Berkeley.

Confidential update: 1993 Sept. 4. Eden Foods will be introducing 2 new beverages in one week (Sept. 10-12) at the Natural Products Expo East: Eden Rice (a non-dairy rice milk) and Rice-Soy Milk. Both are superior products using Lundberg organically grown rice, and the Rice-Soy milk is much better nutritionally that Rice Milk on its own. They will be using real traditional rice koji in both but will not be making the koji themselves. To make koji in truck-load quantities weekly takes a lot of skill. There are 10 sake manufacturers in the USA and one of these (located not too close to Eden Food's soymilk factory) will be making Eden's koji. The whole process is just beginning and it has required the sake company to greatly expand their operations. This has been going on for a year and the expansion is completed. Ron can imagine that eventually Eden will make the koji themselves.

Both of the new beverages will be packaged in Tetra Brik cartons. The rice milk has been a very difficult product to develop technically; the solids tend to settle out. Imagine Foods and Grainaissance both use a lot of oil and a whiter (more refined rice). They also centrifuge out the fiber and protein, leaving basically starch and sugars–according to the Imagine Foods patent. Making real koji into a beverage that is stable and consistent is a very significant task. Ron's greatest concern now is how Imagine Foods reacts, since they have patented a process related to making a beverage from rice. They have sent Eden letters threatening a lawsuit; but Imagine Foods does not know anything about how Eden will be making their koji or their beverages. If Imagine Foods continues to pursue the path they are now on, Eden might have to tell Imagine Foods' customers how Imagine Foods makes its product–based on the public information in their patents. Most consumers have little idea how Imagine Foods' beverage is made. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6401. Ochoa, Pamela. 1993. Re: Advertisement in Natural Foods Merchandiser. Letter to William Shurtleff at Soyfoods Center, Jan. 28. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "Dear Mr. Shurtleff: Thank you for responding to our advertisement in the December issue of Natural Foods Merchandiser.

"According to research at Iowa State University, Department of Food Science and Human Nutrition, manufacturers of conventional soy milk and tofu can obtain up to a 32% reduction in fat and no loss in protein, when using our natural dehulled organic soybean flakes.

"White Wave Soy Products, Boulder, Co., is introducing the world's first 'Reduced Fat' tofu at the Natural Products Expo, Anaheim, CA, February 18-21. However, you can take delivery in January. Please contact Jill in Customer Service, (303) 443-3470 for more information.

"See us at the Natural Products Expo, Anaheim, CA, February 18–21, Booth #743A, or call us at the above listed number for more information.

"Very best regards, Soy Products Division." Address: Assistant Manager, Nichii Company of America, Inc., 23440 Hawthorne Blvd., Skypark 2, Suite 140, Torrance, California 90505. Phone: 310-791-0010.

6402. **Product Name:** Solait (Powdered Soy Beverage)

[Original flavor].
Manufacturer's Name: Devansoy, Inc. Renamed Devansoy Farms by July 1994.
Manufacturer's Address: 202 West 7th St., P.O. Box 885, Carroll, IA 51401. Phone: 1-800-747-8605.
Date of Introduction: 1993. January.
Ingredients: Aug. 1994: Soybeans, brown rice syrup, sunflower oil, calcium carbonate, sea salt, natural flavor, lecithin.
Wt/Vol., Packaging, Price: 3.8 oz foil pack makes 1 quart. 26 oz can makes 6 quarts. Or 60 lb nitrogen flush bag.
How Stored: Shelf stable.
Nutrition: Per 1 oz. powder or 8 oz. liquid: Calories 135, protein 6 gm, carbohydrates 13 gm, fat 7 gm, sodium 145 mg, calcium 50 mg.
New Product–Documentation: This product was introduced in May 1987 by Miller Farms Food Co. located at 314 Main St., Cedar Falls, IA 50613. The company later changed its name to Solait International Inc. By April 1992 the company name was Solait International Ltd., P.O. Box 885, Carroll, Iowa 51401.

Ad (full-page, black-and-white) for "Solait Powdered Soymilk" in Soya Bluebook. 1993. Sept. p. 58. The company name is now given as Devansoy, Inc. located at 202 West 7th St., P.O. Box 885, Carroll, Iowa 51401. Phone: 1-800-747-8605. Talk with Bev Tierney of Devansoy. The company changed its name from Solait International Inc. to Devansoy, Inc. in Jan. 1993. The president is now Elmer Schettler. They make only one product–Solait Powdered Soy Beverage–however in about June 1992 they started selling soy flour, tofu powder, and textured soy flour made by other companies.

Ad (¼ page, blue, black, and white) in Natural Foods Merchandiser. 1994. July, p. 16 and Aug., p. 12. "New. Delicious, nutritious, and 100% Devansoy." the product advertised is Solait "Milk of the Sun" instant soy beverage, from Devansoy Farms, Carroll, Iowa. For information call 1-800-747-8605.

Product with Label sent by Beverly Tierney of Devansoy Farms. 1994. Aug. 22. Stand-up foil retort pouch containing powdered soymilk. 3.5 by 6.75 inches. Dark blue, light blue, orange, green, and black on white. Logo shows a farmhouse and barn in a field. with the sun rising over a hill. "Solait. 'Milk of the Sun.' Instant soy beverage. Devansoy Farms, Carroll, Iowa. Original flavor. Quick. East. Delicious. Low fat. Cholesterol free. Lactose free. 100% natural. Makes 1 quart."

News release sent by Devansoy Farms. 1994. Aug. 22. "More than a milk substitute, Solait 'Milk of the Sun' is a tasty ingredient for all cooking and baking needs." Elmer Schettler is president of Devansoy Farms.

Recipe booklet titled "Cooking with Solait" sent by Devansoy Farms. 1994. Aug. Contains 8 pages of recipes by various chefs.

6403. **Product Name:** [Alitey (Soymilk with Cereals, or Cocoa), and Monsoy (Soymilk with Calcium, Cereals, or Cocoa)].
Foreign Name: Alitey, Monsoy.
Manufacturer's Name: Liquats Vegetals, S.A.
Manufacturer's Address: Ctra. de Vic, Km. 1,230, E-08553 Viladrau (Girona), Spain. Phone: +34-3 884 80 69.
Date of Introduction: 1993. January.
New Product–Documentation: Talk with Michael Makowski of DE-VAU-GE in Germany. 1993. Dec. 8. Active soymilk manufacturers include Liquats Vegetals S.A. in Viladrau (near Girona), Spain. They started about 1 year ago, make their soymilk from whole soybeans, and are a private company. Letter (fax) from Michael Makowski. 1993. Dec. 10. Gives the company address and phone number.

Letter (fax) from Xavier Vilacis of Liquats Vegetals, S.A. 1994. Jan. 27. The company's first two products, both types of soymilk, were introduced in December 1992; Alitey was sold to the general public and Monsoy was sold only to specialty shops that sell vegetarian- and health-food products. In January 1993 the company introduced Alitey with cereals, and cocoa, and Monsoy with calcium, cereals, and cocoa.

6404. Ono, Tomotada; Katho, Shoji; Mothizuki [Mochizuki], Kazunori. 1993. Influences of calcium and pH on protein solubility in soybean milk. *Bioscience, Biotechnology, and Biochemistry* 57(1):24-28. Jan. [14 ref]*
Address: Gifu Woman's Univ., 80 Taromaru, Gifu 501-25, Japan.

6405. **Product Name:** Tofu, Soymilk, Tortillas with Okara, and Whole Wheat Bread with Okara.
Manufacturer's Name: Soyane.
Manufacturer's Address: Nueva Goverdhana, km. 34 Carretera hacia Antigua, Santa Lucia Milpas Altas, Guatemala. Phone: 030-7179 or 030-7181.
Date of Introduction: 1993. January.
New Product–Documentation: Letter from Lorenz Stuber and Ellen Figueroa de Stuber. 1993. Aug. 20. Please see this letter for details on their work with soya, Soyane, and Comida Para Todos in Guatemala. Their work with soya in Guatemala began in 1985 with a vegetarian restaurant in Panajachel.

Follow-up response to questions from William Shurtleff of Soyfoods Center. 1993. Oct. 9. Since 1985 they have known about the soy dairy (which Plenty Canada had helped to establish) in San Bartolo, Solola, Guatemala. In July 1985 they started buying tofu and soy ice cream from San Bartolo for their vegetarian restaurant in Panajachel. They fried the tofu and sold it at the restaurant. In July 1989 they started to make tofu, soymilk, tortillas with okara, whole wheat bread with okara, and soyaburgers. In January 1993

they established Soyane and started to sell the first four of these foods, which they make at Nueva Goverdhana, km. 34 Carretera hacia Antigua, Santa Lucia Milpas Altas, Guatemala. Phone: 030-7179 / 030-7181. They are still working on developing labels; a sample of a generic label (which can be used on any of their soyfood products) is enclosed. As of October 1993 they sell the following amounts of each soyfood product: Tofu 42 kg/week (sold mostly to Korean people), soymilk 350 liters/week (distributed to 150 school children), tortillas with okara 15 kg/week (distributed to the people at the dump), and whole wheat bread with okara (110 kg of which is distributed to school children).

A Label sent by the Stubers is 3 by 2 inches, green and black on yellow. The largest letters say "Soyane." Across the top and bottom are written: "Comida para todos. Vivir sano es divirtido." A cartoon figure of a soybean is dancing and waving its arms. A soybean plant grows out of a round yin-yang (*t'ai chi*) symbol.

6406. Weiss, Rick. 1993. What's the matter with milk? *Health* (*San Francisco, California*) 7(1):18, 20. Jan/Feb.
• ***Summary:*** Problems include: (1) 71% of milk samples taken from 5 Eastern U.S. states contained significantly too little or too much vitamin D (10% were too high, 61% too low); Too much vitamin D causes calcium to accumulate in the blood and urine, and can eventually lead to kidney failure. (2) Research has shown that milk can cause diabetes in some individuals. (3) "The U.S. Accounting Office released a report concluding that U.S. dairy farmers are routinely treating their herds with dozens of drugs not approved for use in milk-producing cows. Some of these drugs can cause allergies in people; others, like the antibiotic sulfamethazine, may cause cancer. But despite repeated promises to get on the ball, the Food and Drug Administration hadn't even begun to test for these contaminants in milk. No one yet knows if the drugs are causing health problems in milk-drinkers.

"To make matters worse, the revelation rekindled a smoldering controversy over the use of bovine somatotropin (BST), a genetically engineered hormone that makes cows give more milk and is being used experimentally at a few dairies across the country..."

Dr. Benjamin Spock recently proclaimed that "no infant should be fed cow's milk during the first year of life...

"Experts today agree that cow's milk can cause severe iron-deficiency anemia in infants, not only because it's lacking in this critical element but because it can cause iron-depleting intestinal bleeding. According to the American Academy of Pediatrics, the only appropriate beverage for infants up to 12 months of age is breast milk or iron-fortified infant formula" [including soy-based infant formulas].

Among the most outspoken critics of milk is Frank O. Oski, director of pediatrics at Johns Hopkins University School of Medicine in Baltimore, Maryland. "'Cow's milk is for calves,' Oski says flatly, 'not for people.' Oski notes that no other species, with the exception of the domesticated cat, continues to drink milk after tripling its birth weight (about one year for humans). And most people in the world, including a fifth of all Americans, lack the enzyme that breaks down the milk sugar lactose, leaving them gassy and bloated when they drink it.

"'There are three things you need to know about milk,' Oski says. 'Number one, nobody needs milk; there are plenty of other sources for everything that milk provides. Number two, certain people are harmed by milk–by allergies, for example. And number three, most people in the world do not drink milk.'"

A table shows that 1½ oz. of firm tofu provides the same amount of calcium as one glass of milk.

Note: This is the earliest document seen (June 2001) that mentions "BST" or "bovine somatotropin."

6407. Tripp, Debbie. 1993. Re: Soya Milk Cottage Industry Phase III. Enclosed cheque for $18,925. Letter to Mrs. Bonnie Cappuccino, Director and President, Child Haven International, R.R. #1, Maxville, Ontario K0C 1T0, Canada, Feb. 25. 1 p. Typed, with signature on letterhead.
• ***Summary:*** Enclosed please find a cheque for $18,925.00 representing the second payment for the above mentioned project, as stated in the Letter of Agreement (Annex C).

Note: This letter shows that Child Haven got funding for at least three phases of their soymilk project. Address: Senior Program Officer, FIT–Ontario International Development Program, 1262 Don Mills Rd., Suite 200, Don Mills, Ontario M3B 2W7, Canada. Phone: (416) 449-3817.

6408. **Product Name:** [Soia L {Soymilk}].
Foreign Name: Soia L.
Manufacturer's Name: ALICONF srl.
Manufacturer's Address: S/s Cassia km, 46500 Sutri, Viterbo, Italy.
Date of Introduction: 1993. February.
Wt/Vol., Packaging, Price: 1 liter polyethylene bottles.
How Stored: Refrigerated.
New Product–Documentation: Spot in SoyaFoods. 1993. Winter. p. 5. "Soya milk from ALICONF." This lightly sweetened organic soya milk is available in supermarkets.

6409. Badani, Bernard. 1993. Edible soybean mission report, Korea, Indonesia, Taiwan, February 1993. Ottawa, Ontario, Canada: Agriculture and Agri-Food Canada. iii + 14 + 17 p. 28 cm. Spiral bound.
• ***Summary:*** Contents: Foreword. Acknowledgements. Mission members: Tino Breuer, Ron MacDougall, Dr. Gary Ablett, Jim Lowe, Bernard Badani. 1. Visit to Korea: Executive summary, report, conclusions, recommended follow-up. 2. Visit to Indonesia: Executive summary,

report, background, price structure, quality requirements, conclusions, recommended follow-up. 3. Visit to Taiwan: Executive summary, report, background, price structures, conclusions, recommended follow-up. Appendix A. List of contacts (photocopies of business cards of people met on the trip). List of 26 invitees for Canadian soybean seminar in Seoul (15 Feb. 1993), including academic researchers, government, soybean crushers, soysauce association, tofu association, food-related media, soybean milk manufacturers (Kwangja General Foods Co., Namyang Dairy Co., Lotte-Chilsung Beverage Co., Samyuk Foods Co., Dong-A/Otzka Co., Dr. Chung's Foods, See Joo Industry Co.). List of participants for Indonesia and business cards from Indonesia (incl. Primkopti, Sarpindo, Ikapti, Yeo's-P.T. Salim Graha). Business cards from Taiwan. Address: Oilseeds Div., Grain Marketing Bureau, Grains and Oilseeds Branch, Agriculture Canada, Ottawa.

6410. **Product Name:** [Soja Tonus {Soymilk Dessert}].
Foreign Name: Soja Tonus.
Manufacturer's Name: Laiterie Ladhuie.
Manufacturer's Address: Montayral, 47500 Fumel, France. Phone: +33 53 40 91 91.
Date of Introduction: 1993. February.
Ingredients: Soymilk, rice, sugar, maize starch, agar-agar, natural vanilla flavoring.
Wt/Vol., Packaging, Price: 4 x 100 gm pots.
How Stored: Refrigerated, 21 day shelf life.
New Product–Documentation: Spot in SoyaFoods. 1993. Winter. p. 5. "New soya and rice dessert." Should be refrigerated at 6ºC.

6411. Murphy, Patricia A.; Wang, Huei-ju. 1993. Total genistein and daidzein content of soy foods. *FASEB Journal* 7(4, Part II):A742 (Abst. #4283).
• ***Summary:*** "The major soy isoflavones, genistein and daidzein, inhibit tyrosine protein kinase, are weakly estrogenic, have moderate antioxidant activity and may have an anticarcinogenic effect by preventing oxidative damage." Heat processing changes the distribution of glucosides but not the total isoflavone content. Twenty commercial soyfoods and 10 institutionally prepared foods were evaluated for isoflavone content by HPLC photodiode array detection. Total genistein and daidzein ranged from 20 to 1,550 ppm and 0 tot 750 ppm (dry weight basis), respectively. High protein soyfoods, such as whole dry soybeans, textured soy flour (TVP), tempeh, and soymilk yielded total isoflavone contents that may provide an anticarcinogenic dose (0.7 to 2.0 mg per gm of food). Address: Food Science and Human Nutrition, 2312 Food Sciences Building, Iowa State Univ., Ames, Iowa 50011.

6412. **Product Name:** Soy Gourmet (Soy Cheese with Casein) [Cheddar, Mozzarella, Chili Pepper, or Herbs & Garlic]. Previously named Fromage de Soy (Feb. 1992).
Manufacturer's Name: Nutrition Specialties International, Inc.
Manufacturer's Address: 1660 Chicago Ave., Suite P-11, Riverside, CA 92507. Phone: (909) 781-4401.
Date of Introduction: 1993. February.
Ingredients: Soy base (organic soybeans, filtered water), canola oil, casein, sea salt, calcium phosphate, sodium phosphate, natural non-dairy flavors, citric acid, carrageenan.
Wt/Vol., Packaging, Price: 8 oz. or 5 lb.
How Stored: Refrigerated.
Nutrition: Per 1 oz.: Calories 50, protein 5 gm, carbohydrates 5 gm, fat 1 gm, cholesterol 0 mg, sodium 198 mg, potassium 15 mg, calcium 170 mg.
New Product–Documentation: Two-page leaflet from Natural Products Expo West. 1993. Feb. "New update effective January 1993." The company's president, Patrick Cochran, has over 23 years experience in the specialty foods industry. Note: According to one industry observer, this product is made by Phil Leisac & Sons of Portland, Oregon.

Leaflet (8½ by 11 inch, brown and black on beige) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 1994. March 10-13. "Soy Gourmet. Simply the best! The gourmet quality non-dairy cheese alternative made from organically grown soybeans... Less than one ounce of fat per serving." "We do not use spray-dried or modified tofu products as many of our competitors do." The company address has changed to Suite P-13 from Suite P-11. The ingredients have also changed–more casein is used than canola oil: Soy base (organic soybeans, filtered water), casein [dairy milk protein], canola oil, sea salt, calcium phosphate, sodium phosphate, natural non-dairy flavors, citric acid, carrageenan. A new size is 20 lb. Note: This brochure claims that the product is non-dairy even though it uses casein as a major ingredient.

Talk with Patrick Cochran, owner of NSI. 1994. April 19. This product line was launched in March 1993 at the Natural Products Expo West in Anaheim. It no longer claims to be non-dairy. It is sold refrigerated. Patrick was formerly with Loma Linda Foods. This is still the company's only product line. The source of the company's soymilk is confidential.

Talk with Kevin Cross of Stonecrest Natural Foods. 1998. Nov. 13. Kevin now owns this Soy Gourmet product line. He bought the company–a small L.A. firm that just didn't have the finances to get the product going. They were about to go under, so Kevin's company basically just bought the inventory and the label/brand. They had it in some supermarkets in the Los Angeles area. It has always been sold mostly in the Los Angeles area, in Ralph's, Whole Foods, Wild Oats, Pavilions, etc., and at Andronico's in northern California. It has an upscale-looking label with gold foil around it. He plans to introduce a "Rice Gourmet" line of cheese alternatives next month.

6413. Perez, Oswaldo. 1993. Helado de soya [Soy ice cream]. *La Era Agricola* (*Merida, Venezuela*). Jan/Feb. No. 15. [Spa]
• ***Summary:*** Describes how to make soy cream at home–5 recipes. Cites: Tofutti and other soy ice creams. Vol. 2 by William Shurtleff and Akiko Aoyagi, The Soyfoods Center. Address: Granja Tierra Nueva, Aldea San Luis, La Azulita, C.P. 5102, Estado Merida, Venezuela.

6414. Tetra Laval Food. 1993. We helped you process it–Alfa-Laval Fats & Oils. Now we can help you package it–Tetra Pak. In short, the total supplier–Tetra Laval Food. *Oils & Fats International* No. 1. Back cover.
• ***Summary:*** Effective 1 Jan. 1993 Tetra Pak and Alfa-Laval merged to form the Tetra Laval Group. The Group, which contains four industrial groups, has sales of about $8.5 billion, with some 35,000 employees worldwide. One of these four groups is Tetra Laval Food, and under it is Alfa-Laval Fats & Oils (based at Tumba, Sweden), formerly named Alfa-Laval Fats & Oils Systems.

6415. Kanazawa, Takemichi; Tanaka, Makoto; Uemura, Tsugumichi; Osanai, T.; Onodera, K.; Okubo, K.; Metoki, H.; Oike, Y. 1993. Anti-atherogenicity of soybean protein. *Annals of the New York Academy of Sciences* 676:202-14. March 15. [18 ref]
• ***Summary:*** "Numerous papers have been published (Sirtori et al. 1977; Descovich et al. 1980) indicating that the proteins isolated from soybeans are effective in preventing the risks of atherosclerosis" [Note: Atherosclerosis is a condition in which fatty material collects along the walls of arteries. This fatty material thickens, hardens (forms calcium deposits), and may eventually block the arteries. Atherosclerosis is a type of arteriosclerosis. The two terms are often used to mean the same thing].

Because the taste of extracts made from *raw* soybeans is unpleasant, it has been difficult to make soy protein drinks without sugar, "which is very injurious to the arterial wall" (Kanazawa et al. 1984; Bunag et al. 1983).

Okubo et al. (1992) and Kudou et al. (1990) have devised a method for removing the undesirable taste from the extracts of raw soybeans.

Soycream was found to reduce the size of low density lipoprotein (LDL) particles and soymilk protected LDL from peroxidation.

Note: This paper is from: The Third International Conference on Nutrition in Cardio-Cerebrovascular Diseases, edited by Kyu Taik-Lee, Yasaburo Oike, and Takemichi Kanazawa. Address: 1-5. Second Dep. of Internal Medicine, Hirosaki Univ. School of Medicine, 5 Zaifu-cho, Hirosaki city, Aomori prefecture, Japan 036.

6416. Chen, Zinie. 1993. At Twin Oaks commune, soybeans turn a profit. *Daily Progress* (*Charlottesville, Virginia*). March 22.
• ***Summary:*** Twin Oaks commune in the hills of Central Virginia is turning organically grown soybeans into tofu–and profits. About 15 of Twin Oaks residents work making tofu part time. Jon Kessler, marketing director for the tofu operations, says that they started out making 700 pounds of tofu a week; now they are making 2,300 lb/week. In 1992 the tofu business had sales of $65,000 with profits of $27,000. Gross sales have almost doubled since 1990.

Twin Oaks buys its soybeans from an organic grower in Arkansas, and sells most of its products through two distributors. The University of Virginia buys tofu for its cafeterias. In addition to cakes of plain tofu, Twin Oaks also makes bean dips, burritos, tofu salad, soy milk, and herb-seasoned tofu. A photo shows "July" of Twin Oaks taking freshly made tofu out of a cooling bath. Address: Associated Press.

6417. Jain, Manoj. 1993. New developments with soyfoods in India (Interview). *SoyaScan Notes.* March 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** In June 1992 the book that he and his mother wrote, *Melody of India Cuisine,* was published in the USA. Since that time they have been doing many soyfoods demonstrations and promoting their book in the Boston area. In about 1985-86 he did field research and wrote up his results in the *Food and Nutrition Bulletin* (United Nations University). He and his mother are still doing a lot of work with soyfoods in India. He plans to travel to India next week. He has been involved with Plenty USA via Charles Haren and with a very large Indian women's organization named BGMS (Bharatiya Grahmeen Mahila Sangh; Indian Rural Women's Organization) In April 1992 USAID gave BGMS funding of $300,000 for a 3-part nutrition project in India: (1) Basic health care needs in 50 villages; (2) Training other voluntary organizations to do health-related work; and (3) Introduce soyafoods into the area by doing demonstrations and by developing a small-scale commercial industry to make soyfoods such as tofu, soymilk, biscuits, etc. 3-4 people will work together to make enough foods for 8-10 nearby villages.

An industrialist whose last name is also Jain, N.N. Jain of Prestige Foods in Indore, is a very close friend of Manoj and his mother, and he has made a lot of money from soya. His company is now multinational. Prestige Foods is giving technical assistance to the project and is trying to obtain a SoyaCow ($3,000–$4,000, made by ProSoya of Ottawa, Canada) for the project. Prestige Foods presently makes biscuits containing soya flour which are sold at a small markup to schools. Indore is the site of the USAID project, of Indore Foods, and of Manoj's home town. Manoj is trying to convince USAID to allow the project to buy a SoyaCow to make soymilk. Address: 83 Fullerbrook Rd., Wellsley,

Massachusetts 02181. Phone: 617-237-5997.

6418. Bates, Dorothy R.; Wingate, Colby. 1993. Cooking with gluten and seitan. Summertown, Tennessee: The Book Publishing Co. 128 p. March. Illust. by Barbara McNew and Thomas Johns. Index. 22 cm.
• ***Summary:*** This is vegan cookbook. Seitan is gluten cooked in a soy sauce broth. This book calls vital wheat gluten "instant gluten flour." It has already had the starch and bran removed and needs only to be mixed with seasoning and liquid. Miso is used as a seasoning in several recipes, and "tamari" in many seitan seasoning sauces.

Contents: Introduction. A word on nutrition. Making gluten. Making seitan. Ingredients. Recipes (a nutritional analysis is given for each recipe): Appetizers, soups, salads, American, Asian, Continental, Mexican, Italian. Sources for ingredients. Address: Summertown, Tennessee.

6419. **Product Name:** [Biosoja Delisoja {Calcium Enriched Soymilk Dessert–Aseptically Packaged} (Vanilla, Chocolate, Caramel)].
Foreign Name: Biosoja Delisoja.
Manufacturer's Name: Sojinal. Affiliate of Coopérative Agricole de Colmar (CAC) (Marketer).
Manufacturer's Address: 8 rue Merxheim, 68500 Issenheim, France. Phone: 89 74 53 53.
Date of Introduction: 1993. March.
Wt/Vol., Packaging, Price: Tetra Pak Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Spot in SoyaFoods. 1992. Spring. p. 1. "A taste of soyamilk to come: Editorial." A photo shows many different soyfood products in packages, including Tonyu Saveur, Soja Equilibre, Vanilla Drink Bar, and Coffee Drink Bar.

SoyaFoods. 1992. Autumn. p. 7. "A profile of Sojinal." See Table 2. "Biosoja retail food products." "Desserts (calcium enriched) packed in Tetra Pak."

6420. **Product Name:** [Biosoja Sojatine {Calcium Enriched Chocolate Bars} (Plain Chocolate Covered with Flavored Soya Paste, or Fruit and Fiber Sojatine)].
Foreign Name: Biosoja Sojatine.
Manufacturer's Name: Sojinal. Affiliate of Coopérative Agricole de Colmar (CAC) (Marketer).
Manufacturer's Address: 8 rue Merxheim, 68500 Issenheim, France. Phone: 89 74 53 53.
Date of Introduction: 1993. March.
New Product–Documentation: SoyaFoods. 1992. Autumn. p. 7. "A profile of Sojinal." See Table 2. "Biosoja retail food products." "Sojatine chocolate bars (calcium enriched)."

6421. **Product Name:** [Biosoja Italian Sauce {Based on Soymilk}].
Foreign Name: Biosoja Sauce Italienne.
Manufacturer's Name: Sojinal. Affiliate of Coopérative Agricole de Colmar (CAC) (Marketer).
Manufacturer's Address: 8 rue Merxheim, 68500 Issenheim, France. Phone: 89 74 53 53.
Date of Introduction: 1993. March.
New Product–Documentation: SoyaFoods. 1992. Autumn. p. 7. "A profile of Sojinal." See Table 2. "Biosoja retail food products." "Sauces based on tonyu. Sauc'annaise, Sauce Italienne."

6422. *SoyaCow Newsletter* (*Ottawa, Canada*). 1993. SoyaCow SC-20 "mooves" west to Saskatoon. 2(1):1. Jan/March.
• ***Summary:*** "The Sweet Carrot Cafe, the top vegetarian restaurant in the province of Saskatchewan, is setting up its 'micro-soydairy' and will offer fresh soymilk as well as other soy-based foods. This will not only augment their existing menu at the restaurant, but will also form the heart of their new 'SoyaCow–Health Bar Deli' slated to open along side the restaurant. This will be the second Canadian retail project in a developing franchise system. Other locations are due to open in Ontario in the fall."

Note: The Sweet Carrot Cafe is owned by George and Wendy Conquergood. The SC-20 has a cooker capacity of 20 liters. It can make 3 batches of soymilk per hour, or about 40 liters/hour. Talk with George Conquergood of IPC in Vancouver, BC, Canada. 1999. May 10. His Sweet Carrot Cafe in Saskatoon had their SoyaCow SC-20 in operation in early 1993, before Rainbow Foods in Ottawa. So Sweet Carrot Cafe was the first company to make commercial products using a SoyaCow. When George first went to Ottawa to meet Raj, Rainbow was in the process of expanding the store into new location, and building their kitchen in the health food store. But George already had a restaurant, a kitchen, and a coffee bar–named Caps Coffee Bar. Rainbow did open their little Health Bar Deli within the health food store. Rainbow didn't understand the importance of sanitation when dealing with the protein in a milk alternative. Cleaning the glass bottles properly was a horrendous job, but one that has to be done meticulously–lest bacterial spoilage occur when the bottle is refilled. Rainbow was unable to maintain consistent quality in their operation, so they had to shut down after a short time. Sweet Carrot and Rainbow used the same glass bottles, with the SoyaCow logo painted on the bottles. When they first ordered the bottles, they shared the order. Since George has his SoyaCow working before Rainbow, he did some consulting with Rainbow, through Frank Daller, to help Rainbow get started. George also developed the formulas that both companies used. He used to be on the phone with Frank on almost a daily basis. George was conceptualizing this Health Bar Deli concept as a potential franchise operation.

6423. *SoyaCow Newsletter* (*Ottawa, Canada*). 1993. New

SoyaCow logo. 2(1):1. Jan/March.

• ***Summary:*** A new version of the SoyaCow logo has been designed, and is shown here. It is a vertical oval, with the face of a cow superimposed on the large letter "S." Across the bottom, in all uppercase letters, is written "SoyaCow." The original logo was useful mostly in a wide, horizontal orientation. "The new logo is already in use on returnable glass bottles."

6424. *SoyaCow Newsletter* (*Ottawa, Canada*). 1993. 2,000 L/H soymilk system planned. 2(1):1. Jan/March.
• ***Summary:*** "An industrial, continuous-process version of the SoyaCow is on the drawing boards and slated for development in 1994." The SC 2000 will be designed to produce up to 2,000 liters of soymilk per hour. "The project is currently under consideration by companies in North America and Europe" [such as APV-Crepaco].

6425. *SoyaFoods* (*ASA, Europe*). 1993. Profile of Haldane Foods. 4(1):6-7. Winter.
• ***Summary:*** "The Haldane Foods Group is the largest specialist health food manufacturer in the UK and Europe... with 12 companies in the Group... Seven years ago, ADM's British arm, British Arkady bought its biggest customer, Direct Foods of Petersfield, Hampshire, known for its Protoveg brand." Among its other acquisitions was The Dietburger Company.

"The company's headquarters is now in Newport Pagnell the site of Granose Foods, but there are five factories in all. The site at Leicester continues to produce dry goods, soya milk is produced at Stockport [by Unisoy], vegetarian margarines, ices and yogurts are produced at Wrexham, North Wales, snack meals and sauces in Newport, South Wales, and frozen and canned products at the Granose Factory in Newport Pagnell.

"However, it was the acquisition of Granose Foods which had a major impact on the business... A total of 200 people work for Haldane. All the factories are animal free and many products are Vegetarian Society approved. The company has recently attained BS 5750, the British Standards Institution Certificate of Quality Assurance (ISO 9000).

"As a result of its acquisitions Haldane's product range is extensive with over 200 products. But the core of the business is vegetarian with soya products featuring high on the list... Last year Haldane launched over 50 new products."

6426. **Product Name:** Soymilk (Natural, Original, Maple, Vanilla, Chocolate, or Nog), Soybé Soy Ice Cream (many flavors, constantly changing), Soy Yogurt (Natural or Vanilla Flavors) tofu, and Soyanaise (soy mayonnaise).
Manufacturer's Name: Sweet Carrot Café–Health Bar & Deli.
Manufacturer's Address: 702 14th St. East, Saskatoon, SK, S7N 0P7 Canada.
Date of Introduction: 1993. March.
Wt/Vol., Packaging, Price: Bottle.
New Product–Documentation: *SoyaCow Newsletter* (Ottawa, Canada). 1993. Jan/March. p. 1. "SoyaCow SC-20 "mooves" west to Saskatoon." "The Sweet Carrot Cafe, the top vegetarian restaurant in the province of Saskatchewan, is setting up its 'micro-soydairy' and will offer fresh soymilk as well as other soy-based foods. This will not only augment their existing menu at the restaurant, but will also form the heart of their new 'SoyaCow–Health Bar Deli' slated to open along side the restaurant. This will be the second Canadian retail project in a developing franchise system."

SoyaCow Newsletter (Ottawa, Canada). 1993. April/June. p. 1-2. "SC-20 complements fine vegetarian restaurant and top natural foods store." The Sweet Carrot Cafe in Saskatoon uses a SoyaCow SC-20 to produce fresh non-beany soymilk for direct sale and formulation into value-added products. They also feature returnable glass bottles of the soymilk in several flavours. The Sweet Carrot Cafe is a fine [vegetarian] restaurant, featuring a grand piano, tablecloths, and wine. Owners George and Wendy Conquergood have added a Health Bar & Deli, made possible by a new SoyaCow. A photo shows George Conquergood with his SC-20 at the Sweet Carrot Cafe.

Talk with George Conquergood of International ProSoya Corporation (IPC) in Vancouver, BC, Canada. 1999. April 21. George started this gourmet vegetarian restaurant in 1992. In early 1993 he bought a SoyaCow SC-20 and started the Soya Cow Health Bar Deli, where (by about March 1993) he sold at least five soy products, both as part of the menu and for takeout. The soymilk for takeout was always sold in 1-liter glass bottles, with a SoyaCow logo stamped into the glass. Only the soy ice creams were sold under a brand, Soybé. The Soy Nog (soymilk flavor; which was not a brand) was introduced in December 1993, but people liked it so much that George continued to make it thereafter all year long. The soy ice cream was sold in 500 ml round

hardpack plastic tubs. There were no fixed flavors; every day was a new surprise–such as Blueberry-Mint, Strawberry-Banana-Peach, and one like a Butter Pecan with nuts, etc. George is a very creative person and he likes to try new things with foods. In the garage of his home in Saskatoon he has an archival file box containing all of the recipes and notes from his restaurant days. After March 1994 George also sold Gelato Fresco, a soy ice cream made by Hart Melvin of Toronto using a SoyaCow SC-20. The soy yogurt was fermented; the two flavors were sold in 250 ml yogurt tubs. The tofu was sold pre-cut into 500 gm bricks, wrapped with plastic wrap (not packed in water), and refrigerated. The Soyanaise (soy mayonnaise) was sold in a 250 ml see-through plastic tub. Each product had a label, printed by a computer. George's dates are a little earlier than those published in *The SoyaCow Newsletter* since it typically published at least several months after the events it reported.

6427. *SoyaScan Notes.* 1993. NLEA requirements for nondairy products (Overview). April 28. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** NLEA is the FDA's Nutrition, Labeling and Education Act of 1990. This act unfortunately does not make it illegal to characterize on the label as "nondairy" a product which contains casein or caseinate. But it does deal with this problem as follows (21 CFR Ch. 1(4-1-93 Edition), p. 21). 101.4 (d) "When foods characterized on the label as 'nondairy' contain a caseinate ingredient, the caseinate ingredient shall be followed by a parenthetical statement identifying its source. For example, if the manufacturer uses the term 'nondairy' on a creamer that contains sodium caseinate, it shall include a parenthetical term such as 'milk derivative' after the listing of sodium caseinate in the ingredient list."

6428. Bryan, Ford R. 1993. Robert Allen Boyer (Document part). In: Ford R. Bryan. 1993. Henry's Lieutenants. Detroit, Michigan: Wayne State University Press. 321 p. See p. 44-51. Great Lakes Series. April. [10 ref]
• ***Summary:*** This biographical sketch of Boyer (1909-1989), Henry Ford's top soybean man, is well researched and full of original material. Robert Boyer was born on Sept. 30, 1909 in Toledo, Ohio. In 1916 he moved with his parents to Royal Oak, Michigan, where he attended grade school while his father worked in the accounting department of the Ford Motor Co. in nearby Highland Park. When Henry Ford bought the Wayside Inn in Massachusetts in 1923, Frank Campsall suggested to Ford that Earl Boyer would be an appropriate business manager for the Inn. So the Boyers, including young Robert and his three sisters, moved into a Ford-owned house near the Inn. Robert then attended high school at Framingham, Massachusetts, where he graduated in 1927. Robert met Henry Ford while skating at the Inn. Ford suggested that he come to Dearborn for some work experience before going to college at Dartmouth as planned. So in Sept. 1927 Robert arrived in Dearborn where he was enrolled in the Henry Ford Trade School at the Rouge plant.

"Henry Ford had taken recent trips to Europe and had been impressed with the agricultural prosperity in some of those countries. Returning to Dearborn, Ford wanted to set up an experimental agricultural chemical factory to determine what products could be obtained from plants. The experimental chemical factory became a one-quarter size model of Ford's mammoth wood distillation plant at Iron Mountain, Michigan. The model was constructed at Iron Mountain and moved to Greenfield Village in late 1928. About then Ford asked, 'Bob, how would you like to supervise this model plant–to stay another year or two and live at the Sarah Jordan Boarding House in Greenfield Village.'

"Boyer had had little formal training in chemistry, but he was provided with tutors from the University of Michigan, and from 1929 to 1933 attended the Edison Institute of Technology, a school founded by Henry Ford and Thomas Edison as a school for inventors... Ford's purpose was to find industrial uses for farm crops. A farm depression was imminent. During the depression year of 1931, Robert Boyer married Elizabeth Szabo of Detroit. During the next few years they had three children...

"In 1931, soybeans became one of the plants investigated at the Chemical Laboratory... Usually the beans were pressed to obtain the oil, and the remaining 'cake' was fed to animals. The Boyer group, however, developed a solvent extraction procedure whereby soy protein as well as oil could be produced...

"By this time Henry Ford was growing rather old, approaching seventy. Design of the V-8 Ford in 1931 seems to have been his final great interest in automobile mechanics. His Edison Institute Schools, Greenfield Village, and soybean research now largely occupied his time. In 1932 he began to plant hundreds of acres of soybeans on his Dearborn farm lands and began procuring thousands more acres in Southeastern Michigan. Several additional processing plants were located in outlying towns where he promised to buy even more soybeans from local farmers to use in automotive paints and plastics. Boyer was largely responsible for Ford's advancement in soybean technology.

"Henry's vegetarian eating habits led him to hire his old gradeschool friend, Dr. Edsel Ruddiman, an organic chemist, to devise tasty dishes containing soybean ingredients for the dining room. And Ford's executives, including Boyer, were coaxed by Ford to try them–soybean milk, soups, bread, croquets, simulated meats, butter and ice cream. Most were not very palatable, however, because of the tendency of the soy oil to be slightly rancid."

Boyer was in charge of the "Industrialized American Barn" demonstration at the 1934 Chicago World's Fair. And in May 1935 when the first chemurgy conference was held

at the Dearborn Inn, Boyer was in charge of arrangements. During the second chemurgy conference in Dearborn, Boyer led the groups of participants through his Soybean Laboratory at Greenfield Village. At about this time Boyer developed soy protein fibers which were blended with wool (35% soy and 65% wool) and woven into cloth. The resulting cloth was given to Ford's own tailor, and suits of soy fiber were worn by Ford on occasion–and highly publicized. "Boyer admits that the tensile strength of soy fiber was only 85% of wool, however, behooving the wearer to avoid strenuous movements, bending down for example very cautiously.

"Boyer's fiber was ideal for felt hats, however. All of the fiber Boyer could produce was wanted by the Hat Corporation of America. The soy fiber blended well with rabbit fur, was less expensive and much cleaner to work with. To produce fiber in larger amounts and to develop fiber of higher tensile strength, a modern air-conditioned laboratory was built on Village Road in Dearborn. In this plant not only fiber producing equipment was installed but complete weaving equipment as well."

Between 1939 and 1941 Boyer worked on Ford's "plastic car" made from soybean plastic. It also drew widespread media publicity. "Boyer drove the car a few weeks before it was abandoned. (People are still wondering what became of that plastic car.) A major defect never corrected, according to Boyer, was the strong odor reminiscent of a mortuary...

"The soy protein fiber facility was operating nicely when in 1943 the U.S. Air Force demanded the air-conditioned building for precision measurement of aircraft engine parts. When his building was thus usurped, Boyer was out of a job involving soybeans. He then transferred to Ford's Willow Run Bomber Plant at Ypsilanti, Michigan, where, because of his knowledge of plastics, he was given responsibility for protecting the plastic windshields on the B-24s during assembly of the planes."

In 1943 Drackett Products Co. in Cincinnati, Ohio, purchased the Ford fiber processing equipment and Boyer went to work for Drackett in Cincinnati–he was never again in direct contact with Henry Ford. Boyer wanted to develop edible soy protein fibers. When H.R. Drackett died in 1949, Boyer left The Drackett Co. so he could pursue his goal of receiving a pioneer patent for texturizing vegetable (soy) protein. He was granted this patent in 1949. As many as 30 corollary patents were subsequently obtained.

"Boyer had developed methods for producing soy fiber that was thoroughly washed and tasteless. In 1951 he became a consultant to several food processors who were licensed to use his patents in their operations. These firms included Worthington Foods, Swift & Company, Ralston Purina, Unilever Company of England, National Biscuit Company [Nabisco], General Foods, and General Mills. Dozens of high-volume foods were, and still are, produced using Boyer's procedures... Robert Boyer worked full time for Ralston Purina in St. Louis, Missouri, from 1962 until 1971.

"In February 1963, Elizabeth Szabo Boyer died, and in April 1965, Boyer married Nancy Ann Miller, a recent widow living in St. Louis. Boyer retired from general consulting work in 1971 after his patents had expired in 1966, but continued consulting with Worthington Foods until 1977. In 1973, Nancy and Robert retired to downtown Dunedin, Florida.

"The Boyers did considerable traveling. But in the early 1980s Robert's eyes began to fail, and then his chief hobby became baking, an occupation he had always enjoyed. In 1985 he dictated his oral reminiscences [8 hours on tape with David R. Crippen] as requested by the Henry Ford Archives. Boyer died in Dunedin on November 11, 1989. The body was cremated and the ashes scattered over the Gulf of Mexico."

Photos show: A portrait of Boyer in his later years (Ford Archives photo ID No. P.0.19429). The Chemical Laboratory building at Greenfield Village at Dearborn (No. 0.6213) in 1930. Henry Ford discussing soybean work with Boyer in the Chemical Laboratory on Ford's birthday, July 30, 1937 (No. 188.21320. Ford is seated on a stool by a lab. bench reading and Boyer has one elbow on the bench behind him.) Boyer and Ford with the "plastic car" at Dearborn in 1941 (No. 189.16352).

Talk with Ford Bryan. 1992. Nov. 12. He is now working to get Robert Boyer's soybean research laboratory, the Chemical Plant of the Edison Institute, restored at Greenfield Village and interpreted as to its history and significance. The building is in fairly good shape; the exterior is in good shape but all the equipment has been removed from the interior. Address: 21800 Morley, Apt. 1203, Dearborn, Michigan 48124.

6429. Gupta, Rajendra P.; Gupta, R.R.; Wood, G.W. 1993. The SoyaCow resource book. Maxville, Ontario, Canada: Child Haven International. 131 p. 28 cm. [1 ref]

• ***Summary:*** Contents: Preface. 1. Introduction: Soya beans, soya milk, okara, tofu. 2. SoyaCow–Knowing it: Advantages of the SoyaCow, SoyaCow components, SoyaCow inputs, SoyaCow outputs, who needs SoyaCow, SoyaCow's economics, business plan, larger than SoyaCow machines, smaller than SoyaCow machines. 3. SoyaCow–Getting it: Preparations, ordering, receiving and unpacking, assembly, installation and testing. 4. SoyaCow–Using it: Preparation, making soya milk base, making tofu, soya yogurt (dahi), soya cream cheese, soya cottage cheese, finishing. 5. Formulations and recipes: Soya milk (dairy like, pistachio flavour, almond flavour, banana flavour, chocolate, malt, maple) tofu (tofu salad, tofu rice salad, tofu cheese squares, tofu fried rice, tofu uttapam, tofu snack sticks), soya yogurt (lassi, other sweet drinks, salted drink, raita). Figures (21 figures). Appendices: A comparison of basic soya milk

processes, a sample SoyaCow cost-benefit analysis: USA/Canada, a sample SoyaCow cost-benefit analysis: India, consultants, organizations, SoyaCow training, suppliers, some SoyaCow installations, SoyaCow order form, service centres, assembly, trouble shooting guide for grinder/cooker, weekly log, periodic maintenance and repair, the SoyaCow newsletters. Address: [Ottawa, Ontario, Canada].

6430. Haren, Chuck. 1993. Soy happenings in Central America. *Plenty Bulletin* (*Davis, California*) 9(1):1-2. Spring.
• ***Summary:*** During the past 6 months, the author has been working to introduce soybeans and soyfoods to Belize and Nicaragua. In Jan. and Feb. he worked with groups in Belize "who are making efforts at not only utilizing soybeans for themselves but also teaching methods of preparing soybeans at home.

"Together with Casta Calderon, a representative from SOYNICA (a women's development organization in Nicaragua), I provided technical assistance in Belize for the Santa Familia Farmers and Women's Group, the Corozal South Soybean Producers Cooperative, The Caledonia Grain Cooperative, Maya Mopan Cooperative, Toledo South Beekeepers and Farmers Cooperative and the Hopkins Farmers Cooperative. We gave them very practical advice on the growing and use of soybeans. We conducted workshops to teach women about the nutritional qualities as well as methods of cooking soybeans, making soybean cheese (tofu) and milk, then using the by-product (okara) in baked goods, tamales, tortilla fillings and stir-fried dishes. We also helped some of these groups to evaluate their needs (material, labor and marketing costs) for small business projects they wanted to start.

"Small-scale soybean producer and processing groups and cooperatives are being established throughout Central America... In April and May we will be responding to requests for technical assistance in Guatemala, El Salvador and again in Nicaragua."

Photos show: (1) Members of the Toledo South Beekeepers and Farmers Cooperative making soymilk. (2) Members of the Cooperative standing with Chuck Haren. The caption states: "A small grant from the Inter-American Foundation enabled us to purchase some tools like the wheel-seeder displayed by members of the" Cooperative. Address: Program Director.

6431. **Product Name:** Dream Pudding [Butterscotch, Lemon, Chocolate, Carob, Coconut, Banana, or Almond].
Manufacturer's Name: Imagine Foods, Inc. (Marketer/Distributor).
Manufacturer's Address: 299 California Ave. #305, Palo Alto, CA 94306. Phone: 415-327-1444.
Date of Introduction: 1993. April.
Wt/Vol., Packaging, Price: 4 x 4 oz tubs. Retails for $2.79 (2/93, San Francisco).
How Stored: Refrigerated.
New Product–Documentation: Talk with Bob Gerner, who saw these at the Natural Products Expo West, Anaheim. 1993. Feb. 22.

Letter from Robert Nissenbaum, president of Imagine Foods. 1993. Dec. 8. This product was launched in April 1993.

Talk with David Nickerson of Imagine Foods. 1995. Jan. 25. Dream Pudding has been discontinued, but Imagine Foods plans to introduce a new version of it in April 1995. There were many problems with the consistency of the original product due to manufacturing difficulties. The new product will be pretty much the same as the first one with the same flavors, but it will be made on better equipment. Most of the flavors will be fat-free, non-dairy, with no refined sugars.

6432. Leneman, Leah. 1993. 365 plus one vegan recipes: Delicious meals and ideas for every day of the year. Hammersmith, London, England: Thorsons–An imprint of HarperCollins Publishers. 144 p. April. Index. 24 cm.
• ***Summary:*** Chapter 1 of this book, titled "The Vegan Dairy," gives recipes for homemade soya milk, mock cream (from soya milk), soya flour cheese, yogurt cheese (from soya yogurt). There are also recipes for cashew or almond milk, cashew cream, and cashew cottage cheese.

Chapter 11 (p. 85-100), titled "Tofu and other Soya Foods," contains a long introduction plus the following recipes: Home-made tofu. Tofu and onions. Sweet and sour tofu and vegetables. Sea-flavored crisp tofu slices. Mushroom stroganoff. Tofu kebabs. Tofu casserole. Warming winter stew (with tofu). Korean-style kebabs (with tofu and miso). Tofu and green pea bhajia. Tofu 'scrambled eggs.' Scrambled tofu and mushrooms. Tofu piperade. Spicy tofu scramble with red pepper and tomato. Tofu knishes. Tofu and pea curry. Tofu burgers. Swiss steak (with frozen tofu). Savoury tofu 'mince' (with frozen tofu). Crispy fried sea-flavoured frozen tofu. Tofu goulash. Smoked tofu stew. Smoked tofu, courgette and sweetcorn risotto. Smokey duvec (with smoked tofu). Pease pudding and smoked tofu bake. Smoked tofu pasties. Steamed savoury smoked tofu pudding. Smoked tofu charlotte. Lek and smoked tofu au gratin. Smoked tofu and mashed potato cakes. Tempeh croquettes with mushroom sauce. Tempeh hash with potatoes. Indonesian-style tempeh. Tempeh stroganoff. Japanese-style tempeh kabobs. Tempeh burgers. Tempeh chilli. Mock 'ham' (with dried bean milk sheets [yuba]). Mock 'chicken' (with yuba). Mock chicken cooked Indonesian style.

Chapter 13 is entirely about sea vegetables, and a number of the recipes contain tofu, tempeh, miso, or soya milk. A number of other recipes throughout the book also use soyfoods as an ingredient. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

6433. *High Plains Journal* (*Dodge City, Kansas*). 1993. Lower fat doughnut made with soymilk. May 10.
• ***Summary:*** "Iowa State University researchers say they have developed a version of the doughnut that has significantly lower levels of fat, without sacrificing texture or flavor."

"Doughnuts made with soybean flour, had a coarse, beany flavor, Lester A. Wilson, ISU professor of food science and human nutrition, said. The new recipe calls for dry soymilk to replace non-fat powdered milk found in many commercial doughnut recipes."

"Wilson said soymilk absorbs less oil during the deep-fat frying process than non-fat milk used in conventional recipes. As an added bonus, the soy-milk doughnuts seem to stay fresh longer than conventional pastries. The research was funded by the Iowa Soybean Promotion Board."

6434. *SoyaScan Notes.* 1993. Triballat, located in France, has sold a lot of their soymilk and yogurt technology to China and other countries (Overview). May 16. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Talk with Lon Stromnes of White Wave. 1993. Feb. 9. Steve Demos has visited the Triballat plant in France where Sojasun is made, he knows all about it, and he knows that Sojasun is opening a plant in China.

A Chinese-American businessman, who wishes to remain unnamed, states that Triballat has sold a lot of their soymilk and yogurt technology to China. They have sold 6 plants to China, one to Saudi Arabia, and one to some country in South America. He is certain that this information is correct.

This was confirmed again in Nov. 1993 by a German who knows Triballat well.

6435. Ogbugwo, Joseph O. 1993. Re: History of Odeigai & Company in Nigeria. Letter to William Shurtleff at Soyfoods Center, May 24–in reply to inquiry. 3 p. Handwritten.
• ***Summary:*** Odeigai & Company, located at P.O. Box 100, Ibusa, Delta State, Nigeria, is owned by Joseph O. Ogbugwo, Mrs. E. Ogbugwo, and Mr. Bolaji Iriah (partner). The company was founded in March 1985 by Joseph Ogbugwo to grow soybeans and process them into food–especially soymilk. In July 1985 the company started to produce soyfoods for commercial sale; the first product was soy flour. At that time the company was named Odeiga & Company; it later changed its name to the current spelling. The company has always been at the same address.

The company's ownership structure changed when Mr. Bolaji Iriah joined the company before it was incorporated in 1987. The present ownership is: Joseph Ogbugwo 80%, Elizabeth Ogbugwo 15%, and Bolaji Iriah 5%. Sales last year were 1,080,000 naira, and the net worth of the business is 1.5 million naira. Note: The naira is the Nigerian unit of currency.

Milestones in the company's history were: 1984–The decision to quit the Nigerian civil service and concentrate on soyabeans. In May of that year the government introduced soyabeans to his state of origin. 1985–Introduction of soymilk in Bendel and Anambra states. 1987–Incorporation of the company. The company has been the first in Nigeria to develop, make and market a line of Nigerian-style soy-based foods. Reasons for the company's success: Patience and perseverance, determination, good knowledge of the soybean crop to be able to create awareness in the masses, encouragement from my teacher and friend Professor J.Y. Lu of Tuskegee University, Tuskegee, Alabama 36088.

Major products and amount produced each week: Soy-Flour (2,000 kg). Soy-Beverage (200 kg). Soy-Bouillon (200 kg). Supplementary Food (100 kg). The company now employees 15 people including 2 managers, 10 production workers, 2 office workers, and 1 other. The company's average sales growth rate over the past 3 years has been 10%, 25%, and 40%. The company's building now consists of a rented apartment of 6 main rooms and 2 seating rooms. The main rooms are each 4 by 5 meters and the seating rooms are 5 by 6 meters. Two rooms are used as offices and the others are used for production. Land is now ready for a new factory and offices.

Current projects: "We are researching local technology for the production of powdered Soy-Milk which is not sold in any Nigerian market but which is in very high demand now. Also, 3 new products are in the pipeline undergoing taste panel acceptability trials."

Biographical sketch of Joseph O. Ogbugwo: He is an Igbo, married with 5 children and self employed. Education: BSc and MSc (horticulture major and food science minor), PhD candidate in food science–all at University of Benin, Nigeria, 1977-1979. He got interested in soyfoods through working with Prof. John Lu (1977-1979). Soya was used in preparing Chips in the USA in 1978. They were a big success but he could not make them in Nigeria because of lack of startup capital. He then planted soybean on an experimental basis to determine the right time of planting and adaptability to Southern Nigeria. The results were successful. In 1984/85 he made recommendations to the Bendel State Ministry of Agriculture and supplied them with the first batch of seeds, which they distributed to farmers. Then he began research on using soybeans as food based on local culture, tastes, and habits. Joseph Ogbugwo "is very research inclined and has spent over 15 years doing research on the soybean and its uses. He is making it a lifetime vocation in spite of limitations... *The Book of Tofu* was quite inspiring and gave impetus to our work." Address: P.O. Box 100, Ibusa, Delta State, Nigeria. Phone: +234 46 000 0172.

6436. Brink, Susan. 1993. Can tofu stop cancer? As its uses multiply, the soybean looks more like a magic bullet. *U.S.*

News and World Report 114:77. May 31.
• ***Summary:*** The magic bullet in soybeans could be genistein, a crystalline substance with almost no nutritive value, which is found almost exclusively in soybeans. "More than 200 scientific papers on genistein's possible role in cancer prevention have been published since 1987. Among the most intriguing is a German study in the April 1993 *Proceedings of the National Academy of Sciences,* which found that, in the test tube, genistein blocks angiogenesis, the process in which new blood vessels grow–and which is needed to nourish malignant tumors.

"The German research feeds speculation that genistein may be one dietary substance that explains the difference in some cancer rates between the United States and Asia. The American breast-cancer rate, for example, is 22.4 per 100,000, almost four times Japan's rate of 6 per 100,000. The American prostate-cancer rate is 15.7 per 100,000, also roughly four times the Japanese rate of 3.5 per 100,000. A high-fat diet has long been suspected as a cancer-causing culprit. That could be true. But while Americans eat more fat, they also eat fewer plant foods, including soy...

"In the meantime, try making this summer's fruit shakes with soy milk–and see if anyone notices."

Note: This is the earliest document seen (June 1999), with "soy" in the title, and which suggests that soy might reduce one's risk of prostate cancer.

6437. Center for Crops Utilization Research. 1993. Center for Crops Utilization Research. Ames, Iowa: Iowa State University, Utilization Center for Agricultural Products. 16 p. Undated. 24 cm.
• ***Summary:*** This color booklet describes the Center's many interesting and pioneering projects. Lawrence A. Johnson is in charge of the Center. "Approximately 30 CCUR scientists from 12 departments are involved in 60 basic and applied research projects in areas ranging from new food products to applied biotechnology." Some projects are focused on developing industrial (non-food, non-feed) products from soybeans, but others involve improved soyfoods. "Center researchers are working to improve water extraction methods for preparing soymilk and dried soy products. The group's rapid hydration hydrothermal cooking (RHHTC) process is an innovative means by which antinutritional factors and the oxidative enzymes responsible for off-tastes are deactivated. Concurrently, product yields are increased; the new process can recover 90% of the bean solids–only 60% is recovered by traditional manufacturing methods.

"Another group is evaluating new and improved lines of soybeans having enhanced soyfood processing characteristics. Rapid screening methods for measuring the potential end-use performance of soybean lots are also being developed."

Talk with Larry Johnson, Professor-in-Charge. 1993. Sept. 27. This booklet was published in about May 1993 to discuss the Center's programs and projects. Address: Ames, Iowa. Phone: 515-294-0160.

6438. Eden Foods. 1993. Edensoy Extra–High performance food. Edensoy + antioxidants + vitamins + minerals = Edensoy Extra. Healthy, delicious vegetable kingdom food. Look good and feel great (Ad). *Natural Foods Merchandiser.* May. p. 10-11.
• ***Summary:*** "America's favorite liquid soy food is now fortified with beta carotene vitamin A, vegetable origin vitamins E & D2, and twice as much calcium [in the form of calcium carbonate]... Beta carotene A and vitamin E are potent antioxidants that protect us from 'free radicals' which lack an electron. Antioxidants donate electrons and neutralize their harmful effect. Pollution, too much sun, toxins in food, and high oxygen intake tend to create them. 'Free radical' molecules can destroy a cell, enzyme, protein, alter DNA or harm cells so strength is weakened."

Made from whole soybeans, Edensoy is OCIA certified organically grown and processed. Address: 701 Tecumseh Rd., Clinton, Michigan 49236. Phone: 1-800-248-0320.

6439. Library of Congress, Subject Cataloging Div., Processing Services. 1993. Library of Congress subject headings. 16th edition. Washington, DC: Cataloging Distribution Service, Library of Congress. 4 volumes.
• ***Summary:*** For the basic idea, words and LC call numbers see the 12th edition (1989). Address: Washington, DC.

6440. Shurtleff, William; Aoyagi, Akiko. comps. 1993. Henry Ford and his researchers' work with soybeans, soyfoods, and chemurgy–Bibliography and sourcebook, 1921 to 1993: Detailed information on 439 published documents (extensively annotated bibliography), 79 unpublished archival documents, 71 original interviews (many full text) and overviews, 13 commercial soy products. Lafayette, California: Soyfoods Center. 249 p. Subject/geographical index. Author/company index. Language index. Printed May 19. 28 cm. [567 ref]
• ***Summary:*** This is the most comprehensive book ever published about the work of Henry Ford and his researchers with soybeans and soyfoods. It has been compiled, one record at a time over a period of 18 years, in an attempt to document the history of this subject. It is also the single most current and useful source of information on this subject, since 96% of all records contain a summary/abstract averaging 286 words in length.

This is one of more than 40 books on soybeans and soyfoods being compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyfoods Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features: 30 different document types, both published and unpublished; every known publication on the subject in every language;

66 original Soyfoods Center interviews and overviews never before published. Thus, it is a powerful tool for understanding this subject from its earliest beginnings to the present.

The bibliographic records in this book include 439 published documents and 79 unpublished archival documents. Each contains (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation of the title, month and issue of publication, and the first author's first name (if given).

The book also includes details on 13 commercial soy products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to make best use of this book, a complete subject and geographical index, an author/company index, a language index, and a bibliometric analysis of the composition of the book (by decade, document type, language, leading periodicals or patents, leading countries, states, and related subjects, plus a histogram by year) are also included. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

6441. Weiner, Michael. 1993. New developments with Amano and Yamashita (Interview). *SoyaScan Notes.* June 18. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Michael works as a consultant for Peter Joe of Sunrise Market Ltd. and with Amano Foods. He used to consult with Mandarin Enterprises in British Columbia. Now his main work is as a broker, representing various U.S. companies such as Vitasoy, Knudsen, Santa Cruz, etc. Amano still makes all of Westbrae's organic miso. Amano is trying to construct a 60,000 square foot plant. They had a joint venture with Yamashita but it fell apart. Now Yamashita is constructing their own 60,000 square foot soy sauce plant in Oregon. The ground breaking will take place in a couple of weeks. Michael does not feel that this will be much of a threat to Amano, which plans to sell a lot of Amano products in supermarkets. The market is big and growing rapidly. Soyfoods now are given large amounts of shelf space (8-16 linear feet) in the produce section of all supermarkets in western Canada (British Columbia, Alberta, and Manitoba). A major reason for this is that Mandarin and Sunrise have an excellent relationship with the people in charge of the produce section in western Canadian supermarkets. Initially Michael helped to establish some of these relationships; these companies got a few facings for their tofu. Then Mandarin added their tofu burgers. Then Sunrise added Yves Wieners and soy cheese. The products sold, which is proof that exposure will work. Michael was involved in trying to make the same thing happen in Ontario with the Loblaws chain, and in Quebec, but they were never allowed to give the program a try–not even in 1-2 stores.

Safeway supermarkets are so sold on soyfoods that they have developed special open-front, vertical, refrigerated "Tofu Products" cases that are placed adjacent to the produce case, but have a lower temperature. They are quite large and contain everything from soy drinks to tofu, soy cheese to meatless hot dogs. Soyfoods are very widely available on Vancouver Island.

Sunrise and Michael jointly import Mori-Nu tofu into Canada from Japan. Also Sunrise distributes some juice products for which Michael is the broker. Mori-Nu does not sell well in supermarkets because it's retail price is too high. Address: President, New Age Marketing, P.O. Box 39590, White Rock, BC, V4A 9P3, Canada. Phone: 604-538-0127.

6442. Foundation on Economic Trends. 1993. Amended petition requesting the Food and Drug Administration to halt the feeding of ruminant animal protein to ruminants. 1130 17th St., NW, Suite 630, Washington, DC 20036. 11 p. Unpublished typescript. 28 cm. [21 footnotes]
• ***Summary:*** This petition was submitted to Dr. David Kessler, Commissioner of the U.S. Food and Drug Administration (FDA), with a copy to Hon. Michael Espy, Secretary, U.S. Department of Agriculture (USDA). The president of the Foundation is Jeremy Rifkin.

"The petitioners request that the FDA and USDA take the following action to prevent the potential spread of a severe health threat to both animals and humans: (1) order a permanent halt to all feeding of ruminant animal protein to ruminants, especially cows and sheep; (2) develop a significant epidemiological investigation to determine the incidence of transmissible spongiform encephalopathies (TSE), such as scrapie-like diseases in sheep and bovine spongiform encephalopathy-like diseases in cattle, among ruminant animals in the United States; (3) develop a separate, significant epidemiological study to determine the incidence of TSEs in 'downer' cattle; (4) establish a bovine brain bank for the ongoing study of TSEs; (5) develop a significant epidemiological investigation to determine the incidence of TSEs among the human population of the United States, and (6) develop an ongoing national monitoring and registry program utilizing autopsy examinations to determine any changes in the incidence of CJD-like diseases among the human population of the United States"

Notes: Downer cows are cows that look healthy but drop dead prematurely for unknown reasons. In humans TSE is commonly referred to as Creutzfeldt-Jakob Disease (CJD) or Gerstman-Straussler Syndrome (in Germany). In Europe, bovine spongiform encephalopathy or BSE is called 'Mad Cow Disease'.

"I. Statement of facts: The health and safety of ruminant animals, primarily cows and sheep, are at grave risk because of the relatively recent and increasing practice of feeding ruminant animal protein–the otherwise unmarketable remains of rendered cows and sheep–to cows and other ruminants in the form of commercial animal feed products.

"Currently, end products from rendering are being used to feed ruminant animals throughout the United States. The rendering industry utilizes packinghouse offal, meat processing waste and animal tissues from other sources including animals that have died otherwise than by slaughter."

In Europe, many cattle have died from "Mad Cow Disease" or BSE. Since the discovery of the BSE outbreak, more than 80,000 cattle thought to be infected with the disease have been destroyed throughout the United Kingdom. "In the U.S. virtually every 'downer' cow is sent to slaughterhouse where they are readied for human consumption and/or made into high protein animal feed... As a result of CJD's close physical relationship to TSEs, there is a significant concern that the consumption of TSE-infected cattle or sheep, or cattle and sheep fed TSE-infected ruminant protein, could have a direct impact on human health by promoting the onset of CJD. In fact, there already are several indications that incidences of CJD in the United States are on the rise. There is much overlap in symptomatology between Alzheimer's Disease (AD) and CJD. Studies indicate a typical 25% error rate in the clinical diagnoses of dementia.* Up to 4 million Americans currently are thought to be afflicted with Alzheimer's Disease, the leading dementia disease. The specific causes of AD are unknown at this time, but hypotheses include head trauma, prion infections, aluminum toxicity, and immunologic disorders." (Footnote: *Marks, W.A., et al. "Cerebral degenerations producing dementia: importance of neuropathologic confirmation of clinical diagnoses." *Journal of Geriatrics-Psychology-Neurology.* 1988 Oct/Dec; 1(4):187-98.)

"If an increasing number of people are developing CJD, their deaths could be hidden by the high number of Alzheimer's cases, since direct post-mortem evaluation of brain tissue is the only positive method of determining whether a patient has Alzheimer's Disease or CJD. Researchers have recommended that direct neuropathological examination at autopsy be undertaken in all demented patients to determine the actual incidence of the various dementia diseases, including CJD, but only a small number of dementia victims are now autopsied.

"Often CJD is confused with other forms of dementia. When doctors at the Veterans Administration Medical Center in Pittsburgh, Pennsylvania, consecutively autopsied 54 demented patients, they discovered that three (5.5%) had died of CJD disease, a rate of CJD occurrence that is about one thousand times higher than expected."* (Footnote: *Boller, Francis, et al. "Diagnosis of dementia: clinicopathologic correlations." *Neurology.* 1989 Jan; 39(1):76-79). Address: Washington, DC. Phone: (202) 466-2823.

6443. *Health Food Business.* 1993. Edensoy added to flight meals. June. p. 55.

• ***Summary:*** "Edensoy, a soymilk manufactured by Eden Foods of Clinton, Michigan, has been chosen to be served with in-flight vegetarian meals in First and Business Class seating on Continental and American West Airlines. Eden's president Nancy Potter said that this is the first time a soymilk is being offered by a domestic airline."

6444. Kushi, Michio; Kushi, Aveline; Jack, Alex. 1993. Macrobiotic diet: Revised and enlarged edition. Tokyo and New York: Japan Publications. 400 p. June, Illust. Index. 21 cm. [67 ref]

• ***Summary:*** Edited by Alex Jack, this is the revision of a book with the same title first printed in 1985. The table of contents of this edition is identical to that of the 1985 edition. However, this edition has been "expanded to include information on natural foods that have recently become available; the latest research on cancer and diet; AIDS and diet; the U.S. government's landmark report on Diet and Health, and the China Study; as well as a wealth of information on the impact of our dietary choices on the earth's environment" (from the rear cover).

Since the physical dimensions (21.2 cm tall) are smaller, the text is on different pages. For example, Japanese black beans (see below).

The chapter on "Beans and bean products" has the following contents: Daily use. History. Quality. Varieties: Azuki beans, black-eyed peas (sometimes known as yard-long beans), black turtle beans, broad beans, chick-peas, great northern beans, kidney beans, lima beans, lentils, mung beans, navy beans, peas, pinto beans, soybeans (p. 195-99) (introduction, miso, natto, okara, soy flour, soy grits, soy milk, soy oil, shoyu, tempeh, tofu {incl. nigari, fresh tofu, soft tofu, firm tofu, deep-fried tofu, pickled tofu, fermented tofu, frozen tofu, dried tofu}), viilia, soy yogurt, yuba.

For information on cooking soy, see p. 204-07. Note: Natto is not usually made with koji (p. 207). For "Health benefits" and for "Soy foods and cancer research" (p. 208-09).

Black soybeans (also known as "Japanese black beans") are mentioned as follows: "The smaller varieties of azuki beans, lentils, chick-peas, and black soybeans contain less fat and oil and are preferred for daily use" (p. 60). "Bean rice: Besides azuki beans, other beans and legumes such as lentils, chick peas, yellow or black soybeans, and [common] black beans can be cooked together with brown rice in a proportion of 10 to 15 percent beans and 85 to 90 percent rice" (p. 121). The chapter titled "Beans and bean products" (p. 189)

begins: "In the standard macrobiotic diet, whole dried beans and bean products are usually eaten daily or several times per week and comprise about 5 to 10 percent of the volume of total food consumed. Beans that are more northerly in origin, smaller in size, and contain less fat and oil than other varieties, such as azuki beans, lentils, chick peas, and black soybeans are eaten most frequently." In the same chapter, the section on "Cooking methods" (p. 200). "In general, chick peas, black soybeans, and other hard beans should be soaked 6 to 8 hours or, preferably overnight, if boiled, and a minimum of 2 hours if pressure cooked." "In order to allow the inside and outside of the beans to cook evenly, beans are usually seasoned toward the end of cooking... In the Far East, a small strip of kombu is traditionally added to the bottom of a pot of beans. The mineral-rich sea vegetable adds flavor to the beans... and improves their digestibility." "Shocking is a traditional method of preparing beans in the Far East." It is described in detail (p. 201). In the section titled "Soybeans" (p. 204) black soybeans are also discussed.

"Natto is a fermented soybean product that resembles baked beans connected by long sticky strands. Its strong odor takes some adjusting to but once appreciated natto is enjoyed regularly as a small side dish or condiment" (p. 196). Address: 1-2. Brookline and Becket, Massachusetts.

6445. Messina, Mark. 1993. Welcome to *The Soy Connection. Soy Connection* (*The*) (*Chesterfield, Missouri–United Soybean Board*) 1(1):1-2. [7 ref]
• ***Summary:*** Discusses the growing interest in soyfoods (such as tofu, tempeh, soymilk, and miso) in America. They are becoming more mainstream. An estimated 2/3 of all tofu is sold in traditional supermarkets. Tofu consumption in America has doubled during the past 10 years.

6446. *Newsletter of the Soyfoods Association of America* (*Libertytown, Maryland*). 1993. Thank you to the American Soybean Association. 4(2):2.
• ***Summary:*** "The American Soybean Association has awarded the SAA [Soyfoods Association of America] a grant for $27,625.00 to develop and distribute educational materials on soyfoods and to produce periodic press releases. The grant will be used to produce a 4-color brochure on soyfoods and eight individual, camera-ready fact sheets on tofu, soymilk, tempeh, miso, texturized vegetable protein, soy flour, soy-based meat analogs, and soy oil. Materials will be made available to state soybean boards for distribution to consumers and volunteer soy promoters, to state level cooperative extension nutritionists for distribution to consumers through county home economics offices, and to health professionals for use in health and nutrition education programs. The first two fact sheets–on tofu and soymilk–will be available this month. All of the materials will be completed by Fall, 1993."

6447. **Product Name:** Soya Beverage, and Tofu.
Manufacturer's Name: Palaami Food Products India (P) Ltd.
Manufacturer's Address: I 1/C Sidco Industrial Estate, K. Pudur, Madurai, Tamil Nadu–625 007, India.
Date of Introduction: 1993. June.
New Product–Documentation: List of new tofu manufacturers in countries where tofu is not well known, sent by Yoshinori Ito of Takai Seisakusho. 1994. Nov. 15. The owner of this new tofu company is Mr. Prem Palanivel.

Letter (fax) from Mr. D. Prem Palanivel. 1995. March 24. He started making Soya Beverage and tofu in June 1993. He now makes about 5,000 liters/month of Soya Beverage and 50-75 kg/month of tofu. Madurai [Madura] is located in southern India.

Letter (fax) from Mr. D. Prem Palanivel. 1995. May 22. He is presently packing his products in HM HD pouches. By June 1995 he plans to introduce his soya beverage in Tetra Brik cartons and to reach a capacity of 10,000 200 ml pouches per day. "Our machinery and basic know-how was imported from Takai of Japan. After extensive research, we have developed our product so it is suitable to the Indian taste, and we have branded our product Pep 'n' Bounce." He would like to establish a branch of the International Soyfoods Center Network in India.

6448. *SoyaCow Newsletter* (*Ottawa, Canada*). 1993. European patent helps ProSoya's new partners. 2(2):1. April/June.
• ***Summary:*** "With the successful process patent for non-beany soymilk, ProSoya has now initiated development of the European market with the help of TAN AB of Sweden and UPDATE GmbH of Germany.

"Ted Nordquist of TAN AB, is an internationally known soyfoods production expert who is specializing in the worldwide development of the SC-2000, the 2000 L/H–continuous-process, industrial system offered by ProSoya. UPDATE GmbH is a Frankfurt-based marketing and communication company headed by Horst Daller and Rainer Wilkens. It specializes in ethical and progressive products and will develop European territories for the retail SC-20 and wholesale SC-100 systems and franchises."

Talk with George Conquergood of International ProSoya Corporation (IPC). 1999. May 10. Horst Daller is the older brother of Frank Daller, who worked for ProSoya in Ottawa, Canada.

6449. *SoyaCow Newsletter* (*Ottawa, Canada*). 1993. Wholesale soymilk and ice cream production with SC-100. 2(2):1-2. April/June.
• ***Summary:*** "Using the economical 400 litre/hour SC-100 batch system, Moulins aux Abenakis of Ste. Clair, Quebec, was the first company to make 'SoyaCow' non-beany soymilk for wholesale distribution. Now, ProSoya has begun

a new development with Gelato Fresco, a top quality, natural ice cream company in Toronto, Canada, and Milan, Italy. The first shipment of 'SoyaCow' non-dairy ice cream has already been make, thanks to the smaller SC-20 installed as a pilot system."

6450. *SoyaCow Newsletter* (*Ottawa, Canada*). 1993. SC-20 complements fine vegetarian restaurant and top natural foods store. 2(2):1-2. April/June.
• ***Summary:*** "The Sweet Carrot Cafe in Saskatoon and Rainbow Foods in Ottawa are the first Canadian retail sites for the SoyaCow SC-20... Both locations produce fresh non-beany soymilk for direct sale and formulation into value-added products like shakes, yogurt, pudding, okara baked goods, tofu, etc. They also feature returnable glass bottles of the soymilk in several flavours." The Sweet Carrot Cafe is a fine [vegetarian] restaurant, featuring a grand piano, tablecloths, and wine. Owners George and Wendy Conquergood have added a Health Bar & Deli, made possible by a new SoyaCow.

"The newly-enlarged 5,700 square foot Rainbow Foods in Ottawa is the largest health and natural products store between Toronto and Montreal. Owners Janet and Mike Kaplan see the production of high-quality fresh soymilk as a major feature of their full-service operation... Their "Healthy Deli" with the SoyaCow comprises over 1,000 square feet of the total business, and customers can see the micro-soydairy operation from the fast-food counter."

Photos show: (1) George Conquergood with his SC-20 at the Sweet Carrot Cafe. (2) The SoyaCow SC-20 at Rainbow Foods, owned by Janet and Mike Kaplan. Note: The SC-20 at Sweet Carrot Cafe was in operation before the one at Rainbow Foods. The soymilk made at Sweet Carrot Cafe was the first commercial soymilk made by any model of SoyaCow.

6451. Roller, Ron. 1993. How much soymilk was sold in the USA in 1992? (Interview). *SoyaScan Notes.* July 8. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ron recently conducted a little market survey, then cross-checked and confirmed his figures with Westbrae, Soyatech, etc. In 1992 the estimated retail value of soymilk (not including infant formulas), sold in the United States was about $75,000,000. Note that soymilk now retails for a little less than $2.00/liter. The market is estimated to be growing at the rate of about 12% a year. Approximately 80% of the soymilk is sold in liter or quart sizes and the remaining 20% is sold in smaller (250 or 200 ml) sizes. Almost all is packaged in aseptic cartons. Soymilk is one of the most popular products in natural- and health food stores nationwide. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6452. Rich, Robert. 1993. More on Rich Products Corporation's work with soy-based dairy analogs (Interview). *SoyaScan Notes.* July 13. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Rich Products does not have any documents in its archives on the various small companies (such as Delsoy Products) that were the first to make soy-based whip toppings starting in about 1944-45. However Bob remembers them well and what they did. Delsoy started with a filled cream named Devonshire Topping which they sold mostly in Detroit, Michigan. Then they came out with a soybean cream that was not frozen. The majority of their early sales were in the filled cream. Delsoy was never sold in Buffalo, New York, and thus was not a competitor to Rich's Whip Topping. Even after Whip Topping was frozen, Delsoy was never much of a competitor. Bob is not sure when Delsoy was launched, but he has the feeling that it was on the market only several months before his Whip Topping.

Concerning the article by F. Olmsted in the 16 April 1945 issue of the *Detroit News,* Bob (who worked for the War Food Administration or WFA) never heard of the WFA issuing an order placing a 19% limit on all fats used in any dairy product. This information was probably supplied to Olmsted by Herbert Marshall Taylor, who Bob remembers as "a wild man." Bob conjectures that maybe the reason Taylor switched to a soy-based topping was to allow him to ship the product across state lines. In those times a company could not sell a filled cream product (which was what he had) across state lines, and there were only 7 states in which filled milk products could be made and sold within the state. In fact the Milnot Company had a plant near Litchfield, Illinois, situated exactly on the state line between Illinois and Indiana. They had a filled milk processing room on each side of the line, i.e. in each state. They never made a soy-based product. At one time, Milnot started shipping its filled milk across a state line either to test the law or because they thought they could get away with it. The government seized their product and took the president to court. He was judged guilty and had to spend the weekend in jail until he could get a bail bond. He was sentenced to a year in jail but he never served time because president Franklin Roosevelt gave him a presidential pardon.

Rich Products was involved in about 40 lawsuits with various states involving its non-dairy products–and the company won them all. But if the lawsuits had taken place a few years earlier, Bob thinks Rich Products could have been beaten. The climate was changing, led by more favorable attitudes toward legalization of margarine–which replaced a dairy product. The first lawsuit against Rich Products took place in California in 1949. The charge was that Whip Topping was an imitation dairy product, and hence illegal. Arguing that the product was a replacement, not an imitation, the company won the case.

Most of the subsequent cases were against Coffee Rich

(a non-dairy coffee whitener) starting in 1961. Whip Topping was not much of a threat to the dairy industry. Most milk routes used to take out 6 half pints of heavy cream (38-40% fat; housewives would use it to make whipped cream) in the morning and maybe bring back 8 in the afternoon–due to souring, etc. So heavy cream was not of much interest to milk dealers. But Coffee Rich was a real threat because much more light cream (19-20% fat; for use in coffee) and medium cream (28-30% fat; for use on cereal) was than heavy cream.

Last Wednesday (July 7) Bob celebrated his 80th birthday. He is still chairman of the board of Rich Products Corp., his son Robert Jr. is president, and Herb Kusche is executive vice president. Last year his company did $940 million is sales. Next year, which will be the company's 50th anniversary, they expect to go over $1,000 million. The company has a research department in Buffalo with 75 researchers, plus 6,000 employees and 26 plants worldwide. They have 7 people in their London office, 5 in the Hong Kong office, 6 in Mexico City, 2 in Singapore, 2 in Brisbane (Australia), and 2 in Tokyo–all their own people.

The Freeze Flo process has become very successful, especially in frozen fruits and in their great-tasting product named Bettercreme–which was launched in April 1977 and which keeps fresh without bacterial growth or spoilage at room temperature without preservatives. It is sold as such to foodservice organizations and bakeries, which keep it frozen, then whip it for use on cakes and pies; the latter will go stale before the Better Cream! It is also used as the filling in Rich's Frozen Chocolate Eclair. Though the company spent a lot of money hoping to find medical applications for the Freeze Flo Process, nothing has yet been commercialized.

Rich Products does not have a good archives with documents from the early years of the company. "In those days we didn't save things, although we have nice displays in our memorabilia room here in our 250,000 square foot building which is called Rich Renaissance Niagara. Our offices and research center are in that building–but it houses no manufacturing operations."

Bob has heard that Edsel Ford died of either ungulate fever or cancer of the intestine. If it were ungulate fever, that could be one more reason why Henry Ford was so interested in promoting the use of soymilk–as at the Henry Ford Hospital. Bob thinks they also served a soy coffee cream (soymilk thickened with propylene glycol) at the hospital.

Note from Ford Bryan, researcher at the Ford Archives, in response to an inquiry from William Shurtleff. 1993. Aug. 9. "I'm fairly certain Henry Ford disliked cows as a boy–long before Edsel's illness. We do not seem to have a copy of Edsel Ford's death certificate. As far as we know, the cause of Edsel's death was cancer of the stomach, perhaps complicated by ungulate fever."

Talk with Herb Kusche, executive vice-president of Rich Products. 1993. July 14. "Bob Rich has a memory like an elephant; its superb." Address: Chairman of the Board, Rich Products Corp., P.O. Box 245 (1150 Niagara St.), Buffalo, New York. Phone: 716-878-8000.

6453. Sharma, Ratan. 1993. Utilization and evaluation of soymilk as a partial substitute for cow / buffalo milk in the manufacture of rasogolla. PhD thesis, Dep. of Animal Husbandry and Dairying, Inst. of Agricultural Sciences, Banaras Hindu University, Varanasi–221 005, Uttar Pradesh, India. 192 leaves. [116 ref]*

• ***Summary:*** Note 1. Rasogolla (also widely known as Rasgulla) is a very popular cheese-based syrupy sweet dish, originally from Orissa. Popular throughout India and South Asia, the dish is made from balls of chhena (the word for "paneer" used in the eastern parts of India) and semolina dough, cooked in sugar syrup.

Note 2. This thesis was forwarded and submitted on May 13, 1993 and was accepted and awarded by the panel of experts on July 29, 1993.

Note 3. Ratan Sharma's masters thesis was titled "Preservation of Eggs at Room Temperature." Soy was not mentioned in this master's thesis. Address: Varanasi, India.

6454. Demos, Steve. 1993. New developments with soyfoods in America (Interview). *SoyaScan Notes.* July 31. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Vitasoy purchased Azumaya Inc. (America's largest tofu manufacturer, and the low-price leader) in May or June 1993 for an estimated $4-$5 million. Azumaya did not sell their building or the land on which their plant is situated. So now Vitasoy owns two large tofu manufacturers on both coasts of the USA: Nasoya in Massachusetts, and Azumaya in California.

Mr. Yamauchi sold the rest of his ownership in House Foods & Yamauchi, Inc. to House Foods of Japan. [Note: Another industry observer states that the sale took place in about April 1993 for about $2 million].

Bill Bolduc is now running a soymilk plant in the Midwest; he now makes Westbrae's soymilk. Steve sees the future of soymilk as being packaged in the new extended shelf life (ESL) gable-top carton and sold as a commodity for a lower price like cow's milk rather than as a specialty flavored beverage.

Anders Lindner told Steve in March that DE-VAU-GE wanted to sell their soymilk plant. He offered to sell the used plant to Steve for a good price in German marks. Steve never responded.

White Wave now makes about 100,000 lb/week of tofu (of all kinds). The company's reduced fat tofu is selling very well. Quong Hop is stating on two red-on-white stickers on their package that (1) their tofu is "The original reduced fat tofu;" and (2) "The original reduced fat–High protein tofu: Serving size 4 oz., Fat per serving 3 gm. Protein per serving 14 gm." Lab tests run by more than one company indicate that Quong Hop's tofu actually contains far more fat.

Steve bought Veggie Life from Leonardo Laudisio much more for the name than for the product (meatless burger) or its formula.

Update: 1993. Nov. 24. Talk with Leonardo Laudisio. On about November 8-10 White Wave secured preferred vendor status from Whole Foods Markets. They now are installing their cold-storage "set" in the individual stores; one is now in the Berkeley store. At the top in large letters is written "White Wave Vegetarian Cuisine" with the oval White Wave logo is bas relief. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301. Phone: 303-443-3470.

6455. Haren, Chuck. 1993. Maya soy Guatemala. *Plenty Bulletin* (*Davis, California*) 9(2):1-2. Summer.
• ***Summary:*** "I spent two mornings at Alimentos San Bartolo (ASB), the Mayan owned and operated soy dairy near Solola that Plenty helped to create in 1979-1980. Alimentos San Bartolo is a business that is owned by the community of San Bartolo. A board of eight directors, who are the Community Development Directors for the village, watch over the operations. Our old friends Elena and Augustine continue to work there. ASB has a total staff of eight people.

"They sell about 2,000 frozen ice creams and fruit flavored milk bars every month during the six-month dry season. Also, each month they sell 700-800 lbs. of tofu and 60-80 lbs. of tempeh to stores in Antigua (Guatemala), Panajachel and Guatemala City. Some packaged soybeans and soy flour are sold and a small amount of milk is delivered to individual homes that like it. The prices of all these products are slightly lower than comparable foods on the market. The business is just making enough now to cover the small wages they are receiving and the other basic operating costs. They are not making enough to repair major equipment failures or to replace equipment when needed. All the equipment has been very well-maintained by the staff and the sanitation standards are very high.

"One thing that was obvious was the need to establish a small restaurant outlet in Solola if the ASB is going to develop a wider market for soybean foods among the Mayan people. They need a place near the center of Solola. They need an opportunity to show people the variety of delicious ways soybeans can be included into traditional foods at a very low cost and also educate the populace about the nutritional value of soybean foods. Now the local people only buy the frozen milk/fruit bars, ice cream and a small amount of milk. Why?–because they are not expensive and are sold in forms that are similar to foods they are accustomed to. Almost all of the tofu and tempeh is sold to stores catering to tourists... Now virtually all of the okara is used as compost to fertilize the gardens... Soybeans used at ASB are grown near the coast. They are purchased in Guatemala city. Inappropriate varieties, technical methods and lack of infrastructure used earlier limited soybeans from becoming a cash crop among farmers at the altitude of Solola (6,000-7,000 ft). Some people say soybeans cannot be established as a crop in this area because of the costs of fertilizer, fungus [fungicides] and insecticides needed, and the lack of sunlight during the rainy season."

"Fundadase is a Mayan NGO with a paid staff of about 25 people that supports community development work in areas surrounding Chichicastenango and Chimaltenango. They receive the majority of their funding from a Danish NGO."

In March of this year Haren participated in a successful 9-hour soybean workshop in Chichicastenango attended by more than 100 men and women from surrounding villages. "This group is very well organized." A meal was served which included soy harina drinks, okara stir-fried with vegetables and potatoes, and soymilk with vanilla. Then a practical demonstration of soybean processing was conducted. Finally several hundred pounds of soybean were sold to interested attendees in one and two pound packets. Of the 9 million people living in Guatemala, about 6 million are indigenous Maya. A 1991 United Nations study found that 6.5 million Guatemalans are living in extreme poverty. Photos show: A Mayan woman straining soymilk to make tofu at Alimentos San Bartolo. Two women preparing corn and soya tamales for the FUNDADASE demo. Address: Program Director.

6456. Imagine Foods, Inc. 1993. Three out of four would rather be dreaming (Ad). *Vegetarian Times.* July. p. 33. Also run in the Oct. issue, p. 39.
• ***Summary:*** This attractive 1/3 page color ad shows a glass and a carton of Rice Dream (Organic Original Lite 1% fat non-dairy rice beverage) next to a bowl containing cereal, sliced strawberries, and Rice Dream. The text states: "In a blind taste test, 300 natural food store shoppers were asked to compare Organic Original Lite Rice Dream with the two best selling soy beverages* (Footnote: * Based on a poll of leading natural food distributors). The exciting results were 227 out of 300 chose rice dream as the best tasting non-dairy beverage. 99% fat free with no cholesterol, Rice Dream is available in four scrumptious flavors. The light refreshing taste comes from our patented recipe which transforms nutritious brown rice into a delicious beverage rich in complex carbohydrates..." Address: 299 California Ave. #305, Palo Alto, California 94306. Phone: 415-327-1444.

6457. Osho, S.M. 1993. Developed soybean technologies for small-scale and industrial levels. Nigeria: IDRC Canada / IITA Soybean Utilization Project, Phase II. 67 p. July. Illust. 25 cm. [7 ref]
• ***Summary:*** On front cover and bottom of title page: "For a National Workshop on Small-Scale and Industrial Level Processing of Soybeans (27-29 July 1993). Contents: 1. Introduction. 2. Chemical composition and nutritive value

of soybeans. 3. A concept for preparation of whole soybeans for use in human food: Reduce the long cooking time required to tenderize the beans using a blanch of sodium bicarbonate or a local tenderizer. Soybean can be processed into soyflour and soybean paste to facilitate processing. Elimination of anti-nutritional factors (by use of moist or dry heat). Ensuring high protein yield at the end of processing. Taste 4. The use of soybean at household / village level processing. 5. Processing of soybeans as an income generating activity: Soybean tofu processing (soywara or soycheese). Extrusion cooking: IITA concept. Defatted cake processing and soybean oil extrusion using mechanical screw press technology: IITA concept. Flow charts: 1. For making raw soy flour, partially processed soy flour, roasted soyflour. 2. Four methods for processing soy ogi. 3. Soybean gari. 4. Soybean iru. 5. Processing of plantain / banana products. 6. Soy vita / Soyvita processing. 7. Soybean milk processing (hot extraction, cold extraction, from soy flour). 8. Processing soybean milk and milk residue (okara). 9. Soy cheese from whole soybean. 10. Making soy yogurt.

6. Achievements and impact of soybean utilization. How to grow soybeans (starting with a small area). Fabricators / suppliers of soybean processing equipment (32 companies listed). Fig. 2. Instapro 600 extruder: Configuration for whole soybean extrusion. Fig. 3. Instapro 600 extruder: Configuration for corn/soy extrusion. References / suggested reading.

Note: On the white cover are the logos of IRDC/ IITA Soybean Utilization Project, International Institute of Tropical Agriculture (IITA) and Libran Trusts Limited.

Figures show: (1) Products derived from soybeans (full page). (5) Soybean processing by extrusion / expelling.

Tables show: (1) Chemical composition of whole soybeans. (2) Comparative cost of commodity and protein in selected food sources in Nigeria 1993 (The most expensive is milk powder at 556 Naira/kg. The least expensive is soybean at 167 Naira/kg). (3) Amino acid profile of soybean protein: Grams of gram Amino acid per 16 grams of nitrogen. Source: FAO 1985. (4) Specification of time, temperature and treatment for the complete inactivation of the soybean trypsin inhibitor at the household level (ranges from 4 minutes for puffing whole soybeans in sand to 30 minutes for boiling whole soybean at 100ºC.). (7) Yield and quality of soyoil as affected by processing temperature. (8) Physico-chemical characteristics of crude, partially and fully refined oil. (9) The percentage of farmers / households producing and utilizing soybeans in IRDC Project Sites (1991 vs. 1992). (10) Some soybean products that are being processed and marketed by companies in Nigeria (Feb. 1992). Shows 32 commercial products. For each product is given the company name, location (state), Product, and % soybean used in the product. Here are the details for each product.

1. Betamarks, Lagos, Soybean flours, 30%.
2. DLOB, Oyo, Soy oil / high protein cake, 100%.
3. Farina, Lagos, Soybeverages, 100%.
4. Kofa Agric. Ventures, Kwara, Soy oil / high protein cake, 100%.
5. Milkman, Oyo, Soymilk, 100%.
6. Oja Farms, Oyo, Soy oil / high protein cake, 100%, Casasoy, 30%.
7. Taraku Oil Mills, Benue, Soy oil / high protein flake, 100%.
8. Uncle Segun Food Proc. & Preserv. Co., Oyo, Soy powder, 100%.
9. Jomartex, Oyo, Soymilk, 100%.
10. Lisabi Foods, Lagos, Soy custard, 30%.
11. Smallette, Sogi, 30%.
12. Funtua Oil Mills, Kaduna, Soy oil / high protein cake, 100%.
13. Glaxo Nigeria, Lagos, 'Babeena' baby food, 30%.
14. Nestle Foods, Lagos, 'Nutrend' baby food / 'Golden Morn' breakfast food, 30%.
15. Imo Health Foods, Imo, Soybeverages, 100%.
16. Cadbury Nigeria, Lagos, 'Das' candies, 10%.
17. Tuns Oil, Osun, Soy oil / high protein cake extruded products, 100%.
18. Marrison Ltd., Lagos, Extruded products, 100%.
19. Akiibiti Farms, Ondo, Extruded products, 100%. 20. Deagbo Industries, Oyo, Soyvita (beverages), 100%.
21. Tella Food Industries, Oyo, Soymilk, 100%.
22. Goodings Health Foods, Lagos, Texturized vegetable protein (Nutrela), 100%.
23. Niger Dock, Lagos, Soymilk, 100%.
24. Jof Ideal Family Farm, Ondo, Vegetable oil, 100%.
25. Temitope Biscuit Indus. Ltd., Ogun, Soybiscuit, 10%, Baby food, 30%.
26. Orman Industries Comp. Ltd., Oyo, Extruded soy full-fat defatted soycake, 100%.
27. Al-Bahamas, Lagos, Baba ogi, 30%.
28. Odichie Bakery, Lagos, soybread, 10%.
29. Morgan, Oyo, Soyflour, 100%.
30. Pfizer Nigeria Ltd., Lagos, Livestock feed, 30%.
31. Buckingham Ltd., Lagos, Mama Joy baby food, 30%.
32. Alphatec, Oyo, Soyoil / livestock feed, 100%.
33. Cocoa Industries, Lagos, Chocolate bar, 10%.

Address: 1. Food Technologist and Coordinator, IDRC/ IITA Soybean Utilization Project, International Institute of Tropical Agriculture, Oyo Road, PMB 5320, Ibadan, Nigeria.

6458. Bolduc, Bill. 1993. Current work with soymilk and organically-grown soybeans (Interview). *SoyaScan Notes.* Aug. 16. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Bill Shurtleff tells Bill Bolduc that he has heard that Bolduc's company is now making soymilk for Westbrae Natural Foods. Bolduc admits that this is correct. Shurtleff says that he cannot imagine how Bolduc is doing this, since

a modern soymilk plant typically costs about $1.5 million. Bolduc answers that he purchased the soymilk plant owned by Grove Country Foods in an auction on 4 April 1993. This plant used the University of Illinois process for making soymilk.

Note: Grove Country Foods, USA, is located at 720 S. Main St., Columbus Grove, Ohio. Phone: 419-659-5636 (office) or -2920 (plant). The two main people involved in the company were Dr. Carl Hastings and Prof. Alvin I. Nelson, both food scientists from the University of Illinois. The basic idea of the company was to commercialize new soy products and processes (such as soynuts, soy yogurt, soy ice cream, and soymilk) developed at the University of Illinois. By December 1988 they were in test production of several products but were in need of funds for commercial production and marketing. In early 1989 Grove Country Foods Canada Inc. (located in Ridgetown, Ontario, Canada) introduced Astronuts, a type of soynuts apparently made by some other company, but the company went bankrupt after 1-2 years.

Bill has modified the Illinois process for making soymilk extensively. For example, he removes the okara from the soymilk. Completing these modifications has taken several months, and his company is "now in a start-up mode making soymilk." Their refrigeration was under-sized so they lost several loads of product to spoilage. This week they are installing another compressor, etc. The system now works very well if they go slowly, but they need to be able to produce twice as much soymilk as they presently can before he will be satisfied. Now it takes several days to produce a tanker full of soymilk. Westbrae is being patient and supportive even though the process is "a bit bumpy."

Bill is only making Westbrae's regular soymilks–not their Malteds, which he thinks are still made by Hinoichi in Los Angeles. The only soymilk Bill makes is Westbrae's. He ships this soymilk in a tanker to a separate facility nearby in the Midwest that packages the soymilk in Tetra Brik Aseptic cartons for Westbrae. Westbrae now has their regular soymilk (the same product sold under the same brand) made by two companies (Pacific Foods of Oregon and Bill's Organic Processing Corp.) using two different processes. Bill started because Pacific ran out of capacity. Westbrae likes the flavor of Bill's soymilk as well as they like Pacific's–even though Pacific's technology is much more expensive than Bill's. Bill has dramatically altered the Illinois process but he has decided not to try to patent his altered process.

Within about 2 months Bill expects to have a new soymilk product on the market with another partner (similar to Westbrae, but whose name is confidential) in a new package [perhaps an extended shelf-life (ESL) gable top carton]. After that, Bill hopes to diversify his customer base and his product mix. To do that he hopes to start by making a fresh, UHT Processed, refrigerated soy-based frozen dessert mix (for soft-serve soy ice cream) packaged at another facility, located very nearby, in 2-gallon bags with a 60-day shelf life.

Bill sees the future of soymilk packaging as being in the relatively new extended shelf life gable top carton that is sold refrigerated. This package, which is made by Tetra Pak and Evergreen, is significantly less expensive than the traditional Tetra Brik carton. It is now becoming quite popular in the Midwest and the East Coast because of its lower cost. It can cut at least $1.00 off the wholesale price of a case (12 quarts) of soymilk, which leads to even bigger savings at the retail level. And the product has a shelf life of 60-90 days refrigerated. Co-packers nearby own the new gable-top packaging equipment. Most of America's major soymilk companies are looking carefully at this package, it requires a whole new distribution system–refrigerated trucks. Bill knows that there will be a soymilk product on the market in the extended shelf life gable top package by this fall. Bill will make it for another company. The rest is confidential. He just ran the first test batch last Thursday, and now he is doing shelf-life tests. His smaller company has several advantages over the bigger soymilk companies; his company is very lean and can move very quickly. He is not controlled by any multinational corporations.

Bill has a separate company named Organic Marketing that exports organically grown soybeans to Europe; he started Organic Marketing in about 1989 and it was the precursor to Organic Processing. Bill was acting as marketing coordinator for the Ohio Ecological Food and Farm Association (the organic growers of Ohio). First he sold a lot of organically grown soybeans to Dan Burke of Pacific Soybean & Grain, then he started exporting. He met Jerry Fowler, a British-born man who has a company named Manna International in Ontario, Canada. Bill likes very much to do business with Jerry because he has a very good overview of the market, is cooperative with the growers, and pays good money to the growers for organic soybeans. Bill exports his organic soybeans via Montreal to England, where they are used by the Haldane Foods Group (which is owned by ADM).

Update: Talk with Ron Roller, CEO of American Soy Products (ASP). 1993. Sept. 4. Bill Bolduc is making plain soymilk and shipping it up to Grand Rapids, Michigan, for formulation and Tetra Brik packaging for Westbrae. ASP negotiated with Westbrae for a long time, but Westbrae finally went with Pacific Foods and Bolduc; there were many reasons for this but they are mostly political. Address: President, Organic Processing Corp., 305 N. Walnut St., Yellow Springs, Ohio 45387. Phone: 800-647-2326 OF.

6459. Bolduc, Bill. 1993. Plans for a making a rice beverage (Interview). *SoyaScan Notes.* Aug. 16. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Bill is planning to make a rice beverage using organically grown rice, to be sold under the Organic

Processing label. He has been working with some excellent professionals who know a great deal about converting carbohydrates to sugars. He has copies of the patents owned by California Natural Products in Manteca, California. He plans to run the beverage through his soymilk plant–but it will be very different than what anyone else is doing. If he is able to get the right flavor (which is the key), he will do a nutritional analysis to see how much conversion has taken place after different time periods. He feels there is a major market opportunity. He has considered making a product using a mixture of rice beverage and soymilk, and some time ago he has heard that American Soy Products (Eden Foods) in Michigan is working on such a product–but his tendency now is to make a rice beverage (more a rice milk than an amazake) without soy that will compete head to head with Rice Dream but in a different package–an extended shelf life (ESL) gable top carton that is sold refrigerated. This new package is significantly less expensive than the traditional Tetra Brik carton. Tetra Pak and Evergreen make this new package, which is now becoming quite popular in the Midwest and the East Coast because of its lower cost. It can cut at least $1.00 off the wholesale price of a case (12 quarts) of soymilk, which leads to even bigger savings at the retail level. And the product has a shelf life of 60-90 days refrigerated. Co-packers nearby own the new gable-top packaging equipment. Address: President, Organic Processing Corp., 305 N. Walnut St., Yellow Springs, Ohio 45387. Phone: 800-647-2326 OF.

6460. *Wall Street Journal.* 1993. Small food producers win a big concession on labeling. Aug. 18.
• ***Summary:*** "Congress this month modified the Nutrition Labeling and Education Act [NLEA] to give small companies more time to comply–and to exempt more of them altogether.

"The law requires most food concerns to use labels listing the nutritional content of a product's ingredients by next May. Originally, it exempted only companies with under $500,000 in annual sales. But few food concerns are in that category. So, after heavy lobbying from the Retail Confectioners International and the National Association for the Specialty Food Trade, Congress relaxed the rules.

"Under the amended law, companies that have under 300 workers are exempt in the first year from labeling products that sell fewer than 600,000 units and in the second year from labeling products that sell fewer than 400,000 units. Firms that have under 200 workers are exempt in the first three years from labeling products that sell fewer than 200,000 units. And companies that have under 100 workers are permanently exempt from labeling products that sell fewer than 100,000 units annually."

Talk with John Belleme. 1993. Aug. 29. If a company has less than 100 employees and sells less than 100,000 units of any particular product per year, and does not make any nutritional claims about its product, it need not switch to the new labeling regulations. However if it does make nutritional claims, it must use the new label format. In the past, if a product made no nutritional claims about its product, it did not need a panel showing the nutritional composition. The new nutritional panel requires information on 11 nutrients, whereas the old panel suggested only 7. Most of the food industry did not like the new labeling requirements. It would have cost food companies billions of dollars, and the FDA would have had to greatly increase their staff just to enforce it. Now, if a company makes a nutritional statement, it must use the new panel format–regardless of the company size and sales. The only time the new labeling regulations would not apply would be to the product that makes no nutritional claims, and whose manufacturer has less than 100 employees, and sells less than 100,000 units of the product per year. For example, Westbrae has 300 products since they purchased Little Bear, yet they only have above 3 products that sell more than 100,000 units per year: Several soymilk products and 1-2 flavors of ramen.

6461. Stuber, Lorenz; Stuber, Ellen Figueroa de. 1993. Re: Work with soya, Soyane, and Comida Para Todos in Guatemala. Letter to William Shurtleff at Soyfoods Center, Aug. 20. 3 p. Handwritten. [Eng]
• ***Summary:*** "We would like to thank you for all of the information and inspiration that we got from your book *The Book of Tofu.* We are vegetarians and for years we have been making and eating tofu.

"In 1985 we started a little project to help the poor people in Guatemala. We had a little vegetarian restaurant in Panajachel and we distributed the daily leftovers to people that need food. At the same time we started a little project of food distribution at the garbage dump in Guatemala City. We helped to fund our project by selling Guatemalan hand crafts in Switzerland. There we met some people who were interest in our work and with their financial help we were able to expand our project (Comida Para Todos–Food for Mankind).

"We presently go 4 times each week to the garbage dump and to Peronia (a slum outside Guatemala City). Each day we take a hot meal made with rice, vegetables, beans, and tortillas (containing some okara) plus a fruit drink to about 150 children and poor people.

"This year we started a program in 2 little schools in the countryside, where we take whole wheat bread (containing some okara), marmalade, and fruit-flavored soya drink (soya milk) daily to 150 children. We distribute the food at our own cost. We have a little piece of land 30 km from the city where we built a big kitchen for this project and also for our own income. We would like to sell soy products on a large scale at inexpensive prices which could help relieve the malnutrition of so many Guatemalan people.

"We have done some tests in making soya milk (natural, fruit flavored, and chocolate), which we store in plastic

bottles and refrigerate. But it usually spoils within 3-4 days, and sometimes even gels and spoils the day after it was made. "We got a cheap vacuum packaging machine for packing natural tofu, fried tofu, and soyaburgers, and now we have started experiments to see how long these products will stay fresh under refrigeration." They order a copy of *Tofu & Soymilk Production* and ask for advice in solving their problems.

A color photo shows a little Guatemalan boy pouring soymilk from a large teapot into two 1-liter plastic bottles held by little girls. Other kids are standing around drinking soymilk out of cups.

Follow-up response to questions from William Shurtleff of Soyfoods Center. 1993. Oct. 9. Since 1985 they have known about the soy dairy (which Plenty Canada had helped to establish) in San Bartolo, Solola, Guatemala. In July 1985 they started buying tofu and soy ice cream from San Bartolo for their vegetarian restaurant in Panajachel. They fried the tofu and sold it at the restaurant. In July 1989 they started to make tofu, soymilk, tortillas with okara, whole wheat bread with okara, and soyaburgers. In January 1993 they established Soyane and started to sell the first four of these foods, which they make at Nueva Goverdhana, km. 34 Carretera hacia Antigua, Santa Lucia Milpas Altas, Guatemala. Phone: 030-7179 / 030-7181. They are still working on developing labels; a sample of a generic label (which can be used on any of their soyfood products) is enclosed. As of October 1993 they sell the following amounts of each soyfood product: Tofu 42 kg/week (sold mostly to Korean people), soymilk 350 liters/week (distributed to 150 school children), tortillas with okara 15 kg/week (distributed to the people at the dump), and whole wheat bread with okara (110 kg of which is distributed to school children). Address: Soyane, Comida Para Todos, Apdo. Post. 2812, Guatemala City, Guatemala. Phone: 030-7179 or 030-7181.

6462. **Product Name:** [Nordlac (Soymilk)].
Foreign Name: Nordlac.
Manufacturer's Name: Alimentos Alfa Ltda. Productos Nordland.
Manufacturer's Address: Carretera a Sacaba Km. 7½, Cochabamba, Bolivia. Phone: (042) 70094.
Date of Introduction: 1993. August.
Wt/Vol., Packaging, Price: 200 cc, 300 cc, and 1 liter plastic pouches.
How Stored: Refrigerated.
New Product–Documentation: Letter from Rene Mouton-Bluys. 1990. Oct. They plan to make Nordland soy yogurt and maybe ice cream in the summer of 1992.

Call from Rene Mouton, President, from Bolivia. 1995. March 24. This product was launched in Aug. 1993. It is sold in plastic pouches. He uses an enzyme, α-galactosidase, to hydrolyze and get rid of the oligosaccharides in his soymilk. His equipment and technology comes from a mixture of sources: Bean Machines, with ideas from the University of Illinois, and a Bolivian research center. His company now makes 5,000 liters/day of soymilk.

6463. Kradjian, Robert M. 1993. The milk letter: A message to my patients. Hillsborough, California: Published by the author. 21 p. 28 cm. [7 ref]
• ***Summary:*** Contents: Introduction. What is milk? Is all milk the same? (cow's milk compared with mother's milk). Well, at least cow's milk is pure. Or is it? It gets worse. Other problems. Leukemia? Lymphoma? This may be the worst–Brace yourself (Bovine leukemia virus). Other cancers–Does it get worse? Well, what are the benefits? Is that all of the trouble? Low fat. Summary. Address: Chief, Div. of General Surgery, Seton Medical Center, 1800 Sullivan Ave., Suite 302, Daly City, California 94015.

6464. Obis, Mariclaire Barrett. 1993. Take another look at soyfoods. *Vegetarian Times.* Aug. p. 54-56, 58, 60, 62, 64, 66. [8 ref]
• ***Summary:*** A good introduction to soyfoods including whole dry soybeans, fresh green soybeans, soy flour and grits, soy sauce, soy oil, textured vegetable protein, soymilk, okara, soy yogurt and cheese, tofu, tempeh, and miso. Address: Contributing editor, Vegetarian Times.

6465. Soyfoods Association of America. 1993. Soymilk facts (Leaflet). Libertytown, Maryland. 2 p. 28 cm.
• ***Summary:*** The funding for this simple sheet (black ink on white paper) was provided by the United Soybean Board. Contents: Soymilk (what it is). Nutritional value of soymilk. Buying and storing soymilk. Types of soymilk. Tips for using soymilk. Soymilk recipes (4). Address: P.O. Box 65, Libertytown, Maryland 21762.

6466. Roller, Ron. 1993. Extended shelf life (ESL) gable-top cartons (Interview). *SoyaScan Notes.* Sept. 4. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ron has looked at the Tetra Rex ESL program. He feels it is worth considering if you can find a nearby co-packer. He has been talking with a man in Detroit who has one of the ESL packaging machines. He would not want to obtain a packaging machine until there is an established market for the product.

This new ESL package does not offer much cost savings; the key to saving money is distribution. It can be more expensive to distribute refrigerated foods unless you go with a dairy that ships right into stores–which can reduce your distribution costs, since they are already going there. Increasingly dairies are willing to distribute competing products. Cow's milk is a commodity that is very hard to make money on. So these distributors are diversifying in the items they carry.

Note. This is the earliest English-language document seen (Aug. 2013) that contains the abbreviation "ESL" which stands for "Extended Shelf Life" in connection with gable-top cartons or soymilk packaging. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6467. Thakur, Dan. 1993. Final report: The mid-term project evaluation. The soya milk cottage industry. Toronto, Ontario, Canada. 53 p. Sept. 24. Submitted to: Ontario International Development Program, 133 Richmond St. West, Suite 800, Toronto, Ontario M5H 2L3, Canada.
• ***Summary:*** This evaluation of the Child Haven International (Maxville, Ontario, Canada) SoyaCow program in India was strongly negative and stopped any more funding from CIDA. For another perspective, see Oct. 2010 interview with Bonnie and Fred Cappuccino, founder of Child Haven.

Interview with Hart Jansson. 2010. Oct. 28. Hart believes that at the time of this report, other things were taking place in the background. Either CIDA's priorities had shifted or their budget got smaller or both. Address: PhD, Consultant, 7 Admiral Rd., Toronto, ONT M5R 2L4, Canada.

6468. Archer Daniels Midland Co. 1993. Annual report. P.O. Box 1470, Decatur, IL 62525. 42 p. Sept.
• ***Summary:*** Net sales and other operating income for 1993 (year ended June 30) were $9,811 million, up 6.2% from 1992. Net earnings for 1993 were $567.5 million, up 12.7% from 1992. Shareholders' equity (net worth) is $4,883 million, up 8.7% from 1992. Net earnings per common share: $1.66, up 12.9% from 1992. Number of shareholders: 33,654.

New ADM products from soybeans include Soy Milk (dry mix) and Harvest Burgers (also named Veggie Burgers). Opposite a full-page color photo of soy milk being poured from a pitcher into a glass, we read: "A new line of soy-based milk products was introduced that are nutritionally equivalent to milk but less expensive to produce, allowing countries to expand their supply of needed protein at minimal cost.

"The all-vegetable protein food, Harvest Burger, is being actively marketed in the U.S. where 12% of the stores frozen food sections stock the product.

"Haldane Food Group continues to develop as the leading U.K. supplier to the health food industry. From a well-established domestic base and with an ever increasing product range the Group's commercial thrust is extending to Continental Europe. Of the many new products introduced during the year 'Vegemince' commands attention as a direct TVP/wheat gluten non-meat alternative to ground beef. The prototype plant is fully committed to production and line extension is in progress.

"'Vegeburger' continues as a market leader with other burger products being added to the range. The realized growth and market potential for convenience foods has brought about the relocation of Snackmasters Limited to a new factory at Sileby adjacent to the Haldane site. The automated production line is currently at 60 % capacity and the introduction of new products should fill the plant within twelve months.

"Genice Limited continues to pioneer the growth of non-dairy soya based ice cream and yogurts with an increasing market share in Continental Europe... Soya milk sales remain stable and we hope to excite the market by introducing a bottled soya milk that will complement the existing Tetra pack products."

"Currently operating at 80% capacity, ADM can produce 350,000,000 Harvest Burgers a year. ADM introduced the product in 1989, and soon will be selling as many burgers as some fast food chains" (p. 19). Address: Decatur, Illinois.

6469. August, Amanda. 1993. Soya far, soya good. *Vegetarian Living.* Sept. p. 37-38.
• ***Summary:*** "For many vegetarians the decision to drop dairy products from their diet is a natural progression– whether it be for ethical or health reasons... The dairy cow has been described as the most hard-worked of all farm animals. Normally, she would only produce 5 to 7 litres of milk a day for her calf but intensive farming means that the quantity can now be anything from 25 to 40 litres. To keep the milk flowing, the cow is subjected to yearly pregnancies, each lasting 9 months. After giving birth she will be milked for 10 months, but in the third month she will be put in calf [inseminated] again. So for 6 to 7 months of each year the cow is milked whilst pregnant.

"Calves are taken away from their mothers after 2 to 3 days, causing much distress to both mother and baby. Some calves are kept for dairy herd replacement (25%), some are exported to Continental veal crates, and the rest are fattened up to produce beef. Although cows have a lifespan of around 20 years, most are worn out after only 5 years. At this stage they are killed for meat."

"Soya milk is a wonderful alternative to cow's milk... Many brands are fortified with calcium (some containing more than dairy milk) and the vitamins B-12 and D... Soya milk doesn't taste like dairy milk. If trying it for the first time it's worth knowing that its an acquired taste. You may find it to be quite floury, with a strange after-taste and a strong aroma. But there are many who swear by it and whose altered palates find dairy milk cloying, fatty and oversweet.

"The first soya milk came onto the market in 1965, prior to which there had been no alternative to cow's milk. It was launched by one of today's leading producers, Plamil. Other companies began to follow suit in the 1970s.

"The market is still growing. In 1991 soya milk manufacturers produced 10.5 million litres and it's estimated that by the year 2000 Britain will be consuming over 20 million litres per year. Supermarkets even have their own

brands now. The Soya Milk Information Bureau's 1991 annual poll found that 39% of respondents were buying more soya milk than in 1990."

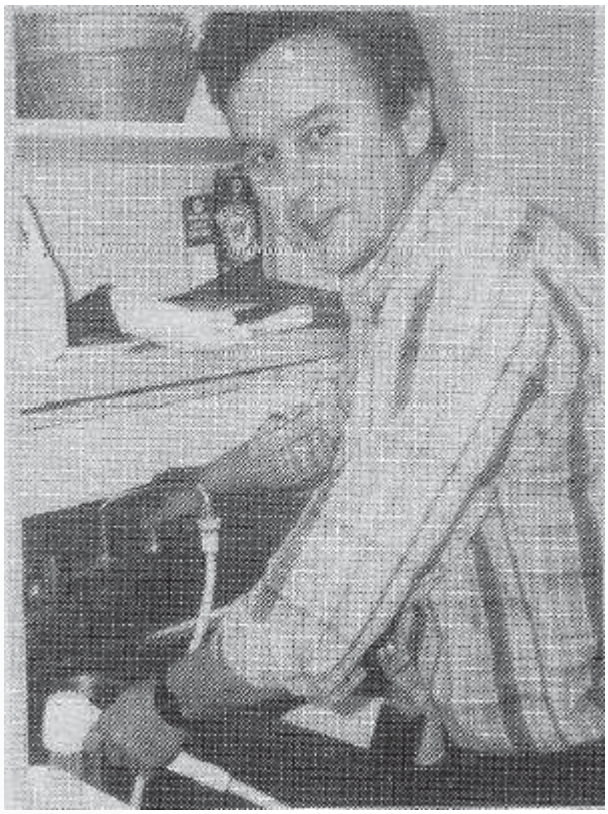
Color photos (p. 38) show 3 brands (Granose liter plastic bottles, Plamil 500 ml can, Provamel aseptic cartons), each with the words "Soya Milk" appearing as the product name on the front panel. The following brands are now available: Sainsbury, Safeway, Tesco, Waitrose, Co-op, Granovita, Granose, Sunrise, Plamil, Holland and Barrett, Unisoy, and Provamel [made by Alpro in Belgium]. Address: England.

6470. *Child Haven International* (*Newsletter, Maxville, Ontario, Canada*). 1993. Ottawa SoyaCow Group. Sept.
• ***Summary:*** "Our own Grant W. Wood received the Canada 125 Medal for his work on the soyacow. In cooperation with inventor Raj Gupta, Grant fabricated the first prototype of the SoyaCow. The citation was for 'providing a food source for children of the Third World,' and mentioned Child Haven. He is sporting a special cap with a SoyaCow logo designed by Kate Daller. Congratulations, Grant!"

A small portrait photo shows Grant Wood dressed in a white lab coat, with a beard and white cap.

An illustration shows the SoyaCow logo in an oval, elongated vertically.

6471. *Child Haven International* (*Newsletter, Maxville, Ontario, Canada*). 1993. Frank Daller... Sept.
• ***Summary:*** "... in addition to having a talented wife [Kate], is to be commended for getting the SoyaCow retail program going in Canada, beginning with a system placed at Rainbow Foods in Ottawa. Child Haven will soon receive its first monthly royalty: $100 from the sale of soymilk at the store. A SoyaCow is also producing is Saskatoon [in central Saskatchewan, Canada] at the Sweet Carrot Cafe, and two more at locations in Toronto and Ottawa are committed."

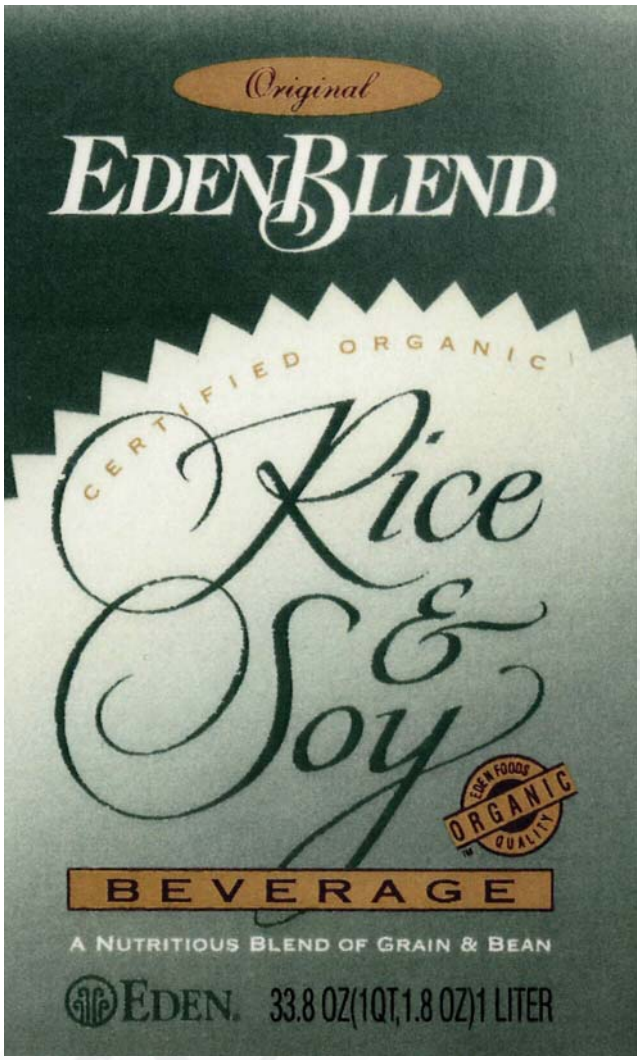


A photo shows Frank Daller at work.

6472. **Product Name:** Co-Op Soya Milk [Sweetened, or Unsweetened].
Manufacturer's Name: Co-Op (Marketer-Distributor).
Manufacturer's Address: England.
Date of Introduction: 1993. September.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton. Retails for 42p (sweetened or unsweetened) (9/93).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Amanda August. 1993. Vegetarian Living. Sept. p. 38. "Soya Far, Soya Good." Note: Co-Op is a major British supermarket chain. These products are private labeled for them.

6473. **Product Name:** EdenBlend Rice & Soy Beverage (Amazake & Soymilk) [Original].
Manufacturer's Name: Eden Foods, Inc. (Distributor). Made in Saline, Michigan, by American Soy Products, Inc.
Manufacturer's Address: 701 Tecumseh Road, Clinton, MI 49236.
Date of Introduction: 1993. September.
Ingredients: Purified water, organic brown rice, organic soybeans, kombu (seaweed), carrageenan, Lima sea salt,

calcium carbonate.
Wt/Vol., Packaging, Price: 1 liter (33.8 oz) Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 8 fl oz.: Calories 120, calories from fat 30, total fat 3 gm (4% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 85 mg (4%), potassium 270 mg, total carbohydrate 16 gm (5%), protein 7 gm (10%), calcium 2%, iron 6%. Percent daily values are based on a 2,000 calorie diet.



New Product–Documentation: Talk with Ron Roller, President of American Soy Products (ASP). 1993. Two new beverages, Rice Blend and Rice Soy, were introduced at the Natural Products Expo East, Sept. 9-12, in Baltimore, Maryland. They are both made from real, traditional rice koji. The EdenBlend (made of amazake and soymilk) tastes better than soymilk. These are really good products that took a great deal of time and innovation to develop; they should be on the shelves of natural foods stores in about mid-October.

Talk with Ron Roller. 1993. Oct. 19. These new products are now expected to be in stores by December. Originally they were going to be named Rice Blend and Rice-Soy, but now the names have been finalized to EdenRice, and EdenBlend. The packages are now being printed; it takes 5-6 weeks to print the film.

Talk with Ron Roller. 1994. Jan. 15. They have started making EdenBlend commercially; a little may be in the stores by now. Production of EdenRice will start tomorrow; it may not be in retail stores until February.

Label sent by Ron Roller. 1994. Jan. 16. Tetra Brik carton. White and black on light and dark green. "A delicious blend of rice and soy. Grains and beans are the primary foods of the human family. Combined they offer a whole spectrum of nutritional building blocks. Many cultures have intuitively combined grains & beans for balanced nutrition–rice and soybeans in Asia, maize and beans in the Americas, rice and peas in Africa. Grains and beans provide premium nourishment. EdenBlend marries two healthy foods–certified organic Lundberg Brown Rice (the best in the world) and organic soy (the same as Edensoy)... EdenBlend is certified organically grown and processed by OCIA (Organic Crop Improvement Association)."

Spot in Soyafoods (ASA, Europe). 1994. Autumn. p. 5. "Eden Foods launches rice and soya drink." A photo shows the package of EdenBlend Rice & Soy.

6474. **Product Name:** Grainaissance Amazake Pudding [Chocolate, or Almond Cinnamon].
Manufacturer's Name: Grainaissance, Inc.
Manufacturer's Address: 1580 62nd St., Emeryville, CA 94608. Phone: 415-547-7256.
Date of Introduction: 1993. September.
Ingredients: Chocolate: Filtered water, organic brown rice*, almonds, rice koji, tapioca starch-modified, unsweetened cocoa, natural flavors, xanthan gum. * = Organically grown and processed in accordance with the California Organic Food Act of 1990.
Wt/Vol., Packaging, Price: 6 oz plastic tub.
How Stored: Refrigerated.
New Product–Documentation: Talk with Tony Plotkin, owner of Grainaissance. 1993. Oct. 17. The lemon pudding was launched in about Feb. 1992 and the cocoa in about May or June 1992. He misunderstood the laws about labeling chocolate, believing that a product could not be labeled "chocolate" unless it contained milk. But an attorney corrected him. They will be renaming the product flavor to "chocolate" in about 2 weeks.

New Label for Chocolate sent by Tony Plotkin of Grainaissance. 1993. Nov. 2. Blue and red on white. The subtitle reads: "Naturally Sweet, Low Fat, Non-Dairy." Almond Cinnamon was launched in Sept. 1993. The label is red and white on tan. In the ingredients, cinnamon replaces unsweetened cocoa.

6475. *Heath Foods Business.* 1993. Milk substitute patent purchased. Sept. p. 80.
• ***Summary:*** "Imagine Foods, Inc. and California Natural Products, Inc., have entered into an agreement with Grainaissance, Inc. whereby Grainaissance has elected to take a license on U.S. patents owned by Imagine Foods and California Natural Products. These U.S. patents cover rice-based milk substitute products."

6476. **Product Name:** Holland & Barrett Soya Milk [With Calcium, or Unsweetened].
Manufacturer's Name: Holland & Barrett (Marketer-Distributor).
Manufacturer's Address: Healthways House, West Byfleet, Surrey, KT14 6NE, England.
Date of Introduction: 1993. September.
Wt/Vol., Packaging, Price: 1 litre Tetra Brik Aseptic carton. Retails for 75p (with calcium) or 69p (unsweetened) (9/93).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Amanda August. 1993. Vegetarian Living. Sept. p. 38. "Soya Far, Soya Good." Note: Holland & Barrett is one of the largest health food chains in the UK. These products are private labeled for them.

6477. **Product Name:** Safeway Soya Milk [Sweetened, or Unsweetened].
Manufacturer's Name: Safeway (Marketer-Distributor).
Manufacturer's Address: England.
Date of Introduction: 1993. September.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton. Retails for 49p (sweetened) or 42p (unsweetened) (9/93).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Amanda August. 1993. Vegetarian Living. Sept. p. 38. "Soya Far, Soya Good." Note: Safeway is a major British supermarket chain. These products are private labeled for them.

6478. **Product Name:** Sainsbury Soya Milk [With Calcium, or Unsweetened].
Manufacturer's Name: Sainsbury (Marketer-Distributor).
Manufacturer's Address: England.
Date of Introduction: 1993. September.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton. Retails for 49p (with calcium) or 42p (unsweetened) (9/93).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Amanda August. 1993. Vegetarian Living. Sept. p. 38. "Soya Far, Soya Good." Note: Sainsbury is a major British supermarket chain. These products are private labeled for them.

6479. *SoyaCow Newsletter* (*Ottawa, Canada*). 1993. El Salvador Project for Plenty Canada. 2(3):2. July/Sept.
• ***Summary:*** "Two more SoyaCows were recently ordered by the Canadian branch of Plenty. This organization, known worldwide for its humanitarian agricultural reform programs, is installing the SC-20 systems in San Salvador. A local El Salvador program manager has been brought to Ottawa for hands-on system training."

6480. *SoyaCow Newsletter* (*Ottawa, Canada*). 1993. Child Haven hires a Ph.D. for SoyaCow project in India. 2(3):1-2. July/Sept.
• ***Summary:*** Child Haven International, charitable organization based in Maxville, Ontario, Canada, has hired Ratan Sharma, a PhD in [soy and] dairy science, "to look after the 17 SoyaCows in India which were acquired with the help of the Canadian International Development Agency over the past several years. Dr. Sharma will be responsible for setting up The SoyaCow Centre in India." He will ensure that all the SoyaCows in India "function profitably to provide employment to women by selling protein-rich foods at affordable prices.

"Dr. Sharma has specialized in the development of soymilk-based Indian foods, especially sweets. The Centre will assist the Indian SoyaCow manufacturer in marketing the machine. In addition, it will provide operator training, public education, product development and marketing assistance, and SoyaCow servicing. The Centre's location is yet to be decided."

6481. *SoyaCow Newsletter* (*Ottawa, Canada*). 1993. Myanmar (Burma) soya food project. 2(3):2. July/Sept.
• ***Summary:*** "At the initiative of the California-based firm, Zin International, a SoyaCow SC-20 system has been sent to Rangoon for a pilot soyfood project. Zin International is headed by Thet Zin, a former United Nations Official in the Food and Agriculture Organization (FAO). He and his son and partner, Adalbert, are spearheading a grassroots agricultural reform initiative in Myanmar which they hope will eventually spread into other countries in Indochina."

6482. *SoyaCow Newsletter* (*Ottawa, Canada*). 1993. $20 billion soymilk market potential worldwide. 2(3):1. July/Sept.
• ***Summary:*** In Canada alone the potential for soymilk sales is over $400 million. In Canada, the per capita consumption of fluid dairy milk (not including ice cream, yogurt, cheese, etc.) is about 100 litres a year. Since 5 million Canadians have lactose intolerance (according to McNeil Consumer Products, Guelph, Ontario), these people could potentially be consuming soymilk at the same rate that others consume dairy milk, amounting to 500 million litres worth about $400 million. This translates into a $4 billion potential in the USA, and conservatively $10 billion worldwide. Soymilk

consumption in the form of non-dairy desserts, yogurt, and cheese could easily double this estimate.

"Why then is the current annual consumption of soymilk a meager 0.13 litre, or 0.65 litre for the lactose tolerant population?

"The answer to this question is related to the quality and cost of the soymilk available currently in the market." The soymilk sold in Canada by Eden Foods, Vitasoy, and Westbrae is expensive–$2.00 to $3.00 per litre compared with $1.25 for fresh dairy milk.

6483. Soyfoods Association of America, Standards Committee. 1993. Soymilk standards: First draft (Seventh revision). Bar Harbor, Maine. 22 p. Sept. Unpublished manuscript. 28 cm. [19 footnotes]
• ***Summary:*** Contents: Purpose of standards. General definition of "soymilk." Classification of "soymilk." Definitions. Labeling and advertising of "soymilk" products. Microbiological guidelines for "soymilk." Endorsement; "Seal of Soymilk Integrity." Soymilk Standards Committee; Adoption and amendment of standards.

Page 3 states: "In the United States in 1991, no fewer than 35 processors or marketers of soymilk distributed approximately 9.8 million gallons of soymilk and consumption was estimated to be growing at around 15% a year (Source: Peter Golbitz. Soyatech, Inc., 1991; estimates based on industry survey conducted in 1991)."

Note: During 1983, total U.S. consumption of soymilk was 2,683,000 gallons, according to *Soymilk Industry and Market* (published in Feb. 1984 by Soyfoods Center). These figures indicate that U.S. soymilk consumption has more than tripled (increased by a factor of 3.65) in only 8 years. Address: 318 Main St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207/288-4969.

6484. **Product Name:** Tesco Soya Milk [Sweetened with Calcium (1 litre), or Unsweetened (500 ml)].
Manufacturer's Name: Tesco Stores Ltd. (Marketer-Distributor).
Manufacturer's Address: Cheshunt EN8 9SL, England.
Date of Introduction: 1993. September.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic carton. Retails for 93p (sweetened with calcium) or 42p (unsweetened) (9/93).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Amanda August. 1993. Vegetarian Living. Sept. p. 38. "Soya Far, Soya Good." Note: Tesco is a major British supermarket chain. These products are private labeled for them.

6485. **Product Name:** Provamel Soya Dream: A Non-Dairy Alternative to Single Cream.
Manufacturer's Name: Vandemoortele (UK) Ltd. (Marketer-Distributor). Made in Belgium by Alpro.
Manufacturer's Address: Ashley House, High Street, Hounslow, Middlesex TW3 1NH, England.
Date of Introduction: 1993. September.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Ad (full page, color) in *Vegetarian Living.* 1993. Sept. p. 39. "Its the soya cream topping she's been dreaming about." A large color photo shows a black and white cat looking curiously at a carton of Soya Dream, which "is delicious as a topping for all your favorite desserts. Soya Dream tastes, looks and pours just like the real thing. And, unlike most cream alternatives, it is high in polyunsaturates and low in saturated fats." The front of the carton shows a hand pouring Soya Dream from a cup over a dessert on a plate. The text below the illustration reads: "A delicious dessert topping made with pure Soya Oil and Soya Beans."

Note: This is the earliest document seen (Jan. 1999) that uses the term "cream alternatives" (or "cream alternative").

6486. **Product Name:** Waitrose Soya Milk [Unsweetened].
Manufacturer's Name: Waitrose (Marketer-Distributor).
Manufacturer's Address: England.
Date of Introduction: 1993. September.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton. Retails for 42p (9/93).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Amanda August. 1993. Vegetarian Living. Sept. p. 38. "Soya Far, Soya Good." Note: Waitrose is a major British supermarket chain. These products are private labeled for them.

6487. **Product Name:** Lite Malteds.
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor).
Manufacturer's Address: 1065 East Walnut St., Carson, CA 90746. Phone: 310-886-8200.
Date of Introduction: 1993. September.
New Product–Documentation: Ad in Natural Foods Merchandiser. 1993. Sept. p. 23. "Another exclusive first for Westbrae is Malteds [launched Oct. 1984]–a truly non-dairy delight! Thick and rich, in five delicious flavors... Vanilla, Almond, Cocoa-Mint, Carob, and caffeine-free Java... For an 'almost sinless' treat new Light Malteds have less than half the fat and 1/3 fewer calories than original malteds. Like original Malteds they're sweetened with brown rice syrup, a more balanced sweetener, high in complex carbohydrates, with a smooth, mellow sweetness and no sugar 'rush.' And new Creamy Banana flavor is a hit with kids of all ages. Health-conscious consumers can enjoy Lite Malteds guilt free. Both original Malteds and Lite Malteds now come with a convenient flex-straw that says 'pick me up and enjoy me now!'"

6488. Westbrae Natural Foods. 1993. WestSoy–First and foremost: Westbrae information series no. 1 (Ad). *Natural Foods Merchandiser.* Sept. p. 23.
• ***Summary:*** "As the industry leader in soy beverages, Westbrae Natural Foods has a history of product innovation. Beginning with the introduction of 100% Organic WestSoy [in 1984], the first and only organic soy drink on the market... Westbrae is proud to have introduced the first 1% low-fat soy drink line–WestSoy Lite [in April 1990]... And when asked us for a soy beverage without added sweetener for soups, sauces and gravies, we introduced 100% Organic Unsweetened Westsoy [in Nov. 1989]."

"Another exclusive first for Westbrae is Malteds [launched Oct. 1984]–a truly non-dairy delight! Thick and rich, in five delicious flavors... Vanilla, Almond, Cocoa-Mint, Carob, and caffeine-free Java... For an 'almost sinless' treat new Light Malteds have less than half the fat and 1/3 fewer calories than original malteds. Like original Malteds they're sweetened with brown rice syrup, a more balanced sweetener, high in complex carbohydrates, with a smooth, mellow sweetness and no sugar 'rush.' And new Creamy Banana flavor is a hit with kids of all ages. Health-conscious consumers can enjoy Lite Malteds guilt free. Both original Malteds and Lite Malteds now come with a convenient flex-straw that says 'pick me up and enjoy me now!'"

"Another important first for Westbrae was WestSoy Plus, with calcium, vitamins A, D and riboflavin added. WestSoy Plus was the first soy drink to bring your customers a balance of the important nutrients found in dairy milk. Calcium is added in the form of tricalcium phosphate, naturally occurring in phosphate rock and lime. This is the same calcium that is found in dairy milk... Vitamin A palmitate is used as a vegetarian source of vitamin A." Vitamin D is derived from torula yeast. Riboflavin is formed through a biofermentation process of ribose, which is a simple sugar. WestSoy Plus has only 2% fat.

"Behind the careful development of the great tasting new WestSoy products is an experienced Product Development and Quality Control team, headed by Dr. Myron Cooper, PhD. Dr. Cooper is Vice Chairman of the California Organic Advisory Board and Chairman of the Processor Subcommittee. He also serves on the Board of Directors of the Soyfoods Association of America and their Soymilk Standards Subcommittee." Address: P.O. Box 48006, Gardena, California 90248.

6489. Lowe, Frederick H. 1993. Business can breathe easier. *Sun-Times* (*Chicago, Illinois*). Oct. 6.
• ***Summary:*** Boris Yeltsin's defeat of Russian hard-line opponents will help Midwest companies doing business in Russia. Decatur-based Archer Daniels Midland Co. sells soybean-based food products to Russia and the Ukraine. These include vegetarian burgers and soy-based milk products, according to company executive Howard Buffett, assistant to ADM Chairman and CEO Dwayne O. Andreas. "We sell 5,000 vegetarian patties a day to a restaurant we jointly operate in Moscow. The burgers are also sold throughout Moscow at Kiosks."

6490. Poninski, Piotr. 1993. Re: Tofu in Poland. Letter to William Shurtleff at Soyfoods Center, Oct. 10. 2 p. Typed, with signature on letterhead.
• ***Summary:*** After giving details about the tofu made by his company, Piotr notes: "We think that second generation products are absolutely the best way to popularize this kind of new food. We will soon be working on tofu with various spices and other additions such as vegetables, grains, nuts etc. as well as on dressings and spreads.

"As far as other soyfoods are concerned, both soymilk and TVP are available on the Polish market but in a rather modest way. If you want to find them you can, but since they are all imported from Western Europe, or from Hungary (TVP) and not generally known, they are not widely available. Our plan is to import and popularize TVP. You can also get some retail packaged soybeans and soy meal.

"I think we are the first company to make and sell tofu in the Warsaw area, but I know a little about other companies which make or are planning to make tofu in Poland: (1) Vietnamese immigrants make firm tofu (*Dau Phu*), probably coagulated with vinegar, and sell it only to other Vietnamese people. Their general opinion is that Poles will not eat it and it is not worthwhile to try to popularize it; (2) A 'district dairy cooperative' in Szczytno (Northeastern Poland) makes tofu and tries to sell it somewhere in Warsaw. A professor from the department of food technology at the Main School of Agriculture in Warsaw is involved in this project and probably has set up the whole technical process. We contacted with him but he refused to cooperate with us. I have not had a chance to eat their tofu but one of our customers who tried it says it has a taste inferior to ours; (3) A Polish-Chinese enterprise which presently sells soybean sprouts is planning to manufacture and sell tofu in the Warsaw area." Address: Founder and owner, Polsoja, ul. Hetmanska 61, 05-120 Legionowo (near Warsaw), Poland. Phone: (48 22) 18 21 11.

6491. Richardson, Al. 1993. Companies using Nichii Soy Flakes, and new developments (Interview). *SoyaScan Notes.* Oct. 14. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The main American user of Nichii's soy flakes is White Wave of Boulder, Colorado, which uses the flakes in only one product–its reduced fat tofu. White Wave also makes a private label reduced fat tofu for Tree of Life in Florida. Other users are: Ashland Soy Works (Ashland, Oregon), which will be introducing a reduced fat tofu, made from 100% soy flakes, this month; Sacramento Tofu uses soy flakes only in their firm-style tofu; Calco of Dallas, Texas, uses flakes in their firm-style tofu. They buy a truckload

about every 5 months. They also use whole soybeans; Dorothy Hwang, a PhD chemist, of Michigan Soy Products Co., Inc. (in Royal Oak, Michigan) uses both soy flakes and soybeans. Dr. Les Wilson made the very valuable discovery that soy flakes can be used to make reduced fat tofu.

Quong Hop recently put a sticker on their Nigari Firm Tofu that says "The original reduced fat tofu," which is in violation of FDA regulations. At the new Whole Foods store in Palo Alto, Al recently saw Wildwood's firm tofu with a little sticker on the front that said "Low fat," also a violation. The real problem is that Wildwood's tofu retails for $0.99, Quong Hop's is $1.29, and White Wave's tofu, the only real reduced fat tofu is $1.49.

Nichii has just landed a big agreement with Korea and is now shipping them about 60 tons/month of soy flakes from the plant in Iowa. They are expected to be buying 100 tons/month at the end of this year. Those flakes are being used entirely to make tofu and soymilk. They are buying it for the convenience in dealing with rush orders, and the water and space savings–not for the reduced fat properties.

Nichii's plant in Iowa is now producing a little less than 1,000 tons/month. 95% of this is non-organic soybeans and 5% is organic. There is an increase in demand from Japan for organic flakes. The plant runs a little less than 4 days a week, 10 hours a day.

95% of all soy flakes make in this plant are sold outside America, mainly to Japan and Korea. Al visited Japan earlier this year. All of the flakes in Japan are used for making tofu; none is used in meat products. Nichii/Mycal has about 250 retail stores but just a few of them make fresh tofu in the store using Mr. Chikaarashi's tofu-making machine; yet that number is increasing. 90% of the tofu sold is purchased from outside tofu manufacturers, many of them very large. Nichii sells three types of tofu, each clearly labeled: That made soybeans, that made from a mixture of soybeans and Nichii soy flakes, and that made entirely from Nichii soy flakes. Nichii says "We'll buy your tofu if you use our flakes." None of tofu sold in Japan and made from flakes is promoted for its low fat content. Address: Nichii Company of America, Inc., 23440 Hawthorne Blvd., Skypark 2, Suite 140, Torrance, California 90505. Phone: 310-791-0010.

6492. Lukoskie, Luke. 1993. Some history of and update on activities at Island Spring (Interview). *SoyaScan Notes.* Oct. 16. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** David Sucher was one of the original investors in Island Spring. He has been a close friend of Luke's for 20 years, and it was his investment that got the company going at its original location.

Luke now works half time with Island Spring; he and his wife, Suni, literally make tofu. Suni manages the people and products. Yvonne Kuperberg is still there. He lets other people run the business side of things. The company has a solid base of consumers in the northwest who support its products. Though sales are still strong, Island Spring is not yet out of the hole on the debts it incurred when the principals at Pacific Soy said "either give us complete control of the company or we're going to leave." At that time, Luke had accounts payable of $485,000, and he lost $300,000 in extracting the company from the position it had been in. He had raised $110,000 before the fire with the help of Harold Hopkins, who knows a lot about capital in the Pacific Northwest.

He soon realized that the only way to get out of the $300,000 hole was to tighten the belt at Island Spring. He cut his and Suni's salary to zero for 3 years. They got personal income from personal investments, such as 4 housing units that they rent. They have worked the debt down to $60,000 and they are now starting to pay themselves. In one more year they will be competitive again.

Their competition is Azumaya, Nasoya (from time to time), White Wave, Ohta Tofu, Sea Asia, Boohan (of Tacoma), and Tacoma Tofu. Island Spring's main products are now tofu burgers, soymilk in quarts and half gallons, traditional firm tofu (Korean-style, water pack), and extra firm tofu (vacuum pack).

Talk with David Sucher. 1993. Oct. 20. One day Luke called David from Los Angeles, California, to ask if he could borrow (or exchange for stock) about $1,000 to $1,500 to buy a grinder/mill for making tofu. At the time Luke's company was in its original small building near the ocean and had not yet started commercial tofu production. At a later date Luke asked David to invest in the company, which he did; he now owns about 5% of the company's stock. Address: P.O. Box 747, Vashon, Washington 98070. Phone: 206-622-6448.

6493. Plotkin, Tony. 1993. The rice beverage and amazake industry and market in America, and its relationship to the soymilk market (Interview). *SoyaScan Notes.* Oct. 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Grainaissance became a corporation on 26 April 1982, and they moved to their present location in 1986. His company's main competition is Imagine Foods, which is "such a talented, smart company. They set their own rules, and tend not to copy." Cedarlane (in Southern California) has either greatly narrowed its scope or has gotten out of the amazake market entirely. Creative Kitchens (in Florida) has either narrowed its scope or discontinued production. Scotty's Wholesome Foods in Boulder makes a nice amazake in a 12 oz plastic bottle; it is sold mostly in Colorado. Kendall Foods, Grainwaves, and The Bridge are still in business. Kimoto has closed.

Tony has not yet been as successful with his Tetra Brik Aseptic carton as he had hoped–in part because of competition from Imagine Foods. His product has had a slow start, but Imagine Foods has been very successful with their Rice Dream in an aseptic carton. "This carton has really put

rice drinks on the map. The quart carton will expand it even further." One key is to get the product as light as possible, since consumers will not pay more than $0.69 for an 8-ounce pack. It costs Tony a lot of money to ship tankers full of amazake to the packer and then shipping the packed products back. He is working on shipping truckloads of packed products directly from the packer to distributors.

Aseptically-packed products (especially quarts and liters) are much more widespread in the natural foods market than in supermarkets–where the package is used mostly for kids juice drinks.

Imagine Foods immediately realized that their competition was soymilk, so their ads, in effect, say "Hippies and punks (with long hair and earrings) drink soymilk and normal people drink Rice Dream." In the ad they showed packages of soymilk products. It was a very aggressive ad; Tony did a similar ad and Imagine Foods made them discontinue it. Imagine Foods now has its products packaged by Pacific Foods of Oregon; they used to be packaged by Real Fresh (which packs Tony's products).

The market for rice beverages (which was about 5,700 gallons/week in 1988) has grown a dramatically during the last 5 years, and especially during the last 12-18 months since Rice Dream became so popular. In some natural-foods stores Rice Dream is the best-selling non-dairy beverage. There are only two big rice beverage manufacturers in America: Imagine Foods and Grainaissance; Scotty's may be #3. Tony would estimate that Imagine Foods sells about 9-10 times as much rice beverage by volume as Grainaissance. In 1984 Grainaissance was making about 1,200 gallons/week; today they make a little over 2,000 gallons/week and have 15 employees. Imagine Foods might be doing a little less 20,000 gallons/week. Tony would guess that the gallon volume of Rice Dream rice beverage sold is about the same as the volume of Vitasoy or Westsoy soymilk.

There are several reasons for the rapid growth of the rice beverage market: (1) The advent of Tetra Brik Aseptic packaging; (2) The very effective product development and marketing done by Imagine Foods. The product is delicious and their ads have been well designed and widely seen; (3) They have positioned Rice Dream as a delicious non-dairy beverage and new product which they invented–rather than as a type of amazake. In fact, they have made as little connection as possible between amazake and Rice Dream–in part because the enzyme-hydrolyzed rice drink that they make is not really amazake. When Tony launched his first aseptic amazake in 1989 he thought seriously about discontinuing the term amazake, but he couldn't think of a good replacement. Its hard to sell a product with a name that people can't pronounce and that sounds foreign. (3) They have benefited from the rapid growth of the larger market for non-dairy beverages.

At the trade show in Baltimore, Eden Foods showed its two new koji-based amazake products–Eden Rice and Rice Blend (with soymilk) Rice Dream. Tony strongly feels Eden is entering the rice beverage market because of the stiff competition they are feeling from Rice Dream–which is causing growth of their soymilk sales to slow. He liked their flavors, but he disliked the fact that Eden adds a sweetener. Eden may promote their product by describing how Imagine Foods uses commercial enzymes rather than koji to make Rice Dream. Eden's price will probably be the most expensive. Tony has heard that another large company will soon be making a rice beverage–perhaps Westbrae. Tony promotes his products by emphasizing two points: (1) No oil is added; and (2) They are made from organic, whole-grain brown rice as you would buy it in the store. When Tony introduced his Almond Lite in Tetra Pak he changed from commercial rice to organic. Address: Founder and owner, Grainaissance, Inc., 1580 62nd Street, Emeryville, California 94608. Phone: 510-547-7256.

6494. Roller, Ron. 1993. The soymilk and rice beverage markets in the USA and Canada (Interview). *SoyaScan Notes.* Oct. 19. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Ron has some new very accurate and reliable numbers which show in 1992, in the USA and Canada, about 8.1 million gallons of soymilk and 1.4 million gallons of rice milk were sold. In 1993 about 9.8 million gallons of soymilk and 2.3 million gallons of rice milk were sold. The total amount sold in Canada is quite small compared to that sold in the USA.

When people who have never tried a non-dairy beverage before are served both rice milk and soymilk, they tend to prefer the rice milk–because it is sweeter and it's not soy.

In 1992 the amount of rice milk (rice beverage, including amazake) sold in the USA and Canada was 14-15% of the amount of soymilk sold by volume (gallons). The percentage has increased by an estimated 4-5 percentage points since then. The overall market for both soy- and rice drinks in 1992 was about 9.5 million gallons–a slight decrease from 1991. For the first 6 months of 1993, volume is up about 27% over the same period in 1992, and the total market is projected to be about 12.1 million gallons in 1993.

Looking at the individual soymilk manufacturers, Eden's soymilk production is experiencing strong growth. In the natural foods market, Ron thinks that Westbrae is ahead of Vitasoy. If you include the Oriental market, Vitasoy may be ahead of Westbrae. Vestro (which owns Westbrae) is a publicly owned corporation, so their financial data is available to the public. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6495. Paine, Heather. 1993. Re: Use of the term "soya milk" on product labels in the United Kingdom. Letter (fax) to William Shurtleff at Soyfoods Center, Oct. 20. 1 p.

• ***Summary:*** "I should clarify the situation on labeling in the UK. In my opinion, the term 'soya milk' is not permitted in the UK, although it is still used. The UK authorities, in this instance, seem to have a relaxed approach, but under EC Regulation No. 1898/87, the term 'soya milk' is not permitted anywhere in the European Community. I believe Ireland is also in breach of the Regulation and that the matter has been raised in the European Court of Justice.

"ASA [American Soybean Association] have just renewed my contract for another year so *SoyaFoods* is safe for 1994!" Address: Editor, SoyaFoods, 27a Santos Rd., London, SW18 1NT, England. Phone: 081-874-5059.

6496. Redmond, Tim. 1993. New developments at the Soyfoods Association of America (SAA) (Interview). *SoyaScan Notes.* Oct. 29. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Tim has been very active in shepherding SAA during the past year. He is the vice president, on the executive committee, and a director. The original $30,000 grant to SAA from the American Soybean Association increased to about $40,000. SAA will soon be sending 3,000 packets to the media and 5,000 packets to health professionals. Each packet contains fact sheets, a soyfoods brochure, and a brochure announcing the "First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease," which is scheduled to be held on 20-23 Feb. 1994 in Mesa, Arizona. In addition, Tim is now drafting a letter to new and prospective members, including San-J (which has never joined), Worthington Foods, Kikkoman, Ralston Purina, etc. SAA needs more money to promote soyfoods on a broad basis.

Michelle Edwards, Dan Burke's long-time secretary, is now the Executive Director of SAA.

Tetra Pak Inc. has donated $50,000 to SAA over a period of 3 years, primarily to aid in the development of soymilk standards. Note: This is the largest single grant ever received by the Soyfoods Association. As of Jan. 1995, according to Dan Burke (Treasurer of SAA) the funds are being used mainly to pay for legal advice (from Hyman, Phelps & McNamara in Washington, DC) on the standards and to promote soyfoods. Peter Golbitz, who has spent a great deal of time in compiling the standards, has not received any payment for his time. Address: Vice President of Marketing and Sales, American Soy Products, Inc., 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6497. Potter, Michael. 1993. History of Eden Foods. Part II (Interview). *SoyaScan Notes.* Oct. 31. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Upon Cliff Adler's death, Michael immediately and automatically acquired Cliff's 34% share in the company–because Eden Foods Inc. and Michael and Cliff, jointly and severally, had a buy-sell contract that came into effect in the event that either Cliff or Michael should die. The value of Cliff's stock, which was reviewed by the Ann Arbor office of Platt-Moran (one of the big eight accounting firms), was $500,000. Michael paid this amount from his personal funds for the stock. Life insurance paid Cliff's widow an additional substantial sum. It's all a matter of public record.

In August 1992 Michael was released from jail and returned to work at Eden Foods. He was originally sentenced to 8 to 15 years, but he was let out early because he won an aspect of his appeal that his sentence was illegal. He was resentenced and his sentence was changed to 60 months probation.

On 31 Dec. 1992 Michael purchased Tim Redmond's remaining 1,000 shares of stock.

Royce "Roy" Seeger, who lives in Manchester, Michigan, was an early employee at Eden Foods. He ran the mill and was once a stockholder but was deprived of his stock in a way that he does not feel good about. He now serves as Michael's driver (he was hired by the board of directors to drive Michael to and from work) and as a driver for Eden Foods doing various jobs. Michael also lives in Manchester.

What were some of Michael's main contributions to Eden? Building the company into a major natural foods company before the fire. Extricating Eden from its pathetic relationship with Midwest Natural Foods ("It was difficult to get consensus that the situation was not in Eden Foods' best interest and in fact was a very negative reflection on the company.") Saving the company from disaster after the fire. Putting together the American Natural Foods agreement and introducing Edensoy to America.

Shurtleff's summary comments: (1) Eden was a pioneer in many areas, including the development and promotion of organically grown foods, soymilk, and soyfoods in general. Eden has kept a high level of product quality and integrity over the years, based on their philosophy of food and agriculture. Address: Chairman, Eden Foods, Inc., 701 Tecumseh Rd., Clinton, Michigan 49236. Phone: 517-456-7424.

6498. Seeger, Royce. 1993. Recollections of work with Eden Foods (Interview). *SoyaScan Notes.* Oct. 31. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** At age 18 Royce was introduced to macrobiotics by Jimmy Silver. He was never involved with the food buying co-op before Eden Foods started. He started working for Eden Foods in about the fall of 1970 at the store on State Street. He was married with a child, he needed a job, and he was interested in macrobiotics, so the job was a natural. At the time he started work, Bill Bolduc, Mark Retzloff, and Tim Redmond were working at that store. After he had worked there about a year, Michael Potter arrived. Initially he ran the cash register, stocked the shelves, and ran the 8-inch stone flour mill grinding wheat, corn, rye, rice,

etc. into flour. Shortly after he started work, he also began to mill soy flour. Tom Vreeland grew the soybeans organically. Royce toasted the soybeans lightly, about half way, so that the flour could be milled more easily and was still yellow. The roasting got rid of the heavy raw taste, but some raw soy flour taste still remained. Initially the soy flour was sold in paper bags, but the bags became very oily, so they switched to packing it in 3 sizes of cello bags which we heat sealed. The bags were considered biodegradable. Eden couldn't buy too large a supply since they became brittle after a while. A printed label was affixed by hand to each cello bag. The flour was also sold in big 25 lb paper flour bags, which were stamped with a rubber stamp to indicate the contents.

Eden also made Kokoh, a macrobiotic baby cereal, which contained roasted soy flour and was also packed in the small cello bags. All the ingredients were roasted together and then ground; soy was one of the ingredients. The soy was roasted longer than it was for the flour.

Eden was also importing miso in kegs from Japan. Employees would pack the miso into 1- and 2-lb bags. Eden still imports its miso in bulk kegs.

In those days the store wasn't making much money; it had just come from being a co-op, so often the only pay employees got was to have their bills paid–such as rent, so they didn't get evicted. They didn't really get a pay check. In about 1973 Royce quit work at Eden to do some construction work for a friend, and then moved to Arizona to be with his wife's parents. After about 10 months he returned to Ann Arbor and went back to work for Eden Foods. This time he stayed until 1978, running the mill and doing packaging. Then he left for a second time; he needed to make more money.

In 1982 Royce returned to work for Eden for a third time. He started working in production at a small bottling line where Eden bottled soy sauces (imported in 55 gallon drums from Japan), vegetable oils, and vinegar. Eden still bottles its soy sauce this way. One person runs the filler, which fills 6 bottles at a time; he slides in 6 bottles, pulls down the lever which fills them, then he puts them on a conveyorized line. The next person on the line puts on caps. Finally, at a labeling machine, one person labels one bottle at a time. Then he went back into running the mill, grinding flours. Royce has been working at Eden, more or less, since 1982. However in 1987 he developed testicular cancer, which had spread throughout his lymph system. His weight dropped to 155 lb and parts of his spine had to be removed. The cancer is now in remission and he feels like he is getting stronger. Royce now serves as Michael Potter's driver, since Michael is not allowed to drive at all by himself. Royce likes working at Eden Foods, even though he is not an official employee, since he is receiving disability payments. Address: 133 S. Clinton, Manchester, Michigan 48158. Phone: 313-428-0973.

6499. Shi, Yanguo; Ren, Li. 1993. Dadou zhipin gongyi-xue [The technical arts of soybean products]. Beijing, China: Zhongguo Qinggong Yechu Banshe [Chinese Ministry of Light Industry]. xii + 484 p. Illust. No index. 18 cm. [34 ref. Chi]

• ***Summary:*** Wade-Giles reference: *Ta-tou chih p'in kung-i hsüeh,* by Shi, Yen Kuo; Jên, Li. Contents: Preface. 1. Introduction to soyfoods: Terminology and classification, origin and development, future prospects. 2. Soybeans: Production, seed structure and components. 3. Chemical composition of soybeans: Soybean lipids, carbohydrates, minor components. 4. Soy proteins: Overview, molecular weight and classification, water solubility, denaturation, functionality, soy enzymes and antinutritional factors.

5. Soy oil extraction: Oil extraction from soybeans, solvent extraction principles and process outline, pre-extraction preparation, extraction process, other extraction technology, supercritical CO_2 extraction. 6. Chinese traditional soyfoods: Principles and ingredients, soybean soaking and cleaning, soymilk preparation for tofu processing, coagulation and molding, lactone tofu, yuba, meat alternatives. 7. Fermented tofu: Varieties (total 14 discussed), ingredients, microorganisms, mucor fermented tofu & process, top 8 products. 8. Fermented black soybeans and fermented soy paste (miso): Fermented black soybeans, fermented soy paste.

9. Soymilk (soy beverages): Production principle and outline, beany flavors and reduction, several commercial production lines, fermented soymilk, dry soymilk products. 10. Products from defatted meal: Defatted soy flour, soy protein concentrates (*dadou fenli danbai*), soy protein isolates (*dadou nongsuo danbai*), structured soy protein products, soy emulsifiers, applications of soy protein products. 11. Soy by-products utilization: Okara and its uses, soy whey and its uses. 12. Biological and chemical assay methodology: Assay for protein solubility, soy protein isolation, soy protein molecular weight measurement, gas chromatographic analysis of soy oligosaccharides, HPLC analysis of soy oligosaccharides, phytic acid assay, assay for hexanal Ä the major beany flavor component, trypsin inhibitor assay, lectin assay, urease assay, lipoxygenase assay, soybean cell biology: thin sample preparation technology, soybean cell biology: ultra thin sample preparation technology.

Concerning fermented tofu (Chapter 7): Fermented tofu may be named after the region where it is made. Some famous products in China include: (1) Shaoxing furu. Famous for its rice wine, Shaoxing is a city in northeastern Zhejiang, a coastal province in central eastern China. (2) Guilin furu. Guilin is a city in the northeast of the Guangxi Zhuang Autonomous Region of far southern China. (3) Kedong furu. Kedong is a county in Heilongjiang province in northeastern China. (4) Jiajiang furu. Jiajiang is a county in Sichuan Province, southwest China. (5) Tangchang doufu-ru.

Tangchang is a town in Sichuan province.

Note: Talk with KeShun Liu. 2001. July 9. Green vegetable soybeans (*maodou*) are not mentioned in this book. Address: China.

6500. *SoyaFoods* (*ASA, Europe*). 1993. Dried soyamilk and tofu as bakery and meat ingredients. 4(3):2. Autumn.
• ***Summary:*** "Researchers at Iowa State University have been studying dried soya milk and tofu as food ingredients in doughnuts, hot dogs and pork sausages to find out how they affected food quality. Doughnuts made with 7% soya milk cut fat by 15%. The meat products made with 1-3% dried soya milk and tofu reduced fat by up to 25%. In taste tests, foods made with the soya bean products compared favourably with commercial products. The project has interested several food companies."

6501. Soyfoods Association of America; American Soybean Association. 1993. Good news about soyfoods. San Francisco, California. 16 p. 19 cm.
• ***Summary:*** This attractive booklet, containing 6 color photos, introduces soyfoods. Produced jointly by the Soyfoods Association of America and the American Soybean Association, it represents a first in cooperation between these two organizations. Contents: Soyfoods–A healthy choice: Soyfoods lower blood cholesterol, and fight cancer. Adding soyfoods to your menu: It's easy! The soyfoods family: Soybeans and edamame or fresh green soybeans, soy flour, texturized soy protein (TSP), soymilk, tofu, tempeh, miso, meat analogs, soy oil (a brief description is given of each). Soy recipes: Miso soup. Tofu chocolate cream pie. Creamsicle spritzer (with soymilk). Banana pancakes (with soy flour, soymilk, and soy oil). Sloppy joes with texturized soy protein. Barbecued tempeh. Nutritional value: Gives the composition of tofu (soft, silken, firm), meat analogs, soy oil, miso, texturized soy protein, tempeh, soymilk (regular or lite), and soy flour (full fat or defatted). Address: 1. One Sutter St., Suite 300, San Francisco, California 94104; 2. American Soybean Assoc., 540 Maryville Centre Drive, Suite 390, St. Louis, Missouri 63141-9200. Phone: 1. (415) 393-9697; 2. 1-800-Talk-Soy.

6502. **Product Name:** Low Fat WestSoy Soy Drink (Non-Dairy Beverage with Calcium and Vitamin D Added) [Plain, or Vanilla].
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor).
Manufacturer's Address: 1065 East Walnut St., Carson, CA 90746. Phone: 310-886-8200.
Date of Introduction: 1993. October.
Ingredients: Vanilla: Filtered water, whole organic soybeans*, malted cereal extract, natural vanilla flavor with other natural flavors, tricalcium phosphate, sea salt, vitamin D-2. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 1 liter (1.06 quart) Tetra Brik Aseptic carton. Retails for $1.39 (11/93, Trader Joe's, Concord, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 8 fl. oz.: Calories 100, protein 4 gm, carbohydrate 16 gm, fat 2.5 gm (percent calories from fat 18, polyunsaturated fat 2.0 gm, saturated fat 0.5 gm), cholesterol 0 mg, sodium 140 mg, potassium 170 mg.
New Product–Documentation: Products (plain and vanilla) with Labels purchased at Trader Joe's in Concord, California. 1993. Nov. 4. 3.75 by 6.5 by 2.5 inches. Orange or red, dark blue, white, and black on light blue. Color photo of soymilk being poured from a pitcher into a bowl of flaked breakfast cereal with a glass of soymilk behind the bowl. "All natural. No cholesterol. Lactose & dairy free. Great tasting." Each 8-oz. serving of Low Fat Westsoy provides the following percentages of the U.S. Recommended Daily Allowances: Vitamin D 25%, calcium 25%. "Not for use as an infant formula."

Ad in Natural Foods Merchandiser. 1993. Nov. p. 27. "We know the importance of customer satisfaction." "Westsoy Soy Drink–The first value-added enriched soy drink."

6503. **Product Name:** WestSoy Lunchbox Plus (Non Dairy Beverage) [Plain, or Vanilla].
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor).
Manufacturer's Address: 1065 East Walnut St., Carson, CA 90746. Phone: 310-886-8200.
Date of Introduction: 1993. October.
Ingredients: Filtered water, whole organic soybeans*, brown rice syrup (brown rice, water), vanilla flavor with other natural flavors, tricalcium phosphate, expeller pressed organic canola oil*, sea salt, carrageenan, vitamin A palmitate, vitamin D-2, riboflavin (vitamin B-2).
Wt/Vol., Packaging, Price: 6 oz. Tetra Brik Aseptic carton. Retails for $1.39 (11/93, Trader Joe's, Concord, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Ad in Natural Foods Merchandiser. 1993. Nov. p. 27. "We know the importance of customer satisfaction." "Westsoy Lunchbox Plus–The first convenient 6 ounce size enriched soy drink."

Product with Label brought by Cheryl Ishida in her kids' lunch. 1996. April 23. 2 by 4.5 by 1.5 inches (tall and slender, petite, handy size for a kid's lunch). Aseptic carton. Red, black, and tan on white. The word "Lunchbox" is written with many fun colors: Red, yellow, blue, orange, green. Below the product name on the front panel is written: "6 times more Calcium, 10 times more Vitamin A, 20 times more vitamin D, 5 times more Riboflavin, than Original WestSoy. 2% fat." A logo states: "Made with Organic soybeans." The product now comes in Plain, Vanilla, and

Cocoa [pronounced KO-ko] flavors.

6504. *SoyaScan Notes.* 1993. Chronology of the American Soybean Association's growing interest in promoting soyfoods in America. Nov. 5. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** 1992 Jan.–Keith Smith of ASA calls Mark Messina PhD, at the National Cancer Institute and asks what Mark knows about possible cancer-preventing substances in soybeans. ASA was getting a lot of enquiries on the subject, which was Mark's specialty at NCI.

1992 Dec.–ASA decides to allocate a large portion of their 1993 research funds for health-related research. The 1993 budget contains $1,200,000 in funding for three 2-year projects which each received $400,000 over the 2 years. One project by Stephen Barnes involves soy and prostate and breast cancer, one by Maurice Bennink of Michigan State involves soybeans and colon cancer, and a third by William Wong involves cholesterol metabolism in soy.

1993 March–ASA allocates $27,625 for the Soyfoods Association of America (mainly Ginny and Mark Messina) to develop and distribute educational materials on soyfoods and to produce periodic press releases. The grant will be used to produce a 4-color brochure on soyfoods and eight individual fact sheets on tofu, soymilk, tempeh, miso, texturized vegetable protein, soy flour, soy-based meat analogs, and soy oil. These materials will be made available to state soybean boards.

1993 June–*The Soy Connection,* a quarterly newsletter on the nutritional benefits of soyfoods, starts to be mailed to 70,000 registered dieticians across the U.S. This high-quality publication, edited by Mark Messina, contains articles by experts in their fields, plus some good recipes.

1993 Oct.–Dr. Mark Messina is officially hired by ASA as a consultant. He gave about 12 public speeches on soy, diet, and chronic disease prevention in 1993, and has 15 more planned for 1994. Messina also coordinates nutrition research for a group named the North Central Soybean Research Program. As part of this, Steve Sonka of the University of Illinois is conducting a $43,000 economic impact analysis to determine the market potential for soyfoods and its effect on soybean consumption. The report is expected out in Dec. 1993. USB only has 3 paid employees and 60-65 volunteers, so they hire the ASA to do projects using money from USB and everything that ASA does is approved by David Thomas.

1993 Oct.–USB has a booth (probably its first) at the annual 3-day conference of the American Dietetic Assoc. attended by roughly 10,000 people. ASA and Dr. Messina were there. Evans Food Group, ASA's big food-related public relations firm in Seattle, Washington, was also there. The booth was geared mostly toward soy oil, but most of the interest from dietitians was in soyfoods. Fact Sheets on soyfoods and a brochure prepared by the Soyfoods Association and Evans Group were distributed. Soynuts were served but they ran out in the first 2 hours. Messina encouraged USB to have enough good soy-based snacks to last for 3 days for next year's show.

1993 Nov.–*Good News About Soyfoods,* an attractive 16-page booklet, prepared jointly by the Soyfoods Association of America (Ginny Messina) and USB, featuring information about and recipes for soyfoods is mailed to about 3,000 to 5,000 key media contacts.

1994 Feb.–The First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease is held in Mesa, Arizona, organized by Dr. Mark Messina and sponsored by the United Soybean Board as well as soybean growers from Nebraska and Indiana.

1995–The United Soybean Board (USB) begins to sponsor dietitian seminars on the health benefits of soy in 26 cities across the USA. The budget for each seminar is $8,000. Manufacturers can exhibit products at seminars for a fee of $75 per table.

1996 Jan.–The Indiana Soybean Development Board introduces *Soyfoods USA,* the world's first e-mail newsletter on soyfoods. It is sent monthly to e-mail addresses free of charge. By Feb. 1997 there are 1,200 subscribers.

1996–USB creates and develops the theme "Soybeans–Designed for Life." When someone phones one of the state soybean associations or boards, music with these words plays in the background while he or she is on hold.

1996 Sept.–The Second International Symposium on the Role of Soy in Preventing and Treating Chronic Disease is held in Brussels, Belgium, again organized by Dr. Mark Messina. Sponsors contributing more than $15,000 include: American Soybean Association, Nebraska Soybean Board, United Soybean Board, Ohio Soybean Board, Indiana Soybean Development Council. Other sponsors: Illinois Soybean Association and Illinois Soybean Program Operating Board, Soyfoods Association of America, Minnesota Soybean Research and Promotion Council, Iowa Soybean Promotion Board, and Michigan Soybean Promotion Committee.

1997 Jan.–USB announces 11 more Soy Connection Dietitian Seminars that will be held in major cities across America during 1997, from April 4 to Sept. 12.

1997 Feb. 25–The Illinois Soybean Assoc. (ISA) mails a form letter to all known soyfoods manufacturers in the USA, stating that it has recently teamed up with a number of industry leaders and researchers to examine the feasibility of a cholesterol health claim for soy protein products. The letter asks that each manufacturer send ISA (by March 5) nutritional labels for each soyfood product that it makes or distributes.

6505. Barnum, Alex. 1993. Milk production hormone gets FDA approval: Bioengineered gene can raise cow's output by 25 percent. *San Francisco Chronicle.* Nov. 6. p. 1, A15.

Address: Chronicle staff writer.

6506. Schneider, Keith. 1993. U.S. approves use of drug to raise milk production: Gain for biotechnology. Genetically changed hormone wins backing of F.D.A., but critics plan to protest. *New York Times.* Nov. 6. p. 1, 7.
• ***Summary:*** The FDA approved the sale of Bovine Growth Hormone (BGH), a genetically engineered hormone used to increase milk production in cows. It also ruled that no labeling was required on milk from cows treated with the hormone. The decision ends a 9-year controversy over the drug. The maker of the hormone is Monsanto.

Note: This is the earliest document seen (July 2013) that contains the abbreviation "BGH."

6507. Kashama, Johnny. 1993. Re: Work with soybeans and soyfoods in Rwanda and Zaire. Letter to William Shurtleff at Soyfoods Center, Nov. 9. And 25 May 1994. 2 p. Handwritten. [Eng]
• ***Summary:*** "In Rwanda there is a mini-industry which makes tofu and other products from tofu like crackers (from okara) and fritters and other kind of cakes called in French 'croquettes.'" Johnny would like to take the methods used by Tofu-Rwanda to his home country of Zaire, beginning in Kisangani (where he will defend his treatise at the university), and the finally in Bukavu where he lives with his parents. He is preparing a treatise (*memoire;* equivalent to 5-year bachelor degree) to present at the end of his studies in Zaire at the *Institut Facultaire des Sciences Agronomiques* (*IFA*). It was originally to be titled *"Essai de valorisation de la technologie du soja: Methodes et techniques de production de lait de soja pour une unité artisonale"* ("Evaluation of Soybean Technology: Methods and Techniques for the Production of Soymilk and Derivatives for Small-Scale Processing in Bukavu"). But as of June 1994 the title has changed to *"Effet du depelliculage, du temps de trempage de graines de soja ainsi que de deux methodes d'extraction de lait de soja"* ("Effect of dehulling and of the time of soaking the soybeans as well as two methods of extraction on soymilk"). He hopes to start a small soyfoods company in Bukavu, but presently he has no money. He hopes that completion of this treatise will lead to financial support from some NGO (non-governmental organization) in Bukavu or abroad, or he many ask CIDR (*Centre International de Développement et de Recherche;* the International Center for Development and Research) to widen the project beyond the borders of Zaire.

In Bukavu, Zaire, where many children die of hunger and suffer from kwashiorkor, there is an NGO (non-governmental organization) which is at work, but kwashiorkor is still persisting. There is a little factory that makes soy crackers using maize, sorghum, and soya. The blend the three ingredients and make what they call "Masoso." The name is taken from the first two letters of each ingredient. The way it is done is different from what they do in Tofu-Rwanda, where he is working as an apprentice.

Note: On 22 Feb. 1994 Soyfoods Center received a letter (fax) from Johnny Kashama in Kigali, Rwanda. On 4 April 1994 a terrible ethnic and genocidal civil war broke out in Rwanda, centered in Kigali. The Hutu (comprising 90% of the nation's population) tried to eliminate the Tutsi (very tall people; 9% of the population). An estimated 500,000 people were killed and millions fled into neighboring Tanzania and Zaire. As of 15 May 1994 the fate of Mr. Kashama is unknown. Address: Tofu-Rwanda, P.O. Box 1906, Kigali, Rwanda.

6508. Olson, Paul. 1993. Update on Bountiful Bean Soyfoods (Interview). *SoyaScan Notes.* Nov. 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Paul created a corporation named Vermont West Inc. which purchased Bountiful Bean Soyfoods from Richard Kraemer and Elizabeth Hanson on 3 Sept. 1993. Richard and Elizabeth will continue working at the company until Feb. 1994, then Richard plans to go back into the ministry.

A follow-up letter (19 Nov. 1993) and leaflet (titled "About Bountiful Bean Soyfoods Products") shows that the company now makes tofu, herb tofu, tasty tofu (marinated and baked herb tofu), tempeh, soymilk, hummus, and taboolie [tabbouleh].

Paul also encloses "Bountiful Bean Soyfoods Newsletter." Issue 1. Nov/Dec. 1993. 4 pages. It includes articles titled "New ownership of Bountiful Bean Soyfoods Announced" (The company currently employs 8 people.) "Who is Paul Olson and what is Vermont West?" (Paul has had 9 years prior experience working in the computer industry with Apple Computer. He is 27 years old and lives near the family farm where he grew up). Address: 620 Main St., P.O. Box 329, Ridgeway, Wisconsin 53582-0329. Phone: 608-924-1703.

6509. Wilson, Don. 1993. The pioneering work of Aqua Agra in Florida with sprouts and soyfoods. Part II (Interview). *SoyaScan Notes.* Nov. 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** "When we started talking about making tofu, it became very evident to me that we would need a bigger space, so in about March or April of 1977 we moved over to 100 Highline Dr., Longwood, Florida 32750. We went from 4,000 square feet of floor space to 50,000 square feet. We outgrew our plant on Seminola Blvd. in about 4-5 months." In June 1977 Don's first child, a son, was born. On Highline Drive, Don built rooms to grow the various sprouts and also diversified the company into chopping and packing huge amounts of fresh vegetables; there was a separate packet of sauce (such as teriyaki) in each bag for making stir-fries. All that was needed was some tofu to complete the stir-fry.

Don bought his tofu equipment used from Robert and Mary Brooks, whose company Swan Foods in Miami had gone out of business. The purchase became a mess because Robert had failed to inform Don about the liens that were against his equipment due to Robert's unpaid bills. So Don started to make tofu in 1978. He sold it chiefly to the chain stores–first to Albertson's (the smallest group), then to Publix, and then to Winn Dixie (the biggest chain). He did not deal with restaurants or health food stores. At the height of production, Aqua Agra was making at least 25,000 to 30,000 lb/week of tofu. He was the first person to introduce tofu to supermarkets in Florida.

In the summer of 1979 Don attended the second annual Soycrafters Conference at Amherst College in Massachusetts. "I will never forget that as long as I live. Some of the major U.S. food companies, such as General Mills and a few others, sent representatives in 3-piece suits. I was standing in the back of the auditorium where these guys were and I'll never forget listening to their comments as they talked about what a bunch of dingdongs they had been sent to observe, and how this had absolutely no place in the American food chain whatsoever. I can remember walking away from that conference thinking to myself, 'I sure am glad these big guys think this way because all it would take is one big corporation to get involved in this and a lot of small businesses would soon go down the drain.'"

Aqua Agra grew rapidly. Many of his employees were Asian-Americans and they were wonderful workers. the copycats that tried to compete with him couldn't. About 2 years after Aqua Agra started making tofu, the *Sentinel Star* newspaper did a rather nice story on the company in 1980.

In early 1981 Don started making soymilk, which he sold in bulk to the nearby Seventh-day Adventist Florida Hospital–but not to any of the chain stores. He sold about 300 gallons a week.

At about the same time he started making soy yogurt in individual unprinted cups with a pressure sensitive label. Most of his sales were of plain yogurt, but he also sold strawberry, peach, and blueberry flavors. The yogurt was sold to local health food stores, to Del Champs in Alabama, and to a broker in New York named Marty Grossman, who sold a lot.

In late 1981 Aqua Agra began to make soy tempeh. They sold less than 100 lb/week, and only to a few health food stores in Orlando who had asked for it.

Don and his wife had to close the company in about mid-1982, after 6 years in business. At that time they were making about 75 products. He and his wife were each working 100 hours a week. "The doctor gave me a choice. He said, 'You can either get rid of that business and live, or you can keep it and die! But you're gonna do one of the two.'" Don was so sick and tired of everything at that time that he decided not to even sell the company–just to shut it down and walk away.

Don feels that he was a little bit before his time. "People found it amusing that a sergeant in the United States Marine Corps. was involved in making hippie food." Address: 2321 Virginia Dr., Altamonte Springs, Florida 32714.

6510. Drosihn, Bernd. 1993. Re: New developments with soyfoods in Germany. Letter to William Shurtleff at Soyfoods Center, Nov. 29. 2 p. Typed, with signature on letterhead.

• ***Summary:*** Viana has done a lot of work to improve the design of its labels and packaging. In Germany the soyfoods market is not growing at present, but neither is there a big recession. Germany's biggest soyfoods manufacturer, DE-VAU-GE, stopped production of tofu in early 1993 and now buys its tofu products from Heuschen-Schrouff B.V. in the Netherlands. That should make Heuschen-Schrouff one of the largest tofu manufacturers in the world. DE-VAU-GE plans to stop soymilk production in early 1994.

Some newer, small soyfoods manufacturers have recently started in Germany: Tofuhaus Eisenreich (Steinmetzstrasse 4, 93049 Regensburg, Germany. Owner: Mrs. Eisenreich. Phone: 0941/27 01 27), and Topas GmbH (Bollbergsr. 41, 72116 Moessingen [near Tuebingen], Germany. Owner: Klaus Gaiser. Phone: 07473/25515). Our old friend Klaus Gaiser, once the largest tofu manufacturer in Germany, is trying to make a comeback.

The market for soyfoods in Eastern Europe is developing very quickly. Bernd has had contact with a Polish company named Polsoja. Yesterday a person from Slovenia visited Viana. He wants to make tempeh there and he told Bernd that there are some soyfoods manufacturers in the former Yugoslavia. In Slovenia, which is relatively untouched by the war, there is one existing tofu company and more than 30 natural food stores.

Albert Hess (owner of Das Tofuhaus in Lautersheim) and Bernd are in the process of founding a new company, named Sojarella, which will start to make and sell soy cheeses in early 1994. The address will be the same as Viana. They have developed a method for making soy cheese products that contain no casein. Address: Founder and president, Viana Naturkost GmbH, Willi Graf Str. 88, 33881 Euskirchen-Kuchenheim, Germany. Phone: 02251-56076.

6511. Reis, Ademar. 1993. History of his work with soyfoods, seitan, and gluten (Interview). *SoyaScan Notes.* Nov. 29. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Ademar, age 46, was born on 2 May 1947 in Santos, Sao Paulo, in Brazil. In the early 1950s when Brazil started growing more soybeans. His mother was a very well educated person and she liked to read; she also had many children and the family was rather poor, so they could not afford to buy meat, milk, or other animal products. Not far from their home was an agricultural department. His

mother would send him there, and they would give him free soybeans, which he and his mother would cook or use to make soymilk.

He entered law school in Brazil in the early 1970s, but upon graduation he became an actor and had a theater group. At the time, life in Brazil was very hard and repressive due to the military government. He went against the government and he had to flee the country in June 1973. Since he had several Brazilian friends living in Los Angeles, he went to live with them there. One day while shopping at Erewhon on Beverly Blvd. in Los Angeles he learned about the East West Center.

He moved into the East West Center, a macrobiotic commune on [7357] Franklin Ave. in Hollywood, California 90028. At that point his girlfriend, Iseti, joined him from Brazil; they were married in America in Oct. 1975. First he started working as Roy Steevensz' assistant making foods. Then in late 1973 or early 1974 he started a company named East West Cookery, where he made Soy Burgers, which he sold to many health food stores in and around Los Angeles, including the Erewhon retail store. To make the burgers he would soak whole soybeans, pressure cook them until soft, then cool and mash them for use as a binding agent. He would mix the mashed soybeans with cooked brown rice and fresh onions, parsley, and carrots. He would shape the mixture into patties, which he baked in an oven. He made the burgers in the kitchen of the big East West Center. In terms of logistics, he would wake up at 4:00 in the morning, cook the soybeans and let them cool. Later, after others had finished breakfast in the kitchen, he would shape and bake the burgers. He would put these between buns, with lettuce, tomatoes, etc. and distribute them to stores.

After several years he decided that he wanted to move to Boston to be close to Michio Kushi. He and his wife, Iseti, went to live at the Kushi macrobiotic study house in Newton, Massachusetts. In Newton he tried to support his wife (who was pregnant) and himself by doing some translation of articles from a Brazilian newspaper. After a few months, they realized they could not make a living doing translation, so Ademar decided to move to Somerville, re-activate East West Cookery, and start making Soya Burgers again–just about the same time his son was born (in October). After making the down payment on the apartment, they found themselves out of money. So they went to see Aveline Kushi (who he met when she lectured in California) at her home in Brookline. She gave him $500 to get his business started and she put only one condition on the gift: "Don't put too much garlic in the food." He has kept in touch with her over the years.

The Seventh Inn made the bread for Ademar's burgers' buns. First he made the burgers out of his home in Somerville, Massachusetts, but he was caught by the Board of Health, so he had to move to a commercial kitchen.

One day a young man named David came from San Diego (where he had been a lifeguard), tasted Ademar's product, and ended up working with the company for a year. Tom was also an artist, and before he left, he drew a logo, wrote "Season's Harvest" in it, and gave it to Ademar as a present. In 1977 decided to rename his company Season's Harvest. Between the late 1970s and the early 1990s Ademar developed a line of about 20 different types of sandwiches (including Solar Burger sandwiches [with Wheatmeat made from Seitan], in 1976), many different burritos (including and a Tofu and Brown Rice Burrito, in about 1978), 20 different types of salads, and carrot juice. In about 1980 Season's Harvest introduced Tuna Salad and Chicken Salad, each containing textured soy protein concentrate; these are the only two products in his line that are not vegetarian.

Until 1987 Season's Harvest did its own distribution throughout the area (Massachusetts, Connecticut, New York, Philadelphia [Pennsylvania], etc.). Then from 1987 to 1990 the company turned over part of its distribution to a natural foods distributor named Country Barn. In 1990 Country Barn went out of business, with large unpaid debts to Season's Harvest. Ademar picked up two distributors in New York: Craig Coester and Ed Wolf.

Looking for a bigger market, in the winter of 1991 Ademar contacted a little company in Massachusetts named Idyllwild Farms, which prepares food and puts food together for major airlines. He made a presentation but nothing developed. One day Continental Airlines contacted Idyllwild saying, "Look, we're having a lot of requests for vegetarian meals, what can you come up with?" Idyllwild spent a great deal of time trying to find meals that were acceptable to Continental's headquarters in Texas, but to no avail. As a last resort, in about December 1992, they went to Ademar. He set to work modifying the Dream Burger. It was an instant hit at Continental–so they asked for more vegetarian products and a dish with mushrooms and onions. Ademar designed the Vegetable Patty. Then they wanted something for breakfast, so he made the Veggie Breakfast Sausage. The first order from Idyllwild arrived in March 1993–the last arrived on 29 July 1993. Idyllwild declared bankruptcy, and Ademar lost $12,000 that Idyllwild owed his company. It was a small disaster. Fortunately, Ademar was able (by great good fortune) to reestablish his contact with Continental and today they are still ordering from him. Idyllwild had hidden the names of its suppliers. Subsequent soy- or gluten-related products included: Dream Burger (1991, June, to be renamed Dreamburger in 1994), Vegetarian Meatball, and Vegetarian Bacon Bits (1992, Feb.), Seitan (1992, June), Cajun Burrito (1992, Nov.), Vegetable Patty (1993, March), and Veggie Breakfast Sausage (1993, March).

Ademar is now looking for a plant or company to make his Veggie Breakfast Sausage. He met Ernie Mucke, who is a fourth-generation sausage maker and who owns a traditional sausage company named Mucke's. Ernie, who is in his late 30s, grew up working in the plant and knows every detail of

the machinery. His 4-year-old son has many allergies so his wife started cooking vegetarian meals, which Ernie likes, so now he is very open to vegetarianism. Ernie's wife's brother, who had spiritual powers and lived in Arizona, was Ernie's spiritual guide. Just before he died, this spiritual guide told Ernie that someone would come into his (Ernie's) life and his sausage plant would be transformed, and he would end up making vegetarian foods. Ademar and Ernie are now working out plans together.

In about mid-1992 Sysco, America's largest food distributor, began to carry Ademar's products; he is with their Hallsmith Sysco division. About 6 months ago he also got into J.P. Food Services (Monarch); Harvard University buys his products. The last few months, in working with Protein Technologies International, ADM, and Central Soya, Ademar has learned many new things about food technology and product formulation. So now he is reformulating many of his products. Currently his best-selling products are Bean & Cheese Burrito, Hoomus [Hummus], Tabouleh [Tabbouleh], and Dream Burger–in that order. He now owns the largest natural-food sandwich company in New England–followed by New World.

Ademar has kept good records of his years of pioneering work with natural foods; his files may be able to add more detail and accurate dates and names to this story. He still uses macrobiotic principles in formulating his recipes to balance yin and yang, but he is not as strict as he used to be; he now eats tomatoes and eggplants. Address: Founder and owner, Season's Harvest, 52 Broadway, Somerville, Massachusetts 02145. Phone: 617-628-1182.

6512. Coward, Lori; Barnes, N.C.; Setchell, K.D.R.; Barnes, S. 1993. Genistein, daidzein and their beta-glycoside conjugates: Antitumor isoflavones in soybean foods from American and Asian diets. *J. of Agricultural and Food Chemistry* 41(11):1961-67. Nov. [31 ref]

• ***Summary:*** This is a very important article. Isoflavones were first extracted with alcohol (80% aqueous methanol) and then the fat was removed from the extract with hexane solvent. Details of the isolation process are given. The results showed that most Asian and American soy products, with the exception of soy sauce, alcohol-extracted soy protein concentrate, and soy protein isolate, have total isoflavone concentrations similar to those in whole soybeans. Asian fermented soyfoods contain mainly isoflavone aglucones, whereas in nonfermented soyfoods of both Asian and American origin isoflavones are present mainly as beta-glycoside conjugates. The estimated daily intake of these isoflavones by Asians is similar on a body weight basis to the isoflavones in soy-containing diets which inhibit mammary tumorigenesis in animal models of breast cancer. Therefore, it is possible that dietary isoflavones are an important factor accounting for the lower incidence and mortality from breast cancer in Asian women.

"The concept of reducing cancer risk by chemoprevention has become an important aspect of current cancer research. It has been suggested that two so-called phytoestrogens, lignans and isoflavones, may play a role in the prevention of estrogen-dependent breast cancer and colon cancer.

Three tables show the isoflavone concentrations in various types of soyfoods. For each food, the content of the following is given: Conjugated genistin, conjugated daidzin, genistein aglucone, daidzein aglucone, total isoflavones, D/G ratio, percentage of genistein aglucones, and percentage of daidzein aglucones. After each food listed below we will show the total concentration "as is" and then (if given) on a dry weight basis.

Table 1 shows isoflavone concentrations (in mg per gram) in basic nonfermented Asian soyfoods: Soymilk (0.252 / 3.256), Tree of Life tofu (0.417 / 2.031), Mori-Nu tofu (0.494 / 3.827), soy flour (1.338), soy powder (1.748), and soy nuts (2.363).

Table 2 shows isoflavone concentrations (in mg per gram) in fermented Asian soyfoods: Tempeh (0.430 / 1.130), miso (0.920 / 1.379), rice miso (0.404 / 0.721), barley miso (0.721 / 1.195), Shiromiso soup mix (0.708), Akamiso soup mix (0.882).

Table 3 shows isoflavone concentrations (in mg per gram) in other soyfoods: Soy sauce (0.023 / 0.090), soy cheese (0.050 / 0.105), Tofutti soy ice cream (0.032 / 0.092), Ice Bean soy ice cream (0.117 / 0.360).

Although flavonoids are found in many plants, vegetables, and flowers, isoflavones such as genistein and daidzein are found in just a few botanical families. This is because of the limited distribution of the enzyme chalcone isomerase largely to tropical legumes. Partly for this reason, isoflavones are a very minor part of American or British diets. Address: Depts. of Pharmacology and Biochemistry and Comprehensive Cancer Center, Univ. of Alabama at Birmingham, Birmingham, Alabama 35294, Mass Spectrometry Lab., Children's Hospital Medical Center, Cincinnati, Ohio 45229.

6513. Havala, Suzanne; Dwyer, Johanna. 1993. Position of the American Dietetic Association: Vegetarian diets. *J. of the American Dietetic Association* 93(11):1317-21. Nov. [24 ref]

• ***Summary:*** Contents: Introduction. Position statement. Vegetarianism in perspective. Implications for health promotion. Nutrition considerations vegetarians. Groups with special needs. Meal planning.

Introduction: "A considerable body of scientific data suggests positive relationships between vegetarian diets and risk reduction for several chronic degenerative diseases and conditions, including obesity, coronary artery disease, hypertension, diabetes mellitus, and some types of cancer.

"Position statement: It is the position of the American Dietetic Association vegetarian diets are healthful and

nutritionally adequate when appropriately planned."

A half-page table titled "Daily food guide for vegetarians" (p. 1318) suggests that 2-3 servings per day come from the "Legumes and other meat substitutes" food group. Serving sizes: 4 oz tofu or tempeh, 8 oz soy milk. Address: 1. MSc, RD; 2. DSc, RD.

6514. **Product Name:** [Alitey (Soymilk with Hazelnuts), and Monsoy (Soymilk with Hazelnuts)].
Foreign Name: Alitey, Monsoy.
Manufacturer's Name: Liquats Vegetals, S.A.
Manufacturer's Address: Ctra. de Vic, Km. 1,230, E-08553 Viladrau (Girona), Spain. Phone: +34-3 884 80 69.
Date of Introduction: 1993. November.
New Product–Documentation: Talk with Michael Makowski of DE-VAU-GE in Germany. 1993. Dec. 8. Active soymilk manufacturers include Liquats Vegetals S.A. in Viladrau (near Girona), Spain. They started about 1 year ago, make their soymilk from whole soybeans, and are a private company. Letter (fax) from Michael Makowski. 1993. Dec. 10. Gives the company address and phone number.

Letter (fax) from Xavier Vilacis of Liquats Vegetals, S.A. 1994. Jan. 27. The company's first two products, both types of soymilk, were introduced in December 1992; Alitey was sold to the general public and Monsoy was sold only to specialty shops that sell vegetarian- and health-food products. In January 1993 the company introduced Alitey with cereals, and cocoa, and Monsoy with calcium, cereals, and cocoa. In November 1993 it launched Alitey with hazelnuts and Monsoy with hazelnuts.

6515. Mangels, Reed. 1993. Vegetarian Journal's guide to cheese alternatives and non-dairy yogurt. *Vegetarian Journal* (*Baltimore, Maryland*). Nov/Dec. p. 25-27.
• ***Summary:*** The cheeses are called cheese alternatives because many of them contain casein or calcium caseinate. Casein is a protein derived from cow's milk. It is added to most cheese alternatives to make them stretchy when melted. Though most cheese alternatives are not acceptable to vegans, two products on the market appear to be free of casein: Soymage and Soymage Cheddar, made by Galaxy Foods. One brand of cream cheese alternative (Tofutti Better Than Cream Cheese) also contains no casein. "It is hard to tell just whom these cheese alternatives were developed for." The main market seems to be consumers who want to avoid cholesterol and lactose. A table shows the following three types of products, each with the number of calories, and amount of fat and sodium per serving. Those followed by an asterisk contain no casein.

Mozzarella-style (1 ounce): Almond Rella, Lite'n' Free, Lite'n' Less, Soya Kaas, Soymage*, White Wave Soya A Melt, White Wave Fat Free, Cow's Milk Mozzarella, Part Skim Cow's Milk Mozzarella.

American/Cheddar-Style (1 ounce): Lite'n' Free Cheddar, Lite'n' Less American, Nu Tofu Low Sodium Cheddar, Nu Tofu Cheddar, Soya Kaas Mild American Cheddar, Soymage Cheddar*, White Wave Cheddar Soya A Melt, White Wave Fat Free Cheddar, Zero-Fat Rella California Cheddar, Cow's Milk Cheddar, Low Fat Cow's Milk American.

Cream Cheese (2 tablespoons): Lite'n' Less, Nu Tofu, Tofutti Better Than Cream Cheese*, Cow's Milk Cream Cheese, Low Fat Cow's Milk Cream Cheese.

The only non-dairy yogurt found in Baltimore, Maryland, was White Wave's Dairyless Soy Yogurt. It is available in raspberry, strawberry, blueberry, peach, vanilla, lemon-kiwi, and apricot-mango flavors and is available plain in quarts. All the flavored dairyless soy yogurts are similar in fat content to low-fat yogurt. The plain soy yogurt is closer to regular yogurt in fat content. The soy yogurts are not very goos sources of calcium (only 40 mg per 6-ounce serving). "I think their taste is quite acceptable."

As this magazine goes to press, Sharon's Finest (of Santa Rosa, California), after 7 years of research, has just released a new vegan cheese named Vegan Rella. "We had an opportunity to taste the cheese and found it to be a big improvement over Soymage." Vegan Rella contains organic Brazil-nut milk, tapioca, rice, oats, canola oil, Irish moss, garlic, spices, basil, sun-dried tomatoes, citric acid, and salt. It is available in hard cheese form (in Mexican and Italian flavors) and in cream cheese form (in either plain, or onion and dill flavor). Address: PhD, R.D.

6516. Westbrae Natural Foods. 1993. WestSoy–We know the importance of customer satisfaction (Ad). *Natural Foods Merchandiser.* Nov. p. 27.
• ***Summary:*** This full-page color ad states: "Westsoy is the most complete line of premium soy drinks on the market. Our focus is on innovative, quality products that meet your customer's needs." Also lists the many Westbrae "firsts."

Color photos show packages of: Westsoy Lite, Westsoy Low Fat Soy Drink, Westsoy Plus, Westsoy Lunchbox Plus, Lite Malted, Westsoy Original, Westsoy Lite Nondairy Creamer. Address: P.O. Box 48006, Gardena, California 90248.

6517. Willemse, Jan; Eaton, Eleanor. 1993. Cooking for Henry: The memories and recipes of Chef Jan Willemse, former pastry chef at Dearborn Inn and personal party chef for Henry Ford. Virginia Beach, Virginia: The Donning Company / Publishers. 160 p. Illust. Recipe index. 26 cm. Autographed by Willemse and Eaton.
• ***Summary:*** Contents: Foreword. 1. I'm discovered by Edsel Ford: Bread, pastries. 1. Henry Ford introduces me to the soybean: Soybean recipes. 3. I help open the Clinton Inn Restaurant to the public: Soups, salads, finger food. How you can be as healthy as Mr. Ford: Entrees, sauces, vegetables.

Mr. Willemse selected and downscaled his recipes while

Mrs. Eaton wrote the biographical text and selected the photos. The book was published just after Mr. Willemse's 93rd birthday. A photo on the cover shows Fair Lane, the last and most famous home of Henry and Clara Ford, located on the banks of the Rouge River in Dearborn, Michigan. Completed in 1915, the mansion has 56 rooms and is situated on 1,346 acres. After Mr. Ford's death, Fair Lane was given to the University of Michigan at Dearborn by the Ford Motor Co.

In the Preface, Jan's three children write: "The qualities our father and we admired most in Henry Ford were his simple manner, his genuine interest in his employees and their families, and his many kindnesses to them."

Born in Holland, Jan's training as a cook began at age 12 in his home town of Hilversum. He came to America in 1919 settling in Boston where he met and married his wife Annie. He first came in contact with the Ford family in 1931 when he was cooking at the Nautilus Hotel in Miami Beach. Florida. He took food to Edsel Ford and the crew of his yacht, which was moored at the marina. Edsel thought Jan was a good cook. Henry Ford had just opened the Dearborn Inn in Dearborn, Michigan, and Edsel thought Jan would be a good executive chef. Henry Ford wrote Jan asking if he's come to Dearborn and take the job of head chef. After a while, Jan accepted. Mr. Ford didn't want any alcohol served at the inn and he was very much against smoking. Jan soon met Edsel Ruddiman, Henry Ford's chemist. Jan never cooked at Fair Lane, the Ford's home and mansion, while the Fords lived there.

In 1934, at Mr. Ford's request, Jan started experimenting with soybeans. Dr. Ruddiman had the miller send him samples of soybean flour. He started by making soft rolls, and then began experimenting with many different foods. Whatever Jan made had to be approved by Dr. Ruddiman before he could send it to the Ford family. However, it could be served at the Dearborn Inn without his approval. He made many recipes in the next 5 or 6 months, and as far as he knows no other soy recipes were around.

While Jan researched food recipes with soybeans, Dr. Ruddiman and chemist Bob Smith experimented with making a substitute for milk and ice cream from the beans. The first products were served at the Dearborn Inn, but weren't well liked. Several other soybean researchers Jan remembers were R.H. McCarroll and Harold Joyce.

Jan worked as pastry chef at the Dearborn Inn until 1932. Then he went into Dr. Ruddiman's laboratory in Greenfield Village. "This soybean experiment was a sideline, you might say. It started small but grew to be very important to Mr. Ford. He wanted more and more food made with the soybean. Clara Ford was not as interested in the soybean as her husband, but she especially liked some soybean food such as cookies made with white chocolate chips, and soy bread. She wanted the bread sent to the mansion every day. A favorite of Mr. Ford's was a soybean cracker that he named the Model T..." A recipe for "Model T. Crackers" is given.

The section titled "Soybean Recipes" (p. 51-72) contains 42 such recipes. The main soy ingredients used in these recipes are soybean flour (used in 18 recipes), soybean margarine (in 17 recipes), soybean milk (10), whole soybeans (cooked, 9), soybean oil (8), roasted soybeans [soy nuts] (5), soy sprouts (1), TVP (textured soy flour, 1), and canned green soybeans (1). There are also two recipes for making soybean milk (one from soybean flour and 1 from whole soybeans), and one recipe each for making roasted soybeans (salted and baked) and homemade soybean coffee.

A photo (p. 66, supplied by Willemse) shows the "Menu of Dinner Served at Ford Exhibit, Century of Progress, August 17, 1934." The names of 17 dishes, each containing soya, are listed. The text on the facing page states: "I planned this menu of all soybean food..." served at The Ford Exhibit in Chicago, Illinois.

When Henry Ford ceased to be active in the Ford Motor Co., Jan left the company and started a catering business on his own. The Clinton Inn (pictured) was the first building Henry Ford acquired for Greenfield Village in 1927. Jan helped to open it to the public. Of the various friends of Henry Ford that Jan met, the one who impressed him most was George Washington Carver. "Of all the people I met, the prince of them all was Henry Ford. He was a wonderful man. He was so interested in everything and everybody. He loved children. He helped them, and the poor too, whenever he could." Jan also thought a lot of Dr. Ruddiman, who told him many times that "you are what you eat... Well, I've eaten soybean foods ever since I started experimenting with them."

"It used to be everyone thought soybeans were just food for animals. Mr. Ford helped people realize that they are perfect food for human beings. He once said that, next to the Model T, he considered his soybean research to be his greatest work."

This book contains many fine old photos including the following: The Carver Laboratory in 1942 (p. 50). Henry Ford standing by George Washington Carver (p. 65). Austin W. Curtis Jr., Jan Willemse, and Bob Smith sampling soybean foods that Jan served at a soybean brunch at the Henry Ford Estate–Fair Lane in 1988 (p. 138). Two giant pressurized cans of Presto Whip which attracted the attention of passers-by on Telegraph Road, south of Michigan Ave. in Dearborn for many years. Stored inside the structures were soybean oil and sugar used to make the soy-based non-dairy whip topping developed by Robert Smith, food chemist, at the request of Henry Ford (p. 144). Photos on the last page, titled "About the Authors" (autobiographical) show both Willemse and Eaton. Jan still bakes soybean cookies (recipe p. 61). Address: Willsemse: 130 Nightingale, Dearborn, Michigan 48128. Phone: 313-561-4088.

6518. Cole, Sidney J. 1993. Changes at DE-VAU-GE (Interview). *SoyaScan Notes*. Dec. 6. Conducted by William

Shurtleff of Soyfoods Center.
• ***Summary:*** DE-VAU-GE (DVG) has stopped making soymilk [actually they plan to stop in early 1994] and therefore also tofu. It was an economic decision. When the Adventist church sold Granose Foods in England, that cost DVG about 40-50% of their soymilk market. DVG still sells and distributes both soymilk and tofu under their GranoVita brand, but they buy the products from other manufacturers. The soymilk may be made by Alpro in Belgium. DVG still manufactures many other soyfoods, such as the soy protein foods, the canned meatlike products, etc.

DVG is still a strong company that is growing rapidly and Michael Makowski is still the general manager. He calculated that he can do better financially by using his factory space to make Corn Flakes rather than soymilk. If DVG keeps up their current growth rate, they may soon pass Australia's Sanitarium Foods as the leading Seventh-day Adventist food company in terms of sales. The church has no plans to sell DVG, and in fact the church is looking to support its food industries quite strongly now.

The decision to sell Granose was made at the local division level, not at the General Conference level. Sidney personally would have preferred that the church not sell Granose, but at least they did sell it at the right time and to a good buyer–the Haldane Foods Group. The products, the company, and the philosophy are all in good hands.

Eric Fehlberg retired about 2 years ago as director of the Seventh-day Adventist International Health Food Assoc. Dr. Cole took his place, and he has also kept his job in Miami at the Inter-American Division. Address: Director, International Health Food Assoc., P.O. Box 140760, Miami, Florida 33114-0760. Phone: 305-443-7471.

6519. Makowski, Michael. 1993. Soymilk at DE-VAU-GE and in Europe (Interview). *SoyaScan Notes.* Dec. 8. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** DE-VAU-GE (DVG) has not yet stopped making soymilk; they had planned to stop during late 1993 and they hope to definitely stop during 1994. They stopped making tofu and Tofu Cream 2 months ago, but they continue to sell tofu; they now buy it from another company [Heuschen-Schrouff in the Netherlands]. DGV decided to stop soymilk production because of the large drop in demand after Granose was sold.

Their problem is to find a partner to produce soymilk for them. This other company must make a good quality product at a reasonable price, must have a large enough capacity to supply their needs (they plan to continue to sell the same soymilk products they are selling now), and must be willing to buy their used soymilk equipment at a reasonable price (this is the main sticking point).

There are not many large soymilk manufacturers in Europe. Alpro in Belgium makes and sells about 32 million liters/year in all the different sizes and flavors. Sojinal in France makes about 5½ million liters/year, and DE-VA-GE makes about 4 million liters/year. Other active soymilk manufacturers include Liquats Vegetal S.A. in Viladrau (near Girona), Spain (which started about 1 year ago and makes their soymilk from whole soybeans; they are a private company), several small manufacturers in England (but their quality is not acceptable), and Soyana in Switzerland. In Michael's opinion, the quality of the soymilk made by Alpro and DVG are more or less the same.

The British market for soymilk is by far the biggest in Europe, comprising about 50-60% of the total European market. Belgium, France, and Germany come next and are all about the same size. Then come Italy and Spain.

In Europe, 80% of all soymilk is sold plain–unsweetened and unflavored; it contains only soybeans and water. Then there are the sweetened types, which are sweetened with sugar, honey, or grape juice. The main flavored types are chocolate, vanilla, or strawberry. Then there are three flavors of dessert puddings: Chocolate, vanilla, and strawberry. That's all. Address: General Manager, DE-VAU-GE Gesundkostwerk GmbH, Postfach 1660, Luener Rennbahn 18, D-2120 Lueneburg. Phone: (04131)-303-145.

6520. Kashama, Johnny. 1993. Re: Tofu-Rwanda s.a.r.l. Questions answered on Soyfoods Center questionnaire and returned to SC on 22 Dec. 1993. 3 p. Handwritten, without signature. [Eng]
• ***Summary:*** The following is based on a interview with Mr. Jean-Pierre Cadran, technical assistant in charge of the Tofu-Rwanda project (*Projet Valorisation et Transformation du Soja*). This company was founded in Feb. 1990 for the improvement of the diet of the people of Rwanda by the introduction of a new product of high nutritive value. A private society of limited liability (s.a.r.l.), 51% the shares are owned by 3 Rwandese men (Mr. O. Murenzi, Mr. L. Gahamanyi, and Mr. F. Gasengayire) and 49% by a French non-governmental organization (NGO) named CIDR (*Centre International de Développement et de Recherche;* the International Center for Development and Research). In July 1991 the company started to make and sell soyfoods, starting with tofu.

The soybean was introduced to Rwanda in 1927 (see Lejeune 1938). In 1980 in Rwanda soybeans were processed only by one company into flour and oil, and this company failed because of bad management. A new type of processing was introduced in 1984 when CIDR began studies on tofu. Tofu-Rwanda was the first company to make tofu in Rwanda. The company has been moderately successful (but has not grown) because tofu is a new product, yet it is easy to use, and most of the people living in cities can afford it. Their main business problem has been the devaluation of the Rwandese franc by 120% over the last 2 years. The company presently makes five soy products: Tofu, Tofu Croquettes (triangles), Tofu Fritters (balls 2 inches in diameter), Okara

Crackers, and Soymilk (which is sold only to people who come to the shop with their own container). Of these, tofu is the best seller. A number of the products have no labels. he tofu is sold directly from the factory. None of the products are sold refrigerated.

The company employs 6 people; 1 manager, 2 production workers, and 3 office and other workers. Their plant contains 146 square meters of production space and 41 square meters of office space. Net sales last year were 1,600,000 Rwandese francs (=US$11,000). The net worth of the business is 2,700,000 Rwandese francs (=US$18,600).

There is also another company in Kigali, Rwanda named Duhamic-Adri that makes a product named *Imvange-Sosoma* containing soybeans, sorghum, and maize. Address: c/o Tofu–Rwanda, P.O. Box 1906, Kigali, Rwanda. Phone: 758-82607.

6521. *SoyaCow Newsletter* (*Ottawa, Canada*). 1993. Russian Soybean Association launches soyfoods initiative. 2(4):1. Oct/Dec.

• ***Summary:*** In December, Krasnodar, a city in southern Russia, hosted a warm reception for the first SoyaCow ever to penetrate the former Soviet Union. Krasnodar is the center of a major agricultural "breadbasket" for Russia and soybeans are a leading local crop–which has traditionally been grown mostly for animal feed and oil extraction.

The Russian Soybean Association, ASSOY, had arranged for a SoyaCow demonstration, attended by local staff, VIPs, and the media. "The line-ups for samples of fresh soymilk and tofu proved that an entire new food category could be embraced spontaneously by one of the world's major cultures." A photo shows Frank Daller demonstrating SoyaCow to Alexander Podobedov, director of ASSOY.

Note: Talk with Frank Daller of The SoyaCow Centre. 1994. Aug. 22. Mr. Podobedov (pronounced po-DOE-buh-doff) can be contacted at ASSOY, Ul. Mirra 28, 350063 Krasnodar, Russia. Phone: (7) 8612-525614; Fax (7) 8612-540081.

Krasnodar is in southern Russia at about 45º N latitude (about the same latitude St. Paul, Minnesota), just east of the Black Sea. It is the capital of the Krasnodar Krai, a Territory of the Russian S.F.S.R.

6522. **Product Name:** Soymilk Powder.
Manufacturer's Name: Agronico, Inc. of Minnesota.
Manufacturer's Address: 95 S. Park Ave., P.O. Box 55, R.R. #1, Le Center, MN 56057. Phone: 612-357-4474.
Date of Introduction: 1993.
How Stored: Refrigerated preferably.
New Product–Documentation: Talk with Mike Vincent, president of Agronico. 1995. Sept. 30. This product, finely ground soy flour, was introduced in about 1993 and is sold in 50 lb sacks.

Sample (product with handwritten Label) sent by Mike Vincent, owner of Agronico. 1995. Dec. 7. Soymilk powder.

6523. **Product Name:** [Le Naturalezze Pearl of the Fields Soymilk].
Foreign Name: Le Naturalezze Perle di Campo Soia L.
Manufacturer's Name: Aliconf srl. (Distributor).
Manufacturer's Address: S/s Cassia km 46,500 Sutri (VT), Italy.
Date of Introduction: 1993.
Ingredients: Extracted liquid of the soybean*. Organically grown.
Wt/Vol., Packaging, Price: 1 liter.
How Stored: Refrigerated.
New Product–Documentation: Label sent by Heather Paine of SoyaFoods in London. 1990. Nov. 10.5 by 2.75 inches. Blue, red, yellow, green and brown on white. Paper label wraps all around the container. "Contains no sugar. Alimento vegetal. Contains no animal fats or preservatives."

6524. **Product Name:** Soybean Milk, Hard Tofu Cake, Square Tofu (not pressed), Deep-Fried Triangle Tofu, Tofu Pudding.
Manufacturer's Name: Binh Minh Tofu Manufacturing.
Manufacturer's Address: 1180 Tully Rd., Unit B., San Jose, CA 95122. Phone: 408-279-3655.
Date of Introduction: 1993.
How Stored: Refrigerated.
New Product–Documentation: Talk with Binh Tran, owner and founder. 1996. May 28. He is a Vietnamese-American. Tran is his family name. He started this company in May 1991. His is now the largest tofu maker in San Jose. These products were introduced after the company started. They are all Vietnamese soy products and the labels are entirely in Vietnamese, with no English.

6525. **Product Name:** [Line "S" Drink Bar {Aseptically Packaged Calcium-Enriched Soymilk} (Vanilla)].
Foreign Name: Ligne "S" Drink Bar (Boisson Vanille).
Manufacturer's Name: Biosoja [Sojinal].
Manufacturer's Address: 10, rue Lavoisier, 68000 Colmar, France.
Date of Introduction: 1993.
Ingredients: Water, dehulled soybeans (10%), cane sugar, natural vanilla flavor, calcium salt.
Wt/Vol., Packaging, Price: 500 ml Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Label (see next page) sent by Heather Paine of SoyaFoods in London. 1993. Nov. 3 by 5.75 by 1.75 inches aseptic carton. Red, green, and white on yellow. "Soya enriched with Calcium. Rich in protein. 100% from plants. No lactose. No colorings. No preservatives."

6526. Crnivec, Vesna. 1993. Od soje do tofuja [From soya to tofu]. *Bio Novice* (*Bio News, Ljubljana, Slovenia*) No. 5/6. p. 40-44. [1 ref. Slv]
• ***Summary:*** The subtitle reads: "Basic recipes for making traditional fermented and nonfermented foods, and for preparing foods using tofu." Excerpts from *The Book of Tofu* by Shurtleff and Aoyagi. Describes how to make tofu at home (with 6 illustrations {line drawings} by Akiko Aoyagi), and discusses soy puree, soymilk, and okara. Address: Slovenia.

6527. **Product Name:** Soymilk.
Manufacturer's Name: Deli France Refreshment Services.
Manufacturer's Address: 79 Blue Spruce St., Brampton, ON L6R 1C3, Canada. Phone: (905) 799-0197.
Date of Introduction: 1993.
New Product–Documentation: Letter (fax) from Jimmy Chong, followed by a phone call. 1993. Nov. 8. He and Michelle Cheng (both of whom are natives of Singapore) currently make soymilk which they sell to catering services.

6528. **Product Name:** [Bjorg Tofu Quenelles with Basmati Rice and Curry Sauce].
Foreign Name: Bjórg Tofunelles au Riz Basmati Sauce Curry.
Manufacturer's Name: Distriborg.
Manufacturer's Address: 217 chemin du Grand-Revoyet, 69230 Saint-Genis-Laval, France.
Date of Introduction: 1993.
Ingredients: Tofu quenelles 25% (Concentrated soymilk* 40%, egg white, non-hydrogenated palm oil, flour, salt, seasonings), basmati rice* 25%, water, modified starch, soymilk*, salt, onions, sugar, seasonings, curry 0.5%. * = Organically grown.
Wt/Vol., Packaging, Price: 280 gm.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Label sent by Heather Paine of SoyaFoods in London. 1993. Nov. 3. If you have any questions, contact Distriborg, 217 chemin du Grand-Revoyet, 69230 Saint-Genis-Laval.

6529. **Product Name:** Unfried Tofu (Extra Firm), Soft Tofu, Soymilk [Chocolate, or Strawberry].
Manufacturer's Name: Happy Tofu.
Manufacturer's Address: 5231 S.E. Powell Blvd., Portland, OR 97206. Phone: 503-771-2802.
Date of Introduction: 1993.
How Stored: Refrigerated.
New Product–Documentation: Talk with Tom Nguyen. 1994. Nov. 17. Tom is Ann Uong's partner and brother-in-law, married to her sister. He is also Vietnamese. In 1993 Happy Tofu introduced Unfried Tofu (which is extra firm tofu–doufu-gan–in 4-inch squares), Soft Tofu, and soymilk in chocolate and strawberry flavors.

6530. Harcan Kingsoya Co. Ltd. 1993. Veg-A-King (Brochure). Ontario, Canada. 4 p.
• ***Summary:*** This is a portfolio-style leaflet with one insert describing Veg-A-King soy sauce. "Harcan Kingsoya Co. Ltd. is a Chinese/Canadian joint venture company set up to bring you authentic soyfoods and exotic sauces. Our Chinese partner is a leading food manufacturer and exporter in Heilongjiang Province, China." The company has established a manufacturing plant in Scarborough, Ontario, Canada. The brand name is Veg-A-King.

"Veg-A-King soy sauce is our flagship product. We use a traditional recipe which has a long history in China. Brewed naturally from premium soybeans, wheat and bran, it contains no artificial colours or added flavourings."

The company also makes an impressive line of 17 meatlike soyfoods products such as Vege-Beef, Vege-Chicken, and Vege-Shrimp. Pressed tofu is the basic ingredient of these foods. "Through further processing it can be shredded, formed, steamed, deep-fried or smoked to make different delicious foods" for vegetarians. Premium quality Canadian soybeans are used in manufacturing soymilk, tofu, and dried bean curd.

Two photos show foods being made in the factory. Address: 33 Casebridge Court, Units 5&6, Scarborough, ONT M1B 3J5, Canada. Phone: (416) 283-8328.

6531. **Product Name:** Soja Drink.

Manufacturer's Name: Mission de Mutoyi / Vispe.
Manufacturer's Address: Bujimbura, Burundi.
Date of Introduction: 1993.
Ingredients: Soybeans, water, flavor, sugar.
Wt/Vol., Packaging, Price: 60 ml PE pouches.
How Stored: Refrigerated.
New Product–Documentation: J.L. Voisin. 1995, Oct. 3-5. Dairy like soyfoods in Africa: Evolution & perspectives. Paper presented at the Third Bi-Annual SoyAfrica Conference. 5 p. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by Aproma. Actimonde of Archamps, France, installed an Agrolactor (soymilk processing plant) at this company in 1993. This Italian NGO is still working in Bujumbura, producing soy milk and baked goods.

Note: This is the earliest known commercial soy product made in Burundi.

6532. **Product Name:** [Nestlé Spray-dried Soymilk].
Manufacturer's Name: Nestle, S.A. de C.V.
Manufacturer's Address: Ejercito Nacional Mexicano No. 453, Mexico D.F. 11520, Mexico. Phone: +52 915-250-9944.
Date of Introduction: 1993.
How Stored: Shelf stable.
New Product–Documentation: Soya Bluebook. 1993. Aug. p. 88.

6533. **Product Name:** Soymilk [Plain].
Manufacturer's Name: Tofu-Rwanda.
Manufacturer's Address: P.O. Box 1906, Kigali, Republic of Rwanda.
Date of Introduction: 1993.
How Stored: Unrefrigerated and perishable.
New Product–Documentation: Form filled out by Johnny Kashama of Tofu-Rwanda, based on a interview with Mr. Jean-Pierre Cadran of Tofu-Rwanda. 1993. Dec. 21. The company presently makes five soy products, including soymilk, which is not packaged. It is sold only to people who come to the shop with their own tins or bottles. It is natural in flavor (unflavored).

6534. Bhatnagar, P.S.; Ali, Nawab. 1993. Country Report 4–India. In: N. Chomchalow & P. Narong, eds. 1993. Soybean in Asia: Proceedings of the Planning Workshop for the Establishment of the Asian Component of a Global Network on Tropical and Subtropical Soybeans. Bangkok, Thailand: FAO Regional Office for Asia and the Pacific. viii + 218 p. See p. 34-49. RAPA Publication (FAO), No. 1993/6.
• ***Summary:*** Contents: (1) Introduction. (2) Processing, utilization, and marketing: Soybean oil, soybean meal export, soyfood technologies ready for commercialisation, future scenario, soy-based food products. (3) Constraints for soybean production: Constraints during the 1970s, constraints during the 1980s, current constraints. (4) Research undertaken to resolve the constraints. (5) Constraints on a priority basis. (6) Resources available. (7) Training needs: Soybean production research, processing and utilization. (8) On-going research projects. (9) Constraints in promoting soy-based foods. (10) Efforts undertaken to resolve the constraints. (11) Seed production and distribution system. (12) Information required: Production/improvement, processing and utilization. (13) Collection of germplasm. (14) Major soybean growing seasons and cropping systems. (15) Information relevant for a strategy plan.

Tables: (0) Average prices in Nov. 1991 of yellow soybean, black soybean, soy oil in bulk, soymeal (soybean meal from solvent extraction), retail price of soy oil, texturised soy protein (TSP), soy beverages. (1) Area, production, and productivity of soybean in India from 1970-71 to 1989-90. (2) Area, production, and productivity of soybean in India during 1988-89 by state. 83.5% of India's soybeans are produced in Madhya Pradesh, followed by Rajasthan (8.20%), and Maharashtra (3.75%). (3) Soybean processing plants in India by state. 58% of India's soybean processing capacity is in Madhya Pradesh, followed by Maharashtra (16.00%), Gujarat (9.00%), and Andhra Pradesh (8.50%). (4) Production and processing of soybean and export of soybean extraction/meal by India during last five years. (5) Small scale soybean processing equipment. (6) Production of fullfat soyflour with financial viability of different plant sizes. (7) Production of soy *paneer* with financial viability of different plant sizes. (8) Production of soy-fortified biscuits with financial viability of different plant sizes.

Today, 85% of soybean production in India is used for oil (and meal, a by-product), 10% for seed, and 5% for food.

Table 1: Soybean area has increased steadily from 32,000 ha in 1970-71 to 1,900,000 ha in 1990-91. Soybean production has increased dramatically from 14,000 tonnes (metric tons) in 1970-71 to 2,000,000 tonnes in 1990-91. Productivity [yield] has increased steadily from 438 kg/ha ha in 1970-71 to 1,053 kg/ha in 1990-91. Source: Agricultural Situation in India. Address: 1. Director, National Research Centre for Soybean, Indore, India; 2. Project Director, Soybean Processing & Utilization, CIAE, Bhopal, India.

6535. Boots, Gypsy; Arthur, Mike; Hopkins, Jerry. 1993. The Gypsy in me! How to look younger and have more energy as you grow older. Camarillo, California: Golden Boots Co. vi + 102 p. Illust. No index. 22 cm.
• ***Summary:*** Contents: Dedication and thanks. Introduction, by Charlie Fox. 1. Natural beginnings. 2. Living in nature. 3. Love and marriage. 4. Hollywood meets health nut. 5. Semi-stardom with Steve Allen. 6. Never too late to rejuvenate. 7. Exercise is a way to live. 8. Vital foods. 9. Eat and drink to your health. 10. Recipes for a healthier you. 11. Traveling through life.

In Chapter 8, titled "Vital foods," the section on

legumes includes soy milk, tofu, tempeh, and texturized vegetable protein. Here Gypsy notes that he has always been a vegetarian. Eggs and dairy products once formed a major part of his diet, but now he rarely eats those foods.

Chapter 10, titled "Recipes for a healthier you," contains the following soy-related recipes: Scrambled tofu. Baked soy bean casserole. Tofu mushroom loaf. Tofu burgers. Soy burgers. Soya-rice flour coffee cake (with soy flour). Shakes (with seed, nut, rice, or soy milk). Many other recipes are seasoned with soy sauce. The Gypsy Boots smoothie (p. 93) calls for: 1 cup fresh apple or orange juice. 1 ripe banana. 1 tablespoon Kyo-Green. 1 date or a few raisins.

Contains many photos, both in black-and-white and color of Gypsy Boots, alone, or with family (p. iii, 19), friends, and celebrities. On the cover is a color photo of Gypsy in short pants standing barefoot on rocks in a stream. Eight unnumbered pages of color photos of Gypsy and friends on glossy paper follow page 70. This book has an unusually commercial tone. Throughout the book, Gypsy discusses the benefits of garlic supplements, wears Wakunaga's Kyolic T-shirts in photos, and plugs Kyolic garlic quite a bit. Address: Camarillo, California.

6536. Chomchalow, Narong; Kueneman, E.A.; Hicks, P.A. 1993. Institutional report 3–FAO. In: N. Chomchalow & P. Narong, eds. 1993. Soybean in Asia: Proceedings of the Planning Workshop for the Establishment of the Asian Component of a Global Network on Tropical and Subtropical Soybeans. Bangkok, Thailand: FAO Regional Office for Asia and the Pacific. viii + 218 p. See p. 164-172. RAPA Publication (FAO), No. 1993/6.

• ***Summary:*** Contents: (1) Introduction. (2) FAO's involvement in soybean research and development in Asia. (3) The FAO-executed projects: National projects (Sri Lanka, Vietnam, Philippines), regional projects. (4) Other FAO-supported activities: Networking (Global Soybean Research Network, Asian Soybean Network), evaluation (Buhler's Full-fat soybean processing technology, Plenty's soymilk production in Sri Lanka, Danish Turnkey Dairies soymilk plant).

Tables: (1) Soybean production, area harvested, and yield in developing and developed countries in Asia: Developing countries: Bhutan, Cambodia, China, DPR Korea (north), India, Indonesia, Iran, Laos, Malaysia, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Rep. of Korea (south), Sri Lanka, Thailand, Vietnam. Developed countries: Australia, Japan, New Zealand. (2) Activities involving soybean sponsored by RAS/82/002 (1983-89). (3) Activities involving soybean sponsored by RAS/89/040 (1990-93).

Regional projects RAS/82/002: "During the period of 1983-89, an FAO-executed and UNDP-funded project, RAS/82/002, entitled "Research and development of Food Legumes and Coarse Grains {FLCG} in the Tropics and Sub-Tropics of Asia" was operated. This project involved Bangladesh, Indonesia, Lao PDR, Nepal, Pakistan, the Philippines, Republic of Korea, Sri Lanka, Thailand, and Vietnam. The project was planned in two phases; the duration of Phase I was 2 years, and activities began in September 1983. The proposed UNDP contribution for this phase was US $450,000 and the actual expenditure was US $454,394. Phase II was approved in August 1985 but implemented in July 1987 and concluded in June 1989. Total UNDP contribution for both phases was US $1,331,453.

"The long-term objective of the project was to increase production of FLCG in the participating countries in order to bridge the gap between the demand for protein-rich food for domestic needs and export markets and the actual production. One of the main goals of the project was to establish a network of national institutions, linked with international institutions capable of advancing the relevant development objective of participating countries through coordinated research and extension activities."

RAS/89/040: "A follow-up project of RAS/82/002, entitled 'Regional Cooperative Programme for the Improvement of Food Legumes and Coarse Grains in Asia', funded by UNDP, is being executed by FAO. It became operational in April 1990 and has a termination date of December 1993. Four more countries (China, India, Myanmar, and Malaysia) joined the network in this follow-up phase. The Government of Indonesia continues to provide the Secretariat."

Table 1: Bhutan: Soybean production increased from 900 tonnes (metric tons) in 1981 to 1,300 tonnes in 1991.

Cambodia: Soybean production increased from 1,100 tonnes in 1981 to 16,000 tonnes in 1991–growing at 28.0% a year on average.

North Korea: Soybean production increased from 350,000 tonnes in 1981 to 460,000 tonnes in 1991–growing at 2.5% a year.

Iran: Soybean production increased from 62,000 tonnes in 1981 to 105,000 tonnes in 1991–growing at 0.8% a year.

Laos: Soybean production increased from 3,900 tonnes in 1981 to 4,200 tonnes in 1991–growing at 1.3% a year.

Papua New Guinea: Either had no soybean production or no information was available.

New Zealand: Soybean production decreased from 300 tonnes in 1981 to 100 tonnes in 1991–decreasing at -11.0% a year. Address: 1. Regional Plant Production Officer (Industrial Crops), 2. Regional Agricultural Engineering and Agro-Industries Officer: Both: FAO/RAPA, Bangkok, Thailand; 3. Senior Officer, Plant Production and Protection Div., FAO, Rome, Italy.

6537. Escano, Crisanto R.; Gaddi, Virgilio Q. 1993. Country report 11–Philippines. In: N. Chomchalow & P. Narong, eds. 1993. Soybean in Asia: Proceedings of the Planning Workshop for the Establishment of the Asian Component

of a Global Network on Tropical and Subtropical Soybeans. Bangkok, Thailand: FAO Regional Office for Asia and the Pacific. viii + 218 p. See p. 92-108. RAPA Publication (FAO), No. 1993/6. [12 ref]
• ***Summary:*** Contents: (1) Introduction. (2) Production: Status, major growing seasons and cropping systems, constraints, resolving constraints. (3) Processing, utilization and marketing: Status, supply and demand, exportation of soybean products, constraints, resolving constraints.

Figures: (1) Trend in soybean production, Philippines, 1980-90. (2) Soybean area harvested, Philippines, 1980-90. (3) Trend in the soybean yield, Philippines, 1980-90. (4) Regional shares of total production, Philippines, 1990. (5) Soybean and soybean product shares in importation, Philippines, 1990. (6) Country of origin, soybean meal import, Philippines, 1990. (7) Country of destination, soysauce export, Philippines, 1990.

Tables: (1) List of soybean-based food products popularly used in the Philippines. (2) Volume and value of soybean imports, 1980-90.

Soybean production increased from about 9,800 tonnes (metric tons) in 1980 to a peak of 11,466 tonnes in 1982, then decreased to 5,614 tonnes in 1990. Area planted to soybeans increased from about 10,000 ha in 1980 to a peak of about 11,00 ha in 1982, then decreased to about 7,000 ha in 1990. The average yield for the period 1980-1990 was 920 kg/ha, but has generally been falling since 1983. Southern Mindanao has been the single most important soybean producing region in the Philippines for more than a decade, accounting for about 67% of total Philippine soybean production in 1990; Central Mindanao comes next with about 23%.

A brief history of soybean production in the Philippines from 1983 to 1990 appears on pages 99-10. Popular soyfoods products in the Philippines include: A. Fermented products: Soy sauce (toyo), fermented soybean curd (tausi [sic, fermented black soybeans]), tempeh (tempe), soybean paste (miso), soft fermented soybean curd (tahuri). B. Non-fermented products: Soybean sprouts (toge, tauge), soybean cheese [tofu] (tokwa), Geerlings cheese (taho [soft curds]), soybean milk (soymilk), and roasted soybean powder (soy coffee).

Philippine imports of soybeans and soybean products have increased rapidly since 1980, yet 93% of these imports in 1990 were soybean meal, of which 38% comes from India, 33% comes from the USA, 22% from China, and 7% from others.

In April 1991 the General Milling Corporation's soybean solvent extraction plant began operation in Tabango, Batangas. It is expected to reduce the country's imports of soybean meal but increase the imports of raw soybeans. Address: 1. Scientist III; 2. Subject Matter Specialist. All: PCARRD, Los Baños, Laguna, Philippines.

6538. Karki, Tika Bahadur. 1993. Country Report 9–Nepal. In: N. Chomchalow & P. Narong, eds. 1993. Soybean in Asia: Proceedings of the Planning Workshop for the Establishment of the Asian Component of a Global Network on Tropical and Subtropical Soybeans. Bangkok, Thailand: FAO Regional Office for Asia and the Pacific. viii + 218 p. See p. 79-86. RAPA Publication (FAO), No. 1993/6.
• ***Summary:*** (1) Introduction. (2) Production. (3) Observation trials. (4) Grain legume crops improvement: Collection and maintenance of germplasm, breeding and varietal improvement, varieties for different ecological regions. (5) Agronomic investigation. (6) Pathological investigation. (7) Entomological investigation. (8) Processing: Tofu, kinema, soy drink (and soy yogurt / dahi). (9) Marketing. (10) Recommendations.

Tables: (1) Germplasm collection of pulses in Nepal. (2) Area, production and productivity of soybean in Nepal. (3) Chemical composition of *kinema* (on dry-weight basis).

Figures: (1) Traditional process of *kinema.* (2) Preparation of *kinema* starter. (3) Preparation of *kinema* using selected strains. (4) Marketing channel of soybean.

Table 2 shows: Area planted to soybeans grew from 18,400 ha in 1983 to 20,700 ha in 1989. Soybean production grew from 10,100 tonnes (metric tons) in 1983 to 12,800 tonnes in 1989. Soybean yield grew from 548 kg/ha in 1983 to 611 kg/ha in 1989.

"Traditionally, soybean is consumed in various forms. Green pods are popularly eaten as a snack food. The green beans are consumed as a delicious vegetable curry along with other leafy vegetables or with potato slices. The dried soybean is roasted, dehusked and split to prepare a popular snack item. The dried beans are soaked overnight and deep-fried in vegetable oil, salted and spiced and consumed as another popular snack item. These recipes are developed over a long period of time and constitute the integral component of Nepalese food preparations." Address: Chief, Food Research Office, CFRL, Kathmandu, Nepal.

6539. Limtrakul, Porn-ngarm; Suttajit, M.; Semura, R.; Shimada, K.; Yamamoto, S. 1993. Suppressive effect of soybean milk protein on experimentally induced skin tumor in mice. *Life Sciences* 53(21):1591-96. [21 ref]
• ***Summary:*** Soymilk protein appears to have anti-tumor properties. Address: 1-2. Faculty of Medicine, Chiang Mai Univ., Chiang Mai, Thailand.

6540. Pitchford, Paul. 1993. Healing with whole foods: Oriental traditions and modern nutrition. Berkeley, California: North Atlantic Books. xxii + 656 p. Illust. Index. 26 cm. 2nd ed. 1996. 3rd ed. 2002 (both by same publisher). [536 ref]
• ***Summary:*** Contents: 1. Origins. Part I: The roots of diagnosis and treatment. 2. Yin-yang and beyond. 3. Qi vitality. The six divisions of yin and yang: 4. Heat/cold–The

thermal nature of food and people. 5. Exterior/interior: Building immunity. 6. Excess and deficiency.

Part II: Essentials of nutrition. 7. Dietary transition. 8. Water. 9. Protein and vitamin B-12.

10. Oils and fats. 11. Sweeteners. 12. Salt. 23. Condiments, caffeine, and spices. 14. Vitamins and supplements. 15. Calcium. 16. Green food products. 17. Survival simplified. 18. Enjoyment of food. 19. Food combinations.

20. Fasting and purification. 21. Food and children.

Part III: The five element and organ system. 22. Five elements: Seasonal attunement and the organs in harmony and disease. 23. Therapeutic use of the five flavors. 24. Wood element. 25. Fire element. 26. Earth element. 27. Metal element. 28. Water element.

Part IV: Diseases and their dietary treatment. 29. Blood sugar imbalance [diabetes]. 30. The stomach and intestines. 31. Blood disorders. 32. Cancer and regeneration diets. 33. Other degenerative disorders.

Part V: Recipes and properties of vegetal foods. 34. Vibrational cooking. 35. Grains. 36. Breads. 37. Legumes–Peas, beans, and lentils: Healing properties of legumes, improving the digestibility of legumes, techniques for cooking legumes, miso, tempeh, tofu. 38. Nuts and seeds. 39. Vegetables.

40. Sprouts. 41. Salads. 42. Seaweeds: Agar-agar, dulse, hijiki and arame, kombu and kelp, nori, wakame, Irish moss and Corsican (*Alsidium helminthocorton;* it is sold as a tea and discharges worms. 43. Soups. 44. Sauces. 45. Condiments: Chutneys and relishes. 46. Spreads and patés. 47. Pickles. 48. Grain and seed milks (incl. sesame seed milk, almond milk, almond milk shake, sprouted grain milk {oats, rice, millet, barley}, cooked grain milk). 49. Rejuvelac and yogurt.

50. Fruit. 51. Desserts. Appendixes: Recipe locator. Bibliography (180 references, mostly alternative; Oriental philosophy. Chinese medicine: Theory and foundations. Chinese dietary therapy. Ayurvedic and Tibetan medicine. Western approach to nutrition. Healing the spirit and mind. Chinese herbology. Western herbology. Healing with food. Green foods. Amaranth. Seaweeds. Vegetarian, macrobiotic, vegan. Children. Ecology, politics, and ethics of food. Degenerative diseases and immunity. Toxins and radiation. Cookbooks. Food catalogs, guides, and references. Sources of data for tables, charts, and nutritional statistics). References and notes (356 refs, mostly scientific). Resources index (Incl. Soyfoods Center).

The following are listed in the index (f = most important pages): Acid-forming foods (p. 235f, 240). Aduki [azuki] beans (p. 26, 34, 50, 60, 68, 77, 178, 273, 305, 307, 319, 362, 467f). Amaranth (lots, 419-20f). Amasake (p. 98, 152-53, 155, 160, 163, 275, 287, 592f). Animal products (lots). Aspergillus oryzae (p. 592). Ayurveda (lots). Black sesame seed (lots, 492f). Black soybean (60, 68, 288, 317, 324, 327, 468). Bran (p. 332) and its role in relieving constipation (345-46). Buckwheat (lots, 422f). Buddha. Calcium (lots). Cancer. Cheese (but no soy cheese). Cholesterol. Cigarette smoking. Coldness, bodily. Dampness, bodily. Deficiency. Digestibility (Improving the digestibility of legumes, p. 471-73). Five elements system. Free radicals. Gerson, Max and cancer therapy (p. 41, 126, 162, 365-66, 381). Goiter. Gomasio (sic, gomashio; sesame salt, p. 272, 566f). Heart / Heart/mind. Heat (lots). Hijiki. Ice cream (p. 291, 305). Job's tears (p. 381, 383). Kasha (buckwheat, p. 422). Kelp. Kloss, Jethro (p. 366, 381). Koji (p. 479). Kudzu (p. 22, 25, 29, 60, 289, 299, 309, 317, 414f). Lecithin (lots, p. 127, 470, 414f). Legumes (lots, p. 466-471, 473f). Macrobiotics (p. 3-4). Marijuana (lots). Menopause (p. 181-82, 362-364f, 441, 468, 497). Microwave cooking (p. 20). Milk). Mind, Chinese Zen concept of. Miso (p. 33-34, 60, 72-74, 78, 81, 90, 92, 98, 101, 105-06, 150, 159, 164, 195, 221-22, 272, 275, 315, 376, 479-82f; natto miso p. 482). Mochi (p. 436-37f). Mother's milk–to increase. Mucus. Nails, dry and brittle (p. 285). Oils (incl. soy oil, p. 138-41) Omega-3 fatty acids. Nori. Protein (lots). Qi [chi, p. 16-17]. Quinoa. Rice syrup. Schweitzer, Albert (365). Sea palm (p. 541). Seaweed (lots, p. 540-55f–see also Agar, alaria, arame, bladderwrack, Corsican, dulse, hijiki, Irish moss, kelp, kombu, nori, ocean ribbon, sea lettuce, sea palm, wakame). Seitan (p. 446-47). Sesame butter (p. 81, 492). Sesame seed (lots, 492f). Soybean (p. 52, 56, 60, 105, 124, 161, 178, 232, 235n, 250, 300, 466, 470f; children and soy products 253-54; soy sprouts p. 22, 34, 122, 291, 470f; see also miso, soy sauce, tempeh, tofu).

The section titled "Soybean" (p. 470) begins: "Cooling thermal nature; sweet flavor; strengthens the spleen-pancreas; influences the colon; moistens conditions of *dryness;* supplements the kidneys; cleanses the blood vessels and heart, improving circulation; helps restore pancreatic functioning (especially in diabetic conditions); promotes clear vision; diuretic; lowers fever; highly alkalizing and eliminates toxins from the body; boosts milk secretion in nursing mothers. Also used as a remedy for dizziness, childhood malnourishment (especially in the form of tempeh and soy milk), skin eruptions, constipation, edema, excessive fluid retention and toxemia during pregnancy, and food poisoning. For the imbalances during pregnancy and for food poisoning, drink soybean juice (prepare as 'aduki juice' above). Soybeans are a natural source of lecithin–a brain food.

"Unless well-cooked, soybeans inhibit the digestive enzyme trypsin, making them [sic] difficult to digest. The fermentation process, such as used in tempeh, tofu, miso, and soy sauce, also eliminates the beans' trypsin-inhibiting effect.

"Soybean sprouts are cooling with a sweet flavor. They are diuretic and used to treat spasms, arthritis, food stagnation, *heat*-type coughs and other heat conditions marked by one or more signs such as yellow tongue coating, yellow mucus, and scanty, dark yellow urine."

Soy sauce (p. 34, 78, 81, 98, 105-06, 150, 159, 164, 195, 222, 272, 277, 315, 414f, 480). Spirulina. Sprouting (p. 232-33). Sprouts (lots, p. 528-30f). Steiner, Rudolf (p. 19-20, 504). Stomach (beneficial foods, stomach/duodenal heat and, strengthening food). Stress. Sugar (lots). Superoxide dismutase (SOD). Sweating–night sweats (p. 24, 117, 441). Sweeteners. Sweet rice (p. 433f). Tahini (sesame, p. 106, 225, 493). Tempeh (p. 22, 34, 56, 60, 96, 99, 105, 124, 216, 221, 242, 250, 290, 307, 310, 482-86f; vitamin B-12 and p. 98). Thirst. Tobacco. Tofu (p. 22, 25, 34, 55-56, 60, 68, 81, 105, 124, 242, 250, 290-91, 300, 303, 307, 310, 317, 327, 486-89f). Tomato. Tongue coating and digestion (p. 399). Umeboshi plums (p. 78, 159, 222, 272, 307, 414, 583f). Umeboshi vinegar (p. 414). Urinary incontinence and deficiency of kidney qi (p. 318-19). Urination, frequent, from kidney qi and yang deficiencies (p. 318). Valerian root. Vegan (p. 5, 95, 137, 261, 389, 502). Vegetarianism (p. 81-82, 95). Vitamin B-12. Vitamin E. Vitamin K. Wakame. Warming foods (p. 18-20, 26-27). Warts. Watermelon. Wind, bodily (foods which quell, 286-89; incl. black soybean, p. 468). Yang. Yin.

Talk with Heartwood Institute. 1997. Nov. 12. This is basically a massage school that also offers retreats. Paul's background is in the martial arts and massage. He graduated from a college after 4 years but the name of the college is not available. He also did 2 years of graduate work at an institution whose name is not available. The Institute sent their catalog/brochure. Address: Director, Heartwood Inst. Wellness Clinic and Oriental Healing Arts Program, 220 Harmony Lane, Garberville, California 95542. Phone: 707-923-5000.

6541. Rosas, Juan Carlos; Young, Roberto A. 1993. El cultivo de la soya [The cultivation of soya]. Tegucigalpa, Honduras: Escuela Agrícola Panamericana, Departamento de Agronomía. 60 p. Illust. 27 cm. [Spa]*
• ***Summary:*** Contents: 1. Overview: Economic importance, chemical composition, history, taxonomy. 2. Morphology of the soybean plant. 3. Physiology of the growth and development of the soybean plant: Stages of development. 4. Environmental factors that affect the cultivation of soya: Soil, water, irrigation, light / photoperiod, temperature, period of growth. 5. Practical cultivation: Preparation of the soil, time of planting, density of planting, quantity of seeds, systems of cultivation, control of weeds (methods of weed control, chemical control). 6. Mineral nutrition of soybeans (and inoculation). 7. Diseases that affect the cultivation of soybeans and their management: Bacterial, fungal, viral, other, seed treatment. 7. Insects that attack soybeans. 8. Harvest and storing. 10. Improvement of soybeans. 11. Processing and utilization: Industrial processing (extraction of oil, soy flours, soy protein concentrates {*concentrados proteícos de soya*}, soybean cake). Direct consumption: In the Far East, the soybean is consumed in the form of fermented and non-fermented foods. Fermented foods include shoyu, miso, mato [sic, natto], and tempeh, while non-fermented foods include soymilk (*la leche de soya*), tofu, yuba (*juba*), and kinako. 12. The cultivation of soya in Honduras (history).

In 1972, the Ministry of Natural Resources (*Ministerio de Recursos Naturales*) reported the initiation of commercial soybean production on a small scale in various departments of the country (Olancho, El Paraíso and Comayagua). Three varieties were used at that time: Biloxi, Hardee and Jupiter. However, before these reports were made, at the Panamerican Agricultural School (*la Escuela Agrícola Panamerican* (*EAP*)), some hectares had already been planted with the varieties Jupiter and Pelican. Discusses additional developments in 1974, 1982, 1986, 1987, and 1988. Address: 1. PhD; 2. PhD.

6542. Saks, Anne; Stone, Faith. 1993. The Shoshoni cookbook: vegetarian recipes from the Shoshoni Yoga Spa. Summertown, Tennessee: The Book Publishing Co. 208 p. Illust. Index. 24 x 21 cm.
• ***Summary:*** This is a vegan cookbook written by the cooks of the Shoshoni Yoga Retreat, founded in 1987 and situated in Rollinsville above Boulder, Colorado, on 110 acres of colorful high country in the Rockies. This book is dedicated to their teacher, Swami Shambhavananda Yogi. "The magic ingredient put into every dish is Shakti or Divine Energy. Food is treated as God, because it contains the essence of life, a conscious energy that nourishes the same energy in you. It is not a native American cookbook. A color photo on the back cover shows Anne Saks and Faith Stone. "In 1975, Faith stone and Swami Shambhavananda opened Rudi's Restaurant in Boulder to serve tasty, fresh, wholesome foods prepared with grace and love. Today Rudi's is a Boulder landmark.

The book begins with a glossary which includes: Miso. Nutritional yeast. Quinoa. Rice milk. Sesame oil. Silken tofu. Soymilk ("A non-dairy alternative to milk"). Tahini. Tamari. Tempeh. Tofu.

Soy-related recipes: Scrambled tofu (with "1 pound firm tofu," p. 28). Hot 'n sour miso soup (with "½ pound firm tofu, cubed" and "3-4 tablespoons red miso," p. 52). Tibetan barley soup (with "2 tablespoons red miso," p. 56). Tempeh almond salad (with "1 pound tempeh, thawed if frozen, cut in ½-inch cubes" and "¼ cup tamari" and "½ pound soft tofu" p. 74). Ginger-tamari sauce (p. 79). Cooling soy yogurt raita (with "2 cups soy yogurt," p. 90). Tamari-orange dressing (p. 104).

The chapter on "Healthful alternatives" (p. 105-110) offers meat alternatives, many of them based on tofu–"the most versatile food on the planet." Baked marinated tofu (with "1 pound firm tofu, sliced ¼ inch thick," p. 106). Tofu feta. Tofu ricotta. Tofu sour cream. Soy yogurt (soymilk fermented with plain yogurt).

Entrees (p. 110-145). Empress tofu. Mandarin tofu. Royal tofu roulade. Tempeh tandoori. Tofu lasagne. Tofu in a pocket.

Baklava (with "½ pound soy margarine," p. 190). Fresh strawberry tofu pie (p. 196). Address: Rollinsville, Colorado.

6543. *SoyaScan Notes.* 1993. Terms related to tofu: Library of Congress subject headings and call numbers (Overview). Compiled by William Shurtleff of Soyfoods Center. [1 ref]
• ***Summary:*** The 16th edition (LCSH 16) of the *Library of Congress Subject Headings* (published in 1993) lists the following subject headings and call numbers related to tofu.

Tofu (May Subd Geog) [TP438.S36 (Manufacture)]. [TX401.2.S69 (Nutrition)]. [TX558.T57 (Composition)]. UF Bean curd [Former heading]; Curd, Bean; Curd, Soybean; Curds and whey, Soymilk; Soybean curd; Soymilk curds and whey; Whey, Soymilk curds and. BT Nonfermented soyfoods. RT Cookery (Tofu). NT Dried tofu.–Advertising USE Advertising–Tofu. Tofu, Dried USE Dried tofu. Tofu ice cream USE Soy ice cream. Tofu industry (May Subd Geog) [HD9330.T68-HD9330.T683]. BT Nonfermented soyfoods industry.

Abbreviations: [ ] = Call number. UF = Use for. BT = Broader terms. RT = Related terms. NT = Narrower terms. May Subd Geog = May subdivide geographically.

6544. Tran, Van Lai. 1993. Country report 15–Vietnam. In: N. Chomchalow & P. Narong, eds. 1993. Soybean in Asia: Proceedings of the Planning Workshop for the Establishment of the Asian Component of a Global Network on Tropical and Subtropical Soybeans. Bangkok, Thailand: FAO Regional Office for Asia and the Pacific. viii + 218 p. See p. 143-150. RAPA Publication (FAO), No. 1993/6.
• ***Summary:*** Contents: (1) Introduction. (2) Production: trend, major growing seasons and cropping systems, constraints, resolving the constraints, future research. (3) Processing, utilization and marketing: Consumption, processing, marketing, constraints, resolving the constraints. (4) Resources: Personnel, seeds. (5) On-going research projects. (6) Information required. (7) Conclusion.

Tables: (1) Area, yield, and production of soybean in Vietnam, 1970-90. (2) Soybean production constraints in Vietnam. (3) Several research findings on soybean breeding and farming patterns. (4) Identified constraints for soybean production in Vietnam. (5) National requirement for food and production of soybean. (6) Methods of soybean processing of Vietnam. (7) Constraints to soybean processing, utilization, and marketing. (8) Future research priority for soybean in Vietnam. (9) Number of scientists working on soybean research. (10) Training needs on a priority basis. (11) Soybean varieties of high yield potential.

Introduction: "Soybean has been cultivated in Vietnam for a long time. Le Quy Don, in his book "Van Dai Loai Ngu", written in 1773, mentioned about soybean cultivation. It is the second most important legume in Vietnam. All soybean products are used as human foods and animal feed because of its high food value (40-50% of protein and 20-25% of oil).

"The Government of Vietnam, which is conscious of the importance of soybean and its role of human food and animal feed, and the possibility to increase its production, has listed soybean as the number two most important crop after groundnut in her agricultural development policy."

Table 1: Area planted to soybeans in Vietnam grew from 17,078 ha in 1970 to 149,000 ha in 1990, projected to grow to 300,000 ha in the year 2000.

Production of soybeans in Vietnam increased from 5,277 tonnes (metric tons) in 1970 to 146,020 tonnes in 1990, projected to grow to 420,000 tonnes in the year 2000.

Yield of soybeans in Vietnam grew from 309 kg/ha in 1970 to 980 kg/ha in 1990, projected to grow to 1,400 kg ha in the year 2000.

"Most of the soybean produced in Vietnam is consumed as human food prepared by traditional methods, which include fermented products such as soysauce, soypaste (miso), soycurd (fermented tofu), and soycheese, and non-fermented products such as soymilk, soycurd (tofu) and soybean oil.

Note: This is the earliest English-language document seen (March 2009) that uses the term "soypaste" to refer to miso.

Concerning the Vietnamese names of these foods, Huong Quan Nguyen (Zomore Quan) writes, in reply to a question from Soyinfo Center. 2008. Aug. 17. Soy sauce = "xi dau" (the Vietnamese "d" written without the bar across the vertical stroke is pronounced "Z").

Soy paste = "tuong dau nanh" or "tuong Cu Da." "Tuong" is a generic term meaning "sauce." As you know, Cu Da is the name of the village famous for its soy paste. "Tuong Cu Da" literally means "sauce made in Cu Da Village." Soy paste is made in many villages in North Vietnam, not just in Cu Da. I have heard that Tuong Ban and Tuong Pho Thoi are just as good as Tuong Cu Da.

Soy curd = "dau hu" (which is unfermented. Once the soy curd is fermented, it is referred to as "chao").

Soy cheese = "chao" (this word has no diacritical mark).

Note: Zomore asked six Vietnamese people who are knowledgeable about soyfoods and all are aware of only one kind of fermented tofu in Vietnam; therefore they cannot imagine what fermented "soycheese" is. Address: Legumes Research and Development Centre, INSA, Dong Da, Hanoi, Vietnam.

6545. **Product Name:** [Hazelnut Cream Spread with Soymilk and Cocoa].
Foreign Name: La Crema.
Manufacturer's Name: Valsoia S.p.A.
Manufacturer's Address: Via Iacopo Barozzi 4, 40126

Bologna, Italy. Phone: +39 051-659-9900.
Date of Introduction: 1993. January.
Ingredients: Sugar, vegetable oil, hazelnuts (14%), powdered soymilk, low-fat cocoa, soy fiber (5%).
Wt/Vol., Packaging, Price: 200 gm or 400 gm glass jar.
How Stored: Shelf stable, 12 month shelf life. Refrigerate after opening.
New Product–Documentation: Talk with Dr. Piero Bontempi and Laura of Valsoia. 1995. June 6. This product was introduced in 1993. Color leaflet and product specifications showing labels. 1995. "Valsoia–Bonta' e Salute. La Crema 100% Vegetale. Arricchita in Fibra di Soia." No al colesterolo." The company uses the word "Soyamilk" as a registered trademark. The leaflet describes the product as "La delizia spalmabile a base di soyamilk nocciole e cacao.

6546. **Product Name:** [Snack–Crisp Cannoli with White Almond Filling].
Foreign Name: Snack–Cuore Bianco.
Manufacturer's Name: Valsoia S.p.A.
Manufacturer's Address: Via Iacopo Barozzi 4, 40126 Bologna, Italy. Phone: +39 051-659-9900.
Date of Introduction: 1993. January.
Wt/Vol., Packaging, Price: Two 15 gm snacks in a foil packet.
How Stored: Shelf stable, 9 month shelf life. Refrigerate after opening.
New Product–Documentation: Talk with Dr. Piero Bontempi and Laura of Valsoia. 1995. June 6. This product was introduced in 1993. Color leaflet and product specifications showing labels. 1995. "Valsoia–Bonta' e Salute. Lo Snack 100% Vegetale. Ricco in Fibra di Soia. No al colesterolo." The company uses the word "Soyamilk" as a registered trademark. The leaflet describes the product as "I croccanti cannoli ripiendi di morbida crema."

6547. **Product Name:** Soymilk.
Manufacturer's Name: EarthStar.
Manufacturer's Address: 5 Kay Street (P.O. Box 654), Mullumbimby 2484, Australia. Phone: (066) 72 5931.
Date of Introduction: 1993?
New Product–Documentation: Letter from Greg Nance-Kivell, consultant. 1993. Aug. 12. The company letterhead and business card now read: "EarthStar–Manufacturers of Quality Wholefoods, P.O. Box 654,..." They have ordered 2 copies of *Tofu & Soymilk Production, and note:* "We are a non-profit organisation with the aim of giving work opportunities to people with disabilities. We produce organic products based on soybeans, chickpeas, wheat, etc. We produce under three brands and products include tofu, soymilk, hommus [hummus], felafel, vegi sausages, and we will market soy yoghurt desserts in the future. We took over Chinese Farmhouse some 3 years ago."

6548. **Product Name:** Soymilk, and Taho (soymilk curd).
Manufacturer's Name: Kimsun International.
Manufacturer's Address: 35 Simoun St., Quezon City, Philippines. Phone: +63 2 47 2330.
Date of Introduction: 1993?
New Product–Documentation: Talk with Johnny Lee of Kimsun Intl. 1995. Aug. 11. He calls from the Philippines. He has been making soymilk and taho (soymilk curd) for several years. Philsoy is still made in small quantities, but is sold only around the university at Los Baños.

6549. *SoyaScan Notes.* 1994. Keywords used with more than 1,000 documents in the SoyaScan database, as of 1 January 1994 (Overview). Jan. 1. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1. USA 24,636. 2. Commercial soy products 6,565. 3. Japan 5,948. 4. Tofu 5,122. 5. Soymilk 3,884. 6. Illinois 3,642. 7. Soy sauce 3,387. 8. California 3,129. 9. Historical (documents published from 1900 to 1923) 3,013. 10. Soy flour 2,822. 11. History 2,730. 12. Soy oil 2,648. 13. Germany 2,447. 14. Miso 2,324. 15. Vegetarianism 2,319. 16. United Kingdom (England, Scotland, Wales, N. Ireland) 2,134. 17. China 1,554. 18. Soybean meal 2,019. 19. Cookery 2,017. 20. Soybean production: Cultural practices and agronomy 1,996. 21. France 1847. 22. Tempeh 1,844 23. Soybean production (General): 1,825. 24. U.S. Department of Agriculture 1,744. 25. New York 1,665. 24. Nutrition (General) 1,471. 25. Historical (documents published before 1900) 1,460. 26. India 1,397. 27. International trade in soybeans, soy oil, and/or soybean meal 1,225. 28. Canada 1,204. 29. Soy protein isolates 1,204. 30. Michigan 1,146. 31. Meatlike commercial products 1,145. 32. USDA state agricultural experiment stations in the USA 1,120. 33. Soybean production: Marketing 1,098. 34. Ohio 1,095. 35. Soybean production: Variety development 1,083. 36. Indonesia 1,063. 37. Tofu used as an ingredient in second generation commercial food products 1,062. 38. Bibliographies and literature reviews 1,049. 39. Massachusetts 1,029. 40. Macrobiotics 1,022. 41. Soy ice cream 1,014.

6550. Rojo, Oscar. 1994. Canadian firm supplies soybean process to Russia. *Toronto Star* (*Ontario, Canada*). Jan. 10. p. B3.
• ***Summary:*** Last month the first pilot SoyaCow system was installed in the Russian city of Krasnodar. Eventually, a technology transfer agreement will allow SoyaCow systems to be produced under license in a former Russian military plant. "Consulting work performed by Dr. F. Warren of the Canadian Executive Service Organization is credited with helping ProSoya break into the Russian market."

6551. Rusnell, Charles. 1994. Local firm milks Russian deal:

Company to ship 100 machines to produce soymilk. *Ottawa Citizen* (*Ontario, Canada*). Jan. 13. p. D6.
• ***Summary:*** ProSoya Inc., and Ottawa (Canada) firm has signed a major deal to provide a Russian official, Alexander Podobedov of ASSOY (the Russian Soybean Processing Association), with 100 of its SoyaCow soymilk machines. The six-year deal will earn the young company about $1 million during the first year alone. A photo Frank Daller of SoyaCow and Alexander Podobedov standing by a SoyaCow system.

6552. Howard, Robert B. 1994. Archer Daniels Midland Company. *Positive Patterns* (*Rogersville, Missouri*) No. 23. p. 1, 5-6. Jan. 29.
• ***Summary:*** This is an analysis of ADM stock and its potential based on earnings and charts. The author sees a very bright future for the company. He believes that "ADM will deliver superior returns to shareholders." Mr. Andreas is a big-vision person who has a long range plan. Key products are lysine, tryptophan, and threonine for animal feeds, soy milk and Harvest Burgers (ADM Predicts these two products are likely to be the most important for ADM over the next 10 years), biological insecticides (ADM is the world's largest producer), xanthan gums, and ethanol. ADM is an excellent cash generator. Every year they wisely acquire other companies, and they have an acquisition team that is second to none. They have made dozens of acquisitions during the past decade. Their balance sheet sparkles and is very straight forward and honest. ADM takes the long view. Address: Route 2, Box 248, Rogersville, Missouri 65742. Phone: 417-887-4486.

6553. DeBona, Don. 1994. Early work with natural foods, macrobiotics, and soyfoods in America (Interview). *SoyaScan Notes.* Jan. 27. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Don was born in Eagle Pass, Texas, in 1955. He had "hung around natural food stores since high school." While in high school, he worked as produce clerk at a natural foods store named The Powerhouse in his home town on Towson, Maryland. It was the town's first natural foods store. They bought foods from Erewhon.

In 1977 Don graduated from a small Catholic college named Mount St. Mary's College in Emmitsburg, Maryland. He got interested in macrobiotics through books (such as *Zen Macrobiotic Cooking* by Michel Abehsera) that same year several months after he graduated; he had been a vegetarian for about 6 months. His first job after college was in Virginia at Appalachian Outfitters, a store which outfitted people going on camping or river trips.

Don worked for Laurelbrook Foods in Maryland for about a year, starting in 1981. He left shortly after the company filed for Chapter 11 bankruptcy protection on 15 Feb. 1982, then he went to work on a Permaculture farm named Watkins Farm on the Maryland/Virginia border. Run by a man named Law Watkins, it was testing no-till agriculture, growing organic winter wheat, barley, soybeans and summer produce according to the principles set forth in Masanobu Fukuoka's classic, *The One Straw Revolution...* After working there for a year and a half, in December 1983 he went to Great Eastern Sun (GES, which had started business in March 1982). GES was just starting to get involved with soymilk (Ah Soy) when Don arrived; taking charge of the soymilk was his first project at GES. Barry Evans hired Don and was actively running GES at the time. Marty Roth had just left for Westbrae when Don arrived; Don took his place as general manager/sales manager. John Belleme was still at American Miso Co. John Fogg designed the package for Ah Soy; Don invented the phrase "Nondairy Soy Beverage" which is now widely used on other soy beverages. After working at GES for about a year plus several months, Don and his wife went down to the American Miso Company in Feb. 1985 to take over from John Belleme. Bob Ballard took Don's place at GES, but Don was the general manager of GES until Nov. 1993, when he hired John Swann. Don still owns part of GES (as well as part of American Miso Co., along with Barry Evans) and is paid by them, even though American Miso Co. is a separate corporation. Bean Mountain Soyfoods in North Carolina was shut down about 2 years ago; John Swann used to be in charge of Bean Mountain. John Fogg worked with John Troy for a while; they started a company named American Natural Foods. Then John Fogg did consulting for Arrowhead Mills, but 2-3 years ago he left the natural foods business and was writing books on motivation. Address: General Manager, American Miso Co., Route 3, Box 541, Rutherfordton, North Carolina 28139. Phone: 704-287-2940.

6554. Vilacís, Xavier. 1994. Re: A brief history of Liquats Vegetals, S.A., of Viladrau, Spain. Letter (fax) to William Shurtleff at Soyfoods Center, Jan. 27. 2 p. Typed, with signature on letterhead. [Eng]
• ***Summary:*** Mr. Josep Ma Erra had the idea to establish Liquats Vegetals, S.A., because all of the soy products consumed in Spain are made out of the country. The three owners of the factory are Mr. Josep Ma Erra, Mr. Josep Serra, and Mr. Josep Vilacís. The company's first two products, both types of soymilk, were introduced in December 1992; Alitey was sold to the general public and Monsoy was sold only to specialty shops that sell vegetarian- and health-food products.

In January 1993 the company introduced Alitey with cereals, and cocoa, and Monsoy with calcium, cereals, and cocoa. In November 1993 it launched Alitey with hazelnuts and Monsoy with hazelnuts. The company presently makes only soymilk in these different flavors. Address: Liquats Vegetals, S.A., Ctra. de Vic, Km. 1,230, 08553 Viladrau (Girona), Spain.

6555. *Bluebook Update* (*Bar Harbor, Maine*). 1994. Study explores soyfoods in space. 1(1):2. Jan/March.
• ***Summary:*** Food and AgroSystems, Inc. (FASI), a food process engineering firm located in Sunnyvale, California, spent 2 years researching crops that could be grown in outer space under zero-gravity conditions. The four best crops it found were soybeans, sweet potatoes, wheat, and white potatoes. In July 1993 the company presented a final draft of its findings to the National Aeronautics and Space Administration (NASA).

For the soy-related research, FASI contracted with Soyatech, Inc. of Bar Harbor, Maine, which recommended the use of extrusion and screw pressing technologies with modifications to process soy oil, soy flour, and soymilk.

6556. Haren, Chuck. 1994. The programs: Looking ahead to 1994. Soybean utilization technical assistance. *Plenty Bulletin* (*Davis, California*) 9(4):1-2. Winter.
• ***Summary:*** The 1994 budget for these programs is $45,000. "Over the past two years, with funding from the Public Welfare and Threshold Foundations and individual Plenty donors, we have worked extensively with 30 groups in Liberia, Guatemala, Nicaragua, Belize, Dominica, St. Vincent, Jamaica, and on two Native American reservations... We currently have requests for assistance with soy programs from other grassroots organizations in India, Guyana, Uganda, Tanzania, Bolivia, El Salvador, Philippines, and Sri Lanka, and we would like to be able to assist them." Photos show: (1) Two women cooking soymilk over an outdoor fire in Belize. Children with soymilk and tortillas.

6557. **Product Name:** Soy-Um (Soymilk) [Plain, Vanilla].
Manufacturer's Name: J&G Inc. (Distributor). Made in Oregon by Pacific Foods.
Manufacturer's Address: 60 East Elm, Chicago, IL 60611. Phone: 312-787-5157.
Date of Introduction: 1994. January.
Ingredients: Plain: Filtered water, whole organic soybeans*, brown rice syrup (brown rice, water), expeller pressed canola oil, sea salt, carrageenan. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 32 fluid oz. (1 quart) 946 ml Tetra Brik Aseptic carton. Retails for $1.39 (2/94).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per cup (8 fl. oz): Calories 100, calories from fat 25, total fat 3 gm (4% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 115 mg (5%), total carbohydrate 14 gm (5%; dietary fiber 0 gm), protein 4 gm, calcium 4%, iron 10%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Trader Joe's in Concord, California. 1994. Feb. 2. This is a delicious product at a great price in a beautiful

package! 3.75 by 6.5 2.5 inches. Pastel colors. At the center of the front panel, a photo shows soymilk being poured onto flaked cereal. On the left and right borders are pastel vines with flowers. Above is the sun rising behind fields and a farmhouse. Below are purple flowers. Note: The manufacturer of this soymilk is not given on the package. The price is about $0.20/quart less than other soymilks at Trader Joe's.

Talk with Ron Roller of American Soy Products. 1994. Jan. 3. Soy-Um is made by Pacific Foods in Oregon. It is sold to a man named Kim Jenkins in Chicago who used to be with Hormel Foods and who has a lot of connections in the grocery industry. J&G stands for Jenkins and Gournoe. They are "marketeers." There was some talk that Trader Joe's was going to introduce a soymilk under their own label, but somehow they hooked up with J&G. Ron believes that Jenkins wants to sell this as low-cost, grocery brand style soymilk for food chains and the mass market. They are going after the low end of the market, and they have gained some shelf space because of their low price. The product is not for the natural foods market. Their products (in terms of flavor and ingredients) are styled after the Westbrae soymilk products.

Soyfoods Center Taste Test. 1994. Feb. 12. We find the flavor, consistency, and appearance of this product to be excellent. These qualities, combined with its very low price,

make this one of the best, if not the best, soymilk buys in America today.

Talk with Michael Gournoe's secretary. 1994. March 4. Michael is located in Chicago, Illinois, and Kim Jenkins (who has a background with Hormel) is located in Minneapolis, Minnesota.

Talk with Kim Jenkins of J&G. 1994. March 11. Which see. As of June 1995 1 quart of Soy-Um retails for $1.39 at Trader Joe's in California.

6558. **Product Name:** Pacific Lite: Non Dairy Beverage–Only 1% Fat (Soymilk) [Vanilla].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1994. January.
Ingredients: Vanilla: Filtered water, whole organic soybeans*, brown rice syrup (brown rice, water), natural vanilla flavor with other natural flavors, tricalcium phosphate, sea salt, carrageenan, vitamin A palmitate, riboflavin (B-2), vitamin D-2. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton. Retails for $1.79 (8/94, Berkeley, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 8 fl. oz. (240 ml): Calories 110, calories from fat 20, total fat 2 gm (3% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 115 mg (5%), total carbohydrates 18 gm (dietary fiber 0 gm, sugars 9 gm), protein 4 gm. Vitamin A 10%, calcium 30%, vitamin D 30%, vitamin C 0%, iron 15%, riboflavin 30%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Talk with Berkeley Natural Grocery Co. 1994. Feb. 3. Pacific Foods has three new types of soymilk. They started carrying the products about 1 month ago.

Product with Label purchased at Berkeley Natural Grocery Co. 1994. Aug. 20. "A refreshing non-dairy alternative. No cholesterol. No lactose. Calcium and vitamin A & D added." \

6559. **Product Name:** Pacific Select: Non Dairy Beverage–Lowfat (Soymilk) [Vanilla, Plain].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1994. January.
Ingredients: Vanilla: Filtered water, whole organic soybeans*, brown rice syrup (brown rice, water), natural vanilla flavor with other natural flavors, expeller pressed canola oil, sea salt, carrageenan. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton. Retails for $1.39 (8/94, Berkeley, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 8 fl. oz. (240 ml): Calories 120, calories from fat 25, total fat 3 gm (5% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 115 mg (5%), total carbohydrates 17 gm (dietary fiber 0 gm, sugars 9 gm), protein 4 gm. Vitamin A 0%, calcium 4%, vitamin C 0%, iron 10%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Talk with Berkeley Natural Grocery Co. 1994. Feb. 3. Pacific Foods has three new types of soymilk. They started carrying the products about 1 month ago.

Product with Label purchased at Berkeley Natural Grocery Co. 1994. Aug. 20. Purple, green, pink, and yellow on white. On the front panel are wavy pastel lines, as from four crayons, in purple, pink, yellow, and green. "A refreshing non-dairy alternative. No cholesterol. No lactose."

Product with Label purchased at Trader Joe's in Concord, California. 1996. Dec. A quart of lowfat plain now retails for $0.99, down from $1.39 two years ago. This may be a different product since 1 cup contains only 100 calories instead of the 120 calories in the 1994 product.

Product with Label purchased at Trader Joe's in Lafayette, California. 2001. Nov. 4. New package design. "Pacific Soy Select Vanilla: Organic. Non GMO. All natural non-dairy drink." Purple, yellow, light green, and orange. A photo shows soymilk being poured from a blue pitcher in the upper left into a glass in the lower right. Contains 100 calories and 5 gm of protein per cup. 1 quart retails for $1.69. The word "lowfat" no longer appears on the front panel, but "low fat" does appear in small letters at the bottom of the back panel.

6560. **Product Name:** Pacific Ultra: Non Dairy Beverage–Calcium and Vitamin A&D Added, Plus L. acidophilus Cultured Product Added (Soymilk) [Vanilla, or Plain].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1994. January.
Ingredients: Plain: Filtered water, whole organic soybeans*, brown rice syrup (brown rice, water), expeller pressed canola oil, tricalcium phosphate, *Lactobacillus acidophilus* and *L. bifidus* cultured product added, sea salt, carrageenan, vitamin A palmitate, riboflavin (B-2), vitamin D-2. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton. Retails for $1.79 (8/94, Berkeley, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 8 fl. oz. (240 ml): Calories 160, calories from fat 45, total fat 5 gm (7% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 120 mg (5%), total carbohydrates

22 gm (dietary fiber 0 gm, sugars 11 gm), protein 6 gm. Vitamin A 10%, calcium 30%, vitamin D 30%, vitamin C 0%, iron 15%, riboflavin 30%. Percent daily values are based on a 2,000 calorie diet.

New Product–Documentation: Talk with Berkeley Natural Grocery Co. 1994. Feb. 3. Pacific Foods has three new types of soymilk. They started carrying the products about 1 month ago.

Product with Label purchased at Berkeley Natural Grocery Co. 1994. Aug. 20. "A refreshing non-dairy alternative. No cholesterol. No lactose. Only 2% fat." On front and left side of package is a splash of pastel colors: Pink, purple, green, and yellow.

Soyfoods Center product evaluation. 1994. Aug. 4. Taste: Excellent, slightly sweet, no beany flavor. Consistency: The top 2/3 of the carton is very nice, somewhat creamy, but the bottom is somewhat lumpy, even when shaken well before serving. Package design: Mediocre.

6561. Plenty International. 1994. A guide to growing and using soybeans for food. Davis, California. 37 p. Jan. Illust. 22 cm.

• ***Summary:*** Contents: Foreword. Introduction. Growing soybeans: Planning, land preparation, planting, plant growth, field sanitation, insect and disease control, harvest, threshing, storage, vacuum packing for seed storage, calculating growing costs. Home preparation of soybeans: Cooking soybeans, soy flour, soy coffee and nuts, ingredients for making soy milk, tofu and tokara, kitchen tools, soy milk, tokara (tofu with the okara still in it), tofu, tempeh, storing soybean foods, costs of processing soybeans for market, expected yields of primary soybean foods, recipes. Nutritional information. Resources and contacts. Acknowledgments.

Note. This is the earliest English-language document seen (June 2013) that contains term "tokara," which refers to tofu with the okara still in it.

Businesses Plenty has worked with that make fresh soyfoods and are listed on pages 30-32 include: Alimentos San Bartolo (San Bartolo, Guatemala). Survival Foods and Nature Island Foods (Roseau, Dominica, West Indies). Natural Cafe and Health Plaza (Castries, St. Lucia, West Indies). Kay Cuisine (Kingstown, St. Vincent, West Indies). Country Farmhouse Soy Products (Kingston, Jamaica). Deagbo Industries (Ibadan, Nigeria). Address: P.O. Box 2306, Davis, California 95617. Phone: (916) 753-0731.

6562. Shurtleff, William; Aoyagi, Akiko. comps. 1994. Soymilk and soymilk products–Bibliography and sourcebook, 1500 to 1993: Detailed information on 3,120 published documents (extensively annotated bibliography), 968 commercial soymilk products, 506 original interviews (many full text) and overviews, 462 unpublished archival documents. Lafayette, California: Soyfoods Center. 1,105 p. Subject/geographical index. Author/company index. Printed 3 Nov. 1993. Published Jan. 1994. 28 cm. [5528 ref]

• ***Summary:*** This is the most comprehensive book ever published about soymilk and soymilk products. It has been compiled, one record at a time over a period of 18 years, in an attempt to document the history of this subject. Its scope includes all known information about soymilk and soymilk products (including soy-based infant formulas, fermented soymilk, and soy-based calf milk replacers) worldwide, from 1500 to the present.

This book is also the single most current and useful source of information on soymilk, since 83.5% of all records contain a summary/abstract averaging 170 words in length.

This is one of more than 40 books on soybeans and soyfoods being compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyfoods Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features: 40 different document types, both published and unpublished; every known publication on the subject in every language–including 296 in French, 270 in Japanese, 190 in German, 105 in Spanish, etc.; 466 original Soyfoods Center interviews and overviews never before published. Thus, it is a powerful tool for understanding the development of soymilk and related products from their earliest beginnings to the present.

The bibliographic records in this book include 3,120 published documents and 462 unpublished archival documents. Each contains (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation of the title, month and issue of publication, and the first author's first name (if given).

The book also includes details on 968 commercial soymilk products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to make best use of this book, a complete subject and geographical index, an author/company index, a language index, and a bibliometric analysis of the composition of the book (by decade, document type, language, leading periodicals or patents, leading countries, states, and related subjects, plus a histogram by year) are also included. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

6563. Shurtleff, William; Aoyagi, Akiko. comps. 1994. Soyfoods industry and market–Bibliography and sourcebook, 1985 to 1993. Lafayette, California: Soyfoods Center. 361 p. Subject/geographical index. Author/company index.

Language index. Printed 11 Jan. 1994. Published Jan. 1995. 28 cm. [985 ref]
• ***Summary:*** This is the second of the two most comprehensive books ever published on the soyfoods industry and market worldwide.

In May 1982 the first study of the burgeoning soyfoods industry in the Western world was compiled by Shurtleff and Aoyagi, and published by Soyfoods Center. In April 1985 the fifth edition of that book, titled *Soyfoods Industry and Market: Directory and Databook* (220 pages), was published. It contained statistics through 1984, the market size and growth rate for each soyfood type, rankings of leading soyfoods manufacturers of each soyfood type and the amount each produced, analyses, trends, and projections. This book is published to update the 1985 market study.

In the decade since 1984 the soyfoods market has continued to grow at a very healthy rate, with some soyfood types (such as soymilk) growing at a truly astonishing sustained rate–in both the USA and western Europe–as the statistics in this book show so vividly. In 1975 only 75 new commercial soyfood products were introduced in the USA, yet that number skyrocketed to 217 in 1979, reaching an amazing 422 new products in 1987.

During the decade from 1984 to 1994, Soyfoods Center has invested most of its time and resources in the production of SoyaScan, the world's largest computerized database on soyfoods, which contains more than 44,500 records as of Jan. 1994. This database also includes a wealth of carefully researched statistics and analyses of the soyfoods market; those from the start of 1985 to the end of 1993 are contained in this book. Its scope includes all known information on this subject, worldwide. Its focus, however, is statistics, analyses, and trends concerning the soyfoods industry and market in the United States and Europe.

In May 1990 Soyfoods Center conducted an in-depth study of the tofu market in Europe (137 pages), and in July 1990 of the soymilk market in Europe (261 pages). All original interviews and published records from both of these market studies, plus a summary of each study, are included in the present book.

The SoyaScan database is composed of individual records. One record might be an original interview with the head of the largest soymilk company in Europe, on the size and growth of the soymilk market in Europe, and new trends in that market, conducted by William Shurtleff of Soyfoods Center. Another might be a published article or an unpublished document concerning the growth of the market for soy yogurts or soy sauce in America.

This book documents the growth of each product category in every country worldwide. The book contains three extensive and easy-to-use indexes: A subject/geographical index, an author/company index, and a language index. These allow you to find the exact information you need on the soyfoods industry and market quickly and easily. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

6564. Soyfoods Association of America. 1994. Income and expenses for 1992 and 1993, and proposed for 1994. Balance sheet. San Francisco, California: SAA. 3 p. Unpublished manuscript. 28 cm.
• ***Summary:*** In 1992 income was $27,102 (incl. $21,615 from membership dues), and expenses were $32,262 (incl. $11,739 management fee). Balance in bank account on 31 Dec. 1992: minus $648.

In 1993 income was $50,060 (incl. $20,192 from the American Soybean Association (ASA) Project, $18,539 from membership dues, and $8,500 from Tetra Pak for soymilk standards), and expenses were $39,694 (incl. $20,191 ASA Project and $9,022 management fee). Balance in bank account on 31 Dec. 1993: $9,717.

In 1994 proposed income was $41,150 (incl. $16,000 from membership dues and $19,000 from Tetra Pak for soymilk standards), and expenses were $41,800 (incl. $10,000 management fee and $11,000 for soymilk standards–mostly for attorneys fees to Stephen McNamara). Projected balance in bank account: $9,007. Address: One Sutter Street, Suite 300, San Francisco, California 94104. Phone: 415-433-9494.

6565. United Soybean Board; Nebraska Soybean Program. 1994. Designed for life: A closer look at the versatile soybean's contribution to human health (Brochure). Lincoln, Nebraska. 12 panels. 23 x 10 cm each. [1 ref]
• ***Summary:*** Contents: Soybean fiber. Soybean protein (in soy flour, isolates, concentrates). Soybeans: The newest and oldest of designer foods. Finding and using soybeans: Miso, tofu, natto, tempeh, full fat flour, soymilk, soynuts, soy sauce. Soybean oil: 85% unsaturated fat, no cholesterol, high in polyunsaturates, hydrogenation and *trans* fatty acids. Once upon a time ("circa 1500 BC, Yu Xi-ong and Gong Gang-shi, who were either bandits or warlords depending on your perspective..." discovered the soybean. Note: This story has no basis in historical fact). The soybean: Health insurance in a pod.

Photos show: Two hands holding up a large Chinese bowl of miso soup containing squares of tofu. A table set with dishes of various East Asian soyfoods. Charts: Bar charts showing percentage of saturated, monounsaturated, and polyunsaturated fatty acids in soybean oil and other oils and fats. Nutritional analysis of 1 cup of cooked soybeans.

Note: This brochure was developed for the United Soybean Board (USB) by the Evans Group in Seattle, Washington. It was mailed mostly to food manufacturers. Address: Lincoln, Nebraska.

6566. United Soybean Board. 1994. Soybeans: Unlocking the secret to good nutrition. Healthcare guide. St. Louis,

Missouri. 8 p. 28 cm. [5 ref]
• ***Summary:*** Contents: A critical food source from the dawn of history. The only vegetable that contains complete protein. World soybean production (1992/93, bar chart). The most versatile food on earth. Health benefits of soy foods (discusses only soybean oil!). Nutritional analysis of soybeans, kidney beans, and peanuts. Bar chart showing the fatty acid composition of soybean oil and other oils and fats (soybean oil is "the balanced oil"). Hydrogenation and health. Cis and *trans* fatty acids. Soybean oil's place in the diet. Whole soybean foods: Tofu, tempeh, miso, natto, soy sauce, full fat soy flour, soy "nuts" and soymilk. Soybean fiber (the outer hull). Soy protein products: Defatted soy flours, soy isolates, soy concentrates. Isoflavones (incl. Genistein). Soybeans, the "All American" legume. For more information call 1-800-Talk-Soy.

Note: This brochure was developed for USB by the Evans Group in Seattle, Washington. It was mailed mostly to dietitians, nutritionists, and members of the food industry. It focused more on soy oil than on soy protein. Address: St. Louis, Missouri.

6567. McReynolds, Thomas. 1994. Morinaga's new interest in soymilk (Interview). *SoyaScan Notes.* Feb. 3. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Morinaga has been looking seriously at manufacturing soymilk in America for the last 6 months, and very seriously for the last 4 months. The major reason is the value of the Japanese yen, which has fallen steadily against the dollar over the years. From 1964 to 1971 the yen was steady at about 360 yen per dollar. In 1972 it fell below 300, in 1978 it fell below 200, and recently it dipped briefly below 100 yen per dollar; it is now at about 108-109. This makes it expensive to import products from Japan. A second reason is that Morinaga would like to build its own plant in America. But they are looking for a partner in the venture to help minimize the risk. There are two pieces to the formula. The partner must join Morinaga in manufacturing costs, and land and factory development. The partner must also be a potential buyer of the soymilk with an established market, provided the product is made to their quality, volume, and price specifications. Address: Marketing Consultant, Morinaga Nutritional Foods, 2050 W. 190th St., Suite 110, Torrance, California 90504. Phone: 213-728-4325.

6568. Roller, Ron. 1994. New developments with soymilk in America (Interview). *SoyaScan Notes.* Feb. 3. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Pacific Foods in Oregon has reintroduced and updated its own line under the brand Pacific Foods in three types: Ultra, Lite, and Select. One is fortified, one is light, and one is plain. They are selling these directly to distributors. Soy-Um is sold to a man named Jenkins in Chicago, Illinois, who used to be with Hormel Foods and who has a lot of connections in the grocery industry. J&G stands for Jenkins and Gournoe. They are "marketeers." There was some talk that Trader Joe's was going to introduce a soymilk under their own label, but somehow they hooked up with J&G. Ron believes that Jenkins wants to sell this as low-cost, grocery brand style soymilk for food chains and the mass market. They are going after the low end of the market, and they have gained some shelf space because of their low price. The product is not for the natural foods market. Their products (in terms of flavor and ingredients) are styled after the Westbrae soymilk products.

But the biggest story is the impending entry of Morinaga into the U.S. soymilk market. Remember that Morinaga is basically a milk company and a very conservative one. It looks like they plant to build a plant to make tofu and soymilk in America and they are looking for a partner in the venture–in part because they don't know the market that well, in part to reduce their risks, and in part to get extra volume to cover their overhead. But they want the controlling interest in the venture. They are talking with all the major U.S. soymilk manufacturers–especially Westbrae (which is looking for a partner, in part because their soymilk has been made in so many different places) and Pacific Foods. 90% of their tofu sales are in the mass market, and very little is sold to the natural foods industry. So they will probably also try to sell their soymilk to the mass market.

Bill Bolduc in Ohio makes plain, unpasteurized/unsterilized soymilk, then sends it up to Parmalat Foods (5252 Clay Ave., Wyoming, Michigan 49548. Phone: 616-538-3822). Parmalat is a huge and very significant Italian food company that is the biggest user of Tetra Pak Aseptic packaging in the world. They specialize in tomato products, milk, and pasta, and they are an expert at Aseptic packing. That have advertised their dairy milk in an aseptic carton via full-page ads in the *Wall Street Journal.* [Their corporate headquarters is: Parmalat USA, 500 Rt. 17 South, Hasbrouck Heights, New Jersey 07604.] In 1993 Parmalat bought White Knight Packing, which is a Tetra Pak co-packing operation. This was their entree to the American market–except that they previously had some distribution for their tomato products in America. Westbrae was a co-pack customer of White Knight. Parmalat then bought two dairies–one in Pennsylvania and one in Louisiana. They move very quickly and are very aggressive.

Note: Parmalat S.p.a. in Italy (43044 Collechio, Parma, Italy) was interested in soymilk as early as May 1987. The two contact people at that time were Mr. Barilla and Dr. Alberto Rota. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6569. Pierce, Ray. 1994. A brief history of Genice Foods Ltd. and their work with soy ice creams, yogurts, creams, and margarine. Part I (Interview). *SoyaScan Notes.* Feb. 4, 8, 10,

and 16. Conducted by William Shurtleff of Soyfoods Center. Followed by a an 8-page fax on 7 Feb. 1994.
• ***Summary:*** From 1979 to 1982 Ray, a native of Wales, was general manager of Pendeltons Ice Cream. In March 1982, at age 41, he started a company named Classic Ices, which was primarily a dairy ice cream company. Located in Rhydymwyn (pronounced REED-uh-MOO-un), Clwyd (pronounced KLU-ud) County, Wales, the company began trading (making and selling products) in July 1982. In early 1984 Ray sold all but 10% of his shares in Classic Ices to the Hillsdown Holdings Group but continued to work at the company. Then in May 1984 Irene Barclay joined Classic Ices as technical manager. In April 1985 Ray saw an article in *The Grocer* (April 6, p. 23) stating that Michael Cole of Soya Health Foods Ltd. had started making soya milk and was planning to make related non-dairy products–such as soya ice cream. Ray called Michael Cole and asked if Classic Ices could develop and make a soy ice cream for him. Michael was interested, he came to visit Ray at Classic Ices, and that is how Ray's interest in soya ice creams began. Irene Barclay of Classic Ices worked closely with Michael Cole to developed the product. In about July 1985 Classic Ices started making Sunrise Ice Dream and selling it to Cole, who marketed it very successfully. Before this, Classic Ices had never made any non-dairy products. But Classic Ices was not particularly interested in non-dairy products, so Ray and Irene Barclay decided to leave Classic Ices in 1985 and start their own small company in Clwyd, Wales, about 10 miles from Classic Ices, at the same location they now occupy. The two business partners believed they saw a new market with great potential. Moreover, Irene was lactose intolerant so she could not consume dairy products. So Ray sold his remaining shares (10%) in Classic Ices to Hillsdown Holdings, then he and Irene established their company to develop and manufacture non-dairy dessert specialties–starting with soya ice cream.

They named the company Genice Foods Ltd. (short for "Genuine Ice Cream" and pronounced JEN-ais), but today many people pronounce the name jen-EES, which has come to be preferred by the company. In late 1985 Genice Foods moved into a brand new, small custom-designed, purpose-built factory unit in the Llay Industrial Estate. The unit was 5,000 square feet in size, but initially Genice used only half of that space–for manufacturing, cold storage/warehousing, and offices. In early April 1986 Genice was officially established and registered as a company and that same month, about two weeks later, they began trading. Today Ray's title is Director General Manager and Irene is the Technical Director. Genice's first product, launched in April 1986, was Genice Ice Delight, a non-dairy frozen dessert in 5 flavors (vanilla, strawberry, raspberry ripple, hazelnut, and pistachio & almond). Initially the main soy ingredient was powdered soymilk obtained from Michael Cole of Soya Health Foods, which probably imported it. But soon Genice switched to using soy protein isolates because they were less expensive and seemed to give a better product. At that time Genice bought the isolates from Macauley-Edwards (in Peterborough, eastern England), which later somehow became Purina Protein; today Genice buys most of its isolates from ADM (SP6, imported from the USA), but a little from Protein Technologies International for "old time's sake." Genice developed this product largely because they needed an actual product to show potential customers, but they never put much effort into marketing the product because they had already decided that Genice wanted to be a product development and manufacturing company and leave sales and marketing to other companies. Later in 1986 the manufacture of Sunrise Ice Dream was transferred to Genice from Classic Ices. It was now sold in four flavors–vanilla, wildberry, hazelnut, and carob. Genice worked out an agreement with Cole that they would not compete by entering markets where Cole's product was established.

In 1986 Dayville Ltd. asked Genice if they could make a non-dairy frozen dessert intended to appeal more to the general grocery sector of the market than health food stores where Ice Delight and Ice Dream were sold. The product N'ice Day, was launched for Dayville in July 1986, sold in 3/4 litre packs in four flavors–vanilla, hazelnut, strawberry, and pistachio & almond. The soy ingredient was soy protein isolates. Continued. Address: Founder, Genice Foods Ltd., Pinfold Lane, Llay Industrial Estate, Llay near Wrexham, Clwyd, LL12 OPX, Wales/Cymru, UK. Phone: 0978-853-787.

6570. Pierce, Ray. 1994. A brief history of Genice Foods Ltd. and their work with soy ice creams, yogurts, creams, and margarine. Part II (Interview). *SoyaScan Notes*. Feb. 4, 8, 10 and 16. Conducted by William Shurtleff of Soyfoods Center. Followed by a an 8-page fax on 7 Feb. 1994.
• ***Summary:*** Continued: At this time, Genice Foods was the only company in Europe manufacturing non-dairy frozen desserts, but the market in Europe was not expanding as rapidly as the market in the USA. Possibly the main reason for this was a greater perceived differentiation in the U.S. between dairy ice creams, containing up to 15% butter, and healthier non-dairy, lower-fat frozen desserts such as Tofutti and McQueens. By contrast, ice creams in the UK generally contained palm oil instead of butter and at a much lower level–around 6-8%. Other reasons for the rapid growth of the U.S. market could be: Greater awareness of lactose intolerance, a larger number of vegetarians, larger ethnic communities, and cost consciousness. With Genice being the only manufacturer of non-dairy frozen desserts, it was difficult to satisfy existing and potential customers without some duplication of products in the market place. However Genice was also attempting to help these companies avoid competing directly with one another by suggesting different package sizes, flavors, package shapes, etc. Hence in 1987

Maranellis Ice Supreme was launched for Unisoy (before Unisoy was acquired by Haldane), in a ½-liter format, sweetened with fruit juice, in 3 flavors–raspberry ripple, vanilla, and chocolate. The product was made from fresh soya milk, delivered to Genice by Unisoy. Another non-dairy frozen dessert launched in 1987 was Sunrise Carob Ice, a frozen soya vanilla-flavored bar covered with a carob coating, made for Soya Health Foods Ltd., Michael Cole's former company; the product sold extremely well.

In March 1989, the Haldane Foods Group Ltd., part of the Archer Daniels Midland Co. (ADM), acquired a 70% interest in Genice. Genice Foods approached the Haldane Group since Genice needed both cash and access to bigger markets in order to develop properly. Peter Fitch, head of the Haldane Group, has told Ray many times he didn't really want to acquire Genice; Ray had to court him for 9 months before he agreed to acquire Genice. Haldane was an ideal partner, being one of the biggest health food manufacturers in Europe (they made mostly vegetarian main courses), but having no dessert products. Genice made mostly non-dairy frozen and chilled desserts. Also the cash backing from ADM was equally important in creating and developing new markets. ADM and the Haldane Group gave Genice the freedom to continue to develop and make products for companies (such as Soya Health Foods and Dayville Ltd.) outside the Haldane Group.

In April 1989 Sweet Sensation, another non-dairy frozen dessert, was launched for Granose Foods in a 3/4 liter pack composed of a rectangular plastic tub in a cardboard sleeve, in 4 flavors–tutti fruitti, black cherry, raspberry ripple, and vanilla. Genice made this product for Granose before and after Granose was acquired by the Haldane Group. Another non-dairy frozen dessert products launched in 1989 was Vegedine Mousse a frozen mousse dessert in two flavors–carob & walnut, and strawberry. Vegedine was a very small company in Bournemouth, sales to health food shops were small, and the company soon went out of business.

Following the acquisition by Haldane, the pace of development speeded up at Genice. Previously, products had been produced from either powdered soya milk and soy protein isolates, or soya milk imported from Unisoy. In late 1989 a small soya milk plant was installed at Genice with the ability to produce limited quantities of tofu also. With the new availability of tofu, two new non-dairy frozen products were launched: (1) So Good Tofu Dessert for the Haldane Group, a 3/4 litre pack in a round cardboard tub flavored as a strawberry/vanilla split, or as wild blackberry; and (2) So Good Strawberry Bombes for the Haldane Group, a 100 ml vanilla flavored base with a strawberry puree center, coated with carob couverture, and sold in retail packs of four. Because of Haldane's extensive contacts throughout Europe, Genice products are now sold in 7 European countries. The company also made a brief foray into the kosher market in America, when they sold some So Good Strawberry Bombes to a distributor named Quality Foods in Long Island, New York, but Genice had a bad experience and ended up with an unpaid debt on their first shipment. About 4 years ago Ray exhibited some of his soya products for 2 years in a row at one of the New York Kosher Fests. There he met David Mintz of Tofutti fame. Ray would like to try to enter the New York market again some day; its a big market.

Genice uses fresh soymilk (produced by Unisoy) to make the majority of its total volume of soy ice cream, and isolated soy protein to make rest. Powdered soymilk is not used because it is very expensive and too hard to obtain. Ray now feels that fresh soymilk gives a better soy ice cream. Genice is now producing a range of development samples for Dayville Ltd., which is going to re-launch their soy ice creams this year and they have picked the one made with soymilk as being the best. From the production viewpoint, isolates are much easier to use, but product taste and overall quality is the key point. Moreover, organic soymilk can be used to make an organic soy ice cream, but there are no organic soy isolates.

Genice is still the only manufacturer of soya frozen desserts in the UK. However two strong, competing products are now being imported: Winner's Swedish Glace from Sweden and Tofutti from the USA. Three years ago Genice made more than 90% of the soy ice creams sold in the UK, but today that figure has dropped to an estimated 50%, with Winner in second place, followed by Tofutti. Ray is concerned that Winner could overtake Genice in soy ice creams this year. During 1994 Genice plans to rationalize and reformulate its soy ice cream product line in order to concentrate its marketing efforts more on its best products, to eliminate or merge its own brands of the same type that compete with one another, and to put more effort into sales of soy ice creams. Continued. Address: Founder, Genice Foods Ltd., Pinfold Lane, Llay Industrial Estate, Llay near Wrexham, Clwyd, LL12 OPX, Wales/Cymru, UK. Phone: 0978-853-787.

6571. Pierce, Ray. 1994. A brief history of Genice Foods Ltd. and their work with soy ice creams, yogurts, creams, and margarine. Part IV (Interview). *SoyaScan Notes.* Feb. 4, 8, 10, and 16. Conducted by William Shurtleff of Soyfoods Center. Followed by a an 8-page fax on 7 Feb. 1994.
• ***Summary:*** Ray feels that these soy yogurts are excellent products. Consumers must have the same opinion since the market is growing very rapidly. "In retail terms, this soya yoghurt market is now worth around £2 million sterling ($3 million), whereas it was worth only about £30,000 sterling in 1985." The market was almost totally created in the last four years–since Genice started making soy yogurt using its unique process that gives a shelf-stable product.

Today Genice now sells about ten times as much soy yogurt as soy ice cream. Moreover, sales of soy ice cream are fairly static, while sales of soy yogurt are leaping ahead.

Genice makes at least 90% of the soy yogurts sold in the UK. In short, Genice started as a non-dairy ice cream company, which has in fact turned into a non-dairy yogurt company! "The soy yogurts really sold themselves. It was amazing how they took off so well." There are about 1,500 health food shops in the UK, and no more than half of those have a freezer, so they cannot sell ice cream. Even those with a freezer, usually have very limited frozen storage capacity and the competition for that small space (as from dairy ice creams) is intense. Almost all of those with no freezer also have no refrigerated storage; they sell mainly "pills and potions" etc." So a refrigerated or frozen product can be sold in less than half of all health food stores. This gives shelf-stable products, such as Genice's soy yogurts, a big advantage. Genice is moving its soy yogurts into Italy and Portugal in a bigger way, and is launching two new yogurts for Spain this year (competing soy yogurts are sold on a small scale in Spain). Other concepts and flavours will be introduced into the yoghurt area in 1994, together with the quest for other export markets continuing both in Europe and the rest of the world.

Genice uses fresh soymilk (produced by Unisoy) to make about 50% of its total volume of soy yogurt, and isolated soy proteins to make the other 50%. Powdered soymilk is not used because it is very expensive and too hard to obtain. Isolates are more convenient to use but Ray now feels that fresh soymilk gives a slightly better product–though this is very subjective and different people have different opinions. Isolates also give an excellent soy yogurt.

One of the markets that Genice has not yet entered–and would like to–is Germany, where there are large sales of soymilk and twice as many health shops (Reform Houses) as in the UK. Since most of the Reform Houses do not have chilled or frozen cabinets, Genice's shelf-stable products would fit perfectly; they could be sold on the shelf next to the Muesli. In the smaller health food shops in the UK, Genice's shelf-stable soy products are usually sold unchilled, but in the bigger shops, like Holland & Barrett, they sold chilled, since they taste better after being chilled.

Other dairylike non-dairy products that Genice has made are as follows: In 1990 chilled So Good Soycreem was launched as a non-dairy alternative to dairy double cream, but low in cholesterol, high in polyunsaturates, and low in saturates. It was made for Haldane in a little beige plastic pot with a green foil lid, packed at the Genice plant. It contains a trace of cholesterol because law requires that it contain 36% oil, including some palm oil. In 1991 a shelf-stable UHT version (completely sterilized, with a 9-month shelf life), now named Granose Soya Creem, was launched in a 225 ml Combibloc pack, made for Genice by a large dairy in Ireland which had Combibloc packaging equipment. The chilled So Good Soycreem was discontinued. In 1992 Genice installed a vegetarian margarine plant, which also makes Granose Soya Margarine that is sold chilled. This margarine was developed in Germany, so they took over the business and reformulated the product.

Genice is doing very well. The plant has expanded to 15,000 square feet from its original 2,500–a 6-fold increase. Their turnover (gross sales) has doubled virtually every year since they have been in business. Being owned by ADM has been of great benefit to Genice because ADM has been extremely generous in providing the money that Genice needs for its ongoing expansion and implementation of new ideas. Genice would eventually like to enter the U.S. market (starting in New York) with its shelf-stable non-dairy yogurt products, since there are no such products in America.

When yogurt is pasteurized, the beneficial effects of the yogurt bacteria are nullified. But Ray was just told by Dr. Glen Gibson that oligofructose, a sugar, has the effect of promoting the growth of the small quantities of Bifidobacteria in the human digestive system. Thus a pasteurized soy yogurt could be made into an even healthier product if it were sweetened by oligofructose.

Ray is a native of Wales and his wife is a teacher who often teaches in Welsh. Both are happy to see the revival of the Welsh language. Ray is not a vegetarian, but he has a good feeling and high regard for vegetarianism, he likes vegetarian food, and he has some vegetarian ideals but they go beyond the food to more ethical issues. He finds that many of the people in other companies that he deals with are more ethical people. He would estimate that 85-90% of the consumers who buy products made by Genice are vegetarians or vegans. Address: Founder, Genice Foods Ltd., Pinfold Lane, Llay Industrial Estate, Llay near Wrexham, Clwyd, LL12 OPX, Wales/Cymru, UK. Phone: 0978-853-787.

6572. Schneider, Keith. 1994. F.D.A. warns the dairy industry not to label milk hormone-free. *New York Times.* Feb. 8. p. 1, A10 (Natl).
• ***Summary:*** All cow's milk contains trace amounts of natural bovine growth hormone. As of last Friday it became legal to inject a new genetically engineered growth hormone [made by Monsanto], named bovine somatotrophin, into milk cows to make them produce about 10% more milk. "The drug is the first important product of biotechnology to be used to produce food, and its introduction was met by protests in New York, Washington [DC], Atlanta, Seattle, and other cities."

The FDA said that any effort by manufacturers to label their dairy products as free of the hormone could be false and misleading, and illegal under Federal law.

6573. Roller, Ron. 1994. J&G, Inc., Soy-Um, and the price of soymilk in America (Interview). *SoyaScan Notes.* Feb. 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** This low-cost soymilk product and efficient way it is distributed will probably usher in a new era of less

expensive soymilk, create growth in the low-price soymilk market, and introduce soymilk to many non-traditional mainstream outlets outside its home base in the health-food market.

Ron has talked with the people at Jenkins and Gournoe who sell Soy-Um. They are able to sell soymilk so inexpensively [$1.39 per quart at Trader Joe's] because of their simple, efficient distribution system and the fact that they are a broker, which means they never own the product and they probably have no warehousing expenses; they may not even own delivery trucks. They probably just ship the soymilk directly from Pacific Foods. But whose truck stops at Pacific Foods? Maybe Trader Joe's or a common carrier. The truck probably takes the soymilk directly to Trader Joe's warehouse, then Trader Joe's probably distributes the soymilk to their 40-50 retail outlets.

American Soy Products now sells Edensoy to Eden Foods (a master distributor), which sells it to many distributors. Large or regional distributors usually make a deal with the bigger retail outlets or chains (such as Whole Foods) to sell products to the retail stores or chains on a cost plus basis. For example the distributor would take the cost at which they buy the product and add a flat 8% to determine the price at which they sell to those retailers. Then the manufacturer, or the master distributor, or the distributor, or the retail outlet could offer a discount to make the product even less expensive to the retail customer.

Westbrae has the same distribution structure as Eden Foods since both are master distributors. At some future point, both Westbrae and Eden Foods will have to look for ways to become competitive with products like Soy-Um–perhaps by reducing margins or becoming more efficient. Pacific Foods does not have to sell through a master distributor,–so they eliminate one link in the distribution chain–which puts them at an advantage in terms of price. It seems unusual that they would sell to J&G–unless J&G can reach new markets that Pacific Foods cannot reach. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6574. *Agri-Book Magazine* (*Exeter, ONT, Canada*). 1994. Far East market can double. 20(5):29. Feb.
• ***Summary:*** Canada is selling more and more soybeans for food uses to East Asia. Thailand is the only country in the region that is self-sufficient in soybean production. Japan (population 123 million) imports more than 1 million tonnes per year, Taiwan imports 250,000 tonnes, Indonesia 150,000 tonnes, Korea 120,000 tonnes, and Malaysia 100,000 tonnes. Singapore and Hong Kong import all the soybeans they use.

In 1993 Ontario produced a record 1.7 million tonnes. Only 500,000 tonnes of this (29.4%) was exported, and only a fraction of that was suitable for making soyfoods such as tofu, natto, soymilk, Taiwanese fermented tofu (*foo yee*), etc. A large color photo shows ladies in Taiwan packing fermented tofu in jars.

Ontario has captured 56% of the Hong Kong market, and about 14% of the Malaysian market. But the Asian market is becoming more competitive because exporters from the USA are beginning to offer soybeans in bags as well as bulk shipments. Michael Loh, the OSGMB coordinator for export development, thinks Canada can achieve its goal of doubling soybean exports by the year 2000.

6575. Asbridge, David D. 1994. Agricultural importance of soybeans. In: Mark Messina, ed. 1994. First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease: Abstracts. Chesterfield, Missouri: United Soybean Board. 27 p. See p. 6. Held 20-23 Feb. 1994 at Mesa, Arizona.
• ***Summary:*** "Soybeans are omnipresent in American life... Last year, the average American consumed only four pounds of soyfoods in the form of soy protein products, tofu, soymilk, tempeh, miso, soy sauce, and soynuts. They consumed over 40 pounds of soybean oil in the form of margarine, salad dressings, cooking oils, and shortening. They consumed 204 pounds of meat, poultry, and eggs. Soybean meal, the most widely used processed feed ingredient in the U.S., is the leading source of protein for meat and poultry animals. To meet this huge demand for soybeans, vast resources are needed. In 1992, 440,000 U.S. farmers planted 59 million acres of soybeans. That's enough to nearly cover the entire state of Arizona. The farm value of the 2.2 billion bushel crop was more that $12 billion dollars. Once farmers sold the 1992 crop, the majority of the soybeans were either crushed into meal and oil, or exported. The meal and oil were valued at $6 billion and $3 billion, respectively. Exports, which historically make up one-third of the U.S. soybean crop, directly reduced the U.S. trade deficit by almost $4.5 billion dollars and indirectly employed 126,600 people. It has been estimated that since 1975, the value of the soybean crop has been about $275 billion in nominal terms. The multiplier affect brings the total impact to the US economy of soybean production to $800 billion." Address: American Soybean Assoc., 540 Maryville Centre Drive, Suite 390, P.O. Box 27300, St. Louis, Missouri 63141-1700.

6576. Badani, Bernard. 1994. Edible soybean mission report, Indonesia, Taiwan, Korea, February 1994. Ottawa, Ontario, Canada: Agriculture and Agri-Food Canada. 23 p. 28 cm. Spiral bound.
• ***Summary:*** Contents: Foreword: Mission objective, countries visited, main goals, conclusion. Acknowledgments. Names of the 8 mission members. Visit to Indonesia (Jakarta): Background, visits (Nestle soymilk plant in Surabaya, BULOG), conclusions, market potential (short, medium, and long term). Visit to Taiwan (Taipei, Taichung, Tainan, Kaohsiung): Background (the pro-American soybean

lobby), visits (Taiwan Tofu Manufacturers Assoc., Tet Union Corp., Great Wall Enterprises, Herng Yih), conclusions, market potential (short and medium term). Visit to Korea (Seoul): Background, visits (Hyosung Corp., AFMC, Korean and Seoul Tofu Manufacturing Co-operatives, conclusions, market potential (short and medium term). List of contacts by country (photocopies of business cards). Note: Mr. Badanai works for this federal organization in Ottawa.

This mission, whose coordinator was Michael Loh, took place between Feb. 25 and March 10, 1994; it was organized by OSGMB with assistance from the Canadian Embassies in Jakarta and Seoul, and the Canadian Trade Office in Taipei. The overall objective of the mission was to open these 3 markets to the sale of Special Quality White Hilum (SQWH) soybeans from Canada for use by their soy food industries.

Indonesia imports about 700,000 tonnes of soybeans each year, mostly grade #1 from the USA, to supplement its local production of about 1.3 million tonnes. About 250,000 tonnes of the imports are used to make soyfoods such as tempeh (which accounts for about 80% of the total), tofu, taucho (Indonesian miso), and soybean milk. The majority of their domestically grown soybeans are also used to make soyfoods. All Indonesian soybean imports are handled by BULOG, a government agency which determines yearly requirements and allocates the resulting imports to various companies under a complex price structure formula apparently designed to maintain the competitiveness and full utilization of the domestic crop whose internal prices are very high by international standards. Sarpindo is the largest Indonesian soybean crusher. Nestle operates a soymilk plant in Surabaya that makes 12,000 tonnes/year and is completing a second one of 20,000 tonnes capacity in Jakarta. Much of Nestle's production, especially for the new Jakarta plant, is oriented toward the export market, with the Philippines as their top priority.

Taiwan grows only 12,000 tonnes of soybeans domestically, but they import 2,400,000 tonnes per year. Their main suppliers are the USA (1,938,000 tonnes, 80.8% of the total), China, 297,000 tonnes), and Argentina (6,000 tonnes). Imports are handled mostly by a small number of major crushers, which then select a portion of the #2 soybeans imported, bag them, and sell them to Taiwanese soyfood manufacturers. About 8% of the total imports (200,000 tonnes) are handled in this way. Tofu is by far the most important soyfood in Taiwan, with consumption of 49.79 kg/capita/year. Most tofu is made by very small companies. The main problem facing Canadian exporters is the almost total control that the pro-American soybean lobby has shown so far in Taiwan. This lobby includes the main local crushers/importers of U.S. soybeans (which have a strong interest in maintaining the present import and distribution systems that make local tofu manufacturers dependant on them), and the American Soybean Association (ASA) office (with a staff of 15) in Taipei. Tet (Ttet) Union Corp. in Tainan is the largest crusher in Taiwan. Fwusow (Fwu Sow) is a large edible oil company. Taiwan's largest tofu manufacturer is Herng Yih Food Industrial Co. of Kaohsiung. The 13 year old company has two plants, 14 minutes drive apart.

Korea imports between 1 and 1.1 million tonnes of soybeans a year to supplement domestic production of about 200,000 tonnes. Approximately 200,000 tonnes of the total imports and 20,000 tonnes of domestically grown soybeans are used to make soyfoods, mostly tofu. All soybeans destined for this purpose are purchased by AFMC, the Agricultural and Fisheries Marketing Corporation, a state-owned corporation and government monopoly under the Ministry of Agriculture. that resells soybeans to food processors according to their needs, charging a very high markup over the import purchase price. This markup, in turn, allows AFMC to subsidize purchases of domestic soybeans which it buys at prices close to 5 times the international price but which it resells to tofu manufacturers at the same price as the imported soybeans. It is expected that AFMC will loose its importing monopoly on food grade soybeans by 1997 due to the GATT agreement. An immediate market potential for Canadian soybeans seems to exist for sprouting soybeans, of which Korea purchases about 6,000 tonnes a year. Address: Grains and Oilseeds Div., International Markets Bureau, Agriculture and Agri-Food Canada, Ottawa.

6577. *Child Haven International* (*Newsletter, Maxville, Ontario, Canada*). 1994. Dr. Ratan Sharma... Feb.
• ***Summary:*** "Dr. Ratan Sharma, Child Haven's Soya Expert in India, with Mrs Mukerjee and Bonnie inaugurating the placement of a SoyaCow at Gram Niyojan Kendra a woman's organization headed by Mrs. Mukerjee in Ghaziabad near New Delhi (Bayne photos)."

"Ratan at Child Haven's new SoyaCow Centre in Ghaziabad [in Uttar Pradesh, northern India]. He has a PhD in soya development, and will promote the use of soya products, as well as see to the maintenance of the machines and training of SoyaCow workers. Photo No. 2 shows Ratan standing in front of a flat-topped white building behind a large sign that reads: "SoyaCow Centre (India)."To the left is the oval SoyaCow logo.

"Volunteer Steven Bayne, Ottawa, below, on his fourth Child Haven trip to India, using most of his time helping Ratan establish the new SoyaCow Centre in Ghaziabad.

A photo shows Steven standing to the right of a SoyaCow atop a platform.

"Child Haven now has fifteen SoyaCows in India. One is in our Hyderabad Home, another at Kaliyampoondi [near Madras, in Tamil Nadu state of southwestern India]. The rest are mostly at social centres, schools, and women's organizations."

6578. *Child Haven International* (*Newsletter, Maxville, Ontario, Canada*). 1994. Soyamilk machines are now being produced in India. Feb.
• ***Summary:*** "With help from CIDA (Canadian International Development Agency) the technology was successfully transferred by Child Haven to India. The new model makes use of the first stainless steel pressure cooker in the world that we know of. Known as the SoyaCow, it is being produced in India by India Noble Electric Co. At left is Mr. P.H. Rajani, a partner with Noble Electric, with his nephew Vijay and a worker."

A photo shows two shining stainless steel SoyaCows on a white table with the three men.

"India SoyaCows sell for about 2,000 U.S. dollars. They produce in 25 minutes about 15 litres of soyamilk equivalent to the daily production of an average Indian cow. Theoretically they could run 24 hours [a day], and would produce as much milk as a large herd of cattle. Soyamilk has many advantages over cow's milk. It can be produced for one-third the cost. It requires only one-eighth of the farmland. It has no cholesterol. In many developing countries a majority of the people are lactose intolerant. Also many millions of people are vegetarian and soyamilk and soya products are a high protein food.

Note: Vegetarians are not prohibited from consuming milk and dairy products.

6579. **Product Name:** Altima HP-20 Nutritious Beverage Powder [Plain, Chocolate, or Strawberry], and Altima FA-8 Nutritious Beverage Powder [Plain, Chocolate, Almond]. The Altima brand was changed to Take Care in about Nov. 1994.
Manufacturer's Name: Nutritious Foods, Inc. Wholly owned subsidiary of Protein Technologies International, Inc.
Manufacturer's Address: 4600 Chippewa, #281, St. Louis, Missouri 63116. Phone: 1-800-445-3350.
Date of Introduction: 1994. February.
Ingredients: Incl. Isolated soy protein, genistein.
How Stored: Shelf stable.
New Product–Documentation: Note: These are the world's first two commercial food products to contain genistein added as an ingredient.

Mail order catalog in the form of two leaflets distributed at the First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease held at Mesa, Arizona. 1994. Feb. "Altima HP-20 provides 20 gm of protein and 20 mg of genistein* per 8-ounce serving, with as few as 100 calories. (Footnote: * Genistein is a naturally occurring isoflavone, or plant tissue compound, found in soy. It is believed to have antioxidant and other anti-cancer properties). Altima HP-20 Nutritious Beverage Powder contains Supro brand Isolated Soy Protein..." made by Protein Technologies International, Inc. of St. Louis, Missouri. "For everyday use, simply stir one serving of Altima HP-20 into 8 ounces (1 cup) of water. Or mix with your favorite juices such as orange and grape; add to your favorite hot chocolate drink or hot coffee. Or use a blender to Altima HP-20 with bananas, strawberries, raspberries, blueberries, sliced peaches or pineapple."

"Altima FA-8 offers all of the essential nutrients of milk but with some significant things missing–cholesterol, lactose, and almost all of the fat. A source of high-quality protein, Altima FA-8 provides 8 grams of protein per 8-ounce serving... and only 90 calories. FA-8 also provides 8 mg of genistein* per 8-ounce serving."

Talk with Nutritious Foods Inc. 1994. March 4. This product was introduced at the conference in Mesa, Arizona, in Feb. 1994. Samples of HP-20 plain were offered to participants. It was never sold before that time. It is currently sold only by mail order. Nutritious Foods Inc. is a wholly owned subsidiary of PTI, established in Feb. 1994 to market its products (such as Supro) to consumers. PTI has not previously sold retail products to consumers. FA-8, which is basically a milk substitute, has less protein and genistein per serving than HP-20.

6580. Nutritious Foods, Inc. 1994. Altima (Mail order catalog). St. Louis, Missouri. 2 p.
• ***Summary:*** This mail order catalog, in the form of two leaflets, was distributed at the First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease held at Mesa, Arizona. Products listed: Altima HP-20 and Altima FA-8, each a nutritious beverage powder, available in plain, strawberry, or chocolate flavors. Address: 4600 Chippewa, #281, St. Louis, Missouri 63116. Phone: 1-800-445-3350.

6581. Vitasoy (U.S.A.) Inc. 1994. Vitalizing versatile victorious Vitasoy (Ad). *Natural Foods Merchandiser.* Feb. p. 8.
• ***Summary:*** This 8½ by 11 inch color ad (red and black on a

pale blue background) shows a lady in a red leotard skating rapidly on in-line roller skates. Behind her are two large liter cartons of Vitasoy: Light Original (1% fat) and Creamy Original. Address: 99 Park Lane, Brisbane, California 94005. Phone: 1-800-VITASOY.

6582. Mahlich, John. 1994. History and development of the Haldane Foods Group Ltd. Part II (Interview). *SoyaScan Notes.* March 8. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued: Next, in Feb. 1989, the Haldane Foods Group purchased a company named Kwality Foods. They made sauces, spreads, and dips. John liked the management, their products, and the price at which they offered to sell the company, which had a financial problem–they had run out of money. The Group subsequently changed the name of Kwality Foods into Saucemasters Ltd.

While owning Saucemasters, the Group started another company named Snackmasters Ltd., which was wholly owned by Saucemasters. Then in 1993 the Group sold Saucemasters, but retained ownership of Snackmasters, which they relocated in a new factory adjacent to the Haldane factory. It basically makes noodle- or rice-based vegetarian snack meals that contain textured protein and dried vegetables with a sauce sachet in each plastic cup. You pour hot water into the cup, leave for 4 minutes, and you have a very convenient and nutritious meal. This type of product is a big business in England; one company, Golden Wonder, dominates the market. But Snackmasters has carved out a niche by making ethnic vegetarian meals (Chinese, Indian, etc.), and using their sauce company to make the sachet of sauce. They have taken the product up-market by some ingenious developments and the company is thriving.

A month after buying Kwality Foods, the Haldane Group purchased Genice (pronounced JEN-ais) Foods, which makes non-dairy ice creams, yogurts, and margarines. "By this time we were deeply into the healthy food, health food, vegetarian business." Though this was the Group's first company to make non-dairy products, it fit well because their products were basically made from soya–either soyamilk or soya protein isolates. "Not only were we developing a group of interesting companies that can make some profit, but we were also signalling to a very large audience that maybe others (such as the many food manufactures who have been hesitant to use soya) should get into the soya business. And ADM likes that, because the more it is obvious that soya is here to stay and that it has multitudinous uses, the more Dwayne Andreas's dream will come true. Truthfully, we do not fear competition; the more that are in the business, the merrier. If you can get companies like Unilever to start using soya, then you get good publicity on a global basis.

"Genice is doing a very good job, but I have to say truthfully that selling non-dairy ice cream is missionary work. You need converts, and if you don't get them you're not a happy missionary. Its just a fact that most people want products with more and more cream. But at Genice we were going in the opposite direction–but successfully, though with slow growth. That's a tough number but we are hanging in and more and more will be sold. The non-dairy yogurts, incidentally, are going exceedingly well. That's good business."

ADM is a very acquisitive organization. For this reason, John and Peter Fitch were always looking for promising companies to add to the group. In the 20 years that John has worked for them, he has bought more than companies–with many outside the Haldane Group. Dwayne Andreas was aware of each of the Haldane Group's purchases as they took place. "He was totally aware of what we were doing and obviously was approving as we went. "You have to remember that Dwayne Andreas is very much committed to the evolution of the soyabean. He certainly has shown the keenest of interest in everything that we have done. I report directly to ADM and I could not buy a business without the approval of Dwayne Andreas (or Jim Randall) and finally the ADM board of directors, which meets quarterly... Yet ADM is a very fast-moving animal, and you can't contain its dynamism by quarterly meetings. The whole thing is designed to move with speed. So some acquisitions have been made before the board meeting; the contract simply reads 'Subject to board approval.'"

In those days John used to go to the USA quite a lot because he was running the ADM-Arkady business there for ADM; it was a manufacturing business in Chicago, Illinois–it's now in Kansas.

In December 1990 the Haldane Group purchased Unisoy, a small soya company which was for sale and which made soymilk. In the early 1990s a situation developed where the Haldane Foods Group had a sales director who had been a previous employee of Granose Foods. He suggested that the Group might be able to buy the Granose Foods company. "He had a key to open that particular door. It was with his basic introduction that we approached Granose, and subsequently we bought all of Granose. Granose had built a brand new and beautiful factory which was about 40 miles north of London, and that fit it very well to the growth and pattern that we were following." So the Haldane Group moved the center of their operations out of the Haldane factory and into the Granose factory, where it now is. The group still usually calls itself the Haldane Foods Group Ltd., but under some circumstances other names may also be used–such as the Granose Foods Group.

Granose was selling soyamilk that was being imported from a German manufacturer [DE-VAU-GE]. The Haldane Group decided to discontinue these imports, and now Unisoy is making all of the soyamilk for Granose that used to be imported from Germany. The quality of Unisoy's soyamilk is definitely as good as the German-made product, and now Granose has added many new soyamilk products to its range,

with vitamin enrichment, etc. However, it seems like the total soyamilk market in the UK is no longer growing. Continued. Address: The British Arkady Co. Ltd., Skerton Road, Old Trafford, Manchester M16 0NJ, England, UK. Phone: 061-872-7161. Fax: 61-873-8083.

6583. Mahlich, John. 1994. History and development of the Haldane Foods Group Ltd. Part III (Interview). *SoyaScan Notes.* March 8. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued: Perhaps the key concept that governed the formation of the Haldane Group was adding value to soya–even though that policy was never clearly spelled out. In one sense, each company was acquired, one by one, without any overarching plan, on its own merits. Yet all companies in the group (except Saucemasters) make value-added foods from soya. The Group is fundamentally a "healthy foods" company that makes only vegetarian foods (i.e. those which contain no meat, fish, or poultry). Most of the foods are also vegan in that they contain no animal products.

The Group has bought about 13 companies and each had its own niche, name and reputation. Each company had its own brands, each of which had a reputation, and the Group has tried to keep these and promote them.

The Haldane Group could not have developed without the very strong health food market in the UK, where there are more than 2,000 health food retail shops. Equally important is the strong interest in vegetarian foods in the UK. When British Arkady bought Direct Foods in 1985, supermarkets in the UK had no space at all for healthier foods or vegetarian foods. Now they all have a separate health food section and that section is steadily growing.

Companies like Birds Eye (owned by Unilever) stand like a praying mantis and wait until the Haldane Group has built the market for Vegeburgers to such a size that they can enter the market with their own vege burger backed by all of their marketing clout; they will try to push out competing products and steal your market. "They come into the supermarkets with their overriding discounts and they say 'We're already selling you £20 million. Put this product in and then you get another million pounds, plus you get a preferential discount, etc." This is a real concern as the Haldane Group becomes more of a force in the UK market. Fortunately there are 350 million people in the entire European Community. Moreover the Haldane Group has a bright future because they are "extremely inventive" and they have many loyal customers. They are leaders and other companies are following.

"Most all of these companies that we bought were started by devotees of healthier foods or vegetarians." They all started small but most did not realize what a big, expensive step it is to get into food processing. So many of the companies were founded on good ideas but were crippled because their founders lacked business experience and were undercapitalized.

The various products sold by the companies in the Haldane Group are being made in five factories: the Unisoy factory (soyamilk), the Genice factory (non-dairy yogurts, ice creams, and margarine), the Haldane factory (which makes all dry mixes), and the Granose factory (which makes frozen burgers and many other non-dry products).

The Group now sells a large amount of frozen vegetarian sausages. If you make a conventional skinless sausage, you must first make it in the skin, then case harden it, then finally remove the skin. But removing the skin costs you money. So the Group has gotten a unique machine (they were the first to get it, but there are now a few others in other companies) that makes skinless sausages from the start. The machine was invented by another British company of which John used to be a director. These skinless sausages have become a big business and the product is of excellent quality. The Group plans to introduce this sausage product in new forms, such as sausage roles in pastry.

The Haldane Group is also doing a lot of private labeling for supermarket chains. The big food companies in the UK spend many millions of pounds on advertising, and they can slip in a vegetarian product under a known brand name. An example is ADM's Harvest Burger sold under the Green Giant label in the USA, which led to a big increase Harvest Burger sales. The Haldane Group cannot afford to spend huge sums of money advertising its own brands. So they are finding that it is in their own interest to develop their own brands but at the same time to go to some of the supermarket chains and offer to make products under the supermarket's brand. This is one way the Haldane Group can find new growth. Continued. Address: The British Arkady Co. Ltd., Skerton Road, Old Trafford, Manchester M16 0NJ, England, UK. Phone: 061-872-7161. Fax: 61-873-8083.

6584. Adamson, Bob. 1994. The Combibloc aseptic packaging system (Interview). *SoyaScan Notes.* March 9. Conducted by William Shurtleff of Soyfoods Center. Followed by a letter of March 10.

• ***Summary:*** Combibloc, which makes aseptic packaging systems, has recently developed a new package named "Pour 'n Seal," which is the first reclosable aseptic carton. The company is very excited about the potential of the 1 liter Pour 'n Seal carton in the soy beverage category–which is low acid. "The plastic reclosable combiTop fitment represents a significant improvement over the current aseptic carton opening feature. It makes the package easy to open and re-close." As we speak, Combibloc is installing and completing FDA filing for the company's first 1-liter consumer combiTop [Parmalat milk, Michigan]; the first products should be on the shelves in April. Similar Combibloc products have on the shelves in Europe for 6-9 months. Combibloc's 46 oz (1.36 liters) high-acid combiTop

is on the USA market now but sold only to foodservice.

The key differences between Combibloc and Tetra Pak aseptic systems are: (1) The Combibloc system is sleeve fed: This gives extra flexibility over the Tetra system which is web fed. Tetra packaging comes in large rolls to the packing location, whereas Combibloc packaging arrives as pre-formed sleeves (many individual unformed flat blanks which will become formed into individual packages) with the back seam already sealed; they come in a box, not a roll. That allows Combibloc to offer multi-size flexibility. For example, their 700 series filler can fill up to 5 different package sizes (150 ml, 200 ml, 250 ml, 300 ml, and 350 ml) on the same piece of equipment. The footprint of each package is the same but the fill height would be different for each size. Combibloc has four different series of fillers, each with a different size footprint. With Tetra, you need a different piece of equipment for each package size. (2) Combibloc can fill larger cartons: The largest Combibloc carton is 2 liters (67.5 oz), whereas the largest Tetra carton is 1 liter. The Combibloc 400 series of filler can produce packages from 1 liter up to 2 liters. (3) Combibloc's sleeve-fed system fills above the product, and then it's sealed: That allows them to handle products with lots of pulp and particulates. Such products are hard for Tetra to handle since Tetra seals "through" the product as the tube is formed; any pulp would interfere with the seal. (4) Combibloc now offers combiTop, described above–but only for 1 liter, 46 oz, or 64 oz cartons. (5) Combibloc and Tetra packages cost food manufacturers about the same price. Combibloc is very flexible in the way users of its equipment pay for it; they may lease it, pay on a per carton filled basis, etc. Tetra only leases its equipment.

The Combibloc carton was first used to package a commercial product in the USA in about 1983–shortly after FDA approved hydrogen peroxide as an acceptable sterilant. Prior to that, the company was competing with Tetra in Europe. Only within the last year has Combibloc placed a priority on low-acid products [such as soymilk]; previously Tetra has owned that segment. They hope that their new reclosable package will allow them to penetrate the soymilk market. Address: Market Development Manager, Combibloc Inc., 4800 Roberts Rd., Columbus, Ohio 43228. Phone: 614-876-0661.

6585. Jenkins, Kim. 1994. How J&G markets Soy-Um soymilk: The importance of flavor, price, and packaging (Interview). *SoyaScan Notes.* March 11. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** J&G, which was started in 1989, is a marketing company with headquarters in Chicago, Illinois. Kim's partner, Michael Gournoe, runs the Chicago office. Kim (age 44), who works out of Minneapolis, Minnesota, runs the business, finance, and marketing side of the business, and Michael does the creative design work. They are venture people, who do both active and passive investments, mostly in the food industry. Kim's background was with Hormel (the meat packer; Dick Nolton, the president, was Kim's mentor) and Michael now is quite well known for his creative design work in the food field. He and Michael only get involved with food or beverage products that they believe in–those which are healthy, good for people, and ones with a definite niche. They want all their products made with only natural ingredients and absolutely no artificial ingredients. That is they key for making products taste good. They look for high quality, excellent consumer value, and excellent flavor–but the flavor is most important. They know how to position products. They do work with some meat products; they also market a smoked salmon from the Pacific northwest to the retail trade. They have more than 25 products. "We are a business company which exists for the purpose of forming strategic alliances with existing companies and entrepreneurial ventures. Our main objective is to identify market potential and achieve the maximum value for all the parties involved. We want to achieve unique positioning with a product and service. We are product strategists. Life is an open book test. Its marketing 101–getting back to the basics."

The soymilk category is a very interesting one because it is healthy and non-dairy. Kim can't drink milk due to a bronchial problem. Kim and Michael worked with Trader Joe's [which has 50-55 retail stores in its chain] to create Soy-Um. Trader Joe's has taken a deep interest in retailing soymilk. No other retail chain sells as much soymilk on a per store basis as Trader Joe's. J&G wanted to develop a soymilk that tasted good to mainstream palates. He has found that most Americans do not like the flavor of most brands of soymilk. Three things keep most Americans from buying soymilk: Poor taste, high price, and poorly designed label. The price of many soymilks is too high because too many people touch/handle the product as it moves from the factory to the retail store. Soymilk is surprisingly inexpensive to make but most companies sell it for too high a price–except Pacific Foods, which undersells J&G by a significant amount (a fact that doesn't bother Kim at all). J&G wanted to develop a good-tasting product in an attractive package (whose design communicates the product clearly to mainstream consumers) at a great price. With soymilk, J&G is not a broker; they take possession of the product and own the label. J&G hopes to sell soymilk in supermarkets (very soon) and in natural and health food stores. How does J&G deliver soymilk to Trader Joe's so inexpensively? First, they buy the soymilk packaged from the manufacturer [Pacific Foods in Oregon], then they ship most of it to a warehouse (owned by some other company), rent space, and inventory it. They do not own any of their own delivery trucks or warehouses; they just ship the product FOB. They are merchants; they don't want to own "brick and mortar." They want soymilk to "mellow out" for at least 14 days in the package before it is sold; it tastes better after that time. It is

not possible to bypass the warehousing step because of the size of the production run and the need for "mellowing out." Trader Joe's determines the price of the product, but they buy in huge quantities which entitles them to volume discounts.

Kim has heard that American Soy Products is making a large addition to their plant.

Update. Talk with SunRich customer support. 2004. March 19. Kim Jenkins now works as a manager for SunRich in their Minnetonka, Minnesota, office. Phone: 952-939-3958. Address: Minneapolis, Minnesota.

6586. Lai, Renee. 1994. Vitasoy looks forward to better results. *South China Morning Post* (*Hong Kong*). March 15. Business section. p. 3. [Eng]
• ***Summary:*** During the past 2 years, Vitasoy International has enjoyed pre-tax profit margins of 10-12% on a steady increase in earnings. Vitasoy plans to construct two manufacturing facilities in China, though this market accounted for only 2% of its sales last year. One plant will be in Shenzhen, producing distilled water. The other will be a joint venture in Shanghai or Beijing to produce a full range of beverage products.

Vitasoy International will issue 127,200,000 shares at $2.28 each, priced at 8.7 times earnings of the year ending in March on a weighted average basis, or 10.7 times on a fully diluted basis. The company forecasts full-year profit of $101 million for 1994, and 18% increase over the $85.76 million in 1993. Profits were $76.12 million in 1992 and $39.13 million in 1991. Sales have grown steadily from HK$794 million in 1991 to HK$996 million in 1993. A photo shows Vitasoy chairman Winston Lo standing by a Vita Juice production line.

Note: Shenzhen is inside China, just across the border from Hong Kong. This is the earliest document seen that mentions Shenzhen in connection with Vitasoy or with soybeans.

6587. AP-Dow Jones News Service. 1994. Stock prices in region end mostly lower: Asian-Pacific stocks. *Asian Wall Street Journal.* March 31. [Eng]
• ***Summary:*** Vitasoy International Holdings Ltd. finished its first trading session on the Hong Kong Stock Exchange 18% above its opening public offer price. Vitasoy's shares opened at HK$2.28 and closed at HK$2.70. The company, which is Hong Kong's leading manufacturer of non-alcoholic beverages, has sold 127.2 million shares, raising HK$290 million earlier this month. "The offering was 50 times subscribed." Note: That means that they could have sold 50 times as many shares as were available, based on the number of orders for the shares placed with dealers. Thus, the initial public offering (IPO) was greatly "oversubscribed"–a good sign indicating strong interest in the company.

6588. Lai, Renee. 1994. Vitasoy in 18 percent gain on first day trading. *South China Morning Post* (*Hong Kong*). March 31. Business section. p. 15. [Eng]
• ***Summary:*** Shares of Vitasoy closed at HK$2.70, up 18% from the company's new issue price of $2.28. Shareholders cheered. Vitasoy's gain was attributed to potential growth in China, which could be the company's fastest growing market for its non-carbonated drinks. Vitasoy pocketed an aggregate of HK$290 million from the issue of 172.2 million shares. The bulk of the new money will be used for expanding and constructing manufacturing facilities and a distribution network in China. The company plans to make a full range of drinks in northern China, including Vitasoy soyabean milk.

"The company's share offer was 50 times subscribed, which was considered encouraging in view of investors becoming cautious about new issues. Fragile market sentiment has claimed a total of five debut failures this year."

6589. **Product Name:** WMR4 (lactose free, all vegetable, nutritional powder product) and NutriBev (Dry Soy-Based Milk Alternative).
Manufacturer's Name: Archer Daniels Midland Co.
Manufacturer's Address: 4666 Faries Parkway, Box 1470, Decatur, IL 62525. Phone: 800-637-5850.
Date of Introduction: 1994. March.
Ingredients: WMR4: Corn syrup solids, isolated soy protein, partially hydrogenated soybean oil, sugar, tricalcium phosphate, maltodextrin, sodium hexametaphosphate, salt, artificial flavors, mono and diglycerides, sodium stearoyl lactylate, magnesium sulfate, vitamin C (ascorbic acid), vitamin A (palmitate), iron (ferric orthophosphate), vitamin D, zinc oxide, calcium pantothenate, vitamin B-2 (riboflavin), niacinamide, vitamin B-6 (pyridoxine hydrochloride), vitamin B-12, vitamin B-1 (thiamine mononitrate), folic acid.
Wt/Vol., Packaging, Price: 25 kg or 144 gm.
How Stored: Shelf stable.
New Product–Documentation: Kahn, E.J., Jr. 1987. "Profiles: The absolute beginning" [Dwayne Orville Andreas and ADM]. *New Yorker* 62:41-68. Feb. 16. See p. 41. A soy-based milk substitute called Nutri-Bev is a food supplement for Third World children. Nutri-Bev isn't sold. It comes in six flavors and its given away. ADM has been doing research on it for 25 years, and now they are improving it even more with fructose, which is thought to improve its mouth feel. It costs only 1/10th as much as cow's milk and its nutritionally better. After all, says Dwayne Andreas, "'some millions of people can't tolerate cows' milk. We've been frustrated every time we've tried to push this product. Do you realize that for a mere twenty-five billion dollars you could give a quart of this drink every day of the year to five hundred million people, and–presto!–you'd have the end of hunger? And there are enough soybeans in United States government storage right now to do the job. This is the most exciting long-range product we have. It's to milk what margarine

turned out to be to butter. I draw some comfort from reminding myself that it took margarine twenty-five years to get off the ground.'"

ADM annual report. 1994. p. 14. NutriBev is a new milk alternative made largely from soy protein isolates and concentrates; it has the same nutritional value as milk but can be produced free of lactose.

Talk with Phil Fass, product manager. 1994. Oct. 4 and 14. WMR4 was launched in March 1994; it is one and the same with NutriBev. WMR4 was not a stand-alone product before the NutriBev program was conceived. At present, there is no product on the market with a NutriBev label. Some people are looking at test marketing various products. WMR4 has been sold commercially to make a milklike product that has no name in Third World feeding programs. So NutriBev is still a concept that is waiting to happen. The registered trademark for NutriBev has no hyphen.

Brochure titled "Nutri-Bev & WMR4 as Presented by ADM," sent by Phil Fass of ADM. 1994. Oct. 10. WMR4 [whole milk replacer] is a lactose free, all vegetable, nutritional powder product. It is a free-flowing white powder that has been specially processed to dissolve very quickly in water. Using water at 45ºC (warm) will facilitate mixing. The resulting product has the appearance and mouthfeel of normal whole milk. WMR4 can generally be substituted on a one for one basis for whole milk liquid or powder. Mix 130 gm WMR4 powder with 900 gm water to make 1 liter of finished product. It contains protein, fat, carbohydrates, calories, minerals, and vitamins equal to whole milk. It contains no lactose or cholesterol, making it a healthy alternative beverage. WMR4 can be used to make milklike products, hot chocolate drink, frozen desserts, yogurt, soft cheese (Ricotta, Quark, Queso Fresco, Farmers Cheese, etc.)

The Nutri-Bev Program is an exciting marketing program specifically developed for foreign countries interested in marketing a liquid, soy-based, flavored children's drink. ADM will license the Nutri-Bev label for a nominal fee [or an organization can use its own brand name and label]. ADM supplies the base product, WMR4, in a powdered, stable form. The base will be used in conjunction with a sweetener, flavor, and stabilizer to make a finished liquid product. Technical assistance will be supplied by ADM as needed. WMR4 does not contain any dairy fat and therefore will not develop the rancid off-flavors which are commonly associated with products containing dairy fat (whole milk powder). It has much better flavor stability than whole milk powder; the latter declines very rapidly at 50ºC.

Technical Data. 1994. Jan/Feb. Gives nutritional analyses of Nutri-Bev drink and Chocolate drink. Gives formulas for using WMR4 to make: Frozen dessert. Fudge chocolate pudding. Cooked custard. Cultured yogurt (Swiss-style with fruit on top, or fruit on bottom).

Spot in Soyafoods (ASA, Europe). 1995. Spring. p. 4. "ADM launches lactose free and low cholesterol whole milk replacer." WMR4 is available in the UK from ADM Ingredients Ltd., Church Manorway, Erith [on the River Thames just east of London], Kent DA8 1DL, England. Phone: +44 1322 443000.

Dixie Diner's Club Official Newsletter and Catalog. 1996. Jan. Vol. 2, issue 1, p. 3. "NutriBev Soy Beverage: Delicious and satisfying–a drink that is soy-based and offers all the goodness of a quart of *whole milk* without cholesterol and lactose... and 30% of your daily calcium in a prepared cup." The 5 oz package (makes about 1 quart of liquid soy beverage) sells for $1.98 plus at least $4.99 postage. 12 packages are $1.79 each. A color photo shows the package. The name of the manufacturer is not given.

6590. **Product Name:** [Soya Based Drink (Vanilla)].
Foreign Name: Soja Drink–Vanille.
Manufacturer's Name: Bruno Fischer GmbH (Importer-Distributor). Made in France.
Manufacturer's Address: Im Auel 88, 53783 Aetorf, Germany. Phone: 49-2243-4021.
Date of Introduction: 1994. March.
Ingredients: Water, soya beans* (9%), maize malt extract*, dried sugar cane juice*, sea salt, natural vanilla extract. * = Organically grown and controlled.
Wt/Vol., Packaging, Price: 1 liter glass bottle.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Product with Label sent by Bruno Fischer. 1998. April 15. Ingredients and nutritional value are given in five languages, each with the flag of that country by the product name: German, English, Italian, French, and Dutch. Talk with Bruno Fischer. 1998. May 13. This product was launched in March 1994.

6591. **Product Name:** Rice Dream (Rice Milk in a Tetra Brik Carton) [Enriched in Original, Vanilla, or Chocolate flavors].
Manufacturer's Name: Imagine Foods, Inc. (Marketer-Distributor). Rice milk made by California Natural Products, Manteca, Calif.
Manufacturer's Address: 350 Cambridge Ave., Suite 350, Palo Alto, CA 94306. Phone: 415-327-1444.
Date of Introduction: 1994. March.
Ingredients: Filtered water, certified organic brown rice (partially milled), expeller pressed high oleic safflower oil, sea salt.
Wt/Vol., Packaging, Price: 32 fl oz (946 ml) Tetra Brik Aseptic carton. Retails for $1.79 (12/94, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per cup (240 ml): Calories 130, calories from fat 20, total fat 2 gm (3% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 90 mg (4%), total carbohydrate 28 gm (dietary fiber 0 gm, sugars 12 gm), protein 1 gm. Vitamin A 10%, calcium 30%, vitamin D 25%, vitamin C 0%, iron 0%, phosphorus 15%. Percent daily values are based on a

2,000 calorie diet.
New Product–Documentation: Talk with Robert Nissenbaum of Imagine Foods. 1994. Nov. 23. This product was introduced in March, 1994.

Product (vanilla) with Label purchased at Berkeley Natural Grocery Co., California. 1994. Dec. 1. 3.5 by 7.75 by 2.25 inches. Tetra Brik Aseptic carton. Note this new tall, slim carton with a new easy-pour reclosable cap. Blue, black, and light purple on white. Photo of a stem glass filled with white rice drink. "1% fat non-dairy beverage. With vitamins A and D plus calcium. Not to be used as an infant formula." On one side is a recipe for Rice Dream Smoothie.

6592. Ling, C. 1994. We must stop the Europeans renaming our soya milk and calling it soya drink. *Health Food Business* (*England*). March. p. 37.
Address: Plamil Foods, Folkestone, Kent, England.

6593. Mahmud, T.Y. Tunku; Kasim, A. Abu. 1994. Processing and marketing of fresh soybean milk for income and employment generation in the Klang Valley, Malaysia. *Palawija News* (*Bogor, Indonesia*) 11(1):9-14. March.
• ***Summary:*** "An interesting development taking place in the food processing industry is the increase of fresh soybean milk retailers in night and farmers' markets. Entry into this business is relatively easy because it requires low initial capital outlay and the raw materials are readily available. It appears that Malaysian consumers are acquiring a taste for this relatively new product."

"There are three main objectives of this study: 1. To determine the number of establishments involved in the processing and marketing of fresh soybean milk and the employment generated in the Klang Valley. 2. To determine the income and expenditure of processors and retailers of fresh soybean milk in the Klang Valley. 3. To estimate the market size of fresh soybean milk in the Klang Valley."
Address: Malaysian Agricultural Research and Development Inst. (MARDI), Malaysia.

6594. Minnesota Soybean Growers Association; Minnesota Soybean Research & Promotion Council. 1994. Cooking with soy. North Mankato, Minnesota. 45 p. March.
• ***Summary:*** Talk with Christie Metzger of the MSRPC. 1996. Jan. 4. The first edition of this book was published in March 1994. Some of the recipes came from the winners of a contest. Address: 360 Pierce Ave., Suite 110, North Mankato, Minnesota 56003. Phone: 507-388-1635.

6595. Robbins, John. 1994. Apocalypse cow. *EarthSave* 5(1):1-5. March.
• ***Summary:*** About the potential dangers of Bovine Growth Hormone (BGH or rBGH) in dairy milk. Also discusses IGF-1, somatotropin, Monsanto.

Page 6 states that "The first case of fatal 'mad-cow' disease was confirmed in North America on a western Canadian farm in December 1993 (Source: Reuters News, 10 Dec. 1993).

The slogan "Personal Food Choices... Global Results" now appears at the top of page 1 of this Newsletter.

Note: This is the earliest document seen (July 2013) that contains the term "rBGH" (recombinant bovine growth hormone). Address: Director, EarthSave, California.

6596. **Product Name:** Scotty's Non-Dairy Beverage (Fresh Rice Milk) [Almond Light, Vanilla Light, Carob Vanilla Light, Original].
Manufacturer's Name: Scotty's Wholesome Foods.
Manufacturer's Address: 1780 55th St., Suite C, Boulder, CO 80301. Phone: 303-443-3359.
Date of Introduction: 1994. March.
Wt/Vol., Packaging, Price: Pint (16 oz.) and half gallon plastic jug.
How Stored: Refrigerated.
New Product–Documentation: Talk with Scott Silverman, founder and owner of Scotty's Wholesome Foods. 1994. May 5 and 6. He introduced this beverage in March 1994. He is presently selling it in plastic milk jugs only in Boulder, Colorado, as a test market. This product is similar to Rice Dream, however it is not made with commercial enzymes, but rather from converted koji. He would like to have it packed in gable-top Pure-Pak cartons–like milk. He is age 25.

6597. Shurtleff, William; Aoyagi, Akiko. comps. 1994. Non-dairy whip toppings (with or without soy protein)–Bibliography and sourcebook, 1944 to 1994: Detailed information on 115 published documents (extensively annotated bibliography), 21 commercial whip topping products, 48 original interviews (many full text) and overviews, 49 unpublished archival documents. Lafayette, California: Soyfoods Center. 135 p. Subject/geographical index. Author/company index. Printed March 1. 28 cm. [202 ref]
• ***Summary:*** This is the most comprehensive book ever published about non-dairy whip toppings–which resemble whipped cream. It has been compiled, one record at a time over a period of 19 years, in an attempt to document the history of this subject. Its scope includes all known information about soy-based non-dairy whip toppings, worldwide, from 1944 to the present, plus considerable information about non-dairy whip toppings that are historically related to soy-based whip toppings. It does not attempt to give comprehensive coverage of other so-called non-dairy whip toppings–most of which are based on casein, the major protein found in cow's milk, yet which nevertheless are allowed to be labeled "non-dairy."

This book is also the single most current and useful source of information on non-dairy whip toppings, since

99% of all records contain a summary/abstract averaging 348 words in length.

This is one of more than 40 books on soybeans and soyfoods being compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyfoods Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features: 27 different document types, both published and unpublished; every known publication on the subject in every language–including 200 in English, 2 in French, and 1 in German; 48 original Soyfoods Center interviews and overviews never before published. Thus, it is a powerful tool for understanding the development of soy-based non-dairy whip toppings and related products from their earliest beginnings to the present.

The bibliographic records in this book include 115 published documents and 49 unpublished archival documents. Each contains (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation of the title, month and issue of publication, and the first author's first name (if given).

The book also includes details on 21 commercial whip topping products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to make best use of this book, a complete subject and geographical index, an author/company index, a language index, and a bibliometric analysis of the composition of the book (by decade, document type, language, leading periodicals or patents, leading countries, states, and related subjects, plus a histogram by year) are also included. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

6598. *SoyaCow Newsletter* (*Ottawa, Canada*). 1994. Top Russian government kitchens make soyfoods. 3(1):1. Jan/March.
• ***Summary:*** "In March, six SoyaCows were delivered to Moscow, where most were promptly installed in the kitchens of key government buildings. The sites included: The Russian Council of Ministers (White House), Ministry of Finance, Ministry of Economics, Ministry of Agriculture, and the State Bank.

"At the initiative of Alexander Podobedov, director of the Russian Soybean Association, 'ASSOY,' these pilot operations are building a broad political awareness and will launch the first soyfoods program throughout Russia. In addition to flavoured beverages, the SC-20 systems are providing for soy yogurt, tofu, and baked goods using the 'okara' fibre. Hundreds of top government people have sampled the various products, made with homegrown soybeans, with generally positive results."

6599. *SoyaCow Newsletter* (*Ottawa, Canada*). 1994. Child Haven establishes SoyaCow Centre in India. 3(1):2. Jan/March.
• ***Summary:*** "The SoyaCow Centre has now been established in Ghaziabad, about 30 minutes drive from Delhi, to serve the growing population of SoyaCows in India. The Centre's main objective is to help women in self-employment by producing and selling soymilk and its products at affordable prices.

The Centre promotes a table-top SoyaCow SC-20 machine that makes high-quality soymilk on demand at the cottage industry level, producing 13-14 liters every 30 minutes (using 1.75 kg of soybeans costing about 10 rupees per kg) at a cost of Rs. 2-3 per litre. The SoyaCows, which will be made in India under a technology transfer agreement with Child Haven, include accessories for making tofu from the soymilk.

Letter (e-mail) from Ratan Sharma, PhD of India. 2010. Oct. 11. Ratan established this Centre on 8 March 1994.

6600. **Product Name:** Tradsoy (Soya Milk).
Manufacturer's Name: Trade Group Africa (Israel) (Marketer).
Manufacturer's Address: P.O. Box 5318 Afridar, Ashkelon, Israel. Phone: 09972-7-713390.
Date of Introduction: 1994. March.
New Product–Documentation: Form filled out by Zvi Sundy. 1994. July 25. Trade Group Africa (Israel) started producing soyfoods in March 1994. One of the two products they launched in 1994 was Tradsoy (Soya Milk).

6601. Vitasoy International Holdings Ltd. 1994. New issue of 127,200,000 shares of $0.25 each at $2.28 per share: Prospectus. Hong Kong: Vitasoy International Holdings Ltd. 94 + 94 p. March 15. 28 cm. [Eng; Chi]
• ***Summary:*** This prospectus announces the first public sale of Vitasoy stock. Half the prospectus is written in English and the other half in Chinese. The sponsor and manager of this initial public stock offering is Wardley Corporate Finance Limited. Underwriters: Wardley Corporate Finance Limited, and Schroders Asia Ltd. The symbol "$" refers to Hong Kong dollars unless otherwise indicated; 7.8 Hong Kong dollars = 1 U.S. dollar, and the exchange rate is fixed.

Contents: Summary. Expected timetable. Definitions. Preliminary. Conditions of the new issue. Share capital. Indebtedness. Risk factor. Directors and corporate information. Parties involved in the new issue. Information relating to the Group: Introduction, corporate structure, history and development (see separate record), strategy,

brands, market share and competition, marketing and sales, operations, tofu, Guang Ming Farm, Gardner Merchant, financial information, future plans and prospects, directors, management and staff, trademark valuation, profit and dividend forecasts, proceeds of the New Issue and working capital, adjusted net tangible assets and net assets. Appendixes: 1. Accountants' report. 2. Profit forecasts. 3. Trademark valuation. 4. Property valuation. 5. Statutory and general information. Prospectuses and application forms. Procedure for application.

Financial summary (in million Hong Kong dollars): Turnover (sales) has grown from 795 in 1991 to 912 in 1992 to 996 in 1993. Profit before taxation has grown from 43.8 in 1991 to 88.6 in 1992 to 108.8 in 1993. The company has 5 executive directors and 4 non-executive directors. All of the directors have British, Australian, U.S., or Canadian nationality. Three of the 5 executive directors are children of the founder, K.S. Lo: (1) Mr. Winston Lo Yau Lai, age 52, of Hong Kong (British nationality). Frank graduated from the University of Illinois with a BS degree in Food Science, then earned his MSc degree in Food Science from Cornell University in New York; (2) Mr. Frank Lo Yau Ki, age 54, of Hong Kong (British nationality). Frank attended Queensland Agricultural College where he obtained a diploma in dairy manufacturing before joining the group in 1965; (3) Ms. Yvonne Lo Mo-Ling, age 45, of San Francisco (California; USA nationality). Yvonne is president of the Group's operations in the USA and has been responsible for them since 1980. She received a BA degree from Oberlin College in Ohio and took undergraduate studies in Urban and Regional Planning at the University of Toronto in Canada.

Brands: Vitasoy soybean milk is the Group's principal product. Sales (in million Hong Kong dollars) were $337.4 in 1991 (42.5% of total sales), $397.0 in 1992 (43.5% of total), and $411.6 in 1993 (413% of total sales). Sales of tofu and other food products were $32.9 (US$4.21 million) in 1991, $50.2 (US$6.44) in 1992 and $50.7 (US$6.5) in 1993.

In terms of turnover (sales) by geographical area, Hong Kong is by far the leading area with 78.9% of total worldwide turnover ($995 million) in 1993, followed by North America (12.0%), Macau (2.4%), Singapore (2.2%), PRC (1.6%), Australia/New Zealand (1.6%), and others (1.1%).

Senior management includes: Mr. Jerry Maynard, age 43, who is president of Nasoya. He joined the group in 1988 and became president of Nasoya in Sept. 1993. Mr. Michael Ho, age 38, is president of Azumaya. He joined the Group in 1982 and became president of Azumaya in June 1993.

Trademark valuation: An independent valuer has valued them at HK$260 million.

Assets: The main trade marks are Vitasoy, Vita, Balanz, Azumaya, and Nasoya. Tangible: $781 million. Net assets: $1,051 million.

Subsidiaries: Value of issued and paid up share capital: Vitasoy (U.S.A.) Inc. US$12.0 million. Nasoya Foods Inc. US$6.346 million (incorporated 13 July 1990). Azumaya Inc. US$6.5 million (incorporated 1 July 1969).

Properties: The main property, located at No. 1 Kin Wong St., Tuen Muen, New Territories, has a capital value of HK$140 million on 28 Feb. 1994. This is a 17-story industrial building, completed in 1986, on a site of 33,250 square feet (3.089 square miles). It has a total gross floor area of approximately 311,815 square feet, including 38 lorry parking spaces and 22 private parking spaces. The property is held from the Government under New Grant No. 2606 for a term extending to 2047. The current ground rent is $600 per annum. The Azumaya rental property comprises 37,172 square feet of interior floor space on 2 acres of land. Monthly rental is about $20,000. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

6602. Vitasoy International Holdings Ltd. 1994. History and development (Document part). In: New issue of 127,200,000 shares of $0.25 each at $2.28 per share: Prospectus. 1994. Hong Kong: Vitasoy. 94 + 94 p. See p. 14-15. March 15. 28 cm. [Eng; Chi]

• ***Summary:*** The Company, originally named Hong Kong Soya Bean Products Company Ltd. was founded in March 1940 by four men, Mr. (later Dr.) Lo Kwee Seong, Mr. Shiu Wai-Ming, Mr. Chan Nam-Cheong, and Mr. Kwan Yim-Chor. The Company's first product, named Vitamilk, was first sold in Hong Kong just prior to the outbreak of World War II. Note: Production began on 9 March 1940. Vitamilk was fortified with calcium, cod-liver oil, and vitamins, and sold in small milk bottles. Production of Vitamilk ceased during the War, but after the War the Company relaunched Vitamilk, which was then produced at and sold from, small premises in Causeway Bay. 1950–The Company moved to new premises in Aberdeen to keep up with growing sales; it now had increased production capacity and facilities for research and development. At the same time the Company became the franchisee for Green Spot, an orange flavoured soft drink. Green Spot proved highly popular in Hong Kong and provided the company with the opportunity to gain important experience in pasteurization and sterilization techniques. 1953–This new expertise led to the Company's development of a sterilized version of Vitamilk, which had a longer shelf life. At the same time the product was renamed Vitasoy in English and repackaged in narrow-necked soft drink bottles, which replaced the traditional milk bottles. Note: In 1953 the company first began to work with UNICEF to popularize the use of soy beverages in developing countries. 1957–The Pepsi-Cola franchise replaced the Green Spot franchise.

1960–The image of Vitasoy as a nutritious quality product received a boost when UNICEF became aware of the attractions of a high protein, vitamin enriched soybean milk for use in developing countries. 1961–An additional soymilk

production plant was opened in Kwun Tong to keep up with rapid increases in sales of Vitasoy. 1962–The introduction of a malt Vitasoy helped lead to further increases in sales. From 1955 to 1970 sales of Vitasoy grew from approximately 12 million bottles to approximately 60 million bottles per annum.

1970s–The Company continued to expand and develop. 1975–A major development was the adoption of a new Tetra Pak packaging process, which brought many benefits. "In addition to enhancing the quality of the product, the new light and disposable packaging meant that Vitasoy could be sold in the non-returnable soft drinks market which significantly reduced both the delivery costs of the product and the costs associated with collecting returned bottles. The new packaging also offered greater scope for innovative design which assisted in marketing the Company's products. To coincide with this technical innovation, in the mid-1970s the Company repositioned Vitasoy in the market by promoting it as a soft drink as well as a milk substitute. The remainder of the 1970s saw the Company's product base expand away from Vitasoy and malt Vitasoy.

1976–A range of fruit juice drinks was introduced under the vita brand name. These were also packaged in Tetra Pak cartons and initial flavors included orange, lime, mango, and guava. 1976–The Company decided to relinquish the Pepsi-Cola franchise in favor of producing its own range of carbonated drinks, again under the Vita brand name. The carbonated products, which included cola, orange, lemon lime, and cream soda, were initially sold in returnable bottles and subsequently also in the form of fountain syrups. Both Vita Juice drinks and Vita carbonated drinks won immediate consumer acceptance upon their introduction. 1977–Exports to Australia began. 1978–Vita Juice drinks now have over 30% of the Hong Kong fruit juice drinks market. 1978–The Company moved its Aberdeen production facilities to Heung Yip Road in Aberdeen. 1978–The Company launched a line of traditional teas, the first of which was chrysanthemum, which were sold under the Vita brand and packaged in Tetra Pak cartons.

1979–The Company began a further significant diversification of its business by entering into an agreement with Guang Ming Farm [at Shenzhen, just inside China]. Under the initial agreement, which was for a term of 5 years, and subsequent revisions to this agreement, the Company obtained the rights to market and sell most of the farm's fresh milk output in Hong Kong and Macau. Today the farm produces approximately 55% of all fresh milk sold in Hong Kong.

The late 1970s and early 1980s were characterized by the Company's push into overseas export markets. Each of these export markets took time to develop, both in terms of developing consumer awareness of the Vitasoy and Vita products and particularly in identifying the most suitable and effective distribution channels. 1979–Exports to Papua New Guinea and to Canada began. 1979 Jan. 15–Vitasoy (U.S.A.) Inc. is incorporated.

1980–Exports to the United States began. 1982–In the United States, the Company established its own distribution operations. 1982–Exports to Singapore began. 1985–The Company acquired the operations of its Singapore distributor to gain greater control over and more efficient distribution of its products. 1987–Due to growth of operations, the Company opened a new head office and principal manufacturing facility in Tuen Mun. 1989–The Company acquired a 12% equity stake in its contract packer in Papua New Guinea to gain greater control over and more efficient distribution of its products.

1990 Sept. 24–The Company name is changed to Vitasoy International Holdings Ltd. from Hong Kong Soya Bean Products Co. Ltd. 1990–The Group made the first of two significant diversifications from its traditional business by entering into a joint venture with Gardner Merchant to provide large-scale contract catering services in Hong Kong. Gardner Merchant, headquartered in the United Kingdom, is one of the leading contract catering firms in the UK; the Group has a 40% interest in the joint venture.

1990 Aug.–In its second diversification the Group entered into the manufacture and distribution of tofu in the United States through the purchase of Nasoya, based in Leominster, Massachusetts on the east coast of the United States. 1993 May–The Group acquired Azumaya, a large tofu manufacturer based in San Francisco, California, with a distribution network covering the west coast and mid west of the United States. These acquisitions have not only made the group a [sic, the] leading manufacturer and distributor of tofu in the United States but have also provided the Group with an extensive distribution network throughout the United States and Canada for its other products. 1992–Distilled water was launched under the Vita brand.

1994 Feb.–The Group opened a new production facility on a site at Guang Ming Farm at Shenzhen in the PRC [China] to replace the group's plant in Aberdeen. The Shenzhen plant, which has been built and will be operated pursuant to a joint venture with Guang Ming Farm, is currently operating at partial capacity and is expected to be fully operational by the middle of 1994. The Group's old production and packaging facility at Aberdeen is currently being leased by the Group to provide production capacity unti the Shenzhen plant becomes fully operational. At that time the Group will cease to lease the facility at Aberdeen and all beverage production will then be at Tuen Mun and Shenzhen. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

6603. Schmitz, Tom. 1994. Tofu cook believes she nourishes body and soul: Linda Lam, tofu maker. *Mercury News* (*San Jose, California*). April 3. p. 1E, 3E.

• ***Summary:*** A large color photo shows Linda Lam and

her husband Thom Tran at their Fuji Fresh Tofu Co. in Japantown, San Jose. They make tofu 6 days a week, as well as tofu pudding, soymilk (in plastic quart jugs), tofu spring rolls, Okinawa tofu, and Peking tofu. Linda Lam learned to make tofu as a girl in Vietnam, where she was taught by the monks at her local Buddhist temple. She stayed at the monastery during school vacations, preparing meals and studying the scriptures. "Three decades later, Lam remains a devout Buddhist. And her faith in tofu is equally strong." She and her family are vegetarian. She uses nigari as a curding agent in making her tofu.

Before leaving Vietnam in 1979, she worked as a high school teacher. Later she ran a catering service.

6604. Rose, Richard. 1994. The cheese alternatives industry and market in America. Part I (Interview). *SoyaScan Notes.* April 25. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Note: We define cheese alternatives as those which contain a major protein source (such as soy protein or nut protein) in addition to or in place of dairy protein.

Milestones (arrived at jointly by Soyfoods Center and Richard Rose): The soy cheese and cheese alternative category in America started with Soyarella, which was introduced in March 1985. Though expensive, the product was a runaway success, in part because the label claimed (incorrectly) that it contained no casein or other dairy products. Its success alerted other soyfoods companies to the potential of soy cheese. The first major soy cheese to hit the market was Soya Kaas, introduced in Jan. 1986 by Richard McIntyre of Swan Gardens Inc. In June 1986 Mozzarella Style Tofu-Rella was introduced by Richard and Sharon Rose of Brightsong Foods–which had become interested in the category because of Soyarella (not Soya Kaas). The company later became Sharon's Finest and the product was renamed TofuRella. In Oct. 1986 Original Pizsoy (a whole-wheat pizza topped with soy cheese) was introduced by Tree Tavern Products; It was the first product in which soy cheese was used as an ingredient. In Jan. 1987 Soymage was introduced by Soyco Foods, a Division of Galaxy Cheese Co.; This was Soyco's first soy cheese product and the first soy cheese that contained no casein. In April 1987 NuTofu was introduced by Cemac Foods Corp. This was Cemac's first soy cheese product. In April 1988 Soyco shreds and slices were introduced–the first soy cheese shreds and slices. In Jan. 1991 Fat-Free Soyco was introduced–the first fat-free soy cheese. In Dec. 1992 Almond Cheese was introduced by Wholesome & Hearty Foods–the first major non-soy cheese alternative. In April 1994 VeganRella (made from Brazil nuts) was introduced by Sharon's Finest–a true non-dairy non-soy cheese with excellent flavor.

In the cheese alternatives market, about 98-99% of the products contain casein (milk protein, which makes the cheeses melt) and only 1-2% are truly non-dairy (free of casein). About 95% are hard cheeses and 5% are soft cheeses, mainly cream cheeses, About 95% are soy cheeses and 5% are nut cheeses without soy.

Big American food companies make basically two types of imitation cheeses. The first is a filled cheese in which vegetable oil is used to replace butterfat. The product is positioned as inexpensive rather than low-cholesterol. Roughly 98% of these products are sold to food processors, foodservice organizations, and restaurants, and only 2% to consumers. The market size is about $500 million. The second is fat-free dairy cheese (the butterfat is replaced by non-fat ingredients such as gums), such as FREE made by Kraft or Healthy Choice from ConAgra. Both are widely sold in supermarkets to the tune of $50 million to $100 million.

The size of the natural foods cheese alternatives market in the USA is about $15 million/year at wholesale and $25 million/year at retail; this is the equivalent of about 5 million lb/year. The largest manufacturers (Mfg.) and primary marketers (Mar.; they buy a private labeled cheese from a manufacturer who must sell exclusively to them) are: 1. Soya Kaas, Mfg., $6 million/year wholesale. 2. Sharon's Finest, Mar., $3 million/year wholesale. Their source is confidential. 3. Cemac / NuTofu, Mfg., $2 million/year wholesale. 4. Galaxy / Soyco Foods, Mfg., $2 million/year wholesale. 5. Phil Leisac & Sons of Portland, Oregon, Mfg. They are owned by or involved with Pacific Foods of Oregon, and make Almond Cheeze for Wholesome & Hearty of Oregon and Soy Gourmet for Patrick Cochran of Nutrition Specialties International, Inc. of Riverside, California.

The major secondary marketers of soy cheeses as such (they must buy from one of the above companies) are: White Wave and Rosewood Farms. Companies that make important foods that use soy cheese as an ingredient in foods are: Imagine Foods (Ken & Robert's Veggie Pockets), Farm Foods (Pizsoy and Pizsoy Pockets), Cedarlane Foods, Amy's Kitchen Inc. (Pot Pies), Rademacher–Worley Farms of Sonoma County (Solar Tacos). The main types of foods in which soy cheese are used as an ingredient are pizzas, pockets, and other. Since soy cheeses and other cheese alternatives are a major part of the natural foods market, any company that develops a product containing cheese must seriously consider using a cheese alternative, which contains little or no cholesterol or lactose, and usually less fat and calories.

The cheese alternatives market is has grown at the rate of about 20% a year for the past 3 years, but now it is starting to level off.

Most people who buy cheese alternatives (estimated 60% of the total) are those who prefer not to eat dairy products and mistakenly believe that these products are non-dairy products. This the market is based on consumer misunderstanding and deception. Labels promote "Cholesterol free and lactose free" because they don't want to say "dairy free." Yet only an estimated 20% of the

products are purchased primarily because they are free of cholesterol, and lower in fat, saturated fat and calories. Another 20% are purchased for other reasons (such as lactose free). Of the buyers, an estimated 20% are vegans, 60% are vegetarians, and 20% other. As for outlets, an estimated 75% are sold at natural- and health food stores and 25% at supermarkets. Sharon's Finest sells their cheese alternatives at every Trader Joe's, and at many Lucky, Vaughns, and Ralphs supermarkets in the Los Angeles area. Most of the other manufacturers also sell in some supermarket chains, especially in their geographical region. Wildwood Natural Foods sells NuTofu at each of their sets in Safeway supermarkets in California. Continued. Address: President, Sharon's Finest, P.O. Box 5020 (616 Davis St.), Santa Rosa, California 95402-5020. Phone: 707-576-7050.

6605. Rose, Richard. 1994. The cheese alternatives industry and market in America. Part II (Interview). *SoyaScan Notes.* April 25. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Cheese alternatives retail for about 1.5 to 2 times as much as their regular dairy cheese counterparts–but the price difference is decreasing. Soya Kaas retails for about $4.90 for 12 oz ($6.53/lb) in California. TofuRella cheddar retails for $2.75 for 8 oz. ($5.50/lb). Dairy cheddar retails for about $2.50–$3.20 a lb. The cheese alternatives are more expensive because relatively small quantities are sold, the market is small, and their ingredients are more expensive. Richard's non-soy cheeses with casein (such as AlmondRella) are about 10% to 20% more expensive than his soy cheeses with casein (such as TofuRella). The difference is small in part because Sharon's Finest takes a smaller markup on AlmondRella; soybeans are, of course, much less expensive than almonds. Richard's non-soy non-casein cheese (VeganRella) is more expensive (10-50%) than AlmondRella, again because of the economies of scale. Casein now costs about $1.60/lb.

The biggest company that makes powdered tofu (the main soy ingredient in many soy cheeses) is DMV USA (basically a cheese company owned by Danes) in La Crosse, Wisconsin (Agronico does the spray drying for DMV; Ed Pedrick brought know-how and maybe technology from Clofine), followed by Clofine in Linwood, New Jersey. Pedrick now works for some company in Iowa–maybe Devansoy (formerly Solait International, before that Miller Farms Food Co.). Richard does not think that St. Peter's Creamery presently sells to this market. Richard thinks that these companies curd the soymilk before they spray-dry it.

Sharon's Finest is growing nicely. They are in the INC. 500 this year with annual sales of about $3 million a year. Last year's sales did not increase much over the previous year, but this year Richard predicts a 50% sales increase, based on predicted large sales of VeganRella–in both hard cheese and cream cheese consistencies. Richard believes that VeganRella will outsell his TofuRella in 2 years, and become America's leading brand of cheese alternative in 2 years–including Soya Kaas. All kinds of people, including kids, really like VeganRella. The company's best-selling product is TofuRella (all flavors), followed by slices, then Zero-FatRella. All of Wholesome & Hearty's non-soy business (Almond Cheeze and White Almond Beverage) only accounted for $700,000 in sales last year.

Concerning the outlook and forecast for the cheese alternatives market in the USA, Richard sees the market maturing, with steady upward (but slower) growth of about 10% a year, and moving more toward truly non-dairy products that contain no casein. There is presently little or no room for new companies to enter the category, prices will start to drop, marginal or "me too" products (like Soy Gourmet) will not survive, and more consolidation (within 1-2 years Galaxy will not be selling to the natural foods market; now most of their products sell only because retailers want their Soymage and Parmesan).

Cheese alternatives have been slower to catch on in Europe than in America, even though per-capita cheese consumption is higher in Europe, because European retailers and consumers have not been deluded into thinking that a product can contain casein and still be dairy free. If they want to sell a cheese-like product that contains casein, they would be likely to sell a rennetless vegetarian cheese. Sharon's Finest used to sell its products to a distributor in the UK [The Redwood Company], but Richard found that retailers and consumers said "It has casein. Why bother?" The company that Sharon's Finest sold to in the UK was implicated in the death of an Indian boy who (Richard heard) died of suffocation when left alone by his grandmother eating soy cheese (he was not allergic to the casein in the product). There was no trial. Richard sees a big potential market for his VeganRella in Europe. Richard thinks he can make a better, cost competitive product from Brazil nuts than from soybeans. Soy causes some flatulence problems. Richard donates a portion of the profits from sales of VeganRella to Earthsave, which both a vegan and an environmental organization. On the back of the VeganRella is an Earthsave logo and Earthsave is supporting the product.

Talk with Richard Rose. 1997. March 16. The truly non-dairy cheese alternatives which contain no casein (such as Vegan-Rella and Soymage) have not caught on in America; they are more popular in Europe. Vegan-Rella is now Sharon's Finest slowest selling cheese alternative. Address: President, Sharon's Finest, P.O. Box 5020 (616 Davis St.), Santa Rosa, California 95402-5020. Phone: 707-576-7050.

6606. Messina, Mark J. 1994. New developments with soyfoods. Do soyfoods prevent cancer? (Interview). *SoyaScan Notes.* April 27. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Mark sees more of ASA's interest in soyfoods

coming from individual state soybean boards rather than from the headquarters in Missouri. One good example is the fine work of Jim Weyer and Connie LaBarr of the Nebraska Soybean Program. Jim was the first person to ever invite Mark to speak. The ASA (American Soybean Association) has a food advisory panel which is completely focused on soy oil. Mark wishes ASA would establish a separate panel to discuss and promote soyfoods.

Mark is now working on a new book about the health benefits of a vegetarian diet. It will be published by Harmony Books in New York–a publisher which is very interested in vegetarianism and was willing to give a good advance for the book.

Mark believes that when the people in a culture consume 4-6 ounces a day of tofu, that will lower the cancer risk of the population significantly. The basic message of his new book, *The Simple Soybean and Your Health,* is that one serving of soyfoods (any kind, ideally tofu or soymilk) each day will have a protective effect. "But our present knowledge would not allow us to say that 20 mg/day of genistein would have some specified amount of protective effect."

Mark pronounces daidzin and daidzein as DAYD-zin and DAYD-zeen respectively. Some scientists pronounce the latter word DAYD-zain.

Mark thinks it would be a good idea–but a bold step–for tofu manufacturers to write "Contains genistein" on their tofu packages. It is certainly legal, as long as no claims are made about genistein. The question is how many people who buy tofu know what genistein is? Mark thinks that genistein is the one biologically active substance that would be best to put on the front of a product. Phytic acid binds minerals, and protease inhibitors are still thought of as antinutritional factors.

"If the cancer preventing effect is real in humans, it is probably due to genistein. But I have no idea whether or not it is real. It is all conjecture at this point. I don't put any faith in the animal research. It's part of what you have to do to develop a hypothesis because everybody else is going to be looking at it. I don't think the animal studies are particularly impressive at this point. There is good reason to think that consuming soyfoods may reduce cancer risk and it will probably lower your cholesterol and saturated fat content. There is apparently no down-side to eating soyfoods and there is a considerable up-side to it. We may eventually find out that the effect is valid only if people consume soy from an early age. The strongest studies are those done in vitro, but there are many problems extrapolating those results to humans. I only wish the soyfoods industry would take advantage of this window of opportunity, where people are talking about the possibility that soy prevents cancer, to get people to taste their products. Even if it turns out 5 years from now that soy doesn't prevent cancer, people will probably continue to consume the soyfoods, and realize many other health benefits." Address: PhD, Libertytown, Maryland 21762. Phone: 301-898-5769.

6607. Althoff, Susanne. 1994. Meatless muscle: Vegetarian bodybuilders bulk up just fine without the beef. *Vegetarian Times.* April. p. 69-70, 72, 74-75.

• ***Summary:*** Vegetarian bodybuilders include Andreas Cahling ("Mr. International," weighs 210 lb, from Cardiff by the Sea, California) and Bill Pearl (four time "Mr. Universe." He was a vegetarian when he won his titles in 1967 and 1971), Spice Williams (vegan actress and stuntwoman), and Beth M. Ley.

"'Twenty-five years ago there were virtually no professional bodybuilders who were vegetarian,' says James E. Wright, at editor at Muscle & Fitness magazine (Woodland Hills, California). 'Now there are several."

A table gives typical daily menus for Bill Pearl, Andreas Cahling (incl. Tofu Burrito and Rice pudding made with soymilk), Spice Williams (10 oz. shake with soymilk, water, and soy protein powder, 8 oz. tempeh burger, 2 cups cooked TVP (textured vegetable protein)).

Pearl, age 63, is still a vegetarian but no longer competes. "Spice Williams turned vegetarian as part of a program to get her life back on track after overdosing on drugs."

Photos show the muscled bodies of (1) Bill Pearl. (2) Spice Williams. (3) Andreas Cahling.

6608. Child Haven International. 1994. Soymilk Cottage Industry–Phase IV: A request for funding to the NGO Division of CIDA-OIDP. Maxville, Ontario, Canada: CHI. iii + 38 p. April.

• ***Summary:*** This proposal for funding was written by Hart Jansson. In the title: NGO stands for "non-governmental organization. CIDA-OIDP stands for Canadian International Development Agency–Ontario International Development Program. This proposal was written after the report by Thakur (24 Sept. 1993) basically stopped all funding from CIDA itself to Child Haven's "Soymilk Cottage Industry" project.

Contents: Country. Project history. Sector. Objectives: General, specific. Background: Problems, assumptions, risks. Relevant experience. Implementing NGOs. Means to achieve objectives: Project structure, inputs. Implementing, monitoring and reporting: Implementation schedule, equipment installation logistics. Self-reliance. Results expected. Evaluation: Impact on women, impact on the environment. Previous contributions.

Appendices: 1. Interim Progress Reports for the Third Phase of the SoyaCow project and the SoyaCow Newsletters. 2. Letter of intent regarding the royalty fee licensing of the SoyaCow patent. 3. The SoyaCow technology and method of producing soymilk. 4. Cost-benefit analysis for the SoyaCow technology. 5. Budget for the Fourth Phase of the SoyaCow Project. 6. Letters of appreciation from soyfoods experts.

Letter (e-mail) from Hart Jansson. 2010. Oct. 27. We did not receive any funding for the Phase IV proposal. I believe that funding was denied due to a change in priorities at CIDA, and of course the negative report [in Sept. 1993 by Dr. Thakur]. Address: Maxville, Ontario, Canada.

6609. Colorio, S. 1994. Re: The Agrolactor–A soya milk production machine (Letter to the editor). *Soyafoods* (*ASA, Europe*) 5(1):7. Spring.
• ***Summary:*** The writer states that his company makes the Agrolactor which "can produce, by simple efficient technology, between 2,000 and 3,000 litres of soya 'milk' per day and the soya milk is of exceptional quality." The fully automatic machine, which is particularly suitable for small and medium sized operations, allows for sterilization of the mixing water, measuring and crushing of soybeans, soymilk extraction, okara recovery, incorporation of flavor and syrup, pasteurization at 100ºC for 2 minutes, and cooling to +4ºC. Address: Agrolactor, Actini SA, Parc de Montigny, Maxilly, 74500 Evian, France. Phone: +33 5070 7474.

6610. *Food Processing* (*Chicago*). 1994. To ban or not to ban: Here's what *Food Processing* readers had to say about BGH [Bovine Growth Hormone]. 55(4):108. April.
• ***Summary:*** This magazine polled its readers with the question, "Do you think the food industry should ban the use of milk from BGH-enhanced cows?" 64% said Yes, ban BGH! 36% said no. Many sample comments are printed.

Thereafter this sidebar notes that a recent poll by the *Chicago Sun-Times* asked readers if they would drink milk from cows fed with growth hormones. 89% said No, and only 11% said Yes.

Accompanying the sidebar is "An open letter to Jeremy Rifkin," by Kitty Kevin, associate editor, criticizing Rifkin's views and ways of expressing.

6611. Kath. Gemeinden St. Johann und St. Joseph. 1994. Soja fuer Ghana [Soya for Ghana]. Duisburg-Hamborn, Germany. 24 p. Illust. 21 cm. [Ger]
• ***Summary:*** Each year this group of German Catholics has one development-help project in Ghana. In 1991 and 1992 it was trees for Ghana. In 1993 it was soya for Ghana. Contents: Development help? by Gottfried O. Praem. Africa's need (incl. population growth, demographics, per capita GNP, and infant mortality). Our new project: Soya for Ghana. Why soya? Yields a variety of foods, healthy, ethical (in relation to eating animals and protecting the environment), good for agriculture. History of the soybean plant. Food products from the soybean: Soymilk, tofu, soy protein, soy sauce, miso, tempeh, soy oil, soy sprouts. Cultivation of soybeans in northern Ghana. Planting and harvest. Ghana–the land and its agricultural products. Teaching hygiene in Ghanaian. Dear money: Where does it come from and how is it spent? Past projects in Ghana and the 1993 Soya for Ghana project. The Bole mission station in northern Ghana (90,000 inhabitants of which 4,000 are Christian). Recipes. A talk with Brother Rudolf, age 62, during his visit to Hamburg in Sept. 1993. Address: Duisburg-Hamborn, Germany.

6612. Messina, Mark J.; Persky, Victoria; Setchell, K.D.R.; Barnes, S. 1994. Soy intake and cancer risk: A review of the *in vitro* and *in vivo* data. *Nutrition and Cancer* 21(2):113-31. March/April. [112 ref]
• ***Summary:*** Contents: Abstract. Introduction. Estrogenic and antiestrogenic properties of genistein. Genistein, signal transduction, and cancer cell inhibition. Animal studies: Mammary cancer, intestinal cancer, liver and bladder cancer, prostate, skin and stomach cancers. Epidemiologic studies: Breast cancer, prostate cancer, colorectal cancer, lung cancer, stomach cancer, esophagus, bile duct, liver, and pancreatic cancers. Discussion.

Tables: (1) Preparation and use of traditional soyfoods and Western soy products. The traditional soyfoods are tofu, soymilk, and miso. The Western soy products are soy protein isolate (used in infant formulas etc.), soy protein concentrate, soy flour / grits, textured soy protein. (2) Effects of soy or soy isoflavones on spontaneous and chemically induced cancers or precancerous lesions in laboratory animals (listing of 26 experiments in 5 columns; author, year and reference number, animal, soy product, cancer / inducing agent, findings {no effect or protective}). (3) Epidemiologic studies involving soy product intake and cancer risk (listing of 40 experiments in 7 columns on 3 full pages).

Note: This is Dr. Messina's most comprehensive article on the subject to date. He spent 2 years writing it. Originally it was a 45-page manuscript with 300 references, but both the number of words and references were condensed by about half. Yet for years it was the most widely cited paper in the field of soy. Address: 1. 8401 Mapleville Rd., Mt. Airy, Maryland 21771; 2. Epidemiology/Biostatistics Program, School of Public Health, Univ. of Illinois at Chicago, Chicago, IL 60680. Phone: 301-898-5769.

6613. *Natural Foods Merchandiser.* 1994. Monsanto sues dairy producers over BGH-free label. April. p. 10.
• ***Summary:*** Monsanto makes Posilac, generically known as BGH or bovine growth hormone. It is suing two dairy companies that do not use BGH on the grounds that their promotional materials falsely imply that milk from untreated cows is safer or of higher quality than milk from treated cows.

Monsanto also sent letters to several retailers warning them that their advertising is in violation of federal guidelines. Karen Buckey, a retailer who received on of the letters, says she "will achieve FDA's 'proper context' by saying she is carrying rBGH-free products because her customers want them, because of her concern for the health

of the cows and because of possible negative economic effects on small family farmers.'"

"The board of directors for the NNFA voted unanimously to condemn FDA's disclaimer requirements.

"HFA, a San Francisco-based advocacy group, also opposes the FDA guide-lines. HFA is spearheading a campaign to remove BGH-treated milk from school food programs and has run full-page anti-BGH ads in *Time, Newsweek, U.S. News* and other national publications. For more information, contact HFA at 1550 California St., Suite #6, San Francisco, CA 94109, 415-485-1495."

6614. **Product Name:** VeganRella (Cheese Alternative–Non-Dairy, Non-Soy): [Mexican, or Italian].
Manufacturer's Name: Sharon's Finest (Product Developer-Marketer).
Manufacturer's Address: P.O. Box 5020, Santa Rosa, CA 95402-5020. Phone: 707-576-7050.
Date of Introduction: 1994. April.
Ingredients: Organic Brazil-nut milk (water, certified organic Brazil nuts), tapioca, rice, oats, canola oil, Irish moss, yeast, garlic, spices, basil, sun-dried tomatoes, citric acid, salt.
Wt/Vol., Packaging, Price: 8 oz.
How Stored: Refrigerated.
New Product–Documentation: Reed Mangels. 1993. Vegetarian Journal. Nov/Dec. p. 26. "Vegetarian Journal's guide to cheese alternatives and non-dairy yogurt." As this magazine goes to press, Sharon's Finest (of Santa Rosa, California), after 7 years of research, has just released a new vegan cheese named Vegan Rella. "We had an opportunity to taste the cheese and found it to be a big improvement over Soymage" [Made by Galaxy]. Vegan Rella contains organic Brazil-nut milk, tapioca, rice, oats, canola oil, Irish moss, garlic, spices, basil, sun-dried tomatoes, citric acid, and salt. It is available in hard cheese form (in Mexican and Italian flavors) and in cream cheese form (in either plain, or onion and dill flavor).

Leaflet distributed at Natural Products Expo East in Baltimore, Maryland. 1993. Oct. "Product Information: Vegan Rella" "VeganRella is the breakthrough 100% non-dairy cheese alternative. Firm when cold, it melts easily when heated, and stretches and tastes like cheese. A special process uses organic brazil nuts from the Amazon to make the cheese-like base." Product features: Low in fat (all from canola oil). "Free of soy, dairy and cholesterol. 5% of profits go to Rain Forest protection groups ($13,400 so far), and EarthSave Foundation. Our purchase of Brazil Nuts helps indigenous workers in the Amazon Rain Forest."

VeganRella "Fact sheet." Dated 1993. July 22. Contents of this single-sided leaflet (28 cm): Introduction. The concept. Product features. Products. In the list of ingredients, casein is not mentioned.

Leaflet (8½ by 11 inch, black, purple, and green on tan kenaf paper) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 1994. March 10-13. "Product information. Sharon's Finest Healthy Alternatives." "VeganRella: The first 100% non-dairy alternative to cheese that melts, tastes, and shreds great. Lower in fat and free of cholesterol and lactose. Uses certified organic Brazil nuts from the Rain Forest to replace all dairy products. Delicious cream cheese varieties also." Ingredients: "Organic Rainforest Nectar (water, FVO-certified organic Brazil Nuts), tapioca, rice, oats, irish moss, yeast, spices, citric acid, salt.

Letter (fax) from Judy Bowhall of Sharon's Finest in response to enquiry. 1994. April 20. This product was introduced in Sept. 1993 but the first two flavors (Mexican and Italian) were not sold until April 1994.

Talk with Bob Davis of Washington. 1994. May 7. He developed the VeganRella line of products. He has just finalized a nori-ginger flavor of VeganRella. This will be the third international flavor after Mexican and Italian.

Talk with Richard Rose, President of Sharon's Finest. 1995. April 3. The hard cheese form of VeganRella outsells the soft tub form by about two or three to one.

6615. Shurtleff, William; Aoyagi, Akiko. comps. 1994. Cheese and cream cheese alternatives (with or without soy)–Bibliography and sourcebook, 1896 to 1994: Detailed information on 334 published documents (extensively annotated bibliography), 159 cheese alternative products, 119 original interviews (many full text) and overviews, 44 unpublished archival documents. Lafayette, California: Soyfoods Center. 225 p. Subject/geographical index. Author/company index. Printed April 28. 28 cm. [570 ref]
• ***Summary:*** This is the most comprehensive book ever published about soy cheese, soy cream cheese, and other cheese alternatives. It has been compiled, one record at a time, over a period of 19 years, in an attempt to document the history of this subject. Its scope includes all known information about cheese and cream cheese alternatives, worldwide, from 1910 to the present.

This book is also the single most current and useful source of information on soy cheese, since 97% of all records contain a summary/abstract averaging 190 words in length.

This is one of more than 45 books on soybeans and soyfoods being compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyfoods Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features: 34 different document types, both published and unpublished; every known publication on the subject in every language–including 528 in English, 11 in French, 11 in Japanese, 10 in German, etc.; 47 original Soyfoods Center interviews and overviews never before published. Thus, it is a powerful tool for understanding the development of soy cheese from its earliest beginnings to the present.

The bibliographic records in this book include

334 published documents and 44 unpublished archival documents. Each contains (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation of the title, month and issue of publication, and the first author's first name (if given).

The book also includes details on 159 commercial cheese and cream cheese alternatives products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to make best use of this book, a complete subject and geographical index, an author/company index, a language index, and a bibliometric analysis of the composition of the book (by decade, document type, language, leading periodicals or patents, leading countries, states, and related subjects, plus a histogram by year) are also included.

A brief history of cheese alternatives (p. 7-8): Cheese alternatives are Western-style cheeselike products that contain a significant amount of non-dairy protein, typically from soybeans, nuts, or seeds. They may or may not contain casein or caseinates (the main protein found in milk). The hard cheeses that contain casein typically melt, stretch, and shred in much the same way as dairy cheeses. We distinguish cheese alternatives from imitation cheeses and cheese substitutes in which the butterfat is typically removed and replaced by vegetable oil or by no fat at all.

The world's first non-dairy cheeselike products were the various types of fermented tofu made in China (where they are called *doufu-ru, fuyu,* or *sufu*). Said to have been developed 1,400 to 1,500 years ago, they were first mentioned in documents during the Ming dynasty in China in the 1500s (Chin Kan. 1534. Messenger to Ryukyu; Li Shih-chen. 1578-1597. *Pen-ts'ao kang-mu*). Since we consider fermented tofu (sometimes called "soy cheese") to belong to a different category of foods from cheese alternatives (in part since the former do not melt), we discuss them in a separate book.

The first commercial cheese alternative in the Western world was invented and made by Dr. John Harvey Kellogg, the famous Seventh-day Adventist physician and vegetarian. Named Nuttose, it was launched in 1896. Made largely from peanuts, it was a true non-dairy product that was also used as a meat alternative.

The first commercial soy cheeses in the Western world were developed and made Li Yu-ying in 1911. At his modern soyfoods factory near Paris, Li manufactured Fermented Tofu Cheese in Gruyère, Roquefort and Camembert flavors.

Between 1911 and 1985 most of the commercial cheese alternatives in America were made by Seventh-day Adventist companies. Though we know the names of these early products, their ingredients and properties are not always clear. In 1939 Madison Foods (Madison, Tennessee) introduced Cheze-O-Soy, based on tofu. In 1942 Butler Food Co. (Cedar Lake, Michigan) launched ViM-eat Soy-Nut Cheese and in 1944 Butler's Soynut Cheese. In 1951 Loma Linda Foods (Arlington, California) rolled out Vege-Chee (canned, based on tofu). And in 1961 Worthington Foods (Ohio) introduced Kreem-Chee, the world's second commercial non-dairy cream cheese.

The idea of cream cheese alternatives was first conceived of by another Seventh-day Adventist, Jethro Kloss. In April 1934 the *Miami Daily News* reported how approximately 6,000 people had recently heard him speak about dairylike foods made from soy beans at Bayfront park. He exhibited 21 foods made from soy beans (including cream cheese, yellow cheese, and cottage cheese) and invited the public to taste them.

By November 1938 the Wigmore Health Shop in London was making the world's first Soya Cream Cheese. The first two commercial tofu cheesecakes were created in 1971 by students of macrobiotics: One by Marcea Newman was sold at her Souen restaurant in New York; the other by David Kalan (named Tofu Blueberry Pie) was sold at his Crane's Call Bakery in Boston. The first two recipes for a soy cheesecake appeared in 1974: One by Marcea Newman (made with tofu) in her book *The Sweet Life: Marcea Newman's Natural Food Dessert Book;* the other by The Farm in Summertown, Tennessee (made with soy cheese, from naturally fermented / soured soymilk) in their booklet *Yay Soybeans!* The first recipe for a "Tofu Cheesecake" appeared in *The Book of Tofu* by Shurtleff and Aoyagi (1975).

The modern category of commercial soy cheeses and cheese alternatives was born under a bad sign. It began in America in March 1985 with the introduction of Soyarella–probably the most deceptive soyfood product ever launched in America. Though extremely popular for about a year, it was unfortunately mislabeled to deliberately deceive consumers. Though marketed as a "non-dairy soy product" which contained no casein yet melted like cheese, it was later found to contain about 15% casein. The "source" of Soyarella (not to be confused with TofuRella) is thought to have been Nature's Best in Osseo, Michigan. But the name of the manufacturer was not given on the label–and it remains a mystery to this day.

In America, this new category has a number of basic characteristics: (1) Casein (a milk protein) or caseinates is used in more than 95% of all products to make them melt and stretch like dairy cheeses. Less than 5% of all products are truly non-dairy; (2) In the late 1980s, most manufacturers, marketers, and retailers deliberately

concealed from consumers the fact that casein is derived from cow's milk (complicated by the fact that FDA regulations allow food products that contain casein to be called "non-dairy"); (3) Many consumers believe that most cheese alternatives are truly non-dairy products. Fortunately, labels and promotional materials have become more honest with each passing year–yet many consumers still remain confused and some deceptive practices still exist; (4) All products are free of cholesterol and lactose, and relatively low in saturated fats. Some are also low in total fats, calories, and sodium; (5) About 95% of the products are soy cheeses and 5% are nut or seed cheeses without soy. Most products contain tofu (either dried or fresh) as a major ingredient; (6) Most products are sold at natural- or health food stores, and retail for about 50% more than typical dairy cheese sold at supermarkets; (7) About 95% of the products are hard cheeses and 5% are soft cheeses, mainly cream cheeses.

The first major soy cheese to hit the market was Soya Kaas, introduced in Jan. 1986 by Richard McIntyre of Soya Kaas Inc., a subsidiary of Swan Gardens Inc. Marketed exclusively by American Natural Snacks of Florida, it is still America's most popular cheese alternative. In June 1986 Mozzarella Style Tofu-Rella was introduced by Richard and Sharon Rose of Brightsong Foods. The company later became Sharon's Finest and the product was renamed TofuRella. In Oct. 1986 Original Pizsoy (a whole-wheat pizza topped with soy cheese) was introduced by Tree Tavern Products; It was the first product in which soy cheese was used as an ingredient.

In Jan. 1987 Soymage was introduced by Soyco Foods, a Division of Galaxy Cheese Co.; This was Soyco's first soy cheese product and the first modern soy cheese that contained no casein. In April 1987 NuTofu was introduced by Cemac Foods Corp. This was Cemac's first soy cheese product.

In April 1988 Soyco shreds and slices were introduced–the first soy cheese shreds and slices. In 1988 new labels for Sharon's Finest Tofu-Rella became the first (as far as we can tell) to state clearly on the label that the casein in the product is derived from milk.

In Jan. 1991 Fat-Free Soyco was introduced–the first fat-free soy cheese. In Dec. 1992 Almond Cheeze was introduced by Wholesome & Hearty Foods–the first major non-soy cheese alternative.

In April 1994 VeganRella (made from Brazil nuts) was introduced by Sharon's Finest–a true non-dairy non-soy cheese said to have excellent flavor and texture.

The size of the natural foods cheese alternatives market in the USA is about $15 million/year at wholesale and $25 million/year at retail; this is the equivalent of about 5 million lb/year. The category has grown at a remarkable rate–about 20% a year for the past 3-5 years. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

6616. *Soyafoods* (*ASA, Europe*). 1994. UK catches up with soya 'milk' rules. 5(1):2. Spring.
• ***Summary:*** "Since 1987 it has been illegal, in the EC (according to EC regulation 1898/97) to use the word 'milk' on 'soyamilk' products. Hence the appearance of 'soya drinks' and 'soya beverage' labels throughout Europe, excepting the UK and Ireland.

"The UK, however, has taken a somewhat relaxed view of this ruling–until recently that is." The Ministry of Agriculture, Fisheries and Food (MAFF) is now cracking down and UK manufacturers may soon be required to use the term 'soya drink.' During negotiations on the EC regulation, MAFF tried to obtain an exemption for soya milks but failed. Yet the same regulation allows the term "coconut milk."

6617. *Soyafoods* (*ASA, Europe*). 1994. Soya 'milk' in Vietnam. 5(1):2. Spring.
• ***Summary:*** The second Franco-Vietnamese food and agriculture exhibition will take place in Hanoi on May 11-15. More than 100 French companies plan to participate. One of these, Actimode, has been working in Vietnam on joint projects since 1990. Near Hanoi they have established a soya milk factory using the Agrolactor system (see p. 8). The products made at this plant have been well accepted by consumers and the factory now makes 400,000 liters per year of soymilk.

6618. Woodhams, Dr. David J. 1994. Introductory essay: The toxicity of soybeans and related products. In: Valerie James and Richard James. 1994. The Toxicity of Soybeans and Their Related Products. Vol. 1. Scientific Reports, Laboratory Analyses, Field Observations. Auckland, New Zealand: Published by James and James. See Section Two. 9 p. April 11. [9 ref]
• ***Summary:*** Contents: Background. Soy protein based infant formulas. Traditional use. Conclusions.

Note: This was published as a separate booklet on 5 March 1995 by the Soy Information Network (SIN; Whangarei, New Zealand). Address: PhD, CEng, MIChemE, MIPENZ, MNZIC, Dairy Process Consultant, 2/47 Church St., Devonport 1309, New Zealand.

6619. Bean Supreme Ltd. 1994. Wholesale price list. P.O. Box 12082, 140 Hugo Johnson Dr., Penrose, Auckland, New Zealand. 2 p. May 1. 28 cm.
• ***Summary:*** The company sells the following soyfoods: Tofu (firm bulk and vacuum pack), Tofu Luncheon (3 flavors), Soysage, Tempeh (vacuum pack), Soymilk (Nice 'n' Healthy), Lite Licks Non-Dairy Frozen Dessert (6 flavors in 2 liter size, 3 of those flavors in 475 ml size, and bulk packs of 9 liters and 16 liters).

It also sells the following non-soy foods: Biofarm organic yoghurts (3 flavors), Malabar goat yoghurt, Cyclops

acidophilus yoghurt (5 flavors), Koromiko cheeses (10 flavors), Olive grove Middle Eastern foods (falafel mix, hoummus, Middle Eastern sauce, tahini), herbal teas (3 flavors), and Pacific Harvest sea vegetables (Karengo fronds, flakes, and shaker, and kelp shaker). Address: Penrose, Auckland, New Zealand.

6620. Elliott, Tom. 1994. Update on FarmSoy Company (Interview). *SoyaScan Notes.* May 1.
• ***Summary:*** Tom, who has lived on The Farm for almost 20 years, and his wife Barbara, purchased this company in July 1991 from Michael Lee. Michael was going to simply close the company and he had let it run down. Tom's background is in the excavating business and his wife is a nurse. He has not introduced any new products since he bought the company, but he did change the company name to FarmSoy Company. The company's main product is pasteurized tofu; they produce 1,500 to 1,600 lb once a week. They also make a little soy yogurt, soymilk, and tempeh, which is sold mostly to people living on The Farm. The company has 2 adult employees and has a positive cash flow.

People on The Farm no longer all get together like they used to when it was run communally. Stephen no longer to talks like he used to.

Update on the change of company name: Talk with Tom. 1998. July 8. Tom and Barbara incorporated their company on 2 March 1994 in the state of Tennessee. At that time they changed the company name to FarmSoy Company from The Farm Soy Dairy. Tom and Barbara are the only shareholders in the corporation. Address: 156 Drakes Lane (P.O. Box 96), Summertown, Tennessee 38483. Phone: 615-964-2411.

6621. Roller, Ron. 1994. Barley malt used as a sweetener in soymilk and other foods in America (Interview). *SoyaScan Notes.* May 10. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ron knows quite a lot about barley malt and barley malt extract based on years of experience with these products. The terminology is important. It is important to distinguish between malted barley, barley malt, and barley malt extract, co-extracted barley malt, and barley malt syrup. During the years 1983 to 1986 the term "barley malt" appeared on Edensoy labels as the name of the sweetener. In fact this was "co-extracted malted barley with corn," without added enzymes. Since about 1992 the name of this sweetener has been changed to "malted cereal extract" but the sweetener itself has not changed.

Malted barley is the barley grain that has been almost sprouted and dried. It is a rich source of enzymes for subsequent processes. From malted barley, one can make barley malt syrup and barley malt extract. Barley malt syrup usually contains some other added ingredient, such as [high fructose] corn syrup, whereas barley malt extract is a sweet syrup extracted from barley without the addition of anything else. Premose was a brand of natural barley malt syrups, and corn-barley malt syrups.

The main malting industry in the USA is for beer. Usually the maltsters, who make the malted barley, work separately from the people who make the extract. Barley extract is widely used as a browning and flavoring agent by the baking industry. It is sold in both powdered and liquid forms mostly to cereal and bread companies. It gives a malt flavor to breakfast cereals.

There are two types of barley malt extract–that which is co-extracted and that which is not. Co-extract means that an adjunct (such as pre-gelatinized corn, rice, wheat, or potatoes) is used with the barley. Malted barley is put in a mash tun, then the temperature is raised to a particular level, held there to activate the enzymes, then raised to the next level to activate other enzymes. They keep raising it. The barley has a very strong flavor and dark color. Adding the adjunct allows the extract to have a sweeter flavor and lighter color during co-extraction. Co-extraction can be accomplished using only the natural enzymes in the malted barley, however the more adjunct you add, the longer it takes to do the conversion, so most places add additional enzymes (said to be extracted from barley) to speed the conversion. The co-extracted barley malt added to Edensoy does not have any added enzymes. Straight 100% malt extract has an overpowering barley taste and very dark color. "The flavor of malt, in and of itself, if you're using it as a sweetener, has a super strong malt taste. That's why rice syrup has worked well in soymilks–it's sweeter (has a higher DE content), and doesn't have a dark color or malt taste. But ASP likes the malt taste. That is the taste of Edensoy.

ASP prefers not to use the term "barley malt syrup" because they feel it has a negative connotation to natural food consumers. It implies an artificial product, such as log cabin syrup. The labeling laws regarding syrups and extracts are not extremely clear. ASP did not want to say "malted extract and corn syrup" on the label since it sounds like the product contains high fructose corn syrup. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6622. *SoyaScan Notes.* 1994. Foods of East Asian origin that the macrobiotic movement/community has played a leading role in introducing to America, starting in about 1960 (Overview). May 10. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** These include brown rice, rice cakes, miso (many types), shoyu (traditional Japanese-style soy sauce), tamari (Japanese soy sauce containing little or no wheat; prior to about 1980 many practitioners of macrobiotics referred to natural shoyu as "tamari," thus inadvertently popularizing real tamari, which now may be better known in the USA than it is in Japan), natto (fermented soybeans), seitan (wheat gluten seasoned with a soy sauce broth; this

word was coined by George Ohsawa), amazake (thick rice beverage), umeboshi salt plums, sea vegetables (kombu, wakame, hijiki, nori, etc), tofu, soymilk, alternatives to dairy products (macrobiotics do not consume dairy products), buckwheat noodles (*soba*), kuzu, rice syrup, barley malt syrup, azuki beans, sesame seeds, sesame salt (*gomashio*), daikon (white radish) and daikon pickles, kabocha (Hokkaido pumpkin), shiitake mushrooms (also known as Chinese black mushrooms, they have a firm "meaty" texture), burdock, jinenjo (glutinous yam).

They have done this by starting and running many natural food companies to import, distribute, manufacture or grow these foods; by writing cookbooks and other books about these foods; by teaching classes (including many cooking classes in which these foods are used); by influencing other people to do all of the above.

The Japanese names of many of these foods have become anglicized and are now the standard English-language names.

The macrobiotic movement also played a major role in introducing "tahini" or sesame butter (a Middle-Eastern food) to America, starting with George Ohsawa's book *Zen Macrobiotics* in 1960. Of the first 20 records in the SoyaScan database that mention "tahini," 14 are associated with macrobiotics. Likewise, 22 of the first 50 records are associated with macrobiotics.

6623. Woodard, Teresa P. 1994. Re: Chronology of Combibloc, Inc. Letter to William Shurtleff at Soyfoods Center, May 12. 2 p. Typed, with signature on letterhead.
• ***Summary:*** 1930s–Perga-pack, the first carton-pack for liquids, is developed by the Jangenberg family's paper machinery business.

1958–PKL Verpackungssysteme GmbH is established in Linnich, Germany, as a subsidiary of the Jagenberg business. PKL is the parent company of Combibloc, Inc.

1960s–Blokpak, developed by PKL, becomes a leading packaging system for fresh milk and fresh milk products in Europe.

1970s. In 1972 PKL introduces the pergabloc system. In 1976 it is followed by the "combibloc," the carton system for aseptically packaging long-life food. In 1979 it is followed by the quadrobloc system.

1982–The FDA approves hydrogen peroxide sterilization of packaging materials in the USA.

1983–Combibloc, Inc. is founded in Columbus, Ohio, to meet the expanding market for aseptically packaged foods and beverages in North America and Latin America.

1984–Production begins at Combibloc, Inc. in Ohio.

1985–Combibloc secures a major contract with General Foods. Soups containing solids in "combibloc" aseptic cartons are introduced.

1989–PKL is acquired by two Swiss companies: SIG (Swiss Industrial Group) owns 75.1% and Swiss Bank Corporation owns 24.9%.

1989–Aseptic processing is hailed by the U.S. Institute of Food Technologists (IFT) as the "most significant food science innovation of the last 50 years"–even more significant than the microwave oven. The package ensures "outstanding protection of food contents... while ensuring maximum safety for consumer."

1989–Aseptic packages are banned in the state of Maine.

1990–The Aseptic Packaging Council is formed to initiate recycling programs throughout the United States and communicate the package's environmental attributes to consumers and legislators. Combibloc is an active member.

1991–The Swiss Industrial Group (SIG) becomes the sole owner of PKL.

1993 Feb.–Combibloc introduces Pour 'n Seal, a reclosable aseptic multi-serve carton, at the International Exposition for Food Processors.

1993 Sept.–Pour 'n Seal receives the Gold Star Award from the Institute of Packing Professionals at the AmeriStar Packaging Competition.

1993 Dec.–The first isotonic product is packaged in a Combibloc aseptic carton for U.S. domestic consumption.

1994 March–Curbside recycling of drink boxes reaches 3 million households milestone.

1994–The first juice concentrate is packaged in a Combibloc aseptic carton for domestic consumption.

1994–Maine repeals its ban on aseptic packages.
Address: Marketing Communications Manager, Combibloc Inc., 4800 Roberts Rd., Columbus, Ohio 43228. Phone: (614) 876 3700.

6624. Studer, Margaret; Winslow, Ron. 1994. Sandoz, under pressure, looks to Gerber for protection: Acquisition comes as company's drug division faces stiff competition. *Wall Street Journal.* May 25. p. B4 (West).
• ***Summary:*** Sandoz Ltd. has acquired Gerber Products Co. for $3.7 billion in order to diversify the company's business and protect itself from pricing attacks on its drug division. In the past Sandoz, founded in 1895, has relied on its drug division to provide a majority of total revenue. About 70% of Sandoz's world-wide profits were related to drugs, and about 35% its total profits came from one drug: Sandimmune (also known as cyclosporine) which is used in preventing the rejection of transplanted organs. The reliance on one big product as a major reason for Sandoz's move to diversify.

With the expiration of the patent for this particular drug next year, many generic companies will compete for this very lucrative market for Sandimmune and bring the price down. Analysts wouldn't be surprised if that product's sales drop 70 to 80% in the U.S. in the first year. To compete and stay on top, Sandoz has to diversify into businesses that are better protected.

Sandoz's major products are pharmaceuticals, nutrition, seeds, fine chemicals, agrochemicals, construction

chemicals, environmental engineering. But Sandoz CEO Rolf W. Schweizer says the plan is for pharmaceuticals, nutrition, and chemicals to contribute a roughly equal share of revenue. In 1967 Sandoz first entered the nutrition sector when it acquired the British health-food company Wander, the maker of Ovaltine [as well as the soy-based milk alternatives Wanderlac and Velactin]. Since then Sandoz has steadily built up its health food business through a number of acquisitions. Sandoz is the only one of Europe's three major chemical companies to make a major move into nutrition. The big three German companies–Hoechst AG, BASF AG, and Bayer AG–have held to their traditional focus, as have Roche Holding Ltd. and Ciba-Geigy Ltd., Sandoz's major Swiss rivals.

Sandoz's other major competitors are Imperial Chemical Industries PLC, Zeneca, Merck of the U.S., SmithKline Beecham, Glaxo, Nestle SA, Quaker Oats, and Coca-Cola.

Note: This is the earliest document seen (Aug. 2009) concerning either Sandoz or the roots of Syngenta. Address: 1. Basel, Switzerland; 2. New York. Staff Reporters.

6625. Marketing 632 Class–San Francisco State University. 1994. Vitasoy (U.S.A.) Inc.: Market research study. San Francisco, California. 33 p. 28 cm.

• ***Summary:*** This study was conducted by the students at San Francisco State University taking the Marketing 632 class. The project was introduced to the class by Jennifer Corsiglia of Vitasoy (USA).

Contents: Executive summary. Introduction: History, purpose of research, prior research, hypothesis. Methodology and limitations: Project planning, secondary research, expert interviews, focus group, questionnaire group, computer analysis and visual aids (the four types of respondents, based on usage, interest in the product, and future purchase intentions, are users, potentials, potential-triers [they have tried soymilk], potential-non-triers [they have not tried soymilk]). Issues. Conclusions. Recommendations. Bibliography [very poor]. Appendices: Purpose/strategy of focus group, focus group preparation, focus group meeting (10 people in San Francisco, 13 March 1994), focus group questionnaire (22 questions), budget and expenditures, findings, recommendations and conclusion.

Currently, 90% of Vitasoy's sales are through natural and health food stores. But recently the company has decided to look into how it could move into the broader mainstream marketplace, preferably into large supermarkets. The objective of this research was to help Vitasoy identify the characteristics of this potential market. The majority of the potential target market is defined as health conscious and active, between the ages of 18 and 32. Over 80% have some college education, and are primarily Caucasians (47%) or Asian Americans (24%). Most fall into an income range of $28,000 or less. Some 81% shop at supermarkets. The issues are: (1) Who is Vitasoy's target audience? A breakdown of all respondents shows that 17% are users (Note!!), 57% are potentials, and 26% are other. (2) Product positioning: The product should be positioned primarily as a healthy, nutritious beverage and secondarily as a milk substitute. (3) Promotional strategy: The group believes that free sample coupons are needed to entice potential customers to try the product. (4) Price strategy: Both the potentials and the users were found to be price sensitive.

What are the major factors in determining the brand of beverage to buy? Flavor 50%, price 35%, brand loyalty 10%, packaging 5%. If respondents received a free sample coupon for soymilk, 65% said they would use it (=redeem it). Address: San Francisco, California.

6626. Melina, Vesanto; Davis, Brenda; Harrison, Victoria. 1994. Becoming vegetarian: A complete guide to adopting a healthy vegetarian diet. Toronto, Canada: Macmillan Canada. x + 262 p. Foreword by Louise Lambert-Lagacé. Index. 26 cm. [20 ref]

• ***Summary:*** An excellent vegan sourcebook and cookbook by three registered dietitians. For the Contents and details, see the 1995 revised American edition.

Talk with Vesanto Melina. 1996. July 22. This book has presently sold about 25,000 copies in Canada alone. A revised U.S. edition was published in Nov. 1995 by The Book Publishing Co. in Summertown, Tennessee. Address: Canada.

6627. Youngerberg, Mike. 1994. A brief, rough history of Minnesota Edamame (Interview). *SoyaScan Notes.* June 8. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The idea for Minnesota Edamame originated in 1987. It came from a Japanese lady named Reiko Weston who lived in the metropolitan Minneapolis area, and was founder and operator of the Fuji-Ya restaurant. She was importing edamamé from Taiwan for use in her restaurant. Reiko called James Lambert, who owned Jameson-Williams Co., a grain elevator at Huntley, Minnesota, and a farm management company that does business in the Jackson and Fairmont area. She asked Lambert to find her land where she could grow edamamé locally. Jim Lambert was the moving force in the beginning. He brought in shareholders to raise money.

Mike is under the impression that James Lambert has left Minnesota Edamame and is now "out of the picture." He was in the grain business for some years. He was very involved in getting it started. Some other investors have become involved in it. The company still exists; its new address is Route 1, Box 53A, East County Road 34, Jackson, Minnesota 56143. Previously it was located at Route 3, Box 4, Fairmont, Minnesota. Bob Luedtke (pronounced LUD-kee) is now the manager. The company had a plant in Fairmont (actually in Huntley, which was a small town about 8 miles north of Fairmont). They moved this plant to Jackson

in about June 1991. In the plant they process and wash green soybean plants, blanch the pods, and then quick-freeze them in freezing tunnels.

The plant is still operating but the excessive rains and floods last year ("the nightmare of 1993") were very hard on all soybeans in Minnesota.

In Minnesota there is a quasi-governmental program named AURI (Ag Utilization Research Institute) that get funds from various sources (the lottery, etc.). Minnesota Edamame has received help from AURI in the form of technical expertise, etc. Two people at AURI who have worked closely with Minnesota Edamame are Duaine Flanders (Morris, Minnesota. Phone: 612-589-4532) and Keith Sannes (Crookston, MN. Phone: 218-281-7101). AURI has introduced Minnesota Edamame to another company in south central Minnesota named Minnesota Waxy, which does a lot of waxy corn plus Soy Supreme spray-dried soymilk. Minnesota Waxy, which has extensive contacts, is working to help Minnesota Edamame on its marketing program. From Japan, he brought in Mike Nishihara (president) Mr. E.J. Watanabe (general manager) of Nishimoto Trading Ltd. Bob Luedtke joined the company after Jim Lambert had gotten things started. They worked together for several years. The company first processed edamamé in 1989.

Minnesota Edamame, with the help of the Minnesota Soybean Growers' Assoc., got some MIATCO funds which are like Targeted Export Assistance (TEA) funds. MIATCO (Mid-America Agri-Trade Council) is the federal agency that helps companies target export markets with effective advertising, etc.

In Sept. 1991 Minnesota Edamame held a big saké party that was attended by the governor of Minnesota. It marked the signing of a 5-year, multi-million dollar soybean contract between Jameson-Williams Co. of Fairmont and Nishimoto Trading Co. The company changed its name to Minnesota Edamame in about May 1992 and at the same time Jim Lambert left. The plant was moved in about May 1992. The office was in Fairmont, then they bought a building in Jackson where they actually do the processing and freezing. Address: Director of Field Services, Minnesota Soybean Growers Assoc., 360 Pierce, Suite 110, N. Mankato, MN 56001. Phone: 507-388-1635.

6628. Clifford, Mark. 1994. Profile: K.S. Lo, Hong Kong. Milk for the millions. Grandson of indentured servant in Malaysia epitomises the Overseas Chinese success story. *Far Eastern Economic Review.* June 9. p. 78.

• ***Summary:*** K.S. Lo is the grandson of an indentured servant who had been sent to work in Malaysia's tin mines. K.S. Lo was born into the poverty of a Hakka family in China's rural Guangdong province, the son of a would-be scholar who moved to Malaysia after failing China's imperial exams. Mr. Lo lived in Malaysia from age 10 to 20. In 1930 the future soy-milk magnate relocated to Hong Kong to attend Hong Kong University, where he studied commerce and law. After graduation, he worked as a secretary to Malaysian-Chinese property magnate Eu Tongseng.

"But a trip to Shanghai in 1937 [sic, 1936], on a mission to wind up a failed business that one of Eu's sons had started, forever changed Lo's life. Shanghai in those days didn't have much of a nightlife for sober sorts like Lo, so he often passed his evenings at the YMCA reading and listening to lectures. One of those lectures, given by an American diplomat from Nanjing, was called 'Soyabean: The Cow of China' and it extolled the role that soya had historically played in the Chinese diet."

Describes the founding and early history of Vitasoy. In 1940 he set up a soy milk factory in Hong Kong's Causeway Bay district. The company got off to a slow start. "It was only when Vitasoy opened a retail store that sales took off.

"War put an end to the business after less than two years. Fortunately, Lo managed to sell the firm's stock of soybeans and sugar before the Japanese commandeered the company headquarters, giving him enough money to survive the nearly four years of war which followed.

"What he did with the proceeds of the sale was typical of Lo's inclination to go against the grain. Rather than investing in gold, the usual Chinese store of value, Lo bought useful products such as telephone wire and tins of anti-malaria medicine."

In 1942, Lo smuggled his family over the border into China, where a tobacco-farming venture flopped. So he returned to doing what he knew best: soy. His wife made cakes and he made soy milk; the business thrived. Vitasoy was first listed on the Hong Kong Stock Exchange earlier this year; now run by his son, Winston, it has annual sales of more than HK$1 billion. The company produces more than one million drinks a day.

"To fully understand Lo, it is necessary to understand his parents. From his mother, Lo imbibed a do-good instinct. From his scholarly father, he acquired a taste for the finer objects in Chinese culture. His teapot collection, which is being readied for a world tour, was born after he stumbled on a collection of Yixing teapots in a Hong Kong antique store. Now, more than 3,000 antique teapots later, Lo is the major benefactor of the Hong Kong Museum of Tea Ware." A photo shows K.S. Lo, smiling.

6629. Clifford, Mary. 1994. Many uses for soymilk. *Soy Connection* (*The*) (*Chesterfield, Missouri–United Soybean Board*) 2(2):2-3. [9 ref]

• ***Summary:*** Discusses soymilk as a milk substitute related to lactose intolerance, allergies, and insulin-dependent diabetes mellitus. It may also have anti-atherogenic and anti-tumor properties. Page 3 discusses soymilk nutrition, using soymilk, buying and storing soymilk, and gives a recipe for Strawberry-banana frosty. Address: RD, Roanoke Valley, Virginia.

6630. *INTSOY Newsletter* (*Urbana, Illinois*). 1994. INTSOY assists Egypt in establishing model soy foods processing pilot plant. No. 45. p. 2. June.
• ***Summary:*** INTSOY and the Food Technology Research Institute (FTRI, established in 1991) at the Agricultural Research Center (ARC) have opened a model processing pilot plant in Giza, Egypt. FTRI has a staff of about 150 researchers. A photo shows Wilmot Wijeratne of INTSOY training Egyptian scientists in the dry processing room, which contains an Insta-Pro extruder and ancillary equipment needed to grind soybean meal into flour for baking. The adjacent wet processing area contains complete systems for the production of soymilk, tofu, and dairylike products such as soy ice cream and soy yogurt. It is hoped that the facility will serve as a model for stimulating local entrepreneurs to use soybeans in commercial food products.

6631. Sousa, António Saraiva de. 1994. Re: Making cheese with cow's milk enriched with soymilk protein at Universidade Eduardo Mondlane in Mozambique. Letter to William Shurtleff at Soyfoods Center, June. 1 p.
• ***Summary:*** For the last several years, his department has been conducting research on soyfood products. They have achieved some results, mainly in the field of soymilk production. They are presently concentrating their efforts on making dairy products enriched with soymilk or the protein from soymilk. They are look for more information. Address: Prof. Dr., Eng., Dep. of Chemical Engineering, Faculty of Engineering, Universidade Eduardo Mondlane, C.P. 257, Maputo, Mozambique. Phone: 427 851.

6632. *SoyaCow Newsletter* (*Ottawa, Canada*). 1994. Agriculture Canada to develop protein isolates from soymilk. 3(2):2. April/June.
• ***Summary:*** The research will be headed by Dr. C.Y. Ma, a leading protein chemist at Agriculture Canada. The soymilk will be made from whole soybeans using ProSoya's patented process of air-less cold grinding.

6633. *SoyaCow Newsletter* (*Ottawa, Canada*). 1994. A Soyafood Alliance getting ready to go global with government support. 3(2):2. April/June.
• ***Summary:*** Agriculture Canada has decided to support a team of companies on a matching grant basis to develop value-added products and global markets based on milk from the SoyaCow. The companies include ProSoya, Gelato Fresco (an ice cream company), and two well-known dairies.

6634. Xu, Xia; Wang, H.J.; Murphy, P.A.; Cook, L.; Hendrich, S. 1994. Daidzein is a more bioavailable soymilk isoflavone than is genistein in adult women. *J. of Nutrition* 124(6):825-32. June. [33 ref]
• ***Summary:*** Though soybean isoflavones may have anti-cancer activity, their effective doses have not yet been determined. In this study 12 young adult women received single doses of 0.7 1.3 and 2.0 mg of soy isoflavones per kg of body weight from soymilk as part of a liquid diet. After 24 hours, approximately 21% of the daidzein and only 9% of the genistein were detected in the urine at all 3 doses. The total amount of isoflavones excreted in the feces was only 1-2% of the amount ingested. Total isoflavone concentration in the blood plasma was significantly increased to 4.4 ± 2.5 μmol/liter at 6.5 hours after a does of 2.0 mg/kg. The plasma concentrations of daidzein and genistein were approximately equal. 24 hours after ingestion, isoflavone concentrations in both the plasma and urine were nearly zero. The bioavailability of soymilk isoflavones seems to be, on average, only 15%, probably due to a first-pass effect; the remaining 85% seem to be degraded by bacteria in the intestines. But the bioavailability, especially of daidzein, may be sufficient to exert some health-protective effects. Greater focus on the biological effects of daidzein may be warranted.

Discusses: soymilk (powder, Now Foods), daidzein, genistein. Address: Dep. of Food Science and Human Nutrition, Iowa State Univ., Ames, Iowa 50011.

6635. Johnston, Trevor. 1994. Re: Recent developments at Bean Supreme Ltd. in New Zealand. Questions answered on Soyfoods Center letterhead (dated 27 June 1994) and returned to SC on 8 July 1994. 2 p. Plus handwritten note with signature on letterhead.
• ***Summary:*** In April 1989, in order to expand operations, the company moved to its present address in Penrose from its former location at 1 Wallingford St., Grey Lynn, Auckland. In about Feb. 1990 the company changed its name to Down to Earth Natural Products Ltd. in order to try to reposition away from a specialty soy identity. However a major household cleaner company in New Zealand launched a product with the same name, "Down to Earth," so Trevor had to change the company name back to the original name. But at the same time the company redeveloped its logos and the corporate identity.

Presently, the company's best-selling soyfood products are Nice 'n' Healthy (isolated-based soymilk, launched in March 1989), and Lite Licks Dessert (soy ice cream, launched in Oct. 1986).

The company's brands also include Bio Farm, and Spiral Foods. Address: Managing Director, Bean Supreme Ltd., P.O. Box 12082, 140 Hugo Johnson Dr., Penrose, Auckland, New Zealand. Phone: (09) 590 592.

6636. Bianchini, Gilberto. 1994. Re: Early history of tofu and seitan in Italy. Letter to William Shurtleff at Soyfoods Center, July 16–in reply to inquiry. 3 p. Typed. [Eng]
• ***Summary:*** "I started to make tofu and sell it officially in October 1979 in Rimini, Italy, at Via Cuoco 9 (Community Food). I first learned how to make tofu in London at the

Community Health Foundation, Old Street 98, in 1976 or 1977. Then I gained additional experience in making Japanese-style nigari tofu from Centers and individuals in France and Belgium. I first visited the United States in late 1978 and early 1979. On 9 Feb. 1979 I visited you [William Shurtleff and Akiko Aoyagi] at New-Age Foods Study Center in Lafayette, California, having a good impulse in tofu pioneering, to talk about making tofu in Italy.

"In 1980 I visited a friend, Mr. Franco Pagliano, in Milan; that city had many Chinese restaurants. Mr. Pagliano had learned how to make tofu from Mr. Roland di Centa. was supplying these Chinese restaurants with a small quantity of tofu (he made it the Chinese way, with calcium sulfate), but he was soon forced to stop production because he had difficulties producing, unofficially without the proper permits, in his apartment. It was a really good experience for me to get to know Chinese and Japanese people; Franco was very skillful and shared many secrets with me. Then after several months he called me to say that he was going to stop tofu production and that he could introduce me to his clients–which he did, including a Japanese restaurant, Suntory Italia, which had not previously accepted his Chinese-style tofu. I had contacts in Milan and met Mrs. Giovanna Mazzieri at a conference in Milan, where tofu was presented to the public and the press, together with the Italian Chefs' Association. I remember that on that occasion I first had a large number of tofu kits sold through Mrs. Mazzieri.

"I survived financially making tofu for the first couple of years. I sold my tofu to the Chinese restaurants of Milan, driving there once a week from Rimini in my small refrigerated car (280 km each way). I soon got tired of the trip, but actually I was motivated and satisfied and full of curiosity for the Chinese and Japanese atmosphere. Meanwhile, I was stopping to deliver my tofu at all of the macrobiotic and natural food shops and restaurants along the way (in Cesena, Forlì [Forli], Faenza, Bologna, Modena, Reggio Emilia, Parma, etc.). During those years I did promotion for soyfoods, including cooking classes.

"In July 1982 I attended the Soyfoods Conference in Seattle, Washington (we met again) because of my interest in large-scale production and in making a report on soyfoods, together with a lady dietitian from Bologna (I forget her name) supported by the University of Bologna. She continued introducing the many good qualities of soyfoods to those in her field, medical doctors and nutritionists. For more information on this, contact the Sunsoy Food company in Bologna.

"After my 1982 trip to the USA (now having with me color slides, literature, and information), I developed contacts with the largest food distributing company in Italy, Coop Italia, but the people in charge believed that it was too early to distribute tofu widely in Italy–the market was not yet ready... maybe in the future. Even though they were open to innovative ideas, the negative answer was disappointing.

"I remember there was a time in 1983 when I had the luck of meeting a Japanese girl, Fusako Aoki, who was just passing through Rimini–a very rare occasion. She helped me in tofu-making classes for about 3 months, in Rimini and other cities. Meanwhile many people visited me to learn about making and selling tofu (future competitors)!

"I had enough technical skills to develop and build (mostly by myself) a stainless steel continuous open-air steam cooker (not pressurized! a secret for good tofu), a second-hand Weston (from the USA) vibrating screen, a good stainless steel hammer mill. This was really good equipment for those times, the only equipment of its kind in Italy that I knew of.

"I was in charge of everything–production, sale, promotion, and new product development. Unfortunately I was not able to grow from the individual to the team aspect of the work. I exhausted myself, ending production in June 1988. In that year I was supplying centers in cities like Rome, Firenze [Florence], Torino [Turin], Bologna, Treviso, and Ravenna–mostly in northern and central Italy. The demand was growing and it reached the point that in places like Florence, Rome, and Torino people started companies to make soyfoods. At that point, I could survive only by diversifying products, improving packaging, moving into a larger factory at a new location, and expanding the company and the number of employees.

"I could not do this, and after a project of moving in Toscana near Florence, to live and work there, I had to discontinue my activities. The other reason was that my family was growing rapidly; I had 2 children in 1985 and 1987, and I did not want to jeopardize or endanger my family's personal financial situation. Looking back, I think I made the right choice, but I feel good when someone remembers me for my good tofu. I sold my equipment at a low price to a company named Food for All in Verona, then helped them with my knowledge of making and selling tofu. They are connected to the Ananda Marga Society, are supporting activities in India, and are really nice people.

"While in business, I was producing: Tofu (vacuum packaged or in bulk), tofu spreads (various flavors), tofu burgers, tofu mayo (fresh or long-life, in glass jars), seitan, seitan burgers, spreads, soymilk (sometimes, and only fresh), and various tofu desserts (fresh and perishable). I only made small batches of tempeh, for personal use and experimentation (not sold commercially) using cultures from the USA. Near the end of my activities, I produced 400 kg (and up to 600 kg) of tofu (base product); officially I had only one (maximum two) part time workers, with good help from my relatives.

"The only company (apart from the person of Mr. Pagliano) I know that made tofu before I did was the Poporoya company in Rome, which produced and sold it at his branch in Milan, the Poporoya-shop, a Japanese shop.

"People introducing soyfoods in Italy were the

macrobiotic centers: Mr. Ferro Ledvinka from Rome, Mr. Alois Grassany from Bologna, and Mr. Roberto Marocchesi from Torino.

"I still see an opportunity in the future for making and selling tofu and tofu products in Rimini; this would be for me and my friends, but it would work only if it was connected with a larger project of a vegetarian cultural center. Who knows? Now I am a 'natural wood' carpenter." Address: Via Cuoco 9, 47037 Rimini, Italy.

6637. Weaver, Eric. 1994. Growing soybeans organically in Nicaragua (Interview). *SoyaScan Notes.* July 27. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Eric also supervises the development of Earth Trade's project in Nicaragua and he spends a large amount of time down there. During the last year or so, he has been to Nicaragua 4 times, a total of a month. Before that he worked for 10 years on the *Central America Bulletin,* an economics and politics newsletter published monthly in the USA by the Central America Research Group, so he went to Nicaragua regularly.

Cottonseed oil was the basic food oil in Nicaragua until 1991, after the new government of Violetta Chamorro took over from Daniel Ortega and the Sandinistas in national elections on 25 Feb. 1990; the Chamorro government changed the policies on subsidies in general and conducted an economic rationalization. Before that, the Nicaraguan government subsidized cotton production at huge losses. The official justification was that they needed the oil, but Eric thinks there were more complicated political factors. The cotton crop has now basically collapsed in Nicaragua. Starting in 1991, Nicaragua began to import soybeans, which they processed in the country's 9 or 10 cottonseed processing mills. President Violetta Chamorro's son-in-law, Antonio Lacayo, who is actually the de-facto president, got into soy oil processing even before the cotton was phased out. That is another reason for the move toward soy oil–because he had business interests in soya. Earth Trade is now starting to do a feasibility study of organic oil processing in Nicaragua. The company would like to set up an organic facility that will process not only soy oil, but also peanuts, sesame, etc. to produce a variety of organic oils.

Starting in the mid-1980s Nicaraguan breeders at CEA (a cotton experimental center near Leon) developed a soybean strain named CH86 from the Brazilian tropical varieties of soybeans. Now CH86 has been grown increasingly by farmers during the last few years–starting in about 1991 or 1992. The variety that they call Cristalina (which may be known internationally as light hilum) is a tropical variety that grows pretty well in Nicaragua. Nicaraguans calculate crop yields in hundredweights (cwt) per manzana. Note: 1 hundredweight = 112 pounds. A *manzana,* a traditional unit of land area in Central America, is the area of a square 100 *varas* on a side; it therefore varies according to the length of the vara. On average it equals 0.7 hectares or 1.7 acres. The CH86 averages 47-50 cwt/manzana and the Cristalina averages about 30 cwt/manzana. There is a big demand for the seed of these two varieties, and that's why there is a shortage on the market. Earth Trade grows both varieties. Earth Trade has talked with some Japanese buyers who are interested in Cristalina for soymilk and CH86 for tofu. They were very close to signing a contract then the price started to fall, so they backed off for a while.

Earth Trade's first organic soybean crop in Nicaragua was harvested in December 1993 as a rotation for sesame. They were planning to sell it on the international market organically, but the producer sun-dried it and it got rained on and became spotted; so Earth Trade sold those soybeans for $12-$12.50 per cwt on the local Nicaraguan market for soy oil Earth Trade presently has in the ground enough soybean seeds to produce approximately 1,000 tonnes of the CH86 and 500 tonnes of the Cristalina. The CH86 was planted in June and the Cristalina is being planted now, in July; both should be ready to harvest in December.

In Nicaragua, all substantial agriculture is located on the Pacific Coast; Earth Trade grows its soybeans in this region to the northwest of Managua, around the city of León (the capital of León Department) and in Chinandega. Address: Secretary-Treasurer, Earth Trade, 1814 Franklin St., Suite 710-E, Oakland, California 94612. Phone: 510-987-7222.

6638. Guerimbaye, Midaye B. 1994. Moyen Chari: Palidoyer pour le soja [Central Chari: A speech in the defense of soya]. *Progres* (*N'Djamena, Tchad*)**.** July 28. p. 8. [Fre]

• ***Summary:*** His name is Akintayo Issaya, a volunteer for the United Nations dispatched to the Directorate of Human Resources in the Ministry of Agriculture. From Doyaba to Sarh in Tchad [Chad] he is making the promotion of soya his top priority. Animated with an exceptional courage, he visits village after village in central Tchad to explain to the population the importance of intensifying their cultivation of soybeans, always with emphasis on its popularization. He says that soya is a pill to take to counter the unfortunate effects of the devaluation of the franc in rural areas. Rich in nutritional value, soya can be substituted for a variety of more expensive foods. He teaches workshops to groups of women in villages, to help them fight against malnutrition by using soy in many different forms and ways.

Soya is rich in protein as well as essential vitamins. A kilogram of meat contains 200 gm of protein, while a kg of soybeans contains 450 gm. Soybean seeds contain 30-45% protein compared with only 27% in peanuts and 25% in common beans. The soybean can also play a major role in improving the soil, by adding nitrogen obtained from the air. Practically speaking, the soybean can be consumed in many different ways, which are easily incorporated into traditional recipes. With the soybean, once can prepare milk, croquettes,

biscuits, bread, mustard, yogurt, and coffee.

Note: This article makes no mention of soybean cultivation in Africa. Is Mr. Issaya (like Johnny Appleseed) not taking soybeans with him in his travels and showing Africans how to grow them in their home gardens (for use, perhaps, as edamamé) or farms. Address: Chad.

6639. Dwyer, Johanna; Goldin, B.R.; Saul, N.; Gaultieri, L.; Barakat, S.; Adlercreutz, H. 1994. Tofu and soy drinks contain phytoestrogens. *J. of the American Dietetic Association* 94(7):739-43. July. [45 ref]

• ***Summary:*** Phytoestrogens, compounds with weak estrogenic activity such as isoflavones, coumestans, and resorcyclic acid lactones (lignans), are found in several dozen plants eaten by humans, including some soy products. As the intake of soyfoods rises in the American diet, the activity of phytoestrogens may reach biologically effective levels. Phytoestrogens appear to have both estrogenic and antiestrogenic activity. They may also help prevent cancer. "Anticancer activity has been demonstrated by inhibition of tumor cell growth. Also, they appear to act in other ways that may inhibit tumor formation and growth, including inhibition of tyrosine kinase; inhibition of cell growth stimulated by epidermal growth factor; inhibition of steroid aromatase kinase and of DNA topo-isomerase; elevation of sex-hormone-binding globulin; and possibly lowering of endogenous estrogen levels."

Of the various products tested, tofu contained the highest level of isoflavones. Different brands of tofu contain from 73.0 to 97.5 micrograms per gram (wet weight) of the phytoestrogen daidzein and 187.4 to 215.9 micrograms of genistein per gram. By comparison, the soy drink First Alternative (made by Protein Technologies International of St. Louis, Missouri) contains only 7.0 micrograms of daidzein per gram of weight and 21.0 micrograms of genistein. The two soy-based specialty formulas tested were nearly devoid of these two isoflavones.

The tofu products tested were: Kikkoman firm, Nasoya soft, Azumaya soft, and Vitasoy silken. The soy-based specialty formulas were Jevity Isotonic, Enrich, and Glucerna–each made by Ross laboratories, Columbus, Ohio.

Note: What is the isoflavone content of a typical 130 gm serving of tofu? 9.5 to 12.7 mg of daidzein and 24.3 to 28.1 mg of genistein.

A sidebar (p. 741) features an interview with Johanna Dwyer and Nora Saul (both women); their hospital happens to be located in Boston's Chinese community. "Journal: What are phytoestrogens? How do they function? Dwyer: Phytoestrogens such as isoflavonoids and lignans, are compounds found in certain plants that are inherently active or are converted by human intestinal microflora into biologically active, hormone-like substances. Phytoestrogens exert weak estrogenic activity, most likely attributable to their ability to activate estrogen receptors in cells such as those in the vagina, uterus, and mammary glands. Depending on the biological environment and their chemical structures, phytoestrogens can function as either estrogens or antiestrogens.

"For example, in premenopausal women, who have high levels of circulating estrogens, phytoestrogens may function as antiestrogens. This is because phytoestrogens that bind weakly at estrogen receptor sites may compete for a place on the estrogen receptors with endogenous estrogens, which have much stronger affinity for the receptor sites. On the other hand, in postmenopausal women, who have low levels of endogenous estrogens, phytoestrogens may function as estrogens. Although phytoestrogens only bind weakly at estrogen receptor sites, there is little other estrogen in circulation, so phytoestrogens do bind to estrogen receptors At present, however, this explanation is based on hypotheses and must be tested."

"Journal: Why are these substances important biologically? Dwyer: A growing body of research suggests that phytoestrogens may reduce risks of certain cancers, especially hormone dependent diseases such as breast and prostate cancers." Address: 1. Prof. of Nutrition at the Tufts Univ. Schools of Medicine and Nutrition and director of the Frances Stern Nutrition Center, New England Medical Center, Boston, Massachusetts.

6640. Eden Foods, Inc. 1994. We've added something here (Antioxidants, vitamins & minerals) and cut something here (Ad). *Vegetarian Gourmet* (*Montrose, Pennsylvania*) No. 10. Summer. p. 3.

• ***Summary:*** This full-page color ad for Original Edensoy Extra shows a carton and a glass filled with the soymilk. At the bottom of the page is a $0.40 manufacturer's coupon. Edensoy is fortified with calcium and antioxidant vitamins Beta Carotene A, E, and D-2. Address: 701 Tecumseh Rd., Clinton, Michigan 49236.

6641. Harris, Mark. 1994. BGH: Cloudy judgment? *Vegetarian Times.* July. p. 16.

• ***Summary:*** The Pure Food Campaign (PFC), a consumer watchdog group based in Washington, DC, accuses Michael Taylor of the FDA of conflict of interest and unethical conduct in writing interim guidelines related to BGH (bovine growth hormone), a controversial drug that enables cows to produce more milk. Before joining the FDA in 1991, Taylor was a partner in the Washington-based law firm of King and Spauling, where he represented Monsanto, maker of the only approved BGH product on the market in this country.

6642. Imagine Foods, Inc. 1994. Who needs milk? (Ad). *Vegetarian Times.* July. p. 3.

• ***Summary:*** This attractive full-page color ad shows a large glass and 3 cartons of Rice Dream non-dairy beverage, in original, chocolate, and vanilla flavors. "More and more

Americans are reaching the same conclusion–they can enjoy life without milk. Now Rice Dream Enriched offers the best tasting dairy free alternative with as much calcium and vitamins A and D as milk."

This ad also appeared in the Oct. 1994 issue, p. 5, and the Nov. 1994 issue, p. 59. Address: Palo Alto, California. Phone: 415-327-1444.

6643. Moyes, John. 1994. Dear Soyafoods. Re: Use of the term "soya milk" in the UK. *Soyafoods* (*ASA, Europe*) 5(2):7. Summer.
• ***Summary:*** "The soya milk industry was somewhat perplexed by the article "UK catches up with soya 'milk' rules" in your Spring issue. Far from MAFF cracking down on manufacturers, the UK Minister for Agriculture, Fisheries, and Food, Gillian Shephard MP, has gone on record as asking for 'all steps to be taken to try and ensure that the term 'soya milk' can continue to be used in the UK.

"The UK government has submitted robust arguments to the Commission and industry is making its own representations in support of the Government position. It is abundantly clear that the influential dairy lobby within the EC is seeking to enforce an arcane directive in the mistaken belief that 'soya milk' represents a serious threat to their industry.

"The plain fact is that soya milk is a niche product and has no impact on dairy milk consumption. It is used by people who cannot take milk for medical reasons or reject it on moral and ethical grounds, e.g. vegans. The chance of selling cow's milk to these people is minimal, therefore the enforcement of the regulation would have no practical benefit to the dairy industry at all."

6644. *Natural Foods Merchandiser.* 1994. Aseptic packaging ban lifted in Maine. July. p. 16. [2 ref]

6645. **Product Name:** [Tofu, Tempeh, Soymilk, Okara Croquette, Soy Ice Cream].
Manufacturer's Name: Nutrem Soy Shop.
Manufacturer's Address: Managua, Nicaragua.
Date of Introduction: 1994. July.
New Product–Documentation: John Gabriel. 1995. Plenty Bulletin (Summertown, Tennessee). 11(3):4. Fall. "A Plenty volunteer in Nicaragua writes."

Chuck Haren. 1995. Nov. 8. SoyaScan Notes. "Soyfoods, Soynica, and Nutrem Soy Shop in Nicaragua" (Interview).

Note: This is the earliest known commercial soy product made in Nicaragua.

6646. Rattenbury, Jeanne. 1994. Answers about aluminum [packaging for soymilks and tofu]. *Vegetarian Times.* July. p. 26, 28.
• ***Summary:*** D.P.S. of Phoenix, Arizona, writes: "I've been wondering about the aluminum content of soymilks, juices and tofus that come in aluminum-lined paperboard containers. What is the aluminum level of these products? How safe are they to consume? Also, what about aluminum cookware? I've heard conflicting things about its contributing role in Alzheimer's and other illnesses."

Ans: "The first thing to know about aluminum is that you can't avoid it. The third most common element found in the earth's crust (after hydrogen and silicon), aluminum circulates in the dust in the air we breathe. Plants also inevitably absorb aluminum from soil and pass it along to their fruits and vegetables. Aluminum has no known physiological function; our kidneys do a good job of filtering it out of our systems before we absorb much of it. The U.S. Food and Drug Administration (FDA) has set no recommended dietary allowance (RDA) for aluminum intake, nor has it set any ceiling on the maximum amount of aluminum considered safe to ingest."

To be on the safe side, it may be best not to cook in aluminum pots–especially when cooking acidic foods such as tomatoes.

The current scientific consensus concerning Alzheimer's is that it is not necessary to take any extra ordinary steps to avoid aluminum in one's diet or otherwise.

6647. Simms, Kelly. 1994. Re: Soy's bad rap (Letter to the editor). *Vegetarian Times.* July. p. 8.
• ***Summary:*** The writer explains that she is a day-care provider who recently signed up to participate in a childcare food program which is funded by the USDA and the Michigan Dept. of Education. The program is designed to reimburse day-care providers for serving healthful meals and snacks to children.

"To ensure that the meals are healthful, guidelines are designed to require a provider to pattern the food components of a meal after the Food Guide Pyramid. Providers are also given a long list of unacceptable foods, which supposedly meet no nutritional need." The provider will not be reimbursed for the meals if they include an unacceptable foods. This list includes tofu, imitation milk (like soy beverages and infant formula, except in the case of allergies), and dairy substitutes (like soy cheese).

"Any program that allows the breading on a corn dog to count as a grain component but considers tofu to have no nutritional value at all is suspect. This food program really misses the mark, and I do feel slighted that as a provider, I cannot with a clear conscience participate in it. Give them a tofu covered stick for me." Address: Lansing, Michigan.

6648. *Soyafoods* (*ASA, Europe*). 1994. U.S. soyfoods consumption predicted to grow. 5(2):3. Summer.
• ***Summary:*** A U.S. study titled *An economic analysis of the use of soybeans as human food* predicts that domestic increases in consumption of soyfoods could use an additional

100 to 240 million bushels of soybeans each year. The study was conducted for the North Central Soybean Research Program by researchers at Agricultural Education and Consulting in Savoy, Illinois (Phone: 217-352-1190).

The study found that the following food categories which have the greatest potential to use soya as an ingredient (listed in descending order of projected use levels): (1) Flour products–bread, bakery products, pasta, and pizza dough. 2. Meat products–ground beef and processed meats. 3. Dairy products–liquid milk replacements, processed cheeses and yogurt. 4. Snack foods–crisps, extruded snacks, snack nuts and meat snacks. 5. Soyfoods–tofu, soymilk, tempeh, soy sauce, and miso. 6. Fresh vegetables–green vegetable soybeans.

However there will be tradeoffs. For example, increased use of soya to make meatlike products will ultimately lead to less need for soybean meal to feed livestock animals. But overall, the researchers believe that net crop income, at least for the North Central Region of the United States, will rise from nearly 8% to over 30%.

6649. **Product Name:** Provamel Organic Soya Milk (With Organic Wheat Syrup).
Manufacturer's Name: Vandemoortele (UK) Ltd. (Marketer-Distributor). Made in Belgium by Alpro.
Manufacturer's Address: Ashley House, 86-94 High Street, Hounslow, Middlesex TW3 1NH, England. Phone: (81) 577 2727.
Date of Introduction: 1994. July.
Ingredients: Incl. de-hulled soybeans, organic wheat syrup.
Wt/Vol., Packaging, Price: 500 ml Tetra Brik Aseptic carton. Retails for £1.22 (7/94, England).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Spot in Soyafoods (ASA, Europe). 1994. Summer, p. 5. "New from Provamel." The use of wheat syrup is innovative.

6650. Stevens, Liz. 1994. You call this milk? Yes, there are palatable alternatives to the real thing. *Detroit News.* Aug. 30. p. 3D, 12D.
• ***Summary:*** An overview of soymilks and rice milks in America. Address: Michigan.

6651. Organic Processing Corp. 1994. The organic industry's ingredient supplier (Ad). *Natural Foods Merchandiser.* Aug. p. 22.
• ***Summary:*** "Whole soybeans. Meal & flour. TVP & soy oil. Liquid soy extract. Protein concentrate. Whole wheat & unbleached flour. Degermed corn flour & grits. Corn malt syrup." Note: No address is given, but the company is located in Ohio.

6652. **Product Name:** VeganRella (100% Non-Dairy Cream Cheese Alternative–Non-Soy): [Plain, or Onion & Dill].
Manufacturer's Name: Sharon's Finest (Product Developer-Marketer).
Manufacturer's Address: P.O. Box 5020, Santa Rosa, CA 95402-5020. Phone: 707-576-7050.
Date of Introduction: 1994. August.
Ingredients: Rainforest Nectar (water, certified organic Brazil Nuts from the Rain Forest), canola oil, tapioca, rice, oats, onion, yeast, salt, dill, citric acid.
Wt/Vol., Packaging, Price: 8 oz plastic tub.
How Stored: Refrigerated.
New Product–Documentation: Reed Mangels. 1993. Vegetarian Journal. Nov/Dec. p. 26. "Vegetarian Journal's guide to cheese alternatives and non-dairy yogurt." As this magazine goes to press, Sharon's Finest (of Santa Rosa, California), after 7 years of research, has just released a new vegan cheese named Vegan Rella. "We had an opportunity to taste the cheese and found it to be a big improvement over Soymage" [made by Galaxy Foods]. Vegan Rella contains organic Brazil-nut milk, tapioca, rice, oats, canola oil, Irish moss, garlic, spices, basil, sun-dried tomatoes, citric acid, and salt. It is available in hard cheese form (in Mexican and Italian flavors) and in cream cheese form (in either plain, or onion and dill flavor).

Letter (fax) and prototype of two labels sent by Judy Bowhall of Sharon's Finest in response to enquiry. 1994. April 20. The company expects to sell a VeganRella Cream Cheese Alternative (in Plain and Onion & Dill flavors) in June 1994.

Talk with Richard Rose. 1994. April 21. He trademarked the term "Rainforest Nectar" in part to get around the questionable term "Brazil Nut Milk," and in part because in the future his company might have a whole line of Rainforest Nectar products. Its the same kind of concept as using Nutrasweet to refer to aspartame.

Call from Richard Rose. 1994. Sept. VeganRella Cream Cheese is now on the market.

Leaflet sent by Patricia Smith from Natural Products Expo West at Anaheim, California. 1995. March. "Free recipes! Using delicious cheese alternatives from the Sharon's Finest 'Land of Rella'! TofuRella, HempRella, VeganRella, Zero-FatRella, and AlmondRella." Contains 8 recipes. For more information call 1-800 NJOY NOW. Our internet address is richrose@nbn.com.

Product with Label purchased at Open Sesame in Lafayette, California. 1995. March 11. It retails for $3.59 for 8 oz. The tub is printed purple and green on white. Soyfoods Center product evaluation. Taste: Poor. Consistency: Poor, like custard. Price: Too expensive. Moreover, there was a patch of mold growing on the surface of the product.

6653. Soyfoods Association of America, Standards Committee. 1994. Soymilk standards: Second draft (First revision). Bar Harbor, Maine. 24 p. Aug. Unpublished manuscript. 28 cm. [19 footnotes]

• ***Summary:*** Contents: Purpose of standards. Definition of soymilk. Classification of soymilk. Definitions. Labeling of soymilk products. Microbiological guidelines for "soymilk." Endorsement; "Seal of Soymilk Integrity." Soymilk Standards Committee; Adoption and amendment of standards. Address: 318 Main St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207/288-4969.

6654. Wang, Huei-ju; Murphy, Patricia A. 1994. Isoflavone content in commercial soybean foods. *J. of Agricultural and Food Chemistry* 42(8):1666-73. Aug. [28 ref]
• ***Summary:*** Isoflavones are one class of phytochemicals and are found in soybeans in large amounts. Twelve isomers of isoflavones were quantified: three aglycons and nine glucosides. Soybeans contain two major isoflavone aglycons, genistein and daidzein, and a minor one, glycitein. In the seed, the isoflavones are present primarily as Beta-glucosides. The nine glucosides are: daidzin, genistin, glycitin; 6"-O-acetyldaidzin, -genistin, or -glycitin; and 6"-O-malonyldaidzin, -genistin, or -glycitin.

This paper gives data on the concentration and distribution of isoflavones in 29 commercial soybean foods, grouped into three types: Soy ingredients, traditional East Asian soy foods, and second-generation soyfoods. Four values are given for each product in micrograms per gram, on an "as is" basis: daidzein, genistein, glycitein, and total isoflavones.

(1) Soy ingredients: Vinton 81 90: 600, 954, 82, 1636. Vinton 8191: 240, 648, 107, 995. Green vegetable soybeans: 546, 729, 79, 1354. Soy flour: 226, 810, 88, 1124. TVP #1: 473, 707, 202, 1382. TVP #1: 484, 702, 156, 1342. Soy isolate #1: 77, 273, 115, 466. Soy isolate #2: 115, 392, 102, 610. Soy isolate #3: 122, 393, 99, 615. Soy concentrate: trace, 13, 42, 56.

(2) Traditional soy foods: Roasted soybeans: 563, 869, 193, 1625. Instant soy beverage #1: 311, 617, 109, 1037. Instant soy beverage #4: 407, 665, 111, 1183. Tofu (73% moisture): 146, 162, 29, 337. Tempeh: 273, 320, 32, 625. Bean paste (ko chu jang in Korea): 272, 245, 77, 593. Fermented tofu: 143, 224, 23, 390. Honzukuri miso (rice and soybeans): 79, 177, 38, 294.

(3) Second generation soyfoods: Soy hot dog: 34, 82, 34, 150. Soy bacon: 28, 69, 24, 122. Tempeh burger: 64, 196, 30, 289. Tofu yogurt: 57, 94, 12, 164. Soy Parmesan: 15, 8, 41, 65. Soy Cheddar cheese #1: 2, 5, 27, 34. Soy Cheddar cheese #1: 34, 40, 35, 109. Soy mozzarella cheese: 11, 36, 30, 76. Flat soy noodle: 9, 37, 39, 85.

Some manufacturers use ethyl alcohol extraction to prepare soy protein concentrates; this process removes a substantial portion of the isoflavones. The products examined for this paper which had the lowest content of isoflavones (all less than 100 micrograms per gram) were: soy cheddar cheese A 34, soy protein concentrate 56, soy Parmesan 65, soy mozzarella cheese 76, flat noodle 85.

"Proposed anticarcinogenic doses of soybean isoflavones range from 1.5 to 2.0 mg per kg of body weight per day (Hendrick et al, 1994). There are a number of soy food choices that will fit this dose requirement without the need to consume unusual amounts of these soy foods."

Isoflavone standards and extraction of isoflavones: Authentic standards of daidzein and genistein were obtained from commercial sources (ICN Pharmaceuticals, Plainview, New York, and Calbiochem Corp., San Diego, California). Daidzein and genistein were from previous work in the laboratory (Murphy 1981). The starting material for extracting isoflavones was defatted soybean flour. It was, in turn, extracted with acetonitrile (ACN) and 0.1 N HCl [hydrochloric acid] (1:5:1 w/v/v) according to the procedure of Murphy 1981. Address: Food Science and Human Nutrition, 2312 Food Sciences Building, Iowa State Univ., Ames, Iowa 50011.

6655. Hill, David. 1994. Tofu-maker sold, re-opens. *Journal* (*Ithaca, New York*). Sept. 5.
• ***Summary:*** Ithaca Tofu began production again in late July after restaurateur Michael Pan bought Ithaca Soy from Michael Scovronick, who co-founded the business in 1981. Pan, with 3 employees, now makes about 3,000 pounds/week of tofu in the former Ithaca Bakery plant in the Lansing Small Mall on Cinema Drive. The company also makes soymilk and Spiced Tofu Kan.

6656. Belleme, John. 1994. New developments with rice beverages and natto (Interview). *SoyaScan Notes.* Sept. 16. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** At the recent Natural Products Expo on the East Coast there was a big battle of the rice beverages. Westbrae has just launched two new rice beverages in aseptic cartons with spouts; one is regular strength and the other is concentrated. This may be the first natural foods product in an aseptic carton with a spout. Imagine Foods then switched to a carton with a spout. Then Imagine Foods put out a big poster explaining why their Rice Dream is superior to Westbrae's. John prefers the flavor and texture of Rice Dream.

John's main business is now exporting to Mitoku. There is a big demand for organically grown soybeans in Japan. John has a standing order from Mitoku for 1,000 tons of small-seeded organically-grown soybeans to be used in Japan for making natto. Tommy Carter at North Carolina State University in Raleigh is breeding natto-type soybeans. Charles Kendall, a natto manufacturer in Massachusetts, is now testing the soybeans that Carter breeds. It is a nice relationship. Address: P.O. Box 457, Saluda, North Carolina 28773. Phone: 704-749-9537.

6657. Mann, Sue. 1994. Tempeh, tofu, and soymilk in Ecuador (Interview). *SoyaScan Notes.* Sept. 23. Conducted

by William Shurtleff of Soyfoods Center.
• ***Summary:*** Sue, who has lived in Quito for 6 years, is interested in making tempeh commercially in Ecuador, South America. She went to Ecuador originally as a teacher in an American school. Some people at Ambato Votec College [a Vocational-Technical College about 3 hours bus ride from Quito] in Ecuador are making quinoa tempeh, supposedly on a commercial scale; they sell it mostly in Quito.

Also some Chinese or Korean people make tofu in Quito and sell it at one stall of an outdoor Oriental foods market. They make the tofu somewhere else and sell it twice a week fresh, from a bathtub, at the stall. They also make a pressed tofu. A lot of the health food stores in Quito occasionally sell fresh tofu; she has never asked where it is made.

She also knows a Baha'i person who makes soymilk in Ecuador. Address: c/o Donna Lewen, Cassilla 17-12-578, Quito, Ecuador. Phone: 593 2-570-600.

6658. Archer Daniels Midland Co. 1994. Annual report. P.O. Box 1470, Decatur, IL 62525. 42 p. Sept.
• ***Summary:*** Net sales and other operating income for 1994 (year ended June 30) were $11,374 million, up 15.9% from 1993. Net earnings for 1994 were $484.1 million, down 14.8% from 1993. Shareholders' equity (net worth) is $5,045 million, up 3.3% from 1993. Net earnings per common share: $1.40, down 11.4% from 1993. Number of shareholders: 33,940.

ADM's decline in profits was due largely to the great Midwestern flood of 1993 and rise in corn costs. Today ADM has 165 operating plants, 300 grain elevators, 2,000 barges, and 10,000 railroad cars. On any given day, together with affiliates in Europe, the company has 100 cargo ships on the high seas.

ADM Began processing corn in 1971, with a single wet-milling plant that had an annual processing capacity of 104,000 tons. Today ADM has an annual wet and dry corn processing capacity of 14.2 million tons. Corn is the origin of ADM's river of dextrose, from which is made HFCS, sorbitol, cornstarch, and ethanol. It is fermented to yield lysine, threonine, lactic acid, citric acid, and MSG. New products from corn fermentation scheduled for production by ADM in late 1994 include xanthan gum (a high-performance stabilizer is syrups, salad dressings, etc.), tryptophan, and vitamin C.

In recent years the U.S. government "has been providing strong incentives for farmers to grow more corn and fewer soybeans, thus turning the oilseed growing business over to Canada, Brazil, Argentina, India and the European Union (EU)–all while U.S. acreage shrank by 10 million acres... Consumers all over the world got a major setback when trade negotiators in Paris sat around a shiny table quarreling over which one should take the biggest cut in the production of oilseeds. The result was that the United States gave up its policy of being competitive in world markets for vegetable oil and the EU agreed to drastically reduce oilseed production. French farmers, proud of their productivity, protested." Many countries are in dire need of more cooking oil. "It was agreed that Europe would first idle several million acres and then be allowed to produce oilseeds on those acres for industrial purposes only. The result is obscene. The EU is requiring processors to take perfectly good cooking oil worth $1.65 a gallon and turn it into diesel fuel worth perhaps 40 cents.

A sidebar on p. 13 gives ADM's views opposing the U.S. government's efforts to reduce the amount of cropland, mainly to reduce surpluses but also for soil conservation. A graph shows that world oilseed acreage has risen dramatically since 1967, while that in the USA rose slowly from 1967 to 1982, then fell thereafter.

NutriBev is a new milk alternative made largely from soy protein isolates and concentrates; it has the same nutritional value as milk but can be produced free of lactose. The Harvest Burger plant is being greatly expanded to meet the product's rapid growth in sales. "The USDA's new school lunch regulations will soon make it possible for school districts to be reimbursed for using 100% soy products such as Harvest Burger. In addition, schools will be required to reduce average fat levels in meals. A number of fat-reduced products contain ADM soy isolates. ADM's soy products are thus well positioned as extenders or a stand-alone products. Before the new regulations were announced, ADM provided testimony on the benefits of soy protein at a number of USDA hearings. We have put increased emphasis on increased soy protein research. We are also isolating some of the components in soy that are said by many scientists to inhibit cancer and some types of diabetes." A half-page color photo shows the Green Giant Harvest Burger and its package. A new lecithin plant was fully integrated into the existing oil refinery at Europoort, Netherlands, increasing efficiency substantially.

Pages 16-18 discuss ADM's worldwide procurement network and its unique partnership with A.C. Topfer.

Page 41 shows the officers of ADM's subsidiaries and divisions: David H. Swanson is chairman of Premiere Agri-Technologies, Inc. Larry H. Cunningham is president of ADM Protein Specialties Division. John R. Mahlich is managing director of The British Arkady Co., Ltd.

Update: March 1995. The Republican congress is now downsizing the U.S. government and trying to balance the federal budget. Yet ADM is quite dependent on government subsidies, especially for their most profitable products such as ethanol and PL-480 food products. How vulnerable does this make ADM, which is the largest manufacturer of ethyl alcohol in the world? One cannot tell from reading ADM's annual report. Address: Decatur, Illinois.

6659. *Bluebook Update* (*Bar Harbor, Maine*). 1994. Bühler process advances soymilk and soya flour. 1(3):1, 4. July/

Sept.
• ***Summary:*** Buehler Ltd. of Uzwil, Switzerland, makes milling equipment that can transform whole soybeans into an ultra-fine soya powder, which can be made directly into soymilk or used as an ingredient in foods or baked goods. In early 1994 Buehler's latest soya flour and soymilk plant began operation in Italy. The company reports it has installed a total of 13 systems in 8 countries including France, Italy, Switzerland, Brazil, Taiwan, Ethiopia, China, and Japan.

6660. Business Trend Analysts, Inc. 1994. The health and natural food market: Past performance, current trends, and opportunities for growth. 2171 Jericho Turnpike #342, Commack, NY 11725. 325 p. Sept. Price $995.00. *
• ***Summary:*** Chapter 3 of this report, the first of seven chapters that discuss individual product categories, is titled "The Market for Soy Foods: An in-depth analysis of historical, current, and projected sales. Trends in the U.S. market for soy foods. Manufacturers' total sales of soy foods. Manufacturers' sales of soy foods, by distribution channel. Total retail sales of soy foods. Retail sales of soy foods, by distribution channel. Retail sales of soy foods, by type: Soy sauce, tofu, second generation, soymilk, miso, soynuts, tempeh. Worldwide soybean production, total and per capita. U.S. production of soybean oil. New product introductions in the market for soy and vegetarian foods, including names of manufacturers, brand names, and product descriptions.

Under "Report Highlights and Special Features" we read that after the 3-year recession, most product categories posted strong gains, but "several segments failed to cash in on the growth bonanza. Manufacturers' sales of soyfoods were up a meager 2½%, while the market for frozen health foods declined slightly... One-third of consumers under the age of 35 feel it is extremely important that the food products they purchase are natural; the percentage is even higher among older consumers. Over 40% of adults believe they will contract heart disease or cancer." Today 68% of adults are overweight, up from only 58% a decade ago.

Overall report Contents: 1. Executive summary. 2. Overall market dynamics (including Soyfoods). 3. The market for soy foods. 4. The market for herbal teas. 5. The market for dairy foods. 6. The market for grains and cereals. 7. The market for frozen foods. 8. The market for snack foods. 9. The market for groceries. 10. The health food consumer. 11. The health/natural food store industry. 12. Competitor profiles. 13. Industry directory. Address: Commack, New York. Phone: 516-462-2410.

6661. Haren, Chuck. 1994. Alimentos San Bartolo. *Plenty Bulletin* (*Summertown, Tennessee*) 10(3):1-3. Fall.
• ***Summary:*** "Tempeh, tofu, flavored [soy] milk cicles, [soy] ice cream, soy milk, and toasted soy flour are sold daily from this village processing facility. It was great to see that since last year ASB had built a small room to cook the tempeh (a cultured soy food). The quality of tempeh they were making had improved considerably."

Photos show: (1) Two Guatemalan young people in traditional Mayan dress, holding two soy ice cream cones each, and standing outside the window of Alimentos San Bartolo (ASB–San Bartolo Foods). Caption: "Soy ice cream has been enjoyed in San Bartolo since 1979." (2) Three Mayan staff people in traditional dress at ASB package tofu for market.

6662. **Product Name:** Rice Dream (Rice Milk in a Tetra Brik Carton with Pour Spout) [Original, or Vanilla].
Manufacturer's Name: Imagine Foods, Inc. (Marketer-Distributor). Rice milk made by California Natural Products, Manteca, Calif.
Manufacturer's Address: 299 California Ave. #305, Palo Alto, CA 94306. Phone: 415-327-1444.
Date of Introduction: 1994. September.
Ingredients: Filtered water, certified organic brown rice (partially milled)*, expeller pressed high oleic safflower oil, sea salt. * = Organically grown and processed in accordance with Section 26569.11 of the California Health and Safety Code.
Wt/Vol., Packaging, Price: 23 fl oz (946 ml) Tetra Brik Aseptic carton. Retails for $1.59 (11/93 at Trader Joe's, Concord, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Robert Nissenbaum of Imagine Foods. 1994. Nov. 23. This product in the new Tetra Brik carton was on the shelves in stores in late September or early October 1994.

Product (vanilla) with Label purchased at Berkeley Natural Grocery Co., California. 1994. Dec. 1. 3.5 by 7.75 by 2.25 inches. Tetra Brik Aseptic carton. Note this new tall, slim carton with a new easy-pour reclosable cap. White clouds against a blue sky, fading into peach color, behind black letters, at bottom of carton. "1% fat non-dairy beverage. Made from brown rice. Not to be used as an infant formula." On one side is a recipe for Rice Dream Smoothie.

6663. Laokole, Dedjoguere. 1994. Tchad: Combattre la malnutrition par le soja [Chad: Combatting malnutrition with soya]. *Communautes Africaines* No. 49. p. 12-13. July/Sept. [Fre]
• ***Summary:*** This article, in a section titled *"Actions de Developpement,"* follows a question and answer format. Dr. Akintayo, a teacher in the PNUD project, answers the questions. Q–When and why was the UN International Volunteer Corps (*journée Internationale des Volontaires*) created? Ans:–the JIV was established in 1985 by the General Assembly of the United Nations. It has three main goals, but in each country the work must be suited to local needs. In Central Chari the main problem is malnutrition, especially of children. Dr. Akintayo is using the soybean, a

miracle plant, to fight this problem. Many different delicious foods, such as milk, yogurt, cheese [tofu], sojatine or soy coffee, oil, biscuits, bread, cakes, etc. can be obtained from soya. These foods can greatly enrich the local diet.

Q–What obstacles has production of soya faced in Tchad? Ans: The soybean was introduced to Tchad about 20 years ago, because the peasants were interested in its production. Unfortunately this interest quickly disappeared because there was no market for the first harvest. The many ways of using the soybean and its benefits were unknown by the population at that time. This is one of the objects of our exposition.

Note 1. This article makes no mention of current soybean cultivation in Chad.

Note 2. This is the earliest document seen (Aug. 2009) concerning soybeans in Chad, or the cultivation of soybeans in Chad. This document contains the earliest date seen for soybeans in Chad, or the cultivation of soybeans in Chad (about 20 years ago, i.e., about 1975). The source of these soybeans is unknown. Address: Chad.

6664. Osho, S.M. 1994. The role of research in the development of soybean based small and medium food enterprises scale. Paper presented at the Small and Medium Scale Agro-food Enterprises Seminar. 34 p. Held 12-14 Sept. 1994 at Dakar, Senegal.

• ***Summary:*** "Abstract: Protein deficiency is still a major problem in Africa particularly among the low income group. Soybean has the potential for alleviating malnutrition in African diets via soybean based industries. The paper discusses the role of soybeans in the development of soybean based small and medium scale food enterprises in Nigeria. The IDRC funded soybean utilization project jointly implemented by IITA and National Institutes in Nigeria has been successful through research extension activities, in developing several food uses for soybean and disseminating these technologies to industries. Several people have received training on soybean technologies and over fifty industries are processing soybean into weaning foods, breakfast cereal, extruded products, fermented soybean products, soybean soups and condiments. The success of the soybean project is based on dissemination of developed technologies on soybean."

Contents: Introduction: Research for development. The role of International Institute of Tropical Agriculture (IITA) in international agriculture research (It was founded in 1976 at Ibadan): Soybean research at IITA as it focuses on nutrition in Africa, nutritional value of soybeans, soybean processing, utilization, and dissemination model (product development research, training and extension activities, assessment of impact), development of household and small scale processing technologies, soybean food options and technology (soybean beverages and ice cream, soybean based baby foods and breakfast cereals, defatted cake processing and soybean oil extraction using mechanical screw press technology: IITA concept, extrusion cooking: IITA concept, other advantages of extrusion processing). Impact of soybean utilization project: Constraints in research, policies and programmes that affect soybean research at IITA. Conclusion ("The future of soybean looks bright in Africa").

Selected tables show: (3) Yield and quality of soy oil as affected by processing temperature. (4) Nutrient composition of selected soy flours from the extruder and the screw press. Defatted and full fat; four types.

(6) Forty nine soybean products that are being processed and marketed by companies in Nigeria (Feb. 1994). The soy percentage of the product is given in parentheses. In Lagos: Betamarks, Soybean flours (100%). Farina, Soy beverages (100%). Lisabi Foods, Soy custard (30%). Smallette, Sogi (30%). Glaxo Nigeria, "Babeena" baby food (30%). Nestle Foods, "Nutrend" baby food and "Golden Morn" breakfast food (each 30%). Cadbury Nigeria, "Dash" candles (10%). Morrison Ltd., Extruded products (100%). Goodings Health Goods, "Nutrela" texturized vegetable protein (100%). Niger Dock, Soymilk (100%). Al-Bahamas, Baba Ogi (30%). Odichie Bakery, Soybread (10%). Pfizer Nigeria Ltd., Livestock feed (30%). Buckingham Ltd., Mama Joy baby food (30%). Cocoa Industries, Chocolate bar (10%). Green Source Nigeria Ltd., High protein cake (100%). Golden Compass Foundation, Babyfood (100%). CAPL, High protein cake (10%). NAINTO Ltd., Soymilk (10%).

In Oyo: DLOB, Soy oil / High protein cake (100%). Milkman, Soy milk (100%). Oja Farms, Soy oil / High protein cake / Casasoy (30%). Uncle Segun Food Proc. & Preserv. Co., Soy powder (100%). Jomartex, Soy milk (100%). Deagbo Industries, Soyvita (beverages) (100%). Tella Food Industries, Soymilk (100%). Orman Industries Co. Ld., Extruded full-fat soy, Defatted soycake (100%). Morgan, Soyflour (100%). Alphatec, Soyoil & Livestock feed (100%). Florets Ltd., Soyflour / Babyfood (100%). Vita soy, Soymilk (100%). Dare foods, Soyflour (100%). Sarah Farms, Soyflour (100%). Benny Commercial Co. Ltd., High protein cake (100%).

In other locations in Nigeria: Kofa Agric. Venture (Kawara), Soy oil / High protein cake (100%). Taraku Oil Mills (Benue), Soy oil / High protein cake (100%). Funta Oil Mills (Kaduna), Soy oil / High protein cake (100%). Imo Health Foods (Imo), Soy beverages (100%). Tuns Oil (Osun), Soy oil / High protein cake, Extruded products (100%). Akiibiti Farms (Ondo), Extruded products (100%). Jof Ideal Family Farm (Ondo), Vegetable oil (100%). Termitope Biscuit Industry Ltd. (Ogun), Soybiscuit (10%), Baby food (30%). Rainbow Manufacturing Industries (Ogun), Soyflour / High protein cake (100%). Babs Ventures (Ondo), Soymilk / Cassory (100%). Parakletos Co. Ltd. (Osun), Soyflour / Baby food (100%). IBOL (Osun), High protein cake (100%). Oyalemi Farm (Ondo), Soy vegetable oil (100%). Women's Group (Jos), Soyflour (100%). Golden

Oil Industry (Anambra), Soy oil / Cake (100%).

(7) Summary of number of markets and retail outlets for soybean and products in Ibadan, Nigeria (1987 to 1994). The survey was conducted in January of each year. In Jan. 1987, 2 markets and 4 retailers were selling soy. Soybeans cost 1.50 Naira per kg; only soybeans (seeds) were sold. In Jan. 1990, 19 markets and 419 retailers were selling soy. Soybeans cost 4.25 Naira per kg; soybeans (seeds) and soy flour were sold. In Jan. 1994, 64 markets and 1,017 retailers were selling soy. Soybeans cost 20.00 Naira per kg; soybeans (seeds) and soy flour were sold.

Figures show: (1) Comparative prices of selected commodities that are sources of protein in Nigeria (1987-1994). Soybeans are by far the least expensive source of protein and milk powder is by far the most expensive. Inflation increased dramatically after 1990. (2) Schematic diagram of commercial soymilk production (UHT and aseptic). (3) Schematic diagram of soybean processing by extrusion / expelling.

(5) Processing of soybeans and cereals by dry extrusion. Includes full fat soy flour and snack foods. (6) Number of indigenous soy processing companies in Nigeria (1987-1994). The number increased from about 2 in 1987 to about 22 in 1991 to about 52 in 1994.

Soymilk yoghurt and frozen soy lollies (ice cream on a stick) are sold commercially in Nigeria. Six companies are involved in soy beverages. About 7 large-scale companies and several small ones in Nigeria are using soybean as part of the raw material in the manufacture of baby foods and breakfast cereals (p. 13). Address: PhD, Food Technologist & Coordinator, Soybean Utilization Project, International Inst. of Tropical Agriculture, Oyo Road, PMB 5320, Ibadan, Nigeria.

6665. Parks, Thomas R.; Bindon, J.N.; Bowles, A.J.G.; Golbitz, P.; Lampi, R.A.; Marquardt, R.F. 1994. Methodologies for processing plant material into acceptable food on a small scale, phase II. Moffett Field, California: National Aeronautics and Space Administration, Ames Research Center. x + 219 + 21 p. Sept. Illust. No index. 28 cm. Technical Report. NASA CR-177647, A-94130. Govt. Doc. No.: NAS 1.26:177647. [10 ref]

• ***Summary:*** A study of simple processing equipment for the foods to be used by NASA in closed ecological life support systems (CELSS) on a space station under micro-/zero-gravity conditions. Most nutrient requirements can be met by four crops, which were studied: Soybeans, wheat, white potatoes, and sweet potatoes.

The section titled Soyfoods (p. 171-96) has the following contents: Introduction (composition of dried soybeans, best foods for CELSS, processing equipment), soymilk, tofu, okara, tempeh, edamame (immature green soybeans), soy sprouts, processing by extrusion/expelling (oil), expeller pressed soy oil, whole fat soy flour, soymilk beverages, tofu-based meat replacers, tempe-based meat replacers, soy yogurt (fermented), frozen desserts, textured soy flour, extrusion impact on functional properties, materials balance. The production of wheat gluten from wheat, and the biomass culture of mushrooms are also discussed (p. 160).

Tables and figures show: (T7) Soyfoods–Composition and nutrient content (based on USDA Handbook No. 8-16, full page). (F78) Chart of modern soyfoods, divided into: Soya-based dairy alternatives and Soya-based prepared foods. (F79) Four methods of soymilk production: Traditional, Cornell, Illinois, ProSoya. (F80) Modified ProSoya system with pressure plate and centrifugal basket for okara removal. (F81) Flow chart for regular tofu production. (F82) Flow chart for tempeh production. (F83) Flow chart for soybean processing by extrusion/expelling. (F84) Flow chart for soymilk yogurt. (F85) Flow chart for soymilk ice cream. (F86) Processing soybeans for primary soyfood products with extruder. Address: Food and AgroSystems, Inc., 1289 Mandarin Dr., Sunnyvale, California 94087.

6666. *SoyaCow Newsletter* (*Ottawa, Canada*). 1994. Plenty's El Salvador Project feeding soya to 500 kids. 3(3):1-2. July/Sept.

• ***Summary:*** With the financial help of the members of the Bell's Corners United Church near Ottawa, together with Plenty Canada and the Canadian International Development Agency (CIDA), a SoyaCow project has been established in El Salvador in the poor municipality of Mejicanos. Two SoyaCow SC20 systems are in operation providing soymilk and soy ice cream to over 500 local kindergarten children. The left-over okara is used as an ingredient in making tortillas. A photo shows children enjoying soymilk at school in Mejicanos.

6667. *SoyaCow Newsletter* (*Ottawa, Canada*). 1994. Russian ASSOY director tours Canadian food processors. 3(3):1-2. July/Sept.

• ***Summary:*** "Mr. A. Podobedov, General Director of the Russian Soybean Association, visited Canada in early September to tour a variety of soyfood and dairy processors. His objective was to gain insights into the production of tofu, ice cream, and dairy-type beverages made from soymilk. The tour was a complement to his visit to ProSoya Inc., the company building the industrial-scale SoyaCow SC2000 systems for installation in Russia.

Mr. Podobedov visited: La Soyarie in Hull, Quebec (which makes tofu and meat alternatives; President: Mr. Koichi Watanabe); scientists Dr. C.Y. Ma and Dr. W. Modler of Agriculture Canada (they are developing isolates and concentrates from soymilk); the Neilson Dairy facility in Ottawa; and Gelato Fresco (which is making soy ice cream and has signed a distribution deal with Modern Products, of Milwaukee, Wisconsin).

6668. *SoyaCow Newsletter* (*Ottawa, Canada*). 1994. First SC-100 plant installation completed. 3(3):2. July/Sept.
• ***Summary:*** "The installation of the first SC-100 plant has now been completed at ProSoya's Canotek road facility. The plant has been built to modern dairy standards complete with tiled floor, CIP system, culinary steam supply, and purified water supply. The plant presently can produce 500 L/H of high quality non-beany soymilk. The refrigerated storage capacity is 20,000 litres.

"The Canotek plant will also be used as a pilot facility to implement technology improvements and perform product development on an on-going basis."

6669. Roller, Ron. 1994. Breeding soybeans to use for making soymilk in America. Part I (Interview). *SoyaScan Notes.* Oct. 13. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ron finds that 1 pound of soybeans yields roughly 8.8 pounds of regular non-flavored soymilk and 11.88 pounds of lite soymilk. For regular soymilk, the solids content of flavored soymilk is less than that of "original" or dairylike soymilk. In 1993 an estimated 9.8 million gallons or 81.6 million lb of soymilk were sold in the USA and Canada. Of this, about 80% was regular and the rest was lite. To make this much soymilk required about 8.78 million lb or 146,333 bu or 3,982 metric tons of soybeans. Almost all of these soybeans were organically grown. Soyfoods manufacturers have to pay about 70% more for organically grown soybeans than for non-organic.

Ron knows that most soybean breeders are breeding soybeans for food uses–especially large-seeded food-grade soybeans for the export market. Many of the large-seeded soybeans are selected for high sugar content and processability (cooking with the seedcoat on, dehulling, etc.). Ron has contacted almost all the seed companies and has asked them for "food use clear-hilum soybeans." They say they are working on such products but say they are all sold to Japan. These seed companies are generally working on large-seeded, high-protein, Vinton-type, clear-hilum soybeans. Ron does not think most companies are interested in phytochemicals yet, but Prof. Maurice Bennink at Michigan State is studying the effect of genistein on colon cancer.

Enrei is a very large-seeded Japanese soybean, with a clear hilum, high sugar content, good taste, and seedcoat that is suitable for both harvesting and dehulling during processing. There is an Enrei industry (association and breeding program) in Toyama, Japan. They treat this variety as if each bean was a gold nugget. They hand-cultivate the plants. Ron has had Michigan State working on Enrei soybeans in their breeding program, and he is developing a program to grow it.

When Ron chooses a soybean variety for making soymilk, the most important factor is the taste of the resulting soymilk. For good taste he wants a soybean with high sugar content, high protein, and relatively low fat–but he is not sure what causes a soybean to taste good. A panel of 5-6 experienced people from American Soy Products (ASP) tests the soymilks in a 4-5 sample blind test, always with the same control sample–where the control sample is their basic soybean, that every panelist can distinguish from the other samples every time with no problem whatsoever. Second is the protein and oil content of the soybean: high protein, low fat. Third is availability of the seed. Fourth is the price. They pay a premium of 60-70% above the Chicago Board of Trade (CBOT) price for specialty, organically grown soybeans. In 1994 the price went as high as $18/bushel, but it used to be $8-9. Many people are willing to pay high prices for organically grown Vintons, but Ron is not willing to pay that for Vintons, he doesn't buy them. But there are other soybeans he will pay more for. Other factors: The region in which it will grow. Processability (easily dehulled and does not produce much foam when cooked). Clear hilum. Large seed size. Many of these characteristics are interrelated. In terms of the agronomic characteristics: Seed yield, including disease resistance, lodging and shatter resistance, emergence, etc.

Ron contracts directly with farmers for all the soybeans he buys. Some varieties he uses are confidential, others are not. ASP developing varieties that they do not want their competitors to know about. He also buys some varieties bred by Pioneer Hi-Bred: his growers can go to their local elevator and buy that seed. Ron generally tells the farmers with whom he contracts to grow his soybeans what varieties he would like them to grow and where they can go to buy those varieties. Once he tells this to the farmers, the farmers generally tell the industry and ASP's competitors often grow the same varieties. "We are continually testing soybeans to find the best ones for our process and product. It's more selection than breeding. We're taking a number of soybean varieties and storing them in specific bin locations, then blending the varieties to create or maintain a certain, consistent taste and product." Ron generally buy's large-seeded soybeans (but not the biggest), because experience has shown that they taste best, and the sugar content seems to have something to do with the good flavor. But for one variety, the flavor changes from field to field, and from one growing area to another. As ASP's demand for soybeans has grown, so has their growing area, and this requires the use of more varieties of soybeans. Moreover, Ron would not take the risk of growing all their soybeans in one geographical area–since they could then all be destroyed by flood, frost, drought, etc. A good soybean for soymilk must yield well for the farmer and make good soymilk. Continued. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6670. Roller, Ron. 1994. Tetra Pak's new TBA Slim Re-

cap aseptic carton (Interview). *SoyaScan Notes.* Oct. 13. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Tetra Pak has a new carton named TBA Slim Re-cap (available only in the slim form) that is the equivalent is the Combibloc Pour 'n Seal. You open the Re-cap. pull the foil seal off, then when you are done just close the Re-cap–rather than pushing the spout down into the liquid as you must do with Combibloc. The spout is shaped in such a way that air can enter when you are pouring.

Combibloc came out first, but only in a high-acid version. Both are good. Combibloc doesn't have many low-acid filling machines. Yoo-Hoo chocolate milk was the first one out.

Westbrae is using the Tetra Pak carton. Ron thinks that Westbrae's product is just now starting to arrive in natural food stores. It will be interesting to see how the new packaging is received. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6671. Roller, Ron. 1994. Breeding soybeans to use for making soymilk in America. Part II (Interview). *SoyaScan Notes.* Oct. 13. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** How often does Ron change the soybean variety he uses? He has several base varieties, which are kept secret and which he tries to build on. Every year he tries to find new soybean varieties which are like the base varieties but which will grow in other geographic areas. Moreover the acreage for a particular variety must be expanded slowly as it proves itself both agronomically and from a food point of view. When Ron contracts with a farmer he contracts bushels, not acres. That is, guarantees to pay a certain amount per bushel if the farmer plants a certain number of acres, never just a certain amount per acre planted. This way, both sides take a risk: If the farmer has a large yield, then Ron must buy more soybeans than he wants to. ASP has been hurt before by contracting acres, when there was a flood or frost. Each farmer must get certified, which pretty much guarantees that he has grown the soybeans organically. After a while, ASP knows which growers it can trust, and they become part of ASP's steadily expanding grower base or network.

There are probably very few U.S. soyfood manufacturers that have enough volume that they need to contract directly with farmers. But those that are big or have a large need for organic soybeans must contract directly with farmers to assure themselves an adequate supply of the type of soybeans they want.

Ron would be very interested to know more about how the composition of a soybean affects its flavor. He has a good deal of respect for Pioneer Hi-Bred Seed Co. He thinks they have good seeds, a good staff and research department, and a good distribution system. And they have generally been reliable. They have helped Ron find soybeans for certain growing areas that they sell. He likes the fact that they are national, spanning the breadth and width of the U.S. soybean growing area, and selling all maturity groups. However, 3-4 years ago, Pioneer Seed Co. got into the cultivation, cleaning, bagging, and export of organic soybeans–with their Better Life program (no pesticides or herbicides, but they can use chemical fertilizers). So they began to compete with Ron for organic farmers to grow their seeds, and they pay the farmers more than Ron does.

Pioneer has a pretty extensive base of soybean customers in Japan for regular soybeans, Better Life soybeans, natto beans, large-seeded soybeans, and organic soybeans. Their Specialty Crops Division has penetrated the Japanese market in many areas. Their employees travel frequently to Japan, they speak Japanese, they have an office there, and they're plugged in. They study those industries in Japan, find out what they want, then they come back and try to breed that into a soybean. As far as Ron can tell, Pioneer is the leader in breeding soybeans for food uses in terms of both volume and specific varieties.

Another company doing research in this area is Jacob Hartz Seed Co. in Arkansas. They are working on some large-seeded soybeans but they are having a lot of trouble. Ron has a low opinion of the soybeans Hartz breeds for making natto; he studied that market intensively.

There has been a demand from Japan to supply some organic beans, so many of the U.S. companies that supply soybeans to Japan have begun small organic programs (not because they want to–they hate it), just to satisfy their Japanese customers. Even though Mitsui or Mitsubishi or Marubeni don't want a lot of organic soybeans, they want enough in a tight market to drive the price way up. It was because of the Japanese demand plus a small soybean crop that organic soybean prices were so high in 1994. Country Life went out of business, with unpaid debts of $400,000 to $500,000. Some of the farmers formed cooperative marketing groups; they grow varieties desired by the Japanese, and pool their resources in cleaning and bagging, so they can export containers to Japan and eliminate U.S. middlemen or soybean brokers. Ron feels the price for organic soybeans will stabilize at about $10-$12 per bushel.

If Ron worked closely with a soybean breeder and seed company, he would want the right for the farmers with whom he contracts to be able to buy the seed from the seed company. His company is unique in having a large number of cooperating organic growers, and that gives ASP the lowest price and highest quality. If Ron contacts the growers early and tells them what ASP will pay per bushel of organic beans, that becomes the standard base contract price for other companies too. Word travels fast. Nichii buys directly from soybean farmers, but Ron thinks Vitasoy buys from a middleman (a soybean broker or trading company such as Pacific Soybean and Grain). Some soyfoods manufacturers

buy through soybean brokers–the biggest of which are Pacific Soybean and Grain, American Health and Nutrition, and Purity Foods. Domestic soyfoods manufacturers get deluged with calls from farmers who want to grow soybeans just for them at a premium price and sell direct without a middleman. The middlemen or soybean brokers tend to survive on export business.

This is a very complicated issue–particularly seen from the viewpoint of a seed company that wants to breed better soybeans for food uses. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6672. Demos, Steve. 1994. How White Wave selects soybeans to make tofu, tempeh, and soy yogurt, and to create value-added products (Interview). *SoyaScan Notes.* Oct. 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** White Wave now uses 3 varieties of soybeans: A blend of two varieties for making tofu, and one different variety for tempeh. Steve selected these varieties over a number of years by a trial and error process–but he would like to be able to select them in a more scientific way. For making soy yogurt, Steve is looking for a new variety, which must have a low flavor profile (i.e. little beany flavor). Within the last year, he began talking with a soybean breeder who approached Steve saying that he had one soybean with a low lipoxygenase content (which is thought to give soymilk with little beany flavor), and another with a low fat content. Steve is looking for better flavor and lower calories because he is trying to develop value-added products out of former commodities for his Vegetarian Cuisine line. The key to doing this is developing products that taste better.

For many years, soyfoods consumers were willing to sacrifice taste for ideology or price. Tofu and tempeh have traditionally been bought and sold as commodities, so manufacturers of these foods have traditionally paid more attention to yield and functional properties than to flavor–since the flavor quickly gets lost in the surrounding water. "Most tofu makers won't use only Vinton soybeans because they are too expensive and that added expense cannot be passed on to the consumer. Yet everyone knows that vegetable-type soybeans produce a superior product–bigger, glossier curds, meatier texture. Vintons also give a superior tofu yield–but Steve does not know why and he would be very interested in knowing the science and theory behind this phenomenon. Is more of the protein in the bean extracted in the soymilk? Does it have a higher nitrogen solubility index? Do the curds trap more water? I think U.S. tofu makers totally disregard flavor when buying soybeans for tofu; they are concerned mostly with the quality and texture of the curd–the size, firmness, and elasticity of the curd. The majority of consumers believe that tofu has no taste anyway." But value-added products are judged in a totally different way than commodities; consumers demand good taste. White Wave's way of making soyfoods is capital intensive; therefore he would prefer to sell value-added products rather than commodities. So Steve is now studying how to transform his commodities into value-added products that command a premium price and have consumer loyalty. White Wave's low-fat tofu is sold as a value-added product, and it has recently become the company's best-selling tofu product. It allows him to "add a couple of higher gross margin points to his profit." Adding *Bifidus* also adds value. A major opportunity is to associate soyfoods with medical benefits [as by showing that eating soyfoods reduces ones risk of a major disease, or by adding genistein–which Steve had not heard of].

The main factor moving White Wave in this direction is the "organic problem" that is emerging in America; high prices and limited supplies. For a number of years, Steve has contracted for his soybeans with a broker (also called a consolidator) at a certain time of year each year; the name of the broker and the time of year are confidential. Steve contracts for specified amounts of certain identity-preserved soybean varieties at a specified price, to be delivered over a specified period of time. He also specifies the maximum moisture content, foreign material, etc. The broker then contracts with soybean growers and the broker stores the soybeans after harvest until delivery. The broker takes the risks associated with reduced yield or crop failure. It is much easier to contract with farmers if they are located nearby; but the farmers who end up growing Steve's soybeans are all far away. It would be hard (and too much trouble) for him to keep in touch with weather conditions far away, and to visit the farmers from time to time. The organic business used to be based on affidavits issued by the farmer; now it is changing to third-party certification, and that change should be finished after about one year. Having soybeans certified by a third party raises their cost to the manufacturer by about 25%. It is virtually impossible to pass that on to the tofu consumer, since tofu is seen as a commodity. The federal organic law may be different in particulars from the California organic law–which has been the standard. All the tofu Steve now produces is made from organically grown soybeans, but soon he will offer both a low-cost regular (non-organic) tofu, and a certified organic tofu that retails for about $0.15 per pound more. Then the consumer will have a choice. This has never really been done before.

In the future, Steve would like to work much more closely with soybean breeders and seed companies to help solve his problems, improve the flavor of his products, develop new products, and learn more about the theory and science that connects soybeans and soyfoods. In addition he is planning to set up an in-house R&D department; White Wave already has a test kitchen and a food technologist on staff. A key function of the R&D department will be to develop value-added products. White Wave is already conducting in-house taste panels but is selecting soybeans

"from a grab-bag mentality rather than from an organized, scientific project mentality... There is absolutely no question that the long-term strategic development of soyfoods requires this approach." The timing is perfect and Steve would like to establish such a relationship with a seed company as soon as possible. White Wave is now in the process of strategic planning for the next 5-7 years. But a company must be big enough (as White Wave now is) to devote the focused mind time and invest the resources to follow through for the seed companies this way. As a company gets larger it has a greater need and ability to base its choice of raw materials on a solid scientific foundation. Smaller companies might agree to work with seed companies but it would be hard for them to do it properly over the long term.

In the past, White Wave has chosen one or two soybean varieties and then stopped looking for better ones for several years. But that will change as soon as the new R&D department begins operation. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301. Phone: 303-443-3470.

6673. Loh, Michael. 1994. Early history of Vitasoy and K.S. Lo (Interview). *SoyaScan Notes.* Oct. 18. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Michael's father-on-law was named Soo Putt. Born in Malaysia, he worked for the same company as K.S. Lo, who founded Vitasoy. This company, named Eu Tong Seng, was involved in tin mining and trading. K.S. Lo, who lived in Malaya before he moved to Hong Kong, was a protege of Mr. Eu, who sent him to Hong Kong to attend college. Address: Export Development Specialist, Ontario Ministry of Agriculture and Food, Market Development Branch, 33 Yonge St., Suite 800, Toronto, ONT M5E 1X2 Canada. Phone: 416-326-3551.

6674. **Product Name:** [Soja Biostar Cream Alternative].
Foreign Name: Soja Biostar Douceur.
Manufacturer's Name: Celia's Soja-Biostar.
Manufacturer's Address: B.P. 10, 45550 St.-Denis-de-l'Hôtel, France. Phone: +33 16 3846 3022.
Date of Introduction: 1994. October.
Ingredients: Based on soya milk.
Wt/Vol., Packaging, Price: 2 liter aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 ml.: Calories (kcal) 239, protein 2.2 gm, carbohydrate 3.6 gm, fat 24 gm (of which 19.2 gm is monounsaturated), cholesterol 0 mg.
New Product–Documentation: Spot in Soyafoods (ASA, Europe). 1995. Spring. p. 4. "Soya Douceur–world premier at Sial '94." The latest Sial was held in Paris, France, in Oct. 1994. This product, which is free of cholesterol and lactose, can be used in place of cream in cooking. A photo shows the package.

6675. Global Exchange. 1994. Soy Cubano! The Cuba soyfood company. Honorary "share." An investment in the health of Cuban children. 1 p. Front and back. Oct. Unpublished typescript. 22 x 28 cm.
• ***Summary:*** "This certifies that (Name, Address, Phone #) has made a contribution of $ ___ to the Soy Cubano! Company and is therefore the owner of ___ fully paid shares in the Soy Cubano! Company at a value of $5 per share.

"These shares will be invested in Cuba's soy food products industry, particularly in the construction of soy yogurt factories in each province of Cuba. These factories will provide two liters of soy yogurt drink per week for Cuban children between the ages of seven and fourteen–those who can no longer receive their previously guaranteed "liter of milk per day" due to the current economic crisis in Cuba. The shares will fund the purchase of raw materials and equipment as well as further research in the production of a variety of soy food products to extend the protein intake of Cuban children. Investors in these factories are guaranteed a high rate of 'return'–the satisfaction of knowing that Cuban children are enjoying the benefits of a nutritious diet, despite the U.S. embargo of Cuba that causes terrible suffering to the people of Cuba and serves no national security interests of the people of the United States."

"Warning: Investing in the health of Cuba's children, through such projects as the Soy Cubano! Company, may be considered 'trading with the enemy' by the U.S. government, which carries a maximum penalty of 10 years in prison and a $250,000 fine. The founding members of the Soy Cubano! Company agree with the American Public Health Association that 'when it comes to food and medicine, there is no enemy.'

The founding partners of Soy Cubano! are: Pamela Montanaro, MS, Coordinator of Soy Cubano Company. Medea Benjamin, MS & MPH, Co-Director of Global Exchange, Dr. Hesham Ragab, M.D., Executive Director of Pediatricians and Parents for Peace [he is assisting Pamela with Soy Cubano!]. Peter Rosset, PhD, Executive Director of Food First. Rene Saucedo, Esq. Blase Bonpane, PhD, Executive Director of Office of the Americas.

"Three soy factories are already operating in Holguin, Santiago and Pinar del Rio, Eight more factories will be constructed before the end of 1994... The cost of building one soy yogurt factory is $50,000. The goal of the Soy Cubano! Company is to raise the funds needed to build, equip and staff at least one factory within the first year."

Note: In Jan. 1994 Soyfoods Center purchased twenty of these shares for $100 to help the children of Cuba and to help soyfoods in Cuba. Address: Food and Medicine Campaign, c/o Global Exchange, 2017 Mission St. #303C, San Francisco, Food and Medicine Campaign, c/o Global Exchange, 2017 Mission St. #303C, San Francisco, California 94110. Phone: 415-558-8682.

6676. Goh, Francis. 1994. Soybean in Singapore and its

utilisation for the production of tofu and soymilk. Paper presented at Incoming Soybean Technical Mission. 7 p. 18 Oct. 1994 at Harrow Research Station, Harrow Ontario, Canada.
• ***Summary:*** Singapore (population 3 million, of which 78% are Chinese and 14% Malay) imports 33,360 tonnes (metric tons) per year of soybeans for local consumption and re-export. About 51% of these soybeans are imported from Canada. There are 45 small and medium sized tofu factories in Singapore (which together use 600-700 kg/day of soybeans) and 2 large factories (which together use 2 tonnes of soybeans and each have an are of 1,500 square meters of more). Unicurd is the biggest. Four tofu companies have a history of 70 years in Singapore. No family wants to marry its daughter to a tofu maker because the work requires such long hours, often all night.

Mr. Goh and his wife bought an existing company in 1981. Theirs was the first company in Singapore to bring automatic machinery from Japan to produce soymilk and pack tofu in containers. In Singapore, tofu used to be considered a poor-man's food; if it was served more than once every two weeks, family members might complain. But Unicurd repositioned tofu as a "nutritional food." The company markets its products mostly to the Japanese community of 20,000 people in Singapore.

There are 6 traditional soymilk makers in Singapore; the people like a product with a "strong beany flavor." Address: Managing Director, Unicurd Food Co. Pte Ltd., Blk. 6020 Ang Mo Kio Industrial Park 3, #01-154/156/158/160, Singapore 2056. Phone: 482-5454.

6677. Lee, Mu-Tsun [Mucun]; Huang, Shuhui. 1994. Tofu! Tofu! Tofu!: Chinese style. Monterey Park, California: Wei-Chuan Publishing Co. 79 p. Illust. (color). Index. 13 x 19 cm. [Eng; Chi]
• ***Summary:*** Contents: Conversion table. Soybean products: Soft tofu, hard tofu, bean curd skin (*fu p'i*) [yuba], pressed bean curd (*doufu gan*), bean curd strips and bean curd sheets ("Bai Yeh"). Homemade soymilk. Homemade tofu. Tofu: Salads, appetizers, frying, stir-frying, cooking in sauces, deep-frying, steaming.

For most recipes, there is one recipe on each two-page spread. A color photo occupies two-thirds of the left page together with the English-language list of ingredients. The rest of the recipe is on the right page. For the rest of the recipes, there is a second recipe with a small photo on the right page.

6678. Olson, Joan. 1994. Tofu in good taste. *Ag Innovation News* (*AURI–Agricultural Utilization Research Inst., Crookston, Minnesota*) 3(4):11. Oct.
• ***Summary:*** Tofu and soymilk could soon have a milder flavor. USDA's Agricultural Research Service (ARS) soybean breeders have bred out the "rancid" taste, yet the new varieties still have acceptable yields, insect tolerance, and resistance to pod shattering. But the tofu and soymilk made from these soybeans is more yellow than usual, so the scientists are working to identify and remove the chemical causing the yellow color.

Letter from Joan Olson. 1994. Dec. 20. For details on the new soybean contact Niels Nielsen, Purdue Univ., West Lafayette, Indiana 47907. Phone: 317-494-6076.

6679. Or, Gary. 1994. Our personal experiences with utilizing Ontario soybeans for Vitasoy production. Paper presented at Incoming Soybean Technical Mission. 12 p. 18 Oct. 1994 at Harrow Research Station, Harrow Ontario, Canada. [Eng]
• ***Summary:*** Contents: Company profile. Soymilk production. Our experience with Ontario soybean. Varieties to help Vitasoy International in future expansion.

The company was founded in 1940 by Mr. Guan, Mr. Chen, and Mr. Chu. In March 1994 Vitasoy shares were first listed on the Hong Kong Stock Exchange. Today Vitasoy exports to more than 20 countries via distributors in North America, Macao (Portuguese Macau, near Canton), Singapore, and China (PRC). The company's mission is to produce and promote high-quality, nutritious and wholesome products which can be purchased anywhere, at any time, at a price that everyone can afford."

The company makes two kinds of soymilk: Regular and organic. For regular soymilk, which contains 2% protein and 1% fat, Grade No. 1 Ontario soybeans are the first choice; more than 120 containers (mostly 20 tons each) were received from Jan. to Sept. 1994. No shipment was rejected. The current packaging is 45 kg gunny sacks [Note: Gunny, a term first used in 1711, is derived from the Hindi term *gani.* It is a coarse heavy fabric, usually of jute or hemp, used especially for bagging]. The soybeans are first ground into flour. A mild beany flavor is desired. For organic soymilk, which contains 3.5% protein, U.S. soybeans with OGBA [Organic Growers and Buyers Association] certification are used. The whole beans are ground to a slurry, and are not first ground into a flour. The fat content is 3.0% for regular and 1% for lite. Beany flavor is removed.

Vitasoy would like to buy high-protein, organically grown Ontario soybeans–ideally OGBA certified–but they are not readily available. Vitasoy is planning a franchising program. Address: Technical Research and Quality Assurance Manager, Vitasoy International Holdings Ltd., No. 1, Kin Wong Street, Tuen Mun, N.T., Hong Kong. Phone: 466 0333.

6680. Shurtleff, William. 1994. Report on soybean and soyfoods research trip to Ontario, Canada: 17-19 October. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549 USA. 21 p. Unpublished manuscript.
• ***Summary:*** Contents: 3-page program titled "Incoming

Soybean Technical Mission." Oct. 17. Talk with Fred Brandenburg, executive director of OSGMB about food-grade Ontario soybeans exported to Asia. Canada is working to increase its sale of food-grade soybeans to Asia. Even though these soybeans are more expensive, they are of better quality and thus preferred. They are also very clean, since soyfoods makers want soybeans with little or no foreign matter. Most are not sold identity preserved, but they are large seeded, white hilum beans. Fred speaks of "crusher beans" and "food beans."

Oct. 18. Visit to Harrow Research Station, run by the Canadian federal government. (1) Talk by Michael Loh: Canada has 72% of the Singapore soybean market, 52% of the Hong Kong market, and 14% of the Malaysia market for soybeans imported for all purposes. Ontario's goal is to double exports by the year 2000. Their strategy is selling value-added products to niche markets. Food-grade soybeans now being developed in Japan include Enrei, Toyo Suzu, Toyo Masari, Otsura, and Kita Musume. (2) Talk by William Shurtleff on "Breeding Soybeans for Food Uses." (3) Presentation by Doug Jessop of the Food Processing Lab. at Harrow. He has been making and studying tofu there since 1983, and on a regular basis since 1984. He shows us his process, using lab equipment that cost about $15,000 not including the Instron system that measures texture. (4) Talk with transparencies by Dr. Dick Buzzell on breeding soybeans to make tofu. Harovinton gives the best tofu yield of all the varieties developed in Canada. A soyfoods maker can either contract with farmers in advance to have soybeans grown for them, or buy the soybeans from traders after they are harvested. To take optimum advantage of a soybean for making tofu, you must know the protein content then add the appropriate amount of water. The more protein in the bean, the more water you must add to get the highest yield. Identity preservation (IP) costs more. The yields will be lower and you must contract for it in advance; a problem is how to deliver the beans year-round to the end user. (4) Talk by Dr. Ma of Central Food and Animal Research. His specialty is vegetable protein. He is collaborating with ProSoya to make soy protein isolates from soymilk since Russia wants to make its own isolates. The soybeans with the highest protein content (on a dry weight basis) are BARC-6 53.4%, Harovinton 45.5%, Enrei 45.0%. One Japanese mutant soybean has none of the three types of lipoxygenase. Lines that lack A-4 protein give firmer tofu. In isolines, everything is the same except for one trait.

Oct. 19. (1) Visit to OSGMB with Fred Brandenburg to hear presentation, see facilities and collect documents. It takes more solar energy to lay down oil in a soybean than protein. Thus after a hot, dry summer, Canadian soybeans contain more oil. Soybeans in hot, tropical countries near the equator also generally contain more oil. In 1985 Canada became a net exporter of soybeans. The cost of producing soybeans in Canada is about the same as in the USA, but the U.S. often ships full vessels of soybeans and is near oceans, whereas Ontario often ships containers (20 or 40 tons), either out the St. Lawrence Seaway or down the Mississippi River. Some agrochemicals that are legal in America are not legal in Canada. All agrochemicals must be licensed, as must some farmers. Mr. Goh says that Chinese believe white hilum soybeans contain more protein than other soybeans. (2) Visit to Canadian Grain Commission to learn how Canada inspects and exports soybeans. The closest that a full seagoing vessel can get to Ontario is Montreal (Quebec)–the last deep-water port up the St. Lawrence Seaway. In Canada, dockage (both big and tiny foreign matter) is removed from soybeans before foreign material is calculated. This makes Canadian soybean much cleaner than those from the USA. Address: Lafayette, California. Phone: 510-283-2991.

6681. **Product Name:** UltraSoy (Soymilk, Non-Aseptic) [Original, or Vanilla].
Manufacturer's Name: Ultra Beverages.
Manufacturer's Address: 4015 Cherry St., Cincinnati, OH 45223. Phone: 1-800-514-3683.
Date of Introduction: 1994. October.
Ingredients: Purified water, whole soybeans, brown rice, oat bran, malted cereal extract, tricalcium phosphate, sea salt, vitamin A palmitate, vitamin D-2.
Wt/Vol., Packaging, Price: ½ pint, quart, and half gallon. Recommended retail: $1.29 to $1.59 per quart, or $2.89 per ½ gallon.
How Stored: Refrigerated. Dated 60 days from pack date at 36-42ºF.
Nutrition: Fat: 1%.
New Product–Documentation: Ad (1/3 page, black-and-white) in Natural Foods Merchandiser. 1994. Dec. p. 20. "A refreshing new approach to soymilk. UltraSoy. In your dairy case. Made with brown rice & oat bran. Fortified with vitamins A & D and calcium. Low temperature pasteurization [less than 180ºF for 15 seconds] for a refreshing flavor unlike aseptic products. Preferred in taste tests by 75% over leading brands. 21 day shelf life. 7 days after opening. Distributor inquiries welcome." A photo shows 3 sizes of cartons.

Talk with Bill Bolduc, owner of Ultra Beverages. 1995. Jan. 23. He spent an entire year developing this product, which was introduced at the Natural Products Expo at Baltimore in Sept. 1994, and first sold commercially on 1 Oct. 1994 to Alberts. The product has a shelf life of 21 days if stored at 35ºF, the recommended temperature. The secret is an extremely sanitary, clean manufacturing plant. The products is sold at a few Fresh Fields stores and they are about to get into the Whole Foods chain. They plan to have a booth at the NFM show in Anaheim and they will try for distribution on the West Coast. The product is now often sold on special at $0.99 per quart. The recommended retail price is $1.29-1.49/quart. The oat bran acts as a stabilizer and antioxidant. He still packs for Westbrae and produces

some of Westbrae's soymilk. In consumer taste tests in the Dayton, Ohio, area, when UltraSoy (original flavor with low temperature pasteurization) was compared with Edensoy and Westsoy, 75% of the participants said they preferred UltraSoy. Bill is thinking about introducing a product with high temperature pasteurization so he can get a longer shelf life and wider distribution–even though that means a loss of flavor. Bill presently owns 92% of the shares in Ultra Beverages; organic farmers own the other 8% for which they paid $82,500. Now Bill is looking for additional capital.

Product specifications and description sent by Peggy A. Maus of Ultra Beverages. 1995. Feb. 2.

6682. Redmond, Tim. 1994. Soyfoods Association of America had a booth at the American Dietetics Association (ADA) annual convention (Interview). *SoyaScan Notes.* Nov. 2. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The annual national 3-day ADA convention, held this year in Orlando, Florida, and was attended by 9,000 registered dietitians, nutritionists, and food service operators. Two panel discussions on soyfoods were held. At the first session, Mark Messina, PhD, and Anne Patterson, R.D., gave excellent speeches on "Soyfoods in Prevention of Chronic Disease" to an audience of about 650 people in a large room at the convention. The next day there was standing room only when Dr. Stephen Barnes, Dr. James Anderson, and Dr. George Blackburn spoke on "Challenging paradigms: The case for a plant-based diet."

Many dietitians came to the Soyfoods Association booth the next day and seemed very interested in information about soyfoods. "SAA displayed a wide range of soyfoods made by member companies, along with product brochures, and sampled soy hot dogs and soymilk. SAA distributed 2,000 Soyfoods Information Kits which also contained coupons and information about SAA members' products." Those in the soyfoods industry who attended the show included Tim, Michelle Edwards (of SAA) and her new husband, and Rick McKelvey from Lightlife. Ginny Messina staffed the PCRM booth, and the Vegetarian Resource Group also had a booth. A company named Omaha Steaks (whose main product is mail-order frozen steaks) had only one product there–their soyburger. Address: Vice President of Marketing and Sales, American Soy Products, Inc., 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

6683. Morano, Jim. 1994. The patent for making rice syrup owned by California Natural Products may not be valid because of prior art (Interview). *SoyaScan Notes.* Nov. 11. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jim has a PhD in food science from Rutgers University, as well as an MBA and a Master's degree in philosophy from Rutgers. His business, Innovative Sweeteners, manufactures organic malt extract, sweet sorghum syrup, and corn syrup from grits. He wants to start making rice syrup using commercial enzymes, he has found a customer for this product, and he has done considerable research on the process. He was recently told by Pam Sander of Zumbro, Inc., that her company has started to make rice syrup using commercial enzymes. They were challenged by California Natural Products (CNP, which has two patents on the process) but CNP dropped their challenge and essentially backed down [Note: Not correct; see interview with Pam Sander 16 Nov. 1994].

He has also talked with Tony Plotkin of Grainaissance, Bob Kennedy of Chico-San, the man who developed Kennedy's enzyme process for making rice syrup, and several men from H.J. Heinz who were closely involved in the purchase of Chico-San. Jim knows the Heinz and many people who work there. Chico-San once made rice syrup in California. [Note: Chico-San started to make rice syrup (*amé*) in 1972. A fire in 1972 destroyed the Chico-San plant located at Chico, California, and set back the company's marketing efforts 5 years]. Originally they made it using the traditional koji method, but then in about 1974 Kennedy decided to switch to using commercial enzymes because of the difficulty in using koji. Over a period of time, Kennedy had three plants in California for making rice syrup; Jim thinks the first one burned down. He had to move his operations to a new third plant when sales of Rice Cakes started to take off.

In 1974 a man named Carl Abbot, a very smart technical person, was loaned to Chico-San by a local nut company. The owner of the nut company owned a portion of Chico-San at the time. He looked at the koji enzymes, which were basically fungal alpha amylases, and he found several companies that sold those enzymes, as extracts of the *Aspergillus oryzae* in koji. By choosing alpha amylase as the main enzyme, he kept the high level of maltose in Chico-San's new rice syrup made with enzymes. Then he added another enzyme, a high-temperature alpha amylase that helped to liquefy the rice at very high temperatures. So in 1974-76 Carl developed the procedures and enzymes to switch from koji conversion to enzymatic conversion.

After a while, Chico-San's rice cake business began to grow so fast that the rice syrup business became a nuisance. He had to concentrate on making rice cakes, so Peter Milbury found CNP, and Chico-San contracted with CNP to manufacture their rice syrup, and guaranteed to buy and certain minimum amount each month. CNP could not sell this rice syrup to any else, and Chico-San kept ownership of the process. At that time, Chico-San taught CNP how to make rice syrup using enzymes.

In 1984 the rice cakes were selling so fast that Bob Kennedy had the opportunity to sell Chico-San to H.J. Heinz. The man who was mainly responsible for evaluating then buying Chico-San, Ken Smialek (pronounced SMAI-lek), is now the director of H.J. Heinz's operations in Australia. Working closely with him was Jim Fox, a technical expert,

who no longer works with Heinz. He lives in Indiana and works as a private consultant. Jim has talked at length with Jim Fox about Chico-San Rice Syrup. Jim's attorney have told him that if he were to make rice syrup using enzymes, CNP would probably not be able to win a legal challenge.

Heinz bought Chico-San mainly for their rice cake; at first they couldn't decide what to do with the rice syrup business. Jim Fox went to California, talked with Cheryl Mitchell of CNP, and explained that rice syrup was not of much use in the regular food industry because it was not sweet enough. She said that she knew how to make it sweeter (she was probably referring to the use of glucosidases or gluco-amylases to develop glucose) but Bob Kennedy never wanted any glucose in his products because he felt that the natural/health foods industry would not be attracted to such a product since consumption of the glucose by a diabetic could stimulate his or her body's production of insulin which could lead to insulin shock.

When Heinz bought Chico-San they automatically became responsible for all of Chico-San's contractual obligations–including the one to purchase a certain amount of rice syrup from CNP each month. So Heinz said that if CNP would relieve Heinz of its obligation to buy rice syrup, Heinz would give CNP in exchange all rights to make and sell rice syrup. Kennedy now feels he made a big mistake by selling the rights to Rice Syrup to Heinz–something they never really wanted.

CNP was issued the first rice syrup patent in May 1988. But 3 months earlier, in February 1988, William Shurtleff interviewed the Mitchell's about their rice syrup. Pat said: "We did not want to come out with another Grainaissance type product. We wanted a really fine tasting product. Grainaissance has what we consider a lot of negative characteristics, such as a glucose bight. Apparently he [Tony Plotkin, owner of Grainaissance] is using some type of glucose enzyme. Some people like things very sweet." Jim notes that if he can show that Tony was using a glucose-generating enzyme prior to the filing of the first CNP patent, the CNP patent is null and void–because of prior art. Jim has asked Tony about this, but he is unable to discuss it because of his agreement with CNP. But if CNP were to take Jim to court over making rice syrup with enzymes, Jim would simply ask his attorney to depose Tony, who would be required by law to tell the truth–despite his agreement with CNP.

Jim holds numerous patents and he has found by long experience that avoiding an existing patent is five times more difficult than writing a novel patent. He has spent more time researching prior art and ferreting around than he would have if he had written the patent himself. Address: PhD, owner of Innovative Sweeteners, 1 Kingsbridge Road, Somerset, New Jersey 08873. Phone: 908-545-5544.

6684. Cloud, Jon. 1994. Re: Work with organic farming in Canada. Letters to William Shurtleff at Soyfoods Center, Nov. 14 and Dec. 27–in reply to inquiry. 2 p. and 1 p. Typed, with signature on letterhead.

• ***Summary:*** To the best of John's knowledge, the first soybeans grown organically in Canada (after 1960) were produced in 1974 in Wainfleet, Ontario, under contract with John. They started growing organically because John was willing to "issue them contracts guaranteeing floor prices and ready sales." "Through extensive field work with these and other growers, the quality and field yield of organic soybeans have steadily increased." John now works in a cooperative arrangement with W.G. Thompson & Sons Ltd. in Blenhein, Ontario, Canada. This arrangement "allows us to secure soybeans at harvest, clean them, and store them in facilities that maintain that quality. I'm still training farmers in organic methods."

"I'm no longer at Soy City Foods. I sold my interest there on 1 Jan. 1994 and now I am gratefully involved in taking the industry to its next level of expansion with W.G. Thompson & Sons.

"I began working with Thompson in May 1994. We have a partnership where they are responsible for marketing the complete line of organic commodities. My responsibility is the operational grower / production side of the business. I train farmers in growing techniques so that the organic acreage can be greatly expanded.

"Presently we have about 295 growers on our mailing list. Approximately 50% of these growers produce organic soybeans, and about 40-50 of them produce them in any one year. However many of these growers have limited soybean sales due to their dairy operations and/or position in the 7-year crop rotation. In Ontario there are over 1,500 farmers growing crops organically but mostly on mixed farms [with non-organic crops]. Probably no more than 60-70 of these grow soybeans organically. Due to crop rotations, the acreage in organic soybeans fluctuates dramatically from year to year; anywhere from 1,000 to 2,500 acres of organic soybeans would be under production in any given year. This means that the bulk of their commodities are going for beef and dairy operations. About one fourth of the 1,500 are cash croppers. The number of farmers has not changed appreciably in the past four years but the size of the farms has. The smaller farms have opted for market garden operations while the larger farms are more efficient at cash cropping–things like soybeans, wheat, and spelt.

"At present we market a full line of organic commodities including soybeans which we ship globally. Other organic crops include spelt, soft white winter wheat, hard red spring wheat, rye, buckwheat, barley, corn, and sunflowers. When you take into consideration that soybeans constitute only one of the commodities in the rotation, you can see that the tonnage is greatly expanded by handling all of the commodities. It is our hope that we will be able to move quickly 4,000 to 5,000 acres of soybeans. The vast majority

of our current soybeans are high protein for tofu or soymilk.

"Ontario sells few organic soybeans to East Asia because the bulk of our production has historically been shipped to Europe. That has changed this year with Japan receiving its first shipments. Other Pacific Rim countries started receiving minimal amounts of organic soybeans in 1992 and 1993.

"Although I was forced to leave the Ontario Oil Protein Seed Crop Committee because of excessive work load, I still sit as an ad hoc member of that committee in a technical assistance capacity to the plant breeders in designing higher quality soybeans. My two latest projects focus on soluble protein increases and elimination of trypsin inhibitors in soybeans."

John encloses a leaflet titled "Training in organic production techniques: Workshop schedule for the winter of 1994-1995." There are two 4-day workshops each month, one in Blenheim and one in Toronto, Ontario. Each workshop costs $25.

Update: 1995 May 17. Acreage of organic soybeans in Ontario is up about 300% over last year and acreage for all organically grown crops in Ontario is up about 100%. John contracts 75% or more of the organic acreage in Ontario. One crop that is rapidly expanding is spelt. It has a better flavor and protein content than typical wheat, and it lacks one of the glutens to which some people are allergic.

Update: 1999 March 20. Talk with an associate of W.G. Thompson. Jon Cloud now has a very bad reputation with at least one manager at W.G. Thompson. According to this manager, Cloud misrepresented his relationship with the company and did some unscrupulous things, then disappeared leaving some unpaid debts. Address: Cloud Mountain Inc., 342 Indian Rd. Cres., Toronto, ONT M6P 2H1 Canada. Phone: (416) 762-0940.

6685. Sander, Pamela A. 1994. Litigation between Zumbro, Inc. and California Natural Products concerning patents on rice milk (Interview). *SoyaScan Notes.* Nov. 16. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Zumbro has begun making a hydrolyzed rice product. California Natural Products (CNP) began threatening Zumbro plus different customers and brokers saying that they would sue Zumbro, and then they would sue the customers and brokers if they bought this rice product from CNP, since Zumbro was violating CNP's patents. Zumbro told CNP many times that they were not violating CNP's patents, but though Zumbro tried, they couldn't come to an agreement. So Zumbro sued CNP in the Minneapolis circuit court in Minnesota, in order to resolve the problem and to get a summary judgment that Zumbro was not violating CNP's patents, that the CNP patents were not valid, and that CNP was interfering with Zumbro's business. The two companies fought over this matter for about a year in court. "CNP fought the entire time to get the case dismissed. In the end CNP did get the case dismissed in Sept. 1994 on the grounds that they do not do business in Minnesota. Now they could conceivably sue us in California, but I feel fairly certain they won't, because they didn't ask for the case to be transferred to California. They fought so hard to have the case dismissed that I think they don't want this to come out."

During the case Zumbro sent CNP considerable information on amazake, rice syrup, and related subjects obtained in a search of the SoyaScan database. Zumbro also interviewed a number of people mentioned in that search, including Bob Kennedy, Peter Milbury, Joel Wollner, etc.–all of whom said that this process was prior art, that Chico-San had taught the basic process to CNP, and that they would testify as such. Zumbro also sent information obtained in these interviews to CNP. "We told CNP that this enzyme process predates you, and we can document that and we have witnesses who will testify. We want to discuss this in court. We tried to come to some agreement with them before the suit, and even during the suit. Let's agree on the amount of glucose we can have in our rice product. Your patent says 'about 5% or more of glucose,' so let's go to 4½%. But they said 'about 5% also includes 3%.' They would let us have up to 3% glucose, but no more. They argue that amazake contained very low glucose and that their invention was to have higher glucose. But we have tested the glucose levels on commercial amazake products and they have high glucose, like 60%. So we feel it is incorrect to say that typical amazake contains less than 5% glucose."

Although CNP won the suit (arguing that they could not be sued in Minnesota) and did not back down, Pam feels that CNP would not like the matter to become widely known. "I don't expect to hear from them again about this matter. I think we're done, and I don't think they are going to sue us. I think there are so many people coming out with similar rice products, that they will not be able to sue everybody. Also, a company named Habib Arkady makes rice syrup in Pakistan, and have for many years. Gaffar Habib, the president, says the CNP patents are ridiculous. He went around with them on this several years ago and they finally backed down, and have not bothered him since."

Update. 1997. Jan. 16. Pam Sander left Zumbro in spring or summer of 1996 to start her own company, The Big Map Company, which makes large maps. Phone: 507-775-7130. She is no longer in the food business. Address: Vice President R&D, Zumbro, Inc., Route 1, Box 83, Hayfield, Minnesota 55940. Phone: 507-365-8400.

6686. Gupta, Rajendra ("Raj") P.; Daller, Frank. 1994. Update on ProSoya Inc. and the SoyaCow Centre (Interview). *SoyaScan Notes.* Nov. 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** ProSoya Inc. (named ProSoya Foods International until late 1993) is the company that developed and owns SoyaCow, which is a machine that makes soymilk.

The name SoyaCow was intended originally for smaller machines for developing countries, but now it is used also for the larger, more expensive systems.

In 1985 ProSoya had no manufacturing capability, so Raj talked with APV about developing equipment for ProSoya. APV did some research and development work for ProSoya but no money changed hands. ProSoya was considering giving APV a license to manufacture the machine, but APV found eventually that there are not many companies in the soyfoods market that are big enough to afford APV equipment, and most who could afford a large system might buy it from STS, which APV acquired in 1986. STS also looked at making the SoyaCow, but decided that the market was too small. APV has never owned ProSoya, and ProSoya never licensed any technology or equipment to APV.

The hard part was finding the right people. Once ProSoya found the right people, they chipped in some money, got some bank financing, and some small money from some shareholders. Only 15% of the company is owned by outsiders. So ProSoya is a corporation with about 8 shareholders, of which 4 are principal shareholders; the rest are relatives, accountants, etc. Raj still has the controlling interest. Frank Daller has raised all the outside capital within the last 1-2 years but most of it came in early in 1994. This has allowed ProSoya to construct a building where they do final manual assembly of SoyaCows, to publish a newsletter, and to market its SoyaCow very effectively. Most of the new funds have been used to build this assembly building, which does not have an assembly line and does not manufacture any of the SoyaCow's component 200 parts; they are custom fabricated by various other companies. ProSoya has 15-30 SoyaCows made at a time–built to order; each takes only 2-3 hours to assemble, and they inventory only a few at a time. In the building there is also a pilot plant, where potential customers can see how the SoyaCow works and taste the finished product.

ProSoya has not gone to any large companies for capital, and has not had to made any compromises as to its goals. In fact, they have been very selective about bringing in capital, desiring only investors who share Raj and Frank's views and goals. Frank invested money, and they have brought in outside money from only one other significant source, which is their West Coast licensee. This is a new entity in Vancouver, British Columbia, named Pacific ProSoya, which has acquired the license to produce soymilk in bulk, using ProSoya technology, for the western part of Canada and the northwest USA. The milk, made in a plant which ProSoya is building for them, will be sold to food processors. It is sort of joint venture and licensing deal. ProSoya holds equity in their company and they hold equity on ProSoya. The relationship began about 2 months ago, though they have been discussing this for the last 9 months.

Another new development is that ProSoya in Ottawa is starting to make bulk soymilk for food processors. They will be serving cow's milk dairies which will be test marketing Pure-Pak cartons of soymilk, as well as an ice cream company and a yogurt company and a Tetra Pack filler.

ProSoya is aggressively looking for a company to manufacture their SoyaCow assembly-line style in East Asia (especially in China, Taiwan, or Korea) for about half the price they can make it for in Canada. They see a large potential market in China and throughout the less developed countries if they can reduce the price to end users.

How much does a SoyaCow cost? The SC-20, the smallest machine which makes 20 liters of soymilk per batch, is extremely compact, uses a patented airless cold-grind process to produce a very good-tasting soymilk, and retails for US$7,000. The SC-100, which can produces 100 liters per batch and can make up to 400 to 500 liters/hour, retails for a minimum of US$175,000, not including the boiler, chiller, and clean-in-place system. They are about to introduce a continuous-process machine.

People learn about the SoyaCow mostly through word of mouth and from the *SoyaCow Newsletter,* which is written mostly by Raj and Frank. It goes out to several hundred people.

The Russians have translated Mark Messina's book, *The Simple Soybean and Your Health* into Russian. They want to print 10,000 copies. Address: The SoyaCow Centre, 9 Veery Lane, Ottawa, ONT, K1J 7W7, Canada. Phone: 613-745-9115.

6687. Nissenbaum, Robert. 1994. The early work of Imagine Foods with Chico-San, California Natural Products, and enzymes in making Rice Dream. Part I (Interview). *SoyaScan Notes.* Nov. 23. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In March 1983 Robert started making amazake, using the traditional koji method, at a company named Imagine Foods, Inc., Moniteau Farm, Jamestown, Missouri. As an additional sweetener he added Yinnies syrup, a rice-based syrup made by Chico-San in Chico, California. Robert was also buying organically-grown rice from Chico-San. Chico-San bought this rice mostly from Mike Polit of Polit Farms in Maxwell, California. To this day, Robert buys all his organic rice from Mike Polit. The story of why Chico-San left Wehah Farms in the early 1970s is a story of its own. Paul Hawken of Erewhon went to Lundberg and asked to buy their organic brown rice direct, rather than going through Chico-San. Note: The 1975 Erewhon catalog lists Wehah Farm as its supplier of organic and non-organic brown rice. Peter Milbury claims that Wehah broke its exclusive contract with Chico-San. From that point, Chico-San became very upset at Wehah Farm, so Chico-San developed new sources, primarily Polit Farm. Then Mike Polit started developing other organic farmers in the area. The Lundberg brothers of Wehah did the same thing; they do not grow all the organic

rice they sell. Polit and Lundberg became arch competitors.

In June 1984 Imagine Foods launched Rice Dream, a non-dairy frozen dessert, based on their traditional amazake (made from koji) and sold in hard packs (not soft serve). They sold it in the Midwest and the product seemed to have excellent potential. Robert had become good friends with Peter Milbury, who was Chico-San's operations manager. Robert told Peter that he would have to do something to expand his production of amazake. At the time Chico-San was selling very little rice syrup. Robert said: "Whatever you are doing to make Yinnies syrup, we could probably do something similar to make a product like our amazake." They talked about this for several months.

In early June of 1984 Imagine Foods took Rice Dream to its first trade show in Atlanta, Georgia. They wanted to introduce the product nationally. At that show, every major distributor in America wanted to sell Rice Dream. But Robert could not supply this huge new demand from his little plant in Missouri that used a traditional koji process. Peter Milbury was at the same show, as was Joel Wollner, who was doing some consulting work for Chico-San, though he was not employed by Chico-San. Wollner was involved with Mountain Ark, a macrobiotic trading company and community in Fayetteville, Arkansas, a rice farming center. Bob Kennedy was thinking of putting up the money to start making more macrobiotic products in America rather than importing them from Japan, and he was thinking of making these products in Fayetteville. In about May, Joel had learned about Kennedy's ideas from Peter Milbury. So Joel visited Robert's booth at the show in Atlanta, and he and Robert started talking about Fayetteville. Peter invited Robert to visit Chico-San in California after the show; he said they could talk about new possibilities for cooperation in Fayetteville or California or Missouri. Neither Chico-San or Nissenbaum knew anything about California Natural Products (CNP) at this time.

So in late June of 1984 Robert visited Chico-San see how they made the Yinnies syrup (rice syrup) that he used in his amazake, and to see why their quality was so inconsistent. He met Bob Kennedy for the first time. He was taken to a a building that was "like a big garage" at the end of an alley in Chico. It was in a different part of town from Chico-San's rice cake plant and other operations. "It was not a pretty sight. They had almost no control over what they were doing. Technically, the operation was a disaster. They just didn't know what they were doing. I was really surprised to see the way it was produced." Robert recalls visiting this plant twice. Chico-San wasn't selling much rice syrup in part because of the inconsistent quality, and in part because they didn't have the time or money to invest in improving the rice syrup process–since all their resources were going into making rice cakes. "We got a different product every time we received a shipment." Robert has heard of Carl Abbot (the man who developed Chico-San's process using commercial enzymes), but he never met him.

For the next several months Robert, Peter Milbury, and Bob Kennedy discussed possible ways of working together so that Imagine Foods could expand its production of amazake. One idea that looked promising was Imagine Foods making its amazake and Chico-San making its Yinnies rice syrup at the same plant (which they would construct, with Chico-San providing most of the funding) in Fayetteville, Arkansas. Then one day Robert got a call from Peter Milbury, who said that all plans (including those involving Fayetteville) would have to be put on hold because Bob Kennedy had received an offer to buy the company. At about that time Quaker Oats bought Arden, which was the only other maker of rice cakes in America and thus Chico-San's biggest competitor. That is what precipitated the sale of Chico-San to Heinz. Peter was concerned about his job. Robert told Peter he could not wait, but as asked Peter to keep him posted of new developments. A few days later Peter called Robert again, and said, "There is a couple name Pat and Cheryl Mitchell of California Natural Products (CNP), who I have met at natural food trade shows. I know that they have food processing equipment that they are not using all of the time. Would you like me to call them." Robert said "yes." So Peter talked with them and called Robert back to say that Pat and Cheryl were not interested. But after Pat and Cheryl thought about the matter for a few days, they called Peter back and said, "Let's talk about it."

At the time Pat was basically a big produce farmer in central California and Cheryl had a PhD in food chemistry. Pat's father, Bill Mitchell, who worked for General Foods, had been one of America's foremost food scientists and developers of food products. He had roughly 50 food patents, and had been in on the original Jello and pudding patents, and in the development of Cool Whip. He got Pat and Cheryl interested in making various food products. Bill was interested in inulin, which was a pharmaceutical product used to treat diabetics–and was the main product used before the synthesis of insulin in 1920. All U.S. supplies were imported from Israel and it was very expensive. Bill encouraged Pat to grow the dahlia plant from which inulin was extracted, then Bill would try to figure out a way to extract the inulin less expensively using a sort of malting process. Almost by accident, while making inulin into a syrup, Bill and Cheryl found that if they dried the syrup the resulting product had a flavor like grain coffee. So they decided to approach the natural foods industry to see if they could sell this grain coffee. They started going to natural foods trade shows and Peter Milbury met them at one of these shows. At that time, CNP was not using enzymes in food processing operations, but Cheryl had been a consultant for General Foods and other food companies and she was very familiar with enzymes. Continued. Address: President, Imagine Foods Inc., 350 Cambridge Ave., Suite 350 Palo Alto, California 94306. Phone: 415-327-1444.

6688. Nissenbaum, Robert. 1994. The early work of Imagine Foods with Chico-San, California Natural Products, and enzymes in making Rice Dream. Part II (Interview). *SoyaScan Notes.* Nov. 23. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued: Robert is not sure whether he met Pat and Cheryl Mitchell before or after they first visited Chico-San in the summer of 1984. When they first visited Chico-San's plant that made rice syrup in Chico, she was appalled. But she knew about enzyme technology and she thought that their company, California Natural Products (CNP) in Manteca, California, could make the product. Peter Milbury felt that Rice Dream (a non-dairy ice cream made from amazake) had a great deal of potential and he convinced Bob Kennedy that transferring the production of Yinnies rice syrup to CNP was a good idea. Nobody knew what would come of Heinz's offer to buy Chico-San, but after Pat & Cheryl talked with Bob Kennedy he "agreed that the Yinnies syrup operation was a mess" and decided to make the transfer to CNP. Note that Chico-San never made Rice Dream base.

In 1984 (before Heinz made its offer to buy Chico-San) Pat and Cheryl moved the rice syrup equipment from Chico to CNP in Manteca. They were still basically in the farming business and their entire food processing operation was a very small business they did as a "side business"–since Pat was looking for a way to get out of farming. Robert does not know if the Mitchells bought Chico-San's rice syrup equipment or not, but much of it turned out to be worthless and he is quite sure that if any money was involved in the transaction, it was not much. CNP signed a contract with Chico-San stating that Chico-San would buy a minimum amount of Yinnies rice syrup from CNP each month. CNP only got into this business of processing rice because Rice Dream, made by Imagine Foods, looked like it had real potential. Robert went to California and met Pat and Cheryl, who were very skeptical about Chico-San and rice syrup. But the three of them soon got along very well together, and Robert soon convinced them to get involved because of Rice Dream's potential, based on promises from big natural foods distributors. Robert had to buy all of his Rice Dream base, made by CNP, through Chico-San, and he agreed to buy a certain minimum amount of this base each month. At the time, Robert also told the Mitchells that he was making a beverage product, traditional amazake (Robert made the koji by hand), and that he wanted to find a way to produce it on a much larger scale. He knew that he would not be able to continue making it in the traditional way as volume expanded. "I knew there must be some way to make this rice beverage without using koji. [Note: Robert prefers the term "rice beverage" to "rice drink]. I spent a lot of time talking with Betty Stechmeyer of GEM Cultures (from whom we were already buying our cultures) about the possibility of inoculating the rice directly with koji spores, without growing the mold on it first. We ran many experiments. At the time I was not aware that commercial enzymes were the answer to our problem. When I got involved with Chico-San I asked them how they made rice syrup, but they declined to reveal their secret (they were using commercial enzymes, but they had 'koji' on their labels and in their catalogs). I began to suspect they were not using koji."

When Kennedy sold Chico-San to Heinz in Nov. 1984, Heinz automatically took over Chico-San's contract and obligations with CNP, and they had to send CNP a check every month–which Heinz disliked. Imagine Foods was required to buy its minimum amounts of Rice Dream base through Heinz. To Heinz, Rice Dream looked like a minuscule product. During this time, Pat, Cheryl and Robert were developing a very close personal and business relationship. Together (and without Bob Kennedy) they developed a completely new and innovative process for making Rice Dream base using commercial enzymes. "We started literally by hand, from scratch, using buckets, trying to make the new Rice Dream base at CNP–even before Chico-San's plant was set up in Manteca. I spent days working on the process during the fall of 1984. I didn't know if an enzyme method would work. I had a sense for the product and the Mitchells had some technical expertise I lacked. It was a good fit."

On 16 November 1984 Bob Kennedy sold Chico-San to Heinz. At this time, the experiments that Robert and the Mitchells were conducting at CNP were looking more and more promising. In late 1984 Robert moved Imagine Foods from Jamestown, Missouri, to Fayetteville, Arkansas. In about December 1984 the Rice Dream base was good enough that CNP began sending it to a dairy plant in Palo Alto, California, for experiments in making this new base into Rice Dream non-dairy frozen dessert. In the meantime, Imagine Foods was still making Rice Dream in Missouri or Arkansas using the traditional koji process.

In January 1985 the new Rice Dream non-dairy frozen dessert was launched commercially, in hard-pack pints in seven flavors: Vanilla, carob, strawberry, lemon, carob chip, orange, and carob almond. The base was made for Imagine Foods, using the new enzyme process, by CNP, and shipped in a large stainless steel tanker The actual frozen dessert was made by Peninsula Creamery at 900 High Street, in Palo Alto. Koji was no longer used. The use of commercial enzymes increased the glucose content of the product, obviating the use of maple syrup. Robert still lived in Fayetteville (probably) but he traveled frequently to Palo Alto.

Robert, Pat and Cheryl all hoped to have Heinz out of the picture as soon as possible, so they all acted as a sort of thorn in Heinz's side. Within about 6 months after Heinz bought Chico-San almost everyone who had formerly worked for Chico-San (including Kennedy and Milbury)

had left Heinz. The only person who stayed with Heinz a little longer was Bob Kennedy's daughter, Gail. Heinz eventually closed down the offices in Chico. Heinz soon realized that though they had a contract to buy rice syrup from CNP, they were hardly selling any. Sales of Rice Dream base were small in Heinz's eyes. So Heinz had to pay for a product they did not want. Pat Mitchell, who is a relentless negotiator, finally convinced Heinz to get out of the rice syrup business because their involvement made no sense to anyone. Continued. Address: President, Imagine Foods Inc., 350 Cambridge Ave., Suite 350 Palo Alto, California 94306. Phone: 415-327-1444.

6689. Nissenbaum, Robert. 1994. The early work of Imagine Foods with Chico-San, California Natural Products, and enzymes in making Rice Dream. Part III (Interview). *SoyaScan Notes.* Nov. 23. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Robert has about four letters in his "nostalgia" file documenting key events relating to Heinz and CNP from the summer of 1985 on. A letter dated 31 July 1985 from Pat Mitchell to Joe Ward (a major figure at Heinz) summarizes the problems that exist between CNP and Heinz as CNP understands them. Representatives of the two companies met at CNP on 30 July 1985. Heinz had a contractual obligation to CNP for a specified amount of money, of which a certain amount is still due and which Heinz wishes to terminate. "Because Heinz has not actively marketed the rice syrup and has no apparent intention of doing so in the immediate future, CNP would be agreeable to the proposed termination of the agreement. CNP's commitment to mere contractual minimums as opposed to twice the minimums as originally promised by Chico-San has caused a financial burden to CNP. CNP would be agreeable to the purchase by Heinz of a right-of-refusal on future rice syrup business prospects exclusive of those customers already provided on a list by CNP to Heinz." Many natural foods companies wanted to buy rice syrup from CNP because the quality was so much better. But CNP felt that Heinz was doing nothing to develop this market, so they didn't want to pay Heinz for product sold to customers that CNP had found and developed. "It is understood by Heinz that upon termination of the agreement with Heinz that CNP will be relying on the Imagine Foods account for a specified number of dollars per week. The only way for CNP to survive economically would be to have the Imagine Foods account. Without the Imagine Foods account, CNP has no choice but to enforce the current contract with Heinz and accept the minimums." In short, Imagine Foods was buying more than its required minimums, whereas Heinz was not. Yet Heinz was trying to have the best of both worlds. They wanted to void their obligations to buy at least a minimum amount of rice syrup from CNP, yet they still wanted to take of a cut of the increasing sales of Rice Dream base to Imagine Foods. "CNP recognizes Robert Nissenbaum of Imagine Foods as having certain rights of inventorship to the process and formula of the amazake developed in conjunction with CNP for Imagine Foods. CNP also recognizes Robert Nissenbaum as having full product rights making a non-dairy ice cream from amazake since he originally approached Chico-San with the concept and product that he was already making. It should be noted that Robert Nissenbaum of Imagine Foods has already indicated his dissatisfaction with regards to the pricing and service structure that is currently being received from Heinz. It is a possibility that Imagine Foods for economic reasons will seek out, within months, the other two companies currently in amazake production to make his formula." Robert felt that he was not getting his money's worth from Heinz; all they were doing was taking a percentage of sales (Robert had to send his payments directly to Heinz rather than CNP) and doing nothing in return. It was just a nightmare. So Robert was threatening to void the contract, which said that things had to be done to the satisfaction of both parties.

A letter dated 9 Aug. 1985 from Marianne McCullough, marketing manager of Chico-San in Pittsburgh, Pennsylvania, written on Chico-San stationery, to Robert Nissenbaum in Fayetteville, Arkansas, states that Chico-San will not pursue negotiations with Imagine Foods for a long-term contract. Agreement in principle has been made with CNP to service Imagine Foods directly, effective date of August 19, 1985, per signed agreement with CNP. In the meantime, Imagine Foods will continue to order through Chico-San's Pittsburgh center.

Within a month or two Heinz was no longer involved with CNP or Imagine Foods. For the first time, Imagine Foods placed its orders directly with CNP and paid its bills to CNP.

In 1986 Robert moved to Palo Alto, taking his company with him. Then in September Imagine Foods moved from 299 California Ave., #305, Palo Alto 94306, to 350 Cambridge Ave., Suite 350, Palo Alto 94306. Address: President, Imagine Foods Inc., 350 Cambridge Ave., Suite 350 Palo Alto, California 94306. Phone: 415-327-1444.

6690. Nissenbaum, Robert. 1994. Imagine Foods, Westbrae, rice drinks, and the pour spout carton (Interview). *SoyaScan Notes.* Nov. 23. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Imagine Foods and Westbrae launched a commercial rice beverage in a pour spout carton at about the same time. Pacific Foods, where Rice Dream (non-dairy beverage) is currently being packed in aseptic Tetra-Brik cartons, made an agreement with Tetra Pak about a year ago to get new filling machinery that will package in a carton that has a pour spout. Pacific Foods was told they would have the second machine in the USA that filled this new carton; Steuben Foods (1150 Maple Road, Elma [near Buffalo], New York 14059) got the first machine. Pacific Foods planned to

be the first rice beverage on the market in the new pour spout container. Ever since Robert began working with Tetra Pak 5 years ago, he has been encouraging them to improve their package. Tetra Pak was spurred to introduce the new package after Combibloc introduced it first.

Westbrae was having their aseptic packaging done by White Knight Packing [in Grand Rapids, Michigan], which is owned by a very large company in Europe [Parmalat]. When Westbrae found out that Pacific Foods would soon be getting equipment to package with a pour spout, Westbrae contacted White Knight, which in turn contacted their parent company saying that Westbrae wanted to get the pour spout packaging as fast as possible. So the president of Parmalat went to Tetra Pak, and since his company was Tetra Pak's biggest customer, he was able to say "I have to have one of these new machines." So Tetra Pak went around the normal channels and got White Knight a new machine very quickly at about the same time that Pacific Foods got theirs. Pacific Foods was very upset about this.

Westbrae's new rice beverage in the pour spout carton was probably on the market in late September 1994, a week or so before Imagine Foods' rice beverage, but Imagine Foods' product was on the market first on the West Coast.

Westbrae's rice beverage is made from rice syrup (made by California Natural Products, CNP, in Manteca, California) and rice starch. Westbrae has been buying rice syrup from CNP for a long time, to use as a sweetener in their soymilk products. [Note: In fact, on a solids basis, Westbrae buys about as much or perhaps even more rice hydrolysates from CNP as Imagine Foods does.] About 7-8 years ago Imagine Foods tried making a product using the same ingredients (from CNP) that Westbrae is making now; but CNP's ingredients are much better now. One reason Robert decided not to use this approach because of the high content of glucose in the product. Address: President, Imagine Foods Inc., 350 Cambridge Ave., Suite 350 Palo Alto, California 94306. Phone: 415-327-1444.

6691. Nissenbaum, Robert. 1994. Imagine Foods' future plans (Interview). *SoyaScan Notes.* Nov. 23. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Imagine Foods has decided to install their own Tetra Pak line at California Natural Products (CNP) so they don't have to ship their rice beverage to Pacific Foods of Oregon to have it packaged. That will cut the cost of making Rice Dream. They now have a really good source of organically grown rice, which they buy directly from the farm, and they do all their own rice milling. It is a really good situation with great efficiency at the CNP plant. Imagine has been planning to do this for a long time since they have developed a very significant international market for this non-dairy beverage–especially in Europe. They are designing an international package. It still makes sense to manufacture the product in one place in the USA–at CNP. Address: President, Imagine Foods Inc., 350 Cambridge Ave., Suite 350 Palo Alto, California 94306. Phone: 415-327-1444.

6692. Lombardi, Joyce. 1994. Re: Growing and using soybeans in Chad. Letter to William Shurtleff at Soyfoods Center, Nov. 24. Thanksgiving. 2 p. Handwritten. [Eng]
• ***Summary:*** "A friend in New York sent me *The Book of Tofu* because I am one of the people sending soybeans to the four directions, as you put it. I am a Peace Corps Volunteer in southern Chad, and just today I returned from the communal field of the local midwives. We have just harvested our first sack (50 kg) of soybeans. The idea of soybeans is catching on slowly in Chad, but quickly in my village of Bissada." She then requests soy recipe books in French or recipes especially developed for Africa.

"In January I will be devoting more time to soybean transformations in the village. Soymilk, soy porridge, soy beignets [fritters] made with okara, and soybean coffee are all I've managed to make here, but more adventurous people have had soybeans in fish sauce, soy snacks, and so on. Unfortunately, soy is expensive here because it is still an unknown crop, but that's changing slowly. The health team is pushing for its nutritional value, and mothers are pretty interested. It's also a good profit-maker for now."

Note: This is the 2nd earliest document seen (Aug. 2009) concerning soybeans in Chad, or the cultivation of soybeans in Chad. Address: U.S. Peace Corps, B.P. 193, Sarh, Chad.

6693. Mercado, Sam. 1994. Re: The Plenty Canada soy program in El Salvador. Letter to Mr. Frank Daller, ProSoya Foods International Inc., 5350 Canatek Road, Ottawa, ONT K1J 9C9 Canada, Nov. 25. 4 p. Typed, with signature on letterhead.
• ***Summary:*** The SoyaCow project is part of Plenty Canada's Integrated Rural Development Program (CIDEP) in El Salvador. An evaluation made by CIDA in March 1994 showed the following achievements: 1. A small soya production has been established in the municipality of Mejicanos. It is equipped with two SoyaCows, each producing more than 130 liters of soymilk a day. More than 500 children in three kindergarten schools receive soymilk and soy ice cream as part of the breakfast program. The okara (solids) is used as a raw material in making tortillas; in the future the okara will also be used in making *pupusas,* a very popular staple food in El Salvador.

2. One person in El Salvador was trained in the operation and maintenance of the SoyaCow. This person trains other Salvadorian trainees. 3. This project has created five permanent and several other part-time jobs in the poor neighborhood of the municipality of Mejicanos. It has also provided the local staff of CIDEP and the child care center hands-on experience in organizing and operating a small

enterprise.

Demonstrations and extension visits, though on a very limited scale, helped make local people aware of the benefits of soyfoods. CIDEP received several requests from women's groups and individuals to help them with training in processing and to set up related small income-generating activities. Address: Central America Program Officer, Plenty Canada, Lanark, ONT Canada K0G 1KO. Phone: (613) 278-2215.

6694. Morano, Jim. 1994. Processing rice with enzymes to make rice hydrolysates, including syrup and rice beverage (Interview). *SoyaScan Notes.* Nov. 25. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Enzymes work best at their optimum conditions, which come from adjusting their pH by adding acids or bases. Natural foods companies didn't want to add acids or bases, so they just processed rice under less than optimum conditions. Jim thinks Tony Plotkin of Grainaissance may have been the first person in the natural food industry to process rice with commercial enzymes–but he can't talk about it. Frank Marero might know some of the details. Apparently Tony and the others (Joel Wollner, Sjon Welters) all knew Miles Laboratories.

The industry will soon be entering a new phase as big companies get involved. Jim is affiliated and working with a company that is much larger than either his company or Zumbro. It is a Fortune 500 company, with $500 million in food sales, that will make cereal syrups and starch hydrolysates (including rice syrups and rice maltodextrins) for Innovative Sweeteners, which retains the exclusive rights to sell these products to the natural/health food industry, and the big company retains the exclusive rights to sell them to the mass market. This big company, which has a plant in Chicago, Illinois, is one of the major manufacturers of malt extracts in the USA. He pays them a contract manufacturing fee, since Innovative Sweeteners is only a product development and marketing company that owns no manufacturing facilities. This big company needs to see a market for at least 5 million pounds of a rice hydrolysate (80 brix extract) before they would be interested in starting to make it. Jim sees an immediate potential market for 2-4 million pounds/year of rice syrup.

Amazake is really a form of rice maltodextrins. Jim is more interested in rice syrup than amazake-type products, that is a rice hydrolysate as a beverage. Zumbro is partly interested in rice syrup solids, but she is mostly interested in amazake type products made with commercial enzymes. Rice maltodextrins may be able to serve as a fat substitute in the food industry. One popular malted cereal syrup, which is 70% corn syrup/hydrolysate and 30% malt, would be excellent as a natural sweetener for soymilks.

All rice hydrolysates typically start at 18-24% solids. A gallon of this base is diluted to make 1½ gallons of rice drink. Amazake exists as a low-solids liquid, that contains 10-15% solids including the oil and rice syrup that is added back to many commercial products. If you concentrate the original hydrolysate to 80% solids, you get rice syrup. For a rice drink or amazake, you can get the desired sweetness either in the basic processing (as is done with Rice Dream beverage) or by adding rice syrup later. Westbrae can't do that because of the CNP patents.

Jim's wife owns Suzanne's Specialties (which used to be named T&A Gourmet), and which started in about 1986 focusing on the gourmet industry. She buys koji (made in the traditional way) and makes rice syrup, which she sells in relatively small quantities (pails and drums) to people in the health food industry. She makes about 500,000 lb/year of koji-converted rice syrup.

Koji is a generalized, non-specific term. It can be made with *Aspergillus oryzae* (which produces sugars mostly in the form of maltose) or with *Aspergillus niger* (which produces sugars mostly in the form of glucose). Amazake made with traditional koji (made with pure culture *Aspergillus oryzae*) would probably contain less than 10% glucose on a solids basis. But any rice drink or syrup made with koji is outside the domain of the CNP patent.

Jim has discussed these matters at length with Ron Roller of Eden Foods. Address: PhD, owner of Innovative Sweeteners, 1 Kingsbridge Road, Somerset, New Jersey 08873. Phone: 908-545-5544.

6695. APV DTD. 1994. DTD 25. Aarhus, Denmark: Danish Turnkey Dairies Ltd. 55 p. 21 x 27 cm. [Eng]

• ***Summary:*** Published on DTD's 25th anniversary, this book tells the story of the company founded on 1 Nov. 1969 by Mr. Jorn B. Jensen. In May 1971 the company signed the world's first contract for a turnkey dairy plant–signaling a new era for the dairy industry.

In 1981 DTD established a new subsidiary company, STS-Soya Technology Systems Ltd., based in Singapore together with DTD's South East Asian regional office. STS developed new technologies for production of a wide range of soy-based products.

1984–STS breaks into the European market with the building of a complete soymilk plant in Germany [for DE-VAU-GE]. Address: 2, Europaplads, P.O. Box 146, DK-8100 Aarhus C, Denmark. Phone: +45 86 12 41 55.

6696. Barnes, Stephen; Kirk, M.; Coward, L. 1994. Isoflavones and their conjugates in soy foods: Extraction conditions and analysis by HPLC-mass spectrometry. *J. of Agricultural and Food Chemistry* 42(11):2466-74. Nov. [16 ref]

• ***Summary:*** HPLC is "high-pressure liquid chromatography." The isoflavone genistein has attracted a great deal of attention because it can serve as an *in vitro* inhibitor of protein tyrosine kinases, many of which form

part of growth factor-stimulated signal transduction cascades in normal and transformed cancer cells.

Discusses: Soymilk, soy protein isolate, toasted soy flour, daidzein, genistein, glycitein. Address: 1. Dep. of Biochemistry; 1-2. UAB Comprehensive Cancer Center Mass Spectrometry Core Facility; 1,3. Dep. of Pharmacology. All: Univ. of Alabama at Birmingham, Birmingham, AL 35294-0019. Phone: (205) 934-7117. Fax: (205) 934-8240.

6697. Imagine Foods, Inc. 1994. Imitation is the highest form of flattery. (But you don't have to settle for it) (Ad). *Natural Foods Merchandiser.* Nov. Insert glued in after p. 26.
• ***Summary:*** The front of this color 8½ by 11 inch insert ad shows a large carton of Rice Dream. On both sides of it are cartons of four imitations, named "Rice This–New" "Rice That–So Incredibly Sweet," "Rice Drink Knock Off–Westward Ho," and "Brand X Rice Syrup Drink." The text begins: "Have you noticed that several soy milk companies have been introducing rice drinks lately" This new enthusiasm for a beverage we pioneered may have something to do with the fact that Rice Dream has become the best selling alternative to milk in the natural food store.* (Footnote: *"Based on a poll of leading natural food distributors). Why? Superior quality and taste. And try as they might, other rice beverages can't duplicate Rice Dream–we have two U.S. patents to guarantee it."

The back of this ad is titled "Rice Dream vs. Westbrae's Rice Drink." A table shows the differences. Westbrae's drink is said to be reconstituted from concentrates. The main ingredient is high glucose rice syrup. It is thickened by adding rice starch and carrageenan. The Westbrae drink contains 50% more fat than Rice Dream.

This ad also appeared in *Vegetarian Times* (Dec. 1994, p. 5; Feb. 1995, p. 3).

Talk with Robert Nissenbaum of Imagine Foods. 1994. Nov. 23. This ad is saying that Rice Dream, including all of its different flavors and varieties (SKUs), is the best-selling brand of milk alternative in U.S. natural food stores nationwide (ahead of Edensoy, which is the best-selling brand of soymilk, including all its different flavors and varieties). It is not saying that more rice milk is sold in U.S. natural food stores than soymilk. Imagine Foods' best-selling single product (SKU or stock-keeping unit) is Rice Dream Original, followed by Rice Dream Vanilla. Many major U.S. distributors have reported to Imagine Foods that these two products are, in many cases by far, the two best-selling products among ALL products of all categories sold by that distributor. In both Mountain People's Warehouse and Nature's Best, which are the two largest western U.S. regional distributors, these two products are the two best-selling single products for both distributors. Likewise in every one of the other large distributors (Tree of Life, Cornucopia, Stow Mills, etc.), Rice Dream is among the top SKUs. Since Tree of Life tends to promote its own brands, Rice Dream products may not be the very top SKUs, but they are very high on the list. Address: Palo Alto, California.

6698. INTSOY. 1994. Soybean processing and utilization. May 17-June 15, 1995. An international training program (Brochure). Urbana, Illinois. 12 panels. Each 22 x 10 cm.
• ***Summary:*** Contents: Basic topics to be presented in the 1995 course: Basic processing concepts, nutrition and functionality, oil extraction, extrusion technology, soymilk and dairy analogs, Oriental soybean foods (tofu, tempeh, etc.), animal feed applications, quality control, global overview of the soybean industry, economics and marketing of soy products. Professional opportunities. Cost and travel information (the course costs $3,900 plus an estimated $1,900 for room, board, and other local living expenses. INTSOY is unable to offer scholarships).

The course time consists of 35% lectures, 45% hands-on exercises, and 20% industry visits. This is the 15th offering of the training program. Some 155 persons from 26 countries have attended the course. Danny Erickson is the training officer in charge. Facilities at the University of Illinois include the largest public university library in the United States, the nation's largest supercomputer complex, and the National Soybean Research Laboratory. Address: International Soybean Program, Univ. of Illinois, 169 Environmental and Agricultural Sciences Building, 1101 West Peabody Drive, Urbana, Illinois 61801. Phone: (217) 333-6422.

6699. **Product Name:** [Rizoleil (Rice Drink)].
Foreign Name: Rizoleil.
Manufacturer's Name: Les Aliments Tarasoy Ltée (Tarasoy Foods Ltd.).
Manufacturer's Address: 3455 Local D rue Isabelle, Brossard, QUE J4Y 2R2, Canada. Phone: 514-659-6586.
Date of Introduction: 1994. November.
Ingredients: Incl rice.
Wt/Vol., Packaging, Price: 1 liter Pure-Pak.
How Stored: Refrigerated.
New Product–Documentation: Talk with Helen Wan, sales manager. 1995. May 26. In Nov. 1994 they introduced *Rizoleil,* a rice drink–which is the company's only product not made from soy. Helen does not know whether the rice drink is made with the traditional koji fermentation process or with enzymes. It is sold fresh, packaged in 1-liter Pure-Pak cartons, with a remarkable 20-day shelf life.

6700. *Soyafoods* (*ASA, Europe*). 1994. EU rules against 'soya milk.' 5(3):1. Autumn.
• ***Summary:*** On June 16 the EU Milk Management Committee, despite opposition from the UK, decided by a vote of 10 to 1 (with Ireland abstaining) that use of the term "soya milk" should be phased out because they consider

that it infringes on the Dairy Designations Regulations (1989/87/EEC). The UK Government opposed the decision because it does not believe that consumers are confused by use of the term. But the UK Government has decided not to appeal the decision. These regulations specify that the term "milk" should be used only for cow's milk, although some traditionally named products such as coconut milk, cream sherry and cream crackers are exempted.

About £10 million of 'soya milk' is sold each year in the UK, compared with £3.3 billion of regular milk.

6701. *Soyafoods* (*ASA, Europe*). 1994. Sojinal acquired by B & K Holdings. 5(3):2. Autumn.
• ***Summary:*** Sojinal, the soyfoods manufacturer from Issenheim, France, which manufactures the Biosoja and Ligne S lines, is now owned by B & K Holdings [a Swiss company].

In a spot on page 5, a photo shows several newly changed packages in the Ligne S line which includes tofu, soya beverages, desserts, biscuits and bars.

6702. *Soyafoods* (*ASA, Europe*). 1994. In depth: Food Ingredients Europe. 5(3):6-7. Autumn.
• ***Summary:*** Food Ingredients Europe, the international exhibition of food ingredients, was held this year on Oct. 4-6 in London, England, at Earl's Court. This was the biggest FIE in its 9-year history, with more than 500 exhibitors. The American Soybean Association (ASA) had a very successful booth at the U.S. Pavilion. One of the most interesting new products was Befine, from a company named VPS Europe. This unique, patented soya-based granule, sold fresh or frozen, mimics the texture of ground meat but it is not TVP or textured soy protein concentrate. Made from organic whole soybeans, it contains 18% protein. ADM Protein Specialties Division introduced their new WMR4, a dry soymilk based on soy protein isolate. Protein Technologies International exhibited Supro brand Isolated Soy Protein and Fibrim brand soy fiber. A line of texturized Danprotex (H-29, B-39, and F) and functional Danpro (DS) soy protein concentrates were launched by Central Soya Aarhus A/S, a member of the Eridania/Beghin-Say agro-industrial group. Kikkoman Trading Europe exhibited their naturally fermented soy sauces in liquid and dehydrated dorms. Other soy sauce exhibitors included Henry Lamotte GmbH and Mandarin Soy Sauce Inc. Loders Croklaan exhibited a new soya concentrate line. Alsace-based Sojinal, which supplies soy products to the food industry, exhibited along with their new sister company, Sevenday. SFI Netherlands BV (SFI = Special Food Ingredients, formerly Solnuts Inc.) exhibited their line of dry roasted soynuts. Also present were Stern Lecithin and Soja GmbH & Co. KG, Sapa and Dafa Associès (makers of Dafasoy for the food, dietetic, and pharmaceutical industries), Soya Mainz & Co. KG and Solbar Hatzor (soy protein concentrates), Dalgety Food Ingredients International (with the former Spillers Premier Products), Lucas Meyer GmbH (with a phosphatidyl choline lecithin powder and a de-oiled lecithin for frozen doughs), Edelsoja GmbH, Celia SA, Freeze-Dry Foods GmbH, and GMB Proteins (a division of Bush Boake Allen Ltd.). The address and fax number of each company is given.

6703. *Soyafoods* (*ASA, Europe*). 1994. Sunrise Health Foods. 5(3):5. Autumn.
• ***Summary:*** Soya Health Foods Ltd. is located at Unit 4, Guiness Road, Trafford Park, Manchester M17 1AU, England. Phone: +44 61 872 0549. Under the Sunrise brand the company has a range of soya products including natural and flavored soya drinks, vegetarian burgers, non-dairy products such as Ice Dream (a non-dairy frozen dessert in 6 flavors), Ice Yoghert (a non-dairy frozen dessert in 2 flavors), and Carob Ices. Their spray dried soymilk powder made from pure soymilk is a suitable ingredient for use in non-dairy cheeses, tofu, yogurts, frozen desserts, etc.

6704. Soyfoods Association of America. 1994. Get the soy edge (Ad). *Vegetarian Times.* Nov. p. 71-74.
• ***Summary:*** This 4-page advertorial, with 17 color photos, is sponsored by the following organizations: ADM, DevanSoy Farms, Inc., Eden Foods, Inc., Lightlife Foods, Lumen Food Corp., Morinaga Nutritional Foods Inc., Soyfoods Association of America, Tofutti Brands Inc., Worthington Foods.

"Did you know you can fit soy into your diet without giving up your favorite foods? Try soy burgers, soy ice cream, soy yogurt, soy hot dogs, soy flour, soy cream cheese, soy sausage, soy chili, soy frozen juice bars, soy margarine, soy milk, soy tacos, soy sour cream, soy sloppy joes, soy 'chicken' patties..." Address: Palo Alto, California. Phone: 415-327-1444.

6705. **Product Name:** Westbrae Rice Drink (Non Dairy) [Only 1% Fat, and Concentrate; Plain, and Vanilla].
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor). Made in Manteca, California, by California Natural Products.
Manufacturer's Address: Carson, CA 90746.
Date of Introduction: 1994. November.
Ingredients: Plain: Rice base (filtered water, brown rice syrup, rice starch), expeller pressed canola oil, tricalcium phosphate, pea protein, natural flavors, sea salt, carrageenan, vitamin A palmitate, vitamin D-2, riboflavin.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton. Retails for $1.69 (12/94, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per cup (240 ml): Calories 100, calories from fat 25, total fat 3X gm (5% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 70 mg (3%), total carbohydrate 18 gm (dietary fiber 0 gm, sugars 16 gm), protein 1 gm. Vitamin

A 10%, calcium 25%, vitamin D 25%, vitamin C 0%, iron 0%, riboflavin 25%, vitamin E 2%, phosphorus 10%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Ad in Natural Foods Merchandiser. 1994. Nov. p. 11. "Wake up! You don't have to dream any longer." This is a full page color ad for two new Westbrae Rice Drink products: Only 1% Fat, and Concentrate (which makes 2 quarts). Both products are in a new "Easy Pour" aseptic carton, with added calcium and vitamins A&D. The word "dream" in the ad's title refers to Rice Dream, the leader in the rice beverage category. A color photo shows the two colorful quart packages of Rice Drink against a blue background on a blue and white tablecloth, with glasses of milk, a bowl of cereal topped with berries, and assorted fruits in the foreground.

Product (1% fat in plain and vanilla flavors) with Label purchased at Berkeley Natural Grocery Co., California. 3.5 by 7.75 by 2.25 inches. Tetra Brik Aseptic carton. Note this new tall, slim carton with a new easy-pour reclosable cap. Blue, white. red, and black. Photo of white rice drink being poured from a pitcher into a glass, against a light blue background. "Only 1% fat. Rice drink. A cholesterol free food. Tastes great! Non dairy drink. New easy pour. Reclosable spout. With calcium and vitamins A&D. Not to be used as an infant formula." On one side is a message from President Andrew H. Jacobson titled "We're here for life."

6706. Westbrae Natural Foods. 1994. Wake up! You don't have to dream any longer (Ad). *Natural Foods Merchandiser.* Nov. p. 11.
• ***Summary:*** This is a full-page color ad for two new Westbrae Rice Drink products: Only 1% Fat, and Concentrate (which makes 2 quarts). The word "dream" in the ad's title refers to Rice Dream, the leader in the rice milk category. A color photo shows the two colorful quart packages of Rice Drink against a blue background on a blue and white tablecloth, with glasses of milk, a bowl of cereal topped with berries, and assorted fruits in the foreground. Address: P.O. Box 48006, Gardena, California 90248.

6707. *Daily Post* (*Rotorua, New Zealand*)*.* 1994. Fears prompt probe of baby formula. Dec. 8.
• ***Summary:*** "The Ministry of Health is to investigate the safety of soy-based infant formulas." Variations on this article appeared on this date in Australia in the *Northern Advocate, Nelson Evening Mail, Evening Standard,* and *Waikato Times.*

6708. *New Zealand Herald.* 1994. Govt. checks soya milk. Dec. 8.
• ***Summary:*** The Wellington staff reports that the Ministry of Health is investigating a report on the effects of soya-bean based infant milk. "The Minister of Health, Mrs. [Jenny] Shipley, told Parliament yesterday that the ministry had received a report on the matter from the Auckland School of Medicine by a senior lecturer in toxicology, Dr. Iain Robertson. The report recommends that the use of soya-bean products in infant milk formula be stopped because of the high level of oestrogenic compounds found in the four major brands on sale in New Zealand.

"Mrs. Shipley was responding to a question from the Alliance leader, Sandra Lee, who tabled a letter to the ministry from a Devonport process engineering consultant, Dr. David Woodhams. Dr. Woodhams described himself as a member of a privately funded group which has been looking into the scientific literature on soya beans and soya-bean products and their effects on humans. 'I imagine that few mothers would choose to feed a formula containing both active oestrogens and an immune suppressant to their baby during the first few months of life if they had an informed choice,' he said. Mrs. Shipley said the ministry was investigating to see whether the claims could be substantiated. At this stage, there was insufficient evidence to withdraw the products." Address: Wellington staff.

6709. New Zealand Ministry of Health. 1994. Director General's privileged statement under Section 37 of the Food Act 1981 (News release). 13 Molsworth St., P.O. Box 3013, Wellington, New Zealand. 1 p. Dec. 8. [1 ref]
• ***Summary:*** "Acting Director-General of Health David Smyth says the Ministry of Health has no knowledge of any reputable scientific studies that suggest soy based milk formulas are detrimental to baby's health. 'Babies who are being fed soy based milk formula on the advice of their health specialist should continue being fed with this product,' says Mr. Smyth.

"The Ministry is, however, investigating the claim that soy based milk formulas have adverse health affects. The claim was made in an independent report prepared and released by Mr. and Mrs. James in Whangarei."

"The soy based milk formulas, which are produced and sold by international companies all around the world, have been in New Zealand for approximately 20 years and in the United States for 30 years. Parents who have any queries about their baby's diet should ring The Royal New Zealand Plunket Society's free phone 0800 101067 for more information.

"Signed by Acting Director-General of Health, David Smyth." Address: Wellington, New Zealand. Phone: (04) 496 2000.

6710. Roberts, Rosemary. 1994. Grotesque deaths transform bird hobby to heartbreak: Soybean investigation sparks infant food safety scare. *Northern Advocate* (*Whangarei, New Zealand*)*.* Dec. 8. p. 2.
• ***Summary:*** "Richard and Valerie James' retirement home at Whangarei Heads turned from heaven into Heartbreak House about 3 years ago when many of their parrots began dying

inexplicably.

"Their efforts to work out what had happened to their birds led them to make inquiries all over the world and spend well over $100,000 on research and information.

"Some of this research has resulted in the story published in today's *Northern Advocate* on soy-based infant formulas. The Auckland Medical School's chief toxicologist, Dr Iain Robertson, has called for use of soy-based infant formulas to be discontinued until more research has been done into their levels of phyto (plant) oestrogens.

"Richard and Valerie James are New Zealanders who lived and worked overseas for 19 years in law, education and real estate. They returned to New Zealand in 1984 and retired to Whangarei Heads about five years ago."

"The birds began to die when the couple started using commercially-prepared handrearing baby bird food, about four years ago.

"'Initially they grew brilliantly. Then they died,' says Valerie James.

"Others were born deformed. The breeding birds laid malformed eggs. Some also suffered convulsions, behaved strangely, and frequently haemorrhaged violently before dying."

"Early in 1993 the Jameses had immediate autopsies on a few young parrots done at several laboratories, including the Massey University School of Veterinary Pathology.

"The full autopsy report suggested the underlying cause of death was severe depression of the birds' immune systems. The James' were told previous autopsies on other birds of different origin but fed similar food had also revealed this feature.

"Extremely concerned at the implications of what little they knew at the time, the couple commissioned tests at laboratories in New Zealand and the United States.

"The mystery started to unravel for the couple when they realised two things. One was that the base for most anti-coagulant rat poison was originally synthesised from a naturally occurring plant toxin with oestrogenic properties. The other was that the soybean was high in plant oestrogens."

Photos show: (1) Valerie and Richard James (portraits, p. 2); (2) Valerie and Richard, each with a cockatiel on the shoulder, by their outdoors bird cages, with their report, books, and a dish of dry soy bird food (p. 1).

This article (slightly changed) also appeared in New Zealand on this same date in the *Marlborough Express* under the title "Couple spends fortune on feathered friends' deaths: Richard and Valerie James didn't realise what they were getting into when they began investigating the inexplicable deaths of their parrots."

6711. Roberts, Rosemary. 1994. Infant food safety queried. Ministry will investigate. *Northern Advocate* (*Whangarei, New Zealand*). Dec. 8. p. 1.

• ***Summary:*** "Infants on a soy-based diet might be consuming up to 12 contraceptive pill equivalents per day," according to Auckland research scientist Mike Fitzpatrick. Auckland Medical School senior toxicologist Iain Robertson says that the use of soybean-based infant formulas should be discontinued pending further research on possible side-effects on babies. Four soy-based infant formulas are currently on sale in new Zealand–Prosobee, Isomil, Karicare, and Infasoy. Robertson said new research has showed that soy-based infant products have high levels of phyto-oestrogens (plant oestrogens) and researchers have little knowledge of the effects of these compounds on babies.

His recommendation to discontinue the use of such soy-based infant products is contained in a review of a scientific study commissioned by Richard and Valerie James of Whangarei, New Zealand. Mr. and Mrs. James commissioned the investigation by Mike Fitzpatrick, PhD, after the unusual and painful deaths of many of their newly-hatched parrot chicks, and the often premature maturing of the few survivors. These parrots were reared solely on a commercial soy-based bird food. The New Zealand Ministry of Health also plans to investigate the safety of the soy-based infant formulas. The Ministry's chief toxicologist Martin Edwards said he had received a copy of the Fitzpatrick report and was taking its recommendations seriously. He said the ministry would consult organisations such as the Pediatricians Society and the Plunket Society.

Similar articles appeared in 3-4 New Zealand newspapers on this same day, including the *Marlborough Express* and *Gisborne Herald.*

6712. Roberts, Rosemary. 1994. Maker welcomes call for research [into safety of soy-based infant food]. *Northern Advocate* (*Whangarei, New Zealand*). Dec. 8. p. 1.

• ***Summary:*** Douglas Pharmaceuticals produces Karicare brand soy-based infant formula; according Dr. John Birbeck, the company's private consultant, Douglas is the only New Zealand company making such a product. He believes other similar foods are being imported. Birbeck says the company welcomes more research on the oestrogen content of its soy-based product, and says it is likely the industry will fund the study.

Columbit New Zealand, the company which imports soy isolates to New Zealand, also backs the call for more research, and is confident research will clear its product. Columbit is a partner of the large international corporation Protein Technologies [International]; principals of that U.S.-based company said that they would respond to any requests for information about their products.

Sanitarium Foods [of New Zealand and Australia] does not produce soy-based infant formulae, but does use soy protein isolates in some of its products. The company's technology superintendent, Graham Jackson, said his company was keeping an eye on the situation.

A large photo shows Valerie and Richard James at their New Zealand aviary, with several large white birds, soy bird food, and reports on soy. A similar article appeared in the *Marlborough Express* on this same day.

6713. Royal New Zealand Plunket Society. 1994. Formula 1 [Statement on the safety of soy-based infant formulas] (News release). New Zealand. 1 p. Dec. 8.
• ***Summary:*** "The Plunket Society says there is no evidence that soy-based infant formula is dangerous to babies' health–and parents should not be anxious about using the product. Concerns have been raised over the safety of soy-based formulas, after research found they contained a plant-based substance similar to the hormone oestrogen. Plunket says that further research and observation is planned, but there is no reason for undue concern over the products.

"Plunket paediatrician Dr. Charles Essex says that soy formula has been used internationally for many decades and in New Zealand for more than 10 years, with no reports of adverse effects. In New Zealand, soy formulas account for about 13 per cent of all [infant] formula sales. 'Millions of babies have been fed soy formula,' Dr. Essex says, 'and one would have imagined any serious side effects would have shown up by now.'

"Dr. Essex says that soy contains a compound which is chemically similar to oestrogen. However even breastfed infants can often exhibit oestrogen effects, from maternal oestrogen. These are quite normal, and can include small breast buds for up to six months after birth, secretion of small amounts of breast milk, and a little vaginal bleeding, like a mini-period. 'Infants under one year of age, for their main milk drink, should ideally be breastfed,' Dr. Essex says. Otherwise they should be fed a recognized infant formula, either cow's milk-based or soy-based.'" Address: New Zealand.

6714. NZPA. 1994. Ministry queries soy formula risk. *New Zealand Herald.* Dec. 9.
• ***Summary:*** "The Ministry of Health and the Plunket Society have moved to allay fears that soya-based milk formulas could be harmful to babies. Both said they were unaware of any reputable studies showing soy-based milk products could have adverse health effects.

"Concerns have been raised over the safety of soy products after research found they contained a plant-based compound which is chemically similar to the hormone oestrogen.

"The Acting Director General of Health, Mr. David Smyth, said parents who were feeding babies with soy-based milk on the advice of a doctor should continue doing so. However the ministry was investigating a claim that soy-based formulas might have general adverse health effects."

"A Plunket paediatrician, Dr. Charles Essex, said further research was planned, but there was no reason for undue concern about the products. In New Zealand soy formulas account for 13 per cent of all formula sales."

"Infants who have a definite cow's milk allergy should use a hydrolysed formula, and there are products available for infants with lactose intolerance," according to Dr. Essex.

Note 1. Concerned parents should telephone the Plunket Society's free telephone on 0800 101067 for more information. Note 2. Similar articles appeared on this same day in the *Hawkes Bay Herald Tribune, Dairy News* (*New Plymouth*), *Southland Times, Nelson Evening Mail, Marlborough Express, Evening Standard* (*Palmerston North*), *Bay of Plenty Times* (*Tauranga*), *and Gisborne Herald.* Address: Wellington, New Zealand.

6715. Roberts, Rosemary. 1994. Soy formulae caution urged again. *Northern Advocate* (*Whangarei, New Zealand*). Dec. 10.
• ***Summary:*** New Zealand research scientist Dr. Mike Fitzpatrick has again called for parents to be wary of soy-based infant formulae. Dr. Fitzpatrick, whose report on the toxicity of soybean-based products spared alarm about infant formulae, said yesterday that a Plunket statement on the subject "missed the point entirely."

Dr. Fitzpatrick said he fully supported the statement of research scientist Dr. Richard Sharpe, of the Medical Research Council in Edinburgh, Scotland, that oestrogens from whatever source should be kept to a minimum for babies.

6716. *SoyaScan Notes.* 1994. Soymilk and cow's milk prices in California, December 1994 (Overview). Dec. 10. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Since 1987, every other year, Soyfoods Center has conducted a survey of the prices of soymilk and cow's milk in California. In Dec. 1994 at Berkeley Natural Grocery Co., a large natural food store at 1336 Gilman St. in Berkeley, California, unflavored (plain or original) soymilk made from organically grown soybeans retails for the following prices: Westsoy Lite plain 1% fat liter $0.99 (the equivalent of $0.899/quart), Vitasoy creamy original liter $1.49 ($1.35/quart), Pacific Foods liter $1.69 ($1.53/quart), Vitasoy Lite original liter $1.89 ($1.715/quart), Edensoy original liter $1.99 ($1.88/quart). The most expensive soymilk is Health Valley Soy Moo at $2.35/quart.

At Trader Joe's, a gourmet and natural foods chain in California, Soy-Um quart (plain, vanilla, or chocolate) retails for $1.39. Edensoy vanilla liter retails for $1.59. Rice Dream Enriched Non-Dairy Beverage (a non-soy rice beverage) retails for $1.29/liter (but $1.59 with reclosable spout).

The average price of the quart equivalents of the 6 least expensive soy beverage brands is $1.46 a quart. This is $0.46 per quart lower or 24.0% lower than the $1.92 in Dec. 1992.

Cow's milk (fortified with vitamins A and D) sells for the following prices at the Safeway supermarket in Lafayette,

California: (1) Nonfat: $0.85/quart or $1.42/half gallon or $2.74/gallon; (2) Extra light (1% fat; protein fortified): $0.89/quart or $1.51/half gallon or $2.86/gallon; (3) Low-fat (2% fat; protein fortified): $0.89/quart or $1.27/half gallon; (4) Whole: $0.89/quart or $1.51/half gallon. The best-seller among these is non-fat in half gallons.

Thus in Dec. 1994 soymilk in liter cartons is, on average, 1.71 times as expensive per unit volume as nonfat dairy milk purchased in quarts, 2.05 times as expensive as in half gallons, and 2.13 times as expensive as in gallons. In Dec. 1992 a quart of soymilk was 2.78 times as expensive as a quart of the best-selling cow's milk. So in the last 2 years the price of soymilk has fallen significantly relative to that of cow's milk.

In Oct. 1987, after most soymilk brands were available in liter or quart sizes, soymilk retailed, on average, for $1.88/quart and cow's milk for $0.55/quart; thus soymilk was 3.42 times as expensive per unit volume as dairy milk purchased in quarts–compared with just 1.71 times as expensive in Dec. 1994. Since 1987, the average price of soymilk has decreased by 22.4%, while the average price of cow's milk has increased by 54.5% on a quart basis. So the price of soymilk has decreased by 50% relative to the price of cow's milk in quarts over the last 7 years.

6717. Soyfoods Center. 1994. The price of soymilk has fallen by 50% relative to the price of cow's milk since 1987 (News release). P.O. Box 234, Lafayette, CA 94549. 2 p. Dec. 19. [1 ref]

• ***Summary:*** Since 1987, every other year, Soyfoods Center has conducted a survey of the prices of soymilk and cow's milk in California. Since 1987, the average price of soymilk has decreased by 22.4%, while the average price of cow's milk has increased by 54.5% on a quart basis.

In Oct. 1987, after most soymilk brands were available in liter or quart sizes, soymilk retailed, on average, for $1.88/quart and cow's milk for $0.55/quart; thus soymilk was 3.42 times as expensive per unit volume as dairy milk purchased in quarts. But soymilk was just 1.71 times as expensive in Dec. 1994.

Note: This news release was published in Soyafoods, spring 1995, p. 2. Address: Lafayette, California. Phone: 510-283-2991.

6718. Behling, Ann. 1994. Put soybeans on that pizza, please. *Soybean Digest.* Dec. p. 32h.

• ***Summary:*** Suzanne Nielsen, a food scientist at Purdue University, is studying the cause of the beany flavor in soybeans and how to get rid of it. It is know that the lipoxygenase enzyme, which breaks down the oil within the soybean and creates off-flavors, has three forms: L1, L2, and L3. Soybeans were bred lacking one or more of these 3 forms, then Nielsen made soymilk from the various soybeans. Taste panels found that soymilk made from soybeans lacking both the L2 and L3 forms tasted best. These soybeans were then used to make soy protein isolate. A cheese made with this L2-L3-less isolate was compared with a cheese made with milk casein and a cheese made from a typical commercial soy protein isolate. Nielsen's taste panel ranked the casein cheese as being best, closely followed by the cheese made with the L2-L3-less isolate; the cheese made with the conventional isolate finished last.

Soy isolate made from this new soybean variety could be used as a partial replacement for rennet casein in pizza cheese.

6719. Holin, Fae. 1994. Chemical-free plant markets organic soybeans. *Soybean Digest.* Dec. p. 22. In "New Uses Digest" section.

• ***Summary:*** Agronico, a small oilseed processing company in southeastern Minnesota, claims to be the only one in America using a chemical-free cold process to extract oil from soybeans. Started by former commodity trader Mike Vincent, the company operates a converted 6,000-square-foot machine shed on a farm near Le Center, Minnesota. During 1993, Agronico processed 30,000 bushels of soybeans and sold $400,000 worth of soy flour, meal, and oil. About 30% of the company's products are made from organically-grown soybeans. Vincent hopes to increase that to 50%. He buys organic soybeans wherever he can, but his best source is farmers in Minnesota.

Soy flour and meal are sold to the health food industry to be used in soymilk powder and specialty foods, including desserts and drink mixes. About 80% of the soy oil is sold to local hog farmers, who mix it with commercial feed to keep barn dust down and add nutrients. The remaining 20% is sold to food processing plants.

By next summer, Vincent hopes to build a 20,000-square-foot processing plant in Le Center. His goal is to reach $10 million in annual sales within 5 years.

6720. Kashama Batabela, Johnny. 1994. Influence du depelliculage at de la durée de trempage des graines de soja (*Glycine max* (L) Merill) sur les qualities organoleptiques du lait de soja [Influence of dehulling and soaking time on the organoleptic qualities of soymilk]. Thesis, Département de Chime et Industries Agricoles, Institut Facultaire des Sciences Agronomiques (I.F.A.–Yangambi, Zaire). 42 p. Accepted Dec. 9. [21 ref. Fre; eng]*

• ***Summary:*** The effect of two variables (soaking time and dehulling) were measured at 25ºC in the preparation of eight batches of soymilk. Four batches of soymilk were made from dehulled soybeans, and four from non-dehulled. The dehulled or non-dehulled soybeans were soaked for either 10, 12, 14, or 24 hours. The soymilk preferred by taste panelists was that made from dehulled soybeans that had been soaked for 12 hours at 25ºC. A test of the acceptability of a new product made from soybeans (tofu) was done.

Letter from Johnny Kashama. 1994. Nov. 29. He is writing from Kisangani, in Zaire, but his return address is given as c/o Mr. Projet Bahali [a person], B.P. 364, Cyangugu, Rwanda. He has finished his thesis (cited above) and hopes to finish his studies this year. Letter from Kashama. 1996. Sept. 26. The thesis was accepted on 9 Dec. 1994. He earned the degree of *Ingenieur Agronome, Chemiste et des Industrie Agricoles.* Address: Kisangani, Zaire.

6721. **Product Name:** Soya-Cow Soymilk (Bulk).
Manufacturer's Name: ProSoya International.
Manufacturer's Address: The SoyaCow Centre, 9 Veery Lane, Ottawa, ONT, K1J 7W7, Canada. Phone: 613-745-9115.
Date of Introduction: 1994. December.
New Product–Documentation: Talk with Raj Gupta and Frank Daller of ProSoya in Ottawa, Ontario, Canada. 1995. Nov. 21. Another new development is that ProSoya in Ottawa is starting to make bulk soymilk for food processors. They will be serving cow's milk dairies which will be test marketing Pure-Pak cartons of soymilk.

Talk with Frank Daller of ProSoya. 1995. March 7. This products was first sold commercially in bulk in Dec. 1994. It was sold to an ice cream company.

6722. Rochet, Maurice. 1994. Le tonyu: Interets nutritionnels, distribution, integration dans l'alimentation quotidienne: Interview de Mr. Maurice Rochet [Soymilk: Nutritional interests, distribution, integration into the daily diet: Interview with Mr. Maurice Rochet]. *Info Soja* (*Sojaxa, France*) No. 4. Dec. p. 1-2. [Fre]
• ***Summary:*** A photo (p. 1) shows soybean pods. Address: Président de Sojaxa, Association loi de 1901, Siège social: 12, avenue George V–75008 Paris.

6723. *SoyaCow Newsletter* (*Ottawa, Canada*). 1994. New license for West Coast plant. 3(4):1. Oct/Dec.
• ***Summary:*** "A Western Canadian group has formed Pacific ProSoya Foods Inc. to act as a licensed producer of soymilk using the SoyaCow process." In March, 1995, a SoyaCow SC2000 (which can produce 2,000+ liters/hour in a continuous process) is slated for installation at Pacific ProSoya's facility in Langley, British Columbia, Canada. This plant will ship bulk soymilk to British Columbia, Alberta, Oregon, and Washington.

Note: Three SC2000 systems have been ordered and will be installed in (1) British Columbia, (2) Russia, and (3) at the ProSoya test plant in Ottawa.

Talk with George Conquergood of International ProSoya Corporation (IPC). 1999. May 10. The SC-2000 was ProSoya's first continuous-process soymilk cooker. Development started in early 1993. Raj designed it and ProSoya and George debugged it and got it to work; it didn't work when it was first installed in the British Columbia plant.

6724. *SoyaCow Newsletter* (*Ottawa, Canada*). 1994. New SC100 system successfully tested. 3(4):1-2. Oct/Dec.
• ***Summary:*** "In November, the new Ottawa facility of ProSoya Inc. successfully tested the latest generation of the SoyaCow SC100." It produces 500 liters/hour of soymilk and can be upgraded to the continuous process SC2000. A photo shows the SoyaCow SC100 Plant at ProSoya's facility in Ottawa.

6725. *SoyaCow Newsletter* (*Ottawa, Canada*). 1994. Gelato Fresco receives first bulk soymilk shipment. 3(4):2. Oct/Dec.
• ***Summary:*** In late December Gelato Fresco, a maker of premium dairy and of soymilk ice cream in Toronto, was the first to receive a 1,000-liter test shipment of the bulk soymilk produced by the new SoyaCow plant in Ottawa. For the last year Gelato Fresco has used (and over-used) its own SoyaCow SC20 which could produce only 20 liters/hour. Gelato Fresco has successfully test marketed a premium line of soymilk-based frozen desserts. Orders are also coming in from a distributor in Wisconsin.

6726. *SoyaCow Newsletter* (*Ottawa, Canada*). 1994. Russian program orders more SC-20s. 3(4):2. Oct/Dec.
• ***Summary:*** The Russian Soybean Association (ASSOY) has ordered 20 more tabletop SoyaCow SC20 systems to add to the ten similar systems they have already acquired during the past year. "ASSOY's soyfood program, which is based exclusively on the SoyaCow technology, is developing with unusual speed. Soymilk derived yogurt, tofu, mayonnaise, drinks, and ice cream as well as baked goods made using 'okara' soy-fibre, are all made in pilot or cottage industry production."

6727. **Product Name:** [Fresol: Soy Drinks].
Foreign Name: Fresol: Bebida de Soya.
Manufacturer's Name: Benali Cabo Verde.
Manufacturer's Address: Praia (capital city), Sao Tiago (island), Cape Verde.
Date of Introduction: 1994.
Ingredients: Soybeans, water, flavor, sugar.
Wt/Vol., Packaging, Price: 157 ml PE pouches.
How Stored: Refrigerated.
New Product–Documentation: J.L. Voisin. 1995, Oct. 3-5. Dairy like soyfoods in Africa: Evolution & perspectives. Paper presented at the Third Bi-Annual SoyAfrica Conference. 5 p. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by Aproma. Actimonde of Archamps, France, installed an Agrolactor (soymilk processing plant) at this company in 1994. A private company is producing soydrinks and fruit juices (from imported concentrate); today 80% is from fruit.

Note: This is the earliest known commercial soy product made in Cape Verde.

6728. **Product Name:** Berri Soy Drink (Non Dairy) [Plain with Dietary Fibre, or Vanilla].
Manufacturer's Name: Berrivale Orchards.
Manufacturer's Address: McKay Road, Berri, SA 5343, Australia. Phone: (085) 82 1019.
Date of Introduction: 1994.
Wt/Vol., Packaging, Price: 1 liter Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: The Berrivale Orchards Story. 1994? (Undated). On the rear cover of this 6-panel glossy brochure is a section on "Soy Drinks: Berrivale produces the one-litre 'Berri Soy Drink' seen in supermarkets across Australia." It is available in two flavours: Plain and vanilla. A color photo shows the front of both packages.

Leaflet titled "Berri Soy Drink." Undated. On the front cover is a lady in a white workout suit lying on her back on the floor, supported by her elbows, holding a glass of soymilk, with her legs straight up in the air–against a blue background. The text says: "Berri Soy Drink is different... made in the heart of Australia's Riverland at Berri, from soybeans grown in Australia... Unlike so many other soy drinks Berri Soy Drink is made from fresh soybeans (not imported soybean powder) and then directly filled into packs." No salt is added. Contains 40%less fat than milk. Two recipes are given.

6729. **Product Name:** [Line "S" Soy {Aseptically Packaged Calcium-Enriched Soymilk} (Extra, Calcium)].
Foreign Name: Ligne "S" Soja (Extra, Calcium).
Manufacturer's Name: Biosoja [Sojinal].
Manufacturer's Address: 10, rue Lavoisier, 68000 Colmar, France.
Date of Introduction: 1994.
Wt/Vol., Packaging, Price: 1 liter Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Label sent by Heather Paine of SoyaFoods in London. 1994. On the front panel of Soja Extra is a photo of two tall glasses of soymilk; on one is a red lipstick mark. On the front panel of Soja Calcium is a illustration of a glass of white soymilk with a yellow flex-straw going down into it. On the white part is an illustration of four children dancing. A yellow tennis ball is in the background.

6730. **Product Name:** [Line "S" Soy Dessert {Aseptically Packaged} (Chocolate, Caramel)].
Foreign Name: Ligne "S" Soja Dessert (Chocolat, Caramel).
Manufacturer's Name: Biosoja [Sojinal].
Manufacturer's Address: 10, rue Lavoisier, 68000 Colmar, France.
Date of Introduction: 1994.
Wt/Vol., Packaging, Price: 500 ml Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Label sent by Heather Paine of SoyaFoods in London. 1994. On the front panel of each is a stem glass of dessert.

6731. Chikere, A.C. 1994. Preservation of soymilk with extracts from *Afromonum danielli* and *Allium sativum.* MSc thesis, University of Ibadan, Nigeria. Supervisors: O.C. Aworh and S.M. Osho. *
• ***Summary:*** *Allium sativum* is garlic. Extracts from these two plants were screened in vitro for their ability to inhibit the growth of 7 spoilage microorganisms isolated from soymilk. All treated samples were rated inferior in acceptability to a reference sample with no additives during the first 2 days of storage in all 5 attributes measured: Changes in acceptability, pH, titratable acidity, and microbial load. Spoilage set in after 2 days storage under ambient conditions. Address: Nigeria.

6732. **Product Name:** [Soymilk, Tofu].
Manufacturer's Name: Rey Sol.
Manufacturer's Address: Colonia el Recreo, Lote No. 9, Amatitlan, Guatemala. Phone: +502 633-0971.
Date of Introduction: 1994.
How Stored: Refrigerated.
New Product–Documentation: Letter (fax) from Juan Guillermo Tornoe. 1999. Aug. 31. Rey Sol is owned by Mario Cesar Jimenez and Blanca de Jimenez, both members of the "Gran Fraternidad Universal" (GFU), which is some kind of new-age association that practices yoga, meditation, tai-chi, vegetarianism, etc. They have a production plant near Lake Amatitlan, which is about 30 km (18.5 miles) from Guatemala City. From there, they supply 3 health food stores/restaurants that they own. One is in downtown Guatemala City, the second is in Centro Comercial Gran Via Roosevelt, Zone 7, and the third and newest one is in 10 Avenida 33-73 zona 11 Las Charcas. From the latter he encloses a promotional leaflet. They make soymilk, tofu, meat alternatives made from soy with different flavors (beef, chicken, etc.), sausages (like hot dogs, and imitations of local sausage-like products such as the "chorizo" and "longaniza"), soy tacos, green peppers stuffed with soy, and a variety of sweet and regular soy breads and cakes. They sell their soymilk in 1 liter plastic bottles but these bottles do not have a label–only a sticker with the expiration date; they advertise the product as "leche de soya" and retail it for about $US0.89. The company also distributes their products to other health food stores. Miss Blanca Jimenez gives vegetarian cooking classes at the GFU offices and is in charge of bakeries. Mr. Mario Cesar is in charge of most of the soy products. Leaflet (8½ by 5½, black on white, in Spanish) sent by Mr. Tornoe. 1999. Aug. 31. "A new option!

Now everything that's necessary for your health and nutrition is at Las Charcas in Zona 11. Taste our vegetarian buffet, the best in baked goods and whole-grain pastries, soya meats and sausages, tofu (*toffú*), granola, natural medicine, natural vitamins and much more. Vegetarian restaurant "Rey Sol" Las Charcas. 10 Avenida 33-73 Zona 11 Las Charcas. "We have our own parking lot (*Contamos con Parqueo Propio!!!*)."

Talk with Blanca de Jimenez. 1999. Aug. 8. They started making tofu and soymilk about 4 years ago. She has been a vegetarian for 30 years and her son has been a vegetarian his entire life.

6733. **Product Name:** Supreme, Number 1, and Eezee.
Manufacturer's Name: Sasko International.
Manufacturer's Address: P.O. Box 4315, Luipardsvlei 1743, South Africa. Phone: +27 11762 5300 x-116.
Date of Introduction: 1994.
New Product–Documentation: Spot in Soyafoods (ASA, Europe). 1995. Spring. p. 4. "Sasko International at Sial '94." Sasko makes and supplies foods, from consumer goods to nutritional assistance programs. "Under the brand names Supreme, Number 1, and Eezee they produce a range of soya products, such as flavoured, cubed TVP, flavoured minced TVP, soups and gravy powders. In addition they manufacture soya milk powder and other high protein drink powders. The TVP based products are available in a number of flavours including 'monkey gland'! whilst a range of fruit flavors are used for the high protein drink powders. The company also produces cereal mixes and batter mixes using soya, and a protein, mineral and vitamin enriched drink also based on soya."

6734. **Product Name:** Soymilk (Chocolate-Peanut Butter).
Manufacturer's Name: Sweet Carrot Café.
Manufacturer's Address: 702 14th St. East, Saskatoon, SK, S7N 0P7 Canada.
Date of Introduction: 1994.
Wt/Vol., Packaging, Price: Bottle.
New Product–Documentation: Talk with George Conquergood of International ProSoya Corporation (IPC). 1999. April 21. George introduced this, his last flavor of bottled soymilk, sometime in 1994. The Chocolate-Peanut Butter was a "power drink" that–along with the Soy Nog–people loved. Both flavors especially popular with cyclists. George used to keep a refrigerator at a cycle shop stocked with product. These guys would come back from their bicycle trips to the cycle shop and down a liter of soymilk.

6735. **Product Name:** [Deli Salads: Hawaii, Garden, Mexican, Shanghai].
Foreign Name: Feinkostsalat: Hawai, Jardinière, Mexicano, Shanghai.
Manufacturer's Name: Viana Naturkost GmbH.
Manufacturer's Address: Neusserstr. 199, D-5000 Cologne 60, West Germany. Phone: (02233) 41323.
Date of Introduction: 1994.
Ingredients: Shanghai: Seitan (*Seitan*)*, soymilk (*Sojamilch*)*, corn oil (*Maiskeimöl*), soy sprouts (*Sojasprossen*), wine vinegar*, corn malt (Maismalz)*,¼ paprika, wheat starch, herbs, sea salt, carob*. * = Organically grown.

Note: The main ingredient in Hawaii flavor is smoked tempeh, and in Garden and Mexican is soy tempeh.
Wt/Vol., Packaging, Price: 200 gm or 100 gm.
How Stored: Refrigerated.
New Product–Documentation: Labels brought by Bernd Drosihn of Viana. 1995. March 11. 3.5 x 4.75 inches. Red, white, and black on yellow (Hawaii), or light green (Garden), or red (Mexican), or purple (Shanghai). Cardstock. 150 gm.

6736. Bates, Chris; Bates, Ling-li. 1994. Culture shock! Taiwan. Portland, Oregon: Graphic Arts Center Publishing Co. 256 p. Illust. Map. Index. 20 cm. [11 ref]
• ***Summary:*** A guide to Taiwan's customs and etiquette. Ling-Li is a Taiwanese native and Chris, her husband, is an American who lived and studied in Taiwan for a number of years. In Chapter 3, "Settling In," the section titled "A stroll through the wet market" [the traditional fresh vegetable market, where each vendor rents a stall] is a section (p. 50-51) about doufu and doufu products. "If it is marinated and dried further, it becomes *doufu gan* (dried bean curd [sic, pressed tofu]). If it is fermented, it becomes *chou doufu* (smelly bean curd).

Chapter 7, "Cuisine of the Ilha Formosa" is about Taiwanese restaurants–where happy noise and clanging dishes are part of what Chinese value in dining out.

Page 160-61: "Junior is off to cram school, so Mom eats a specialty at a push cart to remind her of the flavors of her youth. When they have all returned home they might go out together for *syau ye* (midnight snack). This might be a bowl of noodles, or *chou doufu* (smelly bean curd–they say it smells like a sewer and tastes like a dream; bean curd's equivalent to Blue Stilton cheese)."

Note: This is the earliest English-language document seen (Oct. 2011) that contains the term "smelly bean curd."

6737. Becker, Egon. 1994. Soya bean milk and cheese from Africa's soil (Videotape). Falls Church, Virginia: Landmark Media, Inc. 15 minutes. VHS. Written and directed by Egon Becker. Series: Fruits of the earth: Promising plants for tomorrow. [Eng]*
• ***Summary:*** "Soya, one of the most important oil and foodstuff sources on the world market, is being adjusted to the requirements of African cooking in Nigeria and also cultivated for the production of milk and cheese for city dwellers."

6738. Chik, Hon Man; Ng, Lam Sim Yuk. 1994. Chinese-English dictionary: Cantonese in Yale romanization. Mandarin in pinyin. Shatin, N.T., Hong Kong: New Asia–Yale-in-China Chinese Language Center, The Chinese University of Hong Kong. 512 + 9 p. Radical index. Number of strokes index. Cantonese romanization index. 17 cm. [Eng; chi]
• ***Summary:*** Page 430: Dauh (Md [Mandarin] dou): beans and peas. Dauh fuh: bean curd. Dauh ngah: bean sprouts as a vegetable. Dauh jeung: soybean milk. Sih (Md chi): fermented bean.

Appendix 3 is a "Comparative chart for four different kinds of Cantonese romanization systems": Yale, IPA, Sidney Lau, and Meyer-Wempe. For each is given: initials [initial sounds], finals, and tones (of which seven can be represented).

Note. This is the earliest Cantonese Chinese-language document seen (Aug. 2013) that uses the term *Dauh jeung* to refer to soymilk. Address: Hong Kong.

6739. Crane, Milton G. 1994. Almond milk (Recipe). Weimar, California. 1 p.
• ***Summary:*** A recipe, with nutritional analysis, for making about 1 quart of almond milk at home. Ingredients: ½ cup almonds, 1 quart water, 2 tablespoons cooked rice or millet (optional), and 1/8 teaspoon salt (optional). Supplements: 100 mcg. of vitamin B-12. Two Tri-Boron Plus capsules (TwinLab Co. for calcium, magnesium, zinc, and boron).

The almonds should be first ground in a coffee bean grinder, then blended with ½ cup water plus the other solid ingredients in a blender until smooth. Add supplements, plus the rest of the water, and blend for about 1 minute. Remove from blender and strain with a colander (optional). Then store in refrigerator. Address: M.D., Medical Dep., Weimar Inst., Box 486, Weimar, California 95736. Phone: 916-637-4111.

6740. Diehl Specialties International (DSI). 1994. Vitamite favorite recipes: For people who can't drink milk. 2nd edition. Defiance, Ohio. 25 p. 22 cm.
Address: Defiance, Ohio.

6741. Gordy, Josephine Shih. 1994. Chinese in southeast Florida 1900-1992. Miami, Florida: Broadley Publishing. See p. 78-79. 28 cm. [Eng]
• ***Summary:*** On pages 78-79 is the biography of Mr. Manny Wong and his company, Fully, Inc.–based on an interview with Mr. Wong on 8 March 1994 in Miami. He was born in Cuba in 1953 of Cuban immigrant parents. His entire family immigrated to Miami in 1961. His father had gone to Cuba from China as a young man of age 18 in 1943; he had a distant uncle in Cuba who sponsored him. He was married, but he had to leave his wife behind. She came to Cuba in 1950. In Miami, Manny's father, together with several partners, started a restaurant in downtown Miami and named it Hong Kong Restaurant. In 1963 he bought a second Chinese restaurant in Little Havana and named it Oriental Restaurant; it was an still is a Cuban-Chinese restaurant.

After graduation, Manny did not take over his father's restaurant business, but pursued his own career. He and his brother-in-law started their own business in Miami. Named Fully, Inc., it makes beans sprouts, soy sprouts, tofu and soy milk. Its clientele includes all the Chinese grocery stores, most of the Chinese restaurants, and Chinese food distributors in the tri-county area. Manny enjoys being an entrepreneur. Address: Florida.

6742. Grogan, Bryanna Clark. 1994. The (almost) no-fat cookbook: Everyday vegetarian recipes. Summertown, Tennessee: The Book Publishing Co. 192 p. Index. 21 cm. [10 ref]
• ***Summary:*** This low-fat vegan cookbook contains a wealth of soy-related recipes, including 27 recipes that call for tofu. Address: Denman Island, east of Vancouver, British Columbia, Canada.

6743. LeShane, Patricia. 1994. Vegetarian cookery for people with diabetes. Summertown, Tennessee: The Book Publishing Co. 143 p. Index. 21 cm.
• ***Summary:*** This is a vegan cookbook. Approximately 12 million Americans have diabetes, but only about 50% of them are currently aware that they have it. The index contains 21 entries for tofu, 2 for soybeans (p. 106, 107), 1 for soy yogurt, and lots for soymilk.

6744. Lien, Eric L. 1994. The ratio of linoleic acid to α-linolenic acid in infant formulas: current facts and future research directions. *World Review of Nutrition and Dietetics* 75:92-95. [11 ref]
• ***Summary:*** Essential fatty acids (LA = linoleic acid; LNA = linolenic acid) must be provided in all infant formulas. The fatty acids in infant formula play two important roles in the rapidly growing neonate: they provide 50% of dietary energy and they also provide essential fatty acids.

Omega-3 fatty acids are now being viewed as essential nutrients for infants.

Table 2 shows that soybean oil, corn oil, and canola oil can each supply essential fatty acids for infant formulas. Soy and corn oil are the two most widely used of the three. "Soy oil contains a more balanced proportion of LA to LNA, and if prepared under appropriate conditions can be used to produce a stable infant formula." Address: Wyeth-Ayerst Labs., Philadelphia, Pennsylvania.

6745. Mindell, Earl. 1994. Earl Mindell's food as medicine. New York, NY: Simon & Schuster. 393 p. Index. 22 cm. [97 ref]
• ***Summary:*** Here Mindell, who would write *Earl Mindell's*

Soy Miracle in 1995, gives a preview of his growing belief in the health benefits of consuming soy. Phytochemicals (p. 13, 25): Genistein, which is found in the urine of those who eat soy-based foods, appears to block the growth of new capillaries that supply blood to some tumors. Researchers hypothesize that genistein may be responsible for the low incidence of certain forms of cancer among "Japanese, who eat a diet rich in soy foods."

Phytates (p. 28) found in soybeans and cereal grains deactivate steroidal hormones that promote tumors. However excessive intake of phytates is known to interfere with absorption of minerals such as calcium.

Protease inhibitors (p. 29), found in soybeans and soyfoods, can prevent the conversion of normal cells to malignant ones.

Calcium (p. 65): Tofu curded with calcium sulfate is a good source of calcium. Sodium (p. 83-84): Recommends the use of reduced-salt soy sauce.

Breast cancer (p. 215-16): "Soybeans and soy products (soy milk, tofu, etc.) may also provide some protection against breast cancer." Women in East Asia who eat a lot of soy products have 10-15% lower circulating estrogen levels than Caucasian women and must lower rates of breast cancer.

Osteoporosis (p. 242-44): Eat tofu (curded with calcium sulfate), miso, and other traditional soy products.

Menopausal symptoms (p. 261-63): Japanese women seem to have less discomfort. Mindell thinks this may be because the Japanese diet is rich in soy products (tofu, miso, soybeans, etc.). Address: R.Ph, PhD, registered pharmacist and Prof. of Nutrition at Pacific Western Univ. in Los Angeles. He lives in Beverly Hills, California.

6746. Oser, Marie. 1994. Luscious low-fat desserts. Montrose, Pennsylvania: Chariot Publishing, Inc. 124 p. Foreword by Scott W. Sanders, PhD. 21 cm. [18 ref]

• ***Summary:*** The many recipes in this vegan cookbook are low in fat (only 3 grams of fat per recipe), use no dairy products or eggs, and contain no cholesterol. Twenty-five attractive full-page color photos show the prepared recipes. The glossary of ingredients contains entries for the following soy ingredients:

"Lite silken tofu–a reduced-fat form of silken tofu. It is sold in aseptic packages in large supermarkets and natural food stores. Lite silken tofu has 75% less fat than regular silken tofu and does not sacrifice flavor or texture."

"Silken Tofu–a smooth-textured, custard-like tofu that is sold in aseptic packages and is available in most supermarkets and natural food stores. Like regular tofu it is made from soybeans. Silken tofu is an effective egg substitute when used in ¼ cup tofu to one egg proportions. It is also available in soft, firm and extra firm consistencies. I prefer the extra firm consistency."

"Soy buttermilk–a good substitute for dairy buttermilk in baked goods. It is made by adding 2 tablespoons of lemon juice to 1 cup of soy milk."

"Soy milk lite–a reduced fat soy milk that is 1% fat. It is available in large supermarkets and natural food stores." Soy milk lite was first introduced in the USA in March 1990 as WestSoy Lite. Also in 1990 it was introduced in Australia as Sanitarium So Good Lite.

The glossary also defines "Rice milk" as "a delicious non-dairy beverage with a mildly sweet flavor that can be used in place of dairy milk and soy milk. The Rice Dream (R) brand is available in both original (plain) or vanilla flavors and contains 1% fat and no cholesterol."

It also defines the following sweeteners: Barley malt syrup, brown rice syrup, date sugar, FruitSource (made from grapes and grains), maple syrup, Mystic Lake fruit sweetener, natural applesauce, and Sucanat (granulated organic sugar cane juice).

At the listing for "Tofu" in the index, we are asked to "see lite silken tofu,"–which is used in 33 dessert recipes–including the following (listed alphabetically): Almond streusel cake. Apricot almond custard Austrian apple torte. Banana cream pie. Blueberry custard pie. Chocolate dream pie. Chocolate truffles. Classic pumpkin pie. Lemon yellow icing. Peaches 'n cream parfait. Raspberry banana mousse. Strawberry Nice Cream (creamy frozen dessert like ice cream).

In the introduction to the chapter on cakes, the author says: "One way I achieve a rich cake without eggs or dairy is to use lite silken tofu. Its creamy, custard-like consistency is perfect for replacing the eggs and milk found in traditional cakes. And its low-fat profile will keep you coming back for seconds.

A small color photo on the rear cover shows Marie Oser, who has been a vegetarian since 1971. She left a career in TV advertising to pursue her interest in food and nutrition.

Note: The words "low-fat" are hyphenated on the cover but not on the title page. Address: Agoura Hills, California 91391. Phone: 818-707-7353.

6747. Pan, Lynn. 1994. Sons of the Yellow Emperor: A history of the Chinese diaspora. New York: Kodansha International. xx + 418 p. Illust. (16 pages of plates). Index. 22 cm. [174* ref]

• ***Summary:*** On page xiv is a very interesting map of southern China, with a blowup of southern Kwangtung [Guangdong] province, the area around Canton the Pearl River, the South China Sea, Macao, and Hong Kong. For this area was at the heart of the Chinese diaspora–especially in the 19th and 20th centuries and especially from two small areas southeast of Canton: (1) Sam Yap (Three Districts) of Punyu, Shuntak, and Namhoi–the more affluent counties. (2) Sze Yap (Four Districts) of Hoiping, Sunwui, Toishan, and Yanping–the poorer and ruder area southwest of Sam Yap. Although the people from both areas speak Cantonese, they have difficulty understanding each other's speech. Other

important languages of the diaspora were Hakka and its numerous variants (spoken in Guangdong, Fujian, etc.) and Hokkien (spoken in southern Fujian, Taiwan, and by many overseas Chinese throughout Southeast Asia). It is closely related to Teochew / Teochiu, though mutual comprehension is difficult,

In Part Four: 1960s to 1980s, Chapter 16, titled "Food" contains a history (p. 320-23) of Amoy Food Limited, now an international firm, with its headquarters in Hong Kong, owned largely by overseas Chinese. For many overseas Chinese, "perhaps no label has quite the resonance of Amoy." In 1908, T'ao-hua Ta-t'ung, the predecessor of the company, was founded in Xiamen for producing bottled soy sauce and dairy milk. Its founder was Yang Ko-fei, who soon brought in other shareholders. In 1911 clashes between the founder and other shareholders lead to a break-up of the company, with one party going it alone as T'ai-hua (Tao Fia), and the other as Ta-T'ung. Yang Ko-fei went with the latter company, who chief shareholder was Tan Kah Kee, the rubber and pineapple magnate.

It became increasingly apparent, however, that the two companies would do much better of they operated as a single unit. So in 1928, when a new rival appeared, they merged, with the smaller of the two now located in Hong Kong. Thereafter the company experienced steady growth. Eventually the branch in Hong Kong came to eclipse the parent company in Amoy. In 1937, when the Japanese invaded China and war broke out, almost the entire canning plant was moved to Hong Kong from Amoy. In 1951, when the company went public, the ownership passed mainly into the hands of overseas Chinese.

Today Amoy Foods' products are on the shelves of supermarkets and Asian markets in 37 countries. Half of Amoy Foods' shares are owned by the American food giant Pillsbury (owner of Haagen-Dazs and the Burger King hamburger chain) and the other half by Hang Lung (a Hong Kong real estate company). Amoy's line of 34 sauces include dark soy sauce (lau-ch'ou), light soy sauce (*sheng-ch'ou*), black bean sauce [made of fermented black soybeans], sweet and sour sauce, etc.

On the roof of the Amoy factory's main building a visitor can see a demonstration of the old-fashioned process; "here, an old man with sleeves rolled up goes from earthen vat to earthen at plunging his arm into the thick brew of black and yellow soy beans to give it a gentle, almost loving stir. He works rhythmically, with deep concentration. A Soy Master with thirty or forty years behind him, he stands in a line which goes back to the fifth century, from when dates the earliest surviving soy sauce recipe."

Companies like Amoy have helped to make Chinese foods more widely available in the West. Not so long ago, Chinese cookbooks published in England said that Worcestershire sauce was an acceptable substitute for soy sauce, because the latter was available only at delicatessens and specialty shops [Asian grocery stores] in London. Even during the last five years, the range of Chinese foods available in London's Chinatown has grown remarkably. In Chinatowns in the United States [and especially those in San Francisco {California} and New York] the selection of Chinese foods has long [perhaps always] been greater than at those in London or other places in Europe.

Page 324: The first person to make tofu in Europe was Li Shih-tseng [Li Yü-ying, Li Shizeng], a Chinese intellectual and educator. As a young student of biochemistry in France in 1900, Li was to be greatly influenced by the writings of Nietzsche and Bergson. A Francophile, Li was one of the founders of the Work and Study Program, which sent Chinese students abroad for part-time work and part-time study. One of these students, who would later become famous, was Deng Xiaoping. While establishing his tofu [beancurd] factory in France, Li drew on his knowledge of biochemistry; the factory provided jobs for many students in the Work-Study Program.

Li, a vegetarian, was a firm believer in the nutritional value of tofu and other soybean foods. His factory also made and sold soybean flour, fermented tofu, soy-bean milk, and soy-bean jam, and these foods nourished not just Chinese, but also Westerners, including American soldiers who fought in France during World War I (Lin Hai-yin 1971, p. 125). "All this was before the faddish demand for tofu by health food enthusiasts, and before it became widely known as an unbeatable source of protein. The company closed after the war, but among certain Chinese *émigrés* [emigrants from China] France was never to lose its reputation for beancurd. In Europe up to the 1980s *tofu kan,* a particular variety of fermented beancurd [sic, pressed tofu] much demanded by eastern Chinese palates, could only be had in Paris, and the handful of *émigrés* in London had to send over for it."

Li was also a founder of the Université Franco-Chinoise at Lyons, a sort of accommodation and placement agency.

About the author (facing p. 418). Lynn Pan was born in Shanghai; she left as a child. She "has lived as an immigrant in North Borneo and England, and worked as a social scientist, journalist and writer in London, Geneva, Helsinki, and Hong Kong." In 1981 she returned to Shanghai for the first time, and was gripped by deep, haunting sensations of nostalgia. She had found the place where she belonged, her inheritance, and she began to write this book. She is the author of at least five other books–all listed facing the title page. Her Epilogue and Afterword at the end of this book are both very interesting.

6748. Pennington, Jean A.T.; Church, Helen Nichols. eds. 1994. Bowes and Church's food values of portions commonly used. 16th ed. Philadelphia, Pennsylvania: J.B. Lippincott Co. 257 p. 1st ed. was 1937. 2nd ed. was 1939. 10th ed. was 1966. [62 ref]

• ***Summary:*** Soy is mentioned on pages 62 (shortenings),

63 (soybean oil, regular and hydrogenated), 83 (soy muffin, with soy flour replacing 25% of the white wheat flour), 84 (soy pancake, with soy flour replacing 25% of the white wheat flour), 73 (soybean flour, regular and defatted; whole wheat and soy flour), 114 (meat analogues made by Loma Linda and Worthington Foods), 116 (soybean milk, liquid, concentrate and powder), 119 (soy bean nuts [soynuts]), 126 (soy sauce), 142 (soybean mayonnaise, regular and imitation; spread and stick of soybean and palm), 158 (soybean sprouts; soybeans immature [edamame]), 163 (soybean protein). Address: 1. Formerly Instructor of Nutrition, City College of San Francisco, San Francisco, California [Now with U.S. Food and Drug Administration, Washington, DC]. Phone: 202-245-1064.

6749. Stepaniak, Joanne. 1994. The uncheese cookbook: Creating amazing dairy-free cheese substitutes and classic "uncheese" dishes. Summertown, Tennessee: The Book Publishing Co. 192 p. Index. 21 x 18 cm. [16 ref]
• ***Summary:*** This is an excellent, very creative cookbook with a poor index, developed especially for people who, due to choice or chance, have eliminated cheese from their diet. The recipes are well designed to satisfy any compelling cheese fantasies you may have.

Contents: Introduction. Cheezes, spreads & dips. Soups and chowders. Fondues & rarebits. Sauces. pestos & dressings. Pizzas, polentas & breads. Quiches, casseroles & entrées. Sweets. Glossary. Mail order suppliers of natural foods.

Tofu is used as a major ingredient throughout this cookbook. For example: Muenster cheese (p. 23). Chunky Roquefort dip & dressing (p. 24). Tofu cottage cheese (p. 27). Tofu ricotta (p. 27). Betta feta (p. 28). Brie (p. 31). Liptauer käse (p. 32). Boursin cheese (p. 33). Tofu cream cheeze–rich or light (p. 34-35). Kefir cheeze (p. 36). Garbanatto (p. 39). Hot Parmesan artichoke dip (p. 41). Pecan cheese (p. 42). Egg-free (vegan) mayonnaise (p. 89). Tofu sour cream (p. 90). Calzones (p. 100-10). Tofu tetrazzini (p. 122) Tofu devonshires (p. 140). Mattar paneer (p. 146). Tofu cheezecakes & cream pies (ten varieties, p. 164-74). Tofu whipped topping (p. 172).

Many other recipes also call for "low-fat, dairy-free (vegan) milk" which is defined (p. 183) as "a generic term which refers to any creamy beverage such as soymilk, nut milk, or rice milk that is produced from non-animal products.

Interesting products in the glossary (p. 180-184) include: Agar, barley malt syrup, brown rice syrup, liquid aminos, mirin, miso, seitan, tahini, tamari, tempeh, toasted sesame oil, tofu, umeboshi plum paste, vegan milk, yeast–nutritional (*Saccharomyces cerevisiae*).

6750. **Product Name:** [Soymilk–Enriched with Calcium].
Foreign Name: Soyamilk–Arricchito in Calcio.
Manufacturer's Name: Valsoia S.p.A.
Manufacturer's Address: Via Iacopo Barozzi 4, 40126 Bologna, Italy. Phone: +39 051-659-9900.
Date of Introduction: 1994. January.
Ingredients: Water, soybeans (20%), chicory syrup (*sciroppo di cicoria*), calcium carbonate (*carbonato di calcio*), sea salt, spices (*aromi*).
Wt/Vol., Packaging, Price: 500 ml Tetra Brik cartons.
How Stored: Shelf stable, 9 month shelf life. Refrigerate after opening.
Nutrition: Per 100 ml.: Energy 178 kJoules / 43 Kcal (calories), protein 3.6 gm, carbohydrate 2.3 gm, fat 2.1 gm (of which 0.4 gm saturated, 0.4 gm monounsaturated, 1.3 gm polyunsaturated, cholesterol 0 mg), calcium 120 mg (15% of RDA).
New Product–Documentation: Talk with Dr. Piero Bontempi and Laura of Valsoia. 1995. June 6. This product was introduced in 1994. Color leaflet and product specifications showing labels. 1995. "Valsoia–Bonta' e Salute. Soyamilk–Arricchito in Calcio. 100% vegetale. Senza zucchero (saccarosio) (Free of sugar). Prodotto Dietetico." The company uses the word "Soyamilk" as a registered trademark. The leaflet describes the product as "Il latte di soia dietetico."

6751. Asahi Food Processing Co. 1994? Soybean materials and tofu quality: Soybean use at Asahi. Gyoda-shi, Saitama-ken, Japan. 13 p. 28 cm. Undated. [Eng]
• ***Summary:*** This very interesting report was produced by the Tofu Research Team in the company's Foods Laboratory. It shows how a top Japanese tofu manufacturer evaluates soybeans and processes for making tofu. Each year Asahi uses 4,900 tonnes (metric tons) of soybeans, of which 3,000 tonnes (61.2%) are IOM from the USA and 1,900 tonnes (38.8%) are grown in Japan. Contents: Flow sheet for making soymilk and tofu.

Chemical composition and viscosity of soymilk and hardness of tofu, made using 26 different soybean varieties and 3 coagulants–GDL, calcium sulfate, and magnesium chloride. The main soybeans are Enrei, Toyosuzu, Suzuyutaka, Nanbushirome, Tachinagaha, Yamabe daizu (+ or -), IOM, Vinton, Beeson, Kunitz, Zane, Forrest, 9 experimental Canadian soybeans bred at Harrow [Ontario], Best One (Harrovinton [Harovinton]), plus soybeans from Nepal, Celebes, and Chiang Mai.

Chemical composition of 26 soybean varieties and subunit composition of their protein (11S, 7S, etc.). Composition of other soybeans tested: Vinton organic, Tachiyutaka, Tamahomare, Fukuyutaka, Murayutaka, Raisen, Nakasennari, etc. Variables affecting tofu breakage, and tofu compression. Graph showing effect of A-4 subunit on viscosity change of soymilk after addition of magnesium chloride. Graph showing viscosity curves after addition of magnesium chloride coagulant (0.2%) to soymilk derived from 8 different soybean varieties (Note: Enrei gives the

lowest viscosity and Vinton the highest). Dendrogram of cluster analysis on principal component score for Japanese soybean cultivars (Best suited for tofu are Enrei, Toyosuzu, Fukuyutaka, Shirosennari). Note: *Webster's Dictionary* defines dendrogram (a term first used in about 1953) as "a branching diagram representing a hierarchy of categories based on degree of similarity or number of shared characteristics esp. in biological taxonomy."

Three dimension chart of factor loading. Chart (2 pages) of variables affecting tofu quality: Vertical columns: Deliciousness (Color, taste, flavor, texture), nutrition, sanitation, cost. Horizontal columns: Points/characteristics, soybeans, extraction of soymilk, coagulation operation to make tofu, viewpoints (notes), Enrei, IOM. Address: 2-17-8 Mochida, Gyoda-shi, Saitama-ken, Japan.

6752. **Product Name:** [Fresh Tofu-Based Pastry (Carob)].
Foreign Name: Tof'délice (Caroube).
Manufacturer's Name: Gaia.
Manufacturer's Address: 11, rue François Chancel, 31190 Auterive, France. Phone: 61 50 67 39.
Date of Introduction: 1994?
Ingredients: Tofu*, sunflower oil*, corn syrup*, sea salt, soymilk* [filtrat de soja], agar-agar, carob*, flour T65*. * = Organically grown.
Wt/Vol., Packaging, Price: 150 gm.
New Product–Documentation: Color leaflet (undated, 6 panels) sent by Jean-Luc Alonso. 1994. May 16. *Une gamme de pains spéciaux, goûtres et desserts naturels, 100% végétals, biologiques et sans adjonction de sucre* [A line of special breads, snacks, and natural desserts. Made purely from plants, organically grown, and without the addition of sugar]. The printed address has been crossed out; the new address is: 7, rue du Mail, 81300 Graulhet, France. Phone: 63 42 16 03. The following products are included in the leaflet (the label of each is shown): Tof'délice–Caroube (A fresh carob pastry based on tofu). Tof'quiche–Au tofu fume (Tofu quiche based on smoked tofu). Friand au seitan (Seitan appetizer).

6753. **Product Name:** [Tofu Quiche (With Smoked Tofu)].
Foreign Name: Tof'quiche–Au Tofu Fume.
Manufacturer's Name: Gaia.
Manufacturer's Address: 11, rue François Chancel, 31190 Auterive, France. Phone: 61 50 67 39.
Date of Introduction: 1994?
Ingredients: Tofu*, soymilk* [filtrat de soja], smoked tofu*, flour T65*, rolled oats, sunflower oil*, shoyu [sauce de soja], miso [pâte de soja], aromatic herbs. * = Organically grown.
Wt/Vol., Packaging, Price: 130 gm.
New Product–Documentation: Color leaflet (undated, 6 panels) sent by Jean-Luc Alonso. 1994. May 16. *Une gamme de pains spéciaux, goûtres et desserts naturels, 100% végétals, biologiques et sans adjonction de sucre* [A line of special breads, snacks, and natural desserts. Made purely from plants, organically grown, and without the addition of sugar]. The printed address has been crossed out; the new address is: 7, rue du Mail, 81300 Graulhet, France. Phone: 63 42 16 03. The following products are included in the leaflet (the label of each is shown): Tof'délice–Caroube (A fresh carob pastry based on tofu). Tof'quiche–Au tofu fume (Tofu quiche based on smoked tofu). Friand au seitan (Seitan appetizer).

6754. **Product Name:** Tofu, Soymilk, Dried Tofu Curds, and Veggie Burgers.
Manufacturer's Name: Harcan Kingsoya Co. Ltd.
Manufacturer's Address: 33 Casebridge Court, Units 5&6, Scarborough, ONT M1B 3J5, Canada. Phone: (416) 283-8328.
Date of Introduction: 1994?
New Product–Documentation: Talk with Duff MacKinnon of the Ontario Ministry of Agriculture and Food in Guelph. 1995. March 6. Harcan makes tofu, soymilk, dried tofu curds, and veggie burgers. They have a very small plant. One partner, from mainland China, speaks excellent English. The other two partners are Canadian.

6755. Rosas, Juan Carlos; Young, Roberto A. 1994? El cultivo de la soya. Quinta edición [The cultivation of soya. 5th ed.]. *Departamento de Agronomía* (*Zamorano, Honduras*), *Publication* No. AG-9603. 68 p. Undated. [Spa] • ***Summary:*** Contents: 1. Overview: Economic importance, chemical composition, history, taxonomy. 2. Morphology of the soybean plant. 3. Physiology of the growth and development of the soybean plant: Stages of development. 4. Environmental factors that affect the cultivation of soya: Soil, water, irrigation, light / photoperiod, temperature, period of growth. 5. Practical cultivation: Preparation of the soil, time of planting, density of planting, quantity of seeds, systems of cultivation, control of weeds (methods of weed control, chemical control). 6. Mineral nutrition of soybeans (and inoculation). 7. Diseases that affect the cultivation of soybeans and their management: Bacterial, fungal, viral, other, seed treatment. 7. Insects that attack soybeans. 8. Harvest and storing. 10. Improvement of soybeans. 11. Processing and utilization: Industrial processing (extraction of oil, soy flours, soy protein concentrates {*concentrados proteícos de soya*}, soybean cake). Direct consumption: In the Far East, the soybean is consumed in the form of fermented and non-fermented foods. Fermented foods include shoyu, miso, mato [sic, natto], and tempeh, while non-fermented foods include soymilk (*la leche de soya*), tofu, yuba (*juba*), and kinako. 12. The cultivation of soya in Honduras (history).

In 1972, the Ministry of Natural Resources (*Ministerio de Recursos Naturales*) reported the initiation of commercial

soybean production on a small scale in various departments of the country (Olancho, El Paraíso and Comayagua). Three varieties were used at that time: Biloxi, Hardee and Jupiter. However, before these reports were made, at the Panamerican Agricultural School (*la Escuela Agrícola Panamerican* (*EAP*)), some hectares had already been planted with the varieties Jupiter and Pelican. Discusses additional developments in 1974, 1982, 1986, 1987, and 1988. Address: 1. PhD; 2. PhD.

6756. Much, Marilyn. 1995. Seeds bear fruit at Archer Daniels Midland: Profits surge at huge grain processor thanks to growing sales of higher margin additives. *Investor's Business Daily.* Jan. 5.
• ***Summary:*** A photo shows ADM Chairman and CEO Dwayne Andreas who said that his company's business has doubled every six years for the past 20 years. In 1994 ADM had bad luck because of the great Midwest floods; earnings dropped 11% even as revenues rose 16% to $11.4 billion. ADM's strategy is to nurture core businesses, like milling of corn, wheat, and soybeans, while expanding and upgrading products into higher margin items.

Over the past few years ADM has used new technologies to extract amino acids from corn. Today ADM is a leader in the production of amino acids like lysine and threonine, which are used as livestock feed supplements. It will soon start making tryptophan for use in livestock feeding. Andreas estimates that consumption of such value-added products is growing anywhere from 6% to 25% a year. That explains why he has invested several hundred million dollars in making these items. "This investment includes the January acquisition of Central Soya Co., one of the largest global distributors of multivitamin products." [Note: In Jan. 1994 (not 1995) a subsidiary of ADM acquired Central Soya's feed division–but not the entire Central Soya company].

Analyst David Nelson of NatWest Securities predicts that ADM's earnings overall will grow at a compound annual rate of 9% to 12% over the next 5 years as the firm reaps the benefits of its wise investments, and as agricultural trade becomes more liberalized. That's up from only 3% from 1990-1994. For example, the market for ADM fructose has exploded. ADM plans to diversify into new bioproduct categories. Long-term, Andreas plans to produce all six antioxidant vitamins from natural sources–and penicillin.

ADM's soy protein business is growing rapidly. Six years ago the company invented a new way to isolate [concentrate?] soy protein and make a product similar in taste and texture to meat. This is used as an ingredient in the Harvest Burger patties marketed at retail by Pillsbury's Green Giant.

Andreas has found that liberalization of agricultural trade through NAFTA and GATT has been of tremendous benefit to ADM and similar companies. ADM is now shipping to China vastly increased amounts of vegetable oil. "The company has shipped $26 million of a total $100 million order from the Ukraine for soy protein to be used in milk. And the former Soviet Union has asked ADM if it can supply it with 3 million tons of milk from soy protein in the future, says Andreas." Address: Staff reporter.

6757. Food Commission (The), London. 1995. Question mark hangs over infant soya milks (News release). Third Floor, Viking House, 5/11 Worship Street, London EC2A 2BH. 1 p. Jan. 11.
• ***Summary:*** "New research published by the Food Commission today [See Living Earth and Food Magazine, page 3] shows evidence that the levels of naturally-occurring hormones (phytoestrogens) present in soya baby milks may be equivalent to giving a young infant several contraceptive pills every day. The research, undertaken in New Zealand, raises questions over the advisability of giving babies soya formulae as the biological effect of phytoestrogens could be 100 times greater than the amount of natural oestrogen a child would receive from breastmilk.

"The Food Commission has also discovered that UK Government experts called for monitoring of the phytoestrogens in soya formula in 1992 but, despite being on MAFF's 'priority list', the research has yet to start.

"Phytoestrogens can be toxic to animals and could potentially decrease fertility in women yet little is known about their effects on children. However one leading UK researcher is recommending that oestrogens from whatever source should be kept to a minimum especially during childhood." Address: London, England. Phone: 071 628 7774.

6758. Roberts, Rosemary. 1995. New voice urges care with soy formula. *Northern Advocate* (*Whangarei, New Zealand*). Jan. 18.
• ***Summary:*** David Russell, chief executive officer of the Consumers Institute (in New Zealand) said this week that people should be "'very, very cautious' about giving infants soybean-based formulae. Mr. Russell said scientists had shown there was cause for concern because of the high phyto (plant) oestrogen content in the formulae."

"Yesterday in Britain, the British Food Commission's magazine, The Food Magazine, published the results of Dr Fitzpatrick's research, highlighting his comments on the probable risks of feeding soy infant formulae to babies.

"The magazine also reminded readers that in 1992 the United Kingdom's expert committee on toxicity recommended that levels of phyto-oestrogens in soy baby milks and other soy foods for children be analysed as part of its review of natural toxicants in foods.

"No research had yet been done, the magazine said.

"The British Food Commission also asked companies supplying soy baby milks in the UK to provide information on levels of phyto-oestrogens. Only one company had done

so, and the level appeared to be about two-thirds that in New Zealand formulae.

"Dr Iain Robertson, senior toxicologist at the Auckland Medical School, has also restated the strong views he expressed last month on the use of soy infant formulae. Reviewing the Fitzpatrick report, he said use of soybean-based infant formulae should be discontinued until research on their possible effects on babies was carried out."

6759. Lo, K.S. 1995. Re: New developments at Vitasoy, and some early history. Letter to William Shurtleff at Soyfoods Center, Jan. 25. 2 p. Typed, with signature.
• ***Summary:*** As of January 1994, Dr. Lo stepped down from the chairmanship of Vitasoy International Holdings Limited when the company went public. The company is now being run by Dr. Lo's son, Winston, as the Chief Executive. All matters relating to the company should be referred to him at his office: No. 1, Kin Wong St., Tuen Mun, New Territories, Hong Kong.

Dr. Lo sends a photocopy of an article from the *S.C.M. Post* titled "Soya Bean Milk Factory Opened," published on 10 March. 1940. It describes the opening ceremony of his original soymilk factory, which took place on 9 March 1940. Dr. Lo writes that this factory "was situated at Great George Street, Causeway Bay, Hong Kong, where the Park Lane Hotel stands today. It was not until 1950 when we moved down to Aberdeen."

Mr. Lo's new office address is: Chairman, Ping Ping Investment Co., Ltd., B-1, 1st Floor, Vita Tower, 29 Wong Chuk Hang Road, Aberdeen, Hong Kong. Address: Former chairman, The Hong Kong Soya Bean Products Co., Ltd., 41 Heung Yip Rd., Aberdeen, Hong Kong. Phone: 5-528211.

6760. **Product Name:** Vitamite: 2% Fat Chocolate Non-Dairy Flavored Beverage.
Manufacturer's Name: Diehl Specialties International (DSI).
Manufacturer's Address: Defiance, Ohio.
Date of Introduction: 1995. January.
Ingredients: 1995: Water, corn syrup solids, partially hydrogenated canola oil, potassium caseinate (a milk derivative), isolated soy protein, cocoa processed with alkali, tricalcium phosphate, natural cocoa, salt, dipotassium phosphate, guar gum, xanthan gum, carrageenan, mono- and diglycerides, calcium sulfate, sodium stearoyl lactylate, artificial flavor, calcium d-pantothenate, vitamin A palmitate, vitamin D-3, riboflavin, pyridoxine hydrochloride, thiamine mononitrate, annatto (color), vitamin B-12.
Wt/Vol., Packaging, Price: 1 quart gable-top Pure Pak carton.
How Stored: Refrigerated.
New Product–Documentation: Liz Stevens. 1994. Detroit News. Aug. 30. p. 3D, 12D. "You call this milk? Yes, there are palatable alternatives to the real thing." Mentions Vitamite.

Label sent by Irene Stuttman, President and CEO, Sycamore Creek in Michigan. 1995. Nov. 2. Quart Pure Pak carton. Chocolate brown and red on white. "Lactose free. Cholesterol free. High calcium. Delicious chocolate taste. Contains milk protein. Homogenized / Ultra pasteurized. Vitamins A & D added." "For lactose intolerant people."

Talk with Tom Mekus, Vice President of Sales and Marketing, at DSI toll-free number (1-800-643-3930). 1995. Nov. 6. Vitamite is sold in the dairy section at most supermarkets throughout most of the United States, including most Safeway supermarkets in California. It comes in both liquid and powdered forms. They are the licensee, Diehl Specialties International in Defiance, Ohio. Their factory there makes the powder base and ships it nationwide to dairies that process it into a liquid milk alternative then package it. Ryan Milks processes the powder in the California area. The company makes "2% white" (blue carton) and "2% chocolate." They are developing a non-fat version. The product contains both soy protein and some potassium caseinate which is a milk derivative but is not considered to be a dairy product. Vitamite is distributed throughout most of the USA except in the northeast from Philadelphia (Pennsylvania) up through New York and Boston.

6761. Eshett, Susan. 1995. Sidi Modupe Osho: Nutrition for Nigeria. *IRDC Reports* p. 11.
• ***Summary:*** "Food technologist Dr. Sidi Modupe Osho attributes much of her recent success in research to a somewhat unlikely source–a small cream-coloured bean known as soybean. Simply stated, soybean is nothing less than a 'miracle crop,' she says. Soybean was like 'a vehicle for me to carry out research activities.'

"However, most colleagues would likely say that it is Osho's own singular intelligence, enthusiasm and dedication that have been vital factors in her achievements in developing food products from soybean that now find growing acceptance among her fellow Nigerians.

"Born thirty-five years ago into a large Nigerian family, her love for information was evident from an early age. 'As a child, my parents said I was the most curious of my siblings,' she says. Although science became her eventual vocation, throughout her secondary education she was more inclined to the arts. However, as she grew older she became fascinated by science.

"At Delta College University Centre, in Michigan, she obtained an associate degree in agriculture, followed by a degree in food science from Michigan State University. Then came a Master's degree in food processing and technology from Ohio State University in 1982.

"Osho's first contact with soybean in Nigeria came indirectly, through research she was conducting on cassava, a staple in West Africa but a crop with very low protein

content–in some cases none at all. She began investigating the potential of legumes that could improve the nutritional value of cassava-based products.

"Years after that initial contact, Osho has succeeded in popularizing soybean as an alternative source of protein, one which is affordable and acceptable to Nigerians, particularly among low income and rural communities. Most of her work entails coordinating the soybean utilization and processing program at the International Institute of Tropical Agriculture (IITA), located in Ibadan, southwest Nigeria. For the past seven years, she has worked in a soybean utilization project initiated by the IITA in collaboration with the Institute of Agricultural Research and Training (IART), also in Ibadan, the National Cereals Research Institute, Badeggi, National Agricultural Extension Research and Liaison Services, Zaria, and the University of Nigeria, Nsukka. The project is funded by IDRC.

"Osho came well suited to the project, owing to her doctoral research on plantain processing and preservation while at the University of Ibadan. This research allowed her to live in a rural community in Oyo State and to learn from villagers the technique of processing *dodo ikire,* a nutritional plantain-based food product that had been developed locally.

"Osho worked with an economist, agronomists, agricultural economists and a home economist. The team was multidisciplinary because, as she notes, it had to 'develop uses for soybean that were acceptable traditionally in our food systems and interact with the rural household to uncover simple technologies that will fit their own life style.' The main obstacle in the research was the negative perception of soybeans. 'The missionaries that introduced the crop in Nigeria in the early part of this century told farmers soybeans had a toxic component.' The researchers had to erase that belief, then prove to rural folk that soybean was nutritionally beneficial.

"Osho recognizes the role of cultural factors in introducing new foods such as soybean-based products to Nigerians. 'In the northern region they have a lot of cereals so most of the soybean technologies that we developed were to suit that part.'

"She points to the fact that soybean originated in China and from there was introduced to other parts of the world, and that most of the technologies now in use were borrowed from China and the Asian sub-continent. 'Drinking soybean milk is a typical Asian habit, which we are now adopting in Nigeria.'

"Osho and her husband, a biometrician, met as students in the United States. They have three boys. 'I am married to a very understanding person,' she explains. 'He is also a researcher, works in the University of Ibadan and knows the dedication that research requires.' He assists her in the documentation of her work and statistical analysis.

"Osho envisages a great need for developing countries to increase food production levels. But for now, what is paramount for the Nigerian researcher is the sustainability of the soybean project. The next challenge is to develop strong research programs with national institutions in other African countries. Her achievements in Nigeria could serve as a springboard for spreading her experiences to other parts of the African continent and even beyond."

A portrait photo show Sidi Osho. Her soybean research in Nigeria could help other countries seeking an affordable alternative source of protein. Address: Correspondent for NTA News, Nigeria.

6762. Mindell, Earl. 1995. Earl Mindell's soy miracle. New York, NY: Simon & Schuster. A Fireside Book. 256 p. Index. 22 cm. [97 ref]

• ***Summary:*** Contents. Part I: Soy–The miracle food. 1. The soy story: explaining the miracle. 2. Soy by any other name. 3. Does soy prevent cancer? 4. Heart and soy. Part II: Soy for special needs. 5. Just for women: Rx for menopause and osteoporosis. 6. Just for men: Rx for prostate problems. 7. Kids, cancer, and heart disease. 8. Tips for vegetarians. Part III: Not by soy alone. 9. Thirty-seven miracle foods from the Pacific Rim. Earl's pearls: A guide to vitamins and minerals. Part IV: Get more soy in your life. 11. Savvy substitutions. 12. Cooking with soy. 13. Breakfast the soy way. Part V: Seventy super soy recipes (p. 149-230). Glossary. Resources. Selected bibliography.

Pages 12-13 note that soybeans are an abundant source of many different types of phytochemicals, including isoflavones, genistein, protease inhibitors, and phytic acids.

Chapter 2 describes the different types of soy foods. Traditional soy foods: Soy milk, tofu (firm tofu, silken tofu, yakidofu, koyodofu [sic, koya-dofu]), okara, natto, tempeh, miso, soy sauce, kinnoko [sic, kinnako] flour. Soy protein products: Soy protein concentrates, soy protein isolate, soy flour, texturized soy protein, meat analogs. Other soy products: Soy fiber, soybean oil, lecithin. Questions about soy foods. Page 33 asks the question: "If phytochemicals in soybeans are so healthy, why can't they be extracted from food and made into a pill like a vitamin?" Answer: Researchers are not yet certain which phytochemicals are the most important. "There may even be other beneficial compounds in soy that have yet to be identified. Your best bet is to eat the real food." A section titled "Soy's top ten benefits" (p. 36-38) discusses: 1. Antioxidant. 2. Breast cancer. 3. Cholesterol lowering. 4. Colon cancer. 5. Hip fracture. 6. Hot flashes. 7. Immunity. 8. Kidney disease. 9. Lung cancer. 10. Prostate cancer.

Chapter 3, titled "Does soy prevent cancer?" discusses six compounds which cancer researchers believe may be effective in cancer prevention: Isoflavones, genistein, daidzein, protease inhibitors, phytic acid, and saponins. A long section later in the chapter discusses each of these, with special emphasis on genistein.

Note: The author has also written *Earl Mindell's*

Herb Bible and *Earl Mindell's Food as Medicine.* He is a newcomer to this field. This book may appeal to those who are looking for miracles from the foods they eat. Most of the information contained in this book can be found in Mark and Virginia Messina's outstanding *The Simple Soybean and Your Health* (1994), and the *First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease: Proceedings from a symposium held in Mesa, Arizona, on February 20-23, 1994,* published in full in *The Journal of Nutrition* Vol. 125, No. 3S, March 1995 Supplement. It was from this symposium and the outline published before the symposium that Mindell got his idea for this popular book.

Dr. Mindell is an R.Ph. (Registered Pharmacist) with a PhD in Nutrition from Pacific Western College in Renton, Washington.

According to a review of *Earl Mindell's New and Revised Vitamin Bible,* by James A. Lowell, PhD. (Nutrition Forum, June 1986) "Mindell claims to hold valid credentials in nutrition. Although he does have a bachelor's degree in pharmacy from the University of North Dakota, his Ph.D. is from the University of Beverly Hills, an unaccredited school which lacks a campus or laboratory facilities." Mindell helped to found the Great Earth chain of vitamin and health food stores, numbering about 200 in 1986, America's second largest such chain. Address: R.Ph, PhD, registered pharmacist and Prof. of Nutrition at Pacific Western Univ. in Los Angeles. He lives in Beverly Hills, California.

6763. Minnesota Soybean Growers Association; Minnesota Soybean Research & Promotion Council. 1995. Cooking with soy. Revised 2nd ed. North Mankato, Minnesota. 48 p. Jan. 22 cm.

• ***Summary:*** Contents: Introduction. Tofu facts. Soy milk facts. Soy flour facts. Miso facts. Tempeh facts. Texturized soy protein facts. Meat analog facts. Soy oil facts. Whole (dry) soybean facts. Whole (green) soybean facts. How to cook whole soybeans.

Recipes: Appetizers & snacks. Dips & dressings. Beverages. Salads & soups. Breads. Main entrees. Cakes, cookies & desserts. Substitutions.

Talk with Christie Metzger of the MSRPC. 1996. Jan. 4. The revised edition of this book was published in Jan. 1995; the first edition was published in March 1994. Address: 360 Pierce Ave., Suite 110, North Mankato, Minnesota 56003. Phone: 507-388-1635.

6764. **Product Name:** Pacific Rice: Non Dairy Drink (Lowfat) [Vanilla, Cocoa, or Plain].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1995. January.
Ingredients: Plain: Filtered water, brown rice, expeller pressed canola oil, tricalcium phosphate, *Lactobacillus acidophilus* and *L. bifidus* cultured product added, guar gum, xanthan gum, carrageenan, sea salt, vitamin A palmitate, vitamin D-2.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 8 fl. oz. (240 ml): Calories 70, calories from fat 15, total fat 1.5 gm (2% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 55 mg (2%), total carbohydrates 14 gm (dietary fiber 0 gm, sugars 9 gm), protein 1 gm. Vitamin A 10%, vitamin C 0%, calcium 15%, iron 6%, vitamin D 30%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Leaflet (8½ by 11 inch, color) sent by Patricia Smith from Natural Products Expo East (Baltimore, Maryland). 1995. Sept. 15-18. "New from Pacific Foods. New! All-rice beverages are completely enriched, taste great, and come in resealable, easy-to-pour containers. Plus, Pacific Foods offers the first fat-free rice non-dairy drinks!" A color photo on the cover shows 3 low-fat and 3 non-fat products. Label: On the front panel is a color illustration of a glass of rice beverage surrounded by leaves of grass. Below the word "lowfat" appears: Calcium, vitamins A&D, and L. acidophilus cultured product added: On one side panel for all flavors: "Simply the best. Pure Cascade mountain water. Brown rice. A cholesterol-free and lactose-free food. Low sodium. No animal fats. No preservatives. Lactobacillus acidophilus and L. bifidus cultured product added."

Fax with photocopies of 3 Labels sent by Kaye Barnes of Pacific Foods. 1996. Jan. 5. These three products were introduced in Jan. 1995.

6765. **Product Name:** Pacific Rice: Non Dairy Drink (Fat Free) [Cocoa, Vanilla, or Plain].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1995. January.
Ingredients: Plain: Filtered water, brown rice, tricalcium phosphate, *Lactobacillus acidophilus* and *L. bifidus* cultured product added, guar gum, xanthan gum, carrageenan, sea salt, vitamin A palmitate, vitamin D-2.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 8 fl. oz. (240 ml): Calories 60, calories from fat 0, total fat 0 gm (0% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 55 mg (2%), total carbohydrates 14 gm (dietary fiber 0 gm, sugars 9 gm), protein 1 gm. Vitamin A 10%, vitamin C 0%, calcium 15%, iron 6%, vitamin D 30%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Leaflet (8½ by 11 inch, color) sent by Patricia Smith from Natural Products Expo East (Baltimore, Maryland). 1995. Sept. 15-18. "New from

Pacific Foods. New! All-rice beverages are completely enriched, taste great, and come in resealable, easy-to-pour containers. Plus, Pacific Foods offers the first fat-free rice non-dairy drinks!" A color photo on the cover shows 3 low-fat and 3 non-fat products. Label: On the front panel is a color illustration of a glass of rice beverage surrounded by leaves of grass. Below the words "Fat Free–Plain" appears: Calcium, vitamins A&D, and L. acidophilus and L. bifidus cultured product added: On one side panel for all flavors: "Simply the best. Pure Cascade mountain water. Brown rice. A cholesterol-free and lactose-free food. Low sodium. No added oils. No preservatives. Lactobacillus acidophilus and L. bifidus cultured product added."

Fax with photocopies of 3 Labels sent by Kaye Barnes of Pacific Foods. 1996. Jan. 5. These three products were introduced in Jan. 1995. New package designs were introduced in Feb. and March 1995. The latter are in both English and French.

Product with Label purchased at Trader Joe's in Concord, California. 1996. Jan. 3.5 by 7.75 by 2.25 inches, with resealable spout. Aseptic carton. Green, purple, and black on white. Retails for $1.19. Soyfoods Center taste test. Tastes pretty bad, like a mixture of starch and sugar.

6766. Ubiera, L.R. 1995. Tofu y leche de soya: Alimentos macróbiotics–naturales. Una guía practica para su manufactura en casa. La proteina del futuro, ahora [Tofu and soymilk: Macrobiotic natural foods. A practical guide for home preparation. Protein source of the future, now]. Santo Domingo, Dominican Republic: Published by the author. iii + 156 p. Illust. Index. 21 cm. [5 ref. Spa]

• ***Summary:*** The author was born on 20 Jan. 1955 in the Dominican Republic. He also practices and teaches Hatha Yoga. Contents: Dedication to his teacher Maestro el Swami Guru Devanand Saraswati J. Maharaj, and others. Prolog, by José A. Fortunato of New York. Introduction. How to make tofu and soymilk at home. Preparatory techniques for tofu. How to make tofu cutlets, burgers, and pouches. Recipes: Sauces, salads, and soups. Main dishes. Other recipes– *Aderezos, cremas, salsas, ensaladas, sopas, entremeses, pastelones y platos, pastas, estofados y otros platos, postres, dulces y bizcochos, panes.* Photos and illustrations (from The Book of Tofu, by Shurtleff & Aoyagi). A color photo on the rear cover shows the author. Address: Ufiesa Nutrisoya, C/33 No. 9 A, Villa Carmen Este, Santo Domingo, Dominican Republic. Phone: (809) 590-3418.

6767. Westbrae Natural Foods. 1995. Only Westbrae... No other brand has 100% organic non dairy beverage (Ad). *Vegetarian Times.* Jan. p. 7.

• ***Summary:*** This full-page color ad shows the front of a large carton of WestSoy 100% Organic Non Dairy Beverage (Original, only 2% fat), with a convenient new pour spout. It also has a free book offer: Buy 4 quarts of WestSoy and get a free copy of *Earl Mindell's Soy Miracle.* A photo shows Earl Mindell. "Find out how phytochemicals like isoflavones, that help protect plants from disease, may also help prevent chronic illnesses in humans. These same isoflavones, particularly genistein, are found in abundance in soy."

This ad also appeared in the March 1995 issue (p. 7) of this magazine. Address: P.O. Box 48006, Gardena, California 90248.

6768. Wildwood Natural Foods. 1995. Price list–January 9, 1995. Fairfax, California. 5 p.

• ***Summary:*** Wildwood's own product lines include: Sandwiches (7 products, incl. burritos and sushi), salads (17), tofu and tofu products (13), soymilk (2), hot dogs (1), tempeh (4).

Wildwood also distributes products made by other companies: Red Wood Foods (16 products), Mrs. Wiggles Rocket Juice (12), Grainaissance (17; amazake, pudding, and mochi), Sonoma Salsa (7), Yves Veggie Cuisine (9), Lightlife Foods (13), Turtle Island Foods (1), NuTofu soy cheese (3), Señor Felix's (8), Heart & Soul (5, Trim Slices), Natures Babies (10, baby foods). Address: 135 Bolinas Rd., Fairfax, California 94930. Phone: (415) 459-3919.

6769. Ham, P. Marc. 1995. The work of Semences Prograin Inc. (Micronisation Canada Inc.) in Quebec (Interview). *SoyaScan Notes.* Feb. 1. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** This company was established in 1980 and is now a leader in Canada in the field of value added soy products. About two-thirds of their business is making full-fat micronized soybeans for use in animal feeds (mainly dairy cows, plus hogs and poultry), and one-third is in breeding and growing soybean seed (they presently grow about 2,000 acres year for use as soybean seed). They now have two micronizing plants which produce the Micro Flake, the Micro Milled product and the Micro Elite (made from higher protein soybeans, with high bypass). Mark believes that a micronized product makes better feed than that produced on a low cost extrusion cooker. Extrusion may be better for monogastric animals than it is for dairy. They have a research and development program for new soybean varieties. They also contract with a winter nursery in Chile for reproduction during the winter. They buy about 55,000 tonnes/year of soybeans for processing into animal feed and for exporting to the Pacific Rim. They are one of the largest companies in Quebec that buy soybeans and keep them in Quebec. The big trading houses buy soybeans then export them mostly to Rotterdam, Netherlands, to the European crush market. Prograin keeps its Maple Glen varieties identity preserved. They screen soybeans to sort them into 3 sizes. The big beans (18/64 inch and over) are sold to Japan for use as green vegetable soybeans, the medium sized beans (500 tonnes/year) are used in the Chinatown in Quebec to

make tofu and soymilk, and the small soybeans are used by 3 companies for making soy sprouts in Quebec. They have a natto program as well. Address: Semences Prograin Inc. (Micronisation Canada Inc.), 145 Bas Riviere Nord, St-Cesaire, Quebec, J0L 1T0, Canada. Phone: (514) 469-5744.

6770. Flinn, John. 1995. Who won in Sunday's ad bowl? *San Francisco Examiner.* Feb. 3. p. C-1, C-3. Business section.
• ***Summary:*** In the second quarter of the 1995 Super Bowl (football), Nike ran an ad featuring Dennis Hopper. As the little referee (Stanley Craver) is lamenting his being so weak and puny that he couldn't play football, he says something like "I was allergic to milk and the soybean juice my mother gave me made my bones weak."

One viewer wrote the Examiner: "For Nike to equate soy-milk with malformation/weakness is socially irresponsible. My family has never bought Nike and never will."

6771. Lombardi, Joyce. 1995. Re: History of growing and using soybeans in Chad. Letter to William Shurtleff at Soyfoods Center, Feb. 4. 3 p. Typed, with signature. [Eng]
• ***Summary:*** "Thank you for your response and enthusiasm for our soya work in Chad. I am forwarding your letter to people in town who are very involved in spreading the good bean throughout the land. One, an agronomist from Togo named Dr. Akintayo, has come to Chad for soy propaganda only. He has recently produced a book which will be of great interest to you, and is also very involved in training soybean trainers at the *Centre de Formation Professionale d'Agriculture* (*CFPA*), a farm extension service launched about 6 years ago by Swiss development workers.

"It is in fact from a Swiss-Italian development worker that I got the idea, and later the seeds, for soybean cultivation in my village. I had enjoyed ginger-flavored soymilk at his villa, and had heard him extoll the soil-enriching properties of the soy bean, so when people in my village began complaining about the low rates they were getting from the state's cotton company, I asked if they had thought about planting another cash crop, like soy. I was told it had been done in the past, but people here don't really known how to do much with soy beyond what you call dawa-dawa, fermented sauce. So a few weeks later, after more discussions with villagers, who told our health team that famine was their biggest health worry, the *Comite de Sante de la Paix* was born. Its mission–to grow, sell, and popularize the soybean in the village of Bessada, Chad.

"As far as I can tell, the farthest back anyone can remember planting soy in our region of southeastern Chad is 10 years ago [i.e. in about 1985]. Most people credit the above-mentioned CFPA with introducing the crop here 6 years ago. From its base in town, the CFPA also has several outposts in smaller towns (i.e. Koumra) and villages (i.e. Modjibe) near, or within a 20 km radius of Bessada. Farmers report success with the crop, especially as our soil is 'tired' from a constant rotation of cotton, millet and peanuts. People report that one 100 kg sack fetches between 23,000–50,000 cfa ($41-90) compared to half that for a sack of millet. The main buyers seems to be ONGs run by ex-pats [expatriates] or missions. Local buyers make dawa-dawa, or *ndi,* as it is called in the Sara language here, and several women in my village report making sojateen, or soybean coffee. However the cost, between 150-500 cfa per kg is prohibitive, and soy is still seen as a luxury food here. For comparison, millet is about 50-100 cfa/kg, and peanuts a bit less. Nonetheless, people generally know that soy is good for the body and soil, and were very interested in our collective soybean field.

"So, on July 17 1994, our rather ad hoc health team–made up of four men previously elected as village health delegates and 10 ten traditional birth attendants, old women with lined, tribal-scarred faces, canes, strong wiry hands–planted 6 kg of soybeans on a cleared ½ hectare plot, known here as a corde... Millet and cotton had been planted on our plot before, the debris cleaned away with the usual bushfire method.

"Our yield, just barely over 100 kg, was dismal. Reasons: we planted too late in the rainy season, which begins in May/June, and harvested our beans on Thanksgiving Day. Akintayo informed me that we planted the 120-day variety, which is what the CFPA has made available to folks here. Also, we only weeded twice, and very late in the game. The tribulations of collective labor as I'm sure you remember from your Peace Crops days. Third, our soil is rather sandy, and I'm told soy prefers clay and shade. Indeed, we remarked that the plants growing in the shade of a karite tree produced very well while the plants in the shade of an ndil tree produced a lot of foliage but not much bean. A farmer 7 km away reported a yield of 250 kg from 4 kg of seeds on a one-corde plot. He planted earlier and had better soil. His village has a water table of 23 meters, ours is 47."

"So, now, the sack of beans sits in my hut, away from mice and thieves, until we move it to a communal silo with another sack we're buying on credit. We have siphoned out some of the beans already to stage a big village-wide soybean transformation day, January 25, run by two animatrices sent by the CFPA in nearby Koumra. The two women journeyed out on their red moped to teach the health committee members, representatives from church and women's groups, 25 total participants, to make soy milk, cheese (tofu), fried tofu, beignets (spicy tofuburgers made with the residue [okara] whose name in Japanese I saw in your Book of Tofu), cake, steamed pate with fish and tomatoes, sweet donuts, and cake. The consensus was: porridge (I forgot to mention it above), spicy beignets and cake. Those were the big hits. People were shocked that one could bake a delicious cake there under the mango tree outside our clinic. Our tools were 3-rock fires, wooden mortars, big iron cauldrons and manual labor. Perhaps Niger

was the same way, but Chad has next to nothing in the way of time-saving tools. We did manage to borrow someone's hand-cranked meat grinder to make the soy milk.

"The fallout from soyday is this: the chef du canton, in whose compound I live, wants to make our village a center for soya cake, and we plan to serve it to the US Ambassador and Minister of Health who are due out in the village next week to inaugurate our newly renovated clinic, *grâce à* USAID. New members of the health team want to launch an infant-feeding program of soy porridge at the dispensary each Saturday or vaccination day. There is one such program started by a French doctor named Dr. Magguie Negri in a village called Bekemba, about 60 km north of here. She started the program in 1991, and reports feeding 103 children in 1993, on a continued basis. She encourages mothers to prepare the soy meals (porridge) themselves, and to aid with a community soycrop. (Paperwork to follow if I can find any).

"The infant nutrition program couldn't come at a better time for Bessada which now finds itself in the midst of a fatal measles epidemic, compounded by the beliefs that vaccinations give AIDS and measles, and that giving meat to baby or child with measles will make her sicker.

"So, in my village, soybeans are growing fast and well, and I will leave here knowing that at least I have made a substantial contribution to the well-being of a place it seems that history has forgotten. God, it's hard here. People scrape a living out of the sand with their bare hands."

"So. The gospel spreads forth. Having seen the damage wrought by so many other egos and programs come here to save the Africans, plugging away for The Soybean is one of the only acts of development I really feel comfortable engaging in.

"So no, in answer to your question, soybean cultivation is not a specific Peace Corps program or govt. program here."

"As for me, I was a Vanilla Edensoy and tahini tofuburger fan back in the States, but I never knew much about soy until now."

Color photos taken by Joyce show: (1) Three African men weeding a field of soybeans by hand, Sept/Oct. 1994. (2) Soybean plants in Bessada growing in the shade of a Karité tree, Aug. 1994. (3) Four Africans (two in traditional dress) from the health team seated outside of Joyce's round mud-walled house with conical thatched roof. Atop a wooden mortar are five glasses of soybean coffee on a white plate. Enclosed is a recipe for "Bessadonian soya coffee deluxe," by Joyce. Season, if desired, with *tumba* (Arabic tea spice). It's cheap, nutritious, and you can eat the grounds. Address: U.S. Peace Corps, B.P. 193, Sarh, Chad.

6772. Messina, Mark J. 1995. The effect of phytoestrogens and isoflavones in soyfoods on reproduction and fertility: We are about to see a wave of negative information, but important questions need to be asked (Interview). *SoyaScan Notes.* Feb. 8. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Richard James, an American who lives in New Zealand, fed his parrots a soy-based formula feed and they died. He blamed the soy. He got a New Zealand toxicologist (Mike Fitzpatrick, who works for the government) to do a report on toxins in raw or heat-treated soy, including all the well-known antinutritional factors. The report showed a lack of knowledge of the subject. It was a classic example of a little knowledge being dangerous. The conclusion of the report was that there are many toxins in soy, and that may explain why the parrots died–although it is too early to tell. However James is very dedicated about warning people about the possible dangers of soy. The health department of the Government of New Zealand sent out a questionnaire to soyfoods manufacturers asking them to indicate the levels of various antinutritional substances in their products, can they show that these products are safe, etc. For example, Bean Supreme in New Zealand has been seriously affected by this problem.

The main concern is with phytoestrogens, and more specifically with isoflavones. The two main isoflavones in soy are genistein and daidzein. Mark feels this is a very legitimate and serious concern, especially as it relates to reproduction, fertility, infants, and children. However he believes that in the end, scientific research will show that this is not a problem. This concern has now spread to England, Canada, and Australia. Mark got a copy of a document that was on the Internet; it discussed the many toxins in soy. It said that the information in this document came from an article on toxins in soybeans in the January 1995 issue of *Food* magazine (published by the Food Commission in London).

Nowadays when Mark appears on radio talk shows, roughly one-third of the calls are negative. Mark is now hearing a great deal of incorrect, negative information about the phytoestrogens in soy; some people are very afraid of their potential toxicity. In a book by John Thomas titled *Young Again: How to Reverse the Aging Process* (1994) the author had a chapter on soybean toxicity, in which he warned people not to consume tofu because of the lectins it contains. It was ridiculous; this is a non-issue.

In 1946, reports began to appear in the Australian veterinary journals concerning the decrease in lambs from ewes grazing in subterranean clover [*Trifolium subterraneum*]. In some cases lambing fell below 10% of normal with a 30% loss in ewes. It was shown that the presence of 7-10 grams/day of genistein in ewe rations resulted in sterility or infertility of the female. In 1987 Ken Setchell and coworkers, in an international symposium paper titled "Dietary factors in the development of liver disease and infertility in the captive cheetah," reported that the soy component of diets fed to captive cheetahs, which was

added for economic reasons, was responsible for the severe breeding problems in these animals.

More recently the Perinatal Nutrition Group (one of the dietetic practice groups of the American Dietetic Association; see Gunderson 1994) suggested that women who were trying to get pregnant not consume excessive amounts of soy.

Starting about 6 months ago, Mark began telling leaders of the soyfoods industry that they need to write a report refuting the rising tide of false information related to isoflavones. He has even contacted people at ADM, and they offered, along with other companies, to help fund a review of the literature on the toxicity of isoflavones.

A recent issue of *The Soy Connection* (a professional journal which Mark edits) was devoted to the subject of phytoestrogens and isoflavones. It showed the need for more research on this subject, since scientists realize how potent the isoflavones are. One cup of soymilk contains about 40 mg of phytoestrogen. For example, if 25 mg have a noticeable effect in extending the length of an adult woman's menstrual cycle, what will be the effect of 100 mg in a 1-year-old child–roughly 24 times the dosage on a body-weight basis. People are saying that 1-2 cups of soymilk may contain approximately as much estrogen as is found in 3-4 contraceptive pills, however Mark thinks that one cannot make direct comparisons because the phytoestrogens are different, and are absorbed and metabolized differently. Dosage is clearly the key. But scientists do not yet understand the effect of this relatively large dose of phytoestrogens on the development of an infant. How much soymilk can be safely consumed by young children (who have been weaned). Should Mark feel safe in recommending that vegans consume 3 cups of soymilk a day in place of 3 cups of cow's milk?

In Sept. 1994 the National Cancer Institute had a meeting that focused on the subject of isoflavones. A number of researchers were honestly concerned about unanswered questions regarding the effect of soy isoflavones on humans. Researchers call these "toxicity" questions, and there are a number of disagreements among researchers. The key issues are fertility, sex hormones, and gonadotropins (hormones which stimulate growth or function of the ovaries or testes). Do normal doses make it more difficult for women to become fertile? Are three servings of soyfoods a day better or worse than two servings, or no servings? Can one level of consumption reduce cancer risks, while another increases those risks? Can the ideal does of isoflavones for reducing cancer risk simultaneously cause fertility problems? Do isoflavones behave differently when studied as an isolated compound versus when they are consumed in the form of food with many other substances (e.g. genistein and daidzein consumed together, which is always the case with soy, vs. separately).

The answers will always be related to dosage. Studies can be done on animals, but the conclusions may not be correct when applied to humans. Clinical studies are problematic. If you go to the FDA and you want to prove that genistein (an isolated substance) is safe so you can sell it in pill form, you will be required to conduct a series of standard toxicity tests, starting with two species. If there is no toxicity at the maximum tolerated dose, then you conduct human studies, looking first at absorption and metabolism (kinetic) studies. Then you proceed with the standard FDA protocol.

Bad news can travel very fast, and bad news can easily cancel good news. Remember the dramatic effects of the story of Alar and apples. Imagine the damage that would be done to the soyfoods industry if there were a major half-true TV documentary on problems of isoflavones in soy. The soyfoods industry and Soyfoods Association of America needs a plan of action to deal with this problem. The first thing we need is a brief 2-page report summarizing what we know and what we don't know about isoflavones and phytoestrogens in soy–a review of the most relevant literature. There should be one for consumers and one for professionals (with say 30 citations). The report should be written by the leading American experts in this field–especially related to toxicity, reproduction, and sex hormones. This would give us something to deal with the rising wave of negative information that is coming. We must remind critics that much scientific information shows benefits of consuming isoflavones, and entire populations in East Asia have consumed soyfoods for centuries with no known adverse health effects and probably many benefits. Moreover, reproductive effects is a cheetah, for example, do not necessarily apply to humans. It is very unfortunate that the debate on isoflavones has been picked up by the media before it has been resolved by the scientific community. This has the potential to be the biggest problem yet faced by the soyfoods industry worldwide. "If I owned stock in a soyfoods company right now, I'd be worried and I'd do everything I could to try to make sure the industry is ready to counteract any negative publicity.

Update: 1995. April 27. Sales of infant formulas in New Zealand have decreased significantly since the negative publicity started. Mark has calculated, based on published data, that an infant consuming 1 liter/day of a reconstituted infant formula based on isolated soy protein would be consuming about 40 mg/day of isoflavones. Address: PhD, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 206-379-9544.

6773. Weber, Marcea Newman. 1995. Re: Work with natural foods and tofu in England and Australia. Letter to William Shurtleff at Soyfoods Center, Feb. 12–in reply to inquiry. 3 p. Typed, without signature.

• ***Summary:*** Marcea and Daniel Weber met in Boston in about 1972, and both studied macrobiotics. They left Boston in 1974 to live in England because Daniel wanted to study acupuncture in one of the acupuncture schools in

Buckinghamshire. They stayed there for 6 months and then moved to London, where they connected with Bill Tara, who was working at starting an East West Centre. Marcea began teaching cooking classes and started a Wholefoods Bakery with an English woman. This continued for 1½ years.

During this time Marcea met Bruce Gyngell, an Australian who met Michio Kushi while he was in London. Michio suggested that Bruce change his diet, so Bruce came to the East West Centre and studied cooking. He was looking for a cook for himself. He was at that time living in England and working for one of the television studies. He was the person responsible for bringing television to Australia, so he was quite influential. He wanted macrobiotics to find its way to Australia, so he invited Marcea and Daniel to visit Australia and bought them each a round-trip ticket. He said they could see if they wanted to stay and start a centre in Australia. So in 1976, after visiting Japan and Oki sensei and his Oki Yoga Dojo in Mishima, Japan, for several weeks, they arrived in Australia, and have lived there ever since. In December 1982 Marcea and Daniel Weber were married in Australia.

"The Soy Bean Factory was established in Dec. 1978, when Michael De Campo, Yoshiko Wright and Marcea Weber started a company devoted to producing traditional Japanese tofu using nigari (a sea water extract) as a coagulating agent. The fresh Japanese-style tofu began to arrive in the health food stores and Japanese supermarkets around April 1979." As far as Marcea knows, theirs was the first Caucasian-run tofu company in Australia. It was her idea to start the company. Shares were issued at the beginning. Marcea initially invested about $5,000 to $7,000, Yoshiko Wright was brought in to invest about $3,000, and Michael De Campo invested about $3,000 or a little less. His main role was making the tofu and working with Marcea on improving product quality.

"The Soy Bean Factory was located just outside Chinatown and in the central district of Sydney, New South Wales, Australia. We concentrated on making a tofu equal in quality to the fresh tofu sold in Japan today. We were able to service people who wanted fresh tofu by selling it straight from the Factory to the public, as well as packaged in a plastic container with a plastic film on top."

The Soy Bean Factory ceased operation in October 1981. Note: On 8 Nov. 1981 Marcea wrote Bill Shurtleff, on a letterhead of the East West Foundation, 363 George St. in Sydney: "Our factory has shut down, and now one of the Chinese producers [Sin Ma Trading Co., 9 Meeks Road, Marrickville (in southwestern Sydney), NSW] is allowing us to use their premises to make our tofu... We are hoping to start another factory with more capitol behind us. Unfortunately, we were grossly undercapitalized, and this was our downfall." While making tofu at Sin Ma Trading Co., The Soy Bean Factory continued to use its original name, since they had lots of packaging and labels, and no need to change names.

"After getting into the swing of making Japanese-style tofu and using the packaging equipment, we decided to find a source of organically grown soybeans that would produce the same quality tofu as the non-organic beans we had been using. In 1983, after several months and many trials, we finally found a bean that would give almost the same quality, though with a small drop in tofu volume [yield].

"As the demand increased up to as much as 600 pieces per week of tofu (each piece weighed 300 gm), we began to look for larger premises, which were found in Leichhardt (about 7 miles southwest of downtown Sydney), so by early 1982 we had re-located to 355 Parramatta Road, Leichhardt, NSW 2040–and had started making tofu. At that time, Yoshiko Wright and Michael De Campo sold their shares to John Fenwick and me, and the name of the company was changed to Soyfoods Australia. Still having a controlling interest in the business, I hired Tony Wondal, a Chinese man, to help operate the business. A year later (in about 1983), after an increase of sales, John decided to sell his shares to Ross Ebert, and we moved to even larger premises at 14/2 Paton Place, Manly Vale (northeast of downtown Sydney), New South Wales. After a year of production and trying to make soymilk without proper soymilk equipment, I decided to sell my share of the company to Ross Ebert. I was expecting my first child in August 1985 and didn't want to be tied down to any business. So I left the tofu business and never looked back! As far as I know, Ross never put any new products out on the market and so the business only sold tofu–and still does today with new owners.

Note: In Sept. 1986 Ross B. Ebert had just spent $100,000 on fairly sophisticated soymilk equipment. He was selling soymilk fresh to Coles supermarkets in plastic bottles. In Nov. 1988 Lindsay Kotzman purchased the business, which was named Great Australian Pty. Ltd. In July 1990 Jennifer Young purchased the business, still located at 14/2 Paton Place. "The Company is Great Australian Tofu Pty. Ltd., trading as Soyfoods Pty. Ltd."

As far as Marcea knows, Sin Ma Trading Co. and Castle Trading Co. were both tofu manufacturers. Address: 56 St. Georges Cres., Faulconbridge 2776 NSW, Australia.

6774. Chu, Debbie. 1995. Shougang slides in less-intense session. *South China Morning Post* (*Hong Kong*). Feb. 23. Business section. p. 15. Ed. 2.
• ***Summary:*** Various Chinese-related stocks fell in value. "Vitasoy lost 7% to close 22.5 cents lower at $2.95 on a turnover of $1.89 million. Business of the non-carbonated drinks manufacturer was badly hit by heavy rainfall last summer."

6775. Goodale, Ralph. 1995. Re: Opening of the ProSoya bulk soya milk processing plant in Gloucester, Ontario, Canada. Letter to Mr. Frank Daller, President of ProSoya

Inc., 5350 Canotek Road, Unit 7, Gloucester, Ontario K1J 9C9, Canada, Feb. 24. 1 p.

• ***Summary:*** "It was a pleasure to meet you and participate in the opening of the ProSoya bulk soya milk processing plant in Gloucester on January 12, 1995.

"I would like to congratulate your company for being part of the dynamic strategic alliance of companies which will, beginning with this plant, turn Canadian soya beans into beverages and foods for the domestic and export markets."

Talk with George Conquergood of International ProSoya Corporation (IPC). 1999. May 10. George was present at the commissioning of this plant in Gloucester (pronounced GLOS-tur, a suburb of Ottawa, Ontario, located south southeast of Ottawa) and he met Ralph Goodale. This is the one and only ProSoya R&D facility and bulk soymilk plant in Ontario. It contained a new SC-100–better than the first SC-100 prototype developed for ProSoya by APV-Crepaco; the prototype finally wound up in Russia. APV-Crepaco built this machine to sell, using ProSoya technology. The SC-100 uses a batch process; it is basically just a big SC-20. Address: Minister of Agriculture, Ottawa.

6776. Montanaro, Pamela. 1995. Revolutionary developments with soymilk in Cuba. Part I (Interview). *SoyaScan Notes.* Feb. 27. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Cuba now has at least 15 factories in operation that make a soy yogurt drink for children. The goal is to have 37 factories in operation by the end of 1995. Leaders of the project believe these 37 factories will be sufficient to provide at least 2 liters per week of soy yogurt drink to all Cuban children ages 7 to 14. Given that the population of Cuba is about 11 million and 23% of the population is under the age of 15, there are roughly 1.1 million kids eligible to receive free soymilk. So Cuba plans to be producing about 2.2 million liters of soymilk a week by the end of 1995. Amazing!

Pam coordinates the Freedom to Travel Campaign for Global Exchange (based in San Francisco). They had decided to do a trip to Cuba during the first week in October, 1994, where the itinerary was focused on projects related to sustainable development–such as organic agriculture, alternative energy, alternative medicine, the bicycle revolution, etc. The trip would also be a "Travel Challenge," since the U.S. government presently prohibits most Americans from traveling to Cuba, and from investing in or spending U.S. dollars in Cuba. In 1962 the U.S. imposed an export embargo against Cuba, severely damaging the economy. This unilateral embargo, which is still in effect, prohibits even the export of food or medicine from the USA to Cuba. Stiffer trade sanctions enacted by the U.S. in 1992 made things even worse. The only other country that has consistently voted with the USA at the United Nations in favor of this embargo is Israel–and Israel is now operating the largest citrus plantation in the world in Cuba, and also benefitting greatly from investments in Cuban textiles, etc. for export. The "Travel Challenge" is designed to expose U.S. anti-Cuba policies and invite public debate in the USA about their usefulness. The Soy Cubano! project is part of a larger campaign to get food and medicine exempted from the U.S. trade embargo against Cuba. Pam recently met with the staff of Senator Paul Simon (Democrat from Illinois) who is about to introduce a bill that would exempt food and medicine from all U.S. embargoes.

While on this trip in Oct. 1994, Pam met and had a long talk with Dr. Alberto Ortega-Jhones, who is head of Cuba's new soyfoods research project (Address: *Instituto de Investigaciones para la Industria Alimenticia,* Carreterra al Guatal, Km. 3½, La Lisa, Havana, Cuba. Phone: 29-9110). Dr. Ortega is a Cuban-born national in his late 40s or early 50s; Pam found him to be "so moving, kind of like a saint in my eyes, very sweet and modest." One of the vice-directors at the Cuban Food Research Institute in Havana, he was involved for several decades in dairy food research. He was an expert in the subject, studied all over the world, and speaks very good English. He said that since the "Special Period" of austerity started in 1989, production of cow's milk has been cut to about 20% of what it used to be. To provide an alternative protein drink, the Cuban Ministry of Agriculture made soyfoods a priority, and started to seriously divert resources into the soy yogurt drink project. By May 1994 Dr. Ortega's project developed soymilk technology and a recipe that was efficient to produce and that Cuban children liked. Dr. Ortega said he believed that "soy protein is the protein of the future" and he feels the Cuban soymilk project and its technology could serve as a model for Third World countries.

Cuba has about 100 factories across the country that produce dairy products. Dr. Ortega was one of the leaders involved in setting up these plants and in launching the program that has provided one liter of cow's milk per day on the ration to every Cuban child between the ages of 7 and 14. This milk went to families, not to schools, so that family members could share the milk if desired. People 65 and over also got a liter a day.

From Dr. Ortega, Pam learned that Cuba was developing a number of facilities to manufacture a soymilk yogurt drink. Each facility was located inside a former cow's milk dairy, and was based on converting former dairy equipment to soymilk production. Cow's milk is being phased out. By Oct. 1994 three soy factories were already operating in Holguin, Santiago and Pinar del Rio. Pam visited the latter factory. While in Cuba, she also tasted a soy-based hard cheese and a cream cheese.

The refrigerated soy yogurt drink is packed in liter bottles, and sent to the neighborhood grocery shop (*bodega*). Cuba is on a ration system and the soy protein drink is available on the ration, so people go to their neighborhood

bodega, present their ration card, and pick up their rations, including the soy yogurt drink. This drink is very thick–more like kefir or a milk shake than milk. It apparently has a low pH, which extends its shelf life–and most people in Cuba now have a refrigerator. After finishing the soymilk, a family returns the bottle to the bodega for recycling.

Cuba presently imports most of the soybeans used to make its soy yogurt drink from Canada and Brazil. Pam learned from Chuck Haren of Plenty Foundation that, at one point in its history, Cuba had developed a soybean variety that was especially well suited for tropical climates at that latitude. Plenty used to grow this variety in Dominica. By Oct. 1994 agricultural co-ops in Cuba were starting to grow soybeans under contract for the soy yogurt drink factories.

When Pam returned to the USA from Cuba she decided to try to help the Cuban soymilk project. So in October 1994 she established a new company named Soy Cubano! Company–the Cuba Soyfood Company, which would try to raise $50,000 to help fund another soymilk plant in Cuba by selling "honorary shares" to Americans interested in investing in the health of Cuban children. For a description of the company and its shares see Global Exchange 1994. As of Feb. 1995 Soy Cubano! had raised several thousand dollars. They have not yet sent the money to Cuba, since they are hoping that the Cuban government will allow it to be considered a direct business investment–thus creating the opportunity for a test case to challenge the U.S. embargo. If that does not materialize, the money will be used to make a direct cash donation–which is also "trading with the enemy."

One "Honorary Share" in Soy Cubano costs $5. Anyone who is interested in "investing" can contact the Food and Medicine Campaign at Global Exchange in San Francisco. Remember, however, that doing this involves a big risk because the penalty, if the U.S. government should choose to arrest anyone for "trading with the enemy," is up to 10 years in prison and a $250,000 fine. Pam says of Soy Cubano! "It's been kind of a magical project. It has so many dimensions to it and so many fine people are involved.

When Pam returned to Cuba in November 1994, eleven soymilk factories were in operation; she goes to Cuba roughly 5-6 times a year. Dr. Heshan Ragab, M.D., is working with Pam on this project. Pam has read Mark Messina's book, *The Simple Soybean and Your Health.* She found it "incredibly enlightening," and has purchased several copies of it since and given them to key people, including Dr. Ortega. Continued. Address: Coordinator of Soy Cubano! Company, Food and Medicine Campaign, c/o Global Exchange, 2017 Mission St. #303C, San Francisco, California 94110. Phone: 415-255-7296 or 415-558-8682.

6777. Montanaro, Pamela. 1995. Revolutionary developments with soymilk in Cuba. Part II (Interview). *SoyaScan Notes.* Feb. 27. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The "Special Period" is what the Cubans call the time since the Soviet Bloc fell apart in 1989 and they lost 75% of their foreign trade. Conditions in Cuba had gotten very bad by 1991, but now they have bottomed out and the standard of living is slowly improving. Cuba is now involved in a massive conversion to sustainable development, including a conversion to organic agriculture from chemical agriculture. Pam has a video on that, and her group is working with Food First on sustainable agriculture in Cuba, and they are aware of Earth Trade / Progressive Asset Management, and has seen their video on organic farming in Nicaragua and El Salvador.

How does the future of Soy Cubano look? Since Oct. 1994 Global Exchange has been negotiating with Cuba to try to do a straight trade investment in this humanitarian area, where there would be some modest return. It's mostly for show, but the people who are doing this are taking a big risk because the penalties for "trading with the enemy." The barrier to progress has been partly from the government of Cuba. Only a few years ago did they start to allow foreign investment at all. Their laws presently allow foreign investment only in factories producing for export–and soy yogurt drink is produced only for domestic consumption. From a socialist viewpoint, the idea of anyone, especially foreigners, making a profit on products such as food and medicine that fill primary human needs–is anathema. On the other hand, Cuban's think Soy Cubano! is a great project, and they want to see a group of people directly challenge the U.S. trade embargo. One approach would be for Global Exchange to apply to the U.S. government for a license to work directly with Cuba's Food Research Institute. They would probably be denied, and that would set the stage for a larger coalition of development groups to conduct a campaign to expose the U.S. embargo which denies food and medicine to the people of Cuba.

Internationally, an interesting movement is starting to look at the whole issue of embargoes and their effects on innocent civilians–in Iraq, for example, where a U.S.-led embargo has been in effect since the Desert Storm war ended in Feb. 1991. Though more than 85,000 Iraqis died in the war, it is estimated that even a larger number of civilians (including 250,000 children) have died since the war due to the embargo.

This is increasingly being seen as a human rights issue–with the USA being seen as the major violator of Cuban human rights. Global Exchange feels that it has a responsibility to educate the American people about what the U.S. government doing in their name, but often without their awareness.

Cuba is now moving toward a mixed economy, where free private enterprise can coexist with state-run socialism. Global Exchange is very eager that they not loose the tremendous gains they have made in providing for the primary needs of their people. Moreover, Cuba is taking the

lead among developing countries worldwide in sustainable development projects. So good things are growing out of the present suffering and hardships in Cuba. Address: Coordinator of Soy Cubano! Company, Food and Medicine Campaign, c/o Global Exchange, 2017 Mission St. #303C, San Francisco, California 94110. Phone: 415-255-7296 or 415-558-8682.

6778. Arnold, Kathryn. 1995. The joy of soy. *Delicious!* (*Boulder, Colorado*). Feb. p. 34-36. [3 ref]
• ***Summary:*** The soybean "has long been revered by vegetarians as a nutritional powerhouse. However, the real secret is that soyfoods may help prevent disease." They are cancer fighters and good for the heart. A table (p. 36) lists 12 different types of soyfoods and their uses: Tofu, tempeh, okara, miso, natto, TVP, soymilk, soy grits, soy flour, soy cheese, soy sauce, soy yogurt.

Note: This periodical, which began publication in about 1983, is published for natural products consumers by New Hope Communications in Boulder, Colorado. As of March 1998 some 425,000 copies of Delicious! are distributed each month to over 900 health food retail stores throughout the United States.

6779. **Product Name:** [Soghurt {Soy Yogurt} (Original, Peach, Cherry, Strawberry)].
Foreign Name: Soghurt {pflanzliche Zubereitung nach Joghurt-Art} (Natur, Pfirsich, Kirsch, Erdbeer).
Manufacturer's Name: Bruno Fischer GmbH.
Manufacturer's Address: Im Auel 88, 53783 Aetorf, Germany. Phone: 49-2243-4021.
Date of Introduction: 1995. February.
Ingredients: Peach: Water, soybeans*, fruit preparation (Peaches*, thick grape juice* [Traubendicksaft], corn syrup, honey, corn starch*, natural aroma). * = Organically grown (*aus kontrolliert biologischem Anbau*).
Wt/Vol., Packaging, Price: 250 gm reusable glass jar.
How Stored: Refrigerated at +6ºC, 21 day shelf life.
Nutrition: No information given.
New Product–Documentation: Talk with Bruno Fischer, who calls from Germany. 1995. March 22. His company introduced this fermented product at Biofach in Feb. 1995. The product has a 21-day shelf life.

Photocopies of 4 labels sent by Bruno Fischer. April 21. The product is described on the front panel in German as a plant-based preparation resembling yogurt *"(pflanzliche Zubereitung nach Joghurt-Art).*"

Talk with Bruno Fischer. 1998. May 14. The same day Bruno Fischer introduced this Soghurt, Life Food GmbH introduced a soy yogurt under the Taifun brand. Bruno Fischer had their product made in a small milk plant and kitchen by an anthroposophic community that work with drug addicts. The product was produced using fresh soymilk made by Sojinal; Triballat was too far away. The ingredients were organic soymilk, whole cane juice, yogurt cultures, and fruit–that was mixed in. But in the long run they could not guarantee the microbiological quality that was required. This product was discontinued about 6 months after it was launched. The Taifun product was also discontinued about a year ago.

6780. Clarkson, Thomas B.; Anthony, Mary S.; Hughes, C.L., Jr. 1995. Estrogenic soybean isoflavones and chronic disease: Risks, and benefits. *Trends in Endocrinology and Metabolism* 6(1):11-16. Jan/Feb. [56 ref]
• ***Summary:*** Includes a discussion of the effects in infants of soy isoflavones. Address: Comparative Medicine Clinical Research Center, Bowman Gray School of Medicine, Wake Forest Univ., Winston-Salem, North Carolina 27157-1040.

6781. Ferrell, John S. 1995. Fruits of creation: A look at global sustainability through the eyes of George Washington Carver. Shakopee, Minnesota: Macalester Park Publishing Co.; Wynnewood, Pennsylvania: Green Cross (jointly published). 117 p. 22 cm. [95 endnotes]
• ***Summary:*** A very carefully researched and well-written view of an important and pioneering contribution made by G.W. Carver of which many people are not aware. Carver extended the Golden Rule to stewardship of God's earth. He was not a vegetarian. Address: 2000 N.E. 42nd Ave., #332, Portland, Oregon 97213.

6782. *Image Sandoz: La Lettre de Sandoz en France* (*Rueil-Malmaison*). 1995. "Nutrition & Soja": Avec cette nouvelle unité de production, Nutrition & Santé s'investit dans le soja [Nutrition & Soja: With this new production unit, Nutrition & Santé invests itself in soya]. No. 21. Feb. p. 1, 16-17. [Fre]
• ***Summary:*** The inauguration of the production unit "Nutrition & Soja" took place on 15 October 1994 in the industrial park at Revel (in the Department of Haute-Garonne). A color photo shows the many important people who attended the event at the ribbon-cutting ceremony under the skies of Lauragais: Mr. Jean Puech (French Minister of Agriculture and Fisheries), Alain Chatillon (president of Nutrition & Santé and of Nutrition & Soja), Pierre Izard (President of the Consul General of Haute Garonne), René Basdevant (President of Sandoz France), Marc Censi (President of the Region Midi-Pyrénées), and Alain Bidou (Prefect / Chief Administrator of the Region Midi-Pyrénées). In his speech, Minister Jean Puech underlined the importance of this factory for local agriculture. Nutrition & Soja (formerly named Société Soy and founded by Mr. Bernard Storup and Mr. Jean de Préneuf) is a wholly owned subsidiary of Nutrition & Santé. The company will maintain its functional autonomy, under the responsibility of its two founders: Mr. Storup is administrative director and director of *Exploitation,* and Mr. Preneuf is plant manager and director of development.

The new factory rests on a piece of land 17,000 square meters in size (4.2 acres), and has a floor space of 3,000 square meters. Nutrition & Soja has four main activities: Milling (heating and dehulling soybeans), a production line for soymilk (*jus de soja*), a tofu production line, and a area for transforming fresh tofu into various food products.

The nutritional goal of Nutrition & Santé is to market food products having high nutritional, dietetic, and biological content, which promote the good health and well-being of the consumers. Most or all of the soybeans are organically grown. The commercial goal of Nutrition & Santé is to be on the forefront as the market evolves, and to anticipate new technological developments and the needs of consumers. In France, one person in five who is concerned about their weight or figure, and their well-being, consumes soya. In the USA, this figure is more than 50%. Soya has "formidable potential."

Other photos show: The public figures who attended the event examining Nutrition & Soja's line of packaged products. An external view of the headquarters of Nutrition & Santé at Revel–a four-story building with 3 flags flying. The inside of the soyfoods factory, where the public figures receive an explanation of equipment from Jean de Préneuf.

A sidebar notes that Nutrition & Soja: * Received 40 million French francs of investment in 1994. Employs 45 people. The products are distributed in dietetic stores under the brand Soy and mainstream stores under the brands Union Nature and Céréal.

Note: This periodical is an internal publication of Sandoz in France. Address: France.

6783. Krizmanic, Judy. 1995. The buzz on BGH: Biotechnology. *Vegetarian Times.* Feb. p. 18-19.
• ***Summary:*** An update on genetically engineered bovine growth hormone (BGH), which can increase a cow's milk production by 5% to 20%. Each year the U.S. government spends about $250 million to buy surplus milk to keep prices steady; the Office of Management and Budget estimates that BGH use will increase that sum by 40%. The FDA estimates that in its first 6 months, BGH was used on 560,000 dairy cows. During this time Monsanto received 95 reports from farmers who were using BGH that they had problems with their herds–such as mastitis, a painful udder infection. Among consumers and farmers, there is still widespread resistance to using BGH.

6784. Messina, Mark; Messina, Virginia. 1995. Soybeans linked to health benefits. *Vegetarian Voice* (*Dolgeville, New York*) 20(4):10-11. Winter.
• ***Summary:*** Contents: Introduction. Soy and heart disease. Soy and cancer. Other roles for soy. What if you can't tolerate soy. The whole diet approach.

A table shows the isoflavone content of selected foods: Soymilk (1 cup) 40 mg. Tofu (½ cup) 40 mg. Tempeh (½ cup) 40 mg. Miso (½ cup) 40 mg. TVP, cooked (½ cup) 35 mg. Soy flour (½ cup) 50 mg. Soybeans, cooked (½ cup) 35 mg. Soy nuts (1 ounce) 40 mg. Isoflavones (unlike vitamins) are not destroyed in conventional cooking methods.

6785. Minnesota Soybean Research & Promotion Council. 1995. Soybeans–Designed for life (Recipe cards). North Mankato, Minnesota. 14 cards. Each card: 8 x 13 cm. Feb.
• ***Summary:*** This is a set of recipe cards, consisting of 14 cards and 12 recipes, linked to fold out accordion style. Printed with blue and yellow soy ink on white card stock, the recipes call for the use of tofu (8 recipes), green vegetable soybeans, soy flour, whole dry soybeans, and soymilk. Only one recipe calls for the use of meat.

Talk with Bonnie McCarvel, executive director of the Minnesota Soybean Research & Promotion Council. 1996. Feb. 2. These recipe cards were developed by the Minnesota Soybean Board in conjunction with a video bearing the same title. Both were released in about Feb. 1995. Minnesota paid all expenses, then made the video and the cards available to all the other state soybean boards. Address: 360 Pierce Ave., Suite 110, North Mankato, Minnesota 56003. Phone: 507-388-1635.

6786. *Ontario Soybean Growers' Marketing Board Newsletter.* 1995. 1994 Annual Meeting highlights. Feb. p. 3.
• ***Summary:*** More than 300 soybean growers, industry and government representatives, and suppliers attended the Dec. 1994 Annual Meeting of the Ontario Soybean Growers' Marketing Board. Bernard Leung (photo shown) of Harcan Kingsoya spoke on soyfood opportunities. Garth Baxter of Maple Leaf Foods expressed his belief that the miso market holds the best potential for expansion of Canada's food soybean exports to Asia. New markets with good potential include Taiwan, South Korea, Indonesia, and the Philippines.

"Frank Daller of ProSoya reported that his company is setting up soymilk production facilities in several locations across Canada. Their strategy is to sell bulk soymilk to dairies for processing and packaging."

The Board reported a financial operating surplus of $311,225 for the year ending 31 August 1994, and a reduction in Board fees from 90 cents per tonne to 80 cents for the 1994 crop. Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

6787. Reilly, Lee. 1995. Answering machine: Buttermilk minus the milk. *Vegetarian Times.* Feb. p. 30.
• ***Summary:*** There are two good ways to make non-dairy buttermilk. 1. Add 2 teaspoons of lemon juice or vinegar to a cup of soymilk. 2. Blend 3/4 cup of soft or silken tofu with ¼ cup water, 1 tablespoon lemon juice or vinegar, and a pinch of salt. Address: Free-lance writer.

6788. Krizstan, Jan. 1995. Re: Work with seitan and

soyfoods in Slovenia. Letter to William Shurtleff at Soyfoods Center, March 1. 2 p. Typed, with signature.

• ***Summary:*** Jan phoned on 6 January 1995, then wrote a long letter dated March 1. His first name is pronounced "Yan." He was born in 1967 in Ljubljana, the capital of Slovenia, where he now lives. He worked for two years on Slovenian television, then in 1992 he quit because of unhealthy working conditions. He had already been a vegetarian for 2 years and he knew that many people are looking for and need healthy food, but they don't know how to get it. So he started a small private company named "Izvor" ("The Source") and in Sept. 1992 started (together with friends) to publish a magazine in Slovenian titled *Bio Novice* ("Bio News") that would connect these people. The main subjects were growing plant foods in accordance with Nature, healthy diets, ecology, alternative medicine, and the culture of peace and non-violence. "It was very difficult, because we started with almost no money, but we published 15 issues of *Bio News.* In December 1994 we had to stop publishing because of big financial problems.

"One of my friends [Vesna Crnivec] translated some paragraphs from *The Book of Tofu* about preparing home made tofu and made an article. We published her translation, a summary of the Introduction, and some of Akiko's illustrations in one of the first issues of *Bio News* (See issue 5/6, letnik 1993, p. 40-44). Some readers (especially women) showed great interest in it! Later I translated some paragraphs from *The Book of Tofu* and published them (together with Akiko's good illustrations) in issues 14 and 15 of *Bio News.* At the end of the article I gave the address of Soyfoods Center for all people interested in ordering your books.

"Last year I was attracted to making seitan and tofu from organic wheat and soybeans. Mr. Mirko Trampus is my very good friend. He has an organic farm in Metlika (1 km from the border with Croatia, in southeastern Slovenia). He has been growing wheat, soybeans, and daikon organically for the last 6 years with very good results. We decided to make a kitchen in his house for transforming Mr. Trampus' soybeans, wheat and daikon into tofu, tempeh, natto, soymilk, seitan and pickled daikon.

"A few days before New Year 1995 I visited all Ljubljana's bookshops, because I wanted to find some information about tofu and seitan. What a surprise! There was your *Book of Tofu.* I found it once again and bought a copy. I was so happy. Not far away I found the book *Cooking with Seitan* by Barbara and Leonard Jacobs, with a foreword by Aveline Kushi.

"Now (at the end of February 1995) we are making about 50 kg of seitan per week by hand. We sell it in some 20 healthy food shops all over Slovenia." He would like to start making tofu, soymilk, natto, and tempeh, Later he would like to make miso too. "Our aim is preparing 100% vegetarian foods of the highest possible quality, made from organically grown soybeans, wheat, and daikon. Now we need more information. Presently Mr. Trampus grows about 12,000 kg of wheat and 9,000 kg of soybeans per year. Prof. Spanring is our good friend. He helped Mr. Trampus to choose the best varieties of soybeans for making tofu and the wheat with the highest gluten content for seitan. Now we use hard winter wheat. We mill it into flour in our own mill with stones. From 100 kg of wheat flour we get about 23 kg of very dark brown seitan.

"Up until now, all of the starch has been rinsed by hand, but we have constructed an automatic rinsing machine which will be prepared for use very soon. We presently rinse using only warm water at about 30ºC. We discard all the starch (putting it on compost heaps on the fields), but later we will use it as an ingredient in cooked soymilk puddings."

Jan would like to order *The Book of Tempeh.* He is looking for a source of tempeh starter. Tempeh is largely unknown in Slovenia, but he would like to introduce it because it is a healthy food and tastes very good. Address: Mestni trg 22/1, 68330 Metlika, Republic of Slovenia. Phone: (386) 068 59 481.

6789. Woodhams, David J. 1995. Nutritional deficiencies in soy protein based infant formulas. Whangarei, New Zealand: Soy Information Network (SIN). 15 p. March 5. 21 cm. [28 ref]

• ***Summary:*** Contents: Introduction. Soy protein based infant formulas. Trypsin inhibitors. Estrogens. Lectins. Phytic acid. Conclusions. Acknowledgements.

This booklet, written for both the lay reader and the scientist, is helpful in explaining the meaning of scientific terms such as pancreas, hypertrophy, hyperplasia, estrogen, etc.

Table 1 shows an analysis, conducted by M.G. Fitzpatrick (Grayson Laboratories Ltd.) of the concentrations (in mg/kg) of total genistein and daidzein in four commercial soy-based infant formulas: Infasoy 98 / 53. Isomil 72 / 73. Prosobee 118 / 59. Karicare 91 / 48 (Nutricia, NSW, Australia). Address: PhD, CEng, MIChemE, MIPENZ, MNZIC, 2/47 Church St., Devonport 1309, New Zealand.

6790. Storup, Bernard. 1995. Société Soy was acquired by Diétetique et Santé in July 1993, was renamed Nutrition et Soja, and is now located in Revel (near Toulouse) in southern France. Part I (Interview). *SoyaScan Notes.* March 6. Conducted by William Shurtleff of Soyfoods Center. [Eng]

• ***Summary:*** In 1993 Bernard was contacted by Diétetique et Santé, a big French manufacturer of health foods (founded in 1972), which wanted to buy his company, Société Soy. At the time Bernard's company was doing well financially and they had excellent equipment. But they had reached the maximum they could achieve in the health food market, and the only market into which they could expand was supermarkets.

First some background: In Sept. 1990 Société Soy

had taken in an outside investor, a retired banker, who was wealthy and friendly man, and who invested as a private individual. In exchange for contributing cash funds to help in expansion and give the company more of its own capital (*fonds propre*), he was given ownership of 25% of Société Soy's shares. The banker also worked at the company one day a week as an accountant. At this time, the company was making money–but not that much.

In early 1991 Bernard had created the new and more neutral brand *Union Natur* to be used on all products sold in supermarkets by Société Soy. So Bernard was looking for a company with which he could work as a partner in entering this big new market.

In the late 1980s and early 1990s the Sandoz Group accelerated its expansion into the healthy/nutritional foods industry throughout Europe. The Sandoz Group is best known in Europe as a manufacturer of pharmaceuticals (its largest division) and chemicals (its second largest division). Sandoz's food/nutrition division is now its third largest. About 5-6 years ago Sandoz was involved in major pollution problems related to its chemical production. Sandoz, the big Swiss pharmaceutical company, was famous during the 1960s among young people in Europe and America as the manufacturer of LSD. From one viewpoint, this popular psychedelic started the counterculture revolution in the Western World, including the natural foods movement. One of the Sandoz Group's earliest acquisitions in the health food field had been the British-based Wander Co. In about 1987-88 the Sandoz Group bought the Céréal Co. Then on 1 July 1992 Sandoz bought Diétetique et Santé in Revel, France–which was renamed Nutrition et Santé on 1 Aug. 1994. Also on 25 Aug. 1994 the Sandoz Group purchased Gerber, the huge American manufacturer of baby foods (headquartered in Fremont, Michigan). Two months ago the Sandoz Group announced that it plans to sell its entire chemical division, with about 10,000 employees. Sandoz was a world leader in dyes. Money from the sale chemical division will be used to buy more companies in the field of food and nutrition. In the future, Sandoz plans to keep only its pharmaceutical and its food/nutrition divisions.

Dietetique et Santé was established in 1972 in Revel and that year they purchased the brand (registered trademark) Gerblé from a small company located near Lyons (French = Lyon) in France. So now Nutrition et Santé is the head of Sandoz nutrition branch in France. In addition, Sandoz has a nutrition division in every European country, with a major food company as head of that branch. Approximately 95% of the sales of these companies are to supermarkets, and only about 5% to natural- and health-food stores.

Although it is owned by the Sandoz Group, the company Nutrition et Santé is not well known by consumers. Yet its brands, trademarks and products are very well known–some all over Europe. These include Ovomaltine [Ovaltine], Céreal, Wander, Wasa (a Swedish bread, pronounced VA-sa), Gerblé, Nerjisport, and Isostar. The latter two products are non-protein sports drinks, rich in mineral salts, that replace electrolytes after exercise. They are now developing a product named Gerlinea (like Slimfast, a low-calorie diet powder or bars).

Nutrition et Santé is the leading company in the health food market in France. Sandoz-owned counterparts in other European countries include Sandoz-Spain, Sandoz-Italy, Eden in Germany, Reforma in the Netherlands, and Wander in the UK. They have 54% of the health food market in supermarkets in France.

So in July 1993 Bernard sold Société Soy to the Sandoz Group because he believed the sale would help the company to develop and grow. He stayed on as managing director and was given a great deal of independence and responsibility. Sandoz wanted to keep the acquisition fairly quiet so that retailers and consumers would not be concerned. Very little information about the deal appeared in the public press, except in the financial press. Before the sale, Société Soy was a corporation whose shares were owned as follows: Bernard Storup 35%, Jean de Preneuf 35%, the retired banker 25%, and the company's workers 5%.

After Société was sold, Nutrition et Santé owned 100% of the shares. Bernard and Jean had no difficulty at all giving up their share of ownership in the company they had started in 1982. Nutrition et Santé had offered Bernard and Jean ownership in the company, but the latter two men felt the situation would be more clear if Nutrition et Santé owned 100%. "The world is big and life is short. Daily work is just as interesting as ever." Continued. Address: Managing Director, Nutrition et Soja, Z.I. de la Pomme, B.P. 33, 31250 Revel (near Toulouse), France. Phone: +33 62.18.72.50.

6791. Storup, Bernard. 1995. Société Soy was acquired by Diétetique et Santé in July 1993, was renamed Nutrition et Soja, and is now located in Revel (near Toulouse) in southern France. Part II (Interview). *SoyaScan Notes.* March 6. Conducted by William Shurtleff of Soyfoods Center. [Eng] • ***Summary:*** In August 1994 Bernard moved the company from Saint-Chamond to Revel, near Toulouse in the south of France and on 1 Aug. 1994 the company name was changed from Société Soy to Nutrition et Soja (pronounced nu-tree-SYON et so-ZHA). On the same day the name of Dietetique et Santé was changed to Nutrition et Santé. Nutrition et Soja still uses *Soy* as their trademark for products sold at health food shops; this trademark is very widely known among health food consumers in France. "Remember that 'Soy' doesn't mean anything in French." The water in Revel is of excellent quality, just like the water in Saint-Chamond. In Revel, Nutrition et Soja gets its water from another natural park.

Bernard's company is now located only 500 meters from another factory owned by Nutrition et Santé that makes Gerblé brand products–such as organic cookies, cereals, etc.

The Céréal brand products are made at a factory in Annonay, 500 km from Revel.

Bernard's company moved into a completely new factory, with an integrated production line from dehulling to packaging in Tetra-Pak cartons. It is really a big installation. The company has not introduced many new products since it was acquired 18 months ago. Bernard has been working a lot with companies in Germany, Spain, the Netherlands, and Italy which have been selling soymilk made typically by Alpro in Belgium or Innoval in France. But Innoval went out of business and no longer exists. They declared bankruptcy twice, first in 1993 and again in late January 1995. In 1993 an investor bought Innoval for almost nothing, invested a little money in it, but was not able to make it survive. Nutrition et Santé bought all of Innoval's equipment (made by Alfa-Laval; it was very nice), and Bernard is now using some of this equipment (including a large, automatic Buehler dehulling system) and some of the equipment he had before in Saint-Chamond. And Bernard has been working with their former soymilk customers in hopes of becoming their supplier of soymilk. Most of Bernard's sales have always been to health food stores under the *Soy* trademark. This has not changed since the acquisition. Bernard estimates that he has at least 80% of the fresh soyfoods market in France–not including soymilk.

The soymilk market continues to grow, but there is still excess soymilk manufacturing capacity. Nutrition et Soja is now the leading soymilk manufacturer in France, and they may be the second largest in Europe after Alpro–though they are much smaller than Alpro, which sells about 25 million liters of soymilk and soy desserts each year. Alpro has five Tetra-Pak packaging lines, including one that packs in 500 ml (half liter) cartons.

Nutrition et Soja doesn't compete much with Alpro because Nutrition et Soja sells its soymilk under its own trademarks–Céréal and Gerblé–in supermarkets all over Europe. There is not much difference between these two products, but because they used to be made by two different companies, different consumers have loyalty to each brand. For the health food market, Nutrition et Soja sells its soymilk under the BioSoy trademark, which was first used in 1990 by Société Soy.

Jean de Preneuf is still with the company, working as technical manager. Bernard is in charge of the total company Nutrition et Soja, in charge of production, administration, sales, and marketing. Bernard is very happy with his new parent company, which gives him lots of independence and responsibility, and which is doing a very good job at thinking in terms of the new integrated European market. One of the products with which Bernard is especially happy is their vegetarian sausage–which is 100% organic.

Thirteen years ago Société Soy registered and owned the trademark "tofu." But recently Bernard came to feel that this was not "fair play," so he gave ownership of the trademark to SOJAXA (pronounced so-zhak-SAA), the French soyfoods association. Address: Managing Director, Nutrition et Soja, Z.I. de la Pomme, B.P. 33, 31250 Revel (near Toulouse), France. Phone: +33 62.18.72.50.

6792. Storup, Bernard. 1995. Update on Sojinal (Interview). *SoyaScan Notes.* March 6. Conducted by William Shurtleff of Soyfoods Center. [Eng]

• ***Summary:*** In mid-1993 Sojinal was purchased by B & K Holding, a Swiss group; the owner is one of the Buehler brothers, involved with the company that makes milling equipment. After the Buehlers sold their milling equipment company, they used the money to buy various factories in Europe. They also bought a company to make breakfast cereals. But during the last 2 years there has been an economic crisis in France. Though things are beginning to look better now, Sojinal is for sale again because they are losing lots of money–and nobody wants to buy it.

Update: 21 June 1995–Sojinal is still for sale; Bernard thinks it will be sold before long. Address: Managing Director, Nutrition et Soja, Z.I. de la Pomme, B.P. 33, 31250 Revel (near Toulouse), France. Phone: +33 62.18.72.50.

6793. Lang, Paul. 1995. HiPro Food Products (Minnesota), Clofine, and Devansoy (Interview). *SoyaScan Notes.* March 8. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Paul is looking at buying a company name HiPro Food Products in Minnesota. This company has a patent on an indirect roasting process. The two men who own the company are both in their late '70s, and they have not marketed their product well. Most of their business has come from recommendations from Peter Golbitz. They also make enzyme-active full-fat soy flour, which they sell to companies such as Clofine and Devansoy. They dehull the bean then use the new technology of spray drying or flash drying to go straight to tofu powder and soymilk powder. Paul is thinking about by-passing the expensive spray-drying or flash-drying process and going straight into a soymilk processing equipment. Their full-fat soy flours are sold most to companies that make waffles, pancake mixes, etc. They use organically grown soybeans. They sell roughly $24,000 a year of product to Clofine, which starts with an enzyme-active full-fat soy flour. Clofine takes the raw materials to a dairy, where it is boiled to inactivate the enzymes. Then they spray-dry it. The particles are so fine there is no need to make soymilk. So they by-pass the filtration step.

Note: As of Aug. 1994 HiPro Food Products, Inc., was located at 775 Colorado Ave. South, Minneapolis, Minnesota 55416. Phone: 612-545-0151. Robert F. Cross, President. Their manufacturing plant is in New Germany, Minnesota. They make soy fiber, soy flour (full fat), and soy grits. Address: Natural Products Inc., Grinnell, Iowa. Phone: 515-236-4635.

6794. MacKinnon, Duff. 1995. Restrictions on mixing soy and dairy products in Ontario province, Canada (Interview). *SoyaScan Notes.* March 10. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Under Canada's Edible Oil Act, the blending of most soy and dairy products is not legal, although certain specific products, such as coffee whitener and edible oil topping (whip topping) that were on the market when the law was written were grandfathered and kept legal. Duff would guess that this Act was passed in the 1950s or 1960s.

If illegal imported products are noticed on the shelves of Canadian food stores, any person may complain to the Canadian Ministry of Agriculture. Inspectors will investigate the case. Address: Ontario Ministry of Agriculture and Food, GAC RR#5, P.O. Box 1030, Guelph, ON N1H 6N1, Canada. Phone: 519-767-3166.

6795. Ball, Stephen. 1995. Spiked carton drinks trigger warning. *South China Morning Post* (*Hong Kong*). March 14. 23. News section. p. 3. Ed. 2.
• ***Summary:*** "People should avoid drinking cartons of soya milk and fruit juice on the streets in case they are spiked with drugs, the chairman of the Consumer Council warned yesterday. The call for action comes after a series of unsolved carton drink druggings, in which victims bought drinks from corner stores then woke up on the streets to find they had been robbed."

6796. *Focus on Farming* (*Moravia, New York*). 1995. Cornell graduate creates fellowship in food service. March 20.
• ***Summary:*** In Dec. 1994 Winston Lo, a Cornell graduate, pledged to create the Vitasoy and Lo Fellowship in Food Science at Cornell's Agricultural Experiment Station in Geneva, New York. The fellowship is an endowment, so each year interest income from the fund will provide support for a graduate student at Geneva in Food Science and Technology. Lo received his master's degree in 1967 from the Department of Food Science and Technology at Geneva.

The first student to be supported by the fellowship, Grace Feng, is doing research on soymilk in Terry Acree's lab. She will try to identify the flavors produced by soymilk processing.

6797. Goh, Francis Nyang Kuang. 1995. The tofu industry and market in Singapore. Suitability of various soybean varieties for making tofu. Paper presented at meeting of Canadian outgoing soybean mission and Singapore tofu makers. 4 p. Typewritten.
• ***Summary:*** "As you will be visiting some soybean importers this afternoon, I would take this opportunity to concentrate mainly on the technical aspects of soybean. There are 40 plus tofu makers in Singapore producing a wide variety of tofu products, such as soft or silken tofu, firm and extra-firm tofu, tofu puff, soymilk and sweet tofu. The market for soybean-based food products, particularly tofu, is growing rapidly due to its nutritious value. However competition is very keen in our line of business." Therefore we need to produce high quality products.

Mr. Goh tested six varieties of soybeans: S 20-20, Marathon, Hypro, Orient Pearl (Harovinton), Dominator, and Vinton. He summarizes the results in a table which evaluates each variety for tofu production in terms of 5 variables: Texture, firmness, fragrance, colour, yield of tofu, plus remarks. Overall, Harovinton gave the best results, but the price is 12% above the standard price. Discusses his specifications for an outstanding soybeans for making tofu and issues related to identity preservation. Address: Managing Director, Unicurd Food Co. (Pte.) Ltd., Blk. 6020 Ang Mo Kio Industrial Park 3, #01-154/156/158/160, Singapore 2056. Phone: 482-5454.

6798. Mouton-Bluys, Rene. 1995. Recent developments at Alimentos Alfa Ltda. Productos Nordland, in Bolivia (Interview). *SoyaScan Notes.* March 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** His equipment and technology comes from a mixture of sources: Bean Machines Inc., with ideas from the University of Illinois, and a Bolivian research center.

Cochabamba is a traditional dairy city [population in 1992 404,000] so he has had a hard time introducing his products. He didn't have any publicity or strong campaign surrounding the launch of each product. His company is independent, not connected with any other company.

The company now makes 5,000 liters/day of soymilk, 1,000 liters/day of ice cream, and 2 to 3 tons/day of soy yogurt. All of these products are sold only in Bolivia; 60% are sold in Cochabamba, and a little is sold in the cities of Santa Cruz, and La Paz. His products are much less expensive than dairy products, retailing for only about 60% as much. So initially people bought his products because they were less expensive than dairy products, but now customers are increasingly interested in the health benefits. New he is developing a large 9-month campaign to educate the people on the benefits of his products.

He uses an enzyme, α-galactosidase, to get hydrolyze and rid of the oligosaccharides, which could otherwise cause flatulence in his soymilk. Address: Cochabamba, Bolivia. Phone: +591 (042) 70094.

6799. Silla, José A. 1995. Re: Soymilk is now being produced in Valencia, Spain. Letter (fax) to William Shurtleff at Soyfoods Center, March 24. 1 p.
• ***Summary:*** The name of the soymilk manufacturer is not given. Impiva is a public organization for the development of small and medium industries in the region o0f Valencia. Address: IMPIVA, Plza, Ayuntamiento 8, E-46002 Valencia, Spain. Phone: Fax: 96-394-21 74.

6800. Cloud, Jon. 1995. Relationship with ProSoya Inc. in Ontario, Canada (Interview). *SoyaScan Notes.* March 30. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** John has known the people at ProSoya for years. ProSoya has a staff of 3, and they are not producing any products yet. They were operating off government grants initially–probably both provincial and federal (Ag Canada) grants. The government apparently saw the possibility of creating jobs, setting up a franchise, and perhaps exporting the technology or products. John shipped them at least 3 large samples of organically grown soybeans on a skid in Sept. 1994. They had no records of the shipment, and only one person vaguely remembered it. They called John in the fall and asked him to set aside a considerable tonnage of organically grown soybeans–of which they have taken none because they are not in production. John wonders how long the company can survive.

Update, 1995 May 17. ProSoya may have a contract with Neilson Dairy, a large Canadian ice cream manufacturer. ProSoya may make soymilk for them to use in making a non-dairy soy ice cream. This could pull ProSoya's fat out of the fire. Note: Neilson launched this soy ice cream in Nov. 1996. Address: Cloud Mountain Inc., 342 Indian Rd. Cres., Toronto, ONT M6P 2H1 Canada. Phone: (416) 762-0940.

6801. Barr, Susan Learner. 1995. Don't overdo the tofu. *Longevity* (*New York, NY*). March.
• ***Summary:*** In recent years cancer research has focused on isoflavones, such as daidzein and genistein, "found in abundance in soy." That, in turn, has increased the demand for soy products such as tofu and soy beverages. There is even talk of isoflavone supplements. But since isoflavones are weak estrogens–which counter the effect of natural body estrogens–some experts have become concerned about the potential side effects on women of childbearing age of a diet high in soy and other phytoestrogens (plant estrogens).

At Emory University in Atlanta, Georgia, Patricia Whitten, PhD, found that among the offspring of rats fed large amounts of phytoestrogens from bean sprouts, sunflower seeds and red clover, the females were unable to ovulate and reproduce, while the males' sexual performance was impaired. Whitten thinks that these findings warrant studies on the effects of phytoestrogens on humans.

Whitten and other researchers are not questioning the value of adding nutritious soy products to the diet in moderation–say, one serving a day. Address: R.D.

6802. Birbeck, John. 1995. Soy debate. *Nutrition News* (*New Zealand Nutrition Foundation*). March. p. 1-2.
• ***Summary:*** Discusses the views of Dr. Mark Messina (a private soy consultant and advocate from the USA) and Professor Cliff Irvine (Prof. of Animal & Veterinary Science at Lincoln University, New Zealand, with a particular interest in human reproduction). Prof. Irvine "maintains that infants are more susceptible to the effects of oestrogens and is surprised at the dearth of information and lack of research. He raised questions about the long term serious effects of synthetic hormones in the 40's, through to the 70's. However it should be noted that the effects recorded related to only one specific synthetic substance (DES) and not to the many others used."

6803. Blankenship, J.; Crane, M.; Mullen, T.; Gregory, R.; Lukens, R.; Sample, C.; Cruise, R. 1995. Serum lipoprotein(a) increased by powdered soymilk in subjects on a total vegetarian diet (Abstract). *J. of Nutrition* 125(3S):802S-803S. March. Supplement. First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease.
• ***Summary:*** Serum lipoprotein(a) (Lpa) was measured in 4 groups of adults. A low level of Lpa is desirable for adults with cardiovascular ailments. Group 1 ate a total vegetarian diet with no powdered soymilk. Group 3 at the same diet but with 1-2 cups/day of commercial powdered soymilk. Group 1 had the lowest Lpa of the 4 groups. The authors conclude that exclusion of powdered soymilk and other free fats significantly lowers Lpa. Address: 1&7. School of Public Health, Loma Linda Univ., Loma Linda, California 92350; 2-6. Dep. of Medicine, Weimar Inst., P.O. Box 486, Weimar, California 95736.

6804. Cohn, L.C.; Preud'homme, D.; Klijsen, S.; Klijsen, C.; Stare, T.J.; Mosca, L.J.; Deckelbaum, R.D. 1995. Effects of soy protein beverage supplement on plasma lipids in hypercholesterolemic children on the AHA Step-1 diet (Abstract). *J. of Nutrition* 125(3S):799S. March. Supplement. First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease. Address: The Children's Cardiovascular Health Center, Columbia Univ. Dep. of Pediatrics, New York; Novo Nordisk, Denmark.

6805. Furuhata, Hideki. 1995. Japanese soyfoods markets. Paper presented at a conference titled "Producing Soybeans for the Soyfoods Market." 9 p. Held 2 March 1995 at Ames, Iowa.
• ***Summary:*** This paper consists of nine very interesting statistical tables, one on each page. Table 1 shows the supply and demand for soybeans in Japan from 1984 to 1992 (in tonne = metric tons). The supply of Japanese-grown soybeans decreased from 126,000 tonnes in 1984 to a low of 73,000 tonnes in 1992, and imports increased from 4,401,000 tonnes in 1984 to 4,725,000 tonnes in 1992. The demand for soybeans from crushers has stayed about steady, ranging from a low of 3,428,000 tonnes in 1991 to a high of 3,928,000 tonnes in 1985. Demand for food uses has increased from 786,000 tonnes in 1984 to a high of

927,000 tonnes in 1992 (up 18%). Demand for use as feed has increased from 55,000 tonnes in 1984 to 95,000 tonnes in 1992.

Table 2 shows soybean utilization in Japan by type of food product from 1987 to 1994: Use of soybeans for tofu and aburage stayed about steady at 498,000 tonnes, by far the largest food use. Use for miso decreased slightly from 180,000 tonnes in 1987 to 170,000 tonnes in 1994. Use for natto grew strongly from 97,000 tons in 1987 to 110,000 tonnes in 1994. Use for kori-tofu (dried-frozen tofu) grew slightly from 29,000 tonnes in 1987 to 30,000 tonnes in 1994. Use for soy sauce grew strongly from 5,350 tonnes in 1987 to a record 25,300 tonnes in 1992, dropping slightly to 23,000 tonnes in 1994. Use for soymilk decreased slightly from 4,000 tonnes in 1987 to 3,100 tonnes in 9994. Total use of soybeans for food in Japan grew slowly from 875,350 tonnes in 1987 to 930,000 tonnes in 1994 (up 6%).

Table 3 shows Japanese population and per capita consumption of soyfoods from 1982 to 1992. Population grew from 103,720,000 to 124,452,000 during this period, while per capita consumption grew from 6.8 to 7.4 kg/capita (up 8.8%).

Table 4 shows per family expenditures and consumption per year on tofu, natto, miso, and soy sauce from 1982 to 1992. For example, expenditures on tofu increased from 2,535 yen in 1982 to 7,992 yen in 1992, while consumption fell from 87.98 cakes to 79.26 cakes. Thus in 1992 the average Japanese family consumed 1 cake of tofu every 4.6 days.

Table 6 shows imports of soybeans for food from the USA, Canada, and China from 1982 to 1992. Imports from the USA are subdivided into IOM, Beeson, and other identified varieties. In 1992 about 88.7% of food-grade soybeans imported to Japan from the USA were IOM. Moreover, of all these soybeans imported for food use in 1992, about 76.6% came from the USA, 21.5% from China, and 1.85% from Canada.

Table 6 shows the amount spent per capita by people of different 5-year age-groups on four soyfood products. The average person in the age 60-64 year group spent ¥2,976 on tofu, ¥1,539 on miso, ¥1,490 on soy sauce, and ¥1,098 on natto. The average person in the age 30-34 year group spent ¥1,581 on tofu, ¥603 on miso, ¥508 on soy sauce, and ¥708 on natto.

Table 7 shows the source of soybean used to make four soyfood products in 1984, 1990, and 1992. In 1992, of the 498,000 tonnes of soybeans used in tofu and aburage in Japan, 74.8% of the soybeans were IOM from the USA, 6.0% were Beeson (USA), 8.0% were other U.S. varieties, 3.0% were from China, and 8.0% were grown in Japan. Of the 30,000 tonnes use to make dried-frozen tofu, 86.7% were IOM and the rest were from China. Of the 108,000 tonnes used to make natto, 55.5% were from the USA and Canada, 39.8% were from China, and 4.6% were grown in Japan. Of the 176,000 tonnes of soybeans used to make miso, 88.0% were from China, 5.7% were white-hilum beans from the USA, and 6.25% were grown in Japan.

Table 8 shows that production of soybeans in Japan from 1982 to 1994 has decreased sharply. In 1982 some 262,300 tonnes were produced on 147,000 ha with a yield of 1,782 kg/ha. In 1994 some 98,800 tonnes were produced on 26,500 ha with a yield of 1,620 kg/ha.

Table 9 is two charts showing the distribution system for (1) Imported soybeans from suppliers to end users, and (2) Domestic soybeans from farmer to end users. Farmers sell to the Zenno Nokyo or a collector. Address: Mitsui & Co. Phone: 515-294-0160.

6806. Golbitz, Peter. 1995. Traditional soyfoods: Processing and products. *J. of Nutrition* 125(3S):570S-572S. March. Supplement. First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease. [9 ref]
• ***Summary:*** Contents: Introduction. Soymilk. Tofu. Tempeh. Miso. Soy sauce. Address: Soyatech, Inc., Bar Harbor, Maine 04609. Phone: 360-379-9544.

6807. Goldberg, Anne Carol. 1995. Perspectives on soy protein as a nonpharmacological approach for lowering cholesterol. *J. of Nutrition* 125(3S):675S-678S. March. Supplement. First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease. [30 ref]
• ***Summary:*** Contents: Introduction. Media reports about diets and supplements. Soy protein as an adjunct to diet. Dissemination of information. Availability of soy products (tofu, soymilk). Physician use of soy protein. Additional considerations. Address: Lipid Research Center, Dep. of Medicine, Washington Univ. School of Medicine, St. Louis, Missouri 63110.

6808. Hayes, Keri. 1995. Feeding their own: Cubans turn to soy as an alternative protein source. *Bluebook Update* (*Bar Harbor, Maine*) 2(1):1, 3-4. Jan/March.
• ***Summary:*** Pam Montanaro of Global Exchange (San Francisco, California) explains how Cubans–led by Alberto Ortega Jhones–have turned to soy and developed a host of delicious products, especially soymilk yogurt drink (in five flavors), which are now being produced in factories that formerly made dairy products. These factories are also manufacturing hard cheese from soymilk, soymilk cream cheese, and soymilk ice cream.

Some of the soybeans used to make these soyfoods are now being grown in Cuba; however most are imported from Canada and Brazil.

The USA, which has a trade embargo against Cuba, also holds embargoes against Iraq, North Korea, Libya, Serbia, and Montenegro. However the "Cuban embargo is the only one, at this time, that denies the right to trade for food and medicine." A photo shows two men at work in one of the

dairy factories that has been converted to include a soyfoods processing section.

6809. *Living Earth & Food Magazine* (*Food Commission, London*). 1995. New Zealand research questions safety of hormones in soya baby milks. Jan/March. p. 3. [1 ref]
• ***Summary:*** The Food Commission is a UK consumer advocacy group. "The Food Commission has received evidence from New Zealand that soya formula milks for babies contain levels of chemicals, known as phytoestrogens, which, the researchers say, give young babies the equivalent of several contraceptive hormone pills a day*. (Footnote: *James et al. 1994. *The Toxicity of Soybeans and Related Products*). The research has been widely reported in the New Zealand press with calls for soya formulae to be withdrawn from sale."

"The Food Commission asked companies supplying soya baby milks in the UK to provide information on levels of phytoestrogens. As we went to press, only one company, Wyeth, which makes SMA Wysoy formula, was able to provide the Food Commission with figures. SMA told the Food Commission: 'Our soy formula contains no more than 20-28 micrograms/ml (of phytoestrogens) in the reconstituted product.'

Sales of soya-based infant formulas are worth nearly £9 million a year from the 3% of babies in the UK who are fed soya-formula, with about 85% of sales on prescription.

6810. *Living Earth & Food Magazine* (*Food Commission, London*). 1995. BST banned until next century. Jan/March. p. 3.
• ***Summary:*** "The genetically engineered milk-boosting hormone Bovine Somatotropin (BST) is to be banned in the European Union until January 1, 2000." The product is made by Monsanto and Eli Lilly–who argue they have a right to market animal pharmaceuticals that are safe and effective. However consumer and animal rights groups are unhappy with evidence that the drug leads to distressed animals and a raised incidence of mastitis. "Dairy trade organisations are deeply unhappy with the damage that BST could do to the image of milk as a clean, fresh product that has not been processed or tampered with." For more information contact BST Concern, London (Phone: 0171-638-0606).

6811. Lu, L.-J.W.; Anderson, K.E.; Broemeling, L.; Doughty, M.; Hu, D.M.-C.; Sadagopa Ramanujam, V.M. 1995. Metabolism of soya isoflavones in healthy males after soymilk consumption (Abstract). *J. of Nutrition* 125(3S):807S-808S. March. Supplement. First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease.
Address: Dep. of Preventive Medicine and Community Health, The Univ. of Texas Medical Branch, Galveston, TX 77555.

6812. Ontario Soybean Growers' Marketing Board. 1995. Technical soybean mission: Japan, Hong Kong, Malaysia, Singapore. March 10-26, 1995. Chatham, Ontario, Canada. 23 p. 28 cm. [Eng]
• ***Summary:*** Contents: Participating members: Dr. Karen Lapsley, Mr. Ron McDougall, Mr. Michael Loh, Mr. Doug Jessop (food technologist and tofu expert, Harrow Research Station), Mr. Kim Cooper (marketing specialist, OSGMB). Note: This is the first Canadian soybean mission in which a food technologist (Doug Jessop) participated. Background. Mission objectives. Acknowledgements. Mission details–Japan: Canadian embassy.

Japan Miso-Co-op Industrial Association: Japan imports about 250,000 tonnes {metric tons} of soybeans from China each year, and about 150,000 tonnes of that amount is for the miso market. The remaining miso soybeans come from Canada, USA, and Japan. The best soybean for making miso comes from the Hokkaido area of Japan. It is a large, white hilum type, perhaps Toyomasuri. Generally the larger the soybean the better for making miso. Japanese miso makers need two types of soybeans from Canada: (1) Normal SQWH (Special Quality White Hilum); average values for color, taste and texture are acceptable though higher values would be preferable; (2) High Premium Soybeans; they would consider paying a premium for better color, taste, and texture.

Azuma Natto Foods Co. Ltd.: This natto company uses 7,000 tonnes/year of soybeans making them the third largest natto maker in Japan. They use 65% USA, 25% Japanese, and 15% Canadian soybeans. There are four sizes of natto: Small natto < 5.5 mm accounts for 72% of the natto market in Japan; Large natto, 5.5 to 6.2, account for 18%. Extra large natto > 8.5 mm account for 18%. Split seed natto account for 10%. Factors in assessing the suitability of soybeans for natto are: Fat content should be less than 19%. Total sugars–Group 1 contains sucrose, fructose, and glucose, group 2 contains raffinose and stachyose. Calcium affects the hardness or softness of natto. The ideal range is 180-250 mg/100 gm. Sanwa Company–Tofu manufacturer.

Wed., March 15–Japan Tofu Association: There are over 20,000 tofu makers in Japan, and 53 of these are members of this association, with half of the 53 being in the Tokyo area. Only 185 tofu manufacturers in Japan have 30 or more employees. Tofu makers consider there are two types of organic soybeans: true organic and semi-organic. The association imports about 2,000 tonnes of each type from the USA; they are OCIA certified.

Home Foods Company Ltd. uses 4,000 metric tons of soybeans a year, mostly a blend of 70% Chinese white hilum and 30% U.S. white hilum. The soys from the USA are I.O.M. soybeans, especially the "High Super" variety. For the more premium market they use a blend of 50% Japanese soys and 50% Harovinton soybeans. They have

also just started blending 50% Chinese and 50% Canadian white hilum soybeans. The two most important criteria for their soybeans are high protein and high total sugars. Sugar levels of Chinese soybeans (24-25%) are higher than those of Canadian soybeans (23-24%).

Thursday, March 16–Takeya Miso Co.: Ikuo Fujimori, President. Takeya has two plants employing 100 production workers and using 5,000 to 6,000 tonnes of soybeans yearly. 70-80% of their products are sold in supermarkets. For years they have been using the U.S. soybean variety Kanrich.

Nagano Chushin Agricultural Experiment Station: They have been breeding soybeans since 1957 and in that time have developed and released 17 varieties, the most famous being Enrei. The staff of 34 includes 5 soybean breeders. Dr. Nobuo Takahashi has been breeding soybeans for over 18 years. Japan has domestic soybean area of 370,500 acres (150,000 ha); it is decreasing, so imports are increasing.

Nagano Miso Industrial United Co-operatives: This group consists of 8 local co-ops made up of 160 miso manufacturers, who pay a fee to this group based on sales. There was a detailed discussion of the types of sugars in soybeans necessary for good miso.

Friday March 17–National Food Research Institute. Tsukuba is developing into a science research park, now containing over 200 different research institutes. NFRI, originally founded in 1934 as the Rice Institute, moved to Tsukuba from Tokyo in 1973. Thirty years ago, all tofu in Japan was made with Japanese soybeans. Dr. Toshiro Nagai spoke about natto: In 1992 the natto needs of Japan were met by soybeans from China (45%), USA (38%), Canada (17%), and Japanese domestic (8%). Natto consumption has increased by about 10% for each of the last few years. Dr. Sayuki Nikkuni spoke about miso: In 1992 the miso needs of Japan were met by soybeans from China (87%), USA (6%), Japan (6%), and Canada (1%). Dr. Kaoro Koyama spoke about tofu: In 1992 the soybeans for tofu totaled 490,000 tonnes and came from USA (390,000 tonnes; 80%), Canada (50,000; 10%), Japan (20,000; 4.1%), China (20,000; 4.1%), and South America (10,000; 2.0%).

Asahi Food Processing Co. Ltd. This plant, which has 350 employees and operates 365 days/year, was established in 1972 and produces tofu, fried tofu, natto, noodles, and juices. They use 15 tonnes of soybeans daily or 4,900 tonnes/year, of which 38.8% are grown in Japan and the remaining 61.2% are IOM from the USA. Each day they make 120,000 cakes of tofu, 100,000 pieces of fried tofu, and 20,000 packages of natto. Most of the soybeans they use in production are dehulled. They use about 500 tonnes/year of OCIA certified soybeans from the USA and some semi-organic soybeans from Japan. The prices they pay per kg of soybeans are: IOM 30-40 yen; Vinton, identity preserved varieties, and Harrovinton [Harovinton] 100 yen; organic 120-140 yen; Enrei (Japanese) 400 yen.

Saturday, March 18–Hong Kong. Canadian High Commission. Canada Packers (Hong Kong) Ltd.

Monday, March 20. Shenzhen Economic Zone: This area of 30 square km, just outside the Hong Kong border, contains 1 million people or 60% of the provincial population, all of whom require a special permit to work in the area. This economic zone is booming, basically due to spiralling costs in Hong Kong, where many businesses and factories are closing and moving to this area, where land and labor costs are much lower.

Shenzhen Vitasoy (Guang Dong) Foods & Beverage Co. This plant, which is only one year old, produces a major share of the soymilk for Hong Kong. They are able to import soybeans at a low tariff rate because they ship the majority of their finished products back into Hong Kong. The plant uses Canadian SQWH (Special Quality White Hilum) soybeans, but has problems with uneven seed size. They presently receive the soybeans in 45 kg jute bags, but would prefer strong 45 kg poly-lined paper bags. A small percentage of dairy milk is mixed with the soymilk, which is thought to improve its texture and taste.

Tuesday, March 21. Dah Chong Hong, Ltd. This was the first company to import Canadian soybeans for food use in the early 1970s. Dah Chong pointed out that Ontario soybeans were experiencing increasing competition from Quebec soybeans, especially in the past two years. The Quebec soybeans are 5-10% less expensive, due to lower basis levels, lower freight costs, and being more aggressive in a new market. Their quality is similar to Ontario, though the seed coat color is somewhat darker. There are about 50 tofu makers in Hong Kong, 10 larger size and 40 smaller size, although there is not a large difference in size. Consumers believe that packaged tofu is not as fresh as that purchased fresh daily from local markets.

Amoy Food Ltd. (Dr. Alain Butler; This plant makes soy sauce and other sauces used in cooking. They use only Canadian soybeans, the Maple Glen variety from Quebec). Wed., March 22. The group visited Hung Tao Soya Bean Products Pty., a traditional Hong Kong tofu and soybean sprout plant in the New Territories.

Thursday, March 23–Malaysia. Canadian High Commission. Yeo Hiap Seng (Malaysia) Berhad (Contains excellent details on the company). Chop Lee Kit Heng Sdn. Bhd. (A soybean trader selling to end users in Malaysia).

Friday, March 24–Singapore. Canadian High Commission. Yeo Hiap Seng Ltd. (Singapore). Meeting with nine tofu manufacturers in Singapore. (The name of each company is given. There are 40 tofu makers in Singapore, and the majority now use Canadian soybeans. Tofu growth in the last 5 years has been very rapid and competition is fierce). Asia Corporation Pte. Ltd. (This company accounts for about 70% of the soybeans imported into Singapore and Malaysia. They first brought Canadian soybeans into the area in 1978). Canadec Private Ltd. Sing Yeap Trading Pte. Ltd.

Saturday, March 25–Unicurd Food Company Pte. Ltd.

(Mr. Goh gave a tour of his facility and discussed his plans for a new plant in late 1995). Yam Thye & Co. (Warehouse).

Encore Ltd.: Sylvia B. Hollenstein, managing director. This company, based in Switzerland, uses Swiss technology to produce soy yogurts, chocolates, and noodles in Switzerland from Chinese soybeans–mostly for the taste. The products are shipped from Switzerland to the company's 3 retail stores in East Asia; they plan to expand to 10 retail stores by the end of 1995.

Appendixes A through J, issued as a separate document, contain extensive and detailed information and some published documents related to the technical mission. Address: P.O. Box 1199, Chatham, ONT N7M 5L8, Canada. Phone: 519-352-7730.

6813. Petrakis, N.; Wiencke, J.; Coward, L.; Kirk, M.; Barnes, S. 1995. A clinical trial of the chemopreventive effect of a soy beverage in women at high risk for breast cancer (Abstract). *J. of Nutrition* 125(3S):800S. March. Supplement. First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease.
• ***Summary:*** It has been proposed that the isoflavone genistein is responsible for the low rate of breast cancer observed in women from Southeast Asia. To evaluate this hypothesis, a pilot study for a clinical trial of the chemopreventive properties of soy protein is being conducted in American women at high risk for breast cancer. Fifty such premenopausal women, previously studied at UCSF, have been recruited and are incorporating into their diet two servings a day of a soy-based nutritional beverage powder prepared using Supro isolated soy protein (made by Protein Technologies International, St Louis, Missouri) for 12 months. The 38 gm of soy protein consumed each day contains about 70 mg of genistein (mostly as glycosidic conjugates). At 3-month intervals on the diet, tests for cytological and biochemical surrogate endpoint biomarkers (SEBs) will be conducted to see if breast cancer risk is reduced. Supported by a grant from the United Soybean Board. Address: 1-2. Dep. of Epidemiology, Univ. of California at San Francisco (UCSF); 3-5. Dep. of Pharmacology, Univ. of Alabama at Birmingham, Birmingham, AL 35294.

6814. **Product Name:** R.F.'s Gourmet Organic Brown Rice Pudding (Made with Soymilk–Dairy Free) [Raisin-Cinnamon, Chocolate, or Banana].
Manufacturer's Name: R.F. Bakery International, Inc. (Gourmet Foods Div.).
Manufacturer's Address: 8101 Orion Ave. Unit 6, Van Nuys, CA 91406. Phone: (818) 785-6945.
Date of Introduction: 1995. March.
Ingredients: Raisin-Cinnamon: Organic* brown rice, soy milk (organic* soybeans, filtered water), pineapple juice concentrate, raisins, peach juice concentrate, pear juice concentrate, pure vanilla, spices, lemon, sea salt. * = Organically grown in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 6½ oz tub.
How Stored: Refrigerated.
New Product–Documentation: Leaflet (2 pages, with all 3 labels) from the Natural Products Expo (Anaheim, California). 1995. March.

6815. Smith, Paul. 1995. The life and work of F.G. Roberts, naturopath, and Australia's first soyfoods pioneer. Part II. Early years in Australia, 1927-1932. Bayswater, Victoria, Australia. 6 p. March. Unpublished manuscript. Handwritten. Updated by several interviews with and letters to William Shurtleff in March 1995.
• ***Summary:*** Continued: In early 1927, after his clinic in Hobart was well established, F.G. Roberts traveled to Melbourne (in Victoria, southern Australia), where he became licensed in 1929 and established his first mainland clinic at Latrobe Street and commenced his well-known lectures. Initially his wife kept the clinic and rest home going in Hobart, then she and the children joined him in Melbourne in late 1927, when the family took up residence in Mordialloc, later moving their house and clinic to 232 St. Kilda Road.

In Nov. 1928 F.G. Roberts and his wife, Gladys, from their headquarters in Melbourne, began publishing a magazine titled *Nature's Path to Health* (NPH). The first issue was volume 5, number 5–raising many questions about previous volumes and issues. They continued publishing NPH until 1951-52. Gladys was a major contributor, serving as editor, publisher and even writer of articles when her husband was away. In later years, Gladys was assisted by her sister, Muriel Ackerman. The magazine became Roberts' main vehicle for announcing his lecture and travel plans, advertising his products, and disseminating his ideas about health, naturopathy, and diet.

In 1929 Roberts established the Australian College of Naturopathy and began offering lectures and study courses, including some in chiropractic; he used his home as the organization's first headquarters. Soon more space was required, so the Roberts family moved to 428-430 St. Kilda Road, where they also established yet another rest home.

During 1930, 1931, and 1932 frequent advertisements appear in *Nature's Path to Health* (Melbourne) for F.G. Roberts interstate lecture circuit, giving dates and venues. He established centers in Sydney and Newcastle (New South Wales), Brisbane, Ipswich, Toowoomba (Darling Downs), Maryborough, Bundaberg, and Rockhampton (Queensland). After traveling this northern circuit by train, he would return to Melbourne for several weeks to rest and attend to his duties there, prior to traveling by car to Ballarat and Geelong (both in southern Victoria), where he had also established centers. Then he was away by train to Adelaide (South

Australia), and Fremantle (near Perth, Western Australia). He loved to travel, and in all these places he lectured and treated people. He also participated in radio (wireless) interviews and programs. As his students became qualified, he opened clinics and shops to give the public the goods and services he felt they needed. During this time he closed the St. Kilda Road Clinic and opened a new clinic at Post Office Place.

At about this time, F.G. Roberts may well have traveled to the United States. Esmae N. Jackson (born in 1937), the Roberts' granddaughter, recalls vividly that he told her about several visits (at least two) there during her years in primary and secondary school; she does not know when his trip took place but thinks vaguely late 1930s to mid-1940s. She recalls her grandfather mentioning Loma Linda (which was named College of Medical Evangelists from 1906 to 1 July 1961, when it was renamed Loma Linda University). Paul's father, Ron Smith, has no recollection of F.G. Roberts going to the USA between 1948 and 1954. If Roberts did go, there are three good reasons for thinking he may well have visited Benedict Lust (pronounced LOOST; rhymes with "boost"), who was based in New York. First, Lust published (from July 1925 to 1960) a naturopathic magazine titled *Nature's Path* (New York City). In 1930 F.G. Roberts, assisted by his wife (Gladys), began editing and publishing a bimonthly (later monthly) magazine titled *Nature's Path to Health.* He continued to publish it until about 1952. The magazine was published in Melbourne and Gladys kept it going during her husband's travels. Some articles by Benedict Lust appeared in the Roberts' Australian periodical. And articles by other writers, first published in *Nature's Path* (USA) later appeared in the Australian magazine. By Sept. 1939 Lust appears on the magazine's masthead as "American Contributing Editor"–all indicating a spirit of cooperation and friendship.

Second, the Sept/Oct. 1937 issue of *Nature's Path to Health* (Australia) states (p. 14): "The Naturopathic School of Dr. Benedict Lust conferred on F.G. Roberts, N.D., D.O., D.C. [doctor of naturopathy, osteopathy, and chiropractic], of 430 St. Kilda Road, Melbourne, Australia, the Degree of Dr. of Natural Therapeutics." Esmae believes the honorary doctorate arrived by mail, and that F.G.R. was enormously proud of the honour.

Third, Dr. Lust was widely considered the world's leading practitioner of natural healing (naturopathy) at the time, and it seems likely that an energetic, curious, and dedicated man such as F.G. Roberts would have wanted to meet him, to talk with him about their mutual interests, and perhaps to study Lust's organization, publications, and healing methods. Note: A careful examination of Dr. Lust's magazine might mention a visit from Roberts.

During the 1930s Roberts began to import a range of packet herbs, tablets, and other herbal remedies from Potter and Clark in London.

In 1934-35 F.G. and Gladys Roberts established a restaurant named the Curative Dining and Health Service, on the 2nd floor, 300 Little Collins St., Melbourne. It was renamed Cafe Naytura (see ad in 15 Aug. 1936 NPH). (Note: In 1943 Sanitarium Health Food Co. {SDA} had a cafe and natural food store at 293 Little Collins St., Melbourne). During the 1950s it was located in the basement at this same address and run by the Cutting family. It continued at this address until the late 1970s, when it was purchased by Don Newsome, a pharmacist, and moved to its current Bourke Street Mall location. Don used his experience to establish the Naytura Health Food Section nationwide through the Safeway (Victoria) / Woolworths supermarket chain. The Bourke St. store is used to evaluate products for potential supermarket sale and the basement restaurant still carries on the tradition of the Roberts' 1934-35 Cafe.

In the early 1930s, F.G. Roberts became interested in Mr. Willson's food manufacturing business–probably because his son, Horace, worked there. It may have been that Roberts took over the business to keep Horace in a job. F.G.R. never had the time or any real interest in running it.

In the Aug. 15, 1936 issue of *Nature's Path to Health* we find the first advertisement for "F.G. Roberts' Health Food Products, 40a Chapel St., East St. Kilda." The same appears in the "Directory of health aids." He had acquired this health food factory which had been previously named Drummond Health Food Products. St. Kilda was a beach-side suburb of Melbourne, Victoria, Australia. A photo of this original red brick factory appeared in the May-June 1937 issue of *Nature's Path to Health* (p. 22); an original hangs on the office wall at Soy Products of Australia. The factory began to pack a variety of herbal products, and to manufacture some new foods, all to service the needs of Roberts' shops and clinics. Many herbs were grown locally in Australia to supplement the supplies imported from England. It was during the mid-1930s that many of the products still manufactured today by Soy Products of Australia Pty. Ltd. under the Roberts brand name were first formulated and developed. By the late 1930s F.G. Roberts, his teachings, and his products were known nationwide. From 1951 onward Potter & Clark's herbs were replaced by herbs mixed and packaged in Australia using some imported ingredients.

During this period the Australian College of Naturopathy (which Roberts had founded in 1929) became more closely affiliated with the British College and became known as the British and Australasian College of Naturopathy; the two colleges were run on the same standards and principles.

The Roberts' children had now grown up and were taking an active interest in the business, training for and working in key positions. The eldest son, Fred, Jr., and the daughter, Gladys, worked in the clinics. Fred, Jr. later moved to Brisbane and his son, Peter, carries on the family tradition, practicing as a chiropractor. Mr. Roberts was good at treating people and lecturing, but was less interested in managing the food factory, a role that his youngest son, Horace Roberts, fulfilled. Horace also managed the shop at the Post Office

Place Clinic. Horace was instrumental in transforming his father's ideas into formulations and products. Starting in the mid-1930s, and continuing until the 1950s, F.G. Roberts developed a number of health food products, which were sold throughout Australia. They were hand-mixed and packaged at his factory, F.G. Roberts Health Food Products, in St. Kilda and from 1933 he was advertising them nationwide in his magazine *Nature's Path to Health.*

Several of these products contained soy flour. Prior to 1950 he launched and sold the following soy products, listed here is the order they were first advertised in his magazine: (1) Soy Wheat Macaroni (Aug. 1936); (2) Soy Bev (tea or coffee substitute; Nov. 1937) was made primarily from ground roasted soybeans and roasted milled chicory; Paul thinks it was first introduced in about 1935-36; (3) Soy Flakes (Dec. 1937); (4-5) Roberts' Soy Nut Roast; Soy Beans in Tomato (in glass, Oct. 1938; canned June 1940); (6) Malto-Soy Drink (tea or coffee substitute; Sept. 1939); (7) Soy Milk Compound (Sept. 1939; originally a mixture of soy flour, malt, lactose, and nonfat dry milk [skim milk]). This product is still made today in modified form under the name Soy Compound; Paul thinks it was introduced in about 1933 or 1934. It was made using defatted soy flour imported from America; (8) Soya Choc-Malt (Jan. 1940), renamed Soya-Choc in Aug. 1946; it was the Soy Milk Compound plus natural cocoa; Paul thinks it too was introduced in about 1933 or 1934; (9-10) Roberts Soy Nut Brawn, Soy Nut Cheese (May 1940); (11) Vita Elm (1948). This early and widely advertised herbal product was being advertised by May 1935 in *Nature's Path to Health* as a "vitalizer" that can give "Glorious Health." Vita-Elm, which always contained slippery elm, was based on an old English formula that went back to the 1750s; the company still makes the product today. Published ads from 1935, 1936, and 1949 said it contained "the Germ of Life of Wheat, Oats, Barley, Rye, Maize" (and slippery elm) but Paul is sure that somewhere prior to 1948 it also contained small amounts of soya flour. Esmae Jackson believes that the soy was added to Vita Elm in 1937, when Roberts first became interested in it. Continued. Address: Director/General Manager, Soy Products of Australia Pty. Ltd., 69 Power Road, Bayswater, VIC 3153, Australia. Phone: (03) 729-1738 or 729-3611.

6816. Smith, Paul. 1995. The life and work of F.G. Roberts, naturopath, and Australia's first soyfoods pioneer. F.G. Roberts Health Food Products, and Ron Smith. Part II. Mid-1930s to 1949. Bayswater, Victoria, Australia. 6 p. March. Unpublished manuscript. Handwritten. Updated by several interviews with and letters to William Shurtleff in March 1995.

• ***Summary:*** Continued: It is not clear when and how F.G. Roberts first learned about soybeans and soy flour. Paul suspects that he read about Dr. Harry W. Miller (a Seventh-day Adventist doctor) and his pioneering work with soyfoods in China, starting in the 1930s. "There is definitely some connection and I believe it is highly likely that F.G. Roberts met Harry W. Miller." Or the two men may have corresponded. If Roberts visited Loma Linda, California, he would surely have visited Loma Linda Foods, which made a large range of early soyfoods: In 1922 Loma Linda introduced–Smokene (a seasoning based on roasted soy flour). 1934–Soy Mince Sandwich Spread, Soymilk, VegeCheese, Soy Bean Spread, Breakfast Cup (coffee substitute), Soy Wafers, Soybeans with Proteena and Tomato Sauce. 1936–Soy Beans (plain, canned). 1938–Gluten Burger (with soy flour). 1940–Soy Beans with Tomato, Soy Beans with Proteena, etc.

During the 1930s, F.G. Roberts and others were experimenting with soybean cultivation in Australia on a small home-garden and experimental level. An article in *Nature's Path to Health* (15 July 1936, p. 35-36) gives details. Roberts concluded: "The Soya Bean has been very successfully grown in Australia." But there were no commercial crops until the 1950s.

In 1940 Horace Roberts, the youngest son, left the company when he volunteered for service with an ambulance corps being formed in Melbourne. Serving as a non-combatant male nurse during World War II, he was sent to Singapore. With Horace's departure, F.G. Roberts' food production business began to languish; the man who had managed the plant and attended to daily details was gone. Although the company's soy products were available during the war, it continued to languish until Ron Smith entered the business in 1948.

Meanwhile, during World War II, with the clinics and college all well established and running smoothly, F.G. Roberts turned some of his time and attention to a property at Panton Hills, an outer Melbourne suburb, between Eltham and Lilydale, where a home was built; he grew fresh fruit, herbs, and vegetables, and practiced composting. This provided family, friends, and pupils from the college with a place to visit and relax. It never made the expected profit.

Shortly after World War II ended, the Roberts family received devastating news. Their youngest son, Horace, had been captured in Singapore and interned by the Japanese in Changi, their prisoner of war camp there. He had died in October 1943 in Burma (working as a forced laborer on the Thailand-Burma Railway)–unbeknownst to his family until after the war had ended. So shattered was F.G. Roberts by the death of his son that he began to lose interest in the shop and the factory. The shop and clinic in the Post Office Place was closed and the family moved to Malvern Road, Prahran. The factory continued to run indifferently while F.G. Roberts put most of his time and energy into public lectures, the college, and seeing and treating patients.

Esmae recalls that for many years on a Thursday [sic Tuesday] night, often weekly, F.G. Roberts had addressed the public about "Health Matters" at the Athenaeum Art Gallery

Hall at 188 Collins Street, Melbourne. Esmae personally attended many of these evenings, singing, playing the piano, and on one occasion addressing the audience with a speech of her own about diet and health.

In 1946 Ron Smith first came in contact with the F.G. Roberts at the Athenaeum. Vincent Ronald "Ron" and Mabel Smith, both originally from Western Australia, had married and settled in Melbourne after World War II. Ron was born on 10 December 1918 at Boulder (near Kalgoorlie), Western Australia. Mabel was born on 16 Dec. 1919 in Bunberry, also in Western Australia. Both in their late 20s and dogged by ill health, they first attended several of F.G. Roberts' lectures and later went to him for advice and treatment. Ron, in particular, was slightly built, had worn glasses for years, and had never enjoyed really robust good health. F.G. Roberts prescribed an exercise program and made radical alterations to the Smith family diet. Almost immediately the Smith family's health began to improve. Ron's physique developed and his eyes improved to where he was able to discard his glasses for nearly 30 years. Thus began a long and ongoing association with the Roberts family.

F.G. Roberts owned Green Island, a small island just off the coast of Queensland at Mackay, near the Great Barrier Reef; you could walk across at low tide. There he built a retreat to which he took his friends and pupils to enjoy the sea air, balmy climate, and the cleansing diet of fresh tropical fruits–pineapples, papayas, bananas, coconuts, and mangoes. Ron Smith enjoyed unforgettable visits with the Roberts at Green Island several times between 1948 and 1954.

F.G. Roberts had an enormous enthusiasm and an almost boundless capacity for work. When he got a bit tired or run down, he would switch off and head for Green Island for a few weeks of relaxation. He was good fun and good company to go away with. He would buy a case of good quality ripe oranges and, with his guests, would enjoy fresh squeezed orange juice and half a ripe pineapple (freshly sliced with a sharp machete and handed around to all present) for morning and afternoon tea. He practiced what he preached.

The Roberts presided over the prenatal and antenatal care of Mabel Smith during the birth of her two sons in 1949 and 1950 with beneficial results to both infants and mother. The Smiths became lifelong converts to Mr. Roberts' philosophy. Note: In 1995, at age 76, Ron Smith still comes to work at the company each day, and often puts in a 10-hour day as managing director of the company.

In early 1948, after several unsuccessful attempts to start his own business, Ron Smith went to work for F.G. Roberts. He worked as an employee at the factory at 40 Chapel St., St. Kilda, increasingly taking over the daily management and running of this operation–formerly the responsibility of Horace, the Roberts' son, who died in the war.

Although a great healer and publicist, F.G. Roberts was not strong in the technical aspects of food production or marketing. The factory at 40 Chapel St. was more like a cottage industry. It was small, cramped, and labor intensive; mechanical aids were either non-existent or very primitive. Output was small and most products were mixed and packed by hand.

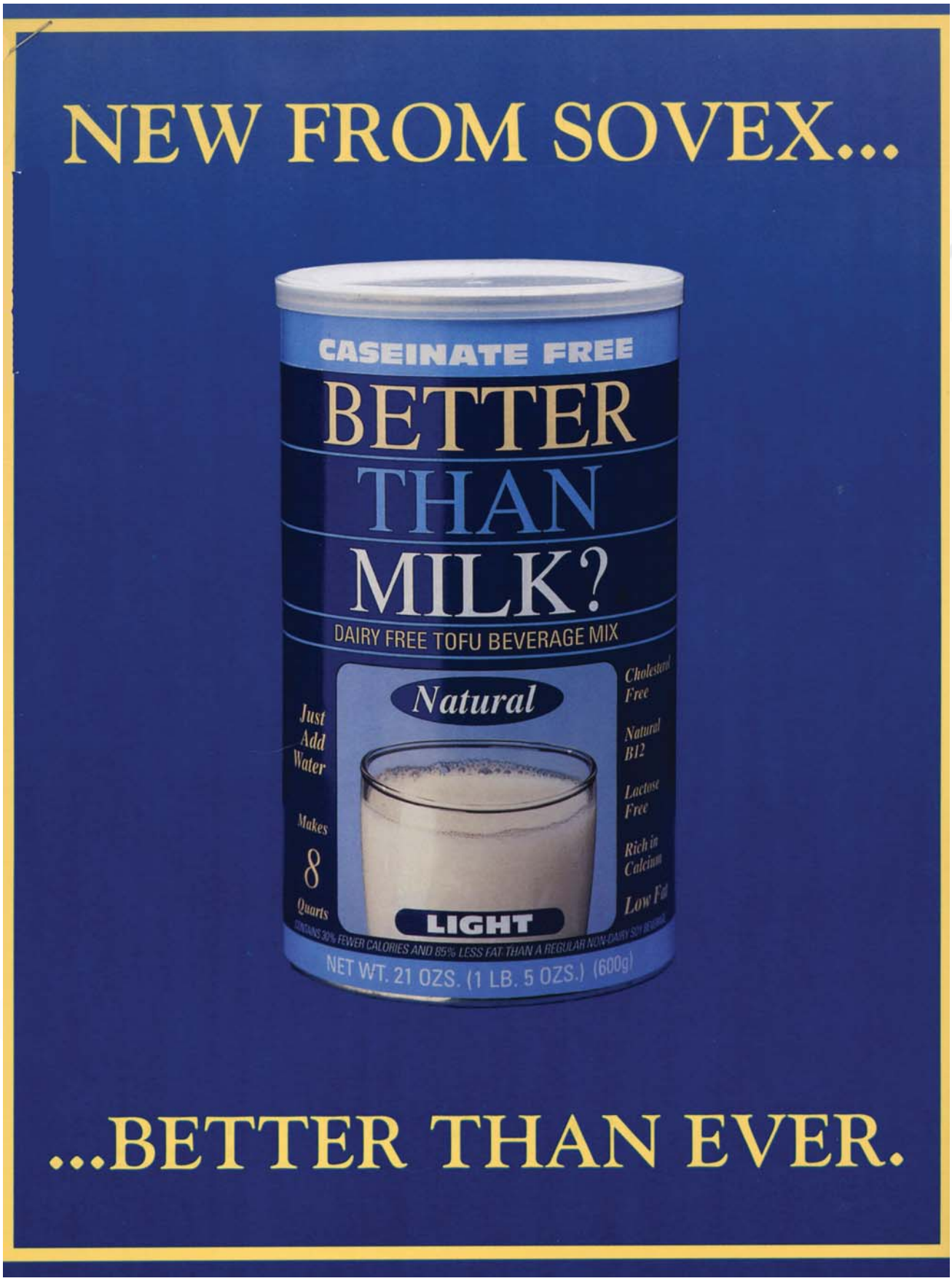
Ron sparked the resumption of manufacturing, even though wartime rationing was still in place and obtaining permission to import anything was difficult. Paul recalls (28 March 1995): "Roberts, himself, was a dreamer, and far too preoccupied with travelling, treating patients, lecturing, and racing on to the next new idea. He lacked the patience, persistence, and stability to run a manufacturing business. His skills and interests lay elsewhere."

F.G. Roberts was an osteopath, naturopath, registered dietitian, iris diagnostician, and had several other natural healing qualifications. He studied by attending courses in the U.K. and by correspondence. He was first registered in Australia as a "Consultant Dietitian" in 1942-43. Continued. Address: Director/General Manager, Soy Products of Australia Pty. Ltd., 69 Power Road, Bayswater, VIC 3153, Australia. Phone: (03) 729-1738 or 729-3611.

6817. **Product Name:** Better Than Milk? Caseinate Free. Dairy Free Tofu Beverage Mix.
Manufacturer's Name: Sovex Natural Foods, Inc.
Manufacturer's Address: 9104 Apison Pike, P.O. Box 2178, Collegedale, TN 37315. Phone: 615-396-3145.
Date of Introduction: 1995. March.
Wt/Vol., Packaging, Price: 21 oz (1 lb 5 ozs) paperboard carton.
How Stored: Shelf stable.
New Product–Documentation: Leaflet sent by Patricia Smith from Natural Products Expo West at Anaheim. 1995. March. "New from Sovex... Better than ever." A large photo shows a can of Better Than Milk? on a deep blue background. On the rear are nutrition facts and ingredients (printed too small to read except with a magnifying glass) for seven SKUs. Caseinate Fre Better than Milk? in Natural, Natural Light, Carob, and Chocolate flavors. Low Fat Better than Ice Cream in Vanilla and Strawberry flavors, and Caseinate Free Better Than Milk in a Natural flavor in an aseptic package.

6818. *SoyaCow Newsletter* (*Ottawa, Canada*). 1995. Health of SoyaCows in India. 4(1):2. Jan/March.
• ***Summary:*** "In a recent visit to India, Frank Daller reported that most of the SoyaCow SC20 systems sent to India originally under Child-Haven / CIDA project were not being used anywhere close to their potential. He noticed lack of adequate management and organization barring the optimal use of the systems.

"Since CIDA no longer supports the project, Frank is determined to overhaul the project by raising adequate funds and devoting a significant portion of his time. With the help



of Dr. R.K. Sharma, Manager–SoyaCow Centre, India, he found a company suitable for manufacturing the SoyaCow system in any size and capacity in India at a reasonable cost."

6819. *SoyaCow Newsletter* (*Ottawa, Canada*). 1995. Protein isolates from soymilk: Canadian scientists developing technology. 4(1):2. Jan/March.
• ***Summary:*** "Protein isolates were successfully prepared using [whole bean] soymilk from SoyaCow SC20 and SC100 in a laboratory as well as at a pilot scale. These isolates were found to be comparable to a commercial product, Supro 610, made from defatted soybean flakes by Protein Technologies International of St. Louis, Missouri."

The project was the result of collaborative research between ProSoya Inc. and an Agriculture Canada team led by Dr. C.Y. Ma. "Isoelectric precipitation and ultrafiltration were used to remove the carbohydrates and solvent extraction was used to remove the fat. Alternate means of removing the fat are currently being explored."

A large table compares the functional properties of isolates made from ProSoya soymilk vs. those of Supro 610.

6820. *Soyafoods* (*ASA, Europe*). 1995. A phytoestrogen story. 6(1):6. Spring.
• ***Summary:*** A "media scare story" concerning soya recently appeared in the British press. The story originated in New Zealand last year when a firm of consultants carried out some research on phytoestrogen levels in soy-based infant formulas. They concluded that the levels "were equivalent to giving several contraceptive pills a day" and submitted a report to the New Zealand authorities requesting the immediate withdrawal of soy-based infant formulas from the market. The story was reported in the New Zealand press.

When the story appeared in the UK, headlines questioned the safety of soy-based infant formulas and made comparisons with contraceptive pills. But the story failed to mention that "the research was commissioned privately by two New Zealanders concerned about side effects in their pet parrots who were being fed soya (not a proprietary bird feed!). Secondly, the research had not been published either independently or in a scientific journal and so it has not been peer-reviewed. The report, itself, is only available on payment of a substantial fee (£250)."

The New Zealand government and the New Zealand national association of health visitors both stated that there was insufficient evidence to warrant any action.

SoyaFoods concludes: "We don't yet know the role that phytoestrogens play in our diet, although studies on their health effects in adults are generally positive. Of course, where infants are concerned we need to be cautious, but we also need to keep a sense of proportion, after all millions of babies have been fed soya infant formulas over the past 20 to 30 years with no harmful effects."

6821. **Product Name:** Tofu, Sweetened Soymilk.
Manufacturer's Name: Thanh Son.
Manufacturer's Address: 905 N.W. 23rd St., Oklahoma City, OK 73106. Phone: 405-525-2690.
Date of Introduction: 1995. March.
New Product–Documentation: Talk with daughter of owner of L&H Bean Sprout Co. in Oklahoma City. 1996. July 5. There is now one tofu company in Oklahoma City, named Thanh Son (pronounced TAN-sun). Talk with Mr. Trung Nguyen. 1996. July 5. He started making tofu and sweetened soymilk in March 1995 in Oklahoma City. He came to the USA from Vietnam in 1978. His surname is pronounced "Nwen."

6822. Urban, D.; Grizzie, W.E.; Coward, L.; Kirk, M.; Barnes, S. 1995. A clinical trial of the chemopreventive effect of a soy beverage in men at high risk for prostate cancer (Abstract). *J. of Nutrition* 125(3S):800S. March. Supplement. First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease.
• ***Summary:*** "Men in Southeast Asian countries have a 10-fold lower risk of prostate cancer than American men. Epidemiologic data have suggested that nonfermented soy foods, which contain conjugates of the isoflavone genistein, are associated with the lowering of prostate cancer risk. Experiments carried out on human prostate cancer cell lines have shown that genistein inhibits epidermal growth factor (EDF)-stimulated cell proliferation." Address: Div. of Urology, Dep. of Surgery, and Depts. of Biochemistry, Pathology and Pharmacology, Univ. of Alabama at Birmingham, Birmingham, AL 35294.

6823. **Product Name:** Provamel (Soya Milk Flavoured with 100% Natural Vanilla Extract).
Manufacturer's Name: Vandemoortele (UK) Ltd.
Manufacturer's Address: Ashley House, 86-94 Hogh Street, Hounslow, Middlesex TW3 1NH, England. Phone: +44 181 577 2727.
Date of Introduction: 1995. March.
Ingredients: Incl. soymilk and natural vanilla extract.
Wt/Vol., Packaging, Price: 1 liter Tetra Brik Aseptic carton. Retails for £1.14 (5/94, England).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Spot in Soyafoods (ASA, Europe). 1995. Spring. p. 4. "A new soya milk from Provamel." The product will be available at health food shops and selected supermarkets from March 1995 onwards.

6824. Rose, Richard. 1995. Sharon's Finest is moving towards hemp products (Interview). *SoyaScan Notes.* April 3. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Richard first introduced the idea of using hempseed protein in natural food products in America. His

is still the only company making such products, and demand for them is growing rapidly. "Our business is moving toward hemp." He recently published a brochure titled "Hemp Food," that explains the many benefits of growing hemp. Many people still do not realize that hemp is not the same as marijuana; they are different plants.

Sharon's Finest now makes HempRella (a non-dairy cheese alternative containing 5% milled hemp seeds) and Hempeh Burger (a soybean and rice tempeh burger containing 10% whole hemp seeds). The future of Hemp Foods lies in sprouting hemp seeds then processing them to make milk (similar to making soymilk from the soybean), yogurt, ice cream, tofu, cheese, meat alternatives, and the like. Address: President, Sharon's Finest, P.O. Box 5020 (616 Davis St.), Santa Rosa, California 95402-5020. Phone: 707-576-7050.

6825. Leah, Rickard. 1995. Brand scorecard: Price hikes, baby boom nurture formula sales. *Advertising Age* 66(15):27. April 10.
• ***Summary:*** This overview of the infant formula market in the USA discusses the major manufacturers of infant formula (* = lactose-free, soy-based). A table, titled "Modified milk" shows the top ten brands, their rank in 1994 and 1995, dollar sales to date (for the 52 weeks ended 14 Jan. 1995) and percentage change from 1994, and their market share in 1995 and 1994. For each company the dairy-based product is listed first, and has at least twice the market share as the non-dairy product.

Abbott Laboratories/Ross Labs–Sturgis: Similac 36.6%, Isomil* 14.9%.

Bristol-Myers Squibb Co./Mead Johnson Nutritionals: Enfamil 18.5%, Prosobee* 6.3%, Nutramigen 2.1%.

Wyeth-Ayerst/Wyeth Nutritionals: SMA 7.2%. Nursoy* 3.3%. Nestle Carnation Food Service Co.: Goodstart 3.1%, Follow-up* 2.2%.

Gerber 2.4%.

Total sales of these ten brands in 1994 were $2,565.8 million. Sales of only the soy-based formulas were: Isomil $382.2 million. Prosobee $160.9 million. Nursoy $85.7 million. Carnation Follow-Up $57.2 million. Sales of these four soy brands total $687.00 million, account for 26.8% of total sales.

The two largest companies control almost 80% of the total U.S. market. The WIC program accounts for about one-third of these total sales. (Note: WIC is the Special Supplemental Nutrition Program for Women, Infants and Children. It is administered by the USDA's Food and Consumer Services (FCS)). Many states join into groups to request WIC bids. Fluctuation in market share thus depends greatly on a company winning or losing WIC bids. In 1994 the U.S. infant formula market was worth $2.6 billion. The top six baby formula brands are not advertised directly to the consumer, but marketed through physicians and hospitals.

Note: Wyeth-Ayerst left the U.S. market in 1996.

6826. Reuter (Havana). 1995. Cuba turns to soy to curb protein shortage. *Manitoba Cooperator* (*Winnipeg, MB, Canada*). April 13.
• ***Summary:*** Cuba's present rationing system allows all children under 7 years of age to receive a quart of cow's milk a day. Food Industry Minister Alejandro Roca reports that Cuba, faced with severe shortages of beef and cow's milk, is increasing production of "protein-rich soy products such as soy yogurt, soy ice cream, and soyburgers." Yogurt, ice cream, and cream cheese made from cow's milk were widely available until about 1990, after which there has been a steep drop in their production. Roca said the production of yogurt made from soy milk will reach 40,000 tons this year, up from only 11,000 tons last year, with a goal of 100,000 tons by 1996. He also said that production of ice cream and cream cheese made from soy milk will be increasing.

Since the mid-1980s, soybean meal has been used in Cuba as a meat extender for the ground (minced) meat received by Cuban families under the strict system of food rationing. The official meat ration in Havana is 12 ounces every 10 days. Hamburgers extended with 30% soybean meal are sometimes available in restaurants and cafeterias.

6827. *Glencoe News* (*Chicago, Illinois*). 1995. Soy-based natural foods enter the mainstream. April 20. [1 ref]
• ***Summary:*** Once soy-based foods were found only at health food or natural food stores. Now they are finding their way into mainstream grocery stores, as more and more Americans are recognizing the need to eat healthy. According to the Illinois Soybean Association, the main products to look for are tofu, soymilk, frozen desserts, soy flour, and analogs (like "veggie" burgers).

6828. García, Alvaro. 1995. Re: Soyfoods research at IIIA in Cuba. Letter (fax) to William Shurtleff at Soyfoods Center, April 24. 1 p. [Eng]
• ***Summary:*** "The Food Industry Research Institute (IIIA; *Instituto de Investigaciones para la Industria Alimenticia*) is the only institution working in research and development in foods in Cuba. All areas of food technology are represented in the IIIA. This Institute is equipped with the required laboratories and pilot plant installations and employs 140 research scientists. I am the director of this institution and my own research centers on soy processing for human consumption. I have been working in this field since 1984 and have had favorable results with the installation of 16 soy yoghurt production lines in different areas of the country in which we will produce about 40 million liters this year. We are now working to produce industrial production of soy mayonnaise and cheese."

Alvero (pronounced AL-vay-ro) asks about ways that IIIA could cooperate with Soyfoods Center and access the

Soyfoods Center information system.

Talk with Pam Montanaro of Global Exchange. 1995. April 24. Alvero, who is director of the IIIA, is very sharp and incisive; he loves to absorb new information but he does not speak English. Alberto Ortega-Jhones, who is head of Cuba's new soyfood research project, is vice director of the IIIA. He has a great heart. Pam just returned from a trip to Cuba where the Soy Cubano project donated $3,000 to the soy yogurt factory at Pinar del Rio (Armando Jimenez Diaz, Director). They plan to use the money to grow soybeans locally. Address: IIIA, Carreterra al Guatal, Km. 3½, La Lisa, Havana, Cuba. Phone: 29-9110.

6829. Gupta, Rajendra P. 1995. Automatic food processor. *U.S. Patent* 5,408,922. April 25. 6 p. Application filed 7 June 1993. 3 drawings. [1 ref]
Address: 9 Veery Lane, Ottawa, ONT, K1J 8X4 Canada. Phone: 613-745-9115 or 613-744-4401.

6830. *Living Earth & Food Magazine* (*Food Commission, London*). 1995. New Zealand Health Ministry investigates soya baby milks. April/June. p. 3. [3 ref]
• ***Summary:*** The Food Commission is a UK consumer advocacy group. The New Zealand Health department has started an enquiry into the safety of soy-based infant formulas after a report indicated that the could contain dangerous high levels of phytoestrogens. "The Health Department has circulated a questionnaire to importers and manufacturers of soy-based products and asked scientists from around the world to contribute to the enquiry. It is anticipated that the matter may be referred to the World Health Organization for further investigation."

The UK government has been slow to respond to the matter. "In a letter to the Food Commission Baroness Cumberlege writes, The Committee (on Toxicity) considered that it was extremely difficult... to predict the actions of ingested phytoestrogens in humans... We agree that this is an area which requires further investigation."

6831. McCarthy, Paul. 1995. Dietary phytoestrogens: Scientists stalk potential soy chemopreventives. Research round-up. *Oncology Times* (*New York, NY*). April. p. 19-20.
• ***Summary:*** A good overview and summary, highlighting the work of leading researchers. According to biochemist Kenneth D.R. Setchell, PhD, investigations in this relatively new field began in his laboratory in the early 1980s. Dr. Setchell is Director of the Clinical Mass Spectrometry lab and Professor of Pediatrics at Children's Hospital Medical Center in Cincinnati, Ohio. He found equol, a phytoestrogen metabolite that is structurally similar to estradiol-17B, in human urine. He then determined that eating soy had the greatest effect on equol levels; 40 gm/day of soy protein made equol levels in the blood and urine jump 5,000 times above baseline.

This led him to measure phytoestrogen levels in Asians; he found their levels to be very high. Since weak estrogens have both estrogenic and anti-estrogenic effects, he hypothesized that soy might have properties similar to tamoxifen (a drug which is widely used in the successful treatment of hormone-dependent breast cancer in humans) and that a diet high in soy might explain the lower rates of breast and prostate cancers in Asia. Several key experiments conducted by Setchell, Dr. Stephen Barnes, and others, previously published in scientific journals, are then described.

The results have been provocative, but the mechanism behind the anticancer actions of soy remains unclear. Dr. Setchell is not convinced that it is as simple as his 1984 hypothesis, that the phytoestrogens in soy act like tamoxifen. Since then it has become clear that phytoestrogens also act as antioxidants. Moreover, genistein is a potent inhibitor of protein kinases, the key enzymes involved in the regulation of the phosphorylation of cells.

Herman Adlercreutz, M.D., PhD, of the University of Helsinki in Finland, has studied the anticancer role of soy in prostate cancer and is interested in the mechanism. Soy's estrogenic properties might suppress the growth of prostate tumors. This makes sense because prostate cancer is treated with estrogen. Dr. Adlercreutz has shown that genistein is one of the strongest known natural inhibitors of angiogenesis; it helps to cut off the blood supply that tumors need to grow. Alternatively, soy can suppress the production of gonadotropin secretions by the hypothalmus. This may cause a secondary decrease in testosterone production, which may be reflected in the lower levels found in Japanese men. And lifelong lower testosterone levels may postpone the development of prostate cancer.

Dr. Barnes has observed that prostate-specific antigen (PSA) values fall sharply in men with prostate cancer after that start a soy regimen. So he has started a systematic investigation of PSA values and other bio-markers of prostate cancer to determine if they can be favorably altered by soy.

Some researchers believe that soy could substitute for estrogen-replacement therapy (ERT). Barry R. Goldin of Tufts University School of Medicine notes that a Japanese woman on a traditional high soy diet (about 55 gm/day) is getting the daily equivalent of a low dose of Premarin. Already Dr. Adlercreutz and Mark Whalqvist, MD, Chairman of the Department of Medicine at Monash University in Melbourne, Australia, offer a soy alternative to women who are reluctant to take ERT.

Dr. Margo N. Woods at Tufts is now conducting a study on soy and breast cancer in a group of 200 women. She will be studying levels of serum hormones, luteinizing hormones (LH), and follicle-stimulating hormones (FSH), and trying to correlate them with diary recorded hot flashes and night sweats.

No one knows if consuming large amounts of soy could prove harmful to humans; soy researchers typically respond that the Chinese and Japanese have no apparent problems. But fertility specialist Claude L. Hughes, Jr., PhD, MD, raises important questions. Associate Professor of Comparative Medicine and Obstetrics & Gynecology at Bowman-Gray School of Medicine of Wake Forest University (Winston-Salem, North Carolina), Hughes urges researchers to look at both risks and benefits, especially for humans and other animals in their early developmental stages. He "said he wouldn't be comfortable with his pregnant wife eating large amounts of soy. Nor would he want to expose a neonate [an infant less than 4 weeks old] to soy-based formula." Dr. Hughes sees puberty as another opportunity for research. He is feeding soy to peripubertal male and female monkeys to see if it "perturbs the events of puberty from a reproductive/endocrine point of view."

"After puberty, except when a woman is trying to conceive, he said he expects that soy will prove to be a good addition to Western diets and possibly chemopreventive for breast and prostate cancers."

Photos show Dr. Kenneth D.R. Setchell, Dr. Margo N. Woods, and Dr. Claude L. Hughes.

6832. Slavin, Joanne L. 1995. Health benefits of soy fiber: A quick taste. *Soy Connection* (*The*) (*Chesterfield, Missouri–United Soybean Board*) 3(2):1, 4. Spring. [9 ref]

• ***Summary:*** The insoluble dietary fiber content in ½ cup of various soyfoods is as follows: Soybeans (raw/uncooked) 12.0 gm, soymeal [soy flour] 7.0 gm, miso 3.9 gm, soymilk 1.3 gm, tofu (raw) 0.6 gm.

Soy fiber is also isolated and used as a food additive. Different companies produce various types of soy fiber, but most of the published research is on soy polysaccharide, which contains 75% total dietary fiber (TDF) including a mixture of cellulosic and noncellulosic structural components of the internal cell wall. Soy polysaccharide is mostly insoluble dietary fiber, but clinical studies have shown it has properties of both insoluble and soluble dietary fiber. Soy polysaccharides, like other insoluble fibers, increases stool weight.

There is considerable evidence that intake of fiber-rich foods is inversely related to risk of cancers in the colon and rectum. It is estimated that the risk of colorectal cancer could be reduced by about 31% if fiber intake were increased by 13 gm/day.

"Dietary fiber has also been shown to be effective in lowering serum cholesterol. It may decrease risk of coronary heart disease by decreasing serum lipids, lowering blood pressure, improving glucose metabolism, and aiding weight maintenance. Soluble fibers appear most effective in lowering serum cholesterol" but they are only effective in subjects with elevated cholesterol levels.

"Potential negative effects of dietary fiber include lower absorption of vitamins, minerals protein and calories. It is unlikely that healthy adults who consume fiber amounts within the recommended ranges will have problems with nutrient absorption."

"Soy fiber appears to be extremely fermentable in human subjects, with 93% of the dietary fiber as soy polysaccharide being fermented... Fermentation of dietary fiber produces gas and short chain fatty acids, one of which, butyrate, appears to play an important role in cancer prevention."

"Compared with other fiber sources available as supplements for food, soy fiber provides a range of positive functional, nutritional, and physiological effects. Soluble fibers, such as gums and pectins, lower serum cholesterol but are difficult to incorporate into foods and are not palatable. Insoluble fibers, such as wheat bran or cellulose, are effective in the prevention and treatment of constipation, but are difficult to consume on a long term basis. Soy polysaccharide has found wide acceptance as a supplemental fiber source and is added to hospital nutrition products, breads, and other baked products, including muffins, cookies, and crackers." Address: Prof., Dep. of Food Science and Nutrition, Univ. of Minnesota, St. Paul, MN.

6833. Walker, Morton. 1995. Concentrated soybean phytochemicals. *Healthy & Natural Journal* 2(2):58-60. April. [12 ref]

• ***Summary:*** Contents: Introduction (Designer Foods Symposium III). Cancer inhibitors in soybeans. Prostate cancer cured by fermented soybean drink (Haelan 851). The therapeutic characteristics of Haelan 851. Note: The address, phone number, and fax number of Haelan Products Inc. in Metairie, Louisiana, is given.

Soybeans contain five different types of anti-cancer agents: protease inhibitors, phytate, phytosterols, saponins, and isoflavones. The latter are plant estrogens with strong inhibiting effects in hormone-related malignancies such as prostate, ovarian, cervical, and breast cancers. Isoflavones are found in a variety of soy foods, including soy milk, tofu, tempeh, miso, textured vegetable protein, soy flour, soy nuts, and soybeans. "The isoflavone component which most excites the medical research community is genistein. It's an overpowering suppressor of the oncogene enzymes that ordinarily stimulate pathological cell growth." Address: Medical Journalist, 484 High Ridge Road, Stamford, Connecticut 06905-3020.

6834. Demos, Steve. 1995. New developments at White Wave (Interview). *SoyaScan Notes.* May 8. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Steve is planning to introduce soymilk in a gable-top carton. He has been able to get a 90-day shelf life at dairy storage temperatures. He has the product, which has passed many taste tests. His problem is finding a maker

of soy base. He is working closely with Ted Nordquist in California and has visited Ted's house. None of the companies who make soy base in Tetra Pak are willing to cooperate. Steve tried to work with Pacific Foods of Oregon but they backed out. He has the money to build a state of the art soymilk factory but first he has to prove that the market exists for soymilk in a gable-top carton. He has to run a 5-month test in one major urban market. He would sell this soymilk in supermarkets as part of his shelf set which is on the edge of the dairy section. White Wave is the only soyfoods company with nationwide refrigerated distribution.

White Wave has just purchased Meat of Wheat, and hired Mark Machlis.

White Wave has just completed a $100,000 market study on how consumers view vegetarian foods, meat alternatives, etc. The idea for the study came from Ken Vickerstaff (vice president of sales; he came out of General Foods, Celestial Seasonings) and the results were extremely revealing. Steve was surprised to learn what the word "vegetarian" means to typical consumers. The two terms "meat analogs" and "meat alternatives" are both "off target." Steve took off much of last year (working 30-35 hours a week), involved in this study, gardening, flower arranging, and looking for good ideas. He sat behind a glass wall and watched consumer panels answer questions and taste products for over 2 weeks. They brought in random people (called out of the phone book) who had a proclivity for this kind of life style. He wants White Wave to be the company most closely associated with vegetarianism in America. White Wave now has annual sales of $6-7 million, trying to get to $12 million. "We know that we can do that in the natural foods business, but that's not the game. We're missing the game. We wanted to find out what the game really is, and out was a real eye-popper to find out. What Wave has been able to redefine strategically where they are going and how they are going to get there." The information acquired during the study will be come very apparent as White Wave applies it. "We are a vegetarian company and we always will be. We want to define vegetarianism. Our strategy is to make the word 'vegetarian' and White Wave synonymous. We want people think of White Wave when they think of vegetarianism."

Americans are reducing their use of red meat. So 1-3 meals in the normal family meal rotation are up for grabs. People don't know what to put in place of that red meat.

White Wave is now contracting with Jonathan Gordon from England; he wrote his PhD thesis on acidified soy curd (related to tofu) for use in tropical climates. He is currently the international ingredients specialist for Kraft Foods in Memphis, Tennessee. Steve is hiring him this summer as White Wave's operations director. He will start work in about September, and his first project will be to develop some new soy yogurts. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301. Phone: 303-443-3470.

6835. Kwok, Shirley. 1995. Vitasoy inventor Lo dies aged 85. *South China Morning Post* (*Hong Kong*)**.** May 8. News section. p. 3. Ed. 2.
• ***Summary:*** "Industrialist Dr Lo Kwee-seong, inventor of one of the territory's most popular soft drinks and an avid art collector, has died aged 85. Lo died peacefully on Friday in Queen Mary Hospital. He established Vitasoy in 1940 at a time when diseases caused by malnutrition were widespread in the territory. He aimed to produce a cheap, nutritious, high-protein soyabean milk drink. The product was first sold just before the outbreak of World War II. Today, Vitasoy not only produces soyabean milk but many other soft drinks. Lo resigned from Vitasoy International Holdings last year.

"Besides being a successful businessman, he was an avid collector of Chinese art, donating many classical pieces to public collections. He also gave money to help develop educational facilities to support China's modernisation, served in many community posts, and was a member of the Urban Council and Legislative Council, chairman of the Consumer Council and a member of the 1983 Chinese People's Political Consultative Conference. He is survived by his wife, Elizabeth Lo Shing."

6836. Pratt, Steven. 1995. Copy cows: Soy- and rice-based drinks stand in for milk, but with nutritional consequences. *Chicago Tribune.* May 10. p. 3.
• ***Summary:*** Discusses and gives comments on Rice Dream, Naturally Tofu (Sovex), EdenSoy Extra, and Almond Mylk. Address: Tribune Staff Writer.

6837. Carrasquillo, Fausto. 1995. New developments with soyfoods in Puerto Rico (Interview). *SoyaScan Notes.* May 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Two years ago Fausto sold his natural foods distribution company named *Nuevas Comidas* to a regular food distributor named *Productos de Nutricion,* which is located in a suburb of San Juan (Carretera 876, Km. 4.3, Barrio Las Cuevas, Trujillo Arto, Puerto Rico 00758). Now they want to make tofu and soymilk, and Fausto is working with them to make this happen. He is presently importing tofu and soy cheese from White Wave, but the cost of importing is expensive. Fausto would also like to grow soybeans in Puerto Rico and sell them as green vegetable soybeans. Address: Puerto Rico.

6838. Feldman, Nick. 1995. New developments at Nutrisoya (Interview). *SoyaScan Notes.* May 16. Conducted by William Shurtleff of Soyfoods Center. [Eng]
• ***Summary:*** Giles Goulet is no longer president of Nutrisoya. In Oct. 1993, he sold his shares to Nick Feldman and one other person, then he (Giles) left the company in Aug/Sept. 1994. Nick is the new president. As soon as Mr. Goulet was out of the company, it started doing very well,

and it is still doing well. Mr. Goulet had big ideas but they were not feasible. He did not know the market and was not skilled at marketing.

Nutrisoya got its company name from a brand name owned by Victor Food Products, Ltd. in Scarborough, Ontario. "We had our lawyers take care of that." But Nutrisoya did not buy the company Victor Food Products.

Nutrisoya built its own soymilk plant using components from various sources, including many pieces made by Alfa-Laval. "If you have the right engineers who know something about making good-tasting soymilk, with a few modifications, we have been able to make a soymilk with no beany flavor."

Nutrisoya has never had a Tetra-Brik machine in house; they have their soymilk products packaged in Tetra-Brik cartons by a very large co-packer in Canada. Nutrisoya's competition in soymilk comes largely from Edensoy and from Pacific Foods "which now has a 3rd generation Tetra Pak machine, with the re-cap capability, though supposedly they have not yet perfected the technology." Nutrisoya is the biggest soymilk manufacturer in Canada, with little competition in soymilk from other Canadian companies.

Soymilk products: They no longer make Chocoya; even though it is a great product, it was marketed incorrectly, more like a dairy milk. Since the word "Soya" did not appear on the front panel, consumers often thought it was a dairy milk and so they were not willing to pay a little more for it. It was sold on the shelf in Quebec next to a dairy milk named Chocayo, which retailed for $0.30 less per 3-pack. He plans to introduce it again some time. Nutrisoya still makes their Natura (pronounced nah-TUR-uh) line of soymilks in strawberry, vanilla, and original flavors, in aseptic Tetra Brik cartons. Nick has a brand new soymilk product named Nutrisoy that he is ready to launch in 1 liter Tetra Brik cartons. "We've been working on it for quite a while. I just have to press a button and it will be out in 2½-3 weeks. It has the exact same ingredients as Edensoy, except it is lower in fat, and has a more neutral taste and a better nutritional profile. The Nutrisoy line, which will start with vanilla and original flavors, will probably end up replacing the Natura line." Nick would ideally like to package the new line in re-cap Tetra Brik cartons like Pacific does, but that package is not available to him. "I'm a little bit scared to invest a lot of money in a product and its packaging that is going to be competing against other products that have more advanced packaging," the re-cap pack. So Nick hasn't decided when, or even if, he will "press the button." The big question is this: What percentage of consumers, who are less cost conscious, are willing to pay about 20% more at retail for the re-cap pack. Bill suggests that Nick contact Tetra Pak and ask to see their market research on this question. Most of Tetra Pak's film for all of North American is made at a plant in Aurora, Ontario (near Toronto). A plant in Denton, Texas, specializes in the new re-cap packaging. The Natura soymilk line is made more for the supermarkets in Quebec, which sell 10-15% of the total volume. In British Columbia a lot of soymilk is sold in supermarkets. Nick feels his new-formula Nutrisoy soymilk will give him a big advantage over Edensoy. Eden has to pay a 5% duty on soymilk shipped into Canada, plus large transport costs. So a Canadian distributor receives Edensoy at $19 a case, versus only $13 a case (32% less) for Nutrisoy. Nick is concerned that Edensoy is coming out in a re-cap package.

Tofu: Nutrisoya is the largest tofu manufacturer in Eastern Canada, but Sunrise is the largest tofu maker in all of Canada. They now makes 3 types of tofu, all curded with magnesium chloride and extra firm in texture: Natural, Fine Herbs (*Fines Herbes*) and Pimento & Onion (*Piment-Oignon*). The two flavored products were introduced in about 1990. They do not make an almond tofu. They package all their tofu products with a $120,000 Multivac vacuum packaging machine that they own. He likes vacuum packing; Nutrisoya sells a lot of their tofu to supermarkets, and this packaging seems to give a longer shelf life and a neater package. He also plans to buy a water-pack machine.

Nutrisoya makes most of its money from its tofu products; the competition in the soymilk market from Eden Foods and Pacific Foods (who Nick believes is dumping product in Canada) leads to low profit margins. Plans for new tofu products: Nick would like to introduce soft tofu curded with calcium sulfate. Most Caucasian Canadians now buy tofu curded with magnesium chloride (nigari); it is now a $1.4 million market. Note: Most of the tofu sold in the USA is curded with calcium sulfate because it is a good source of calcium, and is less expensive and much easier to make. Address: President, Nutrisoya Inc., 4050 Pinard, St.-Hyacinthe, QUE, J2S 8K4, Canada. Phone: 514-796-4261.

6839. Akintayo, Issaya. 1995. Re: Introduction of soybeans to Chad. Letter to William Shurtleff at Soyfoods Center, May 22. 3 p. Typed, with signature.

• ***Summary:*** "Joyce Lombardi sent me your correspondence on the subject of the cultivation and utilization of soya in Chad. The soybean was introduced to Chad in about the year 1975. It was cultivated on an experimental basis at the CFPA (*Centre de Formation Professionelle Agricole*). Unfortunately its popularization did not last long, because those who introduced the soybean did not show the population the different possible uses of this miracle plant. The only way of using soybeans that the population knows is as dawa dawa, called "Ndi" here in Chad.

"After my arrival in Chad in 1992 the soybean was given a second chance to succeed. In effect, having noted the very high level of malnutrition in the country, and above all among the infants and children, I conducted a program of educating the population by showing them how they could make a line of products from soya such as milk, yogurt, cheese, cakes, biscuits, bread, pizza, patés, *sojatine*

(soya coffee, for which I coined the name, and which name everyone now uses), and weaning foods based on soy flour.

"For example, roasted soybeans + maize/corn flour + sweet potato flour gives a mixture of flours, which I called 'Maïpaso.' I introduced it to people via several expositions of soy-based menus, through demonstration shops that processed soya, and gifts of soya to hospitals to aid malnourished infants and children.

"In terms of agronomy, I have introduced several soybean varieties from Nigeria (IITA), Senegal, Togo, etc. These introductions were made to identify early maturing varieties that could be used to extend soybean cultivation into several ecological zones within Chad. These varietal studies are still in progress.

"In terms of education, during 1994 I educated more than 400 people. The demands for education are great but unfortunately we do not have the budget to realize them. Presently the population has taken an interest in the utilization of soya. Certain groups are taking charge of educational materials and are asking for my help to teach them how to make the different menus. Periodically I give interviews which are broadcast widely via rural radio and the written press. Copies of some articles are enclosed. At the end of last year I wrote and had published a 40-page color document titled 'Soya, how to cultivate and use it' which also contained recipes.

"After this summary, I will try to answer your questions: 1. There was no written documentation on soybean cultivation and use in Chad [Tchad] before the publication of my book at the end of last year. 2. Soybean was introduced to Chad during the late 1970s. 3. The origin of the soybean presently cultivated in Chad is not documented. It may have come from Nigeria. The variety name is not known either. 4. The average yield is about 800 kg/ha. 5. The total area cultivated is not known because nobody was working with this crop until my arrival in this country. It is only now that its cultivation is gaining momentum. Now everybody wants to cultivate soybean. It became the crop of the year."

Accompanying this letter are four excellent color photos which show: (1) A Chadian woman pounding soybeans using a wooden mortar and pestle. She is surrounded by other women, all dressed in traditional colorful clothing, and taking part in an educational workshop. The pounded soybeans will be used to make soymilk and other soy products. (2) A Chadian man holding a bag containing long loaves of soy-fortified bread (baguettes). "This product is greatly appreciated by the local population."

(3) A Chadian mother hand-weeding a field of soybean plants. Her baby is sleeping on her back; both are dressed in traditional clothing. (4) A Chadian woman seated othe porch of her home in Sarh pressing the soymilk out of a bag of pounded soybeans mixed with water. In front of her are a wooden mortar and pestle.

Note: This document contains the earliest date seen for

soybeans in Chad, or the cultivation of soybeans in Chad (about 1975). The source of these soybeans is unknown. Address: PhD, UNDP Project Advisor, Box 9, Sarh, Chad. Phone: +235 68-12-43 Fax: (235) 68-1309.

6840. Irvine, Cliff; Fitzpatrick, Mike; Robertson, Iain; Woodhams, David. 1995. The potential adverse effects of soybean phytoestrogens in infant feeding (Letter to the editor). *New Zealand Medical Journal* 108(1000):208-09. May 24. [10 ref]

• ***Summary:*** This letter (with 10 references) is a call, by experts in the field, to ban soy-based infant formula in New Zealand.

6841. Roberts, Rosemary. 1995. Leading scientist backs call to ban soy baby food. *Northern Advocate* (*Whangarei, New Zealand*). May 25.

• ***Summary:*** "One of New Zealand's foremost scientists has thrown his weight behind a campaign to halt sales of soybean-based infant formulas.

"In a letter published in the *New Zealand Medical Journal* today, Professor Cliff Irvine, of Lincoln University, has joined three fellow scientists in calling for general sales of soy-based infant formulas to be stopped.

"The letter reopens the debate over the content of soy-based infant formulas."

"In today's issue of the Medical Journal, Mr. Irvine, who holds three doctorates, Iain Robertson, PhD, toxicologist at the Auckland University Medical School, David Woodhams, PhD, a food process consultant, and Mike Fitzpatrick, PhD, the environmental consultant who produced the James' report, have called on the Ministry of Health to stop sales. But despite their concerns the Ministry, which has been gathering information on the subject, says all soy products, including infant formulas, will stay on the market."

This article also appears in *Daily Post* 25 May, *Gisborne*

Herald 26 May, *The Dominion* 26 May, *Sunday Times* 6 Jul.

6842. NZPA. 1995. Scientists warn of soya baby milk risks. *Dominion* (*The*)**.** May 26.
• ***Summary:*** This article also appears in *Sunday Times* 6 July. Address: Whangarei.

6843. Wan, Helen. 1995. Brief history of Les Aliments Tarasoy Ltée in Brossard, Quebec (Interview). *SoyaScan Notes.* May 26. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** This company was founded in Dec. 1986 by her brothers, who are Chinese-Canadians and who own shares–but it is not just a family business since other people also own shares. Her brother, Billy Chin, is the president and one of the main founders. Helen has been employed by the company since the beginning as sales manager; she was born in Canada, and educated in English-speaking schools, though she also speaks French. The name of the company, Tarasoy, is derived from the name of a person they know, to which they added the word "soy." The company's first products were introduced in the spring of 1987. These included: SoftShakes (a soya drink in chocolate and vanilla flavors, and in single serving sizes), Regular Tofu (*Tofu Nature*), Herb Tofu (*Tofu Fines Herbes*), and Tofu with Dehydrated Vegetables (*Tofu au Legumes*)**.** Their tofu products are all sold in 450 gm vacuum packs. The vacuum packaging gives a longer shelf life. Regular (plain) tofu is now the company's number 2 best-selling product.

In 1988 they introduced *Soyolait,* a 1-liter soya drink that is presently the company's best-selling product and also the best-selling fresh soymilk in Quebec. It is sold fresh in Pure-Pak cartons, and has a remarkable 21-day shelf life at 3ºC. The product is made and packaged entirely at their plant. It is sweetened with barley malt extract and sold only in Quebec, and mostly at natural food stores. It is consumed by Caucasian-Canadians rather than by Chinese-Canadians (who prefer a sugar-sweetened product). Soyolait is less expensive than Edensoy, since the packaging is less expensive. Many other Chinese companies in Canada make fresh sugar-sweetened soya drinks, sold in plastic bottles. At about the time Soyolait was launched, SoftShakes was discontinued; It had limited appeal as a single portion novelty drink, whereas Soyolait came in a larger carton and was more versatile, since it could be used for cooking, baking, etc.

In 1993 the company launched *MagiSoy,* a soy cheese, that they make in-house; it melts.

In Nov. 1994 they introduced *Rizoleil,* a rice drink–which is the company's only product not made from soy. Helen does not know whether the rice drink is made with the traditional koji fermentation process or with enzymes. It is sold fresh, packaged in 1-liter Pure-Pak cartons, with a remarkable 20-day shelf life.

One of the major focuses of the company is selling fresh products. This requires that they distribute all their own products. They have excellent quality control. Most of their products are sold in natural- and health food stores, and very little in Oriental food stores. The company has about 20 employees (both Chinese- and Caucasian-Canadians), but they keep a low profile. They have very good people in their research and development department, which is why they have interesting fresh products with a log shelf life.

They are always developing new products which they plan to introduce within the next 6 months, but information on these is confidential until the products are launched. Helen does not have a brochure about the company or its products. Several years ago a French-language article about the company was published. Address: Sales Manager, Les Aliments Tarasoy Ltée (Tarasoy Foods Ltd.), 3455 Local D rue Isabelle, Brossard, QUE J4Y 2R2, Canada. Phone: 514-659-6586.

6844. *New York Times.* 1995. Make it 'Borough of restaurants': In Queens, culinary homes for all. May 28. p. CY12.
• ***Summary:*** Contains summaries of previous reviews of the Golden Monkey and the Taipei Wall Sea Street Taiwanese Restaurant, described in detail by Ruth Reichl in the Feb. 24 issue of this newspaper (p. C24). Mentions "fermented bean curd."

In addition, there is a summary review of Penang Cuisine Malaysia which includes "Penang rojak, a refreshing peppery salad of cucumber, jicama, pineapple, zucchini and tofu enhanced by a pungent fermented shrimp paste, and tofu stuffed with ground fish and served in a spicy coconut milk and bitter melon sauce." Also: "Whole fried pompano in black bean sauce."

6845. Lazzaro, Don. 1995. New developments with soymilk in Australia (Interview). *SoyaScan Notes.* May 29. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Pureharvest has, for some time, been buying its soymilk from Australian Natural Foods (ANF), but recently the quality of this soymilk has been very inconsistent, and often unacceptable. Berryvale Orchards is Australia's largest manufacturer of fruit juices–a huge company. In about 1988-89, after Sanitarium Foods launched So Good, a small distributor in Victoria approached Berryvale and offered to sell them the technology and know how to make soymilk from whole soybeans. Unfortunately this little fellow didn't know how to make soymilk, so Berryvale's initial products were of very poor quality. Recently they have installed a rather low-cost soymilk plant and Don has switched to using them as his source of soymilk. But the quality is still not as good as he would like. Address: Pureharvest, 15 Ardena Ct., East Bentleigh, Victoria 3166 Melbourne, Australia.

6846. *SoyaScan Notes.* 1995. Dr. Chungs Food Co. Ltd. USA (Overview). May 30. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** In the '94 Soya Bluebook is a listing for this famous Korean soymilk manufacturer at 960 Massachusetts Ave., Boston, Massachusetts 02118. Phone: 617-427-1507. Contact Rob Martel, Sales Manager. They may be planning to make soymilk in North America and it is said that they have a co-packing contract with Pacific Foods of Oregon. They are now constructing a soymilk plant in Australia.

6847. Allen, Andrea Horwich. 1995. Can isoflavones give soy mainstream acceptance? *Food Product Design.* May. p. 20-21.
• ***Summary:*** Researchers now believe that a family of phytochemicals present in soy, called isoflavones, may actually reduce the risk of atherosclerosis by preventing the formation of plaque on artery walls. One isoflavone, genistein, which is present only in soy, also fights cancer by inhibiting the growth of cancer cells. Genistein appears to mimic the effects of estrogen so that the body produces less of that hormone, thus reducing the risk of estrogen-dependent cancers, especially breast cancer. One study of Japanese men suggests that those who eat a diet high in soy protein have a lower incidence of prostate cancer.

Representatives from Morinaga Nutritional Foods, Westbrae, and Pillsbury Green Giant are trying to take advantage of the new discoveries by educating their customers. The FDA seems unlikely to be ready to approve a soy-related health claim such as "Includes your daily intake of soy." ADM, who makes the Green Giant frozen burgers, is said to retain Mark Messina, PhD, as a consultant. A large photo shows a carton of WestSoy Low Fat Soy Drink (Vanilla). Address: Assoc. Editor.

6848. Aseptic Resources, Inc. 1995. Aseptic packaging in the United States. West Chester, Pennsylvania: Packaging Strategies, Inc. iii + 96 p. 28 cm in 3-ring binder. *
• ***Summary:*** This multi-client report is the industry's most comprehensive market study and census. There is no special section on "soy" beverages, but section 7 is titled "Aseptic fillers for low-acid foods." As of May 1995 there are 465 aseptic fillers installed in the USA; of these 131 are low-acid aseptic fillers (28% of the total). The leading filler manufacturer is Tetra Pak (132, or 28.3% of the total), followed by Scholle (88), Fran Rica Bag (45), Combibloc (42), and Dole (34). Address: Overland Park, Kansas.

6849. *Bluebook Update* (*Bar Harbor, Maine*). 1995. ProSoya forms Soyfood Alliance: Canadian dairies and soymilk supplier agree to work together. 2(2):1, 4. April/June.
• ***Summary:*** This agreement, now known as the "Soyfood Alliance," was signed by ProSoya, Inc. of Ottawa, Canada, and three Canadian dairy processors–Neilson Dairy, Fieldfresh Farms, and Gelato Fresco. It is seen as the first step in an effort, assisted by the Canadian government, to bring high quality, fresh soymilk products to the North American market. Emphasis is on the word "fresh."

To take advantage of equipment already available in the dairies, fresh soymilk is being pasteurized in traditional "gable-top" dairy cartons rather than Tetra Brik cartons. This can save the processor 30-50% in packaging costs. It is hoped that the product will retail for just slightly more than cow's milk.

Currently Neilson and Fieldfresh are producing flavored organic soymilk, while Gelato Fresco is making soy-based frozen desserts.

A photo shows members of the Soyfood Alliance: Tom Reynolds, Alliance Coordinator; Peter Warmels, General Manager of Fieldfresh; Ralph Goodale, Canadian Minister of Agriculture; Melvin Hart, President of Gelato Fresco; Walter Parsons, Sr., Vice President of Neilson Dairy; Frank Daller, President of ProSoya Inc.

Talk with Raj Gupta of ProSoya. 1995. June 6. These companies are now developing and test marketing products containing ProSoya soymilk. Raj expects commercial products to be available by August or September 1995.

6850. *Bluebook Update* (*Bar Harbor, Maine*). 1995. UK Soya Milk Alliance petitions EU. 2(2):3. April/June.
• ***Summary:*** Three leading soymilk manufacturers in the UK (Vandemoortele (UK) Ltd., Haldane Foods Group, and Plamil Foods Ltd.), have formed the Soya Milk Alliance in order to petition the European Union (EU) to accept the term "soya milk." This decision followed a ruling on 16 June 1994 by the EU Milk Management Committee that the term "soya milk" could not be used on soymilk packages in the UK or Europe. The basis of the Committee's decision is EC Regulation 1898/87 of July 2, 1987, which states that the term "milk" is prohibited from use when the food does not contain any dairy ingredient. However the UK government has repeatedly drawn the Commission's attention to clause 3.1 which grants exemptions for foods "the exact nature of which is clear from traditional usage."

The campaign to save the term "soya milk" has gained considerable momentum as 23 ministers have already signed a petition addressed to the Commission. According to the Alliance, many more ministers have agreed to sign the petition.

6851. **Product Name:** Carnation Follow-Up Soy: Formula for babies 12 months & older eating cereal & other baby foods–Iron fortified. Powder.
Manufacturer's Name: Carnation Nutritional Products Div., Nestlé Food Company.
Manufacturer's Address: Made in Au Claire, Wisconsin. Corporate headquarters: Glendale, CA 91203. Phone: 1-800-543-3112.

Date of Introduction: 1995. May.
Ingredients: Maltodextrin (potato), soy oil, soy protein isolate, sucrose, minerals (calcium phosphate, potassium chloride, potassium citrate, calcium carbonate, calcium citrate, magnesium phosphate, sodium chloride, magnesium chloride, ferrous sulfate, zinc sulfate, copper sulfate, potassium iodide, sodium selenite), soy lecithin, vitamins (ascorbic acid, choline bitartrate, inositol, alpha-tocopheryl acetate, niacinamide, calcium pantothenate, thiamine hydrochloride, vitamin A palmitate, riboflavin, pyridoxine hydrochloride, folic acid, biotin, phytonadione, vitamin D-3, vitamin B-12), L-methionine, taurine, L-carnitine.
Wt/Vol., Packaging, Price: 14 oz (396 gm) steel can. Retails for $6.99 (10/95, Safeway supermarket, Lafayette, California).
How Stored: Shelf stable.
New Product–Documentation: Product with Label purchased at Safeway supermarket in Lafayette, California. 1995. Oct. 24. Can is 4.75 inches high and 4 inches in diameter. Paper label. Red, blue, yellow, and green on white. Illustration of three wooden ducks on front panel. "Carnation Follow-Up is not intended to take the place of breast feeding. It is intended to replace traditional starter formula when your baby is eating cereal and other baby foods. Caution: If you suspect your baby is prone to allergy, consult your pediatrician." "See inside label for Spanish instructions."

Talk with Brenda at Carnation's toll-free number. In May 1995 Carnation purchased Mt. Vernon Foods (Mt. Vernon, Ohio), which made i-Soyalac and Soyalac. The product names were changed to Alsoy and Follup-Soy in May 1995, but both of these products are made from isolated soy protein; whole soybeans are not used as they were in Soyalac. These are Carnation's first two soy-based infant formulas. Carnation Good Start was on the market in 1988, but it was not soy-based. Follow-Up Soy comes only in powder form in a 14 ounce can. Some amount of these products are made at Carnation's main plant in Au Claire, Wisconsin, and the remainder is made at other plants in the USA whose addresses are confidential.

6852. **Product Name:** Carnation Alsoy: Soy formula for milk-free feeding during baby's first year. Iron fortified. Concentrate liquid–Add water.
Manufacturer's Name: Carnation Nutritional Products Div., Nestlé Food Company.
Manufacturer's Address: Made in Au Claire, Wisconsin. Corporate headquarters: Glendale, CA 91203. Phone: 1-800-543-3112.
Date of Introduction: 1995. May.
Ingredients: 14 oz concentrate: Water, sucrose, soy oil, soy protein isolate, tapioca dextrin, minerals (calcium phosphate, potassium citrate, calcium citrate, potassium chloride, calcium carbonate, magnesium phosphate, sodium chloride, magnesium chloride, ferrous sulfate, zinc sulfate, copper sulfate, potassium iodide, sodium selenite), soy lecithin, vitamins (ascorbic acid, choline bitartrate, inositol, alpha-tocopheryl acetate, niacinamide, calcium pantothenate, thiamine hydrochloride, vitamin A palmitate, riboflavin, pyridoxine hydrochloride, folic acid, biotin, phytonadione, vitamin D-3, vitamin B-12), L-methionine, taurine, L-carnitine, calcium carrageenan.
Wt/Vol., Packaging, Price: 14 fl oz (384 ml) steel can. Retails for $1.99 (10/95, Safeway supermarket, Lafayette, California). 32 oz can ready to feed, and a 14 oz can of powder.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Product with Label purchased at Safeway supermarket in Lafayette, California. 1995. Oct. 24. Can is 4 inches high and 3 inches in diameter. Paper label. Red, blue, yellow, and green on white fading into light blue. Illustration of three wooden rabbits on front panel. "Use as instructed by your physician. Breast milk is the preferred feeding for infants. Before deciding to use an infant formula, consult your doctor for advice. Caution: If you suspect your baby is prone to allergy, consult your pediatrician." "See inside label for Spanish instructions."

Talk with Brenda at Carnation's toll-free number. In May 1995 Carnation purchased Mt. Vernon Foods (Mt. Vernon, Ohio), which made i-Soyalac and Soyalac. The product names were changed to Alsoy and Follup-Soy in May 1995. These are Carnation's first two soy-based infant formulas. Alsoy is sold in a 13 fl oz concentrate can, a 32 oz can ready to feed, and a 14 oz can of powder. Some amount of these products are made at Carnation's main plant in Au Claire, Wisconsin, and the remainder is made at other plants in the USA whose addresses are confidential.

Call to Nutricia–Loma Linda Foods in Mt. Vernon, Ohio. 1995. Oct. 30. A message at this number says: "Hello. You have reached the Mt. Vernon Foods Facility, which has recently been closed. The Alsoy product line is being produced at another Nestle facility. If you are a consumer and have questions regarding the product, please dial 1-800-932-5525. For all other enquiries, please dial #201 and leave a message."

Talk with David Polakowski or Mt. Vernon Chamber of Commerce. 1995. Oct. 30. The former Loma Linda soymilk plant is now standing empty. It is owned by Nestle, and the Area Development Council (ADC) is helping Nestle look for a buyer. Nestle purchased the property in Sept. 1994 from Mt. Vernon Foods. They made soymilk at the plant until July 1995, when they closed it. For more details call Tom Heine (president of the ADC and Chamber of Commerce) at this number of the Knox County Recorder (of deeds, 614-393-6755).

Talk with Phil Carlisle, manager of Loma Linda Market. 1995. Oct. 30. The former Loma Linda building is now standing empty, but a new company will be moving in soon. Nutricia bought the Loma Linda name and was using it for

the infant formula. They sold the food manufacturing end of the business to Worthington Foods. Recently Worthington re-acquired the name Loma Linda Foods, and they are making old Loma Linda products in Worthington, Ohio, under the name Loma Linda Foods. For a good history and details see the 1995 interview with David Geriguis of La Sierra University.

6853. Liu, Keshun; Orthoefer, Frank; Thompson, Keith. 1995. The case for food-grade soybean varieties. *INFORM* (*AOCS*) 6(5):593-96, 598-99. May. [10 ref]
• ***Summary:*** Contents: Introduction. Food beans vs. oil beans. Traditional soyfoods: Soymilk, tofu, toasted full-fat soy flour [kinako], soy sprouts, soy sauce, miso, tempeh, natto. Soy protein ingredients: Soy grits and flour, soy protein concentrates, soy protein isolates. Soyfood nutrition. Current size of food bean market. Breeding of food beans. Conclusions.

"Oil/meal beans include all the commonly produced soybeans." The oil is typically used for food and the meal for livestock feed. However the "new varieties of food soybeans" are generally exported to countries in East Asia for preparation of Oriental soyfoods. Table 3 compares the attributes of food beans vs. oil beans. Seed size: Large vs. small to large. Seed uniformity: High vs. no preference. Hull color: White-yellow vs. yellow. Hull quality: Thin, firm vs. no preference. Hilum color: Clear to buff vs. clear to blank. Protein content: High vs. medium to high. Oil content: Low to high vs. high. Cleanliness: U.S. Grade 1 or better vs. any grade. Major applications: Tofu, soymilk vs. oil, defatted meal.

In addition to their use in making traditional soyfoods, the "new food-grade varieties," especially those with high protein content, have been marketed for preparation of toasted full-fat soy flour, defatted soy flour, and soy protein concentrates and isolates.

Photos show: (1) Keshun Liu, Frank Orthoefer, and Keith Thompson. (2) Color and size comparison of soybeans for food use and those intended for crushing (color). The "food beans" are larger than the "oil beans."

Note: This is the earliest English-language document seen (July 2001) that contains the term "oil beans" or the term "oil/meal beans," both used in contrast to "food beans" or "food soybeans." This is also the earliest English-language document seen (July 2001) with the term "food-grade" (or "food grade") used in the title to refer to soybeans or soybean varieties. Address: 1. Project Leader, Soyfood Lab., Jacob Hartz Seed Co. Inc., 901 N. Park Ave., Stuttgart, Arkansas 72160; 2. Vice President for research and development, Riceland Foods Inc., P.O. Box 927, Stuttgart, AR 72160; 3. Vice president, International Soyfood Sales, Jacob Hartz Seed Co.

6854. Packaged Facts. 1995. The meat and dairy alternatives market. New York, NY: Packaged Facts. xii+ 162 + 42 + 6 p. May. 28 cm.
• ***Summary:*** In 1994 retail sales of these products reached an all-time high of $286 million, and these sales are projected to top $660 million in 1999. This very interesting report can be ordered from Packaged Facts, 625 Avenue of the Americas, New York, NY 10011. Phone: 212-627-3228. Price: $2,150. The authors were Sarah and Peter Starr, though their names do not appear in the report. The product director was David Lumis.

Contents: Part I: The products. Scope of the report (Vegetarian products sold as meat or dairy alternatives, products not covered), history of the industry (an emerging market, part of the vegetarian movement, soybeans–an ancient food of Asia, soybeans arrive in the new world in the 18th century, Kellogg family starts health foods industry, makes first meat analogs, Seventh-day Adventists and others produce tofu and meat alternatives in the 1920s, Henry Ford early proponent of soybeans, meat analogs commercially developed in the United States in the 1940s, non-dairy beverages, growth of "Americanized" meat and dairy analogs booming), product definition (foods used to replace meat or dairy products, description of ingredients–tofu, tempeh, soymilk, okara, soy protein concentrates and isolates, textured vegetable protein, wheat gluten and seitan), product categories (three main categories of meat and dairy alternative products, meat alternatives, dairy alternatives, prepared meals), government regulations (the FDA and FTC, NLEA labeling considerations {went into effect in May 1994, making the USA the world's first country to have mandatory nutrition labeling}, soy protein allowed in meat products without special labeling, bovine growth hormone), industry associations (the Soyfoods Association of America, the American Soybean Association, the Vegetarian Awareness Network).

Part II: The Market. Introduction (Retail sales of meat and dairy alternative products by category–1989-94–graph, retail sales of dairy alternatives products by segment–1989-94–graph), market size and growth (market is difficult to monitor, 1994 retail sales estimated at $286 million, dairy alternatives surpass $142 million, meat alternatives soar to $132 million, prepared meals grow steadily to over $12 million, estimated retail sales of meat and dairy alternative products by category–1989-1994–table, growth in milk substitutes segment leveling off but still in double digits, cheese alternatives segment also experiences slight slow-down in 1994, non-dairy desserts–a slow-growth segment, estimated retail sales of dairy alternative products by segment–1989-1994–table), factors in market growth–overall market (maturing population and interest in nutrition, new dietary guidelines, medical community accepts plant-based diet, studies show vegetarian diet equals a healthier–longer life, soy might help to prevent heart disease and cancer, consumers now approve of

vegetarian diets, increased demand for vegetarian foods, youth adopts meatless meals, exposure through foodservice, mass market begins to support meat and dairy alternatives, products in wider distribution, innovative new products, improved technology equals better taste, increased funding for soyfoods through foreign capital, pricing continues to limit market, image–taste and texture still a problem), factors in market growth–meat alternatives (concern about health hazards of meat, fat calories targeted by labeling law, an alternative to chicken and fish, ecological and social considerations will propel meatless meals, meatless meals difficult to handle by foodservice), factors in market growth–dairy alternatives (milk substitutes enter dairy case, awareness of lactose intolerance on the rise, taste profile limits acceptance, cheese alternatives–are they healthier?, projected retail sales of meat and dairy alternative products by category–1994-1999–graph {p. 34}, projected retail sales of dairy alternative products by segment–1994-1999–graph {p. 35}), projected market growth (overall market to reach $662 million in 1999, meat alternatives and prepared meals to lead growth, projected retail sales of meat and dairy alternative products by category–1994-1999–table, growth of milk substitutes and other dairy alternatives expected to slow somewhat by 1999, projected retail sales of dairy alternative products by segment–1994-1999–table), market composition (meat alternatives will outsell dairy alternatives, share of sales by product category–meat and dairy alternatives–graph, soy-based ingredients most frequently used in meat-like products, protein ingredients used in meat-like products by number of products made with ingredient–1990-1992–table, bulk of dairy alternative sales from milk substitutes, share of sales by product segment–1989 vs. 1994–graph, sales by retail outlet, share of sales by retail outlet–meat and dairy alternatives–1994–graph).

Part III: The marketers. The marketers (About 30 significant marketers–most small, major companies move into the market, meat alternatives–other mass-market players, meat alternatives–natural foods players, the leaders in milk substitutes, cheese alternative market leaders, the leaders in non-dairy desserts, prepared meals market leaders, selected marketers and brands of meat and dairy alternative products–chart), market and brand shares (mass-market leader Worthington Foods challenged by ADM/Pillsbury Green Giant Harvest Burger, wholesome and hearty growing fast, Boca Burger boogies by the Bystanders, marketer and brand shares of meat alternative products sold through supermarkets–1993 vs. 1994–table, natural foods sales of meat alternatives more fragmented, Worthington is leader in natural foods stores, White Wave and Lightlife hold second and third place, estimated marketer and brand shares of meat alternative products sold through natural foods stores–1994–table, many small regional players capture local markets, Eden Foods leads in milk substitutes, estimated marketer and brand shares of milk substitute products mass-market and natural foods stores–1994–table, Imagine Foods' Rice Dream is leading rice beverage, other vegetable beverages, Tree of Life's Soya Kaas holds leading share of cheese alternatives market, estimated marketer and brand shares of cheese alternative products sold through natural foods stores–1994–table, Tofutti holds top market share in frozen desserts, Fairmont Foods establishes lead in supermarkets, marketer and brand shares of prepared meals sold through supermarkets–1994–table, natural foods prepared meals–many brands and no one leader), competitive situation–overall market (marketers compete primarily through new product introductions, growth through mergers and acquisitions). Continued.

6855. Packaged Facts. 1995. The meat and dairy alternatives market (Continued–Document part II). New York, NY: Packaged Facts. xii+ 162 + 42 + 6 p. May. 28 cm.
• ***Summary:*** Contents: Continued from p. vi. Part III: The Marketers. Competitive situation–meat alternatives (Worthington pioneers Seventh-day Adventist vegetarian market, Miles Laboratories acquires Worthington–places Morningstar Farms in mass market, tofu drives natural foods market, soy frank marketers exploit tofu opportunities, tempeh–another meat alternative ingredient gains interest, wheat-based alternative seitan expands presence, Worthington places tofu patties in natural foods stores–changes hands again, Wholesome and Hearty develops foodservice distribution, meatless burger market heats up, patty competition fierce in natural foods arena, ADM/Pillsbury alliance brings soy burgers to mass market, Worthington fights back, category differentiates in the early 1990s, soy attacked by soy-free burger companies, meat alternative marketers cut the fat, low-fat sausages and franks, tightly targeted vegetarian fun foods and snacks, mass-market companies introduce ground meat analogs, natural product companies follow suit, Wholesome and Hearty seeks retail growth, others seek lucrative foodservice market), competitive situation–milk substitutes (early market limited to ethnic community, Edensoy a big hit–Vitasoy responds, new lines introduced, competition–domestic manufacturing and larger containers bring down soy beverage prices, flavors and packaging distinguish early products, Westbrae introduces first low-fat soymilk, fortification has become key selling point, Eden's fortified product suits strict vegetarians, new package sizes expand market, re-closable–easy to pour, rice beverages–line extensions grab shelf space, Wholesome and Hearty's almond beverage, 100% organic products, a fresh–new market–some products shift to dairy case, mass-market interest), competitive situation–cheese alternatives (Seventh-day Adventists start category, first natural foods cheese alternative, Soyarella, not dairy-free, handful of marketers compete on price in natural foods arena {Soya Kaas, TofuRella by Brightsong / Sharon's Finest, Cemac Foods, Galaxy Foods, White Wave}, new

products parallel dairy-based mass market, a move toward lower fat and fat-free, seeking the most melt-able cheese, Sharon's finest finds innovative ingredients, marketers target vegan market), competitive situation–non-dairy desserts (Tofutti dominates, dairy-free puddings–one major player {Imagine Foods sells a rice-based non-dairy pudding}, non-dairy yogurt has yet to catch on–but White Wave's Dairyless, a non-dairy soy yogurt, seems to be the only major natural foods brand in this category), competitive situation–prepared meals (flavored tofu and seitan expanded into meals, Legume is early innovator, cheese alternatives in prepared meals, other companies dive into prepared meals, action has been in natural foods, supermarket products have not succeeded), competitive profiles (The Archer Daniels Midland Co.–Grand Metropolitan PLC–Pillsbury division partnership, Amy's Kitchen Inc., A&A Amazing Foods Inc., Boca Burger Co.–Sun Foods, Eden Foods Inc., Fairmont Foods of Minnesota Inc., Fantastic Foods Inc., The Hain Food Group Inc., Imagine Foods Inc., Lightlife Foods Inc., Sharon's Finest, Tofutti Brands Inc., Vestro Natural Foods Inc., Vitasoy–USA Inc., White Wave Inc., Wholesome and Hearty Foods Inc., Worthington Foods Inc., Yves Veggie Cuisine Inc.), marketing trends (updated packaging, burger market segmenting into natural and mass market, Worthington–a master at working both markets, hamburger look-alikes crossing back into natural foods, veggie patties crossing into mass market, nostalgia–creating brand loyalty, marketers expanding into other categories, moving into the frozen breakfast section, retail displays, pushing into new distribution channels), new product trends (new–improved packaging, light and healthy, product names emphasize healthy, fat-reversal–mass-market burger-substitutes gaining fat, ground meat alternatives, new flavors and varieties–many gourmet and upscale, ethnic–especially Mexican and Southwestern, convenience, technology produces better mimics, mixing soy with grains and other ingredients, mainstreaming health foods, natural ingredients preferred–organic even better, selected new product introductions–meat and dairy alternatives–1994-March 1995–chart), advertising expenditures (most advertising not measured, specialty magazines are preferred medium, radio is another alternative, little consumer advertising, Worthington outspends competition, ADM-Pillsbury spends millions to launch Harvest Burger in 1994, Eden Foods targets mass market, Fantastic Foods' first major spending), advertising positioning (good health is overlying theme, and fat is prime concern, vegetables are a solution to a bad diet, milk substitutes advertised to lactose-intolerant market, highlighting a sense of the familiar, foods children love, traditional burger images used to woo mass market, vegetarian appeal used for meatless patties, organic is important feature in natural foods, examples of consumer advertising), consumer advertising (consumer promotions not heavily used, money-off coupons from several companies, new lines offer more generous rebates, recipes and books educate consumers, in-store promotions–the White Wave Center, marketers join forces in advertorial, sponsoring sports events–a healthy fit, 25 years of earth day, non-profit tie-ins, Turtle Island's recycling program, other types of promotions, examples of consumer promotions), trade advertising and promotions (three key trade publications, trade ads also used as consumer ads, trade ads scheduled to run in convention issues, trade ads announce growing business, editorial promotions, reaching retailers, example of trade ads). Continued.

6856. Packaged Facts. 1995. The meat and dairy alternatives market (Continued–Document part III). New York, NY: Packaged Facts. xii + 162 + 42 + 6 p. May. 28 cm.
• ***Summary:*** Contents: Continued from p. x. Continued Part IV: Distribution and retail. Distribution (Two distinct channels, mass-market products–warehouse delivery used most, natural foods products–independent distributors used most, distributors offer wide range of services, direct buying, several large distributors dominate health food channel, margins for the two channels differ, brokers support marketers' sales efforts, marketers' sales forces work with brokers), at the retail level–natural foods stores (the leading outlet–natural foods stores, soy-based products the heart and soul of natural foods store, products sold in several locations, stores adding refrigerator and freezer space, margins, product price comparison, meat alternatives–table, milk substitutes–table, cheese alternatives–table, frozen non-dairy desserts–table, prepared meals–table, in-store demos are top promotional activity, an increase in store advertising, examples of retail promotions), at the retail level–mass market (most products not in mass market, store placement of meat alternatives varies, store-within-a-store, increased selection and space, targeting the vegetarian consumer, margins, warehouse clubs, *Cergro* pricing data). Part V: The consumer. Consumer use–soyfoods (About 25 million U.S. adults use soyfoods, natural foods shoppers more likely to purchase soy products, demographics of meatless burger consumers, use by type–tofu and soy burger use most common, other types of soyfoods used by about 2% of consumers, types of soyfoods eaten five or more times in the past year–table), the vegetarian consumer (what is a vegetarian, 12-22 million vegetarians and growing, small number of strict vegans, meat restrictors–a broader target of 77 million, who are vegetarians, demographic characteristics of vegetarians–table), consumer attitudes (main reason for choosing vegetarian foods, most important reason for becoming a vegetarian–table, concern about health higher among semi-vegetarians, most important reason for choosing vegetarian foods–table, cholesterol-fat primary health concerns, primary health concern when becoming a vegetarian–table, grocery store shoppers more influenced by doctor's orders, health also key reason given

by restaurant diners, fat–salt–fiber and cholesterol top health concerns for meatless burger consumers, environment pollution tops list of other social concerns of vegetarians, vegetarians considered nutrition advisors, a slow transition to vegetarianism, attitudes about meat alternatives, room for improvement on taste, consumers have a positive image on soy, more interest in soymilk from natural foods shoppers). Appendix I: Examples of consumer and trade advertising and promotions [photocopies of ads]. Appendix II: Addresses of selected marketers.

Scope of the report: This is a study of vegetarian foods made to resemble meat and dairy products and sold at retail, mostly through supermarkets and health and natural food stores. These products include meatless burgers and luncheon slices, soymilk and rice milk, cheese alternatives, non-dairy desserts (usually non-dairy ice creams), and prepared vegetarian meals containing meat and dairy alternatives as major ingredients.

Products not covered: (1) Bulk and packaged tofu, unflavored tempeh–However products such as tofu- or tempeh burgers are covered. (2) Margarine, non-dairy creamer, non-dairy whip toppings, and egg substitutes. Although the first three of these categories are alternative to dairy products, they have become well accepted in the American diet and are not necessarily purchased by consumers wishing to avoid dairy products. "Also, the sheer size of these categories–each of which is many times larger than the overall meat and dairy alternatives market–would drastically skew the market numbers and trend information away from the products that are the focus of this report. For similar reasons, egg substitutes are also excluded."

6857. Packaged Facts. 1995. Retail sales of dairy alternative products by segment: 1989-1994 (in million dollars) (Document part). In: Packaged Facts. 1995. The Meat and Dairy Alternatives Market. New York, NY: Packaged Facts. 162 + 42 + 6 p. See p. 18. May. 28 cm.
• ***Summary:*** Sales of milk substitutes (mostly soy and rice milks, in million dollars) rose from $46.0 in 1989 to $72.0 in 1991 to $96.8 in 1993 and $108.4 in 1994.

Sales of cheese alternatives (in million dollars) rose from $12.0 in 1989 to $17.3 in 1991 to $25.0 in 1993 and $28.8 in 1994. The average annual sales growth for this period was 19.1%.

Sales of non-dairy desserts (in million dollars) rose from $4.0 in 1989 to $4.5 in 1991 to $5.0 in 1993 and $5.2 in 1994. The average annual sales growth for this period was 5.4%.

The combined sales of these three dairy alternative product categories (in million dollars) rose from $62.0 in 1989 to $93.8 in 1991 to $126.8 in 1993 and $142.4 in 1994. The average annual sales growth for this period was 18.2%.

Concerning the accuracy of these figures, page 19 notes that sales in these markets are difficult to quantify because a large share of retail dollar volume moves through natural foods stores, where sales are mostly untracked, and because various information sources define meat and dairy alternatives products differently. Therefore these "estimates are based on information provided by Soyatech, Inc., the Soyfoods Center, Information Resources, Inc., the natural foods trade, and various manufacturers."

A table (p. 53) shows estimated market shares of major manufacturers of milk substitute products sold through the mass-market and natural food stores in 1994: (1) Soymilk: Eden Foods (Edensoy) 48%. Vestro Foods (Westsoy, Westbrae) 30%. Vitasoy 12%. Pacific Foods of Oregon 7%. Other 3%. (2) Rice beverages: Imagine Foods (Rice Dream) 85%. Vestro Foods (Westbrae Rice) 10%. Eden Foods (Eden Rice) 5%. (3) Potato beverages: A&A Amazing Foods (Vegelicious) 100%. (4) Almond beverages: Wholesome & Hearty Foods (almondMylk) 100%.

A second table (p. 54) shows estimated market shares of major manufacturers and marketers of cheese alternatives sold through natural food stores in 1994: Tree of Life (Soya Kaas) 41.5%. Sharon's Finest 20.7%. Soyco Foods (Soyco, Soymage) 12.7%. Cemac Foods (Nu Tofu) 12.7%. Other 12.4%.

Pages 54-55 state that Tofutti commands about 80% of the frozen non-dairy dessert segment. The remaining 20% is controlled by Imagine Foods (frozen Rice Dream), Turtle Mountain (Sweet Nothings and Living Rightly), and The Hain Food Group (Farm Foods Ice Bean).

6858. The memorial service for Dr. Kwee-seong Lo, B.A., LL.D., O.B.E., C.B.E., J.P. 1995. Hong Kong. 6 p. 22 cm.
• ***Summary:*** This service was held at 4:00 p.m. on 11 May 1995 at St. John's Cathedral, Garden Road, Hong Kong. A nice portrait photo (p. 1) shows K.S. Lo, who lived 2 Feb. 1910 to 5 May 1995.

Obituary: "Dr. Kwee-seong Lo was born of Hakka descent in Meixian county in Guangdong province, China, on February 2, 1910. His father, Chin-hing Lo, took the family to live in Malaya when Kwee-seong was still young. Following his graduation from secondary school in 1929, Kwee-seong moved to Hong Kong to study Economics at the University of Hong Kong, from where he graduated [with a BA degree] in 1934.

"As war engulfed East Asia in the 1930's, causing much suffering among the Chinese population, Dr. Lo turned his attention to improving standards of health through the provision of nutritious of food at affordable prices. On a business trip to Shanghai in 1936, he attended a seminar entitled "Soya Bean–the Cow of China" non the nutritional value of the soya bean, which had been a major source of protein for the Chinese for more than 3,000 years. He knew this was the solution he had been looking for and, pooling all resources, he founded Hong Kong Soya Bean Products Company in 1940, the forerunner of today's Vitasoy

International Holdings, Ltd."

Discusses the history of the company, and joint ventures with China starting in 1979 with Kwang Ming Dairy Farm in Shenzhen. "This signified the first step in fulfilling Dr. Lo's ideal of "Nation Saving by Industry."

Though busy with his business, K.S. Lo made time for an active life of public service. In 1961 he was honoured as a Justice of the Peace (J.P.). In 1971 he was awarded the Officer Order of the British Empire (OBE), and in 1979 the Commander of the British Empire (CBE). In 1982 he was awarded an honorary doctorate of Law by the University of Hong Kong–thus becoming Dr. Lo. In 1994 he retired from the position of Chairman of Vitasoy International.

His many public, business, and personal contributions are then discussed. In 1986 his book titled *The Stonewares of Yixing* was published.

Dr. Lo has his early education in a Methodist School in Malaya where he had his first contact of Christianity. He was baptized in a church located at the Mount of Double Happiness, Lin County, Guangdong, during the period of Japanese occupation of Hong Kong. At that time, he had a very deep religious experience. In the last part of his journey on earth, he experienced the revival of his faith and consequently a renewal of his relationships with God and his family members. He therefore faced his destiny with peace and joy.

"Dr. K.S. Lo passed away peacefully in Queen Mary Hospital on 5th of May, 1995. Although he has now left us to sleep in the arms of God, Dr. Lo will not be forgotten. His achievements and his qualities live on and will be remembered by those whose lives he touched." Address: Hong Kong.

6859. Bontempi, Piero. 1995. Valsoia, Italy's leading soymilk manufacturer (Interview). *SoyaScan Notes.* June 6. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Valsoia was established in 1990 as a joint venture between Buton and Crivellaro. It is now an independent company that manufactures soymilk, soymilk products, and other soy products. It was sold to many shareholders in Aug. 1993 by Buton and Crivellaro, and the latter two companies now own none of the stock. The CEO is Dr. Lorenzo Sassoli de Bianchi. Valsoia now has a 73% share of the Italian soymilk market, which is 4 million liters/year. They now produce about 7,000 tonnes/year of all products. The technical director of soymilk production is Dr. Piero Bontempi, who has a PhD in chemistry, and a food background with CPC making jams, sauces, and fruit juices. Their soymilk plant was built using components from APV, Alfa-Laval, and Srau.

They have an very attractive portfolio showing their product line, with one glossy color sheet for each product. Address: Technical Director, Valsoia S.p.A., Via Iacopo Barozzi 4, 40126 Bologna, Italy. Phone: +39 051-659-9900.

6860. Lazzaro, Don. 1995. History and current status of soymilk in Australia (Interview). *SoyaScan Notes.* June 6. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ceres Natural Foods is their holding company and Pureharvest is their trading name. They made this name change in 1982 since they found the word Ceres was difficult for many people to pronounce. The first soymilk they imported to Australia was made by Saniku in Japan and imported from Mitoku.

Don is interested in macrobiotics. In early 1979 he took over the running of a small macrobiotic and natural foods retail store in Melbourne named Ceres Wholefoods. The only way he could make it viable was to try to buy at better prices, so in April 1979 he started a wholesale and import company, which he named Ceres Natural Foods, also in Melbourne. There was a company named Real Foods (run by Michael Pels) in New South Wales, Australia, that was importing, through Mitoku in Japan, tamari, soy sauce, miso, tofu, etc. Real Foods was the first company in Australia to import foods from Mitoku in Japan.

Don knew Michael from when they both used to live in Sydney in about 1978. Michael purchased some rice cake machines (the same kind used by Chico-san) through Mitoku from Airin Co. These machines were very poorly engineered and constructed. Michael has already sold 168 of these machines to Quaker.

When Don took over the Ceres Wholefoods retail store in 1979, he approached Michael and asked to be the distributor in Victoria of the food products Michael was importing from Japan through Mitoku. Michael said okay, and Don began distributing. Don asked Michael to import some soymilk from Mitoku, which he did in mid-1980. The stick-on label over the Japanese label said Ceres Natural, in Choc-Malt and Natural flavors. But the first soymilk in Australia was imported from Japan in about 1977-78, through Muso by 3-4 health food stores named Russel's; it was made by Marusan in a stand-up plastic pouch. Not much of it was sold. In about 1980-81, Michael decided to get out of the whole import business in order to focus on making rice cakes. So Mitoku Mr. Kazama and Chris Dawson asked Don to become their importer in Australia. Don also ran a 3rd company, a center that provided information and advice on macrobiotics.

Jim Wilson, who was running Spiral Foods in Australia, had been importing from Mitoku. He convinced Mitoku not to sell to Don, his competitor; Mitoku agreed. Mitoku then approached Saniku, and in about 1981 Don began importing soy milk made by Saniku through Mitoku. Don sold it under the same label he had used before. The Muso started to import some soymilk packaged in Tetra Brik cartons through Spiral Foods. Don got the same product from Kibun, and on it began to use the name Pureharvest.

In short: Four companies pioneered in importing

soymilk to Australia: Real Foods, Russel's, Spiral Foods, and Ceres Natural Foods. There was also a little relatively beany Chinese soymilk sold in the ethnic Chinese market. Ceres, as a result of its Tetra Brik package, managed to get fairly good distribution into the grocery / supermarket trade, starting in late 1983 or early 1984. By this time Ceres was by far the biggest seller of soymilk in Australia. They were importing five 20-foot containers per month of the Kibun soymilk product. Ceres was actively promoting this soymilk, doing trade shows, etc.

In 1986 Ceres was approached by a small soymilk maker named Australian Natural Foods (ANF) in Sydney; basically they had old machinery and were in trouble. They approached Don asking if they could make a soymilk for him. They worked out an exclusive deal and formula, and in Nov. 1986 Ceres launched this as Aussie Soy in its first 1 liter package, in Tetra Brik. Sales shot up. It was trucked in a dairy tanker to Bon Lait in Victoria (almost 1,000 miles away) where it was packaged in a dairy that had a Tetra Brick packaging machine. In about 1990-91 ANF first got its own Tetra Brik packaging machine. That same year ANF launched its own soymilk product, named So Natural, to compete with Sanitarium's So Good. It is made from whole soybeans, and is very similar to the Aussie Soy product they have long made for Don.

As early as 1980 Sanitarium Foods was importing Soyalac in tins / cans. They sold it mostly to Seventh-day Adventists through their own retail stores. Then in April 1987 Sanitarium Foods launched their own So Good soymilk (made from a blend of soy protein isolates, made and packaged by dairy companies) in Australia. They went into it in a big way, with a national campaign. It was the best thing that ever happened to Don and Ceres, because this campaign grew the market dramatically. By April 1987 Ceres was selling 10,000 cartons / month of their Aussie Soy, not including their Japan imports. One year later the figure had skyrocketed to 60,000 cartons / month, increasing to 152,000 on year after that.

Nevertheless, according to the *Australian Grocery Industry Marketing Guide* (1995), Sanitarium has 71% of the dairylike (unflavored) Australian soymilk market, followed by Vitasoy at 7% (they launched in about 1991, and have done a very aggressive marketing campaign), then So Natural (made by ANF) at 5%, Sun Gold at 5%, and Aussie Soy at 4-5%. Of the total Australian soymilk market, flavored soymilks account for only about 5% of the total; the remaining 95% is dairylike; its a milk alternatives market. Each of the three major supermarket chains in Australia (Woolworth's Safeway, Franklin's, and Cole's) has its own soymilk brand. Franklin's has an isolate soymilk made by ANF, starting about a year ago. Sun Gold, made by Associated Dairies of New South Wales, is almost identical to So Good, made by the dairy company that used to mix Sanitarium's product. In about 1990 Sanitarium set up their own soymilk mixing and packaging factory.

Today the soymilk retail market in Australia is $45 million, with a population of only 17 million people. This is huge on a per capita basis. This market has three main segments: (1) Middle class, educated, with some allergies–70%. (2) Age 50 and older, concerned with cholesterol–20%. (3) Natural foods and vegetarian–10%.

In late 1993 and early 1994 Don approached Berrivale Orchard Ltd. (a cooperative of fruit growers, headquarters in Berri, South Australia) to see if they would be interested in making a soymilk product for Ceres / Pureharvest–because Don's relationship with ANF had become intolerable.

In 1979, to get tofu to sell at his retail store, Don used to go to Chinatown in Melbourne twice a week. He bought it from a little Chinese company (whose name he does not remember) located opposite Victoria Market. He would take a couple of buckets and carry it home in bulk, under water. Address: Pureharvest, 15 Ardena Ct., East Bentleigh, Victoria 3166 Melbourne, Australia.

6861. Melvin, Hart. 1995. Why it is difficult to launch a soy ice cream in Canada (Interview). *SoyaScan Notes.* June 8. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** First, the entire frozen dessert industry in Canada has been exclusively the domain of the big dairies. The dairies were subsets of the Marketing Board–which creates a totally different market environment than in the USA. Canada has a relatively small population (10.7% of the U.S. population; 28.1 million vs. 260.7 million in the USA) and it is spread over a land area that is slightly larger than that of the USA (including Alaska). So a company needs to have a significant product line to pay the costs of distribution and to pay the large "listing fees" required to get onto supermarket shelves. It has only been in the last 10 years that any small companies have even attempted to developed frozen dessert products. It is difficult to start a company in Canada making soy ice creams because the market is so small and dispersed. You can't start a company in Canada with your initial target market in the USA. Now Canadian supermarkets are trying to establish individual identities, and one of the ways they do that is by bringing in specialty products, either as is or under their own brand and label. Both his soy and dairy products are in most of the major supermarkets in Canada under their own label–simply because his company is offering unique products not made by the big guys, and these products make the supermarket more competitive with the boutique.

The second reason has to do with Canadian bilingual labeling laws. If you have a half liter or pint carton or tub, you have very little surface area, so you can't get overly descriptive. If you want to make claims (such as "cholesterol free") then you must do fat analysis, and that has to be presented in both French and English. So you quickly run out of space on the label. So a small company has generic

nutritional information on the body of the package, with flavor-specific information on the lid only. This saves printing costs. So the bilingual label restricts a company's ability to make claims, and it hurts small companies more than big ones. The smaller the package size, the bigger the problem. His soy ice creams make a "cholesterol free" claim and print the fat analysis in two languages.

One new development in Canada (within the last 10 years) is the public awareness of lactose intolerance; this makes it easier to market non-dairy ice creams. Address: Product Manager, Gelato Fresco, 60 Tycos Drive, Toronto, ONT M6B 1V9, Canada. Phone: 416-785-5415.

6862. Storup, Bernard. 1995. The soyfoods industry and market in Italy (Interview). *SoyaScan Notes.* June 21. Conducted by William Shurtleff of Soyfoods Center. [Eng]
• ***Summary:*** Recently Bernard has been working with various companies in Europe (including Italy) that have been selling soymilk made by other companies. The few companies that he knows are all small, such as Fonte della Vita (a small tofu manufacturer). He is not well aware of Valsoia in Bologna, Italy, but he has the impression that they make soymilk from soy protein isolates and that they are not a major company. (Note: Valsoia claims to have 73% of the Italian soymilk market, which is 4 million liters a year).

Several years ago Bernard had wanted to get very involved in the Italian soyfoods market, but things have changed significantly during the last 18 months. The Italian lost about 23% of its value against the French franc. Thus Bernard's products are now 23% more expensive when sold in Italy. Now Bernard is too busy expanding into supermarkets in France. Address: Managing Director, Nutrition et Soja, Z.I. de la Pomme, B.P. 33, 31250 Revel (near Toulouse), France. Phone: +33 62.18.72.50.

6863. Guy, Camille. 1995. Soy under suspicion: Natural toxins in soybeans could be putting our health at risk. *New Zealand Herald.* June 24. Section 8. p. 2.
• ***Summary:*** "At Whangarei Heads a retired couple keep hundreds of dead parrots in a freezer. The prized chicks were hand-reared on a commercial bird feed derived from the much touted 'health food' soybean.

"Bird-breeders Richard and Valerie James are preserving the birds because they believe they were poisoned. You could dismiss them as cranks, except that the American Food and Drug Administration is now showing serious interest in the contents of the makeshift morgue.

"The couple who once nurtured 600 breeding birds of 40 different species now discount their personal losses. They found the implications of the parrot deaths so serious they went into debt to have them investigated.

"After two years' work at an estimated cost of $354,000, the Jameses and four New Zealand scientists now believe the parrot deaths were probably due to natural toxins in soybeans."

"The Whangarei couple's parrot problems began in 1992 when chicks, fed exclusively on a soy-based product died in ways consistent with eating rat poison. The birds haemorrhaged violently from the beak and suffered total collapse of their internal organs. Survivors suffered deformities, were infertile, or laid deformed eggs.

"Dick James, a New Zealand-born lawyer with a masters degree in business administration from California, was determined to establish why his birds died. Autopsies carried out at Massey University suggested the deaths were due to severe depression of the birds' immune systems."

"At no stage would any Government body contribute to the cost of this work. In 1994 New Zealand imported nearly 350,000 kg of soybeans, 18 million kg of soy flour, and 18 million litres of soybean oil. One seller of soy products, Healtheries of New Zealand Ltd., did help with the cost of the Fitzpatrick analyses. The company's technical manager, Robert Shaw, gave assistance, including getting Healtheries to commission Auckland Medical School senior toxicologist Dr. Iain Robertson to do an independent review of the Fitzpatrick report.

"The review, dated October 1994, was succinct and forthright. Dr Robertson found the Fitzpatrick report 'detailed and reasoned' and made eight recommendations. The first was that the use of soybean products in infant formula be discontinued. 'I can see no good reason why anyone would wish to continue with general sales of such products. Infants are a high-risk population.' Interfering with the many hormone-driven processes going on in infants could affect their growth or immunity, or put them at risk of cancer, Dr Robertson said.

"Healtheries does not produce a soy infant formula but the pharmaceutical company Wyeth does. Its Sydney-based [in Australia] marketing director, Dr Gregory Rough, told the *New Zealand Herald* that he believes the New Zealand reports are speculative and scientifically flawed. Dr Rough was unable to name any scientist not connected to the soy industry who could dispute them," but pointed to millions of babies using soy formula for 15-20 years without reports of adverse effects. "Dr Rough agrees there have been no long term studies but says Asians are exposed to a high level of phytoestrogens without problems."

Photos show: (1) Richard and Valerie James with a large white bird in one of their aviaries. The caption: "Richard and Valerie James are on a personal crusade to expose the dangers of soybeans." (2) Three dead parrots stores in the Jameses' freezer. The caption notes that they "are thought to have died as a result of eating feed containing soybean."

This article also appeared in *Christchurch Press* 25 Jan. 1996.

6864. Brittenden, Wayne. 1995. A New Zealand report on the possible dangers of soya milk has raised fears in

Britain: Report suggests that the milk contains high levels of hormones. Radio New Zealand News, NZBC London correspondent. 12:30 PM News Tuesday, 20, June 1995.

6865. **Product Name:** Soyfine Tofu Powder, and Soymilk Powder.
Manufacturer's Name: Clofine Dairy & Food Products, Inc.
Manufacturer's Address: P.O. Box 335 (1407 New Rd.), Linwood, NJ 08221. Phone: 609-653-1000.
Date of Introduction: 1995. June.
New Product–Documentation: Leaflet from Clofine. 1996. June.

6866. Jacobi, Dana. ed. 1995. The natural health cookbook: More than 150 recipes to sustain and heal the body. New York, London, Toronto, Sydney, Tokyo, Singapore: Simon & Schuster. 271 p. . June. 25 cm.
• ***Summary:*** This is a selection of the best recipes published in *East West Journal,* compiled by Dana Jacobi, Dan Seamens, and the editors or *Natural Health* magazine. The recipes are generally low in fat, free of white sugar and other refined foods, and nutrient dense, based on grains, legumes, and vegetables; some contain fish and shellfish. Chapter 4 is titled "Seitan, tempeh, and tofu." Miso and soy sauce are used throughout as seasonings.

Contains recipes for Amasake dressing (p. 153), and Amasake scones (p. 191). Amasake (or Amazake) is defined in the Glossary of ingredients (p. 243). Address: New York City, NY.

6867. Kwok, Kin-Chor; Niranjan, Keshavan. 1995. Review: Effect of thermal processing on soymilk. *International J. of Food Science and Technology* 30(3):263-95. June. [102 ref]
• ***Summary:*** Contents: Summary. Keywords. Introduction. Methods of thermal processing. Effect of heat on microorganisms in soymilk. Effect of heat treatment of trypsin inhibitor (TI) activity. Elimination of off-flavour in soymilk. Effect of thermal processing on nutrients. Effect of heat on yields of solids and proteins. Other heat-induced effects. Concluding remarks. Acknowledgment. Address: 1. Dep. of Applied Biology and Chemical Technology, Hong Kong Polytechnic Univ., Hung Hom, Kowloon, Hong Kong; 2. Dep. of Food Science and Technology, Univ. of Reading, Whiteknights, P.O. Box 226, Reading RG6 2AP, UK.

6868. Natural lifestyle magazine and mail-order market. 1995. Asheville, North Carolina: Natural Lifestyle Supplies. 55 p. Catalog. 28 cm.
• ***Summary:*** A macrobiotic mail-order catalog with several nice articles, it sells many types of soyfoods and related products, including the full line of Kushi Cuisine, organic soybeans (yellow and black), azuki beans, amazake, Rice Dream, soymilk, soy Malteds (Westbrae), Nasoya Vegi-Dressings, Nayonaise, Farmhouse Tekka, organic soy sauce, fresh tofu, snow-dried tofu, kuzu, and miso. Publisher: Tom Athos. Editor and graphic design: Debbie Athos. Address: 16 Lookout Drive, Asheville, North Carolina 28804-3330. Phone: 1-800-752-2775.

6869. *Ontario Soybean Growers' Marketing Board Newsletter.* 1995. ProSoya forges alliance with dairy processors. June. p. 6.
• ***Summary:*** ProSoya recently formed a "Soyfood Alliance" with three Canadian dairy processors: Neilson Dairy, Fieldfresh Farms, and Gelato Fresco. A photo shows Raj Gupta of ProSoya with the smaller version of his original "SoyaCow." Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

6870. Parr, Jan. 1995. BGH labeling laws baffle dairy producers. *Vegetarian Times.* July. p. 15.
• ***Summary:*** Consumers are concerned about genetically engineered bovine growth hormone (BGH), which can increase a cow's milk production by 5% to 20% and the incidence of mastitis (a painful udder infection)–leading to increased use of antibiotics in the animals.

Therefore many milk producers and retailers have been considering labeling. This is hardest for products that are sold across state lines But finding a label that is acceptable to all 48 states is extremely expensive and time consuming–as Ben & Jerry's ice cream has found out.

6871. *SoyaCow Newsletter* (*Ottawa, Canada*). 1995. Pacific ProSoya starts production using SC2000. 4(2):1. April/June.
• ***Summary:*** "Pacific ProSoya Foods Inc. received the SoyaCow SC2000 system into its brand new facility in Surrey, British Columbia, Canada, in April. The skid mounted system can produce 2,000 litres per hour of non-beany soymilk."

The system was hooked up to a steam boiler and other utilities soon after it arrived. In helping with the initial testing, the untiring efforts of Graham Clarke, George Conquergood and Bud Hnetka were especially commendable. Lorne Broten, President of Pacific ProSoya, kept everyone's spirit alive. The first test run produced soymilk on 6 May 1995. "Dusty Cunningham, VP Marketing of Pacific ProSoya has lined up dairies and other customers in B.C., Washington state, Oregon, and California to buy most of the soymilk" produced by the big SoyaCow.

A photo shows the huge installed system in Surrey, B.C.

6872. *SoyaCow Newsletter* (*Ottawa, Canada*). 1995. Manav Vikas Parishad–a model SoyaCow site in India. 4(2):1-2. April/June.
• ***Summary:*** "Among all the SoyaCow sites currently operating SC20 systems in India, Manav Vikas Parishad is undoubtedly a model site. MVP is an NGO [non-

governmental organization] for training the unemployed, especially women, in self-employment.

"What is a model site? It is an enterprise that profitably uses a SoyaCow to provide employment, especially to women, as well as nutritional foods to the needy at a reasonable cost, and encourages and rains people to start enterprises for producing soymilk and its products and byproducts at a cottage industry level.

"Dr. R.K. Sharma discovered MVP almost a year ago to develop into a model site. Dr. Sharma immediately started working with Mr. S.B. Srivastava and his staff at MVP and provided them with a SoyaCow SC20 and all the needed help. MVP responded very well and worked diligently to quickly start regular production and marketing of soymilk, tofu, pakoras, and many other items."

6873. *SoyaCow Newsletter* (*Ottawa, Canada*). 1995. SSP to manufacture SoyaCows in India. 4(2):1. April/June.
• ***Summary:*** "In a recent visit to India, Frank Daller, President of ProSoya Inc., made arrangements with SSP of Faridabad, India, to develop an SC20 prototype in stainless steel. SSP is a reputable stainless steel fabricator for the dairy, food, and chemical process industries with focus on evaporation and drying equipment including spray dryers.

Dr. Ratan Sharma, Manager, the SoyaCow Centre of Child Haven International in India, will coordinate the project with Mr. Tapas Chatterji, Managing Director, SSP. The SC20 prototype is expected to be ready for testing at SSP in the autumn of 1995. The prototype development costs are to be entirely borne by SSP."

"Earlier attempts of technology transfer to India to manufacture SoyaCows were not successful due to lack of expertise and capabilities required in a manufacturer to produce robust SC20 systems. Also, the final burden for the technology was not shared by the earlier parties.

"Currently only SSP has the license to manufacture or market the SoyaCow technology in India and the neighbouring countries."

6874. *SoyaCow Newsletter* (*Ottawa, Canada*). 1995. Notice of change. 4(2):2. April/June.
• ***Summary:*** Please note that *The SoyaCow Newsletter* will from now on be published by ProSoya Inc.

Note: The company has also moved from 9 Veery Lane, Ottawa. A box on page 2 shows that the Newsletter is now published quarterly at "7-5350 Canotek Road, Ottawa, Canada K1J 9C9, Telephone: 613 / 745-9115. Fax: 613 / 745-2045. Editor: R.P. Gupta, Ph.D."

6875. Soyfoods Association of America. 1995. A consumer profile of the soyfoods shopper. San Francisco, California. 100 p. *
• ***Summary:*** Contents: Executive summary. Overview. 1. U.S. population–Awareness of soyfoods: Number of consumers who have heard of soyfoods (most have heard of tofu, few have heard of tempeh), demographics of soyfood-aware consumers (consumers under age 60 more aware of soyfoods, soyfoods-aware consumers are more affluent, greater number of Easterners but awareness is nationwide, more likely to be married).

2. Soyfoods consumers–Demographics: Use of soyfoods (about 26 million soyfoods consumers–15 million eat tofu, consumers who use one kind of soy product more likely to use another type), demographics (younger households and baby boomers, household incomes skew higher, more than two-thirds are college-educated, employed in white-collar professions, women in soyfoods households less likely to be in clerical jobs, men working full-time–some self-employed, busy women in a variety of employment situations, one-third of soyfoods consumers have children at home, most in the east–proportionately more in the west, proportionately more in pacific, live in areas of greater population density, living the American dream, mostly home-owners).

3. Soyfoods consumers–Shopping and eating patterns: Frequency of eating types of soyfoods (most eat soyfoods infrequently, soy cheese used more frequently, regular users use soyfoods–especially soymilk–a lot, consumers of one type use other types more), where consumers buy soyfoods (groceries/supermarkets stores of choice for tofu, natural foods store shoppers more dedicated soyfoods consumers, meat substitutes purchased in mass-market, other soyfoods in natural foods stores, soymilk customers split between grocery and natural foods, miso popular in Asian stores), future purchase plans (more than 6 million consumers plan to use soyfoods more, soy hot dog–cheese and frozen dessert consumers most enthused about eating more soyfoods), the soyfood shopper's diet (seek low-fat/cholesterol/sodium/sugar foods, health interests vary by types of soy products tried), other red meat alternatives (most list fish and poultry as red meat alternatives, vegetarian foods favored by consumers of specific soy products).

4. Soyfoods consumers–Attitudes about soyfoods: Attributes of soyfoods (a positive opinion of soyfoods' health benefits–consumers approve less of taste and ease-of-use, soymilk and soy hot dog consumers most likely to agree that soyfoods are healthy, few consumers have negative health image of soyfoods, soy products users believe in soyfoods' special nutrients, soyfoods easier to use than public thinks, familiarity breeds affection, users of various soy products see cost savings, those who use specific soy products–especially tempeh–cannot find them where they shop, consumers of various types do not feel soyfoods are a problem for allergies), importance of organically grown (more than one-third of soyfoods consumers seek organically grown, attitudes about organic stronger among users of specific products).

5. Soyfoods consumers–Sources of product information: Where consumers first learned of soyfoods (word of mouth

is primary source, promotion works for packaged products), why consumers first began to eat soyfoods (novelty and health are the prime motivators, soymilk consumers more concerned about specific health and lifestyle issues–soy burger consumers seeking low-fat meat substitutes), why consumers currently eat soyfoods (consumers less sure why they currently eat soyfoods, tofu–soymilk–and soy burger consumers more likely to have specific reasons), familiarity with health connections (consumers unfamiliar with some of soyfoods' health benefits–familiar with soyfoods' link to cholesterol and heart disease, both users and interested non-users aware of link to cholesterol and heart disease, core consumers not well-informed about other health benefits), sources of information (magazines and newspapers most common source of health information).

6. U.S. population–Why consumers aren't eating more soyfoods: Who is interested in eating more types of soyfoods (consumers would like to try new soyfoods), what would get consumers to eat more soyfoods (taste and lack of cooking suggestions are barriers to use, soy hot dog consumers seeking lower prices–soymilk shoppers seeking more outlets–tofu consumers want recipes, rural–southern and consumers seek lower cost–more affluent seek better taste).

7. Children and soyfoods: How often children eat soyfoods (among soyfoods households–two-thirds of kids age 2-12 eat these products, households with children age 2-12 eat more soy burgers–soymilk, children age 13-18 more likely to be infrequent soyfoods consumers, households with older children tend to choose same products as soyfoods consumers overall), children's attitudes about soyfoods (children's attitudes toward soyfoods are mixed–many parents cannot speak for their children).

8. The tofu shopper: Ways consumers use tofu most often (tofu use most often in stir-frys), why consumers eat tofu (consumers say they eat tofu because it is healthy), what influences brand choice (price–freshness and taste), why consumers aren't eating more tofu (tofu consumers are looking for new ways to use tofu), demographics (most tofu users are 30-59–those 60 and over avoid it, higher household incomes, tofu household heads are highly educated and have executive jobs, household size and marital status similar to average American, concentrated in more populated areas–East and West coasts).

9. The soymilk shopper: Ways consumers use soymilk most often (most often used as a beverage), why consumers use soymilk (non-specific health features and convenience attract soymilk users), what influences brand choice (freshness, quality, taste drive soymilk sales), why consumers aren't using more soymilk (cost and availability hinder use), demographics (younger households use soymilk, more affluent households, education and occupation, more multiple-person households, more Westerners and those in mid-size MSAs).

10. The soy-based meat alternatives shopper: Why consumers use soy-based meat alternatives (because they are healthier), what influences brand choice (taste and price), why consumers aren't buying/using more soy-based meat alternatives (cost, unfamiliarity, taste and availability hinder use, cost and availability factors are higher among users of specific products), demographics (soy burger users and interested non-users are younger, household income somewhat higher among meat alternatives users, college educated and graduates, white collar employees, two person households for some products–soy burgers mirror U.S. population, soy bacon use higher in East–burgers higher in central region, variations by types of products used).

11. The soy-based dairy alternatives shopper: Why consumers used soy-based dairy alternatives (for health reasons), what influences brand choice (taste primarily), why consumers aren't buying or using more soy-based dairy alternatives (cost an unfamiliarity hinder use), demographics (older and more affluent, educated and professionally employed, smaller size households–more singles, live in moderately populated areas, more concentrated in east and west).

12. Other soyfoods shoppers–Soy flour, tempeh, and miso: Demographics (soy flour consumers older–miso consumers most affluent, soy flour, tempeh and miso found in educated households, occupation status similar to other soyfoods shoppers, smaller households and more singles use tempeh, more soy flour users in low-density areas, east and west coasts for miso and tempeh).

Methodology. Questionnaire. Continued. Address: One Sutter St., Suite 300, San Francisco, California 94104. Phone: 510-935-9764.

6876. Soyfoods Association of America. 1995. A consumer profile of the soyfoods shopper. II. Methodology of collecting information. San Francisco, California. 100 p. * • ***Summary:*** This survey was conducted by Market Facts, Inc., a market research firm based in Chicago, Illinois. Project directors for this report were Tim Redmond (American Soy Products) and Peter Golbitz (Soyatech, Inc.). Fieldwork was done by Sheri Hoffenberg (Market Facts). Analysis and Report: Sara M. Starr and Peter Starr (Starr Track). Price: SAA members $475. Nonmembers: $975.

The survey was conducted in two parts. In the first part a questionnaire was mailed to 20,000 people in the Market Facts database. Of these, 17,715 people mailed back responses, and of these 15,168 were completed and usable. Three questions related to soyfoods: 1. Have you ever heard of: Ten types of soyfoods are listed–Tofu, soymilk, soy flour, tempeh, miso soup stock paste, soy burgers, soy hot dogs, soy bacon or breakfast sausage, soy cheese, and soy frozen desserts. The respondent is asked to check those that he or she has heard of. 2. Which of these ten soyfoods have you eaten 5 or more times in the past year? The same list is repeated and the consumer is asked to check as indicated.

3. "I would eat more soyfoods if... (1) They were more accessible where I shop for food, (2) I knew better what to do with them, i.e. recipes, (3) I was better informed on the health benefits; (4) I thought they tasted good; (5) They were less expensive. Check all that apply.

Part II. From the 15,168 people who mailed back completed and usable responses to part I, 750 people were chosen to participate in a follow-up survey, which consisted of a 4-page questionnaire containing in-depth questions about consumption of and attitudes toward ten different types of soyfoods, purchasing motivations and patterns, and questions about children's attitudes toward soyfoods. The sample was divided into 3 groups. A questionnaire was mailed to a representative sample of 626 people (anyone who indicated they had eaten soyfoods at least 5 times in the past year). An over-quota sample of 67 soymilk users and 57 respondents who indicated that they were soy cheese users. This was done in order to ensure enough completed questionnaires among people who used soymilk and soy cheese. To ensure the sample quality, consumers were again asked about their use of various kinds of soyfoods. Consumers who responded affirmatively to using at least one kind of soyfoods were retained in the mail survey sample. Address: One Sutter St., Suite 300, San Francisco, California 94104. Phone: 510-935-9764.

6877. Chin, Michelle. 1995. Vitasoy adds dash of flavour to results: Winston Lo Yau-lai says Vitasoy's Shenzhen plant should start contributing in the coming financial year, after reaching full capacity in mid-1994. *South China Morning Post* (*Hong Kong*). July 19. Business section. p. 2. Ed. 2. • ***Summary:*** Vitasoy International Holdings has increased its profit attributable to shareholders by 16% to $122.27 million. For the year ended March 31, turnover increased 9% to $1.25 billion from $1.15 billion previously. The manufacturer of non-carbonated drinks declared a final dividend of 5.9 cents, making the total for the year 9.6 cents. Earnings per share were 24 cents, down from 27.4 cents previously. The Hong Kong market contributed 70% to turnover, with North America earning the remaining 30%. Executive director John Lau Shek-hung said the China market would be the focus of future business. Although this mainland market showed remarkable growth of more than 70%, it failed to add to the group's coffers.

The Shenzhen plant, located inside China right on the north border of Hong Kong, in which Vitasoy holds a 70% stake, replaced the Aberdeen plant, producing both carbonated and non-carbonated beverages and powder concentrate for Vitasoy products. The company hoped that China market would make up 15% of the total turnover in 5 year's time.

"Vitasoy recently purchased land in Shanghai, which will be the site of a $228 million plant. To be completed in 1999, the plant will service eastern China and will produce 60 million liters in a full range of beverages."

6878. Montanaro, Pamela. 1995. New developments with soybeans and soyfoods in Cuba (Interview). *SoyaScan Notes.* July 26. Conducted by William Shurtleff of Soyfoods Center. • ***Summary:*** Pam Montanaro, Coordinator of the Cuba Campaign Department of Global Exchange (GX), returned from the sixth Freedom to Travel Challenge trip to Cuba June 23-30, where a general contract was signed between the *Instituto de Investigaciones Fundamental en Agricultura Tropical* (*INIFAT*) and another GX-sponsored project, the Soy Cubano Company (SCC).

The SCC will fund a small project in soybean production, helping the Cubans to become more self sufficient in soybeans while challenging the U.S. embargo against Cuba. The project will start small, with a 13.4 hectare (one *cabellería* plot) in Havana province, this August. Two to three varieties of soybeans will be grown to produce enough seed to plant 20 *cabellería*s next year, 19 *cabellería*s worth will be sold to the soyfood factories for soyfood production; one *cabellería* will be reserved for planting the following year.

Also on this trip Pam met a very fine and interesting man named Dick Strohl who is an American soybean farmer and businessman from Minnesota; he is now negotiating with the Ministry of Agriculture and *INIFAT* to grow soybeans in Cuba.

The SCC also delivered a computer and modem to Ing. Alvaro Garcia, director of the *Instituto de Investigaciones para la Industria Alimenticia* (IIIA; Food Research Institute) which is developing varieties of soyfoods for domestic consumption.

Frank Daller of ProSoya Inc. (based in Ontario, Canada) will be traveling to Cuba on July 30 for one week to explore investment opportunities in the field of soyfoods–especially soymilk. Frank is the new director of the Canadian branch of the U.S.-based Association for Free Trade with Cuba (AFTC); it was started by Global Exchange in the spring of 1994, immediately after the U.S. lifted the embargo against Vietnam to get the progressive business community interested in working to end the embargo and in investing in worthwhile projects in Cuba such as soyfoods, alternative energy and medicine, and organic agriculture.

In June, at an international exposition, Pam was introduced to a new soy product developed in Cuba–a Chorizo (spicy meat sausage) extended with soy protein, as is or in a pastry blanket, sort of like a corn dog. The Food Research Institute was also exhibiting the other soy products it has developed, including some meat alternatives.

Pam also had a brief meeting with Ing. Elisa Panadés, a women who is a vice director of the Food Research Institute (like Alberto is); she stands in for Dr. Alvero Garcia when he is away. She was very interested in the information on genistein in soybeans compiled by Soyfoods Center. Her

main interest is medicinal properties of food.

Another interesting man Pam met was Dr. Gilberto Fleites (pronounced hil-BAER-toe FLAY-tees), M.D., a cancer surgeon at the Instituto Nacional de Oncologia y Radiobiologia (office phone: +53 7-325977; he lives in Miramar, Havana). He has gotten permission from John Robbins to translate *Diet for a New America* into Spanish. He speaks good English and is also showing John Robbins' videotapes on Cuban television. Pam's group gave him a small grant to start working on a half-hour video in Cuba, with a Cuban videographer, on vegetarianism. On Pam's trip to Cuba in June were three young people who had been raised as vegetarians. Dr. Fleites interviewed the vegetarian youth on film, saying: "Most Cubans have been forced into a primarily vegetarian diet by the U.S. blockade and the loss of their primary trading partners. It is important for Cuban parents to see these healthy vegetarian children on film, because they are very worried that you cannot raise a healthy child without meat and dairy products."

On the July trip Pam also met with some very interesting people who are working on projects in solar energy, wholistic medicine, chiropractic, and Chinese medicine. Dr. Marcos Diaz Mastellari has founded the Center for Holistic Medicine and the International Federation of Holistic Medicine (Ave. 25 No. 15805 entre 158 y 160, Havana, Cuba. Phone: +53 7-336356. Fax: 332420).

Update. 195. Oct. 30. Pam has been in touch with Oxfam Canada; their representative Minor Sinclair has gotten involved in some soy projects in eastern Cuba and wants to work more with Global Exchange. Dick Strohl has some good ideas. Address: Coordinator of Soy Cubano! Company, Food and Medicine Campaign, c/o Global Exchange, 2017 Mission St. #303C, San Francisco, California 94110. Phone: 415-255-7296 or 415-558-8682.

6879. *Soy Cubano! Company: Report to the Shareholders* (*Global Exchange, San Francisco*). 1995. Soy Cubano! Company signs agreement with the Cuban Institute for Basic Research in Tropical Agriculture. 1(1):1. Summer.
• ***Summary:*** "On July 6, 1995, a representative of the Soy Cubano! Company signed a letter of intention with the Cuban Institute for Basic Research in Tropical Agriculture (INIFAT) to enter into a joint venture with Cuba's soy foods industry. This agreement is the result of months of discussion with Cuban ministries and institutes aimed at concretizing how best to invest Soy Cubano! capital to bring the greatest benefit to Cuba's children. Our initial agreement is designed to help Cuba become self-sufficient in soybeans for domestic food production. The first step is the production of large quantities of soybean seed.

'The agreement stipulates that in August 1995, the Soy Cubano! Company will invest $6,000 in the planting of 13.4 hectares to produce 20 tons of soybean seed for the soy food factories in Pinar del Rio and Havana. The seed will be harvested, dried, and stored in November 1995, and in January 1996, Soy Cubano! and the Research Institute will sit down to evaluate the results. In August 1996, and additional 286 hectares will be planted to produce 400 tons of beans and an additional 20 tons of seed. By December 1996, these beans–approximately 40% of the amount needed in Havana and Pinar del Rio per annum, will be delivered to their first targeted factories.

"An important aspect of our commitment as a company is to submit proposals to, and to work with, suitable funding/lending agencies to obtain even larger investments towards Cuba's self-sufficiency in soybeans. Given Cuba's commitment to make healthier and tastier soy food products–soy milk, yogurt, ice cream, cheeses, margarine, mayonnaise and meat substitutes, we have pledged to get experts in organic soy food research and production to Cuba, and to procure large quantities of herb and spice seed for use in soy food recipes."

"As of mid July, 1995, we have 200 shareholders. Our goal is a minimum of 500 shareholders by Thanksgiving, when we will publicly announce that we are 'trading with the enemy' through a Washington, DC, press conference."

"On the April 1995 Freedom to Travel Challenge, Soy Cubano! shareholders delivered $3,000 to a soy food factory in Pinar del Rio. So your dollars are already at work making it possible for Cuban Children in Pinar del Rio to get soy yogurt and other soy foods..."

A photo shows "Two Cuban children benefitting from the soy yogurt drink." Address: Cuba Food and Medicine Campaign, c/o Global Exchange, 2017 Mission St., San Francisco, California 94110. Phone: 415-558-8682.

6880. Vitasoy International Holdings Ltd. 1995. Annual report 1994-95. New Territories, Hong Kong. 92 p. July. 30 cm. [Eng; Chi]
• ***Summary:*** For the fiscal year ended 31 March 1995, group turnover (sales) was HK$1,252 million, up 9% over the previous year. Operating profit was $138.9, up 12%. Earnings per share were 24.0 cents, down 12%. Dividends for the year were 9.6 cents. The price of one share is now about $HK2.69.

The Group has secured local government approval to establish a wholly foreign owned enterprise in Songjiang Industrial Zone of Shanghai and will soon begin construction of a production facility there, investing about HL$228 million in it. About 90% of its output will be sold in Eastern China.

The founder and guiding force for more than 50 years, Dr. K.S. Lo, passed away in May of 1994. "The success of the Group is a reflection of the strong Confucian morals which Dr. Lo worked so hard to instill." In Hong Kong, Vitasoy soymilk saw a slight decrease in sales.

In North America, Traditional Vitasoy soymilk [marketed to Chinese Americans] benefited from ethnic

brand loyalty together with the continued migration from Hong Kong and Taiwan to North America and especially Vancouver, BC, Canada. This helped improve overall sales in the North America market with 11% increase over the previous year. Natural Vitasoy soymilk experienced a slight drop in sales in the U.S. market but made strong gains in Canada. The launch of Vitasoy Chocolate Soymilk played a role in lifting the market share of soymilk in the Chinatown districts from 50.4% to 52.5%. The Group plans to introduce a new family-sized fresh soymilk. Tofu sales in North America recorded growth of 13.6% with the strongest push coming from the East Coast ethnic markets. To help make consumers more aware of the many benefits of tofu, the Group has sponsored the highly acclaimed "Yan Can Cook" program. In addition an 8-minute instructional video titled "Cooking with Tofu" has also been produced. The huge multi-billion dollar pasta market, of which Oriental pasta is one of the fastest growing segments, will be a key focal point for us over the next fiscal year.

Employees: 1,582 at the end of March 1995, up 13.8% Over the previous year.

Use of the $270.2 million for the initial public stock offering: (1) $228 million to develop a wholly foreign-owned production facilities in Shanghai, PRC (China); (2) $40 million for the development of this factory's distribution network in PRC and Hong Kong; (3) $60 to install a distilled water production facility at its existing facility at Guang Ming Farm, Shenzhen.

Color photos show: Winston Lo, Executive Chairman and Managing Director. Three natural Vitasoy soymilk products, Azumaya Asian products, 3 water-packed tubs of Vitasoy Chinese-label tofu, and Nasoya brands (silken and soft tofu), 3 bottled dressings, and Nayonaise. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

6881. Manning, Anita. 1995. Using soy for protein helps reduce cholesterol. *USA Today.* Aug. 3. [1 ref]
• ***Summary:*** A study by Dr. James Anderson in today's *New England Journal of Medicine* reported that "soy in the diet can significantly lower high cholesterol." The research, which analyzed 38 studies involving 730 people, was funded in part by Protein Technologies International, a manufacturer of soy protein. Cholesterol levels dropped 20% in people who started above 300 mg/dl, and about 4% in those under 200.

A small sidebar titled "Soy sources available," states that soy milk contains 4-10 gm of protein per 8 oz glass, tofu contains 8-13 gm per 4-ounce cube, and soy flour contains 10-13 gm of protein per ounce. It is also used in a range of products from burgers to baked goods, according to John Erdman Jr. of the University of Illinois.

6882. Hamlin, Suzanne. 1995. Do you speak tofu or miso yet? *New York Times.* Aug. 9. p. C2. Living section. Wednesday. [1 ref]
• ***Summary:*** Tofu is a "spongy white block that is a major part of Asian diets... Asian restaurants have increased the popularity of tofu, which sustained much of the Woodstock generation. Still there is notable resistance to the chalky soybean derivative that is often called 'the cheese of Asia.'

Note. This is the earliest English-language document seen (April 2013) that uses the term "cheese of Asia" to refer to tofu.

"Johanna H. Dwyer, director of the Frances Stern Nutrition Center at the New England Medical Center Hospitals in Boston [Massachusetts], discovered this resistance during a four-year study on soy protein and estrogen levels in women. She couldn't find subjects that were willing to consume enough tofu to make the study valid." So she ended up using a concentrated soy protein in the study. Dr. Dwyer still feels that "tofu is a good part of a healthy diet, even if by itself it doesn't prove to be a magic bullet. And a good diet is one that is low in saturated fat, high in fiber, and rich in fruits and vegetables."

Each of the following common soybean products is defined: Soy milk, tofu, tempeh, miso, soy flour, textured soy protein.

6883. Demos, Steve. 1995. New developments at White Wave (Interview). *SoyaScan Notes.* Aug. 14. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** White Wave is working to take advantage of the huge amount of publicity about soy protein lowering blood cholesterol. He would like to develop soy-based nutraceuticals (a term Steve first heard from Jeffrey Bland several years ago; the new food medicine) or dietary supplements as a sort of bridge to motivate people to move toward healthy foods. The only two motivators are fear and greed; he will use fear since soy is not glamorous enough to use greed. He has talked with FDA attorneys who have made it clear that under NLEA only dietary supplements can make nutritional claims. Yet the line between foods and dietary supplements is very unclear. It largely depends on how the product is positioned and marketed. Garlic is by far the best-selling supplement in the USA. Slim Fast is a dietary supplement. A soy yogurt or a fortified soymilk could also be positioned as a dietary supplement. Shurtleff's comments: Danger of excess protein intake, which is hard on kidneys and can leach calcium from bones (hypercalciuria). Most of the cholesterol-lowering effect of soy protein may be due to the phytoestrogens bonded to it, so we may want to focus on genistein rather than soy protein. Consider a small product like the lactobacillus drink sold in Japan. Sandoz's concept of selling nutrition not food.

Topic #2. Position on the World Wide Web. Steve's mission is to build brand equity. Paul Chasnoff has registered and "locked in" three positions on the World Wide Web:

Tofu.com, Soy.com, and WhiteWave.com. These give him control of the on-ramp to the web. It is very cheap and there are no protections at this time. He has just traded beads for Manhattan, for ownership of the key subject headings in the card catalog. If things change, there will probably be a grandfather clause to protect him.

His soymilk should be on the market in a gable-top caton in November. He has not yet proved marketability. He thinks he has found a manufacturer. Pacific Foods refused to sell him base. Protein Technologies International (PTI) is selling a consumer soymilk somewhere.

One big upcoming project is to launch a line entrees in five flavors. The center of the meal will be a starch (such as rice or noodles) with flavored protein over the top. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301. Phone: 303-443-3470.

6884. Dorsch, Alan. 1995. Information Resources, Inc. (IRI): The world's largest independent market research firm and supplier of scanner data, and their InfoScan database service (Interview). *SoyaScan Notes.* Aug. 16. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** IRI has been in business for about 15 years; 2-3 years ago they passed Nielsen to become the world's largest independent market research firm. Nielsen, which is IRI's only competitor, is owned by Dun & Bradstreet. The U.S. market for syndicated data services is roughly a $600 million a year market. IRI has about 55% of this market share, while Nielsen has about 45%. They collect scanner data from food, drug, mass, and convenience stores (c-stores). They supplement this with audit data in the stores that don't have scanning. Note: They do not cover natural/health food stores. Their food-related information comes only from scanner data. They develop categories (they now have about 250) and they process the data, and serve it up with software to consumer products goods companies–like Worthington, which has been a customer since 1992. Their customer use that information to measure their marketing programs, track trends, etc.

Information is available in two general formats: (1) Syndicated database and (2) a customized database. The customer is allowed extensive input in the way they set up a customized database. This database has 4 basic dimensions: Products, time periods, measures, and geographies. They have a structured hierarchy for their databases that is unique to IRI. The hierarchy starts at the category level, and gets more detailed the further you drill down. Looking at each one: (1) Product dimensions: Category (e.g. meat alternatives, soap). Type (e.g. refrigerated/frozen, shelf stable, hand soap, laundry soap, shower gels). Parent Co. (e.g. R.J. Reynolds). Vendor/child (e.g. Nabisco, subsidiary of Reynolds). Brand (e.g. Morningstar Farms). Then UPC (the lowest level on the hierarchy). If you are only interested in one specific product, you can drill right down to UPC and get trends on it. Any customer has potential access (if they pay for it) to information on all products in the industry–so they can do comparisons with key competitors. (2) Time periods: 4, 5, 12, 12, 13 weeks, quarterly, and annual. Data is typically available back 5 years. (3) Measures is all the different ways you can look at the data. There are hundreds of different measures but the basic five are: Tracking measures (e.g. dollar sales or volume sales), distribution measures (e.g. ACV = All Commodity Volume, so an 80% ACV distribution in a food store chain means that you have good penetration in that chain), velocity measures (e.g. sales per point of distribution, or sales million ACV; it tells you the strength of your penetration), pricing measures (e.g. average base price per unit on the retail shelf, or on display), promotion based measures (e.g. what percentage of the weekly volume is on display–like a temporary end cap or free-standing display). (4) Geographics: For each of basic store types (food, drug, mass, convenience stores, club stores), the following geographic breaks/breakdowns are available: Total USA, standard 8 geographic regions based on the U.S. Census (e.g. northeast, south central, west coast, etc.), 64 major markets (e.g. New York, Los Angeles), and key accounts (e.g., Safeway, A&P).

Each client negotiates what information they need. IRI has a contractual agreement to protect each customer's customized database and the way they look at data.

For its syndicated service, IRI has a category named "meat substitutes" There are two types: Refrigerated (= refrigerated and frozen) and shelf stable. Meat is also included in the refrigerated type, so a client can compare meat and meat substitutes. Another category is milk. One type is kefir/milk substitutes/soymilk.

How does IRI get its data? Every main chain in the USA scans and accumulates its own raw data from its cash registers. IRI has a relationship with each of these chains, and it gathers all this scanned data from the corporate headquarters. IRI often puts software and systems on site at the headquarters which allows the chain to read and use its own data. In some cases IRI has to pay for this data, while in other cases it is a barter agreement.

How much does it cost to get information from IRI? One report might cost $1,000. But to set up a custom database might cost $50,000 on up to $1,000,000. Once a company has their own database, they may be able to access it electronically whenever they want to.

IRI's product is named InfoScan, whether it is syndicated or customized. IRI also has Infoscan Census (based on every store in key accounts), Infoscan Panel. They also offer testing services (to set up a test market), MRA (marketing research analysis, with curves, pricing sensitivity, etc.) IRI also has a software division named IRI Software that has separate revenue.

All of these services are sample-based services. They use projection techniques to estimate the entire market.

SAMI (Selling Areas Marketing, Inc.), which was a company, no longer exists. In about 1989 or 1990 it was owned by Arbitron, and was in the process of going out of business. Arbitron focused on rating advertising penetration on radio and TV, and was a competitor of Nielsen (which did TV ratings). IRI did not buy SAMI per se; rather it bought 60-80 of SAMI's employee contracts (those these former SAMI employees went to work for IRI) and SAMI's client files and contracts. SAMI was slow to get into scanned data; IRI, which saw scanner data as the future, came on so fast that SAMI could not recover. Nielsen has always focused on audit data more than scanner data.

Retailers use their own scanner data extensively, as to do category management, track trends and sales of individual products.

Alan is now developing IRI's page on the World Wide Web. The URL is http://pages.prodigy.com/KY/ abdorsch/ abdorschinfores.html.

Update: 1997 April 24–"Over the course of the last two years, Category Management has moved from concept to buzzword to the point where it occupies a substantial part of every modern marketer's time and energy." There is now an "IRI University," where a full-day course on Category Management will be taught on June 18 in New York City. Address: Assoc. Director of Client Services, Information Resources, Inc., Chiquita Center, Suite 700, 240 East 50th St., Cincinnati, Ohio 45202. Phone: 513-357-8025.

6885. *South China Morning Post* (*Hong Kong*). 1995. Duties threaten beverage makers. Aug. 17. Business section. p. 2. Ed. 2.

• ***Summary:*** Winston Lo (chairman and managing director of Vitasoy International Holdings), is the newly appointed president of the Beverage Manufacturers Association of Hong Kong, the key lobby group which plans to confront the government over duties which it says discriminate against domestic beer brewers. These fees are not levied against imported beers. Mr. Lo said a variety of problems had brought about a slowdown in the growth of the overall domestic beverage market; 1994 was the first year in which the industry experienced no year-on-year growth, based on total combined sales of carbonated and non-carbonated beverages, beer, and milk.

6886. Cunningham, Dusty. 1995. Recent developments at Pacific ProSoya in Vancouver, Canada (Interview). *SoyaScan Notes.* Aug. 23. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** On Aug. 14 the company made its first successful batch of soymilk. They are presently selling only bulk soymilk. Since a spray drying operation is located nearby, they would like to offer spray-dried soymilk as well. They are selling bulk soymilk to three different companies in British Columbia which are each developing different non-dairy products: One is developing soy ice creams, the second soy yogurts, and the third soy puddings.

She just had a visitor to the plant from a big distributing company in France. He was comparing their soymilk with French brands. Address: Vice-President Marketing, Pacific ProSoya Foods Inc., 312-19262 60th Ave., Surrey (Vancouver), BC V3S 8E5, Canada. Phone: 604-532-8030.

6887. Guy, Camille. 1995. Growth disorders reopen soy debate: Parents who fed their babies soy formula are asking questions about growth problems the children are now suffering. *New Zealand Herald–Weekend Magazine.* Aug. 26. Section 8. p. 6. Saturday.

• ***Summary:*** 11 weeks, mother's milk was supplemented with soy formula, which Sarah continued to drink until she was 5.

"Sarah's childhood was not an easy ride. At 18 months she broke her femur. She was troubled by eczema and asthma.

"More puzzling was the way Sarah's face developed an abnormal flush at about six months. Later dark rings formed under her eyes.

"Sarah's parents took comfort from their daughter's growth rate, which was just fine. But at 12 Sarah suddenly stopped growing–except for her breasts. She is now seeking breast-reduction surgery.

"Sarah's bones sometimes ache and are easily dislocated. She has had abnormal hair growth, and recently hair loss.

"Sarah's periods have never been regular and she has endured prolonged bleeding. She is under specialist medical care, but doctors can offer no satisfactory explanation for Sarah's disorders.

"Sarah's mother felt driven to tell her daughter's story when she read a *New Zealand Herald* feature article in June on natural toxins in soybeans. ["Soybean campaigner turns up the heat," June 15]. We reported that four New Zealand scientists have persistently urged our Ministry of Health to stop general sales of soy infant formula.

"Professor Cliff Irvine, Dr Mike Fitzpatrick, Dr David Woodhams and Dr Iain Robertson all believe scientific understandings about the toxins particularly the phytoestrogens (isoflavones), found in soy products, and especially in soy infant formula, indicate possible long-term ill-effects.

"But the ministry is reluctant to act until 'researchers give us a more definitive steer.' And the soy industry continues to express confidence in its products. In the *Herald* article, Dr. Gregory Rough of the Wyeth pharmaceutical company said that babies had used soy formula for 25 years without adverse reports.

"The comment prompted several *Herald* readers to offer their own stories. They say they fed their babies soy formula, back in the days when that was unusual–one couple even

importing the product by the case-load because it was not locally available.

Those soy-fed children are now teens or adults, and their parents voice concerns about their development. Those with sons report hyperactivity, learning difficulties, limited concentration and genital abnormalities. One mother says her son became extremely self-conscious about his pointed nipples.

"Parents with daughters speak of arrested development, learning difficulties, delayed puberty, bleeding disorders, ovary disorders, and difficulties with brittle bones, yellowed teeth and retention of baby teeth. One woman developed one breast two years before the other one grew.

"Nobody claims that soy caused these problems. The long-term studies to determine whether there could be any connection have not been done. But the parents the *Herald* spoke to are so struck by the resemblance between reported isoflavone effects on animals, and the disorders they are noticing in their children, that they are asking for urgent investigation. They want to rule out the possibility that feeding their babies soy formula contributed to their present problems."

A nutrition conference will be held at the Auckland University Medical School next week. Some eminent overseas scientists (including Dr. Kenneth Setchell from Cincinnati [Ohio], and Dr. Patricia Whitten from Emory University in Georgia) plan to attend the session on phytoestrogens.

6888. Guy, Camille. 1995. Nutrition experts argue over possible risks or benefits of feeding infants soy formula. *New Zealand Herald.* Aug. 30.

• ***Summary:*** At the joint Australia and New Zealand nutrition conference being held at the Auckland Medical School this weekend, nutrition scientists failed to agree on the possible risks of feeding babies soy infant formula.

Dr. Ian Robertson, a senior lecturer in toxicology at the school, "told the conference that he believed the 800 to 1,600 New Zealand babies put on soy formula each year receive three to six times the dose of phytoestrogens shown to lengthen the menstrual cycles of women consuming a small amount of soy food."

6889. Blank, Christine. 1995. Organic soy products: Industry remains optimistic. *Organic Food Business News* (*Altamonte Springs, Florida*) 7(8):5-7. Aug.

• ***Summary:*** "Even though Japanese demand for organic soy is falling this year," new studies proclaiming the health benefits of soy products have sparked optimism among manufacturers for higher sales in the near future. Supply of organic soybeans is now greater than demand as the Japanese, who have been willing to pay premiums for organic soybeans during the past two years, have lost interest.

Terry Tanaka, executive director of Nichii Company of America, Inc. (Jefferson, Iowa) exports 95% of its organic soybean flakes to its parent company in Japan. Tanaka had been planning to ship 140 tons/month of flakes to Japan, but is now shipping only 50 tons/month, due to sagging consumer interest. The company sends its flakes by rail to Seattle, Washington, whence they travel by cargo ship to Japan.

David Singsank is co-owner of American Health and Nutrition in Ann Arbor, Michigan. His company is now selling an organic soy protein product named Manna to wholesalers for use in bulk bins in co-ops and natural food stores. It has a chewy texture and will cost wholesalers $0.75 to $0.90/lb.

When prices skyrocketed last year, some soyfood manufacturers had to raise prices or discontinue products. For example, White Wave in Boulder, Colorado, started using commercial (non-organic) soybeans in two of its products that had been organic last season. Now the company is reported to have switched back to organic ingredients when many of its customers complained. White Wave is said to use at least 95% organic ingredients in its soy products, including tofu, soymilk, and tempeh.

New contract prices are about $14/bushel FOB for cleaned clear hilum soybeans and $19/bushel FOB for Vinton. OCIA (president Tom Harding) is the main certifier of organic soybeans; others include Farm Verified Organic (FVO), Oregon Tilth, and Quality Assurance International. Reciprocity is a major issue for soyfoods manufacturers.

Jan Remak, vice president of marketing at Vitasoy (Brisbane, California) says that Vitasoy soymilk is sold in some major supermarket chains, such as Kroger, Fred Meyer, Lucky, and Ralph's. Address: Staff writer.

6890. Blank, Dennis. 1995. Street talk [Bill Bolduc]. *Organic Food Business News* (*Altamonte Springs, Florida*) 7(8):3. Aug.

• ***Summary:*** The last issue of this newsletter reported on the financial difficulties of Bill Bolduc, who is said to have had an outstanding debt of $200,000, owned mostly to growers of organic soybeans in the Yellow Springs, Ohio, area, where Bolduc had set up Organic Processing Corp. His company is now no longer licensed by OCIA and state agricultural officials are investigating.

Bolduc told the newsletter that he has no immediate plans to pay off his debt, but he does plan to offer them shares of stock in his company. He now lives at 4015 Cherry Street, Cincinnati, Ohio 45222. Phone: 513-533-9302. The farmers are upset that they have not been paid. Address: Publisher-Editor.

6891. Orthoefer, Frank T.; Liu, Keshun. 1995. Soybeans for food uses. *International Food Marketing & Technology* (*Germany*) 9(4):4-8. Aug. [5 ref]

• ***Summary:*** Contents: Introduction. Traditional soy foods: Soy milk, tofu, toasted whole soybeans and full-fat soy flour ("The toasted flour is often used in rice recipes or for the preparation of flavored bakery snacks. The toasted powder may be mixed with plastic fats and sugar to be used as a filling for confectionery and bakery products"), soybean sprouts, yuba, soy sauce, tempeh, natto, miso. Soy protein ingredients: Soy grits and flour, soy protein concentrates, soy protein isolates. Soy nutrition: Soy protein, fat and calories, phytochemicals. Food bean market. Summary.

Two "different types of soybeans have emerged: oil beans and food beans. This is particularly true in the US soy market..."

Of the fourteen phytochemicals, seven are present in soybeans. These seven are phytates, isoflavones, carotenoids, coumarins, triterpenes, lignans, and phenolic acids. Phytochemicals have been shown to affect human health as much as vitamins and minerals, and many of them have anti-cancer properties. The discovery of phytochemicals may change how the nutritional value of food is assessed.

The world market for soybeans for food use is estimated at about 1 million metric tons (tonnes). In Japan alone about 830,000 tonnes are made into soyfoods as shown in a pie chart as follows: Tofu (552,000 tonnes, 63.4%), miso (180,000 tonnes, 21.5%), natto (90,000 tonnes, 10.7%), soymilk (10,000 tonnes, 1.2%), soy sauce (5,000 tonnes, 0.6%), and others (22,000 tonnes, 2.6%). In the USA the food bean market is estimated at 50,000 tonnes. Other major markets for food beans are in Korea, China, Taiwan, Hong Kong, Singapore, Malaysia, and Thailand. Food-grade soybeans can be sold by the growers at a premium of 5-20% above the base price. The demand for food beans is increasing steadily. Address: 1. Vice President, R&D, Riceland Foods, Stuttgart, Arkansas; 2. Project Leader, Soy Food Lab., Jacob Hartz Seed Co., Stuttgart, Arkansas.

6892. Stevens, Jane Ade; Stevens, Roger. ed. and comp. 1995. U.S. soyfoods directory. Lebanon, Indiana: Indiana Soybean Development Council. 31 p. 28 cm.
• ***Summary:*** This first edition of the directory contains more than 270 company listings. The cover is checkerboard red and white. Contents: Forward [sic, Foreword]. How to use the Soyfoods Directory (incl. Internet access). Soyfood descriptions (alphabetical): Edamame (Sweet beans), food use soybeans (whole soybeans), organically grown soybeans, isolated soy proteins, lecithins, meat analogs (meat alternatives), miso, natto, nondairy (soy) frozen desserts, okara, soy cheese & yogurt, soy flour & grits, soy grits, soy meal & flakes, soynuts, soyoil, soy protein concentrates, soy sauces (tamari, shoyu, teriyaki), soymilk, tempeh, textured soy proteins, tofu & products. Composition and nutrient content of soyfoods (large table, p. 7). Soybean products chart: From whole soybeans, from soybean meal, from soyoil and lecithin. Soyfood companies by product (products listed alphabetically).

Soyfood companies (alphabetical by company name; Each listing contains address, contact, phone, soy products, product names, distribution, to locate product, classification). Soyfood companies by state (alphabetical by state; California has by far the most). Professional associations and industry information resources. U.S. soybean facts. Soyfoods directory survey.

This directory's address on Internet's World Wide Web is http://www.in.net/soy. For more information or suggestions, call 1-800-275-7679. Address: Stevens & Associates, 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 1-800-275-7679.

6893. **Product Name:** Naturally Tofu Drinks, Tempeh Burger, Vegetarian Chili, Meatless Healthy Bologna, Vegetarian Sloppy Joe.
Manufacturer's Name: Wellwide International Ltd. (Importer).
Manufacturer's Address: Room 2905 Wah Yin House, Wah Kwai Estate, Hong Kong. Phone: 852/2549-1173.
Date of Introduction: 1995. August.
New Product–Documentation: Listing in '95-96 Soya Bluebook, p. 100. The company is an importer. Contact Della Leung, Director.

6894. Dinsdale, Mike. 1995. U.S. expert urges research on soy baby food risk. *Northern Advocate* (*Whangarei, New Zealand*). Sept. 6.
• ***Summary:*** Prof. Pat Whitten, an American reproductive expert, visited Whangarei couple Valerie and Richard James this week while in New Zealand for a symposium on the reproductive and developmental actions of dietary phytoestrogens. Ms. Whitten is from the reproductive ecology and environmental toxicology department of anthropology at Emory University in Atlanta, Georgia, USA. She noted that the levels of phytoestrogens in soy infant formulae are three to four times higher than what an adult would consume in soybeans–and that needs to be explored, ideally by an independent and impartial government-run inquiry. A photo shows Pat Whitten.

6895. Fleming, Donna. 1995. What are you feeding your baby? NZ health scandal. *New Zealand Woman's Weekly.* Sept. 11. p. 22-23. [1 ref]
• ***Summary:*** Tells the sad stories of three young women (Jenny, Sarah, and Denise) who were raised on soy-based infant formulae and later suffered serious health problems.

Much of the information in this article was published previously in "Growth disorders reopen soy debate," by Camille Guy (*New Zealand Herald–Weekend Magazine,* Aug. 26. Section 8, p. 6. Sat.).

6896. Archer Daniels Midland Co. 1995. Annual report. P.O.

Box 1470, Decatur, IL 62525. 42 p. Sept.

• ***Summary:*** Net sales and other operating income for 1995 (year ended June 30) were $12,671 million, up 11.4% from 1994. Net earnings for 1995 were $795.9 million, up 64.4% from 1994. Shareholders' equity (net worth) is $5,854 million, up 16% from 1994. Net earnings per common share: $1.47, up 65.2% from 1994. Number of shareholders: 34,385.

On the cover is an American flag and a photo of President John F. Kennedy with the famous quotation from his 1961 inaugural address, "Ask not what your country can do for you–ask what you can do for your country." ADM contributed $6.5 billion last year to America's balance of trade.

On page 3 are graphs showing rising global consumption of soybean meal and vegetable oils from 1964 to 2004, and lysine from 1975 to 2004. For lysine, the equivalent of ten more ADMs will be needed in the next 10 years, for vegetable oil 5 more ADMs, and for soybean meal one more ADM.

On pages 4-5 is a speech delivered by President Eisenhower in 1953 urging the USA to export more food and fewer weapons. Ike's program [Public Law 480 or Food for Peace] resulted in $50 billion in exports to needy countries from 1954 to 1994.

"While the whole of ADM's business can be divided into families of products and services, virtually all can be summarized in a single thought: value-added." ADM makes peanut oil at a mill in Augusta, Georgia. "Soybean oil: Our Europoort facility in the Netherlands remains the world's busiest soybean processor, while in the United Kingdom plans are underway to install a new state-of-the-art vegetable oil refinery and packaging plant at Erith [on the River Thames about 13 miles east of the center of London]. Crushing and refining operations are also being modernized in Hamburg, Germany. These terminals give us access to the three most important rivers in Europe–the Rhine, Elbe and Danube–all the way to the Black Sea" (p. 7).

ADM makes vitamin E from soybean oil distillate. With the completion of a new state-of-the art facility in Decatur, Illinois, ADM has begin to make distilled monoglycerides from soybeans (p. 9).

"BioProducts: ADM BioProducts traditionally introduces at least one new fermentation product each year: in the past year the newcomer was xanthan gum for both food and industrial applications. In 1996 ADM BioProducts expects to add ascorbic acid (vitamin C), astaxanthan and biotin to a lineup that includes monosodium glutamate, sorbitol, citric and lactic acids and their salts. ADM's vitamin C will be produced in a brand-new world-class facility in Decatur. Other products planned for the near future include penicillin, vitamin B-12 and beta-carotene.

"Amino acids for the feed industry remain a major focus of ADM BioProducts. Units to produce threonine and tryptophan are now in full production. This, along with our interest in a methionine plant, makes ADM the only company offering all four leading amino acids: lysine, methionine, tryptophan and threonine" (p. 13).

Isolated soy protein: Construction of increased isolate capacity has begun at Europoort (Netherlands) and in the USA. "Low nitrite ProFam 781 was successfully introduced into the European infant formula market during the past year. The Pacific Rim and former Soviet Union are growing markets for isolates." Harvest Burgers: "Since the beginning of our joint venture with Pillsbury 46 million Harvest Burgers have been sold under the Green Giant label... In Europe Harvest Burger products are now being carried by a German supermarket chain with over 2,300 stores. Another German firm is introducing a line of Harvest Burger frozen entrees that will eventually be marketed in seven EC countries" (p. 15).

"Other soy-based foods: Work is underway on a soy-based dry mix that is the nutritional equivalent of milk. This product would be distributed at little expense wherever starvation exists or powdered milk is too expensive. The product has a shelf life of over a year, requires no refrigeration and is made by adding water.

"A similar product is being developed as a milk alternative for North America. This flavored cholesterol-free product would be carried in the refrigerated dairy section of supermarkets and would appeal to the lactose-intolerant (31% of Americans) and other health-conscious consumers. A frozen dessert version of this product is also being developed. In the United Kingdom Haldane Foods offers the soy-based Vege Mince, Vege Bites, Vege Steaks, yogurt and 'pot noodles'" (p. 15). A full-page color photo (p. 14) shows rich soymilk being poured onto a bowl of cereal and fruits.

"Cogeneration is an efficient low-cost source of energy and steam and is the source of power for our seven largest plants in the U.S., the U.K., Ireland, Germany, and the Netherlands. Our cogeneration system is decades ahead of most U.S. technology, and offers substantial savings over traditional power sources. The key is ADM's fluidized bed technology which enables the cogeneration plants to run on an unusual mixture of high-sulfur coal, discarded tires and limestone" (p. 21).

"Note 11–Antitrust investigation and related litigation: The Company, along with a number of other domestic and foreign companies, is the subject of a grand jury investigation into possible related crimes in the food additives industry. The investigation is directed towards possible price-fixing with respect to lysine, citric acid and high fructose corn syrup. Neither the Company nor any director, officer or employee has been charged in connection with the investigation."

Stephen Yu, managing director of ADM Asia Pacific, Ltd. is unrelated to the Stephen Yu who was a tofu pioneer and founder of Victor Food Products, Ltd. (of Toronto,

Ontario, once Canada's largest tofu manufacturer). Address: Decatur, Illinois.

6897. Archer Daniels Midland Co. 1995. 95-96 food ingredient catalog. P.O. Box 1470, Decatur, IL 62525. 43 p.
• ***Summary:*** A quotation by David Brinkley on the cover states: "Farmers are the only indispensable people in this planet."

ADM Arkady (p. 8, Olathe, Kansas)–Wheat glutens: Provim ESP vital wheat gluten, Whetpro-75 vital wheat gluten, Whetpro-80 vital wheat gluten, SQ-48 meat emulsion binder, Meatbind-3000 meat emulsion binder.

ADM lecithin (p. 16-18). Basic types are: Standard lecithins (4 Yelkin products), Capsule grade lecithins (8 Capsulec products), Complexed lecithins (6 Beakin, 2 Performix, and 4 TLV products), Purified lecithin (Yelkin Gold). Modified lecithins (1 Yelkin and 4 Thermolec products), Deoiled lecithins (3 Yelkinol products).

ADM Milling (p. 21, Overland Park, Kansas). Do-Pep vital wheat gluten, Soy fortified bulgur, Soy fortified sorghum grits, Wheat soy blend.

ADM Packaged Oils–Refined packaged vegetable oils (p. 26-33): Soybean oil is used in many of these products. Product categories: Liquid shortening, salad oil, cube margarine, puff pastry, butter flavored oil, popcorn oil, cube shortening, butter blends and spreads.

ADM Protein Specialties (p. 34): Isolated soy proteins. Ardex D & Ardex D Dispersible, Ardex D-HD, Ardex DHV Dispersible, Ardex R, Ardex F & Ardex F Dispersible, Ardex FR.

Page 35: Pro Fam 646, Pro Fam 781, Pro Fam 970, Pro Fam 972, Pro Fam 974 & 974 Fortified, Pro Fam 981, Pro Fam 982, Pro Fam 985.

Page 36: Arcon (Soy protein concentrates): Arcon G, Arcon F, Arcon VF, Arcon S Fortified S. Arcon T (Textured soy protein concentrates): Arcon T & Fortified Arcon T. TVP (Textured vegetable protein): TVP & Fortified TVP, Bacon Bits. Nutrisoy flours/grits (defatted soy flour & grits): Nutrisoy defatted soy flakes, Toasted Nutrisoy grits, Nutrisoy 7B flour, Bakers Nutrisoy, Nutrisoy flour, Toasted Nutrisoy flour. Note: This is the earliest English-language document seen (Dec. 2007) that uses the term "Arcon T" to refer to textured soy protein concentrate. ADM says the product was introduced in Jan. 1989.

Page 37: Soylec (lecithinated) and refatted soy flours: Nutrisoy 220T, 15% refatted Bakers Nutrisoy, Soylec C-15, Soylec C-6, Soylec T-15. Soy Milk: WMR1 (whole milk extender), WMR4 (contains no lactose, cholesterol, or animal fats). Address: Decatur, Illinois.

6898. *Bluebook Update* (*Bar Harbor, Maine*). 1995. Bright future forecast for soyfoods: SAA study profiles shopper, provides demographics. 2(3):1, 4. July/Sept. [1 ref]
• ***Summary:*** The first truly in-depth analysis of the U.S. soyfoods consumer has been recently published, commissioned by the Soyfoods Association of America. The 125-page report, replete with tables and graphs, shows that nearly 15 million Americans are presently eating tofu, and 10 million are consuming soy burgers. The study details the uses of soyfoods, provides consumer demographics, and analyzes shopping patterns. Even among non-consumers of soyfoods, awareness is high. The majority of Americans have heard of at least one type of soyfood. The best known is tofu, available at nearly every supermarket in America, and recognized by 75% of those polled. Some 55% are familiar with soymilk and more than 50% have heard of soy burgers. Approximately 80% of soyfoods consumers say that they will continue to eat the same amount or more in the future–which looks bright.

6899. *Bluebook Update* (*Bar Harbor, Maine*). 1995. Clofine products certified organic. 2(3):2. July/Sept.
• ***Summary:*** Clofine Dairy & Food Products, Inc. of Linwood, New Jersey, manufactures full fat soymilk and tofu products which have been certified organic by Oregon Tilth Certified Organics. Clofine also produces low-fat spray-dried tofu and soymilk with both non-organic and organic soybeans. They will continue to provide kosher parve products in both lines. Richard Eluk is Clofine's vice-president.

6900. Fallon, Sally W.; Enig, Mary G. 1995. Soy products for dairy products? Not so fast. *Health Freedom Newsletter* (*Monrovia, California*) 14(5):12-20. Sept. [35 ref]
• ***Summary:*** Contents: Introduction. History of the bean. Fit for human consumption? Marketing the soybean? Processing denatures and dangers remain. Soy formula not the answer. Fabricated soy foods. Cancer preventing or cancer causing? Soy products are not complete. Only fermented soy products are safe. Another look at milk. Processing is the problem [that transforms healthy milk products into unhealthy ones]. Quality dairy products are available. Butter is a healthy food. Homemade formula best for babies. Contains two recipes for homemade formula: Milk based formula (based on unhomogenized raw organic milk plus lactose, cod liver oil, coconut oil, etc.). Milk free formula (based on 3½ cups of homemade broth, made from beef, lamb, chicken, or fish).

This article is written to scare people "who have turned to soy products as substitutes for dairy products," and to sing the praises of natural (fresh, raw, and organic) dairy products. It is loaded with so much incorrect information and false conclusions about soybeans and their alleged dangers to human health that one does not know where to begin in starting to refute them. To take just a few such statements: (1) "The Chinese did not eat the soybean as they did other pulses (legumes) such as the lentil, because the soybean contains large quantities of a number of harmful substances." Fact: The soybean, processed into a host of soyfoods using

simple technologies, has been the main legume consumed in China since ancient times. It has long been referred to as "The cow of China."

(2) Trypsin inhibitors in soybeans are "not completely deactivated during ordinary cooking and can produce serious gastric distress, reduced protein digestion and chronic deficiencies in amino acid uptake." Facts: The SoyaScan database contains 386 articles on trypsin inhibitors. When active, these proteins inhibit trypsin, a digestive proteolytic enzyme secreted by the pancreas, which helps us to digest proteins. Fortunately, trypsin inhibitors are almost completely deactivated by the typical cooking of soybeans to make soyfoods. There is no scientific evidence that the small percentage remaining has any adverse effects on human health, digestibility, or amino acid absorption. A considerable body of research, starting in the 1970s, shows that trypsin inhibitors have anti-cancer properties.

(3) "The soybean also contains hemaglutinin [sic, hemagglutinins], a clot promoting substance that causes red blood cells to clump together." Fact: Like trypsin inhibitors, hemagglutinins are inactivated by ordinary cooking and have been a non-issue in the scientific literature for at least 10 years.

(4) Soybeans are high in phytic acids or phytates, which can cause health problems. "Only a long period of fermentation will significantly reduce the phytate content of soybeans." "Oriental children who do not get enough meat and fish to counteract the effects of a high phytate diet, frequently suffer rickets, stunting and other growth... Parents would do well to ask their six-year old boys whether they would prefer to be six-foot-one or five-foot-seven when they grow up, before substituting tofu for eggs, meat, and dairy products." Fact: Phytates and phytic acid are a two-edged sword. They appear to inhibit mineral absorption by forming tight chelates with a variety of polyvalent metals such as calcium, zinc, and iron. By virtue of forming a unique iron chelate, they suppresses iron-catalyzed oxidative reactions and may serve a potent antioxidant function in the preservation of seeds. By the same mechanism, dietary phytic acid may lower the incidence of colonic cancer and protect against other inflammatory bowel diseases. Twelve records in the SoyaScan database show phytic acid to have anticancer activity. In addition, they are one source of dietary phosphorus in the soybean.

(5) Aluminum content of soy formula is 10 times greater than milk-based formula, and 100 times greater than unprocessed milk. Aluminum has a toxic effect on the kidneys of infants, and has been implicated as causing Alzheimer's in adults. Fact: Aluminium is the most abundant metal in the earth's surface. It is harmless to humans except for infants with kidney failure–who should not drink soymilk. There is no solid scientific evidence indicating that aluminum causes Alzheimer's disease; that theory, advocated by a few scientists 10 years ago, is no longer being pursued.

(6) Allergies to soy are almost as common as those to milk. Fact: Roughly 10 to 15 times as many infants are allergic to cow's milk compared to soymilk. Since 1910 soy-based infant formulas have saved the lives of many infants whose mothers could not breast feed and who were allergic to cow's milk

The authors conclude that only traditional fermented soy products such as miso, natto, and tempeh, are safe.

About the authors (autobiographical): Sally W. Fallon, M.A. lives in Washington, DC, with her husband and 4 children. A member of the Price Pottenger Nutrition Foundation Advisory Board, she is a regular contributor to their quarterly journal. Mary Enig, PhD, is an expert in the field of lipid chemistry who has conducted many studies on *trans* fatty acids. She is also well known for a career of anti-hydrogenation and anti-margarine research and writing, with funding from the dairy industry. A large percentage of America's margarine is made from soy oil.

Update: Printout of website named Mercola.com sent to Soyfoods Center by Sjon Welters of Cabot, Vermont. 1998. Nov. 6. The title of this 6-page website is "Avoid soy: Concerns regarding soybeans." On the last page we read: "The above information was abstracted from an article written by Sally Fallon and Mary Enig, PhD. (an international expert renown [sic] in the field of lipid chemistry) for Health Freedom News in September of 1995." Address: 1. M.A.; 2. PhD. Phone: 818-357-2181.

6901. Fitzpatrick, Mike. 1995. Soy warning (Letter to the editor). *New Zealand Herald.* Aug. or Sept. 12 or 21.
• ***Summary:*** "Sir,–It is unfortunate that concerns about soy formulas have had a negative impact on companies, such as Bean Supreme, that do not market infant foods. On this issue the Ministry of Health, via Dr Martin Edwards has stated it does not want to 'unduly damage an industry.' But which is the greater tragedy: a loss of confidence in soy products or a potential health risk to babies."

"The conclusion reached was no leap of logic; compounds that are proven hormone disrupters in adult women (not parrots, quail, fish, dogs, cats, cows, pigs, rats, mice or cheetahs–all of which incidentally, suffer hormone-related disorders when exposed to dietary soy phytoestrogens) are present in significant quantities in soy formulas." Address: PhD, Mt. Eden, analytical chemist.

6902. Lusas, Edmund W.; Rhee, Khee Choon. 1995. Soy protein processing and utilization. In: D.R. Erickson, ed. 1995. Practical Handbook of Soybean Processing and Utilization. Champaign, Illinois: American Oil Chemists' Society Press; St. Louis, Missouri: United Soybean Board. viii + 584 p. See p. 117-60. Chap. 8. [96 ref]
• ***Summary:*** Contents: Introduction and definitions: Types of products, history, analysis, handling of soybeans and soy protein products. Full-fat soy flours and grits: Enzyme-active

soy flours, toasted full-fat soy flours and grits, extruder-prepared full-fat soy flours. Extracted flake products: White flakes, defatted soy flours and grits, refatted or lecithinated soy flours, soy protein concentrates (aqueous alcohol process, acid leaching process, hot-water leaching process, product characteristics). Soy protein isolates (pH extraction-precipitation, separation by molecular weight, membrane processing, aqueous extraction processing, separation of intact protein bodies, enzyme-modified protein isolates, whipping proteins–3 types). Dietary fiber products: Soy cotyledon fiber, soy hulls. Texturized products: Spun and fiber-type products, extruder-texturized products. Applications of soy food proteins: Functionality, selection of soy protein preparations, meat applications (processed meats, restructured meats, pumped meats, extruder-texturized soy proteins), baking applications, dairy and beverage applications. Other soy products: Dried soy milks and tofus, nut-like soybean products (incl. soybean butter [sic, soynut butter]).

Figures: 8.1–Effect of atmospheric steaming on trypsin inhibitor activity and protein efficiency ratios of soybean meal fed to rats. 8.2–Relationship of urease activity to trypsin inhibitor. 8.3–Relationship of urease activity to Nitrogen Solubility Index. 8.4–Cross-section of interrupted-flight extruder used for production of toasted full-fat soy flour. 8.5–Flow diagram for making extrusion-cooked full-fat soy flour. 8.6–Dry extruder used for preparation of infant and child foods in developing countries. 8.7–Flow diagram for manufacture of full-fat and defatted soy flours. 8.8–Mill and air classifier system for commercial grinding of defatted soy flour. 8.9–Classifier mill system for commercial grinding of defatted soy flakes. 8.10–Flow diagram of soy protein concentrate production by aqueous alcohol extraction. 8.11–Extractability of proteins in defatted soybean meal as a function of pH. 8.12–Flow diagram for commercial preparation of soybean protein isolates. 8.13–Effects of pH on solubility of protein and phytate in defatted flour. 8.14–Susceptibility of 7S and 11S soy protein tractions of pH precipitate from solutions at low ionic strength (0.03M). 8.15–Simplified flow diagram for soybean protein isolation with UF and RO membranes. 8.16–Simplified flow diagram of the aqueous extraction process applied to soybeans. 8.17–Effects of pH on nitrogen solubility, 0.5% pepsin hydrolysis of 10% soybean flake slurry at 38ºC. 8.18–Preparation of enzyme-modified whipping proteins, via soy isolate intermediate process. 8.19–Preparation of enzyme-modified whipping proteins by direct hydrolysis of soy flakes. 8.20–Single-screw extruder used for making full-fat flours and texturized soy flours and concentrates. 8.21–Flow sheet of process for making texturized vegetable food protein.

Tables: 8.1–Typical compositions (%) of soy protein products (defatted flours and grits, protein concentrates, proteins isolates). 8.2–Carbohydrate constituents of dehulled defatted soybean flakes. 8.3–Processing and nutritional parameters of heat-treated soy flours. 8.4–Applications of defatted soy products in foods. 8.5–Approximate composition of soy protein concentrates made by three extraction processes. 8.6–Amino acid composition of soy protein concentrates, soy solubles, and soy flours. 8.7–Vitamin and mineral fortification requirements for USDA-FNS child feeding programs. (Note: FNS is USDA's Food & Nutrition Service). 8.8–Functional properties supplied by soy proteins. 8.9–Bakery applications of various soy proteins. 8.10–Composition of dried low-fat and full-fat soy milk and tofu sold domestically. Address: Food Protein Research and Development Center, Texas A&M Univ. System, College Station, Texas.

6903. Pemble, Louise. 1995. Jury is still out on side effects of soy formula. *New Zealand Doctor.* Sept.
• ***Summary:*** At a joint Australian and New Zealand science meeting, experts failed to agree on the risks of infant soy formulas. Visiting American nutrition expert Mark Messina, who was present, was not invited to speak despite his credentials as "a leading authority on soyfoods and cancer prevention." When he asked the panel why no studies have ever reported any adverse effects of soy consumption in humans, other speakers countered that no extensive studies of humans have ever been conducted.

Ian Robertson, senior lecturer in toxicology at the Auckland School of Medicine, advised parents to avoid soy formulas, even though no risk had been proven–because there is no evidence of their safety. He said that the risk is potential but avoidable, so why take it?

A sidebar titled "Soy advocates push hormone advantages" discusses the views of Dr. Mark Messina, who led a panel of nutrition experts in Auckland. Messina was former program director at the Diet and Cancer Branch of the U.S. National Cancer Institute. He conducted his doctoral research on the effects of cruciferous vegetables on colon cancer. He noted that in the USA soy is widely regarded as a health food, in contrast to New Zealand where it is now given negative coverage.

6904. *SoyaCow Newsletter* (*Ottawa, Canada*). 1995. SSP builds SC20 prototype in stainless steel in India. 4(3):2. July/Sept.
• ***Summary:*** "SSP in India completed building and testing the SC20 prototype system at its R&D facility near Delhi. Initial problems were resolved when Frank Dahler (President of ProSoya Inc.) visited the facility in late September." The parties involved have "signed a memorandum of understanding (MOU) that gives certain exclusive rights to SSP for the manufacture and marketing of SoyaCow equipment. Among other things the MOU provides for SP to pay royalties to Child Haven International and to provide partial support for the SoyaCow Centre in India.

"Child Haven and the SoyaCow Centre are dedicated to

humanitarian work mainly in India and Nepal.

"The SC20 system is capable of producing 15 litres of non-beany tasting soymilk every 20 to 30 minutes."

6905. SunRich. 1995. SunRich (Ad). *Soya Bluebook Plus* 1995-96. p. 59.

• ***Summary:*** This one-third page black-and-white ad lists three categories of products: (1) Identity preserved specialty soybeans and grains: IP corn; Food quality soybeans available for soymilk, tofu, tempeh, miso, natto, sprouts, and soy sauce; Shipments available in containers, rail or bulk barge.

(2) Soyamilk powders: Spray-dried soymilk and tofu; Soy/dairy milk.

(3) Sweet Beans: Frozen green soybeans; Podded (*edamame*) or peeled (*mukimame*).

* Certified organic soybeans & products available. Address: P.O. Box 128, Hope, Minnesota 56046. Phone: 1-800-342-6976 or 507-451-3316.

6906. **Product Name:** [Nutrisoya Tofu, Soymilk].
Foreign Name: Nutrisoya Tofu–Queso de Soya, Leche de Soya.
Manufacturer's Name: UFIESA–Division of Productos Nutrisoya.
Manufacturer's Address: Factory: Av. de los Restauradores No. 149. Office: C/33 No. 9 A, Villa Carmen Este, Santo Domingo, Dominican Republic. Phone: (809) 590-3418.
Date of Introduction: 1995. September.
Ingredients: Tofu: 100% leche de soya, vinagre y (Coagulante). Soymilk: Leche de soya, Edulcorante-Azucar crema, especias aromáticas naturales.
How Stored: Refrigerated.
New Product–Documentation: Note: These are the earliest commercial soy products seen in the Dominican Republic. Talk with (call from) Jose Fortunato in New York; he is the partner of Mr. Ubiera. 1997. Feb. 15. Mr. Ubiera wants to order some Spanish-language leaflets. He already has *The Book of Tofu,* which gave him the idea of making tofu in the Dominican Republic. They have been making and selling tofu in the Dominican Republic for about 2 years, starting in August 1995. They make tofu, soymilk, soy yogurt, and a soy salami (from tofu and gluten). Note: L.R. Ubiera, who was born on 20 Jan. 1955 in the Dominican Republic, started this company. He wrote a book titled *Tofu y leche de soya–Alimentos macrobiotics–naturales: Una guia practica para su manufactura en casa.* He also practices and teaches Hatha Yoga.

Letter and leaflets from Leonidas Radhames Ubiera, president of Ufiesa-Nutrisoya. 1997. Jan. 20. "Our company began to operate on September 1, 1995 without experience and too little equipment." Leaflet #1. Green and red on white. "Consuma productos Nutrisoya para su alimentacion una joya. 100% natural. Puros e integrales de soya. Tofu-queso. Leche, lista para tomar ("ready to consume"). Yogourt. Salami. Salichas. Hamburguesa. Chorizo." Leaflet #2. Red, blue, black, and yellow on white. "Productos Nutrisoya. Para su alimentacion una joya. 100% naturales. Recetario especial, platos de tofu (queso)." Gives 5 tofu recipes in Spanish.

Letter from Leonidas Radhames Ubiera. 1997. March 10. Gives the date that each of the company's products were introduced. Tofu and fresh soymilk were both introduced in Sept. 1995. All other products were introduced in 1996. UFIESA is an abbreviation/acronym for Ubiera & Fortunato Import-Export, S.A.

Labels for both products sent by Jose Fortunato. 1997. April 18. 3½ by 3 inches. Self adhesive. (1) Tofu: Blue, red, black, and yellow on white. (2) Soymilk: Light green, red, and black on white.

Note: This is the earliest known commercial soy product made in the Dominican Republic.

6907. Wilson, Lester A. 1995. Soy foods. In: D.R. Erickson, ed. 1995. Practical Handbook of Soybean Processing and Utilization. Champaign, Illinois: American Oil Chemists' Society Press; St. Louis, Missouri: United Soybean Board. viii + 584 p. See p. 428-59. Chap. 22. [41 ref]

• ***Summary:*** Contents: Introduction. Soybean chemical composition. Unfermented soy foods: Soymilk, tofu (momen, kinugoshi or silken, packed tofu, aseptically packaged tofu, deep-fried tofu, kori tofu or dried-frozen tofu), other nonfermented soy foods (yuba, kinako or roasted whole soybean flour, fresh {edamame} and canned soybeans, texturized soy protein-based foods). Fermented soy foods: Miso, shoyu (soy sauce), natto, tempeh, sufu. Japanese Agricultural Standards. Identity preservation and transportation. Soybean quality characteristics: Overview, judging quality (tofu, miso, natto). Note: This is the earliest English-language document seen (Nov. 2012) that contains the term "roasted whole soybean flour."

Tables: 1. Nonfermented soy food products and common names by country. 2. Fermented soy food products and common names by country. 3. Chemical composition of soy foods. 4. Per capita annual consumption of soybeans (kg) in selected Asian countries (China, Indonesia, Japan, Korea, Malaysia, Philippines, Thailand; for the years 1968, 1978, 1988, 1994).

Figures: 1. Flowchart of refrigerated and shelf-stable soymilk production. 2. JAS seal of approval. 3. Diagram of equipment used in large scale tofu production (each piece of equipment is numbered and labeled). 4. Flowchart of regular tofu production. 5. Graph showing percent transmittance of whey versus coagulant concentration for soymilks at 6% solids made from Weber, Vinton, and Amsoy soybeans. A concentration of 0.023 N was selected as the optimum coagulant concentration, since it gave the most transparent whey. 6. Graph showing percent transmittance

of whey versus coagulant concentration for Amsoy soymilk at concentrations of 4, 5, and 8% solids. Concentrations of 0.018N, 0.019N, and 0.035N, respectively, were selected as optimum coagulant concentrations. 7. Flowchart of kinugoshi (silken) tofu production. 8. Flowchart of packaged tofu production. 9. Flowchart of aseptically packaged tofu production. 10. Flowchart of kori (dried-frozen) tofu production. 11. Diagram of equipment used in large scale production of dried-frozen tofu (each piece of equipment is numbered and labeled). 12. Flowchart of miso production. 13. Diagram of the interactive factors producing the characteristic attributes of miso. 14. Flowchart of tempeh production. Address: Iowa State Univ., Ames, Iowa.

6908. Messina, Mark. 1995. Soy formula safety (Letter to the editor). *New Zealand Herald.* Oct. 15.
• ***Summary:*** "In his letter on the safety of soy formula, Dr. Fitzpatrick pointed out that manufacturers have long known their products contain phytoestrogens, yet studies involving infants and phytoestrogens have not been conducted. These statements are true but irrelevant.

"The issue is not the effects of the phytoestrogens but the effects of soy formula. In this regard, countless numbers of studies have been conducted during the past several decades and have concluded that soy formula is safe and promotes normal growth in infants.

"In addition, Dr. Fitzpatrick's use of the word 'toxins' in referring to certain compounds in soybeans is inaccurate and misleading. Phytate, one of these alleged 'toxins,' is widely present in plant foods and, in particular, in food grains" [such as wheat]. Address: PhD, Port Townsend, Washington.

6909. Jenkins, Suzi. 1995. The politics of soyfoods in San Bartolo, Guatemala (Interview). *SoyaScan Notes.* Oct. 21. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Alimentos San Bartolo now employs 6 people, 3 or 4 of whom have worked there for 15 years. The plant operates two days a week, Monday and Wednesday. About 65-75% of the products are sold to expatriates, and the remainder are sold to native Guatemalans. The approximate percentage of sales by product are as follows: Tofu 40%, soy ice cream 30%, tempeh 10%, soymilk 10%, soy flour atole (10%; pronounced ah-TOL), and whole soybeans 5%. Yet the soy flour atole probably earns the company more profit than any other product. It is made by roasting whole soybeans, then grinding them, and mixing about 3 parts of this roasted soy flour with 1 part of cornmeal. The product is sold as a dry mix in a plastic bag, and is served by adding several tablespoons to a cup of hot water, like traditional atole. It is expensive, costing about 2½ times as much as an equal weight of white wheat flour. People are willing to pay the price because they have learned that it is an excellent source of protein, and it tastes good. It is consumed by both infants and adults.

In about 1989 or 1990 the situation at the soy dairy in San Bartolo changed dramatically. Plenty Canada came in, took the keys to the building, and installed a new committee as the "board of directors in charge of the company. Then Plenty Canada pulled out and has never returned. Since that time the Dairy has received no outside funding. Local politics became a big part of the daily operations of the business, and there is now an ongoing political struggle. The leadership did not like the former employees and they continue to discriminate against them. Only one member of the workforce is on the committee." Elena and Agostine Xoquic are in pain. For example, Agostine is made to haul 50-100 lb of tofu and ice water on a long route that goes as far away as Guatemala City, changing buses many times, while the much younger and stronger new manager sits with his feet up on the table. The Dairy does not have its own vehicle.

Plenty USA has no control over the new committee. In addition, most of the people living in San Bartolo are jealous of the 6 people who work in the Soy Dairy, so for a number of years they have been boycotting the Dairy and its products. Suzi is inevitably associated with the old regime, even though she is very close to many people in the community. She has visited at least once a year, usually paying her own way, to check in and see how things are going. When she has worked there in recent years, it has usually been as a volunteer. This was one cause of the divorce process she is now in. She lived in Panajachel, an expatriate community about 15 minutes away by car; her daughter went to school there. She has no plans to go back there as a worker, though she would dearly love to if she could find a way to support herself.

She sees the next steps for the Dairy as trying to get the Guatemalan government to support use of the atole in the village school lunch program, and starting a restaurant in San Bartolo. She believes this basic concept or model could be duplicated and succeed elsewhere in Third World countries. She has had offers to go elsewhere in Guatemala, at good pay, to help start soy dairies. Address: 3967 South 900 E., Apt. 13, Salt Lake City, UT 84124. Phone: 801-268-2717.

6910. Yim, Sauw. 1995. Filter flaw gives milk bad taste [Vitasoy]. *South China Morning Post* (*Hong Kong*). Oct. 25. p. 6. Ed. 2.
• ***Summary:*** A "fault in one of the steam filters during production" was blamed yesterday for the unpleasant taste of some 250 ml paper-packed Vitasoy soya milk drinks, which forced the company to withdraw [not recall] an estimated 50,000 cartons. The faulty filter is suspected of causing "the chemicals and preservatives to react the wrong way" a spokesman said. "The affected drinks, including original Vitasoy, malt Vitasoy, melon Vitasoy, and Vita chocolate milk, would not harm consumers, he said. The Department of Health has taken samples for tests. Major supermarkets

withdrew the affected products. Vitasoy will replace them. The inquiry hotline is 2468 9645."

Note: This was the first of a series of articles about similar but increasingly worse problems for Vitasoy.

6911. Geriguis, David. 1995. What ever happened to Loma Linda Foods and Nutricia in Riverside, California? (Interview). *SoyaScan Notes.* Oct. 30. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** David's last name is pronounced GER-gus. He worked for Loma Linda Foods in 1989 when the company was sold to Nutricia. He remained with Nutricia, making infant formula at the plant in Riverside, California. The production continued for only a few months, then they had a major problem with the new equipment that was being developed, and they had a recall. It was a disaster. So in about October or November of 1990 Nutricia shut down the plant in Riverside.

Nutricia's plan at that point was to shut down the plant in Mt. Vernon, Ohio, and operate only in Riverside. But after the recall, the opposite happened. Nutricia spent more than $12 million revamping the plant in Ohio, then used it to start making various forms of i-Soyalac (from soy protein isolates) and Soyalac (from whole soybeans). The plant in Riverside went up for sale although Nutricia's sales and marketing departments remained in the office. In mid-1993 Nutricia decided to close their offices at the Riverside and move the rest of the company's operations to Mt. Vernon, Ohio. David left Nutricia in July 1993. Then later in 1993 Nutricia had another recall–and another disaster, which even drove down the stock price of Nutricia in the Netherlands. David thinks that Nutricia's management at headquarters in the Netherlands probably said "This American company is too dangerous for us. We'd better sell it." Nutricia then created a fictitious company named Mt. Vernon Foods to allow them to disassociate that company from the Nutricia. Several months later Nutricia began to negotiate with another venture capital group to buy Nutricia's American operations. These didn't work out so about a year later, in 1994, Nutricia sold Mt. Vernon Foods to Nestle/Carnation.

Nutricia is a good company, but they quickly learned that regulation (by the FDA) is much stricter in the USA than in Europe. In Holland they had 90% of the dairy-based infant formula market, and a significant market share in other European countries, but they made no soy-based products. So soy was a new experience for them. In addition they had quite a few problems getting FDA approval and clinical trails done correctly for their dairy-based formula in America. They planned to discontinue Loma Linda Soyalac, because according to their research, starting with whole soybeans caused nutritional problems in the infant formula (probably flatulence). Apparently Carnation followed through with this plan.

In early 1994 Nutricia sold their plant in Riverside to a company named Dasi (pronounced like the flower "Daisy"), which changed its name to Dasi-Linda. Dasi is a manufacturer of equipment for processing cow's milk, including UHT (ultra-high temperature) systems. Then they got into the actual processing of milk. Right now they are spending a lot of money revamping the former Loma Linda plant on Pierce Street in Riverside with the goal of making UHT dairy milk in aseptic cartons. Parmalat (a huge and very significant Italian food company that is the biggest user of Tetra Pak Aseptic packaging in the world) appears to be both a partner and a customer of Dasi-Linda, which talks about having contracts to package for Parmalat.

La Sierra University no longer owns the property on which the former Loma Linda building stands.

David is quite sure that Carnation introduced Follow-Up Soy before they purchased Mt. Vernon Foods.

Talk with Robert Madey, vice president for R&D of Dasi. 1996. Jan. 19 and 24. The information above concerning Dasi is correct. Dasi first signed a written agreement with Nutricia concerning the purchase of the Loma Linda food plant in Oct. 1993, and the deal was finalized in Sept. 1994. Dasi, which is headquartered in Rockville, Maryland, has several dairy milk processing plants of its own in the USA–one in Decatur, Alabama; it is a partner in another in Utah. The Parmalat plant in Michigan produces essentially all of the Parmalat milk in the USA; it is all sold unrefrigerated. Dasi all sells some of its systems overseas as well. Dasi is now in the process of converting all Parmalat plants worldwide to the use of Dasi equipment ("the Dasi process"). This is all equipment from the balance tank, including pre-heating, sterilizer, homogenizer, and up to but not including the packaging equipment. Address: Director of Industries, La Sierra Univ., 4700 Pierce St., Riverside, CA 92515. Phone: 909-785-2477.

6912. Abate, Gugsa; Gobezie, Abeba. 1995. Soybeans in Ethiopia: A review on historical background, production, and utilization. Paper presented at the Third Bi-Annual SoyAfrica Conference. 18 p. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by Aproma. [10 ref]

• ***Summary:*** Contents: Introduction. History of soybeans in Ethiopia. Soybean and its uses in the world: Soybean flour, soybean milk, soybean curd, protein concentrates, protein isolates, soybean oil, soy beverage, soybeans as a vegetable [green immature soybeans], other uses. Nutritional evaluation of soybean. Soybean production in Ethiopia. Climatic condition suitable for soybeans. Uses of soybeans in Ethiopia: Public sector, private sector. Agricultural potential of soybeans. Conclusion.

History in Ethiopia: The first records of soybeans in Ethiopia date back to the 1950s. The years 1956 to 1971 were a trial period for selecting promising varieties and suitable growing areas. During this period, different varieties were tested at the research stations of Debre Zeit, Jimma and

Kulumsa of the former Chilalo Agricultural Development Unit [CADU]. About 20 varieties have been introduced for testing from various parts of the world. In 1972 the Ethiopian Nutrition Institute (ENI) initiated a soybean multiplication program starting with imported seeds of different varieties. The seeds were grown under contract by local farmers. Yields were low due to late weeding and negligence in applying the recommended fertilizer. Finally in 1974 ENI, in collaboration with CADU, introduced soybeans to the local farm population. The aim of this program was to replace the soybean flour imported by ENI for Faffa production with flour made from locally grown soybeans, and to introduce this new bean into Ethiopian diets. A grower's manual was even published and distributed to local farmers. A number of recipes were also developed by ENI for use in the popularization of soybean. This activity started in 1972 and continued until mid-1995.

However, all the efforts made to multiply the soybean and bring it to the local people were discontinued because of low acceptability by the farming community. Presently, no community is producing soybean in Ethiopia. In 1974 IAR took over the basic soybean research program; since then it has remained as a research program. Nevertheless, during the early 1990s, the Faffa plant had an arrangement with settled farmers in Assosa to grow and supply soybeans. Also, Health Care Foods has a soybean supply program with private commercial growers. Most important, since 1978, soybean production on a relatively large scale has been undertaken by certain state farms in Ethiopia: Wollege, Gojam, Kaffa, Awassa, Shashemene, and Awash are the major sites of production in Bellessa. Today, there are only two state farms which produce soybeans. These are Wollega, and Gojam-Gonder Agricultural Development Farms. They supply raw soybeans to the Faffa Food Factory, Health Care Food Manufacturers, and Animal Food Processing Organizations of Kaliti, Akaki, Debre Zeit, and Nazareit. Table 2 (p. 8) shows the area and production of soybeans in Ethiopia from 1979-81 to 1992–however the units are unclear.

Today in Ethiopia, soybeans are used in both the public and private sectors. In the public sector, soybeans are used commercially in the manufacture of Faffa, a high-protein weaning food and famine-relief food. Faffa contains 53% wheat, 18% defatted soy flour, 10% chickpeas, 9% skim milk powder, 7% sugar, and 1% iodized salt, vitamins, and minerals. The Faffa Food Factory is the only big user of both imported and domestically produced soybeans. In addition to Faffa, this factory also makes different soy-based blended food products such as Dube, Cerifam, and Famix. Table 3 (p. 10) shows the production of each of these foods (in metric tons = tonnes) from 1988 to 1994. Faffa has decreased from 5,835 tonnes in 1988 to 1,520 tonnes in 1994. Dube has decreased from 5,937 tonnes to 1,109 tonnes. Cerifam has increased from 10.8 to 20.6 tonnes. Famix (which contains full-fat soy flour) has increased from 10.7 tonnes in 1993 to 3,906 tonnes in 1994.

Table 4 (p. 11) shows the factory's annual consumption of both defatted and full-fat soy flour from 1988 to 1994. Use of defatted soy flour (all imported from the Netherlands) decreased from 1,407 tonnes in 1988 to 376.8 tonnes in 1994. Consumption of full-fat soy flour (locally processed) increased from 0.1 tonnes in 1988 to 684.7 tonnes in 1994. The factory's maximum demand for soybean is estimated to be about 4,000 tonnes/year if it works at full capacity. ENI has developed recipes using soy flour in traditional Ethiopian dishes for the purpose of introducing soy to communities. These dishes are: Injera (fermented, flat pancake), wot & allichas (sauces served with injera), kitta (unleavened bread), dabbo (leavened bread), dabokolo (snack food), and porridge. At its experimental kitchen, ENI has also been testing soy milk and tofu, and the results have been disseminated to home agents to teach people in the communities how to make soymilk and tofu at home.

Private sector: With the advent of the New Economic Policy, private industries are now flourishing in every sector of the economy. A supplement producer named Health Care Food Manufacturers Pvt. Ltd. Co. began to use soybeans in 1993 in the form of full-fat soya flour in all of its supplementary food mixtures. Its production capacity is now 15 tonnes/shift. In Ethiopia, most people, especially members of the Ethiopian Orthodox Church, consume diets free of animal products during their fasting period. The total number of fasting days amounts to 110-150 days/year, but can reach 220 days for priests and monks. Thus soy-based meat and dairy alternatives can serve as good alternatives for these people while they are fasting. Ethiopia should encourage soybean production. Address: Ethiopian Health and Nutrition Research Inst., Addis Ababa, Ethiopia.

6913. Albertson, Ellen. 1995. Super soy: The newest miracle food. *Self.* Oct. p. 148-151, 204. [1 ref]

• ***Summary:*** The subtitle continues: "Okay. One more time. Scientists are telling us they've found the nutritional Holy Grail, a simple food that prevents heart disease and cancer. Do we believe them? Yes!"

"Soy may be so effective that it actually crosses the line from nutritional to medicinal."

This article begins with a summary of the meta-analysis by Dr. James Anderson published in the *New England Journal of Medicine* (3 Aug. 1995). It reported soy in the diet can significantly lower high cholesterol." It also notes that: (1) "Genistein, a powerful natural chemical unique to soy," may stop the growth of cancer cells. (2) The natural estrogens in soybeans may "help alleviate postmenopausal symptoms." In Japan, where soy is typically eaten daily, there is no word for "hot flashes."

Photos and definitions of various soyfood products are given: Tempeh, soy flour, tofu, textured vegetable protein, soy milk. A section titled "15 delicious ways to add soy to

your diet," gives serving suggestions for these and other soyfoods at breakfast, lunch, snack, and dinner.

A full-page table on p. 204 rates the best (B) and worst (W) of the following, with nutritional information, taste, texture, and comments: Hot dogs: B–Yves Veggie Cuisine Tofu Wieners. W–Soy Boy Right Dogs. Burgers: B–Boca Burger. W–Green Giant Harvest Burger. Sausage: Lightlife Lean Links Italian Sausage. W–Fantastic Foods Nature's Sausage. Bacon: B–Yves Veggie Cuisine Canadian Veggie Bacon. W–Lightlife Fakin' Bacon. Luncheon Meat: B–Yves Veggie Cuisine Deli Slices. W–Lightlife Smart Deli Thin Slices–Roast Turkey Style. Plain soy milk: B–Westbrae Natural WestSoy 1% fat. W–Edensoy Extra. Soy cheese: B–Sharon's Finest Cheddar Style TofuRella. W–Soymage Cheddar Style Cheese Alternative. Chili: B–Midland Harvest Chili Fixin's. W–Fantastic Foods Vegetarian Chili. Pizza: Nature's Hilights Rice Crust Pizza. W–Farm Foods Pizsoy Cheese Style. Frozen Dinners: B–Amy's Tofu Vegetable Lasagna. W–Hain Pure Foods Pepper Steak. Dessert: B–Living Lightly Chocolate Almond Non Dairy Frozen Dessert. W–White Wave Dairyless Vanilla "Yogurt."

6914. Barnard, Neal D. 1995. Natural defenses against chemicals. *Good Medicine* (*PCRM, Washington, DC*) 4(3):16-17. Fall. [10 ref]

• ***Summary:*** One of the most surprising discoveries of modern medicine is that enzymes in the liver "can take the most powerful and dangerous chemicals, and, in an instant, render them totally harmless and show them to the door." It takes certain foods to boost or activate these enzymes, which eliminate toxic chemicals in two steps. In phase 1, an enzyme in the liver cell grabs hold of a toxic molecule and attaches oxygen to it. In phase 2, a second enzyme hooks the toxic molecule onto a carrier molecule, such as glutathione, which carries it away via the urine or feces.

The key is to have plenty of phase 2 enzymes. According to Dr. Paul Talalay of Johns Hopkins University, one of the best sources natural chemicals that cause the liver cells create large amounts of these enzymes is broccoli and other cruciferous plants, such as white cabbage, Brussels sprouts, cauliflower, and kale. "Soybean products, such as tofu, tempeh, and soy milk, also contain natural compounds that stimulate your body to make more of these helpful phase 2 enzymes, which may be part of the reason why Asian countries have especially low cancer rates." Address: M.D.

6915. Bloyd-Peshkin, Sharon. 1995. A labor of love: A group of vegetarians has spent two dozen years trying to change the world one acre at a time. *Vegetarian Times.* Oct. p. 66-73, 75.

• ***Summary:*** The Farm is a back-to-the land vegetarian community located about 75 miles southwest of Nashville, Tennessee. They have "spent a quarter century quietly pursuing what have become major trends of the 1990s... In the food business they are on the forefront of healthful eating. They produce tofu, tempeh, and soymilk;... publish vegetarian cookbooks; and run a vegetarian mail-order business that sells hard-to-find vegetarian foods. They've been instrumental in introducing soyfoods to the United States, as well as using them to assist people in developing nations." Their experiment in communal living began in 1971, but they began to come together at Stephen Gaskin's Monday Night Class, a course in the Experimental College at San Francisco State University, where love, tolerance, and compassion were the main tenets. In 1969 Gaskin went on a speaking tour of liberal churches across the country and invited along any members of the class who cared to join him. Seven months and 7,000 miles later a caravan of 300 people in school buses returned to San Francisco. In 1971 the caravan again hit the road, bound for Tennessee. hey rented a tract of land in Lewis County, one of the poorest in the state, and began farming. Others could join if they agreed not to smoke cigarettes, drink alcohol, eat meat, use weapons, or be violent in any way. If they decided to stay, they had to turn over all of their money and property to the community bank–except for tools, musical instruments, and clothes. Now they were part of a community dedicated to living a spiritually meaningful life.

Several years later a 1,000 acre tract of land became available next door to the land the community was renting. They purchased it for $70/acre and began to build a village and a soy dairy. For the first 10 years they had no running water and only battery-powered lighting. Now 10,000 hippies a year came to visit, and some stayed. When 750 more acres of land adjacent to the original farm came on the market, the community quickly bought it.

"But the Farm members' mission was more than just to build a community: They wanted to save the world. With its own basic needs for food and shelter barely met, the Farm sent volunteers to help with disaster relief after an Alabama tornado in 1974. This was the beginning of Plenty, the Farm's charitable relief and development agency. When an earthquake hit Guatemala in 1976 [Feb. 4], Plenty sent a construction crew to help rebuild the homes of poor Mayans... They also found a strain of soybeans that thrived in the local soil, and helped build a soy dairy that still produces tofu, soymilk, and soy ice cream. After the experience in Guatemala, Plenty made soy technology a regular part of its strategy for assisting people in developing countries. Other relief agencies have followed Plenty's lead, discovering that raising soybeans for soyfoods is one of the surest routes out of starvation and into self-sufficiency."

In 1978, after a few years of terrible financial losses, the Farm decided to keep its agricultural operations small scale and organic. By 1980 the population of the Farm had risen to about 1,500 and resources were stretched thin. The population of the Farm began to decline. There was a shift from the idealism of the 1970s to the materialism of the 1980s. The grumbling and discontent escalated, as did

the Farm's debt of $1.2 million owed to local banks and merchants. In 1983, after much research and soul searching, the board decided the Farm should cease being a commune and become a cooperative instead. Members would still own the land in common but they would earn and spend their own money. "Food and medical care would no longer be free, and members would pay monthly dues in order to pay off the community's debt and maintain community property, such as roads and utilities. All adult members would ratify each year's budget and decide other major issues affecting the community.

"In the wake of this metamorphosis, known as the Changeover, more people left; by 1986 only 400 residents remained... Many of the people who left were bitter, feeling they had put everything into the community and were left with nothing." To pay its debts, the Farm sold off some of its communal assets, including Ice Bean, a nondairy ice cream. After 3 years, the Farm was debt free, and local businesses were thriving.

"The soy dairy, begun in order to feed thousands of hungry hippies, has been revived as the Farm Soy Company by founding residents Barbara and Tom Elliott, who today churn out 1,600 pounds of tofu and 10 to 15 gallons of soymilk daily with the help of two part-time employees and cleaning help from four teenagers. The Tempeh Lab, which pioneered U.S. production of this soyfood in 1974, is now owned by Cynthia Bates, who provides tempeh culture to individuals and businesses that make tempeh worldwide. Mushroompeople, owned by Frank Michaels," grows and sells shiitake mushrooms.

"The community's Book Publishing Company, which pays a staff of seven full-time and four part-time Farm members, has made these foods and vegetarian cooking accessible to the mainstream. The company also publishes information on midwifery and the nutritional aspects of a vegetarian diet. The Mail Order Catalog, owned by Cynthia and Bob Holzapfel, is a source of vegetarian foods that are difficult to obtain outside of major metropolitan areas."

Today the Farm owns its land outright and has about 185 residents, about half of them teenagers–who provide living proof that a vegan diet is healthy for children.

6916. *Good Medicine* (*PCRM, Washington, DC*). 1995. New vegetarian wave in Cuba. 4(3):18. Fall.
• ***Summary:*** Last year PCRM's Director of Preventive Medicine, Andrew Nicholson, presented lectures on the role of vegetarian diets in preventing breast cancer at a conference of Latin American surgeons. Soon he was asked to speak in Havana, Cuba, at Oncology '95, an international conference of 400 Latin American oncologists. In June 1995, in Cuba, together with Gilberto Fleites, M.D., Chief of General Surgery at the National Institute of Oncology, Dr. Nicholson launched the National Commission on Diet and Cancer to disseminate information on cancer prevention and vegetarian diets. One of the first tasks will be a 3-month study on how best to help individuals make the transition to vegan diets with locally produced foods.

"Dr. Nicholson received the Oncology '95 award for the best research on cancer prevention. His address to the conference was the subject of tremendous press interest, leading to appearances on five radio broadcasts, numerous tapings for future broadcast, and a lengthy television interview on the equivalent of the *Today Show.* Dr. Fleites also took the opportunity to shoot a Spanish-language video on vegetarian diets."

Production of cow's milk in Cuba has fallen to only 20% of 1989 levels, due to a lack of imported feed grains, and "15 of the nation's dairy factories have been converted to use soy products. Soy yogurt is now produced in every province of Cuba, and is routinely provided to 2½ million children and 1 million senior citizens at a ration of 2 liters per week. Twenty more dairies will make the conversion within the next few months. As the health risks of cow's milk products become more evident, the switch to soy will have benefits that are more than economic.

"Some Cubans continue to be concerned about decreased availability of meat and milk, despite their contribution to heart disease, cancer, and stroke. The new wave of interest in vegetarian diets could have a powerful effect on both dietary habits and health in Cuba."

6917. Mangels, Reed. 1995. Nutrition Hotline: Fortification of soy milk. *Vegetarian Journal* (*Baltimore, Maryland*). Sept/Oct. p. 2.
• ***Summary:*** Question: What are the sources of vitamin D and other added nutrients in the fortified soy and rice milks I've been seeing lately? Are any of these animal derived?

Answer: "The following companies state that their fortified beverages contain no animal-derived ingredients:" A long list of non-dairy products and their makers are given.

Four key nutrients associated with these beverages are calcium, vitamin D, Vitamin B-12, and riboflavin. A nice table (see next page) shows how these beverages compare with cow's milk. Address: PhD, R.D., Baltimore, Maryland.

6918. Osho, Sidi M. 1995. Developed soybean technologies for household small-scale and industrial levels. Paper presented at the Third Bi-Annual SoyAfrica Conference. 32 p. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by Aproma.
• ***Summary:*** Contents: Introduction. Soybean food options and technology: Use of soybean at house level, soybean beverages and ice cream, soybean based baby foods and breakfast cereals, weaning / baby food, extrusion cooking (IITA concept), other advantages of extrusion processing. Impact of soybean utilization project. Conclusion.

Tables: (1) Chemical composition of soy milk from seven milk processors: IITA, IAR&T, Jomatex, Tella Food

CALCIUM (milligrams in 1 cup)	
Sovex Better Than Milk? Caseinate Free Light	500
Health Valley Soy Moo	400
Sovex Better Than Milk? Caseinate Free	350
Pacific Ultra-Plus and Lite, Rice Dream Enriched, Solait, Westsoy Plus	300
Cow's Milk	**300**
Westbrae Natural Rice Drink	250
EdenSoy Extra, Westsoy Lowfat and Nonfat	200
Pacific Rice Fat Free and Lowfat	150
VITAMIN D (IU in 1 cup)	
Health Valley Soy Moo	400
Pacific Ultra-Plus, Lite, Rice Fat Free and Lowfat, Rice Dream Enriched	120
Westsoy Plus, Lowfat, and Nonfat, Westbrae Rice Drink	100
Cow's Milk	**100**
EdenSoy Extra	40
VITAMIN B-12 (micrograms per 1 cup)	
EdenSoy Extra	3.0
Cow's Milk	**0.9**
Sovex Better Than Milk? Caseinate Free	0.6
RIBOFLAVIN (milligrams per 1 cup)	
Pacific Ultra-Plus and Lite	0.5
Westbrae Natural Rice Drink	0.4
Cow's Milk	**0.3**

Industries, Mini Opic milk, Samalic Industries, Milk man, Deagbo Industries. The protein content ranges from 3.01% (Deagbo) to 4.99% (Milk man). (2) Proximate composition of some baby food manufactured by Nigerian companies. Those containing soy are Nutrend, Babeena, Golden Morn, Mama Joy, and Joy Vita; their average price in 1994 is 87 Naira. Non-soy (mostly imported) are SMA, Similac, Nan, and Nan; their average price is 192 Naira–more than twice as expensive. (3) Yield and quality of soy oil and affected by processing temperature. (4) Nutrient composition of selected soy flours from the extruder and the screw press. (5) Physico-chemical characteristics of crude, partially and fully refined soy oil.

(6) Forty nine soybean products that are being processed and marketed by companies in Nigeria (Feb. 1994): In Lagos: Lisabi Foods Soy custard, Smallette Sogi, Glaxo Nigeria "Babeena" baby food, Nestle Foods "Nutrend" baby food and "Golden Morn" breakfast food, Goodings Health Goods "Nutrela" texturized vegetable protein, Niger Dock Soymilk, Al-Bahamas Baba Ogi, Odichie Bakery Soybread, Buckingham Ltd. Mama Joy baby food. In Oyo: Milkman Soy milk, Deagbo Industries Soyvita (beverages), Tella Food Industries Soymilk.

(7) Summary of number of markets and retail sale outlets for soybean (seeds & flour) in Ibadan, Nigeria. Gives figures collected by IAR&T for January each year from 1987 (2 markets, 4 retailers, price 1.50 Naira/kg) to 1994 (64 markets, 1,017 retailers, price 20.00 Naira/kg) to 1994.

Abstract: "Protein deficiency is still a major problem in Africa particularly among the low income group. Soybean has tremendous potential for alleviating protein energy malnutrition in root crops / cereal based African diets via soybean based industries. This paper discusses the soybean technologies available for household, small scale, and industrial level."

In African diets, almost 60% of the proteins comes from cereal grains. Soybeans can be used in traditional recipes and foods in a wide variety of forms including whole soybeans, soymilk, tofu, soy splits (split soybeans), soy flour (raw and heat-treated), soy paste (cooked soybeans ground to a paste), soymilk residue (okara), etc. Traditional Nigerian dishes that were found to benefit from addition of soy are *moinmoin, akara, kuni, fufu, eba, etc.* Soy milk, soy yogurt, and soy ice cream have become readily acceptable and available in Nigerian markets.

"Conclusion: The future of soybean looks bright in Africa. With increasing demand and the increasing costs of protein foods, soybean offers one of the best solutions for improving human nutrition in Africa; particularly the problem of protein energy malnutrition. There is need for more research and training in the area of soybean processing and utilization." Address: Food Technologist and Coordinator, Soybean Utilization Project, International Inst. of Tropical Agriculture (IITA), Oyo Road, PMB 5320, Ibadan, Nigeria. Phone: 234 2 241 2626.

6919. Paine, Heather. 1995. Processing trends in Europe. Paper presented at the Third Bi-Annual SoyAfrica Conference. 14 p. + 11 p. of tables, charts, and graphs. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by

Aproma. [10 ref]
• ***Summary:*** Contents: Introduction. History and production. The benefits of soya: Nutrition, functional properties. Products & applications: oil-based products (soya bean oil, soya lecithin), soya protein products (full-fat soya flours, defatted soya flours, soya concentrates, soya isolates), soya fibre products (incl. soy bran), whole soybean products or soya foods (soya milk or drink, tofu, yuba, soya sauce, miso, tempeh, natto). Trends and problems: Growing market for soy protein ingredients, U.S. soyfoods market, soymilk sales, problems of quality and image and legislation. Address: Editor, Soyfoods, England.

6920. *Plenty Bulletin* (*Summertown, Tennessee*)**.** 1995. Why soy in Guatemala?–The history. 11(3):1, 3. Fall. [1 ref]
• ***Summary:*** In 1982 Plenty published "Plenty Integrated Soy Program Guatemala" from which this article is excerpted. Photos show: Suzi Jenkins serving soy ice cream from the soy dairy in Guatemala in 1980. Suzi Jenkins and Laurie Praskin handing out soy ice cream cones to Mayan kids near Solola, Guatemala, in 1980.

6921. Roberts, Justin J. 1995. Trends in soybean processing and utilization. Paper presented at the Third Bi-Annual SoyAfrica Conference. 43 unnumbered pages. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by Aproma.
• ***Summary:*** This paper consists entirely of graphics (prints of overhead transparencies showing many charts and tables).

Background with regards to soy products in general: Healthy and nutritious, protein rich with all essential amino acids, rich in fibre, rich in vitamins and minerals, low in sodium and potassium, cholesterol free and low in fat, probiotic.

Typical soy products available in the RSA [Republic of South Africa]: soybeans, untoasted full fat soya flour, toasted full fat soya flour, micro-milled soya flour (100 mesh), soya mince (coloured or uncoloured)–tvp, textured soya concentrate–tsc (red crumble frozen), uncoloured frozen (coloured and uncoloured frozen chunks), soya chunks (coloured and uncoloured), soya isolate (90% protein), soya concentrate (70% protein).

Typical soya applications in the RSA (many are listed).

Soyabeans (defatted flake products): Food uses, industrial uses of soya flour and grits, soyabean meal (feed uses, industrial uses), soy isolate (edible uses, industrial uses).

Soyabeans (natural full fat products): baked soyabeans, seed, soyabean sprouts, stock feeds. Full fat soya flour (8 uses), roasted soyabeans (8 uses), soyabean derivatives (soymilk, tofu, miso, tempeh, etc.).

Oil products: crude soyabean oil (glycerol, fatty acids, sterols {stigmasterol, sitosterol, tocopherol, hormones}), refined soyabean oil (edible uses {9 uses listed}, medicinals, technical [industrial] uses {12 uses listed}), soyabean lecithin (edible uses {emulsifying agent, nutritional, stabilizing agent, surface active agents, anti-spattering agents, pan grease}, technical [industrial] uses {9 uses are listed}).

Soy products (7 benefits listed). Typical soy products available in South Africa (18 are listed again). Soya applications (Baking industry {7 benefits listed}). Appropriate technology (8 examples). Research needs (12 needs). Soybean research in the Department of Food Science, University of Pretoria (12 areas of research). Modified Intsoy method of making soymilk (to reduce oligosaccharides and urease, lipoxygenase, and trypsin inhibitors). Small / micro and small to medium food enterprises (SMEs, problems and opportunities). Oligosaccharides are probiotic? (7 types of health promotion, 3 unknowns). Soya protein isolate by ultrafiltration (requires less water than usual isoelectric method). Future developments in the soya industry in RSA (turnkey soymilk plants, soy sprout mince, milk and flour, canned soybean products, okara in standard white or brown bread and/or biscuits, tofu).

Mopane or mopani from caterpillars / worms of *Gonimbrasia belina*. Address: Dep. of Food Science, Univ. of Pretoria, South Africa.

6922. United Soybean Board. 1995. The absolutely astounding supermarket soybean search. Chesterfield, Missouri: USB. 6 panels. 28 cm.
• ***Summary:*** This colorful, six-panel foldout contains a panoramic 4½-panel illustration of the inside of a modern supermarket. Each of the aisles and sections are marked. Additional signs show the many places that soy appears in the store.

The bottom half of the first page states: "Ever since the famous American chemist George Washington Carver began exploring the mysteries of this little legume near the turn of the century, the growth in food and technical uses for soybeans has been nothing short of astronomical. Today, every aisle of your local supermarket contains soybean products, and we're not just talking tofu. Take a look at the astounding number of products containing soybeans at the Super Duper Food Store in Anytown, USA."

A sidebar explains four symbols for marking foods made from whole soybeans (circle) or containing soy oil, soy lecithin, and soy protein or soybean meal. For example (moving from left to right): Margarine & spreads. Tofu. Tofu ice cream. Peanut butter (with soy oil). Desserts and Mixes (with soy oil). "Super Soy–Oh Boy" (Soymilk end display, by the case). Cooking oils. Mayonnaise, Salad dressing. New Chips Asoy! Sauces. A sign reading "Think soy." Soya Snax. Soy Joy (in the refrigerated drinks section).

One full page, titled "Believe It," gives a detailed alphabetical listing of 76 categories supermarket items that contain soy, and what type they contain. For example: "Cosmetics: Soybean oil. Crackers: Soybean oil, soybean

oil shortening. Croutons: Soybean oil. Diet drinks: Soybean oil, soy lecithin, soy protein isolate." Also included are: Soy sauce. Soy nuts. Tofu. Not mentioned: Miso. Soymilk. Meat alternatives. Address: 16305 Swingley Ridge Dr. #110, Chesterfield, Missouri 63017.

6923. United Soybean Board. 1995. Soybeans: How a little bean becomes an ingredient in thousands of products from margarine to tofu to chicken feed (Brochure). Chesterfield, Missouri: USB. 12 panels + poster. Each panel: 23 x 10 cm.
• ***Summary:*** This attractive color publication is folded so that the first 12 panels are a brochure. However when fully unfolded, a large color poster appears. The brochure notes: In 1992/93 the USA produced 51% of the world's soybeans. An early history of the soybean in the USA [full of errors]. America livestock (including poultry) consume about 22.5 million tons of soybean meal a year. How soybeans are grown. Composition of the soybean. Foods made from soybeans: Edamame, miso, natto, soy milk, soy sauce, tempeh, tofu or soybean curd, full fat flour. Photos (each incorrect) in the brochure show: "1904: The famous American chemist George Washington Carver discovers that soybeans are a valuable source of protein and oil. 1920s: Combines first used to harvest soybeans. 1922: First U.S. soybean processing plant opens. 1929: Soybean pioneer William J. Morse spends two years in China, gathering more than 10,000 soybean varieties for U.S. researchers to study. 1940: Henry Ford takes an ax to a Ford car body to demonstrate the strength of the soybean plastic he has developed."

The color poster (16 by 27 inches) is a cartoon showing how soybeans are processed into various products, including full fat flakes, crude and degummed soybean oil, soy concentrates, soy isolates, soy flours, and defatted soy flakes. A soybean utilization/processing diagram at the bottom of the poster shows 137 different products that can be made from the soybean, including 33 whole soybean products ("Traditional soyfoods" incl. tofu, soymilk, miso, tempeh, soy sauce, natto), 33 soybean meal products (26 edible uses + 7 feed uses), and 71 soy oil products (13 edible uses, 19 industrial uses, and 18 applications for lecithin). The seven types of lecithin applications are: Emulsifying agent (4 applications), nutritional (medical use, dietary use), anti-spattering agent (in margarine manufacture), stabilizing agent (in shortening), anti-foam agent (yeast manufacture, alcohol manufacture), dispersing agent (in paint, ink, and rubber manufacture, and in insecticides), and wetting agent (in cosmetics, paint pigments, and calf milk replacers).

Accompanying the brochure/poster is a note pad with the same slogan across the top of each sheet: "Soybeans–Designed for life." Across the bottom is written: "United Soybean Board–Investing check-off dollars." Address: P.O. Box 419200, St. Louis, Missouri 63141-9200.

6924. Voisin, Jean-Luc. 1995. Dairy like soyfoods in Africa: Evolution & perspectives. Paper presented at the Third Bi-Annual SoyAfrica Conference. 5 p. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by Aproma.
• ***Summary:*** Contents: Foreword. The existing plants. Dairylike foods in Africa–The weak points: The soyfood itself, and the size of the project. The best "compromise": The end products, the size of the plant and investment. Feasibility of a soy yoghurt plant–an example. Conclusion.

During the last 20 years the author has spent most of his time in the study and establishment of more than 30 food processing plants for the private sector throughout Africa (mainly for the milk, fruit, and soya industries) from the smallest (US$100,000 investment) up to the biggest (more than US$15 million) on behalf of small European companies and multinationals. In 1987, while visiting dairy plants in Nigeria, he noticed that all but one had been forced to stop operations because of lack of powdered milk–whose price had quadrupled from $0.50/kg to $2.00/kg within a very short time. Today the price is about $3.00/kg.

At this time he realized that powdered soymilk could be used in place of powdered cow's milk, so he worked with a French company to design and manufacture a soya milk processing machine (named Agrolactor) which made 250 liters/hour of soymilk. They tried to promote this machine in Africa. The first one used commercially was installed in Nigeria in 1990; since then they have installed 7 other plants throughout Africa. The demand for soya processing is steadily increasing, however during the past 5 years these projects have faced many difficulties.

The seven existing plants (with the company name in parentheses) are: (1) 1989–Congo (Agricongo). This was the first project to use the Agrolactor. Agricongo used the machine for research and development. They sold it this year (1995) to a dairy plant in Brazzaville for soy yogurt production. (2) 1990–Lagos, Nigeria (Uncle Soyo): A private Indian investor. After 3 extensions and an aggressive marketing policy, this company was selling more than 300,000 units per day of soydrinks (pouches), soy yogurt, and ice cream. After very good results and profitability, the plant has now been moved to India. (3) 1992–Ivory Coast (Cebon): This plant had planned to process pineapple juice and soy drinks, but in the end only pineapple juice was commercially successful. (4) 1993–Burundi (Vispe): This Italian NGO is still working in Bujumbura, producing soy milk and baked goods. (5) 1994–Cape Verde (*República de Cabo Verde*) (Benali): A private company is producing soydrinks and fruit juices (from imported concentrate); today 80% is from fruit. Note: This is the earliest document seen (Aug. 2009) concerning soybeans in Cape Verde. This document contains the earliest date seen for soybeans in Cape Verde (1994) (one of two documents). The source of these soybeans was France (See Duchatel 1997). Even earlier, sometime between Sept. 1946 and 30 June 1960, the

Cape Verde Islands received 1 shipment of 2,007 lb of Multi-Purpose Food.

(6) 1995–Cairo, Egypt (Sesco): This private company, in a joint venture with Actimonde, is manufacturing soy yogurt. After 3 months of production the break-even point has already been reached (50% of normal capacity, i.e. 20,000 cups/day). (7) 1995–Nigeria: A second plant in Suleja (50 km from Abuja) was installed for a parastatal company; the soydrinks are expected to be launched this month.

The end products: European soyfoods companies are now very creative in research & development. During the last 2-3 years many new products, with better taste and packaging, have been introduced to European food stores, including supermarkets. The author estimates that the sales of the 7 French, Belgian, and Swiss soyfoods companies he knows have increased by approximately 30% every year since 1990! Four groups of products have been the most successful in Europe: 1. Soymilk, packaged in aseptic long-life cartons and sometimes mixed with flavors or fruit juice. 2. The dessert products–soy yogurt (Soyourt) and ice cream. 3. Tofu burger. 4. The dried products–biscuits and energy bars. For the African market, consumer taste tests conducted in 12 countries show that the most acceptable product is soy yogurt, which is very close to the traditional sour milk consumed by many African people. Dried products (energy bars) are also well accepted, and they are easily distributed and stored. Soymilk (whether flavored or plain) is not appreciated and tofu is too sophisticated at present.

In Africa, up until now, all of the soyfoods projects known by the author, have been developed on a relatively small scale with an investment of less than $1 million. Because this size plant involves too many problems, it is now believed that a plant with an investment of approximately $2 million represents the best compromise between production capacity, the market possibilities, profitability, and management capability. An example of the cost breakdown for a soy yogurt plant on this scale is given.

Conclusion: There is no doubt today that dairylike soyfoods are becoming one of the most interesting solutions to nutritional problems facing the growing populations of Africa. In order to realize this potential, the food industry must develop technologies and end products suites to the purchasing power and tastes of African consumers. Those products must be followed up by a strong marketing program. For the success of such medium- and small-scale commercial ventures, it is important that linkages be established between the private investors, NGO's, and International Organizations. Address: Food Engineer, Managing Director, Actimonde, International Business Park, Batiment Athena, 74160 Archamps, France. Phone: +33 50.31 56.40.

6925. **Product Name:** Soydrinks.
Manufacturer's Name: Zuma Foods.
Manufacturer's Address: Suleja, Nigeria.
Date of Introduction: 1995. October.
Ingredients: Soybeans, water, flavor, sugar, starter culture.
Wt/Vol., Packaging, Price: Plastic cup.
How Stored: Refrigerated.
New Product–Documentation: J.L. Voisin. 1995, Oct. 3-5. Dairy like soyfoods in Africa: Evolution & perspectives. Paper presented at the Third Bi-Annual SoyAfrica Conference. 5 p. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by Aproma. Actimonde of Archamps, France, installed an Agrolactor (soymilk processing plant) at this company in 1995. A second Agrolactor plant in Suleja, Nigeria, (50 km from Abuja) was installed for a parastatal company; the soydrinks are expected to be launched this month (Oct. 1995).

6926. Haren, Chuck. 1995. Soyfoods, Soynica, and Nutrem Soy Shop in Nicaragua (Interview). *SoyaScan Notes.* Nov. 8. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The Nutrem Soy Shop started making and selling small amounts of soyfoods in Managua, Nicaragua, in about June or July 1994. They are managed by *Soynica* (*Organizacion Soya de Nicaragua*), an organization of women working to improve the lot of children and women in the barrios of Managua by providing nutrition and health education and by supplementing the nutritional needs of more than 4,000 children and 500-600 pregnant and nursing mothers. Nutrem is in the process of introducing fresh soyfoods to the marketing sector in Managua. They are also teaching their people how to make these foods on a very small scale. Even when John Gabriel was working to prepare the shop for opening, his wife Charlotte was teaching women how to make tempeh. Plenty USA helped them obtain a grant from the InterAmerican Foundation, to purchase equipment for the plant and pay for people the first year; Chuck is sure this grant money has run out, but they may have had follow-up grants. There will be a big program there soon with Soynica as the center of it; the Belgians or the Austrians are going to fund it. It will include extruders (such as the InstaPro) to make dry products. Chuck thinks several more years will be required before Nutrem can stand on its own; less time would be required if they were just a food business, rather than an educational center with a broad program. The women of Soynica have been making and selling soyfood products for a long time, and helping different women in the barrios on a micro-business scale. Nutrem is an educational center as well as a small producer of foods.

Nutrem now makes small amounts of the following soy products: Tofu, tempeh, soymilk, soy ice cream, and okara croquettes (a mixture of okara, tofu, flour, herbs, and spices). John does not know how many people are employed by Nutrem; it is owned, managed and operated by women, though they may have some technical help from men.

Nutrem's soy products are sold at about 7 different very

small health food stores in Managua; some of these shops focus on herbs and one is macrobiotic. The products are consumed almost entirely by Nicaraguans, not by foreigners. Nutrem has started to sell a little tofu to hospitals. Some of the Soynica women take home soy products made at the shop and sell them in their neighborhoods. Some of these women have micro-businesses in their homes. They will make soyfoods at home with several neighbors in the morning, then sell these fresh in the neighborhood.

Luci Morren, a former Belgian nun, has long been a spearhead for the program. Plenty met her in Chiapas, Mexico, when the Guatemalans fled in the early 1980s. She has been in Nicaragua since about 1981. Casta, Chuck's wife, was the administrator of Soynica; Luci is now the vice president; she was the president. Soynica has a paid staff of about 25 women and a board of directors, which includes people from the Nicaragua National University, a woman judge, etc. Soynica is a group of people who were Sandinistas during the 1980s; they were trying to maintain good nutrition in the country and were teaching people how to use soybeans. Some people in the government didn't like this since the soybeans had to be imported from the USA, but when they started getting the soybeans from Mexico and Brazil, and showed the importance of their work, the government let them continue. Soynica was formed and registered in 1988-89 shortly before the election of Violetta Chamorro in Feb. 1990. Chuck estimates that Soynica has at least 500 members and volunteers. Their most important is *olla communales* or communal eating pots. While educating people in the barrios about nutrition and soyfoods, they organized local groups into which they selected the most needy children and pregnant and nursing mothers. Six mornings a week Soynica offers these people a nutrition supplementation program in the form of an extra meal from the communal pot. Some of the soyfoods made at Nutrem may go into these communal pots. Nicaragua's economy is in pretty bad shape.

Nutrem was not the first tofu shop in Nicaragua. Before Chuck arrived in Nicaragua in 1990, he thinks there was a small tofu shop at the Ben Linder house–or perhaps somewhere else. There is another group named Tonali (pronounced toe-nah-LEE), a women's cooperative which Chuck helped in starting to make soyfoods; they have a bakery in Managua where in about 1992 they started making and selling tofu and soymilk. They also used the okara in their breads.

For details, write Luci Morren, Soynica, ERP-05, Managua, Nicaragua. To phone Nicaragua, where the time is 2 hours later than California: 011 +505-2-73360. Address: 3625 South 1st St. #110, Austin, Texas 78704. Phone: 512-912-1429.

6927. Lang, Paul. 1995. Natural Products, Inc. in Grinnell, Iowa: History, products, and competition (Interview). *SoyaScan Notes.* Nov. 27 and 28. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Paul started making soy products in Grinnell, Iowa, in August 1995. His family, which owns a 3,000 acre farm there, also now owns this business. They hope to use it as a way of adding value to the soybeans they grow. They do not presently make the roasted soy fiber or the enzyme active soy fiber shown in their ad in *Soya Bluebook Plus.* These two products were basically unground soy hulls, and some bagel companies used them. Some American bakers buy soy hulls to add dietary fiber to their baked goods. He cannot begin to compete with Fibrim made by Ralston Purina. The oil crushers is his area are dumping semi loads of soy fiber on the market for about $0.05 to $0.08 per pound. Paul's family bought a Cargill animal feed mill in Grinnell; it was worth $700,000 (for just the buildings) but Cargill had abandoned it, so they were able to buy it for $52,000. Paul is very interested in identity-preserved soybeans and he has 34 different bins to keep each variety separate. He thinks the future of soyfoods lies in identity preservation. For example, he now uses a low-flatulence soybean to make his soy flour–and his is the only company doing this.

Clofine, located just outside of New York City, buys Paul's products (both enzyme active and inactive roasted whole soy flours) and re-sells them. They are almost like a broker. Using a patented process, Clofine slurries the enzyme active (raw) flour with water (probably hot water) then spray dries it, under high pressure through a small orifice. Ed Pedrick helped to develop this method. After that, Paul does not know how the product is processed, and how they get from soy flour to "spray-dried tofu." He does not know if any coagulant is added, and what is the justification for calling it tofu. He views it as simply a water-soluble soybean flour, with a low PDI. It will hold up in suspension when mixed with water to make soymilk. Paul also sells to Devansoy, where Mr. Pedrick now works full time and makes the same spray-dried product. Devansoy sells the product both under their own trademark and as a raw material for use by other food processors. Both Clofine and Devansoy sell these spray-dried products for about $1.35 per pound; they buy the flour from Paul for about $0.35/pound. If Paul developed a very finely ground soy flour, he could probably take away that market. They sell the roasted flour to bakers in New York City.

In terms of particle size, the smallest is flour, then meal, then grits, then granulers [he coined this phrase], then splits. The big crushers such as ADM and Cargill sell fairly coarse "grits." Generically, the grits go to bagel companies–and he does not know why. The granulers and splits are not presently being sold. His main products are the enzyme active full fat flour, and the lightly roasted inactivated full-fat flour. Paul is working closely with the American Institute of Baking (AIB). Paul also sees a huge potential export market. Address: Natural Products, Inc., 798 Hwy 6, Grinnell, Iowa

50112. Phone: 515-236-0852.

6928. Yuen, Ada. 1995. Vitasoy prepared for tougher second half. *South China Morning Post* (*Hong Kong*). Nov. 30. Business section. p. 2. Ed. 2.
• ***Summary:*** Vitasoy's turnover rose 14% from the same period last year to $750 million. Earnings per share stood at 13.3 cents, up 8.1% from last year. A dividend of 4 cents a share was paid, up 8% from last year. Sales of the distilled water, juice, and tea lines showed strong growth, but sales of soya milk products remained stagnant. Sales in North America, the company's second largest market, grew 9% to $128 million. Brand recognition from Hong Kong immigrants and strong demand for health foods contributed to the growth. Sales from the Shenzhen plant, of which Vitasoy owns 70%, grew 63%, partly because of the hot weather and the launch of a distribution network.

6929. Global Exchange. 1995. Soy Cubano! (Color videotape). San Francisco, California: Global Exchange. 30 minutes. Produced by Global Exchange and the Hisperian Foundation, and narrated by writer and activist Alice Walker.
• ***Summary:*** Discusses the food and medicine crisis in Cuba. Strongly suggests that most of the problem is caused by the U.S. embargo on Cuba. Address: Cuba Food and Medicine Campaign, c/o Global Exchange, 2017 Mission St., San Francisco, California 94110. Phone: 415-255-7296.

6930. Idowu, I.A.; Osho, Sidi. 1995. An update of soybean food technology generation and transfer problems in Nigeria: A review of experiences. Paper presented at Conference on Postharvest Technology and Commodity Marketing in West Africa. 8 p. Held 27 Nov.-1 Dec. 1995 at Accra, Ghana. [8 ref]
• ***Summary:*** Published in 1998 under the title "A review of experiences with soybean food technology generation and transfer in Nigeria," in Ferris, R.S.B., ed. 1998. *Postharvest Technology and Commodity Marketing in West Africa. Proceedings of a Conference...*

Contents: Introduction. Agricultural technology generation and transfer concepts. The issue of untapped human resources for technology generation and transfer. The prospects for soybean production in Nigeria. Processing and utilization of soybean. Utilization classes and forms of soybean products (fermented products such as soy-ogi or dawadawa, soy-milk, meat substitutes). Important points on soybean processing and utilization: Acceptability of soybean product, suitability of equipment, misinformation about soybean products, profitability. Improving the status of soybean production, processing, and utilization in Nigeria. Address: 1. Coordinator, lecturer of the Dep. of Agricultural Extension and Rural Development, Univ. of Agriculture, Abeokuta, Nigeria and Socio-Economic Consultant on the IDRC/IITA Soybean Utilization Project; 2. Food Technologist, Grain Legumes Improvement Programme, IITA, Ibadan, Nigeria and Coordinator, IDRC/IITA Soybean Utilization Project.

6931. LaBarr, Connie. 1995. Soy info (Leaflet). Lincoln, Nebraska. 2 panels each side. Each panel: 28 x 21.5 cm. [1 ref]
• ***Summary:*** This leaflet was sent to people who called 1-800-Soy-Info. Contents: Whole soybean facts. Texturized soy protein. Soy protein isolates. Soymilk facts. Soy flour facts. Recipes: Tofu dip. South of the border enchiladas (with tofu). Alfredo pasta sauce (with soft tofu). Easy microwave lasagna (with ground beef and lite soft tofu). Key West cooler (with silken tofu). Nutritional composition of the following is given: Whole soybeans, textured soy protein, soy isolates, soy milk, and soy flour. Address: 1610 S. 70th Street, Suite 200, Lincoln, Nebraska 68506-1565. Phone: 1-800-SOY-INFO.

6932. Melina, Vesanto; Davis, Brenda; Harrison, Victoria. 1995. Becoming vegetarian: A complete guide to adopting a healthy vegetarian diet. Summertown, Tennessee: The Book Publishing Co. x + 262 p. Foreword by Suzanne Havala. Index. 26 cm. [20 ref]
• ***Summary:*** An excellent vegetarian and vegan sourcebook and cookbook by three registered dietitians. Contents: Acknowledgements. Foreword. Introduction. 1. What is a vegetarian? 2. The evidence is in. 3. Without meat–exploding the myths. 4. Without dairy products. 5. Veganism: More food for thought. 6. Fats and oils: A balancing act. 7. Fiber: The gift from plants. 8. The vegetarian food guide: Putting it all together. 9. Vegetarian nutrition in the growing years. 10. Vegetarian diplomacy. 11. From market to meals. 12. Recipes: Simple treasures. Appendixes: 1. Glossary. 2. Nutrition recommendations.

This book contains a wealth of accurate, positive information about many different types of soyfoods (especially tofu) and related subjects, including tofu, soymilk, tempeh, miso, soy yogurt, soy cheese, soy sauce, tamari, and soy oil (incl. omega-3 fatty acids). Plus wheat gluten, seitan, rice milk, sea vegetables, adzuki beans (p. 66, 162), quinoa, amaranth, macrobiotics, phytochemicals, plant estrogens found in tofu and other soy products (p. 75; they may contribute to positive calcium balance and have a protective effect on the bone health of Chinese and Japanese women), dietary fiber.

Talk with Vesanto Melina. 1996. July 22. This book was originally published in Canada in May 1994 by Macmillan Canada in Toronto. A revised U.S. edition was published in Nov. 1995 by The Book Publishing Co. in Summertown, Tennessee. Address: Canada.

6933. **Product Name:** SoyaDeli PeptiPro.
Manufacturer's Name: Miwon Co. Ltd.

Manufacturer's Address: 720 Banghak-Dong, Dobong-Ku, Seoul 132-020, Korea. Phone: +82 2 992 1191.
Date of Introduction: 1995. November.
Ingredients: Incl. soy protein isolate.
How Stored: Shelf stable.
New Product–Documentation: Soyafoods (ASA, Europe). 1996. Spring. p. 6. "New soya products at FiE '95." This product, exhibited at the Food Ingredients Europe Exhibition, is a soy protein hydrolysate made by enzymatic treatment of soy protein isolate. It consists mainly of oligopeptides and amino acids. It is claimed to have good solubility and organoleptic properties over a broad pH range. It can reduce the allergenicity and accelerate the absorption rate of the nitrogen source. As a protein supplement it can be used in nutritional foods and drinks, infant formulas, sports drinks, and enteral feeding products.

6934. **Product Name:** Bulk Soymilk.
Manufacturer's Name: Pacific ProSoya Foods Inc.
Manufacturer's Address: 312–19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: (604) 532-8030.
Date of Introduction: 1995. November.
New Product–Documentation: Talk with Raj Gupta and Frank Daller of ProSoya in Ottawa, Ontario, Canada. 1995. Nov. 21. Their West Coast licensee, a new entity in Vancouver, British Columbia, named Pacific ProSoya Foods Inc., has acquired the license to produce soymilk in bulk, using ProSoya technology, for the western part of Canada and the northwest USA. The milk, made in a plant which ProSoya is building for them, will be sold to food processors. It is sort of a joint venture and licensing deal.

Talk with and letter (fax) Dusty Cunningham, Vice-President Marketing, Pacific ProSoya Foods Inc. 1995. July 5. The company expects to start making soymilk next week.

Talk with Dusty Cunningham. 1995. Aug. 23. Pacific ProSoya made its first successful batch of bulk soymilk on Aug. 14.

Talk with George Conquergood of International ProSoya Corporation (IPC). 1999. May 10. The plant in British Columbia (BC) was unable to produce quality bulk soymilk until the latter part of 1995. The soymilk Dusty talks about making on Aug. 14 was never sold. Pacific ProSoya Foods sent samples to dairies and various yogurt companies (Jersey Farms) and ice cream companies (Mario Gelato in BC) in Western Canada, but they weren't getting anywhere. These companies started looking at this soymilk as just a commodity, and not a unique product, and they kept asking for lower prices. By this time, Dairyworld and Sunrise were starting to finalize an agreement–as a result of an information leak from IPC to Peter Joe of Sunrise. Small amounts (about ten 55-gallon barrels/drums) of soymilk made in BC were first sold to Ted Nordquist of TAN Industries in about Nov. 1995. The first bulk shipment went to Ted in Jan. 1996. Then very small amounts of bulk soymilk was sold to Jersey Farms. Ted and Jersey Farms were the only two companies that bought this bulk soymilk. But this was not what ProSoya's plan called for. They were talking with Tom Reynolds and cow's milk dairies in eastern Canada. Tom and Frank were working with Neilson Dairy and Fieldfresh Farms. When IPC entered the scene in 1994, ProSoya was just starting to task with these people, but they had a whole business plan which Lorne Broten bought into. They were going to have packaged product with Neilson and Fieldfresh, and they were going to give us samples of this packaged product, which we, in turn, were supposed to introduce to Dairyworld–the big dairy on the West Coast. "When they saw the Neilson package, they were expected to fall all over us, and we would be selling them soymilk at the same price that Frank would be selling to the dairies in eastern Canada." But the plan didn't work out that way. First, ProSoya never got a firm deal in the east. Gelato Fresco got their own SoyaCow SC-20, and used it to make the first soymilk that ended up in their soy ice cream; later they bought some bulk soymilk (about 1,000 liters at a time) from the ProSoya plant in Ottawa, which also sent samples of soymilk to Neilson and Fieldfresh for testing–but they never marketed a commercial product. The only company that ever marketed a product–soy ice cream–using soymilk from the Ottawa plant was Gelato Fresco.

6935. Parr, Robert; Litser, Glyn. 1995. "What hath God wrought!" The Sanitarium Health Food Company story. Berkeley Vale, NSW, Australia: Sanitarium Health Food Co. 463 p. Nov. Illust. Index. 29 cm.
• ***Summary:*** This book is strong in describing the unfailing presence of the hand of God in Seventh-day Adventist health work, but short on a clear presentation of history. For example: Seventh-day Adventists were pioneers in the production of peanut butter worldwide. When did they start commercial production in Australia? Here is a brief chronology:

1897 Nov. 8–Edward C. Halsey first arrives in Sydney, Australia (p. 18 left column), from the USA, where he undoubtedly learned how to make peanut butter, probably at Battle Creek [Michigan].

1898 Jan. 28. Halsey roasted the first tray of peanuts–according to his diary (p. 19 left)–probably at the Melbourne plant.

1898 April 27–The first products of the infant company were Granose, Granola, and Caramel Cereal [grain coffee]. The names were registered on patents applied for on this date (p. 16 right).

Undated–There is no evidence of what they said as the first products were taken from the oven; "they were probably too busy with the next batch of Granola or the next tray of peanuts, to be roasted to make the first peanut butter ever made in Australia" (p. 19 right).

1899 May 29–The new factory at Cooranbong is

now "ready to allow Edward Halsey to commence his manufacturing Wizardry. His first product was Peanut Butter" (p. 27 right).

1899 July–The company begins to sell its first products at the Union Conference session held at Avondale. "During this conference he [Halsey] produced (and sold to the delegates) the first Granose Biscuits ever made in Australia" (p. 27 right)–but no peanut butter.

1899 Dec.–Halsey "had the following products off the production line and ready for customers: Granose, Granose flakes, Bromose, Nuttose, Antiseptic (charcoal) Tablets, Granola, Caramel Cereal, Nut Butter, Wheatmeal Biscuits, Gluten Biscuits and Gluten meal" (p. 27 right). If this "Nut Butter" was peanut butter (which seems likely) then Sanitarium Foods first made and sold peanut butter commercially in Australia in Dec. 1899. They probably sold it commercially in late May or early June 1899. However, the company may have made 6-12 months earlier, but the records are unclear. Address: Berkeley Vale, NSW, Australia.

6936. *Soyafoods* (*ASA, Europe*). 1995. GMO labelling for Vermont, USA. 6(3):3. Autumn.
• ***Summary:*** The state of Vermont has passed a law, which requires for the first time in America, any genetically engineered food product to be labeled as such on grocery and supermarket shelves. The law resulted from the controversy surrounding the synthetic hormone BST, a bovine growth hormone made by Monsanto and used to make cow's give more milk. Food industry groups hope to overturn Vermont's ban in court; they fear that drawing attention to a genetically engineered substance might unfairly stigmatize it. Note: This is the earliest document seen (March 2007) that uses the abbreviation "GMO" to refer to "genetically modified organism(s)."

6937. *University of California, Berkeley Wellness Letter.* 1995. Oy, soy: here comes the hype. 12(2):1-2. Nov.
• ***Summary:*** This is an excellent critique of the article by Dr. James Anderson on the ability of soy protein to lower blood cholesterol, published in the *New England Journal of Medicine* (3 Aug. 1995, p. 276-82). Some recent news reports would make you think that soy was a "magic bullet." However there is a danger it may go the way of oat bran. "Remember oat bran? The rise and fall of oat bran was a textbook case in how *not* to think about nutrition." Interestingly Dr. Anderson, an expert on fiber, was a leading proponent of oat bran in the 1980s and the author of a similar meta-analysis on oats.

In short, the Anderson study "found that substituting soy protein (in a wide variety of forms) for some or all animal protein resulted in an average drop of 9% in total blood cholesterol, and a 13% drop in LDL ("bad") cholesterol. There was no significant effect on HDL ("good") cholesterol, which is a plus, since HDL usually fall when the total number drops." But there were some serious problems in the study: (1) Anderson's analysis raises more questions than it answers. This is not new research, but rather a meta-analysis of previous studies on soy protein. The meta-analysis can be a powerful tool, however this one is flawed. The main problem is that the focus supposedly is soy *protein,* yet the 38 studies analyzed actually used a wide range of compounds: various kinds of isolated soy protein and textured soy protein. Some of the soy compounds were 95% protein, some much less. Some diets contained everything in the soybean, including fiber and certain potent phytochemicals, such as isoflavones.

"In other words, we still don't know if soy protein itself lowers cholesterol, as claimed." Part of the effect may be due to the soluble fiber, which is well known to lower blood cholesterol and is found in many plant foods besides soybeans. "What's needed is a study that feeds highly purified soy protein (just the amino acids) to humans–and it hasn't been done. Such a study, using rats, found that the isolated soy protein did *not* significantly lower cholesterol, compared to animal protein. In light of this, don't be surprised if next week the headlines read 'Soy protein does *not* lower cholesterol after all."

(2) Not everyone would benefit, even if soy protein does prove effective. Most of the reported drop in cholesterol (and LDL) occurred in people with very high levels (over 335 mg/dl), which dropped by 20% on the soy-based diet.

(3) A person would have to eat a lot of soy protein. The above results were obtained when people ate an average of 47 grams of soy protein a day. Eating only 25 gm a day cut the drop in half. One cup of soymilk has 4 to 10 gm of protein; 4 ounces of tofu has 8 to 13 gm; 3 ounces of soy burger contains 18 gm. So to get 47 gm of soy protein you would have to drink about 7 cups of soymilk or 1 pound of firm tofu.

(4) Adding soy to a poor diet won't do the trick. In nearly all the studies, soy protein replaced half or even all of the animal protein, which is usually high in fat and dietary cholesterol.

(5) Not all soy products are equally effective in lowering blood cholesterol. In addition, some contain lots of fat (albeit unsaturated) and calories. Some foods claiming to contain soy actually contain little of it. "Even those that contain the same amount of soy protein often have very different levels of fiber and/or other phytochemicals, and may have very different effects on cholesterol."

6938. *Vegetarian Times.* 1995. Can soy save Cuba? Nov. p. 25.
• ***Summary:*** A photo shows two Cuba girls drinking soymilk. The caption reads: "Soymilk is keeping Cuban children healthy." Address: Managing editor, Vegetarian Times.

6939. Vitasoy International Holdings Ltd. 1995. Interim

report 1995. New Territories, Hong Kong. 14 panels. Nov. 29. 21 cm. [Eng; Chi]
• ***Summary:*** For the six months ended 30 Sept. 1995, sales (turnover) were HK$750.2 million, up 14.4% over the same period last year. Operating profit was $77,370, up 9.5%. Earnings per share rose to 13.3 cents, up 8.1%. In Hong Kong, which contributed 70% of the group turnover, sales were up 14%, but sales of soymilk products in this market are stagnant.

In North America, the company's second biggest market, sales showed a 9% increase, to be in excess of HK$128 million. Sales of pasta and tofu were particularly strong. "This market benefits from the strong brand recognition among Hong Kong immigrants, an example being the strong sales increase of Traditional Vitasoy Soyamilk in Canada."

In China, the Shenzhen facility is now fully operational and this contributed to a robust sales increase of 63%. The Shenzhen has already started to make a small contribution to Group profits in its second year of operation.

See also article in the *South China Morning Post* (Hong Kong) of Nov. 30 (Business section, p. 2). Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

6940. Guy, Camille. 1995. Soy infant formula concerns to be aired at conference. *New Zealand Herald.* Dec. 4.
• ***Summary:*** "A Lincoln University scientist will present controversial New Zealand concerns about soy infant formula at a conference in the United States this week.

"Professor Cliff Irvine, a reproductive endocrinologist, has been invited by the United States Food and Drug Administration [FDA] to present a paper at its Arkansas conference on phytoestrogens.

"He will be accompanied by an Auckland analytical chemist, Dr Mike Fitzpatrick, whose findings indicate that soy infant formula and soy infant cereals contain plant estrogens at levels which may be harmful.

"This conclusion is vigorously contested by the soy industry.

"Professor Irvine will also present new findings on phytoestrogen levels in human breast milk, which do not support the soy industry's claim that breast milk also contains phytoestrogens.

"The Health Research Council last week awarded a $32,500 grant to Professor Irvine to look at the effects that soy infant formula has on the reproductive systems of male babies.

"He says this research is necessary because soy estrogens have been shown to affect normal sexual differentiation in the young of several species, with the damage not apparent until puberty. It is not known whether similar effects are found in humans.

"A Soy Information Network has been set up by Auckland scientists and parents."

6941. Bourelly, Thomas. 1995. Plans to start a soymilk plant in Haiti (Interview). *SoyaScan Notes.* Dec. 19. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Thomas is a native of Haiti who speaks fluent English and has been educated in the USA. He has undergraduate degrees in chemistry and biochemistry (from Illinois Institute of Technology), and an MBA. He has run several food companies in the USA. Now he is planning to return to Haiti where he will start a soymilk factory. He has already purchased the land.

Update. 1996. April 3. Thomas calls. He is still as interested as ever in this project, but cannot figure out how to get soymilk with a long shelf life that is not refrigerated and not too expensive.

Update. 1996. August 13. Thomas calls. He is getting ready to order a SoyaCow 400 liter/hour system from ProSoya in Canada. Two problems remain: (1) A type of packaging that is low in cost. Shurtleff recommends he ask ProSoya to solve this problem. (2) A source of flavors. His product is designed to replace Carnation Evaporated Milk, which has a caramelized taste. Haitians prefer vanilla, chocolate, and strawberry flavors. Shurtleff recommends that he use caramel made in Haiti. Address: 15262 Southwest 157th Terrace, Miami, Florida 33187. Phone: 305-233-6691.

6942. Huang, H.T. (Hsing-Tsung). 1995. Early history of soybeans and soyfoods in China (Interview). *SoyaScan Notes.* Dec. 28. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The early *jiang* in China was made from meat or fish. The *jiang* used by Confucius was almost surely made from meat and fish. Many of the ancient books were annotated during the Han dynasty in an attempt to explain the meaning of certain words and passages. A very eminent scholar in the late Han dynasty (about 100 A.D.), talking about events in roughly 500 B.C., said that the *jiang* used by Confucius was made from meat and fish.

The soybean was not an important crop in China until the early Han, say 200 to 300 B.C. The soybean is mentioned in the *Book of Odes,* which is the most ancient and most reliable of Chinese books, not as a crop but as a plant that people gathered from the wild. Then is are a series of books that were traditions of the Chou dynasty; these were codified and gathered by about 300 B.C., but in them there are not many references to the soybean. However by the time of the Western (Former) Han (206 B.C. to 8 A.D.) there were references in the literature to cartloads and big urns of *jiang* [Chinese-style miso]; *shi* (fermented black soybeans) was also mentioned many times in the literature. Both these foods had become commodities.

Soy is also found in the Han Tomb No. 1 at Ma-wang-tui (pronounced "ma-wang-DUI"), a big archaeological find in China. A woman ruler was buried here in about 165 B.C.

with all the 5-6 major grains, including wheat, barley, rice, 2 kinds of millet, soybean (*shu*), and hemp. Also found in the tomb were several seasonings including "soy sauce (*jiang*), *shi* ('salted darkened beans'), and leaven (*qu*)."

The earliest reference to pasteurization in China concerns pasteurization of wine, around the 11th century, long before the Japanese were pasteurizing shoyu before shipping it to Holland. He is not aware of any early reference to the Chinese pasteurizing soy sauce, but he will look again. However soy sauce is so highly salted that it does not require pasteurization, whereas wine does. The wine was filled into to earthenware jars with a small mouth, which was covered with cloth or leaves, then sealed with mud.

Dr. Huang will travel to China next month (to Foochow, capital of Fujian province) and he hopes to see some of the existing traditional fermentation processes. Soymilk was not an important traditional food in China, but it was becoming important when he traveled there in the 1940s with Dr. Joseph Needham. When they visited northern China, early in the morning people would have a huge iron wok of hot soymilk, which they sold for breakfast. Joseph liked the soymilk with bits of *youtiao* (deep-fried bread sticks; W.-G. *yu t'iao*).

One of the chapters in Dr. Huang's book deals with nutrition in China. The Chinese diet is said to be lacking in calcium. It is well know that for calcium to be absorbed, you need lactose, and the ability to tolerate lactose. Thus, it would be surprising to find higher bioavailability of the calcium in soymilk or tofu. Before the time of Confucius (551-479 B.C.) the Chinese ate a lot more animal products than they do now, but the agricultural system developed with the emphasis on grains, less emphasis on animal products, and no emphasis on milk–probably because of the lactose intolerance of the Chinese people. Thus, the Chinese never developed a dairy industry. Mongols are not as lactose tolerant as northern Europeans, but they are heavily dependant on animal milks as a source of food. They get around this problem by converting animal milk into yogurt. This fermentation converts the lactose to lactic acid, which both solves the lactose intolerance problem and extends the life of the product by lowering the pH.

Another interesting problem: Europeans are the only ones who make true cheese, using rennet. The Mongolians and all the pastoral people in Asia rely on various animal milks, including horse's milk to make koumiss, and they even make a type of cheese that is sort of like cottage cheese, coagulated by acid. Dr. Huang thinks the discovery of rennet is one of those major, accidental discoveries that is very rare. If you wash an animal stomach carefully before using it to store milk, that will wash all the rennet away. Another such major discovery is the Chinese discovery of *chu* or koji. Address: 309 Yoakum Parkway #403, Alexandria, Virginia 22304.

6943. *South China Morning Post* (*Hong Kong*). 1995. Sour milk. Dec. 31. p. 3 (Sunday. ed. 2).

• ***Summary:*** Yesterday samples of Malt Vitasoy Milk were collected by the Department of Health following complaints that some 250 ml paper-packed drinks tasted sour. The company, which has been asked to conduct an investigation and submit a report, recalled 3,840 cartons.

6944. Agbo, N.G.; Kouame, N.C.; Kohoro, H.; Traore, R.; Osho, S.M. 1995. Status of soybean production and utilization in Cote d'Ivoire. Paper presented at Conference on Postharvest Technology and Commodity Marketing in West Africa. 6 p. Held 27 Nov.-1 Dec. 1995 at Accra, Ghana. [3 ref]

• ***Summary:*** Published in 1998 under this same title in Ferris, R.S.B., ed. 1998. *Postharvest Technology and Commodity Marketing in West Africa. Proceedings of a Conference...*

"Abstract: Soybean production was introduced officially into Côte d'Ivoire in 1989. In order to initiate the production of that crop, the government decided to assign this responsibility of the work to the office named 'Direction et Controle des Grand Travaux'. This office has the duty to settle farmers in the north-west regions of the country, particularly in the district of Touba and Odienne. A modernized agriculture system was set for the farmers selected. The investment involved in the project to start with was 56.10 millions US dollar (41.032 millions F CFA). From the first harvest in 1991 to the last in 1994, the production increased progressively to reach 25 206 tonnes. Regarding the utilization of soybean, we could state that the crop is only known by industrials and some people living in urban areas and on the production site. Therefore, initiatives should be taken in order to inform more people in Cote d'Ivoire on various advantages the crop offers for humans and animal nutrition. Different ways of utilization need also to be given to them for a proper use and development of some commercial activities. This outcome will, probably, help farmers improve their health and increase their incomes."

Contents: Introduction. Utilization of soybeans: Utilization in the production area, utilization in non-producing and urban areas. Marketing study (The only firm in the country that processes soybeans is named Tritrufaf and is located in Bouake, near the center of the country. The main products are soybean oil {47% of production} and animal feed. Potential soy products include soymilk, soyflour, soy-attieke (local food), and soybean-cereal mixes). Conclusion. Address: 1. Laboratoire de Biotechnologie et de Science des Aliments, Departement de Biochimie, Faculte des Sciences et Techniques (FAST), 22 B.P. 582 Abidjan 22; 2. Institut des Savanes (IDESSA), Bouake; 3. Ecole Nationale Superieure Agronomique (ESA), Yamoussokro; 4. Consultante Socio-Economiste; 5. Food Technologist & Coordinator, Soybean Utilization Project, International Inst. of Tropical Agriculture, Oyo Road, PMB 5320, Ibadan, Nigeria.

6945. *Soy Cubano! Company: Report to the Shareholders* (*Global Exchange, San Francisco*). 1995. Soy Cubano! Company expands to over 500 shareholders strong! $25,000 raised thus far! 1(2):1. Winter.
• ***Summary:*** "Following the signing of a letter of intention between the Cuban Institute for Basic Research in Tropical Agriculture (INIFAT) and a representative of Soy Cubano! in the summer of 1995, to enter into a joint venture with Cuba's soy foods industry, the company launched a major drive to sell shares in the company." They are now halfway toward their goal of $50,000.

Phase I of the project is successful; the "soyfields" in Cuba are growing well. Seed harvested in late 1995 will be dried and stored for planting in 1996. "By late 1996, this project will be responsible for the production of a large percentage of the soybeans needed by the Cuban factories per annum island-wide."

A new 30-minute video titled "Soy Cubano!" is now available. Produced by Global Exchange and the Hisperian Foundation, and narrated by writer and activist Alice Walker, it chronicles the food and medicine crisis in Cuba. Address: Cuba Food and Medicine Campaign, c/o Global Exchange, 2017 Mission St., San Francisco, California 94110. Phone: 415-558-8682.

6946. *SoyaCow Newsletter* (*Ottawa, Canada*). 1995. Vocational training in soymilk production and use started in India. 4(4):1. Oct/Dec.
• ***Summary:*** "Manav Vikas Parishad [MVP] of Ghaziabad in collaboration with the Government Polytechnic College and the SoyaCow Centre has developed a short course to train unemployed youths in the production and utilization of soymilk, tofu and okara.

"Thirty students were registered in this first ever vocational training course and were awarded Certificates by the College.

"In a recent visit to MVP, Dr. R.P. Gupta from Canada, was shown the SoyaCow facility by MVP manager, Mr. S.B. Srivastava, and was introduced to some students from the course. They appeared to be knowledgeable about soymilk production and very excited about the training. MVP regularly runs an SC20 system and profitably sells soymilk, tofu, okara, and related products in the local market. It provides sustained employment to a few persons [making these soyfood products]. The products are accepted well in the local market."

"Dr. R.K. Sharma, Manager of the SoyaCow Centre in India, is responsible for providing interested students with all the help needed to write business plans and complete other formalities to secure loans. He will also assist in the purchase of soymilk equipment from SSP, as well as in the equipment installation, and soymilk production and marketing."

A photo shows an Indian woman standing behind MVP's SoyaCow, which is used for vocational training.

6947. *SoyaCow Newsletter* (*Ottawa, Canada*). 1995. SSP gets approval to manufacture SoyaCow SC20s in India. 4(4):2. Oct/Dec.
• ***Summary:*** Upon careful inspection and testing of the modified prototype of the SC20 built by SSP (Pvt.) Ltd., Dr. R.P. Gupta (who is credited jointly with his wife Rashmi with the SoyaCow invention) approved the system for production of ten SC20 systems."

The SSP-built SC20 was recently showcased twice: First, in a program–Krishi Darshan (Farm-Vision)–televised throughout India. And second in a farm exhibition at a trade fair.

"The response to the soymilk machine was overwhelming. Mr. Tapas Chatterji, Managing Director of SSP, says he has now received 250 enquiries with many parties wanting to buy the SoyaCows immediately."

In view of the success at SSP, ProSoya Inc. is thinking about discontinuing the manufacture of SC20s in Canada (where they are made using aluminium vessels) and having SSP manufacture them from stainless steel for the world market.

A photo shows a close-up of a SoyaCow SC20, built by SSP, at a trade fair near New Delhi.

6948. *SoyaCow Newsletter* (*Ottawa, Canada*). 1995. Inox licensed to manufacture big SoyaCows for ProSoya. 4(4):1. Oct/Dec.
• ***Summary:*** "Inox Industries Inc. of Rexdale, Ontario, and ProSoya Inc., recently signed a licensing agreement that gives Inox certain rights and responsibilities for the manufacture and servicing of larger soymilk equipment and plants based on ProSoya's patented. Inox is a custom stainless steel fabricator for the pharmaceutical, food, and dairy Industries."

6949. Soyfoods Association of America, Standards Committee. 1995. Soymilk standards: Second draft (Third revision). Bar Harbor, Maine. 15 p. Dec. Unpublished manuscript. 28 cm. [22 footnotes]
• ***Summary:*** Contents: Purpose of voluntary standards. History and terminology: History, existing standards in other countries, terminology. Definition and classification of soymilk products: Soymilk definition, soymilk classification. Labeling of soymilk products: General, modifiers to the statement of identity, use date labeling, refrigeration information. Microbiological guidelines for soymilk. Standards Committee; Adoption and amendment of standards. Address: 318 Main St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207/288-4969.

6950. Straus, Karen Cope. 1995. At home with the McCartneys: Share the season's best with Paul and Linda.

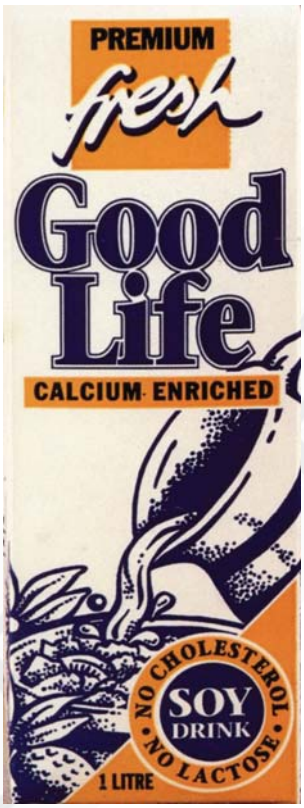
Vegetarian Times. Dec. p. 41-45.
• ***Summary:*** This is largely a selection of lacto-vegetarian recipes from two of Linda McCartney's popular vegetarian cookbooks. Ingredients include TVP granules, soymilk, and soy sauce. Her first cookbook, *Linda McCartney's Home Cooking,* remains "one of the best-selling vegetarian cookbooks published to date." Several nice color photos show Paul and Linda.

6951. **Product Name:** Edensoy Extra: Organic Soy Beverage [Vanilla with Vitamin B-12].
Manufacturer's Name: American Soy Products, Inc.
Manufacturer's Address: 1474 N. Woodland Dr., Saline, MI 48176. Phone: 800-248-0301.
Date of Introduction: 1995.
Ingredients: Purified water, organic soybeans, malted cereal extract, vanilla extract, calcium [calcium carbonate], kombu (seaweed), Lima sea salt, vitamin E, beta carotene, vitamin D-2, vitamin B-12.
Wt/Vol., Packaging, Price: 1 liter (33.8 oz, 1.06 quart) Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: This product is distributed by Eden Foods, Inc., Clinton, Michigan 49236. Label sent by Eden Foods. A color photo on the front panel shows yellow sunlight drifting down through a forest.

6952. **Product Name:** Good Life: Non Dairy Soy Drink (Calcium Enriched in Pure Pak Carton) [Premium, or Low Fat].
Manufacturer's Name: Berrivale Orchards.
Manufacturer's Address: McKay Road, Berri, SA 5343, Australia. Phone: (085) 82 1019.
Date of Introduction: 1995.
Wt/Vol., Packaging, Price: 1 liter Pure Pak carton.
How Stored: Refrigerated, 18 day shelf life.
New Product–Documentation: Product information sheets and leaflets sent by Anna Wieczorek, Food Technologist, at Berrivale Orchards Ltd. 1996. March 14. "Enjoy the Good Life." Color photos show both of the cartons. The low-fat product contains less than 1% fat (0.9 gm per 100 ml) while the premium product contains 3.4 gm of fat per 100 ml. These two products are made and/or packed at the company's MacKay plant.

Soyafoods (ASA, Europe). 1996. Spring. p. 4. "Soya products 'down under.'" Berryvale [sic] Orchards has launched GoodLife, a fresh non-dairy soya drink. It has a shelf life of 18 days and is sold in 1 liter containers.

6953. **Product Name:** Good Life: Non Dairy Soy Drink (Calcium Enriched in Long Life Aseptic Carton) [Premium, or Low Fat].
Manufacturer's Name: Berrivale Orchards.
Manufacturer's Address: McKay Road, Berri, SA 5343,



Australia. Phone: (085) 82 1019.
Date of Introduction: 1995.
Wt/Vol., Packaging, Price: 1 liter Aseptic Combi carton.
How Stored: Refrigerated.
New Product–Documentation: Product information sheets and leaflets sent by Anna Wieczorek, Food Technologist, at Berrivale Orchards Ltd. 1996. March 14. Color photos show both of the cartons. The low-fat product contains less than 1% fat (0.9 gm per 100 ml) while the premium product contains 3.4 gm of fat per 100 ml. These two Isolate UHT products are made and/or packed at the company's MacKay plant.

6954. Lu, L.W.; Grady, J.J.; Marshall, M.V.; Ramanujam, V.M.S.; Anderson, K.E. 1995. Altered time course of urinary daidzein and genistein excretion during chronic soya diet in healthy males. *Nutrition and Cancer* 24:311-23. *
• ***Summary:*** Discusses: soymilk (Banyan Foods), daidzein, genistein.

6955. Nguyenle, T.; Wang, W.; Cheung, A.P. 1995. An investigation on the extraction and concentration of isoflavones in soy-based products. *J. of Pharmaceutical and Biomedical Analysis* (*Oxford*) 14:221-32. *
• ***Summary:*** Gives levels of daidzein and genistein in Infant formulas: Isomil (ready to feed), Nursoy (liquid concentrate), Prosobee (liquid concentrate). Soy flours (Central Soya–Soyafluffy), Centex, Promax, Promax plus, ADM–Nutrisoy, TVP, Acron-F, Acron-S, Cargill Protein Products -200/20,

200/70, Arrowhead, Molly Farm, Sun Ridge Farm, Soy drink, Tempeh, Soy protein concentrates (Procon, Promine), TVP (Response).

6956. **Product Name:** Soy Latte (Espresso Latte with Soymilk).
Manufacturer's Name: Starbucks.
Manufacturer's Address: Nationwide.
Date of Introduction: 1995.
Ingredients: Espresso coffee and organic vanilla soymilk.
Wt/Vol., Packaging, Price: Paper cup.
New Product–Documentation: Talk with Bud at Starbucks in Lafayette, California. 2000. March 20. This is a hot beverage prepared at Starbucks' espresso bar. Instead of using any dairy products, they use heated vanilla soymilk. So it is a Latte made with soymilk. It is not available in bottled form. It contains no added sweetener; each customer can add sweetener as he or she wishes. It has been available for at least a year. Purchase Soy Latte at Starbucks in Lafayette. 2000. April 3. Neither this item nor any other of the soy alternatives is listed on the menu. An employee says "We can add soy to any latte; it costs 35 cents more than the regular latte made with dairy milk. The smallest cup of Soy Latte, called "Tall" (about 11 oz) costs $2.50. To make it, Starbucks uses Pacific Vanilla soymilk, which they mix with water then heat with steam before adding it to the Latte. As I place my order for one "Soy Latte," one employee calls out "Soy is for Communists!" When I ask him what he means by that he says he has never tried soy, but he doesn't like it.

Talk with Starbucks headquarters (media relations) in Seattle, Washington. 2000. April 3. In 1995 Soy began to be used (when consumers requested it) as an alternative to milk in various Starbucks' products, especially Latte, Mocha, and Chocolate.

6957. Tezuka, M.; Ono, T.; Itoh, T. 1995. [About tofu and soymilk] *Nippon Shokuhin Kagaku Kogaku Kaishi* (*J. of the Japanese Society for Food Science and Technology*) 42(?):556-61. Month? [Jap; eng]*

6958. American Institute for Cancer Research. 1995. Taking a closer look at phytochemicals: New cancer research. 1759 R Street, N.W., Washington, DC 20069. 12 panels. 20 cm. [5 ref]
• ***Summary:*** Contains extensive information on isoflavones and soyfoods, including brief interviews with Stephen Barnes, PhD and Mark Messina, PhD. "Tofu, soy milk, and other foods made from soybeans are rich in isoflavones, which may inhibit cancer cell growth and division under some conditions. Since cancer is the result of the cell growth process gone awry, isoflavones may provide a means for switching off the unusual growth." Contains an illustration of packages of soy milk and tofu. Address: Washington, DC.

6959. Diehl Specialties International (DSI). 1995. Diehl, Inc. [a chronology] (Leaflet). Defiance, Ohio. 1 p. Single sided. 28 cm.
• ***Summary:*** Diehl Specialties International, the maker of Vitamite, is a subsidiary of Diehl, Inc. 1870–The company was established as the Christ. Diehl Brewing Company and operated as same until 1920 when Prohibition was enacted.

1920–The Defiance Milk Products Company was established and one-half of the brewery was converted to an evaporated milk plant. The balance of the facility was used to bottle water, soft drinks, and "Near Beer."

1933–When Prohibition was repealed, the production of beer was resumed and continued until 1955.

1964–The company began producing spray-dried products–non-dairy creamers, powdered vegetable shortenings, whipped topping mixes and other special formulations as required by industry. Diehl is a leading producer of private label non-dairy creamers.

1966–Acquired the Wilson Milk Co.

1981–Acquired the evaporated milk operations of United Dairy. 1982–Acquired the evaporated milk operations of Westerville Creamery.

1982–Acquired Diehl Specialties, Inc. (DSI), St. Louis [Missouri], and renamed it Diehl Specialties International, (DSI) in 1985. DSI produces non-dairy milk substitutes, chocolate and other flavor powdered drink mixes. It makes private label products for over 100 companies with over 300 labels, has national distribution with warehouses in all major markets, and employs an average of 135 people at two plants. Address: 24 N. Clinton St., Defiance, Ohio 43512-1899. Phone: (419) 782-8219.

6960. Diehl Specialties International (DSI). 1995. Vitamite (Portfolio). Defiance, Ohio. 12 inserts. 30 cm.
• ***Summary:*** The cover of this portfolio is filled with an illustration of white milk being poured and splashing against a blue background. Across the top is written "Vitamite" in white letters on a red background. The 12 documents enclosed in this portfolio (mostly and flyers and brochures) include: Facts on lactose intolerance (2 p.). Vitamite: The answer up to 50 million Americans are looking for could be on your shelf (1 p.; Up to 50 million Americans cannot drink milk–11.5% to 19% of the total U.S. population. This includes 15% of northern European whites, 60% of Hispanics, 80% of Jewish people, 90% of Asian Americans, and 75% of African Americans).

Vitamite–A unique product for an unserved market (1 p.; compares Vitamite with other milk replacements–Lactaid, Enjoy, Presto-Whip, Rich Whip, Reddi-Whip, Dairy Whip, Coffee Rich, Neo-Mull Soy, Ensure, Pro-Sobee, Soyagen).

Lactose intolerance (5 p., from the National Digestive Diseases Information Clearinghouse). Management of a lactose-free diet (2 p.). Ileitis & colitis IBD file (incl. lactose intolerance, and Crohn's disease or ulcerative colitis, 2 p.).

Management of renal failure (2 p.). If you like milk but milk doesn't like you (6 panels). Packet of powdered Vitamite Non-Dairy Beverage. Cover letter and business card from Thomas A. Mekus, Vice President, Sales and Marketing. Address: 24 N. Clinton St., Defiance, Ohio 43512-1899. Phone: (419) 782-8219.

6961. Grogan, Bryanna Clark. 1995. The (almost) no-fat holiday cookbook: Festive vegetarian recipes. Summertown, Tennessee: The Book Publishing Co. 192 p. Index. 21 cm. [26 ref]
• ***Summary:*** This low-fat vegan cookbook, containing a wealth of soy-related recipes, features 18 menus for celebrating holidays from around the world. Address: Denman Island, east of Vancouver, British Columbia, Canada.

6962. Herbst, Sharon Tyler. ed. 1995. The new food lover's companion: Comprehensive definitions of over 4000 food, wine, and culinary terms. 2nd ed. Hauppauge, New York: Barrons. xvi + 715 p. 18 cm. 1st ed. published 1990. Barron's Cooking Guide. [325* ref]
• ***Summary:*** This carefully researched and well written dictionary of food terms also contains 21 useful appendixes and a good bibliography. All enquiries should be directed to: Barron's Educational Series Inc., 250 Wireless Blvd., Hauppauge, New York 11778.

Soy and related entries can be found under the following headings: Adzuki bean (also azuki), agedashi, cheese–imitation cheese (generally includes tofu and lecithin), fermented black beans (also called Chinese black beans and salty black beans), flour–gluten flour, kecap manis / ketjap manis, kudzu, milk (see soy milk), miso, natto, okara, queso fresco (also called queso blanco), quinoa, seitan, shoyu (Japanese for soy sauce), soybean, soybean oil, soy flour, soy milk, soy pea (see soybean), soy sauce (light soy sauce, dark soy sauce, Chinese black soy, tamari), tempe or tempeh, tofu (also called soybean curd and bean curd).

6963. Mindell, Earl. 1995. Earl Mindell's soy miracle cookbook: 70 simple, tasty ways to add soy protein to your diet. New York, NY: Simon & Schuster. A Fireside Book. 91 p. No Index. 22 cm.
• ***Summary:*** The title page states that the recipes in this book were previously published in *Earl Mindell's Soy Miracle* (1995). At the end of each recipes is the source. Many of the recipes were developed by Judith Eaton, M.S., R.R., and Karen Lefkowitz, M.S., who have been tofu advocates for many years. "Judith and Karen run Nutrition Services, a consulting firm in Pomona, New York.

Contents: Salads. Spreads, dressings and sauces. Soups. Main dishes. Breads and breakfasts. Desserts.

The main soyfoods used–in descending order of predominance–are: Tofu (in 47 recipes). Soymilk (13, incl. Vitasoy and Edensoy). Tempeh (8). Texturized soy protein (3). Soy flour (3). Natural Touch okara patties (2) Miso (1). Soy sauce is used here and there as a seasoning.

Note: This is not a vegetarian cookbook. Ground beef, chicken, crabmeat etc. are used in a relative small proportion of the recipes. Address: R.Ph, PhD, registered pharmacist and Prof. of Nutrition at Pacific Western Univ. in Los Angeles. He lives in Beverly Hills, California.

6964. Northrup, Christiane. 1995. Heal your symptoms naturally. Potomac, Maryland: Phillips Publishing Inc. 18 p. 28 cm.
• ***Summary:*** In the section titled "Natural healing for menopause" (p. 1-3) Dr. Northrup advises women to take natural progesterone, since their body stops producing its own progesterone during menopause. This supplement provides relief from both hot flashes and mood swings for many women. "For two weeks out of every month, use a little progesterone cream on the soft areas of your skin, changing sites often... Another form of natural progesterone is plant progesterone. There are many sources. The most common are soy foods and yams (not sweet potatoes)." Also take a safe form of estrogen–estriol. It can be applied as a vaginal cream and may protect against breast cancer. "Natural estrogens such as estriol have been in use for over 50 years, and are considered generic. Although these natural hormones aren't very common in the U.S., estriol is one of the more popular estrogens in Europe." To find a U.S. source call the Women's International Pharmacy at 1-800-279-5708.

"Natural plant hormones with estrogen-like effects are found in soy products, such as soy milk, tofu and miso, in addition to cashews, peanuts, oats, corn, wheat, apples and almonds. Japanese women go through menopause more easily than American women, partly because their diet is so high in the natural estrogens found in soy products. (Note: If you still have your uterus, never take estrogen of any kind without balancing it with progesterone.)"

In the section titled "Natural healing for breast cancer" (p. 6-7) notes that you can lower your risk through diet. "Eat soy products, You can also protect your breasts with tofu. A study published in the September 1994 issue of the *American Journal of Clinical Nutrition* demonstrated that women who ate 60 grams of soy protein per day (about 2 ounces) had changes in the estrogen levels that were similar to the effects of tamoxifen–an antiestrogen drug that is undergoing study as a possible prophylactic agent in women who are at high risk for breast cancer.

"The effects of soy protein on hormonal levels are thought to be from estrogen-like substances in soybeans called isoflavones. These behave like partial estrogen agonists/antagonists, which means they help increase the effects of estrogen in women who have estrogen levels that are too low, while helping to decrease the effects of estrogen in women whose estrogen levels are too high.

"While we're waiting for more research on the subject, I'd recommend adding soy protein to your diet regularly. In addition to tofu, soy protein is found in tempeh, miso and natto. These products are sold in many grocery stores and in almost all health food stores." Address: M.D. (gynecologist), Women to Women, Yarmouth, Maine.

6965. Plenty International. 1995. From the global kitchen: A collection of vegetarian recipes. Summertown, Tennessee: The Book Publishing Company. 124 p. Illust. (57 photos). Index. 21 x 18 cm.
• ***Summary:*** Contents: Foreword, by Virginia & Mark Messina. Introduction. Local ingredients–Cooking tools. Description of uncommon ingredients. Recipe notes: Flours (incl. soy flour), tofu, grating tofu and tempeh, replacing okara with grated tofu or tempeh, cooking, breaking and dehulling soybeans, hand mills and blenders. 1. North America: The Bronx, Native Americans (Oglala Lakota people at Pine Ridge Reservation in South Dakota), recipes (main dishes, salad, breads, desserts). 2. The Caribbean: Introduction (Jamaica, Dominica), recipes. 3. Central America: Introduction (Belize, Guatemala, Nicaragua, Casta Calderon's first experience with soy foods in Nicaragua), recipes. Africa: Introduction (Lesotho, Liberia), recipes. Sri Lanka: Introduction, recipes.

This remarkable, first-of-its-kind book by Plenty International tells the story of the pioneering work they have done over a period of several decades to introduce soyfoods to the Third World. The many vegetarian recipes in each section (each containing at least one soy ingredient, and based mostly on traditional soyfoods) are innovative and well adapted to that region. The 51 black-and-white photos, plus 6 color photos on the front and rear covers, add joy and a human face to the book. Much of the text is by Chuck Haren. Address: P.O. Box 394, Summertown, Tennessee 38483. Phone: (615) 964-4864.

6966. **Product Name:** Rich's Rich Rewards (Single Serving [3/8 ounce] Non-Dairy Flavored Creamer) [Hazelnut, Irish Cream, French Vanilla, Double Chocolate Mint, and Chocolate Raspberry].
Manufacturer's Name: Rich Products Corporation.
Manufacturer's Address: Buffalo, New York.
Date of Introduction: 1995. January.
Wt/Vol., Packaging, Price: 3/8 ounce single serve packs.
How Stored: Refrigerated.
New Product–Documentation: Talk with the toll-free customer service line at Rich Products Corp. 1995. Nov. 1. This product has been discontinued. It was launched in about March 1995 and came in 6 different flavors: Hazelnut, Irish Cream, French Vanilla, Double Chocolate Mint, and Chocolate Raspberry.

6967. Scully, Terrence. 1995. The art of cookery in the Middle Ages. Woodbridge, Suffolk, England: Boydell & Brewer Ltd. (The Boydell Press). 276 p. Index. 24 cm. [89* ref]
• ***Summary:*** Sunflower arrived in Europe by 1250. Peanut references not important on p. 2, 15, 67.

6968. Scully, Terrence. 1995. The art of cookery in the Middle Ages. Woodbridge, Suffolk, England: Boydell & Brewer Ltd. (The Boydell Press). 276 p. Index. 24 cm. [89* ref]
• ***Summary:*** During the 14th and 15th centuries in Europe, the legumes most widely used in cookery were peas and a variety of beans–both dry and fresh. The peas were often pureed ("pea puree") and occasionally ground to make pea flour or fried. Recipes usually called for simply "beans." Chickpeas, probably introduced from the Middle East by Arabs, were used from time to time.

The source of most cooked foods for the lower classes was the stew pot, filled mainly with cereal grains, vegetables, and legumes–such as peas and beans. Popular dishes included pork-and-peas, and pea or bean *cretonnée* (p. 6-7). Pea puree and round breads were staples in the Middle Ages (p. 8-9). Vegetables commonly peddled and cried through town streets included fresh peas in their shells and fresh beans (p. 13). Fried peas, cooked beans, and bean cakes–like today's prepared delicatessen items–were also sold this way. Pea flour was used in Germany (p. 14-15).

The main ingredient in breads was cereal grains; however peas, beans, and lentils were also used. In English households, the standard daily food ration was 2-3 pounds of wheat bread and a gallon of ale (p. 36). Fried beans (*Fava in padella*) (p. 45). Green peas were a common vegetable (p. 67). Everyone knew how (without a recipe) to prepare peas, split beans, mashed beans, sieved beans, and beans in their shell (p. 71). On lean days, to moisten dry ingredients, the cook used the pot containing his pre-prepared pea puree (p. 89). Cooks fashioned imitations of live creatures out of meat-paste or (on lean days) out of pea- or bean-paste (p. 106). A cook could puree fruits and vegetables, then occasionally fry the puree (as with legumes) (p. 110).

In England, a morning soup or mash of corn or legumes was often served (p. 122). Pea puree and strained peas were served at banquets (p. 125-26). For dinner, pea puree or bean puree (p. 133). While peas and beans may cause flatulence, this is in part because they pass through the stomach so easily (p. 134). Pastes of meat or peas required spoons (p. 173). Foods appropriate for robust working men include beef and goat, salt pork, stag, peas, beans, barley and wheat bread. Foods appropriate for the sick and weak include gruels of rice, oats, or barley prepared with almond milk, chickpeas, or pullet broths (p. 191). Chiquart, in his book *On Cookery,* included no less than 17 sick-dish recipes, more than 20% of the total. Most can be divided into four general categories, the first of which is cereal grains or legumes. One such

recipe is a Dish of Chick Peas (#76) (p. 193).

On All Souls' Day, which followed Hallows' Eve (Hallowe'en), it was the practice to share the meal with one's ancestors by taking some of it to the cemetery. Dishes prepared from peas, beans and lentils–which have been called the original 'soul food–were customarily served at that time (p. 205). Among the foodstuffs of late medieval cookery, cheese, peas and beans (legumes), onions and mustard, were almost common enough to be called universal–along with bread and wine (p. 206). A recipe for Fish Jelly called for various spices "distempered with pea puree" (p. 215). In France, the recipe for Cretonne or Gratunne begins with a base of peas or beans (p. 216). The recipe for A Soringue (*Une soringue*) includes pea puree (p. 224). One recipe is named Heathen Peas or Bohemian Peas (p. 235).

6969. Srivastava, P.K.; Shukla, B.D.; Srivastava, N.S.L. 1995. Appropriate agri based technologies for rural women. Bhopal, India: Central Institute for Agricultural Engineering. 77 p. Illust. (color). 26 cm. Series: Technical Bulletin CIAE/95/56. *

6970. **Product Name:** [Orgal Soy Drink Powder, Sweet Cakes of Maize and Rice with Soya, Soya Medallions (Baked, Organic), Organic Soy Fiber Drink].
Foreign Name: Orgal Bebida de Soja, Galleta Dulce de Maiz y Arroz Inflado con Soja, Medallones de Soja (100% Orgánico), Bebida de Fibra de Soja Orgánica (100% Orgánico).
Manufacturer's Name: Alimentaria Rosco S.A.
Manufacturer's Address: Buenos Aires, Argentina. Phone: 54 2477 497136.
Date of Introduction: 1995?
Ingredients: Water, organically grown soybeans, strawberry pulp, rice, sugar, pectin, lactic acid bacteria (*fermentos lácticos*), strawberry essence (*esencia de frutillas*).
Wt/Vol., Packaging, Price: 200 gm plastic yogurt cup.
How Stored: Refrigerated.
New Product–Documentation: Visit with Carlos Planes at Soyinfo Center in Lafayette, California. 2012. Feb. 23. Carlos brought an original sell sheet for these products (4 panels, each 8.25 by 6 inches). On each panel is a description plus a photo of and recipes for each product. Carlos says they used to make a tofu with 3 months shelf life at room temperature.

6971. **Product Name:** Tofu, Soymilk.
Manufacturer's Name: Din Ho Foods, Inc.
Manufacturer's Address: 5475 Rotterman St., Montreal, QUE H4P 1J3, Canada. Phone: 514-735-9503 or 9502.
Date of Introduction: 1995?
New Product–Documentation: Name and address sent by Marc Ham of Prograin in Quebec. 1996. Feb. 1. This company makes tofu and soymilk.

6972. **Product Name:** Tofu, Soymilk.
Manufacturer's Name: Les Aliments Fontaine Santé.
Manufacturer's Address: St.-Laurent St. 4560, QUE H4M 2N5, Canada. Phone: 514-956-7730.
Date of Introduction: 1995?
New Product–Documentation: Name and address sent by Marc Ham of Prograin in Quebec. 1996. Feb. 1. This company makes spreads using tofu, hummous, tahini, etc. The owner is Mr. Di Savioz.

6973. **Product Name:** [Soy Sprouts, Tofu, Soymilk].
Foreign Name: Germes de haricot (Chop suey), Tofu, Boisson de Soja.
Manufacturer's Name: Les Aliments Panda Foods Inc.
Manufacturer's Address: 4800 St.- Ambroise, Suite 110-111, Montreal QUE H4C 3N8, Canada. Phone: 514-846-0824.
Date of Introduction: 1995?
New Product–Documentation: Name and address sent by Marc Ham of Prograin in Quebec. 1996. Feb. 1. The name of the owner / director is Vinh Sieu Tran.

6974. Missouri Soybean Merchandising Council. 1995? Soybeans–Good food for good health. Jefferson City, Missouri. 12 p. Each panel ranges in size from 7.5 x 9.5 cm to 14 x 9.5 cm. Undated.
• ***Summary:*** Printed with green soy ink on white paper, each page of this little booklet is a different height to serve as a sort of tab index. Contents: Good nutrition. Heart disease. Cancer prevention. Other diseases: Osteoporosis, diabetes. Adding soyfoods to your diet is not as hard as you might think: Soymilk, tofu, isolated soy protein, soy flour, whole soybeans.

The information in this brochure is based on "The Simple Soybean and Your Health," by Mark Messina, PhD and Virginia Messina, RD. Though it was developed by the Missouri Soybean Merchandising Council (Susie Oberdahlhoff), any state soybean board could order copies with its name, address, and phone number printed on the back. Address: Missouri. Phone: 507-388-1635.

6975. **Product Name:** [Tofu, Soymilk].
Manufacturer's Name: Super Marché Sun Hing.
Manufacturer's Address: 1050 Boul. St. Laurent, Montreal QUE H2Z 1J5, Canada. Phone: 514-866-8110.
Date of Introduction: 1995?
New Product–Documentation: Name and address sent by Marc Ham of Prograin in Quebec. 1996. Feb. 1.

6976. Olgeirson, Ian. 1996. Boulder tofu company expanding product line: White Wave hopes boomers guzzle soy milk. *Denver Business Journal.* Jan. 4. p. 3A, 17A.

• ***Summary:*** White Wave got its first big break almost 20 years ago when a King Soopers' buyer agreed to stock its products in two stores on a trial basis. "If the tofu did well in the Boulder markets, King Soopers pledged to put White Wave in all of its Colorado outlets. 'Every morning we delivered tofu to the stores,' said president and founder Steve Demos,' and every afternoon I sent my employees out to buy up the remaining stock... Demos [age 46] may not adhere to such guerilla marketing tactics anymore, but the charismatic titan of tofu hasn't lost his zest for the natural foods business... Demos has built his company into the nation's largest industrial seller of tofu, making 150,000 pounds a week on the Boulder factory."

Now he's "preparing to launch a soy milk product called Silk and a line of vegetarian entrees aimed at turning White Wave into the Dannon Yogurt of the soy by-product world. 'I will be called a heretic and then I will be called a genius,' Demos said.

Sheryl Lamb, a sales manager with Mountain People's Warehouse, anticipates a tremendous demand for Silk and for the line of vegetarian entrees called Full Moon Cafe. Demos' primary goal is to establish brand equity for White Wave. A photo shows Demos, dressed casually, leaning against a tree.

6977. Garcia Uriarte, Alvaro; Ortega, Alberto. 1996. Recent history of soyfoods in Cuba. Part I (Interview). *SoyaScan Notes.* Jan. 9. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Overview: Since 1995 Cuba has become the rising star among developing countries in the use of soyfoods–and especially dairylike products. Cuba is the first Third World country to realize the potential of dairylike soy products to enhance the nutrition of the population while dramatically reducing costs and imports of feeds required by dairy animals. In the last 2 years, the Cubans have constructed about 34 "soy dairies" inside of inactive or partially inactive cow dairies. In 1995 they made 34 million liters of soy yogurt and soy yogurt drink, which they distribute free of charge to children ages 7-14. They are now also making delicious non-dairy soy ice cream and spreadable soy cream cheese. In addition, almost all of the regular ice cream made in Cuba now contains 50% soymilk.

This remarkable story was told during two long sessions, mainly by Alvaro, with Alberto adding many key points, in Alvaro's office. Alvaro is director and Alberto is vice-director of Cuba's Food Industry Research Institute (FIRI; In Spanish: *Instituto de Investigaciones para la Industria Alimenticia–IIIA*) near Havana. Catherine Murphy translated the first session and Dr. Gilberto Fleites translated the second. Shurtleff took notes and asked quite a few questions, but this was more the telling of a story than an interview. The meeting was arranged by Pam Montanaro, director of the Soy Cubano! program at Global Exchange, San Francisco. She has met with Alvaro and Alberto many times before and Soy Cubano! has helped significantly to further development of soybeans and soyfoods in Cuba. Soy Cubano! has given Alvaro and Alberto several of Shurtleff's books, helped them to exchange correspondence, and arranged for Shurtleff's present trip to Cuba. The atmosphere is relaxed and friendly.

Alvaro begins: "We would like to tell you the complete story, in depth, of the development of soyfoods in Cuba from 1984 to the present. You are the first person to whom we have ever told the story in this much detail. Please fell free to ask questions." Shurtleff explains that he is not interested in commercial secrets. Alvaro laughs and says "Don't worry. We'll let you know if you ask about anything that is confidential." Cuba hopes to export some of the proprietary technology and processes they have developed.

This phase of Cuba's work with soyfoods began in early 1984, when Fidel Castro obtained a Mechanical Cow from Brazil. Note: This relatively small-scale soymilk production machine was developed in Sao Paulo, Brazil, by Dr. Roberto H. Moretti (of Vanguarda Mecanica and the Dep. of Food Technology, FEA/UNICAMP) starting in 1976 and it was patented in 1979. By Nov. 1980, according to Dr. Moretti, 80-90 Mechanical Cows were in operation in Brazil. Fidel has long been interested in and concerned about food, nutrition, and malnutrition worldwide, and especially in developing countries. It was for this reason that he obtained a Mechanical Cow–which cost about $40,000. After 48 hours without sleeping, Alvaro and his collaborators finished installing the Cow at the Food Industry Research Institute (FIRI). They began using it with much enthusiasm. One month later when the Brazilians arrived, they were to surprised to see it in operation, making soymilk and various products. Ten copies of the Cow were soon made at Cuba's Ministry of Mechanization. But despite much research and attempts to flavor the soymilk with various fruits, it continued to have a strong beany flavor. Soymilk from the Cow was first sold in 1984 at 15 outlets in Havana at non-rationed dairy products stores in the "parallel market." It was not well accepted by the Cuban people, who ended up feeding it to their pets. The product was withdrawn after 1 to 2 years, but scientists at FIRI began a new project to study soyfoods and flavor problems in greater depth. By the beginning of the 1980s partially defatted soy flour (expressed under pressure, but not texturized) was being used in Cuba as an extender in ground meat at levels of 2% to 5%.

In 1990 a series of disasters struck Cuba. Shortly after the dissolution of the Socialist/Soviet Bloc (Warsaw Pact alliance) in late 1989 and early 1990, Cuba suddenly lost at least 75% of its trade, which had focused on sugar bought by the Soviet Union through long-term agreements at prices well above the world market price of that moment. Food production dropped due to a severe shortages of fertilizers, agrichemicals, gasoline, and imported feed for animals. What Cuba now calls the Special Period was phased in. The situation grew even worse in October 1992 when the

United States passed the Torricelli Act (also known as the "Cuban Democracy Act") The United States had had an embargo on trade with Cuba since 1960, but the new Act became essentially a blockade (a true blockade is a military operation), in which the U.S. very effectively pressured foreign nations and companies not to trade with Cuba–in violation of the United Nations charter, the charter of the Organization of American States, and virtually all international law. The Torricelli Act made the economic embargo on Cuba more severe than it had previously been. It curtailed Cuba's ability to trade with subsidiaries of U.S.companies abroad, 90% of which was trade in food and medicine. Thus, it effectively prevented food and medicine from being shipped to Cuba. The only exception was humanitarian aid. The Torricelli Act also made it illegal for Cubans living in the USA to send dollars back to relatives and friends in Cuba.

In response to the Special Period, FIRI began to work first on the meat supply, by extending ground meat with textured extruded soy flour–which was 10 to 15 times less expensive than meat on a protein basis. Initially Cuba imported textured soy flour from Mexico. Two extended meat products were developed: Extended ground beef was sold in the neighborhood meat/butcher ration shops (*carnicerias*), and extended meat patties were sold at places called Saz (a chain of popular cafeterias) on the free market.

One traditional meat product that Cubans love is *picadillo,* which consists of ground meat, garlic, onion, and lemon, and which is sold at the meat ration shops. Instead of pure meat, FIRI now used a mixture of 70% textured soy flour and 30% ground meat. The seasonings in this *picadillo extendido* largely masked the soy flavor, but the reaction of the Cuban people was not very good. Of course, they had no idea of what was in the new mystery product, and how much of it. They were used to pure meat, yet the nation was paralyzed, so this was no longer an option. Even though food was in short supply, there was a large excess of money, so it was not an economic issue–the extended meat had to be sold only at the meat ration shops if everyone was to get a fair share.

The second extended meat product developed by FIRI, the patties, were sold like a hamburger, between buns, with catsup and mustard. The Ministry of Food Industry of Cuba (MINAL) got a patty-forming machine named Koppens from the Netherlands, and the patty-making operation was very successful. MINAL then bought 15 more patty machines, one for each province, and by 1990 Cuba was making 200,000 meat-soy patties a day. Continued. Address: 1. Ing., Director; 2. Vicedirector. Both: Food Research Inst. (*Instituto de Investigaciones para la Industria Alimenticia*), Carretera Guatao Km 3½, La Lis 19200, Havana City, Cuba. Phone: 21-6986 or 21-6742.

6978. Garcia Uriarte, Alvaro; Ortega, Alberto. 1996. Recent history of soyfoods in Cuba. Part II (Interview). *SoyaScan Notes.* Jan. 9. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued: After the problems with meat shortages were somewhat under control, the Food Industry Research Institute (FIRI) began to work on alleviating milk shortages. They had not forgotten their previous bad experience with soymilk from the Mechanical Cow, but Alvaro still believed that soya and dairylike soy products had great potential in Cuba, so he took the lead (and a rather big risk) by deciding to do more research on soy products to replace milk.

Note: At this point we must pause to take a look at the important role that milk has played, especially for children and senior citizens, after the Cuban Revolution. This information comes from Alvaro and Alberto, and from the excellent book *No Free Lunch: Food & Revolution in Cuba Today,* by Benjamin, Collins, and Scott (1989, Institute for Food and Development Policy, San Francisco). Page numbers refer to pages in that book. Before the revolution succeeded in Jan. 1959, only 11% of rural Cuban families regularly drank milk (p. 2). Almost one-third of the food consumed in Cuba was imported, including much of the dairy products (p. 8), and more than 70% of these imports came from the United States (p. 19). Just 3 months into the revolution, in May 1959, the new government set official prices for milk, rice, bread and beef (p. 20). Nationwide consumption of milk, and other long-coveted foods such as pork, soared, but the supply could not keep up with demand–for a host of complex reasons (p. 119-27). On 19 October 1960 the Eisenhower administration imposed the first U.S. embargo on Cuba, prohibiting all exports except nonsubsidized foods and medicines. Cuba set a goal to free itself from U.S. imports and to generally become more self-sufficient in food. In April 1961 the USA tried to invade Cuba at the Bay of Pigs–and failed. Then on 7 Feb. 1962 a second and tighter U.S.-imposed embargo on trade with Cuba (including food, but exempting medical supplies) went into effect. That same month the Organization of American States voted 15 to 4 to exclude Cuba from the organization and for member states to break all diplomatic ties. On March 12, in response to these painful measures, Cuba began a program to ration food via the new National Board for the Distribution of Foodstuffs (p. 22, 197-98). Initially, rationing was expected to be temporary, yet as of 1996 it is still in effect–as is the U.S. embargo, though both have changed.

As part of the 1962 ration, all children under the age of 7 received a liter of bottled milk daily, and senior citizens over age 65 could buy six cans of evaporated milk a month (p. 27), both at very low prices–part of Cuba's "right to eat" ethic. Since 98% of Cuba's children are born in a hospital, almost all of them start being breast fed from birth, and the mothers drink the milk during this time. As of 1989, a liter of milk cost only 25 centavos on the ration, but 80 centavos off

the ration in the so-called parallel market (p. 41). Families buy the bottled milk at the neighborhood dairy ration store (*lechería*) and the canned milk at the *bodega.* The Cuban government placed tremendous emphasis on expanding production of cow's milk–perhaps more than on any other food except sugar. Indeed milk production increased threefold from 1962 to 1979. In addition to the 800 million liters produced in 1982, some 600 million liters of powdered and butterfat milk were imported (p. 151-52). One tonne of powdered milk makes 10,000 liters when reconstituted. Yet Cuba's emphasis on milk was expensive, and substantial imports (such as feed for dairy cattle) had to be bought with hard currency (p. 111).

Cubans say that families mourn on a child's seventh birthday, for that is when they lose eligibility to receive one liter per day of low-cost milk. To ease the transition, in the 1970s the Cuban government decided to give ½ liter of milk per day to kids of ages 7-13, and to seniors over age 65. All people would also get one-fifth liter per day as fresh, powdered, or evaporated milk on the ration card. With the arrival of the Special Period in 1990, the whole milk program had to be re-examined from top to bottom. That year, in a speech on July 26, a famous national holiday, Fidel Castro said that Cuba would no longer be able to guarantee milk at traditional levels because milk imports would have to be reduced, and, more important, the money was no longer available to buy feed for dairy cattle. Between 1989 and 1995, consumption of dairy milk in Cuba fell from 1.3 billion liters to 390 million liters, a drop of 70%. This abrupt loss of milk strongly affected everybody in Cuba, except 1.2 million children ages 0 to 7, kids in nurseries, pregnant women, and hospital patients. The spotlight turned to Alvaro and his coworkers to try to solve this immense problem.

The first product they developed was named Cerelac. Introduced in March 1991, it contained 15% whole milk powder, 40% defatted soy flour (all imported), plus sugar, calcium, vitamins, and vanilla flavor. It was sold at subsidized prices to kids ages 7-13 and seniors over age 65. These people found the product acceptable. Soon 7,000 to 8,000 tonnes per year of Cerelac were being mixed in plants inside of ten of Cuba's dairy processing factories. Shortly four more mixing plants were added.

Then Alvaro and his coworkers thought about developing products from whole soybeans, but were cautious because of the bad experience with the Mechanical Cow 7 years earlier. It was then that Alvaro visited the Valsoia soymilk plant in Bologna, Italy. At this plant, which used Alfa-Laval soymilk equipment, Alvaro learned many important secrets. Continued. Address: 1. Ing., Director; 2. Vicedirector. Both: Food Research Inst. (*Instituto de Investigaciones para la Industria Alimenticia*), Carretera Guatao Km 3½, La Lis 19200, Havana City, Cuba. Phone: 21-6986 or 21-6742.

6979. Garcia Uriarte, Alvaro; Ortega, Alberto. 1996. Recent history of soyfoods in Cuba. Part III (Interview). *SoyaScan Notes.* Jan. 9. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued: Returning to the Food Industry Research Institute (FIRI), Alvaro worked with his colleagues to construct a soymilk pilot plant in the fruit processing building, where they already had a decanting centrifuge for separating fruit into its juice and pulp. They left this machine (the most expensive and important in the soymilk pilot plant) where it was, and built the pilot plant around it–with a capacity of 500 liters per hour. To get rid of the beany flavor, they added very hot water (above 90ºC) to the mill while grinding the soybeans, then they ran the hot slurry into a horizontal chamber where they kept it at 90ºC or hotter for 2 minutes to wholly inactivate the enzymes. At this point Alvaro drew a diagram of this stage of the process. Soon this plant was producing good-tasting soymilk. But would the Cuban people accept it?

Alvaro decided to make the soymilk into soy yogurt for various reasons: (1) Soy yogurt had acidity, which was important in enabling the product to be sweetened and flavored; (2) Dairy yogurt was popular among the Cuban people; and (3) FIRI had long experience making it. Dairy yogurt has become widespread in Cuba since the revolution thanks to a major Bulgarian aid project in the 1960s (Bulgarians are considered the "fathers of yogurt") and the Cuban government's view that it was a good way to add protein to the diet. Dairy yogurt caught on in part because it is served in work and school cafeterias and snack bars together with free sugar, and it is sold in *lecherías.* Per capita consumption of yogurt soared fifty-fold, from less than 0.1 kg per year in 1963 to 5 kg in 1980 (p. 112). There are two basic types of yogurt, and both are cultured / fermented: Stirred yogurt and set yogurt. Both types had long been made in Cuba, adding sugar for sweetness, in 29 factories. FIRI decided to try to develop both types using cultured soymilk and some of the principles of Bulgarian yogurt technology.

They transported the soymilk made in the fruit building at FIRI, to the dairy processing building, then worked with an interdisciplinary team. FIRI has its own culture collection of food fermentation microorganisms containing a large variety of strains for cultured dairy products. One of FIRI's mandates was to supply these to Cuba's food industry. They tested many fermentation bacteria and arrived at several–the names of which are top secret! One of the bacteria uses the oligosaccharides (complex sugars) in soybeans as a source of energy, thereby getting rid of this undesirable cause of flatulence in humans. But the researchers ran into two basic problems: the technology was very expensive, and the protein yield was very low. Only 50% of the protein in the soybeans ended up in the soymilk. The quality, however, was good. So they asked Alfa-Laval for a firm price on a soymilk plant that would produce 3-4 tons of soymilk per hour. The

answer? $3 to 4 million. Too much!

Each year from 1990 to 1993 the number of calories and grams of protein, per capita, in the Cuban diet dropped as the food problems of the Special Period grew more serious. 1993 was the worst year of all. Malnutrition began to appear, and teams of health professionals arrived from abroad to study the problem and try to help. Something had to be done–soon!

Necessity is the mother of invention. In Havana there was a large dairy products complex named *Complejo Lacteo de la Habana.* It used Alfa-Laval equipment and cow's milk to make cheese, yogurt, ice cream, butter, and (most important) lactose and powdered whey. To produce the lactose required two centrifuges, that had cost $500,000 new. At the moment these two machines were standing idle due to the lack of cow's milk during the Special Period. So in late 1993, around these centrifuges, MINAL researchers built a scaled-up pilot plant with a capacity of 5,000 liters per hour of soymilk–ten times the output of the pilot plant at FIRI. The first soymilk that came out of the enlarged pilot planted tasted great. In January 1994 production of stirred soy yogurt began. It was a drink with the consistency of a milk shake. By early 1994 some 200,000 kids ages 7-13 in Havana were receiving 1 liter per week of this soy yogurt from their local dairy ration stores. The program was a great success. Also in January 1994, production of Cerelac was discontinued.

While this production was going ahead in Havana, the researchers continued work at FIRI on making a set soy yogurt, in part because they had a long tradition of making set dairy yogurt. But now a major problem arose. There was only one pair of the expensive Alfa-Laval centrifuges in all of Cuba. If the country wanted to set up similar soymilk plants in other provinces, it would have to invest millions of dollars to buy more centrifuges. This was clearly impossible. The only alternative was to start all over again, to develop Cuban technology to meet the challenge. A period of intense thinking began.

One Sunday morning in early 1994, at his home, a key idea came to Alvaro. He called Alberto and they worked together with a sense of urgency to try out the idea in Alvaro's kitchen. It worked! Bravo. On Monday at FIRI they began work immediately on the "new technology" (NT), a system that did not use centrifuges. This system also worked.

With the yogurt he had produced, Alvaro had already convinced the Minister of Food Industry of the value of the new technology, and this minister then became a fervent supporter of the project.

After they had developed the technology on a laboratory scale, a period of intensive work began to develop the prototype equipment, made in FIRI's workshop with the participation of researchers, mechanics, electricians, and electronic specialists. A decisive factor in this step was the participation of Ing. Carlos Pérez, vice-director of FIRI, in charge of maintenance. By April 1994 they were ready to install the first prototype NT system in a large idle dairy products plant at Holguín (pronounced hol-GEEN) in eastern Cuba. This plant was chosen because the workers are a very enthusiastic group and also because it has a good workshop and qualified, hard-working mechanics. Thus, it could make a contribution to the successful and speedy installation of the first plant. At this point, the whole interdisciplinary team that had developed the technology and equipment moved to Holguin, where they worked night and day, sometimes 20 hours nonstop, with the men and women of Holguín, catching a little sleep when they could on the floor of the plant. It took, on average, 14 days to install each plant and get it running. This was possible thanks to the spirit and selfless dedication of these local people, who were willing to work so hard and with such great desire to help relieve the severe food shortages. When the soymilk plant was up and running, they tested it and the soy yogurt, made changes, and tested again. Finally in May 1994 the first soy yogurt for the people Cuba came off the line. Everyone tasted it and rejoiced. *Viva la revolucion!* Continued. Address: 1. Ing., Director; 2. Vicedirector. Both: Food Research Inst. (*Instituto de Investigaciones para la Industria Alimenticia*), Carretera Guatao Km 3½, La Lis 19200, Havana City, Cuba. Phone: 21-6986 or 21-6742.

6980. Garcia Uriarte, Alvaro; Ortega, Alberto. 1996. Recent history of soyfoods in Cuba. Part IV (Interview). *SoyaScan Notes.* Jan. 9. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Again and again during 1994 the Food Industry Research Institute (FIRI) team went to dairy processing plants in Cuba. It was a marathon effort. By the end of 1994 a remarkable 14 new soy dairies making soy yogurt had been installed in the wings of existing dairy plants throughout Cuba. This mammoth effort was possible through the cooperation of the Ministry of Food Industry (MINAL) and local enterprises and governments. The NT equipment was built mostly by the Enterprise in Charge of Equipment Building and Installation. Most of the plants had a capacity of either 2,000 or 4,000 liters/hour; the smallest was 1,200 liters/hour. During 1994 the 14 plants churned out a total of 11 million liters of soy yogurt–4 million liters from the one plant in Havana using the two large Alfa-Laval centrifuges, and 7 million liters from the 13 other plants using the new technology. By late 1994 about 400,000 kids ages 7-13 living in the provincial capitals nationwide were receiving 1 liter of soy yogurt a week. Alvaro and his coworkers at FIRI were so convinced of the superiority of their technology that in Nov. 1994 they eliminated the Alfa-Laval plant, replacing it the next month with two new NT production lines.

During 1995 eight more plants were installed, bringing the total to 22. These plants produced 33 million liters of soy yogurt (containing 3.0 to 3.2% protein), which reached about 500,000 kids. Though there are presently about 1,200,000 kids in Cuba, most of those not living in the capitals have

access to milk from the nearby cows. Alvaro showed us a chart listing the location of each plant, the date it began operation, and its capacity. As of mid-January 1996 four new plants are under construction, and 5 more are on the drawing boards, ready to go. One of the plants under construction in Havana will make only spreadable soy cream cheese (*queso crema*), a new product developed at FIRI.

Three basic types of yogurt were made in Cuba's many soy dairies: 50% of the total was set soy yogurt sold in bulk containers, which reduced packaging costs. Local people would bring their own containers in which to take home their portion of the yogurt. Another 25% was set soy yogurt in one liter glass jars–which were, of course, recycled after use. The last 25% was stirred soy yogurt, sold in one liter plastic bags as a drink having the consistency of a milk shake.

The plan for 1996 is to produce 76 million liters of soy yogurt–more than double the total for 1995!

In September 1994, soymilk started to be used (together with dairy milk) in Cuban ice cream, made at the dairy plant at Pinar del Rio. In 1995 some 12 million liters of soymilk were used in Cuba's ice cream, accounting for 50% of the total milk used–the other half being cow's milk. However no soymilk is used in the most famous Cuban brand of ice cream, Copelia. This is made with only fresh milk and cream, using a traditional dairy formula and technology.

In January 1995 a cultured/fermented spreadable soy cream cheese was first made commercially in Cuba at the dairy plant in the province of Villa Clara. Resembling Cuba's traditional *queso crema* but containing no animal products, it is used as a spread on bread or crackers, in salad dressings, served as a dessert topped with marmalade or jam, or mixed with canned meat to make a pâté.

Soybeans were first cultivated in Cuba in 1904, and the climate and soil have always been good for growing them. Yet although Cuban scientists have done extensive research on soybean production over the last few decades and developed new soybean varieties that yield well under Cuban conditions, almost no soybeans are grown in Cuba today, in part because of the historical emphasis on sugar. Therefore Cuba has to import all of the 10,000 tonnes per year of soybeans used to make soymilk and soy yogurt, using precious foreign exchange. In the past, Cuba has also imported roughly 300,000 tonnes of soybeans (as whole beans or soybean meal) for animal feed. The food-grade soybeans come mostly from Canada and Brazil. Canada's white-hilum soybeans are considered the best for soy yogurt. For 45 days during 1995 no soybeans were imported into Cuba due to the lack of hard currency (U.S. dollars). The Soy Cubano! program of Global Exchange in San Francisco is working to help Cuba become more self-sufficient in soybeans. For Cuba to become self-sufficient at 1989 levels of consumption for the 11 million inhabitants, the country would have to grow about 500,000 tonnes of soybeans.

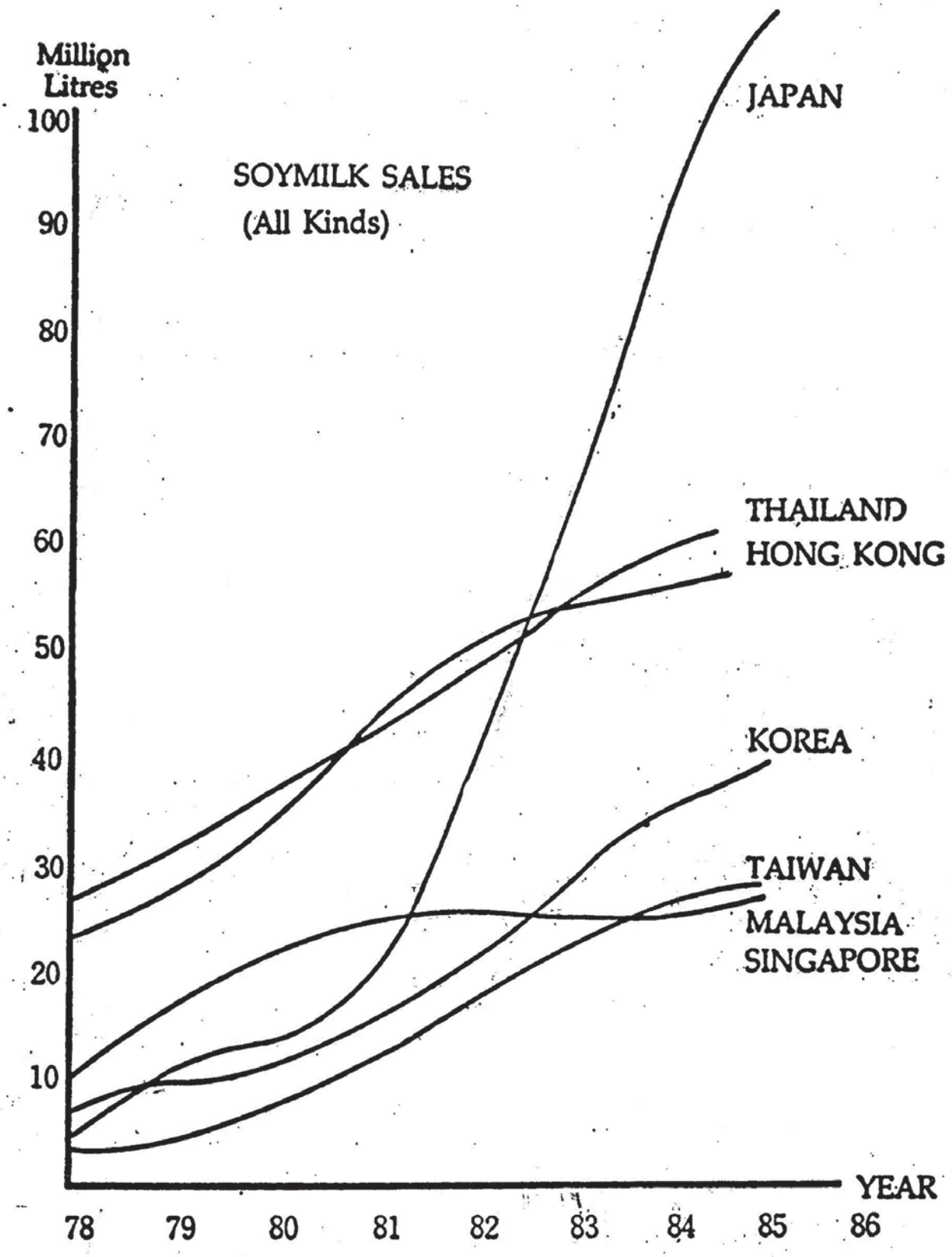
The development of new soyfoods products does not stop here. The FIRI team has two big projects on tap for 1996. The first is to expand commercial production of spreadable soy cream cheese, which will be made at existing dairy plants in 10 provinces throughout Cuba (*Santiago de Cuba, Holguín, Bayamo, Las Tunas, Camagüey, Ciego de Avila, Sancti Spiritus, Villa Clara, Matanzas, and Pinar del Rio*) and to finish the spreadable soy cream cheese factory in Havana with 10 tonnes/day capacity. At each plant they hope to make 500 to 1,000 kg/day, and a total of 5,000 tonnes in 1996; this will require an additional 10 million liters of soymilk. The second project is to make two types of powdered soymilk. Type 1, which is spray dried, contains 85% soymilk and 15% dairy milk, plus cocoa, sugar, salt, and vitamin A. Type 2, which is roller dried, resembles a traditional Nestlé product called *Harina Lacteada.* The ingredients are similar to type 1 except that rice is substituted for cocoa. Cuban researchers are very interested in learning more about Japanese *amazaké* (a traditional non-alcoholic fermented rice beverage made from koji), about the various new enzyme-hydrolyzed rice beverages made in America, and about ways to mix soymilk with ricemilk. Cuba plans to make a total of 2,000 tonnes of powdered soymilk in 1996. They are also working on development of spreadable soybean pâtés with different flavors, among them ham, and *chorizo* (a paprika spiced Spanish-style pork sausage).

To summarize: In 1995 Cuba used 7,000 tonnes of soybeans to make 47 million liters of soymilk; 1 kg of soybeans yields about 7 kg of soymilk. Of this soymilk, 33 million liters were used for soy yogurt, 12 million liters for soy ice cream, and 2 million liters for spreadable soy cream cheese. In 1996 Cuba plans to use 76 million liters for soy yogurt, 14 million liters for soy ice cream, and 10 million liters for spreadable soy cream cheese. Total: 100 million liters, or roughly twice as much. Continued. Address: 1. Ing., Director; 2. Vicedirector. Both: Food Research Inst. (*Instituto de Investigaciones para la Industria Alimenticia*), Carretera Guatao Km 3½, La Lis 19200, Havana City, Cuba. Phone: 21-6986 or 21-6742.

6981. Garcia Uriarte, Alvaro; Ortega, Alberto. 1996. Recent history of soyfoods in Cuba. Part V (Interview). *SoyaScan Notes.* Jan. 9. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** At this point we were invited for lunch at a nice hotel on the Food Industry Research Institute (FIRI) compound. There we were served various flavors of three dairylike soy products developed at FIRI. Our group of two Cubans and three Americans was invited to taste each product and offer our comments. (1) A set soy yogurt in cups in six flavors: Caramel, coconut, banana, orange, vanilla, and strawberry. Caramel, the most widely distributed flavor in Cuba, comes, of course, from Cuba's abundant sugar supply. The soy yogurt's acidity is 0.4 to 0.5 (half that of cow's milk), and it contains 3.2% protein and 1.6% fat. By

Plantas	Capacidad	F.Implant.	Observaciones
Pasteuriz.Holguin	2000 l/h	Abril/94	Prototipo Industrial
"S.Cuba	4000 l/h	Junio/94	
"P.Río	2000 l/h	Julio/94	
" Levisa	2000 l/h	Sep/94	
" Moa	2000 l/h	Oct/94	
Fca.Nela S.Spit.	4000 l/h	Oct/94	
Pasteuriz.S.Clara	2000 l/h	Oct/94	
" Escambray	2000 l/h	Oct/94	
Complejo L.Habana I	4000 l/h	Nov/94	
Pasteuriz.C.Avila	2000 l/h	Nov/94	
" Guantan.	2000 l/h	Dic/94	
Past.Tunas	2000 l/h	Dic/94	
Complejo L.HabanaII	4000 l/h	Dic/94	
" Guanajay	2000 l/h	Enero 95	
Pasteriz. Matanzas	2000 l/h	Abril/95	
Pasteriz.Camaguey	4000 l/h	Dic/94	
Fca.Queso Hacienda	4000 l/h	Mayo/95	
Insti.Invest. (IIIA)	1200 l/h	Mayo/95	
Past.Algibe	4000 l/h		En construcción
Dietético Bayamo	4000 l/h		En proceso montaje



comparison, dairy yogurt contains 3.0% protein and 3.4% fat when made from whole milk, or 3.4% protein and 1.7% fat when made from low-fat milk. This set soy yogurt is now sold in all provincial capitals in Cuba.

The soy yogurt plant at Santiago de Cuba had an original capacity of 2,000 liters/hour. The plant was briefly shut down to double its capacity to 4,000 liters/hour. During this period, children in Santiago de Cuba were supplied with dairy yogurt and this caused them to complain, as they objected to the more acid flavor.

(2) Soymilk ice cream (caramel flavored). The ingredients are soymilk, sugar, soy oil, caramel (for flavor), and a stabilizer. (3) Soy Cream Cheese. This is like the traditional Cuban *queso crema,* with much the texture of American Philadelphia cream cheese. Spread on crackers, it is delicious. Our group of five tasters gave each of these three products excellent marks for flavor, texture, and color. Shurtleff (who has the most experience with soyfoods of the five) noted that this is the best soy yogurt he has tasted anywhere, one of the best soy ice creams, and the first fermented soy cream cheese. Also served at this tasting was *queso blanco,* which resembled the traditional non-fermented white cheese but made from whole buffalo's milk. No soymilk was added. It was served in slices about ½ inch thick and 4 inches square, to be enjoyed on toast or crackers. This delicious product might also be made some day from soy.

Alvaro says in summary that his team of researchers is proud of three major achievements: (1) Making soymilk with no beany flavor; (2) Producing it at relatively low cost on equipment designed and constructed in Cuba using middle-level technology; and (3) Making soymilk with a high protein yield (The figure for protein yield is a top secret).

What are the big lessons to be learned from Cuba's bold and very successful experiments with soyfoods? (1) Cuba is the world's first country (outside of the traditional soy countries in East Asia) to fully grasp and realize the potential of soyfoods, and specifically dairylike soy products. Countries with high population densities in East Asia (such as China, Indonesia, and Japan) have known for centuries that it makes much more sense in terms of economics, land use, the environment, and good health to get protein directly from plants (specifically soybeans and cereal grains) than to feed those plants to animals and then eat the animals. Since the 1960s experts in the field of Third World development and food resources have stated repeatedly that soybeans are the protein source of the future. Not only are they the world's lowest cost source of high-quality protein, but they are now known to contain a host of beneficial phytochemicals, not found in any animal products, that appear to protect humans from cancer, heart disease, osteoporosis, and many of the unpleasant symptoms of menopause. Yet it took a major crisis to prompt Cuba to make the switch. (2) Cuba switched from dairy products to dairylike soy products largely for economic reasons and to make the country's food economy more efficient. The fact that Cuba has a centrally controlled economy probably facilitated the swift change. Yet with rapidly growing populations and declining incomes, many Third World countries may soon find it necessary or wise to follow Cuba's lead. Cuba has also become the world leader among Third World countries in sustainable, organic agriculture. Introducing a good food to a country under hardship conditions can pose a threat to that food's future. Will the people associate it so strongly with memories of the hard times that they want to get rid of it when good times arrive? (3) Cuba made the transition to dairylike soy products without constructing any new buildings, and with a relatively modest investment in locally designed, appropriate technology that actually revitalized flagging dairy processing plants. (4) By approaching the challenge with "beginner's mind" and plenty of creativity, Cuba was able to develop exciting new soy products especially suited to Cuban tastes and unknown in other countries. (5) Cuba's new soyfoods technology and processes offer the possibility of a new category of exports, which could earn badly-needed foreign exchange and, perhaps more important, offer new hope in the fight against malnutrition and hunger throughout the Third World.

Wm. Shurtleff was given (1) A list of soymilk plants (converted dairies) in Cuba, with the name and location of the plant, the capacity in liters per hour (mostly 2,000 or 4,000), the date each plant started making soymilk (from April 1994 to May 1995) and any observation (such as "Under construction").

(2) A graph of commercial production of soymilk (all kinds) from 1978 to 1985 in Japan, Thailand, Hong Kong, Korea, Taiwan, Malaysia and Singapore. Address: 1. Ing., Director; 2. Vicedirector. Both: Food Research Inst. (*Instituto de Investigaciones para la Industria Alimenticia*), Carretera Guatao Km 3½, La Lis 19200, Havana City, Cuba. Phone: 21-6986 or 21-6742.

6982. Chan, Chi-Keung; Lee, Stella; Le, Naomi. 1996. Vitasoy recalls 30 million drink cartons. *South China Morning Post* (*Hong Kong*). Jan. 10. p. 1 (Wednesday, ed. 2). • ***Summary:*** "Soft drinks maker Vitasoy yesterday announced it is to recall an estimated 30 million drink cartons from Hong Kong and the rest of the world because of continuing production problems. The company, acting on more complaints about sour-tasting soya milk, is to also suspend production at its Tuen Mun plant. Managing director Winston Lo Yau-lai, who last week announced suspension of the company's Shenzhen carton production lines, last night would not rule out industrial sabotage.

"Retailers are being asked to stop sales of all cartons of Vitasoy drinks including soya milk, lemon tea and juices in 250-millilitre, 375 ml and one-litre packs. Customers and retailers would be offered refunds... The company estimated

that recalling the 15 million packs in circulation in Hong Kong and Macau would take 12 days. But it could not say how long it would take to recall a further 15 million packs from more than 10 countries, including Canada, Australia, and the United States.

"Yesterday's announcement followed three more complaints from consumers concerning sour soya milk produced at the firm's Tuen Mun plant... The group decided to recall eight million drinks manufactured in Shenzhen last Thursday after a barrage of complaints. A day later, it also recalled 42,000 cartons produced in Tuen Mun... The company promised none of the 1,000 workers at the plant would be affected. The recall does not affect the company's bottled products including soya milk, iced teas, distilled water and Vita fresh milk. But paper products represent 'a significant proportion' of turnover.

"The firm admitted that the latest recall would have a 'material adverse effect' on profits. Vitasoy International shares will also be suspended from stock market trading from this morning. The news came just as its share price was recovering from the sharp fall caused by last week's announcement of the problems with Hong Kong and Shenzhen production. After falling more than eight per cent since Friday, the price yesterday rose five per cent to $3.125.

"Mr. Lo rejected claims the announcement had been provoked by Health Department pressure." Preliminary results of Health Department tests showed that of the 240 samples tested, only "four had been found to have abnormal acidity."

"'While bacteria were found in these four samples, they were not of pathogenic (disease-causing) nature,' a spokesman said. 'Further tests will be conducted to confirm the exact identity of the bacteria.'"

6983. Tacey, Elisabeth. 1996. Sour milk leaves experts with disposal headaches. *South China Morning Post* (*Hong Kong*). Jan. 12. p. 1 (Friday, ed. 2).
• ***Summary:*** "How to get rid of 30 million cartons [15 million liters] of unwanted assorted drinks? That's the problem facing Vitasoy and the Environmental Protection Department" [of Hong Kong]. The company recalled all its carton drinks after complaints about sour soymilk. None of the alternatives look good. It would be too expensive to slice open each carton and use the nutrient-rich contents as livestock feed. Vitasoy's biological treatment plants are much too small to remove the organic content from the drinks then release the treated liquid into the sewage system. Nor would landfill companies be able to handle the full cartons as standard household waste.

"The simplest method would be to send it direct to a municipal sewage treatment works, said the Productivity Council engineer, where the liquid could be treated gradually from storage tanks–but just separating the liquid from the cartons would be a massive and complicated task."

6984. Tacey, Elisabeth; Moir, Jane. 1996. Bitter blow for Vitasoy: An old favorite is now facing a crisis of confidence. *South China Morning Post* (*Hong Kong*). Jan. 14. p. 9 (Sunday, ed. 2).
• ***Summary:*** For Lo Kwee-seong, soya beans were the source of a fortune. He "turned a backstreet operation making soya milk drinks into a multi-billion dollar stalwart of Hong Kong life–the ubiquitous Vitasoy.

When Mr. Lo died in May 1995 at age 85, the company had a turnover of $1.25 billion for the 1994-95 fiscal year. He had become a Commander of the British Empire, had a fine collection of Chinese art, and contributed substantially to the Hong Kong Museum of Teaware. After his official retirement from Vitasoy" in late 1993, he "weathered some controversy over a huge $45 million payoff he received during the company's public flotation in 1994."

But ongoing problems with sour soymilk and production have dogged the company at both its Tuen Mun and Shenzhen plants for the past 3 months. Thirty million carton drinks have been recalled from both factories during the past 10 days.

"Analysts and management experts point out the similarities with the Perrier debacle in 1990, when traces of benzene were found in the formerly lauded mineral water. Perrier's market share in the UK, for instance, plummeted from 60% before the crisis to 25% afterwards.

"Vitasoy, with a 90% share of the soya milk market–Watson's, Hi-C and Nestle being its strong competitors–may suffer a similar fate. The firm has been praised for taking all its paper-packed products off the market, despite finding flaws only in the Shenzhen plant and in one of its 13 production lines at Tuen Mun.

"But a build-up of various problems since last October has left a perception of disarray at the firm, says director of the Hong Kong Institute of Marketing, Henry Steele... Directors of the firm, which employs 1,500 people, say they have been too busy trying to put the problems right to spend much time talking publicly about the affair. Four of Mr. Lo's six children remain directors.

"Old Mr. Lo was known as a man of strong Confucian values. Elsie Tu, who worked with him as a legislative and urban Councillor, described him as 'humble and hard-working.'" Here is a brief chronology of what went wrong.

In the autumn of 1995–Vitasoy pulls their new formulation of malt milk drinks from the shelves after undisclosed production problems.

1995 Oct. 24–Complaints of sour taste or kerosene-like smell in soymilk products from the Tuen Mun plant leads to recall of 50,000 cartons. Vitasoy blames the problem on a stem filter used in sterilization.

1996 Jan. 3–Vitasoy promises to step up monitoring of their Shenzhen plant after complaints of sour taste in malt soymilk.

Jan. 4–All seven production lines in Shenzhen halted. Eight million cartons of paper-packed drinks are recalled although complaints relate to about 9,000 250 ml malt soya milk packs from two production lines only. The company says the problem occurred during packaging and says investigation will last a month. The price of Vitasoy shares drops 8.5 percent.

Jan. 5–About 42,000 250 ml malt drinks made at the Tuen Mun plant are recalled after two complaints of sour taste.

Jan. 9–All thirteen lines at Tuen Mun that package in paper cartons are closed. A worldwide recall of 30 million carton drinks begins, covering all milk, tea, and juice products. The company expects an investigation by Swedish food experts to take 2 to 4 weeks. Bottled drinks are unaffected. Trading in Vitasoy shares is suspended. Non-pathogenic bacteria are found in four milk samples.

6985. Manuel, Gren. 1996. Vitasoy cartons disposal scheme. *South China Morning Post* (*Hong Kong*). Jan. 15. p. 5 (Monday, ed. 2).
• ***Summary:*** Vitasoy International is discussing with government officials what proportion of its recalled products will go into landfill and what proportion will go into the sewage system. The 15 million drink cartons contain about 4,000 cubic meters of liquid.

"The collection from consumers will start on Thursday morning when consumers can exchange their paper-packaged Vitasoy and other Vita drinks in paper packages for a voucher, which they will then be able to redeem for a similar pack when production starts."

"The company is preparing a formal statement to shareholders to be released tonight, which would allow the company's shares to start trading again tomorrow."

6986. Daller, Frank. 1996. Interest in and activities related to soyfoods in Cuba (Interview). *SoyaScan Notes.* Jan. 19. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Frank has traveled to Cuba 3 times (paying his own way) to do soy-related work. He was there first in Aug. 1995 and is very impressed with the resourcefulness and sincerity of the Cuban people. He likes the people he has met very much and is trying to help–not trying to sell them equipment or steal their soymilk processing secrets. He plans to buy a SoyaCow with his own funds and donate it to some place in Cuba–probably Dr. Gilberto Fleites at a cancer hospital. He wonders why the Cubans have focused on making soy yogurt rather than soymilk. If they use a hot-blanch process, perhaps because they have a high proportion of suspended solids (rather than dissolved solids), which might settle out in soymilk. In a 4-star hotel in Cuba where he was staying, he was served a sweetened yogurt for breakfast in a cafeteria line. The attendant told him it was soy yogurt, but he is not certain that it was since he could not tell the difference. Through his contact with the Canadian ambassador in Cuba, Frank was able to meet with Jesú Montane (pronounced HAY-su MON-tan-ay), who is a personal secretary of Fidel Castro and who is deeply interested in work with soyfoods in Cuba. Address: ProSoya Inc., 5350 Canotek Road, #7, Gloucester, ONT K1J 9C9, Canada. Phone: 613-745-9115.

6987. Tacey, Elisabeth. 1996. Vitasoy's clean sweep: The drinks company may have over-reacted, but by doing so it kept faith with its customers and saved its image. *South China Morning Post* (*Hong Kong*). Jan. 26. p. 19 (Friday, ed. 2).
• ***Summary:*** A photo shows tonnes of soya milk being loaded, ready to be dumped at a landfill. Forty-three million packs of Vitasoy await destruction, at an estimated cost of $100 million. But did Vitasoy over-react? Throughout the whole affair, there have only been nine complaints from consumers of sour malt and plain soya drinks. The sourness was bad-tasting but did not cause any illness. Even though there were no complaints about Vitasoy's fruit juices and teas, the company has recalled them all anyway and plans to destroy them. One management professor thinks that Vitasoy's actions were a text book example of the right way to protect a brand's image–a very good demonstration of sound business ethics and how much the company values its customers.

But Dr. Irene von Brockelmann, an independent consultant and microbiologist, would have recommended a limited recall. She adds: "I was surprised that they had done a total recall because in my experience there has been no total recall in the world before when there is no danger to health."

"Hong Kongers have grown up with Vitasoy. The firm's expansion since the war has been much like the territory's, making it a symbol of the proud prosperity of Hong Kong–and the people who drink it. Customer loyalty is very high–but so are their expectations."

"Media interest in the case was huge. After the first December complaint about one pack of malt Vitasoy, Hong Kong newspapers splashed the case over their front pages on at least two consecutive days." As attention grew, rumors and speculation spread like wildfire. "Vitasoy executive chairman and managing director Winston Lo Yau-lai said the press played a part in the decision to recall the drinks: 'I read that consumers were confused and there were rumors of sabotage, and poisoning, and so on, so we decided to recall.'"

The company's problems started on 24 October 1995, when a faulty steam filter led to various soya milk drinks going sour, leading to a recall of 1.2 million packs. But the real troubles came at the end of December.

"Of the 43 million packs to be destroyed–30 million of which never left the factory–the company estimates that only about 200 Shenzhen packs and nearly 1,000 in Tuen Mun

were affected. But at the time of the recall, the company only knew that far more than the acceptable 0.3 per cent were failing random tests."

6988. Faulkner, Jessie. 1996. Lots of benefits with local tofu. *Times-Standard* (*Arcata, California*). Jan. 24-30. p. 8. Buyers' Guide.
• ***Summary:*** About The Tofu Shop in Arcata, California. Photos show: (1) Soymilk and three types of tofu (Firm Tofu, Tofu-Vegetable Patties, Tofu Snack Sticks) made by The Tofu Shop. (2) Mike Schwartz, tofu maker, monitors the boiler as slurry goes down a chute.

6989. Anderson, James W. 1996. Soy protein lowers blood cholesterol. *Kentucky Soybean Board Annual Soy Research Symposium* 13:13. Held 5-6 Jan. 1996 at Lexington, Kentucky.
• ***Summary:*** Coronary heart disease (CHD) accounts for approximately 600,000 deaths each year in the USA. "Elevated serum cholesterol concentration is a major risk factor for CHD and oxidation of low-density lipoprotein (LDL) has a central role in the atherosclerosis process." Dr. Anderson's meta-analysis indicates that consuming 17 to 25 gm of soy protein per day could have a meaningful effect on lowering cholesterol levels. A photo shows Dr. Anderson, smiling. In front of him on a table are packages of Mori-Nu Tofu and Vitasoy soymilk. Address: M.D., Metabolic Research Group, VA Medical Center and Univ. of Kentucky, Lexington, KY 40511. Phone: 606-281-4954.

6990. Lai, Benny. 1996. Dah Chong Hong–A pioneer in using Ontario soybeans. *Canadian Export Soybeans* (*OSGMB, Chatham, Ontario, Canada*) 9(1):2. Jan.
• ***Summary:*** In the mid-1970s Mr. Lai was working in the Food and Edible Oil Dept. of Dah Chong Hong's head office in Hong Kong. He and co-workers imported 800 bags of Ontario special quality white hilum soybeans into Hong Kong for testing. They distributed the soybeans to more than 30 manufacturers of soybean curds, tofu, soy milk, soy sauce, and other soy products. "The quality was considered not very terrific by most end-users, in terms of 'yield' when manufacturing the soy products, but was acceptable." To further explore development of this imported product, Mr. Lai and Mr. Chi-bun Leung flew to Canada, where they were warmly welcomed and treated Dah Chong Hong's as pioneers. "Since that time Dah Chong Hong has imported Ontario soybeans for the Hong Kong market continuously every month now for more than 20 years. The overall quality of Ontario soybeans has improved over the years, and the quantity has been growing from only one or two containers per month in the mid-1970s, to hundreds of containers per month presently."

In 1984 Dah Chong Hong (Canada) Ltd., a wholly owned subsidiary of the head office in Hong Kong, was established in Vancouver, British Columbia, Canada. "One of our goals is to export more Canadian soybeans to many countries in Asia." The address in BC is: 4211 No. 3 Road, Richmond, BC V6X 2C3. Phone: 604-273-8222. Fax: 604-273-9222. Address: President, Dah Chong Hong (Canada) Ltd., 4211 No. 3 Road, Richmond, BC V6X 2C3, Canada. Phone: 604-273-8222.

6991. Lark, Susan M. 1996. The estrogen decision: Self help book. Revised & updated. Berkeley, California: Celestial Arts. 313 p. Illust. Index. 22 x 22 cm. [256* ref]
• ***Summary:*** This excellent, well-researched, and easy to understand book is "A complete guide to relief from menopausal symptoms through hormonal replacement and alternative therapies." It is divided into two parts: I. Hormone replacement therapy: Is it for you? (Chapters 1-9). II. Alternatives to hormone replacement therapy (Chapters 10-17).

Soybeans, soyfoods, and vegetarianism are discussed in many parts of this book. Women in the USA who do not suffer from hot flashes tend to eat a more vegetarian diet high in plant estrogens (p. 68). Nondairy soy yogurt made with live acidophilus cultures is an excellent food for preventing vaginal infections (vaginitis), urinary tract infections, and for menopausal women in general; this delicious food is sold at many health food stores (p. 84-86).

In Chapter 10, titled "Dietary principles of menopause relief," is a section on "Foods that ease menopausal symptoms." A long subsection titled "Beans and peas (Legumes)" (p. 124-26) starts by noting that "Soybean-based products actually help reduce and prevent menopausal symptoms. Soybeans are loaded with natural plant or phytoestrogens, called bioflavonoids." It goes on to discuss the reasons for these benefits, with scientific documentation. Soybean oil is also a good source of essential fatty acids (p. 128-29).

Chapter 11, titled "Menus, meal plans, and recipes," calls for use of soyfoods and other legumes in place of red meats, poultry, and dairy products (p. 163-67); tofu and soymilk are used in many menus and at least 14 recipes.

Chapter 12, titled "Vitamins, minerals & essential fatty acids," contains sections on the benefits of bioflavonoids, which are found in soybeans, for relieving menopausal symptoms, such as heavy and irregular bleeding (p. 172), hot flashes, night sweats, vaginal and bladder atrophy (p. 174-75), menopause-related emotional symptoms and insomnia (p. 177-79, also vitamin E found in soy oil). Omega-3 fatty acids, also found in soybeans, can help reduce one's risk of heart disease (p. 188).

Chapter 13, "Herbs for menopause," notes that estrogen and progesterone are widely synthesized from soybeans, which contain a preformed steroidal nucleus.

One problem with this book for more serious students is that the bibliography is completely disconnected from the

text. One cannot easily go from a statement in the text to its source in the bibliography. Address: M.D., 101 First St., Suite 441, Los Altos, California 94022. Phone: 415-941-5905.

6992. **Product Name:** SoyPro Shake [French Vanilla, or Chocolate Malt].
Manufacturer's Name: Life Services Supplements, Inc. (Marketer-Distributor).
Manufacturer's Address: 3535 Route 66, Neptune, NJ 07753. Phone: 1-800-542-3230.
Date of Introduction: 1996. January.
Wt/Vol., Packaging, Price: Chocolate: 22.7 oz can or Vanilla 21.5 oz can. Each (14 servings) sells for $18.17 plus shipping which is $4.75 for 1-2 items (UPS ground) or $5.50 for 3-4 items.
How Stored: Shelf stable.
New Product–Documentation: Ad (full page color) in Vegetarian Times. 1996. March. p. 73. "SoyPro Shake. Delicious soy protein shake!" "The health benefits of a diet high in soy protein isolates and isoflavones, especially genistein, are becoming the subject of increasing world-wide research... Guaranteed source of isoflavones such as Genistein (.222 grams/serving)."

Talk with Shari Goldwyn of Life Services Supplements Inc. 1996. March 11. This product was first sold in Jan. 1996. It comes as a powder in a can; add water or soymilk. No genistein is added to the product.

Leaflet (5½ by 8½ inches). "SoyPro Shake." "Abundant soy protein isolates–10 grams per serving. Only 144 calories per serving. Zero fat."

6993. Ma, C.Y.; Buzzell, R.I.; Jessop, D.B.; Buttery, B.R. 1996. Evaluation of soybeans for tofu processing. *Canadian Soybean Technical Bulletin* (*OSGMB, Chatham, Ontario, Canada*) 1(1):1-2. Jan.
• ***Summary:*** Contents: Introduction. Tofu yields and texture. Flow properties of soymilk. 11S / 7S globulin ratio. Correlation among soymilk and tofu variables. Conclusions.

In this study, eight Ontario, five USA, and two Japanese soybean cultivars covering a wide range of protein content were evaluated for their tofu processing properties, using glucono delta lactone as a coagulant. Table 1, titled "Characteristics of soymilk and tofu prepared from 15 soybean varieties," lists the following varieties (in descending order of soymilk protein; a water to dry matter ratio of 7 was used in making soymilk and tofu): BARC-6, AC Proteus, Proto, Harovinton, Raiden, Enrei, HP202, Secord, TK-89, Kanrich, RCAT Calico, Maple Arrow, RCAT Angora, Grande. This table contains the following vertical columns: Soybean protein (highest was BARC-6 at 53.4% on moisture-free basis), soymilk protein (highest was 6.1% from AC Proteus), soymilk yield (highest was 5.7 kg/kg from Maple Arrow), tofu yield (highest was 4.6 kg/kg from Harovinton and Raiden), tofu firmness (highest was 0.42 N/mm from Enrei), tofu rigidity (highest was 1680 G', Pa from Maple Arrow), soymilk viscosity (highest was 7.73 from BARC-6), and soymilk 11S/7S (highest was 5.44 from Secord; It has been reported that soybeans with a high 11S/7S ratio will produce firmer tofu).

Conclusion: "Results show that Canadian tofu varieties such as Harovinton have excellent tofu processing properties (yields, textures, etc.) comparable to or exceeding those of Enrei, a Japanese tofu variety." Address: 1. Centre for Food & Animal Research, Agriculture & Agri-Food Canada, Ottawa, Ontario, Canada; 2-4. Harrow Research Centre, Agriculture & Agri-Food Canada, Harrow, Ontario.

6994. McCord, Holly. 1996. Savor the new white-hot superfood. Way, way beyond the usual tofu: 7 easy, tasty ways to get "soying." *Prevention* (*Emmaus, Pennsylvania*). Jan. p. 79-83.
• ***Summary:*** The article begins: "Finally, soy's so hot it's smokin'! After years of neglect, mounting studies now suggest that soy foods help us dodge the big ones–heart disease and breast and prostate cancer. Maybe even osteoporosis... But in the United States, where we grow half the world's soybeans and then feed 'em mostly to chickens, the idea of soy for dinner somehow doesn't cut it. Fear of tofu–a white, spongy, soybean curd that most of us don't have a clue how to cook with–runs deep.

"If this describes you, relax! We've discovered seven surprisingly gentle ways to get you started with soy. They're all delicious and supereasy–foods even soybean sissies can relate to." 1. Pour soy milk on your cereal. 2. Whip up tofu blender smoothies (using Mori-Nu Silken Lite Firm Tofu–aseptic pack). 3. Make chocolate pudding no one can resist (using Mori-Nu Silken Lite Extra Firm Tofu). 4. Add "Sweet Beans" [green vegetable soybeans] to your repertoire. 5. Indulge in healthy Sloppy Joes (add TVP to a can of Sloppy Joe sauce and serve on a bun). 6. Go Nutlettes! The only ready to eat soy breakfast cereal made from a TVP you don't rehydrate. Order by phone from Dixie USA, Inc. 1-800-347-3494. 7. Drink soy protein beverages (such as Take Care. Order by phone from Nutritious Foods, Inc., 1-800-445-3350).

A sidebar discusses why soy is white-hot: Soy protein lowers high cholesterol. Soy isoflavones may beat breast and prostate cancer. Because soy protein causes less calcium excretion from the body than does animal protein, it may reduce osteoporosis. "Also, soy isoflavones may help slow down bone loss after menopause and relieve symptoms such as night sweats and hot flashes." Address: R.D.

6995. Napier, Kristine. 1996. The one food that could save your life: Long a favorite of vegetarians, the soybean is now touted as a potent cholesterol cutter. Why its not just another dietary fad. *Good Housekeeping.* Jan. p. 101-02.

• ***Summary:*** This article begins with a summary of the meta-analysis by Dr. James Anderson of Kentucky, published in the *New England Journal of Medicine* (Aug. 3), showing that soy protein can lower blood cholesterol. Contains two recipes: Hearty pasta & vegetables (with textured soy protein), and Thai tofu stir-fry. A sidebar titled "Where's the soy?," gives a brief description of tofu, tempeh, isolated soy protein, soy flour, soya powder, textured soy protein (TSP), and soy milk. Address: R.D.

6996. **Product Name:** Nutrisoy Premium Lite (Aseptic Soymilk).
Manufacturer's Name: Nutrisoya, Inc.
Manufacturer's Address: 4050 Pinard, St.-Hyacinthe, QUE, J2S 8K4, Canada. Phone: 514-796-4261.
Date of Introduction: 1996. January.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Classified ad in Bluebook Update. 1996. July/Sept. p. 7. In. January 1996 the company launched its new line of aseptic packaged soymilk, "Nutrisoy Premium Lite."

6997. *Prepared Foods.* 1996. New food plant construction: Dasi Linda [Riverside, California]. Jan.
• ***Summary:*** Dasi, Inc., headquartered in Rockville, Maryland, purchased the idle facility in the Loma Linda section of Riverside, California, from Nutricia for $2.2 million, then refurbished it at a cost of $8.5 million. The architects/engineers were O'Mally Engineering, Corona, California. Features: The facility includes an 850,000 cubic foot cooler, with initial capacity to produce more than 50 million quarts of fluid annually. "Dasi's patented processing technology permits gentle UHT pasteurization of fluid products while maintaining their taste. Start-up was expected in Dec. 1995. The plant, which 10,000 square feet of processing space, will make UHT and ESL (Extended Shelf Life) milk, and other dairy and non-dairy products in a variety of packages and sizes.

Talk with Robert Madey, vice president for R&D of Dasi. 1996. Jan. 24. Dasi first signed a written agreement with Nutricia concerning the purchase of the Loma Linda food plant in Oct. 1993, and the deal was finalized in Sept. 1994.

6998. Shurtleff, William. 1996. Report on soyfoods research trip to Cuba: Jan. 7-12, 1996 (Log–unpublished). Soyfoods Center, P.O. Box 234, Lafayette, CA 94549 USA. 68 p. Jan. Unpublished manuscript. Log. 28 cm.
• ***Summary:*** Contents: Daily itinerary and schedule. Questions and to do. Daily notes from interviews and meetings: Visit to INIFAT–Boris Sanchez, Dr. Gilberto Fleites, Dr. Raphael Martinez, Tomas Guzman, Dick Strohl. Visit to Food Research Institute (IIIA): Alvaro Garcia (Director). Alberto Ortega. History of soyfoods in Cuba. Three soy videos at MinAg. To INIFAT with Dr. Martinez: Summaries of many soy-related documents found in the library. With Boris Sanchez at MinAg. Various Cuban's impressions of Fidel Castro. Second visit to IIIA. Taste tests of products. Statistics on soy yogurt production in Cuba. Business cards. Conversations about daily life in Cuba. Trip schedule from Pam Montanaro: San Francisco to Mexico City to Cancun to Havana. Address: Lafayette, California.

6999. *Soybean Quarterly* (*Nebraska Soybean Board, Lincoln, Nebraska*). 1996. New research: Soyfoods consumers are just like you. 2(1):4.
• ***Summary:*** A new study available from the Soyfoods Association of America shows: (1) Urbanites under age 60 on the East and West coasts of the USA are the best soyfoods customers. (2) Soy users are not strict vegetarians; most list fish and chicken as red meat alternatives. (3) Among 26 million soy consumers, 6 million plan to use soyfoods more in the future. (4) Although most eat soyfoods infrequently, consumers would like to try new soyfoods. (5) While value-sensitive soy consumers want lower prices, experienced soy users actually see cost savings when preparing soyfoods. (6) Tofu users want new recipes (besides stir-frys) while soymilk and soy-meat users are concerned more with cost than variety.

7000. Soyfoods Center archival collections, from the 1600s ongoing. 1996. Lafayette, California. [6313 ref]
• ***Summary:*** As of 1 Jan. 1996 the Soyfoods Center Archives contains 6,313 unpublished archival documents–mainly correspondence, interviews, photographs, and unpublished manuscripts relating chiefly to the history of soybeans and soyfoods, and to a lesser extent, the history of vegetarianism and natural foods.

Main subject areas include: early history of soybeans and soyfoods; modern soy protein products; soyfoods industry and market; industrial utilization of soybeans; soy pioneers in the U.S., Europe, and worldwide; major U.S. soybean crushers; Seventh-day Adventists worldwide; pioneer U.S. soy protein companies; pioneer U.S. natural food companies and distributors; soybeans, soyfoods, Third World nations, and world hunger; nutritional and medicinal value of soybeans and soyfoods; and soybean production, trade, and marketing.

Document level access is available through the repository's SoyaScan information retrieval system.

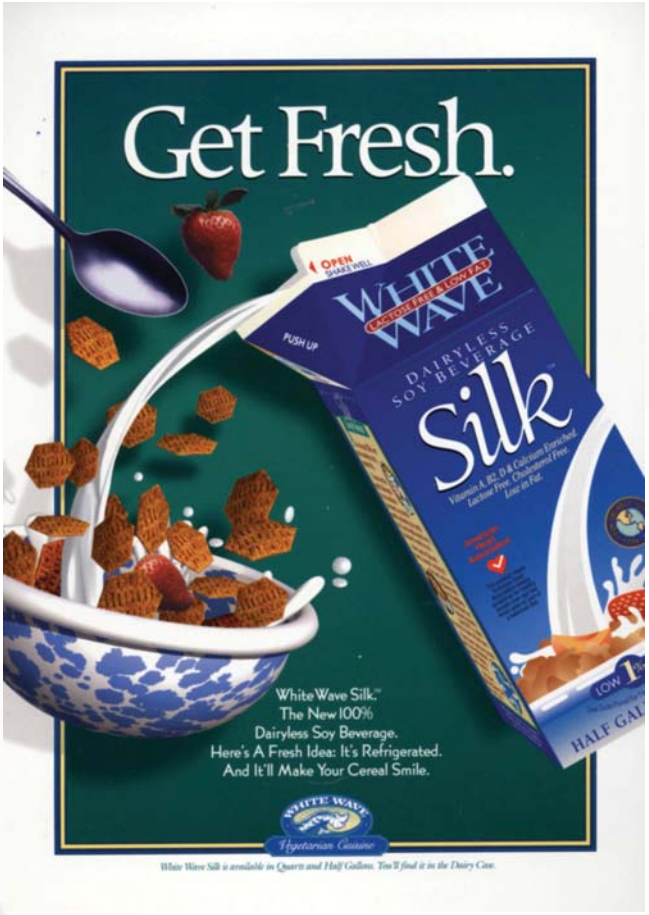
Most important specific subject areas: Miso, natural foods, Seventh-day Adventists, soy sauce, soybean, soybean industry, soybean products, soyfoods, soyfoods industry, soymilk, tempeh, tofu, vegetarianism. Address: P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

7001. **Product Name:** Bulk Soymilk.

Manufacturer's Name: Twin Oaks Community Foods.
Manufacturer's Address: Route 4, Box 169, Louisa, Virginia 23093. Phone: 703-894-4112.
Date of Introduction: 1996. January.
Wt/Vol., Packaging, Price: 4 gallon pouches.
How Stored: Refrigerated.
New Product–Documentation: Letter from then talk with Jon Kessler. 1996. Jan. 29. The soymilk is packed hot into the pouch, then cooled in a cooling sink. The 4-gallon pouches are sealed with a twist tie. Shelf life: 10-14+ days. He has no label for the product since it is sold to only one customer, a group named Synchronicity.

7002. **Product Name:** Silk (Soymilk Sold Refrigerated in Quart or Half Gallon Pure-Pak / Gable Top Cartons) [Vanilla].
Manufacturer's Name: White Wave, Inc. (Product Developer-Distributor). Made in Vancouver, Canada (by Pacific ProSoya Foods) and formulated in Gustine, California (by Tan Industries).
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 1996. January.
Ingredients: Water, whole organic soybeans*, brown rice syrup, raw cane crystals, tricalcium phosphate, natural vanilla flavor, sea salt, carrageenan, xanthan gum, vitamin A palmitate, vitamin D-3, riboflavin (vitamin B-2). * = Grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: Quart or half gallon Pure-Pak Carton. Half gallon retails for $3.59 (Berkeley, California 2/96).
How Stored: Refrigerated.
Nutrition: Per 1 cup (237 ml): Calories 80, calories from fat 20, total fat 2.5 gm (4% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 85 mg (4%), total carbohydrate 11 gm (dietary fiber 0 gm, sugars 9 gm), protein 4 gm. Vitamin A 10%, calcium 30%, vitamin D 30%, vitamin C 0%, iron 2%, riboflavin 30%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Talk with Steve Demos (who phoned), CEO of White Wave. 1995. Nov. 22. This innovative new product will be launched in a very big way, nationwide, on January 8, 1996. The soymilk will be packaged in Pure-Pak cartons, like most milk, and sold refrigerated. The use-by date will be 35 days from the date of manufacture but it actually lasts 120 days. The milk will be made at a plant that is not owned by White Wave, but Steve hopes that White Wave will be making the product within 2 years and that it will be shipped in condensed form to 8 regional dairies, which will pack and distribute it.

Note: Steve Demos later wrote (Aug. 2013) that Silk was formally launched in March 1996 at the Natural Products Expo at Anaheim.



The regular price (with no discounts) will be about $1.79 a quart. The product will compete based on the fact that (1) Consumers prefer this package to aseptic Tetra Brik packaging, and (2) Consumers prefer the flavor of this product to that of all other non-dairy beverages tested–including Rice Dream. The tests were run 3 times. The product is being marketed for use with breakfast cereal. Steve wants customers to first taste the product on the end of a spoon with cereal. It will not initially compete on price. It will be targeted initially to the natural foods market, primarily as a dairyless soy beverage. In addition it is organic, contains only 1% fat, is calcium fortified, etc. Steve's goal is to capture 10% of the market. Lactaid now has sales of $120 million a year. The market for lactose-free beverages is growing at a very fast rate.

News release from Holden McClure in Boulder, Colorado. 1996. Jan. 10. "Don't forget to drink your Silk. Vegetarian Cuisine company launches refrigerated soy beverage." The dateline is Tofu Town, USA. White Wave, Inc., one of the fastest growing vegetarian cuisine companies in the U.S., "announced today that it is entering the beverage market with the launch of Silk, a lactose-free, low-fat, refrigerated soy beverage to be sold in the dairy case. Packaged in a traditional milk carton, Silk is delicious and 100% dairyless. Beginning in February, Silk will be available

in natural food stores across the country." In many blind taste tests, Silk was consistently preferred to the soy and rice beverages that consumers indicated they currently used. Silk will be sold in quart and half gallon cartons at a suggested retail price of $1.99–$2.49 and $3.99–$4.79 respectively. "Ken Vickerstaff, White Wave's VP of Sales and Marketing, believes positioning silk as a refrigerated soy beverage in a milk carton will be the key to success as White Wave enters this $100 million market. 'We're the first company to offer a nationally distributed soy beverage that isn't mispositioned. To date the category has been mispositioned, offering product in a square dry box at room-temperature. That is just foreign to how we eat." Silk is fortified with calcium plus vitamins A, B-2, and D, is low in fat (1% by weight), is made from organically grown soybeans, meets the American Heart Association guidelines and features the Heart Check seal. The motto: "White Wave Silk. Pour it on."

Letter from then talk with Dusty Cunningham of Pacific ProSoya Foods. 1996. Feb. 8. Her company makes the soymilk for Silk at their plant in British Columbia, then ships it to the packer. It is not made at the ProSoya plant in Ontario. Talk with Mark Brawerman. 1996 Feb. 10. Pacific ProSoya now ships numerous tanker trucks of soymilk each week to a UHT [Ultra High Temperature] packer in the Bay Area. This is probably the soymilk used to make Silk. Note: Talk with George Conquergood of IPC. 1999. May 10. Starting in Jan. 1996, the soy base for this soymilk was made by Pacific ProSoya in British Columbia, Canada, then was sent in tanker loads to Ted Nordquist of TAN Industries for formulation at Avoset dairy [the Morningstar plant] in Gustine, central California (29 miles west of Merced). Note: Laura Tewnion and Ann Shaw, who were in the lab at Gustine, helped Ted with the formulation. The Gustine plant had a UHT pilot plant. George has photos of the first tanker sent to Ted, with Lorne Broten and Dusty Cunningham standing by the tanker. Soy base or Soymilk processed by UHT has a longer shelf life than that processed by HTST [High Temperature Short Time]. UHT is also held for a shorter time at the higher temperature.

Talk with Jonathan Gordon. 1996. Feb. 21. Silk is being sold in two sizes, quarts and half gallons, with only one basic flavor for each size. The product is selling extremely well.

Talk with Steve Demos (who phoned). 1996. Feb. 23. The product was released on Jan. 15. in 226 A-level natural food stores nationwide and is selling very well, at the rate of 1,000 cases/week. Steve traveled 30,000 miles in 60 days to get Silk off the ground. White Wave will host the Silk Soirée dance at the Natural Products Expo at Anaheim in March.

Product (half gallon and quart) with Label purchased from Berkeley Natural Grocery Co. 1996. Feb. 28. Price of half gallon: $3.59. Expensive! Deep blue, light blue, white, red, and light brown. Front and back panels: Illustration of a stream of soymilk splashing onto a bowl of breakfast cereal topped with strawberries. "Dairyless Soy Beverage. Vitamin A, B-2, D * calcium enriched. Lactose free. Cholesterol free. Low in fat." The American Heart Association logo shows a white check on a red heart: "This product meets American Heart Association dietary guidelines for healthy people over age 2 when used as part of a balanced diet." A circular logo shows North and South America: "Made from Organic Soybeans." "Low 1% fat." Side panel: Cartoon motif. "Good morning. As you pour Silk over your morning cereal, ponder this. If cows ran the world, Silk would be our national beverage. Soy protein would probably look pretty hip. Good health would be in. Cholesterol would be out. In the Land of Silk and Honey, hunger is a thing of the past and stress is replaced with deep breathing. White Wave has labored steadily since 1977 to offer the world a taste of that calm. Many have said we should take our enthusiasm for good living and bottle it. We have. White Wave Silk. Pour it on. White Wave's mission is to creatively integrate healthy, natural, vegetarian foods into the American diet." Second side panel: "Not to be used as an infant formula." It is "made from organic soybeans that are raised without herbicides, pesticides, or chemical additives."

Talk with Richard Rose of Sharon's Finest. 1996. March 5. White Wave's Silk is being packaged at Avoset, a company in Gustine (south of Modesto), central California. Richard has heard that Silk has not been selling very well so far. "If it fails, it could put White Wave on the ropes."

Leaflet (19 x 13.5 cm, front and back, glossy) sent by Patricia Smith from Natural Products Expo at Anaheim. 1996. March 15. Front (color): "Get Fresh–White Wave Silk." Rear (black-and-white): "New Silk. For cereal. Deliciously friendly to open, pour and store."

Leaflet (28 x 21 cm, single sided, black and white) sent by White Wave. 1996. Feb. 16. "Silk Fact Sheet."

Update: 1996. May 6. It costs about $4,000 to ship a tanker of soymilk from Vancouver (BC, Canada) to the Midwest.

Product with Label purchased at Open Sesame (natural food store) in Lafayette, California. 1998. Dec. 23. Plain quart of "Silk–Dairyless Soy Beverage" retails for $2.49. A quotation on one side titled "Something worth hanging onto" states: "Wish not so much to live long as to live well"–Benjamin Franklin.

"Silk–Soymilk is cool"–Oval shaped sticker on envelope sent by White Wave. 1999. Jan. 25. 2 inches long by 1¼ inches high. White on blue.

Talk with Denis Bolger of New York City. 2003. June 8. On sale at Pathmark supermarkets in New York City: Silk refrigerated for $0.99/quart in Vanilla, SoyaLatte, and Plain. Dec. 12-18. On sale at Pathmark: two ½ gallon cartons of Silk (Vanilla, Plain, or Chocolate) for $5.

7003. McCullen, Kevin. 1996. Silk is answer to vegetarian non-milk quest. *Rocky Mountain News* (*Denver, Colorado*). Feb. 1.

• ***Summary:*** Silk looks like milk and is packaged in a bright blue milk carton. "Demos said he hopes his company's newest creation will appeal to vegetarians and anyone else looking for a non-milk beverage on their breakfast cereal. But he is also trying to have some fun while he promotes the product... Copy on the Silk package ponders what cows might say about soy if they could decide what to put on breakfast tables." A small photo shows a portrait of Demos. Address: Rocky Mountain news staff writer.

7004. *SoyaScan Notes.* 1996. New soymilk manufacturer in America! Cathay Industrial in Los Angeles, California (Overview). Feb. 7-9. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Mr. Shoan Yamauchi bought a brand new building in early 1995 for his son Jon, who has a background in food science and technology, and who started Cathay Industrial in this building at 2121 East 8th St., Los Angeles, California 90021. Phone: 213-623-8126. House Foods needed more space to make tofu so they sold their soymilk manufacturing equipment to Cathay, and in Feb. or March 1995 Cathay began to make the soymilk used in Westbrae Malteds. Cathay also soon began to make soymilk (for use as a beverage) for Wy Ky Foods and for AFC–both companies run by Chinese-Americans. They have always made only soymilk; they do not make any tofu. However they do have their own brand of Cathay Tofu, which is made for them by House Foods & Yamauchi, and which their Cathay Distributing Co. distributes. Boon Nakornratana, a native of Thailand, worked for Mr. Yamauchi for almost 20 years. When Mr. Yamauchi bought this new building, Boon came here with Jon Yamauchi. Mr. Shoan Yamauchi is now semi-retired. He visits Cathay about once a week, and visits House Foods & Yamauchi 3-4 times a week.

Note: Westbrae's soymilk is now made in 3 different locations. Cathay Industrial makes only the soymilk used in Westbrae Malteds. For the past 3 years, part of Westbrae's soymilk has been made by Bill Bolduc and packaged by White Knight, a Tetra Brik packager in Grand Rapids, Michigan. The rest has been made and packaged by Pacific Foods of Tualatin, Oregon.

Update: Feb. 27. Nancy Knudsen, whose father owns the juice company, has started her own company named Healthy Harvest. She is talking with Cathay about making a soy & rice beverage for her.

7005. Holden, Susan L. 1996. If cows ran the world, Silk (TM) would be our national beverage. Soy protein would look pretty hip... (News release). Boulder, Colorado. 1 p. 28 cm. On White Wave letterhead.
• ***Summary:*** "... Good health would be in. Cholesterol would be out. In the Land of Silk and Honey, hunger is a thing of the past, and stress is replaced with deep breathing."

"Look for White Wave Silk at the Natural Foods Expo West–March 14-17 in Anaheim. We'll be in booth #889. White Wave Silk. Pour it on.

"If you'd like additional information on Silk or would like to interview one of our 'cow experts,' please contact me at 303.449.2526." Address: Holden McClure for White Wave. Phone: 303-449-2526.

7006. White Wave, Inc. 1996. Silk fact sheet (Leaflet). Boulder, Colorado. 1 p. Single sided. 28 cm.
• ***Summary:*** "White Wave's biggest new product launch in the company's 18 year history.

"Silk (TM) is a low fat (1% by weight), refrigerated soy beverage. With delicious taste, it is dairyless–100% lactose-free and 100% cholesterol-free.

"Silk meets the American Heart Association dietary guidelines and features the Heart Association's Heart Check seal.

"It is made from organic soybeans, grown and processed in accordance with the California Organic Foods Act of 1990. The natural soybeans are raised without the use of herbicides, pesticides or chemical additives.

"Fortified with Calcium as well as Vitamins A, B2, and D.

"Silk is great poured over cereal, as a cool, refreshing drink, or as an ingredient in any recipe. (A Silk latte is awesome!)

"It is easy to use in cooking and baking, and maintains the same fresh quality and smooth taste associated with milk products.

"It is sold in the dairy case and is packaged in a traditional milk carton.

"Silk is a healthy, protein-packed staple for your daily diet.

"White Wave Silk. Pour it On." Address: 1990 North 57th Court, Boulder, Colorado 80301. Phone: 303-443-3470.

7007. White Wave, Inc. 1996. White Wave makes a big splash with Silk: Vegetarian Cuisine Company launches refrigerated soy beverage (News release). Boulder, Colorado. 2 p. 28 cm. On White Wave letterhead.
• ***Summary:*** "TofuTown, USA, February 1996. White Wave, Inc., one of the fastest growing vegetarian cuisine companies in the U.S., announced that it has entered the beverage market with the launch of Silk (TM), a lactose-free, low fat, refrigerated soy beverage. Now available in natural food stores across the country, Silk is uniquely packaged in a traditional milk carton and sold in the dairy case.

"'In just a couple of weeks on the market, Silk has already made a big splash with retailers as well as consumers,' stated Steve Demos, President of White Wave. This is our biggest and most bodacious new product launch in our company's 18 year history. Our sales of Silk in its first week were comparable to White Wave's sales for its entire first year in business in 1977.'

"He continued, 'We've tapped into the demand for a good tasting, 100% dairyless beverage that appeals to a broad range of consumers–vegetarians as well as mainstream consumers who are looking for a fresh, non-milk product for their breakfast cereal, We believe Silk will bring people back to the breakfast table by allowing them to enjoy a healthy breakfast with Silk and their favorite cereal.'

"Ken Vickerstaff, White Wave's VP of Sales and Marketing, believes positioning Silk as a refrigerated soy beverage in a milk carton will be the key to success as White Wave enters this rapidly growing market, which was estimated at $130 million in retail sales for 1995. We're the first company to offer a nationally distributed soy beverage that isn't mis-positioned. To date, the category has been mis-positioned, offering product in a square dry box at room-temperature. That is just foreign to how we eat,' explained Vickerstaff..."

"Contact Susan L. Holden, Holden McClure, 303.449.2526." Address: 1990 North 57th Court, Boulder, Colorado 80301. Phone: 303-443-3470.

7008. Lo, Francis. 1996. K.S. Lo died on 5 May 1995. Vitasoy went public several months earlier (Interview). *SoyaScan Notes.* Feb. 19. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Francis is the grandson of K.S. Lo (one of Mr. Lo's 18 grandchildren) and the son of Frank Lo. As a young man Frank studied cheese-making in Australia at the Queensland Agricultural College. Frank is currently in charge of new developments in China. Francis is presently a third year student at the University of Guelph in Canada, studying agricultural business. He would like to get some business experience before he goes to work for Vitasoy; he does not want to use the company as a training ground. Vitasoy shares were first sold to the public in about February or March 1995. Francis has a copy of the booklet that was published at that time. Address: Univ. of Guelph, Guelph, ONT Canada.

7009. SSP Private Limited. 1996. Display ad: Earn Rs. 500/- to Rs. 1,500/- per day. Take advantage of Canadian technology. "Soya Cow" machine for soya milk / soya paneer production. *Times of India* (*The*) (*Bombay*). Feb. 28. p. 22.

• ***Summary:*** "Produce 30 litres/hour soya milk (without beany off flavour) and produce 2.0 kg/hour sweets and other products, or produce 7.0 kg/hours soya paneer from soya milk. Space requirement: 5 square metres. Electrical requirement: 1.0 H.P. [horsepower] (220 volt single phase). Price: Rs. 1.0 lakh [100,000 rupees] + taxes.

A photo shows the "Soya Cow" equipment. Address: 19, DLF, Industrial Area–II, 13/4 Mathura Road, Faridabad–121003, Haryana, India. Phone: 0129 27 5441, 7442, 7730.

7010. Daller, Frank. 1996. Re: Present status of the SoyaCow. Letter to William Shurtleff at Soyfoods Center, Feb. 29–in reply to inquiry. 1 p. Typed, with signature on letterhead.

• ***Summary:*** ProSoya Inc. does "sell the small SoyaCow SC-20 but not to users in North America. This is because the system is not currently built to ASME standards and because America is lawsuit crazy. The SC-20 system is primarily for cottage industries and humanitarian applications in developing countries although it is also used as a pilot or lab-type system in North America. We can make a North American model with UL approval etc. but it would almost double the cost of the system. Because of this, we are primarily interested in the lower cost version.

"We are currently awaiting delivery of an Indian manufactured model of the SC-20 which will be available at a lower price even than the Canadian-made ones. We expect this system will be available for about US$5,000... It should be available in 60-90 days." Address: ProSoya Inc., 5350 Canotek Road, #7, Gloucester, ONT K1J 9C9, Canada. Phone: 613-745-9115.

7011. Behling, Ann. 1996. New technology makes soy foods tastier: Canadian firm makes concentrate for ice cream, milk, and yogurt. *Soybean Digest.* Mid-Feb. p. 56.

• ***Summary:*** About Pacific ProSoya Foods and Jersey Farm Soya Yogurt. Photos show: A label for Jersey Farm Soya Yogurt. The soymilk equipment inside Pacific ProSoya's plant at Surrey, British Columbia.

7012. *Bluebook Update* (*Bar Harbor, Maine*). 1996. ProSoya finds new opportunities in Cuba. 3(1):3. Jan/March.

• ***Summary:*** Frank Daller of Canada has made three trips to Cuba and is planning a fourth this February, when he plans to return to Cuba with the head of a major Canadian agricultural equipment company to discuss possibilities of a joint venture company that would compliment the Soy Cubano program, as well as a separate initiative for the production of Canadian agricultural equipment in Cuba.

On another venture, Mr. Daller is working with Dr. Gilberto Fleites, a cancer surgeon from Havana, and a local entrepreneur to install a small SoyaCow SC20 in the first natural food/vegetarian restaurant in Havana. Dr. Fleites is working to build local awareness of the anti-cancer properties of soyfoods.

7013. **Product Name:** [Rice-Based Drink].
Foreign Name: Reis Drink.
Manufacturer's Name: Bruno Fischer GmbH (Importer-Distributor). Made in Belgium.
Manufacturer's Address: Im Auel 88, D-53783 Aetorf, Germany. Phone: 49-2243-4021.
Date of Introduction: 1996. February.

Ingredients: Water, rice* (9%), sunflower oil*, sea salt, sunflower lecithin, natural vanilla extract. * = Organically grown and controlled.
Wt/Vol., Packaging, Price: 1 liter glass bottle.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Product with Label sent by Bruno Fischer. 1998. April 15. Ingredients and nutritional value are given in five languages, each with the flag of that country by the product name: German, English, Italian, French, and Dutch. Talk with Bruno Fischer. 1998. May 13. This product was launched in Feb. 1996. Note: Imagine Foods ships a rice beverage base to the UK and packages it there.

7014. Connolly, Maureen. 1996. Have you had your tofu today? For the health-conscience, soy has become the superfood du jour. Is it all it's cracked up to be or the next incarnation of oat bran? *Women's Sports and Fitness* 18:62-63. Jan/Feb. [3 ref]
• ***Summary:*** Studies show that soy can reduce your risk of coronary disease. A 1990 study by the National Cancer Institute identified five anticarcinogens present in soybeans. As little as 25 gm/day of soy protein can be beneficial to health, and many soy products are now on the market. The author talks about "soy's new celebrity" and asks her readers "why not try tofu?"

A sidebar titled "A smorgasbord of soy" (p. 63) gives a brief description of the following soy products: Isolated soy protein, miso, soybeans, soy flour, soy milk, tempeh, textured soy protein (TSP), and tofu. Address: New Jersey.

7015. Golbitz, Peter. 1996. Nondairy beverage market pours it on. *Natural Foods Merchandiser.* Feb. p. 68.
• ***Summary:*** A graph shows retail sales of milk alternatives in million dollars from 1987 to 1995, and projected to 1999–based on a recent report by Packaged Facts. They have risen dramatically, from 29.0 in 1987, 41.2 in 1988, 60.2 in 1990, 84.2 in 1992, 108.4 in 1994, 130.1 in 1995, 179.5 in 1997 (projected), and 231.2 in 1999 (projected). Interestingly, according to the USDA per capita consumption of fluid cow's milk has fallen nearly 20% since 1970. Soymilk comprises an estimated 80% of the market for fluid milk alternatives, with most of the balance comprised of rice drinks.

Much of the information in this article comes from a consumer study conducted in 1995 for the Soyfoods Association of America (SAA). According to this study, 51% of soymilk consumers first purchased soymilk because they were aware that the product was "generally healthy food" and an additional 32% purchased soymilk because of allergies to dairy products and lactose intolerance. A remarkable 75% said they were familiar with the reported link between soyfoods consumption and reduction in heart disease, and 66% were aware of possible cancer risk reduction.

The SAA study also found that soymilk is by far the most frequently consumed soyfood, used on average almost twice a week. Most people drink it as a beverage, but 25% of them pour it on their cereal and 30% use the product most often in cooking and baking. Where do consumers buy soymilk? 51% buy it in a natural- or health food store or a co-op, 46% buy it in a supermarket (showing that soymilk joined that select group of natural food products that have made a successful leap into the mass market), and 3% buy it in Oriental markets.

Soymilk is too expensive. 47% of current users said they would buy more if it cost less. In addition, 40% said they would buy more if it were more available. Address: President of Soyatech Inc.

7016. Hagler, Louise. 1996. Soyfoods cookery: Your road to better health. Summertown, Tennessee: The Book Publishing Co. 160 p. Illust. Index. 21 cm. Introduction by Mark and Virginia Messina.
• ***Summary:*** Contents: Foreword, by Louise Hagler. Introduction, by Mark Messina and Virginia Messina: Introduction, soybeans–a powerhouse of nutrition, soy and cancer (soybeans–a phytochemical factory, genistein and non-hormone cancers, soy and cancer treatment, isoflavones in the diet), soyfoods and heart disease–beyond cholesterol, soyfoods and bone health, soyfoods and kidney disease, menopause, perspective on soyfoods, about the Messinas. Basic soyfoods (glossary): Whole soybeans, fresh green soybeans, soymilk, okara (soy pulp), soymilk powder, soy protein concentrates, soy protein isolates, tofu, freeze-dried tofu, tempeh, textured vegetable protein, miso, soy flour or grits, yuba or bean curd stick or sheet, natto, soy sauce, soy oil, soy lecithin, convenience soyfoods (frozen soyburgers, frozen tamales and burritos, frozen soy hot dogs or wieners, frozen fat-free soy ground meat replacement, frozen soy pizza, tempeh burgers, frozen tofu lasagne, stuffed shells, manicotti, tortellini or ravioli, frozen soy breakfast links or "sausages" or tempeh "bacon," "ground" tofu, meatless chili mixes, meatless burger mixes, soy "cheeses," eggless soy mayonnaise, tofu salad dressings, soy ice creams, frozen pot pies, frozen pocket breads, instant miso soup, eggless soy cake, quick bread, pancake and waffle mixes, liquid soy coffee creamer, smoked or baked tofu). Feeding babies and children soyfoods. Breakfast, brunch & bread. Whole soybeans. Sauces, spreads, dips & dressings. Soup & salad. Main dishes. Desserts. Drinks & yogurt.

No dairy products or eggs are used; honey is called for in some recipes. Optional microwave instructions are sometimes included. Address: Summertown, Tennessee. Phone: 615-964-3571.

7017. Messina, Mark; Messina, Virginia. 1996. SoyFacts No. 1: Soyfoods & allergies (Leaflet). Lebanon, Indiana: Indiana

Soybean Development Council. 2 p. Front and back. 28 cm. [20 ref]
• ***Summary:*** Contents: Introduction. Soy protein allergy. Soy infant formula. Soyfoods and allergy. Conclusion.

"Soy infant formula: For many years soy-based infant formulas were recommended for infants with cow's milk protein intolerance. In healthy, non-allergic children, soy is generally less allergenic than cow's milk (Eastham 1989). The incidence of cow's milk allergy is thought to range from 0.3 to 7.5 percent among infants (Bana & Heiner 1980); allergy to soy is seen in 0.5 percent or less of the population.

"But there is currently some debate over the advantages of soy formulas for infants who are allergic to cow's milk. Where the gut is already damaged as a result of cow's milk allergy, the incidence of concomitant soy allergy may be substantial. In the early 1980s, the American Academy of Pediatrics Committee on Nutrition recommended that soy-based infant formulas not be used in the dietary management of documented clinical allergic reactions to cow's milk protein, although the committee concluded that soy formula, in comparison to cow's milk formula, is 'probably a better source of nutrition in allergy-prone infants.' More recently, researchers from Italy concluded that most of the studies reporting soy allergenicity had serious flaws. Based on an extensive review of the literature, the Italian researchers concluded that soy formulas should be used for infants with IgE-mediated cow's milk protein allergy."

Note: One version of this leaflet was developed for consumers and another for dietitians. The project was funded by the Indiana Soybean Development Council. Address: 1. PhD; 2. MPH, RD. Both: Nutrition Matters, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

7018. Messina, Mark; Messina, Virginia. 1996. SoyFacts No. 9: Soyfoods & nutrients (Leaflet). Lebanon, Indiana: Indiana Soybean Development Council. 2 p. Front and back. 28 cm.
• ***Summary:*** Contents: Introduction. Macronutrients in soybeans: Protein, fat, fiber. Micronutrients in soyfoods: Calcium, iron, other. A table shows the nutrient content of the following soyfoods: Soybeans (½ cup, cooked). Tempeh (½ cup). Textured soy protein (½ cup cooked). Soynuts (¼ cup). Tofu (½ cup). Soy flour, defatted (¼ cup). Soy milk, plain (1 cup). For each food the following are given: Calories, protein, carbohydrate, fat, saturated fat, niacin, vitamin B-6, folic acid, calcium, iron, magnesium, copper, zinc.

This leaflet begins: "Like other legumes, soybeans are rich in nutrients. However, the macronutrient profile of soybeans differs in some important ways from most other legumes. Soybeans are higher in both protein and fat than other beans and are relatively low in carbohydrate."

Macronutrients–"Protein: Soybeans derive about 35 to 38 percent of their calories from protein compared to approximately 20 to 30 percent in other legumes. Soy protein is also of the highest quality. Under new guidelines that have been adopted by the Food and Drug Administration and the World Health Organization for evaluating protein quality for children and adults, soy protein isolate receives a rating of 1, which is the highest possible score. This means that the quality of soy protein is equal to that of meat and milk proteins."

Note: One version of this leaflet was developed for consumers and another for dietitians. The project was funded by the Indiana Soybean Development Council. Address: 1. PhD; 2. MPH, RD. Both: Nutrition Matters, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

7019. Messina, Mark; Messina, Virginia. 1996. SoyFacts No. 11: Soyfoods & women's health (Leaflet). Lebanon, Indiana: Indiana Soybean Development Council. 2 p. Front and back. 28 cm. [21 ref]
• ***Summary:*** Contents: Introduction. Breast cancer. Menopause. Osteoporosis. Heart disease. Soy and fertility. Soyfoods in the diets of women.

"Menopause: The decrease in estrogen production that signals menopause can produce a variety of symptoms. These include difficulty in regulating body temperature that manifests as night sweats and hot flashes. However the severity of menopause symptoms varies throughout the world. For example, Asian women are typically one-third as likely as American women to report symptoms. Although, to some extent, this may reflect cultural differences regarding willingness to discuss these symptoms, there appears to be an actual difference in the severity and incidence of symptoms (Lock 1994). Soy consumption has been proposed as one explanation for these differences. The estrogenic activity of soybean isoflavones may help to offset the effects of reduced estrogen production by the ovaries. Even though soy isoflavones exhibit very weak activity (1/1,000 to 1/100,000 the potency of endogenous estrogen), in women consuming soyfoods, blood levels of isoflavones can be 1,000 times higher than endogenously produced estrogen levels (Xu et al. 1995). Most important, in a recent Australian study, researchers found that women who consumed 45 grams of soy flour per day experienced a 40 percent decrease in menopause symptoms (Murkies et al. 1995). Several studies examining the effects of soy on menopause symptoms are under way."

Note 1. One version of this leaflet was developed for consumers and another for dietitians. The project was funded by the Indiana Soybean Development Council.

Note 2. The issue of goitrogens / goitrogenic substances in soybeans and soyfoods is not discussed in any of these 11 leaflets. Address: 1. PhD; 2. MPH, RD. Both: Nutrition Matters, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

7020. Ornish, Dean. 1996. Everyday cooking with Dr. Dean Ornish: 150 easy low-fat high-flavor recipes. New York, NY: HarperCollins Publishers. xix + 344 p. Index. 24 cm. [6 ref]
• ***Summary:*** This is Dr. Ornish's 4th book. Recommends low-fat vegetarian meals. Organized into 45 seasonal menus with "recipes that use inexpensive, commonly found ingredients and follow easy time-saving steps."

The opening chapter, "Choices made easy," has the following contents: Why I wrote this book (in response to thousands of letters he receives each year). Delicious and nutritious. Low fat, high flavor (He has commissioned some of America's most celebrated chefs to work within his guidelines and see what they can create. Dr. Ornish and his team have "trained the chefs at the White House, Camp David, the Navy Mess, and on *Air Force One* who cook for President and Mrs. Clinton. We've learned what works"). Beyond heart disease (to improving the quality of your life right now; you will feel so much better!). Good nutrition is easy (If you drink, limit it to one drink per day. "Reducing salt is a good idea for everyone, but its most important if you have high blood pressure, kidney disease, or heart failure") The Life Choice Program ("which also includes moderate exercise, stress management training (stretching, breathing, meditation, visualization, and relaxation techniques), smoking cessation, and psychosocial support... this is a diet and lifestyle program based on (1) the joy of life, not the fear of death, and (2) choice, not coercion"). Why a plant-based diet? ("Cholesterol is found only in animal products, which also tend to be high in saturated fats"). Eat more complex carbohydrates, weigh less. Why 10 percent fat? (recommends 10% of calories from fat. The average American diet has about 40% of its calories from fat. You can eat nonfat dairy, egg whites, but no added oil). Why so little cholesterol? (Your dietary requirement for cholesterol is zero). What is the cause? (His program addresses the cause of the problem rather than trying to get rid of the symptoms). Big changes are easier than small ones (First, you fell so much better so quickly. Second, your palate adjusts quickly so that you prefer low-fat foods. Fat is an acquired taste, not one of the four basic tastes).

Soy related recipes: Vegetable broth ("Experiment with salad dressings made with soft tofu or nonfat yogurt," p. 18-19). Roasted onions (For heightened taste, use soy sauce, Japanese miso, etc., p. 22). Supermarket tips and traps ("Tofu is sometimes in the produce section, sometimes in the dairy case." Take it from the dairy case if you have a choice; the colder temperature keeps tofu fresher, p. 35). Miscellaneous ("Soymilk in aseptic cartons has a long shelf life before its opened. Use it as a cholesterol-free alternative to nonfat cow's milk," p. 39). How to cook legumes (Soybeans contain about twice as much protein as other beans and are a good source of omega-3 fatty acids. Their protein is complete protein, and has been show to lower blood cholesterol levels. For smart ways to incorporate more soy foods into your diet, see p. 313. Two servings a day {½ cup each} from the legume group are ideal, p. 41). Section on "Meat substitutes" (p. 56-57) mentions soy protein, wheat gluten, tofu, etc. "One of the most popular meat substitutes is Textured Vegetable Protein, or TVP." It is made from defatted soy flour and is sold in various flavors and shapes. "The Boca Burger 'No Fat Original' used in some recipes in this book is made from defatted soy protein..." The section on Miso (p. 57) notes that it "adds nutty flavor to soups, stews, and dressings." The section on tofu (p. 58) describes the many types, their uses and nutritional value. Creamy coleslaw (with "Creamy tofu dressing," p. 164-65).

The section on "Commonly asked questions about the Reversal Diet" (p. 306+) has a subsection titled "Since soy products are high in fat, how much can I have?" which begins (p. 313): "Soybean products have no cholesterol and supply essential fatty acids and are an exception to the guideline of no more than 3 grams of fat per serving. However use good judgment... a good rule of thumb is to stay within 4 ounces tofu or 2 cups soy milk per day. Soy milk–the rich creamy product of soybeans ground with water–is an excellent cholesterol-free alternative to cow's milk. It is available plain and flavored, in a range of fat contents."

"Will I get enough protein on the Reversal Diet?" (p. 314-15) begins: "Americans tend to be overly concerned about getting enough protein. In fact, meat eaters tend to get too much. Eating too much protein, especially animal protein, can increase your risk of cancer, diabetes, and heart disease... and may lead to osteoporosis."

"Where do I get protein on the Reversal Diet?" (p. 315) begins: "The body's protein requirement is about 50 grams per day for women and about 60 grams for men." "Good sources include beans and peas, including soy milk and tofu."

On the same page under "combining proteins": "(The soybean is the only plant food with enough of all the essential amino acids to be considered a complete protein)."

The recipes in this book were developed by Janet Fletcher, Jean-Marc Fullsack, and Helen Roe. The Boca Burger is called for in many recipes (p. 57, 177-78, 194-95, 237-38). Address: M.D., President and Director, Preventive Medicine Research Inst., 900 Bridgeway, Suite One, Sausalito, California 94965; Asst. Clinical Prof. of Medicine, School of Medicine, Univ. of California, San Francisco. Phone: 415-332-2525.

7021. Stacy, Michelle. 1996. Can soy save your life? Michelle Stacy separates hype from hope. *Food & Wine.* Feb. p. 88-94, 96. [1 ref]
• ***Summary:*** This story is based on the study by Dr. James Anderson in the *New England Journal of Medicine* (Aug. 1995). "In its cholesterol-busting guise, soy bears an eerie resemblance to another unglamorous food: oat bran."

"A growing body of evidence suggests that it [soy] may help prevent certain cancers, slow calcium loss from bones and moderate symptoms of menopause. Many of these effects, researchers posit, are due to natural substances in soy called isoflavones, which resemble the hormone estrogen and may replicate the many protective effects of estrogen without any of its drawbacks."

But many marketers, including Ronald Paul (president of Technomics, a food-consulting firm in Chicago) believe that soy has a bad image. "It's going to be a marketing challenge to change the public's view of it. I always like to say that if you can make the kiwi a success you can make anything a success." Will companies start to promote their products by advertising on the package "Excellent source of soy!"? Another obstacle to acceptance for some people that tofu reminds them of the health-food era of the 1960s.

Photos show the following packaged soyfoods, each with a brief description: Edamame, soy sauce, soy milk, soy flour, miso, tempeh, roasted soybean powder, tofu. Contains the following recipes, each accompanied by a color photo: Grilled tofu salad. Miso-carrot dressing. Tempeh sandwiches. Chili con tofu. Miso-clam soup. Fried tofu with mushroom gravy. Miso-stuffed chicken. Silken tofu in ginger syrup. A full-page color photo shows green vegetable soybeans in and around one large pod. Small photos show most of the recipes, plus a field of soybeans, and a farmer holding a young soybean plant. Address: Author of *Consumed: Why Americans Love, Hate, and Fear Food* (Simon & Schuster).

7022. The Mail Order Catalog. Spring-summer 1996. Catalog of books and food. 1996. P.O. Box 180, Summertown, TN 38483. 24 p.
• ***Summary:*** The book section of this mail order catalog contains listings for an excellent selection of vegetarian and vegan cookbooks, plus books on food nutrition & health, alternative healthcare, women's healthcare, native Americans and their cultures, and animal rights.

The vegetarian food products section offers TVP granules and chunks, Response textured soy protein concentrates (misleadingly called "Response TVP flakes"), Harvest Direct vegetarian broth, and Protean, instant gluten flour (regular or flavored), seitan "chicken" or "sausage" mix, Mori-Nu silken tofu, Soja instant soy beverage, organic low-fat soymilk powder, Red Star nutritional yeast, Beano, and tempeh starter. Address: Summertown, Tennessee. Phone: 800-695-2241.

7023. White Wave, Inc. 1996. Get fresh. White Wave Silk (Ad). *Vegetarian Times.* Feb. p. 15.
• ***Summary:*** This attractive full-page color ad shows a carton of White Wave Silk (soymilk) being poured onto a blue and white bowl of breakfast cereal. The background is bluish-green. "The new 100% dairyless soy beverage. Here's a fresh idea: It's refrigerated. And it's make your cereal smile."

This ad also appeared in the March 1996 issue (p. 11) of Vegetarian Times. And in the Feb. 1996 issue of Natural Foods Merchandiser (p. 67). This was also printed on glossy cardstock as a leaflet or poster (19 x 14 cm). Address: Boulder, Colorado.

7024. Woodhams, Dave. 1996. Gag the messenger. *SIN Newsletter* (*Soy Information Network, Whangarei, New Zealand*) No. 2. p. 2-4. Feb.
• ***Summary:*** In October 1995, Dr. Mike Fitzpatrick, then of Grayson Laboratories, was forbidden to speak or write publicly in the soy debate on pain of instant dismissal from his job. He had been invited to present a paper on "The Phytoestrogen Content of Soy-based Infant Foods" at the Third International Conference on Phytoestrogens, at Little Rock, Arkansas. The types of pressure put on Dr. Fitzpatrick are discussed. "He was able to attend the conference on the condition that he did not ask questions in the open sessions or speak to the press on his return." Address: PhD., CEng, MIChemE, MIPENZ, MNZIC, 2/47 Church St., Devonport 1309, New Zealand.

7025. Wieczorek, Anna. 1996. Re: Berrivale Orchards Ltd. Letter to William Shurtleff at Soyfoods Center, March 11–in reply to inquiry. 1 p.
• ***Summary:*** "Berrivale Orchards is the largest manufacturer of fruit juice products in Australia. We are a wholly owned Australian company controlled by Fruit Packing Co-operatives, which are owned by small individual growers."

Note: A color brochure and various product description sheets notes that at the McKay plant the company also makes or packs two Soy Drink products, in 1 liter low fat and premium types. At the Sturt plant the company makes or packs three types of Soy Milk: "Milk extraction from Soya Beans–'Berri.' Pure Harvest Soy and Rice Milk. Good Life Soy Drink (Isolate UHT Soy)." Berri and Good Life Soy Drink are made from soybeans groan and harvested in Australia. Good Life is made at Berri, heart of Australia's Riverland. Good Life Soy Drinks are available in 4 varieties: UHT 1 liter combi in either premium or low fat. Chilled 1 liter PurePak in either premium or low fat. Address: Food Technologist, Technical Dep., Berrivale Orchards Ltd., P.O. Box 396 (McKay Road), Berri, SA 5343, Australia. Phone: (085) 82 1661.

7026. Rayes, Kamal. 1996. Designing and developing the CIDA soy program in Sri Lanka. New developments with Plenty Canada (Interview). *SoyaScan Notes.* March 12. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Kamal designed and developed the CIDA soy program in Sri Lanka. In 1983 he was sent to Sri Lanka to look at an industrial soy project and possible work with soyfoods at the grass-roots level. He designed the project with two parts: (1) An industrial part, that never took off,

because be thinks CIDA never understood what he was talking about, and (2) A grass-roots part, which did well. His grass-roots soyfoods project in Sri Lanka was the world's first. At the time INTSOY had a pilot plant in Gannoruwa with a food specialist. There was little or no soy industry in Sri Lanka at the time. Kamal designed a small soy plant ($3-4 million) but he got the richest man in Sri Lanka interested in getting involved. "He told me in about 1983 or 1984: 'If you build this plant and you give me four per years (2 people for 2 years) to show us how to manage it, I am willing to pay you back everything you put in and at the same time I will reserve (free of charge) 49% of the equity of the plant for the farmers growing and delivering the soya beans.' He was owner of the Mercantile Bank in Colombo. The whole beautiful idea never happened; it was too difficult for CIDA bureaucrats to understand. This would have been a first in the history of development." For details, call Mr. Jeyabalan in Toronto at 416-498-1394. He knows Ellen Jayawardene. He brought in Muttiah Jeyabalan to manage the Plenty Canada program. Kamal was later shifted to CIDA's program in Indonesia, but he was kept informed of developments in Sri Lanka. Then he took early retirement from CIDA. After a few years Plenty Canada started to fall apart. He thinks Larry McDermott was fired or left and there is a new board of directors. "Now they are almost folded. I think they are about to close shop." They were doing little by 1992. Kamal is a native of Egypt and is now age 64. He came to Canada 31 years ago; before that he was involved with international development at the United States. Now he is thinking of doing something with soymilk, soy yogurt, and soy ice cream in Ontario. He wonders whether the ProSoya technology in Ontario is superior to the one that INTSOY is promoting. Address: 296 Sherwood Dr., Ottawa, ONT K1Y 3W6, Canada. Phone: 613-728-2792.

7027. Demos, Steve. 1996. New developments with Silk–refrigerated fresh soymilk in a Pure Pak carton (Interview). *SoyaScan Notes.* March 20. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** On Monday, March 18, on the Today Show, the famous television program did a special with *Good Housekeeping* magazine on what happens if your child comes home and announces that he or she is now a vegetarian. They are interviewing the nutritionist for *Good Housekeeping* who had spread out all the products she was recommending in the basic food groups, and there with the Kraft Macaroni and Cheese was White Wave's Silk–for 90 to 120 seconds on national TV. It was unbelievable. It looked great. The product has been out 60 days and its already on national TV. "I said, 'Lift your eyes up to a bigger horizon.' I realized that I'm not really selling a beverage. Rather I'm selling a nutritional, functional complement to breakfast. That is totally different." This could be a new category. "What happens if I find a giant behemoth to dance with and I convince one of these missionaries that this is a real market opportunity out there. I can't educate them. The only people that can are the large corporations who are looking for strategic things that they believe will work. If a cereal company picked up this idea a really believed in it–amazing what we could do and how fast it could occur. I've already got the Today Show showing our product next to Kraft.

Steve just returned from the big Silk Soiree at the Natural Products Expo at Anaheim. It was a great event. One thousand people attended the dance and party. White Wave fed 1,500 people at the industry reception and ran out of food in an hour and a half. The response was extremely positive.

Steve has developed a creative way of introducing food buyers (mainly for retailer chains) to Silk–via the Silk Breakfast. The goal is to absolutely convince buyers to put this product on the shelf under White Wave's terms and conditions. He sends them breakfast by Fed Ex overnight with a blue ice pack in it. It comes in a wicker basket lined with shredded straw as is found in the bottom of Easter baskets. In that they place a Fiesta ceramic bowl, and in it a napkin, a nice spoon. On the right is an empty carton of Silk. At the front are two Tupperware containers, one containing Silk, and the other fruit. In the bowl is cereal, and the bowl is covered with a piece of wax paper with a rubber band around it. The crowning touch is a rose with a flower-water stem. The opening letter begins: "I'm so sorry I can't be there, but I'd like to treat you to breakfast... While you're enjoying the food, please read this letter. We'll call you in 2 hours." In some cases Steve would arrive while the person was just finishing the breakfast. He would say: "How was breakfast and do we have anything to talk about?" It went over very well. The key is not the gift but the creativity–when you breathe life into every aspect of a product.

One of the investigative shows on NBC-TV about 2 months ago said that of all the tofu brands they tested from the New York market, the only ones they could recommend were Nasoya and White Wave. The others had microbiological problems. White Wave pasteurizes its tofu after it is packaged–its the only way to get shelf life beyond 21 days. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

7028. Dairy Farmers of Canada. 1996. Dairy Farmers of Canada response to *Becoming Vegetarian.* Chapter: "Without Dairy Products." Montreal, Canada: Dairy Bureau of Canada. 45 p. March. Undated. No index. 29 cm. [20 ref]

• ***Summary:*** This is a negative critique by Canada's dairy industry of this popular vegan cookbook written by three registered dietitians: Vesanto Melina, Brenda Davis, and Victoria Harrison. Contents: Introduction. 1. Cows and dairy farming. 2. Milk and milk products. 3. Osteoporosis. 4. Calcium. 5. Vitamin D. 6. Riboflavin. 7. The menus. Finally.

Letter from Dairy Farmers of Canada. 1996. Sept. This critique was published in March 1996. Address: 1981 McGill

College Ave., Suite 1330, Montreal, QUE H3A 2X9, Canada. Phone: (514) 284-0449.

7029. **Product Name:** Rice Magic (Non-Dairy Rice Beverage) [Vanilla].
Manufacturer's Name: First Light Foods, Inc. (Distributor).
Manufacturer's Address: 60 East Elm St., Chicago, Illinois 60611. Phone: 1-800-555-4332.
Date of Introduction: 1996. March.
Ingredients: Filtered water, brown rice, expeller pressed canola oil, natural vanilla with other natural flavors, tricalcium phosphate, *Lactobacillus acidophilus* and *L. bifidus* cultured product added, guar gum, xanthan gum, carrageenan, locust bean gum, sea salt, vitamin A palmitate, vitamin D-2.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton. Retails for $1.39.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Product with Label purchased at Open Sesame in Lafayette, California. 1995. April 13. Reclosable cap. The name of the product is in light blue and white, set against a dark blue sky with white stars and a crescent moon. On the bottom half of the front panel some of the white milk is splashing up from corn flakes and blueberries, with a trail of stars connecting the milk and the moon. On the back panel, against the same dark sky, is written, "It just tastes better!!" A side panel states: "Lactose free. No cholesterol. Calcium added. Vitamins A & D. No saturated fat. *Lactobacillus acidophilus* and *L. bifidus* cultured product added.

Call to toll-free number on package. 1996. July 3. This product was apparently developed and is marketed by the same company (J&G Inc.) that developed Soy-Um soymilk.

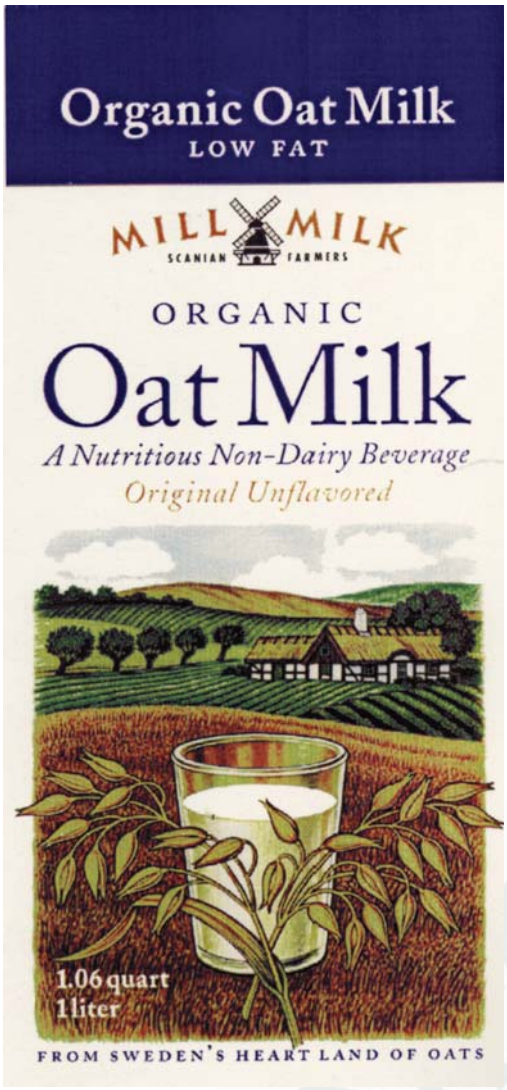
7030. **Product Name:** Imagine Pudding Snacks [Chocolate, Lemon, Banana, Butterscotch].
Manufacturer's Name: Imagine Foods, Inc. (Marketer-Distributor). Rice milk made by California Natural Products, Manteca, Calif.
Manufacturer's Address: 299 California Ave. #305, Palo Alto, CA 94306. Phone: 415-327-1444.
Date of Introduction: 1996. March.
Ingredients: Lemon: Filtered water, partially polished brown rice syrup, rice starch, expeller pressed oleic safflower oil, lemon juice, natural lemon flavor, carrageenan, tricalcium phosphate, sea salt, colored with turmeric.
Wt/Vol., Packaging, Price: Four x 4 oz plastic cups, two atop two, in a paperboard sleeve. Retails for $1.49 (6/96, Concord, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 1 cup = 113 gm.: Calories 150, calories from fat 30, total fat 3 gm (5% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 50 mg (2%), total carbohydrate 33 gm (dietary fiber 1 gm [5%], sugars 19 gm), protein 1 gm. Vitamin A 2%, vitamin C 2%, calcium 10%, iron 2%, vitamin E 6%, phosphorus 6%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Ad (8½ by 11 inch, color) in Natural Foods Merchandiser. 1996. March. p. 15. "Imagine the perfect chocolate pudding." It would be deliciously rich, naturally creamy, sensibly low fat and surprisingly dairy free. The perfect pudding would be ready to eat anytime, anywhere. Imagine Natural Pudding Snacks–now a reality in four delectable flavors where natural foods are sold." A color illustration shows a large spoon topped with a swirl of chocolate pudding. A color photo shows the 4 products/flavors.

Spot (color) in NFM's New Product Review. 1996. Spring (April). p. 1. Imagine Foods introduces all-natural puddings which are creamy, low in fat, and dairy free. This product is packaged in an aseptic cup, which is pretty standard for the many types of puddings in the USA. Ad (full-page, color) in Vegetarian Times. 1996. June. p. 5. "Imagine. Imagine the perfect chocolate pudding."

Product with Label purchased at Trader Joe's in Concord, California. 1996. June 14. The 4 Aseptic cups wrapped in the paperboard sleeve are 5.25 by 2.75 by 2.25 inches. Lemon yellow, blue, and light purple on white. Illustrations of whole and sliced lemons. "Low fat & non-dairy."

Visit to Trader Joe's in Concord, California. 1997. Sept. 21. They no longer carry this product. Talk with Imagine Foods' Customer Service. 1997. Sept. 22. This product is still on the market in all 4 flavors. Trader Joe's keeps its prices down by picking up all products at the Imagine Foods warehouse, then warehousing all TJ products, thus serving as their own distributor.

7031. **Product Name:** Mill Milk Organic Oat Milk.
Manufacturer's Name: Nordic Farmers, Inc. (Importer-Marketer). Made in Sweden.
Manufacturer's Address: 4848 South Highland Dr., Suite 211, Salt Lake City, Utah 84117. Phone: 801-272-9759.
Date of Introduction: 1996. March.
Ingredients: Artesian spring water, organically grown oats, canola oil.
Wt/Vol., Packaging, Price: 1 liter aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Portfolio sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 1996. March. Contains 8 leaflets describing the product and its development. The product was first successfully introduced in the United Kingdom in the fall of 1995 by the Swedish trading company named Scanian. Development of Oat Milk began over 7 years ago when Swedish farmers, scientists, food producers and packaging companies formed a cooperative venture called Skanska



Lantmannen Group (SLG). Nordic Farmers, founded by Siri Sant Khalsa, founder of CBB Brokerage, is an international trading firm with exclusive rights to sell and distribute the product. In Sweden ecological quality is regulated by KRAV.

Note 1. This product was introduced at this Expo with T-shirts; it tasted good.

Note 2. This is the earliest known commercial oat milk product.

7032. O'Connor, Amy. 1996. BGH linked to cancer in humans. *Vegetarian Times.* March. p. 18.
• ***Summary:*** This study by Samuel Epstein, M.D., was published in the winter issue of the *International Journal of Health Services.* He is professor of environmental toxicology at the University of Illinois-Chicago.

7033. **Product Name:** SoBe (Soy Protein Infused Fruit Drinks) [Berry, Citrus, Peach].
Manufacturer's Name: South Beach Beverage Co.
Manufacturer's Address: Norwalk, Connecticut.
Date of Introduction: 1996. March.
How Stored: Refrigerated.
New Product–Documentation: Dwyer, Steve. 1999. "Shooting from the 'hip.'" Prepared Foods. Oct. John Bello and Norm Snyder are the founders of South Beach Beverage Co. in Norwalk, Connecticut. They started out with "me-too" tea and juice varieties. Then in March 1996 they retooled their brand. Sales jumped from $13 million in 1997 to $67 million in fiscal 1998. "Consumers buy SoBe because it tastes great, provides a nutraceutical benefit and has a hip image."

Spot in Vidette Times. 1999. Nov. 3. "SoBe Soy Essentials Drinks. 14 oz for $1.49. They are sweetened with pure natural cane sugar and come in three flavors: berry, citrus, and peach." A small photo appears to show bottles of the 3 flavors.

7034. *SoyaCow Newsletter* (*Ottawa, Canada*). 1996. Non-profit company to serve NGOs [Frank Daller]. 5(1):1. Jan/March.
• ***Summary:*** "Frank Daller is leaving ProSoya to form a not-for-profit company to serve NGOs [non-governmental organizations], charities, and other institutions' needs for low cost soyfood equipment.

"During the 2½ years of his presidency, Frank helped take ProSoya from a basement research company to a two million dollar a year business, He is the architect of a multi-million dollar sales contract with the Russian Soybean Processors' Association, ASSOY, and the link with SSP, India. Among his many other achievements, he was instrumental in nurturing Pacific ProSoya's deal, and discovering Agriculture Canada's GRTGG (Getting Ready to Go Global) support.

"Brian Harrigan, the Executive Vice-President of ProSoya, will assume Frank's executive responsibilities."

A portrait photo shows Frank Daller.

7035. *SoyaScan Notes.* 1996. A simple prediction for the future of soybeans, isoflavones, and genistein (Overview). Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1. Soy isoflavones and genistein will soon be available commercially in America. They will probably not be sold in a concentrated form, as supplements, because of the legal risk the manufacturer would face if someone overdosed. Therefore they will probably be sold as a food ingredient, to be added in carefully calculated doses to popular healthy foods such as tofu, soymilk, or soy yogurt–as well as similar non-soy foods. The amount of total isoflavones and of genistein will appear on the package, along with some mention of their protective effects.

2. Within 5-10 years there will be an RDA for the most important phytochemicals (including soy isoflavones or genistein), just as there are today for vitamins and minerals. 3. This will expand the focus of the RDAs from preventing

nutritional deficiencies to preventing disease and promoting good health. 4. The next step in the evolution of the RDA will be to find the optimum doses of certain vitamins and perhaps phytochemicals for promoting good health.

7036. *SoyaScan Notes.* 1996. Interesting new developments at the Natural Products Expo West (Anaheim, California, March 15) (Overview). March. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** The big development was the introduction of two refrigerated, extended shelf life (ESL), gable-top, regional soymilk products. One was Silk, by White Wave, and the other was by Nancy Potter.

Kushi Macrobiotic Corp. is in the process of changing its name to Kushi Natural Foods Corp.

An aseptically packed non-dairy beverage named "Organic Oat Milk" was also introduced (with T-shirts) from Sweden. It tasted good. The U.S. distributor is Nordic Farmers, 4848 South Highland Dr., Suite 211, Salt Lake City, Utah 84117. Phone: 801-272-9759. But as of May 17 they have not yet gotten any product in stock.

Michael Potter was conspicuous by his presence at the show. He had a physical problem (perhaps some type of palsy–not a stroke; one half of his face froze up and it was very noticeable), but it has since gotten much better, though there is some lingering effect. When he was in jail, he had an altercation with someone and his head was smashed against a desk; at the time it injured one of his eyes, which has never been quite the same again. He swiped a shuttle van and was soon in handcuffs. Several weeks after the show, during the week of April 4-8, Michael was in San Francisco (where his son Ki lives) talking with his Japanese partners in American Soy Products (ASP) about investing more money in the company to expand the size of the soymilk plant in Michigan; the plant is apparently running at near full capacity.

7037. Soyfoods Association of America, Standards Committee. 1996. Voluntary standards for the composition and labeling of soymilk in the United States. Accepted by the Soyfoods Association of America, March 1996. Bar Harbor, Maine. 15 p. Unpublished manuscript. 28 cm. [22 footnotes]
• ***Summary:*** Contents: Purpose of voluntary standards. History and terminology: History, existing standards in other countries, terminology. Definition and classification of soymilk products: Soymilk definition, soymilk classification (soymilk, soymilk drink, soymilk powder, soymilk concentrate). Labeling of soymilk products: General, modifiers to the statement of identity, use date labeling, refrigeration information labeling. Microbiological guidelines for soymilk. Standards Committee; Adoption and amendment of standards.

A table (fig. 1, p. 5) titled "Soymilk standards for various countries," lists minimum protein, fat, and soybean solids requirements for various soymilk products. In the following, the minimum protein content is given for various products: Japan (soymilk 3.8%, blended soymilk 3.0%, soymilk beverage 1.8%, soy protein beverage 1.8%), Taiwan (soymilk 2.6%, formulated soymilk 2.0%, soy drink 1.4%), Singapore (soymilk 2.0%, soy drink >2.0%), France (soymilk {tonyu} >3.6%, fortified soymilk {extra tonyu} >3.8%), and Thailand (soymilk 2.0%). Fat content ranges from 0.5% in Taiwan to >1.5% in France; it is not specified in Japan or Singapore.

A table (fig. 2, p. 11) titled "Soymilk composition," defines four different types of soymilk in the USA. The three numbers after each are for minimum percentages of soy protein, soy oil (fat), and total solids: Soymilk 3.0, 1.0, 7.0. Soymilk drink 1.5–2.9, 0.5, 3.9. Soymilk powder 38.0, 13.0, 90.0. Soymilk concentrate 6.0, 2.0, 14.0.

Note 1. These standards, which are very similar to the last draft, were accepted by the Soyfoods Association of America in March 1996. A note on page 2 of a final draft circulated in April 1997 states that the Soyfoods Association was formed in 1989; it was actually established in July 1978.

Note 2. In a letter dated 27 June 1996, Peter Golbitz, Standards Committee Chair, notes that the Soyfoods Association of America "is filing a formal 'Citizen's Petition' for a common and usual name for 'soymilk.' Along with this petition, we will be submitting a copy of our standards. We need to have copies of all documents cited in our standards when we make this filing." He asks that Shurtleff send copies of 10 hard-to-find documents located in the Soyfoods Center library. Address: 318 Main St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207/288-4969.

7038. **Product Name:** WestSoy Lite: Non Dairy Soy Beverage [Plain, Vanilla, or Cocoa].
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor). Subsidiary of Vestro Natural Foods.
Manufacturer's Address: 5701 South Eastern Ave. Suite 330, Commerce, CA 90040. Phone: 213-722-9817.
Date of Introduction: 1996. March.
Ingredients: Filtered water, organic soy beverage* (filtered water, organic soybeans*), brown rice syrup, sea salt. * = Organically grown and processed in accordance with the California Foods Act of 1990.
Wt/Vol., Packaging, Price: 64 fluid oz (1.89 liter) Combibloc Aseptic carton. Retails for $1.99 (1997/12, Concord, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 1 cup (8 fl oz = 240 ml): Calories 100, calories from fat 20, total fat 2 gm (2% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 120 mg (5%), total carbohydrate 15 gm (dietary fiber 0 gm, sugars 11 gm), protein 3 gm. Vitamin A 0%, calcium 2%, vitamin C 0%, iron 2%. Percent daily values are based on a 2,000 calorie diet.

New Product–Documentation: Note: This is the first U.S. soymilk product seen sold in a half gallon carton. Talk with Richard Rose. 1996. April. Westbrae introduced a half gallon soymilk at Anaheim. Richard thinks that Pacific Foods no longer makes any soymilk for Westbrae; it may now be made in several places, including perhaps by Parmalat in Michigan. This product is sold in a half-gallon Combibloc carton. Tetra Brik does not have a 64-ounce low acid capacity in the USA.

Product with Label (Plain) purchased from Trader Joe's in Concord, California. 1996. Nov. Retails for $1.99. 6.5 inches. Orange, blue, red, and black on white. Close-up photo of milk being poured from the front of a pitcher into a glass. "New Pour 'n Seal! 1% fat. 50% less fat than Original WestSoy. Lactose Free. A cholesterol-free food."

7039. White Wave Inc. 1996. Join us in Anaheim for the Silk Soirée–A Silk & milk celebration. Boulder, Colorado. 4 panels. 13 x 18 cm.

• ***Summary:*** This is an attractive invitation, blue, black, white, and green, to "A dance party, presented by White Wave & Stonyfield Farms.

The inside panel reads: "Join us for a Silk & milk celebration. 8:00 PM–Midnight. Friday, March 15, 1996. Natural Products Expo West. Join us in Marriott Hall and dance 'til the cows come home. Come dance with us if you dairy–or don't! Sponsored by the folks at Stonyfield Farm (Udderly natural yogurt; Profits for the planet) & White Wave (Vegetarian cuisine)."

On the back panel is printed: "A TofuTown production." Address: 1990 North 57th Court, Boulder, Colorado 80301.

7040. White Wave, Inc. 1996. White Wave's mission statement and company overview (Leaflet). Boulder, Colorado. 1 p. Single sided. 28 cm.

• ***Summary:*** White Wave's mission is to creatively lead the full integration of healthy, natural, vegetarian foods into the average American diet.

"'Our interest is in promoting the use of foods we consider the world better off with, rather than without.' Steve Demos, president of White Wave.

White Wave company overview:

"Founded in 1977 as a tofu company by President Steve Demos, White Wave, Inc. has grown to become one of the largest soyfoods manufacturers in the United States and a leader in the vegetarian foods industry. White Wave's reputation for quality, consistency and innovation has led its sales to grow 20% annually over the last six years. This success has positioned Demos as an award-winning 'entrepreneur' and White Wave as an award-winning small business.

"With its $1.5 million expansion in 1994, White Wave currently has the capacity to produce 2,000 pounds of tofu per working hour every day. That's one-quarter million pounds per week, and thirteen million pounds per year.

"Over the last few years, White Wave has gone 'Beyond Tofu' (TM) and taken a leadership position in the development of the vegetarian cuisine market with the introduction of its new Vegetarian Cuisine Centers (TM), located in supermarkets and natural food stores across the country. Not only do The Centers showcase White Wave's ever-growing product line, but they offer an easy way for shoppers to learn more about their vegetarian eating and cooking options.

"White Wave's introduction of Silk (TM) as the first nationally distributed, refrigerated soy beverage illustrates White Wave's further commitment to expanding its line with truly innovative products. The recent introduction of a new line of three vegetarian burgers–White Wave Prime Burger, Chick'n Burger, and re-introduction of the classic Veggie Life Burger, along with the 1995 acquisition of 'Meat of Wheat' line of seitan products from Ivy Foods of Salt Lake City, Utah, are the company's latest, successful moves to increase it's market share in the meat alternatives category.

"White Wave produces tofu, tempeh, seitan, soy beverages, and a wide variety of easy to prepare meat and dairy replacement foods, including White Wave Silk, Meatless Jumbo Franks, Tempeh Burgers, Vegetarian Fajita Strips, Traditionally Seasoned Seitan, Vegetarian Sloppy Joe, Soy A Melt soy cheeses, and Dairyless soy yogurts. The primary ingredient for White Wave's tofu and tempeh products is soybeans. The company uses approximately 2 million pounds of soybeans per year.

"The majority of White Wave products are cholesterol-free and lactose-free, as well as certified Kosher-Parve by Star K. White Wave is dedicated to producing wholesome, natural foods without artificial ingredients, preservatives or additives.

"Employing over 65 people, White Wave's two Boulder, Colorado plants manufacture foods for distribution in the refrigerated and frozen sections of natural food stores and supermarkets throughout North America." Address: 1990 North 57th Court, Boulder, Colorado 80301. Phone: 303-443-3470.

7041. White Wave, Inc. 1996. White Wave products–as of

3/96: Featured in White Wave Vegetarian Cuisine Centers (Leaflet). Boulder, Colorado. 1 p. Single sided. 28 cm. March.

• ***Summary:*** Leaflet (8½ by 11 inch, printed black on blue) sent by Patricia Smith from Natural Products Expo West. 1996. March. Lists all of White Wave's products, grouped by category, as of March 1996.

Tofu (reduced fat, hard style, soft style).

Baked tofu: "Snack'n Savory Tofu (TM)" and a line of International Baked Tofu: "Oriental-style, Italian-Style, Thai-Style, and Mexican Style."

"Tempeh: Original Soy Tempeh, Soy Rice Tempeh, Five Grain Tempeh, Wild Rice Tempeh, Sea Veggie Tempeh.

"Veggie Burgers: Prime Burger, Chick'n Burger, Veggie Life Burger, Tempeh Burger, Teriyaki Tempeh Burger, Lemon Broil Tempeh.

"Dairyless (TM) Soy Yogurt: Raspberry, Key Lime, Strawberry, Lemon, Blueberry, Banana Strawberry, Peach, Vanilla, Lemon-Kiwi, Apricot-Mango, Organic Plain in 6 oz. and Quarts.

"Dairyless Soy Beverage: White Wave *Silk.*

"Sandwich Slices: Turkey-Style Sandwich Slices, Chicken-Style Sandwich Slices, Roast Beef-Style Sandwich Slices, Bologna-Style Sandwich Slices, Pastrami-Style Sandwich Slices.

"Meat Substitutes: Meatless Veggie Franks, Meatless Jumbo Franks, Meatless Veggie Links.

"Seitan: Traditionally Seasoned Seitan, Vegetarian Fajita Strips, Vegetarian Philly Steak Slices, "Meat of Wheat" (TM) Chicken Style Wheat Meat, Meat of Wheat Grilled Burgers Wheat Meat, Meat of Wheat Sausage Style Wheat Meat, Meat of Wheat Beyond Chicken Patties, Meat of Wheat Beyond Turkey, Meat of Wheat Beyond Roast Beef.

"Heat & Serve: Vegetarian Sloppy Joe.

Soy A Melt Soy Cheese: Cheddar Style Soy A Melt, Fat Free Cheddar Style Soy A Melt, Mozzarella Style Soy A Melt, Fat Free Mozzarella Style Soy A Melt, Garlic Herb Style Soy A Melt, Monterey Jack Style Soy A Melt."

Note 1. A new, very similar list was issued in June 1996. "Chicken-style Seitan" had been added, and 3 Meat of Wheat products and one flavor of Soy A Melt (Monterey Jack) had been discontinued.

Note 2. A new, less similar list was issued in Sept. 1998– after sales of Silk soymilk were skyrocketing. The following had been discontinued:

"Veggie Burgers: Prime Burger, Chick'n Burger, Veggie Life Burger, Teriyaki Tempeh Burger.

"Sandwich Slices: Roast Beef-Style Sandwich Slices, Bologna-Style Sandwich Slices.

"Meat Substitutes (all): Meatless Veggie Franks, Meatless Jumbo Franks, Meatless Veggie Links.

"Seitan: All 6 Wheat of Meat products were discontinued but Vegetarian Sloppy Joe had been moved in from the "Heat & Serve" category (which then disappeared).

Four types of tofu were added: Extra Firm Style, Tidal Wave (firm), Hard Water Pack, Hard Vacuum Pack. Address: 1990 North 57th Court, Boulder, Colorado 80301. Phone: 303-443-3470.

7042. Montanaro, Pamela. 1996. Attending the First National Soybean Workshop in Cuba (Interview). *SoyaScan Notes.* April 15. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Pam Montanaro, Coordinator of the Cuba Campaign Department of Global Exchange, just returned from 2 weeks in Cuba. She led an alternative medicine group during the first week. While there, she attended the First National Soybean Workshop (*Primer Taller Nacional Soya*), 2-day meeting held on 11-12 April 1996 at the Food Research Institute outside Havana. It was attended by about 200 Cubans, and many important Cubans were there, including Jesu Montané Oropesa, a top advisor to Fidel Castro, and Vilma Espín, head of the Federation of Cuban Women (*Federation de Mujeres Cubanos, FMC*). One of the founders of the Cuban revolution in the 1950s, she is married to Raul Castro (Fidel's brother), is a chemist or biochemist, speaks good English, and has been involved with popularizing soybeans and soyfoods in Cuba for many years. In the early 1960s Vilma organized a Cuban group named "Friends of the Soybean."

The afternoon sessions on the first day were divided into two parts: Soybean production, and soybean utilization. The first was open to everyone, the second was restricted to speakers only, because of Cuba's proprietary soymilk and soy yogurt technology. Dr. Gilberto Fleites, a top Cuban cancer surgeon who is also a vegetarian, gave a presentation to both sessions on soy, diet and health, with an excellent slide show that he has developed; he answered many questions and received many requests for talk to other organizations.

The conference was attended by representatives from both agriculture and food processing from every Cuban province. The food representatives brought samples of their best soy yogurt and soy cream cheese. At the conference there was a contest to see which organization had the best soy yogurt. Las Tunas won, with a special award going to a factory in Havana. In all, the conference was very up-beat. Video- and audio tapes were made of most of the sessions, and the proceedings are expected to be available in Spanish. Pam has a Spanish language conference agenda.

At the conference, Pam learned that two other foreign groups are apparently involved with growing soybeans in Cuba. Vilma Espín's women's group (FMC) has a project very similar to Global Exchange's funded by Oxfam Canada and now underway in the easternmost province of Cuba, Santiago de Cuba (near Guantanamo Bay, the U.S. naval base). The project is getting its seeds from INIFAT, but there seems to be poor communication between INIFAT and this

project, to the extent that Pam wondered if a rivalry might have developed between them. Oxfam Canada first began work in Cuba in Jan. 1995 and Pam helped to interest them in work with soy. Canadians Minor Sinclair and Sheila Katz are now involved with this soy project. A second Cuban group is also working on this project, the National Association for Small-Scale Agriculture (*Association Nacional de Agricultura Pequena, ANAP*). They just had their first harvest and got a good yield of about 2 tons of seed per acre. Minor (who now lives in Havana with his wife, Martha Thomson) in writing up a report on the project for Pam. Pam's combine has not yet arrived in Cuba.

An Italian NGO (non-governmental organization), which is part of the European Union, is said to be trying to do another soy project, and has offered to invest $1 million in the project.

During 1996, nationwide, Cuba hopes to grow between 6,700 ha and 8,040 ha of soybeans (500 to 600 caberillas; 1 caberilla = 13.4 ha). If all goes well, this area would provide them with about 15,000 metric tons of soybeans–enough for all their food needs but only about 10% of their total needs including vegetable oil and livestock feed.

Only two foreigners attended the soy conference–Pam and a man from Mexico. Pam heard that Cuba has signed a contract to export its soymilk manufacturing technology to an organization in Semaya, Mexico. This would be Cuba's first known export of such technology. Last year Cubans did a lot of traveling throughout Latin America looking for customers.

Tito Nuñez's vegetarian restaurant in the Botanical Garden, next to a Japanese garden, is just lovely and becoming very popular. The food is organically grown and presented in a beautiful way. Address: Coordinator of Soy Cubano! Company, Food and Medicine Campaign, c/o Global Exchange, 2017 Mission St. #303C, San Francisco, California 94110. Phone: 415-255-7296 or 415-558-8682.

7043. Roller, Ron. 1996. Update on the soymilk industry and market in the USA (Interview). *SoyaScan Notes.* April 16. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** In October 1993 Ron estimated (based on a lot of reliable information he had collected) that the size of the soymilk market in the USA and Canada was 9.8 million gallons, up from 8.1 million gallons in 1992. Now he would estimate (without a lot of reliable facts) that this market is about 15 million gallons. Since Dr. James Anderson's article appeared in the *New England Journal of Medicine* on 3 August 1995, and especially during the last 6 months, the soymilk market has expanded rapidly, almost exponentially. Many new consumers have started to drink soymilk, largely for its health benefits. Because of this significant expansion in the customer base, more soymilk is being sold in supermarkets. Ron estimates that about 15% of Edensoy is sold in supermarkets. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

7044. Roller, Ron. 1996. Soymilk in extended shelf life (ESL) gable-top cartons (Interview). *SoyaScan Notes.* April 16. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ron looked at the Tetra Rex ESL program several years ago and discussed the new packaging technology in a SoyaScan interview on 4 Sept. 1993.

Two companies introduced America's first soymilk products in an ESL gable-top carton at the Natural Products Expo at Anaheim in March 1996. White Wave launched Silk, and Nancy Potter, the sister of Michael Potter (founder and CEO of Eden Foods) introduced Healthy Harvest. So Nancy is now in competition with her brother. Ron does not know who makes Nancy's soymilk.

Packaging products in ESL cartons is very expensive, and there are not many ESL machines in the USA. ESL is a technology midway between that of aseptic Tetra Brik packaging and the traditional Pure-Pak gable-top cartons. First ESL involves a UHT (ultra-high temperature) process. Second, the packaging blanks are much more sophisticated than traditional Pure-Pak blanks because they contain a foil layer and they are sterilized with hydrogen peroxide; Ron has heard a rumor that they are irradiated. Finally, ESL has a head space whereas Tetra Brik does not.

Though ESL soymilk is often called a "fresh" product, that would be stretching the meaning of the word "fresh." ESL soymilk made and sold regionally is a threat to aseptically packed soymilk. It involves a different distribution system–one which uses refrigeration. Eden Foods does not sell any refrigerated products, so it would be difficult for Eden to get into ESL. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

7045. *SoyaScan Notes.* 1996. The fixed exchange rate between the Hong Kong dollar and the U.S. dollar. Outlook for Hong Kong after 1997 (Overview). April 16. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** According to the Hong Kong Economic and Trade Office in San Francisco, California, in 1983 the government of Hong Kong established a fixed exchange rate of 7.8 Hong Kong dollars = 1 U.S. dollar. This has not changed since 1983, and is not expected to change. Thus companies such as Vitasoy, which import soymilk from Hong Kong to the USA, have not seen the price of their product rise with the steady devaluation of the dollar against most foreign currencies.

In 1997 Hong Kong will lose its status as a British colony. For at least 5-10 years thereafter, the economic situation in Hong Kong is expected to be stable and bright. The fact that so many Hong Kong citizens recently applied for British passports is of no special significance. They did

so mostly for its convenience as a travel document.

7046. Ali, Nawab. 1996. Indian soybean industry-recent trends and development. In: Alex Buchanan, ed. 1996. Proceedings of the Second International Soybean Processing and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. See p. 78-82. [10 ref]
• ***Summary:*** Content: Abstract. Introduction. Processing of soybean. Food industry. Livestock feed. Industrial applications. R&D efforts and entrepreneurship development. Product promotion and policy issues.

During 1993-94 soybean production in India was 3.9 million tonnes [metric tons]; it is expected to be over 4 million tonnes in 1995-96. There are now in India 154 soybean solvent extraction plants (with a total installed capacity of 13.5 million tonnes of soybeans per year), 60 soyfood manufacturing units, 30 companies dealing with soy-related equipment, and 15 organizations and agencies involved in soybean trade. "Soyproducts" such as oil and protein foods have entered the market and been accepted because of the health and economic benefits. The demand for soyproducts is increasing and this makes the future of the soybean industry in India look bright.

In India the soybean has added US$ 500 million a year to the nation's foreign exchange, and it has increased the supply of edible oils by 0.6 million tonnes per year. In addition, it has brought prosperity to soybean farmers. Today, the soybean is India's 3rd most important oilseed crop after groundnuts and rape / mustard, contributing 18% to the total oilseed production of 22 million tonnes. India is now almost self-reliant in edible oil and soybean has played a significant role in this important development.

Tables: (1) Traditional and non-traditional soyproducts in India. (2) State by state soybean oil extraction plants in India and their installed capacity. (3) Type, number, and installed capacity of Indian soyfoods manufacturing units (1995), in descending order of the number of units. 20 units make texturised soy protein / flour, TSP (soynuggets); Installed capacity 120,000 tonnes / year. 10 units make soymilk; capacity 500 tonnes / year. 6 units make Soypaneer (tofu); capacity 1,000 tonnes / year. 5 units make soyflour, flakes, and grits; capacity 20,000 tonnes / year. 5 units make soy-fortified baked products; capacity 1,000 tonnes / year. 5 units make soylecithin; capacity 2,000 tonnes / year–etc. Address: Project Director, Soybean Processing & Utilization Centre, Central Inst. of Agricultural Engineering, Nabi Bagh, Berasia Road, Bhopal–462 038, India.

7047. *Bluebook Update* (*Bar Harbor, Maine*). 1996. Daller resigns from ProSoya. 3(2):3. April/June.
• ***Summary:*** "Frank Daller, president of ProSoya Inc. in Ontario, Canada, is resigning to develop a non-profit corporation dedicated to distributing soyfood technology to developing countries and humanitarian applications." Mr. Daller will continue as a partner and director of ProSoya; Raj Gupta. ProSoya's founder, will assume the role of president.

7048. Buchanan, Alex. ed. 1996. Proceedings of the Second International Soybean Processing and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. Illust. No index. 30 cm. [Eng]
• ***Summary:*** The first international conference of this type was held in Jilin, China, in 1990. Contents: Foreword, by Dr. Saipin Maneepun, Chairman, Scientific Committee. Scientific committee (13 members plus 2 secretaries). Executive summary, by Alastair Hicks. Keynote address. Part I: Crop technology related to processing (2 plenary papers, 2 regular papers, and 13 poster sessions). Part II: Post-production systems (1 plenary paper, 4 regular papers, and 2 poster sessions). Part III: Food processing technology (1 plenary paper, 7 regular papers, and 21 poster sessions). Part IV: Food science and nutrition (1 plenary papers, 5 regular papers, and 7 poster sessions). Part V: Tempe (6 regular papers, and 1 poster session). Part VI: Feed technology (2 plenary papers, and 7 regular papers). Part VII: Marketing technology (1 plenary paper, and 2 regular papers). Part VIII: Industrial technology (1 plenary paper, 4 regular papers, and 5 poster sessions).

This conference was organized by the Department of Agricultural Extension, Ministry of Agriculture and Cooperatives, Thailand. In collaboration with Institute of Food Research and Product Development, Kasetsart Univ., Thailand. Supported by FAO, American Soybean Association, and United Soybean Board.

On the rear cover, below a logo of an orange soybean superimposed on a globe inside a yellow square, is written: "Soybeans and soyfoods: Green, clean and healthy." Address: Bangkok, Thailand.

7049. Ediriweera, Nandanie D. 1996. Effect of calcium salts in minimising beany flavour in soymilk. In: Alex Buchanan, ed. 1996. Proceedings of the Second International Soybean Processing and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. See p. 166-70. [8 ref]
Address: Ceylon Inst. of Scientific and Industrial Research, 363 Bauddhaloka Mawatha, Colombo 7, Sri Lanka.

7050. Golbitz, Peter. 1996. New soymilk creates a stir: Silk set to smooth U.S. market. *Bluebook Update* (*Bar Harbor,*

Maine) 3(2):1, 7. April/June.
• ***Summary:*** Soyatech, Inc. estimates that the U.S. soymilk market is worth $130 million a year, and that 95% of the volume is sold in aseptic packaging which requires no refrigeration. Now White Wave Inc., of Boulder, Colorado, developer and marketer of Silk, believes the market is ready for soymilk that is packaged and sold refrigerated like regular milk. Steve Demos, founder and president of White Wave, expects one out of ten soymilk consumers to buy Silk, which retails for $1.99 to $2.49 per quart, and $3.99 to $4.79 per half gallon. A photo shows quart and half-gallon cartons of Silk.

7051. Goulart, Frances Sheridan. 1996. Oh, soy! *Fit* (*New York*). March/April. p. 77-79.
• ***Summary:*** On the section titled "A nutritional wonder," the authors notes that soymilk has 15 times more iron than dairy milk, 50% less fat, and no cholesterol. Tofu is one of the two best sources of calcium (yogurt is the other) recommended by the Osteoporosis Foundation for meeting adult calcium needs (1,000 mg/daily). One 4-oz. serving of tofu provides twice as much calcium as one cup of plain yogurt. Soybeans provide the antioxidant vitamins A and E.

A sidebar titled "Your soy shopping list" gives brief definitions of tofu, tempeh, miso, natto, soy milk, soy cheese, soy sauce, and textured vegetable protein (TVP). Address: Connecticut.

7052. Husin, Adinan; Ahmad, Hasimah Hafiz. 1996. Soybean as a consistent industrial resource. In: Alex Buchanan, ed. 1996. Proceedings of the Second International Soybean Processing and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. See p. 497-507. [30 ref]
• ***Summary:*** Contents: Abstract. Introduction. Processing of soybean. Food uses of soybean. Processing of soybean oil. Processing of protein products: Flours, protein concentrates, protein isolates, textured protein products. Unfermented soy products: Soy curd/tofu, soymilk, snacks. Fermented products: Tempe, soy sauce, cheese (Commercial cheese alternatives claim to taste, melt, and stretch like regular cheese. Soy cheese now comes in Jalapeno Jack style, Cheddar style, mozzarella style, Garlic-herb style, and Monterey Jack style). Non-food uses ("Soy oils are used in non-food applications such as in the preparation of soaps, paints, varnishes, resins, plastics, lubricants and agrochemicals"). Promoting the use of soybean. Conclusion. Address: Food Technology Research Centre, MARDI, G.P.O. Box 12301, 50774 Kuala Lumpur, Malaysia.

7053. Irwe, Stern. 1996. Soy milk processing–quality aspects on products and process. In: Alex Buchanan, ed. 1996. Proceedings of the Second International Soybean Processing and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. See p. 515-20.
Address: Tetra Pak Processing Systems Div. Asia/Pacific, Singapore.

7054. Kayte, Lillian. 1996. Soy what are you waiting for? It's easier than you think to turn healthful soyfoods into delicious dishes. *Vegetarian Times.* April. p. 40-44, 46-50.
• ***Summary:*** Kinako is mentioned numerous times on p. 44. Includes recipes for Kinako Butter, and Kinako (homemade toasted soy flour) (p. 46).

7055. Krusong, Warawut; Yongsmith, Busaba. 1996. Factors affecting acid formation in soymilk from high vitamin B-12–tempeh. In: Alex Buchanan, ed. 1996. Proceedings of the Second International Soybean Processing and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. See p. 403-07. [10 ref]
• ***Summary:*** Cooked, dehulled soybeans were inoculated with both *Rhizopus oligosporus* and with *Propionibacterium shermanii* then incubated to make a "high vitamin B-12 tempeh (HVT)."

Vitamin B-12 is produced only by microorganisms. *Propionibacterium shermanii* is widely used in large-scale production of vitamin B-12 (Florent and Ninet, 1979). Krusong et al. (1991) reported that non-sequential mixed fermentation of *Rhizopus oligosporus* and *Propionibacterium shermanii* was able to produce vitamin B-12 in tempeh, called high vitamin B-12 tempeh (HVT); this tempeh contained 10 times as much vitamin B-12 per gram as the original soybeans.

In this article, the HVT tempeh was used to prepare HVT soymilk, and "lactic soydrink" was prepared from the HVT soymilk using a mixed culture of appropriate lactic cultures, a mixed culture of *Lactobacillus bulgaricus* and *Streptococcus thermophilus* at 5% concentration. No sucrose was added to the HVT soymilk during its lactic acid fermentation. It was fermented for 16 hours to attain the highest acid production. Address: 1. Dep. of Agro-Industry, Faculty of Agricultural Technology, King Mongkut's Inst. of Technology, Ladkrabang, Bangkok 10520; 2. Dep. of Microbiology, Faculty of Science, Kasetsart Univ., Bangkok 10903, Thailand.

7056. Lutfur, Rahman. 1996. Processing and utilization of soybeans in Bangladesh. In: Alex Buchanan, ed. 1996. Proceedings of the Second International Soybean Processing

and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. See p. 33-39. [1 ref]
• ***Summary:*** Contents: Abstract. Introduction. Soybean utilization technology: Local snack foods with soybeans. Soya bread and biscuit. Home level soya milk. Feed uses in Bangladesh. Soybean oil. Awareness about soybean.

Table 2 shows that soybean is by far the lowest cost source of usable protein in Bangladesh. In that country, soybean is mostly used as feed for poultry; it is also used as an ingredient of fish feed. Address: Dep. of Genetics and Plant Breeding, Bangladesh Agricultural Univ., Mymensingh 2200, Bangladesh.

7057. Maneepun, Saipin. 1996. The role of formulated soyfoods and their enrichment. In: Alex Buchanan, ed. 1996. Proceedings of the Second International Soybean Processing and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. See p. 291-99. [10 ref]
• ***Summary:*** Contents: Abstract. Introduction. Using full-fat soyflour (FFSF) in formulated soyfoods: Traditional full-fat soyflour production, processing technology for full-fat soyflour production, baby food products (and conclusions of a metabolic study), cookies, concentrated soymilk, formulated cereal-soy snackfoods (made by an extrusion cooker), soynoodles (using 10% FFSF with wheat flour). Using defatted soy flour (DSF), soy concentrates and isolates. Development of tempeh flour as a food ingredient. Conclusion.

Tables show: (1) Protein content and protein score in various cereal-soy combinations (wheat, corn, or rice unfortified or fortified with soy). (2) Ingredients for six high-protein snacks. (3) Proximate analysis of these 6 high protein snacks. (4) Nutritional evaluation of 8 high protein snacks. (5) Composition of four commercial formulated soyfoods (supplementary baby food, cookie, concentrated soymilk, soynoodle). Address: Director, Inst. of Food Research and Product Development, Kasetsart Univ., P.O. Box 1043, Bangkok 10903, Thailand.

7058. Nakajima, Mitsutoshi; Snape, Jonathan B.; Reddy, K. Kondal; Nabetani, Hiroshi. 1996. Application of membrane technology to soybean processing. In: Alex Buchanan, ed. 1996. Proceedings of the Second International Soybean Processing and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. See p. 508-14. [15 ref]
• ***Summary:*** The various types of membrane technology include ultrafiltration (UF), microfiltration (MF), nanofiltration (NF), electrodialysis (ED), and reverse osmosis (RO).

Contents: Abstract. Introduction. Soybean oil processing: Solvent recovery (by reverse osmosis), degumming (UF membranes can be used to remove phospholipids from soybean oil in hexane), lipid separations (separation of tri-, di-, and mono-glycerides and fatty acids from soybean oil by membrane technology), removal of contaminants (such as nickel catalysts from hydrogenated oils), removal of pigments (pigments in soybean oils include chlorophyll, carotenoids, xanthophyll, and their derivatives; use of expensive bleaching earth might be eliminated), wastewater treatment (a typical soybean oil extraction plant {1000 tonnes/day} generates 1,000 cubic meters of waste water each day; each liter contains 100 mg of suspended solids). Soybean protein processing and Beta-amylase production: Soybean saccharides processing, soysauce and other seasonings production. Conclusions.

Membrane technology has been widely accepted in many separation processes, including bioseparation. Although only a few industrial membrane processes have been installed for soybean processing, membrane technology has many potential applications in this broad field. One of the main advantages of membrane technology over conventional processing operations is that much lower temperatures can be used. This leads to large saving in energy costs associated with heating, and minimizes the thermal damage to heat-sensitive soybean components. Figure 1 shows how soybean oil might be processed using MF, UF, NF and RO purification near the beginning of the process, and nitrogen with gas separation membrane between the "refined soybean oil" and "packed oil" stages.

Ultrafiltration can be used to remove low molecular substances such as phytic acid. "When soy milk was processed by UF diafiltration, 86% of the oligosaccharides were removed," and the soymilk quality was improved because off-flavors were reduced (Asahi Kogyo Group, 1987). The Kibon [Kibun] Group (1987) has used UF to concentrate soymilk. Soybean has high Beta-amylase activity, and soybean whey has been used for Beta-amylase production. Recently a new industrial plant for Beta-amylase production that uses defatted soybean meal has been installed (Nomura et al. 1994). (p. 512).

Note: This is the earliest document seen (March 2002) that uses the term "nanofiltration" in connection with soy. Address: 1&4. National Food Research Inst., MAFF, Tsukuba, Ibaraki, Japan 305; 2. Nippon Lever B.V., Shibuya, Tokyo, Japan 150; 3. AP Agricultural Univ., Hyderabad, India.

7059. *Plenty Bulletin* (*Summertown, Tennessee*). 1996. Soy on the frontlines, Liberia, West Africa. 12(1):1, 3. Spring.

• ***Summary:*** From September to December of 1995, with help from the Trull Foundation of Texas, Plenty was able to send a soy / agricultural technician to Liberia to support the farming work of Imani House (IH). The volunteer technician was Ignatius (Gomier) Longville, a Caribbean native, who had worked with Plenty on the Island of St. Lucia from 1984 to 1990. "Gomier is a 'Roots' (Rasta) farmer skilled in ways of growing foods under adverse conditions employing the natural rhythms and resources of the earth. Gomier provided very practical, hands-on assistance related to growing soybeans and other crops in nutrient-deficient soils for Liberian families... He also worked with the IH staff in conducting soy food preparation workshops for farming families, technicians from other development assistance organizations, and UN representatives. At the World Food Day Exposition in Monrovia, Gomier and the IH staff performed soy demonstrations for 10,000 people! They won first prize for their food production demo at this Exposition.

"Recently IH sent out a letter asking NGOs working in rural areas to commit at least 10 acres each for the growing of soybeans. They have been bombarded by requests for seed and information ever since." Photos show: Gomier with several African men making soymilk at a workshop in Liberia. Gomier and 3 other people at a IH soy demonstration plot under palm trees.

7060. Rau, Subba B.H. 1996. Processing a milk-like emulsion from black and yellow varieties of soy bean grown in India. In: Alex Buchanan, ed. 1996. Proceedings of the Second International Soybean Processing and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. See p. 283-87. [17 ref]
• ***Summary:*** "A modified method of obtaining soymilk with bland flavour and good stability has been attempted on black (Kalitur) and yellow (Bragg) varieties of soybean grown in India. The indigenous black variety had high protein, calcium and phosphorus with reasonably low fibre content in comparison with yellow varieties.

Contents: Abstract. Introduction. Objective. Materials and methods. Results and discussion. Address: Protein Technology, Central Food Technological Research Inst. (CFTRI), Mysore-13, India.

7061. Rivera, F.T.; Sinchaisri, P. 1996. Soybean utilization as a poverty and food deficit alleviation strategy in the Philippines. In: Alex Buchanan, ed. 1996. Proceedings of the Second International Soybean Processing and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. See p. 102-08. [5 ref]
• ***Summary:*** More than 50 soyfoods were prepared and tested on adults and children. Those which were liked very much one or both groups were: Longgasoy, soy milk, soy cafe, choco soy, soy adobo, soy nut mix [meaning not clear], tokwa, tahu [tofu], soy polvoron, soy lumpia. "More than 3,000 rural women, landless farmworkers, and out-of-school youths were trained in village soybean processing and utilization."

Tables show: (1) Results of nutritive analysis of selected mixed soyfoods (such as rice soy, soy corn, soy fish). (2) Cost and sensory analysis of soy products (per kg raw soybeans). Address: 1. Univ. Prof. Emeritus, Chairperson, Binhi ng Buhay Village Soybean Processing and Marketing Centre and Lingap Tao sa Kabuhayan Foundation, Inc., Central Luzon State Univ. Muñoz, Nueva Ecija, Philippines; 2. Agricultural Chemistry Div., Dep. of Agriculture, Bangkok, Thailand.

7062. Robertson, Robin. 1996. 366 healthful ways to cook tofu and other meat alternatives. New York, NY: Penguin/ Dutton. 406 p. Index. 24 cm. A Plume book. Nutritional analyses provided by Ed Blonz, PhD.
• ***Summary:*** Contents: Introduction. 1. Appetizers, hors d'oeuvres, and sandwiches. 2. Stews and hearty soups. 3. Pasta dishes. 4. Casseroles, gratins, and risottos. 5. Stir-fries. 6. Burgers, loaves, and savory pies. 7. Under wraps, stuffed, and skewered. 8. Sautéed, seared, and grilled. 9. Main-dish salads. 10. One-dish meals.

The three main meat alternatives used in the recipes in this book are tofu, tempeh, and seitan. Other soy and related foods are used in recipes are: Adzuki beans, soy milk, and TVP. The author is a woman. Address: Professional chef and cooking instructor, Virginia Beach, Virginia.

7063. *Soyafoods* (*ASA, Europe*). 1996. Soya 'milk' ruling goes against UK. 7(1):2. Spring.
• ***Summary:*** The European Union (EU) Commissioner has told the British government that it cannot continue to allow the name 'soy milk' on labels. The Commission, which was backed by all other EU member states, will not change its 1987 regulation which restricts use of the word 'milk' to products obtained from milking cows or other dairy animals.

7064. Su, Gang; Jin, Tao. 1996. Study on sweetened condensed soybean milk. In: Alex Buchanan, ed. 1996. Proceedings of the Second International Soybean Processing and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. See p. 241-44.
Address: Heilongjiang Research and Development Centre of Soybean, 25 Nan Tong St., Tai Ping District, Harbin, 150050,

China.

7065. Tamang, Jyoti Prakash. 1996. Fermented soybean products in India. In: Alex Buchanan, ed. 1996. Proceedings of the Second International Soybean Processing and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. See p. 189-94. [10 ref]

• ***Summary:*** Contents: Abstract. Introduction. Indigenous fermented soybean food: Kinema, hawaijar. Modified fermented soybean food: Soy-idli (a rice-based breakfast food in south India), soy-dhokla (a wheat-based snack in west India), soy rabadi (a butter milk staple of west India). Non-fermented soybean products: Green [vegetable] soybeans (a snack in north-eastern India), roasted soybean [soynuts] (a snack throughout India), soybean chutney (a condiment / pickle made from whole soybeans in north-eastern India). Commercially available soybean foods: Soymilk, soypaneer [tofu], soysuji / soy-suji (a snack in Central India), soy fortified biscuit (using soyflour).

Kinema and hawaijar are similar to natto of Japan and thua-nao of Thailand; the principal microorganism in both is *Bacillus subtilis.* Two strains were selected to give the best quality kinema. The main determinants of quality are high viscosity, long sticky strings, and solubilized protein. The optimum fermentation is for 20 hours at 40ºC. "The optimized process can be promoted to popularize more consumption of fermented soybean products as a sustainable supply of low-cost nutritious foods."

Kinema is consumed in eastern Nepal, "in the Darjeeling hills of West Bengal, Sikkim and north-eastern hills of India as a meat substitute in the local diet."

"The preparation of hawaijar is similar to kinema except the wrapping materials used are leaves of the fig plant (*Ficus hispida* L.) and the fermentation time is prolonged for 3-4 days.

To make soybean chutney, whole dried soybeans are soaked, deep-fried in vegetable oil, then mixed with salt and chilies. This chutney is then consumed like a pickle with boiled rice.

Soypaneer is a very good substitute for traditional dairy paneer, a semi-soft mild-flavoured fresh cheese, which is significantly more expensive than its soy counterpart. Soypaneer is deep fried, mixed with vegetarian curry, and sometimes used to make paneer pakoda [pakora], a local recipe.

Note: A pakora is a fritter–any kind of food coated in batter and deep fried.

Soysuji can be used to replace up to half of the wheat suji in the preparation of traditional Indian recipes.

"Cereal-based Indian diets are generally deficient in protein and calories. The protein intake in the local diet is not enough due to high prices of meat and dairy products as well as religious taboos."

Tables: (1) Soybean-based foods in India. The four columns are: Four types of products and 12 specific product names. Substrate (whole soybean, soybean-rice, etc.). Use (breakfast, snack, etc.). Consumption area. (2) Chemical composition of kinema (two types with very different composition).

Fig. 1 (p. 194) is a flow sheet of the traditional method of preparing kinema in a Sikkim village. After cooking and draining, the soybeans are crushed lightly by a wooden pestle. Firewood ash may be added. Wrap the soybeans in fern leaves, and ferment for 1-3 days to make kinema. Fry to make curry or soup. Address: Microbiology Lab., Dep. of Botany, Sikkim Government College, Gangtok 737 102, Sikkim, India.

7066. Tiamzon, Ma. Florideliz D. 1996. Institutional mechanisms for an effective soybean technology transfer in the Philippines. In: Alex Buchanan, ed. 1996. Proceedings of the Second International Soybean Processing and Utilization Conference: 8-13 January 1996, Bangkok, Thailand. Bangkok, Thailand: Printed by Funny Publishing Limited Partnership. Distributed by The Institute of Food Research and Product Development, Kasetsart University. xviii + 556 p. See p. 450-53.

• ***Summary:*** "The Soybean Development Program (SDP) was launched by the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD)–Department of Science and Technology (DOST) in 1983 and later renamed as the Accelerated Soybean Production and Utilization Programme (ASPUP)." The goal of the program is to contribute to community development and improved nutrition.

Lists ASPUP's four main goals related to vertical integration of soybean production and small-scale soybean processing of soybeans for food and animal feed in six regions of the Philippines (in Luzon and in Mindanao) where soybean is grown.

A second list shows six strategies used by ASPUP to attain these goals. The last strategy reads: "(6) Create new markets and promote the use of soybean-based food products like ice cream, soy curd [tofu], soy cheese, soya milk, soy burgers and others as part of the daily diet." Address: National Program Leader, Accelerated Soybean Production and Utilization Programme (ASPUP) and Supervising Science Research Specialist, Crops Research Div., Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), Los Baños, Laguna, Philippines.

7067. Tyler, Jim; Neville, Jan. 1996. Wellspring Natural Food Co. Mail order catalog. Amherst, Massachusetts: Wellspring. 32 p. 28 cm.

• ***Summary:*** This is the first issue of this catalog, and Wellspring started in 1996. Soy-related products include: Miso, shoyu, black soybeans (from Hokkaido, Japan), yellow soybeans (organic), azuki beans, snow-dried tofu, kuzu, miso ramen, kinako, natto miso chutney, tekka miso, soymilk, and amasake.

Jim has been a macrobiotic teacher and counselor since 1975-76 and Jennifer was a chef at the Kushi Institute. Main competitors include Gold Mine and other such companies. This catalog is service oriented, easy to use, and more than 80% of the products have lower prices than the competition. Address: P.O. Box 2473, Amherst, Massachusetts 01004. Phone: 1-800-578-5301.

7068. **Product Name:** Silk (Soymilk Sold Refrigerated in Quart Pure-Pak / Gable Top Cartons) [Chocolate].
Manufacturer's Name: White Wave, Inc. (Product Developer-Distributor). Made in Canada and California.
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 1996. April.
Ingredients: May 2000: Filtered water, organic whole soybeans*, organic raw cane crystals*, cocoa (Dutch process), calcium carbonate, natural vanilla flavor, sea salt, carrageenan, vitamin A palmitate, vitamin D-2, vitamin D-3, riboflavin (vitamin B-2), vitamin B-12. * = Grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: Quart Pure-Pak Carton.
How Stored: Refrigerated.
Nutrition: Per 1 cup (240 ml): Calories 120, calories from fat 20, total fat 2.5 gm (4% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 95 mg (4%), total carbohydrate 18 gm (dietary fiber 0 gm, sugars 14 gm), protein 5 gm. Vitamin A 10%, calcium 30%, vitamin D 30%, vitamin B-12 50%, vitamin C 0%, iron 2%, riboflavin 30%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Leaflet (20.5 x 13.5 cm, glossy color) sent by Patricia Smith from Natural Products Expo East. 1996. Oct. On the front: Cartons of chocolate and regular silk against a green blackboard. On the blackboard, near the top, is written "No cow," with an arrow pointing to the regular carton. Further down is written "No cow, Now brown" with an arrow pointing to the carton of chocolate Silk. "How? Simple addition. Take pure, delicious White Wave Silk. Add real chocolate. Result: Dairy-free, lactose-free chocolate fun. Class dismissed."

Near the bottom is the White Wave: Vegetarian Cuisine logo. And the American Heart Association logo. On the back (in black on white). A photo of a quart carton of Chocolate Silk. "Made from organic soybeans. Vitamin A, B2, B12, D and calcium enriched. Contains 50% of the RDI for vitamin B-12." The ingredients for chocolate and regular Silk are given.

Carton with Label sent by James Terman of White Wave. 2000. May 11. 2.75 by 2.75 by 8¼ inches. Tetra Rex package. "Organic–Third party certified. Calcium enriched. Low 1% fat & vitamin enriched." Talk with James Terman of White Wave. 2001. May 29. Silk chocolate in quarts was introduced in April 1996.

7069. Lang, Paul. 1996. St. Peter Creamery and Agronico (Interview). *SoyaScan Notes.* May 3. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Paul does not know what happened to St. Peter Creamery. Note: St. Peter Creamery of St. Peter, Minnesota, introduced Soy Supreme Spray-Dried Soymilk Powder in Dec. 1984 and Soy Supreme Spray-Dried Tofu Powder in July 1985.

Paul tried phoning the company several years ago but there was no answer. He tried to figure out what happened but with no results. Try contacting Allan Routh (rhymes with "south") who is the brains behind SunRich, which is mainly a marketing group. Allan is on the board of the Soyfoods Association, and has an ad in the 1995 Soya Bluebook Plus (p. 59, 134). Paul is almost certain that SunRich gets its spray-drying done by Zumbro. Paul does not know who makes SunRich's soymilk.

Agronico (run by Mike Vincent) is basically out of business. Paul has heard (within the last week) that Agronico is being taken over by Honeymead, and they plan to make TVP. Address: Natural Products, Inc., 798 Hwy 6, Grinnell, Iowa 50112. Phone: 515-236-0852.

7070. Routh, Allan. 1996. SunRich, soymilk, Davisco, St. Peter Creamery, Prosource, and Northern Milk Products in Alexandria, Minnesota (Interview). *SoyaScan Notes.* May 3. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Allan (whose surname rhymes with "south") is CEO and one of the owners of SunRich. His company manufactures both liquid and spray-dried soymilk at a plant in Alexandria, Minnesota. They own this plant as part of a joint venture with Northern Milk Products. The company in Alexandria is named Northern Milk Products, but in the '95-'96 Soya Bluebook Plus the company name is given as Prosource, Inc. (P.O. Box 1058, 601 Third Ave. West, Alexandria, MN 56308. Phone: 612-763-2470). Sales are handled through SunRich.

Question: What happened to St. Peter Creamery, of St. Peter, Minnesota?; they introduced Soy Supreme Spray-Dried Soymilk Powder in Dec. 1984 and Soy Supreme Spray-Dried Tofu Powder in July 1985. Answer: Allan used to be part of the soy process with St. Peter Creamery (located in St. Peter, Minnesota), which was owned by the Davis family and which is no longer in business. The Davis family also owned LeSeur Cheese and Lake Norden Creamery; all these companies (including St. Peter Creamery) are now named Davisco. Stan Davis, the main man, is now retired,

but his sons and grandsons are involved. The soy part of the business (the Oberg Division of St. Peter Creamery) was a joint venture between St. Peter and Ed Oberg, and Lou Osterbur. Dr. E.B. Oberg had some patents when he was at Carnation. These patents were only part of the complex, which included "know-how" and process subtleties that made the product taste so good. Like every spray-drier and custom spray-dried in Minnesota and the Midwest, St. Peter was an old dairy plant and a custom processor. This sort of plant used to belong to coops, then individuals would buy them. St. Peter installed its own soymilk. They made soymilk from whole soybeans, then spray-dried it. Soymilk ceased being made at St. Peter in about 1989 because St. Peter decided they wanted to go a different direction and soymilk sales weren't really taking off. The soymilk equipment was partially moved to Northern Milk Products in Alexandria, Minnesota–located about 150 miles northwest of St. Peter. More precisely, they reconstructed a soymilk line in Alexandria that they thought was a little better than what they had at St. Peter. Allan has been with Minnesota Waxy (which started as a corn company) from the early days. Minnesota Waxy purchased the process from Oberg and Osterbur, and Northern Milk owned the physical plant.

Now Allan's joint venture company makes Soy Supreme, which used to be St. Peter Creamery's main soymilk product, made at their plant. But when the general manager at St. Peter, Dennis Anderson, decided to go into business for himself, he bought 3-4 plants–one of which was in Alexandria. So they moved the process to his plant in Alexandria. Basically the same technology that was used to make Soy Supreme (a dry product) is now also being used to make a liquid product, but Allan thinks his company has made significant improvements compared to E.B. Oberg's product.

SunRich is not really company with its own retail products. They sell foods to food manufacturers. They supply Westbrae with soymilk. They have made most of Westbrae's soymilk for a while–a number of tankers each week. They also have other soymilk clients. Most of their spray drying of soymilk is done in the neighboring town of Bertha, but they also have two spray driers in Alexandria. Northern also processes some milk products in Alexandria, and they do some specific separations on oats for customers like Quaker Oats. Zumbro, which is a similar company to Northern Milk in Alexandria, does not spray dry the milk made in Alexandria. Dennis Anderson is still in Alexandria.

Minnesota Waxy (recently renamed SunRich) has always been a specialty grain company. Initially their main product was waxy starch corn, which contains an all amylopectin starch; it has a much larger starch molecule than regular amylose starch or common corn starch. Waxy starch is used in many food applications, such as those that must be freeze-thaw stable, or products that must hold more flavor that is more available. It has many desired functional properties, and can be used to strip cholesterol from eggs. They also grow about 800,000 bushels of specialty, identity preserved soybeans per year, representing about 30% of their total specialty grain business. The soybeans are sold to soyfood manufacturers in both Japan and the USA. All of their corn and soybean production is contracted with farmers. SunRich is a corporation that has about 200 farmer shareholders; it is not a co-op. They have been in business for almost 20 years, and now they contract with a lot of non-shareholder farmers as well all over the Midwest. About 5% of SunRich's business is in organically grown crops, especially soybeans, and they are emphasizing it more and more.

Talk with Allan Routh of SunRich. 1997. April 18. He used to work with Davisco (St. Peter Creamery) making soymilk solids, but that was years ago. They have been out of that business for 5 years or more. Northern Milk Products is now named Northern Food and Dairy; it is owned by Dennis Anderson in Alexandria, Minnesota. Allan now jointly processes a lot of soy solids products with them. Prosource is one individual who works out of Northern Foods and Dairy; he does processing up there too. Allan's products are doing well. "Our biggest struggle is just to get big enough to support them." Address: CEO, SunRich Inc., P.O. Box 128, Hope, Minnesota 56046. Phone: 1-800-342-6976 or 507-451-3316.

7071. *SoyaScan Notes.* 1996. Who is making Westbrae's soymilk (Overview). May 3. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Until recently, Westbrae's soymilk (not including its Malteds) was being made by several different companies in different parts of the USA: (1) Most of it was made by Pacific Foods of Oregon, in Tualatin, Oregon. (2) Some of it was made by Nutricia at the old Loma Linda Foods plant in Mt. Vernon, Ohio. (3) Not long after that plant was taken over by Carnation / Nestle, Westbrae's production was shifted to Bill Bolduc in Ohio. In mid-1993 he purchased a small soymilk plant at which he made plain, unpasteurized/unsterilized soymilk, then sent it northward to Parmalat Foods (5252 Clay Ave., Wyoming, Michigan 49548. Phone: 616-538-3822). Parmalat is a huge and very significant Italian food company that is the biggest user of Tetra Pak Aseptic packaging in the world. Parmalat packaged the soymilk for Westbrae. As of May 1996, none of the above 3 companies make soymilk for Westbrae any longer.

Then in mid-1995 Bolduc was forced to declare bankruptcy, and apparently the relationship between Westbrae and Pacific Foods was not satisfactory for Westbrae. So Westbrae approached Raj Gupta at ProSoya Inc. in Ontario, Canada. In late April 1996 ProSoya started to make Westbrae's soymilk, apparently using their full capacity of 1-2 tankers a week, which is about 45,000 pounds or 20,000 liters a week. The product is probably

shipped to Farmland Dairies, a packer in New Jersey, where it is packed in Westbrae's new 2-liter Combibloc cartons. ProSoya in Ottawa is also obligated to do quite a bit of R&D work for the Canadian government. It is not clear why or what kind of compensation they receive for this.

The rest of Westbrae's soymilk is made by Northern Milk Products (related to SunRich) in Alexandria, Minnesota. Several tankers a week are shipped to Parmalat in Michigan.

ProSoya would like to set up a soymilk plant with Westbrae (probably in the USA) on a joint venture basis.

7072. Gupta, Rajendra ("Raj") P. 1996. Update on ProSoya Inc., International ProSoya Corporation (IPC), and Pacific ProSoya Inc. (Interview). *SoyaScan Notes.* May 9. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** There are three closely related companies that use the word "ProSoya" in their name. They all exist to develop partnerships with companies which may be interested in exploiting patented soymilk technologies. (1) ProSoya Inc., which was the original company, designs, develops, and manufactures soymilk equipment. Raj owns 55% of the shares in this company, Lorne Broten owns 10-12%, and the remainder is owned by others. (2) IPC (International ProSoya Inc.) is a company that licenses soymilk equipment and technology. ProSoya Inc. has licensed to Lorne Broten and IPC the rights to license (not sell) SoyaCow soymilk technology, through joint ventures, in North America. IPC sells equipment only outside of North America where it has no patent protection. Raj owns about 5% of the stock in IPC, and Lorne holds the controlling interest. (3) Pacific ProSoya Inc. makes soymilk in British Columbia. Raj and Lorne are good friends and on good terms with one another. Address: 5350 Canotek Road, #7, Gloucester, Ottawa, ONT, K1J 9C9, Canada. Phone: 613-745-9115.

7073. Roller, Ron. 1996. How American Soy Products (ASP) disposes of the okara resulting from making Edensoy (Interview). *SoyaScan Notes.* May 10. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** ASP is the largest manufacturer of soymilk in North America. Located in the rural city of Saline, Michigan (population 6,500; about 9 miles south of Ann Arbor), they are bounded on the south and west by diversified agricultural land. The ASP plant produces about 1,000 lb/hour of okara, which contains on average 80% water (range 78-82%) and 6.7% protein. The okara comes out of a high-speed decanter. 100 lb of dry soybeans yields 75-100 lb of okara. Ron has an arrangement with one farmer, who owns two large trucks, who comes to the plant each night in one of the trucks, leaves it under the okara spout, and drives the full truck away. These two trucks are used only for hauling okara. ASP pays this man a significant amount of money (which is confidential) each year to haul the okara; in fact Ron estimates that the money may be of more value to the farmer than the okara itself. Ron estimates that this farmer composts about 90% of the okara and adds the remaining 10% to feed for his milk cattle. Cattle are pretty sensitive to a change in their diet, and the wet okara is hard to mix. Ron believes it would be much more difficult and expensive to dispose of okara from a city plant than from his in the countryside.

All of the okara must be hauled away regularly every day. This is the most important thing! The operation must be organized and the person doing the hauling must be reliable. If he missed even one day, it would a nightmare! The okara piles up so fast and Ron would have no idea of what to do with it. The local dump wouldn't take it. The okara freezes in the winter and ferments (putrefies) in the summer.

The amount of okara that ASP produces each year is steadily growing, so Ron is now doing research and planning for the future. The best option appears to be drying the okara then selling it as an ingredient in organic livestock or pet feeds–but they have not yet found a dependable outlet, and dependability is–again–the key. With a dependable outlet, Ron believes they could pay for the drier and make money on it. They have also looked at pelletizing. Drying requires both a large initial investment in a continuous process operation (ideally made with stainless steel so the dried okara would be food grade) and use of a large amount of energy to remove all that water. On a moisture free basis, okara contains 34% protein (of very high quality) and 49% carbohydrates. Okara with 10% moisture (a realistic figure after drying) contains 32% protein and 37% carbohydrates. Outlets for dried okara in food might include use in a burger, in breads and muffins, etc. Worthington Foods has made their Natural Touch Okara Patties since March 1984; okara is the 4th ingredient in order of predominance. Northern Soy has made Soyboy Okara Courage Burger since April 1995; okara is the 3rd ingredient. Many companies make Soysage. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

7074. Storup, Bernard. 1996. Re: New developments with soyfoods in France. Letter to William Shurtleff at Soyfoods Center, May 13. 2 p. Typed, with signature on letterhead. [Eng]

• ***Summary:*** On 22 April 1996 Alpro (Belgium) bought Sojinal (France) [from B & H Holdings].

Bernard recently met with Steve Demos (founder and CEO of White Wave) in Revel, France. They shared experiences, ideas for the future, and dreams. Bernard plans to visit him in Boulder next month for a few days.

The soymilk made by Nutrition & Soja is now packaged in about 12 different package designs [SKUs], including the brands BioSoy, Céreal, Gerblé, l'Abbé Bisson (Barcelona, Spain), and Union Nature. Address: B.P. 33, Z.I. de la

Pomme, 31250 Revel (near Toulouse), France. Phone: +33 62 18 72 50.

7075. Sheehan, Daniel M. 1996. More about phytoestrogens and isoflavones from soybeans (Interview). *SoyaScan Notes.* May 15. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Dr. Sheehan heard from a colleague in Canada that the soy protein isolates used in infant formulas in Canada have most of the phytoestrogens removed. The source of that information was Mr. Marshall Marcus of Protein Technologies International.

People use terms such as phytoestrogens or isoflavones differently depending on their background and orientation. For example, people interested mostly in biological activity tend to use the term "phytoestrogens," whereas those interested mostly in chemical structure tend to use the term "isoflavones." Additional terms include "flavonoids" (pronounced FLAY-vuh-noids, which refers to a large class of chemicals), and "isoflavonoids" (which are isomers of the flavonoids). "Genistein" and "daidzein" are what chemists call "trivial names." Real chemists provide the actual name of the chemical structure. Note: The first isoflavone found in tempeh was 6,7,4'-trihydroxyisoflavone.

Not all isoflavones are phytoestrogens; only some have biological activity as estrogens, and most of them are inactive. Genistin is just a conjugated genistein. The conjugated forms such as genistin and daidzin are not biologically active, as such; the glucoside linkage must be cleaved by intestinal bacteria before they become biologically active. Biologists usually use the term "prohormones" to refer chemical substances such as daidzin or genistin; they are precursors of hormones that require metabolic action before they become active. So when we eat a soyfood such as tofu, the biologically inactive prohormones are converted to active hormones in our digestive system. On the other hand, equol has estrogenic activity, but it is a metabolite of genistein. Of the three major conjugated forms in soybeans, daidzin, genistin, and equal, all of the digested forms have biological activity. Address: Dep. of Health and Human Services, Food and Drug Administration, National Center for Toxicological Research, Div. of Reproductive and Developmental Toxicology, Jefferson, Arkansas 72079-9502, and Dep. of Biochemistry, Univ. of Arkansas for Medical Sciences, Little Rock, AR 72205. Phone: 501-543-7561.

7076. D'Aguilar, Marlon. 1996. New developments at Country Farmhouse Soya Products (Interview). *SoyaScan Notes.* May 20. Conducted by William Shurtleff of Soyfoods Center. [Eng]

• ***Summary:*** Marlon started making and selling tofu in 1985. He started teaching himself the processes in 1983-84. He believes that Country Farmhouse Soya Products was the first company to make tofu commercially in Jamaica. *Tofu and Soymilk Production* and *The Book of Tofu* by Shurtleff and Aoyagi helped him out somewhat over the years. In the beginning he gave away a lot of tofu "to get our people to know it. Our people have always liked it. Our Soy Scream Ice Cream, launched in about 1985, is our favorite product. It was made using hand-cranked wooden buckets. It is still sold in both soft serve and hard packs." Marlon has launched about 10 soy products since 1985–Tofu, Soy Scream Ice Cream, Mayonnaise (based on soymilk and sold to the foodservice), soy ice cream sandwich, soy flour, soy burgers (launched in about 1987 and renamed Veg Middles in about 1994), soymilk (made to order only).

Right now he is working on expanding the company, but it is difficult because of limited finances and resources. The vision is still high and open. Country Farmhouse Lifeline is the parent association and a community operation; Country Farmhouse Soya Products is an offshoot, and a limited liability company. "We went into soyfoods as part of a whole social program named Country Farmhouse Lifeline, which is a local community program whereby local people get together to shape their lives and bring about sustainable life. It was not started just as a business. Our wider program involves alternative sources of energy and more sustainable living." Marlon has worked with Plenty USA and they have helped him mostly with contacts, plus some technical advice–Not much help with product development. There are no other companies now making soyfoods in Jamaica. One company named Nature Treats started in about 1993, but they went out of business about 2 years later; she is trying to sell him her equipment. He is a Rastafarian, and the Lifeline was spun out of that concept–not so much from the religious perspective but from a social and cultural perspective. Most Rastafarians are vegetarians and his interest in tofu and soyfoods grows in part out of his interest in vegetarianism. They have used the okara and whey from their company to generate energy (methane) that is run back into the plant–though it is not established now.

Talk with Annie Liu from Miami, Florida. 1999. Feb. 16. The tofu made by Country Farmhouse is very hard. In Jamaica, there is a dish named Solomonogondi, that is traditionally made with pickled mackerel; Country Farmhouse makes a vegetarian version with tofu–that is delicious. Their ice cream is also delicious. Address: Affiliate of the Country Farmhouse Lifeline, 12 Faulkner Ave., Duhaney Park, Kingston 20, Jamaica. Phone: 809-933-4617.

7077. Roberts, Rosemary. 1996. Soy formula campaign wins praise. *Northern Advocate* (*Whangarei, New Zealand*). May 24. p. 2.

• ***Summary:*** "Work being done by Whangarei couple Dick and Valerie James to have soy infant formula withdrawn from sale and tested for toxins, particularly soy oestrogens, has won the admiration of Professor Reg Morgan of Perth.

"Mr Morgan, who visited Mr and Mrs James last week,

heads the department of physiology at the University of Western Australia.

"For the past 20 years he has been investigating the chemicals in raw soy flour, called trypsin inhibitors, which have been shown to cause pancreatic cancer in rats."

Note: The date of this article may be Sept. 25–instead of May 24.

7078. Heenan, Cathy. 1996. Talk on soy infant formulas. *Otago Daily Times* (*Dunedin, New Zealand*). May 31.
• ***Summary:*** This article also appeared in *Gisborne Herald* 1 Jun 1996.

7079. Attwood, Charles R. 1996. The great American milk myth. *New Century Nutrition* (*Ithaca, New York*) 2(5):6. May.

7080. DeAngelis, Lissa; Siple, Molly. 1996. Recipes for change: Gourmet wholefood cooking for health and vitality at menopause. New York, NY: Dutton Signet. A Div. of Penguin Books USA Inc. xvi + 400 p. May. Index. 25 cm. [34* ref]
• ***Summary:*** In the upper right corner of the front cover we read: "Feel great without hormone replacement therapy!" This is a book, with a natural foods and macrobiotic slant, about using foods in place of hormone therapy to help deal with nine problems that occur around the time menopause: Premenstrual syndrome, hot flashes, fatigue, heart palpitations, memory lapses, mood swings, irritability and depression, weight gain, waning interest in sexuality, hypothyroidism. All menu suggestions are divided into two choices: Vegetarian and non-vegetarian (but with many vegetarian dishes). Pages 4-5 note that science has found active ingredients in foods that promote good health during menopause. Soybeans and soy products are "rich in phytohormones... sometimes called phytoestrogens." Four types of food are "off the menu" = should not be consumed: Refined sugars, caffeine and coffee, processed oils, and refined white flour and refined grains. The subsection titled "Phytohormones" (p. 16) lists ten foods, including tofu and brown rice, as good sources. The benefits of phytohormones and soyfoods are also discussed in the section on "Breast cancer" (p. 55-56).

Soy-related recipes include: Miso soup (p. 90). Bean basics (p. 120-23). Tofu teriyaki with vegetables (p. 123-24). Tempeh, green beans, and carrots with mustard sauce (p. 132-33). Tempeh slices for sandwiches (p. 148-49). Tofu alfredo sauce (p. 303).

The recipes also call for: Adzuki beans, almond butter and tahini, almond milk, kudzu, and plums (umeboshi). The last page is titled "About the authors." Photos of Lissa DeAngelis and Molly Siple appear on the inside rear dust jacket. Address: 1. Private nutrition consultant, North Edison, New Jersey; former Assoc. Director of the Natural Gourmet Cookery School in New York City for 10 years; 2. Registered Dietitian, Los Angeles, California.

7081. **Product Name:** Solait (Powdered Soy Beverage) [Chocolate flavor].
Manufacturer's Name: Devansoy, Inc. Renamed Devansoy Farms by July 1994.
Manufacturer's Address: P.O. Box 885, Carroll, IA 51401. Phone: 1-800-747-8605.
Date of Introduction: 1996. May.
Ingredients: (March 1997): Soybeans, brown rice syrup, sunflower oil, calcium carbonate, sea salt, natural flavor, lecithin.
Wt/Vol., Packaging, Price: 27 gm foil packet, 10 oz can, and 21.6 oz can.
How Stored: Shelf stable.
New Product–Documentation: Spot in NFM's New Product Review. 1996. Summer (May). Product with Label sent by Patricia Smith from Natural Products Expo West, Anaheim, California. 1997. March. Label: 4 inch square foil packet. Blue, orange, brown, and back on white. "Milk of the Sun–Instant soy beverage." Soyfoods Center taste test. Too sweet to drink.

7082. Kuhn, Mary Ellen. 1996. Soy in the spotlight: Disease-fighting benefits may change the image of the once-lowly bean. *Food Processing* (*Chicago*). May. p. 52-53, 55, 58.
• ***Summary:*** This is a cover story; on the cover is written: "Unlocking the secrets of soy," with four large color photos. The article begins: "What a difference a couple of decades make." Twenty or 30 years ago, most foodservice operators and consumers used soy with hesitation, sometimes scornful comments. "Today, however, the once-maligned soy protein has a much better image, thanks to a fast-mounting stack of research data suggesting it may help prevent and treat high blood cholesterol, cancer, osteoporosis, and symptoms of menopause." And this good news has begun to reach health and nutrition professionals. With better products on the market, "soyfoods marketers may soon be dealing with a new generation of mainstream consumers who–far from spurning soy-based products–actively seek them out.

"Much of the current soy research is focused on isoflavones, a unique class of phytoestrogens or plant hormones found primarily in soy protein." The main soy isoflavone is genistein. Now soyfoods manufacturers are starting to take isoflavone content into consideration when they formulate, label, and promote their products. The isoflavone content of unprocessed soybeans can vary considerably among varieties, years, and place of harvest. Heat treatment does not appear to significantly reduce isoflavone content, but an alcohol wash (used with most soy protein concentrates and isolated soy proteins) removes most isoflavones in the product. The well-known Supro brand of isolated soy proteins are not subject to an alcohol wash,

which helps preserve their isoflavone content.

Rick McKelvey, president of the Soyfoods Association of America, has attended the American Dietetic Association show for the past two years. Last year, most of the questions he heard were: "What is this soy stuff that I'm hearing about?" This year's questions concerned the level of isoflavones in specific products. "This shows how far we've come in the bast year," he observes.

ADM, which could easily extract isoflavones from soybeans and sell them has decided not to do so. Jerry Weigel, PhD, who is ADM's vice president of corporate nutrition and regulatory affairs thinks it is probably not legal to sell isoflavones because they do not have GRAS (Generally Recognized as Safe) status or food additive status. Few soyfoods marketers are presently publicizing the isoflavone or genistein content of their products or making specific health or disease-prevention claims.

William Helferich, PhD, an associate professor at Michigan State University's Department of Food Science and Human Nutrition, has been studying dietary phytoestrogens in laboratory animals for 3 years. He has found that "genistein can stimulate estrogen-responsive breast cancer-cell growth in cultured cells and in animals implanted with these cells. He believes that women at risk for estrogen-dependent forms of breast cancer should not consume high levels of phytoestrogens." Most researchers are concerned about consumers taking isoflavone supplements or pills. Yet such products are now on the market and they acknowledge that some consumers will be attracted to them, instead of simply increasing the level of soyfoods in their diet, eating a healthful, balanced diet, and living and healthy lifestyle. Photos show: A jar of Morningstar Farms Roasted Soy Butter (soynut butter) which will be introduced this spring. Jan Remak, president of marketing for Vitasoy U.S.A.

One sidebar, titled "Probing the soy/health connection," discusses the research of Dr. James Anderson and Mark Messina, PhD. "Scientists theorize that phytoestrogens in soy might help compensate for the loss of hormonal estrogen women experience at menopause."

Another sidebar, "Boom times for the bean," notes that starting soon after the research study by Dr. James Anderson was published in August 1995, many soyfoods companies experienced a substantial increase in sales. Peter Golbitz notes that "After years of steady 10% to 15% annual growth, soyfood sales have soared by about 30% in the past year... Many marketers of meat and dairy analogs are reporting sales increases of more than 100%." A 1995 study by the Soyfoods Association of America found that 75% of Americans have heard of tofu, 55% of soymilk, and 50% of soy burgers. Golbitz adds that in Australia, where soymilk based on soy protein isolates is widely available, per capita soymilk consumption is at least three times what it is in the USA. Vitasoy has adopted a niche-market approach to selling its soymilk; it adjusts the amount beany taste according to the taste preferences of each market. Address: Senior Editor.

7083. Messina, Mark; Messina, Virginia. 1996. The dietitian's guide to vegetarian diets: Issues and applications. Gaithersberg, Maryland: Aspen Publishers, Inc. xi + 511 p. Index. 24 cm. [1939 ref]

• ***Summary:*** Contents: Preface. Acknowledgments. Part I: An overview of vegetarian diet. 1. Demographics and definitions: History of vegetarianism, profile of vegetarians, types of vegetarian diets. 2. Health consequences of vegetarian diets: Differences in dietary components of vegetarian and nonvegetarian diets, cardiovascular disease, hypertension, cancer, diabetes, obesity, kidney disease, renal stones, gallstones, diverticular disease, other conditions, the dairy connection, phytochemicals, conclusion.

Part II: Vegetarian nutrition. 3. Protein: A historical perspective on protein, protein requirements, vegetarian diets and protein digestibility, assessing protein quality, plant proteins and nitrogen balance, protein complementarity, conclusion. 4. Calcium: Osteoporosis, calcium and osteoporosis, calcium absorption and the RDA, calcium excretion, bone health of vegetarians, meeting the calcium RDA on plant-based diets, plant sources of calcium, other factors that affect bone health/fracture rate, conclusion. 5. Minerals: Iron, zinc, selenium, copper, magnesium, phosphorus, manganese, iodine, sodium, chloride, potassium, fluoride, chromium, molybdenum. 6. Vitamins: Vitamin B_{12} (cobalamin), riboflavin, vitamin D, vitamin B_6, vitamin B_1 (thiamin), niacin, folate, biotin, pantothenic acid, vitamin C (ascorbic acid), vitamin A, vitamin E, vitamin K. 7. Food guides for vegetarians: A history of food guides, developing food guides for vegetarians, vegetarian food guides, appendix 7-A–food guides for vegetarians (food guide for lacto-ovo vegetarians and vegans, the 1-2-3-4-5 vegetarian food guide, American Dietetic Association's vegetarian food guide, the vegetarian food pyramid, the vegetarian food pyramid, macrobiotic food guide).

Part III: Vegetarian diets throughout the life cycle. 8. Pregnancy and lactation: Weight gain and calorie needs in pregnancy, weight gain in pregnant vegetarians, meeting nutrient needs of pregnancy on a vegetarian diet, meal-planning guidelines, adolescent pregnancy, potential complications of pregnancy, common conditions of pregnancy, vegetarians and lactation, appendix 8-A–food guides for pregnant and breast feeding vegetarians (food guide I, food guide II). 9. Vegetarian diets in infancy: Growth in vegetarian infants, vegetarian diets during the first six months of infancy, solid foods for vegetarian infants, comparison of sample menu plans for 9-month old vegan and omnivore infants, potential concerns in infant feeding, macrobiotic diets in infancy, fatty acids in the diet of vegetarian infants, conclusion. 10. Preschool and school-age children: Growth of vegetarian children, diets of vegetarian children, protein, fat, calcium, vitamin D, vitamin B_{12}, iron,

zinc, guidelines for meal planning for vegetarian children, milk in the diets of vegetarian children, counseling parents of vegetarian children, vegetarian diets for school-age children, school lunch, bag lunch, appendix 10-A–meal-planning guidelines for children (other food guides). 11. Vegetarian diets for adolescents: Growth of vegetarian adolescents, nutrient needs of vegetarian adolescents, meal-planning guidelines for vegetarian adolescents, eating disorders. 12. Vegetarian diets for older people: Dietary status of older vegetarians, nutrient needs of older vegetarians, meal planning for older people.

Part IV: Practical applications for counseling vegetarians. 13. Counseling vegetarian clients: Dietary assessment, counseling clients to plan menus based on vegetarian food guides, vegetarian diets as dietary therapy, reducing fat in vegetarian diets, reducing food costs on vegetarian diets. 14. Diabetes: Diet therapy for diabetes, vegetarians and diabetes, the diabetic exchange lists, appendix 14-A–exchange lists for meal planning. 15. Vegetarian diets for athletes: Vegetarian diets and athletic performance, nutrition needs of athletes, risks of amenorrhea in female vegetarians and female vegetarian athletes. 16. Vegetarian food preparation: Preparing grains, preparing beans, using tofu, using textured vegetable protein, using egg substitutes, cooking with sweeteners.

Glossary of vegetarian foods. Resources on vegetarian diet: Vegetarian resources for dietitians, resources for vegetarian clients, on-line services, mail-order vegetarian foods.

Appendixes. A. Fiber, cholesterol, and macronutrient intakes of adult vegetarians and nonvegetarians. B. Lipid levels in adult vegetarians and nonvegetarians. C. Blood pressure of adult vegetarians and nonvegetarians. D. Anthropometric data of female adult vegetarians and nonvegetarians. E. Anthropometric data of male adult vegetarians and nonvegetarians. F. Intake ratios of N-6 to N-3 fatty acids on vegetarian and non-vegetarian diets. G. Protein, calcium, phosphorus, sodium and potassium intakes of adult vegetarians and nonvegetarians. H. Iron intake and status of vegetarians and nonvegetarians. I. Mineral intake of adult vegetarians and nonvegetarians. J. Water soluble vitamin intake of adult vegetarians and nonvegetarians. K. Fat soluble vitamin intake of adult vegetarians and nonvegetarians. L. Fiber, cholesterol, and macronutrient intakes of vegetarian and nonvegetarian school-age children and teenagers. M. Water soluble vitamin intakes of vegetarian and nonvegetarian school-aged children and teenagers. N. Fat soluble vitamin intake of vegetarian and nonvegetarian school-aged children and teenagers. O. Mineral intake of vegetarian and nonvegetarian school-aged children and teenagers. P. Fiber, cholesterol, and macronutrient intakes of elderly vegetarians and nonvegetarians. Q. Water soluble vitamin intake of elderly vegetarians and nonvegetarians. R. Mineral intake of elderly vegetarians and nonvegetarians.

The information on vitamin K is excellent and extensive (despite one small error): Table 6-12 (p. 197) gives the vitamin K content of selected foods. The content of soybean oil is 77 micrograms per tablespoon (not milligrams as stated). Other rich sources are (per ½ cup cooked): Lentils (261 mcg), kale (179 mcg), spinach (141), broccoli (119). The source of these statistics is: USDA Provisional table on vitamin K content of foods. 1994. Hyattsville, Maryland: USDA.

Index listings for individual soyfoods: Tofu: p. 38-82, 392. Tempeh: p. 391. Soymilk: p. 214-15, 284-85, 391. Miso: p. 389. Soy cheese, soy flour, soy yogurt, soybeans, soynuts, Take Care (fortified soy protein beverage sold in powdered form), tamari: p. 391 (Glossary of vegetarian foods). Address: 1. PhD; 2. MPH, RD. Both: Nutrition Matters, Inc., 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

7084. Ohio Soybean Council / Soy Ohio. 1996. Creative cooking with soy. Columbus, Ohio. 20 p. May. 24 cm. • ***Summary:*** This attractive cookbooklet contains many large color photos on thick glossy paper. The recipes are: Heartland burgers (with TVP). Golden baked beans (with 2 cups cooked soybeans). Creamy tomato soup (with soy milk, silken tofu, and soy oil). Chicken raspberry salad (with silken tofu in the sauce, and reduced sodium soy sauce). Easy day vegetable lasagna (with silken tofu). All-American twice-baked potatoes (with silken tofu). Primo veggie pasta (with silken tofu in the sauce). Oatmeal bread (with soy milk and soy flour). Better bran muffin (with soy milk and soy flour). Super crunchy caramel corn (with soy margarine). Fruit smoothie (with silken tofu). Sweetheart cinnamon rolls (with silken tofu and lite soy margarine). Chocolate silk dessert (with silken tofu and soy margarine). Buckeye surprise (with silken tofu and soy margarine). The last two pages are "Working with soyfoods" (soy flour, soy oil, tofu), and "Soyfoods resources" (a directory of organizations, books, and web sites providing information about soyfoods and nutrition).

Talk with Kelly Ollwine, executive secretary for the Ohio Soybean Council. 1996. June 7. This booklet, published in May 1996, was developed by Jim Kapp of Yoder, Sullivan & Kapp, a consulting firm in Columbus, Ohio. He also developed another such book titled "Cooking American Favorites with Soy," published in 1994.

Talk with Jim Kapp. 1996. June 7. The recipes in both these books were developed by two Ohio home economists, Connie Cahill and Melody Leidheiser. Address: P.O. Box 479, Columbus, Ohio 43216-0479.

7085. Raymond, Jennifer. 1996. The peaceful palate: Fine vegetarian cuisine. Revised ed. Calistoga, California: Heart & Soul Publications. 159 p. Illust. Index. 28 cm. [5 ref]

• ***Summary:*** A vegan cookbook, with a substantial section on vegan nutrition. Contains 11 tofu recipes and 1 recipe for tempeh sandwich.

Contents: Acknowledgements. Introduction (most Americans eat too much protein and far to much fat). Choosing food for optimum health. Protein. Calcium. Protein myths and facts. Putting fat in its place. Cutting the fat. Dairy products and eggs (why each is cruel to animals; soy and rice milks are excellent alternatives to cow's milk; tofu can be scrambled in place of eggs. Five good books about factory farming. Contact information for three organizations "working to end the horrors of factory farming"). A note about sweeteners. Coking dried beans. Equipping your kitchen. Stocking your pantry for healthful eating. What to eat when you don't eat meat. Foods which may be new to you [glossary] (includes aseptically packaged tofu, barley malt, low-sodium soy sauce, mirin, miso, Nayonaise {eggless, dairyless, cholesterol-free mayonnaise}, non-dairy frozen dessert, non-dairy yogurt, reduced-fat tofu, rice milk, rice syrup, seitan, silken tofu, soy milk, Spectrum Natural Spread {similar to soft margarine but made without hydrogenated fats}, tempeh, textured vegetable protein {TVP}).

"Until he extends the circle of his compassion to all living things, man will not himself find peace"–Albert Schweitzer.

Recipes: Breakfasts. Breads. Sandwiches. Salads & salad dressings, etc. A portrait photo (p. 159) shows Jennifer Raymond. "She works as a chef and nutrition specialist with Dean Ornish, M.D. in his 'Open your heart program,' teaching patients how a delicious, easily prepared vegetarian diet can reverse heart disease." "Her first cookbook, *The Best of Jenny's Kitchen,* was published by Avon books in 1981 and was followed closely by her television series *Cooking Naturally!* Jennifer lives in Calistoga, California, with her husband Stephen Avis and their five dogs."

The tofu and tempeh recipes are: Scrambled tofu (p. 27). Missing egg sandwich (p. 42). Tempeh salad sandwich (p. 44). Tofu, lettuce & tomato sandwich (TLT, p. 45). Broiled tofu (p. 48). Pasta with creamy tofu (p. 109). Lasagna (with tofu, p. 113). Tofu burgers (p. 125). Tofu croquettes (p. 126). Tofu pot pie (p. 127). Tofu cream frosting (p. 148). Tofu cheesecake (p. 150).

Talk with Jennifer Raymond. 1996. May 30. The new enlarged edition was available on 2 May 1996. There are new recipes and with each recipe is a nutritional analysis. The book is still available from the author, as well as nationwide because it is distributed by The Book Publishing Company in Summertown, Tennessee. She is now working closely with Dr. Dean Ornish, and adds: "He is at the center of where things are happening related to vegetarianism, diet, and health. His work has had a more profound impact on the way that the medical profession and people in general view vegetarianism than that of almost any other person. It has allowed vegetarianism to turn a really big corner." Address: 1418 Cedar St., Calistoga, California 94515. Phone: 707-942-2180.

7086. Demos, Steve. 1996. Recent trip to Europe. What is vegetarianism? Cause marketing (Interview). *SoyaScan Notes.* June 5. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Steve greatly enjoyed meeting Bernard Storup of *Nutrition et Soja* in France, and discussing soyfoods. Steve was especially impressed with his soymilk production and packaging line. Bernard is making some interesting soy/dairy blends. Bernard's long term plan is not to stay with Sandoz. Now Bernard gets a bonus of $100,000 a year in addition to his salary just to stay with Sandoz.

In the UK, Steve met with Graham Keene, head of marketing and sales for the Haldane Group. Haldane makes yogurt under 3 brands, and one of them was the best soy yogurt Steve has ever tasted anywhere. Their yogurt has a pH of 3.8 to 4.0 which gives it a shelf life of 3-4 weeks; there appeared to be no special tricks involved. Steve would soon like to travel to East Asia to take a closer look at Okinawan fermented tofu (*Tofuyo*). Steve spent $100,000 to find out what people mean when they say "I am a vegetarian." They mean: "I avoid red meat."

Cause marketing is where a company puts its advertising dollars into a cause, such as saving the rain forests or promoting vegetarianism.

The largest investor in White Wave has the surname "Demos," and it is not Steve. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

7087. Connor, Steve. 1996. The poison risk in 'healthy' eating: Natural toxins in food pose a greater potential danger than man-made chemicals. *Sunday Star-Times* (*Auckland, New Zealand*). June 9.

• ***Summary:*** Pulses and beans, which are the epitome of healthy eating, contain the widest variety of biological toxins. "Included in this list of poisons–most of which are destroyed by cooking–are substances known as phytoestrogens, plant chemicals that can mimic female hormones." They "cannot be ignored in the search to find the cause of falling sperm counts." They are present in soya beans, which are used to make soy infant formulas. "Scientists are therefore seriously questioning whether soya milk products, given at a critical moment in the development of the male reproductive system, could be responsible for lower sperm counts." Address: London.

7088. Guy, Camille. 1996. Soybean campaigner turns up the heat: A visiting professor tells about his concern over the sale of food containing soybean. *New Zealand Herald–Weekend Magazine.* June 15. Section 7. p. 10. Saturday.

• ***Summary:*** Reg Morgan is a physiology professor at the

University of Western Australia. During a trip to New Zealand, he compared the promotion of soy products as health foods with "cigarette advertising at the turn of the century." He also joined with New Zealand scientists to "warn parents that using soy infant formula may put their babies' health at risk. The Ministry of Health has issued no such warning but a dramatic decline in supermarket sales of soy formula suggests that many parents are avoiding the product. Prof. Morgan said: "In my lectures I warn young people they may be drinking a cocktail of oestrogens and other nasties. But the babies are the ones I am scared about–the newborns who take soy formula from birth."

"At Auckland University's chemistry department Dr Mike Fitzpatrick has 25kg of soy flakes awaiting study. In 1994 Fitzpatrick was one of four New Zealand scientists who asked the Ministry of Health to warn the public of possible health risks from soy products.

"Then working as an analytical chemist for a private company, Fitzpatrick did a commissioned analysis of soy foods and a survey of the scientific literature on soy toxins.

"After reviewing Fitzpatrick's work in 1994, Auckland Medical School senior toxicologist Dr Iain Robertson recommended that the use of soy in infant formula be discontinued pending future research."

"Figures from the international marketing research group A.C. Nelson for supermarket sales of soy infant formula show that New Zealanders spent $1.6 million on these products over the past year–a 30 per cent decline on the previous year.

"Soy formula used to claim a 16 per cent share of the infant formula market. That share has shrunk to less than 9 per cent."

A photo shows Prof. Morgan with the caption "soy toxins are very active and scary stuff."

7089. *SoyaScan FactSheet.* 1996. Non-dairy products (alternatives to dairy products), which are good tasting and widely available (Overview). June 22. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** About 30 million Americans are lactose intolerant. Between 4% and 6% of infants develop allergies to the proteins in one or more foods, with cow's milk being the most allergenic. And many other people have moral or philosophical objections to drinking milk (e.g. widespread use of antibiotics, use of genetically engineered Bovine Growth Hormone [rBGH, made by Monsanto], the suffering of calves when forcefully removed from their mother, etc.). Until quite recently, these people had to live without dairy products, but now that has all changed–thanks to soyfoods, which are widely available and usually quite delicious.

Foods marked with one asterisk (*) are sold at most natural food stores and some health food stores and supermarkets (look in your Yellow Pages at "Health & Diet Food Products–Retail"). Foods marked with two asterisks are also sold at most supermarkets.

If you use dairy alternatives regularly, you can save money by making them yourself: See the index of *The Book of Tofu* by Shurtleff & Aoyagi (Ballantine Books edition) for carefully tested, home-scale recipes for soymilk, soy ice cream, soy yogurt (from soymilk or from tofu), tofu, cream cheese, sour cream, whipped cream (from tofu or soymilk), tangy tofu cottage cheese, tofu icing, frozen-banana tofu shake, soymilk kefir, soy mayonnaise (from tofu or soymilk),

Soymilk* is the most popular type of dairy alternative. It is sold in many flavors, often fortified with calcium, vitamin D, antioxidants, etc. in quarts and half gallons. It costs about 1.7 times as much as milk (so if a quart cow's milk costs $1.00, a quart of soymilk will cost about $1.70). Popular brands: Edensoy, Westbrae, Westsoy, Vitasoy, So-Yum, Silk, and Pacific Foods. For a tasty soymilk shake, try Westbrae Malteds. Rice Dream is a delicious non-dairy rice milk and also an ice cream; both products are made by Imagine Foods. Many other brands of rice beverage (some of whose quality we think is not as good) are also available.

Soy ice cream* is sold in an outrageous variety of flavors and forms. Hard-pack pints are the most popular, followed by soft-serve, ice cream sandwiches, etc. Popular brands: Tofutti, Living Rightly, Sweet Nothings (fat free), and Ice Bean. Rice Dream is a delicious rice-based non-dairy ice cream.

Soy yogurt* is sold in typical small yogurt cups, in a wide variety of flavors. The most popular brand is White Wave Dairyless. Try their Lemon-Kiwi flavor! Most soy yogurts are fermented/cultured with live cultures, but some are like a parfait (not fermented) made by blending silken tofu, fruits, and a sweetener.

Tofu**, the world's most popular soyfood, is now sold at very reasonable prices in most supermarkets across America. It makes an excellent replacement for cheese in many dishes where the cheese is not required to melt: Salads, sandwiches, in Lasagna for the ricotta cheese, etc. You can also use tofu to make your own soy yogurts and ice creams at home.

Soy cream cheese*. These products, based on tofu, are delicious and moderately priced. Our favorite brand is Tofutti Better than Cream Cheese, which comes in flavors such as Garlic & Herb, French Onion, Herbs & Chives, Plain, Wildberry, or Smoked Salmon. Some bagel shops (such as Noah's Bagels in Northern California) sell this product. VeganRella Cream Cheese (in plain & onion & dill flavors) uses more natural ingredients (no hydrogenated oils, or mono- or diglycerides).

Soy sour cream*. Again, this product is based on tofu. Our favorite brand is Tofutti Sour Supreme–Better than Sour Cream.

Soy cheese* is our least favorite dairy alternative. Most brands contain *casein* (the protein from cow's milk), which allows them to melt, but which also (technically) disqualifies

them from being a truly non-dairy product. A few brands are truly non-dairy but they melt in a sort of thick puddle. Top brands with casein: Soya Kaas, TofuRella, Zero-FatRella, HempRella (soy free), and AlmondRella (soy free). Top brands without casein: VeganRella (2 flavors), Soymage.

Soy-based infant formula. Available at most pharmacies and many supermarkets, this is a carefully formulated and regulated product designed to meet the critical needs of infants when served as the sole source of nutrition. It is widely fed to infants who are allergic to cow's milk. But note that 15% to 50% of infants with cow's milk allergy will also develop allergies to soy protein. Soy protein was recently ranked 11th among foods in terms of allergenicity; animal proteins such as milk and eggs remain the most allergenic foods.

Whip Topping**. Sold as "non-dairy whip topping" at most supermarkets, as far as we know, these all contain casein or sodium caseinate from cow's milk. Leading brands: CoolWhip.

For more information on non-dairy products on the World Wide Web, go to http://www.rella.com. This website is produced by Sharon's Finest in California.

7090. Roller, Ron. 1996. New developments at American Soy Products (ASP) (Interview). *SoyaScan Notes.* June 28. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Seikensha is no longer one of the five partners that own ASP; they are still in business but they decided to sell their shares back to the remaining 4 partners–perhaps because they felt they could use the money in more productive ways.

The ASP plant at Saline is now running at full capacity–3 shifts, 24 hours a day. A smaller expansion at the plant has just been completed; they added building space and equipment that was more closely related to packaging than to soymilk. They added some tank capacity, utility chillers, etc. that helped to increase the current capacity and went a long ways toward helping to utilize additional capacity in the future. Packaging capacity, sterilizing capacity, and *Jun* (soymilk base) capacity are all separate but they all need to work together. They now have more packaging capacity than they have production capacity; they could package more product if they could make it.

ASP has a new Tetra Brik Aseptic packaging machine, a TBA-8 filler that puts a pull-tab over the hole. A separate piece of packaging line equipment puts on the plastic cap after the package comes out of the filling room. The cap is stuck on over the pull-tab. The package looks exactly the same but it now has a reclosable cap; you can't retrofit the old machine to give it capping capability.

Soon ASP plans to make a big expansion in the plant. Michael Potter recently sent a letter to Eden distributors to address that issue.

Bill Bolduc is now in Los Angeles, California. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

7091. **Product Name:** Harmony Farms Non-Dairy Rice Drink (Fat Free, Aseptic Pack) [Original, or Vanilla].
Manufacturer's Name: American Natural Snacks (Marketer-Distributor).
Manufacturer's Address: P.O. Box 1067, St. Augustine, FL 32085. Phone: 904-824-8181.
Date of Introduction: 1996. June.
Wt/Vol., Packaging, Price: 1 quart (32 oz) Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Ad (full-page, color) in Natural Foods Merchandiser. 1996. June. p. 31. "The girls are not happy... Mooooove over, Milk." Color photos show: The package and label for both flavors of product. Three cows standing in a field.

7092. Hattersley, Joseph G. 1996. Sudden infant death–Linked to soy products, processed milk & milk formulas. *Australasian Health and Healing* 15(3):46-48.
• ***Summary:*** Much of his information is based on an article by Sally W. Fallon and Mary G. Enig published in *Health Freedom News* (Oct. 1995, by National Health Federation, Monrovia, California).

7093. House Foods America Corporation. 1996. Report 1996. Tokyo, Japan. 14 p. 28 cm. [Eng]
• ***Summary:*** A colorful English-language annual report. Contents: Corporate philosophy. Financial highlights. To our shareholders, from Kunihiko Otsuka, President (June 1996). Product information. Overseas activities (with world map). Domestic company facilities (with map). Balance sheet. Income statement / appropriation. Of retained earnings. Board of directors. Company history.

For the ear ended March 31, 1996, the following are in U.S. dollars: Sales: $1,713 million (down from the peak in 1994). Net income (profit): $75.12 million (down from 1994 and 1995). Net income per share: $0.659 (down from the peak in 1994). Company history: 1913 Nov. 13–Company founded by Seisuke Urakami, the first president, who started Urakami Shoten as an enterprise dealing in herbal medicine supplies in Osaka, Japan. 1926–Production and sales of curry began. 1947–The business was incorporated under the name Urakami Ryoshoku Kogyosho, Ltd., with an initial capital of ¥197,500. 1949–Firm name was changed to House Curry Urakami Shoten Ltd. 1954–Tokyo office opened. 1960–Firm name was changed to House Food Industrial Co., Ltd. (*House Shokuhin Kogyo*). Indian curry introduced. 1963–Vermont curry introduced. 1971–Stock first listed on both Tokyo and Osaka Stock Exchanges. 1973–Introduced House Hontofu, an instant tofu to be made at home by adding GDL to powdered soymilk. 1981–Los Angeles office established.

1983–Curry House restaurant specializing in curry opened in Los Angeles. 1983–Purchased a share of a tofu company in Los Angeles, renamed House Foods & Yamauchi, Inc. 1993–Firm name was changed to House Foods Corporation.

Note: On 2 April 1997 House Foods Corporation was selling for about $12 per share; the minimum purchase was 1,000 shares. Address: 5-11, Nihonbashi Honcho 2-chome, Chuo-ku, Tokyo 103, Japan. Phone: (03) 3243-1231.

7094. Jacobi, Dana. 1996. The soy of cooking: Throw out your old ideas about soy–These innovative recipes bring out the delicate, sophisticated flavor of soy. *Natural Health.* May/June. p. 76-81, 138-44.
• ***Summary:*** Contents: Introduction (incl. health benefits and isoflavones). Soy, the next generation. Soymilk: Cooking tips, how to buy. Tempeh: Cooking tips, how to buy. Fresh green soybeans: Cooking tips, how to buy. Soy meats: Cooking tips, how to buy. Newfangled tofu: Cooking tips, how to buy. Recipes include: Soymilk smoothie. Thai salad with savory tofu. Garlic tempeh croutons. Green soybeans with pickled cabbage and ginger. Barbecued beans and tempeh bacon or tofu franks. Chili with black soybeans. Chocolate pote de crème.

A sidebar discusses: Powdered soymilk, soycheeses, soy sour cream, soy yogurt, soy-based cream cheese, margarine substitute (Spectrum Spread containing canola oil and soy isolate). Address: Food writer, New York, NY.

7095. Lambrecht, Hillary S.; Nielsen, S.S.; Liska, B.J.; Nielsen, N.C. 1996. Effect of soybean storage on tofu and soymilk production. *J. of Food Quality* 19(3):189-202. June. [22 ref]
• ***Summary:*** Century 84 and Century -L2L3 (lacking lipoxygenase isozymes 2 and 3), near isogenic soybean varieties, were stored at five temperatures and relative humidities for up to 3 months. Soybean storage above 25ºC and 50% relative humidity adversely affected the quality of the resulting soymilk (reduced pH and solids content) and tofu (decreased yield and moisture content, gave a darker color). Century -L2L3 soybeans were more resistant to changes during adverse storage than were Century 84 soybeans. Address: 1-3. Dep. of Food Science, 1160 Smith Hall, Purdue Univ., West Lafayette, Indiana 47907. Phone: (317) 494-8328.

7096. *SoyaCow Newsletter* (*Ottawa, Canada*). 1996. SSP of Indian manufactures SoyaCow SC20 for the world. 5(2):1. April/June.
• ***Summary:*** "The successful technology transfer of the SoyaCow SC20 to SSP (Private) Ltd. of Faridabad, India, means that ProSoya can now discontinue manufacturing these units in Canada. This is a positive development for all concerned because it means an all stainless-steel system available at a lower price than the aluminium-stainless hybrid systems previously in Canada."

"An additional benefit is that Child Haven International, which introduced the SoyaCow to India and placed the first 12 Canadian made systems there in 1992-1994, will receive a royalty on the sale of these systems. This is a direct result of the grant of the Indian patent rights to the SC20 by ProSoya to Child Haven for the humanitarian work.

A large photo, with a black background, shows the SoyaCow SC20 manufactured by SSP.

7097. *SoyaCow Newsletter* (*Ottawa, Canada*). 1996. High Commissioner of India visits ProSoya. 5(2):2. April/June.
• ***Summary:*** "His Excellency Mr. Prem Budhwar and his wife Kusum Budhwar, visited ProSoya [in Ottawa, Ontario, Canada] on June 11. The occasion was the arrival and unveiling of the first satisfactory "Made in India" SoyaCow SC20. Among those who welcomed them at ProSoya were Fred and Bonnie Cappuccino of Child Haven International [which they founded in 1985; http://www.childhaven.ca/ourstory.htm] who are recent recipients of the Order of Canada Award for their humanitarian work."

A photo shows the whole group together with an Indian SoyaCow SC20; also in the photo are Rashmi Gupta, Rajendra Gupta, and Frank Daller.

7098. Vitasoy (U.S.A.) Inc. 1996. We've moved (Card). 400 Oyster Point Blvd., Suite 201, South San Francisco, CA 94080. 1 p.
• ***Summary:*** This 4½ by 6-inch card, printed red on white, mailed June 11, announces that Vitasoy has moved its corporate headquarters to 400 Oyster Point Blvd., Suite 201, South San Francisco, California 94080. Phone: (415) 583-9888 or 1-800-VITASOY. Fax: (415) 583-8881. The old address was: P.O. Box 552, Brisbane, California 94005. Address: South San Francisco, California. Phone: (415) 583-9888.

7099. Washam, Cynthia. 1996. The incredible, edible soybean: Soy, doctors, say, can help prevent cancer and heart disease, and even lower blood cholesterol. *E: The Environmental Magazine.* June. [4 ref]
• ***Summary:*** "Step aside, beta carotene. Take a back seat, complex carbos. The hottest new nutrients are 'isoflavones,' natural compounds credited with preventing everything from heart disease and cancer to osteoporosis and hot flashes. The principal source of isoflavones? Foods made with soybeans, such as soy milk, soy burgers, and tofu." Address: 2425 N.E. Gardner Lane, Jensen Beach, Florida 34957.

7100. **Product Name:** Westbrae Natural Rice Beverage (Half Gallon, Non Dairy) [Vanilla].
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor).
Manufacturer's Address: Gardena, CA 90746.

Date of Introduction: 1996. June.
Ingredients: Plain: Rice base (filtered water, brown rice syrup, rice starch), expeller pressed canola oil, tricalcium phosphate, pea protein, natural flavors, sea salt, carrageenan, vitamin A palmitate, vitamin D-2, riboflavin.
Wt/Vol., Packaging, Price: Half gallon Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Ad (1/3 page, color) in Vegetarian Times. 1996. June. p. 64. "Only Westbrae–First in half gallons. The best just got bigger." A photo shows the front of the package. The text reads: "New. Pour 'n Seal. Enriched with vitamins A, B and D and calcium. Only 1% fat."

7101. Kobold, Christy. 1996. How to get statistics on exports from and imports to the USA using PIERS (Port Import Export Reporting Service) (Interview). *SoyaScan Notes.* July 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** PIERS is a computerized database with detailed records on all import and export transactions through U.S. ports. It is produced by *The Journal of Commerce,* which started in San Francisco in 1827. The PIERS division started in 1972-73. They have 125 reporters at all U.S. ports (including Alaska, Hawaii, and Puerto Rico) who enter information into their database information from bills of lading and vessel manifests. Import data is now 100% electronic. Reports are produced on a weekly, monthly, or quarterly basis by port, by destination, product type, etc. There are five formats/media: Printed report (hard copy), tape, diskette, CD-ROM, and on-line access. One report costs $450. The 3 big ports on the west coast of the USA are Oakland and Long Beach (California), and Vancouver (BC, Canada); few imports come into San Francisco any more. The information available from PIERS is found in the following import and export data fields: Product description (as shown on bill of lading or manifest). PIERS product code. Harmonized Tariff Code and Description (assigned by PIERS, not copied from ship documents). Overseas country name. U.S. port name. Overseas port name. Container size, container quantity, TEU count and cubic feet. Steamship line and vessel name. Manifest number. Cargo quantity and unit of measure. Cargo weight. Voyage number. Shipment value. Payment type. Shipment direction. Bank name. Address: 425 California St., Suite 2450, San Francisco, CA 94104. Phone: 1-800-824-7537.

7102. Fletcher, David. 1996. Mothers urged to seek advice over babies' soya milk. *Daily Telegraph* (*London*). July 18 or 19.
• ***Summary:*** Mothers who feed their babies on soya milk formulae in preference to those made from cows' milk should seek their doctors' advice on whether to continue doing so, the Department of Health said yesterday.

"It follows research showing that naturally-occurring chemicals similar to those contained in soya can cause infertility and sexual abnormalities in animals.

"The department stressed that there was no evidence suggesting a similar effect in humans and it was not recommending that mothers should stop feeding soya-based milk to their babies.

"But it announced that it is giving 'high priority' to research investigating whether soya milk formulae carry any risk to the future development of babies' reproductive organs.

"Sir Kenneth Calman, the Chief Medical Officer, said: 'Mothers who have been advised on medical grounds to give their babies soya-based formulae should continue to do so.'

"However, parents who had chosen soya milk in preference to cow's milk–such as vegans and those opposed to eating animal products–should seek their doctor's advice, he added.

"He activated the department's 'urgent cascade system' to send out more than 60,000 letters to alert all general practitioners, practice nurses and community pharmacists to the warning.

"Concern centres over naturally occurring chemicals present in soya called phytoestrogens." Address: Health Correspondent.

7103. Laurence, Jeremy. 1996. Parents warned over soya milk. *Times* (*London*). July 19.
• ***Summary:*** "Parents who choose to give their babies soya-based infant formula milk should seek medical advice about the risks, the Government said yesterday.

"A committee of independent scientists appointed by the Health Department has said that phytoestrogens found in soya-based infant formulae can, in certain situations, behave like a very weak form of oestrogen, the female hormone. In animals this has caused fertility problems.

"The Committee on Toxicity of Chemicals in Food. Consumer Products and the Environment says there is no evidence of damaging effects in humans."

7104. New Zealand Ministry of Health. 1996. Soy based infant formula a useful alternative (News release). New Zealand. 2 p. July 19.
• ***Summary:*** "Breast milk is best for infants. Dairy based substitute formulas can be used if needed however, and under the advice of a health specialist soy based infant formulas are a useful alternative for babies who cannot tolerate dairy based formulas, says Dr. John Eastwood, Ministry of Health Paediatrician.

"A recent statement from the Chief Medical Officer of the United Kingdom Department of Health that if your doctor or health professional has recommended that you feed your baby soy based infant formula, you should continue to do so. This is in line with the advice that the Ministry has

been providing in New Zealand since August 1995."

Note: Letter from Richard James of New Zealand. 1998. This was issued to all media by the Ministry of Health (NZ) to counteract the report of the British Expert Committee on Toxicity, which the New Zealand government wished to suppress. A more thoughtful release titled "Soy infant formula: Soy formula risk?" was issued the same day by the Soy Information Network.

7105. Roberts, Rosemary. 1996. Soy milk move elates North pair. *Northern Advocate* (*Whangarei, New Zealand*). July 19.
• ***Summary:*** "An acknowledgement by British health authorities yesterday of a potential health risk to infants from phytoestrogens in soy milk has elated Whangarei couple Richard and Valerie James.

"Representatives of the soy industry and consumer groups were summoned to an urgent meeting in London yesterday.

"Britain's Chief Medical Officer, Sir Kenneth Calman, announced that the government's Committee On Toxicity (COT) had recommended that research be undertaken "as a matter of high priority" to determine whether soybased infant formula affected infant reproductive development."

"In the wake of the announcement, the British Department of Health's Food Advisory Committee has said manufacturers should investigate means of reducing the levels of phytoestrogens in soy-based infants formulas as a precautionary measure.

"Mr and Mrs James have been campaigning for about three years to have soy infant formula removed from the market."

7106. Soy Information Network. 1996. Soy infant formula: 'Soy formula risk?' (News release). New Zealand. 2 p. July 19.
• ***Summary:*** "The United Kingdom Department of Health yesterday recommended that research should be undertaken 'as a matter of high priority' to determine whether soya-based infant formulae create risks to the normal reproductive development of infants.

"The recommendation follows reports of a Department of Health committee of independent experts on the effects of phytoestrogens on animals and humans. The report found that phytoestrogens, or plant oestrogens, were a cause of infertility in animals, and influenced the menstrual cycle in women. It had also been shown to cause androgenisation of females and feminisation [feminization] of males in certain species. Soy beans contain high levels of phytoestrogens.

"The Committee said it did not have any data 'specifically relating to the potential effects of soy phytoestrogens in human infants.'"

"The Committee has stopped short of recommending the removal of soy formulae from the market, but recommends that it should be used only when prescribed by a doctor or other health professional. Manufacturers of infant formulae have been urged to investigate means of reducing the levels of phytoestrogens in soya-based formulae as a precautionary measure." Address: P.O. Box 100 212, North Shore Mall Centre, New Zealand.

7107. *United Press International Financial Wire.* 1996. Product recall pounds Vitasoy profits. July 23.
• ***Summary:*** Profits of Vitasoy International dropped 75% last year, largely because of a massive product recall in January which the company said cost it US$10 million (80 million Hong Kong dollars). The recall affected about 30 million cartons of soya milk, lemon tea, and fruit juices sold mostly in Hong Kong, Macau, and southern China, but also in 23 other countries in Europe, the Americas, Africa, and Asia. Despite the setback, Vitasoy promised to pay investors a dividend of 1.2 cents (9.6 Hong Kong cents) per share, the same as the dividend last year. Vitasoy's performance was not all bad: turnover actually increased by 4% to $169 million.

7108. Chisholm, Donna. 1996. Soya-based baby formulas warning. *Sunday Star-Times* (*Auckland, New Zealand*). July 28.
• ***Summary:*** Soya-based infant formulas only on the advice of a physician, following a UK Health Department report recommending urgent research into the safety of such products, say New Zealand researchers.

"The chief medical officer of the British Health Department wants the research done 'as a high priority' to determine whether the formulas affect infant reproductive development because they contain phytooestrogens (plant oestrogens). The chemicals influence women's menstrual cycles and have been shown to cause infertility to animals."

7109. Chambers, Norm. 1996. Growing and selling low-lipoxygenase soybeans in Iowa for making improved tofu and soymilk (Interview). *SoyaScan Notes.* July 29. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Please begin by reading the July 1996 interview on this subject with Dr. Walt Fehr of Iowa State University. Norman and John Chambers, a father and son team, refer to the soybeans that they grow under license from Iowa State University in various ways: "low lipoxygenase soybeans," "low lipo (pronounced LAI-po) beans," "Laura beans," and 2001 beans. They grow these mostly under contract with end users, so each company or person who wants some places a firm order in the spring before planting time and receives the special soybeans in about September. Last year they grew about 50 acres of these special soybeans, with a yield of about 50 metric tons cleaned. Since 1 metric ton = 2,204.6 lb and a bushel of soybeans weighs 60 lb, there are 36.74 bushels in a metric ton, and 50 acres would yield about 1,837 bushels. The price last year was $13.00 per bushel FOB

Iowa. They are sold in 30 kg (66 lb) bags. Fairview Farms always grows somewhat more than the amount contracted for; they presently have 107 bags and about 425 bushels unbagged in the bins available for sale.

All of their customers for these special soybeans are overseas. From last year's crop they sent one container to Slovakia (to Alfa Bio), one to Singapore, and one to Japan (*Taishi Shokuhin*). They did not sell any in the USA. Address: Fairview Farms, 2304 150th St., Corwith, Iowa 50430. Phone: 515-583-2198. Fax: 515-583-2192.

7110. Fehr, Walter R. 1996. Commercial sources of and information on soybeans specially bred to be low in lipoxygenase and to give tofu and soymilk with little or no "beany" flavor (Interview). *SoyaScan Notes.* July 29. Conducted by William Shurtleff of Soyfoods Center. [1 ref]
• ***Summary:*** There are 3 lipoxygenase enzymes in soybeans that cause beany flavors. Iowa State has developed several soybean varieties that lack lipoxygenase-2 (L-2), the most active lipoxygenase enzyme. These are now commercially available; Dr. Fehr thinks that the best and most widely tested of these is IA2011. Varieties that lack two, or all three lipoxygenase enzymes are also under development. Dr. Fehr has made tofu and soymilk using the soybean lacking L-2 and found that these products have no detectable beany flavor. To order these varieties, contact any of the suppliers, such as Norman and John Chambers (father & son team), Fairview Farms, 2304 150th St., Corwith, Iowa 50430. Phone: 515-583-2198 (office) or 515-583-2330 (home). Fax: 515-583-2192. They grow these varieties themselves and subcontract the rest out to farmers in the area. Fairview Farms has many Japanese customers; Dr. Fehr does not know if they have any U.S. customers. For a complete list of licensees for the lipoxygenase-free soybean varieties, contact Julie Gustafson at Iowa State University, phone 515-294-9442. This fall Iowa State will be releasing seed of a "triple null" variety with L-1, L-2, and L-3 all missing.

Roughly 6-10 studies have been published (mainly by Nielsen at Purdue Univ. (Indiana), Hymowitz at Univ. of Illinois, and Dr. Kitamura at Tsukuba, Japan) where these soybeans have been used on a laboratory scale to make tofu and soymilk, and the flavor of those products were compared with similar products made from typical soybeans. Japanese consumers do not particularly favor the absence of the lipoxygenase enzyme; they like tofu and soymilk with some (but not a lot of) so-called "beany" flavor. As far as Dr. Fehr knows, no one has ever tested these soybeans lacking lipoxygenase on American consumers–but the information system is very closed and confidential. Dr. Fehr's group has not published anything on lipoxygenase, although they have research underway.

A world leader in this area Dr. Kitamura at the National Agricultural Research Center, 3-1 Kannondai, Tsukuba, Ibaraki 305, Japan. His group developed the genotype (named something like Kyushu) which is absent of any of the 3 known lipoxygenase enzymes, then he shared this variety with U.S. soybean breeders working on this problem. Dr. Kitamura has a series of excellent of papers on this subject, but he has "not found a home for his special soybean in terms of the consumer market." Nor has anyone found any customers for the soybean from Iowa State missing L-2 enzyme. Address: Dep. of Agronomy, Iowa State Univ., Ames, Iowa. Phone: 515-294-6865.

7111. Harrigan, Brian. 1996. Update on ProSoya in Russia. Current prices of equipment (Interview). *SoyaScan Notes.* July 29. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Russia has been ProSoya's single best source of income. To date ProSoya has sold 60-70 SC-20s, and one SC-100. By the end of August, ProSoya will also have sold eight SC-2000s (which produce 2,000 liters/hour of soymilk). Most of the latter large soymilk machines are being sold to a former dairy factory in Korenovsk, located about 35 miles northeast of Krasnodar in southern Russia, just northeast of the Black Sea. It was purchased by ASSOY–the Russian Soybean Association (Alexander Podobedov, director), which shut down the dairy operations completely and converted the plant to 100% soymilk production. Most of this soymilk is spray dried (powdered), and sold for half the price of dairy milk. ASSOY has conducted a very ingenious marketing effort on behalf of soymilk in southern Russia and is winning many converts.

The current prices (in U.S. dollars) of ProSoya's three basic types of soymilk equipment are as follows: SC-20–$6,900 (now made in India); SC-100–$65,000 to 100,000; lower prince models do not include boiler or chiller; SC-2000–$200,000 to $300,000. Address: Executive Vice President, ProSoya Inc., 5350 Canotek Road, #7, Gloucester, Ottawa, ONT, K1J 9C9, Canada. Phone: 613-745-9115.

7112. Harrigan, Brian. 1996. Actini, Actimonde, and the Agrolactor (Interview). *SoyaScan Notes.* July 29. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Actini is an active French company (located in eastern France on the southern shore of Lake Geneva) that makes the Agrolactor. The company president is Jean de Stoutz. ProSoya is now working closely with Jean de Voisin of Actimonde (the soy division of Actini), who has had a a great deal of experience for many years in Africa and Asia. He is a UHT and packaging specialist, who now lives in southern France and works as a consultant. Actini has sold about 100 of these machines, mostly in Third World countries, especially in Africa (to former French colonies). One puts dry soybeans (without soaking) into the machine and out comes formulated soymilk. The yield of soymilk is relatively low, with mostly suspended (rather than dissolved) solids since the soybeans are not soaked. The machine is very compact and can make about 200

liters/hour of soymilk using a continuous process. The base model (all you need to make soymilk) costs about $80,000 to $90,000. The yield from 1 kg of dry soybeans is 5½ to 6 liters of soymilk containing 7% dissolved solids. ProSoya's equivalent machine gets 7½ liters of soymilk, if you rewash the okara. Address: Executive Vice President, ProSoya Inc., 5350 Canotek Road, #7, Gloucester, Ottawa, ONT, K1J 9C9, Canada. Phone: 613-745-9115.

7113. American Natural Snacks. 1996. The girls are not happy (Ad). *Natural Foods Merchandiser.* July. p. 35.
• ***Summary:*** This is an ad for Harmony Farms Fat-Free Non-Dairy Rice Drink. A large color photo shows 3 cows standing in a field. The product "is priced *every day* lower than other rice and soy beverages... You might say the whole package–taste, look, price, promotion–is udderly irresistible. And while the girls may try and try–till the cows come home, as it were, they'll never be able to do vanilla!" Address: P.O. Box 1067, St. Augustine, Florida 32085-0410. Phone: 904-825-2057.

7114. Bertani, Elizabeth. 1996. Make room for oat milk: Meet an intriguing new nondairy beverage, born out of high-tech innovation and marketing savvy. *Natural Foods Merchandiser.* July. p. 72.
• ***Summary:*** "History of oat milk: Development of oat milk began more than seven years ago when Swedish farmers, scientists, food producers and packaging companies formed a cooperative venture that provided university professors with data substantiating the demand for oat-based products to serve consumers with lactose intolerance, vegetarian or vegan diets, and cholesterol concerns."

Oat milk was introduced into the USA in March 1996 at Natural Products Expo West by a sales and distribution company based in Salt Lake City, Utah. Address: Free-lance writer, Boulder, Colorado.

7115. **Product Name:** Granose Non-Dairy Custard.
Manufacturer's Name: Haldane Foods Group.
Manufacturer's Address: Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 1908 211311.
Date of Introduction: 1996. July.
Ingredients: Soymilk.
Wt/Vol., Packaging, Price: 70 gm sachet. Retails for £0.49 (7/96, England).
New Product–Documentation: Spot in Soyafoods (ASA, Europe). 1996. Summer. p. 4. "Six new products from Haldane Foods." This is a vegan product, containing no dairy products. A black-and-white photo shows the package.

7116. Natural lifestyle magazine and mail-order market: Spring-summer '96. 1996. Asheville, North Carolina: Natural Lifestyle Supplies. 63 p. Catalog. 28 cm.
• ***Summary:*** A macrobiotic mail-order catalog with several nice articles, it sells many types of soyfoods and related products, including the full line of Kushi Cuisine, organic soybeans (yellow and black), azuki beans, amazake, Rice Dream, soymilk, Westbrae Malteds, Nasoya Vegi-Dressings, Nayonaise, Farmhouse Tekka [miso], organic soy sauce, fresh tofu, snow-dried tofu, kuzu, and miso. Publisher: Tom Athos. Editor and graphic design: Debbie Athos. Address: 16 Lookout Drive, Asheville, North Carolina 28804-3330. Phone: 1-800-752-2775.

7117. Ono, Tomotada; Takeda, Motoyoshi; Guo, Shuntang. 1996. Interaction of protein particles with lipids in soybean milk. *Bioscience, Biotechnology, and Biochemistry* 60(7):1165-69. July. [14 ref]*
Address: 1. Dep. of Agro-Bioscience, Faculty of Agriculture, Iwate Univ. Ueda 3-18-8, Morioka, Japan.

7118. *Pravda* (*Slovakia*). 1996. [Dangerous milk]. [Slk]*
• ***Summary:*** "London–Parents who give their children milk made from soy expose their descendants to health risk. A group of independent scientists working on human health declared that phytoestrogens in soymilk behave in some situations like a weak form of estrogen, the female hormone. The animal experiments showed that phytoestrogens in soy milk could cause problems with human fertility."

Letter (fax) from Dominik Belco, commercial manager of Alfa Bio s r.o. in Slovakia. 1996. Aug. 1. This article, which was published in the Slovak newspaper Pravda, caused quite a big reaction among consumers of soy milk and other soy products. After this article was published, another person who is head of a science institute, said that soy milk is dangerous only for children under 3 years of age.

7119. Roudybush, Tom. 1996. Misconceptions about soy. *Australian Birdkeeper* 9(3):141-43. June/July.
• ***Summary:*** For the past 3-4 years the author has had conflict with Mr. Richard James of New Zealand "about the death of some of his birds and the possibility that their deaths were due to the use of soy products in the feeds I make." Mr. James is the only person who has ever complained about this matter to the author, who subsequently did extensive research into the complaint. After attending the Third International Conference on Phytoestrogens (3-6 Dec. 1995), organized by the National Center for Toxicological Research, a part of the United States Food & Drug Administration, "I can now say with confidence that my feed had nothing to do with the deaths of the birds in New Zealand or elsewhere and that there is no evidence that soy infant formulas cause any harm to infants."

The author's company has a standard policy when such problems arise. "It states, in essence, that I will have my veterinarian contact the customer's veterinarian and allow them to work up the problem to their mutual satisfaction.

No matter what the outcome, I will pay all the expenses incurred by my veterinarian. If there is a problem with the feed, I will also pay for the customer's veterinary bills and for any damages. If we are unable to solve the problem, but find no problem with the feed, we drop out of the process. In my mind this is a fair and generous policy which allows the customer to undertake relatively extensive diagnostic procedures at no cost. When I offered this policy to the couple in New Zealand, he declined and eventually cut me off from any further information on the issue. He did, however, continue to seek a public forum for his unsupported views."

The soy products in the bird feeds in question were obtained from Roudybush in California. Many other birds were fed this feed and none experienced any problems. "Soy simply wouldn't have killed one set of birds and left others in good condition. Toxins don't work that way.

"Death at his own hands: I believe we have found the cause of death of the birds. They died from a virus variously called polyoma virus, papova virus or budgie fledgling disease. This disease is consistent with all we know about the situation."

Note: See the rebuttal to this article by Valerie James in this magazine, Vol. 9, issue 5, p. 249-50, Oct/Nov. 1996. In the same issue see her letter to the editor (p. 214).

7120. *Soyafoods* (*ASA, Europe*). 1996. UK government approves alternative name for 'soya milk.' 7(2):2. Summer.
• ***Summary:*** The newly approved name is "Soya–Non-dairy alternative to milk." All British soya milks must be re-labelled using this name because of a June 1994 ruling of the EC Management Committee for Milk and Milk Products.

7121. *Soyafoods* (*ASA, Europe*). 1996. Compact soyamilk processing machine. 7(2):3. Summer.
• ***Summary:*** This soymilk machine, the size of a washing machine, is made by: Tantraco Enterprise Pte. Ltd., P.O. Box 72, Jalan Kayu Post Office, Singapore 91 8003. Phone: +65 482 3575.

7122. *Soyafoods* (*ASA, Europe*). 1996. An interview with Mark Messina. 7(2):6-7. Summer.
• ***Summary:*** This September, Mark will chair the Second International Symposium on the Role of Soy in Preventing and Treating Chronic Disease in Brussels. He is a leading expert on soy nutrition. All of the presentation at this conference will discuss new research. Whereas the First International Symposium in 1994 focused almost exclusively on cancer and heart disease, at this one there will be separate sessions on kidney disease, bone health, and hormonal effects (dealing to a large extent with menopausal symptoms). "Also there will be a satellite symposium comprising two sessions. One will focus on some of the controversies surrounding phytoestrogens (such as the safety of soya infant formulas) and the other will focus on isoflavone absorption and metabolism."

Question: "For you, what are the most exciting areas of research into soya at the present time? Messina: The effects of soya on heart disease unrelated to cholesterol reduction and the effects of soya on menopausal symptoms. But I got my start in this field by studying the relationship between soya consumption and cancer risk. Although this relationship is very speculative, it is exciting because of the numbers of studies suggesting the consumption of just one serving of a soya product per day may reduce the risk of several different types of cancers." Many "people have heart attacks with normal cholesterol levels. The effects of soya on cholesterol oxidation, vasodilation, smooth muscle cell proliferation, etc. may be at least as important as the hypocholesterolemic effects of soya."

Question: "What do you hope will be the conclusions of this symposium? Messina: From an academic perspective, I hope we can reach some conclusions about the mechanism(s) responsible for the hypocholesterolemic effects of soya. In my opinion, this is a very important question that has tremendous practical implications. I also hope some conclusions are reached about the safety issues. Finally, in addition to generally increasing awareness, I would like to see the meeting stimulate the kinds of research that are most needed to ascertain the public health significance of soyafood consumption."

Question: "What specific areas of research require greater effort? Messina: The anticancer effects are potentially most important, but it is extremely difficult to prove relationships between diet and cancer risk. Therefore, I would like to see more work done on the effects of soya on heart disease unrelated to cholesterol reductions, and finally on the effects of soya on bone health, and menopause symptoms."

An excellent, detailed summary of Dr. Messina's research and publications follows. His doctorate research involved the effects of cruciferous vegetables on colon cancer.

7123. *Soybean Quarterly* (*Nebraska Soybean Board, Lincoln, Nebraska*). 1996. Soy reduces effects of osteoporosis. 2(3):2.
• ***Summary:*** Research indicates that consuming soy as part of a healthful diet may be one way to low risk of osteoporosis. This disease affects 15 to 20 million Americans, especially women. "High protein diets are associated with an increased loss of calcium in the urine. When it comes to protecting bone health, decreasing loss of calcium from the bones may be more important than consuming more calcium. Soy protein offers excellent quality protein, with less calcium loss compared to the same amounts of animal protein.

"Estrogen replacement therapy may reduce the risk of bone fractures by 50 percent." Soybeans and most soyfoods are a unique source of isoflavones, which mimic estrogens

and may help promote bone health. In animal studies, isoflavones have been found to inhibit bone fracture and stimulate bone formation.

Many soyfoods, especially calcium-set tofu and calcium-fortified soymilk, but also soybeans, textured vegetable protein, and tempeh are good sources of calcium that are well absorbed by the body.

7124. Takai Tofu & Soymilk Equipment Company. 1996. Catalog of small and medium-scale equipment. 1-1 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan. 8 p. 30 cm.
• ***Summary:*** This is a new edition of this catalog, printed with brown ink on glossy white paper. Across the top of the first page is written "The world's leading supplier of tofu & soymilk equipment."

Page 1 states: "During the 1960s and 1970s Takai gained a great deal of experience exporting our equipment to large and small Japanese- and Chinese-run manufacturers of tofu and soymilk in the United States, Europe and Southeast Asia. Then in early 1977, with the rapid growth of interest in soyfood products in the West, we began to work closely with William Shurtleff, author of *The Book of Tofu* and *Tofu & Soymilk Production,* to develop our first- and the world's first–English-language catalog, which appeared in August 1977. Since that time we have become the world's leading supplier of tofu and soymilk equipment. We have sold our equipment to hundreds of new and established companies worldwide, and we are constantly upgrading our equipment materials and quality (as with stainless steel) to meet the highest standards. To give you the widest possible choice of the best equipment available, we also include a number of items produced by other well-known Japanese manufacturers." Address: Ishikawa-ken, Japan. Phone: +81 76 294 1712.

7125. Vitasoy International Holdings Ltd. 1996. Annual report 1995/96. New Territories, Hong Kong. 104 p. July. 30 cm. [Eng; Chi]
• ***Summary:*** For the fiscal year ended 31 March 1996, group turnover (sales) was HK$1,301 million, up 4% over the previous year. Of these sales, 70% came from Hong Kong, 19.6% from North America, and 10.5% from the rest of the world. Operating profit was down dramatically due to a big recall crisis which cost HK$79.9 million. Earnings per share were 6.0 cents, down 75%. Dividends for the year were 9.6 cents, the same as the previous year.

Chairman's statement: A crisis contained: Because of the "sour-taste" crisis, the Group decided to suspend temporarily operations at its plants in Hong Kong and China and to recall all Tetra Pak products from the markets in Hong Kong and Macau. These actions were in line with our policy of always putting our consumers' interests first" (p. 6).

"In North America, the Group continued the trend set in the first half and turnover grew by 10% for the year. The overall consumption of tofu has significantly increased due to newly published medical evidence–and public awareness–of the health benefits of soya protein and its effect on cholesterol reduction" (p. 7).

In the section on "Markets" (p. 8) is more detail on the North American market, where "the Group achieved sales of HK$25 million, representing an increase of 10% over the previous year. Despite unexpected sales shortfalls in beverage, the net operating profit of the Group in North America jumped 14%.

"Tofu products were the largest contributor, accounting for 40% of turnover. Tofu also realized the healthiest growth of over 17%. This was followed by beverages which made up about 39% of the region's total sales. Owing to order backlogs, sales were hardest hit in the Canadian traditional markets, resulting in reduced sales of almost 25%. The Hong Kong recall had little impact on the North American Vitasoy soyamilk sales in terms of consumer confidence.

"Secondary line products made up 11% of the region's turnover, representing a 16% increase. The dressings line comprised about 5% of total revenues, representing a 12% growth, while two new product lines under the Newmenu brand, Tofu Mate seasoning and Meat Analog, contributed an additional few percent to sales." Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

7126. Wells, Jeff. 1996. Genetic ID: A new technique for determining which plants or foods contain genetically altered material (Interview). *SoyaScan Notes.* Aug. 12. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Genetically altered Roundup-Ready soybeans, developed by Monsanto, have now passed FDA and USDA approval and are on the market. At the moment, Genetic ID is focusing on soybeans, because the impact and scale of soybeans is very considerable, in part because a large amount ends up in a great variety of processed foods. To the best of Jeff's knowledge, the Roundup-Ready soybean is the only genetically altered variety of soybean now on the market. If anyone sends Genetic ID a sample of a plant (any part, the seed, the leaf, the root, etc.) or a food, and asks "Has this been genetically altered?" they can determine the answer by a very sensitive, proprietary test. If even a fragment of some altered gene is present, this test will detect it. The company does not have a patent on the process, but they are considering applying for one.

They find out what genetically altered plants have been approved by USDA and FDA, go to the Web site http://www.Aphis.usda.gov/bbep/bp/ and read the list. This list, which deals with Biotechnology Permits (BP) is up to date and an important part of the public disclosure process. Companies must apply for permits at each stage of the development of a new plant–for example at the field testing stage.

The main issue in this area worldwide is concerned

with labeling genetically altered foods. Monsanto and the others are saying, "There is no need to label such foods because there are no health risks and no significant difference compared to other foods or seeds." Jeff believes that Europe has a more intelligent understanding of this controversial process than the USA. Europe appears to be moving toward requiring labeling of all plants and foods containing genetically modified organisms (GMOs). Some Scandinavian countries have outlawed GMOs and genetically altered food within their borders; they feel there are environmental risks and too little is known about the consequences.

Monsanto sells a bag labeled "Roundup-Ready Soybeans to farmers, but the farmer is not required to notify food processors that the soybeans are genetically altered. Monsanto is saying, there is no way to distinguish a genetically altered soybean from one that is not altered. But Genetic ID has the technique that can tell the difference. They have a fine scientific staff with 20 years of experience. They have raised capital by approaching private investors; they are not a corporation but a limited liability company (LC).

Concerning milk made with Monsanto's Bovine Growth Hormone (rBGH), a bacterium is first genetically altered in the laboratory. This altered bacterium produces a hormone (that is very slightly different from natural hormone), which is injected into the cow to make the cow produce more milk. Only a very small quantity of the hormone ends up in the milk, and it is very difficult to tell which milk contains this unnatural hormone. Genetic ID does not have immediate plans to test milk for rBGH. Address: Genetic ID, 500 North 3rd St. Suite 208, Fairfield, Iowa 52566. Phone: 515-472-9979.

7127. Gupta, Rajendra P.; Wood, Grant W. 1996. Energy efficient centrifugal grinder. *U.S. Patent* 5,544,821. Aug. 13. 8 p. Application filed 22 June 1995. 5 drawings. [1 ref] Address: 1. 9 Veery Lane, Ottawa, ONT, K1J 8X4 Canada; 2. 836 Vinette Crescent, Orleans, ONT, K1E 1W9, Canada. Phone: 613-745-9115 or 613-744-4401.

7128. Sheridan, Margaret. 1996. The recall of Vitasoy soymilk in Hong Kong (Interview). *SoyaScan Notes.* Aug. 18.
• ***Summary:*** Margaret lived in Hong Kong for seven years, and was a features writer and food editor for the *South China Morning Post.* In late 1995 and early 1996 (to the best her memory) people started complaining about a sour taste in Vitasoy soymilk products. Fortunately, no one got sick. Initially there was a sort of public panic because Vitasoy is such an important part of Hong Kong life. The government got involved and there was the initial suspicion that someone might be tampering with the product. Vitasoy voluntarily shut down their factory until they could find the cause of the problem and recalled a huge amount of their soymilk (more than 30 million cartons). The company handled the recall very well, being extremely apologetic and forthright about the incident, concealing nothing and vowing to determine the cause at all costs as fast as possible. It was excellent crisis management. This became a big news story in Hong Kong, receiving widespread media coverage. Vitasoy took out advertisements in newspapers and went on TV inviting people to call a toll-free number or return any Vitasoy soymilk for a full refund. After several weeks, the cause was found to be bacterial contamination in one piece of soymilk equipment.

But the shutdown and recall apparently dealt a serious financial blow to the company, and it may have even prevented them from shipping soymilk to their sister company in the United States. Address: Food writer, Los Angeles Times, Los Angeles, California.

7129. *SoyaScan Notes.* 1996. The market for puddings in America (Overview). Aug. 28. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** The retail market for dairy puddings in America is valued at about $400 million a year. 98% of the products are aseptically packaged, usually in multi-packs. The market probably would have been bigger if yogurt makers hadn't copied the idea using yogurt, and marketing it to kids.

7130. Galaxy Foods Company. 1996. Annual report 1996. Orlando, Florida.
• ***Summary:*** Sales in 1996 were $3,950,455–down 16.8% from 1995. Net loss was $3,282,58–not as bad as the $5,013,578 loss in 1995.

At the top of the cover is written: "In 1972, Angelo Morini, Galaxy founder and president, became the first in the world to market healthy cheese (formägg)." An attached mission statement reads: "Galaxy invented healthy cheese products free from cholesterol, saturated fat and lactose and introduced them to the world in 1972."

Galaxy now has five rice-based cheese alternatives: Rice Chunk in Cheddar and Mozzarella flavors. Rice Slice in Mozzarella and American flavors. And Rice Parmesan (grated, in a jar). All five are "Soy free."

Page 5 states: "Galaxy's numerous accomplishments in innovation include: 1. The first dairy free individually wrapped cheese slices. 2. The first rice based line of cheese products. 3. The largest line of pareve kosher cheese products. 4. The first meat free line of meat flavored deli cuts. 5. The first individually wrapped cheese slices made with organic tofu. 6. The largest line of lactose free cheese and cheese related products. 7. The first complete line of salad bar cheddar products. 8. The first complete 'Lite Bakery' product line." Photos (p. 3-5) shows all of the company's products. Address: 2441 Viscount Row, Orlando, Florida 32809. Phone: 800-441-9419 or 407-855-5500.

7131. McCord, Holly; Yeykal, Teresa A. 1996. Menopause naturally: Got hot flashes? get soy! *Prevention* (*Emmaus, Pennsylvania*). Aug. p. 65-70. [1 ref]
• ***Summary:*** About 75% of American post-menopausal women experience hot flashes and night sweats, along with sleep disturbances and mood swings. Until now, the only antidote for these unpleasant symptoms has been hormone-replacement therapy (HRT), a prescription medicine the replace the estrogen that women's bodies start making less of. But recently researchers have found that the foods made from the soybean may offer a practical alternative.

"The trail of evidence linking soy with a hot-flash-free menopause starts in Asia." There isn't even a word for hot flash in Japanese. Sherwood Gorbach, M.D., at Tufts University School of Medicine, in Boston, Massachusetts, was one of the first to suggest that the reason for this may lie in the Asian diet, which is rich in soyfoods that contain isoflavones–a natural plant form of estrogen. In one day, a typical Asian woman–who eats about a quarter pound of soyfoods–may be getting 30 to 50 milligrams of isoflavones from her food.

Three clinical studies are now under way to see if and how soy isoflavones work to relieve menopausal symptoms. At Bowman Gray School of Medicine of Wake Forest University (Winston-Salem, North Carolina), Gregory Burke, MD, heads a study of 240 women over age 45 experiencing hot flashes or night sweats. Every day for 2 years the women will drink an 8-ounce soy beverage containing either 1 mg, 34 mg, or 50 mg of isoflavones without knowing which level of isoflavones they're receiving. Researchers will see if more isoflavones relieve their menopausal symptoms or anxiety or mood swings.

Two studies at Tufts University, in Dr. Gorbach's department, are following 60 women with hot flashes. For 3 months, these women will eat either two specially designed almond- or chocolate-flavored soy breakfast bars that each contain 20 mg isoflavones (for a daily total of 40 mg isoflavones) or two placebo bars without isoflavones. Researchers will track the women's reports of hot flashes and night sweats, and their levels of estrogen and other hormones. Though these studies have not been completed, preliminary data look promising says Dr. Gorbach.

A table (p. 67) shows the amount of isoflavones (in mg) in a typical serving of various soyfoods. In descending order: Nutlettes breakfast cereal* (½ cup): 122 mg isoflavones + 140 calories. Beef(Not) textured soy protein granules* (¼ cup dry): 62 mg + 70 calories. Roasted soy nuts (¼ cup): 60 mg + 195 calories. Tempeh (½ cup): 35 mg + 165 calories. Low-fat tofu (½ cup): 35 mg + 54-75 calories. Regular tofu (½ cup): 35 mg + 105-120 calories. Take Care High Protein beverage powder (Protein Technologies International; 2 scoops): 35 mg + 100-130 calories. Regular soymilk (1 cup): 30 mg + 130-150 calories. * = Available from Dixie USA, 1-800-347-3494.

Even if this research doesn't show positive results, other studies show that soy lowers cholesterol and may prevent breast cancer and osteoporosis. "A serving of soy every day could turn out to be a good bet," says Dr. Gorbach. Researchers recommend consuming in the range of 30-50 mg/day of isoflavones. More than 100 mg/day could be harmful, so its is best to get your isoflavones from food instead of pills. Contains two recipes: Creamsicle Cooler (shake with soft tofu; 35 mg of isoflavones). Southwestern Skillet (with Beef(Not); 62 mg of isoflavones).

7132. Obata, Akio; Matsuura, M.; Kitamura, K. 1996. Dehydration of sulfhydryl groups in soymilk by lipoxygenases during soybean grinding. *Bioscience, Biotechnology, and Biochemistry* 60(8):1229-32. Aug. [27 ref]
Address: Research & Development Div. of Kikkoman Corp., 399 Noda, Noda City, Chiba prefecture 278, Japan.

7133. *Ontario Soybean Growers' Marketing Board Newsletter.* 1996. Profile: Harcan Kingsoya Co. Ltd. Aug. p. 7.
• ***Summary:*** Harcan Kingsoya began operations Canada in 1991, in Scarborough. The company was formed by Bernard Leung, Michael Cheung, and a Chinese soyfoods manufacturer in the People's Republic of China. The company's first and main product is soya sauce. They also produce tofu, soymilk, and "dried soybean curd." In the future they also plan to produce "veggie-food" products such as burgers, sausage, and ham. Harcan products are marketed under the Veg-A-King and VAK brand names. The company's market was originally Europe, but now they are shipping to local supermarket chains and wholesalers in Ontario. Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

7134. Wang, Huei-Ju; Murphy, Patricia A. 1996. Mass balance study of isoflavones during soybean processing. *J. of Agricultural and Food Chemistry* 44(8):2377-83. Aug. [45 ref]
• ***Summary:*** Discusses: Soybeans (Vinton 81, 1992), soybeans, (Vinton 81, 1993), soybean flour, products made in the lab–Tempeh, soymilk, okara, tofu (momen or cotton, $CaSo_4$ coagulant), whey, soy protein isolate, defatted soy flour, daidzein, genistein, glycitein. Address: Food Science and Human Nutrition, 2312 Food Sciences Building, Iowa State Univ., Ames, IA 50011.

7135. Gerner, Bob. 1996. Update on Vitasoy soymilk and Silk (made by White Wave), seen from a natural food retailer's perspective (Interview). *SoyaScan Notes.* Sept. 3. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Bob still sells Vitasoy soymilk products if he can get them. For the last 4-6 weeks Vitasoy products have

been unavailable and off the market. Vitasoy was Bob's best-selling brand of soymilk, but the shelf has recently been empty. They are just starting to come in now, in small amounts–but no discounts are yet available and Bob cannot get the small sizes yet, only the liters. Starting about 3 months ago, distributors stopped discounting Vitasoy products, no matter how many cases a retailer ordered. Apparently they knew the supply was going to dry up.

Bob was never notified of a recall of Vitasoy products and he does not recall ever having returned any products to them. Bob uses Vanilla Vitasoy regularly to make French toast at his home; he likes it's dessert-like taste and has not noticed any problems with sour taste. Note: According to a Vitasoy employee, Vitasoy USA was unable to get any soymilk from Hong Kong for 3 months. They ran out and were unable to fill orders for a long time. They re-allocated (rationed) a lot of product to minimize the problem. Many people at Vitasoy USA now think (with the benefit of hindsight) that the decision to recall was made too quickly; if they had waited 12-24 hours, they would have realized that a huge recall was not necessary.

White Wave's refrigerated soymilk, Silk, is selling fairly well–but nothing spectacular. He tends to run out of the half-gallon sizes, which he prices below his ordinary markup. The quarts move more slowly than the half gallons. There are several reasons that Silk does not sell well: (1) The price is too high; (2) It is a new product with new packaging (gable-top carton like dairy milk); many people have not seen it or tried it; (3) Many people are not used to going to the refrigerator for their soymilk; they buy unrefrigerated aseptic cartons off the grocery shelves. Bob puts Silk in the refrigerator next to his other fresh soymilks (like Yo-Soy from Wildwood Natural Foods); this is four doors away from the dairy milk section. For pouring over cereal or as a beverage, Bob prefers the taste of Silk to Vitasoy–which is more thick and sweet. Address: Owner, Berkeley Natural Grocery Co., 1336 Gilman St., Berkeley, California 94706. Phone: 415-526-2456.

7136. Messina, Mark J. 1996. How safe are soy-based infant formulas? A preview of abstracts from papers to be presented in Brussels (Interview). *SoyaScan Notes.* Sept. 6. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Dr. Samuel Fomon, a world authority on infant formulas, told Mark recently that "If soy-based infant formula was coming before the FDA for approval and it had not yet been on the market, it wouldn't be approved." Mark agrees, has said so before, and thinks it is a fairly obvious statement. The key problem is the relatively high level of phytoestrogens in soy formula. The only thing that balances out all this concern is the fact that it has been used for 40 years.

This whole question of the safety of soy-based infant formulas has been handled very poorly by the Infant Formula Council. Mark thinks has the soy formula manufacturers may end up taking the phytoestrogens out of the soy formulas. The new formula would then probably have to be tested as a new product, and go through all the necessary toxicological tests, which would require huge expenses. It is possible that the phytoestrogens were doing something beneficial for the infants, and that would presumably come out in the tests.

Mark now has 120 abstracts from the 80 speakers and 40 poster sessions in Brussels. Two areas look especially promising, one abstract in the area of bone health and two indicating that soy increases high-density lipoproteins. The latter could be very big news, probably even bigger than soy lowering blood cholesterol. Address: PhD, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

7137. Rozing, George. 1996. Amazake and rice beverages in Europe (Interview). *SoyaScan Notes.* Sept. 11. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Orido is the only company in Europe that makes amazake in the traditional way from koji. His product is much more expensive than the many enzyme hydrolyzed beverages. The market leader of these modern products is Imagine Foods' Rice Dream, followed by a Lima Foods' rice beverage. Address: Owner, Orido Koji Products, P.O. Box 109, NL-7200 AC Zutphen, The Netherlands. Phone: +31 575-518546.

7138. Daller, Frank. 1996. Re: New developments at ProSoya Inc. Letter to William Shurtleff at Soyfoods Center, Sept. 16. 1 p. Typed, with signature on letterhead.
• ***Summary:*** Several months ago Frank resigned his position as president of ProSoya Inc. "During almost four years with the company, I had the pleasure of helping our team grow from a purely R&D operation, into a systems developer and manufacturer with over $3 Million in sales this year. Of particular personal satisfaction, was the introduction of the cottage industry size 'SoyaCow' to humanitarian applications in developing countries, and the technology transfers to India and Russia which are providing for locally produced models at lower prices." Address: ProSoya Inc., 5350 Canotek Road, #7, Gloucester, ONT K1J 9C9, Canada. Phone: 613-745-9115.

7139. Guy, Camille. 1996. Frankenfood on menu: Compliments to the prof–Are we the unwitting guinea pigs for genetically re-designed food? *New Zealand Herald.* Sept. 24.
• ***Summary:*** "New Zealand consumers will be eating genetically modified food by Christmas... As the first shipments of a Roundup-resistant soybean crop leave America, food campaigners warn that the beans will go into so many foodstuffs that few will avoid eating them. They say the beans carry health and environmental risks.

"Our Ministry for the Environment, attempting to

discover just who will be bringing Roundup Ready beans into the country, says there is no New Zealand precedent for monitoring what as been dubbed 'Frankenfood.'"

To date, no New Zealand company has sought or obtained permission to import genetically engineered soybeans, yet American agricultural authorities say that these soybeans comprise up to 5% of this season's harvest and cannot be separated from traditional unmodified soybeans."

The soybeans have been genetically engineered by Monsanto so that farmers can spray Roundup weed killer (also made and sold by Monsanto) on the soybean crop without damaging–selectively killing only the weeds.

Last year over 350,000 kg of soybeans and 49 million kg of soyflour were imported to New Zealand. Some of these soybeans go into self-proclaimed soy foods like tofu and soy milk.

7140. Kashama, Johnny. 1996. Re: Teaching Rwandan refugees how to make soyfoods. Letter to William Shurtleff at Soyfoods Center, Sept. 26. 3 p. Handwritten, with signature. [1 ref. Eng]

• ***Summary:*** His thesis on soymilk was accepted in Zaire on 9 Dec. 1994. After the Rwandan civil war, Johnny conceived of a soy processing project. He was promised financial support, but it never arrived. Even if it had arrived, they wouldn't have been able to get soybeans easily, as all the nearby production areas were beset by ethnic conflicts. On August 3rd, he began to work in a feeding center for the children of refugees in the camp of Kahindo in Zaire (55 km from Goma). He left that center for Caritas Internationale, a Christian NGO relief organization in Zaire.

With Caritas he held the same job, probationer, but now in the camp it was very interesting because he had to teach a group of 70 refugees (girls, wives, widows) how to process soy; to make soymilk, fritters, and "boulettes." He could not find nigari or lemon juice, so he could not make tofu. The little project, financed by Caritas, is still continuing, but it is getting harder and harder to obtain soybeans.

Note: Letter of March 31. The soybeans were purchased by the coordinator of the social service in the market in Goma; they had been grown in the neighboring areas. To make boulettes, boil whole soybeans until they are soft. Drain, then pound the soybeans to obtain a homogeneous mash. Blend in spices, salt, pepper, and concentrated canned tomato. Shape into spheres about 4 cm in diameter, then deep fry in oil.

Johnny left Caritas because of several problems and is now working for the United Nations High Commissioner for Refugees (UNHCR), supervising the stock and distribution of fuel wood for 112,000 refugees. Yvonne Katabana is also working for UNHCR. He was married a year ago and now has a daughter.

Update. 1997 Jan. 17. Johnny is now in Kigali, Rwanda. At the company Tofu-Rwanda in Kigali they are trying to re-commence their activities. Address: c/o Mr. Justin Kouarou, UNHCR–Goma/Zaire, Via UNHCR-Nairobi/Kenya, P.O. Box 43801, Nairobi, Kenya.

7141. Sheridan, Margaret. 1996. Is tofu ready for the big leagues? *Los Angeles Times.* Sept. 26. p. H8, H10, H11.

• ***Summary:*** The article begins: "Tofu, the spongy off-white soybean cake that spells B-O-R-I-N-G for so many people, is about to get a marketing makeover. Slick packaging, toll-free consumer hotlines, new products, and a blitz of cookbooks created by chefs rather than earnest vegetarian activists are some of the strategies tofu companies plan to use to bring tofu into the mainstream." A number of second generation tofu products found in supermarkets, and forthcoming cookbooks are listed.

"But some advertising and marketing professionals say that's not enough." The author talks with many such people who dislike tofu for various reasons: "Tofu is a joke... Tofu is a sissy. Bland, white, boring. It needs to take a stand. Become something. And that name! Its terrible." "Tofu goes against the American palate... Very little in American food, except baby food or gelatin, has that texture. Even buying tofu is alien. What else do you buy floating in water? And Americans love convenience. Bean curd is anything but. It's not an open-and-eat product." "I buy tofu but it just sits there, floating in my refrigerator. It makes me feel stupid and guilty. What do you do with it? I end up tossing it out." Hinoichi is America's largest tofu manufacturer. In March 1997 the company plans to move from its present 50,000 square foot plant in Los Angeles to a facility three times that size in Garden Grove. Harry Tanikawa, Hinoichi sales manager, notes that tofu and soy have been helped by good research and press from the medical community. He adds: "When you see fast-food places such as Panda Express in the shopping malls adding more tofu items to the menu, when you can buy a tofu hot dog at Dodger Stadium, you know tofu has arrived." Note: Dodger Stadium is a major league baseball park in Los Angeles.

Worthington Foods has experienced a sales rush in meat alternatives; the category went from nothing four years ago to $150 million a year. The company's best-selling items, sold under the Morningstar Farms brand, are breakfast patties, sausage links, garden burgers, and spicy black bean burgers–according to Don Burke, executive vice president of sales and marketing. The people who buy Worthington products are "the masses, people who want to cut down a little on meat and saturated fat. Most are aging baby boomers who want taste, convenience, and a health benefit."

Tofu "recipes for the mainstream" include: Red flannel hash. Mushroom scrambler. Tofu-stuffed French toast. Tofu slaw. Tofu citrus shake. Tofu cheesecake (p. H11).

The article ends with two sidebars: 16 "Tofu do's and don'ts." Soy food: Its many looks (p. H11)–Defines different soyfoods: Tempeh, miso, textured vegetable protein (TVP),

soy milk, soy flour, soy cheese, soy sauce, tamari. Address: Times staff/food writer.

7142. Skiff, James. 1996. Negotiations with ProSoya of Canada (Interview). *SoyaScan Notes.* Sept. 27. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jim is working for a man named Howard Weiner (pronounced WEE-ner), who owns a company named Shared Ventures, which is a venture capital company that invests in food processing operations. Howard is now especially interested in soymilk and related products. Howard, whose family made their money originally (many years ago) by developing the dried egg business, is skilled at putting together new companies and joint ventures. Jim (often with Howard) has been negotiating all summer with ProSoya of Vancouver, BC, Canada, in the hope of starting a soymilk company in Minnesota using ProSoya technology. Jim and Howard (who flew to Vancouver twice) were hoping to get exclusive rights to use the ProSoya technology in the USA, to establish an initial plant in Marshall, Minnesota, and then to develop regional plants round the USA. About 3 weeks ago Jim and Howard pulled out of the negotiations, very frustrated.

When Jim first talked with Lorne Broten in Vancouver, they discussed that ProSoya's contribution might be valued at $500,000 or a little more. They next time Jim talked with him, ProSoya's contribution was being valued at roughly $1 million. Then Jim and Howard went to Vancouver; they met Lorne, then were soon negotiating with Jerry Duncan of ProSoya; he is a newcomer to the company who is trying to put together business deals for ProSoya. He was apparently formerly in dairy sales and marketing for a company such as DairyFresh or some other company in that part of Canada; he is said to own part of ProSoya.

ProSoya has taken the position that they will not sell or license their equipment; they are only willing to participate as an equal partner in joint ventures. They offer to provide the soymilk equipment and know-how; the partner must provide the land, capital, personnel, and any additional equipment (as for packaging tofu). At the time Jim withdrew from the negotiations, he calculated that his side was expected to contribute about $3.5 million. The catch is that ProSoya retained the right to take back the equipment and withdraw from the joint venture at any time. Jim was frustrated at not being able to talk with Raj Gupta; he was told that Raj Gupta is no longer involved in the joint-ventures company but he has signed agreements whereby they control the company and equipment, and now he receives a royalty on the equipment he invented. The proposed joint venture would have paid a royalty to Gupta based on the production volume of the plant.

Jim has seen ProSoya's equipment operating in Vancouver several times and he thinks that he can improve a little on the equipment and a lot on the product. See comments on White Wave's Silk in a separate interview. In Vancouver, Jim tasted ProSoya's soymilk, yogurt, and tofu. He was very impressed with each of these products. The soymilk products made by ProSoya in Vancouver were very bland, with almost no beany taste. Address: Cornbelt Foods, Inc., P.O. Box 218, Marshall, Minnesota 56258. Phone: 507-537-1406.

7143. Skiff, James. 1996. Questions about White Wave's Silk soymilk (Interview). *SoyaScan Notes.* Sept. 27. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jim is aware that Silk is made by ProSoya in Vancouver, BC, Canada, but then it is further processed and packaged somewhere in California. Jim is quite sure that additional ingredients are added in California, for two reasons. (1) He has read the ingredients listing on the label and it contains ingredients that he has been told by the manufacturer are not in the product when it leaves Vancouver. (2) He has tasted the product both here and in Vancouver. The taste is quite different. In addition, the product's taste within the USA is not consistent; each batch tastes different–sometimes quite different. Jim thinks that sweeteners, and perhaps other types of soymilk, are added in California. The product in California is much sweeter and (up until last week) more beany than it is in Vancouver. The Vancouver soymilk was very bland, with almost no beany taste. That was not true with the Silk sold in America. Address: Cornbelt Foods, Inc., P.O. Box 218, Marshall, Minnesota 56258. Phone: 507-537-1406.

7144. American Soybean Assoc. 1996. Soya in dairy products: Manual [Soya in dairy products: Manual]. Mexico City, Mexico: Asociación Americana de Soya. 36 p. Illust. 28 cm. [Spa]
• ***Summary:*** Contains ten chapters by various authors on different aspects of the subject. Focuses on: Soymilk, soy beverages rich in protein, soy yogurt, soy ice cream. Address: Rio Sena 26, Col. [Colonia] Cuahutémoc, Mexico City, Mexico 06500. Phone: +52 705 1633/0139.

7145. Archer Daniels Midland Co. 1996. Annual report. P.O. Box 1470, Decatur, IL 62525. 44 p. Sept.
• ***Summary:*** Net sales and other operating income for 1996 (year ended June 30) were $13,314 million, up 5.1% from 1995. Net earnings for 1996 were $695.9 million, down 12.6% from 1995. Shareholders' equity (net worth) is $6,145 million, up 5.0% from 1995. Net earnings per common share: $1.27, down 9.3% from 1995. Number of shareholders: 35,431.

On the cover of the report is color illustration of a stylized family farm. ADM now has a Web site at http://www.admworld.com. The American farmer is the most efficient and most productive in the world. "One American farmers feeds 212 people... In 1996, the U.S. will export $65

billion worth of agricultural products, approximately 10% of which are exported by ADM and its affiliates, helping to generate over $100 billion in economic activity and about one million jobs. The productivity of the farmer can help ensure world peace... Thanks to the 1996 farm bill, U.S. farmers will be able to respond to market conditions instead of government orders" (p. 4-5).

Soy protein is a fast growing are for ADM. Currently ADM is building plants in Decatur, Illinois, and Europoort, Netherlands, to make improved soy protein isolates. "Isoflavones are another exciting area. Isoflavones are trace components in plants (particularly soybeans) that are believed to have positive health effects. This is a promising new area, so this research group is seeing its share of exciting developments. Programs are in place to purify these components for future production" (p. 6).

"Natural-source vitamin E: ADM produces this antioxidant from soybeans and other oilseeds. Research shows that natural-source vitamin E is 36% more potent than synthetic vitamin E" (p. 6).

"ADM value-added products from soybeans: (1) Derived from soy protein: Concentrates, isolates, isoflavones, TVP*, flour/grits, soy milk, Harvest Burgers*, Harvest Burgers for Recipes*, NutriBev*; (2) Derived from soybean oil: Vitamin E, lecithin, distilled monoglycerides, mono- and diglycerides, sterols." * = Registered trademark (p. 7). Note: Each of these products is discussed in detail on pages 13-14.

"Isoflavones: Soybeans contain isoflavones, powerful phytochemicals that appear to be able to block the multiple processes that lead to cancer, heart disease, and other chronic degenerative diseases" (p. 12).

"Value-added products from soybeans:... Vegetarians have long been using soy as a protein source, but in light of the mounting evidence that soy foods have significant health benefits, Americans from all walks of life are trying to incorporate soy into their diets... Every day, ADM plants worldwide process over 2.6 million bushels of oilseeds, and with value-added soy products gaining in popularity in a number of industries, these products will continue to be in demand" (p. 13).

These soy products include: (1) "Distilled monoglycerides, derived from soybeans or other oilseeds, are used primarily as emulsifiers or as starch complexing agents in a variety of food applications. ADM monoglycerides are often used in baked goods, confections, extruded products and margarines to bring about or enhance desired characteristics" (p. 13).

(2) "Isoflavones: A relatively new area of interest is isoflavones (part of a group of substances called phytochemicals). The two predominant isoflavones found in soybeans are genistein and daidzein. Researchers at ADM and around the world are conducting studies that strongly suggest that isoflavones have significant health benefits. ADM is scaling up research and processing for the future production of this product" (p. 13).

(3) Lecithin: "Interest in lecithin has escalated worldwide due to recent research investigating its health benefits. Lecithin is most recently being touted as a nutraceutical, since the linoleic acid in lecithin is believed to possess health benefits. Expansions have been completed in both the Windsor (Ontario, Canada) and Europoort (Holland) facilities. Improvements are scheduled for the Hamburg, Germany plant and construction is progressing on the new deoiled lecithin plant in Decatur, Illinois. As the leading producer of lecithin, ADM is positioned to meet the world's growing demand."

(4) Natural-source vitamin E: "An antioxidant, vitamin E is reported to help protect cells from free radical damage, the type of damage that can lead to an array of degenerative diseases. A study in the *Lancet* [a prestigious British medical journal]... concluded that a dime's worth of natural-source vitamin E could reduce heart attacks by 75% when taken daily by those with bad hearts. The *New England Journal of Medicine* reported that postmenopausal women who ate a moderate amount of foods rich in vitamin E cut their chance of heart disease by almost two thirds." In order to keep up with the rising demand, ADM is increasing its natural-source vitamin E plant capacity by fifty percent. ADM is one of the world's largest producers of natural-source vitamin E and also processes products that are good sources of vitamin E, including corn, canola, soy, sunflower, and peanut oils... By 1997, we will have the capacity to supply 300 million people with the current recommended daily allowance of vitamin E."

(5) "Soy protein: One of ADM's most important and versatile value-added products is soy protein. With increasing evidence of health evidence associated with soy foods, an increasing demand for soy protein products seems likely. To meet this rising demand, ADM is expanding its soy concentrate and isolate plants in Decatur, Illinois, and Europoort, Holland... Soy protein is finding success abroad in the consumer marketplace. In Canada, soy frozen desserts are being sold at Safeway grocery stores under the Lucerne Dairy label. In the U.K., a new soy milk plant is under construction to met demand for a good tasting nutritious non-dairy beverage [probably made from isolated soy protein]. In Europe, VegeMince, VegeBites and VegeSteaks are being introduced by Haldane Foods, an ADM subsidiary. German consumers will be introduced to Frosta Medallions, soy protein and vegetable frozen patties available in four varieties." A large color photo shows a package of Green Giant Harvest Burgers for Recipes (p. 15).

"ADM European Overview: ADM owns the three largest tidewater oilseed plants in the world. They are located in Erith [on the River Thames just east of London], England; Rotterdam, Holland; and Hamburg, Germany."

Page 37 discusses "Antitrust investigation and related litigation." Address: Decatur, Illinois.

7146. Clofine Dairy & Food Products. 1996. Classified ad: Specialty ingredients: Taking tofu to its next level! *Bluebook Update* (*Bar Harbor, Maine*) 3(3):7. July/Sept.
• ***Summary:*** Using a fresh soymilk base and a proprietary process, Clofine has developed "Spray Dried Soymilk & Tofu Powders to perform and offer high isoflavone content. Available in lowfat, kosher-parve, and organic. Contact Richard Eluk..." Address: 1407 New Road, Linwood, New Jersey 08221. Phone: 609-653-1000.

7147. Hastings, Carl. 1996. Soybean products in human foods. Paper presented at Regional Workshop on Soybean Processing and Utilization for Central America and the Caribbean. 4 p. Held Sept. 15-18 in Jamaica.
• ***Summary:*** Contents: Introduction. Soy sprouts. Whole soybeans: Cooked green beans, cooked soybeans, roasted or deep fat cooked soybeans (soy nuts–salted, flavored, etc., candy coated, salad topping, bakery ingredient or topping, soynut butter, soy coffee) fermented soybeans (tempeh–*Rhizopus,* natto–*Bacillus,* hamanatto–*Aspergillus*). Cereal blends: CSM (Corn-Soy-Milk), WSB (Wheat-Soy-Blend), other (bulgur, oat, sorghum grits).

Refined soy oil: Solvent extracted, physically extracted, uses, lecithin. Soy protein: Soy flour (full fat, defatted), concentrates, isolates, textured, uses. Hulls. Soy fiber. Soy milk: Liquid, powder, uses (plain, flavored, fortified, blends, instant formula, nutritional beverages, tofu, soy cheese, frozen desserts, yogurt, soymilk film {yuba}). Soy sauce. Soy paste (miso). Soy pulp (okara). Address: Reliv, Inc., Chesterfield, Missouri.

7148. **Product Name:** Firm Tofu, Mushroom Tofu, Soymilk.
Manufacturer's Name: Hung Vuong Tofu #2.
Manufacturer's Address: 4138 Monterey Road, San Jose, CA 95111. Phone: 408-229-9255.
Date of Introduction: 1996. September.
New Product–Documentation: Talk with Lieu Ta of San Jose, California. 1997. Aug. 19. This company is run by a Vietnamese-American family, with which she is associated. They started making tofu and soymilk on 10 Sept. 1996. The manager, Scott Truong, is the only one at the factory who speaks English. They also make vegetarian foods.

7149. NIDC. 1996. Classified ad: Business opportunity: Soya milk plant for sale. *Bluebook Update* (*Bar Harbor, Maine*) 3(3):7. July/Sept.
• ***Summary:*** Located in Kathmandu, Nepal, this plant was designed and supplied by the Alfa-Laval Group of Sweden. It is in excellent condition and has a production capacity of 14,000 liters per 8-hour shift. The price (FOB Kathmandu) is negotiable. Contact NIDC, P.O. Box 10, Kathmandu.

Note: This plant, sold by Alfa-Laval to Indreni Soybean Industries Ltd., began operation in Kathmandu in 1988. Address: P.O. Box 10, Kathmandu, Nepal.

7150. Nutrisoya Inc. 1996. Classified ad: Bulk soymilk. *Bluebook Update* (*Bar Harbor, Maine*) 3(3):7. July/Sept.
• ***Summary:*** "Nutrisoya Inc. is Canada's leading soymilk and tofu manufacturer." In January 1996 the company launched its new line of aseptic packaged soymilk, "Nutrisoy Premium Lite." Recently they have upgraded their production facility and can now supply up to 3,000 liters/hour of organic soymilk. Contact Nick Feldman. Address: 4050 Pinard, St.-Hyacinthe, QUE J2S 8K4, Canada. Phone: 514-796-4261.

7151. **Product Name:** Pacific Fat Free: Non Dairy Soy Beverage [Plain, or Vanilla].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1996. September.
Ingredients: Vanilla: Filtered water, brown rice, organic soybeans*, natural vanilla flavor, soy protein [isolate], tricalcium phosphate, natural flavor, sea salt, guar gum, xanthan gum, carrageenan, vitamin A palmitate, vitamin D-2.
* = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton. Retails for $1.19 (1996/11, Concord, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 8 fl. oz. (240 ml): Calories 90, calories from fat 0, total fat 0 gm (0% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 75 mg (5%), total carbohydrates 17 gm (dietary fiber 0 gm, sugars 12 gm), protein 3 gm. Vitamin A 10%, vitamin D 30%, calcium 20%, vitamin C 0%, iron 8%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label (plain and vanilla) purchased at Trader Joe's in Concord, California. 1996. Dec. This is the earliest known U.S. soymilk that claims to be "fat free." Note that brown rice is the second ingredient, ahead of soybeans. Label for vanilla. Purple, green, pink, and yellow on white. A color illustration shows a glass of soymilk surrounded by pastel colors. Reclosable spout. "Shake before opening. A refreshing non dairy alternative. No cholesterol. No lactose. Calcium and vitamin A&D added."

Talk with Pat Carey of Pacific Foods of Oregon. 1997. May 5. This product was introduced in about Sept. 1996. It is made from whole organic soybeans; no defatted soybeans are used except for the soy protein isolate. The product does contain some fat from the whole soybeans, but less than 0.5 gm/cup, which appears as zero grams on the label according to labeling regulations. The first fat-free soymilk was Soy Moo, introduced by Hain Pure Foods about 5 years ago; the second was Westbrae's Non-Fat introduced in about Jan. 1996.

Leaflet (glossy color, 4 panels, each panel 28 cm) sent by Patricia Smith from Natural Products Expo West at Anaheim. 1999. March. (but leaflet is dated "2/98"). "There's only one way to improve on Pacific's great tasting soymilk drinks–New packaging." A wide color photo (2-page spread) shows the following ten products (from left to right): Pacific Original Soymilk, Pacific Select Soy Drink (in Plain or Vanilla), Pacific Fat Free Soy Drink (in Plain or Vanilla), Pacific Enriched Soy Drink (in Plain or Vanilla), Pacific Ultra Soy Drink (in Plain or Vanilla).

All these non-dairy drinks are made with organic soybeans–although the soy protein isolate is not organic. A large pull-quote states: "'soy contains several naturally-occurring compounds–phytochemicals like isoflavones, protease inhibitors and saponins which seem to protect against breast cancer'–American Institute for Cancer Research." On the last panel are given the nutrition facts, ingredients, UPC numbers, and case/pallet information.

7152. *Soybean Digest.* 1996. Soy milk program for rural Chinese children. Sept.
• ***Summary:*** "A 'soy action' program, designed to improve nutrition for more than 300 million rural children, was recently launched in China.

"The program will provide soybean milk or other soybean products every day for children below age 15 as a replacement for the protein they are lacking.

"According to a recent story in the *China Daily,* the only national English-language newspaper in China, many children in rural areas suffer from malnutrition-related health problems.

"The report noted that poor nutrition, because sufficient high-protein foods like cow milk and meat products are in short supply, has affected the physical development of children in rural areas."

Last year, for the first time in recent history, China, long a major soybean producer, was forced to import soybeans to meet the demands of its exploding livestock industry.

7153. The Mail Order Catalog. Fall-winter 1996. Catalog of books and food. 1996. P.O. Box 180, Summertown, TN 38483. 24 p.
• ***Summary:*** The book section of this mail order catalog contains listings for an excellent selection of vegetarian and vegan cookbooks, plus books on food nutrition & health, alternative healthcare, women's healthcare, native Americans and their cultures, and animal rights.

The vegetarian food products section offers TVP granules and chunks, Response textured soy protein concentrates (misleadingly called "Response TVP flakes"), Harvest Direct vegetarian broth, and Protean, instant gluten flour (regular or flavored), seitan "chicken" or "sausage" mix, Mori-Nu silken tofu, Soja instant soy beverage, organic low-fat soymilk powder, Red Star nutritional yeast, Beano, and tempeh starter. Address: Summertown, Tennessee. Phone: 800-695-2241.

7154. Spence, Paddy. 1996. SPINS (Spence Information Services) is a new company providing information about the natural products industry to manufacturers (Interview). *SoyaScan Notes.* Oct. 11. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** SPINS started providing information in Jan. 1996. Their sources of this information are: (1) Natural product distributors, including United Naturals but not including Tree of Life (the biggest such distributor). These distributors account for about 20-30% of all U.S. natural product sales. (2) A.C. Neilson's HomeScan Panel, with a population designed to mirror the U.S. census.

They provide information only to manufacturers. It is provided on a bi-monthly basis–every two months, down to the UPC level = the individual product or item level. This information, aggregated for the USA costs $1,500 per category. One such category is non-dairy beverages (soymilk, rice milk, almond milk). Others include meat substitutes, and cheese alternatives. One of their clients is Vitasoy (USA) Inc.

Talk with Richard Rose of Sharon's Finest. 1997. March 16. The 6-7 distributors from which they now receive information represent well over half of the natural foods market. Richard uses the bar-chart information to say to retail buyers: "Sharon's Finest is No. 1 in unit sales, but you carry only one of our 17 SKUs. Tofu-Rella is now the best-selling cheese alternative in terms of unit sales (but Soya Kaas is No. 1 in dollar sales). This product is in the top ten and you don't even carry it." Address: President, SPINS, San Francisco, California. Phone: 415-284-0546.

7155. Corson, Betty. 1996. Lactaid and Beano (Interview). *SoyaScan Notes.* Oct. 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** AkPharma was founded in 1990 by its president and CEO Alan Kligerman, as a split-off from Lactaid Incorporated, which was also founded by Mr. Kligerman in 1977. The Lactaid brand was licensed to Johnson & Johnson for a while, then sold to Johnson & Johnson in 1996; Lactaid is the world's leader in lactase enzyme modification of milk products and lactose-containing foods and drugs. Lactaid Inc. was renamed to AkPharma Inc. Lactaid is not a milk product; it is an enzyme that is used with milk products. Lactaid and Beano are no longer owned by the same company. Mr. Kligerman owns the company that owns Beano.

A study showing that Beano is effective was published in the *Journal of Family Practice* in Nov. 1994.

If you would like a free sample of Beano, call 1-800-257-8650.

A new product, Prelief, is a calcium supplement that neutralizes acid indigestion. It's a pill–that works very well

on coffee, orange juice, tomato sauce, wine–all acidy/acidic foods that cause problems. If you put Prelief in a cup of coffee, it will neutralize the acid in that cup of coffee. And it ads calcium to the diet.

Betty sends a portfolio of documents about Beano, Alan Kligerman, and related subjects. Address: Public Relations, AkPharma Inc., 6840 Old Egg Harbor Road, P.O. Box 111, Pleasantville, New Jersey 08232. Phone: Fax: 609-645-0767.

7156. Tuchy, Pat. 1996. Re: Safety of soy-based infant formula. Letter to Professor J. Mann, Chairman, Food and Nutrition Committee, Ministry of Health, Box 5013, Wellington, New Zealand, Oct. 15. 1 p. Typed, with signature. [1 ref]

• ***Summary:*** "Dear Prof. Mann: I am writing on behalf of the Royal New Zealand Plunket Society to request that the Food and Nutrition Committee review its current position on soy infant formula in the light of the recent United Kingdom on Toxicology report, and concurrent advice to UK Health Practitioners."

"The Plunket Society believes that there is no conclusive evidence that soy infant formula is harmful to infants, but there is no doubt that a number of regulatory agencies, including the NZ Ministry of Health is aware that there are endogenous estrogenic agents in soy formula which have unknown but real potential to cause harm. If the formula was know to be contaminated exogenous estrogens at this level would the Ministry act any differently?" Address: Royal New Zealand Plunket Society (Inc.), New Zealand.

7157. Johnston, Cathy. 1996. Health-food maker seeks to buy former shrimp plant. *Sun* (*Lowell, Massachusetts*). Oct. 24. p. 7, 9.

• ***Summary:*** Nasoya Foods Inc. of Leominster, Massachusetts, "a producer of soy-based health food products, is working to buy the former New England Shrimp Co. building in Ayer, Massachusetts, located about 7 miles northeast of Leominster, and a slightly smaller town than Leominster. According to Nasoya president Fred Eaton, the 125,000 square foot building (located at One New England Way off Westford Road) would serve as a new, expanded headquarters and manufacturing plant, and will bring 77 jobs to Ayer. The company expects to add another 175 new positions during the next 3-5 years. The shrimp company was foreclosed upon by lenders after the federal government shut it down in 1992 for selling tainted shrimp. The FDIC, which now owns the building, auctioned it off in a sealed bid process on 25 Sept. 1996. Nasoya, the top bidder, has until Nov. 25 to complete the deal.

Nasoya was founded in 1978, as a tofu manufacturer located in a barn in Leominster. In 1984, 6 years later, as tofu production topped 25,000 lb/week, Nasoya outgrew the barn and moved into its current 30,000 square foot processing facility on Jytek Drive in Leominster. By 1987 Nasoya was producing more than 60,000 lb/week of tofu. In 1990 Nasoya was acquired by Vitasoy (USA) Inc. The former shrimp plant, with about 4.2 times the square footage of Nasoya's present plant, would give Nasoya the space to expand its current operations as well as to install a new line for making Vitasoy soymilk.

Nasoya's revenues grew 16% and 22% during the last two years respectively. The company is projecting a 24% sales growth this year.

Note 1. Nasoya's fiscal year runs from April 1 to March 31. So "this year" will end on 31 March 1997.

Note 2. Talk with Nasoya representative. 1997. Jan. 13. Nasoya purchased the plant in Ayer on 18 December 1996 and expects to be making tofu in the plant by about June of this year. They will operate two plants for a while, and hope to have finished phasing out the present plant in Leominster by the end of 1997. Nasoya uses only organic soybeans so they do not anticipate any problems in answering questions about using genetically modified soybeans. They have not yet prepared any documents to answer consumer questions on this subject.

Note 3. Talk with Nasoya representative. 1997. Oct. 1. The first Vitasoy soymilk started to be shipped from the plant in Ayer in mid-September 1997. The offices have now been moved to Ayer from Leominster. All tofu is still being made at the plant in Leominster.

Note 4. A label from the Azumaya tofu made in South San Francisco, California, shows that "glucono delta lactone" is now being used, with calcium sulfate, as a coagulant. Address: Sun Correspondent.

7158. *Better Homes and Gardens.* 1996. The benevolent bean: Cancer fighter, cholesterol cutter, and more–There's a whole lot of nutrition in this unassuming little soybean. 74(10):76, 78. Oct.

• ***Summary:*** This article is in the "Good food / Good health" section. Contents: Introduction. How much soy? ("Just a few ounces of soyfoods every day allow you to reap any of its health benefits"). Food for a healthy heart. Fight cancer, too. Stronger bones, cooler hot flashes. Adding soy to your diet: Tofu–from firm to silky, soy milk–plain or flavored, soy flour–for baking, whole soybeans fresh and dry.

"With Mary Hubbard, Registered Dietitian and PhD in education, She teaches at Grossmont College in California..." Color photos show: (1) A pod containing 3 dry soybeans, held in a person's fingers. (2) Dry soybeans, tofu cubes, soy flour, soy oil in a cruet, and a stick of soy margarine.

7159. **Product Name:** Fearn Soyness: Powdered Soy Beverage [Original, Vanilla, Chocolate].
Manufacturer's Name: Fearn Natural Foods (a Div. of Modern Products Inc., Marketer-Distributor).
Manufacturer's Address: P.O. Box 09398, 3015 West Vera Ave., Milwaukee, WI 53209. Phone: 414-352-3209.

Date of Introduction: 1996. October.
Wt/Vol., Packaging, Price: 150 mg (5.3 oz powder) or 750 mg (90 caplets). Wholesale: $14.00 and $10.00. Suggested retail: $28.00 and $20.00.
How Stored: Shelf stable.
New Product–Documentation: Leaflet (8½ by 11 inch, black on white photocopy) sent by Patricia Smith from Natural Products Expo East (Baltimore, Maryland) 1996. Oct. "Fearn Soyness and Riceness. Makes ½ gallon. 2 quart packs inside." Another leaflet (8½ by 11 inch, black on blue) sent by Patricia Smith from Natural Products Expo. 1999. Oct. The address is now 6425 West Executive Drive, Mequon, Wisconsin 53092. Phone: 414-242-2751.

7160. Jacobi, Dana. 1996. The natural kitchen: Soy! 75 delicious ways to enjoy nature's miracle food. Rocklin, California: Prima Publishing. xii + 244 p. Oct. Index. 22 cm. Series: The natural kitchen. [16 ref]
• ***Summary:*** Contents: Preface. Acknowledgments. Introduction: Soy and health. All about soyfoods: Traditional soyfoods (tofu, miso, tempeh, soy sauce, soymilk), other Asian soyfoods (okara, yuba, kinako, natto), second-generation soyfoods (soy dairy products, soy deli foods, textured vegetable protein {TVP}, textured soy protein {TSP}, soy isolate (isolated soy protein)), more soy choices (fresh soybeans, dried black soybeans, soy flour, soy grits, soy flakes, soy nuts), cooking with soyfoods (tofu {pressing, freezing, marinating, sautéing and pan-crisping, frying, braising, pureeing, parboiling, storing and handling tofu}, miso, tempeh, soymilk, other soy dairy foods), cook's notes (herbs, spices and flavorings, nuts, oils, produce, stock, sweeteners).

Soups, appetizers, and first courses. Main dishes. Pasta and light dishes. Side dishes and sauces. Salads, burgers, and kebabs. Desserts. Breakfast and beverages. Mail order sources.

The Preface states: "If you are new to soy, you will find descriptions of soyfoods, from tofu to soymilk... If you already cook with soyfoods, the approximately 75 recipes in this book and their variations will expand your repertoire. These recipes will take you across lines that people who cook with soy rarely approach. The dishes bring familiar and satisfying textures along with flavors that are full and deep. Whether ethnic or classic, they are dishes with verve and elegance." The author first tasted tofu, with her parents, in 1953, "at the precocious age of eight," at The Great Shanghai on 125th St. in Manhattan, New York City. Address: Food writer, New York, NY.

7161. *Natural Foods Merchandiser.* 1996. Vermont rGBH labeling law struck down. Oct. p. 6.
• ***Summary:*** Vermont's law, which took effect on Sept. 12, 1995 and is due to sunset on June 30, 1997, was struck down in a panel for the New York Federal Appeals Court in August. The law "requires retailers to post signs warning consumers of products that might contain rBGH... Currently, rBGH is being administered to only 10% of U.S. dairy cows, according to a recent USDA survey."

7162. Oser, Marie. 1996. Soy of cooking: Easy-to-make vegetarian, low-fat, fat-free, and antioxidant-rich gourmet recipes. Minneapolis, Minnesota: Chronimed Publishing. xviii + 264 p. Illust. Index. 23 cm. [55 ref]
• ***Summary:*** This is a very nice gourmet vegan cookbook with 16 full-page color photos. Contents: Dedication. Notice: Consult a health care professional. Grateful acknowledgment to. Foreword, by Neal D. Barnard, M.D. Preface, by Marie Oser. Introduction, by Suzanne Havala. Soyfood for thought. A healthy kitchen. The soyfoods pantry (short definitions of generic and brand-name soy products). A quick guide to ingredients. Substitutions. Spices: The variety of kitchen life. Techniques.

Recipes: Sensational starters. Soups, stews, and salads. Bountiful breads. Exceptional Entrées. Soyful sides. Pizza and pasta. Delectable desserts.

Resource guide (Names and addresses of 23 companies selling soy and soy-related ingredients). Recommended reading (15 books). Bibliography (40 journal articles). Address: Agoura Hills, California 91391. Phone: 818-707-7353.

7163. SunRich. 1996. Soya food ingredients. Soybeans for: (Leaflet). Hope, Minnesota. 3 p. 28 cm.
• ***Summary:*** These two closely related leaflets are in black ink on a red letterhead. The first leaflet states that SunRich offers "specialty soybeans... for specific soyafood uses: Consistency. Quality. Identity preserved." "Our extensive grower base enables us to contract produce soybeans for your special needs. Specific varieties with reduced antinutritional factors (lipoxygenases, trypsin inhibitor enzymes and oligosaccharides, stachyose and raffinose) available."

"Soyamilk powders: For ingredient or beverage use." A table describes soya beverage powders, spray-dried soymilk, spray-dried tofu powder, soy/dairy milk replacers.

"Sweet Beans–Frozen green soybeans–Podded [in the pods] (Edamame) or peeled (Mukimame). Certified organic soybeans and products available."

The second leaflet states: "Tofu varieties–Vinton, Beeson. Soymilk–Yellow or white hila. Sized over 6.7 mm round. Natto–Sized through a 5.5 mm round. Miso–Yellow hila. High soluble sugars. Boiling soybeans–Edamame varieties, yellow or black seed coats, high soluble sugar. Sized over 7.5 mm round screen. Frozen green soybeans. Edamame, mukimame. New varieties and types–High soluble sugars, high protein content, specific fatty acids. Grower base of 500 growers in Minnesota, Iowa, Wisconsin, South Dakota. Produce specific varieties for customers–Container lots, bagged, bulk. Bulk barge. Organic or

conventional." Address: P.O. Box 128, Hope, Minnesota 56046-0128. Phone: (507) 451-3316.

7164. **Product Name:** Trader Joe's Low Fat Fresh Non-Dairy Soy Beverage (½-gallon Pure-Pak carton) [Original Flavor].
Manufacturer's Name: Trader Joe's (Marketer-Distributor). Made in Chico, California, by Healthy Harvest Foods.
Manufacturer's Address: P.O. Box 3270, South Pasadena, CA 91031-6270. Phone: 818-441-1177.
Date of Introduction: 1996. October.
Ingredients: Filtered water, organic whole soybeans*, brown rice syrup, calcium carbonate, sea salt, carrageenan, vitamin A palmitate, vitamin D-2. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: Net 64 fl oz (½ gallon) 1.89 liters. Gable-top Pure Pak carton. Retails for $2.69 (California 1997/01).
How Stored: Refrigerated.
Nutrition: Per 8 fl oz (240 ml): Calories 130, calories from fat 25, total fat 2.5 gm (4% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 80 mg (3%), total carbohydrate 22 gm (dietary fiber 0 gm, sugars 11 gm), protein 9 gm. Vitamin A 10%, calcium 30%, vitamin D 25%, vitamin C 0%, iron 6%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Trader Joe's in Concord, California. 1997. Jan. 16. 3.75 by 3.75 by 9 inches. Rainbow colors in a woven fabric. "Lactose free. Good source of protein. Fortified with vitamins A&D and calcium."

Talk with Steve Demos, president of White Wave. 1997. Jan. 27. This product is made for Trader Joe's by Healthy Harvest Foods, owned by Nancy Knudsen of Chico, California. Nancy's maiden name was Nancy Potter; she ran Eden Foods (developer of Edensoy soymilk) while her brother, Michael, was in jail.

Talk with Patricia Smith, an employee of Trader Joe's. 1997. Feb. 10. She called the buyer who told her that this product was introduced on 20 Oct. 1996. Update: Nov. 1998. The price is still $2.69 per half gallon.

7165. United Soybean Board. 1996. National report on consumer attitudes about nutrition. Seattle, Washington. 8 p. Oct. 28 cm.
• ***Summary:*** This report, commissioned by USB, was conducted by a an independent research firm. It included telephone interviews with 1,000 consumers and primary household shoppers of all ages throughout the USA. They were asked a series of up to 23 questions. The standard margin of error for the study is ±3.2%.

Popularity of soy products: A bar chart shows the following, listed in descending order of popularity. The first number indicates the percentage of the population who are familiar with each product; the second number indicates the percentage of those who are familiar with the product that have tried it. Tofu–76% of Americans are familiar with tofu, and 53% of these have tried tofu. Veggie burger–69% /53%. Soybean oil–65% / 28%. Soy milk–58%–35%. Infant formula [soy-based]–53% / 36%. Soy protein–42% / 32%. Soy flour–41% / 30%. Miso–17% / 58%. Tempeh 14%–45%.

"How healthy are soy products? 40% of the population acknowledge that soy has positive health attributes. Half of those believe soy is a high protein source. 13% of the respondents cited soy as an option for lactose intolerance, 13% as a low fat food and 11% as a cholesterol reducer."

Consumer concern and confusion about nutrition terms: Trans fatty acids–37% of the population are familiar with the term; 38% of those who are familiar are concerned about trans fatty acids; 51% of those who are familiar are confused about trans fatty acids. Hydrogenation: 36% are familiar, 39% of those are concerned, and 46% of those are confused. Address: 190 Quuen Anne North, Seattle, Washington 98109. Phone: 1-800-TALK-SOY.

7166. *Vegetarian Times.* 1996. Litigation over BGH labeling: Food safety. Oct. p. 22-23.
• ***Summary:*** Bovine growth hormone (BGH) is a synthetic hormone that makes cows produce more milk. It was first approved for use in 1993. "Its manufacturer acknowledges that it can cause health problems in cows; some physicians also believe it increases the risk of cancer in humans who drink milk from BGH-treated cows." Now several food companies, frustrated that four states (Illinois, Oklahoma, Nevada, and Hawaii) refuse to allow product labeling for BGH-free milk, have begun suing for the right to tell their customers that their dairy products don't contain BGH.

Last May Ben & Jerry's (an ice cream manufacturer) and three other companies filed suit against the state of Illinois and the city of Chicago, arguing that the labeling prohibition violates their right to free speech. But he state of Illinois says that BGH does not come through in the milk, and that no laboratory test currently available can distinguish treated from untreated milk.

7167. White Wave, Inc. 1996. No cow. No cow, now brown (Ad). *Vegetarian Times.* Oct. p. 26.
• ***Summary:*** This attractive half-page color ad shows two cartons of White Wave Silk. On the left is unflavored Silk and on the right is chocolate. The text continues: "How? Simple addition. Take pure, delicious White Wave Silk. Add real chocolate. Result: Dairy-free, lactose-free chocolate fun. Class dismissed." At the bottom is the company logo "White Wave Vegetarian Cuisine," and the American Heart Association seal of approval. Address: Boulder, Colorado.

7168. Himelstein, Vicky. 1996. Amazing tofu diet to beat hot flashes: And here's how to make 'tasteless' health food really delicious. *Star.* Nov. 26. p. 1, 33.
• ***Summary:*** *Star* is a popular tabloid newspaper, sold at supermarket checkout stands, featuring sensational stories and celebrities. On the cover is a color photo of TV star Roseanne in a large rectangle. The text reads: "Roseanne's holiday diet: Eat what you want and lose weight, plus Tofu diet to beat hot flashes."

This article, based on an Associated Press story, begins: "If you're in the throes of menopause and suffer from uncomfortable hot flashes, take heart. You may be able to beat the heat by simply adding tofu to your diet. Startling new research reveals that tofu, a soybean-rich food, can cool the miseries of menopause fast, which may be the reason Asian women–whose diets are rich in soy–suffer fewer, less severe hot flashes and night sweating than American Women."

The article then summarizes a study by Dr. Gregory Burke, of Bowman Gray School of Medicine in Winston-Salem, North Carolina. Investigating the effects of soy on menopause, his 6-week study involved 43 women, ages 45-55. Tofu contains "phytoestrogen–the plant form of the female hormone estrogen." The Star adds: "Doctors are recommending that women eat tofu–a custard-like extract from soybeans–and drink soy milk. The challenge is now for cooks to make tofu taste good. 'Tofu is a white spongy cube that's very bland when you eat it raw,' says Star nutritionist Ann Newswanger. 'But it's cholesterol free, and absorbs flavor from other ingredients. The possibilities are endless–have it for meals and in desserts." Three recipes are given: Tofu raspberry mousse. Poppy seed dressing. Spicy tofu stir-fry with vegetables.

7169. Essex, Charles. 1996. Questions remain over soy milk infant formula. *New Zealand Doctor.* Nov. 27.
• ***Summary:*** "The adverse publicity surrounding soy-based formulas has had a significant effect on their sales in some countries. Soy formulas in New Zealand have fallen from about 13 per cent of the formula market in 1994-95 to around 5 per cent, although soy follow-on formula has risen from 0.8 per cent of the market to 1.3 per cent. This is because use of infant formula has risen in infants over six months of age as parents have delayed the introduction of whole cow's milk.

"Sales of other soy products, for the adult health food market, have also fallen recently in New Zealand because of the concerns which have arisen without satisfactory scientific evidence about the effects of soy in the human diet."

7170. Berkoff, Nancy. 1996. Turkeyless Tetrazzini: With our feather-free version of this post-Thanksgiving classic, vegetarians needn't feel left out when it comes to leftovers. *Vegetarian Times.* Nov. p. 30-32.
• ***Summary:*** Main ingredients in this dish include extra-firm tofu or smoked tofu and cooked spaghetti. Soymilk is used in the sauce. The vegetarian version contains only 79% as many calories, 65% as much fat, 10% as much cholesterol, 27% as much sodium, and 50% more fiber.

7171. Gerstner, Patsy. 1996. The temple of health: A pictorial history of the Battle Creek Sanitarium. *Caduceus* (*Southern Illinois University School of Medicine*) 12(2):1-99. Autumn. Special issue. [101* endnotes]
• ***Summary:*** This special issue, a nicely bound book with a color illustration on the cover, offers a remarkable look at the Battle Creek Sanitarium, including 115 photos, illustrations and other graphics, and a well-written text and balanced appraisal.

Contents: Acknowledgments. 1. From gentle obscurity to worldly fame, 1866-1902. 2. The temple rises from the ashes. 3. The treatment. 4. Never enough space. 5. A moment of glory, 1928 and after. 6. The Battle Creek Sanitarium: An appraisal. 7. Further reading and notes. Picture credits. About the author (and Garth "Duff" Stoltz's remarkable collection of Sanitarium memorabilia). "Certainly the Sanitarium was one of the grandest experiments in health care in the nineteenth and twentieth centuries" (p. 99).

Soy acidophilus milk contained a bacillus similar to the one in yogurt that created lactic acid. Intended "to suppress the putrefactive bacteria in the colon and replace them with 'good' bacteria," this soy-based milk "became a standard item on the Sanitarium menu after 1915" (p. 43).

"Among his [Dr. Kellogg's] most successful efforts were Sanitarium exhibits at the World's Columbian Exposition, the great fair held in Chicago [Illinois] in 1893, and the Louisiana Purchase Exposition, the 1904 world's fair held in St. Louis [Missouri]... Kellogg and others began to refer to the Sanitarium as a 'University of Health'" (p. 81).

"Kellogg recognized the importance of endorsements from well-known personalities... Henry Ford was not only a frequent visitor but the first guest in the 1928 Towers addition. Other famous visitors were presidents William Howard Taft and Warren G. Harding,... arctic explorer Roald Amundsen, industrialist John D. Rockefeller, grape juice manufacturer Edgar Welch, author Upton Sinclair, educator Booker T. Washington, aviatrix Amelia Earhart, and merchandisers J.C. Penney, Montgomery Ward,... First Lady Eleanor Roosevelt was among the noted visitors, but not as a patient" (p. 81).

Figures (Photos unless otherwise stated): (1) People in the grand parlor, Battle Creek Sanitarium (the San), 1880s. (2) Ad for the Health Reform Institute in Battle Creek (1870s), forerunner of the San. (3) Illustration of John Harvey Kellogg, in his early 20s, shortly after he became superintendent of the Western Health Reform Institute. (4) Illust. Dansville, New York, water-cure facility. (5) Exterior of the Western Health Reform Inst. in 1866. (8) Illust.

"Women and men share a workout in the gymnasium, 1888." (9) Woman at the punching bag, 1910. (10) The Sewing Department, ca. 1915. (11) Exterior of the 1878 building–5 stories. (12) Diagram of the first floor. (13) Audience in Grand Parlor awaits a lecture; inset illust. shows a doctor interviewing a patient. (14) Illust. Typical San guest room, 1888. (15) Rate card from 1888, showing all basic costs / expenses. (16) The Sanitarium Hospital, completed in 1888. (17) By 1895, the San had been enlarged by a 5th story plus two additions. (18) Menu for dinner, July 15, 1888. (19) Leaflet promoting Sanitarium Training School of Nurses. It opened in 1883 with a six-month program. It grew to a full two-year course. (20). The front of an urban vegetarian restaurant and "Battle Creek Sanitarium Treatment Rooms," location unknown. (21) The dispensary of the Chicago Mission. The sign reads: "American Medical Missionary College: Dispensary." Constructed 1887. (22) Dr. John Harvey Kellogg poses ca. 1895 seated outdoors with some members of the medical and nursing staff. (23) The fire of 18-19 Feb. 1902; it burned the main San building and the hospital to the ground. Only one patient died in the fire. San losses were valued as high as $400,000 and the loss of guests' personal property as high as $500,000. (24) A group of San employees by the ruins. (25). Laying of the cornerstone for the new San on 4 May 1902. (26) Aerial view of the huge new San from the rear, showing the gymnasium and two treatment wings. (27) Entrance to the San. (28) The loggia. (29) A patient wearing the blanket / robe designed by Dr. Kellogg. (30) A Porte-air directing fresh air to the head of a patient in bed. (31) The Grand Lobby, with a "Ladies Corner" at center back. (32) Guests in the Grand Parlor. (33) A guest room being prepared for a new arrival. (34) The San switchboard, 1903. (35) Guests at the roof promenade. (36) The San kitchen. (37) Diagrams of the grounds and buildings of the Battle Creek Sanitarium. (38-39) Scenes from the San laundry, ca. 1910. (40) The annual ice caravan (pulled by horses) makes its way to the San. (41) Many patients being led in outdoor breathing exercises. (42-45) San patients receiving a thorough medical examination. Note: Between 1890 and 1898 Dr. Kellogg adopted the theory of "autointoxication" (mainly from the colon) as the most important cause of disease. (46) A laboratory; an important aspect of diagnosing autointoxication was laboratory analysis of body wastes. (47) Menu of special dietaries. (48) The food booth, located just outside the Palm Garden. (49) Local Rotarians having dinner in one of Dr. Kellogg's dairy barns as a demonstration of its cleanliness. (50) Label of a box of Kellogg's Bran, marketed as a cure for constipation. (51) Labels of Paramels, Ssylla, and Kaba, bulk-producing products developed at the San and sold by the Battle Creek Food Co. (52) A sign that reads "Fletcherize" is prominently displayed in the San's dining room. (53) Program / schedule for the day on a typical day, 22 Feb. 1915, printed on the back of the day's menu. Everyone was expected to participate in the activities listed and each guest also received a personal schedule of treatments. (54) The gymnasium in 1903; round the upper level is a running track. (55) Kellogg's Universal Dynometer measured the strength of all major muscle groups. (58-64) The Mechanical Movement Room, ca. 1890; incl. vibrating belts and chairs, a mechanical horse and an abdomen-bending machine. (65) A walking party in front of the San. (66) Members of an exercise class pose with Indian clubs on the front terrace. (67) Improved posture and mental and physical dexterity were the goals of sloyd [Scandinavian exercises], ca. 1903. (68) A bedridden patient engaged in approved exercises. (69). (69) An electrotherapy device in 1888 with San helpers. (70) Electrostatic generator, which Kellogg claimed was the largest ever made. (71) A man standing inside a wire cage of coils; the rapidly oscillating electric field within this coil generated a high-frequency electrical treatment. (72) Electrotherapy in a bath tub. (73) Laboratory of Experimental Hydrotherapy (1800s). (74-78) Hydrotherapy treatments. (79) The outdoor sand bath in a huge sand box. (80) The air bath was usually used to cool the body after a heat bath. (81-82) Three versions of the light bath. (83) In diathermy, a high-frequency alternating current delivered penetrating warmth to a specific part of the body. (84) Kellogg standing in white suit presides at a dinner in the Annex dining room. The average patient stayed a month at the San. (85) Exterior view of the Annex. (86) The new hospital building–formerly the Sanitas Food Co. factory, 1914. (87) An operating room. (88) Horseback riding party in front of the Annex. (89) Illust. of the 1928 Twin Towers addition to the Battle Creek San. (90) Map of San grounds showing new addition. (91) The luxurious lobby. (92) The men's parlor. (93) The elegant Towers dining room. (94) The pre-dinner rooftop Grand March. (95) Towers accommodations (bedroom). (96) Miami Battle Creek [Florida], 1931. (97) In "1942 both the 1903 building and the towers addition were sold to the federal government for $2.25" million. Kellogg relocated San activities to the Annex and a building on the former campus of Battle Creek College. (98) The Annex in the 1940s. (99) The fountain, now part of the Battle Creek Federal Center. (100) A view of Battle Creek from the San sun roof. (101) Advertisement for the Sanitas Nut Food Co. (102) Page from a Kellogg recipe book shows how Malted Nuts might be used. (103) Ad for Sanitarium Health Food Co. (Battle Creek). (104) Eddie Cantor on the San's golf course. (105) Eleanor Roosevelt at the San. (106) Certificate awarded the San in 1919 by the American College of Surgeons. (107) Ella Kellogg at home. Married in 1879, the Kelloggs adopted 42 children. (108) Menu for Christmas Dinner, 1930. (109). Dr. Kellogg tending orchids in his lush tropical palm garden. (110) People in an early horseless carriage, ready for an excursion in the fresh air. (111) Outdoor exercise class at entrance to 1903 building. (112) Hollyhocks in bloom around the 1903 San. (113) The colonnade. (114) Guests checking into the

San. (115) Two people in a horse-drawn sleigh in front of the San in winter's snow. Address: Chief Curator, Dittrick Medical History Center.

7172. Holin, Fae. 1996. Roundup Ready beans stir environmental boycott. *Soybean Digest.* Nov. p. 5.
• ***Summary:*** Jeremy Rifkin, president of the Foundation on Economic Trends, is leading this boycott in the USA and Europe of Monsanto's genetically engineered (transgenic) Roundup Ready soybeans by asking consumers to boycott foods in which these soybeans appear unlabeled–such as Green Giant Harvest Burgers, Similac infant formula, and McDonald's french fries (which may be fried in soybean oil).

Both the European Union and Japan recently approved the use of Roundup Ready soybeans in feed and food. "And one of Europe's largest soybean processors, Oelmuhle Hamburg AG [in Germany], says it will begin importing and processing genetically modified U.S. beans this fall, despite Greenpeace protests."

"Roundup Ready soybeans are being harvested for the first time this year from nearly 1 million acres. That's predicted to increase tenfold next year."

7173. Imagine Foods, Inc. 1996. The Rice Dream cookbook. Palo Alto, California: Imagine Foods. 15 p. 22 cm.
• ***Summary:*** This is a booklet of natural, vegan recipes for using three types of Rice Dream brand rice milk. On the front cover is a pastel illustration of a spoon over a bowl of soup; on the rear cover, a stack of pancakes. Contents: Breakfast ideas. Savory soups. Sauces & gravies. Salad dressings. Hearty vegetarian entrees. Dreamy desserts. Dream drinks. A list of 9 of the company's products is shown on the inside rear cover. Address: Palo Alto, California.

7174. James, Valerie A. 1996. Experience and reason together. *Australian Birdkeeper* 9(5):249-50. Oct/Nov.
• ***Summary:*** This article is a rebuttal to a previous article in this magazine (June/July 1996, p. 141) by Tom Roudybush, whose company manufactures bird feed. She argues that the article by Roudybush was almost completely false and summarizs many studies from around the world, from the 1930s to the present, showing that soybeans contain toxins that are harmful or potentially harmful. Address: Whangarei, New Zealand.

7175. **Product Name:** Neilson's Soy Delight (Refrigerated in Gable-Top Carton).
Manufacturer's Name: Neilson Dairy. Div. of Weston Food Group.
Manufacturer's Address: Halton Hills, ONT, Canada. Phone: (905) 702-7200.
Date of Introduction: 1996. November.
How Stored: Refrigerated.
New Product–Documentation: Ontario Soybean Growers' Marketing Board Newsletter. 1997. Feb. p. 2. "Soy Delight soymilk." Neilson's Soy Delight is "the first fresh soymilk to be available in grocery stores." It comes in two flavors: Original and Vanilla. With its trilingual labeling (English, French, and Chinese) it is "targeted at the Asian-Canadian market, but it's a high-quality product that everyone will enjoy." One litre milk-style (gable-top) cartons are "currently being sold at Zehrs, Loblaws, Fortinos and Mr. Grocer supermarkets throughout Ontario."

Talk with Ian Walker. 1997. May 26. Neilson Dairy, a big Canadian dairy company, has a fresh soymilk on the market, sold in a gable-top carton like milk. They introduced it in about Nov. 1996. This is a new trend in Canada. Note: This soymilk is made by Nutrisoya, Inc. in Quebec and packaged near Quebec City.

7176. **Product Name:** [Tofu, Tempeh, Soymilk, Soyshakes / Smoothies, Soysages].
Foreign Name: Tofu, Tempeh, Soymilk, Soyshakes / Smoothies, Soychicha.
Manufacturer's Name: Organica-ecotienda.
Manufacturer's Address: Xicotencatl 653-18, Col. Centro, Veracruz, VER 91700, Mexico. Phone: 29-31-30-83.
Date of Introduction: 1996. November.
New Product–Documentation: Letter and form filled out by Pat Hayward. 2000. Aug. 25. This company, managed by Pat Hayward and Claudia Gutierrez, makes and sells the above five soyfood products, which they introduced in Nov. 1997. Production of each in kg/month is as follows: Tofu 50. Tempeh 2. Soymilk 40. Soyshakes/Smoothies 40. Soychicha 10.

7177. **Product Name:** ProSoya SoNice (Soymilk in Tetra Brik aseptic cartons) [Natural, Original, Vanilla, Chocolate].
Manufacturer's Name: Pacific ProSoya Foods Inc.
Manufacturer's Address: 312–19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: (604) 532-8030.
Date of Introduction: 1996. November.
Wt/Vol., Packaging, Price: 1 liter and 250 ml aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Raj Gupta of ProSoya in Ottawa, Ontario, Canada. 1996. Dec. 16. This product was introduced in November 1995 (1996?) in three flavors: Natural (nothing added), original, and vanilla. A fourth flavor, chocolate, is now in test market. The product is presently sold only in Canada. The soymilk is made in two of ProSoya's plants–in British Columbia and in Ottawa, Ontario. The place where it is packaged is confidential. Note: It may be packaged at a Beatrice Foods plant near Toronto.

Talk with Fred Webster, head of International ProSoya Corp. office in New Hope, Pennsylvania. 1997. Sept. 31. This product, made in British Columbia, Canada, and packaged in New Jersey, will be introduced to the U.S.

market in mid-October, 1997, in aseptic cartons (1 liter, and 250 ml x 3), in 6 flavors (vanilla, chocolate, natural {soybeans and water only}, original {sweetened, and balanced, with a balance of sodium and carbohydrate}, strawberry, and cappuccino); expected retail price is $1.99/liter.

Talk with Lorne Broten, President and CEO, International ProSoya Corp. 1997. Oct. 29. This product was launched in the late fall of 1996. It is now available in 1 liter and 250 ml UHT cartons. A new flavor (chocolate) has been introduced, and two new flavors (strawberry and cappuccino) will be available very soon.

7178. **Product Name:** Trader Joe's 100% Non-Dairy Vanilla Soy Milk (Plastic Bottle).
Manufacturer's Name: Trader Joe's (Marketer-Distributor).
Manufacturer's Address: P.O. Box 3270, South Pasadena, CA 91031-6270. Phone: 818-441-1177.
Date of Introduction: 1996. November.
Ingredients: Soybeans, filtered water, honey, vanilla.
Wt/Vol., Packaging, Price: 16 oz (1 pint) plastic bottle. Retails for $0.89 (1997/02, San Rafael, California).
How Stored: Refrigerated.
Nutrition: Per 8 fl oz (240 ml): Calories 130, calories from fat 25, total fat 2.5 gm (4% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 80 mg (3%), total carbohydrate 22 gm (dietary fiber 0 gm, sugars 11 gm), protein 9 gm. Vitamin A 10%, calcium 30%, vitamin D 25%, vitamin C 0%, iron 6%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Talk with Patricia Smith, an employee of Trader Joe's. 1997. Feb. 10. She called the buyer who told her that this product was introduced on 15 Nov. 1996.

7179. *SoyaScan Notes.* 1996. Soymilk and cow's milk prices in California, December 1996 (Overview). Dec. 10. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Since Dec. 1983, approximately every other year, Soyfoods Center has conducted a survey of the prices of soymilk and cow's milk in California. In Dec. 1996 at Trader Joe's, a gourmet and natural foods chain in Concord, California, soymilk made from organically grown soybeans, sold in an aseptic package with reclosable spout, retails for the following prices: Pacific Select (lowfat plain) retails for $0.99. Westsoy Lite (1% fat) Combibloc half gallon with reclosable spout (plain, or vanilla) retails for $1.99 (equivalent of $0.995/quart). Pacific fat free (vanilla, or plain) retails for $1.19. Trader Joe's Soy-Um quart (original, vanilla, or lowfat chocolate) retails for $1.39. By comparison, Rice Dream Vanilla (a rice-based beverage) retails for $1.39/quart.

The average price of the quart equivalents of these four soymilk brands is $1.14. This is $0.32 per quart lower or 22% lower that the $1.46 in Dec. 1996 and $0.78 per quart lower or 41% lower the $1.92 in Dec. 1992.

The major factors leading to the falling price of soymilk are: (1) The growing popularity of "lite" soymilks since 1990; they contain more water and less fat–but also less protein and other nutrients; (2) The increase in carton size to 2 quarts; and (3) The economies of larger-scale production due to increasing demand. This increased demand is due to the growing awareness of the many nutritional benefits of soymilk (especially from isoflavones such as genistein), the falling price, and the dislike of growth hormones (rBGH, made by Monsanto) used in producing cow's milk.

Cow's milk (fortified with vitamins A and D) sells for the following prices at the Safeway supermarket in Lafayette, California: (1) Nonfat: $0.95/quart or $1.69/half gallon or $3.35/gallon; (2) Extra light (1% fat; protein fortified): $0.95/quart or $1.82/half gallon or $3.39/gallon; (3) Low-fat (2% fat; protein fortified): $1.01/quart or $1.82/half gallon; (4) Whole (homogenized): $1.01/quart or $1.82/half gallon. The best-seller among these is non-fat in half gallons.

Thus, during the past two years, the price of soymilk has continued to decrease while the price of cow's milk has continued to rise. In Dec. 1996 soymilk in quart cartons is, on average, 1.20 times as expensive per unit volume as nonfat dairy milk purchased in quarts, 1.35 times as expensive as in half gallons, and 1.40 times as expensive as in gallons. In Dec. 1994 a quart of soymilk was 1.71 times as expensive as a quart of the best-selling cow's milk. So in the last 2 years the price of soymilk has fallen significantly relative to that of cow's milk.

During the last 13 years, the price of soymilk on a per-quart basis has fallen dramatically–from $2.48/quart in Dec. 1983 to $1.14/quart in Dec. 1996; thus, soymilk is less than half as expensive per quart today as it was 13 years ago. The price of soymilk has fallen even more dramatically relative to the price of cow's milk, which has increased from $0.43/quart to 0.95/quart during this same period. In 1983, a quart of soymilk was 5.76 times as expensive as a quart of cow's milk; today it is only 20% more expensive.

7180. *SoyaScan Notes.* 1996. Chronology of major soy-related events and trends during 1996 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jan. 15–Silk, America's first soymilk sold refrigerated in a typical milk carton (gable-top, Pure-Pak) is introduced by White Wave of Boulder, Colorado. It is made in Canada, formulated in California, then shipped to White Wave in tanker trucks.

Sept.–Monsanto's Roundup Ready transgenic (genetically engineered) soybeans are harvested from an estimated 1.2 million acres of U.S. farmland. They begin to enter into the food supply–unlabeled. There is a great outcry in Europe (especially in England and Germany) by consumers over loss of freedom of choice concerning food–

but hardly a peep from the USA.

1996 Sept. 15-18–The Second International Symposium on the Role of Soy in Preventing and Treating Chronic Disease, is held in Brussels, Belgium, and organized by Mark Messina, PhD.

1996 Oct. 30–Odwalla, a fresh juice manufacturer and distributor, is informed that their unpasteurized apple juice may be contaminated with an especially virulent strain of *E. coli* strain O157:H7 (pronounced Oh-157-H7). Odwalla immediately initiated a recall, but one baby died and 66 people in 3 states got sick. Three years earlier, in January 1993, a similar but more severe outbreak had occurred at Jack-in-the-Box in Seattle, Washington; 4 children died (from kidney failure) and 700 people became ill–from eating undercooked hamburgers. These two incidents may have major implications for the soyfoods industry–since unpasteurized tofu is a prime target for *E. coli* contamination. The first big consequence was seen when Kroger, a major supermarket chain in the Midwest, announced in late 1996, that it would no longer sell unpasteurized tofu.

There is growing interest in the health benefits of the phytochemicals in soybeans–especially genistein. Four areas of potential benefits have been identified, and they are in a "horse race" as scientists investigate more deeply: 1. Relief of risk of cardiovascular disease, especially heart disease. 2. Relief of menopausal symptoms. 3. Improvement of bone health and relief of risk of osteoporosis. 4. Relief of cancer risk of some sites–especially prostate cancer. But most media have tended to hype these health benefits, far beyond what the science justifies.

During the past year or two, Soyfoods Center has been receiving a growing number of calls from people who ask "How can I get more soy into my diet?" Never before have we heard people ask a question like this. These people have heard about the many health benefits of consuming soyfoods regularly but they don't know what foods would suit their tastes and diet.

This year, for the first time, the state soybean associations and boards take the lead (passing the Soyfoods Association of America) in promoting soyfoods in America. The leading states are Illinois, Indiana, Michigan, Minnesota, and Missouri.

This year (1996), the Chemopreventive Branch of the National Cancer Institute concluded that genistein (the primary isoflavone in soybeans) was one of four plant compounds with superior anticancer activity.

Also this year there was a rapid rise of interest in and sales of meat alternatives.

7181. *Bluebook Update* (*Bar Harbor, Maine*). 1996. ProSoya receives new patent. 3(4):3. Oct/Dec.
• ***Summary:*** On 13 Aug. 1996 ProSoya Inc. of Ottawa, Ontario, Canada, was awarded a U.S. patent for their Energy Efficient Centrifugal Grinder. Invented by Raj P. Gupta and Grant W. Woods, it grinds solids or solids in liquids in multiple stages. For more information phone: 613-745-9115.

7182. Golbitz, Peter. 1996. Soyfoods take root in the Caribbean: Basic food needs spur growth of a new industry. *Bluebook Update* (*Bar Harbor, Maine*) 3(4):4-5. Oct/Dec.
• ***Summary:*** Dominican Republic: In August, the Mexico City office of the American Soybean Association sponsored a conference in the Dominican Republic titled "The Importance of Using Soy Protein in the Treatment of Chronic Disease." Two companies are now making soyfoods in the Dominican Republic and working to increase awareness of their value. Engela Estévez, founder of Saluvid S.A., makes a variety of meat alternatives from textured soy protein.; she presents seminars, has written a book titled "112 Recipes with Soya, The Vegetable of a Thousand Uses," and has helped to establish a foundation named FundaSoya to educate consumers. Mr. L.R. Ubiera, founder of Nutrisoya in 1996, makes fresh soymilk and tofu as well as several meat alternatives; he has written and published a book titled "Tofu y Leche de Soya, a Practical Guide for Home Preparation."

Cuba: A summary of the history of soyfoods in Cuba, including recent developments, was extracted from a report by William Shurtleff after his visit to Cuba in Jan. 1996.

A photo shows a soybean harvester in Cuba, donated by Global Exchange. It arrived in the spring, just in time to help with this year's soybean harvest. From left to right: The harvester's mechanic. The director of the INIFAT station where the soybeans will be grown. Segundo Panas of ECAP (A Friends-of-Cuba organization). Pam Montanaro of Global Exchange in San Francisco, California. Tomas Guzman of INIFAT, director of the Cuban soybean production project.

7183. Hager, Stacy. 1996. What the heck are tofu and tempeh? Here's a dictionary of healthy soyfoods. *Soybean Digest.* Dec. p. 14-15. In "Soyfoods Special Report" section.
• ***Summary:*** Gives a brief description of tofu, tempeh, textured soy protein (TSP), isolated soy protein, soy milk, soy flour, green vegetable soybeans, and roasted soy nuts. The article begins: "No, tofu's not a martial arts method, tempeh's not an Arizona city, and TSP isn't an abbreviation for teaspoon."

7184. Hansen, Asger Sommer. 1996. Re: Finally our soymilk business is taking off (Card). Letter to William and Akiko Shurtleff of Soyfoods Center, Dec. 1 p. Handwritten, with signature.
• ***Summary:*** Handwritten on an APV UNICEF Christmas card: "Finally our soymilk business is taking off. Plants sold in 1996: 3 for China. 1 for England. 1 for Japan.

"Kind regards, Asger S. Hansen." Address: APV Soya Sector, Europaplads 2, 8000 Aarhus C, Denmark. Phone: +45 86 12 41 55.

7185. Holin, Fae. 1996. Start with soy flour, milk: Slowly infiltrate your family's diet. *Soybean Digest.* Dec. p. 16-17. In "Soyfoods Special Report" section.
• ***Summary:*** Contains recipes for: Spicy chicken stir-fry. Cook soybeans to soy nuts. A color photo shows Barb Overlie, farmer and soy spokesperson, who says that "soyfoods are easy to add to her recipes."

7186. Holin, Fae. 1996. Getting sneaky with soy: How to use tofu without a family strike. *Soybean Digest.* Dec. p. 23, 27. In "Soyfoods Special Report" section.
• ***Summary:*** Describes how registered dietitian Anne Patterson slowly introduced tofu to her family, starting with desserts. She and her husband, Jim, own corn and soybean acreage in Illinois. Jim "doesn't really like to see white tofu," so Anne always disguises it–as by putting it in lasagna in place of ricotta cheese, or in other baked or main dishes to reduce the amount of oil or eggs used. She notes that the new lite or low-fat tofus are excellent. Also describes how to use tempeh, soy flour, soy beverage (soy milk) and TSP (TVP). Her family also likes the commercial soy burgers now widely sold in mainstream grocery stores.

Contains recipes for: Strawberry tofu fruit dip. Tofu basil pasta sauce on fettuccine.

7187. Iderabdullah, Bisi. 1996. Imani House International (IHI), Liberia: Update and report. *Plenty Bulletin* (*Summertown, Tennessee*) 12(4):3-4. Winter.
• ***Summary:*** Bisi is now in New York trying to raise funds to continue Imani House programs in Liberia. Renewed hostilities in that country have destroyed much of the organization's infrastructure. However staff and volunteers have reactivated eight programs, including the Soybean Multiplication and Utilization Program–Duazon Village, Jahtondo Town, with outreach and extension to farming groups.

"The Soybean Project which is the heart of our Health, Nutrition and Agricultural Improvement Program continues on a limited basis due to the lack of sufficient tools and farming implements. The World Food Program and the UN/FAO had agreed to bring in enough soybeans for the growth and utilization campaign which was due to kick off this year. After four years of soybean introduction to the Liberian public we felt that the time was ripe for a full fledged program across the entire country. IHI had embarked on a campaign to include 10 NGOs who would receive training from IHI in soy growth and utilization. These NGOs in turn were committed to training farming groups with whom they worked, and participating in spreading the soy program nationwide. It is hoped that IHI will reactivate this part of the soybean program as soon as some level of security returns to Liberia.

"In the meantime we would like to request that Plenty continue collaboration with IHI in Liberia."

"Plenty has been more than a friend to IHI. If the war in Liberia could end we know that Liberia will be absolutely 'soy literate...' (In November we brought Bisi to Plenty's offices on the Farm in Tennessee where we spent 3 days working on plans for Imani House to expand its work in Liberia and extend its soyfoods development program to other parts of Africa.–Ed)"

A photo shows Bisi, in traditional dress and smiling, passing a glass of soymilk as she leads a soyfoods demonstration in Duazon Village, in Liberia.

7188. **Product Name:** Trader Joe's Soy-Um: Dairy-Free Soy Drink [Low Fat Chocolate, Original, or Vanilla].
Manufacturer's Name: J&G Inc. (Distributor). Made in Oregon by Pacific Foods.
Manufacturer's Address: 60 East Elm, Chicago, IL 60611. Phone: 312-787-5157.
Date of Introduction: 1996. December.
Ingredients: Low Fat Chocolate: Filtered water, whole organic soybeans*, brown rice syrup (brown rice, water), natural vanilla flavor with other natural flavors, cocoa powder, tricalcium phosphate, sodium citrate, sea salt, carrageenan, vitamin A palmitate, vitamin D-2. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 32 fluid oz. (1 quart) 946 ml Tetra Brik Aseptic carton. Retails for $1.39 (1996/12, Concord, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per cup (8 fl. oz): Calories 160, calories from fat 25, total fat 3 gm (4% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 260 mg (11%), total carbohydrate 27 gm (9%; dietary fiber 2 gm = 7%), protein 6 gm, vitamin A 10%, vitamin C 0%, calcium 30%, vitamin D 30%, iron 20%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Trader Joe's in Concord, California. 1996. Dec. This product, first introduced in Jan. 1994, was launched under the Trader Joe's brand, with a very similar label, in about Dec. 1996. The formulation has been changed to reduce the fat and add more calcium and vitamins. Reclosable spout." Copyright 1996. Distributed and sold exclusively by Trader Joe's, South Pasadena, California 91031." Soyfoods Center taste test. 1997. March. Delicious. Excellent package design, great price, and great value. Talk with Patricia Smith of Trader Joe's, San Francisco. 1997. May 5. This product was launched in late 1996. It comes in the three flavors shown above.

Product (vanilla) with Label purchased at Trader Joe's in Lafayette, California. 2000. March 24. The front of the vanilla carton (copyright 1999) has been redesigned. A bold banner with a yellow blending to orange background reads: "Contains natural isoflavones." Below that are four checked boxes: "Calcium enriched. No saturated fat. No cholesterol.

Isoflavones–35 mg per [1 cup] serving." The product is now made with certified "whole organic soybeans." The headline on the back panel reads: "Supporting our future through organic agriculture." The retail price is $1.39 for 1 quart.

Product (original) with Label purchased at Trader Joe's in Lafayette, California. The retail prices is now $1.49/quart.

7189. Mergentime, Ken. 1996. Biotech soybeans enter the food supply: Unlabeled genetically engineered, pesticide resistant soybeans and other crops will impact natural products marketplace. *Natural Foods Merchandiser.* Dec. p. 43-44, 48.

• ***Summary:*** The article begins: "The hornet's nest of controversy over genetically modified foodstuffs continues to intensify as new products come into the marketplace. The latest–a new soybean modified to be resistant to the effects of a powerful herbicide–has stirred international clamors of protest, threatened boycotts and much publicity." Yet there isn't much evidence that the product is unsafe.

"Many are up in arms because federal regulations require no labeling to indicate that such products have been altered in any way, a fact consumer advocates say removes a person's right to choose whether or not to consume foodstuffs that have been genetically altered."

Roundup Ready soybeans were developed by Monsanto, the same company that in 1993 introduced the "highly controversial" genetically engineered recombinant bovine growth hormone (rBGH) intended to stimulate milk production in cows. The new soybeans were genetically modified to resist the effects of Monsanto's broad-spectrum herbicide named Roundup.

Roundup's active ingredient is glyphosate, which the EPA has given an "E" rating, indicating "evidence of noncarcinogenicity for humans based on EPA's review of toxicological studies." Yet in a review of glyphosate toxicity published in the *Journal of Pesticide Reform* (vol. 15, no. 3, Fall 1995), the journal's editor, Caroline Cox, states that "Glyphosate-containing products are acutely toxic to animals, including humans." She states that such products have caused genetic damage in human blood cells, reduced sperm counts in male rats, and lengthened estrous cycles and increased fetal loss in female rats. Moreover two serious cases of fraud have occurred in laboratories testing the toxicity of glyphosate.

7190. *Soybean Digest.* 1996. Soyfoods special report: Working the miracle crop into your family's diet (Section of articles). Dec. p. 13-17, 20, 23, 26-27.

• ***Summary:*** On page 4, editor Syl Marking, introduces this special section of articles and cover story by noting: "Cooking with Soy: *Soybean Digest* is plowing new ground again. It's our first-ever special report on cooking with soy (see p. 13). Take some time to not only read it but have the cook in your family try some of the recipes. Its another way to utilize the crop you grow. Let us hear from you–whether you like it or not. If you like it, we'll do it again next December.

On the cover, a full-page color photo shows a mother (Karen Johnson of Minnesota in Christmas colors) with two kids in the kitchen cutting rolled-out gingerbread dough with a cookie cutter. The caption (p. 3) states that she "slipped a little soy flour into the gingerbread dough." At the front of the table are packages of Westsoy Low Fat Soy Drink and Arrowhead Mills Soy Flour, plus an unlabeled 1-pound plastic bag full of yellow soybeans.

This special section begins with a 1-page introduction to six articles which follow; each of these is cited separately. The introduction asks: "But why should healthy, meat- or pasta-and-cheese loving people want to the spoil the flavor of their favorite foods? You shouldn't–and won't–have to. Foods containing soy are tasty as well as healthful.

"Say you want to reduce your fat intake. Or need to increase the amount of fiber your consuming. Studies in Japan, China and the U.S. show that eating as little as one serving of soyfoods a day cuts the risk of some types of cancer by 40-50%.

"You're already eating soy–just look at the product labels of the foods you eat daily... You may want to replace regular milk with some soy milk in the next batch of cookies you make. As you become more adventurous, cut out some of the ricotta or cottage cheese in next week's lasagna and sneak in a little tofu." A color photo shows a little boy and girl about to eat gingerbread cookies fortified with soy flour.

7191. *Soybean Digest.* 1996. More on soyfoods. Dec. p. 20. In "Soyfoods Special Report" section.

• ***Summary:*** "Looking for more soy recipes or health information? Start with your state's soybean association. Most offer free soy information, cookbooks or recipes. Publishing companies offering books on soyfoods include:" The Book Publishing Co. (Summertown, Tennessee), Avery Publishing Group (Garden City Park, New Jersey), Prima Publishing (Rocklin, California).

A sidebar (developed by the Minnesota Soybean Association) titled "Guide to modifying recipes" shows eleven substitutions that "can reduce calories, total fat, saturated fat and cholesterol." For example: For 1 cup milk substitute 1 cup fortified soy milk. For 1 cup fruit yogurt substitute 1 cup soft silken tofu + fruit, blended. For 1 egg substitute 1 tablespoon soy flour + 1 tablespoon water or one 2-inch square of tofu. For 1 cup ricotta cheese substitute 1 cup firm tofu, mashed. You can replace up to ¼ of the flour in baked goods with soy flour.

7192. **Product Name:** Fat Not! Crème It (Soy Powder).
Manufacturer's Name: Dixie USA, Inc. (Marketer-Distributor).
Manufacturer's Address: P.O. Box 55549, Houston, TX

77255. Phone: 1-800-347-3494.
Date of Introduction: 1996.
Wt/Vol., Packaging, Price: 8 oz package or 2 lb cannister.
How Stored: Shelf stable.
New Product–Documentation: Dixie Diner's Club Official Newsletter and Catalog. 1996. Jan. Vol. 2, issue 1, p. 3. Add water to make soy milk without a blender. Or use like cream in hot chocolate. The 8 oz package (equal to 8½ boxes of tofu) sells for $3.99 plus at least $4.99 postage. The 2-lb canister (equal to 34 boxes of tofu) sells for $12.49 plus at least $4.99 postage. A color photo shows the 2-lb canister. Many recipes using the product are given. The name of the manufacturer is not given.

Talk Robert A. Beeley, chairman of Dixie USA. 1996. July 31. Fat Not! Crème It (Soy Powder) is a tofu powder made by Clofine. Brenda developed a great recipe for using it and now it is one of the company's best sellers.

7193. **Product Name:** Sobe (Soymilk in Pure-Pak Carton).
Manufacturer's Name: Fortune Food Manufacturing Pte. Ltd. (Affiliate of Provisions Supplies Corp.).
Manufacturer's Address: 348 Jalan Boon Lay, Singapore 2261, Singapore. Phone: +65 266 4188.
Date of Introduction: 1996.
How Stored: Refrigerated.
New Product–Documentation: Letter (fax) from Wataru Takai in Singapore. 1996. April 22. In Singapore, Fortune Foods Manufacturing Ltd. started making "Sobe" soymilk in a Pure-Pak carton. Sales are now booming. Company listing in '95-96 Soya Bluebook Plus. p. 116. But soymilk is not mentioned. Natalie Yap, factory manager.

7194. Fukutake, M.; Takahashi, M.; Ishida, K.; Kawamura, H.; Sugimura, T.; Wakabayashi, K. 1996. Quantification of genistein and genistin in soybeans and soybean products. *Food and Chemical Toxicology* 34(5):457-461.
• ***Summary:*** Discusses: Soybeans, soy nuts, soy powder, soymilk, tofu, miso, natto, soy sauce, genistein. Address: 1-3,5-6. Biochemistry Div., National Cancer Center Research Inst., 1-1 Tsukiji, 5-chome, Chuo-ku, Tokyo 104; 1,4. Tsumura & Co., 3586 Yoshiwara, Ami-cho, Inashiki-gun, Ibaraki 300-11. All: Japan.

7195. **Product Name:** [Soy Wonder Soymilk Machine].
Foreign Name: Soywonder Sojamilch Maschine.
Manufacturer's Name: InnoMach, Inc.
Manufacturer's Address: Germany.
Date of Introduction: 1996.
New Product–Documentation: Color leaflet (photocopy, front and back, 28 cm) sent by Patricia Smith from Natural Products Expo West. 2003. East. On the front panel: "Make it fresh with Soy Wonder Soymilk Machine and get maximum nutrients for just pennies a quart with no additives or preservatives. New improved 2002 Model 720. Easy! Inexpensive! Versatile (The 2002 model Soy Wonder makes great-tasting Rice Milk, Almond Milk, Coconut Milk, Sesame Milk and Tofu too! Its instruction booklet contains great recipes for these and other okara-based baked treats... Buy direct from the manufacturer and save. InnoMach, Inc.)."

On the rear: "To get the most pure nutrients from soy... Soy is rich! Soy is healthy! Soy is versatile!"

According the company website, www.soywonder.de (July 2013). "You can easily make 2 quarts of fresh soymilk in 23 minutes with the Soy Wonder soymilk machine... To make 2 quarts you will only need 150 grams (1 cup) of dry soybeans; therefore two quarts of soymilk will cost US$0.50. This is an amazing savings compared to the packaged milk that you buy at the store."

The Soywonder has been sold worldwide since 1996. Two year guarantee, no cost, no waiting. The dealer in the USA is Tobe Products, USA, Johnston, Rhode Island.

Letter from Bernhard Feix in reply to inquiry. 2013. July 16. "The first Soy Wonders were sold in the US probably early 1997 through Miracle Exclusives; we were first in the market to the best of my knowledge our company. Tobe Products situated in Bavaria, Germany, has been doing business in Asia since the early 1970s. My father, owner of Tobe, was first introduced to a soymilk maker in Hongkong in 1996; bringing it to a standard accepted in the USA and Europe took a year. A lot of work was involved; we got advice from Soyatech in Maine and Iowa university. Tobe Products Hongkong in cooperation with LTL company–also Hongkong–was responsible for production of the machine in mainland China. Tobe Hong Kong was at Salisbury Road, Kowloon, Hong Kong at that time."

7196. Kamuaya Mutoke, -. 1996. Etude technico-economique d'une usine de production de paracaséine à partir de lait de soja à Lubumbashi (Zaire) [Techno-economic study of a factory for the production of vegetable casein from soymilk at Lubumbashi (Zaire)]. *Memoire de fin d'études Faculté Polytechnique, UNILU* 1995-1996. [Fre]*

7197. **Product Name:** Soymilk Beverage.
Manufacturer's Name: Unicurd Food Company (Pte) Ltd.
Manufacturer's Address: Singapore. Phone: +65 759-2855.
Date of Introduction: 1996.
New Product–Documentation: Soya Bluebook Plus. 1997. p. 163. This company makes soymilk beverages. Contact: Francis N.K. Goh, Managing Director.

7198. Chen, J.D.; Xu, Hong. 1996. Historical development of Chinese dietary patterns and nutrition from the ancient to the modern society. *World Review of Nutrition and Dietetics* 79:133-53. [23 ref]
• ***Summary:*** During the Han and Tang dynasties (206 BC

to 907 AD) people in China started to pay attention to vegetarian food and to use vegetable oil. "Bean products, such as bean curd, were already used in recipes" (p. 136).

A famous saying has been handed down from ancient times: "Breakfast should be eaten well, lunch must be in one's fill, and food for dinner should be little."

Generally people eat porridge or millet gruel as the main food for breakfast; with it they eat soybean milk, salted vegetables, eggs (boiled or fried), and deep-fried twisted dough sticks. For lunch and dinner, salt or soy sauce were often added during cooking.

The soybean is mentioned on page 148. Address: 1. Research Div. of Sports Nutrition and Biochemistry, Inst. of Sports Medicine, Beijing Medical Univ.; 2. Dep. of Sports Medicine, Beijing Univ. of Physical Education. Both: Beijing, China.

7199. El-Hai, Jack. 1996. Celebrating tradition, building the future: Seventy-five years of Land O'Lakes. Minneapolis, Minnesota: Land O'Lakes, Inc. 132 p. Illust. No index. 26 x 26 cm.

• ***Summary:*** Land O'Lakes is a cooperative, created by cooperative creameries in 1921 in order to solve 3 specific problems concerning butter: (1) its high transport costs, especially to New York City; (2), its erratic, often poor quality when made from soured milk; and (3) the lack of a marketing plan and vision for the future.

The cooperative first became widely known as a pioneer in making America's best sweet-cream butter, and for its colorful package featuring a kneeling Indian maiden holding a carton of the organization's butter. The cooperative was based in Minnesota, "the land of 10,000 lakes."

This is a beautiful book, artistically designed, filled with superb old photos and illustrations (many in color), printed on glossy paper with a hardcover binding. The chronology of milestones is well done and very helpful. By the 1890s, dairying had become firmly established in the upper Midwest.

1891–Minnesota governor John Pillsbury attracts Theophilus Levi Haecker, an expert in the science of buttermaking, to the Univ. of Minnesota. Haecker tours Minnesota's dairy plants and encourages the formation of co-op creameries. 1896–The Minnesota Dairy and Food Department reports that the unsanitary methods used to produce butter often result in a product that "smells bad, tastes worse and does not keep at all." 1899–Less than a decade after his arrival in Minnesota, Haecker's efforts paid off. The number of co-op creameries in the state skyrocketed from two in 1891 to 438 by the end of the decade.

1901–The invention of the hand-operated cream separator enables dairy farmers to more easily skim the butterfat from their own milk, but also attracts large-scale butter makers (or "centralizers") to the Midwest. 1920–John Brandt, a dairy farmer from Litchfield, Minnesota, is elected president of the Meeker County Creamery Association, a federation of co-op creameries interested in reducing shipping costs and improving the quality of their butter. 1921 June 7–"Representatives of 320 of the state's co-op creameries meet in St. Paul to form the Minnesota Cooperative Creameries Association. John Brandt is elected to the board of directors. 1924 March–The association–in need of a catchy trade name to use in marketing the members' butter–holds a contest to name the brand. The judges select 'Land O'Lakes' from among nearly 100,000 entries... 1926–Positive response to the Land O'Lakes butter name prompts the membership to change the name of the Minnesota Cooperative Creameries Association to Land O'Lakes Creameries, Inc."

"1929–Land O'Lakes opens a feed department to sell feeds for cattle, hogs, and poultry. Using higher-grade feeds, farmers are able to produce higher-quality milk, eggs and poultry that bear the Land O'Lakes label."

In the mid-1930s Land O'Lakes is a pioneer in introducing sophisticated, automated equipment for packing, labeling, and boxing sticks of butter in its "butter print room."

1951–Land O'Lakes introduces Calf Milk Replacer, a revolutionary feed that substitutes for (and is better than) the increasingly valuable skim milk that dairy farmers had formerly fed to their calves. A scientific formula (non-soy), it was developed by Dr. Frank Crane of the Land O'Lakes Feed Department.

"1969–This is a peak year acquisitions and mergers, with 37 organizations becoming part of the Land O'Lakes family.

"1970–In a step that begins a tremendous growth in Ag Services, Land O'Lakes merges with Farmers Regional Cooperative (Felco) of Fort Dodge, Iowa."

"1981–Land O'Lakes moves to a new corporate headquarters building in Arden Hills, Minnesota."

"1982–Land O'Lakes merges with Midland Cooperatives, a Minneapolis-based ag supply co-op that markets feed, seed, agronomy products and petroleum."

"1987–An innovative joint venture with Cenex results in shared ownership of the Cenex / Land O'Lakes Agronomy Co. and a marketing effort that unifies the Feed and Seed operations owned by Land O'Lakes with the petroleum operations owned by Cenex."

"1996–The 75th Annual Meeting celebrates Land O'Lakes best year ever, with earnings in each core business exceeding plan." Address: Minneapolis, Minnesota.

7200. Gelles, Carol. 1996. 1,000 vegetarian recipes. New York, NY: MacMillan. [vii] + 598 p. Index. 24 cm.

• ***Summary:*** In the Introduction, a section titled "Soy products" (p. 17-18) includes brief definitions of soybeans, bean curd (tofu), miso, seitan, soy flour, soy milk, soy nuts, soy sauce and tamari, soy sprouts, tempeh, and textured

vegetable protein (TVP).

In the chapter on "Entrees" is a section (p. 217-27) is titled: "Tofu, tempeh, seitan, and textured vegetable protein (TVP)."

The index contains 20 entries for tofu, 5 each for tempeh and soybeans, 4 for textured vegetable protein (TVP), 3 for seitan, and 1 for miso.

A table (p. 14) gives the time to cook various types of beans (that have been soaked overnight, the soak water discarded, and fresh water added) in a pot or saucepan (not in a pressure cooker); the adzuki bean takes the shortest time (45 to 90 minutes) while the soybean takes by far the longest time (2½ to 3½ hours [which is not nearly long enough]). Herein lies one key reason that Asians strongly prefer soyfoods to whole soybeans. Address: Author, food stylist and recipe tester, New York City.

7201. Gonzalez-Pando, Miguel. ed. 1996. Greater Miami: The spirit of Cuban enterprise. Fort Lauderdale, Florida: Copperfield Publications, Inc. See p. 168. [Eng]

• ***Summary:*** On page 168 is the story of Fully, Inc. run by Manny Wong, whose biography is also given. This company was started in Cuba in 1947 by Cesar Wong; that's when he and his family began making sprouts in Havana's produce market. In 1960 they came to Miami and soon established themselves in the restaurant field. His son, Manny Wong, attended college in New York and majored in business. After graduation he married Silvia Cok, also a Cuban-Chinese whose father had been a Chinese businessman in Havana, in the grocery business. "Upon arriving in New York in 1960, Silvia's father joined his relatives in a tofu (bean curd) [manufacturing] business which had been established back in 1933."

In 1978 Manny and his bride moved back to Miami, where he launched Fully, Inc. with his brother-in-law Dennis Marr. In Chinese "Fully" is composed of the two characters *ful* meaning "rich" and *ly* [*lei*] meaning "profit." They started as an Oriental food wholesale company, handling most of the items used in Chinese cooking.

In 1981, with demand for sprouts growing dramatically, Manny and Dennis founded Fully Bean Sprouts Farm Company. They grow mainly [mung] beans sprouts and soy sprouts.

During the 1980s, as "demand for more healthful foods grew, Fully opened another subsidiary, Fon-On for Florida. This is a spin-off of Manny's father-in-law's tofu business in New York. Fon-On of Florida manufactures 'soy products'–mainly soy milk and currently five kinds of tofu: Oriental, Soft, Firm, Silk, and Pudding." Photos show: Manny Wong with his wife and three children in late 1994. Various packaged soy products made by Fully including soy sprouts, soy milk, pudding, tofu. Address: Florida.

7202. Hasse, Geraldo; Bueno, Fernando. 1996. O Brasil da Soja: Abrindo fronteiras, semeando cidades [The Brazil of soy: Opening frontiers, sowing cities]. Porto Alegre, Brazil: L&PM Editores S.A. 256 p. Illust. (some color). 32 x 28 cm. [Por; Eng]

• ***Summary:*** This spectacular and original book contains the best history of the soybean in Brazil seen to date. It was published to celebrate the 25th anniversary of Ceval Alimentos S.A. (best known as "Ceval"), a soybean crushing and processing company in Brazil. Founded on 4 April 1972 as *Cerais do Vale Ltda.* ("Valley Cereals") by the Hering Co. to benefit from tax incentives offered by the government of Santa Catarina, it began regular operations in Oct. 1972–but quickly transcended its origin and original name. In 1996 the company had nine soybean crushing plants throughout Brazil; three of these also contained soy oil refining capabilities.

The first half of this book is written in Portuguese, the second half in English. Issued in a case, it contains almost 100 pages of full-color photos plus 24 historical black-and-white photos (from the early 1900s to the present, each with a detailed caption) and excellent illustrations. Hasse, an expert in rural matters, conducted more than 150 interviews in the process of writing this book.

Contents: A Brazilian saga (how the book was created), by the publishers. The soy revolution (introduction), by Ivo Hering and Vilmar Schürmann of Ceval Alimentos. Before the fields, the school: Introduction, in the baggage of the Japanese, the reflection of North America, whole grain bread, the role of World War II, local industry. The foreign thrust (p. 202): Introduction, Communist help, the pool of exporters, "Zé Sojinha" (nickname of agronomist José Gomes da Silva, who continues the research of pioneer Neme Abdo Neme at the IAC), frost in coffee plantations (1955 in Parana), the weight of industry (Samrig in 1953, Bunge & Born, Antonio Mafuz, first Samrig crushing plant in 1956 at Porto Alegre, Institute for Soy Development of Rio Grande do Sul once had 42 members), planting news (Samrig, Nestle), butter vs. margarine (Primor soy oil and margarine), table showing soybean production in Brazil and four states, every five years from 1950 to 1970. The wheat lever: Introduction, a civic mission, the import addiction, the circle of mold, the technological package, paper wheat, the powerful CTRIN, swapping roles. The cooperative branch (p. 212): Introduction, the original sin (*Fecotrigo,* Oct. 1958), in the shadow of Banco do Brasil, victims of a giant, grass roots education, a summit decision, big shot, the charter flight to Chicago, the crisis of 1982, loss of credibility, the lessons of soy. The Chicago fever: Introduction, "It was impossible to compare," "Exceptional," kings and beggars (the price fever of 1973), the export model, state incentive, the theory of plenty. The conquest of the West (p. 222): Introduction, expanding frontiers, under the weight of the ax, from the other bank of the river, family subsistence, chronological duality, the march to the west, sowing cities,

family memories, once upon a time, the transportation bottle-neck (building the Madeira river waterway). The agribusiness axis: Introduction, the role of the government, plenty of credit, the oil industry, the "poking" method, the boom of Santa Catarina, the dynamism of the Central-West region, the new paradigm, the revolution in transportation, the effect of the strike, grain trucks, machinery industry, the progressive Carazinho, Lodgemann–the land surveyor, Streich–the carpenter. A tropical adventure (p. 236): Introduction, a multinational legion, the metamorphosis, technical leadership, Santa Rosa, in the Mogiana region, the Campinas-Pelotas pioneers, Santa Maria, trailing behind producers, the queen of the cerrados, technical polarization, no frontiers, stories from the hinterland, Londrina–technical capital, the Nobel Prize, the retirement of the plow, farewell to one-crop farming, poor man's food (ITAL). A symbol of health: Introduction, the paradox of Esteio, forced diet, for the pigs and the poor, food and medicine, nutritious soft drink (soymilk, *leite de soja*), a secondary ingredient, flavor barrier (Ital {a public organization}, Vital soymilk {1977}, Sojal soymilk, Gestal soymilk, Roberto Moretti from 1977), the Mechanical Cow (Moretti's "cow" was awarded the "greatest Brazilian invention" prize by the governor of Sao Paulo; this started the cow on an outstanding public career), drops in the ocean, a standing taboo, in search of health, Oriental wisdom, anti-nutritional factors, therapeutic powers. The lessons of a revolution (p. 255): Conclusion. Chronology of the history of soy in Brazil.

On the two pages after the table of contents are full-page color maps which show: (1) Satellite photo of the Planalto Central (High Central Plains) region of Brazil. The city of Brasilia is at the center, and concentrated on the right are areas of soy plantations. The small circles between the plantations are "pivot" planted areas. (2) Map of Brazil showing the historical growth of the soybean crop, places of historical interest, and important cities and ports. There are five special symbols: (a) A brown soybean pod = Introduction of soybean cultivation, e.g., 1882 Bahia, 1980 Barreiras, 1989 Balsas. (b) A blue ship by an elevator = Ports that are outlets for soybean production. (c) Three silver elevators = Centers of cooperative wheat growing. (d) A red retort and a white book = Centers of education, training, and research. (e) A yellow factory with smokestack = Crushing or processing plants. Generally, the soybean has expanded into the northern and northwest parts of Brazil. The captions explain: 1882–Bahia–First cultivation of soybeans in Brazil. 1908–Japanese immigrants import soybeans to Brazil in their personal baggage. 1920–Santa Rosa, Rio Grande do Sul–Soybean seeds distributed to European colonists. They become the first regular cultivators of soy in the southern Brazil. 1923–Sao Simao, Sao Paulo–Henrique Lobbe starts to test American soybean varieties. 1938–Porto Alegre–The first exportation of soybeans from Brazil to Germany. 1958–Esteio–Brazil's first soy oil plant, started by Samrig. 1971–Rio Grande–Grain terminal starts operating. 1972–Gaspar, Santa Catararina–Ceval Alimentos begins operations. Dourados–Bridge of entry of soybeans into Mato Grosso do Sul. Territory of Brasiguaios–Planters of soya and wheat. Port cities (from south to north): Rio Grande, Sao Francisco, Paranagua, Santos, Vitoria, Ilheus, Ponta de Madeira: They play an important role in the exports of seeds and industrialized products.

Talk with Ted Hymowitz, Prof. of Plant Genetics, Univ. of Illinois. 2000. July 3. From 1964 through 1966, Dr. Hymowitz was employed as an agronomist by the IRI Research Institute, Campinas, Brazil–working with soybeans–as part of the Alliance for Progress. He was also a technical advisor to the Brazilian National Soybean Commission. When he read this book, he was struck by the fact that it did not mention the important U.S. role in the development of the soybean industry in Brazil in the 1960s. Address: 1. Journalist; 2. Photographer. Both: Brazil.

7203. Main, Jan. 1996. The lactose-free family cookbook. Canada: Macmillan Canada. *
• ***Summary:*** This book combines information on lactose intolerance, dietary calcium, and a collection of recipes, including many dishes based on soyfoods. Address: Professional home economist, Scarborough, Ontario, Canada.

7204. Melina, Vesanto; Forest, Joseph. 1996. Cooking vegetarian. Toronto, Canada: Macmillan Canada. xi+ 212 p. + 8 unnumbered pages of color plates. Illust (some color). Index. 25 cm. [9 ref]
• ***Summary:*** The index contains 14 entries for tofu, 2 each for tempeh, for textured vegetable protein (TVP), and for miso soup, and 1 each for soy milk and for teriyaki sauce.

On page 3 is a "Vegetarian food guide" in the form of a series of four arcs. The largest, outside arc is for grain products, the next largest is for vegetables & fruits, the third largest is milk and alternatives which includes tofu, dairy products (milk, yogurt, and cheese), and beverages [such as soy milk] fortified with 150 mg of calcium per serving, the fourth and smallest arc is beans & alternatives, which includes legumes, tofu, meat substitutes, tempeh, nuts and seeds, and soy milk.

On the rear cover is a brief biography and portrait photo of each author. This book generally advocates a plant-based (vegan) diet but does include milk, milk products and eggs as alternatives. Melina Vesanto, whose "way of eating has now become totally plant-based (vegan)" was born in 1942. Address: 1. Dietitian, university and college teacher, and government consultant; 2. Chef and food consultant based in Vancouver.

7205. Mendelson, Anne. 1996. Stand facing the stove: The story of the women who gave America *The Joy of Cooking*.

New York, NY: Henry Holt and Co., Inc. xviii + 474 p. Illust. Index. 24 cm. [86 + 774 endnotes]

• ***Summary:*** An excellent biography of Irma Starkloff Rombauer and her daughter Marion Rombauer Becker and a richly detailed piece of American social history. Irma Louise Starkloff was born on 30 Oct. 1877 in St. Louis, Missouri, the daughter of Max von Starkloff (M.D.) and Emma Kuhlmann. She grew up in comfort at Carondelet (a part of St. Louis) in a family of strong German ancestry and liberal political convictions. Irma lived almost all her life in St. Louis. In 1930, during the Great Depression, Irma Rombauer's husband committed suicide. To help pay the bills, she decided to write a cookbook. *The Joy of Cooking: A Compilation of Reliable Recipes with a Casual Culinary Chat* was initially self-published in 1931 as a vanity book (the author pays the publisher, not vice versa); Irma was age 54, a complete amateur with no known qualifications for writing or publishing a cookbook.

But *Joy* went on to sell 14 million copies over 60 years, and to become the most influential American cook book of all time. While it has no claim to be the best-selling cookbook in American history, it is probably the best-selling trade cookbook–one published by an ordinary publisher and sold through retail bookstores. But in terms of total sales it falls well behind *The Better Homes and Gardens Cookbook,* which gets wide distribution through its parent magazine, and *The Betty Crocker Cookbook,* which benefits from the research and marketing prowess of General Mills. The latter two are, of course, the work of committees.

The crucial factor in *Joy's* unexpected success was Rombauer's lively voice as an unpretentious beginner. She treated her readers as close friends, as "an amateur addressing amateurs." America's home cooks were desperate to learn the basics in simple English they could understand. Yet they also enjoyed Rombauer's firm opinions and strong personality.

The information on *Joy's* copyright page is of little help in understanding the major stages in the book's history. Seven editions mark genuine stages in the book's development: The original privately published (1931). The first Bobbs-Merrill edition (1936). The popular wartime edition (1943). The first Rombauer-Becker edition (1951). The unauthorized edition (1962). The first authorized prepared by Marion Becker (1963–sometimes mistakenly called the 1964 ed.). And Marion's last revision (1975). Note: A supposed 1942 edition is a pure phantom.

The mother and daughter who wrote this superb book were very different people, and each put her own stamp on the book. Irma, the mother who began the work, "loved stardom as much as Marion Rombauer Becker, her eventual collaborator and successor, loved privacy" (p. 1). Marion developed a deep and abiding interest in natural foods and organic gardening, in compost and manure. She also grew up during the era when scientists discovered that micronutrients or trace elements (such as all vitamins and many new minerals) played an essential role in human health. This led many (including Marion, starting in 1939 or 1940) to criticize refined and overly processed foods–such as white flour, white rice, etc.–and to advocate a return to natural, whole foods, including raw foods such as fresh fruits and some fresh vegetables. This awareness began during the 1920s and 1930s, when canned fruits, vegetables, and juices were seen as a triumph of modern food science. It was most widespread in California, "a hotbed of health-food cults." On several trips to the West Coast during the 1930s, Irma visited California, where she saw juice bars and restaurants that were replacing sugar with honey and vinegar (p. 260-61).

By 1948, when Marion agreed to work seriously with her mother on *Joy,* it was understood that the "culinary priorities laid down in earlier editions would be drastically arranged. *Let's Cook it Right* [by Adelle Davis] was a concrete influence."

Marion, with her zeal and love of learning, became deeply interested in nutrition, health, and the relationship between diet and health.

The first Rombauer-Becker edition, which appeared in 1951, gave much more attention to grains, cereals, and flours, while lamenting the ills of "modern processing." Brown rice was preferred to white as "richer in taste and a far better buy nutritionally." Marion also "contributed one of the earliest recipes for bean curd ("soybean cheese") in any American cookbook" (on p. 192). The 1951 edition introduced mainstream readers to ideas generally "seen as the sole territory of health cranks" (p. 268).

Irma died in 1962. Marion suffered increasingly from allergies and sometimes had difficulty breathing. Knowing that that the 1975 edition of *Joy* would be her last, she approached it with special care. It was a heady time, for parts of radical / counterculture ideas about natural foods and health had been adopted into mainstream American culture. Young visionaries, who rejected the offerings of supermarkets, were starting natural food stores nationwide. Ralph Nader (one of Marion's heroes) was denouncing harmful food additives and corporate junk foods. By 1975 Marion realized that "beliefs like hers on the relationship between food and health, land use, and good citizenship looked like very sensible ideas to a large spectrum of the American public. She was emboldened to direct *Joy* more emphatically to issues she had first noticed decades before" (p. 395). She commented on "chickens fed in batteries, pigs an cattle concentrated in feed lots," the fact that "many of our lakes and estuaries have become nearly incapable of supporting life," the "galaxy of pollutants such as viruses, nitrates, heavy metals, pesticides, and asbestos and other carcinogens" in our drinking water.

The new 1975 edition became an immediate best-seller, with 236,000 copies sold in 1975 and 334,000 in 1976. She was eager to make the text as accurate as possible. If

someone pointed out an error, "she was not insulted but appreciative. When the soybean-product experts Akiko Aoyagi and William Shurtleff wrote to explain that the directions for homemade soy milk and bean curd were seriously muddled, Marion, grateful for this sign of the seriousness with which her work was taken, conscientiously sent in the necessary changes in time for the printing of August 1976." There are 8 glossy pages of photos, mostly of the two authors, their spouses and children. Address: Freelance journalist, New Jersey.

7206. South Dakota Soybean Research & Promotion Council. 1996. Soyfoods: A healthy profile. Sioux Falls, South Dakota. 33 p. Illust. No index. 23 cm. [1 ref]
• ***Summary:*** This is an original and colorful soyfoods cookbook, with many full-page color photos of prepared recipes. Near the bottom of the front cover: "As technology advances, science is discovering that unique compounds found in soyfoods help prevent or even treat some of society's most serious diseases." Contents: Health benefits of soyfoods: Heart disease, cancer prevention, osteoporosis, diabetes, kidney health, menopause. Incorporating soy into your diet. Nutritional benefits of soyfoods: Phytochemicals, phytoestrogens, protein, fiber. Guide to modifying recipes: A one-to-one substitution of soyfoods for animal products and white flour. The diabetic exchange list. Recipes (p. 4-31). Introducing soy into your diet: Buying and storing tofu, types of tofu, tips on using tofu, textured soy protein (TSP), isolated soy protein, soy flour, soy milk, tempeh.

Talk with Betty Hansen at South Dakota Soybean Board. 2000. May 15. This cookbook (which is undated) was first published in 1996. It was later reprinted by the Nebraska Soybean Board, with their Nebraska logo on the back. Address: 3801 S. Western Ave., Suite #105, Sioux Falls, South Dakota 57105. Phone: (605) 330-9942.

7207. Soya World Inc. 1996. So Good–Dairy free beverage: 5 easy to make, nutritious recipes. Product information guide (Leaflet). Vancouver, British Columbia, Canada. 6 panels each side. Each panel: 15 x 10 cm.
• ***Summary:*** This attractive, full-color, glossy leaflet is folded into 12 panels. On the front panel is a photo of a carton of "So Good: Dairy-Free Beverage." It is "Very high in calcium. Enriched with vitamins and minerals. Soy protein rich. Lactose free. Cholesterol free." Contents: The story of So Good. Five recipes and color photos. The So Good family of soy beverages. Tips for using So Good. The ingredients in So Good: Filtered water, soy protein, vegetable oil, maltodextrin, rice extract, fructose, cane sugar, mineral salts (calcium phosphate, potassium phosphate), food acid (potassium citrate), flavours.

Why choose so good? (Nine reasons, incl. contains up to 9.3 gm of protein per 250 ml serving). Nutritional information for each of the five flavors: Original, Fat Free, Absolutely Vanilla, Utterly Chocolate, and Seriously Strawberry.

Note: These products are made by Soya World Inc. under license from the Sanitarium Health Food Company, New South Wales, Australia. Address: P.O. Box 3018, Vancouver, BC V6B 3X5, Canada. Phone: (604) 420-3240.

7208. Spahn, Mark; Hadamitzky, Wolfgang; Fujie-Winter, Kimiko. 1996. Kanji jukugo jiten The Kanji dictionary. Rutland, Vermont; Tokyo, Japan: Charles E. Tuttle. xviii + 1748 p. See p. 666, 667, 787, 1391. 24 cm. [Eng; Jap]
• ***Summary:*** On page 666, under the character *tô* or *zu,* meaning bean or pea or (as prefix) miniature, are the following (with diacritics) related to soybeans: tônyû–soybean milk.

"mame(no)ko–soybean flour [*kinako* or "roasted soy flour"].

"tôfu–tofu, bean curd.

"mamema(ki)–bean-scattering ceremony [using soybeans].

"daizu–soybean.

"kôridôfu–frozen tofu.

"yakkodôfu–tofu cut into cubes.

"edamame–green soybeans.

"i(ri)mame–parched / popped beans.

"nattô–fermented soybeans.

"kuromame–black soybean.

"yudôfu–boiled tofu.

"ya(ki)dôfu–broiled tofu.

"nimame–boiled beans [usually soybeans].

"i(ri)dôfu–bean curd boiled dry and seasoned.

"shiomame–salted beans.

"mitsumame–boiled beans with molasses.

kôyadôfu–frozen tofu.

Also: "amanattô–adzuki-bean candy.

"nankinmame–peanuts.

On page 667, under the character *mi* or *aji,* meaning taste or flavor, are miso–miso (fermented soybean paste).

miso shiru–miso soup.

On page 787, under the character *kô, ô, ki* or *ko,* meaning yellow is: ki(na)ko–soybean flour.

On page 1391, under the character for *fun, kona,* or *ko* meaning flour or powder are: "mame(no)ko–soybean flour.

"ki(na)ko–soybean flour.

On the cover: "Over 47,000 Japanese character compounds." "Find any compound using any of its component characters."

A brief biography of the three authors, with photos of Spahn and Hadamitzky, appears on [unnumbered] p. 1750.

7209. Van Dolson, Bobbie Jane; Van Dolson, Leo R. eds. 1996. Seventh-day Adventist encyclopedia, 2nd rev. ed. 2 vols.: Harry Willis Miller (1879-1977). Hagerstown, Maryland: Review and Herald Publishing Assoc. See vol. 2,

p. 71-72.
• ***Summary:*** A good, detailed biography of Dr. Miller. "In later years Harry Miller worked seriously with the soybean. He made products that were tasty and practical. These included "vegeburgers," "wieners," and soy cheese [tofu]. His crowning accomplishment, however, was a tasty, affordable, nutritious soy milk, which literally saved the lives of many Chinese babies. Before his death Miller saw his grain-and-soybean-based foods adopted as alternatives to meat all over the world.

"In his 90s Harry Miller continued as a consultant to the World Health Organization and the Food and Agriculture Organization of the United Nations, and still made frequent trips to eastern Asia." Address: Washington, DC.

7210. Winter, Ruth. 1996. Super soy: The miracle bean. New York, NY: Crown Publishers Inc. 192 p. Index. 21 cm. [106 ref]
• ***Summary:*** On the cover is written: "This wonder bean can help fight cholesterol, high blood pressure, blood sugar, cancer, ease menstrual and menopause symptoms, and keep a colon healthy. Includes a cookbook of 50 soy recipes from New York's Natural Gourmet Cookery School."

Contents: Introduction: The Cinderella bean. 1. How soy protects the heart and blood vessels: Full of fiber, the Eskimo secret omega-3 fatty acids, lecithin and vitamin E, preventing strokes, magnificent magnesium, soy and the Mediterranean diet, foam to wash out cholesterol?, cholesterol competitors–phytosterols, is it thyroid hormone [when thyroxine levels rise, cholesterol falls]?, amino acid at work?, could it be the B's?, is it the flavonoids?, the bean and obesity, high blood pressure and the bean, could it be just avoiding meat and dairy products?, summing it up. 2. How soy protects against cancer: Protease inhibitors, trypsin inhibitors, plant estrogens, polyphenols, terpenes–antioxidants, fighting phytates, maybe it's due to low-count amino acid, saponins, inositol–the cancer-fighting phytic acid, which soy products have the most anticancer potential?, potential adverse effects of soybeans. 3. How soy helps ease digestive problems: Promoting regularity, calcium and soybeans. 4. How soy is beneficial in diabetic diets. 5. How soy is proving beneficial to women: The soy and the cycle, other hormonal benefits, magnesium, PMS and pregnancy, contraceptive or fertility inducer?, so "B" it, the bones need it, magnesium and bones, boron and bones, it could be the phytates. 6. Soy and men: Soy and sex, protein power. 7. Soy products and their nutritional value: Soybeans, edamame, soybean sprouts, tofu (also known as bean curd and dou fu-tofu), tempeh, soy milk, yuba, soy cheese, okara, soy yogurt, soy sauce, soy oil, soybean lecithin, soy nuts, miso, natto, soy flour, soy powder, soy protein isolates, concentrates and grits, texturized soy protein, convenience of soy foods. 8. Easy ways to add soy to your diet: Some other easy ways to add soy to your diet, sensible soybean use. 9. Recipes: Appetizers, soups, salads, main dishes/entrées, side dishes/breakfast, sauces/dips, desserts. Glossary. Where to get more information. References. Address: M.S., Health and science writer, Short Hills, New Jersey.

7211. Crane, Milton G. 1996? Does "every body" need milk? Weimar, California. 8 p. Undated. Unpublished manuscript. [23 ref]
• ***Summary:*** An excellent introduction to the subject. Introduction: Breast milk is the perfect food for baby mammals. However let us try "to formulate an intelligent conclusion about the wisdom of the use of milk from other mammals for human food."

The hazards of milk protein. Hazards from lactase deficiency. Hazards from infections (especially cancer viruses). Hazards from the type of lipids present ("Human milk contains 47% of calories from fat and 6% of calories from protein. The corresponding values for whole cow's milk are 48% and 22%"). Hazard from homogenization. What to guard in the diet when giving up milk (calcium, vitamin D, vitamin B-12, etc.). Address: M.D., Preventive Endocrinologist, Weimar Inst., Box 486, Weimar, California 95736. Phone: 916-637-4111.

7212. Morales, Isabel. 1997. Functionará en Mexico empresa mixta con Cuba: Se trata de BIOTEK, elaborada de productos derivados de la soya [A joint venture with Cuba will operate in Mexico: Biotek will make soyfood products]. *Gramma* (*Cuba*). Jan. 3. p. 2. [Spa]
• ***Summary:*** Biotek, a joint venture with some Cuban capital, began operating in Cuba. It is dedicated to the production of soymilk and its products, using modern technology developed at the *Instituto de Investigaciones de la Industria Alimenticia* (IIIA) in Cuba. Antonio González, director of the Dairy Association (*Unión Láctea*) said that the deal was negotiated, using the good offices of CORALSA S.A., the deal-making arm of the Ministry of Food Industry. The plant has a capacity of 4,000 liters/day of soymilk. It is the first such plant exported by Cuba. From soymilk, many nutritious and tasty products can be made, including nondairy ice cream, yogurt, and cheeses.

7213. Pearce, Jean. 1997. Getting things done: Starting out on soy. *Japan Times* (*Tokyo*). Jan. 12. p. 17. Wednesday. [Eng]
• ***Summary:*** "Last week's columns reported on recent research pointing to the dietary benefits of soybean products in relieving complaints associated with menopause." Discusses isoflavones and the isoflavone content (in micrograms per gram) of kinako (roasted soy flour, 2,589), roasted soybeans (1,625), edamame (1,354), natto (1,273), regular tofu (509), fried tofu (695), soy milk (357), miso (373), shoyu (16).

Gives several tofu recipes and recommends *The Book of*

Tofu by Shurtleff & Aoyagi.

"And finally, kudos to Japan Airlines for creating natto in a palatable form, freeze-dried and flavored... It has been tremendously successful. In two years, total sales amounted to ¥56 million. Just think of all those isoflavones." A photo shows Jean Pearce.

Note: This article may have been published on 12 Feb. 1997 rather than 12 Jan. 1997. Address: Columnist.

7214. Roller, Ron. 1997. New developments with rice beverages (Interview). *SoyaScan Notes.* Jan. 16. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ron does not know how Pacific Foods of Oregon, which began making rice beverage in Jan. 1995, got around the Imagine Foods' patent. He does not know if Pacific Foods private labels rice beverage for anyone, and he does not know where Westbrae, or where American Natural Snacks, gets their rice beverage products. A Minnesota company [Note: IFP = Innovative Food Processors, Inc. of Faribault, Minnesota (Phone 1-800-997-4437)] was making Rice Trend, which is rice syrup solids; it's a line of different DEs of rice syrups. Ron talked with them and he thought they were supplying Westbrae. They spent a lot of money battling Imagine Foods on the patent issue.

It was not Jim Morano of Innovative Sweeteners. Jim also works for Krompton Knowles (a big company), probably for their Sweetener Division. As far as Ron knows, Jim hasn't made any rice beverage but he, too, was battling Imagine Foods on patent issues. Jim's wife runs Suzanne's Specialties, which makes koji-based rice syrup.

Ron's feeling is that rice beverage as a category has continued to grow, but its percentage share of the non-dairy beverage market has probably stabilized. It was zooming [growing very rapidly] several years ago, but is no longer growing at such a fast rate. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

7215. Roller, Ron. 1997. New developments with organically grown soybeans in America (Interview). *SoyaScan Notes.* Jan. 16. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The demand for organic soybeans in America is rising rapidly. Ron thinks this has nothing to do with concerns over genetically engineered (transgenic) soybeans such as Monsanto's Roundup Ready soybeans. "Soybeans have become, hands down, the main cash crop (the one that makes the most money) for organic farmers, at least those in the Midwest. Organic growers in the Dakotas and Montana still rely on wheat as their main cash crop, but the corn, wheat, and soybean growers everywhere else rely on soybeans." The demand for organic soybeans is growing faster than the supply–even though the supply is rising. Increasing prices have attracted more and more farmers to growing soybeans organically. The biggest demand is still from Japan, as it has been for the past 4-5 years. As interest in organic foods has grown in Japan, bigger food manufacturers (primarily of tofu and natto) have started to use organic soybeans. The American food companies that use organic soybeans are still relatively small and few. Ron's company (if you add the organic soybeans Ron exports) may be the single biggest.

The demand for organic natto soybeans from Japan appeared suddenly and is now very large. Acreage that was used to grow organic soybeans for tofu or soymilk suddenly got switched to growing small-seeded organic natto soybeans. Because of that, the acreage used to grow organic soybeans for tofu and soymilk has decreased. Last year the organic soybean crop in the Midwest (especially Michigan and Ohio) was smaller than expected. So the combination of the export demand (mainly to Japan but also to Europe), the loss of acreage to natto beans, the bad crop, and the lack of new growers, has made the price of organic soybeans rise–by about 10%. But remember that the price of organic soybeans were already more than double, very often triple, that of non-organic beans. The highest prices are paid for Vintons and natto beans. It is these premium prices that are so attractive to the organic farmers. "This trend is of great concern to me, and especially the effect it could have on the price of soyfoods. In a free market economy, with lots of farmers looking for value-added crops, you would think that many more of them would start growing organic soybeans. But it is a difficult chasm to cross. A farmer must learn a whole new way of farming, and, he must wait for 3 years before that land can grow organic crops. That 3-year lead time is the big stumbling block; many farmers actually lose money on that land during those 3 years. Some big farmers are now starting to grow organic soybeans, but they getting involved on a gradual basis, adding 50 to 100 acres a year. Those large commercial growers, who have recently switched to growing soybeans organically, are sitting in the catbird seat, and doing extremely well."

In Ron's market, there have been very few questions from consumers about genetically engineered (transgenic) soybeans. "It hasn't become a problem at all for ASP; I think it will be an asset for us–because we don't use them and we can prove that we don't. However a lot of growers want to grow transgenic soybeans." Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

7216. Duchatel, Bernard. 1997. The work of Actimonde with dairylike soyfoods in Africa (Interview). *SoyaScan Notes.* Jan. 30. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Day after tomorrow Mr. Duchatel will travel to Douala, Cameroon, where Actimonde is installing a complete plant for Laiterie Auguste, the biggest dairy company in Cameroon, to make UHT soymilk that will be sold mainly as soy yogurt. The plant capacity will be 1,000 liters/hour of

long-life (aseptic) products. Mr. Duchatel thinks this plant will be successful, because the company is strong and it has conducted extensive consumer research before launching the product. The plant is expected to be in full operation by August 1997. Of the various soy products introduced to Africa by Actimonde, fermented soy yogurt seems to have the greatest potential, because its flavor and consistency are very close to those of the traditional sour milk consumed by many African people.

Concerning soy in Cape Verde (*Cabo Verde*)*:* First a little background. Cape Verde is one of the few nations in the world in which Soyfoods Center has never been able to find a record of soybean cultivation. It is a small nation, a former Portuguese colony that gained independence on 5 July 1975, consisting of ten volcanic islands and 5 islets off the west coast of Africa, in the Atlantic Ocean, west of Senegal. The capital city is Praia, on the island of Sao Tiago. The population is about 450,000. Actimonde installed an Agrolactor (their turnkey soymilk plant) in Praia, Cape Verde in 1994 for a company named Benali Cabo Verde. The soybeans used in the plant were initially imported from France in October 1994; after that, the had planned to import the soybeans either from Zimbabwe or Mozambique. Mr. Duchatel has never heard of soybeans being cultivated in Cape Verde, and he is quite sure that they have not been cultivated there in recent years–that is why the company had to import them. His company did not study the matter, but he thinks it would not be possible to grow soybeans on the island because most of it is like a desert; in the few places that are green, more important food crops are grown. Note: This document contains the earliest date seen for soybeans in Cape Verde (Oct. 1994) (one of two documents). The source of these soybeans was France.

Actimonde was founded in 1977 to develop and supply turnkey dairy plants; their main competitors are Alfa-Laval and DTD, both of which are now bigger than Actimonde. The Agrolactor was invented by Actini and developed by Actimonde, starting in 1986, based on their experience in Brazil. They hoped to sell the first Agrolactors to Brazil, but actually the first one was sold to the Congo Republic and installed at Brazzaville in 1988; Agricongo used it for research and development only. The experience of Mr. J.L. Voisin in Nigeria in 1987 (where he saw many dairies shut down because of the high price of imported powdered milk) was another early reason that the Agrolactor was developed. Actimonde sold Agrolactors to Nigeria (in 1990) and Ivory Coast (1990) because locally-grown soybeans were readily available. Mr. Voisin retired in November 1995; he no longer works for Actimonde. Mr. Duchatel is now in charge of selling turnkey dairy plants, but the company is increasingly involved in sell small and medium-sized fruit juice plants made from local fruits.

Concerning the present status of companies in Africa using the Agrolactor: (1) The unit sold in 1988-89 to the Congo will soon start again in Brazzaville; a private investor will make soy yogurt. (2) Cebon's plant in the Ivory Coast is no longer making soymilk, because local consumers do not like the flavor of that soymilk. Also, there are very big dairies in Abidjan. (3) In Burundi the soymilk plant is still in operation; the product has a Swahili name. (4) In Cape Verde the product was named Fresal; the generic term for soymilk is *bebida de soya.* But the plant is no longer in operation. The market is very small and there is no demand for soymilk. But there is a demand for soy yogurt. (5) In Cairo, Egypt, the plant is still operating, making a refrigerated, stirred soy yogurt named Soyo. The company makes its own Polystyrene cups (non-aseptic) with very nice printing. (6) In Suleja, Nigeria, the plant is probably still making soymilk–but now it is dangerous to go to that area. Address: Director and former technical manager, Actimonde, International Business Park, Batiment Athena, 74160 Archamps, France. Phone: +33 450 31 5640.

7217. **Product Name:** Sensational Soy (Soymilk) [Original, or Vanilla].
Manufacturer's Name: Beatrice.
Manufacturer's Address: 295 The West Mall, Suite 600, Toronto, ONT, M9C 4Z4 Canada. Phone: (416) 626-5500.
Date of Introduction: 1997. January.
How Stored: Refrigerated.
New Product–Documentation: Ontario Soybean Growers' Marketing Board (OSGMB). 1997. *Canadian Soyfoods Directory.* Chatham, Ontario, Canada: OSGMB. 27 p. See p. 15. Contact Greg Wild or Surendra Patel.

Talk with George Conquergood of International ProSoya Corporation (IPC). 1999. April 21. This soymilk was introduced in Jan. 1997 in a blue ½-gallon Pure-Pak carton. It was made for Beatrice by a small Chinese-Canadian soyfoods company named Pak Fok Food Products Inc., in Scarborough, Ontario. Owned by Simon Kwan, they make soymilk, tofu, and tofu products. Beatrice formulated, flavored, and packaged the soymilk at their plant at #6 Shastaberry Lane, Brampton, Ontario, and distributed and sold it across Canada in the dairy case of supermarkets. It was a Chinese-style soymilk with a fairly strong beany flavor. Beatrice started to package aseptic soymilk for IPC in 1996. The informally agreed to also package fresh soymilk in a gable-top carton for IPC–but they kept stalling. Jerry Duncan failed to get a written agreement and a non-compete clause from Beatrice. This stalling forced IPC to have their fresh soymilk packaged by Farmland Dairies in New Jersey. Soon after IPC's fresh soymilk was launched, Beatrice came out with a competing product.

7218. **Product Name:** ProSoya SoNice: Fresh Soy Beverage (in 1 Quart ESL Gable-Top Cartons) [Natural, Chocolate, Vanilla Lite].
Manufacturer's Name: ProSoya Foods Inc.

Manufacturer's Address: Surrey (Vancouver), BC, V3S BE7 Canada. Phone: (604) 532-8030.
Date of Introduction: 1997. January.
Wt/Vol., Packaging, Price: 1.89 liter ESL gable-top carton. Retails for $2.99.
How Stored: Refrigerated, 85 day shelf life.
New Product–Documentation: Talk with Fred Webster, head of International ProSoya Corp. office in New Hope, Pennsylvania. 1997. Sept. 31. This product, made in British Columbia, Canada, and packaged in New Jersey, will be introduced to the U.S. market in mid-October, 1997, in quarts and half gallons. Refrigerated (45 day shelf life); expected retail price is $0.99/cup.

Talk with Lorne Broten, President and CEO, International ProSoya Corp. 1997. Oct. 29. This product was launched in Canada in Jan. 1997. It is available in 1 liter and 2 liter gable-top ESL cartons.

Talk with Steve Demos, president of White Wave. 1998. Aug. 10. He heard about 10-14 days ago that the SoNice brand, both aseptic and gable top, is no longer being shipped to market. The company's first comment was "Packaging problems," and then it was "money problems."

7219. Stevens & Associates, Inc. ed. and comp. 1997. U.S. 1997 soyfoods directory. Lebanon, Indiana: Indiana Soybean Development Council. 47 p. 28 cm. [29 ref]
• ***Summary:*** This second, expanded edition of the directory contains more than 270 company listings. Contents: Foreword. How to use the Soyfoods Directory (incl. Internet access). Daily soyfood guide pyramid (color). Soyfood descriptions (alphabetical): Introduction, green vegetable soybeans (edamamé), hydrolyzed vegetable protein (HVP), infant formulas–soy based, lecithin, meat alternatives (meat analogs), miso, natto, nondairy soy frozen dessert, okara (see soy fiber), soy cheese, soy fiber (okara, soy bran, soy isolate fiber), soy flour, soy grits, soy protein concentrate, soy protein isolate, soy protein–textured, soy sauce (tamari, shoyu, teriyaki), soy yogurt, soybeans, soymilk (soy beverages), soynut butter, soynuts, soyoil & products, sprouts–soy, tempeh, tofu & tofu products, whipped toppings (soy based–"similar to other nondairy whipped toppings, except that hydrogenated soyoil is used instead of other vegetable oils"), yuba. Soybean products chart: From whole soybeans, from soybean meal, from soyoil and lecithin. Soyfood companies by product (products listed alphabetically).

Composition and nutrient content of soyfoods (large table, p. 14). Soyfood companies (alphabetical by company name; Each listing contains address, contact, phone, soy products, product names, distribution, to locate product, classification). Mail-order soyfoods: Soyfood mail order companies (listed alphabetically by company). Soyfood companies by state (alphabetical by state; California has by far the most). Soybean promotion & research organizations (national, and state). Professional associations and industry information resources. Soy cookbooks (19). Soy resource books (10). Soyfood fact sheets and recipes: 1-2 pages each for meat alternatives, miso, soyoil, soy flour, soymilk, tofu, textured soy protein, whole soybeans. Soyfoods directory survey.

This directory is on the Internet's World Wide Web at http://www. soyfoods.com. For more information or suggestions, call 1-800-301-3153. The Internet version of the Directory continues to improve. "The first year saw hits to our site increase from 1,000 the first month to more than 8,000 per month now. We have added a new search engine that makes it easier to find information and a new monthly e-mail newsletter, *Soyfoods USA,* designed to inform media sources, dietitians and consumers about the latest soyfoods information. To subscribe to this popular newsletter, just send an e-mail message to soyfoods@ind.com with the words 'Subscribe Soyfoods USA' in the body or subject field."

Talk with Roger Stevens. 1997. March 10. The 1997 directory was first available in January 1997. About 100,000 copies of this directory were printed, and all but 7,000 have already been sent out free of charge. About 77,000 copies were sent to registered dietitians nationwide; all are members of the American Dietetic Association. Another 10,000 copies were sent to the American Association of Family and Consumer Sciences–basically extension personnel at the Cooperative Extension Service in each county; these people provide a lot of consumer information about foods and agriculture. About 500 copies were sent to each of the 20 state soybean development councils. The remaining 6,000 copies were sent to callers who left their name and address at a toll-free answering service. The next step is to do a media tour in Indiana. Traveling with a registered dietitian, they expect to generate a lot of requests from citizens of Indiana. One of the goals is to show other states that if you promote soyfoods in this manner, you will get a lot of interest. Roger hopes to encourage other states to take a more active role in promoting soyfoods. The directory has generated a tremendous amount of information on the part of dietitians who call the toll-free number and have many questions about soyfoods; Roger tries to refer them to people who have the answers–such as 1-800-Talk-Soy. The Indiana Soybean Council has had to hire a new person just to handle the requests for this directory.

Next Roger plans to do a survey of registered dietitians to learn more about their responses to the 1997 directory. He might ask: Did you receive the book? Do you use it? If so, in what way and how often? How many people do you influence with regards to soyfoods as a result of this book? So if each of the 77,000 dietitians influences, on average, 10 people a year, the directory has reached more than 750,000 people. One major goal of this book is to help dietitians include more soyfoods in their own diets and in the diets of

their clients. How can we better help you do this? Do you want a cookbook? A starter kit? Shall we include coupons?

From the focus groups he has already conducted, Roger thinks that future editions of the directory will be presented more like a cookbook or recipe book, with the directory in the back. "People really like the recipes. They just hand them out to their clients. We get requests for 100 books at a time from dietitians, who give the entire book to their clients at classes, in their offices, etc." Roger has the funds to do the research to find out exactly what dietitians want in the way of soyfoods recipes and how they want them organized.

Other possible questions: Which part or parts of the book do you find most valuable? Which do you find least valuable. Is there any information which is not in the book that you wish were included?

Roger would also like to develop for the next edition of this book a graphic presentation of the inside of a typical supermarket showing all the different products which contain soy.

Note: The word "soyoil" is used instead of "soy oil" throughout this directory. Address: Stevens & Associates, 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 317-926-6272.

7220. Sullivan, Cheryl; Rhodes, Kathy. 1997. Simply soy: A variety of choices. Williamsburg, Virginia: Virginia Soybean Association. 118 p. Undated. Illust. Recipe index. 26 cm.
• ***Summary:*** Contents: Introducing soyfoods into your diet. The healthful soybean. Exploring soyfoods: Dried soybeans, fresh green soybeans, soy milk, tofu, textured soy protein, soy flour, soy grits, tempeh, miso, soy meat analogs. Where to find soy products. Nutrient information. Recipes: Breakfast, beverages, breads, appetizers & snacks, salads, soups, sandwiches, side dishes, main dishes, desserts.

Talk with Susan Haller of the Virginia Soybean Assoc. 2000. Nov. 9. This undated book was published about 3-4 years ago.

Talk with Cheryl Sullivan. 2002. Aug. 12. She wrote this booklet for the Michigan Soybean Promotion Committee; it was published in about Jan. 1997. It was never sold and is now available online at www.soyfoods.com/SimplySoy. Address: 1. M.A., R.D., Sullivan Nutrition Inc.; 2. PhD, R.D., Preventive Cardiology Program, Univ. of Michigan; c/o 151 Kristiansand Drive, Suite 115 E & F, Williamsburg, Virginia 23188. Phone: (757) 564-0153.

7221. Roller, Ron. 1997. Growth of soymilk sales in U.S. supermarkets (Interview). *SoyaScan Notes.* Feb. 10. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ron would estimate that sales of soymilk in U.S. supermarkets now account for about 25% of all soymilk sales in America. It has grown lot during the past 18 months; this is now the area of most rapid growth. East Coast supermarkets (especially certain chains) tend to sell more soymilk than West Coast supermarkets.

American Soy Products does not subscribe to SPINS (SPence INformation Service) run by Paddy Spence out of San Francisco, California. Ron thinks he could do as good a job of gathering market information as SPINS does. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

7222. Dominguez de Diez Gutiérrez, Blanca. 1997. Re: Update on her life, and past and upcoming work with soya. Letter to William Shurtleff at Soyfoods Center, Feb. 11. 4 p. Handwritten, with signature. [Eng]
• ***Summary:*** In 1987 Blanca went to Ecuador to teach soyfoods to housewives. She was active with soya until 1989, when her health began to decline. She had to close her Fundacion Mariposa. In 1993 she finally had a heart attack; she underwent surgery and had 3 coronary bi-passes. She had low cholesterol levels; the heart failure is hereditary. All her family on the father's side died of heart attacks at about age 50 to 60. Blanca is now age 77, so she has outlived them all.

She came to the USA 3 years ago to live with her son (who is single) in Houston. She also has a daughter in Houston, and another son and daughter in Mexico, plus 7 grandchildren. She must live at sea level because she needs the oxygen. She had to leave everything and start over again. She is still not allowed to drive an automobile. But she is now feeling stronger and better.

She has accepted an invitation to go to Los Mochis, Sinaloa, Mexico, in mid-April for 2-3 weeks to teach women about soyfoods. Los Mochis is on the Sea of Cortés [Gulf of California].

In Mexico she used to make delicious dishes with okara to replace eggs (*Huevos a la Mexicana*) with plenty of onion, garlic, tomato, cilantro, and chili. You scramble it like eggs.

Blanca keeps in touch with some of the people to whom she taught soyfoods during the 1980s. This work is still alive in the following places: (1) Tepozlan, Mortelos. The women named Coti who was the most Indian of all her group was the one who caught on; her native language is Nahuatl, but she learned to speak a little Spanish. She has a little vegetarian shop where she makes soya milk, tofu, and okara dishes. Coti and Blanca's niece are very close friends, so Blanca's niece tells her about this work. (2) In Durango, a lot of work has been going on for years. Lots of information about soya is taught to all the social workers and teachers in the college for teachers (*La Normal de Maestros*). Blanca's book is used like a textbook. A friend of Blanca's who is a teacher here keeps the work going and keeps Blanca informed. (3) In both Veracruz and Huauchinango also Blanca's work is continuing. She keeps in touch with friends there. (4) In the state of Tlaxcala, at a little teaching center, Prof. Alfonso is teaching about soya.

After her heart attack, she just had to let everything go–but it is now going on its own "I had a death experience.

I feel like I'm alive, but I'm dead. I let everything go. She closed her *Fundacion Mariposa* (Butterfly Foundation) in 1994. There she taught nutrition, and tried to take culture to the children, from grades 1 to 6, in this poor, rural area. They put on plays such as the *Iliad* [an epic by Homer that recounts the story of the Trojan War] and the *Odyssey*–and they loved it. She called these poor little peasant children kings and queens. She also lectured on ecology to high school kids and teachers in the town nearby, and taught Indian philosophy (such as the *Bhagavad Gita*), which has helped them a lot with their emotional problems. She tried to help them to develop character and to love their work. She also tried to return the dignity of cooking to the women and the sacredness of food. Blanca has been a professional painter, and she was an art teacher. She married when she was young and had 4 children; she was happily married to Jose Diez Gutierrez for 48 years until her husband died 7 years ago. Her husband didn't understand a thing about her work with spiritual teachings and soya, but he never let her down.

NAFTA has been a disaster for Mexican-owned business. Only the multinational have really come out ahead; they now employ more Mexicans than ever before. Blanca believes that the multinationals are also into drug trafficking. Address: c/o Mr. Jose Diez Gutierrez, 3231 Meadway Dr., Houston, Texas 77082. Phone: 281-870-1850.

7223. **Product Name:** Personal Edge (Nutritional Beverage Powder) [Plain, Strawberry, Chocolate].
Manufacturer's Name: Nutritious Foods, Inc. (Distributor).
Manufacturer's Address: St. Louis, Missouri.
Date of Introduction: 1997. February.
Ingredients: Incl. Supro brand isolated soy protein.
How Stored: Shelf stable.
New Product–Documentation: Ann Behling. 1997. *Soybean Digest.* Feb. p. 90. "Soy-based beverage provides an edge." Personal Edge, a sports nutritional beverage made from Supro brand isolated soy protein, helps speed the repair and recovery of muscle tissue after training or competition, according to its manufacturer. It can be mixed with milk, water, or orange juice. It is being promoted by the Nebraska Soybean Board at various farm shows and related events.

7224. *Ontario Soybean Growers' Marketing Board Newsletter.* 1997. Soy Delight soymilk. Feb. p. 2.
• ***Summary:*** Neilson's Soy Delight is "the first fresh soymilk to be available in grocery stores." It comes in two flavors: Original and Vanilla. With its trilingual labeling (English, French, and Chinese) it is "targeted at the Asian-Canadian market, but it's a high-quality product that everyone will enjoy." One litre milk-style (gable-top) cartons are "currently being sold at Zehrs, Loblaws, Fortinos and Mr. Grocer supermarkets throughout Ontario." Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

7225. Santell, Ross C.; Chang, Y-C; Nair, M.G.; Helferich, W.G. 1997. Dietary genistein exerts estrogenic effects upon the uterus, mammary gland and the hypothalamic / pituitary axis in rats. *J. of Nutrition* 127(2):263-269. Feb. [30 ref]
• ***Summary:*** Phytoestrogens include the isoflavones, lignans, and other nonsteroidal chemicals found in plants. These compounds can bind to the estrogen receptor. The estrogenic effects of genistein in the uterus are well known. However few experiments have been conducted to determine estrogenic effects in other tissues, such as the mammary gland (breast) and the hypothalamic/pituitary axis. This research was conducted to investigate the estrogenic and antiestrogenic effects of dietary genistein. Plasma levels of isoflavones in infants fed soy-based infant formulas are comparable to levels that exert significant estrogenic effects in experimental animals. Address: 1&4. Dep. of Food Science and Human Nutrition; 2-3. Dep. of Horticulture. All: Michigan State Univ., East Lansing, Michigan.

7226. **Product Name:** Rice Silk (Rice Milk Sold in Quart Pure-Pak / Gable Top Cartons).
Manufacturer's Name: White Wave, Inc. (Product Developer-Distributor). Made in Canada and California.
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 1997. February.
Ingredients: From leaflet: Filtered well water, rice syrup solids (from partially milled brown rice), rice starch, canola oil, calcium carbonate, natural flavors, sea salt, carrageenan, guar gum, xanthan gum, vitamin A palmitate, vitamin D2, riboflavin (B2), vitamin B-12.
Wt/Vol., Packaging, Price: Quart Pure-Pak Carton. Suggested retail price: $1.99 to $2.49.
How Stored: Refrigerated.
New Product–Documentation: News release from Holden McClure in Boulder, Colorado. 1997. Jan. 30. "Rice not against the grain for White Wave. Vegetarian Cuisine company adds rice beverage to Silk line... Beginning in February 1997, Rice Silk will be available in natural food stores across the country, with the introduction to supermarkets to follow. Rice Silk will be sold in the dairy case in a traditional milk carton at a suggested retail price of $1.99–$2.49 per quart size." White Wave claims it is the largest producer of tempeh in North America. White Wave, Inc. was founded in 1977. A line at the bottom of the letterhead reads: "White Wave. We've bean around the block for 20 years."

Leaflet (20.5 x 13.5 cm, glossy color) sent by White Wave. 1997. June. "A fresh face in your dairy case."

7227. Witt, Barbara. 1997. Pan-Asian express: Quick fixes for Asian food fans. New York, NY: Bantam Books. xiii + 194 p. Index. 24 x 14 cm.

• ***Summary:*** The author, who grew up in Connecticut, loved Chinese food and Mott Street in New York City. An excellent writer, she won the James Beard award in 1993. The section on "Seasonings" (p. 8-13) gives descriptions of: Hoisin sauce, sesame seeds, soy sauce (Kikkoman is a good brand; tamari is darker and stronger), soy sauce–dark (sometimes called "black soy"; Koon Chun is a good brand), soy sauce–mushroom (flavored with straw mushrooms; Pearl River Bridge is a good brand). Soy sauce–shrimp (The Chinese equivalent of Thai and Vietnamese fish sauce. Pearl River Bridge is a good brand), soy sauce–Indonesian (*Ketjap manis;* not to be confused with the less subtle Chinese sweet soy sauce).

The section on "General packaged goods" (p. 15-18) gives descriptions of: Black beans–Chinese salted (Chinese salted black beans: "The ancient and original soyfood that produced miso and soy sauce looks kind of pitiful..." Good brands are Mee Chun and Pearl River Bridge. Avoid those flavored with five-spice powder), coconut milk (canned is excellent), coconut cream, tofu ("innocuous").

Soy-related recipes include: Seared corn, tomato, and black bean relish (with "chopped Chinese black beans," p. 40-41). Silky tofu walnut dip (p. 50-51). Bean paste soup (*miso shiru,* with red bean paste, p. 91). Romaine salad with lemon soy dressing (with soy sauce, p. 95-96). Tropical fruit, avocado, and tofu salad (p. 110-11). Scallops with pork and black beans (with "Chinese fermented black beans," p. 146-47). Curried mushrooms, peas, and potatoes (p. 171-72). Address: Washington, DC.

7228. Ubiera, Leonidas Radhames. 1997. Re: Work with soyfoods and gluten in the Dominican Republic. Letter to William Shurtleff at Soyfoods Center, March 10–in reply to inquiry. 2 p. Typed, with signature.
• ***Summary:*** Gives the date that each of the company's products were introduced, and the main ingredients in each. Tofu and soymilk were both introduced in Sept. 1995. All other products were introduced in 1996.

Leonidas is aware of only one company that made soy products in the Dominican Republic before his company–that is a company named Salubi, which made salami from texturized soya and sold other imported products.

UFIESA is an abbreviation/acronym for Ubiera & Fortunato Import-Export, S.A. It is a division of Productos Nutrisoya.

The address on this letter is his home and office. His factory is located at Av. de los Restauradores No. 149.

He thanks William Shurtleff for sending him a database search of all known work with soya in the Dominican Republic from earliest times to the present. "I will use this to teach about soya in our country." Address: Calle 33 #9-A, Villa Carmen Este, Santo Domingo, Dominican Republic. Phone: 809 590 3418.

7229. *SoyaScan Notes.* 1997. A new challenge for soyfoods manufacturers in America (Overview). March 14. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** During the last year or two, Soyfoods Center has been receiving a growing number of calls from people who ask "How can I get more soy into my diet?" Never before have we heard people ask a question like this. These people have heard about the many health benefits of consuming soyfoods regularly but they don't know what foods would suit their tastes and diet. Some are willing to try tofu, but others are not. Those who have tried soymilk often say that they don't like the taste and it is too expensive.

We think there is a need for a new type of soy product with the following specifications, listed here in order of importance: (1) It must be delicious, something that most Americans would like immediately. (2) It must be ready to eat, ideally without even heating. (3) It should be low in fat and low in calories. (4) It should contain enough soy isoflavones/phytoestrogens (i.e. soy protein) to have significant health benefits if consumed daily. (5) It should not be too expensive. (6) It should contain only natural ingredients and no animal products.

Examples: (1) A pudding or parfait–either the type made from soymilk and sold so widely in Europe in Tetra Brik cartons, or one resembling the Imagine Foods 4-pak puddings (which have no nutritional benefits except low fat and low calories). (2) A protein-rich soy yogurt with added sweetener plus fruits or flavoring. (3) A dry mix to which one adds water or soymilk for use as a breakfast shake.

How to market it: Any slogan that works, with the subheading "Contains 30 mg natural soy isoflavones/phytoestrogens per serving." Or "Contains 30 mg natural genistein per serving."

7230. Wenley, Sally. 1997. Caution over soy products. *G.P. Weekly.* March 17. [1 ref]
• ***Summary:*** "'I believe that feeding soy formula is risky.' This is from David Woodhams, a food consultant in Auckland, who is adamant that many soya products have potential dangers.

"'Feeding soy infant formula and follow-on foods to a normal baby is such that the Ministry of Health ought to make those accessible by prescription only,' he says." Dr. Woodhams is concerned because phytoestrogens in soy products are physiologically in humans.

"The soya issue is being dragged into the spotlight after Professor Bob Elliot's claims that protein from cows' milk can trigger diabetes in up to five percent of the population."

7231. Kashama, Johnny. 1997. Re: Update on Tofu-Rwanda s.a.r.l. Letter to William Shurtleff at Soyfoods Center, March 31. 3 p. Handwritten, with signature. [Eng]
• ***Summary:*** Johnny was recently with the director of Tofu-Rwanda who is Miss Mado Niyontese. She told him the

following. Before the civil war in Rwanda [April to July 1994] the address was 1906, Kigali, Rwanda. But now it was given to another person. The current address is: Tofu-Rwanda, c/o Swiss Embassy, P.O. Box 1297, Kigali, Rwanda.

The name "Tofu-Rwanda" will disappear in a few days because all the associates are no longer together; they were ruined. The enterprise was been under the direction of the Switzerland Cooperation for two years, but that ended in 1996. The director will create a kind of cooperative which they plan to name Soja Val. Its main goal will be social service, but it will also attempt to be profitable. The director is planning many workshops on tofu and other soybean foods in all the prefectures of Rwanda. The phone number is +250 75812. They recommenced making tofu on 28 Nov. 1994. They are still producing soymilk, tofu, croquettes, and fritters. They added two other products–soy flour, and Misola made of a mixture of millet, soja, and peanuts. Address: Rwanda.

7232. Cheng, Guoqiang. 1997. Market prospects for upland crops in China. *Palawija News* (*Bogor, Indonesia*) 14(1):1-12. March.

• ***Summary:*** In China, the soybean is considered a major upland crop, along with maize, sweet potatoes, potatoes, and rice. Economic reforms in China have led to major changes in the eating habits of Chinese consumers. "Grain consumption of urban consumers dropped from 145.4 kg in 1981 to 97.8 kg in 1993. However, the consumption of pork, beef and mutton grew from 18.6 kg to 20.8 kg and poultry meat from 1.9 kg to 3.7 kg. The grain consumption of rural consumers increased from 248 kg in 1978 to 266.0 kg in 1993, pork, beef and mutton consumption grew from 6.1 kg to 13.3 kg, and poultry consumption from 0.3 kg to 1.6 kg."

Table 4 shows income elasticity of food consumption for various commodities in China (mean, rural, and urban). A negative elasticity (as for maize, sweet potatoes, or potatoes) means that as income rises, consumption of these commodities decreases. A high positive elasticity means that a small increase in income leads to a large increase in consumption of that food. Foods with the highest mean elasticity are poultry (0.86), eggs (0.57), pork (0.49), and vegetable oils (0.35). As as income increases, consumption of foods with the highest elasticity will increase most rapidly. Beans have a mean elasticity of 0.38; soybeans are not specifically mentioned.

Table 5 shows projected growth (%) in demand for food. Demand for soybean (which has an expenditure elasticity of 0.38) is expected to grow at 3.56% a year. Other projected annual growths in demand: Poultry 6.44%. Eggs 4.70%. Pork 2.22%. Edible oils 3.39%.

A long section (p. 5-9) discusses supply or and demand for feed. In China, feed is conventionally divided into three types: feedgrains (71.4% of total), oilcakes (8.4%) and bran (20.2%). Feedgrains include maize (by far the largest), rice, tubers, and roots (mainly potato and sweet potato). Table 8 shows total grain and feedgrain in China from 1980 to 1994 (in million tons). Total grain grew at 2.37% annually from 320.56 in 1980 to 445.10 in 1994. Feedgrain grew at 6% annually from 59.39 in 1980 to 134.24 in 1994. Feedgrain comprised 18.53% of total grain in 1980, but 30.16% in 1994.

Table 9 shows the availability of feed by source in 1993. 15.00 million tons (MT) of oilcakes were available, including cottonseed meal 5.23MT, groundnut meal 4.88MT, soybean meal 4.70MT, and others 0.19MT. Note the relative unimportance of soybean meal.

Table 10 shows that the output of formulated feed (in million tons) in China grew from 0.60 in 1978 to 42.32 in 1994. Table 12 shows the demand for commodities as animal feed in China in the year 2,000. The total feed demand is projected to be 231.74 million tons, including 103.82MT of maize, 25.95MT of rice, and 6.03MT of soybean meal.

A subsection titled "Soybean" (p. 7-8) states that the soybean has received increasing attention by producers and consumers with the change of consumers' views and adjustment of the food structure of households. In 1994, soybean was grown on 9.22 million hectares, accounting for 8.4% of total grain acreage and the output was 16 million tons, accounting for 3.6% of total grain production.

"Soybean in China is mainly used as food (49%) and for oil extraction (43%). Most of the soybean meal is utilized domestically (89%), with a small proportion used for export (10%). It is projected that by the year 2000, the demand of soybean in China will be 15.32 million tons, of which 6.57 million tons will be used as food and 7.54 million tons for oil extraction. Direct consumption of soybean (such as processed into bean curd, soybean sprouts, soybean milk, etc.) will still be the major form of soybean utilization in China. Due to an ever increasing domestic demand, the export of soybean in the future will not increase."

7233. DuPont Quality Grains. 1997. Optimum quality grains (Leaflets). Des Moines, Iowa. 2 p. Each leaflet is single sided. 28 cm.

• ***Summary:*** One leaflet describes A231QT Optimum yellow hilum soybean varieties "designed specifically for the soyfood market. It is large seeded, high protein, yellow hilum, and lipoxygenase 2, null" [i.e. lacking the undesirable L2 lipoxygenase enzyme which causes beany flavor]. Soyfood evaluations conducted by the Illinois Crop Improvement Association show that soymilk yields, tofu yields, tofu strength, and protein content meet and exceed Soyfood standards. Quality specifications on a dry matter basis: Seeds/lb: 2100. Protein: 46.3%. Oil: 20.6%. Tofu yield 332.6. White index of tofu: 51.6%. Tofu strength: 22.7 gm/sq. cm. Soymilk yield: 4.8 ml/gDS. Solids content of soymilk 11.7%. Protein content of soymilk: 50.3%. Sold in

50 lb bags and bulk.

The second leaflet describes A232QT Optimum high sucrose soybean varieties which "have been specifically selected and developed for their unique characteristics for use in the soyfoods industry and traditional food industries. High sucrose varieties have significantly increased sucrose content, reduced stachyose content [Note: Stachyose is an oligosaccharide that causes flatulence], and are lipoxygenase 2, null. Flours and powders from high sucrose varieties have a unique flavor profile offering opportunities for making improved beverages, bakery, pasta products, and other processed foods. Quality specifications Seeds/lb: 2900. Protein: 42.4%. Oil: 19.7%. Carbohydrate profile (dry weight basis): Sucrose: 8.4%. Raffinose: 0.03%. Stachyose: 0.40%. A color photo shows the soybeans with sliced white bread.

A cover letter from Kent Savage states that "These soybeans were developed through traditional plant breeding methods, and were produced in Iowa and Minnesota."

Note: 1997 July 11–There is no good source of bland soymilk base in the United States. Use of these lipoxygenase-null soybeans could be the answer to that problem. Address: 10700 Justin Dr., Des Moines, Iowa 50322. Phone: (515) 251-3056.

7234. FARM [Farm Animal Reform Movement]. 1997. Kicking the habit: The great American meatout (Leaflet). Bethesda, Maryland. 4 panels each side. Each panel: 9 x 7 cm. [3 ref]

• ***Summary:*** This year's meatout will be held on March 20. National co-chairs: Casey Kasem and Cassandra 'Elvira' Peterson. "What is a meatout? Every March thousands of caring Americans welcome spring with a joyous celebration of meatless eating." Each participant pledges to "kick the meat habit (at least for a day) and explore a more wholesome diet."

"Since 1985 Meatout has grown explosively to become America's largest annual grass-roots dietary education campaign." Address: FARM, Box 30654, Bethesda, Maryland 20824. Phone: 1-800-Meatout.

7235. **Product Name:** [VivaSoya Soy Mousse (Apricot)].
Foreign Name: VivaSoya Mousse di Soya (Albicocca).
Manufacturer's Name: Fonte della Vita S.r.L. (La).
Manufacturer's Address: Via Monviso 18, 12049 Trinita (Cuneo), Italy. Phone: (0172) 66 231.
Date of Introduction: 1997. March.
Ingredients: Soymilk*, apricot, cane sugar, natural aromas, living lactic bacteria (Streptococcus thermophilus and Lactobacillus bulgaricus). * = Organically grown.

Wt/Vol., Packaging, Price: 250 gm; 2 x 125 gm plastic tubs.
How Stored: Refrigerated.
New Product–Documentation: Label from Biofach, March 1997. Orange, white, green and blue. "Rich in living lactic acid bacteria. No preservatives."

7236. Havala, Suzanne. 1997. Nutrition hotline: Soy to be added to WIC? *Vegetarian Journal* (*Baltimore, Maryland*) 16(2):2. March/April.

• ***Summary:*** WIC is the Special Supplemental Nutrition Program for Women, Infants and Children. It is administered by the USDA's Food and Consumer Services (FCS).

A writer asks if any work is being done to include soyfoods in WIC, and notes that while working for WIC over the summer she felt her main job was "to convince women to drink more cow's milk." Answer: "If current plans to revise the WIC food packages proceed as planned, a proposed rule would address the addition of soy-based milks and possibly other soy foods, a move that will benefit women who are lactose intolerant or for whom soyfoods are traditional diet components." For additional information contact Stanley Garnett, director of WIC, Alexandria, Virginia. Phone: 703-305-2746. Address: M.S., R.D.

7237. International ProSoya Corp. 1997. ProSoya SoNice: Manufacturer of superior soy food products (Portfolio / Presentation folder). Surrey (Vancouver), BC, Canada. Seven inserts. 30 cm.

• ***Summary:*** The full-color cover of this "presentation folder" shows a large white plate with a black rim on a natural beige tablecloth. In the center of the plate, in green

and black letters, is written "ProSoya SoNice." Around the bottom and right side in smaller white letters is written "Manufacturer of superior soy food products." Four sprigs of parsley are scattered around the edge of the plate. In the upper right corner is a stem glass of soymilk, seen from the top.

Contains the following inserts: (1) Two ProSoya SoNice color brochures. One is for fresh soymilk products packaged in gable-top cartons, the other for shelf-stable products in aseptic packages. The front of each is similar, showing many different soymilk products in color packages. On the back of each are details about the products. The fresh soymilk is sold on four different flavors (natural, original, vanilla and chocolate), each quart or half-gallon gable-top cartons. The shelf-stable is sold in six different flavors (natural, original, vanilla, chocolate, strawberry, and cappuccino) in 1 litre aseptic cartons. (2) Sample recipes from five different color tear-off recipe pads: Banana pancakes. Potato soup with peppers. Lemon tahini dressing. So Nice fruit shakes. Dijon scalloped potatoes. (3) Color shelf dangler; on a 4-inch plastic square, SoNice is featured in a fresh gable-top carton. It is connected to a peel-off self-adhesive strip with a thin plastic strip. A "fridge sticker" with similar graphics, but larger, has a peel-off self-adhesive back and sticks onto a refrigerated case. (4) Two identical coupons: Save 35 cents on the purchase of any flavour of 1 liter So Nice soymilk. (4) Color leaflet from ProSoya Foods Incorporated titled "ProSoya SoNice: A natural choice!. Three panels, one side only. One panel contains product information, another recipes. Toll free number: (888) 2-SO-NICE. (5) George Conquergood's business from Pacific ProSoya Foods Inc. The oval SoyaCow logo appears in the upper right hand corner. (6) Letter to William Shurtleff at Soyfoods Center.

Talk with George Conquergood. 1999. May 29. This "presentation folder" was created either in late 1996 or early 1997; His best guess is March 1997. It was part of the SoNice presentations to potential buyers or investors. All agents and brokers had a supply of presentation folders and inserts. There was also one main insert on the health benefits of soy, and many more specific health-related inserts–to help salesmen explain "how good soy was for you." IPC had a huge library of information on the health benefits of soy that was printed on So-Nice letterheads, including excerpts from the writings of Mark Messina, Earl Mindell, etc. Dusty compiled much of this information together. Some of the inserts were developed in 1996 (the shelf-dangler was developed first), some in 1997, and some in 1998 (the recipe cards, in about 1998). ProSoya Foods Inc. was the company under which the various products were marketed. It had formerly been named Pacific ProSoya Foods Incorporated. Address: 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: (604) 532-8030.

7238. New Zealand Nutrition Foundation. 1997. Soy foods in human nutrition: A position paper of the New Zealand Nutrition Foundation. New Zealand. March. *
• ***Summary:*** There is no scientific evidence that isoflavones can cause harmful effects in children.

7239. **Product Name:** Multi Grain: Healthy Non Dairy Beverage [Original].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1997. March.
Ingredients: Filtered water, oat groats, triticale, barley, organic soybeans*, brown rice, amaranth, sea salt. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton with reclosable spout. Retails for $1.89 (1997/05, Berkeley, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per cup (8 fl. oz or 240 ml): Calories 150, calories from fat 20, total fat 2 gm (3% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 50 mg (3%), total carbohydrate 31 gm (dietary fiber 0 gm, sugars 12 gm), protein 3 gm. Calcium 15%, iron 0%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Talk with Pat Carey of Pacific Foods of Oregon. 1997. May 5. This product shown at Anaheim in March 1997 and introduced commercially at about the same time. Each cup contains 3 gm of protein and 15% of the RDA for calcium. Product description and specifications faxed by Pat Carey. May 5. "An innovative new product containing all 8 essential amino acids." On the front panel of the label is a large glass of the white beverage, surrounded by grains. Written in large letters on the white background: "A great tasting nutritious balance of essential amino acids. Simply the best."

Product with Label brought by Bob Gerner of the Natural Grocery Company, Berkeley, California. 1997. May 13. Price: $1.89. Label. Yellow, green, tan and red on white. Reclosable spout. Soyfoods Center taste test: Flavor: Excellent, with nice balance of grains and soy. Consistency: Nice and thick. Label design: Excellent. One of the best all-around non-dairy beverages we have ever tasted. A taste panel liked it better (10) than Pacific Almond (8) or Pacific Oat (6).

Product (Original flavor) with Label purchased at Trader Joe's in Concord, California. 1998. Feb. 22. Price: $1.49. Price at Trader Joe's in Lafayette, California. 2001. Feb. 27. $1.69. The package design is new but the ingredients are the same except that the oats are organic. The top one-fourth of the front panel is orange with the word "Pacific" in white script letters. The beverage is being poured from a yellow pitcher into a glass. "Non GMO. Low fat. Original." Talk with Pam in customer service at Pacific Foods. 2001.

Oct. 24. This product contains no added sweetener. The sweetness comes from the grains themselves. After all the grains are ground and mixed together, an enzyme is added which converts the starches to sugars, primarily glucose with some maltose. No new sucrose is created. The enzyme does not have to be listed with the ingredients because it is a "processing aid" and does not itself appear in the finished product. Pacific Foods uses the same process make its oat beverage and rice beverage. The company also makes its own brown rice sweetener. Pat Carey left the company earlier this year.

7240. **Product Name:** Naturally Almond: Healthy Non Dairy Beverage [Original, Vanilla].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1997. March.
Ingredients: Vanilla: Almond base (filtered water, almonds), brown rice sweetener (filtered water, brown rice), natural flavors, sea salt, ginger, guar gum, xanthan gum, carrageenan.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton with reclosable spout. Retails for $1.89 (1997/05, Berkeley, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Pat Carey of Pacific Foods of Oregon. 1997. May 5. This product shown at Anaheim in March 1997 and introduced commercially at about the same time. Each cup contains 2 gm of protein and 2% of the RDA for calcium. Product description and specifications faxed by Pat Carey. May 5. "In response to consumer demand, our new and improved Naturally Almond is made with real almonds." On the front panel of the label is a large glass of the white beverage, surrounded by grains. Written in large letters on the white background: "Great tasting. Lactose free. Low fat. No cholesterol. Simply the best."

Product with Label brought by Bob Gerner of the Natural Grocery Company, Berkeley, California. 1997. May 13. Price: $1.89. Label. Yellow, green, tan and red on white. Reclosable spout. Soyfoods Center taste test. Flavor: Quite good, but a strong aftertaste of almond flavor. Texture: Quite good, but a little gritty at the end. Suggest it be run through a finer colloid mill.

Product with Label purchased at Trader Joe's in Lafayette, California. 2001. Nov. 4. New package design. "Pacific Almond: Low Fat Original. Non GMO. All natural non-dairy drink." Orange, yellow, light green, red, and white. A photo shows almond milk being poured from a blue pitcher in the upper left into a glass in the lower right. Contains 70 calories and 2 gm of protein per cup. 1 quart retails for $1.69. Soyfoods Center taste test: Pretty good flavor but too watery.

7241. **Product Name:** Naturally Oat: Healthy Non Dairy Beverage [Original, Vanilla].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1997. March.
Ingredients: Vanilla: Filtered water, natural oat groats, natural flavors, sea salt.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton. Retails for $1.69 (1997/05, Berkeley, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Pat Carey of Pacific Foods of Oregon. 1997. May 5. This product shown at Anaheim in March 1997 and introduced commercially at about the same time. Each cup contains 4 gm of protein and 2% of the RDA for calcium. Product description and specifications faxed by Pat Carey. May 5. "Preferred over 2:1 to other Oat Drinks in blind taste tests. Great tasting. Lactose free. Soy free. No added oils. Low fat. No saturated fat. No cholesterol. Low sodium. Made from whole oats. No added sweeteners." On the front panel of the label is a large glass of the white beverage, surrounded by oats. Written in large letters on the white background: "A great tasting low fat beverage from whole oats. Simply the best."

Product with Label brought by Bob Gerner of the Natural Grocery Company, Berkeley, California. 1997. May 13. Price: $1.69. Label. Dark blue, tan, green, and beige on white. Reclosable spout. Soyfoods Center taste test. Flavor: Fair.

7242. Parks, Thomas R.; Lampi, R.A.; Marquardt, R.F. 1997. Development of technology base needs for processing in an advanced life support (ALS) system. Moffett Field, California: National Aeronautics and Space Administration, Ames Research Center. 62 + 63 p. March 24. Illust. No index. 28 cm. Final report. NASA CR-6816SN. [16 ref]
• ***Summary:*** This final report covers five crops: Soybeans, rice, wheat, peanuts, and white potatoes. The section titled "Process investigations–Soybeans" (p. 1-25) discusses five products made from soybeans: Soy flour, tempeh, soymilk (plus okara), soy yogurt (fermented), and tofu. Descriptions are given of each food and the process used.

Figures show: (1) General flow schematic–Soybean products. (2) Flour from dehulled soybeans. (3) Concept sketch–Soybean dehuller. (4) Water elutriation column to classify/separate particles by settling rate differences (Input: Dehulled beans and hulls). (5) Flow chart of tempeh from dehulled soybeans. (6) Flow chart of tempeh from beans with hulls. (7) Flow chart of soymilk from dehulled beans. (8) Flow chart of soymilk without prolonged soaking. (9) Flow chart of soymilk (Shurtleff & Aoyagi procedure). (10) Flow chart of tofu from beans with hulls. (11) Flow chart of tofu from dehulled beans. (12) Flow chart of yogurt from

dehulled beans. (13) Label of Redi-Set Culture from Chr. Hansen Laboratory, Milwaukee, Wisconsin.

Color photos show: (1) Vertical plastic tube described in Fig. 4. (2) Soybean hulls and cotyledons following flotation separation using the prototype device shown above. (3) The K-Tec mill used in preparing the various flour products for this project. (4) Plastic bag filled with full fat soy flour prepared from dehulled beans. (5) Tempeh in perforated plastic bags, made according to "The Tempeh Lab" procedure. (6) A glass of soymilk produced by modified Shurtleff & Aoyagi procedure. (7) Freshly made okara on a blue dish. (8) Freshly prepared tofu; one sample was made from dehulled soybeans, the other from beans with hulls.

Table 1 shows yield data for different food products: Soymilk 11:1. Tofu 1.77:1. Soy yogurt 10.2:1. Tempeh (dehulled beans) 1.59:1. Tempeh (beans with hulls) 2.32:1. Okara (dehulled beans) 1.64:1. Okara (beans with hulls) 2.19:1. Soy flour (dehulled beans) 0.62:1. Address: Food and AgroSystems, Inc., 1289 Mandarin Dr., Sunnyvale, California 94087. Phone: 408-245-8450.

7243. **Product Name:** Tran's Soymilk (Canned) [Plain Sweetened].
Manufacturer's Name: Quang Thai Co.
Manufacturer's Address: 6645 Stockton Blvd. #300, Sacramento, CA 95823. Phone: 916-393-2825.
Date of Introduction: 1997. March.
Ingredients: Incl. soybeans, sugar.
Wt/Vol., Packaging, Price: 11 oz can.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with (call from) Thai Tran, owner. 1997. May 5. He launched this product on 20 March 1997. He is Vietnamese by birth and he is mainly in the canned soup business, selling beef broth and seafood broth soups to Asian-Americans. He also exports some of his canned soymilk and other products–as to Australia and Canada. The soymilk has, up to now, been purchased from White Wave. He recently placed an order for 20,000 gallons of soymilk from White Wave but today they called him to say they will not be able to deliver it due to production problems. Hence he is looking for a new supplier. His soymilk is canned by Pokka Beverage Co. in American Canyon (a city located in the 707 area code region near the Napa Valley, California).

7244. **Product Name:** Rice Moo (Non Dairy Beverage Mix) [Original, Vanilla].
Manufacturer's Name: Sovex Foods, Inc. (Marketer-Distributor).
Manufacturer's Address: Box 2178, Collegedale, TN 37315.
Date of Introduction: 1997. March.
Ingredients: Brown rice syrup solids (partially milled), tapioca, maltodextrin, natural flavor, sea salt, carrageenan, titanium dioxide (a mineral for color), guar gum, xanthan gum.
Wt/Vol., Packaging, Price: 19 gm foil packet.
How Stored: Shelf stable.
New Product–Documentation: Products with Label sent by Patricia Smith from Natural Products Expo West, Anaheim, California. 1997. March. Label: 4 by 5 inch foil packet. Blue and pink on white. "Cholesterol free. Tastes great. Just add water. Fat free. Makes one 8 oz glass."

7245. Zimmerli, Bernard; Schlatter, Josef. 1997. Vorkommen und Bedeutung der Isoflavone Daidzein und Genistein in der Saeuglingsanfangsnahrung [Occurrence and significance of the isoflavones daidzein and genistein in infant formulas]. *Mitteilungen aus dem Gebiete der Lebensmitteluntersuchung und Hygiene* 88:219-32. March. [47 ref. Ger; fre; eng]
• ***Summary:*** During 1995, the isoflavones in three soy-based infant formulas sold on the market in Switzerland were analyzed. A range of 280 to 980 micrograms of total isoflavones per gram of dry matter was found. If newborns were fed exclusively with such formulas, the mean daily intake of isoflavones would be up to 30 mg/kg of body mass. "This dose is up to 25 times higher than the does which was shown to prolong slightly the menstrual cycle in women. Taking into account the very limited knowledge on the possible adverse health effects of an isoflavone exposure in newborns and infants it is demanded that soy-based infant formulas containing isoflavones should be used only under strict medical indications and a lack of alternative products." Address: Bundesamt fuer Gesundheit [Federal Office of Health], Food Research Section, Bern, Switzerland.

7246. Hizer, Cynthia. 1997. The versatile vegetarian: Bean mixes going, going... *Atlanta Journal-Constitution.* April 10. p. H.07.

7247. Nash, J. Madeleine. 1997. Early flash points: Beset by symptoms caused by ebbing hormones, women in midlife turn to herbs and health foods to smooth out the rocky road to menopause. *Time.* April 21.
• ***Summary:*** "The ingredients she weaves into each and every recipe–flaxseed, soy milk, tofu–contain chemical compounds known as phytoestrogens, which are estrogens produced by plants."

7248. *Bluebook Update* (*Bar Harbor, Maine*). 1997. Bar N.A. installs soymilk plant. 4(2):3. April/June.
• ***Summary:*** Bar N.A., Inc, sold a soymilk plant to Lavery Panama, S.A., where it will be used in the [dairy] cheese manufacturing process. The plant has a capacity of 4,000 liters per hour.

7249. Elliott, Julia. 1997. With a little help from the soybean. New York, NY: SCB–Published by the author. 62 p. No

index. 28 cm. Lay-flat comb bound. April.
• ***Summary:*** Contents: Facts and information (p. 1-8): Why the soybean? Areas of health that soy may affect: Heart disease and cholesterol, cancer, osteoporosis, kidneys, Alzheimer's disease, menopausal symptoms. Soyfoods (p. 9-13): Soy milk, tofu, soybeans, soy flour, miso, tempeh, texturized soy protein, soy protein isolates. Isoflavone contents. Recipes (p. 14-61): Appetizers, main dishes, desserts, tofu.

Note 1. There are no references to back up the many medical statements and claims on pages 1-8 of this book. Note 2. This is not a vegetarian cookbook; ingredients include 1 lb. ground beef (p. 14), 6½ oz. minced clams (p. 15), 1 lb. sweet or hot sausage (p. 16). Address: 10 Guyton St., Kingston, New York 12401. Phone: 914-338-6368.

7250. *Healthy & Natural Journal* (*Sarasota, Florida*). 1997. Creative cooking with soy: Flash! Even kids like soy foods! 4(2):58-59. April.
• ***Summary:*** These six recipes and three color photos are courtesy of the Indiana Soybean Development Council. For a brochure featuring these and other soy recipes, contact them at 1-800-735-0195. Recipes call for: Silken tofu (3). Soy milk. Roasted soy nuts. TVP textured vegetable protein. Cooked whole soybeans.

A sidebar titled "Flash! Even kids like soy foods!" is compiled from the American Dietetic Association and other sources.

7251. Hyde, Tom. 1997. Health: Bean there, done what? Soy foods have long been favoured by vegetarians and other careful-what-you eat types as the healthy alternative to animal proteins but critics of the seemingly innocuous bean suggest its anything but. Tom Hyde looks at both sides of a long-running debate. *Metro* (*Auckland, New Zealand*). April. p. 68-76.
• ***Summary:*** This is one of the most detailed and balanced articles on the "soy debate" seen to date. Dick James attended Canterbury University law school in Christchurch, New Zealand. There he met his wife Valerie. They ended up living and raising two kids in the San Francisco Bay Area [actually Walnut Creek]. He worked as a contracts manager for Bechtel, the multinational construction firm, while completing an MBA at Golden Gate University in his spare time. Valerie worked as a schoolteacher, and they also sold real estate. By the mid-1980s they had more than $2 million in savings; they decided to pursue their favorite hobby, raising exotic birds. They moved back to New Zealand and settled in Big Monroe Bay near the Whangarei Heads. In 1990, on 2½ acres of waterfront land, they established their own aviary and began raising colorful parrots, parakeets, and finches on seeds and berries. All went well for about a year until they began hand-feeding the birds a powdered mix containing more protein (about 20%) made by a California company named Roudybush. For the first six months, the Jameses' flock of about 600 birds seemed to thrive on the new diet. They produced offspring during the first breeding season and their plumage was good. "Then, over the next 12 months, the Jameses lost 542 chicks and 289 adult birds. Many of them haemorrhaged violently before death. Some simply faded away. The remaining birds produced 1,272 infertile eggs. Valerie says: 'I felt like the wrath of God had come down on us.'"

They began to do research and "identified soy protein in the bird feed as a possible explanation not only for the mysterious death of their birds, but for the hyperactivity and aggression of their own children who had been raised on soy formula."

Additional information reinforced their suspicions and they concluded, rightly or wrongly, that soy protein was a dangerous substance to feed both birds and babies.

They contacted their scientist brother-in-law, Dave Woodhams, and together they formed the "Soy Toxin Team" and began what became a huge worldwide debate (more like a war of words) over the safety of soy protein in animal feeds and infant formulas. The team admits that traditional Asian methods, some of which involve long fermentation processes, produce foods that are safe to eat, but that modern mass production methods do not.

Trevor Johnston of Bean Supreme, makes tofu, soymilk, and related products which he knows are safe–as do his many customers. But his business has been hurt by the Jameses' campaign. The more the Jameses talked with other animal breeders, the more their suspicions grew.

Mike Fitzpatrick, a young PhD in chemistry from Otago University, suggested to the Jameses that they pay him to go to the library to learn everything he could about toxins in soybeans. He quickly found many books and articles about natural toxins in soybeans–and other legumes too. Among these toxins were proteins and phytoestrogens, yet many of them were inactivated by heat or had such a low concentration that they were not generally a problem for humans–unless the dosage was too high and the exposure too long. Since he was looking only for negative information, his literature search was one-sided, unbalanced, and out of context. / Note: The above summary covers only the first few pages of this excellent article.

Photos show: (1) Dick and Valerie James. (2) Dave Woodhams. (3) Trevor Johnston of Bean Supreme. (4) Pat Carr of Roudybush; she was forced to close her business after much negative publicity. (5) Mike Fitzpatrick. (6) Dr. Ian Robertson, PhD in zoology and researcher of anti-cancer compounds at Auckland medical school. Address: Metro's Deputy editor.

7252. Mansfield, Linda. 1997. Soyfoods association petitions FDA to accept "Soymilk". *Bluebook Update* (*Bar Harbor, Maine*) 4(2):1. April/June.

• ***Summary:*** "A citizen petition filed with the United States Food and Drug Administration (FHA) on February 28 by the Standards Committee of the Soyfoods Association of America (SAA) requests that the FHA 'issue a common or usual name regulation' recognizing the term "soymilk" as the 'established common or usual name to be used in labeling or identifying a beverage of this nature.' The petition requests that the FDA also include a regulation which will establish standard terminology and composition guidelines for soymilk products sold in the U.S. today.

"The petition is based solidly on voluntary soymilk standards which were accepted by SAA directors in March of 1996.

"The FDA is required by its own regulations to furnish a response of some type within 180 days of the filing date of the petition."

"For a copy of the soymilk standards, submit a written request to Peter Golbitz, SAA Standards Committee, c/o Soyatech, Inc., P.O. Box 84, Bar Harbor, ME 04609 of fax: 207-288-5264.

Note: The FDA never responded to this petition, thereby signaling its acceptance.

7253. *Nutrition News* (*Riverside, California*). 1997. Soy tsunami: The wave of the future. 21(4):1-4. April. [1 ref]
• ***Summary:*** Contents: A wave is coming (introduction). East soy and save your life. Soy vs. cancer. Top ten benefits of soy–According to Earl Mindell's Soy Miracle. Genistein is unique to soy. Soy vs. heart disease. The pause that refreshes: a soy shake. And, by the way, save your planet too. Get on the soy train! If you are a first timer, jump in there with tofu and/or isolated soy protein.

Where the good stuff is–table showing nutritional composition, including isoflavones of 1 serving of: miso, cooked soybeans, soy flour, soymilk, soy nuts (dry roasted), soy protein isolate, tempeh, firm tofu, low fat tofu (aseptic pack), extra firm tofu (aseptic pack), textured soy protein. Note: Good sources of isoflavones provide 30-50 mg per serving.

"This issue of *Nutrition News* is dedicated to partners William Shurtleff and Akiko Aoyagi and to Frances Moore Lappe, pioneers in the promotion of soyfoods and of the concept of kindness of eating."

7254. Raymond, Jennifer. 1997. Fat free & easy: Great meals in minutes! No added fat. No cholesterol. No animal ingredients. Calistoga, California: Heart & Soul Publications. 152 p. Recipe index. 26 cm.
• ***Summary:*** A very useful vegan cookbook. Contents: Introduction. Health consequences of high-fat diets. How much fat should you eat? Calculating your fat intake. Sources of fat in food. Fats are not created equal. Tips for cutting the fat. Meeting your protein needs. Problems with excess protein. Protein myths and facts. Salt. Menu planning and menu ideas. Stocking your pantry. Ingredients that may be new to you. Recipes: Breakfast foods, breads & muffins, sandwiches, sauces & spreads, salads & dressings, soups & stews, vegetables, grains & side dishes, main dishes, sweets.

In this book, all recipes that would typically call for milk (such as smoothies or pancakes), call for "soy milk or rice milk." Many recipes are seasoned with soy sauce. Other soy-related recipes include: Scrambled tofu (p. 33). Missing egg salad (with tofu, p. 47). Creamy cucumber dip (with tofu, p. 49). Cucumbers with creamy dill dressing (with tofu, p. 61, 66). Holiday tofu roast (p. 113). Truly terrific tacos (with Boca Burgers, p. 119). Tofu cheesecake (p. 133). Chocolate tofu pudding (p. 136). Creamy prune pudding (with tofu, p. 139). A photo (p. 151) shows Jennifer Raymond, her husband Stephen Avis, and their five dogs. Address: 1418 Cedar St., Calistoga, California 94515. Phone: 707-942-2180.

7255. Carey, Pat. 1997. Sales of rice beverages pass soymilk sales in America: Some history and current statistics (Interview). *SoyaScan Notes.* May 5. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Growth in the U.S. non-dairy beverage market in recent years has been in rice beverages Pat has solid nationwide statistics for all of calendar year 1996 which show that soy beverages and rice beverages now each have about equal shares of the U.S. non-dairy beverage market. In terms of dollar value of wholesale prices, rice beverages have 49.3%, soy beverages have 48.8%, and other nondairy beverages (oat, almond, etc) have 1.8%. Since the wholesale price of rice beverages runs 10% to 30% less than that of soy beverages, that means that an even higher percentage of the liquid volume sold is rice beverages.

Pacific Foods formulated and aseptically packaged the Rice Dream beverage made by Imagine Foods from the day it was introduced in June 1990 until about 18 months ago when Imagine Foods installed its own packaging line. Pacific Foods deserves credit for developing the formulation and packaging techniques. At the beginning, Robert Nissenbaum had a small amount of the product packaged at Real Fresh (Visalia, California) but not for very long. Pacific Foods had problems packaging the product initially because it was too thick, but soon Robert reformulated it until it could be packaged without difficulty. The rice base has always been made by a joint venture between California Natural Products (CNP–Cheryl and Pat Mitchell; Manteca, California) and Imagine Foods. Most of the credit for the making the base using commercial enzymes goes to the Mitchells; Cheryl has a PhD in that area. For years, tankers of rice base arrived at Pacific Foods in Oregon from Manteca, California, almost every working day. When Imagine Foods started packaging its own rice beverage, Pacific Foods lost the entire Imagine Foods account, so it introduced its own line of rice beverages. Pacific Foods made the rice base without infringing on the CNP/Imagine Foods patent. They

have considerable expertise in that area. Pacific Foods sent samples of rice beverage to Imagine Foods long before Imagine Foods left, because Pacific Foods was making rice syrup sweetener. Pacific Foods sweetens its products with rice syrup which it the company makes itself; it has been making rice syrup for 2-3 years. Pacific Foods is a highly integrated company, and also has a full-line spice company in Seattle, Washington. All of the soybeans Pacific Foods buys are organic.

The big decrease in the price of soymilk during the past few years has been due to the lower price of non-fat or fat-free products. The first fat-free product was Health Valley's Soy Moo, introduced about 5 years ago. The second such product was WestSoy Nonfat, launched in early 1996. Address: Marketing Manager, Pacific Foods of Oregon, 19480 S.W. 97th Ave., Tualatin, Oregon 97062. Phone: 503-692-9666.

7256. Johnston, Trevor. 1997. Recent nightmares at Bean Supreme Ltd. in New Zealand (Interview). *SoyaScan Notes.* May 7. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The last 18 months have been a marketing nightmare for Trevor. The problems started when a toxicologist, who works for the government in New Zealand, fed his parrots a soy-based formula and they died. He blamed the soy. He and others formed "The Soy Toxin Team" and have been working ceaselessly to (1) get soy-based infant formula banned from the market in New Zealand, and (2) alert the public to what they feel are the dangers of the phytoestrogens in soybeans. Trevor has a huge file of anti-soy and anti-phytoestrogen articles published in New Zealand. Note that in the USA almost all of the many articles about the phytoestrogens in soybeans consider them to be one of the main benefits of soybeans.

The second major problem has been Roundup Ready soybeans–which are genetically engineered by Monsanto. Greenpeace in Australia has made these soybeans their major project; they are working to alert the public to the fact that most food products that contain soybeans–unless specifically labeled otherwise–probably contain at least a small percentage of Roundup Ready soybeans–which are not labeled as being genetically modified (GM). These soybeans offer no benefits to consumers and Greenpeace argues that they main contain some real dangers. They have conducted a number of media actions, such as taking soy products off supermarket shelves to point out that they contain soy–as the cameras roll. The result has been to give soy a negative image in Australia. A group called the Natural Food Commission (an offshoot of Maharishi's Transcendental Meditation or TM) has been formed and is now circulating a draft proposal on genetically modified organisms in foods–urging that they be labeled.

Trevor's sales have decreased by 25% over the past 18 months. His biggest specific problem is trying to find a source of soy protein isolates that are guaranteed to be free of GM soybeans. Protein Technologies International is refusing to deal with this issue by saying that their isolates are safe. There are other big users of soy protein isolates in Australia: A large sausage company and Sanitarium Foods. Of his various products, Trevor's isolate-based soymilk has suffered the greatest drop in sales. Sales of his tofu products have not decreased, and sales of his soy ice creams are down only a little. Address: Managing Director, Bean Supreme Ltd., P.O. Box 12082, 140 Hugo Johnson Dr., Penrose, Auckland, New Zealand. Phone: (09) 590 592.

7257. Mack, Heidi. 1997. Tofu doesn't have to be yucky: Disguise it, change its texture, and you might even fool Godzilla. *Christian Science Monitor.* May 8. p. 14.
• ***Summary:*** During the past few years, the number of soy products available to consumers "has grown phenomenally." They include soy yogurt, soy ice cream, soy milk, tofu turkey and pastrami, tofu salad dressing and mayonnaise, soy flour, vegetarian philly steak and Sloppy Joes, tofu dogs tofu burgers, and soy cheese.

The author, a vegetarian for 15 years, admits a genuine dislike of tofu. However she discovered that freezing it for at least a week, to transform its soggy texture, squeezing the water out of the tofu by hand, and then marinating it, made all the difference. Now she makes Tofu Taco Meat using frozen tofu instead of meat, and her family likes it in tacos, burritos, chili, spaghetti, and taco salad. Friends and family no longer stop at McDonalds on the way to her house.

Contains recipes for Barbecued tofu, Barbecue sauce, Spicy peanut tofu, and Tofu taco meat.

7258. Seemo (H. Shapira). 1997. Re: History of Dakini Health Foods Pvt. Ltd., in Pune/Puna, India. Letter (fax) to William Shurtleff at Soyfoods Center, May 13–in reply to inquiry. 7 p. Handwritten.
• ***Summary:*** Seemo is Mr. H. Shapira from Israel and Kairava is Mrs. J. Spaelstra from the Netherlands. Seemo is in charge of tempeh, Kairava in charge of tofu & soymilk. They are making the earliest known commercial soybean tempeh in India. For their first letter see Dakini (1997).

Both Seemo and Kairava are devout disciples of Osho (formerly called "Sri Rajneesh"), he since 1984 and she since 1986. They arrived in Pune to stay in about 1988/89. Initially to support themselves, they had a gem and crystal shop, a wholesale new-age jewelry operation, and a motor bike repair shop. Now they have finally found what they want to do for work. "It's love and Zen." Osho died in Pune on 19 Jan. 1990; they returned to India the next day; the fire was still burning at the burning ghat. In the year before his death, his discourses were mostly about Zen. He died in Pune due to heavy metal poisoning and radiation damages done to him by U.S. marshalls in an Oklahoma jail cell, where he was kept unlawfully in 1985.

Their company started with the idea of making white tahini and possibly Turkish halva [halvah] (in which white tahini is a main ingredient). It was extremely difficult to get started. As foreigners doing business in India, they had to register a "Pvt. Ltd." company. Then they could not find a space for the company, since Pune is a rapidly growing city. So Seemo pulled down the back garden in his rented house, constructed a shed with a floor area of 25 square meters, and moved his bedroom up to the second floor. This gave him an additional 24 square meters where the bedroom used to be. They also have a 25 square meter storeroom where they make the tempeh. He got electrical connections then waited for 8 months while a colloid mill (copy of a 1940 model), hot air oven, and filling machine were delivered. The mill proved to be a technical nightmare; he had to totally rebuild it. Finally their small factory started operation. Then they added peanut butter and brown tahini to their product line–with no additives or preservatives. They had to set aside their plan to make halva.

Spicer College, run by Seventh-day Adventists, is located in Pune. They have a health food store and they make peanut butter–nearly edible, with too much sugar and salt, plus other ingredients. Their sesame butter (brown tahini) is gritty, rancid, and inedible. They also produce grape juices (very, very sweet), pastries (Mmmm good). And they make and bottle soy milk in plain and chocolate flavors, but it is loaded with white sugar and Class II permitted preservatives! They also make pretty good tofu; Seemo used to eat it now and then for the last 8 years. "Besides being actually able to taste the Bible in it, I had no reason to complain." This tofu is now served at the Osho commune. "Pune old timers told me that once–20 years ago–the place was managed by an enthusiastic old American woman and the quality of their products was very good.

At Dakini, they now also make hummus in their kitchen, 15 kg/week in summer and 60 kg/week in winter. They pack it in 200 or 400 gm cups and sell it at various shops in town to foreigners and Indians. They like it.

Seemo started developing the tempeh about 8 months ago. Last year a friend of his found a book titled *Handbook of Indigenous Fermented Foods,* edited by Dr. Keith H. Steinkraus, in a pavement stall for 400 rupees (US$13.00). Since he had been to Bali, Indonesia, many times, he tried making some of the foods but rarely got any edible products. So before leaving Pune, he gave the book to Seemo as a gift. As he read it, Seemo got really excited. He had grown up in a meat-eating family. Even while traveling and living in Europe, he continued to eat meat and junk foods. "Then I understood it was not good for me on all levels, and went vegetarian." Living in Holland later on, he started to learn about tofu, and then tempe, tamari, etc. "So now I was a healthy, well-fed vegetarian." Then he moved to India, but after some years of eating fried foods, lentils and lots of dairy products, he started to eat meat again, 2-3 times a month. "It did not feel too good, but I had no idea how to manage my diet, and living on mostly dairy products did not suit my body. So when Dr. Steinkraus' book fell into my hands, I got excited and realized that it might be possible to make tempe here in India at a small, affordable investment.

"So I first got a small incubator built; its actually like a cool box ½ meter wide and 1½ meters high, made of galvanized sheet metal with insulation and 8 shelves (of which I now use only 3)." At the bottom are heaters, which give 250-540 watts of heat. Two old computer cooling fans distribute the heat, and a thermostat regulates it. "It's not a perfect machine but I can do 5-12 kg/day when I want and, most important, I can produce in it excellent spore powder–since it is difficult to import anything here. Actually, I nearly gave up the project, because I was making sporulated tempeh, then sun-drying it and running in through my spice grinder. The powder looked great. The tempe cakes used to get hot, then very hot, then smelly with funny colors (no white mold). I double-checked everything. In the end, only the grinding was left, so I bought a small hand-turned grain mill (500 rupees = US$15.00). Since then, perfect tempeh has been happening.

"For starter, I first got a packet of spores from Holland. Later I got 1 gram of white tempe starter from an American friend in Goa (she used to make her own supply down there), and playing with it I found it a bit more suitable for my use. So most of my spore stock now is from this starter, and some is mixed. I still have to study how to make tempe and starter during the different seasons here. Now it is very hot and dry. Next month is monsoon (wet), followed by a month that is hot and humid, and then the 3-month 'cold' season."

About half of all tempe produced is sold frozen; the other half is sold fresh. Seemo also plans to try making dry tempeh. He gives away lots of tempe as samples; most people love it. Starting this July, it will appear on the menu of one restaurant, possibly two–first as Tempeh Stroganoff and Tempeh Shashlik (steamed, then spiced, then barbecued). "When I get *The Book of Tempeh* I will introduce it to more places. Meanwhile, I have totally forgotten about eating meat. I feel strong and light. I find my vision benefits too; I haven't noticed that with tofu. Now that I am a bit more confident working with the mold, I hope to raise some capital, move to a suitable place (possibly well out of town), and then start to make tamari shoyu, and definitely some miso too. So that's a little of our story. Thank you." Address: Dakini Health Foods Pvt. Ltd., Vidyut Nagar, Plot A2, Kawdewadi, Pune / Puna 411 001, India. Phone: 0091-212-63-1990 (phone and fax).

7259. Burros, Marian. 1997. Trying to get labels on genetically altered food: Eating well. *New York Times.* May 21. p. B8.

• ***Summary:*** In December 1996, Whole Foods Market (WFM), the largest natural foods supermarket chain in

America, sent a letter to more than 400 of its suppliers asking if their products contained genetically engineered ingredients. About 75% of the suppliers have not yet responded–According to Margaret Wittenburg, quality assurance director of WFM; she wrote the letter. More soybeans are genetically engineered than any other food crop. "They [most Americans] have no idea what foods on their supermarket shelves contain genetically engineered ingredients because the Government does not require those products to be labeled. A small but growing movement of people is pushing for that to change."

"Europeans have been quicker than American to react to transgenic food... In Austria and Luxembourg genetically engineered food is banned. Most observers suggest that Europe's response is so much more intense because of the European experience with mad cow disease."

"There are signs that the consumer movement is gaining momentum. Nebraska and Maine are considering legislation for labeling. Mothers for Natural Law, a nonprofit consumer advocacy group, has begun a public awareness campaign. The group, which is affiliated with the Natural Law Party, which promotes transcendental mediation, wants to collect a million signatures on a petition asking the Food and Drug Administration to require testing and labeling of transgenic foods."

The article then asks how widespread transgenic foods are in U.S. supermarkets. "[The *Times*] asked Genetic ID, a company in Fairfield, Iowa, that tests foods for genetically engineered ingredients, to test four soy-based baby formulas and eight other products made with soy or corn. The infant formulas–Carnation Alsoy, Similac Neocare, Isomil and Enfamil Prosobee–all tested positive. Eden Soy milk tested negative. Morningstar Farms Breakfast Links and Morningstar Farms Better 'n Burgers, Betty Crocker Bac-os Bacon Bits, all soy-based products, also tested positive. And so did three corn-based chips–Fritos, Tostitos Crispy Rounds and Doritos Nacho Cheesier."

7260. Buchheim, Steve. 1997. New developments at ADM. Thoughts on the use of genetically engineered soybeans in foods (Interview). *SoyaScan Notes.* May 22. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** About 3 weeks ago ADM announced that G. Allen Andreas (a nephew of Dwayne Andreas) is the new CEO of ADM. Dwayne Andreas, who had been CEO for many years, will continue to be chairman of the board. As a result of this change, Dwayne Andreas' activities and involvement with ADM are not likely to decrease at all. A good article appeared in the *Wall Street Journal.* The main contribution of G. Allen "Allen" Andreas is that he understands "Wall Street," and he understands that investors are not attracted by ADM's perennially small dividend. Dividends may go up, as ADM pays more attention to Wall Street. ADM has never liked to borrow money–perhaps because of Dwayne's Mennonite background. That may change. ADM has authorized a big "buyback" of ADM stock to raise the price. The family wants stock prices to go higher. Allen was in Europe for 15 years and he grew that part of ADM's business at an impressive rate. He is soft spoken, intelligent, and a "people person."

Concerning the price-fixing charges, lysine was $1.40 a pound when ADM got into the business and $1.08, when the government went after ADM for price fixing. Michael "Mick" Andreas, Dwayne's son, no longer works at ADM. He is apparently on "administrative leave," but still on the ADM payroll. He has an office in downtown Decatur; Steve has no idea what he is doing.

Steve does not agree with the criticism that ADM is a company that is run for the ownership, rather than for the shareholders. It is rather a question of management having free reign to make the decisions that are best for the company. Dwayne Andreas does not want others trying to force him and the board to do something to the company that he does not want to do. ADM uses its profits to build the company and expand assets. A buyer recently came from China and told top ADM management that he could give them orders for soybean meal and soy protein isolates that are ten times their corporate crushing capacity. ADM is just now finishing their fifth plant [its in Europe] to manufacture isolates; all of the production is sold out for two years. It is well known that Dwayne is one of the wealthiest Americans. What is less well known that his ADM holdings (shares) account for only about one-fifth of what he is worth. He was the largest single individual shareholder in Nabisco and they have been bought out twice. Dwayne doesn't operate for money; he now cares very much about his legacy.

Concerning genetically engineered soybeans: Almost all companies in the soybean industry are sitting on the fence and waiting to see what happens. By making non-GMO products available, you encourage and abet the whole process of diving the soy protein business into GMO and non-GMO, and you negatively affect all the other businesses that are contemplating going into genetic engineering.

Shurtleff argues: But the alternate position is not to do anything until there is a crisis and/or the voices demanding labeling of GMO ingredients get louder and louder. If you start soon to offer non-GMO soybean meal, isolates, and TVP, there are many huge benefits. You become the first company worldwide to do so. You diffuse criticism of genetic engineering in general and gain large amounts of goodwill (which ADM now needs) and free publicity as the leader in this area. As you offer these non-GMO products (responding to consumer demand) you make it very clear that you agree with consumers' right to know what is in their food, but that you also believe that GMO products are completely safe. Note: Soyfoods Center has recently received a number of calls from companies which use large amounts of soy protein isolates in soymilk, tofu, and other

food products, and which are in urgent need of an isolate that is guaranteed by the manufacturer to contain no genetically engineered soybeans.

Steve agrees with many of these ideas. ADM's position has always been that they are consumer driven and market driven; they respond quickly to demand. All smart businesses know they are consumer driven. If it is soy, ADM should be making it available in both GMO and non-GMO forms. One way to do this would be to create a new corporation (named, for example, New World Proteins), which is a subsidiary of ADM. They lease existing excess capacity from ADM, using facilities that crush soybeans and make soy protein products such as isolates and TVP. The new corporation says to ADM: "You will agree under contract to clean these facilities thoroughly and certify that they will be used only for non-GMO soy products. We will separately contract for the purchase of soybeans. You will crush and process them for me to my specifications, and we will market them. Nothing moves. Its very simple. The new corporation could be run by people who wouldn't even have to move their desks. It makes a lot of sense from a pure commercial/profit standpoint. It is the right and the smart and the responsible thing to do. Then we can follow the market whichever way the wind blows. We can take a position where we win either way. ADM could become the first in the world to take an enlightened, consumer-driven position on this issue. I personally believe deeply that consumers have the right to know what is in their food. It is a fundamental right. ADM has always been on the side of the consumer's right to know. Now we're putting our money where our mouth is.

There is a major problem out there, and this would be a solution that makes sense for ADM at this time. Steve is going to start talking with his superiors at ADM (such as Larry Cunningham, who has assumed Michael Andreas' responsibilities) about this, and he will keep in touch on new developments.

Much of ADM's current activity is in China, where the company has many joint ventures, and is building factories, teaching the Chinese new ways of using soybeans, etc. Address: Marketing Manager, Soy Protein Applications, Archer Daniels Midland Co., P.O. Box 1470, Decatur, Illinois 62525. Phone: 1-800-637-5824 X-5394.

7261. Walker, Ian. 1997. Soymilk and soybean crushing in Canada (Interview). *SoyaScan Notes.* May 26. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** It is quite the fashion now for big dairy companies (such as Neilson) to be selling soymilk under their own private labels. It is widely available in Canadian supermarkets–much more so than in U.S. supermarkets.

There are only two major soybean crushers left in Canada: ADM Agri-Industries Ltd. (Windsor, Ontario) and CanAmera Foods. But there are also about 4 "micro-crushers" who make "cold pressed" [mechanically pressed] soybean oil, and low-fat meal (which they sell to ADM). Address: College d'Alfred–Formation/soya, C.P. 580, 31 St. Paul, Alfred, ON K0B 1A0, Canada. Phone: 613-679-2218 X-309.

7262. Liu, KeShun. 1997. Nonfermented Oriental soyfoods. In: KeShun Liu. 1997. Soybeans: Chemistry, Technology, and Utilization. Florence, Kentucky: Chapman & Hall. xxvi + 532 p. See p. 137-217. Chap. 4. Index. [125 ref]

• ***Summary:*** Contents: Introduction. Soymilk: Traditional soymilk preparation methods, chemistry of beany flavors, modern soymilk preparation methods (Cornell method, Illinois method, rapid hydration hydrothermal cooking, methods using defatted soy material, deodorization techniques, commercial methods, novel approaches), basic steps and principles of soymilk preparation (starting material, water incorporation, grinding, soymilk extraction, heat treatment, formulation and fortification, final processing and packaging, additional processing), other constraints (objectionable aftertaste, chalkiness, yields), standardization of soymilk.

Tofu: Tofu preparation methods (traditional methods, variations in tofu preparation methods), tofu varieties, quality and quantity attributes of tofu, factors affecting tofu making (soybean varieties and compositions, temperature of grinding soybeans, concentration of soymilk, heat processing of soymilk and tofu gelation mechanism, types of coagulants, concentration of coagulants, coagulation temperature, mode of adding coagulants, coagulation time, molding conditions, other factors, tofu made from full-fat soy flakes, novel treatments), microbiological safety.

Yuba: Preparation, chemical composition, varieties, utilization, mechanism of film formation, conditions for film formation and their optimization.

Other nonfermented soyfoods: Soybean sprouts, okara, roasted soybeans, soynuts, and soy flour (roasted soy flour, known in China as *dou fen* and in Japan as *kinako.* "In China, roasted soy flour may be mixed with lard and sugar and used as a filling or coating material for pastry... In Indonesia, the flour is mixed with spices, such as garlic and chili powders, and served with *longtong,* which is boiled rice wrapped in banana leaf"), cooked whole soybeans, immature soybeans [green vegetable soybeans]. Address: PhD, Soyfood Lab., Hartz Seed, a Unit of Monsanto, P.O. Box 946, Stuttgart, Arkansas 72160-0946. Phone: 870-673-8565.

7263. Messina, Mark; Messina, Virginia. 1997. Soy: Good food for good health. *Veggie Life* (*Concord, California*). April/May. p. 48-50, 55.

• ***Summary:*** Contents: Introduction. Heart disease. Osteoporosis. Menopause. The many faces of soyfoods: Soybeans, soy flour, soymilk, textured vegetable protein, tempeh, soynuts, miso, tofu.

7264. Patterson, Anne G. 1997. Concerned about calcium? Soyfoods can help. *Soy Connection* (*The*) (*Chesterfield, Missouri–United Soybean Board*) 5(2):3. Spring.
• ***Summary:*** "Food labels are valuable tools in helping us meet our requirements for calcium. Nutrition Facts found on food labels are required by law to list the percent 'Daily Value' of calcium. The daily value for calcium is 1 gram for adults and children age 4 or older. This is equal to 1,000 milligrams. If the Nutrition Facts on a soymilk container states, 'Calcium 20 percent,' then you know the amount of calcium for one sewing of soymilk is 200 milligrams, or 20 percent of the recommended daily value for adults and older children.

"If you've been reading the labels on containers of soymilk and tofu you may have noticed a big difference between the amounts of calcium provided brand to brand. Both tofu and soymilk contain calcium since there is naturally occurring calcium in soybeans.

"The amount of calcium varies in tofu because of the type of calcium-rich coagulant used to thicken the soymilk. Taste and the type of tofu desired determines what type of coagulant or combination of coagulants are used in tofu processing. If you want more calcium, then look for a tofu which lists the coagulants, calcium chloride or calcium sulfate, in the food ingredient list.

"Soymilk that has been fortified with calcium is your best choice for getting significant amounts of calcium. Since all soymilk is not fortified, one needs to review Nutrition Facts on labels carefully. Use the following chart to help you get a jump start on the right soymilk for you. Remember it's still wise to check out that food label since food companies may reformulate their product."

A large table shows only fortified soymilks which may be found in retail stores. The 5 columns are: (1) Brand and flavor. (2) Milligrams of calcium per cup. The range is about 200-400 mg. (3) Calories per cup. (4) Grams of protein. The range is about 4-6 gm. per cup. (5) Grams of fat per cup. Address: R.D., L.D.

7265. Tofutti Brands Inc. 1997. Tofutti. 1996 annual report. 50 Jackson Dr., Cranford, NJ 07016. 13 p. 28 cm. Plus 7-page proxy statement insert.
• ***Summary:*** Net sales for the 52-weeks ended Dec. 30, 1996 were $5,842,000, up 16% from the previous year. The net income was $135,000, up 2.9-fold from the previous year ($47,000).

"The Company made several new product introductions in 1996. During the year, the Company extended its non-dairy cheese line by introducing six new flavors of Better Than Cream Cheese and three new flavors of Sour Supreme. During the summer of 1996, the Company introduced several new frozen novelty items, including cakes and other chocolate enrobed novelties. The Company at this time also introduced its first non-frozen, non-refrigerated product line, TOFUTTI COOKIES. In December, the Company introduced a chocolate coated CANNOLI filled with a non-dairy cheese filling.

"In 1996, The Company also made a change in its distribution arrangements for the metropolitan New York area. Effective March 31, 1996, the Company terminated the services of The Haagen-Dazs Company and appointed the Mattus Ice Cream Company to be its New York area master distributor."

"During 1997, the Company will be introducing a number of new frozen dessert products. Among these items will be honey-sweetened pints, sugar-free, fat-free half gallons, new novelties and a soy beverage. The Company will also be introducing some new food products, such as Tofutti Lavasch flatbreads."

David Mintz, age 65, is still Chairman of the Board of Directors and CEO. He has been a director since August 1981. He owns 49.9% of the company's common stock. His salary in 1996 was $155,000, including a bonus of $30,000 paid in April 1997. Rick W. Malloy, Executive Vice President last year, appears to have left the company and not been replaced. Steven Kass, chief financial officer, was paid a salary of $100,000 in 1996, including a bonus of $15,000. Other directors are Bernard Koster (counsel), Reuben Rapoport (Director of product development), and Franklyn Snitow (general counsel). Address: Cranford, New Jersey. Phone: 201-272-2400.

7266. **Product Name:** Café Westbrae (Coffee-Flavored Soy Beverage) [Coffee, Mocha, or French Vanilla].
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor).
Manufacturer's Address: 1065 East Walnut St., Carson, CA 90746. Phone: 310-886-8200.
Date of Introduction: 1997. May.
Ingredients: Filtered water, organic soy beverage* (filtered water, whole organic soybeans*), Florida Crystals (dehydrated cane juice), natural flavors, expeller pressed canola oil, organic spray dried coffee*, tricalcium phosphate, potassium bicarbonate, sea salt, carrageenan. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 8 fl oz (240 ml) Tetra Brik Aseptic carton. A 3-pak retails at Trader Joes for $2.29 (1998/02 Concord, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per box (8 fl. oz.: Calories 130, calories from fat 25, total fat 2.5 gm (4% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 85 mg (3%), total carbohydrate 25 gm (dietary fiber 0 gm [0%], sugars 23 gm), protein 2 gm. Calcium 25%, iron 2%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Ad (1/3 page, color) in Vegetarian Times. 1997. May. p. 88. "The first non dairy

blended coffee beverage." A color photo shows the label. A coupon offers $0.30 off on any 3 flavors of Café Westbrae.

Product with Label purchased at Trader Joe's in Concord, California. 1998. Feb. 15. Front Panel: Colors: Blue, white, tan, red, yellow, and green. A modernistic, stylized illustration shows a man and woman seated at a coffee table in a café. "Creamy, Low Fat, Non Dairy." Back panel: "Bring the coffee house to your house–bring home Café Westbrae!... Café Westbrae is a unique blend of organic coffee and organic soy beverage. No cholesterol, no lactose, no grinding, measuring or brewing... just perfect ready-to-drink coffee blends!" Free offer for a compact disc containing ten Pop Rock hits from the 1960s. Just send 6 proofs of purchase +$3.50 for shipping and handling. A message from Andrew H. Jacobson, president, titled "Westbrae... Naturally" begins: "Back in 1970, when we grew our own organic fruits and vegetables, people knew that the Westbrae stamp on our products meant that only the finest ingredients were used. Today we continue to continue that tradition..." Questions or comments? Call (800) 769-6455. http://www.westbrae.com.

Talk with Connie at Customer Support for Westbrae. 1998. March 30. This line of products was introduced in about May 1997. The Kosher symbol is called "square box K."

7267. Ngo, Nga. 1997. Two Vietnamese-American manufacturers of tofu and soymilk in Little Saigon, Orange County, California (Interview). *SoyaScan Notes.* June 12. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Nga works for a dairy plant in Southern California. Her employer is thinking about introducing its own brand of soymilk which has a beany flavor–since that is what Vietnamese like. There are already two companies in the area, each run by Vietnamese-American families, that make tofu and soymilk, but they hot-pack their soymilk and it spoils quickly. The older and larger of the two companies is Tan-Tan Tofu, located in Westminster or Santa Ana, Orange County, which was in business by the late 1980s. Its younger competitor is Buong Son, which started in about 1992 and is located in the same area. Address: Orange County, California. Phone: 818-961-3399.

7268. Tibbott, Seth. 1997. Estimates of the retail markets for tofu, soymilk, and tempeh market in the United States (Interview). *SoyaScan Notes.* June 13. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Tofu: Steve Demos, founder and president of White Wave, thinks that the retail value of tofu sold as tofu in the USA in 1996 was about $110 to $130 million. Peter Golbitz estimated that in 1990 the U.S. retail tofu market was $89.6 million, rising to $116 million in 1996. He also estimated that in 1990 the U.S. retail soymilk market was about $54 million, rising to $125 million in 1996.

Tempeh: A total of about 55,000 lb/week of tempeh is now made in the USA, compared with 34,700 lb/week in Jan. 1984 (based on a Soyfoods Center survey, published in Soyfoods Industry and Market, 5th ed.). The average retail price of an 8-oz package of tempeh in the USA is $1.81. Thus the retail value is 55,000 x $1.81 x 52 = $5.18 million.

Note: A detailed survey conducted by Soyfoods Center in Feb. 1984 and published in Soyfoods Industry and Market (5th ed., 1985, p. 41) found the U.S. retail value of tofu and tofu products to be $46.08 million, of soymilk and soymilk products (including soy-based infant formulas) to be $221.97 million; about 6.7% of that value or $14.9 million was "adult soymilk." And of tempeh to be $4.96 million. Address: Turtle Island Foods, Inc., P.O. Box 176, Hood River, Oregon 97031. Phone: (503) 386-7766.

7269. Bean Supreme Ltd. 1997. Price list with sale. Auckland, New Zealand. 1 p. Single sided. 30 cm.
• ***Summary:*** Effective 20 June 1997. Black on yellow. The products are listed in categories except for the first, which is soyfoods. For each is given the product name, weight, price, barcode, outer, and price. Tofu bulk organic. Tofu firm vacuum pack. Tofu firm vacuum pack organic. Tofu soft Asian. Tempeh vacuum pack. Tempeh fr. frozen. Soysage. Luncheon [Traditional, Cajun, Smoke]. Tempeh patty frozen. Meatfree sausage.

Soymilks: Soyplus 1 liter. LiteLicks [soy ice cream] (Honey Vanilla, Wildberry, Maple Walnut, Chocolate, Fruit Fiesta, Almond Fudge, Bulk packs) (9 or 16 liters).

Biofarm yoghurts (5 flavors). Malabar goat yoghurt. Olive Grove: Falafel mix, hoummus, Souvlaki sauce, tahini.

Koromiko cheese (11 types, of which the first 4 are vegetarian). Koromiko wax selection (private bin). Pacific Harvest: Agar, kelp and karengo granules, fronds, or flakes. Address: Box 12082, 140 Hugo Johnson Dr., Penrose, Auckland, New Zealand. Phone: 64 09 579 0592.

7270. Haumann, Barbara Fitch. 1997. Soy protein foods gain store space. *INFORM* (*AOCS*) 8(6):588-596. June.
• ***Summary:*** Contents: Introduction. Nutritional drive. Meat alternatives. Soymilk and tofu markets. Soybeans as vegetables. Emerging products. Products consumers want. Hurdles. Possible health claim? School lunch opportunities (federal school lunch program). Product promotion. Nutraceuticals.

Soy protein foods sold in supermarkets are no longer targeted at only vegetarians; they're becoming mainstream products. Many U.S. consumers are decreasing their consumption of meat. USDA food intake surveys show that from 1977 to 1994 per capita beef consumption decreased 54% and pork consumption dropped 45%.

The leader in meat alternatives is Worthington Foods, which has seen sales rise approximately 20% in each of the past 3 years. Its Morningstar Farms brand, sold in frozen

food sections in supermarkets and geared for mainstream consumers, represents 75% of the company's offerings.

PMS Foods, Inc. in Hutchinson, Kansas, is among the companies that make meat alternatives, including soy-based beef, chicken, ham, pepperoni, bacon, sausage-flavored crumble, sloppy joe mix, soy-based taco mix, and soy-based chili mix–which it sells wholesale, primarily to foodservice operations. Some of its products are used as ingredients in supermarket products–such as bacon bits and salad dressing mixes.

Steve Demos, founder and president of White Wave, jokes: "We're primarily a dairy without a cow. We 'milk' soybeans. Founded in 1977, the company now sells 54 retail products and produces about 125 tons a week of soy proteins via aqueous extraction. White Wave has up to 30 linear feet in the refrigerated sections in some natural food stores. White Wave has experienced 25-30% sales increases per year over the past decade.

The Soy Protein Council in Washington, DC, now has 3 members: ADM, Cargill Inc., and Central Soya; all produce soy protein concentrates, isolates, and soy flours. The council promotes the growth of the soy protein industry and works to broaden the acceptance of soy products in foods. The council's Web site is http://www.spcouncil.org.

Fourteen state soybean boards, the United Soybean Board, and the Soy Protein Council gave joined together to form the "Soy Protein Partnership," whose goal is to promote domestic soy protein use in human foods. Seven members of the partnership–the state soybean boards from Indiana, Iowa, Kansas, Michigan, Nebraska, Ohio, and South Dakota–are providing $270,000 to fund the partnership's first project, a "Food Manufacturer's Initiative." The group in using the slogan "New Food, New Uses: How soy protein can expand your business, to reach food marketing executives and food technologists and to increase their awareness of the demand for soy products and their use in food products.

Surveys by Wiese Research Associates have shown that consumer awareness concerning soy protein increased from 55% of consumers polled in 1991 to 79% in 1996. Likewise, those saying they wee likely to purchase a product if they knew it contained soy protein increased from 20% in 1988 to 32% in 1996.

In addition, a national Gallup survey conducted in 1996 for the Nebraska Soybean Board showed that 56% of the 600 school foodservice directors polled currently use soy products. And studies by the National Restaurant Association indicate that 97% if colleges and universities and 80% of restaurants have incorporated meatless entrees into their daily menus.

Schouten USA Inc. of Minnesota, whose parent company is the Schouten Group in the Netherlands, manufactures SoyLife, a soybean [sprout] extract containing 25-30 mg of isoflavones per gram. According to Laurent Leduc, Schouten USA's international marketing manager, it is presently used as an ingredient by more than 40 different vitamin and supplement companies as a source of isoflavones in their products, and is being incorporated into "functional foods" around the world. Leduc notes that research has indicated that consuming 60-80 mg of isoflavones a day may provide health benefits. He adds: "The only other way to get that much is by eating 8-9 ounces of tofu or drinking two-thirds of a liter of soymilk a day. The average American is not going to do that."

William Shurtleff of Soyfoods Center "said it currently is no longer usual to field questions from consumers in Midwestern states who would like to know how to incorporate soy as part of their diets to lower cholesterol.

"'I credit much of this to the state soybean checkoff boards that are promoting interest in soyfoods, particularly in the heartland. This is changing the demographics for the market throughout the United States. Within the past two years, these boards have collectively become the single biggest force promoting soyfoods in America.'" Address: Senior editor/writer for INFORM.

7271. Jabbar, Muhammad A.; Larrea, J.; Shaw, R.A. 1997. Abnormal thyroid function tests in infants with congenital hypothyroidism: The influence of soy-based formula. *J. of the American College of Nutrition* 16(3):280-82. June. [9 ref]
• ***Summary:*** Conclusion: "When initiating soy-formula feeding in infants with congenital hypothyroidism, the L-thyroxine dose should be increased because of significant reduction in intestinal absorption: conversely, when soy feeding is discontinued, the L-thyroxine dose should be decreased."

Note: TSH stands for "thyroid stimulating hormone" or thyrotropin. It is a "peptide hormone synthesized and secreted by thyrotrope cells in the anterior pituitary gland which regulates the endocrine function of the thyroid gland... TSH stimulates the thyroid gland to secrete the hormones thyroxine (T4) and triiodothyronine (T3)" (Source: Wikipedia). Address: 1-2. Dep. of Pediatrics; 3. Dep. of Research. All: Hurley Medical Center, Flint, Michigan.

7272. Kumar, Praduman. 1997. Market prospects for upland crops in India. *Palawija News* (*Bogor, Indonesia*) 14(2):10-16. June.
• ***Summary:*** Two thirds of India's population are still engaged in agriculture, and many are subsistence farmers who eat most of what they produce. Most of India's upland crops have traditionally been grown by subsistence farmers. India's main upland crops are rice, soybean, maize, and cassava. The latter three crops in India comprise 12.4% of total animal feed ingredients; soy meal 10.3%, cassava 1.1%, and maize 1.0%. This is quite low compared to the rest of the world. Most of the soy meal produced in India is exported.

"Soybean: Although soybean came to be commercially exploited [in India] in the mid-sixties, the lack of processing

facilities severely constrained its production growth by depressing soybean prices which in turn adversely affected its area and production. Processing facilities were developed only in the eighties consequent to the introduction of various incentive schemes. While large scale processing results in economies of scale on account of higher oil recovery and lower per unit processing costs, processing of black soybean is still a problem. In this variety, the soy meal recovery is low and it also fetches a low price in the international market because of poor product acceptance with the consequential adverse effect on profitability of the industry. However, farmers still grow this variety because of its lower working capital requirement. Small quantities of soybean are retained by the producers as seed, food and feed and part of it is used as soy food (soya milk, nutrella, etc.). Some is lost in the process of handling. The remaining part is processed for oil and meal. While soy oil is chiefly used domestically, soy meal is largely exported with a mere 10% of it consumed domestically, as the price of soy meal is the world market is high and exports have grown at an annual rate of around 26%.

"About 77% of the production is demanded by the crushing industry to produce soy meal and oil, while seed, feed and soya food together account for 19%. By the year 2000 AD, the total demand for soy meal will be around 2.5 million tons which in turn will require about 3 million tons of soybean. Since only 77% of the production is available for crushing, the demand for soybean will be on the order of about 3.9 million tons by 2000 AD... Since India enjoys a comparative advantage in Asian Markets compared to European and Latin American markets on account of lower freight charges, much of our exports have been confined to these markets."

Table 1 shows estimates of the various demands for Indian soybeans in 1992 and in the year 2000. In 1992 some 2.747 million tons of soybeans were produced. 76.56% was used for crushing, and 23.44% for seed, food, and wastage. Of the crushed soybeans, 83.97% became soybean meal and 17.02% became soybean oil. Of the soybean meal, 86.99% was exported and 13.01% was used in India. Address: Indian Agricultural Research Inst., New Delhi, India.

7273. *Ontario Soybean Growers' Marketing Board Newsletter.* 1997. Project S.O.Y. winners announced. June. p. 5.

• ***Summary:*** "The winners of the first Project S.O.Y. contest were announced on April 17th. Jennifer Lo and Nicole Lepkowski, food science students at the University of Guelph won first prize ($2,500) for their fruit-based soy custard dessert, *Fantasia.* Second place was captured by engineering students, Cori Cowan, Jody Lewis, Jennifer Kinoshita, and Karen Conrad, with their puffed soy-based product, *Soy Good Snax.* Yaling Fan and Lawrence Wang, students in agricultural business and economics, won third place with their strategy to market Ontario soymilk products to young Canadians.

"Project S.O.Y. (Soybean Opportunities for Youth) is sponsored by First Line Seeds and the University of Guelph." A photo shows Peter Hannan tasting a sample of "Fantasia" soy custard, while Lennifer Lo and Nicole Lepkowski look on. Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

7274. **Product Name:** So Good (Soymilk Based on Soy Protein Isolates) [Fresh, or Aseptic].
Manufacturer's Name: SoyaWorld Inc.
Manufacturer's Address: 4074 Lozells Ave., Burnaby (suburb of Vancouver), BC, Canada. Phone: 604-420-3240.
Date of Introduction: 1997. June.
New Product–Documentation: Talk with Peter Joe of Sunrise. 1999. May 26. So Good is created under a licensing agreement with Sanitarium Foods in Australia. It was first test marketed in mid-1997 (with the name SoyaWorld Inc. on the package), then in Jan. 1998 the product was officially launched with a big TV advertising campaign. It is sold in both fresh and UHT packaging, but 90% of the sales come from the fresh product. It is targeted at mainstream Canadian consumers and sold mostly in supermarkets.

Note: This is the earliest record seen (Aug. 2013) concerning SoyaWorld, Inc.

7275. Setchell, Kenneth D.R.; Zimmer-Nechemias, L.; Cai, J.; Heubi, J.E. 1997. Exposure of infants to phyto-oestrogens from soy-based infant formula. *Lancet* 350(9070 Suppl. II):23-27. July 5. [34 ref]

• ***Summary:*** The isoflavone content of five major brands of soy infant formula was analyzed in detail. The brands were Nursoy, Isomil, Prosobee, Isomil liquid, and Alsoy. After each product was prepared and ready to serve, the isoflavone content ranged from 32 to 46 micrograms/milliliter of total isoflavones. On the basis of a typical daily intake of 900 to 1,000 milliliters of soy formula at 4 months of age, the total isoflavone exposure for an infant this age is 28-47 mg per day, or 6-9 mg/kg of bodyweight per day. This dose represents a 6-11 fold higher level of intake of isoflavones than the bodyweight adjusted intake (0.7 mg/kg per day) found to cause significant modifications to the hormonal regulation of the menstrual cycle of western women.

The isoflavones in the soy-based infant formulas were mostly glycosidic conjugates of genistein and daidzein; unconjugated isoflavones accounted for only 3-6% of the total. Isoflavones are readily absorbed by infants.

Note: Isoflavones (plant estrogens) exert a very weak effect and even block the actions of human hormones.

Setchell himself states in this study that "exposure to these phytoestrogens early in life may have long-term health benefits for hormone-dependent diseases." Address: 1-3. Clinical Mass Spectrometry Center; 4. Div.

of Gastroenterology and Nutrition. All: Children's Hospital Medical Center, 3333 Burnet Avenue, Cincinnati, Ohio 45229.

7276. Gordon, Jonathan. 1997. Volunteer work with soy yogurt and other soyfoods at Sesco in Egypt (Interview). *SoyaScan Notes.* July 9. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jonathan just got back from working for 2 weeks as a volunteer with Sesco, also called the Swiss Egyptian Soy Co. They have a nice little plant and make a good quality soy yogurt product, sold in 3 flavors–Mango, peach, and strawberry. For details, see the 1997 interview. The soy yogurts were very good, except for a slight beany taste, however they had a shelf life of only 10 days and very limited distribution. They make only soy yogurt–no soymilk. They are also making several products based on dairy milks (yogurts, puddings, cheeses) to increase their manufacturing base. The 4 oz cups have a raised bottom to give the appearance of more product. During the 2 weeks Jonathan was there, he worked with them to improve the quality of their base soymilk to virtually remove the beany flavor; this led to a marked improvement in the yogurt quality. He introduced a new yogurt process to give them an extended shelf life; if they follow his recommendations, that could increase to 50 days. They also invented new processes for the production of soy-based ice creams, puddings, and a spreadable soy cream cheese. Jonathan found that equipment and the process used to make the soymilk for the yogurt to be very unsatisfactory. It is designed to grind dry soybeans. There is a water feed at a temperature from ambient temperature to not above 70ºC–so you get a beany flavor. More than that, the ground soybeans go immediately to two extractors, a coarse and a fine spin extractor. There is about 1 second between grinding the hydrated beans and extracting the okara. Therefore the yield of soymilk solids and protein is very low. The soymilk is then run through a heat exchanger to pasteurize–with a 2½ to 3 minute residence. He made various suggestions to Sesco as to how they could re-plumb this machine to make it much more efficient, including running the product thru the heat exchanger before the extractors–to give more time to extract soy solids. Address: Director of Operations, White Wave Inc., Boulder, Colorado. Phone: 303-443-3917.

7277. Buzzell, R.I.; Poysa, V. 1997. Two food quality soybean cultivars released by GPCRC. *Canadian Soybean Technical Bulletin* (*OSGMB, Chatham, Ontario, Canada*) 3(2):1. July.
• ***Summary:*** GPCRC is the Greenhouse and Processing Crops Research Centre (formerly Harrow Research Station). "These two cultivars, AC Onrei and OX756, have been introduced to complement Harovinton expand the export of Ontario soybeans into the premium Asian soyfood market. Harovinton, a tofu-type soybean cultivar developed at Harrow, has established Canadian soyfood soybeans as a premium quality product in Asia, where it is called 'Orient Pearl.'

"AC Onrei is a selection from the cross Vinton X Enrei. Enrei is a premium quality Japanese tofu cultivar which lacks the a4 protein sub-unit of the 11S glycinin (gy4/gy4). Enrei's superior tofu quality, especially the ability to make premium tofu using the 'nigari' (magnesium chloride) coagulant, is due to the lack of this a4 protein sub-unit. Vinton is Gy4/Gy4 and has the a4 protein sub-unit."

"OX756 was developed from the backcross of L2 X Harovinton. L2 is a backcross derived lx2/lx2 line of Century which lacks the L2 lipoxygenase isoenzyme... Harovinton is Lx2/Lx2 and has the L2 lipoxygenase isoenzyme."

"OX756 is a low lipoxygenase (lx2/lx2), yellow hilum cultivar similar in yield but earlier maturing than Harovinton, the recurrent parent. The lack of the lx2 lipoxygenase enzyme should reduce the 'beany' flavours in tofu, soymilk, and other soyfood products made with OX756, thus promoting wider acceptance of soybeans as food ingredients. It was released to W.G. Thompson and Sons, Ltd."

A table shows agronomic performance and seed quality for these two new food varieties compared with Harovinton during 8-9 years. For each variety are given: Yield, plant height, lodging score, days to maturity, weight of 100 seeds, protein %, and oil %. Address: AAFC, GPCRC, Harrow, Ontario, Canada.

7278. Jessop, D.B. 1997. The food processing lab at GPCRC at Harrow. *Canadian Soybean Technical Bulletin* (*OSGMB, Chatham, Ontario, Canada*) 3(2):1. July.
• ***Summary:*** "The food processing lab at the GPCRC [Greenhouse and Processing Crops Research Centre] has, for the past several years, evaluated soybean varieties for their soymilk, tofu and miso making properties. The Grainspec whole grain infrared analyser is capable of evaluating raw soybeans for moisture, oil, protein, total sugar, colour and more recently sucrose and stachyose [an oligosaccharide that causes flatulence]. The raw beans are also analysed for water uptake in both the tofu and miso process." Address: AAFC, GPCRC, Harrow, Ontario, Canada.

7279. *Progressive Grocer.* 1997. Databank: Complete statistical information on all 36 product categories and hundreds of subcategories follows. 76(7):55. July.
• ***Summary:*** The statistics are for the year 1996. The "Sales manual" is an annual publication of this magazine. All categories are arranged in three broad sections: grocery edibles, grocery non-edibles, and perishables. Categories are listed in alphabetical order within each section.

Under "Grocery edibles" in the category of "Baby foods" (which comprise 0.84% of supermarket sales) we read that U.S. supermarket sales of infant formula (not including

drug store and discount store sales) total $1.923 billion, which was a decrease of 2.1% from the previous year, and which comprises 70.6% of the "baby food" category sales.

7280. *Soyafoods* (*ASA, Europe*). 1997. New equipment from ProSoya. 8(2):6. Summer.
• ***Summary:*** Two large black-and white photos show the new equipment: (1) Continuous hydration tank (ST2000; consists of three tanks, one atop the other). (2) Low-cost desludging centrifuges (EC2000; the twin stage self-desludging centrifuges are located side-by-side). For details contact: ProSoya, Inc., 2-5310 Canotek Road, Ottawa, Ontario, Canada K1J 9N5. Phone: +1 (0)613 745-9115.

7281. Vitasoy International Holdings Ltd. 1997. Annual report 1996/97. New Territories, Hong Kong. 100 p. July. 30 cm. [Eng; Chi]
• ***Summary:*** For the fiscal year ended 31 March 1996, group turnover (sales) was HK$1,524 million, up 17.1% over the previous year. Of these sales, 70.3% came from Hong Kong, 19.3% from North America, and 10.5% from the rest of the world. Operating profit was HK$120 million, up 12% from the previous year. Earnings per share were 22.3 cents, up 272%. Dividends for the year were 10.2 cents, up 6% from the previous year.

"North America: Sales continued to be healthy, with good increases over the previous year. The U.S. Group achieved a total gross revenue of HK$294 million, an increase of 15% over the previous year. Again, tofu products made up the largest share, commanding more than 40% of gross sales, a rise of over 18%.

"Soyamilk contributed the second largest revenue stream, and the Natural Vitasoy product range realized a significant increase of nearly 30%. Vita tea and juices made a modest increase over last year, while pasta, with just over 10% of gross sales, rose nearly 7%."

"Nasoya Foods, Inc. has purchased a new building in Massachusetts to relocate its tofu plant and greatly increase production capacity. It is also adding a new soyamilk processing line. To better serve our American customers, Natural Vitasoy soyamilk will be produced in North America from October, 1997."

Two Americans are on the board of directors: Mr. Jerry Maynard (age 47, Chief Operating Officer of Vitasoy USA, joined the Group in 1988) and Mr. Alfred H. Eaton (age 41, President of Nasoya Foods, joined the Group in 1990).

China: "With both the Shenzhen and the Hong Kong plants running at almost full capacity, and the new Shanghai plant planned to commence production in the third calendar quarter of this year, the Group is well positioned for growth."

The Group was awarded one of the "Top 20 Leading Companies in Hong Kong" in an election organized by the *Hong Kong Economic Times.*

The company now has two websites: www.vitasoy.com and www.nasoya.com. Photos show: Vitasoy chilled soymilk in gable-top cartons (p. 6). The Shenzhen plant (p. 9). The Nasoya plant in Massachusetts (p. 10). Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

7282. Woodrow, L.; Buzzell, R.I. 1997. Sugars in food processing soybeans. *Canadian Soybean Technical Bulletin* (*OSGMB, Chatham, Ontario, Canada*) 3(2):2. July.
• ***Summary:*** "The soybean program at the Greenhouse and Processing Crops Research Centre [formerly Harrow Research Station] focuses on the development of lines with characteristics suited to the domestic and export food processing markets. Seed characteristics such as hilum and seed coat colour; storage protein content and profile; enzyme profile; oil content and fatty acid composition; total carbohydrate content; and free sugar composition are important determinants of the food processing performance of soybeans into products such as soymilk, tofu, and miso."

"As soybeans mature, free sugars are synthesized and form part of the storage reserves of the seed. When the seed germinates, these sugars represent the first energy available to the young seedling... Glucose and sucrose are present in most fruits and vegetables, raffinose and stachyose are found in some plant families including legumes. These sugars are synthesized in a pathway that leads from the monosaccharide glucose to sucrose (disaccharide), raffinose (trisaccharide) and finally the tetrasaccharide, stachyose. In the mature soybean sucrose and stachyose are present at levels ranging from 3.0-8.0% by weight dry matter depending on the variety or line. Raffinose and glucose are intermediates in the synthesis and are present at much lower levels in the mature seed."

A graph shows the glucose, sucrose, raffinose, and stachyose contents of 40 soybean varieties and lines, plotted to show their relationships with the total free sugar content. The data illustrates that among lines increasing total free sugar content is correlated with an increase in sucrose. Sucrose is the most abundant sugar in mature soybeans, followed by stachyose, then raffinose. Glucose and fructose are present in only trace amounts. Address: AAFC, GPCRC, Harrow, Ontario, Canada.

7283. Nordquist, Ted. 1997. Re: Establishing TAN Industries, Inc. in California and update on work with soyfoods. Letter to William Shurtleff at Soyfoods Center, Aug. 4. 2 p. Preceded by an interview on July 14.
• ***Summary:*** "I incorporated TAN Industries, Inc. in California [in about mid-1991, shortly after Ted's mother died in Feb. 1991. Ted had also incorporated a TAN AB is Sweden]. I commuted from Örsundsbro, Sweden, to California (lots of frequent flyer miles) from 1992 until August of 1994, when my family joined me in Sonoma, California.

"I received money from the sale of Aros Sojaprodukter AB (to Blekinge Invest) and invested in TAN, plus received 6% commission on sales for three years. This contract was up the same month that Henry and I began selling soymilk to White Wave (Silk).

"In January of 1995, TAN Industries started packaging and selling soy beverage in extended shelf-life refrigerated packaging. We believe we are now the largest packager and seller of a formulated refrigerated extended shelf-life (12 weeks) soy beverage in the United States.

"TAN Industries, Inc. specializes in vegetable-based dairy-like products such as beverages, yogurts, ice creams and, as you may know, puddings as required. TAN has its own process, comprised of specially designed equipment to process whole soybeans into high quality, good tasting and nutritious vegetable-based dairy-like products at competitive prices. Usually economy of scale dictates a minimum production order of approximately 12,000 gallons on each processing occasion. TAN seeks to enter into contractual agreements to provide product to companies where distribution and marketing are already in place.

"TAN will develop specific products for customers or TAN will develop a product and present the product wholesale, FOB factory, to a prospective company capable of taking the product to market.

"In 1996, TAN has entered a contractual agreement with a producer of rice-based beverage. This enables TAN to offer both Rice beverages and related products, as well as Soy."

"After many years, I have learned some ways to keep out of debt, realizing that being low on money will not help the cause and that I must move slowly enough to keep the money flowing in at least as fast as it flows out. So there is some dampened enthusiasm for moving ahead too quickly in exchange for what looks to me to be a solid, sensible path to long term business and growth.

"Much of this success I owe to Henry Glasser, my partner and long time friend of my father's best friend. I sit in this office and consult with his wisdom, content to see TAN Industries, Inc. continue in the black toward goals we both share."

Note: TAN Industries is listed in the *1997 Soya Bluebook Plus* (published Sept. 1996) on pages 185 (manufacturer of soymilk) and 285 (equipment supplier and consulting).

Ted Nordquist now lives in California. His company, TAN Industries, Inc., operates out of the office of Henry Glasser, an attorney in San Francisco. He was involved in the development and formulation of Silk, a fresh soymilk product launched by White Wave in Jan. 1996. He was having this product made by ProSoya in British Columbia, Canada, but now it is apparently being made somewhere else–perhaps in Los Angeles. His main goal now is to develop a soymilk product that will compete with Lactaid. Address: TAN Industries, Inc., 351 California St., Suite 1330, San Francisco, California 94104; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-398-8007.

7284. Skiff, James. 1997. Lipoxygenase (L1) null soybeans do not yet make better-tasting soymilk than regular soybeans (Interview). *SoyaScan Notes.* Aug. 7. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Last week Jim (together with Paul Lang and Paul's production manager) visited with Dr. Lester Wilson at Iowa State University. Lester had just finished conducting a taste panel test to judge the quality of soymilk and other products made from L1-null soybeans. One batch of soymilk was made from the L1-null soybeans and the other batch was made from a mixture of any other types of soybeans–and not from the best varieties used to make soymilk, such as Vinton. Jim and his two coworkers took the same taste test of the two types of soymilk independently. They concluded that there was no significant difference between the taste of the soymilk made from the L1-null soybeans and that made from regular soybeans. If the soymilk had been made from Vinton soybeans, the L1-null soymilk would probably not have tasted as good.

The results of the official taste panel, which Jim received later, were about the same–showing no significant difference.

Lester Wilson was noticeably upset by these results. He has tried to get rid of the beany flavor of soymilk solely by changing the soybeans–without changing the soymilk manufacturing process. So far apparently, Lester's work has not been successful. His one defense is that perhaps the L2-null or the L3-null soybeans will give better results. Les Wilson has published the results of two studies on the use of lipoxygenase-null soybeans to make soymilk. Address: Cornbelt Foods, Inc., P.O. Box 218, Marshall, Minnesota 56258. Phone: 507-537-1406.

7285. Kilman, Scott; Warren, Susan. 1997. DuPont to buy Ralston-Purina unit in building 'dirt-to-dinner' biotech line. *Wall Street Journal.* Aug. 25. p. A4, C2 (p. A8 East).

• ***Summary:*** DuPont signed a letter of intent to buy Ralston Purina's soybean processing unit, Protein Technologies International (PTI), for $1.5 billion in DuPont stock. PTI makes high-protein powder from soybeans, "a hot-selling ingredient for everything from infant formula to supplemental nutritional drinks for senior citizens. Recent medical studies suggesting that soybean compounds inhibit growth of some cancer cells and reduce the risk of osteoporosis are fanning strong interest in them for use in 'nutraceuticals.'" DuPont, a giant chemical company, wants PTI to process the soybeans genetically engineered by the biotech joint venture it recently formed with Pioneer Hi-Bred International Inc. of Des Moines, Iowa, the nation's largest seed company; DuPont purchased a 20% stake in Pioneer for $1.7 billion.

"Officials of the joint venture hope to design a soybean

from which it is easier to extract isoflavones, a chemical with estrogen-like properties some researchers believe eases menopause symptoms." Industry observers were surprised at the high price (announced Friday) that DuPont offered to pay for PTI; it is more than 3 times the annual revenue of PTI, which last year had $421 million in sales and $85 million in operating profit. High offer fueled speculation that DuPont had to outbid its biggest biotech rival, Monsanto Co., which is spinning off its flagship chemicals business as it gobbles up seed and biotech companies. Some Wall Street analysts think Friday's developments put pressure on Monsanto to form some sort of alliance with ADM to process its genetically engineered crops into food ingredients.

Although the soy protein market that PTI helped to create is growing at about 10% a year, Ralston says it is selling the unit because it doesn't have the biotechnology resources to take it to the next level. DuPont said it expects to reach a final agreement with Ralston this fall, subject to corporate and regulatory approval.

Ralston's stock advanced $3.44 to $91.68 with the sale. ADM stock rose $0.94 to $21.875.

Note: As of 16 Oct. 1998, PTI has decided to remain at its former offices at the Ralston Purina building in St. Louis. Missouri. It still uses the Ralston Purina library, etc.

7286. Galaxy Foods Company. 1997. Annual report 1997. Orlando, Florida. 29 p. 22 x 28 cm.

• ***Summary:*** Sales in 1997 were $17,171,496, up 334% from $3,950,455 in 1996. Net loss was $2,736,660–not as bad as the $3,282,58 loss in 1996. In the first quarter of 1998, sales were $5.8 million–up 75% over the same quarter one year ago, and the company made a profit.

Accompanying the report is a "Notice of annual meeting of shareholders to be held Wednesday, October 15, 1997" (15 p.). The principal shareholders (p. 3) are Angelo S. Morini (age 54, 38.8%) and Cede & Co. (New York, 48.9%). Mr. Morini's salary is an astonishing $250,000 plus $16,262 in other annual compensation.

"Between 1974 and 1980, Mr. Morini was the general manager of Galaxy Cheese Company, which operated as a sole proprietorship until its incorporation in May 1980. Prior to 1974, he was associated with the Food Service Division of Pillsbury Company and the Post Division of General Foods Company. In addition, he worked in Morini Markets, his family-owned and operated chain of retail grocery stores in the New Castle, Pennsylvania, area. Mr. Morini received a B.S. degree in Business Administration from Youngstown State University in 1968" (Notice, p. 7). Address: 2441 Viscount Row, Orlando, Florida 32809. Phone: 800-441-9419 or 407-855-5500.

7287. Newshour with Jim Lehrer. 1997. Osteoporosis, calcium, and the U.S. diet. Television broadcast. PBS. Aug. 14.

• ***Summary:*** Americans and Canadians need more calcium in their diets to guard against the bone disease osteoporosis, according to a report released yesterday by the Institute of Medicine (an affiliate of the National Academy of Sciences) in Washington, DC. The study recommended increasing the daily dose of calcium for adults to 1,000–1,300 mg, depending on age. That is an increase from the current 800–1,200 mg which had been recommended by the National Academy of Sciences. Many women and teens still get less than 600 mg/day.

"Calcium can be consumed in dairy products and foods such as broccoli and tofu." Note: Experts agree that getting enough calcium is essential to building strong bones. Other good sources are calcium-fortified soymilk and calcium-fortified orange juice. Another key to keeping calcium levels high is retention–smoking, coffee, and intense physical exercise all deplete calcium stores–as does excess protein consumption.

7288. *GMF–Genetically Modified Foods Market Intelligence* (*Genetic ID, Fairfield, Iowa*). 1997. rBGH labeling suit settled. No. 12. Sept. 1. p. 1-2.

• ***Summary:*** "The State of Illinois and the City of Chicago have settled a lawsuit brought by a group of natural food companies who sought the right to label their dairy products as free of recombinant bovine growth hormone (rBGH). The companies, Ben & Jerry's Homemade Inc., Stonyfield Farms Inc., Whole Foods Market Inc., and Organic Valley, won the right to place the following statement on their labels: 'We oppose recombinant bovine growth hormone. The family farmers who supply or milk and cream pledge not to treat their cows with rBGH. The FDA (Food and Drug Administration) has said no significant difference has been shown and no test can now distinguish between milk with rBGH treated and untreated cows.'

"Also known as recombinant bovine somatotropin (rBST [recombinant bovine somatotropin]) and first marketed by Monsanto under the brand name Posilac, rBGH was first introduced to the dairy industry in February, 1994. Bovine somatotropin is a hormone produced naturally in the pituitary gland of cattle, and is a regulator of milk production... When injected into lactating dairy cows, the hormone stimulates milk production."

Approximately 15% of all U.S. milk producers have purchased this Monsanto product. According to Monsanto figures, sales volume for the first ten months of 1996 was up 40% over the same period in 1995.

Also discusses: State legislatures debate rBGH; some laws have been passed. Mid-1995 consumer survey of 1,901 primary food purchasers on rBGH, funded by USDA (Milk from rBGH cows should be labeled as such–94%. Poor overall opinion of rBGH–54%. Concerned about possible discovery of negative long-term effects on human health–74%). Scientific concerns. Concerns of animal

rights groups (rBGH increases dairy cows' susceptibility to mastitis, cystic ovaries, and uterine disorders). Limited international acceptance of rBGH: "At present, the 15 countries of the European Union (EU), Canada, Australia, and New Zealand do not permit the importation of rBGH."

7289. *GMF–Genetically Modified Foods Market Intelligence* (*Genetic ID, Fairfield, Iowa*). 1997. DuPont next big player in ag biotech. No. 12. Sept. 1. p. 1.
• ***Summary:*** "In a bid to join Monsanto and Novartis in the top tier of developers of new genetically engineered crops, Wilmington, Delaware-based DuPont Co. is building a biotech food empire through acquisitions.

"DuPont has acquired a 20% stake in seed producer Pioneer Hi-Bred International of Des Moines, Iowa, which will give it a marketing outlet for its new seeds that are genetically engineered for special nutritional attributes. Pioneer had previously turned down purchase offers from Monsanto.

"As part of a strategy to create a vertically integrated structure to deliver its products, DuPont is also acquiring the Protein Technologies International (PTI) unit of Ralston Purina Co. PTI is a leading producer of soy protein powders that are ingredients in a wide range of nutritional products from infant formula to soy burgers. PTI will be the vehicle for processing and selling DuPont's soybeans engineered to contain altered nutritional components such as proteins and fats.

"The *Wall Street Journal* of August 25 reported that some Wall Street analysts are now expecting an alliance between Monsanto and Archer Daniels Midland Co. to process Monsanto's genetically modified crops into food products."

7290. *GMF–Genetically Modified Foods Market Intelligence* (*Genetic ID, Fairfield, Iowa*). 1997. New soy product goes non-GMO. No. 12. Sept. 1. p. 3.
• ***Summary:*** A new soy milk ice cream made from non-GMO soy powder was introduced at the recent Institute of Food Technologists Expo 97 by O.S.F. Corp., a flavor company in Hartford, Connecticut. The low-fat product contains special flavorings to mask the soy aftertaste. The soy powder base is supplied by Devansoy Farms of Carroll, Iowa. Olivier de Botton of O.S.F. says that his company chose a non-GMO soy powder because they have European customers for their products. "Mr. Botton also points out that as awareness of the issue of GM foods grows among American natural foods consumers, the ice cream could also be marketed as a non-GMO product."

7291. Jha, Krishna. 1997. Soya bean: Do we know enough about it? *Indian Express–Pune Newsline* (*India*). Sept. 6.
• ***Summary:*** Subtitle: "Very few people might be really aware of the uses and benefits of soya beans. Most of us simply know that it is used for extraction of edible oil. Soya bean apart from containing about 20-22 per cent oil also contains about 44 per cent high quality edible protein which is approximately two times higher than what is present in common pulses popular such as *arhar, urad, moong,* gram, lentil, etc."

This article focuses on the therapeutic benefits of soya bean in reducing cancer risk, improving glycemic control in diabetics, and lower cholesterol.

"Soya milk, soya paneer (tofu), breads, cakes, yoghurts, biscuits, nuggets, etc. and many other food products will shortly be available to the common man.

"For the first time, in Pune this useful product will be made available for mass consumption by Amrit Foods, Pune.

"The various products including Soya Milk and Soya Paneer (Tofu) will be launched in a fortnight and Breads, Cakes, Yogurts, Biscuits, Nuggets along with a host of other soya products are in the pipeline for the future." Address: PhD, Senior Scientist, Microbiology.

7292. Sandler, Matthew. 1997. New developments Luppy and with soymilk in the USA (Interview). *SoyaScan Notes.* Sept. 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** At the Natural Products Expo in Baltimore, Matt introduced Luppy, a pudding based on organic milk. For years he had wanted to make a soy-based pudding but he was unable to realize his dream, largely for two reasons. He was unable to buy soymilk at a reasonable price, and when the soymilk was heated to aseptic temperatures, it developed off-flavors that he was unable to get rid of.

Matt buys organic nonfat dried milk for $2.30/lb. One pound makes 10 gallons with 10% solids. So the cost of a gallon of liquid is $0.23.

Matt heard that American Soy Products (makers of Edensoy) has recently doubled the capacity of their soymilk plant.

Matt also heard that Elmer Schettler, president of Devansoy, Inc. (Carroll, Iowa), recently sold his company to Sovex. Devansoy started making Solait (powdered soy beverage) as its own brand in Jan. 1993; Solait had previously been made by Miller Farms. Devansoy also made "Better Than Milk" (powdered soy beverage) for Sovex. Note: Talk with Elmer Schettler, owner of Devansoy, Inc. This is not true. Devansoy is not for sale and has not been sold. Address: Co-owner, Luppy Natural Foods, Inc., P.O. Box 5997, Snowmass Village, Colorado 81615. Phone: 970-923-0333.

7293. Schettler, Elmer. 1997. History of Devansoy, Inc. including current developments (Interview). *SoyaScan Notes.* Sept. 16. Conducted by William Shurtleff of Soyfoods Center.
Address: President, Devansoy, Inc., P.O. Box 885, Carroll,

Iowa. Phone: 712-792-9665.

7294. *New Zealand Herald.* 1997. Call for research on soy milk hormones: An American researcher wants to find out more about the long-term impact of plant hormones on babies fed soymilk as an alternative to dairy formula. Sept. 17.
• ***Summary:*** Babies being fed infant soy milk formula are receiving large doses of plant hormones at biologically active levels, says an American researcher.

"Dr. Kenneth Setchell said babies on soy formula received the hormones at six to 11 times the level shown to affect the menstrual cycle of adult women.

"He said the hormones, known as isoflavones, 'must have some biological activity in the infant' but there was not enough evidence to know if this was beneficial or harmful.

"About one in 60 babies born in New Zealand each year is fed on soy formula, usually because they are allergic to dairy foods."

7295. *SoyaScan Notes.* 1997. Update on ProSoya (Overview). Sept. 23. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** The following is based on a talk with a person who just returned from the Natural Products Expo in Baltimore, Maryland, and wishes to remain anonymous. ProSoya now has an office in the United States, run by Fred Webster. It is: International ProSoya Corp., 106 Sunset Dr., New Hope, Pennsylvania 18938. Phone: 215-862-5715.

ProSoya from British Columbia, Canada, has a booth at the show. A fellow named Jerry Duncan at that booth was unusually rude and nasty to two potential customers who tried to approach him. First he said that ProSoya sold only a soymilk system (equipment), not the soymilk itself. When this American businessman said he was interested in buying soymilk, not a system, Mr. Duncan said that he would sell soymilk only if the final product was sold under the ProSoya brand, and the co-packing was taken care of by the American person.

7296. Chua, G.P. 1997. Re: Plans to establish over 1,000 franchise outlets to make and sell instant soya milk and tofu. Letter to William Shurtleff at Soyfoods Center, Sept. 25. 1 p. Typed, with signature on letterhead.
• ***Summary:*** Mr. Chua is looking for sources of information, soybeans, tofu coagulants, and equipment. He plans to establish over 1,000 franchise outlets to make and sell instant soya milk and soft tofu.

Note: A record in the SoyaScan database dated 1 Nov. 1985 showed: Mr. G.P. Chua, Cai Consultants, Industrial Pk 3 #03-18, 6024 Ang Mo Kio, Singapore 2056. At the bottom of his letterhead the following address is crossed out: Cai Technologies, 20, Bideford Road, #05-02 Wellington Building, Singapore 0922. Phone: 732-1991. The top of his letterhead states that Cai Technologies has offices in Los Angeles [California], Chicago [Illinois], Hong Kong, Melbourne and Perth [Australia], London [UK], and Tokyo [Japan]. Address: President, Cai Technologies, 153A Rochor Road, Singapore 188428, Singapore. Phone: +65 339-3733. Fax: +65 339-1733.

7297. *SoyaScan Notes.* 1997. How different types of bacteria reproduce and the amount of heat required to kill them (Overview). Sept. 28. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** What are bacteria? They are tiny, one-celled organisms that can usually be seen only with the aid of a microscope. Millions of them would fit on the head of a pin. Bacteria (and blue-green algae) are distinguished from other living things because of their cell structure: they have no distinct nucleus–that is, their nuclear matter is not enclosed by a cell membrane or wall, and they lack most of the internal cell structures found in the cells of higher organisms. All bacteria have a cell wall surrounding a cell membrane, inside of which lies the unbound nuclear matter and other material. There are three types of bacterial cells, based on shape: spherical (coccus), rodlike (bacillus), and spiral (spirillum). In terms of evolution, bacteria are the most successful of all creatures.

Are all bacteria bad? No! Some bacteria (popularly called germs) cause disease and sickness. Others are responsible for the spoilage of food. Yet many types of bacteria are essential in making foods–called fermented (or cultured) foods–such as yogurt, sour cream, buttermilk, many fermented cheeses, vinegar, sauerkraut, dill pickles, natto, etc. Other bacteria are decomposers of the biosphere; in nature they cause the decay of stumps, logs, leaves, and other vegetation, which eventually would literally choke our forests and fields. Indeed, without bacteria, there would be no plant or animal life on earth.

How do bacteria multiply? Most bacteria reproduce by dividing in the middle to form two cells. After these cells reach maturity, they divide again to make four. In some species of bacteria, such divisions may occur as often as every 15 minutes. Thus billions of bacteria may be formed from a single bacterium in 24 hours. Others divide only once every 16 hours.

What are bacterial spores? Bacteria of the genera *Bacillus, Clostridium, Desulfotomaculum, Sporolactobaciullus* (rods), and *Sporosarcina* (rods) share the ability to form a type of spores, called endospores. Of primary interest to food microbiologists are the spore-forming species of the genera *Bacillus* (aerobic) and *Clostridium* (anaerobic). Endospores, which are formed within the bacterial cells, are very resistant to heat. They are a survival mechanism for the bacteria, because when they germinate, new bacteria are formed–even if the bacteria (vegetative cells) have been killed by heat.

How much heat is required to kill bacteria and their endospores? The heat resistance of microorganisms is usually expressed in terms of their *thermal death time,* which is defined as the time it takes a certain temperature to kill a stated number of organisms (or spores) under specified conditions. The heat resistance of vegetative cells of bacteria varies widely with the species, but even the most difficult to kill (the thermophiles) are killed in several minutes at 80 to 90ºC. Generally, the higher the optimal and maximal temperatures for growth, the greater the resistance to heat. Bacteria which clump considerably or form capsules are more difficult to kill than those which do not. Thermal death times of some common bacterial cells: *Gonococcus:* 2-3 minutes at 50ºC. *Staphylococcus aureus:* 18.8 minutes at 60ºC. *Escherichia coli:* 20-30 minutes at 57.3ºC. *Staphylococcus thermophilus:* 15 minutes at 70-75ºC. *Lactobacillus bulgaricus:* 30 minutes at 71ºC.

Thermal death times of some common bacterial spores: Time (in minutes) to kill all at 100ºC: *Bacillus anthracis:* 1.7 minutes. *Bacillus subtilis* (the natto bacterium): 15-20 minutes. *Clostridium botulinum* (causes botulism): 100-330 minutes. *Clostridium calidotolerans:* 520 minutes. Flat sour bacteria: Over 1,030 minutes (17.1 hours). These hard-to-kill bacterial spores are usually killed by heating in a retort (pressure cooker) which raises the temperature.

Heat resistance of enzymes: Although most food and microbial enzymes are destroyed at 79.4ºC, some may withstand higher temperatures, especially if high-temperature short-time heating is employed.

Bacterial growth in different foods: Very few bacteria grow in acid foods, dry foods, salted foods, or very sweet foods. Thus, it is relatively easy to can tomatoes because they are an acid food. Jams and jellies are protected by their high content of sugar, and often acid. But the amount of heat required to successfully can nonacid foods is very high because of the need to destroy thermophilic bacteria and the very heat-resistant bacterial spores.

Letter from Dr. Keith H. Steinkraus, Prof. of Microbiology, Cornell University, Ithaca, New York. 1997. Nov. 15. "One of the most interesting areas of microbiology today is the 'extremophiles' isolated from volcanoes, and deep pockets in the oceans. Some extremophiles will grow at temperatures above boiling water, for example 220ºF. They are proving to be a good source of enzymes operating at high temperatures.

"Regarding the thermal death times of spores: Using a spore concentration of 60 billion spores/ml of *Clostridium botulinum* (suspended in buffer at pH 7.0) the minutes required to kill them are as follows: 100ºC–360 minutes, 110ºC–36 minutes, or 120ºC–5 minutes."

"D-value-decimal reduction time or the time required to destroy 90% of the organisms (their spores) at 120ºC (250ºF): *Bacillus stearothermophilus*–4.0-5.0 minutes, *Clostridium thermosaccharolyticum*–3.0-4.0 minutes, *Clostridium nigrificans*–2.0-3.0 minutes, and *Clostridium botulinum*–0.1-0.2 minute.

"Source of the above figures–*Modern Food Microbiology,* James M. Jay (D. Van Nostrand, 1978). There are later editions but it is unlikely that the basic figures have changed much.

"Bacteria suspended in water are more easily destroyed. Suspended in oil or fats or in dried smears are much more resistant to destruction.

"Regarding your inquiry concerning heat treatment of brown rice at 15 psi for 35 minutes, it is very unlikely that any microorganisms in your environment or on the brown rice will survive that treatment. Will it taste 'freshly made' after two weeks in the pot at summer temperatures? Unlikely but only a taste test will answer your question."

One of Dr. Steinkraus' MSc students did her research on "tea fungus–kombucha," and another did his on tempeh bongkrek toxin. He found that bongkrek toxin is formed only in the presence of rather high levels of fat as you would find in coconut residue (left after the extraction of fresh coconut milk with water).

7298. Webster, Fred. 1997. International ProSoya Corp. launches SoNice soymilk and yogurt in the USA (Interview). *SoyaScan Notes.* Sept. 30. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Fred is the first U.S. employee of International ProSoya Corp., which is in the process of launching three products: (1) SoNice soymilk, in aseptic cartons (1 liter, and 250 ml x 3), in 6 flavors (vanilla, chocolate, natural {soybeans and water}, original {with added sweetener}, strawberry, and cappuccino); expected retail price is $1.99/liter. (2) SoNice fresh soy beverage in gable-top cartons, in 2 sizes (quart and half gallon); expected retail is $1.99 and $2.99 respectively. (3) SoNice soy yogurt, in 5 flavors (vanilla, strawberry, raspberry, black cherry, and fieldberry), refrigerated (45 day shelf life) in a 6 oz cup; expected retail price is $0.99/cup.

These products were first introduced to the U.S. market in late September 1997 at the Natural Products Expo in Baltimore, Maryland–where they were preferred to all competing products for their good flavor. They are all made in British Columbia, Canada, but packaged in New Jersey. He will start shipping to U.S. distributors next week. The two types of soymilk should be available in food stores in mid-October and the soy yogurt in mid-November. In March 1997, International ProSoya Corp. opened a sales office in Toronto, Ontario, Canada. Address: International ProSoya Corp., 106 Sunset Drive., New Hope, Pennsylvania 18938. Phone: 212-862-5715.

7299. Bean Supreme Ltd. 1997. Soy kids: Easy family recipes with children in mind (Brochure). Auckland, New Zealand. 6 panels each side. Each panel: 10 x 14 cm.

Undated.
• ***Summary:*** On the cover, red on pink, is an illustration of 7 happy kinds before a large rayed sun. The first 2 panels are about the health benefits of soyfoods. Then come 6 pages of recipes and tips for using Bean Supreme's Soyplus soymilk, tofu, and Lite Licks frozen dessert (soy ice cream). The company also makes tempeh and Tofu Luncheon. The back panel lists the company's soy products, has a statement about the goodness of soybeans, and states: "Bean Supreme brings happiness." Address: Box 12082, Penrose, Auckland, New Zealand.

7300. Bean Supreme Ltd. 1997. Soybeans–why the fuss! Soyplus [soymilk]. Hot health tips. Smart Meatfree Sausages (Leaflet). Auckland, New Zealand. 1 p. Back to pack. 30 cm.
• ***Summary:*** This brochure introduces all the soyfood products in the Bean Supreme line / range: Small photos show: Tofu (chub pack). Soyplus soymilk (in Tetra Pack cartons). Tofu Luncheon. Lite Licks nondairy frozen dessert. Meatless Sausages. Address: New Zealand.

7301. Lightlife Foods, Inc. 1997. Eating healthy can be soy easy (Brochure). Greenfield, Massachusetts. 12 p. 22 cm.
• ***Summary:*** On the cover of this full-color, glossy brochure is a color photo of a meatless burger (between buns, with onion, tomato, and lettuce), a hot dog (in a bun, with a bead of mustard on top), and a plate of stir-fried tempeh with veggies. In the background are rolling soybean fields. In the foreground are three pods of green vegetable soybeans, and 15 whole dry soybeans.

Contents: Ten reasons to include soyfoods and soy protein in your diet (p. 2-3): 1. You will be in good company. 2. Lower your cholesterol. 3. Lower your risk of cancer. 4. Menopausal symptoms. 5. Soyfoods are nutritious. 6. A quality protein source. 7. Save our precious resources. 8. A variety of alternatives and greater availability. 9. Better quality. 10. Soyfoods are "in."

Glossary of common vegetable protein foods (p. 4-5): Tofu, tempeh, meat analogs, soymilk, soy cheese, soy flour, soy protein, textured vegetable protein (TVP), seitan, miso. A table shows each Lightlife product, serving size, and grams of soy protein (soy tempeh has the most at 24 gm per 4 oz serving, followed by Gimme Lean at 18 gm per 4 oz).

Products (with a brief definition of each) and mission statement (p. 6-7): Smart dogs. Tofu pups. Wonderdogs (The first low-fat vegetarian hot dog just for kids). Smart deli slices (fat free). Foney baloney (Kids love it). Lean links sausages. Gimme lean (fat free). Marinated smoky tempeh strips ("Fakin' Bacon"). Fakin' bacon bits. Marinated tempeh "grilles" (soy tempeh patties in Tamari, Lemon, and Barbecue flavors). Lightburgers (fat free). Lightsausages (fat free). Tempeh (in 5 varieties–Soy, Three Grain {millet, brown rice, barley}, Garden Vegetable, Quinoa-Sesame, and Wild Rice), Savory seitan, Vegetarian request (100% vegetarian, all-natural entrees). A color photo shows many products in their packages.

Getting started (p. 8-10; how to use key products). About Lightlife (since 1979). Address: P.O. Box 870, Greenfield, Massachusetts 01302. Phone: 1-800-274-6001 Ext. 129.

7302. Ontario Soybean Growers' Marketing Board (OSGMB). 1997. Overview of the Canadian soyfoods market. Chatham, Ontario, Canada: OSGMB. 44 p. 28 cm.
• ***Summary:*** This excellent, complete, and accurate market study was compiled by the Collège d'Alfred of the University of Guelph, under contract with the Ontario Soybean Growers' Marketing Board (OSGMB). The project leaders were Suzanne Lavoie, Charles Goubau, and Ian Walker. The field research was conducted between Jan. 15 and Aug. 31, 1997. The first study of the Canadian soyfoods market was published in March 1990 (vi + 40 pages).

Contents: Acknowledgments. Summary. Introduction. Research procedures: Methodology, limitations (of the 100 companies in this study, over 75% were visited, interviews were conducted in person, and product samples were collected). The Canadian soyfoods market: History, structure of the Canadian soyfood industry, market highlights by region (The Maritimes, Quebec, Ontario, the Prairies {Manitoba, Saskatchewan, and Alberta}, British Columbia), factors influencing the soyfoods market (A closer look at Canadian demographic trends, a closer look at Canadian immigration trends, a closer look at vegetarianism and family food expenditure trends, research on soyfoods and their health benefits, the American influence). Supply and demand of soybeans for use in soyfoods: Soybean production in Ontario, imports and exports of soybeans, imports and exports of soy products, the soybean crushing industry in Ontario, consumption of whole soybeans by soyfood processors. Opportunities in the Canadian soyfoods market. Soyfood processors and their needs. Market opportunities for food-grade soybeans. Summary comments. Bibliography.

Tables show: (1) Major soyfood companies established in the province of Quebec (p. 13). (2) Major soyfood companies established in the province of Ontario (p. 16). (3) Major soyfood companies established in the province of British Columbia (p. 19).

(4) Percentage of change in units and sales (p. 21). (5) Percentage distribution of population–Canada (p. 22). (6) Percentage distribution of age groups–Canada (p. 22; In the 15-24 age group, 19% did not eat meat in 1992, down from 23% in 1986).

(7) Percentage of population who do not eat meat & share of budget spent on meat, Canada 1986 and 1992 (p. 28). (8) Canadian soybean: Supply and disposition (September–August crop year)–in metric tons (p. 31). (9) Canadian soybean exports by country of destination (p. 32. In 1997-98 some 325,000 tonnes went to the European

Union, 145,000 to the USA, 85,000 to Japan, 40,000 to Hong Kong, 75,000 to other Asia, and 15,000 to other places).

(10) Imports and exports–All countries, dollar values (p. 33. The leading imports are soybean meal $202.7 million, crude soybean oil $16.75 million, and whole soybeans for oil extraction $12.59 million. The leading exports are protein concentrates and textured protein substances $9.1 million, soybean meal 6.5 million, and brans, sharps and other residues $4.3 million).

(11) Soybean crushing facilities in Canada (p. 34. All are located in Ontario province; ADM Agri-Industries Ltd., Windsor. Capacity: 3,600 tonnes/day of raw soybeans. CanAmera Foods, Hamilton, 3,000. Helin Oil Packers, Whitby, 250. Started crushing in 1997. Cold Springs Farm Ltd., Thamesford, 100. Started 1995. Sunfield Oil Seeds, Wingham, 100. Started 1994. Dennis Jackson Seeds Services Ltd., Dresden, 40. Started 1994. Tri County Protein Corporation, Iroquois, 100. Not in operation yet).

(12) Estimated quantities of soybean utilized by soyfood processors–1996–metric tons (p. 35. Total volume of whole soybeans consumed: 9,650 tonnes, of which 4,780 are for soymilk, 4,775 are for tofu, and 95 are for other soyfood products). Total volume of whole soybeans consumed by province (by soyfood processors): British Columbia 3,825 tonnes, Ontario 3,050 (excluding crushing plants), the Maritimes and Quebec 2,535, and the Prairies 240.

(13) Major foreign companies in the Canadian soyfood market (p. 37. Soy cheese: Soyco Foods, Sharon's Finest, Cemac Foods Corp. {Nu-Tofu}. Frozen desserts: Tofutti Brand, Inc. Tempeh: Turtle Island Foods Inc. Tetra Pak packaged soymilk: Westbrae Natural Foods, Cenat, Pacific Select, Vitasoy USA Inc., Eden Food Inc. Tofu: Mori-Nu, Vitasoy USA Inc. Prepared dishes: Amy's, Sharon's Finest. Meat analogs: Fantastic Food Inc. MGM Brands, Northern Soy, Soy Boy, Turtle Island Foods Inc. Salad dressing: Nasoya Foods. Soy sauce: Eden Foods Inc., Kikkoman Foods Inc.).

The Prairie Provinces (Manitoba, Saskatchewan, and Alberta) contained about 16.6% of Canada's population (4.5 million persons) in 1995. "The province of Alberta [Capital = Edmonton] is different from the other two Prairie provinces, due mainly to its larger population base, its growing Oriental population and its proximity to Vancouver. Calgary [a large city in Alberta province] and Edmonton have their own Chinatowns, including small Oriental-owned tofu and soymilk production facilities." Note: According to the Canadian Soyfoods Directory (1997, p. 14), there are 7 soyfoods companies in Alberta province, 2 in Manitoba, and none in Saskatchewan. Address: OSGMB, 180 Riverview Dr., P.O. Box 1199, Chatham, ON N7M 5L8, Canada. Phone: 519-352-7730.

7303. **Product Name:** WestSoy VigorAid [Vanilla, or Chocolate].
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor).
Manufacturer's Address: 1065 East Walnut St., Carson, CA 90746. Phone: 310-886-8200.
Date of Introduction: 1997. September.
Ingredients: Creamy Chocolate (March 1999): Organic soy beverage (Organic soybeans*, filtered water), filtered water, dehydrated cane juice, natural flavors, natural cocoa powder, brown rice syrup, vitamin mineral blend (magnesium phosphate dibasic, potassium chloride, dicalcium phosphate, sodium ascorbate, ferric orthophosphate, vitamin E, niacinamide, zinc oxide, copper gluconate, D-calcium pantothenate, manganese sulfate, pyridoxine hydrochloride,...).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Myron Cooper, President of Westbrae Natural Foods. 1997. Oct. 10. In Sept. 1997, at the Natural Products Expo in Baltimore, Maryland, Westbrae launched VigorAid, a nutritional soymilk in the same category as Ensure.

Ad (1/3 page, color) in Vegetarian Times. 1998. Jan. p. 53. April. Special advertising section after p. 58. "Don't hate me because I'm good for you." "Let me be your power source through a balance of 25 vitamins, minerals and fiber. Seek me when you desire the support of beneficial phytonutrients and essential fatty acids. Enjoy all the superior nutrition I provide when you drink a rich and delicious VigorAid! Each satisfying serving is a non dairy, low sodium, natural beverage made from organic soy... a perfect choice for a snack or occasional meal! Just don't hate me because I'm good for you!

For energy and your good health drink VigorAid!

"WestSoy VigorAid nutritional drink. To learn more about the benefits of VigorAid call us for a free brochure at 800-769-6455 www.westbrae.com."

Sell sheet sent by Patricia Smith from Natural Products Expo. 1999 March. The two flavors are now Creamy Chocolate and French Vanilla. Ingredients and nutritional facts are given.

7304. Nissenbaum, Robert. 1997. The U.S. market for rice milk and soymilk (Interview). *SoyaScan Notes*. Oct. 1. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Robert's information is that the amount of rice beverage sold in America is about the same as the amount of soy beverage. Some statistics indicate that the soymilk market may be slightly bigger–say 5-7% bigger. Rice milk has experience much more rapid growth than soymilk over the last few years. Both have a great place in the American diet. Soymilk probably has have a few more applications in cooking.

All Trader Joe's stores have stopped carrying the Rice Dream puddings–at least for now. In some stores, the product fell short of their weekly minimum sales quotas. They are

quite strict about dropping a product when it fails to meet their quotas in most stores. Trader Joe's wants Imagine Foods to "re-present" the product next year, together with some other new products from Imagine Foods that they will be carrying. Address: President, Imagine Foods Inc., 350 Cambridge Ave., Suite 350 Palo Alto, California 94306. Phone: 415-327-1444.

7305. Cooper, Myron. 1997. New developments at Westbrae. Sale to Hain Food Group is imminent (Interview). *SoyaScan Notes.* Oct. 10. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** About 6 months ago the Vestro board of directors changed the company name to Westbrae Natural, Inc. Westbrae is scheduled to be sold to the Hain Food Group on Oct. 14. Myron is quite certain the deal will go through. He and Andy Jacobsen will stay on the run the Westbrae part of the business. The price of Hain's stock has been skyrocketing recently, even though their earnings are less than those of Westbrae. Hain had made several weak offers for Westbrae, then (by coincidence) Chiquita Banana came along and made a strong offer–that almost led to the sale. After that, Hain came back with a serious offer.

Vestro purchased Westbrae in 1988. At that time, Westbrae had only one soymilk SKU (not including Malteds), in a yellow box, made by Vitasoy–so there was not much room for growth. Since then, Westbrae's non-dairy beverage category (soymilk and rice milks) has grown extremely rapidly–roughly eight-fold in sales, so that today Westbrae's sales in this category are about $16 million/year; of that roughly 80% is soy and 20% rice. Myron believes that Westbrae is now the leader in this category (soy + rice beverages) among all natural foods companies, ahead of both Eden Foods and Vitasoy. Westbrae's distributors tell Myron that the latter two companies now appear to be having problems; they may be having difficulties keeping up with demand. Imagine Foods (maker of Rice Dream) is a very strong competitor, and Rice Dream (rice beverage) has been a bonanza. But Westbrae has just introduced a competitor–Oat Plus, which tastes good and contains soluble fiber (beta-galactones), about which FDA allows a health claim.

Westbrae's single best-selling SKU in terms of units sold my be Malteds. Myron has had a hard time finding a manufacturer for this product. They are made by John Yamauchi in Los Angeles. He is having trouble keeping up with demand.

Westbrae has no plans to introduce soymilk in a gable-top carton, primarily because the company now has only one refrigerated product–tub miso.

Myron is very concerned about the possibility of *E. coli* turning up in some company's soymilk and damaging the whole industry. Les Wilson at Iowa State Univ., who is on the Soyfoods Association board, will be looking into this problem in the larger context of soymilk bacteriology.

Since 1988, Westbrae has continued to be a leader in soymilk innovation. They introduced the first "Lite" soymilk, were the first to structure the soymilk category to make it similar to dairy milk (full-fat, low fat, etc.), introduced the first fortified soymilk, the first small kid's size "Lunchbox" soymilk, the first coffee soy [Café Westbrae–Coffee-Flavored Soy Beverage], and (in Sept. 1997 at Baltimore, Maryland) VigorAid,–nutritional soymilk in the same category as Ensure.

After the Hain sale is finalized, Westbrae will take over management of two very interesting Hain soy products: Pizsoy (a natural pizza with soy cheese), and Ice Bean (a soy ice cream originally made by Farm Foods). Myron feels that these products have considerable unrealized potential.

Update: Talk with Hain Food Group–Westbrae. 1998. Feb. 18. Westbrae was, in fact, sold to Hain on 14 Oct. 1997. The new company name is that shown just above. Myron Cooper and other top executives will continue to work at their former location in Carson, California. Address: President, Westbrae Natural Foods, Inc., 1065 East Walnut St., Carson, California 90746. Phone: 310-886-8200.

7306. Gerner, Bob. 1997. Vestro Foods, Westbrae, and the Hain Food Group (Interview). *SoyaScan Notes.* Oct. 11. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Bob is aware that the Hain Food Group plans to purchase Vestro Foods and Westbrae. As far as Bob knows, the people who started Vestro did not come mostly from the old Hain Company. For example, Andy Jacobsen, president of Vestro Foods, came from Tree of Life. However after Vestro bought Westbrae in early 1988, most of Westbrae's management did not stay with the company, so Vestro hired a number of people from the old Hain Company, spun off by Pet Inc., to run Westbrae. After a while, many of those former Hain people left Vestro.

One of the early major health food distributors in California was Kahan & Lessin. Alan Kahan, son of one founder of the company [Ben Kahan], is now a top salesman for Westbrae.

Rice Dream beverage is now the single best-selling label among all the beverages at Bob's natural foods store. It outsells all the soymilk brands. Two interesting and fairly new soymilk products sold in gable-top cartons are Healthy Harvest (6 SKUs) and Silk (3 SKUs–chocolate and regular in quarts, and regular in a half gallon). Address: Owner, Berkeley Natural Grocery Co., 1336 Gilman St., Berkeley, California 94706. Phone: 415-526-2456.

7307. Broten, Lorne H.A. 1997. New developments at International ProSoya Corp. (Interview). *SoyaScan Notes.* Oct. 29. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The company name has been changed. A new company, International ProSoya Corporation (IPC), was incorporated in the fall of 1996. An agreement was reached

for IPC to purchase all the shares of ProSoya, Inc. (PSI), which will become a wholly owned subsidiary of IPC; the deal has not yet been finalized. Pacific ProSoya Foods, Inc. (the food manufacturing company in British Columbia) has been merged into IPC. Sales of small-scale soymilk equipment and equipment sales to the former Soviet Union countries will generally be handled by PSI, but those who wish to buy large systems must talk directly with Lorne and buy the system from IPC. A company or person in the USA can buy a small soymilk system (200 liters/hour or less) from PSI, but they cannot buy a large soymilk system because IPC is developing their own company in the USA based on their patented soymilk technology–and they do not want competition form their own soymilk systems.

International ProSoya Europe (a subsidiary of IPC, created in Jan. 1997 and began operation in June 1997) is now constructing a soymilk plant in the United Kingdom (in Livingston, Scotland) as part of a joint venture. Dusty Cunningham, who is a director of IPC, is there helping to get the project started–but she is not the person in charge. The factory is expected to begin making soy products in early 1998–an aseptic soymilk, a soy yogurt, soy ice creams, and other food products based on the company's soymilk. There are a number of shareholders in the new joint venture, one of whom is named McCorkle; the joint venture is not with an existing European soy company.

In the future, IPC plans to focus on joint ventures internationally (using IPC soymilk technology), and to place much more emphasis on making and selling foods based on soymilk than on selling equipment. Lorne thinks that two more joint ventures will be finalized in 1998; the details are confidential at present. Part of the capital for all this expansion comes from joint venture partners and PIC raises part of it themselves; they are planning to do an initial public offering (IPO) in 1998 as well–open to the public.

IPC has been so busy lately that Lorne is not sure whether they will continue the newsletter or not; they will discuss it at a board meeting soon.

Ted Nordquist is currently involved with a soymilk plant in Los Angeles, California. He has been buying soymilk from IPC. Lorne has heard that Ted is coming out with his own brand of soymilk. In France, Sojinal has been bought out; Lorne thinks that Sojinal makes a better soymilk product than Alpro. Address: President and CEO, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC V3S 8E5, Canada. Phone: 604-532-8030.

7308. Liener, Irvin E. 1997. Goitrogens are not a concern in soyfoods (Interview). *SoyaScan Notes.* Oct. 30. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Question: Are goitrogens a concern in soyfoods? Answer: People consuming soyfoods or soy protein products need not be concerned with goitrogens, assuming they are consuming a typical diet that is not deficient in iodine. Almost all of the goitrogens found in raw soybeans are destroyed during the normal heat processing or cooking used in making soyfoods.

There are only two situations when goitrogens in soy may be of concern, and lead to enlargement of the thyroid gland or goiter: (1) When infants with a severe iodine deficiency consume soy-based infant formula; for this reason, such infant formulas are fortified with iodine as required by law; (2) When laboratory animals (such as rats) are maintained on diet with a severe iodine deficiency and fed soyfoods or soy protein products. Address: Dep. of Biochemistry, Univ. of Minnesota, St. Paul, MN 55108. Phone: 612-624-4214.

7309. Golbitz, Peter. 1997. Soyfoods Expo '97 in Mexico City, 21-23 Oct. 1997 (Interview). *SoyaScan Notes.* Oct. 31. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The American Soybean Association (ASA) sponsored this expo and hired Peter and Soyatech to recruit American companies to participate. 824 people attended (many more than the last soyfoods expo in Mexico in 1994) and 28 companies exhibited at the U.S. Trade Center in Mexico City. The event started Tuesday, October 21, with a briefing by the Trade Center on how to import products into Mexico. Tuesday evening there was an opening VIP cocktail, attended by about 300 people. The booths were all set up; it and ended Thursday Oct. 23. One Wednesday and Thursday the Expo hall was open from 12:00 noon until 8:00 p.m. each day. The U.S. Trade Center arranged appointments for people, from 9-12 o'clock each morning, linking potential buyers and sellers. A great deal of business was conducted. In addition there were five seminars each day, from 12:30 to 6:00 p.m., with the speakers being mostly Americans, talking about new technologies, marketing, soymilk standards, products, etc. There was one seminar about current developments with soy in Guatemala. ASA put together a beautiful little color catalog as part of a big packet on the Expo, with all the seminars, speakers, attendees, etc. Peter will send a 5-page faxed recruitment packet announcing the event.

Cuba has exported an excellent soymilk plant to Mexico; the company, Biotek, owned by Dr. Javier Sandoval Pierres, is now in operation at: Km. 9 Carreterra Celaya, San Miquel Allende, Guanajuato state (GTO, south of Mexico City), Mexico. Phone: +91 415 5-0347 or 0348. Fax: 4-0349. The soymilk is delicious. The company is beginning to work with the Mexican government to get this soymilk into schools.

Mexico is now the third largest importer of U.S. soybeans after the Netherlands (#1) and Japan (#2; see *Soya Bluebook,* p. 348). This is largely attributed to NAFTA, the proximity of Mexico to the USA, and the fact that as imports from the USA have increased, Mexican soybean production has decreased. In addition, China is now exporting good quality food soybeans to importing nations in Asia.

ASA Mexico now produces a quarterly Spanish-language magazine titled *Soya.* For more information contact Adela Perez and Viki Braverman at ASA Mexico.

Note: A photo in *Bluebook Update* (March 1998, p. 6) shows U.S. participants in the Expo: Matt Renkoski of Optimum Quality Grains; Deb Wycoff of Devansoy; Rick Eluk of Clofine Food & Dairy; Teresa Isakson of SunRich; Lorne Broten of International ProSoya; Alberto Pico of ADM; and Peter Golbitz of Soyatech, Inc. Also shown are Adela Perez of ASA (Mexico) and some of her staff. Address: Soyatech, P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207-288-4969.

7310. American Natural Snacks. 1997. Balance the facts if you *really* want to ensure you're getting more nutrition. Balanced–The total nutritional drink (Ad). *Vegetarian Times.* Oct.

• ***Summary:*** This ad compares two nutritional drinks, Balanced (recently launched by American Natural Snacks) and Ensure Plus (a registered trademark of Ross Products Div., Abbott Laboratories). Each is sold as a dry mix in a can. Some of the differences are (respectively) Natural flavors vs. artificial flavors. 3 grams of fat vs. 13 gm. Diary free vs. contains dairy. No lactose vs. contains lactose. No cholesterol vs. contains cholesterol. 11 oz can vs. 8 oz can. The "Balanced" product contains soy as the basic ingredient. It comes in three flavors: Chocolate, vanilla, and strawberry. Address: P.O. Box 1067, St. Augustine, Florida 32085-0410. Phone: 904-825-2057.

7311. Archer Daniels Midland Co. 1997. Annual report. P.O. Box 1470, Decatur, IL 62525. 44 p. Oct.

• ***Summary:*** Net sales and other operating income for 1997 (year ended June 30) were $13,853 million, up 1.05% from 1996. Net earnings for 1997 were $337.3 million, down 45.8% from 1996. Shareholders' equity (net worth) is $6,050 million, down 1.5% from 1996. Net earnings per common share: $0.66, down 45% from 1996. Number of shareholders: 33,834. ADM spent $1,127 million on additions to plant in 1997, compared with 801 million in 1996 and 658 million in 1995.

On the cover of the report is color illustration of a purple planetary globe. James R. Randall, who has been President of ADM for the past 22 years, has retired but continues advise the company. At ADM's website (admworld.com) a counter displays the world's population, now at 5.859 billion. "Every second of every day, the world gains 3 new mouths to feed." "The earth's population is projected to double in the next 50 years, hitting ten billion by the year 2050. Yet there will be no increase in the land available for growing food" (p. 5).

In the section titled "Discover the benefits of ADM's health products" (p. 6-7) are subsections on natural vitamin E, lecithin granules, soy protein, and isoflavones. The latter section states: "Isoflavones are special compounds called phytochemicals that occur naturally in soybeans. (Phytochemicals are different from vitamins or nutrients, but are thought to have and impact on health.) The two main types of isoflavones are genistein and daidzein. ADM is currently constructing the world's largest plant to make isoflavones in concentrated form.

"Initial research indicates that isoflavones may work in several ways to fight a range of diseases, including heart disease and cancer. They may also help relieve menopause symptoms, promote bone health and protect against osteoporosis.

In addition to the concentrated products, ADM makes a number of soy products that are naturally rich in isoflavones, such as soy milk, soy flour and Harvest Burgers products."

More than 100 million Green Giant Harvest Burgers have been sold (p. 19). The section on Haldane Foods (p. 20), a large producer of vegetarian foods in England, shows a half-page color photo of their products. It states: "A recent survey shows that 5.4% of the U.K. population is vegetarian and almost half are now actively eating less meat." ADM has just completed a fourfold increase in the capacity of its plant in Newport Pagnell–which produces many of these products.

Sales of oilseed products in 1997 increased 10% to 8.9 billion (p. 24). ADM sold its British Arkady bakery ingredient business (p. 25). Among the corporate officers, G. Allen Andreas is President and CEO. Address: Decatur, Illinois.

7312. **Product Name:** Soy Milk [Chocolate, Cardamom, Vanilla, or Plain].
Manufacturer's Name: Bean Me Up, Soya Station, Salad Bar, div. of Ooh-La-La Ling [Lingerie].
Manufacturer's Address: 1684 Ouneachem Baht, Anjuna Bardez, Goa, Goa, India 403-507. Phone: 0091-0832-2273648.
Date of Introduction: 1997. October.
Ingredients: Chocolate: Soya beans, sugar, cocoa powder.
Wt/Vol., Packaging, Price: 500 ml. milk-quality biodegradable plastic bags. 25 rupees.
How Stored: Refrigerated.
New Product–Documentation: Letter (e-mail) from Lisa Camps of Goa. 2005. May 15-16. This product was introduced in about Oct. 1997.
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7313. Evans, D.E.; Tsukamoto, C.; Nielsen, N.C. 1997. A small scale method for production of tofu and silken tofu. *Crop Science* 37(5):1463-71. Sept/Oct. *

• ***Summary:*** 80 gm of ground soybean is used to make silken tofu. Glucono-delta-lactone is used as the coagulant. To evaluate the method, soymilk and tofu were made from 182 experimental, public, and private soybean cultivars grown in Indiana in 1990. Address: 1. Dep. of Plant Science, Univ. of

Adelaide, Waite Campus, Glen Osmond, SA 5064, Australia; ; 2. Taishi Food Co., 68 Okinaka, Sannohe-Machi, Sonnohe-gun, Aomori, Japan 039-01; 3. USDA-ARS, Dep. of Agronomy, Purdue Univ., W. Lafayette, Indiana 47907-1150.

7314. Madison, Deborah. 1997. Vegetarian cooking for everyone. New York, NY: Broadway Books. x + 742 p. Oct. Illust. Plus 24 full-page color plates. Index. 26 x 21 cm. A tenth anniversary edition was published by Broadway Books in 2007, featuring a new introduction by the author.
• ***Summary:*** One of the most comprehensive vegetarian cookbooks ever published; Contains 1,400 recipes. One chapter, titled "The Soy Pantry" (p. 593-609) has the following contents (with many recipes): Introduction (The soybean is the cow of the Orient). Soy milk. Tofu. Tempeh. A sidebar (p. 594) lists more recipes that include soyfoods, by chapter.

Soy-related recipes (not including those on p. 593-609) include: Soy oil (p. 43). Bechamel sauce (p. 53; dairy-free variation uses soy milk). Tofu "mayonnaise" (p. 60). Tofu garlic "mayonnaise" (p. 60). Sesame sauce with tofu (p. 67). Peanut-tofu sauce (p. 69). Spring rolls with napa cabbage and tofu (p. 107). Tofu salad spread (p. 129). Marinated tofu sandwich (p. 130). Tempeh on rye sandwich (p. 130). TLT–Tempeh, lettuce, and tomato sandwich (p. 130). Buckwheat noodle salad with grilled tofu and roasted peppers (p. 178). Green goddess dressing (p. 190; dairy-free variation with silken tofu). Miso soups (about, plus 5 recipes; p. 231-33). Mushrooms with paprika and sour cream–variation with tofu (p. 255). Thai tofu and winter squash stew (p. 257). Winter vegetable pot pie (p. 259; dairy-free variation can use soymilk).

In the section on "Stir-fries" and stir-frying is a subsection titled "Some essential Chinese ingredients." The last entry (p. 262) is: "Salted and fermented black beans: Black soybeans partially fermented and preserved with salt add a rich flavor to vegetables, especially asparagus, green beans, and broccoli. Crush them with the flat of a knife before adding them to release their flavor. The best come in a plastic bag with ginger and orange peel."

Vegetable stir-fry with fermented black beans (with "2 tablespoons fermented black beans, chopped," p. 263). Mushrooms and tofu in Hoisin sauce (p. 269). Stir-fried broccoli, mushrooms, and peppers with caramelized tofu (p. 270). Dried mushroom, leek, and tofu stir-fry with Chinese barbecue sauce (p. 270). Goat cheese enchiladas with corn and red mole (p. 292; silken tofu can replace a portion of the goat cheese to give a less rich version). Soybeans (about; p. 314). Somen in broth with silken tofu and spinach (p. 482-83). Soba in broth with spinach, purple dulse, and silken tofu (p. 483). Udon with stir-fry and five-spice tofu (p. 484). Smoothies (p. 594). Protein drink for breakfast (p. 617, with soy milk). Breakfast burritos with tofu (p. 625). Scrambled tofu (p. 627). Scrambled tofu with herbs and cheese (p. 627). Scrambled tofu with tomatoes and salsa (p. 627). Multigrain waffles (with soy flour, p. 633).

Also used in the recipes are: Quinoa. Sea vegetables. A color photo on the cover shows Deborah Madison.

The dust jacket (and *Jessica's Biscuit Cookbook Catalog,* spring 1998) says: "What Julia Child is to French cooking and Marcella Hazan is to Italian cooking, Deborah Madison is to contemporary vegetarian cooking. At the Greens restaurant in San Francisco [California], where she was the founding chef, and in her two acclaimed vegetarian cookbooks, Madison elevated vegetarian cooking to new heights of sophistication... Madison received the M.F.K. Fisher Mid-Career Award in 1994... She has been a board member of the Santa Fe Area Farmers' Market for the past six years in Santa Fe, where she lives with her husband, Patrick McFarlin."

Marion Cunningham, author of Beard Award winners *The Fannie Farmer Cookbook* and *The Fannie Farmer Baking Book*–"If I could have only one book on the subject of vegetables, *Vegetarian Cooking for Everyone* would be it."

Letter (fax) from Dana Jacobi. 1998. April 26. This cookbook just won the IACP/Julia Child award as the "cookbook of the year" for 1998–the highest honor given, out of 432 books nominated–and a tremendous honor for vegetarianism as well as for Deborah Madison. Note: IACP is the International Association of Culinary Professionals. This book also won the IACP/Julia Child award as the best general cookbook of the year (out of 54 cookbooks nominated, and beating out the new 1997 edition of *The Joy of Cooking*). Two major sets of cookbook awards are given each year: The IACP/Julia Child awards (given in April at a different location each year) and the James Beard awards (given in May in New York City). Each set offers awards in something like 10 different categories. There is surprisingly little overlap among the nominations for both in each category. Address: Santa Fe, New Mexico.

7315. Mangels, Reed. 1997. Nutrition hotline: Food labeling [casein in nondairy products]. *Vegetarian Journal* (*Baltimore, Maryland*). Sept/Oct. p. 2.
• ***Summary:*** "Question: What are the government regulations on labeling a product that contains casein as 'nondairy?' M.W., MD.

"Answer: If a product is labeled as 'nondairy' but contains casein (protein from cow's milk), the ingredient list must state that the casein is milk-derived. If the product does not claim to be 'nondairy,' it is not required to give the casein's source." A portrait photo shows Reed Mangels. Address: Ph.D., R.D.

7316. Sanitarium Health Food Co. 1997. So Good now: The fresh taste of today (Booklet). 146 Fox Valley Rd., Wahroonga, NSW 2076, Australia. 8 p. April. 15 cm.

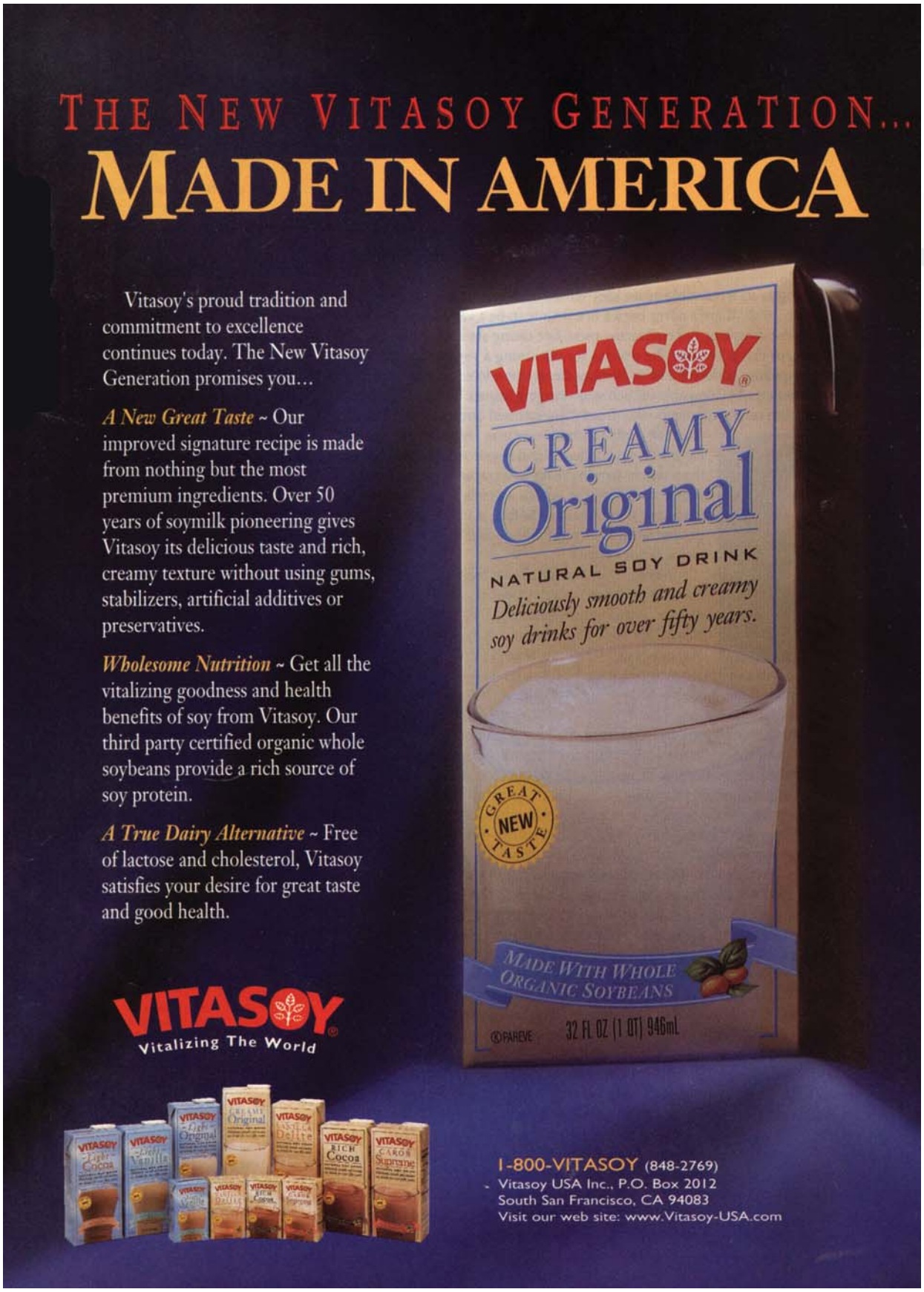
• ***Summary:*** The first 2 pages of this attractive full-color booklet contain information about these soymilk products: Soy & linseed–a recipe for good health. What's so good about So Good. Rich in phytoestrogens. The Omega 3 benefit. Calcium. Vitamin B-12. Low fat. There follow 7 pages of recipes. Address: Wahroonga, NSW, Australia.

7317. *Soya Bluebook Plus.* 1997. Oilseed glossary: Definitions and terms commonly associated with oilseed products or processing. 1998. p. 354-60.
• ***Summary:*** Acidulated soapstock, activated, amino acids, antioxidant, biodiesel, biotechnology, bleaching, bleaching earth, bolls, Bowman-Birk trypsin inhibitor, bran, break material, cake, canola, canola meal, catalyst, coconut, coconut–desiccated, coconut milk, coconut meal, cold pressed soy oil, cold test, confection sunflower, cooking oil, copra, copra meal, corn bran, corn feed meal, corn flour, corn germ meal (wet milled), corn gluten feed, corn gluten meal, corn grits, cotton linters, cotton plant by-product, cottonseed–glandless, cottonseed cake (or cottonseed flakes)–mechanical extracted, cottonseed meal–solvent extracted, cottonseed screenings, cotyledon, cracked corn, cracking, crude cottonseed oil, crude soy oil, defatted soy flour, degermed, dehulled–dehulling, degummed soy oil, degumming, deodorized, desolventizer-toaster, diglyceride, drying oil, edamame, edible crude soy oil, edible refined soy oil, emulsifier, endosperm, esterification, expanded–expanding, expeller, extracted–mechanical, extracted–solvent, extruded, extruder, extrusion, fat, fatty acid, feed (feedingstuff), feed grade, fermented–fermenting, flaking, flour, free fatty acid (F.F.A.), full-fat soy flour (enzyme active or heated/toasted), fully refined soy oil, genetic engineering, germ, ghee, gossypol, grain, green vegetable soybeans, grits, groundnut, gumming, high-fat flour, hilum, hulls, hydrogenated vegetable oil, hydrogenization [sic, hydrogenation], hydrolyzed corn protein, hydrolyzed soy protein, isolated soy protein, kibbled soybean meal, Kunitz trypsin inhibitor, lecithin, lecithinated soy flour, linseed meal, linters, lipoxygenase, low gossypol cottonseed meal, low-fat soy flour, malto dextrins [maltodextrins], margarine, maturity groups, meat analogs [meat alternatives], meat extenders, melting point, methyl esters, miso, monoglyceride, natto, nutraceuticals, oil, okara, once refined soy oil, oxidation, palm kernel oil, palm olein, palm stearin, peanut hulls, peanut meal, peanut skins, pellets, polymerization, processing or extraction of oilseeds (also called "crushers" or oil mill operations–solvent extraction, continuous pressing, batch pressing), protein, pulses, raffinose, rancidity, rapeseed meal–mechanical extracted, refining, refractive index (R.I.), rolled or rolling, salad oil, shortening, soapstock, solvent extracted, solvent extracted soybean flakes, soy flour, soy grits, soy protein concentrate, soy protein isolate, soy sauce (incl. that hydrolyzed with hydrochloric acid), soy sprouts, soya, soya lecithin, soybean(s), soybean ground, soybean cake, soybean curd, soybean fatty acids, soybean feed–solvent extracted, soybean flakes and 44% protein soybean meal, soybean flakes and high protein or solvent extracted soybean meal, soybean hay sun-cured ground, soybean hulls (or seed coats), soybean meal, soybean meal–dehulled–solvent extracted, soybean meal–dehulled–mechanical extracted, soybean mill feed, soybean mill run, soybean processor, soybean protein product–chemically modified, soybean seeds–extruded ground, soybean seeds–heat processed, soybean solubles–condensed, soybean solubles–dried, soyfoods, soymilk, soynuts, spinning (to texturize soy protein isolate for food or industrial use), stachyose, steepwater, sterols, sunflower hulls, sunflower meal–dehulled–mechanical extraction, sunflower meal–dehulled–solvent extracted, sunflower meal–mechanical extracted, sunflower meal–solvent extracted, sunflower seed–oil varieties, technical grade refined soy oil, tempeh, textured soy concentrate, textured soy flour, textured soy protein, toasting, tofu, transgenic, triglyceride, trypsin inhibitors, unsaponifiable matter, unsaturation, vanaspati–vegetable ghee, wet-milled, whole-pressed cottonseed–mechanical extracted, winterized oil, yuba. Address: 318 Main St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207-288-4969.

7318. Vitasoy USA Inc. 1997. The new Vitasoy generation–Made in America (Ad). *Vegetarian Times.* Oct. p. 17.
• ***Summary:*** This full-page color ad shows a large carton of "Vitasoy Creamy Original natural soy drink" (made with whole organic soybeans) against a black and dark blue background. In the lower left is a color photo of all eleven of Vitasoy's soymilk products. "The New Vitasoy Generation promises you... A new great taste–Our improved signature recipe is made from nothing but the most premium ingredients. Over 50 years of soymilk pioneering gives Vitasoy its delicious taste and rich, creamy texture..." The new logo reads: "Vitasoy–Vitalizing the world." Visit our web site: www.Vitasoy-USA.com.

This ad also appeared in the Dec. 1997 issue (p. 6) of this magazine. And in *Natural Foods Merchandiser* (Dec. 1997, p. 49; Feb. 1998, p. 79). Address: P.O. Box 2012, South San Francisco, California 94083. Phone: 1-800-VITASOY (848-2769).

7319. Banner, Bob. 1997. Food forum report. *Hope Dance* (*San Luis Obispo, California*). Nov/Dec. p. 29-30. No. 7.
• ***Summary:*** On Sept. 19 a very successful and festive Food Forum took place at the Community Room of the San Luis Obispo Library. It was billed as "Simplifying our food: Keeping it healthy, local, and sustainable." The various speakers included Professor Bud Evans and "Ed Bruehl, co-ordinator of Natural Flavors, one of the healthiest restaurants in the County [now out of business as we go to press]... Ed not only spoke passionately about his food concerns but about the local contribution in this county from local organic



growers, persons making tempeh, soy milk..."

Note 1. Marcus Tribelhorn, a local tempeh maker from Upfull and Right, was there to promote tempeh. Note 2. This magazine is subtitled "Making a Difference in San Luis Obispo County." Three is a full-page ad for "Buy Nothing Day: A 24 hour moratorium on consumer spending" and an editorial on voluntary simplicity.

7320. Dumke, Nicolette M. 1997. Five years without food: The food allergy survival guide. How to overcome your food allergies and recover good health. Louisville, Kentucky: Adapt Books–Allergy Adapt Inc. vi + 314 p. Index. 25 cm. [200+* ref]

• ***Summary:*** A very interesting and useful book about allergies and their causes, but with a very poor index (the terms soy, soymilk, tempeh, and tofu do not appear), and little information on soy (see p. 49, 104-05).

Key concepts: Traditional allergies and the many allergic reactions involving the antibody called "Reagin" or "IgE." The more than 70 medical conditions associated with food allergies. The "leaky gut" or increased intestinal permeability caused by alcohol, anti-inflammatory drugs, cytotoxic drugs used to treat cancer, antibiotics, radiation therapy to the abdomen, etc. Unfriendly organisms. Small openings can occur in the lining of the intestine, allowing large molecules of undigested or incompletely food to enter the bloodstream. Rotation diets: Soy has the Rotation Group Number 45 (see p. 270).

Contains extensive information on amaranth and quinoa.

7321. Farrell-Kingsley, Kathy. 1997. Recipe redux. Easy as pie: Our pumpkin pie without milk and eggs is sumptuous and fuss-free. *Vegetarian Times.* Nov. p. 30.

• ***Summary:*** Contains a recipe for Vegan Pumpkin Pie (8 servings), made with 3 tablespoons soymilk in the crust and 1 cup low-fat soymilk in the pie itself. This recipe contains 50% less fat and 25% fewer calories than a typical pumpkin pie made with dairy products. A color photo shows a slice of the pumpkin pie. Address: VT Food Editor.

7322. Hain Food Group, Inc. 1997. Annual report 1997. Uniondale, New York. 5 + 30 p. Nov. 28 cm.

• ***Summary:*** This unusual annual report is composed of 6 unnumbered pages of annual report on glossy paper and 30 pages of Form 10-K, which is bound in. A color photo (p. 1) shows Mr. Irwin D. Simon, President and CEO. In October 1997 Hain completed the acquisition of Westbrae Natural, Inc. "Westbrae sells over 300 high quality natural and organic food and snack products. Westbrae is the market leader in non-dairy beverages, the largest single natural food category. Westbrae and Hain combine to lead six of the fifteen top selling natural food categories." A color photo shows four of Westbrae's soy and rice beverages.

Page 1 of Form 10-K states that On Sept. 11, 1997, Hain executed a definitive merger agreement with Westbrae Natural. The next day Hain offered $3.625 cash per share for all outstanding common shares of Westbrae. The aggregate purchase price will be approximately $23.5 million. "For the fiscal year ended DEcember 31, 1996, Westbrae reported net sales of $32,583,000 and net income of $1,203,000. For the six months ended June 30, 1997, Westbrae reported net sales of $17,502,000 (unaudited) and net income of $708,000 (unaudited)."

"The company was formed in 1993. Net sales for the year ended June 30: 1994–$14,963,000. 1995–$58,076,000. 1996–$68,606,000. 1997–$65,353,000 (down 4.9%). Net income for these years: 1994–($502,000 loss). 1995–$2,365,000. 1996–$2,134,000. 1997–$1,069,000 (down 50%).

Enclosed with the annual report is a "Notice of annual meeting of stockholders and proxy statement." The single largest shareholder is Irwin D. Simon, who own 1,573,000 shares, which is 16.7% of the common stock. Mr. Simon, age 38, is the company president, CEO, and a director. In 1997 has salary was $200,000, with a bonus of $60,000 and other annual compensation of $5,400 = $265,400. He is the company founder and has been the president and CEO since its inception. Former positions: 1986-1990 with Haagen-Dazs is sales and marketing. Dec. 1990 to Dec. 1992 with Slim-Fast Foods Company in various marketing capacities. Address: 50 Charles Lindbergh Blvd., Uniondale, New York 11553. Phone: 516-237-6200.

7323. Lowenstein, Melissa. 1997. Natural alternatives for menopausal women: A panel discussion with the experts. *Vegetarian Times.* Nov. p. 86-90, 92.

• ***Summary:*** Several of these experts recommend the use of soyfoods. Tori Hudson, N.D., director of A Woman's Time Clinic in Portland, Oregon, was asked: "What foods do you suggest for women with menopausal symptoms?" Answer: "The best foods are those that contain high amounts of phytoestrogens, or plant estrogens. The very best sources of phytoestrogens are soy products and flaxseeds Ä not flax oil but the whole seed. A handful of roasted soy nuts, a cup of soymilk or a half-cup of tofu will give you 35 to 50 milligrams (mg.) of isoflavones, the phytoestrogen found in soy. I recommend at least 45 mg. a day, but the more, the better. Soy foods also decrease the 'bad' kind of cholesterol and increase the 'good' kind and can dramatically reduce breast cancer risk. Japanese women, who eat enough soy to get 100 mg. of isoflavones a day, are four to six times less likely to have breast cancer." Address: Santa Barbara, California.

7324. Messina, Virginia K.; Burke, Kenneth I. 1997. Position of the American Dietetic Association: Vegetarian diets. *J. of the American Dietetic Association* 97(11):1317-21. Nov. [44 ref]

• ***Summary:*** Contents: Introduction. Position statement. Vegetarianism in perspective. Health implications of vegetarianism. Nutrition considerations for vegetarians. Vegetarianism throughout the life cycle. Meal planning for vegetarian diets. Food guide pyramid for vegetarian meal planning.

Introduction: "Scientific data suggests positive relationships between a vegetarian diet and reduced risk for several chronic degenerative diseases and conditions, including obesity, coronary artery disease, hypertension, diabetes mellitus, and some types of cancer."

"Position statement: It is the position of the American Dietetic Association (ADA) that appropriately planned vegetarian diets are healthful, are nutritionally adequate, and provide health benefits in the prevention and treatment of certain diseases."

Other features of the paper include: (1) A paragraph on why people choose vegetarian diets, including ethical reasons. (2) A food guide pyramid for vegetarian meal planning, including "zero to three servings of milk, yogurt, and cheese." (3) A list of food sources for certain nutrients, including iron, zinc, calcium, vitamin D, B-12, and linoleic acid. (4) Nutritional considerations for vegetarians and vegans. For example, vegans may have lower calcium requirements than the general population because their diets contain less protein and are more alkaline; high acid diets cause more calcium to be lost in the urine as the body tries to neutralize that acid with calcium from the bones. (5) The position paper once again restates that combining proteins is not necessary and that protein intake in both lacto-ovo-vegetarians and vegans appears to be adequate.

A full-page table (p. 1319) shows food sources of important nutrients. Soyfoods are shown as sources of the following, with the number of milligrams per serving shown in parentheses: (1) Iron: Tofu, ½ cup (6.6), soybeans, ½ cup cooked (4.4), tempeh, ½ cup cooked (1.8), soymilk, 1 cup (1.8). (2) Zinc: ½ cup of the following cooked: Tempeh (1.5), textured soy flour (1.4), tofu (1.0), soybeans 1.0.

(3) Calcium: soymilk, fortified, 1 cup (250-300), tofu, ½ cup (120-350), soynuts, ½ cup (252), soybeans, 1 cup cooked (175), soymilk, 1 cup (84), textured soy flour, ½ cup (85), tempeh, ½ cup (77). (4) Vitamin D: Fortified soymilk or other nondairy milk, 1 cup (1.0 to 2.5 micrograms). (5) Vitamin B-12: Fortified soymilk or other nondairy milks, 8 oz = 1 cup (0.2 to 5.0 micrograms).

(6) Linolenic acid: Soybean oil, 1 tablespoon (0.9 gm), soybeans, ½ cup cooked (0.5 gm), tofu, ½ cup (0.4 gm).

7325. Ontario Soybean Growers' Marketing Board (OSGMB). ed. and comp. 1997. Canadian soyfoods directory. Chatham, Ontario, Canada: OSGMB. 27 p. 28 cm.
• ***Summary:*** This excellent, complete, and accurate directory was compiled by the Collège d'Alfred of the University of Guelph, under contract with the Ontario Soybean Growers' Marketing Board (OSGMB). The project leaders were Suzanne Lavoie, Charles Goubau, and Ian Walker. The first Canadian soyfoods directory was published in April 1994 (22 pages).

Contents: Foreword–Ontario Soybean Growers' Marketing Board (OSGMB). Acknowledgements from researchers. Table of contents. Soyfood product descriptions: Green vegetable soybeans–Edamamé, meat analogs, miso, natto, okara, soy cheese, soy flour, soy frozen desserts, soy grits, soy isolate fibre, soy lecithin, soy oil, soy protein concentrate, soy protein isolate, soy pudding, soy sauce, soy sprouts, soy yogurt, soymilk (soy drink and soy beverage), soynuts, tempeh, textured soy flour–TSF, texturized soy protein, tofu, whole dry soybeans, yuba. Soyfoods for your health: Heart disease, cancer, osteoporosis, other conditions. Composition and nutrient value of soyfoods. Soyfood companies by product. Soyfoods companies by province: Alberta (7), British Columbia (21), Manitoba (2), Nova Scotia (2), Ontario (54), Quebec (20). Soyfood companies (105 companies that make or market wholesale soyfoods)–complete listings (address, phone and fax numbers, contact person, products). Soyfoods distributors–complete listings (13). Soybean distributors–complete listings (28). Research information sources–complete listings (24). Soyfoods information sources (23). Canadian soyfoods directory questionnaire.

Spot in *Ontario Soybean Growers' Marketing Board Newsletter.* 1997. Dec. p. 5. The Canadian Soyfoods Directory was launched in November after a two-month delay. "The project was undertaken following numerous information requests from consumers, processors and health professionals." Funded by the Board of OSGMB, it has been mailed to all Registered Dietitians across Canada, and it will soon be available on the Board's website. Address: OSGMB, 180 Riverview Dr., P.O. Box 1199, Chatham, ON N7M 5L8, Canada. Phone: 519-352-7730.

7326. **Product Name:** SoNice Yule Nog (Eggless Soymilk EggNog–Refrigerated).
Manufacturer's Name: ProSoya Foods Incorporated.
Manufacturer's Address: 312–19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: (604) 532-8030.
Date of Introduction: 1997. November.
Ingredients: Soymilk (fairly rich), cane sugar, carrageenan, nutmeg, artificial flavor.
Wt/Vol., Packaging, Price: 1 liter refrigerated gable-top carton.
How Stored: Refrigerated.
New Product–Documentation: Color sell sheet (leaflet) sent by George Conquergood of IPC. 1999. April 21. At the top is written "So Nice" in large green letters. Below that in nutmeg-colored script: "Yule Nog–Just in time for the holidays." At the bottom is a "wood block" style bowl and ladle. In the background is a wreath of holly on a beige

background.

Talk with George Conquergood of IPC. 1999. May 28. This product was introduced in Nov. 1997 for the holiday season. It was sold refrigerated, packed in a gable-top carton at Farmland Dairies in New Jersey. It was on the market until January 1998; only two production runs were ever done. Most customers loved the product and wanted IPC to continue making it all year long. George invented this product and first made it in March 1993 at his Sweet Carrot Café–Health Bar & Deli is Saskatoon, Saskatchewan, Canada. Note: The ingredients in typical eggnog are: eggs beaten with sugar, milk or cream, and often alcoholic liquor. SoNice Yule Nog contained no eggs or alcohol, but it did contain sugar.

7327. **Product Name:** ProSoya SoNice: Soy Beverage (Fresh in 1 Quart ESL Gable-Top Cartons for USA) [Natural, Chocolate, Vanilla Lite].
Manufacturer's Name: SoNice Soy Corporation. Subsidiary of International ProSoya Corp.
Manufacturer's Address: P.O. Box 93009, Langley (Vancouver), BC, V3A 8H2 Canada. Phone: (604) 532-8030.
Date of Introduction: 1997. November.
Ingredients: Natural: Filtered water, certified organic soybeans. Chocolate: Filtered water, certified organic soybeans, cane sugar, cocoa, modified corn starch, tricalcium phosphate, sea salt, carrageenan, vitamin A palmitate, vitamin D-3, vitamin B-12, riboflavin, zinc gluconate.
Wt/Vol., Packaging, Price: 1 quart ESL gable-top carton. Retails for $1.99.
How Stored: Refrigerated, 85 day shelf life.
Nutrition: Chocolate: Per 1 cup (240 ml): Calories 130, calories from fat 30, total fat 3.5 gm (5% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 150 mg (6%), total carbohydrate 18 gm (dietary fiber 0 gm [0%], sugars 15 gm), protein 6 gm (12%). Vitamin A 10%, calcium 25%, vitamin D 20%, vitamin B-12 20%, vitamin C 0%, iron 8%, riboflavin 20%, zinc 10%. Percent daily values are based on a 2,000 calorie diet.

Natural: Per 1 cup (240 ml): Calories 70, calories from fat 30, total fat 3.5 gm (5% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 5 mg (0%), total carbohydrate 3 gm (dietary fiber 0 gm [0%], sugars 1 gm), protein 7 gm (14%). Vitamin A 0%, calcium 6%, vitamin C 0%, iron 4%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Talk with Fred Webster, head of International ProSoya Corp. office in New Hope, Pennsylvania. 1997. Sept. 31. This product, made in British Columbia, Canada, and packaged in New Jersey, will be introduced to the U.S. market in mid-October, 1997, in quarts and half gallons. Refrigerated (45 day shelf life); expected retail price is $0.99/cup.

Talk with Lorne Broten, President and CEO, International ProSoya Corp. 1997. Oct. 29. This product was launched in Canada in Jan. 1997. It is available in 1 liter and 2 liter gable-top ESL cartons.

Talk with Steve Demos, president of White Wave. 1998. Aug. 10. He heard about 10-14 days ago that the SoNice brand, both aseptic and gable top, is no longer being shipped to market. The company's first comment was "Packaging problems," and then it was "money problems." Quart cartons for Natural and Chocolate sent by George Conquergood of IPC. 1999. April. The Chocolate front panel reads: "Fortified with vitamins A, B2, B12 & D and calcium. Cholesterol and lactose free... Made with certified whole organic soybeans. 1.4% fat."

Talk with George Conquergood. 1999. June 2. The quarts for the U.S. market were introduced in Oct. 1997 at the Natural Products Expo in Baltimore, Maryland, and shipped in November. They were targeted at the mainstream consumer, and so were sweetened with liquid white sugar; the aseptic products, targeted at the natural foods consumer, were sweetened with agave. Fortification terminology was allowed on the U.S. products but not on many Canadian products. U.S. and Canadian packages had different nutritional labeling because: (1) U.S. products must bear the heading "Nutrition Facts." (2) The rules for rounding off nutrient values are different in the two countries. (3) The serving size is 1 cup (240 ml) in the U.S. vs. 250 ml in Canada. (4) The U.S. prefers quarts while Canada uses the metric system–like almost all other countries worldwide. These differences created a packaging nightmare for IPC. Fred Webster was and employee of IPC and the company's master broker for the USA, with focus on the East Coast. IPC set up the West Coast complete separately from Fred.

7328. Soy Information Services. 1997. Adverse reaction to soy (Ad). *Daily Post* (*Rotorua, New Zealand*)**.** Nov.
• ***Summary:*** This notice appears in the "Public Notice" section of the Classified Ads section. "The Swedish National Food Administration Livamedals Verket, has advised that life threatening reactions have been caused by soya, especially for children with asthma and peanut allergy. They have, in the last few years, recorded fatal allergic reactions to soy protein (3), peanut protein (1), hazelnut (1), milk (1). They advise that those with a severe allergy to peanuts should avoid soy protein intake and advise that reports from literature recommend that those infants who experience milk allergy from substituted breast milk formulas, should be given casein or whey hydrolysed products instead of soy formulas."

Note: Rotorua is a city near the center of New Zealand's North Island. Address: P.O. Box 3285, Onerahi, Whangarei [New Zealand]. Phone: Fax: (09) 434-0567.

7329. Susanto, Tri; Sawitri, Meita; Widaryanti, Eni. 1997. Research on the utilization of tempe as raw material in the

production of milk and tempe sausage. In: Sudarmadji, Suparmo and Raharjo, eds. 1997. Reinventing the Hidden Miracle of Tempe: Proceedings, International Tempe Symposium, July 13-15, 1997, Bali, Indonesia. Jakarta, Indonesia: Indonesian Tempe Foundation. xi + 280 p. See p. 125-132. [7 ref]

• ***Summary:*** To produce good quality tempeh sausage: Cut and grind fresh tempeh to yield 100 gm. Add 3.5% egg white, 2.5% wheat flour, 10 ml water, 1 gm garlic, and spices. Mix well, then mix in 40 gm vegetable oil, fill into a casing, and steam at 100ºC. Cool and serve. Contains 17.3% protein.

To make tempeh milk: Dice fresh tempeh, steam for 3 minutes, add 2 parts boiling water, grind, and extract the soymilk. Filter the milk and mix in a 0.08% agar (to reduce sedimentation) plus 4% skim milk and 7% sugar. Heat to 90ºC for 5 minutes, filter, bottle, pasteurize at 90ºC for 15 minutes, and cool. This soymilk contains 3.25% protein. Address: Research Centre on Traditional Foods, Brawijaya Univ., Malang, Indonesia.

7330. Tibbott, Seth. 1997. Current state of the North American tempeh [and tofu] market. In: Sudarmadji, Suparmo and Raharjo, eds. 1997. Reinventing the Hidden Miracle of Tempe: Proceedings, International Tempe Symposium, July 13-15, 1997, Bali, Indonesia. Jakarta, Indonesia: Indonesian Tempe Foundation. xi + 280 p. See p. 28-35. [7 ref]

• ***Summary:*** This paper is particularly valuable for its update of tempeh history and the tempeh market in North America from 1985 to May 1997.

Contents: Abstract. History of the North American tempeh market. Current US tempeh market–May 1997: Basic statistics, who is the typical tempeh consumer?, where is tempeh sold?, how is tempeh packaged?, how is tempeh used by the consumer in North America?, what is the future of tempeh in North America?, factors that affect future growth of tempeh (health benefits of soy and label claims, consumer education, development of the food service and industrial market, development of Indonesian cuisine and restaurants in America).

In 1984 some 53 companies in the US made approximately 34,000 pounds/week of tempeh. At that time tempeh was the fastest growing soy product in the US, growing by about 28% a year.

As of May 1997 there are ten tempeh manufacturers in the USA; seven of these produce more than 1,000 lb/week of tempeh, and only one produces less than 200 lb/week. All ten US companies make an estimated 55,580 lb/week of tempeh, and these 7 largest companies make about 95% of the total. Canada has only 3 tempeh makers and they produce a total of about 1,100 lb/week. In Mexico, there are only a few tempeh makers, mostly in tourist areas. All of the 7 largest US and the 3 largest Canadian tempeh manufacturers are owned and operated by Caucasians. Caucasians also consume an estimated 95% of the tempeh made in the USA. In North America, tempeh is marketed in a variety of forms and flavors, of which soy tempeh is the most popular, followed by tempeh burgers and soy & grain tempehs. All of the existing tempeh shops in the USA and Canada trace their roots to The Farm, a spiritual community in Summertown, Tennessee.

By contrast, tofu is much more popular in North America than tempeh. More than 70 manufacturers produce over 1.5 million lb/week. Three of the four largest manufacturers are owned and operated by Asian Americans. Whereas 75% of all Americans know what tofu is, only 14% know what tempeh is.

Although tempeh sales grew very rapidly during the 5-year period from 1980 to 1984, they were stagnant during the next five years, from 1985 to 1989. This was caused in large part by competition from more sophisticated meatless burgers, such as the Gardenburger, launched in March 1985 by Wholesome & Hearty Foods of Portland, Oregon. Also microwavable and ready-to-eat foods became more popular. The period of stagnant sales led to a great consolidation within the industry. By 1990 there was renewed interest in tempeh, which paralleled the new interest in the health benefits of soy, and the rise new "meat alternatives" category. Today, tempeh sales are growing at 10-20% a year. And most Americans still like tempeh very much when they taste it. All US tempeh makers agree that education is the crucial need.

In 1984 about 20% of US tempeh was sold vacuum packed, compared with 70% today. Main advantage of vacuum packing: Longer shelf life. Main disadvantage: Imparts a somewhat bitter taste to the tempeh. A 1992 survey of 400 tempeh users by Turtle Island showed that the number one use was in stir-fried recipes, usually with rice and vegetables.

Tables show: (1) Tempeh market statistics (USA): Average retail price per 8 oz cake of soy tempeh: $1.81. Percentage of tempeh sold refrigerated: 80% (the rest is sold frozen). Total retail dollars spent on tempeh: In 1983 = $4.96 million. In 1996 = $13.15 million. Spent (retail) on tofu in 1996 = $116 million. Spent (retail) on soymilk 1996 = $100 million. Market share of the four largest tempeh makers in 1983: 63%, In 1997: 84%. (2) Number of brands of different types of tempeh on the US market in May 1997: Tempeh burgers 14, soy tempeh 9, multi-grain (mostly 3 or 5 grains) 6, bulk soy tempeh 5, soy & brown rice tempeh 4, sea veggie tempeh 3, wild rice tempeh 2, soy millet tempeh 2, sloppy Joe tempeh 2, other 8.

Talk with Seth Tibbott of Turtle Island. 1999. Dec. 6. The existing tempeh companies with the strongest ties to The Farm in Tennessee are (1) Lightlife Foods (Michael Cohen; see Sept. 1991 interview) and (2) Turtle Island (Seth; in 1977 he learned how to make tempeh at The Farm in Tennessee). Those with weaker ties are (3) Wildwood Natural Foods

(Jeremiah Ridenour; he lived at The Farm for a while, has a lot of Farm history, and one of his kids was born on The Farm), (4) White Wave (In about 1980 Alexander Lyon was hitchhiking through Boulder, Colorado, and had no money. He taught Steve Demos how to make starter culture for something like $20 and a good meal), and (5) Surata Soyfoods (Benjamin Hills learned how to make tempeh from his former wife, who learned it from The Farm in Tennessee).

Turtle Island now makes tempeh for: Lean Green Foods (Hawaii; Benjamin Hills), Wildwood Natural Foods, and Quong Hop. It starts out when you're at a trade show and "people saddle up to you" and say "Uh, we're not sure exactly which way we're going with our tempeh, but do you have any extra plant capacity? It's just a thought." Then "If you give any kind of encouragement to them, the next week they're begging you on their hands and knees, they'll pay anything to have you make it for them. It's such a hassle and they have to devote plant space to it. Tofu is now growing so much faster than tempeh, they just keep tempeh to fill out their product line." Seth expects that White Wave and Surata will come to him next, begging him to make tempeh for them. Address: Turtle Island Foods, Inc., P.O. Box 176, Hood River, Oregon 97031.

7331. Woolf, Marie. 1997. What your baby's drinking now: genetically altered soya beans and squeezed fish-heads. *Observer* (*The*) (*London*). Dec. 21. p. 4.
• ***Summary:*** SMA Nutrition is Britain's leading manufacturer of soya-based baby milk. Their products may now contain genetically modified soya beans. "But other baby formula manufacturers, such as Cow & Gate and Farley, have banned the use of engineered beans because of consumer fears. Sainsbury has decided not to include soya at all in its own-brand milk." Address: Consumer Affairs Correspondent.

7332. Gupta, Rajendra P. 1997. Continuous soaking system. *U.S. Patent* 5,699,726. Dec. 23. 4 p. Application filed 17 June 1996. 2 drawings. [1 ref]
Address: 9 Veery Lane, Ottawa, ONT, K1J 8X4 Canada. Phone: 613-745-9115 or 613-744-4401.

7333. *SoyaScan Notes.* 1997. Chronology of major soy-related events and trends during 1997 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jan. 1–Novartis Seeds (headquartered in Golden Valley, Minnesota) is formed through the blockbuster merger of Ciba Seeds and Northrup King Co. That merger was possible because of the mid-1996 merger of pharmaceutical giants Sandoz and Ciba-Geigy. Novartis Seeds is now America's second largest seed company after Pioneer Hi-Bred International.

Feb. 3–Monsanto completes its acquisition of Asgrow Seed Co. of Kalamazoo, Michigan, for $240 million. From May 1968 to 1994 Asgrow had been owned by The Upjohn Co., which built the company into one of America's largest soybean seed companies. When Monsanto bought Asgrow it was called the Asgrow Agronomics business of Seminis Inc., a subsidiary of Empresas La Moderna, S.A. (ELM), a multi-national agricultural company based out of Monterey, Mexico. of Mexico.

March 4–Morinaga Nutritional Foods' new tofu plant in Tualatin, Oregon holds its official grand opening. Mori-Nu Tofu, previously made in Japan, starts to be made in America for the first time. The plant, 65,000 square feet worth about $15 million, is on the same property as Pacific Foods of Oregon, but in a separate building.

March 12–House Foods America Corporation holds the opening ceremony for America's largest tofu factory, in Garden Grove, California; the company closes its tofu plant in central Los Angeles. The new fully automated, state-of-the-art, 130,000 square foot plant cost $21 million, and will more than double the company's tofu production capacity to 150,000 pounds/day, from 70,000 in the old plant. The old factory has been operating a full capacity for years. The new plant will have three tofu production lines, and is located on 5 acres of land–which gives plenty of room for expansion.

Sept. Nasoya Foods (owned by Vitasoy) finishes moving into a much larger, state-of-the-art $13.5 million plant (125,00 square feet) in Ayer, Massachusetts, from its former location in Leominster. The first Vitasoy brand soymilk ever made in America starts to be shipped from the plant in mid-September. Nasoya's offices have now been moved to Ayer from Leominster, but tofu is still being made at the plant in Leominster.

Oct. 14–The Hain Food Group acquires Westbrae Natural, Inc. Westbrae's new name becomes Hain Food Group–Westbrae. Westbrae will continue to be headquartered in Carson, California. Dec. 1–Phytoestrogens / isoflavones extracted from soybeans by ADM start to be sold commercially in the USA in pill form by supplement companies. ADM's name for the product is Mega Soy.

Dec. 3–DuPont purchases Protein Technologies International (PTI–the world's leading manufacturer of soy protein isolates), a wholly-owned subsidiary of the Ralston Purina Co. DuPont signed a letter of intent to acquire PTI on Aug. 24. PTI, which has offices worldwide, will continue to be headquartered in St. Louis, Missouri.

"How can I get more soy into my diet?" is the question most frequently asked by callers to Soyfoods Center. Soy appears to have a bright future.

7334. *Bluebook Update* (*Bar Harbor, Maine*). 1997. International ProSoya expands. 4(4):3. Oct/Dec.
• ***Summary:*** "International ProSoya Corporation has co-founded International ProSoya Europe plc for the purpose of manufacturing and marketing the ProSoya So Nice line of soymilk products in the UK and Europe. The company

is preparing to commence production in February 1998 in their new 50,000 square foot plant in the UK. Shipped from Canada, this will be the largest plant built using ProSoya technology. For more information, contact International ProSoya by phone: 604-532-8030, by fax: 604-534-2060 or by e-mail: ipc@ direct.ca."

7335. *Canadian Export Soybeans* (*OSGMB, Chatham, Ontario, Canada*). 1997. Canadian Soyfoods Directory released. 11(3):2. Dec.
• ***Summary:*** "Following numerous requests from consumers, processors and health professionals, the Ontario Soybean Growers' undertook this extensive project." For more information visit www.soybean.on.ca, or fax the OSG at 519352-8983.

7336. **Product Name:** Soymilk [Sweetened, Chocolate, Vanilla, Plain].
Manufacturer's Name: Cidis, Ltd.
Manufacturer's Address: No. 32 Awolowo Ave., Bodija. G.P.O. Box 38719, Dugbe, Ibadan, Oyo State, Nigeria. Phone: 234-0281-00301.
Date of Introduction: 1997. December.
Ingredients: Vanilla: Soybeans, water, sweetener, salt, vanilla.
Wt/Vol., Packaging, Price: 120 ml recyclable plastic bottle. Retails for 10 Naira (1999/08, Oyo State).
How Stored: Refrigerated.
New Product–Documentation: Talk with Sidi Osho, PhD, founder and owner of Cidis, Ltd. 1999. Aug. 23-24. The company's first two products, sweetened soymilk and vegetable oil (soy oil) were introduced in Dec. 1997. Sidi made the soymilk at her home in Ibadan. They moved into their building in Ibadan in January 1998. Today the company's best-selling product is soymilk, of which there are four flavors: sweetened (the best-seller), chocolate, vanilla, and plain (mostly for diabetics). Immediately after the soymilk is made, it is filled while hot into 120 ml sterilized plastic bottles, which are then capped, and immediately submerged in iced or chilled water. The water can be chilled by putting it next to the exposed pipes of a freezer. Cidis buys its ice from a local source; Sidi is now looking to buy an ice-making machine. When the soymilk in the plastic bottles is well chilled, 100 bottles are placed in a small insulated retail cooler, which is packed with ice, placed in a delivery vehicle (Sidi's personal car–an old Mazda like a station wagon); a driver then takes them to the kiosks in the markets. Some of the soymilk bottles are placed in a refrigerator in Cidis Soymart. The company does not rely on large refrigerators because the supply of electricity in Ibadan is unreliable, and refrigerators are very hard and expensive to maintain. Most of the bottles are recycled; then they sterilized at the factor and reused. The plain soymilk is sold, once a week, in a 4 liter plastic container to a nursing home that takes care of diabetics.

7337. Holin, Fae. 1997. Cooking cardiologist prescribes soyfoods: They cut heart disease risks, Dr. Richard Collins advises. *Soybean Digest.* Dec. p. 50, 52.
• ***Summary:*** Richard Collins, M.D., is a gourmet chef who uses soy in a high-protein, low-fat menu. Called the "cooking cardiologist," he is also director of The Heart Institute in Omaha, Nebraska. "He's convinced that soyfoods have helped his patients live longer." When Collins first tried this diet on himself (before trying it on his patients) he recalls "I lost 20 pounds, had more energy and felt better." He has made a video titled "Soy Healthy Cooking," which comes with a brochure of 45 recipes. Collins recommends replacing some high-fat foods with products such as tofu, soy beverage and soy flour. Consuming 30-40 grams of soy a day makes a difference in ones health. This amount of soy can be achieved with a chocolate tofu "smoothie", adding tofu in place of meat or cheese and using soy beverage or part soy flour when baking. Collins has a video which gives research and nutritional information. Also on the video, can be seen the preparation of various dishes from his recipe booklet. To order the video ($17.95 + $4.95 s/h), call 800-869-4956.

Color photos show: (1) Richard L. Collins, M.D. (2) Stuffed manicotti with tofu in a skillet–one of the recipes on Collins' video.

7338. Honda, Kyoko. 1997. Tofu & soybean cooking: The Japanese healthy way. Translated by Kazuhiko Nagai. Tokyo: Graph-sha Ltd. 64 p. Dec. Illust. 26 cm. [Eng]
• ***Summary:*** This full-color Japanese-style cookbook is loaded with color photos showing both steps in the process of preparing recipes and the finished dishes. Contents: Basic preparations: Parboiling soybeans, draining tofu, reconstituting Koori-dofu ([Kôri-dofu], freeze-dried tofu), removing oil from abura-age (thin deep-fried tofu), toasting okara. 1. Soybean cooking (daizu = soybeans, aodaizu = green soybeans, edamame = young soybeans in pods, kuromame = black soybeans), abura-age, soybean sprouts. 2. Tofu & natto dishes (Koori-doofu, kouya-dofu, shimi-dofu, okara, yu-dofu = simmered tofu). Let's make momen-dofu (homemade tofu). Tofu dishes from Okinawa (Goya champuru, Ukarairichi, Ujira-tofu).

3. Other dishes from soybeans (Atsu-age, Chinese cheese–Furu [Fermented tofu], miso, soy milk, yuba, daizu moyashi = soybean sprouts, kinako). Articles (summary of four articles).

Note. This is the earliest English-language document seen (April 2013) that uses the term *Koori-dofu* or the term *kouya-dofu* to refer to dried-frozen tofu. Address: Sc.D. (Doctor of Science), nutritionist, and lecturer at Women's Junior College of Nippon College of Physical Education.

7339. Murphy, Patricia A.; Song, Tongtong; Buseman, G.;

Barua, K. 1997. Isoflavones in soy-based infant formulas. *J. of Agricultural and Food Chemistry* 45(12):4635-38. Dec. [25 ref]

• ***Summary:*** Six of the major soy-based infant formulas sold in the USA were tested for their isoflavone content. Total isoflavone content ranged from 214 to 285 micrograms per gram of dry formula or about 25 to 30 micrograms per milliliter (µg/mL).

The six products obtained were: Mead Johnson's Prosobee, Gerber's, Ross Laboratories' Isomil, Wyeth's Nursoy, Mead Johnson's Enfamil, and Carnation's Alsoy. All were obtained as dry infant formula, except Wyeth's Nursoy. An illustration shows an HPLC chromatogram of Enfamil soy-based formula with isoflavone and internal standard peaks resolved.

Discusses: Daidzein, genistein, glycitein. Address: 2312 Food Sciences Building, Food Sciences and Human Nutrition Dep., Iowa State Univ., Ames, IA 50011.

7340. *Newsweek.* 1997. Decade by decade: A rich century of better mousetraps. Special Issue–Winter 1997-98. Keep on sale until Feb. 9.

• ***Summary:*** This Special Issue is one of a series under the general heading "2000–A New Millennium." This article (p. 12-15) is a 4-page chronology of the most important inventions of the 20th century (1900 to 1997). For the year 1987, one of the key inventions is "soy milk." Other inventions listed for 1987 are: gene gun, implanting cells to cure or alleviate Parkinson's, Prozac approved in U.S., 3-D videogame.

7341. Sommer Hansen, Asger. 1997. APV soymilk processes and applications: Technology update. Aarhus C, Denmark: APV Soya Sector. 20 p. March. 30 cm.

• ***Summary:*** This is a glossy, black-and-white brochure. Contents: Introduction. The soybean–a few facts. History of the soybean. History of soymilk. Varieties of soymilk. Nutritional aspects of soymilk. Basic soymilk production methods. Soybean trypsin inhibitors. Oligosaccharides. Soymilk production. Plant capacities. Soymilk applications. Conclusion. Glossary of soymilk terms.

A blue and white logo on the rear cover states: "A Siebe Group Company." Address: APV Soya Sector, Europaplads 2, 8000 Aarhus C, Denmark. Phone: +45 86 12 41 55.

7342. **Product Name:** [Rice Milk].
Foreign Name: Risolight–Alimento Derivato dal Riso.
Manufacturer's Name: Biolab.
Manufacturer's Address: Via dei Grabizio 11, 34170 Gorizia, Italy. Phone: +39 481 533522.
Date of Introduction: 1997.
Ingredients: Water, rice, sunflowerseed oil (cold pressed), whole sea salt, natural vanilla flavor.
Wt/Vol., Packaging, Price: 700 ml e bottle.
How Stored: Refrigerated.
New Product–Documentation: Talk with Maura Ghiraldini of Biolab. 1998. Nov. 9. Biolab, which started in June 1992, is now the third largest tofu maker in Italy. The founder and owner is Massimo Santinelli, now age 34; they also make soymilk and various types of tofu.

Label and letter sent by Maura Ghiraldini and Massimo Santinelli. 1998. Dec. 5. This new (Dec. 1998) label (3½ by 6 inches) has many pink spirals on a light pink background. The border is many little boxes, each with a symbol inside. At the upper left and right corners are cartoons of bears. At the bottom center is a cartoon bear holding a spoon and bowl of rice milk and saying: "The rice beverage (*La Bevanda di Riso*). Free of added sugar (saccharose)! (*Senza Zucchero* (*saccarosio*) *Aggiunto!*)" "Organically grown (*prodotti dalla agricoltura biologica*)." Refrigerate at 4ºC. A small symbol shows a person recycling the container.

Letter from Massimo and Maura. 1999. Jan. 5. They produce the rice milk themselves, using enzymes rather than koji.

7343. Cai, Tiande; Chang, K.C.; Hou, H.J.; Shih, M.C.; Ji, M. 1997. Comparison of bench and production scale methods for making soymilk and tofu from 13 soybean varieties. *Food Research International* 30:659-68. * Address: Dep. of Food and Nutrition and Dep. of Cereal Science, North Dakota State Univ., Fargo, ND 58105.

7344. **Product Name:** Future Shake [Vanilla Al'mondo, or Mocha Motion].
Manufacturer's Name: Odwalla, Inc.
Manufacturer's Address: Dinuba, CA 93618. Phone: 1-800-Odwalla.
Date of Introduction: 1997.
Ingredients: Vanilla Al'mondo: Soy beverage (Soybeans, water), water, mango puree, banana puree, agave nectar, almonds, Madagascar vanilla, whole oats, vitamins and minerals (calcium, magnesium, vitamin C, iron, vitamin E, niacin, zinc, copper, pantothenic acid, manganese, folic acid, viatmin A, vitamin B-6, riboflavin, thiamine, biotin, iodine, chromium, selenium, vitamin B-12, vitamin D).

Mocha Motion: Soy beverage (Soybeans, water), water, mango puree, banana puree, agave nectar, almonds, coffee extract, Madagascar vanilla, cocoa, organic whole wheat flour, vitamins & minerals.
Wt/Vol., Packaging, Price: 16 fl oz (480 ml = 1 pint) HDPE plastic bottle. Retails for $3.39 at Safeway supermarket (1999/01 Lafayette, California).
How Stored: Refrigerated.
New Product–Documentation: Product (Vanilla Al'mondo, 1 pint) with Label purchased for $3.39 at Safeway supermarket in Lafayette, California. 1999. Jan. 17. Self adhesive label in many colors: blue, reddish pink, orange, purple, green and white on beige. Illustration of colorful,

stylized man with an zany design for a head, 3 ears of wheat in his right hand, a glass in his left hand, a long-billed bird on his shirt design, and planets whirling around him. Text on front panel: "A drinkable feast. All natural meal in a bottle." One side panel states: "Future Shake is a dairy-free shake-up of almonds, soy and organic oats, flavored with Madagascar vanilla. One bottle gives you a meal's worth protein, vitamins and minerals, plus 100% of the RDI for calcium and vitamin C. The future is in your hands... shake it up!" "Odwalla (Oh-DWA-la) was founded in 1980 by three musicians with the dream of a healthy world. Their mission: To make great juice and bring a heart to business." www.odwalla. com. Soyfoods Center taste test: Delicious, with plenty of almonds, but very expensive.

Product (Mocha Motion, 1 pint) with Label purchased for $3.39 at Safeway supermarket in Lafayette, California. 1999. Jan. 24. Self adhesive label. Soyfoods Center taste test: Outrageously delicious, but very expensive. Talk with Odwalla representative. 2001. April 30. Mocha Motion was introduced in 1997.

7345. **Product Name:** Pressed Tofu, Fried Tofu, Soymilk.
Manufacturer's Name: Top Grade Foods.
Manufacturer's Address: 3990 Pleasantdale Rd., Doraville, GA 30340. Phone: 770-263-1880.
Date of Introduction: 1997.
How Stored: Refrigerated.
New Product–Documentation: Talk with Russell Chan of Top Grade Foods. 2002. June 26. He started making these products in 1997.

7346. Garcia Uriarte, Alvaro. 1997. Novedosa tecnologia Cubana para la produccion de leche y pasta de soya: Ficha promocional [New Cuban technology for the production of soymilk and soy paste: Promotional brochure]. Havana, Cuba: IIIA. 10 p. Undated. 28 cm. [Spa]
• ***Summary:*** The Cubans are starting to sell the excellent plants they have developed for making soymilk and soy paste (for use in sausages). Contents: Objective. Soya is the protein source of the future. Marketing. Table listing products (soymilk, soy yogurt, concentrated soymilk, natural soy paste, modified soy paste, natural powdered soymilk, modified powdered soymilk, soy cheese), potential clients, and probable uses. Advantages of our products: Nutritional quality, availability, economy. Table showing product costs. Technical description of Cuban soymilk plant. Interest in negotiations. Address: Ing., Director General, Food Research Inst. (*Instituto de Investigaciones para la Industria Alimenticia*), Carretera Guatao Km 3½, La Lis 19200, Havana City, Cuba. Phone: 21-6986 or 21-6742.

7347. Grogan, Bryanna Clark. 1997. Twenty minutes to dinner: Quick, low-fat, low-calorie vegetarian meals. Summertown, Tennessee: The Book Publishing Co. 192 p. Illust. Index. 21 cm.
• ***Summary:*** This vegan cookbook contains a wealth of soy-related recipes. The glossary mentions tofu, soymilk, soymilk powder, tempeh, miso, soy sauce (shoyu, tamari) textured vegetable protein, Chinese condiments (hoisin sauce, Chinese black bean sauce, Chinese brown bean sauce, Szechuan hot bean paste), seitan, soy bacon bits or chips.

In the section titled "Ingredient substitutions," under "Yeasted products" we read (p. 15): "I can think of no practical substitutes for light miso or certain fermented Chinese products like doufu-ru (Chinese fermented bean curd, which has a strong 'blue cheese' type of flavor)."

The recipe for "Buffalo potato wedgies" (an alternative to "Hot wings") advises: "Dip the crusty wedges into Vegetable Dip (p. 48)–you can add a bit of crumbled, white Chinese fermented tofu (doufu-ru) to make it more like traditional blue cheese dressing or dip."

Also includes soy-free options for recipes with tofu and soymilk. Address: Denman Island, east of Vancouver, British Columbia, Canada.

7348. Katzen, Mollie. 1997. Vegetable heaven. New York, NY: Hyperion. xv + 223 p. Illust. (Color by Mollie Katzen). Index. 27 cm.
• ***Summary:*** A handsome vegetarian cookbook. Soy-related recipes include: Vietnamese salad rolls (with firm tofu, p. 11). Kung pao lettuce cups (with firm tofu, Northern Chinese, p. 13). Eggflower soup with pasta shells (with firm tofu, p. 32). Potato soup with rosemary and roasted garlic (with silken tofu, p. 33). Coconut-lemon grass soup (with firm tofu, p. 43). Baked coated nuts sweet or savory (with soy sauce, p. 57). Basic soyburgers (with cooked soybeans and tofu, p. 76). Green beans and tofu in crunchy Thai peanut sauce (with firm tofu, p. 103). Magic carrot flans (with milk or soymilk, p. 122). Scalloped potatoes three variations (with milk or soymilk, p. 130). Sandwiches to write home about (with firm tofu, p. 136). Buckwheat soba with squash, smoked tofu, and basil (with smoked tofu and miso, p. 144). Tiny pasta stew (with firm tofu, p. 151). Horseradish aioli (with silken tofu, p. 168). Peanut-chile [chili] dressing (with soy sauce, p. 174). Homemade butterscotch pudding (with milk or soymilk, p. 194). Pumpkin mousse with gingersnap crumbs (with silken tofu, p. 196). Bittersweet chocolate-banana mouse (with silken tofu, p. 197).

A color photo on the rear cover shows Molly Katzen. Address: California.

7349. Keussink, Ruth. 1997. Soja und Sojaprodukte [Soybeans and soy products]. Bonn, Germany: Auswertungs- und Informationsdienst fuer Ernaehrung, Landwirtschaft und Forsten (aid) e.V. 28 p. Illust. (Color photos). 21 cm. [14 ref. Ger]
• ***Summary:*** Contents: Introduction. Market and utilization. Soya in the diet: Protein, fat, carbohydrates, minerals

and trace minerals, vitamins. Overview–Soy products: Whole soybeans, soy sprouts, soy oil, soy beverage, tofu, natto, sufu, tempeh, soy sauces, miso, soy lecithin, soy sausages, TVP. Processing soybeans. Soy ingredients and additives: Soy protein isolate, concentrate, soy bulk / fiber (*sojaballastoffe*), fatty acids, lecithin, vitamin E (tocopherol). Product safety. Genetically engineered soybeans. Tips for buying and storing. Recipes. Address: Konstantinstr. 124, 53179, Bonn, Germany.

7350. Kitamura, Keisuke. 1997. Genetic improvement of nutritional and food processing quality in soybean. In: Napompeth, Banpot, ed. 1997. World Soybean Research Conference V: Proceedings. Soybean Feeds the World. Bangkok, Thailand: Kasetsart University Press. xxiv + 581 p. See p. 441-46. Held at Chiang Mai, Thailand, 21-27 Feb. 1994. [17 ref]

• ***Summary:*** Discusses manipulation of the 7S globulin (Beta-conglycinin) and 11S globulin (glycinin), the two major soy protein components, accounting for about 70% of the total seed protein. Newly developed Japanese varieties lacking lipoxygenase are: Suzuyutaka, Yumeyutaka (1992, lacks L-2 and L-3), and Kyushu 111 (lacks all 3 lipoxygenase isozymes). Address: National Agriculture Research Center, Tsukuba, Japan.

7351. Kittler, Pamela Goyan; Sucher, Kathryn P. 1997. Food and culture in America: a nutrition handbook. Belmont, California: West/Wadsworth. xiv + 535 p. Illust. (photos). Index. 26 cm. [100+* ref]

• ***Summary:*** What is American food anyway? Does it include sushi, soy sauce, miso soup, or tofu? How about Peking duck or pot stickers? How about enchiladas, chile rellenos, or tacos?

This excellent and original work is arranged in chapters by cultural groups or subcultures living in the USA.

The chapter on "Latinos" states under "Foreign influence" (p. 286) that the "demand for Asian ingredients by later immigrants resulted in the introduction of soybean products,..." Under "Regional variations" (p. 290) that Cubans like a chicken dish marinated in lime juice and soy sauce. Under "Meal composition and cycle" (p. 290) that West-African fritters are made from the meal of soybeans..."

The chapter on "Asians," under "Chinese," notes (p. 328-30) that "Soybeans are transformed into an amazing array of food products that are indispensible to Chinese cooking," including soy sauce, soy milk, bean curd or tofu, black beans ("made with cooked fermented soybeans preserved with salt and ginger. Black beans are usually added as a flavoring in dishes"), hoisin sauce, and oyster sauce. Soy oil is also used in Chinese cooking. The Hakkas enjoy tofu stuffed with meat (p. 332). Every Chinese meal aims for a good balance of *fan* (grain foods, such as rice or wheat) and *tsai* (side dishes). "The Chinese believe that a good diet is critical for physical and emotional harmony and necessary to strengthen the body against disease" (p. 334). During pregnancy, soy sauce may be avoided to prevent dark skin (p. 335). Chinese who avoid fresh dairy products because of lactose intolerance, may consume soybean curd and soy milk (if fortified with calcium) as alternatives.

Under "Japanese," soy sauce is a traditional food of Japan (photo, p. 341). Soybean products (p. 350) are an important part of the Japanese diet; they include tofu, shoyu (soy sauce), miso, and teriyaki sauce–to name just a few. Second-generation Japanese use more soy sauce than non-Asians (p. 354) but as their diet becomes Americanized, they fall prey to more diseases of affluence. The response to dairy products and lactose intolerance is similar to that of Chinese, with the use of tofu and soy milk.

Under "Koreans" (p. 363, 366) Soybean products are in important part of the diet; they include soy sauce, soy paste, and soybean curd or tobu [sic, *tubu*] (tofu).

Under "Southeast Asians and Pacific islanders." Adobo is a popular Filipino stew, seasoned with soy sauce (p. 389). Soy products include soy milk and tempeh (p. 399, 402, 404, 421-22).

The "Glossary of ethnic ingredients" mentions many soy products including (p. 490): "Black beans, fermented: Black soybeans salted and fermented to produce a piquant condiment. Used in Chinese cooking as a seasoning or combined with garlic, ginger, rice wine, and other ingredients to make black bean sauce." Address: 1. M.S., Food and nutrition education consultant; 2. Dep. of Food and Nutrition, San Jose State Univ., California.

7352. Klingel, Brigitta. 1997. Soja und Tofu: 100 koestliche und gesunde Rezepte–Mit den Wirkstoffen der Sojabohne; Erkrankungen natuerlich vorbeugen; mit einfachen, schmackhaften Rezepten [Soya and tofu: 100 tasty and healthful recipes. With soybean phytoestrogens. Prevent illnesses naturally. With simple, delicious recipes]. Munich, Germany: München Südwest Verlag GmbH & Co. 95 p. Illust. (color photos). Recipe index. Subject index. 20 x 18 cm. [Ger]

• ***Summary:*** A small but attractive book, containing many color photos on glossy paper. Soya, the food of the future? Favorable use of land using soya. New industrial uses of soybeans. History of the soybean: East and West. World soybean production, yesterday and today. Soy in modern times: Henry Ford, two basic ways of using soybeans (as food or as livestock feed and oil), the sad story of genetically engineered (*genmanipuliertes*) soybeans. Soya: The power packet: Nutritional composition, a source of B-vitamins, magnesium, calcium and fiber, the world's best source of protein. Soya in medicine: Preventing cancer, plant estrogens, isoflavones, prostate cancer, fiber and stomach cancer, effect on female hormones, men, medicine and soya, lowering cholesterol, help with diabetes, healthy nutrition.

Food products and buying tips: Yellow soybeans, black soybeans, green mungbeans (dehulled and not), azuki beans, glossary of soyfoods (miso, okara, soy flakes, dry soymilk powder, soy lecithin, Sojamark {TVP}, soy flour, soymilk, soy oil, soy protein, soy sauce, soy sprouts, tempeh, tofu, dry tofu, yuba).

Cooking with tofu–for a healthy kitchen, cooking with soy is easy. Infant and child nutrition. Recipe ideas: Basic recipes. Cooking whole soybeans. Homemade soymilk. Homemade soy cream. Soy mayonnaise. Homemade soy sprouts. Soya butter. Classical meat alternative with soya. Okara specialties. International tofu cuisine. Quick and easy recipes with soy and tofu. Healthy recipes for two. Desserts. Baked recipes. Address: Germany.

7353. Main, Jan. 1997. Bone vivant!: calcium-enhanced recipes and bone-building exercises. Toronto, Canada: Macmillan Canada. 192 p. + 8 unnumbered pages of color plates. Illust. Recipe index. Subject index. 25 cm.
• ***Summary:*** This is a book about how to build strong bones (starting in childhood) and to keep them into old age. The 100+ high-calcium recipes include soy recipes to help prevent osteoporosis. The author wrote this in co-operation with The Osteoporosis Society of Canada. A full page near the front contains "A message from the Ontario Soybean Growers' Marketing Board" which is the pround sponsor of the book. The calcium content of tofu, soybeans, soy flour and soy pasta are mentioned on page 6. Praise for tofu and other soy ingredients is found on page 121.

The recipe index contains 12 entries for soy flour, 7 for tofu, 6 for soybeans, 3 for soy beverage [soymilk], and 1 for soy spaghetti. Address: Professional home economist, Scarborough, Ontario, Canada.

7354. Messina, Virginia Kisch; Messina, Mark. 1997. Soy to the world. In: 1997 Medical and Health Annual. Published by Encyclopedia Britannica, Inc. See p. 197-202.
• ***Summary:*** In the section titled "Diet and Nutrition" is a long subsection on "Soy to the world." Contents: Introduction. Sacred crop (history). Varied and versatile: Whole soybeans (incl. green vegetable soybeans), traditional soyfoods (soymilk, tofu, okara, yuba, tempeh, miso, soy sauce or shoyu), modern soy products (textured soy flour or TVP), "second-generation" soyfoods. One of nature's most nutritious foods. Health benefits: the evidence so far: Cancer, heart disease, osteoporosis, kidney disease, menopause. Tofu on your table (how to incorporate soy into American diets; incl. TVP, soymilk, soy flour, soy nuts). Address: 1. M.P.H., R.D.; 2. Ph.D. Both: PhD, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

7355. Nabben, Alexander. 1997. Kochen und Backen mit Tofu: Vegetarische Rezepte ohne tierisches Eiweiss [Cooking and baking with tofu: Vegetarian recipes without animal protein]. Darmstadt, Germany: Pala-Verlag. 139 p. Illust. Recipe index. 21 cm. [Ger]
• ***Summary:*** Contents: Tofu–versatile and healthful. The soybean: Cultural history, production, the world and the soybean, nutritional value of soybeans, soyfood products (soy sauce, miso, tempeh, okara, soy coffee, soynuts, soy sprouts, modern western soy protein products–soybean flour, flakes, textured soy flour, soy protein isolates, defatted soybean meal, industrial soy products), genetically engineered soybeans. Tofu. Tips, tricks, and useful information. How to make soymilk at home. How to make tofu at home. Tofu recipes and marinades. Raw foods and salads. Dressings. Sauces. Soups. Main dishes. Soufflés. Pasta. Patties / burgers. Spreads. Party snacks. Cooking and baking. Desserts and sweet delicacies (*süsse Leckereien*). Ice cream. Address: Weigandufer 38, 12059 Berlin, Germany. Phone: 30 / 6808 0686.

7356. Nutrition Education Service, Sanitarium Health Food Company. 1997. Sensational soy cookbook. Sydney, London, Vancouver, New York: Murdock Books. 64 p. Illust. Index. 20 cm. [32 ref]
• ***Summary:*** A saddle-stitched vegetarian cookbook on glossy paper loaded with color photos and lightweight text. The author and nutritionist is Cathy McDonald of Sanitarium. Recipes developed by Wendy van der Veer of Sanitarium. Contents: The story of soy. The soy family: Miso, soy beans, soy breads & cereals, soy cheese, soy drink, soy flour, soy grits & soy flakes, soy 'meats,' soy pasta, soy sauce, soy snacks, tempeh, TVP, tofu, tofu desserts (ice cream and yoghurt). Breakfasts. Soy for health (isoflavones, menopause, breast cancer, osteoporosis, prostate cancer, heart disease). Light meals. The secrets of soy. Main meals. Soy in perspective. Desserts. Sensational soy (sample menus). Snacks. Know your nutrients. Bibliography. Estimated isoflavones in soy foods (table). Address: 1 Sanitarium Drive, Berkeley Vale, NSW 2261, Australia.

7357. Osho, S.M.; Obatolu, V.A.; Uwaegbute, A.C.; Ndaeji, C.F.; Olowoniyan, F. 1997. Food uses of soybean in Nigeria: Opportunities and constraints. In: Napompeth, Banpot, ed. 1997. World Soybean Research Conference V: Proceedings. Soybean Feeds the World. Bangkok, Thailand: Kasetsart University Press. xxiv + 581 p. See p. 422-30. Held at Chiang Mai, Thailand, 21-27 Feb. 1994. [6 ref]
• ***Summary:*** Contents: Introduction. Past uses of soybeans in Nigeria. The present uses of soybeans. Results and discussion: Composition of some Nigerian traditional foods with and without soybean fortification. Inactivation of the trypsin inhibitor at household level. Development of a soybean-cassava product (soy gari). Soybean tofu processing (soywara or soycheese). The processing of a soy beverage (kunu). Soybean oil. Extrusion cooking (IITA concept). Achievements. Impact.

Tables: (1) Nutritional composition of selected home-made soy-based products compared with products from traditional preparation method (Soy ogi, soy milk, soy moinmoin, soy akara). (2) Phytic acid, tannin, and trypsin inhibitor levels of raw and processed soybean products (the 4 products shown in table 1). (3) Time, temperature, and treatment necessary for complete inactivation of soybean trypsin inhibitor at the household level: Boiling under pressure (with or without soaking), boiling with soda or kaun, boiling whole without pressure (with or without soaking), boiling with prior processing (grits, dehulled soybeans, flour), roasting whole (in sand, in pan). (4) Composition of local gari and fortified soybean gari (fortified with okara, or with whole soybean paste). (5) Sensory evaluation of these three types of gari. (6) Nutritional composition of local cheese (*warankasi*) and tofu. (7) Sensory evaluation of local cheese (*warankasi*) and tofu. (8) Nutritional composition of *kunuzaki* and soy *kunuzaki.* (9) Nutrient composition of selected soy flours from the extruder and screw press (defatted, extruded full fat, defatted extruded, extruded defatted). (10) The percentage of farmers/households producing and utilizing soybean in IDRC project sites (1987, 1991, 1992; Oyo State, Niger State, Kaduna State, Enugu State). (11) 33 soybean products that are being made and marketed by companies in Nigeria (Feb. 1992). For each is given: Name of manufacturer. City or state of manufacture. Product name or description. Percentage of soybean used in the product. (12) Summary of number of markets and retail sale outlets for soybean in Ibadan, Nigeria (each January from 1987 to 1993): Increased from 2 markets and 4 retailers in Jan. 1987 to 42 markets and 824 retailers in Jan. 1997.

Flowcharts show the processing of: (1) Soybean gari. (2) Tofu. (3) Soybean kunuzaki. (4) Soybeans by extrusion or expelling. (6) Soybeans and cereals by extrusion. Address: 1. Soybean Utilization Project, International Inst. of Tropical Agriculture, PMB 5320, Ibadan; 2. IAR&T, PMB 5029, Ibadan; 3. Univ. of Nigeria, Nsukka; 4. NCRI, PMB 8, Badeggi; 5. NAERLS, PMB 1067, Zaria. All: Nigeria.

7358. Rombauer, Irma S.; Becker, Marion Rombauer; Becker, Ethan. 1997. The joy of cooking. New York, NY: Simon & Schuster / Scribner. xiv + 1136 p. Illust. Index. 24 cm.

• ***Summary:*** Soy-related subjects include (* = recipe): Soy sauce butter* (p. 77). Asian black bean sauce* (with "3 tablespoons preserved black beans" [fermented black soybeans], p. 83). Japanese wasabi soy sauce* (p. 83-84). Ginger soy sauce* (p. 84). Soy and sherry marinade* (p. 85). Description of miso soups and their role in the Japanese diet (p. 107-08). Light-colored miso soup with simmered vegetables and dark-colored miso soup with sautéed vegetables and Mongolian Hot Pot–a miso soup based dish* (p. 108). Ginger soy vinaigrette* (p. 238).

One long chapter is titled "Beans and Tofu" (p. 270-294). Lentils with spinach and soy sauce* (p. 280). The section titled "soybeans" (p. 287) discusses their nutritional value, health benefits ("They contain substances thought to help prevent breast and other cancers, as well as Omega-3 fatty acids, which reduce the risks of heart disease"), how to cook yellow and black soybeans, how to dry-roast [to make soynuts], many ways of processing, soy milk, okara, fermented black beans, soy sauce, tamari, miso, soy cream cheese, soy sour cream, and soy cheese. There are also substantial subsections describing the following soyfoods: (1) Soy milk, including a recipe for making it at home (p. 287-88). (2) Tofu, including silken tofu, cottage tofu, frozen tofu, sauteed or fried tofu, and smoked tofu (p. 288-89). Recipes containing tofu include: Szechuan spiced tofu, Southeast Asian curried vegetable stew, Smoked tofu burgers, and Brown rice tofu salad with orange sesame dressing (p. 289-90; the latter recipe calls for toasted sesame oil and adzuki beans, with smoked tofu being optional). (3) Tempeh, including recipes for Moo shu tempeh and Szechuan-style "hacked" tempeh. (4) About soy protein, describing textured vegetable protein and textured soy concentrate, with recipes for Dinner loaf Tex-Mex style and Lion's head (p. 292). This is followed by a subsection describing seitan and with recipes for Root vegetable and seitan stew, and Seitan kibbe (p. 293-94).

Asparagus with mustard miso* (p. 343-44). Baby bok choi with soy ginger sauce* (p. 349). Steamed scallops or shrimp with soy sauce* (p. 513). Grilled or broiled whole red snapper with ginger soy vinaigrette* (p. 548-49). Small fish, fillets, or steaks poached in soy sauce* (p. 555-56). Chinese soy-braised chicken* (p. 601-02). The chapter titled "Know your ingredients" (1059-87) includes short descriptions of bean sauce, Hoisin sauce, miso, nori, salted and fermented black beans, sesame oil, sesame paste, soy sauce, tamari, tonkatsu sosu (dark spicy sauce based on soy), wakame, wasabi, vinegars from fruit and grains, margarines (mentions trans fatty acids, but not soy), and shortenings (p. 1065-69).

Subjects related to vegetarianism include: Discussion of vegetarian diets (positive and accurate, in Chapter 1, p. 3). List of vegetarian side-dishes and main courses in this edition (27 recipes, p. 20). Vegetarian chili* (p. 283). Dairy-free chocolate cake* (vegan, p. 932). Ultra-orange cake* (vegan, p. 932-33).

Irma Rombauer (the grandmother of Ethan Becker) first wrote the *Joy of Cooking* in 1931, "when domestic help was fast becoming a thing of the past and women all over the country were once again heading to the kitchen."

Note: This cookbook was written by a committee of experts, put together by Maria Guarnaschelli. Many controversies and clashes of opinion arose out of this arrangement. Address: 3. Cockaign, Cincinnati, Ohio.

7359. Sullivan, Cheryl; Rhodes, Kathy. 1997. Soyfoods: A

healthy profile. Revised ed. Sioux Falls, South Dakota: South Dakota Soybean Board. 118 p. Illust. Index. 22 cm.
• ***Summary:*** Contents: Introducing soyfoods to your diet. The healthful soybean. Exploring soyfoods: Dried soybeans, fresh green soybeans, soy milk, tofu, textured soy protein, soy flour, soy grits, tempeh, miso, soy meat analogs. Where to find soy products. Nutrient information. Recipes: Breakfast, beverages, breads, appetizers & snacks, salads, soups, sandwiches, side dishes, main dishes, desserts. Guide to modifying recipes: A one-for-one substitution.

Talk with Betty Hansen at South Dakota Soybean Board. 2000. May 15. This cookbook (which is undated) was first published in 1996, and revised in 1997. It was reprinted by the Nebraska Soybean Board with their name and phone number on the rear cover.

Talk with Cheryl Sullivan. 2002. Aug. 12. This booklet is basically *Simply soy: A variety of choices,* with a new cover and title, plus a few pages of additional information added by the South Dakota Soybean Board in Sioux Falls. Address: 1. M.A., R.D.; Ph.D., R.D.

7360. Tanteeratarm, K.; Nelson, A.I.; Wei, L.S. 1997. Processing of soymilk free from beany and other off-flavors. In: Napompeth, Banpot, ed. 1997. World Soybean Research Conference V: Proceedings. Soybean Feeds the World. Bangkok, Thailand: Kasetsart University Press. xxiv + 581 p. See p. 412-14. Held at Chiang Mai, Thailand, 21-27 Feb. 1994. [8 ref]
• ***Summary:*** "An innovative processing technology for preparation of soymilk free from beany and other off-flavors has been developed and evaluated at the University of Illinois. Soybeans were blanched in sodium bicarbonate water to inactive lipoxygenase enzyme and other compounds responsible for the development of off-flavors. The blanched soybeans were then ground into slurry, filtered, pasteurized, homogenized, cooled, and packaged. The major chemical compositions of this soymilk were evaluated. Solids and protein recoveries were essentially high and could be controlled to contain 9.2% and 4.5% respectively. According to the sensory evaluation, this soymilk was very bland, and was considered as much superior to traditional soymilks."

Note: One serious disadvantage to this Illinois method is the creation of "throat drying effect." Address: International Soybean Program (INTSOY) and Dep. of Food Science, Univ. of Illinois, Champaign-Urbana, IL 61801.

7361. Tanteeratarm, K.; Wijeratne, W.B.; Nelson, A.I.; Wei, L.S. 1997. Problems, remedies, and prospects of soymilk processing. In: Napompeth, Banpot, ed. 1997. World Soybean Research Conference V: Proceedings. Soybean Feeds the World. Bangkok, Thailand: Kasetsart University Press. xxiv + 581 p. See p. 461-67. Held at Chiang Mai, Thailand, 21-27 Feb. 1994. [36 ref]
• ***Summary:*** "Soybean quality is affected by seed quality and characteristics, soybean constituents, and processing. Good intact soybeans with high protein content have the most desirable seed characteristics. Controlling lipoxygenases and inactivating trypsin inhibitors are important for improving flavor and protein digestibility. Flatulence factors, raffinose and stachyose, and astringency must be reduced during processing. Soymilk quality varies from one processing method to another. Quality soymilk may be prepared from whole soybean, soy flour, or soy protein isolate. The soymilk from soy flour is generally yellow in color and contains essentially all of the oligosaccharides present in the flour. Research directed towards reducing flatulence factors and astringency is important for improving soymilk quality and eventually increasing consumption. Processing method and raw material used should be economically selected to produce the kind of soymilk for specific markets and type of consumers." Address: International Soybean Program (INTSOY) and Dep. of Food Science, 169 Environmental and Agricultural Science Building, Univ. of Illinois at Champaign-Urbana, IL 61801.

7362. Tuitemwong, P.; Erickson, L.E.; Fung, D.Y.C. 1997. Development of value-added soybean food products. In: Napompeth, Banpot, ed. 1997. World Soybean Research Conference V: Proceedings. Soybean Feeds the World. Bangkok, Thailand: Kasetsart University Press. xxiv + 581 p. See p. 415-18. Held at Chiang Mai, Thailand, 21-27 Feb. 1994. [10 ref]
• ***Summary:*** A cultured soy yogurt and a flavored frozen soy yogurt, made using a rapid hydration hydrothermal cooking (RHHTC) process have been developed in the laboratory. The frozen soy yogurt received higher taste panel scores than the soy yogurt from both Asian and American consumers. Address: 1. King Mongkut's Inst. of Technology–Thonburi, Bangkok, Thailand; 2. Dep. of Chemical Engineering; 3. Dep. of Animal Science & Industry. Last two: Kansas State Univ., Manhattan, KS 66506.

7363. Alpro N.V. 1997? Soya desserts: Lekker goed voor je [Soya desserts: Deliciously good for you (Leaflet)]. Wevelgem, Belgium. 3 panels each side. Each panel: 22 x 9 cm. [Dut]
• ***Summary:*** On the front panel of this full-color Dutch-language leaflet, a photo shows a silver spoon lifting up a spoonful of lemon-yellow desert from a small, round glass bowl.

The leaflet shows photos and gives descriptions of the company's many Provamel soya dessert products. Address: Vlamingstraat 28, B-8610 Wevelgem, Belgium.

7364. Mukherjee, Anjali; Singh, Kanaka. 1998. Add years to your life–starting 1998. *Times of India* (*The*) (*Bombay*). Jan. 8. p. A4.
• ***Summary:*** Studies show that vegetarians are healthier and

live longer than meat eaters; they have lower blood pressure and cholesterol levels, plus lower rates of heart attacks and cancer.

Eat more foods made from soybeans. That may be why the Japanese outlive the Americans. The soybean contains an arsenal of antidisease agents such as antioxidants, lecithin, phenols, genistein and phytates. Genistein has anti-cancer activity. "Soya foods boost the 'good' cholesterol and improve the HDL / LDL ratio." Soya foods and soya milk are also good sources of calcium. To derive the full benefit of soyabeans, it is best to eat "soya foods" every day. To incorporate them into your daily diet: (1) When making chappatis [chapatis], mix wheat flour with soya flour in a 2:1 proportion. This will ensure a steady intake of soya. (2) Use tofu in place of paneer whenever possible. Tofu has more antioxidant punch than casein, the protein in milk. Animal studies have shown that those fed soyabeans had a life span 10-15% longer than those fed casein. (3) Used roasted soyabeans [soynuts] as a tasty snack food. (4) Use textured soya protein products like Nutrinuggets or Nutrella, which come in granule or chunk form, together with mushrooms or green peas to vegetarian chilies or vegetable pulao

pilaf. (5) Whole dry soybeans can be cooked like other pulses to make rajhma / rajma [a north Indian vegetarian dish consisting of red kidney beans in a thick curry and lots of Indian whole spices] or channa / chana masala; serve with rice or chappatis [chapatis].

7365. *SoyaScan Notes.* 1998. Did George Washington Carver play an important role in introducing the soybean to America? (Overview). Jan. 11. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Over the years Soyfoods Center has made great efforts to collect everything we can about the work of George Washington Carver with soybeans and peanuts. As of 11 Jan. 1998, our SoyaScan database and library contain 111 documents by or about George Washington Carver and his work with or interest in soybeans. Of these, 35 were written by Dr. Carver and the rest were written about him by others. Only two of the 35 documents written by him were published, and soy was not mentioned in the title of either. Neither of Carver's two publications was primarily about soybeans, and, in fact, soy was mentioned only briefly in each. The first was a *Tuskegee Experiment Station Bulletin* No. 4 (1901) about a certain type of insect in Macon County, Alabama; Carver reported simply: *"Cercospora canescens,* E. & M. found on the Soja bean (Glycene hispida) [sic, Glycine]."

The second publication was a paper that Carver presented in 1937 titled "What chemurgy means to my people." The paper was published in the *Proceedings of the Third Dearborn Conference of Agriculture, Industry, and Science, Dearborn, Michigan;* the title of the conference did not mention soy. The rest of the 35 documents written by Carver consist of 31 letters (many handwritten to individuals who had written to him), 1 lecture, and 1 unpublished manuscript.

While Dr. Carver was certainly a great man, a fine scientist, and a fan of the soybean, and he encouraged many people in his letters to drink soybean milk, it would be hard to conclude from the above that Dr. Carver played an important role in introducing the soybean to America.

7366. Messina, Mark J. 1998. Soy phytoestrogen pills–The biggest soy-related story of the year (Interview). *SoyaScan Notes.* Jan. 22. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Phytoestrogens extracted from soybeans, made by ADM and sold in pill form, went on the market in the USA in about November 1997. The first company to sell them was the Life Extension Institute in Wilton Manors, Florida. They call the product Mega Soy Extract; in their catalog it is listed under the category Soy Supplements. They sell the capsules in two sizes: 135 mg and 700 mg. ADM is not mentioned in the catalog, but they have their own ADM brand name for the product: Novasoy. Two research scientists to talk to at ADM are Eric Gugger (phone 1-800-637-5850 X-4380) and Rasik Daftary. Mark has the highest regard for these two men as scientists. They are dedicated to the facts as shown by scientific research.

Central Soya is now also making and selling the same kind of soy phytoestrogen pills, but ADM's were on the market first. What would happen if a person (such as a teenage girl wanting larger breasts) took 60 of these 135 mg pills at once? Mark has no idea; you'd have to know more about the absorption and blood levels. Many studies now suggest that a person needs to consume 70 to 100 mg/day of these soy isoflavones (equivalent to about 2 servings of tofu or 2 cups of soymilk) to derive the benefits. This is clearly much more than most Americans would be willing to consume day after day. So the supplements make it much easier for people to get their isoflavones. The average intake of these isoflavones among people in Asia is actually quite low, probably about 15-25 mg/day; this is much lower than was formerly thought to be the case, yet epidemiologic studies suggest that even these low levels confer benefits.

Solid studies increasingly show that these isoflavones give benefits in the areas of bone health (osteoporosis), reduced risk of heart disease, and reduction of menopausal symptoms. The benefits appear to be dose related–though there may be a threshold. There seem to be more benefits to women than to men, and little or no danger of any harm if taken at the recommended doses. Though the results are not yet definitive, there may be reduced prostate cancer risk for men. Some studies have also looked at the individual isoflavones. So Mark believes that many Americans will want to try these pills. They may take their place on the dining room table next to vitamins, minerals, and other

supplements.

The area of greatest controversy concerns the effect of these isoflavones on breast cancer. Mark thinks it is very unlikely that they would increase the risk of breast cancer–even though some studies do seem to indicate that, and therefore further research is needed. Many difficult ethical questions are raised by how information in this area is presented to consumers.

Concerning soy and bone health, a 2-year study of monkeys without ovaries found that soy did not favorably affect bone health, even though estrogen did. That was one of the best studies conducted to date, yet it is never mentioned at any of the soy meetings. Mark is very concerned that there is a real bias in the way this information is being presented. This is such a "hot" area right now. There are so many fortunes to be made, so many researchers with patents, and so many trying to establish their careers on the basis of soy right now. Clinics all over the USA are now doing studies with isoflavones and with soy. Discussion groups on soy and breast cancer are taking place. "This is as hot as it gets."

A big-name researcher in this field, with a reputation in nutrition research going back 20 years, recently proposed the "soy protein hypothesis" in a scientific paper. It had to do with the possibly favorable effects of protein on kidney function, with no acknowledgment of previous research in this area. But this idea/hypothesis was out 4-6 years ago, and a summary in *The Simple Soybean and Your Health* (published April 1994) concluded that soy protein favorably affected kidney function. This appears to be but one of many examples where researchers are trying to establish their niche in soy and ride it to fame–and sometimes fortune. Now in nearly every major university in America, there is at least one researcher who is seriously interested in soy. That is really good for the field, and will help its progress.

The biggest event of 1997 is ADM starting to make soy isoflavone pills and thus taking soy isoflavones to the next level. These isoflavone pills are even sold on TV, in home shopping clubs–an amazing development. Many new books are being written on this subject by well-known authors, and soy plays a leading role. "There is a soy bandwagon here and everyone is jumping on it. The pills will take soy to the next level because there is more money to be made, and they are accessible to everyone. Now anyone can get the benefits (whatever they may turn out to be) without having to eat tofu or drink soymilk. Even with a bland soy powder, it was difficult for most people to consume enough of it (60 gm/day) to get benefits. Now that the soy isoflavones are available as pills, many researchers will now do clinical studies with them. Even now, there are studies underway all over the country. Three years ago, few people were aware of soy isoflavones. Now the research is almost one step removed from mainstream medicine. Virtually all researches involved with progressive health and nutrition, or with women's health, known about soy and phytoestrogens. It's just incredible. Being able to give out two placebo pills and two 'soy pills' a day makes it much easier to conduct controlled studies." People used to think of soy as strongly connected with tofu. Then they began to think of the isoflavones separately and independently. Isoflavones are a type of phytoestrogens, but when the word "phytoestrogens" began to replace the word "isoflavones" a quantum leap took place. Every physician knows what estrogens are, and the word has a power that resonates. For example, Mark recently gave a talk last year at a meeting of the American Dietetic Association (ADA). He titled it: "Soybean phytoestrogens: Possible alternatives to hormone replacement therapy."

So, in the field of soy, ADM and their soy pills is the big story of late 1997 and early 1998. ADM is a huge, respected company, and they plan strong promotion for these soy pills. Granted there were soy isoflavone pills available last year, but because they were made from the ground sprouts (hypocotyls) of soybeans, they had very low levels of genistein and they weren't nearly as potent as ADM's pills. Moreover, ADM is learning ways of processing soybeans to further concentrate the isoflavones, which will make the pills even more potent. Mark believes that the "halo effect" of these soy pills will soon benefit the whole category of soyfoods as well.

Mark has no plans to take these pills; he gets plenty of isoflavones from his natural diet, which contains lots of soymilk, plus some tofu, and other soyfoods.

An Australian newspaper reported that Protein Technologies International (PTI) recently paid $15-20 million to Novagen, an Australian pharmaceutical company that will be marketing Promensil (made of isoflavones from red clover). Note: As of 3 Feb. 1998 Novagen is not listed in the text of any article in the *Wall Street Journal* since March 1984. It is not clear to Mark exactly what PTI got for this large amount of money (perhaps patent right to claims about a product containing isoflavones). This last weekend, PTI helped to sponsor a symposium at UCLA, attended by only about 45 people, but with good press coverage that made the wire services. The point is, a lot of money is being spent on this subject. Whereas ADM does not live or die by its new isoflavone business, some smaller companies do.

The proceedings of the Brussels symposium have been in the hands of editors at the *American Journal of Clinical Nutrition* since Sept. 1997; they have been reviewed, the comments have gone out, but they will not be published before Sept. 1998. Address: PhD, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

7367. Early soyfoods in Japan–Chronological (SoyaScan database search report). 1998. 36 p. incl. index. Jan. 23. Unpublished manuscript. [20 ref]

• ***Summary:*** This carefully customized database search was conducted for Mark Messina to document the fact that soyfoods have been widely consumed for a long time

in Japan. Among the 47 records are the earliest Japanese-language and English-language documents that mention or discuss soyfoods in Japan, with emphasis on tofu (27 records), soy sauce (26 records), miso (20 records), and soymilk (8 records). Also includes the earliest English-language records that give significant industry or market statistics on tofu, miso, or soy sauce in Japan.

7368. Weber, Thomas E. 1998. Takeout food: NASA is seeking recipes that travel really well. *Wall Street Journal.* Jan. 27. p. B1.
• ***Summary:*** The article begins: "That's one small step for man. One gigantic leap for tofu." A group at Cornell University (Ithaca, New York) is working under a NASA grant to develop meals that can be prepared almost exclusively from vegetables that grow well in space. For long space missions, like a flight to Mars, spacefarers may not be able to carry enough food to last the trip, so they will need to grow and cook their own. Trying to produce meat during the mission is too inefficient. "That has set off a space race to develop vegetarian meals that astronauts can stomach. The researchers believe they have found the right stuff" including tempeh, "a sort of super-tofu made from soybeans, and seitan, a gluten extract from wheat." Jean Hunter, a Cornell professor heading the project, says that Creamed tempeh, cooked in soy-milk sauce, "takes a little getting used to." Includes a recipe for Sloppy Joe Tempeh. Address: Staff reporter.

7369. Ota, Eileen. 1998. Update on Ota Family Tofu in Portland, Oregon (Interview). *SoyaScan Notes.* Jan. 28. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ota Family Tofu has tofu making equipment that Eileen would like to sell; it has hardly been used. In about 1981 the company moved to a new location, 812 S.E. Stark St.; it had more than twice as many square feet as their previous location. When they moved Ko went to a soy conference and met Eddie Okita, who was selling tofu manufacturing equipment. Ko decided to buy new equipment. Eileen objected at the time, suggesting that he try it before he buys it–to be sure you get the product that you want. Ko said "No." He just wanted to buy it. Coincidentally, at the same time, a competitor (Dae Han Tofu) began making tofu in Portland. Before that, there was a small tofu maker in Salem that didn't last very long. Dae Han was planning to deliver their tofu, which Ota had never had to do before. So Ota lost a large portion of the Portland tofu market to Dae Han.

Ko used the new equipment for a while, but then it became apparent that the tofu and the agé were not coming out the same. He had less control over the more automated equipment. Their customers noticed the difference and did not like the change. Moreover, Ota no longer had the volume to support the new equipment. So they went back to their old machines.

One of the early tofu-makers was Saizo Ohta (not Seizo), but he was not one of the founders. Two brothers apparently started the company. At the time of the "Spanish flu" epidemic in 1918-19, one or both of them became ill and the business went to Saizo Ota, Matsuno Ota's father. Matsuno was an only child, and in those days there was the tradition of sending Japanese children in America back to Japan for education. So when she was 4-5 years old she went to Japan. She did not return to America until after World War II. During the war her father, Saizo, had died. Matsuno returned to the USA in the early 1950s. The Grandmother, Shina, had a stroke after they arrived in Portland. At that point, in about 1956-57, Ko's father (Matsuno's husband) took over the tofu business. Ko's father was trained as a medical technician in Japan, but he couldn't get a job in the USA because his certification didn't transfer. So he worked for a while as a janitor and then spent a lot of time helping the grandmother, Shina.

After Ota Tofu moved to its present location, there was a huge influx of Vietnamese people who wanted soymilk, so the company started making it.

Shurtleff tells Eileen of an early listing for Ota Tofu in Portland in a 1922 Japanese-language directory of Japanese in the United States.

7370. American Academy of Pediatrics, Committee on Nutrition. 1998. Soy protein-based formulas: Recommendations for use in infant feeding. *Pediatrics* 101(1, Part 1):148-53. Jan. [96 ref]
• ***Summary:*** Abstract: "The American Academy of Pediatrics is committed to the use of maternal breast milk as the ideal source of nutrition for infant feeding. Even so, by 2 months of age, most infants in North America are formula-fed. Despite limited indications, the use of soy protein-based formula has nearly doubled during the past decade to achieve 25% of the market in the United States. Because an infant formula provides the largest, if not sole, source of nutrition for an extended interval, the nutritional adequacy of the formula must be confirmed and the indications for its use well understood. This statement updates the 1983 Committee on Nutrition review and contains some important recommendations on the appropriate use of soy protein-based formulas."

"Conclusions and recommendations: 1. In term infants whose nutritional needs are not being met from maternal breast milk or cow milk-based formulas, isolated soy protein-based formulas are safe and effective alternatives to provide appropriate nutrition for normal growth and development.

"2. Because soy protein-based formulas are lactose-free, they are appropriate for use in infants with galactosemia and hereditary lactase deficiency.

"3. Parents seeking a vegetarian-based diet for a term infant can be advised to use isolated soy protein-based

formula." There are 6 other conclusions.

7371. Becker, Diane. 1998. Easy-to-digest soyfoods are her salvation. *Soybean Digest.* Jan. p. S-22.
• ***Summary:*** Soyfoods are helping people eat without a feeding tube. Some 100,000 people in the USA suffer from a disease that prevents them from properly utilizing the foods they eat. At one center using soyfoods, 40% of the intravenously fed patients admitted to the center each year are taken off feeding tubes a month into the program. They eat six small meals a day, including soy beverage and tofu. Says dietitian Linda Veglia, "We use tofu a lot."

7372. Golbitz, Peter. 1998. Tofu & soyfoods cookery: Delicious foods for a healthy life. Summertown, Tennessee: Book Publishing Co. 176 p. Illust. (3 photos). Recipe index. General index. 21 cm.
• ***Summary:*** Contents: Preface and acknowledgments. The history of soyfoods. A closer look at soybeans. Soybeans and health: Introduction, malnutrition, cardiovascular disease, cancer, osteoporosis, menopause, more to come. Using soyfoods: Whole dry soybeans, tofu, soymilk, soy flour, textured soy protein, green vegetable soybeans, tempeh, miso, soy sauce, soy protein concentrate, soy protein isolates, natto, soybean oil, second generation soyfoods, meat alternatives, cheese alternatives, soy yogurt, nondairy frozen desserts, mayonnaise and dressings, instant soups and other dry mixes, margarine, lecithin, soynuts and soynut butter, soy sprouts, okara or soy pulp. Basic recipes. Breakfast. Bread. Salads & dressings. Soups & sandwiches. Main & side dishes. Desserts & drinks. Glossary. U.S. & Canadian soyfoods companies. Sources of information on soyfoods. Nutrients in soyfoods.

Contains 125 of Peter Golbitz's favorite recipes, selected from the works of some of "the world's leading soyfoods chefs." A list of these "leading vegetarian and soyfoods pioneers" (all of whose books have been published by The Book Publishing Co.) appears on the rear cover. Peter (born in 1952) lives with his wife, Sharyn Kingma, and son on a beautiful island off the coast of northern Maine. A color photo of the family appears on the rear cover. Twenty years ago (in 1978) Peter was "first introduced to tofu and the wonders of soyfoods." A photo of Peter with his book appears in the Book Publishing Catalog of Jan. 1999. Address: President and Founder, Soyatech, Inc., Bar Harbor, Maine. Phone: 207-288-4969.

7373. Greenberg, Patricia; Hartung, Helen Newton. 1998. The whole soy cookbook: 175 delicious, nutritious, easy-to-prepare recipes featuring tofu, tempeh, and various forms of nature's healthiest bean. New York, NY: Three Rivers Press (Crown Publishers / Random House). ix + 221 p. Illust. Index. 24 cm.
• ***Summary:*** Contents: Acknowledgments. Introduction. All about soy: Health benefits of soy (reduces the risk of heart disease, lowers the risk of breast cancer, eases the symptoms of menopause, protects against prostate cancer, prevents digestive disorders {when using whole soybeans or soy products containing high levels of fiber}, eliminates the problem of lactose intolerance, prevents the problems of milk allergy, beneficial in diabetic diets), cooking with soy products (meat analogs or meat substitutes {soy sausage, soy bacon, hamburgers and hot dogs}, miso, okara, soy cheese, soy milk, soy sour cream, soy yogurt, soy flour, whole soybeans, soybeans–green, soybeans–roasted, tempeh, textured vegetable protein (TVP), tofu & silken tofu; Soy-based foods (containing little or no protein): Egg replacers, soy margarine, soy mayonnaise, soybean oil, soy sauce) how to get optimum nutrition from soy (protein, carbohydrates, fat, cholesterol, fiber, sodium), nutrition information. Sample menus (for 3 meals a day, 7 days a week). Recipes: 1. Appetizers, dips, and spreads. 2. Salads and vegetables. 3. Brunch and breads. 4. Pizza and sandwiches. 5. Soups and stews. 6. Main dishes. 7. Pastas and grains. 8. Desserts.

This books contains almost 200 delicious and easy ways to add that essential 25 grams of soy protein to your diet. These recipes (each of which includes a nutritional analysis) are based on more than ten years of experience and experimenting (p. 2). Address: P.O. Box 10853, Beverly Hills, California 90213. Phone: (310) 474-4539.

7374. Jacobi, Dana. 1998. Over-the-top desserts: Cooking with soy. *Veggie Life* (*Concord, California*). Jan. p. 18, 20, 86.
• ***Summary:*** Includes recipes for: Tiramisu (with pureed silken tofu). Cran apple crumble (with soy milk). A luscious chocolate bread pudding (with soy milk).

7375. Messina, Mark. 1998. History favors soy formula use in Western World. *Soy Connection* (*The*) (*Jefferson City, Missouri*) 6(1):1, 5. Winter. [4 ref]
• ***Summary:*** The writer is aware of no reports published in the medical literature, whether it be an article or a letter to the editor, describing adverse effects in infants fed soy infant formula that were attributed to isoflavones. Address: PhD.

7376. Messina, Virginia. 1998. Soymilk in diets of children. *Soy Connection* (*The*) (*Jefferson City, Missouri*) 6(1):2. Winter.
Address: MPH, RD.

7377. Mitchell, Paulette. 1998. The complete soy cookbook: More than 150 simple recipes for good health and great taste. New York, NY: Macmillan Publishing (A Simon & Schuster Macmillan Co.). xlix + 270 p. Illust. Index. 24 cm.
• ***Summary:*** A very attractive vegetarian cookbook. Each recipe is marked with one of three symbols: V = vegan, lo = lacto-ovo vegetarian, and l = lacto vegetarian. Contents:

Preface: An ancient Asian secret isn't a secret anymore. Introduction: The whys (cancer, heart disease, osteoporosis, menopause, diabetes), the hows, soy food ingredients (soybeans, sweet beans {edamame}, tofu, tempeh, texturized vegetable protein {TVP}, soy milk, soy flour, soy oil, soy sauce), other soybean products (soybean sprouts, okara, miso, roasted soynuts, isolated soy protein {ISP}, dairy and meat analogs), a note on food allergies. Soy success: Stocking your refrigerator and pantry, using the recipes, kitchen equipment. 1. Appetizers. 2. Soups. 3. Salads. 4. Entrees. 5. Desserts. Appendix: Recipes listed by soy food categories (and within each category by recipe type–such as salads, soups, desserts): Whole soybeans (32 recipes), sweet beans (green vegetable soybeans, 7 recipes), tofu (96), frozen and thawed tofu (14, all entrées), pressed tofu (12), tempeh (14), textured vegetable protein (TVP, 4), soy milk (14). Note that tofu was used in by far the most recipes (96), followed by whole soybeans (32).

Paulette, who lives in Minneapolis, Minnesota, is a cooking instructor, restaurant consultant, and lecturer. Paulette is the author of many Macmillan books, including *The 15-Minute Vegetarian Gourmet, The 15-Minute Single Gourmet,* and *The Complete Book of Dressings.* This book is dedicated to her 14-year-old son, Brett. Address: Minneapolis, Minnesota. Phone: 612-941-7576.

7378. **Product Name:** Health Source (Soy Protein Health Drink) [Chocolate, Mocha, or Orange Dream], Health Source Plus [Chocolate, or Orange Dream].
Manufacturer's Name: Nutritious Foods, Inc. Wholly owned subsidiary of Protein Technologies International, Inc.
Manufacturer's Address: 1034 Danforth Drive, St. Louis, Missouri 63102. Phone: 1-888-769-9136.
Date of Introduction: 1998. January.
Ingredients: Health Source Plus [Orange Dream]: Water, Purasoy isolated soy protein, sugar, fructose, natural and artificial flavors, potassium citrate, cellulose gel, Yellow 5, Yellow 6, dipotassium phosphate, Red 3. Vitamins & Minerals: Calcium phosphate, magnesium phosphate, sodium ascorbate (vitamin C), vitamin E acetate, ferric orthophosphate, niacinamide, zinc oxide, calcium pantothenate, pyridoxine hydrochloride (vitamin B-6), riboflavin, vitamin A palmitate, thiamin mononitrate, folic acid, biotin, potassium iodide, vitamin B-12, vitamin D-3.
Wt/Vol., Packaging, Price: 1 quart (32 fl oz). Recommended retail price: Health Source ($1.89-1.99, Los Angeles, California), Health Source Plus ($2.39-2.49).
How Stored: Refrigerated, 60 day shelf life from date of manufacture.
Nutrition: Per 8 fl oz.
New Product–Documentation: Talk with Art Mio. 1998. March 3. These products are now being test marketed in the Los Angeles area. Health Source contains 10 gm of Supro soy protein per 8-oz serving and Health Source Plus contains 25 gm per serving.

Ad (full page, color) in *People* magazine. Feb. 23. p. 126. "If you discovered the fountain of youth, wouldn't you want to dive in?"

Talk with Barry Dunn of PTI in Fullerton, California. 1998. March 4. These products first arrived on the shelves of stores in Los Angeles in late January of this year. The first ads broke in late February. Michael Derrington at the Nutritious Foods division of PTI is in charge of the whole program.

Talk with Michael Derrington, product manager, at Nutritious Foods Inc. 1998. March 6. These products are now being made by Ryan Foods (a subsidiary of Dean Foods, a major dairy company) in Murray, Kentucky.

7379. Orstrom, Karin M.; Janas, Lynn M. 1998. Normal growth of infants fed isolated soy protein formulas. *Soy Connection* (*The*) (*Jefferson City, Missouri*) 6(1):1-2, 5. Winter. [17 ref]
Address: 1. PhD, Sr. Group Leader, Pediatric Nutrition R&D, Ross Products, a divisionof Abbott Laboratories.

7380. Vitasoy USA Inc. 1998. A healthy start (Ad). *Vegetarian Times.* Jan. p. 88.
• ***Summary:*** This one-third page color ad begins: "Vitasoy Natural Soy Drinks are the perfect addition to any light and healthy breakfast." A logo says: "Organic soybeans–Great new taste." Color photos show: A young girl giving her pretty mother a bouquet of flowers. She is seated at the breakfast table behind a plate of Strawberry Belgium Waffles (made with Vitasoy soymilk) and a glass of soymilk (top of ad). Packages of many Vitasoy soymilk products (bottom of ad). Address: P.O. Box 2012, South San Francisco, California 94083. Phone: 1-800-VITASOY (848-2769).

7381. *SoyaScan Notes.* 1998. Companies that manufacture soymilk equipment, install soymilk plants, or formulate soymilk from soy base (Overview). Feb. 6. Compiled by William Shurtleff of Soyfoods Center.

7382. Rose, Richard. 1998. New developments at Rella Good Cheese Co. (Interview). *SoyaScan Notes.* Feb. 16. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Richard renamed his company to Rella Good Cheese Co. in about Oct. 1997. Starting in Feb. of 1997, his company began enriching all of its cheese alternatives (except VeganRella) with a vitamin-mineral mix to make them nutritionally equal to dairy cheese. Consumers prefer enriched alternatives; it is not required.

To date, Richard's company has used its self-imposed "Green Tax" to give about $40,000 to environmental groups (EarthSave, Rainforest Action Network, etc.)–in addition to the more than $84,000 donated to the Second Harvest Food Bank. The largest single recipient group was

EarthSave, but they are no longer a recipient. Right now the Hemp Industries Association is the major recipient among environmental groups. Remember that half the pesticides in the USA are used on cotton crops.

It is not very difficult to buy hemp seeds in the USA, but all of it is imported. Last year 1 million pounds was imported into the USA. You can order by phone from 1-800-buy-hemp. You can also buy it from bird stores, where it is used as bird feed. In addition, about 500,000 acres of feral / wild hemp (called "ditchweed") grow in the USA each year–mostly in the Midwest, but almost nobody harvests the seeds, since that is illegal. Since 1957 it has been illegal to cultivate hemp in the USA without a license. One group, the Research Inst. of Pharmaceutical Sciences, Univ. of Mississippi, has a license to grow hemp for the DEA (Drug Enforcement Administration) for the 7 patients the government gives 300 joints per month to.

The whole issue of decriminalizing drugs (including marijuana) is now being supported by a number of prominent public figures such as George Schultz (former Republican secretary of State), Milton Friedman (conservative Republican economist), a superior judge in Orange County, and the mayor of Baltimore, Maryland. They want to medicalize addiction. The Netherlands has decriminalized drugs and the results have been good.

So Richard's company imports its hemp seed from Germany; it is certified organic and dehulled. His is the first company to import dehulled seeds. Their flavor is delicious–like sunflower seeds. It is a complete protein and 65% of the protein is edestin–which is very high quality.

Trader Joe's now has its own brand of soy cheese, named Trader Joe's Soy Cheese in Jalapeño Jack flavor. For a while, Trader Joe's kicked TofuRella off their shelves. Then they had a big problem with a shipment of soy cheese from Soya Kaas, so they brought Richard's products back in–sheepishly.

The main ingredient in Richard's soy cheeses is actually spray-dried tofu. In Canada it must be shown as such on the label, but not in the United States. Richard has never been in the factory where his spray-dried tofu is made, but he has asked the owner point blank if they are coagulating it and they say they are. Nor does he have any statement in writing. They probably coagulate a large tank of soymilk with calcium sulfate (not GDL) to make it into thin silken tofu, then they slurry it and run it through a spray drier. At least three companies make tofu powder: Clofine Dairy & Food Products, Inc. (Linwood, New Jersey), SunRich Inc. (Hope, Minnesota), and Prosource, Inc. (Alexandria, Minnesota). Devansoy Farms, Inc. (Carroll, Iowa; Elmer Schettler, president) makes soymilk powder, but not tofu powder.

In May 1997 Richard incorporated a new company named The Hemp Corporation (THC). There is some fall-out from anti-help people in the industry.

In the near future, he plans to transfer all existing hemp products (HempRella, Hempeh Burger) to THC, which does not yet have any products on the market. Three new hemp products for 1998 will be the HempNut (dehulled hemp seeds), a chocolate, and an aseptic hemp milk (a world's first; tests show there will be no problems with trans fatty acids, which sometimes form at high temperatures). He was on the Jay Leno show 3 times, where they did skits with his foods–the cheese and the chocolate. This was related to the name change to Rella Good Cheese Co. which will license the "Rella" trademark.

Richard also plans to change his environmental policy pretty soon to "All profits go to charity."

Richard is now exporting some of his cheese alternatives to Italy. VeganRella has been made under license in England for several years.

Concerning the cheese alternatives market, in 1996 (according to data from SPINS, which covers most major natural foods distributors except for Tree of Life), Richard's company was the leader in units sold, Soya Kaas No. 1 in dollar sales, and Galaxy was a distant third in the natural foods market (but Galaxy's main market is supermarkets). There are only three major players in this market. Richard does not have the statistics for 1997. Richard expects White Wave to be dropping their soy cheese soon. Originally Richard made White Wave's soy cheese. Then there were problems, it went to litigation; arbitration awarded Richard $45,000 several years ago. Now Soya Kaas makes White Wave's soy cheese.

"The soul of the natural foods industry is being co-opted quickly." One example is Whole Foods Market (WFM). Richard is getting fed-up with the lack of integrity in the industry. WFM recently yanked all the Rellas from all their stores nationwide because sorbic acid (a completely harmless mold retardant/inhibitor) appears on the label. Richard's competitors use sorbic acid (or calcium propionate) as a mold retardant but do not list it on the label. Moreover, WFM carries other products that contain sorbic acid–which they say are "exempted." So WFM punishes the people who are being honest, and at the same time promotes itself as being socially responsible, ethical, members of Social Venture Network, the honest retailer of foods in America. Address: President, Rella Good Cheese Co., P.O. Box 5020 (616 Davis St.), Santa Rosa, California 95402-5020. Phone: 707-576-7050.

7383. Tanaka, Wendy. 1998. The joy of soy: Consumer awareness of health benefits boosts Bay company [Vitasoy]. *San Francisco Examiner.* Feb. 17. p. C-1, C-2.
• ***Summary:*** Vitasoy USA Inc. "has become a powerhouse in the fast-growing soy foods industry." Yvonne Lo, president and CEO, worked as a city planner in Toronto (Ontario, Canada) before investing $10,000 to start the U.S. arm of her father's business in 1979. Company sales have grown at double-digit rates for the past 5 years, reaching an estimated

$43 million for fiscal 1997. Today, the company's soy milk is the No. 2 brand in the USA, controlling 25% of the $150 million market (which has been growing at 10% a year since 1990), according to Soyatech Inc. Edensoy is first with 38% of the market.

Soyatech statistics show that U.S. tofu market sales have grown 5% a year for the last 5 years to $125 million a year last year.

The acquisition several years ago of Azumaya and Nasoya, two of America's largest tofu manufacturers, has made Vitasoy America's largest producer of tofu. Now Vitasoy is hoping to further increase its sales of tofu and soymilk with its $13.5 million state-of-the-art plant in Ayer, Massachusetts. Vitasoy can now deliver soymilk to retailers in 7-10 days, compared with 45-60 days during the years prior to fall 1997 when all of its soymilk was imported from Hong Kong. Moreover, the new plant will eventually have be able to produce 50% more soymilk than the company had been able to import. The plant at Ayer will also produce Nasoya brand tofu. "Vitasoy USA already has a tofu factory in China Basin [actually 1575 Burke Ave., San Francisco] to produce the Azumaya brand." Vitasoy now sells its products in mainstream retail markets such as Safeway, Lucky, Andronico's and Walmart. The vice president for produce merchandising at Walmart Superstores says they have had very good success with Vitasoy's tofu.

A color photo shows Yvonne Lo holding packages of Azumaya tofu and Vitasoy Light vanilla soymilk in front of pallets of product stacked 10 feet high at the company's Brisbane warehouse. Address: Examiner staff.

7384. Imagine Foods, Inc. 1998. Got dreams? (Ad). *Supermarket News.* Feb. 23. p. 45.
• ***Summary:*** The ad title is a take-off on the famous line from cow's milk ads, "Got milk?" In the center of this full-page color trade ad is a large package of Rice Dream–Organic, Original Enriched. Lines point to the package from various brief messages that surround the package: "#1 SKU in the #1 Natural Category. Shelf stable & resealable. #4 shelf-stable non-fruit drink in supermarkets. Contains the same amounts of calcium, vitamins A and D as milk. Maximize profit per square foot of shelf space. Made with certified organic ingredients. Lactose free."

"With supermarket sales flat in '97 and natural food sales accelerating at over 20% annually for the past three years, shouldn't you stock the best-selling product in the natural foods marketplace?

"Call 1-800-333-6339 Ext. #55 and start dreaming up more sales and profits." Address: Palo Alto, California.

7385. Nutritious Foods, Inc. 1998. If you discovered the fountain of youth, wouldn't you want to dive in? (Ad). *People.* Feb. 23. p. 126.
• ***Summary:*** This full-page color consumer ad (copyright 1997 by Nutritious Foods, Inc.) is for new, "soy protein-rich Health Source drinks and yogurt-style snacks. Years of Asian history and numerous studies suggest the same conclusion: substituting soy-protein foods for significant amounts of animal-protein foods can have a real nutritional impact on your health. Some researchers are already pointing to soy protein's power to reduce high cholesterol levels. Several universities are now also investigating soy protein's role in reducing the risk of osteoporosis and some forms of cancer.

As if that weren't enough, Health Source is an excellent low-fat source of calcium, high in vitamin C, and a good source of fiber." Flavors include strawberry, raspberry, and black cherry. "If you'd like more information about the benefits of soy protein, call toll free 1-888-769-9136." The slogan at the bottom of the ad reads: Healthy today. Healthy tomorrow."

A large color photo in the middle third of the ad shows a spoon dipping into a cup of yogurt, which is surrounded by fruits. In the lower right corner is a small photo showing two cups of the soy yogurt, a gable-top carton of the beverage, and the beverage in a glass, with a straw in it. Address: St. Louis, Missouri.

7386. Cuthbert, Lauren. 1998. Soyfood sales surge with more products and new customers: Research sparks soy craze. Soy popularity rising with boomers and their kids. *Natural Foods Merchandiser* 19(2):1, 63-64, 66. Feb.
• ***Summary:*** Second-hand statistics about the soyfoods industry and market. "Why the sudden increase craze? In a word, isoflavones." Address: Mill Valley, California.

7387. Indiana Soybean Board. 1998. Indiana soyfoods locator guide: A guide to finding soyfoods in the supermarket and health food store. Lebanon, Indiana: Indiana Soybean Development Council. 48 p. 28 cm.
• ***Summary:*** This is the first edition of this Guide. On the cover is a paper grocery bag resting on a bed of soybeans and chock full of foods: Veggie Slices (soy cheese), soynut butter, veggie burger, tofu, soymilk, soy flour, plus carrots, celery, and cooking oil. Contents: Food pyramid. Soyfoods descriptions–Meat the Bean: Introduction, green vegetable soybeans (edamame), hydrolyzed vegetable protein (HVP), infant formulas–soy based, lecithin, meat alternatives (meat analogs), miso, natto, nondairy soy frozen desserts, soy cheese, soy fiber (okara, soy bran, soy isolate fiber), soy flour, soy grits, soy protein concentrate, soy protein isolate (isolated soy protein), soy protein–textured (textured soy protein, textured soy flour), soy sauce (tamari, shoyu, teriyaki), soy yogurt, soybeans, soymilk–soy beverages, soynut butter, soynuts, soybean oil & products, sprouts–soy, tempeh, tofu & tofu products, whipped toppings–soy-based, yuba. A taste for health–Scientists are learning about soy's health benefits: Heart disease, osteoporosis, menopause, cancer, isoflavones. Soyfood icon chart. Soyfood facts &

recipes: Meat alternatives, soybean oil, textured soy protein, whole soybeans, soy flour, soymilk, tofu. Composition and nutrient content of soyfoods. Soyfood conversion charts: description of one serving of soyfoods, guide to modifying recipes, soyfoods substitution chart. Mail order soyfood companies. Soyfoods Web site packed with information. Soy cookbooks. Soy resource books. 1-800-talksoy. Soyfoods market search map; where to find soyfoods in the supermarket (a two page color layout of a supermarket displaying where soyfoods are located). Soybeans... they're in almost everything. Finding soyfoods at the supermarket (store listings by county). Address: Indianapolis, Indiana 46205-1744. Phone: 1-800-275-7679.

7388. INTSOY. 1998. INTSOY course: Soybean processing and utilization. May 26 to June 19, 1998 (Brochure). Urbana, Illinois. 8 panels. 2 p. 22 x 10 cm each.
• ***Summary:*** Contents: Topics to be presented in the 1998 course: Basic processing concepts, nutrition and functionality, extrusion technology, oil extraction, soymilk and dairy analogs (soymilk, soy yogurt, soy ice cream), Oriental soybean foods (tofu, tempeh, etc.), animal feed applications, quality control, animal feed applications, overview of the soybean industry, economics and marketing of soy products. Cost and travel information (the course costs $4,300 plus about $1,600 for room, board, and other local living expenses. INTSOY is unable to offer scholarships).

The course time consists of 35% lectures, 45% hands-on exercises, and 20% industry visits. This is the 18th offering of the training program. Some 200 persons from 41 countries have attended the course. Danny Erickson is the training officer in charge. E-mail intsoy@uiuc.edu. Address: International Soybean Program, Univ. of Illinois, 35 Environmental and Agricultural Sciences Building, 1101 West Peabody Drive, Urbana, Illinois 61801. Phone: (217) 333-6422.

7389. Lindsay, Shirley H.; Claywell, Lora G. 1998. Considering soy: Its estrogenic effects may protect women. *Lifelines* (*Association of Women's Health, Obstetrics and Neonatal Nurses*) (*Hagerstown, Maryland*) 2(1):41-44. Feb. [14 ref]
• ***Summary:*** Contents: Introduction. Understanding soy. Soy and menopause. Effects on osteoporosis. Soy & breast cancer. Effects of cholesterol. One sidebar, titled "A look at popular soy foods," gives a brief definition of miso, soy cheese, soy fiber (okara, soy bran, soy isolate fiber), roasted soy flour, tempeh, tofu.

A second sidebar, titled "One woman's experience," states that author Shirley Lindsay has been a near vegetarian for two years, using soy protein as her main protein source, but also an occasional serving of fish. She consumes one 14-oz. glass of soymilk and 5-8 oz. of low-fat silken tofu daily. Her diet contains approximately 70 mg/day of isoflavones. She also eats a very low-fat diet that includes low-fat diary products, egg whites, fruits, vegetables, and olive oils. Lindsay also bakes with soy products and flax seed; the latter is rich in lignans.

"Lindsay has successfully eliminated 90 percent of her menopausal symptoms, as well as decreased her serum lipids. When she began the diet, she eliminated animal proteins except skim milk and egg whites, and within 10 days she noted a 90 percent decrease in hot flashes and night sweats. At one point, Lindsay only ate isolated soy protein powder supplements, but her menopausal symptoms returned because a significant amount of phytoestrogen is lost in the processing of powders." Address: 1. Asst. Prof. of Maternal-Newborn Nursing; 2. Director, Associate of Science in Nursing program. Both: Deaconess College of Nursing, St. Louis, Missouri.

7390. Mangels, Reed. 1998. Guide to non-dairy "milks." *Vegetarian Journal* (*Baltimore, Maryland*). Jan/Feb. p. 19-21.
Address: PhD, R.D., Baltimore, Maryland.

7391. Nutrition Dynamics International. 1998. Business plan for Yankton Sioux tribe and Nutrition Dynamics International joint venture: Infant formula manufacturing plant. Swainsboro, Georgia. 31 p. (mostly unnumbered). Feb. 28 cm.
• ***Summary:*** Contents: Executive summary. Yankton tribe. Nutrition dynamics international of South Dakota. Infant formula industry: Size. Infant formula industry: Structure. The Yankton project's planned market. Financial summary: Development costs, net income. Manufacturing process. Facilities. Staffing. Exhibit 1: Mamalak package design. Table 1: Pro Forma projected income statement. Table 2: Projected cash flow (12 months). Appendices: A. NDI board and advisors. B. Infant formula ingredients. C. Factory equipment price list. D. FDA regulations.

On page 15 is a resume for Erwin David Rabhan; it is cited as a separate record. Address: 135 Ehrlich Farm Road, Swainsboro, Georgia 30401. Phone: 912-237-6313.

7392. Nutrition Dynamics International. 1998. Marketing plan: Yankton Sioux project. Swainsboro, Georgia. 19 p. Undated. 28 cm.
• ***Summary:*** Contents: Executive summary: Market analysis, competitive analysis, the basis selling idea, major strategy, branding and product positioning (for NDI's lactose-free, soy-based infant formula named Mamalak), packaging and pricing (3 types of infant formula, each in 13-oz liquid cans), distribution methods (WIC program, hospitals/physicians, retail stores), promotion, advertising and public relations.

Major thrust (WIC program): A planned communication strategy, contract administrator, direct mail campaign to WIC administrators, Website development, Website

administration, electronic newsletter (director to WIC administrators), special receptions, retailer communication, trade advertising, editorial for trades, PR support for WIC's breast feeding program, press release program. Advertising: Trade publications, radio, television. Secondary thrust (hospitals/physicians): Physician visit program, direct mail campaign, web site development, web site administration, trade advertising, editorial for trades, press release program. Third thrust (retail trades): Web site marketing, web site administration, trade advertising, editorial for trades, press release program, in-outlet promotion and publicity. Tracking and measurement.

This marketing plan was prepared by Horton Lind Marketing and Communication. Note: WIC is the Special Supplemental Nutrition Program for Women, Infants and Children. It is administered by the USDA's Food and Consumer Services (FCS). Address: 135 Ehrlich Farm Road, Swainsboro, Georgia 30401. Phone: 912-237-6313.

7393. **Product Name:** Pacific Enriched Soy Drink [Plain, Vanilla, Cocoa].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1998. February.
Ingredients: Organic soymilk* (filtered water, whole organic soybeans*), brown rice sweetener (filtered water, brown rice), natural vanilla flavor with other natural flavors [for Vanilla and Cocoa flavored], cocoa [for Cocoa], tricalcium phosphate, sea salt, carrageenan, vitamin A palmitate, riboflavin (B2), vitamin D2.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (glossy color, 4 panels, each panel 28 cm) sent by Patricia Smith from Natural Products Expo West at Anaheim. 1999. March. (but leaflet is dated "2/98"). "There's only one way to improve on Pacific's great tasting soymilk drinks–New packaging." A wide color photo (2-page spread) shows the following ten products (from left to right): Pacific Original Soymilk (53.5 mg isoflavones per 8 oz. serving), Pacific Select Soy Drink (in Plain or Vanilla) (26.8 mg isoflavones per 8 oz. serving), Pacific Fat Free Soy Drink (in Plain or Vanilla) (2 mg isoflavones per 8 oz. serving), Pacific Enriched Soy Drink (in Plain or Vanilla) (22.5 mg isoflavones per 8 oz. serving), Pacific Ultra Soy Drink (in Plain or Vanilla) (34.8 mg isoflavones per 8 oz. serving).

All these non-dairy drinks are made with organic soybeans–although the soy protein isolate is not organic. A laree pull-quote states: "'soy contains several naturally-occurring compounds–phytochemicals like isoflavones, protease inhibitors and saponins which seem to protect against breast cancer'–American Institute for Cancer Research."

On the last panel are given the nutrition facts, ingredients, UPC numbers, and case/pallet information.

7394. Rabhan, Erwin David. 1998. Resumé, plus portfolio. Swainsboro, Georgia. 1 p. Unpublished manuscript. 28 cm.
• ***Summary:*** Erwin was born on 9 Sept. 1926 in Savannah, Georgia. He grew up in Savannah and in 1943 he graduated from Benedictine Military Academy, Savannah. In 1949 he graduated from the University of Georgia, Athens, with a Bachelor of Science degree in Agriculture. He did post-graduate work in nutrition at the University of California, and the University of Alabama, Dothan. He served in the U.S. Army Air Corps and the U.S. Army Reserve, retiring in 1975 with the rank of major after serving with U.S. Special forces.

Prior to 1969 he was involved in many successful business ventures. He developed, owned, and operated a poultry farm, a construction company building residential units, including a 250-unit project that is still operating a chain of thirteen 120-bed nursing homes, and day-care centers located across the United States.

In 1969 he established Nutrition Dynamics International to develop and operate factories to produce infant formula, baby food, and fish protein supplement. In 1979 two successful infant formula and baby food factories started operating in Damkan (also spelled Damghan) and Semnon, Iran, producing 10,000 tons of product per year. These assets were confiscated by the Iranian government.

In 1980 he was arrested by the Iranian government chiefly due to knowledge that he had a long-standing friendship with President Jimmy Carter. Although tried for allegedly conducting business contrary to the laws of Islam and for being a spy for the U.S. Central Intelligence Agency (CIA), he was declared innocent of all charges and released in 1990 with apologies.

In 1990 he returned to Georgia and reorganized Ehrlich Farms, Inc. The 2,300-acre farm in Emanuel County, Georgia, is a successful cattle, goat, and pecan operation. Erwin is now the owner/operator and president.

A Portfolio, sent to Soyfoods Center in June 1998 contains the following seven documents: (1) Savannah Morning News. 1990. Sept. "A nine-year waste–Opinion" David Rabhan, now 64, was a political prisoner for nine years in Iran where he was running a successful company that used fish protein to make fortified baby foods. He was finally cleared of wrong-doing.

(2) Photo in *Philadelphia Enquirer* 1990. Sept. 15. "From Iran, to a warm welcome home." It shows former president Jimmy Carter as he embraces an old friend, American businessman E. David Rabhan, back in Atlanta after 11 years in prison [sic] in Iran. Rabhan made a quiet arrival yesterday. (2) Letter from Lindsay Thomas, House of Representatives, Georgia, to Mr. Fred M. Zeder, Overseas

Private Investment Corp. 1992. Sept. 1. David Rabhan of Swainsboro, Georgia is a highly innovative entrepreneur who has a proven record in building international companies. He built up a successful baby formula and infant food company in Tehran, where he was imprisoned for nine years.

(3) Article by Bill Shipp. 1992. *Georgia Trend* Sept. 28. p. 29-31. "Georgia's forgotten hostage." When David Rabhan left Iran, he left behind $15 million in assets and 11 years of his life. Jimmy Carter finally succeeded in gaining his release. Now, age 65, he is trying to borrow $6 million to set up a plant in Georgia that grinds up menhaden, a trash fish, and uses other protein products to make a high quality infant formula. The baby food would save millions of lives in Third World countries and create thousands of jobs in the USA. Rabhan wants to get back into business in Iran. He is forming a partnership with a Muslim fundamentalist group, The Brotherhood of Martyrs, to restart his closed baby-food and sewing plants in Iran. A talented artist, Rabhan draws and paints almost daily. He earned a pilot's license at age 16 and enlisted in the Air Force as soon as he graduated from high school. At the end of World War II, he enrolled in the University of Georgia. In 1971, when Rabhan was a volunteer pilot in Jimmy Carter's successful campaign for governor, Rabhan had his head shaved, wore a black satin jump suit, and looked like Yul Brynner [lived 1915-1985, movie actor who had a shaved head]. At 5-foot-10, 170 pounds, he still looks like the late Yul Brynner. Since he was released from prison in Iran, he has visited Turkey, Israel, Pakistan and Nigeria, trying to interest governments in those countries in his baby-formula operations. In 1975 he went to Iran, learned to speak Farsi and Arabic, and built his baby-formula factories, By all accounts, he became a millionaire overnight.

(4) Letter from former President Jimmy Carter to Meles Zenawim, President of Ethiopia. 1999. Jan. 9. Introduces his longtime friend, Erwin David Rabhan, whose business, Nutrition Dynamics International Inc., being conducted in several countries, makes baby food products. He would like to lease a small property in Addis Ababa to construct a factory.

(5) Article by Douglas Brinkley. 1996. The New Yorker. Oct. 21. p. 78 "What it takes." In 1970 Georgia Gubernatorial candidate Jimmy Carter had enlisted David Rabhan, a rich Jewish businessman from Savannah, with impeccable civil-rights credentials, for use of his airplane and to help him win black votes. Carter was running a populist campaign as a conservative peanut farmer on the long but racist coattails of Lester Maddux, the incumbent. Rabhan, an entrepreneur, had a shaved head and wore a tattered blue jumpsuit–so he looked like Yul Brynner. And he had more black friends than white. Rabhan never asked Carter for anything. One day Carter asked him: "If I become governor, what can I do for you?" Rabhan replied: "I want you to say in your inaugural address that the time to end racial segregation in the South is upon us." Carter easily won the election and on 12 Jan. 1971 he delivered a 12-minute inaugural address that became known as "the Speech" for its bold declaration: "I say to you frankly that the time for racial discrimination is over." The Speech brought Carter national attention and a place on the cover of *Time* magazine (May 31). David Rockefeller placed the Cater, age 48, on the prestigious Trilateral Commission. From it was on to the presidency.

(6) Letter from C. Mack Griffin of the First National Bank and Trust Company (Swainsboro, Georgia). 1998. Sept. 1. Erwin David Rabhan is a good and valued customer. He is one of the largest cattle producers in the area and also raises catfish. One of his many companies is Nutrition Dynamics International (NDI). (7) Resume: This one is longer and, in some points, different from the one cited above. For example, it states that Nutrition Dynamics International, Inc. was established in 1975 (not 1969) in Iran. "1993–Parent company Nutrition Dynamics International, Inc. established overseas joint venture companies to manufacture infant formula, baby food and snack foods in Swaziland, South Africa, Ethiopia, Nigeria, Romania, and Egypt." Address: 135 Ehrlich Farm Road, Swainsboro, Georgia 30401. Phone: 912-237-6313.

7395. Stevens & Associates, Inc. ed. and comp. 1998. U.S. 1998 soyfoods directory. Lebanon, Indiana: Indiana Soybean Development Council. 47 p. 28 cm. [33 ref]

• ***Summary:*** This third edition of the U.S. Soyfoods Directory was produced for the Indiana Soybean Board by Stevens & Associates. The color cover has a wide green and white checkered border.

Contents: Soybean facts. Welcome. How to use the soyfoods directory. Daily soyfood guide pyramid. One bean: a multitude of products.

Soyfood descriptions [alphabetical]: green vegetable soybeans (edamame), hydrolyzed vegetable protein (HVP), infant formulas–soy based, lecithin, meat alternatives (meat analogs), miso, natto, nondairy soy frozen desserts, soy cheese, soy fiber (okara, soy bran, soy isolate fiber), soy flour, soy grits, soy protein concentrate, soy protein isolate (isolated soy protein), soy protein–textured (textured soy protein, textured soy flour), soy sauce (tamari, shoyu, teriyaki), soy yogurt, soybeans, soymilk (soy beverages), soynut butter, soynuts, soybean oil and products, sprouts–soy, tamari (see soy sauce), tempeh, teriyaki sauce (see soy sauce), tofu & tofu products, whipped toppings–soy based, yuba.

A taste for health: Scientists are learning about soy's health benefits (heart disease, osteoporosis, menopause, cancer, isoflavones). Soybeans: health insurance in a pod. Approximate isoflavone content of selected soyfoods.

Fact sheet and recipes (1 or 2 pages each): Meat alternatives. Soybean oil. Textured soy protein. Whole

soybeans. Soy flour. Soymilk. Tofu.

Composition and nutrient content of soyfoods (full-page table, p. 20). 1 serving of each soyfood. Guide to modifying recipes (substitutions). Soyfood substitution chart (½-page table). Soyfoods website packed with information (http://www.soyfoods.com). Soy cookbooks. Soy resource books. 1-800-Talksoy (for answers to your questions).

Soyfood companies by product (e.g., names of all companies that make meat alternatives; products listed alphabetically).

Soyfood companies (directory; p. 27-40. Alphabetical by company name; Each listing contains address, contact person, phone number, fax, e-mail, soy products, product names, distribution, how to locate product, classification). Soyfood mail order companies (p. 41-42). Soyfood companies by state (California has by far the Most). Soyfood promotion and research organizations (incl. state soybean boards / councils). Professional association and industry information resources.

Note: Nasoya Foods has its own listing but Azumaya does not. Azumaya is listed under Vitasoy USA Inc. as a brand. Address: Stevens & Associates, 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 317-926-6272.

7396. Fischer, Bruno. 1998. Update on soymilk in Europe: Sojinal, Alpro and Nutrition et Soja (Interview). *SoyaScan Notes.* March 3. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In mid-1993 Sojinal (of Issenheim, France) was purchased by a Swiss group named B&K Industry Holdings. The heirs got much of their money from disinvesting in weapons and ammunitions. Then in December 1996 Alpro (in Belgium) bought Sojinal from B&K. They now make mostly sterilized pre-pack tofu patties and other related meat alternatives. In Bruno's opinion these products are not very good–they don't fit anywhere.

Alpro dominates the European market for soymilk and soymilk products. They do a lot of private label packaging in their factory, and they now make a little pudding in a cup with a peel-off lid. Bruno heard that in 1995 they had sales of 50 million German marks. Note: In March 1998 one German mark was worth about $0.55. So, very roughly, 50 million would be worth about $27 million.

Alpro now also makes rice drink, and in 1995 launched a rice beverage made by Alpro and packaged in glass bottles.

In about Feb. 1998 Vandemoortele, Alpro's parent company, sold all of its margarine manufacturing operations to Cargill. Now Vandemoortele has only Alpro and its oilseed crushing operations.

Nutrition et Soja (in Revel, near Toulouse, France) no longer sells their soymilk in Tetra Pak cartons–so they must be using it as an ingredient in their own products.

DE-VAU-GE (which made the Grano Vita line) no longer makes soymilk. Address: Im Auel 88, 53783 Aetorf, Germany. Phone: 49-2243-4021.

7397. Fischer, Bruno. 1998. Update on Triballat, maker of soymilk and soy yogurt in France (Interview). *SoyaScan Notes.* March 3. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Triballat makes the best soymilk that Bruno has ever tasted. "It's incredible." Their soy yogurt, which is fermented, is also quite good; it is bland, but expensive and not organic. Triballat is a well-managed family-run business, now in its fourth generation; the company is growing steadily. Their soymilk is sold in multi-weight glass bottles, which are UHT packaged. Bruno sells a soymilk made by Triballat, which he launched about 5 years ago. He buys the finished soymilk from them for US$0.40/liter, and the total cost packaged and labeled is near $0.70/liter. Presently 1.80 German marks = 1 U.S. dollar. He is their biggest customer. He has an agreement with Triballat that they sell the soymilk for bottling into glass exclusively to Bruno Fischer. And they have an unwritten gentleman's agreement that they don't sell to other German companies.

Triballat wants to sell its soymilk technology outside of Europe. About one year ago they sold a complete soymilk and soy yogurt system to some company in China–Bruno thinks it was probably in Shanghai. This is the only system they have sold, but they are now negotiating for the sale of a second system somewhere.

1998. April 7. He has located and contacted the plant Triballat sold to China, but they are not interested in selling. Address: Im Auel 88, 53783 Aetorf, Germany. Phone: 49-2243-4021.

7398. Mio, Art. 1998. Health Source: A new line of soy protein products from Protein Technologies International being test-marketed in the Los Angeles area (Interview). *SoyaScan Notes.* March 3. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Michael Derrington and Barry Dunn visited Morinaga in mid-February and presented their new line of Health Source consumer products and the ad campaign and media schedule (local radio, newspapers, and magazines for 60 days) that will be used to launch them. Some of the ads have been paid for by the Iowa Soybean Board. They are first test marketing the whole concept in Los Angeles. The two basic products in the line are a soy protein drink sold in a 1 quart gable-top cartons and a yogurt sold in a 6-ounce yogurt-style cup. Each of these products comes in two types: Regular (which provides 10 of soy protein per serving) and Health Source Plus (which provides 20 gm of soy protein per serving). They will be sold only in supermarkets and grocery store chains–not in natural- or health food stores. The milk is sold next to the Lactaid and Mocha Mix in the non-dairy part of the dairy case, and the yogurt is sold next to the regular

dairy yogurts. Michael Derrington, who is managing director of consumer product sales, is the main person in charge of these products (Phone: 314-982-5414; Fax 314-982-3627).

Talk with Barry Dunn of PTI in Fullerton, California. 1998. March 4. These products first arrived on the shelves of stores in Los Angeles in late January of this year. The first ads broke in late February. Michael Derrington at the Nutritious Foods division of PTI is in charge of the whole program. Address: National Sales Manager, Morinaga Nutritional Foods, Inc., 2050 W. 190th St., Suite 110, Torrance, California 90504. Phone: 1-800-669-8638.

7399. Derrington, Michael. 1998. Health Source–A new line of soy protein products from Nutritious Foods, Inc., a wholly owned subsidiary of Protein Technologies International, Inc. (Interview). *SoyaScan Notes.* March 6. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The plans of Health Source, so far as we can tell, never got past the planning stage.

7400. Amster, Linda. 1998. Food chain: Shelf life of soy milk. *New York Times.* March 11. p. F2.
• ***Summary:*** "Q. Soymilk seems to spoil quickly even if refrigerated. Is it unwise to drink soy milk even if it is slightly turned?"

A. "According to the Soyfoods Association of America, the shelf life of an open container of soy milk is similar to that of dairy milk. If kept refrigerated in the resealed, original container, soy milk should remain drinkable for about 7 days." As it spoils, it will give off an undesirable odor and it may begin to clot or thicken. It is not advisable to drink slightly turned soy milk or cow's milk.

Cartons of aseptically packaged soy milk can be stored at room temperature for several months. But once opened, they should be refrigerated.

7401. Liener, Irvin E. 1998. Re: Soy infant formulas. Letter to Valerie A. James, RD4, Whangarei, New Zealand, March 11. 1 p. Typed, with signature on letterhead. [4 ref]
• ***Summary:*** "As editor of the journal in which this article appeared, I would be pleased to publish your letter because I think, as you do, that it is high time that someone presented both sides of the story about soy infant milk formulas." Address: Editor, Journal of Agricultural and Food Chemistry, Dep. of Biochemistry, Univ. of Minnesota, 1479 Gortner Ave., St. Paul, Minnesota 55108.

7402. Liu, KeShun. 1998. Re: Profile. Letter to William Shurtleff at Soyfoods Center, March 18. 2 p.
• ***Summary:*** This profile is an autobiography of Dr. Liu. Soyfoods Center has divided the story into two parts. Most of it is told in our "About the author" section at Dr. Liu's excellent 1997 book titled *Soybeans: Chemistry, Technology, and Utilization.* The rest, which follows, is a description of his major responsibilities as Project Leader of the Soyfoods Laboratory at Hartz Seed in Stuttgart, Arkansas, where he works on breedings soybeans for food use. He oversees the laboratory and "collaborates with several plant breeders within Hartz Seed and scientists at Monsanto's Life Sciences Research Center, St. Louis [Missouri], to improve soybean quality for making both Oriental soyfoods and Western soy products (including soy oil and soy protein ingredients). His major responsibilities include: (1) conducting research on the factors that affect the quality of soyfoods (such as soymilk, tofu, natto & soy sprouts) and soy protein ingredients, (2) identifying relationships between raw soybean components and the quality and yields of soyfoods, (3) developing reliable laboratory methods for making soyfoods and evaluating their quality attributes, (4) developing rapid methods for screening chemical components of breeding lines (e.g. assay for fatty acid composition), (5) researching the nutritional and functional properties of soybean oil and exploring applications of modified soybean oil obtained through plant breeding, (6) and identifying new product concepts and areas for further improvements of soybeans as food." Address: Project Leader, Soyfoods Lab., Hartz Seed–A Unit of Monsanto Co., Inc., 901 N. Park Ave., Stuttgart, Arkansas 72160. Phone: (870) 673-8565.

7403. Kelly, Julia. 1998. Fond remembrances of Robert Brooks, co-founder of Swan Foods Corp. in Miami, Florida (Interview). *SoyaScan Notes.* March 29. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Julia first met Robert Brooks in late 1973 or early 1974 at a Premmie house out in the country near New Paltz, New York. "I met Robert because I wanted to receive knowledge. I found out about Maraji and I started going satsang in New Paltz, New York–where I was going to the state university. Robert was one of the first people who told me about Guru Maraji. The first time I saw him he was dressed in a tattered Divine Line Mission t-shirt with his head stuck inside of an old funky oven, cleaning it. He had been a devotee of Guru Maraji and a Premmie for about 1 year before I met him." Then Julia moved into the Premmie house, where she lived with Robert and two other guys. Robert was the "house father"; he rented the old 3-story house (there was a wood stove on each floor and an outdoor toilet), cooked all the food, collected the money, and inspired many of the young people who came there. Julia received "knowledge" in November 1974. Robert told her "Don't eat anything outside this house; just eat what I cook for you. So I went from eating roast beef, sugar, Coca-Cola, and chocolate, to hand-grinding my own toasted brown rice in the morning for cereal. Robert had a remarkable ability to talk about food and macrobiotics, tie it into the order of the universe, and make it all make sense. He was very clear–like a genius. At the time, Robert knew a great deal about tofu and soyfoods, and he talked about them a lot. Robert grew

up in Poughkeepsie (pronounced puh-KIP-see), New York. His father owned a liquor store there." Robert had 2 or 3 brothers. One brother was an attorney. His younger brother, David, was also a "super-inspired, genius, spiritual very creative guy, who also liked to teach, and he did shiatsu, rapped about tofu, and other energy stuff." David is kind of nutty now. Robert believed that a vegetarian diet plus soyfoods could help keep a person healthy and filled with good energy. Julia's mother had died of cancer 5 years earlier and one of her brothers was schizophrenic, so she listened to what Robert said. He said that cancer and schizophrenia were caused by the same type of foods that Julia's family ate–so she quickly and completely changed her diet to a pure vegetarian [vegan] diet–free of eggs and dairy products–which he followed for the next 15 years. He taught that "soy was a clean source of protein." Robert was a natural-born teacher. He taught shiatsu, macrobiotics, tai-ch'i, and the Science of Mind. He was high and charismatic, though he was not out to become famous. He had a big circle of friends. Julia lived with Robert in the Premmie House in New York during 1974 and 1975. In late 1975 or early 1976, Robert went to Miami, Florida, to attend a massage school.

Robert met Mary Pung in Miami, Florida. After they founded Swan Foods, he loved to "turn people on to soy." In early November of 1977 and 1978 Guru Maraji held a huge 3-day festival in Kissimmee (located about 15 miles south of Orlando), the capital of Osceola County, Florida. This festival was named Hans Jiyanti, in honor of the birthday of Sri Hans, who was Maraji's father. More than 10,000 Premmies and other people came and camped out on this land by a nice little lake to see and hear Maraji. Julia was there, "hanging out with the musicians." Vegetarian foods from many different cultures were sold at booths at the festival. "Robert supplied the whole festival and Maraji with his soy products–he wanted to turn on the all these people from all over the world to soy–and he did. In 1977 he brought mostly tofu and soymilk, but in 1978 he brought all of these delicious soy desserts, pies, etc. that he and Mary and Debbie Curran had developed at Swan Foods. He did all this as an offering for Guru Maraji. That was the vision behind all his creativity and production. Robert was definitely high and he deserves recognition."

"One reason that Swan was able to grow by leaps and bounds was that Robert has all these selfless Premmies doing service for Maraji by working for Robert. He had some of the best and the brightest minds in the country working together for a common cause–the highest good of all human beings. It was hard for any other business to compete with this. It was a very special time, with much remarkable talent–including many fine musicians."

Julia first met Mary in about 1978 in Miami. She knows a number of people who knew Robert well: (1) Mark and Pat Lewis (who are still married and have 2 kids) worked at Swan Foods making tofu; they did most of the hard work. Mark said the Premmies would come into the plant during the daytime (as part of their service to Maraji they worked for a pittance or for free), but none of them knew what to do and they'd all be spaced out, then Mark and Pat would go in every night and make 1,000 pounds of tofu. Mark was very close to Robert and he may know where Mary Pung or Robert's father or brother are now. (2) Debbie Curran (an extremely beautiful and creative girl–Phone: 305-667-7692) is now living with rock musician Fleet Starbuck, who has a blues band. Debbie was a good cook; she worked with Mary Pung to develop many tofu dessert recipes. For years after Swan Foods went out of business, on her own and to make a little money, Debbie would make recipes like tofu lasagna and sell them at places like Oak Feed store and 5-6 natural food stores in Coconut Grove. (3) Jerry Wiener–JD. He worked at Swan Foods for a couple of weeks when Danny Paolucci was there. He recalls big refrigerated trucks from Eastern Airlines pulling up in front of Swan Foods to load up on their soy products. (4) Michael Bo knew about tofu and taught Julia how to make her own. Julia does not know Jim Wilks.

Robert was not involved with hard drugs for most of his life, but he was a hippie who smoked (and later bought and sold) large amounts of pot (marijuana).

What caused Swan Foods to go out of business? Julia thinks it was more Robert's greed than his lack of business management skills. "He had both a high side and a greedy side. He switched from making tofu to dealing pot because he could make so much more money from the pot, and he was losing money making tofu. It was strictly a business decision. He told me that in 1978 in Miami as the company was going under. He didn't start selling pot in an attempt to save Swan Foods. He did it to make more money. He was a very good businessman. If he had been humble and gone more slowly in building Swan Foods, not tried to get so big so fast, just stuck with it without getting distracted by all the flashy Miami stuffing going on all around him, Swan Foods might be prospering today." Eventually Mary Pung gave her son, Aslan (who was about age 6-8), to one of Robert's brothers who was an attorney. Julia knew Aslan, who must be about 20 by now. Note: Aslan was named after one of the heroes in *The Chronicles of Narnia,* by C.S. Lewis–series of wonderful allegorical books that were very popular at the time. In the book, Aslan (a name coined by C.S. Lewis) was the great lion in the land of Narnia. Like the Lord, he was the epitome of goodness. He gave up his life to save children and was later resurrected.

Julia has heard from reliable sources that, after Swan Foods went out of business, Robert started hanging out with one really bad guy, who had a strong negative influence on him. He started smoking cigarettes and eating meat, and eventually involved with hard drugs (such as cocaine) for the last 1-2 years of his life–but Julia had lost touch with him by then.

Tatiana, his wife when he died, was a very big spender. "She'd spend thousands of dollars getting her body waxed and her hair done. She was going to testify against him before a grand jury. He became the key guy in a big investigation. She was part of the reason he died the way he did. If he hadn't committed suicide, he might have gotten murdered. He was in a really bad place.

Julia thinks Mary may have lived in Hawaii for a while after Swan Foods went under. Julia presently lives in her van outside a friend's house in Miami, under a sapodilla tree. She used to live in Hawaii. Address: Miami, Florida. Phone: 305-791-2370 or 305-663-0082.

7404. Demos, Steve. 1998. New developments with soymilk at White Wave. Part I (Interview). *SoyaScan Notes.* March 30. Conducted by William Shurtleff of Soyfoods Center. • ***Summary:*** The Morningstar Group is owned by a Texas-based company named Suiza (pronounced SUI-zuh) which is bigger than Morningstar. Suiza Foods Corp. is one of the very big, modern consolidators of the dairy industry. Dean Foods (which owns Vitamite) and Suiza are head-on competitors in the dairy product area. White Wave's Silk brand soymilk is packaged in an ESL (extended shelf life) gable top carton at the plant of Morningstar Foods Inc. (formerly Avoset, now owned by Suiza), 299 Fifth Avenue, Gustine, California 95322. Phone: 209-854-6461. Contact: Gary Veuve (pronounced Vev, rhymes with rev), the plant manager. Gustine is located just off Highway 5 between San Jose and Merced in Northern California. This plant focuses on dairy products, packaged in both aseptic and ESL cartons, but it also packages Lactaid, Dole juice, a goat milk, etc. In addition, it packages Trader Joe's soymilk, indirectly via TAN Industries and San Diego Soy Dairy–which Steve believes breaches the contract between White Wave and TAN. Actually Gary Stein at San Diego Soy Dairy apparently has no hand in making the product–he just does the invoicing. The soy base mix is made at Soyfoods of America (owned by Ken Lee, in Duarte, Southern California) using equipment installed by TAN Industries (Ted Nordquist and Wally Rogers). When some other company moved out of Ken Lee's plant, Ted moved his company in. The installation began about a year ago [March 1997] and it became operational about 6 months ago [Sept. 1997]. This mix is then shipped by tanker-truck up to the Avoset-Morningstar plant, where it is processed. Avoset Food Co. is probably the predecessor which sold itself somehow to Morningstar which sold itself to Suiza. Steve is not aware of any relationship between Morningstar and the former nondairy pioneer Presto Food Products, which introduced Mocha-Mix Coffee Creamer in 1950 (Note: This product was later renamed Mocha Mix Non-Dairy Creamer).

Ted Nordquist has not been buying soymilk from International ProSoya Corp. (IPC) in British Columbia, Canada, for the last six months–to the best of Steve's knowledge. The soy base mix currently used to make Steve's Silk is made using TAN's plant at Soyfoods of America. There were numerous problems with the Silk product during the 6 months that TAN was making the transition from IPC to Soyfoods of America. Because of the nature of Steve's contractual relationship with TAN, Steve had no information about what was happening so he was unable to help smooth the transition. He inherited the problems and had to deal with them in a hindsight fashion.

Steve has an exclusive supply contract with TAN for all nondairy beverage in the USA as long as he meets specified minimums of purchase from TAN; he has always exceeded these minimums. Steve now believes it is no longer exclusive because of the new Trader Joe's soymilk. This will probably be grounds for a lawsuit. Steve feels that TAN has used White Wave and Silk as his springboard–while the contract is still in effect. Ted has a good product and he is going to be a competitor, and he has made plenty of money from the sale of Silk.

TAN decided (about 6 months ago) to stop buying soymilk from IPC and not the other way around. TAN made the switch for two reasons–both economic. First, TAN realized it would be more profitable the make the soymilk closer to Gustine, where it was packaged. The transportation cost of shipping soymilk from Vancouver to central California was about $2,000 per tanker-truck, compared with only about $1,500 for shipping from Duarte to Gustine. At least one truck is shipped per week–sometimes two. Second, since TAN now owns the equipment on which the soymilk is made, the profit margin associated with making the concentrate is now TAN's.

Steve has tasted several of the SoNice soymilk products made by IPC. He thought one of them was good tasting and competitively priced. The others he thought were typical soymilk formulations that were relatively weak. They had some off flavors and problems with balance, color, thickness. Steve thinks "there are a couple of fracturings of focus with the way they are approaching the market." They have both an aseptic line and a refrigerated line (in five flavors and two different sizes). The essence of refrigerated soymilk production is the ability to turn it fast enough so that you never have spoilage on the shelf. White Wave has never suffered returns on its refrigerated soymilk (Silk) but it took a lot of hard work to get their minimums up to that critical mass point where the product was turning fast. With soymilk in an ESL carton, the carton, not the soymilk, is the limiting factor. Silk has a use-by 84 days from the date of manufacture, but it will usually last for 100 days.

Steve has found it very difficult to work with the contract set up by Ted Nordquist, so much so that he plans to terminate the relationship. Steve feels this is unfortunate–"its like working with a black box." Steve has no idea how Silk is processed at the Soyfoods Unlimited or at the Avoset plant–or what the costs are. Steve flew with his people to San

Francisco, and Ted and his people flew to Boulder–but they were unable to resolve the problems to Steve's satisfaction. "We have a great name, a great package, and a great product–but we have no control over costs." That means that if White Wave proves to the market that refrigerated soymilk is a big category, they will be "beat up" by competitors because of their inability to control costs. Ted basically says: "I will deliver the product to you at the following cost per gallon." Steve would like to continually lower the price of Silk–and he plans to do so soon. It will go under $3.00 per half gallon. Steve suggested that Ted take a royalty for the rest of his life and let White Wave deal with all manufacturing and cost reduction issues. But Ted wants control. Steve thinks he was "burned" in Sweden; he is a very good product developer but not such a skillful businessman. IPC tried to introduce SoNice into the U.S. market with a low price strategy, but White Wave and beat them to it. White Wave has contracts with all of the major chains that they exist in so that their pricing plus their support programs will pretty much negate IPC's attempt to come in at a lower price. If IPC really wanted to do so, they would have to cut their prices again–which is a hard way to go with a new product.

Which soymilk does Steve like the best, simply in terms of organoleptics (flavor, color, consistency, etc.)? One SKU from Vitasoy is very good, the Silk made by TAN is a little bit better, but Steve feels that the new version of Silk developed by Jonathan Gordon (completely independently from TAN and not yet on the market) is better than either of those two products.

During the last year, White Wave has worked on new formulations with Tetra Pak at their research facility in Chicago, Illinois. The first major tanker-truck production run was last Friday. White Wave is now in full production with this new formulation of Silk. It will be processed at one plant in Utah and one on the East Coast. Many taste tests have shown that this new Silk is superior to the former Silk made and formulated by TAN. Silk will remain a refrigerated product; it will never be sold in aseptic cartons in the USA–that will be a fracture of focus that sends a mixed message. On the new carton will be two quotations: One from Suzuki roshi about "Beginner's Mind," and the other from Yogi Berra ("You can't hit and think at the same time")! Also at the top front of the carton is written: "32 mg isoflavones per serving." Plus, there is an offer for more free information on isoflavones. White Wave is working to start the educational process on isoflavones–and is also using its Web site and toll-free 1-800 number.

The big ad campaign in Los Angeles from Protein Technologies is teaching about isoflavones but the products (Health Source) are not doing well. So the publicity is helping White Wave. "Like a guy on a bicycle, we're drafting. We're going to try to stay in the draft of the ADMs and PTIs and see where it takes us. We don't have that much pride." Continued. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

7405. Demos, Steve. 1998. New developments with soymilk and other soyfoods at White Wave. Part II (Interview). *SoyaScan Notes.* March 30. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Sales of White Wave's baked tofu are growing at 38% a year, while plain tofu is growing at 18-21% a year. White Wave is the leader nationally in the baked tofu category, with more than 60% of the market share. Plain dairy yogurt in America still outsells dairy yogurt with fruits and flavors, but it was the fruit yogurts that introduced consumers to the plain product. Baked tofu seems to be playing the same role with respect to plain tofu. White Wave is about to invest very heavily in the automation of baked tofu. If a company's plant capacity is 250,000 units per week, it makes much more sense to produce baked tofu at $1.80/unit instead of block tofu at $0.70/unit. White Wave is trying to turn the tofu market from block to flavored, in order to gain market share and position–in exactly the same way the company has been trying to turn the soymilk market from aseptic to refrigerated.

One key question concerning baked tofu remains unanswered? How do consumers eat it? Steve thinks they are eating it in the car on the way home from the store as a salted snack food–or perhaps on sandwiches. Until White Wave can be sure of how it is used, they don't want to commit to positioning it against some other product–such as cheese or meat.

White Wave's first goal was to establish its products in the refrigerated dairy section. Whereas many companies still sell tofu to the produce section, White Wave never sells to the produce section any longer. Everything is refrigerated, controlled temperature during distribution and sale. Only rarely does a White Wave product end up being sold in any produce section; they are usually sold in the juice cooler or in the dairy section. 80% of White Wave's revenues come from the natural foods sector, and in natural foods stores all White Wave products are in the dairy section–as part of their shelf-set program, which has been very effective in establishing a beachhead in the refrigerated section. Around that now Lightlife and Yves each have their own sections. So the vegetarian category is emerging, usually located in the store around dairy cheeses, milk, yogurt, and eggs.

The most interesting insight Steve has gained in the last few years is the one that says consumers are picking four product categories that they want to see in supermarkets. So White Wave has been reducing the number of products it offers; it has dropped hot dogs, sausages, all burgers except tempeh burgers and lemon broil. The company is actively evaluating what consumers want and where they want to find it in the store. One new program will be to give consumers a free half-pint carton of Silk asking them to "Try this–It's the new milk."

Steve is very happy with Silk's sales performance over the past two years. "It's been exceptional, but it cost $400,000 just to launch the product." According to data from SPINS, during the May-June 1997 period, the market shares for soymilk brands in the U.S. natural foods market were as follows: Westbrae 34%, Edensoy 32%, Vitasoy 16%, and Silk 7%. Silk's share is now 10%. Sales of Silk grew by 170% during the past year. The soymilk market grew by 21% during the same period, Edensoy grew at 30%, Rice Dream dropped 0.4%, and the rice beverage market contracted by 0.2%.

Tree of Life (which does not share its sales figures with SPINS) is no longer the biggest natural foods distributor in the USA. United Naturals is now the biggest (after they bought Stow Mills) with sales last year of $650 million vs. $520 million for Tree. United Naturals also owns Mountain People's Warehouse, Mountain People's Northwest (which was NutriSource), Rainbow–Chicago (Illinois), Rainbow–Denver (Colorado), Cornucopia, and Cornucopia–Atlanta (Georgia).

ConAgra is trying again to get into the natural foods industry. They recently tried to buy one big privately owned natural foods manufacturer, and were turned down! ConAgra launched a new "Advantage 10" line of frozen entrees (many of which contain gluten products) that is backed by Dr. Dean Ornish. White Wave is supplying them with some of these gluten products. ConAgra had a huge presence at the Anaheim show–yet they don't understand how natural foods shoppers think and see the world. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

7406. Nordquist, Ted. 1998. Update on TAN Industries, Inc. in California (Interview). *SoyaScan Notes.* March 30. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** A printed card announces that effective March 28, 1998, TAN Industries moved its offices to 49 Stevenson St., Suite 1075, San Francisco, California 94105-2957. Phone: (415) 495-2870. Henry Glasser moved his law office into a larger space and Ted moved with him.

Today big news arrived: Henry Schwartz called to say he wants to buy a TAN 2000 soy-base plant. "He's ready to go." Ted recently went to visit Henry at his plant in New York and took him many samples. Ted's company used to be pursuing lots of leads and opportunities overseas, but they have not panned out. So now he is focusing on North America, selling equipment and know-how. Ted now has two partners in the business: Wally Rogers of Bean Machines (which manufactures equipment) and Henry Glasser, an attorney, who is the company's financial officer. (Note: Ted initially gave Glasser 20% ownership of the company in exchange for services; as of Aug. 1999 Glasser owns 30%). The company now has only one soy customer, White Wave, which has an exclusive as long as they continue to meet their expanding minimum quotas. Ted also makes a rice beverage. When Ted sold his company in Sweden, his contract contained a three-year non-compete agreement. The very day that agreement expired, Ted sold his first shipment of soymilk to White Wave.

If a company wants to buy a soymilk system from Ted, all the equipment from dry soybeans to cooking (including a stainless steel disintegrator / grinder, and a continuous process cooker) is made by Bean Machines. He would put together the rest of the system using components (such as 2 decanting centrifuges and deodorizing equipment) made by other equipment manufacturers.

Ted processes his soybeans at the Morningstar Group; who and where they are is confidential. He has never made any of his soy products at Cathay Industrial (John Yamauchi) in Los Angeles.

Note: The Morningstar Group is owned by a Texas-based company named Suiza Foods Corp. (pronounced SUI-zuh) that is bigger than Morningstar. Suiza is one of the very big, modern consolidators of the dairy industry. Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

7407. Skiff, James. 1998. Impressions from the Natural Products Expo West at Anaheim this month (Interview). *SoyaScan Notes.* March 30. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jim finds that the soymilk made by Ted Nordquist (White Wave's Silk) is by far the best tasting–much better than SoNice from Canada. Both companies had booths at Anaheim. Jim has always liked Ted's soymilk the best. In fact, he and Howard Weiner were ready to set Ted up in business with a soymilk processing plant, but they could never come to terms. Ted wanted to control everything. Ted did not have a booth at Anaheim.

Dusty Cunningham of International ProSoya Corp. (IPC) was at the show, having come from England. She said that GMO-free soybeans are very big in the UK (where new labeling laws have been passed), and to a somewhat lesser extent throughout the rest of Europe. There was some interest in GMO-free soybeans at Anaheim, but it was still a bit reserved. This may be in part because Monsanto and ADM are working so hard to push things in the other direction.

In the past, most of the soy-related companies have been in the same general area at Anaheim. This year they were spread out over many buildings and on various floors so they were hard to find. Address: Cornbelt Foods, Inc., P.O. Box 218, Marshall, Minnesota 56258. Phone: 507-537-1406.

7408. **Product Name:** Harmony Farms Non-Dairy Light Soy Drink (Aseptic Pack) [Original, Vanilla, Enriched Original, or Enriched Vanilla].
Manufacturer's Name: American Natural Snacks

(Marketer-Distributor).
Manufacturer's Address: P.O. Box 1067, St. Augustine, FL 32085.
Date of Introduction: 1998. March.
Wt/Vol., Packaging, Price: 1 quart (32 oz) Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (8½ by 11 inch, color) sent by Patricia Smith from Natural Products Expo West. 2002. March. "Soy it isn't soy." A full-height photo shows a black and white cow. A color photo across the bottom of the cow photo shows the four soymilk products. On the rear is packaging information but no ingredients and no nutritional facts.

Ad (full page, color) in *Natural Foods Merchandiser.* 1998. Sept. p. 105. "The girls have just about had it." A large photo shows the face of a black and white cow. "Take Harmony Farms Soy Drinks. They're the only soy drinks in the world made from The Better Bean–a patented, hybrid soybean that contains 90% less stachyose and raffinose than other soybeans. These are the two sugars found in soybeans that make other soy drinks difficult to digest. Our original and vanilla flavor Soy Drinks are perfect for drinking icy-cold, pouring over a bowl of fruit and cereal, or whipping up in a refreshing fruit smoothie."

7409. Franke, Adrian A.; Custer, L.J.; Wang, W.; Shi, C.Y. 1998. HPLC analysis of isoflavonoids and other phenolic agents from foods and from human fluids. *Proceedings of the Society for Experimental Biology and Medicine* [*PSEBM*] 217(3):263-73. March. [58 ref]
• ***Summary:*** Discusses: Soybeans (raw, dry, Singapore), soybeans (roasted), soybeans (toasted), green soybean pods, soy protein, soybean sprouts, tofu (raw), tofu (fermented, Singapore), curd (fermented), soy milk, soy cheese, Foo Jook (skimmed, dry supernatant [dried yuba sticks], raw, Singapore), Foo Jook (cooked), Tau Kwa, raw (pressed tofu, raw, Singapore), Tau Pok, raw (fried Tau Kwa, Singapore), bean curd (fried). Daidzein, genistein, glycitein. Address: 1-2. Cancer Research Center of Hawaii, 1236 Lauhala St., Honolulu, Hawaii 96813; 3-4. Dep. of Community, Occupational, and Family Medicine, National Univ. of Singapore, Singapore 0511, Republic of Singapore.

7410. **Product Name:** Soymilk [Banana, Chocolate, Strawberry, Plain].
Foreign Name: Leche de Soya.
Manufacturer's Name: Ideal Ltda.
Manufacturer's Address: Industrial Park PI-29-B, P.O. Box 629, Santa Cruz, Bolivia. Phone: +591 708-15100 or +591 3-533-546 or.
Date of Introduction: 1998. March.
Ingredients: Soybeans, water, sugar, flavorings.
Wt/Vol., Packaging, Price: 1 liter and 200 ml plastic bags.
New Product–Documentation: Talk with Ted Nordquist. 2002. Nov. 21. This company was founded by Mario Bonino, with help from his friend Rene Mouton-Bluys in Cochabamba, Bolivia. Talk with Mario Bonino. He started making soymilk in March 1998 in the three flavors plus Plain shown above. He packages his soymilk in 1 liter and 200 ml polyethylene plastic pouches using a completely automated form-fill-seal machine (for liquids) made in the USA ($33,000), Argentina, and China ($5,000).

At the beginning his business did well, but it is not doing well now because of fierce competition from two main local sources: (1) A two women's cooperatives to which the government gave a free building plus operating capital. One sells cow's milk flavored with chocolate and sugar at low prices; the other sells soymilk. (2) A dairy company, owned by a giant international dairy company, which sells a soft drink that contains 10% yogurt. They have advertised this heavily and consumers don't realize that it contains only 10% yogurt. Mario makes about 2,000 kg of soymilk per batch, but he only makes it several times a week. He also makes a dairy yogurt-based drink. He has no plans to make soy yogurt since there is too much competition from dairy yogurt. His plan is to try to educate institutions and consumers about the health benefits of soy. His main source of information is the website revival.com. He believes Revival is the biggest soy company in the USA.
*

7411. SunRich Inc. 1998. SunRich: Products for the 21st century (Leaflet). Hope, Minnesota. 3 panels each side. Each panel: 22 x 9 cm.
• ***Summary:*** The color photo on the front panel shows a field of mature soybeans with a farm and tall silo in the background. "SunRich Inc. was founded in 1978 as Minnesota Waxy Corn Growers for the purpose of marketing waxy corn. Business diversification and expansion of core markets prompted a name change to SunRich Inc. The major focus of SunRich's business remains bringing together growers and suppliers of specialty grains and ingredients for mutually beneficial business relationships."

"SunRich products include: Soymilk, soymilk powder, spray dried tofu, corn grits, corn cones, corn flower, corn masa, maltodextrins, corn syrup solids, sweet beans (green vegetable soybeans), vegetable powders."

"Our goal is to provide the best natural and organically grown and processed food ingredients. SunRich: the ultimate in value-added commodities." Color photos show: (1) The sun setting behind a combine. (2) A low aerial view of the company's facilities, mainly silos. Address: P.O. Box 128, Hope, Minnesota 56046. Phone: 1-800-342-6976.

7412. Wildwood Natural Foods. 1998. Trusted quality since 1980 (Leaflet). Santa Cruz, California. 3 panels each side. Each panel: 22 x 9 cm.

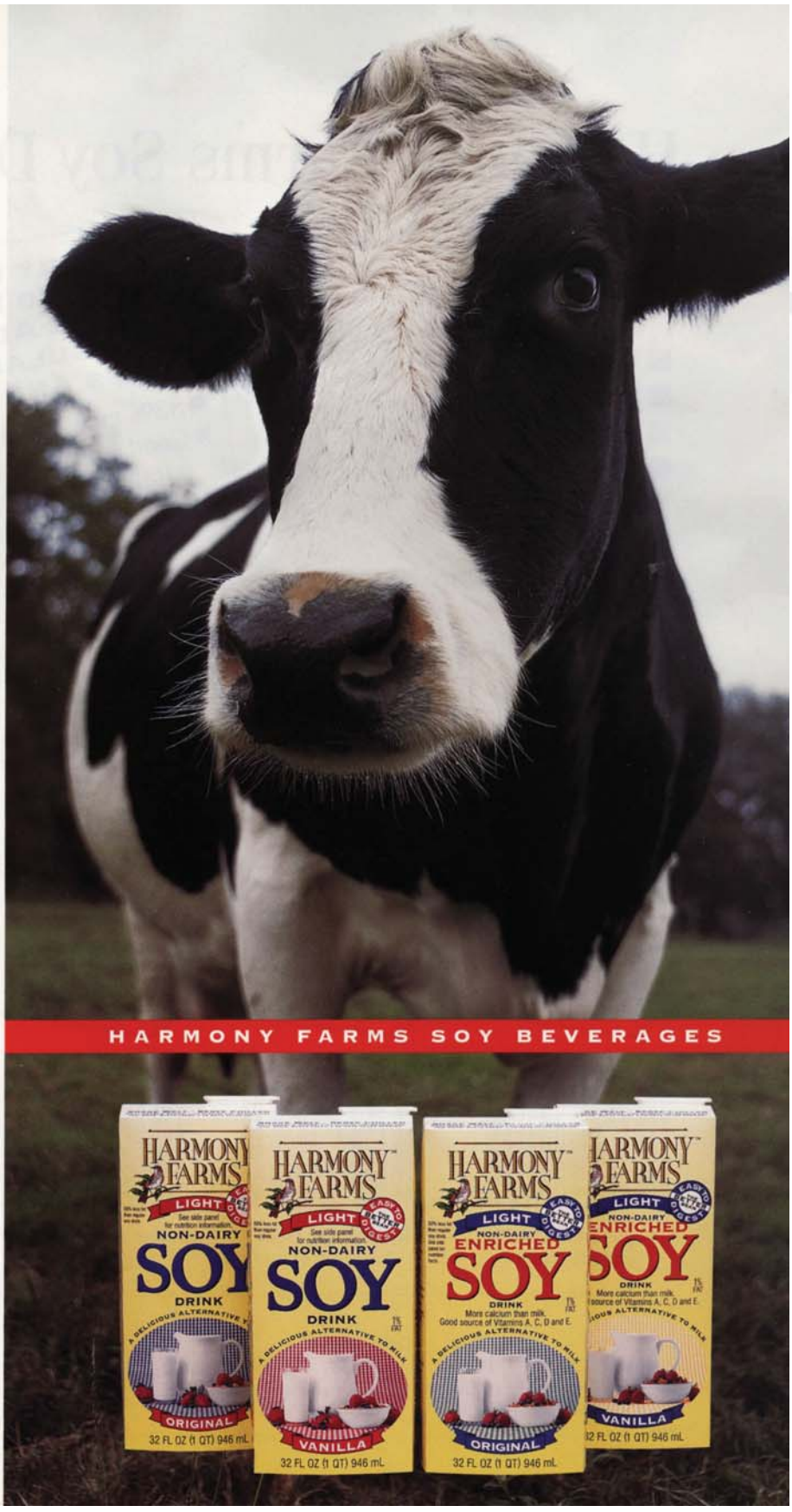
Say it isn't soy!

The girls are in a sour mood again. And it's all because the folks at Harmony Farms have discovered a Better Bean.

The Better Bean is what makes new Harmony Farms Soy Drink a better choice. Not only does the Better Bean lend Harmony Farms Soy Drink its fresh, delicious flavor—it also makes it easier to digest.

Harmony Farms' Better Bean contains 90% less stachyose and raffinose than ordinary soybeans. Those are the two sugars found in soybeans that some people find difficult to digest. With Harmony Farms Soy Drink, you can enjoy all the health benefits of nutritious soy—without the discomfort.

Order new Harmony Farms Soy Drink today—regular and enriched, in both original and vanilla flavors. Lactose-free, cholesterol-free, and easy to digest, it's the cream of the soy beverage crop. And that's no bull.



• ***Summary:*** Leaflet (green, yellow and red on beige) sent by Patricia Smith from Natural Products Expo West. 1998. March. On the front panel is a square illustration of green trees growing beside a lake and reflected in its placid water. "Responding to the community's need for fresh, organic, vegetable-based protein."

The inside 3 pages: Across the bottom half is the green silhouette of trees. "Wildwood roots (founded in 1980). California's soy dairy. Tofu: What is that stuff?, get your money's worth, know your tofu, Great, but what do I do with it? Fat from soy oil: Isn't tofu high in fat? Nutritional info for Nigari firm style tofu vs. Calcium fortified tofu, medium style.

Panel 5: Two recipes. Rear panel: Partial list of Wildwood products: Organic firm tofu. Organic medium low-fat tofu. Organic soymilk (plain or honey vanilla). [Tofu] Fillets and cutlets: Baked, smoked, or agé style, Teriyaki, Thai, Szechwan or Hawaiian flavors. Vegie burgers: Original, Mexican, or Wild West (Southwestern style). Tofu salads: Dill, Mediterranean, Antipasto, or Firenze. Mid-East Hummus. Address: 1560 Mansfield Ave., Santa Cruz, California 95062; 135 Bolinas Rd., Fairfax, CA 94930. Phone: 800-499-TOFU.

7413. Murphy, Patricia A. 1998. Re: Isoflavones in soy-based infant formulas. Letter to Dr. Irvin E. Liener, Editor, Journal of Agricultural and Food Chemistry, Univ. of Minnesota, Dep. of Biochemistry. 1479 Gortner Ave., St. Paul, MN 55108, April 3. 2 p. Typed, with signature on letterhead. [3 ref]

• ***Summary:*** In May 1997 a meeting was held at the National Institutes of Health (NIH) titled "Significance of phytoestrogens in infant soy formulas." It was called by Dr. Ephraim Levin (National Institute of Child Health and Development) and chaired by Dr. Frederick Naftolin (Yale Univ. [New Haven, Connecticut]). Dr. Patricia Murphy was invited to present a summary of what is known about the levels of isoflavones in soy-based infant formula. Dr. Samuel Fomon, internationally recognized infant specialist, presented data showing that about 25% of the U.S. infant formula is soy based, in contrast to only 8% in Europe. Address: Prof., Food Science & Human Nutrition, Iowa State Univ., Ames, IA 50011.

7414. Iderabdullah, Bisi. 1998. History of work with soybeans and soyfoods in Liberia. Part II (Interview). *SoyaScan Notes.* April 6. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In December 1989 a bloody civil war began in Liberia in the countryside. By July 1990 it had reached Monrovia. Many orphaned and abandoned children were brought to the Mission, so an orphanage and clinic sprang into existence at a house next to their house, on an adjacent compound, and was soon caring for about 30 kids. Bisi and Mahmoud paid all expenses of the orphanage, clinic, and Mission from their personal funds.

Bisi and her family returned to the USA after a cease-fire in late November 1990 and tried to solicit support to help feed the many starving people in Liberia. She called CARE and many other organizations, but with little results. One day someone asked her: "What is the name of your organization?" She had previously lost their fifth child, named Imani, so she said spontaneously "Imani House." The name stuck. Then she called The Farm–getting the address from Ina Mae's book. She was told that they had a philanthropic arm named Plenty, but they no longer supplied relief foods. Then she called Peter Schweitzer's office in California to ask him what they could do to help–the situation was very urgent and the world wasn't paying much attention. They got to know one another over the phone and Peter said that Plenty would choose Imani House as a group that they would work with. When they talked about growing soybeans, Bisi thought it was "a little bit way out for Liberia."

Bisi and Chuck Haren (who had been sent by Plenty) went together to the International Institute of Tropical Agriculture (IITA) in Ibadan, Nigeria. Chuck had already taken their training program, but he wanted to introduce Bisi to it. IITA people showed them how to grow soybeans, gave them soybean varieties especially adapted to West Africa, demonstrated simple machinery for pressing oil from the soybeans, introduced them to the *bumbum* leaves they use with lemon as a coagulant in the lab to make tofu, prepared many different dishes from soybeans, and demonstrated different quick and simple ways of making soymilk for use as a beverage. They spent a lot of time with Dr. Sidi Osho, an expert in soybean utilization. Bisi and Chuck were given a tour of local businesses producing soyfoods, including one that made Soyvita soymilk in Lagos. One chemist had turned his distillery into a soymilk factory. In the market, they saw soybeans being fermented to make dawa-dawa, a seasoning. After seeing all these things at IITA, Bisi's skepticism about the potential of soyfoods in Liberia was largely overcome. She and Chuck returned to Liberia.

Returning to Liberia, Bisi and Mahmoud changed the name of their African Islamic Mission to "Imani House;" they didn't want to be killed because they were Muslims–which happened a lot in Liberia during the war. Their original mission, to teach agriculture and education, remained unchanged.

Originally Bisi had assumed that the agricultural work of Imani House would have to be done in the countryside, outside of Monrovia. But by 1990 she realized that urban agriculture was a real possibility.

Bisi and Chuck first planted soybeans in Liberia in about 1991. The seed came from two sources: They brought back about 6 kg of specially adapted seed from IITA, and the rest they bought in a local market in Liberia; the latter soybeans

had come in to Liberia as a relief food and the people were rejecting them (they took too long to cook; the local people thought they were split peas), so they were selling at a very low price. They supervised the planting of these soybeans at 8 different sites, in small plots totaling about 1 acre, in and around Monrovia–no further than 25 miles away. The United Nations provided an agronomist (Mr. Sha of UNDP), who planted some of the seeds incorrectly; they were viable and they germinated. Imani House had 5 acres of land on which they planted one small plot. None of the 8 plots grew well. The war was going on and people grew the soybeans on poor soil that they would not ordinarily use. The plots did not yield enough soybeans to eat, but they did yield enough seeds to replant. The seeds from IITA did the best, but they never gave good yields. The bean beetle became the biggest plague, eating through the leaves. Bisi used compost and many organic methods. The farmers wanted to spray a lot and use chemical fertilizers. In about 1994 they had a very good yield one year at one site in a back-yard garden on virgin soil. The soybean plants were lush and the beans were large. There were big problems with seed storage, since there were heavy rains 6 months of the year.

Throughout this time, Bisi was doing trials with utilization. They would take a few pounds of soybeans to an orphanage and teach them how to make and use soymilk and okara fritters (seasoned patties of okara mixed with flour then, fried). "They loved these foods." They had a big demonstration for home economists from the Ministry of Agriculture, who work with the school feeding program. They developed a sheet of nutritional information on soybeans and soymilk (comparing soymilk with cow's milk) which they passed out to these nutritionists.

From September to December 1995, with help from the Trull Foundation of Texas, Plenty was able to send a soy/agricultural technician from Belize to Liberia to help Imani House with its soybean project. His name was Ignatius ("Gomier") Longville. A Caribbean native and a Rastafarian (Rasta = "Roots") farmer, he was skilled in ways of growing food under adverse conditions using the natural rhythms and resources. He had worked with Plenty on the island of St. Lucia from 1984 to 1990. Now he volunteered his services, providing hands-on assistance to help Imani House and the farming groups with which they were working in Liberia to grow soybeans and other crops in nutrient-deficient soils. He introduced organic methods of pest management and demonstrated composting techniques. They used a Rototiller to open the soil and control the bean beetle, and added small amounts of chemical fertilizers. The result was the most successful crop of soybeans ever. The Liberian farmers were impressed.

In October 1995 Imani House won first prize for food processing at a World Food Day Exposition in Monrovia. Gomier and the Imani House staff conducted soyfood demonstrations for 10,000 people. "We couldn't make food fast enough. We made pies, soymilk (mixed with cocoa), soy fritters, soynuts, and tofu on site. We just didn't have enough. It was amazing." They had plenty of soybeans (300-400 lb), which they bought from Ghana, with help from the Ghanaian Ministry of Agriculture.

Building on these successes, Bisi got FAO to agree to bring in a container of soybeans for planting and to provide a consultant (Delvin Walker) to help Imani House. Walker was an agronomist; before the war he had been a teacher of agriculture at Cuttington University, the Christian university in Liberia. Walker was already a member of the Imani House board of directors; he went with Bisi to talk with FAO and WFP (the World Food Program). They also got the World Food Program to agree to bring in soybeans for utilization. The Liberian government had agreed to give Imani House a memorandum of understanding that they would be the soybean growers and demonstrators in Liberia. The head of the Ministry of Agriculture believed that this agreement would help Imani House to get the funding that they needed so much. Work was underway using soybeans and cassavas to make an enriched *gari.*

Then in April 1996 factional fighting flared up again, devastating Monrovia. The civil war was on again. Bisi, too was devastated–just as her soybean program was finally about to take off. "Armed robbers took our Rototiller, all of our farming equipment. We lost everything. We left Liberia and stayed in Senegal for four months, waiting to go back. But it never got better." Then they went to Gambia. In English-speaking Gambia they were invited by a leading citizen to stay and work to introduce soybeans.

The civil war is now officially over, and Bisi is working to raise funds in the USA which are used to support her Liberian program. She is also trying to raise funds for the soybean, agricultural, and literacy programs. The clinic has been rebuilt and literacy programs have been re-started in English and Bassa. Benjamin Grant is administering the programs. The war has cooled down but anyone who buys equipment is at risk of visits from armed robbers. Because she is now in New York, Bisi is also developing Imani House's local program. She hopes eventually to return to Liberia. "The problem now is not to import soybean to Liberia but to grow it. We see it as a way of solving major problems of malnutrition in Liberia." Address: Director, Imani House, 76A Fifth Ave., Brooklyn, New York 11217. Phone: (718) 638-2059.

7415. Fischer, Bruno. 1998. Trip to Cuba. Impressions of their soy products and their fees to sell equipment and a license (Interview). *SoyaScan Notes.* April 7. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Bruno recently returned from a trip to Cuba. He wanted to sample their various soy-based dairy alternatives and (if he liked them) to enquire about buying a soymilk system from them. His discussions were with Alvaro Garcia.

He found the products (soymilk and soy yogurt) were not up to his expectations and the prices were much too high. The taste of the flavored products was rated excellent but the taste of the unflavored and unsweetened product was rated poor. Thus, the quality appears to come from the flavoring. The biggest problem was the grainy mouthfeel. Bruno thinks they do not remove the okara from their soymilk.

The Cubans are charging the following rates for a soymilk system that makes 4,000 liters/hour and is not automated (i.e. has fairly high labor requirements). $250,000 for the machinery. Roughly $125,000 to install it in the host country and get it up and running. US$0.10 per liter of finished product as a licensing fee. Address: Im Auel 88, 53783 Aetorf, Germany. Phone: 49-2243-4021.

7416. Seemo (H. Shapira); Kairava (J. Spaelstra). 1998. Re: Exciting new developments at Dakini Health Foods Pvt. Ltd. in Pune/Puna, India. Letter (fax) to William Shurtleff at Soyfoods Center, April 10. 1 p. Typed, without signature on letterhead.

• ***Summary:*** "Hello Bill. Greetings from hot, hot India, and some gossips too. 3 months ago we managed to close a deal on a 17,000 square foot plot about 7-8 km from our present place.

"We dug a bore well and found a good spring!!! And yesterday we got our electricity connection–a Big story in India.

"We are trying now for building permits and planning to have 5,000 square feet ready by next year some time. About half of the space will be for our soy project–tofu, soy milk, soyogurt drink, tempeh–and hopefully more. We can get nearly all the equipment built locally–steam boiler, cooking pots, refrigeration, etc. We also want to fabricate a pressure cooker, an okara press, etc.

"For grinders some hammermills are available but I think we prefer to get a sanitary stone grinder so please if you have the address of some manufacturer / stocklist of these. Models sold without motors are best. We will be happy to know as this type of equipment has never evolved in India and importing is the only solution. Taiwan, Japan, or the U.S. are all OK. We may possibly buy a small one for hummus production as well.

"All the best, with love. Seemo & Kairava.

P.S. Tempeh production is running smoothly, 60-80 kg per month, 7-10 per batch for now. Address: Dakini Health Foods Pvt. Ltd., S.N. 33, Bhoiwasti, Keshavnagar, Mundhwa, Pune / Puna 411 036, India. Phone: +91 20-613985.

7417. James, Richard F. 1998. Work to expose the dangers of toxic substances in soybeans. Part II (Interview). *SoyaScan Notes.* April 18. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued. Originally the scientists looked at this soy matter; Richard was not a scientist, he was a check writer, because he and his wife saw something wrong that demanded a scientific explanation. Richard didn't even hire the scientists; they were commissioned originally by the health food company. Rob Shaw, the technical manager who had experience in the pharmaceutical industry, talked to everybody he knew to find out who was the best analytical chemist in New Zealand. They picked Allan Aspell, who owned his own consulting firm. First, Rob Shaw commissioned them to analyze the literature. When that was done, Rob told Richard that he was already convinced there was a problem with soy. Richard replied that he needed a toxicity report on the quantities toxins found in soy. So from the literature they had discovered, they analyzed for genistein, daidzein, etc. including from infant formulas. The soy industry has tried to make it appear–all over the Internet, etc.–that this was just one crazy bird breeder who fed raw soy flour to his birds. It wasn't! It was a crazy bird breeder who had fed soy infant formula to his children in 1969 and 1970. It was Isomil and the James' family was living in Walnut Creek at the time. Looking back, they saw some of the same effects in the early infancy of their children that they saw in the birds 20 years later. One of the really characteristic ones is a high level of hyperactivity. The estrogens wind the brain cells and central nervous system up. We had to move out of the 20th floor of the Golden Gateway Apartments in San Francisco, California, break the lease, which cost a pretty penny, because our son was so hyperactive we were afraid he was going to get out of the apartment and parachute 200 feet to the ground without a parachute. You notice it at about age 6-7 when they look like they are autistic or have attention deficit disorder. Those are subtle things; yet Richard could make a list of about nine things that he saw in the birds that he had seen in the kids. In early 1995 he made such a list and gave it to Dan Shehan and Kevin Medlock. After the short term problems you begin to see the serious deficiencies that reproductive systems and immune systems as they are supposed to be developing properly in later childhood. They have some "awful" anecdotal evidence of kids that were on soy formula for 20-21 months.

Richard will send Shurtleff the first page of about 20 of the most important documents.

In April 1994 the first major report, titled *The Toxicity of Soybeans and Their Related Products. Vol. 1. Scientific Reports, Laboratory Analyses, Field Observations,* was compiled and published by Valerie and Richard James. To get it reviewed around the world cost the two about $100,000 of their own money–just to get started. They thought that if they handed this peer-reviewed report to their own [New Zealand] government, they would act. Since, they have spent an additional $250,000 protecting and educating themselves. For example, soy infant formula contains about 150 times more carcinogens than is permitted under U.S. law–and

most of the soy milks on the market contain about 50 times more. It has been general knowledge for about 50 years that these phytoestrogens are carcinogens–put nobody had ever gone and proved it. Even the toxicologist at the local medical school, who did an independent peer review of the 1994 report, wrote an essay for one of the local newspapers about the carcinogenic effects. Unfortunately it was never published die to pressure from the soy industry. Address: 1868 Whangarei Heads Road, Rural Delivery 4, Whangarei. Phone: +64 9 434 0564.

7418. **Product Name:** Veggie Spread: Nature's Alternative to Butter or Margarine. Renamed "Veggie Margarine: Nature's Alternative to Butter" by 31 May 1998.
Manufacturer's Name: Galaxy Foods.
Manufacturer's Address: 2441 Viscount Row, Orlando, FL 32809. Phone: 800-441-9419.
Date of Introduction: 1998. April.
Ingredients: Soy beverage (filtered water, organic tofu*, isolated soy protein), hydrogenated canola vegetable oil, casein (a dried skim milk protein), maltodextrins, organic food acidulants (lactic and citric acids), tricalcium and potassium phosphates, sea salt, carrageenan (sea weed gum), natural vegetetable locust bean gum, natural flavors, annatto and turmeric colors, vitamin E (antioxidant), vitamin A palmitate. *Tofu is made with organically grown and processed soybeans in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 8 oz. white plastic tub. Retails for $2.19 at Safeway supermarket (1997/05, Lafayette, California).
How Stored: Refrigerated.
New Product–Documentation: Product with Label purchased at Safeway supermarket in Lafayette, California. 1998. April 12. Sold refrigerated from a large display next to the produce section. Tub is 3.75 inches in diameter and 2.375 inches high. Label on top of tub: 3 inches diameter. Yellow, white, red, and black on green. "New! Made with organic tofu." Label on side: Fat per serving: This product: 3 gm. Margarine or butter: 11 gm. Website: www.galaxyfoods.com. Soyfoods Center product evaluation: What is it? This nondescript product/spread somewhat resembles a soft tub margarine, but it doesn't taste very good when used in place of butter or margarine–as on toast. The flavor is unusual and somewhat rancid. The package design is excellent. If it contains any tofu, that must be so-called "spray-dried tofu," but it is not labeled as such. Price: $2.19–Very expensive.

Product with Label purchased at Safeway supermarket in Lafayette, California. 1998. May 31. The product is now named "Veggie Margarine: Nature's Alternative to Butter," however it appears to be the same product described above. The price is still $2.19. One ingredient has changed: Hydrogenated canola vegetable oil has been changed to "unhydrogenated canola vegetable oil."

7419. Haedrich, Ken. 1998. Feeding the healthy vegetarian family. New York, Toronto, London, Sydney, and Auckland: Bantam Books. 305 p. Index. 24 cm.
• ***Summary:*** A lovely vegetarian cookbook. Soy-related recipes include: Mom's hot soy milk (p. 13). Tempeh barbecue, avocado, and Monterey Jack burritos (p. 79). Oriental tofu Reuben (p. 80-81). Tempeh barbecued sandwich topped with coleslaw (p. 82). Baked or grilled vegetable packets (with tempeh, p. 129-30). Spaghetti with tempeh tomato sauce (p. 148-49). Tempeh, onion, and cheese enchiladas (p. 181-82).

We especially like p. 292, titled "Mindful eating, smiling grace." Ken Haedrich is a winner of the Julia Child Cookbook Award. Address: Rural New Hampshire.

7420. **Product Name:** Better than Milk–Soy, and Better than Milk–Rice.
Manufacturer's Name: Hearty Life. Div. of Sovex Natural Foods, Inc.
Manufacturer's Address: 9104 Apison Pike, Box 310, Collegedale, TN 37315. Phone: 800-227-2320.
Date of Introduction: 1998. April.
New Product–Documentation: Ad (3-page color) in Vegetarian Times. 1998. May. p. 11-13. "The comparison of milk substitutes requires a sharpened number two pencil." "For a free sample, call 1-800-227-2320, ext. 302.

Talk with Jay Jones of Hearty Life Sales Dept. 1998. May 11. Hearty Life is a new division of Sovex Natural Foods; it was created in March 1998 at Anaheim as the natural foods line of Sovex. The old name of the soy product used to be "Better than Milk?" In April 1998 it was changed to "Better than Milk–Soy." The Rice product was introduced at the same time. Ad in Vegetarian Times. 1999. July. p. 77. "Better Than Milk."

7421. Ryan, Nancy Ross. 1998. Oh, boy! soy! Top chefs celebrate the diversity of soyfoods with 8 show-stopping dishes. *Vegetarian Times* No. 248. April. p. 36-43.
• ***Summary:*** Chefs from stylish restaurants sing the praises of tofu and offer their favorite recipes: Jump start smoothie (with soymilk). Veggie Peking 'Duck' (with frozen, dried sheets of yuba). Miso risotto. Curried tofu and sweet potato wakaya. Barbecued tofu. Sweet-and-sour tempeh with cucumber and cauliflower. Golden-fried bean curd with tomatoes. Sauteed eggplant with miso sauce. Note: The word "soyfoods" is misspelled as "soy foods" (two words) throughout this article. Address: Chicago.

7422. Sass, Lorna J. 1998. The new soy cookbook: Tempting recipes for tofu, tempeh, soybeans & soymilk. San Francisco, California: Chronicle Books. 120 p. Illust. (25 color photos by Jonelle Weaver). Index. 21 x 23 cm.
• ***Summary:*** Contents: Introduction–The soy of cooking

(descriptions of soybeans, black soybeans, soymilk, tofu, tempeh, miso, soy sauce). Appetizers and soups. Entrées. Soy on the side: Vegetables and grains; Salads, slaws and dressings; Scones and a few desserts. Mail order sources. Table of equivalents. A black-and-white photo shows the author. Note: This is not a vegetarian cookbook. Ingredients include swordfish, shrimps, mussels, codfish, clam chowder, etc.

Letter (fax) from then talk with Lorna Sass. 1996. Sept. 8. This trade paperback book, with many full-page color photos, is scheduled to be published in the spring of 1998. Chronicle Books is now publishing a series of books titled *The Vegetarian Table,* with each book featuring the vegetarian cookery of a different country. Address: 46 West 83rd St., New York City, NY 10024. Phone: 212-799-1085.

7423. Sass, Lorna J. 1998. Sensational soyfoods. *Delicious!* (*Boulder, Colorado*) 14(4):50-52, 54-55. April.
• ***Summary:*** Contains recipes using tempeh, silken tofu, black soybeans, and soymilk–excerpted with permission from her latest book, *The New Soy Cookbook.*

Note: The Delicious! website address is written at the bottom of every other page. Readers are invited to visit this website at 7 p.m. Mountain Standard Time for an online chat with soyfoods expert Lorna Sass. Address: Culinary historian, New York.

7424. Soyfoods Association of America. 1998. Soyfoods once a day for life! (Special advertising section). *Vegetarian Times.* April. 12-page color insert after p. 58.
• ***Summary:*** Contains large color ads by Nasoya (tofu and TofuMate), Morningstar Farms (Chik Nuggets), Eden Foods (organic black soy beans) Vitasoy (creamy original natural soy drink), Westbrae (Westsoy soymilks), Westbrae (Vigoraid nutritional drink), Sno Pac (frozen Sweet Beans–organic green vegetable soybeans), and GeniSoy (soy protein bars). On the rear cover are additional small ads (each with a logo) for Lightlife Foods, Lisanatti, Monsanto, Soyco Foods–Div. of Galaxy Foods Co., Soyfoods Association of North America, and United Soybean Board.

Interspersed with the ads is advertorial text and "Soy facts." The text on page 1 begins: "Miracle food. Health insurance in a pod. Nutritional powerhouse. The bean supreme. Nutritionists, physicians, researchers, chefs, and food experts of all kinds are raving about the healthfulness and great taste of soyfoods, and it's no wonder; soy truly is a nutritional and culinary gift from nature.

"Soyfoods are delicious, convenient, and versatile. At breakfast, soy can make an appearance in the form of soymilk, scrambled tofu 'eggs,' or soy 'sausages.' A soy shake or veggie burger makes a great lunch. Try a tempeh stir-fry, or perhaps a creamy tofu dessert.

"So dig in... with the huge variety of soyfoods available at your local natural foods store, it's easy to get your daily intake of soy, and reap the many benefits of the bean supreme."

The inner contents: Food as medicine. Heart health. Fighting cancer. Menopause? What menopause? Strawberry smoothie. Protein punch.

Soy cooking tips (p. 4): Easy ways to incorporate soy into your baking: Use soy flour in your baking. Be aware that soy flour contains no gluten, and therefore yeast breads will not rise without the addition of some gluten-containing flour. About ¼ cup of soy flour per cup of unbleached white flour is recommended for breads, pastas, and pastries. In place of olive oil, try adding a few ounces of Nasoya Silken Tofu and a dash of lemon juice to mashed potatoes. Try mashing miso into your root vegetables in place of butter. When adding miso to dishes, add roughly 1 tablespoon per four servings. Add GeniSoy Natural Vanilla Soy Powder to your baked goods such as muffins or pancakes. Buy Eden Organic Soybeans in a can and use them the same way you would any other canned bean: over rice, with pasta, in stir-frys, etc.

It's not only what you eat; its also what you don't eat. Making healthy eating taste great. Soy fact: soybeans were traditionally considered one of five sacred crops in China.

No time to cook? Try these quick ways of getting soy in your diet.

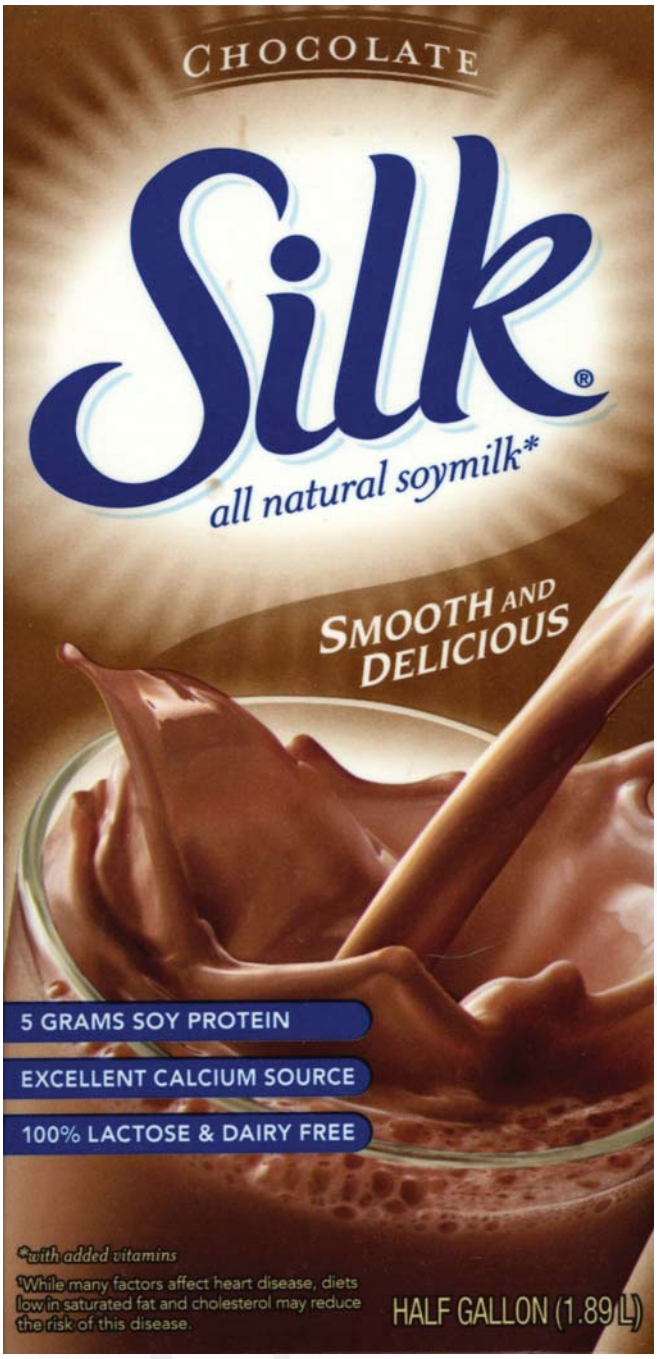
Strong bones... a matter of calcium retention. Miso.

Soy fact: there is no word for "hot flash" in Japan. Soy beverage.

Miraculous tofu. So soy convenient. Soy fact: Western culture discovered tempeh through the Dutch colonization of Indonesia. Soy fact: tofu was unknown to most people in the United States until Chinese immigrants came to this country in the 1800's. Tofu.

Tempeh. By the handful. Soy fact: miso was developed in China about 2,500 years ago. Where to find it. Address: Washington, DC.

7425. **Product Name:** Silk (Soymilk Sold Refrigerated in Half-Gallon Pure-Pak / Gable Top Cartons) [Chocolate].
Manufacturer's Name: White Wave, Inc. (Product Developer-Distributor).
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 1998. April.
Ingredients: May 2000: Filtered water, organic whole soybeans*, organic raw cane crystals*, cocoa (Dutch process), calcium carbonate, natural vanilla flavor, sea salt, carrageenan, vitamin A palmitate, vitamin D-2, vitamin D-3, riboflavin (vitamin B-2), vitamin B-12. * = Grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: Quart Pure-Pak Carton.
How Stored: Refrigerated.
Nutrition: Per 1 cup (240 ml): Calories 120, calories from fat 20, total fat 2.5 gm (4% daily value; saturated fat 0 gm),



cholesterol 0 mg, sodium 95 mg (4%), total carbohydrate 18 gm (dietary fiber 0 gm, sugars 14 gm), protein 5 gm. Vitamin A 10%, calcium 30%, vitamin D 30%, vitamin B-12 50%, vitamin C 0%, iron 2%, riboflavin 30%. Percent daily values are based on a 2,000 calorie diet.

New Product–Documentation: Carton with Label sent by James Terman of White Wave. 2000. May 11. 2.75 by 2.75 by 8¼ inches. Tetra Rex package. "Organic–Third party certified. Calcium enriched. Low 1% fat & vitamin enriched." Talk with James Terman of White Wave. 2001. May 29. Silk chocolate in half gallons was introduced in April 1998.

Product with Label purchased in the dairy case at Safeway supermarket in Lafayette, California. 2010. Dec. 18. One half gallon retails for $3.49. White Wave is now a brand owned by Dean Foods. Soyinfo Center product evaluation. Taste, texture and package design: All excellent. One of the best soy products ever made in the USA.

7426. Gonzalez-Watanabe, Yvonne. 1998. Introducing tofu and soymilk to Costa Rica. Update on soyfoods work in the Los Angeles area (Interview). *SoyaScan Notes.* May 4. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Yvonne just returned from a month (March 29 to April 24) in her native country of Costa Rica, where she was teaching about and studying tofu and soymilk. She gave 8 classes in people's homes, where she taught them how to make and use soymilk and tofu; about 30-40 people attended, and about half the people attended more than one class. During these classes she developed a recipe for tofu seviché (pronounced say-VEE-chay), which is traditionally made with marinated raw fish but occasionally with green plantain or avocadoes substituted for the fish. Yvonne used tofu in place of the fish, and it was a big hit.

Vegetarianism is now quite popular in San Jose, the capital of Costa Rica, but it goes under the name of macrobiotics. There are a number of "macrobiotic" restaurants in the capital; all serve only vegetarian food.

When Yvonne tried to interview the one existing Chinese-run tofu company, they were very uncooperative. It seemed like they might be going out of business because tofu is now being made on a small scale in many other places. Yohan, the big chain of Japanese-run food stores, now makes fresh tofu each day in the store. Many small Chinese food markets and restaurants also make their own tofu. Kikkoman Tofu, sold in aseptic packages, is fairly widely available.

Yvonne's booth and tofu recipe brochure for the LA Tofu Festival are progressing nicely. Margaret Endo has found advertisers for the booklet, which will enable Yvonne to expand its size. She has also found a Costa Rican celebrity to be the host at her booth–Lily Melgar, a well-known actress and friend of her cousin. Yvonne went to Lily's home and prepared her favorite tofu recipes, which Lily liked very much.

Update: Talk with Yvonne. 1998. July 8. The Southern California Gas Co. will be sponsoring Yvonne's booth at the LA Tofu Fair–which is now set for Saturday and Sunday, August 15-16. They will pay for all the bands, the music, and a Spanish-language flyer–largely because they are interested in reaching the Hispanic population in the Los Angeles area. Yvonne has been meeting a large number of people who are interested in tofu–some of them local celebrities. One Puerto Rican lady who is a musician, goes by the name "La India." Ricky Martin from Mexico is a pop music star. Yvonne has cooked Hispanic vegan tofu recipes for both of them.

Update: Talk with Yvonne. 1998 Dec. 10. She is now the guest chef on a TV show in Los Angeles (KCET–Channel 52) twice a month teaching cooking–vegetarian and soyfoods. She receives no pay for this, but it is very interesting and good exposure. Address: 6029 LaPrada St., Los Angeles, California 90042. Phone: 213-254-1712.

7427. Demos, Steve. 1998. Thoughts on making good-tasting soymilk (Interview). *SoyaScan Notes.* May 13. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The process of making soymilk can be divided into two parts: Making the base, then formulating it before packaging. Many years of experience have taught Steve that the second part of the process is more important than the first in making top-quality soymilk. Ted Nordquist's expertise is in formulating the product more than in making the base. Most of the literature is focused on the first part, making the soymilk or base. Steve has also found that making soymilk is easier and takes much less space than making tofu.

The equipment traditionally used by Ted Nordquist traces its origins to Alfa-Laval. It was "an Alfa-Laval knockoff." Steve does not yet manufacture his own base concentrate; he buys it from several suppliers, formulates it himself, then uses dairies to pack it into ESL cartons. He is now planning to buy a standard soymilk system from one of the major equipment sellers–probably from the Tetra-Laval Group. A soymilk system–without the building, refrigeration, steam system, or packaging equipment–will cost him about $1.2 million. Steve no longer feels a need to economize. His main goal is to get a strong, reliable system from a dependable supplier, and to have it running in less than 1 year inside one of Steve's existing buildings in Boulder. It will take up very little space–something like 500-600 square feet of floor space. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

7428. Fischer, Bruno. 1998. The natural foods market vs. the Reform House market for soymilk in Germany (Interview). *SoyaScan Notes.* May 13. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Each year about 3 million liters of soymilk are sold at Reform House stores in Germany compared with about 1.2 million liters at natural food stores. Bruno Fischer's soymilk, sold in 1 liter glass bottles, has about 80% of the natural food market. Alpro controls most of the Reform House market with three different brands that it makes and packages in aseptic Tetra Brik cartons. Natural foods stores, like their American counterparts, focus on selling foods, and especially organic foods. Reform Houses, like U.S. health food stores, focus more on pills and supplements.

German dairy milk is mostly (about 80%) sold in gable-top cartons; only about 20% is sold in aseptic cartons. Address: Im Auel 88, 53783 Aetorf, Germany. Phone: 49-2243-4021.

7429. Louie, Elaine. 1998. Vegetarian that's filling. *New York Times.* May 13. p. F8.
• ***Summary:*** Julie Sahni, cookbook author and teacher, says that vegetarianism has been an inextricable part of Indian culture since about 500 B.C., when Mahavira, a Hindu philosopher, developed the concept of ahimsa, or non killing. Although meat is scarce in Indian cookery, protein is not. A recipe for Indian chickpea ragout shows this.

A recipe for Bean curd sauté, adapted from Youngin Hyun, calls for "2 pounds extra-firm or firm bean curd" [tofu]. Hyun, a Manhattan [New York City] photographer and talented home cook, says that Koreans, which also have a long and rich tradition of vegetarian cookery, have used beans as a protein source since 107 B.C. In Korea, all beans, including soybeans, are called "the meat of the soil." Koreans began making bean curd (called *du bu*) during the late Koryo Dynasty (918-1392), according to Mrs. Hyun. Today bean curd comes in two consistencies, firm or silken. The silken type can be sliced then drizzled with a mixture of soy sauce, sesame oil, vinegar, sugar, and chopped scallions. The firm kind is used in stews and sautéed dishes. In the decade after the Korean war (which ended in 1953), Koreans ate lots of bean curd as the poor country rebuilt itself.

7430. Brody, Jane. 1998. What to serve for dinner, when dinner is on Mars: Menu is vegetarian only–if you can get a table. *New York Times.* May 19. p. F1.
• ***Summary:*** At Cornell Univ., Dr. Jean Hunter and other food scientists are working to develop "tasty, appealing, nutritious dishes for consumption on the Moon, Mars, Jupiter–anywhere the astronauts might set up long-term housekeeping." The foods are made from crops that can be grown hydroponically in space. The possible foods include amazake (from rice), seitan (from wheat), soymilk and soy nog, etc.

7431. Roblin, Lynn. 1998. Asian staple soy good for you. *Toronto Star* (*Ontario, Canada*). May 20.
• ***Summary:*** Discusses the health benefits of soyfoods, which may be caused by their rich content of isoflavones, soy sterols, and soy protein. Various soyfoods are discussed: Tofu, soy beverages (brands include So Good and ProSoya So Nice), soy cheese, texturized soy protein (TSP, such as So Soya made by Bay Hill Impex Ltd. and TVP Meatfree made by Health Haven: A Vegetarian Place), tempeh, and most soy flours.

7432. Nordquist, Ted. 1998. Sanitarium Foods' So-Good soymilk now being made in Canada by Dairy World (Interview). *SoyaScan Notes.* May 28. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Sanitarium Foods is Australia's leading soymilk

manufacturer. Their flagship soymilk product, based on isolated soy protein, is named So-Good. In a joint venture between Sanitarium Foods and the Canadian company Dairy World, So-Good is now being made in Canada.

So-Good, with sales in Australia of about $70 million a year, has roughly 85% of the Australian soymilk market. Sanitarium Foods' total sales are said to be about $130 million a year. The company is also Australia's leading manufacturer of breakfast cereals, and they been very successfully in using their cereal advertisements and packaging to promote their soymilk. Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

7433. Bingham, S.A.; Atkinson, C.; Liggins, J.; Bluck, L.; Coward, A. 1998. Phyto-oestrogens: where are we now? *British J. of Nutrition* 79(5):293-406. May. [138 ref]
• ***Summary:*** A wide-ranging review of the literature which contains numerous, positive references to soybeans and soyfoods. "Of the two main classes of these weak oestrogens, the isoflavones are under intensive investigation due to their high levels in soyabean." The other class is lignans. "Like the 'anti-oestrogen' Tamoxifen, these seem to have oestrogenic effects in human subjects, in the cardiovascular system and bone." "In infants, the effects of high levels in soya milk formulas are uncertain."

"These phytochemicals are of great interest because they could explain why diets containing large amounts of plant foods are associated with lower mortality and morbidity in adult life. Vegetarians, for example, have strikingly lower overall mortality rates than omnivores (Thorogood et al. 1994)." Address: MRC [Medical Research Council] Dunn Clinical Nutrition Centre, Hills Road, Cambridge CB2 2DH, UK.

7434. Central Soya Co. 1998. The protein book: A guide to soy proteins from Central Soya. P.O. Box 1400, Fort Wayne, IN 46801-1400. 12 p. May. 30 cm.
• ***Summary:*** This full-color guide to the development and use of soy proteins is a revised and condensed edition of a booklet with the same title first published in Dec. 1989. Contents: Introduction. Soy history [filled with errors]. Soybean composition & processing. Types of soy protein: Soy flours, soy isolates, concentrates. Function in the food system: Emulsification, fat absorption, hydration, texture enhancement. Protein and human nutrition: typical analysis table, usable protein, minerals, fiber, isoflavones, cholesterol reduction. Choosing a protein for your system. Applications: Central Soya functional and textured concentrates, meat systems, seafood, dairy systems, cereal and bakery systems, protein drinks and beverage mixes, vegetarian and nutritional products. Chart of applications and products. Research and development.

The products shown in the applications chart are: Response–textured concentrate. Promine–functional concentrate. Soyarich B–enhanced functional concentrate. Soyarich I–water wash concentrate. Soyarich T–textured water wash concentrate. Promax–functional concentrate. Procin–powdered concentrate. Procon 2060–granular concentrate. Centex–textured flour. Note: Central Soya Co., Inc. is a company of Eridania Béghin-Say.

Inserts in the book from the Natural Products Expo. 1999. March. Prevastein (Natural soy isoflavones; 1 page, single sided). Technical Bulletin–Soyarich: Soy isoflavones, by George Rakes (1998 June. 1 p. front and back). Technical Bulletin–Soyarich: Soy protein concentrates (1998 May. 4 p.). Response structured soy protein (1996 Sept. 4 p.). Address: Fort Wayne, Indiana.

7435. Dorrell, Kathryn. 1998. Tastes like success–Top ten: Innovative airless cold grind technology enables IPC to produce soy beverages that consumers are drinking up. *Food in Canada.* May. p. 33. [1 ref]
• ***Summary:*** International ProSoya Corp. (IPC), based in Surrey, British Columbia, was founded in 1994 by three business partners from Saskatchewan: Dorothy Cunningham (who is currently helping to run a sister plant in Scotland), Lorne Broten (chairman and CEO), and George Conquergood (vice-president of operations). It was Conquergood who actually spearheaded the idea of commercializing the airless cold grind process developed by Raj Gupta, an Indian PhD, to feed children in Third World countries.

Conquergood first tried out the patented technology in his restaurant in Saskatoon. Noting the enthusiastic response, he decided to develop it into a separate business.

Initially, the company did not intend to make retail products. Rather, they wanted to use their patented process to produce bulk soymilk, that would be sold to food processors. This strategy changed when Jerry Duncan joined the company in 1996; today he is president and Chief Operating Officer (COO).

This year Duncan expects the company to reach sales of $18 million, up four-fold over 1997. In addition to its five flavors soy beverages, in January IPC launched a line of SoNice soy yogurts and on Feb. 1 the company's U.K. joint venture began producing soymilk. A.C. Neilsen upped its North American growth projections for this competitive sector to 60% from about 25% when IPC entered the market.

7436. Hearty Life. Div. of Sovex Natural Foods, Inc. 1998. The comparison of milk substitutes requires a sharpened number two pencil (Ad). *Vegetarian Times.* May. p. 11-13.
• ***Summary:*** The first page of this 3-page color ad is mostly white paper. Above the title are three dotted circles the diameter of a pencil. Next to each is written: "Insert point here."

When the reader turns the page, a 2-page color spread appears. On the left page, two cartons of liquid soymilk are leaking on the table from the holes supposed punched in them. To their left is a cylindrical container of "Hearty Life Better than Milk–Soy." In front of it is a conical heap of fine white flakes. The right page is filled with text, and topped with this headline: "We're easier to afford, carry, cook with, mix to your taste, and, yes, even clean up." The text explains that Better than Milk Soy and Rice beverage mixes enable consumers to save up to 40% per quart over liquid soymilk. The products are sold at natural and health food stores, not via mail order. "For a free sample, call 1-800-227-2320, ext. 302." Address: Collegedale, Tennessee. Phone: 800-227-2320.

7437. **Product Name:** SoNice (Soymilk–GMO Free) [Natural Sweetened, Natural Unsweetened, Vanilla, Chocolate, Original].
Manufacturer's Name: ProSoya UK Ltd.
Manufacturer's Address: No. 2 Kingsthorne Park, Houstoun Industrial Estate, Livingston, Westlothian EH54 5DL, Scotland. Phone: +44 1-506-433-777.
Date of Introduction: 1998. May.
Ingredients: Water, whole soybeans.
Wt/Vol., Packaging, Price: 1 liter Combibloc aseptic cartons.
New Product–Documentation: Talk with Lorne H.A. Broten, President and CEO, International ProSoya Corp., Surrey (Vancouver), BC, Canada. 1997. Oct. 29. International ProSoya Europe (a subsidiary of IPC, created in Jan. 1997 and began operation in June 1997) is now constructing a soymilk plant in the United Kingdom (in Livingston, Scotland) as part of a joint venture. Dusty Cunningham, who is a director of IPC, is there helping to get the project started–but she is not the person in charge. The factory is expected to begin making soy products in early 1998–an aseptic soymilk, a soy yogurt, soy ice creams, and other food products based on the company's soymilk. There are a number of shareholders in the new joint venture, one of whom is named McCorkle; the joint venture is not with an existing European soy company.

Talk with George Conquergood of International ProSoya Corporation (IPC). 1999. April 21. This company started out as a joint venture between IPC in British Columbia, Canada, and various private investors in Scotland. The product, SoNice, made using only certified organic soybeans, was introduced about a year ago. Packaged in Ireland, it is going well. Two of the products are labeled organic and bear the roundel (also spelled rondel or roundelle; a round figure) or certification symbol of the Soil Association of the UK; the three that were fortified could not be labeled "organic" under European organic labeling laws. It just got listed in the multiples (supermarkets). The company still has a license with IPC but during 1998 IPC sold its shares in the Scottish company. There are now 40 shareholders. Dusty Cunningham went to Scotland to help set up the company.

7438. Spangler, Tina. 1998. Rating the dairy alternatives: Our blind test of 14 nondairy milks revealed which are best coffee, which are best in cereal, and which are best left alone. *Natural Health.* May/June. p. 58-59.
• ***Summary:*** White Wave's Silk is considered the best soymilk product. Vitasoy Light Original was the 2nd highest rated soymilk. Westbrae Natural Rice Beverage (Enriched) received the highest overall rating. The 14 products are: Edensoy Original. Edensoy Extra Original. Harmony Farms Fat Free Rice Drink. Health Valley Fat Free Soy Moo. Mill Milk Organic Oat Milk. Pacific Foods Multigrain Nondairy Beverage. Pacific Foods Nondairy Soy Beverage (Unsweetened). Pacific Select Nondairy Soy Beverage. Rice Dream Organic Original. Vitasoy Creamy Original. Vitasoy Light Original. Westbrae Natural Rice Beverage (Enriched). West Soy Low-Fat Soy Drink. White Wave Silk Dairyless (Soy) Beverage. Address: Associate editor.

7439. Strayer, Dennis. 1998. Independent feasibility study of infant formula manufacturing plant. Hudson, Iowa. iii + 36 p. No index. 28 cm.
• ***Summary:*** Contents: Introduction. Critique of NDI (Nutrition Dynamics International) business plan (dated Feb. 1998; page by page critique). The infant formula industry (in the USA): The FDA description of industry, women, infant, and children (WIC) program, competitive nature of market, competition (Abbott Laboratories/Ross Laboratories-Sturgis, Bristol-Myers Squibb Co. / Mead Johnson Nutritionals, Nestle Carnation Food Service Co.), changes in the industry (Wyeth-Ayerst/Wyeth Nutritionals, Inc.), industry regulation, industry problems (price fixing, fake labels), new technologies. The infant formula market: Market share, demographic studies. Financial studies: Projections. Concerns. Recommendations. Reference list. Contacts made. Appendix: Outline of proposed marketing plan.

The main alternative to cow's milk formula is soy formula, which accounts for about 20% of the total infant formula sold in the USA. Lactose intolerance is probably the main reason for choosing soy formula.

The WIC program: In 1972 the WIC program (Special Supplemental Food Program for Women, Infants, and Children) was established to improve the health of at-risk low income pregnant women, new mothers, infants and children under age five by providing them with supplemental foods, nutrition and health education, and health screening. Infant formula is the single most expensive item in the WIC food package. Infant formula manufacturers are required to compete for selection as the single source of infant formula products used by each state WIC program; all WIC participants from that state are required to purchase only the selected brand. Contracts are awarded to the manufacturer

offering the highest rebate to the state. The WIC program is administered by the Food and Nutrition Service (FNS) of the U.S. Department of Agriculture (USDA). The program awards grants to state health departments or state health and welfare agencies. The WIC program is considered successful and cost-effective. A 1992 study by the General Accounting Office (GAO) estimated that the savings that accrue over 18 years from providing prenatal WIC services to infants born in 1990 would yield a return of $3.50 for each federal dollar invested. This success has led to strong bipartisan support for the WIC program. Funding has increased from $900 million in fiscal year 1981 to $2.86 billion in fiscal 1993. Participation has increased from 2.1 million to an expected monthly average of 5.8 million during the same period. But in 1991 a Congressional Budget Office (CBO) study estimated that only about 56% of those who are eligible for the program are being served.

Infant formula is considered a food product and is regulated by the FDA (U.S. Food and Drug Administration). The Infant Formula Act gives guidance for this regulation, and requires manufacturers to disclose the formulation of each product.

Note: This study was commissioned by Jim Abourezk (an attorney of Sioux Falls, South Dakota), and his client Steve Canoyer (Yankton Sioux Reservation, South Dakota). However it was paid for ($15,000) by David Rabhan, who proposed building an infant formula factory on the Yankton Sioux Indian reservation. Address: Dennis Strayer & Associates, 302 Beverly Blvd., Hudson, Iowa 50643. Phone: 319-988-4187.

7440. Tofutti Brands Inc. 1998. Tofutti. 1997 annual report. 50 Jackson Dr., Cranford, NJ 07016. 13 p. 28 cm. Plus 13-page proxy statement insert.

• ***Summary:*** Net sales for the 52-weeks ended Dec. 27, 1997 were $7,440,000, up 27% from the previous year. The net income rose to $535,000, up almost 4-fold from the previous year ($135,000 in 1996). 1997 was the sixth consecutive year that the company has been profitable.

During 1997 the company introduced the following new products: Peanut Butter flavored Tofutti Cutie, Tofutti Soy Lavasch flatbread crackers, and Tofutti Soy-Rite frozen soy beverage. Sales to distributors in foreign countries (especially Europe) increased by 39% to $865,000 in 1997. David Mintz's salary increased to $180,000 in 1997, including a bonus of $30,000–up from $155,000 in 1996 and $125,000 in 1995. Mintz, age 66, owns 50.4% of the company's common stock. Address: Cranford, New Jersey. Phone: 201-272-2400.

7441. Fitzpatrick, Mike G. 1998. Re: Soya-based infant formulas. Letter to S. Kimberley Belshé, California Dep. of Health Services, 714/774 P Street, P.O. Box 942732, Sacramento, CA 94323-7320, June 3. 6 p. Typed, with initials on letterhead. [41 ref]

• ***Summary:*** This carefully considered and well documented letter begins: "Further to our letter date 18 May 1998, please find enclosed material relevant to Mrs. Valerie James' request that your agency consider the potential health issues associated with feeding soy-based formulas and the safety of soy products in general.

"Soy-based infant formulas and the majority of soy products contain a class of compounds known as isoflavones. Mrs. James is of the opinion that the soy isoflavones have significant potential for reproductive and developmental toxicity in infants fed soy-based formulas and from infant foods in general. With respect to evidence to evidence that the soy isoflavones cause reproductive or developmental toxicity, the following should be noted:

The author then lists ten problems or potential problems from soy isoflavones in infant diets, each backed by one or more references to scientific studies. He continues: "Given this weight of evidence, Mrs. James holds the opinion that soy-based infant formulas are adulterated citing Section 110545 of the California Health and Safety Code, 'Any food is adulterated if it bears or contains any poisonous or deleterious substance that may render it injurious to health of man or any other animal that may consume it. The food is not considered adulterated if the substance is a naturally occurring substance and if the quantity of the substance in the food does not render it products to herbal medicines stating that the 'confidence that soy products are safe is clearly based more on belief than hard data'."

Note: Copies this letter were sent to Senator Barbara Boxer, Senator Frank Lautenberg, and Mrs. Valerie James. Address: PhD, MNZIC, Senior Consultant, Kingett Mitchell & Associates Ltd., Environmental Consultants, ASDA Plaza, Fred Thomas Dr., P.O. Box 33-849, Takapua, Auckland, New Zealand. Phone: (09) 486-8068. Fax: 486-8072.

7442. Vitasoy USA Inc. 1998. Vitasoy (Website printout–part). www.vitasoy-usa.com Printed June 21.

• ***Summary:*** Contents: Home page. 1. Company history (Different holdings; 2 p.). 2. Product Information (Links to each brand; 2 p.). 3. Recipes (Five recipes including one from Martin Yan's "Yan Can Cook"; p. 6). 4. Health information (Diabetes, kidney disorders, cholesterol, cancer, menopause, and how to get more information; 3 p.). 5. What's new (Company news, new faces, new customer service department; 2 p.). 6. Gifts & games (Under construction). 7. Azumaya (Info on products: Tofu, wraps; 5 p.). 8. Vitasoy (Soy drink suited for Western tastes; 2 p.). 9. Vitasoy & Vita (English and Chinese, Describes ethnic line: Vitasoy Tofu and Vita; 5 p.). 10. Vitasoy / Vita Beverages (Soy drinks, tea drinks, juice drinks; 4 p.). 11. New Menu (VegiBurger, VegiDog, TofuMate seasonings; 3 p.).

The section on company history begins as follows: "Vitasoy International Holdings was founded in 1937 by

Mr. Kwee-Song Lo when he made his first batch of soymilk to feed Chinese refugees who were plagued and diseases like beri beri and pellagra."

Note: All accounts of Vitasoy's history, including many written by Mr. Lo himself, state that his company (originally named Hong Kong Soya Bean Products Co. Ltd.) was founded in March 1940 and first made commercial soymilk at that time. In 1939 he and a small group of volunteers made soymilk at a refugee camp set up in Argyle Street on Kowloon. They gave it away free of charge to Chinese refugees fleeing the Japanese invasion of China. The results of this volunteer effort gave him the full confidence to start a company. Address: 400 Oyster Point Blvd., Suite 201, S. San Francisco, California 94080. Phone: 1-800-VITASOY.

7443. White Wave, Inc. 1998. White Wave (Website printout–part). www.whitewave.com Printed June 21. • ***Summary:*** Contents: Home page. 1. About White Wave (Mission statement, brief history; 1 p.). 2. About soy (Nutritional benefits; 1 p.). 3. Related sites/ links (Vegetarian / soy / natural foods, sites about Boulder, Colorado; 1 p.). 4. What's new. 5. Product info, questions and answers (Name of all products with nutritional, ingredient, and package view information; Frequently asked questions; Questions about allergies; How do I cook with this stuff; 6 p. total). 6. Where to find our products (Directory of retail stores). 7. Special offers (Books and bumper stickers which can be ordered from White Wave; 1 p.). 8. Recipes (8 pages of recipes for tofu, tempeh, and Silk soymilk on 3 x 5-inch cards).

"White Wave's mission is to creatively lead the full integration of healthy, natural, vegetarian foods into the average American diet. 'Our interest is in promoting the use of foods we consider the world better off *with,* rather than without.' Steve Demos, president of White Wave.

"Founded 20 years ago in 1977 as a small tofu company, White Wave, Inc. has grown to become one of the largest soyfoods manufacturers in the United States and a leader in the vegetarian foods industry. White Wave's reputation for quality, consistency and innovation has led its sales to grow 20% annually over the last 6 years." Address: 1990 North 57th Court, Boulder, Colorado 80301. Phone: 303-443-3470.

7444. Osho, Sidi M. 1998. Re: CIDIS Ltd. and work with soyfoods in Nigeria. Letter to William Shurtleff at Soyfoods Center, June 25. 3 p. Typed, with signature on letterhead. • ***Summary:*** "After I returned to Nigeria [from a trip last year to Atlanta, Georgia]. it was difficult in deciding whether to continue looking for a job or follow my dream.

"I then decided to follow my dream. I registered a company called CIDIS Ltd in 1997 [RC 311981]. We undertake consultancy services on Agriculture and Food Processing. Our focus however is soybean processing and utilization. We conduct training at rural and urban levels, i.e., State government levels in order to promote the use of soybean and improve the nutrition of our people in Nigeria. For paid training, i.e. train the trainers, we collect a fee and award certificates to the trainees. The trainees are either community development officers; or Agriculturists at government parastatals.

"In order to generate income, we introduced into the market some processed soybean products, e.g. Soy Gari, Soy Fufu, Soy Lafun, Soy Ogi, Soy Milk, Soy Elubo, Soy Vita, Soybean, Vegetable oil, Roasted Soybean Flour, and High Grade Soybean Flour. There is high demand for the products when we create awareness. We also have started a market outreach program where we do training in the local language free at a market four times a week. At the end of the awareness program, we retail some of our products. Attached are the labels from the processed products. These products are made in a building which I rented, and also retailed in the CIDIS Soymart Stores. Some of the equipment used for processing is locally fabricated."

"It has been very difficult for me to get the funds to start my business. I wrote proposals to the Nigerian Government, National and International NGOs, funding bodies, but I did not get any positive response. Then I decided to take a bank loan... I took a risk in a cause I believe in and I am very sure."

(2) A color photo of Sidi, surrounded by four men in company uniforms, two holding her soy products, standing in front of a building with "CIDIS SoyMart" written in large blue letters over the front door.

Enclosed are: (1) Large labels (printed in dark blue on white, with the nutritional composition, directions for

use, and the name address of the manufacturer–but no ingredients). Address: No. 32, Awolowo Ave., Bodija; G.P.O. Box 38619, Dugbe, Ibadan, Nigeria. Phone: 810-0301.

7445. Chajuss, Daniel. 1998. Soy protein concentrate: Current status. *Oils & Fats International* 14(3):35-36. June.
• ***Summary:*** The three main commercial soy products are (1) Full fat and defatted soya flours and textured soya flour–current world production and sales about 80,000 tonnes (metric tons). (2) Soya protein isolates–current world production and sales about 130,000 tonnes. (3) Soya protein concentrates–current world production and sales about 284,000 tonnes, and growing at about 15% a year. More than 75% of all concentrates are now used for human consumption, the rest being used in pet and animal feeds. In human foods, concentrates are used mainly in meat alternatives or extenders. In animal feed they are used in formulations for calves and piglets as a milk replacer, in pet foods and in special feedstuffs such as 'fish-flavour-free' bland fish seeds, and for mink and other animal feeds. Concentrates are devoid of the antigenic protein components present in most other soya products.

Production of soy protein concentrates worldwide is presently concentrated in the hands of two companies: ADM and Eridania Béghin-Say (Central Soya). About 95% of all soy protein concentrates worldwide are now made by the counter-current aqueous alcohol was system, originally developed in the late 1950s by the Hayes Company of Israel. A table shows estimates of world production (in metric tons) by company and country in 1998:

ADM, Netherlands 70,000 AAW (Aqueous alcohol wash).

ADM, USA 60,000 AAW.

Central Soya, USA (several factories) 60,000 AAW.

Central Soya, Aarhus, Denmark 50,000 AAW.

Sogip (Central Soya group), France 15,000 AAW.

Solbar Hatzor (formerly named Hayes Ashdod) (with Soya Mainz, an ADM subsidiary), Israel 15,000 AAW.

Sopropech, France 6,000 AWL (Acid/water leach).

Sanbra (Bunge), Brazil 5,000 Acid wash.

ADM, USA 3,000 Acid wash.

Lucas Ingredients, UK 2,000 (unconfirmed, Acid wash).

Total worldwide 284,000 metric tons.

The margins on soy protein concentrates are much more attractive than those from crushing soybeans into oil and meal–which in recent years have been either small or negative. The cost of making a tonne of concentrates ranges from US$459 to $600. For food applications, the sales price obtained by manufacturers for powder and small grits forms ranges from $1,200 to $1,600 per tonne, but for textured or functional forms this increases to $1,500 to $3,000 per tonne. The sales price for the pet food, milk replacer, and special feed industries ranges from $1,000 to $1,200.

Another high-value product, a potential source of additional income, is soya molasses, a by-product of making soy protein concentrates. It is a rich source of soya phytochemicals and soya oligosaccharides.

A second table shows estimates of world production (in metric tons) of soy protein isolates, with estimates for 1997 and forecasts for 1998.

Protein Technologies International (PTI, USA) 60,000 in 1997, 70,000 in 1998.

ADM, USA 15,000, 25,000.

PTI Belgium 15,000, 15,000.

Fuji-PTI Japan 10,000, 10,000.

Sanbra (Bunge) Brazil 5,000, 10,000.

Others worldwide 6,000, 8,000. Total worldwide 110,000, 138,000. Address: Managing Director, Hayes General Technology Co. Ltd., Misgav Dov 19, Mobile Post, Emek Sorek, 76867 Israel. Phone: +972-8-8592925.

7446. **Product Name:** [Tofu, Soymilk, Tofu Cheesecake, Tofu Cheesecake with Apples, Tofu Pie with Bananas, Tofu Mayonnaise, Mushroom Quiche with Tofu, Soymilk with Oats & Natural Sugar, and Tofu Burgers].
Foreign Name: Tofu, Leche de Soya, Cheesecake, Cheesecake de Manzana, Mayonesa de Soya, Torta de Championes con Tofu, Avena Helada con Leche de Soya, Hamburguesa de Tofu.
Manufacturer's Name: DeliSoya–Delikatessen.
Manufacturer's Address: Calle 78 No. 12-03, Santafe de Bogotá, Colombia. Phone: 346-2178 (OF) or 610-1210 (HM).
Date of Introduction: 1998. June.
How Stored: Refrigerated.
New Product–Documentation: Letter from Nestor and Cecilia Santacruz. 1998. Sept. 8. "We started on June 26 in Bogotá (Colombia) a small scale manufacture of soyfoods products, tofu and soymilk, that we distribute personally and sell in a place called 'Delisoya' (see address above). Your books are a permanent source of inspiration. We also prepare 'cheesecake,' *mayonesa de soya,* and *hamburguesa de soya.* Our shop is not located in a place of much public influence but the response to it has been very stimulating and we are very encouraged."

Letter and forms filled out by Nestor and Cecilia Santacruz. 1998. Oct. 14. They started and own Delisoya, which is located in northern Bogota. They do not have labels for their products. Each week they make, on average, 96 cakes of tofu (500 gm each) and 25 liters of soymilk. They used to deliver tofu to a store named *El integral* and to a restaurant named Caliz, but not they reserve all of their small production for their soya deli. Some Japanese housewives are starting to come to Delisoya to purchase tofu. Nestor and Ceci reserve one day each week to deliver tofu to others at their homes. The foods served each day at Delisoya are shown on a menu board. They occasionally make other foods besides those shown above, so that people can try them

and see what can be done with tofu–for example *Torta de champioñ con tofu* (Mushroom quiche with tofu). Turnovers–Tofu, vegetables and spices wrapped in a crust. Sandwiches–Whole wheat bread, tofu, and vegetables. Soymilk with oat and natural sugar (*panela*).

Ingredients–Tofu burgers: Tofu, onion, carrot, parsley, oregano, salt & pepper. Whole wheat bread, lettuce, fresh vegetables. Price: $2.500 each. Source: Mrs. Bernadette Kikuchi (wife of Tomio Kikuchi). Cheesecake (plain or with fruits): Tofu, tahini, lemon, oil, raisins, brown sugar, vanilla, salt, okara granola. Price: $15.000 pesos each. Refrigerated. Source: *The Book of Tofu* (p. 150; Ten Speed Press ed.). Tofu mayonnaise: Soymilk, tofu, lemon, oil, salt. Price: $1500 pesos for 125 gm glass jar. Soymilk, tofu, lemon, oil, salt.

Letter from Cecilia and Nestor Santacruz. 2000. Sept. 12. "As for questions (Bill's letter of 16 Nov. 1999) about our products: 1. *Torta de Champiñoes con Tofu:* It is more like a quiche and can be named 'Mushroom quiche with tofu.' 2. In hot places in Colombia we like to drink *avena helada* which is a drink made of milk (dairy) with powdered (instant or cooked) oat, sugar and cinnamon in a blender and cooled for freshness. We make it with soy milk and it tastes as well. 3. It is Hamburguesa de Tofu. I was wrong saying Hamburguesa de Soya. 4. In 1998 we had plain Cheesecake and Cheesecake de manzana (Tofu cheesecake with apples) and Tofu pie with bananas. We still use apples a lot in pies, drinks with soymilk but have introduced other fruits that are easily available such as mulberry, agraz, guayaba, curuba etc. We make pumpkin pie with Tofu too. We like to vary the repertoire because the same people come to see us often. 5. Yes, we use okara granola in all the different types of pies. We love it instead of bread crumbs and crusts made of wheat, etc. We plan to increase using it in the near future. 6. It is $15,000.00 pesos (or 7.00 U.S. dollars approx.). One dollar is $2,200.00 approx. Our money is so devalued that the least coin is of 20 pesos but no one wants it because it doesn't have any commercial value. 7. It is 'Tofu mayonnaise'. In 1998 we referred a lot to soy because it is a much better known word than Tofu. A 125 gm [of Tofu Mayonnaise] used to cost 1,500 pesos but now it is 2,500 pesos."

7447. **Product Name:** Veggie SourCream: Nature's Alternative to Sour Cream.
Manufacturer's Name: Galaxy Foods.
Manufacturer's Address: 2441 Viscount Row, Orlando, FL 32809. Phone: 800-441-9419.
Date of Introduction: 1998. June.
Ingredients: Soy beverage (filtered water, organic tofu powder*), unhydrogenated canola, calcium caseinate (a dried skim milk protein with calcium), maltodextrins, corn starch, calcium and sodium phosphates, sea salt, carrageenan (sea weed gum), natural vegetetable guar and locust bean gums, organic food acidulants (lactic & citric acids), sea salt, natural flavor, potassium sorbate (to preserve freshness), vitamin E (antioxidant), vitamin A palmitate. *Tofu is made with organically grown and processed soybeans in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 8 oz. white plastic tub. Retails for $1.89 at Safeway supermarket (1998/06, Lafayette, California).
How Stored: Refrigerated.
New Product–Documentation: Product with Label purchased at Safeway supermarket in Lafayette, California. 1998. June 28. Sold refrigerated from a large display next to the produce section. Tub is 3.75 inches in diameter and 2.375 inches high. Label on top of tub: 3 inches diameter. Yellow, white, red, and black on green. "New! Low fat. Made with organic tofu."

7448. *Ontario Soybean Growers' Marketing Board Newsletter.* 1998. Project S.O.Y. winners. June. p. 1.
• ***Summary:*** "In 1997, First Line Seeds, in partnership with the University of Guelph, created a competition called Project S.O.Y. In this case, S.O.Y. is an acronym for Soybean Opportunities for Youth. Project S.O.Y. challenged entrants to develop new products using soybeans and was open to graduate and undergraduate students at the University of Guelph. This year the contest was expanded to include the Ridgetown, Alfred and Kemptville Campuses of the University."

"For the second year, the first prize winners in the undergraduate category were Jennifer Lo and Nicole Lepowski, Food Science students at the University of Guelph. The paid won $2,500 for their product *Expressoy,* a coffee-like beverage made from 100% roasted soybeans. Second place honors went to *The Joy of Soy,* a decadent non-dairy dessert shake. Madley Soy, a fresh soy pasta, and Soyburst, a soy beverage, tied for third place." Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

7449. **Product Name:** Pacific Naturally Complete: Complete Liquid Nutrition (Fortified Soy & Grain Drink) [Vanilla, Chocolate].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1998. June.
Ingredients: Multi Grain base (Filtered water, whole oat groats, triticale, barley, brown rice, amaranth), organic soymilk* (filtered water, whole organic soybeans), soy protein isolate, cane juice sweetener, vegetable fiber, natural vanilla flavor with other natural flavors [or natural cocoa powder, expeller pressed canola oil, tricalcium phosphate, natural flavors, sea salt, carrageenan, magnesium phosphate, potassium chloride, vitamin C, etc.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.

New Product–Documentation: Leaflet (glossy color, front and back, 28 cm) sent by Patricia Smith from Natural Products Expo West at Anaheim. 1999. March. (but leaflet is dated "6/98"). Phytonutrients. Essential amino acids. "Each serving of this rich, satisfying drink provides 26 vitamins and minerals and 9 grams of high-quality protein." Two sets of color photos on the front show cartons of the two flavors plus the product in a tall glass.

On the rear is given the nutrition facts, ingredients, UPC numbers, and case/pallet information.

7450. **Product Name:** Soyganic.
Manufacturer's Name: Sunrise Markets Inc.
Manufacturer's Address: 729 Powell St., Vancouver, BC, V6A 1H5, Canada.
Date of Introduction: 1998. June.
Wt/Vol., Packaging, Price: Paperboard tub.
How Stored: Frozen.
New Product–Documentation: Talk with George Conquergood, Vice-president of Operations, International ProSoya Corp., Surrey (Vancouver), BC, Canada. 1999. SoyaWorld presently markets three soymilk products: Sunrise soymilk (a beany-flavored product made and packaged by Sunrise in plastic bottles), Soyganic (a traditional beany-flavored product made by Sunrise with organic soybeans, packaged at Dairyworld in a gable-top carton and sold refrigerated), and So-Good (licensed from Sanitarium Health Food Co. in Australia, formulated and packaged in gable-top by Dairyworld, and based on soy protein isolates). Soyganic and So-Good appeared on the shelves at about the same time in 1997 under the SoyaWorld brand. They distribute those three products extensively across western Canada, and sell them in the dairy case.

ProSoya News release. 1999. May 17. *Soyganic* is an organic soy beverage fortified with calcium and other essential nutrients.

Talk with Peter Joe, owner of Sunrise Markets. 1999. May 26. In late 1997 the Canadian government first allowed soymilk to be fortified with calcium and vitamins. This showed a weakening of their many laws designed to protect dairy products. Use of the word "milk" is still not allowed. Soyganic was launched in mid-1998.

7451. Westbrae Natural Foods. 1998. Only Westbrae... Makes soy delicious (Ad). *Vegetarian Times.* June. p. 30.
• ***Summary:*** This one-third page color ad shows three of Westbrae's main categories of soy beverages: Nonfat (vanilla and plain), lite (vanilla, plain, and cocoa), and plus (vanilla, plain, and cocoa, fortified with calcium and vitamins A&D). Other Westbrae non dairy products include Malteds, Lite Malteds, Lite Creamer, and Rice Drink. Address: P.O. Box 48006, Gardena, California 90248.

7452. **Product Name:** Certified Organic Soymilk (Sold in Quart Pure-Pak / Gable Top Cartons) [Regular, and Chocolate].
Manufacturer's Name: Wildwood Natural Foods (Marketer-Distributor).
Manufacturer's Address: 1560 Mansfield Ave., Suite D, Santa Cruz, CA 95062. Phone: 408-476-4448.
Date of Introduction: 1998. June.
Ingredients: Filtered water, whole non-genetically modified, certified organic soybeans*, certified organic brown rice syrup*, naturally occurring calcium carbonate, sea salt, carrageenan, xanthan gum, vitamin A palmitate, vitamin D-2, vitamin B-2 (riboflavin), vitamin B-12. * = Grown and processed without synthetically compounded herbicides or pesticides in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 32 fl. oz (1 quart). Pure Pak carton. Retails for $2.29 (1998/07 California).
How Stored: Refrigerated.
New Product–Documentation: Talk with Billy Bramblett of Wildwood Natural Foods. 1998. June 24. Wildwood recently introduced a new fresh soymilk, sold in gable-top quart cartons. The flavor is excellent. Two packages with Labels sent by Billy Bramblett. Green, red, blue, and orange on white. The front panel states: "1% of sales donated to the Breast Cancer Fund. Low fat. Non-dairy drink. Calcium and vitamin enriched. Naturally lactose free." One side panel states: "A diet rich in soy contains a variety of beneficial phytonutrients including*: Isoflavones. Genistein. Phytoestrogens. * = Consult your physician concerning the role soy may play in effecting specific chronic diseases. Trusted purity since 1980: Naturally antibiotic and hormone free. Vegan–No animal products. Enjoy other Wildwood soy foods: Organic tofu. Wild Dogs. Vegie Burgers. Meltables. Talk to us at 1-800-499-Tofu." A second side panel, titled "The fresh approach to healthy eating," states that "1% of sales of this product goes to researching environmental causes of breast cancer."

Talk with Bill Bramblett. 1998. June 9. The original Wildwood soymilk was named Yo Soy! Ted Nordquist and his company TAN Industries, Inc. have played a major role in developing and making this soymilk. Jeremiah and Ted have been friends for many years, and recently they have been working together very closely on this soymilk. They used to call it the "Ted and Wally Show." Jeremiah went to Ted 4-5 years ago; Ted had a new technology for making non-beany soy base. Jeremiah and Ted came up with a formulation for the final product made from Ted's soy base. They had dreams of building a plant together, where Wildwood would do the tofu side and Ted would do the milk side. But in the end, Wildwood didn't have the funds or energy to go that direction, so Ted went to White Wave and told them about his great soymilk. Then White Wave came up with their own formulation (which was different from Wildwood's formulation), resulting in Silk. Ted makes

his soymilk at a plant in southern California [Soyfoods of America], then another California company [Morningstar, formerly called Avoset] finishes and packages the product for Wildwood. Ted is in the process of developing a new yogurt, which is not yet on the market. He would like to make it for Wildwood, but Billy doesn't think it is ready. Also Ted wants the yogurt package to bear the words "Made with TAN soy base."

Talk with Jeremiah Ridenour of Wildwood. 1998. Oct. 20. This product was first sold in June 1998. It may be the first soymilk in America to have the word "Soymilk" in the product name–to test the FDA. Wildwood has nothing to do with the manufacture of packaging of the product; It is made at one place and packaged in another. White Wave's Silk is this product's main competitor. Jeremiah believes that Wildwood's formula is better. See also Oct. 1998 interview with Jeremiah on the early history of this product. This product states in the ingredient listing that it is GMO free, but Jeremiah thinks that the term "organic" is still more important to consumers than "GMO free."

Leaflet (single sided, 8½ by 11 inch, color) sent by Patricia Smith from Natural Products Expo West. 1999. March. "Introducing Wildwood Natural Foods Organic Soymilk. Low fat. Delicious non-dairy drink. Calcium & vitamin enriched. Naturally lactose free. 1% of sales donated to the Breast Cancer Fund. Available in Regular and Chocolate flavors."

Product (chocolate, quart) with Label purchased at Safeway supermarket in Lafayette, California. 2001. April 1. Both real vanilla and chocolate quarts are sold refrigerated in the Odwalla cooler in gable-top cartons for $1.99/quart. One side panel reads: "Wildwood has been making soymilk for over 20 years. As a pioneer in American soyfoods Wildwood has learned to make great tasting nutritious soymilks." The certified organic chocolate is produced from beans grown in a bio-diversity preserve in Costa Rica and Panama.

The back panel states: "Wildwood Natural Foods. Affecting dietary and agricultural change. Wildwood owners Jeremiah Ridenour and Billy Bramblett both grew up in Michigan, then migrated to California and became evangelists for soy. Jeremiah comes from a soybean farming family. While he was studying tofu production in Japan, his future partner Billy was concocting tofu delectables at the legendary Sleeping Lady Cafe in Fairfax, California. Wildwood Natural Foods started producing organic Soymilk and Tofu in 1980. Today these two lead their company's production of thirty-five delicious, premium, organic soy products. More organic choice means less chemicals in your environment..."

7453. Skiff, James. 1998. Jim now has a company name (US Soy) and a GMO-free soybean cleaning plant at Mattoon, Illinois (Interview). *SoyaScan Notes.* July 6. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Jim closed the deal on the soybean cleaning plant 2½ weeks ago; it was held up by the need for a new environmental impact report. The plant is located 43 miles directly south of Champaign, Illinois at 2808 Thomason Dr., Mattoon, Illinois 61938. Phone: 217-235-1020. He has decided to call the company US Soy, LLC (Limited Liability Corporation). Jim is president, Howard Weiner is a director and secretary of the corporation. They have already chosen a board of directors. Jim's home in Minnesota is 650 miles from the plant, so he flies down to the plant once every other week. By August 1, he plans to be at the plant almost all the time. Last Thursday he ordered the spiral separator–which he needs to add to the plant. As soon as that is in, he could begin cleaning. Whether he does that before his contracted beans start to arrive in about the third week in September is an open question.

Jim expected to run into plenty of "roadblocks" and obstacles in setting up this plant, "but they just all evaporated." He was told it was too late in the year to find growers, but that worked out smoothly–though he probably overpaid them on premiums this first year. Farmers in this area have not done much in the way of contract growing or food soybeans. Jim now has 8,200 acres of soybeans (high-protein, large size, and clear hilum) under contract with soybean growers in the area. This should amount to about 400,000 bushels. These growers seem very receptive and are delighted to be able to earn a premium of about $1.50 per bushel over what they could get from their local elevator. These farmers are now growing value-added soybeans. Jim has no buyers for his cleaned GMO-free soybeans yet. He is now choosing a logo and designing a letterhead so he can do a mailing to soyfoods manufacturers.

This plant was built by Golden Valley Microwave (based in Minnesota) for seed-grade popcorn at the huge cost of $4.6 million. They spared no expense to get a state-of-the-art cleaning plant. It was ready to operate in 1992. The Ken Bradney Co., of Des Moines, Iowa, designed the plant; they have a reputation for being one of the top grain plant design companies. It was operated for approximately 2 years, then ConAgra bought out Golden Valley Microwave and transferred the popcorn operations to some of their own plants and closed this one down (since it was the "cadillac" with the highest asset value) for tax purposes.

The complex consists of 6 buildings on about 27 acres. The largest building is a 6-story tower plus a processing room, which is about 18,000 square feet.

Jim is looking at new areas for soybean processing; he wants to buy two new pieces of equipment: A spray-drying plant to make spray-dried soymilk, and an extrusion milling operation that would make very fine particle soy flour for one particular customer.

Looking at the big picture, Shurtleff makes the following suggestions: Develop a strategic alliance with the Illinois state soybean board that will dramatically leverage your

ability to spread your message. Suppose the state of Illinois was willing to hedge its bet on the future of genetically engineered soybeans, and they decided to position Illinois as the world's leading source of both food-grade soybeans and GMO-free soybeans. This program would run parallel to their present programs to sell all types of soybeans and would not conflict with those. The key point is that no U.S. state has yet positioned itself as a leader in these two areas.

Note: Jim's first non-GMO soybeans were available for sale in August 1998. Address: Cornbelt Foods, Inc., P.O. Box 218, Marshall, Minnesota 56258. Phone: 507-537-1406.

7454. Elliott, Barbara. 1998. Re: New developments at FarmSoy Company in Summertown, Tennessee. Letter (fax) to William Shurtleff at Soyfoods Center, July 8. 1 p.
• ***Summary:*** "Correct me if I'm wrong but no one has challenged the claim that FarmSoy Company is the oldest non-Asian soy dairy in the U.S. [Note: Soyfoods Center believes that claim is correct for companies started after 1970. But a number of Seventh-day Adventist soy dairies, including one in Madison, Tennessee–near Summertown, started in the 1920s and 1930s]. We presently are using only certified organic soybeans that are not genetically modified and all of our products are certified organic by Florida Growers & Consumers, Inc."

"Our soymilk is now a principal ingredient in a new drink just out in the market, called Fruit Quest by Del Valle Food Products, Inc. It is the first drink in the U.S. to combine soymilk and fruit juice. Fruit Quest is very tasty and is available through Whole Foods, Wild Oats, and Tree of Life." Address: 96C The Farm, Summertown, Tennessee 38483. Phone: 615-964-2411.

7455. *Globe & Mail* (*Toronto, ONT, Canada*). 1998. Milking healthy sales from the lactose-intolerant. July 15. p. A26. Facts & Arguments. [1 ref]
• ***Summary:*** In Canada, the nationwide retail value of soy and rice beverages (all flavors) at supermarkets and grocery stores has grown from $3.4 million in 1995 to $5.9 million in 1996, up to 9.8 million in 1997–according to a report from A.C. Nielsen. Note: These figures do not include sales in natural- and health foods stores.

New brands of soya drinks come in many flavors; they are free of cholesterol and lactose, and have added calcium. "Studies also suggest that the drinks can also relieve menopausal symptoms, help stave off osteoporosis and breast cancer, and reduce 'bad' cholesterol." A color photo shows the top half of packages of Natural soy beverage (aseptic) and So Nice (fresh, gable-top).

7456. Doerge, Daniel R. 1998. Antithyroid factors in soybeans that can cause thyroid problems or goiter (Interview). *SoyaScan Notes.* July 21. Conducted by William Shurtleff of Soyfoods Center. [1 ref]
• ***Summary:*** Dan (whose surname is pronounced DOR-gee; rhymes with Porgy) and coworkers have done research showing that the isoflavones genistein and daidzein are the antithyroid principles in soybeans. They fractionated the soybean extract and showed that the genistein and daidzein peaks had essentially all of the antithyroid activity that was present in the extract. Then they did mass spectrometry to characterize substances. This is very interesting because isoflavones are not inactivated or destroyed by heat; they are not heat labile. Yet most of the literature shows that heating soy products destroys their anti-thyroid principles. Dan does not know how to explain this. He believes he is starting to understand the mechanisms and becoming able to make predictions in terms of thyroid status, iodine status, and potential for hazards in humans.

People are now promoting soy because of its health benefits and chemotherapeutic properties (which may be based on genistein and daidzein), and it may have some of these excellent properties, but it could also cause problems for people who are "thyroid compromised." A surprisingly large number of Americans have hypothyroidism or a thyroid problem, or are on the borderline of having a thyroid problem (clinically euthyroid), and they should not be consuming large amounts of genistein or daidzein–especially in the form of supplements. About 10% of American women over the age of 60 are hypothyroid (have low thyroid levels); this happens with a gradual reduction of autoimmune function.

Some data from soy-based infant formula makers show that 20-25% of American babies, infants and children are raised on soy formula. Research by Ken Setchell has shown that these kids have higher blood levels of genistein and daidzein than women who take soy/estrogen supplements. There is no direct evidence that there is a problem in kids–but this is the most important potential risk that should be addressed with further research.

In addition, there is evidence in the literature that kids on soy formula are more likely to go on autoimmune thyroiditis in their later lives. (See Fort, P., et all. 1990. "Breast and soy formula feeding in early infancy and the prevalence of autoimmune thyroid disease in children." *Journal of the American College of Nutrition* 9:164-67). "But let's be clear about this. I think there is a big difference between people eating soybeans or soybean products, and people taking genistein or isoflavone supplements. The level of estrogen of intake is much higher with the supplements, and that makes a great deal of difference."

Ishikawa and coworkers in Japan have done some good work on soy and thyroid function in about the 1970s or 1980s. Address: PhD., Dep. of Health and Human Services, Food and Drug Administration, National Center for Toxicological Research, Div. of Reproductive and Developmental Toxicology, Jefferson, Arkansas 72079-9502, and Dep. of Biochemistry, Univ. of Arkansas for Medical

Sciences, Little Rock, AR 72205. Phone: 870-543-7000.

7457. Mueller, Ed. 1998. Update on Takoma Soy Inc. and Potomac Whole Foods (Interview). *SoyaScan Notes.* July 22. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Takoma Soy has not yet started making tofu; they hope to be in production in a couple of years. They are short on capital and using what they have to work on the building, and to build a bakery and community kitchen. Jon Kessler is still at Twin Oaks; he works in the field of soy, but he no longer works at their tofu shop. Potomac Whole Foods (PWF), their wholesale and distribution business, brings in the money. Ed Talked with Yaron the other day. Yaron is at Olive Tree Works; they are the people who use Oak Tree's tofu to make other products, such as savory tofu. "If we started a tofu business, we'd go into partnership with Olive Tree Works."

Ed is quite sure that Bean Mountain Natural Foods (of Weaverville, North Carolina) is out of business. He thinks that some of their equipment ended up at Twin Oaks.

Ed now buys and distributes tofu from Spring Creek, which makes a firm nigari tofu and is located in a relatively depressed part of West Virginia. So this is an ethical and social issue; Ed does not want to put them out of business, or even really compete with them. If Ed started making tofu then, of course, PWF wouldn't distribute their tofu–and that would hurt them because PWF is their biggest distributor. So Ed is thinking of making a softer tofu curded with calcium tofu, then using that as a base for other tofu products such as tofu mayonnaise, tofu puddings, etc. He would also like to make a good soymilk. In that way, Ed would not compete with Spring Creek.

Ed is still interested in starting a tofu school as part of his tofu factory.

Update: Talk with Jon Kessler of Sunergia. 1999. March 21. Ed is still working on his soy business. He hopes to be making commercial products by the end of 1999. Jon heard from Ed Mueller of Potomac Whole Foods and Bread of Life that Bud, Inc. of Baltimore has lost its lease and perhaps has ceased operations. Ed is hoping to move the Bud equipment up to Hancock, Maryland, and start a new tofu shop there. Address: 11 South Pennsylvania Ave., Hancock, Maryland 21750. Phone: 301-678-5283.

7458. Bartkus, Tony. 1998. The importance of DHA, EPA, and omega-3 fatty acids in human diets (Interview). *SoyaScan Notes.* July 30. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** DHA stands for decosahexaenoic (pronounced deh-KO-suh hex-uh-NO-ic) acid. It is one of various omega-3 fatty acids, and the most highly unsaturated among these. EPA (eicosapentaenoic) is another omega-3 fatty acid. Small amounts of DHA are found naturally in soymilk, but they are oxidized.

DHA is considered a required nutrient in Europe, and scientific studies have shown it to have a cardio-protective effect. The World Health Organization (WHO) has a recommended daily allowance (RDA) for both DHA and EPA. In Europe, DHA must be included in infant formulas; this is not the case in the USA. The only natural sources are fish oil and breast milk. However the fish do not manufacture DHA in their bodies; they obtain it from plankton or shrimp that they eat. His company, which started as a research firm in 1987, makes pure DHA in California from vegetable sources using a carefully controlled fermentation system. OmegaTech has been most active in Europe for the past 3-4 years. Now they want to start educating Americans about the importance of DHA, and adding it to basic foods–such as soymilk. It does not affect the flavor of foods to which it is added. They are awaiting FDA approval. Address: OmegaTech, Inc., 4909 Nautilus Ct. North #208, Boulder, Colorado 80301. Phone: 303-381-8131.

7459. American Soy products. 1998. Official celebration guide: Invitation. Saline, Michigan. 12 p. 13 cm.
• ***Summary:*** This attractive passport-sized booklet states: "American Soy Products presents the opening of the largest soymilk processing facility in North America. Official opening ceremony: Wednesday, Sept. 9, 1998. Your invitation–VIP guest No. 01325024. Registration time: 11:15 to 11:30. Official ceremony: 12:00 noon to 12:45 p.m. Followed by light refreshments and hors d'oeuvres. Lunch: 2:00 to 3:00. Tours and demonstrations: 1:00 p.m., 2:00 p.m., 3:00 p.m., 4:00 p.m. RSVP by August 12.

"The event will honor the achievements of a unique joint venture partnership formed to produce Edensoy for the North American marketplace."

"Factory facts: Square footage by Aug. 1998–65,000 square feet. Expected annual output–4,000,000 + cases. Number of quality control checks–245 (4000 per day). Soymilk lines–(2) 8800 pounds per hour and 13,200 pounds per hour.

"Celebrate with us 'History in the making' as four international corporations send you their personal invitation to salute cooperation and unity at work."

The CEO of American Soy Products is Mr. Hiroyasu Iwatsuki. "Joint venture partners: Eden Foods, Inc., Clinton, Michigan, USA. Mr. Michael Potter, Chairman/ President. Kawasho International (USA) Inc., San Francisco, California, USA, Mr. Akio Ono, President. Marusan-Ai Company Ltd., Okazaki-City, Aichi-Prefecture, Japan, Mr. Hatsuji Shimomura, President. Muso Company Ltd., Osaka, Japan, Mr. Yuko Okada, President." Address: 1474 North Woodland Dr., Saline, Michigan 48176. Phone: 734-429-2310.

7460. Bramblett, Billy. 1998. Company history: Wildwood Natural Foods (Continued–Document part II). Fairfax,

California. 10 p. Unpublished typescript.

• ***Summary:*** "The evolution: On January 2, 1982, there was a major flood in Marin County." The company was hit hard. By February Bramblett and Rosenmayr had attended a computer seminar and were convinced the company had better get computerized. "By March the new structure was set. Mr. Orbuch was in charge of production and distribution; Mr. Bramblett was in charge of tofu production, accounting, and administration."

Meanwhile Orbuch and Bramblett continued toward their goal of building sales to $10,000 per week "and started looking into other small manufacturers that made similar products. Our first 'other distributed' product was the Solar Taco made by Rademacher/Worley Farms in Cotati. This product had been on the market for a year or two, but they did not have their distribution together. We also found some sub-distributors to take our products to West Marin and Sonoma County."

Bramblett "arranged for the purchase of an Apple computer along with accounting, spread sheet, and word processing software. The bookkeeping was transferred to the computer and soon Wildwood had timely financial reports that were used to analyze the operations. One of the main sources of financial loss were the returns. Wildwood had a policy from the get-go to guarantee sales. That meant that any product not sold by its 'pull-date' was credited to the store to which it had been sold. It was the job of the distribution department (Mr. Orbuch & the route drivers) to keep this return rate low by correctly estimating how many sandwiches (and other products) would sell before their respective pull dates and deliver that amount to each store on each delivery day. Unfortunately, this was a difficult task and the return rate was about 15%, which was way too high for WNF to make a profit. Mr. Bramblett tried using the spread sheet program to analyze old sales data in order to make accurate predictions for the future. The computer did not have enough memory to accomplish this task. Fortunately, we had a sandwich maker who was a computer programming school grad and who agreed to write a program for the computer which would do all our invoicing and sales tracking as well as predict future sales and help us lower the return rate. He did so and, although the prediction part was way too cumbersome to deal with, Wildwood soon had a billing and sales analysis tool that we still use today.

"Meanwhile, we increased our product line to include baked and vacuum packed tofu, broadened the sandwich line to include avocado and cheese sandwiches as well as bean and rice burritos, and varied flavors of the BRT. We also refined the salad line and expanded the routes into the peninsula and Santa Cruz areas. By 1984 we were profitable enough to have bought out Mr. Duchesne, return the extra $2500.000 that Mr. Bramblett, Mr. Orbuch, and Mr. Rosenmayr had kicked in, as well as pay a dividend of $12,000 to each remaining partner, effectively returning the entire investment in five years, which is equal to a 20% per year return on investment. The partners decided to form a new partnership to buy a piece of property in Fairfax, on which they could expand WNF. And so they did, right down the street, at 31 Bolinas Road.

"The property was a three lot parcel, which housed a funky car repair facility and which was a major eyesore. The actual purchase and all the trials and tribulations we went through with the town is a-whole-'nother story. Suffice it to say that, it was a major pain in the ass which is well documented in the local paper of the day *The Fax*. We also endured major problems from Sherman Chickering, who lived in a neighboring house, but I won't bore you with that story either.

"Also during 1984 we met Jeremiah Ridenour, who owned a major piece of Santa Cruz Tempeh and who aspired to make 'local tofu' in Santa Cruz. He had seen our products and wanted to join up with us in creating a mid-size tofu operation in Santa Cruz to replace one that was about to fail. He had space for such a project in the building that housed the tempeh factory. The concept was also to be able to bolster tofu production output, which was nearing the limit in Fairfax.

"So a new corporation was formed which included Mr. Orbuch, Mr. Bramblett, Mr. Rosenmayer, and Mr. Ridenour. This was called Wildwood Natural Foods, Santa Cruz, Inc. So, while Frank was renovating 31 Bolinas in Fairfax, Jeremiah was renovating the Mansfield Ave., Santa Cruz, location to house a new, steam cooking, pump-moving, ass-kicking modern hi-tech, but still hand-made, tofu factory.

"We soon realized that the Santa Cruz location would also serve as a distribution point and so it did, and still does. WNF (or 'north') maintains an office and several employees in Santa Cruz and operates four routes from that location. The downside of this whole Santa Cruz trip was that it took twice as along and cost twice as much to get underway as originally planned. Wildwood Natural Foods, Santa Cruz, Inc. did not produce a profit until 1991. Since it was a 'Subchapter S' corporation, the partners were able to take a tax loss on this project, but the grim reality was that north supported south and gave away many things to help it along (e.g. the very profitable soymilk production). This became a bone of contention between the partners.

"Meanwhile, north flourished, saleswise. Taking on new product lines for its distribution line, willy-nilly, sales grew incredibly. Mrs. Wiggles Rocket Juice led the way. Solar Tacos extended their product line and several different salsa lines were tired, with varying success. We also started distributing Brightsong Tofu products, most notably various salads to Diet Centers and a new soy cheese product called Tofurella. We also picked up Grainaisannce's mochi and amazake products. These 'distributed' products or 'manu prods,' as we called them, yielded low margins, 15% to 20% and it became increasingly difficult to manage the inventory.

Additional walk-in space was built and purchased. The philosophy was to fill up the trucks that were going to the stores already to maximize the delivery efficiency. The short sighted part of this was that it began to take the drivers much more additional time to drive the route. The upside was that we began to have more clout in the stores and could get more and better shelf space.

"Growth takes a toll on cash flow and, in fact, the lack of that foresight nearly wiped Wildwood out during this incredible growth period. Time and again short term, no interest loans were made by the partners to bolster cash flow while we grew sales to $100,000.00 per week. The administrative burden became much heavier during this period and the office space became cramped and unworkable. Mr. Bramblett left the company in early 1990 and Mr. Orbuch ran the north for the next two years. In 1990, the north suffered losses of nearly $100,000.00 and nearly failed. Mr. Orbuch tried to make the company appear profitable in 1991, by eliminating key positions and programs, e.g. product development and product control. This did effectively save money but the infrastructure was severely damaged." Address: Wildwood Natural Foods, 135 Bolinas Rd., Fairfax California 94930. Phone: 415-485-3940 X-47.

7461. Bramblett, Billy. 1998. Company history: Wildwood Natural Foods (Continued–Document part III). Fairfax, California. 10 p. Unpublished typescript.

• ***Summary:*** "Meanwhile, Mr. Ridenour had brought the Santa Cruz operation into the sunlight of profitability. He had developed systems and teams that worked together toward enlightened profitability. His workers worshipped him, called him 'Dad,' and became a family of which he was the head and patriarch. Wildwood Santa Cruz was profitable in 1991, and on a firm footing.

"After a Stanford MBA analysis indicated that both companies should be headed by the enlightened leadership of Mr. Ridenour, the BOD [board of directors] north elected Mr. Ridenour as president and Mr. Orbuch retired. Mr. Ridenour has set about cleaning up the north and installing those systems and procedures which have been proven effective and profitable in Santa Cruz."

"So as of February 1992, Mr. Ridenour was in charge of both companies... In August, 1992 Mr. Bramblett returned at Mr. Ridenour's request to help with product development and financial analysis (Mr. Bramblett had been the CFO of China Books and Periodicals in San Francisco for the past two years). The analysis determined that the company was losing money primarily due to distribution costs and the imbalance between the sales of Wildwood products and the sales of products made by other manufacturers, which at that time was 33% Wildwood and 67% other."

In 1993 Mr. Bramblett took over the accounting department; Wildwood returned to profitability and the owners decided to merge the two companies so they could sell off a small part of it to raise capital. In Nov. 1993 John Breen was hired as controller.

The corporate merger was accomplished in 1994 with each of the four shareholders owning 25% of the surviving corporation. "We then wrote a business plan in which we proposed to build a new tofu factory, bring all production under one roof (likely in Watsonville) and leave a cross dock in Marin County near the Hwy. 101/580 intersection."

"We finally lined up financing for the new factory, but the senior debt underwriters wanted to see more equity on the balance sheet... We have not yet been successful in this plan but have had much interest and several buy-out offers. We have joined the Social Venture Network and have made presentations to the Investor Circle (SVN spinoff) and have a few investment suitors at this time.

"Meanwhile the combined corporations became profitable in 1995, 1996 and 1997 and so far in 1998. We have strung together 13 consecutive profitable quarters and added to our equity thereby. While only growing total sales by about 10% over the past three plus years, we have flip flopped the products profile and are now at 69% Wildwood and only 31% other products, a much more profitable balance. We have also developed many new products and have several products private labeled for us.

"Most recently we have introduced a new private labeled [by Ted Nordquist and TAN Industries] organic soymilk in gable topped cartons which comes in two flavors, Plain and Chocolate. We expect to have this product in distribution in the western U.S. by September 1998.

"Wildwood is currently producing approximately 30,000 lbs, of tofu per week and bottling 2,000 quarts of Yo Soy traditional soymilk (in plastic quarts) in two flavors, Plain and Honey-Vanilla. We reprocess about 40% of the tofu and sell the rest as either 10 oz. vac pack, or 20 oz. vac pac, 16 oz. firm water pack, 16 oz. medium (low fat, calcium sulfate) water pack, or institutional vac pac in 8 lb. blocks or 7 lb. pre-cut. We also produce 20 oz. vac pac for Whole Foods with their label.

"In addition Wildwood produces Hummus in four styles, traditional Mid East, Low Fat, Spicy Low Fat, and Pesto. To complete our middle eastern line, we also produce Tabouli Salad and Baba Ganooj.

"Secondary tofu products include Baked Tofu in four flavors, Smoked Tofu in two flavors, Tofu Vegie Burgers in three flavors, and Tofu Cutlets (traditional Nama Age). We also make Braised Tofu Salad (cubes of tofu lightly grilled with fresh vegetable in exotic sauces) in five flavors and fresh tofu salads in two flavors as well as two tofu spreads. We have abandoned the sandwich market altogether.

"The retail side of the natural foods market has consolidated. Very rarely will you find the small neighborhood health food store or the little mom and pop place that would sell ready to eat products such as ours. Now its all big corporate up-scale super stores with coffee

bars, juice bars, cookie bars, salad bars, sushi bars in 65,000 square feet of fancy, wide aisles, highly decorated and high prices.

"These stores also demand more margin, squeezing distributors and manufacturers and exhibit 'serve all our stores or serve none' ultimatums. We have countered by refining our DSD (direct store delivery) system. Wildwood is now Macintosh networked from orders through production, packing and delivery. The driver/sales reps now deliver to the stores with completed invoice in hand. We educate the store clerks and managers to understand that our full service distribution saves them over 5% in stocking and inventory management expense and have kept the stores margins below 30% in most cases. Also, since we have concentrated on developing products with longer shelf lives and have refined production methods to extend the shelf lives of existing products, the return rates have dropped dramatically to under 3% for the entire Wildwood product line."

"Quality is still our number one goal, but profitability is a close second."

"We have expanded our distribution to include several sub distributors. Rock Island Foods carries our longer shelf life products into stores in the SF Bay area which we opt not to serve, as well as into eighty Lucky Markets and any account which is outside of Wildwood's distribution area. In Los Angeles our products are distributed by California Day Fresh as well as Tree of Life and Nature's Best."

In Portland, we are carried into natural foods accounts by Zanya Trading, and we are preparing to open the Seattle market by the fall of 1998. Our new soymilk will be carried by Texas Health into Texas, Colorado and New Mexico and will pave the way for the rest of our product line into those markets.

"Wildwood will continue to seek financing in order to build a new production facility before the new millennium and we plan to be nationwide by 2005. Our products continue to gain critical acclaim and have won first place or best of show at three separate San Francisco Chronicle and American Tasting Institute events in 1998 alone.

"In case you missed the ownership / management lineup, here's a recap:

"Jeremiah Ridenour, President & CEO, Board of Directors, 25% shareholder.

"Billy Bramblett, Treasurer, BOD, 25%, GM in Fairfax, product development, demonstrations.

"Frank Rosenmayr, VP & Secretary, BOD, 25%.

"Paul Orbuch, 25%.

"Other key personnel include:

"John Breen, controller.

"Erik Todd, distribution manager.

"Dolly Gianni, human resources (and so much more).

"Doug Porter, purchasing manager, graphic design (and so much more).

"Maria Gonzales, production manager, Fairfax.

"Chris Spalaris, plant manager, tofu manager, Santa Cruz.

"Juan Macias, secondary production manager, Santa Cruz.

"Currently we run thirteen delivery routes which visit our accounts three times a week. We have 95 employees. 1998 sales are estimated to exceed $6.5 million of which about 70% will be Wildwood branded products." Address: Wildwood Natural Foods, 135 Bolinas Rd., Fairfax California 94930. Phone: 415-485-3940 X-47.

7462. *CaliforniaCare News* (*Blue Cross of California*). 1998. I'm soy excited: It's not just tofu anymore. Summer.

• ***Summary:*** "Soy foods come from the soybean." They are turning up everywhere in many forms: Vegetable oil, soy flour, "tofu (soybean curd), soynut butter–a peanut butter alternative that's lower in fat, soy milk, yogurt, cheese, and frozen desserts (good dairy substitutes for the lactose intolerant), meat substitutes, such as soy burgers and soy hot dogs (especially good for those trying to cut down on red meat).

"A healthy choice: Many soy foods are high in protein. Two exceptions are soybean oil, which is high in fat, and soy sauce, which is high in sodium.

"Soybeans also contain a chemical that is similar to the female hormone estrogen. Researchers say this chemical may help prevent and treat some cancers, heart disease, and osteoporosis. It can also relieve the hot flashes associated with menopause."

To learn more, call the United Soybean Board at 1-800-Talk-Soy (825-5769).

A color illustration (cartoon) shows a group of singing soy products: green vegetable soybeans in the pod, soy cheese, soy flour, and a soy hot dog in a bun. Address: 21555 Oxnard St., Woodland Hills, California 91367.

7463. Leading Edge Group. 1998. The U.S. health and natural food market: Past performance, current trends, and strategies for the future. 2171 Jericho Turnpike, Suite 200, Commack, NY 11725. 330 p. July. Price $1,995.00. Illust. 29 cm. *

• ***Summary:*** Three past editions of this report have been published by Business Trends Analysts, Inc. (BTA), which is located at the same address as The Leading Edge Group. BTA is the parent company. Since it was founded 20 years ago, it had published reports under two brand names, each of which has a different style. Business Trends Analysts Reports tend to contain mostly secondary research, with an abundance of charts and graphs, and less text and analysis. Leading Edge Reports are conducted by a person with a specialty in that area. The report contains much more primary research and in-depth analysis, and is roughly twice as expensive. This report was conducted by Melina Laverty.

Chapter 5 of this report is titled "Soyfoods and

alternative meat products: Market dynamics.

Overall report–Contents: 1. Executive summary. 2. Overall market dynamics (including Soyfoods). 3. The market for soy foods. 4. The market for herbal teas. 5. The market for dairy foods. 6. The market for grains and cereals. 7. The market for frozen foods. 8. The market for snack foods. 9. The market for groceries. 10. The health food consumer. 11. The health/natural food store industry. 12. Competitor profiles. 13. Industry directory. Address: Commack, New York. Phone: 516-462-2410.

7464. Robertson, Robin. 1998. The soy gourmet: Improve your health the natural way with 75 delicious recipes. New York, NY: Penguin/Putnam/Dutton. xv + 191 p. July. Introduction by James W. Anderson, M.D. Index. 21 cm. A Plume book.

• ***Summary:*** Contents: Foreword. Introduction: Health benefits of soy protein, by James W. Anderson, M.D. 1. The soy solution. 2. Soy what? (soybeans, tofu, tempeh, textured soy protein or TVP, soy milk, miso, soy sauce, soy flour, dry-roasted soybeans or soy nuts, soy convenience foods, egg replacers). 3. Making soy protein work for you. 4. Breakfasts. 5. Let's do lunch. 6. What's for dinner? 7. Desserts. 8. Shakes and more. 9. Sample menus. Glossary (In addition to the soy foods described at Chapter 2: Gomasio, soy cheese, soy protein powder, and tamari soy sauce).

The author, who is a woman, worked as a professional chef during the 1980s, when she used large quantities of meat, eggs, and dairy products to prepare dishes in classic cuisines, such as French and Italian. In 1987 she made a dramatic change in her life, when she decided to stop working in professional kitchens, and start to pursue a healthier lifestyle, becoming a vegetarian, eliminating all meat and dairy products from her diet. Having lost both parents to heart disease and stroke, she had a personal interest in helping people learn how to cook and eat properly. Using soy products such as tofu, tempeh, and soy milk, she was able to recreate her favorite old recipes–sautéed dishes with cream sauces, rich pasta dishes, and even delicious cheesecakes–all without cholesterol. But these soy foods actually offered a double benefit, for recent scientific studies show that they actually reduce cholesterol levels.

7465. **Product Name:** Silk (Soymilk Sold Refrigerated in Quart Pure-Pak / Gable Top Cartons) [Plain {Dairylike}].
Manufacturer's Name: White Wave, Inc. (Product Developer-Distributor).
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 1998. July.
Ingredients: May 2000: Filtered water, whole organic soybeans*, organic raw cane crystals*, calcium carbonate, sea salt, natural flavors, carrageenan, vitamin A palmitate, vitamin D-2, riboflavin (vitamin B-2), vitamin B-12. * = Grown and processed in accordance with the California Organic Foods Act of 1990. Silk soybeans are third-party certified organic by QAI. Silk is certified to containno GMO soybeans.
Wt/Vol., Packaging, Price: Quart Pure-Pak carton.
How Stored: Refrigerated.
Nutrition: Per 1 cup (240 ml): Calories 80, calories from fat 20, total fat 2.5 gm (4% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 75 mg (3%), total carbohydrate 8 gm (dietary fiber 0 gm, sugars 4 gm), protein 7 gm. Vitamin A 10%, calcium 30%, vitamin D 30%, vitamin B-12 50%, vitamin C 0%, iron 2%, riboflavin 30%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Carton with Label sent by James Terman of White Wave. 2000. May 11. 2.75 by 2.75 by 8¼ inches. Tetra Rex package. "Organic–Third party certified. Calcium enriched. Low 1% fat & vitamin enriched." Talk with James Terman of White Wave. 2001. May 29. Silk plain in quarts was introduced in July 1998. This soymilk was formulated to taste and look as much like dairy milk as possible.

7466. Zind, Tom. 1998. Making the case for soy: Soy protein merges into the fast lane as a functional food ingredient. *Food Processing* (*Chicago*) 59(7):31-32. July. Foods of Tomorrow section.

• ***Summary:*** Soy protein is getting more attention in the budding functional foods/nutraceuticals arena in large part because of the isoflavones in soy which have many health benefits. A number of companies have developed isoflavone-rich extracts–such as Novasoy from ADM. Big companies like General Foods and Nabisco are now working with soy and see a bright future ahead. ConAgra Frozen Foods is promoting soy in its Advantage\10 line, recommended by Dean Ornish, M.D. A color photo shows the front of one package. ADM markets a powdered soy drink named Nutribev and is test marketing a soy-based frozen dessert, named Dairylike, in Southern California. Protein Technologies International says it has found new scientific evidence that soy isoflavones can control cholesterol.

7467. Roller, Ron. 1998. American Soy Products' new soymilk plant and the U.S. soymilk market (Interview). *SoyaScan Notes.* Aug. 6. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** American Soy Products has expanded its former building, added a second soymilk processing line and a packaging machine. Then the company moved its original processing line so that it is now located next to and parallel to the new line. They started running both lines at the same time 1-2 weeks ago. This has enabled ASP to more than double its soymilk production capacity.

Starting about 2 years ago, ASP began experiencing occasional shortages. Even though they were running

their plant 24 hours a day, six days a week, demand was occasionally greater than they could supply. Starting about one year ago, they had constant shortages, and in some cases the demand was up to 50% more than they could supply.

The grand opening in September has several purposes. One is to celebrate the new line and expanded plant. A second is to get some good PR and good-will for ASP, since many consumers and retailers were inconvenienced and upset during the year of shortages and rationing. Even today, Eden Foods is still having to ration soymilk, but that will soon disappear.

Ron finds that soymilk has now really tapped the mainstream; most of the growth is in supermarkets. Unfortunately, during the past year, ASP and Eden Foods have been unable to take advantage of this growth; they have not wanted to take on new customers when they could not fully supply their former customers.

Dairy publications that Ron reads are encouraging local cow's milk dairies to get on the soy bandwagon by buying powdered soymilk, reconstituting it, and selling it gable-top cartons along with their dairy milk. Some manufacturers of powdered soymilk are now advertising in these dairy publications. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

7468. Duchesne, Paul. 1998. Reflections on the early history of Wildwood Natural Foods, and how Richard Rose got involved with tofu (Interview). *SoyaScan Notes.* Aug. 12. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Paul's company is now named "Mama Paul's." Paul Watson was a mutual friend of Paul Duchesne and Billy Bramblett who happened to work in the Good Earth Natural Foods store as a stock clerk. He started to study acupuncture with a person in Bolinas. He is a carpenter and licensed contractor now in Mill Valley. He had nothing to do with tofu. Chris Smith was last seen in or near St. Louis, Missouri, teaching macrobiotics.

Wildwood started making and bottling soymilk about 1-3 months after it began to make tofu in 8 Aug. 1980 in Fairfax.

The Tofumobile got Wildwood a lot of early publicity.

Paul has heard: When the people in Ukiah sold the tofu shop to Dik Rose, he agreed (it was written into the contract) not to move it out of Redwood Valley. But he did. He moved the whole thing to Petaluma. They were very upset. They broke in and stole all the equipment, then put it in a locker. They then threatened him that he was not going to get it back; this went on for a long time. Dik finally showed up with the sheriff and guns, and forced them to open the locker and give him back his equipment. Redwood Valley is 5 miles north of Ukiah. David Patton (who was in a partnership with something like 3 people) was one of the people whole sold the shop to Rose. David was the main tofumaker and they wanted fresh tofu in Ukiah. David wrote Paul a letter last year from Edinburgh, Scotland, studying. David has long been involved with interesting ecological things such as yurts, planting trees, and tofu. "They were very, very upset that Rose moved the shop out of Redwood Valley down to Petaluma. They felt he totally betrayed them." Address: Fairfax, California. Phone: 415-453-2360.

7469. Liu, Jeff. 1998. Third Annual Tofu Festival dazzles: Thousands of tofu enthusiasts attend Nisei Week tribute to soy bean cake product at JACCC. *Rafu Shimpo* (*Los Angeles, California*). Aug. 18. p. 1, 5. [Eng]
• ***Summary:*** This is the best overview seen of the 1998 L.A. Tofu Festival. An "estimated crowd of between 40,000-50,000 hungry people streamed into Little Tokyo this past weekend for a tribute to all things tofu." Over 40 restaurants and food providers offered tofu dishes. This year's festival was the biggest ever, spilling from the Japanese American Cultural and Community Center (JACCC) Plaza into South San Pedro Street. Popular recipes included: Fried tofu with garlic (by Empress Pavilion). Tofu cheese mousse. Tofu cheesecake (Inn of the Seventh Ray), Iced mocha cappuccino with soy milk. Halo-halo and soy snowcones. Tofu coffee dessert (Jello-like). Tofutti Cuties. Hawaiian orange passion mango banana tofu smoothie (from King's Hawaiian; "a remarkable and refreshing fruit-soy shake that is a wonderment to the sense..."). Tofu curry. Smoked eel with tofu and soba. Tofu tuna poke salad. Mabo tofu. Tofu avocado seviche (by Coma Tofu, an outreach to the Latino community organized by Yvonne Gonzalez; "a potent blend of minced onions, chopped cilantro and lime in an all-vegetarian version that substitutes crumbled tofu for fish"). A photo shows an aerial view of one street, lined with tent-like booths and jammed with people. Address: Rafu staff writer.

7470. Endo, Margaret. 1998. The LA Tofu Festival of August 1998 (Interview). *SoyaScan Notes.* Aug. 27. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** This year's Tofu Festival was the biggest and most successful yet. Since there is no admission fee to the Tofu Festival, the Little Tokyo Service Center raises its money by selling food scrip tickets. Each ticket costs $1.00 and can be used at any of the booths, for food, drinks, or novelty items. This year sales of those tickets was $69,000, almost double the $37,000 dollar figure last year. Saturday they sold $33,000 in tickets compared with $16,000 last year. Sunday they sold $36,00 in tickets compared with $20,000 last year. There were 40 food booths and 3 drink booths, including one selling soymilk snow cones. Most of the food booths were run by restaurants that served tofu dishes. One restaurant sold chilled edamamé. There was one tofu boutique selling t-shirts, polo shirts, shorts, etc. and on each was written LA Tofu Festival. This year there was a children's pavilion with really cute tofu-related games, soy

coloring books sent by the United Soybean Board, and 300 soy-based crayons sent by Dixon-Ticonderoga. They also raise money by having corporate sponsors, and selling their tofu cookbook (which was only slightly changed from last year). There was also a program booklet, that contained a history of tofu.

Rafu Shimpo did lots of good English-language articles this year, including highlights of each restaurant that participated. The LA Times did nothing. The crowd was more racially diverse than last year, with a larger percentage of non-Japanese Americans and non-Asian-Americans, including a lot more Chinese-Americans, and Hispanics.

They did a lot of work with Yvonne Dreyfus of the Latino Outreach. She was on KBEA–the Latino station. It worked out pretty well but it was a little bit difficult for Yvonne. Because she wasn't a restaurant, she had much fewer resources as an individual, so LTSC had to help a lot with things like ordering the food products. A little more maintenance was required–but it was well worth it because of the outreach and exposure to the Latino community. Margaret is hoping she will stay involved next year. People liked her Tofu Seviche.

In Los Angeles there is a program on PBS (KCET-TV–channel 28) titled "Visiting... with Huell Howser." This coming Saturday at 6:00 p.m. and Sunday at 7:00 p.m. in Los Angeles (channel 28) a 1-hour documentary he filmed on Saturday about the Tofu Festival–All You Wanted to Know about Tofu will air on this channel. He first visited a tofu factory (American Foods) to show how tofu is made, then shot footage at the festival. The program will not be aired outside the Los Angeles area. The phone number of Huell Howser Productions is 213-953-5380. Note: They sent Soyfoods Center a free copy of the 1-hour video. A PR company volunteers their time each year and puts together a media packet of all the articles etc. about the Festival. Margaret will ask them to send one packet to Soyfoods Center. Address: Little Tokyo Service Center (Resource Development Center), 231 East 3rd St., Los Angeles, California 90013. Phone: 213-473-1613.

7471. Galeaz, Kim. 1998. Build on better health with soyfood guide pyramid. *Soy Connection* (*The*) (*Jefferson City, Missouri*) 6(3):4-5. Summer. [4 ref]
• ***Summary:*** Page 4 shows the full-page "Daily Soyfood Guide Pyramid" containing six different food groups. Page 5 describes how soyfoods can be used in each group, including soy flour, green soybeans, soymilk, soy cheese, soy yogurt, tofu, meat alternatives (incl. soy burgers), roasted soynuts, soynut butter, and soy oil. Address: RD.

7472. Ndungi Khoto, Aubry. 1998. Contribution a l'avant-projet d'une usine de production de *lait de soja* en poudre a Lubumbashi [Contribution to the rough draft for a factory for the production of soymilk at Lubumbashi, Congo]. Civil Engineer thesis, University of Lubumbashi, Polytechnic Faculty, Dep. of Industrial Chemistry. v + 154 + 16 p. Illust. 30 cm. [73 ref. Fre]
• ***Summary:*** Preface and dedication. Introduction. Part I: Review of the literature. 1. General information about soya and proteins: 1.1. The soybean (Botanical, origin and history, soybean production and commerce worldwide, soya in the Democratic Republic Republic of the Congo {Congo, formerly Zaire}, structure and composition of soybean seeds, utilization of soybeans {with diagram}, food uses of soybeans {oil and meal, soy flour (4 types), soy concentrates and isolates, textured soy proteins {TVP, thermoplastic extrusion, spun fibers}, soymilk, tofu, other uses (shoyu, miso, tempeh, yuba)}, industrial uses of soybeans {linoleum, plastics, paints, varnishes, etc.}). 1.2. Proteins (in the human body, in foods), the structure of proteins (amino acids, ionization and acid-base properties of amino acids), protein bonds, denaturation. 1.3. Soya proteins (glycinin or globulin 11S, globulin 7S, hemagglutinins or lectins, protein inhibitors and other antinutritional factors, amino acid composition of soy protein). 1.4 Factors affecting the food value of soya: Acceptability problem (food value of raw soybeans), intolerance to soy proteins, off-flavors in soya and their source, inactivation of lipoxygenase, other treatments affecting the food value of soya: Alkalis.

2. Preparation and properties of soymilk. 2.1. Properties. 2.2. Advantages and disadvantages of soymilk compared with cow's milk. 2.3. Preparation. 2.4. Commercial / industrial production using the Alfa-Laval process.

3. Reminder of certain operations required for the preparation of soymilk powder: 3.1. Homogenization. 3.2. pasteurization and sterilization. 3.3. Concentration by evaporation. 3.4. Drying by atomization. 3.5. economies of energy in dewatering operations.

4. Some ideas on the methods of sensory evaluation: 4.1. The different methods. 4.2. Results and interpretations.

5. Important ideas in the study of the market, in determining the capacity of production, and in the economic evaluation of a project: 5.1. Study of the market. 5.2. Determining the capacity of production. 5.3. Economic evaluation of a project, incl. estimating fixed capital by adding capital costs.

Part II: Experimental, industrial calculations, economic calculations. Introduction. 6. Origin and characterization of the raw materials, trials for inactivation of lipoxygenase. 7. Determination of the optimal conditions for the preparation of soymilk. 8. Results of pilot plant trials. 9. Market study and determination of the capacity of production. 10. Description and calculations for the installation. 11. Economic evaluation of the project. General conclusion.

Tables show: (1) Number of people that can be supported for 1 year by the production from one acre devoted to certain crops and animals. Fewest: Beef 190. Pork 319. Poultry 457. Most: Potatoes 5,329. Split peas 6,901.

Soybeans 9,075. Algae 43,200–154,000. Yeast 3,275,000. (1.1) Leading soya producing countries in 1985 (worldwide, with area, production, and yield; USA, Brazil, China, Argentina, India). (1.2) Leading soya producing continents in 1985 (North and Central America, South America, Asia, USSR, Europe, Africa, Oceania). (1.3) Leading soya trading countries in 1985. Importers: Japan, Netherlands, R.F.A. (Republique Federal Allemagne = Germany), Spain, Italy. Exporters: USA, Brazil, Argentina, China, Paraguay. (1.4) Production of soya in the Congo, by province 1970-1978 (the leading producer by far in 1978 was Western Kasai). (1.5) Production of soya in Katanga [formerly Shaba, before that Elisabethville] (1990-1994; by far the leading producer is Tanganyka). 1.6 Total production of soya in the Congo (1,000 metric tons) from 1970-1995 (increased from 1.7 in 1970-74 to 18 in 1995). (1.7) Average composition of different parts of the soybean seed. (1.8) Physico-chemical composition of soybean seed (ranges and average). (1.9). Mineral content of soybeans. (1.10). Vitamin content of mature soybean seeds and soybean meal. (1.11) Fatty acid composition of soybean oil. (1.11A) Enzymes in the soybean: Lipoxidase, urease, lipases, beta-amylase. (1.12) Properties and characteristics of the water-soluble fractions of soybean seeds. (1.12A) Variations in the solubility of proteins from defatted soy flour at various pH levels. (1.12B) Amino acid composition of soybean protein. Address: Lubumbashi, Katanga Province, Congo.

7473. *Ontario Soybean Growers' Marketing Board Newsletter.* 1998. Soybean processing and the Guelph Food Technology Centre. Aug. p. 4.
• ***Summary:*** "For a crop like soybeans, processing is the 'magic' that converts a hard little bean into a wide variety of high quality, nutritious foods and food ingredients. Whole soybeans can be processed into traditional soyfoods like soymilk or tofu, or they can be separated into their primary components: Protein, oil, lecithin and fibre.

"Consumer interest in foods containing soybeans is on the rise... many Canadian food processors have begun to develop new soyfood products for the marketplace. However, soyfood development is no simple task, so many have contracted the services of the Guelph Food Technology Centre," which is located on the main campus of the University of Guelph. The facilities and benefits are described. Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

7474. Sato, Satoru. 1998. Chef Sato's all-natural desserts: Delicious cakes, pies, pastries, and other irresistible sweets. Becket, Massachusetts: One Peaceful World Press. 96 p. Foreword by Aveline Kushi. Recipe index. 22 cm.
• ***Summary:*** This innovative little book contains "42 delicious, sugar-free, dairy free desserts." Soymilk is widely used in place of dairy milk (as in fillings), and tofu is used in many frostings. Maple syrup is used as the sweetener. Address: Great Barrington, Massachusetts.

7475. *Bluebook Update* (*Bar Harbor, Maine*)**.** 1998. Devansoy plant in full production. 5(3):3. July/Sept.
• ***Summary:*** Devansoy Farms of Carroll, Iowa, now has a refurbished plant in Kansas, which began production in April of soymilk powder, full-fat soy flour, and low-fat soy flour. Contact Elmer Schettler.

7476. Eden Foods, Inc. 1998. Eden–The highest quality natural food (Catalog). Clinton, Michigan. 12 p. 28 cm.
• ***Summary:*** This 8-page color catalog, with four pages of inserts, introduces Eden Foods, its products, philosophy, and history. A timeline running across the bottom of each page lists 23 milestones in the company's history, which is said to have started in 1968. Note: The founders of this company all agree that it was not founded in any form until Nov. 1969.

Contents: Eden Foods–Thirty years of dedication: Macrobiotic understanding, tribute to Herman Aihara, Old World pasta–goodness of grain, maturing as an organic manufacturer, organic pioneers of the audit trail, Eden today (supporting 200 family farms with over 20,000 acres of organic land). Eden Foods–A dedicated network: Color maps show the source of products in the USA, Japan, and Europe. Intuitive imported foods, the Eden brand–fulfilling a promise, organic pest management, our GEO (genetically engineered organisms) policy (since 1993), preserving organic integrity. Edensoy creates a new food category. Eden in the next 30 years? Company goals (rear cover).

The first insert, dated Sept. 1998, is written and signed by Michael J. Potter, "leading Eden Foods for twenty-seven years" (i.e. since 1971). The second insert lists all or most of Eden's products. The third is a mailer inviting comments. Address: 701 Tecumseh Road, Clinton, Michigan 49236. Phone: 517-456-7424.

7477. Ginsberg, Beth; Milken, Mike. 1998. The taste for living cookbook: Mike Milken's favorite recipes for fighting cancer. Santa Monica, California: CaP CURE. Distributed by Time-Life Books. 118 p. Illust. Index. 26 x 27 cm. [2 ref]
• ***Summary:*** This is a gorgeous, low-fat vegetarian cookbook in which about half the recipes use soy as a major ingredient. It is loaded with color photos (many full page), playful graphics, and good advice. Note: 100% of the proceeds from this book are used to fund prostate cancer research. The book is available at bookstores nationwide, or it can be ordered by dialing toll-free 1-877-884-5433 (LIFE). Contents: Introduction, by Michael Milken. Preface, by Beth Ginsberg. Four nutritional principles of CaP CURE to fight prostate cancer and other hormonal cancers: (1) Limit dietary fat to 15% of total energy intake (calories). (2) Eat 5 or more fruit and vegetable servings per day. (3) Consume 25 to 35 grams of dietary fiber a day. (4) Consume 40 to 60 grams of soy

protein a day. "Americans have a five times higher incidence of prostate cancer than people living in Asia and eating a traditional diet. Soups. Exercise. Entrees. Soy and soybeans. Sandwiches and sides. Cruciferous vegetables. Breakfasts and shakes. Desserts. Healthy pantry. Afterword, by Donald S. Coffey, PhD, President of the American Assoc. for Cancer Research and Professor of Urology, Oncology, Pharmacology and Molecular Sciences, Johns Hopkins Hospital, Baltimore, Maryland: We are what we eat, how does food cause or protect us from cancer (ROS = reactive oxygen species), how did we lose our way?, how did our diet change ("The great apes were primarily vegetarian, consuming great quantities of vegetables that are high in fiber"), what should we do? About CaP CURE.

Soy-related recipes include: French onion soup (with soy cheese and soy sauce, p. 20). Broccoli potato soup (with grated nonfat cheddar-style soy cheese, p. 22). Shiitake miso soup (with silken tofu and low-sodium tamari sauce, p. 22). Taco salad with a chili lime dressing (with 1½ lb fat-free soy meat, p. 26). Chinese roasted tofu salad (p. 33).

Note. This is the earliest English-language document seen (April 2013) that contains the term "roasted tofu;" it refers to grilled tofu.

Orange ginger dressing (with white miso and tamari, p. 33). Chef's salad with miso shallot dressing (and Soy Deli Slices, p. 34-35). Thousand island dressing (with tofu, p. 34-35). Chopped vegetable salad (with 1 cup edamame, p. 36). Teriyaki tofu bowl with Chinese vegetables (p. 40). Tofu dog casserole with a pretzel crust (p. 42). Soy and Soybeans (with a sidebar on "understanding tofu," p. 44-45). Lasagne with "soysage" (with fat-free vegetarian sausage, silken tofu, and soy cheese, p. 46). Spinach cannelloni with fresh tomato sauce (plus soy milk and low-fat tofu, p. 48-49). Vegetable fritatta with roasted tomato salsa (and 2 lb tofu, p. 54-55). Enchilada pie with ranchero sauce (and 1 lb soy cheese). Greek spinach pie in a phyllo nest (with tofu, p. 61; remake of spanakopita). Homemade vegetable pizza with soy cheese (p. 62-63). Vegetable reuben (with tempeh bacon strips, p. 68). Tofu egg salad sandwich (p. 72). New Deli (fat-free hot dog, p. 75). VLT with herb mustard (and fat-free tofu bologna slices, p. 76). Broccoli in soy cheese sauce (p. 78-79). Fruit shake (with soy protein isolate, p. 84). Blueberry banana multi-grain pancakes (with soy milk, p. 87). Strawberry shortcake (with soy milk, p. 96). Carrot cake (with silken tofu, p. 100-01). Devil's "fool" cake with cocoa frosting (plus silken tofu, p. 104). Tofu cheesecake with fresh berry topping (p. 106-07). Banana cream pie (with 3 cups vanilla soy milk, p. 108). Old fashioned chocolate pudding (with 2 cups cocoa soy milk, p. 109). Maple flan (with 2 cups soy milk, p. 110). Address: CaP CURE, 1250 4th St., Suite 360, Santa Monica, California 90401. Phone: 310-458-2873.

7478. Goldbeck, Nikki; Goldbeck, David. 1998. The healthiest diet in the world: A cookbook and mentor. New York, NY: Dutton (Penguin/Putnam Inc.). xiii + 561 p. Sept. Illust. General index. Recipe index. 25 cm. [840+* ref]
• ***Summary:*** This is an excellent book, with a wonderful title that lives up to its promise. Both authors are real professionals, with 25 years in the field. Contains extensive information about the importance of a wholefoods, natural foods diet, with plenty of fresh fruits, vegetables, beans, and soyfoods as sources of the many recently-discovered phytochemicals, which offer promising health benefits. The authors are fans of soyfoods, which are featured in both the text and recipes throughout the book.

In Part I, "Goldbeck's Golden Guidelines," No. 5 is "Super Soy Foods" (p. 14-15) which encourages readers to "Make soy foods a regular part of your diet."

Part II is the recipe section, titled "In Nikki's kitchen: Healthiest diet recipes." The main soyfoods used in recipes are tofu (48 recipes!), tempeh (15), soy milk (14), miso (8), soybeans, whole dry (3), and soy flour (2). This book contains so many soy-related recipes that we cannot possibly list all of their names. So here are two samplers of such recipes to give a feeling of their diversity, extent, and inviting names. (1) Salad dressings and salads: Creamy miso-mustard coleslaw (p. 178). Tofu mayonnaise (p. 190). Creamy tofu Russian dressing (p. 191). Creamy tofu ranch dressing (p. 191). Lemon-tahini dressing (with soy sauce, p. 192). Creamy miso-mustard dressing (p. 193).

(2) Tempeh recipes: Tempeh strips (p. 31). Tempeh breakfast links (p. 32). Baked Italian tempeh (p. 38). Tempeh burgers (p. 39). Skewered tempeh with orange-nut crust (mini kebabs, p. 61). Maple-pecan tempeh (p. 98). Baked corn-tempeh hash (p. 98-99). Picadillo (Latin American sloppy Joes with tempeh, p. 99). Tempeh mushroom stew (p. 100). Asian grill (with marinated tempeh, p. 101). Tempeh kebabs (p. 102). Shish kebab in a bag (p. 103). Tempeh-bean chili (p. 114-15).

In Part III, "Mentor," one entire chapter is dedicated to soyfoods ("5. In praise of soybeans," p. 408-29). The contents of that chapter: Introduction. Soy's special assets. The phytochemical furor. Protein plus. Soy fiber. Vitamins and minerals. Soy concerns. Soy food selection (incl. Western-style dairy and meat alternatives; soy cheese, soy ice cream, "soy-based imitation meat"). Stick with traditional soy foods: Tofu, tempeh, soy milk, soy nuts, whole soybeans (incl. edamame or green soybeans), soy sprouts, soy flour, soy grits, soy sauce, miso, okara (soy fiber), natto. Soy for health: Introduction, cancer (breast, prostate, and other hormonally influenced cancers), heart disease, diabetes, osteoporosis, women and soy, infant feeding. Nikki's dialog boxes: Mixing and matching soy protein. Just because they call it "milk": Nondairy vs. dairy. The question of salt. How to acquire your anti-cancer soy intake. Twenty-five grams of soy protein a day?

Soybeans are also mentioned in Chapter 6, "The beauty of beans" (see p. 431, 434). The 43-page bibliography of

current scientific information on the health benefits of foods is worth the price of the book.

In the chapter titled "Controversial carbohydrates" is a long section about the glycemic index of foods titled "G-Force: A new perspective on carbohydrates" (p. 280-89); it includes a 6-page table showing G-force [glycemic index] ratings for individual foods. "Foods with a high G-Force [55 and above, bad] raise blood sugar levels quickly; this is usually matched by a rapid rise in insulin. Foods with low G-Force cause blood sugar levels to rise gradually, in which case insulin is usually released more evenly." Foods that tend to have a high G-Force are: Desserts and sweets (doughnut 108, graham crackers 106), foods made from refined flours (baguette 136, bagel 103, white wheat bread 100), sweet and refined breakfast cereals (puffed rice 132, Cornflakes 119, Cheerios 106), sugars (maltose 150, glucose 137, sucrose 92). Foods groups that tend to have low G-force are: Fruits (apple 54, apple juice 58, orange juice 63, but watermelon 103), legumes (soybeans 25, chickpeas 47), dairy products (yogurt 20, milk 46). vegetables (non-starchy). Address: Woodstock, New York.

7479. **Product Name:** Soy Dream (Soymilk) [Original, Chocolate, Vanilla, Original Enriched, Chocolate Enriched, Vanilla Enriched].
Manufacturer's Name: Imagine Foods, Inc. (Marketer-Distributor). Made in Manteca, California, by California Natural Products.
Manufacturer's Address: CNP: P.O. Box 139, Manteca, CA 95336. Imagine: 350 Cambridge Ave., Suite 350, Palo Alto, CA 94306. Phone: 650-327-1444.
Date of Introduction: 1998. September.
Ingredients: Chocolate enriched: Filtered water, organic whole soybeans*, rice syrup, cocoa, tricalcium phosphate, sea salt, vanilla, xanthan gum, vitamin A palmitate, vitamin D-2, vitamin E, vitamin B-12. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 8 oz or 32 oz Tetra Brik Aseptic carton. Retails for $3.98 per three-pack of 8 oz or $1.99 per quart (1998/09 California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per cup (8 fl oz): Calories 210, calories from fat 40, total fat 4.5 gm (7% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 150 mg (6%), total carbohydrate 35 gm (sugars 22 gm), protein 7 gm. Vitamin A 10%, vitamin D 25%, vitamin B-12 25%, vitamin E 25%, calcium 30%, iron 10%, thiamin (B-1) 10%, riboflavin (B-2) 4%, niacin (B-3) 4%, pantothenic acid (B-5) 4%, folic acid (B-9) 15%, vitamin B-6 8%, phosphorus 25%, magnesium 15%, zinc 6%, copper 8%. Not a significant source of fiber or vitamin C. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Ad (full page, color, trade) in Natural Foods Merchandiser. 1998. Aug. p. 7. "Finally, a premium quality soy beverage line from a proven, consistent supplier." "From the makers of Rice Dream, the best-selling product in the natural foods industry." "Six delicious varieties in quarts and convenient 8 oz sizes." Large photos show the front of each aseptic package. Web: info@imaginefoods.com.

Spot (quarter page, color) in Vegetarian Times. 1998. Sept. p. 12. "Power pack." After years of making rice-based non-soy products, Imagine Foods introduces its first soy product, a soy beverage. "Perfect for stashing in lunch boxes." Made with organic soybeans and fortified with vitamins E and B-12. "Even better: It provides as much calcium and vitamins and D as whole milk."

Talk with Ellen Weiser of Imagine Foods. 1998. Sept. 16. Imagine Foods has been planning this product since before April of this year. The quarts were first available for sale in stores on about 9 Sept. 1998. The suggested retail price is $1.79 to $2.59 for enriched and $1.69 to $2.09 for non-enriched. The product is made by California Natural Products at their factory in Manteca. The Mitchells purchased the necessary equipment and developed the process. Imagine Foods plans to celebrate its 15th anniversary next year. In June 1984 Imagine Foods introduced Rice Dream, a non-dairy frozen dessert based on rice beverage, in hard pack pints in the following flavors: Vanilla, Carob, Carob Chip, Strawberry, Lemon, Orange, and Carob Almond.

Product with Label purchased for $1.99 at Open Sesame (natural food store) in Lafayette, California. 1998. Dec. 23. Aseptic Chocolate Enriched with reclosable lid. Chocolate brown and black on white. Illustration on the front panel shows a thin stream of chocolate soymilk being poured through the "o" in "Soy" into a tall, chilled class where it forms a little wave. Text on front panel: "Soy beverage with vitamins A, D, E, B-12. Rich in calcium. Lactose free." Text on back: "Health benefits of Soy Dream: Lactose and dairy free. High in protein. As much calcium, protein, vitamins A and D as whole milk. Rich in vitamins B-12 and E. Contains soy isoflavones. Low in saturated fat. Cholesterol free. 100% vegetarian." Lists five other lines of "Fine, non-dairy products from Imagine Foods." On one side panel, a table compares the nutritional composition of this product with whole chocolate milk.

Talk with James Terman of White Wave. 1999. May 20. Soy Dream is coming out in a gable-top carton–fresh.

7480. ProSoya Foods Incorporated. 1998. Manufacturer of superior soyfoods products (Ad). *Soya & Oilseed Bluebook* 1999. p. 102.
• ***Summary:*** This one-third-page black-and-white ad shows 4 small aseptic cartons and four large gable-top cartons of ProSoya SoNice organic soy beverage, plus five cups of ProSoya SoNice Yogurt. The soymilk comes in natural, original, vanilla, chocolate & cappuccino (fresh & UHT

packages). The soy yogurt comes in vanilla, strawberry, fieldberry, raspberry, and black cherry. The company's basic listing is on p. 143 of the Bluebook. See also ProSoya Inc. at 5310 Canotek Rd. #2, Ottawa, Ontario K1J 9N5, Canada. Address: 15350 56th Ave., Surrey (Vancouver), British Columbia, Canada V3S 8E7. Phone: (604) 576-8038.

7481. *Soya & Oilseed Bluebook.* 1998--. Serial/periodical. Bar Harbor, Maine: Soyatech, Inc. Peter Golbitz, publisher and editor. Frequency: Annual.
• ***Summary:*** Preceded by Soya Bluebook Plus. A directory and information book for the soybean processing and production industries. The first issue (shipped Sept. 1998) is subtitled "The annual directory of the world oilseed industry." On the cover, below a map of the world is printed the date "1999" in large letters, followed by "A Soyatech Publication." Crops featured on the front cover and inside are "soya, corn, cottonseed, canola, rapeseed, sunflowerseed, palm kernel, palm, coconut, and peanut."

Contents (the four main sections are marked with a fold-out tab): Translations of oilseed terminology (English, German, French, Spanish, and Portuguese). Organizations and government agencies: Complete listings by country. Oilseeds and oilseed products: White pages (Index, individual crops), catalog pages, yellow pages (complete company listing by country). Equipment supplies and services. Oilseed statistics. Oilseed reference: Oilseed glossary, standards and specifications, oilseed technical charts and tables. Indexes: Comprehensive index, internet address index, brand name index, advertiser index.

Soy-related terms appearing in the translation section (p. 9-15) are: (1) Oilseeds and products: dairy analogs, lecithin–edible, lecithin industrial, meat analogs, miso, organic soy products, soy distillate, soy fiber, soy flakes–defatted–edible, soy flakes–full fat, soy flour–defatted, soy flour–enzyme active, soy flour–full fat, soy flour–low fat, soy flour–roasted, soy flour–textured, soy grits, soy isoflavones, soy livestock feed, soy oil margarine, soy oil shortening, soy oil–crude, soy oil–edible, soy oil–hydrogenated, soy oil–industrial, soy oil–refined, soy oil-based fuel, soy protein concentrate, soy protein isolate, soy protein–hydrolyzed, soy protein–industrial, soy sauce, soy sterols & tocopherols, soy-based foods–other, soybean fatty acids, soybean hulls, soybean meal, soybean meal–full fat, soybean seed breeder, soybean seed (for planting), soybean soapstock, soybeans–food grade, soybeans genetically modified, soybeans–green vegetable, soybeans–identity preserved, soybeans–non-gmo, soybeans–organic, soybeans, whole dry, soymilk beverages, soymilk powder, soynuts, tempeh, tempeh starter cultures, textured vegetable protein, tofu & tofu products, tofu powder. (2) Equipment & services: Coagulants for tofu, soymilk & tofu processing equipment, sprouting equipment. Address: 318 Main St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207-288-4969.

7482. **Product Name:** Soymilk, Tofu, Soy Snacks.
Manufacturer's Name: Soytein, Inc.
Manufacturer's Address: 480 Douglas St., Mt. Gilead, OH 43338-1019. Phone: 614-766-0688.
Date of Introduction: 1998. September.
New Product–Documentation: U.S. Soyfoods Directory. 1999. p. 42-43. Talk with Bill Lui, founder and owner. 1999. May 3. He started making soymilk in Sept. 1998, then tofu in Dec. 1998. He designed and built all the equipment in his plant. He also sells custom made equipment; it is made in Taiwan to his specifications. A tofu maker will soon arrive to help him.

Letter from Bill Lui. 1999. May 10. A 1-page laser-printed leaflet describes "Soytein Inc." He has clipped and included two color photos of tofu equipment made in Taiwan to his specs.

7483. US Soy, LLC. 1998. Food grade soybeans (Ad). *Soya & Oilseed Bluebook* 1999. p. 101.
• ***Summary:*** This half-page black-and-white ad states that the company offers: Non-GMO guaranteed, identity preserved, certified organic, variety development, cleaning and storage, supplies available all year. Can store over 1.1 million bushels of soybeans. Occupies 25 acres and contains 114 storage bins. Also offers five soy products produced from client specified soybeans: Soy oil and soy flour, spray dried soy milk, roasted soybeans [oil roasted soynuts], and dehulled soybeans. Website: www.ussoy.com. Address: 2808 Thomason Dr., Mattoon, Illinois 61938. Phone: 217-235-1020.

7484. Vitasoy USA Inc. 1998. By popular demand, we've given Vitasoy a little something extra: Introducing Vitasoy Enriched (Ad). *Vegetarian Times.* Sept. p. 39.
• ***Summary:*** This full-page color ad shows many packages of new Vitasoy Enriched, in original and vanilla flavors, against a white background. "We've added calcium, riboflavin, zinc, vitamins A & D–plus vitamin B-12–an essential vitamin for those on a vegan diet... Like all Vitasoy drinks, our Enriched is made from certified organic whole soybeans..." Address: P.O. Box 2012, South San Francisco, California 94083. Phone: 1-800-VITASOY (848-2769).

7485. **Product Name:** Silk Organic Plain (Soymilk Sold Refrigerated in One Quart ESL Gable Top Cartons).
Manufacturer's Name: White Wave Foods Co. (Distributor).
Manufacturer's Address: Colorado.
Date of Introduction: 1998. September.
Ingredients: Organic soymilk (filtered water, whole organic soybeans), calcium carbonate, sea salt, natural flavors,...
Wt/Vol., Packaging, Price: One quart (946 ml) Tetra Pak ESL gable top carton.

How Stored: Refrigerated.
New Product–Documentation: News release (on White Wave letterhead) sent by Holden McClure for White Wave. "Nothing plain about new White Wave Silk Organic Plain soymilk" "TofuTown, USA (Boulder, Colorado), August/ September 1998. White Wave announces the launch of Silk Organic Plain. Third party certified by QAI. It will be launched first in traditional quart cartons, then in half gallons within a few months.

Note: This is the first organic product in the Silk soymilk line. The company expects to have $13 million in sales this year.

7486. **Product Name:** Silk Soymilk (Half Pints, Fortified for Kids) [Plain, Chocolate].
Manufacturer's Name: White Wave, Inc.
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 1998. September.
Wt/Vol., Packaging, Price: Half pint
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: News release (on White Wave letterhead) sent by Holden McClure for White Wave. "Half pints for 'half-pints'–White Wave to launch its popular Silk soy milk in school-size." "TofuTown, USA (Boulder, Colorado), June 1998. White Wave announces the launch of its popular Silk (TM) and Silk Chocolate soy milks in half pint size. The products will be available his Fall, just in time for back-to-school lunch boxes. Great for those with milk allergies or [lactose] intolerance, Silk and Silk Chocolate are low fat (1%) and 100% lactose free and cholesterol free. The half pint products will be a convenient way for parents to offer their kids a tasty, healthy lunch or snack-time beverage that they like."

7487. White Wave, Inc. 1998. ixnay on the ilkmay? Silk is soy (Ad). *Natural Foods Merchandiser.* Sept. p. 202.
• ***Summary:*** This small (2¼ by 4½ inches) but prominent (bright red, orange, and white) color ad is mostly background color and text. On the right is a half-gallon carton of White Wave Silk (fresh soymilk). In the upper right corner is the White Wave logo. Across the top of the ad, in fairly small letters: "As we like to say, lactose-free Silk is delicious in any language."

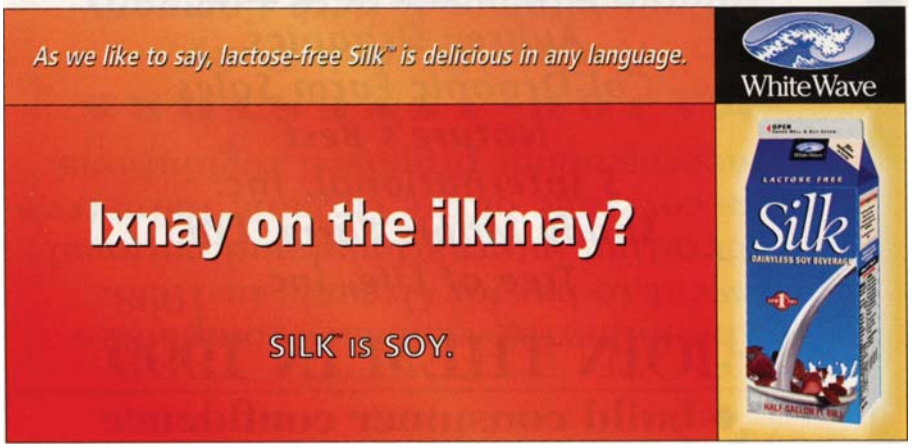
Note: Can you figure out what the title means? A good way to catch one's attention. Steve Demos, founder and president of White Wave, provides the answer (July 2013): it is written in "Pig Latin" and means: "nix on the milk."

Pig Latin takes the first consonant (or consonant cluster) of an English word, moves it to the end of the word then adds the suffix "ay."

Steve adds: "At the time we had no advertising money so we ran very small ads in trade magazines like this." Address: Boulder, Colorado.

7488. Frauenheim, Ed. 1998. Enough to shave off a milk moustache: State ups moo juice price per gallon 15 cents. *Oakland Tribune.* Oct. 1. p. News-1, News-9.
• ***Summary:*** The price of cow's milk varies widely in the USA among states, regions, and seasons. The price of a gallon of milk in California is expected to rise by 15 cents today, due to an increase in the state-determined price paid to dairy farmers. This comes on the heels of an 18 cent rise on August 1. That wholesale price typically gets passed on to consumers. California, which leads America in dairy production (29% of the country's butter and 18% of its cheese), also has some of the nation's highest milk prices. Today's price hike was caused by low production and high demand. The increase was criticized by the "Mad about Milk" coalition (heavily funded by Arizona milk producer Shamrock Foods), which claims that California laws set unfair barriers against out-of-state producers and drive up the cost of milk for California consumers. The price hikes were defended by the Dairy Institute, a trade association of 40 milk producers.

The state's milk pricing system dates back to the Great Depression era, when the cost and availability of milk were very volatile. California also has laws that require more nonfat solids in milk. Address: Business writer.



7489. Harrigan, Brian. 1998. ProSoya Inc. and International ProSoya Corp. (Interview). *SoyaScan Notes.* Oct. 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** ProSoya Inc. and International ProSoya Corp. (IPC) are definitely two separate organizations; each is very different in its activities and philosophy. IPC was not created out of ProSoya, but rather as a separate entity with different owners to license ProSoya's large-scale soymilk technology. This relationship

as licensee still exists. IPC does not make equipment or sell equipment worldwide; they make soy products using ProSoya's technology. ProSoya has some ownership in IPC and they have a very small ownership in ProSoya Inc. People do associate these two companies, not realizing that they are totally separate. This confusion (and some things that people from IPC have said and done) has caused ProSoya quite a few problems.

ProSoya does not presently make any soyfood products. The plant on Canotek Road (in Gloucester, near Ottawa), where they used to make some products and have their offices, was originally used solely for R&B, but it expanded so much that it eventually also became a commercial soyfoods production facility. In Oct. 1996 ProSoya sold this plant to IPC and in Jan. 1997 ProSoya moved to separate offices about 500 feet away, on the same road; there they have offices plus a small area at the back for R&D, shipping, and receiving. ProSoya can still take customers and others to see this plant and its operation, but sort of as visitors.

ProSoya is an R&D and technology company. Their equipment is manufactured by other companies (as in India and Russia) for them.

There has been quite a shake-up at IPC recently and things there are rather chaotic. Their soymilk, SoNice was the number one seller in Canada while it was out. It was made in two plants–in Vancouver (BC) and in Ottawa (Ontario, on Canotek Rd.). It's arrival expanded the market for all soymilks sold in Canada; so while Edensoy and Vitasoy lost market share to SoNice, they actually saw their sales volume increase. But recently IPC has had major problems their soymilk; it is no longer being manufactured, but small amounts are still left in the retail pipeline. The product is good, but it is mostly financial factors that have caused it to disappear from the market. IPC has not really commercialized their soy yogurt yet, except perhaps on a small scale for the Vancouver area–and there they were having problems with the formulation, though not with the taste. For more details, contact George Conquergood, who is the vice-president of operations. He is quite open in telling interested people what is happening. The plant in Scotland is a totally separate venture from IPC; Dusty is still there.

A new brand of soymilk in Canada is SoGood. Based on soy protein isolates, it is the same as that made by Sanitarium Foods in Australia. In Canada, it is made (mixed and packaged) under license from Sanitarium by Sunrise (owned by Peter Joe) in Vancouver. Sunrise and Dairyworld (the biggest dairy in Canada) now have a joint venture named SoyaWorld. Dairyworld distributes SoGood soymilk along with their line of dairy products. SoGood is now doing very well in Canada. When SoNice was on the market, it had a bigger market share than SoGood. But SoGood conducted a national advertising campaign that cost several million dollars, and greatly helped their sales. Brian finds the flavor of SoGood rather artificial and the list of ingredients is very long, so consumers tended to prefer the more natural and better tasting SoNice–until it ceased to be available.

Raj Gupta is now more involved with ProSoya Inc, than ever before. He comes to the office every day. When he started ProSoya he was working for the National Research Council (NRC) and working with ProSoya part-time on the side. Now he works on ProSoya full time; about 3 years ago he gave up his position at NRC. ProSoya was growing so much that the company need his full-time presence, and could afford to pay him what he needed.

Note: Other sources say that IPC recently declared bankruptcy. Address: Executive Vice-President, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7490. Harrigan, Brian. 1998. Update on the work of ASSOY and ProSoya Inc. in Russia and the former Soviet Union (Interview). *SoyaScan Notes.* Oct. 15. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** ProSoya has a technology transfer agreement with ASSOY (Associatsiia "Assoya"), the Russian Soybean Association, which is their partner. Founded and run by the energetic Alexander Podobedov, ASSOY has made more than 250 of the small SoyaCows, and sold them within the former Soviet Union during the last 1½ to 2 years. In addition, ProSoya has sold about 100 of these small SoyaCows elsewhere. In Russia, most of these SoyaCows are in the shops of small entrepreneurs. They make soyfoods to retail to the general public. In Krasnodar alone, ASSOY has opened 7 shops which are called Soyushka, meaning "Little Soya." They sell only soyfoods–tofu, soymilk, soynuts, soy oil, soya flour, soy power and a variety of foods made from soya–such as soya breads. Outside of Russia, there are SoyaCows in the Ukraine, Moldova, Belarus (quite a few there). ASSOY is now actively running newspaper, radio, and TV ads in various countries of the former Soviet Union, and throughout this region Soyushkas are becoming well known and the people are becoming soya-conscious–largely through the efforts of ASSOY. Brian has the whole story, but in Russian, in marketing documents. On paper the story sounds better than it looks when you actually go there. Some of the plants are idle. Some employees haven't been paid in 6-8 months, so they don't work very hard. ASSOY keeps trying to get the Russian government to help them out. The government keeps saying that they will, and they have even signed decrees saying that the government will help send soyfoods to the prisons, schools, and hospitals–where there are dire shortages of protein. But the government never does what it says.

ASSOY provides spare parts for the soy shops, plus all the marketing, recipes and recipe books, everything. The man behind these remarkable developments is Alexander Podobedov, who is a real entrepreneur. But he has a style that is very rough and tough with people, which sometimes

(especially in Russia) helps him and other times (especially with Westerners) limits his effectiveness. Address: Executive Vice-President, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7491. Iacono, Giuseppe; Cavataio, F.; Montalto, G.; et al. 1998. Intolerance of cow's milk and chronic constipation in children. *New England J. of Medicine* 339(16):1100-04. Oct. 15. [22 ref]
• ***Summary:*** Chronic diarrhea or constipation in children can indicate intolerance of cow's milk. Address: Divisione di Pediatria, Ospedale G. Di Cristina.

7492. Ridenour, Jeremiah. 1998. How Jeremiah Ridenour of Wildwood Natural Foods and Ted Nordquist of TAN Industries developed America's first soymilk in a gable-top carton (Interview). *SoyaScan Notes.* Oct. 20. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Background: Ted Nordquist, a native of California, is perhaps the world's leading developer of soy base and dairylike products derived therefrom. He pioneered tofu, soymilk, and soy ice cream in Sweden, and eventually sold his company to one of Sweden's largest food manufacturers, before moving back to California in the early 1990s (1992-94). His family joined him in Sonoma in August 1994.

Jeremiah and Ted met not long after Ted moved from Sweden to California in about 1993-94. This was before his family came, when he was here by himself. Ted contacted Jeremiah. He wanted to make a soy ice cream in the USA–that was his main focus. He suggested that Jeremiah buy Woody Yeh's soymilk yogurt plant in Hayward, California, because Woody's company (Soyeh Natural, Inc.) was about to go out of business. Jeremiah did not do this and Woody went bankrupt then sold his equipment to an Asian American man [Jim Pong of Pure Land Co.] who is now producing tofu there. Woody is now running an import/export company.

Jeremiah liked Ted and thought his soy base was great, so he introduced him to the packaging company, and to Dreyer's (the ice cream company). They spent time together and talked about gable-top soymilk. On his own, Ted soon met Ken Lee of Soyfoods of America (where Ted's soymilk is now made). Not long after Ted got involved with the packaging company, in early 1995, Jeremiah started developing soymilk formulations using Ted's base, then together they started doing pilot runs (into gable-top pints), then larger tailing runs (into quarters) at the packaging plant. In a tailing run, you come in behind someone else's product run, clean out the system with a slug of cleaner, then run your product into the last 100 or so cases. A tailing run duplicates your pilot run on a larger scale to check that all of your assumptions about scaling up really work. They ran two 100-case runs into quarts–which was pretty expensive–but it proved that everything worked. The minimum soymilk run for Wildwood at this packaging plant would be 3,000 gallons (12,000 quarts). Jeremiah ran some calculations and quickly determined that making and packing that much soymilk would be overstretching the financial resources of Wildwood. The ESL carton will get you a 12-week shelf life, but some precipitation (formation of a little tofu on the bottom) takes place after you add calcium and the carton bulges slightly (which makes it look a little funny) around the 11th week due to some saturation of the packaging material. Therefore Wildwood decided to stamp on a conservative use-by date of 10-weeks. So Jeremiah would have to refrigerate and sell 12,000 quarts of a perishable soymilk in ten weeks. Actually he would have to sell it in 6 weeks, because most retailers won't take a perishable product that has less than 4 weeks (30 days) on it. Thus, Wildwood would have to produce a new batch every 6 weeks. That would be difficult, because it was a new product (the first of its kind in the USA) and no one knew how long it would take to catch on with retailers and consumers. Everyone with experience knew that Murphy's Law operates at full force with new, perishable products. But the cash flow problems were an even bigger problem. Before the first run of 12,000 quarts were sold, Wildwood would have to do a second run–and pay for it. The company was already out trying to raise money to finance expansion of its existing tofu business. Jeremiah finally concluded that he didn't have a big enough cash flow or line of credit to take on the soymilk; it was a great product but was just too risky–and a mistake could sink the company.

If money hadn't been an issue, this new soymilk product could have been on the market in late 1995 or early 1996. Finally Jeremiah had to tell Ted that he and Wildwood did not have the capital and were not willing to take the risk of going ahead on the project. Moreover, Ted's production process at Soyfoods of America had not yet been proven; he did not have the equipment there that he has today, and he had never made 3,000 gallons of soymilk in America–though he had made much more than this in Sweden. Also Jeremiah had questions about the reliability of Soyfoods of America.

Jeremiah's contributions toward developing the new product were choosing the type of sweetener and determining the sweetness level for each flavor. He wanted a sweetness that was very similar to that of dairy milk and that came from an organic ingredient. He eventually chose organic brown rice syrup over organic cane sugar; the former has a roundness of flavor but imparts a tan color to the soymilk. Titanium dioxide, a pigment or bleach, could be added to make the soymilk white, but it would have to be listed on the package as an ingredient and was inconsistent with the company's philosophy on using organic. Most important, Jeremiah introduced Ted to the ESL (extended shelf life) gable-top packaging system.

Ted argued that Wildwood should aim for a quart of soymilk that sold for the same price as a quart of dairy milk–and thus drop the expensive organic ingredients. Jeremiah

responded: "That is not who Wildwood is." So Ted had no choice but to approach Wildwood's competitors. First he went to Westbrae (who was not interested), and then to White Wave–which was the first company to put this fresh, gable-top soymilk product on the market. Named Silk, it was an excellent product, well made and marketed, and it soon became the most successful product in White Wave's history. Many industry watchers were surprised at the response and sales volume. White Wave discontinued their burgers and hot dogs so they could focus on their soymilk and yogurt. Over the next few years, Wildwood's financials improved, and in June 1998 they were finally able to launch their gable-top soymilk–made by Ted Nordquist. Unfortunately, it was now a "me too" product, but moving into a proven market. One big challenge for Jeremiah is how to move his fresh soymilk out of the produce section and into the dairy case. Address: Wildwood Natural Foods of Santa Cruz, Inc., 1560 Mansfield Dr., Suite D, Santa Cruz, California. Phone: 408-476-4448.

7493. Black, Pam. 1998. Is soy the recipe for what ails you? *Business Week.* Oct. 26. p. 162-E18.
• ***Summary:*** The soybean gained prominence as a health food in the 1970s. Now even former junk-bond king Michael Milken is "promoting soy's potential to fight prostate cancer..." During the past decade, scientists have discovered estrogen-like active substances named isoflavones or phytoestrogens which may be responsible for "soy's health effects."

Researchers have proven that soy has cardiovascular benefits, primarily by lowering low-density lipoprotein, or LDL ("bad cholesterol"). The mechanism is not clear; the soy may keep LDL from being oxidized to form plaques that clog arteries. Soy increases flexibility of the arteries, which stiffen and harden with age. Thomas Clarkson, professor of comparative medicine at Wake Forest University School of Medicine (Winston Salem, North Carolina) emphasizes that some amount of soy protein must be consumed for the phytoestrogens to exert cardio-protective benefits. Isoflavone pills alone will not be effective. Scientists recommend consuming 30 to 60 mg of isoflavones per day with 7-10 gm of soy protein. A table shows good sources of soy protein, plus their content of isoflavones (mg) and protein (gm): Solgar Iso-Soy powder (1 oz) 103 / 12. GeniSoy natural protein powder (1 oz) 74 / 24. White Wave baked tofu (3 oz): 52 / 19. White Wave tempeh (3 oz) 47 / 18. Edensoy original drink (soymilk, 8 oz) 41 / 10. Soyboy Not Dogs (1.5 oz per dog) 35 / 7.

Soy's effects on cancer are less conclusive; most researchers doubt that soy is harmful. Soy has great appeal to women approaching or past menopause. Nutritionists think soy phytoestrogens may be safer than Premarin–which may increase the risk of breast cancer.

"And for those of you who've always turned up your noses at tofu, there is good news: Soy is available in such guises as hot dogs, burgers, cheeses, and ice cream."

7494. Bynum, William. 1998. Soy Amazing and Better than Milk. Big changes at Hearty Life, Sovex Natural Foods, McKee Foods, and Fuller Life Inc. (Interview). *SoyaScan Notes.* Oct. 28. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** William has been with the company for about 6-7 months. Soy Amazing is a new product, introduced less than 2 years ago; it is actually the original Better Than Milk formula. However there is another product named Soy Amazing, sold only in Canada, which is the same as the present U.S. Better Than Milk; that is because it is illegal to use the name "Better Than Milk" for this product in Canada.

For many years, Sovex Natural Foods has been owned by the McKee Foods Corporation of Collegedale, Tennessee. The Southern Adventist University is also located in Collegedale. Founded, owned, and run by Jack McKee (a well respected Seventh-day Adventist), McKee Foods makes mostly popular snack foods. Their most popular product line is "Little Debbies," consisting of about 40 different varieties of snack cakes–from Jello Rolls to Honey Buns. For this reason they kept an arms-length relationship with Sovex Natural Foods. Glen Fuller has been with McKee Foods for about 20 years, and has been the vice-president for the past 10-12 years. Glen developed the Better Than Milk formula and line of dry soymilk products about 7 years ago.

On July 3 of this year, Sovex was merged into its parent company, McKee Foods, and made a division of that company; it was no longer a separate subsidiary. Sovex also makes a wide variety of cereals, bran, granola, and the like. The name Sovex ceased to exist; it is now McKee Plant No. 6. Shortly after McKee absorbed Sovex, probably at Glen's urging, McKee decided to spin off and sell him the Hearty Life brand and the Better Than Milk product line–which includes the Soy Amazing products. That transaction was finalized last Friday, October 23. So now Glen is president, CEO, and sole owner of a new company named Fuller Life Inc. The address has changed to 1628 Robert C. Jackson Drive, Maryville, Tennessee 37801. Phone: 423-681-4171. Maryville is about 100 miles from Collegedale, and the site of Glen Fuller's main home; called his "mountain home," the property backs up on the Great Smoky Mountains. Their main product is Hearty Life Better Than Milk–which includes Soy Amazing and many SKUs including five flavors of the soy Better Than Milk, two flavors of the rice Better Than Milk. Most of it comes in canisters or 25 lb bulk bags, but they also have an aseptic UHT liquid soy Better Than Milk (original flavor). William will send some press releases and a sales brochure, with the date that each product was launched.

In 6-8 months Fuller Life plans to introduce a new product name Better Than Milk Plus, which will be an all-

organic, enriched and fortified powdered version of the present Better Than Milk.

Follow-up talk with Darlene Foot, Glen's secretary, still at his office in Collegedale. She joined the company about 5 years ago. At that time Glen Fuller was president. John Goodbrad retired in about 1988-89 and died about 3 years ago. Sovex, the yeast product, still exists. Some years ago Sovex Natural Foods sold the rights to Village Market, located near Southern Adventist University, which subcontracts the production with some other company. Address: Consumer Affairs Administrator, Fuller Life Inc., 1628 Robert C. Jackson Dr., Maryville, Tennessee 37801. Phone: 423-681-4171.

7495. Fuller, Glen. 1998. A brief history of Sovex Natural Foods, Hearty Life, McKee Foods, and Fuller Life Inc. (Interview). *SoyaScan Notes.* Oct. 28. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Glen is interested in the history of Sovex, which is now named Fuller Foods, Inc. John Goodbrad did not buy any business from the Hurlingers in Michigan. Rather, he bought their formula for making Sovex spread and the brand name. The word "Sovex" is derived from the words "soy vegetable extract." The soy part of it was real soy sauce, and still is. Glen has heard of the Hurlingers in Holly, Michigan, but they didn't call their company Sovex. Glen does not know the name of the Hurlinger's company, but he thinks he could find it in the company archives. In about 1961 Ruth Goodbrad, John's wife, began making Sovex in their basement. In the early years, Sovex was basically Ruth's business.

In 1962 John Goodbrad called Glen about the granola business. John had an opportunity to buy a formula for granola, which he later did buy. At the time, Glen was a student at Southern Adventist College, where John worked for Collegedale Distributors, and Ruth, was still manufacturing Sovex in their basement. John bought the granola formula, under an exclusive arrangement, from a fellow named Layton Gentry–who sold the same formula with the same exclusive rights to at least 6 other individuals or companies who wanted to make granola! Every one of them thought they had an exclusive agreement! For example, the founders of the Bread Shop (in California) bought the formula from Mr. Gentry during the same calendar year. Right after John bought the granola formula, he formed a corporation and named it Sovex Foods Inc. after the spread. After John bought the granola formula, Ruth also manufactured the granola in their basement. Ruth continued making these two products in the basement of their home until about 1966, at which time they moved the food processing up into a building in Collegedale.

On 1 March 1974 McKee Foods acquired the business from Mr. Goodbrad, who didn't really want to sell it. He was a fine and honest man, very much dedicated to his company and involved in it, but he had to sell it for financial reasons. That is usually difficult for an entrepreneur. During his 1980 interview with Soyfoods Center, he may not have mentioned the fact that Sovex was owned by McKee since he was always sensitive to the fact that a health food company was owned by a snack food company.

Goodbrad was president of the company from that day in March 1974 until 30 June 1990. During that time he reported to Glen Fuller, who was vice-president of McKee Foods and responsible for McKee's subsidiaries. On 30 June 1990, when Mr. Goodbrad retired, Glen took over the company and moved his offices from the parent company to Sovex. He retained his position as vice-president of McKee, but also became president and CEO of Sovex. In the early 1990s, Glen changed the company name to Sovex Foods, Inc. from Sovex Natural Foods, Inc.

About 4 years ago, Sovex licensed a local business (named the Village Market) in Collegedale to manufacture the Sovex seasoning spread in their little deli kitchen. There are many other similar products worldwide, such as Marmite, Vegex, Solvex, etc.

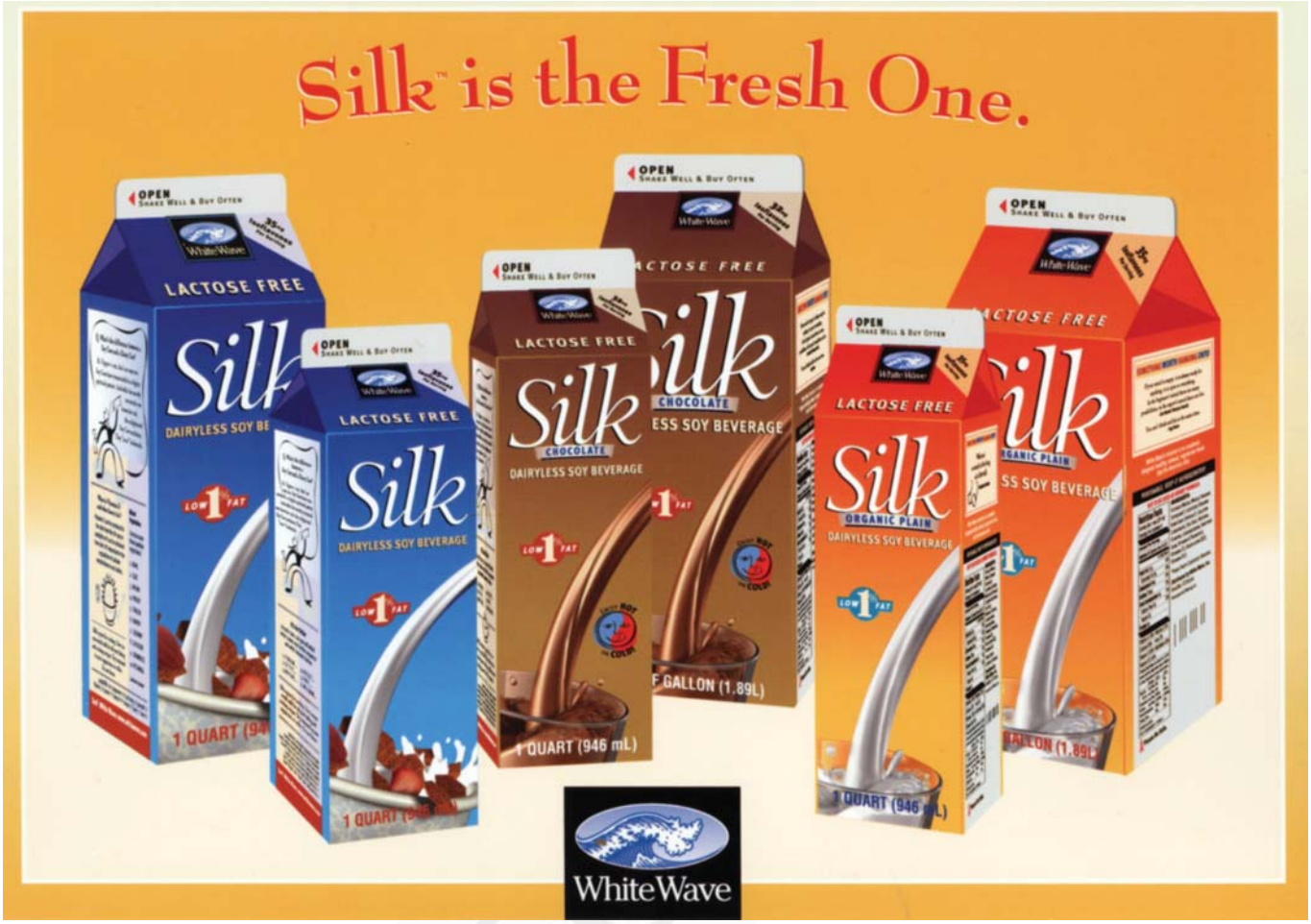
Glen has the "Minute Book" for the corporation which goes back to the date it was established in 1962. He could resurrect most of the history from that book, with solid documentation as to dates.

John Goodbrad is deceased, but his wife, Ruth, is still living in Collegedale and very alert. She really started the manufacturing operations.

Glen has never gotten involved in the actual manufacturing of soymilk. He buys the powdered or fresh soymilk he uses from the manufacturer. Some products also use soy isolates or soybeans. Glen does the product formulation and marketing, Glen has a great deal of interest in how his products are manufactured and his company has very strict quality standards. The company is continually inspecting its suppliers, and trying to stay on the cutting edge of product development. Glen knows Elmer Schettler very well; Sovex marketed Elmer's Solait until 30 Sept. 1998, even after Sovex was merged with McKee Foods. There was apparently a falling out and lawsuit between Elmer and Willis Miller, but it was finally settled. Address: Founder, President & CEO, Fuller Life Inc., 1628 Robert C. Jackson Dr., Maryville, Tennessee 37801. Phone: 423-681-4171.

7496. Fuller, Glen. 1998. Dr. Harry Miller and his descendants (Interview). *SoyaScan Notes.* Oct. 28. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Throughout his life, Glen has heard many fine things about Dr. Harry Miller, though he never had the opportunity to meet him. Glen's wife's parents were Adventist missionaries in China, and they knew Dr. Miller very well. They returned to the USA from China in 1941, several years later than Dr. Miller. Glen's wife was only 3 at the time, but she recalls that there were on one of the



last trains that left from Gulin in central China, just above the Yangtze River. Glen knows his son Willis, and Willis' son (Harry Miller III) who is now about age 30, and who married a lady named Kim Arliano, who worked briefly for McKee Foods in the audit department. Harry III (who lived in Nashville, Tennessee, when they were married) did a lot of work developing and attempting to promote and market a later generation of soymilk. He is quite a promoter of various projects and ideas. About 7-8 years ago he and Glen's nephew worked together on a promotional plan on another formula for soymilk; it never became a commercial product. Address: Founder, President & CEO, Fuller Life Inc., 1628 Robert C. Jackson Dr., Maryville, Tennessee 37801. Phone: 423-681-4171.

7497. White Wave Inc. 1998. Silk is the fresh one (Leaflet). Boulder, Colorado. 1 p. Single sided. 15 x 21.5 cm.
• ***Summary:*** Leaflet (glossy color) sent by White Wave. 1998. Oct. 28. On the front is a photo of 7 cartons of Silk soymilk, and Silk Dairyless Coffee Creamer against an orange and yellow background. Address: 1990 North 57th Court, Boulder, Colorado 80301.

7498. White Wave Inc. 1998. Good news about soy: From your friends at White Wave (Leaflet). Boulder, Colorado. 1 p. Front and back. 21.5 x 14 cm.
• ***Summary:*** Leaflet (blue ink on gray paper) sent by White Wave. 1998. Oct. 28. "Soy beans and soy foods have been called many names lately... good names like miracle beans, wonder beans, magic beans, complete foods and functional foods.

"No longer is soy relegated to use solely in animal feed, but is now considered to be a healthy and smart human food. The reason is simple–scientists and nutritionists have found that soy beans are high in nutrition (protein) and packed with anti-oxidants and cholesterol-reducing compounds.

"First, the protein: Soybeans contain more protein by weight than beef, fish or chicken. And from our body's viewpoint, the protein in tofu is identical to the protein in chicken. And soybeans contain no cholesterol and little saturated fat.

Soy is rich in isoflavones: That's the general term for phytoestrogens unique to soybeans that also act as antioxidants, carcinogen blockers and tumor suppressors. This group of plant sex-hormone chemicals seem to have numerous beneficial qualities.

"Osteoporosis help: Researchers believe that two of these isoflavones, genistein and daidzein, have similar properties to the hormone estrogen. They are thought to block the negative effects of human estrogen and reduce the risk of breast and prostate cancer. The genistein in soy also makes it a natural substitute for hormone replacement that many women seek to combat the negative effects of menopause. Several studies of women who have consumed soy protein showed a lessening of menopausal symptoms such as 'hot flashes' and an increase in bone density and mineral content.

"A lower risk of heart disease: Soy significantly decreases LDL ('bad') cholesterol levels, which can block arteries. While increasing fiber and decreasing your saturated fat intake can also lower your LDL cholesterol, unlike most other foods soy can also raise HDL ('good' cholesterol) levels. HDL acts to clean artery walls by removing the bad cholesterol accumulated there.

"Yet another unique property of soy prevents the oxidation of bad cholesterol. It's that oxidation that makes arteries clog more readily."

At the lower left is the White Wave logo and a tag line: "When it comes to food, we use our beans." Address: 1990 North 57th Court, Boulder, Colorado 80301.

7499. Abourezk, Sanaa. 1998. Oh boy! I can't believe it's not soy: Over 100 gourmet recipes that help prevent cancer, heart disease and alleviate menopause. Sioux Falls, South Dakota: Palmyra Publishing Co. xii + 123 p. Illust. Index. 23 cm.
• ***Summary:*** This is an attractive and unique spiral-bound cookbook, loaded with gorgeous full-page color photos. Most of the recipes are based on eastern Mediterranean or Middle East cuisine. The author, a woman, was born in Syria, is a nutritionist, and learned to cook in Italy and France. Contents: Appetizers. Salads. Soups. Main dishes. Desserts. Glossary.

Though it does not use red meat or poultry as an ingredient, it does contain at least 12 dishes made with salmon. Most of the recipes call for either boiled soy beans, "lite tofu," or "soy vegetable protein crumbles." A few use "nonfat soy milk."

Talk with Sanaa Abourezk. 1999. Feb. 1. This book was self-published in Oct. 1998. Her husband, James Abourezk, who was a Republican senator from South Dakota, has been a vegetarian for 27 years. This is all the more amazing since South Dakota is a cattle state. After they were married, she started developing recipes for him. When his meat-and-potatoes lawyer friends would come for dinner, they would say how much they loved her eastern Mediterranean cooking. She would reply: "There is no meat is these recipes; they are made with soy products." The guests could not believe it. They have quite a few elderly neighbors, with whom Sanaa shares any extra food; they soon started asking her for recipes. Her husband suggested she write a recipe book. Address: P.O. Box 88038, Sioux Falls, South Dakota 57109-1001. Phone: 1-888-351-3663.

7500. Atwood, Charles. 1998. The case against dairy: America's most prominent pediatrician sounds off in *Vegetarian Times* new forum for exploring controversial topics. *Vegetarian Times.* Oct. p. 90, 92-93.
• ***Summary:*** Dr. Spock considered Dr. Charles Atwood his heir, and he turned to Dr. Atwood for assistance in writing the final version of his classic *Dr. Spock's Baby and Child Care* (Pocket Books, 1998), considered the bible of parenting. Dr. Atwood has all the credentials needed to inherit Dr. Spock's mantle. A certified pediatrician since 1964, he is the author of *Dr. Atwood's Low Fat Prescription for Kids* (Viking 1995) and *The Vegetarian Doctor Speaks Out* (Hohm Press, forthcoming). A vegetarian since 1998, he also shuns dairy products. Senior health editor Suzanne Gerber interviewed him recently:

What's so bad about milk and dairy products? Ans: The biggest problem is the widespread allergic reaction of children to milk proteins. Milk contains more than 25 proteins than can lead to allergies. About 70% of Dr. Atwood's patients have allergies. In most cases these children improve when taken off dairy for approximately 3 weeks. And an estimated two-thirds of the world's population has trouble digesting milk because of lactose intolerance. The second concern is saturated fat, one of the primary contributors to heart disease. The third concern is about casein, the primary dairy protein found in all dairy products. There is new evidence that casein is a carcinogen; studies by T. Colin Campbell of Cornell University [Ithaca, New York] show that it can cause liver cancer in laboratory mice. Finally, dairy products are laced with antibiotics, which are initially fed to farm animals. On July 9, 1998. the Committee on Drug Use in Food Animals, a division of the National Research Council, released a landmark report that finally acknowledged that agricultural use of antibiotics poses a public health risk."

Also discusses his views on genetically engineered bovine growth hormone (rBGH, made by Monsanto)." He concludes that it has never been easier to cut back on milk and dairy products because "Supermarkets and natural food stores now carry a variety of milk substitutes made from almonds, soy and rice." A color photo shows Dr. Charles Atwood.

7501. **Product Name:** Country Life Soy-Licious (Dry Mix for Soy Drink) [Dutch Chocolate, or Vanilla Bean].
Manufacturer's Name: Country Life?
Manufacturer's Address: Unknown.
Date of Introduction: 1998. October.
Wt/Vol., Packaging, Price: Can.
New Product–Documentation: Ad (full-page color) in Vegetarian Times. 1998. Oct. p. 7. "Country Life Soy-

Licious: A high protein energizing soy drink." "Provides 15 grams soy protein per serving. Supplementing with soy products can reduce the risk of breast cancer... Highest soy isoflavone concentration of any soy drink available. Call 1-888-476-8647 for more information." Note: No address is given. This ad also appeared in the Oct. 1998 issue (inside front cover) of *Natural Foods Merchandiser*

Spot in Natural Foods Merchandiser. 1998. Nov. p. 80. "Country Life." Available in Dutch Chocolate and Vanilla Bean flavors. A small color photo shows two cans of the product next to a glass of the beverage.

7502. Fitzpatrick, Mike; Dibb, Sue. 1998. Soy infant formula–The health concerns: A Food Commission briefing paper. London, England: The Food Commission. 6 p. [47 ref]
• ***Summary:*** Contents: Background. Eleven health concerns. Removing isoflavones from infant formula. References.

This paper begins: "In July 1996 the UK Department of Health warned that phytoestrogens found in soya infant formulas could affect the health of infants. Issuing advice to health professionals, the Chief Medical Officer, Sir Kenneth Calman, said soya formula should only be given to babies on the advice of a health professional... In 1996 the UK government's Food Advisory Committee asked companies to investigate the removal of soy isoflavones from soy-based infant formulas but, despite evidence that this is possible (see below) companies have not yet done so."

The paper concludes: "The Food Commission believes it is irresponsible for manufacturers of soya formula to continue to place infants at unnecessary risk of exposure to phytoestrogens and we request the immediate removal of phytoestrogens from soya infant formulas." Address: 1. PhD, New Zealand; 2. The Food Commission (a consumer advocacy group), 94 White Lyon St., London N1 9PF, England. Phone: 0171 837-2250 (Dibb).

7503. Gupta, Rajendra; Chopra, Sudhir. 1998. Airless food processor. In: Conference Proceedings, 1998 Appliance Manufacturer Conference & Expo. See p. 225-33. Held 12-14 Oct. 1998 at Opryland Hotel, Nashville, Tennessee. [11 ref]
• ***Summary:*** Discusses a prototype kitchen top machine for making soymilk. "As part of their Advanced Life Support System studies, NASA recently completed tests on a prototype appliance for processing soybeans into soymilk and its byproduct okara. The patented technology used in the appliance provides for the grinding and processing of any food in an oxygen-free environment, thus preventing the degradation of food by oxidation either in flavor or nutritional value.

"The prototype comprises a patented airless grinder with an in-situ steam injection cooker, a steam generator with temperature controls, and provision for timing controls similar to those provided on an automatic bread-maker. The appliance can be used not only to make soymilk, okara, but also pureed soup. It can also grind and steam vegetables, make milkshakes, produce hot beverages, etc.

"In reference to the prototype appliance they tested, scientists as NASA-Johnson Space Center and University of Houston [Texas] concluded that 'with proper care, the production of soymilk from a prototype machine would comply with the requirements imposed by a closed system'.

"Acknowledgements: The authors would like to express their sincere thanks to Yael Vodovotz and Lisa Bye of NASA-Johnson Space Centre for conducting tests on the prototype. They would also like to thank Andre Ladouceur at ProSoya for his continuing involvement in the building and development of the prototype." Address: ProSoya Inc. [Ottawa, ONT, Canada].

7504. **Product Name:** Soy Wonder Soymilk Machine.
Manufacturer's Name: Miracle Exclusives, Inc. (Importer-Marketer). Made in China.
Manufacturer's Address: P.O. Box 8 (64 Seaview Blvd.), Port Washington, New York 11050. Phone: 1-800-645-6360.
Date of Introduction: 1998. October.
Ingredients: -
New Product–Documentation: Six-page brochure sent by Dr. Christopher Harrison, LAc, of Brooklyn, New York. 1999. Feb. 26. "Soy Wonder Soymilk Machine." This brochure, photocopied on light-blue paper discusses: "Introduction. About soymilk. Important safeguards. To make fresh soymilk–2 quarts (1.8 liters)–13 step process with 5 photos. Beverage recipes. Nutritional data. Other uses: Hot chocolate, chocolate soymilk, fruit smoothies, pudding, coffee creamer. Cleaning the machine. Technical data. The machine looks something like a Vitamix blender, and is about the same size. A note from Dr. Harrison states that the machine is made in China and imported by Miracle Exclusives–Phone: 1-800-645-6360. It wholesales for $179. The idea came from a book by Peter Golbitz (phone 207-288-4969). No okara is left over after making the soymilk.

Talk with Gail of Miracle Exclusives. 1999. March 3. This machine (MJ717) was first sold in about Oct. 1998. It wholesales for $179 and retails for $269. It takes about 22 minutes to make 2 quarts. Catalog and price list sent by Miracle Exclusives. 1999. March 4. Effective Nov. 1998. "Catalog 1999-2000: Health appliances for the new millennium." A color photo shows the machine next to a bowl of yellow soybeans, a glass of light tan soymilk, and a copy of the book *The Simple Soybeans and Your Health,* by Mark and Virginia Messina. "Simply insert soaked soy beans, add water, switch on and its done. Its controlled cooking and grinding process produces a delicious soy milk without a "beany" taste at a fraction of the cost of packaged soy products. Recipe book included." Website: www.miracleexclusives.com.

Ad (color, 1/6 page) in *Vegetarian Times.* 1999. July. p.

96. "Make your own fresh soymilk!" Makes 2 quarts in 22 minutes. Call: 1-516-621-3333.

7505. ProSoya Inc. 1998. Creating great opportunities in the health food industry: Advanced soymilk technology (Portfolio). Ottawa, Ontario, Canada. 17 inserts. 31 cm.
• ***Summary:*** The 17 documents enclosed in this portfolio (containing many black-and-white photos) include: (1) Cover letter from Brian Harrigan, Executive vice-president. (2) Creating great opportunities in the health food industry: Advanced soymilk technology (4-page brochure). (3) Soymilk systems: VS 30/40, VS 200, VS 700, VS 2000, VS 3000 and VS 4000. (4) Equipment for upgrading. (5) Production chart. Nutritional comparison of soyfoods (four bar charts). (6) ST 2000–Continuous soaking and hydraulic conveying system. (7) ST 2000-OPT–Dry bean conveying system, washing/dewatering augers, an circulating pumps. (8) EC 200–Extractor. (9) EC 1000 & EC 2000–Twin-stage, self-desludging extractors. (10) EC-OPT–Okara conveying system and spare cone. (11) Continuous heaters. (12) Continuous cookers. (13) VF series–Model 200, 3000, and 60000–Vacuum flash deodorizing systems. Address: 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7506. ProSoya Inc. 1998. Creating great opportunities in the health food industry: Advanced soymilk technology (Brochure). Ottawa, Ontario, Canada. 4 p. 28 cm.
• ***Summary:*** This 4-page black-and-white brochure (with green and yellow overlays), discusses the company, the technology, the equipment, our customers, business opportunity. "ProSoya technology is currently being used in more than 20 countries. There are large-scale processing plants in Canada, Russia, and Scotland. Over 250 small, to medium-scale plants are located on five continents around the world. ProSoya has technology transfer agreements with companies in Russia and India for the manufacture of smaller soymilk systems under license."

Photos show: (1) ProSoya's VS 7000 system. (2) ProSoya's VS 200 system. (3) ProSoya's VS 40 system. (4) ProSoya's VS 4000 system. (5) A sliced cake of tofu, a glass of soymilk, and scoop of soy ice cream on a cone. Address: 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7507. Shurtleff, William; Aoyagi, Akiko. 1998. The book of tofu. 2nd ed. Revised. Berkeley, California: Ten Speed Press. 336 p. Oct. Illust. by Akiko Aoyagi Shurtleff. Index. 28 cm. [321 ref]
• ***Summary:*** This edition contains a completely new "Appendix B–Directory of Tofu Makers" (p. 313-316, updated to 1 Aug. 1998). The page "About the Authors" (autobiographical) has been updated, and the original photograph has been replaced with two more recent ones–reflecting the fact that Bill and Akiko separated in Nov. 1993 and their marriage ended in May 1995.

After the first printing in Oct. 1998, the Preface was quite extensively revised (but not updated) to include more about how this book came into being (early dates and names), including the important contributions on Jeffrey and Gretchen Broadbent, and of Nahum and Beverly Stiskin. These Preface changes first appeared in the second printing of May 1999.

On page 336 is "The Best of Vegetarian Cooking from Ten Speed Press" (descriptions of eight cookbooks, with price and ISBN).

The inside rear cover has been updated, and now includes current information about SoyaScan, the unique computerized database produced by Soyfoods Center. This database now contains more than 55,000 records from 1100 B.C. to the present, and more than 73% of all records have a summary / abstract averaging 128 words in length. A description of the four different types of records (published documents, commercial soy products, original interviews and overviews, and unpublished archival documents), and the number of each type, is given.

The front and rear covers, title page, table of contents, and the first page of each section have been redesigned to give the book a much more contemporary look. Still contains 500 vegetarian recipes–both Western and Eastern style.

Ten Speed Press gave this book a new ISBN: 1-58009-013-8. Yet despite the many changes described above, the authors preferred not to have this called a "new edition" or "revised edition." Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

7508. **Product Name:** Tofu, and Soymilk.
Manufacturer's Name: Tiltan HaArgaman
Manufacturer's Address: P.O. Box 76. Hofit 40295, Israel. Phone: +972 53-607435.
Date of Introduction: 1998. October.
New Product–Documentation: Form filled out by Asher Roy. 1998. Nov. 15. The company started to make and sell tofu and soymilk in Oct. 1998. They currently make 2 metric tons/month of tofu and 2,000 liters/month of soymilk.

Talk with (call from) Roy Grant from Israel. 1999. Feb. 26. His company, located in Kfar-Saba, Israel, started making tofu in late 1998. His company was named Tishrei.

7509. Ghiraldini, Maura. 1998. Biolab and Italy's other major tofu manufacturers (Interview). *SoyaScan Notes.* Nov. 9. Followed by a fax. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The two largest tofu manufacturers in Italy are Soyalab and La Fonte de la Vita, but they are both owned by The Key Group, which bought them 4-5 years ago. The Key Group is the largest in Italy in biological (organic) foods.

Biolab, which started in June 1992, is the third largest.

The founder and owner is Massimo Santinelli, now age 34; they also make various types of seitan. Biolab is distributed by some of Italy's bigger distributors of biological (organic) food: Ecor, Probios, Baule Volante, Mustiola, and La Fenice. Biolab presently has 7 employees; all ingredients are from biological agriculture (organically grown).

The company now makes the following products: Seitan: Natural, with spices, smoked, and grilled. Tofu: Natural, smoked, "Mediterranean" (with carrots, olives, etc), erbe (with herbs), and grilled. Soymilk. Rice milk. Burgers with seitan: Rice & mushrooms, millet & carrots, millet & pepper, wheat (spelt/farro) & aubergine (eggplant). Address: Via dei Grabizio 11, 34170 Gorizia, Italy. Phone: +39 481 533522.

7510. Cowley, Geoffrey; Underwood, Anne; Springen, Karen; Davis, Alisha. 1998. Cancer & diet: Can you eat to beat malignancy? A controversial diet book is just one sign of the revolutionary new thinking about food and health. *Newsweek.* Nov. 30. p. 60-66. [3 ref]

• ***Summary:*** This cover story discusses the many phytochemicals in foods which may reduce risk of various cancers. On the cover is a huge fork piercing a piece of broccoli. The cover text reads: "Eating to beat the odds: What you need to know." On the top half of page 60 is a large color photo of a "low-risk dinner," ready to serve on a table. One of the three portions on the plate is a mixture of beans and tofu cubes. An arrow points to this portion; the caption reads: "The fiber in beans fights colon cancer. And the genistein in tofu appears to pack a disease-preventing wallop." On the facing page (61) is a "high-risk dinner" with advice to omit the grilled steak, french fries, cheesecake, soda, butter on white bread, and salad dressing. The article overstates the health benefits of soy and gives no scientific references for its many glowing assertions.

By 1986 laboratory researchers were already discovering many new chemicals in foods; in test tubes these obscure compounds were showing remarkable ability to disrupt the formation of tumors. Some expert oncologists believe that the future of cancer prevention is food. Yet the cancer death rate in America is roughly the same today as it was in 1970. Americans die of breast, colon, and prostate cancer at five to 30 times the rate of people in many parts of the world. Take breast cancer: The death rate in Thailand and Sri Lanka is 2-5 per 100,000 women; in the USA it is 30-40 per 100,000.

A comprehensive analysis published last year by leading cancer researchers concluded that "poor eating habits account for a third of all cancer–roughly the same proportion attributed to smoking." A spate of brash new books, some by physicians, argue that anyone can eat to reduce cancer risk. They offer specific advice, "from eating the right fats to upping your intake of soy." The best selling of these how-to books is *The Breast Cancer Prevention Diet,* by Dr. Bob Arnot, a nonpracticing physician who covers health and medicine for NBC. It now tops the *New York Times* best-seller list. But Fran Visco of the National Breast Cancer Coalition calls it "incredibly irresponsible." All these new books offer medical advice that is not backed by solid scientific evidence.–And so does this Newsweek article! But interesting questions arise: "Should we live on cheeseburgers until the case for soy burgers is seamless?" Most experts answer "no." If people who eat in accordance with what we know today, cancer rates would definitely drop.

A sidebar titled "Eating to beat the Big Four" gives three statistics on each of America's four leading malignancies: Estimated number of U.S. cases this year, percentage of Americans diagnosed during their lifetime, and potential reduction through diet and lifestyle. Prostate cancer: 184,500 / 17% / 10-20%. Breast cancer: 180,300 / 14% / 33-50%. Lung cancer: 171,500 / 7% / 90-95%. Colon/rectal cancer: 95,600 / 6% / 66-75%. "Breast cancer risk may be lowered by eating soy foods." "Weapons against colon cancer include calcium and fiber."

Tumors arise through a three-step process: initiation, promotion, and progression. Preliminary evidence suggests that compounds found in particular foods can interfere with each of these steps. A two-page sidebar shows each step graphically. (1) Initiation occurs when something alters a cell's genetic makeup, causing it to divide more than it should. The most common cause of such DNA damage is oxygen, from highly reactive oxygen molecules called free radicals. They steal electrons from other molecules, setting off a chain reaction that can damage DNA. Food tips: Antioxidants help neutralize free radicals. Garlic contains allyl sulfides which help limit the production of cancer-causing phase I enzymes, which are produced in the liver and break down procarcinogens. Cruciferous vegetables (such as broccoli) boost production of protective phase II enzymes that cart away chemical debris. (2) Promotion occurs when the damaged cell (a precancerous lesion) multiplies out of control to create a tumor. It soon sends out a network of blood vessels to deliver nutrients and oxygen necessary for further growth. Food tips: Tumor cells seem to grow less aggressively on low-fat diets than on high-fat. But Many experts now agree that, for cancer, the type of fat is as important as the amount. Some types of polyunsaturated fats are protective, others probably harmful. Omega-3 (alpha-linolenic) fatty acids may thwart tumor growth, whereas omega-6 (linoleic) fatty acids may promote it. "Trans fats: Artificially processed polyunsaturates, they are the worst for heart disease, and one study linked them to increased breast-cancer risk. Found in packaged snacks" [and many margarines]. "Soy products contain... isoflavones, which act as weak estrogens, and leave less room for strong ones. One color photo shows cubes of tofu, with the caption "Soy may protect reproductive tissues." Another shows estrogen receptors on the surface of a cell. (3) Progression occurs when the tumor (a mass of rapidly dividing cells) builds

itself a blood supply and starts to invade surrounding tissues. The body's own estrogen promotes fast growth of breast cells in women. "Tumor cells release growth factors that promote the development of new blood vessels a process known as angiogenesis."

A sidebar shows four cancer survivors and their diets: Any Grove of Intel, a prostate cancer survivor, has a daily glass of orange juice with green-tea extract and soy protein. Mike Milken is also a prostate cancer survivor. "A soy fanatic, he eats tofu dogs, 'not-meat' loaf, and soy cheese," plus smoothies spiked with vitamins. Christine Pirello, hostess of PBS's 'Christina Cooks,' was diagnosed with leukemia in 1983. She went macrobiotic, loading up on brown rice, cabbage, tofu, and beans, with no dairy or animal products, except for fish.

On page 66 is a long section of text on soy: "Soy foods are another good bet, especially if you're worried about breast or prostate cancer. One of the strongest promoters of reproductive tumors is estrogen. Women exposed to high levels of the hormone–through early menstruation, late childbearing, late menopause, or obesity–suffer far more than their share of breast cancer. Soy contains weak estrogens, or isoflavones, which compete with the full-strength hormone for access to cells. Isoflavones bind with cell receptors that would normally attract the body's own estrogen, but the growth signal they deliver is only one thousandth as strong. That means less cell division and, presumably, less risk that a small lesion will become cancerous. No one has tested that assumption in a controlled clinical trial, but population studies suggest that tofu, tempeh, and soy milk could have some of the same benefits as the prescription drug tamoxifen, without the side effects. Chinese women on high-soy diets had only half the breast cancer incidence of women on low-soy diets." Soy also contains "compounds known as Cox-2 inhibitors, which can impede the growth of new blood vessels." At least in a test tube, tumor cells doused with Cox-2 inhibitors stop producing growth factors that trigger growth of blood vessels.

This is another article about "magic bullets." But the big, new message from Newsweek seems to be their realization that low-fat plant-based diets can reduce one's risk of cancer–as well as heart disease, stroke, and obesity. The article ends: "The real gamble is to stick with fast food [or a standard American diet] and assume you'll be all right."

Note: This is the earliest (and only) English-language document seen (April 2003) that uses the term "soy fanatic."

7511. Fisher, Kate. 1998. Soy isoflavones charge onto supplement scene: Disease-preventing compounds are available in tablets. *Soybean Digest.* Nov. p. 24.
• ***Summary:*** Soy isoflavone tablets are now available from many supplement companies. Novasoy, a soy isoflavone compound made by Archer Daniels Midland Co., is the active ingredient in many of them. While many studies have shown the health benefits of soyfoods and soy protein products, few studies have been done using isoflavone tablets as supplements.

Soy isoflavones are fairly stable and able to withstand normal cooking without breaking down. There is presently no recommended daily allowance, but 30-50 mg per day seems to be beneficial, especially for post-menopausal women.

A bar chart from the University of Kentucky shows the isoflavone content of soybeans and various soyfoods (in mg per serving (svg)): Mature soybeans (170), roasted soybeans (165), green soybeans (70), tempeh (60), soy isolate (57), soy flour (45), tofu (35), textured soy protein (30), soy beverage (20), and soy concentrate (15).

7512. Monteiro, Longteine de; Neustadt, Katherine. 1998. The elephant walk cookbook: The exciting world of Cambodian cuisine from the nationally acclaimed restaurant. Boston: Houghton Mifflin Harcourt. 324 p. Illust. (some color). Index. 27 cm.
• ***Summary:*** Written by the chef-owner of Boston's renowned The Elephant Walk restaurant.

The word "soy" appears on 38 pages of this book, the word "tofu" on 10, the word "bean curd" on 9, the word "soy milk" on 7, etc.

Soy-related recipes include: Stir-fried pork with bean sprouts (*Cha samdaik bandos;* with "½ pound pressed bean curd or spiced dry tofu, cut into ¼-inch-thick slices," p. 129). Stir-fried pork with tofu and chive blossoms (*Cha p'ka kuchai;* with "½ pound spiced dry tofu or pressed bean curd, cut into ¼-inch cubes," p. 134). Pan-seared fish with pork and soybeans (*Chien chuoan;* with "2 tablespoons salted soybeans, and 2 teaspoons mushroom soy sauce," p. 160-61). Steamed fish with lilies (*Trey chamboy;* with "3 tablespoons salted soybeans, mashed slightly, and 2 tablespoons mushroom soy sauce," p. 170). Braised duck (*Hong tiah;* with "2 tablespoons salted soybeans, and 1 tablespoon mushroom soy sauce," p. 197-99).

The "Glossary" (p. 283-308) includes: Mushroom soy sauce (originates with Chinese cuisine). Peanuts. Pressed bean curd: See tofu.

"Salted soybeans [Fermented black soybeans] add complexity to a dish. They come in cans and jars in Asian markets (I usually use Yeo's brand), and they are often available in the Chinese section of mainstream supermarkets."

Soy sauce: See mushroom soy sauce. Spicy dry tofu: See tofu.

"Tofu... is used in moderation Cambodian cooking, primarily in stir-fries, which are Chinese in origin. The two kinds I recommend are Pressed bean curd and Spicy dry tofu, which are drier and firmer than the fresh tofu you buy in tubs in the supermarket and hold up well during vigorous stir-frying. Both are light to medium brown in color, and

their flavors are mild enough not to compete with their companion ingredients. They can be found in the refrigerated section of any Asian market, usually vacuum packed... Fresh tofu–even extra-firm–tends to disintegrate when stir-fried..." About the author (p. 1): She was born into an upper-class Cambodian, or Khmer, family in the capital city of Phnom Penh. Her father, who had studied in Vietnam and received his advanced training under the French system of education there, returned to Cambodia to become the country's first veterinarian... which kept him in constant touch with foreign colleagues and new ideas. The family had many servants living with them as she was growing up. Her father was deeply influenced by French culture and he ate only French food–3 meals a day. She married a diplomat and was expected to entertain. But in April 1975, when the Khmer Rouge took power, her husband had no country to represent, so the family went into exile in France. In 1990 they moved to Boston and in Aug. 1991 they opened The Elephant Walk restaurant in Somerville, Massachusetts, right next to Cambridge. It thrived. Address: Boston, Massachusetts.

7513. *Nutrition Business Journal* (*San Diego, California*). 1998. Haldane leads U.K. market for vegetarian and non-dairy foods. 3(10/11):26. Oct/Nov.
• ***Summary:*** The Haldane Foods Group is owned by agribusiness giant Archer Daniels Midland Co., based in Decatur, Illinois. ADM group vice president Larry Cunningham says Haldane has revenues of under 50 million British pounds, from sales of 350 products sporting such well-known brands as Vegemince (the company's brand leader; a soy-based minced meat alternative), Realeat, Direct Foods, Dietburger, So Good, and Hera.

The *Linda McCartney* line of vegetarian foods, launched in 1991, has become a leader in its category, with retail sales of about 50 million pounds in 1998. Haldane's newest line, launched in April, is *Linda McCartney's Dairylike,* non-dairy desserts developed by Haldane and marketed under a licensing agreement to use the Linda McCartney brand name. The line includes cultured and frozen vegan desserts which are free of lactose and cholesterol and fortified with calcium and minerals. Haldane is promoting the new Dairylike line using national TV and print ads. ADM is test marketing Dairylike in Southern California under the name Dairyless.

About one-third of Haldane's sales come from products made by third party manufacturers such as Asda and McVities.

During the last year Haldane has faced two big challenges: (1) In the spring of 1998 EU food labeling legislation required companies to stop using the term "soya milk" or "yoghurt" or any misspelling of it. Haldane reformulated, renamed, and relaunched its line of non-dairy products. (2) In Sept. 1998 a EU regulation which came into effect requiring products containing genetically modified soy protein to be labelled appropriately. Haldane guaranteed that all its soy products are GMO-free, made from identity preserved soybeans.

Haldane's "Realeat Survey," now in its 15th year, studies attitudes toward meat eating in the British Isles. Each survey is conducted by The Gallup Organization. The 1997 Realeat Survey showed that a record 5.4% of the British population now chooses a vegetarian diet, up 20% over 1995. Thus, Britain now has more than 3 million vegetarians. And 14.3% of the population no longer eats red meat–over 8 million people. Many Britishers avoid red meat because of fear of BSE or Mad Cow Disease. In the 1995 Survey 7% mentioned BSE as their main health concern; this figure rose to nearly 22% in the 1997 survey. The 1998 Survey showed that 13% (over 7 million people) never or almost never eat dairy products. Today roughly half of the British population is actively reducing consumption of meat, especially red meat, and one-third is doing the same with dairy products.

7514. Oser, Marie. 1998. Soy of cooking: Easy-to-make vegetarian, low-fat, fat-free, and antioxidant-rich gourmet recipes. New York, NY: John Wiley & Sons. xviii + 264 p. Nov. Illust. Index. 23 cm. [55 ref]
• ***Summary:*** The contents of this book is identical to that published by Chronimed in Oct. 1996. John Wiley & Sons began publishing it in Nov. 1998. Talk with Marie Oser. 2000. Oct. 4. The book is now in its 7th printing. John Wiley has excellent distribution and is doing a fine job with the book. Address: Agoura Hills, California 91391. Phone: 818-707-7353.

7515. Stepaniak, Joanne. 1998. The vegan sourcebook. Los Angeles, California: Lowell House. xvi + 352 p. Index. 24 cm. Special nutrition section by Virginia Messina. [196* ref]
• ***Summary:*** Contents: Preface. 1. Vegan roots. 2. The vegan identity. 3. The way the West was weaned. 4. Which came first? 5. Invisible oppression. 6. Environment in crisis. 7. Shooting the myths. 8. Animals and entertainment. 9. Science: Fact, fiction, or fantasy. 10. The compassionate consumer. 11. The body beautiful. 12. Ethics in action. 13. Of principle and practice. 14. Ascent and evolution. 15. Embracing the choice. 16. Reorienting the compass. 17. Challenges, gifts, and offerings. 18. The Vegan table. 19. Secret ingredients. 20. Vegan nutrition. Appendixes: 1. Vegan nutrition charts. 2. Menu planning using the Vegan food pyramid. 3. Special ingredients and Vegan recipes. 4. The Vegan lifeline: Resources and organizations. 5. Recommended reading. Bibliography.

Soy-related recipes or discussion: Soymilk (p. 188-89). Soy cheese, soy yogurt and sour cream (made from silken tofu), vegan cream, puddings, ice cream, and popsicles (p. 190-91). Use of tofu in place of eggs to bind or thicken (p. 192-93). Miso, tamari and shoyu (p. 256-57). Tofu, regular and silken (p. 258). Quinoa, seitan, tahini (p. 258). Sour cream and onion dip (with tofu, p. 275). Sesame-miso

spread (p. 275). Tofu-vegetable spread (p. 277). Miso master dressing (p. 282). Curried tofu salad sandwiches (p. 290). Roasted vegetable pizza with tomato-tinged tofu (p. 300-01). Savory baked tofu (p. 302). Baked potatoes Florentine (with tofu, p. 305). Tofu ricotta (p. 308). Vegan mayonnaise (with tofu, p. 310). Tofu sour cream (p. 310). Creamy fudge frosting (with tofu, p. 315). Address: Swissvale, Pennsylvania.

7516. Zind, Tom. 1998. Soy dairy alternatives: The soy dairy category is hot, with organic soybeans taking center stage in new product introductions. *New Product Sightings.* Nov. p. 8-9. [1 ref]

• ***Summary:*** Soyatech (Bar Harbor, Maine) reports that U.S. soymilk sales reached about $150 million in 1996, and that since 1990 the market has been growing at about 12% a year.

The 17th Annual Market Overview, published by *Natural Foods Merchandiser* magazine, reports that sales of only organic dairy alternatives (a category which is mainly soy-based products, but which also includes rice milks, oat milks, etc.) grew 45.5% from 1996 to 1997. Dollar sales grew to $32 million from 22 million. During the same year, non-dairy yogurts (a category which is mainly soy yogurts) grew to $10.6 million from $5.5 million.

The Ontario Soybean Growers' Marketing Board in Canada predicts that sales of soy beverages in that country will increase by about 68% from 1997 to 1998, to 6.7 million liters in 1998 from 4 million liters in 1997. Although the country's large Asian population has long been the largest consumer of soy beverages, the Board believes that most of the new growth is coming from sales to non-Asians (i.e. Caucasian Canadians).

The marketing manager for Vitasoy USA (based in South San Francisco, California) says sales of their Vitasoy soymilk to supermarkets alone has grown at 15-20% for the last few years.

Why all this interest in soymilk? "Health awareness for one. Science has virtually crowned the soybean as one of the most healthful single plant foods known to man, a versatile product with silver-bullet like qualities" for reducing the risk of heart disease and some cancers, easing menopausal symptoms, sidestepping lactose intolerance, and slowing the onset of osteoporosis. Scientists believe that many of the benefits come from isoflavones–of which soybeans are the only common source.

Photos show: (1) A Pure-Pak quart of White Wave's Silk–Organic Plain Dairyless Soy Beverage. (2) Many packs of SoNice (made by ProSoya Foods of Surrey, British Columbia), in original, chocolate, vanilla, strawberry, and cappuccino flavors. Some are in refrigerated Pure-Pak cartons and other in aseptic cartons. (3) Two aseptic packs of Enriched Vitasoy in original and vanilla flavors. (4) Tofutti Pan Crust Pizza Pizzaz, a pizza product made with soy cheese. Address: Freelance writer living in the Midwest.

7517. Ghiraldini, Maura; Santinelli, Masimo. 1998. Re: History of Biolab of Gorizia, Italy. Form filled out and returned to William Shurtleff at Soyfoods Center, Dec. 5. Form dated Nov. 20. 3 p.

• ***Summary:*** This company history form, sent by Soyfoods Center, was filled out by Maura who got the information by interviewing Massimo on Nov. 20. The company was founded in June 1992 by Massimo Santinelli. That same month they started to make and sell soyfoods commercially. The original purpose was contributing to the development of biologic (organic) agriculture and the production of good vegetable [plant-based] food so that a growing number of people are involved in consuming proteins from wheat or soy. The company address has not changed; the phone number was previously 0481-32261.

Milestones: 1992–Several months after opening, Biolab found its first distributor, Gea, from Treviso. 1994–Massimo's father, Piero, joined his son at Biolab. Now he has become essential to the company's work and is the "seitan master."

Firsts: "Unlike other companies, we aim at producing vegetarian food that tastes good to Italian consumers, who are not always vegetarian, and who like to use tofu or seitan in a Mediterranean diet. So a growing number of people will come closer to meatless diets, without losing the pleasure and health that the Italian way of cooking gives."

Reasons for success: "The good taste of our seitan. And, of course, the help of our distributor, which has grown bigger in the same way we have."

Soyfood products history: Introduced during 1992 and still sold–Tofu, Smoked tofu, Pickled tofu, seitan, smoked seitan. Discontinued: Pickled seitan, Sauce with seitan and tomato, Tomato sauce with olives and capers, Tomato sauce with mushrooms. Introduced in 1993 and still sold: Seitan burgers with millet and carrots, Seitan burger with rice & mushrooms. Discontinued: Tofu burgers, Tofu & seitan kebabs on skewers (very good but too laborious). Introduced in 1994: Grilled tofu, Grilled seitan, Tofu with herbs, Tofu Mediterraneo (carrots, capers, corn, olives), Seitan slices (for making sandwiches). Introduced in 1997: Risolight (rice milk), Roast of seitan. To be introduced in 1999: Seitan burgers with millet & pepper, Seitan burgers with wheat "farro" & aubergine [eggplant].

Present production of various product categories: Tofu (all types) total: 380 kg/week. Seitan (especially regular seitan and grilled seitan): 500 kg/week. Risolight (rice milk): 1,200 bottles/week. The company's three best-sell products in descending order of dollar value: Seitan Naturale 300 kg/week. Tofu Naturale 250 kg/week. Risolight 1,200 bottles.

The company now employs 7 people including the owners (including 2 in management and 5 in production). Last year net sales were 700 million lire. Over the past 2-3 years sales have grown at about 30% a year. The net worth of

the business is about 105 million lire. The present building has about 100 square meters for production and 20 square meters for office space. Massimo is the sole owner of the business. Address: Via dei Grabizio 11, 34170 Gorizia, Italy. Phone: +39 0481 533522.

7518. Karp, Jonathan. 1998. Adding U.S. soybeans to India's spicy diet faces big roadblocks: Protein-loaded legume could help the hungry, if only they'd eat it. Hiding 'that beany taste.' Currying favor? *Wall Street Journal.* Dec. 8. p. A1, A6.

• ***Summary:*** Virgil Miedema, the American Soybean Association's director for South Asia, is the son of a soybean farmer from North Dakota and speaks near-fluent Hindi. He believes that adding American soybeans to Indian diets can do wonders for their health. But there are two problems: (1) India, the world's fifth largest soybean producer, already grows so many soybeans that it exports the soy protein, although the country has a shortage of dietary protein; (2) Indians dislike the beany taste of soy–according to food scientist V.D. Devdhara, who shares Mr. Miedema's mission. The population of India is now growing by 16 million people a year–devouring the gains of the 1960s Green Revolution. Some 53% of Indian children under age 5 are malnourished. Per capita availability of lentil protein is half what it was in 1947, so the Indian government is producing lentil alternatives made of soy protein and wheat flour. The brown pellets, designed to look and taste like dal, contain 60% more protein.

The American Soybean Association (ASA) opened an office in India in 1996. It hired Mr. Miedema who had spent 17 years in South Asia with the Peace Corps and the U.S. Agency for International Development (USAID). His mission is to repeat ASA's success in China, where in just 15 years it helped turn that soybean producer into a major importer. In 1997, China bought $657 million of U.S. soy products. "Of course, the Chinese have been eating soybeans–as soy sauce and tofu, among other things–for millennia." Mr. Miedema's approach is to encourage Indian companies to add soy to everyday Indian foods–such as the wheat flour used to make chapatis.

One company, AFM Foods, Mr. Miedema's first partner, is making soy-fortified flour for chapaties that contains 35% more protein than wheat–"and can reduce the risk of cancer and the aches of menopause."

But attempts to use soy as food in India have failed before. A decade ago the ASA backed three local companies that failed in trying to popularize soymilk. RJR Nabisco Inc. quit making soy oil and Nestle SA (the Swiss food giant) recently withdrew its soymilk powder and soy-based baby food because of poor sales.

Sanjeev Chaudhry (formerly involved with Nabisco's soy oil factory) is head of the India office for Protein Technologies International. He uses Supro brand soy protein isolate to develop turbocharged soy products. He sells about 100 tons a year to 25 customers, mostly food manufacturers.

Large-scale cultivation of soybeans in India began in the 1970s to reduce dependence on imported edible oils. Soy oil still is not popular, and for Indians see soybeans as an evil threat. Ms. Vandana Shiva believes that free trade in agriculture, inevitably controlled by multinational corporations selling expensive genetically engineered seeds, will destroy India's farmers and local foods.

Yet Mr. Verghese Kurien, a famous Indian nationalist from the western town of Anand, has decided to join the soybean forces. As head of India's National Dairy Development Board, he was largely responsible for making India self sufficient in milk and the world's largest producer of cow's milk–while thwarting foreign dairy firms. He then branched out into edible oils to help his country cut costly imports. Though he retired last month, his main project is now developing the lentil alternatives.

The idea has been simmering for a decade, starting with U.S.-funded soybean research at an Indian university. The dairy board, whose sister organization, Amul, is one of India's largest food marketers, accepted the challenge of developing an inexpensive, uniquely Indian protein alternative. Mr. Kurien argues that if soy can be made into chicken and bacon, why not into dal? After years of fine tuning, the product launch is at hand. If it succeeds, the ASA could try for a second wave of products (made from U.S. soybeans) such as "soymilk and tofu, which looks and feels like Indian cottage cheese, called paneer." Indians say that tofu does not taste as good as paneer, but Mr. Miedema responds that its better for you. An illustration (dot-style) shows Mr. Miedema. Address: Staff Reporter.

7519. *SoyaScan Notes.* 1998. Soymilk and cow's milk prices in California, December 1998 (Overview). Dec. 10. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Since Dec. 1983, approximately every other year, Soyfoods Center has conducted a survey of the prices of soymilk and cow's milk in California. In Dec. 1998 at Berkeley Natural Grocer (Berkeley, California), Cindy La reports the following retail prices. (Note: oz = fluid ounces; 32 fl oz = 1 quart; 33.8 fl oz = 1 liter): Westsoy plain/vanilla $1.89/quart. Note: This is the price for 8-9 months a year. Several times a year (back to school sale, company anniversary sale) it will drop as low as $1.49, and for 3-4 months a year it will rise as high as $2.39 (the sticker price). Westsoy chocolate $2.39/quart. Westsoy organic unsweetened $2.59/quart. Westsoy 3 x 8.45 oz packs all flavors $2.59.

Vitasoy all flavors $1.89/quart. Note: This is the price for half the year. The other half it rises to $2.39. Vitasoy 3 x 8.45 oz packs all flavors $2.39.

Soy Dream (Imagine Foods) all flavors $2.15/quart. Soy Dream Enriched all flavors $2.25/quart.

Pacific Foods–Select (organic) all flavors $1.99/quart. Pacific Foods–Enriched (organic) all flavors $2.25/quart. Pacific Foods–Fat Free all flavors $2.39/quart.

Eden Soy organic all flavors $2.25/liter. Health Valley Soy Moo plain $2.49/quart.

Berkeley Natural Grocer also carries dairy milk: Horizon organic milk $1.59/pint or $2.69/quart. Clover Stornetta milk (free of BGH–Bovine Growth Hormone) $1.09/pint.

Cow's milk (fortified with vitamins A and D) sells for the following prices at the Safeway supermarket in Lafayette, California: (1) Fat free (formerly called Nonfat): $1.07/quart or $1.89/half gallon or $3.43/gallon; (2) Low fat (formerly called Extra light, 1% fat, protein fortified): $1.13/quart or $2.05/half gallon or $3.75/gallon; (3) Reduced fat (formerly called Low-fat, 2% fat, protein fortified): $1.13/quart or $2.05/half gallon or $3.75/gallon; (4) Whole (homogenized, fortified with vitamin D only): $1.13/quart or $2.05/half gallon. (5) Acidophilus Plus Bifidus–Low Fat (1% fat): $1.27/quart or $2.18/half gallon. (6) Horizon Organic $2.93/half gallon. The best-seller among these is Fat free in half gallons or gallons.

Thus, during the past two years, the price of soymilk has continued to decrease while the price of cow's milk has continued to rise.

7520. *SoyaScan Notes.* 1998. Chronology of major soy-related events and trends during 1998 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** June–Britain's Prince Charles, who practices organic farming and is a patron of the Soil Association, writes an article attacking genetically modified food that is published in Britain's *Daily Telegraph.* Explaining that he wouldn't eat such food or knowingly give it to his family or guests, he concludes, "I happen to believe that this kind of genetic engineering takes mankind into realms that belong to God and God alone." The prince's surprise article helped unleash a wave of anti-GMO activity and sentiment, that continued for weeks in the British press and carried over to the Continent.

Sept.–New European Union (EU) labeling laws, requiring labeling of genetically modified ingredients, go into effect. However the regulation exempts foods which contain no soy protein but do contain soy oil or soy lecithin. Sept.–Imagine Foods of Palo Alto, California, the natural foods leader in nondairy beverages, launches Soy Dream, the company's first soy product. They support the product with an extensive and very creative advertising campaign.

Sept.–Protein Technologies International starts to offer certified non-GMO soy protein isolates.

Oct.–The Hain Food Group (which owns Westbrae) has announced that it will start to label some of its products as GMO-Free (i.e. free of genetically modified / engineered organisms). It has developed a "Pure Food" logo and a "Just Say No to GEOs" slogan.

Oct. 16–Worthington Foods purchases the Harvest Burger product line from ADM; by agreement, ADM will continue to make the Harvest Burgers at its Illinois plant.

Nov. 1-2–Conference titled "Estrogen, phytoestrogens and cognitive function" held in Seattle, Washington (organized by Mark Messina), largely to learn more about the research of Lon White on tofu and dementia/Alzheimer's disease.

1998 Dec. 31–DE-VAU-GE acquires Bruno Fischer GmbH, which sells bottled soymilk; both companies are located in Germany.

Major trends: (1) The steady expansion of genetically engineered Roundup Ready soybeans. This year an estimated 30% of America's soybean acreage was planted to genetically engineered soybeans. This is one of the hottest and most controversial stories in most countries of the world–except the United States, where it gets unbelievably little media coverage. (2) The hype about the health benefits of soyfoods continues to increase. There are definitely some health benefits, but the exaggerated statements that now routinely appear in articles and advertisements go far beyond what can be supported by scientific evidence. The media seems intent on making as much money as possible as it whips up the story of soy's health benefits. The bigger the story it becomes, the more money they can make later debunking it. (3) The natural foods industry is changing into a supplements industry because of the higher profit margin on supplements. Many consumers are being misled into thinking that supplements are more important than healthy foods in determining good health. (4) Among commercial soy products this year, the ratio of supplements to foods has increased sharply.

Areas of potential danger on the horizon: (1) Lon White of Hawaii and his data on tofu and dementia/Alzheimer's disease. (2) Young girls discovering that overdoses of soy isoflavones could be useful in growing breasts, then publicizing that information using the Internet and World Wide Web. (3) The danger that the media will start to debunk its own hyped story of the health benefits of soy. (4) The concern that the FDA health label claim for soy will not include traditional soy products–such as tofu and soymilk–which contain too much fat. Therefore manufacturers will be tempted to add soy protein isolates to raise the protein to a level that will trigger the health claim.

7521. Birkbeck, John. 1998. Current understanding of soy and infant health–Debate on possible hazards of soy infant formulas: a view from New Zealand (Abstract). *American J. of Clinical Nutrition* 68(6S):1534S. Dec. Supplement. Address: Heinz-Wattie Limited, Auckland, New Zealand.

7522. Fomon, S.; Ziegler, E. 1998. Current understanding of soy and infant health–A review of soy infant formula feeding

(Abstract). *American J. of Clinical Nutrition* 68(6S):1534S. Dec. Supplement.
Address: Univ. of Iowa, Iowa City, IA 52240.

7523. Golbitz, Peter. 1998. Proposed labeling rule may turn soy to gold. *Newsletter of the Soyfoods Association of North America* (*Washington, DC*). Dec. p. 1-2.
• ***Summary:*** A proposed health claim for food labeling, now under review by the U.S. Food and Drug Administration (FDA), would authorize the use of a health claim on food products which contain soy protein. The rule, published for comment in the U.S. Federal Register on 10 Nov. 1998, resulted from a petition originally filed on 4 May 1998 by Protein Technologies International (PTI) of St. Louis, Missouri. This petition summarizes years of clinical studies related to the cholesterol-lowering effects of consuming products that contain a significant amount of soy protein. The comment period ends on 25 Jan. 1999.

According to FDA, "studies show 25 grams of soy protein per day have a cholesterol-lowering effect. Therefore, for a food to qualify for the health claim, each serving of the food must contain at least 6.25 grams of soy protein, of one-fourth of the 25 gram amount shown to have the cholesterol-lowering effect. The exact wording to be allowed on packages won't be finalized until after the comment period ends, but an example of how the health claim might be used on a package is: "Diets low in saturated fat and cholesterol that include 25 grams of soy protein per day may reduce the risk of heart disease. One serving of (name of food) supplies ___ grams of soy protein.

Since a typical serving of most soyfoods (such as tofu, soymilk, tempeh) etc. contain the required 6.25 grams of soy protein, manufacturers and marketers of these foods will clearly benefit if the rule is approved. But perhaps even more important, food processors will probably consider including soy protein products as an ingredient in a wide variety of foods ranging from breakfast cereals to pasta.

The last four proposed health claim rules were all approved by the FDA, which has up to 540 days from the original filing date to complete action on the proposal. So the two key dates to watch are January 25 and late October 1999.

7524. Irvine, Clifford H.G.; Shand, N.; Fitzpatrick, M.G.; Alexander, S.L. 1998. Daily intake and urinary excretion of genistein and daidzein by infants fed soy- or dairy-based infant formulas. *American J. of Clinical Nutrition* 68(6S):1462S-65S. Dec. Supplement. [26 ref]
Address: 1. AVSG (Animal and Veterinary Sciences Group), Lincoln Univ., Box 84, Canterbury, New Zealand 3-325811.

7525. Jacobsen, B.K.; Knutsen, S.F.; Fraser, G.E. 1998. Does high soy milk intake reduce prostate cancer incidence? The Adventist Health Study (United States). *Cancer Causes and Control* 9(6):553-57. Dec. *

7526. Janas, L.; Ostrom, Karin M. 1998. Current understanding of soy and infant health–Tolerance of soy formulas with reduced phytate/phytoestrogens fed to healthy term infants (Abstract). *American J. of Clinical Nutrition* 68(6S):1534S. Dec. Supplement.
Address: Ross Products Div.

7527. Lathia, D.; Krechten, S. 1998. Miscellaneous–Potential nutritional and health benefits of newly developed fermented soy milk desserts (Abstract). *American J. of Clinical Nutrition* 68(6S):1542S. Dec. Supplement.
• ***Summary:*** Table I shows the nutrient content of two fermented soy milk desserts made by incubating soy milk with yogurt and other cultures. Dried apple and other dry fruits were added to Dessert I whereas fresh blueberries were added to Dessert II. Conclusion: These newly developed soy milk products have high nutritional and therapeutic values.
Address: Faculty of Nutrition, FH Niederrhein, Richard-Wagner-Str. 101, 41605 Mönchengladbach, Germany.

7528. Olsen, Eva L.; Holm-Jensen, T.; Soerensen, O.; Jensen, J-E.B. 1998. Soy and bone health–Bone gain after calcium enriched soy milk, food supplement, and lifestyle changes in women with low bone mass: A pilot project in course form (Abstract). *American J. of Clinical Nutrition* 68(6S):1518S. Dec. Supplement.
Address: 1-4. Clinic for Integrated Medicine; 5. Osteoporosis Research Center. All: Copenhagen Municipal Hospital.

7529. Quak, Seng Hock; Tan, Siew Pin. 1998. Use of soy-protein formulas and soyfood for feeding infants and children in Asia. *American J. of Clinical Nutrition* 68(6S):1444S-46S. Dec. Supplement. [16 ref]
• ***Summary:*** Table 1 shows the "Percentage of mothers breast-feeding infants at various ages in Singapore." The percentage has decreased, from 85% at birth in 1951, to 73% at birth in 1960, down to only 28% at birth in 1971 and only 4% at 3 months in 1971.

Whether breast- or bottle fed, infants in Singapore are weaned to solid foods from about 4 months of age onward. Soft rice cereal is the first solid food most Asian infants are fed. Tofu is commonly introduced at about the same time. "Many Asian mothers choose tofu for weaning because it is freely available at low cost. The soft consistency is also an important factor. Tofu can easily be mashed into a paste or gruel and mixed with rice cereal for feeding to babies. Asian infants accept tofu readily because it is highly palatable." The nutritional value of tofu is well established and it is highly recommended by dietitians for weaning as a good source of protein and calcium.

There are two main types of lactose intolerance: primary, late-onset intolerance and secondary lactose intolerance. "Lactose intolerance is a clinical syndrome characterized by

abdominal distention, pain, flatulence, and explosive watery diarrhea after ingestion of lactose-containing products. It is due to a deficiency of the digestive enzyme lactase..."

Soy formulas (or soy protein) are better than cow's-milk formulas for infants and children with lactose intolerance (as shown by a bout of infantile gastroenteritis) and are recommended by family physicians and pediatricians. Asian children generally develop lactose intolerance after 2-5 years of age, and incidence generally increases with age. By age 10 about 80% of Asian children are lactose intolerant.

Figure 1 (a bar chart) shows "Percentage of healthy Asian children in Singapore who consume soymilk as their primary beverage." The percentage is about 5% from 1-5 years, then increases to 17% at 6 years, 42% at 7 years, and a peak of 56% at 8 years, falling slightly to 53% at 10 years. Thus (remarkably) about half of all children in Singapore consume soymilk as their primary beverage from age 8 to age 10.

"The incidence of intolerance to cow-milk protein has decreased over the years and intolerance is no longer a common cause of prolonged diarrhea." Address: 1. National University Hospital, Dep. of Pediatrics, Lower Kent Ridge Road, Singapore.

7530. Schlossberg, Suzanne. 1998. Shape achievement awards (1998). *Shape.* Dec.
• ***Summary:*** "Category I: Food and nutrition. Soy to the world. Award: Soy." The text begins: "Of course, there's no such thing as a wonder food, but to read the latest research, soy seems pretty darn close. It appears to protect against a whole host of cancers–including breast, uterine, stomach, colon and lung. Diets high in soy also seem to reduce total cholesterol and LDL cholesterol levels, thereby reducing the risk of heart disease. Among post-menopausal women, high doses of soy protein also have been linked with increased bone density–good news for the prevention of osteoporosis. Soy protein even appears to reduce the incidence of hot flashes. Experts recommend getting about 3O-5O grams of soy protein daily."

On the facing (right) page are three cakes of tofu, piled atop one another, with a green edamame pod and 3 beans on top. The caption: "Soy milk, tofu and soy cheeses are great sources of this wonder food, and we expect to see a number of new foods on the market, such as soy-fortified drinks and baked goods."

7531. Setchell, Kenneth D.R.; Zimmer-Nechemias, L; Cai, J.; Heubi, J.E. 1998. Isoflavone contents of infant formulas and the metabolic fate of these phytoestrogens in early life. *American J. of Clinical Nutrition* 68(6S):1453S-61S. Dec. Supplement. [86 ref]
Address: 1. Dep. of Pediatrics, Clinical Mass Spectrometry Center, Children's Hospital and Medical Center, Elland and Bethesda Avenues, Cincinnati, Ohio 45229.

7532. Swart, Besty. 1998. The dairy case (Letter to the editor). *Vegetarian Times.* Dec. p. 8.
• ***Summary:*** "Thank you for publishing 'The Case Against Dairy' by Charles Attwood, M.D. I'm vegan and have often wanted to educate others about the health effects of dairy products. This article finally provides me with the information I need in a concise, easy-to-read format.

"There is another reason to give up dairy that your article didn't mention–that is its impact on animals. While driving through northern California recently, I passed a dairy farm and noticed a pile of dead calves, their little bodies stacked up neatly as if it were the most normal thing in the world. I asked someone working nearby how these calves died. He told me that the farm usually only keeps its female calves, sending the male calves to live in veal crates. The pile of little bodies were the excess males that the farmer didn't have room for. I drove away thinking the dead ones were the lucky ones and with a new understanding of the connection between the meat and dairy industries." Address: West Boxford, Massachusetts.

7533. Australian College of Pediatrics. 1998. Position statement: Soy protein formula. *J. of Paediatrics and Child Health* 34:318-19. *
• ***Summary:*** The Australian College of Paediatrics (ACP) has revised its position statement on soya-based infant formula. As in New Zealand and the UK, the advice is that soya formula should only be used when recommended by a health professional for specific medical conditions such as proven cow's milk protein or lactose intolerance. However, even in these circumstances, the authorities recommend the use if alternative non-soy-based infant formula. The ACP statement also says there is some evidence that soy formula may impair immunity and that the long-term effects of contaminants in the formula (e.g., aluminum and phytoestrogens) are unknown.

7534. **Product Name:** Medium Tofu, Soymilk.
Manufacturer's Name: Bui Natural Tofu.
Manufacturer's Address: 520 NE 76th, Portland, Oregon.
Date of Introduction: 1998.
New Product–Documentation: Blog posted on the Web on 12 Jan. 2007 mentions this company. A Vietnamese-American enterprise. Talk with owner and tofu maker Bui Minh. 2008. July 2. This company started making tofu in about 1998. They make only medium tofu and soymilk. He is the owner, but it is a traditional family business run by four brothers; of course, all have the family name of Bui. They deliver to local Asian stores.

7535. IDRC (International Development Research Center). 1998. An effort to promote the production and consumption of soybeans as a means of improving nutrition in Nigeria

(Web article). http://www.solutions -site.org /cat11_sol101.htm.

• ***Summary:*** "Summary: An International Development Research Centre (IDRC) program to encourage soybean cultivation and integrate soybean products into traditional food and commodity production is helping to alleviate malnutrition."

"Background: In 1987, the International Institute of Tropical Agriculture (IITA), under the guidance of Principal Researcher Dr. Kenton Dashiell, launched an ambitious effort in Nigeria to combat widespread malnutrition. With support from the International Development Research Centre, IITA embarked on a project to encourage using nutritious, economical soybeans in everyday food. Soybeans are about 40% protein–more protein-rich than any of the common vegetable or animal food sources found in Africa. With the addition of maize, sorghum, wheat, rice, or any other cereal to soybeans, the resulting protein meets the standards of the United Nations Food and Agriculture Organization (FAO). Soybeans also contain about 20% oil, which is 85% unsaturated and cholesterol free.

"Few Nigerians knew about soybeans until the IITA initiative provided information on everything from their nutritional benefits to how to plant, harvest, store, and prepare them. Since then, soybean production and consumption has increased dramatically, improving nutrition particularly among the urban poor and middle income groups. Soybean-fortified products not only have more protein and minerals than their non-fortified counterparts, they are considerably cheaper than other sources of high-quality protein such as fish, meat, milk, and other protein-rich legumes. The cost of protein, when purchased as soybean, is only about 10-20% of the cost of protein from fish, meat, eggs, or milk. Many Nigerians now incorporate soybeans into their diets, and the Nigerian government has declared soybean production and utilization a national priority."

"Impact: Production increased–Soybean production in Nigeria increased from about 28 tonnes (metric tons) in 1985 to about 200,000 tonnes in 1995. The 1995 crop was worth an estimated US $60 million, saving Nigerians an equivalent amount of foreign exchange in just one year of this project. Since then, soybean production and consumption have continued to increase.

"Number of soybean farmers increased–The number of soybean farmers in Nigeria has increased tenfold to about 500,000. All the soybeans they produce are being used domestically. The price of soybeans has also increased, improving incomes for growers.

"Training increased–As a direct result of the IDRC project, more than 47,000 Nigerians (30 000 of them women) have been trained in producing soybeans and how to incorporate them into their diets. They have, in turn, trained others. Some reasons given by individuals for incorporating soybean into their diet are that it is nutritious, versatile, tastes nice, and is a good substitute for expensive protein.

"New equipment developed–This project has led to developing soybean processing equipment, which has since been adopted for both home and commercial use.

"Industry increasing–The number of soybean-processing industries in Nigeria has increased from less than five to more than 65, including small-scale businesses and larger enterprises. Several large industries, including Nestle Foods and Cadbury, have incorporated soybeans into some of their products, which has proven to be very popular.

"New soybean use developed–The IDRC-sponsored project has been instrumental in encouraging the development of more than 140 soybean-based foods, including soya milk and yogurt, soya flour, biscuits, baby food, condiments, and breakfast cereals. The newest product that has become very popular in Northern Nigeria is tofu. Participating research institutions in Nigeria have developed recipes that incorporate soybeans into new and traditional foods."

7536. Sanlinx Inc. 1998. SoyaJoy Soymilk Maker (for Home / Kitchen Use). 965 EPCO Dr., Dandridge, Tennessee.

• ***Summary:*** Sanlinx website (www.soymilkmaker.com) states (18 Jan. 2013): "Sanlinx introduced the original SoyaJoy soy milk maker in 1998 and created a new category of small kitchen appliance. The original SoyaJoy was quickly endorsed by customers and professionals alike. Over the years, we have been improving our design, adding new features, and introducing new models, such as the hugely successful SoyaJoy Plus and the SoyaJoy G3, both now being replaced by our newest model, the SoyaJoy G4.

"Our last model, the SoyaJoy G3, the third generation of our award-winning SoyaJoy Soy Milk Makers, has remained the #1 rated soy milk maker at Amazon for nearly two years.

"Introducing a new generation–The 4th generation: The SoyaJoy G4 and the SoyaPower G4 are our newest soy milk makers based on the top selling, 5-star rated SoyaJoy G3 and SoyaPower Plus."

"We are so confident that you will like the machine, we offer 90-day return policy." Address: Dandridge, Tennessee.

7537. Vodovotz, Yael; Bourland, C.T.; Rappole, C.L. 1998. Assessment of a prototype soymilk machine for use in an enclosed chamber. *Advances in Space Research* Submitted. * Address: 1. NASA-Johnson Space Center.

7538. Burnham, Trudie. 1998. Innovative soy cooking. Freedom, California: The Crossing Press. 95 p. No index. 15 x 18 cm.

• ***Summary:*** Contents: Preface. Introduction. Appetizers, snacks, and side orders. Salads. Dressings and toppings. Main dishes. Beverages. Desserts and treats.

The introduction begins: "Let's face it. In a society like

ours, obsessed with fast, low-fat food, tofu is the ultimate answer." This is a "user-friendly guide to a soya-based vegetarian diet. Many recipes are vegan, or use a minimum of dairy foods.

The glossary of ingredients includes kelp, kudzu, lecithin, mirin, miso, nutritional yeast, oils (use expeller pressed), sea vegetables, seeds (Sunflower, pumpkin, poppy and sesame are used for eating; alfalfa, radish, red clover, and fenugreek are for sprouting), slippery elm powder, soy milk, soy sauce, soysage, sweeteners, tahini, tempeh, tofu, umeboshi plums, vinegars.

"Missing egg salad: I invented this and word seemed to travel fast and wide, because I saw it in a California deli a year later with the same name." Address: New Zealand.

7539. Fike, Rupert. ed. 1998. Voices from The Farm: Adventures in community living. Summertown, Tennessee: Book Publishing Co. xii + 164 p. No index. 23 cm.
• ***Summary:*** This excellent book (a collection of short vignettes written by various Farm members) captures the spirit and essence of The Farm, a large spiritual in Summertown, Lewis Co., Tennessee–a community that has changed the world (for the better) in many areas.

The Farm traces its roots to the late 1970s with "Monday Night Class," which was led by Stephen Gaskin, an English teacher at San Francisco State College, in California. He held free, open meetings which focused on putting the shared psychedelic experiences of those who attended into the perspective of the world's major religions. He emphasized eternal spiritual values–compassion, self-reliance, development of personal character, and an awareness of the interconnectedness of all life. After talking, Stephen answered questions from the floor, and these sometimes led to broad-ranging discussions. At each meeting there was meditation and often chanting to quiet the mind and nourish the spirit. By 1969 several thousand people were regularly attending this weekly class, and a core group of them began to consider Stephen as their spiritual teacher.

In the winter of 1969 the American Academy of Religion held its meeting in San Francisco. A group of ministers and theologians happened to wander in; they stood at the back of the class and were moved by what they saw and heard. After the meeting several of them stepped forward to invite Stephen to speak at their own congregations and classrooms across America–believing that he might be able to help heal the rift between generations. Stephen agreed and a tour was arranged. Two hundred or so of his students asked if they could come along; any who could put together living quarters on wheels joined the tour. In brightly painted school buses, Volkswagen vans, trucks and campers they left San Francisco in 1970, following Stephen as he spoke on college campuses and in churches from coast to coast. Along the way the group attracted other young people who "were searching for identity, mission, and tribe." After four months and thousands of miles, the Caravan (as it was called) returned to San Francisco. But after their shared Odyssey, the group had become a tightly-knit community–a church. They agreed to pool their money, head back to Tennessee, and buy some land.

Thus, in May 1971, at the height of the counter-culture movement, several hundred young people drove their school buses into Lewis County, southern Tennessee. They had been given permission to park (free of charge) on the Martin Farm until they could find their own land. They stayed on the Martin Farm all that summer, then in the fall purchased the Black ranch (1,000 acres)–less than ¼ mile away. They founded America's largest modern-day intentional community–The Farm. It soon became known and admired by people around the world.

It is said that The Farm had two phases–the Letting Go, which was Monday Night Class, the Caravan, and the Martin Farm. Then there was the Taking Hold–everything after that.

Farm members organized themselves on a communal basis according to a passage in the Bible's *New Testament, Book of Acts,* 2:44-45, which says: "And all that believed were together and had all things in common; and sold their possessions and goods, and parted them to all as every man had need." Each member of the community had to sign this vow of personal poverty. They ate a vegetarian diet–in fact a vegan diet, which contained no animal products, and showed many others how such a diet could be healthful, delicious, and ethical. They started a "Soy Dairy" and used soyfoods (such as soymilk, tempeh, tofu, soy yogurt, soy flour, and whole cooked soybeans) as a key protein source in their diet. They generally used what extra money they had to help impoverished people around the world–both in Third World countries and in the USA. In the late 1970s they worked with people in the village of Solola, Guatemala, to build an innovative Soy Dairy (see p. 78-80, by Doug Stevenson), then helped others start soyfoods businesses in the Caribbean. They did pioneering work in spiritual midwifery, publishing, and many other areas.

By 1977, there were 1,100 farm members and 14,000 visitors–many of whom spent the night. At the peak of its population in 1982, The Farm was home to over 1,500 optimistic young people and the young at heart; about half of these were children, since The Farm offered to raise the child of any woman who was considering an abortion. The community received 20,000 visitors that year alone, as many as 200 on any given night.

But The Farm had one major problem: How to financially support its many members, visitors, and activities. By the late 1970s The Farm had a large and rising debt, and the interest on that debt was starting to get out of hand. By 1980 morale was definitely beginning to suffer. In 1983, after much soul-searching, The Farm decided that no longer would all things be held in common, except for the land. Many people left; it was a diaspora. Each family (or person) who

remained would now be responsible for its own economic survival.

From its beginnings in San Francisco in 1970, The Farm has been an experiment in spiritual communal living. This book tells the story of that experiment (up to the early 1980s) in 66 short chapters, told by many different community members. Its a magnificent, moving story, told in an "energy-based" language invented by The Farm but easily understood by all. Some members recount more than one chapter. Note: This book could be greatly improved by an index. Address: P.O. Box 99, Summertown, Tennessee 38483. Phone: 1-888-260-8458.

7540. Keuneke, Robin. 1998. Total breast health: The power food solution for protection and wellness. New York: Kensington Publishing Corp. xxviii + 416 p. Foreword by Lendon Smith, M.D. Index. 24 cm. [200+* ref]
• ***Summary:*** The key to total breast health (and preventing breast cancer) is a healthy traditional diet and lifestyle. Chapter 7, "Soybeans protect against breast cancer," has these contents: Two pro-soy quotations. Introduction. Some phytochemicals in soy and their properties. Phytic acid. Other benefits of soy for women: Osteoporosis, symptoms of menopause, symptoms of PMS, heart disease, anti-aging benefits, gallstones. Update on the politics of soybeans: Will quality be sacrificed for commercial purposes? Fermented soy foods are especially beneficial. The magic of miso: Folklore was right. The National Cancer Institute is spreading the word about soy's ability to protect against breast (and prostate) cancer. Phytochemicals in soy: (1) Inhibit the growth of tumor cells. (2) Convert cancer cells back into normal cells. (3) Block the entry of estrogen into breast cells; this is beneficial in preventing cancer. "Research shows that soy isoflavones may protect against high levels of synthetic estrogen in the diet." Soy foods include: tofu, tempeh, miso, edamame, soy sauce, soymilk, natto (fermented soybeans), soybeans and second-generation soy foods such as cheese, textured vegetable protein, and meat alternatives such as soy breakfast links.

Contains over 125 internationally inspired recipes, incl. Tofu Cote D'Azur, and Dilled Salmon in Miso-Lemon Sauce.

A portrait photo of Robin (a woman) appears on the inside rear dust jacket. The last page of the book (unnumbered) is "About the author." Address: Norwalk, Connecticut.

7541. Marcus, Erik. 1998. Vegan: The new ethics of eating. Ithaca, New York: McBooks Press. xi + 211 p. Illust. Index. 23 cm. [406 endnotes*]
• ***Summary:*** An excellent, very important book. The New Four Food Groups (p. 194-95) are vegetables, whole grains, fruit, and legumes. Legumes includes soy milk, tempeh, texturized vegetable protein, and tofu.

Dedicated to Henry Spira, a tireless defender of animals. Eric Marcus was born in 1966. Address: Bay Area, California.

7542. *Natural Athlete* (*Evanston, Illinois*). 1998. Cooking with Chef Tina: A natural power breakfast. p. 46, 48-49.
• ***Summary:*** Tina Martini is executive chef at the Franklin Quest Fitness Institute, where she is responsible for teaching some 200 guests a week about the benefits of healthy eating. Many of these guests call her the "Queen of Tofu." She says: "The latest research on soy is that it recruits lean body mass more effectively, than any kind of protein. So I'm a big fan of soy, because along with the increase in strength, you're also getting fiber, which animal protein doesn't offer."

Contains three recipes: Bread pudding (with soy milk). Apple crisp with cashew granola (with soy milk). Natural french toast (with soy milk and tofu). Address: 2859 Central St. #106, Evanston, Illinois.

7543. Rinzler, Carol Ann. 1998. The healing power of soy: The enlightened person's guide to nature's wonder food. Rocklin, California: Prima Publishing. xiv + 194 p. Illust. Index. 24 cm. [119 endnotes]
• ***Summary:*** Contents: Preface. Introduction: Not your ordinary bean, the first soybeans (history), how to talk soy (glossary of soyfoods–miso, soybean oil, soy concentrates, soy flour, soy isolates, soy milk, soy "nuts," soy sauce {shoyu, tamari, teriyaki}, tempeh, texturized soy protein {TSP}, tofu). 1. The nutritional wonder bean: Vitamins, minerals, proteins, fats, carbohydrates, fitting soy into your diet, summing up. 2. Something special in the bean: Hormones and people and plants, fabulous phytoestrogens, the safety of phytoestrogens, summing up. 3. Soy and your heart: Heart Disease and its victims, cholesterol and your heart, soy versus cholesterol, soy's cholesterol busters, beyond cholesterol, summing up. 4. Soy, the cancer fighter: The statistics of cancer, diet and hormone-related cancers, the Asian experience, how soy fights cancer, is soy safe?, a practical guide to your personal war on cancer, summing up. 5. Building better bones with soy: Your hormones and your bones, the hormone dilemma, soy and your bones, getting the calcium you need, summing up. 6. Hot news about hot flashes: What a hot flash is, soy and hot flashes, other plants that may relieve hot flashes, vitamins, minerals and hot flashes, simple lifestyle changes, summing up. 7. Cooking with soy: The joy of soy, whole soybeans, tofu, tempeh, texturized soy protein (TSP), soy flour, soy milk, soy sauces, soybean oil, miso. Appendix A: Shopping for soy through the mail. Appendix B: Directory of soy manufacturers. Appendix C: Directory of soy researchers whose studies are included in this book. Sources.

The author has written seventeen books, including *Nutrition for Dummies* (IDG) and *Estrogen and Breast Cancer* (Hunter House Books). A frequent contributor to

publications such as *American Health, Woman's Day,* and the *New York Times,* she lives in New York.

Note: Another quick, generic book about soy and good health by one who is not very familiar with the subject–though the footnotes show that she consulted many publications; nothing new. The history chapter is full of errors. Address: New York.

7544. Solomon, Charmaine; Solomon, Nina. 1998. Charmaine Solomon's encyclopedia of Asian food. Boston, Massachusetts: Periplus Editions. xiv + 480 p. Color illust. ([28] p. of plates). 29 cm. [67* ref]

• ***Summary:*** An outstanding book; the color illustrations of many ingredients are spectacular and very informative. The author has an insatiable curiosity.

Contents: List of illustrations. Introduction. How to use the *Encyclopedia of Asian Food.* Acknowledgements. A-Z of Asian Food. Bibliography. Illustrated index of selective ingredients. Index of recipes. Index of alternative words and main entries.

Soy related entries: Bean curd (p. 26-28, incl. all the different types, yuba, deep-fried tofu types, fermented tofu incl. ch'ou doufu [chou doufu]: "Despite its overpowering aroma, slimy texture, unappetizing color and the unfortunate odor it leaves on the breath, those brave enough to partake of it consider it a delicacy").

Bean paste, sweet (p. 29. The three colors and types are red {from adzuki beans}, yellow {from mung beans, husked and split}, or black {from black soy beans}. "The pastes are usually available ready-made sweetened in cans. It is possible to make your own, starting out with dried beans." Name in Chinese: dow sa, tau sa {sweet bean paste}).

Bean paste, yellow (p. 29. Despite what the label says, this thick, salty condiment is brown, not yellow, in color).

Bean sauces (p. 29. "Made from fermented soy beans," they range in color from yellow to brown to black [sweet black bean paste]. Their consistency is more like pastes that must be spooned from the jar than pourable tomato ketchup).

Beans, salted yellow (p. 31. Canned yellow soybeans which have been salted and fermented).

Beef (p. 31-37 incl. Teriyaki steak, Sukiyaki, Beef with black bean sauce, incl. "2 tablespoons canned salted black beans [fermented black soybeans]").

Black bean (p. 43-44. Black soy beans which are fermented and salted. "Some are sold in cans in a salty liquid, others in plastic bags, covered with salt crystals." Also called "preserved black beans").

Flours & starches (p. 157-61). Incl. soy flour. "A high protein, low starch flour... used mostly in Japan [where it is called kinako] and China. In Korea roasted soy bean flour and fermented soy bean flour are used to make a variety of bean pastes."

Note. This is the earliest English-language document seen (Nov. 2012) that uses the term "roasted soy bean flour" to refer to kinako.

Legumes & pulses (p. 206-18). A long and interesting section. All entries have a scientific name. Many have an illustration. Those found in many Asian countries (e.g., green bean, green pea) have the name in each country. Includes: Introduction, adzuki bean, asparagus bean (see winged bean), asparagus pea, black-eyed pea (a variety of cowpea), black gram, blue pea, broad bean, butter bean (see lima bean), chick pea, cowpea (see yard-long bean), fenugreek, green bean, green pea, hyacinth bean (see lablab bean), lablab bean, lentil, lima bean, long bean (see yard-long bean), moong bean (see mung bean), moth bean, mung bean, parkia, peanut, pigeon pea, red bean (see adzuki bean), red kidney bean, rice bean, sataw bean (see parkia), snow pea, soy bean (short entry), sugar snap pea, tamarind, white gram (see black gram), winged bean (China: su-ling dou; India: Goa bean; Indonesia: kecipir; Japan: shikakumame; Malaysia: kacang botor; Philippines: sigarilyas; Sri Lanka: dara-dhambala. Thailand: thua pu). Yard-long bean (this is the fresh bean known by a host of names). Recipes: Adzuki bean soup.

Master sauce (p. 232). "Also known as 'flavour pot' or 'lu,' this sauce has a base of soy sauce, water, sugar and Chinese wine or sherry, with a few variable additions..." Cooking with it is similar to 'red-cooking.'

Miso (see soy bean products). Mushrooms & fungi (p. 237-40, incl. recipe for Braised bean curd, cloud ear and vegetables, and Braised soy mushrooms). Natto (see soy bean products).

Oils (p. 258-59, incl. coconut oil, gingelly oil [sesame oil], mustard oil, palm oil, palm kernel oil, peanut oil, perilla oil, sesame oil). Note: Soy oil is not mentioned here! Okara (see soy bean products). Salads, incl. recipe for Indonesian vegetable salad (gado-gado), that calls for 4 oz. fried bean curd. Shoyu (see soy sauce).

Soy bean, dried (349). China: da dau, wong dau, hak dau, tai dau. Indonesia: kacang kedelai. Japan: daizu. Korea: jaa jang. Malaysia: kedelai. Philippines: utaw. Thailand: thua lueang.

Soy bean, fresh. China: mao dau. Indonesia: kacang soja. Japan: edamame. Malaysia: kacang soja. Recipe: Fresh soy beans with bean curd.

Soy bean products (p. 350): Miso (incl. recipe for miso soup). Natto. Soy bean paste (go). Soy milk (including okara). Tahuri (Philippine fermented tofu). Tokwa (tokwan; very firm square tofu).

Soy bean sprouts, with recipe for soy bean sprout salad. China: dai dau nga choi. India: bhat. Indonesia: kacang kedele, taugeh. Japan: daizu no moyashi. Korea: Kong namul. Malaysia: kacang soja, taugeh. Philippines: utaw. Thailand: thua-lueang.

Soy sauce (p. 351-52). Chinese soy sauce: Dark soy sauce. Light soy sauce ("Usually labeled 'superior soy'"). Mushroom soy sauce (Dark soy sauce that has been flavored

with straw mushrooms). Japanese soy sauces: Koikuchi (regular shoyu), tamari, usukuchi. Korean soy sauce ("About the same colour as Chinese light soy sauce, but not as fiercely salty and with a sweet malted aroma"). Thick and flavoured soy sauces: Kecap asin ("A dark, salty soy sauce, from Indonesia, a little thicker than the dark soy of China"). Kecap manis (A thick, sweet soy sauce from Java, Indonesia). Kicap cair: "The Malaysian equivalent of light soy sauce." Kicap pekat: "The Malaysian equivalent of dark soy sauce, though thicker than the Chinese version, but not as thick as kecap manis." Ponzu shoyu. Toyo mansi (p. 352): "A soy sauce used in the Philippines soured with kalamansi juice."

Note: This is the earliest document seen (April 2012) that uses the term "Kicap cair" or the term "Kicap pekat" to refer to light and dark Malaysian soy sauces, respectively.

Tempeh (p. 386). Incl. recipes for Savoury Tempeh and Thai style tempeh. Tofu (see bean curd).

Also discusses: Adzuki bean, agar-agar (incl. almond bean curd, awayuki), almond, amaranth, cowpea, crab in black bean sauce (recipe at crab), daikon, millet, monosodium glutamate ("I would strongly recommend omitting it"), Nonya (pronounced 'Nyonya.' The unique cookery found in Malaysia and Singapore resulting from the fusion of Malay and Chinese cuisine during the last century), peanut, peanut sauce, sago (this palm flowers only once in its life, at about age 15. Just before flowering, it builds up a large reserve of starch in the pith. The tree is felled, the pith scooped out, ground and washed to make sago starch), seaweed (incl. agar-agar, hijiki, kombu / konbu, mozuku, nori / laver, wakame), sesame paste, sesame seed, vegetarian meals ("By far the most important vegetarian food in the Far East... is bean curd"). Address: Australia.

7545. Wise, Victoria. 1998. The vegetarian table: Japan. San Francisco: Chronicle Books; London: Hi Marketing. 156 p. Illust. (color photos by Deborah Jones). 22 x 21 cm. Series: The Vegetarian Table.

• ***Summary:*** Contents: Introduction. Basic ingredients and seasonings for the Japanese table. 1. Appetizers and condiments. 2. Soups. 3. Rice. 4. Noodles. 5. Vegetables. 6. Sweets. Table of equivalents.

Ingredients include: Soybeans, soy sauce, tofu (incl. silken tofu, tofu puffs, grilled tofu), miso (red, white, yellow, brown, barley), fresh soybeans, dried soybeans (incl. black soybeans), soybean sprouts, freeze-dried tofu, soybean milk skin (yuba), and soybean curd pulp [okara]. Azuki beans, sea greens [sea vegetables incl. agar, kombu, nori, wakame], sesame seeds, umeboshi (pickled plums), wasabi, saké.

Contains too many soy-related recipes to list them all. The color photos and food styling are superb–perhaps the most beautiful we have ever seen in a cookbook.

Note: Other books in this series (all published by Chronicle Books) are: France, India, Italy, Mexico, and North Africa. Address: Oakland, California.

7546. Yeager, Selene. 1998. The doctor's book of food remedies: the newest discoveries in the power of food to cure and prevent health problems, from aging and diabetes to ulcers and yeast infections. Emmaus, Pennsylvania: Rodale Press. xiv + 610 p. Illust. Index. 24 cm.

• ***Summary:*** The chapter titled "Soy foods: Help for your hormones–Healing power" (p. 490-95) notes in the subtitle that these foods "Can help: Prevent heart disease, relieve menopause symptoms, reduce the risk of breast and prostate cancer." Contents: Introduction. In the kitchen (using tofu). Good for your heart. The joy of soy: Brief definitions of meat substitutes, soy flour (kinako–made from roasted, ground soybeans), soy milk, tempeh, texturized soy protein, tofu. Turning down the heat (hot flashes and menopause). Powerful breast protection. Protection for men (prostate cancer). Nutritional extras (Good sources of protein and other nutrients). Getting the most: Add soy products last when cooking, shop for power (it's best to eat soy foods in their unadulterated form), look for full-fat soy milk–which contains 50% more phytoestrogens than the low-fat kind. Two recipes: Soy fruit smoothie (with soymilk). Mocha tofu pudding.

Also contains chapters on sea vegetables (p. 477-81), and Thyroid disease: Foods for hormonal health (p. 528-31).

7547. Fallon, Sally; Enig, Mary G.; Fitzpatrick, Mike. 1998? Myths and truths about soy foods (Leaflet). Whangarei, New Zealand: Soy Information Service. 3 panels each side. Each panel: 21 x 9.5 cm. Undated.

• ***Summary:*** Near the bottom of the front is written: "For references and additional information, send $12 to: Soy Alert! 4200 Wisconsin Ave. #106-336, Washington, DC 20007. Copyright Sally Fallon and Mary G. Enig, Ph.D."

The three inside panels are titled "Myths and truths about soy foods." There are 16 pairs of "Myth" and "Truth." The first few myths are: "The use of soy as a food dates back several thousand years." "Asians consume large amounts of soy foods." "Modern soy foods confer the same benefits as traditionally fermented soy foods." Note: The authors are not opposed to the use of traditional fermented soyfoods.

Back left panel: "Soy dangers summarized." Back central panel. "Soy infant formula–Birth control pills for babies."

Note: This leaflet was sent to Soyfoods Center in about 1998 by Richard James of New Zealand. A note stapled to the back reads: "The point being that the industry and the F.D.A. have allowed an unacceptable cancer risk [from soy isoflavones] to continue, especially in baby food, for 20 years." Address: P.O. Box 3285, Onerahi, Whangarei, New Zealand.

7548. Fitzpatrick, Mike G. 1999. Re: Docket No. 98P-0683

[Food labelling: Health claims; soy protein and coronary heart disease]. Letter to Dr. S.M. Pilch, Centre for Food Safety and Applied Nutrition (HFS-465), Food and Drug Administration (FDA), 200 C St., SW, Washington, DC 20204 USA, Jan. 25. 9 p. Typed, without signature (carbon copy). [40 ref]

• ***Summary:*** "My submission does not address the issue of the health claim that soy protein reduces the risk of coronary heart disease *per se*. Rather, it opposes the claims by PTI [Protein Technologies International] that soy protein is a GRAS foodstuff and that there are no risks associated with the daily consumption of between 25 g and 100g of soy protein.

"In fact, the FDA has never granted soy protein GRAS status. I would submit that the proof required to make such a claim is lacking. Also, there are very real risks associated with consuming soy protein. These risks appear to have been ignored by PTI and it is essential that the FDA give their full attention to the exposures to isoflavones and nitrosamines that will occur on daily exposure to 100g of soy protein.

"In this regard, FDA must fully disclose to consumers the possible risks of soy protein as well as the possible benefits." Address: PhD, MNZIC, Senior Consultant, Kingett Mitchell & Associates Ltd., Environmental Consultants, ASDA Plaza, Fred Thomas Dr., P.O. Box 33-849, Takapua, Auckland, New Zealand. Phone: (09) 486-8068. Fax: 486-8072.

7549. Golbitz, Peter. 1999. Re: Follow-up letter concerning FDA proposed health claim for soy protein. Letter (fax) to members of the Soyfoods Association of America, Jan. 25. 1 p.

• ***Summary:*** This fax is on Soyfoods Association letterhead. "It has been brought to our attention that the proposed rule would exclude soy products that don't fit FDA's definition of 'low fat,' which is equivalent to 3 grams of fat per serving. Unfortunately, this would exclude most tofu sold in the market today, as well as soymilks that have more than 6 or 7 grams of protein per serving. This is due to the soybean's natural ratio of approximately 2:1 for protein to fat. Naturally processed soyfood products that have the minimum 6.25 grams of soy protein per serving are likely to have at least 3 grams of fat per serving. Tofu, soymilk, tempeh and soy flour products that contain more than 7 grams of protein per serving might not be able to get the proposed health claim. I don't believe that this was the original intention of FDA in proposing this rule, as they actually used tofu and soymilk in their example of products that may qualify for the health claim."

"I urge all of you to carefully examine your product's nutritional profiles, and if you feel it is important to your company, please send a comment to FDA regarding this potential problem right away... today!" Address: Soyatech, P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207-288-4969.

7550. **Product Name:** Breeze (Almond Milk) [Original, Chocolate, Vanilla].
Manufacturer's Name: Blue Diamond Growers (An Agricultural Cooperative).
Manufacturer's Address: 1082 C Street, Sacramento, CA 95814. Phone: 916-442-0771.
Date of Introduction: 1999. January.
Ingredients: Water, evaporated can juice, almonds, natural cocoa, tricalcium phosphate, sea salt, potassium citrate, soy lecithin, carrageenan, vanilla extract, vitamin E acetate, vitamin A palmitate, vitamin D-3.
Wt/Vol., Packaging, Price: 1 quart (946 ml) Aseptic carton. Retails for $2.48 (1999/04, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 8 fl. oz. (240 ml): Calories 120, calories from fat 25, total fat 3 gm (5% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 160 mg (7%), potassium 180 mg, total carbohydrate 21 gm (dietary fiber 1 gm [4%], sugars 20 gm), protein 1 gm. Vitamin A 10%, calcium 20%, iron 4%, vitamin D 25%, vitamin E 50%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Leaflet brought by Patricia Smith from Natural Products Expo at Anaheim. 1998. March. 8½ by 11 inches. Full color. On the front background is an alpine scene. The slogan: "Breeze: Delicious non-dairy beverage made from real almonds." An inset shows each of the three different flavors of Breeze being poured into a glass. On the back is general information about the product and the marketing support that Blue Diamond will provide–but no ingredient lists. Consumer research has shown it to be "preferable to popular milk alternatives such as soy, rice, and oat beverages."

Talk with Susan of Blue Diamond. 1999. March 24. This product first started to be sold in about January 1999.

Product with Label (Chocolate flavor) purchased at Open Sesame in Lafayette, California. 1999. April 20. 1 quart Tetra Brick carton with reclosable lid. Blue (3 shades), white, brown, yellow, and green. "Delicious non-dairy beverage made from real almonds. No lactose. Only 1% fat. Contains calcium, vitamins A, D & E. A color photo on the front panel shows chocolate Breeze being poured from the left into a glass with a snowy mountain peak, meadow, and clear blue sky in the background.

Soyfoods Center taste test: Flavor and nutritional value–Much too sweet, it contains about 3 times as much sugar and one-eighth as much protein as a comparable soy beverage. Price: Too expensive.
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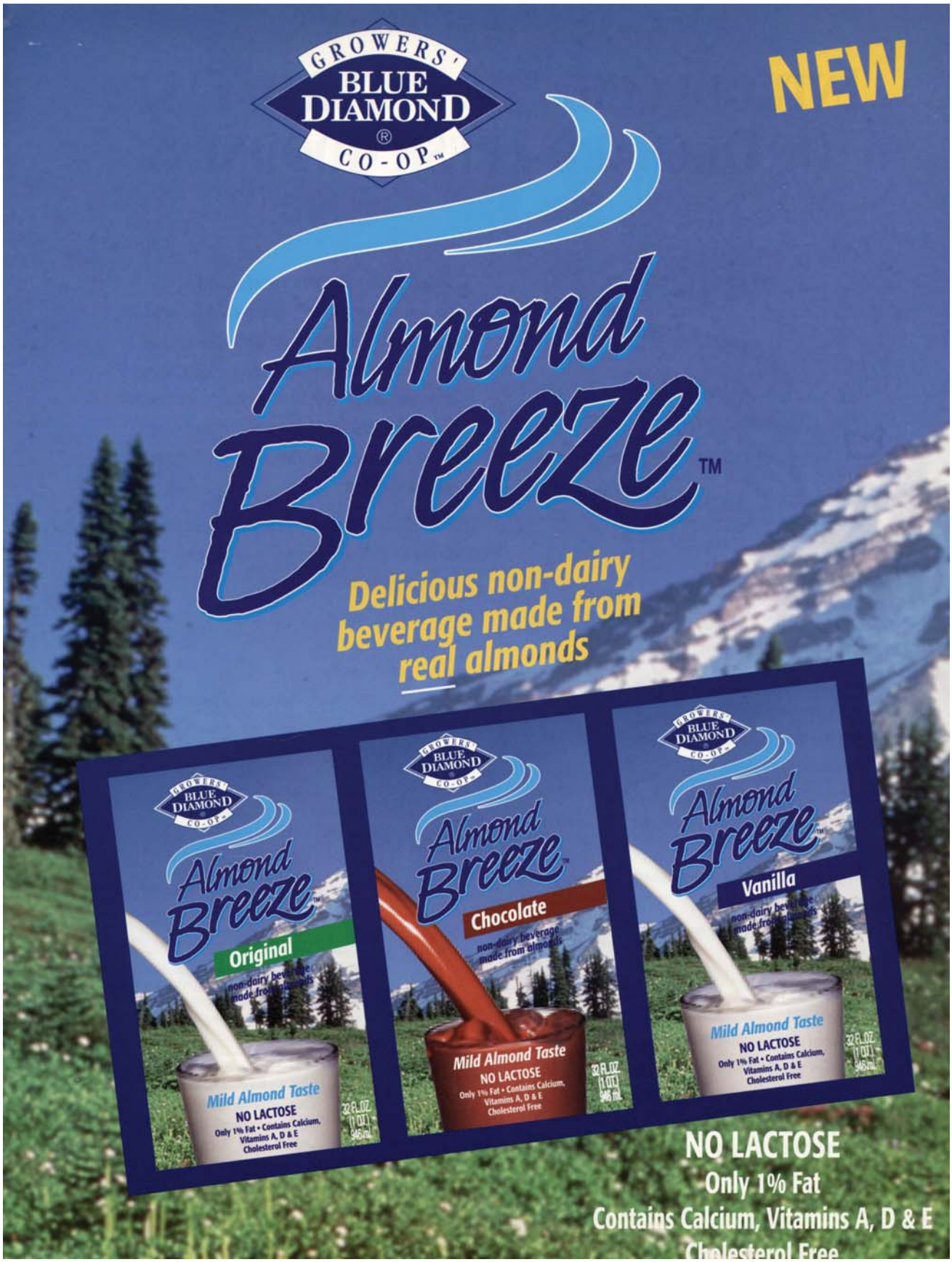
7551. **Product Name:** Veggie Milk (Tetra Pak Quart Cartons) [Original].
Manufacturer's Name: Galaxy Foods (Product Developer-



Marketer).
Manufacturer's Address: 2441 Viscount Row, Orlando, Florida 32809. Phone: 800-441-9419 or 407-855-5500.
Date of Introduction: 1999. January.
Ingredients: Incl. soy protein isolate, rice, and oats.
Wt/Vol., Packaging, Price: 1 quart (32 oz) Tetra Brik Aseptic carton. Retails for $1.99 (1999/05, Concord, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: *Monthly Insight* (Galaxy Foods, Orlando, Florida). 1998. Sept. p. 2. "Veggie Milk to make its debut." "Veggie Milk, Nature's Alternative to Milk, will make its debut on store shelves this fall." It is a "highly nutritious blend of organic soy, rice, and oats. Veggie Milk contains more vitamins, minerals (including calcium), protein and fiber than any other milk on the market today. It is the only milk fortified with folic acid. Veggie milk also contains powerful phytonutrients like Isoflavones (found in soy) and Toconutrients (found in rice)... As with all of our Veggie products, Veggie Milk is lactose free, cholesterol free and saturated fat free. And, because it is from the Veggie Kingdom, it will never contain rBST hormones or antibiotics that are often found in animal's milk. Processed by strategically located dairies, the 32 oz. carton of fresh milk will be available in two flavors–original and chocolate–and will be sold alongside conventional fresh milk. Veggie Milk will also be available in a shelf-stable package that can be sold in supermarket dry grocery aisles."

Monthly Insight (Galaxy Foods newsletter). 1998. Dec. p. 2. "On the shelves–Veggie Milk is making its way onto the shelves in Ingles Markets, Kroger and Dierbergs–and its just a matter of time and paperwork until we'll see Veggie Milk on the shelves of all our Veggie accounts!"

Talk with Tina Nelson of Galaxy Foods. 1999. April 2. Galaxy had Veggie Milk at the NFM show at Anaheim and they are just now getting it on the shelves. It was first sold at Ingles Market in Dec. 1998 or Jan. 1999. This soymilk is now out in a 32 oz (1 quart) Tetra Pack carton in one flavor (Original); they plant to introduce a chocolate flavor in June. Tina thinks the product is packaged at several different locations. They make the powder themselves and ship that to the packager. She does not think the product is packaged by Pacific Foods of Oregon. Galaxy manufactures the powder portion of the product, which is a blend of soy (the main ingredient), rice, and oats. At least part of the soy is soy protein isolate, of which they are a major consumer. As far as Tina knows it is the first commercial soymilk that contains fiber (from the oats) and folic acid. They plan to introduce the product in a fresh gable-top carton very soon; they may have already shipped their first order.

Product with Label purchased at Trader Joe's in Concord, California. 1999. April 30. 3.5 by 7.75 by 2.25 inches. Tetra Brik 1 quart aseptic carton. Retails for $1.99. Green, yellow and black on white. A photo on the front panel shows milk being poured into a tall glass. The front panel states: "Nature's alternative to milk. A natural, highly nutritious blend of organic soy, rice & oats. The world's most nutritious milk. Lactose free. Cholesterol free. More calcium. 1% Low fat. Pasteurized. Homogenized. Great source of isoflavones, antioxidants & folic acid. Fortified with vitamins A, B, C, D & E." On the back is a large color photo of seven other Galaxy Veggie products." A table on one side compares the nutritional composition of this product with 1% dairy milk. A "Veggie for life essay contest" is described in detail on one side." Soyfoods Center evaluation. 1999. May 16. This is the worst soymilk product we have ever evaluated. We found the flavor to be terrible–one taster could not drink it at all; he threw it out! The bad flavor appears to come from the first two ingredients (not including water): "organic soymilk solids" (which usually means powdered soymilk) and isolated soy protein. The price is very high–more than 40% higher than comparable brands at this store. The claim that it is a "A natural... blend of organic soy, rice & oats" seems misleading. The third ingredient (not including water) is "brown rice maltodextrin and protein." Usually that refers to a sweetener, but what is the "protein" doing there? Further down the list is "oat fiber." Does that count as "natural" oats?

7552. Golbitz, Peter. 1999. Proposed FDA rule may turn soy to gold. *Bluebook Update* (*Bar Harbor, Maine*) 6(1):1-2. Jan/March.
• ***Summary:*** This article first appeared in the December 1998 issue of the *Newsletter of the Soyfoods Association of North America* (*Washington, DC*).

7553. ProSoya Inc. 1999. ProSoya VS30/VS40 SoyaCow systems: Operating manual. Ottawa, Ontario, Canada: ProSoya Inc. 28 p. 28 cm.
• ***Summary:*** Contents: 1. Technical description: Grinder/cooker, steam generator (boiler), mechanical filter press, tofu box. 2. Preparations for making soymilk: Bean soaking, checking and preparation of the system. 3. Making soymilk: Grinding and cooking, extracting the soymilk, boiler shutdown. 4. Making tofu. 5. Storage of soymilk and tofu. 6. Cleaning and sanitation of the machine and utensils. 7. Precautions. 8. Do's and don'ts. Packing List. Trouble Shooting Guide. Figures (4 figures).

Talk with Brian Harrigan. 1999. June 16. This booklet was published in Jan. 1999 by ProSoya Inc. Address: 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7554. Wasserman, Debra; Mangels, Reed. 1999. Simply vegan: Quick vegetarian meals. 3rd ed. Baltimore, Maryland: Vegetarian Resource Group. 224 p. Illust. General index. Index of tables. Jan. 23 cm. 1st ed. March 1991. 2nd ed. June 1995. [29 ref]
• ***Summary:*** More than a cookbook (with over 160 vegan

recipes that can be prepared quickly), this is a guide to a non-violent, environmentally sound, humane life-style. Contents: Acknowledgments. Definition of vegan. Foreword. Time-saving cooking suggestions: Microwave cooking. Introducing fat as a percentage of daily value. Sample menus: Menu analysis. Top recipes for calcium and vitamin C. Top recipes for iron. Recipes: Beverages, breakfasts, sandwiches, snacks, salads, soups, side dishes, main dishes (pasta dishes), soy products (tempeh dishes, tofu dishes), desserts. Food definitions. Herbs and spices. Vegan nutrition: Introduction, nutrition is a science, recommendations for vegans, calories, weight gain, and weight loss, protein, fat, calcium, iron, zinc, vitamin D, riboflavin and vitamin B-6, vitamin B-12, sources of vitamins and minerals, pregnancy and the vegan diet, lactation and the vegan diet, feeding vegan kids, nutrition glossary, recommended reading list. Cruelty-free shopping by mail: Vegan food through the mail, cruelty-free cosmetics, environmentally sound household products, clothing containing no animal products, personal care vegan products, educational materials, vegan books and cookbooks, vegetarian groups and internet resources. The vegetarian resource group. Address: Vegetarian Resource Group, P.O. Box 1463, Baltimore, Maryland 21203. Phone: 301-366-8343.

7555. White Wave, Inc. 1999. Soyfood recipes for the American table: Favorite dishes from the folks at White Wave–America's soyfood company since 1977. Summertown, Tennessee: The Book Publishing Co. 96 p. Illust. with full-page color photos. Index by product. General index. 23 cm. [13 ref]

• ***Summary:*** Contents: About White Wave: Brief company history ("Entrepreneur Steve Demos founded White Wave, Inc., in 1977..."), healthy soil means healthy food (White Wave has supported organic farming practices for over 20 years). About soy. About White Wave products: Tofu, tempeh, Silk soymilk, Silk dairyless soy yogurt, Soy A Melt (cheese alternative), Seitan. Breakfast. Appetizers. Soups. Salads. Main dishes. Desserts.

A very disappointing, overly commercial "quickie" book with two main problems. (1) Every recipe calls for the use of "White Wave" soy products. (2) Many of the recipes in this book are taken from other 11 other books published by The Book Publishing Company–but we are not told which recipes are copies and which are original, or (on each page) where a particular copy came from. The color photos are attractive. This book would be fine if it were given away by White Wave to promote its products. Address: Boulder, Colorado.

7556. Gupta, Rajendra ("Raj") P. 1999. Progress in development of natural soy protein isolates and concentrates (Interview). *SoyaScan Notes.* Feb. 4. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Raj and ProSoya are making good progress in developing soy protein isolates and concentrates made from whole soybeans. All, or almost all, isolates and concentrates are made from defatted soybean meal, which is usually defatted with hexane solvent. Raj first makes the whole soybeans into soymilk, then removes the carbohydrates (fiber and sugars), and finally removes most or all of the fat. It is the last step that is the most difficult, and it is more difficult on a commercial scale than on a laboratory scale. Raj hopes to have the technology ready within 2 years. He will license the technology, rather than make and sell the finished product–although he will also have a demonstration plant that makes products for potential customers to see. Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7557. Gupta, Rajendra ("Raj") P. 1999. What happened to International ProSoya Corp. (IPC) and their soymilk product SoNice (Interview). *SoyaScan Notes.* Feb. 4. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** IPC never went bankrupt or even into receivership. Their SoNice soymilk was doing very well but the quality was inconsistent, so they decided to take it off the market and set up their own packaging facility. It has not come back onto the market since some of the money that was promised to the company was not forthcoming. Therefore a product quality problem became a money problem, which is where things stand now. Lorne Broten is still one of the directors and actively involved in looking for a company to buy a license to manufacture the product. Raj is also involved, since he must approve any license. Raj expects SoNice to be back on the market this spring.

Dusty Cunningham has been back in Victoria, BC, for about a month, after living for a while in the Scotland, where she helped set up a plant that is now making and selling SoNice in the UK. Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7558. Pyle, Amy. 1999. State's tough [milk] price rules scrutinized: Battle lines form as Bay Area lawmaker questions California's regulations and how much consumers spend. *Contra Costa Times.* Feb. 11. p. A1, A20.

• ***Summary:*** Above the centerfold of the front-page story is a color photo of a woman in Martinez restocking the shelves of her store's dairy case. The photo is titled "Got milk-cost problems?" Two half-gallon cartons of Silk (refrigerated soymilk made by White Wave of Boulder, Colorado) are very visible in the same case as the dairy milk.

A new look at age-old disputes about California milk prices among consumer advocates, California dairy farmers, and state regulators is about to begin, prompted by sky-high prices (up $0.49 per gallon during the last 12 months) and a bold newcomer–Mad About Milk, a pseudo-consumer group financed by out-of-state dairies (headed by Arizona-based

Shamrock Foods). California's milk prices are the highest in the nation, and despite big ad campaigns, milk consumption in California is dropping–perhaps in part because of the high prices. Twenty-year-old state policies, that are unbelievably complex and based on special-interest politics (backed by the California dairy lobby), allow the state to set the price that farms must charge for milk and suppresses competition by barring most out-of-state milk. Since 1962 only specially enriched milk can be sold in California, and California is the only state that mandates enrichment beyond federal standards; condensed milk fortified with calcium and protein must be added at the processing plant. California is America's leading milk-producing state; 1.3 million cows produce 2.3 billion gallons a year worth $3.7 billion. California's milk production costs are also among the nation's lowest, thanks to large, modern dairies and relatively warm weather.

Now Jackie Speier (a Democrat from Burlingame) plans to introduce a bill that will challenge the price controls. She argues that the price stabilization program hurts poor people, infants, and children–costing about $300 extra per year for large families. Address: Los Angeles Times.

7559. Soyfoods Association of North America. 1999. Soyfoods sales soar with increased consumer acceptance (News release). Washington, DC. 2 p. Feb. 15. 28 cm.
• ***Summary:*** During the past year, sales of soymilk grew 53% in supermarkets and 24% in natural food stores, according to recent data from SPINS. Retail sales of soymilk reached $161 million in 1997, and are projected to reach $300 million by the year 2000 according to Soyatech, Inc. (Bar Harbor, Maine).

Sales of tofu last year reached $43 million in natural food stores and $37 million in supermarkets. This increase in tofu sales is being sparked by a variety of new baked, flavored, and smoked tofu products, and these categories are growing 12% faster than unflavored tofu products, according to SPINS data.

Meat alternatives are also experiencing very rapid growth, with sales last year growing 53% in supermarkets and 20% in natural food stores, according to SPINs. The fastest growing product in this category is the meatless deli slices, sales of which grew by more than 100% last year. Total sales of meat alternatives should reach $325 million this year, with an estimated 62% of that total coming from supermarkets–according to Soyatech. Address: 1723 U Street, N.W., Washington, DC 20009. Phone: 202-986-5600.

7560. Demos, Steve. 1999. The market for non-dairy yogurts and puddings in the United States (Interview). *SoyaScan Notes.* Feb. 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** White Wave's soy yogurt used to be named "White Wave Dairyless." But in March 1998 the company reintroduced and repositioned the product as "Silk: Dairyless Soy"–still as a spoonable dessert. It had been reformulated, and a tamper-free sealed lid was added. Steve estimates that the U.S. market for non-dairy yogurts is about $3-$4 million wholesale or $6-$8 million at retail. It is definitely growing at a very healthy rate–more than 30% a year. Silk has about 80% of that market–based on adjusted SPINS data. SPINS gives a somewhat distorted view of reality because it includes only selected distributors (and omits many of the biggest distributors such as Tree of Life, Stow Mills, etc.), and selected natural food stores–from which the information is extrapolated. Today there is only one major competitor (Nancy's of Oregon), and one small competitor (he forgets the name) that sells mostly in the Boston and New England markets. Soy yogurt is a big, important product for White Wave, which sells 100,000 units or more of Silk soy yogurt per week. The company sells more units of tofu, but the tofu generates less profit per unit and requires a huge investment in money and factory space. Yet the company's flagship product is Silk Soymilk–which is number one in both units sold and revenues earned. "Silk is our grand slam."

Ted Nordquist is expected to introduce a new soy yogurt at the Anaheim show next month under the WholeSoy brand. Steve thinks it is being made at Brown Cow in Petaluma, California.

Jonathan Gordon reformulated White Wave's soy yogurt shortly before he left–and he did a good job except for the stabilization. When you make soy yogurt that is set in the cup, then you stir with a spoon, it doesn't fracture smoothly like dairy yogurt. Woody Yeh's SoyaLatté, for example, was an excellent product, but it didn't look that good when you ate it. Making a good soy yogurt is very difficult; there are many small tricks. Soy yogurts are almost always pre-mixed, what is called European-style. You first make the soy yogurt, then put it into huge blenders which effectively homogenizes the consistency, causing a loss of body in the product. So you must reconstitute the body. After Jonathan left, White Wave hired an outside firm to help reestablish the stabilization system. Now White Wave has a "nice, fluffy, reconstituted soy yogurt structure again."

White Wave has two sizes (SKUs) of plain (unflavored) soy yogurt: a quart and a 6-ounce cup. The quart sells phenomenally well. It provides strong support to the premise that flavored yogurts ultimately bring many people to plain. About 15-20% of all White Wave's soy yogurt (by volume) is sold unflavored–even though it is the same price as the flavored products, and it is premixed just like the flavored products. Many people like to use the plain quart in home cooking. They may sweeten it with maple syrup, etc. Every week, the plain sells as well as the most popular flavor

A close relative of soy yogurt is soy pudding (or soy custard). Both are basically spoonable desserts, but the pudding is not acidified, and therefore probably has to be sold in an aseptic package. Steve believes the soy pudding

market is "about to explode" and this category will upstage soy yogurts in the future. Steve would bet that at least three new soy puddings (aseptically packaged) will be introduced within 60 days. Steuben Foods is coming out with one–probably in chocolate and vanilla flavors–probably at Anaheim in March. Jonathan Gordon would love to develop one but he has signed a non-compete agreement. The pudding is basically a co-packed product; nobody would put an aseptic system just for that–at least at the beginning. Finding low-acid aseptic packers is easy. White Wave is very focused on developing a Silk soy pudding that will be aseptically packaged but sold refrigerated–next to the other Silk products. "This product will be huge! It could be the biggest soy product–after you get acceptance of the word 'soy.' But it will be a long time before its sales could pass those of Silk Soymilk." Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

7561. Demos, Steve. 1999. New developments with Silk Soymilk and related products at White Wave. Company growth rates. Looking for one large investor (Interview). *SoyaScan Notes.* Feb. 24. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Despite all the exciting new developments with tofu at White Wave, Silk Soymilk is the company's flagship product; it is number one in both units sold and revenues earned. "Silk is our grand slam." Silk is now labeled as "lactose-free soymilk." The word "milk" has a strong positive connotation and this makes it clear that Silk is an alternative for milk. "Silk has everything that milk has except for the 'milk' part. James Terman came up with that one!" White Wave tries to fortify Silk Soymilk to be nutritionally equivalent to cow's milk.

The FDA has under review (even though they have tabled it) a petition submitted by the Soyfoods Association to legalize the word "soymilk" on product labels. As long as the word "soymilk" is being reviewed by the FDA, White Wave can legally use that word on their products. The FDA cannot make White Wave drop the word unless and until they pass a negative ruling on it–and then White Wave would have a reasonable amount of time to change its labels. Steve is aware that Wildwood Natural Foods was the first to take advantage of this petition to use the word "soymilk" on its product.

White Wave is now looking for one large investor. This coming spring White Wave will be lining up with some very large national companies as distributors and manufacturers of Silk. The interest in Silk by large companies is unbelievable. The companies that are showing interest in working with and/or investing in White Wave are among the top 100 in the U.S.–and we don't have to do much of a sales job. "They'll take it on any level they can get it." All they want is an entry point, so they can look at it later. They also believe that Silk will attract some very, very large competitors. We think that the Silk brand, the product, the position, the price–everything is lined up for Silk right now. We want to see if we can get that in as a household term. If it becomes a household brand name, we can sell Silk anything. We can always line extend. So our focus is on filling up that dairy case with Silk brand beverage and beverage-like products."

White Wave's identity and focus is presently on Silk Soymilk and Silk spoonable desserts (not only yogurt), and tofu under the White Wave brand.

White Wave's total revenues and tonnage continue to grow a very healthy rate. "For us, a bad year is less than 30%. After 21 years, I've gotten used to riding on the back of a tiger." We are predicting 50% or more growth rate for the entire company in 1999.

James Terman was at Bowling Green College in Ohio for 3-4 years at the same time as Steve and Pat Calhoun. Then James went on to be the art director for the state of California's university system–including Berkeley, Santa Cruz–all those universities. Then he and Steve ran into one another in Boulder and now he works for White Wave. "We can honestly say that we have a lot of fun working together as a team." Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

7562. Fisher, Kate. 1999. High-protein soybean may improve infant formula. *Soybean Digest.* Feb. p. 66f.

• ***Summary:*** Prolina, a high-protein soybean variety developed by Joe Burton of USDA's Agricultural Research Service (ARS), could improve the quality of "soy infant formula." Prolina is a rich source of cystine, an amino acid that occurs naturally in breast milk. Cystine is believed to promote brain and eye development.

7563. Lamp, Greg. 1999. Soyfoods health claim nears FDA okay: Heart-risk labeling should boost soybean demand. *Soybean Digest.* Feb. p. 68.

• ***Summary:*** Funds from the soybean checkoff helped generate the research and information that was submitted to the FDA. The process began in 1995 with financial assistance from the Illinois Checkoff Board and the United Soybean Board (USB). Roughly $1 million in soybean checkoff funds were invested in the project. "A coalition to develop the soy health claim involved ASA [American Soybean Association], USB, state checkoff boards and industry partners, such as Protein Technologies International, Central Soya and the Archer Daniels Midland Company."

An estimated 20% of all Americans (54.2 million adults) have high blood cholesterol levels–over 240. ASA predicts that if each of these people consumed 25 grams (less than 1 ounce) of soy protein each day, annual demand for soybeans would increase by more than 55.2 million bushels.

Consumption of U.S. soybeans in the United States now totals about 1.2 billion bushels a year.

A color photo shows two 3-shelf racks of American

foods. Those on the left rack already contain soy protein: Mori-Nu Tofu, Take Care, GeniSoy bars, Harvest Burgers, Galaxy Veggie Slices, SoNice soymilk, Edensoy, Morningstar Farms [Worthington Foods] meat alternatives, etc. Those on the right rack are foods with potential to have soy protein added: Cream of Wheat, Raisin Bran, puddings, Snackwell's cookies, etc.

7564. *Soybean Digest.* 1999. ADM donates soy beverage to Cuba. Mid-Feb. p. 93.
• ***Summary:*** Archer Daniels Midland Co. is donating 100 metric tons of powdered soy beverage for distribution to children in Cuba. This is one of the biggest donations of food ever made to Cuba, according to the U.S. Dep. of Commerce. ADM chair Dwayne Andreas says that this donation is a gift to the children of Cuba from the 23,000 employees of ADM.

7565. Soyfoods Association of North America. 1999. Soyfoods Once a Day for Life (Portfolio). Washington, DC. 21 inserts. Feb. 15. 28 cm.
• ***Summary:*** The following eight news releases are from the Soyfoods Association: (1) Soyfoods Association of North America celebrates April as Soyfoods Month (2 p.). (2) Soyfoods sales soar with increased consumer acceptance (2 p.). (3) Soyfoods Association of North America–Industry insiders (ask the experts, 1 p.). (4) Start young enjoying soy (ideas for kids, 1 p.). (5) 1999 Soyfoods Month sponsors (a half-page profile of 11 companies: Archer Daniels Midland, Galaxy Foods Co., Hain Food Group, Lightlife Foods, Inc., P.J. Lisac & Associates, Inc., SunRich, Inc., Tetra Pak, Vitasoy USA Inc., White Wave, Inc., Worthington Foods, Inc., Yves Veggie Cuisine; 6 p.) (6) Soyfoods Association of North America product list (lists soyfood products of 15 companies, many of whom are sponsors of "April is Soyfoods Month," 11 p.). (7) Soyfoods Association of North America member list (52 companies, 1 p.). (8) Dear member of the press, from Allan Routh, President, SANA (1 p.).

Product brochures from the following companies are also included: (9) Sweet Soybeans–Hearty & Natural Edamame, from SunRich. (10) Vitasoy soymilk, (11) Fresh, ready to heat entrées, from Yves Veggie Cuisine. (12) Go Veggie (dairy alternatives), from Galaxy Foods. (13) Lisanatti–The good health cheese alternative, from P.J. Lisac & Associates (Clackamas, Oregon). (14) Trust the protein authority, from ADM. (15) Fact sheet, from White Wave. (16) Nasoya tofu. (17) Veggie recipes, from Galaxy Foods. (18) Westsoy recipes, from Westbrae Natural. (19) Eating healthy can be soy easy, from Lightlife. (20) The change will do you good, from Morningstar Farms. (21) Sweet beans–Vegetable soybeans, from Sno Pac. Address: 1723 U Street, N.W., Washington, DC 20009. Phone: 202-986-5600.

7566. Stevens & Associates, Inc. ed. and comp. 1999. U.S. 1999 soyfoods directory. Lebanon, Indiana: Indiana Soybean Development Council. 48 p. 28 cm. [23 ref]
• ***Summary:*** This is the fourth edition of the U.S. Soyfoods Directory. Page 2 states: "And a special thanks goes to the Soy Protein Partnership for sponsoring this project." For a list of farmers and companies that grow soybeans organically, see p. 28. This 1999 Soyfoods directory is now available online at www.talksoy.com. Address: Stevens & Associates, 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 317-926-6272.

7567. White Wave, Inc. 1999. America's soy food company (Ad). *Natural Foods Merchandiser.* Feb.
• ***Summary:*** A cartoon shows a boy with a baseball and four arms holding a different White Wave soy food product in each of his four hands: Silk Dairyless, Baked Tofu Oriental, Silk Vanilla Soymilk, and Organic Firm Style Tofu.

The text reads: "Organic Silk soymilk. Organic tofu. Organic baked tofu. Organic Silk yogurt.

The White Wave logo is at the top and the background is orange at the bottom of the ad fading to yellow at the top.

Note: A very similar ad appeared in the May 1999 issue except the title was now: "America's Organic Soyfoods Company." Address: 1990 N 57 Court, Boulder, Colorado 80301. Phone: 303-443-3470.

7568. Santacruz, Cecilia; Santacruz, Nestor. 1999. Re: Introducing Delisoya. Letter to Nohra Puyana de Pastrana (first lady and wife of the president of Colombia), Santafé de Bogota, Colombia, March 1. 2 p. Typed. [1 ref]
• ***Summary:*** The President and First Lady of Colombia have taken an active interest in promoting soyfoods in Colombia. This letter introduces Delisoy and its products.

Accompanying the letter is the response sent via Bienestar Familiar saying that they are working with soy in the Eje Cafetero where a recent earthquake killed thousands of people and destroyed three cities.

Letter from Nestor and Cecilia Santacruz. 1999. April. "They tell us they will invite us to participate in October in a program to be started in Bogotá. We'll try to keep in touch with them, but bureaucracy is tough!" Address: Founders and owners of Delisoya, Calle 78 No. 12-03, Santafe de Bogota, Colombia. Phone: 346-2178.

7569. Stuttman, Len. 1999. What does the term "food-grade soybeans" really mean? (Interview). *SoyaScan Notes.* March 4. Conducted by William Shurtleff of Soyfoods Center. Followed by a fax of June 19.
• ***Summary:*** Len uses the term "food-grade soybeans" a lot. He may have learned it from people in Canada. For making soynuts, he needs special varieties of soybeans that are high in protein, low in fat, have good texture, good taste, and retain their integrity during processing (the seedcoat or hull stays on–does not slough off–during the entire soaking, cooking, and deep-frying process). A soybean with a thin

seedcoat usually has poor integrity. Actually, he must try to find a variety in which he can get as many of these qualities or specifications as possible at a competitive price. This is complicated; the only way to test a particular variety is to put it through the process. Moreover, a variety (such as Sapphire) that works well one year may not work so well the next year. Or a variety grown at one latitude that works well may not work so well when grown at a much different latitude. Soybeans grown at northern latitudes generally work better than those grown to the south. Not all of Canada's "food-grade soybeans" work well for Len's particular application. For example, manufacturers of tofu and soymilk want high protein dispersibility in water. Len wants low protein dispersibility, so that protein is not lost during soaking and cooking.

Thus within this broad category of "food-grade soybeans" each food application has somewhat different requirements. Actually, it gets even more complicated. When most people say "food-grade soybeans" they are usually talking about large-seeded, clear-hilum soybeans–most of which have a Japanese pedigree. Yet makers of natto and soy sprouts want small-seeded soybeans.

Back in the days when public soy varieties predominated, one variety (such as Corsoy) might be around for years and years. But now that most varieties originate from private seed companies, they change more often and they are not generally bred for food use–except in Canada. W.G. Thompson & Sons has a young soybean breeder who is excellent; but they do not have a food laboratory. Address: President and CEO, Sycamore Creek Co., 200 State St., Mason, Michigan 48854. Phone: 517-676-3836.

7570. Gupta, Rajendra P. 1999. Reverse centrifugal filter. *U.S. Patent* 5,882,529. March 16. 5 p. Application filed 12 May 1997. 4 drawings. [1 ref]
• ***Summary:*** Equipment for continuous separation of soymilk (liquid) from okara (solids, sludge). Address: 9 Veery Lane, Ottawa, ONT, K1J 8X4 Canada. Phone: 613-745-9115 or 613-744-4401.

7571. Kessler, Jon. 1999. Re: Unisoya of Canada, and vacuum packaging bulk tofu hot. Letter to William Shurtleff at Soyfoods Center, March 16. 1 p. Typed, with signature.
• ***Summary:*** Note: According to the *Soya & Oilseed Bluebook* (1999, p. 144) Unisoya, Inc. is now an affiliate of Berero Inc. (Tonatur Foods Inc.) and located at 185 Voyer St., St. Isidore Co., Laprairie, Quebec J0L 2A0, Canada. Contact: Jill Renger. Plant manager: Real Beaulieu.

Jon recently met and talked with Gilles Ranger (sales manager) and Bernard Beaulieu were recently in Virginia looking at the BMI (Bean Machines Inc.) centrifuge at Twin Oaks Community Foods (where Jon was manager before starting his own business). Unisoya has an interesting product line (as described on the enclosed business cards). They are presently making about 4,000 lb/day of tofu, 7 days a week, and are planning on expanding their plant. They package their bulk tofu (which is their best seller) in bulk vacuum pouches of 5 lbs per pouch (20 lb per box). Jon was most interested in the fact that they vacuum pack this tofu hot; they do not cool the tofu after it is made before vacuum packing. Then they pasteurize the tofu in its pouch at 205ºF and get a 50 or 60 days shelf life! Jon is considering visiting them this summer.

The enclosed business card, written in both French and English, states that M. Réal and Bernard Beaulieu are the proprietors / owners. The company slogan is: "The true & original." They sell tofu as follows: (1) In boxes of 225 gm, in natural or fines herbs flavors. (2) In packages of 454 or 300 gm in natural, fines herbs, seaweeds, vegetables, soft, and organic. (3) In vacuum packed boxes of 20 lb. (4) In slices or cubes. They also sell soymilk, and do private labeling.

Update: Talk with Jon Kessler. 2000. Oct. 3. His company, Sunergia, now has all its tofu made by Unisoya in Quebec, Canada, and vacuum packed. Address: Founder and owner, Sunergia Soyfoods, P.O. Box 1186, Charlottesville, Virginia 22902. Phone: 804-970-2798.

7572. Perry, Charles. 1999. The origins and early history of almond milk (Interview). *SoyaScan Notes.* March 23. Conducted by William Shurtleff of Soyfoods Center. Followed by a fax of June 19.
• ***Summary:*** Charles Perry is an Arabist and an expert on the history of Arabic cookery. Almond milk was clearly the first non-dairy milk in the Western world, and it was probably first made in Arabic cultures, perhaps as early as the 10th century A.D. The Arabs (in both medieval and modern cookery) preferred nuts to spices as a flavoring and garnish in their cookery, and they had a relatively large supply of reasonably priced almonds. The early texts say to grind almonds, mixing them with water, and they use the verb which means "to milk" (*istahlaba*), meaning to extract the milk from the almonds, or "to milk the almonds." The Arabs used this milk almost entirely for cooking–they did not drink it as a beverage. Charles is sure that Arabs were making almond milk before the Europeans, but that would be hard to prove because the European records don't go back nearly as far as the Arabic records. Early Arabic cookery manuscripts date from the 9th century. Arabs don't use the term "almond milk" and it is never called for as an ingredient; rather they talk about milking the ground almonds, and they describe this process for a particular recipe. One early Arab cookery manuscript titled *Kitab al-Tabikh* (literally "The Book of Dishes"), compiled in the 10th century mostly from 9th century sources around the court of Baghdad [today's Iraq], probably contained a description of the process for making almond milk. It has never been translated into any European language, but a scholarly edition of the Arabic text, based on

the manuscript in the Bodleian Library (Oxford, England), and in the National Library in Helsinki, Finland, was published in the 1980s by a Finnish scholarly press–with an Introduction in English. Charles has translated some of the recipes.

Only two early Arabic cookbooks have been translated into English. One is a 13th century book from Iraq with the same title ("The Book of Dishes"); it is usually known by the name of the author, Al-Baghdadi. A translation was published in 1939 under the title *A Baghdad Cookery Book,* by a well-known Arabist, A.J. Arberry, in a periodical titled *The Islamic Culture* (Hyderabad, India). The Arberry document is scheduled to be published as a book later in 1999 by Prospect Books, with an introduction by Charles explaining where Arberry's translation was wrong, plus about 230 more recipes from an expanded version of that manuscript that has been found in Turkey. Several of these recipes mention the process for deriving milk from almonds–showing that almond milk was being used in Iraq by the 13th century. Before the 20th century, most cookbooks were written by plagiarizing earlier cookbooks, so almond milk may have appeared at an earlier date. Charles published a short recipe collection (40 very sketchy recipes) dating from the 15th century; it appeared about 10 years ago in the periodical *PPC* (*Petits Propos Culinaires,* London); Charles does not remember whether or not almond milk was mentioned.

So the term "almond milk" probably first appeared in Europe. In cooking, almond milk added a highly regarded flavor, a smoother texture than minced almonds, and the prized color white. Arabic cultures raised lots of domesticated animals–especially sheep–which gave milk, but this milk was almost always used in the form of yogurt, rather than as a fresh beverage. Sheep milk yogurt does not curdle when boiled–so it is often considered preferable to dairy milk for cooking. Yogurt, of course, keeps fresh without refrigeration far longer than milk and causes less problems related to lactose intolerance.

When Arabs fast (as during Ramadan) they abstain from all food; no specific foods (such as meat or fish) are prohibited. In fact, in Islam, vegetarianism was generally considered religiously suspect and thought to indicate heresy. Specifically it was called "forbidding that which God has rendered lawful."

By the 13th century, almond milk was being used in Europe, primarily during Lent, when (in those days) animal milks were prohibited. But almonds were very expensive, so almond milk was a luxurious substitute for cow's milk. The definition of foods and beverages prohibited during Lent has varied from time to time and from place to place. But Charles has seen many old European recipes which state: During Lent, substitute almond milk for milk. This concept is present in the earliest European cookbooks, which date from the end of the 13th and beginning of the 14th centuries. Many early recipes for blancmange call for either dairy milk, almond milk, or white chicken meat–anything that was white. Lorna Sass is the editor of a book in which almond milk is mentioned in connection with Lenten dishes. Charles cannot recall ever having seen an article about the history of almond milk. Address: Staff Writer, Food Section, Los Angeles Times, California. Phone: 213-237-7806.

7573. Brauner, Susan. 1999. Almonds and almond milk (Interview). *SoyaScan Notes.* March 24. Conducted by William Shurtleff of Soyfoods Center. [1 ref]
• ***Summary:*** About 70% of the world's almonds are grown in California, 20% in Spain, and 3-4% in Italy. Blue Diamond, a cooperative owned by about 4,000 California Almond Growers, was founded in 1910. Almonds are the only crop that Blue Diamond processes. Susan has a good English-language book on Almonds, published in Italy, that includes historical information on almond milk. She is not aware of a good, scholarly monograph on the almond; their are many such books on nuts, which contain a chapter on almonds. She has been told by many Indians that almond milk has a long history in India. Address: Sent by Susan Brauner, Director of Public Affairs, Blue Diamond Growers (formerly California Almond Growers Exchange), Sacramento, California. Phone: 916-446-8354.

7574. **Product Name:** Power Dream: Natural Energy Drink (Fortified Soymilk in Aseptic Cartons) [Chocolate, Vanilla, Chai, Raspberry, Coffee].
Manufacturer's Name: Imagine Foods, Inc. (Marketer-Distributor). Made in Manteca, California, by California Natural Products.
Manufacturer's Address: CNP: P.O. Box 139, Manteca, CA 95336. Imagine: 350 Cambridge Ave., Suite 350, Palo Alto, CA 94306. Phone: 650-327-1444.
Date of Introduction: 1999. March.
Ingredients: Organic soymilk* (filtered water, organic soybeans), rice syrup, soy protein isolate, gum arabic, cocoa, vanilla, sea salt, vitamins and minerals.
Wt/Vol., Packaging, Price: 11 fl oz (330 ml) Tetra Prisma Aseptic carton. Retails for $1.48 (2000/05, Open Sesame, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per package (11 fl oz): Calories 310, calories from fat 45, total fat 5 gm (8% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 180 mg (8%), potassium 460 mg (13%), total carbohydrate 59 gm (sugars 33 gm, dietary fiber 5 gm (20%)), protein 10 gm. Vitamin A 20%, vitamin C 20%, calcium 30%, iron 20%, vitamin D 25%, vitamin E 20%, thiamin (B-1) 35%, riboflavin (B-2) 25%, niacin (B-3) 25%, vitamin B-6 30%, vitamin B-12 25%, biotin 20%, pantothenic acid (B-5) 25%, phosphorus 40%, iodine 20%, magnesium 35%, selenium 20%, zinc 30%, copper 35%, manganese 25%, chromium 20%, molybdenum 20%. Percent daily values are based on a 2,000 calorie diet.

New Product–Documentation: Leaflet (glossy color, front and back, each panel 28 cm) sent by Patricia Smith from Natural Products Expo. 1999. "If you need energy, its time to stop hitting the bars" [energy bars]. "More refreshing than an energy bar. High in soy isoflavones. High in protein and carbohydrates. Packed with 23 vitamins and minerals." A color photo shows the "new and unique 11 oz. cartons." Rear panel: "Multiple placements for maximum sales." This product can be placed in the non-dairy section, or in the refrigerator case, or in the nutritional bar section.

Product with Label purchased at Open Sesame natural foods in Lafayette, California. 2000. May 24. 2.5 inches square by 5 inches high. Octagonal Aseptic package. Orange, yellow, silver, brown and white. In the foreground is a wave of chocolate soymilk breaking in a glass. In the background is a photo of the Grand Canyon with a little snow on the ground. On one side is text about the age and size of the Grand Canyon: "It offers explorers great adventure and challenges of endurance, as well as changing views of awesome beauty." Back panel text: "High in soy protein. Soy isoflavones: 52 mg per serving." Distributed by Imagine Foods, Inc. 1245 San Carlos Ave., San Carlos, California 94070.

Talk with Molly of Consumer Relations at Imagine Foods. 2000. June 19. The product comes in four flavors: Chocolate, vanilla, chai, and raspberry. All were introduced in March 1999.

Nutrition Business Journal. 2000. Dec. p. 19. This line of products, launched in June 1999, is currently being repackaged to convey more of a "sport look."

7575. Imagine Foods, Inc. 1999. Until now, soymilk was an acquired taste (Ad). *Vegetarian Times.* March. p. 5.
• ***Summary:*** This creative and classy full-page color ad shows (from the rear) a lady riding a bicycle. Wearing sandals, a white dress, and white sweater, and a white hat, she is kicking up both of her feet–as in a gesture of joy. A wicker basket on a rack on the back of her bike is loaded with flowers and two cartons of Soy Dream brand soymilk. The entire photograph is in black-and-white except for the two cartons, a dozen red roses in the basket, the headline, and the company name in the lower right corner.

The text reads: "From the first sip, you'll love the smooth creamy taste of Soy Dream, the new soymilk from Imagine Foods, America's leading non-dairy beverage company. With a nutritional profile similar to milk, Soy Dream Enriched is as good for you as it is delicious. It's a great way to enjoy the health benefits of soy each day. Once you taste it, the only thing you'll need to acquire... is more" Address: Palo Alto, California. Phone: 415-327-1444.

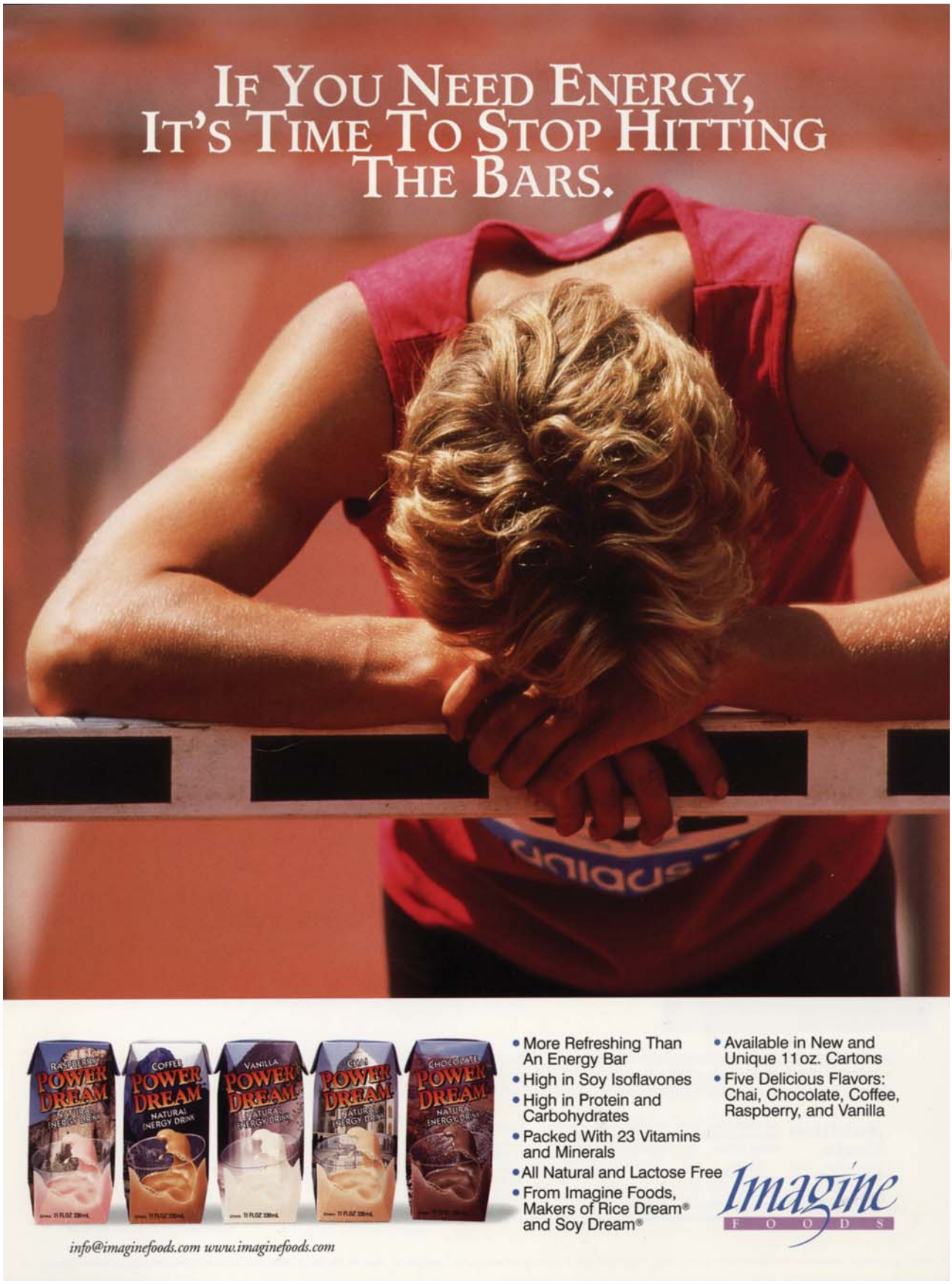
7576. Imagine Foods, Inc.; Barbara's Bakery. 1999. Meet Barbara's dreamy new soy friend (Ad). *Vegetarian Times.* March. p. 20.
• ***Summary:*** This one-third page vertical color ad is for Soy Dream (original enriched soymilk from Imagine Foods) and Barbara's Puffins (cinnamon breakfast cereal). Packages of each are shown together at the bottom of the ad, with many red hearts above them. The text begins: "They only just met and they're already spooning. Of course, some would say that's only natural." Address: 1. Palo Alto, California. Phone: 415-327-1444.

7577. Instituto Colombiano de Bienestar Familiar. 1999. Alimentación a base de soya y germinados [Foods based on soya and sprouts]. Bogota, Colombia. 51 p. 22 cm. [Spa]
• ***Summary:*** Contents: Full-page black-and-white photo of Andres Pastrana Arango (current president of Colombia) with his wife and three children. The family as the basis of development. The soybean (*El fríjol soya*). Recipes–each with basic nutritional information per serving. Dairylike products (*Lácteos*)*:* Basic homemade soymilk, homemade tofu (two methods, each curded with lemon juice), cream cheese, soy yogurt, soy kumis. Meatlike products (*Cárnicos*)*:* Soy burgers (made with ground cooked soybeans–masa de soya cocoda), etc. Baked goods (*Harinas*). Drinks, desserts, and salads (*Bebidas, postres y ensaladas*). Soups, special dishes, and others (*Sopas, especiales y otros*)*:* Incl. soy mayonnaise, pizza with soya.

Note 1. The color photo on the cover of this saddle-stitched book is copied from the Canadian Soyfoods Directory (Nov. 1997). Note 2. Letter from Cecilia and Nestor Santacruz of Delisoya, Bogota, Colombia. 1999. April. This booklet is the successor of one titled *El Cambio es Andres* [Andres stands for change] published in late 1997. They liked the earlier edition better because it contained recipes for whole foods such as brown rice and whole wheat flour, and no meat or dairy products. Quite a few of the recipes in this more recent book call for the use of meat. Address: Bogota, Colombia.

7578. Ionmag Corporation. 1999. Health tofu: Health tofu maker from Ionmag Corporation (Leaflet). Koyang Industrial Complex, 628, Siksa-Dong, Ilsan-Ku, Koyang City, Kyunggi-Do, Korea 1 p. Single sided. 30 cm.
• ***Summary:*** Leaflet (glossy color) sent by Patricia Smith from Natural Products Expo West. 1999. March. A large color photo shows this red and clear plastic home tofu maker against a circle of soybeans with an orange and red border. "Coming to fresh tofu, tasty tofu within short time." Specifications: Weight: 5.5 kg. Height: 370 mm [14.6 inches]. Diameter: 240 mm. Material: Polycarbonate ABS [Acrylonitrile Butadiene Styrene], Stainless steel. Voltage: 110/220 volts. World patent pending.

Note: This machine is also widely advertized elsewhere for homemade soymilk. Address: Koyang City, Kyunggi-Do, Korea. Phone: (82-344) 968-0051/4.



7579. Liu, KeShun. 1999. Oriental soyfoods. In: C.Y.W. Ang, K. Liu, and Y-W. Huang, eds. 1999. Asian Foods: Science & Technology. Lancaster, Pennsylvania: Technomic Publishing Co., Inc. 546 p. See p. 139-99. Chap. 6. March. [60 ref]

• ***Summary:*** Contents: Introduction: Soybeans as a crop, composition and nutritional quality of soybeans, soyfoods–from the east to the west, soyfood classification.

Soymilk: Introduction, traditional soymilk, modern soymilk (techniques for reducing beany flavors, commercial methods, formulation and fortification, homogenization, thermal processing, and packaging), concentrated and powdered soymilk, fermented soymilk (with lactic acid bacteria), soymilk composition and standardization.

Tofu: Introduction, methods of tofu preparation, factors involved in tofu making (soybean varieties, concentration of soymilk, heat process of soymilk, types of coagulants, concentration of coagulants, coagulation temperature, coagulation time, process automation, packaging), varieties of tofu (silken tofu, regular and firm tofu, Chinese semidry tofu {*doufu gan*}, Chinese tofu sheets and tofu noodles, lactone tofu), varieties of tofu products (deep-fried tofu, Japanese grilled tofu, frozen tofu {"Made almost exclusively in rural farmhouses and temples by putting tofu outdoors in the cold weather, frozen tofu was never sold as a commodity in the past"}, Japanese dried-frozen tofu, Chinese savory tofu {"In China there are many specially made tofu varieties known as savory tofu"}, fermented tofu {Sufu or Chinese cheese, varieties of sufu, preparation methods, preparation principle}).

Soymilk film (yuba). Soybean sprouts. Green vegetable soybeans. Other non-fermented soyfoods: Okara, roasted soy powder. Concerning okara: In some parts of China, okara is salted and spiced and used as a pickle. Or it can be simply added to a dish with meat and vegetables. In other parts of China it is made into okara tempeh [called *mei-dou-zha* or meitauza].

Fermented soy paste (Jiang and miso): Koji, koji starter, and inoculum (koji, koji starter, inoculum), Chinese jiang (traditional household method, pure culture method, enzymatic method), Japanese miso (preparing rice koji, treating soybeans, mixing and mashing, fermenting, pasteurizing and packaging), principles of making jiang or miso.

Soy sauce (Jiangyou or shoyu): Chinese jiangyou (traditional household method, modern methods), Japanese shoyu (treatment of raw materials, koji making, brine fermentation, pressing, refining), principles of making soy sauce, chemical soy sauce (made by acid hydrolysis; heat with 18% hydrochloric acid for 8-12 hours, then neutralize with sodium carbonate and filter to remove insoluble materials), proximate composition of soy sauce, quality attributes and grades.

Japanese natto: Methods of preparation, principles of preparation.

Indonesian tempeh: Traditional method, pilot plant method, principles of tempeh preparation. Fermented black soybeans (Douchi or Hamanatto): Chinese douchi, Japanese Hamanatto.

Tables: (1) Names (English, Chinese, Japanese, Korean, Indonesian, Malay, Filipino) general description, and utilization of nonfermented Oriental soyfoods.

Soy sprouts: Chinese: Huang dou ya, Da dou ya. Japanese: Daizu no moyashi. Korean: Kong no mool.

Yuba: Chinese: Dou fu pi, Fu zhu. Japanese: Yuba. Korean: Kong kook. Filipino: Fu chok.

Yuba (Soy pulp): Chinese: Dou zha / doufu zha. Japanese: Okara. Korean: Bejee. General: "Insoluble residue after filtration of soy slurry into soymilk."

Roasted soybeans (Soynuts): Chinese: Chao da dou. Japanese: Iri-mame. Korean: no name. Indonesian: no name

Roasted soy powder: Chinese: Chao dou fen, dou fen. Japanese: Kinako. Korean: Kong ka au. Indonesian: Bubuk kedelai. (2) Names (English, Chinese, Japanese, Korean, Indonesian, Malay, Filipino) general description, and utilization of fermented Oriental soyfoods. (3) Proximate composition (gm per 100 gm fresh weight) of some fermented soyfoods.

Figures show: (1) Flowchart: Traditional Chinese method for making soymilk and tofu (from whole soybeans). (2) A commercial processing method (Alfa-Laval) for making soybase and a subsequent product–soymilk. (3) Photo of homemade firm tofu. (4) Photo of a dish of tofu and mushrooms. (5) Photo of cubes of sufu (Chinese cheese) on a white plate. (6) Flowchart for making sufu from firm tofu. (7) Photo of two packages of dried yuba sticks (Chinese). (8) Photo of a bowl of soy sprouts. (9) Photo of Chinese chiang, and Japanese red and white miso, each on one of three spoons in a shallow white bowl. (10) Flowchart of a common method for making Japanese rice miso [red miso]. (11) Photo of soy sauce in three different containers: dispenser, small bottle, and large Chinese can. (12) Flowchart of a common method for making Japanese koikuchi shoyu (soy sauce). (13) Photo of two chopsticks lifting some Japanese natto from a bowl full of natto; the thin strings connecting the natto above and below are clearly visible. (14) Flowchart of a common method for making Japanese natto from whole soybeans. (15) Photo of tempeh made in the USA in perforated plastic bags (Courtesy of Mr. Seth Tibbott, Turtle Island Foods, Inc., Hood River, Oregon). (16) Flowchart of traditional Indonesian method for making tempeh from whole soybeans. (17) Photo of Chinese *douchi* (fermented black soybeans) on a white plate.

Note: For a biography of KeShun Liu PhD see p. 544. Address: PhD, Soyfoods Lab., Hartz Seed, A Unit of Monsanto, Stuttgart, Arkansas.

7580. McCarty, Meredith. 1999. Sweet & natural. New York, NY: St. Martin's Press. xii + 260 p. Illust. by Magué

Calanché. Photographs by Jeanne Stack. Index. 24 cm. [60 ref]

• ***Summary:*** A macrobiotic cookbook containing "More that 120 naturally sweet and dairy-free desserts." The author's fascination with healthy desserts began in 1974, when she learned to make old-fashioned apple pie in a beginning macrobiotic cooking class. She was working as associate editor of the *East West Journal,* had been diagnosed with mononucleosis a couple of years before, and wanted to learn to satisfy her sweet tooth in a more healthy way.

The long chapter titled "Ingredients" (p. 11-56) gives details on the types of sugars, and commercial natural sweeteners, including brown rice syrup, barley malt syrup, FruitSource (Brown rice syrup and grape juice concentrate), Sucanat (evaporate sugar cane juice). A table (p. 26) gives source and composition of many sweeteners; for example, amazake is 80% glucose and 20% maltose; evaporated sugar cane juice is 89% sucrose, and 1% each fructose and glucose; brown sugar is 98% sucrose. The section on "Dairy and its alternatives" contains a table titled "Calcium sources" (30, incl. two types of fish), soy foods, soy milk, tofu (p. 31-33), amazake (p. 33-34), different vegetable oils, kuzu / kudzu root starch, and tofu as a binder.

Soy-related recipes include: Soymilk: Mango-Key Lime Pie with soy milk filling (130). In crisps and cobblers (p. 141). In cakes (160). In puddings (p. 225). Tofu: Pumpkin pie with tofu cream and soy milk filling (p. 132-33).

Other ingredients: Amaranth, koji, kuzu, peanut butter, sesame butter, sesame seeds. A color photo shows Meredith McCarty in her kitchen. Address: Tiburon, California: P.O. Box 2605, Mill Valley, CA 94942. Phone: 415-435-4102.

7581. Newman, Jacqueline M. 1999. Cultural aspects of Asian dietary habits. In: C.Y.W. Ang, K. Liu, and Y-W. Huang, eds. 1999. Asian Foods: Science & Technology. Lancaster, Pennsylvania: Technomic Publishing Co., Inc. 546 p. See p. 453-85. Chap. 15. [104 ref]

• ***Summary:*** Contents: Introduction. Foods of Bangladesh. Cambodian foods. Chinese foods: Food selection, eating behaviors, intracultural differences, feasts, holidays and special foods. Indian foods. Indonesian foods. Japanese foods. Korean foods. Laotian foods. Malaysian foods. Nepalese foods. Foods of Pakistan. Philippine foods. Thai foods. Vietnamese foods.

In each country and culture, the role and practice of vegetarianism is discussed.

Soyfoods are mentioned as follows: China (p. 458): "For breakfast, Northerners prefer warm soymilk and fried wheat-dough crullers." Vegetarians from both north and south get an important part of their protein "from a sophisticated cuisine based upon considerable use of gluten and tofu," made to look and taste like animal products.

Indonesia (p. 463): "... foods are preferred sweet; even the local soy sauce, kecap manis, is fermented sweetened."

Japan (p. 465): Mentions shoyu and tofu.

Korea (p. 468-69): Mentions tofu.

Malaysia (p. 472): Discusses Chinese who married Malay women (called Nonyas); "their families are called Peranakan or Straits Chinese and their cooking is called Nonya Cuisine. Straits Chinese live mostly in Penang, Malacca, and Singapore; practice Buddhism; and cook their Chinese food with a Malay influence. Their Nonya cuisine is eaten communally; all dishes are served at once,..."

Nepal (p. 473): "During Janai Purnima, a soup called *quantee* is essential; it is made from sprouted soy, chick pea, black beans,..."

Pakistan (p. 476): Pad Thai, a popular lunch dish, is made with tofu. Note: Pad Thai, based on rice noodles, is one of Thailand's national dishes. Address: PhD, R.D., Prof., the Dep. of Family, Nutrition and Exercise Sciences, Queens College-CUNY, Flushing, New York.

7582. **Product Name:** Milk & Soy Blend (100% Lactose Free) [Plain, Vanilla].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1999. March.
Ingredients: Low fat: Fat free milk (lactase enzyme, vitamin A palmitate, vitamin D3), soymilk (filtered water, soybeans), natural cane sweetener, tricalcium phosphate, sea salt, carrageenan.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton. Retails for $1.69 (1997/05, Berkeley, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (glossy color, front and back, 28 cm) sent by Patricia Smith from Natural Products Expo West at Anaheim. 1999. March. "Increase your dairy cooler volume with this hot selling new category." The front panel of 6 different products is shown, all in the same aseptic carton: Soy Drink (plain or vanilla). Milk & Soy Blend (low fat or fat free). 100% Lactose Free Milk (fat free or reduced fat). On the rear is given the nutrition facts, ingredients, UPC numbers, and case/pallet information.

Jack Mans. 1999. Dairy Foods. Oct. p. 57-66. "Pacific Foods of Oregon: High-tech aseptic." This milk & soy blend is sold in a square aseptic carton with a screw-top cap. Even though the product does not require refrigeration, it is being marketed to supermarket dairy cases–to get more attention from consumers.

Nutrition Business Journal (San Diego, California). 2000. "Pacific Foods targets $50 million sales: Soymilk manufacturer scrambles to expand production, expects 35% growth to continue." Sept. p. 12. This product, introduced in March 1999, is a blend of lactose-free cow's milk and soymilk.

7583. **Product Name:** Soy Drink (Low Fat Non Dairy

Drink) [Plain, Vanilla].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1999. March.
Ingredients: Plain: Soymilk (filtered water, soybeans), natural cane juice sweetener, isolated soy protein, tricalcium phosphate, natural flavors, sea salt, carrageenan, vitamin A palmitate, vitamin D2.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (glossy color, front and back, 28 cm) sent by Patricia Smith from Natural Products Expo West at Anaheim. 1999. March. "Increase your dairy cooler volume with this hot selling new category." The front panel of 6 different products is shown, all in the same aseptic carton: Soy Drink (plain or vanilla). Milk & Soy Blend (low fat or fat free). 100% Lactose Free Milk (fat free or reduced fat). On the rear is given the nutrition facts, ingredients, UPC numbers, and case/pallet information. This Soy Drink is sold in a square aseptic carton with a screw-top cap. Even though the product does not require refrigeration, it is being marketed to supermarket dairy cases–to get more attention from consumers.

7584. ProSoya Inc. 1999. VS40 operation (Color videotape). 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. 14 minutes. March.
• ***Summary:*** This excellent color video (in NTSC video format), is professionally produced and narrated, with nice background music. Introduced in March 1999, it describes the operation of ProSoya's VS40 SoyaCow, which makes 40 liters of airless cold-grind soymilk per batch. Use of the soymilk to make tofu (using a forming box and cloths that come with the machine) is also described. The video narration begins: "The VS40 SoyaCow system is a small and economical batch processor for producing highly nutritious, non-beany soymilk with excellent soluble protein yield. Easy to operate and maintain, this system uses an airless cold-grinding process developed by ProSoya Incorporated, world leaders in advanced soymilk technology. The grinder-cooker is the heart of the system. Powered by a single-phase one-horsepower motor..."

Talk with Raj Gupta of ProSoya Inc. 1999. May 30. This color video was produced in-house by a man named Seth Gaurav, who is a native of Bombay, India, and who studied cinema at the Moscow Film School in Russia for nine years (1986-95); he won a scholarship from the Russian government. This is the first video Gaurav produced for ProSoya. ProSoya also has a Russian-language version and also videos for its larger soymilk systems. The company's first video was produced in late 1993 or early 1994. Address: Ottawa, Ontario, Canada.

7585. Quong Hop & Co. 1999. Soy for life: The benefits of eating soy products (Leaflet). South San Francisco, California. 5 panels each side. Each panel: 15.3 x 10.2 cm.
• ***Summary:*** Leaflet (glossy color) sent by Patricia Smith from Natural Products Expo West. 1999. March. On the front panel is a tofu burger under a bun on a light orange plate. At the bottom; The Soy Deli.

Contents: The power of soy foods (anti-cancer, osteoporosis, coronary heart disease, menopausal symptoms, lactose intolerance). Tips for cooking with tofu. Additional recipes. Coupons for Soy Deli Baked Tofu and Nigari Tofu. A photo on the rear cover shows many of Quong Hop's soy products. Soymilk (2 flavors). Tempeh burgers. Tofu burgers. Baked tofu (4 flavors). Soy tempeh. Nigari tofu. Hot dogs.

"Master tofu makers since 1906: In 1906, Sing Hau Lee established Quong Hop, the oldest tofu shop in America. He brought with him his family's tofu-making secrets." Address: 161 Beacon St., South San Francisco, California 94080. Phone: 415-761-2022.

7586. Salmon, Margaret B. 1999. Soy expressions: Common-sense way to small food bills. 404 easy soy recipes. Demarest, New Jersey: Techkits, Inc. x + 160 p. Index. 22 cm.
• ***Summary:*** A quickie spiral-bound soy cookbook. It is not vegetarian; recipes call for the use of lean ground beef, chicken, turkey, frankfurters, turkey frankfurters, tuna, salmon, clams. The section at the back titled "Index" is not really an index. Some form of soy appears in every recipe; the main forms are tofu, soymilk, soybean sprouts, cooked soybeans, soy sauce, teriyaki sauce, soybean oil, "Smart Dogs," black soybeans, soybean flour, and soy bacon bits. Contents: Introduction. How safe are soybeans? Hundreds of soy recipes. Soy foods taste good. A new look at soybeans. Recipes: Soups. Salads and vegetables. Main dishes. Omelets. Breads, cookies, muffins and snacks. Sugar free soy desserts. Desserts: Pies & puddings. Shakes and pops.

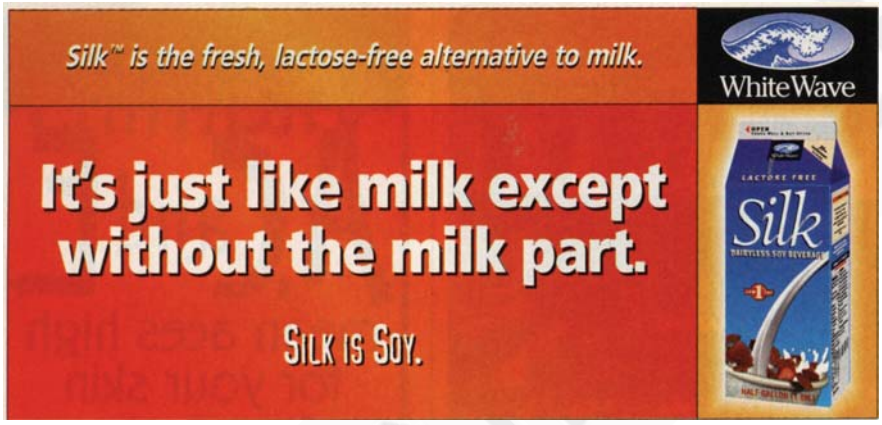
Margaret is the author of many books on food and nutrition. She was "formerly Research Dietitian on the cystic fibrosis research team at Columbia-Presbyterian Medical Center in New York City, and Chief Dietitian and Director of the Dietetic Traineeship Program at St. Joseph's Hospital and Medical Center in New Jersey. She is President of Salmon Consultants, Consultants to physicians, hospitals, schools and federal nutrition programs, and lecturer for schools, colleges, radio and television.

"She received a degree in food chemistry and nutrition at the University of California at Berkeley, and degrees at Columbia University in the science of nutrition and nutrition education. She also has a Certificate of Hospital Dietetics from Duke University and is listed in Who's Who of American Women and World Who's Who of Women and is a Registered Dietitian." Address: R.D., L.D., P.D., Techkits,

Inc., P.O. Box 105, Demarest, New Jersey 07627.

7587. **Product Name:** [Tofu, Soya Milk, Okara].
Manufacturer's Name: Svilen Lapakov Tofu.
Manufacturer's Address: 43/b Gabrovo Str., 9000 Varna, Bulgaria.
Date of Introduction: 1999. March.
New Product–Documentation: Letter from Svilen Lapakov. 2000. Jan. 3. "I live and work in Bulgaria, Europe. I have a workshop for soya milk products. I was the first to open and produce such healthy foods like tofu, okara, soya milk here, in Bulgaria. My small shop has been in existence for 9 months and for now I am the only one producer. I work with a ProSoya device, from Canada. Life in ex-Communist countries is extremely difficult now." Note: This is the earliest known commercial soy product made in Bulgaria.

7588. White Wave, Inc. 1999. Its just like the milk except without the milk part. Silk is soy (Ad). *Vegetarian Times.* March. p. 90.



• ***Summary:*** This small (2¼ by 4½ inches) but prominent (bright red, orange, and white) color ad is mostly background color and text. On the right is a half-gallon carton of White Wave Silk (fresh soymilk). In the upper right corner is the White Wave logo. Across the top of the ad, in fairly small letters: "Silk is the fresh, lactose-free alternative to milk." Address: Boulder, Colorado.

7589. White Wave Inc. 1999. An introduction to our family of wholesome foods, with recipes and quick ideas for ever meal, every taste. Fast + easy. Healthy. Delicious (Leaflet). Boulder, Colorado. 5 panels each side. Each panel: 15.5 x 10 cm.
• ***Summary:*** Leaflet (glossy color) sent by Patricia Smith from Natural Products Expo West. 1999. March. On the front panel is a photo of 3 flavors of Silk soymilk, two types of tofu, seitan and tempeh.

On the remaining panels are recipes (incl. one for Silk Dairyless Soy Yogurt), a mission statement ("Our mission is to creatively lead the full integration of natural, flavorful vegetarian foods into the American diet"), "Good news about soy" (nutritional information). More about White Wave's products (the company now has 13 flavors of Silk Dairyless Soy Yogurt, Silk Dairyless Coffee Creamer, etc.).

Note from James Terman, Vice President Pictures + Words, White Wave. 1999. March. This first appeared in March 1999. Address: 1990 North 57th Court, Boulder, Colorado 80301.

7590. White Wave, Inc. 1999. While Wave's Silk Soymilk and other soy products new certified 100% organic by QAI (News release). 6123 E. Arapahoe Rd., Boulder, CO 80303.
• ***Summary:*** White Wave is pleased to announce that as of January 1, 1999, all of its Silk soymilk line of products and most of its other soy products are 100% Certified Organic by Quality Assurance International."

Only three White Wave products will continue to be made with a combination of transitional and organic soybeans: Reduced Fat Tofu, 12 oz. Extra Firm-Style Tofu, and its "Red Box: Firm Tofu.

Steve Demos says that White Wave has supported transitional and organic soybean farmers for the past two decades, and through their hard work the company has been able to develop a solid network of certified of certified organic suppliers. Address: Boulder, Colorado. Phone: 303-443-3470.

7591. White Wave Inc. 1999. Silk: Put the fastest growing soymilk in your dairy case (Leaflet). Boulder, Colorado. 1 p. Front and back. 28 cm.
• ***Summary:*** Leaflet (glossy color) sent by James Terman, Vice President Pictures + Words, White Wave. 1999. March. This first appeared in March 1999. Shows various sizes and shapes of Silk soymilk and soymilk creamer–against a background that fades from orange into brown. Address: 1990 N 57th Court, Boulder, Colorado 80301.

7592. **Product Name:** WholeSoy Premium Soymilk [Original, Vanilla, Chocolate].
Manufacturer's Name: WholeSoy Co.
Manufacturer's Address: San Francisco, California. Phone: 415-495-2870.
Date of Introduction: 1999. March.
Ingredients: Original: Filtered water, whole organic soybeans,* organic raw cane crystals, calcium carbonate, natural flavors, sea salt, xanthan gum, carrageenan, vitamin A palmitate, riboflavin (B2), vitamin D2, vitamin B12. * = Grown and processed in accordance with the California Organic Foods Act of 1990.

Wt/Vol., Packaging, Price: 32 fl. oz (1 quart) ESL gable-top carton.
How Stored: Refrigerated.
New Product–Documentation: Glossy color leaflet (front and back, 28 cm) sent by Ted Nordquist of WholeSoy. 2005. May. "An incredibly delicious nondairy soymilk!" A photo on the front shows all 3 flavors.

7593. Santacruz, Cecilia; Santacruz, Nestor. 1999. Tofu and other soyfoods in Colombia (Interview). *SoyaScan Notes.* April 1. Conducted by William Shurtleff of Soyfoods Center. [1 ref]

• ***Summary:*** In June 1998 Cecilia and Nestor started the earliest known non-Asian tofu shop in Colombia that focused on traditional, hand-made tofu and made delicious products from tofu. Named Delisoya, it is located in a residential part of Bogota (the country's capital) high in the Andes mountains of Colombia at 8,500 feet altitude. They visited Soyfoods Center from Salinas, California, after being given an excellent tour of the Wildwood Natural Foods soyfoods plant in Santa Cruz. The main things they learned at Wildwood: (1) They can make a large amount of very tasty tofu using an open-top, stem-injection system (without pressure). Nestor would like to get this same kind of system. (3) Their many creative tofu products are delicious; the baked (not fried) tofu burgers were especially interesting. (3) The shop was very clean and sanitary.

Ceci speaks good English, since she lived for a year in Tennessee (with "Ami") during her high school years. This is the third time they have been to the USA.

Ceci and Nestor were both born in Colombia–Ceci on 3 December 1949 and Nestor on 28 Aug. 1955. They both attended the Colombian National University (*Universidad Nacional de Colombia*) where they studied chemistry and graduated in 1982. They were married that same year, shortly after graduation. Nestor got a job in Bogota with Canta Claro, a company that operates soybean crushing plant. They made animal nutrition products from the soybean meal and various foods from the soy oil. Ceci also worked for Canta Claro for 2-3 years in quality control, then she left and worked with her family who owns a small hotel about 150 km (93 miles, 4 hours by car) outside of Bogota. She also spent more time cooking and doing things she enjoyed, alone and with her mother (who has her own foundation and is a very civic-minded person). In 1992 Nestor and Ceci met a macrobiotic group named *Escuela de Educación Vitalicia* (The Life and Vitality Education School) run by students of Tomio Kikuchi, a well-known teacher of macrobiotics who lives mostly in Brazil; this group had been in Bogota since 1985. Later in 1992 Nestor left his job at the soybean crushing plant and began to work as an administrator in Ceci's family hotel. Slowly their lives began to change. In June 1993 they traveled to Brazil to attended the annual winter seminar by Tomio Kikuchi. They found him to be an excellent teacher and, at age 70, a man of remarkable vitality. Bernadette Kikuchi is Tomio's wife. Through her cooking lessons in Colombia and Brazil, in their school, they first made contact with Oriental cooking and foods. Through them they came to know about brown rice and tofu for the first time, 7 years ago. "They are remarkable human beings who left a deep impression on us."

In early 1996 Nestor and Ceci bought some tofu from a Chinese man in Bogota; it was quite hard and the flavor was not very good, so they started to make their own tofu. In late 1996 Nestor and Ceci began to pursue their interest in soyfoods more actively. They saw an article somewhere about Peter Golbitz of Soyatech in Maine, so they wrote him and he sent them a free copy of the 1996 *Soya Bluebook.* In that book they saw a Takai advertisement for tofu and soymilk equipment. Takai sent them a catalog and there they saw the address of Soyfoods Center–from which they ordered several books, including *The Book of Tofu* and *Tofu & Soymilk Production.*

They found that there were already two companies in Bogota that made tofu and other products. Named Hosanna and Sabyi, they each opened in about 1996-97, and were run by Colombians (non-Asians), but their focus was on products such as sausages made with tofu and soy flour, or pimento-flavored tofu, their tofu was not hand-made, and both Nestor and Ceci found the tofu to be very hard and not tasty. So in June 1998 Nestor and Ceci opened Delisoya. There they made traditional handmade tofu and soymilk, plus several tasty second generation soy products such as cheesecake, soy mayonnaise, and soy burgers. The interior is very attractive with a large deli case stretching across the room, and a list of products and prices written by hand on a blackboard on the wall. They gave Soyfoods Center three color slides showing the above views. This is a business with a philosophy and a social mission. They want to teach local people about the goodness of soyfoods and how to use them (including the okara), and they want the shop to eventually serve as a school where other Colombians can learn to make tofu, soymilk, and other soyfoods. Recently the International Monetary Fund (IMF) has demanded that Colombia quickly open its economy to foreign goods. The influx of cheap products has had a drastic effect, creating very high unemployment and widespread suffering. Nestor and Ceci are working to alleviate this crisis.

The soybeans used to make tofu at Delisoya are all grown in Colombia, at Cali, the capital of Valle de Cauca department at 3,327 ft, in western Colombia, bisected by the Cauca River. "Valle" is pronounced "Balle" in Spanish. There is a big Japanese community living in Cali, the area where the first Japanese settled in Colombia many years ago. Another center of soybean production in Colombia is Palmira, a city at altitude 3,000 feet, in Valle de Cauca department, in western Colombia, near the Cauca River. It is about 15 minutes by car from Cali, but 8 hours by car from

Bogota.

Nestor now makes a little more 100 lb of tofu per week; more precisely, he makes about 100 cakes, each weighing 500 gm. He and Ceci are looking for a larger plant near their home in Bogota. He knows a lot about machines and mechanic, so he will make some of the equipment. At the plant they will hire people they know–who are simple and nice.

Ceci and Nestor are interested in translating *The Book of Tofu* into Spanish. They are trying to gain support for the project from Japanese cultural organizations in Colombia, such as JAICA (Japan International Cooperation Agency), and JETRO (Japan External Trade Organization). JAICA is Japanese governmental organization which assists developing countries, including financial support for some projects requested by local people. They send experts in various fields (such as agriculture, earthquakes, etc.) and also send local people to Japan for training. Ceci has a friend, Mrs. Tanaka, who is the wife of the president of JETRO in Bogota.

During the last presidential campaign in Colombia, soybeans were featured by the candidate who won (in June 1998), Pres. Andres Pastrana. In about Sept. 1997 his political campaign published a booklet titled "El Cambio" which means "Change!" It is said that the president's wife, Nohra Puyana de Pastrana, took the idea from people working with soyfoods in Caldas–a department in west central Colombia. Currently, soyfoods are promoted by the *Instituto Colombiano de Bienestar Familiar* (Columbian Institute for Family Well-Being). This institute, which has its headquarters in Bogota but branches in many Colombian cities, now offers free soyfoods cooking classes and printed information (incl. recipes and nutritional facts).

The Colombian government has been studying soyfoods for at least 20 years. The first major organization to do this was the *Instituto de Investigaciones Tecnologicas* (IIT–Institute for Technological Investigations). It existed 20 years ago but ceased operations about 10 years ago. Their purpose was to help industry develop and market new products. Their first soy product was Incaparina [production began in 1963], followed by Bienestarina [first manufactured in Jan. 1976]. IIT made soymilk and targeted local people.

One soy pioneer in Colombia was a man named Joaquin Molano, who was a chemist, is now age 90, and who founded Fundacion del Rio Magdalena. Address: Founders and owners of Delisoya, Calle 78 No. 12-03, Santafe de Bogota, Colombia. Phone: 346-2178.

7594. Fischer, Bruno. 1999. Sale of his company, Bruno Fischer GmbH (in Aetorf, Germany), to DE-VAU-GE in Germany (Interview). *SoyaScan Notes.* April 2. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Bruno is a devout Seventh-day Adventist and DE-VAU-GE (DVG–Granovita) is a Seventh-day Adventist company. Many years ago DVG got out of the soymilk business; they sold their soymilk plant to Korea; it is now the third soymilk plant of Samyung Foods in Korea. Bruno is now interested in getting back into the soymilk manufacturing business in a different way. On 31 Dec. 1998 he sold all of his family-owned company, Bruno Fischer GmbH (in Aetorf, Germany) to DVG–for money. Bruno did not keep or exchange any stock. He now works as a consultant for DVG and no longer owns any part or shares of his former company. He sold the company largely because DVG contacted him at a very appropriate time and offered a very good price. The company had always been run as a triumvirate, his mother, his father, and Bruno. But during the summer of 1998, Bruno's mother had died very unexpectedly. Four weeks later, Bruno's father announced that he would like to get out of the business as soon as possible. This would mean major restructuring. Several months later, out of the blue, came the offer from DVG–like a gift from God. Bruno was not looking for a buyer. The timing was perfect. DVG was looking to buy a company that would allow them to penetrate the organic and natural foods food market better. They had a shopping list and Bruno's company was No. 1 on that list. DVG sells most of their products to the Reform Houses (the predecessor to the natural foods market and stores–*Naturkostlaeden*). DVG already owned a small company in the organic and natural foods market; they had tried for years, using this company, to penetrate the market, unsuccessfully. So they decided that they needed to buy one of the key players in that market.

DVG is owned by the Seventh-day Adventist Church. They contribute significant amounts of money to the church, but if they need money, they must go to non-church sources (mainly banks). Nevertheless DVG has grown at an astonishing rate. Fifteen years ago they had annual revenues (sales/turnover) of about 5 million Deutschmarks; today that figure has increased to about 200 million Deutschmarks. His experience in negotiating with DVG was that they were very ethical and fair. They offered attractive help in moving or severance pay (about one month's salary for each year they had worked for Fischer) to Bruno's former employees in Aetorf after his equipment was moved 400 km (250 miles) away northward to Lueneburg.

Bruno has a non-compete agreement with DVG, but they are interested in buying soymilk from him if should ever decide to make it. They now buy from Alpro.

Katrin [pronounced KAT-rin] Senger, who lives in Munich, is a colleague of Bruno's. She is doing her diploma thesis (something between a BA and an MA thesis) on his behalf on the soy market in Europe.

Bruno has started a new company named Natumi GmbH, located at the same address as his former company. Phone: +49 2243 850 162. Fax: +49 2243 850 172. The sale of his company to DVG is public knowledge. Address: Im Auel 88, 53783 Aetorf, Germany. Phone: 49-2243-4021.

7595. Paroda, R.S. 1999. Jai kisan, jai Vigyan [Interview with Inder Sawhney]. *Times of India* (*The*) (*Bombay*)**.** April 3. p. 12.

• ***Summary:*** Jai means "hail." Kisan means "peasant or farmer." Vigyan refers to the Vigyan Parishad, an apex body for science popularization under the Department of Science and Technology of the Government of India.

Various agricultural revolutions have succeeded in India since the mid-1960s. These are: (1) Green Revolution; the introduction of high-yielding varieties of seeds after 1965 and the increased use of fertilizers and irrigation, which led to a dramatic increase in production of wheat and rice, making India self-sufficient in food grains and largely eradicating famine. The revolution slowed down in the early 1980s and began to be criticised for land degradation, loss of soil fertility, and excessive use of fertilizers and pesticides.

(2) White Revolution in milk production, led by Verghese Kurien, chairman of the Gujarat Co-operative Milk Marketing Federation Ltd., the man who developed the Amul brand. India is now the largest milk producing country in the world. (3) Yellow Revolution in oilseeds and oil production (including soyabeans) (1986-1990). (4) Blue Revolution in fishing (1973-2002).

In this interview, Dr. Paroda, director-general of ICAR, "exudes confidence that India will be a power to reckon with in the field of agriculture." Much of the interview concerns the work of ICAR. Sawnney says that, contrary to popular opinion, the green revolution has benefited the majority of India's farmers.

Question: Presently, almost all of the soyameal produce in India is being exported. "Why is it not being used for making soya products when we are facing a shortage of pulses?"

Answer: Soyabeans can be an effective alternative in helping to meet the shortage of protein and pulses. "Unfortunately our people are not used to soya products. They have to develop a taste for products like soya milk, tofu (soya cheese), soya paste (for using as bread-spread and fish preparations), biscuits, ice cream and soya flour. ICAR as generated technologies for all these products."

Note: India is ready for a soyfoods revolution / movement, based on low-technology, traditional soyfoods, similar to the movement that began in the United States and Europe starting in the mid-1970s. All that is missing is leadership and vision. Address: PhD, Director General of Indian Council of Agricultural Research (ICAR).

7596. Conquergood, George. 1999. History of work with soyfoods and vegetarianism. Part VI. The peak month (May 1998) and on the way down in 1998 (Interview). *SoyaScan Notes.* May 10. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** When did SoNice go off the market? The company's peak month in sales was May 1998 and they couldn't fill all their orders. May 12, 1998 was their last day of UHT aseptic (shelf stable) production. That was the last day that Farmland produced any SoNice soymilk in a shelf-stable package for them. Until July 1998 they continued to produce refrigerated product on a scattered basis–off and on, when they could–and when Farmland didn't dump it all down the drain. Then came that disastrous day in July 1998 when Farmland dumped a huge amount of product–and that was the straw that broke the camel's back. That was the last day any type of SoNice soymilk was made. So the company withdrew all SoNice products (soymilk and yogurt) from sale. They sent a notice to the brokers and the trade that they could not support any more sales; they were withdrawing all products from trade until they could reorganize the company. They were still trying to build the plant in Vancouver, and they were trying to find the money and the people to partner with. They had hoped to settle everything down, to sell product from their warehouses–which they did. Since they had five warehouses (four with shelf-stable product and one with refrigerated) across Canada and the United States, SoNice continued to be available in retail stores until the end of 1998. Moreover, the SoNice distributors all had warehouses full of products, and the retail stores had products. The pipeline was nicely filled in May, but by the fall of 1998 it was becoming difficult for consumers to find products, and it pipeline was empty by early 1999.

George believes that some companies are already using equipment (that they built themselves and keep behind closed doors) that infringes upon the ProSoya patent. It is hard to catch such people; you basically have to send in the "patent police" and catch them red-handed. ProSoya allowed many people to go through their soymilk manufacturing plants, and examine their equipment and process. These include Steve Demos, Ted Nordquist, and (in late 1997 or early 1998) Danilo Callewaert (Director, R&D, Alpro, Wevelgem, Belgium) and Guy Huybrechts (Managing director, Vandemoortele, Soyfoods Division, Alpro). Note: In March 1995, Philippe Vandemoortele, head of Alpro, announced that he was leaving Alpro to work on a new idea he had. He took one of Alpro's most experienced researchers with him. His last words: "I shall return." Continued. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7597. Conquergood, George. 1999. History of work with soyfoods and vegetarianism. Part I. 1976 to 1994 (Interview). *SoyaScan Notes.* April 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** George was born on 1 Dec. 1946 in Toronto, Ontario, Canada. He went to high school in Toronto but did not graduate, and he never attended college. "I attended the school of hard knocks." He dropped out of high school

at age 15 he began to work full-time. At age 17 he went to work for a textile firm until he was age 20. Then he started his own business in the fields of textiles and clothing. In 1967 he married Wendy Lynn Richardson–who was born on 27 Sept. 1948. In 1973 he received knowledge from Guru Maraji (via Guru Charanan) in Toronto, became his disciple, traveled throughout the United States and (in 1973) to the Houston Astrodome [in Texas] with Guru Charanan, and started a vegetarian diet and vegetarian restaurant. In 1977 he was one of the founding partners of Jolly Green Garden, a vegetarian restaurant in Toronto. He called it "Guru Maraji's restaurant" because many of the employees and customers were disciples of Guru Maraji. There he first got involved with soyfoods. He bought tofu and used it to make various products, such as patties, dressings, etc., which were served in the restaurant. George has been involved with soyfoods for more than 20 years, starting in Toronto.

In early 1979 George and his family moved to southern Alberta. He went to work for the Canadian federal government helping a group of native Blackfeet people there. He set up a company named Pe-Kun-nee Garments that manufactured textiles (garments), put 300 women through a training program, and ran it (with the title of General Manager) for about 4 years. George still has the full-beaded outfit and feathers that he got from the Blackfeet people he helped.

In 1984 George and his family moved to Saskatoon, Saskatchewan, where he started a computerized embroidery business. His wife and three children still run this as a family business. Today his company is one of the top software development firms in North America for computerized embroidery. He worked for a company named Jeffrey E. McPherson, headquartered in Nottingham, England, with North American offices in Greensboro, North Carolina and in Canada; George worked for the North Carolina company. They held the worldwide distribution rights for an embroidery machine made by a Japanese company named Barudan (pronounced buh-ROO-dun) who pioneered the electronic embroidery machine from Japan. The ancient Jacquard looms, which were programmed with punch cards, originated in Switzerland [sic]–which is why we refer to "Swiss embroidery." [Note: The French inventor, Joseph-Marie Jacquard (lived 1752-1834) invented the Jacquard loom at Lyons, France, in 1801 and was awarded a patent and medal by Napoleon in 1804]. The Japanese copied these looms. George was a salesman for their equipment, and he developed a collection of baseball caps because he was one of the first people to sell caps–whether it be importers of blank caps or embroiders of finished caps. George even called himself Captain Capman. He went around and set up embroidery companies to whom he sold his embroidery equipment (from Barudan in Japan) all over western Canada. George was one of the first people to embroider a baseball team insignia direct onto the blank hat–replacing the old crest that was stuck on the hat. It was much classier, and now its the only way they do it.

In 1992 he started another gourmet vegetarian (actually vegan) restaurant, this time named Sweet Carrot Café, located at 702 14th St. East, Saskatoon, Saskatchewan S7N 0P7. Actually, George bought the building for his embroidery business, then opened up a corner of one building on the corner as a lunchroom for his staff. It was an historical building, with three buildings in one. George bought an espresso machine for his lunchroom. Passersby thought it should be a coffee shop. George lined the walls of his lunchroom with his collection of embroidered baseball caps. He soon converted the lunchroom into a coffee bar, which he named it Caps Coffee Bar. A popular menu item was Cappuccino! There was a grand piano in the dining room. It was probably the only vegetarian or vegan restaurant ever to be written up in *Where to Eat in Canada*–two years in a row. In those days most people thought of vegetarian restaurants as places where hippies with beards and long hair sat on picnic benches and ate granola bars. Most people were afraid to eat in such places, so George made his restaurant into a fine dining room. One of the main focuses of George's life since the 1970s has been vegetarianism; his wife is a vegan and teaches tai-chi. In the restaurant George made his own tofu, soymilk, and related products, such as spreads, dressings, etc. In the early days, he made these products in the old fashioned way. The firm nigari tofu was very good tasting but the soymilk had a pronounced beany flavor. He was so busy, and making all these foods was such a chore, that he began looking for other technologies to expand his production. One day in early 1992, at about the time Raj Gupta started publishing his *SoyaCow Newsletter,* a young lady from the United Way in Ottawa came into the restaurant and commented on his organic tofu sandwich. She also tried his soymilk and told him about a soymilk making machine named the SoyaCow, developed by a company named ProSoya in Ontario. George asked for more information and the lady sent him a copy of the newsletter. George immediately phoned Raj Gupta, the inventor of the machine, and was on the next airplane to Ottawa. He ended up buying the only small SoyaCow (SC-20) Raj had. Articles about George, his stylish restaurant, and his new SoyaCow appeared in two early issues of the *SoyaCow Newsletter* (Jan/March and April/June 1993–Vol. 2, Nos. 1 and 2). He used the SoyaCow to make soymilk, which he sold at his restaurant–starting in early 1993. This was the first commercial soymilk ever produced by a SoyaCow. He sold the soymilk in 1 liter glass bottles, with the SoyaCow logo printed directly on the glass on each bottle. He and Frank Daller developed the bottle. So the name of the soymilk was "SoyaCow" and it was sold in seven flavors–including maple, chocolate, vanilla, original, chocolate-peanut butter, and nog (a delicious eggnog alternative made only at Christmas). Dusty Cunningham and Lorne Broten were

both patrons of George's vegetarian restaurant in Saskatoon. A romance soon developed and they were called the "love birds." George was thinking about opening a winery in his restaurant. Since Lorne was an accountant, George started working with him on a business plan for the winery in about 1994. George liked Lorne and hired him as his bookkeeper and accountant for his two businesses–embroidery and vegetarian restaurant.

Soon, within his restaurant (which consisted of three buildings in one), George converted his Caps Coffee Bar into the SoyaCow Health Bar Deli, where he sold at least five soy products, both as part of the menu and for takeout: Soymilk (in six flavors), soy ice cream (many flavors, always changing), soy yogurt (several flavors), tofu, and Soyanaise. He also carried Yves Veggie Cuisine. He used his car to deliver some of the soymilk he made to three local stores; he never delivered his other soy products from the restaurant. He carried the glass bottles in milk crates. Continued. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7598. Conquergood, George. 1999. History of work with soyfoods and vegetarianism. Part II. Starting a soy business and creating many more companies–1994 (Interview). *SoyaScan Notes.* April 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued: The winery idea never worked out, but the soyfoods part of the restaurant grew until George decided to start a new company making soyfoods. In 1994 he closed the restaurant, moved out all the soya equipment to focus on doing a soy dairy in Saskatoon, and leased the empty restaurant buildings others who wanted to used them for a new and different restaurant. George and Lorne worked together on the business plan for this new soy dairy company which was going to be called Soybé's Non-Dairy. In 1994 George was already advertising his forthcoming soymilk business and products in the local papers; the products also going to be named Soybé's Non-Dairy, and sold in several flavors. He planned to discontinue his glass bottle and start packaging in gable-top cartons. He found an old dairy in Saskatoon that agreed to sell him their gable-top packer. This would have been the first fresh gable-top soymilk in North America. George had finished his business plan and blueprints, had selected a building, and was getting the building permit–when Lorne learned that Raj Gupta had prototyped an SC-100, which could make 100 liters of soymilk an hour. This changed everything! Lorne now wanted to do a much larger project and buy the rights to the SC-100. George said no, it was too expensive. But to Lorne, money was never a problem. Finally George agreed, so they never built Soybé's. Instead Lorne formed many new "vehicles" for raising the necessary funds to accomplish what *he* wanted to accomplish. His primary interest was in his family's water company in British Columbia (long owned by his family, including his son and brother-in-law), and he saw the opportunity to use the soy business as the catalyst to stir interest in and raise funds for the water company–so that he could bail out of it. Ward Yeager is an investment counselor and broker is Saskatoon. Lorn went to Ward and asked him to raise the money. Ward had no particular interest in soy (though his interest grew as time passed), but he (and a relative of his) wanted to own a chain of coffee franchises–similar to but better than Starbucks Coffee. So he began pushing Lorne to include a coffee business in his plans.

Dusty was not one of the company founders or original shareholders; she was in Europe at the time because her daughter was ill. The original founding partners were George, Lorne Broten, and Ward Yeager. The original corporation created by Lorne was extremely complicated. The original corporation formed for the purpose of raising capital (money) was named Royce Everest Enterprises (REE–as in "Rolls Royce" and "Mount Everest"), the major shareholder equity company which raised capita; it was a shell consisting of three different divisions, with a total of eleven companies. Each of the three founders put up money, but in different amounts and each owned shares. In one of the companies (REE), the shares they received was proportional to the money they invested. REE owned 40% of each of the three divisions; the other 60% was owned by the founders.

The three divisions were (believe it or not) a water business (which Lorne sold to REE; it subsequently lost lots of money), a coffee business, and a soy business. Each of those three divisions was owned 40% by Royce Everest, and contained three companies: A management company, a holding company, and an operating company (which actually made products). In the soy business these three were Pacific ProSoya Management, Soybe's Holdings (owned 60% by Pacific ProSoya Management and 40% by Royce Everest), and Pacific ProSoya Foods Inc. So if you wanted to invest in the company, and you liked the idea of soy, then you had to invest in Royce Everest, because it was the one that was selling shares. But you were also buying into water and coffee–even if you weren't interested in those businesses. Ward could sell anybody anything–and he was good at it.

The three founders owned equal shares of a company named Pacific ProSoya Management, which owned 60% of the soy business; this 60% ownership did not cost them any money originally. The other 40% of the soy business was owned by people who invested money in it.

Back to Dusty: Because of her original involvement in Saskatoon, and because of her association with Lorne in the early days, and because it was basically Dusty's interest that drove Lorne to become involved with George and the work with soy–she was allowed into the company in the early days. Since she didn't want to have anything to do with coffee or water, she didn't want to buy shares in Royce

Everest, but she did want to invest in the company. So Lorne formed another company that also owned shares in Soybe's Holdings. Note: Only accountants and lawyers like this kind of stuff. Then each of the three founders, in their generosity, gave to Dusty a small portion of their shares in Pacific ProSoya Management, though in the end she owned fewer shares than they did.

They raised money again and again, going through two full prospectuses, some rights offerings, first under Pacific ProSoya Foods, then to the shareholders under International ProSoya Corporation, then went back with another "rights offering." Then, when they "ran out of companies to raise money under," they started to sell shares in Pacific ProSoya Management (PPM)–which had a lot of special rights (that the normal common shareholders didn't have in terms of other revenue streams) and owned 60% of the main company. These shares had a higher value. First thing was a rights offering to the shareholders who could put in money to keep their percentage constant. George was not in a position to put in as much money as Loren (who received a big salary) and Ward (who had earned big commissions from raising money). So George allowed Dusty to buy the extra shares that he could have purchased–to increase her percentage ownership. Then they sold shares in PSM to other people as well–further diluting their shareholdings. So in the end, Loren and Ward each owned slightly more shares in PPM than George, who owned slightly more shares than Dusty in PPM. Continued. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7599. Conquergood, George. 1999. History of work with soyfoods and vegetarianism. Part III. Building Pacific ProSoya Inc. and making the base for Silk–1994 to 1996 (Interview). *SoyaScan Notes.* April 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued: George (and Lorne) moved to Vancouver, BC to build a soymilk plant, launch a new soymilk product, and dedicate himself 100% to the soy business; his wife and family stayed in Saskatoon, where they all work in the family business. He is still married, he communicates with his wife and family daily, and they visit one another from time to time.

In Vancouver George and Lorne set up a new soymilk company named Pacific ProSoya Foods. The company had a license to make and sell soymilk, soymilk products, and soymilk equipment in British Columbia and Alberta in Canada, plus Washington, Oregon, and parts of California in the United States. In April 1995 the SC-2000 started to produce soymilk on a trial basis, but it took 8 months to debug the system. Pacific ProSoya's first commercial soymilk was sold in Jan. 1996 to Ted Nordquist of TAN Industries, who used it to make Silk brand soymilk for White Wave in Boulder, Colorado. George started the company, and he and Dusty basically built it up; Lorne, who had been George's accountant, put together the financing.

When IPC started, the company had no plans to make its own soy products. Rather it planned to make soymilk base and supply it to the dairy industry. So selling soy base to Ted Nordquist, their first customer, fell within this general concept. But Ted wasn't buying that much soymilk. George is quite sure IPC never shipped him more than one tanker of soy base (containing about 10% solids) a week; one tanker holds 6,000 gallons. They probably shipped him, on average, 12,000 to 18,000 gallons/month. Ted was formulating product for White Wave's Silk in the 4% solids area. So 1 volume of IPC base would end up as more than 2.5 volumes of Silk, or 37,500 gallons of Silk a month. And that was only several days a month production for IPC's plant. IPC had to do something, so they began spray-drying their organic soymilk in the hope of developing a wholesale market. They shipped large amounts (many container loads), because a broker in the USA led them to believe they could sell plenty. Eventually they did sell small amounts to the USA. One woman buyer ran a health food company that used it in a potato mix. She ordered several 50-lb bags at a time and didn't pay her bills well.

Initially the SC-2000 continuous process SoyaCow didn't work, so George worked with Raj to perfect the technology. This took a long time, and that delay is one thing that took the company so long to get into production.

Actually, International ProSoya Corp. (IPC) was established (incorporated) in 1996. Lorne wanted to negotiate a broader license for Pacific ProSoya Foods that encompassed the whole world. They got rights of first refusal in every country of the world (except the CIS countries of the former Soviet Union), plus an exclusive license for North America. Early in 1996, IPC was formed, licenses were granted, and then (as its first move) IPC bought ProSoya's plant in Ottawa, Ontario (from Raj), and formed a company named IPC Eastern. When IPC launched its first product, it was made in the Ottawa plant (which IPC owned) and packaged by Beatrice.

The company was running into problems in western Canada selling bulk soymilk. They could not convince the big dairy, Dairyworld, to buy milk and package it. But they did get Dairyworld to agree to package and distribute soymilk for them. They even offered Dairyworld a joint venture. Then, shortly after the SIAL trade show in France in early 1996, they developed the brand SoNice and were going to market the product Dairyworld packaged under that brand. Dusty came back from the show with the idea for a brand "Soy-Nice," which after discussions became "SoNice." At about this time an "offering memorandum" went out. When the negotiations with Dairyworld fell through (in early 1996, after IPC was formed) everything changed. Another company, named SoNice Corporation, was formed in 1996.

In Nov. 1996, IPC launched its first product, SoNice. Dusty came up with the product name. Nobody in the firm at that time was aware of the similarity between this name and that of So-Good, a very popular Australian soymilk. George had never heard of the So-Good product, and he thinks that others in IPC also had not. This launch was a momentous event for both the company and the Canadian soymilk market. A.C. Nielsen in Canada attributed the dramatic growth of the Canadian soymilk market to IPC's market entry in 1996 and 1997. Many people who tasted SoNice said it was the best-tasting soymilk on the market. Many chain stores switched brands immediately. To own the patent for the process that makes the world's best tasting soymilk was to own something very valuable–but many of the company's "financial wizards" failed to grasp this. During late 1996 and 1997 the new company grew at breakneck speed. This growth required money. The company's stock was never publicly traded, but it was almost publicly traded.

When IPC packaged SoNice in Canada, they distinguished the Canadian Package from the U.S. package by a little roundel (circular symbol), containing a maple leaf plus "Canadian Technology," on the lower right hand corner of the panel. Continued. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7600. Conquergood, George. 1999. History of work with soyfoods and vegetarianism. Part IV. Starting IPC and mistakes–1997 (Interview). *SoyaScan Notes*. April 21. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** George now feels that his biggest mistake was relinquishing control of the company during its formative period. He owned 100% of an idea; he wanted to commercialize Raj's process. But he didn't have the funds to build the plant in Vancouver and invest in an SC-1000, let alone an SC-2000. So he brought in Lorne and other people to take care of the financing. Today he owns 7% of the company–which today is worth nothing. There are now 400 shareholders in IPC and Raj Gupta is the largest; he now owns 10% of the company. The company has raise money both by selling shares and by borrowing. One of the biggest lenders, who was supposed to convert to shares, never did, and this became a major problem. They always wanted the company to wait longer before it went public so shares they had the right to convert to would be worth more. The company had the opportunity to go public, it should have done so, but it never did–which is one reason it no longer exists.

The people who were now driving the company were Loren Broten and the board of directors. George was on the board in the early days but he was asked to get off because there was too much management on the board. By late 1997 the board increasingly became very focused on what George calls "non-operational issues," largely "How do we ingratiate ourselves. When do we get the big hit? When do we go public? etc.–Instead of focusing on driving and expanding the business, they were focusing on how to line their pockets." The board took control of the company and started to undermine management. The company was growing very nicely, and Dusty had left in early 1997 to go to Scotland to help organize a joint-venture soymilk company there. She remained on the board (as the token woman on a very male chauvinist board) the entire time. Dusty (who is a very fine and talented lady) and George were the real disturbers on the board–because they were the only ones focused on the business.

The management had made a presentation to the board that the only way the company could control its own destiny was to have its own soymilk manufacturing *and packaging* plant. IPC's initial plan was to work with Dairyworld Foods, which is the big (billion dollar) cow's milk dairy in western Canada; their initial plans and plant were based on having Dairyworld package their soymilk–but no contract was ever signed. At the last minute Dairyworld refused to package the soymilk for IPC–because they were involved in some other negotiations. So IPC found itself with a soymilk manufacturing plant and no way to package it. IPC soon found itself spending too much money transporting its soymilk–shipping it first to a co-packer, then to distribution centers, and finally it to the consumer. Ted Nordquist never packaged soymilk for IPC; he bought soy base from IPC, did his own formulation, then packaged and sold it to White Wave. But IPC's president kept raising the price until Ted finally stopped buying IPC's soymilk. So Silk is no longer made with ProSoya base.

Initially IPC had its soymilk packaged by Beatrice Foods, which is now Parmalat Canada Beatrice, in Toronto. Beatrice is now a Parmalat brand. Parmalat, the biggest dairy in the world, bought Beatrice not long ago for $400 million.

IPC's board of directors finally accepted its management's proposal to build its own manufacturing and packaging plant–now a key to the company becoming really viable. The plan was to shut down the ProSoya plant in Ottawa, Ontario, move it out west to British Columbia, combine the two soymilk extraction plants in new facility, put in five packaging lines (two aseptic and three ESL gable-top refrigerated), plus equipment to make soy yogurt and ice cream–a full soy dairy. They would make all the products for North America at that one plant until it was operating at full capacity–which they projected would only take about three years–and then build a second plant on the east coast of Canada and ultimately a third plant in the south of the United States. So in Nov. 1997 IPC bought (with down payment and mortgage) a 66,000 square foot building in the same town in British Columbia (a 5-minute drive away from their existing plant) that had been used for food processing.

IPC had a very tight agreement with Raj Gupta in terms of soymilk equipment sale. It was never IPC's focus to set

up people with the technology to be in competition with IPC, but it was IPC's goal to set up people to be in partnership with IPC.

Jerry Duncan came to IPC from the dairy industry. He did some consulting for IPC as early as 1995 and he became president of the company sometime in early 1997. Loren appointed him president. He is presently no longer with IPC; instead he is involved with a food brokerage company, and he is still a consultant. He was one of the vice-presidents of Dairyworld Foods, and he can be very gruff and hard to deal with–though he is a nice person when you get to know him; his bark is much worse than his bite.

Vesanto Melina, who lives in Langley, BC, quite close to the factory, worked for IPC as a consultant several days a week for a little more than a year before it closed. She looked after consumer relations, did trade shows, developed packets of recipe cards, and recommended SoNice in her books on vegetarian cookery. She and Dusty are good friends. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7601. Conquergood, George. 1999. History of work with soyfoods and vegetarianism. Part V. Rise and fall during 1998 (Interview). *SoyaScan Notes.* April 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** One of the former directors, Robert Landori-Hoffman, asked for and was given the exclusive responsibility to finalize the funding for that facility. He indicated to the board that all the funds were in place, it was a "done deal," and they could go ahead and start development. So they began to "load the land" and engineer the plant, get the building permits, order the very expensive equipment (five packaging lines, holding and blending tanks, compressors, boilers, etc.), and pay deposits on that equipment. They were ready to cut the floors open and put in the drainage. Everything looked great. But by late January 1998 the money still hadn't come in. IPC was in the middle of launching its United States operations, and they had listings (reserved shelf space) in 6,000 U.S. stores in the first 3 months of 1998–Safeway, Albertson's, etc. Note: First the head office lists the product, then individual stores can order it. Most of the listings were not by way of cash slotting allowances but by way of "free fills" (fill the shelf once for free with each flavor) which is a very minimal slotting fee.

The company was shipping products like crazy (initially for aseptic cartons much more than gable-top), repeat orders are coming, the volume was skyrocketing, but now there are quality and volume problems with Farmland Dairy, their co-packer in New Jersey. All the base soymilk sold in North America was made in the Ottawa (Ontario) plant, and was shipped by tanker trucks initially to Beatrice Foods in Toronto (Ontario) for formulation and packaging (in Tetra Brik cartons), but was soon shipped down to Farmland in New Jersey where it was formulated and packed in Combibloc packages–because their Tetra Packer did not have a reclosable top–which was considered essential for entering the U.S. market. Farmland needed business; they were only packaging for Westbrae (in 2 liter cartons). Soon Farmland was packaging IPC's refrigerated products as well. The finished product was sent to five distribution centers. The whole system was very inefficient, in part because it is more efficient to ship west than to ship east. For a while, IPC tried to work with Daisy Linda, the old Loma Linda plant in Riverside, California, to have them package refrigerated products, but then Daisy Linda went through a receivership.

The best way would have been to make, formulate, and package the soymilk in one plant on the west coast in Vancouver (British Columbia), and ship it eastward to distribution centers. So everyone in the company began to focus on the director who said that he had come up with the money to build a new plant. It began to look as if he was trying to suck money out of the company, and consult it to death. The rest of the board and management gave him an ultimatum; come up with the money soon or get out.

SoNice was made with organic soybeans and other ingredients and sweetened with agave. It was a pure product with a great taste. When the product was introduced to U.S. chains like Wegmans and Albertson's, SoNice became the best-selling soymilk in their store overnight–because of the quality. They did in-store demos as their main form of advertising. They developed an elaborate kit, including a book about the product, for people doing the demos. Brokers and the heads of top supermarket/grocery stores were ecstatic with the product. But they did not have the money to support the rapid expansion. But very soon it will happen again, and SoyaWorld has the money and horsepower (distribution, contacts, etc.) to make an even bigger splash. Dairyworld Foods has many affiliates and friends in the USA; they will soon make and formulate the base, package, and distribute it. SoyaWorld is just a marketing company.

At the same time, the IPC leadership started from scratch, and tried to find new ways of putting together a partnership to raise the money. They talked to various financial institutions, institutional investors, etc. Mr. Broten had made the company very complex in terms of the many companies that he formed; it was like a shell game. It became too complex for potential investors. Plus, Raj Gupta wanted a large share of the final deal. His greed was part of the pool of greed that destroyed the company. Raj has a contract which guarantees him a minimum large income per year (from royalties, etc.); this made potential investors uneasy.

So as orders kept growing like crazy, IPC was unable to raise the money needed to keep up with growth and rationalize their production and packaging operations. They had already used up all their working capital in capital expenditures–as in the deposits on the new building (plus a

big mortgage) and on many different pieces of equipment. With no working capital, became very difficult to operate. By May 1998 IPC hit $1.2 million in sales for the month; but they were able to fill only about 85% of these orders. Then they just ran out of money.

Farmland in New Jersey started to not give IPC packing time, due to financial difficulties. Then came the straw that broke the camel's back. By July 1997 IPC was on ad in Canada with A&P stores with a 2-liter products; IPC had paid $25,000 for a huge ad in the A&P newspaper with 2-liter soymilk on special. IPC was producing only refrigerated at that point; the last UHT product was packaged in May. A&P was looking for 10,000 cases of product for this ad, IPC was trying to fill their requirements, but Farmland (who was being prepaid) was flushing the refrigerated UHT soymilk down the toilet, due to packaging problems. On Farmland's last run, they ruined 13,000 gallons of formulated product–which was all pre-sold. That was the last straw, and the last production run that Farmland ever did for IPC. IPC never sued Farmland, which reimbursed IPC for the lost product. Farmland said it did not have enough holding tanks for processing (since they had their own milk in these tanks); Moreover, their Schmidt processor went down. But IPC lost the $25,000 it had spent on the A&P ad, then got fined another $10,000 by A&P for nondelivery of product.

At that point IPC decided to regroup and focus on getting the money to get the new processing and packaging plant into operation. They began talking with everyone they could find about a partnership–from Nestlé to the Alberta Wheat Pool, to Edensoy, etc. Unfortunately the board of directors did not let the people who knew the business best negotiate with other partners for partnering. The board decided to do the negotiating because they represented the shareholders. At one point the board found a firm that would take the company public by raising $12 million, which would be put into new plant construction and operating expenses, and essentially allow to the company to move full speed ahead, with projected sales for 1998 nearing $20 million, and skyrocketing into 1999. They wanted the IPO to be at $1.20 a share. The directors had just finished raising money at $1.60 a share, and had given their shareholders expectations of a big increase. So they wouldn't accept the deal at $1.20 a share. Consequently, at the end of July 1998, the company had to shut down its two soymilk making plants in Vancouver and Ottawa, and go out of business. It was a sad ending, caused largely by greed. The board of directors is now down to two people–Eldon Heppner and Ward Yeager–but they are the two that caused most of the problem, partly because they did not understand the industry, and partly because of their interference in the operation of the company. They raised most of the company from small investors, and were among those who held the company back from going public.

In 1 March 1999 George resigned because he disagreed with the deal that the board of directors had struck with SoyaWorld, and he did not want his name to be on the document that was sent to the shareholders offering them this sale. He was the last employee of the company. After a deal is finalized, George would like to become head of global business development, working as a consultant for SoyaWorld, with a free reign to set up new ventures in countries around the world, including in the natural foods market in North America. He does not want to be a production manager. Most of his experience is in sales and marketing; that's what he has done most of his life. Continued. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7602. Conquergood, George. 1999. History of work with soyfoods and vegetarianism. Part VII (Interview). *SoyaScan Notes.* April 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** By now the two members of the board of directors are on their knees, begging Dairyworld Foods (the huge, billion dollar dairy products and food company in Vancouver, British Columbia–the largest in Canada) to come to their rescue. In about 1997 Dairy Foods World and Peter Joe signed a joint venture agreement, which had been under discussion and negotiation since about 1995 or 1996. As a result of that, Dairyworld Foods created a division named SoyaWorld Foods, which is a 50:50 joint venture between Dairyworld Foods and Sunrise Markets (Peter Joe, in Vancouver, the largest soymilk manufacturer in Canada). SoyaWorld, which is a marketing company for products made by the two other companies, now controls more than 60% of the non-dairy beverage market in the grocery and supermarket trade in Canada–according to A.C. Nielsen statistics. The second largest player is Beatrice (10-13%), followed by Nutrisoy (a UHT soymilk made by Nutrisoya in Quebec), then the imports (Pacific Foods, Rice Dream, Vitasoy, Westsoy, and Edensoy). SoyaWorld presently markets three soymilk products: Sunrise soymilk (a beany-flavored product made and packaged by Sunrise in plastic bottles), Soyganic (a traditional beany-flavored product made by Sunrise with organic soybeans, packaged at Dairyworld in a gable-top carton and sold refrigerated), and So-Good (licensed from Sanitarium Health Food Co. in Australia, formulated and packaged in gable-top by Dairyworld, and based on soy protein isolates). Soyganic and So-Good appeared on the shelves at about the same time in 1997 under the SoyaWorld brand. They distribute those three products extensively across western Canada, and sell them in the dairy case. They are busy expanding, buying up dairies, so that they are now a national dairy, from coast to coast, in Canada. They own the shelf space in the dairy case across Canada, and they have tremendous synergies with other dairy companies in the United States. They use the dairy

for distribution; SoyaWorld is really just a little marketing group. They don't want to see SoNice on the market because it outsold them 7 to 1–because it was a better product.

Now IPC is in such a mess, with so much debt (about six million Canadian dollars). Of this, about $2.5 million is unsecured to creditors. What could happen that would allow IPC to move forward? (1) A public company could buy the assets of IPC (the equipment, the brand, the goodwill)–not IPC itself; George could get rid of most of the debt with shares in a public company, so the company would not need a great deal of cash. (2) SoyaWorld could buy IPC; since August 1998 they have been trying very hard to do so. They are making a very complicated, long-term offer, with long-term royalties, etc. Both ProSoya (Raj Gupta) and IPC are tied into the deal. The amount of cash that would be put on the table at closing is quite small–not even enough to pay off the secured creditors, let alone the unsecured creditors. George is not happy with this deal, but there is not a lot he can do about it–except to keep on trying to scuttle it–as by talking to Horizon, the organic dairy. George feels very frustrated; he is cooperating with the deal to a degree, but at the same he's looking for a better deal. Yet he thinks the odds are 90% that IPC's assets will be owned by Dairyworld within the next few weeks or months. If it goes through (the closing date is May 4) George will at least get his back pay–he has not been paid since last August–but he would loose a lot as a shareholder. George does not know whether or not he has a future with SoyaWorld if the deal goes through–but he plans to be in the soy business somewhere. Since George knows more about making IPC's soymilk than any other person in the company, he is one of IPC's most valuable assets–yet SoyaWorld has not offered him a firm employment contract. SoyaWorld hopes to buy out Raj Gupta and his patents, and get him out of the picture. Continued. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7603. Conquergood, George. 1999. History of work with soyfoods and vegetarianism. Part VIII (Interview). *SoyaScan Notes.* April 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In addition, SoyaWorld would instantly take control of the soymilk market in Canada. First they would gain control of the dairy case (which is where the future of soymilk lies), then they would start trying to push out the American-made aseptic soymilks such as Vitasoy. SoyaWorld would also quickly become a major force in the U.S. market by aligning themselves with major dairies to get distribution. George thinks that major American dairies will be putting Canadian-made soymilk in their delivery vehicles, trucking it to supermarkets, and putting it in American dairy cases. In Canada you have Parmalat / Beatrice Foods selling Sensational Soy soymilk from coast to coast. Since Jan. 1997 it has been packaged in 2-liter blue gable-top cartons at the Beatrice plant in Brampton (20 miles / 32 km west of Toronto, Ontario). It has a beany flavor because it is made by Pak Fok Food Products, a small Chinese company [run by Simon Kwan] in Scarborough (a suburb of Toronto), Ontario, that makes tofu and soymilk. There are no other soymilks, besides those sold by SoyaWorld and Beatrice, that have widespread distribution.

By the way, IPC taught Beatrice how to make this soymilk when Beatrice started packaging for IPC in 1996 using 1-liter aseptic, Tetra-Pak cartons. IPC also got a commitment from Beatrice to package gable-top products. When IPC introduced its refrigerated soymilk at the health food show, it got commitments (listings) from major stores to carry IPC's refrigerated soymilk in gable-top cartons. Beatrice was now packaging IPC's aseptic soymilk and IPC kept asking Beatrice when they could start packaging the gable-top soymilk. Beatrice kept stalling, and stalling–month after month after month. Beatrice said there was a problem with their equipment. Finally IPC actually launched its product through Farmland Dairies in New Jersey. IPC pulled all the packaging stock it had from Beatrice and sending it down to Farmland, because the stores were pressuring IPC, asking "Where's the product you promised us?" Then, low and behold, just as IPC starts distributing its gable-top soymilk packaged at Farmland, guess who comes out with a soymilk. Beatrice! IPC's president, Mr. Jerry Duncan, failed to finalize a contract, which contained a non-compete clause, with Beatrice. Nor was such a contract ever signed with Farmland. Duncan had been in the dairy business for more than 20 years, working for various companies. For example, he was very successful developing a novelty ice cream business, which he sold. He was responsible for expanding Dairyworld Foods from simply a dairy company to a food company. And he conducted the initial negotiations for Dairyworld Foods with Peter Joe of Sunrise. When Duncan left Dairyworld Foods after about 5-7 years, Maheb Nathoo took his place in the negotiations with Peter Joe. After Duncan started his own consulting company, IPC hired him as a consultant. So he should have known the importance of such a contract. Thus, it was both greed and lack of basic business skills that brought down IPC.

George is now very interested in functional foods / nutraceuticals. He has developed a soy pudding in this category. He has samples of a similar product, Alpro Soya Dessert, launched in Jan. 1989 in Europe in aseptic cups, four in a pack.

Dusty Cunningham has is now back in British Columbia. She has been hurt financially and still feels very badly about the collapse of IPC. She worked long and hard on the soymilk plant in Scotland.

Lorne Broten has gone back to work on the water company he developed. They use proprietary technology to soften water and to make chlorine from rock salt to avoid

handling liquid chlorine.

George has not received any pay since last August. He is still working on the proper disposition of assets, but the main people working on that are the two men who now constitute the board of directors of IPC; they were both major investors. The final deal will involve a payback over a ten-year period. The dairy company involved wants to get control of the market for both dairy and soymilk across most of Canada. IPC had purchased (with down payment and mortgage) a food processing plant in BC. They had loaded the land and invested a lot of money in that plant. When it was clear that the necessary funds would not come through, they had to walk away from that deal, losing $750,000. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7604. Conquergood, George. 1999. Re: International ProSoya Inc. Letter to William Shurtleff at Soyfoods Center, April 21. 1 p. Typed, with signature.
• ***Summary:*** "Dear Bill, It was a pleasure to finally talk to you. Your name has been a household word around my place for many years. My copy of *Tofu & Soymilk Production* is quite dog-eared. I am surprised that Raj never mentioned myself or Dusty and Lorne for that matter, but I was never in this for the glory. Like you I just wanted to make a difference.

"I will send you my historical story under separate cover later. For now I am enclosing some articles you may not have had on IPC, as well as sample packages of the products produced." This large box also included many samples of So-Nice soymilk in various flavors and sizes. Address: 15328 Columbia Ave., White Rock, BC, V4B 1J7 Canada. Phone: 604-541-8633.

7605. Park, Alice. 1999. Foods that fight cancer. *Time.* April 26.
• ***Summary:*** "Previous studies showed that women who eat soy products such as tofu and soy milk are less likely to develop breast cancer."

7606. Fischer, Bruno. 1999. Philippe Vandemoortele left Alpro in March 1995 but plans to return (Interview). *SoyaScan Notes.* April 27. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** First some brief background: In June 1980, N.V. Alpro was founded by Vandemoortele to take over production of soymilk previously made by the parent company, Vandemoortele. Inspired and headed by Philippe Vandemoortele, Alpro purchased the land on which it was located from Vandemoortele, and became an independent manufacturer. Alpro quickly became Europe's leading producer of soymilk, making private-label brands for scores of companies.

In June 1990, Alpro opened a new and much larger plant at Wevelgem, Belgium. Alpro was now Philippe's "baby" and his great interest in life.

So what a surprise when, in March 1995, Philippe Vandemoortele announced that he was leaving Alpro to work on a new idea he had. He took one of Alpro's most experienced researchers with him. His last words: "I have a new idea and I shall return."

Update: Oct. 2000. Perhaps Philippe wanted to start a soymilk plant in the United States. See interview with Dana Jacobi (Oct. 2000). Address: Natumi, Im Auel 88, 53783 Aetorf, Germany. Phone: 49-2243-4021.

7607. *SoyaScan Notes.* 1999. Soymilk, rice milk, and almond milk retail prices at Trader Joe's in California, 30 April 1999 (Overview). April 30. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Since Dec. 1983, approximately every other year, Soyfoods Center has conducted a survey of the prices of soymilk and cow's milk in California. Note: 2 quarts = one half gallon. Westsoy Plus all flavors $2.19/half gallon (=$1.10/quart). Westbrae Natural Lite vanilla or plain $2.19/half gallon (=$1.10/quart).

Soy-Um original or vanilla $1.39/quart. Soy-Um three-pack (250 ml each) $1.39 for three.

Pacific Foods Fat Free Soy Drink vanilla or plain $1.29/quart.

Trader Joe's Fresh Non Dairy Soy Beverage $2.69/half gallon (=$1.35/quart–gable top carton sold refrigerated).

Galaxy Veggie Milk $1.99/quart.

Westbrae Rice vanilla or plain $2.19/half gallon (=$1.10/quart). Rice Dream Enriched original or vanilla $1.49/quart.

Breeze almond milk original, vanilla or chocolate $1.59/quart.

Omitting the highest price soymilks, the price of soymilk ranges from $1.10/quart for half gallon cartons to $1.39/quart for quart cartons. A fair average price would be about $1.25/quart.

7608. **Product Name:** Veggie Milk (Fresh in Gable Top Cartons) [Original, or Chocolate].
Manufacturer's Name: Galaxy Foods (Product Developer-Marketer).
Manufacturer's Address: 2441 Viscount Row, Orlando, Florida 32809. Phone: 800-441-9419 or 407-855-5500.
Date of Introduction: 1999. April.
Ingredients: Original: Filtered water, organic soymilk solids, isolated soy protein, brown rice maltodextrin and protein, evaporated cane juice, sea salt, oat fiber, vegetable mono & diglycerides (an emulsifier).
Wt/Vol., Packaging, Price: Quart and half-gallon gable-top carton.
How Stored: Refrigerated.
New Product–Documentation: *Monthly Insight* (Galaxy

Foods, Orlando, Florida). 1998. Sept. p. 2. "Veggie Milk to make its debut." "Veggie Milk, Nature's Alternative to Milk, will make its debut on store shelves this fall." It is a "highly nutritious blend of organic soy, rice, and oats. Veggie Milk contains more vitamins, minerals (including calcium), protein and fiber than any other milk on the market today. It is the only milk fortified with folic acid. Veggie milk also contains powerful phytonutrients like Isoflavones (found in soy) and Toconutrients (found in rice)... As with all of our Veggie products, Veggie Milk is lactose free, cholesterol free and saturated fat free. And, because it is from the Veggie Kingdom, it will never contain rBST hormones or antibiotics that are often found in animal's milk. Processed by strategically located dairies, the 32 oz. carton of fresh milk will be available in two flavors–original and chocolate–and will be sold alongside conventional fresh milk. Veggie Milk will also be available in a shelf-stable package that can be sold in supermarket dry grocery aisles."

Talk with Tina Nelson of Galaxy Foods. 1999. April 2. Galaxy had Veggie Milk at the NFM show at Anaheim and they are just now getting it on the shelves. It was first sold at Ingles Market in Dec. 1998 or Jan. 1999. This soymilk is now out in a 32 oz (1 quart) Tetra Pack carton in one flavor (Original); they plan to introduce a chocolate flavor in June. Tina thinks the product is packaged at several different locations. They make the powder themselves and ship that to the packager. She does not think the product is packaged by Pacific Foods of Oregon. Galaxy manufactures the powder portion of the product, which is a blend of soy (the main ingredient), rice, and oats. At least part of the soy is soy protein isolate, of which they are a major consumer. As far as Tina knows it is the first commercial soymilk that contains fiber (from the oats) and folic acid. They plan to introduce the product in a fresh gable-top carton very soon; they may have already shipped their first order.

Leaflet (8½ by 11 inches, color) sent by Patricia Smith from Natural Products Expo West. 2000. March. "New! Fresh gable. Pour on the profits." A large photo shows Galaxy's new Veggie Milk. The rear shows the ingredients and nutrition facts.

7609. Jacobi, Dana. 1999. The new comfort food: It is possible to cook the creamy classics without a drop of dairy. *Country Living's Healthy Living* 4(2):107-11. March/April.
• ***Summary:*** "You love milk and cheese, but they don't love you." An estimated 25% of adults in the USA are lactose intolerant. These recipes use dairylike soyfoods instead of dairy products. Address: Food writer, New York, NY.

7610. *Monthly Insight* (*Galaxy Foods, Orlando, Florida*). 1999. Veggie Milk pouring on sales. April. p. 1.
• ***Summary:*** Wal-Mart ordered two truckloads of Veggie Milk for its 510 supercenters. A truckload of Veggie Milk was also shipped to Puerto Rico. "We expect Veggie Milk to be available nationwide soon." Note: A major ingredient in the product is soy protein isolate, supplied by Protein Technologies International, a subsidiary of DuPont. A test by PTI comparing Veggie Milk with other milk alternatives found that it ranked No. 1 on every nutritional component, including vitamins, minerals, calcium, soy protein, fiber, and folic acid.

According to the newsletter *Nutrition Business Journal* (April/May 1998), soymilk sales in 1997 were valued at $200 million, and projected to grow to more than $350 million by the year 2000.

Consumers are becoming increasingly aware of the "negative health implications associated with traditional dairy products, such as heart disease, digestive problems, exposure to antibiotics, growth hormones, and more. This increased awareness is fueling a significant shift to soy-based products." Address: Galaxy Foods Company, 2441 Viscount Row, Orlando, Florida 32809. Phone: 800-441-9419 or 407-855-5500.

7611. **Product Name:** Future Shake [Café Latté].
Manufacturer's Name: Odwalla, Inc.
Manufacturer's Address: Dinuba, CA 93618. Phone: 1-800-Odwalla.
Date of Introduction: 1999. April.
Ingredients: Soy beverage (Soybeans, water), water, banana puree, mango puree, agave nectar, coffee concentrate (coffee beans, water), Madagascar vanilla, organic whole oats, vitamins and minerals (calcium, magnesium, vitamin C, iron, vitamin E, niacin, zinc, copper, pantothenic acid, manganese, folic acid, viatmin A, vitamin B-6, riboflavin, thiamine, biotin, iodine, chromium, selenium, vitamin B-12, vitamin D).
Wt/Vol., Packaging, Price: 16 fl oz (480 ml = 1 pint) HDPE plastic bottle. Retails for $3.39 at Safeway supermarket (1999/01 Lafayette, California).
How Stored: Refrigerated.
New Product–Documentation: Product (Café latté, 1 pint) with Label purchased for $3.39 at Safeway supermarket in Lafayette, California. 1999. April 25. Self adhesive label in many colors: blue, reddish pink, orange, purple, green and white on beige. Illustration of colorful, stylized man with an zany design for a head, 3 ears of wheat in his right hand, a glass in his left hand, a long-billed bird on his shirt design, planets whirling around him, and many small spirals. Text on front panel: "Delicious, nutritious, dairy-free. Low fat." One side panel states: "Expresso yourself. Sweet and creamy. Café Latté is a dairy-free shake up of dark espresso roast coffee, organic oats, soy milk, Madagascar vanilla, banana and mango. One bottle provides a wealth of vitamins and minerals, plus 50% of the RDI for calcium and vitamin C and 100% for folic acid. It's delicious low-fat nourishment from real whole foods. The Future is in your hands... shake it up!" "Odwalla (Oh-DWA-la) was founded in 1980 by three

musicians with the dream of a healthy world. Their mission: To make great juice and bring a heart to business." www.odwalla.com. Soyfoods Center taste test: Delicious, but very expensive. Talk with Odwalla representative. 2001. April 30. This product was introduced in 1999.

7612. Simonds, Nina. 1999. A spoonful of ginger: Irresistible, health-giving recipes from Asian kitchens. New York, NY: Alfred A. Knopf. xii + 322 p. April. Illust. Index. 24 x 21 cm. [53 ref]

• ***Summary:*** This beautiful hardcover book and cookbook, printed on glossy paper with many color and black-and-white photos, looks at food in two ways: As medicine, and as the source of delicious recipes. The Asian holistic approach is relaxed and non-rigid; it emphasizes balance. Soyfoods appear throughout. Tofu is used to "increase body energy, produce fluids, and lubricate the system. It is said to have yin, or cooling, properties" (p. 23). Miso chicken soup with snow peas and tofu (p. 34). Grilled miso fish fillets (p. 66). Pan-seared halibut with garlicky black bean sauce ("Seasonings: 3 tablespoons fermented or salted black beans, rinsed, drained, and minced, 2 tablespoons minced garlic, 2 tablespoons minced fresh ginger,... p. 71; "Black soybeans have been used by the Chinese for medicinal purposes for over 2,000 years"). Baked black bean shrimp (with "Seasonings: 2 tablespoons fermented black beans, rinsed and drained; 2 tablespoons minced scallions, white part only; 1 tablespoon minced fresh ginger; 1 tablespoon minced garlic; and 1 teaspoon dried chile [chili] flakes." When the oil in a wok is very hot: "Add the Seasonings and stir-fry for about 10 seconds with a slotted spoon or spatula until fragrant." A side note on this page: *The Chinese System of Food Cures,* by Dr. Henry Lu, says that "a regular diet of fermented black beans can relieve depression and stress and counteract any toxins," p. 75). Stir-fried saucy shrimp (with sweet bean sauce or *jiang,* one of the earliest Chinese seasonings; if unavailable, substitute hoisin sauce, p. 81). Grilled hoisin scallops (with ½ cup hoisin sauce, p. 83). Spicy grilled squid with warm greens (with ½ cup hoisin sauce, p. 86-87). Broccoli or cauliflower with a soy-lemon dressing (p. 173). Grilled leeks in a garlic-soy dressing (p. 174). Grilled wild mushrooms with a teriyaki dressing (p. 178). Black bean acorn squash (with "2 tablespoons fermented black beans, rinsed, drained, and minced." Describes how to make "black bean sauce," p. 179).

One chapter, titled "Soybeans and tofu" (p. 192-215), begins with a discussion of the work of Dr. Albert Leung, author of various books on Chinese herbs and food, and creator of a computerized database on Chinese herbal medicine for the National Cancer Institute. "Like a growing number of doctors, Dr. Leung feels strongly that an integrated approach should be taken in the treatment of many diseases, one that draws from the strengths of both conventional and alternative therapies. He also concurs with Henry Lu that fortifying the immune system is critical to good health. 'Our immune system is the key to health and longevity and there are many factors that throw off our yin/yang balance,' Dr. Leung says. 'When this happens, Traditional Chinese Medicine often uses herbal tonics and food to help restore the balance.'

"Tofu is such a food. Chinese doctors classify its nature as cool and sweet. It is credited with clearing heat from the body, detoxifying the system, and strengthening the spleen and stomach."

A full-page color photo (p. 192) shows tempeh being fried. Simonds notes that the earliest known recorded use of black soybeans dates back to the middle of the eighth century.

A table titled "Soybeans and their byproducts" (p. 196) lists ten products, how each is used, and how long they will stay fresh in a refrigerator. The foods are: Fresh soybeans [as a green vegetable appetizer], soybean sprouts, miso, soybean milk, silken tofu, soft tofu, firm tofu, extra-firm tofu, 5-spice pressed tofu, and tempeh.

Recipes are from many Asian countries": Japanese-style silken tofu. Soybean sprouts and leeks in hot chile sauce. Rainbow salad with spicy peanut dressing (and tofu). Spicy garlic bean curd noodles. Vegetarian roll-ups (with tofu). Fragrant steamed pearl balls (with tofu and glutinous rice). Spicy ma po tofu. Cantonese style tofu in black bean sauce (incl. fermented black beans, garlic, ginger and hot chile paste). Vegetarian kung pao with broccoli and peanuts (with tofu. Note: Kung pao is a style of food preparation associated with Szechuan and Hunan). Curried tofu. Braised cinnamon tofu. Simmered tofu with black mushrooms. Fried tempeh with sweet and sour sauce. Spicy stir-fried tempeh with basil. Ginger teriyaki tempeh.

Also: Chicken-black bean brown rice (with fermented black [soy] beans, garlic, and fresh ginger, p. 231; Dr. Albert Leung says that making fermented black beans is a complicated process, in which small black soybeans are first soaked in water with mulberry leaves and wormwood herb, then they are fermented with salt). Vegetarian pad thai (with tofu, p. 245). Almond soy jelly with litchees and melon (with soy milk, p. 266). Two-spice vanilla tapioca pudding (with soy milk, p. 269; Soy milk lubricates the body, clears the lungs, and is often prescribed for urinary disorders and constipation). Coconut rice pudding with berries (with soy milk, p. 272). Address: Salem, Massachusetts.

7613. Soyatech; Senechal, Jorgenson, Hale & Co. 1999. The North American soyfoods market: A multiclient study. 318 Main St., P.O. Box 84, Bar Harbor, ME 04609. April. *

• ***Summary:*** The price of this market study is $9,500 before 18 Dec. 1998 and $12,500 thereafter. The study will be completed in early April 1999 and presented shortly thereafter at the Marriott Camelback Resort in Scottsdale, Arizona.

Soyatech was founded in 1984 [sic, Jan. 1987]. Address: Bar Harbor, Maine. Phone: 207-288-4969.

7614. *Vegetarian Times.* 1999. Carrot & stick: A carrot to Canadian health officials for refusing to permit the use of recombinant bovine somatotropin (rBST),... April. p. 17.
• ***Summary:*** "... a synthetic hormone that's routinely injected into cows in the United States to increase their milk production."

7615. **Product Name:** Silk (Soymilk Sold Refrigerated in Half-Gallon Pure-Pak / Gable Top Cartons) [Plain {Dairylike}].
Manufacturer's Name: White Wave, Inc. (Product Developer-Distributor).
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 1999. April.
Ingredients: May 2000: Filtered water, whole organic soybeans*, organic raw cane crystals*, calcium carbonate, sea salt, natural flavors, carrageenan, vitamin A palmitate, vitamin D-2, riboflavin (vitamin B-2), vitamin B-12. * = Grown and processed in accordance with the California Organic Foods Act of 1990. Silk soybeans are third-party certified organic by QAI. Silk is certified to containno GMO soybeans.
Wt/Vol., Packaging, Price: Half-gallon Pure-Pak carton.
How Stored: Refrigerated.
Nutrition: Per 1 cup (240 ml): Calories 80, calories from fat 20, total fat 2.5 gm (4% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 75 mg (3%), total carbohydrate 8 gm (dietary fiber 0 gm, sugars 4 gm), protein 7 gm. Vitamin A 10%, calcium 30%, vitamin D 30%, vitamin B-12 50%, vitamin C 0%, iron 2%, riboflavin 30%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Carton with Label sent by James Terman of White Wave. 2000. May 11. 2.75 by 2.75 by 8¼ inches. Tetra Rex package. "Organic–Third party certified. Calcium enriched. Low 1% fat & vitamin enriched." Talk with James Terman of White Wave. 2001. May 29. Silk plain in half gallon cartons was introduced in April 1999. This soymilk was formulated to taste and look as much like dairy milk as possible.

7616. Yasuda, Masaaki; Aoyama, M.; Sakaguchi, M.; Nakachi, K.; Kobamoto, N. 1999. Purification and characterization of a soybean milk coagulating enzyme from *Bacillus pumilus* TYO-67. *Applied Microbiology and Biotechnology* 51(4):474-79. April. [25 ref. Eng]
• ***Summary:*** *Bacillus pumilus* TYO-67 has been isolated from tofuyo, a traditional fermented food made from soybean milk in Okinawa, Japan. This bacterium secretes a soybean-milk-coagulating enzyme (SMCE), which is essential for making tofuyo, however reports on this microbial enzyme are very limited, and its properties have not been sufficiently characterized.

This bacterium was found to be the best producer of SMCE, induced by the addition of soy protein to the growth medium. The enzyme was found to be a monomer with a molecular mass of about 30 kDa [kilodaltons] and an isoelectric point at 9.75. The optimum pH for the enzyme was 6.0 to 6.1 and the optimum temperature was 65ºC. The enzyme was significantly activated by the addition of various ions and its thermal stability was significantly increased by the addition of a Ca (2+) ion.

This enzyme can be applied for the production of various processed foods from soy milk, and may also be widely applicable to other food processing. Address: Dep. of Bioscience and Biotechnology, Univ. of the Ryukyus, 1 Senbaru, Nishihara-cho, Okinawa 903-213 Japan.

7617. Conquergood, George. 1999. Horizon plans to launch a soymilk product (Interview). *SoyaScan Notes.* May 6. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Horizon, the company that has become famous for its organic milk, plans to launch a soymilk fairly soon. When George met with them they asked him several times: "Are you connected with Ted Nordquist of TAN Industries?" He told them he was not. The co-founders of Horizon (in 1992) are Paul Repetto and Mark Retzloff. Mark has been in the natural foods industry for 25 years. He was with Eden Foods during its early days (1969-71), and in 1973 was one of the co-founders of Rainbow Grocery in Denver, Colorado. A food co-op and natural food storefront, it was the first of the new breed of natural food stores in Denver. Mark was also once a devotee of Guru Maraji, and lived in an ashram. George cooked with Mark in 1977 at Guru Maraji's big festival in Orlando, Florida. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7618. Conquergood, George. 1999. How Rajedra ("Raj") Gupta got into the soymilk business (Interview). *SoyaScan Notes.* May 10. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Raj is a research scientist and a physicist. He wanted to come up with something to feed hungry and starving people in Third World Countries. His native country is India and hunger has long been a major problem in India; he wanted to do something for his people. He focused on developing a low-cost protein source that was palatable. "He knew that soy was superior food, but people in Indian didn't like the taste." He wanted to develop good-tasting alternatives to cow's milk and paneer (fresh dairy cheese), which were quite expensive in India and came from the Holy Cow. Once he had a good soymilk, he wanted to use it as the base of puddings, yogurts, and other such foods which would

be popular in India.

Raj went about this research scientifically, trying to understand what was causing the problem. He found that the oxidation of lipoxygenase enzyme led to off-flavors. To control that, he developed the concept and process of airless cold grinding. An associate of his, Grant Wood, who worked for the research council under him in the same department, is the person who actually designed the original SoyaCow.

Theoretically Raj was working in his home kitchen. But he was a government employee, working for the National Research of Canada, a huge organization in Ottawa. As a professor of physics, he had access to good scientific laboratories–but physics labs rather than food labs. He and Grant Wood did most of this work on their own time. He actually got a Canada Council award for designing the grinder.

Raj filed for two patents on his cold grind airless process. These patents are owned by a U.S. company, Micronics, in partnership with his brother, who is a university professor in the United States.

Note: According to Soyfoods Center records, in March 1985 Raj and his wife, Rashmi, applied for a Canadian patent titled "Process for making soymilk with no beany flavor" (No. 477,902). In 1986, Raj, his wife, and one other Gupta filed an international patent application titled "Food processing in oxygen-free environment" [Soymilk]. In April 1987 they filed for a U.S. equipment patent titled "Equipment for making no-beany flavor soymilk." They assigned the rights to ProSoya Corp. (Maryland Heights, Missouri).

In 1992, when George first met Raj in Ottawa, Raj was using his SoyaCow SC20 to make both soymilk and tofu. He even had a little tofu forming box that he shipped with each SoyaCow. The box would form one batch of soymilk from the SC20 into tofu. A filter press pressed the okara. You would coagulate the soymilk to make tofu. Today the SoyaCow SC20 is being made in both Russia and India.

Frank Daller, who was originally in media in Canada, was an important early figure in ProSoya. Before he met Raj, he was working with a charitable organization in Canada (probably Plenty Canada, or perhaps Child Haven). Frank met Raj shortly before George did, when Raj was busy making his first SC20s. Plenty had an SC20 at The Farm in Canada, and today Plenty has several SC20s in projects operating worldwide. The two main organizations that Raj started working with through a CIDA grant he obtained were Child Haven and Plenty. Frank Daller approached Raj and convinced Raj that he should become the president of the company–the man in charge of daily affairs at the office. He invested a little bit of money; with Raj, if you invest a little bit of money, you can do anything.

In early 1996, Frank Daller left ProSoya and set up his own charitable organization. One advantage of such a corporation is that it is not required to pay any taxes. He got a lot of cash by selling the shares he owned back to ProSoya and IPC. More importantly, he had rights to stock options–which he also sold. Somehow Frank and Loren Broten wound up in some difficulty. Today Frank is the president of Daller & Co. Ltd. in Ottawa, Ontario, Canada. He sells soymilk and tofu processing equipment. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7619. Harrigan, Brian. 1999. Update on the work of ProSoya Inc., especially in Russia (Interview). *SoyaScan Notes.* May 11 and June 7. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** ProSoya gives 10% of their revenue (not their profit) from the SC-20 to Child Haven, the charitable organization which purchased the very first SC-20 SoyaCow from ProSoya. Child Haven now has a SoyaCow Resource Center in India near New Delhi. The managing director [Ratan Sharma, PhD], a scientist, uses the Center to train people, and he goes on the road and shows the various places that have SoyaCows how to use them. SoyaCows are now also be purchased by private companies who make commercial soymilk; they are also assisted by a Child Haven scientist.

Actually, the name of the SC-20 has now been changed to VS-40. VS can stand for various things in various languages, such as *Vaca Soya* (in Spanish) or *Vache à Soya.* But the main reason for the name change was that ProSoya wanted to have a number that reflected the capacity of the machine in liters per hours. In the SC-20, the "20" referred to the size of the cooking vessel, which was 20 liters. The machine has always been able to produce about 40 liters/hour of soymilk, using a batch process–a little more 13 liters per batch and three batches per hour.

In Russian *EsKa Vacit* means "SC-20" and *Soya Karova* means "Soya Cow." A program called "Feed the Children," is an American charitable NGO headquartered in Oklahoma City, with branches in about 14 countries. They have bought 200 SoyaCows (the VS-40) recently for Russia and they want to buy 800 more next year. There are now more than 500 SoyaCows in Russia–all over the country. Feed the Children buys these SoyaCows from a Russian company named ASSOY, in Krasnodar, run by Mr. Podobedov; these SoyaCows are made in by ASSOY in Russia under license from ProSoya in Canada–part of a technology transfer agreement signed about 3 years ago. The agreement says that ProSoya will get a small royalty on each system sold. ProSoya declined the offer to own part of the ASSOY business. Feed the Children buys the SoyaCows using money from USDA that was earmarked by Congress as part of the billion dollar U.S. Food Aid Program to Russia. This is the only non-food item in the program. Feed the Children got soybeans from USDA, monetized them by bartering them,

then used the money to but SoyaCows from ASSOY in Russia. ProSoya in Canada receives nothing from the deal–except eventually (hopefully) its small royalty each machine sold.

Feed the Children, true to its name, places most of the SoyaCows it buys in social institutions, with the main objective of feeding kids. Brian would estimate the breakdown at 30% monasteries, 20% orphanages, 20% hospitals, 20% schools, and 10% prisons. Monasteries are one of the few social institutions that the Russian people still trust; they have generally remained honest and free of corruption. These monasteries include 50 Russian Orthodox Christian monasteries, which have long run soup kitchens and shelters to serve the hungry and homeless. The main monastery in Moscow, which is the home of the patriarch of the Orthodox Church, has a SoyaCow and now feeds soymilk and tofu (among other things) to more than 600 people a day–plus their own staff of 80 monks and 200 associates. The social institutions typically run their SoyaCows 20 hours/day and sell any excess soymilk to the public consumers. The SoyaCow comes with a cutter mechanism which transforms it into a SoupCow, and enables it to make a thick well-cooked vegetable soup in 20 minutes–starting with water and any mixture of raw vegetables (carrots and potatoes are popular). Okara is often added to these soups–to make them thicker and more nutritious.

This has also created competition. Four different companies are making machines similar to SoyaCows (some are *very* similar, which raises breach of patent issues). One of these competitors is the largest aerospace company in the ex-Soviet Union. They used to build fighter jets; now they make SoyaCow knock-offs.

In Russia, many SoyaCows are owned and operated by small entrepreneurs. They would read an article in a magazine or newspaper, or see the SoyaCow on TV, get the address of ASSOY in Krasnodar, and make contact. With Russia's current food shortages, this is one area rich with opportunities. An estimated 60% of the entrepreneurs bring the SoyaCow into an existing business (especially a food-related business) while the other 40% start a new business based on the SoyaCow. Entrepreneurs are looking for food sources that make them less dependent on food shortages and unreliable distributors.

About 95% of the SoyaCows in Russia make soymilk that is not packaged. Rather, it is sold hot, directly to consumers, either in little plastic cups or the consumers bring their own containers so they can take the soymilk home. Most SoyaCows are operated in the back of small fresh food stores, or in specialized little Soya Shops (Soyushka in Krasnodar). The fresh, hot soymilk is put into a large, clean metal container or drum. Typically two flavors are sold, each in its own large container: Dairylike contains granulated sugar and a little salt; chocolate is dairylike with added cocoa. In Russia, soymilk retails for about $0.12/liter; this is about one-third as much as cow's milk which costs $0.35/liter. Yet cow's milk is not readily available. A lady behind the counter uses a measuring cup to ladle out the hot soymilk (at about 70ºC) out of the pot and into the customer's container.

Through all of this, ProSoya in Ottawa is aiding Russia's transition to a market economy. Brian concludes: "This is a fantastic program! It's unique, has a bright future, and we love it." The presence of ProSoya as a partner in Canada gives important legitimacy and credibility to ASSOY, assuring organizations like Feed the Children that ASSOY is not a "fly-by-night" outfit. They have "milked that relationship to the fullest–which is fine with us." Indeed ASSOY provides soybeans, training, infrastructure, and marketing aid in addition to SoyaCows. Address: Executive Vice-President, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7620. ProSoya Inc. 1999. SoyaWorld Inc. acquires So Nice soy beverage brand: Leading soy beverage company also secures a strategic interest in ProSoya Inc. (News release). ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. 2 p. May 17.

• ***Summary:*** "Vancouver-based SoyaWorld Inc., a leading manufacturer and marketer of fresh soy beverages, has acquired the So Nice soy beverage brand and a strategic interest in *ProSoya Inc.* Through this transaction the company has also acquired soymilk extraction plants and equipment in Ottawa and Vancouver. Terms of the acquisition were not disclosed.

"'So Nice is an organic soy beverage for health-conscious customers. SoyaWorld will re-launch the product in Canada and the United States as *So Nice Soyganic,* an organic soy beverage fortified with calcium and other essential nutrients. *So Nice Soyganic* will complement the company's successful flagship product So Good [based on soy protein isolates, licensed from Sanitarium Foods of Australia], the mainstream soy beverage and nutritional alternative to milk.

"'*So Nice Soyganic* is an organic beverage, that will be targeted to health conscious customers through distribution in the health food stores and natural food sections of major grocery stores nationwide," said Maheb Nathoo, general manager and chief executive officer of SoyaWorld Inc. 'The new *So Nice Soyganic* beverage is a natural extension of SoyaWorld's business and a quality addition to our portfolio of dairy-free beverages.'

"SoyaWorld will also assume the ownership of the licensor rights of So Nice brand for soy beverages that are currently marketed in the UK.

"SoyaWorld secures exclusive license to ProSoya soymilk technology: ProSoya Inc., an Ottawa-based soymilk technology company controlled by Dr. Raj Gupta, develops technology and equipment for production of 'non-beany'

soymilk using a patented 'air-less cold grinding' process. The ProSoya technology, which provides the soy base used in the manufacture of *So Nice Soyganic,* will now be licensed exclusively to SoyaWorld Inc. in North America, with rights in certain other countries as well.

"In addition, SoyaWorld Inc. gains access to ProSoya's international patents and advanced technology used to extract soymilk from soybeans. A table top version of the ProSoya soy extraction technology was recently tested by the Johnson Space Centre and was determined to be suitable for use in soymilk production on NASA's first manned mission to Mars.

"Soy beverage industry grows: The soy beverage market is one of the fastest-growing beverage categories in Canada. Dollar volume growth for soy beverages increased 106 percent in 1998 over 1997 with Canadians consuming more than 10 million litres last year.

"SoyaWorld Inc. is jointly owned by Dairyworld Foods of Vancouver, one of Canada's leading dairies, and *Sunrise Soya Foods,* Canada's largest tofu company. Formed in 1996, SoyaWorld is Canada's largest manufacturer and marketer of dairy-free beverages, with production facilities in Vancouver, British Columbia; Brampton, and Ottawa, Ontario.

"Contact information: SoyaWorld Inc. Maheb Nathoo, general manager and chief executive officer. (604) 420-0162.

"ProSoya, Inc. Dr. Raj Gupta, President. (613) 745-9115." Address: 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7621. Conquergood, George. 1999. The two final deals: SoyaWorld and IPC, and SoyaWorld and Rajendra Gupta (Interview). *SoyaScan Notes.* May 18. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The main deal (the takeover of IPC by SoyaWorld) was finalized on Friday, May 14, with SoyaWorld buying the assets of IPC. There was never enough money on the table to satisfy all of the secure lenders/creditors, so they (banks, governments, and a debenture holder–the big thorn in the side of the company) got the lion's share or that cash. Their securities were mostly liens on assets–such as food plants, processing equipment, etc. Everybody else has to wait until the next money-payment time, when the first royalties are paid. Raj Gupta (who has spent much of the past year working on these contracts) negotiated a separate deal from IPC to grant a license to SoyaWorld; they have a license that is very good, but not as good as the one IPC had. Raj came out of both deals in very good shape, at least in the short run. His goal of seeing his high-quality soymilk much more widely available should definitely happen. Dairyworld Foods has the option to buy him out, according to a sliding scale formula, whenever they wish. Assuming the product is successful: As Raj's royalties increase it makes more sense for them to buy him out; the sooner they buy him out, the less it costs them. George thinks he will probably be out of the picture in several of years. George got half of the money he was expecting; he was not offered a job by SoyaWorld or by Raj; Raj is willing to pay him commissions on any equipment he might sell as long a George pays all up-front expenses. Raj is very conservative; he wants his money used for R&D rather than to sell and promote his equipment.

SoyaWorld got two complete SC-2000 systems (including boilers, storage tanks, refrigeration equipment, etc.) and an R&D lab–assets worth several million dollars. One plant is in Ottawa and the other in Surrey, near Vancouver. SoyaWorld hopes to have SoNice back on the market by late May or early June. They will probably launch the product in eastern Canada–probably using product made at the Ottawa plant (formerly owned by IPC), which once made all the SoNice products sold throughout North America (and packaged in New Jersey). Note: ProSoya has its offices two buildings away on the same street (Canotek Road).

The two SC-2000 systems together can each produce 2,000 liters/hour of soy base at 10% solids. This becomes about 7,000 liters/hour of formulated product. This will give SoyaWorld a good start toward its first goal of having fresh soymilk in every dairy case where its milk is sold in Canada. The next expansion will be to the United States, and then to the world. The CEO of SoyaWorld is Maheb Nathoo, a native of India, whose background is in the dairy industry with Dairyworld Foods. When SoyaWorld was created he became its first CEO. Peter Joe, the head of Sunrise, is chairman of the board of SoyaWorld. David Coe, who is head of Dairyworld is so busy buying up small dairies all over Canada that he is rarely seen.

Who was at the table during the months of negotiations that led up to this deal? The two remaining members of IPC's board of directors (Eldon Heppner and Ward Yeager), IPC's lawyers, Maheb Nathoo, and the lawyers for Dairyworld and SoyaWorld. Peter Joe, David Coe, and Raj Gupta were all in the background as active players. Raj is the major shareholder in IPC and IPC is the major shareholder in Raj's company–ProSoya.

SoyaWorld is only semi-interested in offering George a position as head of their world soya development and marketing operations–creating new partnerships, joint ventures, etc. This is disappointing to George who feels they have "kept him dangling for 9 months, saying they are going to offer him a job." Dairyworld Foods has a similar position for their dairy operations. David Coe may want his dairy people to try to look after the soy operations; Maheb and Peter Joe seem to be favorably disposed to George filling the position. If George were to work for Raj, he would, in effect, become part of a planned obsolescence program.

There are three huge dairies in Canada, each about the same size, and worth a little over one billion dollars. They are: Dairyworld Foods in the west, Parmalat Canada (including Beatrice) in Ontario, and the Agropur division

of Natrel (a co-op of dairy farmers in the east–Longueuil, Quebec). But Dairyworld Foods is rapidly expanding by buying dairies in Ontario, Quebec, and the Maritimes. They plan to be Canada's first national dairy company; even now they have total coast-to-coast distribution. Another big daily company was Alt, the old Borden's dairy, but it got split up among AgroPur and Parmalat. Dairyworld believes that the soy industry in North America has a very bright future. Part of their long-term strategy is to use their dominance in the soy industry to dominate the dairy industry. George believes that, starting about now, the dairy industry will start to lead the soymilk expansion, and push even lower the price of soymilk products. They may even be able to sell soymilk, like dairy milk, as a loss leader or at a much lower markup than other refrigerated dairy items.

George thinks that SoyaWorld will produce both aseptic and fresh (gable-top) soymilk. They have a large number of both Tetra Pak machines and ESL (Extended Shelf Life) machines. Any soymilk they make in western Canada at their Ottawa plant can be packaged nearby at their dairy in Brampton, 20 miles west of Toronto. As far as George knows, the same thing happened to Dusty Cunningham that happened to him. She has not been offered a job by SoyaWorld, but she is still doing consulting in Scotland.

Many companies are realizing that it's a good idea to set up a soy dairy adjacent to a plant with state-of-the art packaging equipment. However it is not a good idea to build the soy dairy in the plant, lest dust and microorganisms from the soybeans be introduced into an environment which must be kept extremely sanitary. Moreover, the machines come with such huge capacity, that they can be used most efficiently if they are packaging a variety of products.

Since George was not one of the people negotiating this deal, he has not seen the final agreements. But he knows the general outcome because so many people have talking and consulting with him to get basic information about the company and because he is still a major player (significant shareholder). He and Raj have been in touch regularly throughout the negotiations. Address: Ex Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7622. Lee, Jenny. 1999. Burnaby-based SoyaWorld tightens grip on market: Patented technology acquired in purchase. *Vancouver Sun* (*British Columbia, Canada*)*.* May 18. p. D1, D12. Business section.
• ***Summary:*** On Monday, May 17, SoyaWorld, based in Burnaby, British Columbia, tightened its grip on Canada's $25 million a year soy beverage market. From International ProSoya Corp. of Surrey (near Vancouver) the SoNice brand, and soymilk extraction plants in Vancouver and Ottawa.

SoyaWorld also acquired a strategic interest in ProSoya Inc., an Ottawa-based company which developed the technology and equipment for producing a good-tasting soymilk using a patented grinding process. Financial terms were not disclosed.

SoyaWorld is jointly owned by Dairyworld Foods–western Canada's largest food company–and Sunrise Soya Foods, one of Canada's largest tofu manufacturers. Both companies are located in Vancouver.

A photo shows Maheb Nathoo, general manager and CEO of SoyaWorld, as he holds up new packaging for SoNice.

Note 1. Talk with receptionist at Dairyfoods World. Their official name is Agrifoods International Cooperative Ltd. They are a cooperative owned by dairy farmers in Canada. Their address: 6800 Laugheed Hwy., Burnaby, BC, Canada V5A 1W2. Phone: 604-420-6611.

Talk with George Conquergood of IPC. 1999. May 28. The date that SoyaWorld officially finalized its deal with IPC was Monday, May 10. May 17 was the date that SoyaWorld sent out its news release.

7623. Khodorych, Alexei. 1999. [A helpful bean]. *Kommersant-Dengi* (*Businessman-Money; Moscow*) No. 19. p. 21-27. May 19. [Rus]*
• ***Summary:*** This article is about the soyfood products business and SoyaCows in Russia. Contents: Potential consumers. Getting started. Sales and product diversification. Soy yogurt. Soy mayonnaise. Soy ice cream. ZAO Belok and soy protein isolates. Soy flour. Textured soy flour. Address: Russia.

7624. Sugarman, Carole. 1999. The joy of soy is spreading in the U.S. *Philadelphia Inquirer.* May 19.
• ***Summary:*** Also appeared in the Daily Camera (Boulder, Colorado). 1999. June 23. "Soy is infiltrating mainstream America."

7625. Cunningham, Dusty. 1999. The founding of ProSoya UK Ltd., a new soymilk manufacturing company in Livingston, Scotland (Interview). *SoyaScan Notes.* May 21. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** ProSoya UK LTd. (formerly called ProSoya PLC) is a new soymilk manufacturing company licensed to use the ProSoya process. They are located at No. 2 Kingsthorne Park, Houstoun Industrial Estate, Livingston, Westlothian EH54 5DL United Kingdom (Scotland). Phone: +44 1-506-433-777. David Simpson is managing director, and David Cormack is production manager. Address: Suite 114, No. 10 Paul Kane Place, Victoria, BC, V9A 7J8 Canada. Phone: 250-361-3225.

7626. Gupta, Rajendra ("Raj") P. 1999. Update on ProSoya Inc. Background on Raj Gupta (Interview). *SoyaScan Notes.* May 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Raj is very happy with the fact that Vancouver-based SoyaWorld Inc. has acquired the SoNice brand and a strategic interest in ProSoya Inc. Raj has 5-6 U.S. patents on his process and equipment. The first patent was issued in about 1990 and has a life of 18 years, so it will be valid until about 2008.

About 35 SoyaCows (VC-40s) are now in operation in India–most of them in private businesses making tofu (soya *paneer*) rather than soymilk. Three or four of these are in New Delhi.

Raj's formal name is Rajendra Prasad Gupta. He was born on 18 Oct. 1942 in Sahranpur, Uttar Pradesh, India. He received all of his formal education, including his PhD degree in India. He married Rashmi in 1975 and is still married; she is very interested in his work with soy.

Grant Wood is a Canadian mechanical technologist who was Raj's colleague at the National Research Council. Raj had approached many people, but they were unable to build the machine he wanted. He told Grant Wood that he was trying to make a small (SC-20 type) soymilk machine, and that he was doing this for humanitarian purposes and for Child Haven. He asked Grant if he could help. As soon as he heard "humanitarian" he immediately got interested. He volunteered all his time, and a great deal of it, with no offer or promise of any future reward. Raj paid all expenses for materials. He had an excellent workshop in the 2,500 square-foot basement of his home in Ottawa, and there he built the first prototype and assembled the first twenty SoyaCows in a workspace on which he paid no overhead. As ProSoya became more of a commercial establishment, in recognition of his generous and selfless work, Raj issued Grant about 10% of the company's shares. He still owns those shares, and he will benefit as the value of the company rises. He is not interested in cash now. He and his wife can get $1 million tax free.

It was not until 1994 that ProSoya outgrew the basement workshop and moved into the first commercial building on which the company had to pay rent.

ProSoya Inc. manufactures soymilk equipment and licenses technology. The brand "So Nice" cannot be registered as a trademark; it can be written as either "SoNice" (pre-1999) or "So Nice" (now). Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7627. Joe, Peter. 1999. Sunrise Soya Foods and the creation of SoyaWorld Inc. in Vancouver, Canada (Interview). *SoyaScan Notes.* May 26. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** First a bit of background: In late 1995 Peter Joe went to Dairyworld and began talking with them about doing a soy yogurt together. Dairyworld is a huge co-operative of dairy farmers in western Canada (not just British Columbia). Gradually the talk turned to soymilk. Dairyworld had powerful packaging and distribution capabilities, while Sunrise had manufacturing and a deep knowledge of the soy business. Dairyworld got more and more interested in soymilk. Initially Peter started talking with a person who is no longer there. As the talks grew more serious, Maheb Nathoo was added to the team that soon drew up a shareholders and joint-venture agreement. Maheb, who is very bright, seemed to have a personal interest in soy. His daughters were into soy. He realized that milk is a commodity, that soymilk is another form of liquid protein, and is part of the milk shelf. Now he has become a convert, and he feels very strongly about the future and potential of soy. Maheb was the person who convinced the board of Dairyworld Foods (which consisted mainly of dairy farmers) that the joint venture with Sunrise was the way to go. These farmers realized that Sunrise was getting more and more space on the dairy shelf (i.e., invading their territory) so, hey, why not get involved with this newcomer. Dairy people also remember what happened with margarine; if they had gotten into the margarine business at an early date, they would have been able to offer it as another product, rather than having to compete with margarine using butter. Finally, the top executives and management people at Dairyworld think beyond the dairy farm and dairy farmer mentality, and they have done a good job over the past 3-4 years in getting the approval of the dairy farmers to go ahead with this joint venture.

At the same time Peter met Sanitarium people at trade shows for a number of years. Sanitarium was trying to sell the product into Canada from Australia in an aseptic package. Finally Peter went to Sanitarium to ask for a license; they were looking to expand internationally, so the timing was good. The final agreement gave Peter exclusive rights to sell So Good in the USA and Canada.

SoyaWorld Inc. was incorporated in Aug. 1996 with Dairyworld Foods and Sunrise each putting in money and owning half the shares. The new SoyaWorld board of directors (4 people, two from each company) was formed at that time. Maheb moved from Dairyworld to SoyaWorld in late 1996. In mid-1997 SoyaWorld got the license to make So Good from Sanitarium Foods (Australia). Test marketing of So Good began in mid-1997 (with the name SoyaWorld Inc. on the package), then in Jan. 1998 the product was officially launched with a big TV advertising campaign. The humorous ad shows a cow confessing that she drinks So Good; it is even endorsed by cows! This may have been the first national mass market TV campaign for soymilk in North America. In late 1997 the Canadian government first allowed soymilk to be fortified with calcium and vitamins. This showed a weakening of their many laws designed to protect dairy products. Use of the word "milk" is still not allowed. Soyganic was launched in mid-1998.

Peter works closely with Dave Coe, who is the CEO and president of Dairyworld Foods and on the board

of SoyaWorld. He is the one who is responsible for the joint venture with Sunrise and for what is happening with SoyaWorld–in a sense. Maheb is now working for SoyaWorld as general manager and CEO; he no longer works for Dairyworld.

If a taste panel consisting of typical Canadians was asked to taste So Good and SoNice Vanilla, Peter thinks So Good would win. SoyaWorld plans to target So Good and SoNice to different markets. SoNice in Tetra-Pak cartons still has a very strong following among natural foods customers, but SoyaWorld will try to sell SoNice in supermarkets as well as natural food stores in both fresh and UHT cartons. So supermarket consumers will have a choice. So Good is sold in both gable-top (fresh) and aseptic / UHT packages, but about 90% of the sales come from the fresh product. Peter would guess that the same would be true in the USA. Many Asian-Canadians love Soyganic, which has a beany flavor; they have grown accustomed to that taste. Address: General Manager, Sunrise Soya Foods, 729 Powell St., Vancouver, BC, V6A 1H5 Canada. Phone: 604-254-8888.

7628. Bramblett, Billy. 1999. SunRich in Minnesota is now a major supplier of fresh soymilk base (Interview). *SoyaScan Notes.* May 27. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** This liquid soy base is made from whole soybeans. Wildwood is starting to buy this base and use it to make their soymilk; their first run will be next week. According to the people that Wildwood has been talking to, SunRich is shipping 16 truckloads a week; each truck contains 6,000 gallons. Billy thinks the quality is excellent. He thinks SunRich may use the airless cold grind to make this soy base; it is his understanding that is the only way you can get the non-beany taste. He is not sure exactly what process SunRich uses, but he knows that the flavor is really good and very similar to that of the original White Wave Silk. White Wave now gets the soy base for their Silk soymilk from SunRich.

They can get up to 15% solids in the base using some kind of vacuum process; Wildwood then dilutes it back down to about 4% solids for their soymilk.

Wildwood sees soymilk as its "crossover" product–the one that will get the company into mainstream stores. They plan to follow behind the soymilk with their bakes and burgers. Wildwood has been meeting with people like Albertson's who want to take the company's products nationwide, but Wildwood is not quite ready to make that leap yet. Plus they want a free fill in ever store–a free case of product for each SKU introduced–and those freebees alone would cost Wildwood some $30,000 to $40,000. Address: Wildwood Natural Foods, 135 Bolinas Rd., Fairfax California 94930. Phone: 415-485-3940 X-47.

7629. Bramblett, Billy. 1999. Wildwood's good, long-standing relationship with Safeway supermarkets in California (Interview). *SoyaScan Notes.* May 27. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Wildwood first started selling its products in Safeway supermarkets in California in late 1987 or early 1988. Safeway was very nice to Wildwood. They allowed Wildwood to "cherry pick," meaning to pick 30 the stores they wanted to service themselves. Rock Island will service any other ones that Wildwood doesn't want to serve. Wildwood picked the stores based on their location and demographics, and on Wildwood's driving routes and schedules. Address: Wildwood Natural Foods, 135 Bolinas Rd., Fairfax California 94930. Phone: 415-485-3940 X-47.

7630. Bramblett, Billy. 1999. Update on Wildwood Fairfax and Wildwood Santa Cruz (Interview). *SoyaScan Notes.* May 27. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Wildwood no longer makes any sandwiches. The 65 people employed at the Fairfax facility include all of Wildwood's driving staff, accounting staff, production staff, and support staff. Santa Cruz is basically a production facility, though three drivers and several administrators operate out of Santa Cruz. Santa Cruz produces all the tofu, and the YoSoy traditional soymilk. Second generation products made at Santa Cruz include the bakes, the burgers, and the tofu cutlets. If it comes in a vacuum-packed bag or a water-pack tub it is made in Santa Cruz. If it comes in a cup (as 18 products do), it is made in Fairfax–including 5 flavors of braised tofu, 2 tofu salads, etc.

Wildwood believes that it makes the best-tasting tofu on the West Coast. It has also been innovative in developing many delicious products, which some other companies are now trying to imitate.

Wildwood has long been in a big crunch making 30,000 lb/week of tofu; about half of this is sold as tofu and half goes into making second generation products. But they could sell twice that much tofu if they had the capacity to make it.

Last year Wildwood started making Baba Ganooj for Trader Joe's (TJ). The project started as a sort of side deal to the Hummus, making maybe 700 units a week. Within a month, Wildwood was making 5,000 units as week for TJ. Bill had to add two shifts and make many other arrangements. TJ liked it and asked what other products Wildwood had. They came and visited, and Wildwood showed them its various products. TJ then asked if Wildwood could make baked teriyaki tofu for them. Billy agreed on the condition that they not order more than 5,000 units/week; TJ agreed. Their buyer for that section is a really great person named Kimberly Sprinkle Kruell, who Wildwood trusts. She told Wildwood that she and TJ like Wildwood and their products, and want to work with the company.

So in an effort to make more "secondaries," Wildwood went to tofu makers it knows and trusts, and ordered a pallet (several thousand pounds) of tofu. They couldn't do it; they

were unable to come up with the volume, the quality, and the shelf life that Wildwood needed. So Wildwood concluded that they have to make the tofu themselves.

Wildwood's fresh soymilk in gable top cartons is now selling well. It looks like they might be doing that for Trader Joe's too. "If that happens, it's gangbusters–outstanding!"

Wildwood was working with Ted Nordquist, who was making their soymilk base; he and Jeremiah have been friends for more than twenty years. But Wildwood "divorced" Ted and went to another supplier of soymilk base. He is very good at making non-dairy products, but he's a character, and working with him is very difficult. He is an enigma, and he doesn't seem to know what he wants. He and Wally Rogers were buddies and partners for many years, and all of a sudden they just split up. Address: Wildwood Natural Foods, 135 Bolinas Rd., Fairfax California 94930. Phone: 415-485-3940 X-47.

7631. Conquergood, George. 1999. SoyaWorld Inc. (Interview). *SoyaScan Notes.* May 28. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** SoyaWorld is only a marketing company. They are located at 4074 Lozells Ave. in Burnaby, a suburb of Vancouver on the eastern side of the city. Dairyworld Foods is also located in Burnaby. The city of Vancouver is located just a few miles north of the Washington state border; to its west is water–the Straight of Georgia. Across the Strait is Vancouver Island. Surrey is a few miles southeast of Vancouver.

SoyaWorld occupies some small offices on the second floor of an old ice cream plant owned by Dairyworld Foods but now no longer operational and used by Dairyworld as a storage facility. About 8 people are employed by SoyaWorld and work in those offices. The president is Maheb Nathoo, and he goes to work there each day. One marketing person, one sales manager, one controller (accountant), etc. also work there. It is now clear to George that he will not be working for SoyaWorld. He had lunch with Maheb yesterday, and they have discussed this matter for months. They may still want to retain George as a consultant some day, or he may end up as their competitor in the soymilk business. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7632. Conquergood, George. 1999. SunRich, IPC, and soymilk (Interview). *SoyaScan Notes.* May 28. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** SunRich makes all the soymilk sold by Westbrae and George believes they make soymilk for many other companies. They have done so for at least several years. At one point in 1998 Lorne Broten negotiated with Allan Routh, president of SunRich, about buying IPC–or at least coming to their financial aid. Allan was interested in buying the "SoNice" brand–which is more precisely the "ProSoya SoNice" brand since "So Nice" cannot be registered as a trademark by itself. Allan wasn't interested in licensing or buying the ProSoya process; he apparently didn't want to pay Raj Gupta any money. Allan sent some of his soymilk to George; he wanted to know if George could formulate the SoNice product with his soymilk. George did so and was very impressed. In fact, he thinks it tastes very similar to that formerly made by IPC using the ProSoya process–though not quite as good, perhaps because of the formulation.

How would ProSoya find out if SunRich or any other company was using the patented ProSoya process? Raj Gupta says he can do a "footprint" of the product's flavor profile of any soymilk product [perhaps using chromatography] and tell in that way–with only the commercial product for evidence. But George has never seen any proof of this. If Raj is right, he would not have to send any "patent police" into a competitor's plant. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7633. Conquergood, George. 1999. How IPC made soymilk using the ProSoya process (Interview). *SoyaScan Notes.* May 28. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The washed and soaked soybeans are ground with cold water in a sealed chamber using an "airless cold grind" process. This slurry is piped, still in a sealed airless environment, into a cooker, where it is cooked with steam injection. The internal temperature being raised to 120ºC, it is held there for 3 minutes, then "flashed" into a vacuum chamber. Prior to this "flashing" step no air has come in contact with the slurry. The critical point for the lipoxygenase enzyme is when the bean is being broken or ruptured; after that is less critical. The soymilk is then separated from the okara, in a closed, fairly well sealed environment. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7634. Conquergood, George. 1999. The four main soy companies created by accountant Lorne Broten from 1994 to 1997 (Interview). *SoyaScan Notes.* May 29. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** After the many early companies–and shell companies–created by Lorne to raise money, he formed four main soy companies: (1) The first real company, Pacific ProSoya Foods Inc. was created in 1994. (2) International ProSoya Corp. (IPC) was formed in early 1996. (3) IPC Eastern was created a few months later–in about March or April 1996 when IPC purchased ProSoya's Ottawa plant. That became an operating company that operated the Ottawa plant. All of the employees were paid by IPC Eastern. (4) ProSoya Foods Inc. was formed by a name change in 1997;

it had formerly been named Pacific ProSoya Foods Inc. That became the operating company for the western plants in British Columbia; it likewise paid those production employees. But any administrative staff, such as George, got paid by IPC. ProSoya Foods Inc. was also the marketing and sales company that sold the soy products. If another company purchased SoNice, they would get an invoice from ProSoya Foods Inc.

George thinks of the formation of these various companies as "shell games." It's a way of shuffling assets, borrowing money, etc. For example, you can borrow as much money as possible under one company name, then go borrow more under another name. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7635. **Product Name:** Soy Shake [Vanilla Almond, or Mocha Millennium].
Manufacturer's Name: Fresh Samantha.
Manufacturer's Address: 41 Spring Hill Rd., Saco, ME 04072. Phone: 1-800-658-4635.
Date of Introduction: 1999. May.
Ingredients: Vanilla Almond (2001/04): Water, bananas, soymilk powder, cane juice, vanilla extract, vitamins and minerals.
Wt/Vol., Packaging, Price: 16 fl oz (480 ml = 1 pint) PET plastic bottle. Retails for $2.49 to $2.79 (East Coast).
How Stored: Refrigerated.
New Product–Documentation: Leaflets sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March 8-11. "Fresh Samantha Soy Shake: Shake your body healthy!"

Talk with Betsy Schipper of Odwalla Samantha. 2001. April 23. The Soy Shake line was introduced by Fresh Samantha in 1999. The first flavor was Vanilla Almond (May 1999), followed by Mocha Millennium (July 1999, in anticipation of the millennium of 1 Jan. 2000); the latter was reformulated to become Belgian Chocolate in about Sept. 2000. Based on soy powder, the products were made in Saco, Maine. The plant will close down in May 2001 and be moved from Maine to Florida. The product has been sold mainly on the East Coast, from Maine to Florida. It is sold in a 16 oz PET bottle, refrigerated, for $2.49 to $2.79. The company named Fresh Samantha started in 1992 in Maine. Before that it was a sprout company named Down East Sunsprouts, a family company started by Bob and Julie Carter. They made alfalfa sprouts and many other types of sprouts (in their basement), plus a hummus, tabbouli, and Brocamole. They purchased a small company named 24 Carrots and began to make carrot juice. They named the juice Fresh Samanta after their granddaughter. Their first soy product was the Vanilla Almond Soy Shake.

In May 2000 Odwalla purchased Fresh Samantha; they did not change anything about this product. These products are GMO-free and selling well. Their goal is to sell the product nationwide.

Sent by Betsy Schipper of Fresh Samantha. 2001. April 23. (1) "The Fresh Samantha story" (color leaflet, 3 panels each side, front and back). Contents: This is the family story (Brief company history). What we believe in. Nutrition. Why taste matters. Our family of juices. (2) "The juiceheads guide to the universe." A good introduction to nutrition basics, plus nutritional information about the company's juice products. (3) Web pages printout related to soy shakes. (4) "Fresh Samantha power snack: Introducing soy shake–Vanilla Almond flavor." (5) Two samples of each soy product with Labels. Soyfoods Center taste test. Excellent flavor and consistency. Cute and colorful label design. We wish the sweetener were not sugar.

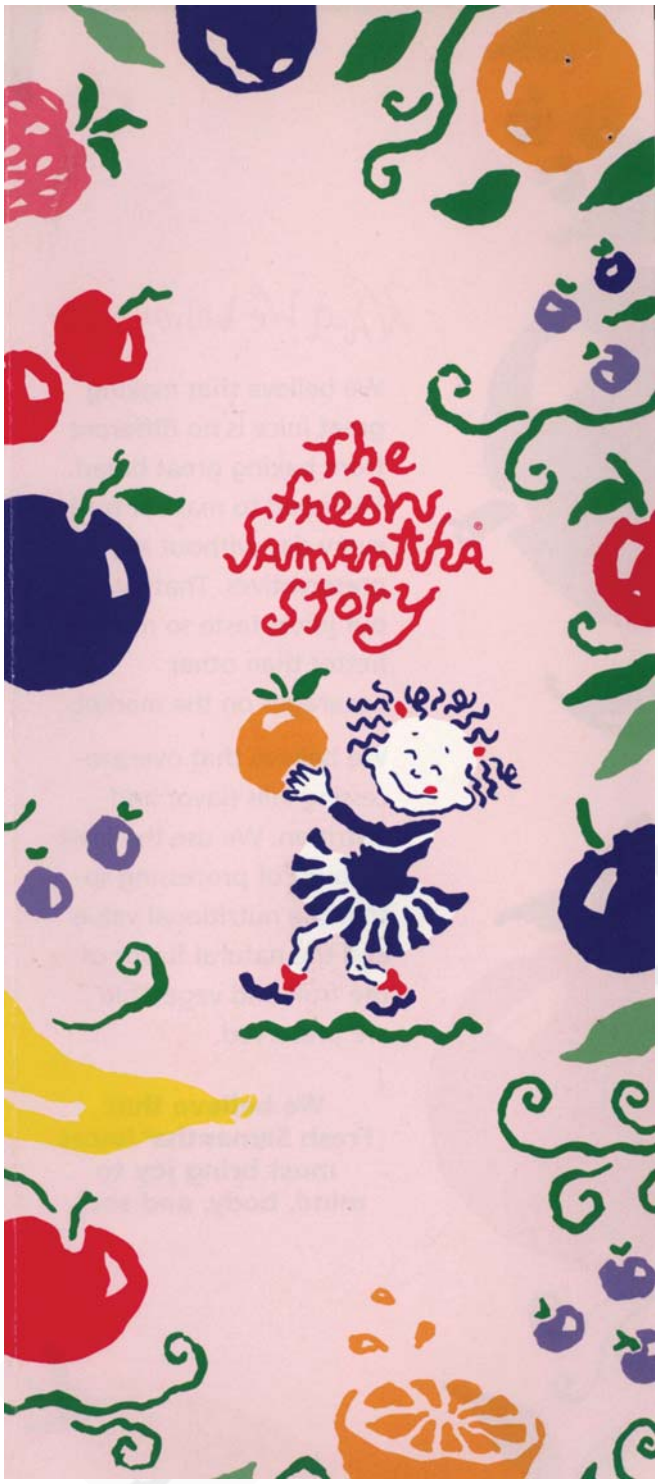
7636. Fuller Life, Inc., BetterThanMilk Div. 1999. Why Better than Milk (R) is also Better than Soy and Rice Beverages (Leaflet). Maryville, Tennessee. 1 p. Front and back. 28 x 22 cm.
• ***Summary:*** This attractive color leaflet (dated May 1999) was sent by Fuller Life in May 1999. A sticker shows that "Better Than Milk" had Booth #1255 in the Food Pavilion. The front states: "Better Than Milk is a mix instead of a liquid, so it: (1) Costs up to 30 percent per quart than liquid quarts. (2) Mixes to your preferred thickness and taste. (3) Makes as little or as much as you need at a time, so its always fresh." On the rear are nutrition facts and ingredients for eight SKUs, which come in either beverage mix cans or pre-mixed cartons.

Note: This product was originally introduced in 1987 by Sovex Natural Foods in Collegedale, Tennessee. In March 1999 the exact same poster (almost) was distributed at Natural Products Expo West (March 1999). Hearty Life, Box 2178, Collegedale, TN 37315. Phone: 1-800-227-2320. It was sent to Soyfoods Center by Patricia Smith. Address: 1628 Robert C. Jackson Dr., Maryville, Tennessee 37801. Phone: 1-800-227-2320.

7637. Tofutti Brands Inc. 1999. Tofutti. 1998 annual report. 50 Jackson Dr., Cranford, NJ 07016. 16 p. 28 cm.
• ***Summary:*** Net sales for the 52-weeks ended Dec. 27, 1998 were $8,991,000, up 21% from the previous year. Net income (profit) rose to $560,000, up 4.7% from the previous year. 1998 was the seventh consecutive year that the company has been profitable.

During 1998 the company introduced the following new products: Sugar free fat free Tofutti in half gallons. Tofutti Too Too's. Better Than Cheese Cake. Pizza Pizzaz. Tofutti Blintzes and Potato Pancakes. Tofutti Cutie Pies. Teddy Bears Chocolate and Pancake Syrups, and Tofutti Totally Nuts.

Accompanying the annual report is a "Notice of Annual



This is a family story

Julie Carter falls in love with Maine during idyllic childhood summers. She decides to pile the whole family into a Ford Station Wagon and head for Maine from Illinois. The year is 1970. Neither Julie nor Bob Carter has a job, so Julie decides to grow sprouts in the basement of her home for a local food co-op. Soon she's delivering sprouts to local supermarkets, enabling Bob Carter to quit his new job in insurance and join up. Their son Michael Carter graduates from Colby College and, after a brief stint at a physics lab, he too joins the rest of the family in the basement.

Doug Levin meets Abby Carter at Wesleyan University in 1983. They get married. After 7 years in advertising in New York City, Doug joins the family in the basement.

By 1992 the basement is quite crowded.

Michael buys 44 acres in Buxton, Maine, and builds his home and a new facility right next door.

That same year the business decides to acquire a small fresh carrot juice processor in Portland, Maine. Within 3 months Fresh Samantha® is born. The product is named after Doug and Abby's daughter who is 2 years old at the time. Abby who is a children's book illustrator, designs the new labels. The first product is Carrot Juice.

Today Fresh Samantha® is sold in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Philadelphia and Washington D.C. Although Fresh Samantha® has grown dramatically, this is still very much a family business.

Meeting of Shareholders and Proxy Statement (10 p.)." David Mintz' salary rose to $225,000 in 1998, up from $180,000 in 1997 and $155,000 in 1996. The 1998 figure includes a $50,000 bonus for Mr. Mintz. This is a company that is run for the management, not for the shareholders. Address: Cranford, New Jersey. Phone: 201-272-2400.

7638. **Product Name:** Silk Soymilk Creamer (Non-Dairy, Liquid).
Manufacturer's Name: White Wave, Inc.
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 1999. May.
Ingredients: Organic soymilk* (filtered water, organic whole soybeans*), expeller pressed organic canola oil*, organic raw cane crystals*, maltodextrin (from corn), soy lecithin, potassium phosphate, sodium citrate, carrageenan, tapioca starch, natural flavors. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990. Certified by QAI.
Wt/Vol., Packaging, Price: Pint gable-top carton.
How Stored: Refrigerated.
Nutrition: Per 1 tablespoon (15 ml): Calories 15, calories from fat 10, total fat 1 gm (2% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 5 mg, total carbohydrate 1 gm (dietary fiber 0, sugars less than 1 gm), protein 0 gm. Vitamin A 0%, vitamin C 0%, calcium 0%, iron 0%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Talk with Steve Demos, founder and president of White Wave. 1999. Aug. 27. Silk Creamer was introduced in March 1999 at the Natural Products Expo at Anaheim, California. Based on organic Silk soymilk and non-hydrogenated oils, it's sales have already exceeded the first year's sales after only 6 months. Its a huge category. Dean Foods is the No. 1 producer of non-dairy creamers in the USA, but they make powders and Silk is a liquid. Some new flavors are planned for the near future.

Leaflet (color) sent by Mia Fox, Marketing Manager of White Wave. 1999. Aug. "The natural way to smooth out your coffee. The non-dairy creamer you put into your coffee or tea should be as full of goodness as it can be... We include minimally treated, naturally occurring minerals and compounds... to give you a silky smooth creamer that won't curdle in your beverage. Silk Soymilk Creamer is lactose free, dairy free, cholesterol free, organic, and 100% natural." On the front is a large color photo of the product. On the back are ingredients and nutrition facts.

Pint carton with Label sent by James Terman of White Wave. 2000. May 11. 2.75 by 2.75 by 4 inches. Tetra Rex package. "Made with organic soymilk. Organic–Third party certified." Talk with James Terman. 2001. May 29. This product was first sold in May 1999.

7639. Conquergood, George. 1999. IPC's nightmares

packaging SoNice soymilk in Canada and the USA (Interview). *SoyaScan Notes.* June 2. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** In Nov. 1996, when IPC (International ProSoya Corp.) first launched SoNice (in 1 liter aseptic) in Canada, they were planning to make both a regular and a lite (with water added to reduce calories and fat per serving)–except nobody wanted the regular, they all wanted the lite. So they produced a Vanilla Lite and an Original Lite–but Canadian laws forbade them from call the original "original lite" because of some detail (long forgotten) concerning fat ratio. The chocolate and natural were always the "full formula." In the aseptic 250 ml size, introduced after the 1 liter as an emulation of it, they produced only Chocolate and Vanilla Lite.

Then in Jan. 1997 they followed with a refrigerated (gable-top) line in Canada, which bore a rondel in the lower left corner of the front panel; in a semicircle across the top was written "Canadian Technology" and in the center was a maple leaf. This refrigerated line reflected new formulations, with fortification. But the label didn't mention that it was

fortified, except on the ingredient panel–because at that time (in 1997) the regulatory agencies in Canada forbade fortification of soymilk in Canada. Moreover, there are different labeling regulations in the USA and Canada. So IPC must package its soymilk for the American market in a different package, with no French text on half the package, and based on at least four different nutritional labeling rules. (1) The nutritional panel in U.S. products must bear the heading "Nutrition Facts." (2) The rules for rounding off nutrient values are different in the two countries. (3) The serving size is 1 cup (240 ml) in the U.S. vs. 250 ml in Canada. (4) The U.S. prefers quarts while Canada uses the metric system–like almost all other countries worldwide. These differences created a packaging nightmare for IPC.

When IPC originally launched the Canadian refrigerated line it was being packaged by Farmland in New Jersey. They were packaging only Canadian products. But when they launched these products in the USA it was another nightmare, because the packaging on these high-speed machines had to be changed from quarts to liters for the same flavor. So they decided to change the Canadian packaging to all quarts and half gallons–so Farmland didn't have to stop its machines to change packages by flavor. But they still had to change packages by country. The original Canadian refrigerated line in 1 liter gable-top packages was supposed to be packaged at the Beatrice plant in Ontario. You can tell this rare vintage of label because the Kosher symbol is "COR 110" in a circle.

Refrigerated products were first introduced to the U.S. market at the Natural Products Expo (Baltimore, Maryland) in Oct. 1997, and products were first shipped in November or December 1997. Note: On the 1 quart ProSoya SoNice soy beverage for the USA, the manufacturer is given as SoNice Soy Corporation, P.O. Box 93009, Langley (Vancouver), BC, V3A 8H2 Canada. But on the refrigerated 1.89 liter product for Canada the manufacturer is given as ProSoya Foods Inc., Surrey, BC, V3S 8E7. Why? At one point IPC had So Nice Soy Corporation marketing the product. This was a very short-lived print run; it changed as time passed, but its all basically the ever-changing IPC. So we're back to Loren Broten and his shell game. But to make things even more complex (and comical), the original processing plant at 19292 60th Ave. in Surrey is literally on the border between Langley and Surrey. Address: Vice-president Operations, International ProSoya Corp., 312-19292 60th Ave., Surrey (Vancouver), BC, V3S 8E5 Canada. Phone: 604-541-8633.

7640. Mukherjee, Anjali. 1999. To your health: Soya beans, the elixir of youth. *Times of India* (*The*) (*Bombay*)**.** June 3. p. A7.

• ***Summary:*** "A cup of soya milk a day can keep aging at bay." This might be the maxim of the new millennium. The humble soya bean has been found to contain enough properties and power that can retard aging, fight cancer, reduce blood cholesterol and sugar, and reduce the risk of osteoporosis–to name a few.

This article discusses each of these health claims, with emphasis on cancer prevention and its mechanism.

Although the soya bean has long been a part of diets throughout East Asia, it is relatively new to the Indian palate. "You can consume soya bean protein through various soya bean products like soya milk, soya bean flour, whole soya beans, soya bean chunks, soya bean granules [textured soy flour]. Sadly, soya bean sauce and soya oil, familiar to the Indian palate, do not offer the same benefits."

For best results, try to include in your daily diet a cup of soya milk or 80-100 grams of tofu or about 50 grams of soya flour. Encourage your children to eat soya beans.

The writer then gives ten specific suggestions for ways to adopt soya beans into a family's daily diet: (1) When making chappati [chapati] dough, use equal parts soy flour and wheat flour. (2) For tasty rotis, add a little soya flour to the dough. (3) When baking, replace about one-third of the regular flour with soya flour. (4) Use soya milk as often and in as many ways as possible. (5) Roasted soya nuts, which are sold in both salty or sweet flavours, are a delicious, nutritious snack for both children and adults. (6) When making a fruit shake, use either soya milk or tofu. (7) Use tofu in place of paneer in your favorite recipes. (8) Add soaked whole soya beans to soups, stews, or casseroles. (9) Make Soya khakras in place of regular khakras. (10). When making biscuits, substitute soya flour for part of the wheat flour. Address: Diet and obesity consultant. Runs the Obesity Centre in Colaba and Bandra [in Bombay].

7641. Thrash, Agatha. 1999. History of work with medicine–orthodox and alternative, and vegetarianism (Interview). *SoyaScan Notes.* June 4. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Both Agatha and her husband, grew up in Georgia, and are physicians with MD degrees. They both went to medical school at Medical College of Georgia (he started in 1950, she in 1951). They met in medical school and married after her second year. They did their internships at the University of Louisville (Kentucky), and began their residency in 1954 at Emory University in Atlanta, Georgia. Then in 1960 they started practicing medicine at a regular hospital in Columbus, Georgia; her husband had a private practice in internal medicine, and she was in pathology at St. Francis Hospital, Columbus, Georgia (she later became chief pathologist). They practiced medicine in this way for about ten years. During that time were not Seventh-day Adventists.

Then they began to study the Bible, and to recognize that the Bible doctrines as taught by Seventh-day Adventists are the same as what the Bible teaches. They started to go to an SDA church where A.C. Becker was the pastor; he was a lifelong vegetarian. Pastor Becker and his wife looked very healthy, as did their three children. Agatha and her husband

were "amazed" that a person go live an entire lifetime without eating meat. Earl Prest succeeded A.C. Becker as pastor of this church. In 1964 she and her husband became Seventh-day Adventists. They continued their regular medical practice, but gradually they began to have a bit of unrest. "Surely, this is not all there is to the practice of medicine. You just give drugs, the patients come back again and again, and you usually give them more and more. But we as doctors have done nothing to change the basic course of their disease. We have merely made it tolerable." They got interested in alternative medicine through Seventh-day Adventists. They decided they could never practice such medicine in a hospital, so they started Yuchi Pines Institute in Seale, Alabama. They bought the land in 1968 or 1969, and in 1970 it was organized as a corporation. They have been operating as a "Lifestyle Center" ever since then. They are chartered in the state of Alabama as educational, benevolent, and charitable–a nonprofit, tax-exempt organization. "Now we try to train them to be in charge of their own health, using the eight natural laws of health: Nutrition, exercise, water, sunshine, temperance, air, rest, trust in Divine power. We have been positively amazed that many diseases–such as hypertension, high blood pressure, diabetes, allergies, asthma, and symptomatic heart disease–could be literally cured or greatly improved using these simple, natural methods. We have seen nothing short of miraculous results."

In 1975 she and her husband wrote their first book titled *"Blessed art thou, o land, when... thy princes eat... for strength, and not for drunkenness." Ecclesiastes 10:17.*

Why does our government, which is now so concerned with reducing medical costs, not consider using these methods when appropriate? Agatha thinks it is because of the powerful drug company lobby.

Dr. Thrash was deeply influenced in her medical work by Dr. Dunbar Smith, a Seventh-day Adventist, who ran the Bates Hospital (until the government took it over during World War II), and Adventist hospital in New York. He had been a missionary and a minister, but he had a problem with this voice from overstraining it. So he decided to become a physician. He came back to the USA, studied medicine, practiced medicine for many years, then became the head of the Bates Hospital.

She was also influenced by Earl Prest, the pastor of a local SDA church in Columbus, Georgia. He was from New York and he knew Dunbar Smith; it was from him that Dr. Thrash was introduced to Dunbar Smith. Madison College in Tennessee was a small inspiration.

Concerning powdered soymilks or so-called "tofu milks": She thinks some of them (such as "Better Than Milk") are unhealthful if used as a major food source. The first ingredients are fat and sugar. She knows and likes the major liquid soymilks such as Edensoy, Westsoy, Vitasoy, etc. Address: Yuchi Pines Institute, Route 1, Box 273, Seale, Alabama. Phone: 334-855-4709.

7642. Gorman, Christine. 1999. The joy of soy: Worried about high cholesterol? This versatile bean may be just what the doctor ordered. *Time.* June 7. p. 68-69.

• ***Summary:*** Begins with the story of a woman, age 67, who volunteered for a study to determine whether or not drinking a soy protein shake could lower blood cholesterol. She was delighted when her cholesterol level fell from 245 mg/dl to 205 mg/dl, and her LDL or "bad cholesterol" level fell from 170 mg/dl to 130 mg/dl. Now that the study is over, she still sprinkled soy protein on her breakfast and continues to see results–as more than 25 scientific studies have shown. Every little bit counts; a 1% drop in total cholesterol leads to a 2% drop in the risk of developing heart disease. For best results consume soy in minimally processed forms. Many Americans find boiled soybeans (edamame) to be delicious. Tofu is good if you find the right seasoning. Soy milk is nice on cereal but will ruin a cup of coffee. Miso soup contains quite a bit of salt. Soy powders (soy protein isolates) can be added to shakes or sprinkled on cereal. Soy isoflavone supplements are best avoided.

Many Americans are discovering that soybeans aren't just for vegetarians and livestock anymore. They may be able to fight cancer and build healthy bones. Later this summer or fall the FDA is expected to put soy on its short list of foods (like whole grains, and fiber-containing fruits and vegetables) that may actually reduce one's risk of heart disease.

Scientists are still not sure why soy lowers cholesterol levels. It may be the isoflavones or the soy protein or a combination of both.

In Japan, the incidence of breast cancer is much lower than in the USA [about one-sixth] and other industrialized countries. One reason may be the soy in the Japanese diet; the isoflavones in soy may act as antihormones, like the drug tamoxifen. Yet this is not yet clear. In the worst case, soy might even negate the protective effects of tamoxifen.

Photos show: Two large pods of edamame. A cake of tofu which is "a great source of nutrients." Japanese consume more than 50 lb of tofu per person per year.

7643. Harrigan, Brian. 1999. How to buy a soymilk system made by ProSoya Inc. (Interview). *SoyaScan Notes.* June 7. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** All orders for SoyaCows of any size should be directed to ProSoya in Ottawa, Canada. The only ones they may not be able to accept are those for systems with a capacity of greater than 200 liters/hour that will be used in the USA or Canada; they must refer such orders to SoyaWorld in British Columbia. SoyaWorld might be interest in a joint venture but not in competitors.

The SoyaCow VS-40 system, which makes about 40 liters/hour of soymilk, sells for US$5,950, including the grinder-cooker, press, and 8 kilowatt electric boiler, but not including small utensils (such as plastic buckets and ladles)

and the packaging equipment. The SoyaCow VS-30 has a propane gas boiler.

The SoyaCow VS-200, which makes about 200 liters/hour of soymilk, costs US$42,500, including an electric boiler. A "stripped down" model is available for $25,000; it includes no skid or boiler.

The soymilk that comes out of these two SoyaCow systems contains 8% soy solids. Since ready-to-drink soymilk typically contains 5% soy solids, each system will make about 60% more ready-to-drink than its rated output. Address: Executive Vice-President, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7644. Kantor, Roy. 1999. Re: The six largest tofu manufacturers in Israel. Letter (fax) to William Shurtleff at Soyfoods Center, June 8. 1 p. Typed, with signature on letterhead.

• ***Summary:*** The follow companies are listed in descending order of the amount of tofu they produce: 1. Shizen Tofu in Kfar Sava. 2. Jerusalem Tofu in Jerusalem. 3. Japanese Tofu in Natanya. 4. Kafri Bari (Healthy Countryside). 5. Ishuzuki Tofu in Ashdod. 6. Taam Ha Chaim (Taste of Life) in Dimona.

Note: Roy's company, Kanero, imports soymilk from Europe. They distribute the Distriborg line. Address: Kanero Group Ltd., 18, Hamelacha St., Solel-Bone Bldg., Suite 208, Raanana I.Z. 43661, Israel. Phone: 972-9-740-9398.

7645. Murphy, Patricia A. 1999. A new database on the isoflavone levels in foods, commercial ingredients, and soybeans (Interview). *SoyaScan Notes.* June 24. Conducted by William Shurtleff of Soyfoods Center. [1 ref]

• ***Summary:*** In April 1999 a new database became available on the Internet at www.NAL.USDA.gov/FNIC/FoodComp / Data/Isoflav/Isolfav.html. There are several files which are downloadable. Data are given for 160 foods, most of which are soy-related. Many individual branded products are included, such as Gimme Lean! or Lightlife Lean Links or Mead Johnson's Prosobee (infant formula). Soy oil is also included–just to show that it contains no isoflavones.

For each food, data may be given for daidzein, genistein, glycitein (pronounced gly-SEE-tun; if available), and total isoflavones. For each of these four information may be given on: Average, mean, and maximum, standard error, sample size, confidence code (A=best, C=least). of all published data. Finally a list of the numbers of all the references used to get this data. So there might be 7 references used to generate the mean value for tofu.

Soybeans themselves are also included, with data given for food-type soybeans, commodity-type soybeans, plus reports from Japan, Korea, Taiwan, etc. But there is no data on individual soybean varieties. Supplements are not included. For each food, some data is given on the isoflavone content The information in the database comes from published scientific studies and from work at Iowa State University's project on national sampling of foods. The food composition lab people will be updating the data as it is collected. There is also a separate file for items which are more typical of clover and alfalfa, which have different isoflavones.

The person in charge of the project is Gary Beecher, in the USDA Beltsville Lab. [Maryland], food composition group. David Haytowitz is the statistician. The funding came from the U.S. Army, Medical Branch, Breast Cancer Research Initiative. This year Congress, "in its wisdom," couldn't give any more money to HHS (the U.S. Department of Health and Human Services), so they gave a large amount of money to the Defense Department for work that would typically be done by NIH (National Institutes of Health). But the army has run this huge program very well–perhaps better than some NIH programs.

Note: NIH is under the Public Health Service, within HHS. Address: 2312 Food Sciences Building, Food Sciences and Human Nutrition Dep., Iowa State Univ., Ames, IA 50011.

7646. Harrigan, Brian. 1999. Re: Prices for VS 30/40 system and VS 200 systems sold in the USA: Quote USA/96A25. Letter (fax) to William Shurtleff at Soyfoods Center, June 25. 3 p.

• ***Summary:*** All orders for SoyaCows of any size should be directed to ProSoya in Ottawa, Canada. A VS-40 system with an 8 kW electric boiler costs US$7,000. A VS-2000 system with a 40 kW electric boiler costs $45,000.

Note from Brian. The prices for these systems are higher when sold to the USA than anywhere else in the world because of the 15% higher insurance premiums ProSoya has to pay and because litigation and other legal pursuits are a national pastime in the USA. The prices for the same systems sold anywhere else in the world are 15% less, i.e., $5,450 for the VS30 and $5,950 for the VS40. If the application is humanitarian, there is a 15% discount. There are also discounts for multiple orders. Address: Executive Vice-President, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7647. *SoyaScan Notes.* 1999. The rise and fall of Soyalac soy-based infant formulas (Overview). June 25. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Dr. Harry W. Miller, M.D., a student of Dr. John Harvey Kellogg, went to China in 1903 (with his wife) as a Seventh-day Adventist medical missionary. In 1926 in Shanghai he began to focus his attention on developing a better soymilk. In January 1928 the Shanghai Sanitarium and Hospital opened, with Dr. Miller in charge. In 1932 he established the Vetose Nutritional Laboratory to further his research. For two years (1936-1937) he fed soymilk he had

formulated to several hundred children (mostly infants) at the Shanghai Clinic, running control tests with fresh cow's milk and various American and European prepared baby foods. The study turned out well and he and C.J. Wen wrote an article which was published in the April 1936 issue of the English-language *Chinese Medical Journal.* "Our experimental work on infant feeding has been carried on over a period of more than two years, mostly in the Shanghai Sanitarium Clinic." In 1936 in Shanghai he started one of the first commercial soy dairies in China. One of its products was Vetose Soya Milk Powder with claims of nutritive value the equivalent of other prepared powdered milk food for infants.

In 1937, when the Japanese began bombing Shanghai, Dr. Miller returned to the United States. In Mt. Vernon, Ohio, he and his sons built a soymilk factory and established a new company named International Nutrition Laboratories. In 1940 this company introduced SoyaLac, a powdered infant formula based on soymilk. Several experiments on Soyalac were conducted by leading pediatricians and child specialists on large groups of babies over a long period of time in America, Japan, the Philippines, and China. Finally, by July 1951 Soyalac was accepted as a hypoallergenic food by the American Medical Association's Council on Foods. Soyalac then began to be prescribed by physicians for allergic infants, and soon started to sell quite well.

In early 1951 (following the death of his wife), Dr. Miller sold (at book value–a very low price) his factory, land, and various soymilk products to Loma Linda Foods (owned by the Seventh-day Adventist Church) of Riverside, California. Loma Linda renamed the product Loma Linda Soyalac Infant Powder and continued to make it at Dr. Miller's plant in Mt. Vernon, Ohio.

In Jan. 1951 Loma Linda Foods added a second soy-based infant formula product to its line, Loma Linda Soyalac Infant Concentrate. In about 1960 they added Loma Linda Soyagen Infant Powder, in 1977 Granolac Infant Soya Milk (sold by Granose Foods in the UK), and in 1979 i-Soyalac, a non-dairy infant formula based on soy protein isolates. In 1979 Loma Linda was making 2.24 million gallons of ready-to-use Soyalac infant formula.

In an interview in March 1990, Eric Fehlberg, director of the Seventh-day Adventist international food operations, said that the church wanted to sell off the infant formula part of Loma Linda Foods because of the high cost of liability insurance. The FDA are really down on infant formula foods. If anything goes wrong, there is no end to the strife. LLF had one small recall due to a small shortage of vitamin A–from dissipation. It was very expensive. In 1989 Loma Linda sold the infant formula part of its business to Nutricia, a Netherlands-based manufacturer of infant formulas, and the second largest manufacturer of such formulas in Europe after Nestle. In the Netherlands, Nutricia had 90% of the dairy-based infant formula market. They had never made soy-based infant formula before they acquired Loma Linda, nor had they ever made infant formula in the United States. Nutricia began making infant formula using new equipment in Riverside, California; they also kept the plant operating in Ohio. Just as they were getting the new plant running, disaster struck, and they had to do a recall. So in late 1990 Nutricia shut down the plant in Riverside, spent more than $12 million revamping the plant in Ohio, then used it to start making various forms of i-Soyalac (from soy protein isolates) and Soyalac (from whole soybeans). The plant in Riverside went up for sale although Nutricia's sales and marketing departments remained in the office. In mid-1993 Nutricia decided to close their offices at the Riverside and move the rest of the company's operations to Mt. Vernon, Ohio. But later in 1993 Nutricia had another recall–and another disaster, which even drove down the stock price of Nutricia in the Netherlands. Nutricia's management at headquarters in the Netherlands probably said "This American company is too dangerous for us. We'd better sell it"–which they did in 1994 to Nestle/Carnation. The Soyalac brand disappeared from the market–forever. Nutricia is a good company, but they quickly learned that regulation (by the FDA) is much stricter in the USA than in Europe.

7648. Clute, Mitchell. 1999. Breaking the mold with tempeh: Praise from the chorus for *Rhizopus oligosporus. Natural Foods Merchandiser.* June. p. 71, 74.

• ***Summary:*** At Avogadro's Number, a restaurant in Fort Collins, Colorado, Jon Long now makes 700 lb/month of tempeh; he supplies several local eateries with fresh tempeh patties.

"As a result of recent health bulletins about the benefits of soy, as well as changing dietary habits, the world seems awash in soy foods of every stripe–soy milk, soy proteins, and of course, the ubiquitous tofu. But American palates have been slower to embrace tempeh, the Cinderella of soy foods."

Long has many years of experience as a baker; he used to run his own business, Jon's Natural Bread, but he never considered making tempeh until restaurant owner Rob Osborne suggested it. He is now in the "postexperimental stage." The process he uses is described in detail.

His fascination with tempeh had led him to create a Web site (www.home.att.net/~tempehinfo/) devoted entirely to information about tempeh. Contains a recipe for Barbecued Southern Tempeh. A color photo shows Jon Long carrying two trays of freshly made tempeh.

7649. **Product Name:** Soy Dream (Soymilk, Refrigerated in Gable-Top Cartons) [Original Enriched, Vanilla Enriched, Chocolate Enriched].
Manufacturer's Name: Imagine Foods, Inc. (Marketer-Distributor). Made in Manteca, California, by California Natural Products.

Manufacturer's Address: CNP: P.O. Box 139, Manteca, CA 95336. Imagine: 350 Cambridge Ave., Suite 350, Palo Alto, CA 94306. Phone: 650-327-1444.
Date of Introduction: 1999. June.
Wt/Vol., Packaging, Price: Quart or half gallon.
How Stored: Refrigerated.
Nutrition: Per cup (8 fl oz): Calories 210, calories from fat 40, total fat 4.5 gm (7% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 150 mg (6%), total carbohydrate 35 gm (sugars 22 gm), protein 7 gm. Vitamin A 10%, vitamin D 25%, vitamin B-12 25%, vitamin E 25%, calcium 30%, iron 10%, thiamin (B-1) 10%, riboflavin (B-2) 4%, niacin (B-3) 4%, pantohenic acid (B-5) 4%, folic acid (B-9) 15%, vitamin B-6 8%, phosphorus 25%, magnesium 15%, zinc 6%, copper 8%. Not a significant source of fiber or vitamin C. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Ad (full page, color, trade) in Natural Foods Merchandiser. 1999. June. p. 13. "The best tasting soymilk just got cooler." Available in quarts (Original Enriched, Vanilla Enriched, and Chocolate Enriched) and half gallons (Original Enriched and Vanilla Enriched). The original and vanilla flavors are made from organically grown soybeans.

7650. Imagine Foods, Inc. 1999. The best tasting soymilk just got cooler (Ad). *Natural Foods Merchandiser.* June. p. 13.
• ***Summary:*** This classy full-page color ad shows Soy Dream, a soymilk made by Imagine Foods and now sold in the refrigerated case, packaged in gable-top cartons. Available in quarts (Original Enriched, Vanilla Enriched, and Chocolate Enriched) and half gallons (Original Enriched and Vanilla Enriched). The original and vanilla flavors are made from organically grown soybeans. On the top of each carton is written: "Lactose free. High in soy protein. 47 mg isoflavones per serving. As much calcium and vitamins A & D as milk." The ad states: "Refrigerated soymilk is an exploding category. From Imagine Foods, makers of the best selling product in the natural foods industry." Address: Palo Alto, California.

7651. Messina, Virginia; Schumann, Kate. 1999. The convenient vegetarian: quick-and-easy meatless cooking. New York, NY: Macmillan USA. viii + 184 p. Illust. Index. 24 cm.
• ***Summary:*** This is a vegan cookbook. The index contains 9 entries for tofu, 9 for textured vegetable protein (TVP), 3 for soy food products (soy foods) 3 for soybeans, 2 for tempeh, 1 each for miso, soy cheese, soymilk, soynuts, and soy yogurt. Address: 1. MPH, RD, coauthor of *The Vegetarian Way.*.

7652. Radov, Alexander. 1999. Obedy Podobedova [Podobedov's dinner parties]. *Sovremennye Otechestvennye Zapiski* (*Contemporary National Notes; Russia*) No. 1. p. 23-25. June. [Rus]*
• ***Summary:*** Alexander Vasil'evich Podobedov has pledged to feed Russia in 2-3 years, and to relieve the severe protein shortages; 75% of the population eats mostly bread, potatoes, and pasta. His answer: The soybean. In two years, Podobedov has established a new industry in Russia, feeding about one million people–using SoyaCow technology from ProSoya in Canada.

Note: This article appears in the section of the periodical titled "From the Rib of Adam Smith." Address: Russia.

7653. Yates, Scott C. 1999. U.S. milk prices at system's mercy. *Natural Foods Merchandiser.* June. p. 12.
• ***Summary:*** The U.S. federal milk pricing system is (and for the foreseeable future will continue to be) unbelievably complicated and convoluted. It started during the Great Depression in the 1930s when the U.S. government decided that anybody should be able to buy (and afford) milk all year long. In 1937, most of America's milk was produced in Wisconsin, and trucking refrigerated milk nationwide was impossible. So the government set up the national "Eau Claire system" containing 31 regions. The further from the town of Eau Claire, Wisconsin, the higher the price. That system is still in place. Milk producers have to pay the federal government a "pooling charge" which is supposed to aid farmers when prices drop. Colorado-based Horizon Organic Dairy, America's largest supplier of organic milk, has recently been hit hard by these pooling charges. Consumer advocates say the current federal system unnecessarily adds about 18 cents to the price of a gallon of milk.

Note: This system, and federal dairy price support systems, both help soymilk compete for price with dairy milk.

7654. Moore, Amity K. 1999. The soy solution: Is it shelf-stable? Nondairy? And a milk substitute? Yes, and health-conscious consumers are asking for it, and, increasingly, savvy retailers are responding. *Supermarket News.* July 5.

7655. Abourezk, James G.; Douglas, Jim; Rabhan, David. 1999. Re: Production of soy infant formula in Iran. Letter to Jim Douglas and David Rabhan, Nutrition Dynamics, Inc., 1522–18th Ave. #402, Seattle, WA 98122, June 29. And reply of July 6. 2 p. Typed, with signature on letterhead.
• ***Summary:*** On June 29, Abourezk wrote Douglas for additional information about the work of David Rabhan with soy in Iran. The questions and answers are given together below: 1. How many plants in Iran did you own that manufactured soy infant formula? Ans: One. 2. Where was it located? Ans: Damgham, Iran. 3. When did it begin operation? Ans: 1976. 4. What were the type of soy related products manufactured and what were the names of these products? Ans: Mamalak (infant formula), Manna (food

supplement), Complete (complete meal). 5. What was the capacity of the plant? Ans: 10,000 tons, 8,000 tons, 5,000 tons. 6. For each year at the plant what was the approximate annual sales in U.S. dollars and the amounts of profit made? Ans: $69,000,000 ($16,000,000 profit), $32,000,000 ($8,000,000 profit), $30,000,000 ($6,000,000 profit). 7. What was done with the plant once it was confiscated by the Iranian government, if you know. Ans: Some of the machinery of the infant formula plant is still there, and we are negotiating at this time with Mr. Ali Radmard at: 011-98-261-443327, to help them reconstruct their new infant formula plant using spray-dried milk as the basis. This plant will include a spray-drying operation and will produce only powdered infant formula. Milk-based product will be 90% and soy-based product 10%. Soy isolate will be imported from the United States.

The other soy-related plants were dismantled and parts sold individually in the height of the revolution. There is a court order (of which I have a copy) ordering all confiscated properties to be returned to me.

The infant formula plant closed within a few months of my arrest; each of the other plants ran for approximately two (2) years, then closed due to raw material shortage, foreign exchange difficulty, replacement parts. 8. What were the names of the Iranian officials you dealt with concerning the soy plant before your captivity? Ans: Bankers–a. Agriculture Development Bank, Hussein Habbie, b. Bank of Holland and Iran, Hassan Mahammidle, c. bank of Sapah, Mohammed Sabrie, d. Health Ministry, Mahmood Tehranie. 9. Do you have any financial records or other business documentation remaining from the Iran operation, if so, can you provide those to us? Ans: After twenty (20) years, no. 10. What are other soy related businesses that you have been involved in? Ans: None. 11. Are you currently operating a soy infant formula plant? Ans: If so, where? Ans: No. Address: P.O. Box 1164, Sioux Falls, South Dakota 57101-1164. Phone: (605) 334-9404.

7656. Demos, Steve. 1999. New developments with Silk Soymilk and related products at White Wave. The fall of rice beverages. Retirement plans (Interview). *SoyaScan Notes.* July 7. Conducted by William Shurtleff of Soyfoods Center. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

7657. Demos, Steve. 1999. New developments at White Wave (Interview). *SoyaScan Notes.* July 7. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Discusses: Soy yogurts and spoonable desserts in different parts of the world. DairyWorld Foods in Vancouver, BC, Canada, and their So Good brand. Sunrise Soya. Hired Fred Webster. Imagine Foods building new offices in Palo Alto. Rice beverages are now almost dead; fired all of its reps. 3-4 companies that are bigger than Dairyworld. Bernard Storup. Suiza and Dean Foods. Mark Retzloff. Paul Repetto. Silk is now #1. Spence was a Nielsen offshoot. He who gets to TV first. No public offering–Strategic partner on board. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

7658. Berkoff, Nancy. 1999. Why soy is hot: Appearing on more menus as a meat / dairy alternative. *Foodservice Director.* July 15.
• ***Summary:*** "Soy is in, it's hot, it's healthy, and your customers want it NOW!"

"Tofu is probably the most familiar soy product. It is nothing more than curded soy milk (think: cheese making)." Address: Rd, EdD, CCE.

7659. **Product Name:** Trader Joe's Soy-Um: Dairy-Free Soy Drink [Coffee].
Manufacturer's Name: J&G Inc. (Distributor). Made in Oregon by Pacific Foods.
Manufacturer's Address: 60 East Elm, Chicago, IL 60611. Phone: 312-787-5157.
Date of Introduction: 1999. July.
Ingredients: Organic soymilk* (Filtered water, whole organic soybeans*), brown rice syrup (filtered water, brown rice), natural milled cane sugar, Colombian spray dried coffee, coffee flavor with other natural flavors, tricalcium phosphate, sea salt, guar gum, xanthan gum, carrageenan, locust bean gum, vitamin A palmitate, vitamin D-2. * = Organically grown and processed in accordance with Oregon Tilth standards and the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 32 fluid oz. (1 quart) 946 ml Tetra Brik Aseptic carton. Retails for $1.99 (2000/05, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening and use within 7-10 days. Best served chilled.
Nutrition: Per cup (8 fl. oz = 240 ml): Calories 130, calories from fat 25, total fat 2.5 gm (4% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 115 mg (5%), total carbohydrate 21 gm (7%; dietary fiber 2 gm = 6%, sugars 16 gm), protein 4 gm, vitamin A 10%, vitamin C 0%, calcium 30%, iron 15%, vitamin D 30%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2000. May 27. On the front of the carton (copyright 1999) a bold banner with a yellow blending to orange background reads: "Contains natural isoflavones." Below that are four checked boxes: "Calcium enriched. No saturated fat. No cholesterol. Isoflavones–30 mg per [1 cup] serving." The headline on the back panel reads: "Supporting our future through organic agriculture."

Talk with Trader Joe's manager in Lafayette. 2000. Sept. 4. This product was introduced in about July 1999.

7660. Jacobi, Dana. 1999. Shake it up! Unbelievably luscious, rich and refreshing smoothies. *Vegetarian Times.* July. p. 48, 50-54. [1 ref]
• ***Summary:*** Contains seven recipes (and many color photos) for smoothies made with fortified soymilk, soy yogurt, and/or soy protein powder (isolates, lecithin, and flavoring): Mango cream smoothie. Kiwi-melon smoothie. Peach glow smoothie. Chai cooler. Chocolate-peanut butter smoothie. Coconut-banana smoothie. Banana-berry smoothie. Sidebars: "Smoothie secrets" (Four secrets for making good smoothies). "Soy by the numbers" (discusses soy milk, soy protein powder, and soy yogurt; the word "numbers" refers to the grams of fat and protein in some of these products). Address: [New York City].

7661. Murphy, Patricia A.; Song, T.; Buseman, G.; Barua, K.; et al. 1999. Isoflavones in retail and institutional soy foods. *J. of Agricultural and Food Chemistry* 47(7):2697-2704. July. [27 ref]
• ***Summary:*** Gives the content of daidzein, genistein, glycitein. Isoflavone levels ranged from 1 microgram per gram in soy sauces to 540 micrograms per gram in tempeh. "Soymilk and tofu represented the major portion of the soy foods evaluated."

Also includes: Tofu (different kinds, raw and cooked), soy sauce, miso (white and red), tempeh (raw and cooked), FriChik (soy chicken, raw and cooked), meatless frank (raw and cooked), Harvest Burger (raw and cooked), Meatless links (raw and cooked), Soy/beef burgers (raw and cooked). Address: 1-4. 2312 Food Science Building, Food Science & Human Nutrition Dep., Iowa State Univ., Ames, Iowa 50011.

7662. Urquart, John. 1999. A health food hits big time: Taste makeover moves soy milk into mainstream. *Wall Street Journal.* Aug. 3. B1, B4.
• ***Summary:*** Sales of soymilk in the USA are predicted to top $300 million in 1999, up 38% over 1998, and a rise from only $2 million in 1980–according to Soyatech Inc. of Bar Harbor, Maine. Sales of Silk, the soymilk product that pioneered the new and booming refrigerated category, are expected to double this year, says Steve Demos, president of White Wave. Silk is now distributed through dairies across the U.S. Sales of Vitasoy in the USA rose 34% during the last year, according to Jennifer Corsiglia Keim, the company's marketing manager.

Indeed soymilk is one of the few products that has been able to cross over from natural- and health-food stores into supermarkets. One of the keys to this cross-over is expected to be the change of packaging and positioning. Traditionally soymilk was sold in "special airtight boxes that require no refrigeration." Now, starting with Silk, it is being sold next to milk in cartons that look like milk cartons. Imagine Foods of Palo Alto is currently introducing a refrigerated version of its Soy Dream brand of soymilk. White Wave plans to hand out several million half-pint samples of Silk during the next 12 months to further stimulate demand. He says he has been making soyfoods for the last 21 years just "waiting for this year."

One reason for the growing interest in soymilk is the growing body of scientific evidence showing that soy has health benefits. Former junk-bond king Michael Milken, who was diagnosed with prostate cancer six years ago, tries to consume 40 grams of soy protein per day–including a soy hot dog and soy shake. Another reason is improvement in the taste of soymilk. Soymilk sales are expected to get another boost if the U.S. Food and Drug Administration allows a health claim saying that soy products reduce cholesterol.

Soymilk is also being promoted in coffee houses. About one year ago Peet's Coffee & Tea (Berkeley, California) introduced Vitasoy as a coffee creamer at its 47 coffeehouse outlets. The consumer response has been "terrific."

In Canada, the soymilk market is also booming; it grew 75% Last year and is expected to grow at about the same pace for the next 4-5 years–according to Maheb Nathoo, CEO of the new SoyaWorld Inc. of Vancouver, British Columbia. SoyaWorld now advertises its soymilk on television. A cow, with its face disguised, confides in an interview on the beverage: "I tried it. I liked it. That's all I can say.

But compared with dairy milk, soymilk still has a minuscule share of the market; cows still supply 99% of the milk market.

The high price of soymilk remains a problem. In some places it can cost twice as much as cow's milk. But prices have dropped to about half their level a decade ago in the USA. In Canada, So Good, made by SoyaWorld Inc. using soy protein isolates, has recently been selling at Loblaw's Ottawa (Ontario) superstore for the same price as cow's milk. Address: Staff Reporter.

7663. Urquhart, John. 1999. A health food hits big time: Taste makeover moves soy milk into mainstream. *Wall Street Journal.* Aug. 3. p. B1, B4. Eastern Ed.

7664. *SoyaScan Notes.* 1999. The soybean: Animal, vegetable or mineral? (Overview). Aug. 4. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** A traditional American parlor game and quiz show named "Twenty Questions" was based on the assumption that all things in the universe could be classified as either animal, vegetable, or mineral. Clearly the soybean is a vegetable, and it is most like a vegetable when served as edamamé or green vegetable soybeans. But soybean pods and leaves are unusually hairy, and the soybean can easily be transformed into alternatives to almost every known animal food product–more specifically into all kinds of meats and dairy products. It can be made into meatless burgers,

hot dogs (wieners), breakfast sausages, beef jerky, bacon bits (such as Bac*Os) or meatless bacon, juicy chicken drumsticks or meatless chick nuggets, meatless steak, and the like. Or it can be made into all the dairy alternatives such as milk, yogurt, ice cream, cheese, coffee creamer, whip topping and the like.

Soybean oil can also be made to imitate the greatest commodity of the 20th century: petroleum. We now have soy ink, soy diesel fuel, soy resins, soy paints and varnishes, etc.

Thus, of all the vegetables in the world, the soybean is the most versatile–the most like an animal and the most like a vegetable. What will they think of next?

Note: Twenty Questions began on radio in 1946, then played on television from Nov. 1949 until May 1955.

7665. Schwab, Robert. 1999. Making waves in soy world: Owner of natural-food firm makes believers of grocery stores. *Denver Post.* Aug. 7. p. C1.
• ***Summary:*** Steve Demos says that the idea for his company came to him during a 76-day meditation retreat. The "whole company came to mind." Name, product, logo, mission. Address: Business writer, Denver Post.

7666. Nordquist, Ted. 1999. Soymilk in America–past and future: The soymilk wars are heating up. Part I (Interview). *SoyaScan Notes.* Aug. 10. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** After SoyaWorld was created in Vancouver (BC, Canada), because ProSoya was developing soymilk in Vancouver, they needed a quick way to get soymilk on the market. So they started negotiating with Ted to see if he could start sending soybase up to Vancouver from California. Then Sanitarium Foods (from Australia) came into the picture and threw a lot of money towards SoyaWorld, encouraging them to purchase a license to make So Good using soy protein isolates. This would also be Sanitarium's entry into the USA and North America. SoyaWorld took this approach and because of Dairyworld Foods' excellent distribution system, So Good has done very well in Canada. Their aim is to work down into the United States; they have been trying to negotiate with Suiza Foods Corp., but Suiza has its own ideas. Ted has heard that Sanitarium is involved in a lawsuit over its So Good soymilk, perhaps with SoyaWorld, because they believe that SoNice is an infraction on the name of their So Good product–the names SoNice and So Good are too close.

Soy is really getting into the mainstream now. Ted's company has done a lot of market studies in supermarkets and the presence of soymilk is "essentially zero." The big change will take place over the next year as soymilk starts to enter the dairy case of supermarkets. Ted is aware that Horizon has its eyes on this market. SoyaWorld is powerful, but they are up against Dean Foods, Suiza, and others. Wait until November or December of this year to see what is going to happen. Ted may be part of the action or he may get squashed–like the bug under your carpet.

Ted learned a lesson when he was making Silk for White Wave; they came out with a different product, and it didn't seem to matter much to consumers that it wasn't as good, as long as it was approximately as good. Money, labeling, distribution, networking, etc. determine the success of a product. Ted designed Silk with a very low solids content (4% solids) for very specific reasons. The main reason was money–so the product could be sold at a competitive price. But with the FDA health claim anticipated, Imagine Foods now has 7 grams of protein per serving, and White Wave's Silk soymilk has 5-6 grams of protein. You cannot use the health claim if a product contains 6.25 grams of protein per serving, because that is rounded down to 6 grams on the label. So you must have a label that states 7 grams of protein. As the solids content of a soymilk rises, any beany flavor is harder to mask, so the flavor of the soybase becomes more important, and the formulation less important. And the flavor of the soybase becomes even more important with soy yogurt, and even more important with soy ice cream–because both have higher solids content. So, if one were rational and logical, the trend toward higher solids would give Ted an advantage. Ted disagrees strongly with Steve Demos who thinks that the soybase and the formulation are of about equal importance in determining the flavor of the final product. Ted believes that the soybase contributes about 80% of the final flavor and the formulation about 20%. Steve's Silk soymilk is now made by SunRich, in Minnesota. The only other companies that make what Ted considers an acceptable soybase are Pacific Foods of Oregon, and Imagine Foods.

If SunRich were using ProSoya's airless technology and if ProSoya took SunRich to court, Raj Gupta would argue that he patented his oxygen-free process in 1988. Alfa-Laval could go to ProSoya and say that they were selling a plant that made soymilk using an oxygen-free process before that patent was instigated, and they demonstrated that plant at an international conference in 1984. The process was not patented, but it was described in published literature and was well known. To get a patent, Raj Gupta had to prove that there was no prior art; thus Ted believes that the ProSoya patents are not valid. Ted and Raj planned to do a joint venture at one time, but they disagreed on many processing issues. His process is based on the *concept* of an oxygen-free grind, but it is not strictly so. Then he makes claims that you don't have to soak the beans, etc. So there are many things that the patent office has accepted in his patent that Ted believes would not stand closer scrutiny.

Ted has compared his soybase with that made by the ProSoya process; he believes that his is much better. Shurtleff says that he always assumed that the reason Ted used the ProSoya process in Vancouver to make Silk was because it was better than his own. Ted laughs and laughs.

The real reason he didn't make the soybase himself was because he had no equipment or plant with which to make it.

Ted started to develop Silk using soymilk made by Pacific Foods of Oregon. Even when he was still in Sweden in the late 1980s, he began to cooperate with them in developing a soy ice cream. Ted bought soybase from all over the world to compare it with the soybase he was developing in Sweden. He ended up using Pacific Foods' aseptically packed soybase (containing only soybeans and water) as a control for his Tofu Line and Swedish Glass ice creams. So when he came to the California in the early 1990s, his goal was to make soy beverages, yogurt, and ice cream. When Ted started doing his work in Gustine, he was using Pacific Foods' soybase. They even had an agreement on the cost of the soybase, the fact that he would be buying it in tankers, etc. The first samples Ted sent to Steve Demos were made with Pacific Foods' soybase. But when the person who finally bought the product made from that soybase turned out to be Steve Demos, then Pacific Foods of Oregon backed off. They didn't want to make soybase for a competitor in the soymilk market. So Ted had to look for a new supplier, and he came into contact with ProSoya in Surrey, near Vancouver. At that time, they were just starting up their soymilk plant and they were really naive; they could make soymilk on a small restaurant scale, but they knew almost nothing about making soymilk on a large commercial scale in a continuous process. It was a nightmare for them at the beginning. Ted did not help them with their process; he just sent them orders, which forced them to get their act together because Ted needed to buy 6,000 gallons (one tanker full) at a time. As ProSoya was learning, Ted was starting to build his own plant, but he couldn't do that until he had money, and his money would have to come from sale of ProSoya soybase to Steve Demos. So Ted went to ProSoya, not because they made better soymilk but because he didn't have the money to do it any other way. Continued. Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

7667. Nordquist, Ted. 1999. Soymilk in America–past and future: The soymilk wars are heating up. Part II (Interview). *SoyaScan Notes.* Aug. 10. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** If Ted had had a lot of money at the beginning, would he have done things differently? Answer: That's an interesting question. ProSoya went bankrupt in large part because they built the plant first and then went out to sell the product. Ted learned in Sweden that its much better to sell the product first, then build the plant once you have the volume. In Sweden, Ted found a juice company in which to install his machines; in the USA he found Soyfoods of America (owned by Ken Lee) in Duarte, California. Ken Lee is now selling a huge volume of soymilk in half gallon containers. It is produced using the same equipment he uses to make soymilk for tofu, and sells for some ridiculously low price–like $0.89 per half gallon. He distributes it all himself, and also makes a lot of tofu and related products.

Shurtleff says: "Within the next 12 months, I think we are going to see the biggest expansion and changes yet in the soyfoods industry. Companies that sell soymilk but have no fresh product in gable-top cartons will almost surely lose market share." Ted agrees; hang on. Ted adds that finding available extended shelf life (ESL) gable-top packaging equipment in California is impossible today. There are no machines available. Dean Foods has no such packaging equipment west of Colorado; their plants in Kentucky and Florida are both full. Even if they wanted to add a line on the West Coast, it would take about 12 months. Suiza Foods Corp. could add on a new line to their plant in California–and they now know how to make good soymilk because of Ted–whether he likes it or not. Bill notes: "As we shoot the rapids during the next 12 months, I hope your kayak comes out right side up." Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

7668. Maharaj, Davan; Fulmer, Melinda. 1999. Fortified milk not required: Door opens for out-of-state dairies after ruling strikes down California regulations requiring extra calcium and protein. *Contra Costa Times.* Aug. 11. p. A1, A16.

• ***Summary:*** A state appeals court (4th District in San Diego) ruling on Monday struck down California's 1962 regulations that require low-fat milk sold in the state to be fortified with 27% more calcium and protein. California is the only state that requires enrichment beyond federal standards; this process is expensive and therefore discourages most out-of-state competition. Adding the extra nutrients is estimated to cost 14 to 22 cents a gallon.

The ruling opened the door for less expensive but less nutritious milk to be sold in California. Consumers will probably be offered more milk choices and a break from what has been the most expensive milk in the USA. Arizona-based Shamrock Foods Co. in Arizona has been involved in a 5-year court battle with state regulators to break into California's $3.7 billion dairy industry. Address: Los Angeles Times.

7669. White Wave, Inc. 1999. Silk soymilk smoothies (Brochure). Boulder, Colorado. 8 panels. Aug. 15 cm.

• ***Summary:*** This stylish fold-out brochure, printed with mango pink and green heads plus blue lettering on light blue paper, offers recipes for: Peach glow smoothie. Chai cooler. Coconut-banana smoothie. Banana-berry smoothie. Chocolate peanut-butter smoothie. Kiwi-melon smoothie. Mango creme smoothie. Plus four secrets for making good

smoothies. "Recipes appeared in *Vegetarian Times,* July 1999." All recipes call for the use of White Wave Silk Soy Yogurt or Soymilk.

Note: Though these recipes were developed by Dana Jacobi and her name appears as author of the *Vegetarian Times* article, her name does not appear in this brochure–because she asked them not to use it. Address: 6123 E. Arapahoe Rd., Boulder, Colorado 80303. Phone: 303-443-3470.

7670. White Wave, Inc. 1999. Dean Foods announces alliance with White Wave Soyfoods: Becomes minority shareholder in White Wave Inc. (News release). Boulder, Colorado. 2 p. Aug. 18.

• ***Summary:*** Dean Foods (Franklin Park, Illinois) and White Wave (Boulder, Colorado) will work together to place Silk soymilk into the refrigerated dairy case of supermarkets across America. Howard M. Dean is Chairman and CEO of Dean Foods Company (NYSE: DF), "the country's number one dairy processor and distributor." Steve Demos is "President and Founder of White Wave, Inc., America's number one soyfoods company." Today they jointly announced the new relationship. "This alliance will support White Wave's new product development and marketing initiatives to reach new audiences. White Wave has annual sales of approximately $21 million. Its product line includes the successful Silk organic soymilk line, the first nationally distributed fresh, refrigerated soymilk sold in the dairy case."

"Mr. Dean remarked, 'Through this collaboration, we are investing in the future of soyfoods in America. As Dean Foods has been an innovator in the dairy market, White Wave is a leader in the innovation and integration of soyfoods into the American diet. We look forward to supporting White Wave as it expands its reach in both the natural products and mainstream market place.'

"Steve Demos stated that 'Dean Foods has shown vision in supporting organics and soy, realizes the current and future value of the natural foods market, and has embraced the concept of promoting complementary proteins–dairy and soy–thus giving American consumers more options. It's a great fit.'"

White Wave is riding a wave of soyfoods popularity. "Annual sales are up over 30% in each of the last five years, while some products such as the company's Silk Soymilk line have seen over 100% growth in each of the last three years. For more information, see the White Wave website at www.whitewave.com.

"Dean Foods is the nation's leading dairy processor and distributor, producing a full line of branded and private label products, including fluid milk, cottage cheese, and ice cream sold under the Dean's and other regional brand names. Dean dips and Marie's refrigerated salad dressings are the leading brand names in their respective categories, while Dean Foods is also the leader in private-label pickles and non-dairy coffee creamers. For more information see Dean Foods website at www.deanfoods.com."

Note 1. This is the earliest document seen (Aug. 2013) that mentions both White Wave and Dean Foods.

Note 2. Dean Foods has ESL packaging plants in Kentucky and Florida, and will soon have one in California. The company operates a trucking business and has 11,200 employees.

Note 3. A 3-page brochure titled "Dean Foods–Introduction" (from about 1996) states: "Dean Foods was founded in 1925 as a small Midwestern dairy. What began as the Dean Evaporated Milk Company with one plant in Pecatonia, Illinois has grown into a major Fortune 500 broad based Dairy and Specialty Foods manufacturer with over 12,000 employees and annual sales of over 2.7 billion dollars." Specialty Foods are now an important part of the company with brands like Birds Eye (acquired in 1993), Freshlike, and Veg-All. About 50% of Dean Foods' growth has come from acquiring other companies; the rest is internal growth, with much of that coming from new product introductions. "The Company's first formal Research and Development lab was established in Rockford in 1943. The original powdered non-dairy creamer was one of the first major product innovations to come out of this lab." Address: Boulder, Colorado. Phone: 303-449-2526.

7671. Kairava (J. Spaelstra); Seemo (H. Shapira). 1999. Re: Update on Dakini Health Foods Pvt. Ltd. in Pune / Puna, India. Letter (fax) to William Shurtleff at Soyfoods Center, Aug. 22. 1 p. Typed, without signature on letterhead.

• ***Summary:*** Gives details on their work with tofu and tempeh. They do not yet have a recipe book nor do they vacuum pack their tempeh. They are, however, developing a nice label. They have contacted Raj Gupta of ProSoya by e-mail about soymilk equipment.

"The nutrition situation in this country and on all income levels is no good–from severe protein deficiency on the lower income rungs to fancy diseases for the rich. Developing soyfoods production here is most crucial, urgent, and possibly also a good investment!

"At a later stage, to avoid spreading ourselves too thin right now, we are interested in trying our hand at more fermentations such as Taucho, Miso, Soysauce. We are looking for more material to study." A copy of the recent article from *Citadel Pune* (full of errors) is attached. Address: Dakini Health Foods Pvt. Ltd., S.N. 33, Bhoiwasti, Keshavnagar, Mundhwa, Pune / Puna 411 036, India. Phone: +91 20-613985.

7672. Osho, Sidi M. 1999. Update on work with soyfoods in Nigeria (Interview). *SoyaScan Notes.* Aug. 23-24. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Dr. Sidi Osho's new business, named Cidis Ltd., is headquartered in Ibadan, Nigeria in a big, old house which

she began to lease in Oct. 1997; they signed a 5-year lease. Sidi does not know the size of the building. They converted the "boy's quarters" in the back of the building into the soy processing space, and the garage in the front into the soy supermarket–which is called Cidis Soyamart. The company is a corporation whose shares are owned entirely by Sidi and her husband.

Their first two products, sweetened soymilk and vegetable oil (soy oil) were introduced in Dec. 1997. Sidi made the soymilk at her home. They moved into the building in January 1998 and that month they established their first kiosk nearby in the Bodija market, the main market in Ibadan. Each kiosk is staffed by a company employee, and sells only Cidis' products. They now have six kiosks, all in Oyo State in western Nigeria.

Today the company's best-selling product is soymilk, of which there are four flavors: sweetened (the best-seller), chocolate, vanilla, and plain (mostly for diabetics). Immediately after the soymilk is made, it is run into sterilized plastic bottles, then placed in a refrigerated storage room. Before being sold at the kiosks, many bottles are packed in ice in a cooler chest then delivered in a van. The next most popular product is soy flour–both roasted (like kinako) and plain whole-fat. Other products include Soya Fufu and Soya Ogi (both fermented). The company presently has 16 employees.

In Jan. 1999 Sidi filled out the papers and completed the first registration for a nonprofit NGO named Cidis Foundation. The final papers and approval came through in Aug. 1999. The Foundation, which works closely with Cidis Ltd., conducts training and educational programs, and disseminates information on soyfoods. The Foundation also helps to reduce year-end taxes, because some of the company's profits are put into the Foundation and used for philanthropic activities.

Cidis makes its own expeller-pressed soybean oil using an InstaPro-600 Junior. It is unrefined and filtered several times. Address: PhD and founder, Cidis, Ltd., No. 32 Awolowo Ave., Bodija. G.P.O. Box 38719, Dugbe, Ibadan, Oyo State, Nigeria. Phone: 234-0281-00301.

7673. Seemo (H. Shapira). 1999. Re: Another update on Dakini Health Foods Pvt. Ltd. in Pune / Puna, India. Letter (fax) to William Shurtleff at Soyfoods Center, Aug. 24. 1 p. Typed, without signature on letterhead.
• ***Summary:*** Their company started business in April 1996 making white tahini. Sometime later they introduced peanut butter.

The third partner in their business is Bodhi Yahaan; they call him Yahaan, and he has been with the company for nearly two years. Like Seemo, he is from Israel where his name was Mr. Natan-Ran Diamant; now he lives in Pune. He does not work in the factory, but he does get the computer to work. He brought in the much-needed finance and also organizes loans when the banks fail. "He owns 50% of the company's shares and a very good friendship is growing."

"Mr. Donnelly (our Indian partner) resigned near the end of 1996, and since last year we got all government permissions to run the company without any Indian partner."

In Goa, "a friends couple of ours, Lisa Camps and her French friend Richard, are making tofu and tempeh on a small but interesting scale. This year they are growing and opening their own retail outlet with a delicatessen counter and a salad bar. We managed to convince them to invest in a good grinder, a small screw press, and a simple dehulling device for their tempeh. Also, I am building them an incubation cabinet so they will no longer mysteriously lose so many cakes of tempeh. Also, since last year, we are supplying their tempeh starter, and, from this year, their soybeans. Their address: Lisa Camps, H.S. No. 1684 Ouneachem Baht, Anjuna Bardez, Goa, India." Address: Dakini Health Foods Pvt. Ltd., S.N. 33, Bhoiwasti, Keshavnagar, Mundhwa, Pune / Puna 411 036, India. Phone: +91 20-613985.

7674. Rabhan, Erwin David. 1999. Introducing commercial soy products to Iran (Interview). *SoyaScan Notes.* Aug. 25. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** In 1979 David started a company named Nutrition Dynamics International (NDI) which developed and introduced four commercial soy products to Iran: Mamalak (Powdered Infant Formula), Manna (Food Supplement), Complete (Complete Meal), and Snacks. The Mamalak was made with isolated soy protein imported to Iran via a broker. Manna was a dry breakfast cereal, made from an extruded mixture of corn and soy (or defatted soy flour), and sold in a box. It was served like a gruel or mush by simply adding hot water, and eaten mostly by children. The Manna was made with soybean grown in Iran; but when the supply was inadequate, Rabhan imported soybeans. Complete was a canned food (500 gm) that had the consistency of a sausage, fortified with soy. A consumer would cut both ends off the can, push it out, then slice it crosswise and either eat it as is, fry it, or crumble it and add it a stew called a horseh or to other dishes, use it as a spread, etc. It was very inexpensive, and supplied a sold meal for two men. It was used mainly by adults, not children. These first three food products were all sold through retail stores, not to government programs. After the revolution started, his company had to give 20% of revenues to the government. The only products he sold to the government were the snacks.

His company made extruded snacks for 2.3 million school children, using soy and corn. The government gave these snacks away as part of their 10:00 a.m. school snack program. The name of the snacks in Farsi was Sin-Nun-Kay, which is pronounced snacks. They had seven different snack products–kind of like Fritos or cheese curls–but fortified with

soy. The snacks were made in a different plant from the other products.

These products were made in four different plants, and the cans for Complete were made in a fifth plant. The plants were located in Damghan (Mamalak and Manna, in separate plants), Semnon (Complete and the can factory), Abayak (the snacks), and Bandar Abbas (snacks; a seaport in southern Iran on the Strait of Hormuz). Each product was made by a different company, but all the companies were owned by NDI. The company's assets were valued at about $14.5 million at the time they were confiscated by the government. Another plant made corn The princess got interested in soy and she built a plant (Rabhan does not know if it ever opened) where she wanted to make soy cookies and compete with Rabhan. Other companies in Iran also had extruders, just before he went to jail. The plants are still operating in Iran. Address: Swainsboro, Georgia.

7675. Demos, Steve. 1999. White Wave and Dean Foods: The inside story and future plans (Interview). *SoyaScan Notes.* Aug. 27. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** White Wave now has its Silk soymilk in 6,000 supermarkets and chain stores–not counting natural foods chains like Whole Foods Market. White Wave's goal is 10K by 2K = 10,000 stores by the year 2000. In most cases Silk is in the refrigerated dairy case, but in a few cases it is in specialty food or soft drink refrigerated cases. Fred Meyer has Silk in the health food section, but White Wave is battling for the dairy case. But at Ralph's in Los Angeles it is next to Lactaid in the dairy case.

White Wave has already won the footrace in the USA with SoyaWorld and Dairyworld. From now on its a question of who has the most money to stimulate consumers to try their brand. That's the last face of the mountain to climb. Dean Foods brings to the alliance the fact that they distribute to 17,500 stores (mainly supermarkets and chains), and they have the national brokerage and delivery trucks and 70 factories that support that system. They own two ESL plants today (in Florida and Kentucky) and they have several more on the books (one in California). White Wave also has two coming in, and they now work with Western Quality Foods in Utah (Dairy Farmers of America and Sinton Dairy out of Colorado).

Dean Foods is a superfactory for Nestle. Nestle has three or four superfactories: H.P. Hood, Dean Foods in Kentucky, and Ador in Los Angeles. Dairy Gold in Seattle, Washington, may be a fourth. Nestle Quick, the chocolate milk, is a billion dollar brand. That warrants tremendous investments in systems and efficiencies, which leads to co-pack opportunities for things that are beyond our dreams. Dean was the inventor of The Chug–a single-serve chocolate milk in a disposable plastic bottle, with a screw cap, that looks like an old-fashioned milk bottle; this made it possible to sell single-serve chocolate milk from convenience stores, and per-capita consumption of chocolate milk jumped. The Chug was a $600 million a year innovation. Also are headed toward the aseptic single serving, Dean Foods is definitely endorsing soy as a concept.

In the dairy business, per-capita consumption of fluid white milk has been decreasing for the past 50 years. The "Got Milk?" and "Milk Mustache" ad campaigns have only slowed the rate of decline from 4% down to 2% a year–but these ads are costing the dairy industry more than $100 million a year. Part of the problem is that milk has never been considered a pleasure beverage; its just a commodity.

How did White Wave contact Dean Foods? "It's kind of like fishing. You put out your hook with the bait, seen who bites, then let them come after you." Indeed, Steve went after them and convinced them that this is a concept and category worth paying attention to. Suiza Foods Corp., because they have been associated for a year with Horizon Organic in Boulder, was not a potential partner. Suiza has already invested $10 million in Horizon. Notice that the plant in Gustine, California, where TAN Industries packaged soymilk, is owned by Morningstar, which is a Suiza division–you can figure out in a hurry where this war is going to be fought. The rumor that Suiza will get into soymilk through its alliance with Horizon will soon be confirmed. The Gustine facility turned down business from Lactaid, which wanted to introduce a soymilk because White Wave is making such a dent in their sales. The people at Gustine told Lactaid that they did not want to start a project that they would have to stop in Jan. 2000, when they planned to introduce their own brand of soymilk.

"It's now a whole new game for White Wave. There's no time to take a breath." The deal with Dean Foods was a very unusual one in that everyone seemed to come out winning. White Wave got everything that they wanted, plus a huge vote of confidence. Steve anticipated their future desires and he accommodated those in the agreement by certain opportunities as time goes on. "I think the biggest accomplishment was we get to ride this thing for a while."

The news release was picked up as a blurb in the back of the Wall Street Journal last Tuesday, but the announcement has been getting a lot of national play. The news release and the recent (Aug. 3) *Wall Street Journal* article on Silk have been reinforcing one another, and creating a new round of interest in White Wave and its products, which is translating sales. The local papers and trade journals also picked up the news release. *Natural Foods Merchandiser, Prepared Foods,* and *Dairy Foods* all plan to do stories. They story appeared in 3-4 national TV announcements. It's very exciting for people throughout the company. For example, the advertising and marketing people are now interviewing full agencies–which were previously unaffordable. "The ability to be whimsical, be creative, and be a little bit off center with things has been a key driving force which we hope

not to lose. Nothing that happens, to be quite honest, could influence me enough to take my hands off the throat of this thing. Not until I'm gone. When I sit in meetings today I say, 'If you thought I was a pain in the ass before, watch this!'" Susan Holden and Holden McClure have done White Wave's PR for the past 7 years. Before that, White Wave had no PR firm.

White Wave has big plans in the dairy alternatives market–for every product you can imagine. Silk Creamer, based on organic Silk soymilk and non-hydrogenated oils, was introduced at Anaheim in March of this year; after only six months, its sales have surpassed its first year projections–and supermarkets are major buyers. Its a huge category. Dean Foods is the No. 1 producer of non-dairy creamers in the USA, but they make powders and Silk is a liquid. Some new flavors are planned for the near future. The Silk brand represents dairy alternatives and the White Wave brand represents tofu. "Silk" is the word that the public is saying. It's a cool word, and "Smooth as..." There's lot of room for play and fun: "Silk boxers in every carton." White Wave has dabbled and played with non-dairy frozen desserts in the past; now they could go big time–pretty fast. But the company will not step outside the dairy alternatives category with things like energy bars or power drinks; it will keep tightly focused on dairy-like non-dairy products.

"Its very important to conduct your mission with some levity and fun–otherwise it never works. Business is an excuse to have parties. We need to pursue that philosophy for as long as possible. We just scheduled our next party; I rented a theater in Boulder for the middle of October." On using the Silk carton for advertising: "Serve people's intelligence and needs and you give them two products instead of one. Once you have the consumer's attention and focus, you can spoon feed them a lot of very wholesome, beneficial things. Our job now is to gain their trust and attention. We have always been say that we deliver more than food; we deliver a little bit of entertainment, and a bunch of information. We want you to think of the package as part of the product." On the red half-gallon Silk, James Terman has put the story of Henry Ford's work with soy. "At least 25-33% of our packages will always be used for some additional information other than 'Buy my stuff.'" The carton of Silk, along with breakfast cereal, is one of the few packages that gets onto the breakfast table or dining table. Steve learned this lesson when he heard from dairy people about all the complaints they received about pictures of missing children on milk cartons. That meant people were reading the cartons; its the perfect captive market. Quotations from Suzuki roshi and Yogi Berra appeared together on one of the Silk cartons. "In the beginner's mind there are many possibilities; in the expert's mind there are few"–said Roshi. "You can't think and hit at the same time"–said Berra. "James Terman and I went into stitches when we put the two of those together. It was such great juxtaposition–so enlightening–just way out there." Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

7676. Bernard, Richard L. 1999. Good tasting soybeans vs. large seeded soybeans (Interview). *SoyaScan Notes.* Aug. 30. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Not all good-tasting or "edible" soybeans are large seeded. Rather small seeded soybeans may make good tofu or soymilk.

Note: According to the SoyaScan database, the four largest-seeded soybeans are Hahto (1,250 seeds/pound), Hiro (1,312), Suru (1,320), and Hokkaido (1,328). By contrast, the four smallest-seeded vegetable type soybeans are Bansei (2,004 seeds/pound–the smallest), Higan (1,962), Toku (1,952), and Nanda (1,952). Address: USDA/ARS Soybean Germplasm Collection, Room 229 EASB, 1101 W. Peabody Drive, Univ. of Illinois, Urbana, IL 61801.

7677. Berman, Alisa. 1999. Booming market for dairy alternatives. *Organic & Natural News* (*Phoenix, Arizona*) 2(8):28. Aug.
• ***Summary:*** This thriving industry is driven by consumers who are lactose-intolerant, vegetarians, vegans, and those interested in the benefits of dairy alternatives. More than 50 million Americans are lactose intolerant. Soy has cancer-fighting isoflavones. Organically grown soy products appeal to consumers who wish to avoid the pesticides, herbicides, hormones, and antibiotics found in regular dairy milk and milk products. At least one soymilk product in a store usually retails for $0.99 per quart.

7678. ProSoya Inc. 1999. Introduction to ProSoya (Color videotape). 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. 8 minutes. Aug.
• ***Summary:*** This excellent color video (in NTSC video format), is professionally produced and narrated, with nice background music. Introduced in August 1999, it begins: "The soybean is a powerhouse of high-quality protein and other nutrients. Soyfoods have been proven to reduce the risk of cancer, heart disease, and other ailments. These health advantages, coupled with relatively low infrastructure and production costs, make soybean processing a fast-growing industry–and we can help you make this a wonderful business opportunity in the 21st century. Welcome to ProSoya, a world leader in advanced soymilk technology.

"Dr. Raj Gupta, a scientist formerly with the National Research of Canada and McGill University, is the president and founder of ProSoya." He appears and says: "Our objective is to help you produce nutritional* soya foods and beverages that consumers will enjoy because they taste good."

"ProSoya creates innovative and cost-effective processing systems that produce an excellent soymilk base naturally from the raw soybean. The first soymilk systems

were small, designed primarily for humanitarian aid, hospitals and small businesses. Today, ProSoya offers the widest range of soymilk production capacities, from modest 30 liters-per-hour batch processors to large, fully automated industrial plants with capacities up to 4,000 liters per hour. The smallest system is a 2-liter prototype that NASA tested for its manned space mission to Mars. ProSoya offers individual production components or complete turnkey plants, and can also assist in the formulation and packaging of soymilk beverages and foods.

"ProSoya's commitment to its customers is demonstrated by its vigorous research and development program. In addition to its own in-house R&D team, ProSoya engineers work closely with researchers in various government laboratories and other industry partners around the world. At the heart of all ProSoya systems is the patented airless cold-grinding process–a truly revolutionary technology invented by Dr. Gupta... The resulting soymilk is free from the beany flavor or chalky mouthfeel. Bill Shurtleff, world-renowned expert on soyfoods and author of over 50 books comments: 'I have no hesitation in saying that ProSoya's airless cold-grind process is one of the best for making soymilk.'

"The soymilk base can be used as is, or to create a whole range of healthy, nutritious, high-quality soyfoods, including beverages, tofu, yogurt, ice cream, soymilk powders, and mayonnaise."

There follows a list of systems designed and sold by ProSoya. "ProSoya delivers reliable equipment and prompt technical support." "Brian Harrigan, an engineer with an MBA degree, is the executive vice-president and director of marketing. 'At ProSoya we don't just sell equipment. We build relationships. Our pride is in the contribution we can make to the success of our clients.'"

"ProSoya technology is presently being used in more than 30 countries. There are large-scale processing plants in Canada, Russia, and Scotland. Over 500 other small to medium-scale plants are benefitting people on five continents. This is what some of our clients have to say." There follow three glowing testimonials.

"In Canada, the retail sales of soy beverages increased from $12.1 million in 1997 to $25 million in 1998, a growth rate of 106%. Are you ready to take advantage of the booming soyfoods industry? ProSoya, with its market-leading technology, continuing R&D, and highly trained personnel can be your ideal partner in pursuing the opportunities which await us in the new millennium." Address: Ottawa, Ontario, Canada.

7679. Sirtori, C.R.; Pazzucconi, F.; Colombo, L.; Battistin, P.; Bondioli, A.; Deescheemaeker, K. 1999. Double-blind study of the addition of high-protein soya milk v. cows' milk to the diet of patients with severe hypercholesterolaemia and resistance to or intolerance of statins. *British J. of Nutrition* 82(2):91-96. Aug. [36 ref]
Address: Center E. Grossi Paoletti, Inst. of Pharmalogical Sciences, Univ. of Milan, Italy.

7680. South Dakota Soybean Research & Promotion Council. 1999. Favorites from the heartland. Sioux Falls, South Dakota. 81 p. Illust. Recipe index. 22 cm. [1 ref]
• ***Summary:*** A full-color, glossy and very original spiral-bound cookbook–loaded with full-page color photos of dishes prepared from recipes. Contents: Why eat soy? Practical ways to incorporate soy into your diet. How to cook soybeans. Breads (incl. prize-winning Carrot tofu muffins, and Tofu herb bread). Soy flour tips. Main dishes. Green soybean (Sweet Bean [green vegetable soybean]) tips. Salads. Desserts (incl. prize-winning Glistening cheesecake, and Pineapple cake). Beverages and snacks (incl. prize-winning Tofu shake). Soy products: Dried soybeans, tofu, soy milk, soy flour, fresh green soybeans, textured vegetable protein (TVP). Soyfoods substitutions (from meat and animal products). For more information: 1-800-talk-soy, or www.soyfoods.com.

Talk with Betty Hansen at South Dakota Soybean Board. 2000. May 15. This cookbook (which is undated) was first published in the summer of 1999. Many of the recipes were adapted from local favorites, and all these were tested in the office. Some also came from the winners of a recipe contest sponsored by the South Dakota Soybean Board. Address: Sioux Falls, South Dakota. Phone: 605-330-9942.

7681. White Wave, Inc. 1999. Silk (Ad). *Vegetarian Times.* Aug. p. 13, 65, 67.

• ***Summary:*** This attractive, color one-third page ad is run in an innovative format: It appears in a slightly different

form (but all the same size) in the lower right corner of three different pages of this magazine–leading the reader to stop and say–"Didn't I just see that ad?" The text for "Vanilla Soymilk" on page 13 reads: "Soymilk never tasted this good: Rich in naturally occurring isoflavones."

The text for "Plain Soymilk" on page 65 reads: "The soymilk when taste is important: Lactose free. Low fat. No cholesterol."

The text for "Chocolate Soymilk" on page 67 reads: "When its gotta be chocolate. All natural. Made with organic soybeans."

These 3 ads also ran in the Jan. 2000 issue on pages 57, 59, and 61. However the ad on p. 59 for "Plain Soymilk" has new text: "It's just like milk except without the milk part. Lactose free. Cholesterol free. Calcium rich." Address: Boulder, Colorado.

7682. **Product Name:** Enlightened Organic Soy Beverage (Fresh, ESL Gable Top Carton) [Plain, Vanilla, Cappuccino, Chocolate].
Manufacturer's Name: Zen Don.
Manufacturer's Address: 155-04 Liberty Ave., Jamaica, NY 11433. Phone: 718-291-3333.
Date of Introduction: 1999. August.
Ingredients: Chocolate (1999/11): Filtered water, organic whole soy beans, organic granulated cane juice, natural cocoa, natural flavors, calcium carbonate, sea salt, vitamin A palmitate, vitamin D-2, riboflavin (B-2), vitamin B-12.
Wt/Vol., Packaging, Price: Quart and half gallon ESL cartons.
How Stored: Refrigerated.
New Product–Documentation: U.S. Soyfoods Directory. 1999. p. 45. Talk with Brian Lee of Zen Don. 1999. May 3. A line of new ESL filling and packaging equipment will be installed in the company's Buffalo plant at the end of May. The product will fresh (refrigerated) be sold in both quart and half-gallon cartons. The quart should be out first. They decided to do a refrigerated product (like Silk) because the market for aseptic soymilk is so saturated. This company, Zen Don, is a division of Worchester Creamery, owned by Henry Schwartz. The soymilk is being made in Elma. This product as expected to be on the market on 1 Jan. 1999; it would be packaged at another facility. They decided to delay the product launch until July 15 (they have a slotted run date with Buffalo), after the new fillers were installed in their own plant; they way, nobody got their formula.

Silas will be the president of this new company. Brian will be one of the account executives. A sister company introduced Juniper Valley Organic Milk, one of America's early brands of organic cow's milk. The product was No. 1 in the New York Metro area until Horizon bought them out. The sister company has a processing agreement with Horizon in one of their other facilities, and that sister company is an exclusive distributor of all the Horizon organic milk products.

Newsday (Long Island, New York). 1999. Oct. 20. "Soy milk goes mainstream." A large photo shows a carton of Zen Don Soy Milk.

Leaflet (color) sent by Patricia Smith from Natural Products Expo (Baltimore, Maryland). 1999. Oct. 26. "Introducing Zen Don Organic Soy Milk. 'Soy as Happiness.'" The product now comes in four flavors in 1 quart gable-top cartons: Plain, Vanilla, Cappuccino, and Chocolate. The phone number is now 718-558-0692. An illustration on the front panel of each quart shows a large panda seated upright, drinking a glass of soy milk. "What is Zen Don? Literally 'Zen Don' means 'magic potion' in Mandarin."

7683. **Product Name:** Enlightened Organic Soy Pudding [Banana, or Chocolate].
Manufacturer's Name: Zen Don.
Manufacturer's Address: 155-04 Liberty Ave., Jamaica, NY 11433. Phone: 718-291-3333.
Date of Introduction: 1999. August.
Wt/Vol., Packaging, Price: Quart and half gallon ESL cartons.
New Product–Documentation: U.S. Soyfoods Directory. 1999. p. 45. Talk with Brian Lee of Zen Don. 1999. May 3. This product will be packaged on the company's standard pudding filler. It is expected to be out by about July 1999, and hopefully it will be in stores before the Natural Products Expo in October in Maryland. Zen Don had a booth for this product in Oct. 1998 at the Natural Products Expo in Maryland–a year before the product was available. "We were test marketing the product. We had mock-up packaging."

7684. **Product Name:** Soy Pudding [Chocolate, or Banana].
Manufacturer's Name: Zen Don.
Manufacturer's Address: 155-04 Liberty Ave., Jamaica, NY 11433. Phone: 718-558-0692.
Date of Introduction: 1999. August.
Ingredients: Chocolate (1999/11): Filtered water, organic whole soy beans, organic granulated cane juice, modified food starch, natural cocoa powder, natural flavors, potassium phosphate, calcium carbonate, lecithin, sea salt, vitamin A palmitate, vitamin D-2, riboflavin (B-2), vitamin B-12.
Wt/Vol., Packaging, Price: Four x 4 oz cups in a sleeve. Retails for $2.59 to $3.00 (1999/12, New York City).
How Stored: Refrigerated.
New Product–Documentation: Leaflet (color) sent by Patricia Smith from Natural Products Expo (Baltimore, Maryland). 1999. Oct. 26. "Introducing Zen Don Soy Puddings. 'Soy as Happiness.'" The product comes in two flavors in aseptic cups. An illustration on the side of each sleeve shows a large panda seated upright, drinking a glass of soy milk. "What is Zen Don? Literally 'Zen Don' means 'magic potion' in Mandarin."

7685. Rose, Richard. 1999. Big problems between Ted Nordquist of TAN Industries Inc. and White Wave (Interview). *SoyaScan Notes.* Sept. 7. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Richard heard from Wally Rogers that White Wave owes TAN Industries $320,000. White Wave, which had usually been ordering one tanker full of soymilk from Ted Nordquist, suddenly ordered six tankers full. After they took delivery of the product, they refused to pay–not because of any claim that the product was defective but for other reasons. The only way that Ted can resolve that is to go to court. The six tankers were apparently enough to keep White Wave supplied with soymilk until they could switch over to a new supplier. White Wave also thought that TAN Industries was charging them too much for the product.

Richard imagines that White Wave will say that they have a contract with TAN industries, which says that TAN will not formulate soymilk for any other companies. TAN's position is that they did not do any formulation; they just sold soy base to other companies, which formulated it themselves.

Talk with Ted Nordquist. 2000. April 14. The above story is basically true. White Wave did have unpaid invoices of $320,000. They refused to pay because they said (incorrectly) that Ted had broken a contract by selling soy base to Gary Stein. It took Ted's partner, Henry Waxman (who is an attorney) 4 months to collect the debt. In the meantime, White Wave's attorney tried to get TAN to settle for a lower amount. Address: President, Rella Good Cheese Co., P.O. Box 5020 (616 Davis St.), Santa Rosa, California 95402-5020. Phone: 707-576-7050.

7686. Iverson, Ron. 1999. Re: Signature Ingredients, LLC is a new company that plans to develop and market a good tasting, nutritious soy milk. Letter (fax) to William Shurtleff at Soyfoods Center, Sept. 16. 24 p. Typed, with signature on letterhead.

• ***Summary:*** "Enclosed is information on FSPGold, a powder that they claim makes good soy milk." FSP stands for "Fine Soy Powder" which is actually fine-mesh whole soy flour.

"Company profile–Start: Soy Protein Technologies (USA), LLC is a continuation of Toshoku Co., Ltd. established in Kyoto, Japan over 20 years ago by FSP inventor Zentaro Iwamoto. FSP has been produced and sold in Japan for over 15 years; however, due to the need to import soybeans and the economic infeasibility of production and infrastructure in Japan, the decision was made to transfer the business to the United States.

"In April of 1999, a partnership was established between newly established Iowa company Soy Protein Technologies (USA), LLC and World Food Processing, LLC to begin construction on a 58 acre site located in Oskaloosa, Iowa–aptly named World Food Park.

"Construction of the FSP plants is scheduled to be completed around April of the year 2000. The initial production capacity is approximately 6000 metric tons per year. The Oskaloosa site will have the capacity to grow as the level of business increases.

"Principals:

"The principals of Soy Protein Technologies (USA), LLC are as follows:

"Zentaro Iwamoto–President, Manager

"Harrison Copper–Vice President, Member

"Yoshinori Iwamoto–Vice President of Operations, Member

"The principals of World Food Processing, LLC are as follows:

"Jerry Lorenzen–President, Manager

"Duane Bushman–Vice President, Manager

"http://www.fspgold.com/prome/index.html.

"Infrastructure

"Soy Protein Technologies (USA), LLC will be located within World Food Park site in Oskaloosa, Iowa. The production facility will be adjacently located next to World Food Processing which is a large, super-sophisticated soybean cleaning facility equipped with chilled storage for soybeans. The proximity of the soybean cleaning and storage as well as the availability of state of the art equipment will enable Soy Protein Technologies (USA), LLC to always be readily supplied with soybeans which are handled well beyond the requirements of the most stringent grain handling / food safety laws.

"The production facility is located on a railroad spur which connects to a ramp in Newton, IA. Rail access will enable us to conveniently and economically ship to all regions in the United States as well as all major ports which facilitate export shipments.

"A highway is also being installed which connects to this facility and will greatly facilitate freight traffic efficiency to the production site."

Company goals: "... We intend to produce FSP with non-GMO varieties of soybeans, which may be grown organically, on a chemical free program, and commercially grown. By doing so we intend to create markets for soybeans grown in the midwest [sic. Midwest].

"Marketing: Soy Protein Technologies (USA), LLC has special ties with The North American Marketing Corp., which is a company designed for the sales and marketing of FSP in the North American market (USA, Canada, Mexico)..."

"Meet the inventor of FSP: Zentaro Iwamoto of Kyoto, Japan is the inventor of FSP Gold. In his facility at Yagi, he has produced and experimented with FSP for over 15 years. His initial inspiration to produce soy powder was the fact that soy food production was inefficient and that many nutrients were lost in the traditional methods of producing tofu and soy milk. This fact was especially significant for

Zentaro Iwamoto because he experienced life in post-war Japan where food shortages were a major problem.

"Starting the end of 1999, Mr. Iwamoto will relocate to Oskaloosa, IA with his son Yoshinori Iwamoto to begin construction of the FSP facility. Mr. Iwamoto will hereafter be a resident in the United States..." Address: Chairman, 693 Ponce de Leon Dr., Tierra Verde, Florida 33715. Phone: (727) 865-1833.

7687. Harrigan, Brian. 1999. Re: Overview of utilization ProSoya's equipment abroad. Letter (fax) to William Shurtleff at Soyfoods Center, Sept. 22–in reply to inquiry. 1 p. .

• ***Summary:*** 1. Commercial vs. non-profit: Of the machines ProSoya has sold directly, about 80% were sold to commercial firms and the remaining 20% to non-profit organizations. If we include the machines that have been made and sold by the Russians and Indians under license from ProSoya (over 500 SoyaCows), these can be estimated at 70% commercial and 30% non-profit.

2. Type of product produced: Soymilk beverage production 50%. Tofu production 40%. Other soyfoods 10%.

Use in developing vs. developed countries: In terms of value, about 75% is in developing countries. In terms of number of liters, about 90% is in developing countries.

There are presently about 250 locations or clients using ProSoya's equipment worldwide, with about 175 of these in Russia alone. Address: Executive Vice-President, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7688. *Bluebook Update* (*Bar Harbor, Maine*). 1999. New study finds soyfoods sales healthy. 6(3):1, 7. July/Sept.

• ***Summary:*** A market study titled *The U.S. Soyfoods Industry* was recently completed by Soyatech, Inc. and Senechal, Jorgenson & Hale Co. It found that retail sales of soy products reached 1.7 billion in 1998 and are expected to reach $2.12 billion by the end of 1999, $2.56 billion by the end of 2000, and 3.67 billion by the end of 1002. After growing at less than 10% a year from 1990 to 1995, sales for the entire soyfoods category shot up quickly, growing 11.5% in 1997, and 17.7% in 1998; they are expected to increase 23.2% in 1999. A major reason for this growth is a keen interest in health by consumers who believe that soyfoods can provide health benefits.

Looking at the various market segments, the one with the most rapid growth has been meat alternatives, which grew 48% in 1997, 45.8% in 1998, and is expected to grow 44.8% in 1999. The category already has retail sales of $500 million a year.

Soymilk is another category with strong growth; retail sales rose 38.7% in 1998 and are expected to grow 38% in 1999.

The study is composed of three major parts: (1) U.S. Soyfood Products & Market, which covers sales, companies, products, and market trends; (2) The Soyfoods Consumer, which provides a detailed analysis of who this consumer is; and (3) Soy Protein Ingredients, which outlines the industry and market for soy ingredients. The report can be purchased in its entirety or by section.

Note: A brochure describing this study, from the two companies that conducted it, states that it was completed in April 1999 and costs $12,500.

7689. Dibb, Sue; Fitzpatrick, Mike. 1999. Fórmulas infantiles a base de soya: Preocupaciones para la salud [Soy-based infant formulas: Health concerns]. *Dietistas & Nutritionistas* 4(4):6-12. Sept. [49 ref. Spa]

Address: 1. The Food Commission, 94 White Lyon St., London N1 9PF, UK; 2. PhD, P.O. Box 33-849, Takapuna, New Zealand. Phone: Fitzpatrick: 0064-9 486 8068.

7690. Grogan, Bryanna Clark. 1999. Soyfoods cooking for a positive menopause. Summertown, Tennessee: Book Publishing Co. 192 p. Sept. Index. 23 cm. [31 + 49 websites ref]

• ***Summary:*** On the front cover: "Reduce the discomforts of menopause naturally. Lower your cholesterol. Reduce your risk of heart disease and cancer. Over 150 family pleasing recipes." Eating a diet rich in soyfoods may alleviate many of the discomforts of menopause.

Content: Introduction. Glossary. 1. The soy prescription. 2. Soy for strong bones and weight loss. 3. Preventing the number one killer of women-heart disease. 4. Can soy prevent cancer? 5. A soyfoods primer. 6. Baking and cooking with soyfoods. 7. Breakfast foods and beverages. 8. Condiments, sauces, dips, dressings, and spreads. 9. Appetizers, salads, and soups. 10. Lunch, supper, and side dishes. 11. Dinner entrees. 12. Desserts. Bibliography and websites. Sources for ingredients.

7691. Kneen, Brewster. 1999. Farmageddon: food and the culture of biotechnology. Gabriola Island, BC, Canada: New Society Publishers; Philadelphia, Pennsylvania: New Society. viii + 231 p. Illust. Index. 22 cm. [43 + 233 endnotes]

• ***Summary:*** An early book about genetic engineering of farm crops. Contents: Acknowledgments. Introduction: What was the problem? 1. Undertones of death. 2. Moral blackmail. 3. A case of bad attitude. 4. Where did biotechnology come from? 5. Progress it is not. 6. Hormonized milk. 7. The eternal tomato. 8. Killer potatoes. 9. Made to order: Regulation. 10. Lifelines. 11. Apocalypse, Armageddon. 12. Growing resistance.

Appendixes: (1) The Farmageddon lexicon [a facetious, humorous glossary]. (2) The science of genetic engineering [how it's done]. Recommended reading. Notes. About the author (with portrait photo. "He is known internationally as Canada's foremost expert on the global food system").

Soybeans are not mentioned in the index. However biotechnology, life science corpration, bovine somatotrophin (BST), deKalb Genetics Corporation, Delta & Pine Land Company, Monsanto, Novartis, rbGH (recombinant bovine growth hormone), etc.

Review in *E–The Environmental Magazine:* "'Buyer beware,' warns Kneen. We are all guinea pigs in a corporate experiment that may be putting our health at risk. Kneen describes the inner working of genetic engineering in detail and calls for a public movement against it. He says genetically engineered food should be labeled." Address: Author and expert on food systems, Sorrento, British Columbia, VOE 2WO Canada.

7692. **Product Name:** Future Shake [Dutch Chocolate].
Manufacturer's Name: Odwalla, Inc.
Manufacturer's Address: Dinuba, CA 93618. Phone: 1-800-Odwalla.
Date of Introduction: 1999. September.
Ingredients: Soy beverage (Soybeans, water), water, banana puree, agave nectar, mango puree, Dutch cocoa (processed with alkali and soy lecithin), Madagascar vanilla, organic whole oats, vitamins and minerals (calcium, magnesium, vitamin C, iron, vitamin E, niacin, zinc, copper, pantothenic acid, manganese, folic acid, vitamin A, vitamin B-6, riboflavin, thiamine, biotin, iodine, chromium, selenium, vitamin B-12, vitamin D).
Wt/Vol., Packaging, Price: 16 fl oz (480 ml = 1 pint) HDPE plastic bottle. Retails for $2.99 at Safeway supermarket (1999/10 Lafayette, California).
How Stored: Refrigerated.
New Product–Documentation: Product (Dutch Chocolate, 1 pint) with Label purchased for $2.99 at Safeway supermarket in Lafayette, California. 1999. Sept. Self adhesive label in many colors: dark brown, red, black, orange, purple, green and white on light brown. Illustration of colorful, stylized man with an zany design for a head, 3 ears of wheat in his right hand, a glass in his left hand, a long-billed bird on his shirt design, planets whirling around him, and many small spirals. Text on front panel: "Delicious, nutritious, dairy-free. Low fat." One side panel states: "Live a lush life! Sweet and velvety. Dutch Chocolate Future Shake is a luscious blend of real dutch chocolate, organic oats, soy milk, banana and mango. One bottle provides a wealth of vitamins and minerals, plus 50% of the RDI for calcium and vitamin C and 100% for folic acid. It's delicious low-fat nourishment from real whole foods. The Future is in your hands... shake it up!" "Odwalla (Oh-DWA-la) was founded in 1980 by three musicians with the dream of a healthy world. Their mission: To make great juice and bring a heart to business." www.odwalla.com. Copyright 1999. Soyfoods Center taste test: Delicious. Very rich in chocolate and quite expensive. We preferred the Mocha Motion.

7693. **Product Name:** Future Shake [Inner Chai].
Manufacturer's Name: Odwalla, Inc.
Manufacturer's Address: Dinuba, CA 93618. Phone: 1-800-374-6554.
Date of Introduction: 1999. September.
Ingredients: Soy beverage (Soybeans, water), chai tea (black tea, cinnamon, cardamom, ginger, black pepper, clove, citric acid), mango puree, banana puree, honey, Madagascar vanilla, organic whole oats, vitamins and minerals (calcium, magnesium, vitamin C, iron, vitamin E, niacin, zinc, copper, pantothenic acid, manganese, folic acid, vitamin A, vitamin B-6, riboflavin, thiamine, biotin, iodine, chromium, selenium, vitamin B-12, vitamin D).
Wt/Vol., Packaging, Price: 16 fl oz (480 ml = 1 pint) HDPE plastic bottle.
How Stored: Refrigerated.
New Product–Documentation: Product with Label purchased for $2.99 at Safeway supermarket in Lafayette, California. 1999. Oct. Self adhesive label in many colors: purple, red, red, black, orange, green and white on light orange. Illustration of colorful, stylized man with an zany design for a head, 3 ears of wheat in his right hand, a glass in his left hand, a long-billed bird on his shirt design, planets whirling around him, and many small spirals. Text on front panel: "Delicious, nutritious, dairy-free. Low fat." One side panel states: "Sherpa's choice! Sweet and creamy. Inner Chai is a dairy-free blend of Indian spiced tea, organic oats, soy milk, banana and mango. Its spicy glow emanates from a a traditional Kashmiri brew of black tea, cinnamon, ginger, cardamom, cloves, black pepper and honey. One bottle provides a wealth of vitamins and minerals, plus 50% of the RDI for calcium and vitamin C and 100% for folic acid. It's delicious low-fat nourishment from real whole foods. The Future is in your hands... shake it up!" Copyright 1999. Soyfoods Center taste test: Delicious and quite expensive.

7694. Ontario Soybean Growers. 1999. Canadian soybeans (Ad). *Soya & Oilseed Bluebook* 2000. p. 104.
• ***Summary:*** This one-third page black-and-white ad states: "High quality, food grade soybeans for the production of tofu, miso, natto, soymilk, soy sprouts, soy sauce, tempeh and other soya products. Soybeans for the crush market. Identify preserved (I.P.)–Specialty soybeans. Organic and transitional soybeans. Container–Bag/bulk. Bulk vessel.

"Trusted, reliable, supplier of soybeans to the world for over 25 years.

"For more information or a list of suppliers contact: Canadian Soybean Export Association." Address: P.O. Box 1199, Chatham, Ontario, Canada N7M 5L8. Phone: 519-352-7730.

7695. Schouten USA Inc. 1999. What do these soy nutraceuticals have in common? Excellent taste! Guaranteed isoflavones! Great success! (Ad). *Soya Bluebook Plus* 2000.

p. 92.
• ***Summary:*** In the center of this full-page color ad is the text. Surrounding it are color photos of 12 commercial products in which SoyLife isoflavones are an ingredient. From top right clockwise: Vogel's Soy & Linseed Soy-Tana (Bran Crunch breakfast cereal with Sultanas). Bakke Meijer loaf of bread. Shefa Sooki Bar. Gardenburger LifeBurger (in a box). A glass of chocolate soymilk. Soy granules (unpackaged). Solgar super concentrated isoflavones (supplement bottle). Vogel's Soy & Linseed (Wheat bran cereal). TwinLab MaxiLife Women's Progesterone Protector (supplement bottle). Granola bars (unpackaged). Ryvita Soy-Lin. Five types of pills for women (Menopause, breast health, fat burners, women's natural replacement). Sanitarium Weet-Bix Hi Bran. Address: 3300 Edinborough Way, Minneapolis, Minnesota 55435. Web: www.soylife.com. Phone: 217-235-1020.

7696. Soyatech, Inc. 1999. Advertiser index. *Soya Bluebook Plus* 2000. p. 431.
• ***Summary:*** Ag Processing Inc. Allocco S.A. American Health & Nutrition Inc. AMG Inc. Anderson International Corp. ADM Lecithin. Archer Daniels Midland Co. B.N.W. Industries. Baker Process. BAR N.A., Inc. Bean Machines, Inc. Behlen Mfg. Co., Biostar. Borton, Inc. Breitenbach GmbH, Leonhard. Brown Company, Charles. Buhler Inc. Campro International Inc. Cargill, Inc. Center for Crops Utilization Research. Ceval Alimentos S.A. Clarkson Grain Co., Inc. Cleary Products, Inc., W.A. Clofine Dairy & Food Products, Inc. Codema, Incorporated. Core Team, The. Damman-Croes N.V. De Smet SA/NV, Extraction. Divine Engineering, Inc. Edelsoja GmbH. Elementar Americas Inc. Europa Crown Ltd./Crown Iron Works Company. First Line Seeds. Frank, Fa. L.I. French Oil Mill Machinery Company, The. Fundiciones Balaguer, S.A. Genetic ID. Grain Systems. GTS Energy Inc. Guelph Food Technology Centre. H&H Company, Inc. HI Roller Enclosed Belt Conveyors. Identity Seed & Grain Company. Indiana Crop Improvement Association. INHSA. Innomach Inc. Insta-Pro International. International Soybean Program (INTSOY). InterSystems, Inc. Iowa Soy Specialties, LLC. Jeneil Biotech, Inc. Kice Industries, Inc. Klein Commodities. Krupp Extraktionstechnik GmbH. Laidig Industrial Systems. Louisville Drying Machinery. Lucas Meyer GmbH & Co. Mason Manufacturing. Metal Products International, Inc. Midwestern Soybeans International, Inc. Midwestern Soybeans International, Inc. Millbank Technology (N.Z.) Ltd. Miracle Exclusives, Inc. Monsanto Company. Montola Growers Inc. Moore & Associates, Inc., N. Hunt. Natural Products Inc. Norseman Inc. Northland Seed Corp./Northland Organic Foods. Nosawa & Company, Ltd. Oil Mill Gazetteer. Oil-Dri Corporation of America. OntarBio Organic Farmers' Co-operative Inc. Ontario Soybean Growers. Pacific International Distributors (PID). Prater Industries, Inc. ProSoya, Inc. R&D Equipment Sales Company. Riceland Foods, Inc. Riley Equipment, Inc. Roskamp Champion. S. Howes Company, Inc. Sato & Company, Ltd. Schouten USA Inc. Separators, Inc. SK Food International. Soyatech, Inc. Specialty Proteins. Strayer & Associates, Dennis. SunRich Inc. Sweet Manufacturing Company. Tecno Moageira Ltda. Tetra Pak Inc. Texas A&M University. Thompson & Sons Ltd., W.G. Tobe Products. Tradin Organic Agriculture B.V. Tramco Inc. Turner Chilled Rolls Ltd. U.S. Soy. United Soybean Board. VIGAN Engineering S.A. Walzen Irle GmbH. Westfalia Separator, Inc. Westway Terminal Co., Inc. Woodson-Tenent Laboratories, Inc. Younglove Construction Company. Address: 7 Pleasant St., P.O. Box 84, Bar Harbor, Maine 04609. Web: www.soyatech.com. Phone: 207-288-4969.

7697. Soyatech, Inc. 1999. Soya & Oilseed Bluebook 2000: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 432 p. Sept. Comprehensive index. Internet address index. Brand name index. Advertiser index. 28 cm.
• ***Summary:*** On the cover is a color photo of rare and beautiful soybeans of variegated colors, including various shades of purple, red, blue, etc. The background is solid soybeans made to appear blue. The inside front cover and first page contain full page color ads from Lucas Meyer, "The Lecithin People." On the back cover is color ad from ADM titled "The next century belongs to soy," written over a huge yellow soybean with a prominent hilum.

To celebrate the year 2000, a special supplement has been included near the front of the book, titled "2000 and beyond: The future of soy. Soyatech brings together a panel of key individuals in the soybean industry to talk about the future" (p. 9-16). Its contents: Introduction, by Peter Golbitz. The introduction of biotechnology. The blossoming demand for identity preserved soybeans. Soyfoods and health benefits. Organic farming has become a growing $4.2 billion dollar industry. Soybean products improve as technology continues to evolve. Alternative technologies for a developing world industry: The world produces 150 million metric tons of soybeans, of which less than 10 percent is used directly for human food. Growth of world markets shaped by American soybean farmers investments (American Soybean Association and United Soybean Board). Soybeans find fertile ground in South America. Soyfoods past, present, and future (incl. Vitasoy and Yvonne Lo). Beyond 2000.

Note that Soyatech has moved to a new address. Address: 7 Pleasant St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

7698. SunRich Natural. 1999. Soy Supreme (Ad). *Soya Bluebook Plus* 2000. p. 139.
• ***Summary:*** This full-page black-and-white ad states that "Soy Supreme is a nutritious, versatile, high-quality soy

powder. Ideal for soymilk, baked goods & desserts, its applications are unlimited!" A photo shows a beaker filled with white powder surrounded by a gable-top half gallon carton of "Soy Milk," liquid soymilk being poured into a glass, soybeans in and around a mortar and pestle. The following specifications are given: Functionality, packaging, storage, typical analysis, microbiological date, and physical appearance. Address: P.O. Box 128, 3824 S.W. 93rd St., Hope, Minnesota 56046. Web: www.sunrich.com. Phone: 1-800-297-5997 or 507-451-6030.

7699. Vierhile, Tom. 1999. Food trends: Got (soy) milk? *Health Products Business.* Sept.
• ***Summary:*** "Introductions of soymilk and soy-based beverages have tripled since 1993." Meanwhile sales of cow's milk are slowly decreasing.

In the 12-month period ended June 1998, sales of soymilk rose 53% in mainstream supermarkets, compared with a still-respectable 25.2% rise in the natural foods channel. Address: General Manage, Marketing Intelligence Service, Ltd., Naples, New York.

7700. Yourk, Jim. 1999. Non-dairy beverages are a mainstream necessity. *Griffin Report of Food Marketing* (*Rockland, Mass.*). Sept.
• ***Summary:*** The article begins: "What was the hottest thing in Natural Foods last year? Soy. What is the hottest thing in Natural Foods this year? Soy... Non-Dairy beverages, which are soy and rice milk, are still the biggest things in the Natural Foods category."

Note: This article also appeared in Griffin's Modern Grocer (Hackensack, New Jersey). Sept. 1999. Address: Category Manager, Natural Foods, Milbrook Distribution Services.

7701. Daniel Rosenberg. Dow Jones News Service. 1999. FDA approves new health claim for soy protein. New York, NY: 1 p. Oct. 20 [Eng]
• ***Summary:*** "Chicago (Dow Jones)–Products containing soy protein will be allowed to boast new health claims on their labels starting next Tuesday, the Food and Drug Administration said Wednesday.

"Foods containing at least 6.25 grams of soy protein per serving will be allowed to claim on their labels that soy protein can reduce the risk of coronary heart disease."

The new health claim is in response to a petition submitted to the FDA by Protein Technologies International.

7702. Flagg, Michael. 1999. A local price war turns analysts sour on Vitasoy: U.S. prospects aren't enough to sway opinion. *Asian Wall Street Journal* (*Hong Kong*). Oct. 20. [Eng]
• ***Summary:*** Vitasoy International Holdings sells soy milk in Hong Kong, the U.S. and China. In 1998, the company bungled the opening of its U.S. factory, a converted shrimp processing plant near Boston, Massachusetts [Nasoya]. The state-of-the-art production line for tofu experienced many start-up problems, which drove Vitasoy profits down 13%. In 1996 profits plunged 75% following a recall in Hong Kong. A graph shows that Vitasoy stock, selling at HK$3.4 in Nov. 1998, has plunged to a 52-week low of HK$2.15 today.

But there are grounds for optimism. In the USA soy milk sales, which were US$2 million 20 years ago, are expected to reach US$300 million this year. Yet Vitasoy's big problem is a price war in Hong Kong, where the company still gets two-thirds of its sales.

7703. Food and Drug Administration, U.S. Department of Health and Human Services. 1999. FDA Approves new health claim for soy protein and coronary heart disease. *FDA Talk Paper* T99-49. Oct. 20.
• ***Summary:*** "On October 26, 1999, the FDA will authorize use of health claims about the role of soy protein in reducing the risk of coronary heart disease (CHD) on labeling of foods containing soy protein. This final rule is based on the FDA's conclusion that foods containing soy protein included in a diet low in saturated fat and cholesterol may reduce the risk of CHD by lowering blood cholesterol levels.

"Coronary heart disease, one of the most common and serious forms of cardiovascular disease, is a major public health concern because it causes more deaths in the U.S. than any other disease. Risk factors for CHD include high total cholesterol levels and high levels of low density lipoprotein (LDL) cholesterol.

"This new health claim is based on evidence that including soy protein in a diet low in saturated fat and cholesterol may also help to reduce the risk of CHD. Recent clinical trials have shown that consumption of soy protein compared to other proteins such as those from milk or meat, can lower total and LDL-cholesterol levels.

"Foods that may be eligible for the health claim include soy beverages [soymilk], tofu, tempeh, soy-based meat alternatives, and possibly some baked goods. Foods that carry the claim must also meet the requirements for low fat, low saturated fat, and low cholesterol content except the foods made with the whole soybean may also qualify for the health claim if they contain no fat in addition to that present in the whole soybean.

"Scientific studies show that 25 grams of soy protein daily in the diet is needed to show a significant cholesterol lowering effect. In order to qualify for this health claim, a food must contain at least 6.25 grams of soy protein per serving, the amount that is one-fourth of the effective level of 25 grams per day. Because soy protein can be added to a variety of foods, it is possible for consumers to eat foods containing soy protein at all three meals and for snacks.

"An example of a health claim about the relationship between diet and the reduce risk of heart disease is:

"Diets low in saturated fat and cholesterol that include 25 grams of soy protein a day may reduce the risk of heart disease. One serving of (name of food) provides ____ grams of soy protein.

"This new health claim rule responds to a petition submitted to the FDA by Protein Technologies International. This rule is based on the proposed rule that was published in the Federal Register on November 10, 1998, and comments received by the FDA. Use of the claim in food labeling is authorized immediately." Address: Public Health Service, 5600 Fishers Lane, Rockville, Maryland 20857.

7704. Riccardi, Victoria Abbott. 1999. Enjoying soy: You know it's good for you. Now learn to like it. *Boston Globe.* Oct. 20.

• ***Summary:*** When people hear the word "soy," different images come to mind. "For devotees of sushi, it might be emerald green soybeans. For the Woodstock generation, it could be custardy blocks of tofu. And for juice bar addicts, it might be soy milk for smoothies." But whoever you are, soy has "likely crossed your radar screen. And pretty soon its going to be on every channel."

Peter Golbitz, president of Soyatech Inc. (Bar Harbor, Maine) has just completed a market study. In 1998 total soyfoods sales were $1.78 billion, up 18% from 1997. They are projected to be $2.6 billion by the year 2000.

Gives a good profile of two local mom-and-pop companies: Health-Trip Foods Inc. of Concord, owned by Eileen Moriarty and Dan Sanford, makes soynut butter. 21st Century Foods Inc. of Jamaica Plain, owned by Rudy and Lovin Canale, makes 800 lb/day of tofu. Before coming to the USA, Rudy ran a health food restaurant in Italy. He came here in 1977 to study macrobiotics at the Kushi Institute in Becket, Massachusetts. In 1981 he and an Italian friend started making tempeh in Brookline. Soon they added tofu products, using tofu made by another company. When the cost of the tofu became prohibitive, they started making their own. Now he and his wife, Lovin, do all the work and delivery. Last year they had $175,000 sales, and even with no advertising they make a profit.

7705. Sterngold, James. 1999. Dairy farmers in California find gold in urban sprawl. *New York Times.* Oct. 22. p. A1, A14.

• ***Summary:*** Several years ago California passed Wisconsin to become America's leading milk-producing state–a little known but very important fact. New York is the nation's #3 dairy state. The dairy industry crowded into the Chino Valley in San Bernardino County in southern California is a marvel of automation and high yields. Because of urban sprawl, many dairy farmers are selling their now outmoded dairy facilities and valuable tracts of land, and using the ample profits to build even larger and more efficient operations in more pastoral areas. These are some of the most profitable times the industry has ever known; feed costs are low and milk prices are high. A typical farm generates $250,000 to $300,000 a month in milk sales.

Another reason the dairy farms are moving is that the intensive farms, with an average of 25 cows per acre, create huge amounts of manure–and the smell that goes with it. Winter rains can spread water contaminated with manure off the farms. The county is putting pressure on the dairies to clean up the environment and "to ship out the 900,000 tons of manure they produce each year, as well as the 2 million tons of manure currently stockpiled."

The owners view their cows as pieces of machinery that work in an automated factory. Each cow has a number and its own record in the computer. If they don't produce milk, they become beef.

7706. Jacobi, Dana. 1999. Impressions of the Natural Products Expo in Baltimore, Maryland (Interview). *SoyaScan Notes.* Oct. 26. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The Expo was great! There were an unusually larger number of new companies selling soy products; Dana picked up many sell sheets. The Soyfoods Association had a meeting at the Expo at which Peter Golbitz announced that the FDA health claim concerning soy protein and heart disease will allow traditional, whole soyfoods (such as tofu and soymilk) to bear the claim–even though they contain more fat than allowed under the claim. This was an unexpected development–and very good news. The claim says that 25 grams of soy protein in a low-fat diet may reduce the risk of heart disease. The Association also presented a new position paper on genetically engineered soybeans in soyfoods, stating that foods containing GMO ingredients should be so labeled. The Association did not oppose the use of GMO soybeans in soyfoods, noting that genetic modification will be used for many different purposes, some of which may have health benefits.

Two prepared soy puddings were debuted at the Expo–one from Westbrae and one from Zen Don. Both came in two flavors: chocolate and vanilla. The chocolates were both delicious; the vanillas were not so good. Zen Don is run by a young man age 30-32 who has introduced a soymilk under the brand Zen Don, which has a picture of a panda on the package, and which he has positioned for the mainstream market to compete with Silk. Dana believes that with this name and graphics, the product is mispositioned; moreover she finds it much too sweet.

White Wave debuted Silk eggnog in quarts. They were also dispensing Silk in four new flavors from a cooler and asking for comments: Lemon (which Dana found delicious), strawberry, chai, and cappuccino.

Abbott Laboratories (Chicago, Illinois) is now the mother company for HealthSource (formerly Health Source, from a subsidiary of Protein Technologies International–

PTI), the protein powder drinks from Ross Products. This is not cleared stated on sales sheets.

Dana did not see the FDA health claim in today's (Tuesday's) *New York Times.* It will probably be in the Wednesday edition, which has a special food section–as do many other major newspapers. Address: New York City.

7707. Brasher, Philip. 1999. Soy becomes healthy option: Under new rules that allow health claims, the milk alternative is expected to find a wider audience despite its relative lack of flavor. *Contra Costa Times.* Oct. 27. p. C1, C4. Business/technology section. Wednesday.
• ***Summary:*** The U.S. government is now allowing food labels to tout soy's ability to lower cholesterol, so a new surge of interest is expected–and not just in traditional soy-based foods such as tofu and soy milk. To qualify for the label claim, a food must contain 6.25 gm of soy protein per serving; this is one-fourth of the 25 grams of soy protein daily that studies have shown is needed to have a significant cholesterol-lowering effect. Carlos Gutierrez, president of the Kellogg Co., says soy is a big food opportunity. Sales of soy-based foods are expected to reach $2.14 billion this year, up from $852 million in 1992, according to Soyatech. Address: Associated Press.

7708. *Denver Post.* 1999. Soy labels expected to boost sales. Oct. 27. *

7709. Bogo, Jennifer. 1999. Tools for green living: The better brown bag. *E–The Environmental Magazine* 10(5):52. Sept/Oct.
• ***Summary:*** This small article discusses organic foods sold by White Foods Co., and Walnut Acres Organic Farms LLC. Walnut Acres offers an extensive selection of organic nut butters, such as cashew, sunflower and soy, as tasty peanut-free alternatives. They also offer a delicious peanut-honey-sesame spread which goes nicely with their organic fruit spreads such as sour cherry or apricot, or the company's old-fashioned jams, like raspberry or strawberry.

White Wave sells "half-pint soy milks."

7710. Egan, Jeanette Parsons. 1999. Soy! Soy! Soy! Enjoy soyfoods' benefits in delicious recipes. Tucson, Arizona: Fisher Books. xxx + 162 p. Oct. Illust. Index. 23 cm. Simply Healthy Series.
• ***Summary:*** This is a soyfoods cookbook. Contents: Dedication. Acknowledgments. Why I love soyfoods: Why eat soyfoods?, soy's health benefits, reduces heart disease, helps prevent cancer, soy for your bones (osteoporosis), to flash or not to flash (menopause), what about soyfoods allergies, how much soy should I eat? (soy protein, isoflavones), where to purchase soyfoods, how to add soy to your diet, important notes about eating soy. A soyfoods glossary: Black soybeans and yellow soybeans, green soybeans (edamamé), meat alternatives or analogs, miso, soy cheeses, soy cream cheese, soy flour, soy grits, soy milk (soy beverages), soybean oil, soynuts, soynut butter (roasted soybean butter), soy protein concentrates, soy protein isolates, soy sauces (tamari, shoyu), soy yogurt, tempeh, textured soy protein (TSP), tofu. Appetizers. Soups. Salads. Main dishes. Side dishes. Breads. Breakfast dishes. Desserts. Mail order sources for soyfoods. Other sources.

Contains 8 full-page color photos showing recipes. This is not a vegetarian cookbook. Recipes call for the use of chicken (4 recipes), ground beef, ham, crab meat, etc.

7711. Fallon, Sally; Enig, Mary G. 1999. Nourishing traditions: The cookbook that challenges politically correct nutrition and the diet dictocrats. 2nd ed. Washington, DC: New Trends Publishing Inc. xvi + 668 p. Illust. by Marion Dearth. Subject index. Recipe index. Menu index. 26 cm. [200* ref]
• ***Summary:*** Contains over 700 recipes. Contents: Preface. Introduction: Politically correct nutrition, fats, carbohydrates, proteins, milk & milk products, vitamins, minerals, enzymes, salt, spices & additives, beverages, about food allergies and special diets, parting words, guide to food selection (nourishing traditional foods, compromise foods {such as tofu}, newfangled foods {such as soy protein isolates and commercial soy milk}), a word on equipment, kitchen tips & hints, references (188). Mastering the basics. Great beginnings. The main course. A catalog of vegetables. Luncheon and supper foods. Grains & legumes. Snacks and finger foods. Desserts. Beverages. Feeding babies. Tonics and superfoods. Appendixes (A-F). About the authors.

Some of the basic recommendations in this book fly in the face of modern nutritional science: Eat more meat. Eat dairy products made from raw milk; pasteurization harms the milk. The worst fats are *trans* fatty acids, produced by hydrogenation; cholesterol and saturated fats do not cause heart disease. Consume plenty of enzymes. Meat should be eaten raw, rare, or braised in stock. Moreover, the authors propose a conspiracy in which doctors, researchers, nutritionists, and spokesmen of various government agencies are giving bad nutritional advice to the American public (p. 2). The authors wish, sentimentally, for the return of the small American farm. Moreover, they do not examine some the non-dietary issues related to a diet based on meat and dairy products: What is its impact on the environment? How would it affect the ability of the Earth to feed more than 6 billion people? What right do humans have to kill animals?

However the authors also make a number of recommendations that many people would agree with: Eat more natural, traditional, fresh, and unrefined foods instead of refined and processed foods. Avoid sugar and hydrogenated fats. This book is strongly influenced by the observations of Dr. Weston Price, a dentist, whose important book *Nutrition and physical degeneration: A comparison of*

primitive and modern diets and their effects, was published in 1939.

Concerning soyfoods, the authors favor the use of small amounts of fermented soyfoods (such as traditionally fermented soy sauce and miso) but are strongly opposed to the use of non-fermented soyfoods such as tofu and soymilk.

Soy-related recipes and information: Commercial soy formulas are low in saturated fats and devoid of cholesterol (p. 6). Today most of the fats in the American diet are polyunsaturated and derived from vegetable oils such as soy (p. 10). The cheapest oils, such as soy oil, are often hydrogenated; this creates *trans* fatty acids (p. 14-15). Cows lose valuable Activator X when fed high-protein soy-based feeds. Lecithin is found in butter (soy, the main source of lecithin worldwide, is not mentioned). Mother's milk is high in cholesterol because it is essential for growth and development (p. 16-17).

Omega-6 (bad) and omega-3 (good) fatty acids in soybean oil (p. 19). Fermented soy foods contain compounds that resemble vitamin B-12 but they are not absorbed by humans (p. 28). Isolated protein powders made from soy are usually obtained by a high-temperature process that over-denatures the proteins to such an extent that they become essentially useless, while increasing nitrates and other carcinogens. These isolated soy proteins can cause osteoporosis (p. 29).

Beef should not be fed soy meal for protein, but rather animal parts (p. 31). Avoid farm raised fish [aquaculture] that have been fed soy meal (p. 32). Cultured soybean products from Asia, such as natto and miso, are a good source of food enzymes if they are eaten unheated (p. 47). The natural glutamic acid in soy sauce and miso gives these foods their rich, meat-like taste (p. 49). Many processed foods contain MSG or hydrolyzed protein, "especially soy-based concoctions" (p. 50).

Heavily yeasted foods, such as soy sauce and Worcestershire sauce, often exacerbate the symptoms of chronic yeast [candida] infection (p. 56). Beans cause digestive problems because they contain two complex sugars, farrinose [sic, raffinose] and stachyose (p. 60). The macrobiotic diet and soybeans: Use only as fermented products like miso, natto, and tempeh. Problems with tofu, soy milk, and phytoestrogens in soy (p. 62). The sickening effect of soy on ruminants (p. 87). In Japan, a typical meal contains miso, soy sauce, and pickles, all fermented products. In Indonesia, they eat tempeh (p. 94).

Ode to naturally brewed tamari soy sauce and teriyaki sauce (p. 147). Soy products increase the body's need for vitamin B-12 (p. 164). Soy in Chinese history. Miso soup. Tofu in fish stock and soy sauce broth (p. 201). Macrobiotic diets (p. 343). Soy foods block zinc absorption (p. 348). Eat natural salmon; farm-raised salmon are fed inappropriate soy meal (p. 418). Problems with soy flour and modern soy products: phytates, antinutrients, omega-3 fatty acids, disagreeable taste, phytoestrogens, phytic acid, enzyme inhibitors (p. 477, 495).

Soybeans are low in two essential amino acids (p. 496). Textured soy protein contains three antinutrients: Phytic acid, trypsin inhibitors, and isoflavones (p. 502). Person fed soybean milk as an infant had a spleen filled with ceroid (p. 546). Infants should not be fed soy-based formulas which contain phytic acid and estrogen compounds (p. 599, 603-04).

Note: The first edition was apparently published in 1995 by ProMotion Publishing (San Diego, California). Address: California. Phone: (877) 707-1776.

7712. **Product Name:** Joy Soy: Non Dairy Soy Beverage [Original, Vanilla, Extra Rich Vanilla, Extra Rich Carob].
Manufacturer's Name: Joy Soy Products, LLC.
Manufacturer's Address: P.O. Box 258, Clifton, TN 38425. Phone: 1-888-456-9769 (4-Joy-Soy).
Date of Introduction: 1999. October.
Ingredients: Extra Rich Carob (1999/10): Whole organic soybeans, fructose (from corn), expeller pressed canola oil, natural cane juice crystals, pure vanilla, carob powder, sea salt, potato flour, guar and xanthan gum, carrageenan.
Wt/Vol., Packaging, Price: 21 oz can.
How Stored: Shelf stable.
New Product–Documentation: Leaflet (color) sent by Patricia Smith from Natural Products Expo East (Baltimore, Maryland). 1999. Oct. 26. "Joy Soy. So delicious! So nutritious!" On the back is "The Joy Soy story." The company, founded by Joyce, also makes soy-based Instead O' Butter, and Instead O' Cheese.

7713. Mahoney, Rob. 1999. Got Silk? A vegetarian cuisine company's trek into mainstream supermarkets passes right through the dairy case. *Prepared Foods.* Oct.
• ***Summary:*** The story of how Steve Demos of White Wave Inc. developed Silk soymilk in a gabletop carton, then teamed up with dairy milk giant Dean Foods to get it into supermarkets nationwide. An illustration shows Steve Demos. White Wave now has 100 employees and projects sales of 28 million in fiscal year 2000. Address: Managing editor.

7714. Mans, Jack. 1999. Pacific Foods of Oregon–High-tech aseptic: At the forefront of the boom in soy-based and other nutritional beverages and packaging. *Dairy Foods.* Oct. p. 57-58, 60, 62, 64, 66.
• ***Summary:*** Pacific Foods was founded in 1987 to make tofu using a new, automated process. But they quickly found that soymilk was their main product, sold in aseptic cartons. Many of these are now packaged in one-quart aseptic cartons with resealable flip-top spouts.

The company, which recently expanded, now has nine buildings totalling 250,000 square feet on its 21-acre

site. Three of the buildings are dedicated to processing, packaging, and office space; the rest are for warehousing, maintenance, etc.

This year Pacific Foods introduced a new type of soymilk in a new type of carton. Named Milk & Soy Blend, it is 100% lactose free and comes in plain and vanilla flavors, sold in a square aseptic carton with a screw-top cap. Even though the product does not require refrigeration, it is being marketed to supermarket dairy cases–to get more attention from consumers. Pacific Foods is the first company in the USA to use the new screw-top aseptic package. Address: Plant operations editor [Chicago, Illinois].

7715. *NSRL Bulletin* (*National Soybean Research Laboratory, Urbana, Illinois*). 1999. U of I program seeks to expand use of soybeans around the world. 6(3):6. Oct.
• ***Summary:*** INTSOY Director Weingartner talks about work to assist the private sector in developing countries to process and use soybeans–with financial aid from USAID. In Bulgaria an entrepreneur is processing soybeans into meal for poultry feed. A businessman from Biolink Technologies Ltd. in Bangladesh is manufacturing and selling a high-protein biscuit made from soy flour; the company currently employs 60 people and soon plans to open a second plant. INTSOY has helped a large soymilk company in Thailand to improve its product. "According to Weingartner, the most important element in the success of all these efforts has been the cooperation of American agribusiness."

7716. *Ontario Soybean Growers' Marketing Board Newsletter.* 1999. Profiles: Mike Snobelen, owner of Snobelen Farms, a non-GMO exporter. Oct. p. 7.
• ***Summary:*** "The safest bet for many farmers hoping to profit from the introduction of biotechnology may, ironically, be to plant non-biotech crops.

"The strategy is reaping dividends in Huron and Bruce Counties, where 500 growers this year contracted to deliver non-Roundup Ready soybeans for a 40 cent per bushel premium to Snobelen Farms elevators at Lucknow, Ripley and Dungannon."

"'This is a customer-driven business,' Snobelen says. 'It has nothing to do with whether biotechnology is good or bad. It's whether biotechnology is what the consumers want.'"

"Snobelen started non-biotech sales with two boatloads shipped in 1997 with the help of marketing firm Manna International. Six boatloads from the 1998 crop were shipped to the UK and Belgium, and three vessels are already booked for 1999 crop, with more sales in the works."

"To date, most Snobelen exports have gone to soymilk makers. Now, the company sees that market widening out. There is more interest in using non-biotech soybeans for bread improvers."

A portrait photo shows Mike Snobelen. Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

7717. Stewart, Kim. 1999. Dean Foods buys minority share in White Wave. *Natural Foods Merchandiser.* Oct. p. 21.
• ***Summary:*** Dean Foods (NTSE: DE), America's No. 1 producer and distributor of fluid dairy products, announced in August that it has purchased a minority share in privately held White Wave Inc. White Wave plans to place its Silk brand soymilk and yogurt, plus various tofu and baked tofu products, in the more than 17,000 supermarkets that Dean Foods presently supplies. During the year 2000 White Wave's goal is to reach 10,000 of those stores or "10K by 2K," according to Steve Demos.

Data from SPINS shows that Silk brand soymilk products are the most popular of the 10 leading brands, and that sales of the Silk brand grew 74.7% during the past year (June 1998 to Jun 1999). During that time, 70% of White Wave's income came from the natural foods marketplace. The company predicts that this will drop to 50-60% during fiscal year 2000 as Silk moves into the mass market.

White Wave's two plants in Boulder, Colorado, now have about 43,000 square feet in two locations; the company plans to increase that by 15,000 square feet or 34%. The existing facilities were designed to produce about 12 million units of product a year, but are now producing about 15 million.

A color photo shows Steve Demos smiling as a pours a glass of Silk brand soymilk. Note: Talk with Bob Gerner of Berkeley Natural Grocer. 1999. Oct. 18. White Wave often shorts Bob on his orders of Silk; he almost never gets as much as he orders.

7718. United Soybean Board. 1999. National report on consumer attitudes about nutrition–1999-2000. Seattle, Washington. 8 p. Oct. 22 cm.
• ***Summary:*** This sixth annual nationwide survey, commissioned by the United Soybean Board, was conducted in July 1999 by an independent research firm in Seattle, Washington. It included telephone interviews with 1,028 randomly selected consumers and primary household shoppers of all ages throughout the USA. They were asked a series of up to 23 questions. The standard margin of error for the study is ±3.1%.

Contents: Concern about nutritional content of food (1996-99). Americans changing eating habits due to concern about nutrition (1996-99). Specific dietary changes (Big changes: Reduce fat 49%, more vegetables 25%, more fruit 18%, less red meat 17%). Importance of nutrition in selecting groceries and restaurants. Americans recalling stories on health and nutrition issues.

Consumer perceptions of genetically modified food, biotechnology, and labeling: Aware of the term "genetically modified food"–42% in 1999 vs. 48% in 1998; aware of "biotechnology"–36% in 1999 vs. 41% in 1998. "Consumers continue to view biotechnology more favorably than

genetically modified. When asked if they would continue to purchase a product with these terms on the label, 71% said yes or maybe to the term biotechnology, while 58% said yes or maybe to the term genetically modified."

Consumer perception of cooking oils: "More consumers (89%) perceive soybean oil as being healthier than any other oil"–followed by olive oil (87%) and canola (86%). "However most Americans (78%) are unaware that vegetable oil is often synonymous with soybean oil."

The healthiness of soy and soy products: "The number of consumers who perceive soy and soy products as very healthy increased significantly to 71% from 67% in 1998 and 59% in 1997.

"Forty percent of consumers are aware of specific health benefits of soy, such as reducing the risk of heart disease (14%), lowering cholesterol (10%), reducing the risk of breast cancer (8%) and prostate cancer (5%) and relieving or reducing the symptoms of menopause (7%)."

Consumer awareness and use of soy products: "Consumers report they are eating more soy products. Of those who have tried soy products, 68% report using them regularly. Twenty-four percent report using soy products once a week or more, compared to 15% in 1998. More consumers also report that they eat soy occasionally, about once a week.

"The three products that ranked highest in consumer awareness are tofu (78%), soy veggie burgers (72%) and soy milk (63%).

"Tofu and soy veggie burgers continue to receive the highest level of trial among consumers at 43% and 38%, respectively."

Consumer perceptions of *trans* fat and hydrogenation. "Over half of consumers are aware of *trans* fatty acids (58%) and hydrogenation (54%). Fifty-three percent understand what the term *trans* fatty acids represents and 64% are familiar with the term hydrogenation.

"Most consumers view hydrogenation either neutrally or positively (56%), while 44% view the term negatively.

"Consumers seem to be confused about the healthiness of *trans* fatty acids. Forty-five percent think of *trans* fatty acids as somewhat or very healthy while 55% view it as somewhat unhealthy or very unhealthy.

"Consumers are also split between their likeliness to purchase a product with *trans* fatty acids listed on the Nutrition Facts label. Forty-five percent are either very likely or somewhat likely to purchase a product with a *trans* fatty listing on the label and 55% would be somewhat or very unlikely to do so. This split also seems to indicate confusion among consumers about the term *trans* fatty acids."

Talk with Vicki M. Nesper of United Soybean Board / Publicis Dialog, in Seattle, Washington. 2002. May 2. This survey was conducted in July 1999, about 3 months before the FDA issued its health claim. The preliminary results were released at the IFT convention that summer. The report itself was published in October–as it is each year.

Note: As of Aug. 2008 this full survey is available gratis in PDF format at www.soyconnection.com /health_nutrition / pdf/.

7719. Vitasoy USA Inc. 1999. Twentieth anniversary celebration brunch (Card). 400 Oyster Point Blvd., Suite 201, South San Francisco, CA 94080. 1 p. Oct.
• ***Summary:*** This 4½ by 6¼-inch card, printed red on beige, mailed Oct. 7, invites recipients to a 20th anniversary celebration brunch (1979–1999), Sunday, November 14, 1999, 11:00–3:00 p.m., The Mark Hopkins Intercontinental Hotel, Number One Nob Hill, San Francisco. RSVP by Nov. 1. A separate stamped return envelope is enclosed for the response. Address: South San Francisco, California. Phone: (650) 583-9888.

7720. **Product Name:** Organic Soymilk [ESL Gable Top Carton–Fortified Rich Chocolate, or Fortified Creamy Original].
Manufacturer's Name: Vitasoy USA Inc.
Manufacturer's Address: 1575 Burke Ave., San Francisco, CA 94124. Phone: 1-800-328-8638 (= Eat Tofu).
Date of Introduction: 1999. October.
Ingredients: Rich Chocolate: Filtered water, whole non-genetically modified organic soybeans, organic cane juice (dried), organic barley flour, cocoa (processed with alkali), tricalcium phosphate, sea salt, zinc oxide, riboflavin (B-2), vitamin A acetate, vitamin B-12, vitamin D-2.
Wt/Vol., Packaging, Price: ½ gallon ESL Gable Top Carton.
How Stored: Refrigerated.
New Product–Documentation: Leaflet (color) sent by Patricia Smith from Natural Products Expo (Baltimore, Maryland). 1999. Oct. 26. "Mooove over! Vitasoy is in the dairy case." A large color photo shows the front of the 2-quart package, with red and white on blue. On the back of the leaflet are nutritional facts and ingredients for each product. Next to a photo of gold medal, which appears on the top of each carton, is written: "Proven best taste: Vitasoy is a premium organic product and the best tasting soymilk you can buy. The proof? We won a Gold Medal and 'Best of Show' from the American Tasting Institute in its once-a-year judging by world experts. Consumers consistently rank Vitasoy No. 1 for best taste. Judge for yourself... take a sip... and savor a long-lasting swirl of rich flavor and creamy refreshment. Satisfying and nutritious... It's 'the delicious one!'" Across the bottom of the leaflet is a color photo of each of the company's other soymilk products. Across the top of each carton is written: "Lactose free soymilk. 60 mg naturally occurring isoflavones per serving" [of 8 fluid ounces].

7721. Hack, Greg. 1999. Adding marketing muscle. *Kansas*

City Star (*Missouri*). Nov. 2.
• ***Summary:*** A table titled "Selected soybean product sales" gives U.S. statistics (in millions of dollars for) for four years: 1996 / 1997 / 1998 / 1999.

Soy milk: 12.2 / 13.4 / 15.4 / 18.7.
Meat substitutes:
Gardenburger: 6.2 / 10.2 / 44.9 / 45.9.
Morningstar Farms: 30.6 / 33.0 / 37.1 / 40.4.
Boca Burger: 5.3 / 7.6 / 12.3 / 17.3.

Source: American Soybean Association and Information Resources Inc.

A photo shows the front panel of a Gardenburger Soy Burgers carton.

7722. Houle, Barbara M. 1999. Oh boy, soy! *Telegram & Gazette* (*Worcester, Massachusetts*). Nov. 3.
• ***Summary:*** Elizabeth M. Ward of the American Dietetic Association discusses the new FDA heart health claim for soy. Foods include whole dry soybeans / mature dry soybeans, fresh immature soybeans [edamame], roasted soy nuts, tofu, and textured soy protein. Large photos show: Green soybeans in the pods, roasted and salted soy nuts, and many cartons of soymilk. Address: Food Editor.

7723. Royal New Zealand College of General Practitioners. 1999. GPs call for caution on soy milk for infants (News release). 88 The Terrace, P.O. Box 10 440, Wellington, New Zealand. 2 p. Nov. 3.
• ***Summary:*** "New Zealand's General Practitioners have joined the British Food Commission, and American nutrition foundation [named] the Weston A. Price Foundation in cautioning against the use of soy milk as an infant food 'other than in very exceptional circumstances'.

"'While the Ministry of Health is correct when it says that soy milk provides a useful alternative for babies who cannot tolerate dairy-based infant formulas, what they don't emphasise is that this represents a very small number of infants,' explained Royal NZ College of General Practitioners Chairperson Dr. Ralph Wiles.

"'The debate on dairy milk formula vs. soy milk also risks drawing attention from the best sustenance of all–breast milk,' he pointed out. 'Society as a whole needs to do much more to practically support women's choice to breastfeed, with everything from trained facilitators to a campaign promoting breastfeeding as a healthy, natural activity. That anyone can still object–as from time to time we read of them doing–to a woman discreetly breastfeeding a baby in a public area is unbelievable.'" Address: Wellington, New Zealand. Phone: 071 628 7774.

7724. Kluger, Jeffrey. 1999. What's for dinner? Our chef whips up a tasty meatless meal that's good for you–and for nature. *Time*. Nov. 8.
• ***Summary:*** In the "health and environment" section: The article begins: "If the human race becomes vegetarian in the next century, animal-rights activists will be ecstatic. But what about the rest of us? Can we possibly enjoy a meat-free, dairy-free [sic] future when hunter-gatherer appetites will still be hard-wired into our genes?"

Time has chosen Louis Lanza, executive chef at and owner of Josie's Restaurant and Juice Bar in New York City, to prepare a dinner for the year "2025 that would be good for the body–and the planet. In his tasty menu, liver pate gives way to lentil pate, steak is replaced by tofu cutlet and a banana-and-ice-cream dessert is made with rice milk instead of cow's milk."

The dinner includes: "Soup and salad: Chick-pea miso soup with salad of organic baby greens, heirloom tomatoes and toasted soy nuts.

"Entree: Seared tofu cutlets in an orange chipotle glaze with mushrooms, butternut squash and wheatberries." For dessert is a sundae of rice "ice cream" [Rice Dream].

7725. Altland, Bonnie. 1999. Soy milk makes great smoothies. *Sun* (*Hanover / York, Pennsylvania*). Nov. 10.
• ***Summary:*** "The FDA has recently announced soy protein may help lower cholesterol levels when used as part of a low-fat diet." Silk, launched in 1996, was been named the industry's best-tasting soy milk in June 1999.

Contains recipes for Peach glow smoothie and Chocolate-peanut butter smoothie, each made in a blender with soy milk. To make smoothies extra refreshing, use frozen fruit and/or frozen juice concentrates.

7726. Kilburn, Roger. 1999. Harvest Direct owns Devansoy. Other makers of powdered soymilk (Interview). *SoyaScan Notes*. Nov. 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Harvest Direct Inc. assumed control of Devansoy Inc. in June 1998. Elmer Schettler is still the president of Devansoy and also a shareholder. As far as Roger knows, there are only two manufacturers of powdered soymilk from whole soybeans in the United States: Devansoy and SunRich. Quite a few large food companies are developing new products using Devansoy.

SunRich also makes liquid soy base. All of their customers get the same base, and have it formulated and packaged elsewhere. Westbrae buys its liquid soy base exclusively from SunRich. In exchange for this exclusive agreement, Roger understands that Westbrae retains the right to say who else SunRich can sell soy base to. Address: P.O. Box 50906, Knoxville, Tennessee 37950-0906.

7727. Schultz, Stacey. 1999. Pass the tofu tacos: Soy-based foods are disease fighters, but they can taste pretty weird. *U.S. News and World Report*. Nov. 22. p. 77-78.
• ***Summary:*** Another typical soy article: Soy is healthy, sales are booming, the stuff tastes awful. During the past year,

soyfood sales have increased 35% to $494 million, largely because of reports of soy's health benefits–many of which are caused by isoflavones. Studies show that older women who consume soyfoods are likely to benefit. In one recent study, post-menopausal women who ate 40 grams of isolated soy protein a day for 12 weeks experienced a 45% decrease in the number of hot flashes.

A sidebar titled "How to fit soy into your diet" gives short descriptions of some "whole soy foods" and the number of grams of protein per serving: Soy milk, whole soybeans (edamame or cooked dry soybeans), miso, textured soy protein, and tofu. A large photo soys many types of prepared soyfoods (not in packages). Contains several factual errors, e.g. soy nuts are high in cholesterol, etc.

7728. Greenfield, Beth. 1999. Yo! Soy! The road to enlightenment is easy to discover in India. Finding tofu is another matter. *Long Island Voice* (*New York*) 3(46):11. Nov. 18-24.
• ***Summary:*** The author, a vegetarian, hungered for tofu as she traveled in sun-drenched Goa on the southwestern coast of India. An Indian state since 1987, Goa used to be a Portuguese colony, and the capital of Portuguese India. Suddenly she discovered a new-looking restaurant named "Bean Me Up," started by Lisa Ann Camps (age 37) of Islip, Long Island.

In 1984 Lisa had come to Goa from Florida to take care of an ex-boyfriend who had broken his arms and legs in an accident. She never left. And the reason was Goa–not the ex-boyfriend. During the late 1960s, Goa had been made popular as India's southern beach resort by wandering Western hippies in search of enlightenment and sunny escapism. Always resourceful, Camps began by starting her own lingerie company named Ooh La La. But as a vegetarian, she missed tofu. So she learned how to make her own soymilk and tofu. Then last year (1998), at the urging of veggie tourists, she started her own tofu shop using soybeans imported from the northern state of Himachal Pradesh. Since local restaurants were reluctant to carry her tofu and since she had restaurant experience from Florida, she decided to start her own place to serve the tofu she made. Camps, now an apostle of tofu in India, hopes to introduce this vegetarian source of protein to rich and poor alike who come to enjoy India's Riviera.

Photos show: (1) The sign announcing Bean Me Up; the words are written across a large circle with a figure seated in meditation at the center. (2) Lisa Camps, in Indian-style dress, seated at a table in her restaurant. Address: New York.

7729. American Natural Snacks. 1999. When a kid's gotta chug... a kid's gotta chug... so tell her to chug this... Kids Balanced (Ad). *Vegetarian Times.* Nov. p. 22.
• ***Summary:*** This is a one-third page colored vertical ad for Kids Balanced, a new nutritional drink which comes in two flavors: Very Vanilla and Choco Chocolate. Totally natural, it's formulated to meet the needs of growing kids–from toddlers to teens. "It's packed with 25% of the RDI of 24 vitamins and minerals; loaded with soy protein, calcium, fiber and iron; and it tastes great! Plus, its cholesterol free, lactose free, dairy free, and 99% fat free." Color photos show the label (front panel) of each flavor. Address: P.O. Box 1067, St. Augustine, Florida 32085-1067. Phone: 1-800-238-3947.

7730. Hain Food Group, Inc. 1999. Annual report 1999. Uniondale, New York. 24 p. Nov. 28 cm.
• ***Summary:*** Net sales for the year ended 30 June 1999 were $205.969 million, up 98% from $104.253 million in 1998. Net income in 1999 was $11.030 million, up 3.3-fold from $3.292 million in 1998.

Accomplishments this year: Completed acquisition (on 1 July 1998) of four businesses and brands from The Shansby Group: Garden of Eatin', Arrowhead Mills, Terra Chips, and DeBoles. Completed acquisition (on 18 May 1999) of the Natural Nutrition Group, including the Health Valley, Breadhsop's, and Casbah brand names, which are among the best-known in the business. Page 6 is devoted to Health Valley, showing color photos of many Health Valley products. In Sept. 1999 acquired Earth's Best Baby Food from H.J. Heinz. This organic baby food brand pioneered the category. Also, the Hain Food Group sold 2.5 million shares to Heinz for $82 million, resulting in Heinz holding a 19.5% interest in the company. The proceeds were used to reduce debt to an extremely low level.

In soy beverages, Hain (mostly Westbrae, plus a little from Health Valley's Soy Moo) has a 32% market share. A new consumer ad campaign is "Enjoy your soy." Two new products introduced over the past year are Westsoy JuiceBar, and tea-based Westsoy Chai. JuiceBar, sold in Tetra Brik cartons and described on the label as "A non dairy blend of natural juice and organic soy beverage" comes in flavors like Berry Blast. Chai, in the same type of carton, is described as "A delicious blend of tea and spices & non dairy organic soy beverage." On the front cover of the catalog is a photo of "Westsoy Low Fat Chocolate Pudding." Address: 50 Charles Lindbergh Blvd., Uniondale, New York 11553. Phone: 516-237-6200.

7731. *Nutrition Business Journal* (*San Diego, California*). 1999. Soy protein is big news for suppliers. 4(10/11):5-6. Oct/Nov.
• ***Summary:*** The health claim for soy protein, approved Oct. 26, was granted under the Nutritional Labeling and Education Act (NLEA). The claim was submitted in 1998 by Protein Technologies International (PTI), a company of DuPont. On the day the claim was approved, PTI ran full-page ads in the *New York Times* and *Wall Street Journal*–a good idea since neither paper ran the story. Both Kellogg

and General Mills are rumored to be developing a breakfast cereal containing soy protein.

In 1998 sales of soyfoods totaled an estimated $1.7 billion and should reach over $2 billion in 1999. During 1998 sales of soy milk grew to almost $200 million (up 20%), tofu to $200 million (up 15%), and tempeh $17 million (up 5%)–according to Peter Golbitz of Soyatech Inc. In 1999, with interest in soyfoods skyrocketing, Golbitz predicts overall growth of 20%, with soymilk up nearly 40%, and meat alternatives, tofu, and other prepared foods containing soy gaining between 20% and 50%, depending on the product.

7732. *Nutrition Business Journal* (*San Diego, California*). 1999. Sales of soy protein isolate set to grow. 4(10/11):21-22. Oct/Nov.

• ***Summary:*** The market for soy protein isolate is dominated by two manufacturers: Protein Technologies International Inc. (PTI, St. Louis, Missouri, a business of DuPont) and Archer Daniels Midland. PTI claims to have sales of $500 million in 1999 and to have captured about 75% of the soy protein isolates market. By extrapolation, this implies a U.S. market of $700 million/year.

About 40% of PTI's isolate sales are to meat and fish processors, 16% to nutritional and sports beverages, 10% to infant formulas, 9% to the paper industry, 5% to young animal feed (milk replacers), and 20% to "developing opportunities."

Other manufacturers of soy protein isolates are Santista of Brazil, and Fuji Oil of Japan.

A new PTI product is Supro XG, an isolate enriched with genistein. Top customers include Ross Laboratories (Ensure), Nestle, SlimFast, and Weider.

The second half of the article discusses ADM's efforts to educate mainstream consumers–in part is using the umbrella brand, Nutrisoy. This tradename will start appearing on supermarket shelves during the first quarter of 2000. Del Cahill, North American manager for ADM's specialty proteins, sees a new trend. The mainstream food industry, recognizing that the U.S. has an aging population, believes that the easiest way to prevent long-term chronic disease is through diet. These companies are now trying to develop and market better food choices.

7733. *Nutrition Business Journal* (*San Diego, California*). 1999. SunRich acquired by NASDAQ company [Stake Technology Ltd. of Ontario, Canada]. 4(10/11):22-23. Oct/Nov.

• ***Summary:*** In July 1999 Stake Technology Ltd. (Norval, Ontario, Canada) acquired SunRich Inc. in a stock-for-stock deal. Stake is an environmental company with technical expertise in steam explosion pulping, cleaning of metals, and recycling. In 1998 it had revenues of $14 million. SunRich, a $35 million niche producer, makes various soy products and contracts with 700 growers in the Midwest. Soy products comprise approximately 60% of SunRich's sales, and soymilk contributes approximately 20%, according to Allan Routh, president and CEO. SunRich makes three basic categories of soymilk: a standard [dried] product used as an ingredient in second generation products; several soy beverages; and soymilk with various protein and fat contents.

SunRich was founded [as Minnesota Waxy Corn Growers Export Inc.] in 1978, and changed its name to SunRich in 1994. Some 30-40% of SunRich's revenue's are international, primarily from Japan, reflecting its roots as an exporter. Less than a year ago, SunRich launched its own retail division, Hearty & Natural.

Note: Talk with Allan Routh of SunRich. 2001. Nov. 6. The acquisition was finalized on 1 Sept. 1999.

7734. **Product Name:** Health Source: Soy Protein Shake Powder [Vanilla, Strawberry, Chocolate, or Unflavored].
Manufacturer's Name: Ross Products, Div. of Abbot Labs.
Manufacturer's Address: Columbus, Ohio.
Date of Introduction: 1999. November.
Wt/Vol., Packaging, Price: Canned.
How Stored: Shelf stable.
New Product–Documentation: Spot in Prepared Foods (Highlands Ranch, Colorado). 1999. Nov. "Oh boy, more soy." Now that the FDA has approved food labels stating that soy protein may reduce cholesterol and lower the risk of heart disease, "expect tons of new soy products to hit store shelves." Ross Products has already gotten into the act.

Food Technology (Chicago). 1999. Nov. "Sipping into the beverage mainstream."

7735. Sando, Shirleen. 1999. Beyond low-fat baking: Cancer-fighting foods for the millennium. Dallas, Texas: Skyward Publishing, Inc. ix + 288 p. Illust. Recipe index. 22 cm. [12 ref]

• ***Summary:*** Contains reduced-fat recipes fortified with soy. Contents. Acknowledgments. Introduction, by Stephen A. Smith, M.D. Message from the author. Tofu for good health. Eat more grains. 1. No-fuss machine breads. 2. Those scrumptious breads. 3. Quick and easy breads. 4. Biscuits and scones. 5. Old time corn bread. 6. Healthy pancakes and waffles. 7. Pizza, flatbread, and focaccia. 8. Glorious cakes. 9. Special occasion cakes. 10. Fabulous pies. 11. Ever lovin' cookies. Appendix: More about soy. Address: President and Founder, Living Healthy Foods.

7736. **Product Name:** WestSoy Low Fat Pudding [Chocolate, or Vanilla].
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor).
Manufacturer's Address: Uniondale, New York 11553. Phone: 1-800-SOY-MILK.
Date of Introduction: 1999. November.
Ingredients: Filtered water, organic soy beverage (filtered

water, organic soy beans)**, dehydrated cane juice, tapioca starch (heat modified), cocoa processed with alkali, expeller pressed canola oil, natural flavors, sea salt, pectin, lecithin. ** = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 4 x 3.5 oz cups = 14 oz (37 gm).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per cup (99 gm): Calories 130, calories from fat 25, total fat 3 gm (5% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 60 mg (2%), potassium 170 mg (5%), total carbohydrate 25 gm (dietary fiber 2 gm [7%], sugars 18 gm), protein 2 gm. Vitamin A 0%, vitamin C 0%, calcium 2%, iron 2%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Talk with Dana Jacobi. 1999. Oct. 26. At the Natural Products Expo in Baltimore, Westbrae introduced (sort of) a soy pudding, in an aseptic 4-pack. They had samples but no literature. Hain Food Group. 1999. Annual Report (Nov. 1999). A color photo of the Westsoy Chocolate Pudding package is on the front cover of this report. But it is not mentioned inside as a new product–yet.

Product (Chocolate) with Label brought by Bob Gerner of Berkeley Natural Grocery Co. 2000. March 13. The product is sold in a 4-pack with a paper sleeve. Label: 6 by 10.75 inches. Paperboard. Chocolate brown, tan, and pink on white. Photo of a spoon filled with a swirl of pudding. "Made with organic soy beverage. All natural. No cholesterol. Contains 7 mg of isoflavones per serving." Soyfoods Center taste test: Flavor and texture: Superb. Very chocolaty and smooth. Package design: Good.

Talk with Elyse Kops, WestSoy brand manager, Uniondale, New York. 2000. March 14. The puddings, which come in chocolate and vanilla flavors, were first available in retail stores in about Nov. 1999. The recommended retail price is $3.39 per four-pack.

7737. **Product Name:** Silk Nog (Eggless Eggnog made with Soymilk in Gable Top Cartons).
Manufacturer's Name: White Wave, Inc. (Product Developer-Distributor).
Manufacturer's Address: 1990 N. 57 Court, Boulder, CO 80301. Phone: 1-800-488-9283.
Date of Introduction: 1999. November.
Ingredients: Organic soymilk* (filtered water, whole organic soybeans*), organic raw cane crystals, natural flavors, salt, carrageenan, annatto (vegetable color). * = Grown and processed in accordance with the California Organic Foods Act of 1990. Certified organic by QAI.
Wt/Vol., Packaging, Price: Quart Pure-Pak carton.
How Stored: Refrigerated.
New Product–Documentation: Leaflet (color, 6 by 8½ inches) sent by Patricia Smith from Natural Products Expo East (Baltimore, Maryland). 1999. Oct. 26. "Nog yourself out. Only White Wave brings you soymilk made for the holidays." On the front is a large color photo of the Silk Nog carton. On the back are ingredients and nutrition facts.

Lehndorff, John. 1999. "Times call for sharing family recipes." *Camera* (Boulder, Colorado). Nov. 3. Keep an eye out for the new seasonal soy Egg Nog from White Wave Vegetarian Foods of Boulder.

Note: Our clipping service picked up 11 newspapers nationwide that ran a new release in early December for Silk Nog–a new product.

Quart carton with Label sent by James Terman. 2000. May 11. 2.75 by 2.75 by 8¼ inches. White, yellow. red, and blue on green. Tetra Rex package. "Made with soymilk. Organic–Third party certified."

Glossy color leaflet (front and back, 28 cm) sent by Patricia Smith from Natural Products Expo East. 2006. Sept. "'Tis the season for Silk Nog: Silk's best selling specialty flavor." It is now made by "WhiteWave Foods Company, 12002 Airport Way, Broomfield, Colorado 80021. Phone: 800-488-9283. www.silksoymilk.com

Product with Label purchased in the dairy case at Safeway supermarket in Lafayette, California. 2010. Dec. 18. One quart retails for $3.29–very expensive! By comparison, a half gallon of Safeway's (Lucerne brand) "Holiday Eggnog" retails for $2.99. So the Silk Nog is more than twice as expensive (2.2 times as much) per fluid ounce. White Wave is now a brand owned by Dean Foods. The ingredients are no longer organic. "Evaporated can juice" has replaced raw cane crystals. The package design is new. Soyinfo Center product evaluation: Flavor: Good. Consistency: Fair, too thin. Package design: Excellent.

7738. Roller, Ron. 1999. The complexities and details of growing and certifying organic and GMO-free soybeans for Edensoy beverages. Part I (Interview). *SoyaScan Notes.* Dec. 3. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Not many people in the organic farming and foods industries have begun to deal with the complex problems of growing and procuring GMO-free soybeans. Most believe, incorrectly, that organically-grown soybeans are automatically GMO-free. "The problem is pervasive and harder to deal with than the organic industry thinks it is. Organic now has to be looked at less as a noble standard and more realistically as a series of technical problems. To assume that certified organic soybeans are GMO-free, unless you have done something to monitor for GMO, is naive." Organic certifiers cannot be relied on to do this monitoring.

Ron first became aware of genetically engineered soybeans several years ago during a talk with William Shurtleff. Since that time, he has become increasingly involved in ensuring the his organically grown soybeans are also GMO-free.

As an example of the problems: This year Carl Garrich

of the Lone Pine Rice and Bean Farm, in Lone Pine, Arkansas, bought GMO-free soybeans from Asgrow Seed Company (now wholly owned by Monsanto) and grew them organically on 600 acres. The seed was certified by Asgrow to be 98% pure; the remaining 2% could be anything. Ron met with him and showed him how to do the GMO strip test developed recently by Strategic Diagnostics Inc. of Newark, Delaware (phone: 1-800-544-8881). When he tested the 600 acres he found an unacceptably high level of GMO soybeans. When he contacted Asgrow to ask them how that could happen, they said that the GMO beans must have been among the uncertified 2%. Carl took a huge loss, and had to sell all 600 acres of his soybeans to the local elevator as regular, non-organic soybeans–at the commodity price. It was a nightmare for Carl, but if the news media picked up the story it could become a public-relations nightmare for Asgrow. Moreover, Asgrow could not afford to let him win a lawsuit or pay him off on it; that would open up their liability big-time. Though it's not Carl's style to file lawsuits, he would probably tell the whole story if some reporter called him. Carl's experience shows that just because a crop is organically grown, doesn't mean it is automatically GMO-free. Finding a totally reliable source for the seed, outside normal commercial channels, is the key to being sure that seed is GMO-free.

Ron used to buy his soybeans from Pioneer Hi-Bred and Northrup King, but with their increasing focus on GMO and because the best food-grade soybeans usually give lower yields and are not very popular, they dropped the varieties he wanted for Edensoy. So about 3-4 years ago, Ron decided to make a big change, due to the growing problems caused by GMO soybeans and difficulty in finding the varieties he wanted. He decided to start working with Iowa State University; he contracted for them to grow foundation seed (F1) of what Ron considered to be the single best variety for Edensoy; they removed any unusual looking beans (e.g. dark hilum beans) by hand before planting. Is there any chance that there could be some GMO soybeans in the foundation seed? Ron has learned the hard way that "There is a chance of anything, anywhere, anytime. It doesn't take much to start the ball rolling. From one grain, ten thousand grains–as George Ohsawa liked to say."

Then Ron contracted with a seed grower in Michigan to grow those seeds, certified organic, to create the next generation (certified or F2 seeds). He started with one soybean variety at first; now he is growing four varieties because Edensoy is best when made from a mixture of varieties. Last year he supplied 3 varieties to about 60 growers who grew 85-90% of the soybeans he needed; the farmers got the remaining 10-15% independently off an approved seed list.

The main thing that Ron has done is to remove himself from the commercial trade in soybean seeds. He now gets his seed independently and stores his crop independently. Because all of these problems and procedures are new, they are both interesting and scary. For example, sending the seed out to the growers is a bit scary. Supposing he supplied non-GMO seed to them and they delivered a crop with some GMO back to him. Whose problem is it?

Before the ASP plant started in 1986, Ron worked as a buyer for Eden Foods, dealing with many different organic crops–including soybeans. When he transferred to ASP, he focused solely on soybeans. As the market for Edensoy expanded, Ron had to constantly expand his "grower base." One of Ron's biggest and most time consuming problems is finding enough farmers to grow the organic soybeans that he needs. Over the past 20+ years, he has worked to develop trust with a growing core group of soybean farmers. Ten growers have been with Ron for 20 years and 40-50 have been with him at least 10 years. These farmers each have a deep personal interest in and commitment to organic farming. "Once a farmer starts working with ASP, they stay–because we treat them right. There is a physical building here and a factory. Seeing that makes a big difference for many growers–as opposed to selling to a trader who exports their crop. They see what happens to their soybeans." The continuity over many years and Ron's work "with each person as another human being has made a big difference. We develop trust. The organic soybean crop is keeping many small farms alive because the premium is so much higher than the commercial market. I have to have a price that most growers will accept. I don't pay the highest price or the lowest." Supply and demand almost requires that Ron try to "steal" experienced organic growers from other companies. The traders, who export organic soybeans, have often not treated their growers well. They may sign a separate contract with each one, try for as low a price as possible, not ship their beans on time, etc. Today about 80-85 farmers grow soybeans organically for Ron and ASP. Before 1997 he would bring in a core group of soybean growers to discuss prices for the upcoming contract period. At first it was 5-6 grower, then it became 10-12 growers.

It's hard to grow soybeans organically on a big farm; dealing with the weeds mechanically takes too much time. Organic soybean farmers don't spread manure (which must be composted first) on their fields, but the good ones plow in green manure, etc. Continued. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

7739. Roller, Ron. 1999. The complexities and details of growing and certifying organic and GMO-free soybeans for Edensoy beverages. Part II (Interview). *SoyaScan Notes.* Dec. 3. Conducted by William Shurtleff of Soyfoods Center. • ***Summary:*** Continued: Two years ago, in December 1997, in anticipation of the plant expansion, he organized the first big meeting at American Soy Products' (ASP's) Edensoy factory in Saline, Michigan. He wanted to try dealing with

the farmers as a group, where he paid them all the same price and had only one contract. Ninety-five growers showed up, both former ASP growers and new farmers who thought they might like to start working with ASP, depending on the conditions; most were attracted by the premium price offered, the chance to get a contract and the opportunity to see the Edensoy plant. Most of the growers live near the plant, in southern Michigan or northern Ohio, but some come from as far away as Nebraska. Having the growers spread over a fairly wide area reduces the risk the weather damage to the entire crop. During the catered lunch, Ron explained "Here's who we are, here's what we do, here are the quality issues in terms of growing soybeans for us, and here is the contract." The variables in the contract are price and varieties. Ron asked Chad Geater of Iowa State to come to talk to the farmers (with a slide show) about GMO soybeans. Over the years, ASP has become more and more specific about acceptable varieties. Starting several years ago, ASP made farmers who signed their contract agree not to grow GMO soybeans. The issues of GMO seed contamination were explained. Rather than negotiate for price, Ron took a calculated risk. After lunch, asked them to decide on a price themselves, then he left the room. They decided on $19.00 per "net clean bushel delivered." ASP's elevator does the cleaning; it does not clean any GMO Products. This compared with $4.50 to $5.00 they would get for regular soybeans at their local elevator. Not all the farmers signed up, but those who did were happy, and so was Ron–who acquired about 80% of his organic soybean needs in one hour. In previous he might have to make 700-800 phone calls before he got all the soybeans he needed for the coming year. "That meeting really increased our presence among farmers. Its a pretty incredible to be in the room with all these growers who normally never see each other or are in the same place together, openly discussing the organic issues that affect them." New farmers generally learn organic methods from another farmer who is already doing it. Years ago, Ron used to do the organic inspections and certification himself, but he did a little teaching of organic methods; he no longer does any of these things.

ASP uses OCIA, a farmer owned and run group, as their third-party organic crop certifier. Each participating farmer must join a local chapter of OCIA, attend their meeting, etc. Each chapter teaches organic methods and provides lots of social interaction. Last year at the same type of meeting, 160 farmers showed up.

Organic is one issue but GMO-free is quite another. The term "GMO-free" is meaningless. You would have to test (and destroy) every soybean to say a sample was "GMO-free." So the heart of the matter is determining tolerance levels, and testing accurately for those levels. ASP "fronts" the soybeans to the growers; that means they do not pay for the seed beans until the crop is harvested.

Previously tests to check for GMO (like that from Genetic ID) were too expensive, at $300 a sample. But a company named Strategic Diagnostics in Delaware developed an "instant" GMO test kit which uses a "strip test." This crucial new tool was developed by Strategic with Monsanto to identify genetically modified plants. Now, for the first time, ASP can test every sample from every farmer for a reasonable price. Each strip is like a little piece of litmus paper made with colloidal gold. They key is determining what tolerance level you want; the higher your tolerance level, the more beans must be in your sample. A 0.1% tolerance level, for example, requires 600 soybeans. To test: Put the beans in a regular blender and grind to a powder. Add water, blend and dilute. Use an eye dropper for them kit to draw off a certain amount of liquid, put that in a test tube, add 3-4 drops of buffer, than put in the little test strip and wait for 5 minutes. The strip will tell you whether or not there are any GMO soybeans in that sample at your level of tolerance. Each test requires two strips and 100 tests cost $300. ASP's new program works like this. Each grower sends ASP a sample of each variety before they deliver any beans to the elevator. Those beans are then graded for quality and tested for GMO. A form is filled out and the actual test strips are attached to that form, as a physical record of the test. The sample is retained. That then goes to the elevator as approved for delivery. The elevator then conducts the exact same GMO test with each load that arrives, taking 3 probes per load. In this year's crop, one sample out of 85 tested GMO-positive. Ron called the grower and asked what could have happened. He said that his combine had broken and he had his neighbor combine the soybeans. The neighbor grew probably GMO soybeans and some must have been left in the combine. Ron said he could not accept the load soybeans; the grower was surprised but accepted Ron's decision. The system worked! Organic beans could also potentially become contaminated during cleaning, storage, or shipping.

So when organic soybeans are said to be "GMO-free" one must also ask: To what tolerance level, and as determined by what exact testing program? Because the Strategic Diagnostics' strip test is so new, the organic industry still does not understand these key points.

Edensoy now has a little malted corn in its sweetener; compared to soybeans, organic corn is a nightmare when it comes to keeping it GMO free. Note: For example, pollen from GMO corn can drift up to ½ mile in the air. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

7740. Roller, Ron. 1999. Update on Edensoy beverages and the soymilk market in the USA (Interview). *SoyaScan Notes.* Dec. 3. Conducted by William Shurtleff of Soyfoods Center. • ***Summary:*** American Soy Products (ASP) finished its plant expansion in Sept. 1998. Before the expansion, it could make 4 metric tons per hour of soymilk. After the expansion it could make 10 metric tons per hour. The plant

is not presently running at full capacity, but with the soymilk market growing so fast, it is hard to say how long it will be until the plant again reaches full capacity.

Competition in the soymilk market is intense, in price and quality, and big new manufacturers are entering. Eden is fortunate in that they have a long-term user base of many loyal consumers. But Suiza Foods Corp. (a powerful dairy consolidator) is expected to have a soymilk on the market by Jan. 2000 and, with Dean Foods and Silk, that should lead to big changes. Refrigerated is a big, big question in Ron's mind, but this is not his job or responsibility. Ron is reluctant to talk about this issue. He makes the soymilk. Eden Foods owns the brand and is the "sole sales agent" responsible for marketing it. Distribution is the problem for Edensoy, since Eden Foods does not presently sell any refrigerated products.

Right now, all is going well at ASP. Getting the new line up and running was tough. There were the inevitable start-up problems with the new, complex machines and getting the people trained. ASP has a pretty experienced crew now. Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

7741. Israel, Cocavatiyah Baht. 1999. Re: Update on "Eternity" and Taste of Life vegetarian restaurants in Israel. Letters to William Shurtleff at Soyfoods Center, Dec. 12 and 10 Jan. 2000. 2 p. + 2 p. Handwritten, with signature. Plus leaflet. [1 ref. Eng; Heb]

• ***Summary:*** This group used to be known as "Eternity," an all vegetable ice cream parlor. Now they serve their vegetarian ice cream plus a menu "consisting of many various dishes (vegetable) that include tofu and the vegetable protein product seitan. We are vegan–no animal by-products, no artificial food coloring, no cholesterol. Kosher." They now have a second restaurant at Hakishon St. (across from Magen David), Tiberias, Israel. Phone: 06 671 2133. They also have a factory that produces the ice cream, tofu, and most of the take-out products and carob candies. The main dishes (entrees) and some vegetarian products are made in the restaurant daily. They make tofu at: Nature's Gate Ltd., Mivne Taaseya Haradash 76, Box 029, Dimona, Israel 86000. Phone: 972-7-655-7774. Fax: 972-7-655-7769. In 1986 they started to make and sell tofu as tofu. They sell their tofu at about 30 different places outside their two restaurants. Nature's Gate Ltd. own the factory and L'Haiem owns the restaurants.

They also make their own soymilk at Nature's Gate Ltd. Presently they produce the soymilk only for their own use, but in the future they hope to expand.

Enclosed is a one page recipe in Hebrew and English. The 12 food categories are: Desserts (incl. 9 flavors of non-dairy ice cream), candies, beverages (incl. soya milk), dressings, salads, breads, breakfast (incl. tofu links, scrambled tofu), sandwiches (incl. tofu cheese, marinated tofu, okara sticks, tofu falafel, tofu burger, tofu vege burger, stir-fry with tofu, stir-fry with seitan), steamed vegetables, take away (take-out), main entrees (incl. tofu teriyaki, tofu with gravy, tofu medley), a la carte (incl. tofu medley). Address: 60 Ben Yehuda St., Tel Aviv, Israel. Phone: 03 620 3151.

7742. Skiff, James. 1999. New Japanese law concerning labeling of foods made with genetically engineered ingredients (Interview). *SoyaScan Notes.* Dec. 22. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Jim is aware of this Japanese law, which was passed in Oct. 1999 but does not take effect until 1 April 2001. Jim Echle, head of the American Soybean Association office in Tokyo, told Jim about the law; Echle is extremely receptive to the needs of his Japanese customers, such as tofu makers. ASA is also getting more involved with issues involving identity preserved (IP) soybeans; they are organizing an IP conference on Jan. 17 in St. Louis, Missouri.

Skiff then faxes Shurtleff a provisional translation of the labeling guidelines, in the form of a 1-page table. The translation was done by ASA-Tokyo and sent to Skiff by Jim Echle. There are three columns: (1) Classification of food: A. Not equivalent to conventional foods with regard to composition, nutrients, or intended use. B. Equivalent to conventional foods, but modified DNA or protein produced therefrom remains after the manufacturing process. C. Equivalent to conventional foods, but modified DNA or protein produced therefrom is removed or decomposed and no longer exists in the in the final food. (2) Examples of the three types of foods: A. High oleic acid soybean oil. B. Tofu and tofu products, soybean sprouts, natto, soymilk, miso, soybean flour, roasted soybeans, corn, popcorn, potatoes, etc. C. Soy sauce, soybean oil, high fructose corn syrup. (3) Method of labeling: "Soybean (genetically modified),..." Address: US Soy, 2808 Thomason Dr., Mattoon, Illinois 61938. Phone: 217-235-1020.

7743. *SoyaScan Notes.* 1999. Chronology of major soy-related events and trends during 1999 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** April–Kevin Cross sells Soy Power Co., Inc. in Santa Monica, California, to Nature's Best.

May 10–SoyaWorld Inc. of Burnaby, British Columbia, Canada, purchases the SoNice brand and two soymilk extraction plants from International ProSoya Corp. (IPC). SoyaWorld is jointly owned by Dairyworld Foods (the largest dairy and food company in western Canada) and Sunrise Soya Foods (Canada's largest tofu manufacturer). SoyaWorld plans to (and has the ability to–because of Dairyworld Foods) put fresh and Aseptic soymilk in every supermarket and grocery store in Canada. Then they will move into the USA. This is a very big story!

July 12–Deutsche Bank, one of its strongest advocates of ag biotechnology, issues a report in which it reverses its previous "buy signals" on many of the companies commercializing ag biotech (such as Monsanto and Pioneer Hi-Bred). It now urges caution, and signals the beginning of trouble for the ag biotech industry.

Aug. 18–White Wave (Boulder, Colorado) and Dean Foods (Franklin Park, Illinois) jointly announce that Dean Foods has created an alliance with White Wave by becoming a minority shareholder in White Wave. The two companies will work together to place Silk soymilk into the refrigerated dairy case of supermarkets across America–and try to get there before SoyaWorld of Canada. A very big story for soymilk in the USA.

Sept. 1–Stake Technology Ltd. (Norval, Ontario, Canada) acquires SunRich Inc. (Hope, Minnesota) in a stock-for-stock deal.

Sept.–In this month's issue of *Consumer Reports,* a 6-page article on genetically engineered (transgenic) foods titled "Seeds of Change" recommends that "federal officials should require that all foods containing genetically engineered ingredients be labeled as such, including milk with recombinant bovine growth hormone."

Oct. 1–DuPont (a large chemical company) buys the 80% share of Pioneer Hi-Bred International Inc. that it doesn't already own–a major move into biotechnology.

Oct. 4–The Kellogg Co., maker of breakfast cereals in Battle Creek, Michigan, agrees to buy Worthington Foods for $307 million. Worthington makes vegetarian meat alternatives.

Oct. 7–The *Wall Street Journal* runs a major front-page story on concern about and opposition to genetically engineered foods in the USA and Europe. Runs two more such stories on Nov. 30 and Dec. 14. Dec.–During the last 6 months of 1999 consumer awareness of and concern about genetically engineered food issues in the United States has increased dramatically. It has moved from a counter-culture to a mainstream concern, and fairly large amounts of money are now flowing into antibiotech organizations. GMO was a widely discussed issue in the breakdown of and mass demonstrations against the World Trade Organization talks in Seattle, Washington.

Oct. 20–The U.S. Food and Drug Administration (FDA) announces its approval of a health claim for soy protein and coronary heart disease. The claim, which goes into effect Oct. 26, can be used on food labels in either of two formats, the first of which is: "25 grams of soy protein a day, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease. A serving of (name of food) supplies ___ grams of soy protein." This promises to have a huge, positive impact on the soyfoods market.

Dec.–General Mills acquires Small Planet Foods (Cascadian, Muir Glen) for $60 million.

Dec.–Kellogg Co. purchases Worthington Foods.

In 1999, for the first time in history, more acres were planted to soybeans in the USA than to any other crop. U.S. soybean acreage exceeded that of corn by 3% and that of wheat by 34%. Worldwide, the acreage planted to soybeans has increased fivefold since 1950.

7744. **Product Name:** Grainaissance Amazake Pudding [Almond].
Manufacturer's Name: Grainaissance, Inc.
Manufacturer's Address: 1580 62nd St., Emeryville, CA 94608. Phone: 415-547-7256.
Date of Introduction: 1999. December.
Ingredients: Filtered water, organic brown rice*, almonds, rice koji, tapioca starch modified, natural vanilla flavor. * = Organically grown and processed in accordance with the California Organic Food Act of 1990.
Wt/Vol., Packaging, Price: 6 oz (170 gm) plastic cup. Retails for $1.49.
How Stored: Refrigerated.
Nutrition: Per cup (170 gm.): Calories 190, calories from fat 30, total fat 3.5 gm (5% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 20 mg (1%), total carbohydrate 37 gm (dietary fiber 2 gm [8%], sugars 35 gm), protein 3 gm. Vitamin A 0%, calcium 4%, vitamin C 0%, iron 8%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Open Sesame in Lafayette, California. 2000. March 14. Front of plastic cup is reddish brown, white, yellow, orange, and tan. "Non-Dairy. Naturally sweet. Organic rice treat."

7745. **Product Name:** Instant Soy Pudding (Dry Mix): [Chocolate Fudge, or French Vanilla].
Manufacturer's Name: Harvest Direct, Inc.
Manufacturer's Address: P.O. Box 50906, Knoxville, TN 37950-0906. Phone: 800-838-2727.
Date of Introduction: 1999. December.
Ingredients: Chocolate: Unbleached cane sugar, soybeans (made into powdered soymilk), cocoa powder, vanilla powder, potato starch, flaxseed, salt.
Wt/Vol., Packaging, Price: 4 oz foil pouch. Recommended retail price: $1.99.
How Stored: Shelf stable.
New Product–Documentation: Leaflet (black and white) sent by Patricia Smith from Natural Products Expo East (Baltimore, Maryland). 1999. Oct. 26. "New!! Instant soy puddings." Shows both labels in black and white. "Just add water. Non-dairy. Low fat. Vegan. Non-GMO soybeans." Taste test by Dana Jacobi. "Very Jello-y. Only the chocolate is good." Talk with Roger Kilburn, owner and founder of Harvest Direct. 1999. Nov. 15. The main soy ingredient in this product is powdered soymilk made from whole soybeans by Devansoy. Harvest Direct assumed control of Devansoy in June 1998. The first products will be shipped in Dec.

1999.

7746. *SoyaScan Notes.* 1999. Major soy-related company acquisitions and mergers worldwide 1990-1999 (Overview). Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1990 Jan.–Worthington Foods acquires La Loma Foods of Riverside, California (formerly Loma Linda Foods, owned by the Seventh-day Adventist Church).

1990 (early)–Daniel Gevaert purchases the Lima Andiran site at Andiran (near Mezin) in southern France from Lima Foods–but not the Lima trademark. In June 1990 Daniel and his wife, Valerie, established Danival.

1990 Aug. 3–Hong Kong Soya Bean Products Co. Ltd. (makers of Vitasoy soymilk) acquires Nasoya Foods of Leominster, Massachusetts.

1990 Dec. 21–The Haldane Foods Group (a subsidiary of British Arkady Ltd., which is in turn owned by ADM) acquires Unisoy Milk 'n' By-Products Ltd. of Cheshire, England.

1991 Jan. 1–The Haldane Foods Group acquires Granose Foods Ltd. of Watford, Hertfordshire, England (formerly owned by the Seventh-day Adventist Church).

1991 Jan. 28–Tetra Pak International acquires Alfa-Laval AB.

1991 April–Huegli Naehrmittel A.G. acquires Soyastern Naturkost GmbH / Dorstener Tofu Produktions GmbH.

1991 Dec.–Specialty Food Ingredients (SFI) Europe BV acquires Solnuts BV (Netherlands) and Solnuts Inc. (Hudson, Iowa).

1992 Oct.–Central Soya Co. acquires the Protein Division of Aarhus Oliefabrik in Denmark.

1993 June–Vitasoy purchases Azumaya Inc. (America's largest tofu manufacturer, and the low-price leader) in California, for an estimated $4-$5 million. Vitasoy is now in the tofu business.

1993 June–21st Century Foods acquires Farm Foods from Barricini Foods.

1993–House Foods of Japan purchases the remaining 50% of House Foods & Yamauchi, Inc. from Mr. Shoan Yamauchi. The new company is named House Foods American Corporation.

1993 July–Nutrition et Santé (part of the Sandoz Group) acquires Société Soy of Saint-Chamond, France. The latter company was renamed Nutrition et Soja, and on 15 Oct. 1994 it moved into a new factory at Revel (near Toulouse), France.

1993 (mid)–B & K Holdings of Switzerland acquires Sojinal of Issenheim, France.

1993?–Kineret (pronounced kuh-NAIR-et) Acquisition Group acquires Farm Foods from 21st Century Foods, then in Nov. 1993 the Hain Food Group acquires Kineret plus some assets of Barricini Foods Inc.

1996 April 22–Alpro (Belgium) purchases Sojinal (France).

1995 April 21–Irene and Len Stuttman buy back control of their company, INARI Ltd. (dba. Sycamore Creek) from J. Charles Follett (former CEO) and Peter L. Pairitz (accountant).

1995 April–Quest International, a unit of Unilever, acquires A.E. Staley's Gunther Products Division.

1997 Feb. 3–Monsanto purchases Asgrow Seed Co. from Seminis Inc., a subsidiary of Empresas La Moderna, S.A. (ELM).

1997 Aug. 24–DuPont signs a letter of intent to acquire Protein Technologies International, a wholly-owned subsidiary of Ralston Purina Co.

1997 Oct. 14–The Hain Food Group acquires Westbrae Natural, Inc., makers of soymilk. Westbrae's new name becomes Hain Food Group–Westbrae. 1997 Dec. 3–DuPont finalizes its purchase of Protein Technologies International (PTI–the world's leading manufacturer of soy protein isolates).

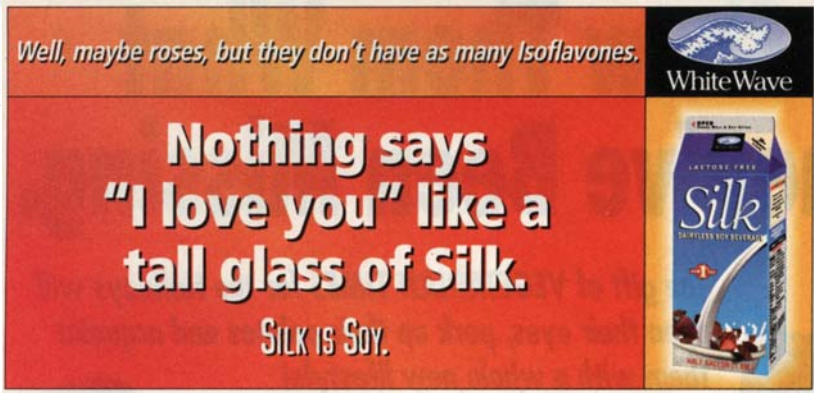
1998 Oct. 16–Worthington Foods purchases the Harvest Burger product line from ADM; by agreement, ADM will continue to make the Harvest Burgers at its Illinois plant.

1998 Dec. 31–DE-VAU-GE acquires Bruno Fischer GmbH, which sells bottled soymilk; both companies are located in Germany.

1999 Jan. 4–W.G. Thompson & Sons Ltd. of Blenheim, Ontario, Canada, purchases Sycamore Creek Co., a maker of soynuts and soynut butter (located in Mason, Michigan).

1999 Oct. 4–The Kellogg Co. (famous maker of breakfast cereals, Battle Creek, Michigan) buys Worthington Foods Inc., America's leading maker of meat alternatives.

7747. White Wave, Inc. 1999. Nothing says "I love you" like a tall glass of Silk. Silk is soy (Ad). *Vegetarian Times.* Dec. p. 78.



• ***Summary:*** This small (2¼ by 4½ inches) but prominent (bright red, orange, and white) color ad is mostly background color and text. On the right is a half-gallon carton of White Wave Silk (fresh soymilk). In the upper right corner is the White Wave logo. Across the top of the ad, in fairly small letters: "Well, maybe roses but they don't have as many

isoflavones." Address: Boulder, Colorado.

7748. *Whole Foods.* 1999. U.S. FDA authorizes soy protein health claim. Dec.
• ***Summary:*** During the 12 months ending June 1999, overall sales of soyfoods reached $494.4 million, up 34% over the previous year–according to statistics compiled by Spence Information Service (SPINS, San Francisco, California) and AC Nielsen. This included $117.9 in sales at natural foods stores (a 31.4% rise) and 376.5 million at supermarkets and mainstream food/drug/mass merchandise outlets (a 35.2% increase). Note that this growth took place *before* announcement of the FDA health claim.

A table (based on figures provided by SPINS) gives growth rates for selected soy subcategories and (in parentheses the growth rate for the entire subcategory): Soy supplements 120.8% (27.0%). Soy-based frozen desserts 98.4% (11.4%). Soy beverages (non-dairy) 45.7% (25.9%). Tofu 42.4% (all tofu is soy). Soy-based meat alternatives 16.4% (15.8%). Address: South Plainfield, New Jersey.

7749. Wildwood Natural Foods. 1999. Joymilk soyful holidays (Folded card). Santa Cruz, California.
• ***Summary:*** This very creative card arrived on December 16, shortly before Christmas and after Hanukkah–in a red plastic card with a "Greetings" stamp. It is in the shape of a two-dimensional Wildwood soymilk carton, with an identical front and back. In place of the typical Wildwood trees and birds motif are decorated Christmas trees. A sort of spout sticks out to one side near the top, and near it is written: "Pull festively to open." When you pull the tab, which is one point of a star, out pops a a white paperboard streamer, like the tail behind a shooting star. On one side is written: "Soyfoods–the protein source of the new millennium." On the other side: "Merry protein and happy isoflavones." Address: Wildwood Natural Foods, 135 Bolinas Road, Fairfax, California 94930.

7750. **Product Name:** Soy Synergy.
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 1999.
New Product–Documentation: *Nutrition Business Journal* (San Diego, California). 2000. "Pacific Foods targets $50 million sales: Soymilk manufacturer scrambles to expand production, expects 35% growth to continue." Sept. p. 12. In 1999 Pacific Foods introduced an innovative product named Soy Synergy, a functional food designed to be mixed with soymilk or rice milk.

7751. American Soybean Association. 1999. Soya: El rey de los frijoles [Soya: The king of beans (Leaflet)]. [Mexico City, Mexico]. 2 panels each side. Each panel: 21.5 x 14 cm. Undated. [Spa]
• ***Summary:*** Printed with black ink on glossy white paper. The front panel begins: "We live in a difficult moment, in a critical situation. Foods are very expensive. There is not enough education and information about good sources of nutrition..." The inside left panel describes how to make soymilk at home from whole soybeans. The inside right panel gives recipes for *Pericos de tofu* and for *Sorbete de soya,* sorbet made from soymilk and fruits. The back panel gives a recipe for soybean stew [*guisado*] using whole soybeans, plus the slogan "Grain for grain, more protein at less cost."

7752. Davidson, Alan. 1999. The Oxford companion to food. New York, NY and Oxford, England: Oxford University Press. xviii + 892 p. Illust. by Soun Vannithone. Index. 29 cm. [1500+* ref]
• ***Summary:*** The 2,650 alphabetical entries in this excellent encyclopedia and cornucopia represent 20 years of Davidson's work. The 175 illustrations by Laotian artist Soun Vannithone are superb. There are 39 longer entries about staple foods such as rice, noodles, and apples. A comprehensive bibliography provides access to further information. The book does not contain recipes.

Soy-related entries include: Bean sprouts (p. 64). Black beans, fermented (*chi,* p. 79). Kecap (Indonesian soy sauce, made "basically from soya beans and palm sugar only." "The word 'kecap' has passed into the English language as catchup or catsup and then as Ketchup, which now means something quite different." p. 429). Ketchup ("probably via the Malay word *kechap,* now spelled *kecap,* which means soy sauce. The word was brought back to Europe by Dutch traders who also brought the oriental sauce itself. The sauce has changed far more than has the word, although the name has appeared in a large number of variations such as catchup and catsup."

Tomato ketchup is now the best known and widely used–in fact almost the only ketchup left. Whereas tomato ketchup contains much sugar and vinegar, mushroom ketchup contains neither, and is basically a salted mushroom extract with a liquid, transparent consistency. The British food historian, C. Anne Wilson (1973), believes that mushroom ketchup was the first kind of ketchup in Britain; she argues that people used to pickle mushrooms, intending to use the mushrooms, but then started using the pickle too, and finally began using the pickle by itself.

"Oysters, mussels, walnuts, and many other ingredients have been used to make ketchup, and cold be blended with spices, garlic or onions, wines and spirits to vary the flavour" p. 430-31). Koji (p. 435). Lecithin (p. 447). Miso (p. 509). Natto (p. 530). Soybean (p. 739). Soy milk (p. 739-40). Soy sauce (p. 740). Tempe (or tempeh, p. 788). Tofu (p. 798-99), including plain tofu (doufu in Chinese), pressed tofu (*doufu-kan,* sic, *doufu-gan*), *wu-hsiang kan,* cotton tofu or momendofu, kinugoshi or silk tofu, sui-doufu, freeze-

dried tofu [dried frozen tofu], smoked tofu. Cooked forms of tofu: Deep-fried tofu, doufu pok, cha-dofu, abura agé or deep-fried thin slices which can be opened to make Inari-zushi, ganmodoki or deep-fried tofu balls, yaki-dofu or tofu which has been grilled. Fermented tofu: The generic term is doufu-ru. The most popular type is white doufu-ru, and there is red doufu-ru, tsao-doufu, ch'ou doufu [chou doufu], chiang doufu. In the Philippines fermented tofu is called tausi [sic, tahuri, tahuli; tausi is fermented black soybeans]. Miscellaneous: A specialty of Japan is *umesutsuke,* "tofu pickled in plum vinegar with a purple exterior." Note: As of Oct. 2011 not one hit / result for umesutsuke can be found on Google. Nor have we ever heard of such a Japanese tofu product.

Dofu nao (literally "bean brain") or smooth curds, yuba or "bean curd skin" or "tofu skin," okara or "presscake" (pulped skins of soya beans) (p. 798-99). Yuba (p. 860-61).

Also discusses: Alfalfa (p. 10). Almond (p. 12-13, incl. "almond milk"). Amaranth (p. 13). American cookbooks, history (p. 15-17). Azuki beans (p. 44-45). Barley, barley breads, and barley sugar (p. 58-60). Beef–BSE (mad cow disease, p. 68). Chia (p. 166). Cowpea (p. 230-31). Chufa (p. 185). English cookery books, history (p. 276-80). Five grains of China (p. 305). Gluten (p. 341). Groundnuts (or peanuts, p. 356-57). Hemp (p. 377-78). Hydrogenation (p. 391). Japanese culinary terms (p. 415-17). Kudzu (p. 437). Linseed (p. 454-55). Lupin (p. 463). Margarine (p. 478-79). Mung bean (p. 518). Nori (p. 534). Noodles of China (p. 537, incl. "Gan si {soya bean noodles}" and "Fen si {also fen-szu} {mung bean vermicelli})." Oncom (p. 553-54). Quark (p. 644). Quinoa (p. 645). Seaweeds (incl. hijiki, kombu/konbu, nori, wakame, etc., p. 712). Sesame (p. 713). Shortening (p. 721-22). Sprouts (no listing). Tahini (p. 779). Toast (p. 797, incl. Melba toast). Ume and umeboshi (p. 817). Winged bean (p. 849).

The entry for "Fermentation" states that the two main reasons for subjecting a food to fermentation are: (1) To "convert it from a form that will not keep, such a milk, to one which will, such as cheese." (2) To "make foods which are indigestible in their original state, such as wheat or soya beans, digestible by turning them into products such as bread or tempe." Other benefits include improvements in flavour. Many do not realize that fermentation is part of the process of making coffee, cocoa, vanilla, and many kinds of sausage. A brief biography and nice portrait photo of Alan Davidson, a man of extraordinary knowledge in the world of food, appear on the rear dust jacket.

Note: The paperback edition of this book (2002) is titled *The Penguin companion to food.* Address: World's End, Chelsea, London, England.

7753. Hagler, Louise. 1999. Meatless burgers: Over 50 quick and easy recipes for America's favorite food. Summertown, Tennessee: Book Publishing Co. 94 p. Illust. Index. 23 cm.

• ***Summary:*** A vegetarian cookbook. Contents: Introduction. Glossary of ingredients: Incl. (with a definition and description of each): Almond milk, arame, flaxseeds, hemp seeds, hulled, millet, miso, oat milk, quinoa, rice milk, shiitake, silken tofu, soy flour, soymilk, soy yogurt, tempeh, textured soy protein, tofu, vital wheat gluten.

Bean & grain burgers. Soyfood burgers: Tofu, tempeh, textured soy protein & soybeans. Vegetable burgers. Burgers with an ethnic flair. Accompaniments. Buns. Side dishes. Nondairy shakes. Address: Summertown, Tennessee.

7754. Klingel, Brigitta. 1999. Gesundheit fuer die Zellen–Soja-Lezithin [Health for the cells–Soya lecithin]. Munich, Germany: Suedwest Verlag GmbH. 96 p. Illust. (color photos). Subject index. Recipe index. 21 cm. [9 ref. Ger]

• ***Summary:*** A popular introduction to lecithin, with basic information about other soyfoods and vegetarian recipes. Contents: Lecithin–The multitalented. Soya lecithin. Help for the heart. Lecithin lowers blood cholesterol. Mental and bodily top fitness. Beauty thanks to lecithin. Soyfood products: Dry soybeans, soymilk, yuba, okara, tofu, tempeh, miso, soy sauce, soy sprouts. Recipes with lecithin. Address: Germany.

7755. Kramer, Heather Lynn. 1999. Evaluation of physical and chemical properties of soybean cheese. MSc thesis, University of Missouri-Columbia. x + 152 leaves. Illust. (some color). 29 cm. *

7756. Mowe, Rosalind. ed. 1999. Southeast Asian specialties: A culinary journey through Singapore, Malaysia, and Indonesia. Cologne, Germany: Culinaria Koenemann. 319 p. Illust. (color photos by Günter Beer). Index. 26 x 22 cm.

• ***Summary:*** Translated from the German. Includes headings in Chinese. This book is a feast for the eyes, printed on glossy paper with informative color photos on almost ever page. The structure and content are also creative and very interesting; it has caught the heart and spirit and nuances of the culture. On some pages, however, the type is too small to read. The name of most recipes and ingredients is given in their native language. A 2-page map of Southeast Asia appears near the front. The basic structure: Singapore (p. 12-109). Malaysia (p. 110-215). Indonesia (p. 216-301). Glossary (p. 302-04). Introduction to Chinese nutritional theory, by Andrea Fülling (p. 305-06): Introduction, yin and yang, the three warmers, the warming effect of foods (the five energy states are hot, warm, neutral, refreshing, and cold), the five elements. Acknowledgements. Photo credits. Index.

The contents includes: Healing herbs (p. 26-29). Soup as medicine (p. 30-33). Soybean (in Singapore, p. 40-47): Introduction (familiar forms are sprouts, soy sauce, beancurd, tempeh; new disguises are "vegetable protein," emulsifier,"

"lecithin," "vegetable oil" which are found in dairy products, canned fish, candies, desserts, and much more), in the West soybeans are "often grown as monocultures, with the disadvantages that this entails, such as the use of chemical fertilizers and pesticides," and genetically engineered soybeans, great nutritional value yet rarely used as whole dry soybeans, most of the harvest in SE Asia is processed into beancurd and tempeh, importance of fermentation, soy milk resembles cow's milk and is an excellent substitute, soy sauce is used throughout this cuisine. Photo of green soybean plants with green pods.

Soybean sprouts: "Black soybeans are imported from Thailand and Myanmar (Burma)." After washing, the beans are spread out in deep baskets and kept in the dark for 6 days. "Before the baskets of sprouts can be sold, the top layer if green leaves is trimmed off. They are used as feed for chickens and ducks. One basket yields 154 lb (70 kg) and the output of a medium-sized business is 60 baskets a day." Soybean "sprouts should never be eaten raw, nor should they be cooked for too long." Mung bean sprouts are better known than soy sprouts, but both can be bought fresh.

Dou ban jiang ("Salted soya bean sauce." Photo of jar and Sinsin label). Dou chi ("Black bean sauce." Photo of jar and Sinsin label). Note 1. Typically Dou chi are named "Salted black beans." Photo of five glasses showing how dry soybeans are transformed into soymilk, then curds.

Tofu: Meat from the fields (p. 42-44). The best tofu is made from special types of soybeans that are different from those that are crushed to make oil and meal. Most of the tofu in Singapore is made from soybeans imported from Canada. Describes the basic process for making commercial pressed tofu or soft tofu, with 7 photos showing the steps. Implies that making yuba is part of the process for making tofu; it "is eventually sold as dried beancurd sticks (*fu chok*).

Soy milk products: Fu pei–dried tofu skin [yuba]. Fu chok–dried tofu sticks [dried yuba sticks]. Tim chok–sweet tofu pieces [sic, sweet dried yuba / ama-yuba].

Note 2. This is the earliest English-language document seen (Feb. 2012) that uses the term "Tim chok" to refer to sweet dried yuba, or that uses the term "dried tofu sticks" to refer to dried yuba sticks.

Tofu fa–soft tofu as a dessert [tofu curds]; a little tapioca flour may be added. "Served warm or cold with a syrup flavored with almond extract." Color photo shows yellow yuba atop hot soymilk, and a woman removing a slab pressed tofu from its mold.

Tofu recipes for every taste (p. 44-45): "Tofu on its own is rather bland in taste, but this is precisely its strength, since when it is combined with different ingredients and condiments it tastes new and different every time. Recipes: Niang dou fu (Fried beancurd pockets). Xia ren dou fu (Stir-fried beancurd with jumbo shrimp). Hong shao dou fu (Braised beancurd). Sui rou zheng dou fu (Steamed soft beancurd with ground pork). Dou hua (Sweet beancurd dessert). Zha fu pi juan (fried beancurd skin [yuba] roll). Color photos show the 2nd and last recipes.

Soy sauce (p. 46-47): A naturally fermented product made with mold cultures of *Aspergillus oryzae.* Describes the process for both light and dark soy sauce; the koji is made in shallow round trays, ready after 4 days. It is "then transferred into fiberglass tanks [or earthenware jars], covered with brine, and left to ferment for 3 months," after which the 1st extraction of crude soy sauce takes place [but not through pressure]. More brine is added and a second extraction takes place 1 month later; this process is repeated for the third extraction. "At this point, the paths of the different soy sauces diverge." The saltier, light-colored soy sauce is mixed with a preservative, pasteurized, "and stored in tanks to clarify before bottling." The dark soy sauce is mixed with both a preservative and caramel coloring, is allowed to mature for an additional 4 weeks, then is pasteurized and bottled. Note 3. What happens to the 2nd and third extractions? Color photos show five steps in the process, but a traditional earthenware vat is shown instead of the fiberglass tanks. Dark soy sauce is thicker than light. Recipes: Jiang you ji (Chicken in soy sauce, with marinade). Hong shao niu nan (Braised shoulder of beef).

Oyster sauce (contains no soy). Sesame oil (p. 49, with 7 photos).

Condiments (p. 50-51): Color photos show the front and label of 15 separate jars and bottles with a substantial description under each. Those containing soy are: Hoisin sauce. Dou chi (Fermented bean dried). Dou ban jiang (Tou cheong). Fu ru (Beancurd preserved). Jang qing (light soy sauce). Hei jiang you (Dark soy sauce). Tian jiang (Sweet sauce).

Peking duck (p. 62-65; soybean paste {no Chinese name is given} and Hoisin sauce are ingredients in the sauce). One key is the crisp skin. It is served in thin Mandarin pancakes.

Suckling pig (p. 86-87): Piglets are bred in Hunan province. Slaughtered at the age of 3-4 months. After a dead piglet has been patted dry, it is brushed with soy sauce, then coated with a marinade that includes fermented red bean curd and light soy sauce. As with Peking Duck, suckling pig is prized for its crisp, tasty skin. Six photos show the skewered baby pig.

Symbolic foods (p. 98-101): One of these is Moon Cakes from the mid-autumn festival (15th day of the 8th lunar month). "Traditional fillings include sweet black bean or lotus paste." Is the sweet black bean filling made from soy beans?

Instant cup noodles [instant ramen] (p. 48): Note 4. Wikipedia says at Momofuku Ando: ORS [Order of the Rising Sun], (lived March 5, 1910–Jan. 5, 2007) was the Taiwanese-Japanese businessman who founded Nissin Food Products Co., Ltd. He is famed as the inventor of instant noodles and cup noodles, which he launched on 25 Aug. 1958 (at age 48) under the name Chikin Ramen–after months

of trial and error experimentation to perfect his flash-frying method. On 18 Sept. 1981 he launched his most famous product, Cup Noodle.

Beansprouts (p. 154-57): With a long introduction, a description of the process, beautiful photos, and recipes: Taugeh goreng kucai (Fried beansprouts with chives). Taugeh masak kerang (Fried beansprouts with baby clams). Tahu goreng (Fried tofu with beansprouts). Bihun goreng (Fried rice noodles). Urap taugeh (Fried beansprouts with grated coconut).

Nasi tumpeng (rice cone) (p. 220). Served with sambal goreng tempe (crisp-fried marinated strips of tempeh). Gudeg (rice with green jackfruit cooked in a sweet sauce, p. 221) is served with a side dish of tahu goreng bacem (tofu cooked with spices, then fried).

Tempeh (p. 228-29), soybeans fermented with *Rhizopus oligosporus* mold. Indonesians consume more tempeh than tofu. The process is described, with 4 color photos: Recipe: Tempe goreng (fried tempeh).

Glossary (p. 302-04) includes: Fermentation. Soy sauce ("Probably the best-known Asian seasoning agent,..."). Sticky rice (also known as glutinous rice). Tahu (Indonesian; tofu). Tempeh. Tofu (beancurd, incl. hard, soft, and smoked).

7757. Sanginga, P.C.; Adesina, A.A.; Manyong, V.M.; Otite, O.; Dashiell, K.E. 1999. Social impact of soybean in Nigeria's southern Guinea savanna. Ibadan, Nigeria: International Institute of Tropical Agriculture. 34 p. http://www.hubrural.org/ IMG/pdf/ iita_soybean.pdf [52 ref]
• ***Summary:*** This case study surveyed 203 households in Benue State to determine the level of adoption of soybean using social impact assessment (SIA). The results showed soybean adoption rates rose from 9% of farmers in 1989 to 75% in 1997. The high adoption rates are attributed to improved material welfare, household income generation, and human capital development. This study also showed that soybeans were an acceptable substitute in traditional foods. Virtually all the farmers used soybean dawadawa, 90% used soybean akpupa, a steamed bean flour cake, and 60% used soybean akwese, fried bean cakes. Innovative soybean utilization, such as soymilk, and a local `tofu' were moderately adopted at 25% utilization (Summary by Shao 2002, p. 87). Address: 1, 3, 5. IITA, Ibadan, Nigeria.

7758. Wakai, Kenji; Egami, Isuzu; Kato, Kumiko; et al. 1999. Dietary intake and sources of isoflavones among Japanese. *Nutrition and Cancer* 33(2):139-45. [35 ref]
• ***Summary:*** The dietary intake and sources of isoflavones (daidzein and genistein) among Japanese subjects were examined based on dietary records (DRs). The subjects comprised two groups: 1,232 who completed one-day DRs (Group 1) and 88 men and women who kept four four-day (16-day) DRs. For quantitative data on the level of daidzein and genistein in soy foods, the literature was thoroughly examined, particularly for Japanese soy foods, and adopted the median value for each food. The median intake of daidzein was 12.1 and 9.5 mg/day among Groups 1 and 2, respectively, while the corresponding values for genistein were 19.6 and 14.9 mg/day. About 90% of the daidzein and genistein in the Japanese diet comes from 3 soyfoods–tofu (including fried tofu), miso, and natto.

Table 2, titled "Estimated total daidzein and genistein contents of soy foods: Median values among results of food" lists these foods: Soybeans, dry. Soybeans, green [edamame]. Soybeans, boiled. Kinako (roasted and ground soybeans). Soybean sprouts. Tofu. Tofu, freeze dried ("kohri tofu"). Fried tofu, thin ("abura-age," deep-fried). Fried tofu, thick ("nama-age," fried briefly). Fried tofu and minced vegetables / seaweed ("ganmodoki"). Soy milk. Okara (tofu lees). Yuba (dried soy milk skim). Natto (fermented soybeans). Miso. Soy sauce. Address: Dep. of Preventive Medicine, Nagoya Univ. School of Medicine, 65 Tsuramai-cho, Showa-ku, Nagoya 466-8550, Japan.

7759. **Product Name:** WestSoy Crème de la Soy: Non Dairy Soy Creamer [Original, French Vanilla, Amaretto].
Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor).
Manufacturer's Address: Uniondale, New York 11553. Phone: 1-800-SOY-MILK.
Date of Introduction: 1999. January.
Ingredients: Original: Organic soy beverage (Filtered water, organic soybeans)*, filtered water, brown rice syrup, organic expeller pressed soy bean oil*, natural flavors, dipotassium phosphate, carrageenan. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 16 fl. oz. (473 ml) aseptic Combibloc carton. Retails for $3.19 (2000/06, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening and use within 7-10 days.
Nutrition: Per tablespoon (15 ml): Calories 20, calories from fat 10, total fat 1.5 gm (2% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 0 mg, total carbohydrate 2 gm (dietary fiber 0 gm, sugars 1 gm), protein 0 gm. Not a significant source of vitamin A, vitamin C, calcium or iron. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Open Sesame in Lafayette, California. 2000. June 5. Combibloc carton. Bluish green, white, and blue on a wood-colored (tan) background. The word "Soy" is written with a small coffee cup in place of the middle letter ("o"). At the bottom of the front panel: "All natural. Lactose free. No tropical oils." For more information: www.westbrae.com. Note: In May 1992 Westsoy introduced its first such product named "WestSoy Lite Non Dairy Creamer." Talk with Westsoy representative. 2000. June 5. This product comes in

three flavors (see above). All were introduced in Oct. 1999. Soyfoods Center taste test. 2000. June 5. The color is tan. The flavor is bland and not too sweet.

7760. Young, Grace. 1999. The wisdom of the Chinese kitchen: Classic family recipes for celebration and healing. New York, NY: Simon & Schuster. xxii + 282 p. Illust. (some color photos by Alan Richardson). Index. 24 cm.
• ***Summary:*** On the front cover is a large color photo of the three generations of women Grace's grandmother, Fung Tong Lai Lan, her mother (Mama), and Grace herself. On the first page of every chapter is an old family photo. The food and their names are Cantonese. Both of her parents were born in China. Growing up in San Francisco, Grace "observed that the principles of yin and yang–a balance of opposites–were integrated into our everyday fare. For example, vegetables considered cooling, such as bean sprouts, were stir-fried with ginger, which is warming" (p. xii). And she "ate Cantonese home-style food every day" (p. xiii).

The name of each recipe is written three ways: (1) In English. (2) In light-orange Chinese characters, vertically to the left of the English name. (3) In Cantonese phonetics (in small black letters).

Soy related recipes: Stir-fried asparagus with shrimp (and black bean sauce, p. 29). Beef chow fun (with black bean sauce, p. 31). Steamed spareribs with black bean sauce (p. 41). Steamed sole with black bean sauce (p. 43). Sandpot braised lamb (with dried yuba sticks {foo jook}, p. 42-43).

Sprouting soybeans (gives a good introduction to bean sprouts and describes how to make soybean sprouts at home) (p. 80-81). Includes many recipes for soybean sprouts: Grandfather's stir-fried soybean sprouts (p. 82). Soybean and spareribs soup (p. 212).

Stir fried clams in black bean sauce (p. 111). Buddha's delight (with fried tofu, dried yuba and red fermented tofu, p. 126-27). Soy sauce chicken (p. 174-75). Foxnut soup (with dried yuba sheets, p. 198). Homemade soymilk (from ½ cup dried soybeans, p. 209). Savory soy milk (p. 210). Gingko nut porridge (with dried yuba sticks, p. 222-23).

The excellent Glossary (p. 246-68) includes entries for: Adzuki beans (*zeck siu dul*). Barley, Job's tear (*ye mai*): A different variety than Western barley. Bean curd: *See* Fried bean curd, Sheet dried bean curd, Stick dried bean curd, Tofu, and Wet bean curd [fermented tofu].

Bean sprouts (*gna choy*): The two varieties of Chinese sprouts are mung bean sprouts (*gna choy*), which are more commonly available, and soybean sprouts (*dai dul gna choy*), which are more nutritious, being rich in protein. The head is the most nutritious part of the sprout. "Don't eat raw soybean sprouts, as they are toxic."

Chinese dried black beans (*dul see*): Also known as salted black beans, fermented black beans, or preserved beans. Note: These are soybeans. "Before being used, the beans must always be rinsed in several changes of cold water." They are usually crushed with the handle of a cleaver or a wooden spoon and combined with soy sauce, garlic, or ginger before cooking. Her favorite brand is Yang Jiang Preserved Beans.

Fried bean curd (*dul foo gock*): Also known as bean curd puffs, or fried tofu. "They are triangles, squares, or cubes of tofu that have been deep-fried." Sold refrigerated. Green mung beans, dried (*look dul*):

Ground bean sauce (*meen see*): "This chocolate-colored sauce is also known as brown bean sauce, bean sauce, brown bean paste, or yellow bean sauce." It is sold in cans and jars. She prefers the Lee Kum Kee brand. It is made from naturally fermented soybeans, flour and sugar. Refrigerate.

Hoisin sauce (*hoisin zheung*): Made from sugar, soybeans, garlic, sesame seeds, chili peppers, and spices. A chocolate-brown sauce, mildly sweet and smoky. She prefers the Lee Kum Kee brand.

Red beans, dried (*hoong dul*): Not to be confused with the elongated adzuki beans. These red beans are used in soups, red bean paste, and desserts.

Seaweed (*see choy*): Also known as nori, roasted seaweed, or kizunori. Note: Many other types of seaweed / sea vegetables are used as food in East Asia.

Sheet dried bean curd (*bien foo jook*): Also known as dehydrated bean curd, dried bean thread [or dried yuba].

Soybeans, dried (*wong dul*): Also known as yellow soybeans.

Soy milk (*dul cheung*): Although it looks like dairy milk, it has a completely different taste and consistency. To learn how to make it at home, see p. 208. The soy milk sold in Western health-food stores is generally different from that sold in Chinatown (which is available sweetened or plain).

Soy sauce (*see yul*): Of the many varieties, the two are most essential for cooking are: (1) Black soy (*low zul*): Also known as soy superior sauce or dark soy sauce. It is darker, thicker, richer in color, and slightly sweeter in taste. (2) Thin soy (*sang zul*): Also known as superior soy, premium soy sauce, or light soy sauce. It has the most flavor but is saltier than Black soy. This soy is most often used in cooking. "The soy sauce sold in Western markets is generally thin."

Stick dried bean curd (*foo jook*): Also known as dehydrated bean curd, dried bean thread [or dried yuba sticks]. The pieces are "ivory colored, about 12 inches long, and shaped like a giant horseshoe."

Sweetened red bean paste (*dul sah*): To make it at home, see p. 139.

Tofu (*dul foo*): Also known as bean curd. "Tofu is high in protein, cholesterol free, low in saturated fats, and rich in phytochemicals." The important types of tofu are: (1) Firm tofu (*dul foo*): Comes in 3-inch squares, ½-inch thick. (2) Five spice tofu (*nmm hueng gul foo gawn*): Also known as spiced tofu or flavored bean curd. (3) Silken tofu (*wat dul foo*): "This is custardlike and more delicate"

Wet bean curd (*fu yu*): Also known as fermented bean

curd [or fermented tofu]. Sold in a brining liquor in jars (typically 1 pint). A favorite brand is Chan Moon Kee. The two basic types are (1) Wet bean curd, white (*bock fu yu*)*:* Often spiced with dried red chilies. (2) Wet bean curd, red (*nom yu*)*:* One-inch red cubes fermented in a thick red sauce.

Yellow mung beans, dried (*look dul hoy pay*)*:* "Also known as peeled mung beans," these look like small yellow split peas. "They are green mung beans that have been hulled." They are used in Savory rice tamales.

()*:* Address: A native of San Francisco, she currently lives in Manhattan with her husband Michael. For 16 years she has been the Test Kitchen Director and Director of Food Photography for Rebus, Inc., a New York Publishing Company.

7761. Wild Oats Community Market; Alfalfa's Markets. 2000. The joy of soy: Resolve to evolve. This millennium, pick up a good habit. Your guide to soyfoods–True health food. Colorado. 8 panels. [10 ref]

• ***Summary:*** This is a chain store newspaper (published from time to time; copyrighted 1998), with this issue devoted to soyfoods. It contains ads for many soy products sold at the store, many of them on sale. "Soy strategy: 3 New Year's resolutions. 1. Get healthy. 2. Lose weight / cut down on bad fats. 3. Help protect the environment.

A sidebar titled "Cool beans! Top ten reasons to enjoy soy" states: "1. Soy protein helps reduce cholesterol levels, thereby reducing the risk of coronary heart disease, which accounts for more than 500,000 deaths in the U.S. per year.

"2. The soybean is the only vegetable to offer a complete protein profile, equal to both meat and eggs in its protein content.

"3. As a complete protein, soy contains all nine essential amino acids. (The human body needs twenty amino acids, only eleven of which are produced by our bodies).

"4. Soybeans are higher in essential, healthful fats than most vegetable foods.

"5. Soybeans are a good source of several vitamins and minerals, including calcium, zinc, copper, magnesium, iron and many of the B vitamins.

"6. One acre of soybeans provides about 30 times more protein than one acre devoted to raising beef.

"7. Soy is also the richest dietary source of isoflavones, which act as phytoestrogens that may help protect against cancer, osteoporosis and menopause.

"8. Soy may increase bone density and reduce the risk of osteoporosis.

"9. Soy may reduce menopausal hot flashes in women–good news for those women who do not wish to take hormone replacement therapy.

"10. Other heart-healthy benefits of soy include low saturated fat, high calcium content, high essential fatty acid (EFA) content, high vitamin E content and no cholesterol."

There are definitions of and information about: Miso, shoyu, tamari, tofu, tempeh, soy milk, soy yogurt, soy cheese, soy desserts, soy oil, soy flour, texturized soy protein, soy grits, soy nuts, edamame (soy in the pod), and meat alternatives.

7762. Galeaz, Kim. 2000. Great tasting soy yogurt, great tasting recipes. *News* (*Okeechobee, Florida*). Jan. 26.

• ***Summary:*** Soy yogurt is now a part of the ever expanding line of soyfoods. Years ago, when yogurt was a rarity, its flavor and texture were not nearly as good as those of dairy yogurts. But now that has changed, and one can find "many new, different and great tasting soy yogurts on the market." These include WholeSoy Creamy Cultured Soy, White Wave Silk Dairyless Soy, and Galaxy Foods Veggie Yogurt.

Most soy yogurt is sold in a 6-ounce plastic cup, whereas dairy yogurt is typically sold in 8-ounce cups. However White Wave Silk Dairyless Soy is also sold in a 32-ounce (1 quart) container.

Soy yogurt may cost a few cents more, but they are "worth the extra money because of their tremendous health benefits. And soy yogurt is certainly a good way to help you with your goal of eating 25 grams soy protein daily to lower high blood cholesterol." Most soy yogurts contain about 5 grams of protein per 6 oz container.

Soy yogurt recipes: Peach parfait. Refreshing raspberry drink. Super strawberry breakfast smoothie (with "1 carton {6 oz.} strawberry soy yogurt," "1 cup vanilla soy milk," and "2 scoops... soy protein powder"). Address: RD, Indiana Soybean Board.

7763. **Product Name:** SoBe Soy Essentials (Soy Protein Infused Fruit Blend Beverages) [Qi Essentials {Berry}, Shen Essentials {Peach Flavor], or Jing Essentials {Citrus Blend}].
Manufacturer's Name: South Beach Beverage Co.
Manufacturer's Address: Norwalk, Connecticut.
Date of Introduction: 2000. January.
Ingredients: Incl. soy protein isolate.
How Stored: Refrigerated.
New Product–Documentation: Gourmet News (Yarmouth, Maine). 2000. Jan. The products are sold in 14-ounce glass bottles. Jing Essentials is a citrus blend which combines ginkgo and gotu kola with rosemary, sage, lemon balm and primrose.

7764. **Product Name:** Sun Soy [Creamy Original, Vanilla, Chocolate].
Manufacturer's Name: Suiza/Morningstar.
Manufacturer's Address: Gustine, California. Phone: 209-854-6461.
Date of Introduction: 2000. January.
Wt/Vol., Packaging, Price: ESL gable-top carton.
How Stored: Refrigerated.
New Product–Documentation: Talk with Dana Jacobi.

2000. March 5. She tasted this product recently and it is probably the worst-tasting soymilk she has ever tasted; she spit it out! She hopes the bad flavor doesn't do too much damage to the soymilk market. She thinks there are three flavors: Plain, vanilla, and chocolate.

Talk with Ted Nordquist. 2000. March 7. This product, launched in Jan. 2000, tastes "ugly." It is sold at Ralph's supermarkets in California. It is made from some sort of instant soy powder and added canola oil plus some wheat protein–which will make it unacceptable to those with wheat allergies. It contains no organic ingredients. It can't survive very long; when it dies, Dean Foods and Silk will fill in the slots.

Ad (full-page color) in *Vegetarian Times.* 2000. April. p. 21. "New Sun Soy. Good enough to drink straight." A color photo shows one large view of a carton and three smaller views of the cartons in three flavors.

Talk with Ann Shaw, researcher at the Morningstar plant in Gustine. 2000. March 27. This product is packaged in an ESL gable-top carton made by International Paper. It has a "screw cap fitment."

7765. **Product Name:** Soy Beverage [Strawberry].
Manufacturer's Name: Trader Joe's (Distributor-Retailer).
Manufacturer's Address: South Pasadena, CA 91031.
Date of Introduction: 2000. January.
Ingredients: Whole crushed strawberries, whole crushed bananas, apple juice from fresh apples, grape juice, coconut juice, fresh orange juice, isolated soy protein. "All ingredients have been flash pasteurized."
Wt/Vol., Packaging, Price: 1 quart (32 oz) or 1 pint plastic bottle. Quart retails for $2.29 and pint for $1.29 (2000/03, Lafayette, California).
How Stored: Refrigerated.
Nutrition: Per 8 oz (240 ml): Calories 200, calories from fat 30, total fat 3.5 gm (5% daily value; saturated fat 2.5 gm), cholesterol 0 mg, sodium 150 mg (6%), total carbohydrate 28 gm (dietary fiber 3 gm [12%], sugars 26 gm), protein 12 gm. Vitamin A 4%, calcium 4%, vitamin C 190%, iron 15%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2000. March 24 (Grand opening). 10 inch high plastic (polyethylene) bottle with a screw-on red lid. Label is red, white, green, and black. An illustration shows strawberries resting an a bed of dark green and black. "Perishable. Shake well. Keep refrigerated. No preservatives." This product is also all natural, and contains no added sweeteners. "Soy" is the biggest word on the label but the last of the seven ingredients, so it is used as a marketing device. Nevertheless, the drink contains 12 gm of protein per cup–a lot, and almost all of it from the soy protein. The product is given the thick consistency of a milk shake by the crushed whole strawberries and bananas. Soyfoods Center taste test: Delicious! A very creative product. Talk with Jason of Trader Joe's, Lafayette. Trader Joe's introduced this product about 2 months ago.

7766. **Product Name:** Trader Joe's Organic Soy Beverage (Quart Pure-Pak carton) [Chocolate, Vanilla, Original].
Manufacturer's Name: Trader Joe's (Marketer-Distributor).
Manufacturer's Address: P.O. Box 3270, South Pasadena, CA 91031-6270. Phone: 818-441-1177.
Date of Introduction: 2000. January.
Ingredients: Chocolate (April 2000): Water, ground organic soybeans*, organic cane sugar crystals*, organic natural cocoa powder*, calcium carbonate, organic vanilla extract*, sea salt, guar gum, carrageenan, vitamin A palmitate, vitamin D-2. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: One quart (946 ml). Gable-top Pure Pak carton. Retails for $1.59 (California 2000/04).
How Stored: Refrigerated.
Nutrition: Per 8 fl oz (240 ml): Calories 160, calories from fat 25, total fat 2.5 gm (4% daily value; saturated fat 0.5 gm {3%}), cholesterol 0 mg, sodium 75 mg (3%), total carbohydrate 29 gm (dietary fiber 2 gm, sugars 25 gm), protein 6 gm. Vitamin A 10%, calcium 30%, vitamin C 0%, vitamin D 30%, iron 8%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2000. April 21. Black, white, and chocolate brown. Three panels are identical. "Low fat & ultra pasteurized. Fortified with vitamin A, vitamin D & calcium. Perishable."

7767. **Product Name:** Silk (Soymilk Sold Refrigerated in Quart or Half Gallon Pure-Pak / Gable Top Cartons) [Vanilla].
Manufacturer's Name: White Wave, Inc. (Product Developer-Distributor).
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 2000. January.
Wt/Vol., Packaging, Price: Quart or half gallon Pure-Pak Carton.
How Stored: Refrigerated.
New Product–Documentation: Three ads in *Vegetarian Times.* 1999. Aug. Pages 13, 65, and 67–for Silk Soymilk in half-gallon cartons in vanilla, plain, and chocolate flavors.

Quart and half-gallon cartons with Labels sent by James Terman. 2000. May 11. 2.75 by 2.75 by 8¼ inches. Tetra Rex package. "Organic–Third party certified. Calcium enriched. Low 1% fat & vitamin enriched." Talk with James Terman of White Wave. 2001. May 29. When Silk was first introduced in Jan. 1996 it was flavored with vanilla and sweetened, but it was not called "Vanilla" until "Plain" was introduced

in quarts in July 1998. In Jan. 2000 the panel about Henry Ford first appeared on a Silk cartons–on all flavors and sizes. The best-seller at that time was vanilla half-gallons. It reads as follows: "Henry Ford: A man who used his bean. Soybeans originally travelled to the United States [Province of Georgia, North America] by ship when Samuel Bowen smuggled them from China in 1765. But it was Henry Ford who put them in cars. When the Great Depression hit, it hit farmers especially hard. Huge farm surpluses meant low crop prices and dwindling income. All of a sudden, Henry Ford's best customers–American farmers–could no longer afford his cars, trucks and tractors. Ford knew that 'If we want the farmer to be our customer, we must find a way to be his.' Figure out a way to use agricultural products in industrial manufacturing, and everyone would benefit. He put his chemists to work determining what products could be developed from plants. After testing numerous crop plants, they narrowed their focus to soybeans. Experimentation was soon rewarded with the discovery of soybean oil which made a superior auto body enamel. Soybean meal was converted to plastic used to make over 20 parts including horn buttons and gearshift knobs. By 1936, Ford was using a bushel of soybean in every car that rolled off the line. But Henry Ford didn't stop there. While his chefs developed a variety of tasty and nutritious American-style foods (including ice cream) from soy Henry invented soybean 'wool,' a fiber half the cost of sheep's wool. Soon a fabric containing 25% soybean wool was being used to upholster many Ford autos. And on special media occasions Mr. Ford would sport a suit made of soybean fiber."

7768. Branson, Roy. 2000. Harry Miller: Adventist hero of social reform. A dedicated doctor changed the way the world eats. *Adventist Review* (*Hagerstown, Maryland*). Feb. 10. p. 13-15 (p. 213-15).
• ***Summary:*** A very well-written story of Dr. Miller's life and work with soybean foods. This article begins: "He had a résumé that turned heads. Trained at Battle Creek Sanitarium by internationally renowned surgeon John Harvey Kellogg, he had gone on to Chicago to study under some of the finest surgeons in the country. By 1903 he was already, at 24, an instructor at Rush Medical College in Chicago. That year he and another researcher, who would later become one of the nation's foremost dermatologists, had written an article that took up nearly the entire May l903 issue of the *Journal of Dermatology.* John Harvey Kellogg had every reason to expect that his Adventist protégé would become a nationally acclaimed professor of medicine.

"But Harry Miller was about to drop his bright career in academic medicine and go to China. He would take with him his wife, Maude, another of Adventism's top physicians–she had surprised Harry by outscoring him on the Illinois state medical examination. When Kellogg heard what Harry and Maude were planning to do, he jumped on a train to Chicago. He would talk some sense into his prize pupils. A lot had gone into producing such fine physicians. The effort shouldn't be wasted.

"Kellogg had taken students like Harry Miller, born in a log cabin north of Dayton, Ohio, instructed them at the Adventist medical school in Battle Creek, then plunged them not only into academic medicine but into the disease and poverty of downtown Chicago. Working in some of the six health and social reform institutions Kellogg had established at the turn of the century, Miller knew there was a great work of reform to accomplish in America's cities. The Seventh-day Adventist Medical Missionary Benevolent Association had already established health reform institutions in 17 American cities. The *Life Boat,* edited by Dr. David Paulson, one of Miller's Adventist teachers, was the Adventist voice of urban mission, publishing articles on such social reform topics as juvenile delinquency, child labor, and prison reform. At its peak, the *Life Boat* reached an astonishing 200,000 subscribers.

"When Kellogg arrived in Chicago, he told his protégés that he wanted Harry to achieve his full potential, to become a professor at a top medical school, an emissary for Adventism to America's university life. But in the face of their strong-willed teacher's advice, Harry and Maude Miller held firm. They insisted on expanding Adventism's encompassing vision of reform across the Pacific. Harry Miller plunged on with his commitment to service and became the 'China Doctor.'

"In refusing Kellogg's entreaties, Miller nonetheless honored his mentor. Just as Kellogg had established a national reputation as an abdominal surgeon, Harry Miller would became a world-renowned thyroid surgeon. Kellogg had erected a half-dozen social reform institutions in Chicago–one of which would become the Chicago campus of the University of Illinois Medical School. Miller would found clinics, hospitals, and food laboratories throughout East Asia. Kellogg transformed America's breakfasts with corn-flakes; Miller would introduce commercially successful soy milk to the world. Kellogg would live to be 91, Miller to 97..." Address: Senior research fellow, Kennedy Inst. of Ethics, Georgetown Univ. [Washington, DC].

7769. Fitzpatrick, Mike. 2000. Soy formulas and the effects of isoflavones on the thyroid (Editorial). *New Zealand Medical Journal* 113(1103):24-26. Feb. 11. [42 ref]
• ***Summary:*** Contents: Introduction (In Nov. 1998) the New Zealand Ministry of Health (MOH) issued an update on its position on soy formulas. The goitrogenic effect of soy. Isoflavones: the goitrogenic agents in soy. Isoflavones: levels of dietary exposure. Isoflavones: the risks to consumers. Conclusion. Address: Kingett, Mitchell & Associates, Auckland, New Zealand.

7770. Purvis, Kathleen. 2000. Say soy! New foods and

drinks keep sprouting from these magic beans. *Post-Dispatch* (*St. Louis, Missouri*). Feb. 14.
• ***Summary:*** Perhaps the tastiest form of soy is edamame. These green soybeans, boiled, salted, and served chilled, are the "latest craze in the chi-chi ["chic"] cocktail set." In Japan they are served as snacks with beer or sake.

In the six months before June 1999, sales of soyfoods have grown 34.4%, according to data from SPINS. Sue Havala notes that soymilk is now available at mainstream food stores / supermarkets. A full-page color photo shows bright green edamame, with the pods both opened and closed. Contains four recipes and a glossary of the following: Green soybeans, soymilk, soy flour, soy nuts, canned soybeans, soynut butter, miso, tofu, tempeh, soy sauce. Address: Knight Ridder Newspapers.

7771. Erickson, Marsha. 2000. Soy foods may lower cholesterol: In season. *News-Tribune* (*Duluth, Minnesota*). Feb. 17.
• ***Summary:*** "Editor's note: The American Heart Association has designated February as American Heart Month. Throughout the month, In Season is focusing on the 'right stuff' to feed your heart. Today the spotlight is on soy foods. Coming next week: Whole grains."

Soyfoods are good for the heart. They "are rich in special plant chemicals called isoflavones. These isoflavones may directly lower blood cholesterol. In addition, soy foods are low in saturated fat, high in soluble fiber, cholesterol-free and contain high quality protein.

"Food sources of soy include soynut butter, roasted soynuts, soy flour, miso, tofu, tempeh, textured soy protein and soymilk."

A black and white photo has a border of "green soybeans," both in the pods and shelled. The text, titled "Great soy sources," states: The FDA now allows products that contain at least 6.25 grams of soy protein per serving to say on the label that the product may reduce the risk of heart disease. Products that are good sources of soy protein per serving are:

4 ounces of firm tofu contains 12 grams of soy protein. 4 ounces of soft tofu contains 9 grams. 1 soy burger contains 10-12 grams. 8 ounces [1 cup] soymilk contains 10 grams. ½ cup cooked soybeans contains 16 grams. ½ cup green soybeans [shelled edamame] contains 10 grams. ½ cup tempeh contains 19 grams. ½ cup roasted soy nuts contains 39 grams. Address: Registered Dietitian, Miller-Dwan Medical Center; Duluth representative of the Minnesota Dietetic Assoc.

7772. United Press International (UPI). 2000. Things we don't understand (News release). *National Wire*. Feb. 22.
• ***Summary:*** The National Milk Producers Federation (Arlington, Virginia), a dairy trade association, says the term "soy milk" is misleading and the manufacturers of soy beverages ought to stop using it.

They are calling on the U.S. Food and Drug Association (FDA) to restrict use of the word "milk" to the stuff that comes from dairy cows.

The dairy group's petition caught the American Soybean Association (ASA) by surprise.

"ASA spokesman Bob Callahan wonders whether the dairy group would seek similar restrictions on such products as goat's milk, coconut milk, or even milk of magnesia."

7773. Jessop, Doug; Mullin, John. 2000. How their Canadian miso won a prize in the Japanese miso contest (Interview). *SoyaScan Notes*. Feb. 28. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Canada has been working for many years to develop food-grade soybeans that are especially well suited for making Japanese soyfoods, such as miso. This year Doug and John entered their miso in the Japanese national contest and won two Special Participation awards. Dough explains: They started by making miso using three Canadian soybean varieties: Harovinton (released in 1989), AC Onrei (released in 1997; "AC" stands for Agriculture Canada), and AC 756 (a double lipoxygenase null variety). They made miso from each of these three soybean varieties and sent it for evaluation to the Nagano Research Institute. NRI said that, of these three, the miso made from the AC Onrei variety was the best, so they concentrated on making miso from that soybean for competition. AC Onrei is a very large-seeded, long-season, white hilum, buff colored soybean, one of whose parents is Enrei–a large-seeded Japanese variety. Most of the miso they entered was red miso; some of it was rough (unground) and some was finished/fine (smooth/ground). They entered their miso in two different contests: The All-Japan content and the Nagano contest, and they won an award for each. This was surprising because AC Onrei was not bred as a miso-type soybean; it has a high protein content and was originally developed as a soymilk and tofu bean. For miso soybeans, the Japanese always look for high sucrose–over 7%; AC Onrei has 6.8%. They also look for total free sugars, of which AC Onrei contains about 10.5-11% (about average). Even though about half the sugars are probably bound up in pectins or cellulose and have no effect on the miso flavor, they still like to know the total sugar content.

Entering and winning this contest was a new step forward for the Canadian soybean folks. "It's really something special." Doug has been taking Japanese language lessons. The miso group of which John is the project leader is now starting to log in soybean variables on a database, which has fields for sucrose, total free sugars, color, etc. For miso soybeans (including red miso or long-term soybean miso), the Japanese prefer a yellow color to a whiter color–which the tofu and soymilk makers look for.

John explains that he is a food scientist, not a soybean breeder. We talked about 6 years ago when he was starting

to work on miso, and he ordered a search on miso from the SoyaScan database. The breeders are the key to the process; at Harrow they breed mostly food-type or food-grade soybeans rather than commodity-type or oilseed-types–which are bred mostly at Ottawa and Guelph.

John's miso group at Harrow has developed a close working relationship with the Food Research Institute in Nagano; they now work directly with one another. About two years ago, Mr. Fujimori, a miso maker with whom they have developed strong ties over the years, was in Canada on one of his trips. John gave him (for the first time) some homemade miso that his group had produced. He sniffed it and looked at it and said "This isn't too bad." He took it back to Japan, where it was evaluated and the results were sent to John–with Mr. Fujimori's interpretation. The conclusion was: "It's okay but... don't give up your day job." John wrote back asking how his group could improve the miso. That was they key! Mr. Fujimori came to Harrow again with another person, gave John's group a lot of technical information, suggested that he use that information to make more miso–and to enter the miso in the annual Japanese miso contest! Mr. Fujimori provided the koji and John got a microbiologist involved. John's group now made miso from three different soybeans (see above) and the scientists and judges at the FRI in Japan "were quite surprised." They said "This isn't bad." They chose the best one. So John's group made larger batches and sent them to Japan in October 1999 for entry in the annual contest. In November John went to Japan to be present at the contest–although nobody can observe the judging. He learned that this was the first miso ever entered by foreigners in the Japanese contest. He also learned that the Canadian miso was not being judged with or against the Japanese miso. They were judging it separately in a special category–of which it was the only entry. Both awards for an "E" for effort and for reaching a high standard. "Miso is kind of a religion in Japan and it for an upstart like us to come in might not go down too well. But we found it interesting that they used our presence there for publicity–in a big way." John also discovered that the koji in all miso entries *must* be made from Japanese rice–even though a lot of Thai rice is used in making commercial miso in Japan. "Our real mission there was to raise the profile of Canadian-grown soybeans and to increase exports of Canadian soybeans. We want to breed soybeans that are very well suited for making miso in Japan. We are not interested in making miso to sell to Japan. However there is a good possibility of developing a domestic market for miso in Canada."

John is also deeply involved in trying to understand "stone seeds" or hard-seeded soybeans that do not absorb water well. Part of the problem seems to be related to weather/environmental conditions during the growing season. John hopes to try to understand the problem at the genetic level. "We now have a very heavy experimental stone-seed line."

John enjoys miso at home and he has served miso soup at the research station on several occasions. Last week he had it served at the Rotary Club. In each case, everybody liked it. "Fermented foods add such a variety of textures and flavors that people enjoy." Address: 1. Food Processing Technologist; 2. Food Scientist: Both: Agriculture and Agri-Food Canada, Greenhouse and Processing Crops Research Centre (GPCRC), Highway 18 East, Harrow, ON N0R 1G0, Canada. Phone: 519-738-2251.

7774. White Wave. 2000. Advertising program for Silk soymilk in 19 national magazines from 1 May 2000 to 25 March 2001. Boulder, Colorado. 1 p. Feb. 28.
Address: Boulder, Colorado.

7775. Skrzycki, Cindy. 2000. Dairy group has a cow over 'milk' that doesn't. *Washington Post.* Feb. 29.
• ***Summary:*** Says Bob Byrne of the National Milk Producers Federation: "We don't want them using milk's good name for their product"–which is not "the lacteal secretion of cows."

Milk once had an untarnished image in the USA. But that was before the medical establishment began warning about butterfat, cholesterol intake, and calories. Suddenly whole milk lost out to 2% and then 1% and then skim / nonfat milk.

7776. *Wall Street Journal.* 2000. Heinz agrees to buy owner of Beech-Nut. Feb. 29.
• ***Summary:*** H.J. Heinz Co. has agreed to acquire Milnot Holding Corp, owner of Beech-Nut Nutrition Corp. Milnot paid $68 million last year to acquire Beech-Nut from Ralcorp Holdings Inc. Heinz will be Beech-Nut's fourth owner is little more than a decade. Beech-Nut used to be a unit of Nestle SA until the Swiss firm sold it to Ralcorp in 1989. Address: Staff Reporter, Wall Street Journal.

7777. **Product Name:** Regular Tofu, Savory Tofu, Almond Tofu, Mushroom Onion Tofu, Lemon Grass Tofu, Sweet Ginger Tofu, Soy Noodles, Soymilk [Unsweetened, or Sweetened], and Tofu Skins.
Manufacturer's Name: Ahimsa Gourmet.
Manufacturer's Address: 1520 International Marketplace, San Pablo, California 94806. Phone: 510-235-8343.
Date of Introduction: 2000. February.
New Product–Documentation: Talk with George Weissmann, founder of Veat Gourmet. 2000. April 12. About two months ago his partner, Van Thi Dang, who is Vietnamese, started a small business named Ahimsa Gourmet in San Pablo, California, where they make tofu, soymilk, and many other soyfood products.

Talk with Van Thi Dang. 2000. April 12. She and her business partner, Tony Tieu (who is Chinese-Vietnamese), founded this business in mid-Feb. of this year. Tony makes all of the soy products. Even though she and Tony are

Vietnamese, they produce their soyfoods for everyone, without targeting any particular ethnic group.

7778. Jaret, Peter. 2000. The joy of soy: Hailed as the king of all health foods, the mighty soybean has been touted as a weapon against heart disease and cancer. *Harper's Bazaar.* Feb. p. 152, 156.
• ***Summary:*** "Wonder foods come and go... But the new superfood of the moment promises to be different. Eventually it's going to get everyone's attention, because the health claims being made for it are just too big to ignore." "A stream of scientific papers have shown evidence that it can fight heart disease and cancer." Even those who hate tofu are finding that soy can taste pretty good. Many like edamame–those slightly furry green pods served at Japanese restaurants. You run them through your lips and suck out the smooth, slightly salty soybeans inside. "Edamame have become so popular, they're being sold in bulk stores from New York to California." At Trader Joe's, a nationwide retail chain, sales of frozen edamame now rival those of frozen corn and broccoli. Even soymilk is poised to go mainstream. A key reason for the health benefits of soybeans is that they are rich in isoflavones–substances that resemble the natural hormone estrogen. Isoflavones are also powerful antioxidants.

Color photos show: (1) Two large red chopsticks holding one cooked yellow soybean. The caption: "The soybean, Asian staple, may be a big reason why cancers of the breast and prostate are uncommon in Japan and China." (2) Edamame in the pods, topped with a sprinkling of coarse white salt, on a square bamboo tray. The caption: "Edamame, the salty finger food served at sushi bars, is so popular, specialty food markets are beginning to sell it by the pound."

7779. Kuchan, Matthew J.; Ostrom, Karin M.; Smith, Carla; Hu, Peter E. 2000. Influence of purine intake on uric acid excretion in infants fed soy formula. *J. of the American College of Nutrition* 19(1):16-22. Feb. [37 ref]
• ***Summary:*** Most mammals catabolize purines to uric acid, which is oxidized by the enzyme uricase to urea and allantoin. However, since humans and primates do not have the enzyme uricase, they produce uric acid as the end product of purine catabolism. This metabolic trait has been used as a diagnostic tool to determine if humans can absorb dietary purines.

These two studies tested the hypothesis that increasing intake of purines, delivered as RNA from infant formula based on soy protein, would increase uric acid excretion in infants.

In Study One, each of the feedings resulted in mean serum acid levels within the normal range. Feeding soy formula led to higher serum uric acid levels than human milk, and human milk to levels indistinguishable from formulas based on cow milk. In Study Two, infants excreted significantly more uric acid in the urine when fed the Standard Purine formula compared to the Reduced Purine formula. In Study Three, infants fed the Standard Purine formula has a significantly higher concentration of uric acid in their urine compared to those fed the Reduced Purine formula. Address: 1-2, 4. Pediatric Clinical Nutrition Research, Medical and Regulatory Affairs, Ross Products Div. of Abbott Laboratories, Columbus, Ohio.

7780. White Wave, Inc. 2000. Silk: Put the fastest selling soymilk in your dairy case (Ad). *Natural Foods Merchandiser.* Feb. p. 16.
• ***Summary:*** This color ad (8½ by 11 inch) contains a photo of a half gallon carton of Silk Vanilla Soymilk (organic, Calcium and vitamin enriched). "The Number 1 selling refrigerated soymilk in America.

"Silk Vanilla half-gallon soymilk is also the largest selling non-dairy beverage in America's top 600 natural foods supermarkets, SPINS data Oct. 1999." Address: Boulder, Colorado.

7781. Nordquist, Ted. 2000. Update on the soymilk wars in America (Interview). *SoyaScan Notes.* March 7. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** In June 1999 Ted was set to launch his WholeSoy Soymilk nationwide in three flavors–original, vanilla, and chocolate. Neil Donovan of Pacific Coast Brands (makers of Lactaid) had agreed to put $43 million into the launch. It was planned as a big and serious launch–the result of a year's work. The plates for the cartons were ready, the formulations were all tested, and many focus-group studies had been completed. Ted was waiting for the final okay from Dallas, which is the headquarters of the Suiza group. The key to the launch was the Suiza distribution network–the same network that distributes Lactaid. Lactaid is made at various plants, including the Suiza plant in Gustine, California. Lactaid has had a licensing agreement with Morningstar since long before Suiza bought Morningstar. Ted had been working closely with Suiza for several years (he packaged his soymilk at their plant in Gustine, California) and had gone to Suiza's headquarters in Dallas, Texas, three times. He submitted several reports to them.

One day in June 1999, as the launch date was approaching, Ted got a phone call from Terry O'Brien, who is a young sales manager at Suiza, in Dallas. He said that Suiza had decided (after looking at all of Ted's marketing information) that launching soymilk nationally was a great idea–so Suiza had decided to do it themselves with their own label, and to totally ignore Ted and his expert advice. O'Brien added that not only could Ted not use the Suiza distribution system, he could also no longer pack his soymilk in the Gustine plant–where he had been packing it for several years. That killed Ted's timing, because he would have been the first to have gable-top soymilk distributed nationally

to supermarkets in the USA. The White Wave-Dean Foods alliance was not announced until Aug. 18. Suiza launched its Morningstar Sun Soy in Jan. 2000. Ted has tasted it–"ugly."

After Ted got kicked out of Suiza, he went to Dean Foods and talked to their head of marketing; he went to the president who said that he could not work with Ted because he was already in negotiations with another company–which turned out to be White Wave.

So Ted no longer plans to try to launch a national soymilk. Now, 8 months later, Ted has found another packing company, and he is still contemplating launching WholeSoy Soymilk, but now it is very risky. He will introduce it at the Anaheim show this month then decide whether or not to invest the $180,000 needed to print the cartons. The refrigerated soymilk shelf space is natural food stores is pretty crowded.

Horizon Foods is still thinking about launching a soymilk, but their present management is very divided on the subject. Feinbloom and some other people Ted knew well have gone. Ted has heard that the main reason for the split is that the many dairy farmers who supply Horizon with organic cow's milk don't like the idea of their starting to sell soymilk–a competing product. Other dairy farmers are also upset at Dean Foods and Suiza for the same reason. Ted has talked with Horizon about doing a soymilk together, but he has heard that they may do that with some European company. Suiza owns about 20% of Horizon Foods. Ted thinks the odds are that Horizon will not launch a soymilk.

Note 1. In Jan. 2000 Suiza/Morningstar launched Sun Soy, in Creamy Original, Vanilla, and Chocolate flavors. Note 2. Dana Jacobi commented to Ted that most of the soyfoods executives she has interviewed are "practical idealists." Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

7782. Chapman, Nancy. 2000. Re: Soymilk and soymilk standards. Letter to Joseph A. Levitt, Director (HFS-1), Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration (FDA), 200 C Street, S.W., Room 6815, Washington, D.C. 20204, March 9. 6 p. Typed, with signature on letterhead.
• ***Summary:*** Response to letter to FDA from the National Milk Producers Federation; a copy of this letter will also be sent to FDA Docket No. 97P-0078.

"The Soyfoods Association of North America... is a trade association that represents 60 manufacturers and distributors of soy-based products, including soymilk, tofu, miso, tempeh, and other items, in the United States and elsewhere in North America.

"We write in response to a letter dated February 14, 2000 that we have recently learned has been sent to you by the National Milk Producers Federation ("NMPF"). In that letter, the NMPF complains to FDA about use in labeling of the nomenclature "soymilk" to describe beverages that are made from soy and asks FDA to take enforcement action to prevent use of such labeling." Address: Executive Director, Soyfoods Center, of North America, 1723 U Street, N.W., Washington, D.C. 20009. Phone: 202-986-5600.

7783. Kelly, Barbara J. 2000. White Wave's Silk Soymilk gains foothold in dairy case. *Boulder County Business Report* (*Colorado*). March 9.
• ***Summary:*** White Wave's products are now carried in more than 11,000 stores nationwide. The company's line of Silk soymilk products has been "the fastest growing item in the dairy case in the past year."

7784. Cohen, Deborah L. 2000. Functional food fever hits local tastemakers. *Crain's Chicago Business.* March 13.
• ***Summary:*** Food companies are starving for growth, and they see a way to get it in functional foods. Kraft spent nearly $400 million this year to buy Boca Burger (a maker of veggie burgers in Chicago) and Balance Bar (a maker of nutrition bars in California).

Dean Foods (of Franklin Park, Illinois), faced with sluggish sales of dairy milk, took a minority stake last year in White Wave Inc. (of Boulder, Colorado), a maker of Silk soy milk. Dean Foods, a large dairy company, has already increased the number of Silk distribution outlets sixfold, says Dennis Purcell, head of Dean's specialty business unit. White Wave had roughly $21 million in sales in fiscal 1999.

Small photos show packages of Silk, Boca Burger, and Balance Bar. Address: Managing editor.

7785. Messina, Mark J. 2000. Update on soy and nutrition (Interview). *SoyaScan Notes.* March 29. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Even though ABC's TV program 20/20 did a positive story about soymilk, they will soon be airing a very negative program on soy. They started by focusing on Lon White's study associating tofu and Alzheimer's in Hawaii. They then added the idea that there is a conspiracy between the soy industry and the FDA for the health claim. Mark has spent six hours on the phone with the 20/20 people, and he expects the program to be very negative. He is concerned.

Another important negative article titled "Eating well: Doubts cloud rosy news on soy," by Marian Burros (*New York Times,* 26 Jan. 2000) concerns soy and breast cancer. She argues that soy may be contraindicated for breast cancer and quotes Steve Barnes as saying that women with ER-positive tumors (that means the estrogen receptors respond to estrogen) tumors should not consume soy. There was a second article on tofu and Alzheimer's by Rosie Mestel in the *Los Angeles Times* that was much more negative than the first article by Susan Essoyan. Moreover, Rosie is confused about what constitutes "moderation," because Lon White's study indicated that 2-4 servings of tofu per week

caused brain problems, whereas most studies show that you must consume at least 1½ servings of tofu a day to get any benefits. In short, Mark believes that the media is and will be increasingly running negative stories on soy. Ken Setchell feels like "everybody has now jumped the soy ship and he's the only one still promoting it." "It's now hitting the fan right and left–so that we have gone to the other extreme." In July of this year, a panel on soy and safety is scheduled for the NNFA (National Nutritional Foods Association) show. The toxicity issues are now starting to take center stage–as Mark has been warning for several years. Mark does not see how any food company could consider coming out with a new soy product in the current atmosphere–with all the controversies being raised." The newspapers are carrying the negative stores because the magazine stories that are running now were written 6 months ago.

Over the past few years, many people in the soy industry have accused Mark of being an alarmist for presenting the whole truth–both sides of the issue. For example, Mark was telling dietitians that soy might be contraindicated for women with ER-positive breast tumors. Steve Barnes did not agree with Mark on this point. David Heber (a "big shot," M.D., PhD at UCLA) was hosting a soy meeting at UCLA on Jan. 20th 1998, in cooperation with PTI, to try to calm any concerns that some UCLA endocrinologists had about soy and breast cancer. It was a sort of "one-day dog and pony show" with five positive talks on soy by UCLA-associated people. He was very critical of Mark's position on the subject and even shouted at Mark on the phone for 10 minutes for scaring women away from soy when soy was so wonderful.

The last four studies on the ability of soy protein to lower blood cholesterol levels have shown no effect. We must be clear that there are two separate issues in these studies: (1) Does it work? and (2) Does it matter? If it does work, it probably doesn't matter, because those people with very high cholesterol levels would probably be put on drugs anyway.

In a recent position paper on women's health, the American Dietetic Association recommended that women avoid phytoestrogen supplements. Address: PhD, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

7786. ABC (American Broadcasting Co.). 2000. 20/20–Gimme a break [Soymilk segment]. Television broadcast. Friday, March 24. Channel 7 (California). 10:30 p.m.
• ***Summary:*** John Stossel discusses (unsympathetically) the dairy industry's actions to try and make use of the word "soymilk" illegal. The segment begins: "It's a war of words over what to call this drink [shows a carton of soymilk]. It looks like milk and tastes like milk, but milk producers say 'You can't call it milk.' Are they protecting consumers or milking the market?"

"What's in a name? Apparently, a lot of money! Because there's a tug-of-war going on now over the name 'milk.' Milk producers say 'We own it.' And to that we say 'Gimme a break.' Yes, because competition should take place on a level playing field. Whatever product consumers prefer wins. But that's not how it works with milk. The milk business seems to think its special." Milk makers was the Food and Drug Administration (FDA) to take immediate action against misuse of the word "milk." They're upset about soymilk, sold in packages that look like those used for regular milk, and showing up in the dairy case. Soymilk comes, of course, not from cows, but from soybeans.

20/20 did as taste test in a supermarket, giving soymilk to 50 people; most of them liked it–even people who were sure they wouldn't like it. When 20/20 give these consumers a blind taste test, some preferred the soymilk–so they are buying the wrong product. Not only do people like the taste of soymilk, it may be better for you. The FDA says that soyfoods help lower cholesterol and reduce the risk of heart disease. "So this is a threat to milk producers. And to that I say, 'Too bad!'... The competition is good for us consumers."

But the milk industry thinks it's special; its used to getting special breaks like the price-fixing deals called "price supports" which prop up the price of milk with taxpayer dollars then force consumers to pay more for milk. So its no surprise that the milk folks are trying to use government and laws to defeat the competition. Its Political Action Committees give millions of dollars to politicians every year and it has come to expect protection. Now they say that soymilk should be called "soy beverage." It's all because they're worried about consumers being hurt. Gimme a break.

7787. **Product Name:** Soy Fusion (Soy Beverage) [Berry, or Matcha Green Tea].
Manufacturer's Name: American Soy Products.
Manufacturer's Address: 1474 N. Woodland Dr., Saline, MI 48176. Phone: 313-429-2310.
Date of Introduction: 2000. March.
Ingredients: Berry: Filtered water, organic soybeans*, organic evaporated cane juice [sugar], apple juice, raspberry juice, carrot juice, and red cabbage juice (water, juice concentrates), pectin, citric acid, calcium, natural flavor, vitamin C, beta-carotene. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 250 ml and 1 liter Tetra Brik Aseptic carton. The liter retails for $1.69 (2001/10, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflets (8½ by 11 inches, color, glossy, front and back) sent by Patricia Smith from Natural Products Expo at Anaheim, California. 2000. March 24. The front panel shows a glass (with a flex-straw) of the whitish-pink berry beverage against a pink background. "Less than 1% fat. Light, refreshing, delicious. Excellent

source of antioxidant vitamins A & C. Made with certified organic soybeans (non-genetically altered). A good source of calcium. 12 mg of soy isoflavones per serving." A color photo shows the front panel of all four aseptic packages. The back panel states: "Sales of soy beverages through all channels increased 52% in 1999." The berry contains only 2 gm of protein per serving, and the matcha 3 gm.

Product (Matcha) with Label purchased at Trader Joe's in Lafayette, California. 2001. Oct. 6. This store carries both Berry and Matcha. "Made with matcha–powdered whole green tea leaves. 75 mg antioxidant catechins/serving." Soyfoods Center taste test. 2001. Oct. 13. Pretty good flavor, but much too watery and diluted. The use of sugar (a whopping 16 gm/serving) makes it undrinkable, so we regretfully discard it. Overall: Poor.

7788. **Product Name:** Luna Bar [Chai Tea, Tropical Crisp, S'mores, Sesame Raisin Crunch].
Manufacturer's Name: Clif Bar Inc.
Manufacturer's Address: 1610 Fifth St., Berkeley, CA 94710. Phone: 510-558-7855 X-236.
Date of Introduction: 2000. March.
Ingredients: Chai Tea: LunaPro (soy protein isolate, rolled oats, rice flour, roasted soybeans, crisp rice [isolated soy protein, rice flour, malt, salt], flaxseeds), brown rice syrup, natural flavors, sea salt, decaffeinated tea extract. Chai Coating: evaporated cane juice, fractionated palm kernel oil, soy milk (soybeans, water), soy lecithin. Chai Blend (ground ginger, green tea leaves, cloves, anise, cinnamon, cardamom), natural flavors. Vitamins and minerals (lists 23).
Wt/Vol., Packaging, Price: 1.69 oz (68 gm) in foil bag. Retails for $1.19 (2000/05, Lafayette, California).
How Stored: Shelf stable.
New Product–Documentation: Talk with Molly Lori, Registered Dietitian, Consumer Service, Clif Bar Inc. in Berkeley, California. 2000. May 17. The Luna Bar was designed for women. The first four flavors were available in July 1999. The most recent four were available in March 2000. The Luna Bar has fewer calories per bar, which is what women want.

"Luna Bar fact sheet" sent by Molly. 2000. May 17. Lists the eight flavors with nutritional facts and ingredients for each. Four flavors are called "New!"

7789. CNN-FN (Financial News). 2000. Business unusual. Television broadcast. CNN. March 1. 4 minutes, 50 seconds.
• ***Summary:*** This interview with Steve Demos begins: "Well, it certainly isn't the usual path to business success. My guest was a '60s hippie who dropped out of American society, moved to India, and practiced yoga in the Himalayas–and lived in a cave, by the way. And when he finally dropped back in, he did so by practicing a philosophy of 'Wealth without guilt,' and launched White Wave, a multi-million-dollar enterprise built on, of all things, soy!"

Steve says that he realized that he wanted to contribute to our society, and to do so he had to keep score by "extracting wealth." He wanted to make a positive contribution, "Something the world was better off with, rather than without." He chose soy because it was a "nonviolent contribution that is nutritional." He started making tofu in 1977. The host (a woman) notes that "its really just sort of catching on more mainstream now in the U.S." Demos agrees: "This is how to get rich slow... Not the overnight success."

The host asks again about the route that he took, "back from a cave in India, doing yoga for days and meditating." Then: "What does your family think of you now?" Answer: They are much more approving. Steve notes that business for him is a philosophy, and he has a great passion for what he is trying to accomplish. White Wave had sales of $30 million last year and the company is forecasting $60 million this year. They expect sales to double for the next three years as a result of the FDA endorsement stating that soy is a "healthy benefits food." The host says she hopes that one day all Americans will be dunking their Oreo cookies in soymilk, then closes with "Keep up your principles."

7790. **Product Name:** Eco Soy Pudding (Organic) [Vanilla, Chocolate, or Chocolate-Orange].
Manufacturer's Name: EcoFoods, Inc. (Product Developer-Distributor).
Manufacturer's Address: Palo Alto, California 94303. Phone: 650-978-9696.
Date of Introduction: 2000. March.
Ingredients: Organic soy beverage* (Filtered water, organic whole soy beans*), fructose, tapioca starch (modified), organic cocoa*, expeller pressed canola oil, organic agave nectar*, natural flavor, calcium, carob powder, lecithin, sea salt, carrageenan. ** = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 4 x 4.5 oz (128 gm) cups = 18 oz (510 gm). Retails for $2.99 to $3.20 (4 pack in California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per cup (128 gm): Calories 140, calories from fat 25, total fat 3 gm (5% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 60 mg (2%), potassium 170 mg (5%), total carbohydrate 25 gm (dietary fiber 0 gm, sugars 18 gm), protein 2 gm. Vitamin A 0%, vitamin C 0%, calcium 20%, iron 0%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product (Chocolate) with Label brought by Bob Gerner of Berkeley Natural Grocery Co. 2000. March 13. The product is sold in a 4-pack with a paper sleeve. Label: 6 by 10.25 inches. Paperboard. Chocolate brown, green, blue, and pink on white. Illustration of a spoon filled with a swirl of pudding. "Made with organic soy beans. Excellent source of calcium. Low fat & non

dairy. 15 mg isoflavones per serving. Organic, genetically unmodified soy beans." Soyfoods Center taste test: Flavor, texture, and package design: Okay.

Leaflet (8½ x 11 inches, glossy color, front and back) brought by Bob Gerner. The front shows the three flavors packaged in sleeves. "A great taste non-dairy pudding with non GMO organic soy beans." The back gives product ingredients and specifications.

Talk with Carole Corb of EcoSoy and C.J. Corb Intl. (phone: 805-773-8801). 2000. March 14. This product was developed by Daniel Adam, who lives in Israel where he runs a natural foods import business, importing Edensoy, Garden of Eatin' products, Galaxy soy cheeses, etc. The product, which is made in Minnesota, was first launched in Israel on 15 Jan. 2000, then in America in March 2000. Her favorite flavor is Chocolate-Orange. The recommended retail price is $2.97+.

7791. **Product Name:** Kôgi Café (Soymilk) [Amaretto Mocha, or Swiss Almond Decaf].
Manufacturer's Name: Flavor Organics, Inc.
Date of Introduction: 2000. March.
Ingredients: Amaretto Mocha: Fresh brewed 100% Colombian organic coffee, organic soymilk (filtered water, soybeans), organic evaporated cane juice, organic brown rice syrup, organic corn syrup solids, organic cocoa, organic flavors, natural flavors.
Wt/Vol., Packaging, Price: 9.5 fluid oz (281 ml) glass bottle.
New Product–Documentation: Leaflet sent by Patricia Smith from Natural Products Expo West at Anaheim. 2000. March.

7792. *Food Trade Journal U.S.A.* (*Ikegawa Food Specialists*). 2000. FDA as well as media help Japanese food industry: Soy products and green tea are highlighted. 10(2):1, 3-4. March. [Eng; Jap]
• ***Summary:*** Each article in this newspaper is published in both English and Japanese. Last October, the FDA gave its approval for U.S. companies to begin using a health claim on foods containing at least 6.25 gm of protein per serving. Except for traditional soy products (such as tofu), each serving must contain no more than 3 gm of fat, 20 mg of cholesterol, and 480 mg of sodium. The FDA believes that adults who consume 25 gm/day of soy protein could experience a decrease in their blood cholesterol, which reduces their risk of heart disease. The mainstream soyfoods that benefited from this announcement are veggie burgers, soymilk, tofu, and soy cheese. But now edamame has emerged as a big seller at supermarkets since a few years ago. A Japanese-style cartoon shows two blonde girls seated at a table. A boy, who is standing, says "I show you how to eat Edamame." Holding a pod of edamame in his right hand, he is popping the beans into his mouth. A circular inset, showing how his fingers hold the pod, is titled "Squeeze." Another cartoon shows Takuji Kimura [Mr. edamame in America], drawn by his son.

The article gives lengthy excerpts from two recent American articles: (1) Hesser, Amanda. 1999. "Bet you can't eat just one soybean." *New York Times.* Sept. 8. p. F3. (2) Deane, Donna. 2000. "Get more soy in your life." *Los Angeles Times.* Jan. 12. p. H1, H3. Food section.

According to Shigeru Shirasaka, president of House Foods (a leading U.S. tofu maker), his company shipped 29 million pieces of tofu in 1999, which is a 70% increase over 1995.

The last page of this article is about edamame, by Takuji Kimura, America's leading edamame broker, Concord, California. Japanese restaurants have been the showrooms for edamame, and they are part of the reason for its growing popularity. Tak Kimura started trying to sell edamame in 1994 at several natural food stores, but nobody seemed interested. He contacted the produce manager of Whole Foods in Berkeley–a woman–without an appointment. When he asked her to try his edamame, she said that she knew what it was–an appetizer at sushi bars! She liked it very much and had tried to find a source, but the restaurants would not disclose their sources. During his first demo day at Whole Foods he sold only 8 packs in 8 hours. But after 2 weeks sales started to increase. Then he got permission to sell edamame at other Whole Foods Markets, and then at the Wild Oats chain of natural food stores. In 1998 sales started to increase rapidly. Now the FDA is supporting edamame and major newspapers are doing stories, so sales continue to grown.

7793. **Product Name:** Veggie Burst (Drink Mix for Kids) [Very-Very Vanilla, Berry-Berry Strawberry, Chock-Full of Chocolate].
Manufacturer's Name: Galaxy Foods.
Manufacturer's Address: 2441 Viscount Row, Orlando, FL 32809. Phone: 800-441-9419 X107.
Date of Introduction: 2000. March.
How Stored: Shelf stable.
New Product–Documentation: Galaxy Foods Nutraceuticals order form sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2000. March. For the "Veggie Burst" (Drink Mix for Kids) three flavors are available–as shown above. A case is 6 x 16 oz packs. This is a dry mix.

7794. **Product Name:** GeniSoy Soy Milk Beverage Mix [Natural, Chocolate, Vanilla].
Manufacturer's Name: GeniSoy Products Co. (Distributor).
Manufacturer's Address: Fairfield, CA 94533. Phone: 1-888-436-4769.
Date of Introduction: 2000. March.

Ingredients: Banana Nut: Syrup blend (cane juice, brown rice, organic agave), soy protein (IP toasted soy beans, IP Supro brand isolated soy protein and IP soy flour), fruit paste (raisin and/or plum), rolled oats, whole wheat flour, dried cranberries, glycerine, peanut butter, canola oil, salt, natural flavors.
Wt/Vol., Packaging, Price: 2.3 oz (66.5 gm) in foil wrapper.
How Stored: Shelf stable.
New Product–Documentation: Leaflet (8½ by 11 inch, color) sent by Patricia Smith from Natural Products Expo East. 2000. Sept. "GeniSoy's Soy Milk: A creamy and delicious milk alternative." Dated: March 2000. This is a dry mix based on isolated soy protein.

Ad in Natural Foods Merchandiser. 2000. July. "GeniSoy's Soy Milk: A creamy and delicious milk alternative." This ad also appeared in the Sept. 2000 issue (p. 76).

7795. GeniSoy Products Co. 2000. GeniSoy's soy milk: A creamy and delicious milk alternative (Leaflet). Fairfield, California. 2 p. March. Front and back. 28 cm.
• ***Summary:*** The front of this glossy color leaflet shows cans of three flavors of GeniSoy Soy Milk (Natural, Chocolate, Vanilla), plus a pitcher filled soymilk, a stemmed glass filled with sliced fruits and half filled with soymilk, and a bowl of cereal, topped with sliced fruits and nearly filled with soymilk. These stand on a bed of soybeans, strawberries, chunks of chocolate, bananas, sliced kiwi fruits, etc. In the background is blue sky with white clouds. "IPP certified non-GMO soybeans. Mix with water. Low fat, cholesterol free. Non-dairy, high in calcium. Isoflavones (Genistein & daidzein). Heart healthy. Vegan. GeniSoy soy protein products: The magic of soy. www.genisoy.com." On the back is the soy heart health claim, plus nutrition facts and ingredients for each product. Address: Fairfield, California 94533. Phone: 1-800-436-4769.

7796. Hain Food Group, Inc. 2000. The Hain Food Group (Portfolio). Uniondale, New York. 35 inserts. 28 cm.
• ***Summary:*** The inserts, all printed with black ink on 8½ by 11 inch paper (usually colored), include: (1) Westsoy Singles and other Westsoy products. (2) Health Valley Soy O's Cereals (like Cheerios, New product March 2000). (3) Westsoy just got cool! Now in gable-top cartons. (4) Westsoy Soy Central (Display rack). (5) Arrowhead Mills stone ground whole wheat flour (Commemorating 40 years of organic heritage). (6) Westsoy pudding cups (vanilla or chocolate). (7) Crème de la Soy (original, French vanilla or Amaretto). (8) Westsoy VigrAid quarts, Pudding Cups, Westbrae Natural Café, Chai, Juice Bar, Health Valley Soy Moo. (9) Westsoy Organic Malteds, Lite Malteds. Address: 50 Charles Lindbergh Blvd., Uniondale, New York 11553. Phone: 516-237-6200.

7797. Odwalla, Inc. 2000. Odwalla: Nourishing the body whole. National brand leader (Leaflet). Dinuba, CA 93618. 2 panels each side. Each panel 21.5 x 14 cm. Front and back.
• ***Summary:*** Leaflet (glossy, color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2000. March. On the front panel is the colorful Odwalla logo. On the inside two panels are four bar charts" (1) Consumer's choice. (2) Odwalla's growth (8%, $32 million) is outpacing the category (which includes Naked and Fresh Samantha). (3) Odwalla is the brand leader in all refrigerated functional juice segments. (4) Odwalla has the highest sales velocity (leads in 7 out of 10 items per sales point of distribution).

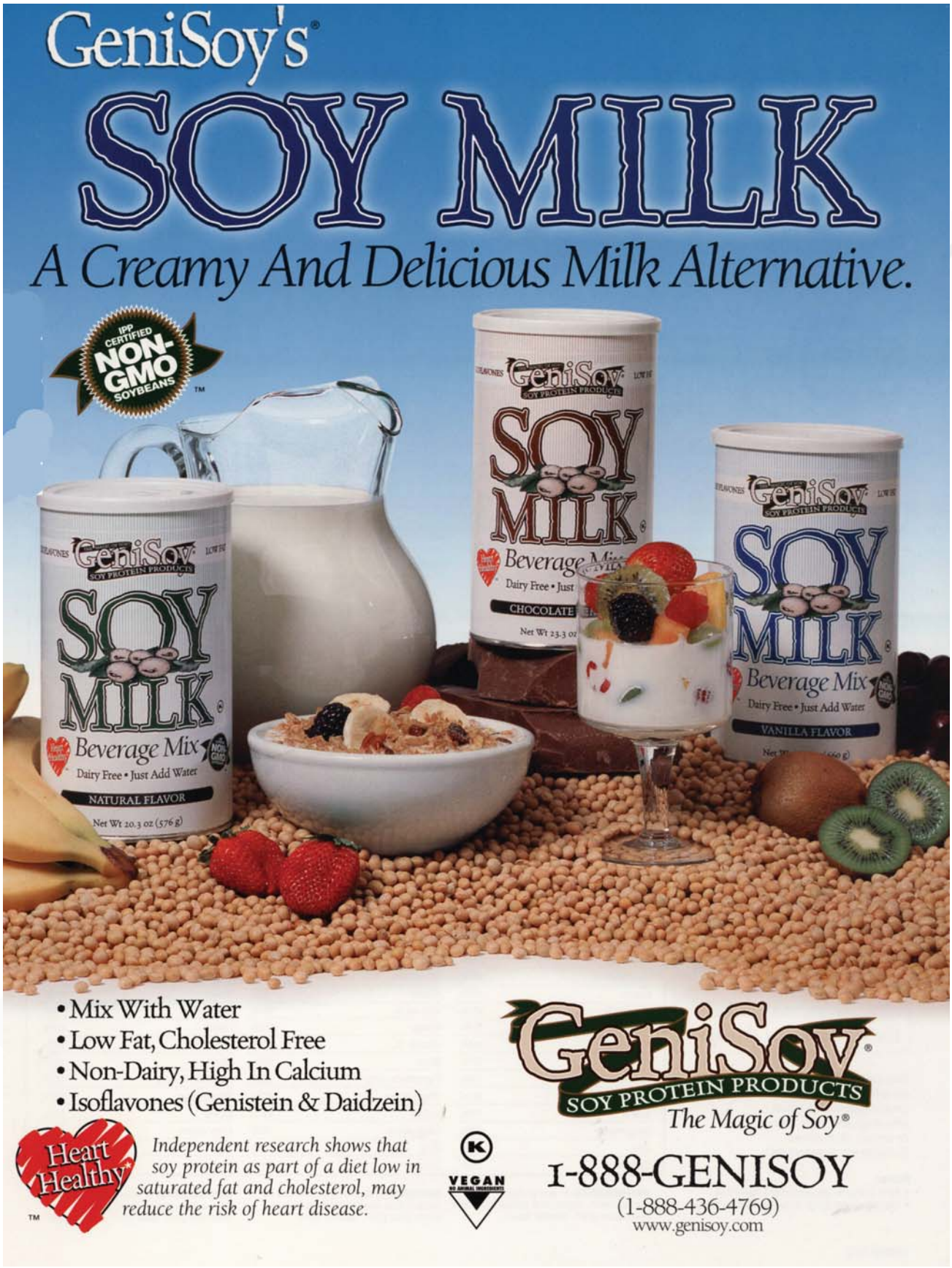
On the rear panel is (1) A chronology (1980 to 1999) of what year each Odwalla product was launched. (2) Odwalla's products by category, which include Nutritionals, Future Shake, and Smoothies. Address: Dinuba, California.

7798. Soy isoflavone content of specific soy milks (Leaflet). 2000. Single sided. 28 cm.
• ***Summary:*** This leaflet, printed with black ink on white paper, contains a full-page table with three columns: Brand, manufacturer (and phone number), and isoflavones/8 oz. The six brands are as follows: (1) Edensoy, from Eden Foods (range 40-45 mg). (2) Pacific, from Pacific Foods of Oregon (range 2-53.5 mg; the 53.5 mg is for Original unsweetened). (3) Silk, made by White Wave (35 mg for all 3 flavors). (4) Soy Dream, from Imagine Foods (40-47 mg). (5) Vitasoy, from Vitasoy (range 16-35 mg; the 35 mg is for Creamy Original). (6) Westbrae, from Westsoy/Hain (range: 4.8 to 50 mg; the 50 mg is for VigorAid).

The products with the lowest isoflavone content are those which are "Light" (watered down) or Fat-free (low fat).

Note: This leaflet was available at a natural foods store in Colorado in March 2000. The compiler and publisher are unknown.

7799. Soyfoods of America. 2000. Ancient Asian wisdom meets Western technology and tastes in our new SoyWise soy food product line (Brochure). Duarte, California. 3 panels. Front and back.
• ***Summary:*** On the cover of this stylish brochure is a magnificent golden dragon racing through a blue sea of clouds. Below the fold is written "Furama" in white letters next to a Chinese seal on royal red. The inside three panels explain that Soyfoods of America is introducing three lines of products: SoyWise soymilk (in vanilla nut, coffee, chocolate, sweetened, and unsweetened flavors), SoyWise cultured soymilk (in strawberry, peach, cactus pear, and plain flavors), and SoyWise smoothie (in raspberry, mandarin orange, peach passion fruit, strawberry banana, and apricot mango). Address: 1091 E. Hamilton Rd., Duarte, California 91010. Phone: 626-358-3836.



7800. Stephens, Roger; Stephens, Jane Ade. ed. and comp. 2000. Soyfoods guide 2000: Helpful tips and information for using soyfoods. Indianapolis, Indiana: Stevens & Associates, Inc. Distributed by the Soy Protein Partners. 24 p. Illust. No index. 28 cm. [23 ref]
• ***Summary:*** This guide is available only on a limited basis to dietitians and health professionals. Contents: Health: Add soy to diet to reduce heart disease (FDA recommends 25 grams of soy protein a day to reduce blood cholesterol levels), sample day soy meal planner (easy ways to add 25 grams of soy protein). Daily soyfood guide pyramid. Soy and your health–Scientists are learning about soy's health benefits: Isoflavones, heart disease, menopause & osteoporosis, cancer, allergies, diabetes & kidney disease, fat. Soyfood Descriptions: Meet the bean: Green vegetable soybeans (edamame), hydrolyzed vegetable protein (HVP), infant formulas, soy-based, lecithin, meat alternatives (meat analogs), miso, natto, nondairy soy frozen desserts, soy cheese, soy fiber (okara, soy bran, soy isolate fiber), soy flour (50% protein), soy grits, soy protein concentrate, soy protein isolate (isolated soy protein, 90% protein), soy protein, textured (flour or concentrate), soy sauce (tamari, shoyu, teriyaki), soy yogurt, soybeans, soymilk, soy beverages, soynut butter, soynuts, soybean oil & products, sprouts (soy), tamari (see soy sauce), tempeh, Teriyaki sauce (see soy sauce), tofu & tofu products, whipped toppings, soy-based, yuba. Helpful charts: Soyfood substitutions, soyfood isoflavone content. Soyfoods web site. Soyfood composition. Recipes using: Meat alternatives, textured soy protein, whole soybeans, soy flour, soynut butter, soymilk, tofu. Address: 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 317-926-6272.

7801. **Product Name:** Westsoy Juice Bar Singles (Soymilk and Juice Mixture) [Berry, Orange, Apple].
Manufacturer's Name: Westbrae Div. of Hain Foods (Product Developer-Marketer).
Manufacturer's Address: New York City, New York.
Date of Introduction: 2000. March.
Ingredients: Soymilk, fruit juice.
New Product–Documentation: Talk with Zaida. 2000. Aug. 7. She has a package of this product.

7802. **Product Name:** Silk Soymilk Creamer (Non-Dairy, Liquid) [French Vanilla].
Manufacturer's Name: White Wave, Inc. (Marketer-Distributor).
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 2000. March.
Ingredients: Organic soymilk* (filtered water, organic whole soybeans*), expeller pressed organic canola oil*, organic evaporated cane juice*, natural flavors, soy lecithin, potassium phosphate, sodium citrate, carrageenan, tapioca starch. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990. Certified by QAI. Silk is certified to contain no GMO soybeans.
Wt/Vol., Packaging, Price: Pint gable-top carton.
How Stored: Refrigerated.
Nutrition: Per 1 tablespoon (15 ml): Calories 20, calories from fat 10, total fat 1 gm (2% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 5 mg, total carbohydrate 1 gm (dietary fiber 0, sugars 3 gm), protein 0 gm. Vitamin A 0%, vitamin C 0%, calcium 0%, iron 0%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Pint carton with Label sent by James Terman of White Wave. 2000. May 11. 2.75 by 2.75 by 4 inches. Tetra Rex package. "Made with organic soymilk. Organic–Third party certified." Talk with James Terman of White Wave. 2001. May 29. This product was first sold in March 2000.

Leaflet (22 x 15 cm, glossy color) sent by Patricia Smith from Natural Products Expo East. 2000. Sept. "More flavor for your coffee. Naturally." A large photo shows a package of the creamer. "Lactose free. Dairy free. Cholesterol free. Organic. 100% natural."

7803. Edmondson, John Robert. 2000. J.B. "Ben" Edmondson, soybean pioneer in Hendricks County, Indiana (Interview). *SoyaScan Notes.* April 9. [1 ref]
• ***Summary:*** John, who is the son of J.B. "Ben" Edmondson, was born in 1914 (the same year his father started to grow soybeans) and so is now age 86, but his memory is excellent. He lives on his father's farm near Clayton, the same farm on which he was born. This farm, now several hundred acres, straddles the Hendricks-Morgan county line, and his father was born on the Morgan County part. His parents had only two children; John was four years older than his sister, Marian. His mother was Amanda Pearl Richardson; everyone called her "Pearl." She was born near Hazlewood in Hendricks County, about 1½ miles north of J.B.'s farm. John knew Taylor Fouts better than the other Fouts brothers. "They were primarily seedsmen."

Each August, just prior to harvest, J.B. Edmondson (who graduated from a 4-year course at Purdue in 1911) and his brother Ralph (who was not a college graduate) would have a soybean meeting on one of their farms; this greatly helped to develop interest in soybeans. They always had a variety plot each year on one of the two farms. They would invite local farmers plus Keller Beeson and M.O. (Merville Oleo) Pence, extension agronomists and soybean specialists at Purdue University, to speak about soybeans. Typically 35-50 men attended. The Edmondsons would serve lemonade (John had to squeeze the lemons) and all the men would spend the afternoon discussing soybean varieties, especially varieties and cultural practices. These annual meetings began in about 1920, several years before the founding of the Mid-State Soy Bean Association, and they continued after the Association

was founded.

Dunfield variety soybeans were grown mostly in Hendricks and Morgan counties. In about 1925 John's dad, two of his four brothers, and some other men who lived nearby organized the Mid-State Soy-Bean Growers' Association, to promote yellow Dunfield soybeans and to have them certified. Ralph Edmondson was one of J.B.'s brothers who lived on the adjacent farm; he and J.B. were the co-founders of the Mid-State Association. Clarence Edmondson, J.B.'s elder brother, grew soybeans nearby and was a member of Association, but was not very involved with its activities. J. Frank Edmondson, a first cousin of J.B. Edmondson, was a Purdue graduate, farmed in this area, and helped to develop the Association. Then he contracted tuberculosis and decided to move to California. So he quit farming, went to a local college, got a teacher's certificate, and moved to Merced, California, in 1930; he taught vocational agriculture until he died.

Each year the Edmondsons went to the International Live Stock and Grain Show in Chicago, Illinois; they had a booth and promoted their certified Dunfields. There were about as many farmers interested in soybeans for hay as for grain. Soybeans were never a very good hay crop, because they came in the fall when it was dusty and that was an aggravation to animals. In those days they were always full of weeds, stems, and other stuff. The Mid-State Association promoted soybeans as a supplement to corn for hogs–enabling hog farmers to grow their own feed and become independent of feed mills–and of the need for cash. But then the soft-pork problem arose because mostly full-fat soybeans were used with the corn. That problem was solved by the use of defatted soybean meal.

The American Soybean Association held part of their ninth annual meeting on the Edmondson farm in about 1928. *"Prairie Farmer* had little old biplane and they flew that thing down here and landed on our field. That was really something for the books!" John recalls that they baked soybeans like Boston Baked Beans for about 3 days in a Dutch oven, then served them to those attending. The local women's organization furnished the meal, and they made everybody take a serving of those soybeans–which not everybody liked.

Prairie Farmer absorbed the *Farmer's Guide* of Huntington, Indiana. J.B. was the associate editor of the *Farmer's Guide* for a year or two–1912 and 1913–after he graduated from Purdue. He and John's mother lived in Huntington before they moved to the farm where John now lives and started farming. They started by purchasing 10 acres adjacent to brother Ralph's farm from an outsider (a non-relative). They added 80 acres the next year, then 65 more acres 3-4 years after that.

J.B. carried on a very active correspondence. For example, he was one of the 4-5 founders of the Indiana state Farm Bureau in about 1919 or 1920. "He was also very strong in the Presbyterian church, and he worked with its general assembly." Most Edmondsons were Presbyterians. Politically, J.B. was a Democrat. And of course he wrote in connection with soybeans. "His old typewriter would be rattlin' when I'd go to bed, and he made a carbon copy of every letter he wrote, and kept everything neatly filed. But after he retired from farming, he and his wife moved to Danville, Indiana, and moved all his files into the basement of an old house. He died in 1962 and his wife died in 1983. "Some twenty or more boxes of files in the basement deteriorated (from water and mold/mildew) to the point that we had to take it all to the dump. Everything smelled awful. It was just a catastrophe." Ralph Edmondson lived until about 1960, but he was not the kind to keep records.

John does not know when or how the soybean was first introduced to Indiana. When asked if he has ever heard of a man named Parsons, he replies that he knew a man named Adrian Parsons who lived in northern Hendricks County. John also knew Adrian's grandson, who was also named Adrian. John recalls that Adrian Parsons was a friend of his dad's but he does not recall Adrian coming to annual meetings on the Edmondson farms. Adrian did nothing to promote soybeans as far as John can recall.

When John was a student at Purdue, an agronomy professor named Fred Robbins (who had graduated from Purdue in about 1912) did more experimentation on the food qualities of soybeans than anyone else. He made soybean milk, and roasted soybeans like peanuts. In the late 1920s there was also a company in Chicago named Kato Nuts; they bought several truckloads of soybeans from J.B. They retailed them for 5 cents a bag in little cello bags. Another company in Chicago made a soy-based malted milk powder that, when mixed with milk, made a sort of chocolate milk. "Since dad furnished them with soybeans, they furnished us with samples." Address: 10725 Hodge Rd., Clayton, Hendricks Co., Indiana 46118-9171. Phone: 317-539-2349.

7804. Weissman, George. 2000. Founding Veat Gourmet (Interview). *SoyaScan Notes*. April 12. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** George founded this company in 1998; he was the sole founder. He came across the Taiwanese technology to make this very unique textured soy protein because his partner (Van Thi Dang) is Vietnamese, and she brought it home from a Chinese grocery store. He ran across something similar, but gluten-based in a Chinese monastery, where he was doing a Chan [Chinese Zen] Buddhist retreat. He is a practicing Buddhist. He was in academia at the time; he as a physicist having earned his PhD degree from Cal Berkeley. He worked on the foundations of quantum theory/paradigm. He started a group at the Lawrence Berkeley Lab in 1974 to discuss physics and spirituality. Fritjof Capra (Austrian by birth) was a member of the group, as was Gary Zukoff. After that he went to the Swiss Polytechnical University where he

did a post-doctorate program. George is a vegetarian and is also very interested in issues related to world water usage and water as a limiting resource in food production.

About two months ago his partner, Van, started a small business named Ahimsa Gourmet in San Pablo, California, where they make tofu, soymilk, and many other soyfood products. Address: 4690 East 2nd St. #9, Benicia, California 94510. Phone: 1-888-321-8328 (toll free).

7805. Shaw, Ann. 2000. History of Avoset Foods, Morningstar Foods, and Suiza (Interview). *SoyaScan Notes.* March 27. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The plant in Gustine (where Ann has worked in research for 26 years) used to be called Avoset Food Corp. Avoset has been a pioneer in ESL products since the company started; this plant is almost 90 years old. Originally it was a creamery, owned by Foremost, then by Smith-Kline (a pharmaceutical company). In the 1940s, during World War II, Avoset pioneered ultra-pasteurized products for the U.S. military–such as whipping cream in little glass jars for use on submarines. In the 1950s they pioneered whipped toppings in pressurized squirt cans. In the mid-1960s Avoset was the first U.S. company to install a gable-top ESL (extended shelf-life) packaging machine, which packaged long-life whipping cream, and half-and-half. The non-ESL products had a shelf-life of 10-14 days and were considered "nuisance items" by fluid dairies and retailers. In about 1975 Smith-Kline sold Avoset to Anderson Clayton, which broke up the company and sold it to Quaker Foods, which sold it in June 1987 to Kraft, which sold it in about 1988 Morningstar–which was basically a group of venture capitalists from the Southland Dairies in Texas which bought specialty dairies (such as Bancroft Dairy) making value-added dairy products such as cultured foods, coffee creamers, whipping cream, half-and-half, etc.–products other than just fluid milk. Other branded Morningstar products included Second Nature (cholesterol-free eggs), International Delight (coffee creamers), etc.

In about 1997 (3 years ago) Suiza Foods Corp. purchased Morningstar. Suiza started with one dairy in Puerto Rico in the 1980s; then they started to buy other dairies, and became a major "dairy consolidator," putting together these many dairies under umbrella. Suiza was basically an acquisitions firm, which did not have any corporate structure beyond the people in the main office who were involved in acquiring new companies. One of the reasons they purchased Morningstar was for the corporate structure–human resources, research labs, etc. So all the research work for Suiza is done by Morningstar. After Morningstar bought Avoset, the technology, packaging, and formulations improved, but the basic business remained unchanged–until 5-6 years ago when Ted Nordquist arrived and Morningstar first began to work with soy. The first development of formulation for Silk soymilk was done at Gustine. Ann knows Ted extremely well.

On the front of the building where Ann works is written "Morningstar Foods" in large letters; below that in smaller letters is written "Avoset." Gustine is near Merced, California. Morningstar and Suiza have their corporate headquarters in the same building in Dallas, Texas. For information on Sun Soy (which is sold at Ralph's supermarkets in southern California), contact Patty Herbeck (phone: 214-303-3400) in Dallas. Wildwood soymilk is also made at the Gustine plant. They also package products for Trader Joe's. At Morningstar's yogurt plant in Fullerton, they package soy yogurts for Ted Nordquist and Trader Joe's. Address: Research Dep., Morningstar Foods (a Suiza Company), 299 Fifth Ave., Gustine, California 95322. Phone: 209-854-6461.

7806. Eden Foods, Inc. 2000. Eden's GEO-free policy since 1993 (Ad). *Vegetarian Times.* April. p. 1.

• ***Summary:*** This full-page color ad features a letter written by Eden chairman Michael J. Potter on 13 Feb. 1993, titled "Policy Statement. Re: Genetically Engineered Foods," which states that "Eden Foods will not purchase or sell any food ingredient known to be genetically engineered." A sidebar states: "Eden Foods has had a policy since 1993 requiring affidavits from all of its growers and suppliers guaranteeing that their food is free of genetically engineered organisms (GEOs). In 1998 New York Times hired a laboratory to test for GEOs in eleven soy and corn based foods. The only one that tested negative was Edensoy soymilk."

"Founded in Ann Arbor, Michigan in 1968, Eden Foods is one of the few remaining independent pioneer natural food companies." A small circular logo shows: "Eden Foods: 32 years. 1968-2000." Color photos show: (1) Michael J. Potter, Chairman & President, and William Swaney, Executive Vice President, standing by a large Eden delivery truck. (2) Mr. Bernard Pease, 3rd generation organic farmer.

Note: Soyfoods Center believes that the term "GEO" (as used above) is much more accurate than "GMO." Address: Clinton, Michigan 49236. Phone: 1-800-248-0320 or www.edenfoods.com.

7807. Manson, JoAnn E. 2000. By the way, doctor... *Harvard Health Letter.* April. p. 8.

• ***Summary:*** Soy, a staple of the traditional Asian diet, is rich in two phytoestrogens, daidzein and genistein. Although the research is limited, there is no research that these–in the amounts consumed in soymilk, tofu, or other soy-based foods–are harmful to breast, uterine, or prostate tissue. "The jury is still out, however, on what will happen if people take large doses of these phytoestrogens as pills or supplements over long periods of time."

Soy has beneficial effects on cholesterol levels, which is good for the heart; it lowers harmful LDL cholesterol

and raises protective HDL cholesterol. It has shown some promise in relieving the hot flashes of menopause. Conclusion: "Our understanding of soy is still very much a work in progress." Address: M.D., Dr.P.H., Chief of Preventive Medicine, Brigham and Women's Hospital.

7808. Morningstar Foods. A Suiza Company. 2000. New Sun Soy. Good enough to drink straight (Ad). *Vegetarian Times.* April. p. 21.
• ***Summary:*** This simple, full-page color ad shows one large view of a carton and three smaller views of the cartons in three flavors. At the bottom right is written in small letters: "Look for Sun Soy in your dairy case in three surprisingly delicious flavors: Creamy Original. Vanilla and Chocolate. www.suizafoods.com." Address: 299 Fifth Ave., Gustine, California 95322. Phone: 209-854-6461.

7809. Myers, Steve. 2000. The soy boom. *Organic & Natural News* (*Phoenix, Arizona*) 3(4):24-25. April.
• ***Summary:*** The decision in Oct. 1999 by the U.S. FDA to allow a heart health claim for soy has boosted sales and growth rates, but the real key to the growing interest has been the ongoing scientific research on the health benefits of soy. The combination of the two is impressive. According to SPINS, which collects scanner data from natural foods stores, sales of soy products were $184.3 million, up 37% over the previous six months. In mainstream stores, sales for the 12 months ended Oct. 1999 were $418.7 million, up 45% over the previous year. This mass market data was supplied in conjunction with ACNielsen.

Ranked by sales in natural products supermarkets, the top five soy products are (in million dollars for the 6 months ended Oct. 1999) are: (1) Soy beverages $58.7. (2) Meat alternatives $31.9. (3) Energy bars $25.5. (4) Tofu $32.1. (6) Frozen entrees $6.2.

Ranked by growth rate in natural products supermarkets, the top five soy products (for the 6 months ended Oct. 1999) are: (1) Energy bars 56%. (2) Soy beverages 34%. (3) Meat alternatives 28%. (4) Tofu 26%. (5) Frozen entrees 26%. Source: SPINS.

Ranked by sales in mainstream stores, the top five soy products are (in million dollars for the 12 months ended Oct. 1999) are: (1) Meat alternatives $176.2. (2) Energy bars $81.6. (3) Soy beverages $77.4. (4) Tofu $46.0. (6) Frozen entrees $3.2.

Ranked by growth rate in natural products supermarkets, the top five soy products (for the 12 months ended Oct. 1999) are: (1) Energy bars 93%. (2) Soy beverages 85%. (3) Frozen entrees 45%. (4) Meat alternatives 26%. (4) Tofu 19%. Source: SPINS/ACNielsen.

7810. Potter, Susan. 2000. Soy: Good news for the heart. *Healthy & Natural Journal* 7(2):68-71. April.
• ***Summary:*** While experts are not sure exactly how soy protein works, they are convinced that a significant improvement in America's cardiovascular health can be achieved by the consumption of as little as 25 grams/day of soy protein. A large color photo shows a tall glass of soymilk, a white bowl of dry soybeans, a cake of tempeh broken in half, and a cake of tofu–all on a wooden cutting board, placed on a woven cloth mat.

Note: Until recently, Dr. Potter was with the Dep. of Food Science and Human Nutrition, University of Illinois, Urbana, Illinois. Address: PhD, Research Scientist, Director of Nutrition Science, Protein Technologies International.

7811. South River Miso Co. Inc. 2000. The little book of miso: Recipes from South River. South River Farm, Conway, MA 01341. 24 p. 22 cm. [5 ref]
• ***Summary:*** This 24-page booklet is illustrated by Gaella Elwell. Contents: What is miso? The art of making miso soup. Recipes: Soups and stews, pasta and grain dishes, miso porridge & grain milk [homemade "Creamy oat milk"], dressings, dips and spreads, miso with vegetable & bean dishes. South River miso varieties. Suggested reading (5 books). South River products. Mission statement. Acknowledgments. Photos show: South River Miso Co. in the snow. The Elwell's daughter. Jars of miso. Address: South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

7812. *SoyaScan Notes.* 2000. Chronology of Avoset Foods in Gustine, California (Overview). Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1917–California Milk Products Company builds a milk sugar (lactose) plant in Gustine, in the San Joaquin Valley of California. It is built by Roy Kruger at First Avenue and Fourth Street. It faced Highway 33 and a spur track was built from the railroad to the plant. This was the first such plant built in the United States

Later in 1917 California Milk Products Co. is purchased by Smith, Kline and French Laboratories (SK&F, of Philadelphia, Pennsylvania; now Smith Kline Corp.), a manufacturer of pharmaceuticals and other health care products. The company is looking for a source of milk sugar (lactose), which is a critical ingredient in Eskay's Baby Food, a product it made and sold at the time–and in other baby food products and military flares.

In Tillamook, Oregon, an area famous for its cheese, SK&F finds a bankrupt company that has equipment for removing milk sugar from whey. They purchase this equipment and move it to Gustine, some 700 miles away.

Soon, both the casein and the milk sugar lines are rolling at CMP, a subsidiary of SK&F. The casein produced at Gustine, known as K-B Brand Casein, became the quality standard for U.S. paper-coating caseins. The lactose was used in making baby foods and pharmaceutical products. These milk derivatives (plus butter) were sold in bulk

to processors who used them to manufacture consumer products.

1929–SK&F purchased a company named Gustine Creamery to ensure a constant source of quality skim milk.

1930s–The company started a research program to develop new products from milk. Laboratories were constructed at Gustine and grants were awarded to colleges to aid in the research.

1939–A new process was discovered for sterilizing liquid foods. Arrangements were soon made with the inventor of the process to develop it commercially. Sterilized cream had never been made successfully before as a commercial product. The cream had to be heated to a high temperature rapidly, then cooled just as rapidly in a sterile environment with sterile packaging. Most important, the product had to taste good to consumers. The first product made using this process was a sterilized cream named and trade-marked Avoset. The word could be pronounced in any language–in anticipation of an international market. Avoset cream stayed sweet for many months on the refrigerator shelf.

1940 July–A company, named Real Cream, Inc., is formed to market Avoset.

1941–Avoset was first sold commercially. It was the company's first venture into consumer products. Is less than a year the new sterilized cream was being sold in many countries where fresh cream was difficult or impossible to obtain.

1943–The Sterile Cream Division of the Gustine Creamery is manufacturing "stabilized cream" for the United States Army, Navy, and Lend-Lease purposes, only (The Redskin, "Gustine Helps" {High School Newspaper} 1943).

1945 late–The Avoset Company introduces another new product, a sterilized whole milk named Avo. It was readily accepted, along with Avoset, by the U.S. armed forces and in many foreign countries where refrigerating foods was a problem. Avo, later renamed Avoset Sterilized Whole Milk, kept its fresh taste for months without chilling. It lasted a year or longer without refrigeration and soon became a household word wherever it was sold.

1947–The Gustine Creamery, California Milk Products Co., and Avoset merge into one company named Avoset Company.

1950 summer–Avoset introduces Qwip, a real cream topping packaged in an aerosol can. It soon became the company's best-seller.

1960–Avoset began to offer its experience in packaging sterilized liquid foods to other manufacturers who were in need of that know-how using the concept of "contract packing." Its first two products were a sterilized infant-food formula and a sterilized ice-cream mix. Avoset did not own the formula and did not market the products. Avoset's private label business grew rapidly; more than 60 companies now buy their own-label milk products from Avoset. Yet Avoset is still the only company in the world that produces a sterilized, pressurized whipping cream.

1963–Avoset establishes a department to market the company's aerosol foam-type valve to other companies packaging foam-type aerosols.

1967–Avoset saw the need for sterilized products in Pure-Pak paper containers. With Avoset's background in sterilized processing, it wasn't long before dairy and nondairy products were being aseptically packaged under the labels of Avoset's customers.

Recently (about 1967) the company introduced 'True Whip, a pressurized nondairy dessert topping–indicating a possible new direction for the company.

1967 May 25–Avoset celebrates its 50th anniversary in Gustine. "Avoset, along with The Borden Company, The Carnation Company, and Foremost Dairies Inc., provide Gustine with a solid economic backbone" ("The Avoset Story," in *The Gustine Standard,* "Salute of Avoset" supplement, 25 May 1967).

1968–Avoset starts apply its aseptic packaging knowledge to portion control packaging. By 1976 Avoset provided most major airlines with individual three quarter ounce servings of salad dressings and sterilized non-dairy half-ounce portion control creamers for coffee that come with airline meals. Avoset is regarded as a pioneer in "portion control packaging."

1973–Avoset Food Corporation has 125 fulltime and 60 seasonal employees. Avoset now makes products under 1,200 labels for over 200 companies–including Foremost, Carnation, Lucerne, Albertson's, Arden, Meadow Gold, etc. ("Any label: Avoset Gustine's largest industry," in *Westsider,* 6 Sept. 1973. Avoset Food Corporation: History, 1976).

1978–Avoset is sold to Anderson, Clayton Co. (Houston, Texas).

1987–Quaker Oats buys Anderson Clayton Co and thereby acquired Avoset.

1987 June–Kraft Foods Co. acquires Avoset from Quaker Oats.

1988 April–Kraft sells Avoset to Duncan-Cook, a Houston based investment group. Avoset is now a 125,000 square foot facility in Gustine.

2000 April–The name over the door at 299 5th Ave. in Gustine now says "Morningstar Foods," with "Avoset" on the 2nd line. Morningstar Foods belongs to Suiza of Houston, Texas.

In 2012 Ted Nordquist wrote: "In 1994-95 I developed the Silk soymilk using formulations I brought from Sweden, using the Morningstar pilot plant and the help of Laura Tewnion and Ann Shaw. We never produced soybase at the Morningstar (Avoset) plant in Gustine. We had soybase made using our equipment at Soyfoods of America in Duarte, California, and this soybase was shipped in 6,000 gallon tankers to Gustine, where, according to my formula, the Gustine plant produced Silk soymilk for Steve Demos

(White Wave) beginning in January, 1996, until March 1998. Our equipment was integrated with Soyfoods of America equipment; we paid Soyfoods of America for this soybase by the gallon."

Note: Thanks to Patricia Snoke of the Gustine Historical Society for sending (on 17 April 2000) a packet of 13 documents she assembled concerning the history of Avoset.

7813. Tezuka, Masanori; Taira, Hideharu; Igarashi, Yasuo; Yagasaki, Kazuhiro; Ono, Tomotada. 2000. Properties of tofus and soymilks prepared from soybeans having different subunits of glycinin. *J. of Agricultural and Food Chemistry* 48(4):1111-17. April. [20 ref]*

7814. **Product Name:** Trader Joe's Low Fat Fresh Non-Dairy Soy Beverage (½-gallon Pure-Pak carton) [Original Flavor].
Manufacturer's Name: Trader Joe's (Marketer-Distributor). Made in Chico, California, by Healthy Harvest Foods.
Manufacturer's Address: P.O. Box 3270, South Pasadena, CA 91031-6270. Phone: 818-441-1177.
Date of Introduction: 2000. April.
Ingredients: Filtered water, organic whole soybeans*, brown rice syrup, calcium carbonate, sea salt, carrageenan, vitamin A palmitate, vitamin D-2. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: Net 64 fl oz (½ gallon) 1.89 liters. Gable-top Pure Pak carton. Retails for $2.69 (California 1997/01).
How Stored: Refrigerated.
Nutrition: Per 8 fl oz (240 ml): Calories 130, calories from fat 25, total fat 2.5 gm (4% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 80 mg (3%), total carbohydrate 22 gm (dietary fiber 0 gm, sugars 11 gm), protein 9 gm. Vitamin A 10%, calcium 30%, vitamin D 25%, vitamin C 0%, iron 6%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Starting in Oct. 1996 this product was made for Trader Joe's by Healthy Harvest Foods, owned by Nancy Knudsen of Chico, California. Nancy's maiden name was Nancy Potter; she ran Eden Foods (developer of Edensoy soymilk) while her brother, Michael, was in jail.

Talk with Ted Nordquist of TAN Industries. 2000. April 12. Ted now makes the soymilk in this product at his plant [at Soyfoods of America] in Duarte, California. Gary Stein buys the soymilk from Ted and has it shipped from Los Angeles to Gustine, where it is formulated and packaged. It is then distributed by Rockview Farms, the company that distributes all of Trader Joe's fresh products. Gary started making this product for Trader Joe's in early 1998; he was the first to package it in an ESL gable top carton. Before that it was packed in a non-ESL gable top carton. Before Gary, Trader Joe's was getting this soymilk from John Yamauchi in Los Angeles. Ted does not know when Gary or John began making this soymilk for Trader Joe's.

7815. Hymowitz, Ted. 2000. Some very big U.S. companies are getting into the soyfoods industry (Interview). *SoyaScan Notes.* May 10. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** In his regular search for soy on the Internet, Ted learned that Pepsico is planning to introduce a line of flavored soy drinks under their Tropicana Brand. Address: Prof. of Plant Genetics, Dep. of Crop Sciences, Univ. of Illinois, Urbana, Illinois.

7816. Goldman, Lea; Post, Tom. 2000. A cry in the wilderness: Steve Demos is selling something that's good for you–and tasty, too. Too bad a lot of people think its the yuckiest food in America. *Forbes* 165(11):322-24. May 15.
• ***Summary:*** About Steve Demos, White Wave, and Silk soymilk–with much incorrect information and a negative bias toward soymilk. Examples of incorrect information: (1) Demos learned to make tofu in India during the early 1970s while on a spiritual retreat. (2) Since then "he has been convinced he's found the path to entrepreneurial nirvana." (3) It's been a lonely quest.

On the right-hand page is an excellent full-page color photo of Demos holding up a half-gallon gable-top carton of Silk against a background of blue sky.

A graph shows annual sales (in dollars) of soymilk versus cow's milk from 1990 to 1999. Sales of cow's milk have been almost flat, rising from about $17 billion to $20 billion during the decade. Sales of soymilk have risen from $82 million in 1992 to $300 million in 1999.

Founded by Demos in 1977 with only $500 in startup, White Wave seemed in danger of crashing by 1986. The company had $200,000 in bank debt with sales stalled at $5 million.

White Wave launched Silk in 1996, packed in typical milk carton and sold refrigerated in the dairy case. But consumers didn't think to look for it there. As a result, White Wave lost $400,000 in six months. But consumers liked the product when they tasted it, so this year White Wave will give away 4 million half-pints of Silk to shoppers in 5,000 stores at a cost of $2.5 million.

Last year White Wave had profits of $1 million on sales of $30 million. This year Demos hopes to double revenues. He is also trying to block competitors like Suiza by signing exclusive agreements with his manufacturers.

Last summer Dean Foods, one of America's largest dairy companies, bought a 25% share in White Wave that is now worth $17 million. Demos' goal is to have a national brand of soymilk–a goal that has eluded dairy milk producers so far. "That would indeed be a triumph of tenacity over taste."

7817. Terman, James. 2000. New developments at White Wave (Interview). *SoyaScan Notes.* May 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** America is definitely ready for refrigerated soymilk. Silk is turning rapidly and selling well; it is America's No. 1 refrigerated soymilk. White Wave is starting to get that critical mass; they have been on NPR [National Public Radio] and 20-20, and are doing some mass market advertising in regular magazines–such a *People* magazine–in the special issue on the "Fifty most beautiful people." It debuted last week but is still on grocery store racks. This is part of a new ad campaign run by a PR agency White Wave recently hired. Address: White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

7818. Fargo, Carolyn. 2000. Ag director sees South Africa as potential soybean market. *Illinois State Journal–Register* (*Springfield*). May 31.
• ***Summary:*** Joe Hampton, Director of the Illinois Department of Agriculture, who returned this week from a trade mission to South Africa with Governor George Ryan, sees an immediate potential for exporting soybeans there. Illinois must work to become the provider of choice–which will not be easy. Hampton said that having an Illinois trade office in South Africa is a big step forward.

The South African government is trying to improve the diet of its people. "But with the lower price of soy milk and soy products and enhanced nutrition, it makes (soybean exports) an immediate possibility." Address: Agribusiness editor.

7819. Golbitz, Peter. 2000. Milk producers sour about "soymilk" label. *Bluebook Update* (*Bar Harbor, Maine*) 7(2):1-2. April/June.
• ***Summary:*** On Feb. 14 the National Milk Producers Federation (NMPF) registered a complaint with the U.S. Food and Drug Administration (FDA) "regarding the rise of fraudulent labeling and marketing of an expanding number of products labeled as 'soymilk.'" They asked the FDA to "take appropriate regulatory action" against soymilk companies that used the word "milk" anywhere on their package. Their objection is based on the FDA standard of identity for "milk" which states that "Milk is the lacteal secretion, practically free from colostrum, obtained by the complete milking of one or more healthy cows."

However in Feb. 1997 the Soyfoods Association of North America (SANA) filed a citizen petition asking the FDA to grant them a "common or usual name regulation" for soymilk. In effect, they asked the FDA to recognize the word "soymilk" as the common or usual name for this class of products made from soybeans and water.

On 9 March 2000 members of SANA and leading U.S. soymilk manufacturers visited the FDA in Washington, DC, and met with Dr. Christine Lewis, Acting Director of the Office of Nutritional Products, Labeling, and Dietary Supplements. They presented a letter, drafted by the group's attorney, that explains the legal, procedural, and policy faults in the NMPF letter, and asks the FDA to follow their standard procedures in regard to the NMPF complaint.

7820. Heaney, Robert P.; Dowell, M.S.; Rafferty, K.; Bierman, J. 2000. Bioavailability of calcium in fortified soy imitation milk, with some observations on method. *American J. of Clinical Nutrition* 71(5):1166-69. May. [14 ref]
• ***Summary:*** The calcium in fortified soymilk (typically tricalcium phosphate) is absorbed about 75% as well as the calcium in cow's milk. Thus, soymilk containing 500 mg of calcium per serving would supply approximately as much usable calcium as does a serving of cow's milk containing 300 mg of calcium. Therefore, fortified soymilk is a good source of calcium, but not as good as cow's milk. Address: Osteoporosis Research Center, Creighton Univ., Omaha, Nebraska.

7821. Jacobi, Dana. 2000. The joy of soy: 75 delicious ways to enjoy nature's miracle food. Roseville, California: Prima Publishing. xii + 244 p. May. Illust. Index. 22 cm. Series: The natural kitchen. [16 ref]
• ***Summary:*** This is basically a reprint of Dana's 1996 book titled *Soy! 75 Delicious Ways to Enjoy Nature's Miracle Food,* also published by Prima Publishing. It contains no new text and no new recipes; a few small errors have been corrected and the design of both covers and the title page is new. Address: Food writer, New York, NY.

7822. Lear, Jane Daniels. 2000. Kitchen notebook: Behind the scenes with *Gourmet's* cooks. *Gourmet* 60(5):255-58, 261. May.
• ***Summary:*** The title page announces that in this article you will learn "How to work soy into your everyday culinary repertoire." The full-page section titled "Toying with soy" (p. 256) observes that there has recently been an "explosion of soy." It's no longer limited to natural foods stores and Asian markets. In a typical grocery store or supermarket, you'll find tubs of tofu in the produce section, soy milk next to the cow's milk in the dairy case, and *edamame* soybeans in the frozen foods section.

"Well, the stuff is good for you." So Americans are learning how to cook with it and make it delicious–as many people in East Asia have long known how to do. Focuses on four foods: Edamame ("better than beer nuts"), miso, tofu, and Chinese fermented black beans (actually fermented black soybeans, sold in Asian markets and sometimes labeled "Preserved beans"). A large photo shows these four foods; the edamame are in a metal Japanese-style strainer.

"Perhaps the most irresistible, and nutritious, cocktail nibble going these days is edamame–young, tender soybeans usually eaten straight from the pod. (Gently suck the beans

into your mouth, and when serving them, don't forget to provide a bowl for the pods.)"

One recipe is given: Kemp Minifie's panfried tofu with Chinese black bean sauce (with "2 tablespoons Chinese fermented black beans"–which is standard fare at her Sunday night suppers. "Her ten-year-old daughter loves it so much that she's requested it as her birthday meal for several years").

7823. *Natural Foods Merchandiser.* 2000. Natural Products Expo West. May. p. 1.
• ***Summary:*** The largest Natural Products Expo ever was held at the Anaheim Convention Center. The 255,000 feet of conference and exhibition space was put to good use as a record 30,704 attendees visited more than 2,400 booths sponsored by 1,400+ companies. Color photos show: (1) One busy, colorful hall with a giant ten-foot-tall carton of White Wave's Silk soymilk in the foreground. (2) A lady carrying a tray of Galaxy soy cheeses, probably to give away as samples.

Patricia Smith and Dana Jacobi who both attended this show note that "there was an explosion of soy products at the show."

7824. *New Soy Times* (*Carmichael Lynch Spong, Minneapolis*). 2000. From ripple to tidal wave, Silk availability and sales soar in 1999: White Wave Silk soymilk becomes national bestseller. May. p. 1.
• ***Summary:*** "Following its quarterly board meeting held on January 31, White Wave announced that its top selling Silk soymilk is available at more than 11,500 mainstream supermarkets–a dramatic increase from over a year ago when the product was only sold in natural food stores and fewer than 100 mainstream supermarkets.

"'Our growth is almost unheard of within the grocery industry,' says White Wave President Steve Demos, 'and the exciting thing is that we're not slowing down. Silk will soon be available in 15,000 stores nationwide.'

"According to IRI data, the increase in refrigerated Silk sales of 600 percent in the last year rivals the climb of products from companies such as Starbucks and Celestial Seasonings."

"As the top-selling refrigerated soymilk, Silk was a major factor in helping the soymilk category reach $300 million in sales last year–its best year ever."

7825. *New Soy Times* (*Carmichael Lynch Spong, Minneapolis*). 2000. Silk soymilk fills mainstream America's cereal bowls: New ad campaign shows consumers an easy way to enjoy the benefits of soy. May. p. 3.
• ***Summary:*** "White Wave, one of the largest soyfoods manufacturers in the U.S., is launching an integrated campaign promoting Silk, leading with a series of striking and colorful print ads. The campaign was created by Minneapolis-based Carmichael Lynch, the agency's first for White Wave, which awarded its advertising and media buying account to CL without a review in October.

"The campaign uses variations on a theme to demonstrate a tasty way for people to integrate soy into their daily diets by pouring Silk over their favorite cereals. Each execution features a birds-eye view of a bowl filled with Silk and cereal, which has been arranged into symbolic shapes and icons.

"In 2000, White Wave will invest $10 to 15 million in an integrated marketing communications campaign that includes print, radio and online advertising, public relations, even marketing and trade shows. The print advertising campaign will break in May with a presence in broad-based, health/fitness and holistic lifestyle publications, including *People, "O"*–Oprah Magazine, *Prevention, Self, Shape, Health, Cooking Light* and others."

Note (from p. 4): White Wave, a privately owned company, has 91 employees and annual sales of nearly $30 million. The company produces more than 40 soy products.

7826. **Product Name:** Fresh Samantha Soy Shake [Belgian Chocolate].
Manufacturer's Name: Odwalla, Inc.
Manufacturer's Address: 41 Spring Hill Rd., Saco, ME 04072. Phone: 1-800-374-6554.
Date of Introduction: 2000. May.
Ingredients: Incl. soy powder.
Wt/Vol., Packaging, Price: 16 fl oz (480 ml = 1 pint) HDPE plastic bottle.
How Stored: Refrigerated.
New Product–Documentation: Leaflets sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March 8-11. "Fresh Samantha Soy Shake: Shake your body healthy!"

Talk with Betsy Shipper of Odwalla Samantha. The Soy Shake line was introduced by Fresh Samantha in 1999. The first flavor was Vanilla Almond, followed by Mocha Millennium (launched just before 1 Jan. 2000), followed by Belgian Chocolate.

7827. Sears, Barry. 2000. The soy zone. New York, NY: HarperCollins (ReganBooks). x + 338 p. Index. 25 cm. [216 ref]
• ***Summary:*** Contents: Acknowledgments. Introduction. 1. The health benefits of soy. 2. Enter the soy zone. 3. Zoning your kitchen. 4. Soy zone cooking tips. 5. Soy zone meals. 6. Modifying your favorite recipes. 7. Fine-tuning the soy zone diet. 8. Your longevity report card: The tests you want to pass. 9. Insulin: Your body's Dr. Jekyll and Mr. Hyde. 10. Soy science. 11. How the soy zone diet stacks up against the traditional vegetarian diet. 12. Frequently asked questions. 13. World health implications for the soy zone diet. Appendixes. A. Technical support. B. Zone validation

studies. C. Calculation of lean body mass. D. Zone food blocks for making soy zone meals. E. Synthesis of DHA. F. Glossary of terms. G. Resources. H. References.

Note: This book has all the hallmarks of a "quickie" written by a person who does not know his subject. Moreover, we believe the nutritional science and dietary philosophy are seriously flawed. Address: Ph.D., Swampscott, Massachusetts.

7828. **Product Name:** Silk (Soymilk) [Chai, or Mocha].
Manufacturer's Name: White Wave, Inc. (Marketer-Distributor).
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 2000. May.
Ingredients: Chai: Filtered water, organic whole soybeans*, naturally milled organic cane*, black tea, green tea, caramel color, cardamom, cinnamon, ginger, clove, natural flavors, calcium carbonate, carrageenan, disodium phosphate, sodium citrate, zinc gluconate, vitamin A palmitate, riboflavin (B-2), vitamin D-2, vitamin B-12. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990. Silk soybeans are third-party certified by QAI and contain no GMO soybeans.
Wt/Vol., Packaging, Price: Quart gable-top cartons. Retails for $2.39 to $2.69.
How Stored: Refrigerated.
Nutrition: Per 1 cup (240 ml): Calories 130, calories from fat 30, total fat 3 gm (5% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 125 mg (5%), total carbohydrate 20 gm (dietary fiber 1 gm, sugars 15 gm), protein 6.5 gm. Vitamin A 6%, vitamin C 0%, calcium 30%, iron 6%, vitamin D-2 20%, riboflavin 20%, vitamin B-12 15%, zinc 6%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Talk with White Wave. 2000. May 8. These two new flavors will be available later in May. *New Soy Times* (Carmichael Lynch Spong, Minneapolis, Minnesota). 2000. May. "White Wave announces two new flavors of soymilk: Introducing Silk Mocha and Silk Chai." p. 1.

Quart cartons with Labels sent by James Terman. 2000. May 11. 2.75 by 2.75 by 8¼ inches. Tetra Rex package. "Made with soymilk. Organic–Third party certified." Chai: "A premium beverage of teas, soy and spices." Mocha: "A premium blend of coffee, soy & chocolate flavor."

Leaflet (color glossy) sent by James Terman. 2000. May 11. "Sip into something silky." On the front, a color photo shows quart cartons of both chai and mocha flavors against a chocolate-brown background. In the foreground a portion of a white mug filled with each beverage is visible. On the back are the nutritional facts, ingredients, and case pack information.

Ad in Natural Foods Merchandiser. 2000. June. p. 71. "Sip into something silky."

Glossy color leaflet (front and back, 8½ by 11 inch) sent by Patricia Smith from Natural Products Expo East. 2005. Sept. (dated 2005). "Silk quarts: Ideal size. Great taste. Variety." "America's most popular soymilk brand."

The company's name has now been changed to WhiteWave Foods Company; it is owned by Dean Foods Co., one of America's largest dairy companies.

Product with Label purchased by Martine Liguori in Oakland, California. 2007. Jan. Package design is copyrighted 2006. Front panel: "Silk Chai. Made with organic soybeans. A premium beverage of teas, soy and spices. Enjoy hot or cold. Vitamin fortified." Retails for $0.99, but regular retail price is about $2.79.

7829. Tannehill, Carol. 2000. Pizza Hut tests new cheese here first. *News-Sentinel* (*Fort Wayne, Indiana*). June 27.
• ***Summary:*** Galaxy Foods chose Fort Wayne, as a typical U.S. city (in terms of demographics), to be guinea pigs for pizza made from its low-fat, cholesterol-free mozzarella. The Veggie Mozzarella Pizza debuted last week at The Village at Coventry Pizza Hut for a six-week test. During the test, the Pizza Hut "customers can choose which cheese–regular dairy mozzarella or soy-based Veggie Shreds–they want on their pizzas."

Galaxy Foods (of Orlando, Florida) says its vegetable-based, non-dairy cheeses, milk, butter, sour cream and other products are available at 13,000 supermarkets. Now the company is branching out into the restaurant industry.

The new pizza is not vegan because it contains casein–without which it will not melt. It is also a bit more expensive than pizza with regular dairy cheese. Address: Restaurant notes.

7830. Demos, Steve. 2000. White Wave reflects on growth and Dean Foods investment: Q&A with Steve Demos, CEO of White Wave. *Nutrition Business Journal* (*San Diego, California*) 5(6):12-13. June.
• ***Summary:*** Products with the White Wave and Silk brand names are now sold in virtually all natural foods stores and over 17,000 mainstream supermarkets in the USA and Canada.

The past 12 months have been the most dynamic period of change and growth in the history of White Wave. In 1999 the Silk beverage line was in less than 1,000 supermarkets, but by May 2000 that number had increased to over 17,500. This increase was not a result of anything Dean Foods (a $4+ billion dairy and specialty foods manufacturer and marketer) did for White Wave. White Wave already had strong momentum before the relationship with Dean Foods began. In 1998 White Wave's distribution was 85% natural foods and 15% supermarkets/grocery stores. In 1999 it was 55% natural and 45% supers. This year the company expects a shift to about 65% supers and 35% natural. For the fiscal year ending 31 March 2000, White Wave's sales were up

more than 100% over the previous year, and for the month of March 2000, they were up 400% over the same month one year ago.

White Wave's greatest short-term challenge is to attract, train, and retain personnel who can meet the challenges of the company's growth and, even more important, maintain the company's culture and identity.

Silk's success in supermarkets has attracted several very large corporate competitors. Soymilk products now sold in the refrigerated beverage case include those from Suiza Foods, Hain Foods (Westsoy brand), Imagine Foods, Vitasoy, Best Foods Co., and Pepsico/Galaxy Foods.

White Wave's market share, (according to March data from Spins and April data from IRI) is 20% of the non-dairy beverage sales in natural foods and 78% of refrigerated non-dairy sales in mainstream supermarkets.

FDA approval of a health claim for soy protein has been one factor leading to dramatic growth for White Wave. During the past fiscal year, the company has operated on its previously developed "out-of-sight" growth plan (for very fast growth), which has led to 74% growth in existing markets and 108% growth in sales increase with less than 0.5% out of stock and almost no quality problems.

Concerning industry consolidation, Demos is glad to see natural foods becoming more widely available in America through new channels of distribution. The problem is that large, multinational companies seldom, if ever, are involved in innovative product development of natural or organic foods. When the entrepreneurial element leaves, the passion to innovate is often lost. No one at White Wave is cashed out or retired, and the passion remains.

Looking back: During the 1970s and 1980s, survival was the key to success for soyfoods companies. During the 1989s it was R&D leading to product innovation and better flavor. During the next decade it will be serious financial backing, dependable and far-reaching distribution, establishing consumer brand loyalty, having consistent and high quality goods and services, and differentiating your company and products from competitors.

7831. Global Food Industries, Inc. 2000. Company profile (Portfolio). Townville, South Carolina. Ten inserts. 28 cm.
• ***Summary:*** Inserts: (1) Cover letter: The company "has been in business since 1982, as one of the leaders in manufacturing soy-based dehydrated entrees." Four sales U.S. offices: Mid-Atlantic, Southeast (Florida), West Coast (California), Armed Forces. (2) Food processing: They have U.S. manufacturing plants in Illinois (Ashcomb), Mississippi, and Iowa. Sales offices in Florida, California, Mexico City, San Salvador (El Salvador), and La Paz (Bolivia). R&D office: Champaign, Illinois. Manufacturing plants in USA and 21 countries. (3) Letter from the president, Neal Pfeiffer.

(4) International organizational chart: Ramlakhan Boodram is in charge of equipment and product development. Paulette Harary is in charge of International development. (5) Five main reasons for using our low cost, high protein entrees: Tastes great, nutrition, alternative diets (vegetarian, kosher, halal), quick, easy, consistent preparation, convenient (light weight, shelf life of 2 years, 1 cubic foot holds 500 servings). (6) Menu description: Ala King, "Chicken" style dinner in sauce, Chili, Chunky "beef" style stew, Chunky "chicken" style stew, Country breakfast, Goulash (New!), Picadillo (New Mexican meal!), Butterscotch, chocolate & vanilla puddings, Salsa verde (Mexican meal–coming soon!), Seafood chowder (Coming soon!), Sloppy joe, Spaghetti, Stroganoff, Sweet and sour, Tinga (Mexican meal–coming soon!), Vegetable "beef" style soup (Coming soon!), Other products, Beverages. (7) Countries with operations: Vegetable oil extraction facilities are in: Ibadan, Nigeria; Roseau, Dominica; St. Paul, Minnesota, USA; Mayaro, Trinidad. Essential oil distillation facility is in: St. Georges, Grenada. Soymilk production lines are in: Roseau, Dominica; Kingston, Jamaica; Mexico City, Mexico; Lagos, Nigeria; Rome, Italy. Extruded products facilities are in: Cairo, Egypt; Giza, Egypt; Ho Chi Min City, Vietnam. Health supplement packaging line is in: Port-of-Spain, Trinidad. Powdered products canning line is in: St. Louis, Missouri, USA. (8) Easy and creative recipes using Global Food as a starter (title page). (9) Potato tart. (10) Nutrition information (sample) (Title page). (11) Nutrition facts–Ala King. Address: P.O. Box 489, Townville, South Carolina 29689. Phone: 1-800-225-4152 or 864-287-1212.

7832. Potter, Michael. 2000. Eden Foods rides growth in soy, focuses on quality: $60 million Eden remains independent in the midst of consolidation. Q&A with President Michael Potter. *Nutrition Business Journal* (*San Diego, California*) 5(6):10-11. June.
• ***Summary:*** Since its founding, Eden has distributed dry groceries, not refrigerated or frozen foods. They sell to customers who want quality natural, organic and macrobiotic foods. Their top category is Edensoy soymilk, which represents about 50% of Eden's sales–followed by canned beans, imported Japanese foods, and pasta. Eden's average soymilk sales have grown 28% a year over the last six years. The company's total sales are about $60 million a year. They have not yet added the FDA health claim to their Edensoy label, and may not.

During the 1970s Eden was a wholesale company distributing to retailers in the Midwest and Northeast. In the early 1980s they withdrew from wholesaling and started selling branded products exclusively to distributors–not to retailers. That's what they still do. In addition, natural and organic products are now in demand in mainstream stores and supermarkets; during the past 5 years, their growth has been strongest in that channel–especially with Edensoy. Tree of Life and United Natural Foods have become primarily

DSD (direct store delivery) distributors, especially where their mainstream customers have "natural food sets."

One highlight in the history of Eden Foods was the introduction of Edensoy in July 1983 at the NNFA show in Denver, Colorado. By the following winter, Edensoy had become the fastest moving item in the natural- and health foods industry and created the non-dairy liquid food category. More recently, the highlight has been the continued gains in conversion of soil to organic agriculture.

There is more competition today for organically grown foods, but Eden has long paid its growers well and promptly, so the company gets first call on quantity and quality. The $30 million plant in Michigan that makes Edensoy buys more soybeans than anyone, and is probably the largest organic processing facility in the USA.

Michael is the sole owner and shareholder of Eden Foods. People with lots of money want him to take the company public and do an IPO (initial public offering). But he has chosen the path of slow and steady growth–like the tortoise. By staying independent, he stays free to focus on his mission of quality.

Michael says he founded Eden Foods when he was age 19. Note: This is not true. Eden Organic foods was founded in Nov. 1969 by Bill Bolduc. At about that time, Michael had a good-paying job at an art gallery in Royal Oak, Michigan. Then he began working for, and eventually became a partner in Joyous Revival, a macrobiotic and natural foods retail store in Birmingham, Michigan. In Jan. 1971 Bill Bolduc hired Michael Potter to work at Eden Foods. So Michael was not a founder or "co-founder" of Eden Foods, but he has served as President since 1972. The article says that Potter was one of the founders of the Soyfoods Association of America; this is also not true. He is now age 50, with six children and two grandchildren.

7833. Schweitzer, Peter. 2000. A village soy demonstration [in Belize]. *Plenty Bulletin* (*Summertown, Tennessee*) 16(2):2. Summer.

• ***Summary:*** Describes the ongoing work of Plenty, Inc. to introduce soybeans to Belize. "During our recent stay in Belize, we participated in a 'soy demonstration' organized by Gomier (Plenty's soy technician) in the village of Aguacate. The Aguacate Farmers' Coop is growing more soybeans than any group in Toledo and this was their first soy demo. The Coop members invited the school in particular and the turnout was half school kids and half farmers and village leaders. First we set up the cooking station and heated a pot of water, while Gomier did his introduction about the health benefits of soybeans. We all trooped down to the village corn mill (where the village grinds its corn for tortillas) to grind the 5 lbs. of beans that had been soaking in water for 8 hours. Afterward we went back and cooked the mash, strained the milk and served it in cups three ways–plain, sweetened with sugar, and sweetened with cacao. Several gallons were consumed by the 30-40 people present. Gomier made patties from the okara (leftover soy pulp) with carrots, celery, onion and seasoning and fried them. These were likewise eaten as fast as they could be cooked. Gomier also made soynuts which were very popular too."

A photo shows Plenty board member Richard Schoenbrun serving soy milk to nine dark-skinned people, mostly kids.

7834. Santacruz, Cecilia; Santacruz, Nestor. 2000. Re: More searching for the roots of soya in Colombia. New developments at Delisoya. Letter to William Shurtleff at Soyfoods Center, July 19. 2 p. Typed, with signature. [1 ref]

• ***Summary:*** Cecilia traveled to Corpoica but was unable to obtain the 1930 Boletin by Durán Castro: Molina Garcés. All records of the Granja Experimental de Palmira were sent to ICA, and the ICA can't find them.

"Our small business demands a lot of time and we are not integrated; we make and sell the tofu in different places. We started a new activity (see the yellow paper) in Delisoya–making lunches. Gloria, my new partner, a young girl and I. Nestor keeps making tofu and soymilk."

Accompanying the letter is Deli Soya's daily lunch menu (black on yellow background) which includes: Brown rice mixed with tofu. Whole-grain lasagna with Italian tomato sauce, tofu and spinach.

In a handwritten note at the end, Cecilia says that she is studying Japanese, and has been invited to stay at the home of Japanese friends. Address: Founders and owners of Delisoya, Calle 78 No. 12-03, Santafe de Bogota, Colombia. Phone: 346-2178.

7835. Bawa, Ravinder. 2000. Straight answers: Jason Baker, Coordinator, People for Ethical Treatment of Animals (PETA), India. *Times of India* (*The*) (*Bombay*). July 26. p. A1.

• ***Summary:*** Baker answers four questions posed by Bawa. The third question is: "What are the alternatives to milk consumption?" Answer: You don't need to drink milk. However delicious alternatives, which are easy to make, include soya milk and nut milks. "Tofu (bean curd) makes great soya paneer."

7836. Khaleque, Abdul. 2000. Re: Work with soymilk and soybeans in Bangladesh. Letter (fax) to William Shurtleff at Soyfoods Center, July 27. 1 p. Typed, with signature on letterhead.

• ***Summary:*** "My name is Abdul Khaleque. I carried out research on soymilk at Massey University, New Zealand in order to fulfill the requirement for the degree of Doctor of Philosophy from 1969-'71 and published a number of papers in National and International Journals.

"I worked for about 35 years in Bangladesh Council of Scientific and Industrial Research (a national research

organisation) and retired as Director. After retirement, I joined as Technical Director in a big National NGO named Gonoshasthaya Kendra (GK). As the authorities of Gonoshasthaya Kendra knew me and about my work, they appointed me to implement a project on production of soymilk for commercialization. We are in a final stage of implementing the project." Address: Director (Tech.), Gonoshasthaya Kendra, Peoples Health Centre, Nayarhat, Dhaka-1344, Bangladesh. Phone: 933 22 45.

7837. Demos, Steve. 2000. New developments at White Wave (Interview). *SoyaScan Notes.* July 31. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Steve actually did live in a cave practicing meditation for one month outside of Rishikesh, India in the 1970s–but he never told anyone in the soyfoods industry about it until he told CNN Financial News [1 March 2000]. They "ran with it."

Silk is now in 24,000 supermarkets nationwide. Dean Foods supplied the slotting money, but otherwise White Wave basically got into the stores using its own sales force. White Wave does not now use, and never has used, the Dean Foods distribution system. Rather, they ship Silk from the factory where it is made to the supermarket warehouse, whence it is distributed to individual supermarkets.

Getting into supermarkets was like running a 100-yard dash; the only competitor was Suisa, whose Sunsoy soymilk is now in about 50% of supermarkets in the USA. Suisa now has about 4% of the market. The next race is to take soymilk to the national media; this is more than a 44 yard dash. White Wave will be spending about $10 million on this media campaign. Their goal is to develop "top of the mind awareness" or TOMA, so that when people hear the word "soy" they think "Silk."

In the natural foods trade all Westsoy products still have a larger market share than all the Silk products.

During the next few weeks White Wave will launch a new version of Silk soy yogurt, a cultured yogurt with live cultures, made at a dairy in the USA. It will be sold in a new carton–an aseptic single-serving plastic cup.

Steve has learned several key things from people at Dean Foods. First, how to manage data, especially market statistics, and to use them in making decisions, allocating marketing dollars, and targeting interested populations. Second, Steve has a mentor at Dean Foods, Lou Nietto, who is teaching him about the mainstream food business. Lou got his MBA from Harvard Business School and came to Dean Foods from Kraft. White Wave grew up in the natural foods industry, but they are no longer primarily in this business. Steve and Lou talk by phone once a month, and phone to person once a quarter. Lou really believes in White Wave's products, concept, and entrepreneurial spirit. "We turned their heads."

Silk is certainly one of the fastest growing products in the food industry in recent times, and may be *the* fastest.

Steve is the second child in his family; his elder brother is a surgeon. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

7838. Mercola, Joseph. 2000. Experts in the field: Clinician of the month–Infants and soy milk. *John R. Lee Medical Letter* (*Windsor, California*). July. p. 5-6. [16 ref]
• ***Summary:*** Dr. Mercola shares "important new information" on the "profound adverse effects that soy products have on infants and young children." He is not a fan of soy and he plans to go on the national media later this year to dispel the pervasive myth in the health food industry that unfermented soy products, like the majority soy foods consumed in the USA, are not good for people.

He limits his responses to the deleterious effects of unfermented soy products on infant nutrition, "and I can best make my case with information abstracted from writings by Dr. Mary Enig and Sally Fallon."

The website for John R. Lee, M.D., describes itself as: "Your information source for Natural Hormone Balance and Natural HRT" [hormone replacement therapy]. Address: D.O. [Doctor of Osteopathy], St. Alexius Medical Center [1555 Barrington Rd., Hoffman Estates, Cook Co., Illinois 60194].

7839. *Ontario Soybean Growers Newsletter.* 2000. Soyfoods opportunities conference. July. p. 3.
• ***Summary:*** "On April 13th, over 130 delegates attended the 'Soyfoods Opportunities Conference' held in Guelph [Ontario]. The purpose of the conference was to bring together industry stakeholders to explore" new opportunities. "Soyfoods are becoming one of the fastest growing food groups in North America." "Peter Golbitz, one of the leading authorities on the world soyfood market, spoke on current and emerging trends in soyfoods." He noted that only 10% of the world's soybeans are currently being used as soyfoods, and of that amount, 90% are in Asia. Sales of soyfoods in the USA this year is expected to top $2.6 billion–led by growth in soymilk and meat alternatives.

Yves Potvin described his very successful work with soyfoods. "After the conference, many of the delegates gathered to discuss the feasibility of creating a Canadian Soyfoods Association. 40 people from across Canada voiced unanimous support..." Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

7840. *Ontario Soybean Growers Newsletter.* 2000. Pepsi to market soymilk. July. p. 8.
• ***Summary:*** "Coming soon to U.S. theatres: A cold soymilk-and-fruit drink to wash down that hot buttered popcorn. The drink is a product of PepsiCo Inc's Tropicana brand, one of several big food and beverage companies trying to get in on the growing market for soy. Kellogg, Kraft and H.J. Heinz

have also recently acquired soyfood companies.

"Known as 'Tropicana Smoothie made with veggie milk', this icy drink is a joint venture with Galaxy Foods in Florida. In addition to some theatres in Florida, the drink is going to be tested in selected restaurants and Kroger supermarkets.

"Galaxy Foods hopes to soon market the Tropicana Smoothie, as well as other soy products, in Canada." Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

7841. Taira, Ele; Taira, Terry; et al. 2000. Auntie Aloha's–A taste of soy. Honolulu, Hawaii: Independent Distributors of Nutrition for Life. 92 p. Recipe index. 22 cm.
• ***Summary:*** These are Hawaiian-style recipes that use various NFLI (Nutrition for Life International) meatless soy products made from whole soy flour, such as: Harvest Beanuts, Heartful Gourmet Beef Chunks, Heartful Gourmet Beef Strips, Heartful Gourmet Chicken Chunks, Heartful Gourmet Chicken Strips, Heartful Gourmet Ground Beef, Heartful Gourmet Ground Turkey, Nutri-Flour Blend, Powdered Soymilk, or Vegetable Curls. Recipes also include traditional soyfoods such as shoyu, tofu. The name of the person who developed and submitted each recipe appears below the recipe title.

Contents: Salads. Soups. Pupus. Pasta & rice. Main dishes. Desserts and breads.

Proceeds (less costs) from the book go to HopeLine, the advice line for young people sponsored by Karing for Kids, a Christian charity. The HopeLine currently operates 8 hours/day on average. Its budget will enable 65,000 youths to call and receive help each year. Yet the goal is to make HopeLine available 24 hours a day, every day, year-round.

Letter (fax) from Ele Taira. 2002. Aug. 6. All the NFLI Healthful gourmet product are meatless and made from soy. For details visit the website at www.nutritionforlife.com. Address: Ele Taira, 1015 Ala Napunani Street #701, Honolulu, Hawaii 96818. Phone: 808-836-4994.

7842. White Wave, Inc. 2000. Five new leaflets from White Wave (Leaflet). Boulder, Colorado. 1 p. each Single sided. 19 x 14 cm.
• ***Summary:*** These playful, glossy color leaflet (or post cards) were sent to Soyfoods Center by Steve Demos on 1 Aug. 2000. Each contains a beige plate with a design on it against a different background color. On the bottom of each is a color photo of a ½-gallon carton of Silk Soymilk with the tag-line "Get your soy with Silk." (1) "Think globally. Spoon locally" (green). (2) "Its one of those soy meets girl love stories" (dark pink). (3) "Taste and nutrition co-habitate harmoniously" (dark red). (4) "A taste bud lovefest." (5) "Have a good life span."

An identical set of five cards is smaller (15 x 11 cm).

7843. Yap, Bwee Hwa Flora. 2000. Re: Tempeh Promotion Day in Germany. Good tempeh now sold in Germany at a reasonable price. Letter to William Shurtleff at Soyfoods Center, Aug. 7. 1 p. Typed, with signature.
• ***Summary:*** This year Tempeh Promotion Day was held on July 1, in Bonn, in the Indonesian Embassy, sponsored by Garuda Airways. The day was successful, with about 150 people in attendance, thanks to Miss Birgit Steffan of the cultural department of the embassy. Lectures about tempeh were given by Dr. Suyanto (Director of Bioindustrial Technology, Agency for the Assessment and Application of Technology, Jakarta) and Dr. Jha (a cancer researcher at the Univ. of Bonn). On the walls were pictures of the different stages of tempeh making. The lunch, consisting of tempeh dishes, was served outdoors in tents by the Java Restaurant (of Koeln). After lunch there were more lectures and a show of Indonesian dances.

Dr. Suyanto will come to Germany again this August or September. Flora plans to go with him to Maldegem, Belgium, where there is a very modern tempeh factory–previously owned by De Hobbit.

In Germany, very nice frozen white tempeh, made in Holland, is now sold in Asian Shops for DM2.50 for 250 grams–a very reasonable price. The tempeh sold in natural food stores retails for about DM6.00 is made by Viana (owned by Bernd Drosihn). Bernd plans to move his factory to the Eifel.

A second letter, dated Aug. 15, accompanies two new books on tempeh. Flora adds: "It is a pity that German people still have not learned to appreciate tempe. Tofu is sold in supermarkets, also soymilk and desserts." Spreads for bread made of soy, are found mostly in natural food shops (Naturkost Laden). One of the reasons that tempe is not made in households is that the starter is difficult to buy in Germany. Address: P.O. Box 4132, D-66386 St. Ingbert, Germany. Phone: 6894-53609.

7844. Rice, Judy. 2000. Wyoming will be home of new soy milk facility. *Beverage Online.* Aug. 10.
• ***Summary:*** A new soymilk production company named Star Valley Natural Foods has been established. Principals in the joint venture include Jeremy N. Kendall, chairman and CEO of Stake Technology Ltd. Allan Routh, president of SunRich, Inc. And Dennis Anderson, chairman and CEO of Northern Food & Dairy, Inc., which currently produces soy milk at its facilities in Alexandria, Minnesota.

The partners have purchased a 20,000 square foot plant and equipment to make soy milk in Afton, Wyoming; it is scheduled to begin operation in September and will supply the West Coast market.

Located in the Star Valley in the Teton Range of the Rocky Mountains, the plant will use the crystal-clear water from the world's largest cold-water geyser in making its soy milk.

Northern Food & Dairy and SunRich recently formed a

joint venture named Nordic Aseptic to purchase a soy milk packaging plant. Stake announced its intention to acquire Northern Food & Dairy.

Note: For more information phone Walt Humbert of Star Valley Natural Foods at 307-886-5212. As of 20 Nov. 2000 the plant had not yet begun operation.

As of 21 Nov. 2002 the phone is 307-885-3060.

7845. Lee, Ken. 2000. New developments with yuba, soymilk, and tofu at Soyfoods of America (Interview). *SoyaScan Notes.* Aug. 18. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Soyfoods of America still makes yuba and, in fact, cannot keep up with the demand. The fresh frozen sheets is their best selling yuba product; it is sold mostly to restaurants, where it is used like an egg-roll wrapper. The dried yuba sticks are used in soups. Ken is developing the equipment and a process for automating the yuba-making process.

The company's best selling product of all is Furama soymilk, sold in both the Oriental and Caucasian markets in the USA. Ken no longer makes tofu; he has House Foods make it for him under his label, since they are the lowest-cost manufacturer.

Two weeks ago Ken's company introduced a cultured soy beverage under the Trader Joe's label, in peach and strawberry flavors. It was developed by Tim Huang. Ken will soon introduce a similar product under his SoyWise brand. Address: President, 1091 E. Hamilton Rd., Duarte, California 91010. Phone: 626-358-3836.

7846. Nordquist, Ted. 2000. Update on work with soyfoods (Interview). *SoyaScan Notes.* Aug. 18. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Sales of Ted's WholeSoy soy yogurt "are going through the roof" = increasing dramatically. Ted is moving production from Fullerton to SSI (Super Store Industries) in Turlock, California–just south of Modesto. He leaves home at 4:00 in the morning to arrive there last Sunday and Monday at 6:00 a.m.

Ted's ice cream is also "flying off the shelves" = selling very well. Things are going very, very well for Ted's business. He is still trying to find a partner to do the soymilk–after Suiza Foods Corp. went off on their own. Ted would have a hard time partnering with people who have betrayed him. "They'd almost have to elect me chairman of the board before I'd agree to go back and work with them." With his WholeSoy Soymilk, Ted was actually 3-4 months ahead of White Wave in the "100-yard dash" to get into supermarkets. Ted was ready to go in June of 1999, ready to sell it through Pacific Coast Brands with Neil Donovan, the man who makes Lactaid–but Neil uses Suiza's distribution. Ted is now talking to some big players, but it would be very expensive to launch the product. He is talking with some big chains about Ted making the WholeSoy Soymilk under his label, then the chain would distribute and sell it. Ted can't afford to pay the upfront marketing expenses–including slotting allowances for individual stores. If White Wave's Silk and Ted's WholeSoy were compared right now in a well designed taste test, Ted's product would definitely get higher scores. Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

7847. Dhawan, Himshani. 2000. Soya bean milk alternative to bovine milk. *Times of India* (*The*) (*Bombay*). Aug. 19. p. 5.

• ***Summary:*** "Mumbai: A recent study by a Washington [DC] -based research group called the Physicians Committee for Responsible Medicine (PCRM) has revealed that there was a growing demand for a viable alternative to conventional bovine milk in Indian hospitals." The study–which was conducted in more than 20 teaching hospitals across India–suggests soya bean milk as a viable alternative and concludes that although Indian hospitals need soya milk, many were unable to obtain it in adequate amounts.

The major findings of the study were: (1) 92% of respondents agreed that soya milk reduced the intake of saturated fat and cholesterol. (2) 84% said it was a viable alternative for those in high risk categories with regard to heart attacks and cancer. (3) 92% of respondents found soya milk to be a good alternative to cow's milk for those who were lactose intolerant.

An independent study concluded that 50% of India's adult population was lactose intolerant.

The article discusses this study and contains interviews with various pediatricians and dietitians about its conclusions.

7848. Cooper, Kim. 2000. Soyfoods Canada, the new Canadian soyfoods association (Interview). *SoyaScan Notes.* Aug. 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Current members of the new organization are the Canadian Ministry of Agriculture, Ontario Soybean Growers, Natures Milling (Ontario), St. Clair Agri Services Ltd. (a soybean exporter in Ontario), University of Guelph, SoyaWorld Inc. (Vancouver, BC), ADM (Maureen Callahan, from USA), and Galaxy Foods (Ontario).

The group is presently headquartered at the Ontario Soybean Growers' offices in Chatham. Janet Nauta (in charge of communications at OSG), who is serving as executive director, is working on different brochures and cookbooks. The main goal is to raise awareness of soyfoods in Canada. The ultimate question people ask is "What do I do with this stuff?"

The group has already had three meetings with a fourth scheduled for October 25th in Toronto, Ontario.

Note: Because of Canada's archaic food laws, Galaxy

Foods can't sell its cheese alternatives in Ontario. The government is considering rescinding this law. One of the focuses is on government relations, and standardizing laws that relate to soyfoods within the various provinces. Address: Marketing Specialist, OSGMB, Chatham, Ontario, Canada N7M 5L8. Phone: (519) 352-7730.

7849. Vergano, Dan. 2000. What's brewing: A coffee that could prevent cancer. *USA Today.* Aug. 21. p. D1. Life section.

• ***Summary:*** Thomas Slaga, of the AMC Cancer Research Center in Denver, Colorado, is working with Oncology Sciences Corp. of Austin, Texas, to develop a coffee that contains polyphenols–cancer-fighting compounds. Within 18 months, Slaga plans to license his roasting process (at around 400 degrees) to a large coffee company to create a "wellness" coffee.

Two decades ago, scientists worried that coffee might cause pancreatic cancer. Recently, however, they have found that coffee contains many of the same beneficial compounds as green tea.

Last year wellness drinks, such as soy milk, juice blends, and ginseng teas, accounted for 18.5% of new beverages, and represented one of the biggest trends of 1999.

Well-Bean Coffee Co. of Rochester, New York, which blends equal parts soybeans and coffee beans, hopes to attract America's coffee drinkers to the wellness ranks. A photo shows Thomas Slaga holding a tray of fresh-roasted coffee. Address: USA Today.

7850. Elliott, Julia. 2000. Simply soy: Nature's own antidote. Clifton, Virginia: Pocol Press. xiv + 112 p. Aug. Index. 22 cm. [37 ref]

• ***Summary:*** Contents: Prologue. The problem: Menopause–a natural event, causes... and effects, my own changing. The solution: The soybean–a little bean with a big history, soy–nature's own alternative, the benefits of soy. The program: Soy food products, cooking with soy, soy recipes, cooking with tofu, tofu recipes. Guideposts for the journey: Warning, risks, and wisdoms, vitamins, minerals, and water, herbal alternatives, meditation, massage, and acupuncture. Epilogue. Appendices: Readings and resources (women's health resources, books about menopause, menopause web sites, books about soy and tofu, general information sources, soy product sources, soybean web sites), source notes, bibliography. About the author. Address: 10 Guyton St., Kingston, New York 12401. Phone: 914-338-6368.

7851. Ernst, Mathew. 2000. Profiles in agricultural entrepreneurship: Iowa Soy Specialties, LLC, Vinton, Iowa. Lexington, Kentucky: University of Kentucky, Cooperative Extension Service. 12 p. Agricultural Economics-Extension Series No. AEC-2001-01. [13 ref]

• ***Summary:*** Contents: Introduction. The idea: Gathering information. Financing: Business formation. Process development: A different process. Market development: A new product and a new company, first customers, educating the brokers. Regulations: Non-GMO, certified Kosher. Managing growth: Forming partnerships and new companies, Hy-Vee alliance, sales and service expertise, research and development (Flour / TSP, soy oil). Conclusion. Acknowledgments.

"More than five years of efforts seeking to add value to the agricultural production in Benton County, Iowa, resulted in the formation of Iowa Soy Specialties, LLC, in 1997. Today, Iowa Soy is housed in three buildings with over 18,000 square feet under roof on the north side of Vinton, Iowa. The company is actively expanding its soy product line around the globe, enjoying the burgeoning market for soy food products.

"Three Benton County farmers are the principal investors and serve as the company's officers: Dave Van Steenhuyse (President), Homer Showman (Vice President), and Marlyn Jorgensen (Vice President)." "They wanted people to 'realize the health benefits of soy without having to eat tofu,' and their original goal was to make and sell soy flour as a baking ingredient and provide soy oil for use by large companies. They would use a mechanical process to extrude the oil from the soybeans." "Iowa Soy's initial stock offering was bought by 33 local investors."

"Iowa Soy became a half partner is Specialty Proteins, LLC, a company which manufactures the line of textured soy proteins sold by Iowa Soy. The other partner in Specialty Proteins, LLC, is the company which makes the equipment used in producing textured soy protein. Production is presently well underway. To enter the soy milk market, Iowa Soy aligned itself with a Minnesota company and soy milk producer [SunRich]. Production there has not yet begun due to a buyout and restructuring of the Minnesota company. Most recently [spring 2000], Iowa Soy has formed an alliance with WholeSoy Foods," an LLC headquartered in Des Moines; it will market the new soyfood products under the Heartland Fields brand name.

Sidebars: (1) Iowa Soy Specialties products. (2) Industry focus: The soy foods explosion. (3) Industry focus: Natural and health food markets. (4) Program focus: REVAMP (Rural Economic Value-Added Mentoring Program) and VAAPFAP (Value Added Agricultural Products and Processes Financial Assistance Program). Both trace their existence back to 1991, the year that the Office of Renewable Fuels and Co-Products (ORFAC) was established by the Iowa Department of Agriculture and Land Stewardship. (5) Program focus: REVAMP. Directed by Pat Paustian. (6) Program focus: VAAPFAP. Directed by Joe Jones. (7) Process focus: Dry extrusion. (8) New organic product introduction. (9) The organic audit process. (10). Non-GMO food claims. (11) "Spin-ff" companies from Iowa Soy: Specialty Proteins, LLC (formed in 1999 in partnership

with company [Triple "F" / Insta-Pro] that manufactures equipment used to make textured soy protein. Startup operating budget: $900,000). WholeSoy Foods (Formed in the spring of 2000 to market new soy foods under the brand name "Heartland Fields." Startup operating budget: $3.9 million). (11) Chronology of Iowa Soy Specialties growth (1991 to Summer 2000; 10 entries).

Note: As of 2006, Specialty Proteins appears (by a Web search) to be located at 1601 West D St., Vinton, Iowa. Phone: (319) 472-4555. However the Nutriant R&D Center is actually located there. Address: Extension Associate, Cooperative Extension Service, College of Agriculture, Univ. of Kentucky, Lexington, KY 40546.

7852. **Product Name:** Nutriline (Soymilk).
Manufacturer's Name: Fraser & Neave (Singapore) Pte. Ltd.
Manufacturer's Address: Shah Alam, near Kuala Lumpur, Malaysia.
Date of Introduction: 2000. August.
New Product–Documentation: Letter from Wataru Takai. 1999. Dec. 16. Takai Tofu & Soymilk Equipment Co. has had many enquiries from F&N [Fraser & Neave] in Singapore and Malaysia, starting 1 year ago. Mr. Takai visited their factory in Shah Alam, near Kuala Lumpur with his staff.

After two days meeting in their factory, Takai received an order for a soya milk extraction plants. Takai will ship it to them from Kanazawa Port to Port Kelang near Kuala Lumpur at the middle of February, 2000.

The name of Coca Cola Co. in Malaysia is F&N COCA-COLA (MALAYSIA) SDN BHD. Takai will ship two production lines with soaking tanks, automatic pressure cooker plants and okara screw presses and okara rotary feeders with air conveyors. Takai will install them in Shah Alam factory and fill soymilk in aluminum cans in Shah Alam factory. They transport chilled soymilk to Selangor factory to fill in pure cartons. They sell them throughout Malaysia. The total capacity of their soymilk plants is 4000 liters/hr. Coca Cola Co. has many soymilk factories all over the world.

7853. **Product Name:** Rice Dream (In Refrigerated Gable-Top Carton) [Organic Original Enriched, or Vanilla Enriched].
Manufacturer's Name: Imagine Foods, Inc. (Marketer-Distributor). Rice milk made by California Natural Products, Manteca, Calif.
Manufacturer's Address: 350 Cambridge Ave., Suite 350, Palo Alto, CA 94036. Phone: 1-800-333-6339.
Date of Introduction: 2000. August.
Ingredients: Filtered water, certified organic non-GMO brown rice (partially milled)*, expeller pressed high oleic safflower oil, sea salt. * = Organically grown and processed in accordance with Section 26569.11 of the California Health and Safety Code.
Wt/Vol., Packaging, Price: 23 fl oz (946 ml) Tetra Brik Aseptic carton. Retails for $1.59 (11/93 at Trader Joe's, Concord, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Spot in Vegetarian Journal. 2000. Sept/Oct. p. 28. "Rice Dreaming. For those of you who don't do soy, Rice Dream now comes in refrigerated cartons, just like its sister product Soy Dream. Rice Dream is made from non-GMO brown rice and is free of dairy, lactose, cholesterol, and soy."

7854. Jaret, Peter. 2000. Sumptuous soy: If you think it still means bland cubes of tofu, you're in for a surprise. New products make it a pleasure to add just the right amount of this potent disease-fighter to your meals. *Health.* July/Aug. p. 112-17.
• ***Summary:*** About the health benefits of soy, with many wise comments from expert soy cook Dana Jacobi. The first page contains a full-page color photo of edamame, with the caption: "Japan's favorite finger food is becoming an American fad."

A sidebar titled "Should anyone take soy pills?," by Jaret, argues that consuming soy in concentrated form–such as isoflavone pills–is not a smart idea. Experts agree. Address: Contributing editor.

7855. Byrne, Jennifer. 2000. Soy milk processor heads here. *Bridgeton News* (*New Jersey*). Sept. 6.
• ***Summary:*** White Wave Inc. of Boulder, Colorado, is setting up a soymilk manufacturing plant in Bridgeton, New Jersey. White Wave is presently a customer of Cumberland Dairy, which is leasing White Wave a portion of its storage facility at 70 Rosenhayn Avenue. The city council authorized White Wave to apply for a permit to enter a wastewater treatment facility. Cumberland Dairy will play a role in the processing (ultra-pasteurization) and packaging. Cumberland Dairy already performs these functions for White Wave, which has annual revenues of approximately $28 million and presently employs 91 people.

7856. *SoyaScan Notes.* 2000. Status of the soybean in the USA and worldwide as of Sept. 2000: A few basic facts and statistics (Overview). Sept. 6. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** The soybean is by far the world's most important oilseed or legume: World production in 1998 in million metric tons was: Soybeans 134.06. Cottonseed 33.52. Rapeseed 31.33. Peanut 26.37. Sunflowerseed 23.50. Total of the top 5 oilseeds: 249.14, with soybeans accounting for more than half of the total (54.0%).

The United States is by far the world's largest producer of soybeans, producing almost as much as all other countries

combined! Leading world soybean producing countries in 1998-199 in million metric tons were: United States 75.028 (and 28.6 million acres). Brazil 31.000. Argentina 18.300. China 13.800. India 6.000. Paraguay 3.100. Canada 2.737.

Top four soybean producing states (million bushels) in the USA in 1998: Iowa 501. Illinois 468. Michigan 285. Indiana 235.

Value of the U.S. soybean crop in 1998: $14.6 billion. Of the Indiana soybean crop: $1.25 billion.

How are U.S. soybeans utilized? About 35.6% of the crop is exported as whole soybeans, 60% is crushed to make soy oil (by far the most widely used vegetable oil in America today) and soybean meal (which is fed to livestock, poultry, and aquaculture animals), about 3% is transformed from whole soybeans into various soyfoods such as tofu, soymilk, miso, etc., and the rest is used as seed to plant next year's crop. Of the crushed soybeans, about 9% goes into industrial uses (non-food, non-feed) such as soy ink, soy diesel, etc.

How is soybean oil utilized in the USA? 96.2% is used for food and 3.8% is used for industrial (nonfood) uses. Of the total food uses: Cooking and salad oils 48.7%. Shortening 37.3%. Margarine 12.9%. Other 0.5%. Of the total industrial uses: Fatty acids, soap and feed 56.94%. Resins and plastics 18.14%. Inks 17.03%. Paints and varnishes 6.31%, Biodiesel 1.42%.

A good source of current soybean statistics is the ASA (American Soybean Association) website: www.unitedsoybean. org/soystats2000.

7857. Rice, Judy. 2000. Making a stake in soymilk. *Beverage Online.* Sept. 21.
• ***Summary:*** Stake Technology Ltd. (Norval, Ontario, Canada) has acquired 100% of the common shares of Northern Food & Dairy Inc. (Alexandria, Minnesota). On 18 Aug. 2000 the shareholders of Stake Technology Ltd. overwhelmingly approved the transaction. Northern produces 65% of the soymilk sold in the USA. The U.S. soy milk market has grown by more than 30% a year in recent years to exceed US$300 million in sales in 1999.

7858. Jaret, Peter. 2000. Sumptuous soy: If you think it still means bland cubes of tofu, you're in for a surprise. New products make it easy to add this disease-fighter to your meals (Ad). *People.* Sept. 27.
• ***Summary:*** This 2-page article was reprinted–as a special advertising supplement–from the July/August issue of *Health* magazine (p. 112-17). Photos show: Edamame. Veggie burgers. A tall glass of chocolate soy milk.

7859. **Product Name:** NutraBlend (Original, Vanilla, Orange, Apple).
Manufacturer's Name: Bestfoods (formerly CPC International Inc.).
Manufacturer's Address: Englewood Cliffs, New Jersey.
Date of Introduction: 2000. September.
Wt/Vol., Packaging, Price: 1 quart aseptic pack retails for $2.19. Or 8.4-oz three-pack retails for $1.99.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Dairy Network. 2000. Sept. 14. "Responding to U.S. interest in soy drinks." This line of four soy beverages was created to respond to consumers' desire for healthful, yet great-tasting foods. Bestfoods is one of America's largest food companies, with 1999 sales of $8,600 million. Food Chemical News. 2000. Sept. 15. "Bestfoods says new soy beverages respond to functional foods interest."

7860. Business Communications Co. 2000. Soyfoods: Trends and developments. Norwalk, Connecticut. 137 p. Sept. *
• ***Summary:*** This study of the soyfoods market, No. R2-419, retails for $3,450. One section is titled "Whole soybean products." By type of product: Largest share and fastest growth–Soymilk. Next largest share and fastest growth–Tofu. Good share: Soy sauce. By application: Largest share–Substitute meat products. Fastest growth–Substitute dairy products. Industry structure: Market influences–Consumers, age/gender, media messages, health benefits, retailing outlets. Driving forces–Regulations, technology, price, niche marketing. Most active manufacturers–Market leaders, industry environment.

The second section is titled "Soyfoods as ingredients–Soy protein, soy fiber, soy isoflavones. By type of product: Largest share–Soy flour (defatted). Fastest growth–Soy protein concentrates. Next fastest growth–TSP [Textured Soy Proteins] Good growth: Soy protein isolates. Slow growth–Soy grits, soy fiber. Soy isoflavones. By application: Largest share–Substitute meat products. Fast growth–Substitute dairy products.

The third section is "Soyoil products–Soybean oil and lecithin." Address: Norwalk, Connecticut.

7861. **Product Name:** Fresh Soymilk.
Manufacturer's Name: Dakini Health Foods Pvt. Ltd.
Manufacturer's Address: S.N. 33, Bhoiwastai, Keshavnagar, Mundhwa, Pune 411 036, India. Phone: 020-613985.
Date of Introduction: 2000. September.
Ingredients: Whole soybeans, water.
Wt/Vol., Packaging, Price: 250 ml, 500 ml, or 1000 ml plastic bags. Retails for Rupees 32 per 1000 ml.
How Stored: Refrigerated.
New Product–Documentation: Letter with 2 labels from Seemo and the Dakini crew. 2000. Oct. 10. Their soymilk has been an instant success in Pune. They got their printed polyethylene bags during the first week of September and now they are selling 350-400 liters/month of soymilk. Seemo expects this rate to triple by the end of this year. Their soymilk is medium rich with a milk-to-bean ratio of 7 or 8 to

1. It retails for the premium price of Rupees 32 per liter (Rs 25 per liter wholesale) which is slightly less than double the retail price of regular packed pasteurized cow's milk at Rs 16.5 per liter.

Their next product, now in development, is Soyogurt and they are having excellent results using their old tempeh incubator and a Swiss probiotic yogurt starter.

Labels. Thick rectangular clear plastic bag printed with purple ink. In the upper left are the two Chinese characters for soymilk. To the right of that a unique yin-yang symbol. "Naturally made from whole soy beans and water only. Absolutely no additives or preservatives. Ready to use, cold or warm. Cholesterol free. Lactose free. Keep refrigerated 4-7ºC."

Note: This is the last document seen concerning Dakini Health Foods Pvt. Ltd. A search of the web in June 2010 shows that their last address was S No. 33 Bhoiwasti Keshav Nagar Mundhwa, Pune, Maharashtra state, India. Phone: 020–26813985. They appear to be out of business. We have no idea why or when they discontinued this thriving business.

7862. Dean Foods Co. 2000. 75th anniversary annual report: 1925-2000. Franklin Park, Illinois. 42 p. 28 cm.
• ***Summary:*** Net sales in 1999 was $4,065 million ($4.065 billion). Net income after taxes was $106.118 million. This annual report contains an excellent history and chronology of the company, and also a list of its "firsts."

1925 June–Dean Foods begins as Sam Dean, Sr. purchased the Pecatonica Marketing Co., an evaporated milk processing facility in northwestern Illinois.

1927 Jan.–The company name was changed to Dean Evaporated Milk Company. During 1927 Dean purchased dairy plants in Belvidere and Chemung, Illinois. 1929–The company name was changed to Dean Milk Company. 1936–The last horse-drawn milk wagon was replaced by a Dean milk truck.

1940–Dean introduced fluid milk, packaged in waxed paper cartons.

1993 Dec.–Dean acquired its first national brand label, *Birds Eye* frozen vegetables. But then Dean vegetable operations were sold in Sept. 1998.

1998–Dean introduced its innovative Chug packaging, providing single-serve containers for on-the-go consumers with the "Milk Where You Want It" slogan.

2000 July–Dean completed its largest dairy acquisition with the purchase of the Land O' Lakes Upper Midwest fluid Dairy operations, expanding Dean's marketing area.

Accompanying the annual report is an announcement of the Annual Meeting of Shareholders and Proxy Statement (26 p.). Howard M. Dean is chairman of the board and CEO. This year (2000) his salary was $700,000 and his bonus $677,408. He was also granted 86,000 shares of company stock, with each share worth $37.31 = $3,208,660.

Under "Specialty Products" (p. 15) we read: "Another promising relationship was established in fiscal 2000 with an equity investment in Colorado-based White Wave, Inc., a producer of soy-based products. White Wave sells its refrigerated soymilk products under the brand name *Silk.* Other products include soy-based yogurt and tofu products. Recent focus on the value of soy-based products and the related health benefits has increased consumer awareness in this area and contributed to White Wave's strong sales growth. We are encouraged by the long-term prospects in this exciting functional food area." Color photos show a half-gallon carton of Silk Vanilla Soymilk, and a pint carton of Silk Soymilk Creamer. Address: 3600 North River Rd., Franklin Park, Illinois 60131. Phone: 847-678-1680.

7863. Hagler, Louise. 2000. Soja: Wandelbarste Bohne der Welt. Eine 'coole' Proteinquelle [Soya: The most versatile bean in the world. A 'cool' source of protein]. Aitrang, Germany: Windpferd. 140 p. Illust. Index. 18 cm. [Ger]
• ***Summary:*** Foreword by Peter Golbitz. Foreword by Louise Hagler. Introduction by Dr. Mark and Virginia Messina. Basic soyfoods. Feeding babies and children soyfoods. Breakfast, brunch & bread. Whole soybeans. Sauces, spreads, dips & dressings. Soup & salad. Main dishes. Desserts. Drinks & yogurt.

No dairy products or eggs are used; honey is called

for in some recipes. Address: The Farm, Summertown, Tennessee.

7864. Hain Celestial Group, Inc. 2000. Westsoy (Leaflet). Uniondale, New York. 2 panels each side. Each panel: 22 x 9.5 cm.
• ***Summary:*** On the cover of this glossy, color leaflet, the word "Westsoy" is written vertically in large white letters against a red background. Four color photos show: (1) Soymilk being poured into a glass. (2) A woman running along the beach with sea foam in the background. (3) Soymilk being poured onto breakfast cereal topped with blueberries. (4) A woman holding a glass of soymilk, meditating in the cross-legged position.

On the inside two panels is a large color photo of the many Westsoy non-dairy beverages–mostly soymilk–and answers to the bold question "Why drink Westsoy soymilk?" Also a 55 cent coupon for any quart or half gallon Westsoy beverage.

On the back panel is a description of nine Westsoy products: WestSoy Plus (new packaging), WestSoy Lite, Low Fat WestSoy Soymilk Drink, 100% Organic Westsoy Soymilk, Vigoraid, Juice Bar, Chai, Cafe Westbrae. Address: 50 Charles Lindbergh Blvd., Uniondale, New York 11553. Phone: 516-237-6200.

7865. Hain Food Group, Inc. 2000. The Hain Food Group (Portfolio). Uniondale, New York. 32 inserts. 28 cm.
• ***Summary:*** The inserts, some printed using a color printer in white paper and others printed with black ink on 8½ by 11 inch paper (usually colored), include (1) Health Valley Soy Flakes. Ship date 15 July 2000. (2) Westsoy Smart Plus soymilk (aseptic carton). Ship date 13 Nov, 2000. (3) Westsoy low fat soymilk drink (Chocolate; aseptic carton). Ship date 13 Nov. 2000. Address: 50 Charles Lindbergh Blvd., Uniondale, New York 11553. Phone: 516-237-6200.

7866. **Product Name:** SoyO's [Original, Honey Nut, Apple Cinnamon], and Soy Flakes [Original, or Raisin] (Breakfast Cereals).
Manufacturer's Name: Health Valley Company.
Manufacturer's Address: 16100 Foothill Blvd., Irwindale, CA 91706-7811. Phone: (626) 334-3241.
Date of Introduction: 2000. September.
Ingredients: Original SoyO's: Organic oat flour*, wheat starch, soy protein, organic oat bran*, organic cane juice*, sea salt, baking soda, cream of tartar, natural caramel color, natural beta carotene, natural vitamin E (for freshness). * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
How Stored: Shelf stable.
New Product–Documentation: Leaflets for both product lines (glossy, color, two-sided) sent by Patricia Smith from Natural Products Expo (Baltimore, Maryland). 2000. Sept. "Profit from the healthy benefits of soy! 8 grams of soy protein in every delicious serving. No genetically modified ingredients."

7867. **Product Name:** Yü Organic Rice Beverage [Dark Chocolate, Green Tea, Natural, Basmati, Apple Rose, Mixed Berries].
Manufacturer's Name: Internova Inc.
Manufacturer's Address: St.-Lambert-de-Lévis, Québec, G0S 2W0, Canada. Phone: 1-800-993-6455.
Date of Introduction: 2000. September.
Ingredients: Apple Rose: Spring water, organic brown basmati rice, organic sunflower oil, natural apple rose flavor, carmine color, sodium ascorbate.
Wt/Vol., Packaging, Price: 32 fl oz (1 quart) or 8 fl oz (1 cup).
How Stored: Refrigerate after opening.
New Product–Documentation: Two leaflets (8½ by 11 inches, color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March 8-11. (1) "Yü–Super premium rice beverages." The front describes the company and products and shows the front panel of each flavor–very stylish designs. All are organic. The back gives nutritional facts, ingredients, UPC codes and ordering information. (2) "Internova Express. Special edition. Internova launches Yü and Earth Shake: a brand new generation of health drinks." The Earth Shake line comes in 6 flavors, combining soya and oats, and enriched with minerals and vitamins. Website: www.yubeverage.com and internova.ca.

7868. **Product Name:** SoySense (Enriched Organic Soymilk) [Original, Vanilla, or Chocolate].
Manufacturer's Name: Jasper Products, LLC.
Manufacturer's Address: 3877 E. 27th St., Joplin, MO 64804. Phone: 877-769-7367.
Date of Introduction: 2000. September.
Wt/Vol., Packaging, Price: 1 quart (946 ml, 32 fl. oz.). Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet in portfolio sent by Patricia Smith from Natural Products Expo East. 2000. Sept. Color photos show the front and back panels of two types of aseptic cartons, one a new square carton with a screw top. However, the ingredients are not given. "Lactose free. 31 mg isoflavones per serving. Vitamins A, D & E. Calcium." Contains all the natural fiber found in soybeans.

The front panel of the portfolio states: "Jasper products: With over twenty years of experience in the food processing business, Jasper Products is committed to excellence and quality. The company has its roots in a privately held business established in 1902. The fourth generation owners are still active in the operations of Jasper Products to this day."

7869. **Product Name:** RiceSense (Enriched Organic Ricemilk) [Original, Vanilla, or Chocolate].
Manufacturer's Name: Jasper Products, LLC.
Manufacturer's Address: 3877 E. 27th St., Joplin, MO 64804. Phone: 877-769-7367.
Date of Introduction: 2000. September.
Ingredients: Filtered water, organic brown rice syrup, high oleic safflower oil, tricalcium phosphate, lecithin, xanthan gum, sea salt, tocopheryl acetate, vitamin A palmitate, vitamin D-3.
Wt/Vol., Packaging, Price: 1 quart (946 ml, 32 fl. oz.). Aspectic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet in portfolio sent by Patricia Smith from Natural Products Expo East. 2000. Sept. Color photos show the front and back panels of aseptic cartons "Lactose free. 100% vegetarian. Cholesterol free. Vitamins A, D & E. Calcium."

7870. **Product Name:** TotalSense: Total Nutrition Shake (Fortified Soyshake) [Original, Vanilla, or Chocolate].
Manufacturer's Name: Jasper Products, LLC.
Manufacturer's Address: 3877 E. 27th St., Joplin, MO 64804. Phone: 877-769-7367.
Date of Introduction: 2000. September.
Wt/Vol., Packaging, Price: 1 quart (946 ml, 32 fl. oz.). Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Two leaflets in portfolio sent by Patricia Smith from Natural Products Expo East. 2000. Sept. Color photos show the front and back panels of aseptic cartons. One leaflet gives the nutritional composition and ingredients in each of the three flavors. "25 vitamins and minerals. 31 mg isoflavones per serving. Lactose free." Loaded with fiber. Use as a meal replacement or nutritious snack. Made from "Heartland Soypure" non-GMO soybeans.

7871. **Product Name:** SoyPure (non-GMO Soymilk) [Original, Vanilla, or Chocolate].
Manufacturer's Name: Jasper Products, LLC.
Manufacturer's Address: 3877 E. 27th St., Joplin, MO 64804. Phone: 877-769-7367.
Date of Introduction: 2000. September.
Wt/Vol., Packaging, Price: 1 quart (946 ml, 32 fl. oz.). Aspectic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet in portfolio sent by Patricia Smith from Natural Products Expo East. 2000. Sept. Color photos show the front panel of aseptic cartons with flip top. A table compares the composition of SoyPure Original and whole cow's milk. However the ingredients are not given. "Lactose free. 31 mg isoflavones per serving. Vitamins A, D & E. Plus calcium. Cholesterol free." Contains 6.25 gm of soy protein per serving. "Our chemical free soybeans are grown without using chemical pesticides and are tested by an independent laboratory to certify that they are free of chemical residue."

Note: A vice president of this company (1 March 2002) says this product is made from finely ground soy flour; the okara remains in the finished product.

7872. Mangels, Reed. 2000. Nutrition hotline: The phytate component of soy products. *Vegetarian Journal* (*Baltimore, Maryland*) 19(5):2. Sept/Oct.
• ***Summary:*** "Phytates interfere with the absorption of minerals, but do not completely prevent us from absorbing minerals like calcium and iron. The presence of phytates is not a good reason for avoiding soy products. Whole grains and other dried beans also contain phytates."

"Fermented soy products, including tempeh and miso, have a lower phytate content so that zinc from these foods is better absorbed than from unfermented soy products like tofu and soymilk." Address: PhD, R.D., Baltimore, Maryland.

7873. *Nutrition Business Journal* (*San Diego, California*). 2000. GeniSoy markets to an expanding demographic: Soy manufacturer introduces new products, expands distribution and secures non-GMO supplies. 5(7/8):10-11. Annual Industry Overview 2000.
• ***Summary:*** GeniSoy's parent company, MLO Products, was founded 36 years ago [in Nov. 1964] as a sports nutrition company that relied heavily on soy protein. Today its subsidiary, GeniSoy Products Co., launched only three years ago (in March 1997), accounts for about 50% of total sales–of about $40 million, to which GeniSoy contributed $18 million in FY 2000 (ended April 30). More remarkable, GeniSoy's $18 million is double what it was a year ago, and it is expected to double again next year.

MLO had traditionally marketed soy protein drinks aimed at athletes between the ages of 15 and 40. GeniSoy products are targeted to an entirely different market–those (mostly women ages 35 to 69) areas in which soy provides benefits, such as heart disease, menopause symptoms, etc. The idea come to MLO quite by accident about 5½ years ago when they were asked by another company to produce a soy protein bar for a university study on soy and cancer. After GeniSoy was launched, its products were sold mainly through MLO's established distribution channels. But soon they picked up many new distributors.

When the FDA announced its soy-heart health claim in Oct. 1999, soy became a very hot category. Many retailers began to develop a "soy set" in their stores–an area where soy products are grouped together. General Nutrition Centers (GNC), for example, are developing such a set, and GeniSoy's products tend to sell more quickly when they are placed in such a set than when they are placed with other bars.

Many consumers believe that soy products don't taste so god, but when they try GeniSoy bars they quickly change their minds and tell their friends. So bars are a great way to introduce consumer to soy.

In Feb. 1999 GeniSoy introduce their first products guaranteed to be free from genetically engineered organisms (GMOs); these included two shakes and one protein powder in the new UltraSoy line. The company says these were made more for the European than for the American market. Later in 1999 the GeniSoy secured a long-term supply contract for non-GMO isolated soy protein from Protein Technologies International, then announced in October 1999 that its entire product line would be made with non-GMO soy.

Recently MLO Products completed a new plant at its Fairfield headquarters, thus bringing its total office and manufacturing space to 125,000 feet. Its extruded candy production capacity has grown to 20 million bars/month. It plans to bring in-house its formerly contracted soynut roasting facilities with a capacity of 2 million lb/month.

Today GeniSoy has 29 SKUs in the U.S. market, 26 in Canada, and 15 in Australia. Two new products are scheduled for release next year: (1) A kind of a soy chip, between a potato chip and a mini rice cake, that will meet the FDA health claim; (2) A Soy Nutty Bar, made with toasted soy nuts, and tasting like a candy bar.

Note: This is the earliest document seen (Sept. 2000) that gives statistics for larger U.S. nutrition bar companies.

7874. *Nutrition Business Journal* (*San Diego, California*). 2000. Pacific Foods targets $50 million sales: Soymilk manufacturer scrambles to expand production, expects 35% growth to continue. 5(7/8):12. Annual Industry Overview 2000.

• ***Summary:*** Pacific Foods Inc. of Tualatin, Oregon, was established in 1987 to make shelf-stable tofu in aseptic packaging. After buying expensive manufacturing equipment, made in Europe, the tofu business failed.

The company had to scramble in order to stay in business and put its large capital investment to work, so they found clients for private-label soymilk–the main product that is made into tofu. In 1989, after watching the category grow rapidly, Pacific Foods began producing its own brand of soymilk. The company has been growing at more than 35% a year and in calendar year 2000 expects to exceed $50 million in sales.

In 1998 Pacific Foods expanded to 250,000 square feet, doubling its production capacity. It now also makes soymilk and rice milk under the Trader Joe's and Fred Meyer brands.

Pacific Foods is not for sale, but it has recently entered into a marketing alliance with a major company to help it enter the mass market via Albertson's and other supermarkets in the Pacific Northwest. Martell of Pacific Foods declined to reveal the name of the partner, but it is a non-U.S. company with "a big name worldwide."

Pacific Foods has changed its soymilk packaging design quite frequently, each time based on reformulation of the products. The company conducts many taste panels and focus groups. Most of its advertising is in trade publications, but in the last few months it began advertising in *Vegetarian Times* and a few other consumer magazines. It has recently done a cross-promotion with cereal maker Nature's Path. One innovative product introduced last year was named Soy Synergy, a functional food designed to be mixed with soymilk or rice milk. In March 1999 Pacific launched several products targeted to the mass market, including a blend of lactose-free cow's milk and soymilk; the products are moving slowly.

7875. *Nutrition Business Journal* (*San Diego, California*). 2000. White Wave leads growth in $300-million soymilk category: FDA health claim and refrigerated soymilk refreshes the category. 5(9):12. Sept.

• ***Summary:*** White Wave's fiscal year begins each April. The company's revenues for FY 2000 were 108% greater than those for FY 1999–more than double! These revenues are expected to double again next year. In 1998 White Wave's products were distributed 85% in natural foods channels and 15% in conventional [mainstream grocery]. Last year this changed to 55% natural, 45% grocery. This year, for the first time in White Wave's history, grocery is expected to surpass natural, with 35% natural and 65% grocery. According to Demos, White Wave has 78% of the non-dairy beverage share in mainstream supermarkets, according to spring data from SPINS and IRI, and over 20% share of the non-dairy beverage share in the natural products channel.

Contains many comments about the U.S. soymilk industry and market by Bill Shurtleff, founder and director of Soyfoods Center (Lafayette, California).

7876. *Nutrition Business Journal* (*San Diego, California*). 2000. Natural, organic, and functional beverages: Functional drinks multiply as beverage companies seek opportunity in healthier opportunities. 5(9):1, 3-5. Sept.

• ***Summary:*** In 1999 sales of all U.S. beverages reached $110 billion. Functional beverages accounted for 6% of this total and natural/organic beverages for 2%. A pie chart shows a breakdown of the $8 billion market for natural/functional beverages: Juices 34%, sports/energy drinks 30%, ready-to-drink (RTD) teas 9%, tea 7%, soy/rice milk 5%, soft drinks 3%, milk 3%, and other 9%.

Functional beverages are those which have been enriched or nutritionally enhanced with vitamins, minerals, herbs, soy protein, fiber, fructo-oligosaccharides, and even oxygen.

7877. Soyatech, Inc. 2000. Soya & Oilseed Bluebook 2001: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 424 p. Sept. Comprehensive index.

Internet address index. Brand name index. Advertiser index. 28 cm.
• ***Summary:*** On the cover is a color photo of a group of soybean leaves superimposed on a purple and blue integrated circuit. Across the bottom: "The ultimate industry resource: In print and online. www.soyatech.com." On the inside front cover is a color ad from Tetra Pak, showing soymilk, its processing and packaging. On the first page is a full page color ad from Northland Organic, "Leading the way naturally." On the rear cover is a color ad from ADM titled "When it comes to soy protein, we bring more to the table." A large color photo shows many of ADM's soy protein products made into edible foods, each labeled. Also displays the logo for "NutriSoy: Natural soy protein. The heart of a healthy diet."

The Foreword states that Soyatech has a newly designed website (soyatech.com) which "includes the entire *Soya & Oilseed Bluebook* as part of its many new features." To gain access, paid subscribers must first register. Address: 7 Pleasant St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

7878. SoyaWorld Inc. 2000. Healthier sales, healthier profits in a heartbeat. New FDA health claim (Ad). *Natural Foods Merchandiser.* Sept. p. 100.
• ***Summary:*** This color ad (8½ by 11 inch) shows photos of four packages of So Nice Soyganic soy milk: Low fat original, chocolate, vanilla, and natural. Below that are listed 9 benefits of So Nice Soyganic. www.soyaworld.com. www.sonice-soyganic.com. Address: Blaine, Washington 98230. Phone: 1-877-414-2078.

7879. SunRich. 2000. Processing and packaging partner services (Leaflet). Hope, Minnesota. 2 panels each side. Each panel: 28 x 22 cm.
• ***Summary:*** A 4-page leaflet sent by Patricia Smith from Natural Products Expo East. 2000. Sept. On the cover is a photo of different beverage packages, including Soymilk. Contents of the next 3 panels: Packaging and processing services. The SunRich advantage. Nordic Aseptic Packaging facility. NFD ingredient processing (Northern Food & Dairy is a custom ingredient processor). SunRich capabilities. Processing & packaging. IP, non-GMO & organic ingredients. Contains 7 more photos. Address: P.O. Box 128, 3824 S.W. 93rd St., Hope, Minnesota 56046. Phone: 800-297-5997.

7880. SunRich. 2000. Soymilk Trends (Leaflet). Hope, Minnesota. 2 panels each side. Each panel: 28 x 22 cm.
• ***Summary:*** A 4-page leaflet sent by Patricia Smith from Natural Products Expo East. 2000. Sept. Dated "Fall 2000 issue."

Contents: From niche market to mass market. Soymilk sales: Accelerating growth. Dairy milk per capita consumption declines (from 229.2 lb in 1980 to 204.1 lb in 1997) while soymilk shows significant increases. Soymilk is the fastest growing non-dairy beverage (comparing soy, rice, almond, and multigrain) (soymilk has 66% of this market segment). Non-dairy consumers: an "unlimited" market. Approximately 40% of Americans do not drink dairy milk (this is 78 million consumers, many of whom have allergies or are lactose intolerant). Soy foods deliver significant health benefits: cancer fighter, bone builder, heart helper, menopause reliever. Whole soyfoods compared to supplements. FDA authorized health claims for soy. Seed selection and improved processing. Sunrich ingredient and processing capabilities (IP, non-GMO, organic, processing, packaging).

Two graphs on page 1 (using data from US Soyfoods Market, published in 1999 by Soyatech Inc.) show (1) Liters of soymilk sold in the United States have increased from 37 million liters in 1990 to an estimated 125 million liters in 1999, and has been growing at 38% a year. (2) Total retail sales of soymilk in the United States have grown exponentially from only $1.5 million in 1980 to $300 million in 1999 and are forecast to grow to nearly $600,000 in 2002. Address: P.O. Box 128, 3824 S.W. 93rd St., Hope, Minnesota 56046. Phone: 800-297-5997.

7881. SunRich. 2000. SunRich: Your direct link to nature. Quality, integrity, expertise (Leaflet). Hope, Minnesota. 2 panels each side. Each panel: 28 x 22 cm.
• ***Summary:*** A 4-page leaflet sent by Patricia Smith from Natural Products Expo East. 2000. Sept. On the cover are 4 color photos on an orange background. Address: P.O. Box 128, 3824 S.W. 93rd St., Hope, Minnesota 56046. Phone: 800-297-5997.

7882. SunRich. 2000. SunRich: Soy ingredients. Your direct link to nature (Leaflet). Hope, Minnesota. 1 p. Front and back. 28 cm.
• ***Summary:*** A glossy color leaflet sent by Patricia Smith from Natural Products Expo East. 2000. Sept. On the cover is a large photo of various soy products on an orange background.

Soymilk, oatmilk, multigrain beverages. Soymilk powders with a range of protein levels. Soy flour for premium flavor applications. TSP (textured soy protein) for meat alternatives. Address: P.O. Box 128, 3824 S.W. 93rd St., Hope, Minnesota 56046. Phone: 800-297-5997.

7883. White Wave Inc. 2000. Silk soymilk smoothies (Leaflet). Boulder, Colorado. 4 panels each side. Each panel: 15 x 10 cm.
• ***Summary:*** Leaflet (glossy color) sent by Patricia Smith from Natural Products Expo East. 2000. Sept. Contains 7 recipes for different smoothies, each with a fanciful delectable name, each with White Wave Silk Soymilk as the

major ingredient. Address: 1990 North 57th Court, Boulder, Colorado 80301.

7884. Singh, J. 2000. Re: Making tofu and soymilk in Belgium, and tempeh in The Netherlands. Letter (fax) to William Shurtleff at Soyfoods Center, Oct. 2. 1 p. Handwritten with signature on letterhead. [Eng]
• ***Summary:*** This company makes tofu and soya milk in Belgium, and they also own a tempeh factory (the biggest in Europe) in The Netherlands. They make about 20,000 kg/week of tofu and 8,000 kg/week of tempeh.

The tempeh company is: Tempé Produkten B.V., Tunnelweg 107, 6468 EJ Kerkrade, Netherlands. Another name of the company is YIP Soya Products (Bolda, Holland). Mr. Singh purchased the tofu company in Belgium in 1986, and the tempeh company in Holland in 1990. Address: Benelux Soya N.V. Factory: Industrieweg 3, 2320 Hoogstraten, Belgium. Phone: 03-314-5632.

7885. Jacobi, Dana. 2000. Provamel/Alpro is planning to build a soymilk plant in the USA (Interview). *SoyaScan Notes.* Oct. 9. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** In September, Dana visited the Alpro booth at the Natural Products Expo in Baltimore, Maryland. This is the first time she has seen their booth at this annual expo. It was staffed by three men from Belgium and was giving out samples of Alpro's pudding (sold in 4-pack aseptic cups) and soymilk. Dana found the pudding to be delicious. It was introduced in that packaging 3-4 years ago.

While talking with Francois Madoe at the booth, Dana learned that Alpro is planning to construct a soymilk plant in the United States. When she jokingly told them that *Alpo* was the name of a popular American dog food, they laughed and indicated that they already had discovered that; so they will probably not use their Alpro brand in the USA. Address: New York City.

7886. Rice, Judy. 2000. Chocolate soymilk wins GH [Good Housekeeping] taste test. *Beverage Online.* Oct. 9.
• ***Summary:*** In independent blind taste tests conducted by Good Housekeeping magazine, consumers preferred Silk brand chocolate soymilk (made by White Wave) to the world famous Hershey's chocolate milk. In fact, everyone who tasted preferred the chocolate Silk, of which one consumer said: "It just tastes so good. It's much lighter and not so sweet."

White Wave president Steve Demos welcomed the good news that consumers now prefer a healthier, lower-fat beverage that actually does them good. Chocolate Silk is lactose free, cholesterol-free, dairy-free, and has a fat content equal to that of 1% milk.

Silk is available is chocolate, vanilla, and plain flavors, along with Silk Mocha and Silk Chai. Address: Managing editor.

7887. Barovick, Harriet. 2000. I was a teen vegetarian. *Time.* Oct. 16.
• ***Summary:*** TV-cartoon heroine Lisa Simpson is a vocal vegetarian. "With mainstream groceries carrying products like Boca Burgers, soy milk and tofu, and fast-food restaurants like Wendy's offering veggie pitas, meat-eating meat-eating parents are having an easier time accommodating their kids and, in some cases, are following suit."

7888. Adie, M. Muchlish; Widowati, S.; Soedarjo, M. 2000. The characteristics of Indonesian soybean varieties, and its importance to the soybean processing. In: Kyoko Saio, ed. 2000. Proceedings–Third International Soybean Processing and Utilization Conference. Tokyo, Japan: Korin Publishing Co., Ltd. [xxiv] + 728 + 8 p. See p. 79-80. [6 ref]
• ***Summary:*** A survey by Indrasari (1991) showed that consumption of tempeh and tofu in Indonesia were 1,065 gm per capita per month, and 866 gm per capita per month, respectively. Address: 1,3. Research Inst. for Legume and Tuber Crops, PO Box 66 Malang, Indonesia; 2. Research Inst. for Food Crops Biotechnology, Jalan Tentara Pelajar 3A Bogor, Indonesia.

7889. Greenberg, Patricia. 2000. Soy desserts: 101 fresh, fun & fabulously healthy recipes. New York, NY: ReganBooks (Imprint of HarperCollins). ix + 166 p. Oct. Illust. Index. 24 cm.
• ***Summary:*** This is a book about how to make delicious soy desserts that are actually good for you! Contents: Introduction. Cakes and frostings. Pies and tarts. Quickbreads, muffins, brownies, bars and scones. Candy and cookies. Parfaits, custards, mousses, puddings, and soy ice creams. Soy source index. Contains 8 full-page color photos in the middle of the book. These recipes call for soymilk, soy cream cheese, soy yogurt, tofu, soy flour, and soy margarine. Contains four recipes for Tofu cheesecake. On the inside back dust jacket is a photo and brief biography of Patricia Greenberg. Address: P.O. Box 10853, Beverly Hills, California 90213. Phone: (323) 938-3975.

7890. Inglett, G.E.; Maneepun, S.; Boonpunt, T. 2000. Novel soybean functional constituents in multi-nutraceutical contributing compositions for increasing health benefits of functional foods. In: Kyoko Saio, ed. 2000. Proceedings–Third International Soybean Processing and Utilization Conference. Tokyo, Japan: Korin Publishing Co., Ltd. [xxiv] + 728 + 8 p. See p. 179-182. [7 ref]
• ***Summary:*** Soytrim-1 is a co-processed oat bran hydrocolloid (Nutrim 10) with soy flour (1:1 ratio) that was tested as a substitute for coconut milk at various percentage substitution levels. Address: 1. Biopolymer Research Unit,

National Center for Agricultural Utilization Research, ARS, USDA, Peoria, Illinois 61604; 2-3. Inst. of Food Research and Product Development, Kasetsart Univ., Bangkok 10903, Thailand.

7891. Ishigami, Takashi. 2000. Contract grow and IP [identity preserved] handling systems for the Japanese food soybean market. In: Kyoko Saio, ed. 2000. Proceedings–Third International Soybean Processing and Utilization Conference. Tokyo, Japan: Korin Publishing Co., Ltd. [xxiv] + 728 + 8 p. See p. 117-120.
• ***Summary:*** Japan is the world's largest soybean importer. Of the 4.9 million tonnes (metric tons) imported, about one million tons (actually 960,000 tonnes or 19.6%, called "food soybeans") are used for making tofu, miso, natto, soysauce, etc. The rest are crushed to make soybean oil and meal.

A table (p. 118) shows the quantity of soybeans obtained from various sources to make each of the major Japanese soyfoods in 1998, 1999, and 2000. In the year 2000, some 512,000 tonnes were used to make tofu, 168,000 tonnes for miso, 125,000 tonnes for natto, 40,000 tonnes to make soy protein and products, 30,000 tonnes to make soysauce (from whole soybeans), 6,000 tons to make soymilk, and 79,000 tons to make other products. Grand total 960,000 tonnes. Address: Marubeni Corp., Japan.

7892. James, A.T.; Bumstead, E.E.; Grant, T.J. 2000. Development of fast small-scale tests to measure tofu potential in raw beans. In: Kyoko Saio, ed. 2000. Proceedings–Third International Soybean Processing and Utilization Conference. Tokyo, Japan: Korin Publishing Co., Ltd. [xxiv] + 728 + 8 p. See p. 157-158. [1 ref]
• ***Summary:*** To produce soymilk, the researchers used 80 gm samples of the grain of each of 3 soybean varieties and applied four treatments. The first two treatments involved soaking the beans overnight in 485 ml water at either 4ºC or 20ºC before grinding into a slurry. The second two treatments were to pre-grind dry beans or to grind dry beans into a slurry using a kitchen blender and 485 ml added water. The samples were then heated in a microwave oven, stirring after each 30 seconds until the mean temperature of the slurry reached 75ºC. Samples were then transferred to a water bath held at 98ºC, and removed 4 minutes after the temperature of the slurry reached 98ºC. The slurry was then poured slowly through a centrifugal juice extractor... Address: CSIRO Tropical Agriculture, 120 Meiers Rd., Indooroopilly 4068, Qld, Australia.

7893. Ono, Tomotada. 2000. The mechanisms of curd formation from soybean milk to make a stable lipid food. In: Kyoko Saio, ed. 2000. Proceedings–Third International Soybean Processing and Utilization Conference. Tokyo, Japan: Korin Publishing Co., Ltd. [xxiv] + 728 + 8 p. See p. 51-52. [6 ref]
• ***Summary:*** The lipids / fats in tofu are stable and no subject to oxidation. During the curd formation, first protein particles (80 nm = nanometers in size) combine with an oil globule (300 nm) because of the addition of magnesium or calcium ions [in the coagulant]. Then the bound globules aggregate with one another to hold water. The curd is formed as soluble proteins are combined with a decrease in the pH. The oil is packed in triple layers of protein, that is oleosin (oil body protein), protein particles, and soluble proteins.

Figures show: (1) Scanning electron microgram of the floating fraction of soymilk. (2) Formation of tofu-curd from soymilk (speculation). Address: Dep. of Agro-Bioscience, Faculty of Agriculture, Iwate Univ. Ueda 3-18-8, Morioka, Japan.

7894. Oser, Marie. 2000. More soy cooking: Healthful renditions of classic traditional meals. New York, NY: John Wiley & Sons, Inc. xi + 307 p. Foreword by John A. McDougall, M.D. Oct. Index. 23 cm. [61 ref]
• ***Summary:*** Contents: Foreword, by John A. McDougall, M.D. Acknowledgments. Introduction. The need for a plant-based diet: The protein question, the dairy myth, the international connection, what's eating North America?, soy: Food of the future, Functional foods. Soy-centered cuisine: Soyfoods and more: a glossary, beyond soyfoods. Kitchen tools, techniques, and tofu: Tools, techniques, tofu, cooking with spirit! The recipes: Amazing appetizers, the skinny on soups and salads, enlightened entrées, pasta and pizza, select sides, delightful desserts. Resource guide. Recommended reading.

On the rear cover is a small color photo of the author and a biographical sketch. Address: P.O. Box 3021, Thousand Oaks, California 91359-0021.

7895. Poysa, V.; Woodrow, L.; Anderson, D. 2000. Effect of soy protein composition on soymilk and tofu yield and quality. In: Kyoko Saio, ed. 2000. Proceedings–Third International Soybean Processing and Utilization Conference. Tokyo, Japan: Korin Publishing Co., Ltd. [xxiv] + 728 + 8 p. See p. 53-54.
• ***Summary:*** Genotype and year effects were found to be significantly greater than location effects on protein content, its sub-unit profile, and seed composition; soymilk and tofu yields, solids levels, and pH; and tofu color, and hardness and firmness in ten soybean lines grown at three locations for two years. Individual protein fractions (such as 7S and 11S) expressed as a percentage of the total detected, all showed significant genotype effects. The 7S fraction, especially alpha and alpha prime content, and the glycoprotein fraction were positively correlated with tofu yield. Address: Agriculture and Agri-Food Canada, Greenhouse and Processing Crops Research Centre, Harrow, Ontario, Canada, NOR 1G0.

7896. Saio, Kyoko. ed. 2000. Proceedings–Third

International Soybean Processing and Utilization Conference: Dawn of the innovative era for soybeans. Tokyo, Japan: Korin Publishing Co., Ltd. [xxiv] + 728 + 8 p. Held 15-20 Oct. 2000, Tsukuba, Ibaraki, Japan. Illust. Author index. 30 cm. [Eng]
• ***Summary:*** The first international conference of this type was held in Jilin, China, in 1990. The second was held in January 1996 in Bangkok, Thailand. Foreword. Program committee for ISPUC-III. Contents: Keynote session (3 papers). Session 1: Production for processing and utilization (20 oral presentations/papers, 22 poster presentations). Session 2: Quality control (13 oral, 7 poster). Session 3: Nutrition and physiological functionality (23 oral, 25 poster). Session 4: Traditional products (23 oral, 19 poster). Session 5: Modern processing and utilization of foods (32 oral, 20 poster). Session 6: Edible oil and feeds (9 oral, 5 poster). Session 7: Innovative non-food uses (10 oral, 4 poster). Session 8: Strategies for dissemination (18 oral, 4 poster). Satellite session: Monodisperse microspheres and microchannel technologies (12 oral, 15 poster). Public symposium: The miracle of Asia–Marvelous fermented soyfoods (6 oral presentations/papers). Author index. Sponsors: Organizations/companies (55), individuals (33), others (8). Within each category, listed in order of date contributed. Exhibitors (29; an exhibition was held with the Conference). Advertisers (6 companies purchased full-page black-and-white ads). Address: Chair of the Program Committee, ISPUC-III, Tsukuba, Japan.

7897. Trongpanich, Kulvadee; Hiraga, C.; Hengsawadi, D.; Phawsungthong, U. 2000. Feasibility study on production of dietary fiber concentrate from soymilk residue. In: Kyoko Saio, ed. 2000. Proceedings–Third International Soybean Processing and Utilization Conference. Tokyo, Japan: Korin Publishing Co., Ltd. [xxiv] + 728 + 8 p. See p. 95-96. [2 ref]
• ***Summary:*** "It was found that it was possible to use soymilk residue for the dietary fiber concentrate production. After the soy milk process, there was about 37.5% of soy flesh residue (on dry basis), and contained about 37% total dietary fiber (TDP). It was found that the soy flesh residue was suitable to be used as dietary fiber concentrate, since it still contained high protein that may be used to increase the protein content in foods. Water extraction and defatting process was the feasible production for the dietary fiber concentrate from the soy flesh residue when compared to the enzymatic method." Address: Inst. of Food Research and Product Development, P.O. Box 1043, Kasetsart Univ., Bangkok 10903, Thailand.

7898. United Soybean Board. 2000. 7th annual national report: Consumer attitudes about nutrition, 2000/2001. Seattle, Washington. 8 p. Oct. 28 cm.
• ***Summary:*** This seventh annual nationwide survey, commissioned by USB, was conducted in July 2000 by an independent research firm in Seattle, Washington. Random telephone interviews were completed with 800 consumers. The study's margin of error is ±3.5 percent and has a confidence level of 95%.

Contents: Nutritional concern and habits. Dietary changes in eating habits. Consumer awareness of nutrition terms and information. Media sources and nutritional information. Consumer perceptions of genetically modified food, biotechnology, and labeling. Consumer perceptions of *trans* fat and hydrogenation. Consumer perceptions of cooking oils. Consumer awareness and perception of soy products. Consumer perceptions of the healthiness of soy.

Consumer awareness and perception of soy products: 1. The number of consumers eating soy products once a week or more continues to rise, up to 27% in 2000. 2. The top 3 soy products that consumers are aware of are tofu (86%), soy veggie burgers (79%), and soymilk (79%). Other products that received a high level of awareness include soybean oil (78%), soy infant formula (67%), soy protein bars (50%), and soy supplements (49%). 3. Tofu and soy veggie burgers are the top two products consumers have tried, at 45% and 41% respectively. 4. There was a significant increase in the number of consumers who have tried soymilk, from 18% in 1999 to 25% in 2000.

Note: As of Aug. 2008 this full survey is available gratis in PDF format at www.soyconnection.com /health_nutrition / pdf/.

7899. Vijayalakshmi, P.; Mercy, Paul. 2000. Supplementation of energy, protein rich mix to expectant mothers. In: Kyoko Saio, ed. 2000. Proceedings–Third International Soybean Processing and Utilization Conference. Tokyo, Japan: Korin Publishing Co., Ltd. [xxiv] + 728 + 8 p. See p. 187-188.
• ***Summary:*** In 1997 the U.S. Food and Drug Administration (FDA) allowed a health claim for soluble oat beta-glucan when consumed at a level of 3 gm per day. Since soybeans and oats both have promising futures in nutraceutical foods, the combination of both materials is being studied. Soy protein foods included in the study are soy flour, soy protein concentrates and isolates, tofu, and soymilk. Address: Avinashiligam Deemed Univ., Coimbatore, India.

7900. *Time.* 2000. Numbers. Nov. 6.
• ***Summary:*** "4: Years of protest by a vegan prisoner in Lewisburg, Pennsylvania, before a judge ordered the facility to serve soy milk.

"145,000: Total number of federal prisoners, now offered meatless cuisine like veggie burgers and barbecued tofu."

7901. Pate, Kelly. 2000. White Wave rides tsunami of soy. *Denver Post* (*Colorado*). Nov. 12.
• ***Summary:*** Last year White Wave of $30 million. In 2000 it projects sales of $80 to $95 million. Steve Demos, founder and president, says that within the last 18 months the number

of supermarkets stocking White Wave products has jumped from 100 to 24,000. And Silk will start shipping to Costco in 2 weeks. A large color photo shows Steve Demos standing in front of a huge delivery truck advertising his company's Silk soymilk on its side. Address: Business writer.

7902. *SoyaScan Notes.* 2000. How genetically engineered soybeans took over the soybean storage and distribution system and led to increased use of organic soybeans (Overview). Nov. 27. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** In the mid-1990s U.S. farmers began to deliver the first crop of genetically engineered (GE) soybeans to their local elevators. There they were accepted without question and mixed in with the traditional non-GE soybeans. They had entered the "stream" and taken over the system with no notification of soybean users, no discussion with consumers, no debate in Congress. It was a silent coup d'état. But the impact of this "non-decision" and "non-issue" was immense.

Soyfoods manufacturers that for decades had purchased their soybeans from the "stream" now suddenly found that, like it or not, they were buying GE soybeans mixed in with their regular soybeans. Magazines and newspapers began to analyze foods and report that certain brands of tofu, veggie burgers, or soymilk contained GE soybeans–even though there was no mention of this on the labels. Consumers began to call the companies that made their favorite soyfoods and ask if those foods now contained GE soybeans. The honest answer was a simple "Yes." Many companies fudged by saying that they were buying soybeans from the same source they always had.

As consumer concern rose (starting in 1999 and 2000) many company felt compelled to make products that were free of GE soybeans. They had two choices: (1). Buy non-GE soybeans, or (2) Buy organic soybeans. Many chose the organic approach. In this way GE soybeans helped the organic movement to prosper.

7903. *Camera* (*Boulder, Colorado*). 2000. Industry watch: Hain Celestial Group launches soy milk. Nov. 28.
• ***Summary:*** Hain teamed up with Heinz North America to launch Great Awakenings Soymilk.

7904. Hain Celestial Group, Inc. (The). 2000. Annual report 2000. Uniondale, New York. 30 p. Nov. 28 cm.
• ***Summary:*** On 30 May 2000 The Hain Food Group completed a merger with Celestial Seasonings, Inc. by issuing 10.3 million shares of Hain common stock in exchange for all of the outstanding Celestial common stock. Each share of Celestial common stock was exchanged for 1.265 shares of Hain common stock. Hain subsequently changed its name to the Hain Celestial Group, Inc. Irwin D. Simon is President, Chairman, and CEO of the new company. Celestial Seasonings is the best-selling specialty tea brand in the USA. The financial statements in the annual report are consolidated from both companies.

Net sales for the year ended 30 June 2000 were $403.543 million, up 28% from $315.820 million in 1999. Net income in 2000 was a loss of $19.097 million, way down from a profit of $13.517 million in 1999.

Westsoy, the leading soymilk brand in the USA, has seen sales grow at a rate of 58% in recent months (p. 1). New Westsoy products: Westsoy Chai, Westsoy Juice Bar, Westsoy Plus (in half gallon refrigerated), and Westsoy Smart Plus (with 33% more protein than other soy beverages or dairy milk).

Accompanying the annual report is a "Notice of Annual Meeting of Stockholders and Proxy Statement" (21 p.). Irwin Simon's annual compensation was: Salary: $375,000. Bonus: $625,000. Other compensation: $5,400. Total: $1,005,400 million. Address: 50 Charles Lindbergh Blvd., Uniondale, New York 11553. Phone: 516-237-6200.

7905. Woodrow, Lorna; Poysa, Vaino; Anderson, Dale. 2000. Effects of soy protein composition on soymilk and tofu yield and quality. *Canadian Soybean Bulletin* (*OSG, Chatham, Ontario, Canada*) 14(2):4. Nov.
• ***Summary:*** For these studies, five large-seeded, food-grade soybean cultivars with acceptable agronomic performance were used. 100 seeds averaged 25 gm in weight and his protein contents, averaging 46% on a dry matter basis (range 44-48.4%). They were used to make silken (kinugoshi) tofu, using two different coagulants: glucono-delta lactone (GDL) or calcium sulfate dihydrate (CS).

There was a significant positive correlation between seed protein content and tofu yield, tofu hardness, and tofu firmness. The 11S and 7S proteins represent 70% of the total protein in the soybean and form the gel when soymilk is coagulated to make tofu. "They are considered to be the key proteins in determining tofu quality." They are extracted then separated by electrophoresis. These cultivars demonstrated a wide range in their content of 11S and 7S proteins. The seed protein profile also changed very significantly from year to year. The 7S content was positively correlated with tofu yield, whereas the 11S content was not. Address: Greenhouse and Processing Crops Research Centre (GPCRC), Highway 18 East, Harrow, ON N0R 1G0, Canada.

7906. Pate, Kelly. 2000. 21 [Colorado] companies to watch in 2001. *Denver Post* (*Colorado*). Dec. 10.
• ***Summary:*** The last of these 21 companies is White Wave. This is a condensed version of an article by Kelly Pate in this newspaper in November. The same photo (but in black and white) shows Steve Demos. Address: Business writer.

7907. *SoyaScan Notes.* 2000. Soymilk and cow's milk prices in California, December 2000 (Overview). Dec. 10.

Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Since Dec. 1983, approximately every other year, Soyfoods Center has conducted a survey of the prices of soymilk and cow's milk in California. In Dec. 2000 at Berkeley Natural Grocery Co. (Berkeley, California), Cindy La reports the following retail prices. (Note: oz = fluid ounces; 32 fl oz = 1 quart; 33.8 fl oz = 1 liter. 2 quarts = one half gallon. All soymilk products at Berkeley Natural Grocery Co. are now organic).

Shelf-stable / Aseptic soymilks: Westsoy Light and Plus all flavors $2.39/quart (but $1.89 when on special). Westsoy original creamy $2.59/quart. Westsoy 3 x 8.45 oz packs all flavors $2.79.

Vitasoy all flavors $1.99/quart. Note: This is the price for half the year. The other half it rises to $2.39. Vitasoy enriched all flavors $1.99/quart (on special). Vitasoy Light all flavors $2.39/quart. Vitasoy 3 x 8.45 oz packs all flavors $2.39.

Soy Dream (Imagine Foods) all flavors $2.15/quart. Soy Dream Enriched all flavors $2.25/quart.

Pacific Foods–Select all flavors $1.99/quart. Pacific Foods–Enriched all flavors $2.25/quart. Pacific Foods–Fat Free all flavors $2.39/quart.

Edensoy and Edensoy Enriched all flavors $2.29/liter. Edensoy and Edensoy Enriched 3 x 8.45 oz packs all flavors $2.29. Health Valley Soy Moo plain $2.59/quart.

Refrigerated / Fresh soymilks (in gable-top cartons) at Berkeley Natural Grocery Co. White Wave Silk $1.79/quart or $2.99/half gallon. Westsoy Plus $3.59/half gallon. Wildwood all flavors $1.99/quart or $3.89/half gallon.

Berkeley Natural Grocery Co. also carries dairy milk: Horizon organic milk $1.89/quart. Clover Stornetta milk (free of BGH–Bovine Growth Hormone) $0.95/quart.

Safeway: Cow's milk (fortified with vitamins A and D) sells for the following prices at the Safeway supermarket in Lafayette, California: (1) Fat free: $0.99/quart or $1.84/half gallon or $3.25/gallon; (2) Low fat (1% fat, protein fortified): $1.07/quart or $2.02/half gallon or $3.39/gallon; (3) Reduced fat (2% fat, protein fortified): $1.07/quart or $2.02/half gallon or $3.39/gallon; (4) Whole (homogenized, fortified with vitamin D only): $1.09/quart or $2.05/half gallon or $3.45/gallon. (5) Acidophilus Plus Bifidus–Low Fat (1% fat): $1.07/quart or $2.13/half gallon. (6) Horizon Organic $2.99/half gallon. (7) Lactaid: $1.89/quart or $3.35 per half gallon. The best-seller among these is Fat free in half gallons or gallons.

Thus, during the past two years, the price of cow's milk has generally decreased slightly for the first time in at least 15 years. Soymilk prices have largely remained unchanged. Therefore the gap between soymilk and cow's milk prices has increased slightly.

7908. *SoyaScan Notes.* 2000. Soymilk, rice milk, and almond milk retail prices at Trader Joe's in California, 20 Nov. 2000 (Overview). Nov. 20. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Since Dec. 1983, approximately every other year, Soyfoods Center has conducted a survey of the prices of soymilk and cow's milk in California. Note: 2 quarts = one half gallon.

Shelf-stable / Aseptic soymilks: Pacific Foods Fat Free Soy Drink vanilla or plain $1.29/quart. Pacific Foods Multi Grain original $1.69 quart.

Soy-Um all flavors $1.49/quart. Soy-Um Fat Free $1.39/quart. Soy-Um three-pack (250 ml each) $1.69 for three.

Westsoy Plus all flavors $2.49/half gallon (=$1.25/quart). Westbrae Natural Lite vanilla or plain $2.29/half gallon (=$1.15/quart).

Refrigerated / Fresh soymilks (in gable-top cartons): Trader Joe's Fresh Non Dairy Soy Beverage $2.69/half gallon (=$1.35/quart–gable top carton sold refrigerated).

Non-Soy Non-Dairy Beverages: Aseptic beverages. Breeze almond milk original, vanilla or chocolate $1.59/quart. Trader Joe's Rice-Um original, original enriched, vanilla, or vanilla enriched $1.39/quart. Westbrae Rice plain or vanilla $2.29/half gallon (=1.15/quart).

Products discontinued since last year: Galaxy Veggie Milk. Rice Dream.

Omitting the highest price soymilks, the price of soymilk ranges from $1.15/quart for half-gallon cartons to $1.39/quart for quart cartons. A fair average price would be about $1.27/quart.

7909. Barboza, David. 2000. New sprouts, old doubts for A.D.M. *New York Times.* Dec. 24. p. BU1.
• ***Summary:*** The company's top executives say a new ADM is emerging, one "that offers not just bulk grain but also a growing array of health and nutritional products like veggie burgers, soy milk, natural vitamin E and isoflavones, a soy extract that may reduce the risk of osteoporosis." In short, ADM is looking for alternatives to commodities, and working hard to grow its nutraceutical division.

It has been two years since the "retirement of Dwayne O. Andreas, the legendary chairman who built A.D.M. into one of the world's most powerful corporations." In 1997 the board chose G. Allen Andreas, Dwayne's nephew, to replace him as CEO; in 1999 Allen moved up to chairman of the board as well. Yet today, the leadership and future direction of the company are unclear. The big question concerns Michael D. Andreas, Dwayne's son and once the heir apparent. After his three-year prison term (for illegally conspiring worldwide to fix the price of lysine) ends in 2002, will he return to ADM. And if so, what office or offices will he hold?

In 1996 ADM paid a $100 million fine to settle the governments charges in the lysine price fixing case. It was one of the largest price-fixing settlements in U.S. history, Although ADM never admitted wrongdoing, the company

has been unable to rebound. Although the world is awash in vegetable oil, the European demand for soybean meal is rising due to the ban on bone meal in animal feeds. Graphs show that ADM's net income and stock price have fallen significantly since 1996.

7910. *SoyaScan Notes.* 2000. Chronology of major soy-related events and trends during 2000 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jan. 8–The Kerry Group (of Wisconsin and Iowa) purchases Solnuts, a pioneer manufacturer of dry-roasted soynuts, in Hudson, Iowa.

Jan.–Kraft Foods Inc. (Illinois) purchases Boca Burger Inc., America's third largest maker of veggie burgers, after Worthington Foods and Gardenburger.

March 6–The Hain Food Group announces that it will acquire the Celestial Seasonings tea company to become the largest natural foods company in the USA.

March 9–The USDA formally approves a rule change allowing soy protein products to completely replace meat products in the Federal School Lunch Program.

March 31–Monsanto, the world's leading agricultural biotech company, merges with Pharmacia & Upjohn (a large pharmaceutical company), and the new company is renamed Pharmacia Corporation.

April–An article by Lon White on tofu and brain aging is published in *J. of the American College of Nutrition.*

June 9–20/20 (ABC) television program, titled "Soy–The untold story," airs on Friday at 10:00 p.m. discusses many of the shortcomings of soyfoods, but in a very fair way.

June 13–Martha Stewart, on her popular nationwide TV program *Living,* has a very positive segment on edamamé.

July 14–Lightlife Foods Inc. (of Turners Falls, Massachusetts) is purchased by ConAgra, Inc., a $25 billion food company based in Omaha, Nebraska–for an undisclosed amount. Lightlife's plant, employees, and management team will stay in place. Lightlife is a leading maker of vegetarian meat alternatives, with 150 employees and about $25 million in annual sales.

July–At a joint meeting of ASA and USB, the International Soy Protein Program (ISPP) was born as ASA and the Illinois Soybean Program Operating Board (ISPOB) formalized their joint commitment to "Increase the international consumption of soy protein by humans in new markets–developing countries–and thereby create new opportunities for disappearance of soybeans and provide higher economic returns to U.S. soybean producers." ISPOB and its Executive Director Lyle Roberts were instrumental in conceiving the program and raising its initial funding. This program was later renamed WISHH.

Sept.–Monsanto's patent on glyphosate expires. Glyphosate is the active ingredient in *Roundup,* the world's best-selling herbicide.

Dec.–Sanitarium Foods of Australia acquires the 47% of SoyaWorld owned by Sunrise Soya Foods (Vancouver, BC, Canada).

Trends: 1. This year, the momentum created by the FDA health claim in Oct. 1999 has propelled the soyfoods industry to new heights. Existing companies are growing rapidly, and many new companies (including some of America's biggest food companies) are entering the market with new products.

2. This year, for the first time, soymilk has become a mainstream American beverage. As of May, White Wave Silk soymilk is sold in 24,000 supermarkets nationwide. Edamamé (green vegetable soybeans) have gone mainstream in California, and are rapidly becoming popular on both coasts of the USA.

3. In the United States and Europe, the tide seems to be flowing increasingly against genetic engineering of foods and food plants. More and more companies in the natural foods industry are labeling their products as "non-GMO" or "GMO-free" or "No GMOs." Monsanto has stopped its efforts to develop genetically engineered soybeans for food use and focused its attention instead on livestock feeds. It now seems likely the genetic engineering of plants has a future, but not in the area of foods–at least in developed countries.

4. Interest in "food-grade soybeans" continues to grow in the USA and has increased substantially this year. Canada began focusing on identity-preserved food-grade soybeans 10-15 years before the USA. U.S. interest began to grow in about 1995 with the introduction of genetically engineered soybeans and with the accelerating interest in food uses of soybeans.

5. While pro-soy articles (mostly about health benefits) continue to increase, so do anti-soy articles and Internet sites. The loudest anti-soy voices are those of Sally Fallon and Mary Enig of the USA (they believe traditional fermented soyfoods–such as miso, shoyu, natto, and tempeh–are good, traditional non-fermented soyfoods–such as tofu, soymilk, and edamamé–are not very good, and modern soy protein products–such as soy protein isolates, concentrates, and textured soy flour–are the worst of all, being highly processed with chemicals such as hexane solvent). Also: Richard and Valerie James of New Zealand, and Lon White of Hawaii. Some of the concerns they raise are legitimate and deserve further research, but the majority (we believe) are not. Nevertheless, many of the health claims made for soy in popular articles are exaggerated or somewhat sensational, and not firmly supported by scientific evidence.

6. As we are about to enter a new century and a new millennium on 1 Jan. 2001, soyfoods appear to have a bright future, worldwide. This past year has seen more activity and interest in, and media coverage of, soyfoods than at any time in the history of the United States.

7911. Huang, H.T. (Hsing-Tsung). 2000. Science and

civilisation in China. Vol. 6, Biology and biological technology. Part V: Fermentations and food science. Joseph Needham series. Cambridge, England: Cambridge University Press. xxviii + 741 p. Illust. Index. 26 cm. [200+ soy ref]
• ***Summary:*** This is the most important book on soyfoods in China ever written, and it is especially good on their origins and early history in China. It is also one of the best books seen on food in Chinese culture and history.

The section titled "Soybean processing and fermentation" (p. 292-378) comprises 14.3% of the book's text, and has the following contents: Introduction. Soybean sprouts. Soybean curd and related products: The origin of bean curd, transmission of *tou fu* to Japan, products associated with *tou fu* (soymilk {*tou fu chiang*}, tofu curds {*tou fu hua* or *tou fu nao*}, pressed tofu sheets {*ch'ien chang* or *pai yeh*}, yuba {*tou fu i* or *tou fu p'i*}, deep-fried tofu {*yu tou fu* or *tou fu p'ao*}, pressed tofu {*tou fu kan*}, five-spice pressed tofu {*wu hsiang tou fu kan*}, plain dried tofu [pressed tofu] {*pai tou fu gan*}, smoked tofu {*hsün tou fu*}, dried tofu soaked in brine and fermented {*ch'ou tou fu kan*}, frozen tofu {*tung tou fu*}), making fermented tofu {*fu ju*}, comparison of *tou fu* and cheese, addendum. Fermented soybeans, soy paste, and soy sauce: *Ferments* for food processing, fermented soybeans–*shih,* fermented soy paste–*chiang,* fermented soy sauce–*chiang yu,* soy fermentations in China and Japan.

There are also long sections on the history koji (*qu*) and of red rice koji (*hong qu*) in China (p. 192-203).

Note: This is the earliest English-language document seen (April 2013) that uses the term "hsün tou fu" [pinyin: *xun doufu*] to refer to smoked tofu. Soy is also discussed in other parts of the book. Address: Alexandria, Virginia.

7912. Kansas Soybean Association. 2000. Its soy easy to cook with soy: A cookbook of simply delicious, easy recipes to incorporate soy protein into a heart healthy diet. Topeka, Kansas. 20 p. No index. 24 cm.
• ***Summary:*** A full-color cookbooklet on glossy paper. Address: 2930 S.W. Wanamaker Dr., Topeka, Kansas 66614. Phone: 1-800-328-7390.

7913. Larson, Stephanie. 2000. The soyfoods boom: What's driving the explosion? First in a series. *Soybean Digest.* Dec. p. 10-11.
• ***Summary:*** Mark Messina says the whole market is driven by consumer demand because of health effects. Sales of soyfoods and soy protein products was $2.1 billion in 1999. Of that total, soymilk sales accounted for $300 million, up 38% from 1998. A graph shows soymilk sales (in million dollars) from 1992 to 1999, with projection to 2002. These sales rose from $100 million in 1993 to $300 million in 1999, projected to reach $500 million in 2001.

The United Soybean Board calculated that last year Americans consumed 37 million bushels of soybeans via soyfoods. A color photo shows many commercial soyfood products with colorful labels: Bergin Nut Company Soynuts (no salt), Fantastic Foods Tofu Scrambler, MCOA Brown Rice Miso, Spectrum Soy Oil, Health Trip Soynut Butter, Midwest Harvest Textured Soy Protein, Low-Fat Soy Flour, and Firm Tofu, Country Choice Soy Cocoa, Eden Organic Black Soy Beans, and Whole Foods Soy Ginger Sauce.

7914. Shurtleff, William; Aoyagi, Akiko. 2000. Tofu & soymilk production. 3rd ed. Lafayette, California: Soyfoods Center. 336 p. Illust. by Akiko Aoyagi Shurtleff. Index. Dec. 28 cm. [223 ref]
• ***Summary:*** Contains many new advertisements, plus changes on the title page, copyright page, and rear cover of both paperback and hardcover editions (new ISBN for each). Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

7915. **Product Name:** Soylove Soymilk and Tofu Maker.
Manufacturer's Name: Ionmag Corporation. Renamed Ronic Corporation by March 2005.
Manufacturer's Address: Korea
Date of Introduction: 2000.
New Product–Documentation: Leaflet (3 panels each side. Each panel: 22.5 x 20 cm, glossy color) sent by Patricia Smith from Natural Products Expo West. 2003. March. On the front panel: "Soylove: For your health." With a photo of the top of the plastic machine. Inside 3 panels: (1) "Make it easy by yourself" (8 different types of food, including tofu soup and soymilk). (2) "Modern design" (for the IOM-201B and the IOM-501A). (3) "Soylove is consist of [sic] in this way" (diagram of the six key parts of the machine) and "Operating principles of soymilk maker." 5th panel: "Making with one-touch button." A business card from H.B. Kim of Ionmag is attached with a staple.

Leaflet (3 panels each side. Each panel: 21 x 10 cm, color) sent by Patricia Smith from Natural Products Expo West. 2005. March. "Soylove.com." On the front panel is a photo of the plastic machine. The inner three panels: "To make flavored punches" [and soymilk / ricemilk]. "To make soup (porridge)." "To make tofu & soy noodles."

Back panel: Patented in Korea, USA, Japan, Taiwan. The patent number for each country is given.

Awards: "2000 Int'l Institute of Invention and Innovators in Germany (Gold Award).

"2001 Int'l Institute of Invention and Innovators in England (Silver Award)."

7916. Davis, Brenda; Melina, Vesanto. 2000. Becoming vegan: The complete guide to adopting a healthy plant-based diet. Summertown, Tennessee: The Book Publishing Co. v + 281 p. Index. 25 cm. [153 ref]
• ***Summary:*** An excellent vegan sourcebook (not a cookbook) by two registered dietitians. Contains perhaps

the most up-to-date, accurate, and concise yet complete information in vegan nutrition.

Contents: Acknowledgements. From the authors. 1. Vegan roots. 2. Perspectives on vegan health. 3. Plant protein. 4. Big fat lies. 5. The two faces of carbohydrates. 6. Prospecting for minerals. 7. Vitamins for vegan vigor. 8. Phytochemicals. 9. The vegan food guide. 10. Building vegan dynamos. 11. Growing vegans. 12. The prime of life. 13. Overweight. 14. Eating disorders. 15. Underweight. 16. The vegan athlete. 17. Vegan diplomacy.

This book begins with a good history of veganism and contains (throughout the book) a wealth of accurate, positive information about many different types of soyfoods (especially tofu) and related subjects, including tofu, soymilk, tempeh, soy yogurt, soy cheese, soy sauce, tamari, and soy oil (incl. omega-3 fatty acids). Plus Adventist Health Studies, dietary fiber, phytochemicals and sea vegetables. Address: 1. Kelowna, British Columbia; 2. Langley, British Columbia. Both: Canada.

7917. Fruehschuetz, Leo. 2000. Soja [Soya]. Schaafheim, Germany: Bio Verlag. 144 p. With recipes by Judith Braun. Illust. Index. 15 cm. [12 ref. Ger]
• ***Summary:*** Contents: Forward: Portrait of the soybean: From China to the entire world, the composition of whole beans, does soya help with cancer?, protein and oil for the world economy. The original soybean and what followed: Introduction (there is not much to improve on in the soybean), the "labor-bean" (Monsanto and Roundup-Ready soybeans), the results for farmers, for the environment, for health, politics without results, for trade and the end-users, the forgotten results, soya in animal feeds. Organically grown soya–without genetic engineering and pesticides. Versatile: Soya in the wholefoods kitchen: Soybeans: whole, ground, and sprouted, the fluid bean–milk, yogurt (fermented), and oil, tofu–the meat without bones, tempeh–the noble cultured food from Indonesia, soy sauce–aged in wooden vats, miso–soya for soups, soyameat–saved from the wolf. Recipes: Soymilk, soy flour and flakes, tofu, tempeh, soy meat and granules, miso, soy sprouts. Address: News journalist for natural foods and long-lived people, co-worker with Schrot&Korn.

7918. Holtzman, Rachel. 2000. Trader Joe's soy foods: Answers to commonly asked questions. Nutrition information (Leaflet). Needham Heights, Massachusetts: Trader Joe's. 3 panels each side. Each panel: 21.5 x 9 cm.
• ***Summary:*** Question and answer format: Contents: What is soy anyway? Why should I include soy in my diet? Does soy have fat? Some soy products say soy wards off heart disease. What does this mean? Ans: The FDA "recently approved a new health claim linking soy protein to a reduced risk of coronary heart disease. Studies show that foods with soy may help stave off heart attacks and other complications of heart disease by lowering cholesterol. The FDA says it takes 25 grams of soy protein a day to have this desired effect (as long as you also follow a diet that's low in saturated fat and cholesterol.) The product needs to meet the strict criteria to bear the new claim, but it will soon be appearing on more labels."

What are isoflavones and where can I find them? Ans: "Soybeans contain a unique compound called isoflavones, which are phyto (plant-based) estrogens. There are three isoflavones: genistein, daidzein and glycitein. Some research suggests that isoflavones are responsible for soy's health properties. One half cup of tofu has an average of 40 milligrams (mg) of isoflavones; one cup of regular soy milk has about 20 mg; one serving of Trader Joe' Soy Protein Powder has 43 mg. Lower fat products have fewer isoflavones. Soy protein concentrates lose isoflavones during processing. Isolated soy protein (ISP) and textured soy protein (TVP) are good sources of isoflavones. Heat treatment does not appear to significantly affect isoflavone content." What is the difference between isoflavones and soy protein? How can I include soyfoods in my diet? Ans: Trader Joe's carries soymilk, tofu, tempeh, soy nuts, edamame (soybeans), soy protein powder, meat substitutes, soybean butter. What is tofu and how can I use it? How much soy should I eat? Ans: About 25-50 grams per day. Address: R.D., Trader Joe's Nutritionist, Needham Heights, Massachusetts.

7919. Kornfeld, Myra. 2000. The voluptuous vegan: more than 200 sinfully delicious recipes for meatless, eggless, and dairy-free meals. New York, NY: Three Rivers Press. [xi] + 305 p. Illust. (by Sheila Hamanaka). Index. 24 cm.
• ***Summary:*** A vegan cookbook with some macrobiotic flavor. The excellent glossary includes: adzuki beans, agar-agar, almond butter, barley malt, barley miso, carob powder, edamame, gluten, haricots verts, Hass avocado, hijiki, Hokkaido pumpkin (kabocha squash), kanten, koji, kombu, kudzu, maple sugar (crystallized maple syrup), mirin, miso, MSG, nori, oden, Rice Dream, rice syrup, sambal (Indonesian word for chutney), sea salt, seitan, shiitake, shoyu, soybean, soy milk, Sucanat, tahini, tempeh, umeboshi paste, wakame, wheat gluten, Yannoh coffee. The index contains 29 entries for tofu, 9 for seitan, 5 for tempeh, 2 for miso, 1 for "Cheese"–tofu (p. 214), "Sour cream"–tofu (p. 25), and teriyaki vegetables. Note: Soy milk is called for in many recipes. Address: Professional Chef, New York City.

7920. Liberty, Anne. 2000. Super soy! Protect yourself against bone loss, heart disease, cancer, menopause, high cholesterol. Boca Raton, Florida: American Media Mini Mags Inc. 66 p. 14 cm. [1 ref]
• ***Summary:*** This mini-book (only 5½ inches high) was sold (for $1.19) next to the tabloid magazines at the checkout stand at Longs Drug Store in Lafayette, California. On the

little cover is a color photo of a grey-haired and healthy-looking lady holding a glass of soymilk. Contents: All about soy: Inside the soybean (phytoestrogen, isoflavones, genistein, protease inhibitors), eight of soy's top health benefits (antioxidant protection from free radicals, breast cancer protection, cholesterol control, colon cancer protection, strong bones, hot flash reduction, a strong immune system, and kidney disease prevention), different soy products (green soybeans, hydrolyzed vegetable protein {HVP}, infant formula {soy-based}, lecithin, meat alternatives, miso, non-dairy frozen soy ("soy ice cream"), soy cheese, soy flour, soy grits, soy protein (incl. TSP = textured soy protein = textured soy flour), soy sauce, soy yogurt, whole soybeans, soy nut butter, soy nuts, soy oil, soy sprouts, tempeh, tofu, whipped soy-based topping, yuba), nutritional value, how much do you need? Bone loss. Heart disease and cancer: Heart disease, cancer (genistein, isoflavones, phenolic acids, phytates, protease inhibitors). Menopause. Cholesterol. Cooking with soy products: Soy flour, miso, soy milk, soy protein, tofu, tempeh. Delicious soy recipes.

The author frequently refers to Earl Mindell, PhD, but has no real scientific references. Many of the recipes were provided by the United Soybean Board. On the last page are two sources of more information and recipes: The United Soybean Board website www.talksoy.com and the Indiana Soybean Board website www.soyfoods.com.

7921. McMann, Mary Carol. 2000. Soy protein: What you need to know. New York, NY: Penguin Putnam Inc. (Avery). 60 p. Index. 22 cm. Avery's Nutrition Discovery Series. [74 ref]
• ***Summary:*** Contents: Introduction. 1. What makes soy so special? 2. Cardiovascular disease. 3. Cancer. 4. Osteoporosis. 5. Menopause and menopausal symptoms. 6. Incorporating soy (protein) into your diet. Conclusion. Glossary. References. About the author.

Note: This book is copyrighted by Protein Technologies International. Address: MPH, RD, LD [Licensed Dietitian], Houston, Texas.

7922. **Product Name:** Odwalla Bar [Super Protein].
Manufacturer's Name: Odwalla, Inc.
Manufacturer's Address: Dinuba, CA 93618. Phone: 1-800-Odwalla.
Date of Introduction: 2000. January.
Ingredients: Incl. 16 gm of soy and rice protein.
Wt/Vol., Packaging, Price: 2.2 oz (62 gm). Retails for $1.19.
How Stored: Shelf stable.
New Product–Documentation: Leaflet (4-panels, glossy, color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March 8-11. "Odwalla Bar! Nourishing food bar. A breath of fresh in the food bar category." Copyright 2000. The "energy bar category" is thriving! During the last 12 months (ending April 2000) it has grown 42% in supermarkets and grocery stores and 26% in natural food stores. Odwalla Bar continues to outpace category growth in both natural food stores (85% to 26%) and supermarkets (192% to 42%) during the same last 12 months.

7923. Ohwalla, Inc. 2000. Introducing OdwallaMilk (Brochure). Dinuba, California. 6 panels. Front and back. Each 22 x 14 cm.
• ***Summary:*** Gives "Four reasons for OdwallaMilk," photos of various products, nutrition facts, and nutritional comparison of OdwallaMilk (original) with whole dairy milk.

Sales of non-dairy soy beverages grew 97%, to $142 million, during the 12 months ending Sept. 2000–according to data from SPINS.

Sales (in dollars) of refrigerated dairy-free products [mostly soy beverages] increased by an astonishing 630% in supermarkets and grocery stores and by 74% in natural food stores during the 12 months ending Sept. 2000. Sales of shelf-stable dairy-free products [again mostly soy beverages] has increased 31% in supermarkets and 8% in natural food stores during the same period. Address: Dinuba, California 93618. Phone: 1-800-Odwalla.

7924. Patil, R.T.; Joshi, K.C.; Ali, Nawab. 2000. The course manual for entrepreneurship development course on production of soymilk and soybean. Bhopal, India: Soybean Processing & Utilization Project, Central Institute of Agricultural Engineering. *
• ***Summary:*** This course was organized by the Soybean Processing and Utilization Center (SPU Center), CIAE, Bhopal. Address: Soybean Processing and Utilization Project, Central Inst. of Agricultural Engineering, T.T. Nagar, Bhopal–462 003, India.

7925. Salmon, Margaret Belais. 2000. Soy discoveries: Recipes for life. Over 700 quick soy recipes. Philadelphia, Pennsylvania: XLibris Corp. 474 p. Recipe index. 22 cm. [60 ref]
• ***Summary:*** Contents: Acknowledgments. Introduction: The truth about food additives and chemicals in food, approximate measurements. Recipes: Soups. Salads and vegetables. Main dishes and appetizers. Omelets. Breads, muffins, pancakes / waffles, cookies. Desserts. Sugar-free desserts. Drinks. Appendix: Food safety.

The rear cover contains a portrait photo and a brief biography of Margaret Salmon with a list of other books she has written. She received a degree in food chemistry and nutrition at the University of California at Berkeley, and degrees at Columbia University in the science of nutrition and nutrition education. She has a certificate of Hospital

Dietetics from Duke University. She was formerly research dietitian on the cystic fibrosis research team at Columbia-Presbyterian Medical Center, New York City, and chief dietitian and director of the dietetic traineeship program at St. Joseph's Hospital and Medical center in New Jersey. Address: R.D., L.D. [Licensed Dietician], P.D. [Professional Diploma, Columbia Univ., specialist in nutrition education], Salmon Consultants, 435 Lynn St., Harrington Park, New Jersey 07640. Phone: 201-768-4457.

7926. Sharma, Ratan. 2000. Soymilk and tofu: An update in Indian context. Technical Bulletin. Haryana, India: American Soybean Association (ASA) / United Soybean Board. 10 p. 28 cm. [7 ref]

• ***Summary:*** Contents: Introduction and history. Future of soy products in India. Soymilk, Tofu, Okara. Soymilk powder. Nutritional value. SoyaCow Project. SoyaCow. Cost of SoyaCow component pieces of equipment. ASA International Offices.

Color bar charts show: (1) Protein yield from cultivation of different crops (in kg/ha). The soya bean gives by far the highest protein yield, 509 kg/ha. (2) Percentage of protein in common foods. Soya bean is by far the highest at 40%. (3) Essential amino acids in soya milk and cow's milk as compared to the ideal protein source. (4) Essential amino acids in soya milk and cow's milk as compared to the recommended daily intake by an adolescent. (5) A comparison of nutrients in mother's milk, cow's milk & soya milk, normalised to the same water level. (6) Flow chart of the many different products that can be made from 1 kg of soya beans. (7) Cost benefit analysis for SoyaCow SC20 system, with net cost of production, monthly income, net profit per month, and payback period for four products: Soy milk (plain), flavoured soya milk, curd, tofu. All values are in Indian Rupees. Photo of SoyaCow SC20.

Pages 6-7: The SoyaCow project was started in India in 1991 by Child Haven International (CHI), a Canadian based NGO (non-governmental organization, and follower of Gandhian philosophy) "working in India and Nepal, and ProSoya Inc. of Canada, a leading name in soymilk technology. Initially the project was granted substantial funding by CIDA (Canadian International Development Agency). Its main objective is to provide low cost nutrition to the general Indian population in the form of soymilk and its derivatives.

The "SoyaCow Centre was established in India jointly by Child Haven International and ProSoya in the year 1993, and the patented technology of manufacturing table top soymilk machines suitable for the cottage industry in India was transferred to SSP Ltd., a Faridabad (Haryana) based well known dairy, food processing and pharmaceutical equipment manufacturing company. Now these machines are being manufactured at SSP under the guidance of the SoyaCow Centre. This centre is providing all kinds of assistance" from making business plans to installation of the machines, operator's training, developing recipes suitable to the local taste, helping the users of the machines in marketing soy products, and providing all the know-how on soymilk to the general population. In association with the American Soybean Association this center has developed the technology to give 4-6 months shelf life to soymilk in bottles without any refrigeration. Also, vacuum packaging technology is provided to pack tofu for a longer shelf life. This technology is given free to SoyaCow users. Sites using this technology are doing very well. Address: PhD, The Child Haven International, SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad–201002, UP, India; American Soybean Assoc., Asia Subcontinent, 168 Jor Bagh, New Delhi–110 003, India.

7927. Shimbo, Hiroko. 2000. The Japanese kitchen: 250 recipes in a traditional spirit. Boston, Massachusetts: Harvard Common Press. xiii + 512 p. Foreword by Ming Tsai. Illust. (by Rodica Prato). Index. 23 cm.

• ***Summary:*** An excellent book with exquisite illustrations. The index contains 46 entries for miso, 20 for tofu, 12 for shoyu, 10 for teriyaki, 7 for edamame, 6 for natto (fermented soybeans), 6 for soybeans, 5 for koji ("a fermentation starter"), 3 for koyadofu (freeze-dried tofu), 2 for soy milk, soy sauce dressing, soybean lover's soybean rice, soybean miso, soybean pulp, 1 each for kinu dofu, moyashi (incl. soybean sprouts; "Until recently, moyashi used for cooking in Japan were predominantly soybean sprouts," p. 42), nama-age, nama-miso, nama-shoyu, okara (soybean pulp), saikyo miso, and tamari.

In the section on *Daizu* "(Dried soybeans)" (p. 96-97) both roasted soybean flour and *kinako* are mentioned. Dried green soybeans, are toasted then ground to a flour (*kinako*) which "is mixed with sugar and used to coat moist or sticky Japanese sweets." During the summertime, edamame (fresh green soybeans) are boiled and served in the pods.

The section on "Koyadofu" recounts the story of its origin: "The dried form of tofu, koyadofu, was invented by accident around the twelfth century, when, it is said, a priest at Mt. Koya Temple left freshly made tofu as an offering on the altar one snowy night. The next morning the tofu was frozen, so he threw it away in the back garden." After several sunny days of melting and evaporation, the tofu was found completely dried. It was found that this dried form can be kept for a long time.

The section on *Tofu seihin*–"Cooked tofu products" (p. 139-41) includes *Abura-age*–"Fried thin tofu." "One type of *abura-age,* called *sushi-age,* is sold specially for the preparation of *inarizushi,* a small barrel-shaped brown sushi, *Sushi-age* comes slit to make a pocket into which sushi rice can be stuffed."

Note: This is the earliest English-language document seen (April 2013) that uses the term *Sushi-age* to refer deep-

fried tofu pouches used to make inari-zushi.

Atsuage–"Fried tofu." *Ganmodoki*–"Fried tofu dumplings." *Yakidofu*–"Lightly broiled tofu." *Yuba*–"Soy milk sheet."

The latter section states nicely: "Because freshly collected yuba is soft and fragile, many sheets may be piled together and rolled into a 1-inch-thick stick. The stick is chilled, cut into bite-sized pieces, and eaten with a little shoyu (soy sauce) and grated wasabi. Fresh yuba has a wonderful creamy texture and a sweet, nutty taste."

"Because fresh yuba is perishable, most yuba found in stores is in the form of a dried sheet." It must be reconstituted in water, but after it has regained its flexibility it makes an excellent wrapper for other foods in fried or simmered dishes.

Shimbo-Beitchman is a knowledgeable and talented Japanese cooking teacher who ran a cooking school in Tokyo for eight years and in London for two; she now teaches in New York City. Address: Teacher of Japanese cooking, Hiroko's Kitchen, London, England. Phone: Fax: 44-171-289-0855.

7928. Sievin, Colleen. 2001. Company built on a blender. *Journal* (*Rapid City, South Dakota*). Jan. 14.
• ***Summary:*** Steve Demos, age 51, founder and president of White Wave, "likens his success to the fairy tale, 'Jack and the Beanstalk,' where the main character trades in his cow for magical beans."

A photo shows Demos holding a carton of Silk soymilk. Address: Associated Press.

7929. *Arizona Republic* (*Phoenix*). 2001. For a healthy treat, shake it up! Eating well. Jan. 17.
• ***Summary:*** One "of the newest trends in the smoothie world is adding soy to the mix of healthy additions. Consumption of soy products has increased tenfold in the last decade."

Last year the US FDA stated that 25 grams of soy protein eaten daily, together with a diet low in saturated fat and cholesterol, may reduce the risk of cardiovascular disease.

7930. G.T.B. Group of Japan, Inc. 2001. Questionnaire [concerning edamame]. Denver, Colorado. 6 p. Jan. 31. Unpublished typescript.
• ***Summary:*** This research was conducted over a 2 month period from 1 Dec. 1999 to 31 Jan. 2000. The questionnaire was administered by an in-store demonstrator. The GTB is the edamame vender for Whole Foods, Wild Oats, and King Sooper. The questionnaire consists of 11 questions, with about 4-5 choices after each question. The number of respondents to each question varies from 59 to 132.

1. How long have you known about Edamame? More than 1 year: 49%. First time: 22%.

2. How often do you purchase Edamame? 1-2 times per month: 44%. Once every 2 weeks: 22%.

3. How often do you eat soy products? (Tofu, Dried soybeans, Soymilk etc.). 1-2 times per week: 51%. 2-3 times per week: 22%. 1-2 times per month: 18%. 2-3 times per month: 9%.

4. Reasons for purchasing our Edamame. Good Taste: 37%. Great health benefit: 33%.

5. Price. Reasonable: 59%. Expensive: 38%.

6. How do you like the flavor of our Edamame? Just Right: 88%. Do not need any salt at all: 7%. Not Enough Salt: 4%. Too Salty: 1%.

7. How do you eat Edamame? By Itself: 81%. Put them into salad: 13%. Put them into stir fry: 5%.

8. How do you feel about the person doing the demonstration? Very friendly: 59%. Provides great information: 23%. Answers customers' questions clearly: 17%.

9. How did you find out about Edamame? By shopping grocery: 53%. At restaurant: 26%.

10. What are other food products you would prefer to eat as snack or quick-preparation meal? Sushi: 37%. Miso soup: 29%. Noodle soup: 28%.

11. If you have any other comments or suggestions, please feel free to give us anything! Address: Denver, Colorado.

7931. Descheemaeker, Koen; Debruyne, Ignace. eds. 2001. Soy and health 2000: Clinical evidence, dietary applications. Leuven, Belgium and Apeldoorn, Netherlands: Garant Publishers. 197 p. No index. 24 cm. [535 ref]
• ***Summary:*** This book contains the proceedings of the international conference "Soy & Health 2000" which was held in Brussels, Belgium, on 13-14 Oct. 2000. The texts of keynote lectures, presentations, and poster abstracts offer a good review of clinical research relating to soy.

Contents: Soy protein and heart disease (4 papers). New products and technology (1). Soy and cancer (3). Obesity (1). Health implications of soy lecithin, oil and phytosterols (3). Soy and hormonal effects (3). From science to market (4). Abstracts poster session (22 presentations).

Note: According to Mark Messina (e-mail, April 2005): This conference was organized by the editors of the proceedings. Koen Descheemaeker, PhD, used to work for Alpro in Belgium. He left in about 2000 to become a full time event organizer, specializing in nutrition events. He has become very successful at this and each year holds the largest nutrition conference in Belgium. Ignace Debruyne, PhD, works for the American Soybean Association in Belgium. He has a background in soy, especially related to processing and soymilk. The money for the conference was raised from sponsors (such as ASA and Alpro). It was a for profit event. Address: 1. PhD, Nutrimedes Communication & Consultancy, Zonnebecke, Belgium; 2. PhD, Ignace Debruyne & Associates, Izegem, Belgium.

7932. Glenville, Marilyn. 2001. Natural alternatives to HRT* (* hormone replacement therapy) cookbook: Understanding estrogen and foods that benefit your health. Berkeley, California: Ten Speed Press. 192 p. Illust. Index. 24 x 21 cm. [37* ref]

• ***Summary:*** Every woman who experiences menopause has probably experienced unpleasant symptoms such as joint pains, mood swings, weight gain, hot flashes, etc. Yet these symptoms can be avoided, or at least alleviated–by simple and safe changes in diet to include more phytoestrogens and isoflavones. This books tells and shows you how. Already a best-seller in the U.K. with over 20,000 copies in print.

Although this is not a vegetarian cookbook (recipes call for the use of fish and shellfish such as crab, mussels, salmon, tuna, etc.), there is extensive discussion of the benefits of soyfoods in a diet for menopausal women and many recipes that use soy (especially tofu). The chapter titled "What you need to eat at menopause" contains a good discussion (p. 17-18) of the benefits of isoflavones / phytoestrogens and natural soyfoods. It is known that "legumes contain good levels of isoflavones, and soy ranks the highest." Phytoestrogens are also good for bone health, and soy protein helps to reduce cholesterol (p. 25).

In the "Introduction to the recipes" is a section on "Soy products" (p. 47) that discusses miso, soy milk, soy sauce, tempeh, and tofu (which is "wonderfully versatile"). Soy-related recipes include: Scrambled tofu (p. 71). Tofu vegetable quiche (p. 90). Russian salad deluxe with tofu dressing (p. 96). Vegetable, bean sprout and tofu stir-fry (p. 104-06). Tofu and mushroom stroganoff (p. 106-07). Herby tofu and oat sausages with nutty mash (p. 112). Austrian bean salad with tofu dressing (p. 130-132). Deluxe kebabs (p. 136). Apricot tofu ice-cream (p. 156). Tofu cheesecake (p. 157). Mixed berry fool (p. 159). Miso broth (p. 176). Soy mayonnaise (p. 179). Sesame tofu dressing (p. 180). Tofu dip for raw vegetables (p. 180). Mocha tofu cream (p. 183). Tofu cream (p. 183).

Marilyn Glenville, PhD, earned her doctorate at Cambridge University and is Chair of the Governing Council for the British Association of Nutritional Therapists. She has practiced nutritional therapy in the U.K.and U.S. for more than twenty years, and specializes in the natural approach to female hormone problems. She practices from three private clinics in London and Kent, including the prestigious Hale Clinic. Address: PhD, nutritional therapist, UK.

7933. Hagler, Louise. 2001. Miso cookery. Summertown, Tennessee: The Book Publishing Co. 96 p. Illust. Index. 23 cm.

• ***Summary:*** Contains 70 recipes (each with a nutritional analysis) that use miso as an ingredient, and four full-page color photographs. Contents: Introduction. It's alive!!!! (visit to American Miso Co. in North Carolina). Soups. Spreads. Salads and dressings. Sauces and gravies. Vegetables. Main dishes. Side dishes. Sweet things.

Many recipes call for the use of tofu as an ingredient, and some call for the use of edamame, gluten, soymilk, soy yogurt, tempeh,

On the rear cover is a color photo of Louise Hagler; her vegetarian cookbooks have sold over 750,000 (or 742,000) copies worldwide. Address: Summertown, Tennessee.

7934. **Product Name:** Spiru-Tein (Soy Protein Beverage with Spirulina) [Vanilla, or Chocolate].
Manufacturer's Name: Nature's Plus. Div. of Natural Organics, Inc.
Manufacturer's Address: 548 Broadhollow Rd., Melville, NY 11747. Phone: 1-800-645-9500 or 1-800-525-0200.
Date of Introduction: 2001. January.
Wt/Vol., Packaging, Price: 8 oz Tetra Brik Aseptic carton.
How Stored: Shelf stable.
New Product–Documentation: Advertising supplement (12 page, glossy, color) inserted into Natural Foods Merchandiser. 2001. Jan. After p. 16. "This will change the way you think about energy drinks forever." Slick, flashy, and misleading. Fails to list ingredients. How can a product with so much protein and only 220 calories be called an "energy drink"? One carton contains 22 gm of protein and many different vitamins and minerals.

7935. White Wave, Inc. 2001. Silk is the hottest selling name in soy (Ad). *Natural Foods Merchandiser.* Jan. p. 42.

• ***Summary:*** This 8½ by 11 inch color ad shows a large white carton of Silk Cultured Soy (strawberry flavor) against a blue background. "Smart new package graphics. Now contains live cultures. Award winning favor. Made from organic soy. Contains 50% daily requirement of calcium." To the left is a "2000 Gold Taste Award" medal. At the lower right is a carton of Silk Soymilk. www.whitewave.com.

This ad also appeared in the March (p. 52), June (p. 34) issues of this magazine. Address: [Boulder, Colorado].

7936. Demos, Steve. 2001. New developments at White Wave (Interview). *SoyaScan Notes.* Feb. 1. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Silk soymilk is now made a five dairies in the USA, and the rest is made by Dennis Anderson at SunRich. They use the basic APV system for making their soybase. Each of these systems costs about $5 million.

Company research has shown that Silk is now in 1-2 million U.S. households, and the average household buys ½ gallon a week. Sales this year are projected to top $100 million.

Consumers now know what soy is and 76% believe that it has health benefits.

One farmer supplies all the organic soybeans used to make Silk. Yet the composition of these soybeans changes

from year to year, so the formula must be adjusted to account for these changes. Making this adjustment so consumers can't taste the difference is a delicate and complex process.

Steve is very happy with the company's new public relations firm. "They are fabulous." They are lining up many stories on the emergence of White Wave as a business and on the spectacular success of soymilk as a new category. Can you think of any other category that has gone mainstream as fast as soymilk? Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

7937. **Product Name:** Edensoy Light: Organic Soymilk [Original, Vanilla].
Manufacturer's Name: American Soy Products, Inc.
Manufacturer's Address: 1474 N. Woodland Dr., Saline, MI 48176. Phone: 800-248-0320.
Date of Introduction: 2001. February.
Wt/Vol., Packaging, Price: Tetra Brik Aseptic cartons. 1 liter (33.8 oz, 1.06 quart) or 250 ml.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Ad in *Natural Foods Merchandiser* (8½ by 11 inches, color). 2001. Feb. p. 38. "The best tasting soymilk just got a little lighter." On the large front panel is a prominent logo, black on yellow, which reads: "Certified organic. Tested GEO free." Near the bottom: "Organic soymilk. Less than 1% fat. Fortified with vitamin D2 & calcium."

Ad in *Natural Foods Merchandiser* (8½ by 11 inches, color). 2002. July. p. 18. "EdenSoy: Increase volume sales." A large color photo shows a woman in a food store facing an aisle of foods and holding out a case of EdenSoy Light. Near the bottom of the ad are photos of cartons of EdenBlend and EdenSoy Original.

7938. Collins, Sherry. 2001. Beans in the beverage market. *Soybean Digest.* Feb. p. 65.
• ***Summary:*** Tropicana, a subsidiary of PepsiCo, is test-marketing a soy smoothie in Florida restaurants and Kroger supermarkets. The drink contains fruit puree, juice, and soy. A 12-oz serving contains 8 gm of soy protein.

7939. Illinois Soybean Board. 2001. Leadership paves a path. There is a solution... World Initiative for Soy in Human Health (Brochure). Bloomington, Illinois. 6 panels. Front and back. 21 x 12 cm each.
• ***Summary:*** "More than 1 in 7 people throughout the world will not have enough food to meet their most basic nutritional needs. U.S. farmers face a surplus of more than 170 million bushels of soybeans and commodity prices at near 30-year lows." The World Initiative for Soy in Human Health includes five activities. (1) Humanitarian effort: U.S. soybean farmers have asked the federal government to designate soybeans, soybean meal, and soybean oil in surplus and that the USDA purchase these and other soybean products as soon as possible under the CCC Charter Act. (2) Private Voluntary Organization (PVO) planning: Supports the efforts of PVOs such as CARE and Save the Children to incorporate more soy-fortified and soy-protein products into their international feeding programs. (3) World Food Program (United Nations) assistance. (4) Global Food for Education initiative. (5) International AIDS initiative.

"For information about this initiative, contact Jim Hershey, WISHH Program Director, American Soybean Association, 1-800-688-SOYA (7692) or visit the website www.wishh.uiuc.edu."

Talk with Jim Hershey and Forest Roberts of ASA. 2001. May 10. This brochure was targeted to U.S. soybean farmers. It comes in two forms. The first was simply a 3-panel brochure. The other was a wider 3-panel brochure and the central panel contained six samples in small (2 inch square) seam-sealing bags: whole soybeans, soybean meal, soybean oil, defatted soy flour/grits, textured vegetable protein, soy protein concentrate, soy protein isolate, and milk replacer. A brief paragraph next to each gives the uses, protein composition (percentage), and calories per 100 gm.

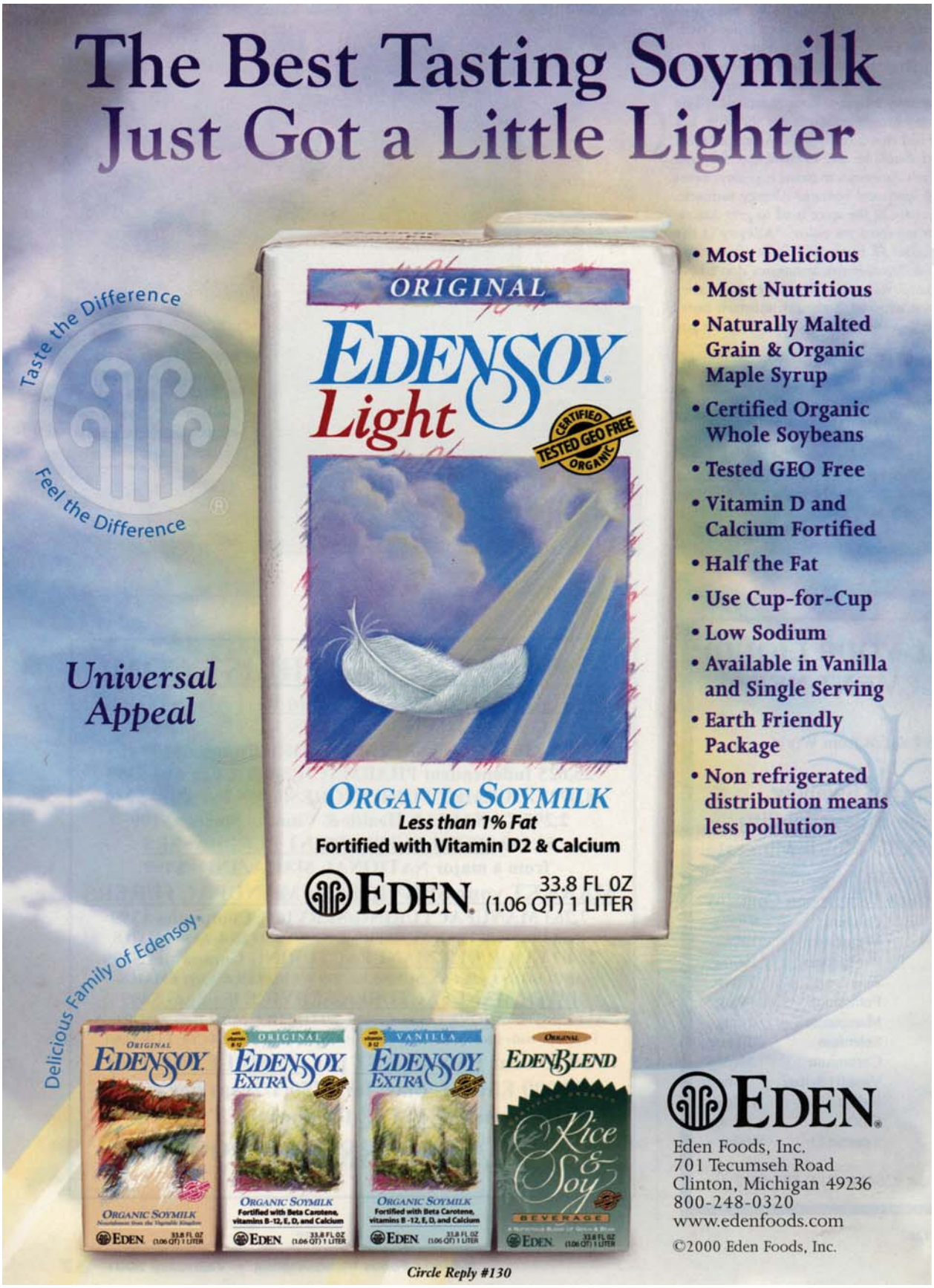
Note 1. This is the earliest document seen (July 2007) that mentions the WISHH program.

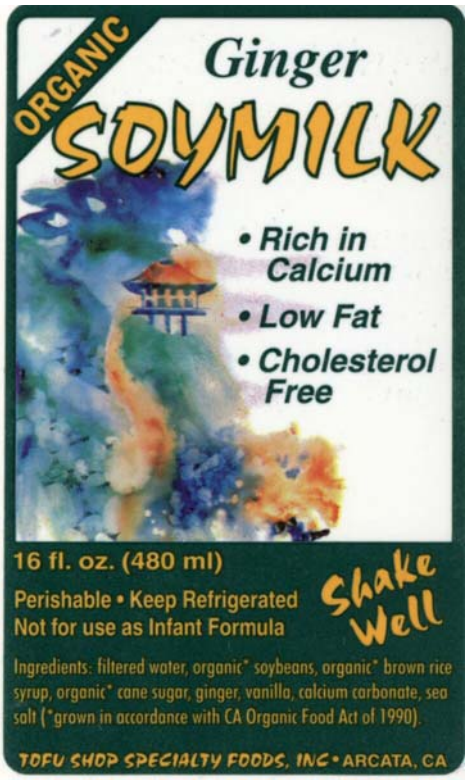
Note 2. The World Soy Foundation website (www.worldsoyfoundation.org) says (July 2007) that "U.S. soybean farmers started the World Initiative for Soy in Human Health (WISHH) Program in July 2000,..." Address: Bloomington, Illinois.

7940. Mangels, Reed. 2001. Vegetarian Journal's guide to soy, rice, and other non-dairy "milks." *Vegetarian Journal* (*Baltimore, Maryland*). Jan/Feb. p. 27-30. [1 ref]
• ***Summary:*** Based on a survey of 19 brands, and about 25 SKUs. Address: PhD, RD.

7941. *Nutrition Business Journal* (*San Diego, California*). 2001. Imagine Foods sets sights on sports set: Imagine converts natural soup line to organic without missing a beat. 6(2):12. Feb.
• ***Summary:*** Imagine prefers to sell organic products–such as their Power Dream. Presently, about 60-70% of the company's products are made with organic ingredients, according to Robert Nissenbaum, president and CEO.

7942. **Product Name:** Soymilk [Natural Unflavored, Vanilla, Chocolate, or Ginger].
Manufacturer's Name: Tofu Shop Specialty Foods Inc.
Manufacturer's Address: 100 Ericson Ct., Suite 150, Arcata, CA 95521. Phone: 707-822-7409.
Date of Introduction: 2001. February.
Ingredients: Vanilla: Filtered water, organic* soybeans, organic* brown rice syrup, organic* cane sugar, vanilla, calcium carbonate, salt. * = Grown in accordance with the California Organic Food Act of 1990.





Wt/Vol., Packaging, Price: Pint and quart plastic bottles.
How Stored: Refrigerated.
New Product–Documentation: Four Labels sent by Matthew Schmit. 2002. Sept. 9. The Vanilla was introduced in 1980, the other three flavors (and their labels) in Feb. 2001. 2.37 by 4 inches. Self adhesive. Red, brown, or green and orange-yellow on white. A handsome, impressionistic watercolor illustration shows a tofu shop on stilts on a cliff near the ocean with a tree arching overhead.

7943. **Product Name:** Westsoy Smart Plus Soymilk [Plain, or Vanilla].
Manufacturer's Name: Westbrae Div. of The Hain Celestial Group (Product Developer-Marketer).
Manufacturer's Address: New York City, New York.
Date of Introduction: 2001. February.
Ingredients: Organic soymilk (filtered water, organic soybeans*), filtered water, brown rice syrup, tricalcium phosphate, natural flavors, sea salt, vitamin A palmitate, vitamin D-2, riboflavin (vitamin B-2). * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 1 quart (32 fl. oz.) aseptic Tetra Pak carton–Liter square with spincap. Retails for $1.78 (2001/02, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Calories 190, calories from fat 45, total fat 5 gm (8% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 90 mg (4%), total carbohydrate 22 gm (dietary fiber 5 gm [21%], sugars 14 gm), protein 11 gm (22%). Vitamin A 10%, calcium 30%, iron 15%, vitamin D 25%, riboflavin 25%, phosphorus 25%, magnesium 15%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2001. Feb. 3 by 3 by 7.75 inches. Aseptic carton. Purple, red, white and blue. Front panel text: "33% more protein than whole milk. Logo: Made with organic soymilk. Excellent source of calcium. With vitamins A & D and riboflavin. 50 mg isoflavones per serving. Lactose and dairy free. Logo of a red heart with a soy protein banner: See side panel for information on the relationship between soy protein and heart disease." A color photo shows soymilk being poured onto flaked breakfast cereal.

Talk with customer service rep. at The Hain Celestial Group. This product was first available in stores in Feb. 2001.

Talk with Janice Palmer, soy beverage expert, of Tetra Pak Inc, Pomona, California. 2001. March 26. This new carton is called "Tetra Brik aseptic Liter square with spincap." It is resealable, so it will not leak when placed on its side in a refrigerator. When you twist open the cap to break the tamper-evident seal, a plastic claw is pushed down so that it penetrates laminated layers of foil and polyethylene, breaking the interior package seal. The foil blocks light and oxygen and gives evidence of tampering; the polyethylene provides the aseptic seal for the laminated paperboard carton. SPINS refers to soymilk, rice milk, almond milk etc. as the "Non dairy beverage category."

7944. **Product Name:** Westsoy Low Fat Soymilk Drink [Chocolate].
Manufacturer's Name: Westbrae Div. of The Hain Celestial Group (Product Developer-Marketer).
Manufacturer's Address: New York City, New York.
Date of Introduction: 2001. February.
Ingredients: Organic soymilk (filtered water, organic soybeans*), filtered water, brown rice syrup, dehydrated cane juice, natural flavors, cocoa powder (treated with alkali), tricalcium phosphate, sea salt, carrageenan, vitamin A palmitate, vitamin D-2, riboflavin (vitamin B-2). * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 1 quart (32 fl. oz.) aseptic Tetra Pak carton–Liter square with spincap. Retails for $1.78 (2001/02, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 100 gm.: Calories 180, calories from fat 25, total fat 3 gm (4% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 95 mg (4%), total carbohydrate 32 gm (dietary fiber 3 gm [13%], sugars 26 gm), protein 6 gm. Vitamin A 10%, calcium 30%, iron 10%, vitamin D 25%, riboflavin 25%, phosphorus 25%, magnesium 10%. Percent daily values are based on a 2,000 calorie diet.

New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2001. Feb. 3 by 3 by 7.75 inches. Aseptic carton. Chocolate brown, red, white, and tan. Front panel text: "33 mg isoflavones. Logo: Made with organic soymilk. Excellent source of calcium. With vitamins A & D and riboflavin. Lactose and dairy free. Logo of a red heart with a soy protein banner: See side panel for information on the relationship between soy protein and heart disease." A color photo shows chocolate soymilk being poured into a tall glass.

Talk with customer service rep. at The Hain Celestial Group. This product was first available in stores in Feb. 2001.

Talk with Janice Palmer at Tetra Pak. 2001. March 26. This new carton is called "Liter square with spincap."

7945. Gupta, Rajendra ("Raj") P. 2001. Changes in ownership of SoyaWorld, Inc. (Interview). *SoyaScan Notes.* March 17. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** In Dec. 2000, Saputo, a large American cheese company, acquired Dairyworld Foods (Burnaby, British Columbia, Canada) and thereby also acquired Dairyworld's 50% ownership of SoyaWorld, Inc.

Then in Jan. 2001 Sanitarium Foods of Australia bought Peter Joe's 50% ownership of SoyaWorld. Maheb Nathoo is still the managing director of SoyaWorld, and the company is doing well. Maheb is basically a financial man. So SoyaWorld, Inc. is a separate company owned by Sanitarium Foods.

The soymilk company in Scotland, which used ProSoya technology and which Dusty Cunningham helped to start, has declared bankruptcy. Raj is now negotiating with another company to take over the plant and equipment.

Raj has heard that Dean Foods is for sale, and that White Wave's Silk is not yet profitable. Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

7946. Chajuss, Daniel. 2001. Soy protein concentrate: Processing, properties, and prospective. Paper presented at the 92nd Annual Meeting of the American Oil Chemists' Society. 13 p. Held 13-16 March 2001 in Minneapolis, Minnesota.

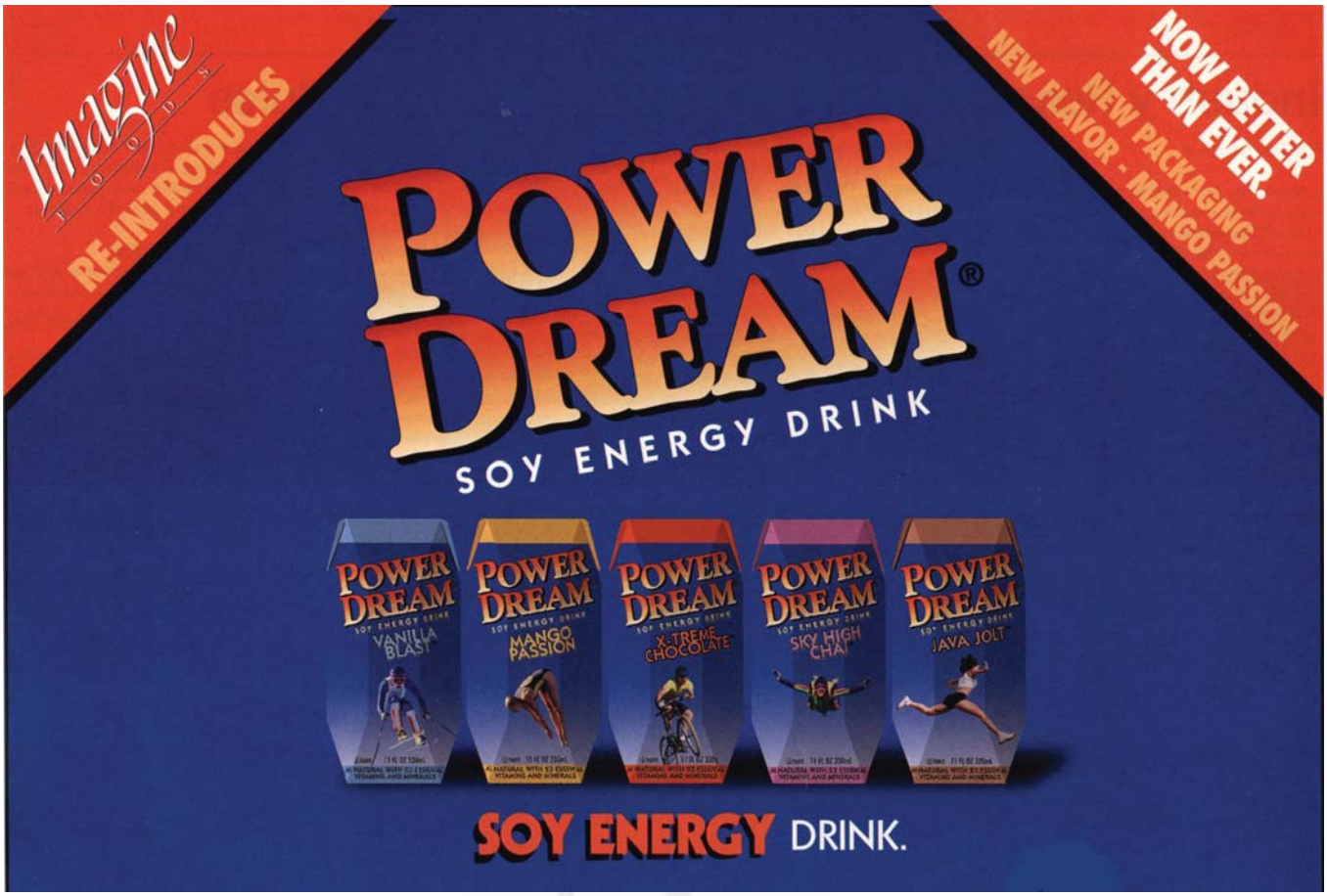
• ***Summary:*** This paper consists of 13 PowerPoint presentation graphics / frames photocopied on 13 pages. 1. Title page. 2. Main presently available industrial soy protein ingredients for the food industry (4 types of soy flours, enzymatic treated soy products, soy protein isolates, soy protein concentrates {SPC}). 3. Soy protein concentrates (three processes: Aqueous alcohol washed "traditional" {Hayes System} concentrates–about 450,000 tonnes {metric tons} per year. Acid washed concentrate–about 20,000 tonnes per year. Hot water washed concentrate–none currently produced). 4. Aqueous alcohol washed soy protein concentrates are usefully applied in (minced meat products, minced and canned fish products, meat analogs and alternatives, bakery products, dietetic foods, infants' formulas, calves milk replacers, fish and piglets feeds and pet foods, other food products). 5. Nutritive advantages of aqueous alcohol washed soy protein concentrate (6 advantages). 6. Technological advantages of aqueous alcohol washed soy protein concentrate (5 advantages). 7. Alcohol washed soy protein concentrate typical material flow. 8. Functional soy protein concentrates (3 types). 9. Typical gross analysis of traditional aqueous alcohol washed ("Hayes System") soy protein concentrate (Moisture 6.0–10.0%. Protein {N x 6.25} dry basis 68.0–72%). 10. Major world processors of soy protein concentrates (table). 11. Cost and margins–Soy protein concentrates by aqueous alcohol wash. 12. Prospective–Soy protein concentrate (Steadily growing market, about 15% per year. "Functional" concentrates with tailor made properties are expected to see rapid future growth). 13. Hayes General Technology Company Ltd.

The table of major world processors of soy protein concentrates shows: ADM (Netherlands) AAW (aqueous alcohol washed). Solae LLC–Central Soya Aarhus (Demark)* AAW. Solae LLC–Central Soya Sogip (France)* AAW. Solbar Hatzor (Israel) AAW. Shemen / Soyprotec Industries (Israel) AAW. ADM (USA) AAW. ADM (USA) Acid washed. Solae LLC–Central Soya (USA)* AAW. Solae LLC–Ceval Alimentos / Bunge (Brazil)* Acid washed. ADM China AAW.

Note: Letter (e-mail) from Daniel Chajuss. 2006. July 8. Asterisks mean that these plants that had once belonged to several firms now (2006) all belong to Solae. The main reason for the two plants using the acid wash process is that these manufacturers had soy isolate plants before they got soy concentrate plants, and this already had the equipment needed (such as a spray drier, decanter, centrifuges, etc.) to produce acid wash soy protein concentrate. The acid washing system is much less widely used today; it was a prior technology.

There is now concern among infant nutrition experts about the high levels of phytoestrogens, and their estrogenic activity, in infant formulas and foods fed to young growing people. "Thus an advantage of the aqueous alcohol wash SPC process, for certain and very special foods, is that it retains *less and not more* of the soy phytoestrogens in the final concentrate."

Nutritional advantages of aqueous alcohol washed SPC: (1) Devoid of antigenic protein components (2S, 7S, 11S proteins, glycinin and beta conglycinin). (2) Devoid of soy "antinutrients" (hemagglutinins, phytates, non-digestible sugars, saponins, etc). (3) Low in antiproteolytic enzyme activity (trypsin and chymotrypsin activity–Kunitz and Bowman Birk trypsin inhibitors). (4) Low estrogenic activity (low in isoflavones / phytoestrogens). (5) Balanced amino



acid ratio. (6) Help to reduce the risk of coronary heart disease (CHD). All these make traditional SPC better suited for making calf milk replacers, piglets starters and fish feeds, and a more nutritive product than other industrial soy protein products, especially for the above noted purposes as well as for young human infants.

It is true today that essentially all soy-based infant formulas are made from soy protein isolates. However, in the past, they have also been made from traditional SPC. So why don't isolate makers use the aqueous alcohol wash process to make isolates (with low estrogenic activity) specifically for use in infant formulas and feeding? Because it is technically difficult and costly–although it would be an ideal product for infant feeding. "Personally I believe that 'refolded-functional' soluble alcohol washed SPC would be better nutritionally, safer, and a more economical product for infants."

SPC producers do not compete (and never have competed) on the high levels of isoflavones / phytoestrogens in their concentrates, as all alcohol washed SPC has low levels of these substances. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

7947. **Product Name:** Grainaissance Rice Shake [Vanilla Soy Creme].
Manufacturer's Name: Grainaissance, Inc.
Manufacturer's Address: 1580 62nd St., Emeryville, CA 94608. Phone: 415-547-7256.
Date of Introduction: 2001. March.
Wt/Vol., Packaging, Price: 16 oz (pint) plastic bottle.
How Stored: Refrigerated.
New Product–Documentation: Ad (1/6 page, color) in Natural Foods Merchandiser. 2001. March. p. 143. "Naturally soy... Perfectly delicious." Amazake: The amazing shake!... "A great tasting, naturally sweet blend of rice, vanilla, and smooth creamy soymilk... Made with organic rice and non-GMO soy with no added sweeteners." Spot in *New Product Review* (Penton/NFM, Colorado). 2001. Spring. p. 4. "Grainaissance announces a new flavor to its line of Amazake Rice Shakes: Vanilla Soy Crème." It is made with organic rice and non-GMO soy, has no added sweeteners, and contains 32 mg of naturally occurring isoflavones per 16 oz serving.

7948. **Product Name:** Power Dream: Soy Energy Drink (Fortified Soymilk in Aseptic Cartons) [Vanilla Blast, Mango Passion, X-Treme Chocolate. Sky High Chai, Java Jolt].
Manufacturer's Name: Imagine Foods, Inc. (Marketer-

Distributor). Made in Manteca, California, by California Natural Products.
Manufacturer's Address: CNP: P.O. Box 139, Manteca, CA 95336. Imagine: 350 Cambridge Ave., Suite 350, Palo Alto, CA 94306. Phone: 650-327-1444.
Date of Introduction: 2001. March.
Wt/Vol., Packaging, Price: 11 fl oz (330 ml) Tetra Prisma Aseptic carton. Retails for $1.48 (2000/05, Open Sesame, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Ad in Natural Foods Merchandiser. 2001. March. p. 21. "Imagine Foods re-introduces Power Dream: Soy Energy Drink." A photo shows 5 packs of the various flavors against a deep blue background. "Finally, an energy bar you don't have to wash down. All the benefits of soy. Organic soybeans... Huge consumer advertising campaign. Over 65 million impressions during the spring and summer."

7949. **Product Name:** Baby's Only Organic Soy [Toddler Formula].
Manufacturer's Name: Nature's One, Inc.
Manufacturer's Address: 12 Westerville Square, Suite 308, Westerville, OH 43081. Phone: 614-898-9758.
Date of Introduction: 2001. March.
Ingredients: Organic brown rice syrup, organic soymilk powder, organic high oleic sunflower oil, organic coconut oil, tricalcium phosphate, calcium ascorbate (vitamin C), natural vanilla flavor, soy lecithin (non-GMO), calcium citrate, sodium chloride, etc.
Wt/Vol., Packaging, Price: Can.
How Stored: Shelf stable.
New Product–Documentation: Leaflet (8½ by 11 inches, black-and-white, 6 panel front and back) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March 8-11. "Baby's Only Organic: Supporting Your Baby's Health Organically." On the front panel is an illustration of a can of this product. Contents of leaflet: Frequently asked questions. Nutritional comparison chart. Product description. Ingredients. Contact information. Website: www.naturesone.com.

Talk with John Falk. 2002. Sept. 27. He has heard: (1) They have a patented process for adding an enzyme to break down the complex carbohydrates that cause flatulence. (2) The product is not doing well–according to a product manager at Ross Labs.

7950. **Product Name:** OdwallaMilk [Original, or Chocolate].
Manufacturer's Name: Odwalla, Inc.
Manufacturer's Address: Dinuba, CA 93618. Phone: 1-800-Odwalla (639-2552).
Date of Introduction: 2001. March.
Ingredients: Original: Organic soymilk (water, organic

whole soybeans*), organic basmati ricemilk (filtered water, organic basmati rice*), organic oatmilk (filtered water, organic whole oats), organic evaporated cane juice*, peaches, mangoes, bananas, natural flavor, kosher sea salt, Madagascar vanilla extract, carrageenan (natural seaweed product), vitamins and minerals (tricalcium phosphate, folic acid, vitamin B-12, vitamin A palmitate, vitamin D-3, vitamin E acetate). * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 15.2 fl. oz. (450 ml), or half-gallon HTP plastic bottle. 450 ml retails for $1.69 (2001/04, Lafayette, California).
How Stored: Refrigerated.
New Product–Documentation: Ad (8½ by 11 inch, color) in New Product Review (Penton/NFM, Colorado). 2001. Spring. p. 18. "Introducing OdwallaMilk." This dairy-free product is "A delicious blend of organic soy, rice and oat milks. Nourishment at a glance: More calcium than whole milk. Good source of protein. Vitamin A & D enriched. Zero cholesterol. Drink it & thrive! No GMO. Udder(less)ly fantastic."

Talk with Odwalla customer service rep. 2001. March 30. This product was first available in stores on March 5. Suggested retail prices are: 15.2 fl oz (450 ml; single serve)

$1.69, quart $1.99, half gallon $3.49. The chocolate flavor is not available in the half gallon size. In retail stores it is sold in the Odwalla cooler and sometimes also in the refrigerated dairy case.

Product with Label (original, and chocolate) purchased at Safeway supermarket in Lafayette, California. Plastic bottle. Red, yellow, blue and black on white. Label text is the same as ad above. Soyfoods Center taste test. The Original is a delicious, very original product. The use of rice and oat milks gives the product a thick, creamy consistency like that of a milk shake. Excellent! The Chocolate is nothing special.

Brochure (6-panels, color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March 8-11. "Introducing OdwallaMilk." Gives "Four reasons for OdwallaMilk," photos of various products, nutrition facts, and nutritional comparison of OdwallaMilk (original) with whole dairy milk.

7951. **Product Name:** Pacific Heart Health (Healthy Lifestyle Drinks): [Chocolate, Tropical Sunrise, Orange Blossom Chai].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 2001. March.
Ingredients: Tropical Sunrise: Filtered water, oat base (filtered water, natural oat groats), organic soymilk* (filtered water, whole organic soybeans*), natural cane sweetener, soy protein isolate, oat bran, phytosterols, etc. * = Certified organically grown and processed in accordance with the Oregon Tilth standards and the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 8 oz. pack. Ready to drink.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (8½ by 11 inches, color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March 8-11. On the front is a color photo of the label. "Promotes healthy cholesterol levels." "Contains three ingredients–soy, oats, and phytosterols–all approved by the FDA and proven to reduce the risk of heart disease by lowering LDL 'bad' cholesterol. Antioxidants (Vitamins A, C. E, and selenium) are added to protect cells from free-radical damage." "Non-GMO. Low fat, cholesterol and dairy free." On the back are nutritional facts, ingredients, and three flavors with the UPC of each.

7952. **Product Name:** Pacific Bone Health (Healthy Lifestyle Drinks): [Orange Smoothie, Strawberry Guava, Mixed Berry].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 2001. March.
Ingredients: Orange Smoothie: Organic soymilk* (filtered water, whole organic soybeans*), orange juice (filtered water, orange juice concentrate), filtered water, natural cane sweetener, inulin/FOS (fructooligosaccharides from chicory)... soy isoflavones, plus vitamins and minerals. * = Certified organically grown and processed in accordance with the Oregon Tilth standards and the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 8 oz. pack. Ready to drink.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (8½ by 11 inches, color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March 8-11. On the front is a color photo of the label. "Promotes healthy bone density." "A delicious, creamy, non-dairy blend of soy and 30% fruit juices, Bone Health contains 500 mg calcium, 80 mg soy isoflavones, and essential bone nutrients like boron, magnesium, vitamins K and D along with FOS (3g/serving) to synergistically enhance calcium absorption." "Non-GMO. Low fat, cholesterol and dairy free." On the back are nutritional facts, ingredients, and three flavors with the UPC of each.

7953. **Product Name:** Pacific Fiber Balance (Healthy Lifestyle Drinks): [Berry Lemonade, Strawberry Guava, Pineapple Orange Banana].
Manufacturer's Name: Pacific Foods of Oregon, Inc.
Manufacturer's Address: 19480 S.W. 97th Ave., Tualatin, OR 97062. Phone: 503-692-9666.
Date of Introduction: 2001. March.
Ingredients: Pineapple Orange Banana: Filtered water, oat base (filtered water, natural oat groats), fruit juice concentrate blend (pineapple concentrate, banana puree, orange concentrate), natural cane sweetener, soy fiber, vegetable fiber, inulin (a fiber source from chicory root), plus vitamins and minerals. * = Certified organically grown and processed in accordance with the Oregon Tilth standards and the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: Three 8 oz. cartons per pack. Ready to drink. Retails for $1.99 (2001/04, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (8½ by 11 inches, color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March 8-11. On the front is a color photo of the label. "Promotes regularity and a healthy digestive system." "Fiber Balance is a delightful blend of fruit juices combined with 13 grams (total) of both soluble and insoluble fiber and our own blend of antioxidant vitamins, minerals and B-complex vitamins, creating a unique and completely natural alternative to bring balance to your body." "Non-GMO. Low fat, cholesterol and dairy free." On the back are nutritional facts, ingredients, and three flavors with the UPC of each.

Product with Label purchased at Trader Joe's in

Lafayette, California ($1.99 for 3-pack). 2001. April 23. Yellow, purple, black and white on orange and red. A double silhouette shows a slender person. Contains 30% juice, and both soluble and insoluble fiber. 50% daily value of fiber.

7954. **Product Name:** So Nice Soyganic [Mocha].
Manufacturer's Name: SoyaWorld Inc.
Manufacturer's Address: Blaine, Washington 98230. Phone: 1-877-414-2078.
Date of Introduction: 2001. March.
Wt/Vol., Packaging, Price: 1 quart.
How Stored: Refrigerated.
New Product–Documentation: Leaflet (8½ by 11 inches, color, single sided) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March 8-11. "So Nice... So delicious. New So Nice Soyganic Mocha. New flavor." A large color photo shows the carton and Label. "Enriched soy milk. Enriched with 14 essential nutrients & low fat. Made with certified organic soybeans. ProSoya Process." Website: www.sonice-soyganic.com.

7955. SoyaWorld Inc. 2001. Corporate profile (Leaflet). Burnaby (suburb of Vancouver), BC, Canada. 1 p. 28 cm. Single sided.
• ***Summary:*** This leaflet, printed on one side using a color printer, describes the company and its four products: So Good, So Nice Soyganic, Sunrise, and Rice Choice. No address or phone number are given. Address: 4074 Lozells Ave., Burnaby (suburb of Vancouver), BC, Canada.

7956. SoyaWorld Inc. 2001. Healthier sales, healthier profits in a heartbeat (Leaflet). Blaine, Washington. 1 p. Front and back. 28 cm.
• ***Summary:*** On the front of this glossy color leaflet are color photos of four So Nice Soyganic soymilk products in three different cartons: 1 quart gable-top, ½-gallon gable-top with screw cap, and 1 quart Tetra Brik Aseptic Slim. Nine benefits of the products are listed, incl. "No refined sugar–Soy Nice Soyganic is subtly sweetened with organic agave syrup naturally extracted from the blue cactus of Mexico." Note: This syrup has a very low glycemic index. On the back, tables show nutritional information, ingredients for each of four flavors (natural, original, vanilla, chocolate), UPC codes and case and pallet ordering information. Website: www.soyaworld.com; www.sonice-soyganic.com. Address: Blaine, Washington 98230. Phone: 1-877-414-2078.

7957. SoyaWorld Inc. 2001. So Nice: Better taste, better flavor, better for you (Leaflet). [British Columbia, Canada]. 3 panels each side. Each panel: 17 x 10 cm.
• ***Summary:*** On the front panel of this glossy color leaflet is a color photo of a carton of So Nice Soyganic Original Soy Milk. Contents: About So Nice Soyganic. A healthy alternative to cow's milk: Soy and its protective compounds.

Three recipes. Four flavors and three sizes: quart gable-top, ½-gallon gable-top with screw cap, and 1 quart Tetra Brik Aseptic Slim. Nutrition facts and ingredients. Website: www.soyaworld.com; www.sonice-soyganic.com.

7958. *Soyfoods Canada Newsletter.* 2001. Founding members of Soyfoods Canada. March. p. 1.
• ***Summary:*** Soyfoods Canada was started just 4 months ago. The eighteen founding member companies are: ADM Protein

Specialties, C&M Seeds, Galaxy Foods, Momo's Kitchen, Nutri-Passion Foods Inc., Ontario Soybean Growers, SoyaWorld Inc., Sunrise Soya Foods, Tofutti-Cholac Foods, Art Allen Consulting, Flamaglo Food Consultants Ltd., Meatless Gourmet, Moulin Aux Abenakis Inc., OntarBio, Snobelen Farms Ltd., St. Clair Agri Services Ltd., Superior Tofu Ltd., W.G. Thompson & Sons Ltd.

Note: Membership costs $500 per year. Address: Soyfoods Canada, Box 1927, Blenheim, Ontario N0P 1A0, Canada.

7959. Stephens, Roger; Stephens, Jane Ade. ed. and comp. 2001. Soyfoods guide 2001: Helpful tips and information for using soyfoods. Indianapolis, Indiana: Stevens & Associates, Inc. Distributed by the Soy Protein Partners. 24 p. Illust. No index. 28 cm. [23 ref]

• ***Summary:*** This guide is available only on a limited basis to dietitians and health professionals. Contents: Foreword. Keep your heart healthy: Super soy protein smoothie. Beans, beans, good for the heart: The more you eat, the better your chances of lowering your blood cholesterol levels. Cholesterol: What's in a claim. Sample soy meal planner (4 meals a day for 5 days, to get 25+ grams/day of soy protein). Dietary guidelines for Americans. Composition of soyfoods (table). The healthy bean: Isoflavones, heart disease, menopause and osteoporosis, allergies, diabetes and kidney disease, fat. Isoflavone content of soyfoods (table). The state of soy research. Protein content of soyfoods (table). Soy resources: Web sites, books. Soyfood substitution chart. Descriptions of soyfoods: Traditional soyfoods, soy-based products, soy ingredients. Recipes: Meat alternatives. Textured soy protein. Soy flour. Whole soybeans. Soymilk. Tofu. Soy snacks and smoothies. Soy–Good for your heart.

The Foreword (p. 2) states: "The *2001 Soyfoods Guide* is distributed by the Soy Protein Partners. Partners include state soybean boards from: Alabama, Arkansas, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, North Carolina, South Dakota, Tennessee, Texas, Virginia, and Wisconsin. Industry partners include: American Soybean Association, Archer Daniels Midland Company, Central Soya Co., Minnesota Soyfoods Association, Protein Technologies International, Soy Protein Council, Soyfoods Association of North America, Soyfoods Council and the United Soybean Board." Address: 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 317-926-6272.

7960. SunRich. 2001. SunRich: Recipe ideas (Recipes cards–Leaflet). Hope, Minnesota. 5 panels each side. Each panel: 10 x 15 cm.

• ***Summary:*** A glossy color leaflet sent by Patricia Smith from Natural Products Expo West. 2001. March. All recipes call for Sweet Beans (SunRich's green vegetable soybeans). Address: P.O. Box 128, 3824 S.W. 93rd St., Hope, Minnesota 56046. Phone: 800-297-5997.

7961. SunRich. 2001. SunRich: Premium whole soybeans. Your direct link to nature (Leaflet). Hope, Minnesota. 1 p. Front and back. 28 cm.

• ***Summary:*** A glossy color leaflet sent by Patricia Smith from Natural Products Expo West. 2001. March. On the cover is a large photo of wooden bowl filled with whole dry soybeans, next to soy sauce and cubes of tofu. "At Sunrich we produce and supply Identity Preserved (IP), Non Genetically Modified (Non-GMO) and Organic soybeans."

Soybean varieties for all food applications: Soymilk, tofu, soysauce, miso & natto, nimame, edamame. Address: P.O. Box 128, 3824 S.W. 93rd St., Hope, Minnesota 56046. Phone: 800-297-5997.

7962. Wildwood Natural Foods. 2001. The premier supplier of organic vegetable protein since 1980 (Leaflet). Santa Cruz, California. 3 panels each side. Each panel: 22 x 9 cm.

• ***Summary:*** Leaflet (green, yellow and red on beige) sent by Patricia Smith from Natural Products Expo West. 2001. March. Similar in design to a leaflet released in 1998. On the front panel is a square illustration of green trees growing beside a lake and reflected in its placid water. "our mission is to nourish health and well-being through the promotion of dietary and agricultural change."

The inside 3 pages: Across the bottom half is the light green silhouette of trees. "Wildwood roots (founded in 1980). The westcoast's soy dairy. Tofu: What is that stuff?, get your money's worth, know your tofu, Great, but what do I do with it? Fat from soy oil: Isn't tofu high in fat? Nutritional info for Wildwood Nigari firm style tofu vs. Calcium fortified tofu, medium style.

Panel 5: One recipe plus 18 recipe ideas. Rear panel: Partial list of Wildwood products: Organic firm tofu. Organic medium low-fat tofu. Organic soymilk (plain or honey vanilla). Braised and grilled entrees. [Tofu] Fillets and cutlets: Baked, Smoked, or Agé style, Savory, Teriyaki, Thai, Szechwan, BBQ, or Hawaiian flavors. Vegie burgers: Original, Mexican, or Wild West (Southwestern style). Tofu salads: Dill, Mediterranean, Antipasto, or Firenze. Mid-East Hummus & Baba Ganooj. "For a complete list of Wildwood products, visit our website, www.wildwoodnaturalfoods.com." Address: 1560 Mansfield Ave., Santa Cruz, California 95062; 135 Bolinas Rd., Fairfax, CA 94930. Phone: 800-499-TOFU.

7963. *SoyaScan Notes.* 2001. Safeway supermarket in California is now carrying many brands and flavors of refrigerated soymilk and rice beverage (Overview). April 2. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Before March 2001 Safeway supermarket in Lafayette, California, had never carried refrigerated soymilk; they did carry 1-2 flavors of soymilk in aseptic

cartons, always unrefrigerated and shelved in an unlikely place. Suddenly in March 2001, as part of a major expansion program, Safeway began carrying the following products in two refrigerated locations. (1) In the dairy case next to cow's milk, all in gable-top cartons: Westsoy Plus, vanilla, organic, $3.19/half gallon (equivalent to $1.60/quart). White Wave Silk (calcium enriched), chocolate, vanilla, or plain, organic, $1.89/quart, or $3.29/half gallon vanilla. Rice Dream (rice beverage), vanilla or original, organic, $3.59/half gallon (equivalent to $1.80/quart).

(2) In the Odwalla cooler at the opposite corner of the store near the produce section: Odwallamilk, original, organic in plastic bottles $1.69/15.2 oz, or $1.99/quart, or $3.49/half gallon (equivalent to $1.75/quart). Odwallamilk, chocolate, non-organic, $1.69/15.2 oz. Wildwood Soymilk, real vanilla or chocolate, organic, gable-top cartons, $1.99/quart.

By comparison: Lactaid is shelved next to soymilk in the refrigerated dairy case. Lactaid quarts are $1.99–the same price as Silk. Lactaid half gallons (fat free, low fat, or fat free) are each $3.59–$0.30 more expensive than Silk half gallons and $0.40 more expensive than Westsoy Plus.

7964. Callahan, Patricia; Kilman, Scott. 2001. Seeds of doubt: Some ingredients are genetically modified, despite labels' claims. Lab test finds altered DNA in SoyO's, Veggie Bacon, belying market pitch. No proven dangers to health. *Wall Street Journal.* April 5. p. A1-A14.
• ***Summary:*** Tests of 20 food products bearing the words "Non-GMO" on their package, commissioned by *The Wall Street Journal,* found some genetically engineered (GE) material in 11 products, and more substantial amounts in another 5 products. The largest amounts of GE soybeans were found in Yves Canadian Veggie Bacon. Yves first placed the new label on its products about a year ago, but the company isn't recalling packages already on the shelves because, according to a spokesman, there are no safety or health issues associated with GE soybeans. However the federal Food, Drug, and Cosmetic Act prohibits placing misleading labels on food products.

The non-GMO label is one of the hottest new trends in food marketing. Industry watchers believe the non-GMO segment is growing about as fast as that of organically grown products, a market worth $7.8 billion that is growing at 8 times the rate of the packaged foods market as a whole.

In late Jan. 2001, a national phone survey conducted by the Pew Charitable Trusts, found that 75% of respondents wanted to know about the presence of GE ingredients in food, and 58% opposed such ingredients. The carton of Silk-brand soymilk, made by White Wave, promises that its contents are "Certified GMO Free Soy." However, says the article, there is no such thing as "certified GMO-free." This long, excellent article discusses each of the many points at which a product can become contaminated with GE soybeans, then points out why no reasonable company should claim that none of its products labeled "Non-GMO" are 100% free. The first thing that is needed is a tolerance level, probably less than 1%.

In a letter to the editor (April 25) responding to this article, Gregory Jaffe (Co-Director, Biotechnology Project, Center for Science in the Public Interest, Washington, DC) notes that the FDA does not "approve" genetically engineered (GE) crops for humans. It does not even require notification before a GE crop is marketed. If a seed company wishes to voluntarily submit safety data on a GE crop, the FDA will review it to see that the food complies with existing laws. "The FDA should approve the safety of every genetically engineered food before it is marketed. Only a mandatory approval process will safeguard our food supply and bolster public confidence in those foods." Address: Staff Reporters, Wall Street Journal.

7965. Deogun, Nikhil; Helliker, Kevin. 2001. Suiza nears $1.5 billion deal for Dean Foods: Combination would involve big dairy processors, raise antitrust issues. *Wall Street Journal.* April 5. p. A3, A14.
• ***Summary:*** Suiza Foods plans to acquire rival Dean Foods for about $1.5 billion in stock and cash and the assumption of nearly $1 billion in debt. The deal would join America's two biggest dairy processors and create a company with about $10 billion in annual sales. Suiza's FY 2000 revenues were about 42% larger than those of Dean Foods. Suiza entered the dairy business less than 8 years ago and has become the leader consolidator of the decentralized / fragmented industry. Suiza now has a 20% share of this market, compared with 14% for Dean Foods. The boards of both companies have approved the agreement yesterday. Suiza makes a soymilk, Sun Soy. Dean Foods owns a share in White Wave that makes Silk, America's best-selling soymilk. Address: Staff Reporters, Wall Street Journal.

7966. King, Paul E. 2001. Work with soyfoods. Founding *The Soy Daily* (Interview). *SoyaScan Notes.* April 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Paul was born in Hawaii of parents who are Theosophists and vegetarians. His father was a sculptor. Raised a vegetarian, he lived in Hawaii until age 10. Then went to law school but never passed the bar. He worked for 17 years as an administrator at Massachusetts General Hospital–the hospital for Harvard University–so it was very rigorous and professional work.

He is still largely a vegetarian, but now eats seafood. His wife, Gail, is a meat eater = omnivore.

Paul and has wife, Gail (married for about 4 years) are very excited about soy; they published a soy recipe book in Jan. 2000 (also available as an e-book that people can download from their website, or on CD-ROM). On 25 Aug. 2000 they started a website named The Soy Fan Club's

Drive-in (www.thesoyfanclub.com). The same website is now also named www.thesoydailyclub.com.

On 13 Nov. 2000 they published the first issue of a bi-weekly e-zine (Web magazine that people pay to download) named *The Soy Daily;* back issues can be found at their website. Membership in the Club, which includes the e-zine, costs $21/year. Before long, *The Soy Daily* was sent out free of charge, and began to be published once a week.

The content of the original *Soy Daily* issues covered research into the soybean itself, and use of soy in a variety of ways including food and biodiesel. Some content about soy farming was always part of *The Soy Daily.*

On 22 Oct. 2000 they began to teaching classes at Northern Essex Community College–Timothy School in Methuen, Massachusetts. They taught two classes a week on Wednesday evenings from 7 to 9 p.m. in this non-credit, adult education, special interest course. They gave soy information, taught recipes for breakfast, lunch, and dinner, and had many soy products to taste. Their first class brought in 6 students. Their largest class was 10 students beginning on 25 March 2001. The class is presently held on 3 Wednesday nights each week.

Paul and Gail got a "scholarship" (free admission) to the Natural Products Expo at Anaheim in March 2001. There they first met many people in the natural foods industry, the most memorable and impressive of whom were: (1) Brenda Oswalt of Dixie USA; formerly an anthropologist, she worked on the "Lucy" dig in Africa. (2) Peter Murry of Iowa Soy in Vinton, Iowa–very friendly.

The second generation of SunSoy soymilk is much better than the first; it has been reformulated. Their four favorite soymilks are: Sunsoy Vanilla, Vendon Cappuccino, Pacific Strawberry, and (as a plain soymilk for cooking) Vitasoy Creamy. Address: The Soy Fan Club's Drive-in, 42 Conrad St., Methuen, Massachusetts 01844-2712. Phone: 978-681-6606.

7967. Soyfoods Association of North America. 2001. Presenting: The secret ingredient for good health. Washington, DC. 6 cards with index tabs. April. 11 x 19 cm.
• ***Summary:*** Each glossy card contains a colored tab and usually a color photo or logos. The index tabs on the six cards read: Announcement (April is soyfoods month). SANA website (www.soyfoods.org). Beverages and toppings. Entrees. Ready-to-eat. Survey. Between the cards are various coupons and small promotional brochures. The cards are packaged in paperboard box 23.5 by 4 by 11 cm high. Participating companies and brands are: SunRich. Silk (White Wave). Galaxy Nutritional Foods. Soy-7 Soy Enriched Pasta (Martha Gooch). Lightlife. Westsoy (Hain). Heartland Fields. Smoke & Fire. Vitasoy. So Nice (SoyaWorld Inc. / ProSoya). Boca. In the back is a news release titled "Start your heart towards health in February–Enjoy soy" released for Heart Month in Feb. 2001. Address: 1723 U Street, N.W., Washington, DC 20009. Phone: 202-986-5600.

7968. *SoyaScan Notes.* 2001. General Mills and DuPont announce launch of new soymilk product in joint venture (Overview). May 14. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** About 8th Continent soymilk.

7969. Tellijohn, Andrew. 2001. Big G [General Mills], DuPont venture to release first soy product. *CityBusiness* (*Minneapolis, Minnesota*) 18(51):7. May 18.
• ***Summary:*** "Nothing in the healthy food industry is more en vogue right now that soy products," and General Mills Inc. (Golden Valley, Minnesota) soon plans to enter that market. Sixteen months ago General Mills announced a joint venture with a subsidiary of DuPont Co. The resulting company, 8th Continent (based in Minnetonka, Minnesota) will release its first product, soy milk, this summer. It will be available in original, vanilla, and chocolate flavors.

"Because of its respected status nationally, General Mills' entry into the so-called 'functional foods' market will legitimize the soy movement, said William Shurtleff, founder and president" of the Soyfoods Center (Lafayette, California). When General Mills puts its name on a product, that is a kind of guarantee, Shurtleff added.

7970. Severson, Kim. 2001. Jury is out on benefits of soy. *San Francisco Chronicle.* May 23. Food section. p. 1, 7.
• ***Summary:*** Expresses concern that some Americans may be overdosing on soy. People are going way overboard since the FDA announced that soy reduces the risk of heart disease. Address: Staff writer.

7971. Terman, James. 2001. Update on White Wave's Silk soymilk (Interview). *SoyaScan Notes.* May 29. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Vanilla Silk was introduced in quart and half-gallon cartons in Jan. 1996; but the word "Vanilla" did not appear on the carton until "Plain" was introduced in July 1998. Chocolate Silk was introduced in quart cartons in April 1996 and half gallon cartons in April 1998. Plain Silk [dairylike, only two-thirds as sweet as vanilla] was introduced in quart cartons in July 1998 and half gallon cartons in April 1999.

Today, half-gallons are outselling quarts; quarts are more of an introductory size. Plain [dairylike] is now the best-selling flavor. White Wave has never sold just plain soymilk with nothing added; moreover, James is not aware of any other major soymilk company that offers such a product.

Silk is doing very well financially; it is quite profitable. White Wave is working to bring their margins up by bringing their costs down, now that they have their own soymilk extraction facility, which will pay for itself quickly. Silk just

got into Walmart, which is a huge nationwide account.

General Mills is planning to introduce a soymilk named 8th Continent in July or August. It will be based on soy protein isolates from DuPont's Protein Technologies International and will be sold in quarts (32 oz) and 8 oz plastic (PET) bottles. James has heard that General Mills plans to spend a lot of money putting this new product in dairy cases nationwide.

White Wave plans to introduce Silk in an 11-ounce single-serve PET bottle (chocolate and vanilla) in July 2001.

James is very excited about the future of White Wave's baked tofu; it will be repackaged, it will be cubed to make it more convenient, and new flavors will be introduced. When America really starts to consume tofu, it will be as a baked, flavored, ready-to-eat product–that is very convenient. "We're only one Mad-Cow outbreak away from having tofu sales shoot for the stars." The sleeper is baked tofu; James thinks it could be as big as or bigger than Silk, in part because America consumes more meat than dairy products.

James has just read a very interesting book, *The Cultural Creatives,* by marketing expert Paul Ray. His premise is that these people are not connected or part of any network. Its 55 million people who all think they are unique individuals and mavericks, and don't think there is anyone else like them out there. Its a psychographic, not a demographic, profile. Financially they range from just below the very poor to just below the very wealthy. But they are not materialists and they do not subscribe to the consumer society or worldview. They are careful consumers. Address: Vice President–Marketing, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301. Phone: 303-443-3470.

7972. FutureHarvest. 2001. Research gives birth to Nigerian soybean industry: Tofu becomes a hunger fighter and cash earner for women farmers and entrepreneurs (Web printout). *www.scienceinafrica. co.za /may /tofu.htm.* May. Printed 27 Aug. 2009.

• ***Summary:*** The article begins: "Ask any farmer in central Nigeria which local food crop is good for her children, puts cash in her pocket, and enriches the soil, and she'll probably say 'soybean.' Then ask her how she prepares it, and she'll likely say 'as tofu.'

In just over two decades, Nigeria–the continent's most populous country (est. 148 million in 2007)–has become Africa's largest producer of soybeans and soy products. In the year 2000 Nigeria harvested about 500,000 tons of soybeans, a 20-fold increase in just over 20 years. That crop, which was valued at US$85 million, "was used to produce a variety of traditional dishes, as well as processed foods such as soymilk and specially formulated foods to help malnourished infants and children."

"A near-perfect crop: 'Soybeans are a near-perfect crop for a country like Nigeria,' says Lukas Brader, director general of the International Institute of Tropical Agriculture, IITA, one of the 16 Future Harvest centers. 'Nutritionally, they carry twice the protein of meat or poultry and contain all eight essential amino acids needed for childhood development. Soybeans are also good for the environment,' Brader says. 'Because they evolved in Asia, they are far less vulnerable to local insects than African bean crops and require fewer insecticide sprays. They also fix atmospheric nitrogen, which reduces the need for farmers to purchase fertilizer.'

"Best of all, they are affordable. In Nigerian markets, soybeans cost about one-fifth as much as other forms of protein, including dairy and fish, and are easier to store and transport. "'Those are big advantages for a crop,' Brader says. 'But to get to that stage, our researchers had to produce an entirely new plant type that could cope with high disease pressure, compete with parasitic weeds, and grow in African soils.'

"'Basically, our plant breeders had to redesign the crop,' he says. IITA soybeans, he notes, are two to three times more productive under Nigerian conditions than U.S. and Asian varieties.

"Funding for the research, some US$20 million, was provided by the members of the Consultative Group on International Agricultural Research (CGIAR), building on seed money provided by Canada's International Development Research Centre (IDRC)."

"My Second Husband: 'Soybean has been a godsend for Nigeria,' says Professor Dele Fakorede, an agricultural expert based at Nigeria's Obafemi Awolowo University. 'Our farmers are earning good money, our small industries are prospering, and our children and young mothers are benefiting from a locally-made, protein-rich food.'

"Nigerian women would seem to agree. In Benue State, a major soybean producing area in the central part of the country, women farmers often describe the crop as their 'second husband' because it helps to pay school fees and medical bills.

"'Soybeans are making it possible for a lot of women to earn their own way and achieve a greater degree of independence than ever before,' says Fakorede.

"While the new plant types have made it possible to expand soybean farming across large parts of the country, most observers agree that what sparked production was the development of soy-based food products, including a West African version of tofu. It was a Japanese researcher, Osamu Nakayama, who got the idea to use tofu as a substitute for *wara,* a traditional but expensive kind of local cheese, says Brader. 'And, of course, there were skeptics.'

"'A lot of people had doubts that we would succeed or that tofu would ever be accepted by Nigerian consumers,' Nakayama says, 'but eventually we succeeded in making a good *wara* substitute using soymilk and local plant extracts.' Nakayama worked at IITA as part of a scientific exchange program sponsored by the Japan International Cooperation

Agency (JICA).

"The idea, Nakayama says, came from watching what local village women did to prepare food for their families. 'We learned a lot through simple observation and by asking questions about traditional methods, he says.' Nakayama's 'wara-tofu' is similar in appearance to farmers' cheese or firm yogurt and has a taste and texture that's only slightly different than Asian-style tofu. Local cooks say that it is easily incorporated into traditional recipes and costs about a third as much as wara made from cow's milk.

"Today, the demand for tofu and other processed soy foods is growing at an annual rate of 20 percent, fueling a major cottage industry in rural Nigeria. A follow-up report by researchers at Nigeria's University of Ibadan points out that children who grow up in soybean-producing communities are generally healthier and suffer less malnutrition than the average Nigerian child. Improved nutrition, researchers believe, also helps to limit the spread of HIV/AIDS.

"In the places where soybeans are grown, roughly 40 percent of the income earned by women is thought to be derived from soybean production or processing. Thus far, nearly 100,000 Nigerians, three-fifths of them women, have been trained in soybean production and in the preparation of soy products by local NGOs, hospitals, and church groups working in cooperation with IITA and various government agencies.

"Currently, about 140 soy-based food products have been developed for use in Nigeria."

A color photo shows a Nigerian woman, in traditional dress, holding a plate filled with pieces of fried "wara-tofu."

7973. Shurtleff, William; Aoyagi, Akiko. 2001. The book of tofu. 2nd ed. Revised. Berkeley, California: Ten Speed Press. 336 p. May. Illust. by Akiko Aoyagi Shurtleff. Index. 28 cm. [321 ref]

• ***Summary:*** The spine has a new look, with dark brown letters on a beige background. At the base of the spine is the Ten Speed Press logo in orange.

This edition contains an updated "Appendix B–Directory of Tofu Makers" (p. 313-316, updated to 22 Feb. 2001). The copyright page and inside rear cover have also been updated; the SoyaScan database now contains 62,000 records. The preface has been expanded. Numerous other small changes have been made throughout the book. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

7974. **Product Name:** Westsoy Soy Smoothie [Banana Berry, or Tropical Whip].
Manufacturer's Name: Westbrae Div. of The Hain Celestial Group (Product Developer-Marketer).
Manufacturer's Address: New York City, New York.
Date of Introduction: 2001. May.
Ingredients: Banana Berry: Filtered water, organic soymilk

(filtered water, organic whole soybeans*), dehydrated cane juice, banana puree (banana puree, citric acid, ascorbic acid), juice concentrate blend (apple, strawberry, cherry, raspberry and blackberry), natural flavors, pectin, tricalcium phosphate, citric acid, sea salt, carrageenan (carrageenan and salt), beet juice (for color). * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 1 quart (32 fl. oz., 946 ml) aseptic Tetra Pak carton–Liter square with spincap.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (8½ by 11 inch, color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March. First ship 15 May 2001. A color photo shows the front panel (label) of each product.

7975. **Product Name:** Westsoy Soy Shake [Chocolate, or Vanilla].
Manufacturer's Name: Westbrae Div. of The Hain Celestial Group (Product Developer-Marketer).
Manufacturer's Address: New York City, New York.
Date of Introduction: 2001. May.
Ingredients: Chocolate: Organic soymilk (filtered water, organic whole soybeans*), filtered water, dehydrated cane juice, cocoa powder, natural vanilla flavor with other natural flavors, tricalcium phosphate, sea salt, carrageenan, vitamin A palmitate, vitamin D-2, riboflavin. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 1 quart (32 fl. oz., 946 ml)

aseptic Tetra Pak carton. Retails for $1.79 (2001/10, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (8½ by 11 inch, color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March. First ship 15 May 2001. A color photo shows the front panel (label) of each product.

Product (Chocolate) with Label purchased at Trader Joe's in Lafayette, California. 2001. Oct. 6. This store carries both Chocolate and Vanilla. 3 by 7.75 by 3 inches. A color photo on the front panel shows a tall, foamy glass of chocolate soymilk with a straw (on which is a red spiral pattern) in it. Soy protein heart health claim on lower right front. "Excellent source of calcium. With vitamins A & D and riboflavin. Lactose and dairy free." On the back panel: "Check out Westsoy's benefits: 30 mg of isoflavones. No soy protein isolates. Excellent source of calcium. Delicious creamy taste–not 'beany' like others. A cholesterol free food. Low sodium. Totally lactose & dairy-free." Dated: 2001. Soyfoods Center taste test. Nice thickness (like a shake), but too rich and too sweet. Contains a whopping 23 gm of sugars per serving–from cane sugar! Overall: 6.

7976. **Product Name:** Westsoy Green Tea Chai.
Manufacturer's Name: Westbrae Div. of The Hain Celestial Group (Product Developer-Marketer).
Manufacturer's Address: New York City, New York.
Date of Introduction: 2001. May.
Ingredients: Filtered water, organic soymilk (filtered water, organic whole soybeans*), dehydrated cane juice, organic expeller pressed canola oil*, natural vanilla flavor with other natural flavors, natural tea blend (black tea, green tea), cinnamon, carrageenan, sea salt, guar gum. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 1 quart (32 fl. oz., 946 ml) aseptic Tetra Pak carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (8½ by 11 inch, color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March. First ship 15 May 2001. A color photo shows the front panel (label).

7977. **Product Name:** Westsoy Unsweetened Vanilla Soymilk.
Manufacturer's Name: Westbrae Div. of The Hain Celestial Group (Product Developer-Marketer).
Manufacturer's Address: New York City, New York.
Date of Introduction: 2001. May.
Ingredients: Organic soymilk (filtered water, organic whole soybeans*), natural vanilla flavor with other flavors. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: 1 quart (32 fl. oz., 946 ml) aseptic Tetra Pak carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (8½ by 11 inch, color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March. First ship 15 May 2001. A color photo shows the front panel (label).

7978. Vitasoy USA Inc. 2001. Announcement of Yvonne Lo's retirement (News release). 400 Oyster Point Blvd., Suite 201, South San Francisco, CA 94080. 1 p. June 14.
• ***Summary:*** "Vitasoy USA President and CEO Yvonne Lo has resigned effective June 30, 2001. Yvonne's brother, Winston Lo, executive chairman of Vitasoy International Holdings, Ltd., will assume Yvonne's position and responsibilities until a new CEO is selected." Address: South San Francisco, California. Phone: (650) 583-9888.

7979. *SoyaScan Notes.* 2001. White Wave is suing Dean Foods and Suiza (Overview). June 15. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Dana just read an Associated Press wire stating that White Wave is suing Dean Foods and Suiza Foods Corp. Dean Foods, which is now being acquired by Suiza, owns 36% of White Wave's common stock. In an agreement with Dean Foods, White Wave has the right of first refusal to buy back this stock in the case that Dean Foods should be acquired by another company. Apparently Dean Foods and Suiza have agreed to void that part of the agreement. Suiza produces Sun Soy soymilk, a major competitor of White Wave's silk in supermarkets.

7980. Tofu Shop Specialty Foods, Inc. 2001. Wholesale price list. Arcata, California. 1 p. June 15. Front and back. 28 cm.
• ***Summary:*** Contents: Fresh tofu, water-pac tubs (firm nigari, regular calcium [sulfate], soft calcium). Fresh bulk tofu–institutional (firm nigari, regular calcium). Baked tofu–retail or institutional (marinated cutlets, sausage patties, Mexi patties, vegie patties). Smoked tofu–Smoked Stiks (original, BBQ, spicy). Fresh soymilk (natural, chocolate, ginger, vanilla). Tofu salad and spreads (eggless egg, basic everyday spread, garlic 'n dill everyday spread, sweet pickled beet dip, hot habañero carrot dip, smoked tofu spread).

Accompanying this price list are the following new and colorful self-adhesive labels: Organic Tofu (Regular, Firm, or Soft). Soymilk (Vanilla or Chocolate). Tofu Shop: Fine tofu products. Crafted in small batches from whole, organic, GMO-free soybeans. Also the following numbered vegetarian "Favorite seasonal tofu recipes": 1. Wild mushroom and asparagus frittata. 2. Tofu egg foo young. 3. Tofu 'ricotta' salad. 4. Creamy miso vinaigrette (with tofu). 5. Hunan style tofu. 6. Tofu turkey with herbed bread stuffing. 7. Almond orange cake (one layer). 8. Tofu apple

sausage. Address: 65 Frank Martin Court, Arcata, California 95521. Phone: 707-822-7401.

7981. Fetters, Luke. 2001. Sovereign foundations and educational antecedents to the Hong Kong Conference, Church of the United Brethren in Christ. Paper presented at the second annual meeting of the United Bretheren Historical Society. 31 p. Held 29 June 2001 in Huntington, Indiana. [34 ref]

• ***Summary:*** "In this paper I will present a historical overview of the United Brethren outreach to the Chinese prior to 1950, focusing on the work of three key figures who shaped a United Brethren missiological strategy for reaching the Chinese: Moy Ling, Chiu Yan Tze, and Wan Kwai Chin. All three were Chinese. All three were educators. All three were related by marriage. All three were highly entrepreneurial. And most impressive, all three displayed remarkable resilience in the face of numerous setbacks."

Chiu Yan Tze is an important figure in the history of soymilk in China and the USA. Therefore we will focus on his life, and that of his wife, Wan Kwai Ching. Here is a brief chronology: 1890 April 14–Y.T. Chiu born in Canton, China, the eldest of 9 children, into a devout Christian family with a strong Baptist heritage. His grandfather on his mother's side was the first Baptist preacher in Canton. His uncle (Mrs. Moy Ling's father) was at one time pastor of the Canton Baptist Church. His father came to Portland, Oregon, in 1855, and while studying in one of the mission schools in Portland, became a Christian; before his death he became one of the elders of the Baptist Church in Hong Kong. His mother was a teacher in the Canton Baptist School before she was married. Therefore Y.T. Chiu was a 3rd generation Christian. 1893–Chiu's father moves his family to Hong Kong, and the son studies in private schools there from 1895 to 1903. 1895 ca.–Wan born in Hong Kong. 1905–At age 15, Chiu baptized in Baptist Church in Hong Kong. 1908–Chiu leaves Hong Kong to study science and education at the University of California at Berkeley. While in school, he was an active Christian leader. He served as teacher and assistant principal of evening school in Berkeley. 1913–Chiu receives his B.S. degree in Chemistry from U.C. Berkeley. 1914–He moves to New York City to attend Columbia University. 1915–Chiu receives his MS degree in chemistry from Columbia. 1915–Chiu returns to Canton to serve as prof. of chemistry and chair of Religious World Committee at Lingnan University (then known as Canton Christian College, Baptist). 1916–Chiu and Wan are married. Her mother died when she was 12 years old. She was the eldest of 3 living children. She graduated from teacher's college at age 16. Upon graduation, she founded Ming To school for poor children in Hong Kong and served as principal for 2 years. She resigned to marry Chiu; the marriage was arranged by their families. 1927–Chiu receives his PhD degree in chemistry at Cornell University (Ithaca, New York). 1937 Aug. 31–Japanese start bombing Canton. 1938 Oct. 12–35,000 Japanese troops occupy Canton; Chiu is in Hong Kong. 1941 Dec. 8–Japanese bombing of Hong Kong begins, followed soon by occupation. Wan evacuates to Hong Kong, where she works in education, evangelism, and refugee relief. 1942-46–Chius flee Hong Kong with family, staff and students. They travel in the Chinese interior, providing education and relief work. 1946–Chius return to Canton to find demolished homes and school buildings. Their person effects are gone. They repaired, rebuilt, and started over. 1947 summer–Chiu returns to USA to teach at Huntington College, Indiana, as a guest professor. Wan supervises work in China. 1949–Communist revolution in China. In Oct. Chiu moves to Hong Kong because of his extensive ties to America. 1949 Oct. 14–Communists take control of Canton. Wan remains in Hong Kong to supervise work. 1957 March 30–Wan is permitted to leave China for Hong Kong. 1959–Chiu serves as director of Hong Kong conference until 1967, at which time the Chius retired to California. 1981–Wan dies. 1987–Chiu dies.

Includes a timeline of Dr. Chiu's life. Note: Both K.S. Lo and Y.T. Chiu lived in the village of Linshan during the war. His name: Chiu Yan-Tsz (Cantonese; he wrote it like this on all his papers) or Chao En-tz'u (Mandarin); Zhao Enzi (pinyin). She says Yan = Grace and Tsz = Given. He was a Rev and PhD; in 1927 he wrote his PhD thesis on soymilk at Cornell Univ. Address: Asst. Prof. of Educational Ministries, Huntington College, 2303 College Ave., Huntington, Indiana 46750.

7982. Monahan, John. 2001. Market Overview 2000. *Natural Foods Merchandiser.* June. p. 18, 24, 26.

• ***Summary:*** A large table titled "Natural products stores 2000 sales by category" shows that sales of nondairy beverages (soy, rice, oat, etc.) was $431 million; this category accounted for 2.8% of total sales. Sales of organic nondairy beverages were $262 million; 61% of this category was organic. The category grew at 18.4% during the year.

7983. *Natural Foods Merchandiser.* 2001. People news: Steve Demos. June. p. 74.

• ***Summary:*** Steve Demos, founder and president of White Wave, "has been honored by the U.S. Small Business Administration with the regional Entrepreneurial Success Award, which is given to individuals who have turned a small business into a large one with SBA's help."

A portrait photo shows Demos.

7984. *Soyfoods Canada Newsletter.* 2001. Who is buying soyfoods in Canada? June. p. 3.

• ***Summary:*** In Sept. 2000 Flamaglo Food Consultants commissioned a study by Omnitel on the market for soy products. The study was basically a national telephone interview with 2,000 Canadians, randomly selected. The data

was provided by Francis Lo.

Findings: Tofu was the most popular soy product; about 25% of the sample had tried it during the past 12 months. About 18% of the sample had tried soymilk and less than 7% had tried soy-based meatless patties or sausages. Only a small percentage had tried soy ice cream.

In general: About 40% of the sample had consumed one of the above four products in the last 12 months. Most current users live in metropolitan areas with a population over 500,000. The higher the person's income and/or the higher their income, the greater their use of soyfoods. Current users tend to be female.

7985. *SoyaScan Notes.* 2001. Suiza is now buying soymilk from SunRich. White Wave's plant, purchased from APV, is not yet in operation. White Wave's suit against Suiza will be conducted in Colorado (Overview). July 19. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** For White Wave, this must be difficult and expensive.

7986. Dillman, Erika. 2001. The little soy book. New York, NY: Time Warner. xiii + 190 p. Index. 15 x 16 cm. [58 ref]
• ***Summary:*** Contents: Introduction. 1. It's soy time. 2. Why eat soy? Health benefits of soy? Soy foods: Soy milk, soybean oil, soy sauce, soy meat alternatives, tofu, tempeh, miso, whole soybeans, edamame, soy nuts, soy nut butter, soy sprouts, soy ice cream, soy yogurt, soy cheese, soy flour and grits, textured soy protein (TSP), soy protein concentrate, soy protein isolate, hydrolyzed vegetable protein, infant formula, lecithin, natto, yuba, soy fiber, Cooking with soy (recipes). Notes [references]. Resources [Directory]. Glossary. Address: Seattle, Washington.

7987. *Soyafoods* (*ASA, Europe*). 2001. Alpro to build Florida factory. 12(3):2. Summer.
• ***Summary:*** Alpro NV of Belgium is planning to build its first U.S. soymilk plant in Jacksonville, Florida. It has chosen the name Belsoy for its U.S. operations and line of North American products. The plant, located in the 1,000 acre Westside Industrial Park, will be quite large (180,000 square feet) and is expected to create 59 jobs. The company is expected to hire a CEO for this specific North American plant.

7988. Strom, Brian L.; Schinnar, Rita; Ziegler, E.E.; et al. 2001. Exposure to soy-based formula in infancy and endocrinological and reproductive outcomes in young adulthood. *J. of the American Medical Association* 286(7):807-14. Aug. 15. [50 ref]
• ***Summary:*** Conclusions: "Exposure to soy formula does not appear to lead to different general health or reproductive outcomes than exposure to cow milk." Address: 1. Center for Clinical Epidemiology and Biostatistics, Univ. of Pennsylvania School of Medicine, Philadelphia.

7989. Nordquist, Ted. 2001. Making tofu the hard way in Cheboksary, Russia (Interview). *SoyaScan Notes.* Aug. 28. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Ted has just returned from two weeks (Aug. 4-18) in Russia working as a volunteer consultant to Soya-Ch [pronounced SOYA-chee], a small tofu company in Cheboksary, which is a city of about 340,000 people situated on the Volga River about 650 km east of Moscow–a 14-hour train ride from Moscow. "They were great people and I had a wonderful time." He was sent there by ACDI/VOCA, a volunteer overseas organization that uses American tax dollars to send American consultants overseas to help businesses that apply to VOCA for help. VOCA stands for "Volunteers in Overseas Cooperative Assistance." Website: www.acdivoca.org.

The tofu company is: Soya-Ch Closed Joint Stock Company, 42800 Chuvashia Republic, Cheboksary, Kanashskoe shosse, 19, Russia. Phone: 8352/66-93-78 or 66-92-69. Director: Alexeeva Anna Alexandrovna.

This tofu company was started in 1998 by Alexeeva, a woman who had previously been hospitalized with severe digestive problems. The doctors couldn't figure out what her problem was; she was near death. Fortunately, her closest friend had read about soy, so in the hospital she stopped consuming dairy products and started eating soyfoods. Her symptoms quickly disappeared, which proved that she was lactose intolerant. As soon as she got out of the hospital, she started a company making tofu. She is now director and she hired her husband, Alexeev Vaycheslav Konstantinovich, as deputy director, and the son of her closest friend as marketing director. They have 32 employees and make about 17 tonnes (metric tons) of tofu a year–which is not very much.

They have two Russian-made SoyaCow USM-150 semi-continuous systems. Each SoyaCow produces 150 liters/hour of soymilk, so the two lines produce about 300 liters/hour. The equipment is very poor quality (it does not use the airless cold grind process so the soymilk has a beany flavor) and the process by which they make tofu is extremely slow and inefficient because their instruction manuals are so poorly written. Each line makes only about 16 kg/hour of tofu. The equipment is made illegally in Russia with no supervision or license from ProSoya Inc., Raj Gupta's company in Canada.

Soya-Ch produces plain tofu and five types of flavored or seasoned tofu (with raisins, dried apricots, caraway, sea tangle or laminaria {*konbu*, a type of sea vegetable}, or salt). They call their tofu "soy cheese" and consumers buy it and use it like cheese. They typically slice it and serve it on bread; it is never pan-fried, deep-fried, sauteed, stir-fried, etc. It retails for about 30% less than dairy cheese–which is its most important selling point in Russia.

The company's total tofu production is about 15,000 kg/month; over 80% of this is plain tofu, which is sold in bulk to a dairy which uses the tofu as an extender for their low-fat dairy cheese. Of the remaining 20%: (1) About 30% is sold as plain tofu 125 gm packs; (2) About 50% is sold as flavored tofu (five flavors) in 125 gm packs; and (3) About 20% is sold as flavored soy cottage cheese dessert in 125 gm round cups.

To make the soy dessert: Place whole raisins or bits of pre-chopped dried apricots in the bottom of a curding vat. Run hot soymilk into the vat in three stages, adding one-third of the total nigari coagulant at each stage. The soymilk flowing into the vat stirs both the fruits and the nigari; no paddle is used for stirring. The fruit distributes itself evenly distributed throughout the curds–naturally! While the soymilk is finishing its coagulation, line a second perforated vat with a cloth pressing sack. Ladle the curd-fruit mixture into the pressing sack; whey will begin to drain out through the holes in the vat. When the sack (and vat) is full, lift the sack out of the barrel and hang it in a cold place over a drain or basin to catch the dripping whey. For best results, hang the sack in a walk-in cooler with a strong fan to hasten cooling and extend the shelf-life of the finished product. Package the fruit-sweetened curds in 125 mg cups. Serve cold as a ready-to-eat dessert. No added sweetener is needed. Ted found this latter product to be very innovative and interesting.

The company sells its tofu at all 42 supermarkets in Cheboksary, and they deliver it in their own refrigerated trucks. They do not make any soymilk for sale as such because of the expense of packaging; however they may sell a small amount in bulk. Financially, they are doing quite well.

It was very easy for Ted to show them how to make tofu correctly, and how to make many additional new products such as flavored tofu, soy yogurt, and soymilk. After Ted's visit, they plan to make soy yogurt using a 140 liter/hour yogurt plant from Israel. They expect to be able to make and sell soy yogurt for 25% less than dairy yogurt. Ted advised them to price the soy yogurt at the same price as dairy yogurt, but to periodically put it on sale at 20-25% off–a Western marketing trick! When they introduce the product, or introduce it to a new store or chain, have it on sale for one month. Then, 2-3 times per year, for one month at a time, have it on sale for 25% off; at those times, try to have demo in as many stores or chains as possible. When introducing new flavors, have the product on sale.

One big problem in Russia is the Sanitation Board. Each new product a company makes must get a permit from this department, but only after they have started to make the product. The product is then sent to Moscow where a bureaucrat must give it his stamp. "The one thing they seem to like most in Russia is stamps." Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

7990. **Product Name:** 8th Continent Soymilk [Vanilla, Chocolate, Original].
Manufacturer's Name: 8th Continent, L.L.C. [General Mills].
Manufacturer's Address: Box 200, Minneapolis, MN 55440. Phone: 1-800-247-6458.
Date of Introduction: 2001. August.
Ingredients: Soymilk (water, soy protein [isolate], soybean oil, calcium phosphate), sugar, fructose, potassium citrate, color added, cellulose gel, salt, dipotassium phosphate, soy lecithin, sodium hexametaphosphate, natural and artificial flavor, cellulose gum, xanthan gum, vitamin A palmitate, vitamin B-12, vitamin D, vitamin B-2 (riboflavin). Contains soy ingredients.
Wt/Vol., Packaging, Price: 1 quart (946 ml) plastic bottle with screw-on cap. Retails for $2.29 (2001/10, Lafayette, California).
How Stored: Refrigerated, 7 day shelf life.
Nutrition: Per 8 fl oz.: Calories 90, calories from fat 25, total fat 3 gm (4% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 170 mg (7%), total carbohydrate 11 gm (dietary fiber less than 1 gm [3%], sugars 10 gm), protein 7 gm. Vitamin A 10%, vitamin C 0%, calcium 30%, iron 4%, vitamin D 25%, riboflavin 25%, vitamin B-12 15%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Talk with James Terman, Vice President of Marketing, White Wave Inc. 2001. May 29. General Mills is planning to introduce a soymilk named 8th Continent in July or August. It will be based on soy protein isolates from DuPont's Protein Technologies International and will be sold in quarts (32 oz) and 8 oz plastic (PET) bottles. James has heard that General Mills plans to spend a lot of money putting this new product in dairy cases nationwide.

Talk with Dmitry Torba of Orinda, California. 2001. Oct. 8. This product is sold at Safeway supermarkets in a plastic bottle. He likes it better than Silk.

Product with Label purchased in dairy case at Safeway supermarket in Lafayette, California. 2001. Oct. 15. Plastic bottle covered with dark blue and white shrinkable sleeve. Lettering in yellow and white. On the front panel: "Simple change, better health." Low fat. Excellent source of calcium. Naturally and artificially flavored." On one side: "Shake well. Keep refrigerated. Use within 7 days of opening. ME 5¢ dep." Back panel: "8th Continent is more than a place... its an attitude about wellness. It's knowing that sticking with small changes can be more important than waiting for miracle cures. 8th Continent... A simple change that can make a difference." "Helps lower cholesterol" (heart health claim; 8th Continent contains 7 grams of soy protein per serving"). American Heart Association logo. Nutrition facts. Quality guarantee. Solae logo (green on white). "Solae is a

trademark of Protein Technologies International, Inc. Made with Solae (TM) soy protein, the soy protein with proven health benefits." "Lactose free." Note in the ingredients listing that the word "isolate" is omitted.

Talk with sales rep at 8th Continent. Their first and only product is soymilk. All three flavors come in the quart plastic bottle; vanilla and chocolate also come in 8 oz single-serve bottle. The product was launched in Aug. 2001 on the East Coast.

Note: This is America's first soymilk made with soy protein isolates rather than whole soybeans. It is packed by Jasper Products in Joplin, Missouri.

Nutrition Business Journal. 2001. Oct. p. 9. General Mills has launched 8th Continent soymilk, the first product out of its joint venture with Protein Technologies International. It competes with Silk, the refrigerated market leader.

Product (Vanilla quart) purchased at Safeway supermarket in Lafayette, California. 2003. Dec. 3. $2.49. Titanium dioxide is not listed among the ingredients. A special offers two ½-gallon vanilla bottles for the price of one = $6.00. The word "isolate" is still omitted in the ingredient listing.

7991. Demos, Steve; Fredman, Catherine. 2001. Got soy? White Wave tried and failed to force-feed U.S. consumers. Not one to cry over spilled milk, founder and CEO Steven Demos changed his soy strategy from pushing an unfamiliar product to giving the people what they want. *Hemispheres Magazine.* Aug. p. 21-23, 26.

• ***Summary:*** Developing Silk refrigerated soymilk was White Wave's "smartest mistake." The company (with sales of $6 million/year) lost $600,000 in the first six months after the product was introduced because nobody could find it.

Also contains a company history and an account of White Wave's near-bankruptcy experience in the mid-1980s. Address: 1. Founder and CEO, White Wave, Boulder, Colorado; 2. Author.

7992. Jacobi, Dana. 2001. Amazing soy: A complete guide to buying and cooking this nutritional powerhouse, with 240 recipes. New York, NY: William Morrow. An imprint of HarperCollins Publishers. xiv + 364 p. Aug. Index. 24 cm. [50 ref]

• ***Summary:*** Contents: Introduction. Ingredients and techniques. Breakfast. Smoothies and drinks. Dips and starters. Soups and breads. Salads and dressings. Wraps, burgers, and savory pies. Pizzas and pastas. Stews, casseroles, and chilis. Steaks, chops, skewers, and meat loaf. Stir-fries and curries. Seafood. Mainly vegetables. Desserts. Sources. Bibliography.

Kinako (roasted soybean powder) is called for in the recipe for Cinnamon toast (p. 59). Address: Food writer, New York, NY.

7993. Mai, Pham. 2001. Pleasures of the Vietnamese table: Recipes and reminiscences from Vietnam's best market kitchens, street cafés, and home cooks. New York, NY: HarperCollins Publishers. xii + 242 p. Aug. Illust. (Photos by Martin Jacobs, some color). Index. 24 cm.

• ***Summary:*** This is a marvelous, very original book, with real passion for food and cookery and a deep curiosity on this subject and desire to learn. It overflows with warmth, devotion, and kindness, and is full of insights about Vietnam, its food, and most of its best cooks–street food cooks. Here we see the origin of the modern restaurant and its chefs. Contains more than 100 authentic recipes and many black-and-white photos.

The Vietnamese eat fresh herbs like vegetables. The Hmong are one of Vietnam's ethnic groups.

The ancestors of today's Vietnamese migrated south from southern China in about 1500 BC. By the 2nd century BC they had annexed the country and introduced their system of government, Confucianism, and Buddhism. Over the centuries they introduced their food traditions–stir-frying, eating with chopsticks, steaming, and such ingredients as soy sauce, tofu, noodles, and ginger.

Vietnam is often divided into three culinary regions: the fertile south, the cooler central region, and the harsh, mountainous north–which suffered most from recent American war.

Important ingredients include: Bean sauce (tuong hot). Hoisin sauce (sot tuong). Soy sauce (nuoc tuong {liquid}; Brands–Pearl River Bridge, Kikkoman. Although not used as widely as fish sauce, soy sauce is a common seasoning in vegetarian and stir-fried dishes).

Soy related recipes: Vietnamese bean dipping sauce (tuong goi cuon, with ¼ cup fermented whole soybeans {tuong hot}, p. 28). Soy-lime dipping sauce (nuoc tuong pha, with 1/3 cup soy sauce, preferably light Chinese style sold under the brands Kim Lan, Bo De, or Pearl River Bridge, p. 29). Sweet soy sauce with chilies and ginger (nuoc tuong den ot, with 3 tablespoons sweet soy sauce, p. 30, 37). About soy sauces (light, dark, and sweet, p. 37. Kikkoman is considered light. There are two types of dark soy: One, also called "black soy," contains molasses and is thick. The other, called sweet soy sauce, is even thicker and sweeter).

Tofu, tomato and chive soup (canh dau hu he, with 6 ounces soft or medium tofu, p. 74). About fermented black beans [fermented black soybeans] (tau xi, an ancient Chinese seasoning, also called salted black beans, are sold in 1-pound plastic bags, paper cartons, or earthenware jars. The author prefers Yang Jiang Preserved Beans with Ginger by Pearl River Bridge).

Chapter 7 is "Return to the grandmotherland: Vegetarian favorites and meatless recipes." Of her beloved grandmother (now age 102) she writes: "When my grandfather died years ago at an early age, my grandmother was forced to raise

seven kids by herself while running the family plantation. That twist of fate turned her into a vegetarian, in part because vegetarianism is a form of merit-making" (gaining merit, duoc phuoc). "In doing so, one's wishes would be granted. In my grandmother's case she prayed for the well-being of her children." "Many Vietnamese are vegetarians who practice vegetarianism on one level or another... With the shortage of animal protein and the pervasiveness of the Buddhist influence in the culture, it is not uncommon to find many Vietnamese dishes eaten in two ways–*man* (with meat) and *lat* (without meat). Indeed almost every meat dish in this book can be made vegetarian."

Vegetarian recipes (p. 185-99, with tofu unless stated): Salad rolls with jicama, peanuts and basil (bo bia chay, with 1 {6 ounce} piece tofu and 1 tablespoon soy sauce). Salad rolls with tofu and mushrooms. About tofu and *tau hu ky* [yuba or dried yuba sticks]. Cucumber and tofu salad (goi chay). Vegetarian pho noodle soup (pho chay). Vegetable curry (ca ri chay, with 2 pieces dried bean curd skin [yuba]). Spicy lemongrass tofu (dau hu xa ot). Rice noodles with stir-fried vegetables (bun chay). Vegetarian claypot rice with ginger (com tay cam chay). Black mushrooms with bean threads in claypot (nam kho). Water spinach with tofu (rau muong xao). Twice-cooked eggplant with garlic and basil (ca tim xao rau que).

Warm soymilk with pandanus leaf (sua dau nanh, with 1 pound dried soybeans made into fresh soymilk, p. 220-21). The headnote to this interesting recipe begins: "I grew up on soy milk, but never thought of making it fresh until I started going back to Vietnam. There, fresh soy milk is sold at markets and on street corners early in the morning and late at night. Sometimes I can walk into a market and just sniff my way to a soy milk vendor. I definitely have a nose for *sua dau nanh,* especially if its been flavored with pandanus leaf."

Glossary (p. 223-32) includes: Bean sauce (*tuong*). Fermented black beans (*tau xi*). Fermented soybeans (*tuong hot*). Hoisin sauce (*sot hoisin,* incl. soybean purée). Peanuts (*dau phong*). Tofu (*dau hu*).

About the author (with portrait photo on inside rear dust jacket): She was born in Vietnam and raised in both Vietnam and Thailand. She fled Vietnam "just days before Saigon fell to Communist rule on April 30, 1975. We left with the clothes on our backs, fighting our way through the pandemonium at the airport before climbing aboard a plane that would fly us to safety." Six years ago she ventured back to Vietnam for the first time–to be with her grandmother (and give her a modern wheelchair) and to eat *pho.* Her inaugural tour to Vietnam in 2000 was televised internationally by CNN, and was frequently rebroadcast on United and Delta airlines. She has returned about once a year since then, for the same reasons but also to learn about the food and cookery from the best cooks in the country–at market stalls, not fancy restaurants. She is now chef and owner of the acclaimed Lemongrass Restaurant in Sacramento, California. She also writes and teaches. Her first book, *The Best of Vietnamese and Thai Cooking* was published in 1996. Address: Chef and owner, Lemon Grass Restaurant, Sacramento, California.

7994. Monahan, John. 2001. White Wave wants its stock back. *Natural Foods Merchandiser.* Aug. p. 2, 12.
• ***Summary:*** White Wave Inc., which has about 79% of the refrigerated soymilk market, has filed a complaint in Denver federal court against its largest outside shareholder, Dean Dip and Dressing Co., a subsidiary of Dean Foods Co. White Wave alleges that its agreement with Dean Foods requires Dean, in its proposed merger with Suiza Foods Corp., to first offer White Wave–and then other shareholders–an opportunity to purchase those shares, before it transfers those shares to Suiza. The complaint also alleges that Dallas-based Suiza, the maker of Sun Soy and Lactaid (and White Wave's main competitor in the refrigerated soymilk market), improperly induced this violation.

Dean Dip owns 36% of the common stock in White Wave–shares that it purchased for $15 million in 1999 and 2000. White Wave used this capital to expand its sales of Silk soymilk. According to a statement by White Wave in June, if Suiza gets White Wave's shares, "Suiza will have significant control rights over White Wave, including blocking rights with respect to all major corporate transactions, access to all of White Wave's proprietary information and the right to elect two of seven members to White Wave's board of directors."

Dean Foods, meanwhile, filed suit in a Chicago federal court asking the court to exempt it from the 1999 shareholders' agreement on which White Wave bases its claim to first rights to buy back its shares from Dean Dip. A second option allows Dean Dip to purchase all remaining shares of White Wave at an undisclosed price in September 2002. A small color portrait photo shows Steve Demos.

7995. *Nutrition Business Journal* (*San Diego, California*). 2001. Regional distribution depth proves key to success for Wildwood Natural Foods: Organic Growth in San Francisco Bay Area sets up a next stage of national distribution in soy and tofu. 6(5/6):25-26. Industry Overview [Aug.].
• ***Summary:*** Wildwood, which reached $8 million in revenues last year, has continued to grow at 18-20% a year. The company (incorporated in 1980) become the third largest selling tofu through the natural foods channel in the USA. This is remarkable since Wildwood products are distributed only on the West Coast.

Wildwood presently operated 13 direct distribution routes that run 3 days a week throughout the Bay Area. All of the company's products are fresh, refrigerated, and ready to eat. Most are also organic. About 70% of Wildwood's sales are natural foods stores but the remaining 30% are to some mainstream markets in the Bay Area to which it also distributes, such as Andronico's, Molly Stone's, and 30

Safeway supermarkets. A sub-distributor, Rock Island Foods, distributes Wildwood products as far north as Medford, Oregon. Additional sub-distributors in Portland (Oregon), Seattle (Washington state), and Southern California, expand Wildwood's reach to include most of the West Coast.

Wildwood is now in the process of raising money to build a new and larger factory in the South Bay to expand production and enable the company to expand eastward–with the eventual goal of going nationwide.

Soymilk is the company's best-selling product, followed by plain tofu. Soymilk also shows the fastest growth.

7996. **Product Name:** Pathmark Soymilk [Original, Vanilla, or Chocolate].
Manufacturer's Name: Pathmark Stores, Inc. (Marketer-Distributor).
Manufacturer's Address: Carteret, New Jersey.
Date of Introduction: 2001. August.
Ingredients: Original: Filtered water, whole organic soybeans, evaporated organic cane juice, natural flavors, tricalcium phosphate, sodium citrate, potassium citrate, carrageenan, tocopheryl, acetate, vitamin A palmitate, vitamin D-2, riboflavin (vitamin B-2), vitamin B-12.
Wt/Vol., Packaging, Price: 32 fl oz (1 qt) Tetra Brik Aseptic Liter Square carton with reclosable cap and foil pull tab.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Three empty cartons sent by Denis Bolger of New York, NY. 2001. Sept. 25. Each carton has the same basic front panel design, showing a stream of soymilk being poured into the top of a glass, however original has a red background, vanilla a blue background, and chocolate a brown background. "Made with organic soybeans. 31 mg isoflavones per serving. Rich in calcium. Lactose free. With vitamins A, D, E, B-2 & B-12." The right half of the back panel and the lower half of one side panel are devoted to recipes: Original has Zesty cornbread muffins, Strawberry banana frosty, and Creamy Italian dressing. Vanilla has Cinnamon honey dressing, Strawberry banana frosty, and Instant chocolate pudding. Chocolate has Chocolate cream pie, and Hot chocolate. On one panel is a heart health claim and "Quality assured: Satisfaction guaranteed or your money back."

Product with Label sent by Martine Liguori. 2007. March. Purchased at Grocery Outlet, Oakland, California. 1 quart retails for $0.99. Taste test: Too sweet. Chalky taste. Not good.
*

7997. Shurtleff, William; Aoyagi, Akiko. 2001. The book of tempeh: A cultured soyfood. 2nd ed. Revised. Berkeley, California: Ten Speed Press. 176 p. Aug. Illust. by Akiko Aoyagi Shurtleff. Index. 28 cm. [374 ref]
• ***Summary:*** This revision has completely new front and rear covers, designed and illustrated by Akiko. It contains a completely new "Appendix B–Directory of Tempeh Makers" (p. 157-58, updated to 16 June 2001). The page "About the Authors" (autobiographical) has been updated, and the original photographs have been replaced with more recent ones–reflecting the fact that Bill and Akiko separated in Nov. 1993 and their marriage ended in May 1995.

The last page, "Soyfoods Center," has been updated.

On page 176 is "The Best of Vegetarian Cooking from Ten Speed Press" (descriptions of eight cookbooks, with price and ISBN).

The inside rear cover has been updated, and now includes current information about: (1) *Tempeh Production,* a book published by Soyfoods Center about how to start and run a company making tempeh on any of four scales and budgets in North America, and on either of two scales in tropical developing countries. (2) *Tempeh and Tempeh Products: Bibliography and Sourcebook,* published by Soyfoods Center. (3) SoyaScan, the unique computerized database produced by Soyfoods Center. This database now contains more than 62,000 records from 1100 B.C. to the present, and more than 76% of all records have a summary / abstract averaging 146 words in length. A description of the four different types of records (published documents, commercial soy products, original interviews and overviews, and unpublished archival documents), and the number of each type, is given.

The title page, copyright page, and table of contents have been redesigned and updated to give the book a much more contemporary look. Other small changes have been made throughout the book. Still contains 130 vegetarian recipes–both western and Indonesian.

Ten Speed Press gave this book a new ISBN: 1-58008-335-8. Yet despite the many changes described above, the authors preferred not to have this called a "new edition" or "revised edition." Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

7998. *SoyaScan Notes.* 2001. White Wave's lawsuit against Dean Foods and Suiza: What's really happening? (Overview). Sept. 5. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** The following is a summary based on discussions with several people who are close to, and are closely following the acquisition of Suiza Foods Corp. by Dean Foods. The White Wave lawsuit is not mentioned in the 174-page report describing the proposed merger between Suiza Foods Corp. and Dean Foods Inc. sent to shareholders in August 2001. There are two real issues in this lawsuit: (1) The smaller, technical issue is whether the merger constitutes a transfer (Dean Foods is quite confident that it does not); this is partly related to the fact that Dean Dip and Dressing Co. (DDDC), a subsidiary of Dean Foods Co., owns the White Wave stock. If the merger is consummated, DDDC

will eventually become a subsidiary of Suiza. (2) The big economic issue is the agreement that gives Dean Foods the first right of refusal to purchase the remaining stock at a specified price. When this agreement was signed in August 1999, White Wave had roughly one-tenth the annual sales that it now does. Neither Steve Demos nor Dean Foods anticipated that White Wave would grow as fast as it has since the agreement was signed, nor that it would be worth as much as it now is. That agreement essentially enables Dean Foods (or Suiza) to buy White Wave for less than Demos thinks the company is worth–and Demos is probably about right as to how much it is worth. Yet at the time the agreement was signed, many at Dean Foods believed the formula had them paying much too much in the future for the remaining White Wave shares. The Silk brand has been extraordinarily successful. Its movement into refrigerated supermarket dairy cases and a ten-fold increase in sales happened so fast it was almost unbelievable.

If White Wave loses its suit, we must ask: "How is Suiza likely to relate to White Wave and Silk?" First, Gregg Engles, the founder, Chairman and CEO of Suiza is an excellent businessman, with little pride of ownership. He has already decided to give up the Suiza name and use Dean Foods as the new company's name. Morningstar is better positioned than Dean Foods to grow White Wave and Silk. However the U.S. Justice Department may very well ask Suiza to divest itself of either Sun Soy or Silk brand soymilk, since owning both would give Suiza about a 90% share of the refrigerated soymilk market. Engles would be crazy to divest Silk, which has 80% of the refrigerated grocery market. If Engles instead sells off Sun Soy he can argue that he then has no more concentration than White Wave had before the merger. Since profit margins on soymilk are much higher than those on cow's milk, Engles would also be crazy not to do everything he can to grow Silk soymilk. Morningstar will offer significant opportunities to cut manufacturing and packaging costs.

Will Demos stay on at White Wave if Suiza buy's the majority of White Wave's stock? Engles will probably ask Demos to stay, since he understands the soymilk market better than anyone in America. Steve's decision as to how long he stays will probably depend on the "fun factor" and the terms of his employment contract. He would almost certainly be restricted by a "non-compete" clause.

It is hoped that the merger will be completed by 31 Dec. 2001. People who now own Dean Foods shares will end up owning Suiza shares.

Another unrelated issue is: How much did Dean Foods help White Wave to get Silk where it is today? First, they helped a lot by providing funding that White Wave needed very much. Second, White Wave's alliance with Dean Foods probably made it easier for White Wave to get Silk into dairy cases in supermarkets. The alliance gave White Wave a kind of staying power and may have saved them a lot of money in slotting allowances. If a supermarket wants a product very much, the maker can usually avoid paying the huge slotting allowances.

7999. Thym, Jolene. 2001. A twist on tofu: New, tastier food products put the joy in soy. *Oakland Tribune.* Sept. 5. Bay Area Living section. p. 1, 6.
• ***Summary:*** This front-page story contains a long interview with Dana Jacobi, author of *Amazing Soy,* plus a large color photo showing ten different types of soyfoods. The writer has discovered that "there's a whole lot more to soy than plain tofu." A sidebar titled "Name that food" is a glossary including: Edamame, silken tofu, miso, tempeh, fermented bean curd, fried tofu balls, yakidofu, yuba, soynuts, soy sauce, soy milk. Contains four recipes from Jacobi's book. Address: Staff writer.

8000. Bramblett, Billy. 2001. Wildwood Natural Foods and Midwest Harvest merge to form Wildwood Harvest Foods, Inc. (Interview). *SoyaScan Notes.* Sept. 24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** On 24 Aug. 2001 Wildwood merged with Midwest Harvest, a small tofu company in Iowa. The new company is named Wildwood Harvest Foods, Inc. but they don't plan to "pump up that new name very much." They are an Iowa corporation, and as a result they got some investment from the state of Iowa, from a fund that is managed by the tecTERRA fund. Iowa is the biggest soybean producing state in America, and also the biggest commodity state. That's a problem, because they are on "the low end of the food chain" as it were. So the mandate of this fund is to help Iowa companies turn Iowa commodities into value-added products. Cybus Capital Markets manages the tecTERRA fund. Thus Wildwood was able to obtain Iowa public money because they agreed to make this an Iowa corporation, located in Iowa, and because Tom Lacina is an Iowa farmer, and because the company was doing at least $5 million in sales–which is why Midwest Harvest needed Wildwood.

Farm Bureaus now do a lot of investing, with the goal of giving their member farmers shares of companies that use the state's farm crops. "We're really trying to live our mission statement." Tom Lacina, who runs Midwest Harvest, is very sharp, and he has a very sharp brother, Dr. Sam Lacina, who is a pediatric cardiologist in Grand Rapids, Michigan. Billy will send a news release by an investment firm that also came into the deal. Paul Orbuch and Frank Rosenmayr are no longer with the company; their shares were purchased for cash by Tom Lacina and his brother, Sam, so that there are now still four shareholders, each owning 25% of the company.

The new company will retain both the existing brand names (Wildwood Natural Foods and Midwest Harvest–they are still "brand building") and the existing products. Tom

Lacina built his tofu factory on his organic soybean farm. The new company plans to build another tofu-making facility on 10 acres they bought at the Grinnell Industrial Park, located south of Grinnell, Iowa–about 3-4 miles from the Lacina farm. Zoning and other issues prevented the larger tofu plant from being built on the Lacina farm.

Last week from California (Billy, Jeremiah, and their wives) went to Iowa for the initial board meeting. The wives went because "this is really a family deal." The new board of directors consists of several investment people, the four principals/owners (Jeremiah Ridenour, Billy Bramblett, Tom Lacina, Dr. Sam Lacina), Van Tunstall (former CEO of McCormick Shilling, who is also on the board of Monterey Pasta and Organic Food Products), plus several other people whose names appear in a second new release. Van Tunstall, who has his own consulting firm, has been helping Wildwood with its strategic planning for the past three years. "He's been around the block many times, and he's a great guy."

There was also a ground breaking in Grinnell, Iowa, last week. The mayor of Grinnell and 65 people showed up. They had stainless steel shovels and construction hats that said "Wildwood Harvest" across the front.

Wildwood has already purchased a building in Watsonville, California. It was originally Ken Miller's Meats, then it was Alfaro's Bakery for many years.

Presently both firms are maintaining their own separate websites, but by the end of this year they will probably have a Wildwood Harvest website, which will link the two separate websites.

Tom Lacina's wife, one of the Soy Sisters, will be part of the company's marketing strategy; they have their own website.

This is how the two groups met: Tom e-mailed Billy about 18 months ago and said that he had seen Wildwood's website and heard about the company. He asked for some advice, since he was just an Iowa farmer who had built a tofu factory on his farm. Wildwood has often wished that it had built its tofu factory on the farm that produced its organic soybeans to eliminate freight bills. Billy e-mailed him back: "You're a genius for doing that; we should have done that a long time ago." Tom responded: "My wife, Alesia, probably wouldn't agree with the 'genius' part." Billy answered: "Hey, my wife's also named Alicia–but spelled differently." Tom answered: "My wife is really a graphic artist." Billy answered: "So is my wife." Tom responded: "I'm really a musician." Billy e-mailed back: "Wait a minute here, I'm really a musician too."

Billy continues: "We knew we had something going at that point, so we traded cookbooks, and aprons. He and his brother-in-law, and her wife (Francene Coons, the other Soy Sister) live on the farm in the other house. All four work on their 320-acre farm and in the tofu factory together. They are all incredibly wonderful people. Tom is an 'A-Type' who can do a thousand things and keep it all going. I have many interests but I've got to take a rest every once in a while. Tom is also a practicing attorney, formally trained in music, plays in church every week. Tom's brother, the cardiologist, had a heart attack at age 40, so now he is an expert on heart health and heart nutrition, and a great admirer of Dr. Dean Ornish. We all had a great time together."

They have been working on the merger since May of this year. The new plant in Iowa should be in operation by early 2001, at which time Wildwood's line of products will start being made and distributed from the Midwest. The distributor will be Blooming Prairie, which is Midwest Harvest's distributor to nine Midwestern states. Wildwood is also looking at wider distribution on the West Coast. They have a new sales and marketing person named Pat Deveau; she has been with Nature's Best for the past 8-10 years, is very well connected, and is working on building Wildwood's distribution and broker network.

White Wave will soon become Wildwood's competitor. Billy has known Steve Demos for years. Steve's girlfriend, Cheryl, used to work for Wildwood years ago, before she went to Mountain People's Warehouse.

Wildwood has its soymilk base made in two places: SunRich Northern and Soyfoods of America. Wildwood used to have its soymilk base formulated and packaged at the Morningstar plant (formerly Avocet) in Gustine. Morningstar kicked out Wildwood (for reasons that are not clear) so Wildwood found another co-packer–Heritage Foods, in Santa Ana. Address: Wildwood Natural Foods, 135 Bolinas Rd., Fairfax California 94930. Phone: 415-485-3940 X-47.

8001. Eden Foods, Inc. 2001. Edensoy in new six pack cases (News release). 701 Tecumseh Road, Clinton, MI 49236. 1 p. Sept. 25.

• ***Summary:*** "All Edensoy and EdenBlend one liter containers are now being packaged in 'six packs' of six liters per case instead of twelve. This new case pack is North America's first and only in the aseptic soy and rice milk category." Address: Clinton, Michigan.

8002. Carter, Rachel; Kistner, Stephanie. eds. 2001. The soy alternative. Vancouver, BC, Canada: Whitecap Books Ltd. 240 p. Illust. (color). Index. 26 cm.

• ***Summary:*** This is an attractive book, with a full-color photo on almost every other page. However it is edited by a team of people who apparently don't know much about the subject, since it contains many factual errors. It has no real author and many publishers, the main one being Murdoch Books, a division of Murdoch Magazines Pty. Ltd. (Sydney, Australia).

Contents: The soy story. Glossary of ingredients. Soy for breakfast. Breakfast in a glass. Soy for lunch. Soy for Sunday lunch. Soy for vegetarians. Note: The rest of the book is not vegetarian, containing recipes for beef, lamb,

chicken, pork, etc. Soy for dinner. Soy for parties. Soy for dessert. Soy at teatime. Cookery terms. Address: 351 Lynn Ave., North Vancouver, BC, Canada V7J 2C4.

8003. Liu, Keshun. 2001. Manuales de procesamiento de frijol soya 1: Sabor afrijolado de la soya y su control [Manuals for soybean processing 1: Beany flavor of soya and its control]. Mexico City, Mexico: Asociación Americana de Soya. 16 p. Sept. Illust. 21 x 11 cm. [Spa; Eng]
• ***Summary:*** This booklet is in both Spanish (left hand pages) and English (right). Contents: Introduction. Beany flavor and its significance in soyfood acceptance. Key causes for beany flavor formation (lipoxygenase enzyme in the presence of oxygen). Processing to control beany flavor (soymilk). Breeding to control beany flavor. Summary. Address: Liu: PhD, Monsanto Co., St. Louis, Missouri; American Soybean Assoc.: Jaime Balmes 8–2º piso, Colonia Los Morales Polanco 11510. Phone: +52 5281-0120.

8004. Robbins, John. 2001. The food revolution: How your diet can help save your life and our world. Berkeley, California: Conari Press. xxii + 449 p. Illust. Index. 23 cm. [945 endnotes]
• ***Summary:*** Contents: Foreword by Dean Ornish, M.D. Acknowledgments. 1. Introduction: What is the food revolution? Part I: Food and healing. 2. Healthy heart, healthy life. 3. Preventing cancer. 4. The great American diet roller coaster. 5. A healthy plant-based diet. 6. Got BS? 7. Unsafe on any plate. 8. Policing the pathogens. Part II: Our food, our fellow creatures [Animals]. 9. The pig farmer. 10. Old McDonald had a factory. 11. Misery on the menu. 12. Eating with conscience. Part III: Our food, our world [environment]. 13. Choices for a healthy environment. 14. Once upon a planet. 15. Reversing the speed of hunger. Part IV: Genetic engineering. 16. Pandora's pantry. 17. Farmageddon. 18. The emperor's new foods. 19. The turning of the tide. 20. Conclusion: Our food, our future.

For more information: www.foodrevolution.org.

Soy milk is discussed and praised in the section titled "Cow's milk versus soy milk" (p. 105-07). Genetically engineered soybeans are discussed in Chapter 16 titled "Pandora's pantry" (see esp. p. 310-11, 316-17). Address: John Robbins Inst. for Health and Compassion, 420 Bronco Rd., Soquel, California 95073.

8005. Soyatech, Inc. 2001. Soya & Oilseed Bluebook 2002: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 444 p. Sept. Comprehensive index. Brand name index. Advertiser index. 28 cm.
• ***Summary:*** On the cover is a rectangular color photo of a soybean in a micrometer, next to a pair of silver calipers, edamame, and exotically colored soybeans–surrounded by a wide, colorful border on a blue background. Across the bottom: "The ultimate industry resource: In print and online. www.soyatech.com.

On the inside front cover is a color ad from Tetra Pak, showing soymilk, its processing and packaging. On the first page is a full page color ad from Vigan Engineering s.a. of Belgium. "Ports and silos equipment–Ships and barges, loading / unloading." On the back cover is color ad from ADM titled "The nature of what's to come." The imaginative collage features edamame in a Chinese paper takeout box with chopsticks on one side, all inside a wok.

The Foreword states: "Our mission is to create an information platform that supports the expansion and development of the soybean and oilseed industry for all people, in all countries." Soyatech's eNews service brings industry-wide news stories to thousands of individuals and companies. "Exciting new multi-client and research studies are slated for production throughout the year." Soyatech will also "be more involved with the creation of symposiums and other opportunities to allow the exchange of ideas, technology, and innovation between industry members." Address: 7 Pleasant St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

8006. Gonzalez, Yvonne. 2001. Teaching a tofu class in Costa Rica (Interview). *SoyaScan Notes.* Oct. 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** While visiting Costa Rica with a devotee of the Indian guru, Ammachi, Yvonne was invited to teach a tofu class on Oct. 3 at the only public school in the small town of Puerto Viejo, on the Caribbean coast of Costa Rica. The class was a great success. Some of the 43 people who attended were Seventh-day Adventists.

Yvonne began her preparations the day before the class. Her friend, Gia, went to a firm named Earth, located in Limón province. One of the companies that grows organic soybeans in Costa Rica on a large scale, they export large amounts of the soybeans they grow. Gia purchased 100 kg of soybeans from them. Yvonne went to the nearby ocean, got a container full of seawater, filtered it, boiled it until only the solids remained, then used the solids as nigari to make tofu the next day. At Gia's home where she was staying, Yvonne made a batch of tofu and a batch of soymilk. She then used this tofu to make Tofu Ceviché (her favorite tofu recipe, where tofu takes the place of fish; it requires no cooking). She added freshly ground cacao beans to the soymilk to make chocolate soymilk. Then she used the okara in a stir-fried dish.

The next day, she made tofu and soymilk again for the class, using a two-burner electric stove and nigari from the ocean. While the little stove was heating the soymilk, she served the three dishes she had prepared the day before. Also Margo, a friend who flew down with Yvonne from Los Angeles, demonstrated (in both Spanish and English) how to sprout and grow soybeans. She grows them in her back yard in Los Angeles. Then Yvonne passed out (free of charge) one

kg of soybeans to each of the 30 adults who took the class. The next day, at least four of these adults planted some of the soybeans in their back yards. "The ground is so fertile there that everything grows." They kept the rest for making tofu or cooking.

A number of important local people came to Yvonne's class. First was the mayor's wife. After the class "she wept with happiness–it was so beautiful." She knew what tofu was but she didn't know how to make it. She was so happy to learn that she could feed so many people for so little money using tofu made at their home or congregation. She and her family and many friends are vegetarian, so previously they had to drive 4 hours to the capital, San Jose, to buy their tofu. Of course they also had to pay for the gas and spend all that time.

Second was Carter, a Canadian man who owned the local health food store. Third was Michael, an advanced French chef who owned the local gourmet restaurant named Michael's–as well as a restaurant in Paris. These two businesses cater mostly to European and Canadian customers–who are predominantly vegetarian. These two men drive to San Jose, the capital, once every three weeks to buy tofu–and they often run out of it, as when the local electricity goes out. Fourth was a man who owns a Filipino-Chinese restaurant in town. He hadn't used tofu in any of his dishes because he didn't want to drive to San Jose to buy it. He bought a tofu kit from Yvonne and now he has started to make tofu.

Three people invented and prepared their own dishes at home and brought them to show Yvonne the day after the class. (1) A Costa Rican man of Jamaican descent made a delicious Jamaican hummus using cooked and blended whole soybeans rather than tofu. (2) Carter made his own soymilk, added finely grated coconut to it, then sold it as coconut soymilk shakes; it was delicious, without any added any sweetener. (3) Michael cooked and blended soybeans, then added some other ingredients to make a patty. He fried it then topped it with a creamy garlic sauce to make a "soy steak." He served it to Yvonne, along with other great food, at his restaurant.

Within one week, various people who attended Yvonne's class were selling organic soybeans and chocolate soymilk at the local farmers' market. Some men went to Earth, purchased 100 kg of organic soybeans, divided them up into 1-kg plastic bags, and began to sell them at the farmers' market. One of the ladies who took Yvonne's class (Rachel, an American who is a devotee of Ammachi and has lived in Puerto Viejo for 3 years) decided to make chocolate soymilk and sell it at the market.

In the capital, San Jose, organic soybeans retail for $1.30/kg and wholesale for $1.00. At least three companies make tofu there: Yohann, the well-known Japanese supermarket chain, makes it twice a week in their butcher shop. At least two Chinese markets in Chinatown make 10 kg maximum at least once a week. They sell some of at their markets (stored in cold water in a bucket) and the rest to local restaurants. People known which day each company makes tofu, so they can buy it fresh.

Many foreign tourists travel to Costa Rica. The Japanese go for the deep-sea fish and the bird watching. The most expensive establishments in the capital (restaurants, hotels, the country club) are all owned by Japanese. The Europeans and Canadians go to surf and to party. They fall in love with the country and its virgin natural beauty.

Sam Zaoui, who wants to start a tofu shop in Costa Rica, is a Frenchman presently living in Miami Beach, Florida. A year ago he visited Costa Rica, fell in love with the country, and decided to move there and try to earn his living making tofu. He recently purchased the book *Tofu & Soymilk Production* from Soyfoods Center. William Shurtleff gave Yvonne's phone number to Sam. Sam was unable to locate a source of soybeans; he especially wanted organic soybeans. So Sam called Yvonne after she returned from Costa Rica and was delighted to learn that Earth First grows organic soybeans on a large scale in Costa Rica. Sam also owns a record company in Miami and manages a very popular "roots reggae" band named Johnny Dred; the musicians are Rastafarians who do not eat meat. So when they travel, Sam has to try to find tofu and vegetarian meals for them.

Note: During the last two decades, soyfoods have made major strides in the United States. But they have not begun to realize their great potential in developing countries–such as Costa Rica. Address: 6029 LaPrada St., Los Angeles, California 90042. Phone: 213-254-1712.

8007. Alpro. 2001. Catch the great new taste coming out of Europe (Ad). *Natural Foods Merchandiser.* Oct. p. 62.
• ***Summary:*** This 8 by 11 inch color ad has a photo on the left and text on the right. "Introducing Belsoy–a new line of great-tasting soymilk products created for the whole family by Alpro Soja, a European company with over 20 years of experience in the soy business. Belsoy provides: Products produced with organic soybeans that are not derived through biotechnology. A high level of protein. Cholesterol-free, lactose-free and gluten-free products. 30 mg of naturally occurring soy isoflavones in soymilk. Exciting new products including delicious soy puddings. Strong appeal to baby boomers and the health-minded mass market.

"Our 32 fl. oz. [½ gallon] soymilk comes in original, unsweetened, vanilla, and chocolate. Our 8.45 fl. oz. soymilk comes in vanilla, chocolate, banana and strawberry. And our 4-pack of 4.4 oz. soy pudding comes in vanilla and chocolate. For more details visit us online at www.belsoy.com.

"Belsoy products are distributed by Liberty Richter, 400 Lyster Avenue, Saddlebrook, NJ [New Jersey] 07663-5910. www.libertyrichter.com. Visit us at the Natural Products Expo East, Booths 4028 and 4030, Hall D." The logo (blue,

white and green) reads: "Where great taste comes naturally."

A large color photo shows four aseptic soymilk packages in different flavors and two soy pudding packages in different flavors, floating against a sky blue background together with several strawberries, banana slices, and chocolate pieces.

Note: This is the earliest published ad seen for Belsoy. Alpro, headquartered in Belgium, is starting a soymilk factory in Jacksonville, Florida, and trying to break into the very competitive U.S. soymilk market. As of 23 Oct. 2001 the company has no phone listing in Jacksonville under Belsoy or Alpro.

8008. **Product Name:** Belsoy Soymilk [Great Tasting Unsweetened, Great Tasting Original, Great Tasting Vanilla, Great Tasting Chocolate].
Manufacturer's Name: Alpro.
Manufacturer's Address: Vlamingstraat 28, B-8560 Wevelgem, West Flanders, Belgium. Phone: +32 56 43 22 11.
Date of Introduction: 2001. October.
Ingredients: Original: Filtered water, organic soybeans*, organic raw cane sugar, tricalcium phosphate, natural flavors, sea salt, zinc gluconate, riboflavin (B-2), vitamin A acetate, vitamin D-2, vitamin B-12. Belsoy soybeans are third-party certified by ECOCERT-BE-1.
Wt/Vol., Packaging, Price: 32 fl oz (1 quart) or 8.45 fl oz. Tetra Brik Aseptic carton. Retails for $1.69 (2001/11, Lafayette, California).
How Stored: Refrigerate after opening.
Nutrition: Per 1 cup (240 ml): Calories 120, calories from fat 45, total fat 5 gm (8% daily value; saturated fat 1 gm), cholesterol 0 mg, sodium 180 mg (8%), total carbohydrate 9 gm (dietary fiber 3 gm [12%], sugars 7 gm), protein 9 gm. Vitamin A 6%, vitamin B-2 20%, vitamin B-12 15%, calcium 35%, iron 6%, vitamin C 0%, vitamin D 20%, riboflavin 20%, zinc 8%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Alpro is trying again to enter the U.S. market. Brochure (8½ by 11 inches, color, 4 p.) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March 8-11. "Belsoy–The taste of Europe!" Page 1: "Our company: Belsoy products are produced at Alpro [in Belgium], a European company producing only vegetable products. At Alpro, our life is Soy. We have more than 20 years experience in the Soy business... Today, Alpro is the market leader in Europe for Soy products and one of the largest Soy manufacturers in the world. All our products are produced with organic soybeans and are GMO-free." Product range: Soymilk in quart and 8.45 oz sizes. Soypudding in 4.4 oz sizes. Website: www.belsoy.com. Sales and distribution: Belsoy products will be sold in the US through our partners American Natural Snacks (ANS; phone: 904-825-2039) for the natural food trade, and Liberty Richter (phone: 201-843-8900) for specialty food distributors and other channels of distribution. Timing: Belsoy will be available through your distributor from July 1st 2001. Color photos at the bottom of page 1 show four flavors of Belsoy soymilk in quart cartons. Pages 2-3 give ingredients and nutrition facts for 10 SKUs (8 soymilk and 2 soypudding). Page 4 contains barcodes, case and pallet information. Note: Both ANS and Liberty Richter are divisions of Tree of Life.

Trader Joe's Holiday Guide. 2001. Oct. 30–Dec. 31. p. 12. "More interesting new stuff... New! Soy milk fortified with calcium, vitamins and minerals. Original, vanilla, and Belgian chocolate." "Belsoy Soy Milks are made by one of the largest soy manufacturers in the world, with more than 20 years experience in the soy business... Belsoy Soy Milks are made entirely from organic soybeans... They contain nine grams of soy protein per serving... We were very impressed with the clean flavors of all the varieties, and thought the chocolate was terrific! Trader Joe's is the first company in the States to carry these Belgian soy milks. They come in quart (32 fl. oz) shelf stable boxes. $1.69.

Product (Original) with Label purchased at Trader Joe's in Lafayette, California. 2001. Nov. 1. 1 quart Tetra Brik. Light blue, dark blue, green, white and red. Front panel: A light blue photo in the upper right shows a mother holding two children. In the upper left is a green leaf with a drop of water on it. An illustration shows milk being poured into a glass. In a red heart at lower left is written: "Contains 9g soy Protein per serving. See side panel." The side panel states: "Diets low in saturated fat and cholesterol that include 25 grams of soy protein a day may reduce the risk of heart disease. One serving of Belsoy Soymilk provides 9 grams of soy protein... Product of France. Distributed by Liberty Richter, 400 Lyster Ave., Saddle Brook, New Jersey 07663-5910." Back panel: "Belsoy products are produced by Alpro, a European soy food manufacturer producing only vegetable products." Soyfoods Center taste test. Taste and consistency: 9. We like very much the richness, high natural protein content (9 gm/serving without using isolates), and smooth consistency of the Original soymilk. However, for us, the use of white sugar as a sweetener makes the product unacceptable. Price: Excellent. Package design: 8.

Talk with Liberty Richter (Customer Service). 2001. Nov. 5. They import, then sell to distributors. The first products arrived two weeks ago and are just now starting to appear in stores. They are not aware that the product will be produced in the USA.

8009. *Nutrition Business Journal* (*San Diego, California*). 2001. Functional Foods V. 6(10):1, 3-8. Oct.
• ***Summary:*** The U.S. retail food market in the year 2000, worth $495 billion dollars, is divided into the following eight categories, listed in descending order of size: Meat, fish and poultry $108.7 billion. Beverages $88.9 (not incl. milk or liquor). Fruit and vegetables $84.9. Bread and grains $59.7. Dairy $53.4. Packaged/prepared foods $51.7. Snack foods

$30.0. Condiments (incl. oils, dressings, spreads, sauces, spices, sweeteners) $17.6.

The top five U.S. functional food companies in terms of U.S. functional food sales ($ million) are Pepsico U.S. $3,530, General Mills $1,400, Kellogg $1,370, Kraft $780, and Coca-Cola $650. Smaller top companies include: Clif Bar $130, Stonyfield Farms $100, Imagine Foods $90, and White Wave $90. 90% of Imagine Foods' total sales come from functional foods, compared with 100% for White Wave. Imagine Foods launched a big campaign in 2001 to market Organic Power Dream Soy Energy drinks to athletes and fitness enthusiasts.

"Soy is the functional food star of the last two years with an estimated 300 soy products introduced in 2000 alone." Ingredient suppliers in the field of soy are now bearing heavy responsibility for functional food research. ADM, Cargill, Central Soya, and Protein Technologies International (PTI, owned by DuPont) are all investing in research, education, and consumer outreach–plus innovation in processing and new ingredients. One of the largest uses of soy protein is SlimFast, but the health benefits of soy are not the shopper's first consideration.

8010. **Product Name:** Trader Joe's Soy Milk [Original, Vanilla, or Coffee].
Manufacturer's Name: Trader Joe's (Marketer-Distributor).
Manufacturer's Address: Monrovia, CA 91016. Phone: 626-599-3700.
Date of Introduction: 2001. October.
Ingredients: Vanilla: Organic soymilk*, (filtered water, whole organic soybeans*), brown rice sweetener (filtered water, brown rice), natural vanilla flavor with other natural flavors, sea salt, carrageenan. * = Certified organically grown and processed in accordance with the Oregon Tilth standards and the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: ½ gallon (1.89 liters) Combibloc aseptic carton with reclosable cap. Original and Vanilla retail for $1.89; Coffee is $2.29 (2001/10, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 1 cup (8 fl oz or 240 ml): Calories 100, calories from fat 20, total fat 2 gm (3% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 140 mg (6%), total carbohydrate 15 gm (dietary fiber 2 gm [7%], sugars 11 gm), protein 5 gm. Vitamin A 0%, calcium 2%, vitamin C 0%, iron 6%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2001. Oct. 28. Label (Vanilla): Pink on white with purple and greenish yellow. Front panel: "Made with organic soybeans. 25 mg isoflavones per serving. Low fat. All natural. Non-dairy drink." Note the low price of these products.

Trader Joe's Holiday Guide. 2001. Oct. 30–Dec. 31. p. 16. "New! Trader Joe's Soy Milks. Half gallon $1.89." "Trader Joe is one of the leading retailers of non-dairy soy and rice beverages in the United States... Recently, we asked our suppliers to develop a new line of non-dairy soy milks that deliver great taste and an amazing value. From all the submissions we chose these... We have four great flavors: Original, Vanilla, Fat Free Original, and Fat Free Vanilla."

New cap: Talk with Corinne Streit of Tetra Pak / StirMarketing. 2005 July 3. The oblong "snap closure with a foil barrier" (a flip-up white cap with the piece of pull-off aluminum foil below it, that sometimes breaks when it is being pulled off), has just been replaced by a circular, white, "SlimCap" screw cap ("ReCap 3"; 2.8 cm in diameter and 0.8 cm high). The "SlimCap" was introduced in summer 2005. A tamper-proof feature requires a strong twist before the cap is broken from two tiny plastic prongs on one side. Below the screw cap is a circular white plastic "pull-tab barrier." When pulled (by inserting one's forefinger or thumb into the circle), it also pulls off an aluminum foil seal or barrier to the aseptic Brik Pak. This is a better design. Since about 2002 the package has been purple on white and the front panel text has read "35 mg isoflavones per serving."

New ½-gallon refrigerated package design. 2006. Jan. 22. Vanilla and Original flavors. Bill bought Vanilla. Retails for $2.99 per ½ gallon. Taste test: Flavor is excellent and color is very white, but contains "can sugar crystals" = sugar.

8011. **Product Name:** Trader Joe's Soy Milk [Fat Free Original, or Vanilla].
Manufacturer's Name: Trader Joe's (Marketer-Distributor).
Manufacturer's Address: Monrovia, CA 91016. Phone: 626-599-3700.
Date of Introduction: 2001. October.
Ingredients: Vanilla: Organic soymilk*, (filtered water, whole organic soybeans*), brown rice sweetner (filtered water, brown rice), natural vanilla flavor with other natural flavors, sea salt, carrageenan. * = Certified organically grown and processed in accordance with the Oregon Tilth standards and the California Organic Foods Act of 1990.
Wt/Vol., Packaging, Price: ½ gallon (1.89 liters) Combibloc aseptic carton with reclosable cap. Original and Vanilla retail for $1.89; Coffee is $2.29 (2001/10, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2001. Oct. 28. Label (Vanilla): Pink on white with purple and greenish yellow. Front panel: "Made with organic soybeans. 25 mg isoflavones per serving. Low fat. All natural. Non-dairy drink." Note the low price of these products.

8012. United Soybean Board. 2001. National report

2001-2002: Consumer attitudes about nutrition. Seattle, Washington. 8 p. Oct. 28 cm.
• ***Summary:*** This eighth annual nationwide survey, commissioned by USB, was conducted in July 2001 by an independent research firm in Seattle, Washington. Random telephone interviews were completed with 800 consumers. The study's margin of error is ±3.5 percent and has a confidence level of 95%.

Contents: Consumer perceptions of cooking oils. Nutritional concern and habits. Consumer awareness of nutrition terms and information. Consumers on soyfoods and health: Awareness that soy reduces risk of heart disease, where consumers get information on soy and health. Consumers consumption of soyfoods. Media sources and nutritional information. Consumer attitudes about *trans* fatty acids. Consumer perception and knowledge of organic foods. Consumer perceptions of genetically modified food, political and activist organizations, and price increases for labeled foods.

Awareness that soy reduces risk of heart disease: 28% in 1999, 35% in 2000, 39% in 2001.

Percentage of consumers who have tried various soyfoods in 2000/2001: Tofu 45%45%. Soy veggie burgers 41%/40%. Soymilk 25%/28%. Soy nuts 14%/20%. Soy protein bars 11%/18%.

Percentage of Americans that consume soyfoods weekly: 24% in 1999, 27% in 2000, and 27% in 2001. And 42% of Americans consume soyfoods once a month or more.

Note: As of Aug. 2008 this full survey is available gratis in PDF format at www.soyconnection.com /health_nutrition / pdf/.

8013. Wartinger, Lisa. 2001. School Feeding Program [in Belize]. *Plenty Bulletin* (*Summertown, Tennessee*) 17(3):4. Fall.
• ***Summary:*** "With funding provided by the Greenville Foundation, Plenty Belize is assisting parents, teachers and local and national representatives of Belize's School Feeding Program (SFP), in their mission to provide a nutritious lunch during the school day to undernourished children. Via processing workshops and presentations and distribution of printed information, Plenty is enabling SFP representatives to include soy foods such as soy milk, pinole (a soy & corn cereal), and fritter made of soy, flour and seasonings, with lunch meals. In the Toledo District, where Plenty Belize is located, malnutrition is a high risk for Mayan children. SFP meals are currently served to over 485 undernourished students at nine schools in the Toledo District. Each of the participating schools is responsible for financing its own SFP costs, and volunteer parents do the cooking. Part of Plenty's education work is to show how inexpensive it is to produce high-protein, nutritious soy foods. In Belize, 5 pounds of soybeans costs little over $1.50. Soy food products made from this amount of beans will provide each of fifty students with 15 grams of high quality protein and other essential nutrients."

A photo shows four Garifuna women as they learn how to make sot patties.

8014. *Bluebook Update* (*Bar Harbor, Maine*). 2001. Sunrich provides quality from start to finish. 8(2):6. Fall.
• ***Summary:*** The Sunrich Food Group, owned by Stake Technology, now has seven production facilities in Minnesota, Iowa, and Wyoming. Recently the company announced plans to double the capacity of its new soymilk plant in Afton, Wyoming.

8015. Fleming, Richard. 2001. Corporate profile: The roots of sustainability run deep for Sunrich. With farmers as shareholders, this Minnesota foods company has a deep regard for the land. *Natural Business LOHAS Journal* 2(4):45-46. Fall.
• ***Summary:*** The article begins: "It seems every time a physician or nutritionist urges Americans to eat healthier, soy is mentioned. Indeed, soy is a key ingredient in almost every health and fitness product on the shelf today, from energy bars to supplements for menopause symptoms. As western appreciation for the protein-packed soybean has grown, so has the success of the Sunrich Food Group, a whole grain and natural ingredients supplier that furnishes 40 percent of the soy milk in the U.S., sold under a variety of brand names. It's a market that the company says is growing at more than 30 percent annually." An estimated 60-70% of the company's revenues come from the soybean.

Sunrich was founded in Hope, Minnesota, in 1978. The company's shareholders are mainly Minnesota farmers. The company was founded on and specializes in identity-preserved (IP) grains. CEO Allan Routh notes that IP was the company's original capability, and that was how the company developed. Sunrich now also focuses on non-GMO, organic grains and grain products. An estimated 85% of the food ingredients the company produces are organically grown. From Japan, the destination of the company's first exports and still the source of about 25% of revenues, Sunrich borrowed edamame soybeans, which are marketed under Sunrich's Hearty and Healthy brand.

Sunrich was acquired in 1999 by Stake Technology (STKL) of Norval, Ontario, Canada. Stake recycles industrial materials and markets clean pulping technologies. It was a good marriage, since both companies have a deep regard for the planet. Sunrich now produces about two-thirds of its parent company's revenues. Sunrich projects sales for calendar 2001 at $75 million, up 50% from 2000, due in part to the acquisition of two companies last year: Nordic Aseptic, a packaging company focusing on private label manufacturing, and NFD, which specializes in technical food ingredient processing and R&D. Today Sunrich has about 250 employees.

Color photos show: (1) Portrait of Allan Routh. (2) A clean field of soybeans in long, straight lines over low rolling hills. (3) Two hands cupping yellow soybeans against a background of yellow soybeans.

Note: Talk with SunRich. 2001. Nov. 6. The company name should be written "SunRich" not "Sunrich"–as it is throughout this article.

8016. Golbitz, Peter. 2001. Soyfoods sales experience strong growth in 2000. *Bluebook Update* (*Bar Harbor, Maine*) 8(2):1-2. Fall.

• ***Summary:*** A new report, titled "Soyfoods: The U.S. Market 2001," by SPINS and Soyatech, Inc., in association with Arthur D. Little, Inc., gives data for the year 2000. It shows that the category grew by 21.1% to reach $2.77 billion during the year 2000; sales are projected to grow by 15-25% during the year 2001. Since 1995, dollar volume for the category has grown 250%, with double-digit increases every year. The top five soyfoods categories, accounting for 86.5% of total U.S. soyfoods sales, were: (1) Meal replacement beverages and powders. (2) Energy bars. (3) Soymilk. (4) Meat alternatives. (5) Tofu.

New trends: (1) Consumers are now buying more soyfoods products at supermarkets and other mass-market stores than at any other channel; sales here grew more than 30% in 2000. Refrigerated soymilk sales grew more than 500% during 2000, reflecting their new positioning in the dairy case next to dairy milk.

For more information on the report contact SPINS at phone 415-957-4410.

8017. Hain Celestial Group, Inc. (The). 2001. Annual report 2001. Melville, New York. 36 p. Nov. 28 cm.

• ***Summary:*** Net sales for the year ended 30 June 2001 were $412.880 million, up 2.3% from $403.543 million in 2000. Net income in 2001 was $23.589 million, way up from a loss of $17.097 million in 2000, and 74.5% higher than the previous net income high of $13.517 million reached in 1999.

The company now markets 26 brands with over 1,500 different products. "We continue to bring new organic products to market, as well as foods and snacks free of genetically engineered ingredients (GEIs).

In June 2001 the company acquired Yves Veggie Cuisine in Vancouver, BC, Canada. This gives Hain a strong base for growing its Canada operations. Yves has been extremely successful in Canada and the U.S. with its refrigerated meat and cheese alternatives. Hain will soon launch many of its U.S. products under the Yves brand in Canada, and also introduce many new product categories (p. 2).

"Soy beverages continue to be the largest natural food grocery category, and Westsoy has increased its #1 leadership position in aseptic products by growing 9.5% in the last 12 months in the grocery channel alone. This has been at the expense of both long-standing competitors and new entrants... Westsoy expanded to new beverage varieties including soy-based shakes and smoothies, and new refrigerated Westsoy is gaining in both distribution and sales velocity. We now also have the distribution network in place to aggressively support and merchandise the refrigerated section of natural food stores and supermarkets" (p. 3).

Photos show: (1) Westsoy, all natural soymilk beverages (p. 12-13). (2) Yves all natural soy protein products, incl. Veggie Bologna Slices, Veggie Ground Round, Good Slice (cheese alternative), Good Dog (hot dog alternatives), and Canadian Veggie Bacon. (p. 14-15). Yves "continues to lead the North American fresh meat alternative category with exceptional growth in both U.S. and Canadian fiscal markets in fiscal 2001. Yves led category growth with the introduction of new 'Great Tasting' products... Using Yves' strong brand name and distribution network in Canada, we will roll out over 70 new products in the Canadian market in fiscal 2002."

Accompanying the annual report is a "Notice of Annual Meeting of Stockholders and Proxy Statement" (17 p.). Irwin Simon, the founder and CEO, age 43, had the following annual compensation: Salary: $460,000. Bonus: NA. Other compensation: $5,400. Andrew Jacobson, president of the company's Natural Products Group, earned a salary of $247,500. A color photo (p. 2) shows Irwin Simon pushing a shopping cart filled with Hain-Celestial products. Address: 58 South Service Road, Melville, New York 11747. Phone: 516-237-6200.

8018. *SoyaScan Notes.* 2001. Chronology of major soy-related events and trends during 2001 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** April 12–Bill Bolduc, founder of Eden Foods and natural foods pioneer, dies in Southern California.

April 17–Martha Stewart, on her popular nationwide TV program *Living,* has a very positive segment on South River Miso Co.

April 18–Richard Rose, a soyfoods pioneer, sells Rella Good Cheese Co. to Tree of Life. He retains his company HempNut, Inc. in Santa Rosa, California. His Hempeh (hempseed tempeh) still contains soy.

May 11–The Kerry Group (of Wisconsin and Iowa) purchases Iowa Soy Specialties, LLC of Vinton, Iowa.

June 12–The Hain Celestial Group acquires Yves Veggie Cuisine (Vancouver, BC, Canada).

Aug. 24–Wildwood Natural Foods (Fairfax and Santa Cruz, California) and Midwest Harvest, Inc. (Grinnell, Iowa) merge to form Wildwood Harvest, Inc. Iowa Agricultural Finance Corporation (IAFC) invests $3.3 million in the new company, and the Iowa Farm Bureau Federation (IFBF) invests an additional $700,000. This investment will be used to build and equip a 20,000 square foot soyfoods plant in Grinnell and to remodel and equip another 20,000 square

foot soyfoods plant in Watsonville, California.

Aug. 3–Bunge, in its initial public offering (IPO), raises $278 million by floating 23% of its shares on the New York Stock Exchange. Bunge his been a private grain trading company since it was founded in 1818 in the Netherlands by Johann Peter Gottlieb Bunge.

Sept.–SunRich's new soymilk plant in Wyoming starts production. By Nov. the plant is at full capacity and expansion begins.

Oct.–The Coca-Cola Co. acquires Odwalla, Inc. of California for $181 million. Odwalla has annual sales of about $130 million, mostly in fresh, refrigerated juices plus some delectable soy beverages.

Oct. 21–The U.S. National Organic Program and its standards take effect.

Nov. 4-7–Fourth International Symposium on the Role of Soy in Preventing and Treating Chronic Disease held at San Diego, California. General chairpersons and proceedings editors: Stephen Barnes and Mark Messina.

Dec. 10–The Hain Celestial Group, Inc. acquires Lima NV, the leading Belgian natural and organic foods manufacturer and marketer, and its Biomarché operations. Hain appoints Lima's Chairman, Philippe Woitrin, as Managing Director of Hail Celestial Europe. Lima is also a European pioneer in macrobiotic foods and soyfoods.

Dec. 11–Ralston Purina Co. (St. Louis, Missouri, a soy pioneer) is acquired by Nestle SA for $10.1 billion cash; on this date the deal is approved by the U.S. Federal Trade Commission. The new company is named Nestlé Purina. The merger brings together such household names as Ralston's Dog and Cat Chow and Nestle's Friskies cat food and Mighty Dog brands.

Dec. 24–The Federal Trade Commission approves the merger of Dean Foods and Suiza Foods Corp. (which owns 14% of Horizon Organic Dairy). A federal judge throws out White Wave's lawsuit arguing that White Wave has the right to buy back its own stock at the market price before the merger.

In 2001, for the first time in modern history, the USA lost the distinction of supplying more soybeans and soybean products (oil and meal) than all other countries combined. This year it supplied about 46% of the world's soybean exports. South America (mainly Brazil and Argentina) now supply more than 50%. Devalued currencies in Brazil (the *real*) and Argentina (the *peso*), plus the strong U.S. dollar, make it difficult for U.S. exporters to compete based solely on price. To compete in the future, U.S. growers must find a new strategy, which will focus on soybean quality.

8019. *ADM Health & Nutrition Update* (*Decatur, Illinois*). 2001. Continued interest in soy products, according to a recent survey. 3(3):5. Dec. [1 ref]

• ***Summary:*** The following are results from a survey conducted for the United Soybean Board, based upon a nationwide telephone of 800 adults 18 years and older.

Consumers who believe soy oil is healthy 88%.

Consumers who are aware of tofu 82%.

Consumers who are aware of soymilk 78%.

Consumers who use soy products at least once a week 27%.

Consumers who believe soy products are healthy 69%.

Consumers who are aware of specific health benefits of soy 39%.

8020. Tale of tofu. 2001. Television broadcast. Canadian TV, Channel 1, The Body, Mind, and Spirit Channel. 1 hour. Dec. 2001.

• ***Summary:*** This is a unique color documentary about tofu in China, narrated by John Culkin (with a few English subtitles when Chinese are speaking), written by Zoe Siu Moi Yee and Lo Wing Yi, directed and executive produced by Tely Fung Wing Chuen, with photography by Ko Chiu Lem. Copyright 2000, it was broadcast in Canada in Dec. 2001. The cinematography is very well done, interesting, and often beautiful. Although the narrative contains many errors and much strange and condescending language, it also contains some new information, especially about unusual types of ethnic or regional tofu varieties. However tofu is presented as an ancient, exotic, foreign food, with no suggestion that it might become part of Western diets.

The story begins: In the "epic struggle for survival, one food has emerged the champion of the poor during the centuries of hardship. Inexpensive and yet nutritional, it is the humble bean curd–tofu." It is "rich in amino acids and anticarcinogens." "At once a much-needed protein supplement and a veritable health food for the poor, bean curd is an oddity in its own right. And if legend has it right, then maybe tofu is a manna from heaven for the Chinese.

"The mythology of tofu begins with the diminutive and unimpressive soya bean." In Guizhou province (in southwest China), despite the harsh weather and rough terrain, soybeans grow well. In the village of Shenlin "soyabean constitutes the staple food of the people." All the families in Shenlin know how to make tofu but only 4 make and sell it (for 1 yuan/catty) to earn a living. One "old woman has devoted her life to the art of tofu-making, not so much for the income as for the pleasure of keeping up an old tradition." As pasta is to the Italians, so where you find Chinese you will find tofu. Today most of the tofu in China is made from soybeans imported from the USA and South America.

The Chinese greatly enjoy cooking; more than 30 products are derived from tofu. For example, crispy bean curd is used in Chinese hot pots. Pressed tofu is eaten during Chinese New Year in Nanjing.

Two sisters of the Miao minority hill tribe make tofu starting at 8:00 each evening. The first step is to make soyamilk, which can provide a "valuable nutrition supplement to children in poverty-stricken areas." Soymilk

must first be boiled thoroughly (usually in a large wok-shaped container) before it is sold at the market. In rural communities, where central heating is a rare luxury, "many Chinese start the day by warming up with hot soymilk and Chinese-style fried doughnuts." The Miao sisters sell soymilk in plastic bags to make it easier to handle. They make 600 packs each night; it is ready for distribution to retailers at dawn.

When hot soymilk cools, a thin layer forms on its surface. This "looks like a pale wrinkled pancake" and is called "bean curd skin" [yuba]. It is one of the most expensive soya products and only a few good-quality (transparent) pieces can be obtained per batch of soymilk. The rest is considered a lower grade product due to color deterioration which causes the lower layers to gradually turn opaque. Though it is an extravagance, those who love its flavor and texture find it well worth the expense. Modern technology now makes it possible to mass-produce bean curd skin.

"In the half-forgotten village" of Kaili, in Guizhou province, the art of making pressed bean curd still thrives. "Plaster of Paris catalyzes the ingredients and coagulates the soyamilk. Surprisingly, the process has no adverse side-effects." Various local flavoring agents are added, resulting in a line of "dried of products." Regular flavors include marinated bean curd and pungent bean curd. Exotic varieties include cowhide bean curd and tea-flavored bean curd. These are sold as snacks in local markets.

Curing the tofu with woodsmoke enables it to be preserved for 7 more days. Since the smoking process is time consuming, it is fast becoming obsolete, and it costs an extra 4 cents per catty of tofu. Making pressed bean curd requires "back-breaking labor. Each day these girls must stand in the sweltering heat of the smokehouse for 13 hours in order to make 500 catties of pressed bean curd." No effort is spared in making these "edible little bricks of bean curd.

We can try to preserve tofu "or we can let it rot" to make fermented bean curd. The tofu is left to mold for several days is a process "not unlike that of making cheese. The workers spread a kind of mold onto the surface of the bean curd, which is then stored at a temperature of 25-30ºC for 3 days. A layer of thin white hair begins to sprout on top of the bean curd." This tofu is then stored in large jars for 3 months while fermentation takes place, breaking the protein in the tofu down into amino acids. "Sometimes the bean curd is wrapped in mustard leaves and stored for 12 months" to create a special product. In China "it is believed it was not human beings, but apes, that first discovered the joys of fermented food"–according to legends in ancient literature. Chinese greatly enjoy wine, as well as bean curd. "It adds a certain flavor to otherwise harsh rural lifestyles. Here, to make poverty bearable, the saying goes, 'All you need is one piece of fermented tofu for one meal and a bottle of fermented tofu to last the year.'"

In its heyday, a little village in Anhui province (eastern China) was home to about 200 families "solely engaged in making tofu." "It is famed for producing the best and most sought-after in China." Concerning the origin of tofu, "most Chinese generally subscribe to the legend of a certain feudal lord, Liu-An of Huai-Nan. Two thousand years ago, during the Han dynasty, Liu-An searched far and wide for the fountain of youth. He believed he could discover the secret of immortality and turn it into a magic pill. When his valiant efforts failed, he threw his half-finished potion into a river in disgust. Natural plaster in the river chemically reacted with the mythical ingredients. And so it was that the first block of bean curd was bestowed upon humanity." The legendary location of his famous experiment is where the "tofu village" stands today. The little stream of historic fame still runs through the village. In its water, the people "wash their clothes, clean their shoes, and prepare the beans that will be made into tofu." One catty of soybeans will yield as much as 3-5 catties of tofu. "The people of this village are content that theirs is the original and authentic recipe for tofu. They have inherited a gift from history." The myth of Liu-An has secured this obscure little village its place in Chinese history.

Many Chinese use bicycles or walk with a shoulder pole to carry their tofu to the nearest market. Some leave home as early as 5:00 in the morning and walk for 2 hours. Today, mass-produced tofu in China is driving village tofu makers out of business.

Freshness is tofu's strength, but also its weakness. "Tofu has a short shelf life and cannot be taken on longer journeys. Even the highly pungent preserved bean curd needs to be eaten fresh. This bean curd, with its forbidding coloring and pungent aroma, can only be found in Nanjing. This brown, smoked bean curd is a "dry" variety with a special, and no less enticing smell."

To make pungent black tofu, the beans are ground in a mechanical grinder, the soya mixture is first placed in a U-shaped rattan mold, immersed in a large pot, then marinated in a special sauce (made from a centuries-old recipe including anise, cinnamon, peppercorn, and black sesame seeds, in wide-mouth earthenware vats, 3 feet in diameter) to produce its unique color and flavor. This tofu is part of the famous Qinghai cuisine of Nanjing, named after the Qinghai River. To preserve its unique flavor, it must be steamed before it is rinsed. Aficionados of pungent black tofu "agree with most visitors that its bold smell evokes the odor of football [soccer] shirts after a tough game." Continued.

8021. Weed, Susun S. 2001. New menopausal years: The wise woman way. Woodstock, New York: Ash Tree Publishing. xxiii + 280 p. Dec. Illust. Index. 22 cm. [102* ref]

• ***Summary:*** Soy is discussed throughout this book but sources are rarely cited. When they are cited, we insert them below. For heavy bleeding (flooding) during the menopausal

years: To nourish and tonify, avoid tofu, soy drinks, and soy protein powders (p. 9-10). For uterine fibroids: Consume lignans, which are anti-estrogenic phytoestrogens, found in all whole grains and beans–including soy (p. 15). Building better bones: Exercise regularly, eat calcium-rich foods, and avoid calcium-leaching foods such as soy "milk," tofu, coffee, alcohol, and white flour products (p. 24). Calcium: Caution–"Unfermented soy (e.g. tofu) is especially detrimental to bone health being protein-rich, naturally deficient in calcium, and a calcium antagonist to boot (p. 28). Beware of calcium antagonists, foods that interfere with calcium utilization. Avoid consistent use of unfermented soy products, including tofu, soy beverages, and soy burgers (p. 29; see p. 163).

Phytosterolic, phytoestrogenic foods: Whole grains and beans are good sources. "Caution: Beans must be cooked or fermented to remove anti-nutritional substances. Tofu and soy 'milk' are not recommended" (p. 70).

Red clover has ten times more phytoestrogens than soy, as well as much more bone-building minerals, such as calcium and magnesium (p. 71). Sea vegetables are second only to flax in concentration of lignans. Seaweeds, not soy, are the real secret of health in the Japanese diet (p. 72). "The phytoestrogens in *dong quai,* like those in soy, promote the growth of cancer cells in petri dishes" (p. 73). Phytoestrogenic herbs: Fermented soy products (miso, tamari, tempeh), ground flax seeds, whole grains, etc. are rich in hormonal precursors and phytoestrogens. Use daily to ease menopausal symptoms, prevent cancer, and lower heart disease risk (p. 94). Lack of vitamin B-12 doubles the risk of severe depression for older women; tofu and soy beverages interfere with its absorption (Fallon 1999) (p. 114).

Preventing breast cancer: 75% of all breast cancers occur in women over age 50. Reduce use of seed oils, such as soy oil. For each 5 gm of polyunsaturated fat (from vegetable oils), risk of breast cancer rose by 70% (Wolk 1997 [sic, 1998]) (p. 145). Eat more beans: "There is a relationship between the large amount of *fermented* soy products (miso and tamari) in the Japanese diet and low incidence of breast cancer. But no relationship has ever been shown between the consumption of processed, fake, imitation soy foods, and breast cancer reduction. Soy beverage is used moderately, or not at all, depending on the specific Asian country" (p. 146).

Herbal allies: Red clover is everything you thought soy would be with none of soy's drawbacks. It contributes to bone health, normalizes the thyroid, and prevents and counters breast cancer. "So do miso and tamari, but not other soy foods. Red clover contains more active phytoestrogens in greater quantity than soy... Red clover contains all four of the major estrogenic isoflavones; soy has only two of them. A cup of red clover infusion (not tea) contains ten times more phytoestrogens than a cup of soy beverage, is richer in calcium, has less calories, and contains no added sugars" (p. 161).

The section titled "Soy" (p. 163-64) praises fermented soy foods (miso, tamari, tempeh, natto) but is quite critical of tofu, soy milk, and "fake soy foods" (burgers, hot dogs, soy cheese, etc.). Soy can reduce hot flashes and prevent heart disease; fermented soy foods can protect against breast cancer. Soy is not a good source of calcium and it is deficient in fats needed for healthy brain/memory functioning. "Soy protein isolate, textured vegetable protein, isolated isoflavones–processed soy foods come in more forms than I can list. I eat miso and tamari freely, tofu and tempeh occasionally, and other soy products not at all. Dosage: 50-200 grams of isoflavones per day, preferably from food. Caution: Excess soy can cause liver damage and is said to feminize men. Soy may be difficult to digest, may cause allergic reactions."

Interstitial cystitis: Tofu may cause problems (Ford 1999).

Heart healthy: Soy, whole grains, vitamin E (from foods), essential fatty acids, and seaweeds are helpful (p. 210).

Osteoporosis risk factors: Being a vegetarian or vegan who eats a lot of tofu or soy beverage (p. 218). "Eliminate soy products except tamari and miso. (Unfermented soy prevents you from utilizing calcium.)" (p. 220).

Aching joints: A tofu poultice may help (p. 229).

Vitamins and minerals for the menopausal years: Vitamin B-12, calcium, and iron are depleted by unfermented soy products (p. 248, 250-51).

Note: The author does not cite a single scientific publication to support her many criticisms of soyfoods. In fact, the scientific literature does not support her criticisms. It is well known that the author is an admirer of Sally Fallon. Address: P.O. Box 64, Woodstock, New York 12498-0064.

8022. Winter, Metta. 2001. The man behind soymilk's success: Winston Lo MS '67 a chairman of Vitasoy International, a food processing company that sells soymilk and soy foods in 26 countries. *Agriculture and Life Sciences News* (*Cornell University, Ithaca, NY*). Dec. p. 4.
• ***Summary:*** Keith Steinkraus, a microbiologist at Cornell Univ., recruited Winston Lo as a graduate student. Lo spent two years developing a novel, high-yielding process that produced soymilk with a more pleasing taste. Today in Hong Kong soymilk is popular as a substitute for milk but also as a soft drink, second only to Coca-Cola. Worldwide, 1.5 million individual containers of Vitasoy soymilk are sold in 26 countries each day.

The person who has most influenced Winston's life is his wife, Jeanette. Together they raised two daughters, both Cornell graduates (Joy '93 and May '97), who they hope will someday join the family business.

A sidebar describes how Winston Lo has helped Cornell. In 1994 he established the Vitasoy and Lo Fellowship in Food Science at the Geneva experiment station with a

generous endowment. The interest income from this fund provides support for a graduate student in the Dep. of Food Science and Technology at the experiment station. A photo shows Winston holding a cop of soymilk latte.

8023. Hutabarat, L.S.; Greenfield, H.; Mulholland, M. 2001. Isoflavones and coumestrol in soybeans and soybean products from Australia and Indonesia. *J. of Food Composition and Analysis* 14:43-58. *
• ***Summary:*** Gives levels of daidzein, genistein, and coumestrol for the following soybeans and commercial soyfood products: Soybeans (USA, Indonesia, Australia: McKenzie's, Bowyer Riverina NSW), Fresh soybeans [edamame] (Indonesia, Imported from China), Canned soybeans (Australia), Soymilk products Australia (So-Good, So-Good lite, Good Life, Soy drinks No Frills, Soy drink Sungold, Vitalife Natural foods, Vitasoy Vitasoy Int., Natures, So Natural, Soya drink, Instant soy powder), Soymilk from Indonesia (Susu Kedalai Mony, Soya bean milk, Susu Kedalai traditional), Tofu products from Australia (Hard, Silken, Smoked, Firm, with tempeh, Cutlets, Nigari, Organic), Tofu from Indonesia (Traditional, Silken, Tahu Tau Kwa, Skake).

8024. Berkoff, Nancy. 2001. Vegan meals for one or two: Your own personal recipes. Baltimore, Maryland: The Vegetarian Resource Group. 216 p. Illust. Index by subject. Index to recipes. Index by major ingredients. 23 cm.
• ***Summary:*** Contents: It's all about you. Meal planning and shopping. Breakfast. One-pot wonders. Freeze or refrigerate now, eat later. Grab-and-go. Desserts and snacks. Every day and special day cooking. Glossary: Definitions of vegan products and details of less common cooking, measurements, soy substitutes. Resources from the Vegetarian Resource Group. Address: R.D.

8025. Breier, Davida Gypsy; Mangels, Reed. comps. 2001. Vegetarian & vegan FAQ: Answers to your frequently asked questions. Baltimore, Maryland: The Vegetarian Resource Group. 272 p. Illust. Index. 23 cm. [69 ref]
• ***Summary:*** Contents: 1. Most frequently asked questions (incl. How many people are vegetarian? Detailed results of polls conducted in 1994, 1997, 2000). 2. Vegetarianism in daily life (incl. How do you pronounce "vegan?" Ans: VEE-gun. Who are some famous vegetarians? What is the history of vegetarianism?). 3. Nutrition (incl. I need impartial, major scientific studies that show a correlation between a vegetarian diet and disease prevention? Gas caused by eating soy). 4. Food ingredients (incl. Soy cheeses, soy lecithin). 5. Recipes (incl. many recipes for tofu, tempeh, soy whipped cream, chocolate pudding with soymilk, soy yogurt, wheat gluten / seitan, TVP). 6. Vegetarian products (incl. What is seitan? Where can I buy seitan? What is tempeh? What is TVP? Where can I buy TVP? What is tofu? What do I do with it? Alternatives to dairy products. Vegan eggnog. Soy candles). 7. Cooking and baking (Tofu, draining tofu, tofu cream cheese, Tofutti). 8. Travel and restaurants. 9. Veggie kids (Soy-based infant formula. Phytoestrogens in and safety of soy infant formula). 10. Soy (p. 168-76; contains good, balanced responses to the anti-soy articles by Fallon and Enig, p. 173-76). 11. Vegan concerns. 12. Unique questions. 13. Questions about VRG. 14. Appendix: Quick guide to fast food. Quick guide to helpful websites. Protein content of selected vegan foods. Calcium content of selected vegan foods. Iron content of selected vegan foods. Daily values. A senior's guide to good nutrition. Eat better, perform better, sports nutrition guidelines for the vegetarian. Why is wine so fined? Handy guide to food ingredients. List of suggested reading: Vegetarian cookbooks, vegetarian families, vegetarian travel. School foods information. Feeding plans for infants and toddlers. VRG publications, resources, and tabling materials.

Soy-related questions and answers outside of Chapter 10: Gas and bloating after eating soy (p. 64). Casein found in many soy cheeses (p. 80). Soy lecithin (p. 85). Recipes: Tofu dill dip (p. 88). Spinach pie (with tofu, p. 93). Tempeh stuffed potatoes (p. 94-95). Spicy sautéed tofu with peas (p. 98). Quick sloppy joes (with tempeh, p. 98). Sweet potato slaw (with tofu). Tofu balls (p. 100). Pad Thai (p. 102-03). Davida's spicy garlic noodles and tofu (p. 105). Soy whipped cream (with soymilk, p. 106-07). Chocolate pudding (with soymilk, p. 107). Heavenly chocolate cupcakes (with soymilk, p. 109). Tofu cheesecake (p. 112). Homemade soymilk, rice milk, almond milk (p. 115). Homemade tofu (p. 115). Tofu recipes on the Web (p. 116). Homemade soy yogurt (p. 116). Homemade wheat gluten & seitan (p. 116). What is tempeh? What is TVP (p. 119). Vegetarian mince or meatless ground beef (p. 120-21). vegetarian and soy cheeses (p. 121). Tofurky (meatless turkey, p. 122-23). Tofutti (non-dairy soy ice cream) and vegan eggnog (p. 125). Soy-based vegan candles (p. 126). Using tofu (p. 129-31). Tofu cream cheese (p. 131). Soymilk and soy creamer (p. 132). Soy buttermilk and soy mayonnaise (p. 133). Feeding an infant with soy formula (p. 154). Are the phytoestrogens in soy formula safe? (p. 155). Helping kinds to switch to soymilk from cow's milk (p. 156). Address: 1. Baltimore, Maryland; 2. R.D.

8026. Davis, Brenda; Grogan, Bryanna Clark; Stepaniak, Joanne. 2001. Dairy-free & delicious. Summertown, Tennessee: The Book Publishing Co. 160 p. Index. 21 x 18 cm.
• ***Summary:*** Contains over 100 creative vegan recipes for managing milk allergy and lactose intolerance. Nutritional information by Brenda Davis, R.D. Recipes by Grogan and Stepaniak. Contents: Introduction. 1. Lactose intolerance. 2. Milk allergy. 3. Building strong, milk-free bodies. 4. Superb substitutes. 5. Dairy-free dining: Travel tips. Natural

foods for dairy-free cooking [glossary]: Agar, arrowroot, brown rice syrup, liquid smoke, mirin, miso, nutritional yeast, seitan, soy flour, soy protein isolate powder, soy sauce (tamari), tahini, tempeh, tofu. Dairy-free & delicious recipes: Homemade dairy-free spreads, uncheeses, and milk. Sauces. Breakfast. Salads and dressings. Soups. Main dishes. Desserts.

With this book, you can make any "dairy product" you can imagine without using dairy. The most widely used ingredients are: Tofu (used in more than 70 recipes!). Soymilk, rice milk, and other dairy-free milks. Nutritional yeast.

8027. Eden Foods, Inc. 2001. The history of Eden Foods. Clinton, Michigan. 3 p. Unpublished typescript. Undated.
• ***Summary:*** This chronology (1967-2001) begins as follows: "1967–Michael Potter and a small group of students on the Univ. of Michigan campus, begin making collective, small orders of natural foods from two of the largest wholesalers at the time.

"1968–Eden Foods Co-op is established in Ann Arbor, Michigan.

"1970–Eden Foods begins food processing, opening a bakery, cafeteria, and the 'Turtle Island' restaurant in Ann Arbor."

Note 1. The early entries in this chronology are deceptive and inaccurate. They make it appear as though Michael Potter founded Eden Foods since his is the only name mentioned in the chronology and since his name is mentioned just before the business was established. In fact, Potter did not join Eden Foods until Oct. 1971–a fact that is omitted in the chronology.

Note 2. Eden Foods was established in Nov. 1969–not in 1968. All of the founders (Bill Bolduc, Tim Redmond, etc.) and early publications agree on that date.

Note 3. The names of the founders of Eden Foods are, unfortunately, omitted from this chronology.

Note 4. One entry states: "1983–North America's 1st soymilk Edensoy is introduced." In fact, Miller's Soyalac Soya Milk had been made since 1940 in Mt. Vernon, Ohio, by International Nutrition Laboratory, founded by Dr. Harry Miller. It was on the market and sold well for more than 40 years.

The later entries are interesting and probably accurate: "1986–Eden opens a warehouse in San Francisco, California. 1987–Eden partners with the Hirzel family of Ohio to grow organic tomatoes, chilies & cabbage for Eden sauerkraut. 1989–Eden Organic Pasta Company becomes the first third party certified organic pasta facility in America.

"1991–The first Eden organic beans are canned in Eaton, Indiana. 1993–Eden expands its facilities in Clinton, Michigan. Eden first questions organic integrity under USDA/NOSB. Eden adopts a policy requiring affidavits from growers and suppliers guaranteeing that their food is GEO-free. 1994–Eden contracts with a cooperative of family orchards to secure organic tree fruit. 1997–Eden sponsors the first whole foods cooking show, 'Christina Cooks' nationally, on PBS. 1998–Eden introduces its first Biodynamic food, Whole Grain Rye Spirals and celebrates its 30th anniversary. 1999–Eden expands its warehouse facility for the eighth time.

"2000–AIB Certification, New Eden web site is launched and Edensoy Light is introduced. 2001–Eden purchases Sobaya, the Canadian producer of Eden Organic Traditional Japanese Pasta. Eden receives the prestigious 'Socially Responsible Business Award' for exemplary business practices. Over 400 vegetarian recipes are posted to Eden's renewed web site, along with detailed historical information, nutritional information and manufacturing descriptions for all of Eden's products." Address: 701 Tecumseh Rd., Clinton, Michigan 49236. Phone: 517-456-7424.

8028. Geiskopf-Hadler, Susan; Toomay, Mindy. 2001. The complete vegan cookbook: Over 200 tantalizing recipes plus plenty of kitchen wisdom for beginners and experienced cooks. Rocklin, California: Prima Publishing. xvi + 318 p. Illust. Index. 22 cm.
• ***Summary:*** Contains more than 200 vegan recipes, including many recipes for miso (3 recipes), soy cheese (9), tempeh (7), tofu (regular, 22), tofu (silken, 6), and soy yogurt (2). The "Glossary of special ingredients" contains definitions of miso, soy mayonnaise, soy milk, tempeh, and tofu. For nutritional information about soy foods, see p. 20-21. Tamari soy sauce is frequently used as a seasoning.

Contents: Acknowledgements. Introduction. 1. Cooking fundamentals. 2. Stocking the vegan pantry. 3. Menus for entertaining and everyday meals. 4. Appetizers. 5. Salads. 6. Soups and stews. 7. Vegetable side dishes. 8. Pasta dishes. 9. Grain and bean dishes. 10. Sautés and stir fries. 11. Baked and grilled entrées. 12. Sandwiches and wraps. 13. Morning meals. 14. Deserts. 15. Frequently used ingredients. Appendix: Nutrition fundamentals. Glossary of Specialty ingredients. Address: Northern California.

8029. Hepinstall, Hi So Shin. 2001. Growing up in a Korean kitchen: A cookbook. Berkeley, California: Ten Speed Press. 254 p. Illust. Index. 26 cm.
• ***Summary:*** The best book seen to date for information and recipes on soyfoods in Korea. The author grew up in Cheongju, South Korea, in her ancestral home. Families made sauces in earthenware crocks (p. 7). A list of ingredients with descriptions includes: Bean curd (Tubu [tofu]). Beans, dried (K'ong, incl. yellow and black soybeans, mung beans and red [azuki] beans). Koch'ujang (Korean hot red pepper paste [with soybeans]). Kudzu (Ch'ik). Meju (Korean fermented soybean paste block [soybean koji]). Piji (Bean curd dregs [okara]). Red

bean paste (P'at komul). Soy sauce (Kanjang). Soybean powder (K'ong karu; a yellow powder sold in 1-lb plastic bags). Soybean sprouts (K'ong namul). Toenjang (Korean fermented soybean paste).

Essential sauces and pastes: Recipe for: "Homemade soy sauce and fermented soybean paste: Kanjang and toenjang." It makes 10 gallons and takes about 2 months to prepare. Unusual ingredients include: 3 pieces oak wood charcoal, 1 gallon white grain syrup (choch'ung), 10 toasted jujubes, and 5 dried hot red peppers. For about 60 days, let the crock stand in the open without a lid; cover when it rains. At the end of 60 days the mash is filtered through a bamboo basket lined with a fine-mesh cloth into a crock to yield two products: The fermented soybean paste (toenjang) remains in the strainer, whereas the soy sauce filters through into the crock. Store the paste in a sterilized crock; sprinkle a thin layer of coarse salt on top. "Pour the soy sauce liquid into a caldron, bring to a boil, and allow to simmer over low heat until it is reduced to one-third of its original volume." Adjust saltiness. The paste and the sauce or now ready to be aged, but we are not told for how long.

Soy sauce at this stage (unaged) is called *ch'ongjang* (clear soy sauce) or *Choson* kanjang (Korean soy sauce). A plain and somewhat salty brown sauce, it is used mostly in base seasonings and clear soups. To make *chin kanjang,* a superior thin, syrupy, jet-black soy sauce, similar to the dark soy sauce sold in today's markets, submerge a large-mesh cloth pouch containing black soybeans, p'yogo mushrooms, and strips of kelp (*Miyok*) in the clear, unaged soy sauce and simmer over low heat for about an hour. The longer it is aged, the mellower it becomes, and the more intense the flavor.

Homemade hot red pepper paste (*Koch'ujang,* with 1 cup fine meju powder and ½ cup soy sauce). Instant fermented soybean paste (*Makjang;* uses 5 cups powdered meju and takes 10 days to mature). Vinegar soy sauce (*Ch'o kanjang*). T'ang soybean paste (*T'anggukjang;* "the best tasting soybean paste among all toenjang). Fermented soybean paste with garlic and bean curd (*Ssamjang;* "Probably the tastiest soybean paste made in the Korean kitchen," p. 32).

Main dishes: Five grain rice (*Ogkpap or Chapgokbap,* with ½ cup dried black soybeans, p. 41. Koreans traditionally eat this dish on the 15th day of the 1st month of the lunar year). Soybean sprouts with steamed rice (*K'ongnamulbap,* p. 44). Ceremonial soup (*T'ang,* with medium firm tofu, p. 62). Seaweed soup (*Miyokguk,* with tofu, p. 65). Kimchi soup (*Kimchiguk,* with tofu and soybean sprouts, p. 67). Soybean porridge (*K'ongjuk,* with 1 cup soybean powder, p. 78). Noodles in chilled soybean milk (*K'ong kuksu,* with 1 quart soy milk, p. 86). Stuffed dumplings (*Mandu,* with medium-firm tofu, p. 90-91). Soy sauce kimchi (*Chang kimchi,* p. 103).

Side dishes: Seasoned soybean sprouts (*K'ong namul,* p. 122, incl. Chilled soybean sprouts, and Soybean sprout soup). Sauteed cabbage kimchi with beancurd and pork (p. 130). Bean curd and vegetable stew with fermented soybean paste (*Tubu toenjang tchigae,* p. 138). Bean curd and vegetable hot pot (p. 152). Soybean pancakes (p. 163). Stuffed pan-fried bean curd (p. 167). Stuffed pan-fried p'yogo mushrooms (with bean curd, p. 168). Stuffed pan-fried peppers (with bean curd, p. 169).

More tofu recipes are on pages 170, 171, 172, 196-97, 199, 200, 204-05, 217. Many recipes call for kelp, kim (laver, nori) or seaweed (see index). Address: Washington, DC.

8030. Jaivin, Linda. 2001. The monkey and the dragon: a true story about friendship, music, politics and life on the edge. Melbourne, VIC, Australia: Text Publishing Co. 438 p. Illust. Index. 24 cm.
• ***Summary:*** About the author's friendship with Taiwanese rock star Hou Dejian. Page 398: "Some things about Taipei were exactly the same as when I'd lived there twenty years earlier: the smells wafting from the ubiquitous snack carts offering egg-wrapped pancakes with chilli sauce, the aptly named 'stinky beancurd' and betelnut wrapped in vine leaves. Open-fronted restaurants served up steaming bowls of soy milk, sweet or savoury, as well as bubbling soups of puffed beancurd [probably fried tofu squares] and stewed meats." Address: Sydney, Australia.

8031. Marcus, Erik. 2001. Vegan: The new ethics of eating. Revised ed. Ithaca, New York: McBooks Press. xi + 211 p. Illust. Index. 23 cm. [432 endnotes*]
• ***Summary:*** Very well researched and written. Widely considered to be the best current introduction to Veganism. Contents: Foreword, by Howard Lyman. Introduction. I. Part I: To your health. 1. The beat goes on. 2. Cutting your cancer risks. 3. Eat well to weigh less. 4. The perfect food isn't. 5. How now, mad cow. II. Part II: The truth about food animals. 6. Rescued! 7. Chickens and eggs. 8. Pigs. 9. Milk and beef. 10. The killing business. III. Part III: Beyond the dinner table. 11. World hunger. 12. American rangeland. 13. Awakening. Appendix A: The new four food groups.

The New Four Food Groups (p. 194-95) are vegetables, whole grains, fruit, and legumes. Legumes includes soy milk, tempeh, texturized vegetable protein, and tofu.

On the cover is written boldly: "Urgent. What we eat has devastating effects. Heal our planet and your body."

The chapter on mad cow disease gives a brief but good history of the problem. In Jan. 1997 the U.S. Foods and Drug Administration proposed regulations to prohibit the feeding of cattle parts back to food and dairy cattle. In June 1997, the proposal was passed into law. "If the resultant ban is seriously enforced, it could essentially eliminate the possibility of a British-style mad cow epidemic." However the new legislation still allows livestock producers to take

risks with America's food supply by feeding other animal by-products back to farm animals. Pig and chickens have been shown to have developed spongiform diseases. Yet the new law exempts rendered pigs, chickens, horses, milk, blood, and gelatin from the ban.

British BSE researcher Stephen Dealler has tried to calculate how many Britons may actually die from Creutzfeldt-Jakob disease–the human form of mad cow disease. He has calculated 21 scenarios, each of which he considers equally likely. Fifteen of these show at least 140,000 people at high risk of developing the disease, and the six worse predict that over 32 million people in Britain have already been exposed to a potentially fatal dose. The wide range of numbers results from several unknowns: (1) The rate of transmission from infected of beef to humans that eat it; the issue of crossing the species barrier. (2) The human body's resistance to BSE prions. (3) The incubation time and distribution of the infection in humans. A closely related question is how many humans will die from spongiform encephalopathies contracted from infected animals other than cattle–such as pigs, chicken, etc.

Eric Marcus was born in 1966. Address: Vegan.com, P.O. Box 432, Albion, California 95410.

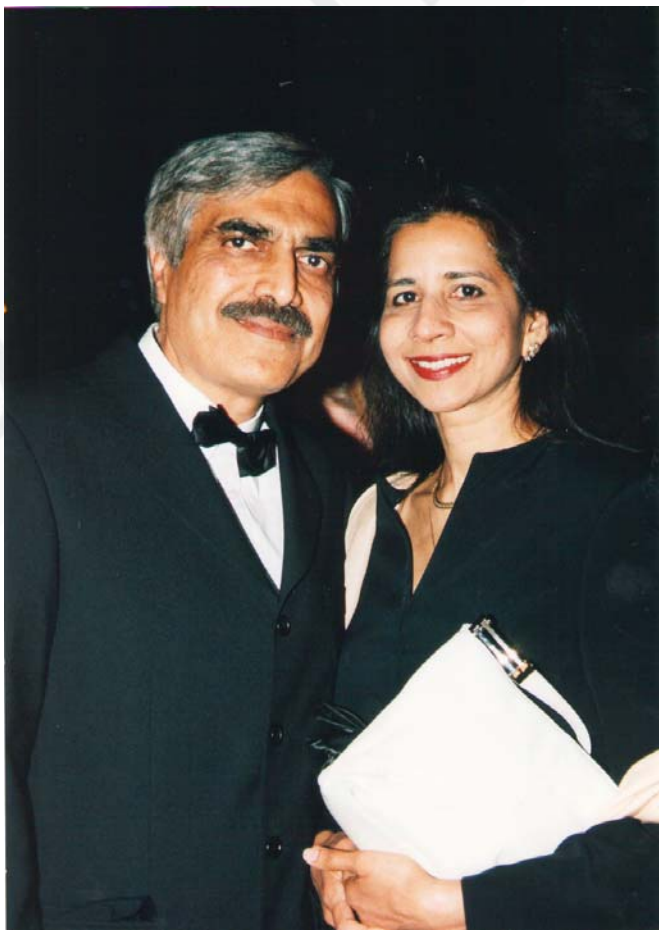
8032. Northrup, Christiane. 2001. The wisdom of menopause: Creating physical and emotional health and healing during the change. New York, NY: Bantam Books. xi + 589 p. Illust. Index. 28 cm. Revised and expanded in 2006.
• ***Summary:*** "This book is dedicated to the pioneering spirit embodied in the women of the baby boom generation." The stories in this book reflect authentic situations in the lives of the thousands of perimenopausal women Dr. Northrup has seen in her practice. She has "integrated advanced medical techniques with the best natural remedies, offering readers specific guidance on choosing the right approach for themselves."

In this book "Dr. Northrup once again challenges convention. 'The change' is not simply a collection of physical problems to be 'fixed'–whether with hormones or herbs–but a body-mind revolution that brings the greatest opportunity for growth since adolescence... [This] book examines the connection between menopause and a woman's emotional and spiritual life And it stresses how the choices a woman makes now–from the quality of her relationships to the quality of her diet–either secure her health and well-being for the rest of her life, or put her at future risk."

Candid and reassuring, [this book] elucidates the changes women should expect from ages 40 to 55, and how these changes can be wonderfully life-affirming. Instead dreading menopause as a time of loss, women will hear the real message their bodies are sending–that this is a time of personal empowerment and positive energy... and a time for women to break free and thrive." Contains a very positive and accurate section on the ability of soyfoods to relieve menopausal symptoms. But the benefits are dose-dependent. Discusses: Soy and menopause (p. 125). Bone loss (p. 164). Soy capsules or pills (p. 173). Soy and menopausal symptoms, dose dependency, genetic engineering (p. 179-84). Vaginal resiliency / moisture (p. 286). Alzheimer's and dementia (p. 321). Skin and wrinkles (p. 345). Breast health (p. 422). Summary (p. 548-49).

About the author: "Christiane Northrup M.D., trained at Dartmouth Medical School and Tufts New England Medical Center before cofounding the Women to Women health care center in Yarmouth, Maine... Board certified in obstetrics and gynecology, she is past president of the American Holistic Medical Association." Address: M.D. (gynecologist), Women to Women, Yarmouth, Maine.

8033. Photograph of Raj and Rashmi Rekha Gupta (husband and wife) of ProSoya Inc. 2002.



• ***Summary:*** Taken at the Cannes Film Festival, May 2002.

8034. Ramnarine, Angela Usha. 2001. The manufacture of tofu, okara and derived products. MSc thesis, University of the West Indies, St. Augustine, Trinidad and Tobago, Dep. of Chemical Engineering, Food Science and Technology. xiii + 229 p. Illust. 29 cm. *

8035. Rodinson, Maxime; Arberry, A.J.; Perry, Charles. 2001. Medieval Arab cookery: Essays and translations. Totnes, Devon, England: Prospect Books. 527 p. Index of foreign words. General Index. 25 cm. [20+* ref]
• ***Summary:*** Contains information on the early history of almond milk and other nut- and seed milks. Also contains Arberry's translation of al-Baghdadi's 13th century book, some important essays by Maxime Rodinson from the 1940s and 1950s, Perry's translation of the 14th century book, which is an expanded edition of the 13th century book, and various other essays. The 14th century book contains information about almond milk, other nut milks and even milks from sesame seeds and safflower seeds.

In the essay titled "Venice, the spice trade and Eastern influences on European cooking" (first presented in 1967 in Venice), Maxime Rodinson notes (p. 209) that of the many parallels between western European and Muslim cooking, one that stands up best to examination is almond milk. Unknown to the Greeks and Romans, it was familiar to the Muslims and played a major role in their cuisine. It represents a clear example of borrowing.

In an essay titled "*Isfidhabaj,* blancmanger and no almonds" (p. 261-66, first published in *Petits Propos Culinaires,* No. 31, 1989), Charles Perry notes that in the 13th century Arabic work translated by Arberry as *A Baghdad Cookery Book,* there is a dish called *Isfidhabaj* which is very similar to the medieval European *blancmanger.* The name of each dish means (approximately) "white food" and both are made by stewing meat in almond milk. But can we prove that the European dish came from the Arabs. We know that almonds were a foreign ingredient in northern Europe. Yet every *blancmanger* recipe in the 14th and 15th century English books *Dieursa Servisa, Utilis Coquinario, The Forme of Cury, Ancient Cookery,* Harleian MS 279, Harleian MS 4016, Laude MS 553, and *A Noble Boke off Cookry* contains rice and either ground almonds or almond milk. Yet some of the best known continental European sources do as well. Yet a closer look reveals that, at this early date, almonds were not widely available on the continent. A very early French manuscript cookbook titled *Traite de cuisine écrit vers 1300,* from about the year 1300, in its recipe for *blanc mengier,* lists animal milk or almond milk as optional ingredients. However this same book gives a version of this recipe suitable for fast days in which the almond milk is not optional. Thus "one of the attractions of almond milk for the medieval Christian was that it was permitted on days of abstinence. It was a dream come true: a luxurious, high-status food that could lawfully be indulged during Lent [and other fast days]. To a great extent this must explain the popularity of almond milk in medieval European cookery books."

In "The Description of Familiar Foods," an Arabic cookbook manuscript (1373) translated (very well and colorfully) and introduced by Charles Perry (p. 273-465), almonds (in various forms) appear in many of the recipes, as peeled sweet almonds (e.g., p. 305, 312, 315, 325), blanched sweet almonds (p. 328), sweet almonds pounded to a paste (p. 306-07, 309, 311-14, 337, 339), sweet almonds pounded and milked with water (i.e., almond milk, p. 319, 322, 336), and sweet almond oil (p. 308, 332). See also marzipan in the index. Milk is also made from safflower seeds (p. 316, 318-19, 336), walnuts (p. 309), pistachios, hazelnuts, and sesame seeds (p. 285).

The ingredients, which sound both exotic and delicious, include apricots (p. 343), camphor (p. 308), Ceylon cinnamon (p. 319) and Chinese cinnamon (p. 311), a race of ginger (p. 326), jujubes (p. 306), kishk or dried yoghurt (p. 322-24), mastic (p. 327), mint (p. 316), noodles (p. 333-34), Persian yoghurt or *laban farsi* (p. 314), pistachios (p. 316), pomegranate seeds (p. 316). quince (p. 320, 344), rose water (p. 308, 316), rue (p. 314), saffron (p. 315), sesame oil (306, 308-13), sesame seeds (317), spikenard (p. 320), tahineh (tahini, p. 312), tiger nut, chufa or earth almond (*Cyperus esculentus,* a sedge with nut-flavored tubers, p. 310), verjuice (lit. "green juice," as the sour juice of crab apples or unripe fruit, p. 306).

Talk with Charles Perry. 2001. May 23. Recipe ingredients do not generally appear in the index. Most of the nut and seed milks will be found on pages 305-42 (stews), and 443-50 (vegetarian recipes–some of which were medicinal and some Christian) of the 14th century book. This is surprising because these milks are not used in recipes in the 13th century book, on which the 14th century book is based. There is reason to suspect that the 14th century book was compiled in Cairo, Egypt, whereas the better-known medieval Arabic cookbooks are from either Baghdad [presently capital of Iraq] or Damascus [presently capital of Syria]. To determine whether a recipe in *The Description of Familiar Foods* was being used as early as 1373, see the concordance of recipes (p. 289).

As late as the 18th century, quite a few European cookbooks have a separate section of recipes for fast days (*maigre* in French)–for recipes that contain no meat or meat juices. Almond milk was fairly widely used in Europe in the Middle Ages, but the English tradition was rather simple and single minded, using it mostly in Blancmanger. But in France, for example, it was used in many different dishes, such as stews (meat stewed with almond milk and cherries). Address: 1. French linguist, historian, and sociologist; 2. British arabist and linguist; 3. Los Angeles, California.

8036. Sabaté, Joan; Ratzin-Turner, Rosemary. ed. 2001. Vegetarian nutrition. Boca Raton, Florida: CRC Press. [xxiv] + 551 p. Index. 24 cm. CRC Series in Modern Nutrition. [1732 ref]
• ***Summary:*** The best scholarly book seen to date on this subject. Consists of a Prologue (by Mervyn Hardinge) plus

21 chapters, in five sections, by various authors.

This book contains extensive information on soyfoods as follows: Vitamin B-12, homocysteine, meat analogues and soya milks (p. 47). Summary of epidemiologic studies of soy / tofu intake and breast cancer risk (p. 80-81). Vegetarian diets and soy in the prevention of osteoporosis, diabetes, and neurological disorders (p. 120-21, 125). Iron and soy (p. 202-03). Guidelines to achieve an optimal ratio of essential fatty acids in the diet (p. 203; soy is rich in α-linolenic acid). Zinc, calcium and soy (p. 206). Women's reproductive function, menopausal symptoms, phytoestrogens and soy (p. 232-34, 244). Health advantages of a vegetarian diet for the elderly–and soy (p. 254-55). Vegan children, protein and soy (p. 302). Iron and soy (p. 304; "While the percentage of iron absorbed from soy may be low, the total amount of iron absorbed is adequate, because soy beans naturally contain relatively large amounts of iron" (p. 304-05)). Phytoestrogens and soy (p. 312-13). Macrobiotic diets (p. 313-15). Calcium and soy (p. 316). Vitamin B-12, miso and tempeh (p. 319-22). Iodine and soy (p. 323). Health-promoting phytochemicals beyond the traditional nutrients–soyfoods and isoflavones (p. 342-45; One table shows the isoflavone content (genistein, daidzein, and glycitein) of soybeans, roasted soyflour, roasted soynuts, TVP, tofu, tempeh, miso, and soy milk). Another shows the isoflavone content of commercial soy products by the weight of a typical serving, in descending order of isoflavone content (cooked soybeans, dry TVP, dry roasted soy nuts, tofu, soy flour, soy protein isolate, soymilk, SoyBoy Breakfast Links, soybean chips, tempeh, miso, soy cheese, Ice Bean, Green Giant Harvest Burger, soy noodles, Tofutti, soy sauce, soy oil). Protection against cancer and soy (p. 346-47). Help for menopause and bone loss (p. 347-48). Protective substances and soy foods (p. 397-98). Calcium fortified products such as soy (p. 421). Consuming a wide range of vegetable oils from intact plants–soy (p. 421). Developing a vegetarian food guide–Legumes, lentils and peas (p. 428-29; "Among legumes, the soybean possesses unique nutrient characteristics." Many food guides place soy beverages in the milk-dairy category). Table: Comparison criteria for evaluating soy and grain-based beverages (p. 430). The water efficiency of food production–and soy (p. 449; "The water intensity of animal production is much larger than the water intensity of crops. For instance, per gram dry weight, soybeans require about 0.75 liters of water" compared with about 20 liters for cattle). Note: Joan Sabaté is a man. The series editor is Ira Wolinsky, PhD, Univ. of Houston, Texas. Address: 1. Prof. of Chair, Dep. of Nutrition, and Prof. of Epidemiology, Loma Linda Univ., Loma Linda, California.

8037. Trinh, Dianne Thuy. 2001. Using developed laboratory procedures for discriminating potential of selected Michigan-grown soybean varieties for soymilk and tofu production. MSc thesis, Michigan State University, Dep. of Food Science and Nutrition. xi + 105 leaves. Illust. 29 cm. *

8038. Verkasalo, Pia K.; Appleby, Paul N.; Davey, Gwyneth K.; Key, Timothy K. 2001. Soy milk intake and plasma sex hormones: A cross-sectional study in pre- and postmenopausal women (EPIC-Oxford). *Nutrition and Cancer* 40(2):79-86. [33 ref]
• ***Summary:*** The effects of soy on serum estrogen levels and estrogen metabolism have been the subject of much research. Decreased serum estrogen levels and favorably altered estrogen metabolism have been proposed as two mechanisms by which soy reduces breast cancer risk. However in this, the most recent epidemiologic study to examine the issue, no support for the former mechanism was found. In this cross-sectional study, which included 636 premenopausal and 456 postmenopausal British women, soy intake was unrelated to circulating sex hormone levels. Yet serum hormone levels may not reflect changes in specific and cells. Address: Imperial Cancer Research Fund, Cancer Epidemiology Unit, Univ. of Oxford, Oxford OX2 6HE, UK. Phone: 301-898-5769.

8039. Viana Naturkost GmbH. 2001. Listen to your heart: mit vielen Leckeren wohlfuehlrezepten [Listen to your heart: With many delicious, wholesome recipes (Brochure)]. Wiesbaum, Germany: Viana. 24 p. 17 cm. [Ger]
• ***Summary:*** On the cover of this colorful brochure are red, green, and yellow stripes. Contents: Listen to your heart. Do you know the secret of Viana tofu? How does Viana make delicious meat alternatives from tofu? What does nutritional science say about plant-based products. Why are Viana products useful for you? Enjoy quick and easy with Viana: Products and wholesome recipes. Tofu. Smoked tofu. Tofu burrito wraps. Little sausages (*Würstchen,* incl. and hot dogs). Menu for the chancellor and children: Curried sausages. Main dishes (*Pfannengerichte*). Meatless minced meat. Lasagna–Dangerous Italian. Crisp breaded cutlets. Colorful spring salad, with roasted, tart chicken filets. Vital tips from Viana. Color photos of 6 packaged products: Tofu vegetable cutlets (*Tofu Gemüseschnitzel*), Tofu Crisp Sticks (*Tofu Knusperstäbchen*), Bonanza Hacksteaks, and 3 types of rice milk (plain, chocolate, vanilla). Address: D-54578 Wiesbaum / Vulkaneifel, Germany. Phone: +49 06593-9967-0.

8040. Willcox, Bradley J.; Willcox, D. Craig; Suzuki, Makoto. 2001. The Okinawa Program: How the world's longest-lived people achieve everlasting health–and how you can too. New York, NY: Clarkson Potter. x + 484 p. Index. 24 cm. Foreword by Andrew Weil, M.D. [41 + 474 endnotes]
• ***Summary:*** A remarkable book! Written by a team of internationally renowned experts, it is based on the landmark, scientifically documented 25-year Okinawa Centenarian Study. Okinawans have the world's longest

disability-free life expectancy. Their occurrence of heart disease is only one fifth that of Americans. Their rate of breast, ovarian, and prostate cancer is less than one quarter of American levels. And the number of centenarians per 100,000 is six times that of the USA. This is a book with plenty of solid, practical scientific advice.

If you have ever questioned the healthfulness of traditional soyfoods, read Chapter 4, "Eating the Okinawa way" (p. 114-45). A table (p. 116) lists "The top fifteen Okinawan healing foods." No. 1 is "Okinawan tofu." Its main active components are saponins and flavonoids (mostly isoflavones). No. 2 is Miso, which has the same active ingredients.

Step 3 in eating the Okinawan way is to "Eat three calcium foods daily." Calcium-fortified tofu is given as the single best source (p. 122)–containing 46% more usable calcium than the same volume of calcium-fortified orange juice! Calcium fortified soy milk is the 3rd best source. "Dairy products are also excellent sources of calcium, but they are best consumed in moderation–there is little support from interventional studies that they actually help reduce risk for osteoporosis [8]. In fact, osteoporosis rates are lower in societies where people eat few, if any, dairy products. This may be because they are high-protein foods, and *too much protein tends to leach calcium out of bones.* For every gram of protein that you eat, you lose 1 to 2 mg of calcium in your urine [9]. For postmenopausal women your protein to calcium ratio (how much protein you eat versus how much calcium) is actually a stronger predictor of your risk for bone fracture than your calcium. intake alone [10]. If you maintain a high-protein diet for an extended period with marginal calcium intake, you could be increasing your risk for osteoporotic fracture.

"The type of saturated fat in dairy products is also the worst offender for making cholesterol in the body."

Step 4 in eating the Okinawan way is to "Eat three flavonoid foods daily. Flavonoids–ubiquitous plant compounds found in large quantities in soy products and some other legumes (beans), and to a lesser extent in tea, onions, and apples–are powerful antioxidants. They provide a weak form of estrogen where the body needs it and block the body's own estrogen in locations where estrogen may induce cancer... two plants–soybeans and flaxseed–have pharmacological levels of these compounds, levels that exceed those in other plants by as much as 1,000 times [14]." "Soy has just been allowed the unprecedented honor of an official U.S. Food and Drug Administration (FDA) health claim [20]... Our prediction is that as the evidence mounts for soy consumption reducing the risks for breast cancer, prostate cancer, and possibly other cancers such as colon cancer, other USDA-approved health claims will follow."

"Tips for increasing your flavonoid intake: Learn about soy products." On pages 126-28 are substantial, accurate descriptions of the following soy products: Tofu, silken tofu, tempeh, miso, soy milk, soy flour, textured soy protein (TSP) or texturized vegetable protein (TVP), edamame, soy nuts.

The praise for soyfoods continues in the next chapter, "Okinawa's healing herbs and foods." There are two pages about Okinawa firm tofu (p. 158-59). Address: 1. M.D., Div. of Aging, Harvard Medical School; 2. PhD, medical anthropologist and gerontologist, Asst. Prof., Okinawa Prefectural Univ.–College of Nursing; 3. M.D., PhD, cardiologist and geriatrician, Prof. Emeritus of Community Medicine, Univ. of the Ryukyus, and Prof. and Chair, Dep. of Gerontology, Okinawa International Univ.

8041. **Product Name:** SoyGood (Powdered Soymilk).
Manufacturer's Name: Trader Joe's (Marketer-Distributor).
Manufacturer's Address: California.
Date of Introduction: 2001?
How Stored: Shelf stable.
New Product–Documentation: Product seen at Trader Joe's in Lafayette, California. 2002. Oct. 13. Cylindrical container makes 6 quarts for $6.99.
*

8042. Sugarman, Carole. 2002. Milk without the moo: A soy product gets a major makeover. *Washington Post.* Jan. 2. p. F1, F4.
• ***Summary:*** Sales of soy milk have take off in the USA, growing from $1.5 million in 1980 to almost $550 million in 2001. The most rapid growth has occurred in supermarkets, drug stores, and mass merchandisers, whose sales have more than tripled from $77 million in 1999 to $242 million in 2001–according to data compiled by SPINS.

Some consumers drink soy milk for its health benefits, while others see it as an alternative to dairy products. In the latter group are vegetarians who avoid dairy products (vegans), and those suffering from lactose intolerance. The National Digestive Diseases Information Clearinghouse estimates that 30-50 million Americans are unable to digest lactose, the major sugar in dairy milk.

There are so many different types of soymilk that consumers may be confused: (1) Fortified vs. non-fortified; (2) Nonfat, low-fat, and full fat; (3) Isoflavone content; (4) Carbohydrate content, and type and amount of sweetener; (5) Refrigerated vs. aseptic (shelf-stable). (6) Taste. Address: Staff writer.

8043. Sugarman, Carole. 2002. Beyond cow's milk: A dairy-free world. *Washington Post.* Jan. 2. p. F1, F4.
• ***Summary:*** Soy milk accounts for 80% of the non-dairy milk market, ahead of rice milk (17.5%), almond milk, oat milk, and even multi-grain milks (2.5% for the last three). In 1996 sales of rice milk accounted for 40% of the nondairy beverage market. But two events propelled soy milk ahead: First was the publication [on 3 Aug. 1995] of

a major article by Dr. James Anderson in the *New England Journal of Medicine* showing that soy protein lowered blood cholesterol. Second [in Jan. 1996] White Wave introduce Silk, America's first refrigerated soy milk.

Sales of rice milk have declined steadily since then. But Imagine Foods, makers of Rice Dream, the most popular rice beverage, have fought back by introducing two soy beverages: Soy Dream and Power Dream. Consumers who are allergic to soy protein continue to buy rice beverages. Address: Staff writer.

8044. Baker, Don. 2002. Re: The Home Nutritionist home soymilk maker made by Salton Manufacturing. Letter to William Shurtleff at Soyfoods Center, Jan. 27. 1 p. Typed, without signature. [Eng]
• ***Summary:*** This home soymilk maker was purchased at a local merchandise store. It produces 1 quart hot soymilk from 3/4 cup soaked soybeans in about 19 minutes. The electrical hot plate leaves some scum on the bottom of the stainless steel cooking pot in which the soymilk is cooked. Address: R.R. 1, Box 170, Greenview, Illinois 62642.

8045. Eden Foods. 2002. New Edensoy 6 pack: Customer friendly velocity and cash flow (Ad). *Natural Foods Merchandiser.* Jan. p. 26.
• ***Summary:*** This 8½ by 11 inch color ad shows 6-packs of various types of Edensoy. The outside packaging is new. "There is no finer soymilk."

8046. *Food Product Design.* 2002. Chocolate flavor delivers tasty soy beverage. 11(10):98. Jan.
• ***Summary:*** Wynn Starr Flavors, Inc. (5 Pearl Ct., Allendale, New Jersey 07401. Phone: 1-800-Wyn-Star. Web: www.wynnstarr.com) has developed a chocolate flavor system that gives soy beverages a flavor and mouthfeel similar to chocolate milk. Other applications include nutrition bars, but high-protein bars present a flavor-masking challenge. A color photo shows a glass of chocolate soy beverage.

8047. *Soy Connection* (*The*) (*Jefferson City, Missouri–United Soybean Board*). 2002. Fourth international soy symposium: Summary of findings–Osteoporosis. 10(1):4-5. Winter.
• ***Summary:*** Over the past six years, data on this subject have been quite conflicting. "Unfortunately, results presented at this Symposium did little to clarify this issue.

"Unarguably, Eva Lydeking-Olsen, from the Institute for Optimal Nutrition in Denmark presented the most encouraging results." She found, in a 2-year study, that postmenopausal women consuming a diet containing a high isoflavone soymilk (total isoflavone intake was about 100 mg/day) increased an increase in spinal bone mineral density (BMD) whereas the spinal BMD of women consuming a soymilk low in isoflavones decreased. No such benefits were noted at the hip, however."

"Previously published studies have suggested that the lower sulfur amino acid content of soy protein relative to animal protein leads to a decrease in calcium excretion.

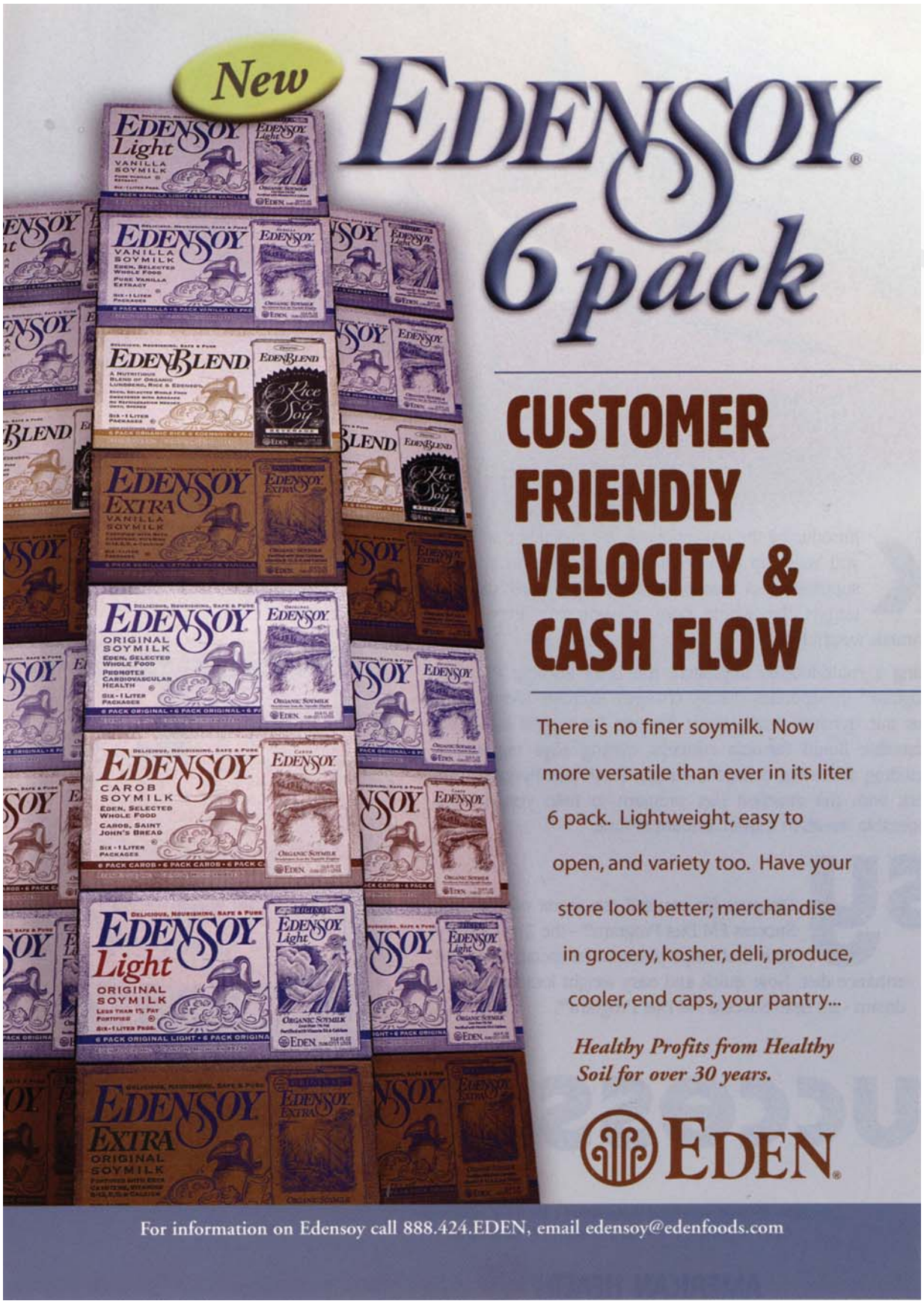
"Clearly, all other factors being similar, substituting soy protein for animal protein appears to favorably affect bone health although the precise role of isoflavones in this regard is yet to be determined. Recent epidemiologic studies do suggest that higher isoflavone intake is associated with greater BMD. Differences in experimental designs, such as the age of the women studied, likely contribute to the conflicting clinical data." Address: PhD.

8048. *Soyfoods Canada Newsletter.* 2002. 2001 annual meeting a great success. Jan. p. 1.
• ***Summary:*** Soyfoods Canada held its second annual meeting on 28 Sept. 2001 in Toronto at the Crowne Plaza Hotel. Speakers included Toby Davidson and Jeanne Cruikshank. A new board of directors was elected to serve during the coming year: Bill Hawes, President–President of Tofutti-Cholac Foods. Maheb Nathoo, Past-President–President and CEO of SoyaWorld. Eric Hart, Vice-President–Business Development Officer with Galaxy Nutritional Foods. Andrew McVittie,–Secretary–Soybean Sales Representative for W.G. Thompson & Sons and Sycamore Creek. Ron MacDougall, Treasurer–Soybean farmer representing the Ontario Soybean Growers. Paula Travado–OntarBio/Organic Meadows. Nick Feldman–Nutrisoya Foods. Peter Joe–Sunrise Soya Foods. Vivian Chiang–Momo's Kitchen. Garnet Pigden–PTI.

8049. The Mail Order Catalog for healthy eating. Winter 2002. 2002. P.O. Box 180, Summertown, TN 38483. 36 p.
• ***Summary:*** The book section of this mail order catalog contains listings for an excellent selection of vegetarian and vegan cookbooks, vegetarian soyfood cookbooks, plus books on food nutrition & health, alternative healthcare, women's healthcare, native Americans and their cultures, animal rights, and sustainability.

The vegetarian food products section offers TVP granules and chunks, Response textured soy protein concentrates (misleadingly called "Response TVP flakes"), miso soup mixes, wheat free soy pasta, soy & rice pudding mixes, soy & nondairy beverages and beverage mixes, soy protein powders & shake mixes, soynut butters, sea vegetables, vegetarian jerky, soynuts, plus foods from Worthington and Loma Linda, Jyoti India Cuisine, and Dr. John McDougall. Address: Summertown, Tennessee. Phone: 800-695-2241.

8050. White Wave, Inc. 2002. Silk: Put a bottle rocket in your dairy case. Silk singles will fly! (Ad). *Natural Foods Merchandiser.* Jan. p. 6.
• ***Summary:*** This full-page color ad shows a large bottle of Silk soymilk (a new form of Silk packaging), and three



small bottles of vanilla, chocolate, and organic plain flavors. Each flavor is calcium enriched and vitamin fortified. On each plastic bottle is written: "High energy soy! Shake well and buy often." On a red banner across the bottom of the ad: "The Number 1 selling soymilk in America."

8051. White Wave, Inc. 2002. Silk is the hottest selling name in soy (Ad). *Natural Foods Merchandiser.* Jan. p. 28.
• ***Summary:*** This 8½ by 11 inch color ad shows a large blue carton of Silk Cultured Soy (strawberry flavor) against a white background. "Smart new package graphics. Contains live and active cultures. Award winning favor. Made from organic non-GMO soy. Contains 50% daily requirement of calcium." To the left is a "2001 Gold Taste Award" medal from the American Tasting Institute. At the lower right is a carton of Silk Soymilk. www.SilkIsSoy.com.

A similar ad in Natural Foods Merchandiser, Jan. 2002 (p. 28), has a white background. Address: [Boulder, Colorado].

8052. Huang, Timothy; Krueger, Carol Ann. 2002. Chronology of work with soyfoods (1972-1980) (Interview). *SoyaScan Notes.* Feb. 15-24. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1950 Dec. 25–Born in Detroit, Michigan. Growing up in a Chinese-American family, Tim naturally ate tofu (mostly at restaurants) and other soyfoods. At college in Michigan he started to prepare some of his own meals and began to cook with store-bought tofu.

1972–Tim leaves the University of Michigan (he studied architecture, then natural resources/ecology) to join "The Farm," an intentional community in Summertown, Tennessee, where he is exposed to vegetarianism and new uses of soybeans as food. Tim becomes a complete vegetarian (vegan). On The Farm, all of the soybeans were eaten as pressure cooked soybeans; a little oil was added to keep the hulls from clogging up the pressure valve. Stephen Gaskin, The Farm's teacher, expresses an interest in learning more about tofu.

1953 July 5–Carol Ann is born in Medford, Wisconsin. In the fall of 1973, at age 19 and after graduating from high school, she first visits The Farm in Tennessee. In Jan. 1974 she moves there to live.

1973–Tim researches how to make tofu for The Farm by interviewing family acquaintances. He built a forming box, got some cheesecloth, bought all the ingredients necessary to make tofu and made a batch in his family kitchen (West Bloomfield, Michigan–a suburb of Detroit) using soybeans from an Asian food store (in Royal Oak, Michigan), and lemon juice as a coagulant. His parents laughed. However neither Tim nor anyone at The Farm used this information to actually make tofu.

1974 spring–Tim and Carol Ann meet at The Farm in Tennessee. Approximately 600 people are living on The Farm at that time. Tim is a woodcutter and chain saw mechanic. Carol Ann works in the community kitchen and soy dairy–where she learns (briefly) how to make tofu and soymilk.

1974 fall–Tim and Carol Ann move to the "Wisconsin Farm," a sister community of The Farm. The Wisconsin Farm was smaller and better organized than the Tennessee Farm. James Taft is a key person there.

1975 March 9–Tim and Carol Ann are at the Wisconsin Farm; Stephen Gaskin comes up from the Tennessee Farm to marry six couples in one ceremony. Tim's parents are distraught; his father barely escaped from Communist China and now he was losing his son to a commune. Carol Ann (who is a good cook and likes to cook) works with the canning and freezing crew, and becomes involved in making soymilk and tofu regularly for that community; Tim, who is on the wood-cutting crew, helps her occasionally.

1976 Nov. 1–Ethan, the Huang's first child, is born on the Wisconsin Farm.

1977 fall–Tim and Carol Ann leave the Wisconsin Farm and move to Detroit, Michigan, to establish their own business. When they leave, Tim's parents give them some money with which they purchase a Dodge Caravan van. They move into a rented apartment. After several months (with financial help from Tim's parents), they buy and start to make payments on a house on the east side of Detroit.

1977 fall–Tim enrolls in an EMT (Emergency Medical Technician) training program associated with Wayne State University, at Detroit General Hospital; this would qualify him to drive an ambulance. Carol Ann wants to start a business making tofu and/or tempeh.

While looking for work on the side, Tim meets a Mr. James Coleman, a wheeler-dealer, who wants Tim to distribute his breads to Detroit from Ann Arbor. Tim begins distributing the bread but quickly realizes he needs a line of products if his route is to be profitable. He soon adds breads from Wildflour Community Bakery. One night at dinner Coleman tells Tim that he should meet Steve Fiering who is part of the 4th Avenue Food Co-op and who started (in about the spring of 1977) a worker's cooperative making tofu next door in the Wildflour Community Bakery in Ann Arbor.

1978 Feb. or March–Tim and Carol Ann meet Steve Fiering of The Soy Plant worker's cooperative making tofu in Ann Arbor, Michigan. Steve's co-op is now located in the small room in the basement of Eden Foods' restaurant in Ann Arbor. It is agreed that rather than create a competing soyfoods production business, that a cooperative business arrangement between the two companies be formed. The Yellow Bean Trading Co. is established by Tim and Carol Ann in Detroit to distribute soy products for The Soy Plant in the metropolitan Detroit area. In Chinese, *Huangdou* or "yellow bean" means soybean.

1978 July–Tim and Carol Ann attend the first meeting of the Soycrafters Association of North America in Ann Arbor,

Michigan, hosted by The Soy Plant. They sign the register as: Yellow Bean Trading Co., 4414 Buckingham, Detroit, Michigan 48224. The conference boosts their interest making a business out of soyfoods. Tim, who is now taking some science classes at Wayne State University, has to decide between two careers: A medical technician or doctor, or a soyfoods entrepreneur. He chooses the latter.

1978 Sept.–Tim starts to distribute refrigerated soy products (tofu, tempeh, soymilk, etc.) made by The Soy Plant in Ann Arbor. He would drive the 40 miles from Detroit to Ann Arbor, would pick up the soy products at about noon, drive them to his home in Detroit in his unrefrigerated van, pack them into a refrigerator in the garage for overnight storage, then deliver them to stores along a distribution route he created in Detroit the next morning. The lack of refrigerated storage space and of a refrigerated van becomes an immediate problem. So Tim soon buys an inexpensive second van, insulates the back, and installs a refrigeration unit. He gradually adds more natural-food products to his line.

1978 late–With Tim realizing the need for a walk-in cooler and Carol Ann wanting to start a soy deli, the Huangs begin to rent a storefront at 15309 Mack Ave. in Detroit–a former natural foods restaurant. Tim borrows some money from his parents to make the rental payments

1978 Nov. 17–The Huang's second child and first daughter, Eva, is born.

1979 March–The deli named Yellow Bean Vegetarian Foods opens at 15309 Mack Ave in Detroit. Yellow Bean also bought tofu from The Soy Plant and used it to create "secondary soy products" including tofu eggless salad, tofu cream pies, and vegetable-tofu pockets.

1980 July 19–The Huang's third child, Emma, is born.

1980–Tim helps The Soy Plant relocate to a larger plant on Airport Blvd. in Ann Arbor.

1981–The Huangs sell the distribution route and trucks to The Soy Plant and sell the store to a private party. Tim decides to finish his undergraduate degree, working in food science and technology. They move to Davis, California.

1982–They separate in California. Carol moves to a ranch in Pima, Arizona; their divorce is finalized. She continues living in Arizona and raises their kids. She starts making jewelry. Address: 1. 155 Ridge Grove Rd., Kerrville, Texas 78028; 2. 438 South Star Ave., Tucson, Arizona 85719. Phone: Tim–830-792-3797; Carol Ann–520-740-0393.

8053. Hirsch, J.M. 2002. Tofu not the only way to get benefits of soy; try using miso. *Advocate* (*Baton Rouge, Louisiana*). Feb. 21.
• ***Summary:*** "The vegetarian love affair with tofu has done as much harm as good for the reputation of the rather mild-mannered soybean." But tofu is not the only source of healthy soy protein. Miso is another tasty source, best known as the primary ingredient in Japanese miso soups. Contains a recipe for "Shish kebabs with miso sauce" from The Book of Miso, by Shurtleff and Aoyagi (Ten Speed Press).

Other soy products besides tofu include: Tempeh, toasted and salted soy nuts, soy milk, breakfast cereals and breads that contain soy, soy flours, soy protein powders, and edamame (fresh soybeans still in the pods; often served at Asian restaurants).

Also appeared in the Press (Ashbury Park, New Jersey). Address: Associated Press.

8054. Praskin, Laurie Sythe. 2002. How tofu came to The Farm in Tennessee, and how Laurie got interested in tofu and vegetarianism (Interview). *SoyaScan Notes.* Feb. 27. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** When The Farm was first settled in 1971, one of the really popular books was *Ten Talents,* by Frank and Rosalie Hurd (1968). They were Seventh-day Adventists and the book was a vegan cookbook that contained two recipes for homemade soybean curd (tofu, p. 195-96). The first used whole soybeans, with Epsom salt as a coagulant; the second used soy flour, with lemon juice as a coagulant. During the first 2-3 years of The Farm, before any tofu was made at a central location, people at home in their buses were using soy flour, with vinegar as a coagulant. The soymilk was never filtered so the okara remained in the tofu.

Alexander Lyon, because he had a PhD degree, was put in charge of learning more about soyfoods and developing soyfoods production at a central facility. In 1972 he started The Farm Soy Dairy.

In 1974 when Laurie arrived at The Farm, quite a bit of this tofu was being made by individuals. She recalls: "It was actually quite tasty. I liked it. It was a nice relief from eating whole soybeans all the time." However the Soy Dairy was making mostly soymilk; occasionally they made "soy cheese" by allowing soymilk to stand until it fermented; the resulting acid caused the separation of curds and whey. The curds were then hung in a sack until firm; the resulting product was quite similar to tofu, even though it was made without use of a coagulant or forming box.

In 1974 Laurie wrote Bill Shurtleff in Japan requesting information on making tofu, and sent him the book *Hey beatnik! This is The Farm book,* published in 1974. Bill sent Laurie pre-publication information on homemade tofu from *The Book of Tofu,* which was published in Dec. 1975. Laurie recalls: "That book was a great help, and a key turning point in The Farm's starting to manufacture tofu on a large scale. I remember just eatin' that book up, and saying 'We've got to do this. You don't need a lot to make it work.'" In early 1975, Alexander Left the soy dairy and Laurie took over managing production.

Laurie (whose maiden name was Sythe) grew up in Los Gatos, California, during the 1960s. She became a vegetarian when she was a teenager (age 15-16), living at home with her parents. The main influence came from her elder brother,

Dan Sythe, who was living on Haight Street in San Francisco and was a vegetarian–in fact a fruitarian. She did a lot of vegetarian cooking while in high school, and eventually had her whole family eating vegetarian before she went to The Farm. She recalls buying and cooking with tofu several times during this time–perhaps directly from small tofu makers in nearby San Jose. Dan had a bus, which he drove to Tennessee, arriving on The Farm in 1971 or 1972, shortly after the main caravan of buses arrived in May 1971 on the Martin Farm. He lived on that first Martin Farm. He started "Solar Electronics" on The Farm. Address: 17969 Oak Dr., Los Gatos, California 95030.

8055. Golbitz, Peter. 2002. White Wave's suit against Dean rejected: Merger could reshape soymilk market. *Bluebook Update* (*Bar Harbor, Maine*) 9(1):1, 7. Jan/March.
• ***Summary:*** Judge Richard Matsch of the U.S. District Court for the District of Colorado threw out White Wave's lawsuit against Dean Foods which claimed that Dean's proposed merger with Suiza Foods would allow an indirect transfer of the company's 36% share of White Wave. Shortly after the announcement of the $1.6 billion merger proposal in April 2001, White Wave sued Dean, claiming that Dean must sell its stake in White Wave back to the company if it merges with Suiza. Dean countered with a technicality: the merger was not a transfer of shares that could trigger the "right of first offer." Suiza, a major soymilk competitor, will now be able to purchase the rest of White Wave's stock by Sept. 2002 at fair market value. Demos, who was very disappointed with the legal decision, is not opposed to a Suiza/White Wave alliance, but only to the unauthorized transfer.

The U.S. soymilk market, which has grown dramatically in recent years, is projected to top $600 million in retail sales during 2001. Refrigerated soymilk has been the fastest growing type of soymilk, and White Wave's silk brand dominates that subcategory, followed by Suiza's Sunsoy–which has also grown rapidly. A small portrait photo shows Steve Demos.

8056. *NSRL Bulletin* (*National Soybean Research Laboratory, Urbana, Illinois*). 2002. Processing system provides new opportunities for soymilk research. 9(1):6. Feb.
• ***Summary:*** An Agrolactor soymilk system (developed by the Actni Company in France) has been installed at the Illinois Center for Soy Foods by BAR NA. The loan was arranged by Karl Weingartner, asst. director of technical training for the Center. Barbara Klein, co-director of the Center says the Center plans to open a soy foods store, where a variety of soy products can be test marketed to the public.

8057. *Ontario Soybean Growers Newsletter.* 2002. Profiles: ProSoya Inc. and the SoyaCow. Feb. p. 7.
• ***Summary:*** Contains a small photo of a SoyaCow. Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

8058. *Soybean Digest.* 2002. Healthy growth in soyfoods. Mid-Feb. p. 34-35.
• ***Summary:*** This article is part of a special pull-out insert on "New Uses." Notes that soyfoods have reached a new level of acceptance during the past year with the purchase of Kashi Co. (a natural cereal manufacturer) by the Kellogg Co. Kashi already made lines of soy-enriched cereal and the company recently expanded its line to include GoLean soy-based diet drinks and cereals. Founded in 1984 by Philip and Gayle Tauber, Kashi grew by more than 100% during the fiscal year before Kellogg's purchase–for an estimated $30 to $50 million. In the year 2000 Kashi had sales of about $25 million, compared with $7 billion for Kellogg. But Kellogg sees a continuing trend toward healthier eating.

Color photos show: (1) Packages of Kashi GoLean and Westsoy Soy Smoothie. (2) Various unpackaged soy products including textured soy protein, soymilk, silken tofu, edamamé, soy cheese, soy hot dogs, breaded soy cutlets, and soy powder. (3) Tortillas filled with cooked whole soybeans and trimmings, a package of Soy Fusion (Berry), and a soy burger between buns. (4) Cover of the 2001 Soyfoods Guide.

8059. Branaugh, Matt. 2002. Smooth as Silk: White Wave projects huge growth, despite legal matter. *Daily Camera* (*Boulder, Colorado*). March 18. Business plus section. p. 10-11.
• ***Summary:*** In 1977, 25 years ago, entrepreneur Steve Demos founded White Wave in Boulder, Colorado, making tofu by hand in a bathtub. White Wave, for its 2001 fiscal year (ending March 31) expects sales of $136 million. The company has 150 employees and next year expects sales just under $200 million. But in 1996 the company's annual sales were only about $8 million. The growth in sales is largely due to Silk soymilk, which is now found in 94% of America's supermarkets. Yet only about 6% of Americans consistently buy Silk.

Last year Suiza Foods Corp. acquired Dean Foods for $2.5 billion, including $1 billion of debt. Suiza changed its name to Dean Foods and made its headquarters in Dallas, Texas. A color photo shows Steve Demos seated at his office desk. "William Shurtleff, whose 'Book of Tofu' inspired Demos nearly 30 years ago, said Silk created the refrigerated soy milk category... Grocery store officials tell Shurtleff, founder and president of the Soyfoods Center in Lafayette, California, that Silk may be the fastest growing new product in the last 50 years." Silk made its way into 30,000 supermarkets nationwide in only 30 months. Yet few consumers knew the new products was there. White Wave quickly lost $600,000 and came near bankruptcy. Address: Daily Camera business reporter. Phone: (303) 473-1363.

8060. Blue Diamond Growers' Co-op. 2002. Now the perfect

balance between soy protein and great taste (Ad). *Natural Foods Merchandiser.* March.
• ***Summary:*** This full-page color ad shows the packages of three flavors of Almond Breeze (original, chocolate, and vanilla) that are enriched with soy protein. Address: [California].

8061. Denny, Darrell. 2002. Jack's still jumping: LaLanne looks back at a healthy life. Natural legacy: The people who founded an industry. *Natural Foods Merchandiser.* March. p. 52, 54, 56, 58, 60.
• ***Summary:*** An excellent biography of Jack LaLanne, now age 87. He continues his daily regimen of exercise and vegetarian diet. For breakfast every morning, he has a blended soymilk and protein powder shake, multi-grain organic cereal with soymilk, and a host of vitamins and supplements. He was the first to: Open a modern health spa. Have a nationally syndicated TV show on exercise and nutrition. Introduce yogurt to America. Have athletes work out with weights. Have women work out with weights. Encourage the elderly to work out with weights. Have a combination health foods bar and gym. Develop a weight-loss instant-breakfast meal-replacement drink. Open a coed health club. Combine weight training with nutrition. Make an edible, nutritious snack bar. Sell vitamins and exercise equipment on TV. Encourage the physically challenged to exercise and work around their disabilities. Perform feats of strength and endurance to emphasize the benefits of exercise and good nutrition. For example: In 1954 (at age 40): Swam the length of the San Francisco Golden Gate bridge underwater with 140 pounds of equipment (incl. two air tanks)–an undisputed world record. Age 41: Swam handcuffed from Alcatraz to Fisherman's Wharf in San Francisco.

He was born in 1914 to French immigrants. When he was 15 the family lived in Berkeley, California, and his mother, a devout Christian, had become a Seventh-day Adventist years before. Jack was unhealthy and unruly. A lecture in Berkeley by health food pioneer Paul C. Bragg changed his life. Bragg told him that if he obeyed nature's laws he could be born again. Contains many good photos of LaLanne, and one cartoon illustration. Address: Executive VP/president Penton Lifestyle Media.

8062. Du Pont (E.I.) deNemours and Company. 2002. The ingredient that helps great-tasting, healthy foods and beverages fly off the shelves (Ad). *Natural Foods Merchandiser.* March. p. 49.
• ***Summary:*** This full-page color ad is about Solae brand soy protein, which is the soy protein used in 8th Continent Soymilk. For more information visit solae.com or contact Protein Technologies (a DuPont business) at 800.325.7108.

8063. Hain Celestial Group. 2002. Soy many ways to profit! Great-tasting new products (Ad). *Natural Foods Merchandiser.* March. p. 79.
• ***Summary:*** This half page color ad shows a lovely lady holding three new Westsoy soymilk products: Smart Lite, Plus, and Low Fat. Each has a heart healthy claim on the front panel. Address: 58 South Service Road, Melville, New York 11747. Phone: 631-730-2200.

8064. Imagine Foods, Inc. 2002. 20–Imagine what's next (Ad). *Natural Foods Merchandiser.* March. p. 6.
• ***Summary:*** This creative and sometimes humorous full-page color ad celebrates Imagine Foods' 20th anniversary of developing and making alternatives to dairy and meat products. The text for most years is accompanied by a color photo of a product introduced that year–all on a jet-black background. Colorful arrows point the reader's way back and forth across the page to the next year.

1982–Imagine Foods is born in a log cabin in Jamestown. Missouri.

1983–Robert Nissenbaum and Bill Gates contemplate the future in slightly different ways.

1984–Rice Dream Frozen Desserts are introduced to Critical acclaim at the NNFA Show in Atlanta [Georgia]. Now how do we make thousands of gallons?

1985–World headquarters moved to Palo Alto.

1986–Rice Dream package is redesigned and seven flavors are added.

1987–World headquarters moves out of Robert's house and into real offices.

1988–Gone Bananas, frozen chocolate and carob covered banana bites, is introduced clearly ahead of its time.

1989–Imagine introduces the world's first organic crust, vegetarian pocket sandwich.

1990–Rice Dream beverage premiers after six years in development and two US patents.

1991–Rice Dream Bars and Pies reinvent natural frozen novelty desserts.

1992–Imagine creates Ken & Robert's Veggie Burger.

1993–Imagine shelf stable pudding cups are added to the non-dairy line of products.

1994–Original Rice Dream becomes the #1 [best-selling] product in the natural foods industry. The sky's the limit. And Rice Dream Enriched is launched offering the sale calcium and vitamins as milk.

1995–Robert goes fishing. Can't catch anything using rice for bait.

1998–Imagine Organic Soups and Broths revolutionize the category. And: Another Dream comes true. Soy Dream beverage is introduced in six flavors. And: Power Dream Soy Energy Drink is launched out of necessity to keep up with the staff's energy requirements.

1999–Soy Dream moves into the refrigerator in gable cartons to milk opportunity.

2000–Rice Dream follows Soy Dream into the

refrigerator. “Its gett’n crowded in here.”

2001–Soy Dream Frozen Dessert and novelties are introduced. Dreamheads rejoice.

2002–Visit us at booth #3757 to celebrate our 20th anniversary on Saturday from 1 to 3 pm for cake and Soy Dream Frozen Dessert. www.imaginefoods.com. Address: Palo Alto, California.

8065. **Product Name:** SoYummi: Soya Dessert [Chocolate, Raspberry, Lime, Banana-Coconut].
Foreign Name: SoYummi: Dessert de Soya.
Manufacturer’s Name: Les Aliments SoYummi.
Manufacturer’s Address: 3655 Redpath, Montreal, Quebec, Canada H3G 2W8.
Date of Introduction: 2002. March.
Ingredients: Soy drink (80%; not subjected to UHT), sugar, soy oil (later changed to high oleic sunflower oil), modified cornstarch, modified rice starch, lactic acid (to lower the pH for longer shelf life), modified vegetable gums, xanthan gum, salt, agar, natural flavors, yucca extract (rich in saponins).
Wt/Vol., Packaging, Price: 125 gm in a low plastic (polypropylene) cup, with flat lid and individual sleeve. Retails for Canadian $1.39.
How Stored: Refrigerated, 35-40 day shelf life.
New Product–Documentation: Cardwell, Mark. 2002. “As good as it gets.” Food in Canada. May, p. 38.

Talk with Joanne Hollander. 2008. May 29. They introduced the first four products on 8 March 2002 at a food festival in Montreal; they were available for sale in stores about 2 weeks later. She has product labels in front of her. The products have always been made at the Food Research and Development Center (CRDA) in Saint-Hyacinthe, and the main office has always been at 3655 Redpath in Montreal. She started the research using tofu, but later switched to soymilk. She is a purist, and spent years trying to find the right tofu. Then she found that soymilk sold in ESL gable-top cartons has been subjected to UHT sterilization (up to 123ºC), which destroys 80% of the isoflavones and all of the vitamins–it ends up being a dead, inert food. She has read “many, many papers by Asian scientists about this destruction of isoflavones” and Dr. Ming (who she visited) at the University of Vermont has written about the destruction of vitamins. The process also kills all the enzymes and the bad bacteria–but it also kills the good bacteria. “The whole point of consuming soymilk is to get the isoflavones, the phytoestrogens.” Her biggest obstacle to making healthy products is Health Canada; they won’t let her use natural sweeteners. Stevia sold off the shelf but not allowed in commercial products. They push Splenda, Aspartame, and all those things that end in the letters “tol” (such an mannitol, sorbitol, glycerol, arabitol, erythritol), all the sugar-alcohols that acidify the body. “It’s just a nightmare trying to develop a really healthy product in Canada.” Her products has a shelf life of 40 days without using UHT soymilk. Joanne regards sugar (organic or not, including “cane crystals”) as poison. “Its the worst thing; I don’t think there is a good sugar. They are all acid-forming and terrible.” “Soy oil is a omega-6 and it oxidizes quickly, so she doesn’t like it, which is why she took it out of her first product. Yucca extract is a good source of saponins, which adhere to cholesterol molecules in the intestines so they can’t get reabsorbed into the bloodstream, and are therefore excreted. Saponins are also foaming agents, so they help make a light mousse–which is the same consistency all the way through–no crust or topping. Its basically a pudding that is whipped and set. Her website is www.soyummi.ca. There is also a SoYummi (a different company) in New Jersey; URL: www.soyummi.com.

Because Joanne has done most of her research at the Center for Research and Development in Saint-Hyacinthe, she has access to many very smart food scientists and lots or reliable information about foods, food ingredients, and food processing.

Joanne’s original product still contains sugar, but Joanne wanted to develop a product with no sugar, which led to her 2nd product, SoYummi GoLite.
*

8066. Lydeking-Olsen, Eva; Jensen, J-E.B.; Setchell, K.D.R.; Damhus, M.; Jensen, T.H. 2002. Isoflavone-rich soymilk prevents bone-loss in the lumbar spine of postmenopausal women: A two-year study (Abstract). *J. of Nutrition* 132(3):581S. March.
Address: 1. Inst. for Optimum Nutrition, Copenhagen, Denmark.

8067. MicroSoy Corporation. 2002. MicroSoy Flakes. Exceeding expectations (Leaflet). Jefferson, Iowa. 8 panels. Each panel 28 x 21 cm.
• ***Summary:*** Leaflet sent by Patricia Smith from Natural Products Expo West at Anaheim. 2002. March. Contents: The key benefits of MicroSoy Flakes. Microsoy Flakes product types. Microsoy Flakes unique fat reduction capabilities. Controlling lipoxygenase and “beany” flavor in soy foods and beverages. Verification of Microsoy Flakes quality and safety. Microsoy Flakes: What you should know about processing. The top ten features of Microsoy Flakes. About our company.

“MicroSoy Corporation, formerly known as MYCAL Corporation of America, was formed in 1984. MYCAL Corporation ofAmerica was a wholly owned subsidiary of the MYCAL Group based in Osaka,]apan.The company was acquired in March 2002 by a group of U S investors led by Itaru (Terry) Tanaka former General Manager of MYCAL Corporation of America.

“MicroSoy Corporation produces MicroSoy Flakes within the heart of the largest and finest soybean-producing region of the world, Jefferson, Iowa. The company has been producing its proprietary MicroSoy Flakes in Jefferson since

1991, providing the unique soy ingredient for nutritious, wholesome and great-tasting food products to millions of people, primarily in Japan. With the growing popularity of soymilk, soy beverages, tofu, soy yogurt, soy cheeses, soy frozen desserts (ice creams) and other soy foods in the western hemisphere, MicroSoy is focusing on servicing and growing with the expanding global demand." Address: 300 East MicroSoy Drive, Jefferson, Iowa 50129. Phone: 515-386-2100.

8068. Nature's One. 2002. Your organic formula choice: Conventional pediatric formulas are known to contain highly processed and objectionable ingredients (Ad). *Natural Foods Merchandiser.* March. p. 100.
• ***Summary:*** This quarter page color ad shows a can of one of the toddler formulas is "Baby's Only Organic Soy." Note: It is not an "infant formula." Address: [12 Westerville Square, Suite 308, Westerville, Ohio 43081].

8069. **Product Name:** Silk (Soymilk Sold Refrigerated) [Coffee Soylatte, Spice Soylatte {Like Egg Nog}].
Manufacturer's Name: White Wave, Inc. (Product Developer-Distributor).
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 2002. March.
Wt/Vol., Packaging, Price: Quart Pure-Pak Carton or 11 fl. oz. single serve plastic bottle.
How Stored: Refrigerated.
New Product–Documentation: Ad (full-page, color) in *Natural Foods Merchandiser.* 2002. March. p. 19. "Silk: The pick-me-up your customers won't put down. New Silk Coffee Soylatte." In the same issue (p. 119) is a full-page ad Silk Spice Soylatte.

A similar ad appeared in the June 2002 issue except that the tagline was "Two more reasons to make room on your shelf. The #1 selling soymilk in America." Each bottle is 11 fl. oz. (330 ml).

8070. White Wave, Inc. 2002. Silk: The pick-me-up your customers won't put down. New Silk Coffee Soylatte. Organic soymilk–protein with a kick (Ad). *Natural Foods Merchandiser.* March. p. 19.
• ***Summary:*** This full-page color ad shows a large carton of Silk Coffee Soylatte and a convenient single-serve bottle (11 fl. oz) of the same product. Both are calcium enriched. On a red banner across the bottom of the ad: "The #1 selling soymilk in America." www.SilkisSoy.com. Address: [Boulder, Colorado]. Phone: 1-800-488-9283 X-885.

8071. White Wave, Inc. 2002. Silk single serves are here. Like a bottle rocket of energy (Leaflet). Boulder, Colorado. 1 p. Front and back. 21.5 x 15 cm.
• ***Summary:*** Leaflet (glossy color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2002. March. On the front: Three single-serve PET bottles (11 fl. oz) of Silk in plain, vanilla, and chocolate flavors–against a dark blue background. Written on each bottle: "High energy soy!" "Shake well and buy often." "Calcium enriched." "Vitamin fortified." Across the bottom, on a background of white bubbles: "Perfect for on-the-go!" "100% lactose free. 100% dairy free. 100% cholesterol free. Non GMO. Made with third-party certified organic soybeans. Visit us at www.SilkIsSoy.com."

On the rear: "Silk single serves: Like an energy bar in a bottle." "Put the power of Silk to work for you all day long." Also: Nutrition and packaging information. Address: 1990 N 57 Court, Boulder, Colorado 80301. Phone: 1-800-488-9283 X-885.

8072. Wildwood Harvest Foods, Inc. 2002. Wildwood–from the wildwoods of California & Midwest-Harvest–to the sea of soybeans of Iowa (Leaflet). Grinnell, Iowa; Watsonville, California. 3 panels each side. Each panel: 22 x 9.3 cm.
• ***Summary:*** Leaflet (glossy color) sent by Patricia Smith from Natural Products Expo West. 2002. March. "In 1980 Wildwood Natural Foods began producing organic soymilk and tofu."

"In 1988 an Iowa farmer's decision to make tofu from Midwestern soybeans resulted in the formation of a family business and the building of a factory on the farmer's third generation farm. Midwest-Harvest Tofu is now on natural food shelves throughout the Midwest."

"In the spring of 2000, a small tofu company located on a farm in Iowa contact a well established soyfood company in California. The resulting dialogue between the leaders of the two companies... culminated in the creation of Wildwood Harvest Foods in August 2001." Address: 1810 Blakely Circle, Grinnell, Iowa 50112; 416 E. Riverside Dr., Watsonville, California 95076. Phone: 1-800-499-8638.

8073. Vaidya, Achutananda. 2002. Re: Answers to questions on soyfoods in Nepal. Letter to William Shurtleff at Soyfoods Center, April 12. 3 p.
• ***Summary:*** On 19 Jan. 1993 William Shurtleff, founder of Soyfoods Center, wrote Mr. Vaidya a series of questions based Mr. Vaidya's last letter. Mr. Vaidya and his uncle seem to be the first people to make tofu in Nepal, so details of their work are very interesting from an historical point of view.

"First, questions about the work of your uncle, Raghubir Baidya. (1) Did he ever sell any of his tofu? Even a few cakes? He Must have sold a few cakes if he tried for several months?" Answer: "First he made Tofu for his own consumption only." He did not sell that tofu. At that time none of the Nepali people understood what tofu was, so he had no idea of selling it.

(2) "At what address did he make his tofu at his residence in Kathmandu?" Ans: The address of his residence

in Kathmandu was Tripureswar, Kathmandu, Nepal. Now his family address has changed.

(3) "Did your uncle ever mention that tofu was made commercially (= for sale) in Tibet? Have you ever heard that it is?" Ans: "No I never heard my uncle mentioning that Tofu was made commercially in Tibet. He had no idea about it." I heard he had only one Tibetan friend.

(4) "You said he started making tofu for 'domestic consumption.' Does that mean he made it, free of charge (of course) for members of his immediate family? How did they cook and serve it (what kind of recipes?). Did he also give it to members of his extended family such as brothers, nephews? Did you ever taste it? What did you think of it? How was it prepared when you tasted it?" Ans: Yes, at first when he started making Tofu he made it free of charge for members of his family. At first Tofu is fried in oil. And then it is used with vegetables as a delicious food," like pickles etc. "Yes he gave it to his extended family members. Yes, I've tasted it. I think Tofu is an excellent food for helping to solve world food crisis because it is a high quality nutrition food and the cost is very low. I tested it; I thought it was like a vegetable." I studied your book, *The Book of Tofu.*

(4a). "How often did you watch your uncle making tofu?" Ans: "Sometimes I watched him making tofu."

(5) "Did he do a special demonstration just for you to teach you the process or did you just watch him while he was making tofu as usual?" Ans: "He never did a special demonstration to teach me but I learned by watching him as usual."

"My uncle was not interested in Tofu because the Nepalese people were not interested because it was a new product for them." The Nepalese concept of the soybean is that it is very cheap and used only by low-class people. "But I was very interested because it was of high quality nutrition and the cost was very low.

"At first no one knew that Tofu was soybean cakes. My uncle's family also didn't know it. They just called it using the Nepali words *Bhatamass Ko Paneer."* But when my friend Mr. Akifumi Nakamura came to Nepal from Kobe, Japan, in 1972, he suggested to me that I call this product Tofu. "Mr. Nakamura was the one who saw my interest in Tofu and taught me to make tofu. He came to Nepal in 1972" to work with Japan Overseas Cooperation Volunteers (JOCV) for two years. He worked at the Central Food Research Laboratory in Kathmandu. During this time he taught me to make Tofu during his after office hours. Then I learned how to make tofu. I started making tofu commercially in Dec. 1974, first at my own residence to keep my expenses low. I started by selling it to small shops and many other places. Then I developed recipes and sold it to even more people. And slowly the people of my country came to understand it as well. At times Mr. Nakamura would help me and we imported some machines from Japan. Then I started commercially.

"Now I want to ask about your company, Nepal Soya Industries. I think you were a pioneer in Nepal not only with tofu, but also with other soyfoods! (7) In what month and year did you start to SELL each of the following soyfoods commercially in Nepal. And approximately what percentage of your total sales does each account for now? Ans: (7a) Shree Akita Miso = Akadashi Miso. Started Oct. 1986. I made miso and sold it in Japanese hotels and restaurants. Even now no Nepalese people know about miso. It accounted for 15% of total sales. Now it is named Akita Miso.

(7b) Soya sauce. Started in March 1982. When I started to make soy sauce nobody knew what it was. Nowadays some people in the cities know about it. And also some local restaurants used soya sauce. It accounted for about 25% of total sales.

(7c) Dry Tofu. I tried making it but never sold it commercially because there was no interest.

(7d) Soya Milk. At first the Nepalese people had not heard of soya milk, but after a few years one International company started it. They named it Indreni Soyamilk. But after some years they stopped selling it. (7e) Soya Curd. I started making it in 1985. It is a part of Yogurt we used. It is sold commercially. But now lots of dairy companies make it commercially, so I stopped producing it. During the period 1985-1990 it accounted for about 10% of sales.

(7f) Vita Tofu. It started making it Dec. 1974. I stopped making it during 1983-185 because at that time I went to Japan and could not manage my factory. My children could not do the work for me. From 1986 to 2000 we again made Vita Tofu, but last year our country had a crisis–the Royal Family accident. Nowadays Maoists are attacking most parts of our country. And now the Nepalese Government has issued an Emergency. Because of this, tourists have stopped visiting Nepal. My business fully depends on tourists. So last year I had to stop making tofu. It once accounted for 40%. "I am interested in working with soyfoods in any country. If you will arrange it I am always ready for it."

(8) "Please circle each product for which you were the first person in Nepal to make that product commercially." Ans: He is not sure, so he circles only Tofu in 1974.

(9) "Are you making all these products commercially now? Are you making any others? Is making soyfoods your main source of income now?" Ans: Nowadays I produce it on a very small scale and this is my main source of income. But now I am retired from my job also [on 15 March 2001 at the Central Food Research Laboratory in Kathmandu and as a food inspector].

(13) "You said that in Japan you learned to make moyashi. Were these soybean sprouts or sprouts from other kinds of seeds?" Ans: They were not soybean sprouts but rather sprouts from some kind of black seeds [probably black mappe].

Mr. Vaidya attaches his business card and a 2-page

curriculum vitae with a portrait photo attached. He was born on 28 Dec. 1947. Address: Founder and owner, Nepal Soya Industries, 9/374 Bhedashing, Jamaguthi, Kathmandu, Nepal.

8074. Booth, Greg. 2002. Working out the links: SoyLink producers plan to boost value of identity-preserved and food-quality soybeans. *Ag Innovation News* (*AURI–Agricultural Utilization Research Inst., Waseca, Minnesota*) 11(2):16. April.
• ***Summary:*** SoyLink, LLC, a subsidiary of the producer-owned cooperative FarmConnect and a partner with the investment group Soy Driven Enterprises, began an equity drive in February. SoyLink expects to sign up about 1,000 farmers with a total investment of $8 to $13 million, says FarmConnect CEO Brent Sorenson. SoyLink will provide ingredients for soy beverages. The co-op uses a processing plant in Oskaloosa, Iowa, where identity-preserved soybeans are made into powder for soy drinks and dairy replacement products.

8075. Dean Foods Co. 2002. Annual report 2001. Dallas, Texas. 82 p. 28 cm.
• ***Summary:*** Merger: On 21 Dec. 2001 Suiza Foods and Dean Foods merged, creating one of the leading food and beverage companies in the United States. The company's Dairy Group is America's largest processor and distributor of dairy products. The per-share price of New Dean Foods has risen from about $50 in Jan. 2001 to about $75 in April 2002. Gregg L. Engles is the new Chairman of the Board and CEO. Facing page 10 is a large color photo of 2 cartons of Sun Soy soymilk (Creamy Original, and Vanilla); Suiza launched Sun Soy refrigerated soymilk in 2001. The company's financial year now ends December 31. Net sales for 2001 were $6.230 billion. Gross profit was $1.480 billion.

Accompanying the annual report is a "Proxy statement and notice of annual meeting 2002" (24 p.). In 2001 Gregg L. Engles, Chairman of the Board and CEO had: Salary $880,000. Bonus $976,800. Other compensation $169,869. Options granted (in shares): 400,000. Address: 2515 McKinney Ave., Suite 1200, Dallas, Texas 75201. Phone: 214-303-3400.

8076. Ferrier, Grant; Lewandowski, Joseph P. 2002. No end seen to soy sales trend. *Natural Foods Merchandiser.* April. p. 24, 26.
• ***Summary:*** This article is about soy milk in the USA. The highly publicized endorsement of soy protein in late 1999 by the U.S. Food and Drug Administration got the attention of consumers. Market studies have shown phenomenal growth in the soy milk market in both natural products stores and in traditional supermarkets.

Reasons to expect this trend will continue: (1) More than half of the U.S. population has never tasted soymilk. (2) Soy milk consumption is still less than 1% of all milk consumption. (3) Consumer demand for organic foods is growing and the leading brands of soy milk are made with organic soybeans. (4) Lactose intolerance extends across all ethnic groups and appears to increase with age. The percentages of people older than 40 who are lactose intolerant are: African-Americans 70%; Asians 70%; Hispanics 60%; Caucasians 40%. (4) As women grow older, they will be buying more products, such as soy milk, to help them deal with both osteoporosis and menopause. (5) Environmental consciousness is growing and plant proteins are seen as having a small environmental footprint than animal proteins.

Growth rates for various soy products:
Nutrition bars 37%
Soy milk 34%
Cheese alternatives 27%
Food supplements 20%
Meat alternatives
Tofu 3%.
Six soymilk brands account for 80% of sales:
White Wave 21%
Hain Celestial Group / Westbrae 13%
Eden Foods Inc. 11%
Imagine Foods Inc. 10%
Vitasoy USA Inc. 10%.
Pacific Foods 8%
30-40 others 18%
Private label 10%.

Grocery chain growth is built on refrigerated soymilk brands; 63% is refrigerated and 37% is shelf stable. In natural products stores, 38% is refrigerated and 62% is shelf stable.

Top ten soy milk brands in natural products stores: 1. Silk. 2. Westbrae. 3. Edensoy. 4. Vitasoy. 5. Imagine. 6. Pacific. 7. Wildwood. 8. Better Than Milk (Fuller Life Inc.). 9. Odwalla (Coca-Cola). 10. Zen Don.

8077. **Product Name:** Natural Soy Mask Flavor (Liquid, Powder, or Natural & Artificial).
Manufacturer's Name: Mission Flavors & Fragrances, Inc.
Manufacturer's Address: 25882 Wright Circle, Foothill Ranch, CA 92610. Phone: (949) 461-3344.
Date of Introduction: 2002. April.
Ingredients: Natural flavor, maltodextrin carrier.
Wt/Vol., Packaging, Price: Powder: 25 lb, 50 lb, 100 lb, and 2000 lb. Liquid: 4 x 1 gallon cases.
How Stored: Shelf stable.
Nutrition: Per 100 gm: 360 calories (used at 0.2% level).
New Product–Documentation: Talk with Mike Hosler and Paul Loskutoff of Mission Flavors. 2001. May 1. This product neutralizes soy off-flavors such as bitterness, grassy/beany flavors, and soy aftertaste. It is an all natural product. The basic mechanism is that a natural masking agent "docks" at taste bud receptor sites on the human tongue

preventing that receptor from tasting the undesired flavors and fragrances. Paul and his partner founded this company in 1987. The work on this product was based on earlier work on masking the aftertaste and bitterness contributed by vitamins, especially B-vitamin complexes. All masking will also mask a small amount of the of the primary flavor system (such as vanilla). When most customers evaluate a soy mask product they look for the effectiveness in masking the soy off-flavors not considering the primary flavor (such as vanilla, strawberry, etc.). Most of Mission's work is ultimately development of soy masks customized to particular soy applications. Hundreds of finished product trials have lead to today's generation of effective masking flavors. Additional research has helped identify ways to adapt these flavors to more specific issues found in the use of soy proteins. Versions of these flavors have been created to not only mask the aftertaste of soy, but to compliment and enhance the positive features of the food or beverage items in which they are introduced. Soy milk, for instance, can benefit from a masking system enhanced with dairy notes recognizable by the consumer as being consistent with whole and low-fat cow's milk."

The product is used at the 0.2% to 0.3% level so 0.2 gm of soy mask per 100 gm of product. The product is "organic compatible" meaning that it is not itself organic but it contains nothing that would prohibit a product it is used it from being organic at, say, the 95% level.

There are presently 60-100 flavor companies in the USA; most of these have developed a soy mask, typically after the soy health claim was issued in late 1998.

8078. Treloar, Brigid. 2002. Tofu. Singapore: Periplus Editions (HK) Ltd. Printed in Singapore. 112 p. Illust. (color). Index. 25 x 24 cm. Series: The Essential Kitchen.
• ***Summary:*** This is a beautiful book, with stylish and informative full-page glossy color photos on every other page. It is well researched, comprehensive, and generally uses standard tofu and soyfoods terminology. It is also strange: We are not told in which country the publisher is located (perhaps Hong Kong or Singapore) or where the author lives. It is distributed in North America, Japan and Korea by Tuttle Publishing. On the inside rear dust jacket: www.tuttlepublishing.com. It is clearly targeted at a world market.

Contents: Introduction. Tofu glossary (introduction, firm and soft tofu, firm and regular tofu, fresh tofu, silken tofu, soft tofu, extra firm tofu, powdered tofu {or instant tofu or soy milk powder}, nigari tofu, flavored or dessert tofu, grilled tofu {yaki-dofu}, deep-fried tofu {age}, freeze-dried tofu {koya-dofu}, thin deep-fried tofu {aburaage or usuage}, thick deep-fried tofu {atsuage or namaage}, seasoned tofu pouches {for *inari-zushi*}, tempeh). Creating texture and flavor. How to use tofu: How to cut tofu, making a chrysanthemum flower, how to remove excess moisture, how to change soft tofu into firm, how to prepare tofu for cooking (marinating, grilling, pureeing or blending, parboiling / braising, panfrying / stir-frying, scrambling, steaming, deep-frying, smoking, how to reconstitute freeze-dried tofu, how to prepare deep-fried tofu for cooking, substituting tofu in recipes). Appetizers Snacks and light meals. Soups. Baked dishes. Stir-fries. Grilled dishes. Noodles, couscous and rice. Vegetables. Salads. Desserts. Glossary (of general ingredients, incl. soy sauce, Teriyaki sauce). Guide to weights and measures.

Note: This is not a vegetarian cookbook. Some recipes call for pork, chicken, fish (salmon, trout, tuna), etc.

Talk with representative of Tuttle Publishing, Vermont. 2004. May 8. Brigid lives in Australia. Periplus, created in 1997 by Tuttle, is located in Singapore and a sister company of Tuttle. Address: Food writer, stylist, consultant, and cooking instructor [Australia].

8079. Dean Foods Co.; White Wave, Inc. 2002. Dean Foods signs definitive agreement to purchase White Wave, maker of *Silk* soy products: Dean Foods becomes America's largest soymilk manufacturer. Boulder-based White Wave management committed to growing Silk brand. Pending litigation between Dean Foods and White Wave to be dismissed upon closing (News release). Dallas, Texas and Boulder, Colorado. 3 p. May 8.
• ***Summary:*** Dean Foods Company [formerly Suiza Foods] (NYSE: DF) announced today that it has signed a definitive to acquire the 64% equity interest in White Wave, Inc. it does not currently own. The price of this 64% was approximately $189 million, bringing Dean's total investment to approximately $204 million. White Wave had total sales of approximately $125 million during the 12 months ended 31 March 2002.

"We are extremely excited about this transaction," said Gregg Engles, Chairman and Chief Executive Officer of Dean Foods. "We believe that soymilk is one of the most promising branded growth opportunities in the food and beverage industry today. With its proven record of success in the soymilk category, we believe White Wave is well positioned to take advantage of the explosive growth potential that this category holds. Dean Foods is committed to investing and innovating in the functional beverage arena, and this transaction is another step toward delivering on that commitment."

"We are more committed than ever to our original mission of creatively leading the full integration of soy foods into the American Diet," said Steve Demos, Founder and President of White Wave. "By joining forces with Dean Foods, we will have more resources available to innovate, extend our brand and expand our distribution. Additionally, we believe that our principles rooted in sustainable, environmentally sensible practices have the opportunity to succeed on an even larger scale. We are anxious to move on

to the next phase of our growth cycle."

Note 1. This news release appeared verbatim as a PRNewswire–FirstCall on the morning of May 8.

Note 2. This news release also appeared as a brief part of an article in the *Wall Street Journal* (May 9, p. B-9) titled "Dean Foods says profit declined 64% amid write-downs." Address: Dallas, Texas and Boulder, Colorado. Phone: 303-449-2526.

8080. Demos, Steve. 2002. New developments at White Wave (Interview). *SoyaScan Notes.* May 8. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Today Dean Foods acquired White Wave for a total of about $295 million–$189 million of which was for the remaining shares not yet owned by Dean Foods.

The root for Steve's training in Right Livelihood came some years ago from a training session with Goenka, who is now age 78. He led a ten-day sitting retreat and course in Lennox, Massachusetts for CEOs to promote the "Spirit in Business" concept. At the end of the ten days, he took two hours of general business questions, not meditation technique and practice questions, from those who had participated in the retreat. Steve signed the contract with Dean Foods then sat on his "pillow" at the retreat for 10 days. Even though he has lost sight of it from time to time, "there has always been this thread running through: Here I am, eyes closed, looking at the breath, and everything else is irrelevant. Who cares about all that other stuff? Here we are, dealing with the real stuff again. It was beautiful."

The response to the deal with Dean Foods that Steve has been getting from everybody, including competitors and suppliers who you'd think would feel threatened, is just remarkable.

"The bottom line is that we started out trying to change the way people eat, and we have helped to do that, and now we are going to try to change the way the world makes its living. That's even more significant.

"I've signed up, the money is staggeringly large, and all those things are somewhat irrelevant at this point. They key question is: How can you really impact the business model out there? Gregg Engles announced the deal this morning on a Webcast which the people at White Wave listened to. He strongly endorsed the profit model, which is strong, but even more he endorsed the company culture and team. It was phenomenal. He said he didn't want to get in the way or disrupt what White Wave is doing, based on a certain culture and philosophy. I can't ask for a bigger and better opportunity than that. Hopefully our generation will have shown America the better business model.

Soy has always been the vehicle, but the goal, right from the beginning was 'I'm gonna out-profit the profiteers because that's the language they speak.' If you do it using a principle-based business, my God, you can really effect people. So when you combine the merit of working with soy products, which are so wonderful, with the merit of that business insight–that's while I'm on cloud nine!"

Steve and several marketing people are leaving tomorrow morning for New York to do a presentation at the Goldman-Sachs Global Consumer Products Conference. "That's where Wall Street presents itself. Dean Foods will present White Wave at that time, then Steve will give a slide-show presentation to the investment community on "Jack and the Beanstalk: A modern day fairy tale."

"I don't tell this to too many people, but after the deal with Dean Foods was signed, the five major stockholders (those who made more than $5 million each from the deal with Dean Foods) took 5% of all of their earnings (that 5% totaled a little more than $7 million), and gave it back to White Wave's employees. Specifically, prior to the closing, the shareholders gifted shares back to White Wave, which gifted those shares over to the employees–all who have worked for White Wave for 3 years or more will (more than 60 people) receive checks (money) on Monday. The amount of money is proportional to the number of years worked–about $12,500 for each year. For example, our truck driver who has been with White Wave for 25 years made $350,000. Those who had been with the company more than 6 months but less than 3 years received a fraction thereof. There is nothing I have ever experienced that made me happier than the look on those people's faces. Disbelief. That look is priceless. The announcement brought some people to tears.

"There was a man who loaned me $500 to start the company. I just saw him this morning. We gave him half a million dollars. Even better–I'm going to meet a man in 20 minutes who came up with the name "Silk." I paid him $10,000 for it at the time. I have a bottle of champagne here on my table, and I'm giving him that plus a million dollars. I've created a good-will model that is staggering. One lawyer said to me, 'I have never seen anything like that.' I replied, 'I'm so sorry to hear that.' People who make enormous amounts of money are not willing to share it with those who help them make it. We're not being that magnanimous. I'm keeping 95%. If we're true to the concept of creating wealth without guilt, how could we not do this? We have such a warped sense of reward and achievement in this culture. We had to spend a lot of money on the gift plan, legally, on documentation–because nobody had ever done such a thing before, so there was no precedent or no forms.

"Prior to this, we had awarded people stock options to our salaried employees. We have been very profitable for the last few years and we just handed out bonus checks. So some of our hourly employees are making about $400,000.

"To avoid disrupting or hurting the company, we designed the gift pack as follows: We took out all taxes at the beginning, then we will give each employee one-third of their gift at once, and we will hold the remaining one-third for two years at which time employees still with the company will receive the balance due.

I do this self-servingly. I keep saying 'My goal is to drag myself up the evolutionary ladder in this life, and the only way to do it is with these kinds of insights. It's a long path. There will be many opportunities and challenges. And if you're not consistent and apply yourself to them, you ain't gonna wake up any better off the next round than you are this round. That's my practice.

"As I was leaving the meditation retreat, ten days of no talking, no eye-contact, I was driving away and there, in the very early morning, walking down the path was the teacher, Goenka, by himself. I stop the car, get out, bow, and then say: 'I just have to thank you for the great influence you have had on my life.' That was my dessert."

"My lucky break was running into Right Livelihood and the Buddhist philosophy of living. Everything since than has been trying to make it come to life. I hope, now that we're in the 'Big Leagues,' we can genuinely influence the profit sector; that's what drives things out there. I constantly ask myself, 'Am I heading in the right direction.' I know that I am without guilt. I can't do anything more than feeling comfortable in my own skin. I credit our business success to an absolute unwavering commitment to the concept; this will not fail because its so well rooted in the right stuff."

Note: This is the earliest document seen (March 2005) in which Steve Demos mentions the word "model" or the term "business model." Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

8081. Mast, Carlotta. 2002. Dean Foods to acquire maker of soy milk in Boulder, Colorado. *Daily Camera* (*Boulder, Colorado*)**.** May 9. Business section. *

• ***Summary:*** On Wednesday, Dean Foods Co. of Texas, America's largest dairy processor, announced it would pay $189 million for the 64% equity interest in White Wave it doesn't already own. That brings Dean's total investment in White Wave to $204 million; the initial 36% was acquired in 1999. In 2001 Dean Foods was purchased by Suiza Foods Corp. for $2.5 billion. In 2001, White Wave sued Dean Foods, claiming the Suiza purchase went against its own acquisition deal with Dean Foods; the acquisition ends this lawsuit.

Steve Demos started White Wave in Boulder, Colorado, 25 years ago with a loan of $500. White Wave had sales of $136.5 million for the year ending March 31; Demos expects that number to double during the next year. White Wave's Silk controls more than 75% of the U.S. market for refrigerated soymilk. Demos and White Wave's four other major stockholders decided to share more than $6 million of the purchase price as cash gifts to the company's 130 employees. Those who have been with the company the longest will receive the most money. "There's no greater pleasure than giving a few hundred thousand dollars to a person who doesn't expect it," said Demos–who will remain president of White Wave and will report directly to Gregg Engles, chairman and CEO of Dean Foods.

Wednesday's acquisition "is a validation of the importance of soy foods to the food industry as well as of soy milk to the future of the dairy industry," said Peter Golbitz, president of Soyatech.

This "is the biggest news to hit the soy industry in 30 years," said William Shurtleff, founder and director of the Soyfoods Center. He added that CEOs like to back winners; this deal shows that a dairy company now wants soymilk to succeed–and believes it will.

8082. ACDI / VOCA–Bolivia. 2002. Prosoy Santa Fe, Ltda / CEDETI. "Soybean derivatives processing." Santa Cruz, Bolivia: CEDETI. 8 p. May 29.

• ***Summary:*** "Summary: Prosoy Santa Fe, Ltda. is a small enterprise run by a group of women. This enterprise is engaged in the production of soybean milk, producing approximately 120 lt. of soybean milk daily, which is mostly sold at the local markets of Santa Fe and Yapacaní. The efforts of this group of women attracted the attention of CERDETI, a local NGO that helped them channel a grant from FOMRENA to build and equip a small soybean processing plant. With this new equipment, PROSOY seeks to increase production volumes and diversify their products. However, using a new technology and increasing production lines will require new skills and improved management of technical matters such as preservation methods, ingredient dosage, as well as improved management of registries and control of inventories. The women comprising PROSOY are aware that the answers for many of their technical questions and applicable skills can be transferred via an experienced consultant, therefore PROSOY requests the support of an ACDI/VOCA "Farmer to Farmer" expert in soybean derivatives processing."

8083. Demos, Steve. 2002. White Wave's 25th anniversary: How Steve sold White Wave to Dean Foods for $189 million (Interview). *SoyaScan Notes***.** June 2. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Steve is at the farm. White Wave's 25th anniversary is coming up in September. At Goldman-Sachs Steve has given his presentation on Jack and the Beanstalk: A modern day fairy tale. "Depending on who I'm talking to, I bring 'Right Livelihood' into it. 'Right Livelihood,' to me, is at the root if it, but we don't always talk about it because we're not going to use that as the reason for the success in the business model. The business model has to be successful because it is a good business model, its based in Right Livelihood, but I don't want to become the Right Livelihood company, I want to become the business model that was very successful because it was based on Right Livelihood."

"Dean Foods is making a commitment to entering the branded foods business. And they've also chosen the healthy benefits foods to be part of that. This was somewhat of the

introduction of the investment they had made, by me just giving the 'street' (Wall Street), so to speak, an update on the soy industry and White Wave." Dean Foods has owned brands before, but they have all been relatively small and No. 2 or 3 in their category. Dean Foods has about $250 million a year in cash flow. This money is looking for a home. They need to invest their stockholder's money or give it back to them. Dean Foods is saying, hey, the way to use the money here is to invest in these value-added, branded foods. Where is the most growth coming from? The legitimate, natural, nutraceutical, healthy benefits, organic type of foods. We ring every one of those bells.

"Our business model is a series of very conscious choices going all the way back to the product itself. It's good for me, good for you, good for everybody who touches it. Right Livelihood is values-based business, or principal-based business.

"We ultimately gave away 10% of the company back to the employees. But we did it in two different ways. Round one came a few months ago; when we saw that this was very likely to occur, we awarded stock options (at the lowest possible price) back to the employees based on job responsibility and contribution to growth. That was 5% of the company. Everybody made 3-5 times what the price was of the option was. Nobody turned it down because it was absolutely free money. The option was something like $10 and the stock sold for $130; who is going to turn that down? The second round came from the five largest stock holders based only a years one had worked for the company. We have talked about this before so there is no need to go over it again."

Looking back over the past 25 years, what are the things that have been most important to White Wave success? "One is innovation. The willingness to constantly try until you find something that works. If you look at the number of attempts versus the number of successes, clearly we are in our own one in a hundred, or even five hundred. We've introduce a lot more failures over the years than we have Silks. In the process, by innovation, we taught ourselves key things. Now, I could tell you how to make a soy product is any factory, virtually for any type of soyfood, from burgers to ice creams, from fermented to curdled. That gives us a different perspective, and it gives us insights into how soy is going to get into the mainstream diet. All that experience and all that time we have come to understand how it is accepted, what is accepted, what they are looking for. In this industry, I think this is somewhat unparalleled. We've tried everything but miso.

Second, we made a business model that was highly profitable and we proved it by investing in all the right stuff. We made all the right decisions for this business model so that we could prove that we could finance growth on our own, without a bank. And over the past several years, since we initially took on Dean's money, we haven't received anything else, and yet we've probably tripled in size–and the numbers were quite large."

When do you think that business model was first clear in your head? "It was at least 5 years ago I saw the three levels of profit that are associated with the soymilk business: Extraction, packaging, and distribution. All are money-makers but two of those are owned by the dairies. So my whole business model was: Use the infrastructure that existed, because the dairies had it all in place, and basically tell them you'd pay them more than they were currently making from their normal cow juice stuff. Once we sat that that was, in fact, true, then we started getting more and more interest on our side in going to a vertical business model, because the profits that were present with packaging and distribution were so much bigger than manufacturing the extract. We're about to start that with Dean Foods; the next step is proving this business model. In the past, White Wave has not been packaging; we have only been extracting. But we got control of how we distributed the extract by where we located the extract. It's funny. You can pay Mother Nature to distribute for you–in other words use the water where you find it and need it–or you can pay truckers to distribute if you happen to ship a heavy water product all over the U.S. So we located our extraction systems located in different parts of the U.S.–more efficient for where Silk was being packaged. And then we bought our own extraction. We have not put in our own processing / formulation, which is one more profit level that we haven't even seen yet, and we're already a very handsome business model. White Wave presently has two different extraction locations, but the company draws off of four. We have an arrangement with another company [such as Sunrich] to supply us. White Wave makes about 50% of the Silk sold and the other company also makes 50%. White Wave does not necessarily want control of 100%; there are headaches that come with that. It is expensive to build a soymilk extraction facility. We are focusing our money on ramping up sales.

Anything else? "Over the past 25 years White Wave has stayed true to our principals–but those are things I take for granted. Some people seem to think that those are great achievements. I think they are normal, which is why I don't mention them. How else would I do it? But it's apparent that there are not a lot of people who walk their talk–at all; it's unfortunate. So, even through some very difficult times, we did not compromise our morals or ethics in running the business. We probably compromised our personal well beings [overwork, stress], which is not all that good. But hopefully, we'll be making up for that.

What was it like when White Wave began operations in 1977? Natural foods were bulk only. Organic was known, but there was no differentiation between organic and natural because nobody had yet deceived the public with a fake product. I had started a natural foods store in Pennsylvania based on no packaging, all bulk. So natural foods was a

lifestyle but had not been compromised by business yet. There were not a lot of natural foods stores in the U.S. in 1977 and they were mostly co-ops. The big natural foods stores came a few years later. The chains and supermarkets (such as Whole Foods and Wild Oats) came 10-15 years later."

Organically grown? "We used to go to Walnut Acres, one of the original organic meccas, to buy all our flours and grains for my natural food store named Touch the Earth in Pennsylvania. I have a clear memory of the bottom third of the bag being dirt. It was organic all-right. We always knew that we had to watch for stones and dirt in anything sold as organic. God knows why!

Soyfoods? "I don't think the word had been invented or was well known. 'Tofu' as a word was starting to be known, partly because of what you were doing at that time. My first experience of making tofu came through the Seventh-day Adventists–through the Bible we used to carry around–*Ten Talents.* It had a recipe for making bean curd. Of course soy sauce was well known. In 1977 there was no category of foods called 'soyfoods' and there were no companies that were soyfoods companies" (Continued). Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

8084. Demos, Steve. 2002. White Wave's 25th anniversary: How Steve sold White Wave to Dean Foods for $189 million (Interview). *SoyaScan Notes.* June 2. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued: Vegetarian? "You were either Indian (from India) or you could have been a left-over hippy from the 1960s, and then there were the Seventh-day Adventists. My father often talked about a couple of people that he was in business with that were into yoga and were vegetarians. I didn't know anybody who was not eating any animal products.

Non-dairy? "Rich Products and whipped toppings or coffee creamers were starting to come about, and maybe infant formula. I think that would be about it for non-dairy.

In the 1960s, Steve bought tofu from a store named Seeds of Life on Telegraph Avenue in Berkeley; it sold foods only in bulk–no packaging. "You weighed your food and priced it yourself. It was Utopian food shopping."

Meat alternatives? "That would have to be Worthington Foods with fake sausage. And they certainly weren't called 'meat alternatives.' They were called 'meat analogs.'"

The diet-health connection? "That idea came in in 1984 with a *Time* magazine cover story–'And now the bad news.' There were two fried eggs for eyes and a piece of bacon doing a downward grin. I use that in a lot of my talks. That was the beginning of the mainstream diet-health consciousness. Up until that point it was calories and calories only–which had to do with gaining weight; it was not yet about disease and diet and well being. Up until that time the cholesterol hypothesis–the theory that cholesterol caused heart disease–had not been proved. Francis Moore Lappe and *Diet for a Small Planet* arrived in the early 1970s–diet and the planet. Now we had diet and consciousness, and environment and consciousness. This whole idea that diet and health were related did not reach most Americans until the 1980s." When Steve started making tofu he saw it as a complete food low on the food chain. It seemed to him inevitable that such foods had a bright future. "To me, it was the environmental and the moral animal-rights issues that I was focusing on, far more than I was on diet and health issues. Yet we were looking at tofu as a healthier food–no question. But it was only in the mid-1980s that Americans started to get into the disease-related part of that. Remember, our generation organized the first Earth Day in April 1970, so there was already the realization 'Aren't we living a little too high on the hog?' From there people began asking 'How are we going to save the planet?' Many of us tried to apply ourselves to this question in some individual way. Lots of us ended up working with food."

Health benefits of soy in 1977? "Complete protein is the only thing I can think of. And most people didn't even think that soy was a complete protein. Many people still don't know that.

"The key thing about founding White Wave in 1977 was we had no experience, no money and no access to any. And those translate to no confidence. You don't need both experience and money, just one or the other–in order to have confidence. Now, we know this market. We helped to create it. So we have a high degree of confidence in what we think about it and where we're going with it. That's a big difference. I have all the faith in the world that I know how to think; the question was what I wanted to think about. Making tofu looked like a pretty good thing to think about. So I just paid attention and learned as I went along. I also know that I had some genetic tendencies that way because of my father, Anthony.

"He was a successful entrepreneur–and still is. He started his own company semi-processing minerals and alloys when he was in his 30s. He would crush and size, and then sell that material to the welding-rod or steel industry. His company now has sales of a few hundred million dollars and has a few hundred employees. When we sold White Wave to Dean Foods he was ecstatic. He was an investor in White Wave to boot. He made double digit millions on the deal. He didn't have much faith in his son when I started in 1977, but he does now! He first invested in about 1983-84 when White Wave was in deep financial trouble. Steve's mom, Lorraine, is still alive and her support for Steve has always been strong and positive. She always believed I was an OK person, and she let me know that–like any good mother. My actions had to be honorable; it didn't matter much what they were. My father, likewise, is a man of very high integrity–he just didn't believe in what I was doing. But

he started relating to me in a completely different way after we sold White Wave.

"I grew up outside of Philadelphia near Villanova and Bryn Mawr. One brother was a surgeon, the other an attorney. In the 1970s my family basically gave up on me. The joke was: Where's Steve? Oh, he's off in India, up some tree somewhere. We paid for his education; what a waste. But he who laughs last laughs hardest. There is a certain vindication when everybody in your family is capable of retiring because of what you've done.

"I remember going to visit Azumaya (I don't recall what year), and I was very impressed at how big it was– so industrial. It looked like such big equipment. And I remember that they were hand curding and hand ladling. I thought: It will take me decades to get near the money to buy equipment like this. I tried to get money many times, but no bank would lend money to a small tofu manufacturer. White Wave got almost all its money from my family–and Pat Calhoun's folks, but to a much smaller extent. White Wave's five major shareholders are: (1) My elder brother, Jack, who is a surgeon and who carried the investment for the company. (2) My father, Anthony. (3) Myself. (4) Pat Calhoun. (5) A man by the name of Michael Sutton–an attorney friend of ours, early in the game, who ended up investing a lot. He's the luckiest person on the planet right now. That was the only way White Wave was able to finance its growth over the years.

"The first bank loan came in about the mid- to late 1980s, and it was for equipment. At one point White Wave got an SBA (Small Business Administration) loan for several hundred thousand dollars; it ended up being a nightmare. That helped finance the expansion into two production facilities. Within the last 3 years White Wave issued industrial revenue bonds through a state & federal program and raised $13 million. We used the money to build two Silk extraction facilities and to rebuild the tofu factory.

"When Dean Foods made its first investment of $5 million in White Wave in Aug. 1999, all of the money was used for product placement and marketing of Silk. Half of that money went specifically to slotting allowances / fees to supermarkets. We almost never lost a slot, but in some cases we actually went back and paid twice. The rest the money was used for samples, PR (public relations) and advertising. In May 2000 we got a new PR agency that is still with us: Carmichael Lynch Spong, of Minneapolis, Minnesota. They have done a great job for us. We had already put in place all of the financing of the equipment for the capacity expansion. It's not too hard to raise money for equipment; the risk-takers can always take back the equipment and sell it."

Nine months later, having spent the initial $5 million, White Wave went back to Dean Foods. But things had changed for the better. Sales had now risen to $28 million. This time Dean invested $10 million.

Did White Wave have any important firsts? "(1) We took a deep look at foods and challenged how they were being presented. We didn't stop challenging until we found a way that worked and was accepted. We put Silk soymilk in gable-top cartons like milk and put it in the dairy case. When Silk took off, it was everything we could do just to hold on. Silk now has sales of $170 million a year; all of White Wave's other products might be $10-15 million. (2) We flavored tempeh and tofu, and basically created the 'flavored tofu' category. (3) We were the first to do shelf sets with soyfoods. We put up 'Vegetarian Cuisine' centers in Whole Foods markets in the San Francisco area. Ultimately we ended up organizing the entire case around vegetarian foods. (4) Use of the word 'vegetarian' boldly with our product line. It was just one more extension of our lifestyle. The Farm in Tennessee did much the same thing but on a much smaller scale. We need to get back to that idea" (Continued). Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

8085. Demos, Steve. 2002. White Wave's 25th anniversary: How Steve sold White Wave to Dean Foods for $189 million (Interview). *SoyaScan Notes.* June 2. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Continued: Let's look at the August 1999 agreement that White Wave signed with Dean Dip and Dressing Co. when they purchased about 36% of White Wave. Why did you give Dean the right to buy the remaining 70% of White Wave? "We started by selling them 25% of the company, then within 9 months we went back (since it happened so fast) and sold them more, which came to a total of 36.03%. We went in wanting to sell the entire company to Dean Foods. We did this for the reason I explained earlier: Extraction, packaging, and distribution, and giving them a bigger profit margin than they could find elsewhere. If the strategic investor in White Wave was the same person who owned what we needed, then my value to them and the value to themselves would be that much greater.

We gave Dean the option to buy the rest of the company when we took on the initial money; here's why. A large business is not in business to invest in small companies; that's a venture capitalist. A strategic partner wants to invest in something so that they can ultimately control it. We had no problem with that because we knew that if we sold them 25% now and used their money in a way that worked, we were going to use their money to make us more valuable and then sell it back to them at a fair market value. That seemed like a fair deal. You do your part. We'll do our part. And we'll all make a lot of money. At that time, it was my intention to retire when Dean purchased the remaining 64%. As of Sept. 7 this year, Dean had the right, at fair market value, to purchase the rest of White Wave. The design was quite brilliant, really. It got everybody what they expected in a very fair and equitable fashion. Everybody had incentives to do their best. In the end, Dean would acquire a major

significant brand–and that's very hard to come up with.

But the big problem was that, after they gave us the initial money, Dean Foods never showed up. We expected Dean Foods to do the processing (formulation), packaging, and distribution of Silk. For proprietary reasons, it was to our advantage to do the extraction; the cost efficiencies were huge. Huge! Staggeringly large. For the last 2½ years, all I've been doing, is making sure we have enough capacity to go forward.

To this day, Dean Foods has not done any of what they were expected to do. I don't know why? No idea! Maybe the CEO felt we were a lark. He certainly didn't have any faith in the soy business. I think he got caught up in business acquisition mania. It was stupidity that we were seeing, but we just didn't understand it. It was so frustrating! My board reports would be devoted 40% to attacking Dean and telling them how pissed off I was, because it was clearly unfair and inequitable.

Everybody thinks that Dean Foods is responsible for putting all our Silk products on supermarket shelves. Not true. Sheryl Lamb built a sales team that put those products on the shelf. Eric Bedar kept our distribution system running on time. Dean Foods had nothing to do, to this moment, with the success of White Wave Silk. Nothing whatsoever, other than the use of their money and we could have done that from any bank. After they put in the initial money in 1999, they did nothing to help us grow the company. And we told them constantly how we felt it was unfair and unreasonable. We eventually sued them and spent $1 million on the suit, but we lost. Yet in the process we finally got their attention. Then Suiza bought Dean Foods and the resulting company came to be named Dean Foods. In the process they sold White Wave.

Here's the irony of ironies. I just found out about all this. When Dean Foods was sold to Suiza, White Wave became a $50 million discount to the deal price because we weren't making any money and Dean Foods gave us no value. Yet less than 4 months after they closed in December, the CEO of Dean Foods has turned around and paid a value of $295 million for White Wave–which we believe was fair market value for White Wave. The $189 million in cash was only the stock that was not owned by Dean Foods at the time of the transaction. Dean Foods paid much more for White Wave than they were required to in order to win the morale of the management.

We told Dean's team that if they were so foolish as to pay less than fair market value, the management team would leave (they'd say 'The spirit's broken. The passion is gone') and Dean would never be able to replace it. That was our first ace; the management team *would* leave. My second ace was that my mission is done; I don't need a job any more. So here are our terms for staying: First, we want to be autonomous; we will make all our own decisions and Dean will stay out of our way, because I can't stand working for anybody. I will report to a CEO but I don't want to be inside anybody's division. Second, there will be no personnel changes. Third, you will pay us a fair market value for what White Wave is worth today. Finally, you will give us a no-cap incentive for the management team to stay with the business for the next several years. They gave the management team a $35 million incentive to stay for two years–in writing. So now Steve, Pat and other top managers at White Wave have an employment contract. Steve's income is fixed if White Wave achieves certain huge sales levels. They said, if you can deliver your plan, here's what we'll give you. I said, if we beat that plan, I don't want any caps on what management people can make.

"There are four ways to make money at White Wave now. (1) You have a base salary, which is above average. (2) Managers get a bonus on achievement of that year's plan; the company draws up its own plan. This is typically 5-30% of your base, depending on who you are and where you are in the company. (3) Profit sharing, which is when we beat the plan; everybody in the company, top to bottom, including hourly workers, participates in profit sharing. That is when all goals have been met and we produce more profit than our plan called for. Then White Wave gets one-third of that extra profit to be handed out to all employees. Profit sharing at White Wave has been going on for a few years. Before that, we had no profit to share! (4) The incentive plan to deliver a fixed amount of sales over the next two years. That money comes from Dean Foods and its over $30 million now–the base. After that, it's limitless–during the next 24 months.

Dean Foods met all of those conditions, so I thought wow! They really mean what they're saying about soy. Wouldn't it be fun to fly the rocket ship (run White Wave) for a little longer.

"Dean Foods wanted to acquire a cultural context company, whose never worked for anybody, to work inside somebody else's vision. So it better be a damned good vision if you're gonna get us involved. To date, all of that seems to be in place.

Finally, Dean Foods is doing what the old Dean Foods was supposed to do. So far so good, but its still very early to give a final judgment. I think its gonna get political. These dairy guys aren't going to like the fact that White Wave is getting so much capital; they will fight that–even though we think we can offer Dean the fastest return on capital. That's the way big business run; every division fights for the their part of the available capital.

"So one day I decided to call the CEO of Dean Foods, Gregg Engles. It was a friendly and conciliatory call since we would have to work together. He is a man of jets; he has a few. He flew up for dinner that night from Dallas, and we struck up an interesting relationship right away. He's a young man with a lot of vision. He's very hungry and sees soy as a tremendous opportunity for opening up his aspects of business. He doesn't care two hoots about our mission–but that's fine. I didn't need him to join the mission. I needed

him to give me factories. So he made money on both sides."

In short, over and over again for White Wave, something that looked out like it would turn out to be a disadvantage (or crisis or disaster), ending up turning out to be an advantage (or great boon or victory).

"It was sort of unbelievable. It was extraordinary to see something of such negativity at one point in terms of litigation and all the rest of it to end up in such a positive way. I'm in awe of it. That inner voice that said–'You're not gonna believe the way this turns out.' It's beyond comprehension. This acquisition would never have happened under Howard Dean. But the new Dean Foods is giving us everything we think we need to make the category succeed. And the CEO wants us to succeed–and there's the key. He's told me, 'As long as you deliver the numbers, I'll give you anything you want.'

"I've never been more excited about the soyfoods industry than I am today. The ability to put soy products into the American mainstream market is phenomenal. White Wave now makes 50 million gallons of Silk a year.

"I'm in it for the jazz, for the thrill, for the fun. I think Silk can change the beverage industry, especially the soft drink industry, which has a bad product.

"Here's a glimpse of the future and my goal now. Capacity is a key piece, and I think purity is going to be another key piece–that Silk is 100% free of dairy, for those who are allergic. So we hope to convince Dean to give us one of their big factories (in Jacksonville, Florida, near Publix Super Markets, Inc.), and we're going to run it vertically–all the way from extraction through processing, filling, packaging–and prove that our business model is more profitable than running dairy product through the same plant. When Publix puts Silk on sale they will take up to 35 truck loads, which is one-third of an entire train! But even more than that, I want to go after heat reclamation and no waste stream. Make it a truly sustainable factory and industry. One big challenge will be the okara. Maybe turning it into a product or decomposing it into a gas. The point is: if there's a green model, aren't we the likely candidate? That's huge! We've already done the analysis; we know we can do this. We have retired 30,500 cows! We've put that on our website. We're thinking about getting a retirement home in India for all the cows we retire.

"Right now we're in 11 to 15 factories for all our products. White Wave has regional plants manufacturing products and selling into those localities. But the location of some of our extraction plants still requires tankering the product (which is mostly water) to a plant 1,000 miles away. Silk is projected to have more sales this year than Ben and Jerry's will have in ice cream. Isn't that amazing. And Silk is not high in saturated fat. We're all in awe of what we've stepped into in terms of the business opportunity. We are no longer missionary zealots for soy. We're also affecting infrastructure of business on the Right Livelihood side–which is fabulous. This is much, much larger in potential cultural impact than we ever fantasized. So that's a neat responsibility. I want to be at the causal point–business and wealth without guilt.

"I figure that if its worth writing about, somebody will do that. I have kept some photographs. On August 24th we have rented the Boulder Theater for our 25th anniversary. The management team will all be in costume. We plan to tell the story of Jack and the Beanstalk." Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

8086. Akintunde, T.Y. Tunde; Akintunde, B.O. 2002. Development of models for predicting the yield and quality of soymilk. *J. of Food Technology in Africa* (*The*) 7(2):55-58. April/June. [12 ref]

• ***Summary:*** Models were developed to predict the yield and quality of soymilk The quality characteristics investigated were total solids, protein content and fat content. The processing parameters considered were: (1) Amount of water added during grinding per kg of dry soybeans; (2) Blanching time; and (3) Heating time. Address: Dep. of Mechanical Engineering, the Polytechnic, Ibadan Federal College of Agriculture, PMB 5029 Moor Plantation, Ibadan, Nigeria.

8087. *Bluebook Update* (*Bar Harbor, Maine*). 2002. Soymilk plant opens in Guatemala: MicroSoy Flakes fuel new project. 9(2):1, 7. April/June.

• ***Summary:*** Leyenda, S.A., a new plant making soymilk and soyfoods in Villa Nueva, Guatemala, now makes Soy! Soyaleche, according the president Alejandro Barrios. The plant opened in Nov. 2001. With the capacity to produce 40,000 liters/day, Leyenda uses processing equipment from Perfecta Curitiba of Brazil and non-GMO MicroSoy Flakes from MicroSoy Corporation of Jefferson, Iowa. A photo shows Barrios holding two large glass beakers of his soymilk; That made from MicroSoy Flakes is whiter than that made from whole soybeans.

8088. French, Steve. 2002. Top ten health and wellness trends to watch. *Natural Foods Merchandiser.* June. p. 52, 54.

• ***Summary:*** Trend No. 8 is "Soy, the ultimate health food." French writes: "Will consumers ever fully understand, use and trust soy foods? As household penetration of soy products across categories continues–and mainstream computer packaged-goods companies search for new brands and extensions–look for a range of soy foods beyond soy milk and soy burgers to enter mainstream consciousness. Soy use is growing in frozen entrees, packaged grocery and snacks."

A table (p. 54) shows that 24.1% of the U.S. general population indicates that they have used soyfoods during the past year. Source: The NMI [Natural Marketing Institute]

Health and Wellness Trends Database. Address: Senior VP, Managing Partner, The Natural Marketing Institute.

8089. Lewandowski, Joseph P. 2002. Dean buys White Wave for $189 M [million]. *Natural Foods Merchandiser.* June. p. 1, 7, 18.
• ***Summary:*** On May 8 Dean Foods, a dairy and beverage giant based in Dallas, Texas, purchased the remaining 64% interest in White Wave, maker of Silk soymilk, for $189 million.

Two days later White Wave founder Steve Demos stood before crowd in a New York City hotel ballroom (with standing room only) and delivered the message he'd been waiting nearly 30 years to pitch: "Operating a business dedicated to the principles of right livelihood and sustainable agriculture can deliver not only spiritual fulfillment, but big-time profits."

White Wave, which has been unable to keep up with consumer demand, will use the money to expand manufacturing and marketing.

8090. Nordquist, Ted. 2002. Soymilk vs. dairy milk plant: Operating costs. In: Soyfoods 2002. Bar Harbor, Maine: Soyatech. 200+ p. 2 p. Held 25-26 June 2002 at the Hyatt Regency O'Hare, Rosemont/Chicago, Illinois.
• ***Summary:*** Compares the operating costs for two different levels of production: 6 million gallons annually and 12 million gallons. At 6 million gallons, the total costs per gallon are $1.09 for soymilk and $1.12 for cow's milk. At 6 million gallons a year, this difference of 3 cents per gallon equals $180,000 per year.

At 50 million gallons, the total costs per gallon are $.92 for soymilk and $1.02 for cow's milk. At 50 million gallons a year, this difference of 12 cents per gallon equals $6 million per year. However this latter calculation does not include the initial cost of the dairy cows, at an estimated $1,500 per cow x 19,850 cows = $29.775 million. If added to the initial investment for the cow's milk plant, the difference becomes $1.61 per gallon, which amounts to $34.5 million per year.

Talk with Ted Nordquist. 2003. Jan. Two experienced dairy consultants who work with him on his Modesto Soy Plant project are Robert Purbeck and Robert Townsend. Both have previously been dairy plant managers at places like Knudsen Dairy, etc. They complied the cost figures for a dairy plant given above. The real issues are dairy costs for which statistics do not exist–such as replacement costs of dead cows, cost of water for washing the animals before milking, water pollution, subsidies for feed, water, spray drying, and storage of milk, butter and cheese, energy issues, etc. Raley's and Savemart own and run large dairy processing plants with an output of about 95 million gallons a year. Moreover, many dairy farmers get their water at agricultural rates ($10/acre foot) whereas the municipality next door pays $150/acre foot. In short, in a modern plant like Ted's, soymilk can be produced for significantly less than cow's milk. However supermarkets / grocery stores do not take much margin on the sale of cow's milk. In the 1930s the U.S. government decided that milk was part of national security. So in seasons when cow's produce more than consumers can drink, the government spray-dries and stores the surplus. So the farmer is guaranteed a certain price to deliver a certain quantity of milk; if it is not used fresh or made into dairy products they spray dry it, store it for a year, then try to sell it on the world market. If they can't sell it, taxpayer dollars pay to destroy it. Schools get free butter, paid for by taxpayers. Ted went to Cal-Davis and posed many of the above difficult questions about dairy costs and subsidies to Sharon Shoemaker, head of the food science department. She told Ted that for $1,500 she would have a student do the research and get Ted reliable answers. Ted paid her. The student came back and essentially said "There are no subsidies." Ted called Sharon and asked what she called the low water rates for farmers in California. She said that is California water law, part of a program that has been in place for 50 years. It is almost too complex to understand and it differs from state to state; so getting solid figures is a monumental task.

Robert and Robert concluded that the real problem for new dairies in today's world is not the costs but the permits. A modern dairy uses about 17,000 cows and is run by a corporation. Nowadays as soon as environmental groups and their attorneys hear of proposal for such a dairy, they begin legal actions. The city council members know it will become a huge issue, and even if they do grant a permit it will end up in the courts of 5-10 years. Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870. Fax: 415-495-3060, Email tedalan@sirius.com.

8091. Prokopeas, Christopher. 2002. Sun Soy–Breaking into the mainstream: A best practice case study. In: Soyfoods 2002. Bar Harbor, Maine: Soyatech. 200+ p. 15 p. Held 25-26 June 2002 at the Hyatt Regency O'Hare, Rosemont/Chicago, Illinois.
• ***Summary:*** This paper consists of 29 PowerPoint presentation graphics / frames photocopied on 15 pages. Sun Soy is successful (p. 1-2): "In only 2 years, Sun Soy has become the #2 soymilk brand and the momentum is continuing. Sun Soy achieved distribution goals in its key markets. Retailers who accepted Sun Soy experienced phenomenal category growth. Sun Soy is pulling new users into the category: Shelf stable soy, lactose free milk, low fat milk." Sun Soy was launched in Jan. 2000. The refrigerated segment is more innovative and advertising savvy. Address: Director of Marketing, Morningstar Foods. Phone: 214-303-3400.

8092. Spencer, Marty Trayner. 2002. Natural products sales

top $34 B [billion]. *Natural Foods Merchandiser.* June. p. 1, 20, 26, 36, 42, 52, 56.
• ***Summary:*** On May 8 Dean Foods, a dairy and beverage giant based in Dallas, Texas, purchased the remaining 64% interest in White Wave, maker of Silk soymilk, for $189 million.

Two days later White Wave founder Steve Demos stood before crowd in a New York City hotel ballroom (with standing room only) and delivered the message he'd been waiting nearly 30 years to pitch: "Operating a business dedicated to the principles of right livelihood and sustainable agriculture can deliver not only spiritual fulfillment, but big-time profits."

White Wave, which has been unable to keep up with consumer demand, will use the money to expand manufacturing and marketing.

8093. United Soybean Board. 2002. National report 2002-2003: Consumer attitudes about nutrition. Seattle, Washington. 8 p. June. 22 x 21 cm.
• ***Summary:*** This ninth annual nationwide survey, commissioned by USB, was conducted in early 2002 by an independent research firm in Seattle, Washington. Random telephone interviews were completed with 1,000 consumers. The study's margin of error is ±3.1 percent and has a confidence level of 95%.

Contents: Introduction and methodology. Nutrition concerns and habits. Consumer awareness of nutrition terms and information. Consumer perceptions of cooking oils. Consumer attitudes about fats. Consumers on soyfoods and health: Perceived healthfulness of soy products (74% healthy, 19% neutral, 7% unhealthy), awareness of health benefits of soy (heart health 39%, menopause relief 18%, cancer prevention 16%, osteoporosis prevention 4%, good source of protein 4%, other 19%), where consumers get information on soy and health (magazines 42%, TV news 22%, newspapers 20%, friends/family 20%, etc.). Soyfoods: Consumption and trial (42% of Americans report they consume soyfoods once a month or more, while 28% consume soyfoods weekly, up from 27% last year. 30% of consumers say they never use soyfoods, down from 35% in 2001). Consumer perceptions of genetically modified food. Consumer perceptions and knowledge of organic foods (42% of consumers buy organic food products either frequently or sometimes. On an unaided basis, 48% know that organic foods can't contain genetically modified ingredients and 64% know that organics must be grown without pesticides and herbicides).

Percentage of American consumers who have tried various soy products in 2000, 2001, and 2002: Tofu 45%, 45%, 48%. Soy veggie burgers 25%, 28%, 35%. Soymilk 25%, 28%, 35%. Soy nuts 14%, 20%, 26%.

Percentage of Americans who consume soyfoods weekly: 24% in 1999, 27% in 2000, 27% in 2001, and 28% in 2002.

Percentage of Americans who are aware of the term "genetically modified": 48% in 1998, 42% in 1999, 58% in 2000, 62% in 2001, and 68% in 2002.

Note: As of Aug. 2008 this full survey is available gratis in PDF format at www.soyconnection.com /health_nutrition / pdf/.

8094. 8th Continent L.L.C. 2002. Some things are hard to stick with. This one's easy. 8th Continent soymilk (Ad). *Newsweek.* July 15. p. 16.
• ***Summary:*** At the top of this full-page color ad is a photo of six videotapes on subjects like weight loss, developing a flat tummy, learning yoga, and advanced marathon techniques; these are hard to stick with. In the lower right is a huge plastic bottle of 8th Continent soymilk with drops of condensed moisture over its surface. "Not everything you do for yourself is easy to stick with. Fortunately there's 8th Continent soymilk. So rich. So creamy. So delicious. It's the only soymilk you'll want to drink every day. Look for it in the dairy case."

A photo in the lower left corner shows the face of a happy, fit, middle-aged woman holding a pint of 8th Continent. Across the bottom: "8th Continent: A better place of wellness. Original, Vanilla, Chocolate. www.8thcontinent.com."

8095. Rivas, M.; Garay, R.P.; Escanero, J.F.; Cia, P., Jr.; Cia, P.; Alda, J.O. 2002. Soy milk lowers blood pressure in men and women with mild to moderate essential hypertension. *J. of Nutrition* 132(7):1900-02. July. [19 ref]
• ***Summary:*** This research suggests that soymilk lowers blood pressure in men and women with essential hypertension. Subjects consumed either 500 ml of soymilk or an equivalent amount of cow's milk for 12 weeks. At the end of the study, systolic and diastolic blood pressure decreased by about 18 and 16 mm of mercury, respectively, in the soy group, but only about 1 and 4 mmHg in the cow's milk group. Differences between groups were statistically significant. The results are encouraging, but more research is needed. Address: 1. Dep. of Internal Medicine, School of Medicine of Zaragoza, Spain.

8096. White Wave, Inc. 2002. Beyond Tofutown (Card). Boulder, Colorado. 10 panels plus insert. 16 cm.
• ***Summary:*** On the cover of this printed, folded invitation card (each panel is 6¼ by 4½ inches) is a color illustration of the top front of the Boulder theater. On the next three front panels are written (on the Marquis of the theater against an orange background): "An evening in Tofutown," "Another evening in Tofutown," and "Yet another evening in Tofutown," referring to three past celebrations hosted by White Wave at the Boulder theater. On the fourth panel is the large number "25" against an orange background on a yellow field, representing White Wave's 25th anniversary. And on

the sixth front panel is "Beyond Tofutown" written in red on the marquis of the Boulder theater.

On the middle back panel we read: "Three things that make our hearts go thump: The ring of the grocery register. The smell of soymilk in the morning. The joy of bringing Texans to Tofutown." "An evening in TofuTown–August 24, 2002 is brought to you by White Wave. The party, like its host, is a testament to sheer persistence. Details from the Boulder Theater, an Art Deco Historic Landmark in downtown Boulder, Colorado. RSVP by August 2nd. 720-565-2301 or Swynegar@whitewave.com." The logo (with a blue and white breaking wave in an oval) reads: White Wave–TofuTown Cards. Illustrations copyright Spark, dutiful servants to the Bean Curd family since 1980.

An insert (black ink on translucent white paper) states: "You are heartily invited to join us in an all new White Wave adventure–A 25th anniversary evening–Beyond Tofutown. In recognition of a job well done and one whale of a ride. Saturday evening, 6:00 p.m. on the 24th of August 2002 at the historic Boulder Theater, on 14th & Pearl.

"The 4th and perhaps most outrageous event along the Silk Road–Indeed, a quantum wiggle in the tofu timeline–So come prepared to shake, rattle & roll to the stylings of Cabaret Diosa.

"Exemplary organic fare offered at 7:00 p.m. A grudging return to real life occurs at 1:00 a.m. No suit. No tie. No problem."

Note: This is to celebrate both the 25th anniversary and the purchase of White Wave by Dean Foods for $189 million. On August 23, the day before this celebration, Steve Demos and his long-time close friend, Sheryl Lamb, were married in Boulder. Tim Redmond (of American Soy Products), who attended the wedding, said it was a beautiful and joyous occasion. Address: 1990 North 57th Court, Boulder, Colorado 80301. Phone: (303) 443-3952.

8097. Kwok, Kin-Chor; Liang, H.H.; Niranjan, K. 2002. Optimizing conditions for thermal processes of soy milk. *J. of Agricultural and Food Chemistry* 50(17):4834-4838. Aug. 14. [17 ref]
Address: 1-2. Dep. of Applied Biology and Chemical Technology, The Hong Kong Polytechnic Univ., Hung Hom, Kowloon, Hong Kong, China; 3. Dep. of Food Science and Technology, The Univ. of Reading, Whiteknights, P.O. Box 226, Reading, RG6 2AP, United Kingdom.

8098. Huang, H.T. (Hsing-Tsung). 2002. Origin of the term for "soymilk" in China and the origin of soymilk as a widely consumed beverage in China (Interview). *SoyaScan Notes.* Aug. 15. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** The earliest document Dr. Huang has been able to find that contains a specific term for soymilk is the book *Yiya yiyi* (Remnant notions from *I Ya*), by Han I (1350 AD). It states that the poppy seed extract should be cooked in a way similar to that for cooking *doufujiang* (soymilk). This is the earliest document Dr. Huang has seen in which the Chinese term *doujiang*, meaning soymilk, appears.

The second earliest document seen is *Hu Ya* [Lakeside Elegance], by Wang Rizhen, published in about 1850. It states that soymilk, before it is coagulated to make tofu, is called *doufu jiang* (literally tofu + thick liquid). This date seems surprisingly late, yet Dr. Huang is quite sure that it is about right.

Before the Qing dynasty (1644-1912), soymilk was not widely consumed in China; most of it was coagulated to make tofu. Then it was found that longer cooking of the soymilk than usual causes hydrolysis of the oligosaccharides–which ordinarily cause flatulence. Street vendors began to make soymilk early in the morning, to keep it warm over low heat for hours, and to sell it as a popular breakfast beverage–*tian doujiang* (sweet soymilk) served with fried crullers (*youtiao*). Note: In some parts of Taiwan and northern China it is also sold as a hot soymilk soup *xian doujaing* (salty soymilk), with various seasonings and garnishes (See *The Book of Tofu,* by Shurtleff & Aoyagi, p. 207).

As far as Dr. Huang knows, soymilk was not generally fed to infants or children in China before the 20th century. Address: Goodwin House, 4800 Fillmore Ave., Alexandria, Virginia 22311. Phone: 703-824-3652.

8099. Blue Diamond Growers' Co-op. 2002. Now the perfect balance between soy protein and great taste: Add Blue Diamond's new Soy Protein Enriched Almond Breeze to your Almond Breeze product line (Ad). *Natural Foods Merchandiser.* Aug.
• ***Summary:*** A full-page color ad. "With the nutritional benefits of soy in 3 delicious varieties: Original, Vanilla, Chocolate," Photos show: (1) A young woman, wearing short pants, in a yoga posture, balancing on her forearms. (2) Six packages of Almond Breeze–3 new with soy protein, 3 older without. (3) Pure white almond milk being poured into a tall glass. Address: www.bluediamond.com.

8100. **Product Name:** Soy Protein Enriched Almond Breeze (Almond Milk) [Original, Chocolate, Vanilla].
Manufacturer's Name: Blue Diamond Growers' Co-op.
Manufacturer's Address: 1082 C Street, Sacramento, CA 95814.
Date of Introduction: 2002. August.
Ingredients: Water, evaporated can juice, almonds, natural cocoa, tricalcium phosphate, sea salt, potassium citrate, soy lecithin, carrageenan, vanilla extract, vitamin E acetate, vitamin A palmitate, vitamin D-3.
Wt/Vol., Packaging, Price: 1 quart (946 ml) Aseptic carton. Retails for $2.48 (1999/04, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.

Nutrition: Per 8 fl. oz. (240 ml): Calories 120, calories from fat 25, total fat 3 gm (5% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 160 mg (7%), potassium 180 mg, total carbohydrate 21 gm (dietary fiber 1 gm [4%], sugars 20 gm), protein 1 gm. Vitamin A 10%, calcium 20%, iron 4%, vitamin D 25%, vitamin E 50%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Ad in *Natural Foods Merchandiser.* 2002. Aug. "New, the perfect between soy protein and great taste:..."

8101. *Natural Foods Merchandiser.* 2002. Organic trends. Aug. p. 7.
• ***Summary:*** Gives two tables from SPINS and AC Nielsen.

(1) Growth of top 10 categories: The top category is "Nondairy beverages." Dollar volume (natural and mainstream): $325,627,220. Year ago dollars: $252,275,334. Growth vs. year ago: 29.1%.

The 10th category is Tofu. Dollar volume (natural and mainstream): $46,381,125. Year ago dollars: $42,971,416. Growth vs. year ago: 7.9%.

Total organic sales: Dollar volume (natural and mainstream): $2,010,633,349. Year ago dollars: $1,637,033,305. Growth vs. year ago: 22.8%.

Table (2) % of dollar sales by channel. For nondairy beverages: Natural product supermarkets: 22.20% Mainstream food stores: 77.17%. Mainstream drug stores: 0.21%. Mass merchandisers: 0.42%.

For tofu: Natural product supermarkets: 44.04% Mainstream food stores: 55.94%. Mainstream drug stores: 0.00%. Mass merchandisers: 0.02%.

Total organic sales: Natural product supermarkets: 45.77% Mainstream food stores: 53.78%. Mainstream drug stores: 0.10%. Mass merchandisers: 0.30%.

Note 1. What about natural food stores that are not supermarkets?

Note 2. Each of the above dollar figures seems to us to be 1,000 times too large.

8102. **Product Name:** Silk (Soymilk Sold Refrigerated in One Quart ESL Gable Top Cartons) [Unsweetened Organic].
Manufacturer's Name: White Wave Foods Co. (Distributor).
Manufacturer's Address: Colorado.
Date of Introduction: 2002. August.
Ingredients: Organic soymilk (filtered water, whole organic soybeans), calcium carbonate, sea salt, natural flavors,...
Wt/Vol., Packaging, Price: One quart (946 ml) Tetra Pak ESL gable top carton.
How Stored: Refrigerated.
New Product–Documentation: 8½ by 11 inches. Ad in *Natural Foods Merchandiser.* 2002. Aug. p. 8. "Silk: Not your ordinary, everyday bean juice! New!" A color photo shows the front of a carton of this Silk soymilk. White letters on a green background. "Calcium enriched." The ad text continues: "Silk introduces the first great-tasting, unsweetened soymilk with no added sugar. Call 1-800-488-9283 ext. 885 to order. The #1 selling soymilk in America. www.SilkIsSoy.com."

8103. Arcot, Jayashree; Wong, S.; Shrestha, A.K. 2002. Comparison of folate losses in soybean during the preparation of tempeh and soymilk. *J. of the Science of Food and Agriculture* (*London*) 82(12):1365-68. Sept. 15. [23 ref] Address: Dep. of Food Science and Technology, Univ. of New South Wales, Sydney 2052, NSW, Australia.

8104. Schmit, Matthew. 2002. Notes on Tofu Shop, Arcata, California 1980 on. Overview. 65 Frank Martin Ct., Arcata, CA 95521. 2 p. Handwritten on lined paper.
• ***Summary:*** 1980-85: Tofu Shop "Soy Deli and Wholegrain Bakery." 768 18th St.

1980–Rented front half of address initially. 1981–Rented remainder of building, initially for storage.

1982–Subleased back portion to Tofu Shop's baker, Melanie Patrick, who started own business, "18th St. Bakery."

1983–Purchased used equipment from Surata Soyfoods (Eugene, Oregon) (Shivak).

1985-92: Tofu Shop "Special Grocery and Deli." 768 18th St.

1985–18th St. Bakery vacates and Tofu Shop moves tofu production and wholesale into entire back of building. 18th St. Bakery owner Melanie Patrick eventually buys "Sprouted Seed" restaurant and renames it "Wildflower Cafe and Bakery.

Purchased more used equipment from Surata and from Richard Rose (Petaluma, California).

Matthew visits Ashland Soy Works and Alvin Kunishi at Sacramento Tofu Co.

Tofu Shop remodels deli with limited "Bar" seating. Tofu equipment upgrade to include Bean Machines' (BMI) grinder and forming box table, Groen jacketed kettle, and custom made hydraulic soymilk press.

1992 July–Tofu Shop "Specialty Foods (manufacturing & wholesale) moves to new Foodworks Culinary Center at 100 Ericson Ct. (2,000 square feet). One of ten companies–and the largest!

Tofu Shop "Specialty Grocery and Deli" is then remodeled into a full sit-down restaurant (seating 50) with a full-service take-out deli counter. Still located at 768 18th St.

1993–Tofu Shop "Specialty Grocery and Deli" is closed and sold, emerging as Daybreak Cafe.

Tofu Shop "Specialty Foods" incorporates with Ronald Horn investing in company in exchange for 40% ownership of the company. In 1995 Ron sells shares to two Tofu Shop employees and moves to Oregon. These shares are eventually bought back by Matthew Schmit except for 10.25% owned

by Tim Payer, a supportive community member, brother of former employee, and computer instructor at Humboldt State University.

2001 June to December–Tofu Shop Specialty Food Inc. purchases property and builds own building. Relocated in Jan. 2002 to 65 Frank Martin Ct. (adjacent to Foodworks Culinary Center). Address: Arcata, California.

8105. *Bluebook Update* (*Bar Harbor, Maine*). 2002. SoyaDairy provides consultants. 9(3):3. July/Sept.
• ***Summary:*** SoyaDairy is headed by Frank Daller and Brian Harrigan, both formerly of ProSoya, Inc. Also with the new consulting company are Koichi Watanabe, owner of La Soyarie, and Hart Melvin, owner of Gelato Fresco. Phone: 613-741-6888.

8106. Golbitz, Peter. 2002. Japanese soyfoods: Looking back to the future. *Bluebook Update* (*Bar Harbor, Maine*) 9(3):4-5. July/Sept.
• ***Summary:*** A photo shows Peter Golbitz.

8107. Lafond, Jacques. 2002. Las mejores recetas con sojas [The best recipes with soya]. Buenos Aires, Argentina: Imaginador / Gamma. 96 p. Sept. No index. 20 cm. [Spa]
• ***Summary:*** Contents: Recipes with soy sprouts. With soy flour. With soy milk. With whole soybeans. With tofu.

8108. *Natural Foods Merchandiser.* 2002. Soy milk lowers blood pressure. Sept. p. 42.
• ***Summary:*** ... in people with hypertension according to a study conducted by Miguel Rivas, M.D. and co-workers, of the Medical School of Zaragoza in Spain. The results were published in the *Journal of Nutrition,* July 2002, 132(7):1900-02.

8109. **Product Name:** Baby's Only Organic (Toddler Formula, Iron Fortified) [Soy, or Dairy Based].
Manufacturer's Name: Nature's One.
Manufacturer's Address: Columbus, Ohio.
Date of Introduction: 2002. September.
Wt/Vol., Packaging, Price: Metal can.
How Stored: Shelf stable.
New Product–Documentation: Ad in *Natural Foods Merchandiser* (8½ by 11 inches, color). 2002. Sept. "Your organic formula choice." "Conventional pediatric formulas are known to obtain highly processed and objectionable ingredients. Nature's One offers... the first and only organic pediatric formulas sold in the U.S." "QAI Certified Organic and Orthodox Union Certified Kosher-D." For more information phone 614-898-9758 or email retail@naturesone.com.

Note: We are not told what the main soy ingredient is–probably dry soymilk or soy protein isolates.

8110. Nordquist, Ted. 2002. Report to ACDI/VOCA on ProSoy Santa Fe, Ltd. / CEDETI, Project #153041 in Bolivia. San Francisco, California. 15 p. Sept. 13. 28 cm.
• ***Summary:*** Ted has just returned from three weeks (Aug. 12-Sept. 16) in Bolivia working with ProSoy Santa Fe, Ltda., a women's co-op that makes soymilk at Av. Melchor Pinto No. 211, Santa Fe, Bolivia. Phone: +591 3 334-1663. Fax: +591 3 334-078. email: cedeti@cotas.com.bo. Website: www.cedeti.org. Ted's counterpart at ProSoy was Mrs. Rosa Angulo, President. The project manager was Engineer Ana Cristina Betancourt, Executive Director of CEDETI. Interpreter: Jaime Ugrinovic.

Santa Fe is a small town of about 3,000 inhabitants located 120 km north of the city of Santa Cruz in western Bolivia. The town is strongly influenced by the commercial activity of Yapacani, a city of 15,000 situated km from Santa Fe. This is an agricultural area with soybeans as one of the main crops.

ProSoy presently makes 150 liters/day of soymilk using rustic processing techniques. They were grinding their soybeans in a 25 liter mixer that took 20 minutes to complete; Ted sent them a new Corenco M6 disintegrator. Ted showed them how to improve their soymilk process and to make drinkable soy yogurt, okara burgers, okara patties, okara bread, and soy ice cream.

This report is accompanied by a 3-page background report (with no title, author, or date) on ProSoy that CEDETI prepared for Ted at his request, for him to study before his trip. It discusses: Equipment. Bottling. Milk processing plant. Competition. The organization of the women's group. Business experience. System of production. Plans for the future. The women's language and culture. The women formed this project named "Production of Soy Milk" on 25 Jan. 1997 at 7:00 p.m. But they first began to sell their soy milk several years later. Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870. Fax: 415-495-3060, Email tedalan@sirius.com.

8111. Soy Luck Club. 2002. September. New soyfoods restaurant or deli. 115 Greenwich Ave. (not Street), at Jane St., New York City, NY 10014.
• ***Summary:*** Article: Sax, Irene. 2002. Eats: Soy Luck Club. *Daily News* (New York). Oct. 22. Now / Entertainment section. p. 28.

Menu sent by Denis Bolger of New York City. Contents: Steamed–iced drinks. Steeped drinks. Frosted drinks. Sandwiches. Plate. Salads. Soup.

Talk with partner Vivien Cheng. 2002. Oct. 25. The restaurant opened on 26 Sept. 2002. Her mission: "I want to make soy tasty and fun instead of a substitute. It seems like soy has been used as a milk substitute or a meat substitute. Where I'm from, Hong Kong, soy is a staple. We're still being discovered. People like the food."

Favorite drinks: Honey ginger soy latté, Green tea soy latté, and Almond soy latté, all the five Soyafrost drinks (mango, peach, kiwi, strawberry, pina colada, mixed berry) and the four Soyafrappe drinks–each with a real shot of espresso, blended with ice topped with organic whipped cream, chocolate sauce and soynuts (regular, mocha, white mocha, and caramel).

Favorite foods: Tuna crunch sandwich. Curried chicken sandwich. Summer salad. Address: New York City, NY. Phone: 212-229-9191. Fax: 212-229-9090.

8112. Soyfoods Council. 2002. Soy foods: Nothing but the facts. *Iowa Soybean Review* (*Iowa Soybean Association, Urbandale, Iowa*) 13(8):19. Summer.
• ***Summary:*** About 2,000 new soy products have been launched in the USA over the past 10 years, with sales now exceeding $3 billion per year.

Soymilk sales have grown from $100 million in 1995 to nearly $500 million in 2000. Soymilk has 80.2% of the nondairy beverage market.

Sales of soyfoods have climbed from $1.2 billion in 1996 to over $3.3 billion in 2002, according to a SPINS U.S. Soyfoods Market report.

In terms of soybean use in this market: 1,007,000 metric tons in 1999, projected to rise to 1,804,000 metric tons in 2005.

Only 2.7% of all protein from soybeans processed in the USA goes for human food.

8113. White Wave, Inc. 2002. Silk–Perfect for lunch boxes and snacks. Chocolate and Vanilla in 8-ounce shelf-stable packs (Ad). *Natural Foods Merchandiser.* Sept. p. 18.
• ***Summary:*** This 8½ by 11 inch color ad shows two 3-packs of Silk. The Vanilla Shake is white on blue. The Chocolate is white on brown. Both are calcium enriched and vitamin fortified. "The #1 selling soymilk in America. www.SilkisSoy.com. Product of USA."

Note: The soymilk is packaged in Tetra Prisma Aseptic cartons. Address: [Boulder, Colorado]. Phone: 1-800-488-9283 X-885.

8114. *Observer* (*London*). 2002. Om: Top ten tips to beat high cholesterol. Oct. 13. p. G64.
• ***Summary:*** Tip #3 is "Eat soya products. Studies suggest that soya helps to reduce low density lipoproteins (LDL) cholesterol. Try portions of tofu, tempeh (fermented tofu [sic]), and soya milk."

Note: Tempeh and fermented tofu are two completely different foods made from soybeans.

8115. Sax, Irene. 2002. Eats: Soy Luck Club. *Daily News* (*New York*). Oct. 22. Now / Entertainment section. p. 28.
• ***Summary:*** Soy Luck Club is a new market and cafe in Greenwich Village at 115 Greenwich Ave., at Jane St. Phone: (212) 229-9191. Partners Vivien Cheng and John Pi want to show how well all kinds of soyfoods fit into Western menus.

Talk with Denis Bolger of New York City. 2002. Oct. 20. He visited this cafe today. They have a "fabulous" location, were quite busy, and have lots of information on the walls concerning soy and health. He got three menus.

8116. Wu, Olivia. 2002. The hidden world of tofu: Local producers offer a boggling array–from delicate and custardlike to chewy and crisp. *San Francisco Chronicle.* Oct. 30. p. E1, E4. Food & Wine section.
• ***Summary:*** About Chinese tofu, with recipes. Color photos show: 1. Yuba. 2. Soymilk. 3. Moist yuba. 4. Vegetarian duck. 5. Pressed tofu. 6. Tofu threads. 7. Fermented tofu. 8. Tofu puffs. 9. Dried yuba sticks. 10. Deep-fried tofu triangles. 11. Fried tofu knots (bayie knots). 12. Sheets of fresh yuba hanging above pans of steaming soymilk at China Tofu factory in Hayward. 12. Fresh, hot soymilk pouring from a spigot into a barrel, where it will be made into tofu. 13. At China Tofu, Hayward, one worker unwraps cloths from a tray of freshly-pressed tofu which another pours steaming curds into a nearby cloth-lined tray. 14. Chef Nei Chia Ji, of restaurant Jai Yun (933 Pacific Ave. at Mason, San Francisco) offers 6-7 delicious tofu dishes.

A tofu glossary, gives for each of 16 entries: Chinese characters, pinyin transliteration, English term, how sold and used. Soymilk (doufu, doujiang), tofu flowers (doufu hua, douhua, doufu nao), silken tofu (nun doufu), soft tofu (ruan doufu), firm tofu (ying doufu), pressed tofu (doufu gan), five-spice pressed tofu (wuxiang doufu gan), pressed tofu sheets (baiye, qianzhang), pressed tofu loops (baiye jie), pressed tofu noodles (gansi, doufusi), yuba (doufu pi, fuye), fermented tofu (furu, doufuru), vegetarian chicken, cuck (suji, suyia), stinky tofu (cho doufu), tofu puffs {deep-fried} (you doufu), deep-fried tofu (zha doufu). Address: Staff writer.

8117. American Soybean Assoc. 2002. Bean beat: ASA activities increase market for soy products in India. *Soybean Digest.* Oct. p. 26.
• ***Summary:*** Suresh Itapu, ASA/India Technical Director of Soy Food Marketing, says that as a result of ASA promotion work, 55 Indian entrepreneurs are now making soymilk and tofu using the Canadian SoyaCow technology. Last year at this time only 31 such entrepreneurs were in business. In addition, with strong support from the ASA-managed World Initiative for Soy in Human Health (WISHH) program, three medium-sized SoyaCow units (53 gallons/hour capacity) have been installed in India alone. And Godrej, a major Indian food manufacturer which failed in the late 1980s in its efforts to launch soymilk, has entered the market again after extensive trials and test marketing.

As a result of all this activity, soymilk production in India during the past year has increased from 290,000

gallons to 924,000 gallons. And Itapu believes that the future looks bright. Soyfoods look like an idea whose time has finally come in South Asia.

8118. Battaglia, Evelyn. 2002. Cooking with soy products. *Martha Stewart Living.* Oct. p. 278, 280, 282, 284.
• ***Summary:*** Introduces fresh soybeans (edamame), tofu, soy milk, miso, soy sauce. Includes recipes for: Miso soup with tofu, spinach, and carrots. Sesame marinated tofu with vegetables. Chai tea with soy milk. Edamame succotash.

8119. Du Pont (E.I.) de Nemours and Company. 2002. The Solae promise (Ad). *Natural Foods Merchandiser.* Oct. p. 78.
• ***Summary:*** This full-page color ad is about Solae brand isolated soy protein. "Your customer seeks great-tasting, Better-for-her and her family products–and the Solae (TM) logo helps her find them."

Three large photos show happy, active family members. The young lady in the lower left is drinking a glass of soymilk. For more information visit www.solae.com or contact DuPont Protein Technologies.

8120. Imagine Foods. 2002. "This new packaging is creating quite a buzz around here" (Ad). *Natural Foods Merchandiser.* Oct.
• ***Summary:*** A full-page color ad. "Same great taste. Splashy new packaging. The #1 selling non-dairy beverage in natural supermarkets. Imagine Foods maintains a 30%+ share of the aseptic non-dairy beverage category. Visit us at Booth #1333 at Expo East."

Note: Does this "#1" refer to Rice Dream + Soy Dream combined?

A black-and-white photo shows an elderly bartender with the shelves behind him stocked full of color Rice Dream and Soy Dream cartons. Two large cartons are in the foreground. Address: 1245 San Carlos Ave., San Carlos, CA 94070.

8121. Lampe, Frank. 2002. The deal with Dean: Strong brand boosts soy company's fortunes. *LOHAS Journal* (*Colorado*) 3(3):33-37. Fall. Cover story.
• ***Summary:*** Steve Demos talks about Dean Foods' $189 million acquisition of White Wave. This is simply the best account of how Demos built Silk into America's leading soymilk brand, then went to Dean Foods to get crucial financing, and finally convinced Gregg Engles to pay big bucks for the company. Three excellent color photos show Steve Demos.

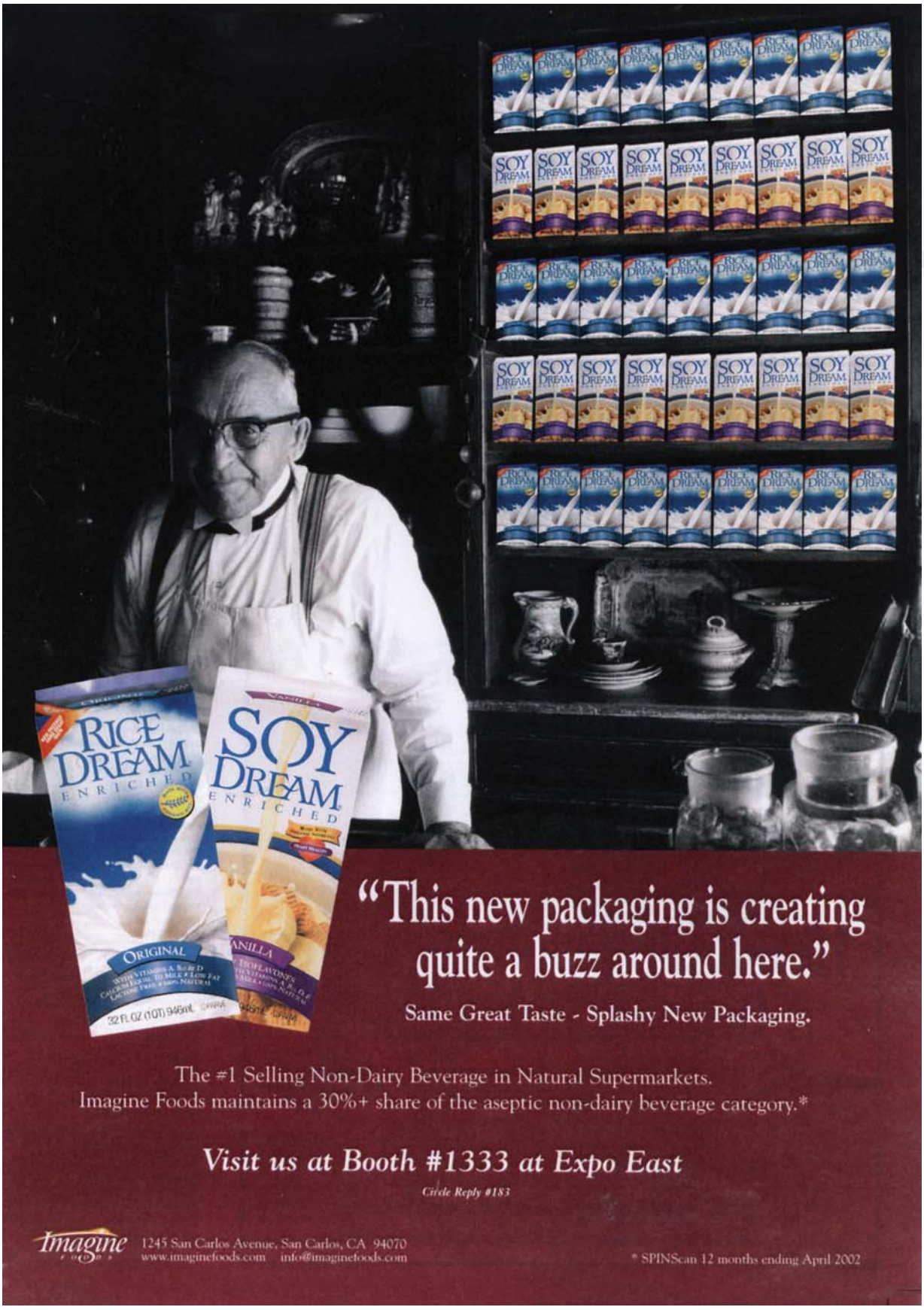
8122. *Natural Foods Merchandiser.* 2002. New product review: White Wave introduces Spice Soylatte and Coffee Soylatte, two additions to its line of Silk Single Serves. Oct. p. 111.
• ***Summary:*** Coffee Soylatte resembles a blended espresso beverage. Like all Silk products, the new products are made with organic soybeans. For details, visit www.SilkIsSoy.com.

8123. Stacey, Michelle. 2002. Weighing the health benefits of soy. *Martha Stewart Living.* Oct. p. 90, 92, 94, 96.
• ***Summary:*** Under "the good news" and "the bad news" discusses the benefits and possible (but unclear) disadvantages.

8124. Vitasoy (USA) Inc. 2002. Enjoy your health: Vitasoy (Ad). *Natural Foods Merchandiser.* Oct. p. 40.
• ***Summary:*** This 8½ by 11 inch color ad shows milk-white soymilk being poured into a glass. The background is dark blue at the top, changing to turquoise blue in the middle, then dark blue again at the top. Below the glass is the Vitasoy logo in bold red. On the glass, with white soymilk as a background, is printed: "Compelling new messaging. Exciting new packaging. New consumer awareness. All that plus unexpected great taste. There's a whole new vitality at Vitasoy USA. Booth I 453. Natural Products Expo East." Address: New England Way, Ayer, Massachusetts 01432.

8125. Nordquist, Ted. 2002. Modesto WholeSoy Co. to start new soybase plant in Modesto, California (Interview). *SoyaScan Notes.* Nov. 21. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Modesto WholeSoy Co. will soon begin making soybase in Modesto, California. The new company, which is independent of TAN Industries, is owned by Ted Nordquist, Henry Glasser, and two others. This is the plant Ted has been dreaming of for 20 years. In 1982 Ted worked with Alfa-Laval in Sweden to build his first soybase plant in one corner of their building in Sweden. He has signed a 20-year lease on the building. The plant has a capacity of four production lines for converting whole soybeans to soybase. The first line can make 1,000 gallons/hour of soybase. The soybase will be used to make soymilk, soy yogurt, cultured soy drinks, and soy ice cream. All packaging will be done at the Super Store Industry plant in Turlock, which is 15 minutes away by car. This plant can package soymilk in plastic bottles / jugs with screw-tops or cartons. This October, at the Natural Products Expo, Ted's company introduced a new soymilk product in a 96-ounce (6-quart) plastic bottle. After years of work, Ted has developed a new and very exciting way of using okara as a food source by processing it hot, when it is almost sterile, in a continuous process. Not long after the new plant begins operation, he expects to launch a new food product with okara as a (or *the*) major ingredient under the WholeSoy brand. He has no plans to try to patent the new process or product. Ted will keep his plant at the Soyfoods of America in Duarte, California, as a backup. Address of Modesto WholeSoy Co.: 1836 Lapham Dr., Modesto, California, 95354-3900. Phone: 209-253-5119. Fax: 209-523-5519.

Update: Talk with Ted Nordquist. 2003. Feb. 19. All



permits have been obtained and all is going well. The Modesto plant plans to begin testing equipment and boilers using water, in two days.

Update: Talk with Ted Nordquist. 2003. March 13. The first run of commercial soybase was produced at the Modesto plant on 6 March 2003. There is much room for expansion; three more lines, each with a capacity of 2,000 gallons/hour of soybase, could be added as demand grows. Working 3 shifts/day and 5 days/week, the plant (with four lines) has a capacity of 24-26 million gallons/year of soybase which converts to 54 million gallons/year of soymilk. Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

8126. Nordquist, Ted. 2002. Soyfoods are thriving in Bolivia (Interview). *SoyaScan Notes.* Nov. 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The oldest major company is Alimentos Alfa Ltda. in Cochabamba, Bolivia, run by Rene Mouton-Bluys (a native of Belgium). This company makes 36,000 gallons/week of soybase then converts it to Nordland soymilk, soy yogurt, and soy ice cream (including novelties on sticks). Rene has a fleet of 22 delivery trucks. He sells some of his products to school districts. Ted spent some time with him.

Rene has a friend–who was a nuclear scientist and worked in Washington, DC, for 22 years–who decided he wanted to find a means of "Right Livelihood" in Bolivia. So Rene helped him to start a company very similar to Rene's in Santa Cruz. Then Rene stopped shipping to Santa Cruz.

The third and newest company is ProSoy Santa Fe, Ltda., a women's cooperative in Santa Fe, Bolivia; it is run entirely by indigenous women (who are not of Spanish descent). Their native language is Quechua, but they all speak perfect Spanish as well. From Aug. 23 to Sept. 16, 2002 Ted and his wife, Anne-Marie, spent a month working with this Co-op, sponsored by ACDI-VOCA (an American company which paid Ted's travel expenses) and CEDETI (a Bolivian private development organization funded by many nonprofit organizations in several countries incl. Sweden, Switzerland, and Germany. Many of the workers are European volunteers). The co-op consists of 20 women who are very focused in what they are doing. In Bolivia, women do much of the work and have almost no rights. So they have decided to take their lives into their own hands. When they arrived, the co-op was making only soymilk in a building whose rent was paid by CEDETI. One member makes it late at night, so that it is ready at 4:00 each morning. They sold the soymilk hot (an excellent innovation) so they didn't have to refrigerate it. They poured it boiling hot into 10 liter, plastic jugs each with a 2-inch screw cap. When each jug was full and bulging (with 10.5 liters of soymilk), the rest of the women took two jugs each and would either bike or walk or take a motor taxi to a local market. There she would pour the hot soymilk into containers that each customer would bring. Each woman also carried special long, slender plastic bags for customers like taxi or truck drivers that wanted to buy soymilk but had no container. The woman would pour her hot soymilk into the plastic bag, insert a straw then a rubber band around the straw, then wrap a piece of paper around the neck of the hot bag so that the consumer could hold it. Each women then took income from sale of her soymilk back to the cooperative, which divided and managed it. The woman worked at night to make the soymilk was paid extra; they took turns at the night shift.

Each day Ted would teach the women how to make new products, such as soy yogurt, soy ice cream, okara burgers. Then they all ate the new products for lunch. The women loved the new products.

While Ted was there, CADETI was finishing a new building for the ProSoy women's cooperative, made with indigenous materials. Ted helped to design the building and floor plan, plus a soyplant that would produce–instead of the present 150 liters/day–about 400 liters/hour. Ted also sent them a new Corenco (cost $9,000) stainless steel mill–as a gift. Ted has finished writing his end-of-project report. They are making the new products on a small scale but the new plant will not be up and running until the mill is installed. Ted and Anne-Marie plan to return to Bolivia next September to visit their two "children."

Ted and Anne-Marie adopted an 11-year-old orphaned and homeless boy, Armando, who had only one year of schooling and would hang around the soy co-op. They invited him to lunches for a month, then found a person at CADETI who agreed to use money that Ted and Anne-Marie now send each month to pay for his food, shelter, and schooling. Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

8127. Nordquist, Ted. 2002. In Bolivia all the soymilk and most of the dairy milk is packaged in inexpensive plastic bags (Interview). *SoyaScan Notes.* Nov. 21. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** These polyethylene bags are used with two types of machines: (1) An inexpensive semi-automatic (and labor intensive) machine used and modified by Rene Mouton and his father in Cochabamba; (2) A fairly expensive ($33,000 in USA, but $5,000 in China) but fully automated machine that requires only one skilled attendant. Called a "form, fill, seal" machine, it uses polyethylene film stock and is manufactured worldwide, stock whereas the first machine uses tubular stock and is made only in Bolivia. Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

8128. Mouton-Bluys, Rene. 2002. Recent developments

at Alimentos Alfa Ltda. in Bolivia (Interview). *SoyaScan Notes.* Nov. 22. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Rene now makes 30,000 kg/day of soy products: 70% soymilk, 20% soy ice cream, and 10% soy yogurt. He has finally paid off the large loans needed to start his business, and is making a real profit for the first time. All of his products are sold under the Productos Nordland brand. His soymilk is sold in banana, strawberry, chocolate, vanilla, and chirimoya / cherimoya flavors, in 1 liter, ½ liter, and 200 ml plastic pouches.

In 1992 Rene and his father developed three systems for adapting an existing machine to soymilk in thin plastic tubes. Previously the machine had been used only for packaging *bolo,* an inexpensive refreshment consumed by poor people in Bolivia. The three are: (1) Reduce the pressure of the liquid on the place to be sealed; (2) Move a horizontal plate into place; (3) Heat seal. This machine is inexpensive, but the three special steps are done by hand and foot, for which Rene employs 30 women laborers.

Rene recently helped his friend, Mario Bonino, to start a company named Ideal that makes only soymilk. Location: Industrial Park PI-29-B, Santa Cruz, Bolivia. Phone: +591 3-553-564or +591 708-15100. Address: Cochabamba, Bolivia. Phone: +591 (042) 70094.

8129. Coffield, Dana. 2002. Is bigger necessarily badder? Organic vs. organic. *Natural Foods Merchandiser.* Nov. p. 12, 18.
• ***Summary:*** While scouting new business opportunities for The Minute Maid Co. division of The Coca-Cola Co., Shawn Sugarman stumbled upon Odwalla and reported to his superiors that this was "a space" where the company was completely underrepresented.

Coke's management bought the idea and in Oct. 2001 "paid $181 million for Odwalla, the funky Half Moon Bay, Calif., maker of fresh juices, health bars and soy milk." The company was founded in 1980 in a shed in Santa Cruz, California.

8130. *Nutrition Business Journal* (*San Diego, California*). 2002. Top U.S. natural & organic food companies, 2001. 8(11):5. Nov.
• ***Summary:*** For each of 43 companies gives the ranking by sales, the natural / organic sales in 2001 ($ million), the percentage of natural & organic that are organic, and the organic sales in 2001 ($ million).

The following companies make soyfood products: 1. The Hain Celestial Group $360. 2. Kellogg (Worthington, Kashi) $255. 4. Coca-Cola (Odwalla, Mad River Traders) $160. 5. Dean Foods (White Wave, Alta Dena) $150. 8. General Mills (Sunrise, Cascadian Farms, Muir Glen) $125. 11. Stonyfield Farm $85. 13. Amy's Kitchen $76. 14. Vitasoy USA Inc. $75. 15. Imagine Foods Inc. $70. 19. Pacific Foods $63. 20. Kraft Foods (Boca Burger) $60. 23. Eden Foods Inc. $57. 25. Gardenburger $55. 29. Galaxy Nutritional Foods $42. 33. Conagra (Lightlife Foods) $35.

Sum of sales of top 43: $3.28 billion. Sum of organic sales of top 43: $1.63 billion.

8131. *SoyaScan Notes.* 2002. Cow's milk prices at Safeway supermarket in Lafayette, California (Overview). Dec. 12. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Since Dec. 1983, approximately every other year, Soyfoods Center has conducted a survey of the prices of soymilk and cow's milk in California.

Safeway: Cow's milk (fortified with vitamins A and D) sells for the following prices at the Safeway supermarket in Lafayette, California: (1) Fat free: $1.07/quart or $1.99/half gallon or $3.09/gallon; (2) Low fat (1% fat, protein fortified): $1.18/quart or $2.35/half gallon or $3.22/gallon; (3) Reduced fat (2% fat, protein fortified): $1.18/quart or $2.35/half gallon or $3.12/gallon; (4) Whole (homogenized, fortified with vitamin D only): $1.24/quart or $2.19/half gallon or No gallon. (5) Acidophilus Plus Bifidus–Low Fat (1% fat): No quart or $2.39/half gallon. (6) Horizon Organic $3.69/half gallon. (7) Lactaid: $1.89/quart or $3.35 per half gallon. The best-seller among these is Fat free in gallons.

8132. Abiatte, Mabel. 2002. Cocinando soja y adelgazando [Cooking soya and slimming]. Argentina: Acquatint. 52 p. Illust. No index. 22 x 17 cm. [Spa]
• ***Summary:*** Contents: Prologue. Thanks and acknowledgments. Notes and advice. Especially for sportsmen and women. Recipes. Something sweet / sweets. Diets. Basic recipes: Soymilk, soymilk from soy flour, white sauce with soymilk, soy yogurt, tofu or *queso de soja* (like ricota / ricotta cheese), tofu mayonnaise, bread with soy bran (*salvado de soja*). If you don't have balance. About the author. Farewell and contact information.

The author received her degree in soil science (*Edafologia*) from the Catholic University of Santa Fe, Argentina. Address: Argentina.

8133. Golbitz, Peter. 2002. Soyfoods are a rising star in organic market. *Bluebook Update* (*Bar Harbor, Maine*) 9(4):1. Dec.
• ***Summary:*** According to the SPINS Organic Marketplace Report, covering the 52 weeks ending 10 Aug. 2002, White Wave's Silk soymilk is the best-selling organic consumer packaged brand in the USA, with over $200 million in sales for the combines mainstream and natural food channels.

In addition, 79% of U.S. soyfoods manufacturers use some or all organic soybeans in their products, according to a 2000 survey conducted by Soyatech, Inc.

8134. Huang, H.T. (Hsing-Tsung). 2002. Hypolactasia and the Chinese diet. *Current Anthropology* 43(5):809-19. Dec.

[72 ref]
• ***Summary:*** Hypolactasia is the scientific term for lactose intolerance. Gives a good history of the uncommon use of animal milk throughout Chinese history. As early as 400 B.C. Hippocrates is reported to have observed that milk was bad for patients with fever whole bellies were "distended and full of rumbling." In A.D. 200 Galen noted that milk should be consumed only by those who digest it well. It was only in the 1960s that the reason that humans had problems digesting cow's milk was understood; many adults lacked the enzyme lactase needed to digest lactose, the main sugar in milk.

"It is now known that the occurrence of hypolactasia is genetically controlled. It cannot be reversed or ameliorated by adaptation; if an individual is lacking in the lactase-persistence gene, he will lose the ability to produce lactase as an adult no matter how vigorously and for how long he continues to drink milk after weaning."

Extensive population studies have shown that hypolactasia is lowest in Northwest Europe, Australia and New Zealand.

It turns out that that main barrier to the adoption on milk and dairy products in the Chinese diet was economic; land was too scarce to raise dairy cows. With the rise in the standard of living in China during the past 20 years, production and consumption of dairy foods has increased dramatically. "In 1979 the total production of milk was 100,000 tons. In 2,000 in was nearly 7 million tons" or about 6.9 kg per capita per year.

Understanding hypolactasia may help to solve another puzzle in food history in China. Soybeans have been made into soymilk since the astern Han Dynasty (AD 25 to 220) and tofu has been widely made from it since the late Tang (ended in AD 906), "yet nowhere in the Chinese literature before 1800 is there any mention of the consumption of soymilk itself. The reason is now clear." The soybean contains two complex sugars (the oligosaccharides raffinose and stachyose) and the human digestive system lacks enzymes capable of hydrolyzing / breaking down either of these. The effect of consuming these sugars would be similar to consuming lactose! The Chinese soon discovered, no doubt, that whereas soymilk was hard to digest, tofu (pressed curds made from soymilk) was not. Not until the late Qing dynasty (ended in 1912) did Chinese find that prolonged heating of soymilk improved its digestibility; it soon became an accepted item in the food system (Huang 2000, p. 322-23) and is now widely consumed as a breakfast food throughout China. Address: 4800 Fillmore Ave., Alexandria, Virginia 22311.

8135. Jenkins, D.J.; Kendall, C.W.; Faulkner, D.; et al. 2002. A dietary portfolio approach to cholesterol reduction: Combined effects of plant sterols, vegetable proteins, and viscous fibers in hypercholesterolemia. *Metabolism* 51(12):1596-604. Dec. *
• ***Summary:*** Plant sterols, soy proteins, and viscous fibers are known to reduce cholesterol, but their combined effect has never been tested. In this study, 13 subjects were provided with pre-measured quantities of foods and were told what and when to eat for a one-month period. The diet, composed of a variety of foods each known to be moderately effective in combating cholesterol levels, cut bad cholesterol by close to 30% among study participants.

Soy products used in the study included soymilk, margarine, soy deli meats, and tofu. Address: Clinical Nutrition and Risk Factor Modification Center, Division of Endocrinology and Metabolism, St. Michael's Hospital, Toronto, Ontario, Canada..

8136. Jordan, Joe. 2002. U.S. Food & Agribusiness Exhibition shows opportunities for oilseed industry. *Bluebook Update* (*Bar Harbor, Maine*) 9(4):2. Dec.
• ***Summary:*** In late September, 290 U.S. companies took the rare opportunity to present their products to over 16,000 visitors in Havana, Cuba, at the U.S. Food & Agribusiness Exhibition. The trade show was organized by PWN Exhibicon, a Connecticut-based company that applied for the permit in Nov. 1999. U.S. companies can now sell goods to Cuba on a cash-only bases thanks to revised trade sanctions, which became law in Oct. 2000. Companies first took advantage of the new law after Cuba appealed for permission to buy food from the USA following the devastating Hurricane Michelle in Nov. 2001.

ADM, the primary sponsor of the event, signed $19.05 million in contracts for soy, corn, and rice products. Cargill, Inc. signed contracts worth $17.1 million. A photo shows Paul Lang, President of Natural Products, Inc. discussing soyfoods with Cuban president Fidel Castro. As part of the Iowa delegation, he attended a dinner with Fidel Castro. Lang notes about two years after the USSR dissolved, Cuba had no feeds for their dairy herds; the cows stopped producing and many died [or were slaughtered for meat]. Since then, that Cuba has converted 18 or their 19 dairy plants so they make soymilk and/or dairy alternatives. Also, Cuba is working to incorporate 50% textured soy into most of the countries meat; in the past they succeeded in incorporating 30% soy. Lang said that Castro has an excellent understanding of soyfoods and of the economics of using soy protein to feed Cuba.

PWN Exhibicon has already applied for the permit to organize a follow-up exhibition in Jan. 2004.

8137. Kaplan, J. Kim. 2002. For you, the consumer. *Agricultural Research* 50(12):4-9. Dec.
• ***Summary:*** A color photo on the top half of the first page shows many soy products, both foods and Industrial products, including: Kaukauna Nacho Cheese, Yves Veggie Tofu Wieners, ProSobee soy formula, NutriGrain energy bars, Betty Crocker Creamy deluxe, Wish-Bone salad

dressing, Edensoy soymilk, Mori-Nu Tofu, Ken & Robert's Veggie Burgers, SoyGold industrial solvent, Natural Touch Okara Pattie, soy ink and a newspaper printed with it.

Many "products that people use every day could justifiably carry the stamp 'Courtesy of ARS Research.'" Omaha Steaks began offering irradiated hamburger patties and ground beef in November 2000–to be sure it is free of *Escherichia coli* O157:H7, bacteria that can cause serious, even life-threatening illness. Today all the 6.5 million pounds of ground beef they sell is irradiated, which means it is treated with "ionizing radiation produced by cobalt and cesium atoms, machine-produced X-rays, or electron beams. Treated meat in no way becomes radioactive." Final FDA approval for irradiation treatment of meat came in Feb. 2000.

Nutrim, a product similar to Oatrim developed by USDA's Agricultural Research Service (ARS), is now being used to make vegan, organic chocolate truffles. Mrs. Mudd's Inc. (Oceanside, California) makes the delicious products; Nutrim flows like heavy dairy cream or coconut cream.

Tifsport is a variety of bermuda grass developed for football and soccer fields, and golf courses. Address: USDA-ARS Information Staff, 55601 Sunnyside Ave., Beltsville, Maryland 20705-5128. Phone: 301-504-1637.

8138. Mescher, Kelly. 2002. Soy beautiful: Increasing number of skin products made with soy hit store shelves. *Iowa Soybean Review* (*Iowa Soybean Association, Urbandale, Iowa*) 14(3):28-29. Dec. Cover story.
• ***Summary:*** On the cover of this issue an attractive, a smiling lady is seated at a table on which are various skincare and beauty products made with soy in plastic bottles and a soy candle. The story notes: "Wander through the bath and body section and you'll find facial cleansers, scrubs, bath gels and lotions–all made with soy." Johnson & Johnson uses soy in their Aveeno line of skincare products. Research has found that many soy constituents (oil, protein, etc.) are good for the skin. Jeanette Graf, M.D., clinical researcher and assistant clinical professor of dermatology at New York University says: "Soy has been able to help a number of conditions that we've had a very difficult time treating in the past. Skin discoloration is one of the most difficult problems that dermatologists treat. We found that soy is able to reduce the appearance of redness caused by acne and the appearance of brown spots caused by sun exposure."

Henneberry Marketing (El Paso, Illinois) sells the Harvestdance line of bath gel and soap, plus Soft Day moisturizing lotion. In their nationwide chain, Target Stores carry the exclusive Mossimo brand Soy Milk Lotion. Avon has introduced soy into their Wellness product line. Avon's Soy Milk products include Soy Milk Body Cream and Edamame Body Cream.

8139. Ruff, Michael D. 2002. Tech transfer: From ARS to a store near you. *Agricultural Research* 50(12):2. Dec.
• ***Summary:*** Since the 1920s USDA's Agricultural Research Service (ARS) has been developing consumer products–described in this issue–including vegan chocolates and "an all-natural biodegradable sunscreen made from rice and oat bran mixed with soybean oil. This new sunscreen could be an additional use for some of the 18 billion pounds of soybean oil produced each year in the USA. A color cover photo shows a package of Edensoy soymilk in a shopping basket.

The Technology Transfer Act of 1986 placed a new emphasis on commercializing federal research. Since this legislation, ARS has become a leader in the federal government, credited with more than 600 new patents and 1,100 cooperative research and development agreements (CRADA's), which are formal arrangements enabling ARS scientists to cooperate with companies on research project of mutual importance. Such agreements often go a long way to ensuring that our research does not end up existing only in the pages of a scientific journal. Address: ARS Asst. Administrator for Technology Transfer, Washington, DC.

8140. Woods, David. 2002. Magic soy desserts: 125 delicious and healthy recipes. Lincoln, Nebraska: iUniverse, Inc. Writer's Club Press imprint. xxix + 153 p. Recipe index. 23 cm.
• ***Summary:*** The author is an experienced African-American cook, who has written two other cookbooks. Contents: About the author. Introduction. Dessert ingredients (Soybeans, dried soybeans, soy flakes cereal, soyflour, soybean margarine, soymilk, soynuts, soynut butter, Soymage sour cream, tempeh, tofu, soybean oil, soy yogurt). The soy food alternatives: A basic guide to substituting with traditional soy products (incl. soy milk, soy flour, silken tofu). Ingredients and techniques (incl. many fruits, coconut milk, craisin [sweet dried cranberries], tahini). Breakfast. Breads and muffins. Puddings. Pies. Soups. Cookies and bars. Ice creams and frozen desserts. Beverages. Side dish desserts. Address: 2501-D Cobble Hill Court, Woodbury, Minnesota 55125. Phone: 651-734-0379.

8141. Jackson, C.J.C.; Dini, J.P.; Lavandier, C.; Rupasinghe, H.P.; Faulkner, H.; Poysa, V.; Buzzell, D.; DeGrandis, S. 2002. Effect of processing on the content and composition of isoflavones during manufacturing of soy beverage and tofu. *Process Biochemistry* 37:1117-23. *

8142. **Product Name:** SoyaSun soymilk.
Manufacturer's Name: SoyaSun Co.
Manufacturer's Address: No. 1, Sohrevardi St., Tehran, Iran. Phone: +98 21 752-7965 or 7979.
Date of Introduction: 2002.
New Product–Documentation: Letter (fax) from Alireza. 2002. Nov. 4. SoyaSun Co. is a newly established company producing soymilk in Iran.

8143. Batmanglij, Najmieh. 2002. Silk Road cooking: A vegetarian journey. Washington, DC: Mage Publishers. 336 p. Illust. (color). 30 cm.
• ***Summary:*** This vegetarian cookbook contains beautiful color photos and an extensive glossary. The Glossary includes entries for agar-agar, almond milk, almonds–sweet, hoisin sauce ("made from fermented soybean paste"), soy sauce (Chinese), sprouts (alfalfa, wheat, mung bean, or lentil; no soy), tahini paste, tempeh, tofu. Yet the Index shows the soyfoods appearing only in the Glossary, not in the recipes or elsewhere.

However the soybean, bean curd and soy sauce are mentioned on page 41. On page 43 is a magnificent full-page color photo of a Chinese bean-curd seller displaying her wares on a Shanghai street; many different varieties of doufu are shown.

The remarkable story of the Silk Road pioneer, Zhang Qian, is told on pages 24-28. The Han dynasty court (under Emperor Wu Di) dispatched Zhang Qian, a military officer who was familiar with the Xiongnu, to the Western Regions in 138 BCE with a group of ninety-nine members to make contact and build an alliance with the Yuezhi against the Xiongnu. He was accompanied by a guide named Ganfu, a Xiongnu who had been captured in war. The objective of Zhang Qian's first mission was to seek a military alliance with the Yuezhi, in modern Tajikistan. No one knows what route Zhang followed. However to get to the territory of the Yuezhi he was forced to pass through land controlled by the Xiongnu who captured him (as well as Ganfu) and enslaved him for ten years. During this time he married a Xiongnu wife, who bore him a son, and gained the trust of the Xiongnu leader.

On the inside front cover and facing page is a 2-page map of the Silk Road region from Shanghai, China, to Genoa, Italy. The author, a woman, has a brief biography and large color photo on the inside rear dust jacket. Born and raised in Iran, "she received her master's degree in education and art in the United States and France. During the past 25 years she has traveled across much of the ancient Silk Road region, working with regional chefs and home cooks along the way. She is a leading authority on Persian cuisine and the author of the best-selling *New Food of Life*, described by the *Los Angeles Times* as the definitive Iranian cookbook..." Address: Washington, DC.

8144. Batt, Eva. 2002. Eva Batt's vegan cookery. London: Thorsons. An imprint of HarperCollins Publishers Ltd. 144 p. Illust. (55 line drawings). Index. 22 cm.
• ***Summary:*** This book, which is deceptively marketed / promoted, is actually identical to Eva Batt's vegan cookery (1985) except that the title has been changed slightly and the design of the front and back cover are different, and with a different photograph. The copyright page states: "First published by Thorsons 1985. This edition published by Thorsons 2002."

Note: We believe there ought to be a law against this sort of deceptive practice. Address: UK.

8145. Challem, Jack; Toews, Victoria Dolby; Knittel, Linda. 2002. The soy sensation: How this incredible food protects against cancer, heart disease, osteoporosis, and other health conditions. Chicago, Illinois: Contemporary Books. A division of The McGraw Hill Companies. xi + 132 p. Foreword by Marcus Laux, M.D. Index. 23 cm. [155 ref]
• ***Summary:*** Contents: Foreword. Introduction. 1. The soy story: The history of the soybean, a look inside the soybean, isoflavones, other phytonutrients, soy antioxidants, estrogen, phytoestrogens and health. 2. How soy prevents cancer. 3. How soy promotes women's health. 4. How soy prevents osteoporosis. 5. How soy fights heart disease.

6. Other health benefits of soy: Soy and diabetes, soy and kidney disorders, soy and gallstones, soy and hearing problems, soy and obesity and fatigue.

7. Does soy have a dark side? Excess estrogen in soy-based infant formula, soy allergy, soy and hormone dependent cancers, soy and the thyroid gland, soy and the brain, soy and digestion, soy and copper / zinc balance, genetically modified soybeans.

Note: The authors show that most or all of these "dark side" problems are of little or no practical importance.

8. Recommendations and guidelines: Whole soybeans, tofu, soymilk, tempeh, soy flour, soy protein powder, textured vegetable protein, meat analogs, soy cheese, soy yogurt, and soy sour cream, soy nuts, okara, miso, soy sauce, natto, soy supplements versus soy foods.

9. Recipes (14 recipes using mostly tofu, miso, tempeh). Resources and readings. Address: 1. Writer and publisher of *The Nutrition Reporter* newsletter; 2. M.P.H.; 3. M.A.

8146. Dragonwagon, Crescent. 2002. Passionate vegetarian. New York, NY: Workman Publishing. x + 1110 p. Illust. (by Robbin Gourley). Index. 23 cm. [10 ref]
• ***Summary:*** A superb, massive book, "with more than 1,000 robust recipes with notes on cooking, eating, loving, and living fearlessly"–as the cover proclaims. Very nicely designed, with many delicious recipes. The author is an outstanding writer with a deep knowledge of ingredients–including soyfoods.

Chapter 10, "Celebrating soyfoods" (p. 623-78) begins: "As a soy-loving girl from way back I invite you to enter an ever-expanding universe of foods: not merely extraordinarily healthful, but delectable and diverse–great ingredients for a passionate cook." This chapter's contents: Introduction. Innecdote. Whole soybeans. Green soybeans (edamame). Canned soybeans. Cooked dry soybeans. Milled soybeans (soy flour and soy grits). Soynuts and soynut butter. Tempeh. Miso. Natto. Okara. Soy protein isolates. Textured soy protein (TSP or TVP). Soy sauces. Soy milk & soy milk

products (soy yogurt, soy cheeses). Tofu & tofu products (fresh perishable tofus, classic traditional, seasoned tofus {savory baked tofu, other seasoned baked tofus}, ready-made tofu dips and spreads, ready ground tofu). Dry or packaged tofus (cupboard, like silken tofu). Other miscellaneous tofus (tofu burgers and sausages, deep-fried tofu, freeze-dried tofu [dried frozen tofu], tofu hot dogs, yuba).

Concerning yuba the author writes (p. 656): "I believe this traditional Asian product will explode onto the American soy-scene soon because it is so versatile and delicious and has a long and honorable history as a meat alternative. It is the unique thin-chewy texture of yuba sheets, when layered with seasonings and shaped, stacked, cut, and prepared in certain ways, that gives such a convincingly 'meaty' feeling to such dishes."

The word "tofu" appears on 100 pages in this book, "tamari" on 100 pages (she uses the phrase "tamari or shoyu soy sauce"), "soy sauce" on 100 pages, "shoyu" on 98 pages, "tempeh" on 88 pages, "seitan" on 72 pages, "miso" on 58 pages, "soy milk" on 47 pages, "tofu sour cream" on 40 pages, "silken tofu" on 30 pages, "soybeans" on 25 pages, "baked tofu" on 22 pages, "savory baked tofu" on 16 pages, "firm tofu" on 10 pages, "green soybeans" and "edamame" each on 8 pages, "soy flour" on 6 pages, "soy ice cream" and "TVP" each on 5 pages, "dairy free" on 4 pages, "firm silken tofu," "teriyaki," "textured vegetable protein," "yuba" and "whole soybeans" each on 2 pages, "Silk Soymilk Creamer" and "meat alternatives" each on 1 page.

8147. **Product Name:** Edensoy (Soymilk) [Unsweetened].
Manufacturer's Name: Eden Foods, Inc.
Manufacturer's Address: 701 Tecumseh, Clinton, MI 49236.
Date of Introduction: 2002. January.
Wt/Vol., Packaging, Price: 1 liter (1.06 qt) Tetra Brik Aseptic Carton.
How Stored: Shelf stable.
New Product–Documentation: Ad in *Natural Foods Merchandiser* (8½ by 11 inches, color). 2002 (dated). "Pure and Simple. Unsweetened Edensoy. New." A color photo shows the front of the carton on which is a large round color illustration of a seashore. "12 g protein. Naturally occurring efa" [essential fatty acids]. In front of a chair on a table is very white Edensoy in a glass. "Heart Healthy per FDA... Authentic. Simple. Only Eden selected whole soybeans and water."

8148. Grant, Amanda. 2002. Fresh & fast vegan pleasures: More than 140 delicious, creative recipes to nourish aspiring and devoted vegans. New York, NY: Marlowe & Company. ix + 230 p. Index. 23 cm.
• ***Summary:*** This vegan cookbook from the UK uses much less soyfoods than its typical counterpart from the USA. The index contains 1 entry each for soy milk/cream and tofu. Soy sauce appears in the title of one recipe. In the headnote to the tofu recipe (p. 114-15) we read: "There are many health benefits to eating this soybean product, not the least of which is its high percentage of protein. It is eaten in vast quantities in Japan, along with other products of the bean such as shoyu and miso." Address: Author and food editor, London.

8149. Katzen, Mollie. 2002. Mollie Katzen's sunlight cafe: breakfast served all day. New York, NY: Hyperion. xvii + 302 p. Illust. (by Mollie Katzen, color). Index. 27 cm.
• ***Summary:*** Offers over 350 easy recipes for vegetarian breakfasts. The index contains 9 entries for soy (incl. soy nuts {p. 67}, soy protein powder {p. 98}, pressed tofu or smoked tofu or savory baked tofu {p. 147}, soy milk {p. 11, 229}), 6 for tofu, 6 for tempeh, and 2 for miso. Address: California.

8150. Nguyen, Chi; Monroe, Judy. 2002. Cooking the Vietnamese way. Revised and expanded to include new low-fat and vegetarian recipes. Minneapolis, Minnesota: Lerner Publications. 72 p. Illust. Index. 23 x 20 cm. Series: Easy Menu Ethnic Cookbooks.
• ***Summary:*** This thin hardcover book is an introduction to Vietnamese cooking, but not a vegetarian cookbook–though it contains some vegetarian recipes. Contains many color photos. The section titled "Special ingredients" includes cellophane noodles (made from mung beans), coconut milk, fish sauce (nuoc mam), ginger root, lumpia, mung beans, sesame seeds, soy sauce, and tofu. The Vietnamese use nuoc cham (p. 33) the way diners in many countries use salt: The main ingredients are fish sauce, garlic, red pepper flakes, sugar, vinegar and water. Soy sauce is also widely used as a seasoning–as in fried rice, grilled lemon-grass beef Soy-related recipes include: Steamed tofu (Dau hui hap, p. 59).

8151. Reddy, Kavitha. 2002. The Indian soy cookbook. New Delhi, India: Rupa & Co. xiii + 106 p. Illust. color). No index. 28 cm. [11 ref]
• ***Summary:*** A beautiful hardcover book with glossy color photos and superb food styling throughout. Contents: Acknowledgements. Contents. Foreword, by Virgil Miedema, Regional Director, American Soybean Association, Asia Subcontinent. Introduction: Soybeans in India, health benefits of soybeans (lactose intolerance, cholesterol and heart disease, cancer, menopausal symptoms, osteoporosis, diabetes). Soybeans: Introduction, composition of the soybean, soybean oil, soy flour, texturised soy protein (TSP, soy chunks & granules), soymilk, tofu. 1. Appetizers. 2. Soups and salads. 3. Rice and paranthas. 4. Chunks and granules. 5. Tofu treasures. 6. A few more. 7. Delicious drinks. 8. Dessert selection. Weights and measures. Glossary.

Near the front of the book is a full-page color photo of some soy products (46) available on the Indian market. The product names are: Rasoya blended besan. Rasoya blended

jowar atta. Gensoy protein plus atta. Gensoy premium soya flour. Mealmaker protein shake. KPFM paushtika atta. Vigor new protein rich soyabean flour. Vital pure refined soya oil. SoyaLife soya bean atta. Soy-flour. MisTura hi-proteen. Golden Harvest 99% fat free high protein soya flour. Allegro defatted soya flour. Soyfit. Elpro. Rasoya nuggets–granular. Kailora: The big tasty soybean. Rangoli nuggets. Alegro Nutri Nuggets. MDH Soyatein. Ruchi's Nutrela (chunks, granules). Mealmaker. Rasoya nuggets. Jeeo veg meat. A-1 protein. Elpro soyabean. Giant value standard. Allegro soya granules. Soya Sakthi. Soya Bite flakes. Soya oil (in plastic bottle with Hindi name). Soyfresh tofu. Mahakosh refined soyabean oil (in a plastic bag). Sweekar. Mealmaker refined cooking oil (in a plastic bag). Ruchi's Soyumn. Fortune refined soybean oil (in a plastic bag). Priya refined vegetable oil (in a plastic bag). Mahakosh refined soyabean oil (in a plastic bottle).

Note: The American Soybean Association (ASA) office in India is now dedicated to teaching Indians about the various soyfoods mentioned above, how to use them in Indian-style recipes, how to start small businesses making soyfoods in India, the health benefits of soyfoods, etc. It invests significantly in these projects using soybean checkoff dollars paid by U.S. soybean farmers.

But why is ASA doing this? First, to grow the demand for soybeans inside India, so that India will eventually become a customer for U.S. soybeans. ASA did the same thing in China starting in about 1982 and today China is the world's biggest and fastest growing customer for U.S. soybeans. Second, ASA would like to keep as much Indian soybean meal (made by crushing soybeans grown in India into oil and meal) off the international market–where it competes with U.S. soybean meal and depresses the price of both. Address: PhD, New Delhi, India.

8152. Sugimoto, Takashi; Iwatate, Marcia. 2002. Shunju: new Japanese cuisine. Sensational recipes from Tokyo's most famous restaurant. Singapore: Periplus Editions. 271 p. Foreword by Charlie Trotter. Illust. (chiefly color, by Masano Kawana). Index. 26 x 23 cm.

• ***Summary:*** Contents: Foreword. The Shunju way: The Shunju philosophy (history, architecture, bar, lighting, *zashiki* {dining room floor}, *chashitsu* {tea room}, hospitality {*motenashi*}). The seasonal kitchen. Spring. Summer. Autumn. Winter. Appendixes: Step by step preparation techniques (incl. Fresh soymilk, Green bean soymilk yuba {*Ryokuto nama yuba*}). Chefs (profile of head chef at each restaurant). Glossary of ingredients. Mail-order sources of ingredients. Acknowledgments.

"The history of Shunju began in 1986 in Mishuku, Tokyo." Today, Shunju has five different outlets in Tokyo–Mishuki, Hiroo, Torizaka, Bunkamura Dori, and Tameiki Sanno (p. 14).

"The most important element in Shunju's cuisine is to be able to truly appreciate the four seasons and the abundant blessings which mother nature has bestowed upon us...–Marcia Iwatate" (p. 24).

At the recipe for Green and lavender tofu squares (*Masu-dofu*) we read (p. 53): Tofu is undoubtedly one of the most representative dishes of Shunju. Our tofu is made daily–soymilk is curdled with *nigari* (bittern)–in different ware unique to each of our five restaurants; in this case in *masu* (traditional square, wooden measuring boxes)." To make green soymilk, see p. 255.

The glossary of ingredients (p. 258+) includes azuki (*koshi an, ogura an*), edamame, miso (many types), okara, sake (incl. koji {molded steamed rice}), shoyu (incl. koikuchi shoyu, usukuchi shoyu, shiro shoyu, tamari shoyu), tofu, ume, umeboshi, wasabi, yuba (famous as a Kyoto delicacy).

Tamari is mentioned on 98 pages of this book, miso on 67 pages, soy sauce on 54 pages, shoyu on 51 pages (incl. "koikuchi shoyu" on 34 pages, "usukuchi shoyu" on 13 pages and "shiro shoyu" and "tamari shoyu" on 2 pages each), tofu on 18 pages, soymilk on 14 pages, yuba on 7 pages, koji on 5 pages, nigari and edamame on 4 pages each, black soybeans on 2 pages (p. 53 and 84).

Natto and kinako are not mentioned. Address: Creators and founders, Shunju restaurants, Japan.

8153. Treloar, Brigid; Inge, Karen. 2002. Healthy soy: Cooking with soybeans for health and vitality. Hong Kong: Periplus Editions (HK) Ltd. Printed in Singapore. 112 p. Illust. (color). Index. 24 x 22 cm.

• ***Summary:*** This is a beautiful book, with stylish and informative full-page glossy color photos on every other page. It is well researched, comprehensive, and generally uses standard soyfoods terminology. It is also strange: We are not told in which country the publisher is located (perhaps Hong Kong or Singapore) or where the authors live. It is distributed in North America, Japan and Korea by Tuttle Publishing. On the inside rear dust jacket: www.tuttlepublishing.com. It is clearly targeted at a world market.

Contents: Introduction. The health benefits of soy: The heart, cancer, menopause, osteoporosis, weight control, allergies, lactose intolerance, the nutritional value of soy, protein, phytoestrogens, fats, calcium, soluble fiber, vitamins and minerals, energy, carbohydrates, how much soy do we need? (as an exchange for meat), how to use the nutrition table. Nutrition table (for various soyfoods). Soybeans: Green soybeans–fresh and frozen, dried soybeans, how to buy and prepare soybeans (selecting and storing dried soybeans, preparing dried soybeans, soaking, pan-roasting, boiling, pressure cooking, canned). Soy foods: Tofu (selecting and using, storing, freezing), bean curd sheets (yuba), deep-fried tofu (age; seasoned tofu), miso, tempeh, soya sauce (shoyu; regular, low-salt, light, tamari, ketjap manis), soy milk, soy flour, soy nuts, soy germ powder,

soy oil, soybean sprouts, soybean paste (fermented), natto, soy dairy products (soy butter, soy spread {margarine}, soy cheese {plain or flavored}, cream cheese, yogurt, mayonnaise), soy meats (meat alternatives), others (soy breads, cereals, pasta, chocolate, chips, health bars, desserts, tofu ice creams), soy grits, tips (tofu, soy dairy products). Compatible soy flavors. Preparation and cooking techniques: Draining and pressing tofu, cutting tofu, deep-frying tofu, how to reconstitute yuba, how to use deep-fried tofu pouches, how to use miso, miso tips. Soups. Appetizers and dips. Light meals and snacks. Main dishes. Seafood. Vegetables. Salads. Desserts. Soy drinks. Glossary. Guide to weights and measures.

Note: This is not a vegetarian cookbook. Some recipes call for chicken, fish (swordfish, tuna, salmon), shrimp, etc. Address: 1. Food writer, stylist, consultant, and cooking instructor [Australia]; 2. Nutritionist and nutrition correspondent for *Good Morning Australia*.

8154. Weil, Andrew; Daley, Rosie. 2002. The healthy kitchen: Recipes for a better body, life, and spirit. New York: Alfred A. Knopf; London: Ebury. xxviii + 325 p. Illust. (color photos by Sang An, Amy Haskell, and Eric Studer). Ports. Index. 24 cm.
• ***Summary:*** Lifelong good health starts in the kitchen. Includes 135 recipes; none require red meat, but not vegetarian. Rosie's introduction encourages: "Don't be afraid to work with new ingredients, such as... using tofu,..." The section on "Nutrition and health" contains useful information on the glycemic index (p. xx-xxi), the main sources of fat (p. xxi) and protein (p. xxiv) in the American diet. Eat more vegetable protein, especially from soybeans, "and less animal protein, especially from fish and reduced-fat dairy products. The section on "Stocking the pantry" includes Asian foods– soy sauce or tamari, and "miso paste "Made from soybeans" (p. xxxiii-iv).

Soy related recipes include: "A soy shake," with silken tofu (p. 3, for breakfast). The section "Got (too much) milk?" (p. 34-35) recommends soymilk as a healthful alternative. And in the "Poultry" section (p. 54), Weil suggests substituting baked tofu. Weil has a full page (p. 58) about "Soy sauce: Shoyu and tamari," which also mentions "rice starter (koji)." There are recipes for: "Vegetable nori rolls" with natural soy sauce (p. 72-73). Miso pâté (p. 80). Miso soup (p. 125). Meat and meat substitutes (incl. tofu and gluten) (p. 149-50). Greens with tangy miso dressing (p. 244-45). Address: 1. M.D., Clinical Prof. of Medicine, Univ. of Arizona and Director of its Program of Integrative Medicine; 2. Chef trained at the Cal-a-Vie spa near San Diego, former Oprah Winfrey chef.

8155. Praestiin, Julie. 2003. Sanitarium buys out Soyaworld. *Record* (*SDA, Victoria, Australia*) 108(2):3. Jan. 18.
• ***Summary:*** Kevin Jackson, CEO of Sanitarium Foods (Australia), recently announced the company successful purchase of SoyaWorld in Canada. "'On entering the initial agreement [about 2 years ago] we purchased half of the business and also negotiated an option to buy the remaining part of the company. We have now exercised our option to purchase the remaining 53% of SoyaWorld, and, as such, we now own 100 per cent of the Canadian company' said Mr Jackson on announcing the takeover."

SoyaWorld, which produces So Good soymilk, now has a 60% share of the soymilk market in Canada. Its current annual sales is about $A46 million (Australian). A photo shows Kevin Jackson. Address: Berkeley Vale, NSW, Australia.

8156. IQPC. 2003. Canadian Soyfood Congress 2003: Exploring opportunities in the national and global soyfood industry (Brochure). Toronto, ON, Canada. 8 p. + 1 p. insert. 28 cm.
• ***Summary:*** This two-day conference will be held on 28-29 April at the Holiday Inn on King [St.], Toronto, Ontario, Canada. A detailed presentation of speakers and their subjects is given. Conference chair: Dr. Gregory Penner: Project Director, soy 20/20. Incl: Peter Joe, President, Soyfoods Canada. Dr. Rajesh Gupta, President, ProSoya Inc. Photos show: (1) Peter Golbitz, President, Soyatech. (2) Peter Joe. Address: International Quality and Productivity Centre, 415 Yonge St., Suite 1600, Toronto, ON M5B 2E7. Phone: 1-800-882-8684.

8157. Mescher, Kelly. 2003. Japanese expand minds and menus to new soyfoods: The Japanese are known for observing tradition. *Iowa Soybean Review* (*Iowa Soybean Association, Urbandale, Iowa*) 14(4):6. Jan.
• ***Summary:*** Discusses the "Japan Food Soybean Mission, in which the Iowa Soybean Promotion Board (ISPB) staff, board members, and Iowa food grade soybean exporters traveled to meet with soybean processors in Japan and to talk with them about market opportunities."

"The soyfoods seminar provided cooking demonstrations for professional chefs, manufacturers, and food media in Japan." An American chef, Michael Foley, prepared various dishes (whose names are given) using soy ingredients. "They ate everything. There was not a morsel left, and they wanted the recipes," said Linda Funk, executive director of the Soyfoods Council. The Japanese are already fans of soy in its traditional forms, says Foley, "but these recipes were outside the box for them. To finish soups with soymilk, soy yogurt, and soy sauce is new to them... They were surprised at how good it tasted."

One of the highlights was the first Soyfoods Foodservice Seminar. A color photo shows Linda Funk and Jim Stillman (ISPB director) in a downtown market in Tokyo.

8158. *Natural Foods Merchandiser.* 2003. Imagine Foods in

Hain portfolio. Jan. p. 18.
• ***Summary:*** In Dec. 2002 the Hail Celestial Group acquired Imagine Foods Inc. which makes leading brands of aseptic and refrigerated soymilks and rice milks, organic soups and broths, and nondairy frozen desserts.

8159. Robertson, Robin. 2003. Vegan planet: 400 irresistible recipes with fantastic flavors from home and around the world. Boston, Massachusetts: Harvard Common Press. xvi + 576 p. Illust. Index. 23 cm. [15 ref]
• ***Summary:*** An outstanding, hefty vegan cookbook by an author who knows her ingredients well and uses a rich and pleasing variety of them. She is also an expert on soyfoods, and the book contains many useful insights about them.

We find the graphic design of the book to be weak to poor; the typeface in the recipe titles is hard to read, the ingredients in the recipes printed in gold on white are hard to read, and the many pages of white ink on a gold or other such background are hard to read.

The word "tofu" appears on 91 pages in this book, "tamari" on 67 pages (she uses the phrase "tamari or other soy sauce"), "soy sauce" on 62 pages, "soy milk" on 56 pages, "dairy-free" on 55 pages, "seitan" on 47 pages, "tempeh" on 46 pages, "silken tofu" on 33 pages, "firm tofu" on 29 pages, "miso" on 28 pages, "soft silken tofu" on 23 pages, "extra-firm tofu on 13 pages, "teriyaki" on 6 pages, "soybeans" on 13 pages, "soy ice cream" and "meat alternatives" each on 10 pages, "TVP" on 8 pages, "baked tofu" on 7 pages, "textured vegetable protein" on 6 pages, "firm silken tofu" on 5 pages, "soy flour" on 4 pages, "soy nuts" and "soft tofu" and "dairy alternatives" each on 3 pages, "edamame" ("fresh soybeans in the pod") on 2 pages, "soy yogurt" and "frozen tofu" each on 1 page (p. 72),

Yuba is mentioned on pages 182, 350-51 (definition and description), 389, 410-11, 414.

Page 29 states that soy flour is "Made from finely ground roasted soybeans" [i.e., kinako].

"Humans are the only animals that drink the milk of another species and the only animals that drink milk after childhood" (p. 9). Address: Virginia Beach, Virginia.

8160. Abiatte, Mabel. 2003. Cocinando soja [Cooking soya]. Argentina: Acquatint. 49 p. Illust. No index. 22 x 17 cm. [Spa]
• ***Summary:*** Contents: Prologue. Generalities. Soymilk & recipes. Soy butter (from fermented soymilk). Tofu & recipes. Okara (*salvado de soja* {soy bran}) & recipes. Whole boiled soybeans (*porotos hervidos enteros*) & recipes. Ground boiled soybeans (*porotos hervidos molidos*) & recipes. Soy flour (*harina de soja*) & recipes. Soaked soybeans (*porotos remojados*) & recipes. Soy sprouts (*brotes de soja*) and recipes. Address: Argentina.

8161. Abiatte, Mabel. 2003. Cocinando soja en la cocina vegetariana [Cooking soya in the vegetarian kitchen]. Argentina: Acquatint. 52 p. Illust. No index. 22 x 17 cm. [Spa]
• ***Summary:*** Contents: Prologue. Miscellaneous. Some recipes (only samples). Why vegetarianism. Ricota and yogurt (from cow's milk and soymilk). Sweet bread fritters. Recipes with bread dough. Recipes with sprouts (incl. soy sprouts). Tortillas. Souffles. Recipes with potatoes (*papas*). Dressings, seasonings, and condiments (*Aderezos*). Recipes with whole soybeans (*con porotos enteros*). Basic recipes. Some useful advice. Address: Argentina.

8162. Gottlieb, Bill. 2003. Truffles and flourishes. *Via* (*American Automobile Association*). Jan/Feb. p. 61-62.
• ***Summary:*** In San Francisco, Jean-Marc Gorce of XOX Truffles, Inc. makes a low-fat truffle using soy milk instead of cream. *Choclatier Magazine* declared him one of the 10 best choclatiers in America.

8163. **Product Name:** SoyQuick Automatic Soymilk Maker.
Manufacturer's Name: Kitchen's Best Manufacturing Group Limited.
Manufacturer's Address: P.O. Box 3944 Station Main, Vancouver, BC V6B 2Z4, Canada.
Date of Introduction: 2003. February.
New Product–Documentation: *The Veggie Platter* (Vancouver Island Vegetarian Association). 2003. Winter. p. 1-2. "Product review: Soymilk machines." "We tested the SoyQuick, SoyaJoy, SoyToy, Soy Wonder, and Nutritionist by Salton."

"Summary:

"SoyQuick–the clear winner: good price, great quality, easy to clean, lots of tips in the manual, includes tofu press and coagulator (we loved the fresh tofu and wouldn't have gotten around to trying it if not included).

"SoyaJoy–machine is the same as SoyQuick but it costs more, has no extras, the manual is not as good, and we got no response from customer service. It is included in the review only for completeness.

"SoyToy–the best machine for using dry soybeans although we recommend soaked. Compared to the SoyQuick it costs more, takes longer to cook and clean, leaves more okara in the milk, and needs a kitchen setup where the steam venting will not be a hazard.

"Soy Wonder–a good machine only if seeing the milk while it is being made is more important than quality construction (the container is clear plastic). Also called Eagle.

"Nutritionist by Salton–only consider this machine if you collect kitchen appliances; this is the cheapest brand. It is too finicky to even use, and the lowest quality in many respects. Also sold as Salton Fresh Food Center and Salton Fresh Soy Food Center."

Three leaflets (8½ by 11 inch, color, front and back) sent

by Patricia Smith from Natural Products Expo West. 2005. March. Each leaflet praises a different aspect of the product. www.SoyMilkQuick.com. "Order now! Toll free 1-888-769-5433. The two models & benefit packages are SDZ-4 (1 year warranty, no tofu kit) and SDZ-5 (2 year warranty, with tofu kit and Gold Warranty Support). Recommended by natural foods experts (for each person a color photo of the person is shown and a long paragraph gives the endorsement): Bryanna Clark Grogan, Jan London, Vickilynn Haycraft, Marie Oser, Susan Smith Jones.

Note: As of July 2013 this soymilk maker had no website, but it was still sold on eBay.

8164. Sosland, Josh. 2003. Matching grain-based foods and specialty proteins. *Baking & Snack.* Feb. 1. *
• ***Summary:*** "Incorporating specialty proteins into the diet represents a red hot health trend." This idea was reinforced by the creation last month of Solae L.L.C., a joint venture between DuPont and Bunge–based in St. Louis [Missouri], the home of Protein Technologies International. "While agricultural biotechnology and farmer services will be part of Solae, it is the specialty protein business that is at the heart of the venture." The first product introduced under the Solae brand was 8th Continent soy milk, developed in another joint venture between DuPont and General Mills, Inc. (Minneapolis, Minnesota).

Gives a detailed description of ADM's work with and market segmentation for soy proteins. Anthony DeLio of ADM says that "a lack of familiarity and wariness about taste stand as two central challenges facing the category... Perception problems have been and will be a challenge. It can be difficult to convince consumers to even give soy-based products a try." "Texture and flavor continue to be the focal areas for formulators," says Phil Gentlesk.

"Nutriant [Cedar Falls, Iowa] is the two-year-old nutritional division of Kerry Ingredients, the global ingredient company headquartered in Ireland."

8165. *Soyfoods Canada Newsletter.* 2003. Soyfoods Canada member profile–Nutrisoya Foods. Winter. p. 3.
• ***Summary:*** "Nutrisoya Foods Inc. first commenced operations in 1988 as a manufacturer of pasteurized, high protein tofu for sale in supermarkets under the Nutrisoya brand. Its production facilities are ideally located in St. Hyacinthe, Quebec, 30 miles east of Montreal, in the agricultural heartland of Eastern Canada, and is immediately adjacent to the most advanced food research centre in North America.

"In 1992 Nutrisoya Foods made its first foray into the aseptically packaged, dairy alternative beverage market with the launching of its *natur-a* brand of soy beverages.

"Today Nutrisoya Foods operates out of an altra-modern, fully automated, computer driven plant..."

Contact: Nick Feldman, President, Nutrisoya Foods Inc., 4050 Pinard, Saint-Hyacinthe, QC J25 8K4, Canada. www.nutrisoya.com.

8166. White Wave, Inc. 2003. "Trendsetter." "Iconoclast." "Trailblazer." Try Silk Soymilk and one of these cool adjectives could be yours (Ad). *Utne.* Jan/Feb.

8167. Nordquist, Ted. 2003. New products made from soybase in Modesto, California (Interview). *SoyaScan Notes.* March 14. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Last week, at the Natural Products Expo, Ted's company introduced two new flavors of cultured beverages–Lemon and Orange. They have stopped making their standard soy-based frozen dessert and converted all of their flavors (they now have 9 SKUs) to soy-based frozen yogurt–which is a more delicious product and for which there is a huge demand.

Ted missed the strong presence of Imagine Foods at the show; they used to have three large booths and lots of delicious foods. Recently they were purchased by Hain-Celestial Food Co.; so this year they had 3 feet inside the Hain both. It was sad.

Ted does not know why Robert Nissenbaum sold his company (Imagine Foods) to Hain. He believes that Imagine Foods soymilk plant was in Lathrop, California. Cheryl Mitchell and her husband (of California Natural Products) were divorced. Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

8168. ElBoghdady, Dina. 2003. Soy milk spilling into the mainstream: The nondairy product is showing up in TV shows, coupons–even on pizza. *Washington Post.* March 15. p. E1, E3.
• ***Summary:*** A bar chart shows that soy milk sales have grown from about $100 million in 1997 to $749.1 million in 2002–based on IRI / Mintel data–which does not include sales at Wal-Mart. Address: Staff writer.

8169. Richmond, Akasha. 2003. Serving soymilk to the stars (Interview). *SoyaScan Notes.* March 17. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Akasha has been working with White Wave. She served soymilk cappuccino at the following places and events: (1) At a Soy Cappuccino Bar at the Sundance Film Festival in Colorado. (2) At a party for the Grammies in New York City. (3) At a party for the Oscars. Dean Foods is now supplying 4,000 Starbucks stores with aseptically packaged Silk soymilk.

Akasha has been invited to give a talk on the history of soyfoods to the L.A. Culinary Historians on June 14 (Saturday morning). Address: Los Angeles, California.

8170. **Product Name:** SoyQuick Soymilk Powders [UltraFine, Nutraceutical, Superfine 1000, Fine 400].
Manufacturer's Name: American Health and Nutrition, Inc.
Manufacturer's Address: 3990 Varsity Dr., Ann Arbor, MI 48108. Phone: (734) 677-5570.
Date of Introduction: 2003. March.
Wt/Vol., Packaging, Price: 25 lb bulk.
How Stored: Shelf stable.
New Product–Documentation: Spot in Bluebook Update. 2003. April/June. p. 3. "AHN introduces SoyQuick."

Talk with Cindy Maynard, director of marketing and public relations at AHN. 2003. May 28. These four products were first sold in March 2003. They are available in bulk as an ingredient to food and beverage manufacturers–especially for use in bars, drinks, and mixes. UltraFine is spray dried, which makes it more soluble; especially good for beverages. Nutraceutical is enzymatically hydrolized for additional solubility, spray-dried, and homogenized. SuperFine 1000 passes through a 1000 mesh screen, but is not as fine as the first two products. Fine 400 is 400 mesh; the most economical.

8171. Archer Daniels Midland Company. 2003. Turns out, raiding the fridge can be good for a broken heart: NutriSoy–It's all about a strong beat (Ad). *Vegetarian Times.* March. p. 7.
• ***Summary:*** This full-page color ad shows a woman raiding the refrigerator. The ad is about NutriSoy, the "all-natural soy protein ingredient that's helping to fortify some of your favorite foods, like breads, pastas, drinks, desserts, entrées, and more. The FDA has approved the claim that including 25 grams of soy protein per day as part of a diet low in saturated fat and cholesterol may reduce the risk of heart disease... So look for the NutriSoy logo." For more information visit www.nutrisoy.com.

8172. *ASA Today* (*St. Louis, Missouri*). 2003. ASA leads soymilk coalition in work with committees. 9(5):1. March.
• ***Summary:*** "ASA [American Soybean Association] is leading a soymilk coalition in meetings with committee staff from the Senate Agriculture Committee and the House Education and the Workforce Committee. These are the staffers who will draft the legislation reauthorizing child nutrition programs. The coalition continues to find 'Hill' staff receptive to including soymilk as part of the reimbursable school lunch program. Questions being raised include the possible cost of adding soymilk, number of children affected, position of the Bush Administration, and position of the dairy industry."

8173. Du Pont (E.I.) de Nemours and Company. 2003. The Solae promise–Better-for-you foods, great taste you and your family will love! (Ad). *Vegetarian Times.* March. p. 22-23.
• ***Summary:*** This full-page color ad is about Solae brand soy protein. Three large photos show happy, active family members. The young lady in the lower left is drinking a glass of soymilk. For more information visit solae.com or contact Protein Technologies (a DuPont business) at 800.325.7108.

8174. SunRich Food Group Inc. 2003. Sunrich (Portfolio). Toronto, Ontario. 9 inserts. 31 cm.
• ***Summary:*** The cover of this portfolio is a composite color photo on a tan background. The photo shows (L-R) whole soybeans, a glass of soymilk, green edamame (in the pods), a farmer in a field examining heads of wheat, a wooden scoop of corn flour and grits, whole kernels of corn. Below it is the SunRich logo, the name in red, a stylized yellow sun background, and the tag line below: "Your direct link to Nature." On the inside front cover are six oval color photos, each explaining Sunrich's mission.

Inserts: (1) Identity preserved grain program. (2) SunRich: Your direct link to nature–Quality, integrity, expertise. (3) Maltodextrins & sweeteners. (4) Fours, meals & grains. (5) Vegetable oil. (6) Premium whole soybeans. (7) Soy ingredients (incl. soymilk, oatmilk, multigrain beverages, soymilk powders, soy flour, textured soy protein). (8) One company: One mission–Unlimited organic snack solutions! The SunRich Food Group Inc. is a Stake Technology Company. (9) Shelled edamame recipe ideas. Address: Toronto, Ontario.

8175. University of California, Berkeley WellnessLetter. 2003. Healthy eating: How to tell the latest news from the old news (Leaflet). Berkeley, California. 1 p. Single sided. 56 x 21 cm.
• ***Summary:*** This glossy color leaflet has a section on "Soy futures." "Latest news: Soy is a good food, well worth adding to your diet–as soybeans, tofu, soy flour, or soy milk. Soy protein may help lower cholesterol and have anti-cancer effects... But while it's a good food, it's not a magic bullet. Like all plants, soybeans are a mixture of complex substances with many potential effects in the body, some beneficial, some not."

8176. *New York Times.* 2003. World briefing–China: Milk kills 3 children. April 9. p. A6. International section.
• ***Summary:*** Soya milk has caused the death of 3 children at schools in northern Liaoning Province, and 3,000 have fallen ill–according to the *Beijing Times.* Eight schools were involved in the mass poisoning on March 19 and it was made public only after more than 100 outraged parents had sought help for their children; they said it was an inadequate local response to the crisis. (Source: Agence France-Press).

8177. *ASA Today* (*St. Louis, Missouri*). 2003. Soyfoods enjoy growing popularity. 9(6):4-page insert after p. 2. April.
• ***Summary:*** Attractive (with 5 color photos), interesting, and

original. This is the first such insert in this 4-page newsletter, and the first time this newsletter has contained a significant amount of information about soyfoods. Below the title is printed: "A special publication from the American Soybean Association." On the back page we read: "ASA thanks the sponsors of this publication...: Solae [DuPont & Bunge], Soyatech, and White Wave. Below the logo of each company is 4½-inch-long column describing the company, its history and activities.

Contents of the insert: Introduction. Soyfoods become mainstream. The most common [widely used] soyfoods. U.S. consumers more aware of soyfoods. The push for soymilk in schools. Soyfoods for the future. Export demand for food ingredient beans.

It begins: "No longer are soyfoods considered unusual or hard to find. No longer are they considered the kind of foods only eaten by so-called 'granola-crunchers' or 'health fanatics'... The menu at the recent American Soybean Association (ASA) awards banquet featured a serving of delicious edamame (sweet green soybeans) that soybean growers and guests alike enjoyed with enthusiasm."

8178. Hobbs, Suzanne Havala. 2003. Nutrition hotline: Alternate Protein Products (vegetarian) in the government's Child & Adult Care Food Program. *Vegetarian Journal* (*Baltimore, Maryland*) 22(2):2, 5.
• ***Summary:*** Federal funding of the Child & Adult Care Food Program (CACFP) supports daily meals and snacks for 2.6 million children and 74,000 adults at home day care programs, day care centers, after-school care programs, and shelters. USDA's Food and Nutrition Service (FNS) administers the program at the federal level; at the state level it is administered by state education and health departments. Modifications to the "Vegetable Protein Products" requirements were finalized in March 2000. With the latest group of changes, "Vegetable Protein Products" were renamed "Alternate Protein Products" (APP). The cap on the amount of APPs that can be used in menus was removed, and the new regulations no longer require that APPs be fortified. Tofu and tempeh don't qualify as APPs because they don't meet the requirement in Appendix A that APPs must contain at least 18% protein by weight when fully hydrated or formulated. Soymilk and soy yogurt don't count as APPs either–even though dairy yogurt does.

8179. *Natural Foods Merchandiser.* 2003. Starbucks' soy is Silk. April. p. 14.
• ***Summary:*** "White Wave has developed a special organic, non-GMO, kosher Silk soymilk formula to complement Starbucks coffee and Tazo chai beverages sold in 4,000 North American locations."

8180. White Wave, Inc. 2003. Unsweetened soymilk. Wow. Hardcore (Ad). *Vegetarian Times.* April. p. 7. Address: Boulder, Colorado.

8181. Dean Foods Co. 2003. Dean Foods means business: Annual report 2002. Dallas, Texas. 88 p. 28 cm.
• ***Summary:*** The "Dear fellow shareholders" statement at the beginning of this report (p. 2-3), by Chairman and CEO Gregg Engles includes a section titled "Achieving strategic objectives" which begins: "We also achieved several important strategic objectives during the year, beginning with the May 2002 purchase of White Wave, maker of *Silk* soymilk and other soy products. Prior to the May transaction, we owned a minority interest in White Wave that we acquired as part of our acquisition of legacy Dean Foods. Recognizing the enormous potential of the soymilk category and *Silk* in particular, we began working toward bringing White Wave fully into the Dean Foods family early in 2002. We are so pleased to welcome Steve Demos, founder of White Wave, and his team to our company. They are an extraordinarily talented and motivated group, and I am now more convinced than ever that *Silk* will be an important source of future growth for our company." "We have identified our core set of 'strategic brands' to include *Silk* and *Sun Soy* soy products..."

A full-page graph shows that the value of Dean Foods stock has risen from about 20 in March 1999 to about 42 in March 2003, apparently more than doubling in value. However this seems incorrect: A $450 investment in Old Dean Foods in Aug. 1999 was worth only $297 on 31 Dec. 20002–for a net loss of about 34%.

The section titled "Dean means new ideas, healthy thinking" has the bold headline: "The power of soy: Refrigerated soymilk is blasting into the American mainstream. Consumers are looking at soymilk in a whole new light–and Silk is largely responsible." Retail sales of all refrigerated soymilk "increased by more than 30% in 2002 to over $440 million, and Silk accounted for more than 80% of those sales. In 2003 Dean Foods expects retail sales of Silk to exceed $450 million. Steve Demos, founder of White Wave and creator of Silk, has a passion for soy. When we acquired White Wave, Steve agreed to continue as President. As part of Dean Foods, Steve and his team of visionaries now have the resources and infrastructure they need to take Silk to the next level... We believe a key to the continued growth of Silk is to stimulate consumer trial. Through sampling, coupon programs, advertising, sponsorships and TV and movie placements, you will be seeing more and more of Silk in 2003 and beyond. A photo shows Steve Demos, smiling, in blue blazer, blue shirt, and no necktie. Founder and President of White Wave, Steve's mission, "to creatively lead the integration of soy into the American diet virtually created the refrigerated soymilk category."

Color photos show four different Silk packages and a Starbucks logo. On the facing page is a full-page color photo of a young man and woman in rollerblades skating

past a huge billboard of Silk Organic Soymilk. "Beginning this summer Silk will become the exclusive soymilk used in handcrafted beverages sold at all Starbucks locations throughout North America. Silk will be identified Starbucks' menu boards, and Starbucks will conduct in-store promotions of Silk products. This partnership furthers our goal of increasing trial by making Silk available to millions of Starbucks customers everyday."

Net sales in 2002 were $8.991 billion, up 50% over the previous year. Gross profit was $2.348 billion, up 67.7%.

Pages 24-25 discuss the acquisition of White Wave, an incentive bonus plan, and new Silk products. During the 3rd quarter of 2002 aseptic Silk soymilk was introduced to better serve dry grocery and foodservice channels, and two new Silk flavors were added: coffee and unsweetened. In Feb. 2003 White Wave entered into an agreement with Starbucks (see above) which will take effect in June 2003. Single-serve bottles of Silk will also be sold separately at certain Starbucks stores.

Note: On 21 July 2003 at the Starbucks location in Lafayette, in the far lower left corner of their wall menu we read (in letters smaller than those used for regular menu offerings): "Silk soy and organic milk available upon request. Add $0.40." After "Silk" is the "registered trademark" symbol. The word "SoyaLatte" does not appear on the menu.

Accompanying the annual report is a "Proxy statement and notice of annual meeting 2002" (32 p.). In 2002 Gregg L. Engles, Chairman of the Board and CEO had: Salary $1,000,000. Bonus $2,200,000. Other compensation $492,984. Options granted in shares: 700,000. Steve Demos, age 54, joined Dean Foods in May 2002 when Dean bought the remaining interests in White Wave, Inc. Demos is not on the Board. Address: 2515 McKinney Ave., Suite 1200, Dallas, Texas 75201. Phone: 214-303-3400.

8182. **Product Name:** La Fe Soy Milk [Plain, Vanilla].
Manufacturer's Name: La Fe Foods (Importer / Marketer). Made in Argentina.
Manufacturer's Address: Plant: Via Mercedes, San Luis, San Luis Province, Argentina. Importer: 230 Moonachie Ave., Moonachie, New Jersey 07074. Phone: 1-866-BUY-LAFE.
Date of Introduction: 2003. May.
Ingredients: Organic soymilk (filtered water, choice of organic soybeans), cane juice (dried), tricalcium phosphate, microcrystalline cellulose / carboximethylcellulose, artificial flavor, lecithin, beta-carotene, carrageenan, salt, di-alpha-tocopherol, vitamin A acetate, vitamin D3.
Wt/Vol., Packaging, Price: 1 liter aseptic carton. Retails for $1.00.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Denis Bolger of New York. 2005. May 12. This is now his favorite soymilk. It is imported from Argentina in 1 liter Tetra Packs. He bought it for $1.00 at Econo, a discount store in New York City. On the bottom of the carton is written: "Product of Via Mercedes, San Luis, Argentina. Imported by La Fe Foods, 230 Moonachie Ave., Moonachie, New Jersey 07074." When he ordered 12 cases from the importer and paid in case, it cost him $1.00/liter and was delivered free of charge.

Talk with representative of La Fe Foods. 2005. May 12. These two products, which are private labeled for La Fe, were introduced in May 2003. The name of the manufacturer is confidential. His company (pronounced LA-fay) imports foods that they market mainly to the Hispanic market in the USA. Note: AdeS soymilk is made in a different province of Argentina.

Product with Label sent by Denis Bolger. 2005. Oct. 22. 1 liter Tetra Brik Aseptic pack. Vanilla. Beige, green, blue, white and yellow on tan. Illustration of soymilk being poured into a glass against a field of green soybeans extending to the horizon and a blue sky with clouds above. "Made from 100% organic soy. Le Fe–Quality since 1968. High source of calcium and vitamin D." "Non-GMO: Contains no genetically modified soybeans."

8183. Lampe, Frank. 2003. Life after the Dean deal: White Wave president Steve Demos outlines his plans for reaching $1 billion in sales and for expanding his sustainable business philosophy. *LOHAS Journal* (*Colorado*) 4(1):44-46, 53. Spring.
• ***Summary:*** Contents: Introduction. The billion-dollar brand. Health. The environment. Aging. Demographics. The business model of the future. Two color photos show Steve Demos.

8184. White Wave, Inc. 2003. Silk: Now shelf stable as well as refrigerated. Solving the age old question of how to be in two places at once (Ad). *Natural Foods Merchandiser.* May. p. 52.
• ***Summary:*** This 8½ by 11 inch color ad shows organic plain Silk and organic vanilla Silk in shelf stable quarts. Address: [Boulder, Colorado].

8185. Richmond, Akasha. 2003. The man who coined the name "Silk" for soymilk (Interview). *SoyaScan Notes.* June 12. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Akasha has heard this story from three different reliable people. The man who came up with the name "Silk" once worked for White Wave. Years later he was fired, but he continue to live in Boulder. After Steve Demos sold White Wave to Dean Foods he invited this man out to lunch, then said to him "What do you think the name "Silk" is worth?" The guy had no idea what to say, and he wasn't expecting anything. Steve handed the guy a check for a million dollars. Address: Los Angeles, California.

8186. Ness, Carol. 2003. Best of fresh soy milks: Taster's choice. *San Francisco Chronicle.* June 18. p. E2. Food section.
• ***Summary:*** Five brands were tasted and rated in descending order of preference as follows: 1. Sun Soy Creamy Original (79 points, $1.99/qt). 2. Silk Organic (76 points, $2.29/qt). 3. 365 Organic Original (67, $2.99/half gallon at Whole Foods). 4. 8th Continent (61, $4.49/half gallon). 5. Wildwood Certified Organic (49 points, $1.99/qt at Safeway). Address: Staff writer.

8187. Yamamoto, Seiichiro; Sobue, T.; Kobayashi, M.; Sasaki, S.; Tsugane, S. 2003. Soy, isoflavones, and breast cancer risk in Japan. *J. of the National Cancer Institute* 95(12):906-13. June 18. [44 ref]
• ***Summary:*** Breast cancer risk was reduced by one half in Japanese women who ate three or more bowls of miso soup on an almost daily basis. The report monitored 21,852 women from 1990 to 2000. Post-menopausal women showed the greatest reduction of risk.

"In Japan, soy is consumed in various forms, including dried or green soybeans, tofu (soybean curd), natto (fermented soybeans), miso (fermented soybean paste), okara (tofu lees), soybean sprouts, soymilk, yuba (soy milk skin), kinako (soy flour), and soy sauce." Address: Cancer Information and Epidemiology Div., National Cancer Center Research Institute, Tokyo, Japan.

8188. Terman, James. 2003. New developments at White Wave (Interview). *SoyaScan Notes.* June 19. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** During the year since Dean Foods purchased White Wave things have been going well. Soymilk has become a mainstream beverage. 8-10% of America's 107 million households purchase Silk at least once a year–and many purchase it once a week. Dean has been smart enough to leave White Wave alone, to operate independently. They are financially independent, and never go to Dean for money. White Wave now makes Sun Soy; the soybase is the same as that for Silk, but it is a little sweeter than Silk, and some people prefer this sweeter taste.

The deal with Starbucks has been one of the biggest developments of the past year. They get 2.3 servings of their Soy Latte (Espresso Latte with Soymilk) from one quart of aseptic Silk–so the drink is largely soymilk. White Wave is also working to reach more kids. They have gotten into some schools with open-minded food-service directors. Kids who are lactose intolerant must forego milk for a beverage that is mostly water and contains no protein; soymilk would be the ideal option. White Wave is conducting tests to see what products kids prefer; presently it's 60% to 40% chocolate over vanilla. Kids may prefer a sweeter product. They are giving away lots of soymilk and selling some in schools in vending machines.

They are making some of their soymilk in Dean's factories and are designing the "perfect green factory." They are getting into clubs such as Costco and Sam's Club. They plan no changes in Silk's price or sweetener (organic white sugar). Address: Director of Words and Pictures, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

8189. *ASA Today* (*St. Louis, Missouri*). 2003. ASA/India spurs major growth in soy consumption. 9(8):6. June.
• ***Summary:*** In March, the American Soybean Association had a booth at the premier food and beverage trade show in India, the 18th International Food Exhibition, called AAHAR 2003, in New Delhi. "Aahar" means food in Hindi. Eight companies participated in ASA's Soy Pavilion: (1) General Food Ltd. (maker of soy nuts, soy oil, soy flour). (2) M.P. State Oilfed (soy biscuits, soy nuggets [TVP]). (3) Protein Technologies International (soy protein isolates). (4) Ruchi Soya Industries (soy flour, soy chunks, soy oil). (5) Soy Appetite (Soy milk, soy rusk, tofu). (6) Sonic Biochem Indore (Full fat soy flour, defatted soy flour). (7) S.S. Agro Industries (fermented black soybeans, soy chunks, soy granules). (8) S.S.P. Ltd. (SSP, soy milk equipment / machinery).

8190. *Bluebook Update* (*Bar Harbor, Maine*). 2003. AHN introduces SoyQuick. 10(2):3. April/June.
• ***Summary:*** American Health & Nutrition Inc. has announced a new line of the SoyQuick soymilk powders, sold as both non-GE and organic: (1) SoyQuick UltraFine has good functionality for beverage manufacturers. (2) SoyQuick Nutraceutical has been hydrolyzed. (3) SoyQuick Superfine 1000 is for use in all non-beverage dairy alternatives.

8191. General Mills. 2003. 8th Continent soymilk: Try the better tasting soymilk. Consumer prefer 8th Continent Vanilla Soymilk 2 to 1 versus Silk Vanilla (Leaflet–Ad). New York City. 1 p. Single sided. 18 x 13 cm.
• ***Summary:*** This color ad is part of a mailer inserted into the *New York Post* (daily newspaper). The main photo shows a plastic quart bottle of 8th Continent Vanilla with a quart of Silk Vanilla in the background. In the lower right are three small photos of 8th Continent half gallons in original, vanilla, and chocolate flavors. In the lower left: "8th Continent Taste beats Silk." In the lower right is a manufacturer's coupon: "Save 50¢ when you buy one quart or half gallon only any flavor 8th Continent soymilk." Expires 10 Aug. 2003.

8192. Jordan, Joe. 2003. Soymilk in school lunch: The leading edge of a soyfoods wave. *Bluebook Update* (*Bar Harbor, Maine*) 10(2):2. April/June.
• ***Summary:*** The regulations that govern the federal school lunch program, enacted during the 1940s, "essentially

prohibit any drink but cow's milk from accompanying school meals." Moreover, a school cannot be reimbursed for a meal that contains soymilk unless the student provides a doctor's note stating a medical need, such as lactose intolerance.

Yet many believe these rules are outdated. Lactose intolerance is known to affect over 50% of Hispanics, Asians, and African-Americans. The USDA has reported that 16% of children served school meals do not drink the accompanying milk. SANA and other soymilk advocates are working to change the National School Lunch Act, to establish a standard protein content for soymilk, and to require that soymilk used in the school lunch program be fortified with calcium (300 mg per 8 oz) and vitamins A and D (500 IU of vitamin A and 100 IU of vitamin D per 8 oz).

The U.S. Senate has already held two hearings on the matter and a bill is expected to be introduced by late May. The House is expected to begin hearings on the subject around mid-June. Photos show: (1) Two small cartons of Silk soymilk. (2) Students holding trays in a school lunch line.

8193. Callewaert, Danilo. 2003. Recent history of Alpro, Europe's largest soymilk manufacturer (Interview). *SoyaScan Notes.* July 18. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** 1975–Philippe Vandemoortele and Danilo Callewaert visit the University of Illinois to learn about their new soymilk process.

1980 May 27–Alpro is founded at Izegem.

1989–Alpro plant at Wevelgem begins commercial production of soymilk.

1995 March 1–Guy Huybrechts starts as general manager of Alpro.

1995 Nov.–Alpro begins commercial production of Yofu soymilk yogurt. It is fermented with living cultures and has a 4-week refrigerated shelf life.

1996 April 22–Alpro acquires Sojinal, with their one plant in Issenheim (near Colmar), France. 1999–Alpro builds a new factory in England.

2000 Feb. 22–Guy Huybrechts finishes as general manager of Alpro. 2000 Aug. 17–Alpro soymilk plant begins commercial production in the UK. 2001 April–Alpro begins commercial production of soymilk in ESL cartons.

2001 Sept.–Bernard Deryckere begins as general manager of Alpro. Address: Alpro, Wevelgem, Belgium.

8194. Callewaert, Danilo. 2003. The soymilk industry and market in Europe (Interview). *SoyaScan Notes.* July 18. Conducted by William Shurtleff of Soyfoods Center. Address: Alpro, Wevelgem, Belgium.

8195. Demos, Steve. 2003. Developments at White Wave during the past year since sale of the company to Dean Foods (Interview). *SoyaScan Notes.* July 18. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** The most important thing is that "we have successfully gotten ourselves into serious corporate America, and we have the opportunity to influence not the consumer world, but now we can also influence the business world. The mission on the consumer is really a matter of momentum now; any corporation could push Silk and keep it going as a pure product. The question is: Can you establish a business model that is socially responsible, environmentally responsible, consumer responsible, and fiscally responsible (make a handsome profit)–all at the same time. That is the opportunity that is being handed to us. This alignment with Dean Foods, and in particular with CEO Gregg Engles, has been remarkable.

"About two weeks ago Dean Foods announced the purchase of Horizon Organic, another company in Boulder, Colorado. The world's largest commodity dairy processor just sent a very clear signal to Wall Street: 'We are going to invest in wellness, health, and environmental businesses.' They paid about $250 million for Horizon, so they have put almost $500 million on the table for these two soy and organic milk businesses. This is all about Wall Street and large profits. It is not about saving the planet–even though they may well do that. The joke between me and Gregg Engles is 'My green is gonna meet your green on Wall Street!' Gregg has really endorsed this. This is not just an arm's length relationship. White Wave is the focus of Dean Foods' strategy going forward."

Steve has created what he calls the "Wellness Division" of Dean Foods–but he would not be surprised if this concept appears in the Dean's next annual report. Dean's price-to-earnings (P/E) ratio has been up. When Dean acquired White Wave, Dean was trading at a P/E of 16. They are now trading at 18–not because of better earnings but because of the sex appeal and opportunities of this wellness. Gregg told me he will give me anything I want if I focus on his P/E ratio–because that's what his stockholders want to see. If we position the company as a commodity business that is now invested in wellness consumer packaged goods, Dean could become the latest and greatest Procter & Gamble–if you will. There hasn't been the emergence of a serious branded company in the U.S. for quite a while. This is an unusual opportunity for Engles and Dean.

"Dean Foods is remarkably supportive of White Wave. They never interfere with anything that we're doing. Why would they? We're more profitable than any of their other divisions.

"We are now building three new extraction factories in the U.S. White Wave is producing Silk in Jacksonville, Florida, now. We invested the money in the processors and the fillers. The extraction part of that will be up and operational by mid-September of this year. We're putting in spin flash-dryers for our okara to turn it into further eco-products. Remember, now that we have an organic dairy inside Dean Foods, the okara goes to Horizon's cows

producing organic milk–a nice fit and inexpensive solution, because drying okara does not cost that much. But we're going to go further than that, by turning it into an actual eco-value product, mixing it with other ingredients so that the Silk story is complete–even our waste stream. So everything is used.

"In Mt. Crawford, Virginia, we are putting in another extractor as we speak. It won't be open until Jan. 2004. Then we are installing a second extractor that will start producing later. So we will have two extraction lines in the same building. That is the major investment center for Dean on the East Coast, where all the plastic bottles are run, etc. Soon we will have facilities up and down the East Coast from Buffalo down to Jacksonville. Presently White Wave extracts soymilk for Silk from whole soybeans in two plants, in New Jersey and Utah. Soymilk for tofu, not Silk, is made in Boulder, Colorado. The dairy White Wave works with in New Jersey put up a $12 million facility next door to White Wave's extraction facility, with a pipe right through the wall; it takes up the entire capacity for this factory, about 16 million gallons a year.

In New York City, Silk soymilk has 4.2% of the dollar share of the entire milk market (including dairy milk), and in Miami 4.3%. Those are White Wave's top markets. In the entire U.S., Silk has from 3.2 to 4.4% of the milk market. One year ago, Silk had about 40% less of those markets–remarkable growth. No wonder Dean Foods likes us so much. We took their factory [in Jacksonville] and increased its value.

"It's a great game out there. It's heating up because we now have some giants gorillas that are chasing us. We figure 8th Continent has spent $40 million chasing us and they don't have much business to show for it. They are planning to spend another $40 million because DuPont owns a patent on a soybean [Synchrony resistant] and if then can establish an American market for products which use that bean, they can expand it into a worldwide market over the next few decades."

Steve has been trying to make an issue out of hexane solvent and extraction but nobody will talk with him about it. Steve refuses to use soy protein isolates in his products because they are currently made using hexane [a petroleum derivative]. He is looking for isolates or isolate-like products that are made using a more natural solvent, ideally from organic soybeans.

A new motto is being used within the company: "A brand that covers you from diaper to diaper." White Wave is developing new Silk products that fit the tastes and nutritional (especially protein) needs of different age groups–such as children, school kids / teens, soccer moms, and geriatrics. "This is the diaper to diaper approach and the direction we are going to try to take Silk. A person needs much different nutrients at age 8 than at age 70. If Silk is organic and natural soy, we can begin to act like the orange juice and the milk people and enhance that delivery, only we can customize more than they ever thought about."

Steve always used to tell people "I'm working for my grandkids." He thought things in the soyfoods industry would eventually turn out the way they have–but not in his lifetime. "That was okay. It has been very exciting to watch things accelerate in the direction we always hoped they would go." Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

8196. **Product Name:** Edensoy (Soymilk) [Organic Chocolate].
Manufacturer's Name: Eden Foods, Inc.
Manufacturer's Address: 701 Tecumseh, Clinton, MI 49236.
Date of Introduction: 2003. July.
Wt/Vol., Packaging, Price: 8.45 fluid oz (250 ml) and 1 liter (1.06 qt) Tetra Brik Aseptic Carton.
How Stored: Shelf stable.
New Product–Documentation: Ad in *Natural Foods Merchandiser* (8½ by 11 inches, color). 2003. July. p. 8. "Organic Chocolate Edensoy. New." A color photo shows the two cartons and a full glass with a straw. It "is made with family farm organically grown whole soybeans combined with Eden selected organically fair-trade cocoa, naturally malted non-GEO organic barley and corn, with organic maple syrup for a naturally smooth finish. Our cocoa is grown in the Dominican Republic and milled in Holland. Eden Cocoa is rich in polyphenol antioxidants. There is five and a half times more antioxidant power in Cocoa than in the same amount of Blueberries; 10.4 times more than in spinach."

8197. *Plenty Bulletin* (*Summertown, Tennessee*). 2003. Soy Huichol [in Mexico]. 19(2):1-3. Summer.
• ***Summary:*** "Louise Hagler, culinary educator whose expertise is cooking with soyfoods, author of seven cookbooks, and Plenty advisor, recently returned from a six week technical assistance and training visit to the Huichol Center for Cultural Survival and Traditional Arts. The Center is located in the town of Huejuquilla, Jalisco, a frontier town in the Sierra Madre Occidental mountain range, which extends along the Pacific side of Mexico. Since Louise's research visit last July, (see Plenty Bulletin: Fall 2002), Plenty staff and Susana Valadez, founder and director of the Huichol Center, have developed a collaborative project called, Huichol Nutrition Education & Food Supplementation Project. Phase I of the project was funded by Onaway Trust and the AMB Foundation. Plenty is working in partnership with the Huichol Center, the regional DIF, (Departamento Infantes y Familias-a Mexican government Social Welfare Agency), and Chapingo University (the largest and oldest agricultural university in Mexico) to develop and maintain a sustainable program

of nutrition education and soy food supplementation for Huichol families."

"Louise worked with Huichol Center staff to develop recipes utilizing soybeans, soymilk, tofu and texturized vegetable protein (*soya seca*) that local Huichol and urban and rural Mexican families would readily integrate into their traditional meals. Malnutrition is a serious problem in rural Mexico, especially among indigenous populations like the Huichols. Soybeans are noteworthy for producing a high-quality protein from limited tillable acreage–ten times more usable protein from an acre than if that same acre were used to raise livestock."

Photos show: (1) A DIF soyfoods class. Louise Hagler (center), with Susana Valadez to her right and Yolanda Ramirez Cordoba to Susana's right. (2) Mexican women squeezing out the soymilk at the soy processing demonstration at the Huicol village of Nueva Colonia.

8198. *SoyaScan Notes.* 2003. History of feeding soymilk to infants or children, worldwide (Overview). Aug. 1. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** We know of no evidence or documentation showing that soymilk was fed to infants in Asia or anywhere else before the 20th century. The early research on the subject was done by medical doctors in the United States and published in scientific journals.

In 1909, John Ruhräh, an American pediatrician in Baltimore, Maryland, published the first research on the subject. It showed that infants for whom mother's milk was not available and who could not tolerate dairy milk, accepted and thrived on soymilk or a smooth gruel of dehulled soybeans (See: Ruhräh, John. 1909. "The soy bean in infant feeding; Preliminary report." *Archives of Pediatrics* 26:496-501. July).

Ruhräh followed his initial, preliminary report with two more detailed articles on the subject in 1910 and 1915, each showing that soymilk was a valuable food for infants: *J. of the American Medical Assoc.* 1916. 54(21):1664-65. May 21; *American J. of Medical Sciences* 150(4):502-12. Oct.

The next investigation, in 1916 by Sinclair, a physician in Philadelphia, Pennsylvania, came to the same positive conclusion: Sinclair, John F. 1916 "Recent observations in the use of soy bean in infant feeding." *New York State J. of Medicine* 16(2):83-88. Feb.

The next study was conducted in the Dep. of Pediatrics, Cornell Univ. Medical College, Ithaca, New York. The author observed 53 infants under 16 months of age who suffered from eczema. "Thirty-six of the patients reacted to cow's milk, which was assumed to be the cause of their eczema. Six of these were given a mixture including protein free milk (lactose and mineral salts), washed butter and soy bean protein, "In all cases the eczema improved markedly in twenty-four hours and practically disappeared in three days. This mixture, however, caused diarrhea and vomiting in four of the patients and for this reason further observations were not made" (Schloss, Oscar M. 1920. "Allergy in infants and children." *American J. of Diseases of Children* 19(6):433-54. June).

In 1921 Muggia and Gasca, pediatricians in Italy, did similar research and concluded: "What is most important from our point of view, is that the soy-bean milk, in the cases observed by us, shows itself to be more easily tolerated than the milk of animals, and sometimes more easily than human milk" (Muggia, Alberto; Gasca, Enrico. 1921. *Il latte vegetale di soia nell'alimentazione e nella terapia delle malattie gastro-enteriche dei bambini* [Soymilk for feeding and treating infants with gastro-enteric illnesses]. *Gazzetta degli Ospedali e delle Cliniche* 42(30):356-58. April 14).

8199. Vandemoortele. 2003. [History of Vandemoortele: Centennial (Website printout–part)]. www.vandemoortele.com/nl/honderdjaar/frameset/timebody.html Printed Aug. 5. [Dut]

• ***Summary:*** 1899–Factory in Izegem is established.

1921–"NV Huileries Vandemoortele" is established. 1936–Consumer oils first produced. 1947–Oils in bottles are launched. 1951–Acquisition of the firm Albers uit Lier. 1955–The firm Metro is established. 1957–Oilseed extraction plant is constructed in Merksem. 1958–A margarine factory is established in Oudenbosch (Netherlands).

1962-67. Further introduction of a line of products. 1969–Acquisition of Meyer Lippinghausen (Meylip). 1974–Vamo Mills established. 1978–NV Vamix established. 1978–Acquire the consumer oils and fats activities of Oleofina.

1980–NV Alpro is established. Construction of a soymilk extraction factory at Gent. 1981-1989–Extension of market positioning into France and Germany. 1989–Acquisition of NV Vleminckx. 1990-1991–Expansion into Eastern Europe. 1991–Construct a new factory for baked goods in the UK. 1992–Joint venture with Fuji Oil Co. 1993–Further expansion of margarine into freezers. 1996-1997–Acquisition of Sojinal in Issenheim, France. Further expansion into southern and eastern Europe. 1998–Divestiture of bulk industry. Joint venture with Cargill. Acquisition of the packaged fat activities of Cargill Europe. Expansion of freezer activities. 1999–Alpro builds a new factory in England.

2000–Vandemoortele Dough Products gets a new logo and a new name: Vandemoortele Bakery Products Division. Vandemoortele Bakery Products opens a new factory for frozen goods in Eeklo, Belgium. Acquisition of the Italian baking specialist Star SpA. Acquisition of Alain Sobrie S.A. Vandemoortele becomes a shareholder of *Cuisine de France* (CdF). Group Vandemoortele sells its share of NV Vamo-Fuji to Fuji Oil.

2001–Vandemoortele acquires Alimas in Italy. 2002–Acquisition of Lasem of Spain. Sale of shares in aOP to Cargill. Address: Netherlands.

8200. White Wave, Inc. 2003. Silk: Perfect for lunch boxes and snacks (Ad). *Natural Foods Merchandiser.* Aug.
• ***Summary:*** This 8½ by 11 inch color ad shows 3-packs of organic chocolate and vanilla Silk in shelf-stable packs (new Tetra Prisma cartons). Each flavor is fortified with calcium and vitamins. Address: [Boulder, Colorado].

8201. Song, Sora. 2003. Going soy crazy. *Time.* Sept. 1.
• ***Summary:*** If even half the claims being made on behalf of the soybean are true, "it may be the closest thing on earth to a magic bean." "'I think eating soy foods–tofu, soy milk or miso–in moderation, a couple of times a week, should be fine,'" says Anna Wu, professor of preventive medicine at USC's medical school.

8202. Chapman, Nancy. 2003. Celebrating the Soyfoods Association's 25th anniversary and other recent developments (Interview). *SoyaScan Notes.* Sept. 12 and Dec. 19. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Nancy's organization manages the Soyfoods Association, whose 25th anniversary was celebrated on Sept. 4, 2003, as part of a reception from 6-8 p.m. during the Natural Products Expo East in Washington, DC. About 60-70 people attended. Tina Nelson of Sunrich (formerly with Galaxy Foods) gave a brief talk, followed by Steve Demos and Lester Karplus who shared their recollections of the foundation meeting of the Soycrafters Association of North America (as it was originally named) on 30 June 1978 in Ann Arbor, Michigan. Numerous photographs of and documents from that meeting (provided by the Soyfoods Center Library) were on display. Some people were unable to attend because the National Football League (NFL) had a party on the Mall which created a terrible traffic jam. The reception followed an Executive Committee meeting at which soymilk standards were discussed, specifically the requirement of 7 gm of protein per 100 gm of soymilk.

The Soyfoods Association has a number of allies in Congress in supporting the bill to get soymilk into school lunch programs and making it reimbursable: Senators Check Grassley (R-Iowa), Tom Harkin (D-Iowa), Richard Luger (R-Indiana), Blanche Lincoln (D-Arkansas), Peter Fitzgerald (R-Illinois), and Ben Knighthorse Campbell (R-Colorado). Representatives Michael Castle (R-Delaware), and Robert Andrews (D-NJ).

United Soybean Board (USB) (Steve Poole), American Soybean Assoc. (Jim Hershey and the WISHH program), and seven state soybean boards (Illinois, Indiana, Iowa & Soyfoods Council, Kentucky, Michigan, Nebraska, and Ohio) are now members of SANA. Each state board pays $500 a year as an Allied Member, and many help pay for additional projects. Illinois and Indiana both sponsored (paid all expenses for) speakers for a SANA symposium. They have contributed almost every year for SANA's April Soy Month promotion. USB paid for a big SANA promotion at the Boston Marathon, and they sent out a big crew to do all the publicity. In addition, the South Dakota Soybean Board has sponsored individual projects (such as video new releases).

About 4 years ago the Iowa Soybean Promotion Board (and Linda Funk and her Soyfoods Council, created Sept. 2000 by the Iowa Soybean Promotion Board) tried unsuccessfully to "take over SANA." There was considerable debate, but in the end the SANA board voted *not* to put SANA under new management, in part because their source of funding looked like it would dry up after 3 years. Now the Iowa board, SANA's Iowa members, Linda Funk and her Soyfoods Council, and the Iowa Economic Development Group all work well together as members of SANA.

A new potential conflict is developing as SANA plans to revise the soymilk standards. Some people want to increase the allowed water content, while others want to prohibit the use of soy protein isolates. Address: Founder, N. Chapman Associates, 1723 U. Street, N.W., Washington, DC 20009. Phone: 202-986-5600.

8203. *D-brief* (*e-newsletter*). 2003. Customer clips: Saputo Inc. Sept. 17. p. 3.
• ***Summary:*** "Saputo Inc. plans to close two Canadian Milk Division plants and will sell a third, leaving it with 10 fluid milk processing plants in Canada."

SoyaWorld, a soy beverage company in British Columbia, will purchase Saputo's Annacis Island, B.C., facility in a deal expected to close by Feb. 2004. Saputo presently co-packs SoyaWorld products in that facility.

Note: D-brief is a weekly dairy business e-newsletter produced by DairyField at www.idfa.org.

8204. White Wave. 2003. Now latte drinkers and chai drinkers have something else in common (Ad). *New York Times Magazine.* Sept. 21. p. SM14.
• ***Summary:*** On the top half of this full-page color ad we read: "There's a new soymilk at Starbucks, and it's Silk. Try it in your latte or Tazo Chai." On the bottom half, a hand is reaching for a cup of Starbucks latte with foam on top. To its right on a table are packages of Tazo Chai and Silk Soymilk (Organic, Vanilla). Across the top of the Silk carton is the Starbucks logo and "Exclusively formulated for Starbucks Lattes and Tazo Chai."

8205. Meyer, Lucas. 2003. Recent work with soymilk (Interview). *SoyaScan Notes.* Sept. 22. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** After selling the family company, Lucas Meyer GmbH, Lucas started a company named Biovalor AG in Hamburg. He and his two coworkers have developed (over the past 10 years) a soymilk with better, more bland flavor

than any he has ever tasted. Their process does not use any masking agents. They have changed the "processing parameters" and also added some ingredients. There is a strong demand in Europe for an alternative to Alpro as a soymilk supplier. The powder made from this soymilk is especially good and reconstitutes very well. It can also be used to make a wider range of products than typical soymilk. Since the solids content in the soymilk is nearly twice that of normal soymilk, it can be used to make a hard cheese, or fermented soymilk, or soy quark. His coworkers have a relatively new patent on the process, and he has access to that if he pays a royalty. Address: Biovalor AG, Heilwigstrasse 50, D-20249 Hamburg, Germany. Phone: +49 700 2469 2567.

8206. Welters, Sjon. 2003. Re: Soyfoods in Russia. Letter to William Shurtleff at Soyfoods Center, Sept. 25. 1 p. Typed, with signature.
• ***Summary:*** Sjon found tofu in only one store in Russia, in a supermarket in Moscow, in the dairy case. He encloses the label. "We ate it. It tasted rather salty, and was like an extra-firm calcium chloride tofu, I would say. Not bad... The only other soyfoods (not counting Maggi by Nestle) we saw were an Alpro (who else!) soymilk carton in the dairy section of a Moscow supermarket. This particular aseptic one-liter pack was made in Austria. The price was about 60 rubles (30 rubles = $1). The other soyfood was Kikkoman soy sauce, a sweetened and an unsweetened variety, in small 12 fl. oz bottles. The price was 90 rubles each. That we saw on the way to Samara."

In Russia, the situation concerning soy is "definitely at ground level. Soy is getting bad press in Russia, according to my hostess, as being bad for you. Specifics they could not give me, but it came up whenever they were promoting soy. Genetically engineered soybeans are not liked. That is a plus in my opinion."

Sjon encloses a number of articles and the title pages of several books related to soy; he found them in the ACDI/VOCA office in Moscow.

8207. *ASA Today* (*St. Louis, Missouri*). 2003. Americans buy more soy. 9(10):3. Sept.
• ***Summary:*** "According to the latest in a series of studies on the soyfoods category, retail sales of soyfoods grew by 12.8% overall in 2002, to reach an estimated $3,650 million.

"According to a Soyatech study, this is the seventh year in a row that the category has grown by more than 10% overall. Growth was driven by storing increases in sales of energy bars, meat alternatives, soymilk beverages and cold cereals with soy. Energy bars with soy protein grew at over 30% and accounted for nearly 25% of the total dollar gain for the category. Sales of soy-based products were growing more quickly in mainstream food channels than in natural product stores, according to 'Soyfoods: The U.S. Market 2003.'

"'The trend towards mainstream growth has been consistent over the past five years,' says report author Peter Golbitz, Soyatech Publisher. 'Not only are sales increasing more quickly in the mainstream channel, but mainstream shoppers now buy nearly half of all soyfood products in the U.S. It's not just a new age food anymore.'"

8208. *Bluebook Update* (*Bar Harbor, Maine*). 2003. U.S. soyfoods sales hit $3.65 billion, says new study. 10(3):1, 4. July/Sept.
• ***Summary:*** In 2002, retail sales of soyfoods grew by 12.8%. The main contributors to growth were energy bars containing soy protein (accounting for nearly 25% of the total dollar gain), meat alternatives, soymilk beverages, and cold cereals that contain soy.

8209. **Product Name:** Kikkoman Pearl Organic Soymilk (In Aseptic Quart Cartons) [Original, Creamy Vanilla, Green Tea], or Pearl Soymilk (Made with Organic Soybeans) [Tropical Delight with 7 Juices].
Manufacturer's Name: Kikkoman International, Inc. (Importer-Distributor). Made in Japan.
Manufacturer's Address: 50 California St., Suite 3600, San Francisco, CA 94111. Phone: 415-956-7750.
Date of Introduction: 2003. September.
Ingredients: Filtered water, whole organic soybeans, organic evaporated cane juice, organic green tea powder, tricalcium phosphate, organic natural flavors (lemon and vanilla), sea salt, carrageenan, vitamin A palmitate, vitamin D2. Certified organic by QAI.
Wt/Vol., Packaging, Price: 32 fl oz (1 quart) Tetra Brik Aseptic Carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Ad in *Vegetarian Times.* 2003. Sept. p. 11. Also: During late 2003 and early 2004 this product is advertised by Kikkoman on Japanese language TV is the USA; an Asian-American young person is showing drinking it.

Product with Label sent by Martine Liguori. 2007. Feb. Purchased at Grocery Outlet in Oakland, California. Paid $0.59 for 1 quart of Green Tea. Regular retail price is $2.29 to $3.29/quart.

8210. Kikkoman. 2003. Soymilk for the purist (Ad). *Vegetarian Times.* Sept. p. 11.
• ***Summary:*** Shows five varieties of "Kikkoman Pearl" organic soymilk in 1 quart Aseptic cartons against a pearl-colored background. In the foreground is a glass of soymilk. The organic flavors are Original, Creamy Vanilla, and Green Tea. The Tropical Delight (With 7 Juices) is made with organic soybeans.

8211. *The Non-GMO Source* (*Fairfield, Iowa*). 2003.

Monsanto, FDA cracking down on hormone-free milk claims. 3(9):1. Sept.
• ***Summary:*** Concerns Monsanto's recombinant bovine growth hormone (rBGH or rBST) and Oakhurst Dairy in Portland, Maine.

8212. United Soybean Board. 2003. National report 2003-2004: Consumer attitudes about nutrition–Insights into nutrition, health & soyfoods. Seattle, Washington. 6 p. Sept. 22 x 21 cm.
• ***Summary:*** This tenth annual nationwide survey, commissioned by USB, was conducted in early 2003 by an independent research firm in Seattle, Washington. Random telephone interviews were completed with 1,000 consumers. The study's margin of error is ±3.1 percent and has a confidence level of 95%.

Contents: Introduction and methodology. Consumer nutritional habits and concerns. Healthy food decisions. Consumer knowledge of cooking oils. Consumer attitudes about fats. Awareness, usage, and trial of soy products. Soyfoods and health: Perceived healthfulness of soy products (74% healthy, 21% neutral, 5% unhealthy), awareness of health benefits of soy (heart health 29%, menopause relief 19%, prevent obesity / promote weight loss 14%, cancer prevention 10%, good protein source 5%, reduced risk of osteoporosis 3%, prevent arthritis 2%, other 14%). Consumer perceptions of biotech [genetically engineered] food. Consumer awareness and usage organic products (45% of consumers regularly purchase organic food products. Unaided basis, 47% know that organic foods can't contain genetically modified ingredients and 60% know that organics must be grown without pesticides and herbicides).

Percentage of American consumers who have tried various soy products in 2001, 2002, and 2003: Tofu 45%, 48%, 48%. Soy [veggie] burgers 40%, 43%, 44%. Soymilk 28%, 35%, 39%. Soy nuts 20%, 26%, 26%. Soy protein bars 18%, 20%, 22%.

Awareness of soyfoods: "Overall consumer awareness of soy products increased significantly this year. Soymilk achieved an 89% awareness rating. One in six [16.7%] Americans consume soyfoods or soy beverages once a week or more. Among those who do not, 47% report that nothing in particular prevents them from including soy in their diet."

Genetically modified foods: Consumer awareness dropped to 60%, an 8% decrease from 2002. Awareness is higher among men (66%) than women (57%). Those aged 35-54 had the highest awareness (66%) compared to those 18-34% (57%), and those 55 and older (57%). Negative attitude: 20%, down from 24% last year. Positive attitude: 13%. But 67% feel neutral or don't known enough about biotech foods to form positive or negative feelings. 23% of consumers are willing to pay a premium for foods without biotech ingredients, down sharply from 32% last year.

Note: As of Aug. 2008 this full survey is available gratis in PDF format at www.soyconnection.com /health_nutrition / pdf/.

8213. Welters, Sjon. 2003. Final report for Project RUS 211: Malakhova Sole Proprietorship (MSP), a soyfoods manufacturer in Russia. Cabot: Vermont. 8 p. 28 cm.
• ***Summary:*** Sjon served as a consultant to this small company from 10-16 Sept. 2003 for ACDI/VOCA and Winrock International. He submitted this report to Winrock International Inst. for Agricultural Development. (Morrilton, Arkansas 72110-9370). Contents: 1. Scope of work. 2. About Malakhova sole proprietorship. 3. Project approach. 4. Activities completed. 5. Recommendations to MSP. 6. General observations on business, marketing, processing and product improvement, and new products. 7. Notes for ACDI/VOCA and recommended follow-up survey.

Irina Malakhova and a friend started this company in Sept. 2001 in Chapayevsk, Samara Region, Russia. The company presently makes soymilk using a Russian-made SoyaCow capable of producing up to 20 liters/hour.

8214. Bjerklie, David. 2003. What you need to know about... fruits & vegetables. *Time* (*Asia*). Oct. 20.
• ***Summary:*** Fruits and vegetables are so good for you they could save your life. "Don't like tofu? Soybeans–roasted–make a good snack. Or try cooking green soybeans (edamame) like lima beans. Soy milk makes a delicious milk shake."

8215. **Product Name:** SoyMoon (Gourmet Soy Cheese, sold in Chunks or Shreds) [Soy Gouda, Soy Provolone–Smokehouse Style, Soy Mozzarella with Italian Herbs, Soy Mozzarella, Queso Blanco–Mexican Picante Style].
Manufacturer's Name: Blue Moon Brands.
Manufacturer's Address: P.O. Box 1220, Monroe, New York 10950. Phone: 845-782-0178.
Date of Introduction: 2003. October.
Ingredients: Soy Gouda: Soy beverage (water, organic soy protein), organic expeller-pressed soy oil, casein, natural flavors, organic corn starch, sea salt, sodium phosphates, lactic acid, sodium citrate, annatto (for color).
Wt/Vol., Packaging, Price: 8 oz.
How Stored: Refrigerated.
New Product–Documentation: Leaflet (8½ by 11 inch, color) sent by Patricia Smith from Natural Products Expo East. 2003. Oct. "Introducing SoyMoon, real gourmet soy cheese." "Naturally cholesterol and lactose free. The only one that deserves to be called Gourmet!" In the lower right: "Makers & Purveyors of SoyMoon and WholeMoon." The latter is "Fine Organic Dutch Cheese"–a dairy product. Attached to the leaflet is the business card of Dean Soicher Vice President.

On the rear are the ingredients and nutrition facts for each of the five soy cheeses. No information is given about

the weight of each package.

Spot in Vegetarian Times. 2005. Feb. "Edible Nirvana." p. 5. "Our taster couldn't believe it when she tried this cheese–its a soy cheese that tastes gourmet and melts well. Her hands-down favorite: soy gouda from SoyMoon, $4/8 oz. 877.282.5400; www.bluemoonbrands.com."

8216. Klein, Barbara P.; Cadwallader, Keith R.; Chen, Dejun; Khanna, Pradeep; Sullivan, Cheryl L.; Weingartner, Karl E. 2003. Baking with soy in the American kitchen. Champaign-Urbana, Illinois: Illinois Center for Soy Foods. 63 p. Illust. No index. 24 cm. Series: Soy in the American Kitchen.
• ***Summary:*** Contents: Illinois Center for Soy Foods. Bringing soy foods to the American table. Why eat soy? Baking with soy. Soy flour. Soy protein isolate. Soymilk. Tofu. Textured vegetable protein. Soy nuts. Soy analogs (soy sour cream, soy cream cheese). Nutrient information,

Recipes (42 recipes). Every right-hand page contains an elegant full-page color photo of the recipe to its left. All of the recipes are meatless.

On page 5 we read: "Soy analogs: Soy products that have been made to look and taste like meat or dairy products are known as soy analogs."

Note: This is the earliest English-language publication seen (Dec. 2007) that uses the term "soy analogs" to refer to both meat analogs and dairy analogs. Yet this term is almost never used! The typical terms were "meat analogs" and "dairy analogs"–terms that are probably best avoided in the state of Illinois. Address: 1. PhD, editor, Director, Illinois Center for Soy Foods, 170 National Soybean Research Center, 1101 Peabody Dr., Univ. of Illinois, Urbana, IL 61801. Phone: (212) 244-1706 or www.soyfoodsillinois.uiuc.edu.

8217. Jalsevac, Philip. 2003. So far soy good for brothers: Cambridge food-processing venture follows family tradition. *Record* (*The*) (*Kitchener, Ontario, Canada*). Nov. 5. p. F1-F2.
• ***Summary:*** The company extracts soymilk (from soybeans grown in southwestern Ontario), which they make into natural, soy-based products named Yoso Spreadables which are similar to cream cheese spreads. They come in five flavors: plain, jalapeno, garlic and onion, key lime, and sun-dried tomato and basil, and are sold by retailers in 230 gm containers for between $3.99 to $4.99.

After about two years of developing the products and working on a business plan, in Dec. 2001 the Lo brothers leased a 9,000 square foot building in Cambridge, Ontario at 1070 Fountain St. North.

Most of the next year was spent doing renovations and leasehold improvements, installing the many pieces of stainless steel equipment, and conducting production trials.

Last November the Yoso Spreadables product line was launched. It is presently carried by about 150 retailers, mostly in southwestern Ontario.

"The company has six full-time and four part-time employees." Sales are now about $15,000 to $20,000 a month.

A large color photo shows brothers Erik (age 32, the CEO and food scientist) and Francis Lo (age 29, in charge of sales and marketing).

8218. Myre, Greg. 2003. With a common thread, Israelis unravel infants' illness: Petah Tikva journal. *New York Times.* Nov. 17. p. A4. International section.
• ***Summary:*** Many sick babies, some near death, began to arrive at Israeli hospitals in early November with nearly identical symptoms: persistent vomiting, eyes that could not focus, spasms, and listlessness. Researchers quickly found the connecting thread. All the children had been fed Remedia Super Soya 1, a soy-based, kosher, nondairy infant formula made by the German company Humana Milchunion, and distributed by an Israeli company. Some 5,000 babies in Israel drank the formula. At least two children have died. It was soon found that the formula lacked vitamin B1.

A brief note by Victor Homola in the next day's issue of the *New York Times* (p. A13) states that the Humana Milchunion in Germany dismissed four senior executives in its development, chemical laboratory, and quality control departments.

8219. *SoyaScan Notes.* 2003. What is titanium dioxide and how is it used with soy products? (Overview). Nov. 26. Compiled by William Shurtleff.
• ***Summary:*** According to the *Encyclopedia Britannica* (2002), titanium is a chemical element–a lightweight, high-strength, low-corrosion, structural metal. Titanium dioxide, a nontoxic, pure white powder, is extensively used as a pigment in paints, enamels, and lacquers.

The SoyaScan database presently contains 20 records that mention "titanium dioxide." From 1936 to 1961 (3 records) it is used as a pigment to whiten paints. In 1953 The Glidden Company, in a joint venture, started a large plant in Japan to manufacture titanium dioxide. From 1965 to 1981 (4 records) it is used as a tracer or tag, mixed with isolated soy proteins (ISP) or textured soy protein products, so that their presence could be detected when used in meat products. One label read: "0.1% titanium incorporated as food grade titanium dioxide in accordance with USDA regulations." In 1984, during the Reagan administration, the USDA eliminated the requirement that titanium dioxide be added to soy protein products as a tracer.

In 1993 it was used as a whitener in Mocha Mix Fat Free Non-Dairy Creamer (made by Presto Food Products). In 1997 it was used as a whitener in Rice Moo (Non Dairy Beverage Mix) (Original and Vanilla flavors, made by Sovex Foods). Also in 1997 it was used as a whitener in SoySoft Deep Treatment Penetrating Cream (made by SoySoft, Inc.)

In 1988 its use as a whitening pigment for paper coatings was discussed. According to Ted Nordquist (Dec. 2003), he saw it on the label of 8th Continent Soymilk (Vanilla and Original flavors, made by General Mills) in which it was presumably used as a whitener when the product was first launched in about 2001, however (Dec. 2003) it presently no longer appears on the label.

8220. Brown, Reg. 2003. Back to the beginnings: 3. *Record* (*SDA, Victoria, Australia*) 108(47):8-9. Nov. 29.
• ***Summary:*** "This article continues a series on the history of the Adventist Church in the South Pacific." In 1897, Edward Halsey, one of Dr. John Harvey Kellogg's bakers at the Battle Creek Sanitarium, Michigan, arrived in Melbourne, Australia, and began manufacturing Granola, caramel cereal (a coffee substitute), and peanut butter. "The Sanitarium Health Food Company was registered as a business on April 27, 1898." On the advice of Ellen G. White, the health food factory was moved to Cooranbong, NSW, to be near the newly established school at Avondale.

Sanitarium Foods is the soymilk market leader in Australia. Its flagship product, So Good, enjoys almost 50% of the market share, and is also the leading brand in New Zealand, the UK, and Canada. So Good was developed at Sanitarium's laboratory at Cooranbong. "In 2002 Sanitarium purchased a Canadian company, SoyaWorld, which gives it 60 per cent of the Canadian [soymilk] market." Address: Australia.

8221. Aguilar, John. 2003. Dairies churn as Monsanto goes on offensive. *Natural Foods Merchandiser.* Nov. p. 1.
• ***Summary:*** In September four U.S. dairies received letters from the FDA that use of the terms "no hormones" or "hormone-free" on their packages is false because all milk products contain naturally occurring hormones and that milk cannot be processed in a way to remove all the hormones it contains. Two of the dairies acknowledged the inaccuracy of their labels and have agreed to comply–but changing the wording could cost more than $20,000 each. Most of the dairies interviewed for this story believe agricultural giant Monsanto is a primary reason for the FDA action. Monsanto makes Posilac bovine somatatrophin, its brand name for recombinant bovine growth hormone (rbST), which causes cows to produce more milk.

8222. Bloch, Benjamin. 2003. All the trimmings. *Los Angeles Confidential.* Nov. p. 254-56.
• ***Summary:*** About Chef Akasha and Chef Beth Ginsberg–color photos show each (with Akasha wearing a White Wave "Silk" cap). Akasha is the national spokesperson for White Wave's Silk soymilk. Her favorite experiences include: Traveling the world as Michael Jackson's private chef, catering Pierce Brosnan's 50th birthday party–a luau on Malibu beach, and cooking for Billy Bob Thornton and Barbara Streisand. She likes to shop for organic produce at Santa Monica Farmers Market, Hollywood Farmers Market, and Whole Foods–which has a remarkable selection of organic artisan cheeses. She is typically booked 4-6 weeks in advance. For details: Chefakasha.com.

Beth has written two cookbooks: *The Taste for Living* and *The Taste for Living World Cookbook.* In 1990 she was a chef in a restaurant on Fairfax named "442." The health food cuisine included many tofu dishes. They developed a big celebrity clientele. Now she works for Michael Milken and does all of his events, plus those of some business professionals. Funny stories: She had to cook tofu products for the ABC staff for Barbara Walters *20/20* special. They weren't told what it was. Some said they tasted great, others said they were terrible.

8223. Hain Celestial Group, Inc. (The). 2003. Annual report 2003: 10 years of changing the way the world eats. Melville, New York. 32 p. Nov. 28 cm.
• ***Summary:*** A nice chronology at the front of the report marks the company's 10th anniversary. At the top of each year is the logo of each brand acquired that year.

"1993. Irwin Simon forms 21 Century Foods with the Farm Foods brand. We acquire Kineret Foods, a specialty kosher brand. Our name becomes Kineret Acquisition Corp. and we sell 1 million shares and warrants in an initial public offering at $3.25 per unit. We are listed on NASDAQ under the ticker symbol NOSH. The FDA issues its Nutrition Labeling and Education Act (NLEA), regulations establishing general requirements for health claims and food labeling.

"1994. We acquire the Hain Pure Food Co. and Hollywood cooking oils from PET Inc. We change our name to The Hain Food Group, Inc. Our ticker symbol is changed to HAIN. Sales in our first full year are $14 million."

"1995. We acquire the Estee sugar-free brand and the Featherweight low-sodium brand. We establish our medically directed business. Our sales reach $58 million.

"1996. We enter the snacks business with the acquisition of Harry's Premium Snacks. We acquire a license to the Weight Watchers line of dry grocery products. Our sales reach $69 million.

"1997. We acquire publicly held Westbrae Natural and enter the nondairy business with the Westsoy brand, the leading soy milk in the aseptic shelf-stable category. We expand our grocery business with Westbrae Natural, the #1 brand of shelf-stable vegetables and beans. We expand our snacks business with the Bearitos and Little Bear brands.

"1998. We open the year with the acquisition of four leading brands. (1) Terra, the #1 specialty all-natural snack food brand with its Terra Original Exotic Vegetable Chips. (2) Garden of Eatin', a leading maker of organic tortilla chips. (3) Arrowhead Mills, the pioneer and leader in organic baking mixes and grains. (4) DeBoles, a premium pasta

company known for its organic and Jerusalem artichoke pastas. Later in the year we acquire Nile Spice, a leading meal cup and dry soup brand. We issue 2.5 million additional shares of our stock to the public in a secondary offering. Our sales reach $174 million.

"1999. We acquire the Natural Nutrition Group, bringing us: (1) Health Valley, the #1 brand in natural soups and snack bars, and a strong player in the natural cereals and cookie categories. (2) Breadshop, maker of natural, ready-to-eat granola cereals. (3) Casbah, providing versatile and great-tasting vegetarian prepared mixes and side dishes. The FDA authorizes the health claim that soy-based foods help to lower cholesterol. Our sales reach $270 million."

Hain acquired Earth's Best and Celestial Seasonings in 2000, Yves Veggie Cuisine in 2001, Lima and Biomarché (both in Europe) in 2002, and Imagine Foods (with its premium Rice Dream and Soy Dream brands), Grains Noirs, and Walnut Acres Certified Organic brand in 2003.

Net sales for the year ended 30 June 2003 were $466.459 million, up 18% from $395.954 million in 2002. Net income in 2003 was $27.492 million, way up from $2.971 million in 2002. Many new products containing soy in the product name are pictured and described incl. Imagine Organic Broth [California Miso or Soy Ginger], Westsoy Soy Slender. Lima Soya Drink.

At the top of this chronology (p. 1) is a list of "10 relevant FDA authorized health claims" from 1993 to 2000. For example: "(1) Calcium reduces osteoporosis risk (1993). (2) Sodium increases high blood pressure risk (1993). (3) Dietary saturated fat and cholesterol increase coronary heart disease and cancer risk (1993). Soluble fiber (fruits, vegetables, whole grains, psyllium seed husk) reduces coronary heart disease risk (1993)..."

Page 2: The Hain-Celestial Group is "one of the largest specialty food companies in the United States." "We now market almost 1,700 products under 28 different brand names." This report contains many fine color photos.

Accompanying the annual report is a "Notice of Annual Meeting of Stockholders and Proxy Statement" (33 p.). Irwin Simon, the founder and CEO, age 45, had the following annual compensation: Salary: $643,077. Bonus: More than $175,000. Other compensation: $16,000. Stock options: 600,000 shares. Note: The value of the company's stock has decreased for the last 3 years in a row. Address: 58 South Service Road, Melville, New York 11747. Phone: 516-237-6200.

8224. Holzapfel, Cynthia; Holzapfel, Laurel. 2003. Coconut oil: for health and beauty. Summertown, Tennessee: Healthy Living Publications, a division of Book Publishing Company. 128 p. Illust. Index. 23 cm. [13 + 28 endnotes]
• ***Summary:*** Contents: 1. The chemistry of fats. 2. The role of fats in the body. 3. Nutritive benefits of coconut oil. 4. Antimicrobial benefits of coconut oil. 5. Beauty tips using coconut oil. 6. Facts and practical tips. 7. Recipes using coconut oil. Glossary. Sources for edible coconut oil, organic dried coconut, and graters for fresh coconut.

The chapter on the chemistry of fats is very well researched and written; it makes a complex subject easy to understand. The book makes a convincing case that coconut oil and coconut milk are as good for one's health as they are delicious. Address: The Book Publishing Co., P.O. Box 99, 156 Drakes Lane, Summertown, Tennessee 38483. Phone: 615-964-3571.

8225. Jenkins, D.J.; Kendall, C.W.; et al. 2003. The effects of combining plant sterols, soy protein, viscous fibers, and almonds in treating hypercholesterolemia. *Metabolism* 52(11):1478-83. Nov. *
• ***Summary:*** Jenkins' team has found new ways of achieving dramatic cholesterol-lowering effects through diet. In this study, 25 healthy hyperlipidemic individuals were put on a dietary plan (Portfolio eating plan) which included 30 gm of almonds, 2 gm of plant sterols (from enriched margarine), 15 gm of viscous fibre (from foods such as oats, barley, eggplant, or okra), and 35 gm of soy protein (from foods such as tofu, soymilk, or soy meat alternatives). The diet reduced their LDL cholesterol by 35% in two weeks. Address: Univ. of Toronto, Canada.

8226. Elliott, Stuart. 2003. Advertising: A soymilk maker hopes a creator of the 'Got Milk?' campaign can do for soy what he did for dairy. *New York Times.* Dec. 5. p. C5.
• ***Summary:*** The White Wave division of Dean Foods Co., maker of Silk organic soymilk, is expected to announce today that it has chosen Berlin Cameron, part of the Red Cell division of the WPP Group, as its new creative agency.

Jon Steel, who (in September) joined Berlin Cameron / Red Cell in New York, developed the "Got milk?" campaign, launched in 1993 for the California Milk Processor Board, when he was senior executive at Goodby, Silverstein & Partners in San Francisco. Steel's experience was a big reason White Wave chose Berlin Cameron and a rigorous 2-month review.

White Wave had been spending about $15 million a year on ad campaigns for Silk from its previous agency, Arnold Worldwide in Boston, Massachusetts. But in 2004 that number is expected to at least double as TV ads are added to the media mix–now made up mainly of print and outdoor advertising.

The "Got milk?" theme was so popular that it was eventually adopted by the national dairy industry, which licenses the rights from the Californians and uses it together with the long-running "milk mustache" campaign.

White Wave hopes to target a broader, mainstream audience for Silk by playing down the premise of its present campaign is "overcoming the hurdle of taste," in favor of talking about Silk's benefits as a better alternative to milk.

Whereas the former campaign is apologetic, things have changed and the new one will convey a more confident attitude.

Silk is the dominant brand in refrigerated soymilk; its competitors are 8th Continent, Sun Soy, and Vitasoy. Its market share is 79% in supermarkets (IRI data) and 85% in natural-food stores (Spence data). And Silk sales are booming, with estimated revenues of $277 million in 2003, up 51.4% from $183 million last year.

8227. Jacobi, Dana. 2003. Serving soyfoods on Capitol Hill (Interview). *SoyaScan Notes.* Dec. 20. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Each year the American Soybean Assoc. (ASA) has a board meeting in Washington, DC. At that time they have an event for Congress. This year ASA decided to "host its first Soyfoods Luncheon," which they announced in a 2-page news release. Representative Jo Ann Emerson (R-MO) served as the Congressional host of the event. White Wave, Solae, Soyatech, and SANA sponsored the event but it (incl. Dana and her food) was paid for by ASA.

Apparently Nancy Chapman of the Soyfoods Association told ASA that Dana was a professional chef with expertise in soyfoods. So Dana got a call from Anna Pavolva of ASA inviting her take responsibility for catering this event. Dana ended up hiring a local caterer, because she lives in New York City and could not make all the preparations at such a long distance. Dana supplied the recipes and supervised the food preparation.

The event took place at lunchtime on Tuesday, 1 April 2003 at the Rayburn Building in Washington, DC. Dana was told to prepare for 200 people, but about 250-350 showed up–most of them staffers, but there were a few members of Congress. The room (29 by 52 feet, or 1,508 square feet) was packed, with standing room only. Food was served on four draped tables, buffet style like a real catered party, with real China plates (no paper plates), and spoons and forks. The attendees ate *all* the food. Dana's meatless recipes (the majority of which came out of her latest cookbook), all on one long table were: Sweet & sour meatballs. Beans and franks (Using Bratos for the franks). Macaroni salad (using ADM's Soy-7 macaroni). Honey mustard with tofu (served 3 kinds of donated soyburgers from Boca and Morningstar Farms). Chocolate velvet mousse. Edamamé. Finger sandwiches with soynut butter and jelly.

ASA hired a chef (Tod Schiller) from one of Washington, DC's premier restaurants, Kinkead's, and he conducted a cooking demonstration at the luncheon; at a second table he served a very elegant soyfoods recipe that included edamamé.

White Wave / Dean Foods had a 3rd table at which they served Silk Cappuccino soymilk out of a cooling machine. On a 4th table at the end of the room was Solae 8th Continent soymilk and Luna Bars (cut into pieces for finger foods). ASA and United Soybean Board had a 5th long table on which was information (leaflet, pamphlets) and exhibits about soybeans and soyfoods.

Dana mingled anonymously and talked with many of the staffers. "They were astounded by all the good food. This sort of event helps greatly to dispel the negative image that soy still has in terms of how it tastes and looks." Dana notes: "My interest in not in preaching to the converted, it is in introducing soyfoods to the rest of the people." Address: New York City.

8228. FBX. 2003. Soyfoods Summit: February 18-20, 2004. Hyatt Regency La Jolla, San Diego, California. www.foodbevx.com (Brochure). Little Falls, New Jersey: IQPC. 12 p. 28 cm.

• ***Summary:*** This brochure begins: "The Food & Beverage Exchange is proud to present its 7th Annual Soyfoods Summit." In association with Soyatech. Media partners: Nutrition Business Journal, The Soy Daily, Nutraceuticals World. The conference, which is being organized by The Food & Beverage Xchange, a division of IQPC (London, England), will have two separate tracks of presentations: (A) Technology & applications, and (A) Health benefits of soy. Summit chairs: Peter Golbitz, president, Soyatech, is chair of track A. Geri Berdak, Director, Public Affairs, The Solae Company, is chair of track B.

The facts: (1) "The US Soyfoods market has grown at an average annual rate of 14% per year for the past ten years and hit $3.65 billion in 2002." (2) "Per capita soy consumption will rise by 50% in the next 5 years." The main speakers, with their organization, track, an outline of their talk, and a small photo are given. Track A: Dr. Jonathan F. Gordon, Firmenich Inc. Hiraoki Iwamoto, Tendre Corp., Japan (frozen tofu). Phil Fass, ADM. Dr. Michael Shemer, Tivall Corp., Israel. Motohiko Hirotsuka, Fuji Oil Co Ltd, Japan. Brad Strohm, Wenger Manufacturing Inc. Mian Riaz, Texas A&M University. KeShun Liu, Univ. of Missouri at Columbia. Victor Braverman, Braverman & Associates, Mexico. Jorge Arturo Canas Diaz, Central Heledra Diaz, Costa Rica.

Track B: Milagros Virginia C. Lim, Nestle Philippines Inc, Philippines. Mark Messina, Nutrition Matters Inc. John L. Williams PhD, Univ. of South Dakota. Prof. Fujian Yang Zhenhua 851 Bio-Science Co Ltd, China. Omer Kucuk M.D., FACN, Wayne State Univ., Karmanos Cancer Inst. Helen Kim PhD, Univ. of Alabama at Birmingham. Prof. Mindy S. Kurzer, Univ. of Minnesota. Dr. Ari Babaknia, DrSoy. Wendy Barrett, Eat Smart. Deborah Miller, The Solae Group.

Day 1–General session at end of day: John A. Schillinger, PhD, Heartland Fields, LLC. Peter Hannam, First Line Seeds.

Day 2–General session running all day: Paul Lang, Natural Products Inc. Seth Tibbott, Turtle Island Foods. Tom Woodward, Tetra Pak, Singapore. Ted Nordquist, WholeSoy

Co. Hsien-Hsin Chang, Lightlife Foods. Gerard Klen Essink, Prosoy Research & Strategy, The Netherlands. Frank Daller, Soyadairy, Canada. Daniel Burke, Pacific Soybean & Grain. Garnet Pigden, The Solae Company. Gerry Amantea, Hain Celestial Group Inc. Johanna McCoy, Soy Happy. Kim C. Kristoff, Gemtek.

Post-conference interactive workshops: Tim Redmond, formerly with American Soy Products. Patricia Godfrey & Danielle Karleskind, Cargill Soy Protein Solutions. Peter Golbitz, Soyatech.

For those who register and pay in full by Dec. 5, the Gold Package of conference plus three workshops the price is $2,999. By Dec. 31 it rises to $3,099. By Jan. 9 it rises to $3,199. After Jan. 9 the full price is $3,299. This does not include lodging and food. The price is $1,299 for those who register by Aug. 1, but $1,599 after Sept. 15.

Note: Talk with two people who will speak at this conference. They are paid no honorarium for speaking, and they must pay their own transportation both ways and all room and board expenses while at the conference. Why do they go? Both say this gives them an opportunity to attend the conference free of charge, to have a nice vacation in a warm and beautiful part of California, and to meet now people and promote their ideas and (informally) their products.

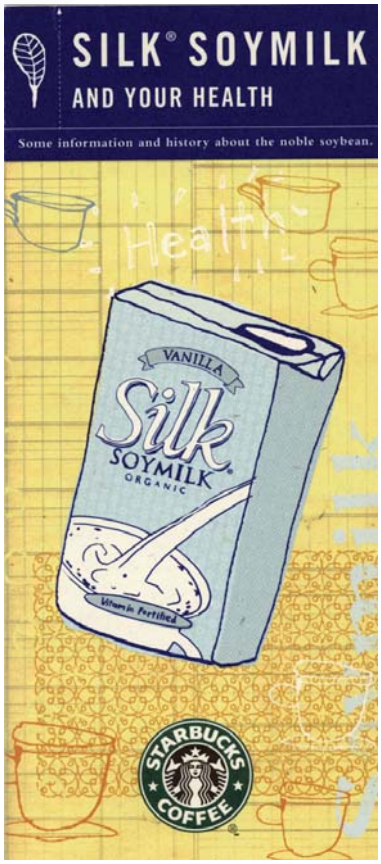
8229. **Product Name:** Soyatoo Soy Whip: Whippable Soy Topping (in aseptic carton).
Manufacturer's Name: Ceres Organics, St. Paul, Minnesota (Importer / Marketer). Made in Germany by Tofutown.com.
Manufacturer's Address: St. Paul, Minnesota 55108. Phone: www.ceresorganic.com.
Date of Introduction: 2003.
Ingredients: Organic soymilk (water, organic soybeans), coconut oil, organic sugar-beet syrup, organic maltodextrin (from corn or rice), fractionated palm oil, Contains less that 2% of: natural vanilla extract, tartaric acid, carrageenan, sea salt, fractionated palm kernel oil.
Wt/Vol., Packaging, Price: 10.14 fl oz (300 ml).
How Stored: Refrigerate after opening.
New Product–Documentation: Ceres Sales sheet and business card sent by Jon Kessler, Sales and Marketing Director, Tofutown North America. 2012. July 30. The sales sheet shows the front panel: "Vegan. Dairy-free. No cholesterol. Best soy on planet earth."

Letter (e-mail) from Jon Kessler. 2012. Aug. 10. Gives the date each product was first sold commercially. The labels were changed to the present more American and less European labels in April 2012.

8230. **Product Name:** WestSoy Lite: Soymilk Drink [Plain].
Manufacturer's Name: Hain Celestial Group, Inc. (Product Developer-Distributor).
Manufacturer's Address: Melville, New York 11747.
Date of Introduction: 2003.
Ingredients: Filtered water, organic soymilk (filtered water, whole organic soybeans), organic brown rice syrup, organic dehydrated cane juice, tricalcium phosphate, sea salt, carrageenan, vitamin A palmitate, vitamin D2, riboflavin (vitamin B2).
Wt/Vol., Packaging, Price: 64 fluid oz (1.89 liter) Tetra Brik Aseptic carton. Retails for $1.89 (2006/06, Oakland, California).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Product with Label (Plain) purchased by Martine Liguori at Grocery Outlet in Oakland, California. 2006. June. Dark blue, white, yellow, red and black on bluish green. Front panel: "70% less fat than unfortified brands. Excellent source of calcium, vitamin D and riboflavin... 18 mg isoflavones per serving. Lactose & dairy free." Martine's taste test: Tastes like sugared water; not good.

8231. Inram, N. 2003. Soya handbook. Singapore: Tetra Pak. *

8232. Starbucks Coffee Co. 2003. Silk soymilk and your health: Some information and history about the noble soybean (Leaflet). Seattle, Washington. 3 panels each side. Each panel: 22 x 9.5 cm.



• ***Summary:*** On the front panel is an illustration of a blue and white carton of Silk soymilk. Contents: Soy and nutrition. Soy and health (FDA heart-health claim, isoflavones, lactose-free). A brief history of the noble soybean (full of misinformation). Silk is now the soymilk of choice at Starbucks (especially popular in Starbucks Espresso or Tazo Chai). Go online for more about Silk soymilk (for more about the health benefits of soy, or for recipes using Silk–just point and click your way to www.SilkisSoy.com or starbucks.com/silksoy). Address: 2401 Utah Ave. South, Seattle, Washington 98124.

8233. **Product Name:** ShopRite Organic Soy Milk [Vanilla].
Manufacturer's Name: Wakefern Food Group (Distributor).
Manufacturer's Address: Elizabeth, New Jersey 07207.
Date of Introduction: 2003.
Ingredients: Filtered water, whole organic soybeans, evaporated organic cane juice, natural flavors, calcium carbonate, sodium citrate, potassium citrate, sea salt, vanilla extract, carrageenan, vitamin A palmitate, vitamin D-2, vitamin E, vitamin B2, vitamin B12, zinc sulfate.
Wt/Vol., Packaging, Price: 1 quart plastic bottle.
How Stored: Refrigerated.
New Product–Documentation: Product with Label purchased by Martine Liguori in Oakland, California. 2006. June. Plastic bottle shaped like a bowling pin. 9.5 inches tall. Front panel: Purple, red, black yellow and white on light blue. "Certified organic by Quality Assurance International (QAI). Delivers all the nutrition of milk and more! Lactose free. Gluten free. No cholesterol. Good source of potassium."

8234. Ellen, Peter T. 2003. Sander Christensen: Entrepreneurial spirit, community building, and the rice industry in California's northern Sacramento Valley. Chico, California: Assoc. of the Northern California Records and Research. 72 p. *
• ***Summary:*** Three libraries own this book, but it does not circulate at any. CU-A, CU-BANC, Cal State Chico. Address: PhD.

8235. Harper, Judson E. 2003. World Book Encyclopedia: Soybean. Chicago, Illinois: World Book, Inc. A Scott Fetzer Co. 22 volumes. See Vol. 18, p. 689-93.
• ***Summary:*** Contents: Introduction. The soybean plant. How soybeans are used: Soy meal (incl. livestock feed, soy flour, soy grits, soy protein concentrate, isolated soy protein, textured vegetable protein {TVP}, extruded soy protein, spun soy protein, products that resemble meat, soy derivatives {food flavorings, soy milk, soy sauce, fertilizer, fire extinguisher fluid, insect sprays, paint}), soy oil. How soybeans are grown: Soybean farming in the USA, diseases and pests. How soybeans are processed. History. Scientific classification.

Crude soybean oil is made into three basic products: (1) technical refined oil used for industrial purposes, (2) edible refined oil, made by deodorizing technical refined oil, and (3) lecithin.

History: "Soybeans are one of the oldest crops raised by human beings. Historians believe the plant first grew in Eastern Asia and was cultivated about 5,000 years ago. The ancient Chinese considered soybeans their most important crop, and one of the five sacred grains necessary for life." Note: Each of the previous statements about early soybean history is incorrect.

See also: Julian, Percy L.; Tofu. Note: What arbitrary choices! How about William Morse, USDA, Henry Ford, miso, soymilk, tempeh? Address: Chicago, Illinois.

8236. Jamieson, Kay Franzen. 2003. World Book Encyclopedia: Margarine. Chicago, Illinois: World Book, Inc. A Scott Fetzer Co. 22 volumes. See Vol. 13, p. 198.
• ***Summary:*** Contents: Introduction. How margarine is made. History.

U.S. government standards require that margarine contain at least 80% fat. This fat must be emulsified in milk, water, or soymilk. Margarine must be fortified with vitamin A at a level equal to that in butter. Most margarine also contains butterlike flavoring, salt, vitamin D, yellow coloring, and preservatives. Soybean oil provides the fat content of most margarine, but other vegetable oils (or even animal fats) may also be used. Address: Chicago, Illinois.

8237. McEachern, Leslie. 2003. The Angelica Home Kitchen: recipes and rabble rousings from an organic vegan restaurant. Berkeley, California: Ten Speed Press. xix + 268 p. Illust. Index. 23 x 18 cm. [23 ref]
• ***Summary:*** Founded in 1976, Angelica Kitchen is located at 300 East 12th St., New York City 10003–between 1st Ave. and 2nd Ave. This is a wise and very warm-hearted book that bridges the gap between farmers and a restaurant. The index contains 22 entries for tofu, 19 for tempeh, 9 for seitan, 4 for miso, and 1 each for soy milk and soy sauce.

The books shows a strong influence from macrobiotics through the use of sea vegetables, aduki [azuki] beans, umeboshi, etc. Address: New York.

8238. **Product Name:** Pathmark Soymilk (Half Gallon Gable-Top Carton) [Vanilla].
Manufacturer's Name: Pathmark Stores, Inc. (Marketer-Distributor).
Manufacturer's Address: Carteret, New Jersey.
Date of Introduction: 2003. January.
Ingredients: Organic soymilk (filtered water, whole organic soybeans), organic cane sugar, calcium carbonate, natural vanilla extract, salt (sea salt), carrageenan, vitamin A palmitate, vitamin D-2, riboflavin (vitamin B-2), vitamin

B-12.
Wt/Vol., Packaging, Price: 64 fl oz (2 qts, 1.89 liters) Dairy Pak ESL carton with screw-on cap.
How Stored: Refrigerated.
Nutrition: Per cup (240 ml): Calories 100, total fat 3.5 gm, sugars 8 gm, protein 7 gm.
New Product–Documentation: Carton with Label sent by Denis Bolger of New York, NY. 2004. April. Red and white on blue. Front panel and both side panels show a stream of soymilk being poured into the top of a glass. "Certified organic soybeans. Non dairy. Soymilk is a cholesterol free and lactose free beverage. Enriched with vitamins A, B-2, B-12, D-2 and calcium" USDA organic logo.
*

8239. Somerville, Annie. 2003. Everyday Greens: Home cooking from Greens, the celebrated vegetarian restaurant. New York, London, Toronto, Sydney, Singapore: Scribner / Simon & Schuster. xix + 395 p. Illust. by Mayumi Oda. Index. 24 x 19 cm. [30+ ref]
• ***Summary:*** A delightful and lovely vegetarian cookbook, filled with the spirit of Greens and Zen Center in San Francisco, California. Soy-related recipes: Crispy spring rolls with spicy dipping sauce (with ½ lb firm tofu brushed with tamari or soy sauce. The refreshing dipping sauce contains ¼ cup tamari or soy sauce, p. 5-6). Vietnamese spring rolls with peanut-hoisin sauce (with 14 oz firm tofu, p. 7-9). Tai's Vietnamese tofu sandwich (with 1 package regular tofu, 14 to 16 oz, fried, p. 129-30. "This warm, braised tofu sandwich is reminiscent of sandwiches sold by street vendors in the cities of Vietnam"). Spring stir-fry with peanut sauce and Thai basil (with ½ lb firm tofu, p. 210-11. For the sauce: "Be sure to use high-quality nonhydrogenated peanut butter; it makes all the difference here"). Udon with miso, shiitake mushrooms, and bok choy (with ½ lb firm tofu, p. 246-48).

"The Asian pantry" (p. 358-60) includes entries for ginger, and "tofu or bean curd" (including silken tofu). "Condiments and seasonings" (p. 360-62) includes coconut milk, hoisin sauce ("This dark, intensely flavored sauce has a perfect balance of sweet and salt; that's what makes it so deliciously addictive"), miso, mushroom soy sauce, tamari, and toasted sesame oil. "The dessert pantry" (p. 363-66) includes various types of chocolate, soy milk ("For desserts and pastries, we prefer vanilla soy milk to plain soy milk; with its smooth vanilla flavor, it's especially good with chocolate"), almond paste ("just plain almonds ground with sugar"). Address: USA.

8240. Nordquist, Ted. 2004. Looking back: Overview of work with soymilk in America (Interview). *SoyaScan Notes.* Jan. 29. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Jeremiah Ridenour was the first person in the USA to have the idea of selling soymilk in extended shelf life (ESL) gable-top cartons. That was a huge breakthrough. Ted wanted to build a soyplant to produce his soy base in America–ideally in California. Ted met Jeremiah, and Jeremiah told Ted about his idea for using gable-top cartons. Jeremiah took Ted to Gustine, the plant where Ted developed a soymilk product for Jeremiah using Ted's proprietary formulation. He sent many samples to Jeremiah, on the understanding that Jeremiah would use his distribution to sell the new product. After the product was developed, Ted did a feasibility analysis, which showed that he had to produce about 4,000 cases (at 3 gallons per case) to make this a competitive, viable product. Jeremiah said he was unable to buy and sell that much volume–including the big initial cost of buying and printing the cartons. Then Ted took the idea to Westbrae (to Myron Cooper–who said "sorry"), and then to Steve Demos of White Wave; Steve had refrigerated distribution, saw the product's potential, and was very interested. "You have to give Steve all the credit for selling the product." Ted still did not have a plant that could make his soybase. So Ted bought ProSoya's soybase made at the ProSoya plant in British Columbia, had it shipped by tanker trucks to Gustine, where Ted formulated it, had it packaged in White Wave's ESL cartons, then shipped the finished cartons in cases to White Wave. White Wave paid for the carton's plates and developed the graphics, but Ted had to pay to print the packaging on the ESL stock. White Wave paid for the product (incl. the package) after he received it. Ted make Silk soymilk for Steve for two years. At the end, Steve ordered $320,000 worth of product and refused to pay for it. Ted thinks that he used that money to move to Utah.

Gary Stein was making tofu for Trader Joe's. Trader Joe's was also buying soymilk in fresh (not ESL) cartons from Rockview Farms–Trader Joe's distributor. Rockview bought its soymilk in bulk from a guy in Los Angeles, who set up his own Alfa-Laval plant to produce soybase and to formulate it for Rockview. Ted does not remember the guy's name but he was only up and running for several years. One day Gary called Ted and explained that Rockview Farms was having all kinds of problems with their soymilk, and that Trader Joe's had called Gary and asked him if he could produce soymilk for Trader Joe's. At this time, Ted was still selling Silk soymilk to White Wave–but he was feeling tension in the relationship. Ted's contract with White Wave said that Ted could not sell soymilk packaged in gable-top cartons out of Gustine. Ted adhered to the contract. But by this time Ted had his first soybase plant up and running at Soyfoods of America in Duarte, near Los Angeles, California. So instead of buying soybase from ProSoya, Ted was now making his own in California. Gustine bought the packaging, Gary Stein formulated Ted's soybase to make soymilk, Ted packaged it in Gustine, then Gary sold it to Trader Joe's; they split the profits 50:50.

In April 1999, Ted's WholeSoy Co. launched WholeSoy: Creamy Cultured Soy, a Swiss-style soy yogurt in four flavors; he sold it to Trader Joe's through Gary Stein; Ted

and Gary split the profits 50:50. Ted did not sell his yogurt direct to Trader Joe's because he is friends with Gary. "I don't do things like that. Our relationship with Trader Joe's was through Gary Stein. So I honored that." Gary got Ted's yogurt into Trader Joe's. But a year or so later, Ted and Gary agreed that the arrangement was getting too complicated, and that Gary would take the soymilk (packed in Gustine) and Ted would take the yogurt. So Ted now sells his soy yogurt and a 96-ounce soymilk directly to Trader Joe's. Gary Stein is still making soy products for Trader Joe's. Gary no longer works much at his soy plant, which is run by his employees; he is often at Lake Tahoe or skin diving. "More power to him."

Jeremiah did not start selling soymilk in ESL packages until after Steve stopped buying soymilk from Ted. Address: TAN Industries, Inc., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

8241. Alireza. 2004. Re: History of soybeans, soyfoods, and SoyaSun in Iran. Letter (e-mail) to William Shurtleff at Soyfoods Center, Jan. 31. 1 p. [Eng]
• ***Summary:*** Alireza is busy installing new equipment for soymilk production. He is interested in trading information about soya, but he does not have much. The following is short history of soy in Iran:

In 1938, for the first time, food grade soybean seeds were imported to Gilan province [in northwest Iran, bordering the southwest Caspian Sea], and a small amount to the town of Karaj for cattle feed, but its planting was unsuccessful.

Later in 1962 the Behshar industrial group imported some soybean seeds from Japan and started to contract with farmers in order to grow soybeans in Gorgan province in order to expand the acreage. Gradually, by 1975, there were about 20 acres of soybeans in Iran, increasing to 60 acres in 1977–when the production was 100,000 metric tons.

Regarding soymilk production in Iran, Alireza has heard that a very small workshop started to produce soymilk powder in Firooz Kooh province near Tehran using Chinese equipment, but the product had a flavor that was too beany and the company was unsuccessful.

SoyaSun is the first company in the Middle East (excluding Israel) to produce soymilk without a beany flavor from whole soybeans. The plants capacity is 8,000 liters/hour.

In Iran, soybeans are used mainly for oil extraction, but recently the government is switching to planting rapeseed (canola) for oil extraction, and plans to gradually introduce soy as a protein source in the Iranian diet.

For its second phase, SoyaSun is looking to produce TSP [textured soy protein] out of mechanically extracted soy residue [soybean meal]. Address: Iran.

8242. Jacobs, Alexandra. 2004. Dharma dining: In Los Angeles, socialite and yoga teacher Anna Getty and caterer Akasha have teamed up to teach young Hollywood the finer points of warrior pose and pan-fried potato samosas. *Food & Wine.* Jan. p. 94-100, 102.
• ***Summary:*** About how to cater the perfect yoga party in Los Angeles. Ann Getty is the daughter of John Paul Getty III, oil-fortune heir and victim of one of the most notorious kidnappings of the 20th century. Akasha is a caterer and personal chef who has worked for Michael Jackson and Barbara Streisand. They met about 7 years ago and, on Akasha's recommendation, Getty attended a yoga class taught by Gurmukh–guru to Madonna and Cindy Crawford. She spent the session in tears from the emotional release–and realized that should become her lifestyle. Akasha, on the other hand, had been practicing yoga for 25 years. In 2003 Getty and Akasha joined to form a company named Pure Style to throw parties–Getty's yoga classes followed by Akasha's organic food. A trial party during last year's Oscars was a success. Pure Style has gotten lots of calls to do wedding and baby showers. Akasha's specialty is giving Indian vegetarian dishes a healthy (lower-fat) American makeover; she likes to substitute soymilk and yogurt for cream and butter. This article contains a recipe for Gingery Soymilk Chai. Color photos show: (1) People sitting around Nancy Stoddart's swimming pool. (2) Anna teaching yoga. (3) Akasha serving food.

8243. **Product Name:** Silk Soymilk (Fortified for Kids) [Chocolate, Very Vanilla].
Manufacturer's Name: White Wave, Inc.
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 2004. January.
Ingredients: Very Vanilla: Filtered water, whole organic soybeans, naturally milled organic evaporated cane juice, natural vanilla flavor, sea salt, carrageenan. Vitamins and minerals: Calcium carbonate, sodium ascorbate (vitamin C), tricalcium phosphate, alpha-tocopherol (vitamin E), zinc gluconate, vitamin A palmitate, vitamin B6, riboflavin (vitamin B2), vitamin D2, vitamin B-12.
Wt/Vol., Packaging, Price: 8.25 fl oz (244 ml) metallic Tetra Prisma Aseptic carton. Retails for $0.89 to $1.00 (2004/04).
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Product (1 case of each) sent by James Terman of White Wave. 2004. March 7. The text on each carton is very creative. On the Very Vanilla is short description of what each of the added vitamins do (e.g., "Vitamin A. Keeps your eyes sharp. Helps you grow tall and strong. Protects against disease"). On both cartons: "Its free! Silk Soymilk is free of lactose, dairy, cholesterol, gluten, eggs, peanuts, casein, MSG and worries. You still have to pay for it, though." The Very Vanilla was designed for kids.

Talk with James Terman of White Wave. 2004. April 15. The first product was shipped on 19 Jan. 2004.

8244. Deutsch, Claudia. 2004. Advertising: A dish of protein with a side of comedy is being use to promote foods with a soy additive. *New York Times.* Feb. 27. p. C2.
• ***Summary:*** Most people believe protein is good. But should they get it from steak and eggs, or from soy? The Solae Company, a joint venture formed last year between DuPont and Bunge, is already racking up $1 billion in annual sales of Solae–its soy protein additive. It is being used to turn drinks and other products into high-protein foods. Now Solae is promoting the phrase "Solae inside"–but its not easy. The TV ads must convince consumers to look for the Solae logo on foods and drinks, and to think of this soy protein isolate as tasting good and being a healthy protein source.

The approach: To make viewers laugh at absurd ads. A series of four 15-second commercials, titled "Protein in unexpected places" show classic blind taste tests. In each a chef with a white toque and a dark-suited host waylay unsuspecting passersby, blindfold them, then subject them to the Solae Protein Quiz, a taste test between a popular protein source and a food or beverage enriched with Solae (such as Snapple). On learning that Snapple contains protein, the victim says "Cool." The tag line: "Proof of protein," near the Solae logo. Among the 40 foods and drinks that include Solae are 8th Continent soy milk and Gardenburger. Many more are in the pipeline. Mainstream consumers now connect food choices not just with health (as before), but with lifestyles and taste. People already love the foods that now contain Solae.

Todd Sutton, Solae's global marketing director, says "consumers buy more than $3 billion worth of soy products per year." In the USA? Worldwide?

8245. *Nutrition Business Journal* (*San Diego, California*). 2004. Thirsty market for kid's beverages: Stonyfield, Silk and Tropicana drink to the success of children's products. 9(2):27-28. Feb.
• ***Summary:*** Healthy beverages and yogurts for children have recently grown into a large market. Stonyfield Farm Inc. (Londonderry, New Hampshire) has annual sales of $37.5 million in this market. Stonyfield sold $26.0 million of its organic YoBaby drinks and multi-packs (launched in 1999), $5.7 million in kids multi-pack yogurts, and $5 million in Squeezers (drinkable organic yogurts in single-serve tubes). The new category, which has "gone through the roof" is called "Dairy beverage meal replacements." Stonyfield's first product in this category was YoBaby.

White Wave (a Dean Foods company) has taken a different approach to the children's market by focusing on Silk non-dairy products. Silk is the market leader in refrigerated soymilks. Their approach to the market is: (1) Appeal to parents; (2) Offer free samples for children to try–especially in schools. With products such as Silk Chocolate or Silk Very Vanilla results have been favorable. When they get a response from a school district, they look for a champion in that district who will shepherd Silk through the system and make sure it is in stock. It is a pull (not a push).

In January White Wave launched Silk Very Vanilla, its first real attempt to appeal to children. It is advertised to moms as a healthy, nutritious drink–low in sugar and fortified with calcium.

8246. Shida, Yasuyo. 2004. Soymilk desserts: Quick & easy. Tokyo: Joie, Inc. 92 p. Feb. Illust. (color). No index. 26 cm.
• ***Summary:*** A handsome book loaded with glossy color photos. Contents: About the author. Baked desserts. Steamed / fried desserts. Fruit desserts. Chilled desserts. Drinks & shakes. Nutrition and health benefits of soybean products. Kitchen utensils for making sweets. Glossary: Meringue, mousse, okara, parchment, puree, sesame seeds, sieve, skimmed milk, souffle, syrup, tofu, *tonyu* (the Japanese word for soymilk), whisk, *yuzu* (a sour and fragrant citrus fruit from Japan).

The author has studied confectionary art at both L'Ecole Lenotre in Paris, France, and at Richmond Bakery School in Luzern (Lucerne), Switzerland. A portrait photo shows the author.

8247. *Soyfoods Canada Newsletter.* 2004. Soyfoods Canada member profile: SunOpta. Winter. p. 3.
• ***Summary:*** "The Sunrich Foods Group is a global supplier of Identity Preserved and Organic soy, corn and rice products. From ingredients to consumer packaged products, we help out customers create great tasting foods, naturally. The Sunrich Food Group is made up of four operating divisions–Sunrich, Nordic Aseptic, Northern Foods and Dairy and Hearty and Natural.

"Founded in 1978, the Sunrich grain division is a fully integrated producer, supplier and ingredient developer for the food industry. Based in Minnesota, Michigan and Ontario, we are in the best position to both produce and supply Identity Preserved (IP), Non Genetically Modified (Non-GMO) and organic grain based food ingredients.

"Nordic Aseptic is an aseptic packaging facility with a focus in private label manufacturing. The facility specializes in Tetra Pak slim, square, wedge and Combi Bloc packages, with a variety of opening types. The extended shelf life and logistical benefits of aseptic packaging make it one of the fastest growing delivery vehicles for liquid products."

"Hearty and Natural is the consumer products division of the Sunrich Food Group. Consumer products edamame, veggie burgers, frozen soy vegetables and functional foods.

"The Sunrich Food Group is a wholly owned subsidiary of SunOpta (formerly Stake Technology). SunOpta owns and operates high-growth ethical businesses, focused on environmental responsibility and the health and well-being

of its communities. SunOpta's Food Group is well positioned in the rapidly growing natural and organic foods sectors through its vertically integrated operations throughout North America."

8248. *The Non-GMO Source* (*Fairfield, Iowa*). 2004. More global competition seen in organic soybean market. 4(2):1-2. Feb.
• ***Summary:*** "Demand for organic soybeans remains strong, increasing 20% per year, driven by the growing consumer demand for soyfood products such as soymilk, tofu, and meat alternatives.

In the USA organic soybeans are grown on nearly 200,000 acres, making them the most widely grown organic crop in the country; their acreage has increased 112% since 1997, according to USDA statistics. The leading states producing organic soybeans are Minnesota, Iowa, and Wisconsin; together they produce almost 45% of the total crop. Yet organic soybeans accounted for only 0.24% of the total U.S. crop in 2001.

Last year the crop of organic soybeans in the US was 25-50% smaller than anticipated, so today there is a huge shortage of organic soybeans in the USA.

Brazil and China are starting to compete with the USA as growers of organic soybeans.

A sidebar is titled "Difficult to gauge market for organic soybeans." There are many players but no reporting requirements, so everything is done in secret.

8249. *The Non-GMO Source* (*Fairfield, Iowa*). 2004. Taiwan's demand for non-GM and organic soybeans increasing. 4(2):3. Feb.
• ***Summary:*** Taiwan has a large market for soybeans for food use, estimated at 225,000 tons. Most of the soybeans are used to make tofu and soymilk. In 2002/03 about 7,500 tonnes (metric tons) of the food-use soybeans came as identity preserved, non-GM "food grade," and organic. Of this total the USA supplied an estimated 4,500 tonnes, Australia 2,000 tonnes, Canada 500 tonnes, and all other countries combined 500 tonnes.

8250. Richmond, Akasha. 2004. Impressions of the Natural Products Expo at Anaheim (Interview). *SoyaScan Notes.* March 8. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Akasha just returned from the Expo where she catered a dinner for 900 guests, catered a smaller party for White Wave, and sat on two panels. Exhausted, she is taking the day off. The show had a record attendance of 34,000 people registered. At the Modern-Fearn (Minnesota) booth, she met Gayelord G. ("Gigi") Palermo, who lives in West Palm Beach, Florida, and thus must be quite wealthy. He is about the same age as Akasha. His father is Anthony "Tony" Palermo of Modern-Fearn and (Gigi said) the adopted son of Gayelord Hauser. Gigi told her a remarkable story she had never heard before about how Gayelord Hauser's career started. Hauser went to a dinner at the Hearst Castle in California. There he met a woman who had been blind for about 20 years. She took a walk with Hauser and told him that she had watched her infant son drown, and had been blind since that moment. After the walk (apparently because of something Hauser told her), her eyesight returned. Because of that, Hearst gave Hauser a column on health and put it in every newspaper he owned. That put Hauser on the map–and changed his whole life. Gigi has a rich archive of Hauser documents, photos, and memorabilia. He owns the rights to it all. Gigi gave Akasha his phone number; he doesn't do e-mail. However, in *Diet Digest* in 1951, in a letter to his readers, Hauser announces that he is getting a column in the Hearst newspapers. Akasha has never seen a Hauser column in a Hearst Newspaper–such as the *Herald Examiner.*

At the show she met Patricia Bragg at her booth; she is tiny but looks very healthy, with fine skin. She, too, is quite wealthy. In 1959 she and Paul Bragg had a black-and-white TV show titled "Health and Happiness Show" in Hollywood. Clips from it are on the huge Bragg website. Gypsy Boots (age 93) was at her booth and Gigi got a fine photo of all of them. Note: Gypsy died on 8 Aug. 2004. Also at her booth was the founder of the Good Earth chain of restaurants named William Gaet (see www.goodearth.com). He founded them in the mid-1970s, and one was in Berkeley. Eventually the chain was purchased by General Mills. William, now in his mid-70s, lives in Cabo, Mexico and looks very healthy; his skin is clear and he has a full head of hair–a tall, good looking man. He told Akasha the story of how Colonel Sanders got him (William) into natural foods. He first worked for Lowrey's, the big beef restaurant chain, then he went to work for Kentucky Fried Chicken. There he learned how to run a restaurant. He told the story of how Colonel Sanders got him into eating healthy food. After Col. Sanders sold his chain of restaurants, William walked in to have a meeting with the Colonel and brought a bucket of the chicken. Col. Sanders looked at him and said, "Son–Don't eat that shit. It'll kill ya!" Col. Sanders traveled with Shaklee Vitamins and he was a complete health fanatic. William Gaet and his daughter are now developing a prototype of a chain of healthy, fast-food, drive-through restaurants in America–like Burger King.

At the show White Wave introduced and demoed a liquid drinkable yogurt named Alive Sweet. She also met a famous African-American named Isaac Hayes, who starred in the movie *Shaft.* He has been into natural foods since the 1970s and is now working to introduce them to other African Americans.

She sat next to Barry Sears, PhD, on one panel; afterwards he predicted to her: "I'll give this low-carb thing a year."

Akasha is an admirer of Dr. Andrew Weil.

Efrem Zimbalist II, the son of the famous violinist, has just purchased *Vegetarian Times* magazine–for which Akasha writes a column. She went to a focus group to which he invited her, but found that most readers want more vegetarian recipes. Address: Los Angeles, California.

8251. Drosihn, Bernd. 2004. Update on soyfoods in Europe. Part I (Interview). *SoyaScan Notes.* March 15. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** This interview was conducted during Bernd's visit to Soyfoods Center. The biggest development for soyfoods in Europe during the past 5-7 years is that soymilk has entered the mainstream market in several countries, driven mainly by Alpro (whose brand was changed to AlproSoya from Alpro 2-3 years ago), the main soymilk maker in Europe. AlproSoya is spending lots of money promoting soymilk and educating consumers about the health benefits of soyfoods. And although there are no health claims in Europe (there is sort of one in the UK) and no FDA, there is a great deal of information available about the health benefits of soy. Women, especially those in their 40s and 50s near the age of menopause, are the target of much advertising and educational material. AlproSoya uses brochures, Internet and TV advertising to educate these people. However Bernd feels that Alpro's style is a little old-fashioned.

Meat alternatives and dairy alternatives are also growing rapidly, but they are still niche products. The organic movement in Europe has long been bigger and stronger than its American counterpart, and it continues to grow at a healthy rate. In Germany, the government greatly helps the organic movement–which is also strong in France, Italy, and Spain in both mainstream and health food sectors. The organic and soyfoods movements have generally worked closely together to help one another, although not all soyfoods companies (especially those based in the Asian market) use organic ingredients. Sojaxa, the former European soyfoods association, is now named Ensa. Ensa is still based in France and it gets some money from the department of agriculture in France because some soybeans are grown in southern France. Since soybeans are not an important European crop (most are imported), they are not promoted by European governments.

The discovery of mad cow disease in about the year 2000 in many European countries outside of the UK had a very positive effect on soyfoods. It was a rising tide that lifted all ships (soyfoods companies). From that time on soyfoods gradually started to be recognized in mainstream markets.

Bernd buys all his soybeans (specific desired varieties at a specified price) under a "Fair Trade" contract from a specific organization in southern Brazil; all are certified non-GE (genetically engineered).

Many European companies now state in their brochures that the FDA has given a heart-healthy claim for soy protein in the USA. But American food has a bad reputation in Europe, being strongly linked with McDonalds, Coca-Cola, Burger King, etc. So Europeans tend to be skeptical of American claims related to food. Instead European companies prefer to cite the original research articles and summarize their findings.

Bernd is not aware of any negative information about soy on the Internet–probably because most of it is in English.

The three largest soyfoods markets in Europe (in total sales) are probably the UK, France, and Germany–in that order. But in terms of per capita consumption, the largest are probably the UK, Netherlands, Belgium, France, and Germany–in that order.

Alpro, which has a very close connection to France, has done a great deal to develop the market there. Bernard Storup's company, Nutrition et Soja S.A., now owned by Novartis, is doing well and is also strong in France. Bernd just saw Bernard (and his business partner Jean de Preneuf) at the Nuremberg show in Germany. Bernard would like to get out of his relationship with Novartis (formerly Sandoz), because they no longer get funding and Novartis has no interest in Nutrition et Soja. Note: Sandoz AG (Basel, Switzerland) merged with Ciba-Geigy in March 1996 to become Novartis. Jean is "the Steve Demos of Europe"–very creative and very crazy. He has an old farmhouse in the south of France and he also has another business that makes sunglasses.

The creation of the EU (European Union) and the euro as a currency has helped Viana and most other soyfoods companies in Europe by greatly facilitating exports and imports across country borders. As a result of its move to a new and larger factory, the creation of the EU, and the advent of mad cow disease, Viana's exports now 35-40% of total sales, and are growing faster than sales in Germany. Viana exports outside the EU (to Croatia, Czechoslovakia, Israel, Morocco, Bahrain, etc.) account for about 1.5% of sales. The economies of eastern Europe are developing very slowly. Bernd knows of 2-3 tofu makers in Poland (incl. Polsoja; tofu is sold in supermarkets) and at least 2 in Czechoslovakia (one employs 60-80 people). In Austria, Guenter Ebner works for Viana, sells Viana products, knows the eastern European market very well, provides much information to Bernd about this market. The founder of Sojarei Vollwertkost GmbH, Guenter had his company taken over by the major shareholder in an unfriendly way; they kicked Guenter out.

The boundaries between eastern and western Europe are slowly breaking down. The move toward a unified greater Europe will be accelerated on May 1 of this year when 10 eastern European countries are scheduled to join the EU: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.

Bernd estimates that only about 10% of Germans consume soyfoods at least once a month; this figure is

much lower than in the USA. Viana's exports have grown. Continued. Address: Founder and president, Viana Naturkost GmbH, 54578 Wiesbaum / Vulkaneifel, Germany. Phone: +49 06593-99670.

8252. Drosihn, Bernd. 2004. Update on soyfoods in Europe. Part II (Interview). *SoyaScan Notes.* March 15. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Soymilk: A major new soymilk maker in Europe is named Wild (www.wild.de), an old German food company that specializes in fruits and ingredients; their retail soymilk is named Soy and Joy. Their most famous brand is Caprisun, a non-soy drink in a foil pouch, well known in the USA. They and So Good, the Australian soymilk now made with Solae, are both strong competitors of Alpro.

Several weeks ago Hain-Celestial of New York purchased two German soymilk makers, both owned by Bruno Fischer, Jr.: Natumi and Gut Honneroth. He sold both companies at a low price–probably because he had to. Bruno had gotten his soymilk into Aldi, the mother company of Trader Joe's and the No. 1 discounter in Germany–and maybe in all of Europe, and he developed a large soymilk business with Aldi–perhaps so large he could no longer handle it himself. Bruno also made a lot of private label soymilk. With Hain, Bruno found a large German dairy to make soymilk for Aldi under a new Aldi brand. The new European CEO of Hain-Celestial is Philippe Woitrin, who was CEO of Lima Foods when Hain acquired it.

Triballat makes the best soy yogurts (Sojasun brand) in the world–in Bernd's opinion. They have a new brand, Sojadé, which are delicious creamy yogurt drinks–maybe organic. The Japanese Yakult concept of drinking live beneficial probiotic bacteria each morning has now caught on in a big way in Europe. Yakult is one of the best entries into the European food market in years. Bernd just saw White Wave's Silk Alive [the name was soon changed; it was sold commercially only under the name "Silk Live"], a similar product, at the Anaheim Natural Products Expo. But he liked the Wildwood smoothie even better, and the WholeSoy fermented soymilk best of all American products.

In France a small company named Sojami (pronounced so-zha-MEE), which started about 10 years ago, makes very creative, unique, and interesting soy cheeses and cultured soy yogurts. The founder has a university research background and is a very nice guy.

Tofu: Tofu consumption in Europe has expanded steadily over the past 5-7 years, but it is still a very small product. The largest maker of the tofu and tofu products sold in Germany is Life Food GmbH / Taifun Produkte, run by Wolfgang Heck and Guenter Klein. Heuschen-Schrouff B.V. (Landgraaf, Netherlands) and Viana are tied for second place. About 10 years ago, Heuschen-Schrouff started selling their tofu under the organic So Fine brand (www.sofine.nl). An Indian-run company in Kerkrade, Netherlands, run by the brothers Singh (both Sikhs), makes tofu mostly for the Asian (Indonesian) market. In 2001 Viana started selling its tofu to the mainstream market under the Veggie Life brand; this English-language brand name communicates well to people speaking many different languages throughout the EU (European Union)–though distribution is still limited to Germany and Austria. Soto Tofu, formerly run by Rolf Barthof has been sold to a very large dairy company, Algäuland. Viana's main products are tofu and tofu products–such as meat and cheese alternatives. Viana is #1 in Germany in meat alternatives. Germans buy soyfoods for three main reasons: They are good for one's health, they taste good, and good for the environment. Bernd is a vegan, but about 90% of Viana's products are sold to non-vegetarians.

Early tofu companies still active in Europe include Sojafarm (founded and still run by Lothar Stassen), Albert's Tofuhaus (Albert Hess; exports lots of his products to France). A basic problem with the smaller, early tofumakers in Germany is that they didn't have the creativity or power to put a brand on the market. So both these companies produce a lot of tofu under private labels. Lothar bought the Svadesha brand (Svadesha was the first German tofu company) and produces tofu under the Svadesha brand. About 2-3 years ago he also purchased the Nagel's Tofu brand from Christian Nagel, who now markets the tofu under his former brand. So Lothar makes tofu under 3 brands. Berief Feinkost (in Beckum, northern Germany), started 10-15 years ago, tries to cover the mainstream tofu market, but not very successfully. Kassel Tofu Kato (started by Gyoergy / Yuri Debrecini, who was at Soyastern). Thomas Karas is no longer involved with soyfoods; he tried to enter the computer business but Bernd does not know what he is doing now. In Spain, the market leader is Natursoy near Barcelona. Nearby is Salvador Sala of Vegetalia. In Spain, there is a lot of interest in and rapid growth of soyfoods and organic foods. In Italy the Ki Group (Schenker) owns a tofu company–fairly old but not very creative.

In the United States, Pulmuone now has three U.S. factories; their first one in Southgate, southern California, a new one at Fullerton, California, and a 3rd one in New York. The Fullerton factory is the most modern Bernd has ever seen. There they make Gourmet Tofu, introduced in about Jan. 2004, which is presliced and marinated, in 4 flavors / styles: Baked, Sliced, and Marinated.

Meat alternatives: Nestle now owns Osem which owns Tivall, the Israeli maker of meat alternatives. Since all of Tivall's products are held together by eggs or egg whites, none of them are vegan–and none are organic. Quorn, which also contains lots of egg protein, is owned by AstraZeneca [Marlow Foods]–which wants to sell the company because growth and profits have been lower than expected. DE-VAU-GE in Germany is a very big company, they make large amounts of meat alternatives (incl. burgers), and they do a lot of business with Aldi in breakfast cereals–not in

soyfoods. Bernd thinks they are good, and very economical manufacturers, but they are not very creative and they have no USP (unique sales point); moreover, many of their products contain egg protein, but their quality is lower than that of Tivall. Bernd believes his meat alternatives are as good as Tivall's, but more expensive, in part because of organic ingredients. Tivall makes its raw materials in Israel, then exports these to Europe for cutting and flavoring.

Klaus Gaiser owns Topas which sells Viti brand meat alternatives based on wheat gluten, with no soy; he owns the brand and markets the products, but he has meat companies manufacture them. However, when his typically 3-year contract with the manufacturer expires, he has to find a new manufacturer, but the previous one keeps making his products under their own brand. In the USA: At Turtle Island Foods (Hood River, Oregon), Bernd met Hans Wrobel, a German who does product development. Note: Hans and Rhonda Wrobel of The Higher Taste developed Tofurky in Portland, Oregon. Bernd makes Pizzarella, a tofu-based cheese alternative. Address: Founder and president, Viana Naturkost GmbH, 54578 Wiesbaum / Vulkaneifel, Germany. Phone: +49 06593-99670.

8253. Lifeway Foods, Inc. 2004. Lifeway organic soy treat: Cultured Soy Milk Smoothie (Ad). *Natural Foods Merchandiser.* March. p. 132.
• ***Summary:*** This 8½ by 11 inch color ad shows quart plastic bottles of different flavors of Lifeway Organic Soy Treat: Cultured Soy Milk Smoothie. It is available in 6 flavors–but only the first three are shown here: Coffee Latte, Peach, Strawberry, Apple, Dulce de Leche, and Coconut. www.kefir.com.

This ad also appeared in the Sept. 2003 issue, p. 106, however the background color was more orange than the original yellow. A single-sided color leaflet was also distributed at the Natural Products Expo in Oct. 2003 and March 2004. Address: 6431 W. Oakton St., Morton Grove, IL 60503. Phone: 847-967-1010..

8254. *Nutrition Business Journal* (*San Diego, California*). 2004. Eden Foods maintains independence in a consolidating industry. 9(3):18. March.
• ***Summary:*** A good interview with Michael Potter about the history and organic philosophy of Eden Foods. The company, "founded in 1969 as a retail food cooperative," is the last significant organic food manufacturer in the USA, according to Potter, the company's sole owner. Walnut Acres used to be the oldest independent, until they were purchased and eliminated by Acirca.

Refrigerated soymilk has hurt sales of aseptically packaged soymilks, and Eden's soymilk sales have been down 8.6%/year for each of the past 4 years. But Potter is optimistic about sales of Eden's other products. In 2003 Eden's sales were about $45 million.

Eden's sales are 98% from organically grown products. Potter estimates that Eden supports about 300 family farms with 40,000 acres of organically managed farmland in the USA and Canada. The advent of USDA organic regulations [NOP] in 2002 brought major changes to Eden, from adding new organic ingredients to having to redesign all labels. Potter is critical of NOP for lax enforcement of organic standards, but he does not agree with those who think that the industry should work to make organic prices closer to those of conventional foods. "The percentage of income that Americans spend on food is the smallest in the world. Food is undervalued, and when you think 'cheap, cheap, cheap' what you end up with is conventional American food, the laughing-stock of planet Earth." Instead of using lower prices to attract new customers, Potter believes that educating consumers about organic and conventional food should drive future growth.

8255. SunOpta Inc. 2004. Sunrich (Portfolio). Toronto, Ontario, Canada. 12 inserts. 31 cm.
• ***Summary:*** The cover of this portfolio is a composite color photo on a tan background. The photo shows (L-R) whole soybeans, a glass of soymilk, green edamame (in the pods), a farmer in a field examining heads of wheat, a wooden scoop of corn flour and grits, whole kernels of corn. Below it is the SunRich logo, the name in red, a stylized yellow sun background, and the tag line below: "Your direct link to Nature." On the inside front cover are six oval color photos, each explaining Sunrich's mission.

Inserts: (1) The SunRich Food Group: Unique vertically integrated soymilk business model. Identity preserved non-genetically modified soy foods ingredients. Five photos show from seed producer to third party distribution.

(2) SunRich company fact sheet (on letterhead). Sunrich (a Sun-Opta company) was founded in 1978. In Aug. 1999 Sunrich, led by SEO Allan Routh, was acquired by Stake Technology Ltd. The Sunrich Food Group, composed of four companies (Sunrich, Nordic Aseptic, Northern Food and Dairy, and Hearty and Natural) now has $150 million in sales.

(3) Reprint of an article: Fleming, Richard. 2001. "The roots of sustainability run deep for Sunrich." *Natural Business LOHAS Journal* 2(4):45-46. Fall.

(4) SunRich Food Group product and services. (5) Soy and organic food trends. Soymilk sales nationwide have grown from $100 million in 1995 to $550 million in 2001. (6) William Fenske: Vice president of technical services for Sunrich Food Group (Bio). (7) Allan Routh: President of the Grains and Soy Products Group of Sunrich Food Group (Bio). "Mr. Routh has been involved with Sunrich since it was established in 1978, originally to develop export markets for waxy corn growers. A graduate of the University of Minnesota and the University of St. Thomas (Minnesota)." Mr. Routh is also involved in the production of high

quality Berkshire Pork for export to Japan, and continues to be active in his family's farming operations in southern Minnesota. (8) Unlimited soy solutions! Color, glossy, back to back. (9) Unlimited Organic Solutions! (10) Cooking with SunRich Naturals brand edamame and shelled edamame (9 p. of recipes). (11) SunRich Food Group patents low fat, high protein organic soymilk formulation–Soy Lite (Feb. 2003). (12). SunRich Food Group executive named new president of Soyfoods Association of North America (Tina Nelson, Feb. 2003). (13) SunRich Food Group introduces new SunRich Naturals line of frozen edamame and fully organic, gluten-free veggie burgers (Sept. 2003, expected to hit stores by Jan. 2004). (14) SunRich to co-sponsor soy tasting event, hosted by Soyfoods Association of North America (on March 6 during 2004 Expo West). (13) Edamame and shelled edamame: New food service item. Address: Toronto, Ontario.

8256. Forgrieve, Janet. 2004. Cream of the crop: Ex-Coloradan molds business into dean of dairy. *Rocky Mountain News* (*Denver, Colorado*)**.** April 10. p. 1C. Business section.
• ***Summary:*** The offices of Dean Foods Co. take up 12 floors of a downtown Dallas, Texas, skyscraper. In 2003 the company had $9.2 billion in sales and 28,000 employees, and 120 facilities. Yet the company is not as well known as the many brands it owns. The Chairman and CEO, Gregg Engles, grew up in Denver, Colorado, graduating from high school in 1975. He later earned degrees from Dartmouth College and Yale Law School. After joining a law firm, he realized that law wasn't his thing, so in 1983 he moved to Dallas to work for a small investment firm. But he realized that he wanted to work for himself. In 1993 he started Suiza Foods Corp after his company had purchased Suiza Dairies in Puerto Rico. Then he began acquiring American dairy companies. Dean's first soymilk company was White Wave, started in 1977 by Steve Demos in Boulder, Colorado–after he returned from a 3-year trip to India, where he became a soy convert. In 1996 White Wave introduced Silk soymilk. By 2001 Dean Foods owned about one-third of the privately held White Wave and had an option to acquire the rest of the company the following year. Demos and Engles met over the lawsuit that White Wave filed against Suiza, which owned Sun Soy, a competing soymilk brand. Dean Foods was planning to merge with Suiza, and Demos was concerned that this merge might cause him problems; so he argued in court that the option didn't apply should the merger proceed.

Eventually the two sides came to a friendly settlement. The Dean-Suiza merger was completed in late 2001 and in 2002 the new Dean Foods acquired the remaining two-thirds of White Wave that it didn't already own. Demos and Engles have become friends, and both are happy about the present arrangement. Dean has allowed White Wave (which has 180 employees) to continue to operate autonomously.

8257. Friedman, Amanda Mosle. 2004. Soy: Ancient legume grows into modern sensation in U.K., U.S. diets. *Nation's Restaurant News* 38(15):100. April 12.
• ***Summary:*** "Soymilk increasingly is heralded as being more healthful than dairy, and even Starbucks put soy alternatives on the menu, a sign that soy products fit into current health trends." "The popularity of soy is on the rise."

This is not new. "The use of soy was first documented in China in 1100 B.C...," says Bill Shurtleff, founder and director of the Soyfoods Center, which has the world's largest database on soy.

8258. Abate, Tom. 2004. Milk expected to go up by about 50¢ a gallon: Higher pay ordered for state's dairies. *San Francisco Chronicle***.** April 24. p. A1, A13.
• ***Summary:*** "The California Department of Food and Agriculture has ordered milk processors to start paying dairy farmers in Northern California an additional 47 cents per gallon beginning May 1, an increase that is likely to be passed to consumers." A graph shows U.S. milk prices per gallon (fresh, whole, and fortified) from 1995 to the present. The peak price was $3.00 in Feb. 1999–according to the U.S. Bureau of Labor Statistics. Address: Chronicle staff writer.

8259. Ness, Carol. 2004. Kikkoman voted top vanilla soy milk: Taster's choice. *San Francisco Chronicle***.** April 28. p. F2. Food section.
• ***Summary:*** Five brands of organic soymilk were tasted and rated in descending order of preference as follows: 1. Kikkoman Pearl (73 points, $2.29/qt at Rainbow). 2. Silk fresh (70 points, $1.99/qt). 3. Pacific Select Low Fat (68, $1.89/qt). 4. Vitasoy Smooth (66, $2.09/qt). 5. Vitasoy Vanilla Delight (58 points, $2.09/qt).

"Also tasted but unranked were Safeway Select Organic, WestSoy Plus, Soy Dream, Silk (boxed), Clover Stornetta, Trader Joe's, Pacific Ultra, Wildwood, 8th Continent, Edensoy, and 365." Address: Staff writer.

8260. Dean Foods Co. 2004. Reach for Dean: 2003 annual report. Dallas, Texas. 96 p. 28 cm.
• ***Summary:*** Dean's Dairy Group is the "largest processor and distributor of milk various other dairy products in the United States. Our Branded Products Group markets and sells a variety of well-known dairy and dairy-related products, such as Silk soymilk, Horizon Organic dairy products,..."

The long and very positive section titled "Reach for Silk" (p. 8-11) contains lovely graphics–smiling moms and their kids, or bike racers, with Silk. Silk revenues were up by more than 40% in 2003. Dean sponsors "The Susan G. Komen Breast Cancer Foundation Race for the Cure, the world's largest 5 km race series. "By making Silk a part of your diet, you're supporting the fight against breast cancer."

New products include Silk Enhanced, Very Vanilla, and Unsweetened–each in ½-gallon ESL cartons. Aseptic 3-packs (8¼ oz) in Very Vanilla and Chocolate flavors.

Accompanying the annual report is an innovative "2004 proxy statement and notice of annual meeting" (24 p.). In 2003 Gregg L. Engles, age 46, Chairman of the Board and CEO had: Salary $1,000,000. Bonus $1,151,822. Other compensation $111,078. Value of deferred units awarded: $5,942,000. Number of stock options granted: 609,000. In 2003 Engles acquired 450,000 shares in exercise, worth $9,253,563. Address: 2515 McKinney Ave., Suite 1200, Dallas, Texas 75201. Phone: 214-303-3400.

8261. **Product Name:** Silk Soymilk (Fortified for Kids) [Very Vanilla].
Manufacturer's Name: White Wave, Inc. (Product Developer-Distributor)
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 2004. April.
Ingredients: Very Vanilla: Filtered water, whole organic soybeans, naturally milled organic evaporated cane juice, natural vanilla flavor, sea salt, carrageenan. Vitamins and minerals: Calcium carbonate, sodium ascorbate (vitamin C), tricalcium phosphate, alpha-tocopherol (vitamin E), zinc gluconate, vitamin A palmitate, vitamin B6, riboflavin (vitamin B2), vitamin D2, vitamin B-12.
Wt/Vol., Packaging, Price: Half gallon (1.89 liters). Gable-top carton with reclosable cap.
How Stored: Refrigerated, 7-10 day shelf life.
Nutrition: Per 1 cup (240 ml): Calories 130, calories from fat 30, total fat 3.5 gm (5% daily value; saturated fat 0.5 gm), trans fat 0 mg, cholesterol 0 mg, sodium 140 mg (6%), total carbohydrate 19 gm (dietary fiber 1 gm [4%], sugars 16 gm), protein 6 gm. Potassium 300 mg. Vitamin A 20%, calcium 35%, vitamin D 30%, vitamin C 35%, iron 6%, riboflavin 30%, phosphorus 10%, vitamin K 15%, vitamin B6 30%, vitamin B12 50%, magnesium 10%, vitamin E 20%, folate 6%, zinc 10%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Safeway in Lafayette, California. 2004. Dec. 28. Front panel: "The taste kids love. Lactose free. With vitamin C. 6.25 grams soy protein per serving. Powerful good flavor! Made with organic soybeans. Calcium enriched. Kids fortified with vitamins A, B, C, D & E." Side panel #1. "Fortify your family. Not to be used as an infant formula. Silk soymilk is third-party certified organic by QAI. This soymilk is made from soybeans that were not genetically engineered. 100% vegan–The ingredients (including the vitamins and minerals) do not contain animal products. Satisfaction guaranteed. We bet you'll like our soymilk. Try it. If you don't like it, we'll give you your money back, no questions asked."

Back panel: "Shake well and buy often. Provides 15 essential nutrients. Demand authenticity. Mozart composed his first music at age 5. Did you know? Soy plants have the power to make the soil better." FDA heart-healthy claim. "Dem bones." Silk is calcium fortified. Pig Latin.

Side panel #2. "Of the five species of tiger, Siberian tigers have the least number of stripes. Knowing your ABCs." Explains in simple language the function of vitamins A, B, C, and D, and what percent of the RDA is provided by one serving of this soymilk. "Learn more about soy. You'll be amazed." www.silkissoy.com.

8262. Xu, Wang Hong; Zheng, W.; Xiang, Y.B.; Ruan, Z.Y.; et al. 2004. Soya food intake and risk of endometrial cancer among Chinese women in Shanghai: population based case-control study. *BMJ* 328(7451):1285-91. May 29. [24 ref]
• ***Summary:*** Regular consumption of soya foods, a rich source of phytoestrogens, is associated with a reduced risk of endometrial cancer. Table 2 lists various soya foods including soya milk, tofu, dry soya bean seeds, fresh soya beans, soya bean sprouts, plus soya protein, and isoflavones from these foods. Address: Dep. of Epidemiology, Shanghai Cancer Institute, 2200 Xie Tu Road #25, Shanghai 200032, China.

8263. **Product Name:** Whole Soymilk, Tofu Blocks, Soy Custard, Braised Tofu, Tofu Puffs, Tofu Noodles, Soy Omelette (with Yuba), Yuba (Tofu Skin), Poached Yuba Loaf.
Manufacturer's Name: Basic Soy Beanery (renamed Hodo Soy Beanery in Sept. 2005).
Manufacturer's Address: 1600 S. De Anza Blvd., San Jose, CA 95106. Phone: 408-517-8958.
Date of Introduction: 2004. May.
Ingredients: See below.
Wt/Vol., Packaging, Price: -
How Stored: Refrigerated.
New Product–Documentation: Labels by brought to Soyinfo Center by Minh Tsai on 2009. Sept. 16. Ingredients:

Whole Soymilk: Soybeans, filtered water (cane sugar is added to our sweetened soymilk).

Tofu Blocks: Soybeans, filtered water, calcium sulfate.

Soy Custard: Soybeans filtered water, calcium sulfate. Ginger syrup: Filtered water, rock sugar, fresh ginger.

Braised Tofu: Soybeans, filtered water, soy sauce, cinnamon, anise, calcium sulfate.

Tofu Puffs: Soybeans, filtered water, soybean oil, calcium sulfate.

Tofu Noodles: Soybeans, filtered water, calcium sulfate.

Soy Omelette: Soybeans [made into yuba], filtered water, soy sauce, sugar, soybean oil.

Yuba (Tofu Skin): Soybeans, filtered water.

Poached Yuba Loaf: Soybeans [made into yuba], filtered water, soy sauce, white pepper, anise.

8264. Budgar, Laurie; Melville, Nancy; Uhland, Vicky. 2004. 25 who championed a cleaner plate: As we celebrate the inroads natural and organic food has made into consumer consciousness during the last 25 years, we often forget the pioneers who made it possible–the men and women... who educated consumers when the concepts were strange and new, and who persisted in the face of adversity. This month NFM profiles 25 people who have been influential in the natural foods industry. *Natural Foods Merchandiser.* April. p. 22, 24, 26, 28-31.

• ***Summary:*** To mark its 25th anniversary, *Natural Foods Merchandiser* pays homage to the following pioneers and visionaries (with a color portrait photo of most) who brought natural and organic foods into consumer consciousness; listed alphabetically by last name. For each person is given: A summary introduction, plus the person's answers to 7 questions: No. of years in the industry. What motivated you in the beginning? What motivates you now? What is been your biggest obstacle? What has been your biggest obstacle? When did you finally realize you'd made it? When did you know the industry would survive? What predictions do you have for the future of the industry? If you had to write your own epitaph, what would it say?

Tony Bedard of Frontier Natural Products Co-op. Andy and Rachel Berliner of Magic Mountain Herb Teas. Neil Blomquist of Cup of Sun natural foods store and Spectrum Organic Products. Annie Christopher of Annie's Naturals. Ben Cohen of Ben & Jerry's Ice Cream (the company was sold to Unilever in 2000). Mel Coleman Jr. of Coleman Natural Meats. Joel Dee of Edward & Sons Trading Co.

Steve Demos: In 1974 He founded Touch the Earth natural foods store in New Hope, Pennsylvania. In 1977 he founded White Wave (now the maker of Silk soymilk) in Boulder, Colorado.

Frank Ford, who founded Arrowhead Mills in 1960. By 1990 it had 220 SKUs. In 1999 Ford sold the company to The Hain Celestial Group. His early inspirations: Paul Keene of Walnut Acres, and Warren Clough of Shiloh Farms.

Michael Funk, founder of Peoples Mountain Warehouse in 1976, who went on to become founder of United Naturals Inc. Lynn Gordon, founder of French Meadows Bakery in 1985. Haas Hassan who founded Alfalfa's Market in 1974, then sold it in 1996 to Wild Oats Markets. Bill Knudsen who worked in his family's juice-processing business, R.W. Knudsen, founded in 1961 and was named president in 1977. In 1984 he sold the business to J.M. Smucker. Bob and Charlee Moore, founder of Bob's Red Mill. Robert Nissenbaum, who launched Morning Dew Food Markets in 1971, an organic and natural food store in St. Louis, Missouri. In 1974 he opened Sunshine Inn natural foods restaurant. In 1982 he co-founded Imagine Foods, which he sold in 2002 to The Hain Celestial Group. Michael Potter, who says he founded Eden Foods in 1968 (but who actually joined the company in Jan. 1971–he was hired by Bill Bolduc, who had founded Eden Foods in Nov. 1969). Barry Sears, author of *The Zone Diet* and a researcher at MIT (Massachusetts), where he found that the cause of most chronic diseases is inflammation. "You can put together diets with natural foods to control inflammation much better than you can with drugs. The Zone Diet is not about losing weight but about controlling the hormones that affect inflammation. He wants to use foods to change health care.

Bill Shurtleff and Akiko Aoyagi founded the Soyfoods Center in 1976.

Mo Siegel, founder of Celestial Seasonings in about 1969. Charles Stahler and Debra Wasserman co-founded the Vegetarian Resource Group, an outgrowth of Baltimore Vegetarians (Maryland) which the pair established in 1982. Arran Stephens founded Nature's Path in 1985; he has been in the industry for 37 years [i.e., since 1967]. Bob Stiller founded Green Mountain Coffee Roasters in 1981. Albert Straus, of Straus Family Creamery. In 1993 he converted his family-owned dairy farm in Marin County, California, into the first certified organic dairy west of the Mississippi. Cyd Syzmanski founded Colorado Natural Eggs in 1991–a cage-free business. Annie Withey created Smartfood popcorn in 1984.

8265. **Product Name:** La Fe Soy Milk [Tropical Punch, Pineapple].
Manufacturer's Name: La Fe Foods (Importer / Marketer). Made in Argentina.
Manufacturer's Address: Plant: Via Mercedes, San Luis, San Luis Province, Argentina. Importer: 230 Moonachie Ave., Moonachie, New Jersey 07074. Phone: 1-866-BUY-LAFE.
Date of Introduction: 2004. May.
Ingredients: Organic soy milk (filtered water, choice of organic soybeans), cane juice (dried).
Wt/Vol., Packaging, Price: 1 liter aseptic carton. Retails for $1.00.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with representative of La Fe Foods. 2005. May 12. These two products, which are private labeled for La Fe, were introduced in May 2003. The name of the manufacturer is confidential. His company (pronounced LA-fay) imports foods that they market mainly to the Hispanic market in the USA.
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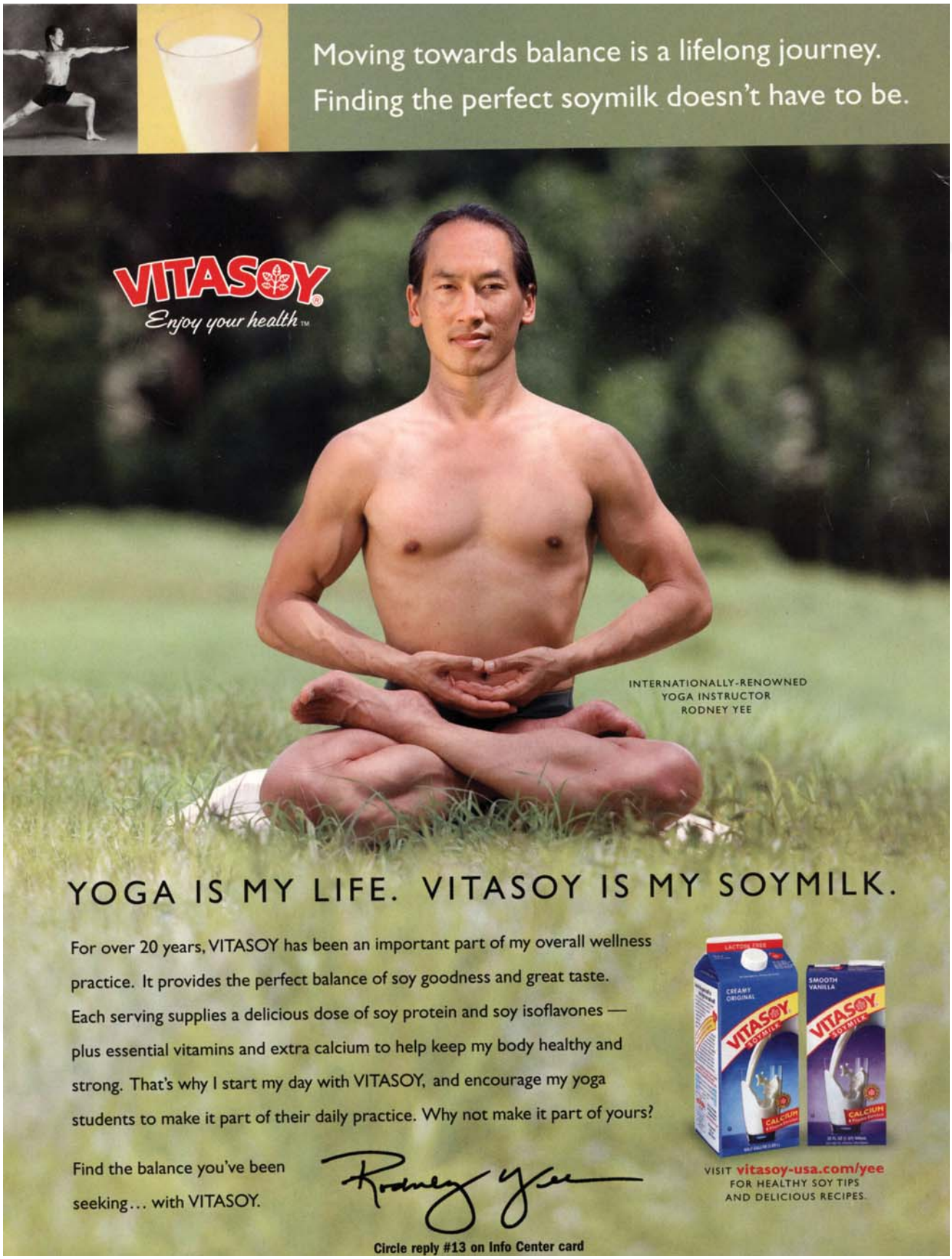
8266. Vitasoy (USA) Inc. 2004. Yoga is my life. Vitasoy is my soymilk. Moving toward balance is a lifelong journey. Finding the perfect soymilk doesn't have to be (Ad). *Vegetarian Times.* May. Rear cover.

• ***Summary:*** This fill-page color ad shows Rodney Yee, internationally renowned yoga instructor, seated in full lotus position green grass with a dark green forest background. To his upper right, against the dark green is the red logo:



"Vitasoy: Enjoy your health."

In the lower right corner are two cartons of Vitasoy soymilk. (1) Half-gallon gable-top ESL carton of Vitasoy creamy original. (2) Quart Aseptic brick pack of Vitasoy Smooth Vanilla.

Below the title of the ad, which is below Rodney Yee, we read: "For over 20 years Vitasoy has been an important part of my overall wellness practice. It provides the perfect balance of soy goodness and great taste. Each serving supplies a delicious dose of soy protein and soy isoflavones–plus essential vitamins and extra calcium to help keep my body healthy and strong... Find the balance you've been seeking–with Vitasoy." Address: San Francisco, California 94107.

8267. Gupta, Rajendra ("Raj") P. 2004. New developments at ProSoya in the USA, India, and Canada (Interview). *SoyaScan Notes.* June 8. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** ProSoya has just acquired a former dairy cheese plant (41,000 square feet) in Heuvelton, New York state (about 10 minutes drive from the Canadian border) and is now setting up a soymilk extraction plant. He hopes to begin shipping products in early Sept. 2004. ProSoya will sell soy extract to third parties, just as SunRich now does.

Raj estimates (based on statistics from SoyaWorld) that total soymilk sales in Canada from all manufacturers is about 75 million liters, which is about 2.5% of the dairy milk market. The soymilk market is growing rapidly, and ProSoya is also doing well. ProSoya has decided not to license its process to other manufacturers, but to make the soymilk itself–in part because ProSoya has developed an improved technology (by adding an additional step to their previous airless cold grind process) which gives soymilk with a much better flavor. Raj will never apply for another soymilk patent. This process is largely independent of the quality of the soybeans used. The contract between SoyaWorld and ProSoya has changed; starting last month they began a non-exclusive license, compensations have been changed from royalties to other types from them, and other new terms have been added to the agreement. Therefore ProSoya can now produce soymilk and soyabase in Canada and the USA and compete with them.

Concerning Dean Foods and White Wave: Who could ever have imagined that America's biggest dairy company (Dean) would become a major manufacturer and promoter of soymilk? Dean is the right company; they saw the opportunity and took it–while other dairy companies wished that soymilk would somehow go away. Raj is proud of the fact that, even though his competitors do not acknowledge it, his airless cold grind process has become the basis of making good-tasting modern soymilk. All the major soymilks taste the same these days. Yet Raj believes that there is a long way to go in improving the taste of soymilk.

ProSoya recently established its own soymilk plant in India; in Jan. 2004 the products were first sold in stores. The head office is in Bombay and the soymilk is made only from whole soybeans grown in India. In both India and the USA its soymilk will be sold in aseptic cartons and will be brand named Staeta–but the word "soy" (in "soy milk") appears on the front panel in even larger letters than the word "Staeta." Soy is no longer a "dirty word" in India; it now has a positive connotation. For details see www.staeta.com. Click India. This is a different website from ProSoya.com. Last time ProSoya entered the Indian market, they tried to go from the "bottom up," targeting their products to the lowest income people. This time they will go from the "top down," by establishing the fact that soymilk is being consumed by affluent people. As in North America, the soymilk will be more expensive at retail than dairy milk, not because of the cost of the soymilk but because of the cost of packaging and a smaller distribution system. The product has been very well accepted in India. Flavors include natural (unformulated), original (slightly sweetened), malt, chocolate (with real cocoa), and kesar-pista. Even the hundreds of smaller SoyaCows made by ProSoya are making soymilk consumed mostly by wealthier people, and not by the poor.

In the next phase, ProSoya will start to make powdered soymilk (already developed), sold in plastic pouches, which will be less expensive. This product has an excellent flavor and texture, after it is reconstituted; people can't tell the difference. They say this is the only powdered soymilk that doesn't taste like "paper pulp." Raj's goal in India is to sell soymilk for one-half to one-third the price of dairy milk. The problem with selling liquid soymilk in plastic pouches is the high cost of shipping water, the shorter shelf life, and the need to protect the pouches with secondary packaging. Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

8268. Schweitzer, Peter. 2004. Re: Soybeans and soyfoods in Nicaragua, at the Huichol Center in Mexico, and in Iraq. Letter sent to *Plenty Bulletin* subscribers, June 21. 2 p. Typed, with signature on letterhead.

• ***Summary:*** "We're not doing a full Bulletin this time, just an update about what's happening with Plenty." After 30 years, "I have come to recognize that what we do together might be described, very simply, as ordinary magic. Where people are connected by their love for each other, miracles are commonplace."

"As you know from the most recent Bulletins, we are working on a new project involving four different organizations–two in Guatemala, one in Managua, Nicaragua and the Huichol Center in Mexico, which have requested Plenty's assistance for their soyfoods and nutrition education efforts. We call it CAFSI (Centra American Food Security Initiative). Through CAFSI we will be purchasing soy

processing equipment, and we will help the groups install it, and do trainings in the use and maintenance of the equipment and different ways of preparing soyfoods and making soyfood products for sale. Two of the organizations will be growing soybeans, so seed variety trials have to happen and growing and harvesting techniques learned."

"Thanks to another grant from the Better World Fund, we were able to help the Mayan Soy Dairy operated by ADIBE in San Bartolo near Solola, Guatemala open a shop in a near-by town where they can sell their products. Remember, the ADIBE Soy Dairy is the original Mayan Soy Dairy built by Plenty and the Cakchiquel Maya of San Bartolo in 1979. That Mayan Soy Dairy is 25 years old this year, and they're still making soymilk, tofu, soy ice cream and tempeh using mostly the same equipment we took down in '79. Using your individual donations to Plenty, we were able to provide the funding to upgrade the dairy floor and roof. Now we're raising money to upgrade the equipment."

"The purpose of the Iraq Soy Food Group (ISFG) is to assist economically disenfranchised families improve their access to good planting seed and high nutrient, low cost foods. Plenty is acting as the fiscal sponsor for ISFG. Long-time Plenty soy technician, Charles Haren, is overseeing the project, and Lou Morgan, a Plenty donor for 25 years, has been providing start-up funding. ISFG is working to help families and communities in Iraq improve nutrition intake and financial income by increasing local production, processing, marketing and consumption of soybeans, other dry legumes. Beginning in March ISFG representatives Martin Edwards and Salam Onibi started working with a few farming families and agriculture scientists to re-establish soybean production capabilities (most planting seed has been lost due to the war). The Iraq Soy Foods Group is now seeking funding to establish a Soy Foods Center that will help address immediate and long-term food needs for impoverished populations in Iraq." Address: Executive Director, Plenty, P.O. Box 394, Summertown, Tennessee 38483. Phone: (931) 964-4864.

8269. *SoyaScan Notes.* 2004. Vitamin E: Forms, best sources, function, and value of supplements (Overview). June 23. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Forms: Vitamin E comes in many forms. Various foods contain the alpha-tocopherol, gamma-tocopherol, and delta-tocopherol forms.

Best sources: Foods such as nuts, vegetable oils, whole grains, tomatoes and tomato products, and leafy green vegetables. Soy oil and traditional soy products (such as tofu, soymilk, edamame) made from whole soybeans are excellent sources.

Vitamin E is a powerful antioxidant. Research suggests that the natural forms found in foods may reduce the risk of cardiovascular disease (heart disease, stroke, etc.) and certain types of cancer.

Are supplements as beneficial as foods: Alpha-tocopherol is the form of vitamin E typically found in supplements. Studies have *not* consistently shown that these supplements provide the same risk reducing effects (such as prevention of heart disease and cancer) as does vitamin E found in foods. The high amounts of alpha-tocopherol in supplements may actually reduce levels of the beneficial forms of vitamin E. However supplements containing natural mixed tocopherols (see the 3 forms above) may provide better health benefits. Read the label to determine what a supplement contains.

An additional benefit of dietary vitamin E is that certain foods rich in vitamin E are also rich sources of other compounds that can protect against disease. Unfortunately, many Americans don't get enough vitamin E.

8270. Uhland, Vicky. 2004. Silk ad push is industry's biggest ever. *Natural Foods Merchandiser.* June. p. 20.
• ***Summary:*** A $23.3 million TV advertising campaign has been launched–the most expensive in the history of the natural foods industry, and part of an effort to move Silk into the mainstream. ACNeilsen surveys show that 11% of American households currently purchase Silk–which is the only soymilk ever advertised on television. The four ads feature female actresses of various ages and are "designed to appeal to empowered women." They "focus on Silk as part of a healthy breakfast."

8271. Raine, George. 2004. Bay area charged higher prices for milk: Consumers pay 29% more than U.S. average in study. *San Francisco Chronicle.* July 29. p. A1, A9.
• ***Summary:*** A national consumer survey showed that the average price per gallon in the Bay Area was $4.71, compared with $3.66 nationwide. And the largest grocery chains in the region continue to charge the most. Address: Chronicle staff writer.

8272. *Consumer Reports.* 2004. Soy: Cutting through the confusion. July. p. 28-31.
• ***Summary:*** An excellent, very helpful article. Growing evidence suggests that soy protein and isoflavones may provide health benefits to most people. However, it is often impossible to tell how much of these are in a given product. *Consumer Reports* analyzed 42 foods for the content per serving of aglycone isoflavones, soy protein, and calories. Cost (per serving), organic or not, non-GMO or not is also indicated. Only 6 of these labeled the isoflavone content, but various definitions of "isoflavones" were used–which is very confusing for consumers. A table shows the results of the analysis with the foods grouped in the following categories: Cereals and snacks. Energy bars. Other drinks. Tofu. Non-dairy desserts (soy ice cream). Cultured soy (yogurt). Veggie burgers. Supplements. Soymilk.

Should you limit your intake of soy? (sidebar): Infants,

breast-cancer patients, people on thyroid medication, people with a history of kidney stones, people allergic to soy.

Health benefits: Soy and heart health, soy and menopause, soy and bones, soy and cancer. Behind the labels. How to choose. Photos show many soyfood products.

8273. Takahama, Motohide; Shiraishi, Atsushi. 2004. Mudage o nakusu tônyû rooshon. Bihada o tsukuru nattô rooshon [Soymilk lotion that helps to get rid of unwanted body hair. Natto lotion that makes beautiful skin]. Tokyo: Besto Serazu. 207 p. 15 cm. [Jap]*

8274. Vitasoy International Holdings Ltd. 2004. Annual report 2003/04. New Territories, Hong Kong. 128 p. July. 30 cm. [Eng; Chi]
• ***Summary:*** "At Vitasoy, promoting consumer well-being is our number one priority. This is achieved through the provision of high-quality, nutritious food and beverages. Vitasoy is an innovative company, a reliable employer, a responsible corporate citizen and is dedicated to creating value for our shareholders" (p. 1).

Turnover (sales) rose 1.8% to HK$2,269 million. Gross profit rose 3.5% to HK$1,288 million. EBITDA (earnings before minority interest, interest expense, income taxes, depreciation, and amortization) fell 6.1% to HK$261 million. Basic earnings per share fell 17.5% to 11.8 Hong Kong cents (p. 4).

Sales analysis by product categories: Soymilk 39%. Tea 25%. Tofu 9%. Lunch boxes and snacks 7%. Water 6%. Milk [dairy] 6%. Juice drinks 4%. Others 4%.

Sales analysis by location of customers: Hong Kong 64%. North America 22%. Mainland China 6%. Australia and New Zealand 5%. Others 3%.

A five-year financial summary (from 2000 to 2004), expressed in Hong Kong dollars, appears on page 127. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

8275. **Product Name:** Vitasoy Complete (Soymilk in Aseptic Quart Cartons) [Vanilla or Original].
Manufacturer's Name: Vitasoy USA Inc.
Manufacturer's Address: One New England Way, Ayer, MA 01432. Phone: 1-800-462-7692.
Date of Introduction: 2004. July.
Wt/Vol., Packaging, Price: 1 quart Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (color) sent by Patricia Smith from Natural Products Expo East. 2005. Sept. (but dated July 2004). Two panels each side. Each panel: 28 x 21.5 cm. "Introducing the great-tasting soymilk–That has it all!" On the front panel is a color photo of each carton with a yellow measuring tape around them. Atop the inside two panels: "The first Fiber-Smart, Calcium-Smart, Calorie-Smart, and Carb-Smart soymilk!" A color photo shows a pretty blonde lady holding out the front of her trousers to show how much weight she has lost.

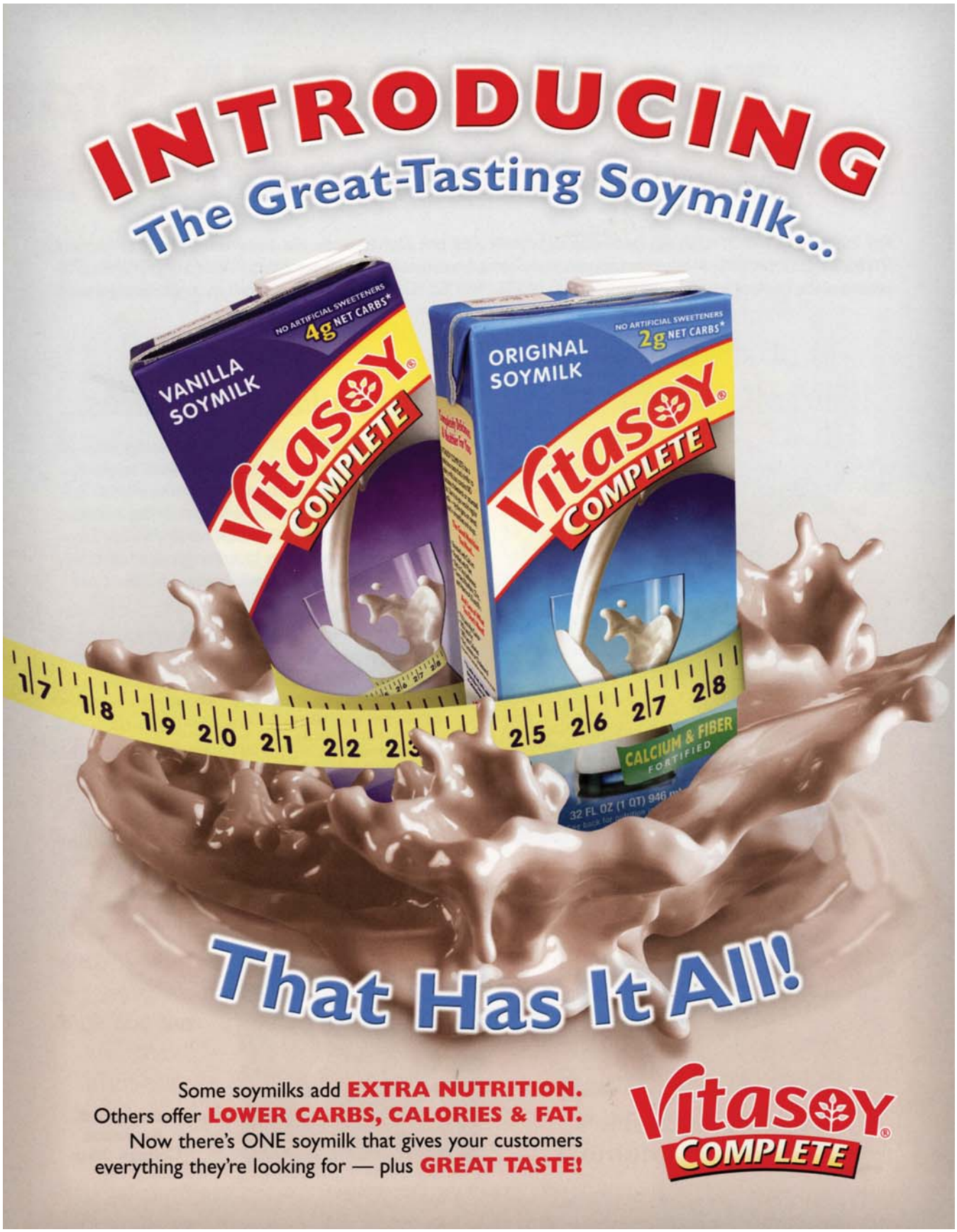
8276. McLaughlin, Lisa. 2004. Eat, drink and be (sort of) healthy. *Time.* Aug. 2.
• ***Summary:*** There are some new cocktails on the bar scene. "And for the soy conscious, Fly Bar in San Francisco serves the 5-0–a mix of sake, soy milk, and pineapple juice."

8277. White Wave, Inc. 2004. Silk–Rise and shine: May today bring more potential boyfriends and less potential annoyances. More job opportunities and less "call again in a few months." More future and less saturated fat (Ad). *Time.* Aug. 2. p. 79.
• ***Summary:*** "A better breakfast starts with no cholesterol, more determination, less sugar and more possibilities." The small print: "Vanilla Silk is compared to 2% dairy milk. Web: www.SilkIsSoy.com. Rise and Shine is a registered trademark of White Wave Inc." Address: Boulder, Colorado.

8278. ProSoya launches soya milk, eyes Rs. 4-crore turnover in first year (Web article). 2004. http:// www.thehindubusinessline.com/ 2004/08/05/ stories/ 2004080502000900 .htm. 1 p. Printed 21 Oct. 2010.
• ***Summary:*** The promoter of the product is Canada-based Mr. Rajendra Gupta, founder of ProSoya Inc. Its subsidiary, ProSoya Foods India (Pvt.) Ltd., has set up a soya milk extraction plant, based on patented technology, in Madhya Pradesh. The product, named Staeta, was test-launched in January of this year in five flavours and has received a good response. Godrej has also recently relaunched soyamilk after its unsuccessful venture in the late 1980s.

8279. Kanner, Ellen. 2004. Final verdict is still not in on the benefits of soy. *Contra Costa Times.* Aug. 11. p. G7.
• ***Summary:*** Some of the suggested health benefits of soy include relief of the unpleasant symptoms of menopause and improved bone mass in older women. However, a year-long study published on July 7 in the *Journal of the American Medical Association* found that soy powder did not "increase bone density, lower cholesterol or improve memory in 175 post-menopausal women."

The article suggests that the conditions of the study may not have been optimal; a longer study on younger women might have different results. Additionally, whole soy foods provide a better dose of isoflavones than soy pills or powder. The author seconds Andrew Weil's recommendation of a daily helping of whole soy foods such as tofu, edamame, soy milk, miso, or soy nuts. Even if the isoflavones in soy don't have miraculous health benefits, soy is still an excellent low-fat, affordable source of protein. Soy can also lower cholesterol and thus reduce the risk of heart disease. Address: Knight Ridder Newspapers.



8280. Newman, Jacqueline M. 2004. Food culture in China. Westport, Connecticut: Greenwood Press. xviii + 230 p. Illust. (color). Index. 24 cm. Series: Food Culture Around the World. [80* ref]
• ***Summary:*** Contents: Series foreword. Introduction. Timeline. Historical overview. Major foods and ingredients. Cooking. Regional and provincial foods. Meals. Eating Out Special occasions. Diet and health. Glossary. Bibliography Resource guide.

Dr. Newman was born in 1932. The following soyfoods are mentioned in the Glossary: dadao [sic, dadou]: Soybeans, which she says were domesticated in north China about 3000 B.C.E. doufu. fuyu. hoisin. mapo doufu.

Concerning doufu [tofu]. Its popularity increased during the Tang dynasty (618-907 C.E.), especially among Buddhists and other vegetarians. Yet it had been known before Tang times (p. 17). It is not known when bean curd was first made. One legend has it that Prince Liu An (lived 179 to 122 B.C.E., during the Western Han, invented bean curd). The Chinese word for soy sauce first appeared in print around the Song dynasty (p. 30-32). Fuyu is fermented bean curd (p. 34). Bean sprouts include those grown from the mung bean and the soybean (p. 52). Hakka-style stuffed bean curd is filled with meat (p. 100). "Dried bean curd wishes personal fulfillment" (p. 161).

Concerning soybeans: The *Qimin Yaoshu* describes how to make "black bean mash," which may have been the earliest known soybean-related condiment (p. 16). Soy sauce, its varieties and bean sauces are described in detail (p. 40-43). A "mother sauce" is a soy sauce mixture used and reused from one similar meat to another (p. 59). Boiling in soy sauce is called *chiang;* it is known in English as red cooking (p. 70). The word "wok" is Cantonese (p. 72-73). Soy milk (p. 52, 99). Steamed sea bass with black bean sauce (p. 151). Address: Food historian and scholar, Former prof., Dep. of Home Economics, Queens College of the City Univ. of New York, 65-30 Kissena Blvd., Flushing, NY 11367.

8281. Calvert, John B. 2004. Soymilk microenterprise: A treatise on small-scale soymilk production. Santa Barbara, California: Published by the author. 82 p. Illust. Index. 28 cm. [10 endnotes]
• ***Summary:*** Contents: Preface. 1. Introduction: What is soymilk microenterprise?, one path of many, history of Gaia Soy, sustainability. 2. Development of recipes. 3. Recipes. 4. The soymilk dairy. 5. Process equipment. 6. Process tools and utensils. 7. Preparing for a batch. 8. Process. 9. Running the business. 10. Running the business. 11. Nutritional info. 11. Suppliers. 12. Research information. Acknowledgments. Appendix A–Weights and measures. Notes.

This is a case study of Gaia Soy, a small soy dairy started by the author which was in operation from December 1997 to late June 1998, supplying fresh bottled organic soymilk to natural food stores in Eugene, Oregon. Actually, the company delivered its first fresh soymilk on 28 March 1996 in half gallon containers to the Growers Market Co-op. Contains many informative photos.

E-mail: jcalvert@rain.org. Address: P.O. Box 143, Santa Barbara, California 93102. Phone: 805-683-5763.

8282. Lydeking-Olsen, Eva; Beck-Jensen, Jens-Erik; Setchell, K.D.R.; Holm-Jensen, Trine. 2004. Soymilk or progesterone for prevention of bone-loss: a 2-year randomized, placebo-controlled trial. *European J. of Nutrition* 43(4):246-57. Aug. Epub 14 April 2004. [47 ref]
• ***Summary:*** "Daily intake of two glasses of soymilk containing 76 mg of isoflavones prevents lumbar spine bone loss in postmenopausal women." Address: 1. Inst. for Optimum Nutrition, Copenhagen, Denmark.

8283. Tofutown.com. 2004. Brief portrait (Website printout–part). www.tofutown.com Printed in August.
• ***Summary:*** At the top of the page in orange: Network of activities. To do list for a sustainable world. Contents: Introduction. Brand names and marketing. Youth researches. Quality. Customer relations. Animal welfare, environmental protection, health. Sustainability. Very big numbers.

Introduction: "The company Tofutown.com GmbH was founded in 1988 in Cologne under the name Viana Naturkost by a group of experienced food producers, brave tofu makers and young musicians. Since then the company has practised 'Business without Guilt" (e.g. the use of purely vegetable organic raw materials, in part from Fair Trade). Even after 15 years the company sees itself as a dynamic "Veggie Start Up Company." Tofutown.com has grown to become a renowned producer of entirely vegetable foods such as meat alternatives and dairy free milk and cream products within Europe. It is part of the Tofutown.com philosophy to produce using one's one know how and not simply "bring into circulation" (i.e. have others produce), which is commonplace in such marketplace niches as organic foodstuffs.

"More than 60 vegetarian products are made in the middle of the beautiful natural countryside of the Volcanic Eifel region, in the town Wiesbaum, which has earned itself the description 'Tofutown.' Tofutown.com is known for its excellent, tasty 'Viana Real Smoked Tofu,' the vegetable drinks 'SoActiv' and ReisActiv, the meat alternatives 'Velami,' 'Vegetarian Kebab' or '½ Pound Veggie Mince,' the dairy free cheese 'Pizzarella,' and the 'Viana Soya Coffee Creamer.' The exquisitely fine 'Country Mild Smoked' from the product range 'Classic Veggie Carpaccio' won the German Vegetarian Union's Trend Prize 2004. The export share of turnover is about 30%. Tofutown products can be found throughout Europe and even in the Kingdom of Bahrain.

"Brand names and marketing: The company produces some 60 items for the European organic market under the

traditional label 'Viana' as well as a soy drink under the quality label 'demeter' (Tofutown.com is a licensed demeter producer).

"In 2003 Tofutown.com was able to introduce a new brand name into German foods retail (supermarkets, warehouses, Cash&Carry, discounters, etc.). This new label is called VeggieLife (slogan: 'happy without meat'), encompasses at present some 15 products and has made its way into 500 supermarkets within just 9 months."

As many as 15,000 users visit the company's websites each week. "We believe in Food Democracy. The Tofutown.com philosophy is that every human should have the opportunity to get an entirely vegetarian product whenever and wherever he or she is hungry or thirsty. If it comes from Tofutown, it's much more delicious and far healthier than something similar containing meat or dairy products. Today's consumers know that they shape their own future with their purchases."

Tofutown.com makes "500,000 tofu burgers and 1,000,000 real vegetarian sausages per year." There are "500,000 faithful and enthusiastic Viana customers... and approximately 35 employees." Address: Wiesbaum, Germany.

8284. **Product Name:** Organic Valley Soy (Soymilk Sold Refrigerated in Half Gallon Pure-Pak / Gable Top Cartons) [Original, Vanilla, or Chocolate].
Manufacturer's Name: Organic Valley (Marketer-Distributor).
Manufacturer's Address: La Farge, Wisconsin 54639.
Date of Introduction: 2004. September.
Ingredients: Filtered water, organic naturally milled cane juice, organic whole soybeans, organic cocoa (Dutch process), calcium carbonate, sea salt, vitamin A palmitate, carrageenan, organic flavor, riboflavin (B2), vitamin D2, vitamin B12.
Wt/Vol., Packaging, Price: Half-gallon Pure-Pak Carton. Retails for $4.99 (2007/06, Lafayette, California).
How Stored: Refrigerated.
Nutrition: Per 1 cup (240 ml): Calories 120, calories from fat 20, total fat 2.5 gm (3% daily value; saturated fat 0.5 gm; *trans* fat 0.5 gm), cholesterol 0 mg, sodium 140 mg (6%), potassium 280 mg (8%), total carbohydrate 19 gm (dietary fiber 3 gm [11%], sugars 16 gm), protein 5 gm. Vitamin A 10%, calcium 30%, vitamin D 30%, vitamin C 0%, iron 6%, riboflavin 30%, vitamin B-12 50%, folate 6%, zinc 4%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Ad (8½ by 11 inch, color) in Natural Foods Merchandiser. 2004. Sept. "New: Organic Valley Soy is making a big splash." A photo shows half-gallon gable-top SL cartons of chocolate, original and vanilla.

Product with Label purchased at Open Sesame in Lafayette, California. 2007. June. 3.75 by 3.75 inches by 10 inches. Front panel: Brown, red, white and green on light blue. Color photo of a stream of chocolate milk with little squares of chocolate in it, against an unfocused forest. "Vitamin and calcium fortified. Family of farms. USDA Organic" logo. One side panel, title "Who birthed my bean," states: "We've introduced organic identity preserved soybeans. Whizz to www.organicvalley.coop/soy. Enter the expiration date on your carton and prepare to meet your bean's maker. You'll be virtually transported to the exact form that your beans originated from." An Iowa soy farmer, Wayne Wangness, says: "Our family is now part of Organic Valley, the largest organic-farmer owned cooperative in America." "Oregon Tilth Certified Organic." This soymilk is made using the entire bean; the fiber is not removed. "Are you aware that other leading brands of soymilk use chemical masking agents to hide unpleasant beaniness? Not us!"

8285. Soymilk and tofu: A healthy delight (Leaflet). 2004. New Delhi, India: American Soybean Association (ASA) / United Soybean Board. 2 p. Front and back. 28 cm.
• ***Summary:*** Contents: Introduction. Soymilk. Tofu (soy paneer). Health benefits of using soymilk and tofu. Lactose intolerance. Heart disease. Osteoporosis and menopause. Cancer. Now soymilk and tofu is available in your city. Try this wonderful food and feel the difference.

This leaflet is printed in black ink on glassy green paper. Two color photos show soymilk and tofu. Ten thousand copies were printed in Sept. 2004. An additional 10,000 copies were printed in Hindi in Jan. 2007. Address: American Soybean Assoc., Asia Subcontinent, 149 Jor Bagh, New Delhi–110 003, India. Phone: (91) (11) 2465-1611.

8286. United Soybean Board. 2004. Consumer attitudes about nutrition–Insights into nutrition, health & soyfoods: National report 2004-2005. Seattle, Washington. 8 p. Sept.
• ***Summary:*** This 11th annual nationwide survey, commissioned by USB, was conducted in early 2004 by an independent research firm in Seattle, Washington. Random telephone interviews were completed with 1,000 consumers, "providing a sample that is consistent with the total American population. The study's margin of error is ±1.9 to 3.1 percentage points and has a confidence level of 95%."

Contents: Introduction and methodology. Nutritional habits and obesity concerns. Healthy food decisions. Cooking oil impressions. Consumer attitudes about fats. Awareness, usage, and trial of soy products. Soyfoods and health: Perceived healthfulness of soy products (74% say healthy, 19% neutral, 7% unhealthy), awareness of health benefits of soy (heart health 29%, prevent obesity / promote weight loss 17%, menopause relief 16%, cancer prevention 8%, good protein source 6%, reduced risk of osteoporosis 2%). Consumer perceptions of biotech [genetically engineered] food. Soy meets beef? Note: This section replaced the section on Consumer awareness and usage

organic products.

Awareness of soyfoods: "Overall consumer awareness of soy products increased this year. Soymilks awareness rating stepped up to 90%, while regular use of soymilk held fairly steady at 16%. "One-quarter [25%] of Americans consume soyfoods or soy beverages once a week or more." However 38% of respondents never consume soy, up 5 points since last year. Among these non-consumers of soy, 37% (down 10 points since last year) report that that nothing in particular prevents them from including soy in their diet, and another 18% say that taste prevents them from incorporating soy in their diet.

Genetically modified foods: The focus of these questions has changed from food to agriculture. 39% "of consumers consider themselves at least somewhat familiar with biotechnology and, of this group, 65% carry a positive perception of its role in agriculture." Awareness is slightly higher among men (66%) than women (64%). Of this group: 34% believe biotech improves the nutritional make-up of crops, 24% don't know enough about biotech to say what role it plays, 13% think that biotech enables farmers to use fewer pesticides, herbicides, and toxins. Other: 29%.

Note: As of Aug. 2008 this full survey is available gratis in PDF format at www.soyconnection.com /health_nutrition / pdf/.

8287. Cui, Zhanglin; James, A.T.; Miyazaki, Shoji; Wilson, Richard F.; Carter, Thomas E., Jr. 2004. Breeding specialty soybeans for traditional and new soyfoods. In: KeShun Liu, ed. 2004. Soybeans as Functional Foods and Ingredients. Champaign, Illinois: AOCS Press. xii + 331 p. See p. 264-322. [217 ref]

• ***Summary:*** Contents: Introduction. Soybean and soyfoods in China: Domestication of soybean, ancient utilization and processing, traditional soyfoods cultivars, current soyfoods markets, modern soyfoods cultivars (cultivars for bean curd {tofu} and soymilk, cultivars for small-seeded soybeans {sprouts, natto}, cultivars for vegetable soybeans {*maodou*}, cultivars for soy sauce, *doujiang, douchi,* and medicine, cultivars with improved seed composition).

Soybean and soyfoods in North America: Introduction of soybean, current soyfoods markets, modern soyfoods cultivars, genetic base and diversity of soyfoods cultivars. Soybean and soyfoods in Japan: Introduction of soybean to Japan, traditional soyfoods in Japan, current soyfoods markets, modern soyfoods cultivars (cultivars for tofu {bean curd} and soymilk, cultivars for *miso* {soybean paste}, cultivars for natto {fermented soybean; Japanese cultivars registered with the Ministry of Agriculture, Forestry and Fisheries (MAFF) include Suzumaru, Kosuzu, Natto-shoryu = Natto-Kotsubu}, cultivars for *nimame* {boiled soybean}, cultivars with low allergenic properties).

Soybean and soyfoods in Australia: Current soyfoods markets, modern soyfoods cultivars. Breeding for the soyfoods market: Tofu (environmental influences on tofu yield and solubility of seed dry matter, genotypic effects on tofu yield, seed protein and gelling properties of tofu, seed color, sugar content, undesirable flavors in tofu), natto, *edamame* or *maodou,* soymilk. Designing future soyfoods cultivars: Increasing protein and oil concentration, soybean protein composition (potential for altering protein composition, mutations in 7S storage-protein genes, mutations in 11S storage protein genes, influence of nutrition on storage protein gene expression, association with protein functionality), soybean carbohydrate composition (genetic regulation of oligosaccharide content), soybean fatty acid composition (genetic modification to reduce saturated fatty acid composition, genetic modification to alter unsaturated fatty acid composition, influence of multiple gene combinations on oil composition), Tocopherols and isoflavones in soybean seed (tocopherols, isoflavones). Summary. Acknowledgments.

Figures: (1) Diagram of two-dimensional representation of genetic relationships among 89 soyfood cultivars derived from a two-dimensional multidimensional scaling (MDS) analysis based on coefficient of parentage. (2) Bar chart of distribution of protein concentration among accessions of the USDA soybean germplasm collection. (3) Bar chart of distribution of oil concentration among accessions of the USDA soybean germplasm collection. (4) Diagram of the stachyose and phytic acid synthetic pathways in soybean. (5) Graph of relation of tocopherol concentrations to C18:3 concentration in mature seed of soybean germplasm with altered linolenic acid concentration, based on germplasm from the population N93-194 x N85-2176. (6) Graph of relation of total isoflavone and protein concentration among soybean cultivars.

Tables: (1) Distribution of releases of 193 public soyfood cultivars developed in China from 1923 to 1995. (2) Origin and description of 193 soyfood cultivars released in China from 1923 to 1995. (3) Distribution of releases of 123 public soyfood cultivars developed in North America from 1956 to 2000. (4) Origin and description of 123 public soyfood cultivars released in North America from 1956 to 2000. (5) Ancestors of North American soybean that contribute to soyfood cultivars but do not contribute significantly to commodity cultivars. (6) Distribution of release of 97 specialty-use public soyfoods cultivars developed in Japan from 1950 to 1995. (7) Origin and description of 97 public soyfood cultivars developed and released in Japan from 1950 to 1995. (8) Cultivars used for soyfood purposes in Australia. (9) Cultivars of Asian origin currently being employed in soyfood breeding in Australia. (10) Desired breeding traits for traditional soyfood cultivars. (11) Ratio of 11S to 7S proteins in seeds of soybean cultivars. (12) Genetic manipulation of soluble carbohydrate concentration in soybeans. Address: 1. North Carolina State Univ., Crop Science Dep., 3127 Ligon St., Raleigh, North

Carolina, 27607, USA.

8288. Egbert, William Russel. 2004. Isolated soy protein: technology, properties, and applications. In: KeShun Liu, ed. 2004. Soybeans as Functional Foods and Ingredients. Champaign, Illinois: AOCS Press. xii + 331 p. See p. 134-162. [39 ref]
• ***Summary:*** Contents: Introduction. Technological development. Functional properties: Solubility, gelation, emulsification, water binding, viscosity, dispersibility, foaming and whipping. Applications in food systems: Hydration of isolated soy proteins, flavor and odor issues, product storage and handling, health and nutrition applications (nutritional bars and other confectionary-type products, liquid nutritional beverages, powdered nutritional beverages, protein tablets), clinical and pediatric nutritional products, meat product applications (injection and marination applications, coarse ground meats, emulsified meats, dry fermented meats), meat analogs products, extruded cereals and snacks, bread and other baked goods, dairy alternative products (soymilks, yogurt, sour creams and soft cheeses, frozen desserts), other processed foods (pasta, soups and sauce, reduced-fat and other spreads). Summary.

Figures: (1) Flow chart of processing schematic for water-washed and alcohol-washed isolated soy proteins.

Tables: (1) Functional characteristics of various isolated soy proteins. (2) Functional properties of isolated soy protein in food systems. Address: Archer Daniels Midland Co., 4666 East Faries Parkway, Decatur, Illinois, 62526, USA.

8289. Liu, KeShun. 2004. Edible soybean products in the current market. In: KeShun Liu, ed. 2004. Soybeans as Functional Foods and Ingredients. Champaign, Illinois: AOCS Press. xii + 331 p. See p. 23-51. [76 ref]
• ***Summary:*** Contents: Introduction. Soybean oil. Traditional soyfoods: Nonfermented soyfoods (soymilk, tofu, variety and current market, nutritional value and health benefits, general processing, soymilk film {yuba}, okara, soybean sprouts, vegetable soybeans, roasted {soynuts} or cooked whole soybeans), fermented soyfoods (fermented soy paste {jiang and miso}, soy sauce, Japanese natto, tempeh, sufu or Chinese cheese, fermented black soybeans {douchi or Hamanatto}). Soy protein products: Soy flour, soy protein concentrated, soy protein isolate, textured soy proteins. Modern soyfoods. Soy-enriched products. Functional soy ingredients / dietary supplements: Soy lecithin, oligosaccharides, isoflavones, tocopherols, phytosterols, trypsin inhibitors.

Figures: (1) Photo of traditional soyfoods. (2) Photo of soy flour and defatted meal after crushing. (3) Bar chart of U.S. soyfood sales since 1992. (4) General flow chart of processing soybeans into various edible products. (5) Flow chart of a traditional Chinese method for making soymilk and tofu. (6) Bar chart of U.S. tofu sales since 1980. (7) Photo of natto, a fermented Japanese soyfood. (8) Flow chart of natto production outline. (9) Photo of soy protein products. (10) Photo of meat analog made by high-moisture extrusion of soybean protein. (11) Photo of new generation of soyfoods in the market. (12) Photo of soy-enriched bakery products. (13) Photo of concentrated soy isoflavone product.

Tables: (1) Classification of various edible soy products in the current market. Address: Univ. of Missouri, Columbia, Missouri.

8290. **Product Name:** Select Organic Plain Soymilk.
Manufacturer's Name: Safeway, Inc. (Marketer-Distributor).
Manufacturer's Address: P.O. Box 99, Pleasanton, CA 94566-0009.
Date of Introduction: 2004. October.
Ingredients: Filtered water, organic whole soybeans, organic cane sugar, tricalcium phosphate, sea salt, natural flavor, carrageenan, zinc gluconate, ascorbic acid (vitamin C), niacin, pantothenic acid, riboflavin (vitamin B-2), vitamin B-6, vitamin A palmitate, thiamine mononitrate (vitamin B-1), folate, vitamin D-2, vitamin B-12.
Wt/Vol., Packaging, Price: Half-gallon Pure-Pak carton. Retails for $3.69 (2004/12, Lafayette, California).
How Stored: Refrigerated.
New Product–Documentation: Product with Label purchased at Safeway supermarket in Lafayette, California. 2004. Dec. 28. 3.75 by 10 by 3.75 inches. Orange, white, and black on light yellow. Front panel: "Nourish your body and mind. Cholesterol free. Vitamin fortified. Calcium enriched. Contains 40 mg of isoflavones per serving." USDA Organic logo near bottom. On one side is a recipe for Blueberry Pie Smoothie, and "Certified organic by Quality Assurance International." On the opposite side we read: "Ancient food enjoys a comeback. More than ever, soy is part of the healthy lifestyles of people from all walks of life. A staple in the diets of some cultures for thousands of years, soy is being discovered by new generations as one of nature's most versatile foods. Scientific studies have shown the health benefits of soy. And Safeway Select Organic Soymilk is a convenient and delicious way to add soy to your diet. Your body–especially your tastebuds–will thank you!" This is followed by three paragraphs with bullet-style logos: "Our soybeans are certified organic. Heart health. Good, and good for you."

Talk with Peggy in customer service at Lafayette, Safeway. 2004. Jan. 20. The product was introduced in Oct. 2004.

8291. **Product Name:** Trader Joe's Organic Unsweetened Soy Milk.
Manufacturer's Name: Trader Joe's (Marketer-Distributor).

Manufacturer's Address: Monrovia, CA 91016.
Date of Introduction: 2004. October.
Ingredients: Filtered water, organic whole soybeans. Certified organic by Quality Assurance International.
Wt/Vol., Packaging, Price: 1 quart (946 ml) Tetra Brik aseptic carton with reclosable cap. Retails for $1.19 (2005/01, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 1 cup (8 fl oz): Calories 90, calories from fat 40, total fat 4.5 gm (7% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 15 mg (1%), total carbohydrate 4 gm (dietary fiber 2 gm [8%], sugars 2 gm), protein 9 gm. Vitamin A 2%, calcium 2%, iron 8%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2005. Jan. 9. This is plain soymilk, with nothing added. Top 1/3 of carton has black letters on a pea-green background. Lower 2/3 has green vegetable soybeans and their pods on a slightly pinkish-beige background. Front panel (lower right) has USDA Organic and QAI logos. Back panel states that this soy milk "has several health benefits. An added plus to the great flavor! 70 mg of isoflavones per serving. Lactose free. Gluten free. 9 grams of soy protein per serving." Followed by the FDA heart-health claim.

8292. **Product Name:** Wildwood Soyogurt Smoothie [Wildly Berry, Mango Apricot Tango, Orange Orange, Kickin' Key Lime, or Vivacious Vanilla].
Manufacturer's Name: Wildwood Harvest Foods, Inc.
Manufacturer's Address: 810 Blakely Circle, Grinnell, Iowa 50012 & 416 E. Riverside Dr., Watsonville, CA 95076. Phone: 1-800-459-TOFU or 813-728-4448.
Date of Introduction: 2004. October.
Ingredients: Kickin' Key Lime: Organic soymilk (filtered water, soybeans*), evaporated cane juice*, water, lime*, tricalcium phosphate, pectin, natural flavors, locust bean gum, sodium citrate, turmeric (for color), active cultures (L. acidophilus, B. lactis, B. longum, S, thermophilus). * = organic.
Wt/Vol., Packaging, Price: 10 fluid oz. in white plastic bottle.
How Stored: Refrigerated.
New Product–Documentation: Spot in *Natural Foods Merchandiser.* 2004. Oct. p. 142.

Leaflet (8½ by 11 inch, single sided, color photocopy) sent by Patricia Smith from Natural Products Expo West. 2005. March. "Wildly delicious SoYogurt Smoothie!" "Less carbs." A color photo in the top half of the front shows the 5 flavors in bottles. The bottom half gives nutrition facts, ingredients, case specifications, and pallet configuration.

8293. **Product Name:** Spicy Braised Tofu, Kung Pao Tofu Salad, Spicy Yuba Strips.
Manufacturer's Name: Basic Soy Beanery (renamed Hodo Soy Beanery in Sept. 2005).
Manufacturer's Address: 1600 S. De Anza Blvd., San Jose, CA 95106. Phone: 408-517-8958.
Date of Introduction: 2004. December.
Ingredients: See below.
Wt/Vol., Packaging, Price: -
How Stored: Refrigerated.
New Product–Documentation: Labels by brought to Soyinfo Center by Minh Tsai on 2009. Sept. 16. Ingredients:

Spicy Braised Tofu: Soybeans, water, calcium sulfate, star anise, teriyaki sauce, vinegar, chili oil.

Kung Pao Tofu Salad: Soybeans, water, calcium sulfate, soy sauce, tea infusion (loaf is smoked over tea leaves), teriyaki sauce, chili oil, vinegar, peanut, cilantro.

Spicy Yuba Strips: Soybeans water, soy sauce, sugar, soybean oil, teriyaki sauce, vinegar, chili oil.

8294. Iowa Soybean Promotion Board. 2004. Simply soy: Recipes celebrating nature's perfect bean. Urbandale, Iowa: Iowa Soybean Promotion Board. 151 p. Illust. Index. 23 cm. • ***Summary:*** A gorgeous book, filled with elegant, mouth-watering full-page color photos of prepared recipes. Contents: Introduction, by Linda Funk, Executive Director, The Soyfoods Council. 1. The magical bean: Soy to the world, soy and health, the soyfoods pantry (glossary incl. soybean oil, soymilk, tofu, tempeh, edamame, soynuts, soy flour, textured soy protein, canned soybeans, miso, soy protein powder {soy protein isolates}, dried soy flakes {MicroSoy}, soy yogurt and smoothies, soy pasta {ADM}). Soyfood nutrient chart. 2. Start it up with soy: Appetizers and nibbles. 3. On the sidelines: Sides and salads. 4. Spoon fed: Comforting soups and stews. 5. Vegetarian anyone? 6. Teamwork: Pork, beef, chicken, seafood and soy. 7. The bread box: Breads and muffins. 8. Desserts: Soy and spice and everything nice. 9. Cooking with kids. Resources (Directory of members of The Soyfoods Council and their soy products; Directory of state and national soybean boards).

A smoothie (p. 133) is made at home by combining 1 cup soymilk (plain or vanilla), ½ medium banana (may be frozen, if desired), and optional nondairy ingredients, such as chocolate syrup, peanut butter, fruit juice concentrate, or frozen fruits (alone or in combinations–pineapple, orange, cranberry, raspberry, etc.). "Many of the soy smoothies and soy yogurts on the market today are probiotic, meaning they contain active, live cultures that are beneficial to intestinal health." Address: 4554 N.W. 114th Street, Urbandale, Iowa 50322-5410. Phone: 866-431-9814.

8295. IQPC, Food & Beverage Div. 2004. SoyFoods 2002: Take your product development and marketing strategies to the next level. Register by January 5, 2005 and save $300 (Brochure). Iselin, New Jersey: International Quality &

NUTRITION FACTS & INGREDIENTS

Kickin' Key Lime	Mango Apricot Tango	Vivacious Vanilla	Wildly Berry	Orange Orange
Nutrition Facts Serving Size Container 1 (295mL)	**Nutrition Facts** Serving Size Container 1 (295mL)	**Nutrition Facts** Serving Size Container 1 (295mL)	**Nutrition Facts** Serving Size Container 1 (295mL)	**Nutrition Facts** Serving Size Container 1 (295mL)
Amount per Serving	Amount per Serving	Amount per Serving	Amount per Serving	Amount per Serving
Calories 180 Fat Cal 30	Calories 180 Fat Cal 30	Calories 180 Fat Cal 30	Calories 170 Fat Cal 30	Calories 180 Fat Cal 30
% Daily Values*	% Daily Values*	% Daily Values*	% Daily Values*	% Daily Values*
Total Fat 3.5g 6%	**Total Fat** 3.5g 6%	**Total Fat** 3.5g 6%	**Total Fat** 3.5g 6%	**Total Fat** 3.5g 6%
Sat Fat 0.5g 2%	Sat Fat 0.5g 2%	Sat Fat 0.5g 2%	Sat Fat 0.5g 2%	Sat Fat 0.5g 2%
Trans Fat 0g 0%	*Trans Fat* 0g 0%	*Trans Fat* 0g 0%	*Trans Fat* 0g 0%	*Trans Fat* 0g 0%
Cholest 0mg 0%	**Cholest** 0mg 0%	**Cholest** 0mg 0%	**Cholest** 0mg 0%	**Cholest** 0mg 0%
Sodium 210mg 9%	**Sodium** 200mg 8%	**Sodium** 200mg 9%	**Sodium** 200mg 8%	**Sodium** 210mg 9%
Total Carb 32g 11%	**Total Carb** 32g 11%	**Total Carb** 30g 10%	**Total Carb** 28g 9%	**Total Carb** 32g 11%
Fiber 3g 12%	Fiber 3g 13%	Fiber 3g 12%	Fiber 3g 13%	Fiber 3g 12%
Sugars 26g	Sugars 25g	Sugars 24g	Sugars 22g	Sugars 25g
Protein 8g 12%	**Protein** 8g 12%	**Protein** 8g 12%	**Protein** 8g 12%	**Protein** 8g 12%
Vitamin A 0% • **Vitamin C** 0% **Calcium** 0% • **Iron** 6%	**Vitamin A** 0% • **Vitamin C** 4% **Calcium** 20% • **Iron** 15%	**Vitamin A** 0% • **Vitamin C** 0% **Calcium** 20% • **Iron** 15%	**Vitamin A** 0% • **Vitamin C** 4% **Calcium** 20% • **Iron** 15%	**Vitamin A** 0% • **Vitamin C** 4% **Calcium** 20% • **Iron** 15%
*Percent Daily Values based on a 2,000 calorie diet.	*Percent Daily Values based on a 2,000 calorie diet.	*Percent Daily Values based on a 2,000 calorie diet.	*Percent Daily Values based on a 2,000 calorie diet.	*Percent Daily Values based on a 2,000 calorie diet.
INGREDIENTS: ORGANIC SOYMILK (FILTERED WATER, SOYBEANS*), EVAPORATED CANE JUICE*, WATER, LIME*, TRICALCIUM PHOSPHATE, PECTIN, NATURAL FLAVORS, LOCUST BEAN GUM, SODIUM CITRATE TURMERIC (FOR COLOR), ACTIVE CULTURES (L. ACIDOPHILUS, B. LACTIS, B. LONGUM, S. THERMOPHILUS). *ORGANIC	**INGREDIENTS:** ORGANIC SOYMILK (FILTERED WATER, SOYBEANS*), EVAPORATED CANE JUICE*, MANGO*, APRICOT*, WATER, NATURAL FLAVORS, TRICALCIUM PHOSPHATE, ANNATTO EXTRACT (FOR COLOR), PECTIN, LOCUST BEAN GUM, LEMON JUICE CONCENTRATE*, ACTIVE CULTURES (L.ACIDOPHILUS, B. LACTIS, B. LONGUM, S. THERMOPHILUS). *ORGANIC	**INGREDIENTS:** ORGANIC SOYMILK (FILTERED WATER, SOYBEANS*), EVAPORATED CANE JUICE*, EXTRACT OF VANILLA*, NATURAL VANILLA FLAVOR*, TRICALCIUM PHOSPHATE, PECTIN, LOCUST BEAN GUM, LEMON JUICE CONCENTRATE*, ACTIVE CULTURES (L.ACIDOPHILUS, B. LACTIS, B. LONGUM, S. THERMOPHILUS). *ORGANIC	**INGREDIENTS:** ORGANIC SOYMILK (FILTERED WATER, SOYBEANS*), EVAPORATED CANE JUICE*, STRAWBERRIES*, BLUEBERRIES*, RASPBERRIES*, NATURAL FLAVORS, TRICALCIUM PHOSPHATE, PECTIN, GRAPE JUICE CONCENTRATE (FOR COLOR), LOCUST BEAN GUM, ACTIVE CULTURES (L.ACIDOPHILUS, B. LACTIS, B. LONGUM, S. THERMOPHILUS). *ORGANIC	**INGREDIENTS:** ORGANIC SOYMILK (FILTERED WATER, SOYBEANS*), EVAPORATED CANE JUICE*, WATER, ORANGE JUICE CONCENTRATE*, NATURAL FLAVORS, TRICALCIUM PHOSPHATE, PECTIN, ANNATTO EXTRACT, LOCUST BEAN GUM, CITRIC ACID, LEMON JUICE CONCENTRATE*, ACTIVE CULTURES (L.ACIDOPHILUS, B. LACTIS, B. LONGUM, S. THERMOPHILUS). *ORGANIC

PRODUCT SPECIFICATIONS

PRODUCT			CASE SPECIFICATIONS				PALLET CONFIGURATION				
UPC CODE	PRODUCT DESCRIPTION	PACK /SIZE	CASE DIMENSIONS	GROSS WT. (LBS.)	NET WT. (LBS.)	CASE CUBE	PALLET PATTERN	TOTAL CASES	GROSS WEIGHT (LBS.)	NET. WEIGHT (LBS.)	TARE WEIGHT (LBS.)
WILDWOOD ORGANIC PROBIOTIC SOYSMOOTHIE											
0-30871-20008-7	Org. SOYsmoothie, Wildly Berry	6/10 fl. oz.	9.75X6.375X4.5	4.75	3.78	.16	41x8	328	1330	1058	272
0-30871-20009-4	Org. SOYsmoothie, Vivacious Vanilla	6/10 fl. oz.	9.75X6.375X4.5	4.75	3.78	.16	41x8	328	1330	1058	272
0-30871-20023-0	Org. SOYsmoothie, Mango Apricot Tango	6/10 fl. oz.	9.75X6.375X4.5	4.75	3.78	.16	41x8	328	1330	1058	272
0-30871-20024-7	Org. SOYsmoothie, Kickin' Key Lime	6/10 fl. oz.	9.75X6.375X4.5	4.75	3.78	.16	41x8	328	1330	1058	272
0-30871-20025-4	Org. SOYsmoothie, Orange Orange	6/10 fl. oz.	9.75X6.375X4.5	4.75	3.78	.16	41x8	328	1330	1058	272

WILDWOOD NATURAL FOODS, INC., 810 BLAKELY CIRCLE, GRINNELL, IOWA 50112
& 416 E. RIVERSIDE DR., WATSONVILLE, CA 95076 www.wildwoodnaturalfoods.com

Productivity Center. 8 p. 28 cm.
• ***Summary:*** This glossy brochure (green and yellow on white) states: "Food & Beverage is proud to present its 8th annual soyfoods conference. Two-day conference: March 1-2, 2005. Pre-conference workshops: February 28, 2005. Rasisson Hotel Miami, Miami, Florida. This brochure gives details on the conference agenda, with the names of the speakers, presenters or workshop leaders, the title of the presentation, and the date and time. Pre-conference workshops (Monday): (A) New strategies and techniques for product innovation, led by Mattson & Co. (B) Think big: Redefining the competition to expand your market, led by Garnet Pigden, The Solae Co. (Solae has come up with a campaign pitting soy products directly against the dairy industry). (C) Understanding your consumer–Soyfoods focus group workshop, led by Primary Insights.

Day 1 includes: "Understanding the soyfood trends of today and tomorrow," by: Tina Nelson of SunRich (the U.S. soyfoods market hit nearly $4 billion in 2003, up 7.2% over 2002). "Kraft's health and wellness initiatives: Evolving with today's consumers," by Kevin Scott, Boca Foods, a div; of Kraft Foods, Inc. "Out of the box: Designing the soy products of tomorrow," by Robert C. Jones, President and CEO of Vitasoy USA. "Partnering with the soy protein ingredient supplier to develop functional products for the future," by Deborah Schultz of Cargill Health and Food Technology. "The soymilk revolution: Marketing for mainstream appeal," by Mary Adams of White Wave. "Understanding the vegetarian, 'flexitarian' and omnivore market for soyfoods," Terry Gieseke of Nutriant, a Kerry Company (Flexitarians are people who usually eat vegetarian but occasionally dine out on meat). "Creating a winning soy snack food," by Tim Walter of Peanotz, Inc. Dominic Dyer, of Soya Protein Assoc., UK.

Day 2 includes: "Making sense of soy health research," by Mark Messina of Nutrition Matters. "Soy and menopause: A clinicians view," by Dr. Ari Babaknia, MD of DrSoy. "Can soyfoods play a role in reducing obesity?" by Barbara Klein of Illinois Center for Soy Foods. "Lessons learned from the US FDA cancer claim petition," by Garnet Pigden of Solae (cites 58 studies as evidence that soy reduces the risk of cancer of the breast, prostate, and colon). "Improving product flavoring to meet consumer preferences," by Mary T. Nash of TIAX LLC. "Research meets commerce: Using new Non-GMO technology to create highly marketable new products," by Daniel Facciotti of Davis Lab, Anawah (Tilling = Targeting Induced Local Lesions in Genomes, a new technology to manipulate gene traits and generate novel ingredients). "Lowering trans fat content with new low linolenic soybeans," by Prof. Walter Fehr of Iowa State Univ.

The price is very expensive: Gold package–$3,186 for the conference plus 3 workshops (save $300) or $1,899 for the conference only. Address: 555 Route 1 South, Iselin, New Jersey 08830. Phone: 1-800-882-8684.

8296. Kao, T.H.; Lu, Y.F.; Hsieh, H.C.; Chen, B.H. 2004. Stability of isoflavone glucosides during processing of soymilk and tofu. *Food Research International* 37:891-900.
*

8297. **Product Name:** SoYummi [Coffee].
Manufacturer's Name: Les Aliments SoYummi.
Manufacturer's Address: 3655 Redpath, Montreal, Quebec, Canada H3G 2W8.
Date of Introduction: 2004.
Wt/Vol., Packaging, Price: 125 gm in a low plastic (polypropylene) cup, with flat lid and individual sleeve. Retails for Canadian $1.39.
How Stored: Refrigerated, 35-40 day shelf life.
New Product–Documentation: Talk with Joanne Hollander. 2008. May 29. In 2004 the company added a 5th flavor, coffee, to their "Classic" line. She doesn't recall which month. This is a dessert made with real coffee that uses soymilk instead of dairy milk.

In 2003 the company won an award–the Grand Prix–for the best new dessert product in Canada. That included non-organic products, so she was competing against Pillsbury and Big Food. The prizes are organized and sponsored by the Canadian Grocers Association.
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8298. **Product Name:** Westsoy Unsweetened Chocolate Soymilk.
Manufacturer's Name: The Hain Celestial Group (Product Developer-Marketer).
Manufacturer's Address: Melville, New York 11747.
Date of Introduction: 2004.
Ingredients: Organic soymilk (filtered water, whole organic soybeans), filtered water, natural flavors, cocoa powder (treated with alkali), carrageenan.
Wt/Vol., Packaging, Price: 1 quart (32 fl. oz., 946 ml) aseptic Tetra Pak carton. Retails for $0.99.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Product with Label sent by Martine Liguori. 2006. June. Purchased at Grocery Outlet, Pleasant Hill, California. Front panel: Color photo shows chocolate soymilk being poured from a pitcher into a clear glass, against a background of stripes of green and yellow vanishing toward purple mountains. "Made with organic soymilk. 1 g net carbs. 46 mg isoflavones per serving. Lactose and dairy free." Taste test: Nice flavor. Chocolate taste pleasant. User can add sweetener, if desired, to taste. Nice idea. Chocolate taste is pleasant.

8299. Atlas, Nava. 2004. The vegetarian family cookbook. New York, NY: Broadway Books. 339 p. Illust. Index. 23 x 21 cm. [15 ref]
• ***Summary:*** Contains 275 vegetarian recipes, many of which

are vegan; a vegan option is provided for almost all of the recipes that are vegetarian.

The index contains 47 entries for tofu (incl. silken, soft, firm, extra firm), 13 for seitan, 4 each for tempeh, soy mayonnaise, and soy milk, 3 for soy yogurt, 2 each for edamame and miso, 2 each for soy nut butter, soy allergy, soy products, and 1 each for soy Canadian bacon, soy cheese, soy cream cheese, soy hot dogs, and soy pasta.

About the author: Nava Atlas is the author of eight previous vegetarian cookbooks. Her website, www.vegankitchen.com, is one of the most widely visited culinary websites on the Internet. She lives in the Hudson Valley with her husband of 25 years (Chaim "Rocky" Tabak) and their two sons, Adam and Evan. A photo (p. 339) shows Nava Atlas. Address: Author and illustrator, New Paltz, New York.

8300. Elliot, Rose. 2004. New vegetarian cooking: 120 fast, fresh, and fabulous recipes. New York, London, Toronto, Sydney: Simon & Schuster. 192 p. Illust. (color). 28 cm. Index.

• ***Summary:*** Contains many full-page color photos, mostly of dishes prepared from recipes. Chapter 1: Why I'm a vegetarian: Being a healthy vegetarian or vegan, get slim and stay slim, eating for two, nurturing the next generation, look younger, live longer. Chapter 6 is titled "Tofu, tempeh, and seitan" (p. 138-61). Other soy-related recipes and info include: Soy milk (p. 13, 20, 21, 23, 188). Green soybeans [frozen edamame] (with soba, p. 60, 61). Tofu mayonnaise (p. 66). Breakfast smoothie (p. 118, with soy milk, rice milk, or almond milk). Soy yogurt (p. 119, 188). Soy sauce (p. 153, 188). Soy creamer (p. 169, 188). Also discusses: Sea vegetables (arame, hijiki). Quinoa.

8301. Grimaldi, Polly. 2004. Quick and easy soy and tofu recipes. Hayward, California: Bristol Publishing Enterprises. (A Nitty Gritty book). iv + 155 p. Illust. Index. 14 x 21 cm.

• ***Summary:*** Contents: 1. An introduction to tofu and soy. 2. Breakfast. 3. Entrees. 4. Side dishes. 5. Salads. 6. Soups. 7. Sauces, spreads, dips and snacks. 8. Breads. 9. Drinks. 10. Desserts. Address: Hayward, California.

8302. Hottinger, Greg. 2004. The best natural foods on the market today: A yuppie's guide to hippie food. Vol. I. Asheville, North Carolina: Huckleberry Mountain Press. 223 p. Index. 23 cm. [94 ref]

• ***Summary:*** This book looks very commercial because it mentions many natural products by brand name. We wonder if companies paid to be mentioned. Contains scattered recipes for branded products, and scattered sidebars titled "Hippie wisdom." Discusses: Almonds, almond butter, almond milk, American Miso Co., antibiotics (used in agriculture in 4 different ways; prevention, treatment, and control of disease, and growth promotion. In 1998 the European Union banned the use of antibiotics to promote growth in livestock. In Oct. 2000 the FDA proposed a ban on two antibiotics also used to treat humans), antioxidants, Bifidobacterium (bifidus), bovine growth hormone, bovine somatotropin (BST), Bragg Live Foods, Bragg Liquid Aminos, breast cancer, calcium, canola oil, celiac disease, cereal & Kellogg Brothers, cheese alternatives, dulse, edamame, Eden Foods (says "Eden Foods opened shop in 1968. By 1969 they were grinding their own flours and bottling their own oils and nut butters"), FDA, flaxseed oil, Galaxy Foods (says they "started in 1972 when founder Angelo Morini invented a new way to make a cheese product free of saturated fat, cholesterol, and the milk sugar, lactose"), genetically engineered foods, ghee, ginger, gluten sensitivity, glycemic index, GMO [genetically engineered] crops, Graham–Sylvester, heart disease, hippie foods, Horizon Organic, hormones, Lactobacillus, lactose intolerance, Lappe–Francis Moore, Lightlife Foods, magnesium, Maine Coast Sea Vegetables, Messina–Mark, milk–problems with, miso, Miso Master brand, nutritional yeast, oils, olive oil, omega-3 and omega-6 fatty acids, organic farming, palm oil, phytochemicals, phytoestrogens, prostate cancer, protein, Red Star nutritional yeast, quinoa, saturated fat, sodium, soymilk, soy products, soy sauce, soy supplements and concerns, soy yogurts, spelt, Stonyfield Farm, tahini, tamari, tempeh, trans fats (hydrogenated oils), WholeSoy Company. Near the back are many color coupons for the companies mentioned in the book by name. Address: MPH, RD, Asheville, North Carolina.

8303. Petrovna, Tanya. 2004. The Native Foods Restaurant cookbook. Boston, Massachusetts: Shambhala Publications, Inc. xxiv + 328 p. Foreword by Deborah Madison. Illust. by Stephen Brogdon. Index. 23 x 19 cm.

• ***Summary:*** The author is co-owner of this chain of four restaurant in southern California. All the recipes are vegan. The index contains 22 entries for soy, 18 for tofu, 17 for tempeh, 16 for seitan, 7 for cheese–nondairy, 6 for soybeans, 5 each for edamame and soy cream cheese, 4 each for meat alternatives and miso, 2 each for soy milk, soy protein textured, soy sour cream, and textured soy protein, 1 each for milk–soy and soy sauce.

On the color cover is a fine photo of Tanya holding out a shallow basket of vegetables. Address: Co-owner and head chef, four Native Foods Restaurants in southern California (in Los Angeles, Palm Springs, Desert Springs, and Costa Mesa).

8304. Takagi, Junko. 2004. The best of tofu. Translated from the Japanese by Kazuko Nagai and Karen Sandness. Tokyo: Japan Publications Trading. Distributed by Kodansha America through Oxford University Press. 112 p. Illust. (color). Index. 26 cm.

• ***Summary:*** Contents: Cooking regular tofu (Simmered tofu. Chilled tofu. Mapo tofu). Hiya-yakko and salad-

yakko. Homemade tofu. Okara recipes. Tofu as a main dish. Varieties of tofu (momen tofu, soft tofu, juten tofu, yose tofu, oboro tofu, zaru tofu, silken tofu). A brief history of tofu. The nutritional value of tofu. Homemade aburage and atsuage. Simple accompaniments to drinks. Preserved tofu. Draining tofu. Preserving tofu. Cutting techniques. Homemade frozen tofu. Soup and one-pot dishes. Homemade yuba. Desserts (incl. soymilk pudding).

The section titled "Preserved tofu" includes: Tofu preserved in soy sauce with garlic (p. 82). Tofu preserved in miso (p. 82). Tofu preserved in herb oil (p. 83). Tofu preserved in kochujang (p. 82).

A small portrait photo shows Junko Takagi. Address: Japan.

8305. Herring, Sandy. 2005. The Solae Branded Products program (Interview). *SoyaScan Notes.* Jan. 5. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** For a product to become part of the Solae Branded Partners program, the manufacturer must agree to two things: (1) To put the Solae logo (of at least a minimum size) on the product. (2) To include a minimum amount of Solae brand isolated soy protein (ISP) in the product. Usually Solae's advertising program ("Protein in Unexpected Places") promotes some of the Branded Partners' products. The makers of some products that do contain Solae might decide not be part of the Branded Partners program because (for example), the package might be too small to include the logo, the amount of protein that gives the maximum acceptability and profitability might be less than Solae requires.

In the past, many products contained ISP for its functional properties, such as being a good binder or emulsifier. The new program is designed to add value to consumer products by making Solae a "characterizing ingredient" and by advertising that the product contains Solae. Before Solae approaches a potential new customer about "a co-branding opportunity," they do a great deal of consumer research and market research about the concept of a product that contains Solae–its acceptability and how the new product or product concept "would resonate with their consumers." Solae presents their ideas of how the ad might look, the packaging might look, etc.

A media release (faxed by Sandy to Soyfoods Center) lists the following 16 branded products: 8th Continent Soymilk (www.8thcontinent.com), Snapple-A-Day Meal Replacement Beverages (www.snappleaday.com), V8 Splash Smoothies (www.v8juice.com), Gardenburger Meat Alternatives (www.gardenburger.com), Mori-Nu Tofu (www.morinu.com), Yves Veggie Cuisine (www.yvesveggie.com), NuGo Bars (www.nugonutrition.com), DelightFull Meal Replacement & Snack Bars (www.affinta.com), DelightFull Smart Snax (www.delight-full.com), Hormel Health Labs Great Shake & Great Shake Plus (www.hormelhealthlabs.com), Perky's 100% Natural Nutty Grains & Soy Cereal (www.pacgrain.com), Natural Harmony Foods SoyLean (www.soylean.com), So Good Soymilk (available in Canada) (www.so-good.com), Linda McCartney Spicy Peanut Pasta with Vegetarian Chicken (www.linda-mccartney.com), Body Choice Premium High Protein Cookies (www.bodychoicenutrition.com), El Burrito Meat Alternatives (www.elburrito.com).

Note: The Solae Company Logo and Solae* are trademarks or registered trademarks of Solae LLC. Address: The Solae Co., P.O. Box 88940, St. Louis, Missouri 63102. Phone: 314-982-2680.

8306. Cadwallader, Keith R.; Klein, Barbara P.; Sullivan, Cheryl L.; Nash, Marilyn; Khanna, Pradeep; Weingartner, Karl E. 2005. Soy for the last minute chef. Champaign-Urbana, Illinois: Illinois Center for Soy Foods. 63 p. Illust. No index. 24 cm. Series: Soy in the American Kitchen.

• ***Summary:*** Contents: Illinois Center for Soy Foods. Bringing soy foods to the American table, the international way. Why eat soy? Soy foods: Soy flour, soy protein isolate, soymilk, tofu (sidebar: What can you do with half a carton of tofu?), textured vegetable protein, edamame, black soybeans, soy nuts, tempeh, miso, soy analogs. Nutrient information. Purchasing soy foods. Recipes. One recipe per page. Contains many excellent full-page color photos (by David Riecks) of prepared dishes. Photos (p. 57) show: Marilyn Nash, Barbara Klein, Cheryl Sullivan, Megan Puzey, and David Riecks. Address: 1. PhD, Director, Illinois Center for Soy Foods, 170 National Soybean Research Center, 1101 Peabody Dr., Univ. of Illinois, Urbana, IL 61801. Phone: (212) 244-1706 or www.soyfoodsillinois.uiuc.edu.

8307. Adamy, Janet. 2005. Behind a food giant's success: An unlikely soy-milk alliance. At Dean Foods CEO, Buddhist team up to sell Silk brand, and gain clout in organics. Mr. Engles's on 'Sukha.' Nature's way. *Wall Street Journal.* Feb. 1. p. A1, A8.

• ***Summary:*** About Steve Demos, White Wave and Silk soymilk. "Mr. Engles, a Yale-educated lawyer, built Dean Foods Co. into a giant in the dairy business by rolling up little players and slashing costs."

A graph shows the price of Dean Foods' share price from 1998-2005; it has more than tripled in value. A bar chart shows Dean Foods' annual revenue from 1998 to 2004 (projected); it has increased significantly every year. A portrait illustration (dot-style) shows Gregg Engles.

8308. Ridenour, Jeremiah. 2005. Pulmuone first invests in Wildwood Natural Foods in April 2004 (Interview). *SoyaScan Notes.* Feb. 13. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Jeremiah met Tom Lacina and his partner / brother-in-law one day when they showed up at the

Wildwood plant in Santa Cruz. Jeremiah took them on a tour of the plant, then they went out to lunch. Tom was one of those rare people who was both an attorney and a farmer. He owned a farm and had built a small tofu shop on his land. He was selling about $50,000/year worth of soy products at the most. They said they were struggling in Iowa trying to make their tofu plant work, and they were losing tons of money. Somebody (Shurtleff) told Lacina that if he wanted to be successful, he should model his company after Wildwood. After visiting Wildwood, they visited San Diego Soy Dairy and Luke Lukoskie. He then called Jeremiah and said that if he was ever in the Midwest, he was welcome to stop by for a visit. On a trip to the East, Jeremiah stopped in to see Tom, who introduced him to venture capitalists (VCs) in Des Moines who scouted for companies potentially suited for Iowa state money. The VCs grilled Jeremiah about his business. To get money from the state of Iowa, a company had to have more than $5 million/year in sales. Jeremiah really liked Tom and the Soy Sisters (Tom's wife and sister). Wildwood had run out of capacity, working around the clock 7 days a week, so it was "grow or else." Wildwood and Midwest Harvest Corp. (Tom's company) ended up merging, becoming an Iowa corporation and getting money from the state of Iowa for job creation in Iowa and value-added products made in Iowa from Iowa farm crops. A certain percentage of that money had to be spent in Iowa, but Jeremiah was able to get enough to buy a used meat-packing plant in Watsonville, about 25 miles southeast of Santa Cruz. First the new corporation bought 10 acres of land in Grinnell, Iowa, 1½ miles down the road from Tom Lacina's farm and in 2001 built a state-of-the art plant (22,000 square feet) where only soymilk and cultured foods (such as soy yogurt) were made–the only such plant in the USA. Jeremiah has long had a strong commitment to organic farming and the use of organic ingredients wherever possible in his products. On his 320-acre farm, Tom Lacina grows some of the organic soybeans that Wildwood makes into cultured soyfoods in Iowa. This is the type of vertical integration that Jeremiah had long sought. Jeremiah used to contract with various organic farmers, but he gradually found problems keeping the protein levels of his two select varieties high enough and ensuring the cleanliness of the soybeans he wanted. So 5-6 years ago he started to buy his soybeans through a broker, and giving very clear specifications–such as at least 43% protein in the soybeans to be used in making tofu. That system has proven to be much better.

While building his first factory in Iowa, Jeremiah bought an old meat-packing plant in Watsonville, California and began to renovate it for food processing. Building two plants at once turned out to be a big mistake. The usual cost overruns occurred. After building plans had been approved by the inspectors and the meat-packing plant renovation was almost finished, inspectors came back in and said that about $1 million worth of earthquake retrofitting would have to be done. Jeremiah did the work and finished the plant. But now he needed the last million dollars of marketing money that he had been promised by Iowa. But Iowa refused to pay that money, arguing that it would take more than that amount for the company to reach the break-even point. What Wildwood couldn't see, was that politics was at work behind the scenes; Iowa wanted to get out. The money guys told Jeremiah he would have to find a strategic partner. Jeremiah suddenly found himself short of cash and in a financial crisis.

So he made a short list of potential partners who might invest money. House Foods America Corporation (Los Angeles) showed some interest then backed off. Jeremiah had first met Pulmuone in the spring of 2003 at the Natural Products Expo West in Anaheim; their booths happened to be across the aisle from one another. They had a smoothie product and Wildwood had introduced a smoothie the year before; Jeremiah thought that Pulmuone's wasn't very good. Some people from the Pulmuone booth came over to visit. They said that their CEO was coming from Korea and invited Jeremiah to meet him. But for some reason it never happened. So Jeremiah never thought of putting Pulmuone on his short list of potential partners.

Meanwhile, the Iowa cultured products plant was not doing well. "This discipline required to make cultured soyfoods is like that in an operating room." Jeremiah's basic concept was to make these cultured soy products probiotic, which would give them functional value. At his first meeting with the employees he asked how many people had heard of "probiotics," Nobody. Woops. How many had heard of "antibiotic." Everybody. He knew from that moment he would have marketing problems. Jeremiah and a PhD in microbiology had traveled to the plant, established the sanitation protocols, and trained the workers. But soon after he left, the quality control problems returned. Tom Lacina was more interested in having the paperwork done well than in enforcing the sanitation rules. This led to a loss of business and of money.

There was another factor. Jeremiah has come to believe that many, if not most, Midwesterners see anyone from California as a hippie. Hippies don't know how to run businesses and don't understand most Midwesterners. At one point the VCs put their foot down and told Jeremiah, "Too much travel. We don't want you to come here anymore." At that point things got out of control.

Stonyfield Farms was planning to have their soy yogurt made at Wildwood's Iowa plant–a huge potential account. But the people in Iowa could not produce the quality that was required. They missed a huge opportunity to make the Iowa plant successful. Jeremiah's wishes he had waited until the Iowa plant was making good quality products before bringing in Stonyfield.

Today, the Iowa plant is doing very well in every way; sales grew 400% last year. Pulmuone sent their R&D experts there and turned things around in short order. (8) In April

2004 Wildwood sold a controlling interest to Pulmuone. It was a matter of economic survival. So Wildwood has become an international company, with Korean partners. To celebrate the deal, Jeremiah went on a tour of Pulmuone's facilities in Korea. (9) Origins of Pulmuone in 1955 in Korea as a Christian Farming Cooperative. Their mission is "Love Thy Neighbor" and they are deeply committed to pure foods, organic agriculture, and no artificial ingredients. The saintly Mr. Won. Alex Nam went to college with Mr. Won's son. Pulmuone now has 12 organic food products.

In the early days, the Soyfoods Association was unable to attract any Asian soyfoods companies. Today both Asian companies, huge American food processors (Kellogg, ADM, DuPont, Kraft), and even state soybean boards are members. Address: 412 E. Riverside Drive., Watsonville, California 95076.

8309. Wildwood Natural Foods. 2005. Wildwood Natural Foods (Website printout–part). www.wildwoodnaturalfoods.com Printed Feb. 13.

• ***Summary:*** Contents: Home page. 1. Our products. 2. Wildly healthy! 3. About Wildwood. Atop the home page is a new Wildwood logo: "Organic since 1978." "Our mission is to nourish health & well being through supporting dietary & agricultural change." "Founded in 1978 on the edge of Marin County's wild watershed, Wildwood Natural Foods' first goal was to provide fresh vegetarian food to local communities. Today, Wildwood is famous for producing the best tasting, freshest organic tofu, vegetarian products, and soy milk you can buy. Ask a tofu eater which tofu is best. We're confident that they will say 'Wildwood!' because we've heard that response for over 2 decades.

"In shepherding the products from the farmers' fields to your table, we've discovered a variety of non-GMO higher-protein low-fat soybeans. We contract directly with organic family farmers to grow these beans. Wildwood further ensures the freshness of our products by delivering to your store several times per week. Our commitment is to your health and well-being, while emphasizing great taste, because our reputation is in your next bite."

2. About Wildwood. One page gives 5 Wildwood locations (addresses but no phone numbers or e-mails). Another gives a ½-page company history, starting in 1978. "2001–Focusing on unique products that nourish the body & protect the environment, Wildwood builds two new state-of-the-art certified organic plants–one in Watsonville, California, and one in Grinnell, Iowa. Under Tom Lacina's guidance, the Iowa plant becomes the first dedicated cultured soy plant in the US.

"2004–Wildwood teams up with Pulmuone, a respected leader and innovator in the organic and soy food industry. A fourth team member, Paul Kang, joins Billy, Jeremiah & Tom to continue the wildwood mission born over 25 years earlier; to bring Wildwood's wildly delicious and healthful products to every table in America." Address: 412 E. Riverside Dr., Watsonville, California 95076.

8310. Chajuss, Daniel. 2005. Brief biography and history of his work with soy in the USA and Israel. Part I (Interview). *SoyaScan Notes.* Feb. 19. Followed by numerous e-mails through Dec. 2007. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** Daniel was born on 23 Sept. 1936 in Jerusalem, Palestine, the son of Elijah Mathew Chajuss (a flour miller, born on 12 April 1903 in Jerusalem) and Dvora Margaliot, born on 4 April 1908 in Tiberias, a town on the western shore of the Sea of Galilee (which today is in northeast Israel). Both his parents were born before World War I when Palestine was still part of the Ottoman Empire; Turkish (written in Arabic script) was the official language, but Hebrew was the main language of the Jewish population.

The family name was pronounced "Chayes" (or "Hayes") but was written "Chajuss." Within the family and among close friends it was pronounced "Khatuth" or "Khayooth," where the initial "ch" is pronounced like the non-initial German *ch* as in *Bach.* Daniel's mother's family had lived in Palestine for at least 9 generations and his father's family for 5 generations. He was the second of three children, with an elder sister and a younger brother.

In 1953, at age 16, he went to the United States to study at Kansas State University (Manhattan, Kansas), focusing on the milling industry and cereal chemistry. In 1956 he began what became a lifelong interest in soy when he learned of the effects of soy flour components on wheat flour; he did some research on soy protein utilization in food systems. He finished his studies in 1956 and graduated in 1957 with a B.S. degree in milling technology. While an undergraduate in the USA, Daniel received lots of help and support from his father and family, but he worked to earn most of his living expenses. After graduation, he returned to Israel, where (in the late 1950s) he worked in the Israel Army Quartermaster Corps. doing food research and development for military purposes.

Eliahu Navot was the first real pioneer of soybean utilization and production in Israel. He devoted much of his life to this work. Daniel met him once or twice in the late 1950s, and was aware of his work. "He impressed me as a person totally devoted to soy and his aim was that the soybean should be grown and used in Israel for many good reasons."

In 1956, the same year his son became interested in soy, Elijah M. Chajuss incorporated a company named "E.M. Chajuss, Ltd." It was a small commercial and trading company, established mainly to trade in grains and foods. Elijah owned 80% of the shares and Daniel owned the remaining 20%. The firm was not very active and it ceased to exist in about 1988.

In 1958 Daniel returned to the United States to do

graduate work at Washington State University (at Pullman). He was not yet married. In 1960 he received an MSc degree in food technology; his dissertation was titled "Post mortem tenderization of chicken muscle."

In early 1961 Daniel went to work at the Northern Regional Research Lab. (NRRL) at Peoria, Illinois, as an employee under A.K. Smith; other coworkers included Joseph Rackis, Walter Wolf, Clifford Hesseltine, and Gus Mustakas. His research included work on soy proteins, and specifically work on making soy protein concentrates (SPC) by the aqueous alcohol wash process, which had been developed by Mustakas and coworkers in about 1960 and published in the *Journal of the American Oil Chemists' Society* in 1962. Yet Daniel was most interested in the biologically active soy compounds which were found in the non-SPC solubles, a by-product of this new aqueous alcohol wash process; he would soon call these solubles "soy molasses." Daniel has a sister in the U.S. Their father came to visit them at this time and Daniel showed him around the USDA laboratory at Peoria and explained the work he was doing there.

In 1962, after about a year at NRRL, he decided to return to Israel, where he got registered and certified Chemical Engineering certification.

In 1962 Daniel and his father, Elijah, incorporated Hayes Ashdod Ltd. (Industrial Zone P.O. Box 2230, Ashdod, Israel); all the shares were owned by their family. At the same time they established Hayes General Technology (HGT) Company Ltd. as the first company's R&D arm or division, and an agro-industrial engineering firm; it was not a separate company and was not incorporated at this time. Daniel's father was chairman of the company and a firm believer that proteins were in short supply and that soy proteins with good acceptability would offer an affordable solution to many. Elijah also handled commercial operations. Daniel dealt mainly with the technology, research, product development, and plant operation. Thus, Daniel spent much of his time with HGT, which was located in a separate building on the Hayes Ashdod site. HGT's goal was to do basic research and develop new technologies and know-how in areas not necessarily related to soy protein concentrates.

Ashdod is a city about 3 miles inland from the Mediterranean Sea, 35 miles due west of Jerusalem and about 15 miles north of the northernmost part of the Gaza Strip. Important harbor facilities have been constructed on the coast near Ashdod; in 1990 its population was about 76,600.

But as with all pioneering ventures by entrepreneurs, starting a new business was risky and the future was unknown. Daniel recalls: "When we started the plant in Ashdod my uncle (father's brother) came to me and said (in a teasing, friendly way), 'Daniel, you are doing a criminal thing. You take your money and your father's money and the bankers' money and big loans to make soy protein concentrate. Who needs it?'"

In 1962 Daniel and Hayes Ashdod began an ongoing, long-term collaboration with Israel's leading center for research on the composition and biologically active components of soybeans–the Hebrew University's Faculty of Agriculture at Rehovot [pronounced rei-HO-vot], located only about 13 miles north of Hayes. Daniel worked very closely with Yehudith ("Judith") Birk, co-discoverer of the Bowman-Birk trypsin inhibitor, who also did work on isoflavones, saponins, etc. She was a great pioneer in the field of soy research; she is still [2005] active at about age 75 and a very able and very nice person. Dr. Michael Naim was a pioneer in the field of soy molasses. Other researchers at Rehovot included Bondi, Gertler, Gestetner, Tagiri, and others.

This collaboration was based on mutual interest in the nutritional value of soybeans, unknown growth factors in soybeans, etc. No money changed hands, no contracts were entered into, Daniel did not assign the researchers any specific projects to work on, and no research was done specifically for Daniel or Hayes. Rather, Daniel and the researchers at Rehovot collaborated on research projects of mutual interest. Daniel sometimes went to Rehovot when needed and did research there, however most of his research was done in the Hayes' laboratories in Ashdod. His work in Ashdod was mainly to fractionate soy components and evaluate the same at the request or understandings with the workers from the faculty. His visits to Rehovot were mainly to discuss the various ongoing research projects with the people involved, and to visit the large library there. Occasionally researchers from Rehovot visited Daniel and Hayes in Ashdod. Daniel spent the most hours in Rehovot during the 1980s, when for about a year he visited the faculty once a week and stayed all day. After 2004 he went there seldom. No one from Hayes did research at Rehovot on a regular basis.

In addition to his own work, Daniel contributed soy products his company had made at Ashdod, e.g., soy protein concentrates (processed in various ways), soy fibers, hulls, soy molasses and various fractions thereof, etc.

Together they worked, for example, on nutritional aspects of soy molasses components, of the soy protein concentrate in human and calves milk replacers, on antigenic components of the soy and their elimination, on the soy dietetic fibers ("Sobit"), etc.

Many research papers were published in leading scientific journals, and PhD and MSc degrees were obtained because of their mutual work. Daniel believes that grants for the research were provided by the USDA under the P.L. 480 (Food for Peace) program. All of them enjoyed the mutual work very much. This fruitful collaboration continued until a few years ago.

In 1963 Hayes Ashdod began operations. Daniel recalls the general situation with soy in Israel at that time:

In 1962 there were several makers of soy food products in Israel. Soybean crushing factories made soy oil for human consumption and toasted soybean meal for animal feeds. However, some of the toasted soybean meal was milled to soy flour for use in households, in the meat processing industry, and in the baking industry. There were also some small cottage industries making various Oriental soy products, such as soy sauce, simply-made toasted and non-toasted full-fat soya flours, roasted soybean coffee, etc.; Daniel does not remember the names of these companies. Continued. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

8311. Chajuss, Daniel. 2005. Brief biography and history of his work with soy in the USA and Israel. Part II (Interview). *SoyaScan Notes.* Feb. 19. Followed by numerous e-mails. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Continued: Let us now return to the early, pioneering products introduced by Hayes Ashdod during the 1960s. Hayes Ashdod was one of Israel's first company to make foods from soybeans, and Israel's first manufacturer of modern soy protein products.

In 1963 the company launched its first product, a soy protein concentrate named Haypro. This product was also the first commercial soy protein concentrate manufactured outside the United States.

The main applications for Haypro were as a meat extender, and in hypoallergenic formulas (especially for babies and children allergic to cow's milk). Most of the product was sold outside Israel, mainly in Europe.

Hayes Ashdod was the world's first commercial plant to make "traditional" soy protein concentrate (SPC) and soy molasses by a counter-current aqueous alcohol wash system; that system was developed by Daniel. The plant's initial capacity was about 5,000 metric tons of soy protein concentrate and about 2,500 metric tons of soy protein concentrate per year (each on an as-is wet basis).

Who should get the credit for developing this important new process using alcohol? In Dec. 2007 Daniel wrote: "The credit for developing the process for SPC by aqueous alcohol wash should go to Mustakas and coworkers [at NRRL] in Peoria [1960-62].

"In the early 1960s, aqueous alcohol washed SPC was introduced on a commercial scale by the Central Soya Company's Chemurgy Division in the USA; they developed a immersion aqueous alcohol extraction system to make SPC. At about the same time we introduced in Israel a continuous counter current aqueous alcohol wash system to make SPC. The producers of the 'traditional' alcohol washed SPC generally use the continuous counter current aqueous alcohol wash system today."

Also in 1963 Hayes Ashdod introduced "Soy molasses, a concentrated soy solubles extract, obtained during the production of soy protein concentrate." This product is used in animal feeds and as a source of oligosugars [oligosaccharides] for elderly people to maintain proper [digestive-tract] flora and regularity (mainly in Japan). Note: Daniel Chajuss wrote the above quoted words and date on 14 Jan. 1993 in a letter to William Shurtleff, in response to a question from Shurtleff. On 9 Sept. 1995 he again wrote Shurtleff: "The name 'soy molasses' was coined by me in 1963. It is generally manufactured today in accordance with the contents of my Israeli Patent No. 19168." He recalled in Feb. 2005: "When we got soy molasses, it was a dark, sweet, bitter, viscous, strong-smelling product. It looked very much like molasses. I decided to sell it to the feed mills, which at that time were using beet sugar molasses. So I decided to call it 'soy molasses.' But from my research in Peoria, I knew it contained many very interesting compounds–such as isoflavones and those that prevent perosis in chickens. In 1963 I made an application to the Israeli government to do research on soy molasses. I believed in it very much because of the many interesting components it contained. Now, most of the patents concerning soy isoflavones are about 'soy molasses,' as are most of the scientific articles. So this term has become accepted, probably because it is so descriptive. Soy molasses is more like beet sugar molasses than cane sugar molasses.

In 1964 the company introduced Haysoy brand soy flours in full fat and defatted, toasted and untoasted forms, mainly for the baking and fermentation industries.

In 1966 Hayes Ashdod Ltd. introduced texturized soya protein concentrates under the brand names Hayprotex and Contex. Hayprotex was designed for use mainly as a minced meat extender, while Contex was designed mainly for vegetarian analogs.

Hayes Ashdod started making texturized [textured] soy protein concentrate in large part because they were very familiar and friendly with the Katzin family–Sol and Sid Katzin, two brothers, who came to Israel from the USA and who built the Shefa Protein Industries plant in Arat, Israel. They were idealists who made the first textured soy flour in Israel. Sometimes they would buy (from Hayes Ashdod) the fines of the white flakes to texturize. Daniel asked Sol why he didn't texturize soy protein concentrate. Sol replied: "We don't sell taste, we sell nutrition." Sol was a really nice fellow, a nutritionist at heart and in his profession. They were real pioneers, but they had such a difficult time and were often disappointed.

In the early days, after he saw Sol Katzin's extruder, Daniel first did some trials with a Wenger single-screw extruder. With assistance from Oak Smith, Hayes bought a small Wenger extruder. Since Daniel didn't want to compete with his friend, Sol, he decided to extrude soy protein concentrate–but the product was not very successful, and definitely not as successful as Shefa's textured soy flour products. Daniel's product failed largely because of its high

price whereas the Katzin's product failed because of its flavor–although its shape was excellent. Daniel is not aware of any company that made textured soy protein concentrates before he did. He knows that another similar product was Response, made by Central Soya.

Note: Concerning early textured soy protein concentrates: Hayes Ashdod introduced Hayprotex and Contex in 1966, Griffith Laboratories introduced GL-219 and GL-9921 in 1974, and Central Soya introduced Response in 1975.

"Hayes Ashdod Ltd. Research and Development Department has developed many soy analogs in various forms ('vegetarian sausages', 'fish-less fish fingers', 'vegetarian sea food analogs', 'vegetarian schnitzels', 'vegetarian nuggets', 'vegetarian gulash', etc.) based on texturized soy protein concentrates (Contex) mainly to promote Hayes Ashdod Ltd. markets and to find customers for its products. These vegetarian analog products were never sold directly to the consumers but were sold to institutions or to various manufacturers / distributors mainly in dry rehydratable forms. They started to appear in the market in about 1966 and still exist today. The usual name was the product name as appears above. Soy protein isolates were made on a pilot plant scale and were never manufactured or sold by Hayes Ashdod Ltd. in any significant quantities."

Also in 1966 Hayes introduced Hyprovit and Promolac, two powdered hypoallergenic soy formulas which were designed to replace milk powder formulas for infants and children allergic to cow's milk.

In 1968 Hayes started producing Haypro-T, a special soy protein concentrate, free of trypsin inhibition and free of antigenicity, for use in calf milk replacers as a substitute of milk proteins.

In 1969 Hayes started to produce Primepro, a more functional and soluble soy protein concentrate, by further treatment of the aqueous alcohol extracted soy protein concentrate (Haypro), for use as substitutes for soy protein isolates and for caseinates in various food systems, especially in the meat processing industries.

Also in 1969 Hayes introduced So-Bit (also spelled Sobit), a fiber product which was removed from the soy protein concentrate by a tail-end dehulling system containing both aqueous alcohol washed hulls and fibers obtained from soybean cotyledons. This product has proven to be beneficial as a source of dietary fiber, especially for diabetic patients. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

8312. Chajuss, Daniel. 2005. Brief biography and history of his work with soy in the USA and Israel. Part III (Interview). *SoyaScan Notes.* Feb. 19. Followed by numerous e-mails. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Continued: In 1972 Hayes General Technology signed a contract to sell the engineering designs and know-how it had developed for a soy protein concentrate plant to Aarhus Oliefabrik A/S in Aarhus, Denmark. This was HGT's first major contract.

In 1973 Daniel Chajuss sold know-how and complete engineering designs to Aarhus Oliefabrik A/S, Aarhus, Denmark (renamed Central Soya Aarhus A/S in Nov. 1992), to manufacture powdered and textured soy protein concentrates for human consumption, pet foods and calves milk replacers; they were sold under various Danpro brands.

On 19 June 1973 Daniel married Talma E. Hirsch in Rehovot, Israel. They had four sons: Ron, born on 18 Dec. 1973 in Tel Aviv; he is now (2005) a computer scientist and electrical engineer. Amir and Shi (twins) born on 17 Dec. 1976 in Rehovot; Amir is a graduate student in physics and philosophy. Shai is a graduate student in business administration and political science. Ori, born on 2 Feb. 1983 in Rehovot, is finishing his military service duties and going to study at a university.

All the soy protein concentrate facilities worldwide, which were established since 1973 and which are still in operation today (including ADM, USA, SOGIP-Bunge, France, etc., with the exception of Central Soya's USA plants) employ Chajuss' technology and/or engineering designs, and are mainly based on the know-how and technology developed by Chajuss. About 90% of the total world production of soy protein concentrates today is made by aqueous alcohol extraction. Most of the protein concentrates are used in the form of powder or grits, some are further texturized, and some are further treated to provide various "functionalities."

In 1974 the Aarhus concentrate plant began regular full-scale operation. It was later bought by Central Soya.

Also in 1974 Daniel, Prof. Birk and the other researchers at the Hebrew University at Rehovot did much collaborative research on soy phytochemicals, such as soy saponins, soy isoflavones, other soy phenolics, etc., which were obtained from alcohol-extracted soy molasses. They found that soy molasses had many interesting and useful applications–even for stabilizing sandy soil and eventually enabling it to be productive for agriculture. Later they developed a technology to remove the isoflavones (very bitter and beany) and saponins from the soy molasses. They found that the isoflavones in the soy germ are not bitter.

Daniel recalls: At [the NRRL in] Peoria, Illinois, they had tried to breed soybeans that had little or no bitter, beany flavor. Essentially they were trying to breed out the isoflavones; fortunately they were not successful. Yet the isoflavone content of both soybeans and soy molasses covers a wide range; for soy molasses it is about 0.5% to 2%.

During 1974 Daniel told researchers at Central Soya and Aarhus Oliefabrik about these compounds found in soy molasses. Then Unimills started a plant and called it 'soy volasses.' The *2004 Soya & Oilseed Bluebook* has a section

titled 'Definitions and Glossary,' however it does not yet have an entry for 'soy molasses' (p. 367). But there is an entry for 'soy solubles,

During this time Hayes General Technology also did development work on many different modern soy protein products functional soy protein concentrates, textured soy proteins, soy flours (full-fat, medium-fat, and defatted; enzyme active or toasted); also on the extraction of specialty oils and cold press systems; on specific extraction plants, as for jojoba oil, primrose oil, argan oil (from the nuts of the argan tree, *Argania spinosa,* of southwest Morocco), etc.; flash desolventizing systems for non-polar and polar solvents; unique, bland and novel "no waste" (fiber included) soymilk products; precooked "instant" cereal plants; complete low-cost food formulae plants; micro-milling systems; production of vegetarian meat alternatives, incl. vegetarian sausages, schnitzels, patties, and "fried fish"; non-soy based protein products; lupine seed processing incl. lupine protein, lupine oil, and lupine alkalozidone alkaloids production systems. Much work was also devoted to the development of low-cost cottage industries.

In 1980 Hayes started to sell soy lecithin commercially; it was separated from the soy oil obtained during the production of "white" flakes by hexane extraction.

Also in 1980 Daniel's father, Elijah M. Chajuss, began to reduce his full active daily work with Hayes Ashdod Ltd. At this time, the two men began thinking about selling that part of their company. Daniel thought it would be better if he focused on research, development, and engineering work. None of his sons was interested in carrying on the family business.

Until 1981, all the shares of Hayes Ashdod Ltd. were held by the Chajuss family.

1984 Sept. 27-28–Daniel attended the First European Soyfoods Workshop held in Amsterdam, Netherlands, as a delegate of E.M. Chajuss Ltd., which was interested in establishing a simple soy cottage industry; at about that time they had developed some simple appropriate processing technologies for soyfoods and soymilk and were thinking about making those in a company other than Hayes Ashdod Ltd.

1984–The Chajuss family began to sell some of the shares in Hayes Ashdod Ltd. (fully owned by the Chajuss family) to Koor Foods Ltd. (headquartered in Tel Aviv), which was a holding company that owned shares and ownership in various food firms and was a part of Koor Industries Ltd., which had been established by labor unions. Hayes Ashdod Ltd. sold crude soybean oil to firms owned by Koor Foods Ltd. Koor has approached the Chajuss family, asking if all or part of Hayes Ashdod might be for sale.

In Dec. 1984 the majority of the shares in Hates Ashdod Ltd. were sold by the Chajuss family to Koor Foods Ltd. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

8313. Chajuss, Daniel. 2005. Brief biography and history of his work with soy in the USA and Israel. Part IV (Interview). *SoyaScan Notes.* Feb. 19. Followed by numerous e-mails. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** 1985–4th of 4 recs. Hayes General Technology (HGT) Co. Ltd. is incorporated as a separate and independent company, still owned by the Chajuss family, especially to develop engineering, process know how and new technologies, mainly in the field of soy proteins.

1986–The Chajuss family sold the remainder of the shares in Hayes Ashdod Ltd. to Koor Foods Ltd. One of Koor's directors was Mrs. Shefi of Kibbutz Hatzor. She was the link connecting her kibbutz with Koor Foods and Hayes Ashdod Ltd.

1987 Feb. 18–Elijah Mathew Chajuss, Daniel's father and co-founder of Hayes Ashdod Ltd., passed away in Rehovot at age 84.

In March 1987 all the shares of Hayes Ashdod Ltd. were purchased from Koor Foods by Kibutz Hatzor. A few months later, in about Sept. 1987, the company name was changed from "Hayes Ashdod Ltd." to "Solbar Hatzor Ltd."

In 1988 Soya Mainz (of Mainz, Germany) bought from Hayes General Technology engineering designs to set up a soy protein concentrate plant in Germany. The plant was not built and instead in early 1991, Soya Mainz bought 25% of Solbar's shares.

In 1989 (a year later) Soya Mainz bought an additional 24% of the shares in Solbar, so that they now owned a total of 49% equity in Solbar Hatzor; Kibbutz Hatzor owned the remaining 51% equity of this joint venture between Israeli and German companies.

Note: The proprietary rights of Hayes Ashdod Ltd. know-how and technology remained, however, Chajuss' proprietary possession. Koor Foods ceased operations in about 1987.

Today HGT does mainly research engineering and designs systems, but it also manufactures special, nonstandardized equipment, and installs complete systems. HGT engineers, including Daniel when warranted, also work as field engineers and consultants on site when the systems they have designed are installed in other countries. They have done that since 1973-74 when their first system was installed outside in Aarhus, Denmark. Systems for manufacturing soy protein concentrates and soy molasses, designed and developed by HGT, have been installed in Israel, Denmark, The Netherlands, France, USA, China, and Brazil. All these plants include texturizing facilities, which although recommended by HGT are designed and made by firms such as Wenger, Extru-Tech, and Clextral. Today HGT is known and often referred to as 'Hayes Ltd.'. Hayes General Technology Company Ltd. is thus thinking about making 'Hayes Ltd.' its official company name. Also

today (2005) this company is owned and managed by Daniel Chajuss.

Note: Hayes Ashdod Ltd., although it was sometimes referred to as "Hayes Ltd." was never officially named "Hayes Ltd."

In early 1991 the German soy processor, Soya Mainz GmbH and Co. bought a 25% equity interest in Solbar Hatzor Ltd. (formerly Hayes Ashdod Ltd.), soya protein manufacturers of Ashdod, Israel. The company has also contracted with Hayes General Technology Co. Ltd. of Israel to set up a soya protein concentrate production facility in Germany.

By 1999 Solbar had started a sister company or division named Solbar Plant Extracts to market its nutraceutical products (such as isoflavones) extracted from soy molasses.

Today (Feb. 2005) the makers of traditional type concentrate generally use the systems developed by Daniel Chajuss. These systems are purchased from Hayes General Technology and are presently used by all the leading makers of traditional and functional soy protein concentrates. Today over 95% of the soy protein concentrates manufactured worldwide are made using systems developed by Hayes. Included among Hayes General Technology clients for traditional or functional soy protein concentrates (SPC) have been: (1) Hayes Ashdod Ltd., Ashdod, Israel (later renamed Solbar Hatzor Ltd.), 1962 to 2005 (complete engineering designs and services). (2) Aarhus Oliefabrik A/S, Aarhus, Denmark (alter renamed Central and presently Solae), 1972 to 1974 and later periodically upon request. (3) Bunge Sogip, Bordeaux, France, 1988 to 1996 (later renamed Central Soya Aarhus and presently Solae). (4) Soya Mainz, Mainz, Germany, 1988 (now part of ADM group). (5) ADM, Decatur, Illinois, 1989-1999. Intended to be used for SPC in the Decatur plant. The knowledge was later also utilized by ADM in plants in the Netherlands (Europort) and China. (6) Finnsoypro Oy, Uusikaupunki, Finland, 1995. Textured soy protein concentrate plant. (7) Cargill, Minneapolis, Minnesota, 2000 to 2003. SPC technology licensing and transfer of know-how and engineering designs. Also consultations. (8) Shemen Industry–Soyprotec Advanced Protein Technology, Haifa, Israel, 1999 to present. SPC technological transfer and licensing agreement and consultation services. (9) China–In China HGT is involved directly and or through Wuhan Crown Friendship and provide Hayes know-how, licensing, engineering designs and services to manufacture SPC to firms such as Shandong Sanwei Oil Enterprise (Group) Co. Ltd., Linyin City, to Crown Proteins, to Gushen in Shandong province and to YiQing Group in Tianjin. (10) Brazil–The transfer of know-how and engineering designs is and was made to such firms as IMCOPA (2006) and others through Crown Iron Works. Cargill, Shemen Industries (Soyprotec), Shandong San Wei, etc.

Daniel has retired largely from the commercial side of his business. But he still (2005) has a small company that makes isoflavone products; he likes very much to do research is this company's laboratories. "Business can be god or bad, profitable or not profitable, but when you do research, you may get good or bad results, but it's always interesting. That's what I like to do." From time to time Daniel goes to the Hebrew University of Jerusalem at Rehovot to do research; he still works occasionally with Dr. Yehudith Birk.

Daniel has become interested in a remarkable plant and its seed, pearl lupin (*Lupinus mutabilis*), a species of lupin that is grown in the Andes of South America for its edible bean. He has done research on the bitter compounds in this underutilized bean, and believes this seed has a very bright future, including as a human food (see separate record).

Daniel's wife is well (Dec. 2007) and works as information librarian in Tel Aviv University Faculty of Medicine.

The year 2007 marks the 45th anniversary of Daniel's pioneering work with soy products in Israel. Today Hayes makes about 450 to 500 metric tons per year. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

8314. Daniel, Kaayla T. 2005. The whole soy story: The dark side of America's favorite health food. Washington, DC: New Trends Publishing, Inc. xviii + 457 p. Index. 24 cm. Introduction by Sally Fallon. [1797 ref]

• ***Summary:*** Contents: Acknowledgments. Introduction, by Sally Fallon. Part I: A short history of soy. 1. Soy in the East. 2. Soy goes West. 3. The ploy of soy.

Part II: Types of soy. 4. Green pods, yellow beans and black eyes. 5. The good old soys–Soybeans with culture. 6. Not milk and uncheese–The udder alternatives. 7. All American soy–First generation soy products. 8. All American soy–Second generation soy products. 9. Soy oil and margarine–Fat of the land. 10. Soy lecithin–Sludge to profit. 11. Not trusting the process. 12. Formula for disaster.

Part III: Macronutrients in soy. 13. Soy protein–The inside scoop. 14. Soy fat–Shortening life. 15. Soy carbohydrate–The flatulence factor.

Part IV: Antinutrients in soybeans. 16. Protease inhibitors–Tryping on soy. 17. Phytates–Ties that bind. 18. Lectins–Glutins for punishment. 19. Saponins–Soap in your mouth. 20. Oxalates–Casting stones.

Part V: Heavy metals. 21. Manganese toxicity–ADD-ing it up. 22. Fluoride toxicity–Dental and mental fluorosis. 23. Aluminum toxicity–Foil-ing health.

Part VI: Allergens: Shock of the new. 24. The rise in soy allergies. 25. The soy-free challenge. Part VII: Soy Estrogens: Hormone Havoc. 26. Phytoestrogens–Food's fifth column. 27. Soy and the thyroid–A pain in the neck. 28. Soy infant formula–Birth control for baby? 29. Soy and the reproductive system–Breeding discontent. 30. Soy and

cancer–High hopes and hype. End notes. Address: PhD, CCN (certified clinical nutritionist), 2162 Candelero, Santa Fe, New Mexico 87505.

8315. Pueppke, Steven. 2005. From the director's desk. *NSRL Bulletin* (*National Soybean Research Laboratory, Urbana, Illinois*) 12(1):7. Feb.
• ***Summary:*** Pueppke likes to put plenty of soy milk on his granola. And he loves edamame served in the pods, unshelled. He likes tofu too, all kinds, but especially the textured kind that can be fried and served under a dollop of sauce.

"Through the Illinois Center for Soy Foods, we at NSRL continue to explore the potential of our growers in Illinois to take better advantage of what some think is a real trend–healthy, good-tasty soy in human nutrition." A portrait photo shows Pueppke. Address: Director, NSRL, Univ. of Illinois, Urbana.

8316. Vitasoy USA. 2005. Introducing Vitasoy Complete: The first fiber-smart, calcium-smart, carb-smart soymilk (Ad). *Yoga Journal.* Feb. p. 43.
• ***Summary:*** Across the top left of the ad: "The perfect balance of body, mind & spirit." Below that, a color photo of yoga instructor Rodney Yee standing on his right leg, with the bottom of his left foot pressed against his inside right thigh, palms folded above his chest. Below that, in small letters, he says: "Moving toward balance is a lifelong journey. Finding the perfect soymilk doesn't have to be."

Across the top right of the ad: "The perfect balance of fiber, calcium & carbs." below that a color photo of the front panel of a quart carton of Vitasoy Complete.

At the bottom left a table compares four nutrients in Vitasoy Complete with those of the leading brand [probably Silk]: Net carbs: 2 vs. 7 gm. Calories: 70 vs. 100. Fat: 2 vs. 4 gm. Fiber: 4 vs. 1 gm.

Visit www.vitasoy-USA.com.

8317. Ladouceur, Andre. 2005. Installing a soymilk plant in Iran (Interview). *SoyaScan Notes.* March 10. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** André has just returned from Iran, where (from Feb. 18 to March 8, 2005) he installed and commissioned a $16 million soymilk plant (VS4000), made by ProSoya, with a capacity of 4,000 liters/hour of soybase, plus mixing stations. Next to that plant he installed a Tetra Pak aseptic packaging line. The plant, located near the capital city of Tehran, expects to start making soymilk commercially (i.e. launch their first products) in 1-2 months. They are now developing flavors and products suited to Iranian consumers. The soybeans used to make the soymilk will be imported from Canada. The plant is owned by a corporation named Soya Sun; the majority of the shares are owned by Iranians, but ProSoya, and he, and other Canadians also own shares. ProSoya contracted with him to do this work in Iran.

For the past 10 years, Andre has lived in Ontario, where he worked for ProSoya doing R&D and commissioning their larger soymilk plants worldwide, and especially in Russia. He also installed a 2,000 liter/hour soymilk plant in Israel. He is now starting a consulting company in Toronto, Canada named MaxSoy Canada Inc.; he is a soy operation specialist, and now lives on Vancouver Island in British Columbia. His second company is Soy Joy Health Products Development, Inc.; he develops products from soy, such as soy kefir.

Talk with Andre. 2005. June 6. He does not know whether or not this company has started to sell soymilk in Iran. They owe him $3,000, and they have broken two contracts with him to do further work. Address: Founder, I&PS, 305b Dogwood Dr. Ladysmith, BC, Canada V9G 1T5. Phone: (250) 616 1714.

8318. Johnson, Kimberly S.; Arellano, Kristi. 2005. White Wave founder departs: Tofu visionary plans to travel, may start a new company upon his return. *Denver Post* (*Colorado*). March 15. p. 1C, 4C.
• ***Summary:*** A small color photo shows Steve Demos. Address: Staff writers.

8319. Ladouceur, Andre. 2005. Industry and Production Systems Consulting Inc. Business introductory. Ladysmith, BC, Canada. 7 p. Unpublished typescript. March 16.
• ***Summary:*** Contents: Executive summary. Services to be offered. Management. Summary of qualifications. Relevant skills. Achieved travel history and experience (1997-2004). Service (rates and fees). Marketing strategy: "Soy Operations Specialist." Address: Founder, I&PS, 305b Dogwood Dr. Ladysmith, BC, Canada V9G 1T5. Phone: 250 616 1714.

8320. White Wave, Inc. 2005. Foodservice catalog: America's soyfood company since 1977. Boulder, Colorado. 20 p. 28 cm.
• ***Summary:*** Catalog (glossy color) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2007. March. Bound with a black comb. ach page is printed, single sided, in color. Each page is devoted to basics and details about one subject or line of products. At the top of each page is the word "Silk" in white on a blue background. On the cover, a photo shows diced baked tofu on a cutting board and in a skillet against a black background. Below the photo is the White Wave logo.

Contents: When it comes to good food, we use our beans! Soyfoods are good for your health (with 6 scientific references). How does organic labeling work? (And: What is the organic status of White Wave products?) What does Kosher mean? (Scroll-K Kosher DE products and Star-K Kosher products). Silk half pints (4 flavors). Silk Soymilk (8.25 oz aseptic, 2 flavors, with straw attached; good for kids K-12). Silk Soymilk single serves (11 oz PET bottles,

5 flavors). Silk Aseptic Soymilk (shelf-stable quarts, 5 flavors). Silk Soymilk Quarts (7 flavors). Silk Soymilk Half Gallons (6 flavors). Silk Bag-in-a-Box (5 gallon capacity, for foodservice or vending machines, 1 flavor). Silk Creamer (3 flavors–1 quart and 3 pints; to smooth out your coffee). Silk Cultured Soy (Just like yogurt, without the dairy; 7 flavors–2 quart and 5 x 6 oz). Silk Live (The drinkable cultured soy smoothie, 4 flavors, 10 oz). TofuTown Tofu Tenders (4 flavors, 9 oz). TofuTown bulk tofu (1 flavor, 5 lb). White Wave block tofu (5 lb or 16 oz). White Wave Baked Tofu (4 flavors, 8 oz). White Wave Seitan and Tempeh (2 seitan in 5-6 lb; 4 tempeh in 5 lb or 8 oz). Nutritional information: Current White Wave products. Address: 1990 N. 57 Court, Boulder, Colorado 80301. Phone: 1-800-488-9283 X-885.

8321. Demos, Steve. 2005. The latest chapter at White Wave. And looking back (Interview). *SoyaScan Notes.* April 10. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Discusses: The famous cave in India where Steve lived. How Dean Foods sent White Wave the $189 million. The origins and importance of Steve's interest in business models. Why Steve accepted the offer to lead Dean Foods' National Brand Group. What he liked most and least about the job after 3-4 months. Experience with Horizon Organic cows. His relationship with Gregg Engles after Dean Foods bought White Wave. The two-year contract and the $11 million bonus.

Details of Steve's termination, without cause, against his will. Why, where, and how Gregg Engles terminated him, Steve's first reaction, and his reaction now. What Steve hoped to accomplish at White Wave, and his evaluation of how successfully he did that. Predictions (market share, sales, profits) in 1 year, 5 years, and 10 years from now.

Steve and Cheryl plan two trips. What he may do after that. Address: Ex-President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

8322. Chajuss, Daniel. 2005. History of his work with soy in Israel (Interview). *SoyaScan Notes.* April 13. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** ADM made acid-wash soy protein concentrate, which cannot be texturized. Daniel thinks they did this after they bought Central Soya's soy protein isolate plant in Chicago, and brought it to Decatur, Illinois. This inability to texturize was one of the reasons ADM asked for Daniel's assistance in establishing a plant to make aqueous alcohol wash soy protein concentrate.

Central Soya made very good soy products–such as Response [textured soy protein concentrate, launched in July 1975]. Daniel has always had very good personal and business relations with Central Soya.

Hayes Ashdod was sold in 1987 and is now named Solbar. It is still in the same location as before, with much of the equipment. After the sale, Daniel; used to work there almost every day, but he no longer works with that company.

Daniel helped Finnsoypro Oy (Finnsoy) in Finland to start a plant by giving them know-how; however they bought equipment from a company that is the daughter company of Wenger. Finnsoypro is a small factory that makes about 300 kg/hour of textured soy protein concentrate. The owner (who is very smart) is a neighbor and friend of Daniel is Israel.

Daniel really loves his work at Hayes General Technology (HGT), which he still owns; he is the managing director. He works to install new plants around the world based on the unique technology that the and HGT have developed. He sold Hayes Ashdod Ltd. in part so that he could focus more on his work at HGT. He is now working on a plant in Haifa for a company named Soyprotec; it belongs to Shemen Industries, which is also making soy protein concentrate.

Daniel drinks Alpro soymilk. "Now in Israel tofu and soymilk and other soy products are very, very popular." Israel's largest producer of dairy milk, Tnuva, now makes soymilk. They generate a lot of okara, which is transformed into a health food product by another company. It contains about 30% protein, 60% fiber, plus some oil, minerals, etc. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

8323. Jacobi, Dana. 2005. 12 best foods cookbook: Over 200 delicious recipes featuring the 12 healthiest foods. Emmaus, Pennsylvania: Rodale Press. xv + 336 p. April. Illust. (color photos). Index. 23 cm. [2 soy ref]
• ***Summary:*** Among these 12 foods rich in nutrients and phytonutrients, the author considers soy the best of all. 28 of the 200 recipes include soyfoods.

In Chapter 1 is a section on Soy (p. 17-24) which includes: Introduction. Everyday ways ("Soy is the easiest Best Food to enjoy every day..."). Benefits at a glance. Soy protein in selected foods (Tofu, miso, edamame, soybeans, soynuts, tempeh, soymilk, cultured soy yogurt, soynut butter, soy flour, soy pasta, soy protein powder, soy drink mixes). Guide to soy products: Soymilk, soymilk cooking secrets, more soy dairy (soy cream cheese, soy sour cream, soy cheese, frozen dessert), terrific tofu (regular tofu, silken tofu, baked or smoked tofu), tofu cooking secrets, other soyfoods (black and yellow soybeans, edamame, meat analogs, miso, soy flour, soynuts, soynut butter, soy protein powder and soy drink mixes, soy sauce and tamari, tempeh), baking with soy, cooking with soy.

Chapter 8, titled "Eggs, beans, and soy," contains recipes (p. 196-203). for: Black soybean and butternut squash stew. Black soybeans. Braised black beans with red wine. Braised tofu with kohlrabi and pears. Broccoli, black mushrooms, and edamame with black bean sauce. Asparagus, red pepper, and curried tofu.

Other soy-related recipes: Finger lickin' edamame (p.

50-51). Black bean hummus (with tofu, p. 57). Mushroom crostini (with tempeh, p. 61). Black bean soup (with dried black soybeans, p. 79). Mushroom consommé with sake (and tofu, p. 88). Double miso soup (p. 89). Nine a day salad (with soynuts, p. 100). Southwestern three bean salad (with canned black soybeans, p. 107). Curry dressing (with silken tofu, p. 115-16). Pepper ranch dressing (with soft silken or regular tofu, p. 116-17). Creamy herb dressing (with tofu, p. 118-19). Blue cheese dressing (with tofu, p. 118). Cracked mustard dressing (with tofu, p. 119). Citrus miso splash (p. 119). Soy and honey drizzle (with reduced-sodium soy sauce, p. 151). Whole wheat linguine with arugula and edamame (p. 164-65). Dirty rice (with tempeh, p. 194). Tempeh, lettuce, and tomato sandwich on rye (p. 207). Honey soynut butter sandwich (p. 208). Grilled pizza (with tofu, p. 210). Soycotash (with shelled edamame, p. 238-39). BBQ collard greens with edamame (p. 240). Miso mashed potatoes (p. 241). Key lime tartlets (with tofu, p. 250-51). Blueberry-lemon trifle (with lemon soy yogurt and soy cream cheese, p. 252-53). Brown rice crisp treats (with salted, roasted soynuts, p. 282). Wild blueberry trail mix (with salted soynuts, p. 283).

On the rear cover is a photo of the author and a brief bio. "After apprenticing at three-star restaurants in France, Dana Jacobi opened a catering business and marketed her own line of gourmet sauces. She has since authored five cookbooks..." Address: Food writer, New York, NY.

8324. Lehrman, Sally. 2005. Drop milk? The dairy industry portrays milk as an essential part of a good diet and our best bet for staving off osteoporosis. *Alternative Medicine.* April. p. 68-73, 94.

• ***Summary:*** This year Americans consumed 594 pounds of dairy products per person. And the chorus of voices urging us to consume still more just grew louder. "The federal government's new food pyramid for 2005 pumps up recommended dairy intake to three cups a day, compared with two in the earlier version."

But there is growing evidence that milk and milk products may not be the wholesome, ideal foods we are told they are. This article documents that evidence. Yet with so many clear risks and unanswered questions, why does the government continue to urge us to consume ever more?

One full-page sidebar (p. 72) titled "Life without dairy" discusses: Where to get calcium. Where to get vitamin D. What to drink (alternatives include soy, rice, and almond milks). When you must have milk (proteins in goat milk are smaller than those in cow's milk). What to spread on your bread.

8325. Stewart, Kimberly Lord. 2005. Soy good for you: It could be the perfect plant-based protein. *Better Nutrition* 67(4):24-26. April.

• ***Summary:*** Soy "is perhaps one of nature's most perfect foods." Food and health journalists rarely use the word "perfect"–except with soy.

"Despite the perfect nutrient profile of soy, the one flaw has been taste. Soy used to taste, well, too soy-like, too bean-like. Now, however, farmers are growing new varieties that taste much better than the beans of the past."

A table shows the amount of protein contained in various "soy foods."

Four ounces of firm tofu–13 grams.
One soy "sausage" link–6 grams.
One soy "burger"–10-12 grams.
One 8-ounce glass of plain soymilk–10 grams.
One soy protein bar–14 grams.
½ cup of tempeh–19.5 grams
½ cup of roasted soy nuts–19 grams.
½ cup of edamame–10 grams.

8326. Wenger, Greg. 2005. Spring surprise: Healthful and delicious soy dishes. *Better Nutrition* 67(4):28, 30-31. April.

• ***Summary:*** "Soy got a new burst of life in 1999 when the US Food and Drug Administration (FDA) approved a health claim that can be used on labels for soy-based foods."

Recipes include: Corn chowder (with "32 oz. Mori-Nu creamy corn chowder soup"). Edamame spread with browned garlic. Golden sautéed tofu with yogurt dill sauce (with "1 lb extra-firm tofu, 1 cup soy yogurt"). Tofu chocolate chip pine nuts muffins (with "12 oz. silken tofu"). Super smoothie (with "½ cup soymilk" plus apple juice, pomegranate juice, banana, kiwi, frozen mango chunks, and frozen cranberries).

A portrait photo shows Greg Weaver, who is "a Certified Executive Chef with the American Culinary Federation." He "hails from Chicago and is a graduate of the prestigious Culinary Institute of America (CIA) in New York State." Address: Chef, Catalina Island, California.

8327. Wolf, Miriam. 2005. Meatless: Soy basically. *San Francisco Bay Guardian.* May 4-10. Vol. 39, No. 31.

• ***Summary:*** "At the Ferry Plaza and Berkeley Farmers Markets, you'll find Basic Soy, a local company that has been bringing its products to market for about a year. It sells some of the freshest soy milk around, along with toothsome savory tofu and creamy soy custard. All of its foods are made with organic, non-GMO soybeans.

"The soy custard is delicate enough to dissolve on the tongue. It comes in a small container of sweet ginger syrup to drizzle over the top, making for a light-tasting dessert or snack. In the next few weeks Basic Soy will ad a densely delicious chocolate soy custard to the lineup. The spicy tofu is firm and meaty, accented with just the right amount of hot oil and sesame seeds. Braised tofu is good enough to eat on its own or in a sandwich but would be the perfect ingredient to slice up and throw into a stir-fry.

"At $5 to $6 a container (at Ferry Plaza) these products

aren't cheap. But the freshness and quality trump the prices–people seem to be eating the stuff up. There's always a buzz around Basic Soy's booth." Basic Soy's "soy layer omelette" features yuba.

"Basic Soy is a young company–all of the people behind it are in their early 30s. It has a hip design sensibility and a mission to bring soy foods to a wider audience." There follows an interview with Minh Tsai, head of Basic Soy. He said that their products are presently sold only at farmers markets. Fresh tofu and soy milk taste better. Go to www.basicsoy.com for more information.

Minh Tsai: "In the United States, soy has been somewhat stigmatized as the 'white block' of tofu that nobody knows what to do with and only a very small segment of the people consume. Basic Soy was formed with the mission of making soy accessible to the public. We wanted to showcase a line of delicious fresh and ready-to-eat soy products that change people's mind about soy." "Most of our recipes are traditional Chinese recipes. The soy custard with ginger syrup, for example..." "Based on our research, the trend of interest in soy is growing." "I believe our customer base is quite mixed [not mostly vegetarians]; we have plenty of carnivores who normally wouldn't touch soy but love our products... We are not vegetarians. But we do eat soy quite a bit."

"Basic Soy is at the San Francisco Ferry Plaza Farmers Market, Embarcadero and Market, Sat., 8 a.m.–2 p.m.; and the Berkeley Farmers Markets: Derby at MLK Jr. Way, Tues., 2-7 p.m.; Shattuck at Rose, Thurs., 3-7 p.m.; and Center at MLK Jr. Way, Sat. 10 a.m.–3 p.m. (beginning mid-May)."

8328. Camps, Lisa. 2005. Re: History of work with soyfoods in Goa, India. Letter (e-mail) to William Shurtleff at Soyfoods Center, May 15. 2 p.

• ***Summary:*** 1984–Lisa came to Goa to nurse a friend back to health; he was a vegetarian. While in India she discovered so many alternative styles of life, so many people from all over the world with a similar consciousness related to healthy body, mind, and spirituality. All "seemed to care about the planet, nature, peace, yoga, natural healing, vegetarianism, etc. India is a whole country of vegetarians, but in Goa, a former Portuguese colony, the inhabitants are mostly Christians who eat meat." That year, Lisa became a vegetarian.

She returned to America, only to yearn to come back to India. So she spent 7-8 years coming and going, whenever finances permitted. When in the USA, she worked with food, in restaurants, hotels, night clubs, made good money, then left again. She took many courses in the health and nutrition at community colleges. She had seen many unhealthy vegetarians and wanted to learn how to be a healthy, vigorous vegetarian. Having helped to deliver 4 children by natural child birth in Goa, she was interested vegetarian diets for children and natural healing.

1982–While in Goa, Lisa met an Australian woman, Diane [Froggatt], who was making her own tofu, because it was not available, and all were tired of Dal (lentils). "I asked her to teach me, and she did... I happily made it for myself to fill the protein gap. Along with Tofu also comes Soy Milk and Okara! A bonus! Made soysausage, soya burgers, etc., but only at home at that time."

1986-87–Lisa attended a Michio Kushi Institute in Switzerland; she learned macrobiotics and shiatsu, which she practiced for about a year, then decided that macrobiotics was "excellent for healing purposes, but not for daily life, simply because any diet so extreme and tasteless is doomed to opposite extremes." She observed that most people who regularly ate a macrobiotic diet "craved massive amounts of Chocolate, or some other form of 'naughtiness.'"

1989-90. Lisa decided to settle in Goa. It had really become her home and it was too expensive to fly back and forth. But how to make money in India? Her many Indian women friends adored lingerie. So she did all the necessary paperwork and started a business named Ooh-La-La-Lingerie Pvt. Ltd., importing undergarments from Europe and traveling all over India to sell them to major department stores. The business went well for 2-3 years until the suppliers and buyers connected–leaving her out.

At the same time, Lisa was selling soya burgers, hummus brown bread, and 4 flavors of soy milk in the Flea market [in Anjuna], where she had a food stall; she made these in her home kitchen. "Then a few people started asking me if I could make them some Tofu! So, I thought why not, since I'm doing it for myself anyway." "All our production started in a small room (in my house), which I converted into a special tofu room, with ventilation above a false ceiling, a sink, stainless steel tables, and extreme hygiene. It was about 3 meters on a side with white tiles. We used (and still use) Aqua Guard water filter systems for all production and packing. So I started by making 2-3 kg at a time, squeezing the milk through a cloth by hand, actually burning my hands on a regular basis, until I decided to build a press. Made some wooden tofu boxes, and did the grinding on a grinding stone. Ouch, too much time and labor! We were selling only to shops and Five-Star hotels.

"As time passed and orders got bigger, my friend and now partner, Richard Chabin, helped me get some machinery, Then, I wanted to learn about Tempeh, and how to make it. There was an American fellow named Joseph Papa who had a book and an interest, so I traded him my shiatsu massages for the method on how to make Tempeh. My interest in Tempeh was the vitamin B's only found in Tempeh. Important if you don't eat beef liver.

"So now I knew many soy foods, and was happily cooking for many friends daily. I enjoy cooking, and they enjoyed eating.

"Then I tried to market the tofu to the local market

and restaurants, but as they were not familiar with it, they were afraid, even after I gave them many recipes" and even showed them how to prepare it Indian style–like paneer. "That's when I decided to open a small sandwich shop."

1999–The sandwich shop, named Bean Me Up, Soya Station, Salad Bar, was a "raging success from the beginning." It became too big for the original premises, and there were long lines at peak season. Note: The restaurant name derives from a famous catchphrase from the movie *Star Trek,* "Beam Me Up, Scotty!"

2004 Oct. 31–Lisa took on large premises with 14 rooms to rent and a small health food shop and restaurant. The commercial foods (tofu, tempeh, soymilk, etc.) are made in a separate building (a small factory) on the compound. It opened on Halloween with a costume party. The "real point is the restaurant" (which kept the same name); it is a unit of Ooh-La-La Ling. When people discover that they can get fresh safe salads, Tofu, Tempeh, Seitan, soya ice cream, Tofunaise, etc. after traveling in India, they are so Appreciative. That is a reward in itself! I truly believe that to introduce people to a more healthy diet, and to given up meat, the alternative must taste good, or why would they consider changing? Hence, our theme is 'The Tasty Alternative.' Lisa, now an established businesswoman, has a new source of income from her 14-room hotel!

Two months later, on 24 Dec. 2004 (Christmas eve), a mob of 150 people, escorted by two policemen (for the mob's protection!) went to the Anjuna-Chopra beach belt and rudely demanded that certain restaurants and shops close down. Why? Because their owners were of foreign origin. No matter that Lisa, of American origin with an Indian passport, had lived in Goa for 23 years and had all the legal papers required to run her business. The agitation was probably initiated by indigenous restaurant / shop owners who resented the foreigners' success and had the blessings of local politicians–a familiar theme worldwide. Fortunately, Lisa had some friends with the National Press, *Times of India,* so she and her fellow foreigners showed no fear, followed the procedures, and made a big noise; the actions of the mob were clearly illegal. Her restaurant was never shut down and the problem appears to have gone away.

Lisa is a member of the Vegetarian Society of India, and occasionally they call on her to give seminars for the members.

Note: Diane Frogatt died a few years ago from cancer.

Photos sent by Ratan Sharma in 2010 and taken by him in Jan. 2005 show the entrance to and the inside of this remarkable soy restaurant and salad bar. They serve only soy-based recipes. They also have a branch in Hyderabad. Note: Lisa does not own a SoyaCow. Address: Owner, Bean Me Up, 1629 Deulvaddo, Anjuna / Vagator, Goa, India 403-509. Phone: 0091-(0)832-227349.

8329. Bean Me Up, Soya Station, Salad Bar. 2005. Welcome to the Soya Station (Menu). Anjuna/Vagator, Goa, India. 10 p.

• ***Summary:*** Contents: Welcome. Starters: Side dishes (incl. Spiced tofu {deep fried} with peanut or chilly sauce. Tofu or tempeh {pan fried} with peanut or tahini. Baked potato with sour cream, butter, or tofu cream cheese). Just for kids: 12 years and under (incl. Tofu bolognese, served over spaghetti. Tempeh sandwich with tortilla chips). New York Pizza (incl. Indonesian special {tempeh & pineapple}. Veg. special {tofu, onion, capsicum, mushroom & olives}, Additional toppings–tofu, tempeh). Salad bar (Tofu salad–Beet root, carrots, onions, cucumber, tofu cubes & tofunaise {vegan}, Side order of tofu or tempeh, with choice of tahini, peanut, or tomato sauce).

Good morning–Breakfast (incl. Tofu {scrambled w/ onion capsicum or butter fried w/soya sauce}, Soysage {4 pieces}, Add 10 rupees for soymilk with any breakfast dish). Desserts: Vegan (non-dairy) or dairy. Vegan includes: Soya ice cream in coconut, chocolate, banana, coffee, or berry (seasonal) flavors. Tofu brownie. All desserts served with soya whipped cream. Beverages (incl. soy milk {hot or cold}–Plain unsweetened, vanilla, chocolate, cardamom). Sandwiches (incl. Soya burger, Tofu burger, Tofu (butter fried), Tofu cream cheese {made with garlic & Herbes de Provence}, Tofu scrambled, Tofulafel. Tempeh {fried} in sesame oil & soy sauce. Seitan fried in onion). Dinner menu: All dinners are served with choice of brown rice, baked potato, or spaghetti, and vegetables of the day. Three broad choices (each with one or more of three symbols by it–vegan, dairy, hot 'n' spicy): (1) Tofu–Khadi tofu, Tofu bolognaise, Tofu lasagne, Tofu nori roll, Vegetable tofu quiche. (2) Tempeh–Tempeh potato patties, Thai style tempeh with cashew nuts, Indonesian sampler. (3) Seitan–Seitan scallopini in cream sauce (served over spaghetti). Address: 1629 Deulvaddo, Anjuna / Vagator, Goa, India 403-509. Phone: 0091-(0)832-227349.

8330. Brewster, Elizabeth. 2005. Beans to go: adding soy to the deli case. *Iowa Soybean Review* (*Iowa Soybean Association, Urbandale, Iowa*) 16(7):12k of 12-page insert after p. 14. Spring.

8331. Dean Foods Co. 2005. Enhancing, enriching, sustaining–Dean's place at the table: 2004 annual report. Dallas, Texas. 88 p. 28 cm.

• ***Summary:*** This annual report is structured to make it very difficult to find the company's financials, and net income (profit). Dig enough and you will find the numbers on p. 49. For the year ended 31 Dec. 2004. Net sales were $10,822 million, up 17.8% from 2003. New income (profit) was $285.4 million, down 19.8% from 2003. "First, our Branded Products Group, which we have renamed WhiteWave Foods, had an outstanding year. WhiteWave Foods' sales increased to $1.2 billion for the year, with operating margins more than

doubling to 10%" (p. 2).

New developments: On 2 Jan. 2004 Dean Foods acquired Horizon Organic. In March 2004 they acquired a license to use the Land O'Lakes name on certain dairy products sold in the eastern United States. Now they have an exclusive right to use the Land O'Lakes brand on most dairy products (excluding cheese and butter) sold anywhere in the country. In Aug. 2004 Dean Foods its decision to consolidate White Wave, Horizon Organic, and Dean National Brand Group into White Wave Foods, a stand-alone operating unit.

"Outstanding brand performance:... Silk continued to perform well, with sales up 33% compared to 2003. Silk market share in the retail grocery channel held steady at 78%, indicating that Silk remains the clear market leader." Horizon Organic's sales increased 24% and sales of Dean's entire portfolio of Land O'Lakes products increased by 34% over 2003.

The section titled "White Wave Foods: Enhancing health, enriching lives, sustaining our environment" (p. 8-13) states that "WhiteWave Foods Company is the largest organic food company in the country." The two colorful pages on Silk note: "We estimate that Silk has been enjoyed in close to 19 million American homes." In 2004 Silk introduced 5 new items that generated $50 million in sales: Very Vanilla, Enhanced, Unsweetened, Kids Silk, and Silk Live. Also the new Silk Twin Pack, which includes two half-gallon cartons in an easy-to-carry box. Silk Kids packs come vanilla, chocolate and strawberry. "Each pack contains eight, 6.5 ounce cartons featuring kid-friendly animal artwork." Many Silk products bear the USDA Organic seal of approval. "Silk and Horizon Organic are proud sponsors of Farm Aid, an annual concert that raises funds to help farmers keep their land. We are the largest purchaser of organic soybeans and organic milk in the country."

Page 20-21 state: "In addition, effective March 11, 2005, Mr. Steve Demos, President of WhiteWave Foods Company resigned his position." Note: Demos was terminated by Engles without cause or explanation. On 5 April 2004, White Wave "acquired [for $25.7 million] a soy processing and packaging facility in Bridgeton, New Jersey. Prior to the acquisition, the previous owner of the facility co-packed Silk products for us at the facility."

Accompanying the annual report is an innovative "2004 proxy statement and notice of annual meeting" (24 p.). In 2004 Gregg L. Engles, age 47, Chairman of the Board and CEO had: Salary $1,000,000. Bonus zero. Other annual compensation $238,767. Value of stock units awarded: $3,148,170. Number of stock options granted: 324,000. Address: 2515 McKinney Ave., Suite 1200, Dallas, Texas 75201. Phone: 214-303-3400 www.deanfoods.com.

8332. Holleran, Joan. 2005. Soy, the next level of new: According to Information Resources Inc. in Chicago, soymilk was essentially nonexistent a few decades ago. Today, the healthful, non-dairy drink has reached critical mass with 10 percent of households purchasing it. In 1999, IRI reported the industry was worth $29 million. In 2003, it was worth $203 million. *Iowa Soybean Review* (*Iowa Soybean Association, Urbandale, Iowa*) 16(7):12c-12d of 12-page insert after p. 14. Spring.

• ***Summary:*** A "Letter from Linda" Funk (Executive Editor, The Soyfoods Council) on the facing page (12B) states that this is the 2nd soyfoods insert. "Soyfoods sales continue to grow with the development of new and delicious products. Joan Holleran, editor of Stagnito's New Products Magazine, developed another soyfoods insert this past winter to be delivered with their monthly magazine. About 37,000 retailers and foodservice professionals receive this magazine so the reach and circulation is fabulous for the soyfoods industry. Kollin Stagnito, vice president and group publisher, graciously agreed again this year to let us send this insert to you... And there's no better time to share with you than April, Soyfoods Month.

In 1999 Information Resources Inc. (IRI) reported that the soymilk industry in the USA was worth $29 million. In 2003 it was worth $203 million. Color photos show: (1) Containers of four flavors of Silk Live!–a live-cultured soymilk smoothie. The product will be entering the mainstream market early next year. (2) Packages of four flavors of Soy Delicious Organic Li'l Buddie's ice cream sandwiches (made by Turtle Mountain, Eugene, Oregon). (3) Front panel of Simply Asia Soy Noodle Soup Bowl (Berkeley, California). These microwaveable meals come in Mushroom & Ginger, Savory Onion, and Szechwan Garlic. (4) Joelle's Choice Chocolate Pudding (based on soymilk, from Joel Health Industries Inc., Fairfield, Iowa). (5) Hershey's 1 Gram Sugar Carb Bar (Chocolate Candy with Soy Crisps flavor).

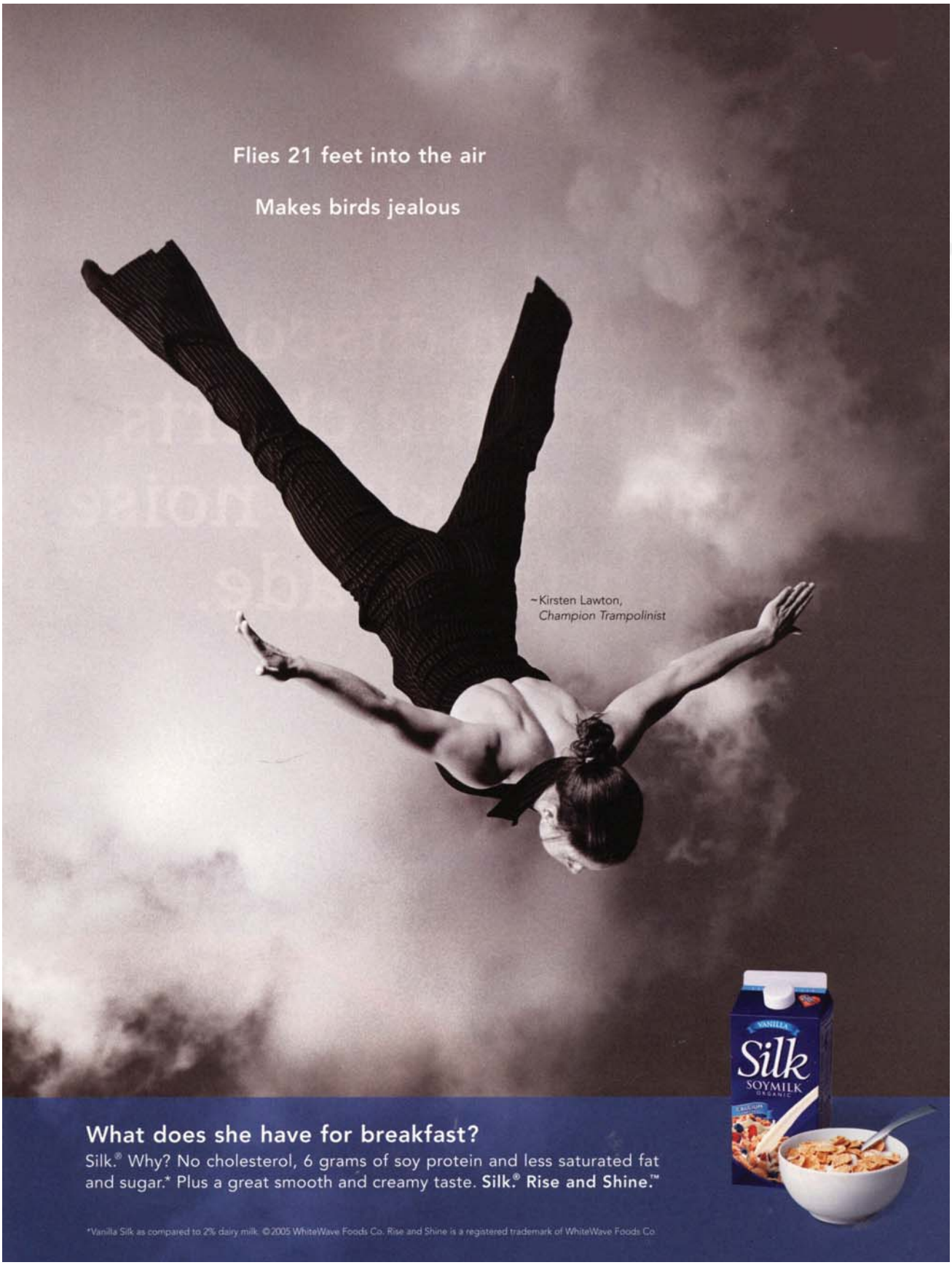
8333. House Foods America Corporation. 2005. House Foods: Tofu and other soy products (Leaflet). Garden Grove, California. 2 panels each side. Each panel: 28 x 21.5 cm. Dated May 2005.

• ***Summary:*** Glossy color and dated. Appears to show a photo of the front of the package of all the different types of House-brand soy products made at this time.

(1) Tofu: 12 types / SKUs. (2) Organic tofu: 4 types. (3) Seasoned tofu (tofu steak): 2 types. (4) Soy snack (Tofulicious): 3 types. (5) Soy milk: 6 types. (6) Age [Fried tofu]: 11 types. (7) Natto: 3 types. (8) Konnyaku (8 types, 2 of which contain tofu). Address: 7351 Orangewood Ave., Garden Grove, CA 92841.

8334. White Wave, Inc. 2005. Flies 21 feet into the air, Makes birds jealous (Ad). *Vegetarian Times.* June. p. 34.

• ***Summary:*** A full-page color ad dated 2005. In the top 7/8 of the ad a black-and-white photo shows a young women wearing long black pants, with both arms extended,



apparently flying. She is: "Kristen Lawton, Champion Trampolinist."

In the bottom 1/8 is a color half-gallon carton of Silk soymilk next to a bowl of breakfast cereal–on a blue. The color carton protrudes into the black-and-white area where it finds a dark gray background.

The white text across the bottom reads: "What does she have for breakfast? Silk. Why? No cholesterol, 6 grams of soy protein and less saturated fat and sugar.* Plus a great smooth and creamy taste. Silk, Rise and shine. * = Vanilla silk as compared to 2% dairy milk." Address: Boulder, Colorado.

8335. Brown, Samantha. 2005. Cambodia's first soya milk factory aims to nourish nation's children (News release). Agence France-Presse English Wire via NewsEdge Corporation. 2 p. July 8.
• ***Summary:*** In 1998–the year peace finally arrived in Cambodia–Pierre Tami established Hagar Soya, a micro-enterprise making fresh soy milk in Cambodia. The small business started out selling about 500 liters of soya milk and tofu locally; this gave both work and hope to dozens of poor local women. But Tami, the executive director, wanted to do more. He was successful in raising $1.3 in investment capital from an array of sources, including the World Bank's Mekong Private Sector Development Facility. He used the funds to build a state-of-the art long-life [aseptically packed] soymilk plant in Phnom Penh, Cambodia's capital.

By 2003 the expanded plant began commercial production and today it has a daily production capacity of 12,000 liters (more than 3,000 U.S. gallons). It employs 50 people, mostly poor women, who earn a decent salary. The company's flagship product, So! Soya, is now sold to more than 500 wholesalers and retailers. Plans are for 8 new soymilk products to be introduced next year.

8336. Asociacion Soya de Nicaragua (La). 2005. [Soynica (Website printout–part)]. www.sdnicc.ni/soynica Printed July 12. [Spa]
• ***Summary:*** Home: Inicio (Introduction). Sobre Soynica (About Soynica, incl. a list of commercial products, a history of the company, and a mission statement). Programas (Programs). Boletin (Bulletin). Contacto (Contact information). Enlaces (links).

Soynica is a small company that makes foods derived from soymilk and other sources that it sells under the Nutrem brand. It was established on 16 October 1994.

Nutrem products: 11 fresh, incl. 4 flavors of soymilk and 4 types of tofu; 11 dry, incl. Soyavena and soy flour; and 11 alternative meals–incl. tempeh.

History of Soynica: In Nov. 1979 Dr. Arturo Aldama and his wife, Dulce, representative of the organization Friends of the Earth (*Amigos de la Tierra*) in Mexico, and Luci Morren, a Belgian woman, organized a group of 8 volunteers who arrive in Nicaragua with the only mission of sharing their knowledge of home preparation of soyfoods. They brought with them only 20 kg of soybeans, because they had been told that soybeans were widely grown in Nicaragua.

But it was not so. So the engineer Alexander Fernandez helped to find about 60 quintals of soybeans with a producer in Esteli, and demonstration plots were started. And so it began. Address: Managua, Nicaragua.

8337. Plamil Foods Ltd. 2005. Plamil (Website printout–part). www.plamilfoods.co.uk Printed July 18.
• ***Summary:*** Home: About us. Products. News. Shopping. Specials. F.A.Q. The home page shows close-up of 12 product labels. Plamil sells 27 consumer and 11 catering / foodservice products. The Products and the Shopping pages show these products and their labels in more detail: Chocolate (100 gm)–Plain, Mint, Roasted Hazelnut, Orange, Martello. Organic chocolate (95-100 gm–Dark, Cayenne, Expressions, Ginger, Plain, Mint, Orange). Organic Chocolate Spread (275 gm)–Plain, Orange, Hazelnut. Carob (95 gm)–Plain, Orange, Hazelnuts, No Sugar Added. Milk Alternatives (1 litre)–Organic Soya Milk (plain), White Sun (contains no soya). Egg Free Mayonnaise (315 gm)–Plain, Garlic, Chili, Tarragon, Organic Plain, Organic Lemongrass. Catering packs (1.5 to 10.5 kg)–Mayonnaise, Chocolate Drops, Baking Chocolate, Carob Drops.

About us: "Plamil is a private company making top quality tasty food for all, supplying customers, retailers, wholesalers and food catering / manufacturing facilities worldwide. Our specialty is making food products free from any animal origin. This means we make great tasting products ideal for those who follow a vegan diet and for all those with allergies to ingredients like dairy milk, eggs, etc. Many products in our range are organic and we are against the use of genetically modified ingredients."

"Our history: Plamil (then Plantmilk Ltd.) was created to manufacture a 'milk' from vegetable source, and made UK history by pioneering British made soy milk in 1965. This was formulated by nutritionists and fortified to cater for the average vegan requirement. Gradually from those early years Plamil has diversified to manufacture a whole range of foods that you see today.

"Where we make our products: We manufacture products in our own factory, where no animal ingredient is ever used. We are also wheat / gluten free site and strictly control purchase of all our ingredients to ensure that none are genetically modified... Also there are no hidden ingredients or processing aids with our products. The ingredients on the label are what you get, nothing more."

"Latest news: Arthur Ling 1919-2005. It is with great sadness we have to report that our founding Director Arthur Ling passed away on the 18th of January. Since the early 1960s his dedication to this company was renowned. He will be sadly missed by all Directors, staff and all that knew

him." A color photo shows Arthur Ling.

Click on the link for Arthur Ling to get a full biography. Veganism was his religion, which he spent a lifetime promoting. He had three children: Julie, Trevor, and Adrian Ling (who now runs Plamil). He had unwavering and uncompromising views on many subjects related to a vegan lifestyle. He was anti-war, egalitarian, and a supporter of "the common man." "A Lover of the outdoors, we was an active Naturist [nudist]. In 1898 England's first health food store was established by "Henry James Cook, who named his store Pitman Health Food Store, in honor of the vegetarian Sir Isaac Pitman, the inventor of shorthand. In 2001 Arthur was awarded the newly created Henry James Cook Award for 'his life's work in the development and production of vegan foods especially for the introduction of the first plant-derived vegan milk in the United Kingdom.' This was Arthur's most cherished award." In 1926, at age 7, he became a vegan when he witnessed a fish being killed at the seaside. "He kept notes of a lecture given in 1938 titled 'Health without dairy produce,' which influenced him greatly. Arthur worked at the London Vegetarian Society, and after the Second World War became an active member of the new Vegan Society, created by Donald Watson in late 1944. For a few years Arthur had his own health food store, and also served on the council of the National Association of Health Food Stores. An accountant by profession, Arthur was involved in his first commercial project in the post war years. A company called Solflower Ltd., based in Wales, was created to produce biodiesel from sunflowers. Unfortunately this project was 50 years ahead of its time and did not enjoy commercial success.

"Arthur is known by most for his work at Plamil and the Vegan Society. From his association with the Vegan Society in the 1950s he joined a group interested in producing a non-dairy milk. Later Arthur attended a meeting called for by Leslie Cross, who later gave it the name, the Plantmilk Society." He worked tirelessly on its behalf. Address: Folkestone, Kent, England CT19 6PQ. Phone: 01303 850588.

8338. Cadwallader, Keith R.; Klein, Barbara P.; Khanna, Pradeep; Chen, Dejun; Nash, Marilyn; Puzey, Megan; Sullivan, Cheryl L. 2005. Around the world with soy. Champaign-Urbana, Illinois: Illinois Center for Soy Foods. 62 p. Illust. No index. 24 cm. Series: Soy in the American Kitchen.

• ***Summary:*** Contents: Illinois Center for Soy Foods. Bringing soy foods to the American table, the international way. Why eat soy? Soy foods: Soy flour, soy protein isolate, soymilk, tofu, textured vegetable protein, edamame, black soybeans, soy nuts, tempeh, miso, soy analogs. Nutrient information. Purchasing soy foods. Recipes. One recipe per page. Contains many excellent full-page color photos (by David Riecks) of prepared dishes.

Photos (p. 61) show: Marilyn Nash, Dejun Chen, Megan Puzey, and David Riecks. Address: 1. PhD, Director, Illinois Center for Soy Foods, 170 National Soybean Research Center, 1101 Peabody Dr., Univ. of Illinois, Urbana, IL 61801. Phone: (217) 244-1706 or www.soyfoodsillinois.uiuc.edu.

8339. Haren, Chuck. 2005. Sustainable community food production: Central American Food Security Initiative (CAFSI). *Plenty Bulletin* (*Summertown, Tennessee*) 21(2):1-2. Summer.

• ***Summary:*** On the cover (p. 1) of this issue are large photos showing people and modern sanitary equipment producing soymilk at four locations in Latin America: (1) ADIBE, Molino Belen, Solola, Guatemala. Agostin Xoquic. (2) UPAVIM, Guatemala City, Guatemala. (3) Huichol Center, Huejuquilla, Mexico. (4) Soynica, Managua, Nicaragua.

Molino Belen is a Mayan village near Solola. "Soynica has become widely known for its work with mothers and children and for promoting use of locally produced soy foods to help address nutrition and economic development issues. During March and April of this year Plenty representatives worked for five weeks helping staff managing Casa Nutrem (Soynica's food processing facility) to purchase, install, and learn to use new cooking, packaging, and refrigeration equipment." A photo (p. 2) shows Elena Xoqic pouring soymilk into a bottle. She and her husband, Agostin, both Cakchiquel Maya, "have been managing the Mayan 'Soyaria' near Solola, Guatemala since Plenty set it up in 1980."

A cover letter from Peter Schweitzer, executive director of Plenty International, notes that Louise Hagler has been working with the Huichol people of Mexico, helping them integrate soy-based foods into their diet. The "Soyaria" near Solola, Guatemala, makes "soymilk, tofu, tempeh and soy ice cream using the very same stainless steel equipment we brought down in an old school bus in 1980! Plenty is helping them renovate the original building and upgrade the equipment. Profits from the Soyaria have been used to fund community development projects such as a new water system and an outdoor basketball court for the school."

Note from Chuck Haren (via Lisa Wartinger, Programs Manager, Plenty International). 2005. Oct. 1. Average weekly sales for the Soyaria at Molino Belen are: Soymilk 400 half-liters. Tofu 260 lb. Tempeh 70 lb. Pinole (dry corn and soy drink mix) 50 lb. Soy ice cream cones 300. Okara 200 lb.

"Plenty has stepped up its technical support to the four CAFSI partner organizations in 2005, and that support will continue in 2006." Address: CAFSI Program Director.

8340. Vitasoy International Holdings Ltd. 2005. Annual report 2004/05. Go natural. New Territories, Hong Kong. 124 p. July. 30 cm. [Eng; Chi]

• ***Summary:*** Turnover (sales) rose 4.9% to HK$2,380 million. Gross profit rose 6.2% to HK$1,368 million.

EBITDA (earnings before minority interest, interest expense, income taxes, depreciation, and amortization) rose 8.8% to HK$284 million. Basic earnings per share rose 5.9% to 12.5 Hong Kong cents (p. 4).

A five-year financial summary (from 2001 to 2005), expressed in Hong Kong dollars, appears on page 123. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

8341. *Dallas Morning News.* 2005. Dean Foods, White Wave beats estimates. Aug. 5.
• ***Summary:*** Dallas-based Dean Foods Co. announced that 2nd quarter profits rose 12% "on stronger milk and organic product sales and cost savings from plant closings."

Sales at the company's White Wave Foods unit, which includes market-leading soymilk and organic brands, rose 12% to $284 million and operating income jumped 160% to 28,7 million.

The White Wave Foods unit, the company's growth leader, has been without its own permanent leader since March of this year when Steve Demos, the founder of White Wave, "stepped down unexpectedly."

Note: Steve Demos has said that he did not step down; he was fired by the CEO of Dean Foods for reasons that are not clear to him.

8342. Soyatech.com. 2005. U.S. soyfoods market shows signs of maturity with slow growth in 2004, says new report. http://www.soyatech.com/bluebook/news/viewarticle.ldml?a=20050829-1. 3 p. Posted 29 Aug. 2005. [6 ref]
• ***Summary:*** *Soyfoods: The U.S. market 2005,* a new market study, shows that total sales of soyfoods hit $4.0 billion in 2004, but "showed the slowest year-over-year growth (2.1%) for the industry as a whole since the early 1980s, when the category began its climb."–according to Peter Golbitz, president of Soyatech, Inc. In 2004, 4 of the 5 top soyfoods categories (meat alternatives, tofu, energy bars, and meal replacements) showed decreased sales; only soymilk posted increased–but modest gains. Up and coming categories include snack foods and other dairy replacements.

In recent years, a number of articles and reports have questioned the health benefits of consuming soyfoods and products containing soy ingredients. "If you look at the top 10 companies in the soyfoods market today, virtually all of the original founders and visionaries are gone," observes Golbitz. During the boom years of the late 1990s and early 2000s, they were bought out by bigger food companies, such as Dean Foods, Kraft, Kellogg, General Mills, ConAgra and Hain-Celestial. These are solid companies but are less willing to take risks and are driven more by "market data than by vision."

The report, the 5th in a series by information partners Soyatech, Inc. and SPINS, is sold in parts. The "macro section" [80-page executive summary] costs $2,900. The more specialized sections are available for about $1,500 each. You can download the prospectus at: http://www.soyatech.com/ pdf/soyfoods05.pds. Soyatech was founded in 1985 and SPINS in 1995. Address: Bar Harbor, Maine.

8343. White Wave, Inc. 2005. Fight every day. Get along perfectly (Ad). *Vegetarian Times.* July/Aug. p. 32.
• ***Summary:*** A full-page color ad dated 2005. In the top 7/8 of the ad a black-and-white photo shows two people fencing. They are: "Keeth & Erinn Smart, Gold Medalists, brother and sister."

In the bottom 1/8 is a color half-gallon carton of Silk soymilk next to a bowl of breakfast cereal–on a light purple background. The color carton protrudes into the black-and white area where it finds a white background.

The white text across the bottom reads: "What do they have for breakfast? Silk. Why? No cholesterol, 6 grams of soy protein and less saturated fat and sugar.* Plus a great smooth and creamy taste. Silk, Rise and shine. * = Vanilla silk as compared to 2% dairy milk." Address: Boulder, Colorado.

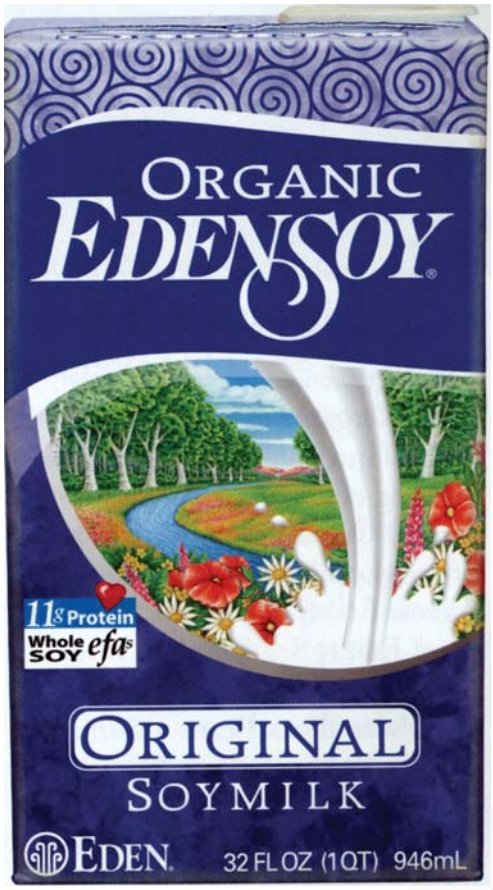
8344. Southern African Soyfood Association (SASFA). 2005. Home page and links (Website printout–part). www.soyfood.co.za Printed Sept. 22.
• ***Summary:*** Links: (1) Home page. (2) Executive. (3) Membership. (4) Constitution. (5) Quality mark. (6) Minutes of meetings. (7) Conferences. (8) Publications. (9) Weekly ASA report. (10) Recipes. (11) Useful information. (12) Useful links.

The 7th International Soyfood Conference will be held on 28 Sept. 2005 at Farm Inn, Pretoria, South Africa. A preliminary program and registration form are given. The program is sponsored by the American Soybean Association (ASA) and WISHH. Speakers from the USA include Peter Golbitz, Frank Daller, Paul Lang, Jim Hershey (Director, WISHH), Rep. of Solae Company.

Some papers from the 2002, 2003, and 2004 conferences are available on the site. Also "Minutes of executive committee meeting held by telephone conference on 18 Nov. 2003. "The web site has been upgraded with the financial support of the American Soybean Association... The recipe book was updated and expanded by 20 pages. A thousand copies were printed with the financial support of the ASA. 170 people attended the soy food conference on 17 July 2002.

The constitution of the SASFA, dated 28 Oct. 1999 (11 pages), is filed with the above materials.

8345. Eden Foods, Inc. 2005. New Edensoy: Now better than ever. *Edenews.* p. 1.
• ***Summary:*** "Creation and maintenance of purity in food." "GEO free whole soybeans & grain." "... no genetically engineered ingredients,..." www.edenfoods.com.



Color photos show Organic Edensoy in Vanilla, Original, Original Fortified, and Unsweetened flavors. Address: 701 Tecumseh Rd., Clinton, Michigan 49236. Phone: 888-424-EDEN.

8346. Eden Foods, Inc. 2005. Organic Edensoy: Better than ever (Leaflet). Clinton, Michigan. 2 panels each side. Each panel: 28 x 21.5 cm.
• ***Summary:*** A glossy color leaflet (8½ by 11 inch) sent by Patricia Smith from Natural Products Expo East. 2005. Sept. On the front panel: "Improved taste. Smoother, cleaner pour. The only soymilk in America made with 100% real vanilla extract... No refined sugars. Gluten free offerings. USA family farm organic grown GEO free whole soybeans and grain." Circle K parve.

The inside two panels give details on the following soymilk products (all are organic) now made and sold by Eden Foods. EdenSoy Unsweetened. EdenSoy Chocolate. EdenSoy Original. EdenSoy Vanilla. EdenSoy Carob. EdenSoy Extra Original. EdenSoy Extra Vanilla. EdenSoy Light Original. EdenSoy Light Vanilla. EdenBlend (Rice & Soy). A color photo shows the front of each carton No product contains refined sugars.

The rear panel highlights four of these soymilk products. First: "EdenSoy Original was America's first soymilk, introduced by Eden in 1983."

Note: Eden Foods knows very well that this was not America's first soymilk. Soymilk was made in America in the 1920s, and many brands were made and sold before 1983. Address: 701 Tecumseh Rd., Clinton, Michigan 49236.

8347. Eden Foods, Inc. 2005. New Edensoy: Now better than ever (Leaflet). Clinton, Michigan. 2 panels each side. Each panel: 28 x 21.5 cm.
• ***Summary:*** A glossy color leaflet. On the front panel: "Improved taste. Smoother, cleaner pour. The only soymilk in America made with 100% real vanilla extract... No refined sugars. Gluten free offerings. USA family farm organic grown GEO free whole soybeans and grain. Circle K parve.

The other panels describe "22 new Eden certified organic foods." Address: 701 Tecumseh Rd., Clinton, Michigan 49236.

8348. **Product Name:** Soy Time (Fiber Enriched Organic Soymilk) [Vanilla, Original, Banana].
Manufacturer's Name: House Foods America Corporation.
Manufacturer's Address: 7351 Orangewood Ave., Garden Grove, CA 92841. Phone: 714-901-4350.
Date of Introduction: 2005. September.
Wt/Vol., Packaging, Price: 1 quart or 2 quart Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (glossy color, front and back, 28 cm) sent by Patricia Smith from Natural Products Expo East. 2005. Sept. "Soy Time: Fiber enriched. Organic soymilk. On the front color photos show the front panels of the three flavors in half gallon (2 quart, 1.89 liter) aseptic cartons. "One 8 oz cup of House Soy Time contains: Natural dietary fiber: 3 gm. Isoflavones: 53 mg. Soy protein: 7 gm.

On the rear panel, no ingredients are given. However the UPC codes and case information are given. www.soytime.com. www.house-foods.com.

Patricia also sent a glossy color leaflet (3 panels each side; each panel 21.8 x 9.4 cm). "Soy Time. The key to good health."

8349. **Product Name:** Kikkoman Pearl Organic Soymilk (In Aseptic Quart Cartons) [Tropical Delight, Chocolate, Unsweetened].
Manufacturer's Name: Kikkoman International, Inc. (Importer-Distributor). Made in Japan.
Manufacturer's Address: 50 California St., Suite 3600, San Francisco, CA 94111. Phone: 415-956-7750.
Date of Introduction: 2005. September.
Ingredients: Chocolate: Filtered water, whole organic soybeans, organic evaporated cane juice, organic cocoa powder, organic dutch processed cocoa powder, tricalcium phosphate, sodium citrate, sea salt, carrageenan, organic natural vanilla flavor. Organic–95% or more and less than

100%. Certified organic by QAI.
Wt/Vol., Packaging, Price: 32 fl oz (1 quart) Tetra Brik Aseptic Carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Color photocopied leaflet sent by Patricia Smith from Natural Products Expo East. 2005. Sept. Two panels each side. Each panel: 28 x 21.5 cm. For each of Kikkoman's six soymilk products is given: A photo of the front panel. Ingredients. Nutrition facts. A photo of a recipe suggestion.

8350. Nature Soy, Inc. 2005. Healthier living, healthier life (Brochure and Portfolio). 713 North 10th St., Philadelphia, PA 19123. 10 p. + 3 inserts. 28 cm.

• ***Summary:*** Brochure (glossy color) sent by Patricia Smith from Natural Products Expo East (Baltimore, Maryland). 2005. Sept. Contents: Nature's Soy: Healthy, convenient, Our company. Our facilities (Large and very modern). Our R&D. Our philosophy (We take soy products seriously!). Our products.

"Based in Philadelphia, Pennsylvania, Nature Soy, Inc. is a major supplier of healthy soy and vegetarian products on the East coast. We have been manufacturing fresh soy products since l99l and have well established our brand name among our customers. As one of the largest Chinese-owned and operated soy food companies in the USA, Nature Soy, Inc. was featured in a television documentary about successful overseas Chinese entrepreneurs by a Chinese television station.

"Our Nature's Soy brand of tofu and soymilk products is in almost all major Asian grocery stores and supermarkets from New Jersey to North Carolina, reaching as far south as Georgia and Florida."

This company specializes in soy products. The two basic types are organic and conventional. The two basic types of organic are plain and flavored.

There are four organic plain products: (1) Silken tofu, 20 oz. (2) Soft tofu, 20 oz. (3) Firm tofu, 16 oz. (4) Extra firm tofu, 12 oz. "Using a cheese or deli slicer, this extra firm tofu can be sliced to about 1/16 inch thin slices, yet still maintains its integrity."

There are four organic flavored products: (1) Five spice flavored tofu, 12 oz. (2) 5 minute tofu, 11.5 oz. (3) Tofu-Deli, pre-diced, 12 oz. (4) Tofu-Deli, pre-sliced, 12 oz.

There are four conventional plain products: (1) Silken tofu, 20 oz. (2) Soft tofu, 20 oz. (3) Firm tofu, 16 oz. (4) Extra firm tofu, 10 oz.

There are four conventional flavored products: (1) Flavored tofu, 12 oz. (2) Hot & spicy flavored tofu, 8 oz. (3) Curry flavored tofu, 10 oz. (4) Oriental sauce tofu, 10 oz.

There are 3 types of soymilk: (1) Plain, ½ gallon. (2) Sweetened, 16 oz. (3) Sweetened, ½ gallon.

There are two other products: (1) Soy puffs (deep-fried tofu), 14 pieces per pack of about 4 oz. (2) Fried tofu, 8 oz.

In addition the company makes two gluten-based products (somewhat like seitan) called "Protein Wise Meat Substitutes." They come in Chicken Style and Beef Style, 8 oz per pack.

They also make Cantonese rice noodles and rice noodle rolls.

The business card of Fenjin (Gee) He, PhD, is attached to the cut-out space in the portfolio. Mr. He designed this brochure. Address: Philadelphia, Pennsylvania. Phone: 215-.

8351. Shurtleff, William; Aoyagi, Akiko. 2005. Doufu zhi shu [The book of tofu]. Taipei, Taiwan: Persimmon Cultural Enterprise Co., Ltd. viii + 270 p. Sept. 1. Illust. by Akiko Aoyagi. No index. 26 cm. [Chi]
• ***Summary:*** A very attractive, complex character, Chinese-language edition of *The Book of Tofu* (2nd ed. Ten Speed Press). A slightly revised edition (different color cover) was published in mid-2012. Address: 1. Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

8352. Soyatech, Inc. 2005. Soya & Oilseed Bluebook 2006: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 416 p. Sept. Comprehensive index. Brand name index. Advertiser index. Statistical conversions. 28 cm.
• ***Summary:*** On the cover is color photo of two cupped hands holding a very small soybean plant rooted in soil–against a greenish black background. On the inside front cover is a color ad from Natural Products Inc. (Grinnell, Iowa) titled "Always unique, always innovative, always natural." Color photos show ready to eat products made with Scotsman's Mill whole egg extender, egg white extender, and enzyme active low fat soy flour, plus roasted soy grits, bakery ingredients, and soymilk powders. On the first page is a full page color ad from Bunge North America (St. Louis, Missouri) titled "The shortest distance from harvest to market." On the rear cover is a full page color ADM ad ADM showing a Chinese teenager eating tofu from a plate, using chopsticks. The text is the same as that of one of ADM's current TV ads: "Somewhere west of Shenyang, a teenager is stopping for dinner... A dinner rich in soy protein.

As one of the world's largest soy processors, we like the idea that there will be no stopping him now."

On the title page of the book is a bright green self-adhesive label containing "Your access code," which expires in a year.

In the Foreword, Peter Golbitz of Soyatech compares the world of today with that of 1947, when the *Soybean Bluebook* was first published. The year 1947 marked a dramatic turning point; "it was the last year that China led the world in soybean production... The U.S. produced 183.6 million bushels (5 million metric tons) [of soybeans] that year, around 34% of the world's total. And the price for a bushel of U.S. soybeans averaged $3.34." In 1948, the U.S. passed China to become the world's leading producer of soybeans. Today, it looks like Brazil will soon pass the USA as the world's largest producer of soybeans. Note: In 2005/06 the U.S. produced 78.789 million metric tons of soybeans, followed by Brazil which produced 62.000 million. Address: 1369 State Hwy 102, P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

8353. Sunrich. 2005. Soy ingredients–Soymilk: Liquid and powdered products (Leaflet). Hope, Minnesota. 1 p. Front and back. 28 cm.
• ***Summary:*** A glossy color leaflet sent by Patricia Smith from Natural Products Expo East. 2005. Sept. On the front is an overview and six small color photos. On the rear are two large tables titled "Product specifications" and "Application chart." The two liquid beverage bases are: Soy-Um Soy Base and Light Soy Base. both available in Aseptic or ESL (Extended Shelf Life) refrigerated packaging. The four spray-dried soymilk products are: Soy Supreme Base. Soy Supreme Fiber Reduced. Soy Supreme Light. Soy Supreme Kreme.

Sunrich is a SunOpta company. Address: P.O. Box 128, 3824 S.W. 93rd St., Hope, Minnesota 56046. Phone: 800-297-5997.

8354. Sunrich. 2005. Whole grains–Soy, corn & sunflower (Leaflet). Hope, Minnesota. 1 p. Front and back. 28 cm.
• ***Summary:*** A glossy color leaflet sent by Patricia Smith from Natural Products Expo East. 2005. Sept. On the front is an overview and six small color photos. On the rear are three large tables titled "Product specifications." For soy, the soybean five varieties are: High protein Vinton type. Clear hilum. Low lipoxygenase. Non-GMO blend. Dehulled soybeans. For each of the five is given: Protein (dry basis), oil, moisture, seed size, hilum color, application (tofu, soymilk, soy sauce, miso, roasting, other).

Sunrich is a SunOpta company. Address: P.O. Box 128, 3824 S.W. 93rd St., Hope, Minnesota 56046. Phone: 800-297-5997.

8355. United Soybean Board. 2005. Consumer attitudes about nutrition–Insights into nutrition, health and soyfoods: 12th annual national report. Seattle, Washington. 8 p. Sept.
• ***Summary:*** This 12th annual nationwide survey, commissioned by USB, was conducted in early 2005 by an independent research firm in Seattle, Washington. Random telephone interviews were completed with 1,000 consumers, "providing a sample that is consistent with the total American population. The study's margin of error is ±1.9 to 3.1 percentage points and has a confidence interval of 95%."

Contents: Introduction and methodology. Nutritional habits and obesity concerns. Healthy food decisions. Cooking oil impressions. Consumer attitudes about fats. Awareness, usage, and trial of soy products. Occasion preferences for consuming soy (Of consumers who use soy products at least once a month: Dinner 40%, breakfast 27%, lunch 23%, other times 10%). Soyfoods and health: Perceived healthfulness of soy products (78% say healthy, 17% neutral, 5% unhealthy), unaided awareness of health benefits of soy (prevent obesity / promote weight loss 17%, heart health 14%, menopause relief 12%, good protein source 11%, cancer prevention 10%, reduced risk of osteoporosis 2%). Biotechnology [genetic engineering] in food and agriculture. Restaurants and soy products.

Perceptions of biotech and food: 46% (up from 39% last year) of consumers consider themselves at least somewhat familiar with biotechnology." Of this group, 62% "report a positive perception of its role in food production."

Perceptions of biotech in agriculture: Of that 46% who are at least somewhat familiar with biotechnology: 33% feel that its role within agriculture is to improve the nutritional make-up of crops, 25% don't know enough about biotech to say what role it plays, 13% think that biotech enables farmers to use fewer pesticides, herbicides, and toxins, 13% have a negative perception, other 4%.

Restaurants and soy: A new question added to the survey this year shows that 20% of consumers would order soy products in restaurants if they were available. Types of soy actually ordered in restaurants: Plain white tofu 37%, veggie burger 28%, soymilk 11%, miso 11%, edamame 10%, other products 19%.

Note 1. As of Aug. 2008 this full survey is available gratis in PDF format at www.soyconnection.com /health_ nutrition /pdf/.

Note 2. This is the earliest English-language document seen (April 2013) that contains the term "Plain white tofu."

8356. West, M.C.; Anderson, L.; McClure, N.; Lewis, S.E. 2005. Dietary oestrogens and male fertility potential. *Human Fertility* (*Cambridge, England*) 8(3):197-207. Sept. * Address: Obstetrics & Gynaecology, School of Medicine, Inst. of Clinical Science, Queen's Univ. Belfast, UK.

8357. **Product Name:** Light Silk Soymilk [Chocolate, Plain, Vanilla].

Manufacturer's Name: WhiteWave Foods Company (Product Developer-Distributor)
Manufacturer's Address: 1990 N. 57th Court, Boulder, CO 80301. Phone: 800-448-9823.
Date of Introduction: 2005. September.
Ingredients: Vanilla: Filtered water, soy flour, organic evaporated cane juice, calcium carbonate, natural vanilla flavor, sea salt, carrageenan vitamin A palmitate, vitamin B6, riboflavin (vitamin B2), vitamin D2, vitamin B-12.
Wt/Vol., Packaging, Price: Half gallon (1.89 liters). Gable-top carton with reclosable cap.
How Stored: Refrigerated.
New Product–Documentation: Glossy color leaflet (front and back, 8½ by 11 inch) sent by Patricia Smith from Natural Products Expo East. 2005. Sept. (dated 2005). "Silk Light half gallons. Half the fat, fewer calories." On the front: A color photo shows an aseptic carton of each of the three different flavors.

On the rear are nutrition facts, ingredients, barcodes and UPC codes, and case information. The product names are written as: Silk Plain Light. Silk Vanilla Light. Silk Chocolate Light (New!).

Note: The word "New" suggests an earlier introduction date for the other two flavors.

8358. **Product Name:** Silk Single Serve Soymilk (11 oz plastic chugs) [Organic Plain, Vanilla, Chocolate, Coffee Soyalatte, Spice Soyalatte].
Manufacturer's Name: WhiteWave Foods Company (Product Developer-Distributor)
Manufacturer's Address: 1990 N. 57th Court, Boulder, CO 80301. Phone: 800-448-9823.
Date of Introduction: 2005. September.
Wt/Vol., Packaging, Price: 11 oz plastic chugs with tamper-proof screw-on lid.
How Stored: Refrigerated.
New Product–Documentation: Glossy color leaflet (front and back, 8½ by 11 inch) sent by Patricia Smith from Natural Products Expo East. 2005. Sept. (dated 2005). "Silk 11 oz Single Serve. The on-the-go snack that delivers great taste and nutrition." On the front: A color photo shows a plastic bottle of each of the five different flavors.

On the rear are UPC codes, and case information. Note: There are no nutrition facts, no ingredients, and no barcodes. The product names are written as: Silk Organic Plain. Silk Vanilla. Silk Chocolate, etc.

8359. **Product Name:** Soy Milk (Organic) [Plain, Vanilla, Chocolate, Cappuccino].
Manufacturer's Name: ZenSoy.
Manufacturer's Address: 21 Empire Blvd., S. Hackensack, NJ 07606. Phone: 201-229-0500.
Date of Introduction: 2005. September.
Ingredients: Plain: Filtered water, organic whole soybeans, organic granulated cane juice, natural flavors, calcium carbonate, sea salt, carrageenan, vitamin A palmitate, vitamin D2, riboflavin (B2), vitamin B12.
Wt/Vol., Packaging, Price: 1 quart or 2 quart Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (glossy color, front and back, 28 cm) sent by Patricia Smith from Natural Products Expo East. 2005. Sept. "Certified organic & delicious. New look!" On the front one large photo shows three flavors of ZenSoy soy milk in half gallon aseptic cartons (not including cappuccino), four flavors in 1 quart aseptic cartons, and four flavors of ZenSoy Soy Pudding in aseptic sleeves (4 x 4 oz. cups per sleeve).

On the rear are given ingredients, barcodes, UPC numbers, and case/pallet information, plus four logos: USDA Organic. Certified vegan (vegan.org). NONY Certified Organic LLC. Non-GMO. www.zensoy.com.

Note: The words "New look!" suggest an earlier date of introduction.

Leaflet (glossy color, front and back, 28 cm) sent by Patricia Smith from Natural Products Expo East. 2007. Oct. "The soy you enjoy." On the front panel a photo shows a carton of ZenSoy Soy Milk (Vanilla) being poured, against a background of sky and clouds, into a glass held by a cartoon figure of a giant panda (black and white). In the lower right corner are photos of the front of 3 half-gallon cartons of 3 the company's 4 flavors of soymilk. Cappuccino is sold only in quart cartons. On the rear are ingredients, UPC and barcodes, and case information. Note: The company apparently no longer sells soy puddings. Across the bottom are three logos as in the 2005 leaflet as well as OU Parve.

8360. **Product Name:** Soy Pudding (Organic) [Chocolate, Vanilla, Banana, Chocolate / Vanilla Swirl].
Manufacturer's Name: ZenSoy.
Manufacturer's Address: 21 Empire Blvd., S. Hackensack, NJ 07606. Phone: 201-229-0500.
Date of Introduction: 2005. September.
Ingredients: Vanilla: Filtered water, certified organic whole soybeans, certified organic granulated cane juice, certified organic corn starch, certified organic flavors, natural flavors, calcium carbonate, carrageenan, locust bean gum, sea salt, lecithin, vitamin A palmitate, vitamin D2, vitamin B2, vitamin B12.
Wt/Vol., Packaging, Price: 4 x 4 oz cups in Aseptic sleeve.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (glossy color, front and back, 28 cm) sent by Patricia Smith from Natural Products Expo East. 2005. Sept. "Certified organic & delicious. New look!" On the front one large photo shows three flavors of ZenSoy soy milk in half gallon aseptic cartons (not including cappuccino), four flavors in 1 quart aseptic cartons, and four flavors of ZenSoy Soy Pudding in

aseptic sleeves (4 x 4 oz. cups per sleeve).

On the rear are given ingredients, barcodes, UPC numbers, and case/pallet information, plus four logos: USDA Organic. Certified vegan (vegan.org). NONY Certified Organic LLC. Non-GMO. www.zensoy.com.

Note: The words "New look!" suggest an earlier date of introduction.

8361. **Product Name:** O Organics Organic Soymilk [Plain, Vanilla, Chocolate].
Manufacturer's Name: Lucerne Foods, Inc. (Safeway) (Distributor). Made in Canada.
Manufacturer's Address: P.O. Box 99, Pleasanton, CA 94566-0009.
Date of Introduction: 2005. October.
Ingredients: Chocolate: Filtered water, organic whole soybeans, organic cane sugar, organic cocoa, tricalcium phosphate, sea salt, carrageenan, zinc gluconate, niacin, pantothenic acid, riboflavin (vitamin B-2), vitamin B-6, vitamin A palmitate, thiamine mononitrate (vitamin B-1), folate, vitamin D-2, vitamin B-12.
Wt/Vol., Packaging, Price: Half-gallon Tetra Pak ESL gable-top carton. Retails for $3.79 (2006/07, Lafayette, California).
How Stored: Refrigerated.
New Product–Documentation: Product with Label purchased at Safeway supermarket in Lafayette, California. 2006. July 31. 3.75 by 3.75 by 9½ inches. Brown, blue, yellow, light green, on white. Front panel: "Cholesterol free. Vitamin fortified. Calcium enriched." A color photo shows chocolate soymilk being poured into a glass. Top front: "Lactose free. Contains 40 mg of isoflavones per serving." Sometimes on sale for $2.49. Nice flavor.

Talk with Sherry at Safeway Corporate Brands. 2006. Aug. 2. This line of 3 flavors was introduced in the USA in Oct. 2005 and in Canada in Dec. 2005.

8362. Ta Ti Hsing Machinery Co., Ltd. 2005. Soyfood processing machinery and equipment (Catalog). No. 8, Alley 13, Lane 183, Yu San St., Taoyuan, Taiwan, R.O.C. 6 panels. 30 cm. [Eng; Chi]
• ***Summary:*** The full color catalog of tofu and soymilk equipment contains 3 panels of photos and name (in English and Chinese) of different production systems. One panels shows an elaborate flow chart for making filled lactone silken tofu, firm / soft / or silken tofu, spiced tofu (tokan), Long life soymilk, and fresh soymilk. The last panel gives a company profile. This company, established by Mr. Cho in 1961, specializes in the development of soybean processing equipment and technology. For details: www.tati.com.tw.

Brief chronology: 1961–Ta Ti Hsing Machinery Co., Ltd. founded by Cong-Qian Cho at No. 27 Chung San North Road, Taoyuan, Taiwan. He develops the No. 1 Grinder and a replacement for traditional hand-turned stone mills. He soon develops the semi-automatic steam boiler, cooker, filter machine, and manual press.

1980–The company moves to No. 8, Alley 13, Lane 183, Yu San St., Taoyuan, Taiwan. Mr. Cho is still the owner, president and general managing.

1990–Mr. Cho retires and his son, Chien-Wang Cho takes his place as president and general manager.

2005–Mr. Cho is starting to research an automatic production line with PLC human touch system to improve equipment for the international market. Since the company has the reputation of being No. 1 in Taiwan, they are going to focus on the international market. Address: Taoyuan, Taiwan. Phone: 866-3-362-1848.

8363. **Product Name:** Trader Joe's Organic Rice Milk [Vanilla].
Manufacturer's Name: Trader Joe's (Marketer-Distributor).
Manufacturer's Address: Monrovia, CA 91016.
Date of Introduction: 2005. October.
Ingredients: Filtered water, organic rice, organic expeller pressed canola oil, natural vanilla flavor with other natural flavors... Certified organic by Quality Assurance International.
Wt/Vol., Packaging, Price: 1 quart (946 ml) Tetra Brik aseptic carton with reclosable cap.
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 1 cup (8 fl oz): Calories 110, calories from fat 20, total fat 2 gm (3% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 70 mg (3%), total carbohydrate 22 gm (dietary fiber 0 gm, sugars 17 gm), protein 2 gm. Vitamin A 10%, calcium 30%, vitamin D 25%, vitamin B-6 25%, phosphorus 20%, vitamin B-12 25%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2005. Oct. Red, yellow, blue, and light green on white.

8364. **Product Name:** Mogami Soymilk [Sweetened, Sweetened–Calcium Enriched].
Manufacturer's Name: Walong Marketing Inc. (Marketer / Distributor). Made in USA.
Manufacturer's Address: Walong: Buena Park, California 90620.
Date of Introduction: 2005. October.
Ingredients: Sweetened–enriched: Filtered water, whole non-genetically modified soybean, sugar, tricalcium phosphate, salt, zinc oxide, riboflavin (B-2), vitamin A acetate, vitamin B-12, vitamin D-2.
Wt/Vol., Packaging, Price: 1 quart aseptic carton. Retails for $0.99 in New York City.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Talk with Denis Bolger of New York. 2005. Oct. 20. This is a new soymilk which

he likes very much, although it is quite sweet. He bought it for 99 cents a quart at A & Singh Project 99¢ Store, 983 Amsterdam Ave. at 106th St. in New York City.

Products with Labels sent by Denis Bolger. 2005. Oct. 22. 1 liter Tetra Brik Aseptic pack. Sweetened, and Sweetened–Calcium enriched. Beige, dark green, white, yellow, and red on green and beige. Photo of soymilk being poured into a brandy glass. "Choose the best–Mogami. Rich & pure. Cholesterol free. Lactose free." One front panel is English, the other in Chinese. The "Nutrition facts" on one side are in English only. On the other side, the top half of the text is in English, the bottom in Chinese. "Soymilk gives you a healthier diet."

8365. *SoyaScan Notes.* 2005. How the word "soyfoods" came to be misspelled as two words–"soy foods" (Overview). Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** Starting in the mid-1970s, the soyfoods industry, the Soyfoods Association of North America, Soyfoods Center, the U.S. Soyfoods Directory, the Soyfoods Council, many companies that had "Soyfoods" in their company name, and (in general) the media all spelled the word "soyfoods" as one word.

Why? (1) Everyone seemed to agree that this was the best way to spell the word. (2) Historically, compound words (such as soy beans) tend to become one word to save time (an extra keystroke) and space when writing them. (3) A single word is much easier to search electronically than a compound word. (4) The word "soyfoods" was one of a group of words with parallel structure as one word–soybeans, soymilk, soyfoods, etc. (5) Our appeal to the U.S. Food and Drug Administration to be able to use the word "soymilk" was based, in part, on the fact that it cannot be easily confused with the word "milk." Note that, from this viewpoint, the term "soy milk" is somewhat ambiguous–and could be a mixture.

For some unknown reason, and without consulting our industry or trade association, in about the year 2000, the Microsoft electronic online dictionary started spelling the word as "soy foods" (along with "soy milk"). These spellings soon spread to Wikipedia, to Google's preferred spellings, etc. Our industry tried many times, unsuccessfully, to reach the compilers of the dictionary. It seemed to be a faceless entity. Then the word "soy foods" began to appear more frequently on Wikipedia and on the web. For example a Google search for "soyfoods" on 12 Sept. 2010 got about 70,200 hits / results compared with 114,000 for "soy foods." Likewise a search for "soymilk" got 478,000 hits compared with 1,090,000 for "soy milk." Address: Soyfoods Center.

8366. Haren, Chuck. 2005. Central American Food Security Initiative (CAFSI) news and updates. *Plenty Bulletin* (*Summertown, Tennessee*) 20(4):4. Winter.

• ***Summary:*** Nicaragua: In Nov. 2004 Chuck again worked with the folks who manage Soynica's soy and green leaf foods processing and marketing business, Casa Nutrem. In March 2004 they had done an assessment of equipment that was needed to help this woman-led nonprofit organization improve and increase production of soymilk and related products. SOYNICA sent $30,000 of their own funds to Plenty and Chuck located and purchased the equipment

including an additional cooker, a hydraulic milk extractor, three sanitary milk pumps with connecting tubing, a plate heat exchanger for quickly cooling the soymilk, a refrigerated bulk soymilk tank, a semi-automatic filling machine and a walk-in cooler. The equipment was shipped to Managua (capital of Nicaragua) from Houston, Texas.

After the equipment arrived, Chuck traveled to Managua where he worked with the Casa Nutrem staff and local technicians in setting up the new soymilk processing line, which enables them to increase production by 1,000 to 2,000 packages of soymilk per shift; each package is ½ liter.

"In 2005 Plenty representatives will return to support SOYNICA's efforts to complete a second phase of upgrading the equipment line at Casa Nutrem and begin to set up a second, smaller soy food processing and marketing business in another town." A photo shows the inside of the soymilk processing line at Casa Nutrem with a worker standing next to a stainless steel cooker.

With the Huichols in Mexico: Louise Hagler and Celena McIntyre are "taking part in phase two of the Huichol Soyfoods and Nutrition Project; funding has been provided by the Onaway Trust, AMB Foundation, and individual Plenty donors.

Guatemala: "Over the past year Plenty has provided more than $8,000 to ADIBE (the Cakchiquel Mayan Soyfoods production facility in Guatemala) to upgrade their San Bartolo facility (new roof and floor), to purchase soybeans and to open a soyfoods retail outlet in the near-by town of Panajachel on the shores of Lake Atitlan. Plans are in place to provide ADIBE with some new equipment and continuing technical support by visiting soy technicians in 2005. Technical assistance will also be provided to UPAVIM, the women's cooperative in Guatemala City, for their soyfoods production operation sometime in the next two months."

8367. Richmond, Akasha. 2005. Hollywood dish: More than 150 delicious, healthy recipes from Hollywood's Chef to the Stars. New York, NY: Avery–A member of the Penguin Group (USA) Inc. xi + 310 p. Illust. Index. 25 x 20 cm. [125 ref]

• ***Summary:*** One of the most original and interesting cookbooks seen in decades. This book, originally titled *Healthy Hollywood,* is much more than just a collection of superb recipes and stories about Hollywood celebrities and glitterati. In carefully researched and well-written sidebars, it documents the history of health foods in Hollywood and southern California. The introduction to each chapter tells the history of that type of food, and every recipe has a long and interesting historical headnote. The acknowledgments show vividly Chef Akasha's high and wide circle of Hollywood friends. The introduction–"The Road to Hollywood" tells the story of how Akasha got interested in and researched this subject. History is woven into every page of this book–in the most palatable way. In short, this is a cookbook with a remarkable tale to tell–one to read and study–as well as one to cook from.

Sidebars and illustrations: (1): "The stars and the Hollywood Diet"–Sue Carol (lovely future wife of Alan Ladd) on the cover of *Motion Picture* magazine, Oct. 1929. (2) Mildred Lager (1908-1960). (3) Harry Chandler (1864-1944). (4) Granola (Layton Gentry, Adelle Davis, Dorothea Van Gundy Jones). (5) Photo of silent film star Anita King eating Sun Maid Raisin Pie, 1916. (6) Adelle Davis (1904-1974). (7) Clarke Irvine, 1892-1975. (8) Photo of Radiant Radish health food store, owned by Beach Boy Brian Wilson, Los Angeles, 1969. (9) Otto Carque, 1867-1935, with a photo of his health wagon, around 1912. (10) Gayelord Hauser (1895-1984). (11) "Nature Boy"–Bill Pester and the 1948 hit song by Eden Ahbez. (12) The Ashram–Hollywood restaurant founded by Anne-Marie Bennstrom. (13) The Hollywood diet, with a photo of page 1 of the "18-Day Diet" from *Motion Picture* magazine, Oct. 1929. The sidebar begins: "The first best-selling diet book in America, *Diet and Health, with a Key to the Calories,* was written by Los Angeles-based Dr. Lulu Hunt Peters in 1918, and sold over 2 million copies. The book introduced the concept of counting calories." (14) Alan Hooker (1902-1993). The grandfather of California cuisine, he opened the Ranch House restaurant in 1956 in Ojai, California. (15) Gloria Swanson–Hollywood's Green Goddess. She "was the highest paid and most popular, influential star of the 1920s." (16) Jim Baker (1922-1975). A pioneering organic restaurateur, he Opened the Aware Inn in 1957, then the Source restaurant in 1969. (17) Raw, raw, raw (Arnold Ehret, Vera and John Richter, and raw foods). (18) Photo of silent film star Mary Pickford drinking orange juice made with Sunkist fruit and juicer. (19) The godfather of fitness–Jack LaLanne. Master chef Danny Kaye (1913-1987). (20) The Farmer's Market in Los Angeles, started in 1934. (21) Paul Bragg (1881-1976), with photo of Rita Hayworth on the cover of his *Health Builder* magazine. (22) Books and cooks–"150 Recipes of the Stars (1928), Helen Evans Brown. (23) Health foods–Dr. John Harvey Kellogg, the rise of health food sections in the late 1800s in L.A. department stores, the rise of health food stores, Sandy Gooch. (24) Mae West (1893-1980). Gypsy Boots (1914-2004). Photo of Boots and Paul Bragg. (25) Food and film. (25) Photo of Donna Reed and Paul Bragg, sometime in the 1950s. (26) Bernarr Macfadden (1868-1955). (27) Celebrity stew and Leo Pearlstein. (28) Vegetables, fruits, and nuts (incl. Frieda Caplan, Albert's Organics). (28) Rancho La Puerta and the Golden Door. Photo of young Burt Lancaster baking bread at La Puerta. (29) Fred Waring (1900-1984), the blender, and smoothies. (30) Hain Pure Foods. "Harold Hain opened his first health food store in downtown Los Angeles on October 17, 1926." (31) Swamis and yogis. Paramahansa Yogananda arrived in L.A. in 1925; he advocated a healthy vegetarian diet, including in his magazine *East West,* first

issued in 1926. On 8 April 1951 he opened SRF India Café at his India House compound on Sunset Boulevard. "Yogi Bhajan (1930-2004) came to Los Angeles in 1969, bringing the teachings of Kundalini Yoga and his own unique style of Indian and Ayurvedic cooking. In 1974 his students opened Golden Temple Conscious Cookery in Los Angeles. I [Akasha] was a cook there from 1979 to 1984..."

Soyfoods are used in recipes (and recipe titles) throughout this book: Edamame or fresh green soybeans (used in 2 recipes), miso (1 recipe), soymilk (many, especially in place of milk in desserts, incl. "Chocolate Jack Daniel's soy gelato" and "Soya chocolate" milk), soy flour (1, Bill Baker's bread), soybeans (whole, 1, "Soybean casserole"), tofu (10), and tempeh (4).

Also discusses: Sophie and Harry Cubbison (p. 47), El Molino Mills (p. 106). Early veggie burgers (p. 106). Silk soymilk and Steve Demos (of White Wave, p. 266).

The recipes in this book are largely vegetarian (including 17 vegetarian main dishes), all call for organically grown ingredients, and many are dairy-free (using soymilk instead of cow's milk). However: Beef (used in 2 recipes, incl. "Fillet mignon Japanese"). Pork (used in 1 recipe, "Citrus roasted pork chops with rosemary potatoes"). Chicken (used in 6 recipes, incl. "Endive petals with curried chicken salad"). Turkey and duck (3 recipes). Fish (many recipes as for cod, halibut, salmon, whitefish). Shellfish (crab, scallops, shrimp).

Talk with Akasha Richmond, who calls. 2005. Dec. 7. Her favorite parts of the book are: The smoothie story (p. 275-80, both dairy and nondairy). Otto Carque. Gloria Swanson. Yogis and Swamis, Granola. She is very happy with everything about the way the book and its promotion turned out ("It looks great")–except she wishes she could have included more photos. Address: Los Angeles, California.

8368. **Product Name:** President's Choice, Too Good to Be True Non-Dairy Soy Beverage [Vanilla, or Original].
Manufacturer's Name: Sunfresh LLC (Marketer-Distributor).
Manufacturer's Address: 2821 Emerywood Parkway, Suite 210, Richmond, Virginia 23294-3727.
Date of Introduction: 2005.
Ingredients: Vanilla: Filtered water, whole organic soybeans, evaporated organic cane juice, natural flavors, calcium carbonate, sodium citrate, potassium citrate, sea salt, vanilla extract, carrageenan, vitamin A palmitate, vitamin D2, vitamin E, vitamin B2, vitamin B12, zinc sulfate.
Wt/Vol., Packaging, Price: 1 quart Tetra Brik Aseptic carton. Retails for $0.99 (2006/06, Oakland, California).
How Stored: Refrigerated.
Nutrition: Vanilla: Per 1 cup (240 ml): Calories 90, calories from fat 30, total fat 3.5 gm (5% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 160 mg (7%), potassium 560 mg (16%), total carbohydrate 10 gm (dietary fiber 2 gm [7%], sugars 5 gm), protein 6 gm. Vitamin A 10%, calcium 30%, vitamin D 30%, thiamin 6%, vitamin B6 4%, vitamin B-12 50%, magnesium 20%, copper 25%, vitamin C 0%, iron 8%, vitamin E 25%, riboflavin 40%, folate 15%, phosphorus 8%, zinc 10%, manganese 20%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label (vanilla and original) purchased by Martine Liguori at Grocery Outlet, Oakland, California. 2006. June. Green and black on flecked white. Front panel: Color photo shows beige soymilk being poured into a clear glass, against a field of green and a blue sky with many clouds. "Lactose free. Cholesterol free. Made with organic soybeans. Contains 6.62 g soy protein per serving. Contains 31 mg isoflavones per serving. Low in saturated fat. Excellent source of calcium, vitamin D riboflavin, and vitamin B12... A source of dietary fiber." Taste test: Muddy flavor–Too sweet. Thickness OK for hot tea.

8369. **Product Name:** 8th Continent Premium Soymilk [Vanilla, Chocolate, Original].
Manufacturer's Name: 8th Continent, L.L.C. [General Mills] (Distributor).
Manufacturer's Address: Box 200, Minneapolis, MN 55440. Phone: 1-800-247-6458.
Date of Introduction: 2005. January.
Ingredients: Soymilk (water, soy protein [isolate], soybean oil, calcium phosphate), sugar, fructose, potassium citrate, sodium polyphosphate, dipotassium phosphate, soy lecithin, salt, natural and artificial flavor, xanthan gum, carrageenan, riboflavin (vitamin B-2), vitamin A (palmitate), vitamin D-2, vitamin B-12. Contains soy ingredients.
Wt/Vol., Packaging, Price: Half gallon (1.89 L) square plastic bottle with screw-on cap. Retails for $4.39 (2006/07, Lafayette, California).
How Stored: Refrigerated, 10 day shelf life after opening.
Nutrition: Per 8 fl oz.: Calories 100, calories from fat 25, total fat 3 gm (4% daily value; saturated fat 0 gm, trans fat 0 gm), cholesterol 0 mg, sodium 170 mg (7%), total carbohydrate 11 gm (dietary fiber 0 gm [3%], sugars 10 gm), protein 6 gm. Vitamin A 10%, vitamin C 0%, calcium 30%, iron 4%, vitamin D 25%, riboflavin 25%, vitamin B-12 15%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased in dairy case at Safeway supermarket in Lafayette, California. 2006. Oct. 31. White plastic bottle. Dated 2005. Text on wrap-around paper label in yellowish orange, white, light blue and red on dark blue. On the front panel: "New look. Same great taste. Vanilla–Naturally and artificially flavored. Helps lower cholesterol." Illustration of a glass overflowing with splashing, very white soymilk. Solae logo [DuPont]. Right panel: Nutrition facts. Ingredients. "Not for use as an infant formula. Lactose free. Please recycle.

ME 5¢ DEP [deposit].” UPC. Back side: “Send the red dress for heart health. The Heart Truth is that heart disease is the #1 killer of American women. 1 in every 3 women dies of heart disease. Help us raise $200,000 for women with heart disease! $50,000 guaranteed donation plus $0.50 per red dress foil lid redeemed through January 2007 up to another $150,000.” Left side: “8th Continent is where taste matters. www.8thcontinent.com. 8th Continent is the one-of-a-kind place that combines great taste with the heart health benefits of soymilk.” Soyfoods Center taste test: Flavor–poor, artificial, much too sweet (like a soft drink). Color: Surprisingly tan for soymilk. Made from highly refined soy protein isolates (not revealed on the label) rather than from natural whole soybeans. The price per quart ($2.20) is almost *twice* as high as Trader Joe’s delicious natural soymilk ($1.19) which is also free of sugar. The white plastic bottle with blue screw-on cap looks somewhat like a bottle of Clorox, but the paper label is attractive.

8370. **Product Name:** 8th Continent Light Soymilk.
Manufacturer’s Name: 8th Continent, L.L.C. [General Mills] (Distributor).
Manufacturer’s Address: Minneapolis, Minnesota 55440. Phone: 1-800-247-6458.
Date of Introduction: 2005. January.
Ingredients: Soymilk (water, soy protein [isolate], soybean oil, calcium phosphate), sugar, potassium citrate, sodium polyphosphate, dipotassium phosphate, soy lecithin, salt, carrageenan, xanthan gum, natural and artificial flavor, sucralose, riboflavin (vitamin B-2), vitamin A (palmitate), vitamin D-2, vitamin B-12. Contains soy ingredients.
Wt/Vol., Packaging, Price: Half gallon (1.89 L) square plastic bottle with screw-on cap. Retails for $1.99 (on sale) (2006/09, Berkeley, California).
How Stored: Refrigerated.
Nutrition: Per 1 cup (240 ml): Calories 50, calories from fat 20, total fat 2 gm (3% daily value; saturated fat 0 gm), saturated fat 0 gm, trans fat 0 gm, cholesterol 0 mg, sodium 160 mg (7%), total carbohydrate 2 gm (dietary fiber 0 gm, sugars 2 gm), protein 6 gm. Vitamin A 10%, calcium 30%, vitamin D 25%, vitamin C 0%, iron 4%, riboflavin 25%, vitamin B-12 15%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased by Martine Liguori in Oakland, California. 2006. June. 10 inches tall. Front panel: White, dark blue, yellow and red on light blue. Illustration of a stream of white soymilk streaming into a clear glass. “50% fewer calories than the leading original soymilk.” Solae logo. Note: Light soymilks are generally made by mixing equal parts of regular soymilk and water.

8371. Bennett, Beverly Lynn; Sammartano, Ray. 2005. The complete idiot’s guide to vegan living. New York, NY: Alpha. 360 p.
• ***Summary:*** “It’s not a diet–it’s a lifestyle.” The vegan lifestyle means compassion for all living things. It means eliminating animal foods and animal products from one’s diet. True vegans avoid the use of honey, and don’t wear animal skin (leather, suede) or fur. Many avoid silk, made by suffocating silkworms inside their cocoons.

Contents: Part 1: Compassion for all. 1. Why be vegan? 2. Vegan 101 (incl. famous vegetarians and vegans, the Vegetarian Society of the UK, the Vegan Society emerges, Donald Watson, coming to America–Dr. Catherine Nimmo and Rubin Abramowitz, Jay Dinshah, ahimsa). 3. Key to good health. 4. Starting your vegan transition. Part 2: Clearing up misconceptions. 5. But you need meat for protein. 6. But you need dairy for calcium. 7. But carbohydrates make you fat. 8. Vegans are all weak and sickly.

Part 3: A vegan survival guide. 9. Nourishing yourself. 10. Seeking supplementation. 11. Raw foodists: Raw and uncut. 12. Oh baby! Bringing up baby. Part 4: Veggin’ it; Tips for maintaining a vegan lifestyle. 13. Handling family and friends. 14. Dining, vegan style. 15. Supporting your ideals. 16. Buying your vegan eats.

Part 5: Substitution is the mother of invention. 17. Using protein alternatives (incl. Demistifying soy products: soy sauce, the incredible tofu, tempting with tempeh, playing tricks with TVP). 18. Doing without dairy and cheese. 19. Vegan baking substitutions. Part 6: Vegan food for the soul. 20. Breakfast ideas. 21. Lunch and lighter fare. 22. Main and side dishes. 23. Baked goods and desserts.

Part 7: Vegan lifestyle choices. 24. Body care and personal items. 25. Dressing to impress. 26. Other things to consider. Appendixes: Glossary, resources.

The index contains 17 entries for tofu, 16 for soybeans, 7 for tempeh, 3 for seitan, 2 for TVP, and 1 each for edamame, nondairy milk substitutes, shoyu, soy milk, tahini, tamari, and tofurky.

“This book offers a vegan food pyramid, fifty vegan recipes, tips on finding animal-free products and hints for reading ingredient lists and other labels to find ‘hidden’ animal ingredients or byproducts” (publisher’s statement). Address: 1. Vegan chef and author, Eugene, Oregon; 2. Musician, web developer, and Beverly’s life partner.

8372. Brand-Miller, Jennie; Wolever, Thomas M.S.; Colagiuri, Stephen; Foster-Powell, Kate. 2005. The new glucose revolution: The authoritative guide to the Glycemic Index–The dietary solution for permanent weight loss. Emmaus, Pennsylvania: Rodale Press. xvii + 382 p. Subject index. Recipe index. 24 cm. [32 ref]
• ***Summary:*** Contents: Introduction. Part I: What is the glycemic index? 1. What’s wrong with today’s diet? 2. Why we all need carbohydrate? 3. All about the glycemic index. 4. Fats: Facts and fallacies. 5. The most frequently asked

questions–Answered. Part II: Your guide to low-GI eating. 6. Making the change to a low-GI diet. 7. Cooking the low-GI way. 8. Recipes–Breakfasts, light meals, main meals, desserts, snacks.

Part III: The glycemic index and you. 9. The glycemic index and weight control. 10. The glycemic index and diabetes. 11. The glycemic index and hypoglycemia. 12. The glycemic index and heart health: The insulin resistance syndrome. 13. Children and the glycemic index. 14. The glycemic index and peak sports performance. Part IV: The glycemic index tables. The tables: An introduction and how to use them. Condensed tables. Comprehensive tables. Further reading: Sources and references. Glossary. Acknowledgments. About the authors.

Carbohydrates are digested and absorbed into the bloodstream as glucose, sometimes called blood sugar. When glucose levels rise, the hormone insulin is released into the blood. Insulin helps cells absorb fat and glucose from the blood, allowing the cells to use the nutrients for energy. Some carbohydrates are converted to glucose more gradually than others. The glycemic index (GI) is a measure of how quickly carbohydrates are broken down and absorbed into the blood. A meal with high a GI causes a surge in the release of insulin, which is associated with increased risk for CVD, diabetes, and possible cancer.

"The right kind of carbohydrate can make an important contribution to the quality of your life." That is the essential message of this book, which is about the glycemic index, a physiologically based measure of carbohydrate quality, and the degree to which the carbohydrates in different foods will raise blood glucose levels. The newer idea of glycemic load is also relevant for everyone. The first book about the glycemic index (GI), titled *The Glucose Revolution* (1996) was written by these same authors. Carbohydrates that break down quickly during digestion have high GI values, and they raise blood glucose rapidly to a high level. Carbohydrates that break down slowly, releasing glucose slowly into the blood stream, have low GI values. Glucose is blood sugar. Low fat diets are automatically high in carbohydrate, But not all carbohydrates are the same. Are all starches good for health? Are all sugars bad? We all must look at carbohydrates in a whole new way!

A healthy diet leads to neither too much nor too little blood sugar. Extreme #1: Too much blood sugar. The typical American diet, which is high in refined carbohydrates (such as table sugar and white flour), results in too much blood sugar. This causes your pancreas to flood your body with the hormone insulin and makes it difficult for your body's cells to burn fat.

Extreme #2. Too little blood sugar. Diets low in carbohydrates cause blood sugars to plunge, which also makes your body stop burning fat. Instead it begins burning muscle tissue and converting it into blood sugar. You quickly begin to crave carbohydrates.

Low GI is less than or equal to 55. Moderate GI is 56-69. High GI is 70+.

Prevention says that "high-GI foods" (those with a GI of 70 or above) are bad. "Forget total carbs; its total GI that matters." There are good carbs (low-GI) and bad carbs. A low-GI diet is generally a healthy diet, a weight loss diet, and a diet with low risk of diabetes. A large and growing body of research now reveals that the real issue isn't how much fat or carbohydrate you are eating, but how that food affects your blood sugar. Eating high-GI foods causes sharp spikes in blood sugar. Since blood sugar is a readily available energy source, your body chooses to burn it as fuel, in place of fat. This means you are not burning fat, no matter how hard you exercise.

The Glycemic Index (GI) is a precise scientific ranking of foods based on how much they increase blood sugar levels during a 2-hour period after eating. Current methods of measuring GI use glucose (blood sugar) as the reference food, giving it a GI value of 100 by definition. The GI was first created as an aid to diabetics.

Low-GI foods: Fruits: Apples 40, banana 51, blueberries 40, cherries 22, grapefruit 25, orange 51. Vegetables: Asparagus, beans (all), broccoli, cabbage, lettuce, mushrooms, onions. Breads: Pumpernickel, rye, sourdough, whole wheat. Dairy products. Eggs. Nuts. Seeds.

Soyfoods are not discussed much in this book since they are low in carbohydrates. However: Recommendation 3 (p. 112-13): "Eat more legumes (beans, peas, and lentils) and use nuts (in small amounts) more frequently." Legumes, including soybeans, are inexpensive, low in calories, free of unsaturated fat and cholesterol, filling. "Soybeans are particularly rich in ALA [alpha-linolenic acid, the plant form of polyunsaturated omega-3 fat] (the plant precursor of omega-3s) and also contain genistein–an anti-cancer phytochemical. Tofu (soy bean curd) is an easy way of using soy. It has a mild flavor itself but absorbs the flavors of other foods, making it delicious when its been marinated in soy sauce, ginger and garlic and tossed in a stir-fry."

The section on the GI values of different food types states, under legumes (p. 129): "Soy beans (GI value of 14-20). These have one of the lowest GI values, possibly due to their higher protein and fat content. Their viscous [soluble] fiber, as in other legumes, reduces physical availability of starch to digestive enzymes."

On p. 329 is a table showing the GI value and glucose load per serving of various soy milks and soy yogurts (mostly from Australia). Similar values are given for soy beans (p. 337).

Concerning ALA (p. 115): "Our bodies can convert this plant-based omega-3 fat to EPA [eicosapentanoic acid, an essential omega-3 fatty acid found in fatty fish and shellfish] and DHA [docosahexanoic acid, another essential omega-3 fatty acid found in fatty fish], but it takes about 10 grams of ALA to yield 1 gram of DHA and EPA."

Is this a weight-loss book that does not mention calories? No, although calories and energy are considered less important than GI (see p. 133, 202, 205). Address: PhD, Prof. of Nutrition, Univ. of Sydney, Australia; 2. M.D., PhD, Prof., Dep. of Nutritional Sciences, Univ. of Toronto, Canada.

8373. Feral, Priscilla; Hall, Lee. 2005. Dining with friends: The art of North American vegan cuisine. Darien, Connecticut: Friends of Animals, Inc. iii + 164 p. Foreword by John Robbins. Illust. (some color). No index. 21 x 23 cm.
• ***Summary:*** The Foreword, by John Robbins, contains this lovely prayer from the Buddhist teacher Thich Nhat Hanh.

"Let us fill our hearts with compassion
"towards ourselves and towards all living beings.
"Let us pray that all living beings realize
"that they are brothers and sisters,
"all nourished from the same source of life.
"Let us pray the we ourselves cease to be
"the cause of suffering to each other.
"Let us plead with ourselves to live in a way
"which will not deprive other beings
"of air, water, food, shelter, or the chance to live.
"With humility,
"with awareness of the existence of life,
"and of the sufferings that are going on around us,
"let us pray for the establishment of peace
"in our hearts and on the earth."

This vegan cookbook contains many soy recipes, for example: Scrambled tofu. Believable bacon (with "8 ounces firm tofu, drained, p. 12). Spinach dip for raw vegetables (with "1 cup Tofutti brand Imitation Sour Cream, p. 19). Veggiessoise (with "1 cup soy creamer {such as White Wave's 'Silk' creamer}," p. 36). Tofu spinach lasagne (p. 60). Tofu hummos with toasted cumin seed (with "12 ounces soft tofu," p. 109). Sweet dessert cream (with "1 package {12.3 ounces} Mori-Nu Silken Firm Tofu," p. 126). Key lime pie (with "1 package {12.3 ounces} Mori-Nu Silken Lite Firm Tofu," p. 130). Soy milk is called for in many recipes.

The Glossary (p. 153-61) includes: Antioxidants (steaming causes minimal loss of antioxidants; microwaving causes much loss). Brown rice syrup. Butter substitutes: See vegan margarine. Cheese (Added casein makes most commercial cheese alternative non-vegan; presently, however, Tofutti, Vegan-Rella, and Soymage Grated Soy Parmesan are vegan). Chocolate ("Both Ecco Bella and Paul Newman's brands offer vegan chocolate"). Cholesterol. Egg replacers (Ener-G Egg Replacer). Fruitarian. Gelatin. Genetically modified organisms ("GMO"); genetic engineering ("GE"). Lightlife. Linolenic acid. Miso. Nama shoyu. Nayonaise. Nutritional yeasts. Organics. Ovo-lacto vegetarian. Pareve (parve). Pesco-vegetarian. Protein. Soy milk. Stevia. Tamari. Tempeh. Tofu. Tofutti. Vegan (VEE-gun). Vegan society (www.vegansociety.com).

The Shopping guide" (p. 161-63) describes companies that make or sell vegan products,

On the rear cover we read: "Friends of Animals is an international, non-profit, animal advocacy organization, incorporated in the State of New York in 1957. We work to cultivate a respectful view of nonhuman animals, free-living and domestic. Our goal is to free animals from cruelty and institutionalized exploitation around the world."

On the inside rear cover are portrait photos and biographical sketches of Priscilla Feral, president of Friends of Animals, and Lee Hall, legal director for Friends of Animals. Address: 1. President; 2. Legal director. Both: Friends of Animals, New York.

8374. Fujii, Mari. 2005. The enlightened kitchen: fresh vegetable dishes from the temples of Japan. Translated by Richard Jeffrey. Tokyo, New York, London: Kodansha International. 107 p. Illust. (photos by Tae Hamamura). Index. 26 cm.
• ***Summary:*** This is a lovely Japanese vegan (and vegetarian) cookbook filled with the spirit of kindness and of Zen–and with color photos on almost every page. It discusses and describes the ancient tradition of *shojin ryori,* the plant-based diet which originated in Japan's Buddhist temples. The author, who is the wife of a Buddhist monk, has taught temple cuisine for over 20 years. Her husband, Sotetsu, lived as a monk for ten years in various Buddhist temples; he also trained as the tenzo (head cook).

In this book she presents 60 beautiful, delicious, health-giving, and heart-warming recipes, many adapted to Western kitchens but all true to their roots. A majority of the recipes contain soyfoods in one form or another.

The helpful glossary includes descriptions of edamame beans, hijiki, karashi mustard, konbu, Koyadofu ("freeze-dried tofu"), miso, natto, nori seaweed, pickled plum paste, saké, sesame paste, sesame seeds, shiso (perilla), soy sauce, soybeans, sukikonbu, tofu, umeboshi pickled plum, usu-age tofu, wakame seaweed, wasabi, yuba, yuzu.

The index contains 20 entries for miso, 15 for tofu (p. 15, 24, 29, 32, 39, 41, 42, 48, 51, 53, 56, 62, 71, 100, 104), 6 for soymilk (p. 17, 45, 47, 94, 99, 104) 4 for edamame (p. 16, 35, 68, 99), 3 for deep-fried tofu (p. 32, 42, 71, 104), 3 for natto (p. 44, 50, 100), 2 for teriyaki (p. 48, 62), 2 for Koyadofu (p. 48, 100), 2 for usa-age (thin slices of deep-fried tofu; p. 32, 104). 2 for yuba (p. 47, 104). A small color photo on the inside rear dust jacket shows Mari Fujii. Address: Cooking teacher, Kamakura, Japan.

8375. Hellmiss, Margot. 2005. Mit Soja durch die Wechseljahre [Using soy through the menopause years]. Munich, Germany: Suedwest Verlag. 96 p. Illust. (color). Index. 20 x 18 cm. [Ger]
• ***Summary:*** An attractive book, with many fine color photos on glossy paper. Contents: Soybeans–Tradition and history

(Healing plant from China): Productive source of protein, tofu–quark with a longer tradition, triumphal procession around the world, great economic significance, soya and genetic engineering. Fundamental changes of the menopause years (What happens during these years?): Hormonal changes, the right attitude helps, the new understanding of women, many hormones influence the body, men also experience menopause, questionable preparations, Hormone Replacement Therapy–Pros and cons. Natural help from soy isoflavones (remarkable phytoestrogens): The active agent of plant hormones, the effectiveness of isoflavones, natural SERMs, safeguard against osteoporosis, estrogen protects the circulatory system, soy hormones as free-radical catchers, the end of hot flashes, strong powers of resistance and smooth skin, isoflavones will take good care of you.

Soyfoods that contain isoflavones (A great variety): Whole dry soybeans, soymilk, tofu, soy oil, soy flour (*Sojamehl*), soy flakes (*Sojaflocken*), soy bran (*Sojakleie*), tempeh, natto, soy granules, soy sauce, shoyu and tamari, miso, lignans. Soybeans: A powerful package for your health (Plant protein as an alternative): Indispensable protein, lecithin, minerals, B vitamins for strong nerves, vitamin E–the fountain of youth. Recipes for enjoying soya (Basic recipes): Hors d'oeuvres and salads, soups, pasta, main dishes, sauces, dips, and bread spreads, mueslis, desserts, and baked goods, beverages.

8376. Hu, Shiu-ying. 2005. Nonfermented foods: Bean curd and whole soybeans (Document part). In: Shiu-ying Hu. 2005. Food Plants of China. Hong Kong: Chinese University Press. xvi + 844 p.

• ***Summary:*** This is a truly remarkable, original and comprehensive book. Basic bean curd (dou-fu [tofu]) is mentioned on 21 different pages.

A recipe for "Bean curd with Swatow mustard" calls for "1 pkg (supermarket style) bean curd" (p. 55).

A recipe for "Farmers' mustard salad" calls for "½ cup soybean (cleaned, soaked overnight)" (p. 56).

A recipe for "Huo-guo (Fire pot)" calls for "3 squares bean curd (sliced 5 x 3 by 1 cm..."), "9 Tbsp soy sauce" and "3 Tbsp hot soybean sauce, *la-dou-ban-jiang* (Sichuan style)" (optional) (p. 64-65).

"A recipe for "Buddha disciples' delight (*Luo-han-zai*)" calls for "3 pieces of bean curd (sliced into 4 cm square..."), 1 can wheat gluten (cut into 3 cm square by 1 cm pieces), "2 oz Laminaria [kombu] (revived [reconstituted], cut into 4 by 3 cm pieces, washed)," and "1 lb fried bean curd squares (cut lengthwise once)," and "4 oz bean curd bamboo (soaked in cold water to revive it, cut into 4 cm sections." This is a vegetarian dish, often served in Buddhist temples. In the Chinese tradition, it is often said that Buddha had 18 close disciples called *Shi-ba-luo-han,* p. 69).

A recipe for "Hot and sour soup" calls for "1 piece bean curd (sliced into 3 cm x 5 mm x 5 mm shreds)" and "1 Tbsp soy sauce" (p. 71).

A recipe for "Vegetarians' delight (*Su-shi-jin*)" calls for "6-8 pieces fried bean curd cubes (diagonally quartered, available in Chinese groceries)" and "four young fruits of luffa" (p. 90).

A recipe for "Bean curd fish (*Dou-fu yu*)" (p. 120) calls for "1 box of bean curd" and "3 Tbsp *dou-chi* (fermented black soybean)." This recipe is a modification of a dish called "Earthenware fish-head bean curd (*Sha-guo you-tou dou-fu*)" popular at sidewalk cafes and food stalls of Guangzhou [Canton] and Hong Kong. Most Chinese recipes for cooking fish call for frying the fish first, which gives a fish smell throughout the house, more so in an apartment" (p. 120-21).

"Bean curd is solidified protein with hardly any taste of its own. One of the important principles of cooking a good bean curd dish is to cook it for a long time with meat, fish, or poultry. Recently, with the introduction of the Sichuan food, *Ma-po dou-fu* (4 Cc = Chinese characters given) ('pockmarked wife's bean curd'), cooked with very hot pepper and powdered zanthoxylum [Sichuan peppercorns; fagara pepper] (much of both), has become increasingly popular among graduate students, for example, Harvard Biology doctoral candidates. Not all people can tolerate hot dishes" (p. 121).

There follows a recipe for "Soybean sprout soup (*Dou-ya-tang*)" which calls for "2 lbs fresh soybean sprouts" (p. 121-22).

"soybean sprouts and bean curd are the salvation of the Chinese people, as they are the most common and widespread foods for all, particularly for farmers, working people, and young students of boarding schools. In a boarding school at Xuzhou (Map 16) in the 1920s, soybean sprouts alternating with bean curd were the daily main dish during the school year."

There follows a recipe for "Soybean sprouts with bacon (*Dou-ya shao-rou*)" which calls for 5 lbs soybean sprouts (p. 122).

Following that is a recipe for "Bean curd hors d'oeuvre (*dou-fu-gan jiu-yao*)" which calls for "10 pieces of *dou-fu-gan* (firm bean curd squares, available in Chinese stores" and "1 cup soy sauce," p. 122-23).

Note: This is the earliest English-language document seen (Aug. 2011) that contains the term "firm bean curd squares" or the term "spiced bean curd squares (see below), or that uses those terms to refer to Chinese-style pressed tofu.

"Bean curd squares are a more refined product made in small molds and drained under heavy pressure, as compared with bean curd in supermarkets which is prepared in large molds and drained under little pressure. The squares of the former are much firmer. This recipe is a modification is a modification of hors d'oeuvres served in Chinese bars or taverns. In taverns, large numbers of spiced bean curd

squares are prepared ready for people with tight purse-strings, who may enjoy their drinks with *dou-fu-gan* (spicy bean curd) and peanuts," while the more affluent customers may savor spicy pork liver and chicken or duck gizzards as hors d'oeuvre.

There follows a recipe for "Bean curd sheet pork (*Qian-zang-pi chao-ru*)" which calls for "3 pieces of *Qian-zang-pi* (3 Cc, 'thousand sheets skin' = bean curd in the form of sheets [pressed tofu sheets]; cut into 5 cm strips and then slice into 3 mm shreds; or use one can of the material, available at American Chinese stores) (p. 123-24).

The next recipe is for "Black soybean oxtail soup" (*Hei dou hui Niu wei*) which calls for "1½ cups black soybeans (the larger the bean, the better)." "This is a special Cantonese dish. Like yellow soybean, the black soybean is rich in protein, CHO [carbohydrates], fats, carotene, vitamins... flavones which become daizin [daidzin] and genisten [genistein] on hydrolyzation, soyasapogenol A, B, C, D, E, choline, and organic acids... The broth is especially good for senior citizens who suffer from dizziness and swollen ankles" (p. 123).

A recipe for "Vegetarians' three treasures" (*Su-san-xian*)" calls for "1 lb firm bean curd (1 box, available in supermarkets)." "Luo-bo [giant white radish; daikon], celery cabbage [Chinese cabbage], and bean curd [tofu] are the most common vegetables of the Chinese people. They have been praised by a leading Chinese Buddhist monk, Tai-xu Fa-shi (4 Cc) as the three treasures that keep the Chinese people alive" (p. 135).

Chapter 4, "Spices and flavoring materials" (p. 147+) begins: "All good food depends on the proper use of spices and flavoring materials... 'Plants and Human Affairs' has always been a popular course in the department of Biology at Harvard University. In the late 1940s, while Professor Paul C. Mangelsdorf was teaching the subject, a classmate asked for my help to complete her required term paper. Her project was on the Chinese invention of using pure plant protein precipitated from the soybean. At the time relatively few Americans knew the term *dou-fu* (2 Cc) ('bean curd')... For the project we went together to Chinatown [in Boston] where I showed her the only production center of dou-fu available at the time. It was a dim one-room area of a basement. There we watched the simple procedure of precipitating solid protein from soaked soybean. She recorded her observations and brought some samples, both *dou-fu* and *dou-fu-zha* (3 Cc) ('bean curd residue' [okara]). Returning to the laboratory, I cooked a few dishes with the product and the by-product" (p. 147).

A recipe for "Fire pot with broomrape stock" calls for "2 oz dried laminaria (2 Cc) (*hai-dai*)," "2 boxes bean curd (doufu, 2 Cc); cut lengthwise once, then slice into 1 cm thick pieces of ca. 3-5-cm square," "2 tsp fermented soybean hot sauce (la-dou ban-jiang, optional) with ¼ of the sesame oil placed in a separate dish, for people who like spicy taste" (p. 203-04). *Huang-dou-ya* (W.-G. *Huang-tou-ya*). (3 Cc) ('soybean sprout'). "Soaked, sprouted under cover with daily wash, prepared at home in villages or as a simple industry in cities; available in American Chinese groceries, used as a vegetable or for making soup with bone and onion" (p. 474).

Dou-fu (W.-G. *Tou-fu*). (2 Cc) ('bean curd'). *Dou-jiang* (W.-G. *Tou-chiang*). (2 Cc) ('soybean milk'). *Dou-fu-nao* (W.-G. *Tou-fu-nao*). (3 Cc) ('soft soybean curd' [curds made from soymilk]). *Dou-fu-gan* (W.-G. *Tou-fu-kan*). (3 Cc) ('dry bean curd,' 5 cm firm squares). *Qian-zhang-pi* (W.-G. *Ch'ien-chang-p'i*). (3 Cc) ('thousand sheet' thin sheets of firm bean curd). (p. 474).

Gardenia angusta (L.) Merrill. Common gardenia. *Huang-zhi* (W.-G. *Huang-chih*) (2 Cc) ('yellow gardenia'). "Fruit, from which an orange dye is obtained for coloring bean curd in Guangzhou [Canton]; animal assay indicating that the dyed yellow bean curd enhances the life span of mice; tea for people suffering from hepatitis" (p. 680-81). Address: Botanist, Arnold Arboretum, Harvard Univ.; Honorary Prof. of Chinese Medicine, The Chinese Univ. of Hong Kong.

8377. Lund, JoAnna M.; Alpert, Barbara. 2005. Cooking healthy with soy. New York, NY: Perigee. Published by the Penguin Group. viii + 368 p. Index. 21 cm. Series: A Healthy Exchanges (R) Cookbook.

• ***Summary:*** Contains 220 recipes. On the cover: "No trouble and no tofu." The author admits in the Acknowledgments (p. vii): When I first started this project, almost all my helpers were a bit hesitant. After all, they really hadn't tried soy products before–even though they had lived all their lives here in eastern Iowa (a state where, no matter which direction you look, you'll see soybean fields everywhere). But after our first 'taste-testing lunch, they all agreed that these soy recipes sure tasted good!

This comb-bound book, which is not vegetarian, calls a commercial branded product (usually available nationwide in supermarkets) in every recipe. These are grouped into five categories: Dairy alternatives (milk-, cheese-, sour cream-, margarine-, yogurt- and ice cream- alternatives), meat alternatives, nut alternatives, pasta alternatives, and miscellaneous (such as Eden Organic Black Soy Beans, or GeniSoy Mountain Medley Soy Nut Trail Mix).

For example: Milk alternatives: Silk Light Plain Soymilk. Silk French Vanilla Soymilk Creamer. 8th Continent Light Original Soymilk. 8th Continent Light Chocolate Soymilk.

This unusual approach raises several questions: Did the author request a kickback for promoting these products? Why does one need recipes for soymilk? Or for Tofutti Mozzarella Soy-Cheese Slices? Or Tofutti America Soy-Cheese Slices? Or for Boca Meatless Cheeseburgers? Or Morningstar Farms Veggie Breakfast Bacon Strips? How about all the people who don't shop at supermarkets?

In the first section, titled "Main street American is cooking with soy–because its good for your health," the author states: "If you are a health-food store 'purist,' then this book probably isn't for you. But if you are willing to try new recipes that taste the same as your old favorites but feature soy products, then I think you'll be mighty pleased with the results. I want to 'bring to the table' all those men, women, and children who aren't necessarily vegetarians or already consuming lots of soy foods and food products." Address: Author and speaker, DeWitt, Iowa.

8378. Marcus, Erik. 2005. Meat market: Animals, ethics, and money. Boston, Massachusetts: Brio Press. ix + 273 p. Index. 23 cm. [432* endnotes]
• ***Summary:*** Contents: Introduction. Part I: Animal agriculture. 1. The economics of animal agriculture. 2. Farmed animal lives. 3. Possibilities of reform in animal agriculture.

Part II: Dismantlement. 4. The movement's scorecard. 5. The three existing movements for animal protection. 6. Creating a dismantlement movement. 7. Organizing for dismantlement. 8. The first steps to dismantlement. 9. The militancy question. 10. Personal action. Epilogue: The unluckiest ones.

Supplementary material: Introduction to the supplementary material.

Activist essays: Leafleting for vegan outreach. The FaunaVision approach. Starting a local vegetarian society. Promoting vegetarian diets as a nutrition expert. The activist chef. Becoming a medical doctor. Making food-service operations vegan friendly. Working for school lunch reform.

Appendixes: A. The health argument. B. The environmental argument. d. The environmental costs of cattle ranching. D. The consequences of fishing. E. The ethics of hunting. F. Why red meat can't compete. G. Animal testing. H. Back to The Jungle–Meatpacking in America.

I. Recommended reading. Acknowledgments. Endnotes. Address: Vegan.com, P.O. Box 432, Albion, California 95410.

8379. Tobing, Hayatinufus A.L.; Hadibroto, Cherry; Kartohadiprodjo, Nies. 2005. Tahu & tempe plus susu kedelai [Tofu and tempeh plus soymilk]. Jakarta, Indonesia: Gramedia Pustaka Utama. 97 p. Illust. (color). 24 cm. [Ind]*
• ***Summary:*** A cookbook of practical yet delicious recipes.

8380. Low, Dennis. 2006. Re: Tofu in Trinidad and Tobago: History of Pacific Food Co. Letter (e-mail) to William Shurtleff at Soyfoods Center, Jan. 17 and 18. 2 p.
• ***Summary:*** "Stephen Low was born in 1937 in Kwangtung (Guangdong), southern China. His father was an established businessman in Trinidad and Tobago. Stephen remained in China until 1960, when he decided to move to Trinidad to do business with his father. He arrived in Trinidad in 1962. Theresa Low, his wife, was born in 1946 in Hong Kong and arrived in Trinidad in 1965. In 1965 the Stephen Low Watch Company was born.

"After 30 years in the watch business, Stephen and his wife Theresa's business was established and they were looking for new opportunities to explore. They belonged to a local Chinese club and they would gather weekly to socialize, eat, and play majong.

"One day a friend of theirs brought in a traditional Chinese dessert, "Tofu fah [soymilk curds]," better known as silken tofu. Theresa has always enjoyed this dessert growing up and was very impressed with the way her friend had made it. She asked her friend for the recipe and started making it at home almost on a daily basis. Cooking for a family of 5 kids, cooking was one of Theresa's favorite hobbies. One day she decided that she wanted to make tofu at home. She used the same recipe as the silken tofu and began to press it. Using a variety of methods, whether it was to use hot or cold water, how much beans to water ratio, even types of cloth to wrap it in, how much weight to press it with, and how long to press it for. It took them about 1 month of trial and error to perfect the art of making tofu.

"They then told their friends about her success and having a business background naturally started talking about selling it. They talked about great health benefits from tofu, soy milk and knew this would be a great opportunity. After some initial research, they realized that all tofu sold within Trinidad was imported. They felt that she can make tofu at a fraction of the cost of the competitor. This was their opportunity, so they jumped on it. In 1998 the Pacific Food Company was born. Their hobby officially has turned into a career. They bought beans locally, and soaked them. They invested in some grinding machines, pressing equipment, designed their own label and packaging equipment. Now in 2006 Pacific foods tofu is sold everywhere to major supermarkets, restaurants and local merchants. Fresh tofu is now widely accepted across Trinidad. Currently we are doing homework on soy products to expand our business. This year we will be launching firm tofu, flavored tofu and tofu puffs.

"One of our goals this year is to educate more people on what tofu is and what great benefits it has towards your health and feel that this "What is Tofu" pamphlet that we talked about will help dramatically.

"Your book has provided us with a wealth of information and we look forward to working with you to develop more soy products in the near future."

Note: Letter (e-mail) from Dennis Low, Manager, Pacific Trading Co., Uptown Excellent Mall, Corner of Park and Frederick Street, Port of Spain, Trinidad, West Indies. 2006. Jan. 18. Dennis is the son of Stephen and Theresa Low. He interviewed his parents just before writing this story. Their company's only product is "Fresh Tofu." Address: Manager, Pacific Food Co., Uptown Excellent Mall, Corner of Park and Frederick St., Port of Spain, Trinidad and

Tobago, West Indies.

8381. Soyfoods Association of North America. 2006. Soyfoods sales and trends (Website printout–all). www.soyfoods.org/press/FAQ_sales.htm 2 p. Printed Jan. 19.
• ***Summary:*** Contents: What are the recent trends in soy consumption in the U.S.? Soy sales by category: Introduction, soy-based energy bars, soymilk sales, meat alternative sales, tofu sales, other soyfoods sales. 2003 Consumer Trends Report. Sources.

"The number of new soy-based products has increased 13.2% per year for the past 3 years. In 2000, approximately 2,295 soy-based SKU's were offered; by 2002 the number hit 3,399. In 2002 there were: 580 soy-based energy bars, with 24.1% of sales [i.e. accounting for 24.1% of sales of soyfoods from all categories]. 366 soy-based meal replacements & powders with 18.5% of sales. 328 soymilk beverages with 16.3% of sales. 318 meat alternatives with 14.5% of sales. 236 tofu products with 6.8% of sales. [Other: 19.8% of total sales].

Soy-based energy bars: Sales reached $880 million in 2002.

"Soymilk sales have grown from $100 million in 1995 to nearly $600 million in 2002. Soymilk has 87.3% of the nondairy beverage sales in mainstream markets. Sales of refrigerated soymilk grew over 100% per year for the past three years.

"Meat alternative sales have grown from $114 million in 1992 to over $530 million in 2002.

"Tofu sales have grown from 108 million in 1992 to $250 million in 2002.

Other soyfoods sales: Soy [fortified] breakfast cereals grew to over $150 million in 2001. Soy yogurt sales grew by 66.9% in 2001 to reach $23.7 million. Soy-based cheese alternatives grew at 11.6% in 2001 to reach $57.6 million. Sales of soy-based frozen desserts rose 39.9% in 2001 to reach $42.2 million. Address: 1001 Connecticut Ave., NW, Suite 1120, Washington, DC 20036. Phone: 202-659-3520.

8382. Center for the Evaluation of Risks to Human Reproduction (CERHR). 2006. Draft–NTP-CERHR Expert Panel Report on the reproductive and developmental toxicity of soy formula. Research Triangle Park, North Carolina: CERHR. viii + 184 p. 28 cm.
• ***Summary:*** NTP is the National Toxicology Program of the US Department of Health and Human Services. Contents: Members of expert panel. Abbreviations. 1. Chemistry, use, and human exposure. 2. General toxicity and biological effects. 3. Developmental toxicity data. 4. Reproductive toxicity data. 5. Summaries, conclusions, and critical data needs. 6. References. List of tables. List of figures.

Note: The preface, summaries, and conclusions do not appear in this draft report, but will appear in the final report. Address: North Carolina. Phone: 703-683-6000.

8383. Global Industry Analysts, Inc. (GIA). 2006. Soy foods–Global strategic business report. 5645 Silver Creek Valley Rd., San Jose, California. 302 p. Jan. *
• ***Summary:*** Publisher description: This report analyzes the worldwide markets for Soy Foods in millions of US$. The specific product segments analyzed are Soy Ingredients, and Soy Oil. The report provides separate comprehensive analytics for the US, Canada, Japan, Europe, Asia-Pacific (excluding Japan), Latin America, and Rest of World. Annual forecasts are provided for each region for the period of 2000 through 2010. The report profiles 151 companies including many key and niche players worldwide such as Archer Daniels Midland Company, Dean Foods Company, White Wave, Eden Foods, Inc., Galaxy Nutritional Foods, Inc., Gardenburger, General Mills, Glenn Foods, Greet Spot (Thailand), Griffith Laboratories (UK), H.J. Heinz Co. Hain Celestial Group, Hartz International (Australia), Hazlewood Grocery (UK), Heartland Fields (USA), Hermans Foods (Australia), High Mark Foods (New Zealand), Imagine Foods, Inc., Kerry Group PLC (Ireland), Kerry Ingredients (Australia), Kikkoman (Japan, Australia, USA, Singapore), Kimlan Foods Co. (Taiwan), Kuhne Nederland BV (Netherlands), SoyaWorld, Inc., Turtle Island Foods, Inc., and Vitasoy USA, Inc.

Price: Electronic or hard copy 3,496 euros. Please note: Reports are sold as single-site single-user licenses. The delivery time for hard copies is between 3-5 business days, as each hard copy is custom printed for the organization ordering it. Electronic versions require 24-48 hours as each copy is customized to the client with digital controls and custom watermarks. Address: San Jose, California. Phone: 408-528-9966.

8384. **Product Name:** Re: Ethnic Koreans growing soybeans in Tajikistan or Turkmenistan, and her work introducing soyfoods to these countries.
Manufacturer's Address: Letter (e-mail) to William Shurtleff at Soyfoods Center, Feb. 18.
Date of Introduction: 2006. February.
New Product–Documentation: In Tajikistan she met a couple who lived near Dushanbe. The husband, Victor, was planning to grow soybeans. She gave him some seed grade soybeans to grow, although she had the impression that he hadn't grown soybeans before. She sensed that he wanted to grow them because of increased interest in soybeans–for reasons she does not understand. She gave him the seeds that Walter Barrett had given her, because the soybeans she had found in Tajikistan were not of good quality.

Victor led her to a Korean tofu maker, a woman who didn't speak Korean. She supplied tofu to a Chinese restaurant in Dushanbe. She told Helen that she bought her soybeans from Uzbekistan, and said they were expensive. Helen did not ask the woman when she had started to make

tofu commercially or what the name of her small business was. Helen does not recall exactly where it was located.

Vera, Victor's wife, sold Korean salads at a green bazaar in Dushanbe. She and other Korean salad vendors at the green markets sold a type of dish made from Chinese TVP, which is white in color and imported from China.

At an import supermarket called Holland Market in Dushanbe, Helen found several Russian-made TVP products and soymilk powder. She also saw soymilk sold in Tetra Pak cartons.

In Ashgabat, Turkmenistan, two Korean men came to talk with Helen at the Winrock office about a soymilk machine.

In the Dashoguz region of Turkmenistan, Helen met two different groups of Koreans (a least 30 people total) who wanted to see her presentation and demonstration of soymilk and tofu production using a SoyJoy machine, along with a display of soy products such as tofu (in a Tetra Pak carton), TVP, soynuts, soy flour, soy protein isolates, energy bars, soy sauce, etc. In some presentations at farms or for women's groups (including the Korean groups), she also prepared soyfoods or Turkmen foods that included whole soybeans.

In Tajikistan, she gave 3 presentations / demonstrations: One at "Salsa Restaurant" in downtown Dushanbe, and two at a cafeteria and at the meat processing lab of the Khujand branch of the Technical College of Tajikistan. She usually ended her presentations with a meal with the participants. Her menu included Pulov [pilaf] (rice with some meat, soybeans, carrots, and onions), soup, salad, and a crepe (using a mixture of wheat flour, soy flour, and some type of local jam).

At the Agricultural University of Tajikistan in Dushanbe, and at the Khujand branch of the Technical College of Tajikistan, she gave technical presentations using an overhead projector with PowerPoint slides showing the nutritional composition of soybeans, and techniques for the preparation of traditional soyfoods and commercial products such as soy oil, soy protein, lecithin, etc.

In Turkmenistan: She gave food preparation presentations: (1) At a farm in the Mary district. (2) At apartment style homes in the cities (Mary district, and Dashoguz). (3) At the Winrock office in Dashoguz for different groups of women. (4) For 2 groups of Peace Corps volunteers in Dashoguz. "Peace Corps was interested in soyfoods because it was suspected that the protein intake of PCVs in that country was not sufficient."

While in Tajikistan and Turkmenistan, Helen did not see any soybeans being cultivated, nor any bundles of soybean plants harvested for green vegetable soybeans.

After her visit: (1) Her soy recipes were translated into the Turkmen language by Winrock staff, but (as far as she knows) they were not printed or reproduced. (2) A 30-page Russian-language brochure on soybeans was created (using desktop publishing) by a group of Peace Corps volunteers in the Dashoguz area. It included planting information and recipes, with colorful pictures and diagrams; about 200 to 300 copies were printed. The produced was funded by the Peace Corps and Helen, however Helen does not have a copy with her in Mexico. (3) Helen prepared a trip report, which is now the property of Winrock International. She did not write much about Koreans in that report.

She includes a Russian-language article on soya from the newspaper *Asia-Plus* (23 Sept. 2004, p. 4).

Note: This document mentions the earliest known commercial soy products in both Tajikistan and Turkmenistan.

8385. **Product Name:** Soyatoo Soy Whip: Whipped Soy Topping (Non-Dairy, Vegan).
Manufacturer's Name: Ceres Organics (Importer / Marketer). Made in Germany by Viana.
Manufacturer's Address: 2121 30th St., Boulder, Colorado 80301. Phone: 303-442-1559.
Date of Introduction: 2006. February.
Ingredients: Organic soymilk (water, soymilk), organic coconut oil, organic fractionated palm kernel oil, organic sugar-beet syrup, organic maltodextrin, tartaric acid, carrageenan, sea salt, natural vanilla extract. Propellant: nitrous oxide (laughing gas).
Wt/Vol., Packaging, Price: 7 oz (198 gm) net weight. Pressurized metal container, 8½ inches tall (incl. cap) and 2¼ inches in diameter.
How Stored: Refrigerated.
New Product–Documentation: Two Samples (products with Labels) with sales sheet and business card sent by Dale Kamibayashi, Sales and Marketing Director, Ceres Organics. 2006. Feb. 10. Has a white fluted plastic cap, and a red and white body. Front panel below the product name: "Vegan. Lactose-free. No cholesterol." A color photo shows a swirl of the snow-white whipped topping atop an assortment of strawberries, raspberries, blueberries, and mint leaves–against a red background. Soyfoods Center product evaluation: Superb taste, texture, color, and whippability. Not too sweet. 10+. A remarkable product, with excellent package design.

Leaflet sent by Ceres Organics. 2006. Feb. 10. 8½ by 11 inches. "Introducing a new dairy-free whipped dessert topping. 100% vegan and no cholesterol. 0% trans fat per serving and heart healthy. 40% less fat than classic whipped cream. Perfect with fruit, desserts & beverages. Incredible flavor and texture. No soy bean aftertaste. GMO free." A color photo shows the front of the product.

New leaflet sent by Ceres Organics. 2007. Oct. "SoyaToo! Soy Whip–Whipped Soy Topping." "100% vegan and no cholesterol." Ceres is now in St. Paul, Minnesota 55108.

8386. Eden Foods. Inc. 2006. Edensoy: Prepared as if it were

for our children (Ad). *Utne Reader.* Jan/Feb. p. 31.
• ***Summary:*** This ad (full page, color) shows a boy (son of Eden's production manager) drinking soymilk through a straw from a carton of Original Edensoy. "At Eden this means: no irradiation, no preservatives, no chemical additives, no food colorings, no refined sugars, no genetically engineered ingredients–the safest, most nutritious, certified organically grown food that can be found. More than 200 Eden Foods are available at discerning retailers in the USA and Canada. Pure food is our passion. Great taste is our joy." Copyright 2002. Address: Clinton, Michigan 49236. Phone: 1-888-424-EDEN.

8387. Gandhi, A.P. 2006. The 'greater bean': Scientists continue to find new food and industrial uses for soybeans. *World Grain* 24(2):59-62. Feb.
• ***Summary:*** About 70% of world soybean production is crushed to make oil and meal, 20% is used directly for food, and the rest for seeds. Soybean meal used for human food "must be devoid of residual solvents that may cause various psychological disorders in humans. The International Standard Organization (ISO) recommends a maximum level of 50 parts per million (ppm) of residual hexane, which is used in the solvent extraction process."

A pie chart shows world soybean production in 2004.

8388. Setchell, Kenneth D.R. 2006. Re: The safety of soy infant formulas. Letter to Michael D. Shelby, PhD, NIEHS EC-32, P.O. Box 12233, Research Triangle Park, North Carolina 27709, March 1. 9 p. Typed, without signature on letterhead. [19 ref]
• ***Summary:*** NIEHS stands for the National Institute of Environmental Health Studies; it is part of the National Institutes of Health (NIH), which is under the U.S. Department of Health and Human Services. The mission of the NIEHS is to reduce the burden of human illness and disability by understanding how the environment influences the development and progression of human disease. Address: Dep. of Pediatrics, Children's Hospital Medical Center, Cincinnati, Ohio.

8389. Illinois Center for Soy Foods. 2006. U of I center sponsors events to celebrate Soy Foods Month (News release). Urbana, Illinois. 1 p. March 22.
• ***Summary:*** "The Illinois Center for Soy Foods at the University of Illinois has scheduled several events to help celebrate National Soy Foods Month this April. A free cooking demonstration and taste test to help consumers become familiar with tofu, soy flour, soy milk, and textured vegetable protein (TVP) will be held on Saturday, April 22, from 9 to 11 a.m. in the test kitchen at the National Soybean Research Center [NSCR] in Urbana." Participants "will return home with recipes that they can try in their own kitchens." Space is limited and pre-registration is required.

"The center will also provide free soy-enhanced cookies on campus during the lunch hour each Tuesday in April. The cookies will be available at" 4 convenient locations on campus. The 5 soyfoods cookbooks published by the center will also be on sale for 50% off.

"In addition, the Center will host a soy-tasting event with the theme "Around the World with Soy" on Wednesday, April 19. The tasting will feature international cuisine with a soy twist." Address: Urbana, Illinois.

8390. Huang, Huihua; Liang, Hanhua; Kwok, Kin-Chor. 2006. Effect of thermal processing on genistein, daidzein and glycitein content in soymilk. *J. of the Science of Food and Agriculture* (*London*) 86(7):1110-14. March. [16 ref]
• ***Summary:*** Investigated the effect of heat degradation on three isoflavones–genistein, daidzein and glycitein–in soymilk processed over a range of temperatures (95, 121, 121, and 140ºC) and times. Reported that both pasteurization and UHT processing can decrease the amount of isoflavones in the soymilk. Genistein showed greater stability during heating than daidzein and glycitein. The content of both daidzein and glycitein decreased rapidly during the early stage of heating, but upon continued heating the rates of decrease became much slower. Address: 1. Dep. of Food Science, South China Univ. of Technology, Guangzhou, China; 2. Dep. of Applied Biology and Chemical Technology, Hong Kong Polytechnic Univ., Hung Hom, Kowloon, Hong Kong, China.

8391. INTSOY. 2006. Processing and marketing soybeans: Meat, dairy and baking applications, May 1-5, 2006 (Leaflet). Urbana, Illinois. 4 panels each side. Each panel: 22 x 9 cm.
• ***Summary:*** This glossy leaflet (green and black on white) announces a 5-day course ($1,800) plus the course and an extended workshop schedule ($2,400). The program now has 15 corporate sponsors: The Solae Co., Staeta, Insta-Pro, Proviant, BAR, N.A., Inc., SOI, ADM, Assoy, Wenger, Microsoy Corporation, US Soy, Silk, Kikkoman, Cargill, and Buehler. Course schedule: Welcome, international soymilk processing, success stories, soymilk, and soy products, marketing, soy flour, soy and meat, hot topics (soy infant formula, soy and reduction of chronic disease, soy allergies, quality and stability of soybean oil, specialty soybean varieties, biotechnology of soybeans). A list of featured speakers are given; many are from the corporate sponsors!

Talk with INTSOY employee. 2005. The "short course" has been discontinued; it was established through a grant, has come to an end. The course is now under the aegis of NSRL. In the year 2000 the 4-day course attracted 28-30 people. Address: National Soybean Research Lab. (NSRL), 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706.

8392. **Product Name:** SoYummi GoLite Soy Mousse

[Black Cherry, Dark Chocolate, California Peach, Bavarian Cream].
Foreign Name: Soyummi Golite Mousse de Soya.
Manufacturer's Name: Les Aliments SoYummi.
Manufacturer's Address: 3655 Redpath, Montreal, Quebec, Canada H3G 2W8.
Date of Introduction: 2006. April.
Ingredients: Organic soy drink, chicory syrup (sweetener), soy oil, modified cornstarch, modified rice starch, natural flavors, modified vegetable gums, salt, agar, xanthan gum, lactic acid, yucca extract.
Wt/Vol., Packaging, Price: 100 gm in a low plastic (polypropylene) cup, with flat lid and individual sleeve. Retails for Canadian $1.39.
How Stored: Refrigerated, 30 day shelf life.
New Product–Documentation: Cardwell, Mark. 2002. "As good as it gets." Food in Canada. May, p. 38. Talk with Joanne Hollander. 2008. May 29. She wanted to develop a product that contained no sugar and fewer calories. She started developing this product in 2004 using basically the same formula and finally launched it in April 2006. The company got a new CEO at the end of 2004. The label was equally French and English, but in Quebec they always write the French first. "Chicory syrup is a great alternative to sugar but it is expensive." She wanted a product that diabetics could eat–and they are allowed 15 gm of carbs per serving. Another great sweetener is the Chinese fruit *lohan guo* (*Siraitia grosvenorii;* literally "arhat's fruit" or monk's fruit), from which a natural sweetener is extracted. Wikipedia says: "The fruit extract is nearly 300 times sweeter than sugar and has been used as a natural sweetener in China for nearly a millennium due to its flavor and lack of food energy, only 2.3 kcal/g [calories per gram] (9.6 kJ/g). It has also been used in traditional Chinese medicine."

"I could go 100% organic but nobody would be able to buy the product." This product contained about 1/3 fewer calories than the original SoYummi. They were trying to compete with yogurt, so the Bavarian Cream is 86 calories per 100 gm.
*

8393. Soybean, a miracle bean (Leaflet). 2006. New Delhi, India: American Soybean Association (ASA) / United Soybean Board. 2 p. Front and back. 28 cm. [7 ref]
• ***Summary:*** Contents: Soybean a miracle bean. Soybean and health benefits. How to use soy daily: Soybeans ("...can be used like lobia. They can also be added up to 20% in dosas, pesarutta, dahi bhalla and vadas etc. where whole legumes are used... can be added up to 20% in recipes such as chole, rajma and dal makhani"), defatted soy flour (contains 50% protein), wheat-soy flour (1 kg defatted soy flour mixed with 10 kg wheat flour), besan-soy flour ("Add 20% defatted soy flour to besan [chickpea flour] and use to make products such as pakora, chilla, kadhi, etc.") nuggets and granules (soy bari), soymilk, soy paneer (tofu), soy papad, soy nuts (whole soybeans that have been soaked in water and then baked until browned), soybean oil.

Note: Printed in four colors on glossy white paper with a green border. Ten thousand copies were printed in April 2006. A color illustration shows a cute cartoon of a soybean character seated next to a meal tray with "thumbs up." Address: American Soybean Assoc., Asia Subcontinent, 149 Jor Bagh, New Delhi–110 003, India. Phone: (91) (11) 2465-1611.

8394. Nordquist, Ted; Webster, Robin. 2006. New developments making dairylike soyfoods in America (Interview). *SoyaScan Notes.* May 9. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** WholeSoy & Co. is a wholly-owned subsidiary of TAN Industries; Ted now prefers to used the former name instead of the latter. Modesto WholeSoy Co. is its own entity. Ted and his business partner, Henry, now own 85% of the stock.

Silk soymilk was launched in Jan. 1996. Ted was having a lot of problems with the soy base made by Pacific ProSoya in British Columbia. About a year later [probably in about March 1997] Ted installed a soy base plant at Soyfoods of America in Duarte, California. He did this together with Wally Rogers, owner of Bean Machine Inc. (BMI–using a stainless steel grinder / disintegrator made for BMI by Corenco, owned by Chris Cory). Wally took Ted to Chris and together they designed the grinders to be installed at Soyfoods of America. In about Sept. 1997 Ted started producing soy base for Silk soymilk at the plant in Duarte. This soy base was sent in tankers from Duarte to Gustine, where Ted and coworkers formulated the Silk soymilk.

Ted's next product was made together with Gary Stein. Gary (of San Diego) called Ted and said that Trader Joe's wanted a soymilk. Ted said to Gary, "That's fine, but I have a contract with Steve Demos, so I can't do that." So Ted set up Gary. He told Gary that Ann Shaw and Laura Tewnion knew how to formulate soymilk. He and Gary talked a lot about it but he told Gary, "I can't touch it with a ten foot pole, but I'm happy to ship the soy base to you." So Ted shipped the soy base from Duarte to Gustine, then Gary Stein formulated the soymilk for Trader Joe's and sold it to Trader Joe's.

Ted's next product was Certified Organic Soymilk, made for Wildwood Natural Foods and launched in July 1998.

Next, in 1999, Ted and Henry came up with the WholeSoy name. So they had cups designed for WholeSoy but, of course, they had no sales volume, so they sent that idea to Trader Joe's, which agreed for Ted to private label the product for Trader Joe's. So Ted launched both the WholeSoy and the Trader Joe's private label at exactly the same time. They were exactly the same products but in different cups.

In about May 2004 changed the name of his company

to WholeSoy & Co. from TAN Industries, and his brand to WholeSoy & Co. from The WholeSoy Co. The words "WholeSoy & Co." first appeared on their Lite Smoothies in September 2004. Ted did a focus group in which he put out packaging from products made by Silk [White Wave], Stonyfield, Wildwood, and TAN Industries. The members of the focus group were asked to describe what they understood by looking at the different packages. "They thought that WholeSoy was a generic name, that companies like Safeway and Albertsons were making. They thought WholeSoy was a really big corporation, and that therefore its products should sell for the lowest price." Ted recalls: "It was unbelievable. I was just speechless. I wanted to go in there and tell them how wrong they were!" They knew the Stonyfield brand and thought that product was worth the money. The Wildwood product attracted them because it had a real good appearance."

In about Jan. 2006 Ted started printing "Soy Yogurt" in large letters on the front of his yogurt cups–which previously said only "Cultured Soy." It happened like this. Ted's soy yogurt is made by SSI (Super Store Industries), which is owned by Raley's and Save Mart (both supermarket chains). Ted was going into new packaging and he asked them: "Do you have any problem using the terms "Soy Yogurt" or "Soy Frozen Yogurt" on the cups? They said they would check. They checked all of their contacts then told Ted that there was no objection to using those terms.

In Jan. 2006 Ted started using the term "Soy Yogurt" in large letter at the top front panel of his yogurt cups. He gradually phased it in to all flavors as new cups had to be printed.

In Sweden, Ted had only one plant in the county of Enkoeping (pronounced en-CHUR-ping) where he made soyfoods. He built (together with Mark Jungstrum of Trensusms Musteri) a soybase plant in the commune and city of Tingsryd near Karlshamn; it produced 3,000 to 3,500 liters/hour of soybase. And he had a test plant at Alfa-Laval in Lund.

WholeSoy's Soy Cream Cheese was introduced in Feb. 2005 in two flavors: Original and Garlic & Herb. It had a 90-day shelf life with 12 packs per case. Both are still on the market but Ted is in the process of discontinuing the product by letting them "sell through" until they are all off the shelves. He got them into all the natural food stores, but the total market for this product category is too small, so sales were too slow.

In about Sept. 2004 Ted also launched a WholeSoy Smoothie Light, but discontinued it in about Nov. 2005. it. It contained very little sugar and used Lo Han fruit concentrate as the natural sweetener. Address: WholeSoy & Co., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

8395. Gupta, Rajendra ("Raj") P. 2006. New developments at ProSoya in the USA and Canada (Interview). *SoyaScan Notes.* May 30. Conducted by William Shurtleff of Soyfoods Center.

• ***Summary:*** "ProSoya" is the popular name of Raj's company. ProSoya Corporation in Heuvelton, New York state is not a new entity. ProSoya Corporation has long existed as a holding / parent company, based in St. Louis, Missouri. The one in New York is a branch of that. The ProSoya UK Ltd. in Livingston, Scotland, which was a separate entity under license from ProSoya Inc., no longer exists. ProSoya Foods India Pty. Ltd. is now active in India.

ProSoya Corp. in Heuvelton is now shipping "soy extract" [soybase / soya base] to a company in Canada. They have also developed a delicious "creamy orange" soymilk with a thick consistency like a smoothie–but it is not yet for sale. Supermarkets that have their own brand of soymilk do not buy soyabase; they want a finished product delivered to their door in their package. Last year Raj could not find a co-packer; but now he has found one in Toronto that packs about 3 truckloads a day for him. He is still looking for one in the USA. If he had been able to find one a year ago, he would be in almost every store by now.

SoyaWorld is now very strong everywhere except in the USA; they have the best-selling soymilk brands in Canada. Since about 2001-2002 they have been owned by Sanitarium Foods of Australia. Originally SoyaWorld was owned by Dairyworld, which was sold to Saputo, then Saputo sold the soymilk business to Sanitarium Foods. Sanitarium kept "SoyaWorld" as a name for both the business and the brand. They don't want to call it Sanitarium, which is sort of an outdated, old-fashioned funny name. SoyaWorld no longer has royalty or exclusivity agreements with ProSoya (they expired in May 2004), which is why ProSoya can now make and sell soybase, soymilk, and soymilk products.

Raj's soybase is now made by an improved process. It is still made by the basic airless cold-grind process, so that change is more in the art than in the science–it is not a breakthrough, but a fiddling with details. He has not licensed his process to anyone. It is better for formulation, is more bland, and is unique in that it has no soy taste. Raj likes to say that his soybase has "no soy taste" and "no beany taste." Most good manufacturers have be able to get rid of the "beany taste, which is normally associated with rancid oil-like flavors, chalkiness, and astringency," but Raj believes that only his company has been able to also get rid of the "soy taste," which is more subtle yet still a big obstacle to widespread acceptance of soyfoods and soy beverages. When Raj talks to big distributors, they say that all the soyfoods manufacturers claim to have gotten rid of the "beany taste," yet the taste still leaves something to be desired–"it still tastes like soy." So Raj speaks of "no soy taste" to distinguish his products from the others. Raj has found that the people of India "hate soy taste." But they love

his products, which have no soy taste. Certain flavors go very, very well with his soybase. If a company uses strong flavors or heavy masking, consumers say the product tastes like medicine.

One interesting phenomenon is that the flavor of soybase or soymilk improves as it is allowed to age for 4-5 days.

Raj is not sure whether or not he should put the word "soy" on the package or not. Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

8396. Bakhshandeh, Ehsan. 2006. Soya health benefits underlined. *Iran Daily.* May 31.

• ***Summary:*** Tehran, May 30. A man who distributes equipment for making soyfoods stressed their health benefits and the role they can play in the prevention of cancer and in reducing the risk of heart disease.

At the 13th International Food, Drink and Packaging Technology Trade Fair in Tehran, Firouz Zanjani, managing director of Assoy (Middle East Div.) said that in Iran, soybeans are classified as vegetables. From them, using his equipment, soyfoods such as soymilk, tofu, soyyogurt, and soycheese can be made. All have important health benefits. Soymilk, from which the other soy products are made, contains no lactose, cholesterol, or side effects, and therefore can be consumed by people of all ages.

Soybeans have been cultivated in Iran for the past three years. They are grown only in the north, in Gorgan, Golestan province. The climate in other parts of Iran is not suited for soybean cultivation. In 2007, according to Zanjani, 240,000 tons of soybeans will be produced in Iran, "while 130,000 hectares will be brought under soybean cultivation in the next two years."

Zanjani said there is only one large factory in Iran that processes soybeans. It was established 9 years ago, however its products began to be marked only 18 months ago. Yet the high price of these products is the main reason for their low per-capita consumption in Iran. Zanjani further blamed poor dissemination of information about the health benefits of soy products. Despite the publicity campaign, using advertisements in newspapers and on billboards, only 5-10% of Iranians know what soymilk is. He added that two other soyfoods factories equipped with the state-of-the-art technology will be launched in 2007 in Tehran and Mashhad.

A color photo shows Firouz Zanjani.

8397. Cardwell, Mark. 2006. Top ten: As good as it gets–Les Aliments SoYummi, Montreal, Quebec. *Food in Canada.* May. p. 38.

• ***Summary:*** Joanne Hollander was born in New Jersey, but raised in a tony [aristocratic, stylish] Montreal neighborhood in the 1960s. She was educated in francophone French schools, then returned to the USA for college. In 1982 she developed a nutritious soy mousse for your young son, Aaron, who was completely lactose intolerant; dairy products gave him bad headaches and eczema. The mousse "was an instant hit with her son, as well as everyone else who tried it. Her friends urged her to commercialize it. So in 1987 she paid a McGill University professor of food science $2,000 to help her stabilize it, to increase the shelf life. But when she took samples to dairy and wholesale food distributors in the Montreal area, they all loved the flavor and texture, but said there was no market for a soy product. "'No one was doing anything with soy back then,' says Hollander."

In 1997 soy milk hit Quebec grocery shelves; Holland decided to try again. This time, with $35,000 in private funds, she went to the Food Research and Development Center in Saint-Hyacinthe, Quebec. "Located a half-hour's drive southeast of Montreal, the federally funded facility offers technical assistance and the use of processing equipment to food companies trying to develop new products."

In 2002 She founded Les Aliments SoYummi, a partnership with Roland Degani and Max Druker (who had offered advice and financial support) and that year she launched SoYummi in four flavors, which "first appeared on shelves in Metro and IGA grocery chains across Quebec." The business has continued to grow from a weekly output of 3,000 cups a week to about 48,000 cups a week today. In April 2006 she launched SoYummi GoLite–a low-calorie version.

A photo shows Joanne Hollander.

8398. Dean Foods Co. 2006. Simple truths–Focusing on what matters most: 2005 annual report. Dallas, Texas. 84 p. 28 cm.

• ***Summary:*** On page 13 we read: "Silk: The leading soymilk brand. Silk celebrates its 10th birthday in 2006. Since its introduction, it has become one of the best-selling natural food brands in the nation, growing 20 percent [in sales] in 2005 to $337 million." Silk Light hit the market in 2005, in vanilla, plain, and chocolate flavors. Note: It is made by adding an equal amount of water to regular silk. "Silk Light offers 50% less fat and fewer calories than regular soymilk." Each cup contains 30% of the RDV of calcium.

"We also refreshed the packaging on Silk Live!, our delicious entry into the thriving yogurt smoothie category. Silk Live is packed with 19 vitamins and minerals, seven grams of soy protein and six live and active cultures, which help promote a healthy immune system.

Consumer "research shows that household penetration is still low, with only 7% of U.S. households accounting for 80% of soymilk volume. This same research also tells us that at least another 30% are interested in trying or purchasing soymilk." Color photos show 3 packages each of Silk Light and Silk Live!

On p. 47: On 5 April 2004 WhiteWave Foods Company acquired a soy processing and packaging plant in Bridgeton,

New Jersey.

Accompanying the annual report is an innovative "2006 proxy statement and notice of annual meeting" (32 p.). A stockholder proposal (p. 7-9) asks that the company disclose its social, environmental, and sustainability practices. The Board of Directors recommends that stockholders vote against this proposal. In 2005 Gregg L. Engles, age 48, Chairman of the Board and CEO had total compensation of $9.48 million, including salary of $1,070,000 (p. 22). Address: 2515 McKinney Ave., Suite 1200, Dallas, Texas 75201. Phone: 214-303-3400 www.deanfoods.com.

8399. **Product Name:** So Natural Soy Milk [Plain].
Manufacturer's Name: NIZA S.A. Made in Argentina.
Manufacturer's Address: Ruta Prov. 2B Km 8 (5730) Villa Mercedes, San Luis, San Luis Province, Argentina.
Date of Introduction: 2006. May.
Ingredients: Soymilk (filtered water, organic soybeans), sugar, tricalcium phosphate, microcrystalline cellulose / sodium carboxymethylcellulose, lecithin, carrageenan, salt, di-alpha tocopherol, artificial flavor, vitamin A acetate, vitamin D3.
Wt/Vol., Packaging, Price: 1 liter aseptic Tetra Pak carton. Retails for $0.99 (Concord, California 2006/05)..
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Product with Label purchased by Martine Liguori. 2006. May 7. At 99cent store, Clayton Road, Concord, California. Green, blue, black, and beige on white.
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8400. **Product Name:** Laura Lynn Original Enriched Soymilk.
Manufacturer's Name: Ingles Markets, Inc. (Marketer-Distributor).
Manufacturer's Address: Asheville, North Carolina 28816.
Date of Introduction: 2006. June.
Ingredients: Filtered water, whole organic soybeans, evaporated organic cane juice, natural flavors, calcium carbonate, sodium citrate, potassium citrate, sea salt, carrageenan, vitamin A palmitate, vitamin D2, vitamin E, vitamin B2, vitamin B12, zinc sulfate.
Wt/Vol., Packaging, Price: 1 quart plastic bottle. Retails for $1.29 (2006/06, Oakland, California).
How Stored: Refrigerated.
Nutrition: Per 1 cup (240 ml): Calories 90, calories from fat 30, total fat 3.5 gm (5% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 160 mg (7%), potassium 560 mg (16%), total carbohydrate 10 gm (dietary fiber 2 gm [7%], sugars 5 gm), protein 6 gm. Vitamin A 10%, calcium 30%, vitamin D 30%, thiamin 6%, vitamin B6 4%, vitamin B-12 50%, magnesium 20%, copper 25%, vitamin C 0%, iron 8%, vitamin E 25%, riboflavin 40%, folate 15%, phosphorus 8%, zinc 10%, manganese 20%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased by Martine Liguori in Oakland, California. 2006. June. Plastic bottle shaped like a bowling pin. 9.5 inches tall. Red, black and gold on white. Front panel: Black and white photo of a stream of white soymilk streaming into a clear glass. "Lactose free. No cholesterol... Vitamins... Calcium enriched. 31 mg isoflavones." Back panel: "We use the whole bean." Taste test: Tastes good, not great. Good to dilute in warm tea.

8401. Muhammad, B.F.; Abubakar, M.M. 2006. Physico-chemical, microbial and sensory properties of cow milk yoghurt produced with different levels of soymilk. *Savannah J. of Agriculture* 1(1):56-56. June. [15 ref]
• ***Summary:*** Adding 25% or less soymilk to cow's milk in making yogurt can lower the cost without decreasing the acceptability. Address: Animal Production Programme, Abubakar Tafawa Balewa Univ., P.M.B. 0248, Bauchi, Nigeria.

8402. **Product Name:** Quality Chekd Organic Soymilk [Original].
Manufacturer's Name: Super Store Industries (Distributor).
Manufacturer's Address: Lathrop, California 95330.
Date of Introduction: 2006. June.
Ingredients: Filtered water, whole organic soybeans, organic cane crystals, calcium carbonate, natural flavors, sea salt, xanthan gum, carrageenan, vitamin A palmitate, riboflavin (B2), vitamin D2, vitamin B12. Contains soy.
Wt/Vol., Packaging, Price: Half gallon gable-top Pure Pak carton. Retails for $1.29 (2006/06, Pleasant Hill, California).
How Stored: Refrigerated.
Nutrition: Per 1 cup (240 ml): Calories 90, calories from fat 30, total fat 3.5 gm (5% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 160 mg (7%), potassium 560 mg (16%), total carbohydrate 10 gm (dietary fiber 2 gm [7%], sugars 5 gm), protein 6 gm. Vitamin A 10%, calcium 30%, vitamin D 30%, thiamin 6%, vitamin B6 4%, vitamin B-12 50%, magnesium 20%, copper 25%, vitamin C 0%, iron 8%, vitamin E 25%, riboflavin 40%, folate 15%, phosphorus 8%, zinc 10%, manganese 20%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased by Martine Liguori in Pleasant Hill, California. 2006. June. Blue, white and black on red. Front panel: "Calcium fortified. Lactose free." USDA Organic logo. Martine's taste test: Very pleasant. "Whole milk" (rich dairy) taste.

8403. **Product Name:** Trader Joe's Soy Milk (½-gallon Gable-Top carton) [Lowfat Vanilla].
Manufacturer's Name: Trader Joe's (Marketer-

Distributor).
Manufacturer's Address: Monrovia, CA 91016.
Date of Introduction: 2006. June.
Ingredients: Water, organic soybeans, brown rice syrup, raw cane crystals, calcium carbonate, vanilla extract, sea salt, carrageenan, vitamin A palmitate, vitamin D2.
Wt/Vol., Packaging, Price: Half gallon (1.89 liters). Retails for $3.29 (California 2006/01).
How Stored: Refrigerated.
Nutrition: Per 8 fl oz (240 ml): Calories 130, calories from fat 25, total fat 2.5 gm (4% daily value; saturated fat 0 gm), cholesterol 0 mg, sodium 80 mg (3%), total carbohydrate 22 gm (dietary fiber 0 gm, sugars 11 gm), protein 9 gm. Vitamin A 10%, calcium 30%, vitamin D 25%, vitamin C 0%, iron 6%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2006. May 21. Blue, brown, black and green on white. Illustration of a small white flower with green leaves. Front and back panels: "35 mg isoflavones per serving. Ultra-pasteurized. Fortified with calcium & vitamins A & D. Lactose & dairy free. On one side is a recipe for Berry banana shake." On the other, nutrition facts and ingredients. SKU 0042 4677 Processed at plant 06-446. Contains 5 gm of protein, 100 calories, and 2.5 gm total fat per cup Note: The soybeans are organic, but there is no USDA organic seal and no organic claims.

8404. **Product Name:** Silk Soymilk (For Starbucks; Organic) [Vanilla].
Manufacturer's Name: White Wave, Inc. (Product Developer-Distributor).
Manufacturer's Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.
Date of Introduction: 2006. June.
Ingredients: Filtered water, whole organic soybeans, organic evaporated cane juice, tricalcium phosphate, natural vanilla flavor, sea salt, carrageenan, calcium carbonate, vitamin A palmitate, vitamin D-2, vitamin B-12.
Wt/Vol., Packaging, Price: Quart Tetra Brik Aseptic Carton (946 ml). Retails for $2.49
How Stored: Refrigerated.
New Product–Documentation: Label brought by Akiko Aoyagi. 2006. June. Purchased at Starbucks in Lafayette, California. 7.75 by 3.5 by 2.25 inches. White, green, and coffee brown on cerulean blue. Front panel: "Exclusively formulated for Starbucks Lattes and Tazo Chai. Calcium enriched. USDA Organic logo. Vitamin fortified. Cholesterol free. Lactose free." Right panel: Nutrition facts and ingredients. Left panel: "White Wave is putting wind to work." Back: Cute stuff.

8405. *Soy Connection.* 2006. Expert panel reports on genistein & soy formula. 14(3):1-2, 4. Summer. [1 ref]
• ***Summary:*** Contents: Introduction. Genistein. Soy formula.

"Soy infant formula has been commercially available in its present form (with only slight modifications over time) for approximately 40 years, and during this period, approximately 20 million infants have used the formula at some point in their development. All evidence indicates soy formula produces normal growth and development as assessed by common measures such as height and weight. Nevertheless, in recent years the use of soy formula has become somewhat controversial and the subject of scientific debate. At issue is the high exposure to soybean isoflavones, especially genistein.

"On Jan. 16, 2006 the National Toxicology Program Center for the Evaluation of Risks to Human Reproduction (NTP-CERHR) issued two draft reports entitled 'NTP-CERHR Expert Panel on the Reproductive and Developmental Toxicity of Soy Formula' and 'NTP-CERHR Expert Panel on the Reproductive and Developmental Toxicity of Genistein.'"

"On March 15-17, the 14-member panel met to discuss the reports and to form conclusions. The public had an opportunity to comment on the reports in written form between Jan. 16 and March 1, to present oral testimony on March 15, and to participate in the 2½ day meeting."

Conclusions: The expert panel expressed negligible concern over genistein. And: "There are insufficient human or experimental data available to permit a determination of the developmental or reproductive toxicity of soy infant formula."

"Finally, considerably more developmental data on the use of soy formula will be available in the not too distant future as ongoing USDA-funded research is comparing the health status of infants fed breast milk, cow milk formula, and soy formula over a several year period."

"Final expert panel reports are available at http://cerhr.niehs.nih.gov and are available in the printed text from CERHR."

8406. Vitasoy International Holdings Ltd. 2006. Annual report 2005/06: Forever natural, forever healthy. New Territories, Hong Kong. 168 p. July. 30 cm. [Eng; Chi]
• ***Summary:*** Turnover (sales) rose 5.9% to HK$2,520 million. Gross profit rose 8.3% to HK$1,481 million. EBITDA (earnings before minority interest, interest expense, income taxes, depreciation, and amortization) rose 18.5% to HK$333 million. Basic earnings per share rose 41.0% to 17.2 Hong Kong cents (p. 4).

A five-year financial summary (from 2001 to 2005), expressed in Hong Kong dollars, appears on page 167. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

8407. **Product Name:** Silk (Soymilk Sold Refrigerated in Half Gallon ESL Gable Top Cartons) [Unsweetened Organic].

Manufacturer's Name: White Wave Foods Co. (Distributor).
Manufacturer's Address: Broomfield, CO 80021.
Date of Introduction: 2006. July.
Ingredients: Organic soymilk (filtered water, whole organic soybeans), calcium carbonate, sea salt, natural flavors, carrageenan, vitamin A palmitate, vitamin D2, riboflavin (B2), vitamin B12. No more, no less.
Wt/Vol., Packaging, Price: Half gallon (1.89 liter) Tetra Pak ESL gable top Carton. Retails for $4.49 (2006/07, Lafayette, California).
How Stored: Refrigerated.
New Product–Documentation: Product with Label purchased at Safeway supermarket in Lafayette, California. 2006. July 31. 3.75 by 3.75 by 9½ inches. White, blue, and light purple on bluish green. Front panel: Color photo of soymilk being poured into a bowl of breakfast cereal with blueberries and sliced strawberries. "Calcium enriched. 4g carbs per serving. Vitamin fortified." Back panel: "Demand authenticity. Check out our new website www.SilkSoymilk.com. We're looking good in green! ("Our wind energy purchase exceeds 24,000 megawatt hours per year–that's the global warming equivalent of taking more than 3,000 cars off the road."). Akasha's corner–Chef to the stars." Recipe for Crustless corn and pepper quiche, adapted from her book *Hollywood Dish.* Note: ALA stands for "alpha-linolenic acid," a polyunsaturated omega-3 fatty acid. It is called an "essential fatty acid" because it is essential in the diet of all mammals.

8408. Sunopta Inc. 2006. SunOpta announces new organic soy milk production (News release). Aug. 7.
• ***Summary:*** SunOpta (headquartered in Toronto, Canada), announced that has begun production of a new aseptically packaged organic soy milk for a major U.S. retailer. "This product will be produced as part of a previously announced global contract and is expected to add an incremental $20 million in revenue over the next three years..."

8409. *Non-GMO Report* (*The*) (*Fairfield, Iowa*). 2006. Report says major food companies want rBGH-free milk. 6(8):3. Aug.
• ***Summary:*** "On June 9, *The Dairy & Food Market Analyst* reported that Dean Foods, Wal-Mart and Kroger, and possibly others are on a nationwide search for milk that hasn't been derived from cows treated with the genetically engineered hormone, rGBH." During the past year, a number of dairies have stopped using rGBH, the price of which Monsanto is now lowering to try to cling to a dwindling market. Montana's two largest milk processors "are now requiring farmers to sign affidavits saying they are rBGH-free."

8410. United Soybean Board (USB). 2006. Consumer attitudes about nutrition: Insights into nutrition, health, and soyfoods. 13th annual national report. Seattle, Washington. 8 p. Oct. 28 cm.
• ***Summary:*** The methodology used in this survey changed significantly in 2006. Previously, random telephone interviews were completed with 1,000 consumers. This year an online self-administered survey was used. "Conducted by an independent research firm [in Seattle, Washington] in February and March 2006, the study includes 1,000 random surveys, providing a sample that is consistent with the total American population. The study's margin of error remains ± 1.9 to 3.1%, with a confidence interval of 95 percent."

Contents: Introduction. Methodology. About USB. Nutritional habits and obesity concerns. Healthy food decisions. Cooking oil impressions. Consumer attitudes about fats. Awareness and usage of soy products. Occasion preferences for consuming soy. Restaurants and soy products. Soyfoods in health.

Awareness and usage: 30% of Americans consume soyfoods or soy beverages once a month or more. A table shows the "Top 20 soy products by awareness." Soymilk 87%. Soybean oil 61%. Soy veggie burger 60%. Plain white tofu 59%. Soy infant formula 44%. Soy nuts 43%. Soy latte 35% (Soymilk in espresso coffee drinks [as at Starbucks]). Soy protein bars 32%. Soy hot dogs 30%. Soy yogurt 29%. Dried or canned soybeans 29%. Soy flour 28%. Soy ice cream / cheese 28%. Cereal bar / Energy bar 28%. Flavored / Marinated tofu 26%. Miso 24%. Soy supplements 23%. Soy breakfast cereal 23%. Textured soy protein. Edamame 17%. All others mentioned 12% or less.

Occasion preferences for consuming soy (in descending order of preference): dinner 40%, breakfast 29%, lunch 22%, mid-morning snack 16%, mid-afternoon snack 16%, etc.

Soy products ordered in restaurants: Soy veggie burger 29%. Tofu 29%. Soymilk 28%. Miso 14%. Edamame 8%. Tofu (prepared) 6%, etc.

"In 2006, 82% of consumers rate soy products as healthy, significantly more than in previous years" (78% in 2005, 74% in 2004, 67% in 1998). Why? Low-fat profile 20%. Protein content 15%. Heart health 15%. Cholesterol-lowering properties 12%. "Being good for you" 10%. "A lactose-free option 10%."

Note: As of Aug. 2008 this full survey is available gratis in PDF format at www.soyconnection.com /health_nutrition / pdf/.

8411. Hymowitz, Ted. 2006. Why did the West (Europe and the Middle East) know so little about China in the 12th and 13th centuries? (Interview). *SoyaScan Notes.* Sept. 1. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** Because the Arabs blocked most European travel over the Silk Road / Route from about the 7th century until the 12th or 13th century. The Arab conquest blocked the overland route, in part to control the trade. There were

actually two phases in the history of the Silk Road. The first phase ended in about the 6th or 7th century, before the origin of Islam.

Note: Both of these "Silk Roads" was actually a series of interconnected routes that ran from about Xian (Chang'an) in eastern China, along the northern part of China, branching into today's Central Asia, south of the Caspian Sea, through today's Turkmenistan, Iran (formerly Persia), and Iraq, to Damascus (today's Syria) and Antioch (in today's Turkey). The first famous and documented Chinese traveler, Zhang Qian (W.-G. Chang Ch'ien) led two expeditions to the Western Regions in the 2nd century BC, during the Former / Western Han dynasty.

As early as the 1st century AD, there were already some oceanic routes that were part of the "Silk Road." They hugged the coast from central China, around India, into the Persian Gulf and the Red Sea, then on to Italy!

This Arab blockade was one of the reasons for the search for a water route to China. The blockade began to fail as sea routes were developed. For example, in May 1498, Vasco da Gama was the first European to discover a sea route to India.

Another reason it took so long for information about the soybean to reach Europe from China was that the soybean is unlike rice, wheat, and maize / corn, where the product of the crop is associated very closely with what is growing in the field; everyone knows what rice, wheat and corn look like because they are so widely consumed as food. The main products of the soybean, especially those in commerce (such as soy sauce), bear no resemblance to the seed or plant from which they are made. It took a long time before Europeans realized that soy sauce (for example), which was known in Europe by the late 1600s, was made from the soybean–which did not arrive in Europe until the late 1730s. Even in Asia, the various names of the soybean were very different from the names of its major products. For example in China: Soybean is *dadou* or *huangdou,* soy sauce is *jiangyou,* tofu is *doufu,* and soymilk is *dounai* or *doujiang.* In Japan: Soybean is *daizu,* soy sauce is shoyu, tofu is tofu, soymilk is *tonyu,* miso is miso, natto is natto, and green vegetable soybeans are edamamé. In Indonesia, tempé is tempeh. Even in the Western World today, many of these traditional foods and condiments do not have "soy" as part of their name. Moreover, the foods look totally different from the seed / bean from which they are made.

The first European to understand the connection between the soybean and its products was Engelbert Kaempfer; he made this clear in his book *Amoenitatum exoticarum...* vol. 5. Yet most Westerners did not understand this connection until more than a century later, and quite a few even today don't realize that tofu (for example) is made from soybeans.

Ted is convinced that Marco Polo and the various early Western missionaries who traveled to China probably tasted soyfoods over and over again–but they didn't realize they were made from soybeans. A good example is milk. The early Western travelers in China often mentioned that Chinese drank milk; in some cases they were probably drinking soymilk. Address: Prof. of Plant Genetics (retired), Dep. of Crop Sciences, Univ. of Illinois, Urbana, Illinois.

8412. 8th Continent L.L.C. 2006. 8th Continent (Website printout–part). www.8thcontinent.com Printed Sept. 6.
• ***Summary:*** Contents: A simple change. Healthy living: Healthy heart, healthy diet, healthy life. Our soymilk. Recipes. Contact us. About us. Media room. Site map. Privacy. Legal. En Espanol.

8th Continent now has 3 regular soymilks (original, vanilla, chocolate), 3 light soymilks (original, vanilla, chocolate), 2 fat-free soymilks (vanilla, original), and 2 refreshers (strawberry banana and orange pineapple banana). Address: P.O. Box 9452, Minneapolis, Minnesota 55440. Phone: 1-800-247-6458.

8413. Pacific Foods of Oregon, Inc. 2006. Pacific Natural Foods: The delicious taste of nature (Website printout–part). www.pacificfoods.com Printed Sept. 8.
• ***Summary:*** Contents: About us. Our products. Our commitment. Recipes. Where to buy. New products. Down the left: Events & promotions. Frequent questions. Special diets. Contact us.

Across the bottom: Press room. Broker site. Foodservice. Contact us. Privacy policy. Address: 19480 SW 97th Avenue, Tualatin, OR 97062. Phone: 503-692-9666.

8414. Tisdale, Kevin. 2006. Has Pacific Foods of Oregon, Inc. (Tualatin, Oregon) changed its name to Pacific Natural Foods (Interview). *SoyaScan Notes.* Sept. 18. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** This question arose because, on the company's website, the space at the top of each page where the company name usually appears, bears the prominent name "Pacific Natural Foods: The Delicious Taste of Nature." Only at the very bottom of each page, in very small, almost inconspicuous letters, do we read: Copyright 2006, Pacific Foods of Oregon, Inc.

On the "Contact us" page, is the company's address, phone number and fax number, but no company name above those–as usual.

Under "About us," the page titled "History" begins: "Pacific Natural Foods was founded in 1987. When the co-founders began building the company, their idea was to start by making tofu."

Kevin says that Pacific Foods of Oregon, Inc. is still the company's legal name. The company's main brand used to be "Pacific Foods," but about 1½ years ago that was changed to "Pacific Natural Foods."

The company is doing well. Since it does not have refrigerated distribution, its soymilk line has been hurt by the trend (started by White Wave's Silk) toward refrigerated

sales in the dairy case. The company's Almond Milk and Oat Milk now sell almost as well as the soymilk, although there are many more SKU's of soymilk. Address: Pacific Foods of Oregon.

8415. Roonnaphai, Nareenat. 2006. Pathways out of poverty through cassava, maize and soybean in Thailand. *Palawija News* (*Bogor, Indonesia*) 23(3):1-4. Sept.
• ***Summary:*** "Maize, cassava and soybean are not staples in Thailand, they are food supplements and ingredients... Locally produced soybean is not large scale." Large amounts of soybeans and soy meal are imported because of booming livestock production.

"Soybean farmers in Sukhothai: In any given year, soybean can be grown three times: the early rainy season crop, late rainy season crop and the dry season crop with irrigation. Most farmers hold many farm plots and they combine paddy [rice], mung bean, morning glory [*Ipomoea aquatica; phak bung,* also called water spinach, water morning glory, water convolvulus] and chili with soybeans in their cropping pattern. Net family cash income from soybean and other crops grown in the irrigated zone is higher than multiple cropping in rainfed areas and also higher than farmers who practice soybean mono-cropping in both [either] irrigated or rainfed areas. Soybean enriches the soil and therefore there is no need to use fertilizers for crops grown after soybean reducing farm costs... Locally produced soybean is suitable for making soy milk due to its freshness and high protein content. Potential exists for simple processing of traditionally fermented Chinese soybean by farm housewife groups to expand production as well as marketing." Address: Director, Div. of Field Crop Economics Research, Bureau of Agricultural Economic Research, Office of Agricultural Economics (OAE), Bangkok, Thailand.

8416. Soyatech, Inc. 2006. Soya & Oilseed Bluebook 2007: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 448 p. Sept. Comprehensive index. Brand name index. Advertiser index. Statistical conversions. 28 cm.
• ***Summary:*** This is the first year in recent decades that the Bluebook (a $95 value) has been sent free of charge to qualified industry members. On the stylish cover is color photo of a lovely Asian woman holding the nozzle while fueling a vehicle with ethanol fuel (as the lid to the gas tank specifies) within an oval outline. Behind her is a large glass of soymilk base against a background of yellow soybeans.

On the inside front cover is a color ad from Natural Products Inc. (Grinnell, Iowa) titled "Always unique, always innovative, always natural." On the first page is a full page color ad from Bunge North America (St. Louis, Missouri) titled "The shortest distance from harvest to market." On the rear cover is a full page color ADM ad titled "Trailblazing" showing a young man riding his mountain bike through deep muddy water. The tag line is "Resourceful by nature" and the NutriSoy logo is shown. The oilseeds covered in this book are (alphabetically): Canola / rapeseed, coconut, corn, cottonseed, palm, peanut, soya, and sunflowerseed. Note: This list is unchanged from the previous year.

There is no longer a self-adhesive label containing "Your access code" on the title page.

The Introduction states that 3,400 companies offering 450 specific products or services are listed in this book. In the Foreword, Peter Golbitz writes: "What a difference one year can make. During the past 12 months, the commodities market, including soybeans, oilseeds and corn, has been pulled into the limelight and asked to play a new leading role in the world's energy industry... Enter biofuels. Renewable energy created from vegetable oils (for biodiesel) and for carbohydrate-based crops such as corn or sugar cane (for ethanol)..." Are these "perhaps, a gateway to a broader realization of the need to create sustainable solutions for humankind?" Address: 1369 State Hwy 102, P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

8417. **Product Name:** Vitasoy Organic Soy Beverage [Holly Nog, or Peppermint Chocolate].
Manufacturer's Name: Vitasoy USA, Inc.
Manufacturer's Address: One New England Way, Ayer, MA 01432. Phone: 1-800-462-7692.
Date of Introduction: 2006. September.
Wt/Vol., Packaging, Price: 1 quart (32 fl oz). Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Glossy color leaflet (front and back, 8½ by 11 inch) sent by Patricia Smith from Natural Products Expo East. 2006. Sept. "Two new ways to boost holiday sales this season. New!" On the front: A large photo shows one carton of each of the two new flavors, with a red ribbon around the bottom of both. Dairy free. In the lower left corner, the USDA Organic logo. On the rear: Nutritional information and products specifications (UPC Codes and barcodes). No ingredients are given.

8418. Dee, Joel. 2006. History and present status of Edward & Sons Trading Co. (his company) and of his work with miso and tamari (Interview). *SoyaScan Notes.* Oct. 23. Conducted by William Shurtleff of Soyfoods Center.
• ***Summary:*** A far-ranging interview on his many important innovations and success. Joel appears to have been the first person in the Western world to add flavor to soy sauce, with Lemon Tamari (Aug. 1985), Ginger Tamari (Feb. 1988), and many other related products.

Joel developed the Premier Japan line because he believed the two main importers from Japan (Eden Foods and Westbrae) both defined their market too narrowly–as macrobiotic. He soon came up with the tagline "Traditional Gourmet," just as the specialty foods market was taking off

in the USA. But the macrobiotics criticized this line as not being "medicinal quality" so it never took off in the macro or natural foods markets.

Joel does not supply Trader Joe's with their Instant Miso Soup; he is not at liberty to reveal the name of the supplier. The TJ product contains dextrose, clam extract, and bonito powder (all for flavor) which Joel's Miso Cup does not contain.

The main segments of his company are now: Soy seasonings (miso and tamari), rice crackers, organic canned foods (coconut milk, pineapple, etc.), candy, and baked goods. Address: President, P.O. Box 1326, Carpinteria, California 93014-1326. Phone: 805-684-8500.

8419. Gupta, Rajendra ("Raj") P. 2006. Re: An improved process for making soymilk has been developed. Letter (e-mail) to William Shurtleff at Soyfoods Center, Oct. 25. 1 p.

• ***Summary:*** "We have been working on a major process improvement for some time now. Only now we are in a position to share with you our excitement of this greatly improved process we have developed that has the following advantages:

"(a) up to 25% higher yield for each kg of soybeans used, (b) reduction in residual particle size in soymilk to submicron size, (c) flavor profile improvement–further reduced beany flavour, (d) reduced viscosity, (e) soymilk base can now be cost effectively produced at higher than 10% concentration

"Fortunately, these huge process improvements do not increase the cost of our equipment to the buyer.

"Our new juice-soy beverages–Creamy Orange (that you had tasted during your visit), Peach-Mango, and Pineapple Banana were a hit at the Natural Products Expo in Baltimore in early October. They are seen as truly mainstream, loved even by the most soy-phobic people. Adez and Ades soy drinks of Unilever do not come even close to them in taste and nutrition (7g protein per 250 ml serving). A color .pdf file of our new package design is attached.

"As we discussed before we can build a soymilk system for you to fit almost any budget. We are able to trade automation with increased labor input and dramatically reduce equipment cost without compromising soymilk base quality.

"We recently sold a VS1000BB system to a party in Bolivia for US$200,000 whereas a standard VS1000 system is priced at US$600,000.

"With best regards, Raj."

Note: Talk with Raj Gupta. 2010. Oct. 14. This new, improved process is not patented. When you patent a process such as this, you make all of your secrets public. Address: Founder, ProSoya Corp., 26 Annette St., Huevelton, New York 13654. Phone: 315-244-7030.

8420. Barios, Alejandro. 2006. Norma Tecnica Guatemalteca COAGUANOR NTG 34 031 leche de soya natural fluida [Natural fluid soymilk standards for Guatemala]. Guatemala. 10 p. 28 cm. [6 ref. Spa]
Address: Presidente Comité de Trabajo de Leche de Soya de COAGUANOR.

8421. Weil, Andrew. 2006. How foods can affect cancer. *Time.* Nov. 20.

• ***Summary:*** The article begins: "What do steak, tofu and sushi have to do with cancer? Plenty, it seems, if several" new studies are to be believed. One study found a disturbing association between red meat consumption and cancer. A epidemiological study showed that Asian women consuming diets rich in soy have significantly lower rates of breast cancer than Western women have.

The report that interested Dr. Weil most examined the association between breast cancer and "soy-based foods" [soyfoods]. This has become a controversial subject because "soy contains isoflavones;" some of these, in an "isolated form, can stimulate the growth of estrogen-receptor-positive breast-cancer cells. That's why many Western doctors warn women against eating soy." Yet the epidemiological evidence looks promising: Asian women who consume "diets rich in soy have significantly lower rates of breast cancer than Western women have."

Dr. Weil was particularly pleased to see a new study of Asian-American women done by the National Cancer Institute. It studied women who ate a lot of soy-based foods as children, adolescents and adults. "The strongest and most consistent association was among women who ate the most soy-based foods from ages 5 to 11." Their risk of developing hormone-fueled breast cancer was only 58% as much as the women who ate the least soy-based foods. Women who ate a lot of soy as adolescents or adults reduced their risk by 25%. "Regular, moderate consumption of whole-soy foods (such as soynuts, edamame, soymilk, tofu and tempeh) probably affects the development of breast tissue in young females, possibly making it more resistant to carcinogens, including estrogenic agents in the environment."

Dr. Weil believes that women who have a history of breast cancer should be introducing their kids to soy foods at as early an age as possible. "Substituting soy milk for cow's milk is one way to start." He believes the same thing will be shown to hold true for boys; a diet that includes soy foods may reduce their future risk of prostate cancer.

A large color photo shows a white bowl filled with edamamé (green vegetable soybeans in the pods). A sidebar across bottom of article, titled "What we eat," states: (1) In 2004, U.S. per capita consumption of red meat was nearly 120 lbs. (2) In 2005 Americans ate, on average, 5 oz. of soy protein (equivalent to 12 oz. of soybeans), including ½ gallon of soy milk and 7 oz. of tofu. (3) In 2004 the average American ate 16½ lbs. of fish and shellfish.

Note: This is the 2nd earliest known article in *Time* magazine that mentions tempeh. Address: M.D.

8422. Northrup, Christiane. 2006. The wisdom of menopause: Creating physical and emotional health and healing during the change. Revised ed. New York, NY: Bantam Books. xvii + 631 p. Illust. Index. 24 cm. [36 soy ref]

• ***Summary:*** This revised edition contains a very positive and accurate section on the ability of soyfoods to relieve menopausal symptoms. But the benefits are dose-dependent. Discusses: Soy and menopause (p. 188-93; "Each of the following servings contains approximately 35-50 mg of soy isoflavones: 1 cup soy milk, ½ cup tofu, ½ cup tempeh, ½ cup green soybeans (edamame), available fresh or frozen, 3 handfuls roasted soy nuts"). Brain foods: Omega-3 fats [fatty acids], and DHA, soy and Japan (p. 337-38). Beautiful skin and soy (p. 364-66). Bone building and soy (p. 407-08). Eating for breast health and soy; Why soy is safe for breast tissue (p. 450-53). Heart health and soy (p. 524-25). Resources–Soy (incl. Revival Soy, p. 549).

At least 36 scientific studies on soy and women's health are cited, each with a full bibliographic record in the notes, chapter by chapter.

"Is there a soy-thyroid connection?" (p. 189-90). "Here's the bottom line: there is no convincing evidence that soy intake increases the risk of hypothyroidism during perimenopause. However, women often begin increasing their intake of soy during perimenopause, a time when they often get their thyroid function checked for the first time as well. And given that fully 25 percent of perimenopausal women have a thyroid problem, many believe that soy is responsible. If you have any doubt about your thyroid function, get it tested. Make sure you test for TSH (thyroid-stimulating hormone) along with T3 and T4, the two thyroid hormones. Its a simple blood test, and it will put your mind at ease." Address: M.D. (gynecologist), Women to Women, Yarmouth, Maine.

8423. Vitasoy International Holdings Ltd. 2006. Interim report 2006. New Territories, Hong Kong. 40 p. Nov. 30 cm. [Eng; Chi]

• ***Summary:*** For the six months ended 30 Sept. 2006, group turnover (sales) was HK$1,326 million, up 5.1% over the same period last year. Gross profit was HK$779 million, up 5.0% over the same period last year. "In view of the Group's strong balance sheet, the Board of Directors has declared an interim dividend of HK$2.8 cents per share." Sales performance was very encouraging in Mainland China (53.8%) and Australia and New Zealand (12.5%); it was steady in Hong Kong (5.9%), but lacklustre in North America (0.5%).

Market performance in North America: After years of rapid growth, the U.S. soyfoods market overall has begun to shrink. For the first 6 months of fiscal 2006/07 the tofu category decreased by 2.2% and aseptic soymilk by 1.8%. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

8424. *SoyaScan Notes.* 2006. Soymilk and non-dairy beverage prices at Trader Joe's in Lafayette, California (Overview). Dec. 12. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Since Dec. 1983, approximately every other year, Soyfoods Center has conducted a survey of the prices of soymilk and cow's milk in California. (Note: oz = fluid ounces; 32 fl oz = 1 quart; 33.8 fl oz = 1 liter. 2 quarts = one half gallon).

Shelf-stable / Aseptic soymilks: Trader Joe's organic original, vanilla, and chocolate $2.49/half gallon. Trader Joe's non-organic original, unsweetened, or vanilla $1.29/quart, or chocolate $1.49/quart. Trader Joe's non-organic chocolate 4 x 8 oz packs $2.49. Westsoy organic unsweetened $1.69/quart. Westsoy non-organic plain non-fat $2.49/quart. Westsoy Plus organic plain or vanilla $2.49/half gallon. Soy Dream soymilk original or vanilla $2.69/half gallon.

Refrigerated / fresh soymilks (in gable-top cartons): Trader Joe's non-organic low fat original or vanilla $2.99/half gallon. Trader Joe's organic low fat original or vanilla $3.29/half gallon. Trader Joe's organic unsweetened $3.49/half gallon.

Non-soy non-dairy beverages–Pacific Foods almond original or vanilla $1.69/quart. Blue Diamond Almond Breeze chocolate or vanilla $1.99/quart.

Soy Dream [rice beverage] vanilla or original $1.69/quart. Soy Dream enriched [rice beverage] vanilla or original $2.49/half gallon.

8425. *SoyaScan Notes.* 2006. Soymilk, non-dairy beverages, and cow's milk prices at The Natural Grocery Co., Berkeley, California (Overview). Dec. 14. Compiled by William Shurtleff of Soyfoods Center.

• ***Summary:*** Since Dec. 1983, approximately every other year, Soyfoods Center has conducted a survey of the prices of soymilk and cow's milk in California. Cindy La reports the following retail prices. (Note: oz = fluid ounces; 32 fl oz = 1 quart; 33.8 fl oz = 1 liter. 2 quarts = one half gallon). All soymilk products at Berkeley Natural Grocery Co. are now organic or largely organic = Org. MOS = Made with organic soybeans. NON ORG = Non Organic.

Shelf-stable / Aseptic soymilks: Westsoy Light and Plus all flavors (MOS) $2.39/quart. Westsoy Nonfat (MOS) $1.99/quart. Westsoy original creamy (95% Org) $2.29/quart or $1.79 on special. Westsoy shakes (MOS) $2.49/quart.

Edensoy Original (95% Org) $2.79/liter. Edensoy Enriched (95% Org) $2.89/liter. Eden Blend Rice & Soy (95% Org) $2.65/liter. Edensoy Dream 3-pack (75-95% Org)

$2.89/3 x 8 oz.

Vitasoy Original (75-95% Org) $2.65/quart or $2.09 on special. Vitasoy Light (75-95% Org) $2.65/quart or $2.09 on special. Vitasoy Enriched (75-95% Org) $2.65/quart or $2.09 on special. Vitasoy Holiday Drinks (95% Org) $2.99/quart or $2.19 on special.

Soy Dream Regular or Enriched (Hain) (75-95% Org) $2.65/quart. Soy Dream 3-pack (75-95% Org) $3.09/3 x 8 oz. Pacific Foods (95% Org) $2.89. Kikkoman Pearl (75-95% Org) $2.59. White Wave Silk (95% Org) $2.49. Silk 3-pack (75-95% Org) $3.39/3 x 8 oz.

Refrigerated / Fresh soymilks (in gable-top cartons): Wildwood (95% Org) $2.39/quart or $3.99/half gallon. White Wave Silk Plain (95% Org) $1.99/quart or $3.69/half gallon. White Wave Silk Vanilla (75-95% Org) $3.69/half gallon. Soy Dream Enriched (75-95% Org) $3.89/half gallon.

Rice drinks: Rice Dream (75-95% Org) $2.59/quart. Lundberg (75-95% Org) $2.69/quart. Pacific Foods (75-95% Org) $2.19/quart.

Refrigerated cow's milk. Clover Stornetta $1.29/quart. or $2.19/half gallon or $3.99/gallon. Clover Stornetta 100% Organic $1.99/quart. or $3.49/half gallon or $6.39/gallon. Straus 100% Organic in glass bottle $2.49/quart or $3.99/half gallon. Claravale Raw Milk non-organic $3.99/quart. Organic Valley 100% Organic $1.99/quart or $3.99/half gallon. Meyenber Goat Milk non-organic $3.49/quart. Lactaid Milk non-organic $2.19//quart.

8426. *SoyaScan Notes.* 2006. Soymilk and cow's milk prices at Safeway supermarket in Lafayette, California (Overview). Dec. 30. Compiled by William Shurtleff of Soyfoods Center.
• ***Summary:*** Since Dec. 1983, approximately every other year, Soyfoods Center has conducted a survey of the prices of soymilk and cow's milk in California.

Soymilk: Silk organic vanilla or plain: $2.98/quart. Silk non-organic lite chocolate, lite plain, or lite vanilla (lite means diluted with water): $4.49/half gallon–or 2 for $7. Silk non-organic calcium fortified plain, vanilla, or unsweetened: $4.49/half gallon–or 2 for $7. Silk "made with organic soybeans" Very Vanilla or chocolate: $4.49/half gallon–or 2 for $7.

Safeway O Organics soymilk: Chocolate, vanilla, or plain: $4.49/half gallon–or 2 for $6.

Safeway: Cow's milk (fortified with vitamins A and D) sells for the following prices at the Safeway supermarket in Lafayette, California: (1) Fat free: $1.49/quart or $1.99/half gallon or $3.79/gallon; (2) Low fat (1% fat, protein fortified): $1.49/quart or $1.99/half gallon or $3.49/gallon; (3) Reduced fat (2% fat, protein fortified): $1.49/quart or $1.99/half gallon or $3.49/gallon; (4) Whole (homogenized, fortified with vitamin D only): $1.49/quart or $1.99/half gallon or $3.49/gallon. (5) Acidophilus Plus Bifidus–Low Fat (1% fat): $2.69/half gallon. (6) Horizon Organic. (7) Lactaid: $3.99/half gallon. Lucerne 100% lactose free, fat free $3.69/gallon. (9) Safeway O Organics Fat free, low fat or reduced fat: $4.19/half gallon or $5.99 per gallon. The best-seller among these is Fat free in gallons.

8427. Hoie, Lars H.; Sjohlm, A.; Gulstrand, M.; Zumft, H-J. et al. 2006. Ultra heat treatment destroys cholesterol-lowering effect of soy protein. *International J. of Food Sciences and Nutrition* 57(7-8):512-19. Nov/Dec. *
• ***Summary:*** This randomised, placebo-controlled, double-blind study, with the lead researcher being from Norway's NutriPharma, in cooperation with researchers from the Karolinska Institute in Stockholm, reports that consumption of UHT soymilk led to increases in LDL (bad) cholesterol levels of up to 20%. Address: 1. NutriPharma, Norway.

8428. McKee, David. 2006. Focus on Israel: Surge in imported wheat from Black Sea region in recent years has made life complicated for Israeli bakers. *World Grain* 24(12):18, 20, 21-22. Dec.
• ***Summary:*** Imports of soybeans to Israel in recent years are as follows (in 1,000 tonnes = metric tons): 600 in 2000-01. 735 in 2001-02. 500 in 2002-03. 494 in 2003-04. 543 in 2004-05. 450 in 2005-06. And 600 in 2006-07 (estimate).

The oilseed crushing industry also depends on imports. Of the estimated 650,000 tonnes of soybeans to be imported in 2006, less than 25% of these will come from the USA, despite a 90% share as late as 2002. Imports of soybean meal, which come mainly from Argentina, have doubled to over 200,000 tonnes over the past few years. Israel has three soybean crushers: Solbar Industries, Shemen Industries, and Teth-Beth; their combined yearly crush is about 660,000 tonnes.

Solbar industries has focused heavily on producing value-added products such as soy proteins, soy isoflavones, and soy flour. Solbar now exports 90% of its soy food products and has global market share for about 5% certain soy food categories. Israel has proven to be a good place to develop these food products. "Over 50% of the population is said to regularly consume soy-based foods including meat substitutes and soy milk." Address: Grain industry consultant; davidmckee59@msn.com.

8429. **Product Name:** Soyabella (Non-dairy Carob [like Chocolate] Bar).
Foreign Name: MolenAartje Soyabella.
Manufacturer's Name: Natudis B.V.
Manufacturer's Address: P.O. Box 376, 3840 AJ Harderwijk, Netherlands.
Date of Introduction: 2006.
Ingredients: -
Wt/Vol., Packaging, Price: 100 gm.
How Stored: Refrigerated.
New Product–Documentation: Label sent to Soyinfo Center by Chico Leroux of Lyon, France. 2012. Feb. 8. Red,

brown, light blue and black on yellow. "Natural. No milk added."

8430. Basu, Debashis; Kulirani, B. Francis; Datta-Ray, B. 2006. Agriculture, food security, nutrition and health in North-East India. New Delhi, India: Mittal Publications. xxvi + 422 p. See p. 299-300. 23 cm.
• ***Summary:*** Chapter 28 (p. 295-307) is titled "Opportunities for processing and utilization of soybean to increase nutritional security in north-east India, by R.K.P. Singh and K.K. Satapathy. Contents: Introduction. Nutritional profile of soybean. Soybean cultivation in north-east India. Present status of soybean utilization in north-east. Technologies for the soybean utilization as food uses: Soy milk, soy paneer (tofu), full fat soy flour, soy fortified biscuits. By-product utilization of soybean: Okara, soya pulp. Conclusion.

In India, the area under soybean cultivation has increased from about 32,000 ha in 1970-71 to about 6.00 million ha today. During this same time period, soybean production has risen from about 140,000 tonnes to approximately 6,000,000 tonnes, and soybean yield has increased from 438 kg/ha to about 1,000 kg/ha.

Madhya Pradesh is by far India's leading soybean producing state, accounting for 72-80% of total production, followed by Maharashtra, Rajasthan, and Uttar Pradesh.

In India's seven north-eastern states, although soybean area and production are very low, soybean yields are higher than the average for all of India–especially in Arunachal Pradesh, Mizoram and Sikkim. This shows that expansion of soybean production has promise in these states.

In the late 1960s and 1970s, soybean was introduced into India primarily as a source of food protein, but this goal has not been met. Today soybean is used primarily as a source of oil for domestic use and protein for export.

In the north-eastern states, however, soybean is used mainly as a pulse crop and as a source of indigenous fermented foods, such as *tungrymbai* (in Meghalaya; it is consumed mainly in the form of chutney along with rice and vegetable curry) and *kinema* (in Sikkim, eaten with boiled rice). Other soybean food products eaten in north-east India are *hawaijar* (Manipur), *bekang-um* (Mizoram), and *akhoni* [*aakhone, akhuni*] (Nagaland), etc.

These soybean foods are all prepared in approximately the same way. Rinse the soybeans then soak overnight in water. Drain, then cook in excess water in an open vessel until each soybean is soft enough to be crushed when pressed between the thumb and one finger. Wrap the warm soybeans in a lamet leaf, place in a bamboo basket, and set the basket above an earthen oven in the kitchen. Leave the soybeans to ferment for 2-3 days until the resulting product shows long, stringy threads when beans are pulled apart, has a sticky texture and the typical strong flavor. To make *tungrymbai* (for example), add green chili, garlic, sesamum / sesame, ginger and salt, then cook in mustard-seed oil for 15-20 minutes.

In May 1984 the Soybean Processing and Utilization Center was established at Central Institute of Agricultural Engineering, at Bhopal. After steady efforts for the past 17 years, the Center has developed equipment and processes for preparing homemade soymilk, soypaneer (tofu), full fat soy flour, soy fortified biscuits, soy dal, etc. (p. 300-01). A detailed discussion each of these products is then given, including its cultural background in Asia, how to make it at home, its nutritional benefits, and ways of adding it to one's daily meals (p. 301-06). A similar discussion is given for the by-products okara and soya pulp.

On page 307 are 4 interesting references.

8431. Chia, Chew-Ling. 2006. The influence of radiation encountered on Mars missions on the yield and quality of soymilk and tofu from bulk soybeans. Thesis (M.S.), Iowa State University. 131 leaves. Illust. 29 cm. *
Address: Iowa State Univ., Ames, Iowa.

8432. Chiarello, Marileusa D.; Guerroue, J.L.; Chagas, C.M.S.; Franco, O.L.; Bianchini, E.; Joao, M.J. 2006. Influence of heat treatment and grain germination on the isoflavone profile of soy milk. *J. of Food Biochemistry* 30:234-47. [34 ref]
• ***Summary:*** Twelve forms of isoflavones have been identified in soybeans and soyfood products. "Heat treatment by autoclaving for 5 minutes did not affect the total isoflavones content, but led to a 90% decrease in malonyl forms, whereas Beta-glycosides increased by 70%... Germination for three days did not change the total isoflavone content, but changed the distribution profile (15% increase in malonyl forms and 30% decrease in Beta-glycosides). Germination for 7 days increased the bioavailability of aglycone isoflavones in soy milk by seven times." Address: Laboratorio de Ciencia e Tecnologia de Alimentos, Universidade Catolica de Brasilia, 70790-160, Brasilia, DF, Brazil.

8433. Davidson, Alan; Jaine, Tom. 2006. The Oxford companion to food. New York, NY and Oxford, England: Oxford University Press. xxviii + 907 p. Illust. by Soun Vannithone. Index. 29 cm. [1500+* ref]
• ***Summary:*** The first edition of this remarkable book (1999) is already a "classic." "Alan Davidson famously wrote eighty percent of the first edition, which was praised for its wit as well as its wisdom. Tom Jaine, editor of the second edition, worked closely with Jane Davidson and Helen Saberi to ensure that new contributions continue in the same style... The text has been updated where necessary" and there are many new entries. The front matter, which is 10 pages longer, begins with "Alan Davidson: A tribute" (p. vii; he died in 2003) followed by a "Preface to the Second edition" by Tom Jaine. Entries in the 1st edition are generally on a

different page in this edition. Tofu, for example, formerly on pages 798-99, is now on pages 801-02; however the information is the same. The marvelous illustrations in both editions are by the same artist. The last page of this edition is page 907 compared with page 902 in the 1st edition. Address: World's End, Chelsea, London, England.

8434. Debruyne, Ignace. 2006. Soy base extract: Soymilk and dairy alternatives. In: Mian A. Riaz, ed. 2006. Soy Applications in Food. Boca Raton, Florida, London, New York: CRC Press (Taylor & Francis Group). [x] + 288 p. See p. 111-33. [15 ref]

• ***Summary:*** Contents: Introduction. Dry and semidry processing. Soy base extraction process: Flavor characterization of soy dairy products, off-flavor development and how to control it, soybean selection, soybean preparation, soybean dehulling, soybean soaking and blanching, soybean wet grinding, flash deodorization, okara and soy base separation, okara washing, cooling, storage and production of dairy alternatives, okara byproduct valorization, yield calculation, soy base extraction equipment suppliers, stabilization and packaging. Reconstituted soymilk. Soy dairy alternatives.

Photos show: (1) A Buhler Ultramill. (2) A ProSoya VS200C.

Figures: (1) Critical sensory attributes of soymilk. (2) Causes of sensory characteristics. (3) A full soy base extraction process. (4) A soy base decanter. (5) Mass balance for the ProSoya VS 1000 soymilk plant. (6) Temperature profile for stabilization process.

Tables: (1) Solids and proteins on wet basis (averaged data). (2) Soy solids and protein yield calculations in soymilk production. Address: Ignace Debruyne & Associates, Izegem, Belgium.

8435. Fromartz, Samuel. 2006. Organic, Inc.: Natural foods and how they grew. New York, NY: Harcourt, Inc. xx + 294 p. No illust. No index. 24 cm. [270 ref]

• ***Summary:*** Contents: Introduction (the case of Arthur Harvey, a small organic blueberry farmer from Maine). 1. Humus worshippers: The origins of organic food. 2. The organic method: Strawberries in two versions. 3. A Local initiative: From farm to market. 4. A spring mix: Growing organic salad. 5. Mythic manufacturing: Health, spirituality, and breakfast (very interesting, largely about Steve Demos, White Wave Silk soymilk and Dean Foods / Suiza, plus Sylvester Graham, Dr. James Caleb Jackson, Dr. John Harvey Kellogg and his brother Will K. Kellogg, Jeremiah Ridenour, Ted Nordquist, *The Book of Tofu* by Shurtleff and Aoyagi, *Diet for a Small Planet* by Frances Moore Lappe). 6. Backlash: The meaning of organic. 7. Consuming organic: Why we buy. Acknowledgments. Notes.

A history (sort of) of the organic food industry in the United States, and how the movement has gone from fringe, to commercial, to mainstream. This is a niche or underdog food culture involving many issues of morality– the relationship of humans to agriculture and nature, and specifically how a principled person or business can thrive in the modern world without compromising ideals.

The author, a business writer, says in the introduction: "I was particularly interested in the people who sought to manifest their values in business... The intersection of idealism and business was not an easy place to stand, since one usually trumped the other."

"Sales of organic food had shot up about 20% per year since 1990, reaching $11 billion by 2003." This industry, which has its roots in utopian ideologies, will surely have an interesting future.

A great deal of the book is devoted to the recent history, and the early history of the organic food industry in the United States is (unfortunately) extremely weak. The book is hurt first by the lack of an index, second by the lack of endnote reference numbers in the text (the 254 endnotes themselves are excellent), and third by the lack of complete references to key books cited in the endnotes (he gives the author and title, but no year of publication or publisher; so one who wishes to cite these books must take the time to look up the missing information). Address: Business writer, Washington, DC.

8436. Golbitz, Peter; Jordan, Joe. 2006. Soyfoods: Market and products. In: Mian A. Riaz, ed. 2006. Soy Applications in Food. Boca Raton, Florida, London, New York: CRC Press (Taylor & Francis Group). [x] + 288 p. See p. 1-21.

• ***Summary:*** Contents: History of soyfoods: Growth and development in the Western world, soybean industry blossoms in the United States, soybeans grow around the world. Soybean production and utilization for food: Soyfoods in Asia, soyfoods in Europe, soyfoods in Africa, soyfoods in the United States: Development of the U.S. soyfoods industry, Americanization of soyfoods. Soybean nutritional components: Soy protein, soy oil, carbohydrates and fiber, vitamins and minerals, isoflavones. Soyfoods and protein ingredients: Whole dry soybeans, tofu, soymilk, tempeh, soymilk yogurt, miso, soy sauce, okara, natto, soynuts, meat alternatives, cheese alternatives, nondairy frozen desserts, green vegetable soybeans (edamame), soy sprouts, full-fat soy flour, defatted soy flour, textured soy flour, soy protein concentrate, soy protein isolate. Conclusions.

Tables: (1) World soybean production by major producers. (2) Annual per capita consumption (2001) of soybeans for direct food. (3) U.S. soyfoods market (1996 to 2005).

This chapter suffers from a lack of references, and contains several basic errors concerning the early history of the soybean. Contrary to what Mr. Golbitz says: (1) The Chinese have not considered the soybean a basic source of nutrition for almost 5000 years (see Hymowitz 1970, "On

the domestication of the soybean"). For "a little more than 3000 years" would be much more accurate. (2) The first reference to soybeans in Chinese literature does not date back to 2853 B.C. (see Hymowitz 1970, and Hymowitz and Shurtleff 2005, "Debunking soybean myths and legends in the historical and popular literature"). It dates back to about 1100 B.C. (3) Natto was not developed at least 3000 years ago in Japan (the earliest known document that mentions natto dates from 1450 CE–or about 560 years ago). Address: Soyatech, Inc., Bar Harbor, Maine.

8437. Lund, JoAnna M. 2006. Cooking healthy with soy. New York, NY: Penguin Group. 369 p. *
• ***Summary:*** A strange book. Tofu, for example, is not mentioned, while most of the recipes call for specific brands, such as "4 Boca Meatless Original Chik'n Patties," or "Tofutti Sour Supreme," or "Silk Light Plain Soymilk," or "Boca Meatless Ground Burger." Makes you wonder if these companies paid the author or publisher for this "free" advertising.

8438. Moskowitz, Isa Chandra; Romero, Terry Hope. 2006. Vegan cupcakes take over the world: 75 dairy-free recipes for cupcakes that rule. Cambridge, Massachusetts: Da Capo Press (A member of Perseus Books Group). Distributed by Publishers Group West. viii + 168 p. Foreword by Sara of Tegan & Sara. Illust. (color). 18 x 17 cm.
• ***Summary:*** Both authors are young women; their photo together is on the inside rear cover. A cupcake is composed of the cake plus the topping. "Plain old soymilk plays a big role in these cupcakes, providing the main source of liquid." "We adore soy yogurt in baking and it helps make some really light, fluffy and moist cupcakes. Rice yogurt will pretty much do the same thing" (p. 11). These cupcakes contain no milk, no eggs, no butter, no honey, etc.–But also no tofu. Soy milk powder appears on page 68.

Contents: Part I: Introduction: How to make kick-ass cupcakes, ingredients, tools for taking over the world, troubleshooting: when bad things happen to good cupcakes, decorating your cupcakes.

Part II: The recipes. Basic cupcakes. Classic cupcakes. Fancy cupcakes. Frostin's and fillin's.

About the authors (provided by the publisher): "Isa Chandra Moskowitz has been cooking up trouble in New York City since the eighties, when she discovered punk rock and vegetarianism. Her public access cooking show, the Post Punk Kitchen, filmed in her small Brooklyn apartment, has been a smash hit since it hit the airwaves in 2003. She has been inspiring fans of vegan food and loud music ever since. The Post Punk Kitchen won *VegNews'* Veggies award for Best Cooking DVD and has been featured in media from *Bust to Herbivore* to Gothamist.com. Isa also hosts cooking demonstrations and can be found online at www.theppk.com.

Note: If they had used tofu as an ingredient, they could have omitted some or all of the baking powder and baking soda. Address: Brooklyn, New York.

8439. Null, Gary. 2006. Gary Null's power foods: the 15 best foods for your health. New York, NY: New American Library. 327 p. Plus 8 unnumbered pages of color plates. Illust. No index. 24 cm.
• ***Summary:*** A vegan cookbook. Gary has eaten a vegan diet for more than 30 years. He owns a juice bar named Gary Null's Uptown Whole Foods in New York City. He advocates eating soybeans and soy products; because of their "extensive and well researched health benefits" and because they come in such a wide variety of forms, from "tofu and tempeh, to nondairy products like milks, cottage cheese, cheese, yogurt and ice creams. No other legume can be used in so many delicious ways" (p. 10, 24-25). One of his 15 "power foods" is soy (p. 13). He likes juicing and raw foods; in the chapter on beverages he sometimes adds 1-2 tablespoons soy protein powder, or a cup or so of soymilk or rice milk, or soy yogurt. For dips, he likes silken tofu. The chapter on "Entrees" (p. 240-88) includes 13 recipes that call for tofu, and 8 that call for tempeh. Edamame, whole soybeans, tamari, and soy cheese are included. His daughter, Shelly Null, is a gourmet chef. The book has no index. Address: Author of more than 70 books, New York City.

8440. **Product Name:** Soy Smart [Chai, Vanilla, or Chocolate].
Manufacturer's Name: Odwalla, Inc.
Manufacturer's Address: Dinuba, CA 93618. Phone: 1-800-odwalla.
Date of Introduction: 2006. January.
Ingredients: Chai: Organic soymilk (water and organic soybeans), pure filtered water, banana purée, organic evaporated cane juice, soy lecithin, tricalcium phosphate, vanilla extract, natural flavors, green tea extract, DHA algal oil, sea salt.
Wt/Vol., Packaging, Price: 450 ml (15.2 fl oz) HDPE plastic bottle.
How Stored: Refrigerated.
New Product–Documentation: The Soy Daily. 2007. May 17. "Quick–Who is Ken Jennings?" Odwalla's latest beverage line is Soy Smart, a nourishing soymilk drink brimming with nutrients. Product with Label purchased for $3.99 at Safeway supermarket in Lafayette, California. 2007. June 26. Self adhesive label in many colors: purple, green and yellow on white. Illustration of the head of a man with an arrow pointing toward his green brain. "Nutritional. Soymilk drink. A good source of protein. 32 mg of Omega-3 DHA an important component of the brain." Label copyright 2006. On the back panel is text and little illustrations. On one side panel: Nutrition mission. Every day better. Soyfoods Center taste test: This is thick, rich, rather sweet soymilk. Not nearly as tasty as Odwalla's chai in 1999 (before

Odwalla was purchased by Coca-Cola Co.) and much, much too expensive.

8441. Oseland, James. 2006. Cradle of flavor: home cooking from the spice islands of Indonesia, Malaysia, and Singapore. New York and London: W.W. Norton & Co. 384 p. + 16 unnumbered pages of plates. Illust. (some color). Maps. Index. 26 x 21 cm. [41 ref]
• ***Summary:*** Lavishly praised. "James Beard Foundation Book Award Winner: Asian Cooking."

In Chapter 3, "At the market, ingredients" (which has many fine color photos) is a long, interesting entry for "Indonesian sweet soy sauce (*kecap manis,* p. 72). "Sweet soy sauce is hugely popular in the cooking of Indonesia and, to a lesser extent, Malaysia and Singapore. (The word *kecap,* by the way, is derived from the Cantonese *koe-chiap,* or 'sauce,' from which we get the word *ketchup.* It was probably handed over by traders from southern China who long ago traveled extensively to the Indonesian islands.)" Its main use is as a table condiment or dipping sauce, although cooks also use it in marinades and to flavor stews. When Indonesian sweet soy sauce is mixed with sliced red chiles and lime juice, it becomes the widely used *sos kecap rawit.* In the U.S., the two most widely available brands, both imported from Indonesia, are Cap Bango (which the author prefers) and ABC.

There are also entries for "Soy sauce (*kecap,* p. 87. Of the two types, the first is called simply soy sauce, whereas the second "is double-black soy sauce, which has been aged longer and mixed with a small quantity of molasses." It has a more robust flavor than regular soy sauce). Sweet soybean paste (*tauco* or *taucheo,* p. 88-89, a Hokkien word. A "thick, golden brown, misolike condiment made of fermented soybeans, rice flour, sugar, and salt). Tempeh (p. 90-91, "one of Indonesia's great gifts to the culinary world"). Tofu (*tahu,* p. 91-92).

Chapter 13 (p. 318-35), titled: "Tempeh, tofu, eggs," has a long and very interesting introduction about the author's visit to Rahmat, a traditional tempeh maker and his shop in Yogyakarta, Java; he wanted to learn how tempeh is made. Recipes: Garlic-marinated tempeh (*Tempe goreng, Indonesia*). Tempeh sambal with lemon basil (*Sambal tempe, Bali, Indonesia*). Caramelized tempeh with chiles (*Tempe kering, Central Java, Indonesia*). Tofu and summer vegetables in coconut milk (*Sayur lodeh, Malaysia*). Twice cooked tofu with coriander (*Tahu goreng bacem, Central Java, Indonesia*).

Tempeh, tofu, soy sauce, and sweet soy sauce are also discussed in many places throughout the book. Address: Executive editor of *Saveur,* New York City.

8442. Paulson, Paul V.; Welsby, David; Huang, Xiaolin L. 2006. Ready-to-drink soy protein nutritional beverages. In: Mian A. Riaz, ed. 2006. Soy Applications in Food. Boca Raton, Florida, London, New York: CRC Press (Taylor & Francis Group). [x] + 288 p. See p. 199-226. [45 ref]
• ***Summary:*** Contents: Introduction: Markets for soy protein nutritional beverages, nutritional and functional demands, soy protein health benefits, categories of ready-to-drink soy protein nutritional beverages. Soy proteins: Soy protein classification, soy protein product manufacture and chemical composition (soy flour, soy protein concentrates, soy protein isolates), physical properties and functionality. Key factors for beverage quality: Dispersion and hydration of dry protein products, factors affecting hydration, recommended temperatures. Formulation and selection of ingredients: Protein attributes, effect of sugars on browning, hydrocolloid stabilizers, emulsifiers, selection of a buffering system, flavoring, colorants, fat sources. Processing: Beverage makeup, thermal treatment, handling (foaming). Beverage applications for soy protein: Ready-to-drink neutral pH (beverages containing dairy proteins, all-soy-protein nutritional beverages, high-fat beverages), ready-to-drink acid (stabilization, protein selection criteria, flavors and colors, thermal treatments, formulation). Parting comments.

Revenues from soymilk sales in the United States today are over $600 million, and soymilk products are sold in a wide variety of retail outlets.

Tables: (1) Human requirements for essential amino acids. (2) Composition of some commercial products derived from soybeans. (3) Relationships between physical properties of proteins and beverage attributes. (4) Examples of heat process conditions for beverages. (5) Formulas for ready-to-drink neutral beverages. (6) Formula for acidic beverage.

Figures: (1) Soybean processing pathways. (2) Nitrogen solubility index (%) of various soy protein isolates. (3) Physiochemical properties of protein hydration. (4) Maillard reaction of milk proteins or isolated soy proteins with fructose. (5) Process flow for typical RTD beverage. (6) pH/solubility curve for the main soy proteins. Address: The Solae Company LLC, St. Louis, Missouri.

8443. Planck, Nina. 2006. Real food: What to eat and why. New York and London: Bloomsbury Publishing. [viii] + 343 p. Index. 22 cm. [30+ ref]
• ***Summary:*** This book is carefully researched and very well, thoughtfully and fairly written; the author has written for *Time* magazine and comes with very good credentials for this book. Born in 1971 in Buffalo, New York. "She was a speechwriter to the U.S. ambassador to Britain when she opened the first farmers' market in London on June 6, 1999. Six months later she quit her job to open ten more markets, write *The Farmers' Market Cookbook,* and host a British television series on local food. In 2003 Nina created the Mount Pleasant Local Food Market in Washington, D.C. In New York City she ran Greenmarket, the largest network of farmers' markets in the United States. Nina's new company, Real Food, runs markets for farmers and purveyors of

regional and traditional foods" ("About the author," p. 344).

The author advocates the following: (1) Eat real, traditional foods rather than more modern "industrial foods." These real foods include plenty of meat, fish, poultry, eggs, and dairy products made from whole raw (unpasteurized) milk from cows grazed outdoors on grass (rather than corn and soybeans, which cows were not designed to eat by nature) without synthetic hormones–plus real, organically grown fruits, vegetables, whole grains and legumes (including traditional soy foods), real salt, and dark chocolate.

(2) Eat real fats–including butter, beef fat, coconut oil, lard, and extra-virgin olive oil, including saturated fats and cholesterol. Avoid industrial fats–such as margarine, polyunsaturated vegetable oils (including soybean, corn, and sunflower oil), and shortening. (3) Go beyond and disregard the cholesterol myth; the evidence supporting it is weak. (4) Stop eating a vegetarian diet, and especially a vegan diet (which no traditional society has ever practiced).

To start with the section on soy foods: In the Chapter 8, titled "Other real foods," the section on soy foods is titled "Traditional and industrial soy are different" (p. 225-34). Traditional soy foods are those that have a long history in the diet, and are still made in pretty much the way they used to be. Her information on the early history of the soybean and soy foods (p. 225-26) contains many errors, as well as some interesting observations. Some of the earliest soyfoods were fermented (starting with fermented black soybeans and jiang in China). She lists five health benefits of fermentation. Fermentation (along with cooking) helps to reduce the phytic acid in soybeans. Soy foods do not contain reliable vitamin B-12. The author states several times that soy protein is not complete protein. Most nutritionists for the past 50 years have correctly avoided this "is" vs. "is not" labeling and instead have listed all foods along a continuum from high quality to low quality. By the latest measures of protein quality, soy protein (by itself, without supplementation by cereal grains) has about the same quality as beef, but lower than that of eggs or milk. While noting that about 85% of all soybeans are genetically engineered, she fails to mention that most traditional soyfoods in the USA are made from organic, non-GE soybeans. She discusses the important part that soy plays in the Okinawan diet, where the people have the highest longevity in the world. Yet soy "should be viewed as part of a diverse diet, not as a nutritional silver bullet." We heartily agree. She lists the many traditional soyfoods (p. 231-32), made in basically the traditional way, including: Bean sauce (jiang), miso, natto, soy milk (non-industrial), soy sauce. sufu (fermented tofu, incl. Filipino tahuri), tofuyo (fermented tofu from Okinawa), tamari (liquid left after miso is made), tempeh, tofu, and edamame. She recommends that we avoid modern soy protein products made from defatted soybean meal (typically extracted with hexane solvent), including soy protein isolate, "industrial soy milk," soy based infant formula, and soy sauce which uses defatted soybean meal instead of whole soybeans. But what would she do with all the oil left over after using whole soybeans?

Concerning a diet rich in fish, meat, and poultry. She partly ignores the ethical issues involved in killing billions of those animals each year and the environmental issues involved in raising them. These are both huge issues. Several complex issues that she addresses head-on and in a fair, interesting way: (1) Is milk good for humans (p. 39-86).

One of the basic hopes / agendas behind this book is that people will start to leave cities, buy a piece of land (as the author's own family did when she was age 2), grow their own food and raise their own animals for milk, meat, and eggs. There is a steadily growing number of books advocating this traditional way of life.

The Glossary (p. 306-15) contains many good definitions that most people will be able to understand. The bibliography (p. 316-21) is substantial, and there are also endnotes (p. 290-303) but the book would be better if more of its controversial or historical statements cited authoritative sources. Address: USA.

8444. Prabhakaran, Molamma P.; Perera, Conrad O. 2006. Effect of extraction methods and UHT treatment conditions on the level of isoflavones during soymilk manufacture. *Food Chemistry* 99:231-37. [24 ref]

• ***Summary:*** Found "that hot grinding caused an improvement in the extraction of isoflavones into the soymilk compared to cold grinding." There "was no apparent difference in the loss of isoflavones due to direct UHT heating compared to indirect UHT heating. A significant percentage of the isoflavones end up in the okara–so it should be used in human food products." Address: Food Science and Technology Programme, Dep. of Chemistry, National Univ. of Singapore, Science Drive 4, Singapore 117543, Singapore.

8445. Riaz, Mian A. ed. 2006. Soy applications in food. Boca Raton, Florida: CRC Press; London: Taylor & Francis Group [distributor]. [x] + 288 p. Illust. Index. 25 cm. First printed in 2005. [295 ref]

• ***Summary:*** Contains 14 chapters by various authors; each is cited separately. Contents: 1. Soyfoods: Market and products, by Peter Golbitz and Joe Jordan. 2. Overview of health effects of soyfoods, by Mark Messina. 3. Processing of soybeans into ingredients, by Mian N. Riaz. 4. Soy ingredients in baking, by M. Hikmet Boyacioglu. 5. Developing and producing protein-enhanced snacks and cereals, by Brad Strahm.

6. Soy in pasta and noodles, by Wesley Twombly and Frank A. Manthey. 7. Soy base extract: Soymilk and dairy alternatives, by Ignace Debruyne. 8. Meat alternatives, by Brad Strahm. 9. Textured soy protein utilization in meat analog products, by M.W. Orcutt, M.K. McMindes, H. Chu,

I.N. Mueller, B. Bater, and A.L. Orcutt. 10. Food bars, by Steven A. Taillie.

11. Ready-to-drink soy protein nutritional beverages, by Paul V. Paulsen, David Welsby, and Xiaolin L. Huang. 12. Soy Product off-flavor generating, masking, and flavor creating, by Rongrong Li. 13. Selecting soybeans for food application, by Lynn Clarksons. 14. World Initiative for Soy in Human Health [WISHH], by Jim Hershey. Address: PhD, Head, Extrusion Technology Program, Food Protein Research and Development Center, Texas A&M Univ., College Station, Texas.

8446. Rozman, Karl K.; Bhatia, J.; Calafat, A.M.; et al. 2006. NTP-CERHR Expert Panel report on the reproductive and developmental toxicity of soy formula. *Birth Defects Research* (*Part B*) 77:280-397. [234 ref]

• ***Summary:*** Preface: In June 1998 the National Toxicology Program (NTP) and the National Institute of Environmental Health Sciences (NIEHS) established the NTP Center for the Evaluation of Risks to Human Reproduction (CERHR).

"This report is a product of the expert panel and is intended to (1) interpret the strength of scientific evidence that soy formula is a reproductive or developmental toxicant based on data from in vitro, animal, or human studies, (2) assess the extent of human exposures to include the general public, occupational groups, and other sub-populations, (3) provide objective and scientifically thorough assessments of the scientific evidence that adverse reproductive/developmental health effects may be associated with such exposures, and (4) identify knowledge gaps to help establish research and testing priorities to reduce uncertainties and increase confidence in future evaluations."

Overall conclusions (p. 391): "There are insufficient human or experimental animal data available to permit determination of developmental or reproductive toxicity of soy infant formula."

Note: After the panel finishes its review, the report has to be approved by the board of advisors to the NTP, which is a formal process completely different from the actual scientific review conducted by the independent scientists on behalf of the NTP. That formal adoption never occurred for this report. Address: 1. Dep. of Pharmacology and Toxicology, Univ. of Kansas Medical Center, Kansas City, KS.

8447. Schwarz, Richard W. 2006. John Harvey Kellogg, M.D.: Pioneering health reformer. Hagerstown, Maryland: Review & Herald Publishing. 240 p. Illust. Index. 24 cm. *

• ***Summary:*** This is a new revised and updated edition of the original classic 1970 edition. Address: Andrews Univ., Berrien Springs, Michigan.

8448. Sugano, Michihiro. 2006. Nutritional implications of soy. In: Michihiro Sugano, ed. 2006. Soy in Health and Disease Prevention. Boca Raton, Florida: Taylor & Francis. [xii] + 313 p. See p. 1-16. [10 ref]

• ***Summary:*** Contents: Introduction. Structure of soybean. Components of soybean: Proteins, oil, carbohydrates, minerals, vitamins. Composition of soy products. Nutritional aspects of soy products: Protein, peptide, oil, oligosaccharide, vitamins, other components. From "A Meat in the Field" to "A Treasure Box of Functionality."

Tables: (1) Major soybean components and their health effects. Two columns: Components and functions. (2) Nutrient contents of dried soybean (incl. minerals and vitamins). (3) Nutrient contents of soybean products (gm per 100 gm): Kinako (parched soybean flour, full-fat). Tofu (bean curd). Abura-age (fried bean curd). Kori-tofu (frozen bean curd). Natto (fermented soybean). Okara (Tofu refuse). Tonyu (soymilk). Yuba (Soymilk skin). Tempe. Miso (bean paste). Shoyu (soy sauce). Soy protein isolate. (4) Mineral contents of soybean products (sodium, potassium, calcium, magnesium, phosphorus, iron, zinc, copper, manganese; same products as in Table 3). (5) Vitamin contents of soybean products (retinol, carotene, D, E, K, B-1, B-2, niacin, B-6, B-12, folic, pantothenic, C; same products as in Table 3). (6) Amino acid and protein composition of Japanese soybean products. (7) Proposed patterns for essential amino acid requirements and composition of soybean proteins (soy protein concentrates and isolates). (8) Fatty acid composition of soybean oils (% of total fatty acids) (Products: Refined soybean oil, genetically modified oils, low linolenic, high oleic, low palmitic, low saturated fatty acid, high palmitic, high stearic).

Figures: (1) Pie chart of intake of soybean and its products in Japan (gm per day of tofu {38.2 gm}, fried tofu {7.9 gm}, natto {6.9 gm}, whole soybeans {2.0 gm}, other {2.3 gm}; Total 57.3 gm per day). (2) Bar chart: Amino acid score of dietary proteins in humans (casein 1.0, egg white 1.0, soy protein concentrate 9.9, soy protein isolate 9.5, beef 9.5). (3) Graph and bar chart: Soybean protein lowers liver delta-6 desaturase activity and liver phospholipid delta-6 desaturation index in rats–relative to casein. Address: Director, Fuji Foundation for Protein Research, Japan; Prof. Emeritus Kyushu Univer. and President, Prefectural Univ. of Kumamoto, Japan.

8449. **Product Name:** Silk Creamer (Plain Non-Dairy, Liquid).
Manufacturer's Name: WhiteWave Foods Co. (Marketer-Distributor).
Manufacturer's Address: Broomfield, CO 80021.
Date of Introduction: 2006. January.
Ingredients: Organic soymilk (filtered water, organic whole soybeans), palm oil, maltodextrin (from corn), organic evaporated cane juice, soy lecithin, potassium phosphate, sodium citrate, tapioca starch, natural flavors, carrageenan.
Wt/Vol., Packaging, Price: Pint gable-top carton. Retails for $0.99 (2007/01, Pleasant Hill, California).

How Stored: Refrigerated.
Nutrition: Per 1 tablespoon (15 ml): Calories 15, calories from fat 10, total fat 1 gm (2% daily value; saturated fat 0 gm, trans fat 0 gm), cholesterol 0 mg, sodium 10 mg, total carbohydrate 1 gm (dietary fiber 0, sugars less than 1 gm), protein 0 gm. Vitamin A 0%, vitamin C 0%, calcium 0%, iron 0%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased by Martine Liguori at Grocery Outlet in Pleasant Hill, California. 2007. Jan. Paid $0.99 but retail value is $2.79. Front panel: Pink, white, blue, brown and white on purple. "Now smoother & creamier." An illustration shows Silk Creamer being poured into a coffee cup. Left panel: "Coffee for folks who use their beans." "Akasha's Corner: Chef Akasha's Chocolate Truffles." Back panel: "We're looking good in green. EPA green power partner." "Our wind power switcheroo eliminates 16,000 tons of greenhouse gases. That's like parking 3,200 cars for a whole year." Back panel: "This soy creamer is made from soybeans that were not genetically engineered." "100% Vegan."

Note: This carton was introduced after White Wave was purchased by Dean Foods. Notice that the word "soymilk" no longer appears in the product name.

8450. Ramirez, Anthony. 2007. Where there's a plant, this librarian has an answer. *New York Times.* Jan. 16. p. A27.
• ***Summary:*** About the library of the Horticultural Society of New York (in midtown Manhattan), and its librarian Katherine Powis. States that "the Vietnamese use *Pandanus amarylifolius,* a tropical plant in the screw pine genus, to flavor soy milk."

8451. Yuan, Shaohong; Chang, Sam K.C. 2007. Selected odor compounds in soymilk as affected by chemical composition and lipoxygenases in five soybean materials. *J. of Agricultural and Food Chemistry* 55(2):426-31. Jan. 24. [41 ref]
Address: Dep. of Cereal and Food Sciences, IACC 322, North Dakota State Univ., Fargo, ND 58105.

8452. **Product Name:** Coffee-mate Soy Creamer (The Original).
Manufacturer's Name: Nestlé USA. (Marketer-Distributor).
Manufacturer's Address: Glendale, California 91203.
Date of Introduction: 2007. January.
Ingredients: Water, soymilk (water, soy powder), partially hydrogenated soybean and/or cottonseed oil, sugar and less than 2% of dipotassium phosphate, sodium tripolyphosphate, sodium stearoyl lactylate, polysorbate 60, gellan gum, sodium citrate, natural and artificial flavor, beta carotene color.
Wt/Vol., Packaging, Price: 1 pint plastic bottle. Retails for $0.99 (2007/01, Pleasant Hill, California).
How Stored: Refrigerated.
New Product–Documentation: Product with Label purchased by Martine Liguori at Grocery Outlet in Pleasant Hill, California. 2007. Jan. Red, green, blue, brown and white on yellow. Plastic bottle with tight shrink sleeve and amazing green plastic molded cap. Front panel: "Made with wholesome soy." The word "soy" is written on a green leaf. An illustration shows a coffee cup. "Trans fat–Zero grams."

8453. [Soymilk and tofu: A healthy delight (Leaflet)]. 2007. New Delhi, India: American Soybean Association (ASA) / United Soybean Board. 2 p. Front and back. 28 cm.
• ***Summary:*** Contents: Introduction. Soymilk. Tofu (soy paneer). Health benefits of using soymilk and tofu. Lactose intolerance. Heart disease. Osteoporosis and menopause. Cancer. Now soymilk and tofu is available in your city. Try this wonderful food and feel the difference.

This leaflet is printed in black ink on glassy green paper. Two color photos show soymilk and tofu. Ten thousand copies were printed in Jan. 2007. Address: American Soybean Assoc. (ASA-International Marketing), Asia Subcontinent, 149 Jor Bagh, New Delhi–110 003, India. Phone: (91) (11) 2465-1611.

8454. Babb, Michelle. 2007. Soyfoods in a low GI [Glycemic Index] diet. *Soy Connection* 15(1):2, 4. Winter.
• ***Summary:*** After the low-carb craze, Americans are starting [again] to examine the types of carbohydrates they are eating rather than avoiding them altogether. The GI [glycemic index] is a measure of how fast 50 gm of a given carbohydrate raises blood glucose levels as it is digested. Researchers from Harvard University [Massachusetts] developed the glycemic load (GL), based on an actual serving or meal, given by the formula GI x carbohydrate per serving + 100 = GL. "For example, soymilk has a GI of 44 and a GL of only 8 per 8 oz serving. (These figures will vary slightly among brands)."

"Recent research suggests that following a low-glycemic index diet not only helps facilitate weight loss, but may also have a significant impact on disease reduction" [incl. type II diabetes and CVD, cardio-vascular disease]. Soyfoods with a low GI include soybeans, soymilk, soy yogurt, and soy smoothie. Foods with a high GI include cornflakes, white rice, baked potato, and white bagel. Address: M.S.

8455. 7th international soy symposium: Role of soy in health and disease prevention. Program and abstracts. 2007. Singapore: Printed for Boon Yee Yeong. 100 p. Held 7-9 March 2007 at Shangri-La Hotel, Bangkok, Thailand. Illust. No index. 30 cm.
• ***Summary:*** This is the first time the International Symposium of the Role of Soy in Health and Disease Prevention is being held in Asia. It will take place in

conjunction with the 5th Southeast Asia Soyfoods Seminar and Trade Show–Science to Market Opportunities in Asia, which will be held at the same location March 6-8. This document was compiled and organized by Boon Yee Yeong, who owns her own company in Singapore; her clients include ASA.

Contents: Scientific and organizing committee: Chair (Dr. Mark Messina), Panel of Advisors, Secretariat. About the organizers: Institute of Nutrition, Mahidol University (INMU, Thailand), ASA International Marketing (ASA IM; the overseas arm of the United States Soybean Export Council), The Soy Food Forum (SFF; a network of organizations in Asia with particular interest in soy).

Acknowledgements: Platinum and gold level sponsors: Otsuka Pharmaceutical Co., Ltd. (own SoyJoy brand), Tetra Pak Asia Pte Ld.–Soy Knowledge Centre. Silver and bronze level sponsors: The Solae Company, Solbar Plant Extracts Ltd., Green Spot Co. Ltd. (Thailand's pioneer and leading soymilk maker with over 45 years of experience. Produces a wide range of soymilk products under the Vitamilk, Vitamilk Champ, and V-soy trademarks). Media sponsor: Be Media Focus (Thailand) Co. Ltd. (Publisher of *Food Focus Thailand* a trade magazine). Exhibitors: 13 companies are listed, about half from the USA.

Symposium program. Post-Symposium seminar program. Speaker profiles. Symposium abstracts: Opening session: Soy and health–An overview. Session 1: Soy and cardiovascular diseases. Session 2: Soy and cancer prevention. Session 3: Soy and bone health. Session 4: Soy and menopause. Session 5: Soy and other health aspects.

Post-Symposium seminar abstracts: Soy complementary food & soy milk programs. Micronutrient fortification programs.

Poster presentation abstracts.

8456. Chow, Cheryl; Chow, James. 2007. Hypoglycemia for dummies. 2nd ed. Hoboken, New Jersey: John Wiley & Sons. xii + 274 p. Illust. Index. 24 cm.
• ***Summary:*** Hypoglycemia (low blood sugar) is difficult to diagnose and to treat; it may be linked to or confused with other health problems.

Soyfoods are a good source of protein in the diets of those suffering from hypoglycemia (low blood sugar). Soy is mentioned on pages 37 (Soy is one of 8 foods to which people are most often allergic), 38 (if you have a food reaction, try eliminating one of these 8 potential allergens from your diet. Go on an elimination diet for 2 weeks and keep a food journal), 41 (If you think you have candidiasis, try going on a hypoglycemic diet. In addition, avoid fermented foods or those that contain yeast, including soy sauce), 91 (MSG is also called hydrolyzed protein, soy extract, meat tenderizer, Accent, Ajinomoto), 104, 106 (milk substitutes, including soy milk, should not contain added sweetener), 107 (Foods such as tofu {bean curd}, tempeh and natto are good sources of protein, but intake should be limited to 2-3 servings of whole soy foods a day), 196, (unsweetened soy milk is good to drink), 250 (soy products make good meat substitutes), and 258 ("Noshing on nourishment": Vegetables such as edamame make excellent, nutrient-packed snacks).

Concerning natto (p. 250): "These sticky, fermented [soy] beans are a great vegetarian source of protein... In Japan natto is often eaten over rice for breakfast." However natto has a strong odor which takes some time to get used to. Address: 1. Writer and editor; 2. MD, Practicing physician, Director, Nihon Clinic [with branches in Manhattan, New York, Atlanta, Chicago and San Diego].

8457. Lozano, Patricio R.; Drake, Maryanne; Benitez, D.; Cadwallader, K.R. 2007. Instrumental and sensory characterization of heat-induced odorants in aseptically packaged soy milk. *J. of Agricultural and Food Chemistry* 55(8):3018-26. April 18. [43 ref]
Address: 1. Dep. of Food Science and Human Nutrition, Univ. of Illinois, 1392 West Pennsylvania Ave., Urbana, IL 81801.

8458. Dean Foods Co. 2007. What makes Dean, Dean: 2006 annual report. Dallas, Texas. 92 p. 28 cm.
• ***Summary:*** WhiteWave Foods (p. 12-13) is Dean's subsidiary and portfolio of leading national brands. In 2006 WhiteWave Foods made up 11% of Dean's total company sales and contributed 21% of the total company operating profit. Silk soymilk is #1 in its category nationwide. A large color photo shows an African-American lady holding a grocery bag full of food, with Silk plain prominently on top.

"In 2006, we expanded Silk single-serve offerings, so today's on-the-go consumers can enjoy our rich and healthy Silk products whenever the craving hits" (p. 17). A color photo shows single-serve Silk in chocolate, vanilla, and chocolate flavors. Page 12 states: "Silk products are made from non-genetically modified organic and natural soy beans [sic]... Silk uses more than 700,000 bushels of organic soy beans [sic] each year, farmed on more than 3,000 acres of organic American farmland. Note: There is no way that 3,000 acres can produce 700,000 bushels of soybeans. "Silk has been the title sponsor of the annual Farm Aid concert since 2003." "In 2006, WhiteWave Foods again won the prestigious Green Power award from the U.S. Department of Energy and the Environmental Protection Agency for its use of renewable wind power."

"In 2007, we introduced two new delicious varieties of Silk soymilk: Silk Plus Omega-3 DHA and Silk Plus Fiber."

Selected financial data (p. 22). In 2006, net sales decreased by 0.8% to $10.098 billion. Net income decreased 27% to $225,414.

Accompanying the annual report is a "2007 proxy statement and notice of annual meeting" (56 p.). In 2006

Gregg L. Engles, age 49, Chairman of the Board and CEO had total compensation of $11.025 million, including salary of $1,200,000–even though the company did poorly last year (p. 31). Address: 2515 McKinney Ave., Suite 1200, Dallas, Texas 75201. Phone: 214-303-3400 www.deanfoods.com.

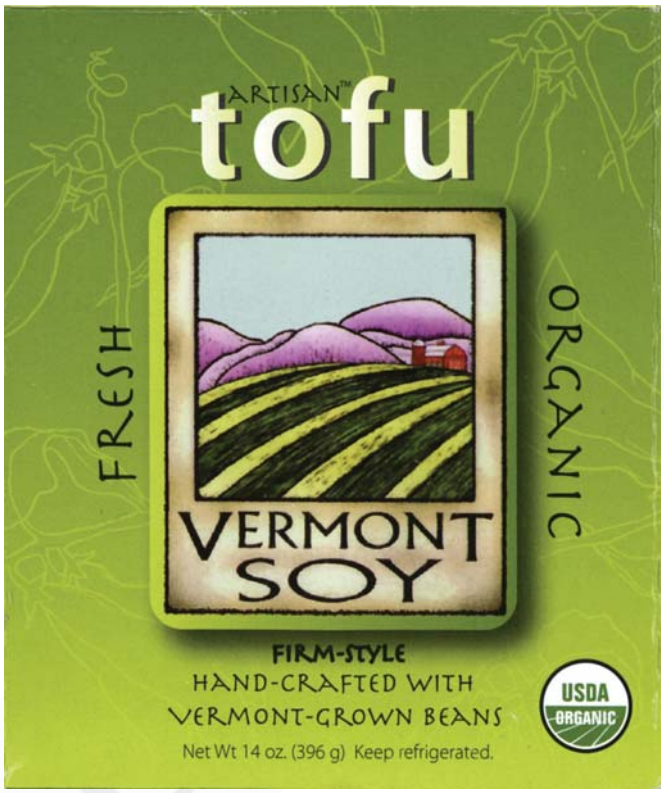
8459. Sullivan, Cheryl L.; Nash, Marilyn. 2007. Soy on the menu: Recipes for foodservice. Champaign-Urbana, Illinois: Illinois Center for Soy Foods. 52 p. Illust. No index. 26 cm. Series: Soy in the American Kitchen.
• ***Summary:*** This book has a creative format: (1) An outer color cover folds over the white spiral binding. (2) The pages are spiral bound across the top. (3) The bottom unfolds like a gusset so the book stands up by itself on a table with the pages angled slightly back on a table. (4) A CD-ROM comes with the book. Remarkably, the whole package sells for only $3.00!

Contents: Bringing soy foods to the American table: Soy in foodservice, why choose soy?, soy foods, vegetarian and vegan recipes [in this book], recipe information, nutrient information, acknowledgements. Recipes: Appetizers. Breakfast. Breads. Salads. Soups. Side dishes. Main dishes. Desserts.

The recipes in this book use: Soy flour, soymilk, tofu, textured vegetable protein / TVP [texture soy flour], edamame, black soybeans, soy analogs [meat and dairy analogs].

Sidebars include: Biodiesel (p. 10). Research shows kids like soy in school lunches (p. 11). Uncommon soy foods: Tempeh, miso, okara, natto. Are you soy savvy?: Why is soy flour added to baked goods? (p. 14). U.S. soybean production, yield, exports, and domestic usage (1979 vs. 2004) (p. 16). Industrial uses of soybeans: Soy candles, ink, biodiesel, soy cleaners, waterproofing sealants, soy silk (fabric). Are you soy savvy? Edamame (p. 19). INTSOY (p. 22). NSRL (p. 24). What is the soybean checkoff? (p. 27). WISHH initiative for soy in human health (p. 29, 30). Illinois Soybean Association (p. 34). What is okara? Why should you shake up a carton of soymilk? (p. 39). Make your own tofu (p. 47). Address: 1. M.A., R.D., Research Dietitian; 2. Ph.D., Project coordinator. Both: 170 National Soybean Research Center, 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706 or www.soyfoodsillinois.uiuc.edu.

8460. **Product Name:** Organic Soymilk (Unsweetened, Chocolate, Vanilla, Original), and Organic Nigari Firm Tofu (in Bulk, or Vacuum Packed).
Manufacturer's Name: Vermont Soy LLC.
Manufacturer's Address: 180 Junction Rd. (P.O. Box 401), Hardwick, VT 05843. Phone: (802) 472-8500.
Date of Introduction: 2007. April.
How Stored: Refrigerated.
New Product–Documentation: Talk with (call from) Todd Pinkham, founder and owner of Vermont Soy. 2007. Dec. 10.



In April he started to make and sell the four types of soymilk and two types of tofu show above. He uses a ProSoya VS-200 system. Todd used to make tempeh.

Leaflet (glossy color, single sided, 28 cm) sent by Patricia Smith from Natural Products Expo West. 2008. March. "Now available, Vermont Soy. It's fresh! It's organic! It's local! made in Hardwick, Vermont." A photo shows four flavors (Original, Chocolate, Vanilla, Unsweetened) in half gallon and quart plastic containers.

Outer package for Vermont Soy Artisan Tofu sent by Sjon Welters. 2008. Dec. 26. 4 by 4.75 by 2 inches. Paperboard box. Light green, dark green, black, white, purple, and red. 14 oz. retails for $3.99. Fresh. "Hand-crafted with Vermont-grown beans." "Sell by 11 31 08." The tofu is vacuum-packed in a plastic pouch inside the box. "Ingredients: Vermont-grown organic non-GMO soybeans, nigari (magnesium chloride), calcium sulphate, pure Vermont water." Phone: 802.472.8500. Note the USDA Organic seal at the lower right.

8461. Golbitz, Peter. 2007. Color photos of the soymilk processing short course held 22 May 2007 at the SoyCow Training Center in Bergville, KwaZulu-Natal, South Africa. Bar Harbor, Maine.
• ***Summary:*** Peter Golbitz took these color photos and wrote the captions. For background see interview with Peter Golbitz on 22 Jan. 2009. The short course workshop on 22 May 2007 took place at the training center located on property owned by Henry Davies adjacent to his Eden

Manufacturing plant. This workshop (including the travel and other expenses of the African participants) was paid for mostly by WISHH; other contributors were USAID, Solae, Silk, Soyatech, and others.

(1) Peter Golbitz leading a strategic planning discussion at a meeting of the Soy Southern Africa association, held in Bergville on May 22.

(2) Ratan Sharma from the American Soybean Association's office in New Delhi, explaining the equipment and processing steps for the SoyCow system. These SoyCows are made in India using the ProSoya process developed and patented by Raj Gupta (Ottawa, Canada).

(3) Henry Davies of Eden Manufacturing and the Eden Social Development Foundation demonstrating the VitaGoat soymilk processor. At this stage, the soymilk and pulp have been pressure cooked with steam and the mixture is being strained before manual pressing to separate the okara from the fresh soymilk.

(4) A participant grinding soaked soybeans on a pedal-powered VitaGoat grinder while a helper feeds fresh beans into the grinder hopper.

(5) Ratan Sharma explaining how to make soymilk yogurt from fresh soymilk produced with the VitaGoat or the SoyCow. (6) Ratan Sharma demonstrating how to make tofu using freshly produced soymilk curds from the VitaGoat. (7) Ratan Sharma cutting freshly pressed tofu for participants

at the short course. Onlookers include Henry Davies (right) and Mrs. Mchunu (center in blue), a member of the South African National Government, Inkatha Party, also known as "Mama Soya" for her long time and personal support of the expanded use of soy in Southern Africa.

(8) Participants at the short course taste and evaluate different soymilk and soymilk yogurt formulations using different flavors and levels of sweeteners. Address: Director of International Business Development, SunOpta Grains and Food Group.

8462. Gupta, Rajendra ("Raj") P. 2007. New developments at ProSoya worldwide (Interview). *SoyaScan Notes.* June 27. Conducted by William Shurtleff of Soyinfo Center.
• ***Summary:*** A very interesting and far-reaching discussion including: (1) Assoy in Russia, Firouz Zanjani and Alexander Podobedov. (2) Soymilk factory in Iran, Andre Ladoucer (he commissioned the plant but is no longer active in the soymilk business), and the ProSoya agent in Iran. (3) People in the Middle East have a palate very similar to that of people living in India; both like soy yogurt. (4) ProSoya's best small machine for making soymilk is the one that makes 2,000 liters/hour and has a vacuum deodorizer. The basic plant without packaging equipment costs $60,000. A chiller costs an additional $15-20,000. Yogurt incubation tanks are extra. (5) ProSoya's continuous curding machine which makes 1,000 kg/hour of tofu; it costs about $135,000. (6) ProSoya's plant in New York is still in operation. It makes 2 tankers a week of soymilk, all of which is sold in Canada. (6) Many taste tests show that ProSoya's SoNice is the best tasting soymilk in the world. The most important thing for soymilk to become a mainstream product is to improve its taste. (7) Raj Gupta has had discussions and negotiations with major companies that sell soymilk: Unilever (Ades, Adez), Coca Cola and Odwalla. All these companies agree that ProSoya's soymilk is the best tasting. It is very frustrating that marketing is of top importance to all, while product quality is much or relatively low importance. (8) The soymilk market in North America is now worth about S1,000 million, with 90% of the sales in the USA and 10% in Canada, where SoyaWorld is the leading player, with about 40% of the market. Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

8463. **Product Name:** [Vetara Organic Tofunaise].
Foreign Name: Vetara Bio Tofunaise.
Manufacturer's Name: Natudis B.V.
Manufacturer's Address: P.O. Box 376, 3840 AJ Harderwijk, Netherlands.
Date of Introduction: 2007. June.
Ingredients: Soymilk (45%) (water, soybeans*),

sunflowerseed* oil (39%), apple cider vinegar*, apple juice concentrate*, sea salt, mustard* (water, apple cider vinegar, mustard seeds*, sea salt, cucumber*), guar gum. * = organically grown.
Wt/Vol., Packaging, Price: 320 gm bottle.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Label sent by Sjon Welters from the Netherlands. 2007. June. 2.5 x 8.25 inches. Dark green, red, yellow, gold. Color photo shows the corner of a salad and french fried potatoes. Vegetarian logo.

8464. Rommelmann, Nancy. 2007. The food chain: The Ota family turns out 6,000 pounds of the Japanese staple a week, selling to the public and stores. *Oregonian* (*The*) (*Portland, Oregon*). July 3. p. FD1, FD5.
• ***Summary:*** A good snapshot of life at Ota Tofu Co. in Portland, Oregon. Koichi Ota is the 3rd generation tofu maker,–"a man short on words and long on skill." He makes soft, medium, and firm tofu (and agé) from a high-protein non-GE soybean variety named Vinton, which is trucked from the Midwest.

Eileen Ota says they no longer run ads, nor does she do deliveries. They sell fresh tofu over the counter like a traditional tofu shop in Japan. Although the retail area is small, she sells 1,000 pounds of tofu a day, six days a week. She says there are a lot of vegetarians in Portland. Non-Asian customers may use soft tofu for salad dressings or smoothies. "Fresh tofu is $1.50 per pound, or $1.25 per pound if you bring your own container. Agé is $1.30 per piece. Soy milk is $2.25 per half gallon."

A large color photo shows Koichi Ota in a steamy tofu shop, holding a nylon sack full of okara. Address: Freelance writer; Special to the Oregonian.

8465. Gupta, Rajendra ("Raj") P. 2007. The purchase of SoyaWorld by Sanitarium Foods (Interview). *SoyaScan Notes.* July 24. Conducted by William Shurtleff of Soyinfo Center.
• ***Summary:*** SoyaWorld is now completely owned by Sanitarium Foods of Australia. First Sanitarium bought the 47% of SoyaWorld owned by Sunrise Soya Foods. Later they bought the remaining 53% owned by Saputo. The person who knows the exact dates is Maheb Nathoo, who is still president of SoyaWorld.

SoyaWorld still makes two soymilk products: (1) Soy Good, made from soy protein isolates, is made using the formula developed by Sanitarium Foods. It is very heavily promoted in Canada, using both TV and print, and has about 60% of the Canadian market, but because it is so heavily promoted and costs more to make, Raj thinks that it is presently not as profitable as the other product, So Nice. (2) So Nice is made from whole soybeans, using the ProSoya process. It is never promoted or advertised by Sanitarium Foods. It has about 40% of the Canadian market.

The fact that So Nice is outsold by So Good no longer effects Raj's income, because the exclusive agreement between ProSoya and SoyaWorld (from which ProSoya earned royalties) has expired. SoyaWorld now has non-exclusive use of the process and ProSoya does not get any royalties.

It is difficult to do blind taste tests comparing these two products, in part because so many people already have developed. There are also issues about using another person's branded product in a taste test and publicizing the results. Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

8466. Joe, Peter. 2007. Sale of Sunrise's share of SoyaWorld Inc. and starting a new tofu plant in Toronto, Canada (Interview). *SoyaScan Notes.* July 24. Conducted by William Shurtleff of Soyinfo Center.
• ***Summary:*** In Dec. 2000 Peter Joe sold his 47% share of SoyaWorld to Sanitarium Foods of Australia.

He recently built a new tofu manufacturing plant in Toronto, Ontario. It began production in March 2002. All is well for Peter and Sunrise. The market for tofu in Canada is growing. Address: General Manager, Sunrise Soya Foods, 729 Powell St., Vancouver, BC, V6A 1H5 Canada.

8467. Vitasoy International Holdings Ltd. 2007. Annual report 2006/07. New Territories, Hong Kong. 148 p. July. 30 cm. [Eng; Chi]
• ***Summary:*** Inside front cover: "For over 65 years, Vitasoy has grown and multiplied its success from a little bean–and is still growing strong." A cartoon shows a team of "Beanies" (soybeans) pulling together on a rope in a tug-of-war.

For the fiscal year ended 31 March 2007, group turnover (sales) was HK$2,693 million, up 6.9% over the previous year. Of these sales, 62% came from Hong Kong, 16% from North America, 10% from Australia and New Zealand, 9% from Mainland China, and 3% from the rest of the world.

Gross profit was HK$1,563 million, up 5.5% from the previous year. Basic earnings per share were 17.3 HK cents, up 0.6%. Dividends per share were 15.5 HK cents, the same as the previous year.

At "Chairman's statement," a photo shows Winston Yau-lai LO, age 66. His resume is found on p. 40. He has two sisters, both married, Myrna and Yvonne. Total dividends for the year are 19.5 cents.

During the year the plant in Massachusetts [Nasoya] generated HK$379 million in revenue a decline of 1.8% from last year. "Operating loss increased to HK$49 million due mainly to the costs associated with the new product launches, declining tofu sales, and additional trade expenses to drive aseptic soymilk sales" (p. 24).

A five-year summary (2003 to 2007; p. 147) shows that, during this entire period, sales increased 20.9% and annual

profit increased by 45.7%. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

8468. Reuters. 2007. SunOpta Inc. acquires operating assets of ProSoya Corporation located in Heuvelton, New York (News release). Aug. 7.
• ***Summary:*** SunOpta (incl. Sunrich), headquartered in Canada, announces that it has acquired a soymilk manufacturing plant in Heuvelton, New York from ProSoya Corporation. The plant (incl. building, machinery, and equipment) was acquired for cash.

Allan Routh is president of the SunOpta Grains and Foods Group. Steve Bromley is president and CEO of SunOpta.

8469. Yu, Jonathan; Yu, Beth. 2007. Re: History of Cherry Food Industry / APY Food Processing in Quezon City, Philippines. Letter (e-mail) to William Shurtleff at Soyinfo Center, Aug. 24. 1 p.
• ***Summary:*** Cherry Food Industry operated as a soy processing company in 1976. In January 1985 the company was registered as APY Food Processing. APY signifies the initials of Mrs. Adelaida Pua Yu, the owner, who had the first factory running at # 74 Speaker Perez St., Barangay Lourdes, Quezon City with 10 employees. From its initial operations until January 1995, Mrs. Yu successfully maintained the factory. In 1993, Jonathan Yu and wife Beth participated in the family business operations. Since the other siblings of Jonathan were engaged in other concerns, the management and operations of the company was transferred to the youngest Jonathan Pua Yu in 1995.

The company now makes the following soy products: Nippon Tofu. Toho. Tokwa. Taohue. Soymilk. Address: Quezon City, Philippines. Phone: (632) 365-0835.

8470. United Soybean Board (USB). 2007. Consumer attitudes about nutrition: Insights into nutrition, health, and soyfoods. 14th annual national report. Seattle, Washington: USB. 12 p. Oct. 28 cm.
• ***Summary:*** Methodology: "This year represents the second year we have adopted an online self-administered survey as our methodology, a significant change from random telephone interviews. The survey, conducted by an independent research firm [in Seattle, Washington] in February and March 2007, includes 1,000 random surveys, providing a sample that is consistent with the total American population. The study's margin of error remains ± 1.9 to 3.1%, with a confidence interval of 95 percent."

Contents: Introduction. Methodology. About USB. Nutritional habits & obesity concerns. Healthy food decisions. Improving overall health. Cooking oil impressions. Consumer attitudes about fats. Awareness and usage of soy products. Occasion preferences for consuming soy. Restaurants and soy products. Soyfoods and health. Special health benefits of soy

Awareness and usage: 33% of Americans consume soyfoods or soy beverages once a month or more. "For the fourth year in a row, consumers reported the most familiarity with soymilk, soybean oil, soy veggie burgers and tofu."

A table shows the "Top 20 soy products by awareness." Soymilk 90%. Soybean oil 66%. Soy veggie burger 63%. Tofu (unspecified) 60%. Soy infant formula 51%. Soy nuts 47%. Soy latte / soymilk in espresso coffee drinks [as at Starbucks] 41%. Soy protein bars 34%. Dried or canned soybeans 34%. Soy yogurt 32%. Soy flour 31%. Soy ice cream / cheese 30%. Soy hot dogs 29%. Flavored / marinated tofu 28%. Miso 28%. Soy supplements 28%. Cereal bar / Energy bar 28%. Edamame 23%. Soy breakfast cereal 21%. Textured soy protein 21%. All others mentioned 14% or less.

Occasion preferences for consuming soy (in descending order of preference): dinner 41%, breakfast 28%, lunch 27%, mid-afternoon snacking 19%, late evening snacking 14%, mid-morning snacking 10%, desserts 6%.

Restaurants and soy products: "Over half of consumers have tried soyfoods in restaurants." Tofu 25%. Soymilk 24%. Veggie burgers 22%. "Over one-third would order soy products in restaurants... if they could find soy on their restaurant's menu."

"In 2007, 85% of consumers rate soy products as healthy, up three percentage points from 2006." A graph (p. 7) shows this increase in awareness (82% in 2006, 78% in 2005, 74% in 2004, 74% in 2003, 74% in 2002, 69% in 2001, 76% in 2000, 71% in 1999, 67% in 1998).

Why? Low-fat profile 18%. Protein content 17%. Heart health function 16%. Cholesterol-lowering properties 11%. "Being good for you" 11%. Potentially providing relief for menopause symptoms 10%.

Note: As of Aug. 2008 this full survey is available gratis in PDF format at www.soyconnection.com /health_nutrition / pdf/.

8471. Kikkoman International, Inc. 2007. Color your year: 12 months of hot, cool ideas (Calendar). 50 California St., Suite 3600, San Francisco, CA 94111.
• ***Summary:*** This calendar for the year 2008 (dated 2007), which is designed to promote Kikkoman Pearl soymilk, was sent by Patricia Smith from Natural Products Expo West. 2008. March. The cover is white on pink, with a large photo of a cocktail glass / martini glass the top half of which is filled with white soymilk and the bottom half with a pink liquid. Each glossy page is 30.5 x 20.2 cm. It is designed to hang on a wall with a nail hole through the upper page. On each upper page is a large color photo. On each lower page is one month of the year's calendar plus a color photo of a carton of one flavor of Pearl organic soymilk and a recipe for its use. Address: San Francisco, California.

8472. Kingsbury, Kathleen. 2007. The changing face of

breast cancer. *Time* (*Asia*). Oct. 4.
• ***Summary:*** As U.S. and European lifestyles spread, so do their unhealthy diets. Last July, scientists released a study that examined the eating habits of 3,000 Chinese women, ranging in age from 25 to 64. Half of the women ate a "meat sweet" Western diet, rich in red meat, shrimp, fish, candy, desserts, bread and milk. The others consumed "more traditional Asian fare of tofu, vegetables, sprouts, beans, fish and soy milk. Postmenopausal women in the meat-sweet group showed a 60% greater risk of developing the most common kind of breast cancer."

8473. Dorff, Erik. 2007. The soybean, agriculture's jack-of-all-trades, is gaining ground across Canada (Web article). http://www.statcan.gc.ca/ pub/ 96-325-x/ 2007000/ article/10369-eng.pdf. 14 p. Oct. 26. Printed 28 Jan. 2010. [7 ref]
• ***Summary:*** An outstanding overview and description of the current status of soybeans in Canada.

Contents: Introduction. Development of the soybean sector in Canada. Growth in soybean area across the country. The soybean–an international super-crop. Soybean dollars make sense to farmers. One crop, many uses. Food for human consumption. Animal feed. Industrial products. Soybean not a "has-bean" crop in Canada. The gift of the bean (a brief early history of the soybean in the USA and Canada).

Figures: (1) Gains in soybean area reflect crop development efforts (1951-2006; 000 hectares). (2) One crop many uses. Diagram showing uses as: Food for human consumption, animal feed, industrial products. (3) Bred in Canada: soybeans of prominence. AC Proteus, Toki (for tofu), Nattawa (for natto), Maple Arrow (expanded soybean range out of southern Ontario), Maple Presto (the fastest maturing soybean). (4) Traditional soy foods: a brief guide (with a description of each). Edamame, miso, natto, soy sauce, soy milk, tempeh, tofu.

Tables: (1) Census of agriculture tracks growth in soybean area. Gives the area planted in Canada, Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, and Alberta in the census years of 1976, 1981, 1986, 1991, 1996, 2001, and 2006. Soybeans were planted in each of these provinces in the three most recent census years. (2) Top 10 soybean producing nations (Average 2000 to 2005): After the USA, Brazil, and Argentina, China is 4th, India 5th, Paraguay 6th, Canada 7th, Bolivia 8th, Indonesia 9th. and Italy 10th. (3) Average soybean composition. Columns: Characteristic, oil, feed and meal beans, soy milk / tofu soybeans. For the latter: 100 seeds should weigh more than 20 gm. Colour very light with clear hilum, oil content 17-19%, protein content 44-47%, soluble sugar content 11-13%, insoluble sugar content 21-25%, minerals 5%. (4) Nutritional comparisons: Tofu and soy milk with ground beef and cow's milk.

Maps: (1) Soybeans in Canada (3 maps on one page). Map A shows that quite a bit of Quebec's soybean acreage lies south of the Saint Lawrence River, in the region named "Southern Quebec" (which includes the Eastern Townships at its southernmost area–its south-western end).

"Until the mid-1970s, soybeans were restricted by climate primarily to southern Ontario. Intensive breeding programs have since opened up more widespread growing possibilities across Canada for this incredibly versatile crop: The 1.2 million hectares of soybeans reported on the Census of Agriculture in 2006 marked a near eightfold increase in area since 1976, the year the ground-breaking varieties that perform well in Canada's shorter growing season were introduced" (p. 1).

"For years, soybeans were being grown in Canada but it wasn't until the Second World War that Statistics Canada began to collect data showing the significance of the soybean crop, with 4,400 hectares being reported in 1941. In fact, one year later the area had jumped nearly fourfold, to 17,000 hectares. In 1943 a program aimed at actively breeding soybeans suitable for southern Ontario was initiated.

"During the Second World War, North American manufacturers used oil from soybeans not only as a food but also to produce a wide number of industrial products including glycerine for the manufacture of nitroglycerine used for explosives and ammunition.

"By 1951, 62,967 hectares had been planted with soybeans (Figure 1), but they were still mostly confined to southern Ontario, the region with the longest and warmest growing season in Canada" (p. 2).

"It wasn't until varieties with earlier maturity and improved tolerance of cooler climates were successfully developed–the 'Maple' series of soybean cultivars–that significant soybean production was pushed beyond southern Ontario. The 1976 release of the Maple Arrow variety in particular is credited with expanding the range of soybean production into eastern Ontario (Table 1)."

The "growth between 2001 and 2006 was particularly notable in the Prairie provinces, with Manitoba's soybean area increasing sevenfold to over 141,869 hectares and its more western neighbours, Saskatchewan and Alberta, beginning to actively pursue soybean production. These gains in area were the payoff from research aimed at finding and breeding soybean varieties suited to the Prairies as well as from crop promotion and market development" (p. 5).

"In the 2006 calendar year, farm cash receipts from soybeans amounted to $680 million in Canada, making it the fifth most valuable field crop, trailing canola ($2.5 billion), wheat ($1.8 billion excluding durum), potatoes ($899 million) and corn ($753 million). In Ontario, where it was also the most planted crop, it was the top crop in terms of farm cash receipts, at $547 million, eclipsing the receipts from corn ($449 million) and wheat ($275 million)" (p. 6).

"International trade contributed to the value of soybean

receipts. Preliminary figures place soybean exports at over 40% (1.5 million tonnes) of the soybeans grown in Canada in the 2006 crop year (3.5 million tonnes).

"Of the four top buyers in 2006, Japan led the list, importing $138 million in Canadian soybeans, followed by Malaysia ($52 million), the Netherlands ($49 million) and Iran ($43 million). At the same time, Canada imported about 302,000 tonnes of soybeans valued at approximately $81 million, 99% of which came from the United States" (p. 7). Address: Statistics Canada.

8474. **Product Name:** Purity Soja [Condensed Soy Milk, or Soy Cream, Fruit Juice Fortified with Soy in Various Flavors].
Foreign Name: Purity Soja (Condensado de Soja, Creme de Soja).
Manufacturer's Name: Brazsoy [Importer, Made in Brazil].
Manufacturer's Address: Rockville, Maryland. Phone: 1-877-257-0139.
Date of Introduction: 2007. October.
Wt/Vol., Packaging, Price: 1 quart (32 fl oz). Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Glossy color leaflet (2 panels each side. Each panel: 19.6 x 14.3 cm) sent by Patricia Smith from Natural Products Expo East. 2007. Sept. "Brazsoy: Unique and delicious soy products. Cruelty free food. What we do. We import products from Brazil that are suitable for niche markets, lactose-free, vegan, and kosher. Why us: We offer unique products like condensed soy milk and fruit juice with soy extract that cannot be found on the shelves of any retailer in the U.S." Color photos show cartons of the products. On the rear panel are three "Delicious recipes." A business card stapled to the front of this leaflet shows that Emile Ghandour is president of Brazsoy.

8475. **Product Name:** Silk Pumpkin Spice (Slightly Thick Soymilk in Gable Top Cartons).
Manufacturer's Name: Dean Foods / WhiteWave Foods (Product Developer-Distributor).
Manufacturer's Address: 2515 McKinney Ave., Suite 1200, Dallas, Texas 75201.
Date of Introduction: 2007. October.
Ingredients: Organic soymilk (filtered water, whole organic soybeans), organic evaporated cane juice, natural flavors, sea salt, carrageenan.
Wt/Vol., Packaging, Price: Quart Pure-Pak carton.
How Stored: Refrigerated.
New Product–Documentation: Leaflet (glossy color, front and back, 28 cm) sent by Patricia Smith from Natural Products Expo East. 2007. Oct. "Silk for the holidays. New." On the front panel photo show: (1) Three hands holding beige mugs of Silk in a toast, each much containing soymilk and a cinnamon stick. A fire burns in the background. (2) The front of two Silk soymilk gable top cartons, one of Pumpkin Spice flavor and the other of Nog. On the rear are given the nutrition facts, ingredients, UPC and bar codes, and case information for each product.

Product with Label purchased in the dairy case at Safeway supermarket in Lafayette, California. 2010. Dec. 18. One quart retails for $3.29–very expensive! By comparison, a half gallon of Safeway's (Lucerne brand) "Holiday Eggnog" retails for $2.99. So the Silk Pumpkin Spice is more than twice as expensive (2.2 times as much) per fluid ounce. White Wave is now a brand owned by Dean Foods. Front panel: "Lactose-free. Seasonal flavor." Back panel: "Every drop of Silk is made from non genetically modified soybeans, grown right here in North America." Note: The organic soybeans and evaporated cane juice used in 2007 have been replaced by so-called "all natural" soybeans and evaporated cane juice.

Soyinfo Center taste test. 2010. Dec. 18. Flavor: Mediocre. Consistency: Less thick and rich than expected.

8476. Sharma, Ratan. 2007. Traditional sweets (Powerpoint presentation). Haryana, India: American Soybean Association (ASA)–International Marketing. 5 p.
• ***Summary:*** (1) Traditional sweets: Excellent quality Rasogolla and Sandesh can be made. Fermented soymilk can be used to make delicious sweets popular in the north east, and to make paysam and puddings. A photo shows Soya Rossogolla (a commercial product).

(2) Large color photo of a 200 liters per hour soymilk plant (taken March 2004).

(3) Large photo of a "Soymilk and Tofu Booth" in Ludhiana, in the Indian state of Punjab. A sign out in front reads "SoFine Soy Foods" above the words "Silly Point" (taken April 2003).

(4) Another view of a "Soymilk and Tofu Booth" in Ludhiana. The sign over this boutique reads "Soya Fresh Point."

(5) A large color photo of a soymilk canteen / booth in a railroad station, with the title "Want to Buy Soymilk at a Railway Station?" A sign reads: "Soyfresh. Cold & refreshing soy milk. With a lip-smacking each flavour. Patented technology from ProSoya Inc., Canada. Brought to you by Fresh & Honest Cafe Ltd." A soymilk cooler and an Indian woman are visible inside the booth. Address: PhD, ASA International Marketing, Spanish Court, 3rd Floor (301A), Block C1, Palam Vihar, Gurgaon–122017, Haryana, India.

8477. Sharma, Ratan. 2007. Tofu promotion in India (Powerpoint presentation). Haryana, India: American Soybean Association (ASA)–International Marketing. 5 p.
• ***Summary:*** (1) Tofu promotion In India. Photos show a

Mickey Mouse balloon character and a Tofu / Milk delivery truck. (2) Women's Employment. (3) A woman entrepreneur in soymilk business. (4) Training. (5) Women's employment. Address: PhD, ASA International Marketing, Spanish Court, 3rd Floor (301A), Block C1, Palam Vihar, Gurgaon–122017, Haryana, India.

8478. Sharma, Ratan. 2007. Soy nuts [and soy flour] (Powerpoint presentation). Haryana, India: American Soybean Association (ASA)–International Marketing. 5 p.

• ***Summary:*** (1) Soy nuts–Soy nuts are whole soybeans that are soaked, then baked. Most conventional nuts are high in fat. Benefits: Soy nuts are similar in texture and flavor to peanuts. Far less expensive than peanuts. Relatively simple technology. Market potential: One of the fast moving products. Introduced in 2002, about 80 manufacturers. Equipment cost: Approx. Rs. 80,000 (30 kg/hour capacity). A color photo shows a collage of about 12 different packages of Indian soy nuts.

(2) Dal analogue–It is a nutritious, high protein processed food made from defatted soy flour, wheat and red gram. Contains about 50 percent soy. Highly economical. Cooking characteristics as any dals. Easy to cook. Developed by NDDB [National Dairy Development Board]. Equipment cost: Approximately 12 crores (1 MT/hr). Two color photos show two different soy dal analogues.

(3) Fortification of Atta with Soy Flour–Atta [whole-wheat flour made with hard wheat grown across the Indian subcontinent] can be substituted up to 10% with defatted soy flour. Benefits: Improved protein content. Increased freshness. Growth: More than 15 brands are available throughout country. Better growth in south India. Equipment Cost: Approx. 2 lack (200,000 rupees) including packaging machine (25 kg/hr capacity). A color photo shows a package of GenSoy Plus Protein Atta.

(4) Fortification of gram with soy flour–Besan [chickpea flour / garbanzo bean flour] can be substituted up to 20% with soy flour. Benefits: Cost effective–Soy flour is much cheaper when compared to besan. Improved protein content–DSF has more than double protein content than besan. Less frying cost–Soy absorbs less oil during frying. Market potential: Not many commercial products, but has potential because of reduction in raw material cost. Equipment cost. Approx. 2 lack (200,000 rupees) including packaging machine (25 kg/hr capacity).

Two color photos show packages of these products; the brands are Blended Besan, and Piyo Healthy Soyjoy (sterilized soya milk).

(5) Defatted soy flour–Economical way to add soy protein to any product. High protein and low fat content. Very long shelf life. Blends well with any traditional flours. A color photo collage shows the front panels of ten packages of soy products. The brand names from upper left to lower right are: Soy Protein Atta. GenSoy. Soya Power. Sassota Roti Mix. Soyaban. Allegro. Vigor. Ramnath's Soya Flour. Soy-Joy. Address: PhD, ASA International Marketing, Spanish Court, 3rd Floor (301A), Block C1, Palam Vihar, Gurgaon–122017, Haryana, India.

8479. Sharma, Ratan. 2007. Soymilk and tofu in India (Powerpoint presentation). Haryana, India: American Soybean Association (ASA)–International Marketing. 5 p.

• ***Summary:*** (1) Cover. (2) Soya Cow–A family business. A color photo shows a man and his son milking a SoyaCow.

(3) A large color photo titled Palak Tofu, showing the prepared dish on a colorful background. Cubes of paneer and tofu are in the foreground.

(4) Soy drink is sold in bulk, pouches, plastic & glass bottles and in Tetra Pak cartons. Four color photos show soymilk in different presentations.

(5) Soymilk and tofu. A large color photo shows Shakti soymilk in plastic pouches, glass bottles, plus rounds of tofu on a bed of yellow soybeans. Address: PhD, ASA International Marketing, Spanish Court, 3rd Floor (301A), Block C1, Palam Vihar, Gurgaon–122017, Haryana, India.

8480. Soyatech, Inc. 2007. Soya & Oilseed Bluebook 2008. Bar Harbor, Maine: Soyatech. 446 p. Nov. Comprehensive index. Brand name index. Advertiser index. Statistical conversions. 28 cm.

• ***Summary:*** This is the 2nd year in a row that the *Bluebook* (a $95 value) has been sent free of charge to qualified industry members. On the cover are color photos of seven different crops (mostly growing in fields) covered in this book. The oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hempseed, jatropha, linseed, palm, peanut, rapeseed, safflower, soya, sunflowerseed. Note that hempseed, jatropha, linseed, and safflower have been added this year.

On the inside front cover is a color ad from Natural Products Inc. (Grinnell, Iowa) titled "Technology doesn't have to be complicated to be effective." Photos show

applications of some of the company's products: soymilk ingredients, tofu ingredients, bakery ingredients, and egg replacers. On the first page is a full page color ad from Bunge North America (St. Louis, Missouri). On the rear cover is a full page color ADM ad titled "Where does healthy begin?" showing a mother talking with her young daughter in the back of a pickup, on a farm. The tag line is "Meeting today's demands. Envisioning tomorrow's needs."

In the Foreword, Peter Golbitz writes: "We no longer determine the price of oilseeds and grains based solely upon their value as a food or feedstock–we now factor in what their value may be as an alternative source of energy. The rise in commodity prices that we have seen over the past year... has been primarily driven by the use of, or the anticipated use of, agricultural crops for energy. Whether or not we can ever grow enough crops to make a substantial contribution to our energy supply is now being debated..." "The continuing removal of trans-fats from food applications has created a boom market for oils, other than those that are hydrogenated,..."

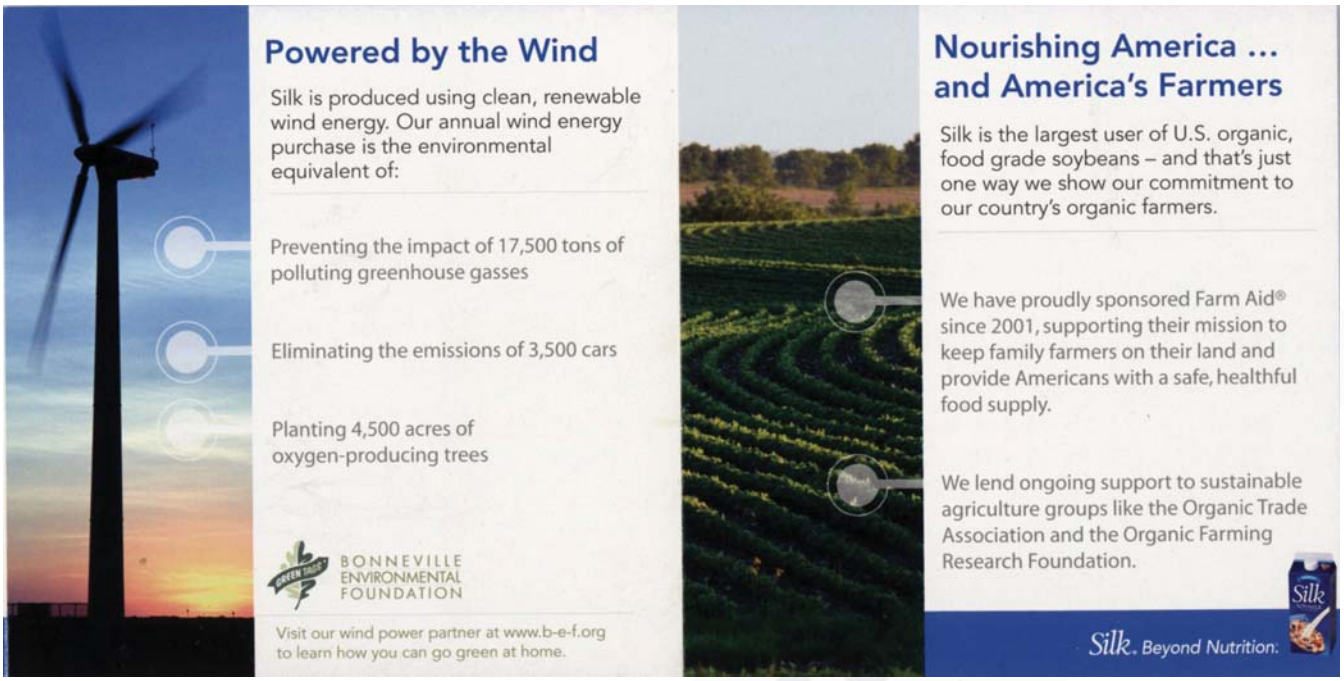
"Soyatech's role in all of this has been to provide as much information as possible to the players throughout the value chain... Soyatech's seminal reference, the *Soya & Oilseed Bluebook*, will continue to evolve... and provide the best information available on the industry." Address: 1369 State Hwy 102, P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

8481. WhiteWave Foods Company. 2007. Responsible livelihood: Silk and our community (Leaflet). Boulder, Colorado. 3 panels each side. Each panel: 10 x 10 cm.
• ***Summary:*** Small leaflet (glossy color) sent by Patricia Smith from Natural Products Expo East. 2007. Oct. On the front: Photos show: (1) A carton of Silk. (2) Three wind power generators. The three inside panels are: Local action ("We have partnered with our local Community Food Share for 15 years"). Powered by the wind ("Silk is produced using clean, renewable, wind energy. Our annual wind energy purchase is the environmental equivalent of: Preventing the impact of 17,500 tons of polluting greenhouse gases. Eliminating the emissions of 3,500 cars. Planting 4,500 acres of oxygen-producing trees. Bonneville Environmental Foundation"). Nourishing America–and America's farmers ("Silk is the largest user of U.S. organic, food grade soybeans." "We have proudly sponsored Farm Aid since 2001, supporting their mission to keep family farmers on their land..." "We lend ongoing support to sustainable agricultural groups like the Organic Trade Association and the Organic Farming Research Foundation").

The last panel states: "Silk is America's number one soymilk brand." Address: Boulder, Colorado 80301.

8482. WhiteWave Foods Company. 2007. The Soy advantage: A message about health from the makers of Silk (Leaflet). Boulder, Colorado. 4 panels each side. Each panel: 21.6 x 9.6 cm.
• ***Summary:*** Leaflet (glossy color) sent by Patricia Smith from Natural Products Expo East. 2007. Oct. The next two inside panels are titled: Soy: A smart solution ("Americans spend nearly $800 million on soymilk every year"). Why soy?

The four final inside pages are titled: Heart health. Bone health ("Soyfoods also offer the added benefit of plant compounds called isoflavones"). Managing lactose



intolerance. Lowering cancer risk. The rear panel is titled: Try soy ("To learn more about soy, visit www.SILKisSOY.com"). Address: Boulder, Colorado 80301.

8483. *SoyaScan Notes.* 2007. Chronology of major soy-related events and trends during 2007 (Overview). Dec. 31. Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** Jan. 1–Soyfoods Center changes its name to Soyinfo Center.

Feb.–The Soy Connection for the Food Industry (Vol. 1, No. 1) starts to be published by United Soybean Board as a free e-newsletter. The subject of the first issue is Qualisoy soy oil.

March 6–8 International Soy Utilization conference in Bangkok, Thailand. It is organized by: The Institute of Nutrition, Mahidol University (INMU), ASA International Marketing (ASA IM), and the Soy Food Forum Southeast Asia (SFF).

April 4–Organizations listed in the Soya & Oilseed Bluebook are invited and enabled to update their own listings online. The update listing will appear as soon as the Bluebook editors review it and in the print edition in the fall. The Bluebook will continue to be printed as a bound book. Preferred customers will receive a free copy. Qualified people or organizations in the industry who request a copy pay shipping and handling. Those outside the industry must pay for shipping and handling plus a $95 fee.

June 11–The Hain Celestial Group completes its acquisition of the tofu and meat-alternatives business of WhiteWave Foods Co., a subsidiary of Dean Foods. The product line includes grilled and baked tofu, seitan, tempeh, etc. These products are expected to complement Hain Celestial's existing meat alternatives under the Yves brand in Canada and the United States. The White Wave tofu business generated sales of approximately $8 million in the last financial year.

July 11–Solae announces that it has completed its purchase of Cargill's Prolisse line of isolated soy proteins (ISP; soy protein isolates), including the patented membrane technology for processing ISP.

Aug. 7–SunOpta (incl. SunRich), headquartered in Canada, announces that it has acquired a soymilk plant in Heuvelton, New York, from ProSoya Corporation (Ottawa, Ontario). Allan Routh is president of the SunOpta Grains and Foods Group.

Aug. 16–CPM (Waterloo, Iowa) acquires Crown Iron Works (Minneapolis, Minnesota). CPM is owned by Golbert Global, a private equity group. The acquisition doubles the size of CPM.

Sept. 11–Hain Celestial Group announces it will delay filing its annual report with the U.S. Securities and Exchange Commission (SEC) pending a review of its practices in granting stock options. Thus, the annual report was received by shareholders in April 2008, rather than the typical Nov. 2007.

Nov 5–Symington's, a major U.K. food manufacturer, has acquired the dry-mix products from Hain Celestial (formerly known as Haldane Foods) for an undisclosed sum. In the purchase of Hain Celestial's dry mix operation, Symington will take over the Barrow based production centre from Hain Celestial and will enable the company to increase its stake in the growing health food and vegetarian sector. Main products in the acquisition are couscous, sport nutrition, snack pots and vegetarian meals. Brands

acquired include Granose, Realeat, Direct Foods, Organic and Amazing Grains. Granose was owned by Haldane Foods which also owned Direct Foods and Realeat. So you will also find Sosmix and Burgamix have disappeared as well–but they have returned under the Granose brand. We now have the Granose Sausage Mix, Burger Mix and others that have replaced the Realeat and Direct Foods Sosmix and Banger Mix as well as the Burgamix. Popular products like Nut Roast, Cashew Nut Roast and Chicken Style Bake were discontinued following the sale of the Realeat, Granose and Direct Foods brands.

8484. Mota, M.; Gargavu, S.; Popa, S.; Schiopu, S.; Panduru, N.M.; Mota, E. 2007. Soya–The medicine food product. *Romanian J. of Internal Medicine* 45(1):113-21. *
• ***Summary:*** Cultivated for more than 3,000 years, soya is both a drug and a food product, with numerous nutritional and health benefits. These are discussed one by one. Among the most popular soyfoods are soymilk, tofu (soy cheese), and soy meat (pie, salami, textured soy in granule form). Address: Clinic of Diabetes, Nutrition and Metabolic Diseases, Univ. of Medicine and Pharmacy, Craiova, Romania.

8485. **Product Name:** 8th Continent Soymilk Smoothie [Chocolate Strawberry Banana].
Manufacturer's Name: 8th Continent, L.L.C. [General Mills] (Distributor).
Manufacturer's Address: Minneapolis, Minnesota 55440. Phone: 1-800-247-6458.
Date of Introduction: 2007. January.
Ingredients: Soymilk (water, soy protein [isolate], soybean oil, calcium phosphate), sugar, fructose, modified corn starch, cocoa processed with alkali, strawberry puree, banana puree, potassium citrate, dipotassium phosphate, natural and artificial flavor, salt, carrageenan, tricalcium phosphate, soy lecithin, sucralose, xanthan gum, sodium benzoate (preservative), riboflavin (vitamin B-2), vitamin A (palmitate), vitamin D-2, vitamin B-12. Contains soy ingredients.
Wt/Vol., Packaging, Price: 1.5 qt (1.41 L) square plastic bottle with screw-on cap. Retails for $1.99 (on sale) (2007/02, Berkeley, California).
How Stored: Refrigerated.
Nutrition: Per 8 fl oz (236 ml): Calories 100, calories from fat 10, total fat 1 gm (2% daily value; saturated fat 0 gm, trans fat 0 gm), cholesterol 0 mg, sodium 180 mg (8%), total carbohydrate 18 gm (dietary fiber <1 gm [3%], sugars 10 gm), protein 6 gm. Vitamin A 10%, vitamin C 0%, calcium 30%, iron 8%, vitamin D 25%, riboflavin 25%, vitamin B-12 15%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased by Martine Liguori in Berkeley, California. 2007. Feb. Private labeled as "Official soymilk of Bob Greene's Best Life Diet. Approved Bestlife the bestlife.com. Limited edition." 10 inches tall. Front panel: Chocolate brown, tan, blue, red, white yellow on light green. Illustration of a strawberry and a scoop of vanilla soymilk floating in a wavy sea of chocolate. Solae logo. Side panel: The Best Life Diet is a new book authored by Oprah's trainer Bob Greene. Forward by Oprah Winfrey. Martine's taste test: Nice thick shake. Good chocolate, banana, strawberry flavor. Low in calories.

8486. Bittman, Mark. 2007. How to cook everything vegetarian: simple meatless recipes for great food. Hoboken, New Jersey: John Wiley & Sons, Inc. xii + 996 p. Illust. Index. 24 cm.
• ***Summary:*** The chapter titled "Tofu, vegetable burgers, and other high-protein foods" (p. 637-78) has this contents: Introduction. The umami factor (savory-ness). The basics of tofu: The tofu lexicon (regular tofu, silken tofu, pressed or extra-firm tofu, smoked tofu, fried tofu, baked tofu, fermented or pickled tofu, tofu skins {dried bean stick, yuba, bean curd sheets or skins}). Buying and storing tofu. Preparing tofu (freezing, squeezing, puréeing,...); then come a wealth of recipes.

The index contains 129 entries for tofu, 32 for miso, 26 for tempeh, 25 for soy sauce, 24 for edamame, 23 for seitan, 11 for soybeans, 7 for black beans (fermented [fermented black soybeans]), 4 for teriyaki sauce, 6 for tofu skins (yuba and dried yuba sticks), 3 for milk substitutes, 2 each for meatballs (vegetarian), and 1 each for bean sprouts (soy), black soybeans, meatless meat sauce, soybean oil, soy flour, soy milk, soy nuts, soy pasta, soy protein isolate, textured vegetable protein, tofu noodles, and Worcestershire sauce (hold the anchovies).

There are also recipes for adzuki beans [sic], tahini, vegan cookery–and much more. Address: New York Times food writer.

8487. Blereau, Jude. 2007. Wholefood: heal–nourish–delight. Philadelphia, Pennsylvania: Running Press. 332 p. Illust. Index. 23 x 19 cm. [8 ref]
• ***Summary:*** This cookbook is not vegetarian. Vegan recipes are so labeled. One chapter, titled "Soy" (p. 92-110) is divided into two parts: Tofu and tempeh The index contains 18 entries for tofu, 14 for tempeh, 3 each for miso and tamari, 2 each for miso soup, soy beans, 2 and soy milk, and 1 each for soy flour, teriyaki marinade, and textured vegetable protein.

"Jude Blereau is a natural foods chef, food coach, and cooking teacher who has been involved with the organic and wholefoods industry for more than 15 years. She first became involved in the natural food industry while living in the U.S. in the late 1980s. In 1997, Jude co-founded The Earth Market, a much loved wholefood store and cafe; in Perth, Western Australia. Her focus is on helping people

learn about good food-what it truly is, where to get it, how to use it-and to give them the tools and information to make healthy eating a part of their everyday lives. Blereau lives in Australia." From publisher's description. Address: Natural Foods Chef, Australia.

8488. Esselstyn, Caldwell B., Jr. 2007. Prevent and reverse heart disease: the revolutionary, scientifically proven, nutrition-based cure. New York, NY: Avery. A member of the Penguin Group (USA) Inc. xii + 308 p. Plus 8 unnumbered pages of plates. Foreword by T. Colin Campbell, Ph.D. Illust. (some color). Index. 24 cm. [27 ref]

• ***Summary:*** A remarkable, milestone book! Every person with a heart should read this book. Advocates a plant-based diet with no oil or nuts. On the cover: "Based on the findings of a now 20-year study first published in the *American Journal of Cardiology* [in Dec. 1995]. With more than 150 great-tasting recipes."

Contents: Foreword, by T. Colin Campbell. Introduction. Part I: The heart of the matter. 1. Eating to live. 2. "Someday, well have to get smarter." 3. Seeking the cure. 4. A primer on heart disease. 5. Moderation kills. 6. Living, breathing proof. 7. Why didn't anyone tell me? 8. Simple steps. 9. Frequently asked questions. 10. Why can't I have "heart healthy" oils? 11. Kindred spirits. 12. Brave new world. 13. You are in control.

Part II: The joy of eating. 14. Simple strategies. 15. Advice from Ann Crile Esselstyn. 16. Breaking the fast. 17. Feasting on salads. 18. Sauces, dips, dressings and gravies. 19. Vegetables, plain and fancy. 20. Soups, thick and delicious. 21. Sandwiches for all occasions. 22. The main course. 23. Wonderful, easy desserts.

This book is based on a 20 plus year study of coronary artery disease using diet and lifestyle modifications; it reports the results of that study. President Bill Clinton has spoken (in public and on TV) very highly of this book and of Dr. Esselstyn (pronounced ES-sul-stun, not ES-sul-stine); the name is Dutch.

The dietary rules (p. 120-21): 1. Don't eat any meat, chicken or fish. 2. Do not eat *any* dairy products. 3. Do not eat eggs; that includes egg whites and even egg substitutes that include egg whites. 4. Do not consume any oil at all–Not even virgin olive oil or canola oil. 5. Use only whole grain products, including brown rice. That means no white flour products. 6. Do not drink fruit juice–but its fine to eat fruit. 7. Do not eat any nuts. 8. Do not eat avocadoes (or guacamole). 9. Do not eat coconut. 10. "Eat soy products cautiously. Many are highly processed and high in fat. Use 'light' tofu. Avoid soy cheese, which almost always contains oil and casein." 11. Read *The China Study,* by T. Colin Campbell.

After having cautioned the reader to "Eat soy products cautiously," the plant-based recipe section of the book (p. 119-286), by Ann Crile Esselstyn, calls for soyfoods in many recipes. Some of the breakfast cereals call for plantmilk using a standard format: "2 cups oat, multigrain, almond, or nonfat soymilk" (p. 129-32, 162, 231, 276, 283). A comparison of the caloric, fat, sodium, and sugar content of nine plantmilks (six of them containing soy) is given on pages 136-37. "Low-sodium tamari" and Bragg Liquid Aminos (which contain sodium by no salt) are widely used in small amounts for seasoning (p. 128, 158-59, 165-66, 168, 170-72, 177, 179, 184, 251, etc.). White miso is used occasionally as a combination seasoning and sweetener (p. 163, 191). Seitan (made from wheat gluten) is occasionally used as a meat substitute (p. 213, 250-51). Light silken tofu or light extra-firm tofu (often one 12.3-ounce package) is used as a dairy alternative in dessert recipes such as: Chocolate mousse (p. 272-73). Blueberry purple passion (p. 273). Pineapple paradise (p. 274). Lemon whipped topping (p. 275). Pineapple frosting (p. 278). Creamy fudge frosting (p. 279).

Sweeteners are used in moderation and the chapter on "Desserts" begins: "Its best not to eat dessert every night. Make it a rare treat, when there are lots of people around–and no temptation to eat too much." Many fruits are naturally sweet and make good desserts. One format is: "3 tablespoons maple syrup, honey, agar nectar, or sugar."

Acknowledgments (p. 287): "Kindred spirits in the transition to healthier living have my gratitude for their own inspiring work. Among them: Neal Barnard, Colin Campbell, Antonia Demas, Hans Diehl, Joel Fuhrman, Mladen Galubic, Alan Holdhamer, William Harris, Michael Jacobson, Michael Klaper, Robert Kradjian, Doug Lisle, Howard Lyman, John McDougall, Jeff Nelson, Dean Ornish, John Robbins."

"My late father, Caldwell B. Esseltyn, M.D... And long before it became fashionable, he argued that the only way out of the impossible health-care burden that confronts the United States is to teach people how to live healthier lives" (p. 288).

Publisher's summary: "Heart disease remains the leading cause of death in this country for men and women. And while we spend millions of dollars each year developing treatments, traditional procedures fail patients by focusing only on the symptoms of the disease, not the underlying causes. In *Prevent and Reverse Heart Disease,* Dr. Caldwell B. Esselstyn, Jr., a former surgeon, researcher, and clinician at the Cleveland Clinic, challenges conventional cardiology by posing a compelling, revolutionary idea–that we can, in fact, abolish the heart disease epidemic by changing our diets.

"The proof is in the incredible results of the patients who have followed Dr. Esselstyn's ground-breaking program. The men and women in his twenty-year nutritional study–the most comprehensive study of its kind–came to him with advanced coronary disease. Despite the aggressive traditional treatment they received-including bypasses and angioplasties–a number had been told by their cardiologists that they had less than a year to live. Within months of

following a plant based, oil free diet, their angina symptoms eased, their cholesterol levels dropped significantly and they experienced a marked improvement in blood flow to the heart. Twenty years later they remain free of symptoms. Drawing on the results of this revolutionary study and his ongoing work with patients all over the country, Dr. Esselstyn convincingly argues that plant based, oil free nutrition can not only prevent and stop the progression of heart disease, but also reverse its effects.

"Furthermore, it can eliminate the need for expensive and invasive surgical intervention except in acute emergencies, no matter how far the disease has progressed. Prevent and Reverse Heart Disease explains the science behind these dramatic results, and offers readers the same, simple plan that has changed the lives of Dr. Esselstyn's patients forever. In addition, the book offers more than 150 delicious recipes developed by Ann Crile Esselstyn, that the Esselstyns and their patients have enjoyed for years. Clearly written and backed by irrefutable scientific evidence, startling photos of angiograms and inspiring personal stories, this book will empower readers to take charge of their heart health. It is an important call for a paradigm shift in heart disease therapy."

About the author: Caldwell Blakeman Esselstyn Jr., M.D., (born December 12, 1933) is an American physician, author, and former Olympic rowing champion. His color portrait photo appears on the front dust jacket. Esselstyn graduated from Deerfield Academy and in 1956 graduated from Yale University, where he was a member of Skull and Bones. Caldwell Esselstyn competed at the 1956 Summer Olympics in Melbourne, where he won a gold medal in eights with the American team. On 1 May 1961 his engagement to Ann Crile was announced by the *New York Times;* they were married on 18 June 1961. 1961–He received his M.D. from Western Reserve University. 1985–He began his famous study at the Cleveland Clinic of 22 patients who had previously had heart attacks. 1988–He and his family began to move toward a plant-based diet. Dr. Esselstyn and his wife, Ann Crile Esselstyn, have mostly followed a vegan diet since the mid-1980s. He attributes the success of his 12 year trial with heart patients to low mean levels of both total cholesterol (145 mg/dl) and LDL cholesterol (82 mg/dl). In 2010 after cardiac surgery, former U.S. president Bill Clinton mostly adopted the plant-based diet recommended by Caldwell Esselstyn, Dean Ornish and T. Colin Campbell. Source: Wikipedia, at Caldwell Esselstyn. May 2011.

Dr. Esselstyne and Ann Krile were married on 18 June 1961 in Cleveland, Ohio. They have four grown children: Rip (born in 1963), Ted (1964), Jane (1965), and Zeb (1967). Three are married, and Dr. Esselstyn and Ann have six grandchildren (p. 288). In 1988 the Esselstyn family joined together in moving toward eliminating dairy products, meats, and oils from their diet. Their eldest son, Rip, became an all-American swimmer at the University of Texas at Austin; after graduating he was a professional triathlete for 11 years. Today (2011) he is a teacher and writer about diet and health–advocating a "plant-strong diet." Their second son, Ted, set a 200-yard backstroke record at Yale University, and their daughter, Jane, won the Big Ten 200-yard backstroke championship while attending the university of Michigan. Their youngest son, Zeb, as an Ohio high school junior, was the state butterfly swimming champion. And Ann, now in her early seventies, runs for 40 to 70 minutes almost every day. Clearly their plant-based diet provides them with plenty of strength and energy (p. 78-79). Address: M.D., former surgeon, researcher and clinician, Cleveland Clinic, Ohio–for 35+ years.

8489. Esselstyn, Caldwell B., Jr. 2007. Prevent and reverse heart disease: the revolutionary, scientifically proven, nutrition-based cure (Continued, Part II). New York, NY: Avery. A member of the Penguin Group (USA) Inc. xii + 308 p. Plus 8 unnumbered pages of plates. Foreword by T. Colin Campbell, Ph.D. Illust. (some color). Index. 24 cm. [27 ref] • ***Summary:*** Continued: Basic biography: Caldwell Esselstyn, M.D., received his B.A. from Yale University and his M.D. from Western Reserve University. In 1956 he received a gold medal as a member of the Olympic rowing team. He trained as a surgeon at the Cleveland Clinic and at St. George's Hospital in London. In 1968 as an army surgeon in Vietnam he was awarded the Bronze Star. Dr. Esselstyn has been associated with the Cleveland Clinic since 1968, having served as staff president and on its board of governors. He chaired the Clinic's Breast Cancer Task Force. In 1991 Dr. Esselstyn served as president of the American Association of Endocrine Surgeons, and in the fall of 1991 he organized "The First National Conference on the Elimination of Coronary Artery Disease" in Tucson, Arizona. He invited Dr. T. Colin Campbell to speak at this conference. In 2005 Dr. Esselstyn became the first recipient of the Benjamin Spock award for compassion in medicine. His website is heartattackproof.com.

Heart disease is the leading cause of death of men and women the United States, with more than 500,000 deaths each year. Three times that number suffer a known heart attack and 3 million more have a "silent heart attack." Dr. Esselstyn believes this is all unnecessary. There doesn't have to be any heart disease at all. He calls it a "toothless paper tiger that need never ever exist. And should it exist, it need never ever progress." His views are based on the global epidemiology of this disease and also on his research. When you look globally, there are still cultures on this planet where heart disease is virtually unknown–the rural Chinese, the Papua Highlanders in Papua New Guinea, the people in Central Africa, and the Tarahumara Indians of northern Mexico (known for their long-distance running). This is largely because, by culture, heritage, and tradition, they

consume a largely plant-based diet that does not contain any of the "atherosclerotic lynchpins," which are dairy products, meat, and processed oils. By contrast, in the USA, by age 12 our children begin to have thickening of those major carotid arteries which go to our brain. If they live until age 20 and they happen to die in combat, as was known in Korea and Vietnam 40-50 years ago, roughly 80% of these young G.I.s already have gross evidence of coronary artery disease–visible even without a microscope. A more recent study, done in 1999, of those who happened to die of accidents, homicides, and suicides, between the ages of 16 and 34, found that 100% of these people have coronary artery disease. This is the background of why Dr. Esselstyn wanted to do research in this area. His research started in about 1985 and he has concluded that the major cause of coronary artery disease is the standard American diet.

A sampling of the many priceless gems in this book: "Can I change?" It is difficult, but "The key is to remember that the rewards are greater than the frustration... after 12 weeks of eating no animal foods, dairy, or added oils, you lose your craving for fat" (p. 76).

The typical Western diet gets 37% of its calories from fat. This diet recommends about 10% of the calories from fat–which is ideal for good health (both heart disease and cancer). And this diet provides about 50-70 gm of protein a day (p. 77).

"Will I have enough strength and energy?" "The truth is that excessive consumption of animal protein badly weakens our bodies. Among other things, it accelerates the loss of calcium through the kidneys, leading to the brittle, porous bone condition called osteoporosis." "And look at the examples that nature offers." The elephant, the bull, etc. They eat a plant-based diet–as do many great athletes, such as Carl Lewis (1991) and many others.

"What if my cholesterol won't go below 150 mg/dL? A tiny minority of the population, no more than 5% of all Americans, has an inherited cholesterol disorder that makes it impossible for them to reduce total cholesterol below 400 to 500 mg/dL, even with careful nutrition. Such patients need to be monitored by highly qualified cholesterol specialists" (p. 79).

A plant-based diet should contain "large quantities of natural antioxidants, which prevent the body from oxidizing LDL cholesterol into its most dangerous, artery-clogging form."

"Don't my genes predetermine whether or not I'll get heart disease?" The "answer is an emphatic NO. If you maintain a cholesterol level under 150 mg/dL, or LDL under 80 mg/dL, you–and all other relatives who inherited these genes–will be free of heart disease" (p. 80).

"Why can't I have 'heart-healthy oils?" The idea of heart-healthy oils and the Mediterranean Diet was based on the Lyon Diet Heart Study, and was widely praised by the media and in books. But: "By the end of the study, nearly four years after its start, fully 25% of the subjects on the Mediterranean diet–one out of four–had either died or experienced a new cardiovascular event. I feel these are wretched results for a nonmalignant disease. We can do much better." "In fact the medical literature is filled with evidence of the harmful effects of monounsaturated oils" as is Dr. Esselstyn's personal experience (p. 84-86).

"T. Colin Campbell, the Cornell University professor who directed and cowrote *The China Study,* observes that there are 'two worlds' of medicine–two radically different visions of how to approach health. 'One consensus favors drugs as the cure, the other favors food,' he explains; Western medicine, for the most part, has chosen drugs. As I see it, we got it wrong.' I agree."

Chapter 11, "Kindred spirits," summarizes the pioneering work of some mentioned previously in the "Acknowledgments" section of this book: T. Colin Campbell, Nathan Pritikin, Hans Diehl, John McDougall, Dean Ornish (whose program is most similar to Esselstyn's. "Among the wide variety of programs promoting cardiovascular health, his and mine are the only ones I am aware of that are based on peer-reviewed research that demonstrates arrest and reversal of heart disease." Dr. Esselstyn's 12-year study started in 1985; Dr. Ornish's study started in 1986. Dr. Ornish "did not use cholesterol-lowering medication. Like mine, Dr. Ornish's patients had three-vessel coronary heart disease. And Dr. Ornish insisted that, in addition to adopting a plant-based diet, his patients must use relaxation and meditation techniques and participate in a structured exercise program. Finally Dr. Ornish had a control group of patients with similar disease severity, but who followed a traditional program of cardiac care"), Dr. Charles Atwood (a longtime pediatrician with an extremely busy practice, his focus on children was very important [not to be confused with Dr. Robert Atkins of low-carb diet fame]), and Antonia Demas.

"And yet with all the research that demonstrates the wisdom and benefits of plant-based nutrition, its growing ranks of opponents still face a formidable array of opponents from the titans of the animal food industry to the medical establishment itself. My colleague Dean Ornish succinctly sums up the dilemma faced by those of us who believe in this healthy way of eating. 'I don't understand why asking people to eat a well-balanced vegetarian diet is considered drastic, while it is medically conservative to cut people open.' Well said" (p. 93). Address: M.D. former surgeon, researcher and clinician, Cleveland Clinic, Ohio–for 35+ years.

8490. Jones, Russell. 2007. Loan-words in Indonesian and Malay. Compiled by the Indonesian Etymological Project. Russell Jones, general editor. Leiden, Netherlands: KITLV Press. xxxix + 360 p. Map. 25 cm. + 1 DVD-ROM (4 3/4 inches). Reprinted in 2008 by University of Washington Press. [70 ref]

• ***Summary:*** *Tahu,* the Indonesian word for bean-curd / tofu

(2 Chinese characters are given) comes from the Chinese Amoy dialect *tau hu* (See also *taofu;* variant *tauhu*).

Tahu pong, the Indonesian word for "soybean cake" [sic, okara], comes from the Chinese Amoy dialect *tau hu phong.*

Taoci, the Indonesian word for fermented black soybeans (two Chinese characters are given) comes from the Chinese Cantonese dialect *tau shi.*

Taoco, the Indonesian word for Indonesian-style miso (two Chinese characters are given) comes from the Chinese Chiangchiu, Changchow [Hokkien] dialect *tau chio* (variant *taucio, tauco*).

Taofu, the Indonesian word for bean-curd / tofu (2 Chinese characters are given) comes from the Chinese Cantonese dialect *tau foo.* (See also *tahu;* variant *tofu*).

Taogé, the Indonesian word for bean sprouts (of the *Phaseolus radiatus*) [mung bean] (2 Chinese characters are given) comes from the Chinese Chiangchiu, Changchow [Hokkien] dialect *tau ge* (var. *taugé, togé*).

Taohupoi, the Indonesian word for dried bean curd sheets [dried yuba] (three Chinese characters are given) comes from the Chinese Chiangchiu, Changchow [Hokkien] dialect *tau hu phoe.*

Taoki, the Indonesian word for deep fried bean curd strips [deep fried tofu strips] (two Chinese characters are given) comes from the Chinese Amoy dialect *tau ki* (var. *tauki*).

Taokua, the Indonesian word for dried bean curd [pressed tofu] (two Chinese characters are given) comes from the Chinese Amoy dialect *tau koa* (var. *takua, taukua*).

Taoni, the Indonesian word for soya bean milk [soymilk] (two Chinese characters are given) comes from the Chinese Amoy dialect *tau ni.*

Taosi, the Indonesian word for salted soya bean paste [fermented black soybeans] (two Chinese characters are given) comes from the Chinese Amoy dialect *tau si.*

Taoyu, the Indonesian word for soy sauce (two Chinese characters are given) comes from the Chinese Amoy dialect *tau iu* (var. *tauyu*).

8491. Reinfeld, Mark; Rinaldi, Bo. 2007. Vegan fusion world cuisine: extraordinary recipes & timeless wisdom from the celebrated Blossoming Lotus restaurants. New York, NY: Beaufort Books. 243 p. Foreword by Dr. Jane Goodall. Illust. (color photos). Index. 26 cm.
• ***Summary:*** A beautiful, inspirational book. Chapter 8 is titled "Tempeh, tofu & seitan" (p. 114-33). The index contains 28 entries for tofu, 13 for tempeh, 4 for seitan, 3 for soymilk, and 2 for miso.

Includes a resource guide, a good glossary with entries for miso, nama shoyu, seitan, shoyu, soy milk, tamari, tempeh, textured vegetable protein, and tofu.

Note: Unfortunately the quotation near the beginning, supposedly by Albert Einstein, is a mish-mash by various wise writers including Albert Schweitzer. Address: 1. Founding chef, Blossoming Lotus Restaurant (Kaua'i, Hawaii), and author; 2. Author and teacher. Both: Kaua'i, Hawaii.

8492. **Product Name:** Silk Soymilk (Aseptic Single Serve) [Vanilla].
Manufacturer's Name: WhiteWave Foods.
Manufacturer's Address: 12002 Airport Way, Broomfield, CO 80021. Phone: 1-800-488-9823.
Date of Introduction: 2007. January.
Ingredients: Organic soymilk (filtered water, whole organic soybeans), organic evaporated cane juice, calcium carbonate, natural vanilla flavor, sea salt, carrageenan, vitamin A palmitate, vitamin D2, riboflavin (B2), vitamin B-12.
Wt/Vol., Packaging, Price: 8.25 fl oz (244 ml) metallic Tetra Prisma Aseptic carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Leaflet (glossy color, front and back, 28 cm) sent by Patricia Smith from Natural Products Expo East. 2007. "Introducing Silk Vanilla Aseptic single serve." On the front, a large photo shows a white man and a black woman with the product. Silk is now "in a handy grab-and-go package." On the rear: The product is sold in 3-packs and 18-packs. Nutrition facts, ingredients, UPC and barcodes, and case information are given.

8493. Yeager, Selene. 2007. The doctor's book of food remedies: the latest findings on the power of food to treat and prevent health problems–from aging and diabetes to ulcers and yeast infections. Fully revised and updated. [Emmaus, Pennsylvania]: Rodale Inc. Distributed to the trade by Macmillan. xii + 707 p. Index. 24 cm. 1st ed. 1998.
• ***Summary:*** The chapter titled "Soy foods: Help for weight loss" (p. 579-83) explains that in the late 1990s the media strongly promoted soy, made it into a sort of miracle food or cure, and rode the wave up, then after about 2005 when scientists found that soy was not a miracle food, the media decided that "The party's over," and they rode the wave down. In 2005 soy foods faced big setbacks, when a U.S. government panel said there wasn't clear evidence that soy could guard against heart disease, ease menopause, or protect bones from osteoporosis. "In response the National Institutes of Health (NIH) said it would stop paying for new soy studies." That fall, the soyfoods industry withdrew a petition that asked the FDA to permit food labels that claim that soy protein helps prevent cancer.

This chapter explains: "But flash forward to 2006, where one dour headline–'Soyonara–tells the sad tale. Has this promised [by the media] superfood become a has-bean?" Maybe not."

It proceeds to give a fair assessment of what current science says can and cannot be expected of soyfoods. Cannot (by itself): Significantly reduce cholesterol. Protect against breast or prostate cancer. Build bones or reduce osteoporosis.

Cool hot flashes or reduce menopause symptoms. This is followed by a long list of its many well-known health benefits. "That's good news because soy seems to be here to stay." It has gone mainstream, and sales of soy foods in the United States rose dramatically from $300 million in 1992 to $3.9 billion by 2004–a 13-fold increase in 13 years.

The section titled "The joy of soy" gives brief definitions of some of the most popular soyfoods: Edamame, soy nuts, meat substitutes [sic, alternatives], soy flour (made from roasted, ground soybeans), soy milk, tempeh, and texturized soy protein.

A sidebar titled "Doctor's top tip" recommends eating soy (such as edamame, tofu, soy nuts, and some soy burgers) in place of foods high in animal fats. The head of the American Heart Association's nutrition committee reminds us: "Heart disease is a major problem–using soy protein instead of animal protein is still a win."

Dr. Mark Messina, a prominent soy researcher, says there are many reasons to add soy to your diet from just a basic nutritional point of view: (1) Soyfoods such as tofu or tempeh are high quality, low-cost, versatile sources of protein. (2) A half cup of tofu, curded with calcium sulfate, can provide more than 25% of the Daily Value (DV), plus a significant amount of iron. (3) Soyfoods contain little of the artery clogging saturated fats found in meat and many dairy products.

Contains recipes for: Soy fruit smoothie (with vanilla-flavored soy beverage, p. 583). Mocha Tofu Pudding (with 2 packages {10½ ounces each} silken tofu and 2/3 cop packed light brown sugar).

The index contains 34 entries for soy, 13 for tofu, 4 for tempeh, 3 entries for miso, 2 entries each for edamame and for soy milk, 1 entry each for soy nuts, soy yogurt, and textured soy protein.

Note: This book is not vegetarian.

8494. Roseboro, Ken. 2008. The 2008 non-GMO sourcebook: A buyers guide to global suppliers of non-GMO and organic seeds, grains, ingredients, and foods. Fairfield, Iowa: Writing Solutions, Inc. 102 p. Illust. (both color, and blue and white photos). Index. 28 cm.
• ***Summary:*** Contents: Editor's introduction (by Ken Roseboro, publisher and editor). Suppliers of non-GMO products: United States, Canada, Europe, Africa / Middle East, Asia / Australia, Latin / South America. The Non-GMO Project special section (The Non-GMO Project rises to forefront of natural food industry, Verification aims to protect natural and organic foods from GMOs, assure consumers, The Non-GMO Project facts, Michael Funk [President and CEO of United Natural Foods, Inc., UNFI]: "Time has come" for The Non-GMO Project, Company profile: Straus Family Creamery becomes first company to be verified through Non-GMO Project). Related products, services, and organizations. Indexes: Index of non-GMO suppliers by product category: Seeds, grains and oilseeds (incl. soybeans {identity preserved, specialty, food- and feed-grade}, soybeans–organic), canola / rapeseed products, corn products, soy products (phytosterols, soy flakes, soy flour, soy germ concentrate, soy grits, soy lecithin {including organic}, soy meal {including organic}, soy nuts, soy oil {including organic}, soy oil–low linolenic, soy protein, isolates and concentrates, soy protein–textured, soymilk, soymilk powder, soy sauce, vitamin E / tocopherols), other ingredients and processing aids (citric acid, dairy ingredients, enzymes, flavors, food colors, organic sweeteners, etc.), food products, animal feed. Index of related products, services and organizations. Index of related products, services, and organizations. Comprehensive index. Order form for *The Organic & Non-GMO Report.*

This comprehensive book gives the single best picture of the growing industry, worldwide, opposed to genetic engineering of foods and feeds. Address: Editor / Publisher. Phone: 1-800-854-0586.

8495. Shurtleff, William; Aoyagi, Akiko. 2008. Le livre du tofu: La source de protéines de l'avenir–dès maintenant! [The book of tofu: Protein source of the future–now! Translated from the English by Nathalie Tremblay]. Varennes, Quebec, Canada: Éditions AdA Inc. 430 p. Illust. by Akiko Aoyagi. Index. Feb. 28 cm. [53 ref. Fre]
• ***Summary:*** Contents: Preface. Acknowledgements. Part I. Tofu: Food for mankind. 1. Protein East and West. 2. Tofu as a food. 3. Getting started. Our favorite tofu recipes (lists about 80 recipe names for each of the different types of tofu, plus soymilk, yuba, whole soybeans, gô, okara, and curds; very favorites that are also quick and easy to prepare are preceded by an asterisk).

Part II. Cooking with tofu: Recipes from East and West (500 recipes). 4. Soybeans: History, cooking with whole dry soybeans, roasted soybeans (*iri-mame*), fresh green soybeans (*edamame*), kinako (roasted full-fat soy flour), soybean sprouts (*daizu no moyashi*), natto (sticky fermented whole soybeans, with "gossamer threads"), tempeh (fermented soybean cakes), Hamanatto and Daitokuji natto (raisin-like natto), modern western soybean foods (natural soy flour [full-fat], soy granules, defatted soy flour and grits, soy protein concentrates, soy protein isolates, spun protein fibers, textured vegetable protein (TVP), soy oil products). 5. Gô (*purée de fèves de soya fraîches;* a thick white puree of well-soaked uncooked soybeans). 6. Okara or Unohana. 7. Curds and whey (*Caillé et petit-lait*). 8. Tofu (includes history, and preparatory techniques: Parboiling, draining, pressing {towel and fridge method, slanting press method, sliced tofu method}, squeezing, scrambling, reshaping, crumbling, grinding).

9. Deep-fried tofu (*Tofu frit*)*:* Thick agé or nama agé (*Agé épais {côtelettes de tofu frit}*), ganmo or ganmodoki (*burgers de tofu frit;* incl. *hiryozu / hirosu*), agé or aburagé

(*pochettes de tofu frit;* incl. "Smoked tofu," p. 197). 10. Soymilk (*Lait de soya*). 11. Silken tofu (Kinugoshi ou tofu soyeux) ("*Kinu* means 'silk'; *kosu* means 'to strain'; well named, kinugoshi tofu has a texture so smooth that it seems to have been strained through silk"). 12. Grilled tofu (*Tofu grillé*). 13. Frozen and dried-frozen tofu (*Tofu surgelé et tofu surgelé séche*). 14. Yuba (incl. many meat alternatives such as Yuba mock broiled eels, Buddha's chicken, Buddha's ham, sausage). 15. Tofu and yuba in China, Taiwan, and Korea (incl. Savory tofu {*wu-hsiang kan*}; see p. 258 for illustrations of many meat alternatives, incl. Buddha's fish, chicken, drumsticks, and duck, plus vegetarian liver and tripe, molded pig's head, and molded ham). 16. Special tofu (*Tofu particuliers*).

Part III–Japanese farmhouse tofu: Making tofu for more and more people. 17. The quest. 18. Making community tofu. 19. The traditional craftsman. 20. Making tofu in the traditional way. Appendices: A. Tofu restaurants in Japan (many are vegetarian). B. Tofu shops in the West (Directory of 43 shops in the USA, 3 in Europe {Germany, Austria, Belgium, Denmark, Finland, France, Ireland, Italy, Netherlands, Portugal, Spain, Switzerland, UK, Wales}, and 3 in Latin America {Brazil, Colombia, El Salvador, Guatemala, Mexico}). C. People and institutions connected with tofu. D. Table of equivalents. Bibliography. Glossary. Index. About the authors (autobiographical sketches; a photo shows Shurtleff and Aoyagi, and gives their address as New-Age Foods Study Center, 278-28 Higashi Oizumi, Nerima-ku, Tokyo, Japan 177). Sending tofu in the four directions.

Pudding recipes include: Rice pudding with gô and apple (p. 76, incl. 2 cups soymilk). Tofu chawan-mushi (p. 147; Steamed egg-vegetable custard with tofu). Tofu fruit whips (p. 148). Tofu rice pudding (p. 150, incl. 1 cup soymilk). Tofu custard pudding (p. 152). Soymilk custard pudding (p. 208). Brown rice pudding (p. 208, with 2 cups soymilk). Soymilk chawan-mushi (p. 209). Chawan-mushi with yuba (p. 249).

Dessert recipes include: Tofu whipped cream or yogurt (p. 148; resembles a pudding or parfait). Tofu ice cream (p. 149, with chilled tofu, honey, vanilla extract and salt). Banana-tofu milkshake (p. 149). Tofu cream cheese dessert balls (p. 149). Tofu icing (for cake, p. 149). Tofu cheesecake (p. 150). Tofu-pineapple sherbet (p. 151). Also: Soymilk yogurt (cultured, p. 205). Healthy banana milkshake (p. 206). On p. 160 is a recipe for "Mock tuna salad with deep fried tofu." Address: Soyinfo Center, P.O. Box 234, Lafayette, California 94549 USA. Phone: 925-283-2991.

8496. *SoyaScan Notes.* 2008. Dates of earliest documents seen that mention non-fermented soyfoods used as human food (Overview). March 17. Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** Whole dry soybeans, ground or mashed to a paste after boiling, or ground raw with water to a fresh puree or slurry (Including Japanese *gô*): 636 BCE–China.

Whole Dry Soybeans (Boiled): 360 BCE, China.

Soy sprouts: 100 CE (AD) China.

Tofu: 965 CE China.

Green vegetable soybeans or edamame: 1275 Japan.

Roasted soy flour: 1301 China.

Soymilk: 1866 France.

8497. Golbitz, Peter. 2008. Sale of Soyatech, major contributions, future plans. Part II (Interview). *SoyaScan Notes.* March 24. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Continued: (1b) Soyatech's electronic newsletter is a way for the company to have a presence with its customers every day. The last printed, mailed issue of *Bluebook Update,* Soyatech's quarterly newsletter, appeared in Dec. 2003 (Vol. 10, No. 4). Thereafter the newsletter moved to an electronic online format and was renamed eNews Daily and Weekly.

(1c) Soyfoods conferences: Soyatech did a series of about ten of these jointly with IQPC and IBC. Peter was asked by the organizers to helped design the agenda, made sure the topics were relevant, and help promote the event (make mailing lists etc. available) to ensure satisfactory attendance. It was a contract for services agreement; Soyatech was paid a flat fee and/or a "piece of the gate" (percentage of income from attendance).

(1d) Market studies: These were a way for Soyatech to benchmark where the soy industry was in any particular year, and measure the value being added. For Soyatech it was a great way to promote the company's expertise in a particular area. Soyatech has done about 10 syndicated studies–7 soyfood reports, one on whole soybeans for food use and another on soy protein. They are currently in production with 2 more. (1e) Proprietary consulting: For one customer such as an equipment supplier, a technology provider, a seed supplier, a processor, a food company, etc. It crossed the whole value chain. People who wanted to understand what they had or what the size of the market was. Today Soyatech does 15-20 medium- to large-size projects a year. For example, in April 2006, the sixth report produced by a partnership of Soyatech and SPINS was released. Having a good staff is one key to doing all this.

Peter resigned as president of Soyatech on 17 Jan. 2008 and it became effective on March 7; his role is now "Founder and Senior Advisor." Peter is actively working with the company; he has three projects on which he is consulting with HighQuest Partners, helping to find and provide information. The Soyatech office in Bar Harbor, Maine, is fully staffed and more active than ever. Keri Hayes is now publisher of the Bluebook and Joe Jordan is general manager of content and events. So HighQuest has promoted the people at Soyatech rather than bringing HighQuest people into the Bar Harbor office. Peter believes that this is

the best arrangement for both Soyatech and HighQuest. He is extremely happy with the way things have worked out, and he has a tremendous amount of respect for the vision that they had and for their respect for what Soyatech was and is. "They've done a great job. More than anything else, I am grateful." People from Boston come up regularly, and are working very effectively with the Soyatech staff. Soyatech has more of a horizontal / egalitarian management chart than most companies. In short, the merger seems to be working out really well. Peter plans to meet Keri and Joe today to discuss upcoming events and Bluebook layout issues. Peter thinks that it is unlikely that HighQuest will shut down the Bar Harbor office and consolidate it into any of their other offices. The Boston office is also headquarters for a number of other businesses that HighQuest operates. HighQuest has five consultants in their Boston office.

(2) Peter's work with the Soyfoods Association of North America (SANA): When Peter left as president of Soyatech, he resigned his seat on the SANA board, because it is a company board seat. Although he could stay on because he is still an advisor to Soyatech, he decided to let Philippe de Lapérouse take the seat. Another reason for the decision to step down is that, during the past 4-5 months, Peter's work with the World Soy Foundation, has taken quite a bit of his time.

(3) Peter's work with WISHH (the World Initiative for Soy in Human Health). Peter became involved with WISHH in 2003 after Soyatech considering forming its own foundation; Peter realized that it made more sense to work with an established group. WISHH is now a committee of the American Soybean Association (ASA); it no longer has its own board. That is a recent change; for more information contact Jim Hershey, who is executive director of WISHH. Peter works with WISHH as a volunteer and ex officio member. He has been to Africa (South Africa, for 1 week each trip) 3 times so far, in 2005, 2006 and 2007. Soyatech helped to raise the $750,000 needed to establish the "Soy in Southern Africa Alliance"; Sarah Day from Soyatech's office just recently went to Ghana and Nigeria for WISHH as a researcher / consultant.

On the first several trips to South Africa, Peter met with companies to advise them on their soy sourcing, processing, marketing, and to generally help them solve their problems and improve their operations. On the most recent trip, when he visited the SoyaCow and SoyaGoat training center in KwaZulu-Natal, the easternmost province of South Africa, he helped them process soymilk using these two mechanical soymilk making machines, and gave several lectures on soymilk processing, flavorings, the types of technologies available, and to help develop that industry further. WISHH, whose objective is market development for foods and ingredients made from U.S. soybeans, is working to create fertile ground through education of the benefits of soy products in the human diet. The focus is on foods, but soy oil and meal are not excluded. WISHH is trying to get the SoyaGoats into communities such as orphanages, feeding kitchens, etc. and to train people to make soymilk using this technology. There are a number of large soymilk companies in South Africa; they generally sell soymilk in Tetra Pak cartons that is too expensive for most people. By using a SoyCow or VitaGoat the people drink fresh soymilk and omit the packaging, which is more than half of the cost. In 2007 Malnutrition Matters of Ottawa, Canada, (Frank Daller, president) got a grant from the World Bank to place about 16 VitaGoats in India; they hope to feed 4,000 to 5,000 children. Daller developed the VitaGoat using simple, inexpensive parts suited for Third World villages without electricity. "We're still just beginning in developing countries but there is a tremendous amount of interest." WISHH is also working with a Rotary group, and together they are sending SoyCows and soybeans, to Guatemala. In Peter's experience, the people in Africa loved the fresh soymilk made using relatively inexpensive technology. He found there was very little difference in the taste and appearance of the soymilk made by the low-tech bicycle-powered VitaGoat and the electric high-tech cold-water-grind SoyCow. "We just sent Sarah Day, research analyst in the Bar Harbor Office, to Nigeria and Ghana for a week in February." Two years ago Peter helped to raise $250,000 from industry for WISHH; WhiteWave and Solait were the two largest contributors. WISHH added $100,000, and that $350,000 was matched by USAID making a total of $700,000 for the South African project, which including establishing the center and running short courses in soymilk processing and teaching seminars.

A remarkable gentleman named Henry Davies (a white Afrikaner businessman) has set up this training center in Bergville, KwaZulu-Natal. It is dedicated to teaching and training people about soyfoods. There is a full SoyaCow in the tiled processing room, which is really a pilot plant. There is also a meeting and lecture room. There was an extrusion plant that made pet food and textured soy flour.

(4) Peter's work with the World Soy Foundation (WSF): In March 2007 Peter was elected to the board of directors of WSF; he is also chair of their fundraising committee. WISHH could not be a foundation or a nonprofit organization–such as 501(c)(3)–because part of its agenda was market development. So in late 2006 the Internal Revenue Service (IRS) gave ASA and USB permission to create the World Soy Foundation as a 501(c)(3) charitable foundation, which would disperse funds to various kinds of organizations related to U.S. soybeans. Presently WISHH is their primary beneficiary, but WSF can only give to certain types of WISHH projects. So WISHH is expected to get some of its funding through the American Soybean Association (ASA) and some through the World Soy Foundation. ASA, as well as the big state soybean boards such as Illinois, Iowa and Indiana, are all major contributors to WISHH. The board is comprised of soybean farmers, who

provide great leadership, and each of whom sits on their state soybean board. Ellen Feeney from White Wave Foods and Peter have provided some soyfoods industry perspective. White Wave has been a great supporter of both WISHH and the World Soy Foundation.

Future plans: Peter is putting the finishing touches on a home office. He is thinking about some travel ideas, book ideas, and writing projects. He's trying to keep his time open. He cannot consult for the next few years with companies outside of Soyatech and HighQuest Partners–being restricted by a non-compete clause in his contract with HighQuest. Looking at the big picture, Peter says: "If there's some way I can do more for promotion of soy in the world–bring it on!"

Peter recently took a trip to visit Nasoya, Lightlife, and South River Miso Co. "It was wonderful. It was really nice to be welcomed with open arms into all those companies." Their original vision is still alive. So is his.

Peter remarried in 2004 to Mary Cline Golbitz, a lawyer, who has also become a certified yoga teacher. They have three sons; two are Peter's stepsons. Peter has two kids in college (one at Middlebury College in Vermont and one at Northeastern in Boston) and a third about to start college, so he can't afford to retire. He needs a source of income to pay for the kids in college. Peter lives on Mount Desert Island, which is several hundred yards off shore and is connected by one road to the mainland. It is the largest island off the coast of Maine (with a permanent population of about 10,000) and the 2nd largest (after Long Island) on the Eastern Seaboard of the USA. Bar Harbor is on the island. Half the island is occupied by Acadia National Park. Address: Founder and Senior Advisor, Soyatech, Bar Harbor, Maine. Phone: (503) 386-7766.

8498. Welters, Sjon. 2008. Re: Soyfoods in western Europe. Letter to William Shurtleff at Soyinfo Center, March 24. 2 p. Handwritten.

• ***Summary:*** Sjon just returned from a trip to Europe (to visit parents and inlaws) where he collected some soyfoods labels. He "noticed a proliferation of soyfoods, especially of tofu products."

Rinatura is a brand he had not seen before. Also: Rinatura.de, and Rila. They sell tofu sterilized in a glass jar for 2.29 euros for 130 gm drained weight.

Some prices: Yakso Tempeh 1.95 euros for 350 gm. Viana Tempeh 3.49 euros for 200 gm. Viana tofu (nigari) 1.99 euros for 300 gm. Demeter tofu (nigari, calcium sulfate) 2.29 euros for 300 gm in Germany or 2.45 euros for 300 gm in the Netherlands. Provamel tofu (nigari, calcium sulfate) 1.99 euros for 400 gm in Germany or 2.20 euros for 400 gm in the Netherlands. These are both packaged 2 x 200 gm in one box. Taifun tofu (nigari) 1.49 euros for 225 gm in Germany. Taifun tofu (calcium sulfate) 1.99 euros for 400 gm in Germany. Taifun silken tofu (*seiden tofu,* nigari only) 2.59 euros for 400 gm in Germany.

Svadesha.de in Munich is another new name, yet apparently the oldest tofumaker in Germany.

Alpro and Provamel are all over with their soymilk.

8499. **Product Name:** Silk Soymilk Plus [Fiber, Omega-3 DHA].
Manufacturer's Name: Dean Foods / WhiteWave Foods (Product Developer-Distributor).
Manufacturer's Address: 2515 McKinney Ave., Suite 1200, Dallas, Texas 75201.
Date of Introduction: 2008. March.
Ingredients: Fiber: Organic soymilk (filtered water, whole organic soybeans), organic evaporated cane juice, dextrin (soluble dietary fiber), calcium carbonate, sea salt, natural vanilla flavor, carrageenan, vitamin A palmitate, vitamin D2, riboflavin (B2), vitamin B12.
Wt/Vol., Packaging, Price: Quart Pure-Pak carton.
How Stored: Refrigerated.
New Product–Documentation: Leaflet (glossy color, front and back, 28 cm) sent by Patricia Smith from Natural Products Expo West. 2008. March. "Introducing Silk Plus." "A re-launch of Silk Enhanced (same UPC) and an innovative new companion sku, Silk Fiber Plus."

8500. Johnson, Katherine Quimby. 2008. Fresh and full of beans: Vermont Soy. From the good earth. *Green Edible Mountains* No. 2. Winter. p. 18-21.

• ***Summary:*** About Vermont Soy, which makes four flavors of soy milk and a firm tofu in Hardwick, Vermont. Their products debuted in the summer of 2007 at the Hardwick and Waitsfield farmers markets. The company grew from the desire of co-owner Todd Pinkham to turn the tempeh he made at home into a commercial venture. Todd's partner is Andrew Meyer. With support and technical assistance from the Innovative Agricultural Initiative developed by the University of Vermont (UVM), about 6 farmers around the state (in Alburh, Highgate, Bridport, Orwell, Glover, and Hardwick) have begun growing food-grade soybeans organically. Extra-firm tofu, Vermont Soy's newest product, is curded with nigari. The soy plant in Hardwick is located next to Meyer's other venture, Vermont Natural Coatings; tofu is made there every Thursday. Tofu recipes are given for: Chinese noodle soup. Pumpkin pie.

Color photos show: (1) James Lewinsky, Sophia Smith, Andrew Meyer, and Todd Pinkham holding a Vermont Soy sign. For more: www.vermontsoy.com. (2) Bright yellow soaked soybeans in a large metal bowl. (3) A thermometer held above hot soymilk. (4) Yoshikawa Maruzen nigari, for curding tofu.

8501. **Product Name:** Kikkoman Pearl Organic Soymilk (In Tetra Prisma Aseptic 8.25 oz. Grab-N-Go Cartons) [Chocolate, Green Tea, Creamy Vanilla].
Manufacturer's Name: Kikkoman International, Inc.

(Importer-Distributor). Made in Japan.
Manufacturer's Address: P.O. Box 420784, San Francisco, CA 94142. Phone: 415-956-7750.
Date of Introduction: 2008. March.
Ingredients: Filtered water, whole organic soybeans, organic evaporated cane juice, organic green tea powder, tricalcium phosphate, organic natural flavors (lemon and vanilla), sea salt, carrageenan, vitamin A palmitate, vitamin D2. Certified organic by QAI.
Wt/Vol., Packaging, Price: 32 fl oz (1 quart) Tetra Brik Aseptic Carton.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: Glossy color leaflet sent by Patricia Smith from NFM Natural Products Expo (Anaheim) 2008/03. "Kikkoman: Purely authentic." A color photo on the cover shows these three products.

8502. Kikkoman International Inc. 2008. Kikkoman: Purely authentic. San Francisco, California. 2 p. Front and back. 28 cm.
• ***Summary:*** On the cover is a color photo showing the following products: (1) Kikkoman Bread Crumbs (Panko). (2) Kikkoman Organic Soy Sauce and Tamari Soy Sauce. (3) Kikkoman Teriyaki (Original, or Spicy Miso; Takumi Collection). (4) Kikkoman Pearl Soymilk (Aseptic quarts; Organic Original, Organic Creamy Vanilla, Organic Green Tea, Organic Unsweetened, Organic Chocolate, and Nonorganic Tropical Delight–with 7 Juices). (5) Kikkoman Pearl Soymilk (Tetra Prisma Aseptic grab-n-go 8.25 oz packs; Organic Chocolate, Organic Green Tea, Organic Creamy Vanilla). (6) Kikkoman Black Bean Sauce, Hoisin Sauce, Thai Style Chili Sauce. Plum Sauce.

On the inside two pages are details about each of these products. On the rear panel is detailed information about the six flavors and two packages of Kikkoman Pearl Soymilk. Address: P.O. Box 420784, San Francisco, California 94142-0784. Phone: (415) 956-7750.

8503. Nutrition & Soja. 2008. Soy: Die pflanzliche Alternative. Tofu, seitan, getreide [Soy: The plant-based alternative. Tofu, seitan, cereal grains (Leaflet)]. Revel, France. 3 panels each side. Each panel: 21 x 10 cm. [Ger]
• ***Summary:*** This stylish German-language color leaflet is from an early French soyfoods company. Front panel: For almost 25 years we have offered a complete line of heat and serve or ready to eat products based on tofu and seitan. They use only organic soybeans grown in southwest France.

The three inner panels start with a vertical cartoon showing how soybeans are made into soymilk and then tofu. From the soymilk comes four lines of eleven products: (1) Biosoy soymilk (aseptically packed) in natural, vanilla, and calcium-enriched flavors. (2) Biosoy desserts (Hazelnut, Vanilla, and Chocolate). (3) Biosoy drinks in Chocolate (2 sizes), Tchai, and Moka. (4) Biosoy creme (like cream but with fewer calories).

From the tofu comes two lines of eight products: (1) Tofinelle meatless sausages in Sesame & Curry, and Mushroom flavors. (2) Six types of *Croque Tofu* (Tofu Croquettes / Burgers) in Provencale, Garlic & Fines Herbes, Mushrooms, Sea Vegetables, Chop Suey, Curry and Poppyseed.

Back left panel: Tofu: The highest form of nutrition. Unique plant protein, unsaturated fatty acids, essential fiber and minerals, virtues for good health. Back middle panel: The delicious art of eating vegetables. Croc' Seitan (Indian Style). Cereal Grains: Grinioc Patties in Quinoa-Tomato, Millet-Mushroom, or Rice, Delicate Vegetables & Saffron. www.soy.tm.fr. Address: Chemin de l'Horte, 31250 Revel (near Toulouse), France.

8504. Nutrition & Soja. 2008. 100 recettes au tofou [100 tofu recipes]. Revel, France. 72 p. Illust. 20 x 17 cm. [Ger]
• ***Summary:*** At top of color cover: Soy: The plant-based alternative (*L'alternative végétal*). Below the title is a photo

brochette with a cube of tofu, wedge of tomato, etc. Across the bottom: Delectable and easy to prepare throughout the four seasons.

Contents: The plant-based alternative: the soybeans is an ecological plant. Full-page cartoon showing how soymilk, tofu, and second-generation tofu products are made. Ideas for using tofu from day to day. Recipes for spring. For summer. For autumn. For winter. Soy: A complete line of products based on tofu and soymilk. The brand name of all these soy products is SOY (p. 70-71, with color photos of the front panel of 29 products). Soy: A new line based on seitan. With every confidence in soy. Address: Chemin de l'Horte, 31250 Revel (near Toulouse), France. Phone: Web: www.soy.tm.fr.

8505. Soyaworld Inc. 2008. So Nice organic soymilk: part of an organic, healthy lifestyle (Leaflet). 1685 H St., #1023, Blaine, WA 28930 USA. 1 p. Front and back. 28 cm.
• ***Summary:*** Glossy color leaflet (8½ by 11 inches, front and back) sent by Patricia Smith from Natural Products Expo West. 2008. March. On the front is a photo of a young man and woman, both standing and smiling, she carrying a bag filled with flowers, he some fruits and vegetables. In front of them are five different ESL gable-top cartons of So Nice Organic Soymilk (chocolate, original, vanilla, omega+ vanilla, and omega+ original). Across the bottom: "Come visit us at Booth 4342" "Towards a better organic world."

On the rear: The So Nice Advantage. So Nice Omega+. The same photo of 5 cartons. "So Nice brings incremental sales to your category: Total soymilk category is growing at +7% with over $438 million. Total chilled soymilk sales represent over $380 million nationally with +9% growth. 64 oz [half gallon] Size represents 82% of chilled soymilk sales. Source: ACNielsen 9/16/06 (conventional supermarket and natural foods). 1 in 7 Americans drink soymilk. Source: April 2006 www.ift.org.

Website: www.soniceorganic.com.

8506. Kong, F.; Chang, S.K.; Wilson. L.A. 2008. Changes of soybean quality during storage as related to soymilk and tofu making. *J. of Food Science* 73(3):S133-44. April. *
• ***Summary:*** Soybeans to be used for making tofu should be stored in a cool, dark place. Soybeans stored at high temperatures can produce a drastic loss in tofu yield. Address: Dep. of Biological and Agricultural Engineering, Univ. of California at Davis, Davis, CA 95616.

8507. Gode Cookery. 2008. Welcome to Gode Cookery [Medieval Cookery] (Website printout–part). www.godecookery.com/#allsites Printed May 8.
• ***Summary:*** This is a website of digitized medieval cookbooks and manuscripts. Most are not dated, except to the nearest century. A search box enables us to search all of the books for any word or term. One of the "books" is titled "Glossary of medieval cooking terms." If we click "A" and look for almond(s) we find the following: Allemandys (GO = Glossary only). Almand (incl. Almand melk, Botere of almand melk {Butter}). Almaundys (8 hits–not including glossary). Almaund (3, incl. Almaund mylke). Almaundys (9). Almandys (1). Almaun (GO). Almaund mylke (3). Almaunde (13, incl. Almaunde milke, Almaunde mylke). Almaundes (10). Almaundis (GO). Almaundys (8). Almond (133, incl. almond cheese {made from almond milk}, almond cream, almond dessert, almond milk, almond mylke, almond oil, almond paste, almond pudding, almond sauce, almond syrup). Almonde (4). Almondes (14). Almound (3, incl. almound melk, almound mylke). Almoundes (9, incl. creme of almoundes, almoundes mylk). Almoundis (GO).

Note: A majority of the recipes that call for almonds as an ingredient call for almond milk (spelled in various ways).

8508. Sojami (Le). 2008. Le Sojami: Balancing nutrition & flavor (Website printout–part). www.lesojami.com Printed May 13.
• ***Summary:*** This website has both French and English editions; the French one is more complete. Contents: The company. Product range. Nutrition. Points of view. Sojami was founded in 1997 by Jean-James Garreau, who has a PhD degree in biology and is an independent researcher in human ecology at the University of Science at Bordeaux, France. In 1996 Dr. Garreau won the Agropole prize for Innovation in the Food Processing Industry as a result of his development of a lactic fermentation process for soymilk. Soyami's products are made from soybeans grown in the southwest of France; they are 100% organic and of plant origin (vegan). They include: (1) Tartimi (cream cheese alternative) in Basil, Cumin & Tarragon, Chives & Shallot, Garlic & Mixed Herbs flavors. (2) Accompaniment (incl. Marinated Lactofermented Tofu, Provençale Sauce {with tofu}, Lactofermented Tofu). (3) Sauces (Plain Sojami, Mayomi). (4) Frozen Dessert (made from Lactofermented Soymilk, Rice Milk, or Almond Milk).

Soyami makes all its own soymilk. Address: Agropole–BP 109, Estillac, 47931 Agen (Cedex 9), France. Phone: +33 5 5377 2488.

8509. Dean Foods Co. 2008. Fortifying our future: 2007 annual report. Dallas, Texas. 4 + 50 + 51 + 5 p. 28 cm.
• ***Summary:*** Its been a hard year at Dean Foods. All but the first 4 pages of this annual report are Form 10-K. Basic financials are on page F-2.

Sales of Silk brand products increased by 8%.

Accompanying the annual report is a "Notice of stockholders' meeting" (49 p.). In 2007 Gregg L. Engles, age 50, Chairman of the Board and CEO had total compensation of $8.152 million, including salary of $1,275,000–even though the company did poorly last year. Address: 2515 McKinney Ave., Suite 1200, Dallas, Texas 75201. Phone: 214-303-3400 www.deanfoods.com.

8510. Liu, KeShun. 2008. Food use of whole soybeans. In: Lawrence A. Johnson et al. eds. 2008. Soybeans: Chemistry, Production, Processing, and Utilization. Urbana, Illinois: AOCS Press. viii + 842 p. See p. 441-481. Chap. 14. [85 ref]
• ***Summary:*** Contents: Introduction. Non-fermented soyfoods: Soymilk (traditional soymilk, modern soymilk {techniques to reduce beany flavors, formulation and fortification, homogenization, thermal processing, and packaging}), tofu (preparation methods, factors involved in tofu-making {soybean varieties, storage and pretreatment, solids concentration, heating, type of coagulants, coagulant concentration, coagulation temperature, coagulation time, process automation, packaging}, varieties of tofu {silken tofu, regular and firm tofus, varieties of tofu products}), green vegetable soybeans, soybean sprouts, yuba, okara, roasted or cooked (boiled whole) soybeans.

Fermented soyfoods: Terms (Koji {fermentation, koji starter, inoculum}), fermented soy paste (preparation method {preparing rice koji, treating soybeans, mixing and mashing, fermenting, pasteurizing and packaging}, processing principles), soy sauce (preparation method {treating raw materials, koji making, brine fermentation, pressing, refining}, processing principles, chemical soy sauce), Japanese natto (preparation method, processing principles), Indonesia tempeh (processing method, processing principles), fermented soymilk, fermented tofu (preparation method, processing principles), fermented black soybeans (Chinese douchi, Japanese hamanatto). Conclusion.

Figures show: (1) Flowchart of a traditional Chinese method for making soymilk and tofu. (2) Photo of savory tofu dices. (3) Photo of soy sprouts. (4) Photo of yuba (soymilk film). (5) Photo of Chinese jiang and Japanese white and red miso. (6) Flow chart of a common method for making Japanese rice miso. (7) Photo of Japanese natto. (8) Flow chart of a traditional Indonesian method for making tempeh. (9) Photo of Chinese douchi (fermented black soybeans or fermented whole soybeans). Address: Research Chemist, U.S. Dep. of Agriculture, Agricultural Research Service, Grain Chemistry and Utilization Lab., Aberdeen, Idaho 83210.

8511. Packaged Facts. 2008. Soy foods and beverages in the U.S. Rockville, Maryland. 210 p. May. 28 cm. *
• ***Summary:*** This market study, No. LA148-6839, retails for $3,300 as on online download or $3,700 as hard copy mail delivery. Contents: 1. Executive summary: Scope and methodology: Scope of report, two classifications–foods and beverages, exclusions, report methodology.

Market overview: Soy food / beverage sales top $2 billion mark, foods classification bigger–but beverages growth faster, snack bars and soymilk are the largest categories, soy "mainstreams" from natural channel, figure 1-1–share of U.S. soy food and beverage sales–by retail outlet type–2007 (percent), soy on a roll, consumer awareness of soy's health benefits on the ups, FDA approves heart healthy claims, looking ahead, the global picture.

Soy food marketing and competitive trends: Soy foods have staying power, company types, marketer and brand shares by category, health a big pitch across all categories, it's all about taste too, westernizing soy, "flexitarians" a growing market base, soy flour boosting baked foods, "natural" tops list of new product introductions, snack / nutritional bars lead new product introductions.

Soy beverage marketing and competitive trends: Riding the healthy beverage wave, company types, marketer and brand shares by category, drink to your health!, synching up with natural / organic, the greening of soy, natural leads new product introductions, most new soy beverages appear in non-dairy milk / yogurt drink category.

Consumer trends: IFIC data on attitudes toward health foods and soy, USB data on attitudes toward nutrition, health and soyfoods, meat alternatives and soymilk are top categories, figure 1-2–usage of selected soy foods and beverages–2007 (percent of U.S. households), soy consumers are eco- and gourmet-conscious.

2. Market overview. 3. Soy food marketing and competitive trends. 4. Soy beverage marketing and competitive trends. 5. Consumer trends. Address: 11200 Rockville Pike, Suite 504. Rockville, Maryland 20852. Phone: 1-800-298-5294.

8512. Stein, Hans H.; Berger, Larry L.; Drackley, James K.; Fahey, George C., Jr.; Hernot, David C.; Parsons, Carl M. 2008. Nutritional properties and feeding values of soybeans and their coproducts. In: Lawrence A. Johnson et al. eds. 2008. Soybeans: Chemistry, Production, Processing, and Utilization. Urbana, Illinois: AOCS Press. viii + 842 p. See p. 613-660. Chap. 18. [149 ref]
• ***Summary:*** Contents: Introduction. Soybean products in diets fed to poultry: soybean products as protein sources for poultry (protein quality of soybean products, soybean products as protein sources in feeds for broiler chickens and turkeys, soybean products as protein sources in feed for laying hens, assessment of protein quality of soybean products), soybean products as energy sources for poultry, genetically modified soybean products. Soybean products in diets fed to swine: Nutrients and energy in soybean products (nutrient and energy concentrations in soy products, amino acid digestibility of soybean proteins by pigs, phosphorus digestibility of soybean products by pigs, energy digestibility of soybean products by pigs), utilization of soybean products in diets fed to swine (soybean meal in swine diets, soy protein concentrates and soy protein isolates in swine diets, soybean oil in swine diets, full-fat soybeans in swine diets, new soybean protein sources in diets fed to pigs), conclusion on soy products in diets fed to swine. Soybean products in diets fed to companion animals: soybean products used in

pet foods, nutritional characteristics of soy products used in pet food, soybean products as protein sources in pet diets, soybean products as fiber sources in pet diets, antinutritional factors in soy products, physiological and gastrointestinal effects of soy products, conclusion on usage of soy products in pet-food diets. Soybean products in diets fed to beef cattle: Protein digestion in ruminant animals, increasing the bypass proteins in soybean products, factors affecting degradability of soybean protein in the rumen, economic implications of using soybean meal in diets fed to cattle, feeding soybean hulls to beef cattle. Soybean products in diets fed to dairy cattle: Protein utilization in dairy cattle, soybean meal in diets fed to dairy cattle, full-fat soybeans in diets fed to dairy cows, soybean hulls in diets fed to dairy cows, soy proteins in milk replacers for young calves. Conclusion.

Figures show: (1) Pie chart of use of soybean meal in the United States by livestock, poultry, and companion animals. (2) Flow diagram of the schematic of protein metabolism in the lactating cow. (3) Diagram illustrating the digestion in the rumen of the A, B, and C protein fractions in feedstuffs.

Tables: (1) Metabolizable energy and protein concentration and true digestibilities of amino acids in soybean meal and other oilseeds fed to poultry. (2) Concentration of energy, P [protein], and amino acids in soybean products fed to swine. (3) Standardized ileal digestibilities of amino acids (percentage) in soybean products fed to swine. Note: The ileum is the last division of the small intestine extending the jejunum and the large intestine. (4) Advantages and disadvantages of using soybean products in companion animal diets. (5) Chemical composition of soy protein sources used in pet foods. (6) Comparison of protein and amino acid profile of soybean meal and AAFCO standard for maintenance of adult dogs and cats. (7) In vitro soy hull fermentability by dog fecal microflora. (8) Nutrient composition and in situ rate of degradation of soybean meal (SBM) roasted to various temperatures. (9) Duodenal nitrogen flow and ruminal escape of roasted soybean meal (SBM). (10) Effects of ethanol and heat treatment of soybean meal (SBM) on in situ nitrogen disappearance and nitrogen solubility (percentage). (11) Effect of concentration of dietary corn and rumen pH on nitrogen disappearance from Dacron bags. (12) Effect of dietary nutrition source and concentration on performance of finishing steers fed diets based on dry-rolled corn. (13) Economic analysis of feeding soybean meal (SBM) to steers implanted with estradiol and trenbolone acetate. (14) Use of soy hulls as an energy supplement for backgrounding steers. Address: 1. Assoc. Prof., Dep. of Animal Sciences, Univ. of Illinois, Urbana-Champaign, IL 61801.

8513. Sbranti, Joanne N. 2008. Gordon, SunOpta to bring 400 jobs. *Modesto Bee* (*California*). June 6. p. 1.
• ***Summary:*** SunOpta Inc. will open an organic soymilk production and processing plant in Modesto, California, starting in the spring of 2009. It will move into the old fruit cannery, inside the Tri Valley Growers' Plant 1 at 555 Mariposa Road. The company expects to employ about 50 people at the beginning, and then to expand to 100 jobs within the next 24-30 months. It will also make and package almond milk and brewed tea.

SunOpta, which is investing $25 million in the plant, has signed a long-term lease (which starts this month) for the 180,000-square-foot building. After looking at various other cities in California, SunOpta chose Modesto because the cost of utilities is very low. Modesto works to attract "wet processing" manufacturers; every month, SunOpta will require 6 million gallons of water and produce 3 million gallons of waste water.

Allan Routh, president of the SunOpta Grains and Foods Group, expects SunOpta's organic soymilk and other beverages to grow by 20% a year. SunOpta also has an aseptic packaging facility in Alexandria, Minnesota. The Modesto plant will produce soymilk for Costco, Starbucks, and food service companies. When the Modesto facility is fully operational, Routh expects that SunOpta will be making 250 to 300 million quarts per year of soymilk and other beverages.

A photo shows "The old Tri-Valley Plant 1" on Mariposa Road.

Note: In Modesto, SunOpta will do both soybean processing (to make soy base and soymilk) and beverage packaging. Address: Staff writer.

8514. Nordquist, Ted. 2008. Peter Golbitz now working for SunOpta. SunOpta is starting a soymilk manufacturing and aseptic packaging plant in Modesto, California (Interview). *SoyaScan Notes.* June 19. Conducted by William Shurtleff of Soyinfo Center.
• ***Summary:*** Last week Ted received an e-mail from Peter Golbitz saying that, starting the week of June 16-20, he will begin working for SunOpta as Director of International Business Development. He expects to be seeing more of Ted. Ted believes that Peter will continue working out of his home at 9 Eastern Way, Bar Harbor, Maine 04609.

Ted also received an e-mail from Allan Routh of SunOpta, offering to buy the soymilk manufacturing equipment in Ted's plant in Modesto. Ted, of course, did not reply. Address: WholeSoy & Co., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

8515. SunOpta Inc. 2008. SunOpta (Website printout–part). www.sunopta.com Printed June 21.
• ***Summary:*** Contents: Home page. About us: Company history. Operating groups. Investor relations. News & events. Site map. Contact us [USA and Canada].

Company history: "SunOpta was founded in 1973 under the name 'Stake Technology' to commercialize its

proprietary steam explosion technology. These efforts continue today within SunOpta BioProcess Inc. "The acquisition of Barnes Environmental in 1995 led to the creation of Opta Minerals Inc., a vertically integrated player in the industrial mineral and environmental recycling markets. The company has grown steadily since that time, and in February 2005 completed an initial public offering, listing its common shares on the Toronto Stock Exchange. SunOpta currently owns 66.7% of the common shares of Opta Minerals Inc.

"The SunOpta Food Group was created in 1999 and through combination of internal growth and acquisitions has grown to become a North American leader in sourcing, organic, processing and distribution of natural and organic food products integrated from seed through packaged products.

"Through this evolution a strong and vibrant organization has emerged with a strong commitment to natural, organic and specialty foods and environmental responsibility.

"From less than $200,000 revenues in 1994, the Company has grown to expected revenues of $740–$760 million in 2007.

On this page is an excellent timeline of almost 30 key events in the SunOpta Food Group's history–starting on 3 Aug. 1999 with the acquisition of Sunrich, Inc., based in Hope, Minnesota.

Also at About us > Company policies, is a statement of SunOpta's "Environmental philosophy and principals." And at About us > Chairman's message is a statement from Jeremy N. Kendall.

SunOpta stock price: During most of 2007 until about Nov. 2007 the stock sold for $12-14 a share. From Nov. 2007 until about Aug. 2008 it averaged $6. In Oct. 2008 it reached an all-time low of about $1.15 with the world economy downturn. But by 29 Jan. 2009 it had climbed back to $2.42. Address: 3824 SW 93rd St., Hope, Minnesota 56046; Headquarters: 2838 Bovaird Drive West, Brampton, Ontario, Canada. Phone: 507-451-4724.

8516. Nordquist, Ted. 2008. (1) The increasing difficulty of sourcing organic, non-GE, clear hilum soybeans for making soymilk, etc. (2) SunOpta: Their role in the U.S. soymilk market. (3) Stremick's Heritage Foods (Interview). *SoyaScan Notes*. June 27. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** (1) Organic, non-GE, clear-hilum soybeans now constitute only 0.03% of total U.S. soybean acreage. 96% of that acreage is genetically engineered. For details see Rhonda Cole's 2008 Powerpoint presentation. She says (slide 10) that organic soybean production in the USA in 2005 (according to USDA ERS data) is 122,217 acres. At 40 bu/acre that is 4.9 million acres or 133,000 metric tons. A major problem is contamination of soybeans from genetically engineered crops. When that happens, farmers must sell their soybeans at a low price for use as feed. Then they switch to other soybean varieties that give higher yields than clear hilum; they sells these organic, non-GE soybeans for organic feed. The grower knows that Ted will check the soybeans to be sure they meet non-GE standards, whereas Ted believes that companies buying the soybeans for use as feed rarely check. These developments have not led to an increase of the organic, non-GE, clear hilum soybeans that Ted buys because he has a long-term special relationship with a farmer who supplies the soybeans. A year ago, from most suppliers (not including Ted's) the price for such soybeans was 39-42 cents/pound; now it is more like 62-70 cents a pound. This gives Ted a price advantage over his competitors, but it won't go on forever.

Ted is in the process of putting together a nationwide private label soymilk program with Heritage Foods, which recently bought the Jasper soymilk plant in Missouri. At this plant they formulate the soymilk and package it into plastic half-gallon bottles, UHT (=ESL) half-gallon cartons, and Tetra-Pak aseptic packaging machines. UHT (ultra-high temperature) is held at 185ºF for 1-2 seconds.

(2) By far the biggest soymilk manufacturer in the USA is Dean Foods / Suiza. They have about 8 soymilk plants and they used to have about 80-85% of the U.S. market, but Ted thinks they have lost market share to private label soymilk, so they may now be down to roughly 65-70%. SunOpta is also a major producer; they took away the Costco soymilk account from Dean / Suiza. To service this account, SunOpta could have reopened their Wyoming plant (Ted is not sure). Costco, the largest membership warehouse club chain in the world based on sales volume, is headquartered in Issaquah, Washington, with its largest warehouse in nearby Seattle. SunOpta has soymilk extraction plants in Alexandria, Minnesota; Huevelton, New York (the plant in upstate New York they bought from Raj Gupta), and Afton, Wyoming. They have plans to build a soymilk extraction plant in Modesto, California (near Ted's plant) but that plant will probably not start operating for 18-24 months. They have already started to pay rent on the building in order to start getting their permits, waiting for stainless steel machinery, etc.

SunOpta temporarily shut down its plant in Afton, Wyoming, Ted's company took the Bolthouse Farms account, for soybase, away from SunOpta. Bolthouse, headquartered in the San Joaquin Valley, California, makes a line of healthy beverages including "Perfectly Protein Vanilla Chai Tea with Soy Protein"–sold at Walgreens and Whole Foods. (3) Heritage Foods (recently renamed Stremick's Heritage Foods) is a big dairy milk, beverage, and juice company that has been around the dairy milk market for a long, long time. Note: The Heritage website states that they are Nestle's largest distributor in the Western United States. "The early stages of development were begun in 1988 when

our President and CEO, Lou Stremick, purchased Carnation dairy in Los Angeles and changed the name to Main St. In 1990, Lou and a group of investors purchased Adohr Farms and merged both Main St. and Adohr together. Adohr Farms was founded in 1916 by Merritt and Rhoda (backwards, that's Adohr) Adamson, and became the worlds largest milk producer. After a rich history including Spanish land grants, a battle to overcome the Great Depression, and more than two decades of ownership by Southland Corporation, Adohr Farms was ready for a new vision and new direction."

Lou's son is Sam Stremick (he does all the organic products) and Ted works with both men. They have many plants that process and fill fluid products, for other people and under their own brands.

Heritage owned half of the Adohr plant in Cedar City, Utah. When Steve Demos left Ted at Morningstar (in Gustine, California) and started having SunRich make his Silk soybase, it was co-packed [cooperatively packed] at this Adohr plant. So SunRich sent tankers of soybase to the Adohr plant, where it was processed, formulated, and packaged. SunRich was making more and more Silk soymilk for Steve Demos (White Wave), so they decided to save Steve money by building a new plant for making / extracting soybase in Wyoming, which was much nearer to the Adohr plant in Utah. Why SunRich built the plant in Wyoming and not in Utah, Ted does not know. The story is that, without telling SunRich, Steve Demos purchased a APV-Crepaco soybase plant and built it right next to the Adohr plant in Utah. When he started piping soybase into the Adohr plant next door, he just stopped ordering from SunRich–which must have upset them greatly. Steve also has created a lot of bad karma with Richard Rose (on soy cheese) and with Ted (on soybase; Steve didn't pay Ted $320,000 for 8 months, until Ted took him to court), but he may not have done anything illegal. "Steve is a very shrewd businessman."

Back to Heritage Foods. At Gustine, Ted was working with Neil Donavan, the man who invented Lactaid. Neil was making Lactaid at the Gustine plant and distributing it through Suiza. Neil and Ted designed cartons for WholeSoy Soymilk, which they planned to piggy-back with Lactaid through Suiza. All they needed was for Suiza to sign off on it, when Tony O'Brien from Suiza in Dallas, Texas, called Ted and said he was going to make his own soymilk (SunSoy) so he didn't need Ted. Apparently a man named Loren Wallace from Good Karma Foods went to Dallas and convinced Suiza that they didn't need Ted Nordquist and his soybase; they could by soy powder from him, and make their soymilk from the powder. That's what they did–and named it SunSoy. After several years Steve Demos (White Wave) had 84% of the soymilk market and SunSoy had 14%. When Ted and Neil got dumped by Suiza, Neil knew Sam Stremick, so they both went to him and asked him if he could package their soymilk at the Stremick packing plant in Santa Ana. He said he could not, and Ted thinks this was because Sam was half owner of the Adohr plant where they were packing Silk. Sam has since purchased the Adohr plant and renamed it Western Quality Foods. Today, Ted has a private label soymilk program with Heritage Foods which started about 5 years ago, as soon as Ted started operating his own soybase plant in Modesto. Ted ships soybase (12% solids) from his plant in Modesto to the Adohr plant in Utah. There it is processed, formulated, filled, and packaged. "Processing" means the soybase is blended (at a certain temperature) with the other ingredients (water, sugar, tricalcium phosphate, a flavor, and some carrageenan) according to a proprietary formula, then the soymilk (6% solids) it is pasteurized or ultra-heat treated, homogenized, and filled into packages. The same process is also used for dairy milk. Western Quality Foods (Heritage Foods) then sells the soymilk. Ted knows what all the private labels (presently four) look like and which companies buy the product, but he does not know how much soymilk is sold to what companies.

Today White Wave has roughly 7-8 extraction plants where soybase is extracted from soybeans. Address: WholeSoy & Co., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

8517. Martinez, J.; Lewi, J.E. 2008. An unusual case of gynecomastia associated with soy product consumption. *Endocrine Practice* 14(4):409-11. May/June. *
• ***Summary:*** Gynecomastia is excessive breast adipose tissue plus benign enlargement of the male breast attributable to proliferation of the ductular elements. This man, age 60, was referred to the endocrinology clinic for evaluation of bilateral gynecomastia of 6 months' duration. He also reported erectile dysfunction and decreased libido. He described a daily intake of 3 quarts of soy milk. After he stopped drinking soy milk, his breasts returned to their normal size, the tenderness in them disappeared, and his estradiol concentration returned to normal. Address: Dep. of Medicine, Brooke Army Medical Center, Fort Sam Houston, Texas.

8518. Gold, Amanda. 2008. Organic Valley top chocolate soy milk: Taster's choice. *San Francisco Chronicle.* July 2. p. F2.
• ***Summary:*** For tasting they chose 9 SKUs (8 brands) of chocolate soy milk. The brand is followed by the cumulative score given by the tasters. The ranking was: Organic Valley 75. Vitasoy Rich Chocolate 71. Silk (shelf stable) 69. Silk (refrigerated) 65. Kikkoman Pearl 55. 365 Organic 49. Soy Dream 38. 365 Organic 31. O Organics (Safeway) 25. Address: Chronicle staff writer.

8519. Messina, Mark J. 2008. Update on research on the health benefits and risks of soy (Interview). *SoyaScan Notes.* July 26. Conducted by William Shurtleff of Soyinfo Center.
• ***Summary:*** Analysis of the strengths and weaknesses

of the Harvard study showing an association between isoflavone intake and sperm counts, by Cavarro et al., and of the Indonesian study showing an association between tofu consumption (but not tempeh consumption) and mental function. In the latter study formaldehyde used as a preservative in tofu may have caused the problem.

Different basic types of scientific studies involving humans: Epidemiologic studies, case control, cross sectional, prospective (Framingham), intervention, in vitro, in vivo, food frequency questionnaires. Pilot studies vs. full studies.

Second incarnation of the Harvard study. Biological basis for the Harvard study. Effect more pronounced on overweight people. Four biggest weaknesses in the Harvard study: (1) Only looked at 15 different soyfoods but not at other foods consumed, nor at exercise. (2) Four quartiles based on soy intake did not show a dose response. (3) In the 2nd group soy intake was too low to be significant. (4) Ejaculate volume increased.

Another very important study by J.H. Mitchell in 2001 was titled "Effect of a phytoestrogen food supplement on reproductive health in normal males" (Clinical Science (London)). Involved 12 men

Vittorio Unfer has done important research and a case study on use of soy isoflavones to increase sperm count and fertility. A five-year study on endometrial hyperplasia is of long-term concern.

Feminizing effect is a big unknown. What kind of study could be designed. Two cups of Silk soymilk contains 50 mg of phytoestrogens.

Mark is organizing a soy symposium in Japan in November. At least 12 of the papers are good enough to be the subject of news coverage.

The scientific health evidence in favor of a vegetarian diet over a prudent diet that contains meat is no longer impressive. The evidence in favor of fruits and vegetables has grown weaker.

The evidence that soy is good for health is stronger now than 5-10 years ago, but in a more modest way. But the industry has gotten so small: ADM, Solait, and Silk ($400 million retail sales). Revival Soy has reformulated many of its products so that they no longer contain soy. Address: PhD, 439 Calhoun St., Port Townsend, Washington 98368. Phone: 360-379-9544.

8520. Vitasoy International Holdings Ltd. 2008. Annual report 2007/08. New Territories, Hong Kong. 164 p. July. 30 cm. [Eng; Chi]
• ***Summary:*** This is a year of discontinuity of sales and gross profit figures, for complex reasons explained on page 7. We will use the new, adjusted numbers below. For the fiscal year ended 31 March 2008, adjusted group turnover (sales) was HK$2,416 million, up 15% over the previous year. Of these sales, 52% came from Hong Kong, 17% from North America, 15% from Mainland China, 12% from Australia and New Zealand, and 4% from the rest of the world.

Gross profit was HK$1,131 million, up 16% from the previous year. Basic earnings per share were 20.9 HK cents, up 21%. Dividends per share were 21.5 HK cents, up 10%.

At "Chairman's statement," a photo shows Winston Yau-lai LO, age 67. His resume is on p. 46. Total dividends for the year are 21.5 cents per share.

In North America, Vitasoy USA grew by 8%, reversing the negative growth trend since 2002/03. Although Vitasoy USA still lost money, this loss was 53% less than in the previous year.

A five-year summary (2004 to 2008; p. 163) shows that, during this entire period, sales increased 26.5% and annual profit more than doubled, increasing by 115%. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

8521. Kikkoman Corporation. 2008. Annual report 2008. Year ended March 31, 2008. 250 Noda, Noda-shi, Chiba 278-8601, Japan. 41 p. 28 cm. [Eng]
• ***Summary:*** Consolidated net sales rose 5.4% to $4.139 billion, operating income climbed 10.2% to $238.5 million, and net income rose 6.6% to $114.4 million. "Sales growth was hampered, however, by lackluster performance from Kibun Food Chemifa's soy milk drinks." Note: Dollar values may have changed at different percentage rates due to changing foreign exchange rates.

Page 1 is titled "Kikkoman Group global launch of new corporate brand logo and slogan. Written in orange, it is: "kikkoman: season your life." Above and to the right of the word "kikkoman" is the old hexagonal Kikkoman logo with the Japanese character meaning "man = 10,000" inside. "Kikkoman introduced its previous corporate logo in the Japanese market in 1987. In the two decades since then, Kikkoman has steadily globalized its operations and generates half of its operating profit in markets outside Japan." The new corporate brand logo represents the Group's "determination to harness both tradition and innovation in its business activities."

A photo (p. 7) shows Yuzaburo Mogi (Chairman of the Board and CEO) and Mitsuo Someya (President and COO).

Pages 8-9 show color photos of Japanese soy sauce products including *Tokusen Marudaizu Shoyu* (Premium shoyu made from whole soybeans–rather than the usual defatted soybean meal) and *Tokusen Yuki Shoyu* (Premium organic shoyu, certified by Japanese Agricultural Standards, JAS). Address: Noda, Japan.

8522. Yuan, Shaohong; Chang, Sam K.C.; Liu, Z.S.; Xu, B.J. 2008. Elimination of trypsin inhibitor activity and beany flavor in soy milk by consecutive blanching and ultrahigh-temperature (UHT) processing. *J. of Agricultural and Food Chemistry* 56(17):7957-63. Sept. 10. [36 ref]
Address: Dep. of Cereal and Food Sciences, IACC 322,

North Dakota State Univ., Fargo, ND 58105.

8523. Food and Nutrition Service, U.S. Department of Agriculture. 2008. Fluid milk substitutions in the school nutrition programs. *Federal Register* 73(178):52903-08. Sept. 12.
• ***Summary:*** USDA announces a change in regulations, which now allow schools to offer soymilk instead of cow's milk to children who bring a written statement from their parents or legal guardians identifying their special dietary need. This applied to both school lunch programs and school breakfast programs. While this change does make it easier for parents to request soymilk, schools are not required to offer soymilk; they are simply allowed to offer it. Soymilks are required to meet certain guideline for nutrient content to be allowed as alternatives. This rule may eliminate many soymilk.

Note: The soymilk made by Pacific Natural Foods is one that meets the USDA nutrient content guidelines. Address: Nancy Montanez Johner, Under Secretary, Food, Nutrition, and Consumer Services.

8524. Cwiertka, Katarzyna J.; Moriya, Akiko. 2008. Fermented soyfoods in South Korea: The industrialization of tradition. In: Christine M. Du Bois, C.-B. Tan, and S.W. Mintz, eds. 2008. Urbana, Illinois: University of Illinois Press. viii + 337 p. See p. 161-181. [47 ref]
• ***Summary:*** Contents: Introduction. The soul of Korean cuisine. The industrialization of *Chang* manufacture. Conclusion–*Chang* and Korean identity. Notes.

Photos show: (1) One of the Starbucks outlets in Korea's capital. (2) Industrially produced soybean paste and hot red pepper paste on shelves in a modern retail store. (3) A traditional home in the Hahoe Folk Village near Andong. Meju [soybean koji] is hanging under the eaves and sauce pots stand in the courtyard. Liquid soy sauce is *kanjang.* Korean miso is *toenjang* or *doen jang.* Hot red pepper miso is *koch'ujang,* which was first mentioned in the 2nd half of the 17th century.

Although foreign foods are widely consumed in Korea today, soybeans and soyfoods remain a fundamental part of the Korean diet, and appear in a wide range for forms. Whole soybeans are boiled with other beans, rice, and other cereals to make *k'ongbap* [*kongbap*]. Whole soybeans are also mashed or ground into a creamy soup called *k'ongguksu* [*kongguksu*] which is served in the summer with noodles, soymilk, and julienned cucumber. Soybean sprouts (*k'ongnamul*), long a favorite in Korea, are used as an ingredient in a variety of soups, stews, and stir-fried. Seasoned soy sprouts (*k'ongnamul much'im* [*kongnamul muchim*]), a popular dish at many Korean meals, is made with blanched soybean sprouts seasoned with green onions, garlic, salt (or sometimes soy sauce), sesame oil, and crushed sesame seeds. Several kinds of tofu (*tubu*) are used in Korean cooking; they can be fried, braised, or simmered. To make Tofu kimchi (*tubu kimch'i*), cut fresh tofu into squares and arrange with pieces of kimchi; it serves as a popular snack with alcoholic beverages. Minced or mashed tofu mixed with minced meat can be used as a filling for dumplings called *mandu* [like Japanese manju], which are then fried or steamed. Roasted soybeans (*pokkun k'ong*) and roasted soybean flour (*k'ongaru*) are indispensable ingredients in many traditional desserts such as *kwaja* and *ttok.* During the last two decades, soymilk has become a popular product in Korea.

Footnote 16 describes the four basic types of Korean soy sauce: *ch'ong kanjan, chung kanjan, chin kanjang,* and *chin kanjang* (written with a different ideogram than no. 3). There is also *honhap kanjang* (a mixture of Japanese soy sauce and its chemical counterpart) and *choson kanjang* (a product manufactured on the basis of traditional Korean methods) (p. 172-73). Address: 1. Leiden Univ., Netherlands, lecturer at the Centre for Japanese and Korean Studies.

8525. *Organic and Non-GMO Report* (*The*) (*Fairfield, Iowa*). 2008. Monsanto sale of rBGH called a major milestone. 8(8):4-5. Sept.
• ***Summary:*** Monsanto announced that it has agreed to sell Posilac, its bovine growth hormone, to Eli Lilly and Co. for $300 million. The drug has failed to be approved in Canada, the European Union, Japan, Australia, and New Zealand. Milk "from cows injected with rBGH contains high levels of insulin growth factor-1 (IGF-1), a hormone that is linked to prostate and colon cancer."

8526. Tan, Chee-beng. 2008. Tofu and related products in Chinese foodways. In: Christine M. Du Bois, C.-B. Tan, and S.W. Mintz, eds. 2008. Urbana, Illinois: University of Illinois Press. viii + 337 p. See p. 99-120. [39 ref]
• ***Summary:*** Contents: Introduction. Historical background. Production and marketing of tofu. Consumption–tofu and Chinese foodways. Tofu's symbolic associations. Conclusion.

Tofu and related foods consumed in China include: (1) Tofu. It is called *doufu* in Standard Chinese or Mandarin (*Putonghua*), *dauh-fu* in Cantonese, and *tauhu* in Minnahua or Hokkien (2) *Doufujiang,* more commonly known as *doujiang,* which is soymilk. (3) *Doufu hua* (soybean custard), or more commonly *douhua.* (3) *Doufu pi* (tofu skin [yuba]). (4) *Zhizhu* [*fuzhu;* dried yuba sticks].

(5) *Doufu pao* (small blocks of deep-fried tofu puff). (6) *Dong doufu* (frozen tofu). (7) *Doufugan* or *dougan*–fresh tofu that has been firmly pressed to partly dehydrate it, and then is air dried. Chinese-style pressed tofu can be further processed to make... (8) *Xun doufu* (smoked tofu).

(9) *Wuxiang doufu* [also called *wuxiang doufugan*] (five-spiced tofu). (10) Pressed tofu can be soaked in brine and fermented to make *chou doufu,* which is usually referred

to as "smelly tofu" but which Hsu and Hsu (1977, p. 301) translate as "molded beancurd." (11) Tofu can also be fermented to make *doufuru,* or simply *furu.* (12) Okara is described (p. 106) as "leavings" or "soybean dregs," or "tofu lees."

Note: This is the earliest English-language document seen (April 2013) that contains the term "smelly tofu" or the term *Doufu pao.*

Photos show: (1) Person making tofu in a Yongchun village, Fujian–filtering. (2) Grinding unripe soybeans (*maodou*) for sale at a morning market in Kunming, Yunnan. (3) Soybean plants in between rice plots in a village in Ganluo Country, Sichuan. (4) Selling bean curd custard in Chengdu, Sichuan. Address: Chinese Univ. of Hong Kong, chair of the Dep. of Anthropology.

8527. Nestle, Marion. 2008. Melamine taint–old problem has new urgency: Food matters. *San Francisco Chronicle.* Oct. 22. p. F1, F5.
• ***Summary:*** Note: Melamine is a chemical, an organic base and a trimer of cyanide. It can be combined with formaldehyde to produce melamine resin, a very durable thermosetting plastic, and melamine foam, a polymeric cleaning product. Melamine, which is sometimes illegally added to food products in order to increase the apparent protein content, is 67% nitrogen (the rest is carbon and hydrogen). Standard tests such as the Kjeldahl and Dumas tests estimate protein levels by measuring the nitrogen content, so they can be misled by adding nitrogen-rich compounds such as melamine.

Nestle is appalled that the melamine waste from Chinese plastic dinnerware is now being found in so many foods, especially infant formula–in which case it can lead to kidney stones in the infants fed the formula laced with melanine. There is only one reason a manufacturer would put melamine in milk powder: greed. Last year 60 million cans of pet food imported from China were recalled because they contained wheat flour laced with melamine.

Congress must give the U.S. Food and Drug Administration adequate funding to inspect these imports. Some forward-thinking members of Congress have even suggested the creation of a "new food safety agency with the authority and resources to oversee the food supply..."

In the meantime, "its best to say no to imported foods and ingredients supposedly made with milk or soy powder, unless they are certified free of melamine and other toxic contaminants." In order to do this, you should "know where foods and ingredients come from." Congress presently requires country-of-origin labeling (COOL), but it contains big loopholes. So its buyer beware. Address: Paulette Goddard professor, Dep. of Nutrition, Food Studies and Public Health, New York Univ. [New York City].

8528. *Restaurant Hospitality.* 2008. Serving up soy. 92(10):62. Oct.
• ***Summary:*** Describes a survey conducted by the United Soybean Board in which veggie burgers, tofu, soymilk, and edamame were the top soyfoods preferred by consumers and one in five consumers said they would order soyfoods from restaurant menus. To "demonstrate the versatility of soy," contains recipes for Edamame-tofu croquettes and Tofu gratin.

8529. NEI–Nutrition & Education International (Website printout–part). 2008. www.nei-intl.org Printed Nov. 19.
• ***Summary:*** A very inspiring and interesting website about an organization created by Dr. Steven Kwon that is introducing soybeans and soyfoods to Afghanistan as a way of combating that country's seriious malnutrition problems. Dr. Kwon has taken early retirement after 22 years working for Nestlé. Please watch the 10-minute video at the bottom of the homepage first. Then read several of the most recent newsletters. The January/March 2008 newsletter notes that farmers working cooperatively with NEI expect to harvest 2,000 tons of edible soybeans in Oct. 2008. NEI is working closely with the Ministry of Women's Affairs (MoWA). A map shows that NEI has four soymilk feeding facilities in various parts of Afghanistan, a soy flour factory in Kabul, and soybean fields in most of the provinces (*weleyats*) in the northern half of the country.

"Afghanistan has one of the world's highest maternal mortality rates. One out of fifty women die during childbirth. Because expectant mothers are malnourished, they are unable to pass on vital nutrients to their babies during pregnancy or breast-feeding. Not surprisingly, one in four Afghan babies die before the age of five, and 54% of these under-five children are chronically malnourished. (UNICEF Humanitarian Action Report Update for Afghanistan. 17, Jan. 2008)."

Headings: Home (Introduction, Why Afghanistan, why soy, what will it take). About us. Programs. News. Career / internship. Contact. Team.

8530. *SoyaScan Notes.* 2008. Soymilk and cow's milk prices at Safeway supermarket in Lafayette, California (Overview). Nov. 25. Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** Since Dec. 1983, approximately every other year, Soyfoods Center has conducted a survey of the prices of soymilk and cow's milk in California.

Soymilk: Silk organic vanilla or plain: $2.49/quart. Silk organic chocolate, plain, vanilla, very vanilla fortified for kids, or unsweetened: $3.99/half gallon. Silk non-organic lite chocolate, lite plain, lite vanilla (lite means diluted with water): $3.99/half gallon. Silk non-organic Plus omega-3 DHA, or Plus for bone health: $4.19. Silk organic nog: $3.29/quart.

Safeway O Organics soymilk: Chocolate, vanilla, plain, lite vanilla, lite plain: $3.49/half gallon.

Cow's milk (fortified with vitamins A and D) sells for the following prices at the Safeway supermarket in Lafayette, California: (1) Fat free: $1.79/quart or $2.49/half gallon or $3.19/gallon; (2) Low fat (1% fat, protein fortified): $1.79/quart or $2.49/half gallon or $3.19/gallon; (3) Reduced fat (2% fat, protein fortified): $1.79/quart or $1.49/half gallon or $3.19/gallon; (4) Whole (homogenized, fortified with vitamin D only): $1.79/quart or $2.49/half gallon or $3.19/gallon. (5) Acidophilus Plus Bifidus–Low Fat (1% fat): $2.79/half gallon. (6) Horizon Organic $3.99/half gallon. (7) Lactaid: $3.99/half gallon. Lucerne 100% lactose free, fat free $3.69/gallon. (9) Safeway O Organics Fat free, low fat or reduced fat: $4.19/half gallon or $5.99 per gallon. The best-seller among these is Fat free in gallons.

8531. 8th international soy symposium on the role of soy in health promotion and chronic disease prevention and treatment: Program. 2008. Champaign, Illinois: American Oil Chemists' Society. 36 p. Held 9-12 Nov. 2008 at Hilton Tokyo Hotel, Tokyo, Japan. No index. 28 cm. [Eng; jap]
• ***Summary:*** This program was given (free of charge) to attendees when they registered.

Contents: Welcome! Chairpersons. General information. Award winners. Oral presentation abstracts. Poster presentation abstracts. Poster presentations. Program schedule. Sponsor showcase schedule. Symposium sponsors: Diamond level–Otsuka Pharmaceutical Co., Ltd. (own SoyJoy brand). Platinum level: ASA International Marketing, Japan office, Fuji Oil Co. Gold level: Silk (soymilk), Solae, Soy Nutrition Institute Japan (SNIJ). Soy Nutrition Institute, Inc. (c/o SmithBucklin, St. Louis, Missouri). Silver level sponsors: Fujicco Co. Ltd. (Kobe, Japan), Nichimo Biotics Co. Ltd. (Tokyo, Japan), Solbar Industries, Ltd. (Ashdod, Israel). Note: All sponsors also have a ½-page ad in the program.

Program schedule: Sunday, Nov. 9: Opening remarks. Hormones, menopause, and mood. Obesity / satiety. Mon. Nov. 10: Equol session. Tues. Nov. 11. Cancer session. Bone / cardiovascular disease. Wed. Nov. 12. Emerging areas research. General topics.

Letter (e-mail) from Mark Messina. 2008. Nov. 18. "Total attendance: 250, about 210 paid. Fewer Japanese attended than we hoped but still a success in terms of attendance and information presented. Lots of enthusiasm for holding another meeting. People were thinking of Italy because it is such a nice venue and so much soy work is underway there. But if we have it there it would be 7 years between symposia in the US so I suspect we will have it in the US in 2010."

8532. Golbitz, Peter. 2008. Color photos of the soymilk processing short course held Nov. 2008 at the SoyCow Training Center in Bergville, KwaZulu-Natal, South Africa. Bar Harbor, Maine.

• ***Summary:*** Peter Golbitz took these color photos and wrote the captions. For background see interview with Peter Golbitz on 22 Jan. 2009. This short course workshop in Nov. 2008 took place at the SoyCow Training Center which was now located a short distance from the site of the May 2007 workshop on the personal property of Henry Davies on the edge of the town of Bergville.

(1) William "Rocky" Fenske, VP of R&D for the SunOpta Grains & Foods Group and Peter Golbitz, SunOpta's Director of International Business Development, at the Sandford Park Country Hotel in Bergville, KwaZulu-Natal, near the Drakensburg mountain range, on a visit to the SoyCow Training Center in November, 2008.

(2) Henry Davies with some fresh tofu made using the VitaGoat processor along with Rocky Fenske from SunOpta, at the SoyCow Training Center in Bergville, November, 2008.

(3) The Soy Shake line produced by Good Hope International Beverages in Cape Town, South Africa.

(4) A display of soymilk products (see next page) on the shelf at a supermarket in Johannesburg, South Africa in November, 2008. Products include Simply Soy, So Good and Nutri-Bev, made with isolated soy proteins, as well as Good Hope's Soymilk and Shakes processed from whole soybeans. In addition, there are some imported products from Alpro and a line of powdered soymilk drinks, So Fresh. At this time, over 95% of the soymilk sold in South Africa is aseptically packaged. Address: Director of International Business Development, SunOpta Grains and Food Group.

8533. Vitasoy International Holdings Ltd. 2008. Interim report 2008. Where healthy life begins. New Territories, Hong Kong. 48 p. Nov. 30 cm. [Eng; Chi]
• ***Summary:*** For the six months ended 30 Sept. 2008, group turnover (sales) was HK$1,425 million, up 20% over the same period last year. Gross profit was HK$637 million, up 12% over the same period last year. "In view of the Group's strong financial position and satisfactory operating

performance, the Board of Directors has declared an interim dividend of HK$2.8 cents per ordinary share." Sales performance was very encouraging in Mainland China (60%) and in Australia and New Zealand (23%); it was healthy in Hong Kong (5%) and in North America (5%).

North America production efficiency: During the 1st half of fiscal 2008/09 the Group's production plant in Ayers, Massachusetts [Nasoya] had sales of HK$175 million, an increase of 11% over the same period last year. "Operating loss narrowed to HK$9 million, versus HK$10 million for the corresponding period in fiscal 2007/08" (p. 12).

North America market performance: In 2007, retail sales of soyfoods grew by only 1%. Tofu sales decreased by 2% whereas soymilk sales grew by 3%, of which refrigerated soymilk was up 6% and ambient [Aseptic] soymilk was down 8%. "Total tofu sales grew by a healthy 12% while pasta sales were up by an even more impressive 34%. However soymilk and imported products were down by 16% and 33% respectively" (p. 12-13).

In April 2008 the Vitasoy Group acquired the entire equity of Unicurd Food Co., (Private) Ltd. ("Unicurd"), which is a leading manufacturer and marketer of soyfoods in Singapore. "This acquisition is aimed at expanding the Group's market presence in the Asia Pacific Region." The Unicurd production plant "at Senoko South Road, Singapore, supports the Singaporean market and exports to Europe, New Zealand, South Africa, Dubai and other parts of Asia. In the six months to 30 Sept. 2008 Unicurd recorded total sales revenue of HK$31 million..." (p. 13).

In Hong Kong, Vitasoy has a new logo and package design (p. 15). Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

8534. *WISHH Soy News.* 2008. Silk donation to World Soy Foundation will support Adventist Development and Relief Agency (ADRA) school feeding in Ghana. Nov. www.wishh.org/media/newsletters.

• ***Summary:*** "The World Soy Foundation announced October 16, World Food Day, that Silk (R) soy milk, a WhiteWave Foods brand, is expanding its commitment to a project that provides nutritious meals to school children in Ghana as well as supports sustainable economic development in the West African country. Silk is donating $75,000 over three years for the World Soy Foundation to increase its partnership with Adventist Development and Relief Agency (ADRA)."

"Silk first contributed to the World Soy Foundation when the foundation was created in late 2006. That initial support of $20,000 aided ADRA's school feeding in Ghana, which the World Soy Foundation leveraged through contributions from U.S. soybean farmers. The new funding will allow World Soy Foundation to purchase, transport and install a "VitaGoat" soymilk processing machine as well as train operators and provide a year's worth of soybeans. As a result, the VitaGoat will produce enough soymilk to feed a school of 280 children for at least one school year and have sufficient product to sell to the community as a sustainable small enterprise. The machine will be placed in a rural community in Western Ghana where local farmers grow soybeans."

Later in this same issue is an interview with Ellen Feeney, Vice President for Responsible Livelihood for WhiteWave Foods. Portrait photos show: (1) Jim Hershey. (2) School children eating in a classroom in Ghana. 3. Ellen Feeney.

8535. *SoyaScan Notes.* 2008. Chronology of major soy-related events and trends during 2008 (Overview). Dec. 31. Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** April 2–United Soybean Board announces that livestock and poultry consume about 98% of domestically used soybean meal (SBM). The top 10 SBM-consuming states in ranking order are Iowa, North Carolina, Arkansas, Georgia, Texas, Minnesota, Alabama, Mississippi, California and Oklahoma. Of these, only Iowa and Minnesota produce enough soybeans to meet the demands of their livestock and poultry producers.

April 3–*The Soy Daily* (an online weekly newsletter founded by Paul and Gail King; the first issue appeared on 13 Nov. 2000. Now published by Norman and Szasz Benedict) announces in Vol. 8, No. 13, that it will change its title to *The Healthy Newsletter.*

Sept. 12–USDA announces a change in regulations, which now allow schools to offer soymilk instead of cow's milk to children who bring a written statement from their parents or legal guardians identifying their special dietary need. This applied to both school lunch programs and school breakfast programs. While this change does make it easier for parents to request soymilk, schools are not required to offer soymilk; they are simply allowed to offer it. Soymilks are required to meet certain guideline for nutrient content to be allowed as alternatives. This rule may eliminate a significant amount of the soymilk in public schools.

Dec. 10–The American Soybean Association files a complaint with the U.S. Department of Agriculture (USDA) and requests an audit of the soybean checkoff program to ensure that money paid by farmers is being used properly.

8536. Hardy, Les. 2008. Socialising accountability for the sacred: A study of the Sanitarium Health Food Company. PhD thesis, School of Commerce, University of Adelaide, South Australia. xiii + 404 p. [490* ref]

• ***Summary:*** This well researched and well written PhD thesis has a long and very useful bibliography (p. 369-404).

Note: "B.Ed. St" apparently stands for "Bachelor of Educational Studies." Address: M.Ec (UNE [University of New England, New South Wales]), Grad Dip Acc (Monash), B.Ed St (QU [Queensland Univ., Queensland]).

8537. Hurd, Frank J.; Hurd, Rosalie. 2008. A good cook–Ten talents. New updated, expanded pictorial ed. Grants Pass, Oregon: Published by the authors. Printed by The College Press, Collegedale, Tennessee 37315. 668 p. Illust. Color plates. No index. 22 x 15 cm. Spiral bound. [1 ref]
• ***Summary:*** A feast for the eyes, the mind, and the palate. Filled with more than 1,300 beautiful color photos; many of them accompany over 1,000 healthful, natural recipes, but others show the great variety of natural foods, from colorful fruits to basic whole grains. Brimming with sound advice on diet, lifestyle, and health.

This is the new edition of a very important, pioneering, indeed classic American vegan cookbook. On the front and back covers is an idyllic painting of the Garden of Eden. Author Rosalie Hurd is seated under The Tree, reading the Bible–Genesis 1:29, which describes God's original diet for men and women. The book uses no animal products (except in one chapter at the end titled "Recipes Using Milk and Eggs," "for those who are in the transitional period. However, we encourage all those who still cling to milk and eggs to become acquainted with the facts concerning their use, and become weaned through this process"). Some recipes also use honey.

Contains even more innovative soy recipes than the original 1968 edition. A minor point: some of the soy terminology is inconsistent and/or outdated. Address: 1. D.C. [Doctor of Chiropractic], M.D.; 2. B.S. Both: P.O. Box 5209, Grants Pass, Oregon 97527. Phone: 541-472-1113.

8538. Soyatech, LLC. 2008. Soya & Oilseed Bluebook 2009: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 426 p. Dec. Comprehensive index. Advertiser index. Statistical conversions. 28 cm.
• ***Summary:*** This is the 3rd year in a row that the *Bluebook* (a $95 value) has been sent free of charge to qualified industry members. On the cover is a farmer, wearing blue jeans, a red short and red cap, standing in a field of soybeans, with a cloudy blue sky overhead. The oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hempseed, jatropha, linseed, palm, peanut, rapeseed, safflower, soya, sunflowerseed–the same as last year.

On the inside front cover is a color ad from Tramco–"the world's most complete line of chain and enclosed belt conveyors." On the first page is a full page color ad from Bunge North America (St. Louis, Missouri); on the next page a full page color ad from desmet ballestra–which supplies healthy technologies for oils containing zero trans fat. SunOpta has a full-page ad on page 4.

On the rear cover is a full page color ad from ADM titled "Breathtaking" showing a man leaping off a cliff high above a green valley. The text: "ADM breaths new life into functional foods with its all-natural NutriSoy soy isolates. Water washed to leave many nutrients intact."

In the Foreword, Joe Jordan (General manager and Bluebook content director) writes about feeding the world's population of 6 billion 700 million. Peter Golbitz is no longer with the company he founded (see 2008 interview). Address: 1369 State Hwy 102, P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

8539. **Product Name:** Trader Joe's Soy Milk Creamer (Organic Non-Dairy, Liquid).
Manufacturer's Name: Trader Joe's (Marketer-Distributor).
Manufacturer's Address: Monrovia, CA 91016.
Date of Introduction: 2008. December.
Ingredients: Organic soy milk (filtered water, whole organic whole soybeans), expeller pressed organic canola oil, organic evaporated cane juice (natural milled organic cane sugar), contains less than 2% of the following: organic maltodextrin (corn), soy lecithin, potassium phosphate, sodium citrate, natural flavors, carrageenan, organic tapioca starch.
Wt/Vol., Packaging, Price: Pint (16 fl oz; 473 ml) gable-top carton. Retails for $1.49 (2009/01, Lafayette, California).
How Stored: Refrigerated.
Nutrition: Per 1 tablespoon (15 ml): Calories 15, calories from fat 10, total fat 1.5 gm (2% daily value; saturated fat 0 gm, trans fat 0 gm), cholesterol 0 mg, sodium 0 mg, total carbohydrate 1 gm (dietary fiber 0 gm, sugars 1 gm), protein 0 gm. Vitamin A 0%, vitamin C 0%, calcium 0%, iron 0%. Percent daily values are based on a 2,000 calorie diet.
New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2009. Jan. 11. $1.49. Front and back panels: Light blue, white, brown and green. "Made with organic soy milk. Non-dairy. Lactose & dairy free. Ultra-pasteurized." Left panel: "Perishable, Keep refrigerated. Gluten free. Lactose & dairy free. Vegan." QAI logo. Right panel: Nutrition facts. Ingredients. "Made on equipment shared with milk. Distributed and sold exclusively by Trader Joe's, Needham, Massachusetts 02494. Certified organic by Quality Assurance International (QAI). Use within 7-10 days after opening, no later than stamped date. Shake well before serving." Soyinfo Center evaluation: Very nice and white. Quite sweet.

8540. Basan, Ghillie. 2008. The food & cooking of Cambodia. London: Southwater. 96 p. Illust. (300+ color photos by Martin Brigdale). Index. 29 cm.
• ***Summary:*** Contains over 60 authentic Cambodian recipes. Soy related recipes: Soya beansprout salad (with "450 gm / 1 lb fresh soya beansprouts," p. 76). The headnote says: "High in protein and fat, soya beansprouts are particularly favoured in Cambodia."

Sweet soya milk with pandanus (with "225 gm / 8 oz / 1¼ cups soya beans, soaked overnight and drained," p. 93). The headnote says: "In the streets and markets of Cambodia,

freshly made soya milk is sold daily. Often infused with pandanus leaves, or ginger, and served hot or chilled,..."

Soy sauce is used in quite a few recipes (for example p. 36, 41, 43, etc.).

8541. Bennett, Beverly Lynn; Sammartano, Ray. 2008. The complete idiot's guide to vegan cooking. New York, NY: Alpha Books. Published by the Penguin Group. xix + 328 p. Illust. Index. 23 x 19 cm.

• ***Summary:*** Dedicated: "To those who are guided by the open heart and open mind of compassion."

Being vegan is "not about being on some trendy new diet; it is a lifestyle" (p. 85).

The index contains 48 entries for tofu, 37 for tamari, 30 for soymilk, 8 for tempeh, 6 for TVP, 4 each for miso, soy yogurt, tofu cream cheese, and seitan, 2 for silken tofu and Soyrizo, and 1 each for edamame, soynut butter, and Soyatoo (natural nondairy whipped topping).

"There are so many reasons to go vegan-health and nutrition, weight loss, green and sustainable living, and prevention of cruelty to animals. With over 200 mouth-watering recipes and tips for converting meat- and dairybased dishes into vegan ones, The Complete Idiot's Guide to Vegan Cooking will help readers enjoy a healthy vegan diet without sacrificing taste" (publisher's description). Address: 1. Vegan chef, author, and host of veganchef.com since 1999; 2. Long-time vegan cook and "foodie".

8542. Fiore, Toni. 2008. Totally vegetarian: easy, fast, comforting food for every kind of vegetarian. Philadelphia, Pennsylvania: Da Capo / Life Long. xi + 273 p. + 16 pages of unnumbered plates. Illust. (some color). Index. 24 cm.

• ***Summary:*** A mostly vegan cookbook; each recipe that calls for milk as an ingredient gives soy milk as an alternative. Rarely, if ever, have we seen such a dazzling and delicious variety of vegetarian soy recipes and information in one book. One purpose of this book is to demystify the world of vegetarian cookery and vegetarianism–especially for non-vegetarians.

The Introduction tells the story of the author's gradual transition from typical meat eater (living in Europe), to animal rights activist in Maine, to vegetarian. She advises: Buy locally, eat seasonally, buy organic, use your intuition (and imagination).

The chapter "Stocking the pantry" contains basic information (p. 39-42, 45-46) about sea vegetables, seitan, and soy products, including edamame, miso, tempeh, textured vegetable protein (TVP), tofu, and soy sauce (Light Chinese soy sauce, shoyu, and tamari), and Worcestershire sauce (vegetarian; without anchovies)

Soy related: Golden tofu bites (with one 14-ounce package firm tofu, frozen, then thawed... p. 50). Red pepper tofu dip (p. 67). Vegetarian Caesar salad (with "silken soft tofu, p. 76). Edamame and apple salad (p. 81; kids love edamame). Boiled edamame pods. Curried lima bean and rice salad with tempeh (p. 92). Tofu lime dressing (with silken tofu, p. 102). Spinach and tofu soup (p. 108). Miso soup. Hot and sour soup (with firm tofu, p. 109). Roasted pumpkin bisque (with soy milk, p. 114). Corn bread (with soy milk, p. 130).

One chapter is titled "Tofu" (p. 145-53): Seared tofu. Tofu sour cream. Baked tofu meatballs. Tofu with parsley sauce. Tofu kebabs with tamari-ginger sauce. Tofu pot pie.

The next chapter is "Tempeh and seitan" (p. 155-69): Best braised tempeh (with sweet and spicy marinade, p. 197). Tamari tempeh. Barbequed tempeh. Jamaican jerk tempeh. Malaysian curried tempeh. Greek stuffed cabbage (with lemon cream sauce and tempeh). Tempeh and cabbage. Moroccan stew. Tempeh cacciatore. Tempeh fajitas. Tempeh marsala. Homemade seitan (from bulk vital wheat gluten). Penne with onions and vegetarian bacon (p. 175). Spaghetti tofunese (p. 176). Tofu ravioli with butter and sage (p. 181-82). Bechamel (with soy milk, p. 184). Tofu lasagna (p. 185-86). Vegetable lasagna (with tofu filling, p. 187). No-egg salad sandwiches (with tofu). Mock fish salad sandwiches (with tempeh). Mock Maryland crab cakes (with tofu, p. 196). Tempeh club sandwiches (p. 197). Cornhusker's reubens (with tempeh, p. 198). New York hot dogs and onions (with vegetarian hot dogs, p. 199). Soysage-pepper sandwiches (with Italian-style vegetarian sausage links, p. 200). Eggplant meatballs (with tofu, p. 214). Stuffed sugar pumpkins (with tempeh, p. 215). Fluffy mashed potatoes (with soy milk, p. 219). Spinach tortillas with potatoes (and seitan, p. 228). Pfannkuchen (with soy milk, p. 239). Rye bread French toast (with soy milk, p. 240). Loaded bagel (with tofu cream cheese, p. 243). Tofu cannoli (p. 250). Tofu coconut cream pie (p. 251). Basmati rice pudding (with soy milk, p. 252). Banana chocolate chip cake (with soy milk, p. 256).

About the author: "A vegetarian for over 20 years, Fiore is a self-taught chef who first embraced Mediterranean culinary techniques and philosophy while growing up in Italy." But she spent the first six years of her life in Germany. Address: Portland, Maine. Host of the national public television show Delicious TV's Totally Vegetarian.

8543. Newman, Jacqueline M. 2008. Cooking from China's Fujian province: One of China's eight great cuisines. New York, NY: Hippocrene Books. 258 p. Illust. (color). Index. 24 cm. [16 ref]

• ***Summary:*** Fujian province, in southeastern China, enjoys a distinct culinary tradition with a thousand year old recorded history–yet it is barely known in the Western world. In addition to carefully researched cultural and historical notes, this book features a collection of 200 authentic recipes.

Dr. Newman was born in 1932. She lives on Long Island, New York.

Bean curd [tofu] appears in the index 24 times, bean curd sheets / skins [yuba and dried yuba sticks] 6 times, fuyu (Fermented bean curd [fermented tofu]) 5 times, black bean sauce / fermented black beans [fermented black soybeans] 3 times.

\ In the Glossary, the section titled "Milk and nondairy milk products" (p. 229-30) states: "Soy milk is the most common nondairy milk used;" it is made into many doufu / tofu products. Nut milks are also popular. Bean curd and pastes are also known in English as Doufu or Tofu. Some of the varieties are: Brown bean curd. Bean curd cheese–correctly called fuyu. Doufu–Called tofu in Japanese. Fermented bean curd–see Fuyu below. Fuyu–the common Chinese name for "fermented bean curd squares." They are mostly widely used as a seasoning. Some fuyu is seasoned with leeks or chili peppers or both. Bean curd skin. Also called bean curd sheet. It is dried. Doufu: See Bean curd and pastes. Tofu: See Bean curd and pastes. Soymilk is called "Bean curd milk" (p. 230). Address: Food historian and scholar, Former prof., Dep. of Home Economics, Queens College of the City Univ. of New York, 65-30 Kissena Blvd., Flushing, NY 11367.

8544. Packaged Facts. 2008. Soy foods and beverages in the U.S. Rockville, Maryland: Packaged Facts. ix + 210 p. Digital PDF file. *

• ***Summary:*** Contents: Market overview. Two classifications: foods and beverages. Market size and composition. Snack bars and soymilk post solid gains in 2007. Soy mainstreams from natural channel. Market outlook. Consumer awareness of soy's health benefits on the ups. Soy / meat combination maximizes potential. Soy allergies a growing U.S. concern. Supermarketing soy. Teaming up with other functional foods. Kids and soy. Soy prices on the rise? The global picture. Competitive overview. Marketer and brand shares. Clif Bar takes the lead in nutrition bars. Kellogg the clear frontrunner in frozen meat substitutes. Turtle Mountain is tops in frozen treats. Silk leads in yogurt category. GeniSoy dominates faltering salted snacks category. Loma Linda leads shelf-stable meat substitutes. Marketing and advertising trends. New product trends. Natural / organic introductions abound. Also coming on the strong: Omega-3 fatty acids. snack bars cover all bases. Meat substitutes going over for real meat flavor. All-in-one meals a convenient choice. Cereals start the day with soy. Baked goods add soy goodness. Soy chips / crackers make for familiar snacking. Edamame becoming more mainstream. Frozen treats: new kid-tested flavors spell success. Soy and chocolate: a healthy combination. Competitor profile: Amy's Kitchen. Competitor profile: Kellogg's Company. Competitor profile: Kraft Foods. Competitor profile: Physicians Laboratories / Revival Soy. Soy beverage marketing and competitive trends. Soymilk types. Competitive overview. Competition from traditional dairy. Marketer and brand shares. Marketing and advertising trends. New product trends. Soymilk: making healthy even healthier with other functional ingredients. Soy smoothies mix fruit and soy. Nutritional and weight-control beverages. Soy chai tea and coffee. Competitor profile: Dean Foods. Competitor profile: The Hain Celestial Group. Consumer trends. IFIC data on attitudes toward health foods and soy. Meat alternatives and soymilk are top categories. Alternative America style vs. classic tofu. Minority and regional patterns. Socio-economic diverse demographics.

8545. Vandemoortele Group 2009. Vandemoortele decides to focus on bakery and lipids and prepares the selling process of its Soy Foods division Alpro (News release). Ghent, Belgium. 2 p. Jan. 17.

• ***Summary:*** "The financial and macro-economic environment has fundamentally changed during the last months. In this context Group Vandemoortele has decided to focus on the activities Bakery (frozen bakery products) and Lipids (margarines and fats), representing together 80% of the Group's turnover and essentially oriented towards professional and industrial customers. Group Vandemoortele is traditionally strong in those segments and wants to further expand in Europe in these activities. Within the framework of this change of strategy the group prepares the selling process of its soy business Alpro, which is oriented towards the end consumer.

"This strategic decision offers the best opportunities for future growth to each of the three activities, which are all three market leaders and generate all three solid operational cashflows. The sale of Alpro and the ongoing capital increase of Group Vandemoortele will bring in the necessary resources to pursue the expansion in Bakery and Lipids. Thanks to the recent takeover of Panavi, French market leader in frozen bakery products, Vandemoortele is amongst the European leaders in this market segment, which grows at an annual rate of more than 5%. Vandemoortele is also strengthening its leading position in margarines and fats.

"Alpro is European market leader in soy food products and has realised a strong and profitable growth during the past seven years with its brands Alpro Soya and Provamel. Alpro meets two fundamental food trends, i.e. health and sustainable development. By splitting off its soy foods activities Vandemoortele wants to ensure the further successful growth of Alpro with a strong new partner.

Group Vandemoortele realised in 2008 a turnover of ca 1.2 billion euro with 5,600 employees in 12 European countries. The Bakery and Lipids activities generate together a turnover of ca 950 million euro with 4.800 employees. Alpro has a turnover of ca 260 million euro and employs 840 people.

8546. Golbitz, Peter. 2009. Update on work with soyfoods in Africa (Interview). *SoyaScan Notes.* Jan. 28. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Peter finds his new work with SunOpta to be very interesting and exciting. He has long had a great deal of respect for Allan Routh, who is a superb entrepreneur. This work has enabled him to travel worldwide–South Africa, Bangkok [Thailand], Paris, etc. SunOpta sales continue to grow–one billion dollars last year–despite the economic downturn. New developments related to soymilk expansion (in the USA and worldwide) will be announced in a few months.

Henry Davies, an white Afrikaner, is with the SoyCow Center in Bergville, KwaZulu-Natal, South Africa. Henry is a wonderful, amazing man, who has a passion for this work that is rare. He is married to Stella. He has stories of people who work on his farm who have reversed their low metric count for HIV by consuming soyfoods. He is a strong believer of the importance of soy in the diet, particularly in South Africa. He is sometimes hard to reach by e-mail, so he might be easier to reach on his mobile phone. He has been working with soy for about 4-7 years. He was part of the Soy in Southern Africa Alliance. He was with a company named Eden Manufacturing Pty. He had an extrusion plant that made pet food and feed. He now manufactures a high-protein, flavored porridge drink named Redi that is a combination of ground maize and soybeans. For details see his website www.edenman.co.za. Now he is importing and rebuilding VitaGoats from India and installing them with the WISHH program and some other programs around southern Africa. The VitaGoats produce soymilk (and a little tofu) using a bicycle-powered grinder and a simple cooker. The soymilk and tofu are being enjoyed by hundreds of kids every day. Henry also runs the Eden Manufacturing Pty Ltd. Training Centre for VitaGoat and SoyCow Food Processing Systems, with Malnutrition Matters (Frank Daller) and WISHH as sponsors. The first training centre was established by WISHH in Pretoria at the Council for Science and Industrial Research (CSIR) in Pretoria. After a few months the CSIR realized they didn't have the resources to do this. So Henry took it over and established the center on his farm; at that time Peter thinks he was director of the Soyfoods Association of South Africa. The first pictures in Peter's color photo album show the old SoyCow training center, which was adjacent to his old manufacturing facility. The more recent photos at the end of the slide show are in his new (still under construction) training center on his property. WISHH helped to fund the costs of constructing the new center. Henry started running short courses on making soymilk and tofu, which WISHH funded. Peter taught several classes at these short courses–as did other people from Europe, India, Solait, Ted Nordquist, etc. Short courses typically last 2-5 days, and 50-60 people attend each course. There have been Zulu chiefs, people from Parliament–its really happening!

Henry has been traveling on behalf of WISHH, installing SoyCows and VitaGoats in various countries in southern Africa, including Mozambique and South Africa.

Recently Paul Lang cleaned, donated and sent Henry two oil expellers–which can be seen in Peter's photo album. Henry also has a solar dryer, a prototype set up by Malnutrition Matters (Frank Daller's group).

Much of this story can be found on the WISHH website. WISHH has more than one mission. The basic one is market development worldwide for U.S. edible soy protein products such as textured soy flour, soy protein isolates and concentrates to improve human health. WISHH does not promote specific products or particular companies; its work is more generic. However WISHH can ask a U.S. company such as ADM or Bunge or Cargill to donate a certain amount of a particular product to a specific WISHH project–such as a school feeding program in Guatemala that needs a container of TVP. ADM typically makes the donation to create goodwill and perhaps in hopes of a long-term business relationship, but it is ADM's responsibility to follow up. Peter has come to realize that he (Peter) has his agenda (to teach people about soy) and Jim Hershey (the executive director of WISHH) has his agenda. Jim's agenda is to take U.S. soy protein ingredients and soyfoods to the Third World. Even though SoyCows and VitaGoats do not lead to the sale of any U.S. soy protein products, this is no problem for Jim Hershey. Jim and his wife are great people. ASA is so lucky to have someone like Jim, because he is so deeply committed to his work and he works so hard, long hours, traveling a lot, and he has put so many great relationships together. He has done an incredible job. He deserves a Medal of Honor. He is a hard to reach but once he's on the phone he is very generous with his time.

Peter is now working with the World Soy Foundation (WSF), whose work is not limited to U.S. soy protein products. This enables him to help develop soybean production in South Africa–which could become self sufficient in soybeans because there is so much wonderful land and water resources, plus a First World agricultural infrastructure and food processing plants. South Africa is pretty much self-sufficient on corn, and they could be growing corn and soybeans in rotation. The country is in transition. Many white farmers are leaving for a variety of reasons that are more covert than in Zimbabwe. When black farmers move onto the vacated land, the productivity of the land often drops–due to lack of experience. People suffer and the land is not used to its full capacity. But Peter thinks the country will recover. An opposition party is finally forming to counter and balance the ANC's policies. Democracy is coming alive; the parties will have competing agendas. For white Afrikaners it may look like shambles, and there is presently a high degree of unemployment, but for Peter (who has been there 6-8 times) the long term view looks very promising.

Peter has a color photo album and slide show (of digital photos he took) that shows some of the workshops and the

whole process for making soymilk and tofu using VitaGoats and Soy Cows, with Henry Davies shown (in a red shirt) in many of the slides; he will send Soyinfo Center (SC) the whole show by e-mail, and SC is free to use a few of the slides if proper credit is given to Peter. If SC lets Peter know which ones we want, he will provide the captions. It is a wonderful story. Peter is also considering putting this slide show on the Web (on an appropriate website such as WISHH or Malnutrition Matters), so anyone can see it.

Peter recommends that Shurtleff talk with Jim Hershey; Peter feels that he and Jim share a common view. Peter often talks with Jim, who has just left Guatemala and is on his way to Haiti. Jim is working on getting SoyCows (the small ProSoya systems made in India that produce several hundred liters per hour of soymilk) installed in Guatemala, sponsored by the Rotary. WISHH would not provide money to have SoyCows installed, but they would supply the beans. Before Jim went to work for ASA, he had spent a lot of time in Africa, in Cote d'Ivoire, working for the Rice Board, so he had experience in international commodity market development work. Then he went to work for ASA International Marketing, before WISHH was created.

Peter has found his work with the World Soy Foundation to be extremely gratifying. Jim and Peter put together the Soy in Southern Africa Alliance (SISA) 2-3 years ago and they raised $275,000 in about a month. From that they got matching funds from USAID and ended up with a $750,000 project. That is how a lot of the activity in South Africa got elevated to a much more productive level. Address: Director of International Business Development, SunOpta Grains and Food Group. Phone: (507) 573-5276.

8547. WISHH. 2009. WISHH–World Initiative for Soy in Human Health (Website printout–part). www.wishh.org Printed Jan. 29.

• ***Summary:*** Contents: Home. About WISHH: Mission and vision, WISHH Committee, Our supporters / partners, Staff. Global outreach: WISHH has activities in the following countries, listed alphabetically and highlighted in green: Afghanistan, Bangladesh, Botswana, Burkina Faso, Cambodia, Ivory Coast, Ghana, Guatemala, Haiti, Honduras, India, Indonesia, Kenya, Mozambique, Pakistan, Senegal, South Africa, Uganda, Vietnam, Zimbabwe. These countries are shown on a map of the world and each program is described in considerable detail if you click on the name of that country below the map. Another group of countries in the same list, whose names are written in black, are those where WISHH presently has projects but (being very busy and active) has not yet had time to describe that project and add a color photo. They are: Angola, Democratic Republic of the Congo (DRC), Ethiopia, Malawi, Nicaragua, Nigeria, Tajikistan, Tanzania.

Media communications: Press releases, Newsletters, Annual reports, Photo gallery (very interesting). Workshops / Training: International workshops, Washington, DC, workshops, Midwest workshops, Other training. Nutrition library: Nutrition HIV/AIDS overview, WISHH presentations, WISHH papers / publications, WISHH HIV/AIDS activities, HIV/AIDS resources, SoyCow & VitaGoat, Economics of soy. Resources / Links: Soybean organizations and agencies (33), U.S. government and international organizations (13). About soy: Soy products, composition of soy, US soy production, Supplier list. Contact us: The WISHH office is co-located with the American Soybean Association office near St. Louis, Missouri.

"Global outreach: WISHH works with multiple private voluntary organizations and commercial companies in more than 28 different developing countries in Africa, Asia and Central America. Many of these groups are using U.S. high-protein soy to improve diets and health as well as encourage growth of food industries in developing countries."

Supplier list–Suppliers of soy and soy products: ADM, Bunge Milling, Cargill, Inc., CHS (Cenex Harvest States), Soya Kenya (agent for CHS in Kenya), Louis Dreyfus Corp., Nedan Oil Mills (Pty) Ltd. (Afgri Products) (Republic of South Africa), North American Millers' Association, Rab Processors Ltd. (Malawi). Seba Foods (Malawi), The Solae Co., Soy Afric (Kenya), SunOpta Food Group LLC (USA), Zeeland Farm Soya (USA).

SoyCow & VitaGoat: Both are manufactured and supplied by Malnutrition Matters (Frank Daller), 498 Rivershore Crescent, Ottawa, ON, Canada K1J 7Y7. www.malnutrition.org. Details about each low-tech machine are given.

Color photos show: (1) Jim Hershey, executive director of WISHH, with Africans interested in soyfoods in Cote d'Ivoire. (2) Ditto. (3) Handsome boy with soy in Mozambique. (4) Jim Hershey drinking soymilk in Malawi. Address: 12125 Woodcrest Executive Dr., Suite 100, St. Louis, Missouri 63141. Phone: (314) 576-1770.

8548. World Soy Foundation. 2009. Feed. Educate. Measure (Website printout–part). www.worldsoyfoundation.org Printed Jan. 29.

• ***Summary:*** Contents: Home. About WSF: Board of Directors, Chairman's message, Executive director's message, Meeting information, Mission / vision / values, Our work. Why soy? Additional facts, What is a SoyCow? What is a VitaGoat? Our partners: National Soybean Research Lab., Northern Food Grade Soybean Association, Organizations to be supported. What's new: Media contacts, Photo gallery. How to help: Ten programs to which you can donate money. Donate now: Donor recognition, Gifting categories, How to give. Contact us (no address is given).

Various color photos of people of various ages move across the top of the website from left to right, stop briefly, then move on. Address: 12125 Woodcrest Executive Dr., Suite 100, St. Louis, Missouri 63141. Phone: 1-866-246-

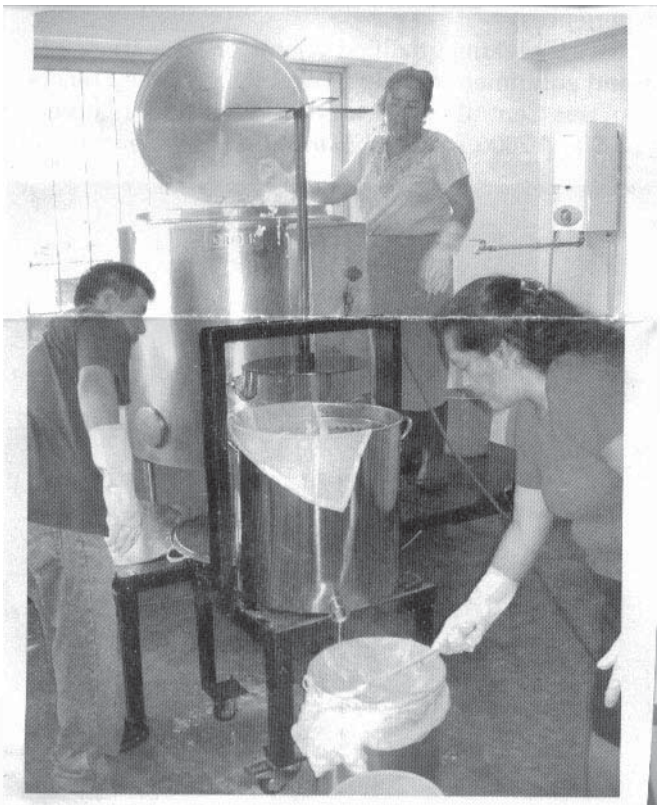
7692 (Soya).

8549. Roseboro, Ken. 2009. The 2009 non-GMO sourcebook: A buyers guide to global suppliers of non-GMO and organic seeds, grains, ingredients, and foods. Eugene, Oregon: Evergreen Publishing, Inc. 106 p. Illust. (both color, and blue and white photos). Index. 28 cm.
• ***Summary:*** Contents: Editor's introduction (by Ken Roseboro, publisher and editor). Suppliers of non-GMO products: United States, Canada, Europe, Africa / Middle East, Asia / Australia, Latin / South America. The Non-GMO Project special section (Non-GMO verification of organic foods begins, Non-GMO Project facts, Non-GMO corn chips create a niche for healthy snack foods, Grain suppliers express concern about the Non-GMO Project, First inspector training for non-GMO verification held). Related products, services, and organizations. Indexes: Index of non-GMO suppliers by product category: Seeds, grains and oilseeds, specialty grains and crops, canola / rapeseed products and ingredients, corn / maize products and ingredients, soy products and ingredients (phytosterols, soy flakes, soy flour, soy germ concentrate, soy grits, soy lecithin {including organic}, soy meal {including organic}, soy nuts, soy oil {including organic}, soy oil–low linolenic, soy protein, isolates and concentrates, soy protein–textured, soymilk, soymilk powder, soy sauce, vitamin E / tocopherols), other ingredients and processing aids (citric acid, dairy ingredients...), sweeteners, food products, animal feed. Index of related products, services and organizations. Complete index of listings. Order form for *The Organic & Non-GMO Report.*

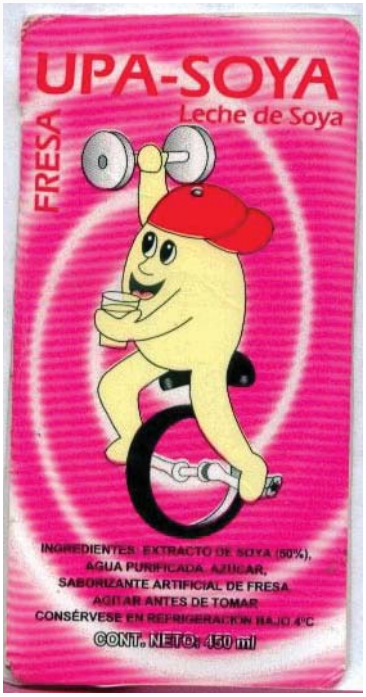
This comprehensive book gives the single best picture of the growing industry, worldwide, opposed to genetic engineering of foods and feeds. Address: Editor / Publisher, P.O. Box 51137, Eugene, Oregon 97405. Phone: 1-541-343-2272.

8550. UPAVIM. 2009. UPA-SOYA–UPAVIM soy food marketing program, processing and nutrition education program (2006) (Website printout–part). www.upavim.pursuantgroup.net/english/upasoya.htm Printed Feb. 5.
• ***Summary:*** The work of UPAVIM, a woman's cooperative in Guatemala City, Guatemala, is available at various places on the Web. UPAVIM's homepage begins: "We are a group of approximately 66 women who live in the marginalized communities of La Esperanza, El Mezquital and Villa Lobos I and II, in Zone 12 of Guatemala City. We are all mothers and homemakers. Some of us are widows, abandoned by our husbands or we confront alcoholism in our families. Many of us are the sole providers of economic support for our families." The group started in 1988 with the Healthy Baby Program in the parish of La Esperanza.

The idea for a soy program began in 1999, when "the women of UPAVIM began talking with longtime friend and advisor Barbara Lorraine about how they could expand UPAVIM in order to create more job opportunities and build long term sustainability for their community service programs." "Barbara and UPAVIM established a partnership with Plenty International, an international NGO specializing



UPAVIM, Guatemala City, Guatemala.



in soy foods for assistance in designing the space and acquiring the necessary equipment." "In April 2005, UPAVIM initiated production and chose the name UPA-SOYA for their young business enterprise."

As of 2006: "Five women at UPAVIM have completed 40 hours of soy food processing and quality control education activities during 2005. These women are now making soy milk and cheese [tofu] twice each week, and including the remaining soy masa [soy pulp, okara] in bread that is made at their bakery."

Talk with Lisa Wartinger of Plenty International. 2009. Feb. 5. Among the many Plenty volunteers who contributed to the soy project, Louise Hagler helped with technical support and Chuck Haren helped to provide the equipment. Much (if not all) of the soymilk produced has been used to feed kids in daycare. The tofu they make is quite soft; some of it may have been sold.

Letter (e-mail) from Jorge Gonzales. 209. Feb. 13. He worked in the soy dairy for two years making soymilk and tofu. His salary was paid by Plenty International. The soymilk came in strawberry, chocolate, and vanilla flavors. Jorge has not worked for Upa-Soya for 2½ years, since Aug. 2006, when he had surgery on his leg. He writes that Upa-soya stopped making soymilk at the end of November, 2008, mainly because the children got out of school; the soy dairy sells their soymilk to the school twice a week. Another reason that Upa-Soya closed is because sales of soyfoods had been low in the area. Besides soymilk, the ladies at the soy dairy have been making different flavors of soy yogurt, granola, and soft tofu. Their main task now is to focus on finishing three buildings that are being constructed now.

Photos (undated) show:

(1) UPA-SOYA's soy dairy, with modern stainless steel equipment, including a steam jacketed cooker, making soymilk or tofu.

(2) A well designed pouch of UPA-SOYA strawberry soymilk. The front panel text reads: "Fresa UPA-SOYA Leche de Soya. Ingredientes: Extracto de soya (50%), agua purificada, azucar, saborizante artificial de fresa. Agitar antes de tomar. Consérvese en refrigeración bajo 4ºC. Cont. Neto 450 ml." [UPA-SOYA Strawberry Soymilk. Ingredients: Extract of soya (50%), purified water, sugar, artificial strawberry flavoring. Shake before using. Keep refrigerated below 4ºC. 450 ml net]. Address: Calle Principal, Sector D-1, Colonia La Esperanza, Zona 12, 01012, Guatemala.

8551. Viavant, Suzi Jenkins. 2009. Re: Introducing soyfoods to the highlands of Guatemala. I. Letter to William Shurtleff at Soyinfo Center, Feb. 5. 6 p. 28 cm.

• ***Summary:*** A cry for help on the ham radio: On February 4, 1976, a devastating earthquake hit Guatemala at 3:01 a.m. local time, while most people were asleep, taking at least 23,000 lives. Approximately 76,000 were injured, and many thousands left homeless. Some areas went without electricity and communication for days, but a desperate cry for help on the ham radio managed to reach "The Farm," a self-sufficient spiritual community in Summertown, Tennessee, founded by Stephen Gaskin. In response, Plenty, The Farm's community outreach program, chose three carpenters to help with the reconstruction efforts. Dennis Martin, Pedro Grey and Melvyn Stiriss were soon flying to Guatemala armed with only their skills, a backpack full of tools and a desire to help rebuild.

Reconstruction Project: Dennis Martin, a natural at networking, was quick to forge strong connections with members of the Canadian Embassy, Clive Carruthers, acting as the Canadian Chargé d'Affaires, and Rick Bronson, administrator of funds for the Canadian International Development Agencies (CIDA). Martin soon discovered that CIDA had a shipment of prefab housing materials and funds on the way for the reconstruction of Guatemalan towns that had been destroyed in the earthquake. Martin pledged to CIDA that if they were to grant him funds and these materials, Plenty would aid in the reconstruction of the town of San Andres Itzapa, in the municipality of Chimaltenango, and build thirteen schools. CIDA agreed, and thus began Plenty's Guatemalan Project.

The Clinic Program: With a few months, many carpenters from The Farm had volunteered for the reconstruction effort, and the Project was quickly underway. However, as they began clearing debris and rubble, a new crisis emerged. They were horrified to find infants, many orphaned, in dire need of medical attention. The Project urgently requested volunteers with medical knowledge to come and provide assistance. Mary Louise Perkins and her medical and public health crew from The Farm answered that call and soon set up a medical clinic in the Plenty camp, which at that time was no more than one kitchen structure, a few platformed tents surrounded by a coffee plantation and corn field. The clinic was later joined by Thomas Wartinger acting as site physician.

The Orphanage: The number of infants and children orphaned by the earthquake had reached a critical point. The Farm sent out request to its members for single female volunteers to help establish an orphanage. In June 10, 1977, I volunteered along with five other women to go to Guatemala and help set up the orphanage. We became known as the Angel Crew. Our responsibilities involved one-on-one parenting of a single infant, collectively caring for 37 children, and preparing three meals a day for around 90 people consisting of orphans, patients at the clinic, and volunteers involved in the Project. Along with the orphans, many locals joined our team, including several teenagers who had been living on the streets of Guatemala, who we helped recover from drug addictions. My baby was Maria Cruz who was severely malnourished. After several months of nursing her back to health using primarily diluted soy formula she regained her health and was later adopted by

Alan and Jane Graf, one of the Plenty couples.

At that time the infant mortality rate was around 50%. Some of the infants came to us extremely malnourished and underweight–at an age of eight months some weighed a mere eight pounds (the weight of most infants at birth!). We fed these babies diluted soy formula through an eyedropper, but in some cases it was simply too late. The only thing that made the heart-breaking experience of losing a child bearable was that we were able to save others. Some returned home if they had one, and others were adopted. However, many of the children we treated went home only to return to us again in a short time, again malnourished. Most of the children in Guatemala were given only tortillas to eat, and it became increasingly clear to me that many Guatemalan mothers needed to be educated about how to provide for their children's basic nutritional needs.

Soy Agriculture & Demonstration Program: Aware of the undernourishment of the people of Itzapa and the high nutritional benefits of soybeans and soy products, we forged a plan to introduce soybeans as a new crop to the local farmers. Our goal was to supplement the diet of the local villagers with high-quality protein while also providing a source of income to the farmers. Soybeans seemed like a viable solution since the farmers had only small plots of land and soybeans can yield high amounts of protein per acre.

In October of 1978, Darryl Jordan, a member of the Plenty team who specialized in agriculture, initiated the soy program. He contacted INTSOY at the University of Illinois and asked if he could conduct one of their international soybean variety trials; he was sent 20 soybean varieties, written procedures to follow, and forms showing results to fill out and return to INTSOY. Itzapa sits at an elevation of 5,860 feet, which at that time, was the highest growing elevation ever tested. Darryl was joined later by Craig Bialick, another team member, who planted and tested the different varieties of which Cobb, Bosier & Davis proved to yield well. As the interest in the new crop increased among the passing farmers, they wanted to know about the new bean and how could they grow it. Since I had a background in producing tempeh for The Farm, Darryl approached me with the idea of teaching the locals about soy products and how to prepare them.

I began by writing a proposal which I submitted to UNICEF Guatemala requesting $6,000.00 to fund in-home soy cooking classes in the area of Itzapa. They gave me the funds I requested along with a two-gallon stainless steel pot and The Soy Demo Project was born. The first classes were held with the wives of the farmers that were involved in growing the soybeans which had proven to grow well at the 5,860 ft. elevation. I taught them using the same utensils that they used themselves, such as a rock grinding stone and cooking on a wood fire; this way every woman who took the class would be able to use the same methods in her own home.

The class size averaged 6-8 neighborhood women along with about 15 children. I would teach the class in Spanish (which I learned informally after arriving in Guatemala), and Maria Sal, a local Indian mother of five who joined our team, would translate in Cakchiquel (a Mayan dialect). The children loved eating the soyfoods and news traveled fast; at the end of each class I would find myself surrounded by 20-30 children, all waiting eagerly for a sample. Interest among the women grew quickly as well. Word spread throughout the area and the requests for classes became overwhelming. I was soon teaching soy demo classes not only in Itzapa, but in many of the neighboring villages as well. By June 1979 approximately 200 women were taught.

The Soy Promoters Program: In one of Itzapa's neighboring villages, San Jose Poaquil, a Guatemalan agency named World Neighbors had set-up a cooperative that held classes in agriculture. While performing a class there, I met a Latino Guatemalan named Amado del Valle, who was the director of the program. (Note: In this context, "Latino," refers to one whose ancestry is largely Spanish rather than indigenous Mayan; for centuries there has been both conflict and intermarriage between these two groups). With his background in agriculture he was very interested in what the soybean had to offer for Guatemala's protein crisis. I realized I needed help spreading the word, so he offered 8 women from his cooperative to become teachers.

In August 1979, we wrote a proposal requesting funding from CIDA to provide the equipment, supplies and training for the cooperative promoters, who would in turn train others in the preparation of soyfoods. I donated my salary as a volunteer and UNICEF donated several thousand dollars towards the project, the total amount of which would then be matched by CIDA. Previously CIDA was able to contribute matching funds through Plenty USA. However at this time, to continue their funding, Plenty needed to obtain a Canadian NGO nonprofit status; we did this through our sister Farm in Canada and we received $11,000.00 for the program. There was good acceptance in Poaquil, especially in the low parts of the municipality. Each promoter had about five groups, some of them walked 15 miles and approximately four hours to get to their groups. We trained them at their cooperative and later went with them to their villages to observe one class. We left them with soybeans, supplies, and funding to continue teaching on their own, visiting them occasionally checking in on their books, and charts, which they kept on all classes. Continued. Address: Salt Lake City, Utah.

8552. Viavant, Suzi Jenkins. 2009. Re: Introducing soyfoods to the highlands of Guatemala. II. Continued. Letter to William Shurtleff at Soyinfo Center, Feb. 5. 6 p. 28 cm.
• ***Summary:*** Continued: In September 1979 the immediate food and housing crisis in the area had been solved, so we began to focus on long-term developments in agriculture and nutrition. As we moved from that area of Guatemala

we began to realize the town had grown accustomed to our medical assistance and were growing dependent upon our charity. It became apparent that we needed to develop a means to allow the indigenous community to help themselves. We moved our camp from Itzapa to Solola, where we had built a Mayan municipality building and several schools. Darryl and his wife Leslie returned to the Farm with their adopted baby named Irma, one of the recovered babies that had been abandoned. Since our project focus changed, as we moved to Solola most of the medical crew returned to the USA after adopting (and taking with them) most of the rest of the 7-10 children in our orphanage; most of these children grew up in the USA and never returned to Guatemala to stay.

The Soy Dairy Project: Although the soyfoods were very popular and classes were available, many women in Guatemala did not consistently have time to make their own soy products at home. To address this need, Plenty wrote another proposal to CIDA for $31,000.00 to build a soy dairy that would operate as a cottage industry. Building the dairy would enable us to produce soyfoods on a large scale, create job opportunities, and make soy products available for purchase to the people of Guatemala. Soy ice cream seemed to be a good product choice to focus on. Its production required less education and ice cream was very popular throughout Guatemala.

We decided to build the dairy in the community of San Bartolo, Solola, where we had moved our camp. We had established a good rapport with the community's reconstruction committee. We had already built a school and installed a water system for them which featured a water spigot in every home. The water system had improved the quality of life immensely in San Bartolo, as before they had to carry water for several miles to their homes. My knowledge of large scale soymilk production was limited so Plenty approached Laurie Praskin, the soyfoods expert who for years was in charge of producing soy milk and tofu on a large scale for The Farm community in Tennessee. Laurie accepted and I returned to the United States to help her purchase the equipment needed. We traveled across the country educating people about our cause. We were able to get some of the equipment donated and purchased the rest with the funding we had received–including two 50 gallon stainless steel pots that Laurie acquired from the Boy Scouts of America.

In the summer of 1979 we shipped the equipment to Guatemala along with seven tons of soybeans, and I returned to Guatemala with Laurie as my partner. Laurie's husband, Alan Praskin, was also an agriculture specialist who joined with Craig Bialick to continue doing more soybean variety trials at different altitudes. They did one trial with 16 different varieties in San Martin Jilotepecque, where they partnered with Amado del Valle, the director of the World Neighbors Cooperative where we trained the eight soy promoters. They also did a trial in the Solola area which at 7,200 ft. was the highest elevation ever tested at that time using INTSOY varieties.

On February 19, 1980 the facility was finished, and the Soy Dairy was inaugurated. Our long-term plan was to turn over full operation of the dairy to the people of San Bartolo so our first task was to choose and train a local to oversee the project. We chose Agustin Xoquic. He had been head of the reconstruction committee in San Bartolo at the time we had installed the water system, and we had developed a very strong bond with him and his family. We lived in the Mayan community, training Agustin and his wife Elena to oversee the dairy. The Soy Demo Promoter's project continued while also operating the soy factory project.

As of August 31, 1980, there had been 117 promoter classes and 1,013 men and women were taught how to make soymilk and tofu in their homes through the Soy Promoter program. Small women's groups had collectively grown their own plot of soybeans. This program was similarly implemented in San Martin Jilotepecque, Chimaltenango, with another World Neighbors Cooperative. Eight women were approved as soy promoters and taught 307 men and women. Over 100 people in San Martin planted soybeans that year. Between all the cooperatives, they harvested approximately 8,000 pounds of soybeans for their own needs and the remaining amount was sold to the *Fabrica de Soya* (Soy Dairy) in Solola.

In Solola, Laurie and I held cooking classes in the town, teaching Latino women, how to prepare fancier dishes such as lasagna, blended tofu dishes, fried and scrambled tofu. These ladies had electric blenders, ovens, and tofu, which was now available in the local market produced by the Fabrica de Soya in Solola. We also continued our classes with the Indigenous people in the surrounding villages of Solola.

We also began working with Berhorst Hospital in Chimaltenango, where we had often taken some of our patients. They were very enthusiastic about soy technology and asked us if we could get them enough soybeans to supply soymilk and tofu for their patient's daily consumption. They also asked us if we could get them an ice cream machine for making soy ice cream for sales to their patients. The current practice is for the patients to go to the local store and get junk food without much nutritional value. They wanted a high quality protein product such as soy ice cream, to be available for their patients. We began holding demonstrations at the hospital with 35 volunteer promoters from the surrounding villages of Chimaltenango.

After eight months of training the employees at the soy factory, the political climate in Guatemala became violent. People we worked with on our water projects were put on "hit lists," and since we did not want to jeopardize anyone's safety we were forced to prematurely leave the soy factory project in the hands of people in San Bartolo.

On September 22, 1980 we returned to the U.S. Since Darryl Jordan returned earlier he had published an article about the soy project in a development newsletter titled *League for Food Education* (*L.I.F.E.*). We received responses from fifty different countries requesting advice on how to set up similar projects. We then published the *Plenty Agricultural Program: Guatemala* booklet (1980, 46 p.) and the *Plenty Integrated Soy Program, Guatemala* (1982, 48 p.) booklet to help educate the many people from whom we had received inquiries, along with those from other interested organizations.

After we left Guatemala, Amado Del Valle worked with Food for the Hungry in efforts to set up two more soy dairies in Zacapa, but the political violence from Guatemala's civil war made it too dangerous to complete. It had also become too dangerous for the Soy Factory in Solola to operate, so it closed as well.

On May 27, 1981, Amado left Guatemala and arrived at The Farm in Tennessee, to study large scale production of soyfoods; he later went on to the Canada Farm. In September of 1985, he returned to Guatemala with funding from Plenty Canada at which time he helped Agustin reopen the soy factory and become the Director for three years. It was reborn as Alimentos San Bartolo, community owned and managed, although Agustin and Elena were still in charge of production, and remain so to this day.

On March 7, 1991 the soy project land was officially turned over to the committee of San Bartolo. Chuck Haren and other members of Plenty periodically traveled to Guatemala to help with funding and equipment upgrades.

In June of 1995 with help from Plenty USA and funding from Food for the Hungry, I returned to Guatemala to do a marketing upgrade which I completed in three months. I wrote a Spanish-language booklet with local recipes titled *Recetas de Soya* (*Soyfoods Recipes*), had 1,000 copies printed, and used it at soyfoods classes, some of which were held at local restaurants.

In August of 2006, each household in San Bartolo was bought out for an amount of money equal to their share of the project. The project was restructured from a community owned business to an association named *Asociacion de Desarrollo Integral Belen* (*ADIBE*), but it is still directed by the committee of San Bartolo, which is elected every 4 years by the community. Address: Salt Lake City, Utah.

8553. Viavant, Suzi Jenkins. 2009. Re: Introducing soyfoods to the highlands of Guatemala. III. Continued. Letter to William Shurtleff at Soyinfo Center, Feb. 5. 6 p. 28 cm.
• ***Summary:*** Continued: In July of 2008 the members of ADIBE traveled to Guatemala City to compete and present all of their products at a National Rural Development contest; they were recognized as one of ten winners and were awarded 46,000 quetzals.

The project has become a model project worldwide. The soy dairy has operated as a self-sufficient business for twenty-nine years. It employs seven members of the Mayan community full-time and perhaps most importantly, continues to supplement the protein intake of the Mayan children.

As of August 21, 2008: The current items produced and sold weekly are: 40 gallons of soymilk, 110 pounds of tofu, 15 gallons of soy ice cream, 20 pounds of tempeh, and 20 pounds of soy flour.

In October of 2007, Amado del Valle developed several new products which the soy factory now produces; shampoo, face cream and hand soap (all made from tofu whey, which was previously discarded).

As it is becoming increasingly more popular to be "green," we, the people of this planet, should harness this global consciousness and set up more projects of this kind, which has proven to make the most of our world's resources and provide quality nutrition and education to people who would otherwise not have them. With more funding, education and organization of the planet's resources, there would be plenty of protein to go around, and malnutrition could be a thing of the past–this is my dream. My experience has taught me that small donations, desire, grass roots commitment and organization can change and save lives.

Note: This article is written from the memory of my experience setting up the Soy Demonstration Programs in Guatemala. However I would like to acknowledge that the success of the soy program involved many Plenty volunteers and Farm members, who have contributed or supported the project directly or indirectly over many years. I apologize if I missed mentioning anybody.

Even though I am no longer a member of Plenty, I have still consistently returned to Guatemala to check-up on the project and bring them supplies.

For more information please contact: Suzi at soysolutions@gmail.com or Plenty International, P.O. Box 394, Summertown, Tennessee 38483. Phone: (931) 964-4323. www.plenty.org. plenty@plenty.org. Address: Salt Lake City, Utah.

8554. Hershey, Jim. 2009. Work with the WISHH (World Initiative for Soy in Human Health) program (Interview). *SoyaScan Notes.* Feb. 13. Conducted by William Shurtleff of Soyinfo Center.
• ***Summary:*** Jim was born in 1957 in St. Louis, Missouri. He grew up in St. Louis, then graduated in 1979 from Northwestern University (Evanston near Chicago, Illinois) with an BA degree in an interdisciplinary program called "American Culture" and a certificate in "African Studies." He earned a teacher's certificate at the same time. He joined the Peace Corps, and during 1979-1981 in Abidjan, Cote d'Ivoire, he taught English as a foreign language–thus using his teacher's training. Returning to the USA, he got some sales jobs then attended the American Graduate School of

International Management ("Thunderbird," in Glendale, near Phoenix, Arizona), graduating in 1984 with a Master's in International Management (similar to an MBA but internationally focused).

Fresh out of graduate school he was hired as regional director for Africa for the Rice Council, a U.S. commodity trade association that does market development overseas for rice. He worked in Abidjan, Cote d'Ivoire, from 1985-89. That was a peaceful period during the later years of the original president, Felix Houphouët-Boigny, who built his country well.

Almost all Americans are not aware of overseas market development programs or their importance to American agriculture or our economy. The principle on which these programs were formed was a public-private partnerships; they have worked very successfully for the last 50 years. The American Soybean Association (ASA), for example, built good, solid, long-term markets, using checkoff dollars from all soybean producing states–except Ohio and Indiana.

After Jim Left Abidjan, he worked for 2 years (1990-91) at the Rice Council's headquarters in Houston, Texas. In 1992 Jim (a St. Louis boy), who was married to Nancy (a Chicago gal), with two kids (ages 2 and 4), said: "Houston is not where we want to raise our family." Rice Council was a much smaller organization at the time than ASA, and he did not foresee a lot of upward mobility within the organization. So Jim started to look for a way to get back to St. Louis. He liked the field of market development very much. The American Soybean Association, which was expanding and opening new offices overseas, offered Jim a wonderful opportunity to stay in the field in which in had built expertise, and to return to his home town. So in Match 1992 Jim moved his family to St. Louis and went to work for the ASA; Ken Bader was CEO at the time. Jim arrived about 3 months before Bader left. Working in St. Louis, he became the Division Director in charge of three offices: the Middle East, Central Europe, and the former Soviet Union. Reporting to Dennis Blankenship, who was Executive Director, International Marketing, Jim presided over and coordinated opening of a new office for the Middle East and Africa in Nicosia, Cyprus, and in Moscow, Russia, in the new CIS (Commonwealth of Independent States). A Hungarian was the regional director in Vienna, a Russian-speaking Serb in CIS, and an American in Nicosia.

In 1996 USB, the organization that funded ASA, said that administrative and overhead costs were too high so let's reduce the number of management staff, so Jim was given responsibility for western Europe along with his 3 other offices.

In 1996 Roundup Ready soybeans were introduced by Monsanto. Jim's job as division director for western Europe became extremely complicated and contentious. ASA's long-time overseas market development and technical assistance work had to take a back seat to ASA as a policy and promotional organization. It seemed to Jim like ASA, in defending genetically engineered soybeans, as fighting a losing battle in Europe. "I was fighting the biotech wars. I felt the injuries and the scars. By 1999 I was getting burned out and was ready for something else." Jim is not personally opposed to biotech soybeans; he thinks that, used appropriately, it could benefit a number of people and even the environment.

Fortunately, at about that time, the WISHH program was starting to be born. It was first conceived and articulated by the Illinois Soybean Program Operating Board (ISPOB, the Illinois checkoff board) as a way to increase the amount of U.S. soy protein consumed by people in the Third World. It usually takes at least one funding year from the time a soybean program is conceived until it begins operation. Illinois soybean farmers joined with soybean economists and leaders at the University of Illinois at Urbana to form the International Soy Protein Program (ISPP).

Lyle Roberts, the visionary leader behind the new idea, had two more important ideas: (1) ASA would be the best organization to manage the program; they were already well established and had expertise in international market development. (2) The head of the new program should be dedicated to that program alone–with no other ASA responsibilities. At the ISPOB meeting in the summer of 2000, the board approved a guaranteed three-year start-up period and a budget of $1 million per year.

In July 2000, at a joint meeting of ASA, USB, and ISPOB, the International Soy Protein Program was born, based on Lyle Robert's concepts. The money was allocated and the management structure was agreed upon. Jim Guinn, ASA's Executive Director of International Marketing, was charged with the responsibility of finding a well qualified person to run the new program. On 1 Nov. 2000 he selected Jim Hershey, who had the right experience, to be the first director of the International Soy Protein Program.

In December 2000, at the National Soybean Research Lab (NSRL), at the University of Illinois at Urbana, the first working group met with a long agenda, including developing a strategic plan for the group and trying to create a better name for ISPP. Seated around the table were 12-14 people, including Lyle Roberts of ISPOB, people from NSRL including Steve Sonka, several consultants who had done some early work with Lyle, a nutritionist who was a specialist in HIV nutrition, etc. When working on a new name, Jim went to the blackboard and wrote down suggestions, in various columns, for words that should be in the new name–words like "World" or "International" and (of course) "Soy" and "Nutrition." In less than an hour they had arrived at a name and acronym that they liked; the name formed a unique acronym–very valuable in the age of Internet searching and URLs. That name was World Initiative for Soy in Human Health (WISHH).

Within the first year, various other state soybean

checkoff boards recognized the potential power of the new idea and decided to share the expenses of the WISHH program with the Illinois board. These states were: Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, South Dakota, and Wisconsin.

But what exactly would the new group do? What would be their tactics? What types of projects and programs would they start? In what countries would they work and with what partners? These were basic, important questions, and having a strong team of creative people helped WISHH to get started–people like Lyle Roberts and ISPOB, people at the University of Illinois in food technology and nutrition (like Barbara Klein, Karl Weingartner). Getting started was very creative and very interesting. As an example of how things worked, in 2001 Jim went to one of the Soy Summits in Phoenix, Arizona. There he met Brian Harrigan and Frank Daller, who already knew about WISHH. They introduced Jim to the SoyCow technology, and said they were interested in working in developing countries and promoting their technology. At that point Jim didn't have many partners or alliances, he did know that he wanted to work in some of the poorer countries, that were not traditional soy countries, where soy was not well known but where it was needed most–which was where there was the best potential for market development and growth. There's an old story: One shoe salesman goes to Africa and says, "This is a terrible market; nobody wears shoes." But the visionary shoe salesman goes to Africa and says, "This is the best market you can imagine; nobody wears shoes." Address: Director, WISHH, c/o ASA, St. Louis, Missouri. Phone: 734-764-2347.

8555. Alpro. 2009. History of Alpro (Website printout–part). corporate.alpro.com/en/organic-food-production-belgium/history.html Printed March 3. [Eng]

• ***Summary:*** "Back in 1934, the founder of the Vandemoortele Group, Constant Vandemoortele, was already aware of the benefits of soya. 40 years later, his grandson Philippe Vandemoortele was so convinced of the soya bean's nutritious power that he perfected a unique and natural process for making soya milk.

"Philippe had a vision to tackle the nutrition problem in the Third World. An early project saw the construction of a soya plant on the island of Madagascar in 1980. Unfortunately, for logistical reasons, the project had to be discontinued.

"But increased awareness of food issues and concerns meant that creating a soya-based business in Europe was a very real possibility.

"To this end, the Vandemoortele Group set up a separate division specialising in natural soya-based food and in 1980 Alpro was born.

"In 1989 Alpro built Europe's largest and most modern production unit for soya food based on the UHT process, situated in Wevelgem, Belgium.

"In 1996, Alpro took over Sojinal and thereby acquired an extra soya milk production unit in Issenheim, France.

"In 2000 Alpro built a brand new soya milk factory in Kettering, UK.

In 2006, to complete Alpro's range of soya products, we took over the Tofu producer SoFine Foods (Landgraaf, The Netherlands).

"To this day Alpro continues to grow as a European market leader and as a fair food partner." Address: Wevelgem, Belgium.

8556. Sunrise Soya Foods (Website printout–part). 2009. www.sunrise-soya.com/ Printed March 7.

• ***Summary:*** "Sunrise Soya Foods humbly began in 1956 when founder Leslie Joe and his wife Susan, newly immigrated from China, realized that there was a demand for tofu in the Chinese community of Vancouver. Leslie began by making small batches of creamy tofu at the back of his grocery store, Sunrise Market, now a well-known Vancouver landmark with its masses of fresh produce and bustling market enticing shoppers from around the city.

"The tofu making operation continued to grow in size throughout the 1960s and the 1970s, as demand increased and consumer awareness of the importance of a healthy diet grew. Sunrise tofu quickly developed a loyal following in the community. 1983–The current Sunrise Soya manufacturing plant is purchased.

"1985–Sunrise ships their first packaged tofu out of British Columbia to outlets in Alberta, Ontario and Washington."

1994–Sunrise acquires Mandarin Soya Foods. Mandarin offers a complementary line of soy products.

By 1995 Sunrise tofu is available in more than 1,000 stores across Canada.

Sunrise produces its first organic tofu with the introduction of the Soyganic brand.

In 1999, Sunrise responds to consumer demand by restating its commitment to the use of non-GMO soy beans in all its products.

That same year, the Union of Orthodox Jewish Congregations of America grants Sunrise kosher certification, including permission to use the Circle-U symbol on all packaging.

In April 2002, expanding markets in Eastern Canada prompt Sunrise to open a 65,000 square foot manufacturing and warehousing facility in Toronto, from which the company will service the Ontario, Quebec, and eastern United States markets.

May 2002 sees Sunrise's newest brand, Pete's Tofu, launched. Pete's Tofu is aimed at tofu novices and experts alike. 'Taking the guesswork out of tofu,' Pete's line-up includes convenient, ready-to-eat products such as savory tofu triangles and tofu desserts.

Sunrise launches Coconut and Banana flavours in twin packs.

Presenting sponsor of the 2006 season of CityCooks, a popular TV show. sunrise Soya Foods will be featured through on set product displays, 30 second promos and a special tofu week.

Feb. 2006 Sunrise releases its Vancouver Chefs Take on Tofu Cookbook, featuring 21 different Vancouver restaurants and 42 wonderful tofu recipes. Half of all sales go to the Canadian Diabetes Association.

"Sunrise Soya Foods celebrates its 50th Anniversary in May 2006!" Address: 729 Powell St., Vancouver, BC V6A 1H5, Canada.

8557. Davies, Henry. 2009. Re: Chronology of work with soy in Southern Africa, 1987 to present. Letter (e-mail) to William Shurtleff at Soyinfo Center, March 17. 2 p.
• ***Summary:*** 1987 Nov. 1–First got involved with soy and the feed industry.

1987 Nov. 1–Started work on the first extruders to be imported to South Africa used mainly for the manufacturing of full fat soy. Henry initiated the establishment of the Committee for the Evaluation and Standardization of Analytical Methods for Determining the Effects of Full Fat Soya Processing. This committee aims to provide a nationally accepted standard of quality control for processed soy under supervision of the Agricultural Research Council (ARC) and the National Protein Council.

1998 March–During 1998, he visited a TVP plant in Egypt together with the American Soybean Association (ASA). It was then that he recognized the similarity between the processing systems used for TVP and that of full-fat soy.

1998 May 21–On his return to South Africa, ASA invited him to attend the International Conference on Processing and Utilization of Soybeans (20-21 May 1999) in Pretoria. He was requested to deliver a paper on the subject of soybean for local human consumption. The title thereof: "Current Food Products and Potential in SA".

1999 July–Invited by Cochrane Fellowship Program to attend a soy training course at the Illinois University on the processing of soy for Human Foods (Small Scale Processing).

1999 Nov.–Elected as executive member of South African Soyfood Association (SASFA).

2000–Attended an intensive international training course on TVP and related issues at Texas A&M University, College Station, Texas, visiting Insta-Pro International offices in Des Moines, as well as a texturized vegetable protein production plant in Vinton, Iowa.

2004 Jan. 1–Started manufacturing of Recharge Instant High Protein Porridge drink after observing the effects of HIV/Aids within the local community and especially co-workers.

2006 July 15–Eden Manufacturing PTY (Ltd) starts a working relationship with WISHH initiating the first VitaGoat and SoyCow units to be installed at the Bergville Training facility.

2006 Aug. 4–Completed the first training centre at the original Eden Manufacturing building situated in Bergville town.

2006 Sept. 19-22–The first Soy Short Course is held at the new training centre in association with SASFA (South African Soyfood Association). 54 people attended the 4-day course. They were taught how to make soymilk and various other soy beverages using the SoyCow (which requires electricity) and VitaGoat (which is bicycle powered). The course was paid for by WISHH.

2006 to 2009 and current–Chairperson of Soy Southern Africa (SSA), previously known as SASFA.

2008 July 21–Install VitaGoat Food Processing System in Shamva, Zimbabwe. The installation was hosted and paid for by HUMANA People to People (www.humana.org). At this location, Henry also lectured on soy nutrition. Humana operates a huge farm where they have managed to plant some soybeans for their own use with the VitaGoat, which produces enough soymilk that Humana can provide (free of charge) 500 ml of soymilk daily to each of 400 school children, as well as enough soymilk to use in their own kitchen for food.

2008 Aug. 8–Install VitaGoat Food Processing system in Tugela Ferry, Northern KwaZulu-Natal, South Africa.

2008 Aug. 21–Install SoyCow Food Processing system in Orange Farm, Johannesburg, South Africa.

2008 Oct. 15–Install a VitaGoat Food Processing system in Nahamatanda, Beira, Mozambique.

2008 Nov. 12–Relocate to new premises outside Bergville town.

2009 Jan. 4–Eden Manufacturing engages in the services of a professional social project manager as well as a educationalist / production manager to add further specialised services to their network.

2009 March–Constitute the establishment of the Eden Social Development Foundation to assist with funding of designated projects. Address: P.O. Box 206, Bergville 3350, KwaZulu-Natal, South Africa. Phone: +27 36 448-1605.

8558. Davies, Henry. 2009. Re: Forthcoming trip to Democratic Republic of the Congo (DRC, formerly Zaire). Letter (e-mail) to William Shurtleff at Soyinfo Center, March 23. 1 p.
• ***Summary:*** "I will be travelling to the DRC [Congo] in 3 weeks time to install and train a group of UMCOR [United Methodist Committee on Relief] on VitaGoat food processing equipment. They have attended a previous workshop and has by far proven to be the best and most attentive group ever. I look forward to meeting up with them again."

Concerning commercial soy products in South Africa:

Soy Mince has been around for at least 30-40 years. Most of the products available contain soy protein isolate as their protein source. Eden Manufacturing has been the first company in South Africa to use the whole soybean to manufacture soy products (i.e., soymilk, yoghurt, tofu etc).

Concerning the Humana VitaGoat project in Zimbabwe: "The constant availability of soybeans at this project is the core of its success. We are looking into the establishment of a NGO [non-governmental organization] that will assist with funding of new VitaGoat and SoyCow projects incorporating both equipment, training and sufficient raw material to keep the project going until such time that they have generated an income to either plant their own soybeans or purchase proper soybeans." Address: P.O. Box 206, Bergville 3350, KwaZulu-Natal, South Africa. Phone: +27 36 448-1605.

8559. Soyatech.com. 2009. Soyfoods sales reach all-time high, says new report. But what is the next growth strategy? http: //www.soyatech.com /sponsor.php?id=283. 1 p. [6 ref]
• ***Summary:*** *"Soyfoods: The U.S. Market 2009,* a newly released report by Soyatech, LLC and SPINS, Inc., retail sales of soyfoods products have surpassed $4 billion for the first time in history. The report, which examines soyfoods sales and industry trends during 2008, points out that the market for soyfoods in the U.S. has continued to develop despite the overall economic downturn. The study's authors note that consumer awareness of the health benefits associated with soy and its expanded presence in multiple distribution channels are leading factors in soyfoods' continued success.

"Interestingly, the sales growth of soy is highest in a channel other than conventional supermarkets or natural retailers, according to the report. Sales growth of 1.8% in supermarkets and natural food stores was outpaced by the 'other channels' category of retail outlets for soyfoods including Wal-Mart, club stores and foodservice operations where sales grew by 3%.

"Leading categories driving this growth include soymilk, meat alternatives, tofu and snack bars. Refrigerated soy-based entrees and sushi, tracked for the first time this year, also fared well and debuted in the top 25 largest soyfoods categories, with $11.5 million in sales.

"Soyfoods: The U.S. Market 2009 is the eighth report produced by Soyatech and SPINS, and it provides detailed information on the U.S. market by category, sub-category, brand and distribution channel.

"The report covers such topics as:

"Opportunities for further growth in this healthful food sector. Major players impacting the marketplace and driving growth. Future developments in soyfoods.

"'With soyfoods now a $4 billion industry, Soyatech and SPINS anticipate that opportunities for innovation will enable the industry to continue to grow,' said Philippe de Lapérouse, director of Soyatech's Global Food and Agribusiness Practice.

"For more information or to order the report, please contact Laiza Martinez at lmartinez@spins.com or 847.902.1200 ext. 1254." Address: Bar Harbor, Maine.

8560. Dean Foods Co. 2009. We're in the growth business: 2008 annual report. Dallas, Texas. 4 + 46 + 50 + 13 p. 28 cm.
• ***Summary:*** All but the first 4 pages of this annual report are Form 10-K. A "Brief history" (chronology) of the company is on page 11. Basic financials are on page F-2. Both net sales and net income were up from last year.

Net sales of Silk brand products increased by about 10% (p. 30).

Accompanying the annual report is a "Notice of stockholders' meeting" (84 p.). In 2007 Gregg L. Engles, age 51, Chairman of the Board and CEO had total compensation of $9.618 million, including salary of $1,300,000 (p. 43). Address: 2515 McKinney Ave., Suite 1200, Dallas, Texas 75201. Phone: 214-303-3400 www.deanfoods.com.

8561. Yan, Lin; Spitznagel, Edward L. 2009. Soy consumption and prostate cancer risk in men: a revisit of a meta-analysis. *American J. of Clinical Nutrition* 89(4):1155-63. April. [53 ref]
• ***Summary:*** The researchers found a 26% reduction in risk of prostate cancer for men with the highest soy food intake, compared to those with the lowest soy food intake. This was increased to a 30% reduction when the reported intake was of non fermented soy products (e.g. tofu, soymilk). However, intake of fermented soy products (e.g., natto) were not associated with reduced risk. The authors concluded that consumption of soy foods is associated with a reduction in prostate cancer risk in men. This protection may be associated with the type and quantity of soy foods consumed. Address: 1. Grand Forks Human Nutrition Research Center, Agricultural Research Service, USDA, Grand Forks, North Dakota; 2. Dep. of Mathematics, Washington Univ., St Louis, Missouri.

8562. Andrews, Roger. 2009. Re: History of Spinning Kitchen (early tofu shop in Boulder, Colorado). Letter (e-mail) to William Shurtleff at Soyinfo Center, May 9. 3 p.
• ***Summary:*** "This is the account of my Spinning Kitchen enterprise, with the erstwhile partner, Beverly Migliori, from 1977-79. In preparing the outline and draft, I began to pass through memories that, though vivid, I would rather leave unvisited. I have one good instance from that time and I keep it dearly. My recollection of that time (Corn Mother, Spinning Kitchen) is not unlike the story of The Frog and the Scorpion. Lesson taken, no desire to repeat.

"I had eaten tofu in Japanese restaurants before coming to the Carnival Café. I was intrigued by the ways that tofu was used there in a vegetarian conversion style- tofu 'egg salad', etc. As the interest in tofu for an important vegetarian

nutrient source was peaking, it seemed that deliveries of tofu to the restaurant might have been becoming more sporadic. We needed to know more about this wonderful substance.

"Three of us took an early spring ('75?) field trip to 'Denver Tofu' in hopes of cultivating greater interest with our supplier. The cursory tour lasted about 20 minutes. We were shown some of the equipment but none of the processes.

"Some months later, myself, Gene Casternovia & Ann Ford left the 'Carnival Café' to start the 'Corn Mother Restaurant' in an older house where Boulder People's Food Co-op was also located. We each gave time and effort to the planning, development and acquisition for that venture. Service was the buzzword and I was 'in for a pound' on that theme. I did not feel like a third wheel in the business though time proved that was indeed the case. A sad condition became ever more apparent when I asked for some measure as they were taking and none came forth.

"I had met my partner, Beverly, while I was working at the Carnival Café, in Boulder. After my time at the Corn Mother, we were both suddenly unemployed and sought to begin a joint venture. We had The Book of Tofu and a related commercial production manual. With these and the 'mother of invention', we formulated a business outline and set to work. In my mind, I could again hear the admonition that "anything worth doing is worth doing well".

"We took three small loans with Beverly's delightful landlady, once for the beginning expenses, once to import a Japanese tofu grinder and two stainless steel tofu forms, and again for a used telephone company truck as the delivery van. These loans had a great effect on Beverly, as each time that we would borrow money, she would disappear for a few days. All monies were gratefully paid back.

"We used some of the crocks from my childhood, one smaller for the 1st stage of the nigari solution and another larger to soak the two to three daily batches of soy beans. The various stainless steel vessels were found at local restaurant supply stores.

"The Cumberland General Store carried an impressive inventory of cast-iron ware as might have been found in common use in a 19th century farmstead. I asked about larger vessels and they said that the foundry would occasionally cast larger kettles for rendering and so forth. It was a few long months until a 17½ gallon kettle was ready. It was delivered by truck. It took some time to prepare it for our use, chasing the roughcast, cleaning it and seasoning with several runs of beans that were then respectfully disposed. A corn/feed grinder was crudely adapted to make the *go* [fresh soybean puree]. It was later replaced with a proper machine.

"I fashioned a stock-pot heater from some steel channel and the burner from a large water heater. Such heaters were not so easily found then as now and there was more ingenuity than cash. Tested outdoors first, it was then placed in a fireboard installation beneath a vent in the ceiling. I still have the fire extinguisher that was purchased for the room.

"The Honduran man, Albert, who had been the juice maker for the restaurant had upgraded to a more modern press for his operation and we bought the heavy wood and iron screw press. I fashioned a stainless steel sieve and collar that fit it to the purpose.

"The chemistry and oceanography classes at university came in handy to make good sense of the specific gravity of the saline solutions and ratios for the sizes and optimal temperature of the batches. A woodworker from Arvada, Colorado made the cedar barrels and redwood forms to my specifications. A sheer voile fabric was used for the liners in the tofu forms.

"A local farmer heard of our enterprise and offered to plow virgin soil to plant a few acres of soybeans. He stored the beans there and we would fly them out a ton at a time. He generously tried several varieties until we found one that was best in flavor, texture and tofu yield. Our research had shown us the variables for fine and soft tofu or the more firm varieties. We fixed the process to produce a tofu that was just slightly on the softer side of firm, to include the smooth texture with the firmness to withstand transport. Within a year, the ratio was of a consistent quality at about a 4.25:1 yield, tofu to soaked beans, with the Westbrae nigari. Pushing the chemistry or methods beyond that and the tofu would not stand properly.

"For a short time, we had the good help of very modestly paid assistants. Properly cleaning the equipment was nearly half the day's work. Upon instruction from the local health department, we used boiling water to clean the wooden vessels, a practice that would not likely pass these many years later.

"Beverly and I paid ourselves after business costs to cover our personal expenses. Hopes were to one day expand into something more viable. We sold our products locally in Boulder and Denver and by air to Aspen and Rapid City.

"We also made soymilk in the quart size, vanilla and carob flavors. Beverly printed a brochure with some of her tested recipes using our soymilk and tofu. A graphic artist, somewhat in the style of R. Crumb, nicely drew up our labels and signs.

"After almost two years, Beverly suddenly abandoned our project and I continued for a couple of months solo. The already early, long and hard work became too much and I was forced to close up shop. (This put our dear farmer at a great disadvantage. Hoping to help recoup his losses, I steered him to the new venture in town, White Wave.) She then absconded with the truck, all of the equipment and one other item. I have not seen or heard of her since.

"Steve Demos and White Wave had no influence on the Spinning Kitchen; he was doing good factory production and we did traditional hand-made style. No conflict. (I have read that White Wave was sold for some millions. I miss the tofu.)

"Gene Casternovia seemed to enjoy having a tofu shop above his restaurant as if it were part in parcel. Annie seemed increasingly annoyed with our activity upstairs.

"About a year after the demise of The Spinning Kitchen, I received a call from a couple in Safford, Arizona who were putting together a lovely vegetarian restaurant called Desert Gardens. I gave a shopping list over the phone. When I arrived, in fact not a thing had been done. We drove around southern Arizona and northern Mexico for a few days looking for a masa grinder or something that might be made to work and other kitchen implements. I left after a week or so with little having been accomplished. They had my production notes and later I heard that they had indeed gotten something going.

"Further levels of detail and I might have a book of my own. I am very recently aware that there are other varying accounts of this time and activity." Address: P.O. Box 21128, Cheyenne, Wyoming 82003. Phone: 307-214-9510.

8563. Kastel, Mark. 2009. Cornucopia Institute provides further clarification on Silk importation of soybeans from China. http://www.organicconsumers.org/articles/article_18064.cfm#. 2 p.

• ***Summary:*** "1. Silk, a pioneering brand [of soymilk] in the organic marketplace, used 100% organic soybeans in their products prior to their acquisition by Dean Foods.

"2. Dean Foods is an $11 billion agribusiness giant and the largest milk processor in the United States. They own over 50 milk labels around the country, including Horizon Organic, a brand that heavily depends on factory farms each milking thousands of cows.

"3. According to reports by farmers and farmer-owned cooperatives, after Dean Foods purchased the company, they discontinued buying some or all of their organic soybeans from domestic organic producers and told the farmers that their decision was based on price–a price that American farmers could not match.

"4. Dean Foods gradually started introducing additional varieties and flavors [of Silk], many made with 'natural' soybeans. These are conventional soybeans. The percentage of their products manufactured with organic soybeans declined steadily over the years, and recently plummeted.

"5. Dean Foods' statement about buying all North American soybeans was recently put up, presumably, since we had announced the imminent release of our report. We have no way of verifying whether the information is accurate. Unlike their two competitors in the refrigerated dairy case (Organic Valley and Wildwood), Dean Foods refused to transparently participate in Cornucopia's study–depriving their customers of an independently verified review of their practices.

"6. In terms of Dean Foods buying a 'small portion' of their soybeans from China in the past, that seems to contradict the reports from organic growers in the United States, and the company has never released any hard data on their purchases.

"7. Recently, Dean Foods reformulated their Silk product line changing almost all their products over to 'natural' (conventional) soybeans. They did this, quietly, without telling retailers or changing the UPC code numbers on the products. Many retailers reported that they didn't find out until their customers noticed and complained.

"8. To add insult to injury, not only did the price of Silk products not go down when they converted to cheaper conventional soybeans, but they now reintroduced three products with organic soybeans and raised the price on those. Greedy profiteering plain and simple.

"On a recent visit to Whole Foods in Milwaukee (May, 2009) the store was offering 25 different Silk soy milk products, in different sizes and flavors, including creamers, of which only one (1) was organic. So much for Dean Foods and their WhiteWave division's commitment to the environment, consumer health and the hard-working family farmers that produce certified organic soybeans in this country." Address: The Cornucopia Institute, P.O. Box 126, Cornucopia, Wisconsin 54827.

8564. Boismenue, Clyde. 2009. Re: U.S. makers of dry whole-bean soymilk. Letter (e-mail) to William Shurtleff at Soyinfo Center, May 28. 1 p.

• ***Summary:*** This soymilk does not have the okara removed; rather, it is very finely ground or homogenized under high pressure.

(1) ADM. The organic soymilk market would ordinarily be too large for ADM. But they were issued a patent on product that was re-functionalized after cooking. The equipment for this was installed in a plant ADM was building in Enderlin, North Dakota to process other edible beans and from the start they targeted the organic market with this soybean operation. However, users of the ADM Organic Whole Soybean Powder apparently found it was not as functional as expected and the project was not successful. ADM is shutting down as I write. This then put Clyde in the position of having to find some alternate source to keep his customer running. There are actually four: All of them deal only in Non-GMO and Organic soybeans.

(1) Soylink, Ottumwa, Iowa–is the most interesting. They have the ability to dry de-flavor milled whole raw soybean and then pulverize it to US 1000 mesh without heat damage. This project has so far also not been successful and the company is in the process of being sold (today actually). Dr. Noel Rudie is a very knowledgeable and friendly guy if you want to contact them.

There are also 3 companies who have developed the means to mascerate soybeans completely enough (high-pressure homogenizers I believe) to make an acceptable soymilk and spray-dried soymilk powder from whole (de-hulled I am sure) soybeans. You will recognize the huge cost

saving this represents.

(2) SunOpta (formerly SunRich) is the longest established.

(3) Devansoy has long been into soymilk and I am not sure it is publicly known that Cresco Food Technologies manufactures the soymilk products for them.

(4) Jeneil Biotechnologies–their website shows only cheese and dairy flavors but they tell me they were under a non-compete agreement for some years and spent this time developing everything they make also from soybeans Among other things, this apparently means a couple of different kinds of soymilk, including enzyme active and whole bean. Jeneil does not advertise nor publicize their soy based line of products and I found them kind of unhelpful. Address: LookAlive / Basic Foods Co., P.O. Box 240070, Los Angeles, California 90024. Phone: 310-473-0719.

8565. *Iowa Soybean Review* (*Iowa Soybean Association, Urbandale, Iowa*). 2009. Farmer vision credited for soyfoods industry growth. 20(7):10-11. Spring.

• ***Summary:*** "The soyfoods industry experienced considerable growth in the past two decades. It started with just a few small companies selling tofu or soymilk to a small, niche market. Today, soy protein is included in thousands of food products, and soyfoods can be found in nearly every grocery store.

"Soybean farmers in Iowa and Illinois can be credited for the advancement of the soyfoods industry. It was their vision to use checkoff dollars to fund soyfoods research, education and promotions, which resulted in much of the industry success we see today.

"Started in the 1990s: In the mid-1990s, the former Iowa Soybean Promotion Board (ISPB) funded an industry study that showed the market potential for soyfoods. From there, the board allocated funds to help promote and grow the market.

"One of their first programs included educating women on the West Coast about soyfoods by using Iowa soybean farmer Yvonne Wente, of Waverly, as a spokesperson.

"'To support the rollout a new soyfoods beverage in southern California, we created a supporting ad and public relations program for ISPB using Wente as the spokesperson,' says Dee Munson, a nationally recognized food expert and veteran food marketer who worked on several of the early projects for ISPB.

"'A print ad promoting soyfoods ran in *Sunset, San Diego Magazine, Los Angeles Time,* along with radio commercials in L.A. and San Diego,' says Munson, who currently owns The Food Professionals based in Seattle, Washington. 'We also conducted numerous media interviews with Yvonne Wente as the spokesperson in the area.

"'The ads and interviews offered a booklet of information about the benefits of soyfoods for women,' Munson continues. 'More than 10,000 were requested, and the promotion board had to open an additional 800-number to handle the requests. A very special extension of the program was sponsorship of Dr. Andrew Weil as a speaker for a fundraiser of the Wellness Group, a cancer service organization.

"'It was ISPB's vision to fund this program and raise awareness about soyfoods, and it really got the Iowa soyfoods program jump-started,' Munson says."

"The Soyfoods Council: To show its commitment to this industry, ISPB created The Soyfoods Council in 2000 and hired food industry expert Linda Funk to head the organization as executive director."

"Under Funk's direction, The Soyfoods Council has published a cookbook called *Simply Soy,* implemented promotional programs, educated chefs throughout the United States about using soyfoods, increased the use of soyfoods in the food service industry, worked with editors from national food publications and created soy recipe contests with adults and kids.

"'We continue to educate food service personnel, chefs and consumers about ways to increase soyfoods in their diets and dishes,' Funk says. 'It's been great to see such huge advancements in the use of soy on restaurant menus.'"

For more, go to www.thesoyfoodscouncil.com.

Note: This might be generously described as an "alternative" view of what caused the growth and development of the soyfoods industry.

8566. *Plenty Bulletin* (*Summertown, Tennessee*). 2009. Guatemala. 25(1):3. Spring.

• ***Summary:*** "About 75 children and adults who live or work in one of Guatemala City's largest trash collection dumps participated in a soy foods cooking demonstration on April 4. The event was organized by Plenty volunteer, Humberto Jorge Gonzales, and women from UPAVIM, one of Plenty's Central America Food Security (CAFSI) partners. Everyone got to sample and enjoy high protein foods such as soymilk (strawberry, vanilla, plain, and chocolate) as well as pineapple and strawberry soy yogurt and soy burgers."

A photo shows a woman handing out samples to children in a room.

8567. *Soyfoods Canada Newsletter.* 2009. Canadian soybeans–a sustainable crop. Spring. p. 4.

• ***Summary:*** "Canada accounts for almost 2% of the world's soybean production. In 2007, approximately 2,700,000 tonnes [metric tons] were produced in Canada, on 2,870,657 acres (1,161,755 hectares). Soybeans are grown in three provinces: 215,006 acres in Manitoba, 434,715 acres in Quebec, and 2,224,936 acres in Ontario.

"Canadian soybean producers are known for innovative and sustainable production practices... Canada's soybean industry is known for its superior ability to segregate and trace soybean crops from seed through to end user, referred

to as Identity Preservation (IP).

"Over 40%, or about 1.7 million tonnes of Canadian-grown soybeans are exported to markets such as Japan, Malaysia, Singapore, Hong Kong and Taiwan. They are used to make Asian food staples such as tofu, miso, natto, and soymilk. Japan only produces about 12% of its own country's food grade soybean requirements, and their consumers demand non-genetically modified product. Japanese buyers value Canadian soybeans because of our industry's IP ability.

"Growing soybeans leaves a relatively small carbon footprint. As a legume, the soybean plant's ability to 'fix' its own nitrogen virtually eliminates the need for petroleum-based nitrogen fertilizer. The wide canopy of leaves formed by soybean plants helps to minimize the need for herbicide sprays."

8568. Xu, Baojun; Chang, Sam K.C. 2009. Isoflavones, flavan-3-ols, total phenolic profiles, and antioxidant capacities of soy milk as affected by ultrahigh-temperature and traditional processing methods. *J. of Agricultural and Food Chemistry* 57(11):4706-17. June 10. [32 ref]
• ***Summary:*** A very important and complex paper. Soy milk, the water extract of soybean, provides high quality proteins and essential fatty acids, while containing no cholesterol, gluten, or lactose. It is an excellent beverage for typical consumers, vegetarians, and those with lactose intolerance or milk allergy. However it also contains undesirable components such as beany flavor, flatulence factors, and trypsin inhibitors. It is generally believed that the beany flavor and flatulence factors are the major obstacles to its wider acceptance in the Western world. Therefore optimizing its desirable components and removing or reducing its undesirable components will improve the quality and utilization of soy milk.

Three soybean varieties (one Proto and one black) were processed to make raw soy milk, which was "then cooked by indirect and direct UHT methods (both at 143ºC for 60 seconds) and traditional cooking (stove cooking and steam injection) methods (both at 100ºC for 20 minutes [Note the relatively long cooking time]). Total phenolic content (TPC), total flavonoid content (TFC), phenolic acids, isoflavones, flavan-3-ols, and anthocyanins were quantified. DPPH free radical scavenging activity, ferric reducing antioxidant power (FRAP), and oxygen radical absorbance capacity (ORAC) were analyzed.

None of the heating methods affected total phenolic acids. All heating methods significantly ($p < 0.05$) affected total isoflavones and individual isoflavones. Address: 1. Dep. of Veterinary Clinical Sciences, Purdue Univ., West Lafayette, Indiana 47907; 2. Dep. of Cereal and Food Sciences, North Dakota State Univ., Fargo, ND 58105.

8569. *SoyaScan Notes.* 2009. Commercial soymilk makers (also called soy milk machine or automatic soy milk maker) (Overview). June 14. Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** Reviews of the following brands (listed here alphabetically) can be found on the Web. Those with a filter cup: QT400, SoyaJoy, SoyaPower, SoyQuick, SoyWonder, Vegan Star.

Filterless: Premium SoyQuick.

8570. Vandemoortele, N.V. 2009. Vandemoortele N.V. and Dean Foods announce an agreement for Dean Foods to acquire Alpro (News release). Ghent, Belgium. 2 p. June 15.
• ***Summary:*** "Gent, Belgium, June 15, 2009, Vandemoortele, N.V., Belgium's largest privately-held food company, and Dean Foods Company (NYSE: DF) today announced an agreement for Dean Foods Company to acquire Vandemoortele's Alpro Division. The transaction's price is approximately 325 million euros. It is expected to be completed in the third quarter.

"Jean Vandemoortele, President of the Group Executive Committee of Vandemoortele, said, 'Earlier this year, we decided to change our strategy by focusing on our Frozen Bakery and Margarine & Fats activities, which represent together 80 percent of the Group's turnover and are essentially oriented towards professional and industrial customers. Selling Alpro to Dean Foods offers the best opportunities for future growth, both for our Frozen Bakery and Margarine & Fats activities, which will have the necessary resources to pursue their expansion in Europe, and for Alpro and its staff, which provides a strong European platform for Dean Foods.'

"'We think this is a great deal and establishes Dean Foods as a clear global leader with over $1 billion in annual retail sales in the attractive soy beverages and related products category,' said Gregg Engles, Dean Foods Chairman and CEO. 'This is one of the most strategic assets we could have acquired. We see significant opportunities to leverage the collective strengths of both businesses across a global soy platform to accelerate growth.'"

"With its Alpro (R) soya and Provamel (R) brands, Alpro is the European leader in branded soybased beverage and food products and had net sales of approximately 260 million euros in 2008. Alpro has five manufacturing sites in Belgium, the United Kingdom, France and the Netherlands, and employs approximately 750 people.

"Alpro CEO Bernard Deryckere will report to Joe Scalzo, CEO and President of Dean Foods WhiteWave-Morningstar division. Alpro will be run as a separate European business."

Note: Those who know say that Dean Foods paid about $400 million for Alpro–which may equate at the time to 325 million euros.

8571. INTSOY. 2009. Processing and marketing of soybeans

for meat, dairy and baking applications. May 31–June 5. http://intsoy.nsrl.uiuc.edu/courses/processing_marketing/bios/sharma.html. 1 p. Printed 29 Aug. 2010.
• ***Summary:*** "Speakers: R.K. Sharma, American Soybean Association International Marketing.

Dr. Ratan Sharma has a Ph.D. in soymilk and tofu technology from Banaras Hindu University, Varanasi, India. He is an international expert in soymilk and tofu production technology. He is credited with transferring the soymilk machine (SoyaCow) technology from Canada to India on behalf of the Child Haven International and ProSoya Inc. Dr. Sharma has been duly trained in Canada and USA on the soymilk production and utilization. He has the privilege to train the soymilk and the tofu course trainees from all over the world at the University of Illinois, USA. Dr. Sharma has been to Canada, USA, Egypt, Singapore, Uganda, Tanzania, Sri Lanka, South Africa, Nepal and Bangladesh to help the soymilk programs in these countries. Dr. Sharma has more than 15 years experience into the soymilk and tofu commercialization. The efforts of Dr. Sharma for transferring this SoyaCow technology are really remarkable as it has created lots of employment opportunities and low cost nutrition in India and in many other countries. Dr. Sharma has established more than 375 soy food manufacturers in India and many other countries and is helping them on a regular basis in product development, marketing etc.

"The overall objective of ASA-International Marketing's (ASA-IM) activities is to increase soybean consumption in the SAARC countries and, thereby, to create larger markets for U.S. soybeans and soybean products." Address: NSRL, Univ. of Illinois at Urbana-Champaign, Room 170 NSRC, 1101 W. Peabody Dr., Urbana, Illinois.

8572. Reinfeld, Mark; Murray, Jennifer. 2009. The 30-minute vegan: Over 175 quick, delicious, and healthy recipes for everyday cooking. New York, NY: Perseus Books Group (print). xx + 348 p. Foreword by Deborah Madison. Illust. Index. 21 cm. [25 ref]
• ***Summary:*** Published as both a printed, bound book and as an e-book. The index contains 31 entries for tofu, 19 for tempeh, 15 for soy milk, 5 for miso, 4 for seitan, 3 for edamame, and 1 for meat substitutes.

Includes recipes for: Tempeh bacon (p. 57). Tofu scramble (p. 62). Seitan curry bowl (p. 119). BBQ tempeh sandwich (p. 123). Sea vegetable salad with edamame and wasabi (p. 142). Tofu garden vegetable salad (p. 148). Tuna-free tempeh salad (p. 149). Tofu satay (p. 193). Tofu saag (p. 209). Asian shiitake tofu (p. 223). Macadamia nut-crusted tofu (p. 224). Chipotle chile-rubbed southwest tempeh (p. 226). Tempeh vegetable enchiladas (p. 237).

Facing page 3 is a photo of Mark and Jennifer. Address: 1. Founding Chef, Blossoming Lotus Restaurant; 2. Co-author (with Reinfeld) of *The Complete Idiot's Guide to Eating Raw.* Both: Kaua'i, Hawaii.

8573. Vitasoy International Holdings Ltd. 2009. Annual report 2008/09: Where healthy life begins. New Territories, Hong Kong. 184 p. July. 30 cm. [Eng; Chi]
• ***Summary:*** For the fiscal year ended 31 March 2009, adjusted group turnover (sales) was HK$2,783 million, up 14.3% over the previous year. Of these sales, 53% came from Hong Kong and Macau, 20% from Mainland China, 15% from North America, 10% from Australia and New Zealand, and 2% from Singapore.

Gross profit was HK$1,279 million, up 13.1% from the previous year. Sales analysis by product categories: Soymilk 44%, tea 20%, tofu 10%, lunch boxes and snacks 8%, dairy milk 5%, etc.

At "Chairman's statement," a large color photo shows Winston Yau-lai LO, age 68. His resume is on p. 49. The resume of Ms. Yvonne Mo-ling LO, aged 61 (who is on the board of directors), is on page 51. Total dividends for the year are 21.5 cents per share.

In North America, Vitasoy USA lost money but, "in terms of profit from operation, it continued to achieve improvement by narrowing its operating loss further to HK$6 million, versus HK$11 million for the fiscal year 2007/2008. Tofu sales in North America grew by 11% "and pasta / wrap sales by an even stronger 29%. However, the sales of soymilk and imported products were down by 18% and 20% respectively." "In the last quarter of 2008, it was decided that Vitasoy USA should exit the loss-making aseptic soymilk business and concentrate on the tofu and Asian market businesses which were making positive contributions to the Group" (p. 33-34).

Singapore: "In early April 2008 we acquired the entire equity of Unicurd–a leading soyfood manufacturer and marketer in Singapore." Details on Unicurd's sales are given as are color photos of 8 of its products.

A five-year summary (2005 to 2009; p. 4) shows that, during this entire period, sales (turnover) increased 50.5% and annual profit increased 52.8%. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: (852) 2466 0333.

8574. Malnutrition Matters. 2009. Food technology solutions (Website printout–part). www.malnutrition.org 1 p. Printed Aug. 30.
• ***Summary:*** This is one of the most interesting and innovative organizations working with soyfoods in the world today. Low-tech and appropriate technology systems, that operate with or without electricity, make soymilk, tofu, soy yogurt, soy coffee, peanut butter, and related foods at very low cost and high efficiency. Congratulations to Frank Daller, his team, and his overseas partners.

Contents: Home. Partners and sponsors. Background: Foods and malnutrition. Technology / expertise. Personnel / Associates. VitaGoat. SoyCow. SolarFlex Dryer. Projects:

VitaGoat projects in Africa: KwaZula Natal, South Africa, Uganda, Zambia, Kenya, Tanzania, Namibia, Guinea, Chad, Mozambique; Also India, North Korea. Contact us. Address: 48 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada. Phone: 1-613-742-6888.

8575. Daller, Frank. 2009. Chronology of work with soy and Malnutrition Matters worldwide, especially soymilk and development of the VitaGoat (Interview). *SoyaScan Notes.* Aug. 31. Conducted by William Shurtleff of Soyinfo Center.
• ***Summary:*** 1951–Born in Bavaria, Germany.

1956–Emigrated to Toronto, Canada.

1989–Began occasional volunteer work with Child Haven International, a Canadian charity active in India.

1991–Introduced to Raj Gupta by Child Haven, which was considering doing a trial with SoyaCows at their children's homes in India.

1991–Saw first prototype of SoyaCow at Raj Gupta's house. He was then working as a research scientist with the Canadian government and moonlighting on soymilk processing with Grant Wood, a technologist also with the Canadian government.

1992–Moved to Ottawa, invested some money in ProSoya Inc., and began working as vice-president to complete technology development and begin commercial phase of operations.

1993–First beta models of SoyaCow–made in Canada sent for field trials at Child Haven homes in India.

1993-94–Began to develop technology transfers with Indian company SSP and Russian company ASSOY. Gives equipment design and know-how to foreign partner to make equipment for ProSoya and for the partner to sell (in their own country) after paying a royalty to a local NGO (Child Haven in India).

1993–ProSoya continued development of larger systems including continuous process soymilk plants.

1994–Became President of ProSoya Inc.

1997–Resigned and sold my shares in ProSoya Inc.

2000–Founded non-profit organization Malnutrition Matters (MM) with partner Brian Harrigan. Objective was to develop small-scale food processing systems including soy, for developing countries. By this time, ProSoya had almost stopped promoting the small SoyaCows, since the business was too small compared to larger commercial systems.

2001-03–MM developed VitaGoat system for non-electric production of soymilk and other foods.

2003–First three "beta" models of VitaGoat, built in Canada, were delivered to Africare projects in Guinea, Chad, and Mozambique.

2005–Transferred VitaGoat technology to G.D. Machines in India.

2007–Brian Harrigan left MM to work with Africare in Zambia for two years.

2007–MM won a Laureate Award from the Tech Museum of Innovation in San Jose [Silicon Valley], California. It was an honor without money.

2007–Alpro, N.V. of Belgium began sponsoring the VitaGoat. [Philippe Vandemoortele introduced Frank to Alpro after Philippe had ceased to be active in Alpro].

2008–MM Won World Bank Development Marketplace competition [project design with local partner] for VitaGoat school feeding project in Orisssa, India. With the funds from winning, MM developed the project in India.

2008–Developed new lower-cost version of SoyaCow (named SoyCow) with separate electric grinder and pressure cooker and lower-cost press, and with option of multi-fuel boiler used by all VitaGoat systems. [Note: Raj Gupta had not used the name SoyaCow for years].

2009 Aug.–Currently there are over 90 VitaGoats in operation worldwide. The greatest number [about 40] are in Africa, followed by South Asia and North Korea. Others in Thailand and Brazil, plus demo systems in–Europe, U.S. and Canada.

With each system that is installed, the cost of the equipment, shipping, installation and training fees are provided (as a commercial transaction) by a partner organization–typically a non-governmental organization (NGO) or a government sponsored organization–but rarely an individual businessperson.

For more details see the very interesting Malnutrition Matters website at www.malnutrition.org. Address: Founder, Malnutrition Matters, 498 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada. Phone: 613-742-6888.

8576. Pfoutz, Arianne. 2009. Vermont soy focuses on local, organic soyfood production. *Organic and Non-GMO Report* (*The*) (*Fairfield, Iowa*) 9(7):8-10. July/Aug.
• ***Summary:*** "The buzz phrase 'fresh, organic, local' has found its perfect expression at Vermont Soy, a manufacturer of fresh soymilk and artisanal tofu at Hardwick, Vermont. Recently rated one of the top five most trustworthy soy companies in the US by the Cornucopia Institute, Vermont Soy is a key player in the transformation of this small, former granite mining town of 3,000 into an impressive model for sustainable agriculture and community economy."

8577. Richards, Michael. 2009. Vippy Industries Ltd. in India (Interview). *SoyaScan Notes.* Sept. 20. Conducted by William Shurtleff of Soyinfo Center.
• ***Summary:*** Vippy Industries Ltd. is located at 28, Industrial Area, A.B. Road, Dewas (northeast of Indore), Madhya Pradesh 455 001, India. Website: www.vippysoya.com. The company does $100 million in sales a year. They are an old soybean crushing company and claim to have played an important role in bringing commercial soybean production and manufacture of soybean products to India. Michael has visited the company 3-4 times. He says they sell soymilk and other soy products. Address: Founder and owner, SoyaWax

International, 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-213-2051.

8578. *NSRL Bulletin* (*National Soybean Research Laboratory, Urbana, Illinois*). 2009. Soy dairy national training center. 16(1):4. Summer.

• ***Summary:*** "The NSRL serves as the National Training Center for educational instruction and technical support for Soy dairy processing and equipment, including SoyCows and VitaGoats."

A color photo shows Danny Erickson, training coordinator, NSRL, as he works to help grind soybeans using a VitaGoat.

8579. Sharma, Ratan. 2009. Bio-Data [Resumé]. India. 2 p. Oct.

• ***Summary:*** Note: Ratan Sharma, PhD, is a humble man, dedicated to helping others. He prepared this in Oct. 2009 at the request of one of the Members of Parliament in India, who used it in recommending Dr. Sharma for a high level award. Soyinfo Center had to make a special request to include it here.

"Name: Ratan Sharma. Date of birth: 1 March 1961. Place of birth: Ram Nagar, Allahabad [in the north Indian state of Uttar Pradesh (UP)]. Native address: V&PO [Village and Post Office]: Ram Nagar (Sirsa), Distt. Allahabad (UP). Present address: KH-177, Kavi Nagar, Ghaziabad–201 002 (UP).

"Qualification: Ph.D. from Banaras Hindu University in Soya Technology.

"Additional qualification: Short term courses on Soya food processing and Nutrition from the University of Illinois, and Texas A&M University, USA.

"Special achievements: Transferred a patented soymilk processing technology from Canada to India and helped the entrepreneurs to start the soy food business very successfully. Initiated and developed approx. 364 such entrepreneurs in India. This created a substantial employment opportunity and low cost affordable quality nutrition in general.

"Countries visited: Upon the success of this technology in India I was invited by many other countries to implement such technology in those countries for the better nutrition and employment generation especially in the African countries. With the help of this technology I worked to improve the nutritional status of the people who are suffering from HIV and AIDS. In this connection I visited Canada, Egypt, Singapore, Uganda, Tanzania, South Africa, Thailand, Nepal, Bangladesh, Sri Lanka and USA for training, demonstration and delivering lectures.

"Special Features: Since my childhood I had the compassion of doing some thing for the people of my country. I realized that a large number of our population is suffering from the malnutrition problem, and the regular protein sources are almost unaffordable for most of the people. This situation forced me to develop some low cost protein source which any one can afford. After completing my masters from the Banaras Hindu University I decided to do my Ph.D. for developing low cost nutrition through soybean. Also, I was influenced by Mahatma Gandhi who realized soybeans as a low cost nutritional source for this country. He tried a lot to introduce soy in the Indian diet in the year 1935 but because the processing technologies and systems were not very good during those days so Soya products could not get acceptance in the Indian diet at that time. I completed my Ph.D. on developing the low cost Soya products and started working to find some suitable processing system to process the soybeans into the soymilk and its derivatives on a cottage industry level at a very low cost. In the mean time I came to know about such technology developed by a Canadian company in Canada. I contacted them and with the help of another Canadian NGO (Child Haven International) I started working on the process of the technology transfer. I coordinated between all three organizations and finally transferred this Patented Canadian Technology successfully to an Indian company (SSP Pvt. Ltd) in the year 1995. I helped SSP Pvt. Ltd. to develop the Indian soymilk processing system based on that Canadian technology and helped hundreds of the unemployed people to use these machines as a cottage scale business for their employment and to produce a better quality low cost nutrition for the people of India. I worked very closely with the entrepreneurs using this technology and helped them to develop as a very successful entrepreneur. This technology was so successful that many govt. organizations and universities installed this processing system to promote this technology with the same objective. ICAR [Indian Council of Agricultural Research], CSIR, Indian army, Army Rehabilitation Centers, National Research Development Corporation (NRDC), Khadi and Village Industry Commission (KVIC), Ministry of Small and Medium Entrepreneurs (MSME), marketing corporations of a few state, industry departments of the Government of India (GOI) promoted and supported this processing technology for the same purpose of employment generation and promoting the low cost nutrition as well. Government of India included this machine under the Prime Minister's Employment Scheme and providing subsidized loan to the unemployed people interested to buy this system. I transferred this technology when there were no such low cost soymilk producing technology available in India and rarely in the world.

"This technology got its way to many developing countries under human feeding programs all over the world. In this connection I visited many countries and implemented this technology in those countries also for promoting the low cost high quality protein through this technology. Also, I got chances to train the group of people from all over the world on this technology under such training programs in USA and Canada.

"While working with US and Canadian organizations in India I got enough opportunity to migrate to USA or Canada but I decided to live and work in India only to work for my fellow Indians who need me and my expertise most.

"Although I did not publish any research papers in the scientific journals but established more than three hundred and fifty such soymilk processing units based on this technology. All of these machines are running successfully and employed a large number of people in their business and selling low cost nutritional soy products to the Indian population.

"India is facing a high incidence of protein calorie malnutrition problem. Through this successful development I am trying to improve the nutritional status of the country by providing low cost affordable and quality nutrition to all my fellow Indians. My overall goal is to eliminate the malnutrition problem from India by developing low cost nutritious products which every one can afford. I am continuously and diligently working on this.

"Ratan Sharma, Ph.D."

Note: The number 350 soymilk processing machines is a conservative number; it is the number of machines that Dr. Sharma introduced to India that were in operation at the time this document as written. This number includes about 325 SoyaCows (SC20 model), four SoyaCow plants with 200 liters per hour capacity, some non-SoyaCow plants made in India, and the rest VitaGoat plants from Malnutrition Matters (MM) in Canada. Ratan says that MM has not had significant commercial success in India. VitaGoat is used mostly by NGOs with very little production.

The total number of soymilk and tofu machines that Dr. Sharma has sold up to Oct. 2010 is actually close to 500. In the beginning, many small soy businesses failed, and sold their machines to someone else.

Quite often ProSoya orders larger capacity soymilk plants from SSP but not the complete plant. They source the other parts elsewhere, either in India or near the place where they are going to supply the plant.

SSP still manufactures the 100 liter/hour and 200 liter/hour capacity soymilk plant. They decided it almost a year back. After they transferred the SoyaCow business to Pristine Plants (PPI) on 9 Sept. 2006, they didn't manufacture any SoyaCows. SSP is a very big and technically sound company. They improved the SoyaCow somewhat from its original model. Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

8580. Shu, Xiao Ou; Zheng, Ying; Cai, Hui; et al. 2009. Soy food intake and breast cancer survival. *J. of the American Medical Association* 302(22):2437-43. Dec. 9. [37 ref]

• ***Summary:*** Soyfoods improve breast cancer survival rates, in part because they are rich in phytoestrogens which resemble the human hormone, estrogen. Since estrogen appears to play a role in breast cancer development and progression, is it safe for women with breast cancer to consume soy? A recent large study examined soy food intake in women in China with breast cancer and evaluated the association of soyfoods with cancer recurrence and with death. More than 5,000 women who had been diagnosed with breast cancer were studied for an average of four years after diagnosis. Women who ate the most soy foods had almost a 30 percent lower risk of death during the period studied and were significantly less likely to have a recurrence of breast cancer compared to women eating the lowest amount (5 grams of soy protein or less per day) of soyfoods. These results were similar for both estrogen-receptor positive and estrogen-receptor negative cancer. The use of a common breast cancer drug, Tamoxifen, did not change results. Intakes of more than 11 grams of soy protein, or more than 40 milligrams of soy isoflavones, did not appear to offer additional protection. Women in this study mainly ate traditional soyfoods, such as tofu, miso, soybeans, and soymilk, rather than using soy supplements, fake meats, or isoflavone supplements. In other words, it looks as if a moderate intake of traditional soyfoods is both safe and beneficial for women with breast cancer. "Conclusion: Among women with breast cancer, soy food consumption was significantly associated with decreased risk of death and recurrence."

"Soy food intake, as measured by either soy protein or soy isoflavone intake, was inversely associated with mortality and recurrence."

From a review by Reed Mangels in *Vegetarian Journal,* 2010, Vol. 29, No. 3, p. 12. Address: 1. M.D., PhD, Div. of Epidemiology, Dep. of Medicine, Vanderbilt Epidemiology Center and Vanderbilt Cancer Center, Vanderbilt Univ. Medical Center, Nashville, Tennessee 37203.

8581. National Toxicology Program (NTP), Center for the Evaluation of Risks to Human Reproduction (CERHR). 2009. Expert panel evaluation of soy infant formula. Alexandria, Virginia. 3 p.

• ***Summary:*** "The National Toxicology Program (NTP) Center for the Evaluation of Risks to Human Reproduction (CERHR) convened an expert panel on December 16-18, 2009, in Alexandria, Virginia to evaluate soy infant formula.

"The 14-member, independent, scientific panel reviewed and evaluated the available scientific data on soy infant formula. In their deliberations, the expert panel considered the quality and strength of the scientific evidence that soy formula or its isoflavone constituents might cause adverse effects on human development. The expert panel also identified gaps in the available scientific data on the possible effects of soy formula and suggested areas where additional research is needed. Soy formula is an infant food made using soy protein and other components. It is fed to infants as a supplement or replacement for human milk or cow milk formula. Soy formula contains isoflavones, naturally

occurring compounds found primarily in beans and other legumes including soybeans, peanuts, and chickpeas. The three main isoflavones in soy formula are genistein, daidzein, and to a smaller extent, glycitein.

"All members of the panel served as individual experts and not as representatives of their employers or other organizations.

"The NTP and expert panel use a five-level scale to express their conclusions to characterize the likelihood of an adverse human health effect resulting from exposure to a substance or chemical, in this case soy infant formula. The concern levels range from highest to lowest: "Serious Concern, Concern, Some Concern, Minimal Concern, Negligible Concern.

"Expert Panel Conclusions: The Expert Panel expressed minimal concern for adverse developmental effects in infants fed soy infant formula.

"The panel voted 10 yes, 2 no in favor of the conclusion. The two panel members voting no included one member who expressed negligible concern and one member who expressed some concern. This conclusion is based on:

"Lack of clarity on whether studies in experimental animals treated with genistein only can be extrapolated to infants fed soy infant formula, i.e., exposure to a single isoflavone versus soy infant formula.

"Interpretation of findings from experimental animals as demonstrating adverse effects, i.e., advanced vaginal opening, effects on the mammary gland in the context of interspecies comparisons.

"Although there are a large number of experimental animal studies published on genistein or soy, there are only a limited number of studies where experimental animals were treated only during the relevant life stage of birth to weaning. Multigenerational studies do not permit discerning effects attributed to gestational or lactational exposure.

"However, a number of studies in experimental animals and one study in humans reported effects related to the reproductive system and this elevates the concern from 'negligible' to 'minimal.'

"Studies of sufficient quality in humans have not been conducted to address the concerns raised from the experimental animal findings or to identify previously unrecognized endpoints.

"Background: The NTP convened a panel in 2006 to evaluate soy formula and genistein. The NTP did not complete the evaluation or issue a final opinion on this topic. Since 2006, a substantial number of new publications have been published for these substances; therefore, CERHR determined that an updated evaluation of soy formula was needed before NTP could develop its opinion on this topic. The panel considered all of the data and not just information published since 2006.

"The expert panel, with assistance from CERHR staff, prepared an updated expert panel report that was released for public comment on October 19, 2009, and finalized at the December expert panel meeting.

"Information about the CERHR evaluation of soy infant formula is available at: http://cerhr.niehs.nih.gov/chemicals/genistein-soy/SoyFormulaUpdt/SoyForm ula-mtg.html.

"Next Steps: Following the December 2009 meeting of the expert panel, the NTP will solicit public comment on the expert panel report. The NTP will use the expert panel report, public comments, and any new scientific literature deemed relevant to the evaluation to prepare the NTP Brief that expresses the NTP's level of concern conclusions for soy infant formula.

"The draft NTP Brief is tentatively scheduled for release for public comment in March 2010 and peer reviewed by the NTP Board of Scientific Counselors at a meeting on May 10, 2010, at the National Institute of Environmental Health Sciences in Research Triangle Park, North Carolina. Following the peer review, the NTP will finalize its conclusions on soy infant formula and release the NTP Monograph containing the NTP Brief, expert panel report and public comments. The NTP Monograph on Soy Infant Formula will be available to the public, appropriate regulatory authorities, and health professionals for use to make personal or public health decisions.

"The NIEHS supports research to understand the effects of the environment on human health and is part of the NIH. For more information on environmental health topics, visit our Web site at http://www.niehs.nih.gov."

8582. *SoyaScan Notes.* 2009. Chronology of major soy-related events and trends during 2009 (Overview). Dec. 31. Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** Jan. 7–The USDA calls for an audit of the soybean checkoff program. The American Soybean Association had filed a complaint on 10 Dec. 2008.

May–Monsanto files a lawsuit against DuPont for patent infringement; DuPont countersues, accusing Monsanto of being anti-competitive.

June 15–Vandemoortele N.V. (Belgium) and Dean Foods (Texas) announce an agreement whereby Dean Foods will acquire Vandemoortele's Alpro Division. The transaction's price is approximately 325 million euros [$400 million]. It is expected to be completed in the third quarter of 2009. With its Alpro (R) soya and Provamel (R) brands, Alpro is the European leader in branded soy-based beverage and food products and had net sales of approximately 260 million euros in 2008. Alpro has five manufacturing sites in Belgium, the United Kingdom, France and the Netherlands, and employs approximately 750 people.

June–SunOpta opens a soymilk / soybase plant in Modesto, California, about 5 minutes drive from the plant owned by the WholeSoy Co.

July 13–Monsanto acquires WestBred, LLC, a Montana-based company that specializes in wheat germplasm.

Worldwide, over the past 5 years, there is growing interest among farmers and farm organizations in genetic engineering of wheat.

Aug. 17–Monsanto and DuPont (via Pioneer Hi-Bred), the world's two biggest sellers of genetically engineered seeds, turn up the volume in their latest skirmish. DuPont accuses Monsanto of monopolistic practices. The two giants are battling for control of the seed business.

8583. Moncrieff, Scott. 2009. What the Sam's Chicken? The true story of the man behind the meat. *Focus* (*The Andrews University Magazine*) 45(4):20-23. Fall.

• ***Summary:*** "You go through the serving line at Dining Services, picking up mashed potatoes and gravy, salad, and a drink. Oh, and you add a portion of Sam's Chicken, along with two tablespoons of tartar sauce. It's pricey, at $3.79 a serving–and 25 cents for the tartar sauce–but it has been an irresistible favorite at Andrews University for 40 years. As you work through your five ounces of wheat gluten, soybean oil, soy flour, yeast extract, sea salt and top secret spices, you have no idea of the history of Sam's Chicken, or who Sam is, if indeed there is such a person. But as those 400 calories hurtle past your taste buds and into your bloodstream, sit back and maintain consciousness. I'm going to tell you.

"Our story starts about 6,000 miles away from Berrien Springs, Michigan, near the city of Obihiro, on the island of Hokkaido, in Japan. That is where Michihisa Yoshimura was born on March 4, 1915. His father, a well-to-do businessman, owned a coal mine and raced horses for fun. In some ways, Michihisa was a lot like your average American kid of the Post World War I era. He liked to snow ski, ice skate and play baseball (catcher and left field). As Michihisa got into his teens his mother, a Christian (his father was an atheist), wanted her son to attend a Christian school, so she sent him way down south to Saniku Gakuin, the Adventist college about 50 miles east of Tokyo on the other side of Tokyo Bay.

"There Michihisa providentially–for purposes of our story and title product–worked in the food department, helping manufacture peanut butter, grape juice and bakery products. During summer vacations he worked with his grandfather's flax company, further extending his knowledge of food production. When Michihisa turned 18, in 1933, he was required by law to apply to join the federal army. However, he was rejected because of flat feet–Japan was not yet in a large-scale war and its military was selective. This rejection prepared the way for him to gain permission to leave Japan to attend Madison College, just outside Nashville, Tenn., where he began further studies in 1937. He had been encouraged to go to Madison by Perry Webber (Emmanuel Missionary College class of 1911), a PhD in chemistry who had a special interest in soyfoods, and had spent much time at Madison College as well as in Japan. As Michihisa set off for Madison, Webber suggested he adopt the name 'Sam,' after the biblical Samuel. Thus Webber unwittingly saved us from 40 years of 'Michihisa's Chicken.' Incidentally, Sam's younger brother Zenzaburo, who remained in Japan, trained as a kamikaze pilot, and had given away his clothes preparatory to his final mission–and then, mercifully, the war ended.

"In entering Madison College, Sam had come to the school most suited to enhance his work as a food technologist with soy products. In 1904, E.A. Sutherland, having resigned as president of Emmanuel Missionary College, embarked with his colaborer Percy Magan to open a new school in the South. This institution, originally the Nashville Agricultural and Normal Institute, became Madison College (in 1937), and Sutherland served as president there for over 50 years. This school, like Andrews and Saniku Gakuin, focused on the harmonious development of body, mind and spirit. As part of the plan, students were to work off half or more of their expenses each year. Among the industries which developed on campus was a food factory which, in 1918, became Madison Foods. By the time Sam arrived in 1937, Madison Foods was a leading–probably the leading–developer of soy-based products in the United States, including soymilk, soy meat substitutes and tofu products.

However, times were hard and wages were pennies per hour. Sam's classmate Shirou Kunihira worked in the soymilk production plant, while Sam worked at the bakery, where his duties included running the bread loaves through the slicer. Shirou would get an allotment of soymilk at the end of his shift and Sam would collect the crumbs from the pan under the slicer. With these ingredients the friends would share a humble evening meal. For Japanese and Japanese-American students, there was the added challenge of the United States being at war with Japan. Despite these challenges, Sam graduated from Madison College in 1941 and worked an additional two years for Madison Foods, but now his passion for soy was balanced with a new passion for she.

Sumiko Yano, a.k.a. Sumi, was born in Japan, but grew up in Southern California. At the time the U.S. declared war on Japan, in December of 1941, her family was living in El Centro, California. Her father made his livelihood by arranging for cantaloupes and other valley produce to be shipped to market. In 1942, her family was given a one-month notice that they would be placed in a 'War Relocation Camp' in Poston, Arizona. (After relocation started, Sam and the other Japanese or Japanese-Americans at Madison would hide in the cornfields whenever immigration officials came looking for Japanese persons.) For approximately one year Sumi lived with her parents in an army barracks at the camp, eating in the communal dining area, using a latrine, and working every day in the agriculture department as a secretary, for $19 per month. One day, Sumi received a box of home-baked peanut-butter cookies from someone named Sam. Sam had sent the cookies as part of a thank you to

Sumi's family, who had helped Sam's family with a financial transaction at a time when Japanese bank assets were frozen. Sumi wrote back asking for more cookies. Sam, in turn, helped arrange for Sumi to get early release from camp, in order to attend Emmanuel Missionary College, through the auspices of A.N. Nelson, then dean at EMC, but formerly president of Saniku Gakuin when Sam was a student there. Sumi, in turn, decided to pass through Madison on her train trip to EMC, to meet Sam. They met and got acquainted in the home of Perry Webber, and that fall of 1943 found Sam as well as Sumi enrolled for classes at EMC. Sumi worked as a reader in the home economics area for Mrs. Holquist, while Sam worked at the farm and the greenhouse.

The young couple was married on June 12, 1944, at a friend's house in Chicago, and lived in an apartment until Sam's graduation on August 1, 1945, with a BS in agriculture. Their first child, Steve, was born in June of that year. Sumi remembers that a friend drove her to Watervliet, Michigan, where the doctor, sympathizing with her state as a poor student, delivered her baby for free. Sam returned to Japan in 1947 (Sumi and infant Steve followed six months later), and spent ten years helping build up the food factory at Saniku Gakuin. The Yoshimuras returned to Tennessee in 1957, where Sam became production manager at Madison Foods. Continued. Address: M.A., Prof. of English, Andrews Univ., Berrien Springs, Michigan 49104.

8584. Soyatech, LLC. 2009. Soya & Oilseed Bluebook 2010: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 356 p. Dec. Comprehensive index. Advertiser index. Statistical conversions. 28 cm.
• ***Summary:*** This is the 4th year in a row that the *Bluebook* (a $95 value) has been sent free of charge to qualified industry members. On the cover are six color photos, including a heavily loaded tanker moving through a blue sea, and a farmer standing in a field of soybeans, bending over to examine one of the plants.

Soyatech has moved to a new part of Maine during the past year. This edition of the *Bluebook* contains 74 fewer pages than it did last year. The oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hempseed, jatropha, linseed, palm, peanut, rapeseed, safflower, soya, sunflowerseed–the same as last year.

On the inside front cover is a color ad from Natural Products Inc. (Grinnell, Iowa), makers of innovative ingredients for bakery, soymilk and tofu. On the first page is a full page color ad from Louis Dreyfus Commodities; on the next page a full page color ad from desmet ballestra–which supplies healthy technologies for oils containing zero trans fat. SunOpta has a full-page color ad on page 4.

On the rear cover is a full page color ad from ADM titled "Trailblazing" showing a man on a mountain bike riding through muddy water. The text: "ADM constantly finds new paths for functional foods with NutriSoy soy isolates."

Chris Erickson is CEO. Keri Hayes is publisher and events director. In the Foreword, Joe Jordan (General manager and *Bluebook* content director) writes about the now popular word "sustainability" and its various definitions. He asks many questions about sustainability. Address: P.O. Box 1307, 19 Clark Point Rd., Suite 112, Southwest Harbor, Maine 04679. Phone: 207.244.9544.

8585. Wiley, Mary. 2009. Soy for life: The soy food industry is poised for growth. *Ontario Grain Farmer* 1(3):10-11. Dec.
• ***Summary:*** "Soy for Life" is the name of a new communications campaign launched by Soyfoods Canada (a trade association composed of Canada's leading soy food and beverage manufacturers) to help boost sales. "Their products represent a $340 million business in Canada," making soy foods and beverages part of Canada's grocery mainstream.

"This mainstream presence came as a result of... a 1999 US government labeling claim for soy, but sales have slowed somewhat in the past couple of years."

Peter Joe, President of Sunrise Soya Foods and head of Soyfoods Canada's board of directors says that his association has been "focusing on encouraging a labeling health claim for Canadian soy food and beverage products similar to the one that exists in the US." But recently the association "has shifted its attention back to marketing and communications activities targeted to consumers and consumer influencers." The campaign is designed to re-introduce Canadians of all ages to the benefits of soy.

"Dr. Brian Wansink of Cornell University's Food and Brand Lab was the keynote speaker at Soyfoods Canada's Soy Symposium, held recently [Oct. 5] in Toronto. He advised the gathering of marketers, retailers, distributors, and other soy industry stakeholders to target young women in the 18 to 35 age group, using an incremental usage approach." Dr. Wansink sees a bright future for soyfoods in Canada.

"Results of an Angus Reid September 2009 online survey of 1,000 Canadians about soy foods... showed that consumption of soy food products is highest among young Canadians, higher income households and women. It also showed that women in the 18 to 34 age group, who tend to be more frequent soy consumers, are particularly attuned to messaging about soy, both positively and negatively.

"Nutritional benefits: Dr. Allison Duncan, Canada's leading soy nutrition researcher, provided a thorough update at the symposium. Duncan and her human nutrition team at the University of Guelph recently released results of a study showing soy protein helps lower cholesterol and reduces the risk of heart disease in adults with type 2 diabetes."

"Market leaders in the tofu and soy beverage categories are using identity preserved [IP] non-GMO and organic soybeans in response to consumer demand."

A photo shows the Soyfoods Canada booth at The

Journey to Your Good Health area of the Royal Agricultural Winter Fair. Some 150,000 visitors attended the fair.

8586. **Product Name:** Soymilk [Sweetened, or Condensed].
Foreign Name: Soymilke (Doce de Soja, Condensado de Soja).
Manufacturer's Name: Olvebra.
Manufacturer's Address: Brazil.
Date of Introduction: 2009.
Wt/Vol., Packaging, Price: 330 gm and 320 gm.
How Stored: Refrigerated.
New Product–Documentation: Label sent to Soyinfo Center by Chico Leroux of Lyon, France. 2012. Feb. 8. Blue, red and yellow on white. Chico says: "Tastes very very good, probably like the real thing. It's full of fat and sugar! Probably GMO. Supermarkets in Portugal now are selling it under their own brands. Year: 2009."

8587. Esselstyn, Rip. 2009. The Engine 2 diet: the Texas firefighter's 28-day save-your-life plan that lowers cholesterol and burns away the pounds. New York, NY: Wellness Central. xiii + 273 p. Foreword by T. Colin Campbell, PhD. Illust. Index. 24 cm.
• ***Summary:*** A very interesting, readable, and innovative book that advocates a sound, healthy diet that can last a lifetime. "Rip managed to convert a firehouse full of committed firefighters to a plant-based diet. Rip (born in 1963) is the eldest son of Caldwell B. Esselstyn, Jr., M.D., who has become famous for his ground-breaking book *How to Prevent and Reverse Heart Disease.* This book is both similar and different. It is similar in that the basic whole foods, plant-based diets advocated by father and son are 98% the same (and please focus on practicing that 98% and not squabbling about the 2%). It is different in that Rip is from a younger generation, is not a physician but an athlete and firefighter, and is trying to help people who want help in lowering their high cholesterol levels and their weight. He is not primarily trying to help people who have had at least one heart attack, are a death's door, and are (generally) willing to do almost anything to save their lives.

In Chapter 2, "My story," we read that while in school, Rip was an outstanding athlete. He set many high school swimming records (he still holds a national record in the 200 meter medley relay); he was a top player in his high school tennis team and co-captain of the water polo team.

At the University of Texas at Austin, he was a three-time All American swimmer and an Olympic trials qualifier in the 100- and 200-meter backstroke and freestyle events. In 1986 he graduated from the University of Texas and within six months he was competing as a professional triathlete–which required a 1-mile swim, a 24.9 mile bike ride, and a 6.2 mile run. In the Hawaii Ironman Triathlon he competed against six-time Ironman Champion Dave Scott, who was powered by a plant-based diet–Rip lost. So in 1987, because of the influence of his father and of Dave Scott, Rip changed to a healthy, whole foods, plant-based diet. In 1997 he decided to become a fire fighter in Austin, Texas. He continued to compete and won many events and set many records. For example, in May 2008 he set the National Record at the U.S. Masters Swimming Championship in the 200 yard

backstroke (1:56:55). Rip is married to Jill Kolasinski, and they have a son, Kole.

Rip's commitment to a healthy plant-based diet has resulted in many people asking him to help them with their diets. So in 2007, he devised the six-week Engine 2 Pilot Study in which 62 people agreed to eat a plant-strong diet; he put them through a gauntlet of tests before and after study to quantify the results–which were spectacular. Then in May 2008 he initiated a similar 4-week (28 day) study in which 15 people participated, 13 Engine 2 firefighters and two civilians. Again careful before and after records were kept. The average participant saw his total cholesterol drop 62 points (from 197 to 135), his average LDL (bad) cholesterol fall 50 points (from 125 to 74), and his weight drop 14 pounds (from 203 to 189). And all this in only 4 weeks! This book is based on the latter plan.

Rip makes much more use of soyfoods in his plant-based diet than does his father. The index contains 16 entries for tofu, 4 for tempeh, 4 for seitan, 2 for milk substitutes ("soy, rice, almond, and oat milk, for example"), 1 each tofu sour cream (p. 239), soy milk, soy yogurt (Silk or WholeSoy).

Soy related recipes include: Migas especiales (with 1 lb firm tofu, p. 154). Breakfast tacos (with "½ tube vegetarian breakfast sausage {we like Gimme Lean})," or use scrambled tofu (p. 155). E2 omelet (with "12 ounces Silken Lite Firm Tofu," p. 156). Lemon cornmeal pancakes (with "2 cups soy milk" and "½ cup soy yogurt, p. 157). Tofu steaks and mushrooms with mashed potatoes and green peas (with "1 pound extra-firm tofu," p. 180).

Linguine and creamy alfredo sauce (with "1 package Silken Lite firm tofu" and "2 cups unsweetened soy milk," p. 195). Lynn's meatloaf (with "10 ounces firm tofu," p. 204). Vegetable stir-fry with brown rice (with "1 pound seitan" and "two tablespoons low-sodium tamari," p. 208). Tempeh-mushroom stir-fry and soba noodles (with "1 package tempeh," and "3 tablespoons low-sodium tamari," p. 209). Red vegetable curry and brown rice (with "1 pound extra-firm tofu," p. 210).

Pad Thai (with "1 pound broiled tofu cubes {see p. 210}," p. 211). The great wooden bowl salad (with "1 pound extra-firm tofu," p. 214-15). Tofu vegetable spread (with "½ pound extra-firm tofu," p. 238). E2 sour cream (with "1 package Silken Lite firm tofu," p. 239). Asian marinade (with "3 tablespoons soy sauce, p. 241). Island marinade (with "4 tablespoons soy sauce," p. 241). Add tofu and allow to marinate refrigerated for 30 minutes to 4 hours (p. 241). Rip's favorite snacks include "4. Soy yogurt: I'm particularly fond of the Westsoy... cherry" (p. 243). E2 Basics chocolate pudding (with "1 package Silken Lite tofu," p. 245). Fruit bowl with soy drizzle (with "4-6 ounce container of soy yogurt," p. 249). Fruit mousse (with "1 package extra-firm Silken Lite tofu," p. 255). Maple sour cream dream (with "1 vanilla soy yogurt," p. 256).

Many recipes call for "Bragg Liquid Aminos" which are simply HVP (hydrolyzed vegetable protein) made by a quick and unnatural / artificial process; soybeans, wheat, and/or corn are immersed in hydrochloric acid until, after 1-3 days, the acid has broken down the protein into its constituent amino acids. Fermentation (as of soy sauce) can do the same thing naturally in 4-6 months. HVP is a source of flavor without salt, but that flavor is generally considered to not nearly as good as the flavor of soy sauce.

Rip has an exercise component to his "Engine 2" 28 day plan.

And Rip gives people a choice as they start the 28 day plan; one can be a Fire Cadet or a Firefighter (p. 22). The "Fire Cadet option is for those who prefer a more gradual approach." In week 1 Cadets must stop eating dairy products and processed / refined foods (such as refined sugar, white flour, etc.). In week 2 Cadets must stop eating meat, poultry, fish and eggs. In week 3 Cadets must do without added or extracted oils–even vegetable oils such as olive oil. In week 4 Cadets and Firefighters eat the total E2 diet, a healthy, whole-foods, plant-based diet. A Firefighter (the plan Rip recommends) requires that a give up all of these unhealthy foods from the start of the program. "Americans consume a staggering 50 percent of their calories from refined and processed foods."

Cholesterol-lowering drugs (such as statins: Rip, who is not a physician, does not use them).

Salt and sodium: Rip advocates a low-sodium diet.

Support groups after the 4-week program: Optional. People who wish to can create or find one themselves (p. 92).

Meditation and relaxation to reduce stress: Not part of the program.

Sugar and sweets. Avoid refined sugars, high fructose corn syrups, and things such as sodas, candy to which they are added. Instead choose natural sugars such as those in whole naturally-sweet fruits (p. 114-15, 134). In desserts, Rip often calls for up to 3-4 tablespoons maple syrup or agave nectar, yet a recipe for Brownies (p. 247) calls for "½ cup light brown sugar, packed" and "½ cup raw sugar." And a recipe for "Oatmeal raisin cookies" (p. 253) calls for even more refined sugar. Rip admits he has a sweet tooth. Some of his desserts violate the basic principles of the Engine 2 diet; they contain large amounts of refined sugars–unlike the recipes (developed by his mother) in his father's book. Moreover, his mother strongly suggests that desserts be saved for special occasions.

This is a sound, healthy diet and anyone who stays on it for 28 days will see dramatic improvements in their overall health and weight.

The Engine 2 diet is a good, practical diet for the rest of your life. But go easy on the desserts and try to avoid the ones with refined sugar. Address: Austin, Texas.

8588. Ronnen, Tal. 2009. The conscious cook: delicious

meatless recipes that will change the way you eat. New York, NY: William Morrow, an imprint of HarperCollins Publishers. 239 p. Illust. (Color). Index. 26 x 20 cm.
• ***Summary:*** A full-color vegan cookbook. The index contains 21 entries for tofu (including tofu ricotta, p. 82-83), 15 for Gardein, 11 for tempeh, 5 for soy milk, 3 for seitan, 2 each for miso and for soy cheese, and 1 each for soy creamer and soy yogurt. Includes interviews with: Yves Potvin, maker of Gardein (p. 157-59). Seth Tibbott, founder and president of Turtle Island Foods (p. 192-93). Address: Vegan chef, lives in Los Angeles and Vancouver, BC.

8589. Silverstone, Alicia. 2009. The kind diet: a simple guide to feeling great, losing weight, and saving the planet. Emmaus, Pennsylvania: Rodale Press. Distributed to the trade by Macmillan. xi + 308 p. Foreword by Neal Barnard. Illust. (color photos by Victoria Pearson). Index. 24 cm. [17 + 71 endnotes*]
• ***Summary:*** On the cover: "New York Times Bestseller." A powerful, very popular book about a plant-based (vegan) lifestyle and diet, which calls for only "real food," with some nice macrobiotic flavor–A whole grain dish should be at the center of every meal, use of seasonal foods organically grown, azuki beans, daikon, kuzu, kabocha, miso, mochi, nori, sea vegetables, seitan, shoyu, no white or cane sugar (a "crazy making" food), tamari, umeboshi, etc.

By a well known actress who first became widely known for the film *Clueless,* a 1995 American comedy film loosely based on Jane Austen's 1815 novel, Emma.

She dedicates the book to Sampson, a stray dog she picked up on the streets of Los Angeles, to all animals who suffer needlessly, and to all "who do their best to tread lightly on the earth."

The index contains 16 entries for tofu, 14 for miso, 11 for seitan, 4 for soybeans (whole dry), 3 for soy milk, 2 each for edamame and tempeh, 1 each for butter substitute (soy-based margarine, p. 142-43), cheesecake–tofu, cheese–vegan (p. 143), shoyu (p. 142), sour cream–soy (p. 143), soy candles (p. 134), and tamari (p. 142).

Some good quotations from a fine writer: "And what about your health?... What if I told you that, by eating a plant-based diet, you will strengthen your immune system, beautify your skin, increase your energy, and reduce your risk (significantly) of cancer, heart disease, diabetes, arthritis, osteoporosis, allergies, asthma, and almost every other disease? What if I said that I feel myself getting younger, more powerful, and more beautiful as I age simply because of *what I eat*?... If you want to lose weight, you've come to the right place (p. 1).

"Eating a plant-based diet is the most ecologically friendly thing you can do... Every time you purchase organic plant-based food, you are protecting the quality of the soil and participating in a more equitable distribution of resources. Conversely, every time you buy a mass-produced steak–packaged in Styrofoam and plastic–you are feeding a huge, unsustainable, toxic death machine. This may sound harsh, but its the truth! There's a whole world of consequences behind every decision we make" (p. 131).

A large color photo on the cover shows lovely Alicia Silverstone, seated, with a bowl of food in one hand. The book contains many fine color photos on glossy paper. Address: Actress, activist, and committed conservationist, Los Angeles, California.

8590. Vallaeys, Charlote; Kastel, Mark; Fantle, Will; Christianson, Lynn; Hannah, Margaret. 2009. Behind the bean: The heroes and charlatans of the natural and organic soy foods industry. The social, environmental, and health impacts of soy. Cornucopia, Wisconsin: The Cornucopia Institute. 54 p. Illust. Index. 28 cm. Available free of charge at www.cornucopia.org/ soysurvey/ OrganicSoyReport/ behindthebean_color_final.pdf. [109 ref]
• ***Summary:*** Contents: Executive summary. Introduction. Part I: The organic soy scorecard. Commitment to organics. Commitment to transparency and openness. Commitment to stakeholders, in addition to shareholders. Commitment to avoiding genetically engineered organism contamination. Commitment to supporting North American organic family farmers. Company ratings in the organic soy scorecard. Private labels.

Part II: Unmasking the natural" soy industry. Isolating nutrients: Soy protein. Hexane: The processing of "natural" soy with a neurotoxic pollutant.

Conclusion. Appendix A: Scorecard ratings. Endnotes.

Pacific Foods [Oregon]: "On their packages, they have a "Certified to the Source" (TM) seal, and their web site explains that this program is "an ambitious endeavor to want to trace the origin of every single ingredient we use in our foods..." On the web page for its organic soymilk, Pacific Natural Foods writes that "We are very picky about our soybeans." "Cornucopia's research indicates that Pacific Natural Foods purchased close to half a million kilograms of organic soybeans from China in the past year. When asked simply to name the organic certifier of the farms where their Chinese organic soybeans are grown, Pacific Natural Foods did not respond. When asked if Pacific Natural Foods would share with us the name of the third-party certifier for their 'Certified to the Source' program, they were silent. This raises the question of whether this program is in fact third-party certified, or simply a marketing gimmick" (p. 26-27).

Vitasoy, USA: "Our research indicates that they purchase organic soybeans directly from American organic farmers in the Midwest, but they also purchased approximately 200,000 kilograms of organic soybeans and 100,000 kilograms of organic tofu from China" (p. 27).

"Another brand of soymilk that chose not to participate in our scorecard project was the industry's largest producer of soymilk, in addition to other soy products, Silk.

WhiteWave, which markets Silk soymilk, is a subsidiary of Dean Foods. Dean Foods is the largest processor and distributor of dairy products in the United States, with $11 billion in sales in 2007."

"Since Dean Foods acquired WhiteWave, its founder, Steve Demos, has left the company [he was fired], along with almost all of the pioneering management–those who believed in 'green' values. According to Demos, the company is now all about 'green, with the dead presidents on it.'

"In January 2009, the familiar Silk soymilk cartons lost the green 'USDA Organic' seal and now state 'natural' where they once said 'organic.' The carton's design is the same, and many loyal Silk customers who associate the brand with organics may not be aware that they are now buying a nonorganic product. Silk's organic soymilk is now in a newly designed carton. Most Silk products are no longer certified organic or 'made with organic soybeans.' It also appears that Dean Foods / White Wave raised the price of their few new organic soymilk offerings, a very small percentage of their product line. They kept the same pricing for the majority of their product line, even though they switched to cheaper conventional soybeans and introduced their new organic offerings at a higher price point–a radical departure from the origins of the company. Before Dean Foods acquired White Wave and Silk, they were considered one of the true pioneers in the organic foods industry" (p. 27-28).

Hexane residues in food: "The FDA does not set a maximum residue level in soy foods for hexane, and does not require that food manufacturers test for hexane residues. Very little research has been conducted concerning the potential effects of consuming hexane residues in edible oils and other processed foods that contain soy protein, such as infant formula, energy bars, protein powders, and meat analogs. Food processors that use hexane tend to assume that nearly all hexane residues evaporate before reaching the consumer, but this may not be the case."

"Moreover, residue testing has tended to focus on the oil, but the protein and fiber that are left after extraction have also come in contact with hexane. To test for the possibility of hexane residues on these other soy components and products, The Cornucopia Institute sent a sample of hexane-extracted soy oil, soy meal, and soy grits to an independent analytical laboratory (registered with the FDA and USDA). While there was less than 10 ppm hexane residue in the oil, both the soy meal and soy grits contained higher levels of hexane residues. The soy meal contained 21 ppm hexane and the grits contained 14 ppm. These tests raise important questions regarding the presence of hexane residues in everyday foods."

"The Cornucopia Institute is petitioning the FDA to examine the effects of hexane in foods. First, Cornucopia is asking the FDA to test commonly consumed soy derivatives, such as soy protein isolate, for hexane residues. Second, if residues are indeed found to be common in foods, the FDA should provide information to consumers regarding the effects of these chemical residues on consumers, including infants and children.

"We believe that this research is especially important given the fact that most soy-based infant formulas contain ingredients that have been hexane extracted. In fact, nearly every major ingredient in conventional soy-based infant formula is hexane extracted. Infants consume much greater quantities of food compared to their body weight than adults, and formula-fed infants consume the same foods day after day, for many months. If hexane residues are present in conventional soy-based infant formula, their effects on infants should be investigated" (p. 36). Address: 1. Farm and Food Policy Analyst, principal author; 2. Senior Farm and Food Policy Analyst; 3. Research Director; 4. Research Assistant; 5. Board President, Scientific Editor. All: The Cornucopia Institute, P.O. Box 126, Cornucopia, Wisconsin 54827.

8591. Association Misola. 2010. Misola (Website printout–part). www.misola.fr Printed Jan. 9.

• ***Summary:*** Misola is the name of decentralized a organization (*l'association Misola*) of health professionals who work to alleviate malnutrition in francophone (French-speaking) countries of subsaharan West Africa, especially Burkina Faso, Mali, Senegal, and Niger.

History: Misola was born in Oct. 1982 in Upper Volta (renamed Burkina Faso in Aug. 1984) from a collaboration between the Department of Public Health of the East (*Direction Départementale de la Santé Publique de l'Est*) and the Association of the Brothers of Man (*l'association Frères des Hommes*), under the initiative of Dr. Jean-Marie Sawadogo and of Drs. Claire et François Laurent. It gradually extended its activities to the three other countries. In 1983 Dr. François Lebas rejoined the project. In Feb. 1995 Dr. Lebas created, at Calais, France, the French Association of Misola l'association française Misola. In November 1995, the Misola trademark was registered with the associations INPI and OAPI. En 2008, le Dr. François Laurent, who was excluded from the association Misola, created the Bamisa Project. The two projects are now totally separate and independent.

To alleviate hunger, Misola uses the food resources of the countries in which they work to make MISOLA, a flour, made from 60% toasted millet, 20% toasted soy, 10% toasted peanuts, and 10% other ingredients including 9% sugar, 1% iodized salt, a mixture of vitamins and other minerals, and the enzyme amylase which digests the solids to yield a fluid when water is added. Thus, the name MISOLA is derived from the first letters of the names of the three main ingredients in French (MIllet, SOya, L'Arachide). This flour is produced from local ingredients that meets basic bodily needs for energy, protein, and micronutrients.

Misola focuses its work on infants of ages 6 to 60

months (5 years) and on the women most closely connected with these children by using the flour to help satisfy their specific nutrition needs. Address: B.P. 286, 62105–Calais Cedex, France.

8592. Roseboro, Ken. 2010. The 2010 non-GMO sourcebook: A buyers guide to global suppliers of non-GMO and organic seeds, grains, ingredients, and foods. Fairfield, Iowa: Evergreen Publishing, Inc. 106 p. Illust. (both color, and blue and white photos). Index. 28 cm.
• ***Summary:*** Contents: Editor's introduction (by Ken Roseboro, publisher and editor). Suppliers of non-GMO products: United States, Canada, Europe, Africa / Middle East, Asia / Australia, Latin / South America. The Non-GMO Project special section (includes comments by Michael Potter and Nature's Path {in Canada}). Related products, services, and organizations. rBGH-free dairy processors in the US. Index of non-GMO suppliers by product category: Seeds (corn, soybeans), canola / rapeseed, processed canola / rapeseed products, corn / maize, processed corn / maize products, soybeans (identity preserved, specialty, organic), processed soy products (flakes, flour, germ concentrate, grits, lecithin, meal, nuts, oil, low linolenic oil, phytosterols, protein, textured protein, soymilk, soymilk powder, soy sauce, tofu, vitamin E / tocopherols), other grains / oilseeds and processed products (alfalfa / hay, barley, cotton,...), other ingredients and processing aids (citric acid, dairy ingredients...), sweeteners, food products, food supplements, animal feed. Index of related products, services and organizations. Complete index of listings. Index of advertisers.

Note 1. In the Suppliers section, many company entries have the Non-GMO Project logo (with an orange and black butterfly on a green leaf) next to their company name (e.g., Eden Foods, p. 17; WholeSoy & Company, p. 42).

This comprehensive book gives the single best picture of the growing industry, worldwide, opposed to genetic engineering. Address: Editor / Publisher, P.O. Box 436, Fairfield, Iowa 52556. Phone: 1-800-854-0586.

8593. Malnutrition Matters. 2010. Improved, sustainable nutrition and community development: With the VitaGoat & SoyCow systems and other technologies. Ottawa, Ontario, Canada. 18 p. Printed 27 Oct. 2010.
• ***Summary:*** The company's tagline is "Food Technology Solutions." This PowerPoint presentation, consisting of 18 graphics / frames, was presented in about Jan. or Feb. 2010. Contents: 1. Title page. 2. MM: Sustainable nutrition & community development. 3. Why are soyfoods ideal for development? 4. Today (number of units installed in different nations worldwide). 5. Site status–December 2009 (map of Africa and Asia shows number of installations {142} + committed {40} in specific nations worldwide. Includes 17 in India). 6. The VitaGoat system (shows the six different pieces of equipment: Hydraulic pump, boiler with chimney, cooker, above filter press, cycle grinder, tofu box). 7. Why the VitaGoat? Manual (non-electric) operation to enable rural micro-enterprise [small business]. Wood, coal, gas or other fuel options. Lower cost and more versatile. 8. The VitaGoat–Food production chart (soymilk, tofu, okara). 9. Why a SoyCow? Electric processing of soy foods. Two models (hybrid and fully electric). 10. Comparison of systems: SoyCow E, SoyCow M, VitaGoat. 11. The VitaGoat / SoyCow: Applications & economics. 12. Orissa project: Achieve a positive health outcome for over 5,000 students. 13. Strategy and priorities. 14-15. Innovations: VitaGoat canning module, SolarFlex fruit and vegetable dryer. 16. SolarFlex Dryer–Small farm model. 17. PedalPro–cycle innovation. 18. Thanks to our sponsors: Africare, Alpro, Child Haven, First Steps, Rotary, WISHH, World Bank.

There is a color photo or illustration on most pages. Address: 48 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada. Phone: 1-613-742-6888.

8594. Maruyama, Kazumi; Oshima, Tomoe; Ohyama, Kenji. 2010. Exposure to exogenous estrogen through intake of commercial milk produced from pregnant cows. *Pediatrics International* (*Japan*) 52(1):33-38. Feb. [26 ref. Eng]
• ***Summary:*** Modern genetically improved dairy cows (such as the Holstein) continue to lactate throughout almost the entire pregnancy. Therefore, recent commercial cow's milk contains large amounts of estrogens and progesterone.

"Conclusions: The present data on milk and children indicate that estrogens in milk were absorbed, and gonadotropin secretion was suppressed, followed by a decrease in testosterone secretion. Sexual maturation of prepubertal children could be affected by the ordinary intake of cow milk." Address: Interdisciplinary Graduate School of Medicine and Engineering, Dep. of Clinical Nursing and Pediatrics, Univ. of Yamanashi, Yamanashi, Japan.

8595. Wartinger, Lisa; Haren, Chuck. 2010. Plenty in Guatemala. *Plenty Bulletin* (*Summertown, Tennessee*) 25(4):1-2. Winter.
• ***Summary:*** "In early November several Plenty representatives visited our long time CAFSI (Central American Food Security Initiative) project partners in the rural Mayan community of Molino Belen, Guatemala, and the women's association Unidas Para Vivir Mejor (UPAVIM) in Guatemala City.

"Out first destination was Barrio San Bartolo and the Mayan community of Molinio Belen, home to about 1200 people. This community overlooks world-renowned Lake Atitlan, a timeless source of food, water, and spiritual significance for the Mayan people.

"How good it was...to visit the Asociacion de Desarollo Integral Belen (ADIBE), to see how they are addressing these issues.

"ADIBE is a non-profit association dedicated to improving the lives of people living in Molino Belen. ADIBE manages the soy dairy (Soy Center) that was established by the community and Plenty in 1979. The community elects their board of directors every two years. meeting with the current "directiva," we were impressed by their earnest efforts to benefit the residents of Molino Belen. Edyn (Eddy) Chalcu, at the age of 21, is ADIBE's current administrator. The Soy Center produces plain and flavored soymilk, tofu, soy ice cream, and flour and sells these products in Guatemala City and several large towns, as it has done for 30 years. In July 2008 ADIBE participated in a national competition for small rural producers. Out of 180 groups, they were one of the final 12 selected, and received an award of 45,000 quetzales or about $6,000. Using the award as an impetus, in November 2008, they made a formal request to the Agricultural Technical Mission of China (Taiwan) in Guatemala for help to expand their production, sales, and markets. In January 2009 the Taiwanese agreed to provide two years of consistent technical support, which has been a real boost to ADIBE. It has enabled them to expand their product line to include toasted soy flour, soy coffee, and even shampoo and moisturizing cream made from the whey remaining from the tofu making process (very nice products, as we tested while in the field!).

"The UPA-SOYA project: After our visit to ADIBE, we spent a few days with members of the Unidas Para Vivir Mejor (UPAVIM), an association of eighty-four women in urban Zona 12, La Esperanza, Guatemala City. In late 2003 UPAVIM requested help from Plenty to design a floor plan and set up a small-scale soy food-processing kitchen next to their small bakery. With Plenty's assistance, the equipment was installed and, by the end of 2008, more than twenty women had received instruction in commercial food preparation and handling, sanitation procedures, and adapting soy foods to traditional meals. Soymilk and other foods were sold in the neighborhood, as well as distributed to children attending UPAVIM's pre and primary school.

"The years 2008 and 2009 have been very difficult for UPAVIM. Sales of their artisan items, income that sustains their social service activities, have fallen with the downturn of the world economy, and UPAVIM was not able to keep up with the costs of operating the soy processing room. The women decided to stop soy production, and then restart UPA-SOYA when they could secure the resources needed to make a sustainable venture."

Photos show: (1) ADIBE staff and Board representatives with Plenty representatives. (2) Inside view of the soy processing room showing its equipment and visitors. (3) Amado del Valle demonstrates how to use the new soymilk press donated by Plenty. (4) UPAVIM staff and volunteers pose with Plenty representatives. Address: Plenty representatives.

8596. Malnutrition Matters. 2010. Improved food security with local processing of soy: Using VitaGoat & SoyCow systems. Ottawa, Ontario, Canada. 20 p. Printed 27 Oct. 2010.

• ***Summary:*** The company's tagline is "Food Technology Solutions." This PowerPoint presentation, consisting of 20 graphics / frames, was presented at the WISHH workshop on Africa in March 2010. Contents: 1. Title page. 2. MM: Improved security with local processing of soy. 3. Why are soyfoods ideal for development? 4. Energy efficiency in production. It takes 20 times as much energy to produce 100 calories in the form of soybeans as in the form of milk, which is the most efficient of all animal food sources. 5. Water efficiency in production: "Soy uses far less water than other forms of 'quality' or 'complete' proteins. 6. Environmental sustainability & increased income: Local cultivation of soybeans. 7. Site status–February 2010 (map of Africa and Asia shows number of installations {144} + committed {42} in specific nations worldwide). 8. The VitaGoat system (shows the six different pieces of equipment: Hydraulic pump, boiler with chimney, cooker, above filter press, cycle grinder, tofu box). 9. The VitaGoat vs. rural dairy in Africa (11 dairy cows vs. 1 VitaGoat; VitaGoat gives twice the profit per month). 10. Real VitaGoat–Eldoret, Kenya. 11. Today (number of units installed in different nations worldwide). 12. The VitaGoat–Food production chart (soymilk, tofu, okara). 13. Why a SoyCow? Electric processing of soy foods. Two models (hybrid and fully electric). 14. Comparison of systems: SoyCow E, SoyCow M, VitaGoat. 15. The VitaGoat / SoyCow: Applications & economics. 16. PedalPro–cycle innovation. 17-18. Innovations: VitaGoat canning module, SolarFlex fruit and vegetable dryer. 19. SolarFlex Dryer–Small farm model. 20. Thanks to our sponsors: Africare, Alpro, Child Haven / Donner Canadian Foundation, First Steps, Rotary, WISHH, World Bank.

There is a color photo or illustration on most pages. Address: 48 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada. Phone: 1-613-742-6888.

8597. Food Standards Australia New Zealand, 2010. Reformulated Bonsoy soy milk without kombu seaweed to return to shelves (Web article). http://www.foodstandards.gov.au/ scienceandeducation/ factsheets/ factsheets2010/ reformulatedbonsoyso4785.cfm 1 p. Posted April 28.

• ***Summary:*** "Food and Health authorities today confirmed that Bonsoy soy milk, reformulated without kombu seaweed extract, could return to sale.

"On the 24 December 2009, Food Standards Australia New Zealand (FSANZ) coordinated a national food recall and issued a media release advising people not to consume Bonsoy soy milk with all best before dates. This followed a cluster of nine adults aged from 29 to 47, and one child, who presented in NSW with thyroid problems.

"A national medical reporting system has been established in Australia. Between 23 December 2009 and 15 March 2010, there were 50 cases of thyroid dysfunction reported to public health units in Australia that are suspected to be associated with the consumption of Bonsoy soy milk.

"Bonsoy soy milk was enriched with kombu which is a seaweed product. Upon testing, the Bonsoy milk with added kombu was found to be the only product with excessively high levels of iodine. This product was also recalled in the UK, Ireland, Singapore and Hong Kong.

"The levels of iodine in the Bonsoy soy milk were at a level that is likely to exceed the safe limit for iodine when as little as 30ml (one eighth of a cup) is consumed per day by an adult. The only soy milk product identified through testing to have high levels of iodine was Bonsoy soy milk.

"FSANZ is also coordinating further testing of a range of beverages enriched with seaweed and other seaweed containing products. Any found to have unsafe levels of iodine will be recalled.

"Food and Health Authorities remind anyone with 1 litre tetra packs of the original Bonsoy soy milk with kombu, with all best before dates, that they should not consume them and should safely dispose of them or return same to place of purchase. Anyone who has consumed the earlier batches of Bonsoy with kombu over a prolonged time who feels generally unwell should consult their doctor." Address: Australia.

8598. National Milk Producers Federation. 2010. FDA should stop imitation products from milking dairy terms, says NMPF (News release). 2101 Wilson Blvd., Suite 400, Arlington, VA 22201. 2 p. April 29.

• ***Summary:*** "Arlington, VA–A decade after it first asked the federal Food and Drug Administration to crack down on the misappropriation of dairy terminology on imitation milk products, the National Milk Producers Federation today sent another petition to the FDA, asserting that the practice has gotten worse in the past 10 years.

"In its petition submitted April 29th, the NMPF contends that not only have the terms 'soy milk' and 'soymilk' continued to proliferate, but also other dairy-specific terms like 'yogurt,' 'cheese,' and 'ice cream' are now being used by products made out of a wide variety of non-dairy ingredients.

"'The FDA has allowed the meaning of 'milk' to be watered down to the point where many products that use the term have never seen the inside of a barn,' said Jerry Kozak, President and CEO of NMPF..." Address: Arlington, Virginia. Phone: 703-243-6111.

8599. Dean Foods Co. 2010. Positioned to win: 2009 annual report. Dallas, Texas. 4 + 49 + 53 + 9 p. 28 cm.

• ***Summary:*** All but the first 4 pages of this annual report are Form 10-K. A "Brief history (chronology) of the company is on page 11. In July 2009 Dean Foods "Acquired Alpro, a leading provider of soy-based food and beverage products in Europe, providing us with the opportunity to leverage the collective strengths of our combined businesses across a global soy beverages and related products category."

Basic financials are on page F-2. Net sales were down 10.5% but net income attributable to Dean Foods (and not to Dean Holding Co.) was up 30.8% from last year.

Net sales of the White Wave-Morningstar division was up 1.9% and total operating income was up 9% from last year (p. 32-33). We are unable to find specific information about Silk any longer.

Accompanying the annual report is a "Notice of stockholders' meeting" (63 p.). In 2009 Gregg L. Engles, Chairman of the Board and CEO, had a salary of $1.1 million and made additional millions (p. 35-43).

From the first 4 pages: Soy brands now make up 6% of Dean Foods' product mix; 49% is dairy milk. "The $1.7 billion branded business at WhiteWave and Alpro increased sales 9%. Our mid-year Alpro acquisition was the key driver to strong sales growth in this business category."

"We also leveraged our Silk brand to launch Silk PureAlmond (TM), and extend the Silk brand equity beyond soy into other plant-based beverages."

"With the strategic acquisition of Alpro, Dean Foods is now a global leader in soy, with over $1 billion in annual retail sales in soy beverages and related products. The combination of Alpro and Silk expands our geographic reach to Europe..." Address: 2515 McKinney Ave., Suite 1200, Dallas, Texas 75201. Phone: 214-303-3400 www.deanfoods.com.

8600. Heikkala, Tomas. 2010. Proyecto Nutricional de Soya Karen. *Plenty Bulletin* (*Summertown, Tennessee*) 26(1):1-2. Spring.

• ***Summary:*** Plenty plans to do a nutrition project for families who live off the Guatemala City Dump, the largest urban dump in Central America. Specifically they plan to help people (410 families and 1,500 children) who live in shacks in the community named *Asentamiento Astrilla.* They have chosen to work with partners, "the women of the local church, *Grupo Soya Santa Maria,* who are getting organized to make soy nutrition available for these communities... They want to get the equipment to produce soymilk and fresh baked products from the okara (soy pulp left over from making soymilk) for 300 children 3 days a week. The woman making the soy foods will be using the same equipment to make soy products for sale, to help fund the project, and to produce a little income for their families." Plenty has received 12% of the $38,000 they estimate will be needed for the first year, mostly from friends of Karen (Tomas's wife who died recently) and individual Plenty donors.

Shurtleff e-mailed Peter Schweitzer (April 19) to ask if there was any relationship between this new project and UPAVIM. "Do you plan to have two sets of soymilk

equipment helping people trying to survive on the same dump in Guatemala City? Or has UPAVIM been renamed? Or have the two projects merged into one with a new name?"

Schweitzer replied: "There is an informal relationship between the two. Last year women from UPAVIM helped put on a soy demo at the church next to the dump. But the programs are independent of each other and each will have its own production equipment and staff."

8601. Nguyen, Hoang Quoc. 2010. Re: Soyfoods and soybeans in Vietnam. Letters (e-mails) to William Shurtleff at Soyinfo Center, May 4-12. 1 p. each.

• ***Summary:*** Mr. Nguyen is the father of Andrea Nguyen, author of *Into the Vietnamese Kitchen* (2006, Ten Speed Press) and was kindly introduced to Soyinfo Center by Andrea, who is now writing a book about tofu in Asia.

Mr. Nguyen was born and raised in Vietnam, and lived there with his wife and family until April 1975 when he fled to the USA just before the fall of Saigon and the American defeat in what Vietnamese call the "American War."

He was governor and military sector commander of two provinces in the Mekong Delta of Vietnam (Vinh Binh {now called Tra Vinh} from 1956, and Kien Phong {now called Dong Thap Muoi} from 1956-1960), and of Binh Thuan, in the south of central Vietnam, from 1960-1963. While he is not a specialist in Vietnamese food, he knows as much about it (or more) as the typical person born and raised in that country.

Question: Do Vietnamese eat soybeans as a green vegetable (green vegetable soybeans, edamamé)? Ans: No, and there is no specific name for them.

Question: Please tell me about soymilk in Vietnam. Ans: Its name in Vietnamese is *sua dau nanh* (with diacritical marks). It was very popular, but mostly in the cities (as we were in Viet Nam before 1975). Don't know exactly at the present time. Use it at breakfast or at any time during the day as a beverage. It is sold in a plastic container, at tofu shops or at marketplaces. Nobody made it at home at our time in Viet Nam (before 1975). But soybean milk machines are now on the market at non-expensive prices. Probably some people are making it at home for freshness. It is typically served sweetened or plain; not salty. It has a fairly long history. Its popularity is increasing with the propagation of the soybean's benefits.

Question: Please tell me about yuba (the film that forms atop soymilk when it is heated) in Vietnam. It is often called beancurd skin or (when dried) beancurd sticks in Vietnamese cookbooks. Ans: It is called *phu chuc* (dried rolled yuba; dried yuba sticks) in north Viet Nam, and *tau hu ky* in south Viet Nam. [Called Fuchu or fuzhu in Chinese]. Fresh dry yuba is *tau hu ky tuoi* (it needs to be frozen or refrigerated and thawed before using) and regular dry yuba is *tau hu ky kho.*

All Vietnamese (north, center, and south) use only one language but there are differences in tone and accent in pronunciation, and also in the naming of some things and objects. The phonetic adaptation from Chinese or French words are also different, it may be the reason of Tau Hu Ky for Fu Pi and Phu Chuc for Fu Zu.

Yuba is very popular, used in households, market stalls, and restaurants–especially in place of meat in vegetarian dishes and diets (influenced by Buddhism). It is sold in dry form, either unfried or fried, in a package at any market place. It is made only by special factories of Chinese origin. It is served as a wrapper for shrimp or meat, then fried. Also in soup–fried and served with broken steamed rice, and many other dishes at home and restaurants from selected to street corners. It is especially useful in the preparation of vegetarian dishes as a substitute for real meat. In one popular dish (called *Chan Thien Ky*), *tau hu ky* [yuba] is wrapped around minced shrimp to make a little packet, which is deep-fried; it is somewhat like the Cantonese dim sum item of shrimp in "tofu skin" but Viet people commonly serve it as a side dish on rice plates. Another popular yuba recipe in Vietnam is *Com Tam Tau Hu Ky Suon Bi* (Broken rice with yuba wrapped around shrimp, pork chop, and pork skin). Note: A Google search for "tau hu ky" will bring up many other recipes, images, and videos in Vietnamese and English. Yuba has a long history in Viet Nam, being introduced along with Chinese cuisine. Today its use is increasing along with the demand for new recipes and awareness of the benefits of consuming foods made from soybeans. Yet it is still not an item in everyday meals, but is reserved for special occasions, whether at home, in a restaurant, or at parties.

Question: When the French divided today's Vietnam into Tonkin (north), Annam (middle) and Cochinchina (south), were there any cultural or language differences between the three? Were the divisions based on these cultural and language differences or not? Ans: No major difference in culture or language existed between the three regions at that time. The French made the division just for more efficiency and convenience in their colonization of Viet Nam. The French split Viet Nam up into many areas with different administrative systems so as to maintain the division, in order to make their occupation more efficient [and to try to prevent or limit the growth of nationalist or resistance movements].

Question: Please tell me about soybean cultivation in Vietnam. Ans: At this present time, because of the huge demand of soybean for edible oil and meal or cake for animal feeds, milk for human consumption, large areas in the South (east and west parts) are being used for cultivation of soybean. Production in the North and Central regions, due to limitation of available lands, may be sufficient only for regional production of Tuong and Tofu. Five different kinds of seeds are being introduced and tested and yield/ha are much better. Areas in the south-west (Mekong delta) will produce 3 crops per year.

For centuries soybeans have been cultivated in Viet Nam. Before the vegetable oil from soybean was introduced, each region produced what people need for daily consumption. This has been changed completely because of the demand for soybean oil, milk, sub-products for animal feeds.

Soybeans are cultivated along the hillsides or high level areas not submerged by water, or in between the rice crops seasons. In the south western region (Mekong delta) where the field is submerged under the water every year for 4 months, farmers can now plant soybean after the rice crop harvest. They burn the hay, make holes and put the seeds down, cover with hay, let it grow, fertilize (chemical), use pesticides and herbicides. After 75-82 days they can harvest (still by hand), or use a machine to pull out the beans, then dry them. Viet Nam is presently divided into 62 provinces and towns; soybean is planted in 43 of them. At the present time, no information is available about large size farms using complete machinery like in the USA, but an area like the Mekong Delta may open up and introduce this kind of large farming process. The highlands in Viet Nam offer tremendous opportunities for development of modern farming (mechanized) but require enormous investments in knowledge, experience, and quick flexibility of action and funds. A state economy system cannot afford to let that happen, I would say.

Viet Nam still has to import 400,000 to 500,000 tons of soybean every year from China, Kampuchea [Cambodia], Thailand, Canada and the USA.

Today, soybeans are most widely used as a food in the south of Vietnam. My estimate of the amount of soybeans used in traditional foods (in descending order of popularity) is: Tofu, soy milk, tuong (a thick fermented soy sauce), chao (fermented tofu), soy sauce (liquid), tau hu ky (yuba).

Additional remarks: Tuong should be considered in this study, as tuong is a sauce made and used only in Viet Nam. It is made from rice and soybean, plus salt, in a very delicate way, serving as sauce for eating and cooking. Long ago the northern Viet term for soybeans was "dou," as in Chinese. But soybeans were also called "dou tuong" because they were so widely used in Vietnam to produce the popular fermented sauce "tuong." That's why today the Vietnamese term for soy sauce is either "nuoc tuong" [sauce + tuong; a lingering reference] or "xi dau," from the Cantonese phonetic.

All the Vietnamese (old generation, of north and center origin) living in the US, miss "tuong" very much as the Tuong Cu Da being sold in the market places here is not the real thing–in terms of composition, taste and flavor. The three best kinds of Tuong are: (1) Tuong Cu Da. (2) Tuong Ban, in north Viet Nam, and (3) Tuong Nam Dan, in Nghe An (central Viet Nam).

Note: Andrea adds: "These are really cool tuong sauces!" Address: San Clemente, California.

8602. Messina, Mark J. 2010. The war has been lost: Update on research on the health benefits and risks of soy (Interview). *SoyaScan Notes.* May 31. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** The image of the safety or healthfulness of soyfoods, primarily on the Web, in large part due to the Weston A. Price Foundation, is getting worse and worse. Mark fears that the future of soy as a human food looks bleak, and that sales of soyfoods and ingredients will decline over the next 20 years–even though the nutritional science is making soy look better and better.

For example, the research on the safety of soy for people with thyroid problems is now solid. Soy does not cause thyroid problems in humans. Soy does cause thyroid problems in rats but rats are a bad model to use for studying this problem. Even for people living in a goiter belt–a place with iodine depleted soil–consuming soy is not a problem.

The research on the safety of soy for women with breast cancer is becoming more solid. The paper by Shu et al. is the most important development although the Guha paper is also basically supportive of safety. The paper by Messina and Wood discusses the clinical work. Add to this the fact that there is another paper albeit smaller in size that will be published soon that supports the paper by Shu and that it is now known that the animal studies aren't very relevant to humans because the amount of biologically active genistein in circulation is much higher in mice than in humans makes a pretty strong case. The editorial by Messina, Abrams and Hardy that makes the case succinctly.

It is quite clear that if a young girl has one serving of soymilk a day for life, that will reduce her risk of breast cancer. Likewise for women with breast cancer. However, nothing is clear when it comes to chronic disease and diet. The hypothesis is quite intriguing and has epidemiologic and animal data in support of it. However, without clinical data it will remain speculative. Nevertheless, because the potential benefit is so great, the amount of soy need for protection so small (one serving) and that in my view there is no disadvantage to consuming soy, it seems like a no brainer to make a recommendation for girls to consume one serving per day.

The area where we have the fewest good studies and the biggest knowledge gap is in safety of soy for young children. Seventh-day Adventist children have been consuming soymilk for more than 60 years with no reported problems, yet this needs to be studied scientifically. A good two-year study has been designed but has yet to be funded.

There has been a big decrease is sales of soy infant formulae over the past ten years due to uncertainty in this area.

The main are of concern today is with isoflavones / phytoestrogens (such as genistein), which are classified as endocrine disruptors. The anti-soy faction likes to talk about

"estrogens in soy" as being risky and about feminization.

The Weston A. Price Foundation (WAPF) recently had their 10th annual conference / meeting in Chicago; 1,000 people attended. Their focus was not anti-soy, although a few such comments were made.

Note: According to Wikipedia, the organization was founded in 1999 by Sally Fallon and Mary G. Enig, PhD. Headquartered in Washington, DC, it is a "501(c)(3) non-profit organization dedicated to 'restoring nutrient-dense foods to the American diet through education, research and activism.' Its goals include disseminating the research and dietary advice of dentist and nutritional researcher Weston A. Price, who studied the foods and health of isolated non-industrialized peoples around the world, and supporting the scientific validation of traditional diets." Their anti-soy program is named "Soy Alert!" and they repeatedly refer to soy as "toxic." "In 2010 its membership numbered 13,000 and was growing at an annual rate of 10%, according to The Washington Post (6 Aug. 2008). It has more than 450 community-driven chapters across the United States, and international chapters in Australia, Canada, Finland, Germany, Pakistan, New Zealand, the United Kingdom and various other countries."

Mark regrets that he agreed to debate Sally Fallon. She made a number of false claims, such as Illinois prison inmates were being fed 100 gm of soy protein a day.

Alpro Soya recently released an excellent cartoon video commercial titled "Great Ideas Often Take a Long Time to Sink in" as part of its "Join the movement now" campaign. It encourages people to change their diet by replacing meat and dairy by an alternative just once a week.

White Wave [Dean Foods] is no longer funding scientific studies on soy–as they were a year ago. They have turned all their soy activities over to a PR firm. Mark finds this very disappointing. However the Silk Soy Nutrition Center has a good website (soynutrition.com) which focuses on the health benefits of soy.

The next soy conference will be in October. Kaayla Daniel is writing a new book of anecdotes about how she has helped people who had nutritional problems with soy.

What evidence does Mark have that people are concerned about the safety of soyfoods? (1) The United Soybean Board (USB) has sponsored a booth at the annual meeting of the American Dietetic Association each year for at least the last 15 years. The booth is organized by Publicis, the USB's PR agency. The purpose is to provide information about soy oil and soyfoods. Materials are provided and usually a soy-related product served or handed out. It could be edamame or soynuts or chap stick made with soy oil. The ADA show attracts about 10,000 dietitians. Mark has staffed the booth every year (except one when he was unavailable) to answer questions about soy nutrition. He answers about 50 questions during the 3-day meeting. Most of the questions are about soyfoods (rather than soy oil). He has watched the nature of these questions change over the years. Initially they were about ways to incorporate more soy into the diet. Now they are about the safety of soyfoods and soy formula, and about isoflavones.

(2) He is often contacted by non-scientific journalists who want to interview him for radio, TV, or the Web / blogs. Here again he is now hearing the same safety concerns. (3) Mark gives many talks about soy nutrition each year. After a typical talk, he opens it up for questions. Here, also, he gets mostly questions about the safety of soy. (4) Mark's wife, Ginny, does a great deal of work promoting vegetarian and vegan diets. She says that support for soy is weakening among vegetarians. (5) On the Web, the number of negative stories about soy nutrition is growing. Almost all are based on hearsay rather than on science. (6) Mark increasingly hears negative comments about soy at random. In short, the climate has changed dramatically since 1990, when the trend was "straight up," to today when things are looking down. Mark has no reason to believe that this downward trend will not continue.

Twenty years ago they soy industry should have developed a long-term strategy, with adequate funding, to respond to the anti-soy faction disinformation campaign with science-based facts. But the industry was unwilling to do this. They thought it would go away, that it was just a passing fad, or that it was not important and would not have any significant effect on the market, which was growing rapidly at the time. Mark did everything he could to try to convince the soy industry that this was a real concern and that they should take action. There is still no interest in a long-term strategy, but now it is probably too late. Address: PhD, 429 Calhoun St., Port Townsend, Washington 98368. Phone: 360-379-9544.

8603. Demetriou, Danielle. 2010. Grain of wisdom: Madonna's former personal chef (Web article). *http://www.thenational.ae/lifestyle/house-home/grain-of-wisdom-madonnas-former-personal-chef.* June 16.

• ***Summary:*** Mayumi Nishimura of Tokyo (age 53), a world-famous practitioner of macrobiotic cookery, was Madonna's personal chef for 7 years, cooking for the singer and her family, as well as providing most meals during four of Madonna's world tours. Madonna (who is not a vegetarian) also avoids dairy products, enjoys tofu, miso and soymilk, is adept at using chopsticks, and speaks pretty good Japanese.

While in high school, Mayumi began to see clearly the connection between her diet and her health and spiritual wellbeing. She changed her diet and became a vegetarian and began to eat brown rice. At age 21 Mayumi was introduced to the writings of George Ohsawa. So she packed her bags and went to study at the Kushi Institute in Boston, Massachusetts. It worked very well for her and she ended up running a branch of the Kushi Institute in Beckett, Massachusetts.

Then 9 years ago she was asked if she wanted to try out as Madonna's personal chef. She got the job and became part of Madonna's extended family. Madonna later wrote her in the book *Mayumi's Kitchen:* "Not only are you the best chef in the world, you are part of our family... In the seven years you lived with us and cooked for us, your amazing food helped me to be a happier, healthier person, balanced in body and mind. I feel better than I did 20 years ago. I am very grateful to you for this."

Note: As of April 2011, Madonna lives in New York City, in the fashionable Upper East Side at 152 East 81st St. She lives in a gated community, said to be worth $32 million.

8604. Vitasoy International Holdings Ltd. 2010. Annual report 2009/10. Seventieth anniversary. New Territories, Hong Kong. 216 p. July. 30 cm. [Eng; Chi]

• ***Summary:*** This year the annual report celebrates the 70th anniversary of Vitasoy, which was founded in 1940. A list of milestones (p. 6-7) goes from 1940 to 2008. For example: 1940–Incorporation of Vitasoy International Holdings Ltd. [Hong Kong Soya Bean Products Co. Ltd.] in Hong Kong. Launch of healthy Vitasoy soymilk in Hong Kong (a color photo shows the original glass bottle).

All values are in million Hong Kong dollars. The fiscal year ends on 31 March 2010. A graph (hard to read, p. 8) shows that turnover (sales) has risen steadily each year from 1,985 in 2006 to 3,012 in 2010 (up 7% from 2009).

Gross profit has risen steadily each year from 945 in 2006 to 1,498 in 2010 (up 15% from 2009).

EBITDA (Earnings before minority interest, interest expense, income taxes, depreciation, and amortization) has also risen steadily each year from 333 in 2006 to 483 in 2010 (up 19% from 2009). Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

8605. Pristine Plants India Pvt. Limited (Website printout–part). 2010. www.ppi.co.in Printed Aug. 29.

• ***Summary:*** Contents: Home page. About ourself. Connect us @. Soymilk system -> Contact us. Moving words at top of each page: "It's a matter of taste." Moving words below company name near top of each page: "Perfection–Performance–Innovation."

Address of works: 16, Gurukul Industrial Area, 12/6, Mathura Road, Faridabad, Haryana (India)–121 003. Tel. / Fax +91 129 413 6901-05 (Five numbers). Email: info@ppi.co.in.

The section titled "Soymilk system" states: "This is a tabletop plant for producing soy milk / soy paneer. 'Soya Cow' SC-20 is a Table-top machine that makes high quality soy milk at the cottage industry level using a break-through Canadian technology.

"An SC-20 produces 14 liters of soymilk every half an hour (using 2 kg of soybeans). This milk could be converted into 2.5-3 Kg of tofu (Soy Paneer). The machine includes accessories for making Tofu also.

"The machine requires 5-10 sq.m [square metres] area with domestic power supply for its installation (1 HP single phase 220 V).

"This machine is equipped with the deodorizer which removes the off flavour from the soymilk."

Note: Letter (e-mail) from Raj Gupta of ProSoya Inc., Ottawa, Ontario, Canada. 2010. Aug. 29. SSP started building small soymilk machines in 1994-95 under license from us. In about 2006 this manufacturing was then transferred by SSP to Pristine Plants (<http://www.ppi.co.in/>). SSP's Managing Director transferred the technology to his brother-in-law, who created Pristine just to focus on the SoyaCow and nothing else. Ask Dr. Ratan Sharma for details. They have sold several hundred SC20 machines in India and abroad. An SC20 is a Soya Cow made in a 20 litre vessel; the soymilk capacity is 15 litres per batch, 2 to 3 batches per hour depending on the boiler capacity. This soymilk and tofu equipment is based on the designs of Raj Gupta and ProSoya Inc. of Canada. Address: Registered office: 124-B, Pocket-A, Mayur Vihar Ph-II, Delhi, India 110 091. Phone: +91 22 77 5335.

8606. ProSoya Inc. (Website printout–all). 2010. www.prosoya.ca Printed Aug. 29.

• ***Summary:*** A very stylish website. Contents: Home page. About us: Welcome to ProSoya, what we offer, our technology, soymilk systems, products know-how, our customers.

Solutions: Solutions at your fingertips, the ProSoya advantage, soymilk systems (ASC 50, VS 200, VS 1000-4000. AVS 1000 / 2000 / 4000 / 8000 / 10000 / 20000). Other solutions: Tofu production (tofu boxes, pressing tables, cooling tanks, ConTofu–a patented continuous curding system), soy yogurt production, existing system upgrading, UHT sterilizers & HTST pasteurizers, homogenizers, aseptic and ESL form-fill-seal fillers, formulation systems, mixing tanks, chilled soymilk storage tanks, CIP systems, aseptic puffer tanks.

Products: Soy beverage know-how, soymilk extract and powder, private labels, product development (we can develop products for you). What's new. Contacts. Updates: Four printed pages of updates (former news releases, most recent first; from 11 Nov. 2009 back to 1 July 1998). FAQs: Frequently asked questions are grouped into these categories: Related to soybeans, related to soymilk, related to soy beverage, related to soymilk & beverage packaging, related to tofu production, related to soy yogurt production, related to okara (fibrous residue), miscellaneous (What books are available to learn production of soymilk, etc.?). Contacts, map, and driving directions. Main website (Home).

Note: Each page has a Yahoo! Babel Fish translation engine. Address: 2-5310 Canotek Road, Ottawa, Canada K1J 9N5. Phone: +1 613 745 9115.

8607. Drosihn, Bernd. 2010. Tofutown.com: Network of activities. To do list for a sustainable world. Portrait [Tofutown.com: Network of activities. To do list for a sustainable world. Portrait]. Tofutown Wiesbaum, Germany: Tofutown.com. 12 p. Illust. (all color). 30 cm. [Ger]

• ***Summary:*** Contents: Tofu is coming: In 1980 tofu was sold in about 100 Reform Houses, Bioläden, and vegetarian restaurants in Germany. In 2010 it is sold at more than 40,000 locations in a great variety of forms. Tofutown is there: Making it easy for people to eat and drink without going through the detour of animals.

After 30 years of making tofu in Germany, all is well. Photos show and earlier and present view of the company's plant.

Brands: Viana: Listen to your heart. Veggie life. Demeter (First soya sprout drink). Soyatoo whipped soy cream. Private labels. Tofu Musick.

Marketing. To youth. Quality. Customer relations.

Protecting animals and the environment, health. We believe in food democracy. Tofuismus No. 6. "In a Tofu Body lives a Tofu Spirit."

Tofu Fact No. 4. Four photos inside and outside the company's headquarters.

Nine website URLs and four photos. Very big numbers. Awards and prizes.

Milestones in the company's history / chronology: 1981/82–Founding of the tofu collective Soyastern, at the time the 3rd so-called "Tofurei" in Germany. In the 1970s and 1980s many small tofu projects were based on vegetarianism.

1988–Founding of Viana Naturkost GmbH on Cologne.

1990–Move to a larger building in Cologne.

1992.–Move to a former dairy in Euskirchen Kuchenheim.

1995. Expansion. 1997 Expansion.

1999–Move into a new building in Wiesbaum / Vulkaneifel.

2001. Detour to Wiesbaum.

2002–Develop the "Veggie Life" brand.

2003–Rename the company Tofutown GmbH.

2004–Development of the "Soyatoo!" brand.

2005–Major expansion of the cold storage area and the final packing area.

2007–Expansion of production.

2008–Start-up a Spaceshuttle Tofu- and Soymilk plant.

2009–Establish Tofutown North America LLC in San Francisco, California, for marketing the company's products in North America and Canada.

Note: During the years 2008 (*Inbetriebname*) and 2010 (Take over a modern production facility formerly owned by De-Vau-Ge Gesundkostwerk in Lueneberg) the story gets very complex, so Shurtleff writes Drosihn to please explain what it means. He kindly explains the 2010 entry in an e-mail dated 1 Nov. 2010: "I'll try to answer your questions. It is a little Gordian [knot] and complex: De-Vau-Ge in Lüneburg is a 'big city' and we did take over a 'small garage' (a small but separate building including about 60 employees) where the home of the 'vegetarian production' has been situated for years. The present owners of the 'De-Vau-Ge Dailycer Group' (50% is owned by 'One Private Equity' a Chase Manhattan Bank PE Company and 50% is owned by the Seventh-day Adventist Foundation 'MSP') focused the company strictly to the core business 'breakfast cereals' and carved out everything else to spin off. (Vegetarian Products) to Tofutown, Baby Food (to Sunval Company) and so on.

Already in 2007 all the health food businesses (brands for so called 'Reform Häuser' and natural food stores and supermarkets) owned by De-Vau-Ge has been carved out to a daughter company named 'Prima Vita' and moved to 'Heimertingen' in the South of Germany. So they did concentrate on the health food brands (most important one is 'Granovita,' the other ones are 'Eden,' 'Linusit,' 'Granovital' and also the smaller ones 'Martin Evers' and 'Bruno Fischer,' in total maybe 10 to 15 health food brands). Nowadays also the other European businesses are consolidated into the newly developed 'Bio Herba Group' which is beside the 'Prima Vita' in Heimertingen also Granovita UK and Granovita Spain. This health food business in total is, compared to the De-Vau-Ge Dailycer Group, of almost no economic importance and is still owned by Seventh-day Adventist money. The De-Vau-Ge Dailycer Group is a competitor of the Kellogg Co. and Nestlé in breakfast cereals and makes about 500 billion Euro turnover [sales] per year. They have several locations in Europe (France, Netherlands, UK, Switzerland).

"Tofutown is still very small compared to this big business; it has two production locations in Germany (Wiesbaum and Lüneburg) and a small bureau in San Francisco.

"A complex story and this is only the short version. Good to hear that you are well and still interested in companies and soy foods and the developments on the market.

Follow-up e-mail (Nov. 2): "There is a SoyaCow (made by ProSoya) grazing and giving milk in Tofutown. Frank Daller and Raj Gupta are both very credible people in the soy market.

"Yes, you are right with the mad accountants and also with mad consultants.

"I do use Google Books and Wikipedia as you do. In my Tofugraphy there is a scene where I tried to register a 'Tofu company' at the city hall somewhere in the beginning of the nineties and the two guys in the line before me tried to register a 'search engine.' Both were completely unknown and therefore nearly impossible to register. Now we have Tofu in every supermarket and we have Google on every computer." Address: Founder and president, Tofutown.com

GmbH, Industrie und Gewerbe Park, D 54578 Tofutown Wiesbaum, Germany. Phone: 06593 9967-0.

8608. United Soybean Board (USB). 2010. Consumer attitudes about nutrition: Insights into nutrition, health, and soyfoods. 17th annual national report. Seattle, Washington: USB. 12 p. Oct. 28 cm.

• ***Summary:*** Methodology: "This year represents the fifth year we have adopted an online self-administered survey as our methodology, a significant change from random telephone interviews. The survey, conducted by an independent research firm [in Seattle, Washington] in February 2010, includes 1,000 random surveys, providing a sample that is consistent with the total U.S. population. The study's margin of error remains ± 1.9 to 3.1%, with a confidence interval of 95 percent."

Contents: Introduction. Methodology. About USB. General nutritional attitudes and concerns. Examining the nutritional facts panel. Obesity concerns. Strategies for improving overall health. Soyfoods and health perceptions. Health reasons for seeking soy. Cooking and salad oil impressions. Soy in the media. FDA-approved health claim. Opinions on biotechnology. Spotlight on biotechnology. Trans fat awareness and opinion. Awareness and usage of soy products. Restaurants and soy products. Occasion preferences for consuming soy.

Awareness and usage: "37% percent of Americans consume soyfoods or soy beverages once a month or more, approximately five percentage points higher than during the period between 2006 and 2008. Conversely, 35% indicate that they never consume soy, which has decreased steadily since 2006 (then at 43%). For the seventh year in a row, consumers reported the most familiarity with soymilk, soybean oil, tofu and soy veggie burgers.

"Soymilk continues to be the most regularly consumed soy product, with nearly one-quarter of Americans reporting that they drink it regularly. For comparison, in 1999, 18% of consumers reported that they had tried soymilk. By 2010, the number of consumers who have tried soymilk has more than doubled to 45% of all consumers.

Edamame holds the number two spot and has surpassed veggie burgers among the top three most consumed soyfoods for the past two years. In fact, it has more than tripled in popularity since 2005 (then at 4% and now at 13%). Plain white tofu follows in third place, on par with 2009 at 9%."

A table shows the "Top 20 soy products by awareness." Soymilk 90%. Soybean oil 56%. Plain white tofu 56%. Soy veggie burger 54%. Soynuts 40%. Soy protein bars 37%. Soy infant formula 36%. Soy latte / soymilk in espresso coffee drinks [as at Starbucks] 36%. Edamame 34%. Dried or canned soybeans 33%. Cereal bar / energy bar 32%. Miso 29%. Soy ice cream / cheese 28%. Soy yogurt 27%. Soy hot dogs 26%. Flavored / marinated tofu 24%. Soy supplements 21%. Soy flour 21%. Soy breakfast cereal 18%. Textured soy protein 16%. All others mentioned 14% or less.

Occasion preferences for consuming soy (in descending order of preference): dinner 39%, breakfast 30%, lunch 22%, mid-afternoon snacking 19%, late evening snacking 13%, mid-morning snacking 9%, desserts 5%.

"In 2010, 84% of consumers rate soy products as healthy, down one percentage points from 2009." A graph (p. 6) shows this increase in awareness (82% in 2006, 78% in 2005, 74% in 2004, 74% in 2003, 74% in 2002, 69% in 2001, 76% in 2000, 71% in 1999, 67% in 1998).

Note: As of Oct. 2010 this full survey is available gratis in PDF format at www.soyconnection.com /health_nutrition / pdf/.

8609. President Bill Clinton talks to CNN's Wolf Blitzer about his new plant-based vegan diet. 2010. Television broadcast. CNN. Sept. 21.

• ***Summary:*** Blitzer: What kind of diet are you on? How did you lose so much weight?

Clinton: The short answer is, I went on essentially a plant-based diet. I live on beans, legumes, vegetables, fruit, whole grains... I drink a protein supplement every morning. No dairy. I drink almond milk mixed in with fruit and a protein powder, so I get the protein for the day when I start the day. It changed my whole metabolism; I lost 24 pounds, and basically got back to what I weighed in high school. But I did it for a different reason. I wanted to lose a little weight, but I never dreamed this would happen.

I did it because, after I had this stent put in, I realized that even though it happens quite often that after bypass, you lose the veins, which are thinner and weaker than arteries; the truth is that they clogged up, which means that the cholesterol is still causing build-ups in my veins, which were part of my by-pass. Thank God I could take the stents. I don't want it to happen again. So I did all this research, and I saw that 82% of the people since 1986, who have gone on a plant-based diet, no dairy, no meat of any kind (no chicken, turkey)–but I eat very little fish, but not often. If you can do it, 82% of the people who've done that have begun to heal themselves. Their arterial blockage cleans up, the calcium deposits around their heart break up.

This movement has been led by a doctor named Caldwell Esselstyn, Jr. (M.D.) at the Cleveland Clinic [Ohio], Dean Ornish in California, the doctors Campbell father and son, who wrote the China study, and a handful [sic, thousands] of others. We now have 25 years of evidence. And so I thought, since I need to lose a little weight for Chelsea's wedding, I'll become part of this experiment. I'll see if I can become one of those that can have a self-clearing mechanism. We'll see.

Seeing grandchildren is really the big deal. Hillary and I love and admire our son-in-law and our daughter, Chelsea. If they have grandchildren, we'd like to be around to do our part.

8610. Sharma, Ratan. 2010. Re: Work with soymilk and tofu in India and worldwide. Letter (e-mail) to William Shurtleff at Soyinfo Center, Sept. 21. 2 p.

• ***Summary:*** "After completing my Ph.D. on soymilk and tofu in 1993 at Banares Hindu University in India, I started working for a Canadian non-governmental organization (NGO) named Child Haven International (CHI). Please see www.childhaven.ca. I was introduced to them by Dr. Raj Gupta of ProSoya. ProSoya had developed the SoyaCow technology and through CHI they wanted to introduce this technology to benefit the people of India and other developing countries. I started working for CHI in India after receiving intensive training in Canada on the SoyaCow technology (which was in the developing stage at that time), project formulation and other related subjects. CHI was supported by some funding from the Canadian International Development Agency (CIDA) for this project. The main objective of this project was to create employment opportunities and to provide low cost nutrition to the Indian masses. In 1994, on behalf of CHI and ProSoya, I transferred this technology to SSP Private Ltd., Faridabad, India. SSP is based near Delhi.

"It is important to mention here that in the latter part of the 1980s a few companies had tried introducing soymilk in the Indian market through large scale production (Tetra Pak, poly pack, etc.) but failed for many different reasons, so they stopped their operations. I worked hard to establish this technology in India, helping SSP in manufacturing quality machines and helping the users of this machine in product development, packaging, shelf life, marketing etc. I helped them in developing the products suited Indian tastes. Because of the previous failure of soymilk in the Indian market, I had to work very hard to introduce this product again in the Indian market and I tried to do it successfully.

"All the organisations involved in the promotion and establishment of this technology, considering its usefulness and the need for it in India and other developing countries, had no intention of making money. This was just for a noble cause and was done very successfully. We approached the Indian government and this machine was included under the Prime Minister's Employment Scheme where one can apply for a subsidised bank loan. In the meantime this machine was upgraded by ProSoya and SSP. I was involved from both the ends, coordinating between CHI, SSP and ProSoya. In the meantime SSP sold many machines to Russia and later Russians developed their own machine similar to this.

"It took time but this technology grew in many folds and Indian entrepreneurs started earning handsome money. Through this technology I promoted the small-scale soy food business in India and now close to four hundred such small factories are operating in India, producing soymilk, tofu, soy nuts, re-packaging defatted soy flour, making soy based noodles and other products. I am helping all of them. Based on the success of these small entrepreneurs a few companies started producing and selling the soymilk in Tetra Pack in India. From India these machines were sold to Nepal, Bangladesh, Pakistan, Sri Lanka and many other neighbouring countries.

"Besides this I promoted this small scale soymilk and tofu business in Uganda, Tanzania, Kenya, South Africa, Egypt and in some other African countries with the help of Malnutrition Matters, CHI, WISHH etc. Also, I helped Dr. Steven Kwon in getting the soymilk machines from India and using them in Afghanistan. Now there are many such machines working in Afghanistan successfully.

"On average, Indian entrepreneurs are making tofu in a range of 100 to 500 kg per day. Some are making 50-100 kg per day. Large scale soymilk business is also growing in India."

Ratan visited Spicer Memorial College in Pune in about 1999 to learn about and perhaps help with their soymilk production. He recalls that they were making very sweet bottled soymilk in various flavors, as well as tofu (which was certainly not canned in a tin). They sold these products at a canteen inside the college and they had two outlets in the city of Pune; he visited one of these which was on a narrow street and was not fancy.

Ratan remembers a company that started making tofu and soymilk in Ghaziabad using a large new plant from Takai (of Japan); he does not remember the company name, but it was not Amrit Protein Foods. When he arrived in Ghaziabad, he lived with the owners of this company for a month. They had recently closed the plant and did not take him there. Later all of their equipment was sold at auction by the bank as they were not able to repay their loan. They had a very nice tofu tray packing system and were selling the tofu in water-filled tray packing only. The owner of the company was a chartered accountant by qualification.

Ratan also remembers a company in Allahabad (both he and Rajendra Gupta of ProSoya are natives of Allahabad) that purchased a large plant from Takai through an agent based in Hyderabad. This plant was purchased by a cigarette manufacturing company named Shyam Bidi. The owner of the company was a politician, who had earned lot of money from his tobacco business. They had just launched the product, which they continued for less than a month, then closed down the business before the product had a chance to become known. This company may possibly have been related to Mishra Soya Food Products, which definitely had a Takai system and which either introduced or was about to introduce "soyabean based paneer" [tofu] in the Bombay market. Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

8611. Sharma, Ratan. 2010. Re: Work with the American Soybean Association (International Marketing), soymilk and tofu in India and worldwide. Letter (e-mail) to William

Shurtleff at Soyinfo Center, Sept. 22. 2 p.
• ***Summary:*** "I joined the American Soybean Association (ASA) in 1997 as a soymilk and tofu expert and since then I have been in touch with the ASA's International Marketing (ASA-IM) activities worldwide. Soybean and soy meal utilization in the animal sector is the first priority of ASA-IM as it consumes most of the soybean and soybean meal (utilised in poultry, animals, aquaculture, etc). But they also have a full-fledged food program in almost all their international offices and they have a substantial budget for this. I know these soy food promotion and utilization programs in India, Japan, China, Mexico, Middle East, etc. And we have these programs in Sri Lanka, Pakistan and Bangladesh through our India office.

"ASA-IM sends teams of potential and prospective entrepreneurs to the US and other countries for advance training on the soy food production and utilization. I have lead such teams to attend the advance courses on the soymilk, tofu, TVP and other products at INTSOY, Texas A&M and Kansas State University courses separately. These courses were attended by Pakistan, Bangladesh and Sri Lanka based soy entrepreneurs also. ASA-IM paid all their hefty course fee, hotel stay, as well as meals and other incidental expenses. The participants paid only for their international air fare. I also visited Bangladesh, Sri Lanka, Nepal and Pakistan so many times to help the soymilk and other soy food manufacturers in these countries.

"ASA-IM spends lot of money on the promotion of soy for the food uses all over the world. I may try to send you some pictures of these activities. These help in creating the market for the small, medium and large scale soy food producers. We do it for the soymilk, tofu, soy nuts, soy flour, TVP and all other soy food products manufactured and sold by the Indian soy food manufacturers.

"ASA-IM promotes the soy food business through the trade fairs, industry visits, helping them in attending government training programs etc. The Indian Government also helps in promoting the soy food business and products. Once they provided huge funds for the generic campaign of the soy food products in India and the advertisement program ran on the popular TV channels, radio, print media etc. for a few months. We coordinate the entrepreneur development programs through the government departments and they have run exclusive training programs on the soy food business in which hundreds of prospective and existing soy entrepreneurs participated.

"Soy fortified products are also popular in India. One of the Indian states, Gujarat, recently introduced wheat flour fortified with soy flour for public distribution system (a subsidised ration for the poor people). All this is run by government programs. The Government of India (GOI) feeds approximately 250 million children, women and men under various feeding programs and soy is the main protein source in most of these. They use other protein options also based on the price and the availability but soy is preferred by the government in these programs. We help them in the product formulation, recipe development etc.

"I introduced the soymilk, tofu and other small scale soy food production business to the Indian army, also for their soldiers who retire at an early age and go for low profile business. I gave them the option of the soy food business on a small scale after their retirement from the army. At one of the army rehabilitation centres they have installed soymilk, tofu and other soy food processing units to train their retiring soldiers. I go there from time to time and impart training to them also when the new lot of soldiers come for this program.

India has made an excellent progress in the soy food business on small, medium and large sale production and there continues to be tremendous growth in this field, especially the soymilk, tofu, soy flour, TVP, soy protein based products etc.; you can see a lot of these products in the super stores. One thing that is remarkable here is that besides selling there products in the rural and urban areas, the soymilk and other soy product manufacturers sell a substantial quantity of their product through the super stores and other organised marketing channels. I help them in making the good quality packaging with the proper shelf life, giving all the nutritional and commercial information on labels, following the rules and regulatory norms framed by the GOI, getting a bar code, taxation, industry licensing, etc.

More later, Ratan. Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

8612. Sharma, Ratan. 2010. Re: Work with soymilk and tofu in India and worldwide. Letter (e-mail) to William Shurtleff at Soyinfo Center, Sept. 26. 2 p.
• ***Summary:*** "There are close to 400 soymilk machines that I established in India after transferring the SoyaCow technology to SSP Ltd. in Faridabad.

"The first SoyaCow machine was sold in 1995 to a rural entrepreneur who ran this machine in an engineering college's canteen in Karnal (Haryana state). I kept track on his business for some time but then I lost touch when he moved to a new location. His son contacted me for some help after four years but since then I have no record of them. I don't think they are still in this business. Anyway, that was the first machine and I could recall that person sitting in front of the machine at SSP's floor and observing the trial of the machine before this was dispatched to him. He was amazed to see a machine producing milk.

"A few points for your information:

"In 1996 SSP Pvt. Ltd. (India) started to make SoyaCow machines.

"Punjab state has the highest number of soymilk machines and are number one in the soymilk and tofu production India.

"About 65% of the total soymilk produced in India is converted into tofu.

"Some of the soymilk producers prepare soy ice-cream, yogurt, mayonnaise, shrikhand (a local yogurt based sweet), rasogolla (a heat desiccation based Bengali sweet).

"On the small scale about 70% of the entrepreneurs make tofu and 30% sell their soymilk as flavoured soymilk.

"Flavoured soymilk is sold in Poly packs [sealed plastic bags], sterilised in the glass bottles, and also in cans which are distributed to schools for consumption at lunch.

"What kind of people and organizations use SoyaCows to make soymilk and tofu: Commercial entrepreneurs approximately 85%. Non-governmental organizations (NGOs) 5%. Homes for destitute children and women 4%. Schools 5%. Cafeterias and business foodservice where they serve the soymilk on a subsidised price to their factory employees, hospitals 2%. These commercial entrepreneurs serve all the above sectors separately.

"Please let me know if you have any questions about the above. I am attaching the list of some successful entrepreneurs. The actual list is long, so I have sent just a few."

Ratan attaches a 4-page table, titled "A few successful soymilk and tofu entrepreneurs," showing: (1) Company name. (2) Contact person, address, and phone number. (3) Products and quantity made per day. For example, for Rubal Soya in Punjab (which owns 3 SoyaCows)–the largest soymilk manufacturer shown: Flavoured soymilk 1,200 L (liters) per day. Tofu 200 kg. Soy nuts 25 kg.

Auroville Soya is run by Mr. Frederic Cordonnier and his wife, Catia. Samara Soy Products in Ludhiana, Punjab, makes 1,400 L of flavoured soymilk. Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

8613. Sharma, Ratan. 2010. Re: Work with soymilk and tofu in India and worldwide. Letter (e-mail) to William Shurtleff at Soyinfo Center, Sept. 26. 2 p.

• ***Summary:*** "The present price of the SoyaCow in India is as follows (Indian Rupees):

"SC20 without deodoriser–Rs. 175,000 (you really don't need a deodoriser if just planning to produce tofu only) but deodoriser is really effective for the flavoured soymilk business.

"SC20 with deodoriser–275,000.

"Tax: 4% on the total value.

"I have worked with the government and have had very good success in introducing soymilk, tofu and other soy products in the government-run residential / boarding schools (600 schools all over India). Although not all of them are using the soy products (for many different reasons), they all have the advice from their headquarters to use soy in their school menus.

"The Government of India (GOI) feeds approximately 120 million school going children by providing them lunch and at most of the schools they include soy products depending on its availability, price suitability, product quality etc. This program is called Mid Day Meal (MDM).

"Simultaneously GOI feeds approx. 130 million women and children by proving them the nutritious diet which is mostly soy based. This is called Integrated Child Development Services (ICDS). In both these programs they have certain norms of protein and calorific requirements.

"SSP manufactured and promoted the soymilk machine (SoyaCow). They did it for so many years without any monetary interest. After everything was established they transferred this business [on 9 Sept. 2006] to one of their fellow associates, Pristine Plants (PPI). SSP is a big Indian Food and pharmaceutical equipment manufacturing company. This was a very small business for them and at later stage they realised that because they were not earning anything from this machine through their Indian business so the interest of the company in after sales service was not up to the mark and they thought that this was not justified, so they transferred this business to Pristine Plants (PPI), which is a full-fledged company involved only this business including manufacturing, marketing, after sales service etc. SSP supplied so many machines to Russia and all over the world through ProSoya. SSP is still into this business and they manufacture and sell soymilk processing plants above 100 litres per hour capacity. Also, they manufacture and sell evaporators and driers for making the soymilk powder. They have good collaboration with the ProSoya. Evaporators and driers are their core competence." Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

8614. Child Haven International (Website printout–part). 2010. www.childhaven.ca Printed Sept. 28.

• ***Summary:*** Contents: Who we are (Our story, Gandhian ideals, directors, Fred & Bonnie, Patrons, Financial. The first ten years. The Cappuccinos. View video about Child Haven). What we do (Our Child Haven homes–India: Delhi, Gandhinagar, Hyderabad, Kaliyampoondi, Savarsai. Bangladesh: Chittagong. Nepal: Kathmandu. Tibet: Lhasa. A map of the Indian Subcontinent shows the location of each home. SoyaCow project. Literacy. Women's program). How you can help (Donating. Volunteering. Sponsorship. Support groups. Corporate support. Supplies. Wall of honour). Intern (Since 1985 about 1,000 interns have volunteered for 3+ months in India or Nepal).

"Inspired by the ideals and philosophy of Mahatma Gandhi, Child Haven International is a registered charity founded in 1985. We assist children and women in developing countries, who are in need of food, education, health care, shelter and clothing, emotional and moral support."

Gandhian ideals: 1. No recognition of caste. 2. Equality

of the sexes. 3. Non-violence (toward both humans and animals). 4. Vegetarian meals (The meals are rice and lentils and vegetables, with some soya milk and yoghurt from our SoyaCow machines, which were invented by Raj and Rashmi Gupta of Ottawa, Canada). 5. Respect for religious background. 6. Simple living (Each child has a little metal suitcase. All their worldly goods have to fit inside, and they do–very nicely).

Child Haven's SoyaCow project: "The SoyaCow machine is capable of making three gallons of soya milk in 30 minutes from 1.7 kg. of raw soybeans. The technology was developed by ProSoya Foods Ltd., a group of Ottawa scientists and entrepreneurs. The SoyaCow machine is used in Child Haven homes to produce Soya milk and Soya products for the children. It's also sold to economically disadvantaged women for their use as a cottage industry.

"In 1988 a SoyaCow Support Group was formed and by 1992 Child Haven International had purchased six SoyaCow machines. Child Haven received funding for this environmentally friendly project from The Canadian International Development Agency (CIDA). There are now 400 SoyaCow machines in India and it is being promoted in Africa. Charitable donations and fundraising events provided Child Haven's contribution to the promotion of the SoyaCow.

"SoyaCow technology produces a palatable, highly nutritious, cereal or almond flavoured milk without cholesterol. The milk and okara mash can then be used to produce other soya products such as yogurt, tofu and vada. One machine can produce sixteen-three gallon batches in an eight hour day–equivalent of a herd of 16 cows in India.

"SoyaCow machines are used in Child Haven homes in Kathmandu, Bangladesh, Hyderabad and Kaliyampoondi because soy milk is a low cost, high protein product which is cheaper to produce than cow's milk. From a given acreage, ten times as much soy milk can be produced at one third to one half the price of cow's milk. Soy milk made on the premises of schools and homes is safe from contamination by dilution with water. It is also free from the danger of transmitting tuberculosis or other diseases from infected cows.

"In addition to the health benefits of soya milk, Child Haven's SoyaCow Project has generated employment for women. These women are trained to operate the SoyaCow machines and sell the soya milk products, thereby achieving some economic self sufficiency and generating revenue which can be used for the benefit of their children." Address: Farmhouse, Maxwell, Ontario, Canada.

8615. Sharma, Ratan. 2010. Re: Work with soymilk and tofu in India and worldwide. Letter (e-mail) to William Shurtleff at Soyinfo Center, Sept. 28. 2 p.
• ***Summary:*** Under what name is tofu sold in India? About 35% is sold under the name of "tofu," 40% is "Tofu (soya paneer)" and 25% is sold as "Soya paneer." Because of regulatory issues in India, people are switching over to the name "Tofu" only.

How is tofu packaged when it is sold? About 50% is sold fresh and loose, 20% is sold in poly packs, and 30% is sold vacuum packed through the super stores. Poly packed tofu is also available in the super stores. Tofu is available in water filled pouches also but the percentage is very small. Fresh tofu is sold in local markets, vegetable markets and in stores that sell house hold supplies.

After the success of SoyaCow in India a few local companies also started producing these machines. This is quite unorganised in comparison to the PPI or SSP who have technically sound teams and are very professional for such business, are professionally marketing the machine and providing excellent after sales service. PPI sells approx. 60 machines in a year, twenty machines are sold by other companies and approximately 10-12 machines are imported from China and Taiwan. There are dealers of imported machines also. On an average 100 machines are sold every year in the Indian market. Not all users of these machine make it to a successful business and 30-35% of them close down their business within a year.

"The most popular soymilk flavours are vanilla, mango, rose flavour, pineapple, almond, and banana. In south India rose flavoured soymilk is very popular. Choice of flavours varies from place to place but the above flavours are standard and popular. Keshar-pista (blend) is also popular. At some parts of the country like Tami Nadu, Punjab, Haryana, etc., people like very sweet soymilk.

"Tofu is cooked in various ways like Indian Paneer, i.e., Matar Paneer, Palak Paneer, Kofta, Oofu Tikka Masala, etc. Tofu Bhurji (scrambled tofu) is also prepared and popular. In the Punjab area many people use spicy tofu as a salad with their alcoholic drinks. Tofu is used as filler material in the Indian snacks like Samosa, patties etc.

Work in Africa: I have visited South Africa five times and tried to establish cottage scale soy food businesses in that country as well. I have worked with Eden Manufacturing and many other companies in South Africa and imparted training also to interested people at Eden Manufacturing at Berg Village and Pretoria with CSIR (Council of Scientific and Industrial Research). Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

8616. Drosihn, Bernd. 2010. Tofu–Vom skurrilen Kampf um ein unscheinbares Weltnahrungsmittel [Tofu–From a ludicrous struggle to an unpretentious world-class food]. Mainz, Germany: Ventil Verlag, KG. 158 p. Illust. (many black and white photos). No index. 20 cm. [Ger]
• ***Summary:*** A very nice, informative book written in a very creative, humorous, light and playful tone. But lightly serious throughout about the importance of vegetarianism

and of not eating animals.

One example of this creative playfulness is the numbered "Tufuismus" ("Tofuisms" = tofu sayings) which appear, in random numerical order, throughout the book. Here is a sampling–from the many that are in English: "On the 8th day God created Tofu." "Earth to Mankind: Take global warming seriously–stop eating animals." "Tofu is a doorway to the sunny side of life." "Tofu is a love letter to your body." "Tofu gives you choices you never thought you had before." "Tofu loves you." "Take tofu–because how we eat is how we manage planet Earth." "Tofu talks to your body and mind." "Your Body is a Cathedral–don't litter it." "Tofu is easy on the only world we have." "Tofu helps you stay young and hot." "Tofu simplifies your life." "Tofu is Al Gore's best friend." "Share Tofu's vision of friendliness toward the environment and the animals on our planet." "Legalize Tofu!" "Tofu hurts NoBody." "Less meat–More Plants–More Planet." "Tofu gives rhythm to the sound of your life." "Tofu is meat 2.0."

The book also contains many numbered "tofu fact" boxes, a few with titles such "Fidel Castro Tofu Fact"

Happily, the book contains only a few pages of recipes using tofu, smoked tofu, and soymilk (p. 142-157)–as many as anyone needs.

The section titled "Addresses" (p. 158-59) contains names, addresses, and websites of "beloved tofumakers from the first generation" in Germany and the USA. A photo shows Bernd Drosihn, founder and president of Tofutown.com GmbH. Address: Founder and president, Tofutown.com GmbH, Industrie und Gewerbe Park, D 54578 Tofutown Wiesbaum, Germany. Phone: 06593 9967-0.

8617. Sharma, Ratan. 2010. Re: Color photos of soymilk, tofu, and SoyaCows in India. Letter (e-mail) to William Shurtleff at Soyinfo Center, Oct. 1. 4 p.

• ***Summary:*** Photos taken by Ratan Sharma 2003-2007 show: (1) (6) A SoyaCow SC20 with each of the 7 main pieces of equipment labeled. The first SoyaCow was developed for Child Haven International (CHI) in India and shipped in 1992. Although, the Canadian International Development Agency (CIDA) helped with funding in the beginning, they later stopped funding and CHI carried it forward through its own funding. Today SoyaCows are installed at all Child Haven homes in India, Bangladesh, Nepal and Tibet.

(2) This 200 liter per hour plant was made by SSP in India and supplied to a company in Chennai (formerly known as Madras, in southeast India) through ProSoya. Dr. Ratan Sharma standing in blue shirt.

(3) This soy restaurant named AIWO (meaning unknown) was started in 2003 by the Fresh and Honest Café (a coffee company selling the coffee beans, powder and leasing the coffee vending machines). They were using a big SoyaCow by in India by SSP (model VS200; capacity 200

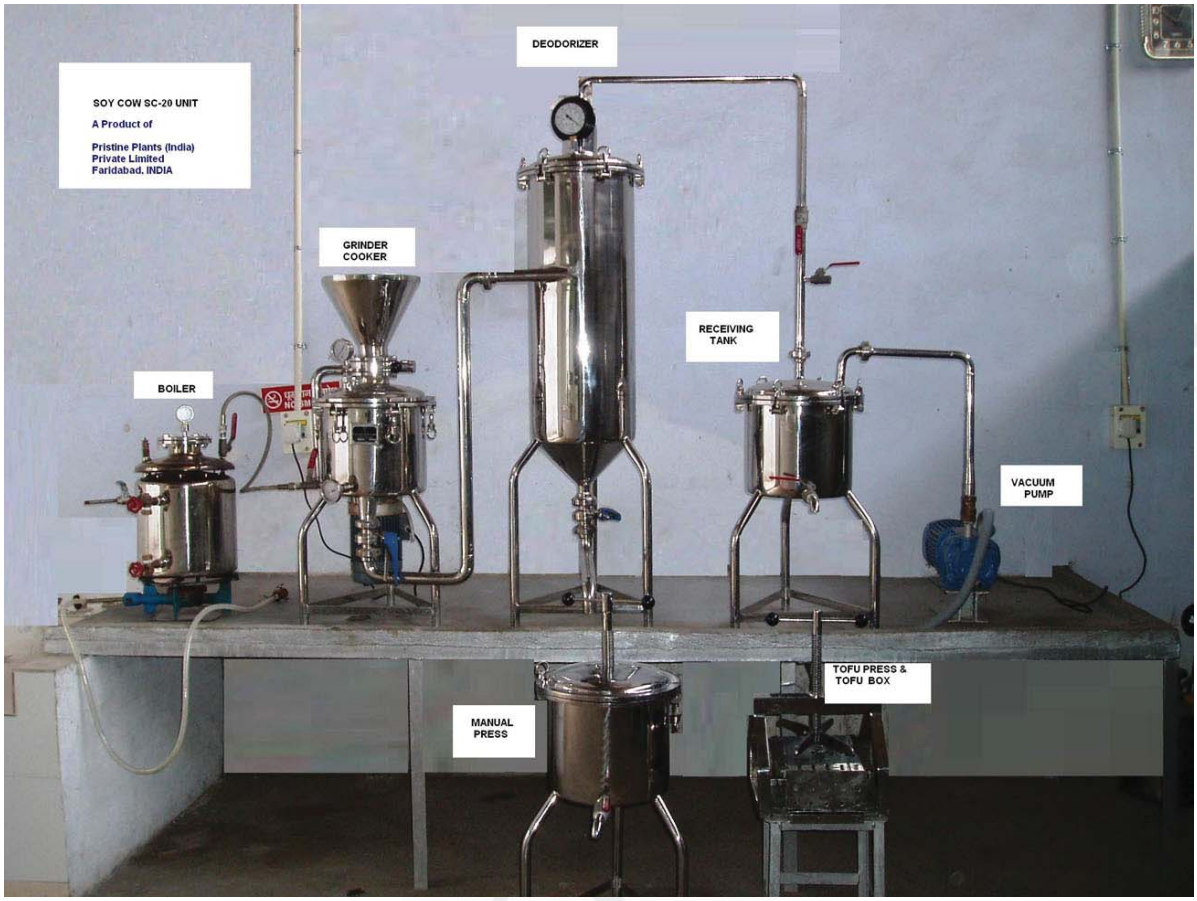
liters per hour). The restaurant served more than 20 kinds of soy food dishes, each at a fixed price. The dishes were served on a conveyer belt that ran around to each of the tables. It was developed by a big group called Sterling Group. They offered some discount to their employees. Some Singapore based company prepared this restaurant and developed the modalities.

(4) Bottled soymilk (in crates ready to be loaded in the truck) was produced by Fresh and Honest Café. Their brand name was Soyfresh. They sold the soymilk and tofu through super stores (supermarkets). Soymilk was sold in glass bottles (sterilised) and poly bags. Tofu was sold only vacuum packed. I helped all these companies from the procurement of the soymilk machines, product development, packaging, shelf life, marketing, etc.

(5) Uncut tofu in India. These SoyaCow users, after making the tofu, put it in water for cooling before cutting it into pieces and packing. Each block of tofu weighs about 3 kg (6.6 lb).

(6) A herd of six SoyaCows, each with a tall stainless-steel deodoriser to improve the taste of soymilk, is ready for dispatch at the SSP factory. Ratan Sharma inspected each machine before it was shipped.

(7) Vakratund Pharmaceuticals (VF) which, despite its name, made only soymilk and tofu at Udaipur, in the state of Rajasthan in western India. (8) They purchased a 200 soymilk plant with a capacity of 200 liters per hour made by



SSP. Because of the huge initial investment this company wasn't able to survive. Their product quality was excellent and they were supplying it to many states. They eventually sold their machinery to other company.

(9) A mobile soy kitchen selling soymilk and tofu.

(10) The advertisement used by the mobile soy kitchen.

(11-13) Various soy products on the shelves of Dorab Ji, a very famous super store (supermarket) in Pune (formerly Poona). The same products are in other area super stores: Food World in Pune, Spencer's in Bombay, etc. Chetran Foods in Pune is well known. Note Silk brand soymilk from the USA along with the Indian Sofit and Staeta in Tetra Pak cartons, made in India by ProSoya, headquartered in Ottawa, Canada. At the bottom of the shelf is sterilised soymilk in 200ml, 500 and 1,000 ml glass bottles. These soy products are in the soft drink cooler, so soy products have been accepted in the leading super stores and are as visible as Coca-Cola. Pepsi, etc. (14) Two brands of tofu in the dairy section (refrigerated) of a super store: Soyace Soya Paneer and Soyfit Soya Paneer (Tofu). The Sofit tofu is made by Wega Industries in Bombay; they have their own large-capacity tofu factory. Fifty percent of tofu and soymilk manufacturers sell their products on their own; the rest sell them through super stores or malls or exclusive restaurants. In the Punjab soyfood makers have developed some special soy retail outlets. A few manufacturers use bicycle rickshaws–somewhat like traditional tofu makers in Japan who carry their wares on a bicycle and sell directly to people in their homes.

(15) Women's employment: Making tofu at a soymilk site in a remote area of Hyderabad.

(16) A SoyaCow SC20 with tall stainless steel deodoriser (for better soymilk flavor) in the center.

(17-18) Training entrepreneurs to make soymilk on a SoyaCow SC20.

(19) Ratan Sharma cutting tofu at a soymilk and tofu training program in the tribal areas of Orissa state.

(20) School children waiting for or drinking soymilk at the same training program.

(21-22) The VitaGoat from Malnutrition Matters (MM) of Canada requires no electricity. The soaked soybeans are ground with a bicycle powered grinder. The soymilk is heated using a very efficient wood-fired boiler. Here is a VitaGoat training program in the tribal areas of Orissa. Malnutrition Matters is associated with Child Haven International (CHI). "Frank Daller is a volunteer of CHI and is one who was involved in the SoyaCow technology transfer from Canada to India in coordination with me. He was working for ProSoya at that time. We have very good relations. I helped MM also in transferring their VitaGoat (VG) technology to GD Machines (a subsidiary of SSP which later merged with SSP) almost two years ago. I help MM also. Their machines are manufactured by GD and sold in India and other countries. These machines are marketed by MM only. Off course, I help their clients in the way I help the SoyaCow users."

(23) Fresh soymilk is prepared by an NGO and served fresh to children at a school in Orissa, which has no electricity or refrigeration.

(24-25) At some of the army rehabilitation centers soymilk and tofu processing systems (SoyaCow) have been installed to impart training to retiring solders (who retire before age 30) so that they could choose soy foods business as a career option after retirement rather than entering low-profile jobs such as guards, drivers, electricians, etc. Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

8618. Sharma, Ratan. 2010. Re: Color photos of soya flour, soya nuts, and soya oil made in India. Letter (e-mail) to William Shurtleff at Soyinfo Center, Oct. 1. 2 p.

• ***Summary:*** Photos taken by Ratan Sharma 2003-2007 show: (1) Soya Shakti soya flour in a super store (supermarket). (2) On the top shelf is Chetran's Soya Aata. Two other brands of soya flour are in the photo.

(3) Salt roasting of soynuts for a commercial scale production; the soybeans and salt are roasted together in the hot metal pan. This product is excellent in taste. This company Bansal Nuts based in Punjab feels that their products are better than the mechanically roasted soynuts.

In English, we say "roasted peanuts" or "roasted soybeans," but in Hindi all roasted legumes and/or grains are simply called "roasteds" (*bhuna*).

In stores, roasted soybeans are usually sold labeled (in English or Hindi or both) in plastic bags–unmixed with other roasted grains or legumes. However a small percentage of products sold in stores or markets contain a roasted mixture of soybeans, wheat, rice, and/or chickpeas (garbanzo beans).

In India, roasted soynuts are usually sold through the direct outlets of the manufacturer and through super stores. Roasted soynuts are sold all over India. At some places they are also included in the school lunch program, which is paid for by the Indian Government.

In India, soyabean is mostly dry roasted. Many small scale soymilk and tofu manufacturers make soy nuts by roasting whole dry soybeans in sand. In India ground nuts (peanuts) and chick peas (garbanzo beans), rice and other grains are roasted in the sand. This job has been done by some communities from centuries. They charge some money, or a little portion of the material to be roasted, and do it for any one. These roasted legumes and grains used for the snacks in the rural and urban areas from centuries. Street vendors in the cities near the courts, hospitals, schools, bus stops, etc. roast and sell these grains or a multigrain mixture. It is not common to roast soybeans (except indigenous black soybeans called *bhatt*) for home consumption. Roasted soybeans are usually sold in super stores in plastic bags. The Hindi name for soybeans dry roasted in sand is *bhuna,* but

most people just call it "roasted" (in English). The name for dry roasted soybeans sold in plastic bags in stores is "Packet" or *thaila* (in Hindi).

Some small soymilk and tofu makers sell fried soy nuts as well but percentage of these is very low compared to the dry roasted soy nuts. The soybeans are first soaked in water about 2 hours; then they are roasted in salt. After the sand is removed (by a sieve), a small amount of oil, salt, and some spices are applied to the soybeans. Very little oil is used so that salt and spices could stick on the roasted beans. Soybeans prepared with oil, salt, and spices are called *masaledar.* But in general in India, whole soybeans are not fried.

In Jammu and Kashmir (J&K, the northernmost state of India) and some other places soy nuts are sold by the street vendors also in the way they sell other roasted grains. In hilly areas also they grow black soybean called *Bhat / Bhatt* (in Hindi) and roast it for their consumption especially in the winter. This indigenous black soybean is grown mostly in the Himalayan range, especially in the Kumau and Garwal regions.

In the villages they use dry leaves to fire their hearths for roasting. They store these dry leaves during the fall / autumn and use them year round for the roasting of the legumes and grains brought by the farmers and other villagers.

(4) Soy-fortified pasta, which is made by small entrepreneurs.

(5) Roasted soybeans coated with jaggery–traditional unrefined sugar. It is a concentrated product of cane juice without separation of the molasses and crystals, brown in color.

(6) A few companies in India use expellers (a mechanical process) to crush soybeans, yielding soy oil and low-fat soy meal. The meal is ground finely to make soy flour. Both are sold at premium prices compared to the oil and flour from solvent extraction (a chemical process, using hexane solvent, a volatile petroleum fraction). Here are bags of the flour.

(7) And the oil. Note the word "Natural" on the label. Note: Even though the manufacturer of this oil and flour is named "S.P. Solvent (Pvt.) Ltd." (which sounds big and modern) they use only expellers and mechanical processing.

(8) A small, single serving packet of soya nuts (soynuts), nicely packaged. Anjali Mukherjee is a diet therapist and well known food and health writer for *Times of India.*

(9) Allegro Soya Nuts from Taj Majal.

(10) Coca-Cola and soyfoods get equal billing in India.

(11) Soya Nuts packaged in plastic bags. Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

8619. Sharma, Ratan. 2010. Re: Color photos of soymilk, tofu, and SoyaCows in India. Letter (e-mail) to William Shurtleff at Soyinfo Center, Oct. 1. 4 p.

• ***Summary:*** Photos taken by Ratan Sharma 2003-2007 show: (1) Training of the prospective soymilk and tofu entrepreneurs (men's group).

(2) In the training program: By using a curding agent / coagulant, soymilk is curded to make soft white curds floating in yellow whey. In India, the most widely used curding agent is citric acid, followed by calcium sulphate, then magnesium chloride. (3) The curds are now ready for pressing to make tofu. This group is part of the Soy Entrepreneur Development Program (EDP). This program was conducted in coordination with the American Soybean Association–International Marketing (ASA-IM) and the Government of India (GOI).

(4) A collage showing the labels of well-known soyfood products made in India. Note Ruchi's Nutrela (chunks of textured soy flour) along the top. Soya Sakthi in the lower right, Sofit soy milk in the lower left. Soyfoods now have a good, healthy image in India–as they do throughout Asia.

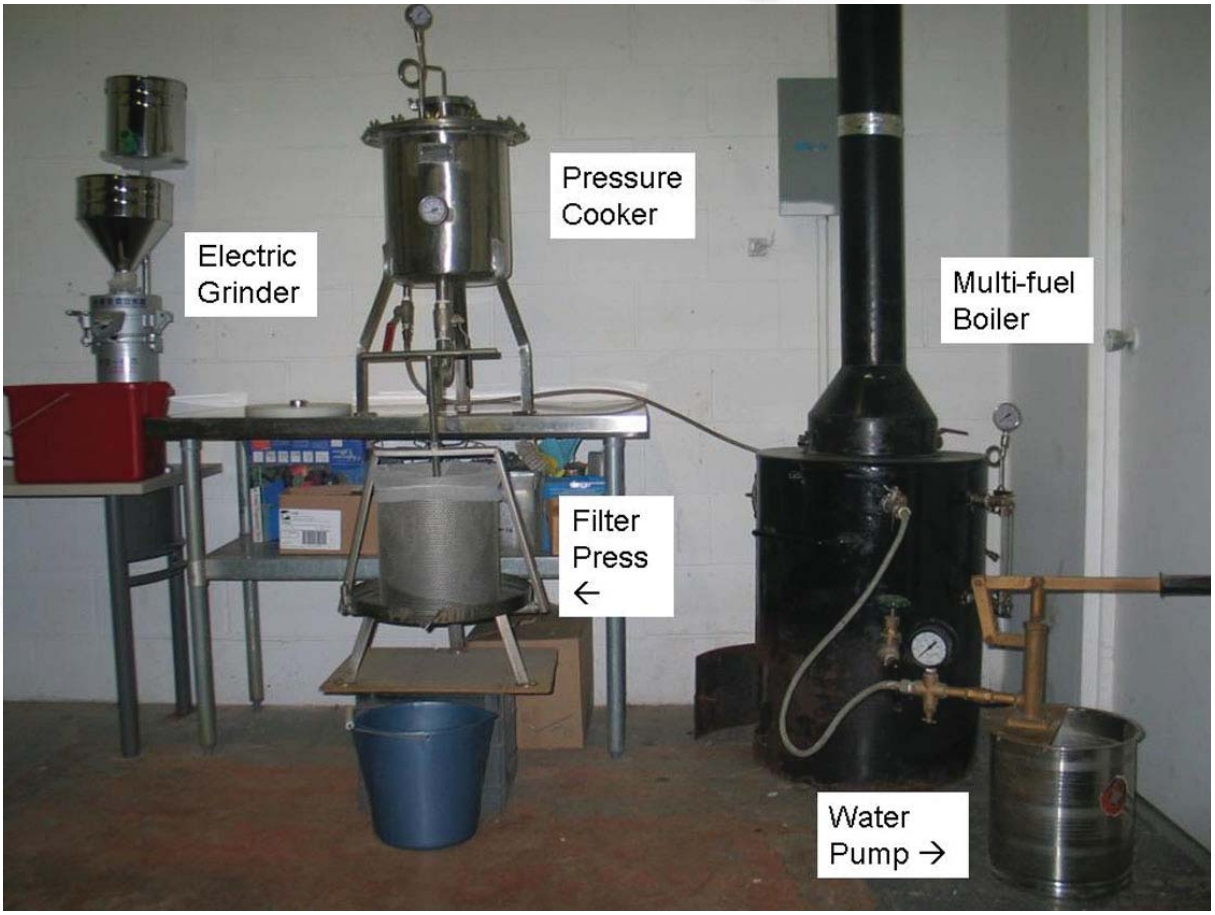
(5) SoyCow 'M' developed by Malnutrition Matters in Canada; the five main pieces of equipment are labeled: Electric grinder, water pump, multi-fuel boiler, pressure cooker, and filter press. A simpler unit, called the VitaGoat, comes with a bicycle powered grinder (which requires no electricity). Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

8620. Sharma, Ratan; Shurtleff, William. 2010. How soymilk came to India after 1970; fragments of a long and interesting story. Part I (Overview). *SoyaScan Notes.* Oct. 7.

• ***Summary:*** 1971–Pantnagar Soymilk Products Pvt. Ltd. launches Sipso Soymilk, made at G.B. Pant University of Agriculture and Technology, Pantnagar, Uttar Pradesh, India. This is the earliest known commercial soymilk produced in India. The equipment is imported from the USA and funded in large part by USAID. The patented "Illinois method" is used to make the soymilk, from which the okara (dietary fiber) is not removed, but is finely pulverized by a high-pressure homogenizer. The selling price (which allows some profit) is about one-third that of cow's milk. By 1978 this plant had produced nearly one million bottles of soymilk, which had been sold to the students and test marketed. A New Delhi Plant was established in 1979. In 1987 this product is still on the market, being sold in Prepac aseptic 200 ml plastic bags. By Oct. 1978 M/S Pantnagar Soy Products (the new name) in New Delhi was producing about 100,000 packets of soymilk per day. Each packet contained about 200 milliliters of soymilk.

1974–Soyghurt Food Products & Co. launches Soyamilk, made at Wardha Rd., Sitabuldi, Nagpur 440012, Maharashtra (MS), India. This company was started in about 1974 by Dr. S.L. Kothari, formerly of the Dep. of Food Science & Technology, G.B. Pant Univ. of Agriculture and Technology, Pantnagar (Nainital), UP, India.

1979–Spicer's Food Specialties of Pune / Poona



launches Soyalac (canned soymilk) and Soya Soft Drink (in bottles), with a full page ad in the *Times of India.* The products are made by Spicer Health Foods, at Spicer Memorial College (a Seventh-day Adventist Organization), which started making Soyalac in 1973 for the students and for delivery to customers over a small radius, and Soya Soft Drink in 1979. The plant was started by Dr. Harry W. Miller, a great man and soyfoods pioneer, worldwide.

1979–The Institute of Buddhist Dialectics introduces Soymilk. It is made on a small scale by the Tibetan Buddhist community in exile at Dharmasala, Dist. Kangra, Himachal Pradesh, India. It is consumed mostly the monks and other members of the community, but small amounts are sold to local residents who bring their own container.

1981 May–Anuradha Industries (of Bombay, India) launches Amisoy (Spray dried soyabean milk powder) with a large ad in the *Times of India.* The product is still on the market in Jan. 1982.

1987 early–Noble Soya House (with partners Godrej, a powerful distributor, and Great Eastern Shipping) launches India's first major soymilk product (named Noble House Great Shake) and first soymilk product sold in aseptic Tetra Pak cartons. The soymilk processing plant, made by Kibun of Japan, had a capacity of 4,000 liters per hour. At this time, there were four Tetra Pak lines in the plant for this product only Targeted to youth, the product was not successful; it was more than a decade ahead of its time.

1988–Premier Industries (India) on Indore, launches Tuffy Hi-Protein Soymilk (in Malt, Orange, Banana, Mango, Strawberry, and Chocolate flavors). The soymilk equipment was from Mitsubishi in Japan. The product was discontinued in 1989.

1989 May 29–Amrit Protein Foods Ltd. (Ghaziabad, Uttar Pradesh) launches Big Sipp Soyamilk [Mango Shake, Banana Shake, Rose, or Pinakool (Pineapple)]. The soymilk processing plant was made by Mitsubishi of Japan. It is packaged in 200 ml aseptic, multi-layered, metalized Prepac Standi-Pak pouches. The product was discontinued in 1991.

1990 Nov.–A SoyaCow, invented by Raj Gupta (a machine that makes palatable, low-cost, high-protein soymilk) is now making soymilk in Hyderabad, India, at one of the Child Haven homes for poor children. The machine was made in Bombay, India (*Child Haven International* newsletter, fall 1990; *Toronto Star,* 19 June 1991. p. D2).

1991 May–The first SoyaCow made in Canada (Ottawa, Ontario) is sent to Child Haven in India (*Child Haven International* newsletter, spring 1991 and summer 1991).

Note: Dates and quotations from 1992 to 1996 are from the *SoyaCow Newsletter,* published by ProSoya, Ottawa, Ontario, Canada.

1992 March–"Child Haven International of Maxville, Ontario, has purchased six SoyaCow systems for their Soya Milk Cottage Industry Project in India. The project is supported by the Canadian International Development Agency [CIDA] and charitable donations from the public.

1992 June–CIDA funds Child Haven to buy seven more SoyaCows. They were shipped to India by air on 30 Nov. 1992.

1993 Sept.–Child Haven has hired Ratan Sharma, PhD, for their SoyaCow project in India.

1994 March–Child Haven has established a SoyaCow Centre in Ghaziabad, India, about 30 miles drive from Delhi to serve the growing population of SoyaCows in India. The Centre's main objective is to help women in self-employment by producing and selling soymilk and its products at affordable prices.

1995 June–SSP to manufacture SoyaCows in India. "In a recent visit to India, Frank Daller, President of ProSoya Inc., made arrangements with SSP of Faridabad, India, to develop an SC20 prototype in stainless steel. SSP is a reputable stainless steel fabricator for the dairy, food, and chemical process industries." "Earlier attempts of technology transfer to India to manufacture SoyaCows were not successful..."

1995 Dec.–Vocational training in soymilk production and use started in India at Manav Vikas Parishad of Ghaziabad in collaboration with the Government Polytechnic College and the SoyaCow Centre; they have developed a short course.

1995 Dec.–SSP gets approval from ProSoya Inc. to manufacture the first 10 SoyaCow SC20s in India.

1997–The first SoyaCow is sold commercially in India, by Dr. Ratan Sharma; it is a model SC20. This is the start of a new era for soymilk in India, as small entrepreneurs start to buy soymilk equipment.

1998–After the early success of SoyaCow in India three local companies also started producing these machines, direct imitations or "rip-offs" of the patented ProSoya technology. Their equipment is very inferior in quality and their service is poor so their sales are poor even though their price is lower than the SC20.

2000–Godrej restarts soymilk production using the brand name Staeta (pronounced STET-uh) and packaging in Tetra Pak cartons as part of a co-packing agreement initiated by ProSoya Foods India (a subsidiary of ProSoya Inc. of Ottawa, Canada, founded by Rajendra Gupta). The soymilk is made at the original Godrej soymilk plant at Mandideep, after some modification of their equipment made by Kibun of Japan. Godrej observed that ProSoya's Staeta soymilk was successful in aseptic Tetra Pak cartons–requiring no refrigeration.

2003–ProSoya Foods, India Pvt. Ltd. installs its own 2,000 liter per hour plant at the Godrej's plant in Mandideep in order to make use of their Tetra Pak facility on a co-pack basis using the brand name Staeta. ProSoya plans to launch this product in December 2003. Godrej (using a 2,000 liter per hour soymilk processing plant) launched its own Tetra Pak (Sofit) soymilk about 15-30 days after ProSoya launched its product. Godrej now has several Tetra Pak packaging

lines. Staeta was actually launched in Jan. 2004 and Sofit was launched a month later.

2006 Sept. 9–SSP transfers their SoyaCow business to Pristine Plants India (PPI) Pvt. Limited. Pristine Plants is a new and independent company started by one of the relatives of SSP's managing director solely to manufacture small SoyaCows (SC20s). All these machines are based mainly on the ProSoya Technology. As of Oct. 2010 Pristine Plants is doing well financially.

2008 Oct.–ProSoya Inc. sells ProSoya Foods India to SoyaWorld of BC, Canada.

2009 Oct.–SSP starts again to make large and medium scale soymilk equipment. This is the first soymilk manufacturing equipment they have made since Sept. 2006. As of Oct. 2010 they have made one 200 liter per hour plant sold in India and one 100 liter per hour plant exported to some other country. Their designs are based on ProSoya designs but with major modifications to suit the needs of their clients. They make each these plants only after they receive an order and down payment for it. They are not marketing their soymilk machinery aggressively. Ratan Sharma works with SSP occasionally on these plants, not on the engineering but to give them ideas about the final product, product specifications, processing techniques and other details so that they can engineer each plant accordingly. Continued. Address: 1. PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India; 2. Soyinfo Center, P.O. Box 234, Lafayette, California 94549.

8621. Sharma, Ratan; Shurtleff, William. 2010. How soymilk came to India after 1970; fragments of a long and interesting story. Part II (Overview). *SoyaScan Notes.* Oct. 7.

• ***Summary:*** Ratan notes: These larger plants do not compete with similar plants that ProSoya Inc. of Canada would like to sell to some larger customers in India. SSP and ProSoya Inc. have a very good understanding. Some times there is a conflict of interest but they sort it out. Occasionally SSP makes a plant for ProSoya on their demand. They have very good business and personal relations and I try to equilibrate between them to avoid any such problems which could create any hurdle in this business. Fortunately SSP and ProSoya are run by the people with very high ethical and moral values.

As the demand for soymilk and tofu has increased in India, people thought of going for the bigger capacity plants and PPI made slightly larger plants. The earlier plants were 30 L (litres) per hour capacity but they recently made 50 L per hour capacity also. The most popular model is SC20 which produces 30 L of soymilk in an hour. The larger versions of the SoyaCow are not sold much.

Approximately how many SoyaCows has Ratan sold each year in India? Here is a sampling of statistics he has kept: 1995–approximately 12 units. 1996–approx. 20. 1997-1999–approx. 27 each year. 2000–approx. 35. 2001-2003–Approx. 18 per year. 2004–approx. 40. 2005–approx. 43. 2006–approx. 45. 2007–approx. 38. 2008–approx. 45. 2009–approx. 65. 2010–approx. 65 as of Oct. 1. If you plot these numbers on a graph, the result is, on average, fairly rapid, linear growth, with the curve rising rapidly starting in 2009.

As of Oct. 2010, there are two brands of soymilk are made in India and sold in Tetra Pak cartons: Staeta and Sofit. Both are made in the same plant, owned by Godrej, at Mandideep, near Bhopal, Madhya Pradesh, in central India. Godrej (now named Godrej Hershey) is the biggest food and consumer goods company in India.

Total UHT (Tetra Pak) soymilk production (for Godrej and ProSoya) is about 4 to 4.5 million liters annually. Godrej has about 60% of the market and ProSoya about 40%. The product quality is almost the same but Godrej sells more because of its well-established network of retail stores to which they distribute a wide variety of consumer products.

"The SC20 comes with the electrical grinder only whereas the VitaGoat developed by Malnutrition Matters (MM), Canada runs without electricity. They have the option of the electrical and gas fired boiler also. This machine was being manufactured by GD Machines in India. GD is a subsidiary unit of SSP and two years back they merged with SSP so now these machines are being made through SSP. Here I would like to mention that these VitaGoats are mainly sold through the MM in India and other countries. I am helping MM also in their VitaGoat business development and helping the users of their machines in product development, marketing etc. These machines have been sold to big NGOS also who run these machines through the shelf help groups (SHGs) and supply the soymilk in schools. One such big project was supported by World Bank in a tribal area of Orissa. I was also involved in that program.

"SSP manufactured and sold VS-200 plants also in India. These could produce 200 L of soymilk in a hour. They just sold 5-6 such machines in India. Also, SSP manufactured and sold so many such systems for ProSoya in other countries; they even produced 500 L and 1,000 L per hour soymilk processing plants for ProSoya along with the evaporators and driers. Some of these were installed in Russia also.

The three companies that make low-quality 'rip-off' soymilk equipment have, on average, sold a total of about 15-20 machines a year during each of the past two years. They are quite unorganised in comparison to PPI or SSP who have technically sound teams and are very professional in this business of making and marketing the machines and providing excellent after sales service. PPI sells approximately 60 machines per year, twenty machines are sold by other companies and approximately 10-12 machines are imported from China and Taiwan. There are dealers of imported machines also. On an average 100 machines are sold every year in the Indian market. Not all users of these machine make it to a successful business and 30-35% of them close down their business within a year.

"The most popular soymilk flavours are vanilla, mango, rose flavour, pineapple, almond, and banana. In south India rose flavoured soymilk is very popular. Choice of flavours varies from place to place but the above flavours are standard and popular. Keshar-pista (blend) is also popular. At some parts of the country like Tami Nadu, Punjab, Haryana, etc., people like very sweet soymilk." Address: 1. PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India; 2. Soyinfo Center, P.O. Box 234, Lafayette, California 94549.

8622. Sharma, Ratan. 2010. Re: Development of soy foods in India. Letter (e-mail) to William Shurtleff at Soyinfo Center, Oct. 10. 2 p.

• ***Summary:*** "We worked to develop specific soy food recipes to make these products popular across the country.

"Sometime in the 1980s there was a semi-larger capacity of soymilk plant was installed at G.B. Pant University of Agriculture and Technology, Pant Nagar, Nainital in India. This was a donation from USAID and was based on the old Illinois technology. The okara was not separated from the soymilk. This university use to sell the flavoured soymilk during the farmer fairs and to their teaching staff. There was no commercial development through this machine in India.

"There are few government organisations promoting the soy products and the soy food based entrepreneurship in India: 1. Indian Council of Agricultural Research: They run all the agricultural universities and institutes where they run some soybean farming and soy food promotion kind of work in addition to varietal development of the soybeans and their work on the other agricultural products. It's a huge establishment of the Government of India under the Ministry of Agriculture.

"2. Central Institute of Agricultural Engineering, Bhopal (MP): They have a Soybean Processing and Utilisation Centre where they have an old version of the SoyaCow and train the prospective entrepreneurs on this. Also, they provide training in the preparation of other soy food products. This institute runs week-long courses on the soy food products.

"3. National Soybean Research Centre, Indore: This is mainly to develop the soybean varieties. They also do some training and extension work on soy food promotion.

"4. The Government of India (GOI) did a generic campaign for the soy food promotion in India about 4-5 years ago. Many government organisations in India are involved in promoting soy foods and businesses.

"5. The Ministry of Women and Child Development, Food and Nutrition Board recommends using soy food products in various feeding programs. GOI feeds more than 240 million of women and children in various feeing programs under Integrated Child Development Services (ICDS) and Mid-Day Meal programs.

"6. Many non-governmental organisations (NGOs) and religious organisations use tofu to feed the people of their targeted area, their devotees, employees, etc." Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

8623. Sharma, Ratan. 2010. Re: Work with soy foods in India and Africa. Letter (e-mail) to William Shurtleff at Soyinfo Center, Oct. 12. 2 p.

• ***Summary:*** "I really feel blessed and fortunate having the opportunity to be associated with Soy which is a wonderful food for the people of my country and all over the world. After my masters [degree] I thought to go for a Ph.D. in soymilk and tofu technology. Soy was not a lucrative topic for a Ph.D. those days. My friends asked me to choose some other topic but I had finally decided and determined for this. When doing a Ph.D., the students want to choose some topic on which they can get enough reference and information on the subject they have chosen. We had a very little information on soy products in our library (everything was on its animal utilization side) but I was determined to go for Soy only.

"What inspired me to go for Soy: I am basically from a village. We have had one retired and old school principal (named Shri Janardan Prasad Sharma) in our neighbouring village. He used to be the school principal of my father and his elder brother and quite often use to visit my family. He was a very simple and great person. During his youth he was associated with Mahatma Gandhi, Vinoba Bhave and others. After his retirement he started educating people on the inner development, simplicity and Karma, and choosing a suitable Guru who could help you develop your inside. All the people in my area had high regards for him.

"He was very vigilant on my studies. Those days very few people go for the higher studies. Once he told me that Mahatma Gandhi tried to introduce soymilk and some soy based products but couldn't make it acceptable to the people. Somehow he was also associated in Mahatma Gandhi's soy program. He was always curious to know if something is happening or some technological advancement to make this product acceptable for the Indians. I thought I should try to work on soymilk and tofu and to develop the techniques to make a better and more acceptable product. That's what brought me into the soy and later my association with Child Haven International and ProSoya was a predetermined thing by God to help me into this noble venture.

"After my Ph.D. and commercial association with soy I became very busy in its promotion and helping the soy food entrepreneurs in many ways. Many things developed in the soy food industry and soymilk, tofu and other soy food product's business. I was excitedly and carelessly so busy that I couldn't show the packaged soy food products, bottled soymilk, vacuum packed tofu to our well respected old school principal who had been lying on bed after breaking his back. Although I kept on talking about these

developments which made him very pleased especially the wide acceptability of the soymilk and other soy food products and the technological developments to make the soy food products acceptable in the general masses. I couldn't show him the products and he passed away after a long illness at a very old age.

"Also, my grandfather (named Shri Harihar Prasad Singh) who was a farmer and very brilliant horticulturist was a real fan of soy. He had a book which was published by the G.B. Pant University of Agriculture and Technology, Pant Nagar more than 32 years ago. In that book, lots of soy recipes were given. My grandfather use to try those. That's how I was exposed to soy; otherwise soy was not a common word known to many people.

"My grandfather and that school principal were not in favour of me pursuing a job in the U.S. or Canada but to live in India and to develop some soy based low cost nutrition and to serve the country. This really influenced me and I determined to work on soy and stay in India. When I see many families growing through this soy food business I feel a little satisfaction of my work which is helping the people in many ways.

"When one of these people working with soy calls on the phone to ask for help, I usually know who it is just by the sound of their voice.

"I really feel blessed that I got this opportunity to serve mankind this way. During my travels to Africa I trained many of the groups/NGOs etc. in the soymilk and tofu production and utilization and delivered lecture on the soy nutrition. These were the programs to help people suffering from HIV/AIDS to get better nutrition through soy. I could still recall those large gatherings of the people suffering with HIV/AIDS at the community centres in Uganda, Tanzania, Kenya, etc. God helped me to develop some products of their interest with the soymilk which they liked." Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

8624. Gupta, Rajendra ("Raj") P. 2010. Overview and current status of soymilk in India. Part I (Interview). *SoyaScan Notes.* Oct. 13. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Soymilk in India: ProSoya never received any royalties from the sale of SoyaCows in India because ProSoya donated all those royalties to Child Haven International (CHI, a charity), that purchased many of ProSoya's earliest machines with significant funding from the Canadian International Development Agency (CIDA).

Some of ProSoya's potential customers for small equipment didn't want to buy that equipment from India because of quality issues. So, for a while, ProSoya in Canada imported small SoyaCows made in India to Ontario, upgraded certain parts (such as motors), then exported them to countries worldwide. ProSoya paid a royalty to Child Haven on those machines. Later ProSoya found that this business in small SoyaCows was taking too much of the company's time and energy, and it was actually unprofitable. So they discontinued that service. But later, because of continued demand (especially from Europe), they built a slightly larger SoyaCow, SC50, which has many new features, such as a cooking vessel with insulation on the outside. All SoyaCows, even those made in India and Russia, are now 100% stainless steel. The only machines that contained aluminum were made by ProSoya at the very beginning, before SSP started making SoyaCows.

One problem is that these small SoyaCows in India do not make very good tasting soymilk–compared to the flavor of soymilk sold in Tetra Pak. The latter "is a very outstanding product; everybody loves it. We developed that taste especially for India, because in India they sometimes drink it hot, sometimes drink it cold. We developed a soymilk that is good whether it is hot or cold. We sell plain soymilk (made from soybeans and water, widely sold to diabetic people), original soymilk (with just a hint of cooked dairy milk flavor purchased from a flavor house), and flavored soymilks (made by using the original soymilk as the base). The best-seller of types three is saffron & pistachio, followed by plain. One key point is that freshly made tasty soymilk does not taste as good as soymilk that has been aged for 2-4 days in the package. The flavors "marry"–as they say in French. However beany flavored soymilk tastes worse and worse, the longer it is aged. In India, law requires Tetra Pak products to be quarantined in the plant for 7 days before they can go to market. The consumer buys it about 15 days after it was made, but it has a shelf life of 6-12 months.

There are only two companies in India that make and sell soymilk in Tetra Pak cartons. They both make their soymilk in the same plant at Mandideep, near Bhopal, Madhya Pradesh. They are Godrej (Sofit brand) and ProSoya India (owned by SoyaWorld, brand name Staeta, pronounced STET-uh). This market is growing by about 8-10% a year, but it would grow much faster if the product were less expensive. The retail price in an aseptic pouch would be about 50-60% as much but the shelf life would be the same.

There are many manufacturers of aseptic pouches. ProSoya owns one in Canada for demonstration and experimental purposes. In about 18 months, when his non-compete agreement with SoyaWorld expires, Raj hopes to start making soymilk using his large SoyaCows in a location unrelated to Godrej, packaging it in aseptic pouches. Rather than competing with Godrej and ProSoya India (who make soymilk for the elite), he will complement them, and may simply expand the market without taking any market from them–by reaching out to the sub-elite.

There may be a potential in India for extending dairy milk with soymilk as long as it is done with full, open disclosure–with no sense that the milk has been adulterated. It would bring down the price and expand the supply. Most

of the milk in India is buffalo milk, which is also much whiter than cow's milk due to its higher fat content.

ProSoya has developed new technology for a new generation of better tasting soymilk; it is incorporated into all ProSoya except the smallest machine.

Although there are 350-400 small soymilk companies in India and two large companies selling soymilk in Tetra Pak cartons, the volume of soymilk produced is very small. "I think Indians still do not like any of the soya products." Raj has been working intimately with his nephew (his sister's son) in one of the smaller cities in India who owns and operates a company making tofu and soymilk. He knows, day to day, what problems he faces. Raj believes that soya paneer would be perfect for India, but the problem is that people are still "soyaphobic." The most promising project in Raj's mind is to sell good-tasting soymilk in inexpensive aseptic pouches–the kind that are very popular in Latin America. The retail products are priced at about half or just over half of Tetra Pak. You cannot see the soymilk in an aseptic pouch; it is an opaque film with an oxygen barrier liner. Such a pouch would greatly increases soymilk sales in India because many more people could afford the product. Total sales of aseptic Tetra Pak soymilk is about $3-5 million and maybe 10 million liters, with only two brands competing: Staeta (ProSoya of India, Inc.) and Sofit (Godrej). America Soybean Association says soymilk sales are much larger, but Raj does not know where they get their numbers from. Both companies make their Tetra Pak soymilk in the same plant at Mandideep, an industrial area just south of Bhopal, in Madhya Pradesh. Raj is still bound by a 5-year non-compete agreement with SoyaWorld at that scale.

Concerning Godrej and the factory at Mandideep: ProSoya India asked Godrej to distribute their Staeta soymilk. "We thought they were not interested in soymilk any more [after the failure of Great Shake, launched in 1987]. When our man asked them to distribute the product, they started thinking 'Why not make our own, instead of distributing Staeta?' So ProSoya ended up distributing its own product; SoyaWorld has continued that–because in India they don't have good distribution channels. We did try partnering with H.J. Heinz Co. for about 1½ years and they spoiled our market completely–not that they wanted to but the corporate culture didn't exist. The top management was very interested in working with ProSoya, but the middle and lower management thought of it as an external product and made no effort to promote it. By contrast, Godrej has the best distribution system in India for foods and basic consumer goods; and they distribute to stores they own. That's the reason their sales are so much more than ours. They distribute even to smaller cities. But in the cities or shops where ProSoya's Staeta is present, Sofit (which is always on discount) hardly sells at all–even though Staeta's price is slightly higher. Consumers strongly prefer Staeta's flavor. Godrej makes ProSoya's soymilk, you might say, so how can we compete with their Sofit on price? We compete on quality. It is very unusual for two competitors to make the same product in the same plant." Continued. Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

8625. Gupta, Rajendra ("Raj") P. 2010. Overview and current status of soyfoods in India (Interview). *SoyaScan Notes.* Oct. 13. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Raj's nephew (his sister's son) earned a degree in physics in India, then a master's degree from a university in Boston in semiconductors, but never finished his PhD degree from Boston University. Then he worked in the semiconductor industry in Scottsdale, Arizona, for many years. Then he moved to Ottawa, Canada, for 10 years. Finally (in 2004, at about age 35) he decided to return to his native India, to do something to help the people of India. When Raj started his original tofu plant in Kanpur in 1985, his nephew had worked at the plant for one summer as a student. He wanted to start a similar plant in Allahabad, a city in the north Indian state of Uttar Pradesh. In about 2007 he bought the smallest SoyaCow system, the SC20, and started a business making soymilk and tofu. He learned how to make these products from a book, *Tofu and Soymilk Production.* He did a lot of innovative research. His business is doing well, but he has not yet reached the break-even point. The volume is pretty low and local people do not really like either soymilk or tofu (soya paneer). He is making only about 5-6 batches per day, which is 200 to 400 liters of soymilk per day. But he located his business in a more challenging part of India. If you go to the western part of India, people are more affluent and more inclined to eat foods which improve their health. The same is true in south India. But in Allahabad and points east, it is somewhat more challenging to try to introduce soyfoods. So his location is part of his problem, but he wants to work where there are challenges rather than where things are easier.

Indians are still not very excited about tofu as a high-quality, low cost alternative to paneer (fresh dairy cheese). Part of the problem is that tofu makers in India try to sell tofu as imitation paneer, rather than as a healthier alternative. So he calls his product "tofu." In Kanpur, where Raj started his work with tofu, he never called it "soya paneer." But the problem is that even if you call it tofu, Indian consumers still think of it generically as "soya paneer"–probably because paneer is so popular and it looks so much like paneer.

In Kanpur, way back in 1985-86, we realized that India requires very small machines (smaller than a small Takai system) that will make soyafoods where needed when needed, decentralized to avoid distribution. Machines that can be used in institutions or very small shops. In many places, this is the way it is done today and they have been successful. "We demonstrated in various schools that this is a

concept which will work."

But today per capita consumption of soyfoods is still extremely small. "We expected that it would double every year or more, but its growing at the rate of 8-10% and from a very small base."

Of the various soyafoods in India, by far the most popular is textured soy flour / flakes (such as Ruchi's Nutrela in chunks, nuggets and granules). Ruchi is the market leader, but many local companies use extruders to make similar products from very inexpensive defatted soybean meal or flakes. Number 2 is probably soymilk, with tofu a distant third.

India is a very milk oriented country; it is the largest producer of dairy milk in the world–especially since the cooperative "white revolution." Indians have always loved milk. Despite the fact that 70% of Indians are lactose intolerant, they consume it anyway in one form or another–such as paneer, yogurt, lassi (a popular and traditional Punjabi yogurt-based drink). In the northwestern states of India (such as Punjab), there is no lactose intolerance, so they can drink dairy milk without problems. This may be because of a long history of dairying and / or because they are descended from Aryans who name from further northwest. Many of them drink it hot. In the south of India there is a high incidence of lactose intolerance. This is the main cause of their "soyaphobia."

If Raj had to make a prediction 25 years into the future, he would definitely predict that soyfoods in India will definitely be more important and a bigger part of the diet than they are today. One reason for this is the declining per capita consumption of pulses, a major source of protein, especially for the poor. This is due to rising prices and static production over the past several decades. Soy is replacing pulses in one form or another–and will continue to do so. In terms of the soy beverage market, they key is to find a good tasting product sold in inexpensive packaging and retailing at the right price point. Do get the price low, you need large volume, fast turnover, good distribution, and lower retail margins. Today soymilk margins in India are 30-35% compared with about 5% for dairy milk–because the volumes are huge.

The traditional Chinese and Japanese model of the consumer buying directly from the tofu or soymilk maker (to ensure freshness, no packaging, lower price to the consumer, higher price to the manufacturer, no middleman) is starting to happen in India among SoyaCow owners. Raj has seen this working nicely in Russia. To support such a model, you need a high density of consumers. Some SoyaCow owners have tried successfully to sell their products using bicycles.

Raj estimates that the market for soymilk in Tetra Pak is $2-3 million ex-factory. Multiply by 2.5 to get the retail value = $5 to $7.5 million retail. The retail price of Tetra Pak soymilk is about $1.50 per liter. That works out to about 3-5 million liters per year. Looking at the whole soymilk market in India, what percentage is sold by the small soymilk makers using SoyaCow SC20 machines (which have a capacity of 60 litres per hour)? This estimate is very hard to make. If we estimate 400 machines in India and each is selling on average 500 liters a day of soymilk, that is 200,000 liters a day times 300 days per year = 60 million liters per year. This is 12 to 20 times as much as is sold in Tetra Pak. Therefore the small makers control 92-95% of the market–a very interesting conclusion–even if the small makers have an output of only 10 to 30 million liters a year. Raj thinks the growth potential for small soymilk machines is bigger than for large Tetra Pak machines.

There are many reasons to believe that food prices will rise faster in the coming decades than during the past few decades, and the price of most animal products will rise faster than soybean prices, so people will consume what they can afford, which means increasing consumption of soy in many developing countries. Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

8626. Gupta, Rajendra ("Raj") P. 2010. Overview and current status of soymilk in India. Part II (Interview). *SoyaScan Notes.* Oct. 13. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Continued: ProSoya authorized SSP to make soymilk machines with a capacity of up to 200 liters per hour of batch-type technology; ProSoya no longer uses batch-type technology for 200 systems. SSP pays ProSoya a royalty on each piece of equipment sold. SSP refers many of the larger system enquiries to ProSoya. The two companies still have a good relationship; there are no conflicts. SSP has not made any significant improvements on ProSoya's basic equipment design. Each machine was essentially handmade, all stainless steel, and their were quality issues (such as interchangeability of parts) right from the beginning. Also, their prices rose quite a bit rather quickly.

ASC50, ProSoya's smallest SoyaCow at present, has a capacity of 50 liters per hour; but with a larger boiler it can produce 100 liters per hour. Raj is happy to get an order from anywhere. "It is not really a money-maker, but many people want to enter at that level, and some big companies want to use it as a laboratory machine. We ASC50s with Unilever, Kraft, DuPont who use it for research. When they want a larger system, they will buy it from ProSoya because they cannot build it themselves for less. SoyaWorld started with our SC20 machine, so you never know who will grow. It was originally bought by a restaurant person in Saskatchewan [George Conquergood] and he then started the ball rolling.

Concerning Pantnagar's Sipso soymilk, Raj tasted that product in 1971 or 1972. He liked the flavor but it was a little gritty. He later bought it in bottles in Delhi in a retail store.

Concerning Noble Soya / Godrej's Great Shake launched in 1987, Raj thinks the main problem was the taste. "It was

awful. Noble Soya was not allowed to import soybeans, so they were forced to use soybeans grown in India. Their sorter was unable to remove dark-colored soybeans. Their process was not tolerant to bad soybeans, whereas ProSoya's process is very tolerant to any soybeans. Because of the bad taste of the soya base, they had to add extra heavy flavoring; as a result the finished soymilk tasted like medicine rather than like food. Raj tasted it himself in India. Yet even if it had been made with the best Canadian soybeans and the best technology, I doubt that it would have succeeded–although sales might have been better and it might have stayed on the market longer. It was a product ahead of its time, did not taste good, and its retail price was too high–in part because of the expensive Tetra Pak carton. Indian consumers are very price conscious; why should they pay so much for soymilk when they can buy dairy milk for less.

"The same problem with price exists today, which is why soymilk sales are still so small in India. For example, the system ProSoya has installed at the Godrej plant in Mandideep has a capacity of 20 million liters, but it is only making 4-5 million liters a year, so it is operating at roughly 20-25% of capacity–which is ridiculously low!" Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

8627. Gupta, Rajendra ("Raj") P. 2010. Overview and current status of soymilk worldwide (Interview). *SoyaScan Notes.* Oct. 13. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Raj finds it very difficult to say which part of the world has the brightest future for soymilk. All over the world, there is a slow but steady growth of interest in soymilk and in ProSoya's technology for making it. ProSoya's main large system is 2,000 liters per hour capacity, but the biggest system it has sold is 6,000 liters per hour. This capacity refers to a concentrated product (soya base), which approximately doubles in volume when reconstituted to regular strength. The protein level of the concentrate is about 5%. The solids content is 10-11%. Also, the okara is rewashed to extract more nutrients from the soybeans. It is these big machines that keep ProSoya afloat financially.

ProSoya sells large-scale equipment to countries all over the world. One year Korea looks promising, the next year Germany, or Ghana or Latin America. Those machines almost always become the center of a successful business that continues to do well. They are purchased by people who know how to run a food business. Some machines are creating new markets while others are adding capacity to existing companies or enabling co-packing.

In Russia more than 1,000 SoyaCows (called Soyushkas) have been sold. Initially, many were in government ministries but now the majority are owned by small entrepreneurs. People line up in the morning to buy fresh, hot soymilk directly from the manufacturers.

As for ProSoya's license to Russia, nothing has changed. The company that ProSoya licensed to make SoyaCows in Russia has never paid ProSoya the royalties that it agreed in the licensing agreement to pay. So Raj has accepted that situation as it is. "It is not worth it to chase people in countries like that. Our company works on the honor system. But we did profit a lot from Russia because they bought some of our very large machines. As a result we gained some credibility in Russia, which resulted in more sales." ProSoya continued to sell SoyaCows in both Russia and Eastern Europe.

"It is very difficult to make predictions. SoNice was launched in the United States at about the same time as Silk. It as selling much better than Silk at one point. But the company that was making SoNice at that point [Pacific ProSoya Foods] ran into financial difficulties, because they were expanding too rapidly, so Silk pulled way ahead.

Raj has known Ratan Sharma, PhD, for a long time and they still keep in touch on a regular basis, but Ratan has not received any money from ProSoya Inc. in Canada for many years. Years ago, ProSoya used to pay Child Haven royalties, and that money was used to pay Ratan's salary. Ratan has done a lot of good work, and he continues to devote a lot of time to it–even though he doesn't make a lot of money from it. He also works as a consultant for the American Soybean Association (ASA-IM) and that is probably his main source of income. He also gets paid by ASA to nurture these SoyaCows and to write brochures and give presentations. Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

8628. Gupta, Rajendra ("Raj") P. 2010. Biography and early work with soymilk and tofu in India and Canada Part I (1942-May 1985) (Interview). *SoyaScan Notes.* Oct. 14. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Raj was born on 8 Oct. 1942 in Saharanpur, a city in the northwest corner of the state of Uttar Pradesh, India, the son of Meena Gupta [her maiden name] and Shiva Prasad Gupta. His father was in government service in the food department. He was the 1st son and 2nd child of four children. He had two brothers and one sister. Raj received all of his education in India. He graduated from high school at Government Inter College (Allahabad, Uttar Pradesh). He graduated from college at the University of Allahabad, with a major in physics, then went on to earn his PhD degree in physics in 1966 from this same university, focusing on lattice dynamics of solids / solid-state physics.

He first traveled to Canada in 1967 to do post-doctoral work. First he was a research associate, then he worked at the National Research Council of Canada in Ottawa, earning a permanent position in 1978. During these years he went back and forth between Canada and India. He was not sure whether he wanted to live in Canada, USA, or India. This

happens to a lot of people. He initially spent two years in Canada, then went back to India for three years, then began coming to Canada every summer for 2-3 years. He finally decided to live in Canada.

Raj met his wife, Rashmi, in 1975 in India, on a trip back to India from Canada. She was working toward her PhD degree in physics from Banaras Hindu University (BHU) in Varanasi, India; they were married in 1975. Back in Canada, Raj did research and taught some classes at the University of Winnipeg (Manitoba) and the University of Western Ontario (London, Ontario). He and his wife lived near the university in both places.

Raj's early interest in soy was more like a hobby. He and his wife knew that there was widespread malnutrition in India and in many developing countries. And they realized that soyabean is the best source of high-quality low-cost nutrition. In about 1977-78 they met some Chinese friends (at the University of Western Ontario, in London, Ontario) who introduced the Guptas to soymilk. They had heard about soymilk but never had tasted it. They did not like the taste. They said: "Perhaps we can get used to the taste by drinking it every day, for several weeks. But after drinking it religiously for some time, we still did not get used to the taste." The soymilk, which had a beany flavor, was made at a local Chinese shop in Canada. "We realized we couldn't hack it, even though we knew it was nutritious. So we gave it up."

In 1978 they arrived in Ottawa, Canada, where Raj had earned a position as an associate research officer at the National Research Council (NRC)–the top government laboratory / campus in Canada. NRC, where both basic and applied research is conducted, is similar to the U.S. laboratories (such as the Lawrence Livermore National Laboratory) that are part of the Federally Funded Research and Development Center (FFRDC) network. His wife also leveraged her PhD degree into a job at the National Research Council, but in the information technology (IT) sector.

From 1983-1995 Raj was adjunct professor at McGill University in electrical engineering, and a visiting professor there during 1986-1987.

In about 1981-82 Raj and Rashmi came across some soymilk products in Tetra Pak made by Vitasoy; it was sold in Chinese grocery stores. They liked the taste and knew it was a good source of protein, so they began drinking it every day. Raj and his wife do not have any lactose intolerance, so they did not drink it for that reason.

In about 1983, when they went to India, they took a case of Vitasoy Tetra Pak soymilk with them; it was nice to be able to have something to drink while traveling. Then (in December 1983) they met Mr. T.N. Agarwal in Kanpur. He was professor at an engineering college there. He and Raj had been friends before Raj got married. He tasted the Vitasoy, liked it, and asked why it could not be made in India. He was in business, doing some electronic and semiconductor business. Agarwal is also a more generic name, describing a group of related people who have a long history of being outstanding entrepreneurs. The Guptas, to which Raj's family belongs, is in the same group or class in India. So after the interesting question from Prof. Agarwal, in early 1984 Raj began to explore and do research to find out what could be done. In Jan/Feb. 1984 he first phoned William Shurtleff at Soyfoods Center in California to discuss the problem. Shurtleff recommended that Raj order the book *Tofu & Soymilk Production,* which he did–and he read it from cover to cover. This book discussed the principles of soymilk production and various methods that had been used to eliminate the beany flavor. This book's bibliography introduced Raj to the large body of literature on the subject. As he studied the basic principles of the subject, he realized that one approach to eliminating the beany flavor had not been tried–eliminating oxygen. He and his wife discussed the problem repeatedly and she also read some of the literature–but not to the extent that Raj did. Before long, they began doing experiments at home and she became very involved. Their work with soymilk was still a hobby; their main work continued to be at the National Research Council. But behind their hobby was a long-term vision. "It originated from the fact that, if we could produce the kind of milk we tasted, at very low cost, we might be able to take it to the masses of India. This would be very helpful. So it was mainly a philanthropic and humanitarian interest to begin with. As a hobby, that's what we wanted to do. But later, when the invention was issued, we realised our discovery was very significant and could be the basis of a business."

In 1984 Raj and Rashmi coined the name for their new business: ProSoya. The word "SoyaCow" was coined in 1985 or 1986, before they met Child Haven (see below).

In March 1985 Raj and his wife, the co-inventors, applied for a Canadian patent on a "Process for making soymilk with no beany flavor." It was soon issued. In 1986 they submitted a PCT International Patent Application for "Food processing in oxygen-free environment" [Soymilk]. This too was issued, and was followed by similar patents in the USA.

They were now ready to use their discovery as the basis for a business. It would be in Kanpur, India, run by T.N. Agarwal, making tofu for the poor. Initially, they hoped to raise start-up capital by taking the company public to set up a Tetra Pak type line there. They were ready to start a fairly large operation, but then they learned (from Tetra Pak) that Godrej was about to launch a soymilk product in Tetra Pak. Raj said: "If Godrej is already going to do this, then we don't have to do it. Let them do it at their level, since they have more resources. Why should we try to do the same thing. So we backed off. By the way, Godrej's intention was also similar to ours–to make a nutritional product for the masses. Of course, they knew that to do that it also had to succeed as a business."

On 23 May 1985 Soy Food Centre. A Unit of Networks

Pvt. Ltd., started making Boon Tofu using a system imported from Takai in Japan. T.N. Agarwal did the bulk of the work. Raj provided most of the financing for the project, but Raj never moved to India. He and his wife would go to Kanpur for 15-30 days at a time, then return to their jobs in Ottawa, Ontario, Canada. The company lasted for less than two years, and Raj learned many hard lessons about introducing a new food to India, and especially a new food intended to help the poor. Continued. Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

8629. Gupta, Rajendra ("Raj") P. 2010. Biography and early work with soymilk and tofu in India and Canada Part II (Interview). *SoyaScan Notes.* Oct. 14. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Continued: "We learned the key lesson the hard way: If you try to promote any product as being good for the poor, the poor don't want to buy it. In Kanpur, we wanted to sell it very very cheap. We did that and it failed in less than 18 months. We couldn't make any money since our margins were so small. The people who bought the product were from the health-conscious middle class." There were also problems with packaging, distribution, and spoilage. "We realized that India requires very small machines (smaller than a small Takai system) that will make soyafoods where needed, when needed, decentralized to avoid distribution. So we began to think about how to make very inexpensive, very small machines, that could be used to make soymilk where needed, when needed, so that packaging and distribution would not be required." Raj and his wife both kept thinking about how to solve this problem and actually design and build the first machines. They contacted a lot of fabricators in India and some initial machines were even fabricated in Mumbai (formerly Bombay) India, but they were too cumbersome and not really very good. But at NRC I met Grant Wood, one of my colleagues who worked as a mechanical technician and draftsman. We were working on the same NRC project and I found that he was very good at designing. So I started discussing this concept and problem with him. I told him it was still just a hobby, so Grant Wood decided to get involved. He designed some small soymilk manufacturing machines according to my directions. He had a small machine shop in the basement of his home, and he and I built the very first machines there. Initially, a lot of prototypes were made but they were not good enough to sell."

The first big breakthrough came when Raj learned about a new organization named Child Haven International (CHI) of Maxville, Ontario, Canada. "They didn't come to us, we went to them." In about Oct. 1986 Raj met them in Ottawa when they were talking about their activities in India and elsewhere on the Indian Subcontinent. He explained that he and his co-workers had been doing something which might be useful to them. They were looking for something like what Raj was doing. They knew that the Canadian International Development Agency (CIDA) usually helps NGOs with funding for this type of venture. CHI thought that this could be a good project for them to get funding from CIDA as well as financial support from their own donors. CHI got the money from CIDA, then in about 1990 asked ProSoya to produce one trial machine for them to make soymilk in India.

On 19 June 1991 an article by Marion Kane appeared in the *Toronto Star* (p. D2) titled "Nifty Canadian invention a boon to the Third World." It explained that the Soya Cow [SoyaCow], invented by Raj Gupta, is a machine that makes palatable, low-cost, high-protein soymilk. One was in operation in Hyderabad, India, at one of the homes for poor children run by Child Haven International.

Another similar article appeared on 24 Nov. 1991 in the *Ottawa Citizen.*

ProSoya contracted with various local machine shops to fabricate the various parts, then these parts were assembled into a working SoyaCow in Raj's basement at 9 Veery Lane. Initially they operated their new business out of their home. The next 6-10 SoyaCows were also assembled in Raj's basement. By March 1992 Child Haven had sent six SoyaCows, made by ProSoya in Ontario, to India–with financial aid from CIDA.

Question: "Is there any religious dimension to this work for you? Is this part of your religious life as well? Ans: "No. Nothing to do with religion. Of course it is spiritually very satisfying to do something like this. But it is more selfish, too. You don't really do it for others; you do it for yourself. You think you are helping others, but really you are helping yourself. It is also an intellectual challenge with many very interesting problems to be solved–almost every day."

Raj has had an interest in being a businessman and running his own business since his earliest days. "I came from that kind of family. A lot of my relatives on both sides of the family were in business." Raj comes from a culture that has a long history of entrepreneurship. "But, I'm not totally for business. If something doesn't have an intellectual component, I'm not interested. It has to be something novel, something new. Even now I spend a lot of time with physics; that's my first passion."

In April 1992 ProSoya published the first issue of *The SoyaCow Newsletter,* which appeared quarterly, from 9 Veery Lane, Ottawa, Canada. Even though it was initially only 2 pages long (filling the front and back of one sheet) it contains excellent, detailed information about the early history of the new company, plus some good photographs in each issue. The first article in the first issue is titled "Child Haven Sends Six SoyaCows to India with CIDA's Help." A photo shows Child Haven's directors, Fred and Bonnie Cappuccino, as they take delivery of six SoyaCows from ProSoya's president, Rashmi Gupta [Raj Gupta's wife]. We also

learn that a SoyaCow system has been operating for over six months [i.e., since about mid-1991] at the Candlestick restaurant in Alexandria, Ontario.

In Aug. 1995 Raj stopped working for the National Research Council, so he could devote more of his time to his former hobby, that was rapidly becoming a full-time business. However he was allowed to keep his original office at NRC and he did research there, when he had time, in an honorary capacity, for the next five years. At the time he left NRC, has wife had already left to work as a consultant in private industry, for Anderson Consulting.

Raj and his wife have one child, a son, who is now about age 32. He graduated from college, earned an MBA degree in France, and was recently married. He lives in Chicago and works as a business consultant.

In 2002 Raj (the Renaissance man) entered a feature film (90 minutes) titled *A Passage to Ottawa* in the famous Cannes Film Festival. Directed by Guarav Seth and written by Jameel Khaja, it was produced by Raj and his wife, Rashmi.

Rashmi is Director of Marketing at ProSoya. Her involvement lately has been on product development and marketing rather than on technology. For her work, Indo Canada Chamber of Commerce gave her the "Business Woman of the Year" award in 2006 which she got from the hands of the prime minister of Canada, Steven Harper. Address: President and CEO, ProSoya Inc., 2-5350 Canotek Road, Ottawa, ONT, K1J 9N5, Canada. Phone: 613-745-9115.

8630. Sharma, Ratan. 2010. Re: Statistics on production of soymilk in India in 2008. Letter (e-mail) to William Shurtleff at Soyinfo Center, Oct. 15. 2 p.

• ***Summary:*** As an attachment to an e-mail, Ratan sends an Excel spreadsheet titled "Soya milk production in India," which he developed in Sept. 2008. The purpose was to estimate the amount of soymilk produced in India at that time. Most of the companies are small, independent commercial producers, however at least 6 Child Haven International (CHI) centers and several university and governmental research centers have been included. Moreover, 4 of the producers are in Nepal (an independent country just north of India), and the last entry under "Companies" is "Other soymilk producers." This figure for soymilk includes soymilk that is transformed into tofu or soy yogurt.

The spreadsheet has the following columns: (1) Company name and city. (2-4) Number of batches per day, month and year. (5-7) Soya milk production (in liters) per day, month, and year. (8-10) Soyabean utilization per day and month (in kg) and per year (in 1,000 metric tons).

A total of 167 specific companies are listed, including two large companies (ProSoya Foods, and Godrej Foods) that sell their soymilk in aseptic Terabrik cartons.

The estimated total soymilk production in India (and Nepal) is 63,767 liters per day, 1.91 million liters per month, and 22.95 million liters per year.

Of this total, ProSoya Foods makes 4.789 million liters per year, and Godrej Foods makes 5.086 million liters per year. Together, these two large Tetra Pak companies make 9.875 million liters or 42.6% of the total.

The "Other soymilk producers" make a total of 810,000 liters per year, which is 3.5% of the grand total.

The total estimated soybean utilization is 255,060 kg (255 metric tons) per month, and 3.060 million metric tons per year. The single largest non-Tetra Pak soymilk maker on this table is Dr. Pathak (in Meerut, Uttar Pradesh, in northern India). His company uses 5 SoyaCows to make 255 batches of soymilk per day. That works out to 3,825 liters per day, and 1.377 million liters per year.

The #2 largest non-Tetra Pak soymilk maker on this table is Rubal Soya (in Distt. Sangroor, Ludhiana, Punjab); contact person Kuldeep Singh Cheema. They use 3 SoyaCows to make 125 batches per day. That works out to 1,875 liters per day (of flavored soymilk), and 675,000 liters per year. Plus 200 kg of tofu, and 25 kg of soy nuts.

Letter (e-mail) from Ratan Sharma. 2010. Oct. 27. He didn't mention many of the machines whose production he was not very sure about at that time. Also, at the end, under "Other soymilk producers," he estimated and summarised their production of most of the rest, but this gives lower number for the total number of soymilk producers. Also: soymilk that is made into tofu is included in this chart as only as soymilk. Ratan would estimate that about 50% of the total soymilk manufactured is immediately transformed into tofu. The volume used to make soy yogurt, soy ice cream ice, and soy sweets is minimal and insignificant. Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

8631. Cappuccino, Bonnie; Cappuccino, Fred. 2010. Child Haven International, a herd of SoyaCows, and soymilk on the Indian Subcontinent (Interview). *SoyaScan Notes.* Oct. 25. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** "Our story: Inspired by the ideals and philosophy of Mahatma Gandhi, Child Haven International is a registered charity founded in 1985. We assist children and women in four countries, who are in need of food, education, health care, shelter and clothing, emotional and moral support.

"Child Haven has five homes in India, one in Nepal, one in Tibet and one in Bangladesh. Our homes accept children who are disabled, parentless, or from socially disadvantaged situations–and who are destitute, i.e. do not receive even one good meal a day" (from the Child Haven website).

One evening [in about Oct. 1986], as Fred was giving a talk about Gandhi to a small group at a Hindu temple in Ottawa, he mentioned that Child Haven was totally

vegetarian. Fred also explained that he had been in Selma, Alabama, in March 1965, for five days with Martin Luther King and with a minister colleague who was killed there. That day converted President Johnson. He knew he would lose the South if he went ahead with the voting rights bill; but he did it anyway. The march for the right to vote by black people in Selma was a purely Gandhian demonstration; the marchers were completely nonviolent in the spirit of Gandhian nonviolence.

After his talk at the temple, Raj Gupta and his wife, Rashmi, from ProSoya came up and told Fred and Bonnie about a small machine for making soymilk that they had developed and that was now in use in their home kitchen. Raj said he hoped to use something like that in India, but hadn't had any luck so far. He asked if Child Haven might like to collaborate with him. Fred and Bonnie had always been interested in soya–primarily because Fred spent 3 years in Japan (1948-1951) as a Methodist missionary before he met Bonnie (so he was very familiar with tofu), and because of books about soyfoods by Shurtleff and Aoyagi they had read. And they had both become vegetarians in 1985. Raj said his machine made soymilk with no rancid flavor but with some beany flavor. There was sincere interest from both sides. Bonnie thinks that Raj had the idea before CHI did of applying to CIDA. Raj could not get money from CIDA unless he went through a charity–such as CHI. Bonnie and Fred had heard about CIDA but Raj knew in a more specific way what the possibilities were. So CHI decided to go to CIDA as an NGO to apply for funds. First they put together a committee of Child Haven people and people recommended by Raj who had some technical experience and interest. The committee wrote a grant funding proposal. The main person was Hart Jansson, who was one of CHI's supporters. The initial proposal was submitted in about 1989.

One early document shows that the soymilk project was originally proposed to CIDA in 1988 as a 2-year endeavour with a total budgetary requirement of under $20,000 Canadian.

It was a complicated process and the money didn't come right away. The CHI committee had to tweak their proposal, adding some things and removing others. Eventually they got about $100,000 for the SoyaCow program (CIDA does not fund orphanages) but only as a matching grant; CHI had to raise about 37.5% of CIDA's amount (in cash or kind) before they could get the money from CIDA. This was very difficult because CHI, a very small organization, is always struggling to raise enough money. Fred recalls that there were subsequently at least three more phases to the grant application process, and for each one they had do a great deal of committee work and planning to make the submission. Raj and his technical people had to come up with a prototype machine, which was a big challenge for Raj and a big opportunity–to make the first real SoyaCow for Child Haven. The first prototype he made was too labor intensive, so he had to change parts of his design.

In about Nov. 1990 the first SoyaCow, made in Bombay, India, arrived at the Child Haven home in Hyderabad. Fred describes it as a "big monster." Child Haven had thought the project was so important that they ordered the first machine from India (with Raj Gupta's approval and designs) before they had secured funding from CIDA. Raj made many trips to India, before and after the first SoyaCow was built, to be sure that all the work would be and had been well done. He met with the proposed manufacturer, examined their fabrication facilities, discussed technical details of the design, etc. Also in Nov. 1990, CIDA approved in principle the first matching grant.

After the first SoyaCow arrived, Raj Gupta traveled to India to see it in action. He spent a lot of time studying how it was being used and how it worked. Some of the older kids at Child Haven were helping out to make soymilk with the SoyaCow. Fred and Bonnie got the feeling that was not appropriate; it was too dangerous, since it utilized steam. "You need mature people, not kids, to run such a machine. However now the machine is much safer and in some of the homes the older children are helping."

Raj made many design changes and improvements on the first few SoyaCow machines that were made in India, and decided that the first few Indian manufacturers were not adequately equipped to do the very fine tuning that the SoyaCow required. This eventually led him to SSP, which was a very experienced and competent equipment manufacturer. Pristine (PPI), the present manufacturer of the SoyaCows, is doing very good work.

Child Haven has never used any of the non-electrical machines made by Frank Daller and Hart Jansson of Malnutrition Matters; he and Frank run the company together, and they are both still strong supporters of Child Haven.

From the outset, there was one basic problem between CHI and CIDA. CIDA was interested helping to develop cottage industries that women could take advantage of. CHI was very interested in teaching women how to use the SoyaCow as well, but in reality it was hard for a woman to make soymilk using that SoyaCow, with the steam, all those pipes and the complexity. That became a problem for CIDA. The number of kids in any Child Haven home has always been about half boys and half girls. But it was the staff that was the problem. There are a lot more women on the staff because CHI needed caregivers, but it was difficult to try to get a woman who was a caregiver to try to get into the mode of making soymilk with an unfamiliar machine; it was a big jump for them.

It is not clear where the 2nd SoyaCow to be used in India was made; it may well have been made by ProSoya in Canada.

One organization in Ghaziabad clamored for a SoyaCow until they finally got one. They then stated in their publicity

that they had gotten a SoyaCow from CIDA (which looked good) but they never actually used it. So Child Haven eventually went to them and repossessed the machine.

It took a while before SoyaCows were accepted in the two Child Haven homes. Making soymilk using a SoyaCow was hard work, so sometimes Fred and Bonnie found that the machine wasn't being used for 2-3 days. Perhaps the gasket broke and nobody took the time to find another gasket. It was an uphill struggle with some of the staff people who worked with the machines. It is less that way now; Bonnie thinks the staff women now have much more appreciation for the value of the nutrition from the soymilk. The children generally liked the soymilk, especially the small ones. "The staff, basically, didn't like the soymilk and we have had trouble getting them to use the okara. I think they're doing the best job using the okara in Bangladesh, where they are working hard to develop new recipes to use the okara, as well as the tofu and soymilk."

At the two CHI homes that had SoyaCows, not much tofu was made in the early days and years because they had trouble getting the coagulant–so they made mostly soymilk. They liked tofu (soya paneer); certainly they are using it much, much more now. Its a good source of protein for the children, so new the staff is required to make tofu three times a week. At some of the homes the staff makes soymilk twice a day and at others they make it once a day. There is a problem because of the erratic supply of electricity required to run the SoyaCows; its a big problem in Nepal. When serving soymilk, they all add some sweetener–sugar. In some of the homes they always use some flavoring. They usually serve each child 1 cup (8-oz. tumbler) of hot soymilk, early in the morning, often before breakfast. In the homes where they make soymilk twice a day, one cup each is usually served in the mid-afternoon, after they get home from school. If there is any extra, some of the children will come back for a second and third cup. It's an uphill battle to get the staff to drink soymilk; they are kind of set in their ways. At the Kaliyampoondi home, near Madras, are about six "senior orphans"–elderly people who have no children to care for them in their old age. They wanted to have a few dairy cows to make milk for their tea. Bonnie and Fred have a commitment to the soymilk. Continued. Address: Founders, Child Haven International.

8632. Cappuccino, Bonnie; Cappuccino, Fred. 2010. Child Haven International, a herd of SoyaCows, and soymilk on the Indian Subcontinent. Part II (Interview). *SoyaScan Notes.* Oct. 25. Conducted by William Shurtleff of Soyinfo Center. • ***Summary:*** Continued: Child Haven has a number of volunteers, Westerners who go for 6-12 months to help at one of the homes in Asia. Before going, they are given a 1-2 day orientation in Ontario. Fred notes: "One of things we tell them is that anything they can do to encourage the use of the SoyaCow machines would be beneficial–such as praising and encouraging the staff who are making the soymilk. Most of the Westerners really do like the SoyaCow program and most of them enjoy that hot cup of soymilk early in the morning." Bonnie adds: "I really enjoy and appreciate that hot morning soymilk. For me, it has a better flavor than cold soymilk. I guess its just what you get used to." Because of the dark-skinned children Bonnie adopted, Fred was kicked out of one Methodist church and invited to another, where he served for four years. "During the time we were there the congregation changed from almost totally white to almost totally black." Then they moved out to the country where Fred served as minister to three churches; 9:00, 10:00, and 11:00–Fred made the circuit every Sunday. "It was fun. After that we were able to make the transfer to a Unitarian congregation." Fred has always been a Unitarian at heart.

Frank Daller was living in Toronto, in what he called "the rat race," when he heard about Child Haven and about Bonnie and Fred. He learned that Bonnie had adopted a lot of kids and that Fred was an anxious spectator. Frank was in the music business, but he was not a musician. He might have been a promoter or a manager. On the wall of his office in Toronto he had a "Juno Award." These are presented annually to Canadian musical artists and bands to acknowledge their artistic and technical achievements. Frank wanted to get out of that "rat race" life, so he and his wife moved from Toronto to be near where Fred and Bonnie lived in Maxville. Frank had skills as a carpenter, so he earned his living doing carpentry and he also worked at ProSoya. Frank and his wife had one child born to them; they then adopted a kid from Mexico.

In early 1993 CHI ordered six more SoyaCows. One of these went to their largest home, in Kaliyampoondi (near Madras, in Tamil Nadu state of southwestern India). The others went elsewhere in India–perhaps to early SoyaCow entrepreneurs.

Importing anything into India at this time was a huge hassle and extremely difficult. Getting those six SoyaCows through customs was fraught with problems–mostly bureaucratic. They didn't assume Child Haven was a charity; they took it to be a money making venture. How would they monitor how much money was made from these six machines, and are the taxes properly paid, etc.

In 1993 CIDA sent a man [Dan Thakur, PhD] to India to evaluate the SoyaCow project. This was the first program he had evaluated a program for CIDA. CIDA does not give funding for children's homes, so CIDA had no interest and no involvement in the main program of Child Haven–the children's homes. His evaluation of the SoyaCow program was totally negative. For example, CHI had hired a woman named Sandiya Rani to be in charge of the SoyaCow program. She was never a caregiver. They hired a woman because CIDA wanted to help women gain employment. She didn't work out very well. She did not know how to fix equipment that was not working properly

and she was prohibited (as an unmarried woman, probably by her family) from traveling unless accompanied by a male relative or chaperone–as to other SoyaCow sites. This lack over supervision was an example of a criticism. The main criticism was that Child Haven was not able, at that time, to get the SoyaCow out into the Indian community with people who wanted to use it to make a living. The 53-page report was submitted on 24 Sept. 1993, after CHI owned at least six SoyaCows. After this evaluation, Child Haven received no more funding from CIDA (except for on-site funding for a school building in Nepal). Child Haven had to raise all future funds for the soya program–almost entirely from donors in Canada.

At about the same time as the negative CIDA report was issued Child Haven hired Dr. Ratan Sharma (his PhD is in soy and dairy paneer) full time to be in charge of the SoyaCow program (replacing the woman) and to monitor the roughly six SoyaCows. He was paid a fixed annual salary, to promote soyfoods and SoyaCows, teach new potential entrepreneurs how to use the SoyaCow and start a business with it, and to maintain existing SoyaCows if they develop problems. Child Haven found Ratan through Raj Gupta and they think Ratan is an outstanding person who is doing a very good job.

Shortly after hiring Dr. Sharma, Child Haven opened the SoyaCow Centre. Here Child Haven also pays the rent on his home and office. At Centre there is no SoyaCow and no space for training people. Ratan has to go to an existing site to train people.

Dr. Sharma is still employed full time by Child Haven, which is not able to pay him as much as he could earn elsewhere with his PhD degree. But he also is paid for part-time consulting with the American Soybean Association, with ProSoya, with Malnutrition Matters, and with some Indian government programs.

At least once or twice, Frank Daller traveled to India with Bonnie. On a trip in early 1995, Daller went to India to see if the herd of SoyaCows were being used properly. When he found that many were not, basic changes in the program were made.

"Part of our reason for developing the SoyaCow was not just for our children's homes but the idea of getting across the whole possibility of low-cost, high-protein food for a society that is basically vegetarian and is gradually losing one important traditional source of protein–dal. But it takes a long time to introduce a new food to a traditional culture, unless you start with the children. The SoyaCow is going out to new places in India and I think Ratan is largely responsible for that. He is still an employee of Child Haven, paid from money that is donated to Child Haven.

After Child Haven got paid staff at the office of its headquarters in Maxville, they became much better about keeping and organizing all important documents so they could be quickly and easily located. Two people presently work at the office in Maxville.

"For Child Haven, over the years, The SoyaCow program has meant much better health for the children and better teeth. Occasionally doctors from other countries offer to come in and do a dental clinic or health check. They usually say that our children have much better health and much better teeth than other children in that area or than children at other children's homes that don't have a SoyaCow. Also the whole idea of trying to spread the concept of this basically very good food for a society that needs a good source of protein because they are largely vegetarian. The SoyaCow provides a good-tasting soymilk. Using soybeans in the form of soymilk or tofu is much better than trying to use them as dal. Ratan has done good work in India, Bangladesh and Nepal to help small entrepreneurs start a new business based on soymilk and tofu made by the SoyaCow. Child Haven has a SoyaCow at its home in Nepal (where electricity is a problem) and at Chittagong, the 2nd largest city in Bangladesh.

"Raj Gupta has been a good supporter over the years of the basic program at Child Haven. Certainly the whole idea of this Soya Cow would never have started without him. Its a mutual admiration society between Raj and Rashmi and the two of us. We admire him and his wife so much for what they have been doing. We saw them often during the early years of the SoyaCow program and the committee that worked to get funding from CIDA. We still see them 2-4 times a year and they have helped us with the Indian High Commissioner to Canada (like an ambassador who lives in Canada) to get visas for our volunteers going to India from Canada. They come to our annual fundraising dinners in Ottawa. We have annual fundraising dinners across Canada at about 18 different places. Child Haven's annual budget from donors in Canada (plus a little from the U.S.) is about $1.5 million.

Question: How would you describe what you have done since you started Child Haven? Ans: "I don't know. I don't try to analyse it. We just do what seems to make sense and hope it works. I calculated one time that 75% of what Bonnie and I have tried to do in terms of new projects, etc. was a total flop. And then something clicks. Child Haven is one thing that clicked. I don't know that it means that we have any special talents or skills."

Fred adds: "When I was in Japan I had the Methodist missionary mindset. But instead of converting people, I accidentally got converted, and came to feel that the Japanese are all right the way they are. That's pretty much my story. I'm a Unitarian minister now. We don't convert people. I tell the congregation that I was 36% Buddhist, until I heard the Dalai Lama. Then I became 48% Buddhist. I'm 81% Unitarian. There's overlapping there" [Laughter]. Address: Founders, Child Haven International.

8633. Cappuccino, Bonnie; Cappuccino, Fred. 2010. Child

Haven International, a herd of SoyaCows, and soymilk on the Indian Subcontinent. Part III (Interview). *SoyaScan Notes.* Oct. 25. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Continued: Fred has had an idea about a new way of using and marketing soymilk in India. He has talked about this with Ratan Sharma, but (so far as Fred knows) nothing has been done to implement it. "I was suggesting to Ratan that he look into utilizing the small clay pots to sell fresh curds made from soymilk." Buffalo milk curd (called *dahi* in Hindi) is sold mostly in small clay pots in India; it is a popular fermented food resembling yogurt. "In India they make small clay pots which are disposable. After each use, they crush them and they may re-use them. It seemed to me that this would be a new way to promote the use of soymilk. Such curds (made from dairy milk) are already part of Indian food culture and the sales could be a dependable, growing product for entrepreneurs who own a SoyaCow. The small clay pots are readily available and very, very inexpensive. We also haven't been very successful in promoting the idea of making curds. For some reason that has not caught on or been popularized–not even at the Child Haven homes, with the exception of Bangladesh. Indians generally prefer curds from Buffalo or cow's milk–but of course many people cannot afford them.

Fred adds with a chuckle: "Ratan has not yet caught this fantastic vision of mine."

Another problem is to get more of the okara used in Child Haven homes. They are now using it in some of the curries at Child Haven in Bangladesh. There are so many ways to use it, the quality of the protein is higher than that in tofu or soymilk, and it is a valuable source of bulk and dietary fiber.

Hart Jansson is a person Shurtleff should talk with (Fred gives contact information). He lives in Oakville, near Toronto. "He is retired. He and his wife also adopted a child, in addition to one born to them. We were and are very close to that family. His wife, Daniella, is the main person who organizes the annual Oakville Child Haven fundraising dinner. He now works with Frank Daller at Malnutrition Matters. Their VitaGoat has the big advantage that it doesn't need electricity." Hart was the main person who wrote the CIDA grant application.

One of the eight Child Haven homes is the Maitreya Foundation in Delhi. All of the 21 refugee children are Tibetan and they have a SoyaCow. The founder and person in charge is a Dakpa Rinpoche, but he is busy and travels a lot. Bonnie goes to visit them. Child Haven provides all the funding. He is also the hereditary head of some 17 monasteries in Tibet, but has never been there having been born in India. He is trying to obtain a visa to visit Tibet. A photo of Rinpoche and the Tibetan children is on the Child Haven website. Address: Founders, Child Haven International.

8634. Jansson, Hart. 2010. Work with Child Haven International on their SoyaCow project (Interview). *SoyaScan Notes.* Oct. 28. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Hart first came in contact and got involved with Child Haven in 1986. Before that time he had worked in the telecommunications (telecom) software industry, where he continued until about the year 2000. He and his wife were members of a Unitarian church in Ottawa, Ontario, Canada, and Fred Cappuccino was a Unitarian minister; he occasionally gave a sermon at Hart's church. Fred's farm in Maxville, Ontario, is about one hour's drive from Ottawa. Since that first introduction the Janssons have been steady supporters of and volunteers for Child Haven.

Hart first met Raj Gupta through Child Haven, where Hart was already working as a volunteer. They introduced Raj to him as "someone who had this marvelous idea about cottage industry and soymilk." Hart first met Grant Wood at about the same time; Grant was intimately involved with the engineering on the SoyaCow. He met both before the project committee began to meet.

Hart knows that the Child Haven committee submitted its first application to CIDA in 1989. He is not sure whether they got started on the project in 1988 or 1989, but he suspects it was probably late 1988. Hart believes that CIDA approved the first grant proposal in 1989 or 1990. Child Haven (with Hart as the principal author) did annual submissions (in part because Child Haven was a small organization with a new idea) and got three consecutive years of funding from CIDA.

In early 1989 Hart first saw a SoyaCow in Raj Gupta's basement. It was a working prototype that made soymilk, and Raj used it to make soymilk for Hart. Hart is quite sure that the first SoyaCow made in Canada was shipped to India in about 1991 and no later than early 1992.

Hart recalls that he first met Frank Daller in 1987 in India; Frank was in India related to this first SoyaCow fabrication. Hart was there on a contract to train software engineers in Delhi. He visited the Child Haven Home in Hyderabad, where about 50-100 kids lived in a rented house. Frank was with there with Bonnie.

Whose idea was it to ask CIDA for money for a SoyaCow program? Hart is not sure, but he thinks it was either Raj's idea or his idea. It was definitely not Child Haven's idea. The grant writing committee consisted of Raj and his wife, Rashmi, Fred and Bonnie Cappuccino, grant writing committee and Hart recalls working very closely with Raj on estimating the cost to build each SoyaCow in Canada. The committee met 4-5 times before the first proposal was submitted. As principal author, Hart did all the writing; he had never written a grant proposal before he did this one. After the first submission, the proposal had to be "tweaked" (changed) several times to make it fit what

CIDA was looking for. Tom Schatzky of CIDA suggested ways in which the proposal could be improved. That back and forth was done once to twice before the final application was submitted. CIDA, for example, hoped to use this project to employ and train women, and they wanted Canadian technology to be used. There may have been an element of children's nutrition too. Moreover, CIDA insisted on a matching grant, where Child Haven had to raise a certain percentage of the amount that CIDA gave for Phase I.

Hart does not recall the amount of CIDA's Phase I grant. It was less than $100,000; it may have been about $50,000.

After the first grant was received, the same committee met once a year to submit a proposal for a new phase each year; these were pretty straight follow-ons.

Frank Daller was involved with Child Haven somewhat before 1987 when Hart met him in India, but he was not involved with Child Haven before Hart.

Note: On 20 April 1991 the first SoyaCow made in Canada for Child Haven was unveiled at a Child Haven dinner in Ottawa. Speakers included Tom Schatzky of CIDA (who had by now visited the Hyderabad project) and Rashmi Gupta.

After the first grant, Hart did 1-2 monitoring visits to India, probably in 1991 and 1992; he travelled alone each time. His goal was to evaluate the SoyaCow and soymilk project implementation. All expenses were paid by CIDA, as part of the project monitoring. Hart found that "things worked pretty much exactly as expected. The machines worked reliably, the kids were accepting the soymilk, the women operators were able to operate the SoyaCow system without any problems. Looking back on it, it went surprisingly well." It's not easy to transfer a new food and new technology to a traditional culture. Upon returning from each trip Hart wrote a report to CIDA; each was positive.

Hart cannot find any early documents from this period, but he did find three old, low-resolution, black and white photos from 1990-91. One shows the St. Thomas Hospital in Madras (Tamil Nadu state in southeastern India). In the photo is a sign that reads: "Thanks to Child Haven and Tom Schatzky of CIDA." In 1988 Child Haven established a home in Kaliyampoondi; that is now (Oct. 2010) their biggest home, caring for 270 children ranging in age from newborn to 21 years. Hart recalls: "I remember being at St. Thomas Hospital; it was the most wonderful reception I've ever received. They were just amazingly friendly. Dr. Sister Mary Rexline was running the hospital and raising funds. They had a SoyaCow in the hospital and they were giving the soymilk to all their patients. They loved it." We could be doing the same thing at hospitals all over the third world.

Follow-up e-mail from Grant several hours after we talked on Oct. 28. "The fact that we did receive 3-years of funding (a total of about $220,000), and the funded project completed in Sept. 1993, confirms my recollection of the timing (i.e., first proposal submitted in 1989, with project start in 1990)." Address: Oakville, Ontario, Canada.

8635. Jansson, Hart. 2010. The work of Malnutrition Matters in India (Interview). *SoyaScan Notes.* Oct. 28. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Hart first got involved with Malnutrition Matters (MM) in 2002; he started working for them part-time. Early in the year 2000 he finished his career as a full-time salaried person in the telecom (telecommunications) software industry in. Then he did some consulting stints and several other things for a couple of years before he started with Malnutrition Matters, while he was still living in Ottawa. He left the telecom job in part because he had enough money that he had the leisure to not be so concerned about money. Hart is paid for his work at Malnutrition Matters. It's much less than he could earn in the private sector, but no complaints. He now lives Oakville, a suburb of Toronto, Ontario.

Malnutrition Matters was founded in the year 2000. When Hart started working at Malnutrition Matters, Brian Harrigan was still there. Their office was in Ottawa, very close to the National Research Council offices where Raj Gupta worked and lived nearby. The office was in a small rented house near where Frank Daller lived. Frank and Brian worked full time and Hart worked part time on partnership development and writing grant proposals. Hart and Frank had kept in close contact since they first met in 1987. They had gone to Nepal together (in about 1998-99) on a trip unrelated to work with soy. Frank invited Hart to work with Malnutrition Matters and Hart was quite eager to give it a try.

Malnutrition Matters is presently very active with soy in India. They have 20 VitaGoats in India. Ten are in the state of Orissa, and almost all of those are part of a school feeding project that for which Malnutrition Matters got funding from the Word Bank. The machines are located in small buildings in various villages, run by women's cooperatives supervised by a local NGO named Biswa. It's working OK, and there is no problem with the children accepting soymilk, but there is some resistance from women to using the pedal-powered grinder (they should call it a spinning class). Most important, it could have been a bigger project. The big hurdle was government approvals. They know about rice, wheat, lentils, but soy is a new thing so it is a years-long process in India to get approval for soymilk in a school lunch program. So its a very limited pilot project. Its an inevitable and rather painful part of introducing soyfoods to a traditional culture. Multiple levels of government have to be convinced, and there is some corruption. "Everybody knows how to say 'no.'"

Hart had noticed a huge change in India's government and economic policies, especially since about 1996. "It's like night and day. Really amazing in terms of modernization– even going through customs is much easier. Even though the buzzword today in India is 'entrepreneur,' if you look in the rural areas, there are more malnourished people than in all

of Africa–according to the World Health Organization. India made progress reducing malnutrition through the 1990s, but basically during the past decade that progress has stalled, and even begun to slide back. Its really inexcusable given their overall economic progress. Even India's prime minister, in an address to parliament, has admitted that people in the rural areas are suffering from malnutrition and have been left behind. He has stressed the need to solve these huge problems but it is not happening. In a good number of African countries you see really substantial progress. In some of the Indian states, such as Karnataka and Kerala (which has a Communist government) the rural population is doing well.

The other ten VitaGoats are scattered all over India from Deli to rural Maharashtra, Rajasthan, Punjab, Bihar, etc.

How does Malnutrition Matters monitor that each of these 20 machines is being used as intended? "We basically do that indirectly through the NGO partners we work with, such as Biswa, and some really small grass-roots organizations. We don't have staff in India, and only three of us at the headquarters in Ottawa. Malnutrition Matters now has 170 VitaGoats and SoyCows operating around the world. Burma and Belize are our latest countries.

"Malnutrition Matters has had three projects funded largely by the Donner Canadian Foundation–in amounts under $100,000. They have provided funds to Child Haven, which has enabled us to do projects under the auspices of Child Haven in India, which is the implementing organization. The machines do not go into Child Haven homes.

"Ratan Sharma presently works only as a subcontractor for Malnutrition Matters, as when we have training or other such work for him to do. We pay him on a per diem basis." The VitaGoats are made by an affiliate of SSP in India, but not by Pristine (PPI). "We have found that it is less expensive and more reliable (with less maintenance and repair) to have the grinder 'off board'–as a separate component. Pristine does good work, but the machines they make are more expensive and more complex than ours. If you're a small guy in a village just trying to make tofu for same-day sales, you would look at a less expensive VitaGoat or SoyCow from us."

Any VitaGoat system has the option of using either a multifuel boiler (which operates with firewood, coal, or other types of biomass, and has an all stainless steel core) or an electric steam boiler (which has a soft steel core–not stainless). The electric boilers are purchased from Reimers Electra Steam, Inc. in Clear Brook, Virginia, USA.

As far a Hart knows, Pristine makes only SoyaCows–of the next to latest generation. Pristine also buys its electric boilers from Reimers in the USA. Address: Oakville, Ontario, Canada.

8636. Jansson, Hart. 2010. The work of the Gates Foundation with soy in the third world (Interview). *SoyaScan Notes.* Oct. 28. Conducted by William Shurtleff of Soyinfo Center.
• ***Summary:*** The Gates Foundation ("Gates") just gave TechnoServe $8 million for promoting soy cultivation in Mozambique and Zambia as part of the "soy value chain" project in Africa. But there isn't a dime in this $8 million budget for human consumption; its all going into soybean production and animal feed.

Note: "TechnoServe (founded in 1968) is a non-governmental organisation (NGO) based in Washington, DC which helps entrepreneurial men and women in poor areas of the developing world to build businesses that create income, opportunity and economic growth for their families, their communities and their countries. It has about 800 employees worldwide (Source: Wikipedia, Oct. 2010).

Hart recently talked with someone at Gates to try to convince them to have at least a token amount for human consumption. The answer was a pretty flat "No." They want to promote soybean production in Africa to help the small landholder to increase his income.

Hart thinks that Gates does understand the soyfoods movement in the third world, and they do understand that consuming soyfoods directly is much more energy efficient, and land efficient, and water efficient. But they seem to be stuck on a big-business model and cooperation with Monsanto. That model is to grow lots of soybeans, crush them to make soy oil and soybean meal, feed the oil to animals (mostly pigs and chickens), then slaughter and eat the animals. Hart thinks that is the wrong, unsustainable model. It makes very inefficient use of basic resources. It will provide more animal protein [and vegetable oil] for the small middle class in the cities, but it is not going to help feed the malnourished and starving poor in the Africa's rural areas and city slums. "I'm passionate about this concept of getting protein, calories, and other nutrients to people who are really starving."

Note: "The Bill & Melinda Gates Foundation recently purchased 500,000 shares of Monsanto Company, worth an estimated $27.6 million."

The Gates Foundation has given the Monsanto and their affiliates about $100 million in funding for biotech research. But the Foundation doesn't really understand the great significance of (for example) St. Thomas Hospital in Madras, or perhaps the fact that children do not have a problem with acceptance of soyfoods that taste moderately good–especially children who are malnourished or hungry or starving.

WISHH hosts a nutrition conference in Washington, DC, once a year, and they have a Midwest workshop once a year, and Gates is usually there. So Gates is well aware of what WISHH is doing and what MM is doing. Gates is probably not aware of Child Haven. There is one project where Gates is providing some funding to an organization named Tropical Soil Biology and Fertility (TSBF, in Nairobi), an Institute

of CIAT. TSBF ordered a number of VitaGoats from MM for Kenya. So Gates is aware of those results via their TSBF project.

Note: A TSBF Web page starts: "Many scientists consider declining soil fertility the biggest obstacle to food security in Africa." The CIAT homepage states: "The International Center for Tropical Agriculture (known as CIAT from its Spanish language name *Centro Internacional de Agricultura Tropical*) is a nonprofit organization that conducts advanced research in social and environmental fields to mitigate hunger and poverty and preserve natural resources in developing countries." Founded in 1967, CIAT's headquarters are near Palmira, Colombia. "Over half of its scientists are located in regional offices around the world." "CIAT is one of 15 research centers that together form the Alliance of the Consultative Group on International Agricultural Research (CGIAR). The Center is funded through contributions from many countries, private foundations, and international organizations." CIAT's mission is "to reduce hunger and poverty and improve human health in the tropics through research aimed at increasing the eco-efficiency of agriculture." "Eco-efficiency" (a term coined in 1992) means "creating more goods and services while using fewer resources and creating less waste and pollution." Address: Oakville, Ontario, Canada.

8637. Photograph of Fred and Bonnie Cappuccino. 2010.

• ***Summary:*** This photo of Fred and Bonnie was taken at their home and farm in Maxville, Ontario, Canada, on 27 Oct. 2010. It was sent to Soyinfo Center by Fred, Bonnie, and Steve Bayne.

8638. *Malnutrition Matters Newsletter* (*Ottawa, Ontario, Canada*)**.** 2010. Serial/periodical. Ottawa, Ontario, Canada: Malnutrition Matters. No. 1. Nov. 2010.
• ***Summary:*** Based on No. 4: Each newsletter, which is sent only electronically, consists of 1 page only, with roughly three articles and 3-4 color photos on that page. Address: Ottawa, Ontario, Canada.

8639. *SoyaScan Notes.* 2010. Did the Chinese or Japanese or Koreans traditionally feed soymilk to infants or to recently-weaned children? No! (Overview). Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** A personal view by William Shurtleff:

I have lived in Japan with a Japanese family for 6½ years, spoke fluent Japanese, traveled all over China, and read huge amounts of literature about soy in China and Japan.

I would say that the Japanese and Chinese do NOT feed soymilk to infants or even to weaned infants. Rather they DO feed tofu as one of the earliest weaning foods. They mash it with rice gruel, so both are very soft. Remember that traditional Asian soymilk causes infants intestinal gas which tofu generally does not, or at least much, much less.

Of course it depends partly on what age you mean by "infants." At what age does an infant cease to be an infant? Wikipedia says of "infant": "It is typically applied to children between the ages of 1 month and 12 months; however, definitions vary between birth and 3 years of age."

I have never seen or heard of soymilk used as an infant food or a weaning food, except in a few early French-language articles such as: Labbé 1911, and Beltzer 1911–and maybe a few other articles.

The statements in these two articles that soymilk is fed to infants are rare exceptions. I imagine that Beltzer learned it from Labbé and that Labbe did not know much about the subject.

Read the writings of Dr. Harry Miller (M.D., on our website, www. soyinfocenter.com) who established the first soy dairy in China in 1936, who lived in China as a missionary in China for many decades, and who introduced soymilk for infants (Soyalac) to the United States. He wrote a great deal and a biography has been written about him, yet I do not recall that he ever said that Chinese feed soymilk to infants. Address: Soyinfo Center.

8640. Nordquist, Ted. 2010. Making concentrated soymilk or soybase–with a high solids content (Interview). *SoyaScan Notes.* Dec. 6. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** It is not difficult or expensive to make soymilk with a high solids content; that is exactly what traditional Japanese tofu makers did when they made the soymilk to be used for making silken tofu (*kinugoshi*). To make soybase, you simply add less water than when making a more dilute product. There are no special tricks.

Note: Concentrated soymilk was also used traditionally to make yuba in China and Japan.

Ever since he was in Sweden in the 1980s, Ted has used the word "soybase" to refer to this concentrated soymilk. He first developed soybase in Sweden for use in making soy ice cream–which is typically made from cream and thus requires a high solids content (11½% solids). Later he continued to make it as the base for other products because it cost less to ship (as in a milk tanker) or store. Today his typical soybase contains 12½% solids–which is the concentration that has the highest yield of solids from the soybean in the soybase. From one gallon of soybase one can get about 2½ gallons of soymilk (containing 5½% solids). For soy yogurt it is diluted down to about 8½% solids.

SunOpta makes a soybase that contains 13½ to 14% solids. But if one wanted to make a soybase with an even higher protein content (16-18% solids), there are only two ways: Using ultrafiltration (UF) or reverse osmosis (RO). Both of these ways are very expensive (they require a large initial investment) and the process can only be run for about a short period of time (6-8 hours) before the equipment must be cleaned–at great expense for chemicals and time (10-12 hours of cleaning time). Ted will produce soybase for 50-60 hours before he stops to clean the equipment. Ted has never heard of using a vacuum to reduce the water content of soymilk. And there is another problem–called "the curve." As you reduce the water, and your soybase solids get higher and higher, the protein and oil in your okara also get higher and higher, so you are losing / wasting a lot of nutrients. You soon begin losing money because your water-soluble protein and oil, at a certain point, start going down, even though you are adding more soybeans and less water. Address: WholeSoy & Co., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

8641. Shurtleff, William. 2010. Re: Work of the American Soybean Association to support or promote soyfoods or soy protein ingredients. Letter (e-mail) to Hervé Berbille, Paris, France, Dec. 6. 1 p.

• ***Summary:*** "In the early days, certain high-up people in the ASA told me that they strongly disliked what I was writing, and doing, and saying. They even did a few things to try to hinder my work. That was in the mid-1970s. But over the years that has changed quite a bit, largely because of women who hold high positions in ASA's state soybean boards, who are interested in food, cooking, soyfoods and the potential of soy to do more to relieve hunger and malnutrition.

"The big change came in 1999 when the U.S. Food and Drug Administration issued a health claim for soy protein. This created huge interest in soyfoods in the USA and many new products, by both very large and very small companies. ASA proudly joined the crowd and really began to support soyfoods as one of its 'new' products.

"Another major change came in early 2001 when ASA created WISHH–the World Initiative for Soy in Human Health. This organization, and its outstanding, deeply-devoted head, Jim Hershey, are now taking soyfoods to the four corners of the world, promoting soymilk, tofu, cottage industries–as well as TVP, isolates and concentrates. I applaud their work.

"I could give you many examples of the things that ASA is now doing that are very favorable and helpful for soyfoods. They sponsor conferences, publish newsletters, conduct market surveys on attitudes towards soy, sponsor fairs and cooking contests, etc.

"Today, I cannot think of a single person in ASA with whom I have a bad or negative or uncomfortable relationship. They either respect my work and my position and simply disagree with it, or they positively like what I am doing and have been doing without stop since Oct. 1972 when I began devoting all my working time to teaching people worldwide about soyfoods.

"ASA is basically in the business of selling vegetable oil and meat. Developing countries (such as India and China) desire more of these two commodities, but in the developed countries they are steadily becoming less popular. Increasingly people want to reduce their consumption of all fats and of meat. So ASA finds itself with a somewhat unclear mission. Nevertheless, in both India and China, ASA is very actively promoting soyfoods and domestic utilization of soy protein.

"This is my analysis of the situation as it now stands. I think ASA is doing a great deal to help the cause of soyfoods. They must flow with the great tides of history–or be left behind. Fortunately they are the keepers of a truly remarkably crop with an ancient, illustrious history–the soybean!" Address: Founder and Director, Soyinfo Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

8642. *SoyaScan Notes.* 2010. Chronology of major soy-related events and trends during 2010 (Overview). Dec. 31. Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** Jan. 21–Alpro releases an excellent cartoon video commercial titled "Great Ideas Often Take a Long Time to Sink in" as part of its "Join the movement now" campaign. It encourages people to change their diet by replacing meat and dairy by an alternative just once a week. If everyone in Europe did this, it would reduce global carbon emissions by 40 million tonnes (metric tons). That is more than the carbon emissions produced by a line of cars going

around the world. Soy is not mentioned in the voiceover, but on the last panel we read that this video (lasting less than 2 minutes) was sponsored by the World Wildlife Fund and Alpro Soya. Note: Alpro Soya is now owned by Dean Foods.

Sept. 22–Quong Hop & Co. files voluntarily for Chapter 7 bankruptcy. The last U.S. maker of wine-fermented tofu no longer exists–opening up a business opportunity. Quong Hop's president at the time of bankruptcy is James Stephens.

Oct. 24–South River Miso Co. stops sending their 4-page quarterly printed newsletter; invites people to sign up for e-newsletter.

8643. Andoh, Elizabeth. 2010. Kansha: Celebrating Japan's vegan and vegetarian traditions. Berkeley, California: Ten Speed Press. vii + 296 p. Illust. (color photos by Leigh Beisch). Index. 25 x 25 cm.

• ***Summary:*** A beautiful book, and a major contribution toward understanding Japanese cuisine, culture, and the pervasive spirit of gratitude / appreciation. In Japanese, *kansha* means appreciation or gratitude. Contents: Acknowledgments. Introduction: A historical perspective on kansha (*shojin ryori* is vegan), recent developments, putting theory into practice, practicing kansha, meal planning, some final thoughts, a note about language. Rice. Noodles. Stocks and soups. Fresh from the market. The well-stocked pantry. Mostly soy. Tuskémono [pickles]. Desserts. A guide to the kansha kitchen. A catalog of tools and techniques. A catalog of ingredients [glossary]–with entries that include the following: daikon, edamame, flours (kinako), kudzu, herbs, spices and seasonings (ao nori, sansho, shiso, togarashi, wasabi), kabocha, dried beans (adzuki [sic], daizu {dried soybeans–the most important legumes in the Japanese pantry}), dried soy foods [sic] (hoshi yuba {dried yuba}, koya-dofu / kori-dofu). Dried vegetables from the land (dried shiitake mushrooms). Dried vegetables from the sea (arame, hijiki, kanten, kombu [konbu]). Dried wheat gluten. Kasu (sake dregs). Konnyaku and shirataki. Matcha. Miso (red miso, white miso, genmai miso). Mushrooms. Natto. Nigari. Nuka. Okara. Pickles. Rice. Roots and tubers. Saké. Salt. Sesame (seeds, sesame paste, sesame oil). Soy milk. Soy sauce. Sweeteners (ama-zaké, kuro-zato, mirin, mizu amé). Tofu (firm tofu, silken tofu, grilled tofu, thin fried tofu {abura agé}, thick fried tofu {atsu agé}).

Tsukemono (pickles). Umeboshi (pickled plums). Vinegar. Yuzu. Yuba.

Note: This is the earliest English-language document seen (April 2013) that uses the term "thick fried tofu" to refer to atsu agé / deep-fried tofu cutlets.

Contains many recipes that use tofu, miso, soy sauce, edamame, natto, etc. Address: Japan.

8644. *Iowa Soybean Review* (*Iowa Soybean Association, Urbandale, Iowa*). 2010. Outstanding contributions in promoting soyfoods. 22(5):18. Dec.

• ***Summary:*** In the section about investing soybean checkoff dollars we read: "Food enthusiasts who enjoy edamame, tofu or soymilk may have Linda Funk to thank. As executive director of the Soyfoods Council, Funk has been successfully promoting the flavor, nutrition benefits and healthful aspects of soyfoods for over 10 years." The Soyfoods Council is headquartered in the office of the Iowa Soybean Association.

A large color photo shows Linda Funk accepting an award "For Outstanding Contributions in Promoting Awareness of the Nutritional and Health Aspects of Soyfoods" from Mark Messina, PhD at the 9th International Symposium on the Role of Soy in Health Promotion and Chronic Disease Prevention and Treatment, held Oct. 16-19 in Washington, DC.

8645. Soyatech, LLC. 2010. Soya & Oilseed Bluebook 2011: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 348 p. Dec. Comprehensive index. Advertiser index. Statistical conversions. 28 cm.

• ***Summary:*** This is the 5th year in a row that the *Bluebook* (a $95 value) has been sent free of charge to qualified industry members. On the cover are six color photos, and a black and white photo of a farmer leaning against a huge rubber tire that is almost as tall as he is.

This edition of the *Bluebook* contains 4 fewer pages than it did last year. The oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hempseed, jatropha, linseed, palm, peanut, rapeseed, safflower, soya, sunflowerseed–the same as last year.

On the inside front cover is a color ad from Natural Products Inc. (Grinnell, Iowa), makers of innovative ingredients for bakery, soymilk and tofu. On the first page is a full page color ad from SunOpta, processors of identity preserved, natural and organic soy products, including whole soybeans, soymilk, soy flours, edamame, oils and more.

On the rear cover is a full page color ad from ADM titled "We see potential" which shows a growing soybean plant with pods and leaves. A table shows the many products that can be made from soybeans.

Chris Erickson is CEO. Mark Dineen is president. Keri Hayes is publisher and operations director. In the Foreword, Joe Jordan (General manager and content director) leads with a question: "What could possibly have increased sales by 1274% between 2008 and 2010? The e-Book." He appears to be talking about the entire e-book industry in the USA or perhaps even worldwide. He then writes about Amazon's Kindle and hints that the printed and bound *Bluebook* may soon be available in digital form only. "Sure the Bluebook is changing. It always has." Address: P.O. Box 1307, 19 Clark Point Rd., Suite 112, Southwest Harbor, Maine 04679. Phone: 207.244.9544.

8646. **Product Name:** Trader Joe's Soy Essential: Soy Beverage (Organic Non-Dairy).

Manufacturer's Name: Trader Joe's (Marketer-Distributor).
Manufacturer's Address: Monrovia, CA 91016.
Date of Introduction: 2010. December.
Ingredients: Organic soymilk (filtered water, whole organic soybeans), filtered water, inulin, calcium carbonate, organic flaxseed oil, natural flavor, sea salt, carrageenan, vitamin A palmitate, vitamin D2, riboflavin (B2), vitamin B6, folic acid, vitamin B 12).
Wt/Vol., Packaging, Price: Quart (32 fl oz; 946 ml) Aseptic carton. Retails for $1.69 (2013/01, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 1 cup (240 ml): 7 gm protein.
New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2103. Jan. 9. $1.69. Front and back panels: Light blue, dark blue, white, light and dark green. "Made with organic soybeans. Unsweetened. Contains 500 mg Omega-3 ALA (alpha-linoleic acid). Heart healthy. Good source of fiber. Enriched with 7 nutrients. free. Ultra-pasteurized." Left panel: "Excellent source of calcium and vitamins D B6, B12, riboflavin and folic acid. Refrigerate after opening and use within 7-10 days after opening."

8647. **Product Name:** Trader Joe's Soy Milk (Organic Unsweetened Nondairy).
Manufacturer's Name: Trader Joe's (Marketer-Distributor).
Manufacturer's Address: Monrovia, CA 91016.
Date of Introduction: 2010. December.
Ingredients: Filtered water, organic whole soybeans. Made on shared equipment with wheat, milk, eggs & tree nuts.
Wt/Vol., Packaging, Price: Quart (32 fl oz; 946 ml) Aseptic carton. Retails for $1.69 (2013/01, Lafayette, California).
How Stored: Shelf stable; refrigerate after opening.
Nutrition: Per 1 cup (240 ml): 7 gm protein.
New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2103. Jan. 9. $1.69. Front and back panels: Light green, black, pink-beige, dark green. Rear panel: "Trader Joe's organic unsweetened soy milk as several health benefits. An added plus to the great flavor! 70 mg of isoflavones per serving. Lactose free. Gluten free. 9 grams of soy protein per serving. * Diets low in saturated fats and cholesterol that include 25 grams of soy protein a day may reduce the risk of heart disease. One serving of Trader Joe's Organic Unsweetened Soy Milk provides 9 gm of soy protein." Right panel: Certified organic by Quality Assurance International.

8648. Chappell, Mary Margaret. ed. 2010. Vegetarian Times everything vegan. Hoboken, New Jersey: John Wiley & Sons. 352 p. Foreword by Neal Bernard, M.D. Illust. (full-page color photos). Index. 24 cm.
• ***Summary:*** Recipes from *Vegetarian Times* magazine.

Chapter 7 (p. 131-64) is titled "Tofu, tempeh, and seitan." The index to the book contains 36 entries for tofu (divided into different types such as extra firm, firm, flavored and processed, silken; plus lots of basic information), 17 for seitan, 15 for tempeh, 7 for miso, 5 for soy crumbles and textured soy protein, 4 for meat alternatives, 4 for edamame, 2 for smoothies, and 1 for soymilk–although many recipes call for soymilk.

This book frequently includes alcoholic beverages with recipes and in photos.

8649. Hackett, Jolinda; Bull, Lorena Novak. 2010. The everything vegan cookbook: 300 recipes for any occasion! Avon, Massachusetts: Adams Media. x + 294 p. Index. 24 x 21 cm.
• ***Summary:*** The book begins: "Dear Reader: When I decided to give up eggs and dairy, I asked every vegan I knew for their advice. One sentiment always stood out: 'Learn to cook.'"

Chapter 11, titled "Tofu" (p. 219-42) contains 26 tofu recipes of great variety and creativity. Chapter 12, "Seitan, TVP, and tempeh" (p. 243-65) contains 23 recipes, including homemade seitan.

Other soy related recipes: Vegan mayonnaise (with "1 12-ounce block silken tofu," p. 23). Vegan "pigs" in a blanket (with vegan hot dogs, p. 24). Vegan tzatziki (with soy yogurt, p. 30). Chili masala tofu scramble (p. 38). Quick tofu breakfast burrito (p. 42). Strawberry protein smoothie (with silken tofu, p. 43). Granola breakfast parfait (with soy yogurt, p. 46). Baked "sausage" and mushroom frittata (with vegetarian sausage or "beef" crumbles, p. 53). Creamy miso sesame dressing (p. 61). Tempeh dill "chicken" salad (p. 64). Edamame salad (p. 73). Winter seitan stew (p. 88). Saucy Chinese vegetables with seitan or tempeh (p. 105). Barley pilaf with edamame and roasted red peppers (p. 185). Cheesy macaroni and "hamburger" casserole (with veggie burgers, p. 210). TVP taco "meat" (taco filling, p. 250). Homemade baked seitan (p. 251).

Many other recipes call for soy milk or soy cream. Jolinda Hackett has been a vegetarian for nearly 20 years and a "plant-based vegan" for nearly ten. Address: 1. Santa Barbara, California; 2. RD [Registered Dietitian], Riverside, California.

8650. Nishimura, Mayumi. 2010. Mayumi's kitchen: Macrobiotic cooking for body and soul. Tokyo, New York: Kodansha International. 157 p. Illust. (mainly color). Index. 26 cm. [15 ref]
• ***Summary:*** This is Mayumi's first English-language book. Madonna (of worldwide musical fame) wrote her a letter that appears in this book (p. 7): "Dear Mayumi, Congratulations on your fabulous book!... Not only are you the best chef in the world, you are part of our family, and we thank you for your love and warmth.

"In the seven years you lived with us and cooked for us, your amazing food helped me to be a happier, healthier person, balanced in body and mind. I feel better than I did 20 years ago. I am very grateful to you for this."

The index of this stylish book contains 24 entries for tofu (some in the chapter titled "Protein dishes"–p. 97-104), 20 for miso, 14 for seitan, and 11 for tempeh. How nice to find a Japanese cookbook that calls for the use of brown rice (basic recipe, p. 67).

The centerpiece of Mayumi's book is her 10-day detox diet.

Also contains specific recipes for: Nabe (with "2 pieces abura-age {deep-fried tofu skins}, halved or cut open on one side to form pouches," p. 67). Soybean and millet croquettes with beet sauce (with "15 oz {425 gm} canned soybeans, drained," p. 84). Seitan pot stickers (with seitan and tofu, p. 113). Smoked tofu salad (with "7 oz {200 gm} firm tofu," p. 104). Black soybean tea (p. 113).

The Glossary (p. 140-49) includes entries for: abura-age, adzuki beans, brown rice, brown rice mochi, edamame, hijiki, kombu, koyadofu, kuzu, mirin, miso, nori, rice milk, rice syrup, seitan, sesame oil, shiso, shoyu (incl. soy sauce and tamari), soba, soy meat nuggets (TVP), soymilk, tahini, tempeh, tofu, umeboshi plum, umeboshi plum paste, wakame, wasabi, whole-wheat flour.

About the author (inside rear dust jacket): "Mayumi Nishimura was born on the small island of Shinojima in Aichi Prefecture [in Mikawa Bay Quasi-National Park]. In 1982 she moved to the U.S. and began studying macrobiotics under Michio Kushi–the leading authority in the field–at the Kushi Institute. Later she worked at the school as head cooking instructor. In 2001 Mayumi became Madonna's private macrobiotic chef, joining her on her Drowned World Tour. Between 2001 and 2008 she cooked for the superstar full-time. Currently Mayumi travels between Japan, where she writes and lectures on macrobiotics, and the U.S." She has written four books published in Japanese. A large color photo of Mayumi appears on the front dust jacket.

The book is dedicated to Mayumi's children, Lisa and Norihiko, to her parents, and to Michio Kushi and his wife, Midori.

8651. Qiu, Xiaolong. 2010. Years of red dust: stories of Shanghai. New York, NY: St. Martin's Press. 227 p. No index. 22 cm. [Eng]

• ***Summary:*** "These stories trace the changes in modern China over fifty years–from the early days of the Communist revolution in 1949 to the modernization movement of the late nineties [1990s]–all from the perspective of one small street in Shanghai, Red Dust Lane. From the early optimism of the end of the Chinese Civil War, through the brutality and upheaval of the Cultural Revolution, to the death of Mao, the pro-democracy movement and the riots in Tiananmen Square–through the bulletins posted and the lives lived in this one lane, this one corner of Shanghai" (from the publisher).

One short chapter "(Tofu) Worker Poet Bao I (1958)" tells how, in the mid-1950s, Bao Hong moved into Red Dust Lane from Ningbo, where he had apprenticed to a tofu maker. He intended to pursue his craft in Shanghai. However in 1958, after Chairman Mao called for major development in the steel industry as part of "the Great Leap Forward," Bao end up working in Shanghai No. 3 Steel Plant instead.

That same year there was a call for peasants and workers to come to the forefront as writers and artists. A chance encounter while he complained about the tofu he had bought led Bao to be proclaimed a great writer. A poem, only partially his was printed with his name on the front page of the *Liberation Daily.* He was selected to be a worker poet and given a special room and nice pay.

The second half of this story, titled "(Tofu) Worker Poet Bao II (1996)" tells how he built a little tofu shop near Red Dust Lane. At his shop, Bao made and displayed a colorful array of soybean products–"white tofu, soft and hard tofu, frozen tofu for hot pot, golden tofu skin [yuba], gray tofu dredges [okara?], milky soybean drink [soymilk?], brown vegetable chicken, yellow fried gluten–all of which were far more delicious than those sold at the state-run market. In the afternoon Bao also started selling stinking tofu, which was fried in a wok over a tiny stove." Most who came to his shop did so to buy his delicious products. But some came out of curiosity to see how a famous worker poet had become a tofu maker. "It was a metamorphosis beyond their imagining." Address: Raised in Shanghai, he is now a poet, professor and author who lives with his family in St. Louis, Missouri.

8652. Reinfeld, Mark; Murray, Jennifer. 2010. The 30 minute vegan's taste of the East: 150 Asian-inspired recipes–from soba noodles to summer rolls. Cambridge, Massachusetts: Da Capo Press. xix + 266 p. Plus 16 unnumbered pages of color plates. Illust. (color photos). Index. 24 x 18 cm. [28 ref]

• ***Summary:*** The index contains 22 entries for tofu, 8 each for tempeh and for seitan, 3 for miso, 2 for edamame, and 1 each for tamari and for soy sauce (Noodles with sweet soybean sauce, pad siew).

Includes a good glossary with entries for miso, nama shoyu, seitan, shoyu, soy milk, soy sauce, tamari, tempeh, tofu. Address: 1. Founding chef, Blossoming Lotus Restaurant, and author; 2. Author and teacher. Both: Kaua'i, Hawaii.

8653. Singh, Guriqbal. ed. 2010. The soybean: Botany, production and uses. Wallingford, Oxfordshire, UK, and Cambridge, Massachusetts: CAB International (CABI). xii + 494 p. See p. 2. Illust. Map. Index. 26 cm.

• ***Summary:*** Chapter 1 is "The origin and history of soybean," by Li-Juan Qiu and Ru-Zhen Chang. In the Introduction we read (p. 2): "The Chinese people are

accustomed to eating soybean. Traditional soybean products such as bean curd (tofu), soybean milk, dried rolls of bean cream [dried yuba sticks]. soy sauce and so on are favoured foods to Chinese people." Address: Senior Agronomist (Pulses), Dep. of Plant Breeding and Genetics, Punjab Agricultural Univ., Ludhiana, India.

8654. Vegetarian and Vegan Foundation. 2010. The soya story: Everything you wanted to know about soya. The truth about how it impacts our health and the environment. Bristol, England. 60 p. Illust. 21.5 x 28 cm. [50+ ref]
• ***Summary:*** An very nice online digital book. Contents: Introduction. History. Soya: the superbean! The nutritional power of soya (by Juliet Gellatley) (7 refs).

Soya: the health protector (by Dr. Justine Butler): The health effects of soya, phytoestrogens, heart health, blood pressure, diabetes and CVD, diabetes, menopausal symptoms, bone health, breast cancer, prostate cancer, endometrial cancer, colon cancer, brain power, soya-based infant formula, thyroid function, allergies, soya production, summary, references (35 refs).

Soya: a global threat? How soya impacts the environment. Bean cuisine! An introduction to cooking with soya (by Jane Easton): Ingredients, stocklists (which soyfood products are available at the following British supermarkets: Asda, Sainsbury, Tesco, Waitrose, Independent health food shops and Oriental food markets. A good online source of soyfoods is Goodness Direct {www.goodnessdirect.co.uk}).

Soya recipes (p. 35-60).

The section on ingredients includes: Soya beans, edamame (fresh soya beans), tofu (silken tofu, firm tofu, flavored tofu {marinated, smoked, deep-fried, Tofu Rosso, Tofu Basil}), miso, soya sauce, soya dairy alternatives (soya milk, soy yoghurt).

Tofu manufacturers: Cauldron Foods (www.cauldronfoods.co.uk). Dragonfly (www.tofu.co.uk). Clear Spot [R & R Tofu] (www.clearspottofu.co.uk; Clearspot is the brand). Mori-Nu (www.morinu.com). Blue Dragon (www.bluedragon.com). Taifun (www.taifun-tofu.de/en).

Makers of soyfood dairy alternatives: Alpro (www.alprosoya.co.uk). Provamel (www.provamel.com). Sojasun (http://en.sojasun.com). Sojade [Triballat] (www.sojade.fr). Granovita (www.granovita.co.uk). Soyatoo [Tofutown.com] (www.soyatoo.de/us). Address: 8 York Court, Wilder Street, Bristol BS2 8QH, UK.

8655. Chaker, Anne Marie. 2011. Move over, cow: Almond milk sparks fight in dairy case. The cookie dunk-off. *Wall Street Journal.* Jan. 12. p. D1-D2.
• ***Summary:*** "Milk alternatives–creamy liquids derived from non-dairy sources-are on the rise, especially in households where people are lactose-intolerant or dairy-allergic." The rise of dairy alternatives follows decades of slow, steady decline in consumption of cow's milk in the U.S. The leading milk alternative by far is soymilk, and the leading soymilk brand is Silk.

Two brands of almond milk–Silk Pure Almond Milk (from Dean Foods Co., Dallas, Texas) and Almond Breeze (from Blue Diamond Growers, of Sacramento, California)–are waging a Coke-and-Pepsi style market-share battle in the supermarket. Almond milk first appeared in refrigerated dairy cases in 2010.

8656. Fu, Jia-Chen. 2011. Re: In China or Japan or Korea was soymilk traditionally fed to infants or to recently-weaned children? Letter (e-mail) to William Shurtleff at Soyinfo Center, Jan. 18. 1 p. [2 ref]
• ***Summary:*** "I know of one medical study by Dr. Ruth Guy (citation below), a physician at the First Health Station of the Beiping Municipality, who found little evidence that Beiping women used soybean milk to feed their children. Dr. Guy notes that though the drink was available through street vendors, it was generally drunk by 'old people in place of tea.' Home preparation was difficult and laborious, and therefore avoided. (Ruth A. Guy, 'The Diets of Nursing Mothers and Young Children in Peiping,' *Chinese Medical Journal* 50 {April 1936}:440).

"This assessment seems in keeping with the broader Chinese medical and materia media literature of pediatrics. I've not seen soybean milk recommended in classical medical texts for infant feeding. In cases in which the mother cannot breastfeed her child, medical texts generally recommend that (1) a midwife be found, (2) animal milk (e.g., sow's milk) be used as supplement, or (3) a thin gruel made with ground cereal in water (often rice) be prepared.

"For a more extensive treatment of breastfeeding and infant feeding practices in late imperial China, please see Ping-chen Hsiung, 'To Nurse the Young: Breastfeeding and Infant Feeding in Late Imperial China,' *Journal of Family History,* 20:3 (1995): 217-238." Address: Case Western Reserve Univ., Dep. of History, Mather House, 11201 Euclid Ave., Cleveland, Ohio 44106.

8657. Goldstein, Richard. 2011. Jack LaLanne, founder of modern fitness movement, dies at 96. *New York Times.* Jan. 23. *
• ***Summary:*** "He ate two meals a day and shunned snacks. Breakfast, following his morning workout, usually included several hard-boiled egg whites, a cup of broth, oatmeal with soy milk and seasonal fruit." He never drank coffee.

Note: Jack LaLanne probably can be correctly called the "founder of the modern fitness movement." His teacher and inspiration, Paul Bragg, might well also claim that title. Bragg started teaching fitness and exercise in the 1920s. He had a gym in Los Angeles where he taught exercise classes long before Jack LaLanne opened his gym, and Bragg taught exercise throughout his life in a very visible way–for years, free of charge, on the beach at Waikiki, Honolulu, Hawaii–

and this garnered him lots of free publicity which reached a wide audience. Paul Bragg and Patricia Bragg also had a health TV show in Hollywood where they taught exercise. However by 1951 Jack LaLanne had a television program in the San Francisco Bay Area, and by 1959 nationwide. LaLanne's TV program had a much larger audience than Bragg's and it ran for much longer (more than 3,000 episodes).

8658. *SoyaScan Notes.* 2011. Chronology of Vitasoy, worldwide (Overview). April 13. Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** 1940–Establishment of Hong Kong Soya Bean Products Co. Ltd. in Hong Kong. Launch of healthy Vitasoy soymilk in Hong Kong (a color photo in the 2009/10 annual report shows the original glass bottle).

1975 The Group introduces the first Tetra Brik Aseptic packaging for beverage products in Hong Kong.

1976–Launch of new VITA line of juice drinks in Hong Kong.

1979–Launch of VITA Lemon Tea. It was the world's first ready-to-drink lemon tea.

1984–Launch of the world's first 375 ml paper-pack drink.

1987–Official opening of the new HK$100 million headquarters and plant building in Tuen Mun, Hong Kong.

1990–Acquisition of a tofu plant on the East Coast of the US.

1994–The Group is listed on the Stock Exchange of Hong Kong. Official opening of Shenzhen plant in Mainland China.

1998–Official opening of a wholly-owned plant in Shanghai, Mainland China. Official opening of the new Nasoya Foods plant in Ayer, Massachusetts in the USA.

2001–Official opening of the Company's first plant in Australia–at Wodonga. 2002–Vitasoy International Holdings Ltd. receives the Caring Company logo from the Hong Kong Council of Social Services for the first time, which demonstrated the Company's efforts in giving to the community.

2006–Selected VITA tea and juice products are launched in Mainland China–imported from Hong Kong under the Closer Economic Partnership Arrangement (CEPA).

2007–San Sui [literally "mountain water"] tofu series is launched in Hong Kong.

2008–Acquisition of Unicurd Food in Singapore.

8659. *SoyaScan Notes.* 2011. Updated USDA database on the isoflavone levels in foods, commercial ingredients, soybeans and soyfoods (Overview). April 23. Compiled by William Shurtleff of Soyinfo Center. [1 ref]
• ***Summary:*** The link is now http://www.ars. usda.gov/SP2UserFiles/ Place/12354500/ Data/isoflav/ Isoflav_R2.pdf. "Legumes and legume products" starts on p. 16. Start by going to page 24, which is where the soy section begins. Then you can do a PDF search for fermented soyfoods such as: Tempeh, miso, soy sauce, natto, or Sufu (fermented tofu)–and you will see that they are NOT lower in total (or specific isoflavones) than nonfermented soyfoods such as: Tofu, soymilk, soybeans (immature), soybeans (mature), etc.

8660. Lo, Francis. 2011. Re: History of Flamaglo and Yoso in Canada. Letter to William Shurtleff at Soyinfo Center, April 27. 1 p. Typed, with signature on letterhead.
• ***Summary:*** "My brother Erik and I have been managing Yoso for almost ten years now. We started out our first day of business with three customers in the Kitchener-Waterloo area. Today we have over one thousand retail outlets that support Yoso across Canada. Most important, I believe we have managed to offer great tasting soy products which appealed to customers.

"After ten years of establishing the Canadian market, I believe we are ready to explore the biggest soyfood market in the world–the United States."

"Our production facility is already registered with the FDA, and I have already recruited an agent as a primary broker."

Note: The company's website is www.yoso.ca. The company apparently sells yogurts, sour cream, spreads, and beverages, but this may be only one product–a "gourmet soy spread."

Update: 12 Sept. 2012. On the company's homepage are color photos of four soy products: (1) Yoso Soy Yogurt. (2) Yoso Spreadables (soy spreads). (3) Yoso Sour Creme / Crème sure, (4) Yoso Wave (soy beverage).

The company's name and address is: Flamaglo Foods Limited, 1070 Fountain St. N., Units 1 & 2, Cambridge, Ontario. N3E 1A3 Canada. Tel: (519) 650-0914. Fax: (519) 650 0896. Toll Free: 1 (866) 887-YOSO (9676). Email: francislo@bellnet.ca. Address: Flamaglo Foods Limited, 1070 Fountain St. North, Units 1 and 2, Cambridge, ON N3E 1A3. Phone: 519-650-0914.

8661. Dean Foods Co. 2011. Annual report 2010. Dallas, Texas. 4 + 59 + 59 + 9 p. 28 cm.
• ***Summary:*** All but the first 4 pages of this annual report are Form 10-K. On page 34 is the segment on White-Wave Alpro. Net sales were $1,938 million, up 18.7% over 2009 driven by the Alpro acquisition. Net operating income was $166.2 million, up 8.6% over 2009.

An accompanying "Notice of stockholders meeting" is 95 pages. Address: 2515 McKinney Ave., Suite 1200, Dallas, Texas 75201. Phone: 214-303-3400 www.deanfoods.com.

8662. *Malnutrition Matters Newsletter* (*Ottawa, Canada*). 2011. PedalPro / Thailand. May 5. p. 1.
• ***Summary:*** "The PedalPro is a multi-function work station that is pedal powered. The original concept and the

Canadian prototype were developed as a way to provide the food grinding [when making soymilk] for the non-electric VitaGoat system, while expanding the utility into other applications. Now it is possible to switch over to charging a battery with the on-board generator, pumping water with the water pump or sharpening tools, when not using the system for food grinding. This versatility also allows the PedalPro to be used as a stand-alone system for micro-enterprise and development in areas without reliable electricity. The successful technology transfer to Thailand will now allow the PedalPro to be produced at a reasonable price. Other tech transfers are also in the planning stages." Address: 48 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada.

8663. *Malnutrition Matters Newsletter* (*Ottawa, Canada*). 2011. Liberia. May 5. p. 1.
• ***Summary:*** "The first two VitaGoats have arrived and will be installed in May, when intensive operational and small business training will also be conducted. MM is working with OIC International on a 5-year project funded by USAID. These VitaGoats, the first of 8, will be operated by multiple groups of entrepreneurial women and youth, thereby creating sustainable new jobs and improving nutrition for the local community. The first five 'Small Farm' SolarFlex food dryers will be installed in November, with 15 more to follow later." Address: 48 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada.

8664. Davis, John. 2011. Veganism from 1808 [chronology]. *Vegsource.com.* May 25. http://www. vegsource.com/ john-davis/veganism-from-1806.html.
• ***Summary:*** "This is a brief summary of a talk I will be giving at the International Vegan Festival in Malaga, Spain, June 4-12, 2011.

"1806–Dr. William Lambe FRCP, in London, England, changed his diet at the age of 40–and gave us the first known unambiguous statement: 'My reason for objecting to every species of matter to be used as food, except the direct produce of the earth, is founded on the broad ground that no other matter is suited to the organs of man. This applies then with the same force to eggs, milk, cheese, and fish, as to flesh meat.'

"1811–John Frank Newton, a patient of Dr. Lambe, in his book 'Return to Nature' expanded Lambe's medical ideas to include ethical values towards all animals.

"1813–Percy Bysshe Shelley, poet, joined a 'vegan commune' which alternated between Newton family homes in London and Bracknell.

"1830s–Sylvester Graham, in Boston, USA, had been promoting the 'vegetable diet'–generally 'with or without' eggs/dairy. In 1837 he exchanged letters with Dr. Lambe, and his 1839 book clearly claimed that 'without' was more effective for health.

"1830s–Dr John Snow, 'vegan' since reading Newton's book when he was 17. Moved to London in 1838 and eventually achieved fame for discovering the way in which cholera was spread. In 2003 British doctors voted him the greatest physician of all time.

"1838–James Pierrepont Greaves opened 'Alcott House Academy', a school near London run entirely consistent with the ideas proposed by Lambe and Newton. It ran for the next ten years.

"1842, April–the first confirmed use of the word 'vegetarian' in the Alcott House journal. All other early uses were by people close to Alcott House, and all using it for what we now call 'vegan'.

"1842 June–Bronson Alcott, from Boston USA, already veg*n thanks to Sylvester Graham, visited Alcott House, named in honor of him and his earlier school in Boston. In 1843, with new English friends, he ran the short-lived 'Fruitlands' near Harvard, MA–again run on totally ethical 'vegan' principles. "1845-46–Henry David Thoreau lived by Walden Pond, near Concord MA, living solely on plant foods plus some fishing–but wrote about how much he regretted the fish.

"1846–William Horsell moved the hydrotherapy institute from Alcott House to Northwood Villa, in Ramsgate, Kent, England. This again followed Dr. Lambe's principles of plant food plus purified water.

"1847–The Vegetarian Society was founded at a meeting in Ramsgate, launched jointly by Alcott House and the (ovo-lacto) Bible Christian Church from Salford near Manchester. The compromise was to set the objective as merely 'abstaining from the flesh of animals'–and the confusion over everything else has continued ever since

"1874–Dr. Russell Trall had been running a hydrotherapy institute in New York City since 1850. This changed to exclusively plant food plus water in 1862–and in 1874 produced the first known 'vegan' cookbook.

"1887–John Harvey Kellogg privately removed eggs and dairy from his diet, though his books and sanitarium, in Battle Creek, Michigan, continued to use them. 40 years later he returned to using yogurt–but then discovered soy milk.

"1910–Rupert Wheldon in England, published 'No Animal Food', the first British 'vegan' cookbook. This was reprinted by Dr. Elmer Lee in New York. A 1910 article about Lee in the New York Times included the first known use of the phrase 'plant foods'. "1909-14–The *Vegetarian Messenger,* journal of The Vegetarian Society, carried much discussion about the use of eggs/dairy. There seemed to be a possibility of significant change, but all momentum was destroyed by the First World War.

"1931–Mahatma Gandhi spoke at a meeting of the London Vegetarian Society, making it clear that he objected to the use of milk and milk products. Such high profile support must have emboldened the minority who called themselves 'non-dairy vegetarians'.

"1944–Donald Watson and friends coined the word

'vegan' and founded The Vegan Society–the first issue of their journal [*Vegan News,* Nov.] was subtitled 'the journal of the non-dairy vegetarians'–and made it clear that they had not wanted to separate from The Vegetarian Society, they just wanted a distinct section within it. Most retained their memberships of both societies, as many do today.

"1947–Watson was a speaker at the IVU World Veg Congress–The Vegan Society had joined IVU soon after being founded, and has been a member ever since.

"1960–The American Vegan Society was founded, joining IVU from the outset. This included a smaller group started in California as far back as 1948.

"1957–The first Indian Vegan Society joined IVU. We don't know how long it lasted, but the new society is also prominent member.

"1960-1990s–Many new vegan organizations were formed, and the word gradually spread.

"1995–Records of printed media show a significant increase in the use of the word 'vegan'–this appears to have come from the rapid expansion of vegan websites, leading to a market for vegan books, especially recipes.

"1997–The IVU website started a recipe collection–agreed to be entirely vegan from the outset. We now have over 3,000 in English with more in other languages.

"1998–IVU agreed that all food at IVU Congresses would in future be completely vegan.

21st Century–Most veg organizations around the world now promote veganism as the ideal, regardless of whether they are called 'vegetarian' or 'vegan'.

"By 2009 more books had 'vegan' in the title than 'vegetarian.'

"2009/2010 surveys in the USA showed that 66% of vegetarians exclude eggs and dairy.

"By 2011 there were as many Google searches for 'vegan' as for 'vegetarian.'

"22 organizations with 'vegan' in their title are now members of IVU

"Will all vegetarians eventually be vegan? We have no way of knowing, but the continuing trend seems inevitable.

"For more details of everything above see: www.ivu.org/history/ vegan.html." Address: IVU webmaster.

8665. Re: Names of soyfoods around the world: Korean. 2011. Form filled out and returned to William Shurtleff at Soyfoods Center, May. 1 p. Handwritten. [Eng; kor]
• ***Summary:*** Soybean: me ju kong. Soymilk: duyu, du-u, or du yu. Tofu: dubu or du bu. Soymilk curds (uncurded / uncurdled tofu): sundubu.

8666. *Nichi Bei Weekly.* 2011. Northern California Soy & Tofu Festival: Come discover the joy of soy. June 2-8. p. 5-7. Cover story.
• ***Summary:*** This issue announces the first Northern California Soy & Tofu Festival to be held on June 11, in San Francisco Japantown, Peace Plaza, 11 am–4 pm. It is sponsored by the Nichi Bei Foundation and many large corporate sponsors. Gold sponsor: Pacific Gas and Electric Company. Silver sponsors: Kikkoman, Union Bank.

The main article on page 6 is titled "Soy to the world: Small businesses explore varied tastes, textures," by Akiko Minaga (Nichi Bei Weekly Contributor). It discusses Megumi Natto, Hodo Soy Beanery, San Jose Tofu, and Sacramento Tofu.

A second article by her (on the same page) titled "Soy, the magic bean: The many benefits of soy" discusses tofu, soymilk, beauty treatments, soy clothing, soy ink, etc.

A sidebar is titled "Tofu: A brief 2,000 year history," by William Shurtleff of Soyinfo Center.

Photos show: (1) Chester Nozaki and his wife, Amy, owners of San Jose Tofu. (2) Alvin and Dorothy Kunishi, owners of Sacramento Tofu. (3) Minh Tsai, owner of Hodo Soy Beanery. Address: P.O. Box 15693, San Francisco, California 94115. Phone: (415) 673-1009.

8667. *SoyaScan Notes.* 2011. Chronology of early U.S. commercial soymilk products with the word "soy milk" or "soymilk" in the product name. June 10. Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** As of today, our SoyaScan database contains 434 records for commercial soymilk products launched in the USA from 1917 to the present. Most have fanciful brand names such as VitaSoy, Soy Lac, Soya-Lac, Kreme-O-Soy, etc.

Here are the early commercial products with soymilk or soy milk in the product name as it appears on the label. Most were sold in interstate commerce. Date, product name, company name, location, number of clear documents describing product.

1929–La Sierra Soy Milk, La Sierra Industries, Arlington, California, 3 documents.

1931–Madison Soy Milk, Madison Foods, Madison, Tennessee, 5 documents.

1934–Loma Linda Soy Milk (canned), Loma Linda, California, 3 documents.

1936–Soy Milk (Canned), Battle Creek Food Co., Battle Creek, Michigan, 4 documents.

1936–Soy Milk, Soybean Health Products Co., Oakland, California, 1 document.

1937–Radcliffe's Soya Milk, Radcliffe Soya Products, San Francisco, Calif., 3 documents,... etc.

1975–Soymilk, Welcome Home Bakery and Tofu Shop, Corvallis, Oregon, 2 documents.

1975–Soymilk, American Food Co., Alhambra, California, 2 documents. incl. label.

1976–Carob Soymilk, Farm Food Co., San Rafael, Calif., 1 document (label).

1977–Laughing Grasshopper Soymilk, Laughing Grasshopper Tofu Shop, Millers Falls, Mass., 2 documents

including poster.

1977–Soymilk [Honey & Vanilla, or Plain], The Soy Plant, Ann Arbor, Michigan, 4 documents including label.

1977–Fresh Joy o' Soy Soymilk, The Tofu Shop, Telluride, Colorado, 2 documents including label.

1978–Island Spring Plain Soymilk, Island Spring, Inc., Vashon, Washington, 3 documents incl. label, etc.

8668. *Nichi Bei Weekly.* 2011. For the joy of soy: Highlights from the festival. June 23-29. p. 6-7. Cover story.
• ***Summary:*** The title above appears on the cover. The title on page 6 is "Northern California Soy & Tofu Festival." It contains: (1) Twenty color photos from the festival–with a caption for each. (2) "A culinary tour of the Soy and Tofu Festival," by Pauline Fujita. (3) Winning recipes. (4) List of all sponsors with thanks. (5) Organizing committee of the festival. (5) Special thanks to raffle prize donors. Address: P.O. Box 15693, San Francisco, California 94115. Phone: (415) 673-1009.

8669. Shurtleff, William. 2011. The word "vegetal / vegetale" (Editorial). *SoyaScan Notes.* July 2.
• ***Summary:*** How would you translate the French: "Produit 100% végétal."

Or this from a Spanish cup of soy yogurt: "100% vegetal."

This excellent word, "vegetal," is used frequently nowadays in French, Spanish, Italian, and Portuguese, plus "pflanzliches" in German.

Yet we have no corresponding word in use today in English. We might say: "100% vegan product." or "100% plant-based product."

However the word "vegetal" used to be used in English!

1896 Sept.–Dr. John Harvey Kellogg wrote in the journal *Modern Medicine and Bacteriological Review:* "In the experiments which we have made with nut milk we find it has a delicate, delightful flavor, with a suggestion of its nutty origin, but resembles cow's milk very closely indeed... Added to cow's milk in proper proportion, lac vegetal, or nut cream, prevents the formation of hard curds in the stomach, as when the cow's milk is used alone. This renders it an exceedingly valuable food for infants–vastly superior to any infant's food which has been devised."

"Nuts are unquestionably the vegetable analogue of meat and other animal foods.

1896–In a cookbook by Dr. Kellogg's wife: Sanitas Food Co. in Battle Creek, Michigan, has an ad for "Lac Vegetal, or Nut Cream: Prepared from the choicest nuts."

1927–*The Future Food Supply of the United States,* by Alonzo E. Taylor. "Vegetal oils may be expected to continue a prominent component of the diet... Americans taste seems to favor bland vegetal cooking oils over animal fats, as illustrated in the preference for vegetal lard substitutes over lard."

And many more...

Merriam-Webster's Collegiate Dictionary (1998) defines vegetal (derived from the Middle Latin *vegetare,* meaning to grow), a word first used in English in the 15th century, to mean: "1: vegetable. 2. Vegetative..."

Do you think we need to reintroduce this word into English?

Or do we presently have equally good alternatives? Address: Founder and director, Soyinfo Center, Lafayette, California. Phone: 925-283-2991.

8670. Weng, Jun. 2011. Re: Brief history of Shanghai Wangxin Bean Products Equipment Co., Ltd. Letter (e-mail) to William Shurtleff at Soyinfo Center, Aug. 5. 1 p.
• ***Summary:*** Our company was first founded in 1994 in Pudong New Area, a district of Shanghai and a New Open Economic Development Zone, which has emerged as China's financial and commercial hub. Our company's original name was Shanghai Wangde Food Packing Machine Factory; it specialized in manufacturing food packing machine. However in the year 2000 our company changed its name to Shanghai Wangxin Bean Products Equipment Co., Ltd.; now it mainly produces a series of mechanical and electrical equipment for making [soy] bean products. It is a starting unit of all-China federation of industry and commerce, an executive member of China Bean Products Council of China food industry council, a permanent member of Shanghai Bean Products Council and passed ISO9001: 2008 in 2009, meanwhile we got the honors of "Shanghai High Technology Company," "National Bean Action Plan model unit."

In total, we have gotten "76 patented equipments until 2011. Our company has more than 200 employees, including 12 engineers, 5 senior engineers and 42 machinists. We mainly produce series of bean products equipments, assembly lines to produce lactone bean curd, soft bean curd, firm tofu, soybean milk, bean curd sheets (thousand sheets), dried bean curd, soft bean curd and so on. On the basis of the management strategy of "Quality, Service, Management, Credibility," and along with the expert devise, high quality products and perfect service after sale, we have enjoyed a high reputation at home and abroad. Our equipments have been sold well all over the China and exported to America, Canada, Japan, Vietnam and other countries.

Mr. Weng sends digital color photos of the following machines stainless steel made by his company: (1) Machine for vacuuming beans (to move 1,000 to 2,000 dried beans from one place to another). (2) Soybean fixed amount distributor (rolls on wheels on a track, for example, over grinder hoppers or cookers). (3) Grinder, 5.5 kw, output: 300 kg soybean per hour. (4) Grinder, 1.5 kw, output: 400 kg soybean per hour. (5) Grinder, 15 kw, output: 600 kg soybean per hour. (6) Centrifugal machine. Power: 5.5 kw. Output: 600 kg soybean/hour. (7) Automatic continuous soymilk cooking machine with 8 pots. Weight: 1,000 kg. Output: 7

tons of boiled soymilk per hour. (8) Automatic intelligent continuous soymilk cooking machine. Weight: 670 kg. Output: 5 to 6 tons boiled soymilk/hour. (9) Boiled soybean milk griddle. Output: 500 kg soymilk per hour. Address: Foreign Trade Manager, No. 4633 Sansan Road, Shuyuan Town, PuDong New District, Shanghai, China.

8671. Chen, Yong. 2011. Re: Was soymilk ever fed to infants or recently-weaned children in China? Letter (e-mail) to William Shurtleff at Soyinfo Center, Aug. 29. 1 p.
• ***Summary:*** Shurtleff wrote him this question: "So far as you know, in any part of China and at any period in Chinese history: Was soymilk ever fed to infants or to recently-weaned children?"

He replied: "I do not have the precise answer to your question. But it is probably safe to assume the poor families have fed it to the infants when mothers do not produce enough milk or have to feed the kids of rich families.

"There is no absolute taboo regarding feeding it to infants. But there is an increasingly popular view in China now that it is not best to use it for children under the age of 2." Address: Univ. of California at Irvine, California.

8672. Kikkoman Corporation. 2011. Annual report 2011. Year ended March 31, 2011. 250 Noda, Noda-shi, Chiba 278-8601, Japan. 47 p. 28 cm. [Eng]
• ***Summary:*** Net sales in yen decreased by 0.78% to ¥283,463 million. Net income in yen decreased by 9.68% to ¥7,770 million.

Under "Major group companies–Kikkoman Corporation, Japan" (p. 44) is listed: Kikkoman Soyfoods Company, 2-1-1 Irifune, Chuo-ku, Tokyo 104-8553, Japan. Phone: +81 (3) 3206-0778. This company was formerly Kibun Foods.

A photo (p. 2) shows Yuzaburo Mogi (Honorary Chief Executive Officer and Chairman of the Board of Directors) and Mitsuo Someya (President and CEO).

The Great East Japan Earthquake struck Japan on 11 March 2011. Kikkoman was affected, and "booked an extraordinary loss of ¥2,352 million due mainly to the impact of the Nippon Del Monte Fukushima plant, which will be closed in September 2011, as was previously scheduled." Address: Noda, Japan.

8673. Vitasoy International Holdings Ltd. 2011. Annual report 2010/11. Investing for growth. New Territories, Hong Kong. 208 p. July. 30 cm. [Eng; Chi]
• ***Summary:*** All values are in million Hong Kong dollars. The fiscal year ends on 31 March 2010. A graph (p. 4) shows that turnover (sales) has risen steadily each year from 2,133 in 2007 to 3,329 in 2011 (up 11% from 2010).

Gross profit has risen steadily each year from 1,003 in 2007 to 1,651 in 2011 (up 10% from 2010).

EBITDA (Earnings before minority interest, interest expense, income taxes, depreciation, and amortization) has also risen steadily each year from 334 in 2007 to 537 in 2011 (up 11% from 2010). Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

8674. Haren, Chuck. 2011. Soy nutrition in El Salvador. *Plenty Bulletin* (*Summertown, Tennessee*) 27(2):4. Fall.
• ***Summary:*** About Plenty's *Proyecto de Soya Nacional* (PSN) in El Salvador. "PSN provides nutritious mid-day meals for about 125 people a day in San Salvador and sells soymilk along with other fresh soy food products to the public."

"In May of this year three Plenty representatives met with representatives in the Schools of Nutrition and Agronomy at the University of El Salvador, and the women at PSN... With the help of Amado Del Valle Montufar [of Guatemala], we were able to give the university and community representatives three varieties of non-GMO soybeans for trial plantings."

8675. Matthews, V.L.; Knutse, S.F.; Beeson, W.L.; Fraser, G.E. 2011. Soy milk and dairy consumption is independently associated with ultrasound attenuation of the heel bone among postmenopausal women: the Adventist Health Study-2. *Nutrition Research* 31(10):766-75. Oct. [28 ref]*
• ***Summary:*** Many people (such as vegans) who do not consume dairy products, use soy milk instead. Fortified soymilk provides calcium protein, and vitamin D–nutrients needed for healthy bones. Moreover, the isoflavones found in soy may offer some protection from osteoporosis. The researchers studied 377 post-menopausal women, who were asked about their diet; ultrasound measurements of bone health were made at an interval of two years. Compared with women who did not drink soy milk, women drinking soy milk once a day or more (1.3 cups of soymilk) had 56% lower odds of osteoporosis. (We do not know if the soy milk was fortified). Likewise, women who used dairy products at least once a day had an almost identical reduction of risk of osteoporosis. The results of this small study suggest that regular use of soymilk can reduce risk of osteoporosis in women. Address: Dep. of Epidemiology and Biostatistics, School of Public Health, Loma Linda Univ., Loma Linda, California.

8676. Bramblett, Billy. 2011. Re: Work with Seth Tibbott of Turtle Island. Wildwood tofu and soymilk. Letter (e-mail) to William Shurtleff at Soyinfo Center, Nov. 22. 1 p.
• ***Summary:*** Shurtleff suggests that Billy create a version of his song "Tofunction" for "Tofurky." He asks if Billy knows Seth Tibbott, founder and owner of Turtle Island Foods, Inc.

Reply: "Seth is one of my best friends. I first met him back in the early 1990's when we shared a booth at Natural Products Expo West the 1st time Wildwood exhibited there.

"After I departed Wildwood, I worked as a consultant for Seth and helped conceptualize and develop a few

products (marinated tempeh strips). I worked at the Turtle Island booth at both Expo West and Expo East for several years, where we won Best New Product of Show three of five years at the West show.

"And, I have also been 'grillmeister' at the Oregon Country Fair's Soyworld Booth (which Seth started 25 years ago) for the past five years.

"Anyway, I will consider a Tofurky song, by the way, do you know why the Tofurky crossed the road? "To prove he wasn't Chicken!! ha ha."

"Yes, brother Seth is an amazing dude, and I visit him in Trout Lake every year or so. We also make sure to play golf, along with his brother, Bob, on the Monday after Expo West each year.

"On the old label issue... You are probably talking about the one that says, "UFO TOFU," yes? Boy, I would love to have a mint condition copy of that as well. As you may remember I am a palindrome freak and named our tofu "UFO TOFU." (and our soymilk was called "YO SOY").

"I still have a Michael Pierce designed t-shirt somewhere that has a whole depiction of our original tofu set up, including the grinder, cauldron, paddle, press and curding tank along with cubes of tofu floating about, and says "UFOTOFU" with the old Wildwood logo at the bottom. I will make a copy and send it to you unless you already have one."

"Its great trading soy stories with you.–B-Love." Address: Marin County, California.

8677. *SoyaScan Notes.* 2011. What is ENSA–European Natural Soyfood Association? (Overview). Nov. 25. www.ensa-eu.org. Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** ENSA, established in Jan. 2003, consists of companies of all sizes involved in the production of natural soyfoods. This means they make soyfoods from whole soybeans that have not been genetically engineered. As of Nov. 2011 the members (listed alphabetically) are: Alpro, Belgium. Sojasun, France. Nutrition et Soja, France. Valsoia, Italy. Liquats Vegetals, Spain. Hain Europe, Belgium. Tofutown, Germany. Mona Naturprodukte, Austria. Raisio, Finland. Grupo Leche Pascual, Spain. Life Food GmbH, Germany.

8678. *Malnutrition Matters Newsletter* (*Ottawa, Canada*). 2011. Five SoyCows for Myanmar (Burma). Nov. p. 1.
• ***Summary:*** "Thanks to initiatives by the Canadian NGO, 'Hands of Compassion,' three SoyCows are already in Myanmar and two more are arriving in December. One is already providing 500 school children with a daily cup of soymilk, a second is feeding 200 children at a school for the blind, and a third one being installed is sponsored by the Australian NGO 'Graceworks.' This expands on the past five SoyCows and VitaGoats, which Hands of Compassion has installed at Karen refugee camps in Thailand and at humanitarian projects in India. They have also developed in-house installation and training capability.

"A photo shows a blind child receiving the daily soymilk serving in Yangon." Address: 48 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada.

8679. *Malnutrition Matters Newsletter* (*Ottawa, Canada*). 2011. PedalPro ready for fabrication. Nov. p. 1.
• ***Summary:*** "This workstation allows multiple pedal-driven functions: Food grinding; electrical generation (for batteries, electric lights, charging cell phones etc.), water pumping (for roof top tanks and garden irrigation etc.) plus knife and tool sharpening. It serves as a stand-alone unit for micro-enterprise or social programs, but also is now the new standard food grinder for all VitaGoat systems. This expands the capability of a VitaGoat beyond soymilk and other food production and allows multiple uses with additional revenue and job creation, especially where there is no reliable electricity. Prices will range from $700 to $1,100–depending on options and quantities.

"A color photo shows the PedalPro system with food grinder, pump and generator on top. Flywheel at bottom includes the sharpener." Address: 48 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada.

8680. Nordquist, Ted. 2011. Re: Trip to Mchinji, Malawi, to learn and teach about making tofu and soymilk. Letter (e-mail) to William Shurtleff at Soyinfo Center, Dec. 7. 1 p.
• ***Summary:*** "From November 12-26 Anne-Marie [Ted's wife] and I volunteered to visit a 'soy plant' in Mchinji, Malawi that used a soy cow to produce soymilk. We instructed them in the proper way of cleaning and soaking the soybeans, the time to cook, sterilizing the bottles and hot filling to extend the shelf life of the soymilk (which was going bad the day after production). We also showed them how to make tofu, mix the tofu with the okara, vegetables and spices and then deep fry 'tofu balls' in cooking oil for sale the same day.

"Unfortunately I had only 500 grams of calcium sulfate with me from California and this was used in the demonstrations. Now we are looking for a good source of calcium sulfate and or magnesium chloride in Africa, hopefully South Africa that they can buy. Even if they make one batch of tofu per day they will only need about 12 to 15 kg of coagulant per year. So one 25 kg bag will last them a long time.

If you have a contact for buying calcium sulfate or magnesium chloride in Africa, please send this information to:

Lauren Day, Southern Africa Program Coordinator, Farmer to Farmer Program.

CNFA, 1828 L Street NW, Suite 710, Washington, DC 20036. Phone 202.296-3920 ext #55. lday@cnfa.org. www.

cnfa.org.

Photos show: (1) Soy Cow processing plant in Malawi. (2) The boiler outside the plant. Address: TAN Industries, Inc., 351 California St., Suite 1330, San Francisco, California 94104; 660 Vischer Ct., Sonoma, CA 95476.

8681. Nutrition & Nature. 2011. Faire le choix du végétal. Pour chacun, pour demain [Choose plant-based nutrition. For each one, for tomorrow]. Revel, France. 16 p. Illust. 18 x 18 cm. [Fre]

• ***Summary:*** One the cover is a lovely young lady, looking upwards, with her eyes closed. Behind here are rows of trees growing in green grass. In 2008 Soy acquired Céréalpes [Cerealpes]. In 2011 they both became Nutrition & Nature. Websites: www.soy.fr. www.cerealpes.fr. Contents: More of plant-based, more of life. Eat better and live better. Good for people, good for the planet. A table shows: To produce 1 kg of protein. (1) Tofu compared to beef. 5 times less water. 15 times less agricultural surface. 10 times less carbon dioxide emissions. (2) Soymilk compared with cow's milk: 3 times less water, 7 times less agricultural surface, 5 times less carbon dioxide emissions. Source: ENSA [European Natural Soyfoods Association].

To grow soybeans in southwest France is not the end of the world. Our "Tofu in Africa" project. With Céréalpes, organic takes the accent of Provence (accent provençal). A path without a trace toward quality. To be engaged for the environment on all levels. Address: Chemin de l'Horte, 31250 Revel (near Toulouse), France. Phone: 05 62 18 72 78. E-mail: info@soy.fr.

8682. Giblin, Karen; Seibel, Mache. 2011. Eat to defeat menopause: The essential nutrition guide for a healthy midlife–with more than 130 recipes. Cambridge, Massachusetts: Da Capo Press. xviii + 237 p. Foreword by Dean Ornish, M.D. Illust. Index. 23 cm. [26 ref]

• ***Summary:*** An excellent book for the lay reader by a woman and a man with top credentials in the field. Includes 130 recipes. On page 3 is an "Ode to Soy and Hot Flashes," by Mache Seibel, M.D.; it says that soyfoods reduce hot flashes and allow women to sleep at night.

Chapter 4 (p. 23-28) is "Understanding soy foods: The perfect food for menopause." Its contents: Introduction. Soybeans and foods made directly from them (gives a basic description of each): Soybeans (incl. edamame, dry soybeans, canned soybeans), soy flour, soy powder (very similar to soy flour except the soybeans are cooked before they are ground), soy protein isolates, textured vegetable protein (TVP), soy grits, soy sprouts. Soy milk and products made from it: Soy milk, okara, yuba, soy cheese. soy yogurt, tofu. Fermented forms of soy: Tempeh, natto, miso, soy sauce.

Most of these soyfoods are used in the recipes in this book. Tofu is used the most frequently.

Dr. Ornish's remarkable Foreword begins: "Many people tend to think of breakthroughs in medicine as a new drug, laser, or high-tech surgical procedure. They often have a hard time believing that the simple choices we make in our lifestyle–what we eat, how we respond to stress, whether or not we smoke, how much exercise we get, and the quality of our relationships and social support–can be as powerful as drugs and surgery, but they often are. Often, even better.

"For more than thirty years, I have directed a series of studies showing what a powerful difference changes in diet and lifestyle can make. My colleagues and I at the nonprofit Preventive Medicine Research Institute showed, for the first time, that many diseases, including heart disease, prostate cancer, diabetes, and hypertension, are often reversible, and thus largely preventable.

"We used high-tech, state-of-the-art measures to prove the power of simple, low-tech, and low-cost interventions. We showed that integrative medicine approaches may stop or even reverse the progression of coronary heart disease, diabetes, hypertension, obesity, hypercholesterolemia, and other chronic conditions. We also published the first randomized controlled trial showing that these lifestyle changes may slow, stop, or even reverse the progression of prostate cancer, and may affect breast cancer as well.

"Our latest research shows that changing lifestyle changes our genes in only three months–turning on hundreds of genes that prevent disease and turning off genes and oncogenes associated with breast cancer and prostate cancer, as well as genes that cause heart disease, oxidative stress, and inflammation. We also found that these lifestyle changes increase telomerase, the enzyme that lengthens telomeres, the ends of our chromosomes that control how long we live. Even drugs have not been shown to do this." Address: 1. President and founder of the Red Hot Mamas, Bridgewater, New Jersey; 2. M.D., Prof. of Obstetrics and Gynecology and Director of the Complicated Menopause Program, Univ. of Massachusetts Medical School. He lives in Boston, MA.

8683. Hever, Julieanna. 2011. The complete idiot's guide to plant-based nutrition. New York, NY: Alpha. A member of Penguin Group (USA) Inc. xiv + 338 p. Index. 24 cm. [35 ref]

• ***Summary:*** This is a book about "eating a whole-food, plant-based diet." This diet is described and compared with a vegan diet, vegetarian diet, and plant-based diet (p. 4-5). The author concludes this section with this interesting observation: "When you think about it, although veganism and vegetarianism are plant-based diets for the most part, they're defined on what they *exclude* from your diet. Part of what makes the plant-based diet unique is that it defines the composition of what *is* included instead of what *isn't.*"

The author discusses soy in Chapter 7, "Controversy clarified" in several sections (p. 93-95): "Soy confusing," "Is soy safe?" and "Are genetically modified organisms okay?" She lists the various soyfoods and then gives the following advice: "Soy can be part of a plant-based diet. For safe soy consumption:

"1. Consume soy from whole-food or minimally processed sources–soybeans, tofu, tempeh, miso, soybean sprouts, and soy milk.

"2. Use soy in moderation–less than 3 servings per day, where a serving is 1 cup soy milk or ½ cup soybeans, tofu, or tempeh.

"3. Avoid processed soy products, like soy protein isolates (found in protein drinks and bars, meat analogues, cereals, meat replacement products, and other processed items).

"Consume only organic" soy products or those that have not been genetically engineered.

We agree.

Plenty of basic information about soyfoods is given in Chapter 18, "The plant-based kitchen"–especially in the section "Plant-based substitutions" (p. 226-32) which includes subsections about: "Egg replacements," "plant milks," "Mock meats" (many are highly processed), "Tofu, tempeh, seitan" (good, nutritionally rich, alternatives), "Un-cheeses" (most are highly processed), miso (a versatile source of meaty flavors, but use in moderation since it has a high salt content).

The word "tofu" appears on 33 pages in this book, "miso" on 20 pages, "soybeans" on 19 pages, "tempeh" on 18 pages, "soy milk" on 11 pages, "edamame" on 5 pages. "soybean sprouts" on 1 page.

Examples of tofu recipes: Plant-based sour cream (with "14 oz. silken tofu." p. 241). Veggie tofu scramble (with "1 {12-oz} pkg. firm or extra-firm tofu, drained and crumbled," p. 248). Marinara corn cakes (with "3 oz. extra-firm tofu, thinly sliced," p. 275). Sweet cream dip (p. 280).

The book contains a good Glossary (p. 291-301) which includes definitions of miso, phytoestrogens, plant-based milks, prebiotics, protein combining, tamari, tempeh, tofu, umami, vegan, vegetarians, whole grains, whole-food, plant-based diet. Address: M.S., R.D., C.P.T. [Certified Personal Trainer], Los Angeles, California.

8684. Jamieson, Alexandra. 2011. Vegan cooking for dummies. Hoboken, New Jersey: Wiley Publishing, Inc. xx + 364 p. Illust. (some color). Index. 24 cm.
• ***Summary:*** A fun, well written, and very informative book. Contains more than 160 healthy vegan recipes. The index contains 22 entries for tofu, 14 for tempeh, 11 for soy foods, 5 for seitan, 3 for edamame, 2 each for milk replacements (soy milk), miso, soy sauce, soy yogurt, and 1 for TVP (textured vegetable protein).

Also mentions macrobiotics, mochi, raw foods diet, sea vegetables, sesame oil, sesame seeds, etc. Address: Professionally trained vegan chef and board certified holistic health counselor (CHHC), and member American Assoc. of Drugless Practitioners (AADP), New York City.

8685. Mangels, Reed; Messina, Virginia; Messina, Mark. 2011. The dietitian's guide to vegetarian diets: Issues and applications. 3rd ed. Sudbury, Massachusetts: Jones & Bartlett Learning. xi + 596 p. Illust. Index. 23 cm. 1st ed. 1996. 2nd ed. 2004. [342 soy ref]
• ***Summary:*** Chapter 9, "Soyfoods" (p. 249-89) is excellent. Its contents: Introduction. Isoflavones: Isoflavone content of soyfoods, isoflavone absorption and metabolism. physiologic properties of isoflavones. Asian soy intake. Nutritional composition of soybeans and soyfoods: Protein, fat, carbohydrate, vitamins, minerals (iron, zinc, calcium). Chronic disease prevention and treatment: Coronary heart disease (cholesterol reduction, lipid-independent effects), cancer (breast cancer, prostate cancer), osteoporosis, alleviation of menopausal symptoms, renal function. Controversies: Soy infant formula, cognitive function, thyroid function, fertility and feminization, breast cancer patients, allergy. Intake recommendations.

Table 9-1 (p. 251-52), "Chemical and common names and molecular weights (MW) of the 12 isoflavone isomers found in soybeans" includes the following foods and USDA IDN [identification number]: Tofu: Firm, firm #2, regular, silken firm, extra firm, extra firm #2. Natto. Soymilk, Miso, Tempeh. Soybeans, raw, US food grade. Soybeans, cooked. Soybeans, raw, Japan. Soybeans, raw, Korea. Soybeans, raw, Taiwan. Soybeans, green, cooked. Soybean curd, fermented. Soymilk skin (foo jook / yuba, cooked). Soymilk skin (foo jook / yuba, raw). Isolated soy protein. Soy protein concentrate: Water washed, alcohol washed. Soyflour: Full fat, defatted.

The Glossary of vegetarian foods (p. 447+) includes: Soyfoods: Edamame, soybeans, soy flour, soymilk, soy nuts, tempeh, textured vegetable protein (TVP, a brand name), tofu. Meat analogs: Commercial meat substitutes, seitan. Milks and dairy analogs: Nondairy cheese, nondairy frozen desserts, nondairy milks, sour cream substitute, yogurt. Address: 1. PhD, RD, LDN, The Vegetarian Resource Group, Maryland; Univ. of Massachusetts, Amherst, Mass.; 2-3. Nutrition Matters, Port Townsend, Washington; Loma Linda University, Loma Linda, California.

8686. Norris, Jack; Messina, Virginia. 2011. Vegan for life: everything you need to know to be healthy and fit on a plant-based diet. Cambridge, Massachusetts: Da Capo Press. xix + 283 p. 23 cm. Index. [219 ref]

• ***Summary:*** Perhaps the single best book on the subject. Very well written by two experts in the field, concise, and carefully documented.

"The practical companion to Eating Animals: a definitive nutrition guide for vegans, including everything from guidelines for making a healthy transition to a vegan diet to kickstart plans, nutrient-dense menus and essential information hot-button issues like soy, protein, and B vitamins"- Provided by publisher.

Contents: Introduction: Going vegan for life. 1. Understanding vegan nutrient needs. 2. Protein from plants. 3. Vitamin B-12: The gorilla in the room. 4. Calcium, vitamin D, and bone health. 5. Fats: Making the best choices. 6. Iron, zinc, iodine, and vitamin A: Maximizing vegan sources. 7. The vegan food guide. 8. Making the transition to a vegan diet. 9. A healthy start: Vegan diets in pregnancy and breast-feeding. 10. Raising vegan children and teens. 11. Vegan diets for people over fifty. 12. Plant food advantages: Health benefits of a vegan diet. 13. Managing weight, heart disease, and diabetes. 14. Sports nutrition. 15. Is it safe to eat soy?: Introduction, soy nutrition, soy isoflavones, soy and health (heart disease, soy and bone health, hot flashes, breast cancer, prostate cancer, cognitive function, thyroid function, reproductive health and feminization), how much and what kind of soy to eat. Table: Isoflavone, protein, and calorie content of soyfoods. 26. Why vegan? Vegan resources. A quick guide to cooking grains, beans, and vegetables. Metric conversion chart. Acknowledgments.

In Chapter 8, "Making the transition to a vegan diet," a section titled "Soyfoods primer" has the following contents: Introduction, soybeans, edamame, soynuts, soymilk, tofu, okara. Fermented soyfoods: Tempeh, miso, natto. Western soyfoods: Textured vegetable protein (TVP (R), made from defatted soy flour), isolated soy protein.

Concerning soyfoods throughout the book: The word tofu is mentioned on 52 pages in this book, soymilk on 47 pages, soyfoods on 45 pages, tempeh on 33 pages, soybeans on 25 pages, isoflavones on 11 pages, miso, soynuts, and soy sauce on 10 pages each, soy flour and textured vegetable protein on 7 pages each, isolated soy protein on 4 pages, edamame, natto and TVP on 3 pages each, okara on 2 pages, and soy protein concentrate on 1 page. Address: 1. RD, cofounder and president, Vegan Outreach, San Francisco Bay Area, California; 2. MPH, RD, Port Townsend, Washington.

8687. Vos, Heidemarie. 2011. Passions of a foodie: An international kitchen companion, A to Z. Durham, Connecticut: Eloquent Books. An imprint of Strategic Book Group. 598 p. 26 cm.

• ***Summary:*** Best-selling author Heidemarie Vos recounts a fascinating story and her journey of putting together the world's first cross-referenced book regarding food-using more than five languages. This cookbook [which contains no recipes] will become an invaluable resource for your kitchen (from the publisher).

The Introduction states: "There are 7922 entries, 300,017 words... based on my own travels to 6 continents and over 40 countries." Note: This is somewhere between a dictionary (in 5+ languages) or brief encyclopedia of food names. It immediately sets the language and cultural context for each word, and ends with broader or narrower terms. For example: "Aburage: Japanese cooking = A fried bean curd... Also see Bean Curd." It contains more than its share of errors and outdated terminology and spellings. It is a "print on demand" book.

It includes: Aburage. Adzuki beans [sic], Agé. Aji Nomoto [sic], see monosodium glutamate. Aka miso–red bean paste. See Miso. Almond milk. Almond oil. Arachide / Arachis. See Peanut. Arachide oil. See Peanut oil. Bean cake, fermented: Chinese cooking, "fu yu" [fermented tofu]. Bean curd, pickled: Chinese cooking. [What is it?]. Bean curd cheese, red: Chinese cooking, "nam yu" or "nan yu" [red fermented tofu]. Bean curd: Oriental cooking. Known as "tofu" in Japanese or "dow fu" in Chinese. Pressed bean curd is "dow fu kon" [doufu-gan, pressed tofu].

"Bean curd, dried [yuba]: Chinese cooking = Known as 'tiem jook' [sweet yuba] / 'fu jook pei', other dialects are 't'ien ch'u' and 'fu pi chi'. It is soybean milk residue, which comes in a thin rectangular sheet or is curled into round sticks. They are usually tan- or cream-coloured with a shiny, glossy smooth texture."

Bean paste, red: Chinese cooking. "Made from soybeans and sugar mashed together then fried and dried out until it resembles sand." Used to fill Chinese moon cakes. Bean sauce, Chinese: Chinese and Asian cookery. Many types including "min see jiong" or "do bahn jiang." Incl. "Black bean sauce." Beans, black: Chinese cooking. "A pulse [sic] known as 'wu dow' / 'wu do' [Black soybeans].

"Beans, black salted fermented: Chinese cooking = Known as 'dow si / dou shih,' used as a vegetable or spice. Known as 'wu dow' dried and salted. They are dull, wrinkled, moist and tender and have an appetising fragrance, yet are pungent with a tangy salty flavor. Used as a flavor enhancer in dark sauces." Keep covered so they do not dry out... "Must be rinsed prior to use to avoid over-salting. Store in a closed jar in the refrigerator after opening."

Bean sprouts: Asian cooking [small green are mung bean sprouts, large yellow soybean sprouts]. Benne seeds: Sesame seeds are used to make sesame oil and tahini (sesame paste). Black beans, Chinese. Also known as 'salted black beans' or 'fermented black beans' and as 'dow si' (Chinese). China beans: See Soya / soy bean. Earth nut: See Peanut. Edamame: Japanese cooking. "Fresh soybean in or out of the

pod." Firm tofu. Fried tofu puffs. Ground nut: See peanut. Hard tofu. Hydrogenated fats. See fats. Miso. Naahm yu: Chinese term. "A cheesy-looking bright red bean curd sauce" [Red fermented tofu]. Nam yu / Nan yu: See Bean curd cheese, red. Shoyu: Japanese cooking. Japanese soy sauce. Soy bean / Soya bean. *Glycine soja,* also known as "'China beans,' 'Butter Beans' and 'Haricot de Java' (French)." Soy bean jam / condiment. See Main see. Silken tofu. Silken firm tofu. Soya oil. Soya sauce. Soy sauce. Tamari soy sauce. Tofu. Tofu tempeh [sic].

Not listed: Amazake. Lecithin. Daitokuji natto. Fermented black beans. Hamanatto. Kudzu. Kuzu. Meat alternatives. Meat substitutes. Milk alternatives or substitutes. Milk, nondairy. Milk, soy. Natto. Seitan. Soy milk. Soy protein concentrate. Soy protein isolate. Soy protein, textured. Tempeh. Teriyaki sauce. Yuba.

Errors: Arame is not also known as "Hijiki." Address: Port Elizabeth, South Africa.

8688. Shapira, Hillel. 2012. Re: Update on work with soyfoods. Letter to William Shurtleff at Soyinfo Center, Jan. 5. 1 p. Typed, with signature.

• ***Summary:*** "Greetings from the Beautiful Mantiqueira mountains, S.E. Brazil. It's been maybe 12 years since I wrote you from Pune.

"We are now busy setting up our new company, Sabias Comidas Comércio e Industria Ltda. We are planning to soon start production of Tempeh, Tofu and rice cakes."

In 2009-2010 we experienced our own private tsunami of sorts. Our flourishing, fast-growing business in Pune, India is now abandoned, run over by an utterly head to toe corrupt government and administration, I have been thrown out of India, 'black-listed' and am unable to return (detrimental to national security!) and Kairava had to leave soon afterward as well while trying to sell our property–now grabbed by some real estate goon with political support.

"We managed to sell (at a "fire sale") most of our equipment and gifted some of our smaller production systems to Wahid, our loyal production supervisor who dared to take on the challenge and now proudly produces on a smaller scale Tofu and Tempeh and salted vegetable pickles sold under the name of Rainbow-Foods (the Dakini brand has been stolen by some north India based business group).

"It seems arrogance is the rule in India these days– and despite being officially invited in the 1990s to start our business in India. It seems the Indian government is now hoping to attract bigger businesses, and are busying brushing out (by denying visas) by the back door the smaller investors. My own government, whose ambassador to India had promised to help, refused eventually... There was a billion dollar weapons deal about to be signed.

"So we ended up penniless refugees. After two months in Bangkok's Chinatown [Thailand], I managed to walk across the India-Nepal border, to get secretly to Pune to sell some equipment, find new homes for the cats and dogs, and ship out 500 kg of books and personal stuff. We were hoping to ship out a container of equipment but under the circumstances that was not possible! I have been told we could write a book about it all, but we prefer to practice our food production arts. So here we are starting from near scratch again, waiting (for 8 months) for the Brazilian customs to release some small scale equipment we imported from China and Korea. We've already got our Brazilian visa's in order!

"We made a down-payment on a long-abandoned property on the edge of Itamonte town, right on the federal road BR-354. We fixed up a semi-ruined house, and renovated the 110 square meter structure (it was a bar before) at one corner of our compound to be ready as a production hall. It now has a well insulated incubation room (1.80 meters tall x 280 meters square) and tiles all around.

"30 minutes ago we received a 500 kg consignment of very good looking, vegetable type organic soybeans from the south of Brazil. We still have a long way to go to furnish our new place–prices for equipment here are stupidly expensive and we are out of funds by now. But the views are fantastic, the air clean and peoples friendly. And we've got a good organic garden coming up in our large back yard.

"We observed the incredible meat / dairy / sugar diet in Brazil and we are sensing that many people are looking for alternative. Good Tofu is available in the Japanese centers in Sao Paulo but nowhere else. We are located 3 hours from both Rio and Sao Paulo and are hoping to send there Tempeh and Rice cakes while Tofu, being perishable, we will market only in the towns nearby.

Update: Feb. 21. "We are having hard time finding magnesium chloride in Brazil–with its 7000+ km coast line and numerous salt producers. Most of them just pump the bittern back to sea. There is one producer in the State of Bahia who supplies in 40% concentration tanker loads for industrial purpose. We are not sure about the grade of his product and are not set to store large tanks. Based on our research to date and to our surprise, we have not been able to locate any solid / flaked producers in Brazil and I suspect all of the (very expensive) magnesium chloride that is available here is imported from China. The cheapest magnesium chloride we managed to find to date from a supplier to the veterinary and dairy industries (they sell good soaps and disinfectants too); it is selling at (wholesale) about r$14 (US$8.00) for half a kg pack. We now have a good stock of clean food-grade calcium chloride to get us started until we sort out the magnesium chloride supply. We may one day need to import it.

"Here in Brazil we are waiting for our equipment still laying in customs–mills and small customized steam injected 50 litters cookers system, stainless steel and pressurized! from China and rice waffle machines from Korea. Maybe after carnival, they say. Also our industrial electric

connection is still due.

"We still paint and paint and clean and fix, at the very end of our bank balance we just do it mostly our selves. We are a bit cut of from the world so to speak–learning Portuguese slowly.

"We make two batches a week of nice magnesium chloride coagulated Tofu, 1.1 kg Soya, small blender two 5 liter pots for cooking and one 10 liter pot for collecting the milk and coagulating, cold filtration of the pulp [okara]–some of which goes into our gluten-free breads and cakes and the rest for garden fertilizing. 2 to 2.3 kg Tofu and two large cups soya milk for our two workers (us) all in 2-3 hours–cleaning included. Good and down-to-earth experience for us who got accustomed to 100 kg an hour production by a well trained crew. And these two pots are Zen masters in disguise–just waiting for the mind to drift... and then (ZEN) they boil over! Only full attention works here."

"Yours always, Seemo ++ Greetings from Kairava."

A photo shows the front of the Dakini Foods compound in Pune, India. On this spot, in April 1997, commercial tempeh production was first introduced to India. Address: RD BR-354, Coqueiros (CX Postal 13), Itamonte, MG C.E.P. 37466000 Brazil.

8689. Scott-Thomas, Caroline. 2012. Almond milk catching up with soy as favorite non-dairy milk alternative (Web article). *www.foodnavigator-usa.com/Market/Almond-milk-catching-up-with-soy-as-favorite-non-dairy-milk-alternative.* Jan. 20. [1 ref]

• ***Summary:*** This article is based on a new report from Packaged Facts titled *Dairy Alternative Beverages in the U.S.,* which found that total retail sales of soy milk, almond milk, rice milk and other plant-based milks increased to $1.33 bn (blillion) in 2011. Although soy milk is still the most popular non-dairy milk alternative, almond milk has become a close second.

Thus in 2011 soy milk had 68.7% of the dairy alternative beverage market, followed by almond milk at 21.1%, rice milk at 7.2%, and coconut milk at 2.6%.

Last year 11% of adult Americans consumed soy milk, followed by 9% who consumed almond milk (almond milk sales skyrocketed by 79% last year). Rice milk came in third.

However soy milk sales are declining, with the total soy food and beverage market decreasing about 15% from 2008 to 2010.

"In the beverage sector, soy-free milk alternatives have altered the category and affected soymilk sales," said the new report. "In recent years almond milk varieties have seen the greatest increase in sales."

Specifically, sales of Silk Pure Almond increased more than 500% in 2010 and 69% in 2011. Sales of Blue Diamond Almond Breeze increased 240% in 2010 and 59% in 2011.

In recent years, according to USDA statistics, sales of cow's milk have steadily fallen. Average per person consumption of cow's milk fell from 24.3 gallons in 1994 to 20.8 gallons in 2008.

Why do people consume alternatives to dairy milk? Some are vegans or vegetarians. Others are concerned about the antibiotics and/or growth hormones often found in cow's milk. Moreover, people generally enjoy the flavor of almond milk.

Note: On 19 Jan. 2012 Packaged Facts also issued a digital new release ("Marketwire") about the new report titled "With almonds as the new white milk, dairy alternatives make further inroads."

8690. INTSOY. 2012. 2012 INTSOY Processing and marketing soybeans for meat, dairy, baking and snack applications, June 3-8: A unique opportunity to gain hands-on experience & practical knowledge about soybeans (Leaflet). Urbana, Illinois. 9 panels. Each panel: 28. Single sided. Black and white.

• ***Summary:*** This printout of an e-mail announces a 5-day course ($1,500 for 1 attendee). The program now has 26 corporate sponsors (listed alphabetically with the logo of each): ADM, Clarkson Grain, Clextral Group, Crown, Devansoy, French, General Mills, Harvest Innovations, House Foods America Corporation, Illinois Soybean Association, Insta-Pro, NEI–Natural Enrichment Industries, NPI–Natural Products, Inc. ProSoya. SavInd (formerly Bar N.A.). Silk, The Solae Co., Soyatech, Soyfoods Association of North America. Soyjoy. SunOpta. USB. USSEC. Wenger. WISHH. World Soy Foundation.

Course highlights. Who should attend? Course schedule (preliminary agenda). Sponsors. Address: National Soybean Research Lab. (NSRL), 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706.

8691. Soyatech, LLC. 2012. Soya & Oilseed Bluebook 2012: The annual directory of the world oilseed industry, online at www.soyatech.com. Bar Harbor, Maine: Soyatech. 332 p. Jan. Comprehensive index. Advertiser index. Statistical conversions. 28 cm.

• ***Summary:*** This is the 6th year in a row that the *Bluebook* (a $95 value) has been sent free of charge to qualified industry members. On the cover is a large color photo of two cupped Caucasian hands holding yellow soybeans against background of rows of green soybean plants. Above this main large photo are six small color photos related to various other oilseeds such as sunflowers and palm oil kernels.

This edition of the *Bluebook* contains 16 fewer pages than it did last year. The oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hemp seed, jatropha, linseed, palm, peanut, rapeseed, safflower, soya, sunflowerseed–the same as last year.

On the inside front cover is a color ad from Omega-9 Oils. On the first page is a full page color ad from SunOpta

with this title: "Can you tell the difference between a bean that's best for soymilk versus a bean that's best for miso? We can." Other full-page color ads in the front are from Intertek, Loders Croklaan North America, Anderson Internal Corp. (expeller press), AOCS, French Oil Mill Machinery Co. and Insta-Pro International.

On the rear cover is a full page color ad from Natural Products Inc. (NPI, Grinnell, Iowa), makers of innovative ingredients for soymilk and tofu to cakes and cookies. They are the makers of Scotsman's Mill ingredients.

Chris Erickson is CEO. Mark Dineen is president. Keri Hayes is publisher and events director. In the Foreword, Joe Jordan (General manager and *Bluebook* content director) writes about how work began this year to expand the Panama Canal–"the most critical 48 miles in international trade." Its freight-carrying capacity is scheduled to be doubled by the year 2014. Address: P.O. Box 1307, 19 Clark Point Rd., Suite 112, Southwest Harbor, Maine 04679. Phone: 207.244.9544.

8692. Vitasoy International Holdings Ltd. 2012. Interim Annual report 2011/12 (unaudited). Focusing on growth. New Territories, Hong Kong. 56 p. Jan. 30 cm. [Eng; Chi]
• ***Summary:*** All values are in million Hong Kong dollars. The fiscal year ends on 31 March 2011. Page 4, financial highlights, states that (for the 6 months ended Sept. 30) turnover increased by 14% from 1,710 to 1,946. Gross profits grew by 12% from 849 to 948.

A management report (p. 5) with business highlights (incl. revenue from external operations and profit from operation) is given for: Hong Kong and Macau, Mainland China, Australia and New Zealand, North America, and Singapore. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 2466 0333.

8693. Messina, Mark J. 2012. The steadily declining image of soymilk and other soyfoods (Interview). *SoyaScan Notes.* Feb. 5. Conducted by William Shurtleff of Soyinfo Center.
• ***Summary:*** Shurtleff notes the similarity between the "anti-evolution crusade" in the 1920s in the United States (and its culmination in the 1925 Scopes trial in Tennessee) and the anti-soy crusade (led by the Weston A. Price Foundation) now. Address: PhD, 429 Calhoun St., Port Townsend, Washington 98368.

8694. Berbille, Hervé. 2012. Re: Use of the word "soymilk" ("lait de soja") in France. Letter (e-mail) to William Shurtleff at Soyinfo Center, Feb. 19. 1 p.
• ***Summary:*** The dairy industry has managed to ban the term "soy milk" ("lait de soja") from any commercial use on the pretext that this is not a liquid from a mammal. Its use is strictly forbidden, But in this case, it would be logical to also prohibit the name "coconut milk" ("lait de coco"), but the dairy industry has not charged for the coconut milk: curious forgetfulness isn't it?

Instead, only three terms are allowed as descriptors in its place on commercial products: *boisson au soja* ("soy drink"), *jus de soja* (soy juice), or *tonyu* (the Japanese word for "soymilk").

Thus, if a soymilk manufacturer (e.g., Nutrition & Santé, brand name SOY) writes "lait de soja" on its packaging, the president would not be put in jail, but h would have big troubles, and surely a very heavy fine!

Likewise, use of "lait de soja" in France is strictly forbidden in any advertisements, brochures, leaflets, sell sheets, or other commercial documents.

However, the term "lait de soja" can be used freely by anyone in any French-language article, cookbook, or any other book–with no limitations or problems. Address: Bordeaux, France.

8695. Hepler, J. Sandy. 2012. Re: Work with soyfoods. Letter (e-mail) to William Shurtleff at Soyinfo Center, Feb. 19. 1 p.
• ***Summary:*** "My specialty has been leaf nutrition. Check out www.LeafForLife.org–And children's feeding in general. Note: A remarkable edible leafy plant is *Moringa oleifera.*

"My experience with soy has been limited, mainly to watching the SoyNica/PLENTY project roll out and unravel over the years. I designed a cookie for them made of 30% okara (2008). It could have been increased to 40%. All samples we made were called delicious to some extent or other. Presently my co-designer, Emelina Oviedo is making and selling these cookies. All of this in Managua, Nicaragua. The SoyNica soy 'factory' is presently not in operation.

"Currently, I'm funding a proof-of-concept project which might be of interest to you. The following figures either come from Chuck Haren (chief soy technician for PLENTY for 20 years or so) or our combined calculations.

"One 7-gm serving of protein via soymilk (8 fl oz.), retail, made by UPAVIM, Guatemala City–retail cost US$0.33.

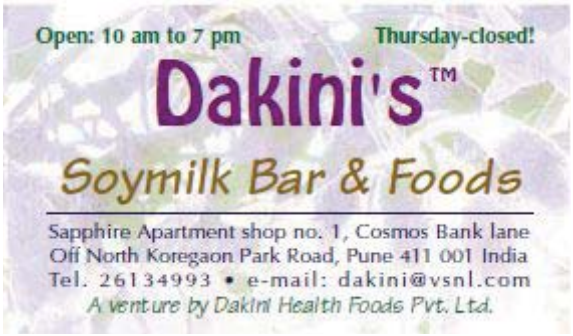
"One and one-half eggs, 7-gm serving of protein–retail cost US$.13-.15.

"One 7-gm serving of protein via baked tempeh chips (1 oz, containing 66% soy tempeh, 30% flour)–retail cost estimated US$.13-.14.

"I believe tasty soy products can and must be made cheaper. Should be able to compete with eggs, the gold standard.

"Chuck Haren will be testing this in Guatemala in the next couple of months. He'll write a report." Address: Whitleyville, Tennessee.

8696. Shapira, Hillel. 2012. Re: Dakini Health Foods' retail outlet in Pune, in operation from March 2004 to April 2005. Letter to William Shurtleff at Soyinfo Center, Feb. 21. 1 p. Typed, with signature.
• ***Summary:*** A business card from the time shows: The retail outlet was named Dakini's Soymilk Bar & Foods



(Sapphire Apartment shop no. 1, Cosmos Bank Lane, Off North Koregaon Park Road, Pune 411 001 India). A venture by Dakini Health Foods Pvt. Ltd. Open from 10 am to 7 pm. Thursday–closed!

"We rented the space near Koregaon Park (Pune) in 2003 and after 8 month preparations we opened around March 2004. We closed for a month holiday in April 2005 (we literally physically collapsed). Not finding the right management for it and electrical and water supply problems getting worse, we decided not to continue, sold the furniture and focused our full attention on the factory. Sales were growing rapidly by then and it was a good decision. But we did miss feeding so many people directly. We felt we gained so much insight from our year in operation that, afterward, business was never the same again–in the best sense!

"The place had a table and 4 chairs inside and 24 seats in the front open space. The place was totally vegan except for one type of very good organic cheese made by a friend in the Himalayas. All milk drinks were soy milk and all yogurt preparations (lassi) were made from soy yogurt. We were producing soya-milk on our pressure cooker system in the factory, but not having a plate heat exchanger, we were cooling it to room temperature in a special jacketed stainless steel tank, then packed it in polyethylene bags which then were put on ice for fast chilling. This worked well and we managed to get a long shelf life. For yogurt production we were inoculating soymilk at room temperature and then incubating it at 45C. The year we were running the shop we were producing 60-80 kg soy yogurt a week, 200-300 liters of soymilk a week, and about 50 kg tempeh. Tofu production at the time was about 600-800 kg a week and these figures include the supply to all the regular clients except soya milk and soyogurt which were for produced for our retail shop use only.

I attach the regular menu. Beside this menu we had a good changing daily menu on the board. The retail shop had about 300-350 square feet inside and 400 square feet of outside area.

"Opening the place (with bank loans) and running it was very challenging yet we got to meet so many people that we got many very good insights. Indians love soyfoods and the place become kind of a cult meeting place with families driving from Bombay and other cities for lunch at Dakini. The place was run as self-service and takeout.

"The most popular drink was the banana date milkshake and second was the papaya lassi; most popular sandwich was the Tofu Sandwich followed by Tempeh Sandwich. Most popular plate was the Falafel Plate followed by the Humus Plate and Tofu Plate. Soya milk Chai was selling real well at all times and the soy-milk ice coffee was a big favorite on hot afternoons. There was no refined sugar on the premises and sweetening was done with tasty organic liquid cane molasses.

A photo (taken 15 Feb. 2005) shows a waitress in red dress carrying a plate of food. Address: RD BR-354, Coqueiros (CX Postal 13), Itamonte, MG C.E.P. 37466000 Brazil.

8697. Boismenue, Clyde. 2012. Re: Required labeling of soy lecithin as a potentially allergenic food since it contains traces of soy protein. Letter (e-mail) to William Shurtleff at Soyinfo Center, Feb. 24. 1 p.

• ***Summary:*** Clyde, who has been selling ADM soy products (including soy lecithin) for 36 years (it is his main life's work), attached to this e-mail 3 documents related to soy lecithin: (1) ADM [Archer-Daniels-Midland Co.] protein content of soy lecithin. (2) Online article concerning NOAEL level for soy protein–a review of a published article by Ballmer-Weber et al. 2007. (3) Copy of an unpublished 2005 report by Steve L. Taylor titled "Soy lecithin: An expert opinion on its potential allergenicity."

His letter reads: "I am sure you will find these interesting. The motivation for these studies was that soy lecithin got caught up in allergen labeling by the way our politicians wrote the regulation, even though lecithin contains only trace amounts of protein (circa 100 ppm) and most of that is not allergenic. My ADM lecithin tech told me he thinks the latter is about 5 ppm in food application lecithins with maximum phosphatide content–e.g. the Yelkin Gold reference. But pan coatings and grill release agents and food extrusion die lubricants were, and are, still technically required to label their products to indicate soy allergen content, even where the use is an obvious processing aid (processing aids are broadly exempt from being required on labels).

"This regulatory hit on the industry triggered these studies. However, if I am reading them right, the fact that we now have a NOAEL value for soy protein established at a relatively high level means we can restore sanity to the entire soy industry. Very exciting.

"FYI–even though the regs have for about 10 years required allergen on the labels of all these minor use products, the FDA has fairly openly NOT enforced them in cases where they recognize there is insignificant risk to consumers. For example, in 10 years there are no recorded instances of allergic reaction to soy in lecithin of pan release coatings (bakery use).

Dakini's™

Cool Fresh Soya Drinks

Soya Milk Shakes

	Price
Banana Shake	30
Banana-Date Shake	40
Chickoo Shake	35
Chickoo-Date Shake	40
Papaya Shake	35
Pineapple Shake	35
Mixed Fruits Shake	40
Soyamilk Ice Coffee	35

Soyogurt Lassi

Sweet Lassi	25
Salt Lassi	25
Banana Lassi	30
Banana-Date Lassi	40
Chickoo Lassi	35
Chickoo-Date Lassi	40
Papaya Lassi	35
Pineapple Lassi	35
Mixed Fruit Lassi	40

Fresh Juices

Orange Juice	40
Sweet Lime Juice	40
Ganga Yamuna	40
Grapefruit Juice	45
Pomegranate Juice	60
Papaya-Lemon Juice	35

Hot Drinks

Black Tea	20
Green Tea	20
Green Jasmin Tea	20
Soy Chai	20
Black Coffee	25
Soymilk Cappuccino	35
Hot Soymilk Pot	30

Cool Drinks

Plain Soya Milk	20
Plain Soda	12
Lemon Soda	15
Himalayan Mineral Water	20

Cool Treats

Fruit Salad small	30
Fruit Salad big	60
Soyogurt	30

Food and Snacks Preparations

Falafel Plate Falafel, Salad, Tahini, Pita bread, Pickles	70
Falafel Serving Falafel, Tahini	50
Humus Plate Humus, Tahini, Olive oil, Pita, Pickles	70
Baba Ganush Plate Roasted Brinjal paté, Tahini, Olive oil, Pita	70
Salad Plate Assorted Veg Salads, Pickles	40
Dakini Royal Plate Falafel, Humus, Baba Ganush, Tahini, Assorted Veg salad, Pita Bread, Pickles	110
Tofu Plate Tofu sauted with Garlic, Ginger, Shoyu	70
Tempeh Temptations Plate Sauted Marinate Tempeh, garlic, Lemon, Shoyu	
Tempeh Crisps Thin fried Tempeh, Lemon, Garlic, Shoyu	50

Pita Sandwiches

Tempeh Temptation Sandwich	70
Tofu Sandwich	70
Humus Sandwich	50
Baba Ganush Sandwich	70
Cheese Sandwich	70
Peanut Butter Sandwich	25
Peanut Butter & Date Sandwich	30
Peanut Butter, Date & Banana Sandwich	35

Extra Servings

Pita Bread	10
Humus	15
Baba Ganush	20
Olive Oil extra virgin	20
Greek Olives	30
Tahini	10
Cucumber Tomato Salad	15
Beet root with Tahini	15
Carrot Salad	15
Sour Kraut	20
Extra Soyogurt	15
Hot Soymilk Extra	10

Cooking mediums are cold pressed Peanut/Mustard/Sesame oils only.

No additives or preservatives or any products containing these are used here. Organic farm products and ingredients are used whenever available.

Check out our daily menu on the board

"Thanks for your help.–Clyde"

"P.S. Besides ADM soy protein products, I have developed with a Chinese partner the World's Most Perfect Isolated Soy Protein for dry powder protein beverage mixes and neutral pH ready-to-drink protein beverages.

"And, just yesterday I began the introduction of a de-estrogenated soy protein concentrate to try to win back the bodybuilding trade who left us on a dead run in favor of whey proteins when the phytoestrogen issue first blew up. But now there is so much demand for whey proteins that they are assuming their correct place in the economic matrix, to wit, at very high prices–about double our highest priced purified soy proteins. So the time is right for this..." Address: LookAlive / Basic Foods Co., P.O. Box 240070, Los Angeles, California 90024. Phone: 310-473-0719.

8698. Nguyen, Andrea Quynhgiao. 2012. Asian tofu: Discover the best, make your own, and cook it at home. Berkeley, California: Ten Speed Press. [viii] + 232 p. Illust. (color photos by Maren Caruso). Index. 24 x 24 cm. [21 ref]
• ***Summary:*** Another very attractive book and well-written book by Andrea Nguyen. In researching this book, Andrea traveled to many countries in East- and Southeast Asia. The color photos and the book design are both superb.

Contents: Introduction: East Asian stronghold (China, Japan, Korea), wavering Southeast Asia (Vietnam, Thailand, Cambodia, Laos, Singapore, Malaysia, Indonesia, Philippines, Myanmar / Burma), South Asian newcomer (India), tofu in America (Samuel Bowen, Benjamin Franklin, Commodore Matthew Perry, Civil War soldiers, Piper & Morse, George Washington Carver, Mildred Lager, World War II), alternative to mainstream (Boys Market in Los Angeles, *Diet for a Small Planet, The Book of Tofu,* Jeremiah Ridenour, Los Angeles Tofu Festival), tofu today (United Soybean Board Survey, Hodo Soy, Dong Phuong Tofu [Westminster, Orange County, California]).

Tofu buying guide: Tofu types (tofu blocks {silken, medium, medium firm, firm, extra firm, super firm}, pressed tofu, tofu noodles, tofu skin [yuba; an unfortunate term since yuba has nothing to do with tofu] {fresh tofu skin packets = dou fu bao, tofu skin rounds = dou fu pi or fu pi, dried tofu sticks [dried yuba sticks] = fu zhu or "tofu bamboo"}, fried tofu {fried tofu slices}, tofu pudding (like silken tofu but made by pouring rich soymilk into a tallish pot with a little calcium sulfate and tapioca starch dissolved in water in the bottom), fermented tofu {red or white}, soy milk).

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "fresh tofu skin packets" or the term *dou fu bao* in connection with yuba.

Tofu cooking tips: Cutting, draining, frying.

Homemade tofu tutorial (incl. homemade soy milk, soy milk lees, homemade silken tofu, homemade tofu pudding, block tofu, confetti tofu, oboro tofu, zaru tofu, seasoned pressed tofu, tea-smoked pressed tofu, white fermented tofu, frozen tofu, fresh tofu skin, soy-simmered fried tofu).

Recipes–Fresh and satisfying: Snacks and starters. Soothing and soft: Soups and hot pots. Homey and wholesome: Main dishes. Versatile and delicious: Salads and sides. Religion and artistry: Mock meats. Building on traditions: Buns, dumplings, crepes, noodles and rice. Amazing transformations: Sweets and desserts. Basics. Ingredients (glossary). Acknowledgments. Measurement conversion charts.

Note 1. This book contains many recipes that use meat, poultry, or fish as ingredients.

Note 2. The Vietnamese term for tofu is *dau phu.* Address: Food writer, Santa Cruz, California.

8699. United Soybean Board (USB). 2012. Consumer attitudes about nutrition: Insights into nutrition, health, and soyfoods. 18th annual. 2011 edition. Seattle, Washington: USB. [12] p. March. 28 cm.
• ***Summary:*** Methodology: "This year represents the sixth year we have adopted an online self-administered survey as our methodology, a significant change from random telephone interviews. The survey, conducted by an independent research firm [in Seattle, Washington] in January 2011, includes 1,000 random surveys, providing a sample that is consistent with the total U.S. population. The study's margin of error remains ± 1.9 to 3.1%, with a confidence interval of 95 percent."

Note about the methodology of this survey from Mark Messina, PhD, who asked one of the survey's designers. 2012. May 29. "The participants in the consumer survey represent US demographics. The only difference with this survey compared to previous ones is that rather than interviewing the consumers by phone, once contacted, the consumers are directed to a web site where they fill out the survey."

Contents: Introduction. Methodology. About USB. Consumers aim to choose healthier foods. Consumers examine the good and bad of nutrition facts. Effective strategies in improving overall health [about choice of amounts and types of fats; does not mention exercise]. Who is to blame for obesity? (Individuals 28%, the fast-food industry 18%). Soyfoods receive healthy rating (In 2011 81% of consumers rated soy products as healthy, with only 5% rating them as unhealthy. A graph shows "Awareness of soy as healthy" from 1998 (67%), to a peek of 85% in 2007 and 2008, falling to 81% in 2011). General nutritional attitudes and concerns. Examining the nutritional facts panel. Obesity concerns. Strategies for improving overall health. Soyfoods and health perceptions. Health reasons for seeking soy. Cooking and salad oil impressions. Soy in the media. FDA-approved health claim. Opinions on biotechnology. Spotlight on biotechnology. Trans fat awareness and opinion. Awareness and usage of soy products. Restaurants and soy products. Occasion preferences for consuming soy.

Awareness and usage: "37% percent of Americans consume soyfoods or soy beverages once a month or more, approximately five percentage points higher than during the period between 2006 and 2008. Conversely, 35% indicate that they never consume soy, which has decreased steadily since 2006 (then at 43%). For the seventh year in a row, consumers reported the most familiarity with soymilk, soybean oil, tofu and soy veggie burgers.

"Soymilk continues to be the most regularly consumed soy product, with nearly one-quarter of Americans reporting that they drink it regularly. For comparison, in 1999, 18% of consumers reported that they had tried soymilk. By 2010, the number of consumers who have tried soymilk has more than doubled to 45% of all consumers.

Edamame holds the number two spot and has surpassed veggie burgers among the top three most consumed soyfoods for the past two years. In fact, it has more than tripled in popularity since 2005 (then at 4% and now at 13%). "Plain white tofu" follows in third place, on par with 2009 at 9%."

A table shows the "Top 20 soy products by awareness." Soymilk 90%. Soybean oil 56%. Plain white tofu 56%. Soy veggie burger 54%. Soynuts 40%. Soy protein bars 37%. Soy infant formula 36%. Soy latte / soymilk in espresso coffee drinks [as at Starbucks] 36%. Edamame 34%. Dried or canned soybeans 33%. Cereal bar / energy bar 32%. Miso 29%. Soy ice cream / cheese 28%. Soy yogurt 27%. Soy hot dogs 26%. Flavored / marinated tofu 24%. Soy supplements 21%. Soy flour 21%. Soy breakfast cereal 18%. Textured soy protein 16%. All others mentioned 14% or less.

Occasion preferences for consuming soy (in descending order of preference): dinner 39%, breakfast 30%, lunch 22%, mid-afternoon snacking 19%, late evening snacking 13%, mid-morning snacking 9%, desserts 5%.

"In 2010, 84% of consumers rate soy products as healthy, down one percentage points from 2009." A graph (p. 6) shows this increase in awareness (82% in 2006, 78% in 2005, 74% in 2004, 74% in 2003, 74% in 2002, 69% in 2001, 76% in 2000, 71% in 1999, 67% in 1998).

Note 1. As of March 2012 this full survey is available gratis in PDF format at www.soyconnection.com /health_ nutrition /pdf/.

Note 2. This survey is hard to cite and to use because it has no page numbers. It is hard to read when printed since much of the type is too light / pale. We appreciate the correct spelling (as one word) of the words soyfoods and soymilk.

8700. Dean Foods Co. 2012. Annual report 2011. Dallas, Texas. 4 + 61 + 64 + [12] p. 28 cm.
• ***Summary:*** All but the first 4 pages of this annual report are Form 10-K. On page 35 is the segment on White-Wave Alpro. Net sales were $2,109.9 million, up 8.9% over 2010. Total operating income was $199.7, up 20.2% over 2010. The last page of the basic report shows that Dean Foods' stock has performed relatively poorly since 2006 compared to the Standard & Poor's 500 Composite Index and to a peer group of 18 manufacturers of food, beverages, and other consumer packaged goods.

An accompanying "Notice of stockholders meeting" is 106 pages. Address: 2515 McKinney Ave., Suite 1200, Dallas, Texas 75201. Phone: 214-303-3400 www.deanfoods.com.

8701. Katz, Ellix Sandor. 2012. The art of fermentation: An in-depth exploration of essential concepts and process from around the world. White River Junction, Vermont: Chelsea-Green Publishing Co. xxiii + 498 p. April. Illust. (photos and illustrations). Index. 25 cm. [109 (Chap. 10 + 11) ref]
• ***Summary:*** A marvelous book by self-described "fermentation revivalist" Sandor Katz, whose books and lectures have inspired thousands to rediscover the ancient art of fermentation.

In this book Katz redefines an old noun "ferment" (no longer used to mean enzyme) to mean fermented food(s). It works quite nicely. For example: "The Japanese soy ferment *natto* contains an enzyme called *nattokinase."* Although information on fermented soyfoods is found throughout the book (see the excellent index), most of it is found in two chapters, 10 and 11 (p. 274-335). The contents of these two: 10. Growing mold cultures: Introduction. Incubation chambers for growing molds (oven method, aquarium method, temperature controller, dedicated incubator designs). Making tempeh. Cooking with tempeh. Propagating tempeh spores. Making koji. Amazake. Plant sources of mold cultures. Troubleshooting. Sidebars: Microorganisms in my bed, a poem by qilo. Sculpting with tempeh. Ode to tempeh, by Spiky. Tempeh variations (chickpea tempeh, etc.).

Note: Koji is mentioned on 41 pages in this book, and especially on pages 296-300.

11. Fermenting beans, seeds, and nuts: Introduction... Spontaneous fermentation of beans. Idli / Dhokla / Khaman... Soybeans. Miso. Using miso. Soy sauce. Fermented soy "nuggets" [fermented black soybeans]: Hamanatto and douchi. Natto. Dawadawa and related West African fermented seed condiments. Fermenting tofu. Troubleshooting.

The section titled "Non-dairy milks, yogurts and cheeses" (p. 207-08) begins: *"Milk* has come to refer to any creamy liquid of substance, such as coconut milk. In our time soymilk has become a ubiquitous alternative to cow milk, but any nut or seed can be extracted as milk (or turned into cheese)." We have hemp seed milk and almond milk. "The seed milk ferment that most closely resembles its dairy analogue is soymilk fermented with yogurt cultures. You can ferment soymilk using the same procedure as dairy milk, and you can even buy commercial cultured soy 'yogurt' to use as a starter."

Sidebars: Dosa variations. Miso generic proportions. Miso soup with William Shurtleff. In the middle of this

chapter are 15 pages of very helpful color photos. Address: Short Mountain Sanctuary, in the hills of Tennessee.

8702. *Plenty Bulletin* (*Summertown, Tennessee*). 2012. Plenty International's program report. 28(1):1-2. Spring.
• ***Summary:*** "Guatemala: In 2011, with funding provided by the Atkinson Foundation, Plenty collaborated with... Escuela Formation Agricultura (EFA) and Amado Del Valle to help more than 40 farming families from 5 villages to grow black beans, soybeans, corn, and vegetables, while learning methods of mitigating soil erosion."

"Students and teachers at Escuela Formation Agricultura (EFA), the Solola Agricultural College, tested 8 non-GMO soybean seed varieties during 2011." A photo shows Amado Del Valle, explaining to villagers in La Nueva Providencia, Guatemala, how to make soymilk.

"Karen's Soy Nutrition Project: At the Guatemala City Dump Site Plenty continues to support the efforts of Grupo de Soya Santa Maria (GSSM) as they provide bakery foods fortified with toasted soy flour and soymilk to more than 300 undernourished children, as well as a few disabled and elderly adults, two days a week. GSSM has not missed a week of distributing foods to the children since starting in early October of 2010."

8703. Zaineddin, Aida Karina; Buck, Katharina; Vrieling, Alina; et al. 2012. The association between dietary lignans, phytoestrogen-rich foods, and fiber intake and postmenopausal breast cancer risk: A German case-control study. *Nutrition and Cancer* DOI:10.1080/01635581.2012.683227. 14 p. Available online 16 May 2012. [46 ref]
• ***Summary:*** "Phytoestrogens are structurally similar to estrogens and may affect breast cancer risk by mimicking estrogenic / antiestrogenic properties." Phytoestrogens, which are found only in plants, are able to bind to mammalian estrogen receptors. There are several mechanisms that have been proposed to explain how phytoestrogens reduce breast cancer risk: (1) Their weak inhibitory effect on aromatase may lower the amount of circulating estrogen; as a result, breast tumor proliferation may be decreased. (2) Inhibition of tumor growth. (3) Angiogenesis. (4) Stimulation of apoptosis.

In Western societies, whole grains, soybeans, and traditional soy foods are rich sources of phytoestrogens.

The three main classes of phytoestrogens are isoflavones, lignans, and coumestans. Isoflavones, which are found in high levels in soybeans and many soyfoods, have received the most scientific attention because of their possible effects on human health, including the prevention of cancers.

"Meta-analyses have shown that isoflavones may slightly reduce the risk of breast cancer, and that this inverse association was somewhat stronger among premenopausal women than among postmenopausal women. However, associations were only significant in high soy-consuming Asian populations, and no significant associations were found in low soy-consuming Western populations."

The results of this study provide evidence for a reduced menopausal breast cancer risk associated with increased consumption of soybeans and soyfoods, sunflower and pumpkin seeds.

Table 6, titled "Adjusted odds ratios and 95% confidence intervals for the association of phytoestrogen-rich foods with postmenopausal breast cancer risk by estrogen receptor (ER) status," contains data concerning soy milk, soybeans, tofu, soy spread, sunflower / pumpkin seeds, sesame / flax seeds, etc. Address: 1-2. Unit of Genetic Epidemiology, Div. of Cancer Epidemiology, German Cancer Research Center, Heidelberg, Germany.

8704. *Malnutrition Matters Newsletter* (*Ottawa, Canada*). 2012. Ten new SoyCow 'E' systems for North Korea. May. p. 1.
• ***Summary:*** "A container full of SoyCows has been shipped from the fabricator in Thailand to North Korea for the Canadian NGO, First Steps. The SoyCow and VitaGoat form the backbone of First Steps' nutritional aid program for the past nine years. With the addition of these new systems, First Steps will have over 80 systems operating at about 30 sites, providing a daily cup of protein-rich soymilk to more than 80,000 needy children in orphanages, daycares and kindergartens." A color photo shows the SoyCow 'E' system, with the blue electric boiler at center. Address: 48 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada. Phone: 1-613-742-6888.

8705. *Malnutrition Matters Newsletter* (*Ottawa, Canada*). 2012. Second VitaGoat system for "A Better World" in Kenya. May. p. 1.
• ***Summary:*** "The Swiss-based foundation, A Better World, has a new system installed with Sustainable Organic Farming and Development Initiatives (SOF-DI) Community Resource Center at Kwisero District, Bungoma, Kenya. This further helps SOF-DI in the fight against hunger which is its prime goal together with access to clean water. Their first system has been running for more than a year at Arutani."

Color photos show: Left: New PedalPro cycle grinder. Right: Making soymilk with the rest of the VitaGoat system. Address: 48 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada. Phone: 1-613-742-6888.

8706. *Malnutrition Matters Newsletter* (*Ottawa, Canada*). 2012. Three more VitaGoats for Liberia program. May. p. 1.
• ***Summary:*** "The USAID-funded HANDS project in Liberia, where Malnutrition Matters is a partner, is now completing its second year. Five VitaGoats and three SolarFlex dryers have been installed. Over 80 women have been trained to operate the VitaGoats and currently over 40

women are self-employed operators. Each VitaGoat is shared between three or more operator groups which produce and sell soymilk and other soy-based products. Soymilk sales have been successful, especially in the smaller villages, and self- sufficiency is projected to be achieved by most groups within a year of initial operation."

A color photo shows a "Women's micro-enterprise group selling soymilk at roadside in Zwedru, Grand Geddeh, Liberia." Address: 48 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada. Phone: 1-613-742-6888.

8707. Shurtleff, William. 2012. The global value chain for soybeans (Editorial). *SoyaScan Notes.* June 12.
• ***Summary:*** "The value chain is a concept from business management that was first described and popularized by Michael Porter in his 1985 best-seller, *Competitive Advantage: Creating and Sustaining Superior Performance"* The value chain concept can be applied at various levels of activity, such as a worldwide level, an industry-wide level in a particular country, or at the level of a particular company operating in a specific industry. The key links in a value chain are those points at which value is added to products. Quantitative data are necessary to analyze the amount of value added (Source: Wikipedia at value chain, June 2012).

In the global soybean chain we have identified four major links or points: (1) Soybean production: This is highly fragmented, with hundreds of thousands of farmers, both large and small, growing soybeans. However some of those farmers are organized into groups, often cooperatives (such as AGP in the United States).

(2) Crushing and other soybean processing. Crushing soybeans to make crude soy oil and defatted soybean meal is main way that soybeans are processed. However in East Asia, whole soybeans are also processed into human foods, such as tofu, miso, soymilk, tempeh, etc. Large soybean crushers which operate worldwide include Cargill, ADM, Bunge, AGP, Sanbra (Brazil) etc. Defatted soybean meal is further processed to make animal feeds, soy sauce, etc. Crude soy oil is further refined to make edible vegetable oil biodiesel, etc.

(3) Transportation / distribution of soybeans and/ or soybean products. Major firms (which are vertically integrated) include Cargill, ADM, Bunge, Dreyfus, the Noble Group of Hong Kong, etc.

(4) End use / retail: The main end uses for soybeans are: From whole soybeans–human foods, often divided into four types: (a) Traditional East Asian fermented soyfoods, such as miso, tempeh, natto and its relatives. The largest makers are miso makers and natto makers in Japan. (b) Traditional East Asian non-fermented soyfoods, such as tofu, soymilk, edamame, roasted soy flour, yuba. The largest makers are tofu makers and soymilk makers in Japan, Hong Kong, and USA. From defatted soybean meal: animal feeds, soy sauce, modern Western soy protein ingredients: textured soy flour / textured vegetable protein (TVP in ad ADM trademark), soy protein concentrates, textured soy protein concentrates, soy protein isolates, and textured soy protein isolates. The largest makers of animal feeds are the same as the major soybean crushers: Cargill, ADM, Bunge, etc. From crude soybean oil: Refined soybean oil and biodiesel. The largest refiners of soybean oil are the major soybean crushers. From refined soybean oil: Edible vegetable oil, salad dressings, margarine, etc. Address: Founder and owner, Soyfoods Center, Lafayette, California. Phone: 925-283-2991.

8708. Palmer, Sharon. 2012. The plant-powered diet: The lifelong eating plan for achieving optimal health, beginning today. New York, NY: The Experiment. xx + 412 p. Foreword by David L. Katz, MD, MPH. [228 ref]
• ***Summary:*** A positive attitude toward traditional soyfoods is found throughout this excellent book. The traditional Japanese diet (p. 19-20)–one of the healthiest–leads to an average life expectancy of 80 years for men and 85 years for women. The Japanese diet is characterized by a "Focus on soy foods. Whole soyfoods such as edamame, tofu, and miso are regular features of the diet.

The section titled "Soy, the superfood" (p. 58-59) describes the basic types of soyfoods and their benefits. The next section is "A word about soy meat alternatives" (p. 60-61) including veggie burgers, soy meat crumbles, and vegetarian hot dogs.

The "Plant-based dairy alternatives guide" (p. 72-76) includes various types of soy milk, soy milk yogurt, and soy ice cream.

The word "soy" appears on 55 pages of this book, the word "tofu" on 54 pages, "tempeh" on 18 pages, "soy foods" on 17 pages, "seitan" on 15 pages, "edamame" on 10 pages, "soybeans" on 10 pages, "soy milk" on 8 pages, "soy sauce" on 6 pages, "miso" on 6 pages "soy milk yogurt," "soy ice cream" and "soybean oil" on 2 pages each, and "soy cheese" and "soy cream cheese" on 1 page each.

Includes "75 original plant-based recipes for every meal–all with nutritional data." "A 14-day meal plan with action alerts to get you started." "Essential information on the healthiest plant food–whole grains, vegetables, fruits, nuts, legumes, and even herbs, spices, dark chocolate (rich in polyphenol antioxidants), coffee (contains many beneficial antioxidants), tea (rich in polyphenol antioxidants, and takes the place of high-calorie, high-sugar drinks), and wine.

Virginia Messina, in her blog The Vegan RD, says this: "It's a book that makes the scientific case for eating fewer animal products and more plant foods while admitting that there is no precise definition for 'plant-based diet.' The information in the book is balanced, honest, and practical, and the recipes–which appear to all be vegan–look really nice. In the forward to the book, Dr. David Katz, of the Yale University Prevention Research Center says this about Sharon's book: 'So much of modern health advice is about

marketing a particular perspective that such a balanced and moderate approach is a truly surprising and welcome departure.'

"I agree, and it's the thing that made this book stand out for me. Admittedly, I wish the book had included more perspective on making compassionate food choices. When animals are part of the discussion (and I think they should always be part of the discussion) a vegan diet is the one and only best way to eat. When the focus moves away from animals, then diet-related issues become somewhat less clear. So far, no one has proven that a vegan diet is healthier than other plant-based ways of eating, and it's unlikely that they ever will. So, this isn't a book I would use to promote veganism–it presents a vegan option, but not a vegan imperative–but, it is one I would use to promote healthy plant-based eating for those who are looking for that type of information."

About the author: "Sharon received her Bachelor of Sciences Degree with Honors from Loma Linda University, California. She enjoyed a diverse 16-year dietetics career with experiences as a clinical dietitian, wellness dietitian, chief clinical dietitian, food and nutrition services director, and consultant dietitian." Address: RD (Registered Dietitian), P.O. Box 1052, Duarte, California 91009.

8709. Baertlein, Lisa; Dorfman, Brad. 2012. Dean Foods shares soar on WhiteWave IPO, profit beat. *www.reuters.com.* Aug. 7.

• ***Summary:*** Dean Foods Co., top U.S. dairy company, announced plans on Tuesday to spin off 20% of a unit that sells Silk soy milk, Horizon Organic dairy products, Alpro products, and International Delight coffee creamer products. The price of Dean's shares soared 27% based on a quarterly profit that was stronger than expected and cost controls.

Last year Dean suggested that it was looking at a possible spinoff as a way of paying down debt, but the move comes earlier than expected.

Using proceeds from the IPO, Dean plans to pay down its own debt as well as $800 to $925 million borrowed under a new credit facility at WhiteWave Foods.

When the IPO takes place, Gregg Engles, presently chairman and CEO of Dean Foods, will take on the roles of chairman and CEO of WhiteWave. Gregg Tanner, now president of Dean's fresh dairy business, will be promoted to CEO of Dean Foods. Address: Reuters.

8710. Kikkoman Corporation. 2012. Annual report 2012. Year ended March 31, 2012. 250 Noda, Noda-shi, Chiba 278-8601, Japan. 47 p. 28 cm. [Eng]

• ***Summary:*** Net sales in yen decreased by 0.01% to ¥283,239 million. Net income in yen increased by 15.6% to ¥8,963 million.

Under "Major group companies–Kikkoman Corporation, Japan (p. 44) is listed: Kikkoman Soyfoods Company, 2-1-1 Irifune, Chuo-ku, Tokyo 104-8553, Japan. Phone: +81 (3) 3206-0778. This company was formerly Kibun Foods.

Under "Corporate History" we read (for the first time): "2008 Aug.–Kibun Food Chemfa Co., Ltd. (now Kikkoman Soyfoods Company) becomes a wholly owned subsidiary of Kikkoman."

A photo (p. 2) shows Yuzaburo Mogi (Honorary Chief Executive Officer and Chairman of the Board of Directors) and Mitsuo Someya (President and CEO). On this page we read that Kikkoman's sales decreased because of "lower demand for soy sauce and the termination of sales of some beverages and casual wines." Address: Noda, Japan.

8711. Vitasoy International Holdings Ltd. 2012. Annual report 2011/12. Focusing on growth. New Territories, Hong Kong. 182 p. Aug. 30 cm. [Eng; Chi]

• ***Summary:*** All values are in million Hong Kong dollars. The fiscal year ends on 31 March 2010. A graph (p. 4) shows that turnover (sales) has risen steadily each year from 2,441 in 2008 to 3,727 in 2012 (up 12% from 2011).

Gross profit has risen steadily each year from 1,156 in 2008 to 1,651 in 1,760 in 2012 (up 10% from 2012).

EBITDA (Earnings before minority interest, interest expense, income taxes, depreciation, and amortization) has also risen steadily each year from 391 in 2008 to 553 in 2012 (up 3.17% from 2011).

A chart (p. 5) shows that 51% of Vitasoy's sales come from soymilk, followed by 19% from tea and 9% from tofu. By location, 45% of the sales are from Hong Kong and Macao, 27% from Mainland China, and 12% from north America.

A full-page color photo (p. 9) shows Winston Lo, laughing. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

8712. Nordquist, Ted. 2012. Talking about soy yogurt in the USA (Interview). *SoyaScan Notes.* Sept. 17. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Market shares of the U.S. soy yogurt market: WholeSoy (75%), White Wave Silk (12-17%), Wildwood, then Stonyfield O-Soy, then Nancy's Yogurt.

Market shares in the U.S. non-dairy yogurt market: WholeSoy, Almond yogurt, and So Delicious coconut yogurt. The So Delicious plant is located in Junction City, Oregon, headed by Mark Brawerman, whose office is in Los Angeles; since they got Nestle as a distributor their sales have increased dramatically. He kind of abandoned soy when his coconut milk products (beverages, ice creams, yogurts, and creamers) went so well. Formerly named Turtle Mountain, they have long made So Delicious and Purely Decadent soymilk Ice Creams. So Delicious Coconut Yogurt (6 oz cup) retails for $1.99 compared with $1.19 for WholeSoy; a lot less money for a lot less nutrition, plus saturated fat.

Up until about 3 years ago, Silk Soy Yogurt was the

main competitor to WholeSoy Soy Yogurt; they never sold more units than WholeSoy. The about 3 years ago Silk started losing enormous market share. Ted thinks it was part of the scheme whereby Silk tried to change from certified organic ingredients to so-called "natural" ingredients without changing the UPC codes; it gave them such a bad name that they lost a lot of market share, both in their soymilk and in their yogurts.

Today WholeSoy has about 75% of the soy yogurt market (in cups, not liquid in bottles).

In about 2007 when Ted moved his manufacturing plant from SSI in Turlock, northern California, to the Safeway / Lucerne plant at City of Commerce, southern California, he had to abandon his smoothies because the plant did not have the necessary filling or bottling equipment. First Ted dropped the smoothies, then he had to drop his frozen yogurt–and focused on just the soy yogurt, which is where he is now.

Over the past year or so, WholeSoy has invested a lot in social media by updating their website (www.wholesoyco.com), hiring a woman, Yessica, who does nothing but social media (blogging, Facebook, Twitter, etc.). WholeSoy has gotten a large number of hits on that site. They give people information (such as where they can buy WholeSoy), they can fill out a form so if their store doesn't have it they can request it, they have free coupons, etc.

It is absolutely NOT true (and is never true) that the organisms used to culture yogurt get killed by the acidity of the yogurt. For example, Ted puts 20 billion CFUs (colony forming units, equal to 6-7 quarts of culture) into a 10,000 gallon tank of soymilk. In 9-10 hours those will multiply in the soymilk (they like it so much) to where they are 140 billion CFUs in an 8 oz cup. Even at the end of code, after 30 days, there are still about 70 billion per 8 oz cup.

What is the acidity (pH) of yogurt? In most countries outside the United States, the pH ranges from 3.5 to 5, where low is more acidic and where plain milk or soymilk is about 6.8. In the USA the yogurt is less acidic because it is so sweet. The way to sell yogurt (and) food is to add sugar.

Do the organisms that culture yogurt survive in the gastrointestinal tract? Yes. That is what "probiotics" means. A probiotic food benefits the host. Thus the Japanese have eaten little containers of Yakult since the 1935. In the early 1970s doctors at the Karolinska Institute in Stockholm found that *Lactobacillus acidophilus* and *Bifidobacterium bifidus* were essential to good digestion of food, especially after people went off intravenous feeding. In Sweden one can buy A Yogurt (acidophilus) and B Yogurt (bifidus). One is most important in the large intestine and the other is most important in the small intestine. Yet they stop short of saying that one of these bacteria consumed as food survive and live in the intestinal tract.

One should be a skeptic about the benefits of probiotics, says Ted. He has been a member of and on the board of the International Probiotic Association (IPA) since the day it started. The members are mostly big companies such as Danone / Dannon, Chr. Hansen (Milwaukee), Yakult, etc. They have held three world congresses (once every other year), where they invite people to speak. "The science around probiotics is *very* nebulous." In Canada and Europe no health claims are allowed for probiotics. WholeSoy makes no health claims. Address: WholeSoy & Co., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

8713. Nordquist, Ted; 2012. Re: Bio of Jonathan Gordon. Letter (e-mail) sent to Henry L. Glasser; Robin Webster; Bill Shurtleff; Jeremiah Ridenour; Laura Tewnion, Sept. 28. 1 p. • ***Summary:*** Dr. Jonathan Gordon posted a bio / resumé for the IFT symposium. Nancy Chapman (director of SANA) sent a copy of it to Ted Nordquist, with a note ("Reading through the Bios, I have a problem with this Bio") and with the following part of Jonathan's bio highlighted in yellow: "After travelling the globe for two years working with every multinational food manufacturer and many major national brands, he moved to White Wave Inc., where he was in charge of all production and R&D (and invented 'Silk' soymilk)."

Ted replied to Nancy as follows:

"Jonathan was hired by Steve Demos after we started manufacturing the Silk soymilk for Steve in Gustine, California in the Morningstar plant, beginning in January, 1996. In 1994-95 I developed the Silk soymilk using formulations I brought from Sweden, using the Morningstar pilot plant and the help of Laura Tewnion and Ann Shaw. We produced the Silk soymilk for White Wave from January 1996 to March 1998. Then Steve began producing Silk in the then Ador plant in Cedar City, Utah. Jonathan was the QC [quality control] manager [at White Wave] during the last phase of our making Silk and was then involved in the product from that time on. For him to publish in his Bio that he "invented Silk soymilk" is very far from the truth. To get confirmation of this you can contact Laura Tewnion who still works now for Dean Foods" (her e-dress of Laura Tewnion and Jeremiah Ridenour are given).

"Bill Shurtleff and Henry Glasser can also testify to these facts.

"Jeremiah Ridenour, then President of Wildwood Natural Foods can also testify to these facts. Jeremiah took me to Gary Veuve, then Manager of the Morningstar, Gustine plant and we agreed that I would develop the first ESL gable-top soymilk for Wildwood Natural Foods. For the record, it is important to note that the 'first ESL gable-top soymilk' idea was that of Jeremiah Ridenour! I developed soymilk formulations in Sweden, but with Tetra Pak cartons. ESL is exactly the same pasteurization techniques as aseptic Tetra Pak, but in a less stable carton. It requires refrigeration, but with up to 80 days shelf life, making it a 'refrigerated product' and sold in the dairy case. This introduced 'soymilk'

in ESL cartons into the dairy case in the US. I believe the good flavor and being in the dairy case is what made soymilk successful in the USA. I would also give Steve Demos credit for his devotion to marketing this product and Jonathan for keeping the flavor good and developing additional variations. The original Silk soymilk had 5 grams of protein per serving, but when the FDA 'Heart Healthy' seal came along, all the soymilks were increased to 6.25g or 7g of protein per serving (just a little less water in the formulation). It is still sold almost exclusively in aseptic Tetra Pak in Europe. Once the product was developed (Morningstar was manufacturing Lactaid in ESL gable top), Jeremiah could not take it to market because of the minimum volumes required. I was running out of money so I took the ESL soymilk to Myron Cooper of Westbrae and Steve Demos. Steve signed onto the ESL soymilk and then developed the 'Silk' brand name. We made the product in the Silk ESL cartons for Steve for two years, selling it to him FOB Gustine, California, before he left us (abruptly)."

"Thanks, Ted.

"P.S. If you would like to forward this email to Jonathan, please do. I would like to see his response!" Address: Boulder, Colorado.

8714. Brawerman, Mark. 2012. Big changes in dairy free products at Turtle Mountain LLC (Interview). *SoyaScan Notes.* Oct. 4. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** Question: When did you realize that you had to make products from other than soy? Ans: "It's not that we had to make something other than soy. On 15 April 2005 we signed a national distribution agreement with Dryer's Ice Cream. This was done with Tom Delaplane, who had run Dryer's for 20 years. Shortly thereafter Nestlé went from having 20% ownership of Dryer's to having 100% ownership. Tom said that he had tested all the non-dairy ice creams worldwide and found that Turtle Mountain's were by far the best. Tom said that he would put Turtle Mountain products in Walmart and in major supermarkets nationwide. He said that our sales would increase to $40-50 million in 2-3 years, but Dryer's is definitely not going to make any of these products, so you will have to expand production rapidly. Everything he said has actually happened. That created a new problem and a new opportunity for us. At that time, Dryer's carried Mocha Mix, which they stopped distributing once they started distributing our products.

Now up until 2005 Mark had made non-dairy soy products–except for a little frozen dairy yogurt in 1989. In 2005 Turtle Mountain was strictly a soy company. But Mark was watching this little company named Coconut Bliss in Eugene, Oregon. They started making their product on a Gelato machine in a clean room–it was very icy and kind of gritty and funky. Yet it started to sell, then sales and distribution increased steadily. In about 2006-08 at a strategic planning session, Mark's people were talking about new products, including a soy cup yogurt since they thought "the products on the market at that time were all terrible tasting." Mark starting talking to his people about making a coconut product. But they had no interest in it. Mark's products had been in Whole Foods for 15 years. He and his people would meet with Whole Foods in December and show them the new products they planned to be shipping in March/May. Four weeks before the meeting Mark decided that he wanted to take 3-5 flavors of coconut ice cream to that meeting. He normally would never give such a command to his guys; its not a dictatorship. In the northwest, data showed that Coconut Bliss was now outselling Mark's products. The coconut flavors got developed and Mark took them to the meeting with Whole Foods in Austin; they liked them and they started appearing in stores the following April. "Within 5 weeks of putting the product into Whole Foods, each of the 5 'So Delicious' coconut flavors in pints was selling more units and more dollars and at a 20% price premium to his Ben & Jerry's-type Purely Decadent soy products, than any single soy ice cream. Each one was selling better than any other product we manufactured. Why? People preferred the taste of the coconut to the soy–that's all I can tell you."

Mark thinks his company got into coconut just before the anti-soy publicity on the Web became significant. His sales of soy products had not yet started to decrease. "Coincidence, act of God, whatever it was." His timing was incredibly fortunate–almost perfect.

In about 2008 they first released their coconut products to national distribution via UNFI; (United Natural Foods) it went to their 12-13 national distribution centers. Once they brought out the first coconut ice creams in Whole Foods, from that year on their soy business started to go down by double digits each year; the sales of all their ice cream competitors were going down even faster. "We went from about $27-28 million of net soy sales down to $16-$17 million in 3 years." The coconut went up much, much faster than the soy went down. Mark's total sales in 2005 were $10-11 million; this year (2012) they will be $85-90 million. "We have been very blessed with consistently growing the business double-digit for the past 6-years straight. We certainly try hard." The coconut products (especially coconut ice cream and coconut beverage) have been responsible for most of the growth. Today Mark's has more than 70% of the dairy free frozen dessert market in the USA. Tofutti is steadily decreasing in size. Rice Dream (developed by Imagine Foods, now owned by Hain) is almost nonexistent.

Over the years, the dairy industry has gotten a bad image for its products, with things such as bovine growth hormone–but of course Mark never mentions that.

Mark buys his coconut in the form of dried meat–by the container. He uses it all–even the fiber which makes his coconut products a good source of fiber. The fact that the coconut has been dried (is not fresh) has no influence on the

flavor–in Mark's opinion.

Does Mark get many questions about the saturated fats in coconut products. Yes, but he explains that medium-length triglycerides are easier for the body to digest. All of the polyunsaturated oils (such soy, corn, safflower, etc.), which are the predominant edible oils in the United States are scavengers, looking for electrons, disrupting cells so that they can become more stable. They have long chains, are hard to digest, and they make people fat. Moreover, coconut meat is an old food; Polynesians have eaten it for thousands of years.

By the time Mark brought out the coconut ice cream, he had also introduced a soy yogurt. Within 6-9 months thereafter the other soy yogurts (such as WholeSoy and Silk) had a dramatic improvement in flavor.

After the coconut ice cream hit the market, they launched a "So Delicious" coconut yogurt and then a coconut milk. Then in March/April 2011 they were showing a Greek-style dairy free coconut yogurt very quietly at the Natural Products Expo. They were also showing similar Greek-style almond yogurt. They brought out the coconut yogurt first and then the almond yogurt in June 2012. In late 2011 they decided to make an Almond Plus dairy free beverage with 5 gram of protein per serving. They thought–mistakenly–that consumers would pay a little more for the large increase in protein at a 10% premium price; the supermarket store and Walmart buyers loved the product but the consumers refused to pay more. The magic price for selling any dairy free beverage is $2.99 a half gallon. The almond product is still selling, but Walmart cut it down to 400 to 500 stores from 3,200. It was not the magical home-run product we thought it would be.

Why have sales of dairylike soy products decreased? Mark thinks a key reason is competition from other non-soy products such as coconut and almond. Noise about soy not being healthy on the Web is clearly also a reason, even if it is false.

Before Mark got involved with soyfoods, he had been in the garment business for many years, including 1½ years with Levi-Strauss. Address: Los Angeles, California. Phone: 213-469-2255.

8715. Glasser, Henry L. 2012. Re: Compilation of documents created by the U.S. FDA and USDA proving that they are now regularly using the terms "soymilk," "soy milk" and "soy yogurt" as common names for these products. Letter (e-mail) to William Shurtleff at Soyinfo Center, Oct. 23. 151 p.

• ***Summary:*** This compilation contains 151 pages of FDA and USDA documents. Exhibit B, "FDA Soymilk Documents," shows 7 documents dated from 21 Jan. 2003 to 17 Nov. 2010.

Exhibit C is "FDA: Office of Regulations, Policy and Social Sciences. Center for Food Safety and Applied Nutrition. Experimental Study of Health Claims on Food Packages: Preliminary Topline Frequency Report: May 2007.

Exhibit D, "Studies referring to soy milk." shows two studies from 16 Feb. 2000 and 29 Jan. 2007.

Exhibit E, "Response letters to the National Milk Producers Federation objection to the use of the term 'soymilk.'" shows 5 letters written from March 8 to May 24, 2000. One of these is from SANA (9 March 2000) and one from White Wave (24 May 2000).

Exhibit F, "Other government agencies references to "soymilk," shows 6 documents dated from 2010 to 2012.

Exhibit G, "Other government agencies references to "soy yogurt" shows 3 documents dated from 22 Feb. 2012 to 2010.

Exhibit H, "References to 'soy yogurt' shows 14 documents from the Internet to soyfoods manufacturers and published documents.

Note: Soy yogurt is mentioned on pages 89, 91, 100 and 105+. Address: Attorney at Law, San Francisco, California.

8716. Heang, Rany. 2012. Soyfoods in Cambodia (Table).

• ***Summary:*** This table (see next page), created by Rany free of charge at the request of Soyinfo Center, has three columns: (1) The English name. (2) The Cambodian name in Khmer script. (3) Romanization of the Cambodian name.

Black bean sauce: Tirk sondek kmao khab.
Dried yuba sticks: Por pous sondek sngout.
Edamame: Sondek seang sros.
Fermented black soybeans: Sondek seang kmao kream.
Fermented soybeans: Seang.
Fermented tofu: Tao hu keo.
Soybean: Sondek seang.
Soybean sprout: Sondek bondos.
Soymilk: Tirk sondek.
Soy sauce: Tirk se eve.
Tofu: Tao hu. Yuba: Pour pous sondek Toun. Address: Lafayette, California.

8717. Haren, Chuck. 2012. Guatemala soy nutrition project. *Plenty Bulletin* (*Summertown, Tennessee*) 28(2):2-3. Fall.

• ***Summary:*** "In mid-August I returned to Guatemala to work with local partners Grupo de Soya Santa Maria (GSSM) in Karen's Soy Nutrition Project."

"With a little funding help over the next year from friends and supporters of Plenty, GSSM members expect to begin making and selling soymilk products, sustain their own employment, and continue providing nutritional support for vulnerable children."

Photos show: (1) Two children at Karen's Soy Nutrition Project. (2) GSSM member Jorge Gonzales at 'El Local,' the site of GSSM's new food and nutrition center which serves residents of the neighborhoods surrounding Guatemala City's 'sanitary landfill.'

Soyfoods in Cambodia

English	Cambodian/Khmer	Romanization
Black bean sauce	ទឹកសណ្តែកខ្មៅខាប់	Tirk sondek kmao khab
Dried yuba sticks	ពពុះសណ្តែកស្ងួត	Por pous sondek sngout
Edamame	សណ្តែកសៀងស្រស់	Sondek seang sros
Fermented black soybeans	សណ្តែកសៀងខ្មៅគ្រាម	Sondek seang kmao kream
Fermented soybean	សៀង	Seang
Fermented tofu	តៅហ៊ូផ្អាប់	Tao hu pha up
Soybean	សណ្តែកសៀង	Sondek seang
Soybean Sprout	សណ្តែកបណ្តុះដុះពី សណ្តែកសៀង	Sondek bondos
Soymilk	ទឹកសណ្តែក	Tirk sondek
Soy sauce	ទឹកស៊ីអ៊ីវ	Tirk si eve
Tofu	តៅហ៊ូ	Tao hu
Yuba	ពពុះសណ្តែកទន់	Por pous sondek toun

(Arranged alphabetically in English)

8718. Nespoto, Massimo. 2012. Le soja au Japon: mythe ou réalité? [Soy in Japan: myth or reality?] *Alternatives Végétariennes* No. 109. Sept/Nov. p. 20-22. [Fre]
• ***Summary:*** The Japanese consume soy in many forms: The main fermented soyfoods are miso, shoyu, and natto. The main nonfermented soyfoods are tofu, soymilk, yuba, okara, Koyadofu, edamame, daizu [whole soybeans], and moyashi [soy sprouts]. A brief description of each is given.

There follows and interview with a traditional tofu maker, Shuji Uemura, owner of Uemura Tofu, who arises each morning at 3:30 a.m. Color photos show: (1) The outside front of Uemura Tofu shop with blue and white norens hanging. (2) Mr. Uemura standing inside his shop. (3-4) Freshly made tofu in a cooling tank and in individual tubs. (5) Many packaged soyfoods in Japan. Address: Prof., Univ. of Lorraine.

8719. WhiteWave Foods Co. 2012. Saputo to buy Dean Foods Morningstar unit for $1.45 billion (News release). Broomfield, CO 80021 1 p. May 23. 28 cm.
• ***Summary:*** Saputo is the largest dairy processor in Canada. They started out as a cheese company, then got into dairy milk. Saputo acquired Dairyworld Foods in about 2001. Dairyworld owned a company named Soyaworld, which made the So-Nice brand of soymilk. Saputo spun off Soyaworld and sold it to Sanitarium Foods in Australia. After a while, Sanitarium sold it back to Agrifoods International in Calgary. It is now named Earth's Own.

Wikipedia (July 2013) says the following about Earth's Own Food Company: "Earth's Own Food Company (previously Soyaworld Inc.) is a health food manufacturing company in Canada. They are producers and distributors of the So Good, So Nice, Almond Fresh and Ryza brands within Canada.

"History: Earth's Own was founded under the name Soyaworld Inc. in 1995 by Maheb Nathoo, and soon grew with an investment from Dairyworld Foods where Mr. Nathoo held the position of Vice President of Finance.

"In 2003 Sanitarium So Good Limited purchased 100% control of Soyaworld. From 2003 onward the company was wholly owned by the Seventh Day Adventist Church, through Sanitarium So Good Limited and Canadian Nutrition Association.

"In early 2011, Soyaworld Inc. was renamed Earth's Own Food Company Inc.

"In 2012 Earth's Own ownership group was renamed to Life Health Foods, Inc. The group remained 100% owned by the Seventh Day Adventist Church. In 2012 Agrifoods International Cooperative Ltd. purchased shares of Earth's Own." Address: 12002 Airport Blvd., Broomfield, Colorado 80021. Phone: (313) 635-4000.

8720. *SoyaScan Notes.* 2012. Soymilk and cow's milk prices at Safeway supermarket in Lafayette, California (Overview). Dec. 13. Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** Since Dec. 1983, approximately every other year, Soyfoods Center has conducted a survey of the prices of soymilk and cow's milk in California. Soymilk: Silk Fruit & Protein (Mixed Berry or Peach and Mango flavors), quart, non-organic $2.99 or $1.49 per chug. Silk organic vanilla or plain: $2.49/quart. Silk organic chocolate, plain, vanilla, very vanilla fortified for kids, or unsweetened: $3.99/half gallon. Silk non-organic lite chocolate, lite plain, lite vanilla (lite means diluted with water): $3.99/half gallon. Silk non-organic Plus omega-3 DHA, or Plus for bone health: $4.19. Silk organic nog: $3.29/quart.

Safeway O Organics soymilk: Chocolate, vanilla, plain, lite vanilla, lite plain: $3.49/half gallon.

Cow's milk (fortified with vitamins A and D) sells for the following prices at the Safeway supermarket in Lafayette, California: (1) Fat free: quart NA (not available). or $2.39/half gallon or gallon NA; (2) Low fat (1% fat, protein fortified): $1.59/quart or $2.39/half gallon or $4.29/gallon; (3) Reduced fat (2% fat, protein fortified): $1.59/quart or $2.39/half gallon or $4.29/gallon; (4) Whole (homogenized, fortified with vitamin D only): $1.59/quart or $2.39/half gallon or $4.39/gallon. (5) Acidophilus Plus Bifidus–Low Fat (1% fat): NA. (6) Horizon Organic $4.49/half gallon regular or 4.49/half gallon 2% fat. (7) Lactaid: $3.99/half gallon. Lucerne 100% lactose free, fat free $3.69/gallon. (9) Safeway O Organics Fat free, low fat or reduced fat: $3.59/half gallon. The best-seller among these is Fat free in gallons.

8721. Robbins, John. 2012. The truth about soy. *http://www.foodrevolution.org/blog/the-truth-about-soy*
• ***Summary:*** This is the best rebuttal we have seen to Sally Fallon, the Weston A. Price Foundation (WAPF) and their anti-soy brigade. It begins:

"In recent years, I've received quite a number of requests from people asking for my views on soy products. Many of these inquiries have mentioned a stridently anti-soy article written by Sally Fallon and Mary G. Enig, titled 'Tragedy and Hype,' that has been widely circulated. This article presents a systematic series of accusations against soy consumption, and has formed the basis for many similar articles. Large numbers of people, as a result, are now seriously questioning the safety of soy.

The litany of dangers with soy products, according to the article by Fallon and Enig, is nearly endless. Tofu, they say, shrinks brains and causes Alzheimer's. Soy products promote rather than prevent cancer. Soy contains 'antinutrients' and is full of toxins. The pro-soy publicity of the past few years is nothing but 'propaganda.' Soy formula, they say, amounts to 'birth control pills for babies.' 'Soy is not hemlock,' they conclude, 'soy is more insidious than hemlock.'

"Fallon and Enig say the soy industry knows soy is poisonous, and 'lie(s) to the public to sell more soy.' They

say that soy is 'the next asbestos.' They predict that there will be huge lawsuits with 'thousands and thousands of legal briefs.' They warn that those who will be held legally responsible for deliberately manipulating the public to make money 'include merchants, manufacturers, scientists, publicists, bureaucrats, former bond financiers, food writers, vitamin companies, and retail stores.'

"Given the rapidly expanding role that soy in its many forms has come to play in the Western diet, these accusations are extremely serious. If they are to be believed, the widespread trust that many people have come to have in soy is not only misplaced, but disastrous.

"Soy foods have come to play such a significant role in the diets of many health conscious people, and the allegations that have been made against soy are so many and so grave, that I think the topic warrants a careful, detailed and meticulous look. What follows is my attempt to provide an objective appraisal of both the benefits and the dangers of soy.

"Are Soy Foods a Blessing or a Curse?

"It's not that long ago that soybeans were considered by most Americans to be 'hippie food.' But then medical research began accumulating, affirming that soy consumption reduced heart disease and cancer risk, that it lengthened lives and enhanced their quality, and that it provided an almost ideal protein to substitute for animal proteins that almost inevitably come packaged with cholesterol and unhealthy forms of saturated fat. The mainstream culture began taking note. In a 1999 article titled 'The Joy of Soy,' *Time Magazine* announced that consuming a mere 1.5 ounces of soy a day can significantly lower both total and LDL ('bad') cholesterol levels. The evidence was becoming so convincing that even the ardently pro-pharmaceutical FDA wound up affirming that soybeans are a food that can prevent and even cure disease.

"As the evidence of soy's health benefits kept accumulating, sales and consumption skyrocketed. Books like *The Simple Soybean and Your Health, Tofu Cookery,* and *The Book of Tofu* helped spread the word. Annual soymilk sales, which amounted to only a few million dollars in the early 1980s, have now soared to more than a billion dollars. And it's not just soy milk, it's all soy foods. From 1996 to 2011, annual soy food sales in the U.S. literally quintupled–increasing from $1 billion to $5 billion.

"But, according to the article by Sally Fallon and Mary Enig, this is all a tragic mistake, because soy is far indeed from living up to the many health claims that its proponents have made for it..." Address: California.

8722. Shurtleff, William; Aoyagi, Akiko. 2012. The book of tofu: Protein source of the future–Now! 2nd ed. Revised. Lafayette, California: Soyinfo Center / www.createspace.com. 344 p. Dec. 22. Illust. by Akiko Aoyagi Shurtleff. Index. 28 cm. [321 ref]

• ***Summary:*** This edition, published as a print-on-demand book by www.createspace.com, is 8 pages longer than any previous edition. The entire Glossary (with all illustrations) from the original 1975 edition is included, as is the updated Preface, the complete "Directory of Tofu Manufacturers" in the Western world (as of Feb. 2001), and the complete bibliography of 321 entries. After the Index is an updated full page of information about Soyinfo Center, then the original photo of Shurtleff and Aoyagi in 1975 from the original edition, and updated page "About the Authors," with new photos of Bill and his son Joey at Yosemite in 1994 and Akiko Aoyagi Shurtleff at the Lafayette Reservoir in 1999.

Then comes the section "Sending Tofu in the Four Directions," with a new photo of William Shurtleff with his tofu master's family at Sangen-ya Tofu Shop during his apprenticeship period, Tokyo, circa 1974. On the last page is (1) Information about the book *Tofu & Soymilk Production* and (2) about the SoyaScan database, which now contains more than 90,000 records from 1100 B.C. to the present. To order a customized search of this remarkable database, contact Soyinfo Center at 925-283-2991 or www.soyinfocenter.com.

Thanks to Akiko for redesigning the front and rear covers, and for skillfully and artistically integrating all the pieces into this newly revised edition. Address: P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

8723. Sharma, Ratan. 2012. Re: Soymilk and tofu in India. Letter (e-mail) to William Shurtleff at Soyinfo Center, Dec. 26. 1 p.

• ***Summary:*** "Soymilk and tofu business has been growing in India like anything [rapidly]. Soy is really picking up." Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

8724. *SoyaScan Notes.* 2012. Soymilk and cow's milk prices in the refrigerated dairy case at Trader Joe's in Lafayette, California (Overview). Dec. 27. Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** Since Dec. 1983, approximately every other year, Soyinfo Center has conducted a survey of the prices of soymilk and cow's milk in California.

Trader Joe's is an all-purpose grocery store which emphasizes low prices and natural foods. Both soy milk and cow's milk are sold in the dairy case under the Trader Joe's brand.

All soymilk is sold in ½-gallon gable-top paper milk cartons. Low-fat vanilla or original (5 gm of protein per cup): $3.29. Organic unsweetened $3.49 (7 gm of protein per 8 oz cup). Organic low-fat unsweetened $2.99 (7 gm of protein per cup).

Trader Joe's organic soy yogurt in the dairy case: Organic 24 ounces: $2.49. Strawberry or peach (6 oz. cups): $0.99 each.

Trader Joe's has two sets of soy milk (each set is of about equal size) in its dairy case: Non-organic and organic.

Trader Joe's has two sets of cow's milk (each set is of about equal size) in its dairy case: Non-organic and organic. Most dairy milk is sold in plastic bottles or jugs. In the prices that follow the Non-organic price will be listed immediately before the organic price, separated by a "/".

Cow's milk (fortified with vitamins A and D) sells for the following prices at the Trader Joe's in Lafayette, California: (1) Fat free: quart $1.29/NA (not available) or half gallon $2.19/$3.49 or gallon $3.39/$5.99

(2) Low fat (1% fat): quart $1.29/NA or half gallon $2.19/$3.49 or gallon $3.39/$5.99.

(3) Reduced fat (2% fat): quart $1.29/ NA or half gallon $2.19/$3.49 or gallon $3.39/$5.99

(4) Whole (homogenized, fortified with vitamin D only): quart $1.29/ NA or half gallon $2.19/NA or gallon $3.39/$5.99. (5) Reduced fat (2% fat) with the cream on top, half gallon NA/$3.49. (6) Whole (nonhomogenized) with the cream on top, half gallon NA/$3.49.

The best-seller among these is the fat-free gallons, $3.39 per gallon, with 4 facings.

Trader Joe's has no acidophilus plus bifidus milk.

8725. *SoyaScan Notes.* 2012. Soymilk and other nondairy milk prices in nonrefrigerated shelf-stable (aseptic) cartons at Trader Joe's in Lafayette, California (Overview). Dec. 27. Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** Since Dec. 1983, approximately every other year, Soyinfo Center has conducted a survey of the prices of soymilk, other nondairy milk, and cow's milk in California.

Trader Joe's is an all-purpose grocery store which emphasizes low prices and natural foods. Various nondairy milks are sold under the Trader Joe's brand and several other brands.

Varieties of soymilk: Trader Joe's Soy Essential: Soy Beverage. 1 quart, organic, unsweetened, with 500 mg omega-3 ALA [alpha-linolenic acid] plus a good source of fiber and enriched with 7 nutrients: $1.69.

Trader Joe's Organic. 1 quart: $1.69. 2 quarts (half-gallon), original, or vanilla or chocolate (all 3 sweetened with sugar): $2.99.

Trader Joe's nonorganic. 1 quart, original, or vanilla or chocolate (all 3 sweetened with sugar): $1.69.

WestSoy Nonfat Organic Soymilk (made by Hain-Celestial). 1 quart. Plain (sweetened), vanilla, or vanilla unsweetened: $1.99.

Soy Dream Organic Enriched (made by Hain-Celestial). 2 quarts (half gallon). Original or vanilla: $3.19. Enriched with: Soy isoflavones 47 mg per serving. Vitamins A, B-12, D & E. Calcium equivalent to milk. Sweetened with evaporated cane juice [sugar].

Nonsoy, nondairy beverages: Trader Joe's rice milk in 2-quart (half gallon) cartons: Original (unsweetened) organic and vanilla (unsweetened) not organic: $2.99 each. The same two products in quarts: $1.69 each.

Blue Diamond Almond Breeze. 1 quart, nonorganic. Unsweetened vanilla, unsweetened original, and sweetened original: $1.99.

Trader Joe's Almond Smooth. 1 quart, nonorganic, fortified with calcium plus vitamins A, D, and E. Original, chocolate, or vanilla: $1.69.

Pacific Organic Almond (from Pacific Foods, Oregon). 1 quart. Vanilla or original: $1.99.

Trader Joe's coconut milk, 1 quart, with calcium, vitamins A and B-12 plus medium-chain fatty acids. 1 quart, nonorganic: $1.99.

8726. Kelly, Carla. 2012. Quick and easy vegan slow cooking: more than 150 tasty, nourishing recipes that practically make themselves. New York, NY: The Experiment. xii + 275 p. Illust. (color photos). Index. 24 cm.
• ***Summary:*** Tofu is mentioned on 29 pages in this book, seitan on 29 pages, soy sauce on 28 pages, soymilk on 23 pages, miso on 18 pages, tempeh on 17 pages, fermented black soybeans on 1 page (p. 114), and cooked black soybeans on 1 page (p. 141).

The section on "Soy foods" (p. 26-29) has subsections on: Regular (water-packed, Chinese-style) tofu. Silken (vacuum packed, Japanese-style) tofu, smoked tofu, tempeh, soy curls (or TVP chunks), soy sauce, miso paste, soy creamer. Also: Seitan and vital wheat gluten, Marmite.

What are soy curls? Defatted soy flour extruded in the shape of curls. "I know not everyone has access to soy curls, but they are available online so try to get them if you can. They cook so wonderfully tender and absorb flavor so well. They do not need to be reconstituted prior to use because of the long cooking time. My first preference for a substitute is TVP chunks, then extra-firm tofu or seitan cut into ½-inch cubes."

Special soy recipes: Black bean beans ("I have a container of black bean sauce, a pungent paste made from fermented black soybeans, in my fridge that I often use for sautéing tofu or green beans," p. 114). Soy curl and soybean chili (with "1 cup soy curls" and "Two 15-ounce cans cooked black soybeans, drained and rinsed," p. 141). Address: British Columbia, Canada (born in New Zealand).

8727. Roseboro, Ken. 2013. The 2013 non-GMO sourcebook: A buyers guide to global suppliers of non-GMO and organic seeds, grains, ingredients, feed and foods. Fairfield, Iowa: Evergreen Publishing, Inc. 106 p. Illust. (both color, and blue and white photos). Index. 28 cm.
• ***Summary:*** Contents: Editor's introduction (by Ken Roseboro, publisher and editor). Suppliers of non-GMO products: United States, Canada, Europe, Africa / Middle East, Asia / Australia, Latin / South America. The Non-GMO Project special section (p. 51+). Non-GMO shopping guide.

Related products, services, and organizations. rBGH-free dairy processors in the US. Index of non-GMO suppliers by product category: Seeds (corn, soybean, edamame), canola / rapeseed, processed canola / rapeseed products, corn / maize, processed corn / maize products, soybeans (identity preserved, specialty, organic), processed soy products (flakes, flour, germ concentrate, grits, lecithin, meal, nuts, oil, low linolenic oil, phytosterols, protein, textured protein, soymilk, soymilk powder, soy sauce, tofu, vitamin E / tocopherols), other grains / oilseeds and processed products (alfalfa / hay, barley, cotton,...), other ingredients and processing aids (citric acid, dairy ingredients...), sweeteners, food products, food supplements, animal feed. Index of related products, services and organizations. Complete index of listings. Index of advertisers.

Note 1. In the Suppliers section, many company entries have the Non-GMO Project logo (with an orange and black butterfly on a green leaf) next to their company name

This comprehensive book gives the single best picture of the growing industry, worldwide, opposed to genetic engineering. Address: Editor / Publisher, P.O. Box 436, Fairfield, Iowa 52556. Phone: 1-800-854-0586.

8728. Soyatech, LLC. 2013. Soya & Oilseed Bluebook 2013: The annual directory of the world oilseed industry, online at www.soyatech.com. Bar Harbor, Maine: Soyatech. 336 p. Jan. Comprehensive index. Advertiser index. Statistical conversions. 28 cm.

• ***Summary:*** This is the 7th year in a row that the *Bluebook* (a $95 value) has been sent free of charge to qualified industry members. On the front cover is a large round color photo collage of four of the major oilseeds, plus harvesting with a combine and shipping in containers.

The 14 oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hemp seed, jatropha, linseed, palm, peanut, rapeseed, safflower, soya, sunflowerseed–the same as last year.

On the inside front cover is a color ad for Omega-9 Oils (from Dow Agrosciences). Other full-page ads related to soyfoods are: ADM, AOCS, French Oil Mill Machinery Co. and Insta-Pro International.

On the rear cover is a full page color ad from Natural Products Inc. (NPI, Grinnell, Iowa), makers of innovative ingredients for soymilk and tofu to cakes and cookies. They are the makers of Scotsman's Mill ingredients.

Chris Erickson is CEO. Mark Dineen is president. Keri Hayes is publisher and operations director. Address: P.O. Box 1307, 19 Clark Point Rd., Suite 112, Southwest Harbor, Maine 04679. Phone: 207.244.9544.

8729. Vitasoy International Holdings Ltd. 2013. Interim Annual report 2012/13 (unaudited). Weaving success through commitment. New Territories, Hong Kong. 56 p. Jan. 30 cm. [Eng; Chi]

• ***Summary:*** All values are in million Hong Kong dollars. The fiscal year ends on 31 March 2012. Page 4, financial highlights, states that (for the 6 months ended Sept. 30) turnover increased by 10% from 1,946 to 2,135. Gross profits grew by 11% from 913 to 1,010.

A management report (p. 5) with business highlights (incl. revenue from external operations and profit from operation) is given for: Hong Kong and Macau, Mainland China, Australia and New Zealand, North America, and Singapore. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 2466 0333.

8730. He, Gene. 2013. Re: Nature Soy, Inc.: Its history and products 713 North 10th St., Philadelphia, PA 19123. 10 p. + 3 inserts. 28 cm.

• ***Summary:*** In 1990 Sunkee Tofu Food Company (*Xinji Doufu Shipin Gongsi* in pinyin) started in Pennsylvania, located at 448 North 12th St., Philadelphia, a few blocks from their present location. The founder was Wen Yatsun, who was born and raised in China but had been educated in the USA; he previously been an electrician and had owned and operated a restaurant in Philadelphia. Being in the restaurant business, he saw that there was a demand for tofu but no local manufacturers. His business thrived and grew very nicely. Sunkee mostly served customers in Philadelphia, especially restaurant customers.

The company's original products, sold under the Sunkee brand, were basic tofu products–the types popular in the Asian-American market: Soft tofu, firm tofu, silken tofu, extra firm tofu, and five-spice extra firm. Also: Soymilk (plain or sweetened, ½ gallon), soymilk (sweetened, 16 oz = 1 pint). In about 1992 the company introduced soy puffs (deep fried tofu puffs).

In 1998 Mr. Wen decided to establish a new company, Nature Soy, Inc. (*Datian Doupin Chang,* in pinyin) and two new brands: "Nature's Soy" and "Datian" (two Chinese characters meaning "Nature Soy"). Production of tofu was moved into the current location (713 North 10th Street in Philadelphia), with about ten times as much square footage and with a very modern, advanced tofu production line. A space in the new building was constructed for an R&D laboratory; it began operation in late 1998. That laboratory improved the sanitation of the entire production facility.

In 2002 the following specialty flavored products were introduced to the market: (1) Hot & spicy flavored tofu, 8 oz. (2) Curry flavored tofu, 10 oz. (3) Oriental sauce tofu, 10 oz.).

In 2003 Gene joined the company as a partner with Mr. Wen. They both own the company and work there every day. Gene developed the company philosophy: "We take soy products seriously!" and "Healthier living, healthier life." At this time the company began to do a little bit of marketing to reach outside the Asian-American community. It was also for this reason that the company began to develop various

pre-marinated types of tofu, sliced tofu, 5-minute tofu (a cake of tofu with a packet of seasoning that takes about 5 minutes to cook), etc. Gene joined the company in large part to make sure the company meets all sanitation and modern food processing regulations. Born and raised in China, his educational background is in dairy products in the USA. He was one of the few Chinese cheese makers. He earned his PhD degree from Utah State University, and was especially interested in fermented dairy products. After that, he went into the fermentation industry.

In about 2004 the R&D lab developed tofu that could be sliced as thin as 1/16 of an inch, and from this they developed a new product: organic deli-style pre-sliced tofu (see photo from 2005 company brochure). The product was pre-seasoned like a lunch meat. As far as we know, this was the world's first product of this type. They supplied it to Giant (a supermarket chain) and also to Walmart. Gene's original intention was to replace those lunch slices which contain a lot of low-grade materials–as well as cholesterol, saturated fat, etc. One big problem at the time was that the company did not have enough marketing money. Unfortunately, the demand for this product was not very great and it had to be discontinued

Maybe the product was ahead of its time. Gene has developed a related product that is even more interesting than the original thinly sliced tofu. It is like a block of cheese, where a deli or restaurant can put it on their own cheese slicer to make fresh tofu slices to any thinness they desire. The company did a focus group on that product with a group of vegetarians and the loved it, but it is not yet on the market.

Competitors: The biggest are House Tofu (which has a new plant in New Jersey), Vitasoy / Nasoya, and Pulmuone [which has a relatively new plant in Tappan, New York]. Nature Soy's product line is much bigger than that of House, which is various forms of water-packed tofu.

Nature Soy has been growing every year, without one year in which sales decreased, even during the Great Recession that started in 2008 and even during the anti-soy campaign on the Web. Of the latter Gene says simply, "They are crazy."

In about 2004 the wheat gluten based vegetarian meat substitutes were produced for commercial sales. Also in 2004 fried tofu (8 oz was introduced).

Mr. He knows and likes fermented tofu. He says that if you blend it with other ingredients (such as garlic) to make a fermented tofu spread, where it serves as the source of flavor, it makes a great spread–as for crackers. A lot of fermented tofu is sold in the USA at Asian food stores, but essentially all of it is imported. It is almost impossible for a domestic manufacturer to compete with the low imported prices.

Gene believes that Nature Soy has a bright future. Address: 713 North 10th St., Philadelphia, Pennsylvania. Phone: 215-.

8731. Guardino, Lorraine. 2013. How Soy City Foods (in Toronto, Ontario, Canada) was transformed into Sol Cuisine by Dror Balshine (Interview). *SoyaScan Notes.* Feb. 28. Conducted by William Shurtleff of Soyinfo Center.

• ***Summary:*** During the 1970s Lorraine was part of a meditation group–and doing other "weird" things; she was not on the scene until 1983, but she is familiar with the early history of Soy City Foods and Sol Cuisine.

In 1980 Soy City Foods started as a tofu company (at 2847 Dundas Street West), in order to supply their very successful restaurant, named The Vegetarian Restaurant, which had opened in 1976 at 542 Yonge Street by Wellesly; that was their first little company. It was one of the first vegetarian restaurants in Toronto; Annapurna was the other. However, the restaurant simply couldn't find a source of good tofu.

The Vegetarian Restaurant was established by Golden Age, Inc., a group of 28-30 like-minded young friends. Each person invested about $1,000 to get it started. Being young, everyone had a lot of energy. The Vegetarian Restaurant was very profitable–initially–and that money enabled it to start Soy City Foods. It was worker owned–a cooperative. The only original restaurant manager Lorraine knows of and can confirm was Paul Dunlop.

Pat Guardino was hired to build the tofu shop because he was a welder. Pat went down to New Hampshire and apprenticed / studied with Jay and Pat Gibbons, owners and operators of Crystal Springs Tofu Shop (renamed North Country Soyfoods by summer 1980) in Bethlehem, New Hampshire; during the week he was there, he learned the basics of making tofu and tofu equipment.

The goal of Soy City Foods shop was to bring Toronto a "clean protein." The main owners of the shop ended up being Pat Guardino & Paul Whitehead. However everyone who worked at the Soy City Foods owned it, and all the capital came from these workers.

Also in 1980 a second The Vegetarian Restaurant was opened on Dundonald Street (which is just off of Wellesly Street) along side of Soy City Foods. The owners / workers called the new restaurant the "West End" and the original one the "Downtown." Both restaurants operated together for about 15 years–from 1980 until about 1995 or 1996, when the Downtown closed, because of dwindling profits and aging staff. When this restaurant had opened at its original downtown location in the mid-1970s there were lots of profits, because the restaurant was very unique. But as the years went on, almost every restaurant in Toronto began to offer good vegetarian food. So the uniqueness dwindled quite a bit as vegetarian food became more widely available. Moreover, leasing and renting rates skyrocketed in the downtown Toronto area. Soy City developed an excellent distribution network and several of their veggie burgers had gone into the larger grocery store chain in Ontario.

They were also selling across Canada in foodservice, which ended up being Soy City's largest market. In Canada, in the university market, it was a requirement that each university provide two vegetarian options for breakfast, lunch, and dinner. That became the driver for Soy City's growth at the time. They ended up selling their tofu in bulk to the university market, and one of the contract catering companies sent their chefs to the west end Vegetarian Restaurant for a week and learned how to cook vegetarian cuisine. Soy City developed two veggie burgers for them and they chose which one they preferred–which was called the Soy City Veggie Burger and which contained both soybeans and okara. That is still sold by Sol Cuisine, but it is now called the Almond Grain Burger. Soy City made an ongoing effort to use okara in foods. "It was very difficult for all of us who worked there to see such a beautiful protein and fiber be thrown away. So our Soysage used a lot of okara, as did a falafel and the veggie burger."

Why did Soy City Foods want to sell? The worker population was aging and they were outgrowing the very small facility as the demand for tofu and veggie burgers steadily grew. Basically the worker-owners made the decision to sell rather than to invest more money and continue on at low wages and personal sacrifice. By 2002 two-thirds of the company's sales were via foodservice. Yet total sales were just under $1 million (Canadian).

In 2002 Dror Balshine bought Soy City Foods, He was a young entrepreneur, in his early '30s. He already had a business in Toronto named Second Nature that sold veggie burgers and dry veggie burger mix. He did not have a manufacturing facility; his products were co-packed for him. He was already dedicated to vegetarianism and he used textured soy protein concentrate in his burgers. Lorraine, who was the sales manager of Soy City Foods, already knew Dror who she often met at food shows. She called him and discussed the possibility of his buying the company. He was interested and before long he decided to buy it.

One of the first things Dror did was to change the name to Sol Cuisine. The tofu continued to be sold under the brand / banner of Soy City Foods, and it is only now that the Soy City Foods name is being phased out. This tofu began to be made with organic soybeans in about 1985 and that tradition continued under Sol Cuisine. Shortly after buying Soy City Foods, Dror moved it to Mississauga (5715 Coopers Ave., Unit 1), just west of Toronto. Shortly after this move was completed, Soy City Foods' food manufacturing plant at 2847 Dundas Street West in Toronto, was closed. They made tofu, tempeh, veggie burgers, falafel, etc. at the new, lower-rent and lower-tax location. Later, the company needed a larger facility, so in Feb. 2008 they moved to their present address at 3249 Lenworth Drive, Mississauga (about 10 minutes drive south of 5715 Coopers Ave.). All foods that Sol Cuisine now sells (except the Sol-Dog, a veggie hot dog) are made at the plant on Lenworth Drive. The Sol-Dog is sold only to foodservice. When they moved to Lenworth Drive, they became a HACCP facility and also stopped making tempeh; the cross contamination of the tempeh spores was too strong. Dror is committed to making only vegan foods and to verification by the non-GMO Project (they are very thorough) and to organic when possible. And, all but one of their products are now gluten-free.

Foods shown on a 2005 leaflet include T-Ribz (now called Organic Barbecued Ribz; made from their own tofu, sliced put in a package with their own sauce on top; sold fresh in Canada and frozen in the USA for about 18 months). Organic T-Nuggets (cubed tofu that was marinated, breaded and baked; never sold as a retail product, no longer made). Organic Sol-Ground (now the Veggie Crumble), 3 vegetarian burgers (they now make a total of 5 soy burgers in the retail market; the main ingredient is verified non-GMO TVP, made by ADM).

What was the Soyateria? It was Soy City's soy deli in Toronto that opened in April 1981. The public could come in and have a pita bread sandwich, or buy bulk tofu. There was a little menu. One popular dish was tofu, coated in Engivita nutritional yeast, then sauteed on the grill with sauteed onions and mushrooms and a sauce. The Soyateria did a lot of experimentation to learn what recipes and products people liked. They made tofu cheesecakes, tofu pumpkin pie, bulk soymilk, soft soy ice cream, etc. Lorraine began working there part time in 1983 (it was a short walk from her home) while raising a family. She left her good-paying job at the Royal Bank to work at the Soyateria! It was a lot of fun. But after 5-6 years it went out of business.

John Escavel, who is still production manager at Sol Cuisine, started working at Soy City Foods in about 1980 or 1981. He has an excellent memory, so he is a good person to talk with about the company's history. Address: Sales Manager, Sol Cuisine, 3249 Lenworth Drive, Mississauga, ONT L4X 2G6 Canada. Phone: 905-502-8500 x 221.

8732. *Malnutrition Matters Newsletter* (*Ottawa, Canada*). 2013. Over 200 VitaGoats and SoyCows now installed internationally: EU project in Myanmar to add 13 more in 2013. Feb. p. 1.

• ***Summary:*** "In 2012 Malnutrition Matters (MM) reached the milestone of implementing 200 systems and 2013 looks to be greatly expanding on that with additional multi-system projects in the wings. The EU-funded project in Myanmar with the NGO's World Concern and ZOA involves 15 VitaGoats to be installed in microenterprises in both Yangon [formerly Rangoon, the former capital of Burma] and rural areas. MM personnel are working closely with World Concern Myanmar to oversee the installation and training in stages over nine months. This is in addition to the existing 4 VitaGoats and SoyCows already in the country previously under other projects."

A color photo shows children seated at wooden tables at

the Yangon Orphanage where they are served soymilk and biscuits daily. Address: 48 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada. Phone: 1-613-742-6888.

8733. *Malnutrition Matters Newsletter* (*Ottawa, Canada*). 2013. 12 more VitaGoats / SoyCows for Malawi in 2013. Feb. p. 1.
• ***Summary:*** "Since 2010 four systems have been operated by the 'Farmers' Clubs' sponsored by DAPP near Blantyre. This was in addition to four systems running in the north of Malawi near Embangweni, sponsored by a US-based Methodist Church project with Robert Holloway.

"The success of the existing 8 systems in Malawi has resulted in a major expansion of the DAPP program there and 12 more systems will be shipped in March. Ten will be going to the DAPP Farmers' Club program and two will be going to hospitals which are sponsored by the Canadian NGO 'Christian Baobab Outreach.'

A color photo shows members of the DAPP Farmers' Club operating a SoyCow "M." Address: 48 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada. Phone: 1-613-742-6888.

8734. *Malnutrition Matters Newsletter* (*Ottawa, Canada*). 2013. PedalPro ready to work. Feb. p. 1.
• ***Summary:*** "Included with every VitaGoat now, the PedalPro is a multi-function workstation which can also operate independently. Besides the non-electric food grinding (and soya mashing) that is needed with VitaGoats, this system has an optional DC generator, water pump and tool sharpener attached. Malnutrition Matters is now looking for a corporate or NGO sponsor to help expand the reach of the PedalPro as a stand-alone workstation."

Photos show: (1) Fully Equipped PedalPro. (2) Soy Mashing in Liberia Address: 48 Rivershore Crescent, Ottawa, ON K1J 7Y7, Canada. Phone: 1-613-742-6888.

8735. *SoyaScan Notes.* 2013. Soymilk and other nondairy milks in nonrefrigerated shelf-stable (aseptic) cartons are moved to a less conspicuous part of the store in a small shelf area at Trader Joe's in Lafayette, California (Overview). March 15.
• ***Summary:*** This would seem to indicate that these products are becoming less important and selling less.

8736. *SoyaScan Notes.* 2013. Three early students of soyfoods in Japan after World War II: A.K. Smith, William Brandemuhl, and William Shurtleff (Overview). April 15. Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** Dr. A.K. Smith, had a strong academic background, having earned MA and PhD degrees from Columbia University. His interest in East Asian soyfoods began in about April 1948 when he began to write questions about fermented soyfoods to Lewis B. Lockwood, PhD and microbiologist. By June 1948 he had departed from the United States on a 3-month study tour that would take him to China, Japan and Korea. He collected samples of 100 microorganisms used in fermenting soyfoods. His articles on "Oriental use of soybeans as food" began appearing in *Soybean Digest* in Feb. 1949. He was mainly interested in fermented soyfoods; his articles about each food were accurate but relatively short.

William Brandemuhl studied soyfoods only in Japan. He arrived in Kyoto, Japan in Jan. 1963 and became a research fellow at the Department of Agricultural Economics, Kyoto University, Kyoto, Japan. Between Feb. 1963 and May 1964 (15 months) he conducted field research on soybean utilization in Japan. In June 1963 (after William had been in Japan for 4 months), Tomoko completed her graduate studies, graduated from the University of Wisconsin, and (since her scholarship was finished), returned to Japan–to be with William and to help him with his research in Japanese, which he spoke only moderately well. She traveled with him throughout Japan and translated for him during the many interviews he conducted. William's monthly check from Honeymead paid for his room and board–but not for his travel and research, so he had to work part time doing English translation for a Japanese company. On trips, he took many photos using his expensive Nikon camera. Tomoko's family lived near Kobe, where she and William were married on 8 Aug. 1964–three months after he finished his field research.

William's primary interests were: (1) To describe in detail, with photos, how each of different Japanese soyfoods were made. He was extremely thorough. (2) The place of each food in Japanese culture. (3) The industry of which each food was a part and its trade associations (if any). (4) The future of that food in Japan. He was not particularly interested in transmitting these foods and their technology to the United States, and he took almost no interest in carefully selecting names for these foods (or the equipment used to make them) which would give them the best chance of catching on in the best chance of catching on in the United States.

William Shurtleff first visited Japan for 3 months in the summer of 1967 while a student at Stanford University; he lived in a Zen temple in Kyoto, practiced meditation each evening, and studied Japanese language and culture. After graduating from Stanford and living for 2½ years at Tassajara Zen Mountain Center, he arrived in Japan on 16 Jan. 1971 with the intent of becoming fluent in Japanese so he could translate the writings of Dogen Zenji, an early Soto Zen master. For the first year he lived with a Japanese family in Kyoto and became a full-time student at the *Nihongo Gakko,* a Japanese language school in Kyoto. At the end of that year he moved to Kyoto, where he entered a university to continue his Japanese language studies. While in Tokyo, he became close friends with Akiko Aoyagi, a Japanese artist

and cook. In Oct. 1972 he first visited and met Mr. Toshio Arai, a Japanese tofu master under whose guidance Shurtleff would later become an apprentice. In Dec. 1972 he started to write a booklet for Americans about tofu; he believed that tofu could be a very positive addition to the American diet and that young Americans would enjoy making tofu as a new occupation. On 13 Jan. 1973 he signed a contract with Autumn Press, a small publishing company in Japan owned by Americans Nahum and Beverly Stiskin. For the next 2½ Shurtleff and Aoyagi researched and wrote *The Book of Tofu,* which was published in Dec. 1975. Shurtleff made enough money to live in Japan by working as an interpreter, translator and researcher for his father's tool company. The story of this adventure is told in the Preface to *The Book of Tofu* (see 2001 or subsequent editions). Shurtleff's interests and work were different from those of William Brandemuhl in several important ways: (1) He spoke very good Japanese. (2) His initial focus was almost entirely on tofu, although he later wrote a book about miso. (3) He was just as interested as Brandemuhl in describing accurately how tofu (and other soyfoods) were made in Japan, but primarily with the intent of transferring this technology to the United States and other parts of the world. To this end he was deeply interested in choosing names for soyfoods and equipment that would help them take root in their hew homes. On 13 June 1978 Shurtleff and Aoyagi, after being married, moved from Japan to live in the United States. For the rest of his life Shurtleff did research on and wrote books about soyfoods, and simultaneously worked to introduce them to the United States. By late 1999 soyfoods had become important foods in the USA; soy sauce, soymilk and tofu had become mainstream foods.

8737. WhiteWave Foods Co. 2013. WhiteWave spin-off from Dean Foods completed: Reduction in the voting rights of Class B common stock effective; Stock repurchase program authorized. (News release). Broomfield, CO 80021 2 p. May 23. 28 cm.

• ***Summary:*** "Broomfield, Colo.–(Business Wire)–May 23, 2013–The WhiteWave Foods Company ("WhiteWave") (NYSE: WWAV) today announced that Dean Foods Company has completed the distribution to Dean Foods stockholders of a portion of its remaining equity interest in WhiteWave. After the close of business today, Dean Foods distributed an aggregate of 47,686,000 shares of WhiteWave Class A common stock and 67,914,000 shares of WhiteWave Class B common stock as a pro rata dividend on shares of Dean Foods common stock outstanding at the close of business on the record date of May 17, 2013.

Based on the shares of Dean Foods common stock outstanding as of May 17, 2013, the record date for the distribution, each share of Dean Foods common stock received 0.25544448 shares of WhiteWave Class A common stock and 0.36380189 shares of WhiteWave Class B common stock in the distribution.

"Fractional shares of WhiteWave Class A common stock and WhiteWave Class B common stock were not distributed to Dean Foods stockholders. Instead, the fractional shares of WhiteWave Class A common stock and WhiteWave Class B common stock will be aggregated and sold in the open market, with the net proceeds distributed pro rata in the form of cash payments to Dean Foods stockholders who would otherwise receive WhiteWave fractional shares. The spin-off was structured to qualify as a tax-free distribution to Dean Foods stockholders for U.S. federal tax purposes. Cash received in lieu of fractional shares will, however, be taxable. Dean Foods stockholders should consult their tax advisors with respect to U.S. federal, state, local and foreign tax consequences of the distribution.

"Effective upon the distribution, the previously announced reduction in the voting rights of WhiteWave Class B common stock became effective. Each share of WhiteWave Class B common stock now is entitled to ten votes with respect to the election and removal of WhiteWave directors and one vote with respect to all other matters submitted to a vote of WhiteWave's stockholders.

"'As an independent company, The WhiteWave Foods Company is well positioned to grow and create shareholder value as a result of strong brand equity in on-trend categories,' said Gregg Engles, WhiteWave Chairman and CEO. 'The spin-off will provide WhiteWave with greater flexibility to build its portfolio of great-tasting, nutritious and responsibly-produced products. We look forward to our future as an independent company with a clear strategy, a leading portfolio of trusted brands and a culture of continuous innovation.'

"WhiteWave Class A common stock currently trades on the NYSE under the symbol 'WWAV' and, beginning on May 24, 2013, WhiteWave Class B common stock will trade on the NYSE under the symbol 'WWAV.B'.

"Following the distribution, Dean Foods continues to own an approximate 19.9% economic interest in WhiteWave, which Dean Foods has stated that it expects to dispose of within 18 months after the distribution in one or more debt-for-equity exchanges or other tax-free dispositions.

"Stock Repurchase Program Authorized: WhiteWave also announced today that its Board of Directors has authorized a share repurchase program, under which the company may repurchase up to $150 million of its common stock. The primary purpose of the program will be to offset dilution from WhiteWave's equity compensation plans, but the company also may make discretionary, opportunistic purchases. Shares may be repurchased under the program from time to time in one or more open market or other transactions, at the discretion of the company, subject to market conditions and other factors. The authorization to repurchase shares will end when the company has repurchased the maximum amount of shares authorized,

or the company's Board of Directors has determined to discontinue such repurchases."

"About The WhiteWave Foods Company: The WhiteWave Foods Company is a leading consumer packaged food and beverage company that manufactures, markets, distributes, and sells branded plant-based foods and beverages, coffee creamers and beverages, and premium dairy products throughout North America and Europe. WhiteWave is focused on providing consumers with innovative, great-tasting food and beverage choices that meet their increasing desires for nutritious, flavorful, convenient, and responsibly produced products. WhiteWave's widely-recognized, leading brands distributed in North America include Silk (R) plant-based foods and beverages, International Delight (R) and Land O Lakes (R) coffee creamers and beverages, and Horizon Organic (R) premium dairy products. Its popular European brands of plant-based foods and beverages include Alpro (R) and Provamel (R).

"To learn more about WhiteWave, visit http://www.whitewave.com."

Talk with Dave Oldani, Investor Relations, WhiteWave Foods Co. 2013. May 28. In Oct. 2012 Dean Foods IPOd basically 13% of the company; that 13% was sold publicly at the end of October. Dean Foods then retained about 87%. They then spun off the other 67% at the end of the day on Thursday, May 23, after the market closed. This means they distributed those shares of WhiteWave Foods, both class A and class B common stock, to Dean Foods shareholders of record on that date. It was done on a tax-free basis. So on May 24 you would have owned both Dean Foods and WhiteWave shares. So if you look at your broker's account now you should see WhiteWave shares of both Class A and Class B–and it should show up on your next statement.

WhiteWave no longer makes tofu. They do make Silk soy, almond, and coconut beverages. WhiteWave today is composed of two segments and three different platforms. The segments are North America, Europe, International. In Europe you have Alpro plant-based beverages–which is basically Silk. In North America the three platforms are Silk, Horizon Organic (Premium Dairy, organic, established in 1991), and Coffee Creamers and Beverages (International Delight and Land O'Lakes (Mini Moo's creamer singles and Land O'Lakes Half & Half)). Address: 12002 Airport Blvd., Broomfield, Colorado 80021. Phone: (313) 635-4000.

8738. Berbille, Hervé. 2013. Re: Sojinal is now owned by Alpro / Provamel, which is owned by Dean Foods. Letter (e-mail) to William Shurtleff at Soyinfo Center, June 19. 1 p.
• ***Summary:*** So Sojinal is now a U.S. company. Address: Bordeaux, France.

8739. INTSOY. 2013. 2013 INTSOY Short Course: Processing and marketing soybeans for meat, dairy, baking and snack applications, June 2-7: A unique opportunity to gain hands-on experience & practical knowledge about soybeans (Leaflet). Urbana, Illinois. 8 panels + 1 panel insert Each panel: 23 x 15.1 cm. Front and back. Glossy color.
• ***Summary:*** Announces a 5-day course ($1,500 for 1 attendee). The program now has 24 corporate sponsors (listed alphabetically with the logo of each): ADM, Clarkson Grain, Clextral Group, Crown, Devansoy, French, Harvest Innovations, House Foods America Corporation, Illinois Soybean Association, Insta-Pro, Kays Naturals, NEI–Natural Enrichment Industries, NPI–Natural Products, Inc. ProSoya. SavInd (formerly Bar N.A.). The Solae Co., Soyatech, Soyfoods Association of North America. SunOpta. USB. USSEC. Wenger. WISHH. World Soy Foundation.

Course highlights. Who should attend? Course schedule (preliminary agenda). Sponsors. Address: National Soybean Research Lab. (NSRL), 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706.

8740. Nakamura, M. 2013. Kibun's interest in and involvement with soymilk (Interview). *SoyaScan Notes.* July 11.
• ***Summary:*** Kibun Food Chemifa is now 100% owned by Kikkoman. Address: Home Economist for Kibun, Japan. Phone: 544-2781.

8741. Nakamura, Mitsunoba. 2013. Re: When did Kikkoman acquire Kibun Food Chemifa Co., Ltd? Letter (e-mail) to William Shurtleff at Soyinfo Center, July 12–in reply to inquiry. 1 p.
• ***Summary:*** In Kikkoman's 2012 Annual Report, the "Corporate History" section states: "2008 August–Kibun Food Chemifa Co., Ltd. (now Kikkoman Soyfoods Company) becomes a wholly owned subsidiary of Kikkoman."

Mr. Nakamura found in other news that Kibun had been acquired via a share swap.

In 2004 Kikkoman first invested in Kibun Food Chemifa.

In June in 2006 Kibun Food Chemifa became a consolidated subsidiary of Kikkoman in June 2006 Address: Kikkoman International Inc., P.O. Box 420784, San Francisco, California 94142-0784.

8742. Gupta, Rajendra ("Raj") P. 2013. Update on ProSoya's work making soymilk equipment (Interview). *SoyaScan Notes.* July 19. Conducted by William Shurtleff of Soyinfo Center.
• ***Summary:*** Raj Gupta makes equipment for making great-tasting soymilk using the airless-grind system, which he invented and patented. ProSoya Inc.'s main business is still manufacturing equipment for soymilk processing, in different capacities, from very small to very large. They sell this equipment globally.

They also have a small side business (spinoff) named

Yeliv Inc. that makes and sells soymilk and almond milk products. These are two separate companies at the same location.

They make plants ranging in capacity from 50 liters/hour to 20,000 liters per hour of "soymilk base," including 250 liters/hour, 1,000 liters/hour, etc.

Each plant (except for the smaller plants) is basically a custom order, since each customer wants a specific capacity that will make soymilk containing a certain percentage of protein. Raj thinks in terms of "soymilk base"–which contains about 5% protein–which he then converts into finished soymilk with the desired protein content.

Of the various systems, the one that is most in demand is the VS200 system (which make 200 liters/hour of soymilk base), followed by the ASC50 system (ASC = Advanced Soya Cow; 50 liters/hour), and then by VS2000 or AVS2000.

Upon request, Raj sends color photos of ProSoya's ASC50, VS200, and AVS6000.

ProSoya does not presently have a backlog of orders; they are always looking for more orders. However some years they do have a backlog and some years not. Raj does not see a clear long-term trend, except that today most of the new orders are coming from Asia; previously it was from the Western world (North America and Europe). There is a new demand in Asia for soymilk without the traditional "beany" taste–even in China! Raj has just returned (two weeks ago) from a trip to China; he was lecturing and had taken samples of his soymilk. They were very excited to discover his flavor. The younger generation seems to prefer the "non-beany" taste–unlike previous generations. In the new generation there are also entrepreneurs with plenty of money. But they always ask Raj, "Can you give us a machine with a 'beany' option"–perhaps to sell to older Chinese. Raj can do that quite easily.

Raj finds that the interest in soy is decreasing in the Western world (men think–erroneously–they might develop "boobs" [large breasts] if they consume too much soy) but not elsewhere in the world. So in the West, no matter how great tasting, women are still tasting, but men don't want to drink–at least not too much. Bad news–even if it is completely wrong–spreads faster than good.

In terms of capacity sold, about 95% of Raj's soymilk equipment is used to make commercial soymilk–which is packaged and sold. However many of the smallest systems, such ASC50, are used at universities, private companies, or research labs to do soymilk research. However many little machines are also used commercially by companies, worldwide. In addition, many small machines are bought by the Rotary Club and put in institutions in poorer areas to make soymilk. For example, there are many such machines in Peru. Raj estimates that ProSoya equipment is in more than 50 countries worldwide.

"But the smaller machines don't reveal any of the tricks of the smaller machines. Even the VS200 system is not going to tell people the tricks of the larger machines. Even when we tell people the proper way to use the equipment, they always try to take shortcuts; they think they can improve on it. And when companies try to make copies of ProSoya equipment in order to sell it illegally, they also try to take shortcuts in order to make it less expensive and simpler. One example is SSP in India; they make ProSoya equipment under license but they have never paid Raj any royalties. Over many years, Raj has had almost no income in the form of royalties from licenses–but he is still happy that his technology is out there.

Concerning the anti-soy publicity from the anti-soy faction on the Web, Raj definitely thinks that this is hurting the image and sales of soyfoods in the Western world. "That is the biggest problem. That is what has caused the growth of soyfoods to stop; previously they were growing by leaps and bounds." Outside of the West: India has never had a lot of soyfoods and they still do not. Most people in India don't like the taste of soyfoods or they good-tasting products are too expensive. Even the small soymilk shops in India have found that they have to package their soymilk; nobody brings their own container to get soymilk in India. Raj has submitted bids for turnkey soymilk plants with Aseptic plastic pouches to India and Ghana.

Concerning the man in Russia who made poor-quality copies of ProSoya equipment then paid Raj no royalties: Raj thinks the company is out of business and he is not sure whether or not Mr. Podobedov is still alive. Raj says he wanted to do things properly, and to pay royalties, but it is very hard to get things done in Russia. He had very high ambitions, but for various reasons he was unable to accomplish what he wanted. Most of ProSoya's machines, made in about 1993-94, are still in operation in Russia–mostly in small shops or operated by NGOs.

Rag originally had about 10 patents, with separate patents for process and for equipment. But long ago he decided not to apply for any more patents because he does not want to give away secrets. The original patents have expired.

Raj, who was born in 1942, is still deeply involved in the activities of ProSoya. At the moment there are too many things that require his attention. "I haven't found anybody who can take some of my burden. So I am still 9-6, not 9-5, plus a few more hours beyond that at home where, because we do some business in Asia, I must deal with e-mails etc." ProSoya is too much of a one-man operation, so it will be hard for Raj to sell the company. His nephew is not a candidate and there is nobody who works for ProSoya in Ontario that could handle the complex job. Raj's highest level expertise is in technical areas of making soymilk and soymilk equipment. Yet today much of his time is used in putting together quotations for soymilk systems, and other basic mundane things–that do not require much creative input. Raj found a person (older than Raj) who could do the

job, but he recently retired.

Over the years Raj has sought out qualified people: "The capable people are hard to find and when you do find them they are always looking for better opportunity with a large company. I have taken this approach repeatedly only to lose them after few years when they have enough experience to be of interest to other companies." "Potential buyers see this as a one-man business." How are they going to run it without him? He would be willing to stay on as technical advisor. This concerns him a lot. Address: President and CEO, ProSoya Inc., 550 Lacolle Way, Orleans, ON K4A 0N9, Canada. Phone: 613-745-9115.

8743. Nakamura, Mitsunoba. 2013. Re: The soymilk industry and market in Japan today. Letter (e-mail) to William Shurtleff at Soyinfo Center, July 23–in reply to inquiry. 1 p.
• ***Summary:*** Mr. Nakamure got these statistics by e-mail from Kikkoman's headquarters in Japan. The leading manufacturers of soymilk in Japan today are:

1. Kibun (Kikkoman) 53%
2. Marusan 20%
3. Meiraku 10%
4. Sugoi Daizu (Otsuka) 5%
5. Toraku 4%

Others 8%

In 2012 the total shipment of soymilk in Japan was 256 million kiloliters. In 1984 it was 110 million kiloliters. Therefore Japanese are consuming a little more than twice as much soymilk today as they were in 1984.

The value of the soymilk market in Japan is approximately 45,000 to 50,000 million yen (about US$450 million to $500 million). Address: Kikkoman International Inc., P.O. Box 420784, San Francisco, California 94142-0784.

8744. Wong, Vanessa. 2013. Companies and industries: Soy milk fades as Americans opt for drinkable almonds. *Bloomberg Businessweek.* Aug. 21. http://www.businessweek.com/articles/2013-08-21/soy-milk-fades-as-americans-opt-for-drinkable-almonds.
• ***Summary:*** Non-dairy alternatives to milk are going mainstream in the USA; they were previously consumed mostly by vegans and those with lactose intolerance. WhiteWave Foods (WWAV) says that sales of Silk increased 12% last quarter, however the majority of its sales of non-dairy milks now comes from almond milk, which grew by more than 50% last quarter. Soy now represents only 35% of the company's non-dairy milk sales.

During the first 6 months of 2013, WhiteWave sold $305.9 million worth of plant based drinks and foods such as yogurt in North America. The company says it now has 75% of the soy milk market and 52% of sales of almond milk. One major competitor is Blue Diamond's Almond Breeze.

Retail sales of non-dairy alternatives to milk made from almonds, rice, and coconuts (not including soy) are now almost $1.4 billion, estimates Marketresearch.com; they are predicted to reach $1.7 billion by 2016.

U.S. retail sales of soymilk are expected to fall another 11% this year, according Euromonitor International, a research firm.

Clearly consumers are now into "drinkable plants."

But why is soymilk fading? Some say almond milk has fewer calories than soy, contains no saturated fat, and is rich in vitamin E. But Larry Finkel, director of food and beverage research at Marketresearch.com believes nuts are now trendy and that soymilk sounds more like an old-fashioned health food, like tofu. Perhaps the product needs to be reinvigorated.

8745. Johnson, Juliette. 2013. Re: All existing issues of the *Madison Survey* (1919-1963, Madison, Tennessee) have been scanned and are available online free of charge. Letter (e-mail) to William Shurtleff at Soyinfo Center, Aug. 22. 1 p.
• ***Summary:*** "Hello Bill, Thank you for contacting the Center for Adventist Research. I have some good news for you! We recently completed the full digitization of the Madison Survey and they are available free of charge on our website. You can reach them at this link: http://jewel.andrews.edu/record=b1671061 (email me if this link doesn't work). Click on the link that says 'Full Text, Complete Holdings.' You will see a directory of all issues by volume and number. If you need information on the year, you can see this on the main view before clicking into the full text. The PDFs are searchable as well.

"We also have these scanned in a higher resolution if you have trouble reading any of the text. Just let me know.

"The Madison College Alumni group has been in negotiation with us to be the repository of their archives. We have received a large amount of materials from them, and are in negotiations to get the remainder of the collection. I am confident in saying that the Center will be the future home of the Madison College materials.

"Let me know if you need more information!" Address: Digitization Manager, Center for Adventist Research, Andrews University, Berrien Springs, Michigan 49104.

8746. Spots: Soymilk. 2013.
• ***Summary:*** (a) View using the "Google Ngram Viewer" of the relative frequency of appearance in books digitized by Google, from 1800 to 2000 of the three case-sensitive terms "soy milk" (the most frequent), "soymilk," and "soybean milk" (decreasing in use since about 1980). Note that "soymilk" (the term preferred for many reasons by the soyfoods industry) was ahead of "soy milk" until the Microsoft spell-checker, apparently without consulting any experts on the subject, chose "soy milk" as its preferred spelling. (b) Asahi Seibu (Seiyu Line). 1982. 500 ml soymilk carton (in Japanese). (c) Swan Foods 1977 quart soymilk

carton. (d) Kibun soymilk–Japanese advertisement. (e) Japanese characters for soymilk.

8747. *SoyaScan Notes.* 2013. Commercial soyfoods products wish list (Overview). Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** 1. Organic, non-GE soy protein isolates (2002/03). 2. A very low calorie soy beverage for weight loss in hospitals. Must be able to be used as a sole source of nutrition. 3. More smoked tofu in America.

4. Meatless pepperoni, sausage shaped, for use atop a meatless pizza. 5. Natural shoyu brewed in America, ideally as part of a joint venture with a Japanese shoyu company. 6. A vegetarian Worcestershire sauce, with no anchovies (John Troy developed "The Wizard's Worcestershire Sauce" for Joel Dee's Premier Japan line in about 1995; it was vegetarian).

7. A low-calorie, low-fat tofu. Fat and calorie content should be at least 30% lower than that made from whole soybeans. The easiest way to make this product would be to run soymilk made from whole soybeans through a decanting centrifuge (like a cream separator) to remove the desired amount of fat, just like the dairy industry does to make low-fat or non-fat milk. There is a big potential market for such a product since 1% fat milk has now passed low-fat milk (2%) as the best-seller in American supermarkets (11 Sept. 1991). 8. Bland soymilk base (11 July 1997). Presently no company (including International ProSoya Corp. of Canada, Pacific Foods of Oregon, and Ted Nordquist dba TAN Industries, Inc. etc.) offers this product.

9. A soy-based kefir made from authentic kefir grains/cultures plus FOS (fructooligosaccharides), a dietary fiber derived from chicory roots. FOS feeds and increases the level of "good guy bifidobacteria by up to five times in the gastrointestinal tract, and boosts the body's absorption of calcium and other minerals by up to 50 percent." See article in *Ag Innovation News* (April 1999, p. 3, 14).

8748. *SoyaScan Notes.* 2013. Soyfoods big ventures wish list (Overview). Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** The Soyfoods Association should team up with other interested parties (such as Protein Technologies International) and petition the FDA to outlaw the use of the term "non-dairy" on the label of (or otherwise in connection with) products which contain sodium caseinate or any other product derived from cow's milk. This would open the way to many new soy-based dairylike products.

A joint venture with a Japanese company such as Sendai Miso Shoyu to brew Japanese-style shoyu in America in the traditional way. Large amounts are now imported from Japan.

8749. *SoyaScan Notes.* 2013. Soyfoods success stories in developing countries (Overview). Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** Public sector with outside funding: 1. Sri Lanka, Thriposha program (Cereal-soy blends, started 1976. Thriposha itself started in 1973). 2. Mexico (Chihuahua) program selling PADSA, Soyaven / Soyavena, Albachisa, and Almesa (Cereal-soy blends, 1978-80). 3. Thailand, ASEAN full-fat soy flour project (1978). 4. Guatemala, Plenty Soy Dairy (Tofu, soymilk, soy ice cream, 1980)

Private sector, largely self sufficient: 1. Uganda, Africa Basic Foods (Dr. D.W. Harrison. Roasted whole soy flour, cereal soy blends, 1966-69). 2. India. Ruchi's Products (TVP, 1980).

8750. *SoyaScan Notes.* 2013. The kosher dietary laws, kashruth, and pareve/parve (Overview). Compiled by William Shurtleff of Soyinfo Center.
• ***Summary:*** Historically there has been a strong interest in soyfoods (especially soy ice creams, yogurts, cheeses, soymilk, and tofu) from Jews who follow the laws of kosher. *Webster's Dictionary* defines kosher (a Yiddish word derived from the Hebrew *kasher* meaning fit or proper, and first used in 1851) as "1: sanctioned by Jewish law; esp. ritually fit for use (kosher meat). b: selling or serving food ritually fit according to Jewish law (a kosher restaurant). The verb "to kosher" (first used in 1871) means "to make kosher."

"The kosher laws are derived from the 'Book of Leviticus' in the *Torah,* and are expounded upon in the volume of the Talmud (Oral Law) titled *Chulin.* Yet the teaching of kosher is touched upon in all 60 volumes of the Talmud.

"Kashruth, the Hebrew term meaning 'fitness,' itself derives from the term 'kosher.' Kashruth refers to the Jewish dietary laws; most Orthodox Jews observe kashruth.

"The kosher dietary laws divide all foods into three types: from the flesh (fleshig), from milk (milchig), and neither flesh/meat nor milk (parev). From this latter Yiddish term 'parev' derive the terms pareve and parve, both pronounced 'parv,' and used interchangeably. They are Jewish cookery or dietary terms meaning (1) 'neutral' or (2) made without milk or meat or their derivatives. Eggs and seafood are both pareve. A pareve food can be eaten with either milk or meat. Many soy ice creams are labeled 'kosher and parve' or 'kosher parve.'

"The laws of kosher state, among other things, that one cannot consume meat and milk products at the same meal. Hence, orthodox Jews do not consume ice cream after a meal that contains meat." Perhaps the most widely observed kosher law is not to eat pig/pork. After eating meat, according to Jewish dietary laws, one should wait for 6 hours before consuming dairy (milchig) products. But one can consume dairy products and then have meat products after 30 minutes. The difference is based on the fact that meat takes longer to digest. For this reason, at least in Israel, more

emphasis is placed on developing meatlike products than on dairylike, to bypass the 6-hour restriction. Meat substitutes are much more popular in Israel than dairylike products. The government has encouraged development of meatlike products. Yet there seem to be many opportunities for production of dairylike products on kibbutzim or moshavim.

In the USA, major kosher certifiers include: (1) Union of Orthodox Jewish Congregations of America, Kashruth Div., 45 West 36th St., New York, NY 10018. Tel. 212-564-8330. Rabbi Reese and Rabbi Menach. Members: 3100. Publications: Keeping Posted: Bimonthly, Kosher Directory of Products and Services. Highly respected. O-U mark. (2) Kosher Supervision Services, 354 Fifth St., Hackensack, New Jersey 07601. Tel. 201-342-7400. Chuff K mark. (3) OK Laboratories, P.O. Box 218, Brooklyn, NY 11204. Tel. 718-851-6428. Rabbi Bernard Levy. Circle K mark.

Several important Hebrew or Yiddish words related to kosher: A "heksher" (pronounced HEK-shur) is the kosher mark. "OU is the most highly respected kosher heksher." A "mashghiach" (pronounced mush-JEE-ak) is the person who inspects a food facility before giving approval.

8751. *SoyaScan Notes.* 2013. Europe's biggest international food fairs / shows and expositions: ANUGA, SIAL, Helfex, and CIBUS (Overview). Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** ANUGA and SIAL are held in Cologne (Germany) and Paris (France) respectively on alternating years in October. Each fair lasts for about 6 days, and tickets cost about $20. Food people and companies come from all over the world to exhibit and see the latest in all kinds of foods and food equipment. ANUGA is held on odd numbered years (1987, 1989, 1991, etc.) and SIAL on even numbered years (1986, 1988, 1990).

ANUGA (pronounced uh-NEW-guh) stands for *Allgemeine Nahrungs und Genussmittel Ausstellung* ("General exhibition of food and food adjuncts {stimulants / enjoyables"}). Billed as the "World Food Market–Consuma–Gastroma–Tecnica," it is held at the Cologne Messe (Exhibition Center) and is sponsored / produced by Messe und Ausstellungs Ges. mbH, P.O. Box 210760, D-5000 Cologne, West Germany. Phone: 221-8210. The first ANUGA fair was held in 1929. Statistics at ANUGA in 1986 were mind-boggling: 200,000 visitors; 5,201 companies exhibiting, from 86 different countries; and what seemed like 50 miles of exhibit space (actually 227,000 square meters).

SIAL (pronounced see-AL) stands for "Salon International de l'Alimentation," and is also called the 'International Food and Dairy Exhibition'. The first SIAL was held in Nov. 1964. The permanent address of SIAL is 39 rue de la Bienfaisance, 75008 Paris.

The 'SIAL d'Or' (also called 'Golden SIAL' or Food Oscar') gold medal awards, first presented in Oct. 1986, are given for the best new food products in each food category at the AIDA-SIAL International competition judged in Paris in June. The Oscars are a bi-annual competition between 16 nations, including Canada, Great Britain, Italy and the USA. Each country presents products in 7 food and beverage categories: Grocery, alcoholic drinks, non-alcoholic drinks, dairy, deep-frozen, meat / poultry and delicatessen. The retail trade in each country nominates the representative products. At least one soy product, So Good, a soymilk produced by Sanitarium Foods in Australia, has been awarded the Golden SIAL.

Helfex, the International Health Food Trade Exhibition and Convention, is much smaller than the two fairs mentioned above and its scope is much more limited. Held biannually in the spring in the United Kingdom on even numbered years, it is sponsored by the British Health Food Manufacturers Association and the British Health Food Trade Association. The Foreign Agricultural Service (FAS) of the USDA typically has a large pavilion featuring booths representing U.S. health / natural food manufacturers. In 1988 at least 8,000 visitors came to Helfex from 25 countries. About 600 exhibitors were there and the U.S. Pavilion was the biggest booth at the entire show. About 88% of the natural foods products at Helfex '88 came from the U.K. The first Helfex was held on 17-19 March 1974 at the Bloomsbury Centre Hotel in London. The tenth Helfex was held on 8-9 April 1990 in Birmingham, England; over 200 companies exhibited in Birmingham. For more information contact the British Health Food Trade Assoc., Angel Court, High Street, Godalming, Surrey, GU7 1DT, England. Phone: 0483-426450. Fax: 0483-426921.

CIBUS (pronounced CHI-bus), the biggest food fair in Italy, is held in Parma in about May each year.

8752. *SoyaScan Notes.* 2013. Chronology of Soyfoods Center: The work of William Shurtleff and Akiko Aoyagi. Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** 1. Introducing soyfoods to the West: Popular books (1972 Oct.–1979 July).

The Book of Tofu:

1972 Oct. 22–First visit to San-gen-ya tofu shop in Tokyo. Mr. Toshio Arai begins to teach William Shurtleff the traditional art of making tofu.

1972 Dec. 22–Meet Nahum Stiskin of Autumn Press. Start to write tofu booklet.

1973 Jan. 13–Sign contract for *Book of Tofu* with Autumn Press.

1973 March 2–Visit Sasa-no-yuki tofu restaurant in Tokyo.

1975 Dec. 12–*The Book of Tofu** published by Autumn Press.

* = Book illustrated by Akiko Aoyagi.

1978 Dec. 22–*The Book of Tofu** published by Ballantine Books in a mass-market pocketbook edition that retails for $2.95.

The Book of Miso

1974 Feb/March–Study miso and shoyu in Japan on trip with Bob Gerner, head of Westbrae Natural Foods.

1974 May 7–Start to write *The Book of Miso,* table of contents.

1975 April–Autumn Press accepts idea of publishing *The Book of Miso.* Contract signed Aug. 18.

1976 Sept. 23–*The Book of Miso** published by Autumn Press.

1976 Sept. 29–1977 Feb. 3–Tofu & Miso America Tour. We do 70 public programs, many TV and radio interviews, drive our van 15,000 miles in 17 weeks.

The Book of Tempeh

1977 May–To Indonesia for one month of tempeh research.

1978 Feb. 27–Sign contract with Harper & Row.

1979 July 14–*The Book of Tempeh** published by Harper & Row.

2. Working to build a soyfoods industry in the Western world (1977 April–present)

1977 April 5–Establish Takai Tofu and Soymilk Equipment Co.

1977 Aug. 16–First Takai catalog of tofu and soymilk equipment published.

1977 Aug. 16–*Miso Production** published by Soyfoods Center–the first book we self-published.

1978 July 28-30–The Soycrafters' Association of North America is founded in Ann Arbor, Michigan. William Shurtleff helps to organize the inaugural meeting, is a founding member, and a member of the first board of directors.

1978–Soyfoods Center starts to develop a mailing list (typed so as to fit on pressure sensitive labels) of all people who have purchased books or contacted us.

1979 July 15–*Tofu and Soymilk Production** published by Soyfoods Center.

1979 July–The first issue of *Soycraft* magazine is published by Richard Leviton, director of Soycrafters' Association in Massachusetts. Each mailing is based on the use of Soyfood Center's mailing list–free of charge.

1980 March 10–*Tempeh Production** published by Soyfoods Center.

1980 Sept.-Dec.–Our mailing list of about 5,000 names and addresses, divided into 70 coded categories, is computerized by Parallel Procedures in San Francisco. This was done primarily to help Richard Leviton of *Soycraft* magazine.

1981 Dec.–There are now 10,900 names on our computerized Soyfoods mailing list, rising to 13,800 names by May 1982.

3. Documenting the history of soybeans and soyfoods (1980 Oct.–present)

1980 Sept. 10–Start to build what we hope will become a large library at Soyfoods Center with regular trips to the University of California at Berkeley library system.

1980 Oct. 22–Start writing *History of Soybeans and Soyfoods.*

1984 June 1–History book manuscript is now completely in our word processor: 2,500+ pages, 70+ chapters.

1984 June 21–Soyfood Center's annual summer intern program begins. Irene Yen, a Stanford student starting her senior year, is our first summer intern.

1984 July 17–*History of Tempeh published*–our first history book.

4. Studying the burgeoning soyfoods industry and market (1982 Sept.–1985 Feb.)

1982 May 16–*Soyfoods Directory and Databook* (1st edition) published. Renamed *Soyfoods Industry and Market: Directory and Databook* on 26 Feb. 1983. 3rd edition.

1982 Sept. 10–*Soyfoods Labels, Posters, and Other Graphics* published.

1984 Feb. 25–*Soymilk Industry and Market* published.

1985 Feb. 22–*Tofutti and Other Soy Ice Creams* published.

1990 May 8–*Tofu Industry and Market in Europe* published.

1990 July 17–*Soymilk Industry and Market in Europe* published.

1994 Jan.–*Soyfoods Industry and Market: Bibliography and Sourcebook* published.

5. Foreign language editions of our books are published (1980 -)

1980 July–*Das Miso Buch** (hardcover and paperback) published by Ahorn Verlag (Wolfgang and Gabriella Furth-Kuby) in Germany.

1981 Aug.–*Das Tofu Buch** (hardcover) published by Ahorn Verlag in Germany.

1988 Nov.–*Das Tempeh Buch** (hardcover) published by Ahorn Verlag in Germany–6 years after the project started.

1988 Nov.–New German pocketbook editions of *Das Tofu Buch* and *Das Miso Buch* (paperback) published by Goldmann Verlag.

6. Developing a computerized information center (1980 Dec.–present).

1980 Dec. 12–Mailing lists of Soyfoods Center and Soyfoods magazine merged and computerized by Parallel Procedures in San Francisco. 5,500 names in 50 categories.

1983 Sept. 28–Install first computer at Soyfoods Center, IBM-PC with 20 MB hard disk and word processing software to use for writing our book on *History of Soybeans and Soyfoods.*

1985 May 9–Install Revelation database manager software for developing a computerized bibliographic database on soya.

1985 July 31–Finish keying all 6,677 file cards (3x5 inch) into our computerized database. Our library is now computerized.

1985 Aug. 30–Our computerized database, containing 9,500 bibliographic records, is now available for use by the public.

1986 Sept. 1-16–The first of many trips to do library research at the USDA National Agricultural Library, Library of Congress, and National Library of Medicine–America's three national libraries, all located in and about Washington, DC.

1987 July 6–Start entering Commercial Soy Products into our database.

1987 Oct. 11–*Bibliography of Soymilk, from 1578 to 1987: With 1,584 References* published–our first bibliography.

1987 Oct. 19–Coin the name SoyaScan, start using it to refer to our computerized database, and apply for a registered trademark, which we are issued on 19 July 1988.

1993 Feb.–Install a Novell 5-user network to link our various computers.

1995 Feb. 11–We enter the 50,000th record into our SoyaScan database.

1997 Nov. 24–We enter the 55,000th record into our SoyaScan database.

7. Current status of computerized information–2000 January 1

SoyaScan database now contains 59,440 records from 1100 B.C. to the present, including 48,318 published documents, 12,683 commercial soy products, 4,628 original interviews and overviews, and 41,584 unpublished archival documents.

More than 75% of all SoyaScan records have a summary/abstract averaging 143 words in length.

More than 26,000 records (44% of the total) are for documents published before 1970.

Thirty five major books in the series Bibliographies and Sourcebooks on Soya, produced from the SoyaScan database, are now available, published by Soyfoods Center.

Soyfoods Center Library owns about 54,000 documents, almost all of which have a record in the SoyaScan database.

SoyaScan Directory now contains the name, address, and phone number of 17,300 people and organizations worldwide actively involved with soyfoods and soybeans. Each entry is coded to show the type of activity, e.g. 2A = Tofu manufacturers.

8. Collecting and Publishing Information on Vegetarianism and Other Non-Soy Food Products that can Replace Animal Products.

1984 Oct. 31–Create our first vegetarian keyword (subject heading) VegeAnim = Vegetarian Diets and Animal Rights.

1988 Feb. 21–*Amazake and Amazake Frozen Desserts: Industry and Market in North America* published. Updated bibliographic supplement published in March 1995.

1992 Oct.–Start actively collecting information specifically on vegetarianism and veganism, and entering it into our new VegeScan database.

1992 March 4–*Bibliography of Vegetarianism: 1,755 References from A.D. 1170 to 1992, Extensively Annotated* published (360 p. large format, preliminary edition).

1992 June 12–*Sourcebook on Wheat Gluten Foods and Seitan* published. Expanded edition published in Jan. 1994.

2000 Jan. 1–VegeScan database now contains 5,500 bibliographic records on vegetarianism and veganism from 238 B.C. to the present.

Best selling books from Soyfoods Center (English-language editions only, as of Jan. 2000).

The Book of Tofu–557,000 copies sold.

The Book of Miso–115,900 copies sold.

The Book of Tempeh–47,950 copies sold.

Tofu & Soymilk Production–5,020 copies sold.

Other–9,200 copies sold.

Total–775,070 copies sold. Address: Lafayette, California. Phone: 925-283-2991.

8753. *SoyaScan Notes.* 2013. The visionary work of Henry Ford and his researchers with soyfoods–then and now: Popularized the use of soybeans as foods in America (Overview). Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** Before Henry Ford began his pioneering work with soybeans in the early 1930s, most American consumers and farmers thought their only use was as feed for animals. Ford and his researchers and chefs played a major role in developing a remarkable variety of tasty and nutritious American-style foods from soybeans, and in publicizing these foods and their health benefits nationwide.

Prior to 1934 (according to records in the SoyaScan database) only about 188 commercial soyfood products had been introduced in America. Of these, 78 had been launched in the Hawaiian Islands, so only 110 had been introduced on the American mainland. Of these 110, at least 46 were made by Asian-American companies primarily for Asian-Americans (such as Chinese-Americans, Japanese-Americans, etc.). Thus only 70 products were made by Caucasian-American companies, and, of these, 27 products were made by Seventh-day Adventist companies and sold mostly to other Seventh-day Adventists. In short, between 1766-1767 (When Samuel Bowen launched America's first two commercial soy products–Soy-based Vermicelli Noodles and Bowen's Patent Soy [Sauce]) and 1934, only 43 commercial soy products had been introduced by Caucasian-American companies, not including Seventh-day Adventists.

Henry Ford's ideas about introducing American-style soyfoods took their first clear form on August 13, 1934, when he presented an all-soy gala dinner banquet for the American media at the immensely popular Ford Exhibit in the Century of Progress World's Fair in Chicago, Illinois. Note first that he chose a world-class event to introduce the little-known Cinderella crop. Now listen to the names

of dishes on the menu: "Tomato juice seasoned with soy bean sauce. Salted soy beans. Celery stuffed with soy bean cheese [tofu]. Puree of soy bean. Soy bean cracker. Soy bean croquettes with tomato sauce. Buttered green soy beans. Pineapple ring with soy bean cheese [tofu] and soy bean dressing. Soy bean bread with soy bean relish. Soy bean biscuit with soy bean butter. Apple pie (soy bean crust). Cocoa with soy bean milk. Soy bean coffee. Assorted soy bean cookies. Soy bean cakes. Assorted soy bean candy."

This menu represented a fresh, new vision of soyfoods in America! Note the creative use of tofu in a pineapple ring and as a celery stuffing, and of soymilk with cocoa.

But this was just the beginning. By Aug. 1935 Ford was serving soy ice cream for dessert at VIP and press luncheons held at the Ford Engineering Laboratory. In about 1936 Ford's Edison Institute published a 19-page booklet titled "Recipes for Soy Bean Foods," which contained 58 innovative American-style preparations including: Soy bran bread. Cinnamon buns. Muffins (for diabetic patients). Waffles (with soy flour). Scalloped green soy beans. Omelette (with tofu). Salad soy bean sprouts. Gingerbread. Honey soy bean ice box cookies. Macaroons. Coconut balls (with chopped soynuts). Lady fingers. Soy bean chocolate bars. Apple sauce cake. Doughnuts. Soy bean custard (with soymilk).

In 1938, when Ford researcher Bob Smith invented a new and greatly improved type of soymilk (based on soy protein isolates), Ford and his researchers focused on developing new dairylike products based on this soymilk, including a non-dairy whipped cream, and an improved soy ice cream. The soymilk itself was widely served at Ford institutions in and around Dearborn, Michigan.

Indeed a strong case can be made that Henry Ford and his coworkers played the leading pioneer role in developing American-style soyfoods and introducing them in a big way to America. In so doing, they set the stage for the rapid rise of soyfoods consumption among typical Americans that began in a small way during World War II, and in a big way starting in the 1970s and continuing into the 1990s.

8754. *SoyaScan Notes.* 2013. The visionary work of Henry Ford and his researchers with soyfoods–then and now: Pioneered soy protein isolates (Overview). Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** Robert Boyer and Bob Smith did extensive, pioneering work on developing soy protein isolates at the Ford Motor Co. Both started research in 1938. Boyer used his isolates to make industrial products, such as spun soy protein fibers and water-based paints. The soy fibers were produced in a pilot-plant with a capacity of 1,000 pounds per day of soybean "wool" and soon a fabric containing 25% soybean wool and 75% sheep's wool was used in the sidewall upholstery of many Ford cars. Bob Smith used his isolates to make a good-tasting soymilk, that was served in Ford cafeterias and schools, and at the Henry Ford Hospital, and was also used as the base for most of the early commercial soy-based whipped toppings–starting with Delsoy. In Nov. 1943 The Drackett Co. bought Ford's soybean fiber spinning operations; Boyer, Francis (Frank) Calvert, and William Atkinson went to Drackett from Ford as part of the deal. Drackett made and sold their fibers, Soybean Azlon, spun from soy protein isolates, from 2 Dec. 1943 to 1949. They were used mainly in felt hats by the American Hat Corporation. Drackett also commercialized other industrial soy proteins, such as Protein 110, 112, and 220, Ortho Protein, and plastic molding compounds. Boyer left Drackett in 1949 when they shut down their Azlon fiber spinning plant; he focused all his energy on developing food uses of edible products made from spun soy isolates. In mid-1957 ADM (Archer Daniels Midland Co.) purchased Drackett's soy protein business. Bob Boyer began to work as a full-time consultant for Ralston Purina in the field of soy proteins starting in early 1960. Since 13 June 1959 Ralston Purina had been manufacturing industrial soy protein isolates (for use in paper coatings) at a plant in Louisville, Kentucky, which they purchased from Procter & Gamble in December 1958. In 1960, after starting consultation with Boyer, Ralston Purina began its first work with edible soy proteins by establishing a research and pilot plant at company headquarters in St. Louis, Missouri. In about September 1962 Boyer was named technical director of protein products sales in the soybean division of the Ralston Purina Co.; he worked for Ralston until his retirement in 1971. Frank Calvert, Boyer's coworker from the Ford Motor Co. was hired in November 1962 to head up Ralston Purina's R&D work on food-grade isolated soy protein in St. Louis. In 1965 Calvert was named director of soybean research, and in 1967 director of research of the Protein Division. In 1969 Calvert was promoted to director of research, New Venture Management, and finally in 1971 vice president and research director, New Venture Management. During these years, Calvert developed new soy protein isolation processes, 70 percent soy protein concentrate products, and modified soy protein coating compositions for industrial use. Calvert is considered a visionary in soy protein research and the accomplishments of his career were honored in 1973 when the Ralston Purina plant at Memphis, Tennessee, was dedicated to him in recognition of his years of service and dedication to protein technology.

In Oct. 1962 Ralston Purina began to introduce a line of edible soy protein isolate products made at their plant in Louisville: The first three were Edi-Pro A and Edi-Pro N (spray-dried isoelectric and neutral isolated soy proteins respectively) and Textured Edi Pro (an edible spun soy protein fiber). Supro 610 was launched in October 1966. As sales of these products increased, Ralston Purina soon found itself a leader in this new field–along with the pioneer, Central Soya, which had launched Promine in Oct. 1959.

Ralston Purina expanded food grade isolate capacity with new facilities at Memphis, Tennessee, beginning production on April 10, 1973; Pryor, Oklahoma, beginning production on December 1, 1976. By late 1975 the company was making about 75 million pounds per year of isolates from its three plants, and was starting to advertise its isolates in a big way, with full-page color ads. This expansion easily vaulted Ralston Purina into the position of world leader in food-grade isolated soy proteins by 1976. On 21 August 1979 the company began producing soy protein isolates at its first plant located outside the Unites States, in Ieper, Belgium. On 1 July 1987 Ralston Purina established Protein Technologies International (PTI) as a wholly owned subsidiary focused on manufacturing soy protein and fiber products. In 1993 PTI was by far the world's leading producer of soy protein isolates, controlling about 60% of the U.S. market. PTI's sales of consumer soy protein products rose from $221.6 million in 1989 to a record $288.1 million in 1992.

8755. *SoyaScan Notes.* 2013. The visionary work of Henry Ford and his researchers with soyfoods–then and now: Pioneered soymilk in America (Overview). Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** Henry Ford and his researchers pioneered soymilk in America. As early as Feb. 1921, in an interview with *The New York Tribune,* Ford predicted that "The milk and meat from cows will be replaced by man-made products." He explained that his laboratories had already made an experimental "milk which is superior to the natural article and much cleaner... not subject to tuberculosis."

Starting in about 1928 Dr. Edsel Ruddiman, working for Henry Ford at Dearborn, Michigan, did research and development work on soymilk made from whole soybeans.

At the 1934 Chicago World's Fair, Henry Ford served soymilk in various dishes, such as Cocoa with Soy Bean Milk, at his gala banquet for the media, and exhibited soymilk and other soyfoods in the Ford Barn. Millions of people saw this exhibit and read the media coverage. In about 1936 Ford's Edison Institute published a 19-page booklet titled "Recipes for Soy Bean Foods," which contained a recipe for making soymilk at home plus various recipes for using this soymilk, such as Soy Bean Custard.

In 1938 Bob Smith developed a completely new type of soymilk based on isolated soy protein. Henry Ford liked the taste very much and said he preferred it to cow's milk. He often kept a supply in his soymilk, which he enjoyed drinking, in his home refrigerator. In about September 1942, this new type of soymilk started to be made at the rate of 150 gallons a day from isolated soy protein, hydrogenated soy oil, and corn sugar at Ford's George Washington Carver Laboratory in Dearborn; the goal–to replace cow's milk. Tests conducted by the Henry Ford Hospital showed that rats could live and reproduce for five generations on nothing but this soymilk. It was served at the Henry Ford Hospital in Detroit, and at Ford cafeterias and schools. During World War II, in about 1943 the Ford News Bureau wrote a 3-page background paper on "Ford soy milk" stating that it could play a major role worldwide in supplementing the diets of millions of people who faced a shortage of cow's milk due to wartime conditions. Ford's soymilk was first used commercially to make Delsoy, a non-dairy whipped topping introduced in the mid-1940s.

Since the early 1980s there has been a boom in soymilk consumption worldwide–as well as in the USA. Since the mid-1980s, soymilk has been the fastest growing basic soyfood product in America. In 1992 an estimated 995,750 gallons (3,768,910 liters) of soymilk (not including infant formulas), worth about $75,000,000 at the retail level, were sold in the USA. The market is estimated to be growing at the rate of about 12% a year. Soymilk, packaged in aseptic cartons that do not require refrigeration, is one of the most popular products in natural- and health food stores nationwide. By 1993 at least 234 brands of soymilk / soy beverages had been introduced in the USA and another 152 had been introduced in Europe. By a remarkable coincidence, America's leading soymilk manufacturer (American Soy Products, Inc., maker of Edensoy) is located in Saline, Michigan, the same small, rural town where Henry Ford established one of his "village industries" that processed soybeans from August 1938 until the start of World War II.

8756. *SoyaScan Notes.* 2013. Chronology of soymilk worldwide–1500 A.D. to 1949. Part I. Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** 1500 A.D.–The earliest known written reference to soymilk appears in China in a poem titled "Ode to Tofu," written by Su Ping

1665–Soymilk is first mentioned by a Westerner, Domingo Fernández de Navarrete, in his book *A Collection of Voyages and Travels.* Navarrete served as a Dominican missionary in China.

1790–Soymilk is mentioned by Juan de Loureiro in his book *The Flora of Cochin China.* Loureiro was a Portuguese Jesuit missionary who lived in what is now Vietnam. Note that each of these and many other early references mentioned soymilk as part of the process for making tofu.

1866–Soymilk is first discussed as a drink in its own right by the Frenchman Paul Champion, who traveled in China. In a French-language article he stated that the Chinese had taken their cups to tofu shops to get hot soymilk, which they drank for breakfast.

1896 June–Soymilk is first referred to in the United States by Henry Trimble in the *American Journal of Pharmacy.*

1909–The first soy-based infant formulas and soymilk made from full-fat soy flour are developed in the United States by John Ruhräh, a pediatrician. He reports his results

in the *Archives of Pediatrics* (July 1909).

1910–The world's first soy dairy, named *Caséo-Sojaïne,* is founded by Li Yu-ying, a Chinese citizen, biologist and engineer, at 46-48 Rue Denis Papin, Les Vallées, Colombes (near Asnières), a few miles northwest of Paris. In December 1910 he applies for the world's first soymilk patents (British Patents No. 30,275 and 30,351). The first patent is titled "Vegetable milk and its derivatives." He is issued both patents in Feb. 1912.

1913 June 13–Li Yu-ying is issued the first U.S. soymilk patent (No. 1,064,841), titled "Method of manufacturing products from soja." He filed the application on 10 Oct. 1911.

1917–Soymilk is being produced commercially in the U.S. by J.A. Chard Soy Products in New York City.

1929 Nov.–T.A. Van Gundy, founder of La Sierra Industries in Arlington, California, launches La Sierra Soy Milk, and becomes the first Seventh-day Adventist worldwide to make soymilk commercially. The product was canned and the beany flavor removed by live steam processing.

1931–Madison Foods of Madison, Tennessee, introduces Madison Soy Milk–the world's earliest known soymilk to be fortified with calcium and the second commercial soymilk product made by Seventh-day Adventists in the USA. Madison Foods is a company run by students and faculty within Madison College, a pioneering work/study school.

1936 Jan.–Dr. Harry W. Miller and his son, Willis, start making Vetose Soya Milk, sold in natural or chocolate flavors in sterilized half pint or quart bottles at their Vetose Nutritional Laboratories in Shanghai, China. Dr. Miller is a Seventh-day Adventist physician, a student of Dr. John Harvey Kellogg, and a medical missionary living in China. The world's first "soy dairy," this company also made soy ice cream and Acidophilus Vetose (a cultured soya milk)–both launched in Jan. 1936. But Japan was invading China. Within months after the soy-milk business began booming, a Japanese bomb blew up the soy dairy.

1936 June–Sobee, the world's earliest known branded soy-based infant formula, is launched by the American Soya Products Corp. of Evansville, Indiana.

1939 autumn–Dr. Harry W. Miller, forced by the war in China to return to the USA, starts making soymilk at Mt. Vernon, Ohio, in a large brick plant which he and coworkers built from the ground up. The first two products were canned liquid soymilk (made in a pressure cooker and fortified with vitamins and minerals) and malted soymilk (Soy-A-Malt). Pressure from the powerful U.S. dairy industry and the USDA convinced Miller not to call his product 'soymilk,' so he latinized the name to Soya Lac. This term was first used in late 1939 for Miller's first American soymilk.

1940 March–K.S. Lo, founder and managing director of the Hong Kong Soya Bean Products Co. Ltd. starts to make soymilk in Hong Kong. His product, originally named Vita Milk (*Wai-ta-nai* in Chinese) was fortified with calcium, cod-liver oil, and vitamins, and sold in milk bottles, primarily as a nutritious, affordable beverage for refugees. In June 1940 the product was renamed Sunspot, and in 1953 it was renamed Vitasoy. Continued.

8757. *SoyaScan Notes.* 2013. Definition of whip toppings (Overview). Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** Most American shoppers are familiar with non-dairy whip toppings–alternatives to whipped cream or whipping cream. The top retail brands are CoolWhip (launched in April 1966 by the Birds Eye Division of General Foods, Inc.), RichWhip (Rich Products Corp), Presto Whip, and La Creme; they generate retail sales of about $222 million per year.

But few realize that this food category was a child of World War II (in November 1942 the government's War Food Administration issued an order outlawing the sale of whipping cream in America during the war) and that all of the earliest non-dairy whip toppings were based on soy protein and had their roots in the work of Henry Ford and his researchers.

The first commercial soy-based whip topping was Delsoy, launched in about August 1944 in Dearborn, Michigan. By 1949 four similar products were on the market; all contained soy protein (derived from soymilk) and none of them contained dairy products.

However an unusual government law, which is now more than 50 years old, allows food manufacturers to use casein (the major protein in cow's milk) or a casein derivative (such as sodium caseinate) in a food product and still label this product "non-dairy." Because of this outdated and misleading law, all of the major brands of so-called "non-dairy whip toppings" contain casein. If the law were changed, many new opportunities would arise for true non-dairy products that based on soy protein and containing no casein or other animal products. Address: Soyfoods Center.

8758. *SoyaScan Notes.* 2013. Chronology of soymilk worldwide–1950 to present. Part II. Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** 1950's–Soymilk enters the modern era as it begins to be marketed in bottles like soft drinks, largely due to work by K.S. Lo of Vitasoy in Hong Kong and Yeo Hiap Seng in Singapore.

1957–Japan's first commercial soymilk, sold in bottles, named *Tônyû,* is introduced by the Ueda Tofu Shop in Hachioji, Tokyo. Dr. Harry Miller was the inspiration for and helped to establish the shop.

1960s–In Japan, soymilk slowly increases in popularity. New manufacturers are: Nihon Tanpaku Kogyo (1962). College Health Foods (later renamed San-iku Foods) in Chiba prefecture with its Soyalac (1969, also inspired

and aided by Dr. Harry Miller). Luppy Tanpaku (House Shokuhin) in Saitama prefecture with its Luppy soymilk (1969).

1965–ProSobee, the world's earliest known non-dairy infant formula based on soy protein isolates, is launched by Mead Johnson & Co. of Evansville, Indiana.

1966–The enzyme lipoxygenase is discovered by scientists at Cornell University [Ithaca, New York] to be responsible for the "beany" flavor in soymilk. A process is developed which could be used to help eliminate this flavor.

1967–Soymilk begins to be packaged aseptically in Tetra Pak cartons. This allows it to be sold without refrigeration for six months or more. The first such product was Beanvit, made by Yeo Hiap Seng Ltd. in Singapore and packaged in a disposable tetrahedron-shaped container.

1970's and 1980's–Soymilk becomes a popular beverage throughout Asia, spreading to Europe, Australia and the United States.

1979–Hong Kong Soya Bean Products Co. Ltd. starts to export Vitasoy, packed in Tetra Brik cartons, to selected countries throughout the world. By the early 1980s exports were going to over 20 countries, both developed and developing. Exports to the USA began in 1980. 1980 Jan.–DE-VAU-GE Gesundkostwerk, a Seventh-day Adventist food company near Hamburg, Germany, launches GranoVita Soja Drink in 500 ml Tetra Brik cartons; this soymilk product is made by N.V. Vandemoortele (one of Europe's largest oilseed crushers, founded in 1934) in Izegem, Belgium.

1980 June–N.V. Alpro is founded by Vandemoortele to take over production of this soymilk. Inspired and headed by Philippe Vandemoortele, Alpro purchased the land on which it was located from Vandemoortele, and became an independent manufacturer. Alpro quickly became Europe's leading producer of soymilk, making private-label brands for scores of companies.

1983 July–Edensoy brand soymilk is launched by Eden Foods of Clinton, Michigan. Imported from Japan (where it is made by Marusan-Ai Co.), it is sold in plain and carob flavors in stand-up foil retort pouches.

1984 Feb.–The first comprehensive study of the soymilk market in the U.S. is published by Soyfoods Center of Lafayette, California. It estimates that total soymilk consumption in the U.S. in 1983 (not including soy-based infant formulas) was 2.68 million gallons (26% of this was imported), and total production of soy-based infant formulas was 32 million gallons.

1984 Aug.–Westsoy Natural brand soymilk is launched by Westbrae Natural Foods of Emeryville, California. Imported from Japan (where it is made by San-Iku Foods), it is sold in one flavor in standup foil retort pouches.

1984 Oct.–Westbrae Natural Malted's, a thick soymilk resembling a milk shake, are launched in many flavors by Westbrae Natural Foods, imported from Japan.

1986 Nov.–Edensoy starts to be made in America by American Soy Products (ASP) at a large, modern plant in Saline, Michigan, and sold in Tetra Brik aseptic cartons. ASP is a joint venture of 4 Japanese companies and Eden Foods.

1988 Nov.–Pacific Foods of Oregon, launches its first soymilk product, Naturally Northwest Soy Beverage [Plain], in a 1-quart Tetra Brik Aseptic carton. The company's new factory is in Tualatin, Oregon.

1990 April–WestSoy Lite, America's first "lite" soymilk, with a low fat content, is introduced in plain, vanilla, and cocoa flavors by Westbrae Natural Foods. Made by adding water to regular soymilk, the product is less expensive to make, but also contains less nutrients.

1990 June–Alpro opens a new soymilk plant at Wevelgem, Belgium. Costing about US$15 million and having a capacity of 45 million liters a year, it is reputed to be the largest in the world. Alpro now makes about 70% of the soymilk in Europe.

1990 Sept. 24–The company name is changed to Vitasoy International Holdings Ltd. from Hong Kong Soya Bean Products Co. Ltd.

1991–There are at least 35 processors or marketers of soymilk in the U.S., increasing production to approximately 9.8 million gallons. Consumption is estimated to be growing at between 15 and 20% per year since 1984.

1993–More than 200 scientific journal articles about soymilk have been published in English, and at least 80 English-language patents on soymilk have been issued between 1912 and 1993.

1994 Jan.–Soy-Um, a low-priced and attractively packaged soymilk, is launched by J&G Inc., a product developer and distributor in Chicago, Illinois. The product is made in Oregon by Pacific Foods.

1995–A market study is published, estimating that $108 million of soymilk was sold in the U.S. in 1994. This equates to approximately 13.5 gallons of soymilk. By 1995 sales are projected to have risen to over $130 million, or approximately 16.3 million gallons.

8759. *SoyaScan Notes.* 2013. Chronology of Kikkoman Corporation. Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** This chronology is based largely on the excellent chronologies near the back of Kikkoman annual reports, dates in "Kikkoman Today & Tomorrow" (1972, p. 1), and dates in Fruin (1983). "Ideally situated close to soybean-growing regions as well as the Edo River, which provided a convenient transportation route for consumers in or near Edo, or present-day Tokyo, Noda has been well-known for its soy sauce (shoyu) production since the Edo period. Noda is located about 30 miles northeast of Tokyo in Chiba prefecture.

"1661–Kikkoman Soy Sauce first went on the market in 1661 when the Takanashi and Mogi families constructed breweries and started the brewing of soy sauce."

1914–When World War I started, excessive competition arose between Japan's many shoyu producers because of the wartime economy, causing a very confused market situation.

1917 Dec.–With these conditions as a background, eight Mogi and Takanashi family companies, the leading shoyu producers in the Noda area, merged to form Noda Shoyu Co., Ltd., a company with capital of ¥7 million and the predecessor of Kikkoman Corporation.

1925 April–Noda Shoyu Co., Ltd. absorbs Noda Shoyu Jozo Co., Ltd., Manjo Mirin Co., Ltd., and Nippon Shoyu Co., Ltd., through a merger. 1926–Kikkoman No. 7 shoyu brewing plant constructed.

1930 August–The Takasago soy sauce production plant (formerly the Kansai Plant) is constructed near Osaka and completed in 1931.

1936–Kikkoman Worcestershire Sauce plant completed.

1939–With the start of World War II, government controls on the price of soy sauce are established.

1946–Kikkoman stock first becomes available to the public.

1949–Export of Kikkoman soy sauce is reestablished after the war.

1950–Wartime soy sauce controls end and free competition resumes.

1957 June–Kikkoman International Inc. (KII) is established in San Francisco, California, in the United States.

1958–The first KII branch is established in Los Angeles.

1960–The second KII branch is established in New York.

1961 July–Kikko Food Corporation is established (later renamed Kikko Food Industries Co., Ltd.). In July 1991, the company becomes Nippon Del Monte Corporation.

1961–Seishin Pharmaceutical Co., Ltd. established.

1962 February–Tone Beverage Co., Ltd., is established. In February 1963, the company becomes Tone Coca-Cola Bottling Co., Ltd.

1962 October–Katsunuma Yoshu Co., Ltd., is established in Japan. In March 1964, the company becomes Mann's Wine Co., Ltd. 1963–Japan Calpak Co., Ltd. established.

1964 October–Noda Shoyu Co., Ltd., is renamed Kikkoman Shoyu Co., Ltd.

1965–The third KII branch is established in Chicago, Illinois.

1966–Sales of Higeta brand products assumed by Kikkoman.

1968–Bottling of Kikkoman Soy Sauce for the American market begins at the Leslie Foods plant in Oakland, California.

1969 June–Kikkoman invests in and merges with Japan Food corporation, the biggest distributor of Oriental food in the United States. In June 1978 the company becomes JFC International Inc.

1970 March–Kikkoman invests in and merges with Pacific Trading Co., Ltd., a sister company of Japan Food Corporation.

1972 March–Kikkoman Foods, Inc. (KFI), is established in Walworth, Wisconsin (USA) for the purpose of manufacturing soy sauce and teriyaki sauce. Shipping is scheduled to start in early 1973.

1972 August–Kikkoman + Daitokai (Europe) GmbH is established in Düsseldorf, in Germany.

1974 February–Kikkoman Restaurant, Inc. is established.

1979 March–Kikkoman Trading Europe GmbH is established in Neuss, in Germany.

1980 October–Kikkoman Shoyu Co., Ltd. is renamed Kikkoman Corporation–the company's present name.

1983 January–Kikkoman Ajinomingei Co., Ltd., is established.

1983 June–Kikkoman (S) Pte. Ltd., a production facility, is established in Singapore.

1983 October–Kikkoman Business Development Inc. is established.

1986 August–New shoyu production facilities come on stream at Kikkoman's Chitose Plant, in Hokkaido.

1990 January–Kikkoman buys perpetual marketing rights for the Del Monte brand in the Asian-Pacific region, excluding the Philippines.

1990 February–A joint venture company, President Kikkoman Inc. is established to produce soy sauce in Tainan, in Taiwan.

1996 April–Kikkoman establishes Kikkoman Foods Europe B.V., Europe's first soy sauce manufacturer, located in Hoogezand-Sappemeer, in the Netherlands.

1996 May–Production of *Shochu* a clear Japanese spirit, commences at a new facility of the Ojima Plant.

1997 March–Kikkoman holds a ground-breaking ceremony for its second U.S. soy sauce production plant, in Folsom, California, in the United States.

1997 October–Kikkoman Foods Europe B.V. begins operations at its plant [in Hoogezand-Sappemeer, the Netherlands].

1998 October–The second shoyu manufacturing plant of Kikkoman Foods, Inc., in Folsom, California, begins shipments.

1999 July–Kikkoman opens its new headquarters in Noda, Chiba prefecture, to commemorate the Company's 80th anniversary.

1999 October–Kikkoman Institute for International Food Culture is opened at the Company's new headquarters.

1999 November–Kikkoman announces a joint venture with its partner in Taiwan [Uni-President Enterprises, Taiwan's largest food manufacturer] to build a soy sauce plant in China [In Kunshan, near Shanghai].

2000 May–Kunshan President Kikkoman Biotechnology Co., Ltd. (a joint-venture company) is established.

2000 Aug.–Construction starts on a soy sauce plant in

China. The first shipments are slated for spring 2002.

2002 May–The China plant Kunshan President Kikkoman Biotechnology Co., Ltd., holds its grand opening.

2003 May–Kikkoman Foods, Inc. (with its plant at Walworth, Wisconsin) holds its 30th anniversary ceremony.

2004 March–Kikkoman invests in Higeta Shoyu Co., Ltd. and Kibun Food Chemifa Co., Ltd. (The latter makes soymilk).

2006 June–Kibun Food Chemifa Co., Ltd. becomes a consolidated subsidiary of Kikkoman.

2007–Kikkoman celebrates its 50th anniversary in the U.S.

2008–Kikkoman rolls out its new corporate brand logo and slogan globally.

2008 Aug.–Kibun Food Chemfa Co., Ltd. (now Kikkoman Soyfoods Company) becomes a wholly owned subsidiary of Kikkoman.

2009 Oct.–Kikkoman shifts to a holding company structure.

2011 April–Kikkoman Biochemifa Company is established [to produce clinical diagnostic devices and reagents, processing enzymes, etc.].

8760. *SoyaScan Notes.* 2013. What's wrong with drinking cow's milk (Overview). Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** These problems are listed in descending order of importance. The first three problems are health problems, widely recognized by health professionals:

(1) Allergies: Cow's milk is one of the three most prevalent allergens, along with eggs and wheat. Pediatricians have reported that up to 70% of their patients have allergies. In most cases these children improve when taken off dairy for approximately 3 weeks. are well aware that infants are especially prone to suffer from allergies to milk, and many who are taken off milk experience almost immediate relief from discomfort.

(2) Lactose intolerance: An estimated two-thirds of the world's population has trouble digesting milk because of intolerance to lactose, the main sugar in milk. Caucasians whose ancestors come from northern Europe have the least problems with lactose. Blacks, Arabs, Asians typically suffer various degrees of discomfort.

(3) Infant formulas in Third World countries: All pediatricians agree that the best food for infant's is mother's milk, supplied by breast feeding. It is free, nourishing, and sanitary. Some multinationals (such as Nestlé) have used various (often insidious) means to try to persuade mothers in Third World countries that infant formula is healthier and more "modern" than mother's milk. But buying such infant formulas (which are relatively expensive) often impoverishes the consumers, during preparation it is often contaminated, and the composition is not as well suited to the infant's nutritional needs as mother's milk–it lacks natural antibodies and contains much more calcium and other minerals than mother's milk.

(4) Chronic constipation in children can indicate intolerance of cow's milk.

The next group of problems also relate to health, but are not a source of concern to most Americans:

(4) Saturated fat: Milk can be a major source of saturated fat, one of the primary contributors to heart disease.

(5) Casein as a possible carcinogen: Casein is the primary dairy protein found in all dairy products. There is new evidence that casein is a carcinogen; studies by T. Colin Campbell of Cornell University [Ithaca, New York] show that it can cause liver cancer in laboratory mice. Read *The China Study*, by Campbell and Campbell (2005).

The rest of the problems are not primarily health problems: (6) rBGH (Recombinant Bovine Growth Hormone): This genetically engineered hormone, made by Monsanto, is injected into cows to make them produce more milk. It also causes their udders to become huge, and sometimes causes udder infection.

(7) Antibiotics: Many cows are regularly fed low-level doses of antibiotics for two reasons: To reduce infections and to stimulate growth. A major problem worldwide is that bacteria which cause human health problems develop resistance to the antibiotics in cows; when they infect humans, antibiotics are ineffective.

(8) Cow's are fed ground up dead cows: This could eventually contribute to the spread of Mad Cow Disease.

(9) Cows and production of their forage and feeds consume huge amounts of water, especially in California, and are perhaps the leading cause of water shortages in this state.

(10) By drinking milk you directly cause suffering to cows (mothers) who are forced to continually reproduce and then immediately give up their newborn calves. Who wants to knowingly cause suffering to another aware, sensitive, caring, conscious being.

8761. *SoyaScan Questions.* 2013. Questions about the life and work of Theodore A. Van Gundy and his children. Compiled by William Shurtleff of Soyinfo Center.

• ***Summary:*** What year did La Sierra Industries start making foods (about 1927 or 1928)? What was the company's address in Arlington, California? Try to get some land or tax records concerning the business. What Seventh-day Adventist church did the Van Gundy family attend?–Probably La Sierra University Church. Does that church have any records concerning the family? What is the true story about Ransom Brown and Loma Linda's soymilk? When (between April 1934 and Sept. 1935) did La Sierra Industries move to Ontario, California? What was their physical address in Ontario?

Do any of the following have information: La Sierra University? Riverside Public Library? Riverside Chamber of

Commerce–Small Business Section? Riverside County tax office? Riverside Historical Society?

An asterisk (*) at the end of the record means that SOYFOODS CENTER does not own that document.
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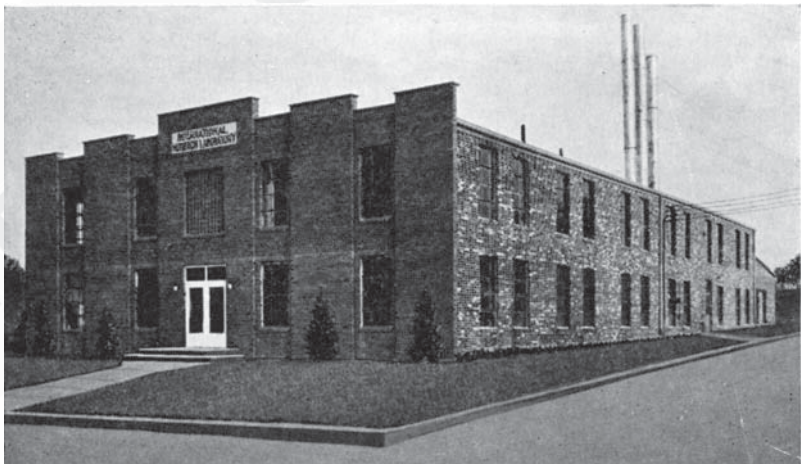
An asterisk in a listing of number of references [23* ref] means that most of these references are not about soybeans or soyfoods.



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Soymilk, Spray-Dried or Powdered, Used as an Ingredient in Non-Beverage Commercial Products Such as Ice Creams, Yogurts, Cheeses, Desserts, or Entrees. 999, 1979, 2509, 3402, 3538, 3634, 4801, 4831, 5057, 5058, 5066, 5510, 5659, 5694, 5837, 6108, 6109, 6333, 6532, 6545, 6569, 7635, 7745, 7949

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3735, 3737, 3739, 3746, 3750, 3751, 3753, 3755, 3759, 3760, 3761, 3762, 3768, 3772, 3775, 3776, 3778, 3780, 3782, 3783, 3787, 3790, 3791, 3800, 3803, 3806, 3809, 3813, 3824, 3825, 3828, 3830, 3831, 3842, 3843, 3848, 3851, 3852, 3861, 3864, 3871, 3872, 3880, 3881, 3882, 3890, 3891, 3894, 3900, 3904, 3907, 3909, 3918, 3920, 3921, 3923, 3924, 3926, 3927, 3928, 3929, 3935, 3936, 3937, 3941, 3946, 3951, 3953, 3965, 3969, 3981, 3984, 3985, 3991, 3995, 3999, 4003, 4004, 4008, 4009, 4015, 4016, 4021, 4025, 4026, 4028, 4031, 4037, 4044, 4046, 4047, 4048, 4049, 4057, 4058, 4059, 4060, 4061, 4070, 4077, 4079, 4083, 4095, 4096, 4097, 4105, 4106, 4109, 4112, 4113, 4114, 4122, 4128, 4129, 4130, 4134, 4135, 4136, 4138, 4140, 4145, 4149, 4150, 4151, 4177, 4185, 4186, 4194, 4198, 4204, 4205, 4206, 4207, 4208, 4209, 4210, 4212, 4215, 4217, 4218, 4219, 4220, 4221, 4222, 4224, 4230, 4233, 4245, 4248, 4255, 4261, 4272, 4277, 4278, 4279, 4280, 4281, 4282, 4283, 4287, 4289, 4290, 4293, 4294, 4295, 4298, 4299, 4300, 4302, 4303, 4307, 4309, 4310, 4311, 4313, 4319, 4331, 4334, 4336, 4337, 4338, 4341, 4345, 4346, 4347, 4348, 4352, 4356, 4367, 4368, 4369, 4370, 4374, 4375, 4376, 4380, 4383, 4384, 4386, 4391, 4394, 4406, 4407, 4408, 4417, 4419, 4425, 4426, 4435, 4437, 4438, 4445, 4446, 4447, 4448, 4449, 4452, 4453, 4456, 4457, 4458, 4462, 4463, 4464, 4470, 4472, 4473, 4474, 4478, 4479, 4481, 4486, 4488, 4489, 4500, 4502, 4504, 4518, 4521, 4524, 4527, 4530, 4531, 4535, 4541, 4543, 4546, 4547, 4549, 4558, 4564, 4566, 4568, 4570, 4574, 4575, 4580, 4581, 4582, 4584, 4592, 4595, 4596, 4598, 4599, 4609, 4615, 4617, 4621, 4631, 4636, 4640, 4642, 4643, 4645, 4649, 4650, 4651, 4652, 4653, 4654, 4655, 4660, 4661, 4663, 4664, 4668, 4669, 4670, 4689, 4690, 4694, 4698, 4705, 4706, 4707, 4708, 4710, 4713, 4717, 4719, 4724, 4725, 4727, 4728, 4729, 4731, 4734, 4735, 4745, 4746, 4755, 4757, 4758, 4759, 4763, 4765, 4770, 4784, 4786, 4788, 4796, 4797, 4798, 4805, 4809, 4810, 4812, 4819, 4823, 4826, 4827, 4832, 4838, 4843, 4847, 4854, 4857, 4859, 4861, 4865, 4866, 4874, 4875, 4876, 4877, 4880, 4881, 4883, 4884, 4886, 4889, 4892, 4894, 4898, 4903, 4906, 4912, 4913, 4920, 4927, 4935, 4941, 4942, 4946, 4949, 4959, 4965, 4968, 4972, 4988, 4991, 4992, 4993, 4994, 4995, 4996, 4998, 4999, 5001, 5002, 5005, 5008, 5009, 5010, 5011, 5012, 5013, 5027, 5028, 5029, 5034, 5040, 5041, 5043, 5044, 5051, 5052, 5054, 5056, 5062, 5065, 5069, 5072, 5078, 5080, 5085, 5093, 5098, 5100, 5101, 5104, 5109, 5113, 5116, 5120, 5128, 5129, 5133, 5137, 5138, 5139, 5140, 5141, 5143, 5145, 5154, 5160, 5163, 5167, 5170, 5174, 5183, 5185, 5188, 5190, 5192, 5197, 5198, 5201, 5203, 5205, 5206, 5209, 5210, 5211, 5215, 5223, 5224, 5226, 5227, 5228, 5229, 5236, 5240, 5242, 5244, 5245, 5249, 5252, 5255, 5256, 5257, 5258, 5261, 5262, 5263, 5265, 5266, 5267, 5269, 5271, 5273, 5280, 5284, 5304, 5309, 5310, 5312, 5314, 5315, 5318, 5319, 5320, 5323, 5326, 5329, 5336, 5337, 5338, 5339, 5340, 5348, 5352, 5356, 5357, 5358, 5362, 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5805, 5806, 5811, 5833, 5834, 5835, 5839, 5840, 5842, 5843, 5846, 5847, 5848, 5855, 5858, 5859, 5864, 5865, 5866, 5867, 5870, 5871, 5875, 5878, 5883, 5885, 5886, 5888, 5892, 5893, 5896, 5899, 5909, 5910, 5912, 5915, 5917, 5918, 5935, 5936, 5937, 5940, 5942, 5946, 5953, 5954, 5955, 5957, 5959, 5960, 5962, 5963, 5971, 5972, 5976, 5977, 5984, 5986, 5988, 5991, 5997, 5999, 6002, 6003, 6009, 6015, 6016, 6018, 6024, 6025, 6027, 6028, 6029, 6030, 6032, 6035, 6039, 6040, 6042, 6049, 6050, 6055, 6056, 6061, 6062, 6064, 6065, 6067, 6068, 6072, 6074, 6075, 6080, 6086, 6087, 6094, 6098, 6099, 6102, 6105, 6106, 6115, 6116, 6118, 6120, 6121, 6122, 6125, 6129, 6134, 6135, 6139, 6144, 6146, 6147, 6148, 6151, 6152, 6153, 6156, 6157, 6158, 6160, 6161, 6164, 6165, 6167, 6170, 6171, 6173, 6175, 6176, 6177, 6182, 6183, 6192, 6193, 6199, 6202, 6203, 6204, 6207, 6208, 6210, 6211, 6213, 6214, 6217, 6220, 6224, 6233, 6234, 6238, 6247, 6251, 6252, 6255, 6257, 6259, 6260, 6262, 6263, 6267, 6268, 6271, 6273, 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3679, 3680, 3681, 3683, 3684, 3687, 3688, 3690, 3691, 3692, 3693, 3694, 3695, 3696, 3698, 3699, 3704, 3709, 3710, 3712, 3714, 3715, 3716, 3718, 3721, 3724, 3726, 3727, 3729, 3731, 3732, 3734, 3735, 3736, 3740, 3744, 3753, 3754, 3757, 3758, 3761, 3762, 3769, 3774, 3776, 3778, 3780, 3782, 3783, 3787, 3791, 3792, 3793, 3794, 3796, 3797, 3799, 3800, 3803, 3806, 3807, 3809, 3810, 3811, 3812, 3816, 3817, 3819, 3823, 3824, 3825, 3828, 3829, 3830, 3832, 3836, 3838, 3840, 3841, 3843, 3846, 3847, 3848, 3849, 3851, 3855, 3861, 3862, 3869, 3870, 3871, 3872, 3875, 3876, 3881, 3882, 3883, 3890, 3891, 3892, 3894, 3895, 3896, 3899, 3900, 3902, 3907, 3909, 3916, 3918, 3919, 3920, 3922, 3923, 3924, 3927, 3928, 3930, 3934, 3936, 3939, 3941, 3945, 3946, 3948, 3949, 3950, 3952, 3953, 3964, 3965, 3967, 3969, 3975, 3978, 3979, 3981, 3986, 3987, 3990, 3993, 3995, 3998, 3999, 4004, 4005, 4006, 4007, 4014, 4015, 4018, 4020, 4023, 4032, 4038, 4047, 4048, 4054, 4057, 4059, 4061, 4062, 4063, 4066, 4067, 4068, 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